

31-12 24th AVENUE
QUEENS, NEW YORK

Remedial Action Work Plan & STIP List (5/21/2015)

NYC VCP Project Number 15CVCP150Q
OER Project Number 11EHAZ215Q

Prepared For:

Tres Construction, LLC
20-62 26th Street, Astoria, NY 11105
(718) 433-1973
George@tresconstruction.com

Prepared By:



45-09 Greenpoint Avenue, Queens, NY 11104
(718) 784-7490
ekarayel@athenica.com

MAY 2015



May 19, 2015

New York City Office of Environmental Remediation
City Voluntary Cleanup Program
c/o Shaminder Chawla
100 Gold Street, 2nd Floor
New York, NY 10038

Re: VCP # 15CVCP150Q
E-Designation # 11EHAZ215Q
31-12 24th Avenue, Queens, New York 11105
Remedial Action Work Plan (RAWP) Stipulation List

Dear Mr. Chawla:

Athenica Environmental Services, Inc. hereby submits a Remedial Action Plan (RAWP) Stipulation List for the Site to the New York City Office of Environmental Remediation (OER) on behalf of Tres Construction, LLC. This letter serves as an addendum to the RAWP to stipulate additional content, requirements, and procedures that will be followed during the site remediation. The contents of this list are added to the RAWP and will supersede the content in the RAWP where there is a conflict in purpose or intent. The additional requirements/procedures include the following Stipulation List below:

1. The criterion attached in **Appendix 1** will be utilized if additional petroleum containing tank or vessel is identified during the remedial action or subsequent redevelopment excavation activities. All petroleum spills will be reported to the NYSDEC hotline as required by applicable laws and regulations. This contingency plan is designed for heating oil tanks and other small or moderately sized storage vessels. If larger tanks, such as gasoline storage tanks are identified, OER will be notified before this criterion is utilized.
2. A pre-construction meeting is required prior to start of remedial excavation work at the site. A pre-construction meeting will be held at the site and will be attended by OER, the developer or developer representative, the consultant, excavation/general contractor, and if applicable, the soil broker.
3. A pre-approval letter from all disposal facilities will be provided to OER prior to any soil/fill material removal from the site. Documentation specified in the RAWP - Appendix 3 - Section 1.6 "Materials Disposal Off-Site" will be provided to OER. If a

different disposal facility for the soil/fill material is selected, OER will be notified immediately.

4. Signage for the project will include a sturdy placard mounted in a publically accessible right of way to building and other permits signage will consist of the NYC VCP Information Sheet (attached **Appendix 2**) announcing the remedial action. The Information sheet will be laminated and permanently affixed to the placard.
5. If your site contains hazardous waste that will be excavated and disposed of offsite, OER can work with your development team to seek an exemption for your property from the \$130/ton state Hazardous Waste Program Fee. To qualify for an exemption, your site must be enrolled in the city Voluntary Cleanup Program; hazardous waste must result from remedial action set forth in a cleanup plan approved by OER; and OER must oversee the cleanup. It is the applicant's responsibility to notify your OER Project Manager, copying supervising Project Manager and Shaminder Chawla, before hazardous waste is shipped from your site. Unless the Department of Environmental Conservation is notified before waste is shipped from your site, you may not receive an exemption from the fee. The exemption does not cover, and you remain liable for, the Special Assessment on Hazardous Waste (established by ECL§ 27-0923) which charges a fee of up to \$27 per ton for hazardous waste generated that is due at the State Department of Taxation and Finance 30 days after the end of the quarter in which the waste was generated. **Appendix 3** includes additional information about the Exemption for Hazardous Waste Program Fee.
6. Collection and analysis of five end-point samples from the bottom of the excavation will be collected to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs. Samples will be analyzed for contaminants of concern VOCs, SVOCs, Metals, PCBs, and Pesticides.
7. OER requires parties seeking City Brownfield Incentive Grants to carry insurance. For a cleanup grant, both the excavator and the trucking firm(s) that handle removal of soil must carry or be covered under a commercial general liability (CGL) policy that provides \$1 million per claim in coverage. OER recommends that excavators and truckers also carry contractors pollution liability (CPL) coverage, also providing \$1 million per claim in coverage. The CGL policy, and the CPL policy if obtained, must name the City of New York, the NYC Economic Development Corporation, and Brownfield Redevelopment Solutions as additional insured. For an investigation grant, an environmental consultant must be a qualified vendor in the BIG program and carry \$1 million of professional liability (PL) coverage. A fact sheet regarding insurance is attached as **Appendix 4**.
8. Daily reports will be provided during active excavation work. If no work is performed for extended time period, daily report frequency will be reduced to weekly basis. Daily report template is attached in **Appendix 5**.
9. The stamped/signed RAWP certification page is included in **Appendix 6**.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ezgi Karayel', enclosed within a large, loopy circular flourish.

Ezgi Karayel
Project Manager

Cc: Sarah Pong, NYCOER

Appendix 1
Generic Procedures for Management of Underground Storage Tanks
Identified under the NYC VCP

Prior to Tank removal, the following procedures should be followed:

- Remove all fluid to its lowest draw-off point.
- Drain and flush piping into the tank.
- Vacuum out the “tank bottom” consisting of water product and sludge.
- Dig down to the top of the tank and expose the upper half.
- Remove the fill tube and disconnect the fill, gauge, product, vent lines and pumps. Cap and plug open ends of lines.
- Temporarily plug all tank openings, complete the excavation, remove the tank and place it in a secure location.
- Render the tank safe and check the tank atmosphere to ensure that petroleum vapors have been satisfactorily purged from the tank.
- Clean tank or remove to storage yard for cleaning.
- If the tank is to be moved, it must be transported by licensed waste transporter. Plug and cap all holes prior to transport leaving a 1/8 inch vent hole located at the top of the tank during transport.
- After cleaning, the tank must be made acceptable for disposal at a scrap yard, cleaning the tanks interior with a high pressure rinse and cutting the tank in several pieces.

During the tank and pipe line removal, the following field observations should be made and recorded:

- A description and photographic documentation of the tank and pipe line condition (pitting, holes, staining, leak points, evidence of repairs, etc.).
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with a calibrated photoionization detector (PID).

Impacted Soil Excavation Methods

The excavation of the impacted soil will be performed following the removal of the existing tanks. Soil excavation will be performed in accordance with the procedures described under Section 5.5 of Draft DER-10 as follows:

- A description and photographic documentation of the excavation.
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with calibrated photoionization detector (PID).

Final excavation depth, length, and width will be determined in the field, and will depend on the horizontal and vertical extent of contaminated soils as indentified through physical examination (PID response, odor, staining, etc.). Collection of verification samples will be performed to evaluate the success of the removal action as specified in this document.

The following procedure will be used for the excavation of impacted soil (as necessary and appropriate):

- Wear appropriate health and safety equipment as outlined in the Health and Safety Plan.

- Prior to excavation, ensure that the area is clear of utility lines or other obstructions. Lay plastic sheeting on the ground next to the area to be excavated.
- Using a rubber-tired backhoe or track mounted excavator, remove overburden soils and stockpile, or dispose of, separate from the impacted soil.
- If additional UST's are discovered, the NYSDEC will be notified and the best course of action to remove the structure should be determined in the field. This may involve the continued trenching around the perimeter to minimize its disturbance.
- If physically contaminated soil is present (e.g., staining, odors, sheen, PID response, etc.) an attempt will be made to remove it, to the extent not limited by the site boundaries or the bedrock surface. If possible, physically impacted soil will be removed using the backhoe or excavator, segregated from clean soils and overburden, and staged on separated dedicated plastic sheeting or live loaded into trucks from the disposal facility. Removal of the impacted soils will continue until visibly clean material is encountered and monitoring instruments indicate that no contaminants are present.
- Excavated soils which are temporarily stockpiled on-site will be covered with tarp material while disposal options are determined. Tarp will be checked on a daily basis and replaced, repaired or adjusted as needed to provide full coverage. The sheeting will be shaped and secured in such a manner as to drain runoff and direct it toward the interior of the property.

Once the site representative and regulatory personnel are satisfied with the removal effort, verification of confirmatory samples will be collected from the excavation in accordance with DER-10.

Appendix 2
NYC VCP Signage



NYC Voluntary Cleanup Program

31-12 24th Avenue
Site #: 15CVCP150Q

This property is enrolled in the New York City Voluntary Cleanup Program for environmental remediation. This is a voluntary program administered by the NYC Office of Environmental Remediation.

For more information,
log on to: www.nyc.gov/oer

Or scan with smart phone:



If you have questions or would like more information,
please contact:

Shaminder Chawla at (212) 442-3007
or email us at brownfields@cityhall.nyc.gov

Appendix 3 Hazardous Waste Fee Exemption Fact Sheet



Exemption from the Hazardous Waste Program Fee

If your site is enrolled in the city Voluntary Cleanup Program and contains hazardous waste that will be excavated and disposed of offsite, OER can work with your development team to exempt your property from the \$130/ton state Hazardous Waste Program fee. This exemption does not cover, and you remain liable for, the Special Assessment on Hazardous Waste (established by ECL§ 27-0923).

To qualify for an exemption from the Hazardous Waste Program Fee:

1. A site must be enrolled in the city Voluntary Cleanup Program;
2. Hazardous waste must result from remedial action set forth in a cleanup plan approved by OER; and
3. OER must oversee the cleanup.

Process for obtaining a Hazardous Waste Program Fee exemption:

For each VCP site, OER will submit three certifications to the New York State Department of Environmental Conservation (DEC):

1. OER will prepare a Notice of Potential Generation after a soil test shows a site contains hazardous waste. To prepare this Notice, you must provide your OER project manager with:
 - the site's EPA generator ID number;
 - the date of the soil test confirming hazardous waste;
 - the amount of hazardous waste in tons that you anticipate shipping offsite; and
 - the anticipated dates for the start and completion of remediation.

DEC must receive this form **before** hazardous waste is shipped from your site. Otherwise your claim for an exemption may be denied.

2. After hazardous waste has been removed from the site, OER will distribute a Certification of Hazardous Waste Generation to your project team which when filled out documents how the hazardous waste was managed. Once completed, it must be signed by the generator (or site owner) and the site's Qualified Environmental Professional and returned to your OER project manager with a copy to Shana Holberston sholbertson@dep.nyc.gov and Mark McIntyre mmcintyre@cityhall.nyc.gov.

3. OER will then issue a Certification of Remedial Action that Generated Hazardous Waste to DEC representing OER's approval of how a site managed its hazardous waste.

Upon OER's submission of the last two certifications to DEC, the agency will issue a written statement exempting an individual site from the Hazardous Waste Program Fee. OER will then notify the project of the exemption.

For further information, please contact:

Shana Holberton
Program Manager
(212) 788-3220
SHolberton@dep.nyc.gov

or

Mark McIntyre
General Counsel
(212) 788-3015
MMcintyre@cityhall.nyc.gov

Contact OER to confirm that you are using the most updated version of this guidance.



NYC Office of Environmental
Remediation

Exemption from the Hazardous Waste Program Fee

Ongoing Obligations:

Regardless of the Hazardous Waste Program Fee exemption, parties must:

- File a Hazardous Waste Annual Report with DEC by March 1 of each year if your site generated 15 tons of hazardous waste or more in the relevant calendar year. For details, see <http://www.dec.ny.gov/chemical/8770.html> To set forth the basis for an exemption from the Hazardous Waste Program Fee, put an X in the Exempt Remedial box in Box H of Section 1 of the Waste Generation and Management (GM) form and in the Comments Box (at the bottom of the form) include "New York City Voluntary Cleanup Program, VCP Site Number _____"; and
- Make quarterly payments of the Special Assessment on Hazardous Waste to the state Department of Taxation and Finance. For details see: <http://www.tax.ny.gov/bus/haz/hzrdwste.htm>

Appendix 4
BIG Program Insurance Fact Sheet



FACT SHEET – BIG PROGRAM INSURANCE REQUIREMENTS

Investigation Grants – for a developer or site owner to be eligible for a BIG investigation grant, its environmental consultant(s) must be:

- a Qualified Vendor in the BIG Program; and
- maintain Professional Liability (PL) insurance of \$1M per claim and annual aggregate.

Cleanup Grants – for a developer or site owner to be eligible for a BIG cleanup grant:

- Its general contractor or excavation/foundation contractor hired to perform remedial work must maintain Commercial General Liability (CGL) insurance of at least \$1M per occurrence and \$2M in the general aggregate. It is recommended that the general contractor or excavation/foundation contractor also maintain a Contractors Pollution Liability policy (CPL) of at least \$1M per occurrence.
- Its subcontractors who are hired by the general contractor etc. to perform remedial work at a site, including soil brokers and truckers, must also maintain a CGL policy in the amount and with the terms set forth above. It is recommended that subcontractors also maintain a CPL policy in the amount and with the terms set forth above.

The CGL policy, and the CPL policy if in force, must list the city, EDC and BRS as additional insureds, include completed operations coverage and be primary and non-contributory to any other insurance the additional insureds may have.

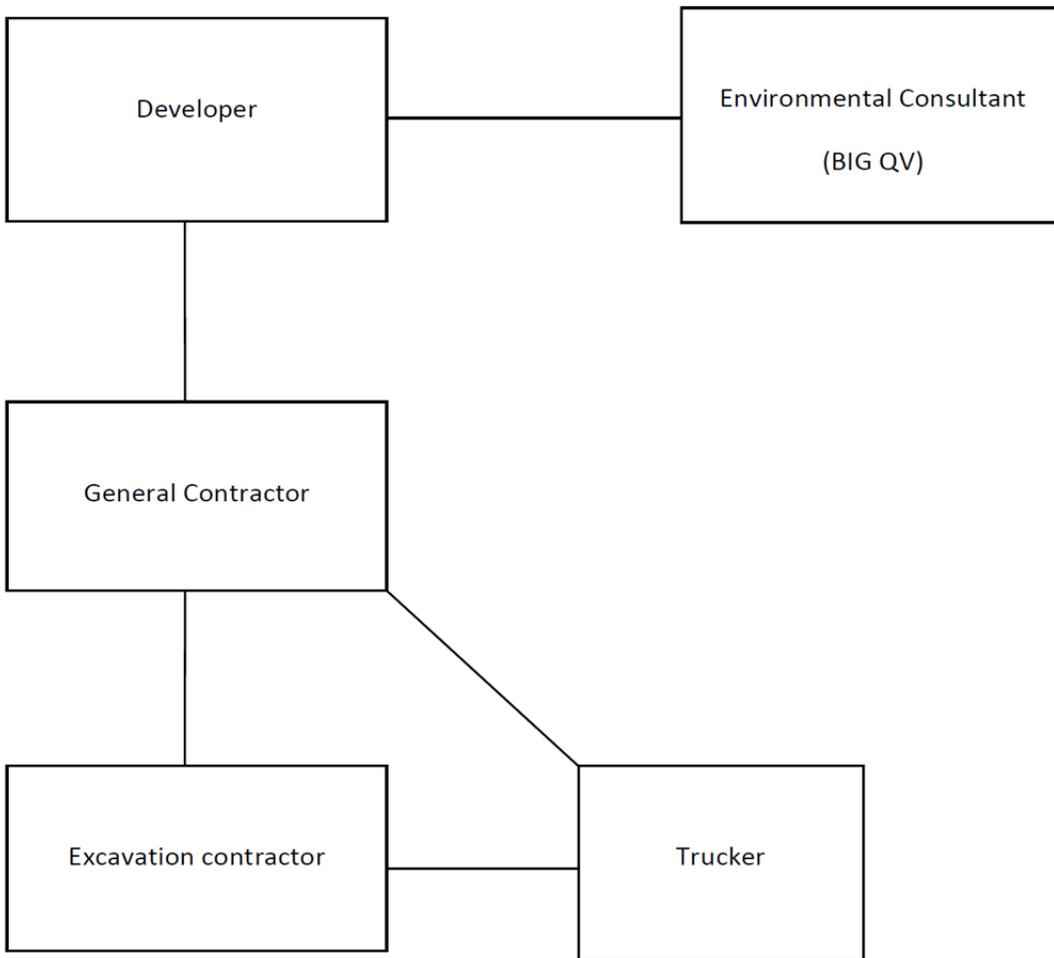
- Its environmental consultant(s) hired to oversee the cleanup must be:
 - a. a BIG Qualified Vendor; and
 - b. maintain Professional Liability (PL) insurance of \$1M per claim and annual aggregate.

If, in the alternative, the developer hires its environmental consultant to perform the cleanup, the environmental consultant must maintain CGL insurance in the amount and with the terms set forth above. It is recommended that the environmental consultant also maintain CPL coverage in the amount and with the terms set forth in the first two bulleted items listed above.

A schematic presenting the contractual relationships described above appears on page 2. Parties who must be named as Additional Insureds on Cleanup Grant insurance policies (CGL and CPL) are presented on page 3.

Example of Contractual Relationships for Cleanup Work

The Office of Environmental Remediation’s Voluntary Cleanup Plan program requires applicants to identify the parties who are engaged in active remediation of their sites including: the General Contractor hired to remediate and/or the excavation contractor hired to excavate soil from the site and the trucking firm(s) that remove soil from the site for disposal at approved facilit(ies).



The chart above shows contractual relationships that typically exist for projects that are enrolled in the Voluntary Cleanup Program.

BIG Program Additional Insureds

The full names and addresses of the additional insureds required under the Required CGL Policy and recommended CPL Policy are as follows:

“City and its officials and employees”

New York City Mayor’s Office of Environmental Remediation
253 Broadway, 14th Floor
New York, NY 10007

“NYC EDC and its officials and employees”

New York City Economic Development Corporation
110 William Street
New York, NY 10038

“BIG Grant Administrator and its officials and employees”

Brownfield Redevelopment Solutions, Inc.
739 Stokes Road, Units A & B
Medford, NJ 08055

Appendix 5
Daily Report Template

Generic Template for Daily Status Report

Instructions

The Daily Status Report submitted to OER should adhere to the following conventions:

- Remove this cover sheet prior to editing.
- Remove all the **red text** and replace with site-specific information.
- Submit the final version as a Word or PDF file.

Daily Status Reports

Daily status reports providing a general summary of activities for each day of *active remedial work* will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions, if any;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

DAILY STATUS REPORT

Prepared By: Enter Your Name Here

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70	X	70-85		>85	

VCP Project No.:	14CVCP000M	E-Number Project No.:	14EHAN000M	Date:	01/01/2014
Project Name:	Name or Address				

Consultant: Person(s) Name and Company Name	Safety Officer: Person(s) Name and Company Name
General Contractor: Person(s) Name and Company Name	Site Manager/ Supervisor: Person(s) Name and Company Name

Work Activities Performed (Since Last Report):
Provide details about the work activities performed.

Working In Grid #: A1, B1, C1

Samples Collected (Since Last Report):
No samples collected or provide details

Air Monitoring (Since Last Report):
No air monitoring performed or provide details
Prestart Conditions – PID = 0.0 ppm, Dust = 0.000
High Conditions – PID = 0.0 ppm, Dust = 0.000

Problems Encountered:
No problems encountered or provide details

Planned Activities for the Next Day/ Week:
Provide details about the work activities planned for the next day/ week.

									Example:	
Facility # Name/ Location Type of Waste Solid <u>Or</u> Liquid	Facility # Name Location Type of Waste Solid <u>Or</u> Liquid		##### Clean Earth Carteret, NJ petroleum soils Solid							
(Trucks, Cu.Yds. <u>Or</u> Gallons)	Trucks	Cu. Yds. <u>Or</u> Gallons	Trucks	Cu. Yds.						
Today									5	120
Total									25	600

NYC Clean Soil Bank		Receiving Facility: Name/ Address (Approved by OER)			
Tracking No.:	13CCSB000				
Today	Trucks 5	Cu. Yds. 25	Total	Trucks 120	Cu. Yds. 600

Site Grid Map
 Insert the site grid map here

Photo Log

Photo 1 – provide a caption	Insert Photo Here – Photo of the entire site
Photo 2 – provide a caption	Insert Photo Here – Photo of the work activities performed
Photo 3 – provide a caption	Insert Photo Here – Photo of the work activities performed

Appendix 6
Signed/Stamped RAWP Certification Page

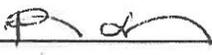
CERTIFICATION

I, Reza Sharif, P.E., am currently a registered professional engineer licensed by the State of New York. I performed professional engineering services and had primary direct responsibility for designing the remedial program for the 31-12 24th Avenue Site, Site number: 15CVCP150Q. I certify to the following:

- I have reviewed this document and the Stipulation List, to which my signature and seal are affixed.
- Engineering Controls developed for this remedial action were designed by me or a person under my direct supervision and designed to achieve the goals established in this Remedial Action Work Plan for this site.
- The Engineering Controls to be constructed during this remedial action are accurately reflected in the text and drawings of the Remedial Action Work Plan and are of sufficient detail to enable proper construction.
- This Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

Name Reza Sharif, PE

PE License Number 074803

Signature 

Date 5-21-15



I, William Silveri, am a qualified Environmental Professional. I will have primary direct responsibility for implementation of the remedial program for the 31-12 24th Avenue site, site number: 15CVCP150Q. I certify to the following:

- This Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

QEP Name William Silveri

QEP Signature 

Date 5-21-15

31-12 24th AVENUE
QUEENS, NEW YORK

Remedial Action Work Plan

NYC VCP Project Number 15CVCP150Q
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MAY 2015

REMEDIAL ACTION WORK PLAN

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Figure 2: Site Boundary Map and Surrounding Land Usage

Figure 3: Map of End-point Sample Locations

Figure 4: Site Excavation Diagram

Figure 5: Site-wide Cover System Plan

Figure 6: Vapor Barrier/Waterproofing Membrane Diagrams

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Appendix 1: Proposed Development Plans

Appendix 2: Citizen Participation Plan

Appendix 3: Sustainability Statement

Appendix 4: Soil/Materials Management Plan

Appendix 5: Construction Health and Safety Plan

Appendix 6: Manufacturer Specifications for Waterproofing / Vapor Barrier

LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AS/SVE	Air Sparging/Soil Vapor Extraction
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
C&D	Construction and Demolition
CEQR	City Environmental Quality Review
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
COC	Certificate of Completion
CQAP	Construction Quality Assurance Plan
CSOP	Contractors Site Operation Plan
DCR	Declaration of Covenants and Restrictions
ECs/ICs	Engineering Controls and Institutional Controls
ELAP	Environmental Laboratory Accreditation Program
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations Emergency Response
IRM	Interim Remedial Measure
MNA	Monitored Natural Attenuation
NOC	Notice of Completion
NYS DEC	New York State Department of Environmental Conservation
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYC OER	New York City Office of Environmental Remediation
NYC VCP	New York City Voluntary Cleanup Program
NYCRR	New York Codes Rules and Regulations
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation

NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
ORC	Oxygen-Release Compound
OSHA	United States Occupational Health and Safety Administration
PCBs	Polychlorinated Biphenyls
PE	Professional Engineer
PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SSDS	Sub-Slab Depressurization System
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
USGS	United States Geological Survey
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VOC	Volatile Organic Compound

CERTIFICATION

I, Reza Sharif, P.E., am currently a registered professional engineer licensed by the State of New York. I performed professional engineering services and had primary direct responsibility for designing the remedial program for the 31-12 24th Avenue Site, Site number: 15CVCP150Q. I certify to the following:

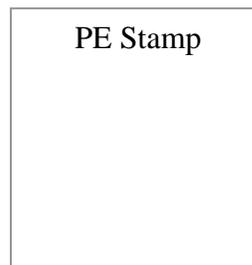
- I have reviewed this document and the Stipulation List, to which my signature and seal are affixed.
- Engineering Controls developed for this remedial action were designed by me or a person under my direct supervision and designed to achieve the goals established in this Remedial Action Work Plan for this site.
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Name

PE License Number

Signature

Date



I, William Silveri, am a qualified Environmental Professional. I will have primary direct responsibility for implementation of the remedial program for the 31-12 24th Avenue site, site number: 15CVCP150Q. I certify to the following:

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QEP Name

QEP Signature

Date

EXECUTIVE SUMMARY

Tres Construction, LLC is working with the NYC Office of Environmental Remediation (OER) in the New York City Voluntary Cleanup Program to investigate and remediate a 7,500-square foot site located at 31-12 to 31-18 24th Avenue and 24-08 32nd Street in Queens, New York. A limited remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance and conforms with applicable laws and regulations.

Site Location and Background

The Site is located at 31-12 to 31-18 24th Avenue and 24-08 32nd Street in the Astoria section in Queens, New York and is identified as Block 837 and Lot 50 on the New York City Tax Map (Please note that the Site was recently merged from Lots 50 and 52 into a single Lot 50). Figure 1 shows the Site location. The Site is 7,500-square feet and is bounded by 24th Avenue to the north, a 3-story residential structure to the south, 32nd Street to the east, and several residential structures and a commercial deli to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is used for storage and office space for a commercial construction business and contains one 2-story structure with a partial basement and one 1-story structure. The two buildings are interconnected at grade level.

Summary of Redevelopment Plan

The proposed future use of the Site will consist of a 6-story mixed use commercial and residential building with cellar and sub-cellar which will occupy the entire footprint of the Site. The total gross square footage of the proposed building will be approximately 37,049 square feet, including approximately 22,648 square feet of residential units and 7,781 of commercial space with the 7,483 square foot sub-cellar utilized for parking and mechanical rooms. The cellar will also be utilized for parking along with commercial as well as commercial space and residential lobby. The first floor will consist of commercial occupancy and a small open area used for bicycle parking. The floor above (2nd through 6th) will be utilized as residential units. As part of development, the entire Site is expected to be excavated to approximately 12-13 feet below

current grade. The total amount of soil expected to be approximately 3,600 cubic yards. The groundwater table is assumed to be at approximately 25 feet bgs at the Site. Layout of the proposed site development is presented in Figure 3. The current zoning designation is C4-3 (R6 equivalent). The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

Summary of Surrounding Property

The Site is located within a primarily mixed use residential and commercial area of Queens, New York. The Site is bounded by 24th Avenue to the north, a 3-story residential structure to the south, 32nd Street to the east, and several residential structures and a commercial deli to the west. According to the OER Searchable Property Environmental E-Database (SPEED), there is one sensitive receptor (such as schools, hospitals and day-care facilities) within a 500-foot radius of the Site. P.S. 85 Judge Charles Vallone is located approximately 250 feet to the north of the Site at 23-70 31st St.

Figure 2 shows the surrounding land usage.

Summary of Past Site Uses and Areas of Concern

A Phase I Environmental Site Assessment was performed by Athenica in May 2015. Historical Sanborn maps show the Site was developed from at least 1915. The Site was shown as developed with various commercial uses including lamp shade manufacturing and as an unspecified use warehouse. Portions of the Site are also shown as developed with small structures designated as “auto” which were most likely former parking garages. Historical City Directories also list several commercial occupants of the Site including: Terrazzo Flooring Co, Kovar Products Co, Astoria Novelty Co, C&L Cabinets & Woodturning, Greenlight Energy Incorporated and Tres Construction.

The AOCs identified for this site include:

1. Presence of urban fill from approximately grade level to 4 feet bgs.

Summary of Work Performed under the Limited Remedial Investigation

The scope of work implemented in May of 2015 by Athenica included:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Performed a ground penetrating radar (GPR) survey;
3. Installed four (4) soil borings across the entire project Site, and collected nine (9) soil samples for chemical analysis from the soil borings to evaluate soil quality;
4. Monitoring wells could not be installed at the Site due to the Site conditions. Monitoring wells will be completed after the demolition of the on Site structures and groundwater quality beneath the Site will be evaluated.
5. Installed two (2) soil vapor probes around Site perimeter and collected two (2) samples for chemical analysis.

Summary of Findings of Limited Remedial Investigation

A limited remedial investigation was performed and the results are documented in a companion document called “Limited Remedial Investigation Report, 31-12 24th Avenue”, dated May 2015 (RIR).

1. Elevation of the property ranges from 52.54 to 60.23 feet.
2. Groundwater depth could not be determined since monitoring wells could not be installed during the limited Remedial Investigation (RI). The monitoring wells will be installed after the demolition of the buildings is completed at the Site.
3. Groundwater flow could not be determined since monitoring wells could not be installed during the RI. The regional groundwater flow direction is towards west in the vicinity of the Site.
4. Bedrock was not encountered during the RI.
5. The stratigraphy of the Site, from the surface down, consists of approximately 2 to 4 feet of medium sand with urban fill, underlain by 6 feet of medium sand with pebbles and beneath 10 feet below grade surface underlain by 5 feet of coarse sand and pebbles.

6. Soil/fill samples collected during the limited RI were compared to NYSDEC 6NYCRR Part 375-6.8 Unrestricted Use Soil Cleanup Objectives (SCOs) and Restricted Residential Use SCOs. Soil/fill sampling collected during the RI showed trace concentrations of a few VOCs including acetone and methylene chloride, both common lab contaminants. Three (3) Polycyclic Aromatic Hydrocarbon (PAH) SVOCs including benz(a)anthracene (1.34 ppm), benzo(k)fluoranthene (0.84 ppm), and chrysene (1.25 ppm) were detected in one shallow soil sample (0'-2') at SB-2 exceeding their respective Unrestricted Use SCOs. Of these only benz(a)anthracene exceeded its respective Restricted Residential Use SCO. One Pesticide; 4,4' DDT (max. of 0.0082 ppm) was detected above its Unrestricted Use SCO in one shallow (0'-2') and one deeper (4'-6') soil sample. Total PCBs was detected in one shallow sample at 0.088 ppm, below its Unrestricted Use SCO. Two (2) metals, including lead (max. of 80.7 ppm) and zinc (113 ppm) were detected above their respective Unrestricted Use SCOs, but below their respective Restricted Residential Use SCOs. The results are indicative of historic fill material and they are contained in the shallow soil beneath the Site. A summary table of data for chemical analyses performed on soil samples is included in Table 1 through 4.
7. Soil vapor samples collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Soil vapor sample results detected trace levels of petroleum compounds and chlorinated VOCs. The total concentration of petroleum-related VOCs (BTEX) was 27 $\mu\text{g}/\text{m}^3$. Chlorinated compound including 1,1,1-trichloroethane, carbon tetrachloride and trichloroethylene (TCE) were not detected in any of the samples. Tetrachloroethylene (PCE) was detected in one sample at a concentration of 17 $\mu\text{g}/\text{m}^3$. All chlorinated compounds were below the monitoring and mitigation levels established by NYSDOH matrix.

A summary table of data for chemical analyses performed on soil vapor samples is included in Table 5.

Summary of the Remedial Action

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Selection of 6NYCRR Part 375 Section 6.8(a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Performance of additional site characterization sampling of soil, groundwater and soil vapor after demolition of current onsite building is complete and prior to start of construction. Results of investigation may change remedial action.
 - a. Installation of two soil vapor implants to 15 feet bgs and collection of two soil vapor samples;
 - b. Installation of two soil borings and collection of at least four soil samples; and
 - c. Conversion of two soil borings to monitoring wells, installation of a third groundwater monitoring well, and collection of three groundwater samples.
6. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility(s).
7. Excavation and removal of soil/fill exceeding Unrestricted Use (Track 1) SCOs. The entire footprint of the Site will be excavated to a depth of approximately 12 to 13 feet below grade for development purposes. A small portion of property will be excavated to

the depth of 18 feet below grade for elevator pits. Approximately 5,400 tons of soil/fill will be removed from the Site and properly disposed at an appropriately licensed or permitted facility.

8. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
9. Management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
10. Removal of all UST's that are encountered during soil/fill removal actions. Registration of tanks and reporting of any petroleum spills associated with UST's and appropriate closure of these petroleum spills in compliance with applicable local, State and Federal laws and regulations.
11. Transportation and off-Site disposal of all soil/fill material at licensed or permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
12. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of Track 1 SCOs.
13. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
14. Performance of all activities required for the remedial action, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
15. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and lists any changes from this RAWP.

If Track 1 Unrestricted Use SCOs are not achieved, the following construction elements implemented as part of new development will constitute Engineering and Institutional Controls:

17. As part of development, construction of an engineered composite cover consisting of a six-inch thick concrete building slab with a 6-inch clean compacted gravel sub-base beneath all building areas.
18. As part of development, installation of a vapor barrier system consisting of vapor barrier beneath the building slab and outside of sub-grade foundation sidewalls to mitigate soil vapor migration into the building. The vapor barrier system will consist of a minimum 20-mil vapor barrier below the slab throughout the full building area and a minimum 20-mil vapor barrier outside all sub-grade foundation sidewalls. OER will be notified of the chosen vapor barrier manufacturer and specifications prior to installation.
19. As part of new development, construction and operation of a sub-cellar parking garage with high volume air exchange in conformance with NYC Building Code.
20. Submission of an approved Site Management Plan (SMP) in the Remedial Action Plan (RAR) for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
21. If Track 1 SCOs are not achieved, the property will continue to be registered with an E-Designation at the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

COMMUNITY PROTECTION STATEMENT

The NYC Office of Environmental Remediation (OER) provides governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan (“cleanup plan”) describes the findings of prior environmental studies, shows the location of identified contamination at the site, and describes the plans to clean up the site to protect public health and the environment.

This cleanup plan provides a very high level of protection for neighboring communities and also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

Project Information:

- Site Name: 31-12 24th Avenue
- Site Address: 31-12 to 31-18 24th Avenue and 24-08 32nd Street
- NYC Voluntary Cleanup Program Project Number: 15CVCP150Q

Project Contacts:

- OER Project Manager: Sarah Pong, 212-788-8841
- Site Project Manager: Ethan Rainey, 718-784-7490
- Site Safety Officer: Name, Phone Number
- Online Document Repository:
<http://www.nyc.gov/html/oer/html/repository/RQueens.shtml>

Remedial Investigation and Cleanup Plan: Under the oversight of the NYC OER, a thorough study of this property (called a remedial investigation) has been performed to identify past property usage, to sample and test soils, groundwater and soil vapor, and to identify

contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of this property.

Identification of Sensitive Land Uses: Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community.

Qualitative Human Health Exposure Assessment: An important part of the cleanup planning for the Site is a study to find all of the ways that people might come in contact with contaminants at the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for people to come in contact with this contamination. All identified public exposures will be addressed under this cleanup plan.

Health and Safety Plan: This cleanup plan includes a Construction Health and Safety Plan (CHASP) that is designed to protect community residents and on-Site workers. The elements of this RAWP are in compliance with applicable safety requirements of the United States Occupational Safety and Health Administration (OSHA). This RAWP includes many protective elements including those discussed below.

Site Safety Coordinator: This project has a designated Site safety coordinator to implement the CHASP. The safety coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site safety coordinator is identified at the beginning of this Community Protection Statement.

Worker Training: Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take

annual refresher training. This pertains to workers performing specific tasks including removing contaminated material and installing cleanup systems in contaminated areas.

Community Air Monitoring Plan: Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan or CAMP. Results will be regularly reported to the NYC Office of Environmental Remediation. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a ‘Contingency Plan’).

Odor, Dust and Noise Control: This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with applicable NYC noise control standards. If you observe problems in these areas, please contact the onsite Project Manager or NYC Office of Environmental Remediation Project Manager listed on the first page of this Community Protection Statement document.

Quality Assurance: This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

Stormwater Management: To limit the potential for soil erosion and discharge, this cleanup plan has provisions for stormwater management. The main elements of the stormwater management include physical barriers such as tarp covers and erosion fencing, and a program for frequent inspection.

Hours of Operation: The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation will conform to requirements of the NYC Department of Buildings.

Signage: While the cleanup is in progress, a placard will be prominently posted at the main entrance of the property with a laminated project Fact Sheet that states that the project is in the NYC Voluntary Cleanup Program and provides project contact names and numbers, and a link to the document repository where project documents can be viewed.

Complaint Management: The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager or the NYC Office of Environmental Remediation Project Manager listed on the first page of this Community Protection Statement document, or call 311 and mention the Site is in the NYC Voluntary Cleanup Program.

Utility Mark-outs: To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

Soil and Liquid Disposal: All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all applicable City, State and Federal regulations, and required permits will be obtained.

Soil Chemical Testing and Screening: All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and chemical testing of soils on the Site, excavated soil will be screened continuously using hand-held instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

Stockpile Management: Soil stockpiles will be kept covered with tarps to prevent dust, odor and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed, to protect storm water catch basins and other discharge points.

Trucks and Covers: Loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with applicable laws and regulations.

Imported Material: All fill materials proposed to be brought onto the Site will comply with rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on the Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean materials will be covered in compliance with applicable laws and regulations.

Equipment Decontamination: All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a truck inspection station on the property before leaving the Site.

Housekeeping: Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

Truck Routing: Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the

property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle in the local neighborhood.

Final Report: The results of all cleanup work will be fully documented in a final report (called the Remedial Action Report) that will be available for public review online. A link to the online document repository and the public library with Internet access nearest the Site are listed on the first page of this Community Protection Statement document

Long-Term Site Management: If long-term protection is needed after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC Office of Environmental Remediation. Requirements that the property owner must comply with are defined either in the property's deed or established through a city environmental designation registered with the Department of Buildings. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

REMEDIAL ACTION WORK PLAN

1.0 Project Background

Tres Construction, LLC is working with the NYC Office of Environmental Remediation (OER) in the New York City Voluntary Cleanup Program and in the “E” Designation Program to investigate and remediate a property located at 31-12 to 31-18 24th Avenue and 24-08 32nd Street in the Astoria section of Queens, New York (the “Site”). A Limited Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This RAWP establishes remedial action objectives, provides a remedial alternatives analysis that includes consideration of a permanent cleanup, and provides a description of the selected remedial action. The remedial action described in this document provides for the protection of public health and the environment, and complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

1.1 Site Location and Background

The Site is located at 31-12 to 31-18 24th Avenue and 24-08 32nd Street in the Astoria section of Queens, New York and is identified as Block 837 and Lot 50 on the New York City Tax Map (Please note that the Site was recently merged from Lots 50 and 52 into a single Lot 50). Figure 1 shows the Site location. The Site is 7,500-square feet and is bounded by 24th Avenue to the north, a 3-story residential structure to the south, 32nd Street to the east, and several residential structures and a commercial deli to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is used for storage and office space for a commercial construction business and contains one 2-story structure with a partial basement and one 1-story structure. The two buildings are interconnected at grade level.

1.2 Redevelopment Plan

The proposed future use of the Site will consist of a 6-story mixed use commercial and residential building with cellar and sub-cellar which will occupy the entire footprint of the Site. The total gross square footage of the proposed building will be approximately 37,049 square feet,

including approximately 22,648 square feet of residential units and 7,781 of commercial space with the 7,483 square foot sub-cellar utilized for parking and mechanical rooms. The cellar will also be utilized for parking along with commercial as well as commercial space and residential lobby. The first floor will consist of commercial occupancy and a small open area used for bicycle parking. The floors above (2nd through 6th) will be utilized as residential units. As part of development, the entire Site is expected to be excavated to approximately 12-13 feet below current grade. The total amount of soil expected to be removed for excavation of the cellar level is approximately 3,600 cubic yards. The groundwater table is assumed to be at approximately 25 feet bgs at the Site. Layout of the proposed site development is presented in Figure 3. The current zoning designation is C4-3 (R6 equivalent). The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

1.3 Description of Surrounding Property

The Site is located within a primarily mixed use residential and commercial area of Queens, New York. The Site is bounded by 24th Avenue to the north, a 3-story residential structure to the south, 32nd Street to the east, and several residential structures and a commercial deli to the west. According to the OER Searchable Property Environmental E-Database (SPEED), there is one sensitive receptor (such as schools, hospitals and day-care facilities) within a 500-foot radius of the Site. P.S. 85 Judge Charles Vallone is located approximately 250 feet to the north of the Site at 23-70 31st St.

Figure 2 shows the surrounding land usage.

1.4 Summary of Past Site Uses and Areas of Concern

A Phase I Environmental Site Assessment was performed by Athenica in May 2015. Historical Sanborn maps show the Site was developed from at least 1915. The Site was shown as developed with various commercial uses including lamp shade manufacturing and as an unspecified use warehouse. Portions of the Site are also shown as developed with small

structures designated as “auto” which were most likely former parking garages. Historical City Directories also list several commercial occupants of the Site including: Terrazzo Flooring Co, Kovar Products Co, Astoria Novelty Co, C&L Cabinets & Woodturning, Greenlight Energy Incorporated and Tres Construction.

The AOCs identified for this site include:

1. Presence of urban fill from approximately grade level to 4 feet bgs.

1.5 Summary of Work Performed under the Limited Remedial Investigation

The scope of work implemented in May of 2015 by Athenica included:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Performed a ground penetrating radar (GPR) survey;
3. Installed four (4) soil borings across the entire project Site, and collected nine (9) soil samples for chemical analysis from the soil borings to evaluate soil quality;
4. Monitoring wells could not be installed at the Site due to the Site conditions. Monitoring wells will be completed after the demolition of the on Site structures and groundwater quality beneath the Site will be evaluated.
5. Installed two (2) soil vapor probes around Site perimeter and collected two (2) samples for chemical analysis.

1.6 Summary of Findings of Limited Remedial Investigation

A limited remedial investigation was performed and the results are documented in a companion document called “Limited Remedial Investigation Report, 31-12 24th Avenue”, dated May 2015 (RIR).

1. Elevation of the property ranges from 52.54 to 60.23 feet.
2. Groundwater depth could not be determined since monitoring wells could not be installed during the Remedial Investigation (RI). The monitoring wells will be installed after the demolition of the buildings is completed at the Site.

3. Groundwater flow could not be determined since monitoring wells could not be installed during the RI. The regional groundwater flow direction is towards west in the vicinity of the Site.
4. Bedrock was not encountered during the RI.
5. The stratigraphy of the Site, from the surface down, consists of approximately 2 to 4 feet of medium sand with urban fill, underlain by 6 feet of medium sand with pebbles and beneath 10 feet below grade surface underlain by 5 feet of coarse sand and pebbles.
6. Soil/fill samples collected during the limited RI were compared to NYSDEC 6NYCRR Part 375-6.8 Unrestricted Use Soil Cleanup Objectives (SCOs) and Restricted Residential Use SCOs. Soil/fill sampling collected during the RI showed trace concentrations of a few VOCs including acetone and methylene chloride, both common lab contaminants. Three (3) Polycyclic Aromatic Hydrocarbon (PAH) SVOCs including benz(a)anthracene (1.34 ppm), benzo(k)fluoranthene (0.84 ppm), and chrysene (1.25 ppm) were detected in one shallow soil sample (0'-2') at SB-2 exceeding their respective Unrestricted Use SCOs. Of these only benz(a)anthracene exceeded its respective Restricted Residential Use SCO. One Pesticide; 4,4'-DDT (max. of 0.0082 ppm) was detected above its Unrestricted Use SCO in one shallow (0'-2') and one deeper (4'-6') soil sample. Total PCBs was detected in one shallow sample at 0.088 ppm, below its Unrestricted Use SCO. Two (2) metals, including lead (max. of 80.7 ppm) and zinc (113 ppm) were detected above their respective Unrestricted Use SCOs, but below their respective Restricted Residential Use SCOs. The results are indicative of historic fill material and they are contained in the shallow soil beneath the Site.
7. Soil vapor samples collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Soil vapor sample results detected trace levels of petroleum compounds and chlorinated VOCs. The total concentration of petroleum-related VOCs (BTEX) was 27 $\mu\text{g}/\text{m}^3$. Chlorinated compounds including 1,1,1-trichloroethane, carbon tetrachloride and

trichloroethylene (TCE) were not detected in any of the samples. Tetrachloroethylene (PCE) was detected in one sample at a concentration of 17 $\mu\text{g}/\text{m}^3$. All chlorinated compounds were below the monitoring and mitigation levels established by NYSDOH matrix.

2.0 Remedial Action Objectives

Based on the results of the limited RI, the following Remedial Action Objectives (RAOs) have been identified for this Site:

Soil

- Prevent direct contact with contaminated soil.
- Prevent exposure to contaminants volatilizing from contaminated soil.

Groundwater

- Prevent direct exposure to contaminated groundwater.

Soil Vapor

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

3.0 Remedial Alternatives Analysis

The goal of the remedy selection process is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of applicable standards, criteria and guidance values (SCGs). Remedial alternatives are then developed and evaluated based on the following ten criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community acceptance;
- Land use; and
- Sustainability.

As required, a Track 1 Unrestricted Use scenario is evaluated for the remedial action. The following is a detailed description of the alternatives analyzed to address impacted media at the Site:

Alternative 1:

- Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
- Removal of all soil/fill exceeding Track 1 Unrestricted Use SCOs throughout the Site and confirmation that Track 1 Unrestricted Use SCOs have been achieved with post-excavation endpoint sampling. Based on the results of the Remedial Investigation, it is expected that this alternative would be achieved by excavating the entire Site to a depth of approximately to 12 to 13 feet below grade to remove all historic fill. If soil/fill containing analytes at concentrations above Unrestricted Use SCOs is still present at the

base of the excavation after removal of all soil required for construction of the new building's sub-cellar level is complete, additional excavation would be performed to ensure complete removal of soil/ fill that does not meet Track 1 Unrestricted Use SCOs.

- No Engineering or Institutional Controls are required for a Track 1 cleanup. As part of development, a vapor barrier, sub-grade ventilated parking would be installed to prevent potential exposures from soil vapor in the future.

Alternative 2:

- Establishment of Site-Specific (Track 4) SCOs.
- Removal of all soil/fill exceeding Track 4 Site-specific SCOs and confirmation that Track 4 Site-specific SCOs have been achieved with post-excavation end point sampling. Based on the results of the Remedial Investigation, it is expected that SCOs would be achieved by excavating for construction of the new building's cellar level to a depth of approximately 13 feet across the entire Site. If soil/fill containing analytes at concentrations above Track 4 Site-Specific SCOs is still present at the base of the excavation, additional excavation would be performed to meet Track 4 Site-Specific SCOs.
- Placement of a composite cover system over the entire Site to prevent exposure to remaining soil/fill;
- Installation of a vapor barrier system beneath the building slab and along foundation side walls to prevent potential exposures from soil vapor;
- Establishment of use restrictions including prohibitions on the use of groundwater from the Site; prohibitions of restricted Site uses, such as farming or vegetable gardening, to prevent future exposure pathways; and prohibition of a higher level of land use without OER approval;
- Establishment of an approved Site Management Plan (SMP) to ensure long-term management of these Engineering and Institutional Controls including the performance of periodic inspections and certification that the controls are performing as they were intended. The SMP will note that the property owner and property owner's successors and assigns must comply with the approved SMP; and

- The property will continue to be registered with an E-Designation at the NYC Buildings Department.

3.1 Threshold Criteria

Protection of Public Health and the Environment

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of Engineering Controls or Institutional Controls. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be protective of human health and the environment by removing all soil/fill exceeding Track 1 Unrestricted Use SCO's and groundwater protection standards, thus eliminating potential for direct contact with contaminated soil/fill once construction is complete and eliminating the risk of contaminants leaching into groundwater.

Alternative 2 would achieve comparable protections of human health and the environment by excavation and removal of most of the historic fill at the Site and by ensuring that remaining soil/fill on-Site meets Track 4 Site-Specific SCO's, as well as by placement of Institutional and Engineering Controls, including a composite cover system. The composite cover system would prevent direct contact with any remaining on-Site soil/fill. Implementing Institutional Controls including a Site Management Plan and continuing the E-designation would ensure that the composite cover system remains intact and protective of public health. Establishment of Track 4 Site-Specific SCO's would minimize the risk of contamination leaching into groundwater.

For both Alternatives, potential exposure to contaminated soils or groundwater during construction would be minimized by implementing a Construction Health and Safety Plan, an approved Soil/Materials Management Plan, and Community Air Monitoring Plan (CAMP). Potential contact with contaminated groundwater would be prevented as its use is prohibited by city laws and regulations. Potential future migration of off-Site soil vapors into the new building

would be prevented by installing a vapor barrier below the building slab and outside foundations walls below grade.

3.2 Balancing Criteria

Compliance with Standards, Criteria and Guidance (SCGs)

This evaluation criterion assesses the ability of the alternative to achieve applicable standards, criteria and guidance.

Alternative 1 would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to achieve Track 1 Unrestricted Use SCO's and Protection of Groundwater SCO's. Compliance with SCGs for soil vapor would also be achieved by installing a vapor barrier system below the new building's basement slab and continuing the vapor barrier outside of subgrade foundation walls, as part of development. In addition, the sub-cellar of the building will contain a parking garage with high volume air exchange that conforms to the NYC Building Code.

Alternative 2 would achieve compliance with the remedial goals, chemical-specific SCG's and RAOs for soil through removal of soil to meet Track 4 Site-Specific SCO's. Compliance with SCG's for soil vapor would also be achieved by installing a waterproofing/vapor barrier system below the new building's basement slab and continuing the vapor barrier outside of subgrade foundation walls. A Site Management Plan would ensure that these controls remained protective for the long term. In addition, the sub-cellar of the building will contain a parking garage with high volume air exchange that conforms to the NYC Building Code and will mediate any potential accumulation of soil vapors inside the building.

Health and safety measures contained in the CHASP and Community Air Monitoring Plan (CAMP) will be implemented during Site redevelopment under this RAWP. For both Alternatives, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance

with applicable SCGs. These measures will protect on-site workers and the surrounding community from exposure to Site-related contaminants.

Short-Term Effectiveness and Impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their short term effects during the remedial action on public health and the environment during implementation of the remedial action, including protection of the community, protection of onsite workers and environmental impacts.

Both Alternative 1 and 2 have similar short-term effectiveness during their implementation, as each requires excavation of historic fill material. Both alternatives would result in short-term dust generation impacts associated with excavation, handling, load out of materials, and truck traffic. Short-term impacts could potentially be higher for Alternative 1 since excavation of greater amounts of historical fill material would take place. However, focused attention to means and methods during a Track 1 removal action, including community air monitoring and appropriate truck routing, would minimize the overall impact of these activities.

An additional short-term adverse impact and risks to the community associated with both remedial alternatives is increased truck traffic. Truck traffic will be routed on the most direct course using major thoroughfares where possible and flag persons will be used to protect pedestrians at Site entrances and exits.

The potential adverse impact to the community, workers and the environment for both alternatives would be minimized through implementation of control plans including a Construction Health and Safety Plan, a Community Air Monitoring Plan (CAMP) and a Soil/Materials Management Plan (SMMP), during all on-Site soil disturbance activities and would minimize the release of contaminants into the environment. Both alternatives provide short-term effectiveness in protecting the surrounding community by decreasing the risk of contact with on-Site contaminants. Construction workers operating under appropriate management procedures and a Construction Health and Safety Plan (CHASP) would provide

protection from on-Site contaminants by using personal protective equipment would be worn consistent with the documented risks within the respective work zones.

Long-term effectiveness and permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of Engineering Controls/Institutional Controls (ECs/ICs) that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of ECs.

Alternative 1 would achieve long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill above Track 1 Unrestricted Use SCO's. Removal of on-Site contaminant sources will also prevent future groundwater contamination.

Alternative 2 would provide long-term effectiveness by removing most on-Site contamination and attaining Track 4 Site-Specific SCOs; installing a composite cover system across the Site; maintaining use restrictions; establishing an SMP to ensure long-term management of ICs and ECs; and maintaining registration as an E-designated property to memorialize these controls for the long term. The SMP would ensure long-term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and restrictions continue to be in place and are functioning as they were intended, assuring that protections designed into the remedy continue to provide the required level of protection.

Reduction of toxicity, mobility, or volume of contaminated material

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal

and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 will permanently eliminate the toxicity, mobility, and volume of contaminants from on-Site soil by removing all soil in excess of Track 1 Unrestricted Use SCO's.

Alternative 2 would remove all of the historic fill at the Site, and all remaining on-Site soil/fill beneath the new building will meet Track 4 Site-Specific SCO's.

Alternative 1 would remove a greater total mass of contaminants from the Site. The removal of soil to 12 to 13 feet for the new development in both scenarios would lessen the difference in contaminant mass removal between these two alternatives.

Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

The techniques, materials and equipment to implement both Alternatives 1 and 2 are readily available and have been proven to be effective in remediating the contaminants present on the Site. They use standard equipment and technologies that are well established in the industry. The reliability of each remedy is also high. There are no special difficulties associated with any of the activities proposed.

Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site

management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

Since historic fill at the Site was found to extend to a depth of up to 2 to 4 feet below grade during the RI, and the new building requires excavation of the entire Site to a depth of 12 to 13 feet, the costs associated with both Alternative 1 and Alternative 2 will likely be comparable. Costs associated with Alternative 1 could potentially be higher than Alternative 2 if soil with analytes above Track 1 Unrestricted Use SCOs is encountered below the excavation depth required for development. Additional costs would include installation of additional shoring/underpinning, disposal of additional soil, and import of clean soil for backfill. However, long-term costs for Alternative 2 are likely higher than Alternative 1 based on implementation of a Site Management Plan as part of Alternative 2.

The remedial plan would couple the remedial action with the redevelopment of the Site, lowering total costs. The remedial plan will also consider the selection of the most appropriate disposal facilities to reduce transportation and disposal costs during cleanup and redevelopment of the Site.

Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action.

Observations here will be supplemented by public comment received on the RAWP.

This RAWP will be subject to a public review under the NYC VCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. This public comment will be considered by OER prior to approval of this plan. The Citizen Participation Plan for the project is provided in Appendix 2. Observations here will be supplemented by public comment received on the RAWP. Under both alternatives, the overall goals of the remedial program, to protect public health and the environment and eliminate potential contaminant exposures, have been broadly supported by citizens in NYC communities.

Land use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the Site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; and current Institutional Controls applicable to the site.

The current, intended, and reasonably anticipated future land use of the Site and its surroundings are compatible with the selected remedy of soil remediation. The proposed future use of the Site includes a 6-story mixed use commercial and residential building. The sub-cellar will be used for parking and mechanical rooms, the cellar and first floor for commercial space with the floors above developed with residential apartments. Following remediation, the Site will meet either Track 1 Unrestricted Use or Track 4 Site-Specific SCOs, both of which are protective of public health and the environment for its planned residential use. The proposed use is compliant with the property's zoning and is consistent with recent development patterns. The areas surrounding the site is urban and consists of predominantly mixed residential and commercial buildings in zoning districts designated for commercial and residential uses. The development would remediate a commercial lot and provide a modern residential building. The proposed development would clean up the property and make it safer, create new employment opportunities, living space and associated societal benefits to the community, and other economic benefits from land revitalization.

Temporary short-term project impacts are being mitigated through site management controls and truck traffic controls during remediation activities. Following remediation, the Site will meet

either Track 1 Unrestricted Use SCOs or Track 4 Site-Specific SCOs, both of which are protective of public health and the environment for its planned use.

The Site is not in close proximity to important cultural resources, including federal or state historic or heritage sites or Native American religious sites, natural resources, waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species. The Site is located in an urban area and not in proximity to fish or wildlife and neither alternative would result in any potential exposure pathways of contaminant migration affecting fish or wildlife. The remedial action is also protective of groundwater natural resources. The Site does not lie in a Federal Emergency Management Agency (FEMA)-designated flood plain. Both alternatives are equally protective of natural resources and cultural resources. Improvements in the current environmental condition of the property achieved by both alternatives considered in this plan are consistent with the City's goals for cleanup of contaminated land.

Sustainability of the Remedial Action

This criterion evaluates the overall sustainability of the remedial action alternatives and the degree to which sustainable means are employed to implement the remedial action including those that take into consideration NYC's sustainability goals defined in PlaNYC: A Greener, Greater New York. Sustainability goals may include: maximizing the recycling and reuse of non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and promotion of the use of native vegetation and enhancing biodiversity during landscaping associated with Site development.

While Alternative 2 would potentially result in lower energy usage based on reducing the volume of material transported off-Site, both remedial alternatives are comparable with respect to the opportunity to achieve sustainable remedial action. The remedial plan for either alternative would take into consideration the shortest trucking routes during off-Site disposal of historic fill and other soils, which would reduce greenhouse gas emissions and conserve energy used to fuel trucks. The New York City Clean Soil Bank program is available for reuse of any clean native

soils under either alternative. A complete list of green remedial activities considered as part of the NYC VCP is included in a Sustainability Statement.

4.0 Remedial Action

4.1 Summary of Preferred Remedial Action

The preferred remedial action alternative is Alternative 1 the Track 1 remedial action. The preferred remedial action achieves protection of public health and the environment for the intended use of the property. The preferred remedial action will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective and implementable and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Selection of 6NYCRR Part 375 Section 6.8(a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Performance of additional site characterization sampling of soil, groundwater and soil vapor after demolition of current onsite building is complete and prior to start of construction. Results of investigation may change remedial action.
 - a. Installation of two soil vapor implants to 15 feet bgs and collection of two soil vapor samples;
 - b. Installation of two soil borings and collection of at least four soil samples; and
 - c. Conversion of two soil borings to monitoring wells, installation of a third groundwater monitoring well, and collection of three groundwater samples.
6. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility(s).

7. Excavation and removal of soil/fill exceeding Unrestricted Use (Track 1) SCOs. The entire footprint of the Site will be excavated to a depth of approximately 12 to 13 feet below grade for development purposes. A small portion of property will be excavated to the depth of 18 feet below grade for elevator pits. Approximately 5,400 tons of soil/fill will be removed from the Site and properly disposed at an appropriately licensed or permitted facility.
8. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
9. Management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated material and non-contaminated materials.
10. Removal of all UST's that are encountered during soil/fill removal actions. Registration of tanks and reporting of any petroleum spills associated with UST's and appropriate closure of these petroleum spills in compliance with applicable local, State and Federal laws and regulations.
11. Transportation and off-Site disposal of all soil/fill material at licensed or permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
12. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of Track 1 SCOs.
13. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
14. Performance of all activities required for the remedial action, including acquisition of required permits and attainment of pretreatment requirements, in compliance with applicable laws and regulations.
15. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.

16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and lists any changes from this RAWP.

If Track 1 Unrestricted Use SCOs are not achieved, the following construction elements implemented as part of new development will constitute Engineering and Institutional Controls:

17. As part of development, construction of an engineered composite cover consisting of a six-inch thick concrete building slab with a 6-inch clean compacted gravel sub-base beneath all building areas.
18. As part of development, installation of a vapor barrier system consisting of vapor barrier beneath the building slab and outside of sub-grade foundation sidewalls to mitigate soil vapor migration into the building. The vapor barrier system will consist of a minimum 20-mil vapor barrier below the slab throughout the full building area and a minimum 20-mil vapor barrier outside all sub-grade foundation sidewalls. OER will be notified of the chosen vapor barrier manufacturer and specifications prior to installation.
19. As part of new development, construction and operation of a sub-cellar parking garage with high volume air exchange in conformance with NYC Building Code.
20. Submission of an approved Site Management Plan (SMP) in the Remedial Action Plan (RAR) for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
21. If Track 1 SCOS are not achieved, the property will continue to be registered with an E-Designation at the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

4.2 Soil Cleanup Objectives and Soil/ Fill Management

Track 1 SCOs are proposed for this project and SCO's are defined in 6 NYCRR Part 375, Table 6.8(a) Track 1 Unrestricted Use. This property already meets 6NYCRR Part 375, Table 6.8(b) Track 2 Restricted Residential Use SCOs. If Track 1 SCO's are not achieved, the SCOs for this Site will include Restricted Residential Use SCOs as amended by the following Track 4 Site-Specific SCO's:

<u>Contaminant</u>	<u>Site-Specific SCO's</u>
Total SVOCs	2.0 ppm
Lead	800 ppm

Soil and materials management on-Site and off-Site, including excavation, handling and disposal, will be conducted in accordance with the Soil/Materials Management Plan in Appendix 4. Discrete contaminant sources (such as hotspots) identified during the remedial action will be identified by GPS or surveyed. This information will be provided in the Remedial Action Report.

Soil/Fill Excavation and Removal

As part of development, the entire Site will be excavated to a depth of approximately 13 feet bgs. The location of planned excavations is shown in Figure 4. The total quantity of soil/fill expected to be excavated and disposed off-Site is 5,400 tons. For each disposal facility to be used in the remedial action, a letter from the developer/QEP to the receiving facility requesting approval for disposal and a letter back to the developer/QEP providing approval for disposal will be submitted to OER prior to any transport and disposal of soil at a facility.

Disposal facilities will be reported to OER when they are identified and prior to the start of remedial action.

End-point Sampling

End-point samples will be analyzed for compounds and elements as described below utilizing the following methodology:

- Volatile organic compounds by EPA Method 8260;

- Semi-volatile organic compounds by EPA Method 8270;
- Target Analyte List metals; and
- Pesticides/PCBs by EPA Method 8081/8082.

New York State ELAP certified labs will be used for all end-point sample analyses. Labs performing end-point sample analyses will be reported in the RAR. The RAR will provide a tabular and map summary of all end-point sample results and will include all data including non-detects and applicable standards and/or guidance values.

Confirmation End-point Sampling

Removal actions for development purposes under this plan will be performed in conjunction with confirmation end-point soil sampling. Five (5) confirmation samples will be collected from the base of the excavation at locations to be determined by OER. To evaluate attainment of Track 4 SCOs, analytes will include those for which SCOs have been developed, including SVOCs and lead according to analytical methods described above. If Track 1 Unrestricted Use SCOs are pursued, samples will be analyzed for VOCs, SVOCs, pesticides, PCBs and metals according to analytical methods described above.

Hotspot End-point Sampling

For any hotspots identified during this remedial program, including any hotspots identified during the remedial action, hotspot removal actions will be performed to ensure that hotspots are fully removed and end-point samples will be collected at the following frequency:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.
2. For excavations 20 to 300 feet in perimeter:
 - For surface removals, one sample from the top of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
 - For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.

3. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation, and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.
4. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullets 1-3 above.

Post-remediation end-point sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-remediation samples should be biased toward locations and depths of the highest expected contamination.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and “finger print analysis” and required regulatory reporting (i.e. spills hotline) will be performed.

Quality Assurance/Quality Control

The fundamental QA objective with respect to accuracy, precision, and sensitivity of analysis for laboratory analytical data is to achieve the QC acceptance of the analytical protocol.

The accuracy, precision and completeness requirements will be addressed by the laboratory for all data generated.

One blind duplicate sample for every 20 samples collected will be submitted to the approved laboratory for analysis of the same parameters. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. One trip blank will be submitted to the laboratory with each shipment of soil samples. Trip blanks will not be used for samples to be analyzed for metals, SVOCs or pesticides.

Collected samples will be appropriately packaged, placed in coolers and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice or “cold-paks” to maintain a temperature of 4oC.

Dedicated disposable sampling materials will be used for the collection endpoint samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected. Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water
- Wash withalconox® detergent solution and scrub
- Rinse with tap water
- Rinse with distilled or deionized water

Field blanks will be prepared by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers.

Import of Soils

Soil import is not planned on this project.

Reuse of Onsite Soils

Soil reuse is not planned on this project.

4.3 Engineering Controls

The remedial action will achieve Track 1 Unrestricted Use SCOs and no Engineering Controls are required. However, the following design elements will be incorporated into the project as part of the new development:

- (1) Composite Cover System
- (2) Soil Vapor Barrier System

(3) Sub-grade Ventilated Parking Garage

If Track 1 is not achieved, these elements will constitute Engineering Controls that will be employed in the remedial action to address residual contamination remaining at the Site.

Composite Cover System

Exposure to residual soil/fill will be prevented by an engineered, composite cover system to be built on the Site. This composite cover system will be comprised of 6 inches of reinforced concrete slab underlain by 6 inches of clean compacted gravel material in building areas. The building will occupy the entire footprint of the Site.

Figure 5 shows the typical design for each remedial cover type used on this Site. Figure 5 number shows the location of each cover type built at the Site.

The composite cover system will be a permanent engineering control. The system will be inspected and its performance certified at specified intervals as required by this RAWP and the Site Management Plan. A Soil and Materials Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying residual soil/fill is disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the Site Management Plan in the Remedial Action Report.

Vapor Barrier System

Migration of soil vapor from onsite or offsite sources into the building will be mitigated with a combination of building slab and vapor barrier. The vapor barrier will be installed prior to pouring the basement's new concrete slab. A 20-mil vapor barrier will be installed below and around the elevator pit and below the entire building slab. The barrier chosen for this project is manufactured by Raven Industries, Inc. model number Vapor Block Plus 20. Penetrations will be grouted if the penetration is not stable, and the membrane will be fitted tight to the penetration. Vertical and horizontal overlaps will be 3 inches. Where applicable, overlap of horizontal and vertical membranes at corners will be 4 inches. Mechanical fastening of overlaps will be in

accordance with the manufacturer installation diagram and specifications. The installation of the VBS will be described in the RAR. The Remedial Action Report will include photographs of the installation process, PE/RA certified letter (on company letterhead) from primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturers certificate of warranty.

The project's Professional Engineer licensed by the State of New York will have primary direct responsibility for overseeing the implementation of the vapor barrier. The extent of the proposed vapor barrier membrane is provided in Figure 6. Product specifications are provided in Appendix 6.

The vapor barrier will extend throughout the area occupied by the footprint of the new building and up the foundation sidewalls and will be installed in accordance with manufacturer specifications. A plan view showing the location of the proposed vapor barrier system is provided in Figure 6. Typical design sections for the vapor barrier on slab and sidewalls are provided in Figure 6. Product compatibility letter is provided in Appendix 6.

The Vapor Barrier System is a permanent engineering control and will be inspected and its performance certified at specified intervals as required by this RAWP and the Site Management Plan. A Soil and Materials Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying vapor barrier system is disturbed after the remedial action is complete. Maintenance of these systems will be described in the Site Management Plan in the Remedial Action Report.

4.4 Ventilated Parking Garage

A ventilated garage will be installed and operated per requirements of the New York City Department of Buildings codes and requirements. The ventilation system will be designed to cover all portions of the ground floor parking garage. The ventilation system layout is provided in Appendix 1.

4.5 Institutional Controls

A Track 1 remedial action is proposed and Institutional Controls are not required. If a Track 1 remedial action is not achieved, Institutional Controls (IC's) will be incorporated in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. These IC's define the program to operate, maintain, inspect and certify the performance of Engineering Controls and Institutional Controls on this property. Institutional Controls would be implemented in accordance with a Site Management Plan included in the final Remedial Action Report (RAR). Institutional Controls would be:

- Continued registration of the E-Designation for the property. This RAWP includes a description of all ECs and ICs and summarizes the requirements of the SMP which will note that the property owner and property owner's successors and assigns must comply with the approved SMP;
- Submittal of a SMP in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, inspection, and certification of ECs and IC's. SMP will require that the property owner and property owner's successors and assigns will submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any controls. This certification shall be submitted at a frequency to be determine by OER in the SMP and will comply with RCNY §43-1407(1)(3).
- Vegetable gardens and farming on the Site are prohibited in contact with residual soil materials;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP;

- The Site will be used for residential and commercial use and will not be used for a higher level of use without prior approval by OER.

4.6 Site Management Plan

A Track 1 remedial action is proposed and Site Management is not required. If a Track 1 remedial action is not achieved, Site Management will be required and will be the last phase of remediation. Site Management will begin with the approval of the Remedial Action Report and issuance of the Notice of Completion (NOC) for the Remedial Action. The Site Management Plan (SMP) describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by this RAWP. The Site Management Plan is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. Site Management continues until terminated in writing by OER. The property owner is responsible to ensure that all Site Management responsibilities defined in the Site Management Plan are implemented.

The SMP will provide a detailed description of the procedures required to manage residual soil/fill left in place following completion of the remedial action in accordance with the Voluntary Cleanup Agreement with OER. This includes a plan for: (1) implementation of EC's and ICs; (2) operation and maintenance of EC's; (3) inspection and certification of IC's and EC's.

Site management activities and EC/IC certification will be scheduled by OER on a periodic basis to be established in the RAR and the SMP and will be subject to review and modification by OER. The Site Management Plan will be based on a calendar year and certification reports will be due for submission to OER by July 30 of the year following the reporting period.

4.7 Qualitative Human Health Exposure Assessment

The objective of the qualitative exposure assessment is to identify potential receptors and pathways for human exposure to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur.

Data and information reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA) for this project. As part of the VCP process, a QHHEA was performed to determine whether the Site poses an existing or future health hazard to the Site's exposed or potentially exposed population. The sampling data from the RI were evaluated to determine whether there is any health risk under current and future conditions by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This QHHEA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation.

Known and Potential Contaminant Sources

Historic fill was identified at the Site from grade to approximately 2 to 4 feet below grade level. Based on the results of the RIR, the contaminants of concern are:

Soil:

- SVOC (PAHs) benz(a)anthracene exceeding Restricted Residential Use SCOs
- Several metals were identified, but none exceeded Restricted Residential Use SCOs

Soil Vapor:

- Trace to low levels of petroleum-related hydrocarbons including BTEX and chlorinated VOCs well below NYS DOH Soil Vapor Matrix

Nature, Extent, Fate and Transport of Contaminants

Soil: PCBs were not detected in any of the soil samples and trace concentrations of VOCs were detected in shallow soil samples. SVOCs, pesticides and metals were detected in shallow 0 to 2 feet urban fill samples slightly exceeding the NYSDEC Part 375-6.8 Unrestricted Use SCOs with one PAH detected at a concentration above Restricted Residential Use SCOs in the 0 to 2 feet sample in one boring. Lead exceeded NYSDEC Part 375-6.8 Unrestricted Use SCOs in one 4 to 6 feet sample.

Soil Vapor: The only NYSDOH Matrix contaminant detected in the soil vapor samples was PCE at low levels in SV-2. Both vapor samples exhibited trace level of petroleum and other chlorinated solvent VOCs.

Receptor Populations

On-Site Receptors: The site is currently occupied by a commercial tenant and utilized for storage and office space. Onsite receptors are limited to current workers, trespassers, site representatives and visitors granted access to the property. During construction, potential on-site receptors include construction workers, site representatives, and visitors. Under proposed future conditions, potential on-site receptors include adult and child building residents, workers and visitors.

Off-Site Receptors: Potential off-site receptors within a 500 foot radius of the Site include adult and child residents; commercial and construction workers; pedestrians; and trespassers based on the following land uses within 500 feet of the Site:

1. Commercial Businesses – existing and future
2. Residential Buildings – existing and future
3. Building Construction/ Renovation – existing and future
4. Pedestrians, Trespassers, Cyclists – existing and future
5. Schools – existing and future

Potential Routes of Exposure

Three potential primary routes exist by which chemicals can enter the body: ingestion, inhalation, and dermal absorption. Exposure can occur based on the following potential media:

- Ingestion of groundwater or fill/ soil;
- Inhalation of vapors or particulates; and
- Dermal absorption of groundwater or fill/ soil.

Potential Exposure Points

Current Conditions: The site is currently capped with a concrete building slab and asphalt parking areas so there are no potential exposure pathways from ingestion, inhalation, or dermal

absorption of soil/ fill. Groundwater is not exposed at the site. The site is served by the public water supply and groundwater is not used at the site for potable supply and there is no potential for exposure. Because the site is currently developed with two commercial structures containing a concrete building slab and an asphalt capped parking area, there is no potential exposure to soil vapor but there is potential for soil vapor to accumulate on site.

Construction/ Remediation Conditions: During the remedial action, onsite workers will come into direct contact with surface and subsurface soils as a result of on-Site construction and excavation activities. On-Site construction workers potentially could ingest, inhale or have dermal contact with exposed impacted soil and fill. Similarly, off-Site receptors could be exposed to dust and vapors from on-Site activities. Due to the depth of groundwater, direct contact with groundwater is not expected. During construction, on-Site and off-Site exposures to contaminated dust from on-Site will be addressed through the Soil/Materials Management Plan, dust controls, and through the implementation of the Community Air-Monitoring Program and a Construction Health and Safety Plan.

Proposed Future Conditions: Under future remediated conditions, all soils in excess of Track 1 SCOs will be removed. The site will be fully capped, preventing potential direct exposure to soil and groundwater remaining in place, and a vapor barrier and ventilated garage, will prevent any potential exposure due to inhalation by preventing soil vapor intrusion. The site is served by the public water supply, and groundwater is not used at the site. There are no plausible off-site pathways for oral, inhalation, or dermal exposure to contaminants derived from the site.

Overall Human Health Exposure Assessment

There are potential complete exposure pathways for the current site condition. There are potential complete exposure pathways that require mitigation during implementation of the remedy. There are no complete exposure pathways under future conditions after the site is developed. This assessment takes into consideration the reasonably anticipated use of the site, which includes a residential structure, site-wide surface cover, and a subsurface vapor barrier system for the building. Under current conditions, on-Site exposure pathways exist for those with access to the Site and trespassers. During remedial construction, on-Site and off-Site

exposures to contaminated dust from historic fill material will be addressed through dust controls, and through the implementation of the Community Air Monitoring Program, the Soil/Materials Management Plan, and a Construction Health and Safety Plan. Potential post-construction use of groundwater is not considered an option because groundwater in this area of New York City is not used as a potable water source. There are no surface waters in close proximity to the Site that could be impacted or threatened.

Environmental Media & Exposure Route	Human Exposure Assessment for Proposed Remedial Action
Direct contact with surface and subsurface soils	<ul style="list-style-type: none"> • There is not direct contact because all soils in excess of Track 1 SCO's will be removed from the site
Ingestion of groundwater	<ul style="list-style-type: none"> • The area is served by an upstate water supply and groundwater is not being used for potable water supply. Groundwater use for potable supply onsite is prohibited by municipal law.
Direct contact with groundwater	<ul style="list-style-type: none"> • All soils in excess of Track 1 SCO's and Groundwater Protection Standards will be removed from the site. Groundwater is not impacted by site conditions.
Direct contact with soil vapor	<ul style="list-style-type: none"> • Soil vapor is not impacted at the site • Contact with impacted soil vapor will be prevented by a soil vapor barrier • Contact with soil vapor will be prevented with a soil vapor barrier and a high volume air exchange required by the Building Code for ventilation of the sub-grade parking garage.

5.0 Remedial Action Management

5.1 Project Organization and Oversight

Principal personnel who will participate in the remedial action include Ezgi Karayel (Project Manager). The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Reza Sharif, P.E, and William Silveri, respectively.

5.2 Site Security

Site access will be controlled by DOB approved construction fence. For work areas of limited size, barrier tape will be sufficient to delineate and restrict access.

5.3 Work Hours

The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. The hours of operation will be conveyed to OER during the pre-construction meeting.

5.4 Construction Health and Safety Plan

The Health and Safety Plan is included in Appendix 5. OER will be notified upon determination of the site safety coordinator. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities will participate in training required under 29 CFR 1910.120, such as 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records. Personnel entering any exclusion zone will be trained in the provisions of the HASP and will comply with all requirements of 29 CFR 1910.120. Site-specific training will be provided to

field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

An emergency contact sheet with names and phone numbers is included in the CHASP. That document will define the specific project contacts for use in case of emergency.

5.5 Community Air Monitoring Plan

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work.

Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review.

Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The

equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m³) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m³ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m³ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m³ of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

5.6 Agency Approvals

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

5.7 Site Preparation

Pre-Construction Meeting

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

Mobilization

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility

mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Utility Marker Layouts, Easement Layouts

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities will be performed in compliance with applicable laws and regulations including NYC Building Code to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Mark-Out Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

Dewatering

Dewatering is not anticipated during remediation and construction.

Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations.

Stabilized Construction Entrance

Steps will be taken to ensure that trucks departing the site will not track soil, fill or debris off-Site. Such actions may include use of cleaned asphalt or concrete pads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit.

Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

Truck Inspection Station

An outbound-truck inspection station will be set up close to the Site exit. Before exiting the Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris will be removed. Brooms, shovels and clean water will be utilized for the removal of soil from vehicles and equipment, as necessary.

Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the enrollee will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to OER at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Petroleum spills will be reported to NYS DEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to OER. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If onsite petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYS DEC's spill hotline at DEC 800-457-7362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

Storm Response Reporting

A site inspection report will be submitted to OER at the completion of site inspection. An inspection report established by OER is available on OER's website (www.nyc.gov/oer) and will

be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the OER project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYS DEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to OER project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

5.8 Traffic Control

Drivers of trucks leaving the Site with soil/fill will be instructed to proceed without stopping in the vicinity of the Site to prevent neighborhood impacts. The planned route on local roads for trucks leaving the site is along 24th Avenue, onto 37th Street to Astoria Boulevard and onto Grand Central Parkway.

5.9 Demobilization

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

5.10 Reporting and Record Keeping

Daily reports

Daily reports providing a general summary of activities for each day of active remedial work will be emailed to the OER Project Manager by the end of the following business day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of excavation and other remedial work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP results noting all excursions. CAMP data may be reported;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

Record Keeping and Photo Documentation

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas.

Photographs will be submitted at the completion of the project in the RAR in digital format (i.e. jpeg files).

5.11 Complaint Management

All complaints from citizens will be promptly reported to OER. Complaints will be addressed and outcomes will also be reported to OER in daily reports. Notices to OER will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

5.12 Deviations from the Remedial Action Work Plan

All changes to the RAWP will be reported to, and approved by, the OER Project Manager and will be documented in daily reports and reported in the Remedial Action Report. The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from OER noting the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy; and
- Determination with basis that the remedial action with the deviation(s) is protective of public health and the environment.

6.0 Remedial Action Report

A Remedial Action Report (RAR) will be submitted to OER following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- Information required by this RAWP;
- Text description with thorough detail of all engineering and institutional controls (if Track 1 remedial action is not achieved)
- As-built drawings for all constructed remedial elements;
- Manifests for all soil or fill disposal;
- Photographic documentation of remedial work performed under this remedy;
- Site Management Plan (if Track 1 remedial action is not achieved);
- Description of any changes in the remedial action from the elements provided in this RAWP and associated design documents;
- Tabular summary of all end point sampling results (including all soil test results from the remedial investigation for soil that will remain on site) and all soil/fill waste characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Account of the source area locations and characteristics of all soil or fill material removed from the Site including a map showing the location of these excavations and hotspots, tanks or other contaminant source areas;
- Full accounting of the disposal destination of all contaminated material removed from the Site. Documentation associated with disposal of all material will include transportation and disposal records, and letters approving receipt of the material;
- Account of the origin and required chemical quality testing for material imported onto the Site;
- Continue registration of the property with an E-Designation by the NYC Department of Buildings (if Track 1 remedial action is not achieved);

- The RAWP and Remedial Investigation Report will be included as appendices to the RAR;
- Reports and supporting material will be submitted in digital form and final PDF's will include bookmarks for each appendix.

Remedial Action Report Certification

I, Reza Sharif, P.E., am currently a registered professional engineer licensed by the State of New York. I performed professional engineering services and had primary direct responsibility for implementation of the remedial program for the 31-12 24th Avenue site, site number: 15CVCP150Q. I certify to the following:

- I have reviewed this document, to which my signature and seal are affixed.
- Engineering Controls implemented during this remedial action were designed by me or a person under my direct supervision and achieve the goals established in the Remedial Action Work Plan for this site.
- The Engineering Controls constructed during this remedial action were professionally observed by me or by a person under my direct supervision and (1) are consistent with the Engineering Control design established in the Remedial action Work Plan and (2) are accurately reflected in the text and drawings for as-built design reported in this Remedial Action Report.
- The OER-approved Remedial Action Work Plan dated [date] and Stipulations in a letter dated [date] were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

Name

PE License Number

Signature

Date

PE Stamp

I, William Silveri, am a Qualified Environmental Professional. I had primary direct responsibility for implementation of the remedial program for the 31-12 24th Avenue site, site number: 15CVCP150Q. I certify to the following:

- The OER-approved Remedial Action Work Plan dated May, 2015 and Stipulations in a letter dated May, 2015 were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

QEP Name

QEP Signature

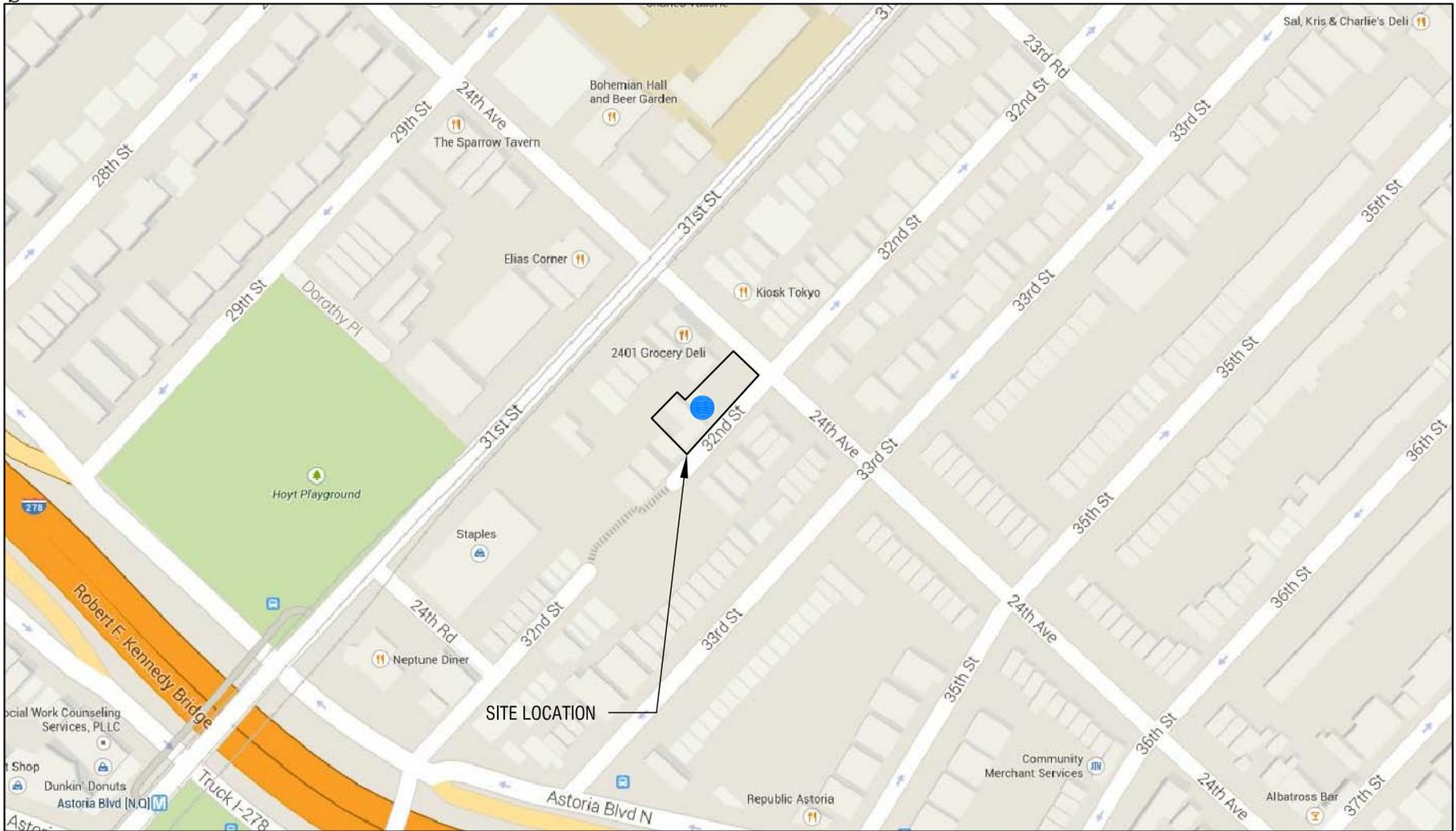
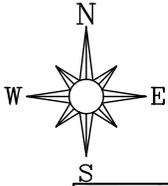
Date

7.0 Schedule

The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a one month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	0	-
Fact Sheet 2 announcing start of remedy	0	-
Mobilization	1 week	1 week
Remedial Excavation	2 weeks	3 weeks
Demobilization	6 weeks	1 week
Submit Remedial Action Report	7 weeks	3 weeks

FIGURES



Legend:

 SITE LOCATION

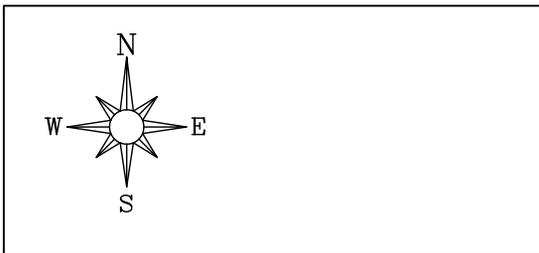
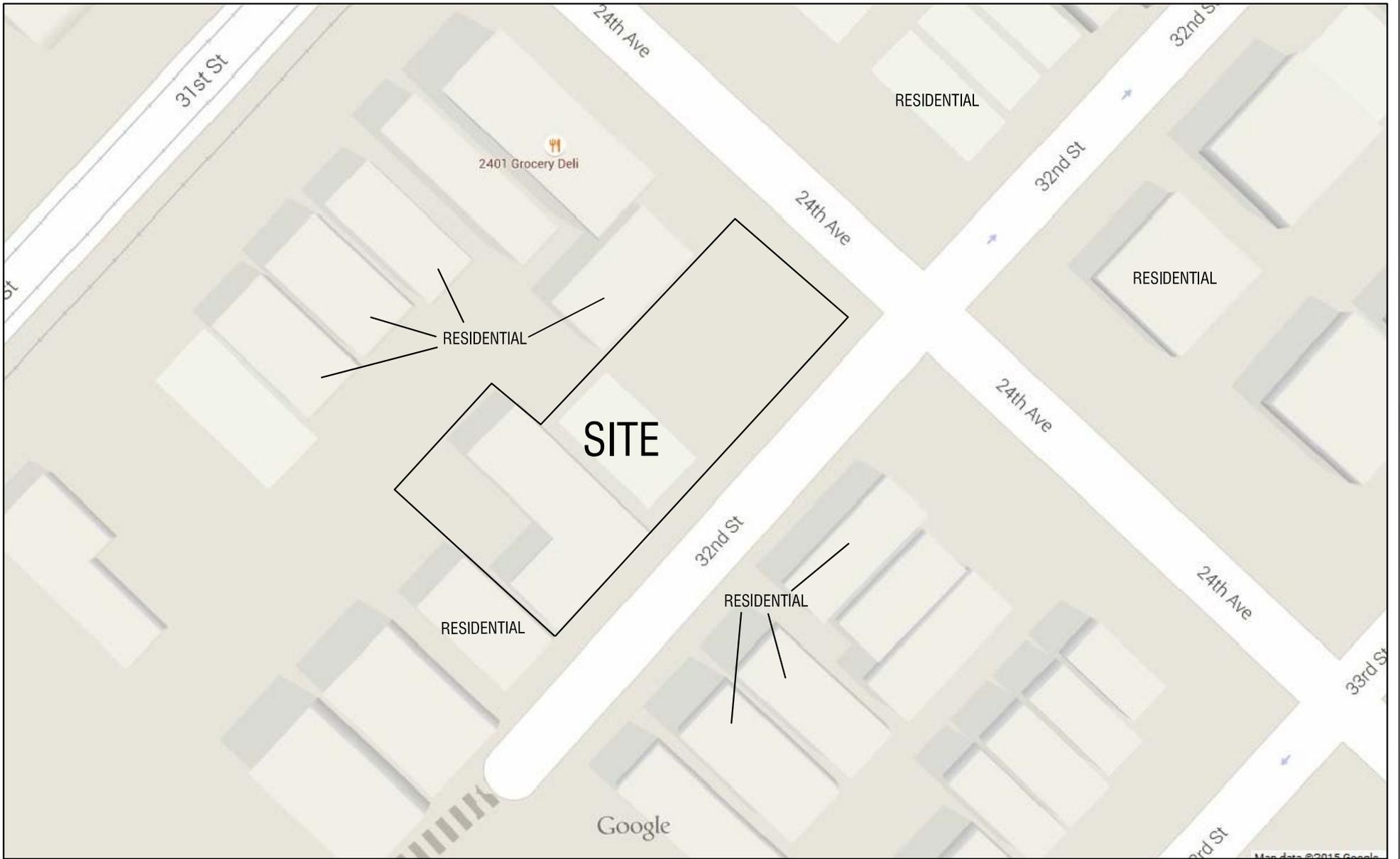


**ATHENICA
ENVIRONMENTAL
SERVICES, INC.,**
Environmental Consultants

Date: MAY 7, 2015
Drawn by: ETHAN RAINEY
Checked by: EZGI KARAYEL
Drawing Scale: NOT TO SCALE
Project No.: 15-133-0436

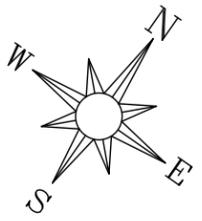
Site map: 31-12 24TH AVENUE
QUEENS, NY 11102

Figure: 1
Title: REMEDIAL ACTION WORK PLAN
SITE LOCATION MAP



Date:	MAY 13, 2015
Drawn by:	ETHAN RAINEY
Checked by:	EZGI KARAYEL
Drawing Scale:	NOT TO SCALE
Project No.:	15-133-0436

Site map:	31-12 24TH AVENUE QUEENS, NY 11102
Figure:	2
Title:	REMEDIAL ACTION WORK PLAN SITE BOUNDARY MAP & SURROUNDING LAND USAGE



LOT 52

EP-X
●

2-story building
with a basement
to be demolished

EP-X
●

1-story building
to be demolished

LOT 50

EP-X
●

Basement

EP-X
●

EP-X
●

24TH AVENUE

32ND STREET

Legend:



Existing partial basement beneath the building



Existing on Site buildings

Scale:

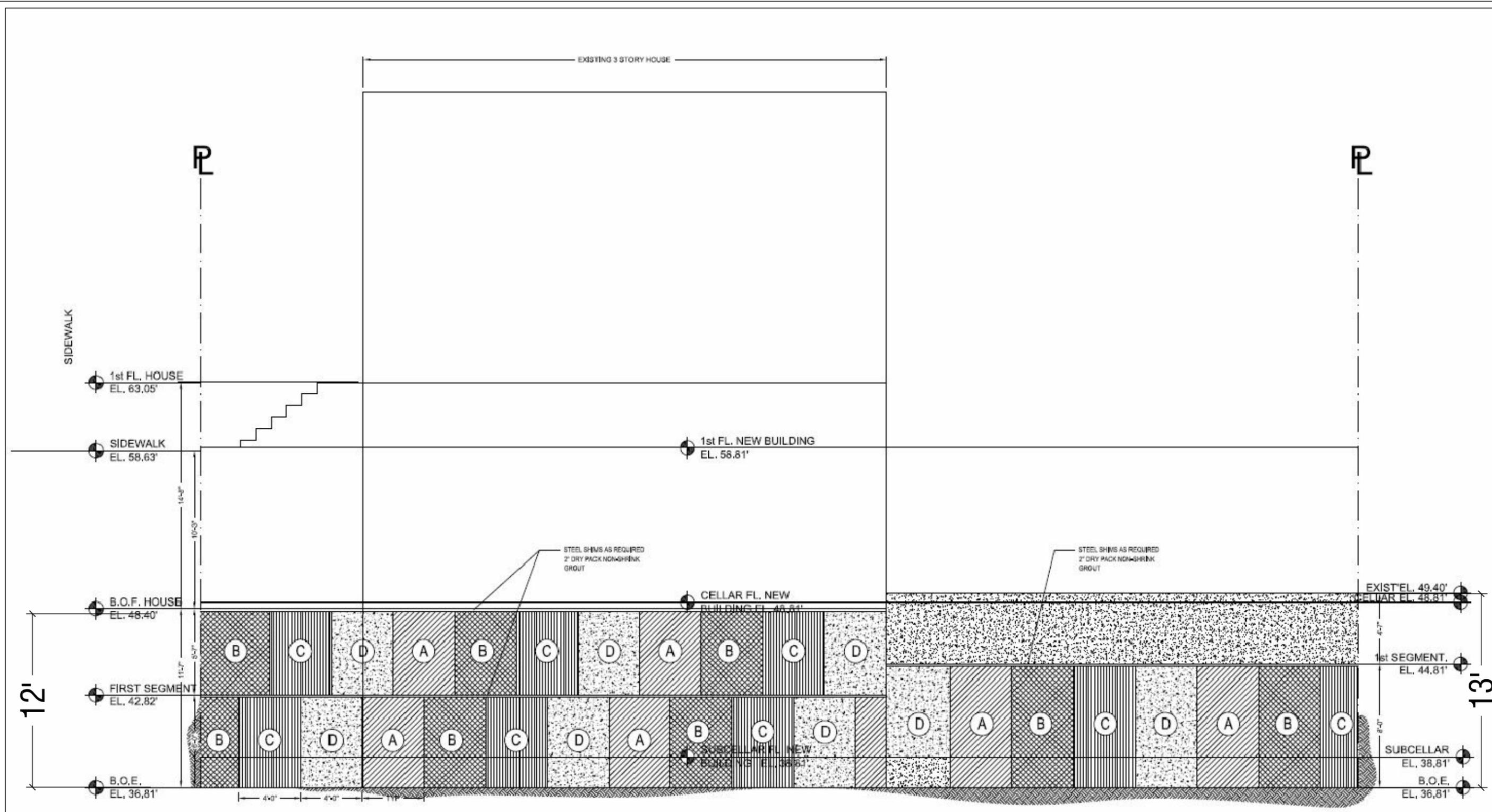
BORING LOCATIONS

N.T.S.



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ENVIRONMENTAL
SERVICES, INC,
Environmental Consultants

Site map:	31-12 24TH AVENUE QUEENS, NY 11102
Figure:	3
Title:	PROPOSED ENDPOINT SAMPLING PLAN
Date:	MAY 14, 2015
Drawn by:	EZGI KARAYEL
Checked by:	WILLIAM SILVERI
Drawing Scale:	N.T.S.
Project No.:	15-133-0436

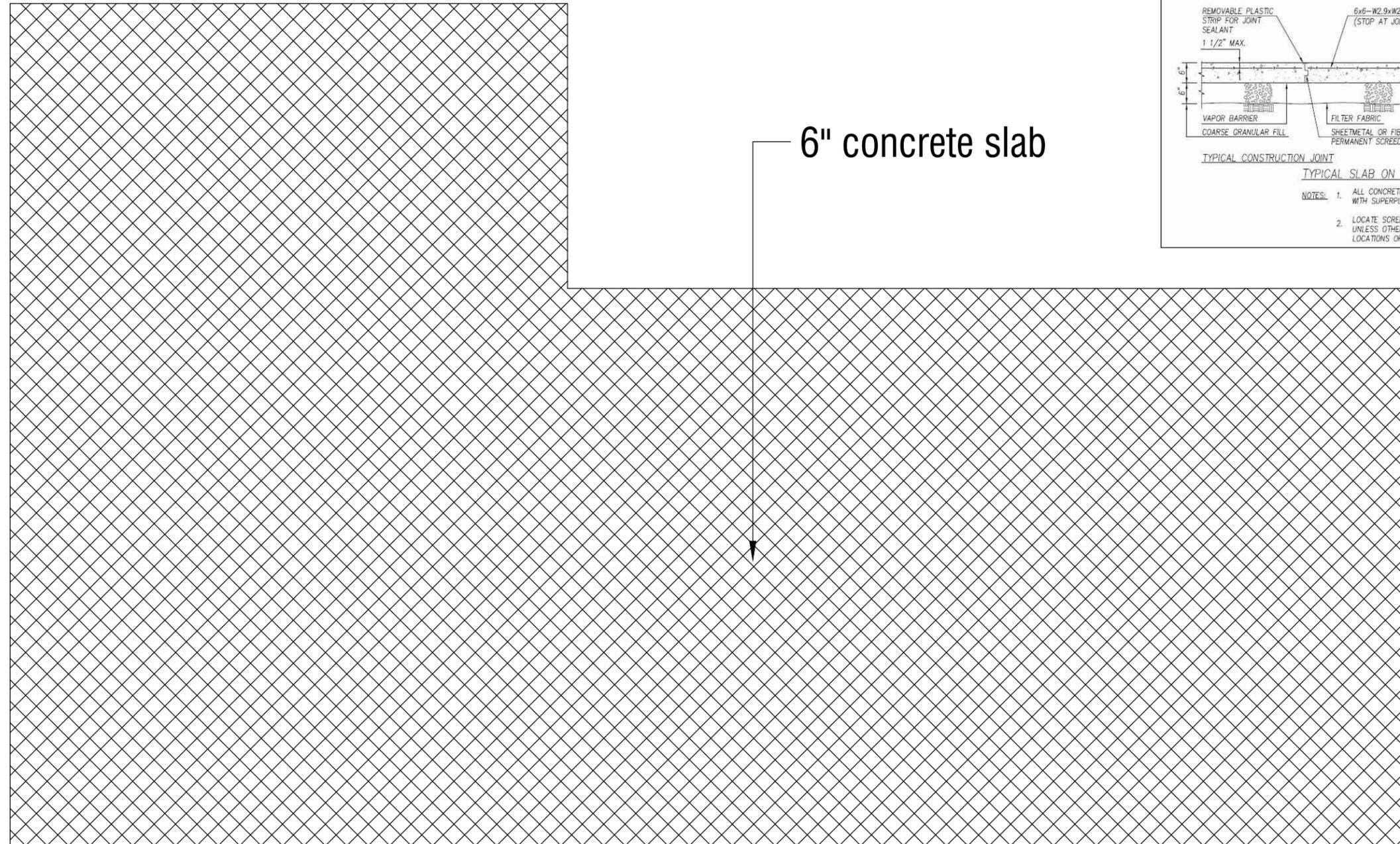


Notes:
 Entire Site will be excvated 12 to 13 feet below grade surface (bgs)

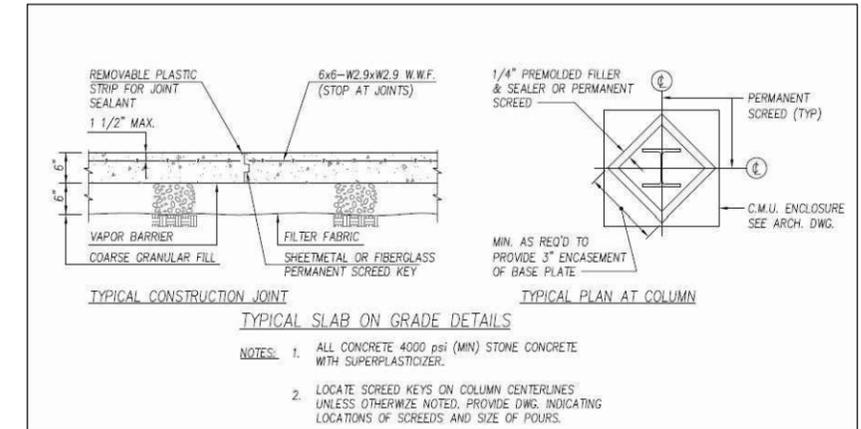
Scale:
BORING LOCATIONS
 N.T.S.



Site map:	31-12 24TH AVENUE QUEENS, NY 11102
Figure:	4
Title:	EXCAVATION PLAN
Date:	MAY 14, 2015
Drawn by:	EZGI KARAYEL
Checked by:	WILLIAM SILVERI
Drawing Scale:	N.T.S.
Project No.:	15-133-0436



6" concrete slab



SUB-CELLAR PLAN

Notes:

Site-wide Composite Cover System consists of 6" concrete slab throughout the sub-cellar

Scale:

BORING LOCATIONS
N.T.S.



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Environmental Consultants

Site map: 31-12 24TH AVENUE
QUEENS, NY 11102

Figure: 5
Title: SITE-WIDE COMPOSITE COVER

Date: MAY 14, 2015

Drawn by: EZGI KARAYEL

Checked by: WILLIAM SILVERI

Drawing Scale: N.T.S.

Project No.: 15-133-0436

APPENDICES

APPENDIX 1

PROPOSED DEVELOPMENT PLANS

KATINA CONDOS - 29 UNIT MIXED USE BUILDING

31-12 24th AVENUE
ASTORIA, NY 11102

CONSTRUCTION DOCUMENTS SET: 100%



ARCHITECTURAL DRAWING SHEET LIST

NO.	REV	#	SHEET NAME / DESCRIPTION	ISSUED	DRWN	CHK'D
T-000	.00	1	COVER SHEET	06/30/14	GB	GJC
Z-100	.00	2	ZONING, NOTES, SYMBOLS, LEGEND, SITE PLAN & INSPECTION ITEMS	04/29/14	GB	GJC
Z-102	.00	4	AREA PLANS	04/29/14	GB	GJC
A-001	.00	5	GENERAL NOTES, BULLETIN # 02/13 & ABBREVIATIONS	04/29/14	GB	GJC
EN-001	.00	6	NYCECC NOTES - COM CHECK & PROFESSIONAL STATEMENT	06/26/14	GB	GJC
A-100	.00	7	SUB-CELLAR LEVEL PLAN	04/29/14	GB	GJC
A-101	.00	8	CELLAR LEVEL PLAN	04/29/14	GB	GJC
A-102	.00	9	FIRST FLOOR PLAN	04/29/14	GB	GJC
A-103	.00	10	SECOND FLOOR PLAN	04/29/14	GB	GJC
A-104	.00	11	THIRD FLOOR PLAN	04/29/14	GB	GJC
A-105	.00	12	FOURTH FLOOR PLAN	04/29/14	GB	GJC
A-106	.00	13	FIFTH FLOOR PLAN	04/29/14	GB	GJC
A-107	.00	14	SIXTH FLOOR PLAN	04/29/14	GB	GJC
A-108	.00	15	ROOF LEVEL PLAN	04/29/14	GB	GJC
A-200	.00	16	32nd STREET ELEVATION	04/29/14	GB	GJC
A-201	.00	17	24th AVENUE ELEVATION	04/29/14	GB	GJC
A-202	.00	18	BUILDING ELEVATIONS	04/29/14	GB	GJC
A-203	.00	19	BUILDING ELEVATIONS	04/29/14	GB	GJC
A-300	.00	20	BUILDING SECTIONS	04/29/14	GB	GJC
A-301	.00	21	BUILDING SECTIONS	04/29/14	GB	GJC
A-500	.00	23	CONCRETE AND SITE DETAILS	01/10/14	GB	GJC
A-501	.00	24	EIR'S DETAILS	01/10/14	GB	GJC
A-502	.00	25	PARTITION DETAILS	01/10/14	GB	GJC
A-503	.00	26	ACCESSIBILITY DETAILS	01/10/14	GB	GJC
A-504	.00	27	MULTIPLE DWELLING DETAILS	01/10/14	GB	GJC
A-505	.00	28	MULTIPLE DWELLING DETAILS	01/10/14	GB	GJC
A-506	.00	29	BULKHEAD & ROOF DETAILS	01/10/14	GB	GJC
A-507	.00	30	DOOR DETAILS	01/10/14	GB	GJC
A-508	.00	31	WINDOW DETAILS	01/10/14	GB	GJC
A-509	.00	32	CEILING DETAILS	01/10/14	GB	GJC
A-510	.00	33	MISCELLANEOUS DETAILS	01/10/14	GB	GJC
A-600	.00	34	ROOM FINISH, DOOR AND WINDOW SCHEDULES	01/10/14	GB	GJC
Grand total: 32						

STRUCTURAL DRAWING SHEET LIST

NO.	REV	#	SHEET NAME / DESCRIPTION	ISSUED	DRWN	CHK'D

MEPS DRAWING SHEET LIST

NO.	REV	#	SHEET NAME / DESCRIPTION	ISSUED	DRWN	CHK'D

OWNER

KATINA
31-12 24th AVENUE
ASTORIA, NY 11102

ARCHITECT

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OWNER:
31-12 24th AVENUE LLC
31-12 24th AVENUE
ASTORIA, NY 11102

COVER SHEET

PROJECT ADDRESS:
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWING TITLE: COVER SHEET

DRAWN BY: GB
CHECKED BY: GJC
JOB No: 0806Z
SCALE: AS SHOWN
DATE: 04/05/14

No.	Date	Description



SEAL: [Professional Seal]

DRAWING No.: 1 OF 34

T-000.00

THE ARCHITECT SHALL NOT HAVE CONTROL OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, DEVIATIONS, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALWAYS USE DIMENSIONS AS SHOWN. DRAWINGS ARE NOT TO BE SCALED. GERALD J. CALIENDO ARCHITECT, P.C. AND ITS PRINCIPAL EMPLOYEES WERE NOT RETAINED FOR ANY CONSTRUCTION SUPERVISION.

HOUSE # 31-12 24th AVENUE ASTORIA NY
CONST. CLASS 1-B **BLOCK : 837**
ZONE DIST. : C-4.3 (R6 EQUIVALENT) **LOTS : 50 & 52**
MAP NO. : 9a

NOTE: THE FOLLOWING ZONING ANALYSIS IS FOR ONE (1) ZONING LOT, ONE (2) TAX LOTS. THESE PREMISES HAVE BEEN DECLARED TO BE SUBJECT TO THE PROVISIONS OF SECTION 12-10 ZONING RESOLUTION AS TO ZONING LOT OWNERSHIP AS FILED WITH THE CITY REGISTER OFFICE EXHIBIT I CRFN # ***** & EXHIBIT III CRFN # *****

TOTAL LOT AREA OF ENTIRE ZONING LOT = 7,506.00 SF
7,506.00 SF (0.17 ACRES)

ARTICLE II - RESIDENCE DISTRICT REGULATIONS
CHAPTER 3 - BULK REGULATIONS FOR RESIDENTIAL BUILDINGS IN RESIDENCE DISTRICTS
BALCONIES: (AS PER 23-13)
BALCONIES IN R6 DISTRICT: (AS PER 23-132)
BALCONIES PROJECT INTO THE REQUIRED SETBACK SPACE SHALL COMPLY WITH THE FOLLOWING: (AS PER 23-132)
(A) MAX. PROJECTION: 7'-0"
PROPOSED PROJECTION: NONE
(B) NOT APPLICABLE (ONLY ONE BUILDING IN ZONING LOT)
(C) NOT APPLICABLE, BALCONIES DO NOT PROJECT OVER ANY OUTDOOR RECREATION SPACE
(D) PERMITTED ENCLOSURE: 3/8" HIGH PARAPET OR 4/8" HIGH RAILING NOT LESS THAN 50% OPEN PROPOSED ENCLOSURE: 3/8" HIGH RAILING NOT LESS THAN 50% OPEN
(E) REQUIRED LOCATION: @ OR HIGHER THAN 3RD STORY OR 20.00', WHICHEVER IS HIGHER PROPOSED LOCATION: @ 3RD FLOOR (3RD STORY)

MAX ALLOWABLE FLOOR AREA: (AS PER 23-145)
RESIDENTIAL = 7,506.00 SF (LOT AREA) x 3.0 (QUALITY HOUSING - WIDE STREET) = 22,518.00 SF
COMMUNITY FACILITY = 7,506 SF (LOT AREA) x 4.8 = 36,028.80 SF
COMMERCIAL = 7,506 (LOT AREA) x 3.4 = 25,520.40 SF

LOT COVERAGE AND FLOOR AREA REGULATIONS FOR QUALITY HOUSING BUILDINGS: (AS PER 23-145)
R6 **ARTICLE 3, CHAPTER 4** **ARTICLE 2, CHAPTER 3**
MAX FLOOR AREA RATIO = 3.00 (AS PER 23-145) QUALITY HOUSING - WIDE STREET
MAX FLOOR AREA RATIO = 2.20 (AS PER 23-145) QUALITY HOUSING - NARROW STREET
MAX FLOOR AREA RATIO = 4.80 (AS PER 23-145) COMMUNITY FACILITY
MAX FLOOR AREA RATIO = 2.00 (AS PER 23-145) COMMERCIAL

NARROW WIDE **1,875.50 / 7,501.75 = 25% x 2.20 = 55 ADJUSTED FAR**
5,026.25 / 7,501.75 = 67% x 3.00 = 2.25 ADJUSTED FAR

ADJUSTED F.A.R. = 2.80
MAX RESIDENTIAL FLOOR AREA = 7,501.75 x 2.80 = 21,004.90 SF MAX
PROPOSED FLOOR AREA = 20,809.67 SF < 21,004.90 SF ==> O.K.

MAX LOT COVERAGE = 60% (AS PER 23-145)
NARROW WIDE **0.00 = 1,125.30 SF MAX ==> O.K.**
80% x 5,628.25 = 4,501.00 SF MAX ==> O.K.

PROPOSED COMMERCIAL FLOOR AREA:
FIRST FLOOR = 4,130.40 SF
4,130.40 SF < 25,520.40 SF ==> O.K.

PROPOSED COMMUNITY FACILITY FLOOR AREA:
CELLAR = 4,130.40 SF
3,651.83 SF < 36,028.80 SF ==> O.K.

MAXIMUM LOT COVERAGE: 2R SEC. 24-165 = 70%
MAX COMMUNITY FACILITY LOT COVERAGE = 7,506.00 x 70% = 5,254.20 SF MAX
PROPOSED COMMUNITY FACILITY LOT COVERAGE = 4,130.40 SF < 5,254.20 SF ==> O.K.

AS PER Z.R. SEC 24-165:
THE MAXIMUM PERCENT OF LOT COVERAGE FOR COMMUNITY FACILITY USES LOCATED BELOW OF RESIDENTIAL USE NEED NOT BE LOWER THAN THE MAXIMUM PERCENT OF LOT COVERAGE PERMITTED SUCH RESIDENTIAL USES)

31-12 24th AVENUE ASTORIA NY - ZONING FLOOR AREA TABLE										
FLOOR	RESIDENTIAL GROSS FLOOR AREA	DEDUCT'S RUB ONLY	RESIDENTIAL ZONING FLOOR AREA	COM. GROSS FLOOR AREA	DEDUCT'S	COM. ZONING FLOOR AREA	COM. FACILITY GROSS FLOOR AREA	DEDUCT'S	COM. FACILITY ZONING FLOOR AREA	TOTAL AREA (ALL USES)
	C-4.3 (R6 EOV)	MH & ZONING	C-4.3 (R6 EOV)	C-4.3	MH	C-4.3	C-4.3		C-4.3	C-4.3
SUB-CELLAR	458.20		458.20	4,130.40		4,130.40	3,651.83		3,651.83	7,483.00
1	458.20		458.20	4,130.40		4,130.40				4,588.60
2	4,574.51	139.15	211.64	4,223.72						4,223.72
3	4,499.85	139.15	211.64	4,149.06						4,149.06
4	4,499.85	139.15	211.64	4,149.06						4,149.06
5	4,499.85	139.15	211.64	4,149.06						4,149.06
6	3,788.73	47.83	100.57	3,640.33						3,640.33
ROOF	327.29		249.15	78.14						249.15
TOTAL	22,648.28	604.43	1,196.28	20,847.57	4,130.40	4,130.40				24,927.97
GFA	31,068.05									37,049.57

DENSITY REGULATIONS: (AS PER 23-20)
MAXIMUM NUMBER OF DWELLING UNITS OR ROOMING UNITS: (AS PER 23-22)
FOR R6B PORTION
REQUIRED 680.00 SF FOR DWELLING UNIT
7,501.75 / 2.80 = 21,004.90 / 680 = 30.88 => 31 D.U.
PROPOSED DWELLINGS: 29 < 31 - O.K.

LOT AREA AND LOT WIDTH REGULATIONS: (AS PER 23-30)
MIN. LOT AREA: (AS PER 23-32)
REQUIRED: 1,700.00 SF
PROVIDED: (R6B): 7,506 SF

MIN. LOT WIDTH: (AS PER 23-32)
REQUIRED: 18.00'
PROVIDED: 50.04'

YARD REGULATIONS (AS PER 35-24(B))
YARD REGULATIONS: (AS PER 23-40(B))
FRONT YARD: (AS PER 35-24(B))
REQUIRED: 0'-0" OR WITHIN 8'-0" FOR 70% OF FRONTAGE
PROVIDED: 0'-0"
SIDE YARD: (AS PER 23-462(B))
REQUIRED: NONE OR 8'-0"
PROVIDED: 0'-0"
REAR YARD: (AS PER 23-541)
REQUIRED: 30'-0"
PROVIDED: 30'-0"

SPECIAL STREETWALL LOCATION AND HEIGHT AND SETBACK REGULATIONS IN CERTAIN DISTRICTS (35-24) TABLE B
MIN. BASE HEIGHT: 40'-0" (AS PER 35-24 (TABLE B))
MAX. BASE HEIGHT: 60'-0" (AS PER 35-24 (TABLE B))
MAX. BUILDING HEIGHT: 70'-0" (AS PER 35-24 (TABLE B))
PROPOSED BASE HEIGHTS: 50'-0"
PROPOSED BUILDING HEIGHT: 60'-0" (SEE HEIGHT & SETBACK DIAGRAM ON SHEET Z-102)
REQUIRED SETBACK: 15'-0" (AS PER 35-24(C)(1) WHEN FRONTING ON A NARROW STREET
PROPOSED SETBACK: 15'-0" FRONTING ON 32nd STREET
REQUIRED SETBACK: 10'-0" (AS PER 35-24(C)(1) WHEN FRONTING ON A WIDE STREET
PROPOSED SETBACK: 10'-0" FRONTING ON 24th AVENUE

PERMITTED OBSTRUCTIONS IN CERTAIN DISTRICTS: (AS PER 23-621(c)(1))
MAX WIDTH OF DORMER: (80% OF STREETWALL) - 1% FOR EACH FOOT THAT DORMER IS ABOVE MAX BASE HEIGHT
STREET WALL @ 32nd STREET = 49.87'
PROPOSED HEIGHT OF DORMER ABOVE MAX BASE HEIGHT = 10.00'
MAX WIDTH OF DORMER: (80% OF STREETWALL) - (10% OF STREETWALL)
PROPOSED WIDTH OF DORMER @ 31st DRIVE = (49.87' x 80%) = 40.87' x 10% = 29.92' - 4.99' = 24.93'

CHAPTER 5 - ACCESSORY OFF-STREET PARKING AND LOADING REGULATIONS
REQUIRED OFF-STREET PARKING SPACES: (AS PER 25-20)
REQUIREMENTS WHERE GROUP PARKING FACILITIES ARE PROVIDED (AS PER 25-23)
REQUIRED FOR RES. PORTION : 50% OF TOTAL DWELLING UNITS FOR RESIDENTIAL USE
29 X 50 = 15 RESIDENTIAL SPACES REQUIRED

STREET TREE PLANTING: (AS PER 23-03 & 26-41)
REQUIRED: 1 TREE FOR EVERY 25' OF STREET TREE FRONTAGE OF THE ZONING LOT
FRONTAGES: 175.01 / 25 = 7 TREES
PROVIDED: (7) TREES PLANTED OFF-SITE / TREE FUND (SEE PARKS APPROVAL)

BICYCLE PARKING (AS PER 25-20)
REQUIRED: (7) TREES PLANTED OFF-SITE / TREE FUND (SEE PARKS APPROVAL)
PROVIDED: 29 X 50 = 15 SPACES (PROVIDED AT CELLAR & REAR PARKING AREA)

CHAPTER 8 THE QUALITY HOUSING PROGRAM 28-00

GENERAL PURPOSES
THE QUALITY HOUSING PROGRAM IS ESTABLISHED TO FOSTER THE PROVISION OF MULTIFAMILY HOUSING THAT:
(A) IS COMPATIBLE WITH EXISTING NEIGHBORHOOD SCALE AND CHARACTER;
(B) PROVIDES ON-SITE RECREATION SPACE TO MEET THE NEEDS OF ITS OCCUPANTS; AND
(C) IS DESIGNED TO PROMOTE THE SECURITY AND SAFETY OF THE RESIDENTS.

28-01
APPLICABILITY OF THIS CHAPTER
THE QUALITY HOUSING PROGRAM IS A SPECIFIC SET OF STANDARDS AND EQUIPMENTS FOR BUILDINGS CONTAINING RESIDENCES IN R6A, 6B, R7A, R7B, R7D, R7X, R8A, R8B, R8X, R8A, R8D, R8X, R10A OR 10X DISTRICTS, AND IN THE EQUIVALENT COMMERCIAL DISTRICTS LISTED IN SECTIONS 34-111 AND 34-112. ALL SUCH BUILDINGS SHALL COMPLY WITH THE QUALITY HOUSING PROGRAM STANDARDS AND REQUIREMENTS AS SET FORTH IN THIS CHAPTER. IN R6D DISTRICTS, ONLY THE REQUIREMENTS SET FORTH IN SECTIONS 36-41 (STREET TREE PLANTING), 28-23 (REFUSE STORAGE AND DISPOSAL), 28-33 (PLANTING AREAS) AND 28-53 (LOCATION OF ACCESSORY PARKING) SHALL APPLY. IN OTHER R6, R7, R8, R9 OR R10 DISTRICTS, AND IN THE EQUIVALENT COMMERCIAL DISTRICTS LISTED IN SECTIONS 34-111 AND 34-112, RESIDENTIAL DEVELOPMENTS, OR RESIDENTIAL ENLARGEMENTS WHERE PERMITTED, ELECTING TO USE THE OPTIONAL QUALITY HOUSING BULK REGULATIONS IN ARTICLE II, CHAPTER 3, SHALL COMPLY WITH THE QUALITY HOUSING PROGRAM STANDARDS AND REQUIREMENTS SET FORTH IN THIS CHAPTER.

THE PROVISIONS OF ARTICLE VII, CHAPTER 8 (LARGE-SCALE RESIDENTIAL DEVELOPMENTS), ARE NOT APPLICABLE TO QUALITY HOUSING BUILDINGS. THE PROVISIONS OF THIS CHAPTER SHALL NOT APPLY TO DWELLING UNITS CONVERTED PURSUANT TO ARTICLE I, CHAPTER 5, UNLESS SUCH CONVERSIONS MEET THE REQUIREMENTS FOR RESIDENTIAL DEVELOPMENTS OF ARTICLE II (RESIDENCE DISTRICT REGULATIONS).

28-10 NEIGHBORHOOD IMPACT
ALL QUALITY HOUSING DEVELOPMENTS OR CONVERSIONS, AND ENLARGEMENTS OR EXTENSIONS THAT INCREASE THE EXISTING RESIDENTIAL FLOOR AREA BY AT LEAST 20 PERCENT, SHALL PROVIDE AND MAINTAIN ALONG THE ENTIRE STREET LENGTH OF THE ZONING LOT, ONE STREET TREE FOR EVERY 25 FEET OF STREET FRONTAGE OF THE ZONING LOT, SUCH TREES SHALL BE OF AT LEAST THREE-INCH CALIPER AT TIME OF PLANTING AND BE PLACED AT APPROXIMATELY EQUAL INTERVALS EXCEPT WHERE THE COMMISSIONER OF BUILDINGS DETERMINES THAT SUCH TREE PLANTING WOULD BE UNFEASIBLE. ALL TREES SHALL BE PLANTED, MAINTAINED AND REPLACED WHEN NECESSARY WITH THE APPROVAL OF, AND IN ACCORDANCE WITH THE APPROVAL OF, AND IN ACCORDANCE WITH THE STANDARDS OF, THE DEPARTMENT OF PARKS AND RECREATION AND THE DEPARTMENT OF TRANSPORTATION.

FRONTAGE = 129.015' / 6' = 5 STREET TREES REQUIRED AND 1 PLANTED AND 4 TREE TO BE PLANTED AT SITE.

28-20 BUILDING INTERIOR
28-21 SIZE OF DWELLING UNITS
A DWELLING UNIT SHALL HAVE AN AREA OF AT LEAST 400 SQUARE FEET OF FLOOR AREA.

APT. "H" = 893.00 SF > 400 SF MIN. THEREFORE O.K.

28-20 BUILDING INTERIOR
28-21 SIZE OF DWELLING UNITS
A DWELLING UNIT SHALL HAVE AN AREA OF AT LEAST 400 SQUARE FEET OF FLOOR AREA.

APT. "H" = 893.00 SF > 400 SF MIN. THEREFORE O.K.

28-22 WINDOWS
ALL WINDOWS IN THE RESIDENTIAL PORTION OF A DEVELOPMENT OR ENLARGEMENT SHALL BE DOUBLE GLAZED.

SEE PLANS AND ELEVATIONS FOR NOTE.

28-23 REFUSE STORAGE AND DISPOSAL
DEVELOPMENTS, ENLARGEMENTS, EXTENSIONS AND CONVERSIONS WITH NINE OR MORE DWELLING UNITS OR ROOMING UNITS PER VERTICAL CIRCULATION CORE SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION. THE STORAGE OF REFUSE SHALL OCCUR ENTIRELY WITHIN AN ENCLOSED AREA ON THE ZONING LOT AND APPROPRIATE LOCATIONS WITHIN THE ZONING LOT SHALL BE DELINEATED FOR THIS PURPOSE. AT LEAST ONE (1) REFUSE STORAGE AND DISPOSAL AREA SHALL BE PROVIDED FOR EACH STORY THAT HAS ENTRANCES TO DWELLING UNITS OR ROOMING UNITS. TWELVE SQUARE FEET OF SUCH REFUSE STORAGE ROOM SHALL BE EXCLUDED FROM THE DEFINITION OF FLOOR AREA.

SEE PLAN FOR LOCATION AND SIZE OF REFUSE ROOMS.

28-24 LAUNDRY FACILITIES
IF THE BUILDING PROVIDES THE FOLLOWING, THEN THAT PORTION OF THE LAUNDRY ROOM WHICH IS USED TO MEET THESE MINIMUM REQUIREMENTS SHALL BE EXCLUDED FROM THE DEFINITION OF FLOOR AREA:

(A) AT LEAST ONE WASHING MACHINE PER 20 DWELLING UNITS OR ROOMING UNITS AND AT LEAST ONE DRYER PER 40 DWELLING UNITS OR ROOMING UNITS.

PROPOSED 8 D.U. / 20 = 4 OR 1 WASHING MACHINE REQUIRED
3 WASHING MACHINES PROVIDED > 0 REQUIRED THEREFORE O.K.

PROPOSED 8 D.U. / 40 = 0.2 OR 1 DRYER REQUIRED
3 DRYERS PROVIDED > 0 REQUIRED THEREFORE O.K.

(B) SUCH MACHINES ARE LOCATED IN A ROOM OR ROOMS WITH AN ADDITIONAL THREE SQUARE FEET OF UNOBTSTRUCTED FLOOR SPACE EQUIPPED WITH CHAIRS AND TABLES FOR FOLDING LAUNDRY FOR EACH MACHINE PROVIDED.

(C) SUCH ROOMS HAVE AT LEAST ONE EXTERIOR WALL WITH WINDOWS MEASURING NOT LESS THAN 9.5 PERCENT OF THE TOTAL FLOOR SPACE OF THE ROOMS AND;

LAUNDRY ROOM NOT REQUIRED!

(D) SUCH WINDOWS MEET THE APPLICABLE REQUIREMENTS OF SECTION 24-60.

LAUNDRY ROOM NOT REQUIRED!

SEE PLAN FOR LOCATION AND SIZE OF REFUSE ROOMS.

28-25 DAYLIGHT IN CORRIDORS
FIFTY PERCENT OF THE SQUARE FOOTAGE OF A CORRIDOR MAY BE EXCLUDED FROM THE DEFINITION OF FLOOR AREA IF A WINDOW WITH A CLEAR, NON-TINTED, GLAZED AREA OF AT LEAST 20 SQUARE FEET IS PROVIDED IN SUCH CORRIDOR, PROVIDED THAT SUCH WINDOW:

(A) SHALL BE DIRECTLY VISIBLE FROM 50 PERCENT OF THE CORRIDOR OR FROM THE VERTICAL CIRCULATION CORE. THIS STANDARD SHALL BE ACHIEVED WHEN A VISUALLY UNOBTSTRUCTED STRAIGHT LINE CAN BE DRAWN BETWEEN SUCH CORRIDOR, ELEVATOR OR STAIRWELL, AND THE WINDOW; AND

(B) IS LOCATED AT LEAST 20 FEET FROM A WALL OR A SIDE OR REAR LOT LINE MEASURED IN A HORIZONTAL PLANE AND PERPENDICULAR TO THE ROUGH WINDOW OPENING.

SEE FLOOR PLANS FOR LOCATION OF WINDOWS IN CORRIDOR.

28-30 RECREATION SPACE AND PLANTING AREAS
28-31 REQUIRED RECREATION SPACE
ALL DEVELOPMENTS, ENLARGEMENTS, EXTENSIONS OR CONVERSIONS, WITH NINE OR MORE DWELLING UNITS OR ROOMING UNITS, SHALL PROVIDE AT LEAST THE MINIMUM AMOUNT OF RECREATION SPACE AS SET FORTH IN THE FOLLOWING TABLE.

MINIMUM REQUIRED RECREATION SPACE (AS A PERCENTAGE OF THE RESIDENTIAL FLOOR AREA)

3.3	R6 R7
2.8	R8 R9 R10

28-32 STANDARDS FOR RECREATION SPACE
(A) ALL RECREATION SPACE SHALL BE ACCESSIBLE TO THE RESIDENTS OF THE BUILDING. IN A MIXED-USE BUILDING, THE RECREATION SPACE SHALL BE ACCESSIBLE TO ALL FLOOR RESIDENTIAL PORTION OF THE BUILDING.

SEE ROOF PLAN FOR SIZE AND LOCATION.

(B) THE MINIMUM DIMENSION OF ANY RECREATION SPACE SHALL BE 15 FEET. THE MINIMUM SIZE OF ANY OUTDOOR RECREATION SPACE SHALL BE 225 SQUARE FEET, AND THE MINIMUM SIZE OF ANY INDOOR RECREATION SPACE SHALL BE 300 SQUARE FEET.

RECREATION SPACE NOT REQUIRED

(C) OUTDOOR RECREATION SPACE SHALL BE OPEN TO THE SKY EXCEPT THAT BUILDING PROJECTIONS, NOT TO EXCEED SEVEN FEET IN DEPTH, MAY COVER UP TO TEN PERCENT OF THE OUTDOOR RECREATION SPACE, PROVIDED THAT THE LOWEST LEVEL OF THE PROJECTION IS AT LEAST TEN FEET ABOVE THE LEVEL OF THE OUTDOOR RECREATION SPACE.

PROPOSED RECREATION SPACE LOCATED ON THE ROOF, OPEN TO THE SKY, WITH NO BUILDING PROJECTIONS THEREFORE O.K.

(D) INDOOR RECREATION SPACE - NONE PROVIDED THEREFORE N/A.

28-33 PLANTING AREAS
THE AREA OF THE ZONING LOT BETWEEN THE STREET LINE AND THE STREET WALL OF THE BUILDING SHALL BE PLANTED, EXCEPT AT THE ENTRANCES TO AND EXISTS FROM THE BUILDING, OR ADJACENT TO COMMERCIAL USES FRONTING ON THE STREET.

PROPOSED BUILDING LOCATED ON THE FRONT PROPERTY LINE, ALIGNING WITH THE ADJACENT BUILDING, THEREFORE NO PLANTING REQUIRED. SEE PLOT PLAN FOR ADDITIONAL INFORMATION.

28-40 SAFETY AND SECURITY
28-41 DENSITY PER CORRIDOR
IF THE NUMBER OF DWELLING UNITS OR ROOMING UNITS SERVED BY A VERTICAL CIRCULATION CORE AND CORRIDOR ON EACH STORY DOES NOT EXCEED THE NUMBER SET FORTH IN THE FOLLOWING TABLE, 50 PERCENT OF THE SQUARE FEET OF THE CORRIDOR SERVING SUCH DWELLING UNITS OR ROOMING UNITS ON SUCH STORY MAY BE EXCLUDED FROM THE DEFINITION OF FLOOR AREA. DWELLING UNITS WITH ENTRANCE DOORS ON MORE THAN ONE CORRIDOR (DUPLICATE TRIPLE UNITS), MAY COUNT EACH ENTRANCE DOOR AS A FRACTION OF THE TOTAL NUMBER OF DOORS TO SUCH DWELLING UNIT WHEN DETERMINING THE NUMBER OF DWELLING UNITS SERVED PER CORRIDOR.

DENSITY OF DWELLING UNITS PER CORRIDOR

NUMBER OF DWELLING UNITS AND ROOMING UNITS SERVED BY A CORRIDOR PER STORY	DISTRICT
11	R6

28-50 PARKING FOR QUALITY HOUSING
EXCEPT AS MODIFIED BY THE PROVISIONS OF THIS SECTION, ACCESSORY OFF-STREET PARKING SHALL BE PROVIDED AS SET FORTH IN THE APPLICABLE UNDERLYING DISTRICT REGULATIONS.

28-51 SCREENING
ALL OPEN ACCESSORY OFF-STREET GROUP PARKING FACILITIES SHALL BE SCREENED FROM DWELLING UNITS, ADJACENT ZONING LOTS AND STREETS IN ACCORDANCE WITH PARAGRAPH (A) OF SECTION 25-88.

28-52 SPECIAL REGULATIONS FOR OFF-SITE ACCESSORY PARKING
OFF-SITE ACCESSORY PARKING SPACES MAY BE UNENCLOSED, PROVIDED THAT THE ZONING LOT ON WHICH SUCH SPACES ARE LOCATED DOES NOT CONTAIN A RESIDENTIAL USE.

28-53 LOCATION OF ACCESSORY PARKING
ON-SITE ACCESSORY OFF-STREET PARKING SHALL NOT BE PERMITTED BETWEEN THE #STREET LINE# AND THE STREET WALL OF A BUILDING OR ITS PROLONGATION.
HOWEVER, ON THROUGH LOTS MEASURING LESS THAN 180 FEET IN DEPTH FROM STREET TO STREET, ACCESSORY OFF-STREET PARKING MAY BE LOCATED BETWEEN THE STREET LINE AND ANY STREET WALL LOCATED BEYOND 50 FEET OF SUCH STREET LINE.

SYMBOLS LEGEND	
SYMBOL	SYMBOL DESCRIPTION
[W]	WATER METER
[E]	ELECTRIC METER
[G]	GAZ METER
[M.V. (50' EPS)]	FOIL FACED BATT INSULATION - SEE PLANS FOR ACTUAL R-VALUE.
[11]	MECHANICAL EXHAUST VENT 50 CFM FOR ALL BATHROOMS
[101]	WINDOW TAG DESIGNATION. REFER TO WINDOW SCHEDULE FOR DESCRIPTION.
[1]	DOOR TAG DESIGNATION. REFER TO WINDOW SCHEDULE FOR DESCRIPTION.
[1]	WALL TAG DESIGNATION. REFER TO WALL STYLES FOR DESCRIPTION.
[1]	PARKING TAG VEHICLES & BICYCLES
[S.D.]	SMOKE DETECTORS REQUIRED IN EACH BEDROOM, ONE IN COMMON AREA, AND ONE ON EACH FLOOR. Section #293.1.
[SD CMD]	NEW YORK CITY APPROVED TYPE SMOKE ALARM & CARBON MONOXIDE DETECTOR HARD WIRED
[---]	CONDITION ABOVE
[---]	STEEL - SEE STRUCTURAL DRAWINGS FOR SIZING & INSTALLATION
[B.S.A.]	B.S.A. APPROVED - DIRECTIONAL EXIST SIGN W/ BATTERY BACKUP
[FD]	FD = FLOOR DRAIN, AD = OUTSIDE AREA DRAIN, RD = ROOF DRAIN
[---]	SECTION NUMBER DESIGNATION
[---]	SHEET NUMBER DESIGNATION

WALL TYPES		
TYPE	MARK	WALL DESCRIPTION
[1]	1	FURRING PARTITION: 1/2" SHEETROCK TYPE "X" APPLIED TO RESILIENT FURRING CHANNELS @ 16" O.C.
[2]	2	INTERIOR PARTITION: 3 1/2" METAL STUDS @ 16" o.c. FINISH WITH 1 LAYER 5/8" TYPE "X" SHEETROCK, FOSS ON EACH SIDE (2 Hour Rated) - GA. FILE # WP 1200 -
[3]	3	INTERIOR PARTITION: 3 1/2" METAL STUDS @ 16" o.c. FINISH WITH 1 LAYER 5/8" TYPE "X" SHEETROCK, FOSS ON EACH SIDE (2 Hour Rated) - GA. FILE # WP 1200 -
[4]	4	DEMISING PARTITION: 3 1/2" METAL STUDS @ 16" o.c. FINISH W/ 2 LAYER 5/8" TYPE "X" SHEETROCK, FOSS ON EACH SIDE (2 Hour Rated) MIN. STC-30 - GA. FILE # WP 1200 - SLAB TO UNDERSIDE OF SLAB
[5]	5	TRANSITION PARTITION: 3 1/2" METAL STUDS @ 16" o.c. FINISH W/ 3 LAYER 5/8" TYPE "X" SHEETROCK, FOSS ON EACH SIDE (3 Hour Rated) MIN. STC-50 - GA. FILE # WP 1200 - SLAB TO UNDERSIDE OF SLAB
[6]	6	CORE WALL: REINFORCED & POURED IN PLACE CONCRETE. REFER TO PLAN FOR SIZES.
[7]	7	BUILDING EXTERIOR WALL: 3" EPS OVER 3/4" DENSGLASS GOLD FIBREGARD OVER 1/2" METAL STUD, VAPOR BARRIER #13 INSUL 5/8" GYPSUM WALL BOARD (Style & finish selected by owner)
[8]	8	SHAFT WALL: 1/2" DUROCK CEMENT BOARD OVER 1/2" S.R. F.C.C OVER 1 1/2" METAL STUD, 1" AIR SPACE, 1 1/2" METAL STUD, 1/2" DUROCK CEMENT BOARD OVER 1/2" S.R. F.C.C
[9]	9	FOUNDATION WALL: WELL POURED CONCRETE FOUNDATION WALL AND FOOTING (3000 PSI MIN) REFER TO STRUCTURAL DRAWINGS FOR ACTUAL WIDTH, PSI AND REINFORCEMENT.

BUILDING DEPARTMENT NOTES

- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS BEFORE ANY CONSTRUCTION WORK IS STARTED.
- AT LEAST 24 HOURS WRITTEN NOTICE SHALL BE GIVEN TO THE COMMISSIONER PRIOR TO COMMENCEMENT OF ANY WORK SEC. C28-118.5
- UNLESS SUPPORTING MASONRY WALLS OVER 4'-0" SHALL BE FIRE PROTECTED WITH MATERIALS HAVING THE REQUIRED FIRE RESISTIVE RATING OF THE WALL
- SUSPENDED CEILINGS SHALL HAVE HANGERS AND SUPPORTING GRIDS OF NON-COMBUSTIBLE MATERIALS. SEC C28-304.12
- INTERIOR FINISHES TO COMPLY WITH SEC. C28-304.10 AND TABLE 5-4.
- ALL PARTITIONS ENCLOSING TENANT SPACES AND EXIT CORRIDORS SHALL BE CONSTRUCTED OF 5/8" SHEET ROCK FIRE CODE "1" TWO LAYERS ON EACH SIDE OF 3/8" METAL STUDS. PARTITIONS SEPARATING TENANTS AND PUBLIC HALL PARTITIONS SHALL BE CARRIED THRU TO UNDERSIDE OF ROOF ABOVE.
- WHERE NON-COMBUSTIBLE PIPES AND CONDUITS PASS THROUGH RAFTER CONSTRUCTION, THE AREA OF SUCH OPENING MAY NOT EXCEED 25 SQ. IN. IN ANY 100 SQ. FT. OF WALL OR FLOOR AREA. THE SPACE BETWEEN THE PIPE AND ITS SLEEVE OR OPENING MAY NOT EXCEED 1/2" AND WILL BE PACKED WITH NON-COMBUSTIBLE MATERIAL, SUCH AS MINERAL WOOL, SEC. Z7-34.3.
- CONCEALED SPACES WITH PARTITIONS, WALLS, FLOORS, ROOFS, STAIRS, FURRING, PIPE SPACES, ETC., THAT WOULD PERMIT PASSAGE OF FLAME, SMOKE, FUMES, OR HOT GASES FROM ONE FLOOR TO ANOTHER, OR FROM ONE CONCEALED AREA TO ANOTHER, SHALL BE FIRE STOPPED TO FORM AN EFFECTIVE DRAFT BARRIER OR SHALL BE FILLED WITH NON-COMBUSTIBLE MATERIAL. SEC. Z7-345
- PLUMBING VENTS SHALL EXTEND ABOVE ROOF AS PER SEC. P109-4(A).
- ALL ELECTRICAL OUTLETS TO MEET ALL REQUIREMENTS OF THE NYC ELECTRICAL CODE.
- THE CONTRACTOR MUST OBTAIN A CERTIFICATE OF OCCUPANCY UPON COMPLETION OF ALL WORK ON THIS PLAN TO COMPLY WITH THE BUILDING CODE SUB ARTICLE 1210
- CONTROLLED INSPECTION ITEMS: THE FOLLOWING ITEMS OF WORK SHALL BE SUBJECT TO CONTROLLED INSPECTION MADE BY THE ARCHITECT OR UNDER DIRECT SUPERVISION OF AN ARCHITECT OR ENGINEER RETAINED BY THE OWNER WHO SHALL BE ACCEPTABLE TO THE ARCHITECT.
 - TEST REPORT AND CERTIFICATE OF INSPECTION SHALL BE FILED WITH THE BUILDING DEPARTMENT.
 - ALL MATERIALS, ASSEMBLIES AND METHOD OF CONSTRUCTION REGULATED BY THE CODE AND NOT LISTED ABOVE SHALL BE SUBJECT TO SEMI CONTROLLED INSPECTION BY THE PERSON SUPERVISING THE CONSTRUCTION.
 - SIGNED COPIES OF ALL TESTS AND INSPECTION REPORTS SHALL BE FILED THROUGH THE ARCHITECT WITH THE DEPT.
- DUCT FIRE RETARDING - DUCTS TO BE FIRE RETARDED AS PER PLANS AND TO BE FIRE STOPPED AT EACH TIE WITH 2" MINERAL WOOL. MAINTAIN 1/2" CLEARANCE BETWEEN DUCTS AND SHEETROCK.
 - ADMINISTRATION
 - ALL MATERIALS, ASSEMBLIES, FORMS, METHODS OF CONSTRUCTION, AND SERVICE EQUIPMENT SHALL MEET THE FOLLOWING REQUIREMENTS:
 - IT SHALL HAVE BEEN ACCEPTABLE PRIOR TO THE EFFECTIVE DATE OF THE CODE BY THE COMMISSIONER, OR
 - IT SHALL HAVE BEEN ACCEPTED FOR USE UNDER THE PRESCRIBED CODE "TEST METHODS" BY THE COMMISSIONER, OR
 - APPROVED BY THE BOARD OF STANDARDS AND APPEALS, OR BY THE M.E.A. DIVISION OF THE BUILDING DEPARTMENT.
 - AT LEAST 24 HOURS WRITTEN NOTICE SHALL BE GIVEN TO THE COMMISSIONER BEFORE THE COMMENCEMENT OF WORK.
 - INSPECTION REQUIREMENTS
 - INSPECTION REQUIREMENTS OF WORK SHALL BE SUBJECT TO CONTROLLED INSPECTION, MADE AND WITNESSED BY OR UNDER THE DIRECT SUPERVISION OF AN ARCHITECT OR ENGINEER RETAINED BY THE OWNER WHO SHALL BE ACCEPTABLE TO THE ARCHITECT. TEST REPORT AND CERTIFICATE OF INSPECTION SHALL BE FILED WITH THE BUILDING DEPT.
 - ALL MATERIALS, ASSEMBLIES AND METHODS OF CONSTRUCTION REGULATED BY THE CODE AND NOT LISTED ABOVE SHALL BE SUBJECT TO SEMI CONTROLLED INSPECTION BY THE PERSON SUPERVISING THE CONSTRUCTION. SIGNED COPIES OF ALL TEST AND INSPECTION REPORTS SHALL BE FILED THROUGH THE ARCHITECT WITH THE BUILDING DEPT.
 - FIRE PROTECTION CONSTRUCTION REQUIREMENTS
 - ALL MATERIALS OR ASSEMBLIES REQUIRED TO HAVE A FIRE RESISTANCE RATING SHALL COMPLY WITH THE FOLLOWING:
 - IT SHALL CONFORM WITH THE NEW "R" RESISTANCE RATING; OR
 - IT SHALL HAVE BEEN TESTED IN ACCORDANCE WITH THE ASTM E-199 STANDARD METHODS OF FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS" AND ACCEPTED BY THE COMMISSIONER, OR
 - IT SHALL HAVE BEEN ACCEPTABLE PRIOR TO THE EFFECTIVE DATE OF THE CODE.
 - OPENING PROTECTIVES INCLUDING FRAMES, SELF-CLOSING DEVICES AND HARDWARE SHALL COMPLY WITH ASTM E-108, "STANDARD METHOD OF FIRE TEST OF DOOR ASSEMBLIES" AND ASTM E-163.
 - INTERIOR FINISH MATERIAL SHALL BE CLASSIFIED IN ACCORDANCE WITH THE SURFACE FLAME SPREAD RATING OBTAINED AS PRESCRIBED IN ASTM E-84 "STANDARD METHOD OF TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS". INTERIOR FINISH SHALL BE GROUPED INTO THE CLASSES OF THESE SCHEDULES.

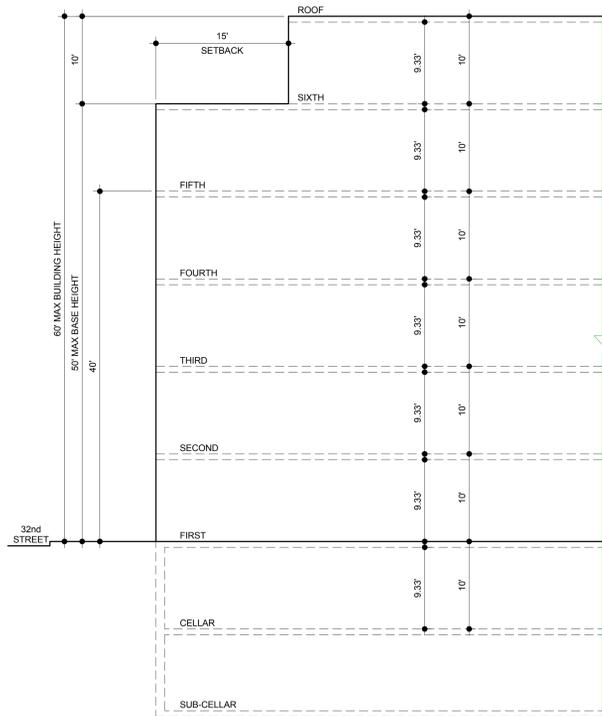
INTERIOR FINISH CLASS	FLAME SPREAD CLASS
A	0-25
B	26-75
C	76-225
D	OVER 225
 - INTERIOR FINISH EXCEPT FINISH FLOORING AND FLOOR COVERING, WALL COVERINGS LESS THAN 60" IN TOTAL THICKNESS, SHALL HAVE A FLAME SPREAD RATING NOT GREATER THAN THAT LISTED.

SPECIAL NOTES

- THE OWNER/CONTRACTOR TO NOTIFY THE ARCHITECT OF ANY DISCREPANCIES IN THE PLANS, INCLUDING FIELD CONDITIONS, CONSTRUCTION DETAILS AND/OR SPECIFICATIONS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- THE BUILDING SHALL BE SUFFICIENTLY BRACED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION TO SATISFY RAIN, SNOW OR WIND LOADS.
- CONTRACTOR TO PERFORM TEST PITS TO VERIFY THE DEPTH OF FOOTINGS OF THE ADJACENT BUILDINGS. CONTRACTOR TO SUBMIT THE DEPTH (ELEVATION) OF THE FOOTINGS TO THE ARCHITECT.
- CONTRACTOR TO MONITOR ALL EXCAVATION USING MECHANICAL EQUIPMENT. NO USE OF MECHANICAL EQUIPMENT WITHIN 5' OF ADJACENT FOUNDATION.
- WITHIN 3' OF ADJACENT FOUNDATION TO BE EXCAVATED BY HAND AND REPAIR ADJACENT FOUNDATION AS REQUIRED TO INSURE STRUCTURAL STABILITY OF ADJACENT BUILDING.
- THE OWNER/CONTRACTOR SHALL RETAIN A SITE ENGINEER TO PROVIDE ON SITE CONTROLLED INSPECTIONS DURING ALL TIMES OF CONSTRUCTION OPERATIONS FOR THE FOLLOWING:

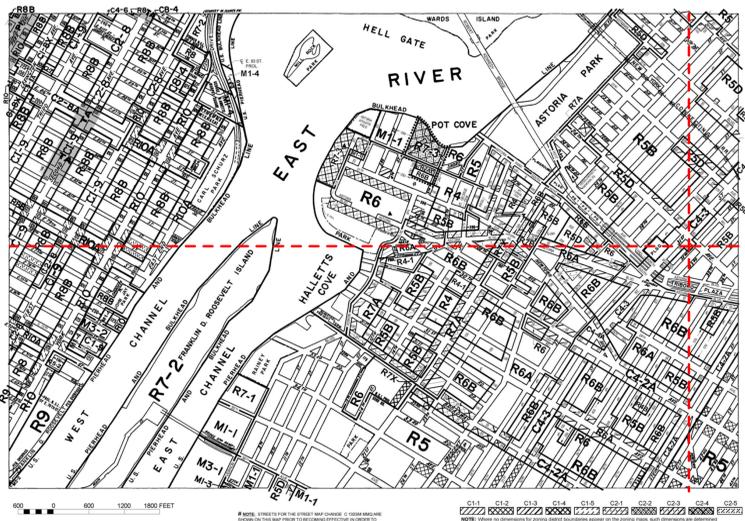
1. ENSURING ENGINEER IS ON SITE.	7. FORMS BRACING.
2. EXCAVATION DEPTH.	8. UNDERPINNING.
3. PUMPING OPERATIONS.	9. GROUNDWATER.
4. PILE DRIVING OPERATIONS.	10. WORK AS PER PLAN.
5. SHEETING/SHORING/BRACING.	11. OTHER ENGINEERING WORKS TO BE DONE.
- ANGLE OF REPOSE.

SPECIAL INSPECTIONS ITEMS		Code/Section	
Y	N		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Flood Zone Compliance	



BASE PLANE CALCULATION	
PROPERTY LINE LEVEL ON 32nd STREET:	$(60.23 + 52.54) / 2 = 56.38'$
PROPERTY LINE LEVEL ON 24th AVENUE:	$(52.54 + 50.39) / 2 = 51.46'$
PROPOSED BASE PLANE EL:	$56.38 + 51.46 / 2 = 53.92'$
WHICH IS BETWEEN THE STREET WALL LINE LEVEL AND CURB LEVEL AS PER 12-10 ZR	

1 BUILDING HEIGHT & SETBACK (32nd STREET)
Scale: 1/8" = 1'-0"



ZONING MAP
THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:
The numbered (and/or lettered) text below are the Major Zoning Districts. For a list of the zoning districts in the City of New York, see the Zoning Map of the City of New York, available at www.dcp.gov.

R - RESIDENTIAL DISTRICT
C - COMMERCIAL DISTRICT
M - MANUFACTURING DISTRICT
S - SPECIAL PURPOSE DISTRICT

Effective Date(s) of Rezoning:
11-29-2014 C 1-4032 Z30

Special Requirements:
For a list of lots subject to special requirements, see Appendix C.
For a list of lots subject to "D" restrictive covenants, see Appendix D.
For preliminary Hearing designated areas on this map, see Appendix E.

CITY MAP CHANGES:
A 108-13-2014 C 13068 WAG

MAP KEY
5d 6b 6d
8c 9a 9c
8d 9b 9d

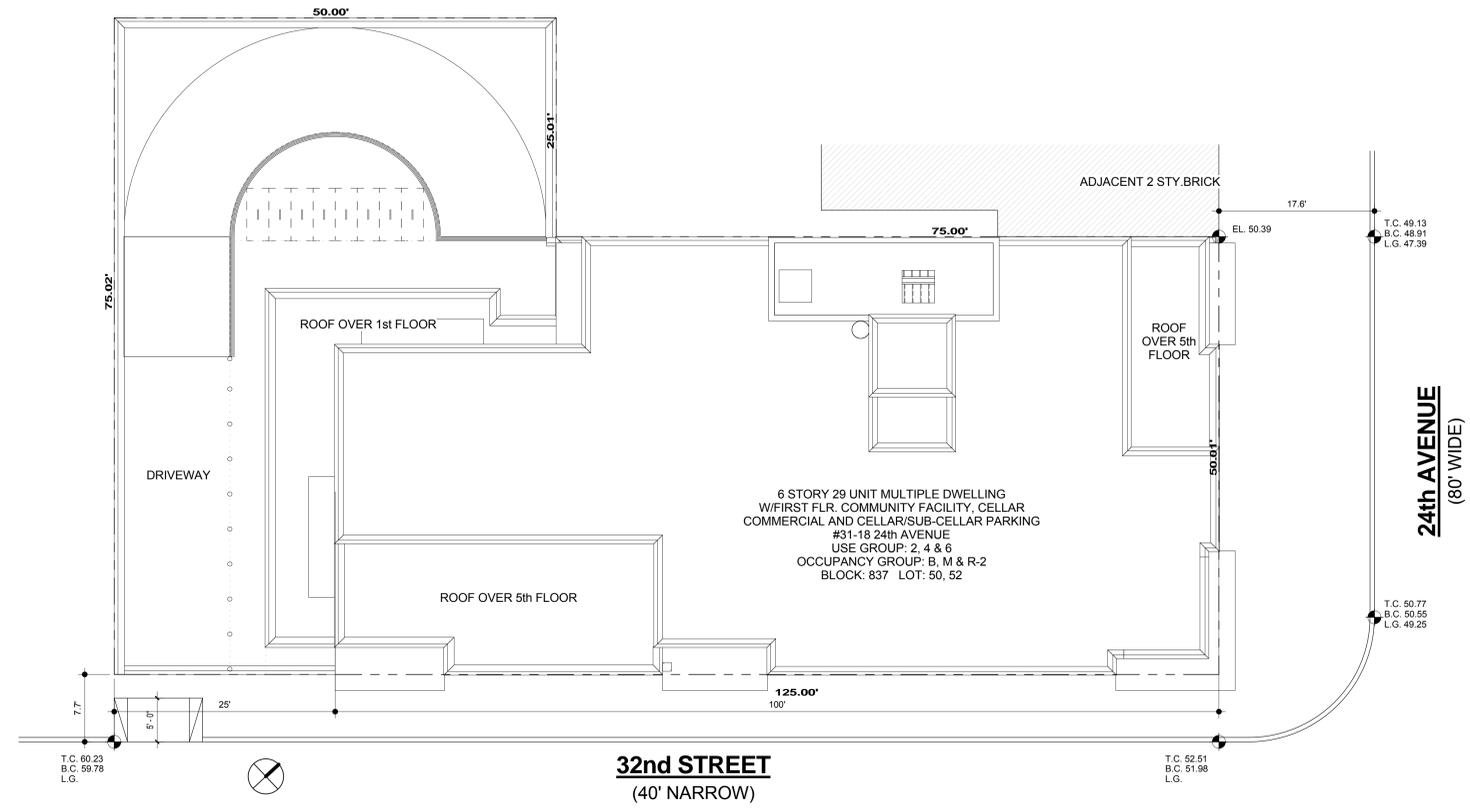


Updated FEMA Flood Hazard Data
FEMA flood hazard data currently available for coastal areas of New York and New Jersey is provided below to help you understand the current flood risk to your property and to guide Sandy recovery and rebuilding efforts.
Note: This tool provides flood zone and Base Flood Elevation (BFE) information for areas affected by coastal flood risk. However, riverine flood zone information will also be returned by the tool in communities where preliminary FIRMs have been released.

Attribute Name	Attribute Value
What is the most recent FEMA flood hazard data source available for this location?	Preliminary Flood Insurance Rate Map (FIRM)
What is my property's Base Flood Elevation (BFE)? (For AO Zones, the flood depth will be shown instead of an elevation; For N/A results, please contact your local floodplain administrator for more information.)	N/A
What is my property's Flood Zone? (For N/A results, please contact your local floodplain administrator for more information.)	N/A
What is the estimated ground elevation at this location? (See licensed surveyor for actual elevation of your building)	N/A
What does my FEMA Flood Hazard Map Panel Look Like?	Link to Preliminary FIRM PDF
View your property on our Interactive Web Tool	Link to Web Tool
Where can I get the GIS data for my property area?	Link to Preliminary FIRM GIS files

Effective Flood Insurance Data
This information is from the effective Flood Insurance Rate Map for your community. It is used to determine who must buy flood insurance and how much it costs. It may also be used by your community to regulate development in flood prone areas.

Attribute Name	Attribute Value
What is my property's current effective Base Flood Elevation?	N/A
What is my property's current effective Flood Zone?	X



2 SITE PLAN
Scale: 1/8" = 1'-0"

FIRM
FLOOD INSURANCE RATE MAP
CITY OF NEW YORK, NEW YORK
BRONX, RICHMOND, NEW YORK, QUEENS, AND KINGS COUNTIES
PANEL 93 OF 457
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
COMBINED NUMBER PANEL SHEETS
MAP NUMBER 360407083F
MAP REVISION SEPTEMBER 5, 2007
Federal Emergency Management Agency

Architectural
Interior Design
Code Consultant
Building Dept
Expediting

Gerald J. Caliendo, R.A., A.I.A.
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KEY PLAN:

CONSULTANTS:
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Linden, NJ 07036
o: (908) 862-7600

SIDERIS KEFALAS ENGINEERS P.C.
217-22 Northern Blvd
Bayside, NY 11361
o: (718) 224-9091

OWNER:
31-18 24th AVENUE LLC
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWING TITLE:
SITE PLAN, ZONING MAP, SETBACK
DIAGRAMS & FEMA MAPS

PROJECT ADDRESS:
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

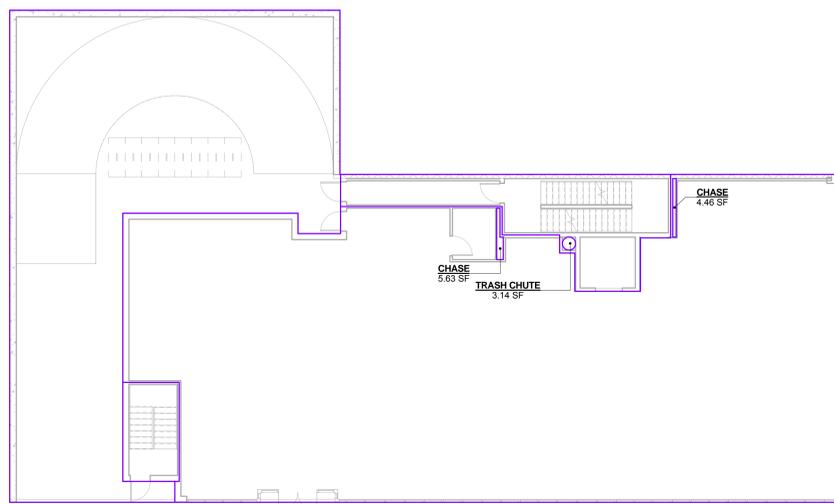
DRAWN BY: GB
CHECKED BY: GJC
JOB No: 08082
SCALE: AS SHOWN
DATE: 04/05/14

REGISTERED ARCHITECT
GERALD J. CALIENDO
STATE OF NEW YORK
020241

SEAL:

DRAWING No.: 3 OF 34

Z-101.00

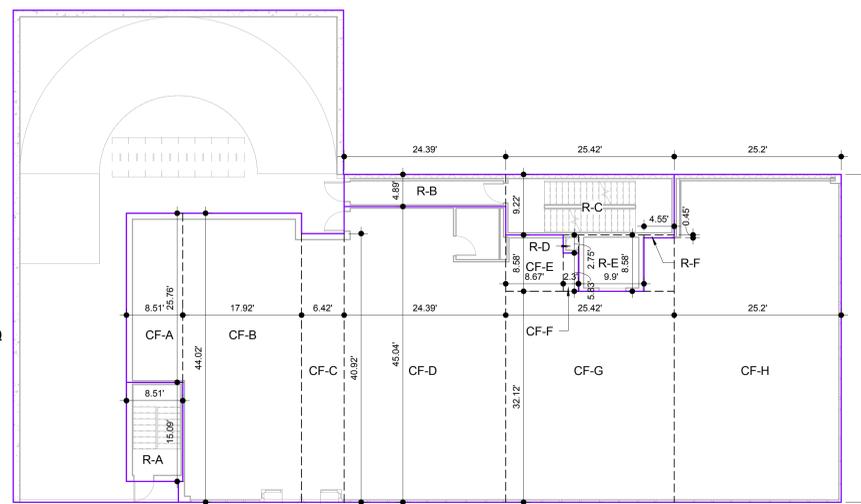


FIRST FLOOR GFA (COM. FAC.)			
AREA	LENGTH	WIDTH	TOTAL
CF-A	25.76	8.51	219.22
CF-B	44.02	17.92	788.64
CF-C	40.92	6.42	262.71
CF-D	45.04	24.39	1,096.53
CF-E	8.58	8.67	74.39
CF-F	5.83	2.30	13.41
CF-G	32.12	25.42	816.49
CF-H	49.93	25.20	1,258.24
TOTAL AREA			4,531.81

FIRST FLOOR GFA (RES.)			
AREA	LENGTH	WIDTH	TOTAL
RA	15.09	8.51	128.02
R-B	4.89	24.39	119.27
R-C	9.22	25.42	234.37
R-D	2.75	2.30	6.33
R-E	8.58	9.90	84.94
R-F	0.45	4.55	2.05
TOTAL AREA			575.27

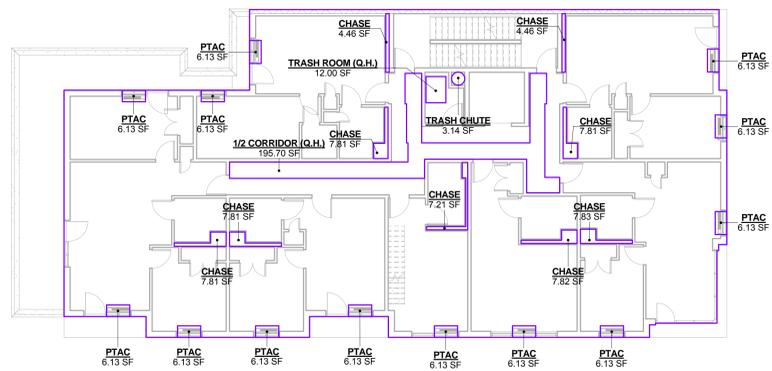
FIRST FLOOR GROSS AREA (COM. FAC.)
 TOTAL = 4,531.81 SF
MECHANICAL DEDUCTIONS
 CHASES = 10.09 SF
FIRST FLOOR NET AREA
 4,531.82 SF - 10.09 = **4,521.72 SF**

FIRST FLOOR GROSS AREA (RES.)
 TOTAL = 575.27 SF
MECHANICAL DEDUCTIONS
 TRASH CHUTE = 3.14 SF
FIRST FLOOR NET AREA
 575.37 SF - 3.14 = **572.23 SF**



01 - FIRST FLOOR NFA

01 - FIRST FLOOR GFA



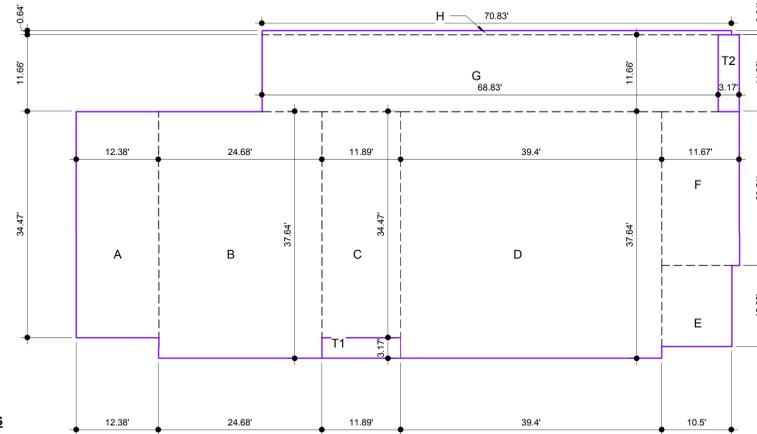
SECOND FLOOR GFA			
AREA	LENGTH	WIDTH	TOTAL
A	34.47	12.38	426.71
B	37.64	24.68	928.96
C	34.47	11.89	409.85
D	37.64	39.40	1,483.02
E	12.29	10.50	129.05
F	23.51	11.67	274.36
G	11.66	68.83	802.56
H	0.64	70.83	45.33
T1	3.17	11.89	37.69
T2	11.66	3.17	36.96
TOTAL AREA			4,574.51

SECOND FLOOR GROSS AREA
 TOTAL = 4,574.51 SF

ZONING DEDUCTIONS
 1/2 CORRIDOR = 195.70
 TRASH = 12
 TOTAL = 207.70 SF
MECHANICAL DEDUCTIONS
 CHASES = 63.02 SF
 PTAC'S = 79.69
 TRASH CHUTE = 3.14 SF
 TOTAL = 145.85 SF

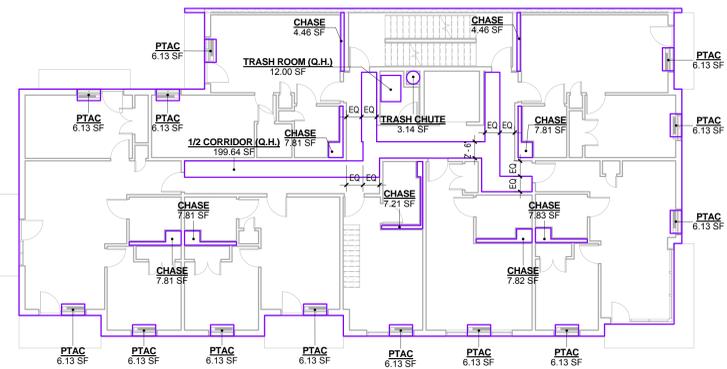
TYPICAL FLOOR AREA DEDUCTIONS
 207.70 + 145.85 = 353.55 SF

SECOND FLOOR NET AREA
 4,574.51 SF - 353.55 = **4,220.96 SF**



02 - SECOND FLOOR GFA

02 - SECOND FLOOR NFA



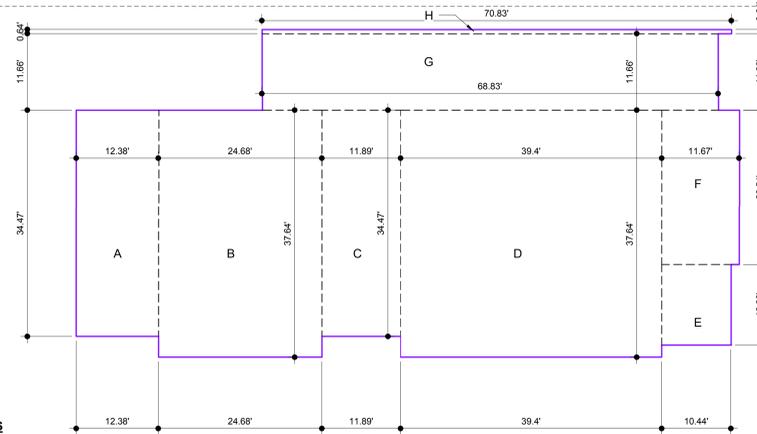
TYP. (3-5) FLOORS GFA			
AREA	LENGTH	WIDTH	TOTAL
A	34.47	12.38	426.74
B	37.64	24.68	928.96
C	34.47	11.89	409.85
D	37.64	39.40	1,483.02
E	12.29	10.50	129.05
F	23.51	11.67	274.36
G	11.66	68.83	802.56
H	0.64	70.83	45.33
TOTAL AREA			4,499.85

TYP. (3-5) FLOOR GROSS AREA
 TOTAL = 4,499.85 SF

ZONING DEDUCTIONS
 1/2 CORRIDOR = 199.64
 TRASH = 12
 TOTAL = 211.64 SF
MECHANICAL DEDUCTIONS
 CHASES = 63.02 SF
 PTAC'S = 79.69
 TRASH CHUTE = 3.14 SF
 TOTAL = 145.85 SF

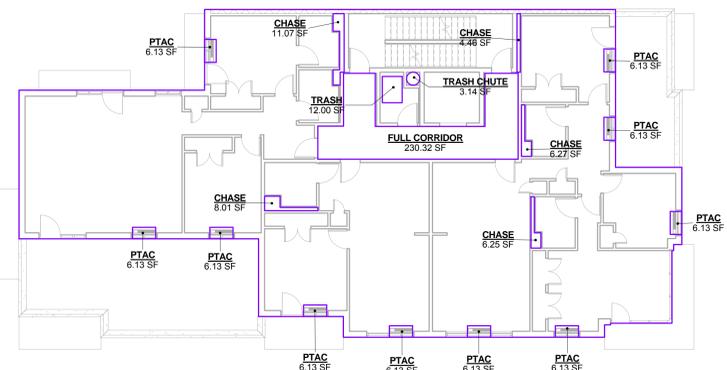
TYPICAL FLOOR AREA DEDUCTIONS
 211.64 + 145.85 = 357.49 SF

SECOND FLOOR NET AREA
 4,499.85 SF - 357.49 = **4,142.36 SF**



03 - TYP. (3-5) FLOORS GFA

03 - TYP. (3-5) FLOORS NFA



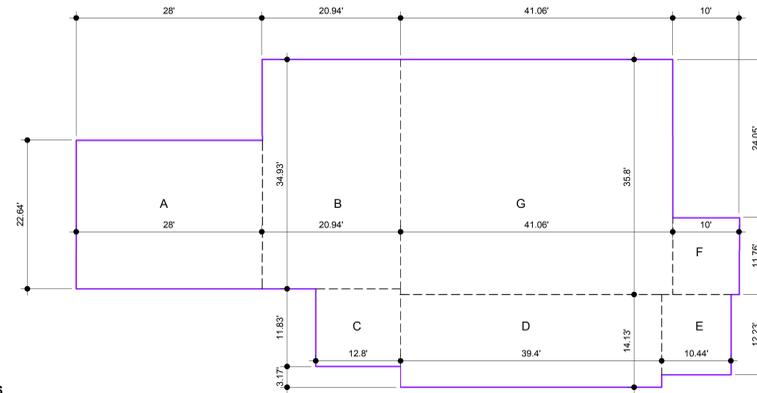
SIXTH FLOOR GFA			
AREA	LENGTH	WIDTH	TOTAL
A	28.00	22.64	633.92
B	28.94	34.93	1,011.43
C	12.80	11.83	151.42
D	39.40	14.13	556.72
E	10.44	12.23	127.68
F	10.00	11.36	113.60
G	41.06	35.80	1,469.95
TOTAL AREA			3,788.73

SIXTH FLOOR GROSS AREA
 TOTAL = 3,788.73 SF

ZONING DEDUCTIONS
 1/2 CORRIDOR = 230.32
 TRASH = 12
 TOTAL = 242.32 SF
MECHANICAL DEDUCTIONS
 CHASES = 36.06 SF
 PTAC'S = 61.30
 TRASH CHUTE = 3.14 SF
 TOTAL = 100.5 SF

TYPICAL FLOOR AREA DEDUCTIONS
 242.32 + 100.5 = 342.82 SF

SECOND FLOOR NET AREA
 3,788.73 SF - 342.82 = **3,445.91 SF**



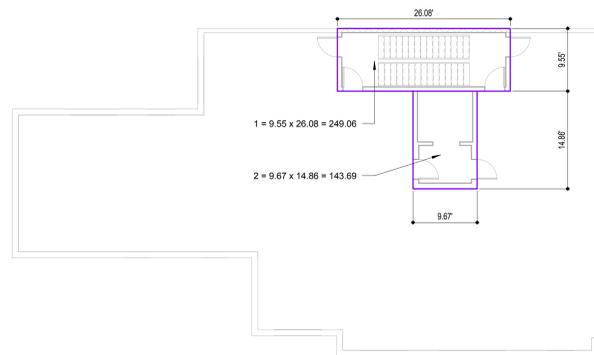
06 - SIXTH FLOOR GFA

06 - SIXTH FLOOR NFA

ROOF GROSS AREA
 1 = 9.55 x 26.08 = 249.06
 2 = 9.67 x 14.86 = 143.69

TOTAL = 249.06 + 143.69 = **392.75 SF**

ROOF NET AREA
 2 = 9.67 x 14.86 = 143.69
 TOTAL = **143.69 SF**



07 - ROOF AREA

Architectural
 Interior Design
 Code Consultant
 Building Dept
 Expediting

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OWNER:
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 ASTORIA, NY 11102

AREA PLANS

PROJECT ADDRESS:
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
 31-12 24th AVENUE
 ASTORIA, NY 11102

No.	Date	Description

DRAWING TITLE: AREA PLANS

DRAWN BY: GB
 CHECKED BY: GJC
 JOB No: 08082
 SCALE: AS SHOWN
 DATE: 04/05/14



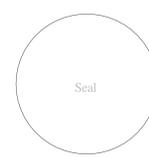
THE ARCHITECT SHALL NOT HAVE CONTROL OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ALWAYS USE DIMENSIONS AS SHOWN. DRAWINGS ARE NOT TO BE SCALED. GERALD J. CALIENDO ARCHITECT, P.C. AND ITS PRINCIPAL EMPLOYEES WERE NOT RETAINED FOR ANY CONSTRUCTION SUPERVISION.

TABLE II - PROGRESS INSPECTIONS FOR ENERGY CODE COMPLIANCE - COMMERCIAL BUILDINGS

Key Name	Inspection/Test	Periodic (minimum)	Reference Standard (See ECC Chapter 6) or Other Criteria ¹	ECC or Other Citation ¹
IIA	Envelope Inspections Protection of exposed foundation insulation: Insulation shall be visually inspected to verify proper protection where applied to the exterior of basement or cellar walls, crawl-space walls and/or the perimeter of slab-on-grade floors.	As required during foundation work and prior to backfill	Approved construction documents	303.2.1; ASHRAE 90.1 - 5.8.1.7
IIA2	Insulation placement and R-values: Installed insulation for each component of the conditioned space envelope and at junctions between components shall be visually inspected to ensure that the R-values are marked, that such R-values conform to the R-values identified in the construction documents and that the insulation is properly installed. Certifications for unmarked insulation shall be similarly visually inspected.	As required to verify continuous enclosure while walls, ceilings and floors are open	Approved construction documents	303.1, 303.1.1, 303.1.2, 502.1, 502.2; ASHRAE 90.1 - 5.5, 5.6 or 11; 5.8.1
IIA3	Fenestration thermal values and product ratings: U-factors and SHGC values of installed fenestration shall be visually inspected for conformance with the U-factors and SHGC values identified in the construction drawings by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables 303.1.3(1), (2) and (3). Where ASHRAE 90.1 is used, visible light transmittance values shall also be verified.	As required during installation	Approved construction documents; NFRC 100, NFRC 200	303.1, 303.1.3; 502.3; ASHRAE 90.1 - 5.5; 5.6 or 11; 5.8.2
IIA4	Fenestration and door assembly product ratings for air leakage: Windows and sliding or swinging door assemblies, except site-built windows and/or doors, shall be visually inspected to verify that installed assemblies are listed and labeled by the manufacturer to the referenced standard. For curtain wall, storefront glazing, commercial entrance doors and revolving doors, the testing reports shall be reviewed to verify that the installed assembly complies with the standard cited in the approved plans.	As required during installation; prior to final construction inspection	NFRC 400, AAMA WDMA/CSSA 1011.5, 2/444 ASTM E283; ANSIDASMA 105	502.4; ASHRAE 90.1 - 5.4.3.2
IIA5	Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents	502.3; ASHRAE 90.1 - 5.5.4, 5.6 or 11
IIA6	Sealing: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that a continuous air barrier around the envelope forms an air-tight enclosure. The progress inspector shall visually inspect to verify that materials and/or assemblies have been tested and meet the requirements of the respective standards, or that the building is tested and meets the requirements of the standard, in accordance with the standard(s) cited in the approved plans.	As required during construction	Approved construction documents; ASTM E2178, ASTM E2837, ASTM E1677, ASTM E779, ASTM E283	502.4.3, 502.4.7; ASHRAE 90.1 - 5.4.3.1
IIA7	Projection factors: Where the energy analysis utilized a projection factor > 0, the projection dimensions of overhangs, eaves or permanently attached shading devices shall be verified for conformance with approved plans by visual inspection.	Prior to final construction inspection	Approved construction documents, including energy analysis	502.3; ASHRAE 90.1 - 5.5.4, 5.6 or 11
IIA8	Loading dock weathersheds: Weathersheds at loading docks shall be visually verified.	Prior to final construction inspection	Approved construction documents	502.4.5; ASHRAE 90.1 - 5.4.3.3
IIA9	Building entrance vestibules: Required entrance vestibules shall be visually inspected for proper operation.	Prior to final construction inspection	Approved construction documents	502.4.6; ASHRAE 90.1 - 5.4.3.4
IIIB	Mechanical and Service Water Heating Inspections			
IIIB1	Fireplaces: Provision of combustion air and light-fitting fireplace doors shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50	303.1.6; BC 2111; MC Chapters 7, 9; FGC Chapter 6
IIIB2	Outdoor air intakes and exhaust openings: Dampers for stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be visually inspected to verify that such dampers, except where permitted to be gravity dampers, comply with approved construction drawings. Manufacturer's literature shall be reviewed to verify that the product has been tested and found to meet the standard.	As required during installation	Approved construction documents; AMCA 500D	502.4.4; ASHRAE 90.1 - 6.4.3.4
IIIB3	HVAC, service water heating and pool equipment sizing and performance: Equipment sizing, efficiencies and other performance factors of all major equipment units, as determined by the applicant of record, and no less than 15% of minor equipment units, shall be verified by visual inspection and, where necessary, review of manufacturer's data. Pool heaters and covers shall be verified by visual inspection.	Prior to final plumbing and construction inspection	Approved construction documents	503.2, 504.2, 504.7; ASHRAE 90.1 - 6.3, 6.4.1, 6.4.2, 6.8; 7.4, 7.6
IIIB4	HVAC system controls and economizers and service hot water system controls: No less than 20% of each type of required controls and economizers shall be verified by visual inspection and tested for functionality and proper operation. Such controls shall include, but are not limited to: <ul style="list-style-type: none"> Thermostatic Set point overlap restriction Off-hour Shutoff damper Snow-melt system Demand control systems Outdoor heating systems Zones Economizers Air systems Variable air volume fan Hydronic systems Heat rejection equipment fan speed Complex mechanical systems serving multiple zones Ventilation Energy recovery systems Hot gas bypass limitation Temperature Service water heating Hot water system Pool heater and time switches Exhaust hoods Radiant heating systems Controls with seasonally dependent functionality: Controls whose complete operation cannot be demonstrated due to prevailing weather conditions typical of the season during which progress inspections will be performed shall be permitted to be signed off for the purpose of a Temporary Certificate of Occupancy with only a visual inspection, provided, however, that the progress inspector shall perform a supplemental inspection where the controls are visually inspected and tested for functionality and proper operation during the next immediate season thereafter. The owner shall provide full access to the progress inspector within two weeks of the progress inspector's request for such access to perform the progress inspection. For such supplemental inspections, the Department shall be notified by the approved progress inspection agency of any unresolved deficiencies in the installed work within 180 days of such supplemental inspection.	After installation and prior to final construction inspection, except that for controls with seasonally dependent functionality, such testing shall be performed before sign-off for issuance of a Final Certificate of Occupancy	Approved construction documents, including control system narratives; ASHRAE Guideline 1; The HVAC Commissioning Process where applicable	503.2.4, 503.2.5.1, 503.2.11, 503.3, 503.4, 504.3, 504.6, 504.7; ASHRAE 90.1 - 6.3, 6.4, 6.5, 6.7.2.4, 7.4.4, 7.4.5
IIIB5	Duct, plenum and piping insulation and sealing: Installed duct and piping insulation shall be visually inspected to verify proper insulation placement and values. Joints, longitudinal and transverse seams and connections in ductwork shall be visually inspected for proper sealing.	After installation and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA Duct Construction Standards, Metal and Flexible	503.2.7, 503.2.8, 504.5; ASHRAE 90.1 - 6.3, 6.4.4.2, 6.8.2, 6.8.3, 7.4.3
IIIB6	Air leakage testing for high pressure duct systems: For duct systems designed to operate at static pressures in excess of 3 inches w.g. (746 Pa), representative sections, as determined by the progress inspector, totaling at least 25% of the duct area, per ECC 503.2.7.1.3, shall be tested to verify that actual air leakage is below allowable amounts.	After installation and sealing and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA HVAC Air Duct Leakage Test Manual	503.2.7.1.3; ASHRAE 90.1 - 6.4.4.2
IIIC	Electrical Power and Lighting Systems			
IIIC1	Electrical metering: The presence and operation of individual meters or other means of monitoring individual apartments shall be verified by visual inspection for all apartments.	Prior to final electrical and construction inspection	Approved construction documents	505.7
IIIC2	Lighting in dwelling units: Lamps in permanently installed lighting fixtures shall be visually inspected to verify compliance with high-efficiency requirements.	Prior to final electrical and construction inspection	Approved construction documents	505.5.3
IIIC3	Interior lighting power: Installed lighting shall be verified for compliance with the lighting power allowance by visual inspection of fixtures, lamps, ballasts and transformers.	Prior to final electrical and construction inspection	Approved construction documents	505.5; ASHRAE 90.1 - 9.1, 9.2, 9.5, 9.6, 1RCNY §101-07(c)(3)(v)(C)4
IIIC4	Exterior lighting: Installed lighting shall be verified for compliance with source efficacy and/or the lighting power allowance by visual inspection of fixtures, lamps, ballasts and relevant transformers.	Prior to final electrical and construction inspection	Approved construction documents	505.6; ASHRAE 90.1 - 9.4.4, 9.4.5, 1RCNY §101-07(c)(3)(v)(C)4
IIIC5	Lighting controls: Each type of required lighting controls, including: <ul style="list-style-type: none"> occupant sensors interior lighting controls light-reduction controls automatic lighting shut-off daylight zone controls sleeping unit controls exterior lighting controls shall be verified by visual inspection and tested for functionality and proper operation.	Prior to final electrical and construction inspection	Approved construction documents, including control system narratives	505.2, 505.2.2.2; ASHRAE 90.1 - 9.4.1, 9.4.1.2 (as modified by section ECC A102)
IIIC6	Exit signs: Installed exit signs shall be visually inspected to verify that the label indicates that they do not exceed maximum permitted wattage.	Prior to final electrical and construction inspection	Approved construction documents	505.4; ASHRAE 90.1 - 9.4.3
IIIC7	Tandem wiring: Tandem wiring shall be tested for functionality.	Prior to final electrical and construction inspection	Approved construction documents	505.3; ASHRAE 90.1 - 9.4.2
IIIC8	Electric motors (including but not limited to fan motors): Where required by the construction documents for energy code compliance, motor listing or labels shall be visually inspected to verify that they comply with the respective energy requirements in the construction documents	Prior to final electrical and construction inspection	Approved construction documents	503.2.10; ASHRAE 90.1 - 10.4
IID	Other			
IID1	Maintenance information: Maintenance manuals for mechanical service hot water and electrical equipment and systems requiring preventive maintenance shall be reviewed for applicability to installed equipment and systems before such manuals are provided to the owner. Labels required for such equipment or systems shall be inspected for accuracy and completeness.	Prior to sign-off or issuance of Final Certificate of Occupancy	Reference Standard (See ECC Chapter 6) or Other Criteria ¹	303.3, 503.2.9.3; ASHRAE 90.1 - 4.2.2.3, 6.7.2.2, 8.7.2

PROFESSIONAL STATEMENT

To the best of my knowledge, belief and professional judgment, these plans and specifications are in compliance with the 2011 New York City Energy Conservation Code.



Architect's Signature

Architect
Interior Design
Code Consultant
Building Dept
Expediting

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31-18 24th AVENUE LLC
31-12 24th AVENUE
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DRAWING TITLE:
NYCECC NOTES - COM CHECK & PROFESSIONAL STATEMENT

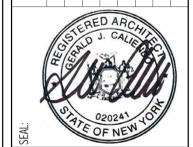
PROJECT ADDRESS:
**KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102**

No.	Date	Description	Drawn By	Checked By	Scale	AS Nbr	DATE
			GB	GLC			
			08062				

GERALD J. CALIENDO



06/19/2014



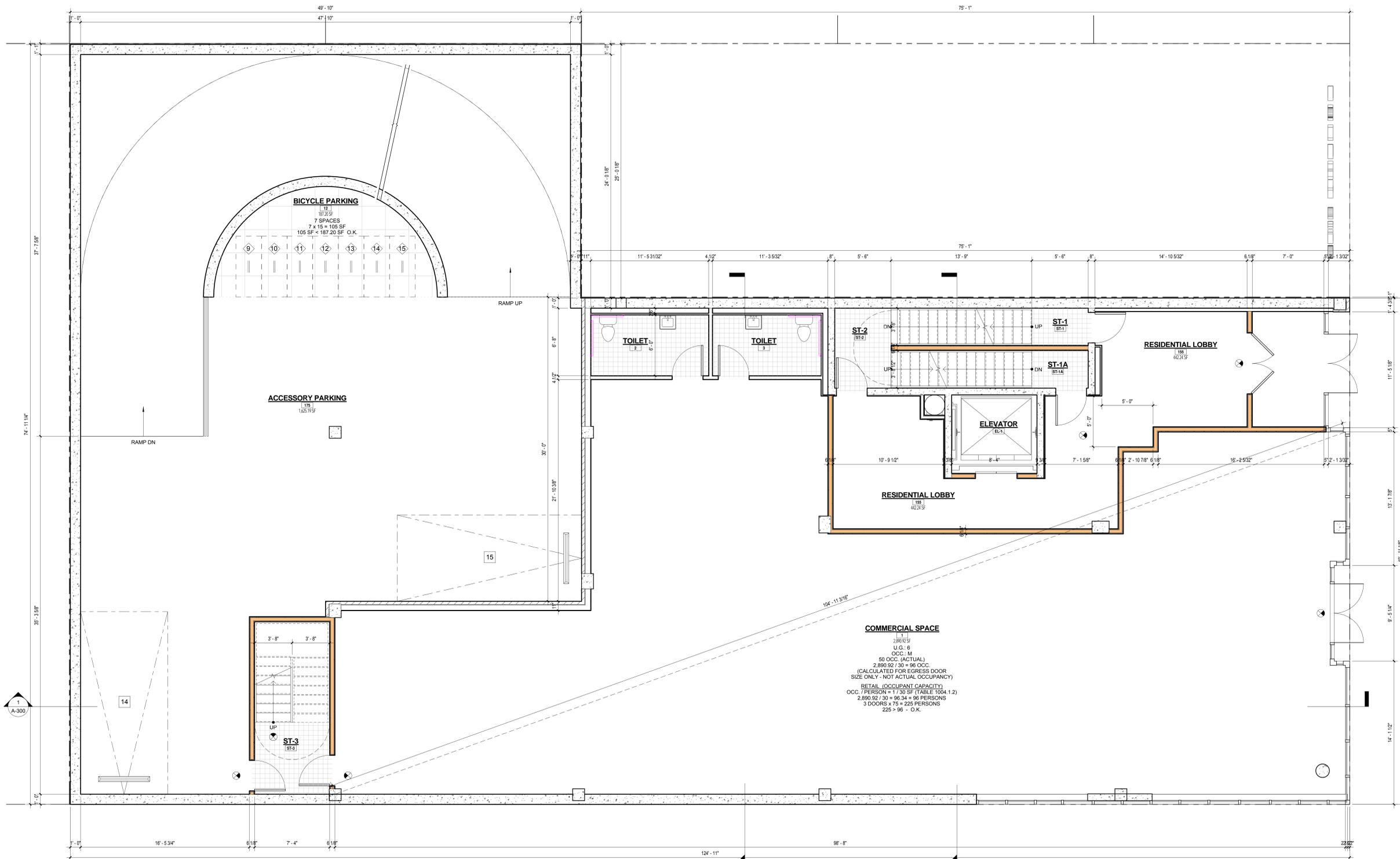
DOB: _____
DRAWING No.: 6 OF 34

EN-001.00

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PLAN NOTES

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- 4 SEE LIGHTING PLANS & SCHEDULE FOR LIGHTING OF COMMON AREAS.

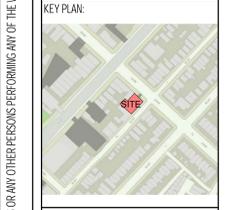


1 0-CELLAR LEVEL PLAN
Scale: 1/4" = 1'-0"

Architecture
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 Building Dept
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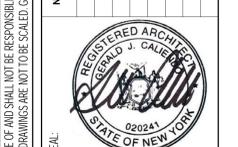
OWNER:

31-18 24th AVENUE LLC
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 ASTORIA, NY 11102

CELLAR LEVEL PLAN

KATINA CONDOS - 29 UNIT MIXED USE BUILDING
 31-12 24th AVENUE
 ASTORIA, NY 11102

No.	Date	Description



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 CHECKED BY: GJC
 JOB No: 08062
 SCALE: AS SHOWN
 DATE: 04/05/14

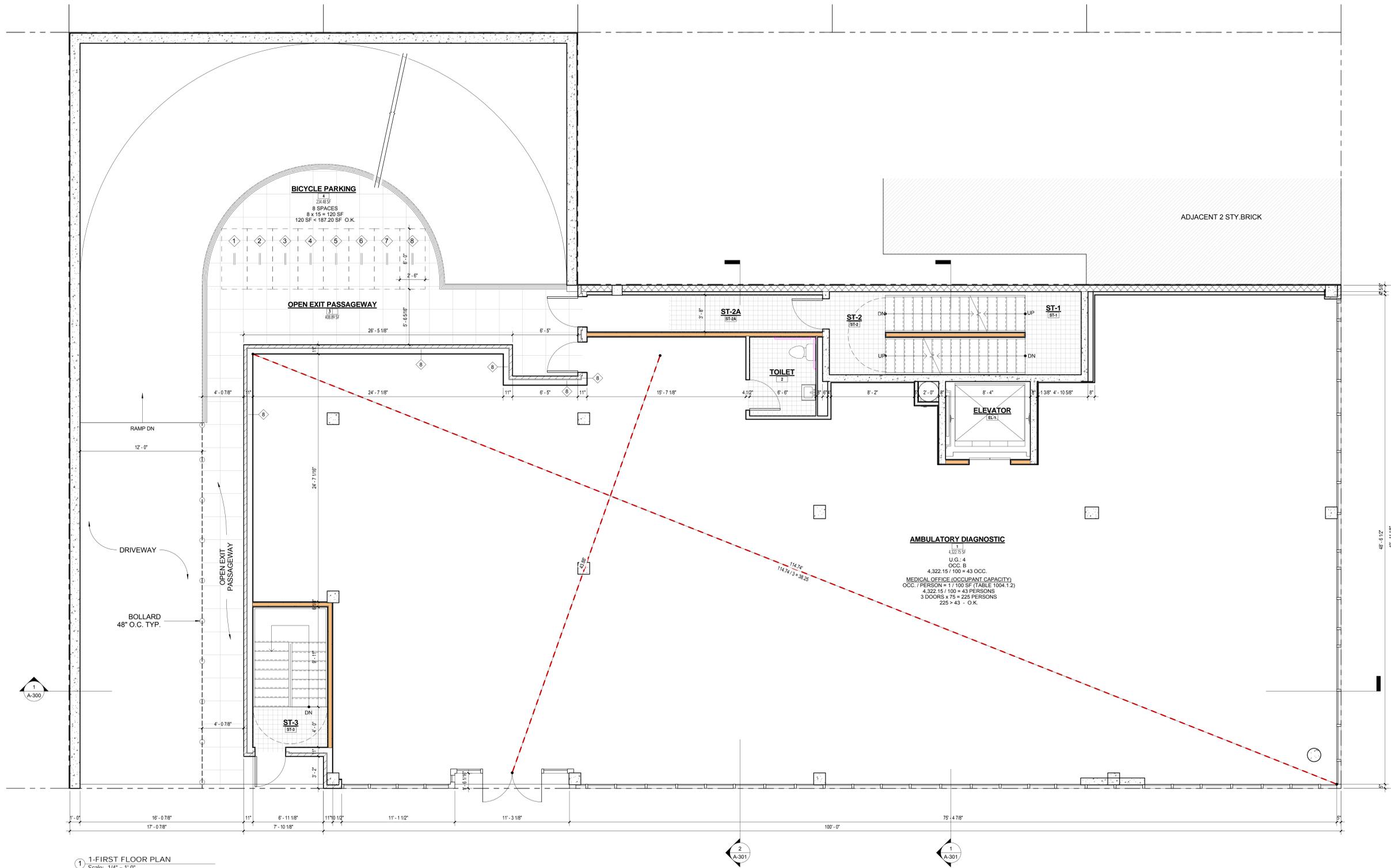
DRAWING No.: 8 OF 34

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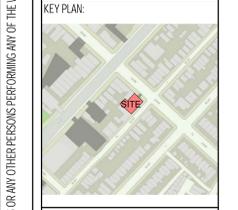
1-1 FIRST FLOOR PLAN
Scale: 1/4" = 1'-0"

Architecture
Interior Design
Code Consultant
Building Dept
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OWNER:
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ASTORIA, NY 11102

DRAWING TITLE:
FIRST FLOOR PLAN

PROJECT ADDRESS:
**KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102**

Drawn By	Checked By	Job No.	Scale	AS Nbr/01	Date
GB	GJC	08082			

No.	Date	Description

SEAL:

DOB:

DRAWING No.: 9 OF 34

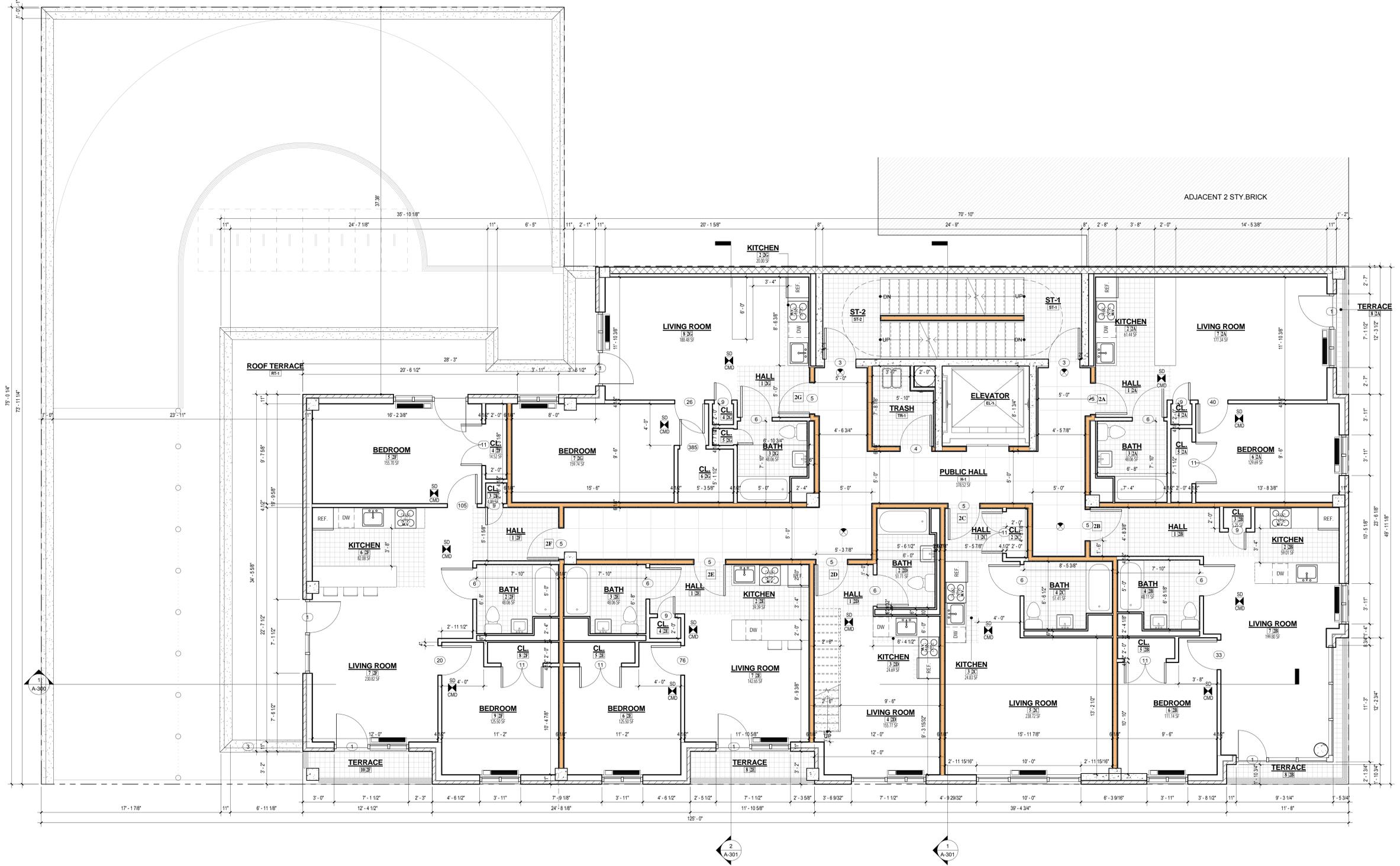
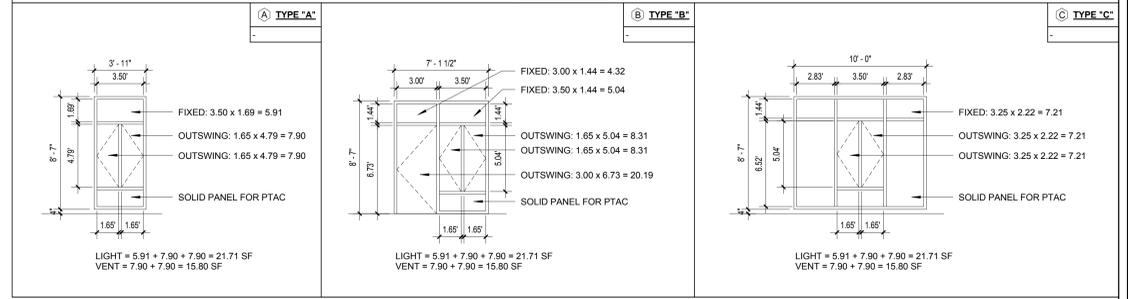
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WINDOW TYPES



① 2-SECOND FLOOR PLAN
Scale: 1/4" = 1'-0"

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DRAWING TITLE: SECOND FLOOR PLAN

PROJECT ADDRESS: KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th Avenue
ASTORIA, NY 11102

DRAWN BY: GB
CHECKED BY: GJC

JOB No: 08082
SCALE: AS SHOWN
DATE: 04/05/14

No.	Date	Description

SEAL:

REGISTERED ARCHITECT
GERALD J. CALIENDO
020241
STATE OF NEW YORK

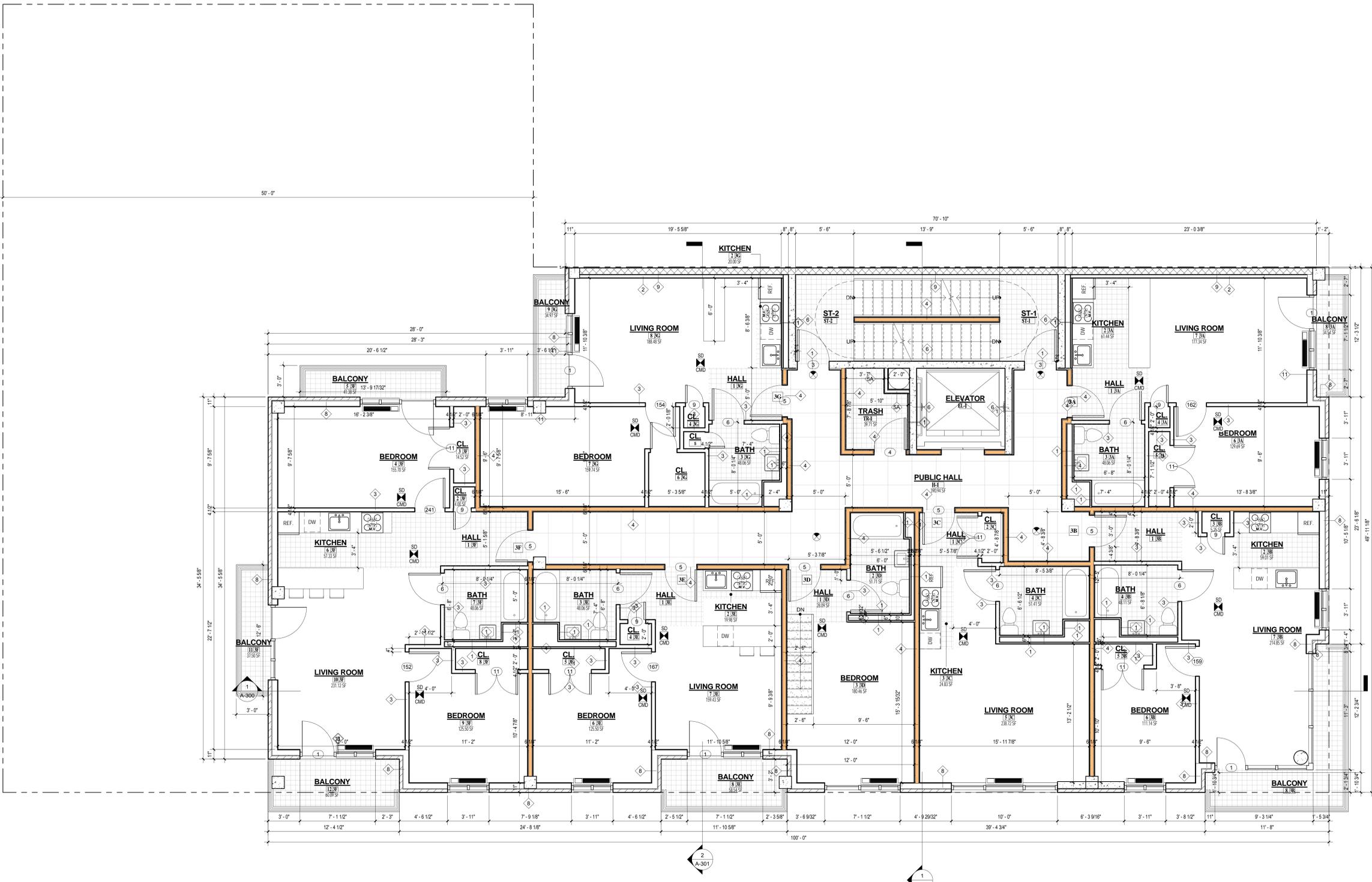
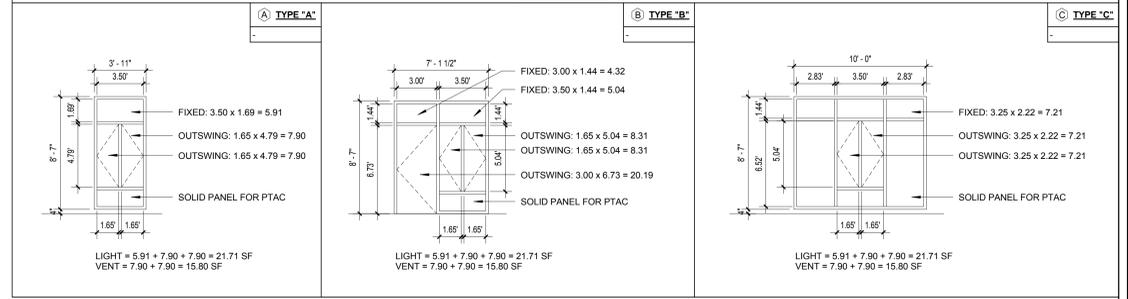
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WINDOW TYPES



1 3-THIRD FLOOR PLAN
Scale: 1/4" = 1'-0"

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OWNER:
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31-12 24th AVENUE
ASTORIA, NY 11102

THIRD FLOOR PLAN

PROJECT ADDRESS:
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWN BY:	GB
CHECKED BY:	GJC
JOB No:	08082
SCALE:	AS SHOWN
DATE:	04/05/14

No.	Date	Description

REGISTERED ARCHITECT
GERALD J. CALIENDO
020241
STATE OF NEW YORK

SEAL:

DRAWING No.: 11 OF 34

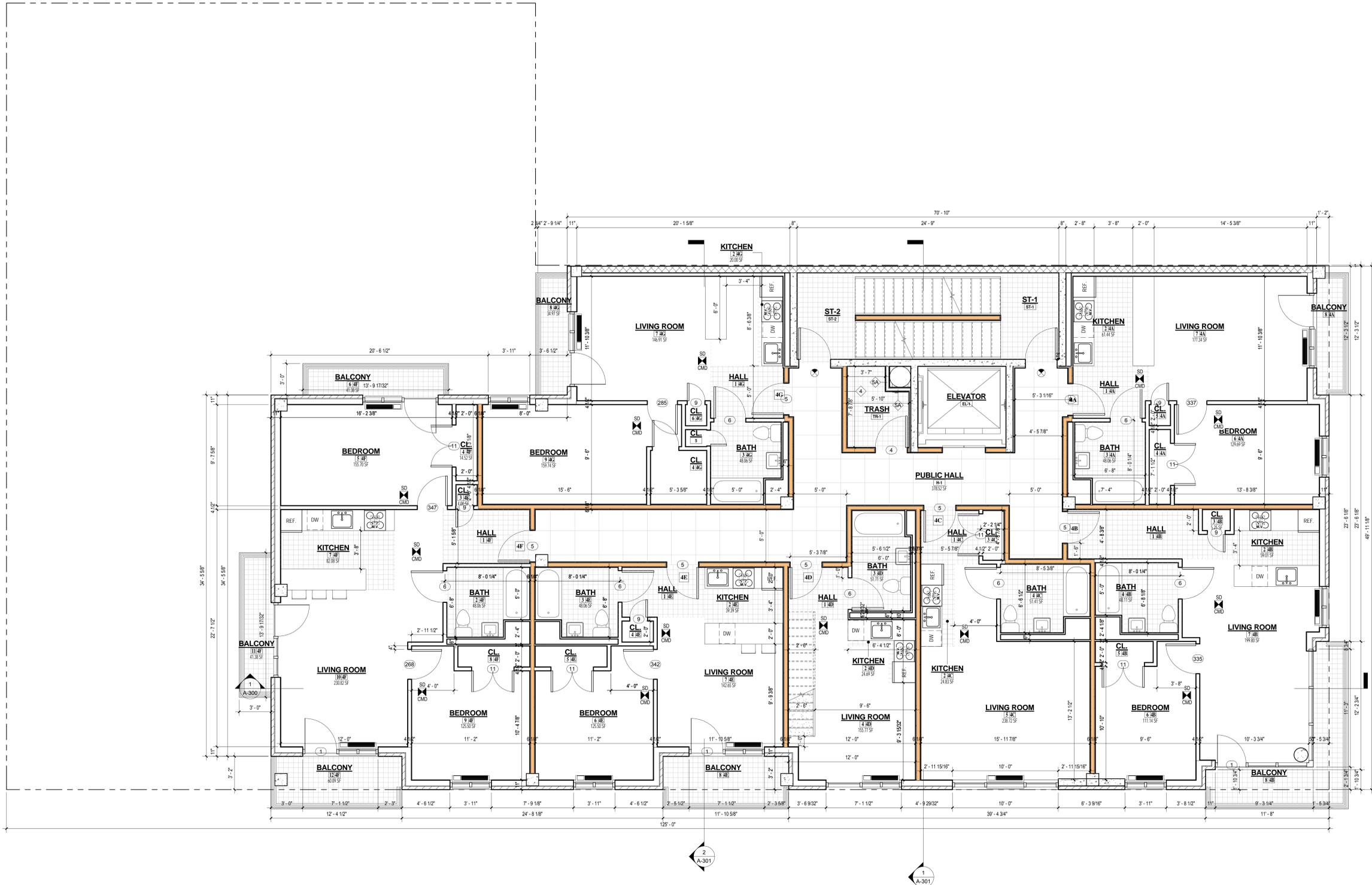
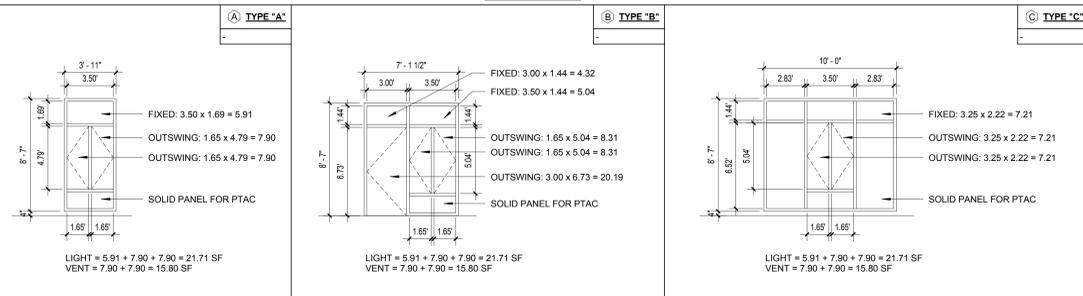
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WINDOW TYPES



1 4-FOURTH FLOOR PLAN
Scale: 1/4" = 1'-0"

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OWNER:
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31-12 24th AVENUE
ASTORIA, NY 11102

FOURTH FLOOR PLAN

PROJECT ADDRESS:
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWING TITLE: **FOURTH FLOOR PLAN**

DRAWN BY: **GB**

CHECKED BY: **GJC**

JOB No: **08062**

SCALE: **AS SHOWN**

DATE: **04/05/14**

No.	Date	Description



DRWING No.: **12 OF 34**

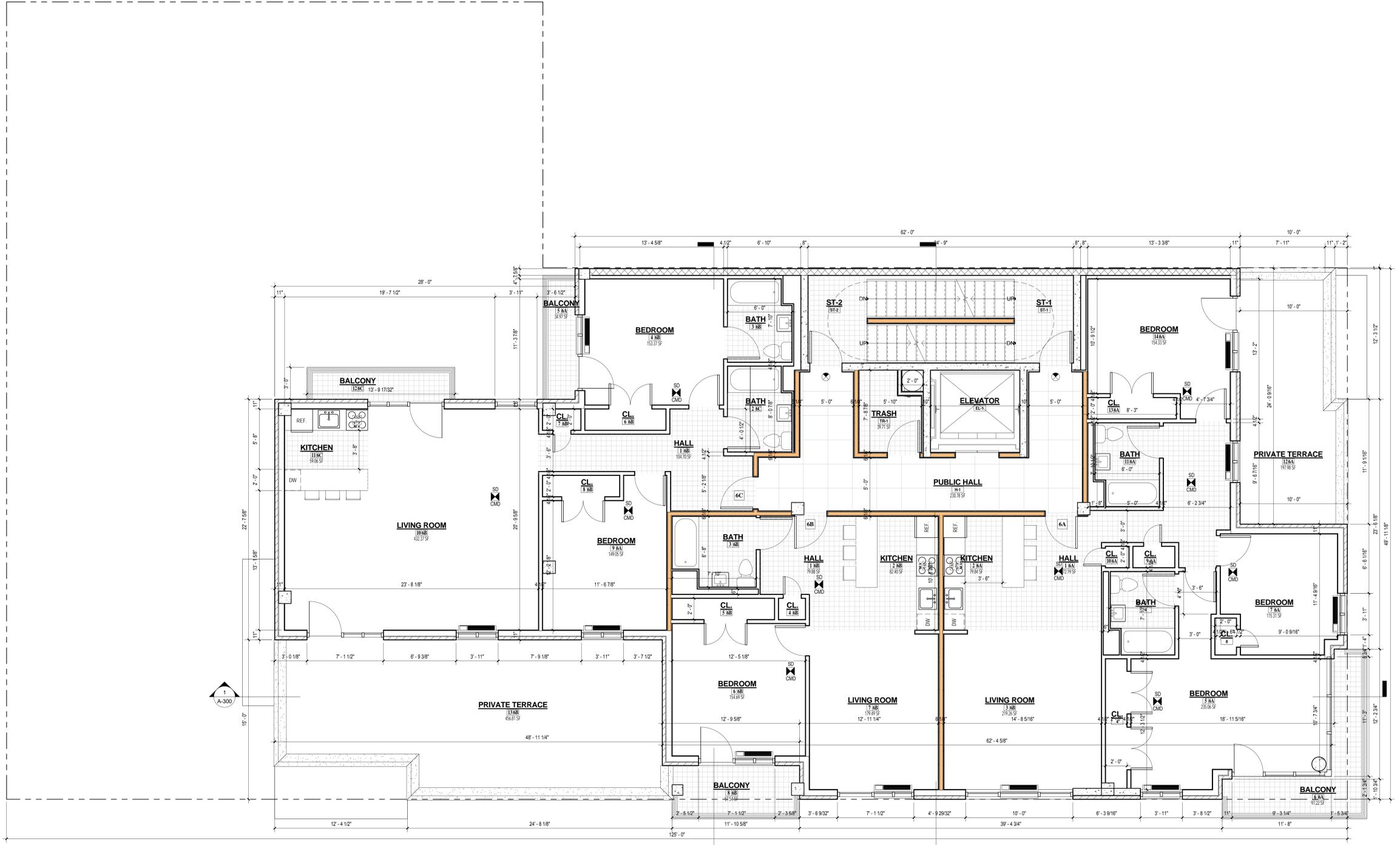
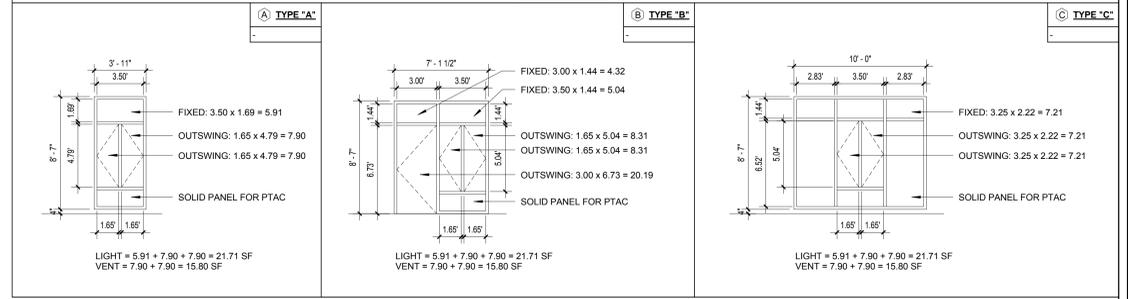
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- 2 BUILDING TO BE FULLY SPRINKLERED.
- 3 WITHIN DWELLING UNITS, AT LEAST 50% OF LIGHTING TO BE HIGH-EFFICACY LAMPS.
- 4 SEE LIGHTING PLANS & SCHEDULE FOR LIGHTING OF COMMON AREAS.

WINDOW TYPES



1 6-SIXTH FLOOR PLAN
Scale: 1/4" = 1'-0"

DORMER WIDTH CALCULATIONS @ 32nd STREET

MAX WIDTH OF DORMER: (80% OF STREETWALL) - 1% FOR EACH FOOT THAT DORMER IS ABOVE MAX BASE HEIGHT
STREETWALL @ 32nd STREET = 98.52
PROPOSED HEIGHT OF DORMER ABOVE MAX BASE HEIGHT = 10.07
MAX WIDTH OF DORMER: (80% OF STREETWALL) - (10% OF STREETWALL)
PROPOSED WIDTH OF DORMER @ 32nd STREET = (98.52 x 60%) - (98.52 x 10%) = 59.11 - 9.85 = 68.97

DORMER WIDTH CALCULATIONS @ 24th AVENUE

MAX WIDTH OF DORMER: (80% OF STREETWALL) - 1% FOR EACH FOOT THAT DORMER IS ABOVE MAX BASE HEIGHT
STREETWALL @ 24th AVENUE = 98.83
PROPOSED HEIGHT OF DORMER ABOVE MAX BASE HEIGHT = 10.07
MAX WIDTH OF DORMER: (80% OF STREETWALL) - (10% OF STREETWALL)
PROPOSED WIDTH OF DORMER @ 24th AVENUE = (98.83 x 60%) - (98.83 x 10%) = 59.27 - 9.88 = 69.17

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OWNER:
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31-12 24th AVENUE
ASTORIA, NY 11102

SIXTH FLOOR PLAN

KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWING TITLE	SIXTH FLOOR PLAN
PROJECT ADDRESS	KATINA CONDOS - 29 UNIT MIXED USE BUILDING 31-12 24th AVENUE ASTORIA, NY 11102

NO.	DATE	DESCRIPTION



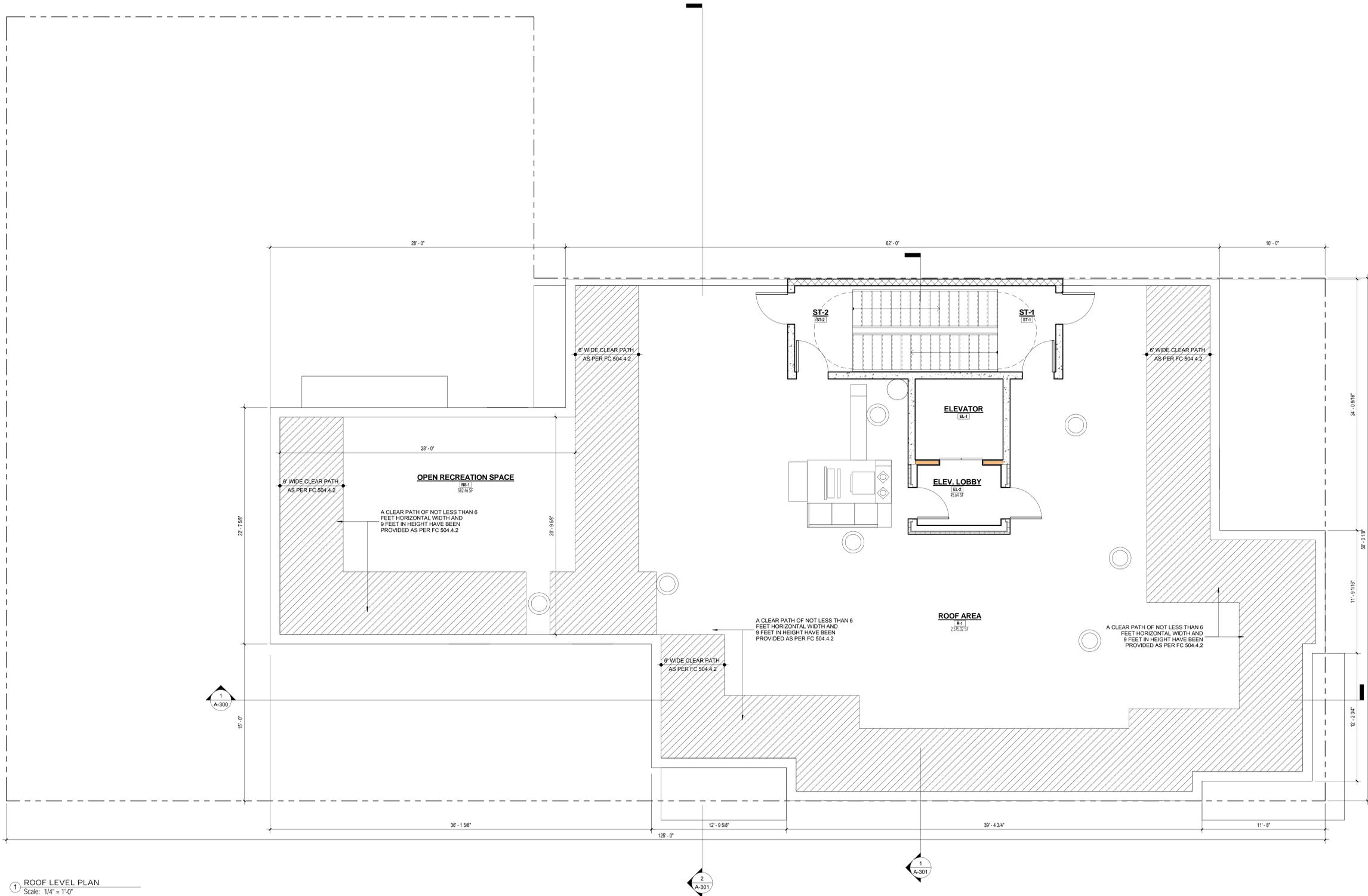
DRWING No.:	14 OF 34
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A-107.00

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PLAN NOTES

- 1 THIS IS NOT A MODULAR CONSTRUCTION BUILDING.
- 2 BUILDING TO BE FULLY SPRINKLERED.
- 3 WITHIN DWELLING UNITS, AT LEAST 50% OF LIGHTING TO BE HIGH-EFFICACY LAMPS.
- 4 SEE LIGHTING PLANS & SCHEDULE FOR LIGHTING OF COMMON AREAS.



1 ROOF LEVEL PLAN
Scale: 1/4" = 1'-0"

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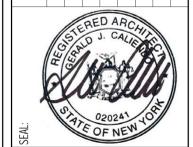
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o: (718) 224-9091

OWNER:
31-18 24th AVENUE LLC
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWING TITLE: **ROOF LEVEL PLAN**

PROJECT ADDRESS: **KATINA CONDOS - 29 UNIT MIXED USE BUILDING**
31-12 24th AVENUE
ASTORIA, NY 11102

No.	Date	Description	Drawn By	Checked By	Job No.	Scale	AS Nbrd	DATE
			GB	GJC	08082			



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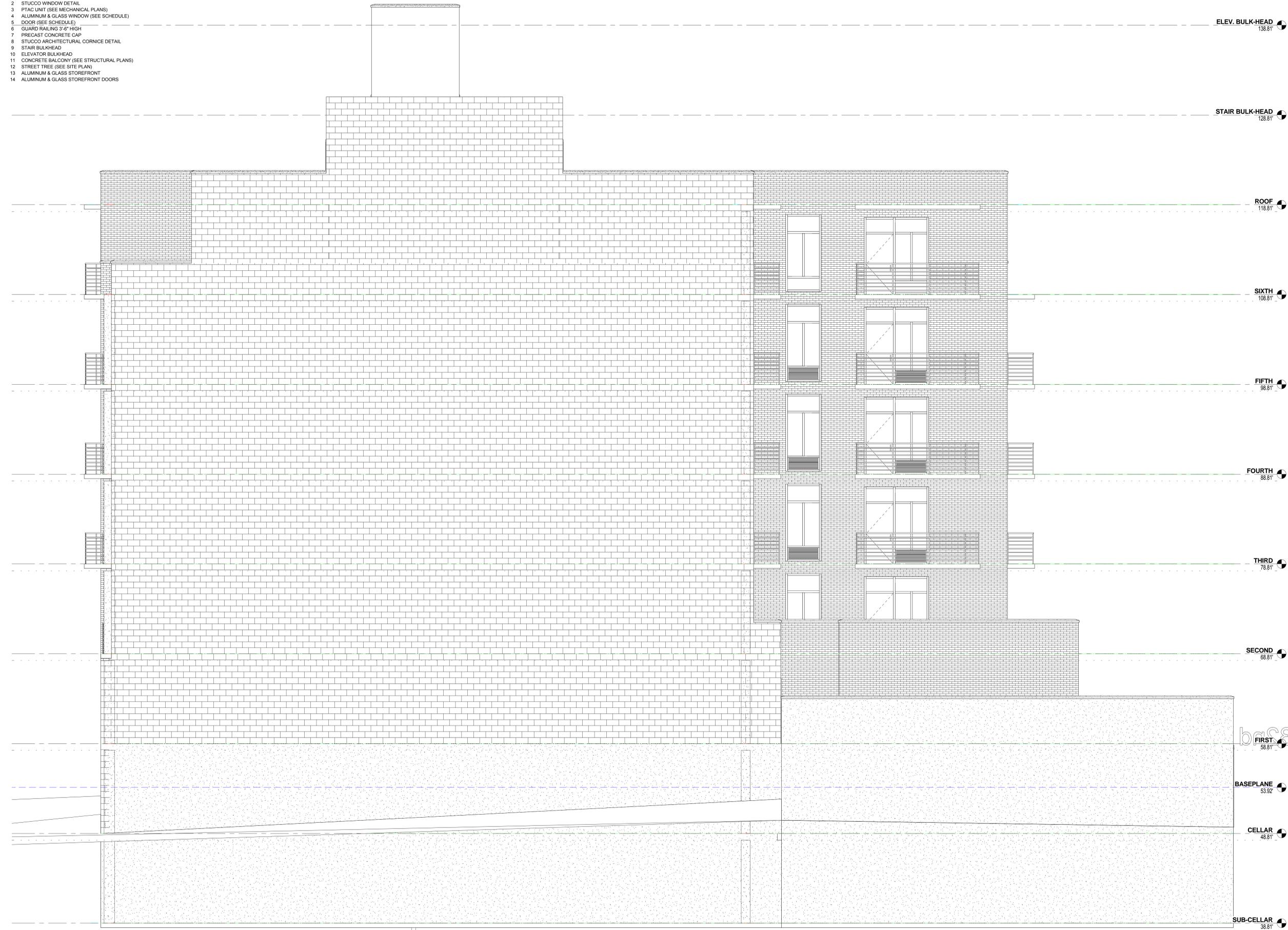
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ELEVATION FINISH NOTES

- 1 BRICK VENEER, COLOR/STYLE/FINISH BY OWNER
- 2 STUCCO WINDOW DETAIL
- 3 PTAC UNIT (SEE MECHANICAL PLANS)
- 4 ALUMINUM & GLASS WINDOW (SEE SCHEDULE)
- 5 DOOR (SEE SCHEDULE)
- 6 GUARD RAILING 3'-6" HIGH
- 7 PRECAST CONCRETE CAP
- 8 STUCCO ARCHITECTURAL CORNICE DETAIL
- 9 STAIR BULKHEAD
- 10 ELEVATOR BULKHEAD
- 11 CONCRETE BALCONY (SEE STRUCTURAL PLANS)
- 12 STREET TREE (SEE SITE PLAN)
- 13 ALUMINUM & GLASS STOREFRONT
- 14 ALUMINUM & GLASS STOREFRONT DOORS



North
Scale: 1/4" = 1'-0"

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Code Consultant
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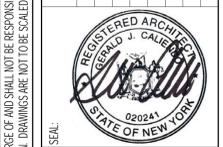
OWNER:
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31-12 24th AVENUE
ASTORIA, NY 11102

DRAWING TITLE: **24th AVENUE ELEVATION**

PROJECT ADDRESS: **KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102**

Drawn By:	Checked By:	Job No:	Scale:	As Noted:	Date:
GB	GJC	08062			04/05/14

No.	Date	Description



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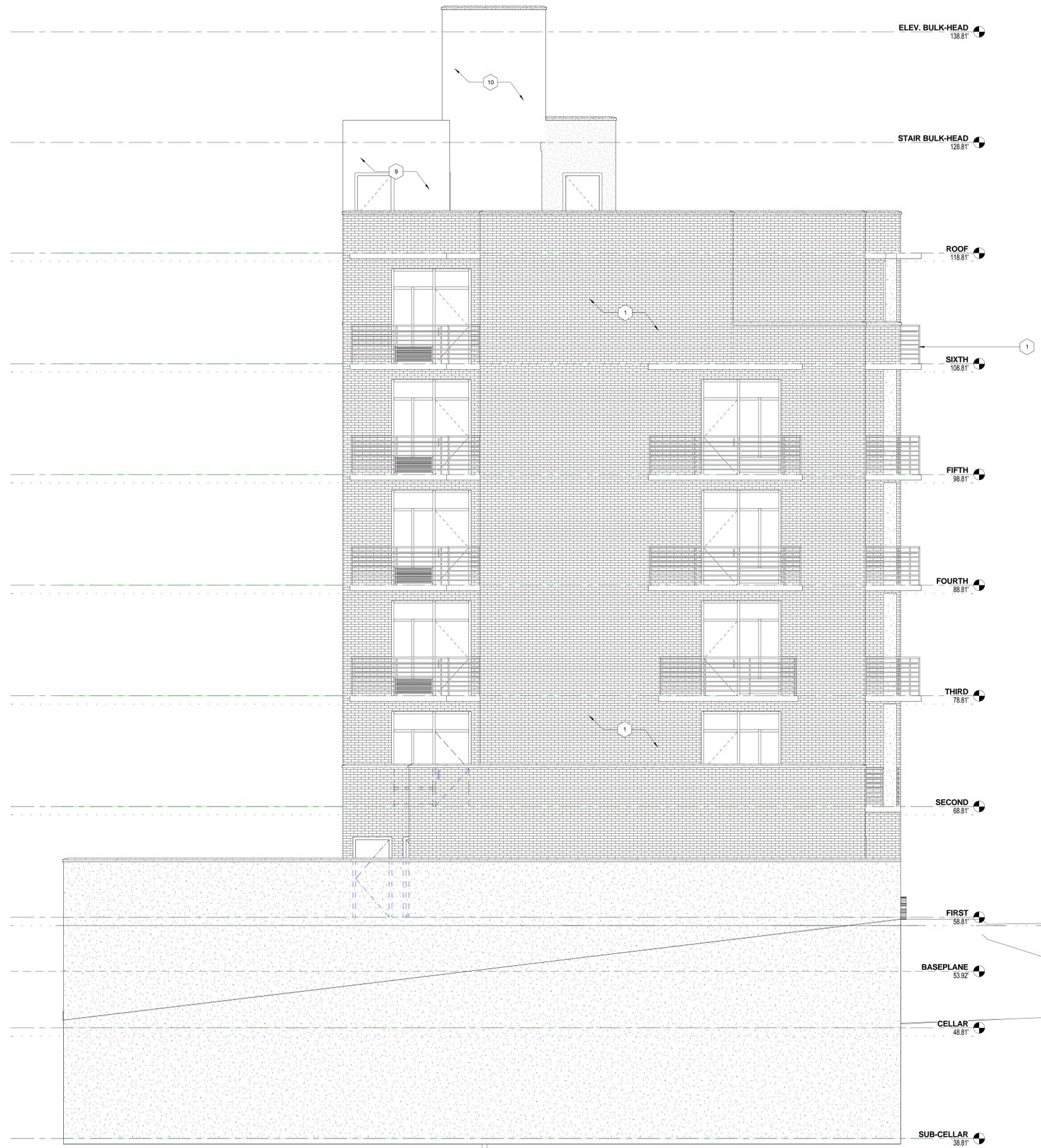
DRAWING No.: 17 OF 34

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ELEVATION FINISH NOTES

- 1 BRICK VENEER, COLOR/STYLE/FINISH BY OWNER
- 2 STUCCO WINDOW DETAIL
- 3 PTAC UNIT (SEE MECHANICAL PLANS)
- 4 ALUMINUM & GLASS WINDOW (SEE SCHEDULE)
- 5 DOOR (SEE SCHEDULE)
- 6 GUARD RAILING 3'-6" HIGH
- 7 PRECAST CONCRETE CAP
- 8 STUCCO ARCHITECTURAL CORNICE DETAIL
- 9 STAIR BULKHEAD
- 10 ELEVATOR BULKHEAD
- 11 CONCRETE BALCONY (SEE STRUCTURAL PLANS)
- 12 STREET TREE (SEE SITE PLAN)
- 13 ALUMINUM & GLASS STOREFRONT
- 14 ALUMINUM & GLASS STOREFRONT DOORS



1 West
Scale: 1/4" = 1'-0"

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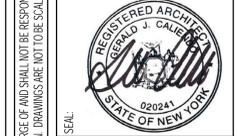
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31-12 24th AVENUE
ASTORIA, NY 11102

BUILDING ELEVATIONS

PROJECT ADDRESS:
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

DRAWN BY:	GB
CHECKED BY:	GJC
JOB No:	08082
SCALE:	AS SHOWN
DATE:	04/05/14

No.	Date	Description



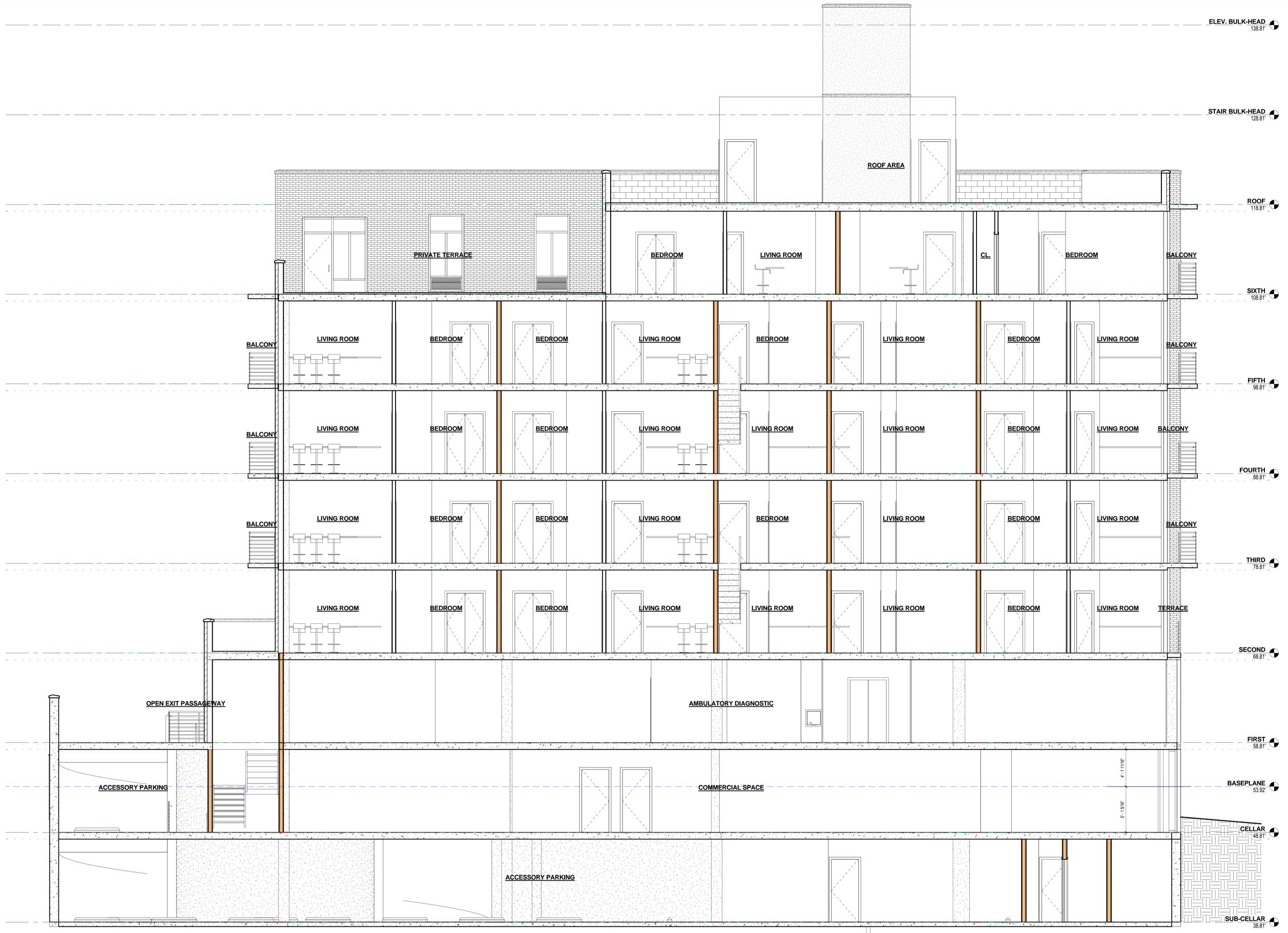
SEAL:

DOB:

DRAWING No.: 19 OF 34

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ELEV. BULK-HEAD 136.81'

STAIR BULK-HEAD 126.81'

ROOF 116.81'

SIXTH 106.81'

FIFTH 96.81'

FOURTH 86.81'

THIRD 76.81'

SECOND 66.81'

FIRST 56.81'

BASEPLANE 53.92'

CELLAR 46.81'

SUB-CELLAR 36.81'

1 LONGITUDINAL SECTION
Scale: 1/4" = 1'-0"

Architectural
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KEY PLAN:

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OWNER:
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31-12 24th AVENUE
ASTORIA, NY 11102

BUILDING SECTIONS
KATINA CONDOS - 29 UNIT MIXED USE BUILDING
31-12 24th AVENUE
ASTORIA, NY 11102

No.	Date	Description

DRAWING TITLE: KATINA CONDOS - 29 UNIT MIXED USE BUILDING

PROJECT ADDRESS: 31-12 24th AVENUE, ASTORIA, NY 11102

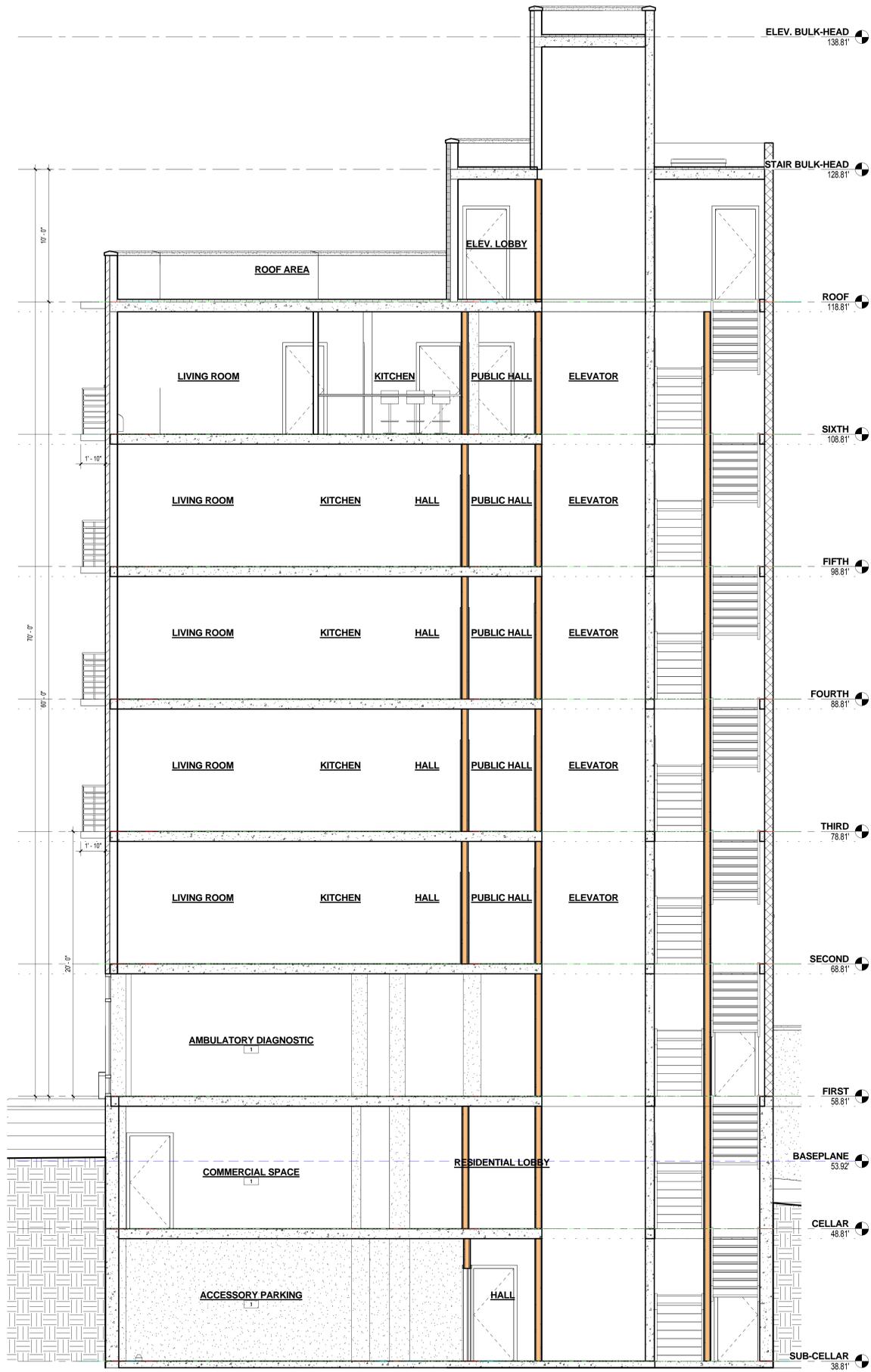
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CHECKED BY: GJC
JOB No: 09082
SCALE: AS SHOWN
DATE: 04/05/14

SEAL: REGISTERED ARCHITECT
GERALD J. CALIENO
STATE OF NEW YORK
020241

DOB: DRAWING No.: 20 OF 34

A-300.00

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1 TRANSVERSE SECTION - 1
Scale: 1/4" = 1'-0"



2 TRANSVERSE SECTION - 2
Scale: 1/4" = 1'-0"

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 INTERIOR DESIGN
 CODE CONSULTANT
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OWNER:
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BUILDING SECTIONS
 KATINA CONDOS - 29 UNIT MIXED USE BUILDING
 31-12 24th AVENUE
 ASTORIA, NY 11102

No.	Date	Description

DRAWING TITLE: BUILDING SECTIONS
 DRAWN BY: GB
 CHECKED BY: GJC
 JOB No: 08082
 SCALE: AS NOTED
 DATE: 04/05/14

SEAL:
 REGISTERED ARCHITECT
 GERALD J. CALIENDO
 STATE OF NEW YORK
 020241

DOB: _____
 DRAWING No.: 21 OF 34
A-301.00

APPENDIX 2

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Tres Construction, LLC have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Tres Construction, LLC will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, Sarah Pong, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 788-8841.

Project Contact List: OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community.

Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the

Site Contact List on request. A copy of the Site Contact List is maintained by OER's project manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at brownfields@cityhall.nyc.gov.

Repositories: A document repository is maintained online. Internet access to view OER's document repositories is available at public libraries. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project. The library nearest the Site is:

Queens Public Library at Steinway
21-45 31 Street
Long Island City, NY 11105
(718) 728-1965
Monday: 9:00am to 8:00pm
Tuesday: 1:00pm to 6:00pm
Wednesday: 10:00pm to 6:00pm
Thursday: 12:00pm to 8:00pm
Friday: 10:00am to 6:00pm
Saturday: 10:00am to 5:30pm
Sunday: Closed

Digital Documentation: NYC OER requires the use of digital documents in our repository as a means of minimizing paper use while also increasing convenience in access and ease of use.

Issues of Public Concern: Enrollee is required to identify whether there are specific issues of concern to stakeholders proximate to the project site. Such issues include but are not limited to interests of Environmental Justice communities. This section should list any site-specific issues of public concern and the method that they will be used resolved them. If needed, contact OER for additional guidance on how to identify issues of public concern.

Public Notice and Public Comment: Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with

descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be reviewed and approved by OER prior to distribution and mailed by the Enrollee. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

Citizen Participation Milestones: Public notice and public comment activities occur at several steps during a typical NYC VCP project. These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan:** Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.
- **Public Notice announcing the approval of the RAWP and the start of remediation:** Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.
- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion:** Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.

APPENDIX 3

SUSTAINABILITY STATEMENT

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

Reuse of Clean, Recyclable Materials and Reduced Consumption of Non-

Renewable Resources: Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction.

An estimate of the quantity (in tons) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency:

Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings.

Best efforts will be made to quantify energy efficiencies achieved during the remediation and will be reported in the Remedial Action Report (RAR). Where energy savings cannot be easily quantified, a gross indicator of the amount of energy saved or the means by which energy savings was achieved will be reported.

Conversion to Clean Fuels: Use of clean fuel improves NYC's air quality by reducing harmful emissions.

Natural gas will be utilized for fuel in the new building.

An estimate of the volume of clean fuels used during remedial activities will be quantified and reported in the RAR.

Recontamination Control: Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later or impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of contamination from off-Site.

An estimate of the area of the Site that utilizes recontamination controls under this plan will be reported in the RAR in square feet.

Stormwater Retention: Stormwater retention improves water quality by lowering the rate of combined stormwater and sewer discharges to NYC's sewage treatment plants during periods of precipitation, and reduces the volume of untreated influent to local surface waters.

An estimate of the enhanced stormwater retention capability of the redevelopment project will be included in the RAR.

Paperless Voluntary Cleanup Program: Tres Construction, LLC is participating in OER's Paperless Voluntary Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

Low-Energy Project Management Program: Tres Construction, LLC is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

Trees and Plantings: Trees and other plantings provide habitat and add to NYC's environmental quality in a wide variety of ways. Native plant species and native habitat provide optimal support to local fauna, promote local biodiversity, and require less maintenance. An estimate of the land area that will be vegetated, including the number of trees planted or preserved, will be reported in square feet in the RAR.

APPENDIX 4

SOIL/MATERIALS MANAGEMENT PLAN

1.1 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the final remedial report. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of final signoff by OER.

1.2 Stockpile Methods

Excavated soil from suspected areas of contamination (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials.

Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event.

Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

1.3 Characterization of Excavated Materials

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

1.4 Materials Excavation, Load-Out, and Departure

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site;
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

1.5 Off-Site Materials Transport

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized.

Outbound truck transport routes are described in the remedial report. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

1.6 Materials Disposal Off-Site

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in New York City under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the final remedial report.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the final remedial report.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility). Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be

reported in the final remedial report. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the final remedial report. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), including transport to a Part 360-16 Registration Facility, a formal request will be made for approval by OER with an associated plan compliant with 6NYCRR Part 360-16. This request and plan will include the location, volume and a description of the material to be recycled, including verification that the material is not impacted by site uses and that the material complies with receipt requirements for recycling under 6NYCRR Part 360. This material will be appropriately handled on-Site to prevent mixing with impacted material.

1.7 Materials Reuse On-Site

Soil and fill that is derived from the property that meets the Soil Cleanup Objectives (SCOs) established in this plan may be reused on-Site. The SCOs for on-Site reuse are listed in Section 4.2 of this cleanup plan. 'Reuse on-Site' means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on land with comparable levels of contaminants in soil/fill material, compliant with applicable laws and regulations, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this remedial plan are followed. The expected location for placement of reused material is shown in Section 4.2.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

1.8 Demarcation

After completion of hotspot removal and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent

material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the SMP; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

1.9 Import of Backfill Soil From Off-Site Sources

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in Section 4.2. Imported soils will not exceed groundwater protection standards established in Part 375. Imported soils for Track 1 remedial action projects will not exceed Track 1 SCO's. A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.

- All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this remedial plan. The final remedial report will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.
- All material will be subject to source screening and chemical testing.
- Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:
 - Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
 - The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
 - Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the final remedial report. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

1.10 Fluids Management

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the

New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

1.11 Stormwater Pollution Prevention

Applicable laws and regulations pertaining to stormwater pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this remedial plan (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

1.12 Contingency Plan for Unknown Contamination Sources

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. These findings

will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

1.13 Odor, Dust, and Nuisance Control

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying this remedial plan.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all

dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying this remedial plan.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided during Site clearing and grubbing and during the remedial program, as necessary, to prevent nuisances.

APPENDIX 5

CONSTRUCTION HEALTH AND SAFETY PLAN

CONSTRUCTION HEALTH & SAFETY PLAN

**31-12 24TH AVENUE
QUEENS, NEW YORK**

**PREPARED FOR:
TRES CONSTRUCTION, LLC
24-08 32ND STREET
QUEENS, NEW YORK 11102**

Prepared by:



ATHENICA ENVIRONMENTAL
SERVICES, INC.

Environmental Consultants

45-09 GREENPOINT AVENUE
LONG ISLAND CITY, NY 11104

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1.0 *GLOSSARY OF TERMS*

AHA:	Activity Hazard Analysis
BZ:	Breathing Zone
C:	Ceiling Limit
CNS	Central Nervous System
CTPV:	Coal tar pitch volatiles
CRZ:	Contamination Reduction Zone
CSP:	Construction Superintendent
CZ:	Clean Zone
dBA:	Decibels Adjusted
ERCP:	Emergency Response and Contingency Plan
EZ:	Exclusion Zone
FDNY:	New York City Fire Department
GI:	Gastrointestinal
HSO:	Health & Safety Officer
IP:	Ionization Potential
Mg/m ³ :	Micrograms per cubic meter
MPH:	Miles per hour

NIOSH:	National Institute for Occupational Safety and Health
OSHA:	Occupational Health and Safety Administration
Owner:	Crescent Owners, LLC
PAHs:	Poly aromatic hydrocarbons
PEL:	Permissible Exposure Limit
PM:	Project Manager
PPE:	Personal Protective Equipment
PPM:	Parts per Million
PSM:	Project Safety Manager
SHASP:	Site-Specific Health and Safety Plan:
SITE:	40-05 Crescent Street, Queens, NY
STEL:	Short-term exposure limit (15 minutes)
SZ:	Support Zone
TLV:	Threshold Limit Value
TWA:	Time-weighted average (8 hours)
USEPA:	United States Environmental Protection Agency
VP:	Vapor Pressure at approximately 68 F° in mm Hg

2.0 *INTRODUCTION*

The Site is located at 31-12 24th Avenue, Queens, New York (the “Site”). The Site is approximately 7,500-square feet. Currently, The Site contains one 2-story building with partial basement and one 1-story building with no basement. A map of the site boundary is shown in Figure 2-1.

This Site-Specific Construction Health and Safety Plan (CHASP) has been developed by Athenica Environmental Services (“Athenica”) for specific activities associated with the construction of a new residential building at the Site.

This CHASP documents the policies and procedures which will protect workers from potential chemical hazards associated with the soils and/or fill at this Site. Other plans and documentation will establish the policies and procedures that will protect workers from potential physical hazards associated with traditional demolition and construction activities at the Site.

This plan assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise during the disturbance of soil/fill at the Site. This CHASP was prepared by the general contractor’s Environmental Consultant, Athenica Environmental Services (Athenica). The general contractor and its subcontractors will be required to utilize this plan when working at the site.

Although this plan focuses on the specific work activities planned for this site, it must remain flexible because of the nature of this work. Conditions may change and unforeseen situations may arise that require modifications from the original plan. Therefore, Athenica only makes representations or warranties as to the adequacy of this CHASP for currently anticipated activities and conditions. This flexibility allows modification by authorized personnel, e.g. Project Manager, Project Safety Manager. All changes to procedures in this plan will be documented in writing using the form provided in Appendix B.

Refusal or failure to comply with this CHASP or violation of any safety procedures by field personnel and/or subcontractors may result in immediate removal from the Site following consultation with the Project Safety Manager (PSM) and the Project Manager (PM).

It is expected that this CHASP will be implemented at a multi-employer work site. Information and references within this plan shall in no way imply or alleviate any other Site contractor from their responsibility to comply with any and all applicable State or Federal statutes or regulations regarding the completion of this project. It is the responsibility of each employer to communicate and coordinate work planning so as to prevent their work activities from becoming

a potential hazard to other workers at the project site. Failure to communicate will not alter an employer's responsibilities or obligations for any resulting injuries to their employees.

2.1 SITE HISTORY

A Phase I Environmental Site Assessment was performed by Athenica in May 2015. Historical Sanborn maps show the Site was developed from at least 1915. The Site was shown as developed with various commercial uses including lamp shade manufacturing and as an unspecified use warehouse. Portions of the Site are also shown as developed with small structures designated as "auto" which were most likely former parking garages. Historical City Directories also list several commercial occupants of the Site including: Terrazzo Flooring Co, Kovar Products Co, Astoria Novelty Co, C&L Cabinets & Woodturning, Greenlight Energy Incorporated and Tres Construction.

Summary of work performed under the Remedial Investigation is as follows:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Performed a ground penetrating radar (GPR) survey;
3. Installed four (4) soil borings across the entire project Site, and collected nine (9) soil samples for chemical analysis from the soil borings to evaluate soil quality;
4. Monitoring wells could not be installed at the Site due to the Site conditions. Monitoring wells will be completed after the demolition of the on Site structures and groundwater quality beneath the Site will be evaluated.
5. Installed two (2) soil vapor probes around Site perimeter and collected two (2) samples for chemical analysis.

2.2 SCOPE OF WORK

Although the construction of the new residential and commercial mix use building involves many different activities, only those activities associated with the disturbance and handling of urban fill are addressed in this CHASP.

The principal tasks covered in this HASP include the following:

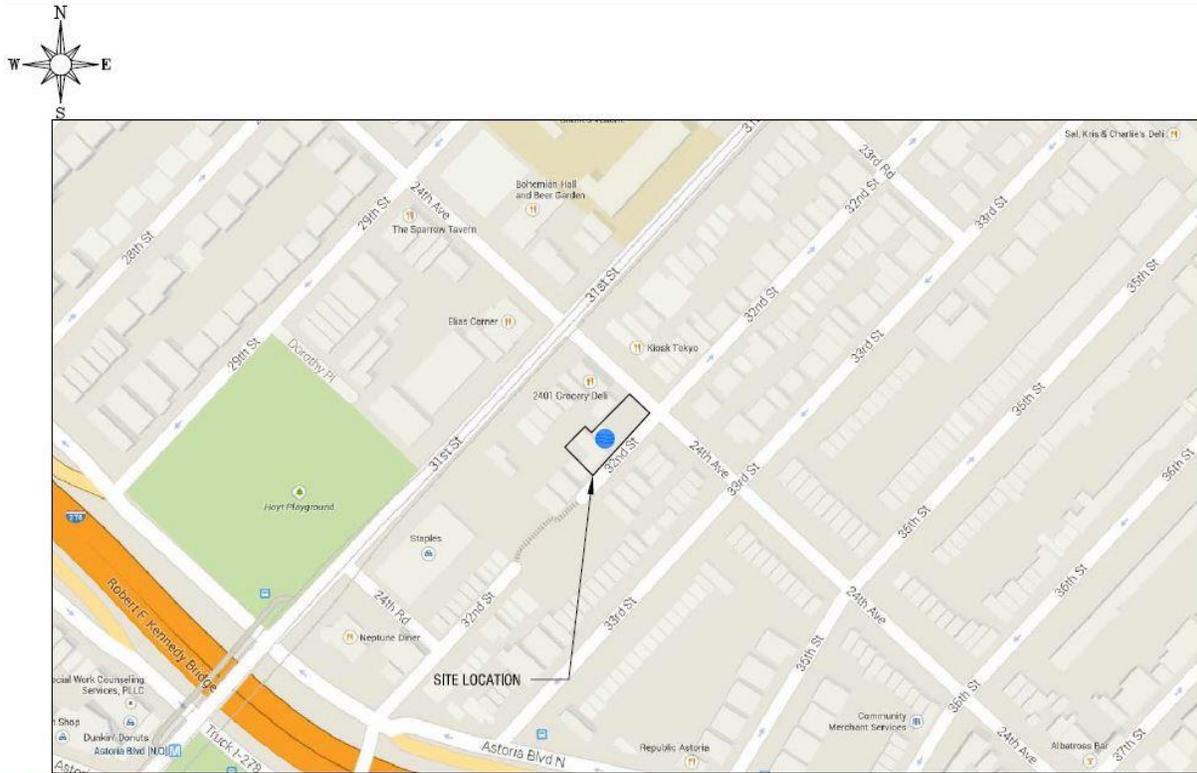
- Mobilization/demobilization,

- Sheeting and shoring,
- Excavation of urban fill and/or soil,
- Loading of urban fill into trucks for disposal,
- Installation of footings for new building, and
- Heavy equipment decontamination

Activity Hazard Analyses for these tasks are provided in Section 4.5.

This CHASP has been prepared and approved for the above scope of work. In order to remain approved, any changes to the scope of work will require amendment of the plan. The Site Health and Safety Amendment Documentation form (Appendix B) will be used for all revisions/amendments to this plan.

**FIGURE 2-1
SITE LOCATION MAP**



Legend:  SITE LOCATION	 ATHENICA ENVIRONMENTAL SERVICES, INC. <small>Environmental Consultants</small>	Date: MAY 7, 2015	Site map: 31-12 24TH AVENUE QUEENS, NY 11102
		Drawn by: ETHAN RAINEY Checked by: EZGI KARAYEL Drawing Scale: NOT TO SCALE Project No.: 15-133-0436	Figure: 1 Title: REMEDIAL INVESTIGATION REPORT SITE LOCATION MAP

3.0 KEY PERSONNEL

The Project Manager (PM), Construction Superintendent (CS), Health & Safety Officer (HSO), and Project Safety Manager (PSM) all share responsibilities for formulating and enforcing health and safety requirements, and assuring that the CHASP is implemented as intended. This section outlines the responsibilities for each of these positions. Responsibilities for site employees and subcontractor personnel are also outlined in this section. The General Contractor and/or other authorized personnel may also be involved and identified in future CHASP documents, as appropriate.

3.1 PROJECT MANAGER (PM)

The PM has the overall responsibility for the project and to assure that the requirements of the contract are attained in a manner consistent with the CHASP requirements. The PM will

coordinate with the CS and the HSO to assure that the work is completed in a manner consistent with the HASP. The PM will supervise the allocation of resources and staffing to implement specific aspects of the HASP and may delegate authority to expedite and facilitate any application of the program. This role will be filled by the General Contractor or Excavation Subcontractor. OER will be notified in the future who the PM will be for this project.

3.2 CONSTRUCTION SUPERINTENDENT (CS)

The CS is responsible for field implementation of the CHASP and Site Emergency Response and Contingency Plan and will act as the HSO in his/her absence. This role will be filled by the general contractor or primary subcontractor. OER will be notified in the future who the CS will be for this project.

Specific responsibilities for the CS include:

- Ensures that the CHASP is implemented;
- Ensures that field work is scheduled with adequate equipment to complete the job safely;
- Enforces site health and safety rules;
- Ensures that proper personal protective equipment is utilized;
- Ensures that the PSM is informed of project changes which require modifications to the CHASP;
- Ensures that the procedure modifications are implemented;
- Investigates incidents;
- Conducts the daily site safety briefing;
- Reports to PSM to provide summaries of field operations and progress; and
- Acts as Emergency Coordinator.

3.3 HEALTH AND SAFETY OFFICER (HSO)

The HSO is authorized to administer the HASP. The HSO's primary operational responsibilities include personal and environmental monitoring, selection and monitoring of personal protective equipment, assignment of protection levels, coordination/review of work permits and observation of work activities. The HSO is authorized to stop work when an imminent health or safety risk exists. The HSO will review the essential safety requirements with all on-site personnel and will facilitate the daily safety meetings. OER will be notified in the future who the HSO will be for this project.

Specific responsibilities for HSO performance include:

- Monitoring workers for signs of stress, such as cold stress, heat stress, and fatigue. Reevaluating site conditions on an on-going basis.
- Coordinating protective measures including engineering controls, work practices and personal protective equipment.
- Assisting the CS in the preparation, presentation and documentation of daily safety meetings.
- Conducting and preparing reports of daily safety inspections of work processes, site conditions, and equipment conditions. Discussing any necessary corrective actions with the CS and reviewing new procedures.
- Initiating revisions of the CHASP as necessary for new tasks or modifications of existing operations and submitting to the Project Safety Manager for approval (see Appendix B).
- Performing air monitoring as required by the CHASP.
- Assisting the PM and CS in incident investigations.
- Preparing permits for special operations, e.g., hot work, confined spaces, line breaking, etc.
- Maintaining site safety records.
- Conducting inspections of all fire extinguishers, first-aid kits and eye washes on a regular basis.
- Informing subcontractors of the elements of the CHASP.

3.4 PROJECT SAFETY MANAGER (PSM)

The Project Safety Manager (PSM) is responsible for developing/reviewing the CHASP and ensuring that it is complete and accurate. The PSM provides technical and administrative support and will be available for consultation when required. If necessary, the PSM will direct modifications (Appendix B) to specific aspects of the HASP to adjust for on-site changes that affect safety. The HSO will coordinate with the PSM on necessary modifications to the HASP. The PSM may make periodic visits to the project site to review implementation of this HASP. This role is role will be filled by the General Contractor's representative.

3.5 EMPLOYEE SAFETY RESPONSIBILITIES

Each employee is responsible for personal safety as well as the safety of others in the work area and is expected to participate fully in the site safety and health program. Employees will use all equipment provided in a safe and responsible manner as directed by the CS. Employees shall report any hazardous conditions which might affect the health and safety of site personnel to the CS and/or HSO. To protect the health and safety of all personnel, site employees that knowingly disregard safety policies/procedures will be subject to removal.

Specific requirements include:

- Reading the CHASP and any amendments prior to the start of on-site work.
- Providing documentation of any applicable medical surveillance and training to the CS/HSO prior to the start of work.
- Attending the pre-entry briefing prior to beginning on-site work as well as other scheduled safety meetings.
- Asking any questions or reporting concerns regarding the content of the CHASP to the CS/HSO prior to the start of work.
- Reporting all potentially dangerous situations, incidents, injuries, and illnesses, regardless of their severity, to the CS/HSO.
- Complying with the requirements of this CHASP and the requests of the CS/HSO.

4.0 *ACTIVITY HAZARD ANALYSIS*

This section outlines the potential chemical and physical hazards which workers may be exposed to during work on this project. The assessment of chemical hazards in this section is based on the results provided on the Remedial Investigation by Athenica for the Site. This is a representative list of contaminants that have been identified through extensive soil and groundwater testing at this site.

4.1 **CHEMICAL HAZARDS**

Based on review of the Remedial Investigation, workers at this Site have the potential to be exposed to chemicals in soil including PAHs benzo(a)anthracene, benzo(k)fluoranthene, and chrysene, metals including lead and zinc and 4,4'-DDT. All listed compounds will be considered as potential contaminants of concern.

Potential exposure to the contaminants of concern may occur during intrusive soil activities or where direct contact with the contaminated soil takes place. Metals and PAHs are primarily inhalation hazards and exposure can be minimized with simple dust control measures. A summary of hazard information is listed in Table 4-1

**TABLE 4-1
 CHEMICAL DATA**

COMPOUND	ACGIH TLV	OSHA PEL	ROUTE OF EXPOSURE	SYMPTOMS OF EXPOSURE	TARGET ORGANS	PHYSICAL DATA
PAHs	0.2 mg/m ³	0.2 mg/m ³	Inhalation Ingestion Skin contact	Headache, nausea, vomiting, and diaphoresis	Genitourinary system, Hematopoietic system, GI Tract, Respiratory system, eyes, skin	Liquid, gas and solid, can be combustible
Lead	0.05 mg/m ³	0.05 mg/m ³	Inhalation Ingestion Skin contact	Weakness, lassitude, insomnia; facial pallor; eye irritation, anorexia, low-weight, malnutrition; constipation; abdominal pain; colic; hypertension, anemia; gingival lead line; tremors; paralysis of wrist, ankles; encephalopathy; neuropathy	GI Tract, CNS, kidneys, blood, gingival tissue	Noncombustible Solid
Zinc	Not Established	Not Established	Inhalation Ingestion Skin contact	Nausea and vomiting, chills and fever, muscular aches and pains, and weakness if inhaled; skin irritant	Respiratory system, eyes, skin	Non-combustible solid
4,4'-DDT	1.0 mg/m ³	1.0 mg/m ³	Skin contact Inhalation	Paresthesia of tongue, lips, face; tremors; apprehension, dizziness, fatigue, confusion, malaise; headaches; convulsions; paresis of hands; vomiting; eye, skin irritation; (carcinogenic)	Respiratory system, eyes, skin	Liquid, gas and solid, can be combustible

Abbreviations

ACGIH = American Conference of Governmental Industrial Hygienists

C = Ceiling Unit

CNS = Central Nervous System

CVS = Cardiovascular System

GI = Gastrointestinal

TLV = Threshold Level Value

mg/m³ = milligrams per cubic meter

OSHA = Occupational Safety and Health Administration

PNS = Peripheral Nervous System

ppm = parts per million

PEL – Permissible Exposure Level

The following general symptoms may indicate exposure to a hazardous material. Personnel will be removed from the work site and provided immediate medical attention should any of the following symptoms occur:

- Dizziness or stupor
- Nausea, headaches, or cramps
- Irritation of the eyes, nose, or throat
- Euphoria
- Chest pains and coughing
- Rashes or burns

4.2 PHYSICAL HAZARDS

To minimize physical hazards, standard safety protocols will be followed at all times. Failure to follow safety protocols may result in removal of the employee from the site. All personnel shall be familiar with the physical hazards presented by each of the tasks they perform. Task specific hazard analyses are provided in Section 4.5. These hazard analyses shall be reviewed prior to beginning each task and periodically throughout the task. It must be noted that these activity hazard analyses are general in nature. It is the responsibility of the CS to revise and adapt them as necessary to reflect site-specific conditions.

The CS and HSO will observe the general work practices of each crew member and enforce safe procedures. Work areas will be inspected by the crew leaders, CS and HSO. All hazards will be corrected in a timely manner. A variety of physical hazards may be encountered during work activities at this site. Activity Hazard Analyses will be developed for each principal activity and will identify all major hazards to which employees may be exposed. Hard hats, safety glasses, and steel-toe safety boots are required in all work areas of the site. Site-specific hazards and all necessary precautions will be discussed at the daily safety meetings. The General Contractor's Safety Manual will be maintained at the project site as a reference document.

4.3 ENVIRONMENTAL HAZARDS

Environmental factors such as weather, wild animals, insects, and irritant plants may pose a hazard when performing outdoor tasks. The HSO and CS will take necessary actions to alleviate these hazards should they arise.

4.3.1 Heat Stress

The combination of warm ambient temperature and protective clothing increases the potential for heat stress. Heat stress disorders include:

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

This information will be reviewed during safety meetings. Workers are encouraged to increase consumption of water and electrolyte-containing beverages, e.g. Gatorade™. Heat stress can be prevented by assuring an adequate work/rest schedule. Guidelines are presented below.

The CS and HSO will determine the specific work-rest schedule based on project specific conditions. In addition, workers are encouraged to take rests and report symptoms whenever they feel any adverse effects that may be heat-related. The frequency of breaks may need to be increased based on worker recommendation to the HSO and CS. The CS and HSO will determine the specific work-rest schedule based on project specific conditions. In addition, workers are encouraged to take rests and report symptoms whenever they feel any adverse effects that may be heat-related. The frequency of breaks may need to be increased based on worker recommendation to the HSO and CS.

Heat stress can be prevented by assuring an adequate work/rest schedule and adequate fluid consumption. A guide for work-rest schedules for various protection levels (defined in Section 5.0) is given below. The number of hours before a work-rest period is based on experience with similar work. The time periods should be considered maximum. It must also be remembered that individual physical variability and differences in physical work activities may require revisions to site plans. This table should be used as a guide. Professional judgment (evaluation of individual work load, ambient weather conditions, worker acclimatization and PPE levels) of the CS and HSO is necessary to assure a fully protective plan to prevent heat stress disorders.

GUIDELINES FOR WORK-REST PERIODS FOR VARIOUS PROTECTION LEVELS (A-D) NUMBER OF HOURS BEFORE REST PERIOD				
Temperature	Level D	Level C	Level B	Level A
90+ F*	2.0	1.5	1.0	0.5
87.5 F	2.5	2.0	1.5	1.0
82.5 F	3.0	2.5	2.0	1.5
77.5 F	3.5	3.0	2.5	1.5
72.5	4.0	3.5	2.5	1.5

**Work above 100 F will be reviewed with the Project Safety Manager to determine specific requirements.*

Alternately the work/rest schedule can be calculated based on heat stress monitoring results. Monitoring consists of taking the radial pulse of a worker for 30 seconds immediately after exiting the work area. The frequency of monitoring is described below.

If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by 1/3 and keep the rest period the same. If the heart rate still exceeds 110 beats per minute at the next rest period, increase the following rest period by 1/3. The initial rest period should be at least 5 minutes.

Body temperature, measured orally or through the ear canal, may also be monitored to assess heat stress. Workers should not be permitted to continue work when their body temperature exceeds 100.4 F (38C). Monitoring should be conducted at the beginning of each break period as noted above.

Monitoring for heat stress will begin when the ambient temperature reaches or exceeds 72.5 degrees Fahrenheit when wearing chemical protective clothing (Level C, B, A), or 80 degrees Fahrenheit for site activities performed with no chemical protective clothing (Level D). Monitoring should include pulse rate, weight loss, oral/ or ear canal temperature, signs and symptoms of heat stress and fluid intake.

An additional measure that can be employed to minimize heat stress is through the utilization of Heat Stress Relief Stations. A Heat Stress Relief Station (HSRS) is a location inside the exclusion zone where workers can partially remove their personal protective equipment, rest and take in fluids. Since the HSRS is established inside the exclusion zone, it is imperative that its use be closely monitored and controlled to ensure that workers do not ingest contamination during use.

The following is a detailed description of the Heat Stress Relief Station:

- Location- The HSRS should be located in an area of the exclusion zone where it will be predominantly upwind of site activities. This can typically be adjacent to the contamination reduction zone.
- Delineation- The HSRS must be separated from the exclusion zone by temporary fencing and must be labeled as “Heat Stress Relief Station”.
- Elements- The HSRS contains several elements:
 - A tarp or tent for shade;
 - A bench or chairs for workers to sit on;
 - A wash station;
 - A table for fluids, cups and clean personal protective equipment (PPE); and
 - A trash can for contaminated PPE.
- Set-Up- Proper set up of the HSRS is imperative its successful use.

- In the Support Zone, prepare the water cooler with ice and water or Gatorade.
 - The person bringing the items to the HSRS must don the appropriate PPE required for the Exclusion Zone.
 - Bring the following items to the HSRS:
 - Cooler;
 - Clean disposable cups;
 - Disinfectant wipes;
 - A clean trash bag;
 - Surgical gloves; and
 - Duct tape.
 - Ensure the wash station has clean water and paper towels for drying hands/face.
- Procedure for Use- In order for the HSRS to be effective, it must be properly used. It is imperative that workers decontaminate properly before drinking fluids so that ingestion of site contaminants does not take place. The following are the steps to properly use the HSRS:
 - Upon entering the HSRS:
 - If wearing a Tyvek, remove duct tape on wrists and unzip and tie around waist;
 - Remove your outer gloves and surgical gloves; set outer gloves aside and throw surgical gloves into trash;
 - Wash hands and/or face at Wash Station;
 - Use disinfectant wipe on hands;
 - Get drink and/or rest on bench/chair.
 - Before re-entering the Exclusion Zone:
 - Dispose of cups in trash;
 - Put on a clean pair of surgical gloves;
 - If wearing a Tyvek, pull up and rezip;
 - Re-apply duct tape to wrists;
 - Put on outer gloves.
 - Monitoring- The CS and HSO are both responsible for monitoring the use of the Heat Stress Relief Station. The HSO should review the procedures for use of the HSRS with the workers before its use begins to ensure that everyone understands the parameters for proper use.

4.3.2 Exposure to Cold

With outdoor work in the winter months, the potential exists for hypothermia and frostbite. Several forms of cold stress as well as preventative measures are described in this section of the HASP.

4.3.2.1 Cold Stress Conditions and Symptoms

Typical cold stress conditions are included in the tables below, including symptoms and first aid precautions. If cold stress conditions develop, professional medical attention will be sought.

**TABLE 4.3.2A
COLD WEATHER INJURIES**

Cause	Symptoms	First Aid
Frostbite		
Freezing of tissue, normally due to exposure below 32°F	Numbness in affected area. Tingling, blistered, swollen or tender areas. Pale, yellowish waxy-looking skin.	Warm affected area with direct body heat. Consult with medical personnel ASAP. Do not thaw frozen area if treatment will be delayed. Do not massage or rub affected area. Do not wet area or rub with snow or ice.
Chilblain		
Repeated exposure of bare skin for prolonged periods to temperatures 20° to 60°F (for those not acclimated to cold weather).	Swollen, red skin. Tender, hot skin, usually accompanied by itching.	Warm affected area with direct body heat. Do not massage or rub. Do not wet area or rub with snow or ice. Do not expose affected area to open fire, stove or any other intense heat source.
Immersion Foot (Trench Foot)		
Prolonged exposure of the feet to wet conditions at temperatures between 32° to 50°F. Inactivity and damp socks (or tightly laced boots that impair circulation) speed onset and severity.	Cold numb feet may progress to hot with shooting pains. Swelling redness and bleeding.	Rewarm feet by exposing them to warm air. Evacuate victim to a medical facility. Do not massage, rub, moisten or expose affected area to extreme heat source.
Dehydration		
Depletion of body fluids.	Dizziness. Weakness.	Replace lost water. Water should be sipped not gulped. Get medical treatment.
Hypothermia		
Prolonged cold exposure and body heat loss. May occur at well above freezing, especially when a person is immersed in water.	Lack of shivering. Drowsiness, mental slowness, lack of coordination. Can progress to unconsciousness, irregular heartbeat and death.	Strip off clothing and wrap victim in blankets or a sleeping bag. Get victim to a heated location and medical treatment as soon as possible.

In cold weather, the potential for frostbite exists, especially in body extremities. Personnel will be instructed to pay particular attention to hands, feet, and any exposed skin when dressing. Personnel will be advised to obtain more clothing if they begin to experience loss of sensation due to cold exposure.

4.3.2.2 Monitoring and Preventative Actions

Typical cold stress monitoring procedures are included in the tables below, including temperatures to initiate monitoring, protective clothing uses and administrative practices to prevent or reduce the potential for cold stress related injury/illness. For weather conditions below -43 °C or -45 °F with no wind and/or similar conditions (see Work/Warm-up Table) all work will cease.

TABLE 4.3.2B COLD STRESS PREVENTION*		
	Temperature	Preventative Action
1	<61°F	Use thermometer to measure ambient temperature.
2	<40°F	Cold weather protective clothing available; check core body temperature at breaks using oral or ear canal thermometer. Maintain core body temperature above 96.8°F to avoid hypothermia.
3	<30°F	Record ambient temperature and wind speed every 4 hours; compare to wind chill chart when below 19.4°F.
4	<19°F	Provide and use heated warming shelters for work breaks and when cold stress symptoms appear.
5	<10°F	Constant observation of workers, i.e. “buddy system”; rest in heated shelters (see work-rest schedule); dry clothing available for change-out; acclimate new workers.
6	<0°F/ >5 mph winds	Obtain medical certification for workers subject to hypothermia risk.

* Based on “2009 ACGIH Threshold Limit Values... for Physical Agents.”

Note: refer to wind-chill and work-warmup charts in Table 4.3.2E

TABLE 4.3.2C COLD WEATHER CLOTHING REQUIREMENTS	
1	If wind chill is a factor at a work location, the cooling effect of the wind shall be reduced by shielding the work area or providing employees an outer windbreak layer garment.
2	Extremities, ears, toes, and nose shall be protected from extreme cold by protective clothing.
3	Employees performing light work whose clothing may become wet shall wear an outer layer of clothing which is impermeable to water.
4	Employees performing moderate to heavy work whose clothing may become wet shall wear an outer layer of clothing which is impermeable to water.
5	Outer garments must provide for ventilation to prevent wetting of inner clothing by sweat, or if not possible, a heated shelter for warming/drying clothing, or a change of clothing, shall be provided prior to returning to work in a cold environment.

Protective clothing greatly reduces the possibility of hypothermia in workers. However, personnel will be instructed to wear warm clothing and to stop work to obtain more clothing if they become too cold. Employees will also be advised to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation.

Employees will be instructed to use heated shelters on site, at regular intervals, depending upon the severity of ambient temperatures. Symptoms of cold stress, including heavy shivering, excessive fatigue, drowsiness, irritability, or euphoria necessitate immediate return to the shelter.

TABLE 4.3.2D COOLING POWER OF WIND ON EXPOSED FLESH EXPRESSED AS EQUIVALENT TEMPERATURE (under calm conditions)*												
Actual Temperature Reading (F)												
Estimated Wind Speed (in MPH)	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
Equivalent Chill Temperature (F)												
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
(Wind Speeds greater than 40 mph have little additional effect.)	Little Danger In < hr with dry skin. Maximum danger of false sense of security			Increasing Danger Danger of freezing of exposed flesh within one minute.				Great Danger Flesh may freeze within 30 seconds.				
Trench foot and immersion foot may occur at any point on this chart.												

*Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA. (Shaded area) Equivalent chill temperature requiring dry clothing to maintain core body temperature above 36 C (98.6 F) per cold stress TLV.

TABLE 4.3.2E TLV WORK/WARM-UP SCHEDULE FOR FOUR-HOUR SHIFT*											
Air Temperature – Sunny Sky		No Noticeable Wind		5 mph wind		10 mph wind		15 mph wind		20 mph wind	
C (appx.)	F (appx.)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26 to -28	-15 to -19	Normal	1	Normal	1	75 min	2	55 min	3	40 min	4
-29 to -31	-20 to -24	Normal	1	75 min	2	55 min	3	40 min	4	30 min	5
-32 to -34	-25 to -29	75 min	2	55 min	3	40 min	4	30 min	5	Non-Emergency work should cease	
-35 to -37	-30 to -34	55 min	3	40 min	4	30 min	5	Non-emergency work should cease			
-38 to -39	-35 to -39	40 min	4	30 min	5	Non-emergency work should cease					
-40 to -42	-40 to -44	30 min	5	Non-emergency work should		Non-emergency work should		cease			

**TABLE 4.3.2E
TLV WORK/WARM-UP SCHEDULE FOR FOUR-HOUR SHIFT***

Air Temperature – Sunny Sky	No Noticeable Wind		5 mph wind		10 mph wind		15 mph wind		20 mph wind	
	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
C (appx.) F (appx.)										
< -43 < -45	Non-emergency work should cease		cease							

* Adapted from Occupational Health and Safety Division, Saskatchewan Department of Labor

4.3.3 Biological Hazards

The contractor will be required to monitor and control insects, rodents, and other pests identified on site. Standing water will not be allowed on-site, in an effort to control insects. Pest control procedures used by the contractor will include bait, trap, spray, or other means to abate pest problems that develop on site during disruption activities.

4.3.4 Noise

Hearing protection is required for workers operating or working near heavy equipment, where the noise level is greater than 85 dbA (Time Weighted Average) as well as personnel working around heavy equipment. The HSO will determine the need and appropriate testing procedures, (i.e., sound level meter and/or dosimeter) for noise measurement. The provisions for noise protection for workers are presented in other safety-related documents for the Site.

4.4 VEHICLE AND HEAVY EQUIPMENT SAFETY

4.4.1 Vehicle Safety

Motor vehicle incidents are the number one cause of occupational fatalities, accounting for one in three deaths. The safety provisions for vehicle use at the Site are presented in other safety-related documents for the Site.

4.4.2 Heavy Equipment Safety

The use of backhoes, front-end loaders, etc. for excavation and other material handling equipment will present various physical hazards. The safety provisions for heavy equipment use at the Site are presented on other safety-related documents for the Site.

4.5 TASK-SPECIFIC ACTIVITY HAZARD ANALYSES (AHA)

This section of the HASP provides a breakdown of the hazards and control measures for each principal task. These Activity Hazard Analyses (AHAs) are general in nature and must be made project specific by the Construction Superintendent prior to each task. The AHAs will be field checked by the supervisor on an ongoing basis and revised as necessary. All revisions will be communicated to the work crew.

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Mobilization/ Demobilization		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Mobilization and demobilization of equipment site tools, personnel. 2. Set up/remove staging and decontamination areas.	Slips/trips/falls	<ul style="list-style-type: none"> • Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Manual lifting/ material handling	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (50 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Temperature extremes	<ul style="list-style-type: none"> • Drink plenty of fluids • Train personnel of signs/symptoms of cold/heat stress • Monitor air temperatures when extreme weather conditions are present • Stay in visual and verbal contact with your buddy
	Hand tool usage	<ul style="list-style-type: none"> • Daily inspections will be performed • Remove broken or damaged tools from service • Use the tool for its intended purpose • Use in accordance with manufacturer instructions.
	Biological hazards	<ul style="list-style-type: none"> • Be alert to the presence of biological hazards • Wear insect repellent • CS/HSO should be aware of on-site personnel with allergic reactions in insect bites and stings.

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Trenching/Excavation		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Trenching and excavation. 2. Install shoring/ sheeting protective system.	Chemical hazards	<ul style="list-style-type: none"> • Wear appropriate PPE per Section 5.1 • Practice contamination avoidance • Conduct real-time air monitoring per section 7.1.1 • Follow proper decontamination procedures • Wash hands/face before eating, drinking, smoking
	Cave-in	<ul style="list-style-type: none"> • Do not allow entry into the trench unless approved protective system is in place and has been inspected by the competent person. • Follow OSHA excavation regulations • Place ladder or entry device every 25 feet of lateral travel
	Struck By/ Against Motor Vehicles/ Operating Equipment	<ul style="list-style-type: none"> • Wear reflective warning vests when exposed to vehicular traffic • Isolate potential equipment swing areas • Make eye contact with vehicle operators before approaching/crossing high traffic areas • Understand and review hand signals • Use a spotter to direct equipment movement in high traffic areas • Audible back-up alarms on equipment • Operator inspects equipment daily for safety defects, including the braking system
	Slips/trips/falls	<ul style="list-style-type: none"> • Clear walkways, work areas of equipment and tools • Mark, identify, or barricade other obstructions • Use barricades or fencing for trenches greater than 6 feet deep • Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Electrical hazards	<ul style="list-style-type: none"> • Maintain 10 foot minimum clearance to any overhead power lines • Call for Utility mark out prior to digging

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Trenching/Excavation		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Trenching and excavation. 2. Install shoring/ sheeting protective system.	Hand and power tool usage	<ul style="list-style-type: none"> • Daily inspections will be performed on tools and cords • Ensure all guards are in place • Remove broken or damaged tools from service • Use the tool for its intended purpose • Use in accordance with manufacturer instructions
	Noise	<ul style="list-style-type: none"> • Hearing protection mandatory at or above 85 dBA. • Instruct personnel how to properly wear hearing protective devices. • Disposable ear plugs or other hearing protection required while around noisy equipment.
	Manual lifting/ Material handling	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (50 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Temperature extremes.	<ul style="list-style-type: none"> • Drink plenty of fluids: • Train personnel of signs/symptoms of cold/heat stress; • Monitor air temperatures when extreme weather conditions are present; • Stay in visual and verbal contact with your buddy; and • Use procedures in Sections 3.3.1 and 3.3.2

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Loading of Trucks		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Load trucks with contaminated soils. 2. Cover and clean trucks.	Chemical hazards	<ul style="list-style-type: none"> • Wear appropriate PPE per Section 6.1 • Practice contamination avoidance • Conduct real-time air monitoring per section 8.1.1 • Follow proper decontamination procedures • Wash hands/face before eating, drinking, smoking
	Struck By/ Against Motor Vehicles/ Operating Equipment	<ul style="list-style-type: none"> • Wear reflective warning vests when exposed to vehicular traffic • Isolate potential equipment swing areas • Make eye contact with vehicle operators before approaching/crossing high traffic areas • Understand and review hand signals • Use a spotter to direct equipment movement in high traffic areas • Audible back-up alarms on equipment • Operator inspects equipment daily for safety defects, including the braking system
	Slips/trips/falls	<ul style="list-style-type: none"> • Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Manual lifting/ material handling	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (50 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Temperature extremes	<ul style="list-style-type: none"> • Drink plenty of fluids • Train personnel of signs/symptoms of cold/heat stress • Monitor air temperatures when extreme weather conditions are present • Stay in visual and verbal contact with your buddy • Use procedures in Sections 4.3.1 and 4.3.2
	Noise	<ul style="list-style-type: none"> • Hearing protection mandatory at or above 85 dBA. • Instruct personnel how to properly wear hearing protective devices. • Disposable ear plugs or other hearing protection required while around noisy equipment.

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Installation of Footers		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Build forms. 2. Pour concrete. 3. Remove forms.	Chemical hazards	<ul style="list-style-type: none"> • Wear appropriate PPE per Section 6.1 • Practice contamination avoidance • Conduct real-time air monitoring per section 8.1.1 • Follow proper decontamination procedures • Wash hands/face before eating, drinking, smoking
	Struck By/ Against Motor Vehicles/ Operating Equipment	<ul style="list-style-type: none"> • Wear reflective warning vests when exposed to vehicular traffic • Isolate potential equipment swing areas • Make eye contact with vehicle operators before approaching/crossing high traffic areas • Understand and review hand signals • Use a spotter to direct equipment movement in high traffic areas • Audible back-up alarms on equipment • Operator inspects equipment daily for safety defects, including the braking system
	Concrete pumper	<ul style="list-style-type: none"> • Make sure nozzle man has eye contact with pump truck operator. • Ensure steady control over nozzle
	Splashing concrete	<ul style="list-style-type: none"> • Ensure eye protection is worn and other PPE as required by Section 6.1 • A portable eyewash will be maintained in the work area
	Falls from heights	<ul style="list-style-type: none"> • Fall protection is required over 6 feet when removing forms • Use PFAS where needed • OSHA required training before use of PFAS, scaffold or lift • Competent person inspects PFAS and scaffold
	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects being handled • Maintain all hand and power tools in a safe condition • Keep guards in place during use

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Installation of Footers		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Build forms. 2. Pour concrete. 3. Remove forms.	Hand and power tool usage	<ul style="list-style-type: none"> • Daily inspections will be performed on tools and cords • Ensure all guards are in place • Remove broken or damaged tools from service • Use the tool for its intended purpose • Use in accordance with manufacturer instructions
	Noise	<ul style="list-style-type: none"> • Hearing protection mandatory at or above 85 dBA. • Instruct personnel how to properly wear hearing protective devices. • Disposable ear plugs or other hearing protection required while around noisy equipment.
	Manual lifting/ material handling	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (50 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Slips/trips/falls	<ul style="list-style-type: none"> • Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Temperature extremes.	<ul style="list-style-type: none"> • Drink plenty of fluids: • Train personnel of signs/symptoms of cold/heat stress; • Monitor air temperatures when extreme weather conditions are present; • Stay in visual and verbal contact with your buddy; and • Use procedures in Sections 4.3.1 and 4.3.2

Project Identification 31-12 24 th Avenue	Location Queens, NY	Estimated Dates June - September 2015
Phase of Work Heavy Equipment Decontamination		Analysis Approved by Spiro Dongaris
TASKS	HAZARDS	CONTROL MEASURES
1. Pressure wash or steam clean heavy equipment and vehicles.	Chemical hazards	<ul style="list-style-type: none"> • Wear appropriate PPE per Section 6.1 • Practice contamination avoidance • Conduct real-time air monitoring per section 8.1.1 • Follow proper decontamination procedures • Wash hands/face before eating, drinking, smoking
	Struck By/ Against Motor Vehicles/ Operating Equipment	<ul style="list-style-type: none"> • Wear reflective warning vests when exposed to vehicular traffic • Isolate potential equipment swing areas • Make eye contact with vehicle operators before approaching/crossing high traffic areas • Understand and review hand signals • Use a spotter to direct equipment movement in high traffic areas • Audible back-up alarms on equipment • Operator inspects equipment daily for safety defects, including the braking system
	Steam/heat/splashing	<ul style="list-style-type: none"> • Wear face shield + safety glasses • Stay out of splash radius to minimize exposure • Do not direct steam/spray at anyone
	Hand and power tool usage	<ul style="list-style-type: none"> • Daily inspections will be performed on tools and cords • Ensure all guards are in place • Remove broken or damaged tools from service • Use the tool for its intended purpose • Use in accordance with manufacturer instructions
	Slips/trips/falls	<ul style="list-style-type: none"> • Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Temperature extremes	<ul style="list-style-type: none"> • Drink plenty of fluids • Train personnel of signs/symptoms of cold/heat stress • Monitor air temperatures when extreme weather conditions are present • Stay in visual and verbal contact with your buddy • Use procedures in Sections 4.3.1 and 4.3.2

5.0 *WORK AND SUPPORT AREAS*

To prevent migration of contamination from personnel and equipment, work areas will be clearly specified as designated below prior to beginning operations. Each work area will be clearly identified using signs or physical barriers.

5.1 **EXCLUSION ZONE (EZ)**

The EZ is the area suspected of contamination and presents the greatest potential for worker exposure. Personnel entering the area must wear the mandated level of protection for that area. In certain instances, different levels of protection will be required depending on the tasks and monitoring performed within that zone. The EZ for this project will include the excavation areas, any stockpiling/staging areas, and areas where disturbance of urban fill is likely occurring.

5.2 **CONTAMINATION - REDUCTION ZONE (CRZ)**

The CRZ or transition zone will be established between the EZ and support zone (SZ). In this area, personnel will begin the sequential decontamination process required to exit the EZ. To prevent off-site migration of contamination and for personnel accountability, all personnel will enter and exit the EZ through the CRZ. The CRZ for this project will be the access/egress routes to/from the EZ and the personnel and equipment decontamination stations.

5.3 **SUPPORT ZONE (SZ)**

The SZ serves as a clean, control area. Operational support facilities are located within the SZ. Normal work clothing and support equipment are appropriate in this zone. Contaminated equipment or clothing will not be allowed in the SZ. There will be a clearly marked controlled access point from the SZ into the CRZ and EZ that is monitored closely by the HSO and the CS to ensure proper safety protocols are followed. The SZ will be any office areas/trailers and the parking and visitor access ways to the project site.

5.4 **SITE CONTROL LOG**

A log of all personnel visiting, entering or working on the site shall be maintained in the main office location. The log will record the date, name, company or agency, and time entering or exiting the site.

No visitor will be allowed in the EZ without showing proof of training and compliance with applicable medical monitoring requirements. Visitors will supply their own protective equipment, including hard hat, boots and respiratory equipment, if required. Visitors will attend a site orientation given by the HSO and sign the HASP.

5.5 GENERAL

The following items are requirements to protect the health and safety of workers and will be discussed in the safety briefing prior to initiating work on the site.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of contamination is prohibited in the EZ and CRZs.
- Hands and face must be washed upon leaving the EZ and before eating, drinking, chewing gum or tobacco and smoking or other activities which may result in ingestion of contamination.
- During site operations, each worker will consider himself as a safety backup to his partner. All personnel will be aware of dangerous situations that may develop.
- Visual contact will be maintained between workers on site when performing hazardous duties.
- No personnel will be admitted to the site without the proper safety equipment, training, and medical surveillance certification.
- All personnel must comply with established safety procedures. Any site personnel, who do not comply with safety policy, as established by the HSO or the CS, will be dismissed from the site.
- Proper decontamination procedures must be followed before leaving the site.
- All site workers are authorized to stop work if they observe unsafe actions of workers or other unsafe conditions on site which may cause an imminent danger.
- All workers and visitors must sign in and out of the site.

6.0 *PROTECTIVE EQUIPMENT*

This section specifies the levels of personal protective equipment (PPE) which are or may be required for each principal activity performed at this site. All site personnel must be trained in the use of all PPE utilized.

6.1 ANTICIPATED PROTECTION LEVELS

The following protection levels have been established for the site work activities based on site information concerning the levels of contaminants and the scope of work. Results of site air monitoring and visual inspection of the work activities may indicate the need for changes in final PPE level(s). Changes in the initial PPE Levels prescribed in the Table below require completion of the HASP amendment form in Appendix B.

Task	Initial PPE Level	Upgrade/ Downgrade PPE Level	Skin Protection	Respiratory Protection	Other PPE
General Support Zone Activities	Level D	—	Generally none	None	Hard-hat, Steel-toe work boots, safety glasses, safety vests. Leather work gloves as needed. Hearing protection when >85 dBA.
Mobilization/ Demobilization	Level D	—	Generally none	None	Hard-hat, Steel-toe work boots, safety glasses, safety vests. Leather work gloves as needed. Hearing protection when >85 dBA.
Excavation, Loading of Trucks with Contaminated Soil/Fill, Equipment Decontamination	Level D		Generally none,	Initial: None (See Section 7)	Hard-hat, Steel-toe work boots, safety glasses, leather work gloves for material handling, hearing protection >85 dBA

6.2 PROTECTION LEVEL DESCRIPTIONS

This section lists the minimum requirements for each protection level. Modification to these requirements may have been noted in the Table shown above.

6.2.1 *Level D*

Level D consists of the following:

- Safety glasses with side shields
- Hard hat
- Steel-toed work boots
- Work clothing as prescribed by weather
- Leather work gloves when material handling

7.0 ***DECONTAMINATION PROCEDURES***

This section describes the procedures necessary to ensure that both personnel and equipment are free from contamination when they leave the work site.

7.1 **PERSONNEL DECONTAMINATION**

Decontamination procedures will ensure that material which workers may have contacted in the EZ does not result in personal exposure and is not spread to clean areas of the site. This sequence describes the general decontamination procedures for Level D. The specific stages will vary depending on the site, the task, the protection level, etc. Dry decontamination may be used if there is insufficient space to support a full decontamination station as delineated with the steps below and approved by the HSO. The CS and the HSO will ensure that the decontamination procedures are adequate.

Level D Decontamination

1. Go to end of EZ
2. Cross into CRZ
3. Wash face and hands

7.1.1 ***Suspected Contamination***

Any employee suspected of sustaining skin contact with chemical materials will first use the emergency shower. Following a thorough drenching, the worker will proceed to the decontamination area. Here the worker will remove clothing and don clean clothing. Medical attention will be provided as determined by the degree of injury.

7.1.2 ***Personal Hygiene***

Personnel will wash hands, arms, neck and face, following decontamination and before any eating, smoking, or drinking.

7.2 **EQUIPMENT DECONTAMINATION**

Heavy equipment and other vehicles operated within the EZ will be decontaminated before being removed from the site. Workers operating the equipment/vehicles will move the equipment to a gross decontamination location near the exit of the EZ. Following gross decontamination the equipment/vehicle will be moved to the decontamination pad. Equipment decontamination will be performed on the pad until the equipment is visually clean. Following decontamination

activities equipment will be inspected by the HSO or CS prior to leaving the site. Once the equipment is inspected it will be removed from the site.

Heavy Equipment / Vehicle Decontamination

1. Equipment operator will move the heavy equipment / vehicle to a position near the EZ / CRZ interchange
2. Worker will use manual equipment (shovel, track spade) to remove gross contamination from tracks, bucket, dump box, and vehicle undercarriage (as required)
3. Following removal of gross decontamination equipment will be moved onto the decontamination pad and pressure washed / steam cleaned until equipment / vehicle is visually clean.
4. Equipment / vehicle decontaminated for removal from the site will be moved to a clean area for the HSO / CS inspection.
5. Once the equipment / vehicle is inspected and approved it will be removed from the site. Vehicles that fail inspection will be returned to the decontamination pad for further cleaning and re-inspected.

7.3 DISPOSAL OF WASTES

Wastes will be disposed according to applicable Local, State and Federal regulations.

7.4 DUST /EROSION CONTROL

The contractor will control dust and implement erosion control measures to be protective of nearby ecologically sensitive areas and sensitive receptors.

8.0 ***AIR MONITORING***

Air monitoring will be conducted in order to characterize personnel exposures and fugitive emissions from site contaminants. Principal contaminants of concern are listed in Section 4.0 of this HASP. The target compounds selected for air monitoring purposes for this site include particulates. Results of air monitoring will be used to ensure the proper selection of protective clothing and equipment, including respiratory protection, to protect on-site personnel and off-site receptors from exposure to unacceptable levels of site contaminants. Descriptions of air monitoring strategies, procedures and equipment are provided below. Modification of this plan, including additional monitoring, may be considered as judged necessary by the PSM, in conjunction with the HSO.

8.1 **WORK AREA AIR MONITORING**

Work area air monitoring will include direct reading methods and personal exposure monitoring. Air monitoring will be conducted during soil/waste excavation, transportation, relocation and/or staging, and any other intrusive activities.

8.1.1 ***Direct Reading Air Monitoring***

During active sifting operations, direct reading air monitoring will be performed to determine the potential for worker exposure to airborne hazards. A summary of air monitoring information is provided in section 8.1.5. Real-time air samples will be taken at least four times each 8-hour worker shift in the workers breathing zone (BZ).

8.1.2 ***Instrumentation***

The following is a description of the air monitoring equipment to be used:

- MIE PDR-1000 Personal DataRAM, Dust trak or equivalent unit for real-time measuring particulates.

8.1.3 ***Use And Maintenance Of Survey Equipment***

All personnel using field survey equipment must have training in its operation, limitations, and maintenance. Maintenance and internal or electronic calibration will be performed in accordance with manufacturer recommendations by individuals familiar with the devices before their use on site. Repairs, maintenance, and internal or electronic calibration of these devices will be recorded in an equipment maintenance logbook. The equipment maintenance logbook for each instrument will be kept in that instrument's case. For rented monitoring equipment, repairs and

maintenance will be conducted by the rental company. Daily calibration records will be documented on a log sheet found in Appendix D.

Air monitoring equipment will be calibrated before work begins. Only basic maintenance (such as changing batteries) will be performed by on-site personnel. Any additional maintenance or repairs will be performed by a trained service technician.

8.1.4 Air Monitoring Recordkeeping

The HSO will ensure that all air-monitoring data is recorded on a data sheet found in Appendix D. The PSM may periodically review this data.

8.1.5 Action Levels

During soil/waste excavation, transportation, relocation and/or staging or any intrusive activities, direct reading air monitoring will be performed in the EZ to determine exposure to workers. A summary of air monitoring information is provided in the table below.

Monitoring Device	Monitoring Location/ Personnel	Monitoring Frequency	Action Level	Action
pDr-1000 (Dust)	Soil excavation areas/laborers, technicians, equipment operators	Four times every 8-hour shift during soil disturbance activities	<5.0 mg/m ³ * ≥5.0 mg/m ³ *	Level D Stop work; notify PSM Implement dust suppression measures and resume work after dust levels are below action level

* Sustained levels in the breathing zone for 5 minutes

As indicated by the below calculations, the action level for PAHs and the metals of concern was selecting based on the OSHA PEL for respirable dust, which was found to be significantly lower than the calculated actions levels for PAHs and copper, lead, mercury, and zinc based on utilizing the highest concentrations of these contaminants found in soil.

- OSHA PEL for respirable dust: 5 mg/m³,
- Maximum concentration of PAHs found in soil is 1.34 ppm or 0.000134%.
 - 5.0 mg/m³ multiplied by 0.000134% = 0.000067 mg/m³
 - OSHA PEL for PAHs is 0.2 mg/m³
- Maximum concentration of Lead found in soil is 80 ppm or 0.008%.
 - 5.0 mg/m³ multiplied by 0.008% = 0.04 mg/m³

- OSHA PEL for PAHs is 0.05 mg/m^3
- Maximum concentration of Zinc found in soil is 113 ppm or 0.0113%.
 - 5.0 mg/m^3 multiplied by 0.0113% = 0.0565 mg/m^3
 - OSHA PEL for Zinc not established mg/m^3

9.0 *EMERGENCY RESPONSE AND CONTINGENCY PLAN (ERCP)*

9.1 PRE-EMERGENCY PLANNING

Prior to engaging in construction/remediation activities at the site, the CS will plan for possible emergency situations and have adequate supplies and manpower to respond. In addition, site personnel will be briefed on proper emergency response procedures during the site orientation.

The following situations would warrant implementation of the emergency plan:

Fire/Explosion	<ul style="list-style-type: none">• The potential for human injury exists.• Toxic fumes or vapors are released.• The fire could spread on site or off site and possibly ignite other flammable materials or cause heat-induced explosions.• The use of water and/or chemical fire suppressants could result in contaminated run-off.• An imminent danger of explosion exists.
Spill or Release of Hazardous Materials	<ul style="list-style-type: none">• The spill could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.• The spill could cause the release of toxic liquids or fumes in sufficient quantities or in a manner that is hazardous to or could endanger human health.
Natural Disaster	<ul style="list-style-type: none">• A rain storm exceeds the flash flood level.• The facility is in a projected tornado path or a tornado has damaged facility property.• Severe wind gusts are forecasted or have occurred and have caused damage to the facility.
Medical Emergency	<ul style="list-style-type: none">• Overexposure to hazardous materials.• Trauma injuries (broken bones, severe lacerations/bleeding, burns).• Eye/skin contact with hazardous materials.• Medical Conditions e.g., loss of consciousness, heat stress (heat stroke), heart attack, respiratory failure, allergic reaction.

The following measures will be taken to assure the availability of adequate equipment and manpower resources:

- Sufficient equipment and materials will be kept on site and dedicated for emergencies only. The inventory will be replenished after each use.

- It will be the responsibility of the CS/HSO to brief on site personnel on anticipated hazards at the site. The CS/HSO shall also be responsible for anticipating and requesting equipment that will be needed for response activities.

Communications will be established prior to commencement of any activities at the remediation site. Communication will be established so that all responders on site have availability to all pertinent information to allow them to conduct their activities in a safe and healthful manner. A telephone will be available to summon assistance in an emergency.

Primary communication with local responders in the event of an emergency will be accomplished using commercial telephone lines.

9.2 EMERGENCY RECOGNITION AND PREVENTION

Because unrecognized hazards may result in emergency incidents, it will be the responsibility of the CS and Health & Safety Officer (HSO), through daily site inspections and employee feedback to recognize and identify hazards that are found at the site. These may include:

Chemical Hazards	<ul style="list-style-type: none"> • Materials at the site • Materials brought to the site 	
Physical Hazards	<ul style="list-style-type: none"> • Fire/explosion • Slip/trip/fall • Electrocution 	<ul style="list-style-type: none"> • Confined space • IDLH atmospheres • Excessive noise
Mechanical Hazards	<ul style="list-style-type: none"> • Heavy equipment • Stored energy system • Pinch points 	<ul style="list-style-type: none"> • Electrical equipment • Vehicle traffic
Environmental Hazards	<ul style="list-style-type: none"> • Electrical Storms • High winds • Heavy Rain/Snow 	<ul style="list-style-type: none"> • Heat Stress • Vehicle traffic

9.3 EMERGENCY TELEPHONE NUMBERS

Emergency telephone numbers can be found in Table 9-1. The emergency numbers will be posted in all site trailers.

Figure 9-1 is the Hospital Route Map with directions to the nearest hospital. Only in a non-emergency situation are personnel to be transported to the hospital by site representatives.

FIGURE 9-1

**TABLE 9-1
EMERGENCY TELEPHONE NUMBERS**

Emergency Medical Service.....	911
<u>Police</u> : New York City Police Department (NYPD).....	911
<u>Hospital</u> : Mount Sinai Queens.....	(718) 932-1000
<u>Fire</u> : New York City Fire Department (FDNY).....	911
New York City Office of Emergency Management.....	911
National Response Center.....	(800) 424-8802
Poison Control Center.....	(800) 222-1222
Chemtrec.....	(800) 262-8200
Center for Disease Control.....	(800) 311-3435
USEPA(Region II).....	(212) 637-5000
NYSDEC Emergency Spill Response.....	(800) 457-7362

DIRECTIONS AND HOSPITAL ROUTE MAP

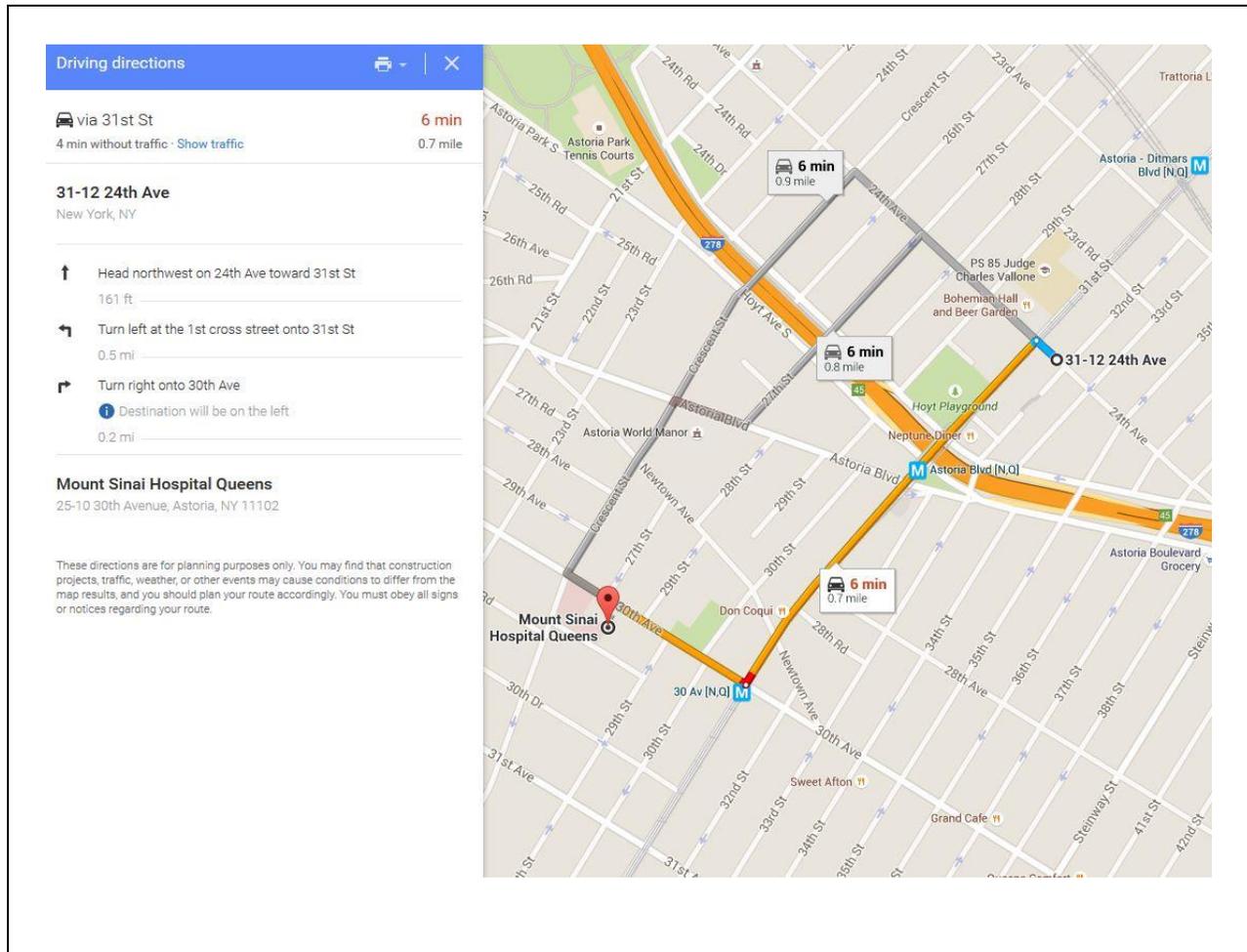
FIGURE 1 – HOSPITAL ROUTE PLAN

Site Location: 38-11 to 38-19 31st Street, Queens, New York 11101

Hospital Location: Mount Sinai Queens, 25-10 30th Avenue, Long Island City, NY 11102

Information Line: (718) 934-1000

Steps	Maneuvers	Dist.
1	Head north on 31 st Street toward 38 th Avenue	1.1 mi
2	Turn left on to 30 th Avenue	0.2 mi
3	Follow signs to the Emergency Room	
Total Est. Time: 4 minutes		Total Est. Distance: 1.3 miles



Once a hazard has been recognized, the CS and/or the HSO will take immediate action to prevent the hazard from becoming an emergency. This may be accomplished by the following:

- Daily safety meeting
- Task-specific training prior to commencement of activity
- Personal Protective Equipment (PPE) selection/use
- Written and approved permits for hot work, confined space
- Trenching/shoring procedure
- Air monitoring
- Following all standard operating procedures

9.4 PERSONNEL ROLES, LINES OF AUTHORITY, AND COMMUNICATIONS

This section of the ERCP describes the various roles, responsibilities, and communication procedures that will be followed by personnel involved in emergency responses.

The primary emergency coordinator for this site is the CS. In the event an emergency occurs and the emergency coordinator is not on site, the HSO will serve as the emergency coordinator until the CS arrives. The emergency coordinator will determine the nature of the emergency and take appropriate action as defined by this ERCP.

The emergency coordinator will implement the ERCP immediately as required. The decision to implement the plan will depend upon whether the actual incident threatens human health or the environment.

Immediately after being notified of an emergency incident, the emergency coordinator or his designee will evaluate the situation to determine the appropriate action.

9.4.1 *Responsibilities and Duties*

This section describes the responsibilities and duties assigned to the emergency coordinator.

It is recognized that the structure of the "Incident Command System" will change as additional response organizations are added. Personnel will follow procedures as directed by the fire department, LEPC, State and Federal Agencies as required.

9.4.2 *On-Site Emergency Coordinator Duties*

The on-site emergency coordinator is responsible for implementing and directing the emergency procedures. All emergency personnel and their communications will be coordinated through the emergency coordinator. Specific duties are as follows:

- Identify the source and character of the incident, type and quantity of any release. Assess possible hazards to human health or the environment that may result directly from the problem or its control.
- Discontinue operations in the vicinity of the incident if necessary to ensure that fires, explosions, or spills do not recur or spread to other parts of the site. While operations are dormant, monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment, where safe and appropriate.
- Notify the Client Representative and local Emergency Response Teams if their help is necessary to control the incident. Table 9-1 provides telephone numbers for emergency assistance.
- Direct on-site personnel to control the incident until, if necessary, outside help arrives. Specifically: Ensure that the building or area where the incident occurred and the surrounding area are evacuated and shut off possible ignition sources, if safe and appropriate. The Emergency Response Coordinator is responsible for directing site personnel such that they avoid the area of the incident and leave emergency control procedures unobstructed.
- If fire or explosion is involved, notify local Fire Department.
- Have protected personnel, in appropriate PPE, on standby for rescue.

If the incident may threaten human health or the environment outside of the site, the emergency coordinator should immediately determine whether evacuation of area outside of the site may be necessary and, if so, notify the Police Department and the Office of Emergency Management.

When required, notify the National Response Center. The following information should be provided to the National Response Center:

- Name and telephone number
- Name and address of facility
- Time and type of incident
- Name and quantity of materials involved, if known
- Extent of injuries
- Possible hazards to human health or the environment outside of the facility.

The emergency telephone number for the National Response Center is 800-424-8802.

If hazardous waste has been released or produced through control of the incident, ensure that:

- Waste is collected and contained.
- Containers of waste are removed or isolated from the immediate site of the emergency.
- Treatment or storage of the recovered waste, contaminated soil or surface water, or any other material that results from the incident or its control is provided.
- Ensure that no waste that is incompatible with released material is treated or stored in the facility until cleanup procedures are completed.
- Ensure that all emergency equipment used is decontaminated, recharged, and fit for its intended use before operations are resumed.
- Notify the USEPA Regional Administrator that cleanup procedures have been completed and that all emergency equipment is fit for its intended use before resuming operations in the affected area of the facility. The USEPA Regional Administrator's telephone number is included in the Emergency Contacts.
- Record date, time, details of the incident, and submit a written report to the USEPA Regional Administrator. The report is due to the USEPA within 15 days of the incident.

9.5 SAFE DISTANCES AND PLACES OF REFUGE

The emergency coordinator for all activities will be the CS. No single recommendation can be made for evacuation or safe distances because of the wide variety of emergencies which could occur. Safe distances can only be determined at the time of an emergency based on a combination of site and incident-specific criteria. However, the following measures are established to serve as general guidelines.

In the event of minor hazardous materials releases (small spills of low toxicity), workers in the affected area will report initially to the contamination reduction zone. Small spills or leaks (generally less than 55 gallons) will require initial evacuation of at least 50 feet in all directions to allow for cleanup and to prevent exposure. After initial assessment of the extent of the release and potential hazards, the emergency coordinator or his designee will determine the specific boundaries for evacuation. Appropriate steps such as caution tape, rope, traffic cones, barricades, or personal monitors will be used to secure the boundaries.

If a major incident may threaten the health or safety of the surrounding community, the public will be informed and, if necessary, evacuated from the area. The emergency coordinator, or his designee will inform the proper agencies in the event that this is necessary. Telephone numbers are listed in Table 9-1.

Places of refuge will be established prior to the commencement of activities. These areas must be identified for the following incidents:

- Chemical release
- Fire/explosion
- Power loss
- Medical emergency
- Hazardous weather

In general, evacuation will be made to the site entrance, unless the emergency coordinator determines otherwise. It is the responsibility of the emergency coordinator to determine when it is necessary to evacuate personnel to off-site locations.

In the event of an emergency evacuation, all the employees will gather at the entrance to the site until a head count establishes that all are present and accounted for. No one is to leave the site without notifying the emergency coordinator.

9.6 EVACUATION ROUTES AND PROCEDURES

All emergencies require prompt and deliberate action. In the event of an emergency, it will be necessary to follow an established set of procedures. Such established procedures will be followed as closely as possible. However, in specific emergency situations, the emergency coordinator may deviate from the procedures to provide a more effective plan for bringing the situation under control. The emergency coordinator is responsible for determining which situations require site evacuation.

9.6.1 *Evacuation Signals and Routes*

Two-way radio communication or equivalent will be used to notify employees of the necessity to evacuate an area or building involved in a release/spill of a hazardous material. As necessary, each crew supervisor will have a two-way radio. Total site evacuation will be initiated only by the emergency coordinator, however, in his absence, decision to preserve the health and safety of employees will take precedence.

9.6.2 *Evacuation Procedures*

In the event evacuation is necessary the following actions will be taken:

- The emergency signal will be activated.

- No further entry of visitors, contractors, or trucks will be permitted. Vehicle traffic within the site will cease in order to allow safe exit of personnel and movement of emergency equipment.
- Shut off all machinery if safe to do so.
- ALL on-site personnel, visitors, and contractors in the support zone will assemble at the entrance to the site for a head count and await further instruction from the emergency coordinator.
- ALL persons in the exclusion zone and contamination reduction zone will be accounted for by their immediate crew leaders. Leaders will determine the safest exits for employees and will also choose an alternate exit if the first choice is inaccessible.
- During exit, the crew leader should try to keep the group together. Immediately upon exit, the crew leader will account for all employees in his crew.
- Upon completion of the head count, the crew leader will provide the information to the emergency coordinator.
- Contract personnel and visitors will also be accounted for.
- The names of emergency response team members involved will be reported to the emergency coordinator.
- A final tally of persons will be made by the emergency coordinator or designee. No attempt to find persons not accounted for will involve endangering lives of site personnel by re-entry into emergency areas.
- In all questions of accountability, immediate crew leaders will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are seeing. Contractors and truck drivers are the responsibility of the Construction Superintendent.
- Personnel will be assigned by the emergency coordinator to be available at the main gate to direct and brief emergency responders.
- Re-entry into the site will be made only after clearance is given by the emergency coordinator. At his direction, a signal or other notification will be given for re-entry into the facility.

9.7 EMERGENCY SPILL RESPONSE PROCEDURES AND EQUIPMENT

In the event of an emergency involving a hazardous material spill or release, the following general procedures will be used for rapid and safe response and control of the situation. Emergency contacts found in Table 9-1 provide a quick reference guide to follow in the event of a major spill.

9.7.1 *Notification Procedures*

If an employee discovers a chemical spill or process upset resulting in a vapor or material release, he or she will immediately notify the on-site emergency coordinator.

On-site Emergency Coordinator will obtain information pertaining to the following:

- The material spilled or released.
- Location of the release or spillage of hazardous material.
- An estimate of quantity released and the rate at which it is being released.
- The direction in which the spill, vapor or smoke release is heading.
- Any injuries involved.
- Fire and/or explosion or possibility of these events.
- The area and materials involved and the intensity of the fire or explosion.

This information will help the on-site emergency coordinator to assess the magnitude and potential seriousness of the spill or release.

9.7.2 *Procedure for Containing/Collecting Spills*

The initial response to any spill or discharge will be to protect human health and safety, and then the environment. Identification, containment, treatment, and disposal assessment will be the secondary response.

If for some reason a chemical spill is not contained within a dike or sump area, an area of isolation will be established around the spill. The size of the area will generally depend on the size of the spill and the materials involved. If the spill is large (greater than 55 gallons) and involves a tank or a pipeline rupture, an initial isolation of at least 100 ft. in all directions will be used. Small spills (less than or equal to 55 gallons) or leaks from a tank or pipe will require evacuation of at least 50 ft. in all directions to allow cleanup and repair and to prevent exposure. When any spill occurs, only those persons involved in overseeing or performing emergency operations will be allowed within the designated hazard area. If possible the area will be roped or otherwise blocked off.

If the spill results in the formation of a toxic vapor cloud (by reaction with surrounding materials or by outbreak of fire) and its release (due to high vapor pressures under ambient conditions), further evacuation will be necessary. In general an area at least 500 feet wide and 1,000 feet long will be evacuated downwind if volatile materials are spilled. (Consult the DOT Emergency Response Guide for isolation distances for listed hazardous materials.)

If an incident may threaten the health or safety of the surrounding community, the public will be informed and possibly evacuated from the area. The on-site emergency coordinator will inform the proper agencies in the event this is necessary. (Refer to Table 9-1)

As called for in regulations developed under the Comprehensive Environmental Response Compensation Liability Act of 1980 (Superfund), a spill of a pound or more of any hazardous material for which a reportable quantity has not been established and which is listed under the Solid Waste Disposal Act, Clean Air Act, Clean Water Act, or TSCA shall be reported.

Clean up personnel will take the following measures:

- Make sure all unnecessary persons are removed from the hazard area.
- Put on protective clothing and equipment.
- If a flammable material is involved, remove all ignition sources, and use spark and explosion proof equipment for recovery of material.
- Remove all surrounding materials that could be especially reactive with materials in the waste. Determine the major components in the waste at the time of the spill.
- If wastes reach a storm sewer, try to dam the outfall by using sand, earth, sandbags, etc. If this is done, pump this material out into a temporary holding tank or drums as soon as possible.
- Place all small quantities of recovered liquid wastes (55 gallons or less) and contaminated soil into drums for incineration or removal to an approved disposal site.
- Spray the spill area with foam, if available, if volatile emissions may occur.
- Apply appropriate spill control media (e.g. clay, sand, lime, etc.) to absorb discharged liquids.

For large spills, establish diking around leading edge of spill using booms, sand, clay or other appropriate material. If possible, use diaphragm pump to transfer discharged liquid to drums or holding tank.

9.7.3 *Emergency Response Equipment*

The following equipment will be staged in the support zone and throughout the site, as needed, to provide for safety and first aid during emergency responses.

- ABC-type fire extinguisher
- First-aid kit, industrial size
- Portable eyewash

9.7.4 *Emergency Spill Response Clean-Up Materials and Equipment*

A sufficient supply of appropriate emergency response clean-up and personal protective equipment will be available as needed.

The materials listed below may be kept on site for spill control, depending on the types of hazardous materials present on site. The majority of this material will be located in the support zone, in a supply trailer or storage area. Small amounts, as necessary, will be placed on pallets and located in the active work areas.

- Sand or clay to solidify/absorb liquid spills.

- * **Note: All contaminated soils, absorbent materials, solvents and other materials resulting from the clean-up of spilled or discharged substances shall be properly stored, labeled, and disposed of off-site.**

9.8 EMERGENCY CONTINGENCY PLAN

This section of the ERCP details the contingency measures the Site Contractor will take to prepare for and respond to fires, explosions, spills and releases of hazardous materials, hazardous weather, and medical emergencies.

9.9 MEDICAL EMERGENCY CONTINGENCY MEASURES

The procedures listed below will be used to respond to medical emergencies. A minimum of one First-Aid/CPR trained personnel should be available on site.

9.9.1 *Response*

The nearest workers will immediately assist a person who shows signs of medical distress or who is involved in an accident. The work crew supervisor will be summoned.

The work crew supervisor will immediately make radio contact with the on-site emergency coordinator to alert him of a medical emergency situation. The supervisor will advise the following information:

- Location of the victim at the work site
- Nature of the emergency
- Whether the victim is conscious
- Specific conditions contributing to the emergency, if known

The Emergency Coordinator will notify the Health & Safety Officer. The following actions will then be taken depending on the severity of the incident:

- *Life-Threatening Incident* – If an apparent life-threatening condition exists, the crew supervisor will inform the emergency coordinator by radio, and the local Emergency Response Services (EMS) will be immediately called. An on-site person will be appointed who will meet the EMS and have him/her quickly taken to the victim. Any injury within the EZ will be evacuated by personnel to a clean area for treatment by EMS personnel. No one will be able to enter the EZ without showing proof of training, medical surveillance and site orientation.
- *Non Life-Threatening Incident* – If it is determined that no threat to life is present, the Health & Safety Officer will direct the injured person through decontamination procedures (see below) appropriate to the nature of the illness or accident. Appropriate first aid or medical attention will then be administered.
- * **Note: The area surrounding an accident site must not be disturbed until the scene has been cleared by the Health & Safety Officer.**

Any personnel requiring emergency medical attention will be evacuated from exclusion and contamination reduction zones if doing so would not endanger the life of the injured person or otherwise aggravate the injury. Personnel will not enter the area to attempt a rescue if their own lives would be threatened. The decision whether or not to decontaminate a victim prior to evacuation is based on the type and severity of the illness or injury and the nature of the contaminant. For some emergency victims, immediate decontamination may be an essential part of life-saving first aid. For others, decontamination may aggravate the injury or delay life-saving first aid. Decontamination will be performed if it does not interfere with essential treatment.

If decontamination can be performed, observe the following procedures:

- Wash external clothing and cut it away.

If decontamination cannot be performed, observe the following procedures:

- Wrap the victim in blankets or plastic to reduce contamination of other personnel.
- Alert emergency and off-site medical personnel to potential contamination, instruct them about specific decontamination procedures.
- Send site personnel familiar with the incident and chemical safety information, e.g. MSDS, with the affected person.

All injuries, no matter how small, will be reported to the HSO or the CS. An accident/injury/illness report will be completely and properly filled out and submitted to the Corporate Health and Safety Manager.

A list of emergency telephone numbers is given in Table 9.1.

9.9.2 Notification

The following personnel/agencies will be notified in the event of a medical emergency:

- Local Fire Department or EMS
- On-site Emergency Coordinator
- Workers in the affected areas
- Client Representative

9.10 FIRE CONTINGENCY MEASURES

Because flammable/combustible materials are present at this site, fire is an ever-present hazard. Safety personnel are not trained professional firefighters. Therefore, if there is any doubt that a fire can be quickly contained and extinguished, personnel will notify the emergency coordinator by radio and vacate the structure or area. The emergency coordinator will immediately notify the local Fire Department.

The following procedures will be used to prevent the possibility of fires and resulting injuries:

- Sources of ignition will be kept away from where flammable materials are handled or stored.
- The air will be monitored for explosivity before and during hot work and periodically where flammable materials are present. Hot work permits will be required for all such work.
- "No smoking" signs will be conspicuously posted in areas where flammable materials are present.
- Fire extinguishers will be placed in all areas where a fire hazard may exist.
- Before workers begin operations in an area the foreman will give instruction on egress procedures and assembly points. Egress routes will be posted in work areas and exit points clearly marked.

9.10.1 *Response*

The following procedures will be used in the event of a fire:

- Anyone who sees a fire will notify their supervisor who will then contact the Emergency Coordinator by radio. The emergency coordinator will activate the emergency air horns and contact the local Fire Department.
- When the emergency siren sounds, workers will disconnect electrical equipment in use (if possible) and proceed to the nearest fire exit.
- Work crews will be comprised of pairs of workers (buddy system) who join each other immediately after hearing the fire alarm and remain together throughout the emergency. Workers will assemble at a predetermined rally point for a head count.
- When a small fire has been extinguished by a worker, the emergency coordinator will be notified.

9.11 HAZARDOUS WEATHER CONTINGENCY MEASURES

Operations outside will not be started or continued when the following hazardous weather conditions are present:

- Lightning
- Heavy Rains/Snow
- High Winds

9.11.1 *Response*

- Excavation/soil stock piles will be covered with plastic liner.
- All equipment will be shut down and secured to prevent damage.
- Personnel will be moved to safe refuge. The emergency coordinator will determine when it is necessary to evacuate personnel to off-site locations and will coordinate efforts with fire, police and other agencies.

9.11.2 *Notification*

The emergency coordinator will be responsible for assessing hazardous weather conditions and notifying personnel of specific contingency measures. Notifications will include:

- Site workers and subcontractors
- Client Representative
- Local Emergency Management Agency

9.12 SPILL/RELEASE CONTINGENCY MEASURES

In the event of release or spill of a hazardous material the following measures will be taken:

9.12.1 *Response*

Any person observing a spill or release will act to remove and/or protect injured/contaminated persons from any life-threatening situation. First aid and/or decontamination procedures will be implemented as appropriate.

First aid will be administered to injured/contaminated personnel. All personnel will act to prevent any unsuspecting persons from coming in contact with spilled materials by alerting other nearby persons. Attempt to stop the spill at the source, if possible. Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as uprighting a drum, closing a valve or temporarily sealing a hole with a plug.

The emergency coordinator will be notified of the spill/release, including information on material spilled, quantity, personnel injuries and immediate life threatening hazards. Air monitoring will be implemented by the emergency coordinator and HSO to determine the potential impact on the surrounding community. Notification procedures will be followed to inform on-site personnel and off-site agencies. The emergency coordinator will make a rapid assessment of the spill/release and direct confinement, containment and control measures. Depending upon the nature of the spill, measures may include:

- Construction of a temporary containment berm utilizing on-site clay absorbent earth
- Digging a sump, installing a polyethylene liner and
- Diverting the spill material into the sump placing drums under the leak to collect the spilling material before it flows over the ground
- Transferring the material from its original container to another container

The emergency coordinator will notify the Client Representative of the spill and steps taken to institute clean-up. Emergency response personnel will clean-up all spills following the spill clean-up plan developed by the emergency coordinator. Supplies necessary to clean up a spill may include, but are not limited to:

- Shovel, rake
- Clay absorbent
- Polyethylene liner
- Personal safety equipment
- Steel drums

- Pumps and miscellaneous hand tools

The emergency coordinator will inspect the spill site to determine that the spill has been cleaned up to the satisfaction of the Client Representative. If necessary, soil, water or air samples may be taken and analyzed to demonstrate the effectiveness of the spill clean-up effort. The emergency coordinator will determine the cause of the spill and determine remedial steps to ensure that recurrence is prevented. The emergency coordinator will review the cause with the Client Representative and obtain his concurrence with the remedial action plan.

10.0 TRAINING REQUIREMENTS

All personnel entering the exclusion zone will be trained in the provisions of this site safety plan and be required to sign the CHASP Acknowledgment form in Appendix A.

10.1 SITE-SPECIFIC TRAINING ORIENTATION

Outlines of the orientation for site workers, subcontractor personnel and visitors are presented below:

CONTRACTOR WORKERS	VISITORS
<ul style="list-style-type: none"> • HASP sign off • Sign in/out procedures • Site background/characterization • Chain of command • Rules and regulations • Hours of work • Absences • Personal Protective Equipment/respirator fit test (if applicable) • Emergency Information <ul style="list-style-type: none"> • Emergency signal • Gathering point • Responsibilities/roles • Emergency phone numbers • Site Control/Work Zones • Hazards/AHAs • Air Monitoring Program • Forms, site-specific • Incident Reporting • Lead Awareness (Appendix C) 	<ul style="list-style-type: none"> • Sign in/out procedures • Site Background/Characterization • Review of Site map • Work Zones in progress • Emergency plan/signals • Training/medical requirements • Zones/areas open to visitors

10.2 DAILY SAFETY MEETINGS

A safety meeting will be conducted by the CS and the HSO before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

APPENDIX A

- *HEALTH AND SAFETY PLAN CERTIFICATION*
- *GENERAL/SUB-CONTRACTOR HEALTH & SAFETY PLAN ACKNOWLEDGEMENT*
- *NOTICE OF SAFETY VIOLATION*
- *PRE-JOB SAFETY CHECKLIST*

NOTICE OF SAFETY VIOLATION

TO: _____ (Name of Contractor/Subcontractor Supervisor)
FROM: _____ (Name of Owner/Contractor's Project Manager)
DATE: _____
SUBJECT: *Notice of Safety Violations*

The following Safety Violations were observed at the Name of Site/Project on Date.

1. _____
2. _____
3. _____
4. _____
5. _____

You are requested to take the necessary corrective action to alleviate these safety violations by _____ (Date).

Please notify _____ (Name of Contractor/Subcontractor's Project Manager) when you have completed this corrective action.

Thank you in advance for your cooperation in this effort.

**CONTRACTOR/SUBCONTRACTOR
PRE-JOB SAFETY CHECKLIST**

JOB:

SUBCONTRACTOR:

LOCATION:

PROJECT NO.

	<u>Yes</u>	<u>No</u>
1. Standard emergency signals fully understood?	<input type="checkbox"/>	<input type="checkbox"/>
2. Subcontractor responsibility in time of emergency understood?	<input type="checkbox"/>	<input type="checkbox"/>
3. Fire and ambulance telephone numbers known?	<input type="checkbox"/>	<input type="checkbox"/>
4. Areas for possible evacuation designated?	<input type="checkbox"/>	<input type="checkbox"/>
5. Special safety rules for the plant or area known?	<input type="checkbox"/>	<input type="checkbox"/>
6. Nature of Chemical or special hazards for area reviewed with safety officer?	<input type="checkbox"/>	<input type="checkbox"/>
7. Special safety equipment for the area of job known?	<input type="checkbox"/>	<input type="checkbox"/>
8. Safety shower and eye wash locations known?	<input type="checkbox"/>	<input type="checkbox"/>
9. Smoking area designated?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have you been advised of potential hazards, protective Measures and availability of hazard information? e.g. Health & Safety Plan	<input type="checkbox"/>	<input type="checkbox"/>
11. Do you understand you are required to provide your employees with the information in (10) above?	<input type="checkbox"/>	<input type="checkbox"/>
12. Have you provided MSDSs to Athenica for any hazardous material you intend to bring on site?	<input type="checkbox"/>	<input type="checkbox"/>
13. Have you submitted training/medical certification records?	<input type="checkbox"/>	<input type="checkbox"/>
14. Are your subcontractors aware of the above rules?	<input type="checkbox"/>	<input type="checkbox"/>

Remarks: (Explain all No Answers) _____

Subcontractor's Supervisor

Date

Contractor's Project Manager

Date

Contractor's Project Supervisor

Date

Health & Safety Officer

Date

APPENDIX B

HEALTH AND SAFETY PLAN AMENDMENTS AND DOCUMENTATION FORM

**SITE-SPECIFIC HEALTH AND SAFETY PLAN
AMENDMENT DOCUMENTATION**

Project Name: _____ **Project No.:** _____

Amendment No.: _____ **Date:** _____

Amendment Page(s): _____ **Revises:** _____ **Section(s):** _____

Task(s) Amendment Affects:* _____

**(Attach new/revised Job Safety Analyses)*

Reason For Amendment:

Amendment: *(Attach separate sheet(s) as necessary)*

Completed by: _____ **Approved by:** _____

**SITE-SPECIFIC HEALTH AND SAFETY PLAN
AMENDMENT DOCUMENTATION**

Project Name: _____ **Project No.:** _____

Amendment No.: _____ **Date:** _____

Amendment Page(s): _____ **Revises:** _____ **Section(s):** _____

**SITE-SPECIFIC HEALTH AND SAFETY PLAN
AMENDMENT DOCUMENTATION**

Project Name: _____ **Project No.:** _____

Amendment No.: _____ **Date:** _____

Amendment Page: _____ **Revises:** _____ **Section:** _____

Task(s) Amendment Affects:* _____

**(Attach new/revised Job Safety Analyses)*

Reason For Amendment:

Amendment: *(Attach separate sheet(s) as necessary)*

Completed by: _____ **Approved by:** _____

APPENDIX C

DAILY SAFETY REPORT FORM

AIR MONITORING FORMS

	pDR-1500, Dusttrack or equivalent			Filter			
	pDR-1500, Dusttrack or equivalent			Filter			
	pDR-1500, Dusttrack or equivalent			Filter			
	pDR-1500, Dusttrack or equivalent			Filter			
	pDR-1500, Dusttrack or equivalent			Filter			

Calibration gases: 1. 100 ppm isobutylene, 2. 50% LEL methane, 3. 50 ppm CO, 4. 25 ppm H₂S

APPENDIX D

TAILGATE SAFETY MEETING FORM

Daily Safety Meeting Report

Project Name:

Location:

Date:

Today's Tasks/Activities:

Potential Chemical/Physical Hazards:

Personal Protective Equipment:

Attendees:

<hr/>	<hr/>

HSO: _____ Const. Supt:

(Signature) (Signature)

APPENDIX 6
VAPOR BARRIER MANUFACTURER SPECIFICATIONS &
COMPATIBILITY LETTER



May 14, 2015

Ethan Rainey
Athenica Environmental Services, Inc.
45-09 Greenpoint Ave
Long Island City, NY 11104

Dear Mr. Rainey,

I have reviewed the tables provided for the remediation/construction project located at 31-12 24th Ave, Queens, NY and noted the contaminants specifically described on the following pages:

- Table 1—VOCs in Soil Samples
- Table 2—SVOCs in Soil Samples
- Table 3—Pesticides and PCBs in Soil Samples
- Table 4—TAL Metals in Soil Samples
- Table 5—VOCs in Soil Vapor Samples

The identified contaminants at the levels reported will not have an adverse effect on the intended performance of VaporBlock Plus VBP20 as a vapor barrier, provided standard design and application procedures are followed. Standard installation instructions and details can be found on our website at www.ravenefd.com. If you have any questions or concerns, please feel free to call or send an e-mail.

Sincerely,

A handwritten signature in cursive script that reads "Erika Arens".

Erika Arens
Product Development Specialist
Engineered Films Division
Raven Industries, Inc.
(605) 357-0453
Erika.Arens@ravenind.com

VAPORBLOCK® PLUS™ VBP20

Under-Slab Vapor / Gas Barrier

RAVEN
INDUSTRIES

Product Description

VaporBlock® Plus™ 20 is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock® Plus™ 20 is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock® Plus™ 20 is more than 100 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon and other harmful VOCs.

VaporBlock® Plus™ 20 is one of the most effective underslab gas barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in a 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock® Plus™ 20 is produced within the strict guidelines of our ISO 9001:2008 Certified Management System.

Product Use

VaporBlock® Plus™ 20 resists gas and moisture migration into the building envelop when properly installed to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock® Plus™ 20 works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

Size & Packaging

VaporBlock® Plus™ 20 is available in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.



Under-Slab Vapor/Gas Retarder

Product

Part

VaporBlock Plus 20 VBP 20

APPLICATIONS

Radon Barrier	Under-Slab Vapor Retarder
Methane Barrier	Foundation Wall Vapor Retarder
VOC Barrier	

VaporBlock® Plus™
UNDERSLAB VAPOR RETARDER / GAS BARRIER

		VAPORBLOCK PLUS 20	
PROPERTIES	TEST METHOD	IMPERIAL	METRIC
APPEARANCE		White/Gold	
THICKNESS, NOMINAL		20 mil	0.51 mm
WEIGHT		102 lbs/MSF	498 g/m ²
CLASSIFICATION	ASTM E 1745	CLASS A, B & C	
TENSILE STRENGTH LBF/IN (N/CM) AVERAGE MD & TD (NEW MATERIAL)	ASTM E 154 Section 9 (D-882)	58 lbf	102 N
IMPACT RESISTANCE	ASTM D 1709	2600 g	
MAXIMUM USE TEMPERATURE		180° F	82° C
MINIMUM USE TEMPERATURE		-70° F	-57° C
PERMEANCE (NEW MATERIAL)	ASTM E 154 Section 7 ASTM E 96 Procedure B	0.0051 Perms grains/(ft ² ·hr·in·Hg)	0.0034 Perms g/(24hr·m ² ·mm Hg)
RADON DIFFUSION COEFFICIENT	K124/02/95	< 1.1 x 10 ⁻¹³ m ² /s	
METHANE PERMEANCE	ASTM D 1434	< 1.7 x 10 ⁻¹⁰ m ² /d·atm 0.32 GTR (Gas Transmission Rate) ml/m ² ·D·ATM	

VaporBlock® Plus™ Placement

All instructions on architectural or structural drawings should be reviewed and followed.
Detailed installation instructions accompany each roll of VaporBlock® Plus™ and can also be located on our website.
ASTM E-1643 also provides general installation information for vapor retarders.



VaporBlock® Plus™ is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.



Engineered Films Division
P.O. Box 5107
Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333

Limited Warranty available at www.RavenEFD.com

Toll Free: 800-635-3456
Email: efdsales@ravenind.com
www.ravenefd.com

10/10 EFD 1125

UNDERSLAB VAPOR / GAS BARRIERS INSTALLATION GUIDELINES

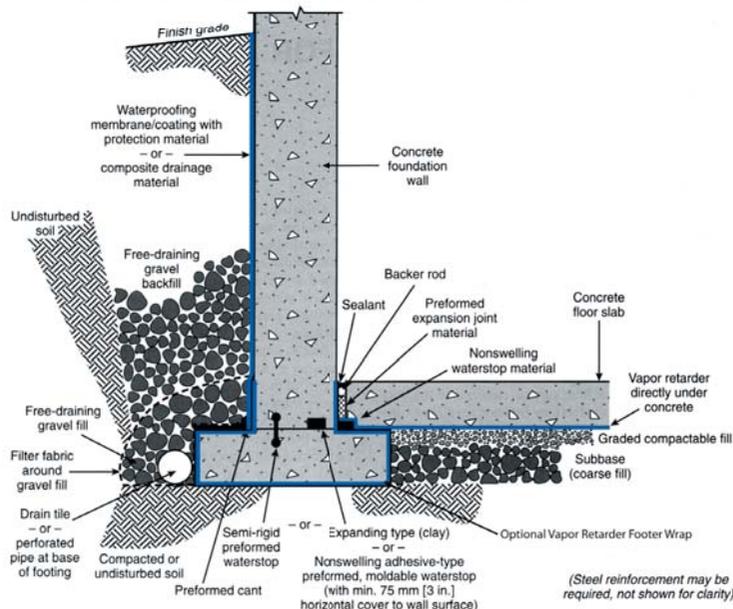
Visit our website for current technical data sheets as well as detailed installation guidelines at www.vaporblock.com and click on the appropriate link under the left menu.

Note: Please refer to ASTM E 1643 (Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs) and the

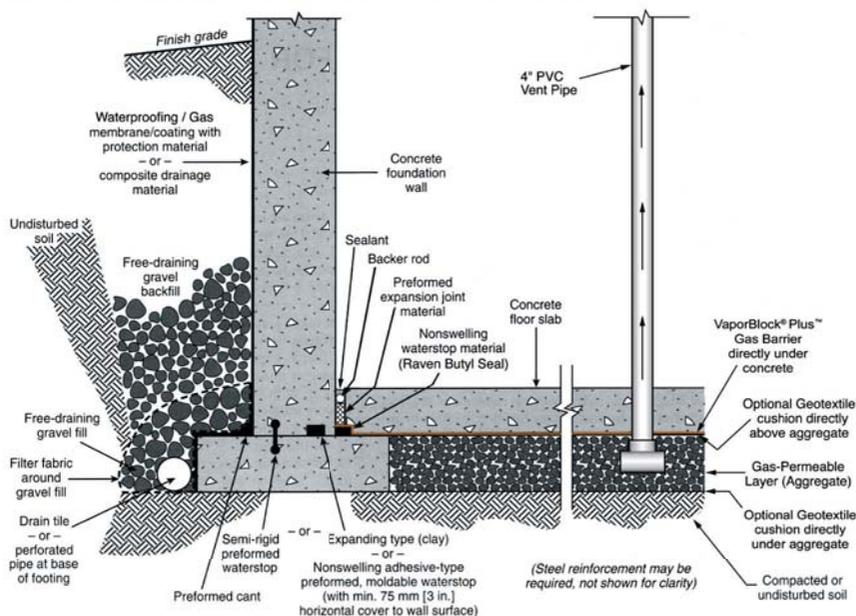
appendixes that accompany this standard to provide additional installation information.

Please follow all architectural drawings/instructions and conform to all applicable local, state and federal regulations and laws pertaining to residential and commercial building construction.

UNDERSLAB VAPOR RETARDER/BARRIER



UNDERSLAB MOISTURE AND GAS BARRIER



Illustrations should be used for general information only. Original diagrams on this page were reprinted with permission by the Portland Cement Association.

Reference: Kanare, Howard M., Concrete Floors and Moisture, EB119, Portland Cement Association, Skokie, Illinois, and National Ready Mixed Concrete Association, Silver Spring, Maryland, USA, 2008, 176 pages.