31-07 38TH AVENUE
QUEENS, NEW YORK

Remedial Action Work Plan

NYC VCP Site Number: 16CVCP002Q

OER Project Number: 15EHAN396Q

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REMEDIAL ACTION WORK PLAN
TABLE OF CONTENTS

REMEDIAL ACTION WORK PLAN 2
TABLE OF CONTENTS 2
FIGURES 4
APPENDICES 4
LIST OF ACRONYMS 5
CERTIFICATION 7
EXECUTIVE SUMMARY 8
COMMUNITY PROTECTION STATEMENT 16
1.0 Project Background 21
1.1 Site Location and Background 21
1.2 Redevelopment Plan 21
1.3 Description of Surrounding Property 22
1.4 Summary of Past Site Uses and Areas of Concern 23
1.5 Summary of Work Performed under the Remedial Investigation 24
1.6 Summary of Findings of Remedial Investigation 24
2.0 Remedial Action Objectives 27
3.0 Remedial Alternatives Analysis 28
3.1 Threshold Criteria Protection of Public Health and the Environment 30
3.2 Balancing Criteria 31
4.0 Remedial Action 38
4.1 Summary of Preferred Remedial Action 38
4.2 Soil Cleanup Objectives and Soil/ Fill Management 41
4.3 Engineering Controls 45
4.4 Institutional Controls 47
4.5 Site Management Plan 48
4.6 Qualitative Human Health Exposure Assessment 49
5.0 Remedial Action Management 53
5.1 Project Organization and Oversight 53
5.2 Site Security 53
5.3 Work Hours 53
5.4 Construction Health and Safety Plan 53
5.5 Community Air Monitoring Plan 54

5.6 Agency Approvals 56
5.7 Site Preparation 56
5.8 Traffic Control 61
5.9 Demobilization 61
5.10 Reporting and Record Keeping 61
5.11 Complaint Management 62
5.12 Deviations from the Remedial Action Work Plan 62
6.0 Remedial Action Report 64
7.0 Schedule 67

FIGURES

Figure 1: Site Location Map

Figure 2: Site Boundary Map

Figure 3: Additional Sampling Plan

Figure 4: Areas of Concern

Figure 5: Site Excavation Diagram

Figure 6: End-point Sample Locations

Figure 7: Site-wide Composite Cover System

Figure 8: Vapor Barrier Diagram

Figure 9: Sub-Slab Depressurization Design Diagrams

APPENDICES

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 Vapor Barrier System

Appendix 7: Specifications for Sub-Slab Depressurization System

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, Ariel Czemerinski, 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 31-07 38th Avenue site, site number 16CVCP002Q. 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

_____
PE License Number

_____
Signature

_____
Date

PE Stamp

I, William Silveri, am a qualified Environmental Professional. I will have primary direct responsibility for implementation of the remedial program for the 31-07 38th Avenue site, site number 16CVCP002Q. 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

_____
QEP Signature

_____
Date

EXECUTIVE SUMMARY

Kayafas Contracting Company is working with the NYC Office of Environmental Remediation (OER) in the New York City Voluntary Cleanup Program to investigate and remediate an approximately 5,500 square foot site located at 31-07 38th Avenue in Queens, New York. A 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 31-07 38th Avenue in the Long Island City section in Queens, New York and is identified as Block 373 and eastern portion of Lot 1 on the New York City Tax Map. Figure 1 shows the Site location. The Site is approximately 6,000-square feet and is bounded by a one-story industrial warehouse to the north, 38th Street to the south, a one-story industrial warehouse to the east, and an active gasoline filling station and one-story service station to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is used as an auto body repair and painting shop and contains a one-story warehouse with several hydraulic oil lifts, a spray booth/oven, and a partial basement.

Summary of Redevelopment Plan

The proposed future use of the Site will consist of a new 6-story mixed commercial and residential use building with a footprint of approximately 5,500 square feet. The existing on Site building will be expanded towards southwest portion of the lot. The current Lot 1 will be subdivided into two lots, with the proposed new building occupying the entire Lot 2. The total gross square footage of the proposed building will be approximately 20,700 square feet, including approximately 16,800 square feet of residential space and 3,900 square feet of commercial space. Partial excavation will be performed in the southwest portion of the Site to expand the existing partial basement to a depth of approximately 12 feet below grade and across

portions of the Site to install new columns and foundation walls to a depth of approximately 5 feet below grade. Additional excavation will be performed in the eastern portion of the Site for an elevator pit to a depth of approximately 5 feet below grade. The total amount of soil expected to be removed for excavation of the new basement, structural footings, and parking elevator is approximately 650 cubic yards.

The new basement will house mechanical and utility equipment rooms for both the residential and commercial spaces and a passenger elevator for the residences. The ground floor will be utilized for the commercial space. Additionally, there will also be a residential lobby and vehicle elevator on the ground floor. The second floor will be utilized for parking. Floors above (3rd through 6th) will be occupied by residential units. The existing Lot 1 will be subdivided so that the eastern half will comprise only the Site. Layout of the proposed site development is presented in Figure 3.

The current zoning designation is M1-2/R6A. 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, commercial, and manufacturing area of Queens, New York. The Site is bounded by a one-story industrial warehouse to the north, 38th Street to the south, a one-story industrial warehouse to the east, and an active gasoline filling station and one-story service station to the west.

According to the OER Searchable Property Environmental E-Database (SPEED), there are no sensitive receptors (such as schools, hospitals, and day-care facilities) within a 500-foot radius of the Site.

Summary of Past Site Uses and Areas of Concern

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Nova Geophysical & Environmental Services (Nova) in March 2013, the Site history was established. The Site consists of an approximately 13,900 square foot lot that is currently developed with three one-story buildings. The first building, with an address of 37-33 31st Street, is a metal works facility which consists of a one-story commercial building of approximately 2,000 square feet. The second building, with an address of 31-05 38th Avenue, is an active gasoline filling station with a one-story commercial building that is used as a service station with a combined square footage of approximately 5,000 square feet. The last building (the Site being redeveloped), with an address of 31-07 38th Avenue, is an auto body repair and paint shop housing within a one-story commercial building occupying approximately 6,000 square feet. The Phase I ESA identified the Site (31-07 38th Avenue) as a registered aboveground storage tank (AST) facility, and identified an active 275-gallon AST in the partial basement of the Site, which is used for storing number two fuel oil. The active 275-gallon AST is currently being used by the spray booth/oven. The Phase I ESA also identified the Site as having an E-Designation for hazardous materials, noise, and air quality.

The AOCs identified for this site include:

1. Presence of tetrachloroethylene (PCE) and trichloroethylene (TCE) in soil vapor underneath the Site.

Summary of Work Performed under the Remedial Investigation

Athenica performed the following scope of work on behalf of Kayafas Contracting Company in June of 2015:

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 seven (7) soil borings across the entire project Site and collected fourteen (14) soil samples for chemical analysis from the soil borings to evaluate soil quality;

4. Installed three (3) groundwater monitoring wells throughout the Site to establish groundwater flow and collected three (3) groundwater samples for chemical analysis to evaluate groundwater quality;
5. Installed one (1) soil vapor and two (2) sub-slab vapor probes around Site and collected three (3) samples for chemical analysis.

Summary of Findings of Remedial Investigation

1. Elevation of the property is approximately 34 feet.
2. Depth to groundwater ranges from 21.1 to 21.6 feet at the Site.
3. Groundwater flow is generally west-southwest at Site.
4. Bedrock was not encountered during this investigation.
5. The stratigraphy of the site, from the surface down, consists of 2 feet of medium to coarse sand with urban fill, underlain by 28 feet of fine to medium sand.
6. Soil/fill samples collected during this RI were compared to 6NYCRR Part 375-6.8 Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs) and Track 2 Restricted Use Restricted-Residential SCOs. Soil results showed that there were no detectable concentrations of PCBs in any of the soil samples. SVOCs were not detected in any of the soil samples above their respective Unrestricted Use SCOs. VOCs were not detected in any of the soil samples above their respective Unrestricted Use SCOs, with the exception of acetone (0.0039 mg/kg) in one soil sample. It should be noted that acetone is a common laboratory contaminant. One pesticide; 4,4'-DDT (0.061 mg/kg) was detected above its respective Unrestricted Use SCO in one shallow (zero to 2 feet) soil samples. Two (2) metals, including lead (max. of 94.9 mg/kg) and zinc (max. of 129 mg/kg) were detected in one shallow (zero to 2 feet) soil sample above their respective Unrestricted Use SCOs. None of these metals exceeded their respective Track 2 Restricted Residential Use SCOs. Overall, the soil chemistry is unremarkable and was consistent with the observed native material in areas throughout New York City.
7. Groundwater samples collected during this investigation were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). Pesticides or PCBs were not detected in any of the groundwater samples above their respective GQS. One VOC, chloroform (max. of 13 µg/L), was detected in all groundwater samples but only

exceeded its respective GQS in MW-1. No other VOCs were detected exceeding their respective GQS. Two SVOCs, phenol (max. of 8.1 µg/L) and bis(2-ethylhexyl)phthalate (max. of 7.25 µg/L) were found to exceed their GQS in MW-1 and MW-3, respectively. Several dissolved metals were detected in groundwater samples but only sodium (max. of 65,900 µg/L) exceeded its respective GQS standards all three groundwater samples.

8. Sub-slab vapor and 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. The sub-slab vapor and soil vapor results indicated elevated levels of petroleum related compounds in all of the samples, including BTEX (max. 1,960 µg/m^3). Chlorinated VOCs were detected at moderate concentrations in all of the samples. 1,1,1-trichloroethane (TCA) or carbon tetrachloride were not detected in any of the sub-slab vapor or soil vapor samples. Tetrachloroethylene (PCE) was detected in all three samples with a maximum concentration of 280 µg/m^3. Trichloroethylene (TCE) was detected in all three samples with a maximum concentration of 110 µg/m^3. Concentrations of PCE and TCE are above the monitoring/mitigation ranges established by NYSDOH. Since the soil and groundwater sample results showed no detections of PCE and TCE in all of the soil samples, the PCE and TCE in soil vapor is thought to come from an off-Site source.

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. Establishment of Track 4 Site-specific 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, consists of installing one (1) soil boring and one (1) soil vapor implant and collecting soil and soil vapor samples to complete the remedial investigation scope for this Site. The additional sampling plan is found in Figure 3.
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 the Restricted Use Restricted Residential Use (Track 2) SCOs. Partial excavation will be performed in the southwest portion of the Site to a depth of approximately 12 feet below grade and across portions of the Site to install new columns and foundation walls to a depth of approximately 5 feet below grade. Additional excavation will be performed in the eastern portion of the Site for an elevator pit to a depth of approximately 5 feet below grade. An estimated 650 cubic yards of soil 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 five end-point samples to determine the performance of the remedy with respect to attainment of SCOs. The end point sampling location plan is found in Figure 6.
13. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations (if required).
14. Construction of an engineered composite cover consisting of a six-inch thick concrete slab on top of a six-inch layer of porous fill sub-base.
15. 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 20-mil vapor barrier manufactured by Raven Industries (VaporBlock® Plus 20) below the slab throughout the full building area and outside all sub-grade foundation sidewalls. The remedial engineer will certify in the RAR that the vapor barrier system was designed and properly installed to mitigate soil vapor migration into the building.
16. Installation of an active sub-slab depressurization system (SSDS) consisting of two closed loops of horizontal pipe set in the middle of a gas permeable aggregate layer immediately beneath the building slab and vapor barrier system. Each loop will consist of fabric wrapped, perforated 4” Schedule 40 PVC pipe connected to a 6-inch cast iron or PVC riser pipe that penetrates the slab and travels through the building to the roof. The active SSDS is an Engineering Control for the remedial action. The remedial engineer will certify in the RAR that the active SSDS was designed and properly installed to establish a vacuum in the gas permeable layer and a negative (decreasing outward) pressure gradient across the building slab to prevent vapor migration into the building.
17. 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.

18. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
19. Submission of a RAR that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, lists any changes from this RAWP, and describes all Engineering and Institutional Controls to be implemented at the Site.
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. 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: 31-07 38th Avenue
- Site Address: 31-07 38th Avenue, Long Island City, 11101
- NYC Voluntary Cleanup Program Project Number: 16CVCP002Q

Project Contacts:

- OER Project Manager: Alysha Alfieri, 212-788-8841
- Site Project Manager: (To be reported to OER once determined) Site Safety Officer: (To be reported to OER once determined)
- 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 include 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 on-site 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: To provide long-term protection 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

Kayafas Contracting Company is working with the NYC Office of Environmental Remediation (OER) in the New York City Voluntary Cleanup Program and/or in the "E" Designation Program to investigate and remediate a property located at 31-07 38th Avenue in the Long Island City section of Queens, New York (the "Site"). A 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 31-07 38th Avenue in the Long Island City section in Queens, New York and is identified as Block 373 and eastern portion of Lot 1 on the New York City Tax Map. Figure 1 shows the Site location. The Site is approximately 6,000-square feet and is bounded by a one-story industrial warehouse to the north, 38th Street to the south, a one-story industrial warehouse to the east, and an active gasoline filling station and one-story service station to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is used as an auto body repair and painting shop and contains a one-story warehouse with several hydraulic oil lifts, a spray booth/oven, and a partial basement.

1.2 Redevelopment Plan

The proposed future use of the Site will consist of a new 6-story mixed commercial and residential use building with a footprint of approximately 5,500 square feet. The existing on Site building will be expanded towards southwest portion of the lot. The current Lot 1 will be subdivided into two lots, with the proposed new building occupying the entire Lot 2. The total

gross square footage of the proposed building will be approximately 20,700 square feet, including approximately 16,800 square feet of residential space and 3,900 square feet of commercial space. Partial excavation will be performed in the southwest portion of the Site to expand the existing partial basement to a depth of approximately 12 feet below grade and across portions of the Site to install new columns and foundation walls to a depth of approximately 5 feet below grade. Additional excavation will be performed in the eastern portion of the Site for an elevator pit to a depth of approximately 5 feet below grade. The total amount of soil expected to be removed for excavation of the new basement, structural footings, and parking elevator is approximately 650 cubic yards.

The new basement will house mechanical and utility equipment rooms for both the residential and commercial spaces and a passenger elevator for the residences. The ground floor will be utilized for the commercial space. Additionally, there will also be a residential lobby and vehicle elevator on the ground floor. The second floor will be utilized for parking. Floors above (3rd through 6th) will be occupied by residential units. The existing Lot 1 will be subdivided so that the eastern half will comprise only the Site. Layout of the proposed site development is presented in Figure 3.

The current zoning designation is M1-2/R6A. 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, commercial, and manufacturing area of Queens, New York. The Site is bounded by a one-story industrial warehouse to the north, 38th Street to the south, a one-story industrial warehouse to the east, and an active gasoline filling station and one-story service station to the west.

According to the OER Searchable Property Environmental E-Database (SPEED), there are no sensitive receptors (such as schools, hospitals, and day-care facilities) within a 500-foot radius of the Site.

Figure 2 shows the surrounding land usage.

1.4 Summary of Past Site Uses and Areas of Concern

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Nova Geophysical & Environmental Services (Nova) in March 2013, the Site history was established. The Site consists of an approximately 13,900 square foot lot that is currently developed with three one-story buildings. The first building, with an address of 37-33 31st Street, is a metal works facility which consists of a one-story commercial building of approximately 2,000 square feet. The second building, with an address of 31-05 38th Avenue, is an active gasoline filling station with a one-story commercial building that is used as a service station with a combined square footage of approximately 5,000 square feet. The last building (the Site being redeveloped), with an address of 31-07 38th Avenue, is an auto body repair and paint shop housing within a one-story commercial building occupying approximately 6,000 square feet. The Phase I ESA identified the Site (31-07 38th Avenue) as a registered aboveground storage tank (AST) facility, and identified an active 275-gallon AST in the partial basement of the Site, which is used for storing number two fuel oil. The active 275-gallon AST is currently being used by the spray booth/oven. The Phase I ESA also identified the Site as having an E-Designation for hazardous materials, noise, and air quality.

The AOCs identified for this site include:

1. Presence of tetrachloroethylene (PCE) and trichloroethylene (TCE) in soil vapor underneath the Site.

Figure 4 shows the Areas of Concern.

1.5 Summary of Work Performed under the Remedial Investigation

Athenica performed the following scope of work on behalf of Kayafas Contracting Company in June of 2015:

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 seven (7) soil borings across the entire project Site and collected fourteen (14) soil samples for chemical analysis from the soil borings to evaluate soil quality;

4. Installed three (3) groundwater monitoring wells throughout the Site to establish groundwater flow and collected three (3) groundwater samples for chemical analysis to evaluate groundwater quality;

5. Installed one (1) soil vapor and two (2) sub-slab vapor probes around Site and collected three (3) samples for chemical analysis.

1.6 Summary of Findings of Remedial Investigation

A remedial investigation was performed and the results are documented in a companion document called "Remedial Investigation Report, 31-07 38th Avenue", dated June 2015 (RIR).

1. Elevation of the property is approximately 34 feet.

2. Depth to groundwater ranges from 21.1 to 21.6 feet at the Site.

3. Groundwater flow is generally west-southwest at Site.

4. Bedrock was not encountered during this investigation.

5. The stratigraphy of the site, from the surface down, consists of 2 feet of medium to coarse sand with urban fill, underlain by 28 feet of fine to medium sand.

6. Soil/fill samples collected during this RI were compared to 6NYCRR Part 375-6.8 Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs) and Track 2 Restricted Use Restricted-Residential SCOs. Soil results showed that there were no detectable concentrations of PCBs in any of the soil samples. SVOCs were not detected in any of the soil samples above their respective Unrestricted Use SCOs. VOCs were not detected in any of the soil samples above their respective Unrestricted Use SCOs, with the exception of acetone (0.0039 mg/kg) in one soil sample. It should be noted that acetone is a common laboratory contaminant. One pesticide; 4,4'-DDT (0.061 mg/kg) was detected above its respective Unrestricted Use SCO in one shallow (zero to 2 feet) soil samples. Two (2) metals, including lead (max. of 94.9 mg/kg) and zinc (max. of 129 mg/kg) were detected in one shallow (zero to 2 feet) soil sample above their respective Unrestricted Use SCOs. None of these metals exceeded their respective Track 2 Restricted Residential Use SCOs. Overall, the soil chemistry is unremarkable and was consistent with the observed native material in areas throughout New York City.

7. Groundwater samples collected during this investigation were compared to NYSDEC 6NYCRR Part 703.5 Groundwater Quality Standards (GQS). Pesticides or PCBs were not detected in any of the groundwater samples above their respective GQS. One VOC, chloroform (max. of 13 µg/L), was detected in all groundwater samples but only exceeded its respective GQS in MW-1. No other VOCs were detected exceeding their respective GQS. Two SVOCs, phenol (max. of 8.1 µg/L) and bis(2-ethylhexyl)phthalate (max. of 7.25 µg/L) were found to exceed their GQS in MW-1 and MW-3, respectively. Several dissolved metals were detected in groundwater samples but only sodium (max. of 65,900 µg/L) exceeded its respective GQS standards all three groundwater samples.

8. Sub-slab vapor and 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. The sub-slab vapor and soil vapor results indicated elevated levels of petroleum related compounds in all of the samples, including BTEX (max. 1,960 µg/m^3). Chlorinated VOCs were detected at moderate concentrations in all of the samples. 1,1,1-trichloroethane (TCA) or carbon tetrachloride were not detected in any of the sub-slab

vapor or soil vapor samples. Tetrachloroethylene (PCE) was detected in all three samples with a maximum concentration of 280 µg/m^3. Trichloroethylene (TCE) was detected in all three samples with a maximum concentration of 110 µg/m^3. Concentrations of PCE and TCE are above the monitoring/mitigation ranges established by NYSDOH. Since the soil and groundwater sample results showed no detections of PCE and TCE in all of the soil samples, the PCE and TCE in soil vapor is thought to come from an off-Site source.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not suspected at this site.

2.0 Remedial Action Objectives

Based on the results of the 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.
- Prevent exposure to contaminants volatilizing from 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 5 feet below grade to remove all contaminated soil. If the soil/fill

contains analytes at concentrations above Unrestricted Use SCOs are still present at the base of the excavation after removal of all soil required for construction of the new building's 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, however, as part of development, a vapor barrier would be installed to prevent potential exposures from soil vapor in the future. Additionally, a sub-slab depressurization system (SSDS) will be required to prevent potential exposure from soil vapor from off-Site sources.

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. For development purpose, the southwest corner of the property will be excavated to expand the existing partial basement to a depth of approximately 12 feet below grade and across portions of the Site to install new columns and foundation walls to a depth of approximately 5 feet below grade. Additional excavation will be performed in the eastern portion of the Site for an elevator pit to a depth of approximately 5 feet below grade. If soil/fill contains analytes at concentrations above Track 4 Site-specific SCOs are 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 basement and ground floor building slab and behind foundation side walls of the basement to prevent potential exposures from soil vapor, as well as around the elevator pits;
- Installation of an active sub-slab depressurization system to prevent potential exposure from soil vapor coming from off-Site sources;
- 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 and passive SSDS below the new building's basement and grade floor slab and continuing the vapor barrier outside of subgrade foundation walls, as part of development.

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 vapor barrier system and an active SSDS below the new building's basement and ground floor 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.

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 on-site 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 most 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 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 the new building requires excavation of to a depth of 12 feet below grade for a portion of the Site, the costs associated with Alternative 1 will be significantly higher than Alternative 2 because of additional excavations to achieve Unrestricted Use SCOs. Additionally, 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 six-story mixed use (commercial and residential) building with a basement, a commercial/retail store on the first floor, residential tenant parking on the second floor, and residential units from floors 3-6. 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 area surrounding the Site consists of mixed use residential, commercial, and manufacturing buildings. The development would remediate a contaminated 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 environmental 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 Appendix 3.

4.0 Remedial Action

4.1 Summary of Preferred Remedial Action

The preferred remedial action alternative is Alternative 2, the Track 4 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. Establishment of Track 4 Site-specific 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, consists of installing one (1) soil boring and one (1) soil vapor implant and collecting soil and soil vapor samples to complete the remedial investigation scope for this Site. The additional sampling plan is found in Figure 3.
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 the Restricted Use Restricted Residential Use (Track 2) SCOs. Partial excavation will be performed in the southwest portion of the Site to a depth of approximately 12 feet below grade and

across portions of the Site to install new columns and foundation walls to a depth of approximately 5 feet below grade. Additional excavation will be performed in the eastern portion of the Site for an elevator pit to a depth of approximately 5 feet below grade. An estimated 650 cubic yards of soil 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 five end-point samples to determine the performance of the remedy with respect to attainment of SCOs. The end point sampling location plan is found in Figure 6.
13. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations (if required).
14. Construction of an engineered composite cover consisting of a six-inch thick concrete slab on top of a six-inch layer of porous fill sub-base.
15. 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 20-mil vapor barrier manufactured by Raven Industries (VaporBlock® Plus 20) below the slab throughout the full building area and outside all sub-grade foundation sidewalls.

The remedial engineer will certify in the RAR that the vapor barrier system was designed and properly installed to mitigate soil vapor migration into the building.

16. Installation of an active sub-slab depressurization system (SSDS) consisting of two closed loops of horizontal pipe set in the middle of a gas permeable aggregate layer immediately beneath the building slab and vapor barrier system. Each loop will consist of fabric wrapped, perforated 4” Schedule 40 PVC pipe connected to a 6-inch cast iron or PVC riser pipe that penetrates the slab and travels through the building to the roof. The active SSDS is an Engineering Control for the remedial action. The remedial engineer will certify in the RAR that the active SSDS was designed and properly installed to establish a vacuum in the gas permeable layer and a negative (decreasing outward) pressure gradient across the building slab to prevent vapor migration into the building.
17. 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.
18. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
19. Submission of a RAR that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, lists any changes from this RAWP, and describes all Engineering and Institutional Controls to be implemented at the Site.
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. 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

The following Track 4 Site-Specific SCO's will be utilized for this project:

Contaminant	Site-Specific SCO's
Total SVOCs	250 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

Partial excavation will be performed in the southwest portion of the Site to expand the existing partial basement to a depth of approximately 12 feet below grade and across portions of the Site to install new columns and foundation walls to a depth of approximately 5 feet below grade. Additional excavation will be performed in the eastern portion of the Site for an elevator pit to a depth of approximately 5 feet below grade. The total amount of soil expected to be removed for excavation of the new basement, structural footings, and parking elevator is approximately 650 cubic yards. The location of planned excavations is shown in Figure 5. 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 Site-specific SCOs, analytes will include those for which SCOs have been developed, including total SVOCs 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. The end point sampling location plan is found in Figure 6.

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 SVOCs, pesticides, PCBs, and metals.

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 $4^{o}C$.

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 with Alconox® 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

Import of soils onto the property will be performed in conformance with the Soil/Materials Management Plan in Appendix 4. Imported soil will meet the lower of:

- Track 2 Restricted Use – Restricted Residential Use SCO’s, and
- Groundwater Protection Standards in Part 375-6.8.

Soil import is not planned on this project.

Reuse of On-site Soils

Soil reuse is not anticipated for this project.

If on-site soils are reused in the future, on-site reuse will be performed in conformance with the Soil/Materials Management Plan in Appendix 4. Reuse soils will meet the SCO's established for this project, Track 4 Site-specific SCOs. A map of soil backfill placement locations will be provided in the RAR.

4.3 Engineering Controls

The excavation required for the proposed Site development will achieve Track 4 Site Specific SCOs. Engineering Controls will be employed in the remedial action to address residual contamination remaining at the site. The Site has three (3) primary Engineering Control Systems. These are:

(1) Composite Cover System
(2) Soil Vapor Barrier System
(3) Active Sub-Slab Depressurization System

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 six-inch thick concrete slab on top of a six-inch layer of porous fill sub-base.

Figure 7 shows the typical design for each remedial cover type used and 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 on-site or off-site sources into the building will be mitigated with a combination of building slab and vapor barrier. The vapor barrier system will consist of a 20-mil vapor barrier manufactured by Raven Industries (VaporBlock® Plus 20) below the slab throughout the full building area and outside all sub-grade foundation sidewalls and will be installed in accordance with the manufacturer's specifications. All welds, seams and penetrations will be properly sealed to prevent preferential pathways for vapor migration

A plan view showing the location of the proposed vapor barrier system is provided in Figure 8. Typical design sections for the vapor barrier on slab and sidewalls are provided in Figure 8. Product specification sheets are provided in Appendix 6. The Remedial Action Report will include as-built drawings and diagrams; manufacturer documentation; and photographs.

The Remedial Action Report will include a PE-certified letter (on company letterhead) from the primary contractor responsible for installation oversight and field inspections and a copy of the manufacturer's certificate of warranty.

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.

Sub-Slab Depressurization System

Migration of soil vapor into the building will be mitigated with the construction of an active Sub-Slab Depressurization System (SSDS).

The SSDS will consist of two closed loops of horizontal pipe set in the middle of a gas permeable aggregate layer immediately beneath the building slab and vapor barrier system. Each loop will consist of fabric wrapped, perforated 4" Schedule 40 PVC pipe connected to a 6-inch cast iron or PVC riser pipe that penetrates the slab and travels through the building to the roof. The gas permeable aggregate layer will consistent of a 6-inch thick layer of washed ¾" pea

gravel or equivalent. The riser will terminate at the roof line with a rain cap to prevent rain infiltration and be located at least 10 feet away from any window, building, or air intake. The active SSDS will include a Radonaway RP265 fan installed on the roof line, hardwired to an electrical circuit, and will include a pressure gauge and alarm, on an electrical circuit separate from the fan electrical circuit, located in an accessible area in the basement and grade floor area or at the roof. Several permanent sampling ports will be installed in the basement and the first floor.

The SSDS is 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. Maintenance of this SSDS will be described in the Site Management Plan in the Remedial Action Report. The location and layout of the SSDS is shown in Figure 9. A typical section of the system is shown in Figure 9. Specifications for the active sub-slab depressurization system are found in Appendix 7.

4.4 Institutional Controls

A series of Institutional Controls (IC's) are required under this Remedial Action to assure permanent protection of public health by elimination of exposure to residual materials. 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(l)(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 commercial and residential uses and will not be used for a higher level of use without prior approval by OER.

4.5 Site Management Plan

Site Management is the last phase of remediation and begins 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.

4.6 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 not identified during the remedial investigation. Based on the results of the RIR, the contaminants of concern are:

Soil:

- VOCs (acetone) exceeding its Unrestricted Use SCO, and
  Pesticides and metals were identified but did not exceed Restricted Use Restricted Residential Use SCOs.

Groundwater:

- VOCs (chloroform) exceeding its GQS,
- SVOCs (phenol and bis(2-ethylhexyl)phthalate) exceeding its GQS, and
- Several metals were identified, but only sodium exceeding its GQS.

Soil Vapor:

- Elevated levels of petroleum-related hydrocarbons including BTEX compounds in sub-slab vapor and soil vapor samples,
- 1,1,1-TCA and carbon tetrachloride were not detected in any of the samples, and
- Elevated levels of PCE and TCE detected in all three samples below the NYSDOH Soil Vapor matrix mitigation range.

Nature, Extent, Fate and Transport of Contaminants

PCBs were not detected in the soil samples. One VOC, acetone, was detected in one deep (3 to 5 feet) soil sample slightly above the Unrestricted Use SCO. One pesticide, 4,4'-DDT, was detected in one shallow (zero to 2 feet) soil sample slightly above the Unrestricted Use SCO. Two metals (lead and zinc) were detected in one deep (3 to 5 feet) soil sample slightly above the Unrestricted Use SCO. One VOC, chloroform, was detected in one of the groundwater samples above its respective GQS. No other VOCs were detected above their GQS. Two SVOCs, phenol and bis(2-ethylhexylphthalate), were detected in two groundwater samples slightly exceeding their respective GQs. Only one dissolved metal, sodium, exceeded their respective GQS. Soil vapor samples exhibited elevated levels of BTEX compounds, PCE, and TCE from an off-Site source/s, since these compounds were not detected in soil or groundwater.

Receptor Populations

On-Site Receptors: The site is currently occupied by an automobile collision repair and painting shop and access to the Site is restricted by a locked door and locked rolltop shutters. On-site receptors are limited to employees, 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:

- Commercial Businesses – existing and future
- Residential Buildings – existing and future
- Building Construction/ Renovation – existing and future
- Pedestrians, Trespassers, Cyclists – 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 concrete, and 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 a building, there is potential for soil vapor to accumulate on site. *Construction/ Remediation Conditions*: During the remedial action, on-site 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 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 4 SCOs will be removed. The site will be fully capped, preventing potential direct exposure to soil and groundwater remaining in place, and engineering controls (vapor barrier/active SSDS) 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.

5.0 Remedial Action Management

5.1 Project Organization and Oversight

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

5.2 Site Security

Site access will be controlled by a DOB-approved construction fence and locked entrances.

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. The Site Safety Coordinator will be reported to OER once determined. 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 incompliance 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 off-site areas may require characterization based on site conditions, at the discretion of OER. If on-site 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 on-site or off-site 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 38th Avenue west and onto Northern Boulevard.

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 al 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, Ariel Czemerinki, 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 31-07 38th Avenue site, site number 16CVCP002Q. 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 July 2015 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 31-07 38th Avenue site, site number 16CVCP002Q. I certify to the following:

- The OER-approved Remedial Action Work Plan dated August 2015 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.

QEP Name

QEP Signature

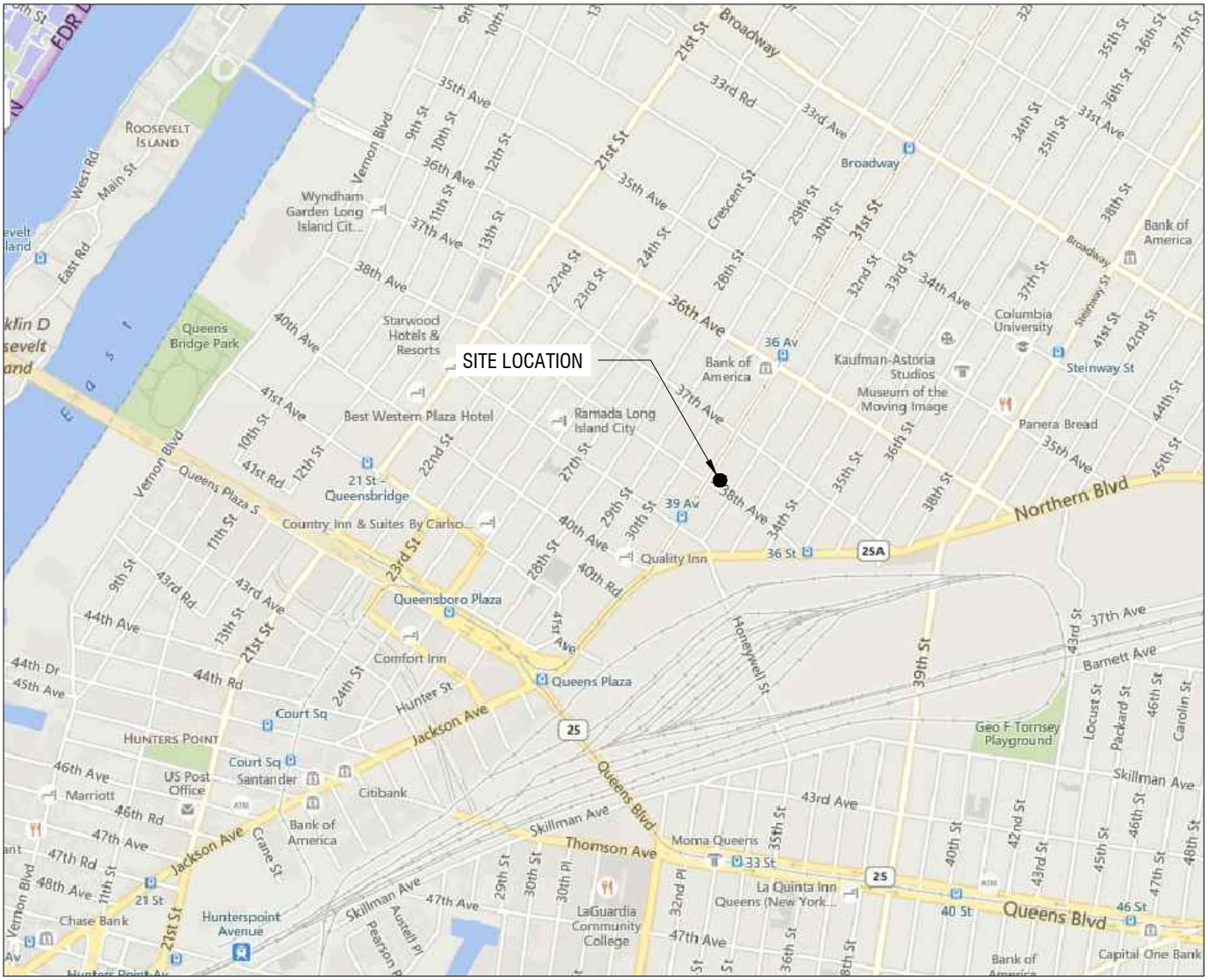
Date

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 two 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	1
Remedial Excavation	8	9
Demobilization	1	10
Submit Remedial Action Report	2	12

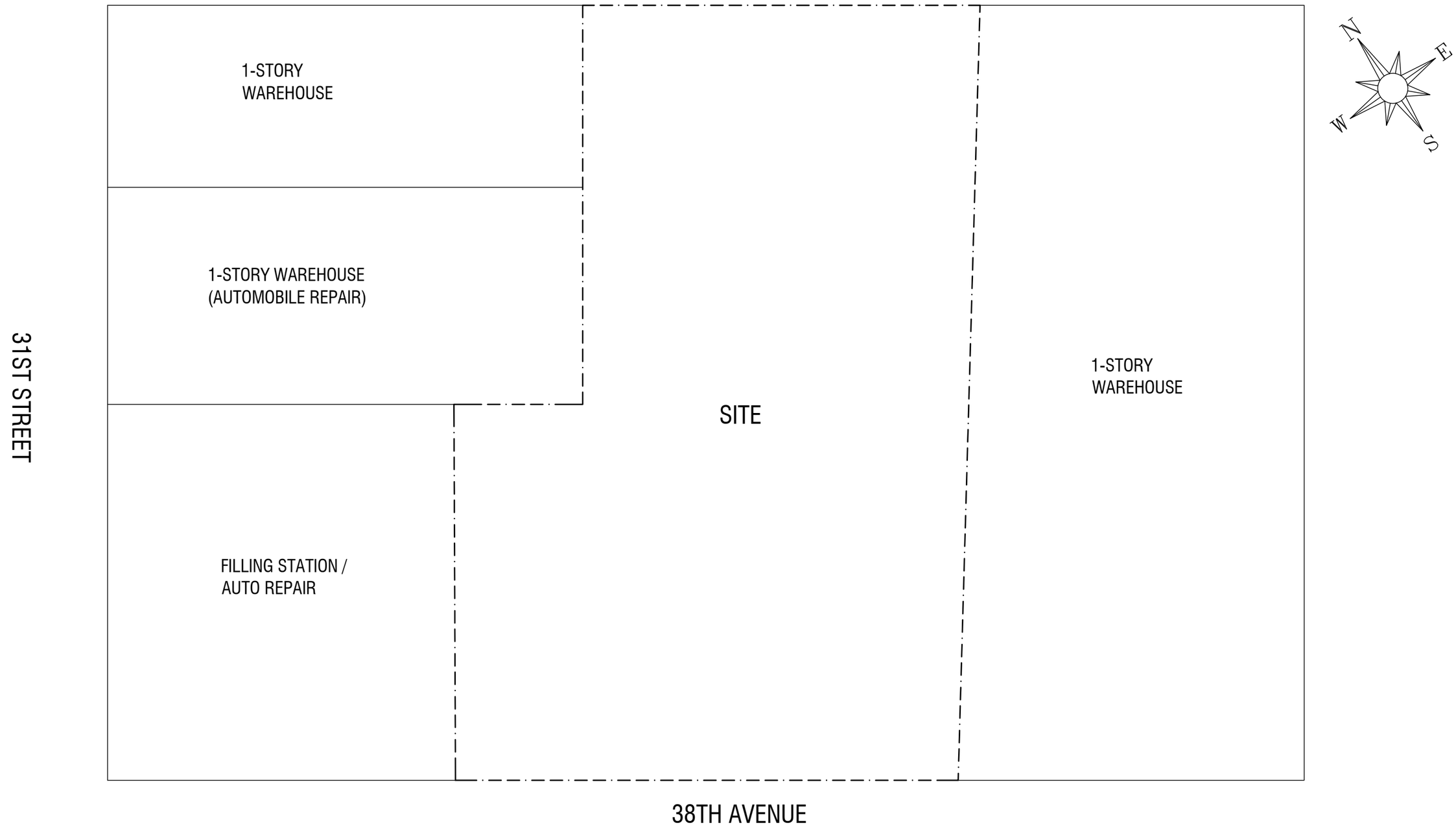
FIGURES



Scale: 1000 ft

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	1 SITE LOCATION MAP
Date:	JULY 2, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416



Legend:

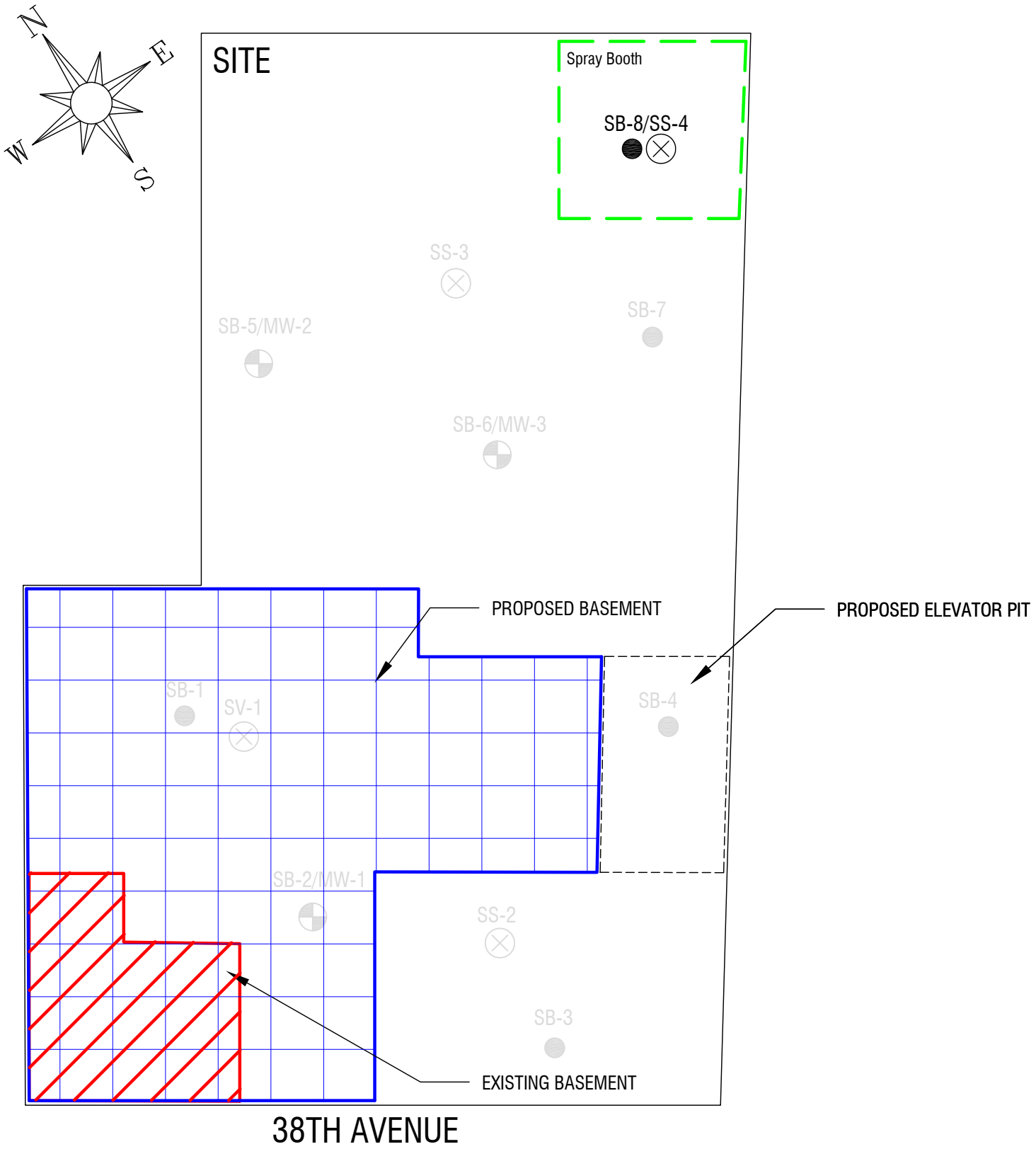
— — · — SITE BOUNDARY

Scale:

Not to Scale

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38TH AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	2 SITE BOUNDARY MAP
Date:	JULY 2, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416

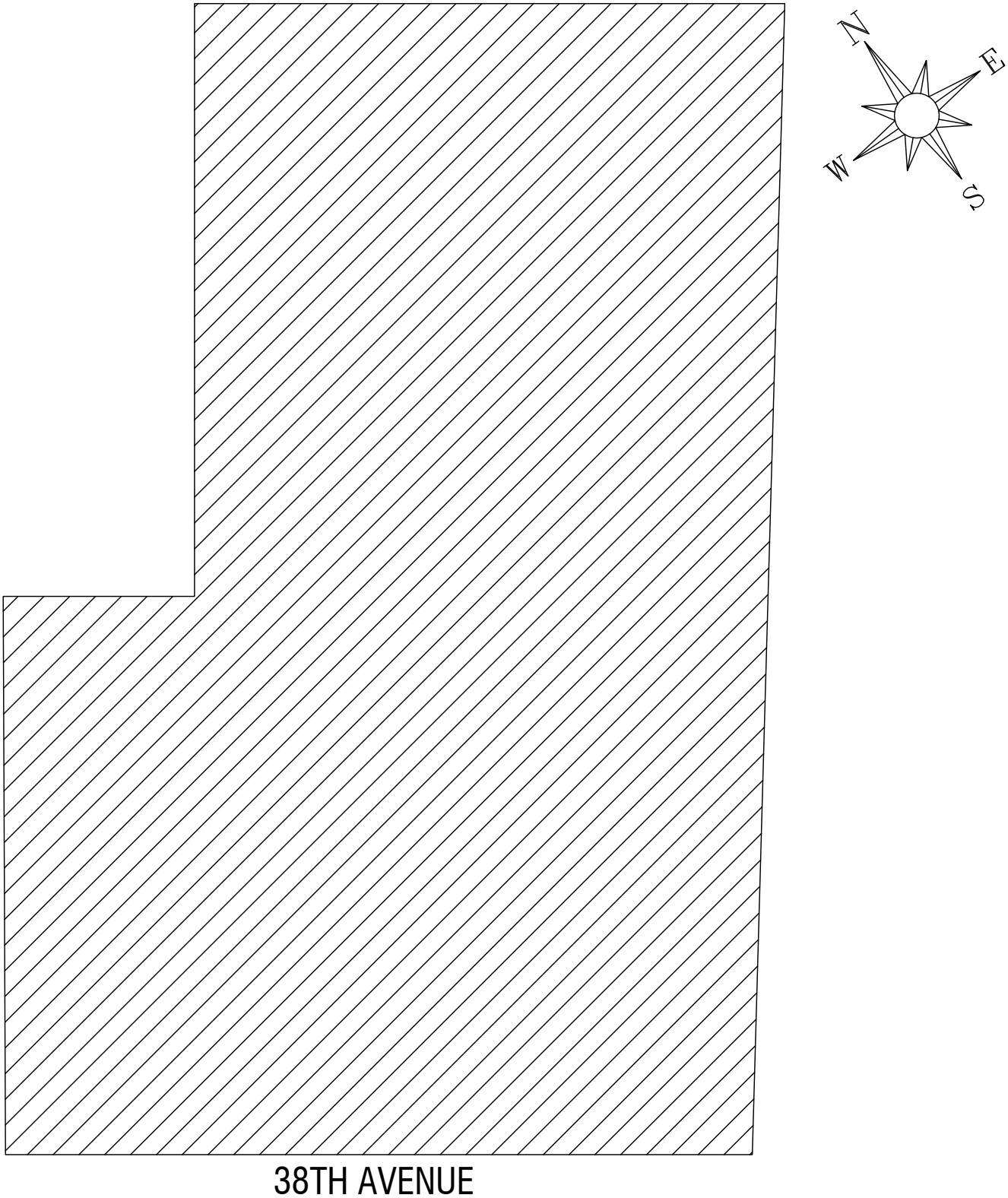


Legend:

- Sub-Slab or Soil Vapor Boring Location and Designated Number
- Soil Boring Location and Designated Number
- Soil Boring & Monitoring Well Location and Designated Number
- Existing Basement
- Proposed Basement Outline

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	3 ADDITIONAL SAMPLING PLAN
Date:	JULY 2, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416

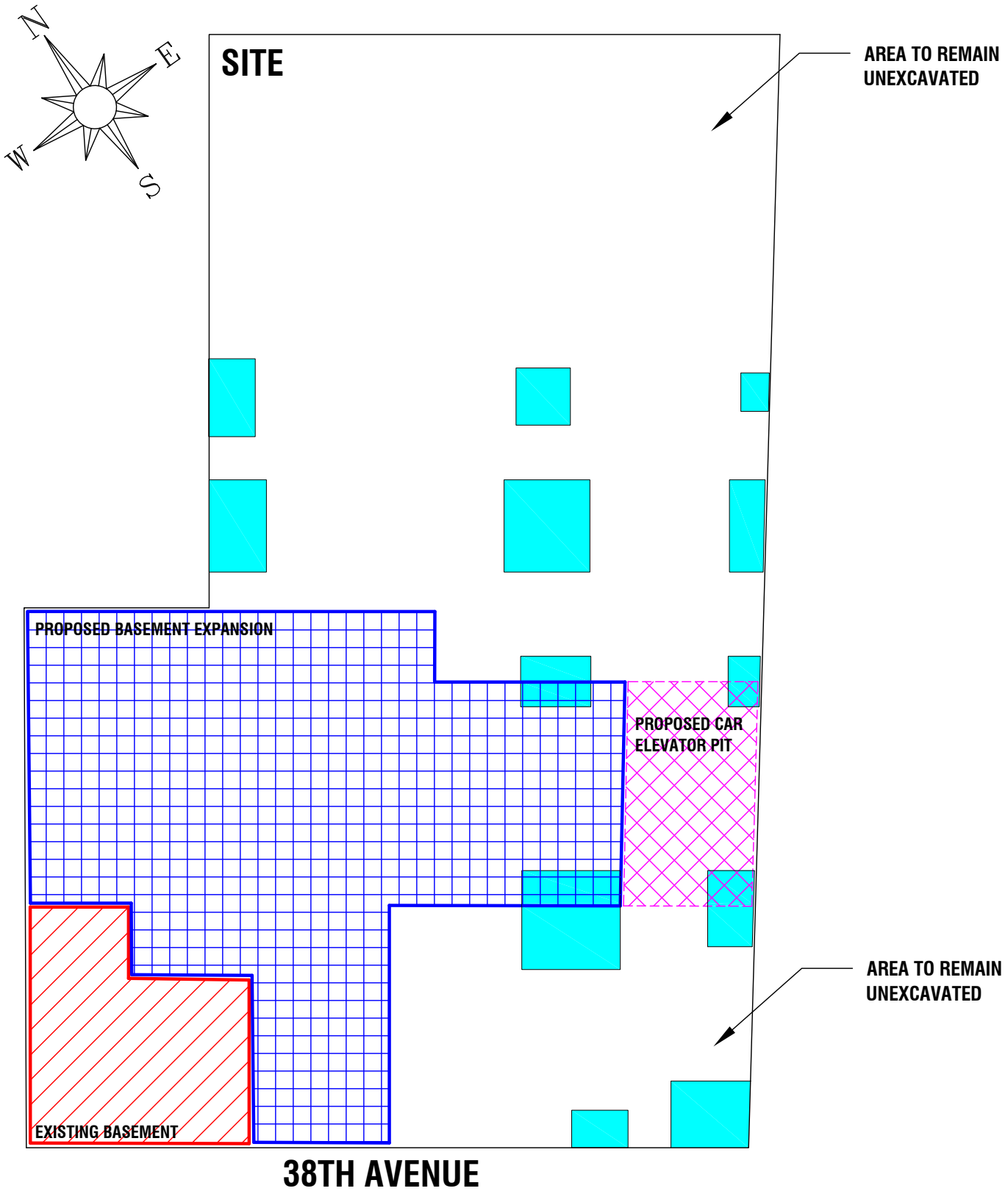


Legend:

AREA OF SOIL VAPOR CONTAMINATION

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	4 AREAS OF CONCERN
Date:	JUNE 16, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416

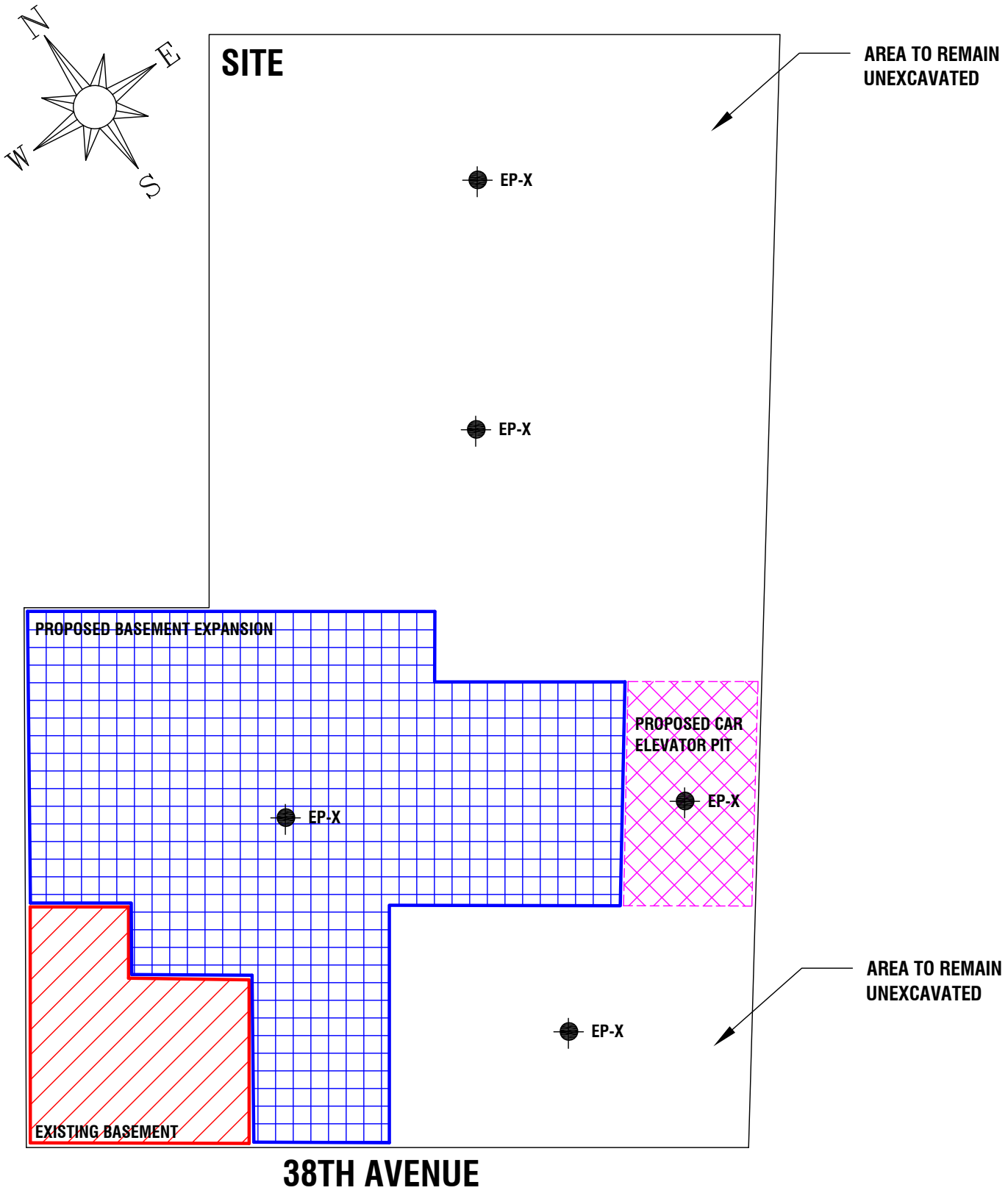


Legend:

- Existing Basement
- Proposed Structural Footings to be excavated 5 feet bgs
- Proposed Car Elevator to be excavated 5 feet bgs
- Proposed Basement Expansion to be excavated 12 feet bgs
- Area to Remain Unexcavated

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	5 SITE EXCAVATION DIAGRAM
Date:	JULY 21, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416

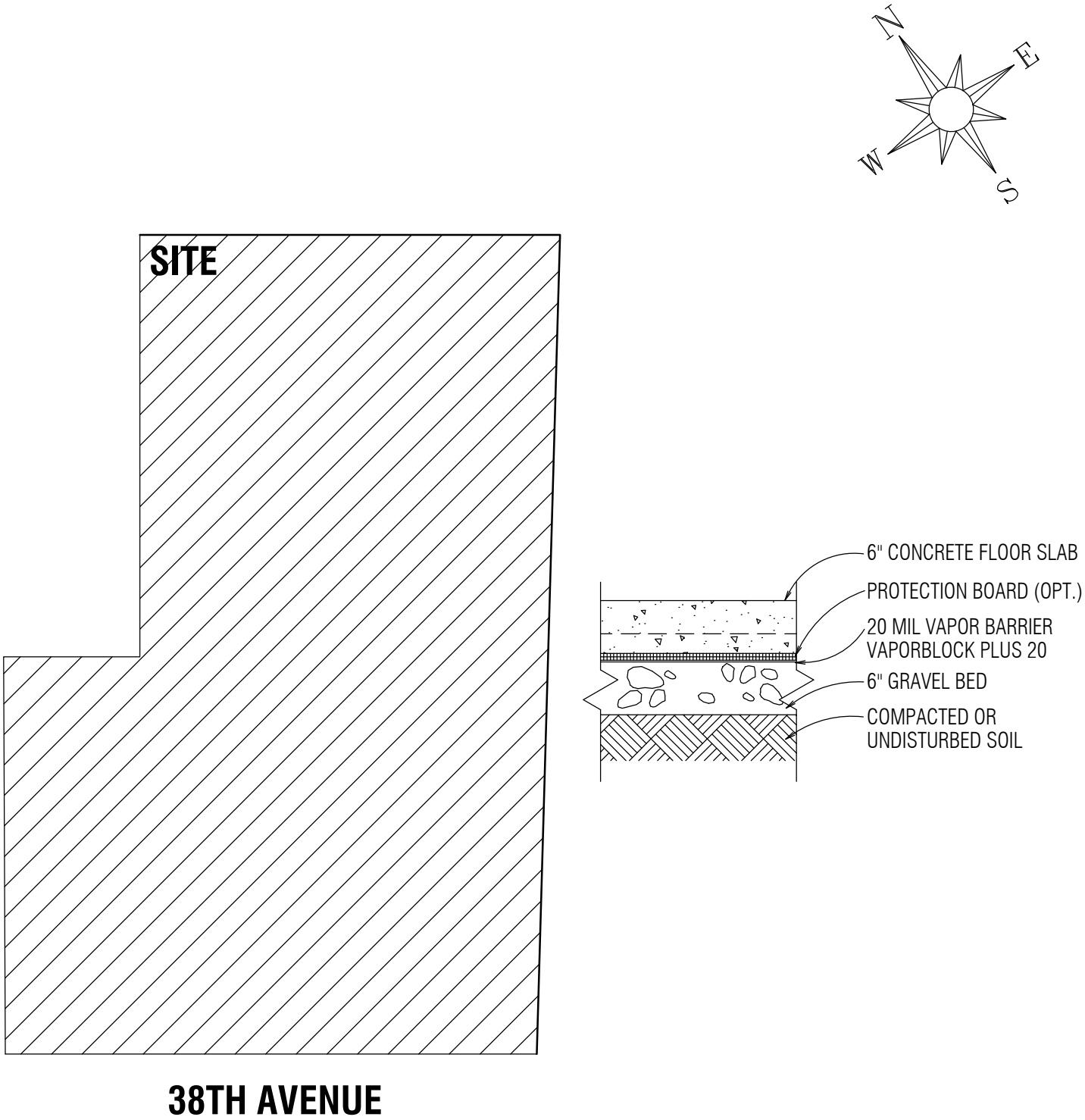


Legend:

- Existing Basement
- Proposed Car Elevator to be excavated 5 feet bgs
- Proposed Basement Expansion to be excavated 12 feet bgs
- EP-X Proposed end-point sampling location

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	6 END POINT SAMPLE LOCATIONS
Date:	JULY 21, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416

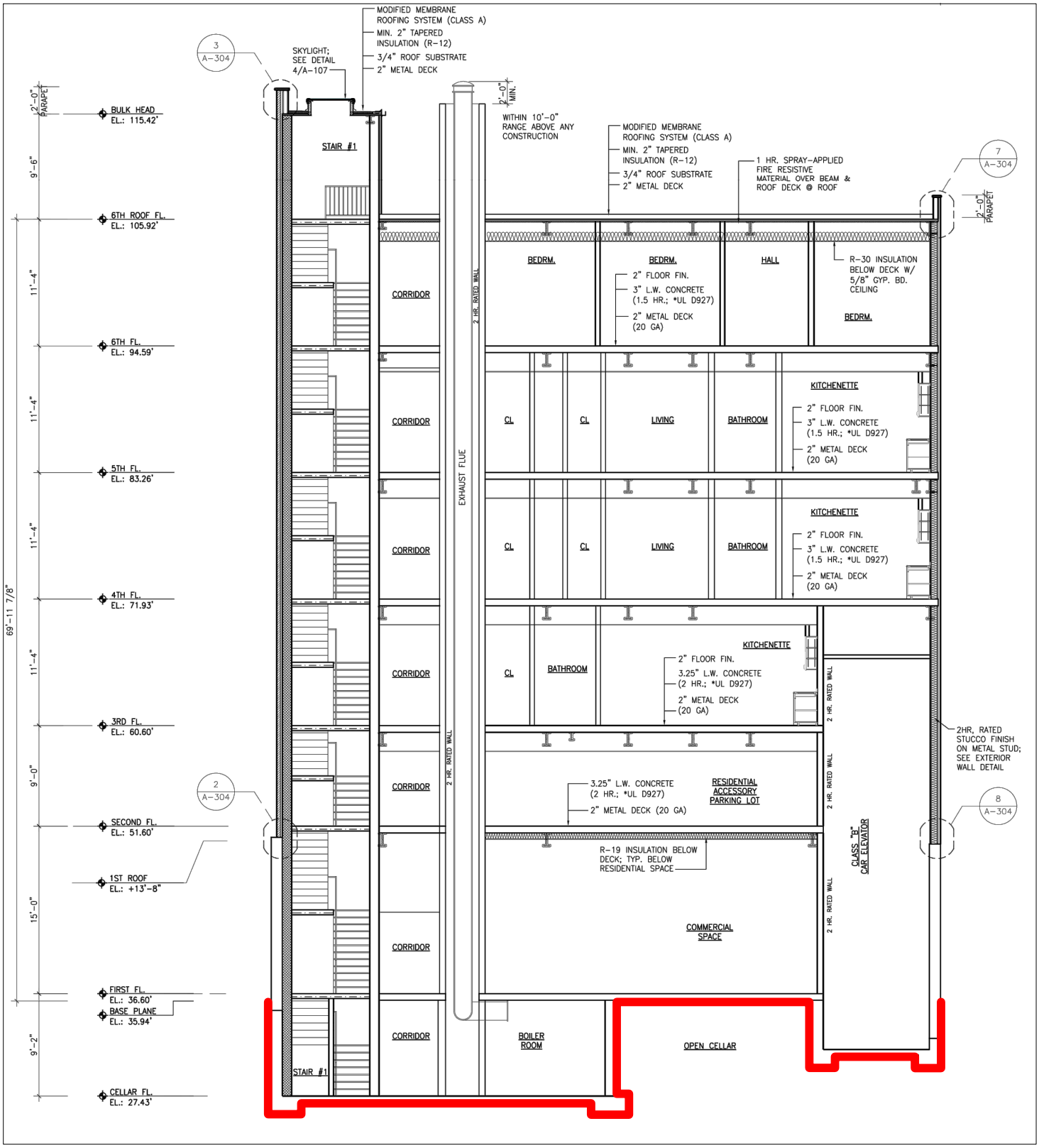


Legend:

Site-wide Composite Cover System consists of six-inch thick concrete slab on top of a six-inch porous fill sub-base throughout the basement slab and the grade level slab.

ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	7 SITE-WIDE COMPOSITE COVER SYSTEM
Date:	JULY 21, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416



NOTES:

RAVEN INDUSTRIES VAPORBLOCK® PLUS 20 TO BE INSTALLED UNDERNEATH THE BASEMENT AND GRADE FLOOR SLABS, BEHIND THE FOUNDATION SIDEWALL, STRUCTURAL FOOTINGS, AND ELEVATOR PITS

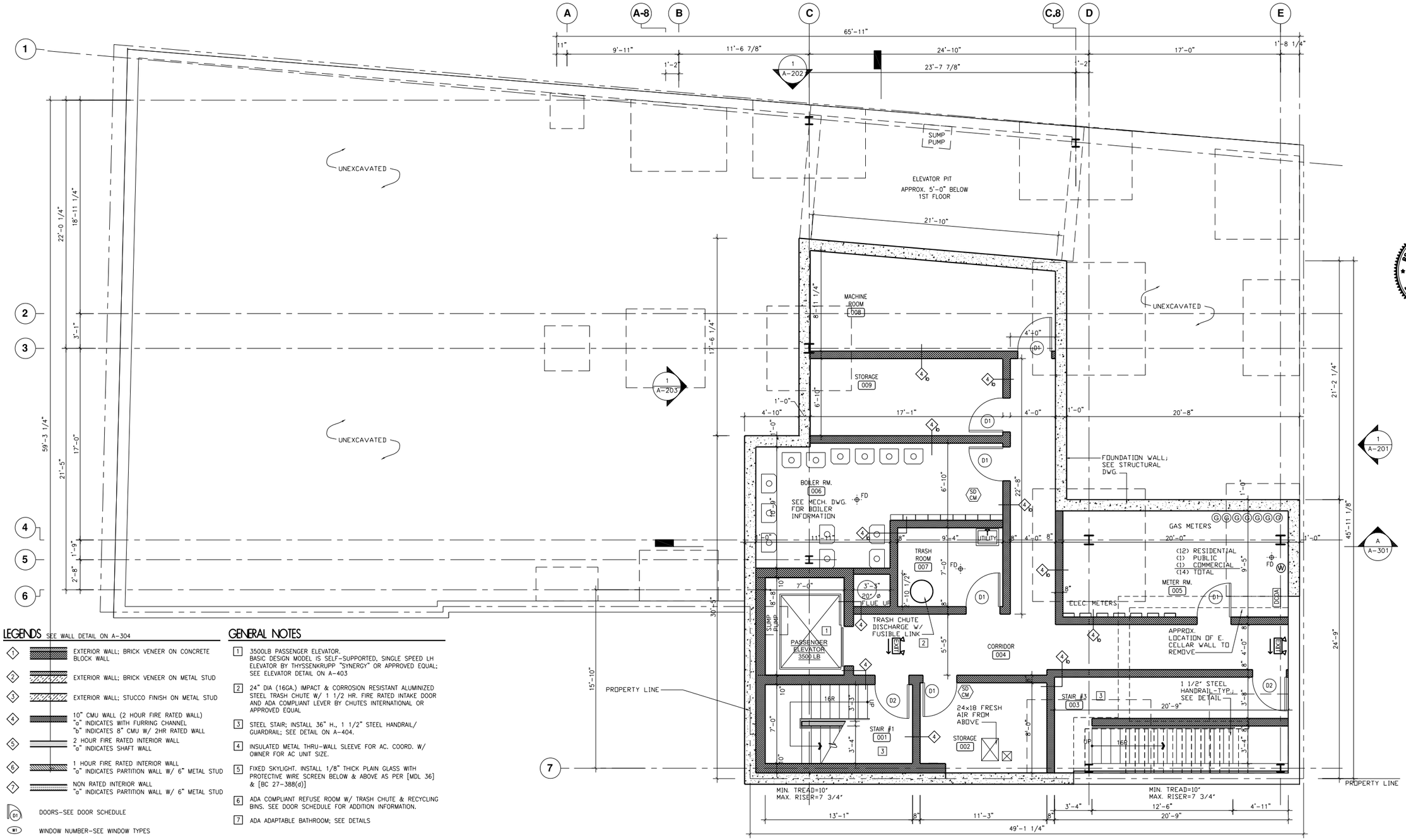
ATHENICA ENVIRONMENTAL SERVICES, INC,
Environmental Consultants

Site map:	31-07 38th AVENUE LONG ISLAND CITY, NY 11101
Figure: Title:	8 VAPOR BARRIER DIAGRAM
Date:	JULY 21, 2015
Drawn by:	ANASTASIA KAKOURI
Checked by:	MICHAEL MANDAC
Drawing Scale:	N.T.S.
Project No.:	15-133-0416

APPENDICES

APPENDIX 1

PROPOSED DEVELOPMENT PLANS



LEGENDS SEE WALL DETAIL ON A-304

1. EXTERIOR WALL; BRICK VENEER ON CONCRETE BLOCK WALL
2. EXTERIOR WALL; BRICK VENEER ON METAL STUD
3. EXTERIOR WALL; STUCCO FINISH ON METAL STUD
4. 10" CMU WALL (2 HOUR FIRE RATED WALL) "a" INDICATES WITH FURRING CHANNEL "b" INDICATES 8" CMU W/ 2HR RATED WALL
5. 2 HOUR FIRE RATED INTERIOR WALL "a" INDICATES SHAFT WALL
6. 1 HOUR FIRE RATED INTERIOR WALL "a" INDICATES PARTITION WALL W/ 6" METAL STUD
7. NON RATED INTERIOR WALL "a" INDICATES PARTITION WALL W/ 6" METAL STUD

D1 DOORS-SEE DOOR SCHEDULE

W1 WINDOW NUMBER-SEE WINDOW TYPES

X GENERAL NOTE TAG

X WALL TAG; SEE DETAIL

CEILING MOUNTED AIR EXHAUST FAN

SD CM SMOKE & CARBON MONOXIDE DETECTOR

RADIATOR; SEE MEP DWG.

EXIT EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING

EXIT EXIT SIGN

EXIT DIRECTIONAL EXIT SIGN

E.J. APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

GENERAL NOTES

1. 3500LB PASSENGER ELEVATOR. BASIC DESIGN MODEL IS SELF-SUPPORTED, SINGLE SPEED LH ELEVATOR BY THYSSENKRUPP "SYNERGY" OR APPROVED EQUAL; SEE ELEVATOR DETAIL ON A-403
2. 24" DIA (16GA.) IMPACT & CORROSION RESISTANT ALUMINIZED STEEL TRASH CHUTE W/ 1 1/2 HR. FIRE RATED INTAKE DOOR AND ADA COMPLIANT LEVER BY CHUTES INTERNATIONAL OR APPROVED EQUAL
3. STEEL STAIR; INSTALL 36" H., 1 1/2" STEEL HANDRAIL/ GUARDRAIL; SEE DETAIL ON A-404.
4. INSULATED METAL THRU-WALL SLEEVE FOR AC. COORD. W/ OWNER FOR AC UNIT SIZE.
5. FIXED SKYLIGHT. INSTALL 1/8" THICK PLAIN GLASS WITH PROTECTIVE WIRE SCREEN BELOW & ABOVE AS PER [MDL 36] & [BC 27-388(d)]
6. ADA COMPLIANT REFUSE ROOM W/ TRASH CHUTE & RECYCLING BINS. SEE DOOR SCHEDULE FOR ADDITION INFORMATION.
7. ADA ADAPTABLE BATHROOM; SEE DETAILS

DASHED INDICATES REQ'D ADA CLEARANCE

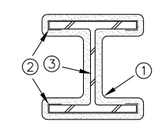
1 A-101 CELLAR PLAN
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



1. SPRAY-APPLIED FIRE RESISTIVE MATERIAL MIN. THICKNESS = 9/16"
2. METAL LATH - 3.4LB PER SQ YD GALV EMPANDED STEEL. SECURED TO COLUMN BY BENDING TIGHT AROUND FLANGES A MIN. OF 1-1/2" TOWARD WEB OF COLUMN
3. STEEL COLUMN

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

REGISTERED ARCHITECT KYU MYEON LEE 030647 STATE OF NEW YORK

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LB ENGINEERING PC
SMEP ENGINERING
NY: 567 7TH AVE (4FL)
NEW YORK, NY 10018
NJ: 80 CRAIN RD
PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

THE PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

TITLE:

CELLAR PLAN

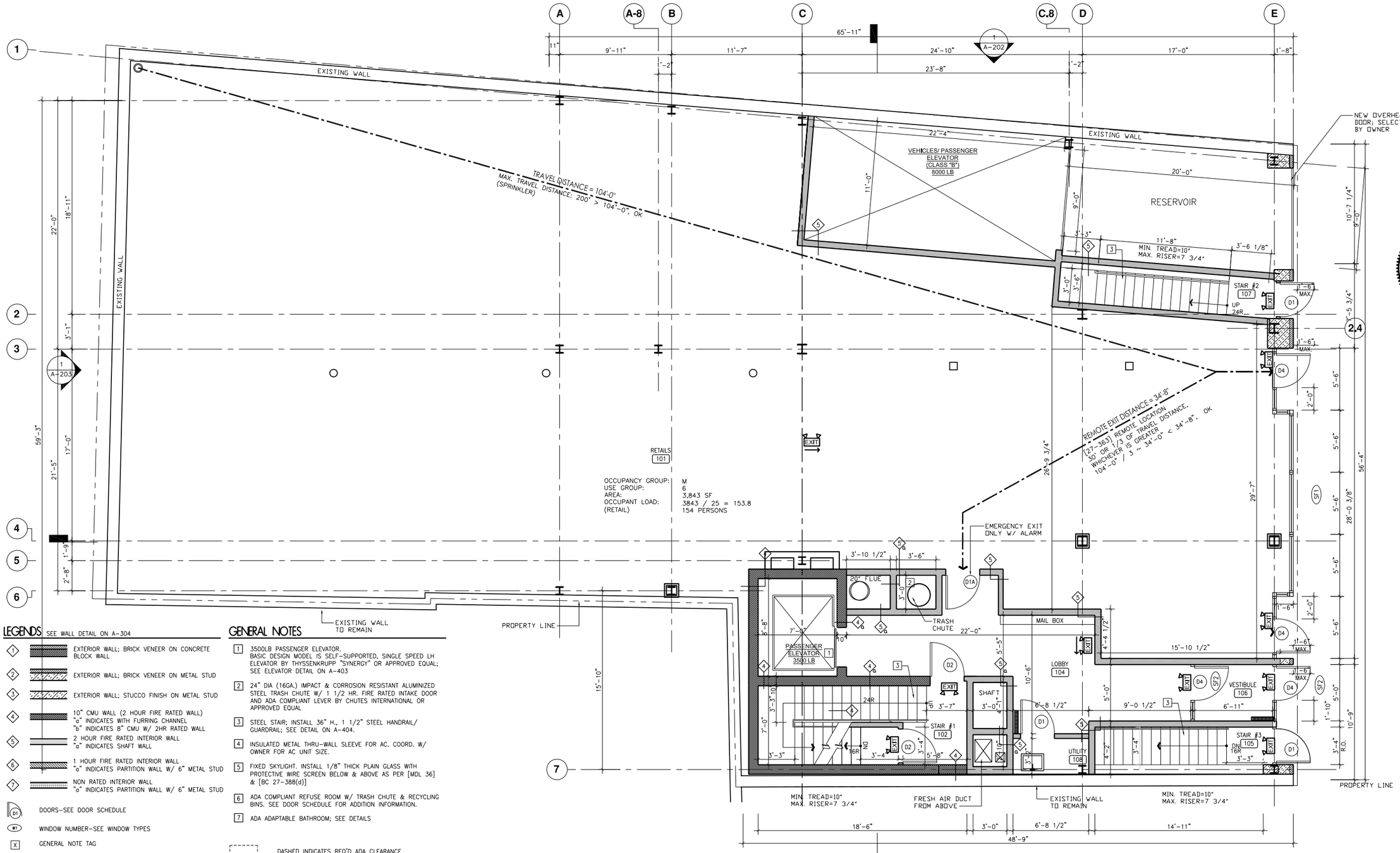
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-101.00



LEGENDS

SEE WALL DETAIL ON A-304

- 1 EXTERIOR WALL; BRICK VENEER ON CONCRETE BLOCK WALL
- 2 EXTERIOR WALL; BRICK VENEER ON METAL STUD
- 3 EXTERIOR WALL; STUCCO FINISH ON METAL STUD
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- 5 2 HOUR FIRE RATED INTERIOR WALL "a" INDICATES SHAFT WALL
- 6 1 HOUR FIRE RATED INTERIOR WALL "a" INDICATES PARTITION WALL W/ 6" METAL STUD
- 7 NON RATED INTERIOR WALL "a" INDICATES PARTITION WALL W/ 6" METAL STUD

- D1 DOORS-SEE DOOR SCHEDULE
- W1 WINDOW NUMBER-SEE WINDOW TYPES
- X GENERAL NOTE TAG
- X WALL TAG; SEE DETAIL
- CEILING MOUNTED AIR EXHAUST FAN
- SD CM SMOKE & CARBON MONOXIDE DETECTOR
- RADIATOR; SEE MEP DWG.
- EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXIT SIGN
- DIRECTIONAL EXIT SIGN
- E.J. APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

GENERAL NOTES

1. 3500LB PASSENGER ELEVATOR. BASIC DESIGN MODEL IS SELF-SUPPORTED, SINGLE SPEED LH ELEVATOR BY THYSSENKRUPP "SYNERGY" OR APPROVED EQUAL; SEE ELEVATOR DETAIL ON A-403
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5. FIXED SKYLIGHT. INSTALL 1/8" THICK PLAIN GLASS WITH PROTECTIVE WIRE SCREEN BELOW & ABOVE AS PER [MDL 36] & [BC 27-388(d)]
6. ADA COMPLIANT REFUSE ROOM W/ TRASH CHUTE & RECYCLING BINS. SEE DOOR SCHEDULE FOR ADDITION INFORMATION.
7. ADA ADAPTABLE BATHROOM; SEE DETAILS

DASHED INDICATES REQ'D ADA CLEARANCE

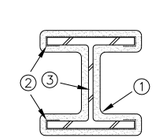
1 FIRST FLOOR PLAN
A-102 SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



1. SPRAY-APPLIED FIRE RESISTIVE MATERIAL MIN. THICKNESS = 9/16"
2. METAL LATH - 3.4LB PER SQ YD GALV EMPANDED STEEL. SECURED TO COLUMN BY BENDING TIGHT AROUND FLANGES A MIN. OF 1-1/2" TOWARD WEB OF COLUMN
3. STEEL COLUMN

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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ENGINEER

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SMEP ENGINERING
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NEW YORK, NY 10018
NJ: 80 CRAIN RD
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TEL: 201 983 3344

NO.	DATE	REVISION

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TITLE:

1ST FLOOR PLAN

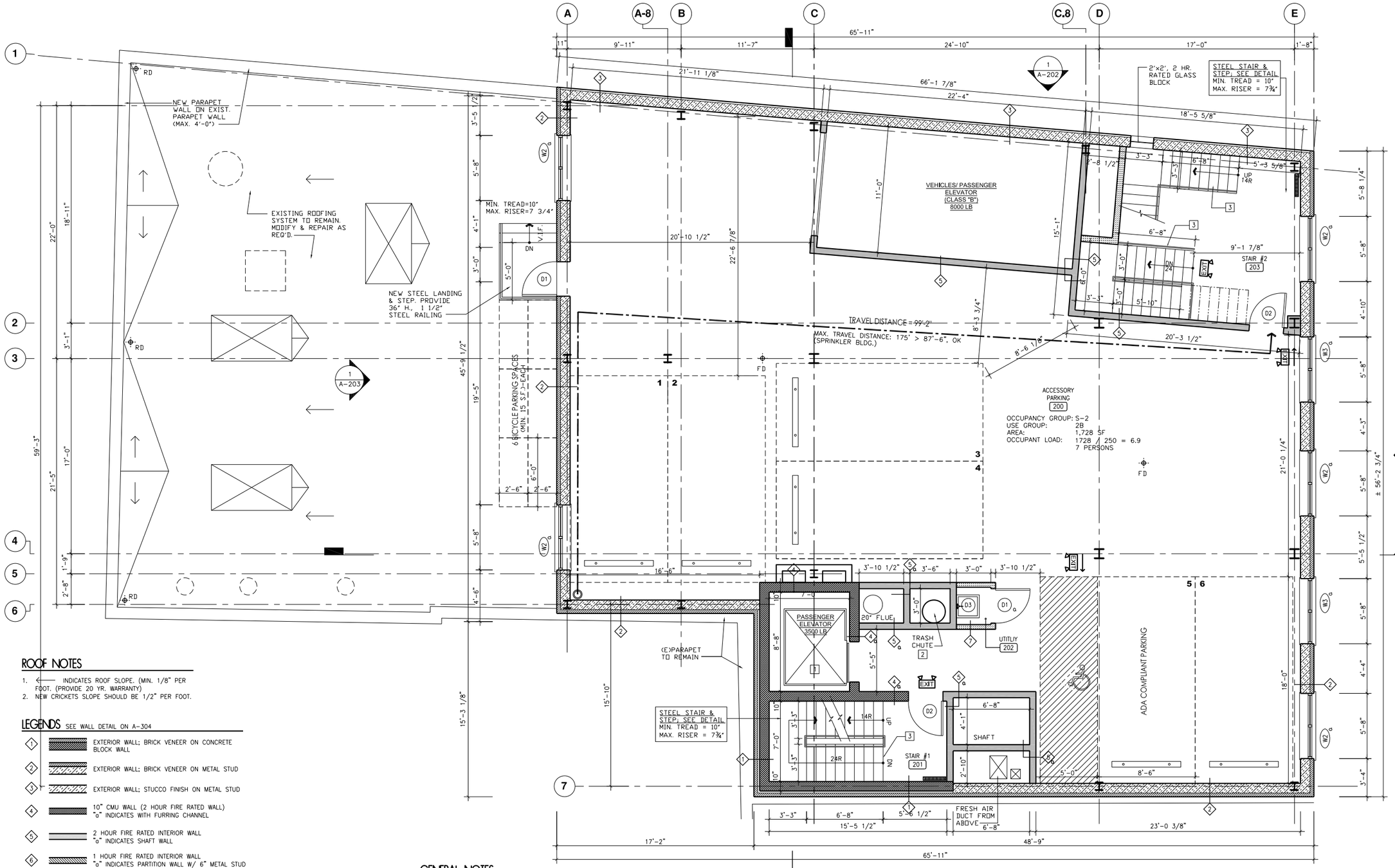
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-102.00



ROOF NOTES

1. ⟵ INDICATES ROOF SLOPE. (MIN. 1/8" PER FOOT. (PROVIDE 20 YR. WARRANTY)
2. NEW CRICKETS SLOPE SHOULD BE 1/2" PER FOOT.

LEGENDS SEE WALL DETAIL ON A-304

- (1) EXTERIOR WALL; BRICK VENEER ON CONCRETE BLOCK WALL
- (2) EXTERIOR WALL; BRICK VENEER ON METAL STUD
- (3) EXTERIOR WALL; STUCCO FINISH ON METAL STUD
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- (5) 2 HOUR FIRE RATED INTERIOR WALL "a" INDICATES SHAFT WALL
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- D1 DOORS-SEE DOOR SCHEDULE
- #1 WINDOW NUMBER-SEE WINDOW TYPES
- X GENERAL NOTE TAG
- X WALL TAG; SEE DETAIL
- CEILING MOUNTED AIR EXHAUST FAN
- SD CM SMOKE & CARBON MONOXIDE DETECTOR
- RADIATOR; SEE MEP DWG.
- EXIT EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXIT EXIT SIGN
- EXIT DIRECTIONAL EXIT SIGN
- E.J. APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

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3. STAIR ENCLOSURE. INSTALL 36" H., 1 1/2" STEEL HANDRAIL; SEE STAIR DETAIL ON A-401 & A-402.
4. INSULATED METAL THRU-WALL SLEEVE FOR AC. COORDINATE W/ OWNER FOR AC UNIT SIZE.
5. FIXED SKYLIGHT. INSTALL 1/8" THICK PLAIN GLASS WITH PROTECTIVE WIRE SCREEN BELOW & ABOVE AS PER [MDL 36] & [BC 27-388(d)]

A A-302 | 1 A-204

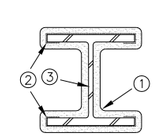
1 A-103 SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



1. SPRAY-APPLIED FIRE RESISTIVE MATERIAL MIN. THICKNESS = 9/16"
2. METAL LATH - 3.4LB PER SQ YD GALV EMPANDED STEEL. SECURED TO COLUMN BY BENDING TIGHT AROUND FLANGES A MIN. OF 1-1/2" TOWARD WEB OF COLUMN
3. STEEL COLUMN

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

REGISTERED ARCHITECT KYU MYEON LEE 030647 STATE OF NEW YORK

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NEW YORK, NY 10018
NJ: 80 CRAIN RD
PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

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TITLE:

2ND FLOOR PLAN

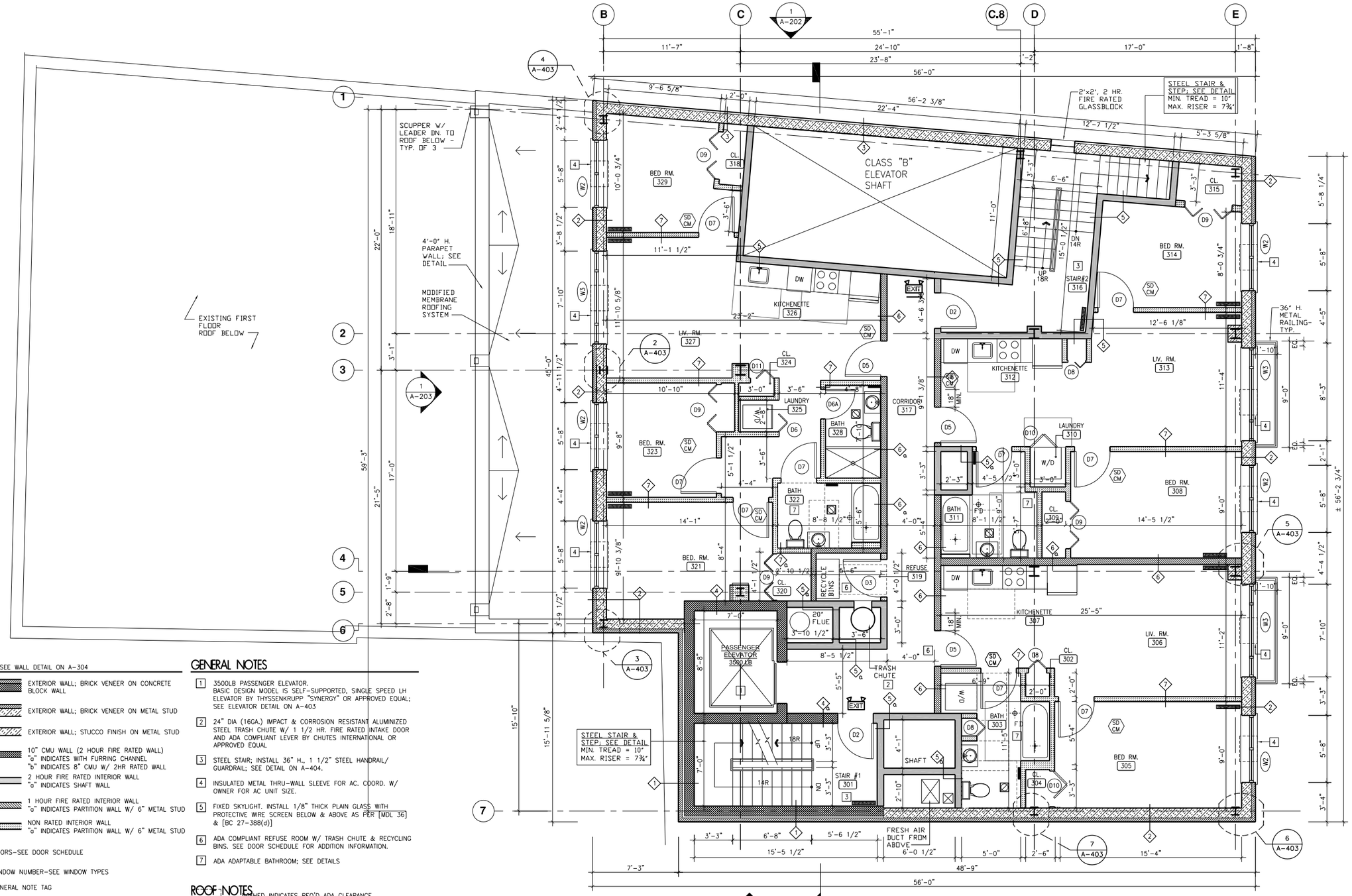
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-103.00



LEGENDS SEE WALL DETAIL ON A-304

1. EXTERIOR WALL; BRICK VENEER ON CONCRETE BLOCK WALL
2. EXTERIOR WALL; BRICK VENEER ON METAL STUD
3. EXTERIOR WALL; STUCCO FINISH ON METAL STUD
4. 10" CMU WALL (2 HOUR FIRE RATED WALL) "a" INDICATES WITH FURRING CHANNEL "b" INDICATES 8" CMU W/ 2HR RATED WALL
5. 2 HOUR FIRE RATED INTERIOR WALL "a" INDICATES SHAFT WALL
6. 1 HOUR FIRE RATED INTERIOR WALL "a" INDICATES PARTITION WALL W/ 6" METAL STUD
7. NON RATED INTERIOR WALL "a" INDICATES PARTITION WALL W/ 6" METAL STUD

D1 DOORS-SEE DOOR SCHEDULE

W1 WINDOW NUMBER-SEE WINDOW TYPES

X GENERAL NOTE TAG

X WALL TAG; SEE DETAIL

CEILING MOUNTED AIR EXHAUST FAN

SD CM SMOKE & CARBON MONOXIDE DETECTOR

RADIATOR; SEE MEP DWG.

EXIT EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING

EXIT EXIT SIGN

EXIT DIRECTIONAL EXIT SIGN

E.J. APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

GENERAL NOTES

1. 3500LB PASSENGER ELEVATOR. BASIC DESIGN MODEL IS SELF-SUPPORTED, SINGLE SPEED LH ELEVATOR BY THYSSENKRUPP "SYNERGY" OR APPROVED EQUAL; SEE ELEVATOR DETAIL ON A-403
2. 24" DIA (16GA.) IMPACT & CORROSION RESISTANT ALUMINIZED STEEL TRASH CHUTE W/ 1 1/2 HR. FIRE RATED INTAKE DOOR AND ADA COMPLIANT LEVER BY CHUTES INTERNATIONAL OR APPROVED EQUAL
3. STEEL STAIR; INSTALL 36" H., 1 1/2" STEEL HANDRAIL/ GUARDRAIL; SEE DETAIL ON A-404.
4. INSULATED METAL THRU-WALL SLEEVE FOR AC. COORD. W/ OWNER FOR AC UNIT SIZE.
5. FIXED SKYLIGHT. INSTALL 1/8" THICK PLAIN GLASS WITH PROTECTIVE WIRE SCREEN BELOW & ABOVE AS PER [MDL 36] & [BC 27-388(d)]
6. ADA COMPLIANT REFUSE ROOM W/ TRASH CHUTE & RECYCLING BINS. SEE DOOR SCHEDULE FOR ADDITION INFORMATION.
7. ADA ADAPTABLE BATHROOM; SEE DETAILS

ROOF NOTES

DASHED INDICATES REQ'D ADA CLEARANCE

1. INDICATES ROOF SLOPE. (MIN. 1/8" PER FOOT. (PROVIDE 20 YR. WARRANTY)
2. NEW CRICKETS SLOPE SHOULD BE 1/2" PER FOOT.

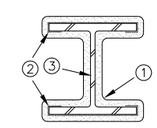
1 / A-104 THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



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2. METAL LATH - 3.4LB PER SQ YD GALV EMPANDED STEEL. SECURED TO COLUMN BY BENDING TIGHT AROUND FLANGES A MIN. OF 1-1/2" TOWARD WEB OF COLUMN
3. STEEL COLUMN

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

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NO.	DATE	REVISION

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TITLE:

3RD FLOOR PLAN

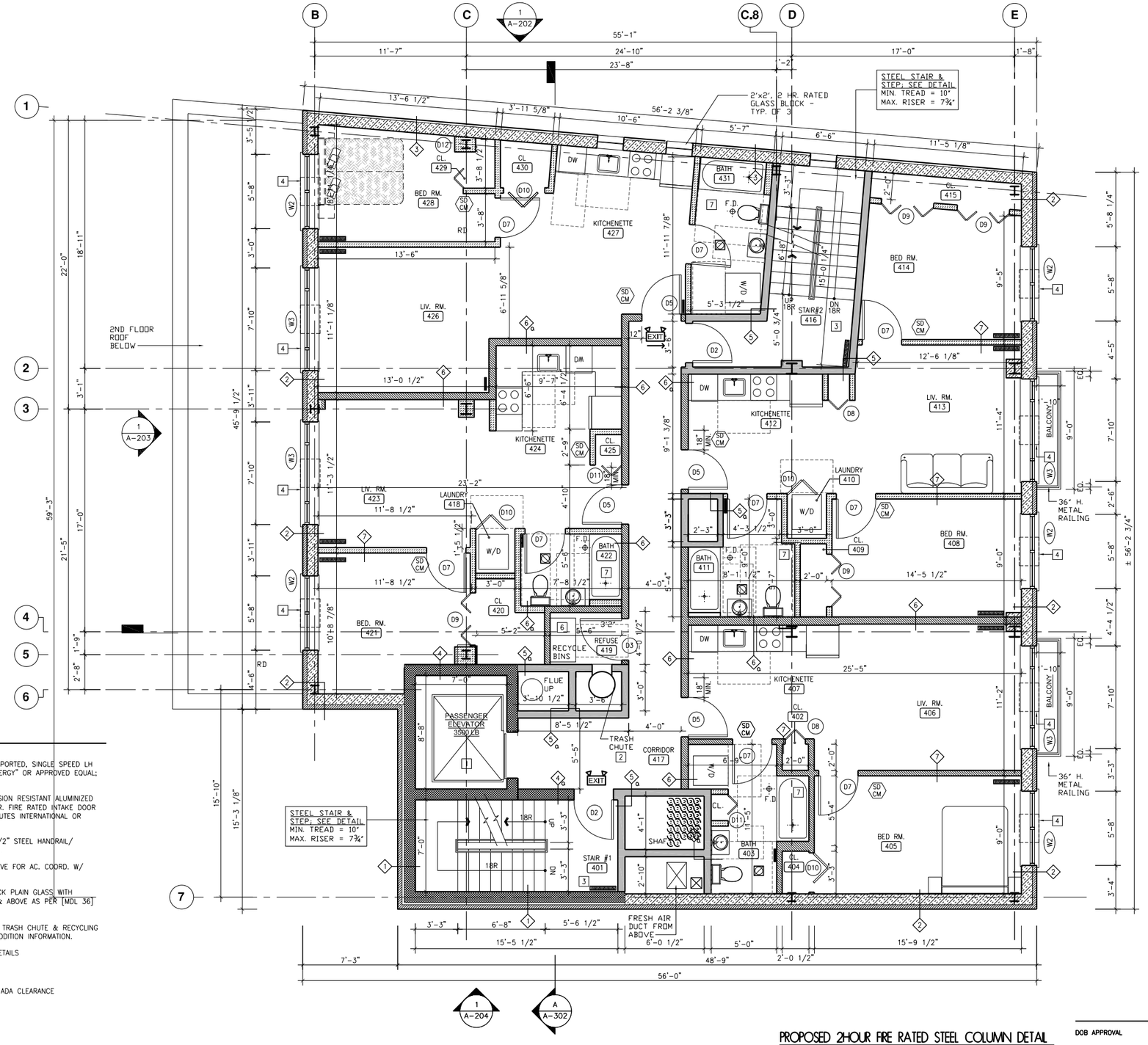
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-104.00



LEGENDS SEE WALL DETAIL ON A-304

- 1 — EXTERIOR WALL; BRICK VENEER ON CONCRETE BLOCK WALL
- 2 — EXTERIOR WALL; BRICK VENEER ON METAL STUD
- 3 — EXTERIOR WALL; STUCCO FINISH ON METAL STUD
- 4 — 10" CMU WALL (2 HOUR FIRE RATED WALL) "a" INDICATES WITH FURRING CHANNEL "b" INDICATES 8" CMU W/ 2HR RATED WALL
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- D1 — DOORS–SEE DOOR SCHEDULE
- W1 — WINDOW NUMBER–SEE WINDOW TYPES
- X — GENERAL NOTE TAG
- X — WALL TAG; SEE DETAIL
- CEILING MOUNTED AIR EXHAUST FAN
- SD CM — SMOKE & CARBON MONOXIDE DETECTOR
- RADIATOR; SEE MEP DWG.
- EXIT — EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXIT — EXIT SIGN
- EXIT — DIRECTIONAL EXIT SIGN
- E.J. — APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

GENERAL NOTES

1. 3500LB PASSENGER ELEVATOR. BASIC DESIGN MODEL IS SELF-SUPPORTED, SINGLE SPEED LH ELEVATOR BY THYSSENKRUPP "SYNERGY" OR APPROVED EQUAL; SEE ELEVATOR DETAIL ON A-403
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6. ADA COMPLIANT REFUSE ROOM W/ TRASH CHUTE & RECYCLING BINS. SEE DOOR SCHEDULE FOR ADDITION INFORMATION.
7. ADA ADAPTABLE BATHROOM; SEE DETAILS

DASHED INDICATES REQ'D ADA CLEARANCE

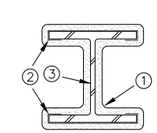
1 A-105 FOURTH FLOOR PLAN
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



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3. STEEL COLUMN

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

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QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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NO.	DATE	REVISION

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TITLE:

4TH FLOOR PLAN

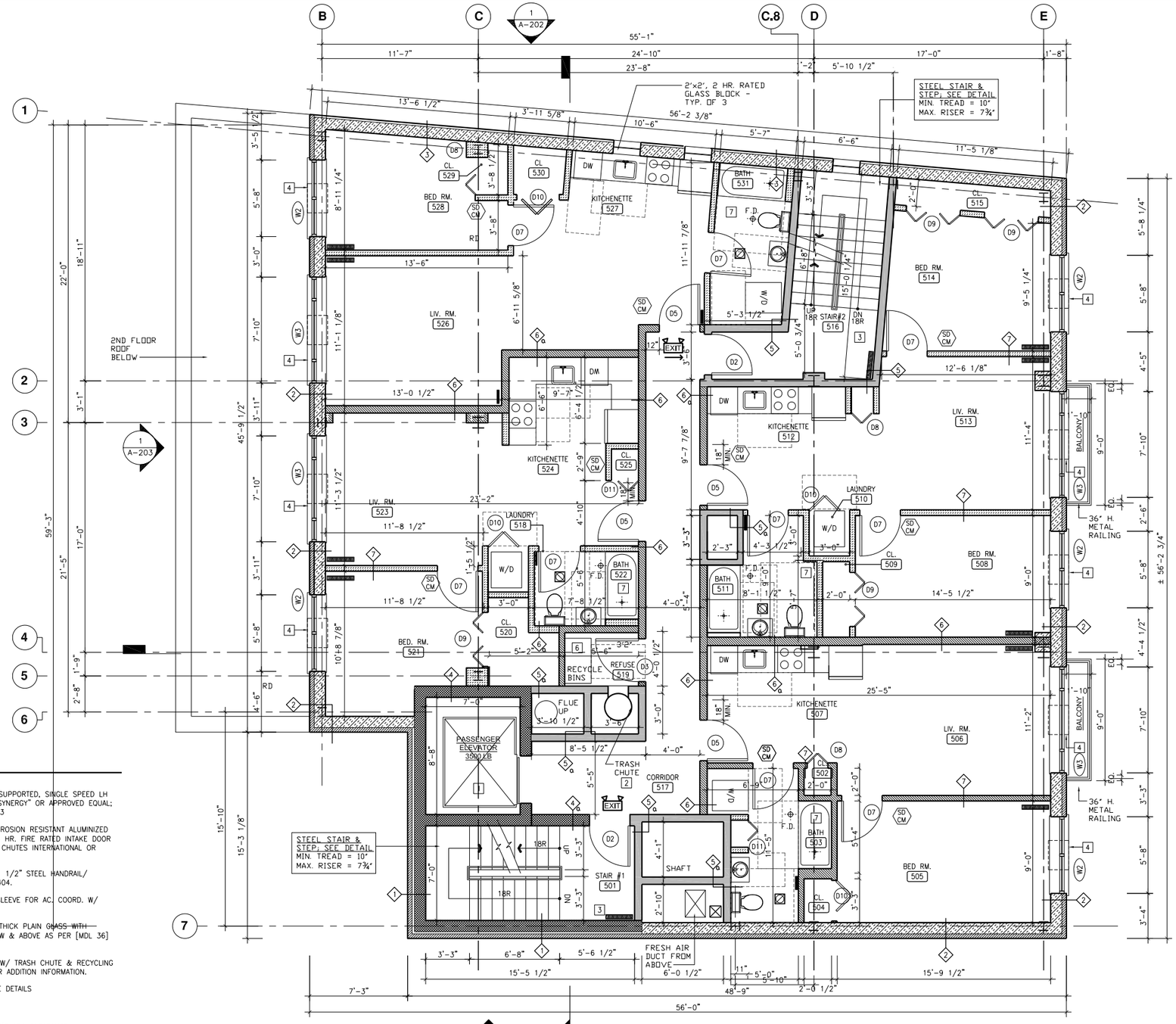
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-105.00



LEGENDS SEE WALL DETAIL ON A-304

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- W1 WINDOW NUMBER-SEE WINDOW TYPES
- X GENERAL NOTE TAG
- X WALL TAG; SEE DETAIL
- CEILING MOUNTED AIR EXHAUST FAN
- SD CM SMOKE & CARBON MONOXIDE DETECTOR
- RADIATOR; SEE MEP DWG.
- EXIT EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXIT EXIT SIGN
- EXIT DIRECTIONAL EXIT SIGN
- E.J. APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

GENERAL NOTES

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6. ADA COMPLIANT REFUSE ROOM W/ TRASH CHUTE & RECYCLING BINS. SEE DOOR SCHEDULE FOR ADDITION INFORMATION.
7. ADA ADAPTABLE BATHROOM; SEE DETAILS

DASHED INDICATES REQ'D ADA CLEARANCE

ROOF NOTES

1. ⟵ INDICATES ROOF SLOPE. (MIN. 1/8" PER FOOT. (PROVIDE 20 YR. WARRANTY)
2. NEW CRICKETS SLOPE SHOULD BE 1/2" PER FOOT.

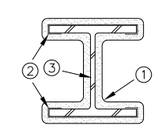
1 / A-106 5TH FLOOR PLAN
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



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3. STEEL COLUMN

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-106.00

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

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QUEENS, NY 11101

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NO.	DATE	REVISION

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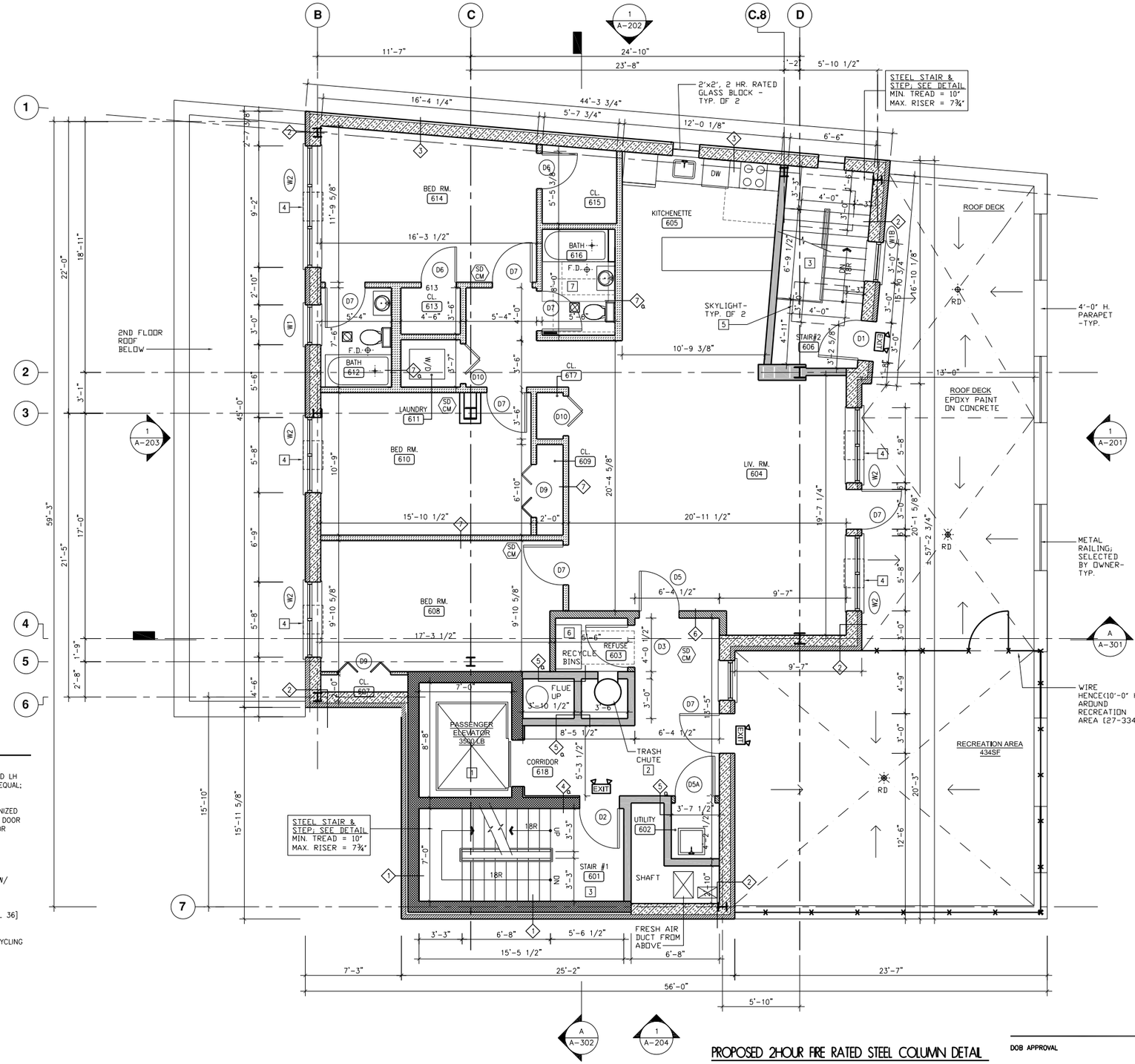
TITLE:

5TH FLOOR PLAN

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014



LEGENDS SEE WALL DETAIL ON A-304

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- 2 — EXTERIOR WALL; BRICK VENEER ON METAL STUD
- 3 — EXTERIOR WALL; STUCCO FINISH ON METAL STUD
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- RADIATOR; SEE MEP DWG.
- EXIT — EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXIT — EXIT SIGN
- EXIT — DIRECTIONAL EXIT SIGN
- E.J. — APPROX. LOCATION OF VERTICAL BRICK EXPANSION JOINST

GENERAL NOTES

1. 3500LB PASSENGER ELEVATOR. BASIC DESIGN MODEL IS SELF-SUPPORTED, SINGLE SPEED LH ELEVATOR BY THYSSENKRUPP "SYNERGY" OR APPROVED EQUAL; SEE ELEVATOR DETAIL ON A-403
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6. ADA COMPLIANT REFUSE ROOM W/ TRASH CHUTE & RECYCLING BINS. SEE DOOR SCHEDULE FOR ADDITION INFORMATION.
7. ADA ADAPTABLE BATHROOM; SEE DETAILS

DASHED INDICATES REQ'D ADA CLEARANCE

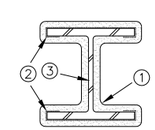
1 / A-107 — 6TH FLOOR PLAN
SCALE: 1/4" = 1'-0"

FIRE ALARM SYSTEM TO BE FILED SEPARATELY

SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES & SMOKE ALARMS

PROPOSED 2HOUR FIRE RATED STEEL COLUMN DETAIL

UL DESIGN NO. X 725



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3. STEEL COLUMN

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

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NO.	DATE	REVISION

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TITLE:

6TH FLOOR PLAN

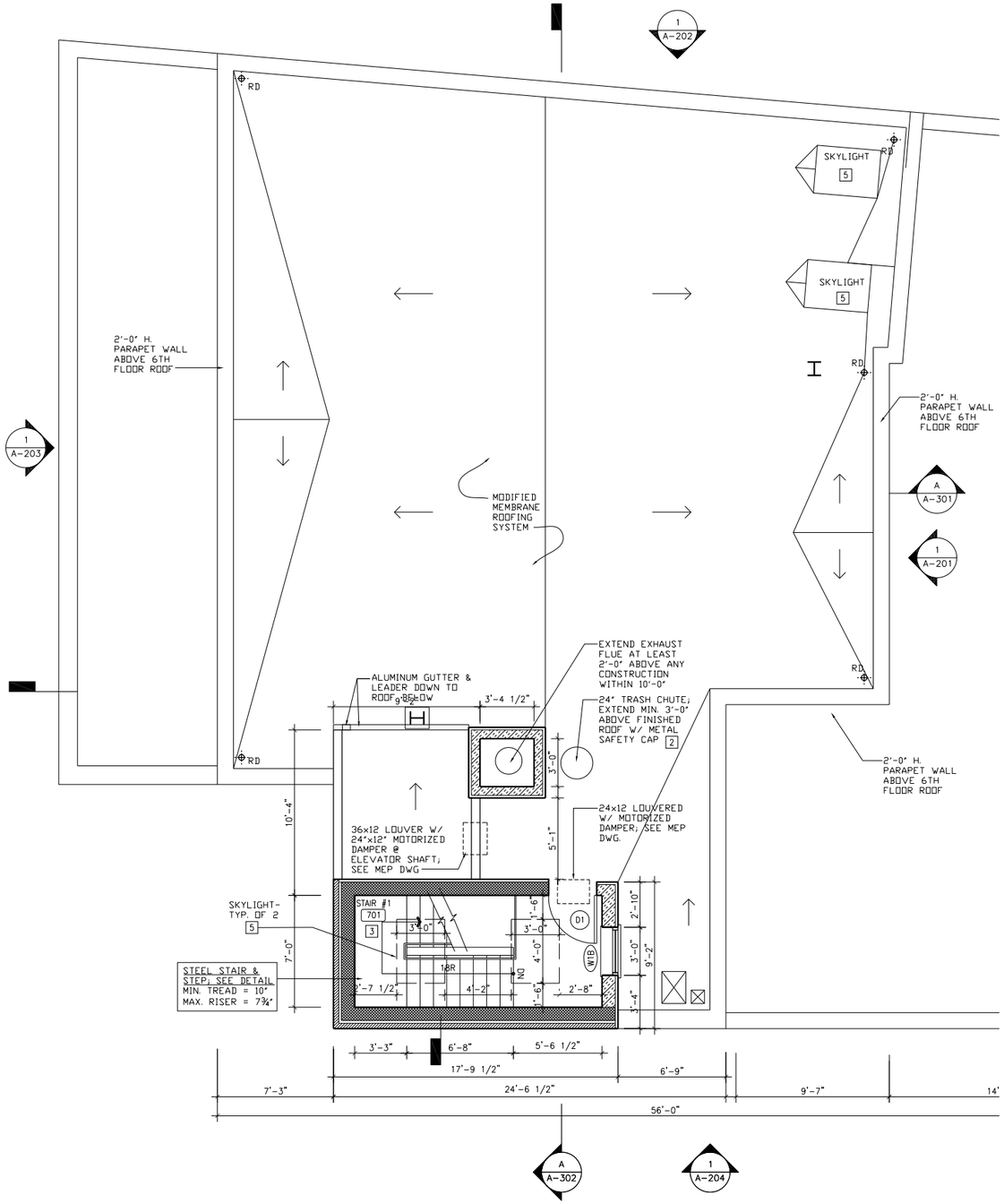
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

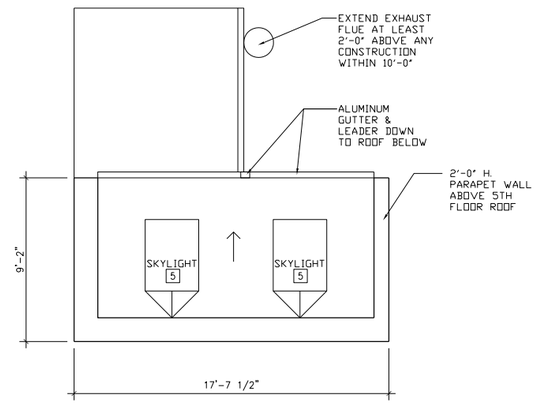
APPLICATION NO.

DRAWING NO.:

A-107.00



1 A-108 ROOF PLAN
SCALE: 1/4" = 1'-0"



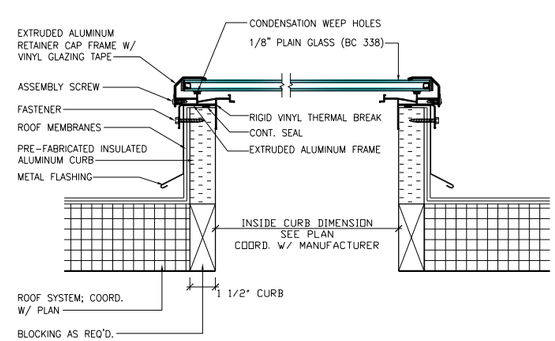
2 A-108 BULKHEAD ROOF PLAN
SCALE: 1/4" = 1'-0"

ROOF NOTES

1. ⟵ INDICATES ROOF SLOPE. (MIN. 1/8" PER FOOT. (PROVIDE 20 YR. WARRANTY)
2. NEW CRICKETS SLOPE SHOULD BE 1/2" PER FOOT.

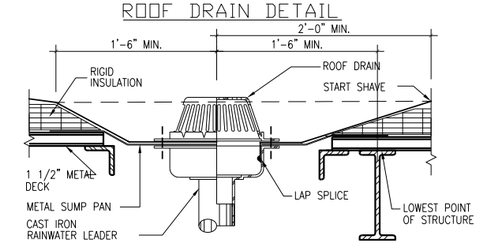
GENERAL NOTES

1. 3500LB PASSENGER ELEVATOR. BASIC DESIGN MODEL IS SELF-SUPPORTED, SINGLE SPEED LH ELEVATOR BY THYSSENKRUPP "SYNERGY" OR APPROVED EQUAL.
2. 24" PIA (16GA.) IMPACT & CORROSION RESISTANT, ALUMINIZED STEEL TRASH CHUTE BY CHUTES INTERNATIONAL OR APPROVED EQUAL
3. STAIR ENCLOSURE; SEE STAIR DETAIL ON A-401 & A-402.
4. INSULATED METAL THRU-WALL SLEEVE FOR AC.
5. FIXED SKYLIGHT. INSTALL 1/8" THICK PLAIN GLASS WITH PROTECTIVE WIRE SCREEN BELOW & ABOVE AS PER [MDL 36] & [BC 27-388(d)



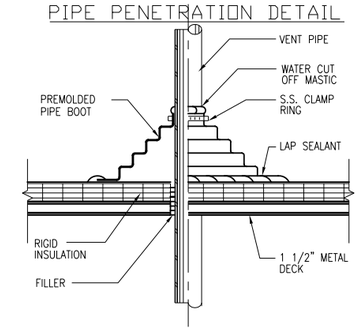
4 A-108 FIXED SKYLIGHT DETAIL
SCALE: N.T.S.

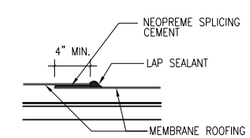
ROOF DRAIN DETAIL



NOTE: CONTRACTOR TO SUBMIT SHOP DRAWINGS OF R.D. CONSTRUCTION AND DETAIL BEFORE INSTALLATION

PIPE PENETRATION DETAIL





LAP SEAL DETAIL

3 A-108 TYPICAL ROOF DETAILS
SCALE: N.T.S.

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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NO.	DATE	REVISION

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TITLE:

ROOF PLAN
& ROOF DETAILS

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

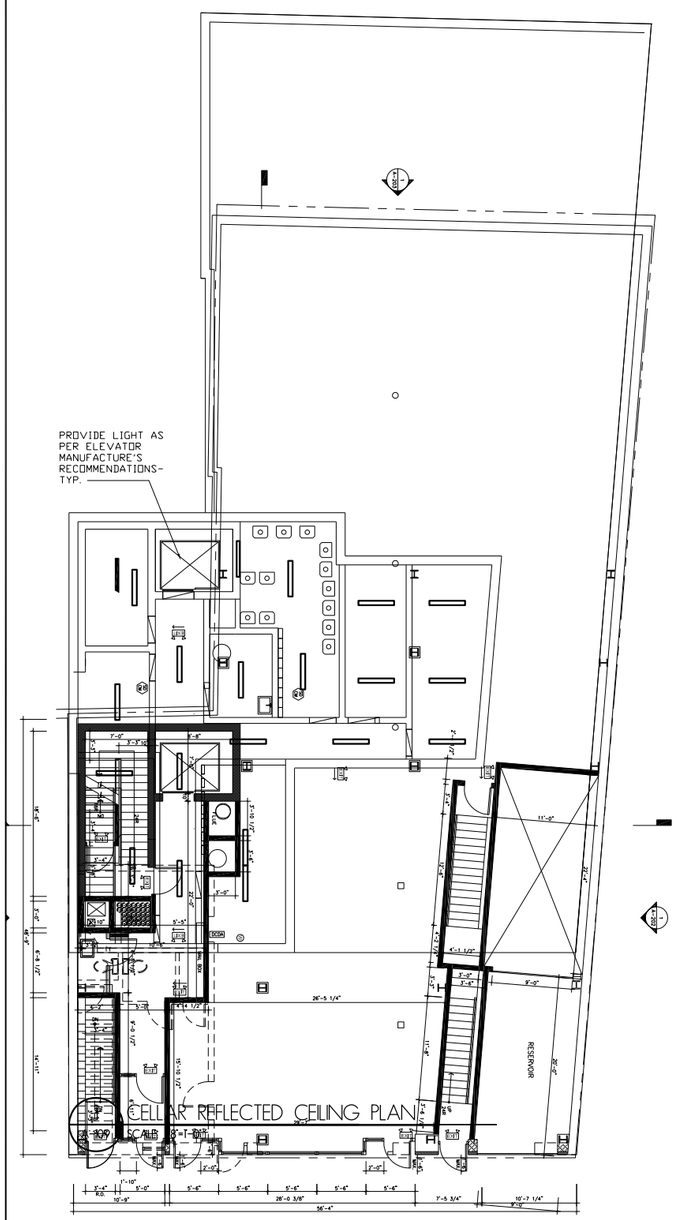
APPLICATION NO.

DRAWING NO.:

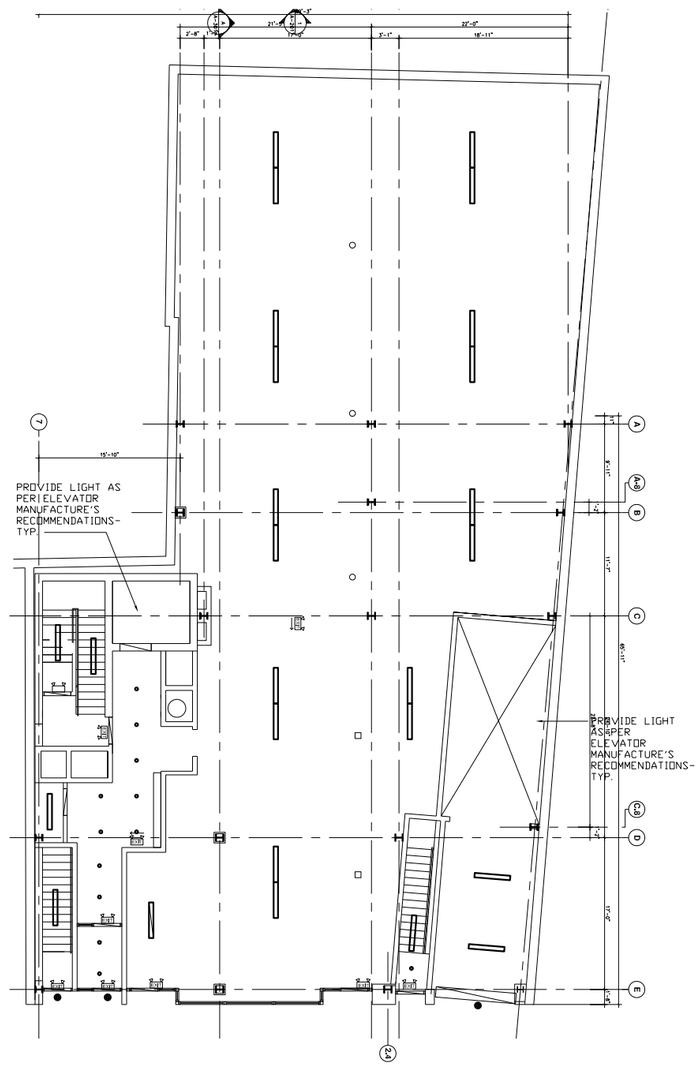
A-108.00

LEGENDS

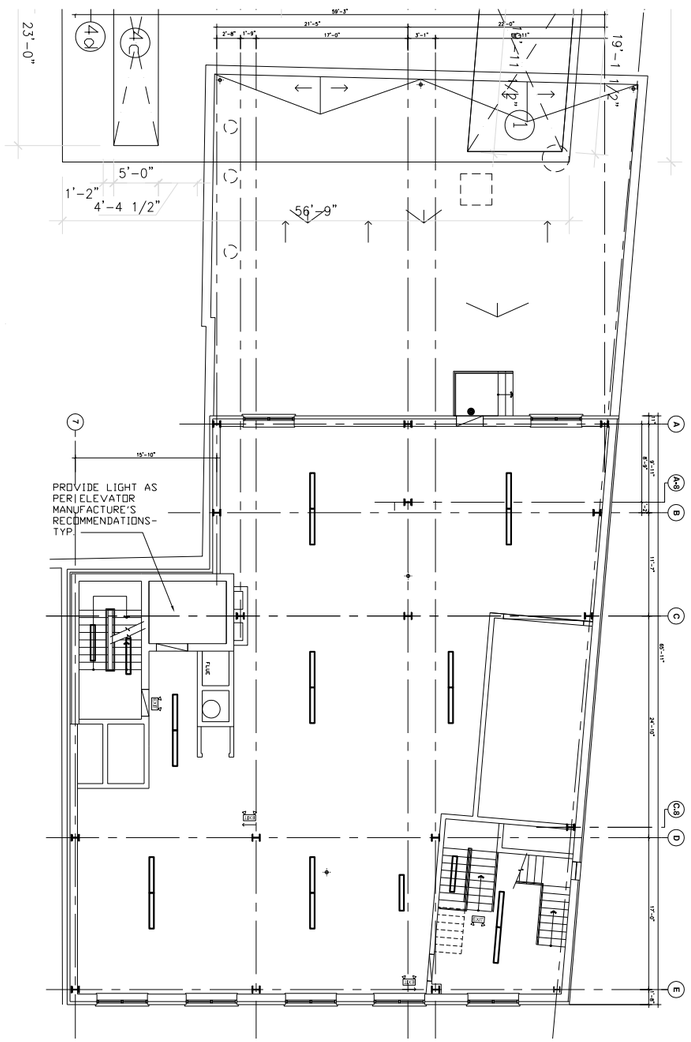
- CEILING OR WALL MOUNTED 4' FLUORESCENT LIGHT FIXTURE
- RECESSED DOWN LIGHT FIXTURE
- SURFACED MOUNTED CEILING LIGHT FIXTURE
- MINI PENDANT LIGHT FIXTURE
- OUTDOOR WALL LIGHT FIXTURE
- 100 WATT INCANDESCENT LIGHT AS PER [HDL 36]
- EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXHAUST FAN – SEE MEP
- WALL MOUNTED LIGHT FIXTURE OVER LAV. TYP.
- SD CM — SMOKE DETECTOR CARBON MONOXIDE DETECTOR



1 A-109 CELLAR REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"



2 A-109 1ST FLOOR REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"



3 A-109 2ND FLOOR REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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TITLE:

CELLAR, 1ST & 2ND FL. REFLECTED CEILING PLAN

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	IL
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

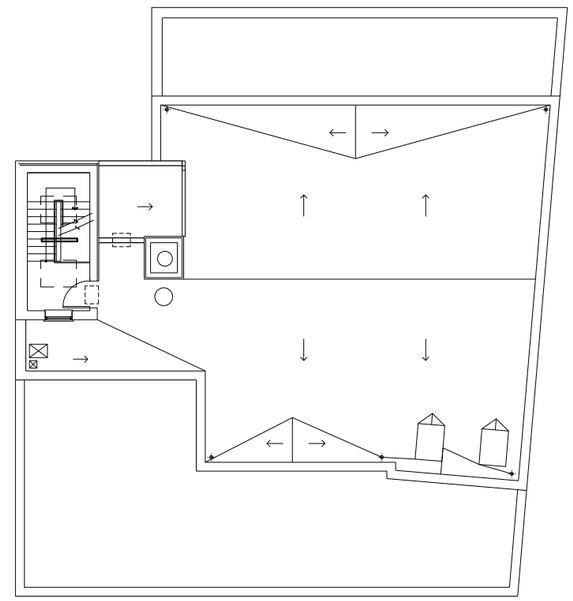
APPLICATION NO.

DRAWING NO.:

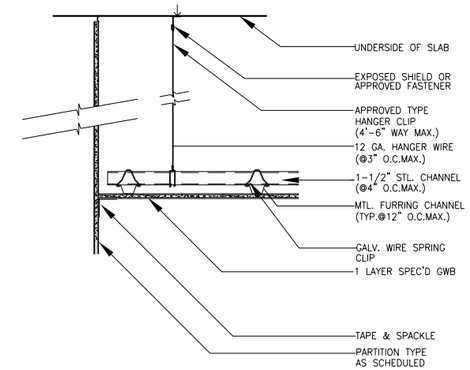
A-109.00

LEGENDS

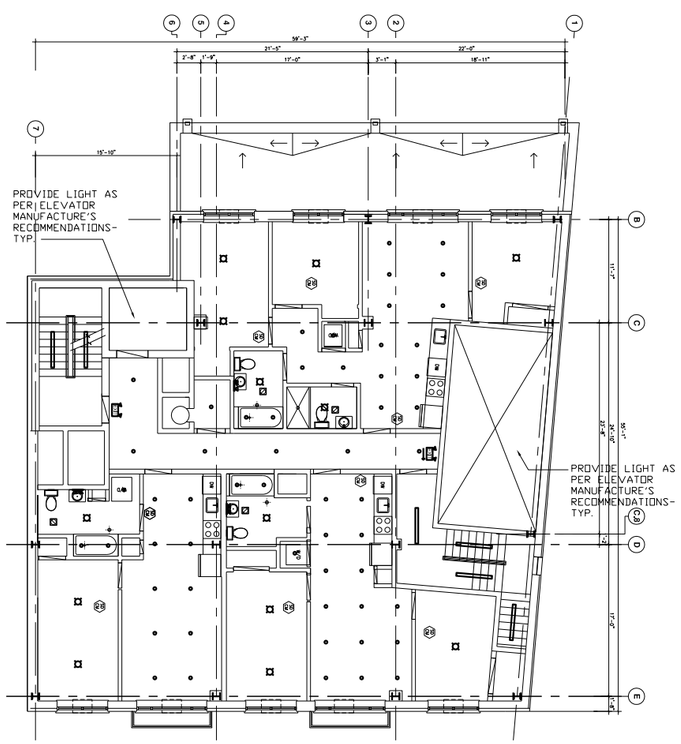
- CEILING OR WALL MOUNTED 4' FLUORESCENT LIGHT FIXTURE
- RECESSED DOWN LIGHT FIXTURE
- SURFACED MOUNTED CEILING LIGHT FIXTURE
- MINI PENDANT LIGHT FIXTURE
- OUTDOOR WALL LIGHT FIXTURE
- 100 WATT INCANDESCENT LIGHT AS PER [HDL 36]
- EXIT SIGN WITH 2 LAMP EMERGENCY LIGHTING
- EXHAUST FAN – SEE MEP
- WALL MOUNTED LIGHT FIXTURE OVER LAV. TYP.
- SD CM — SMOKE DETECTOR CARBON MONOXIDE DETECTOR



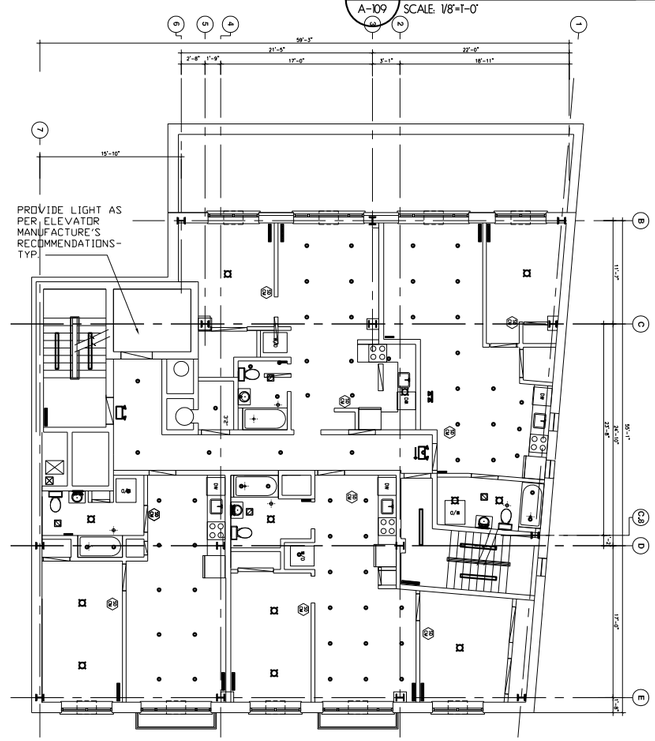
4 A-109 ROOF REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"



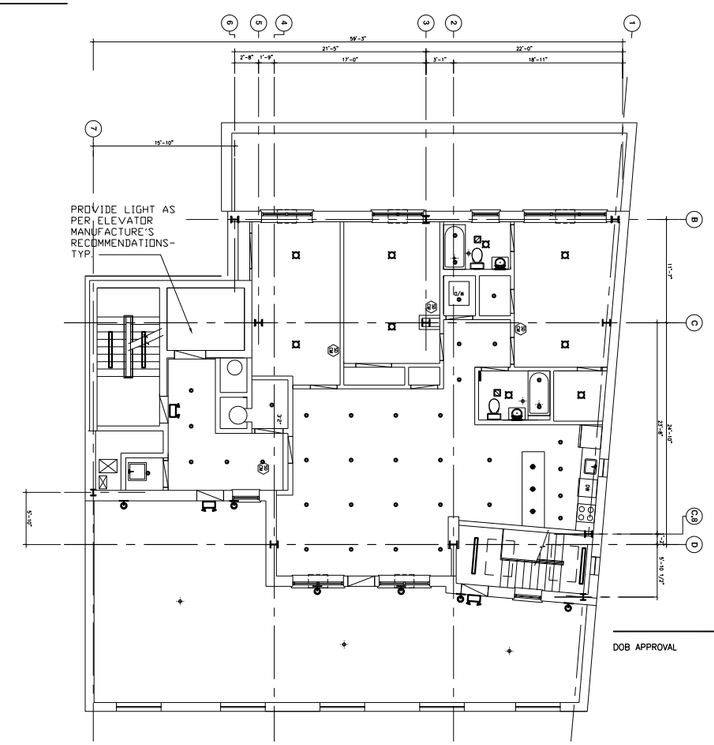
4 A-109 TYPICAL GWB CEILING DETAIL
SCALE: N.T.S.



1 A-110 3RD FL. REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"



2 A-110 4TH FL. & 5TH FL REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"



3 A-110 6TH FL. REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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NO.	DATE	REVISION

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TITLE:

3RD, 4TH & 5TH FL. REFLECTED CEILING PLAN

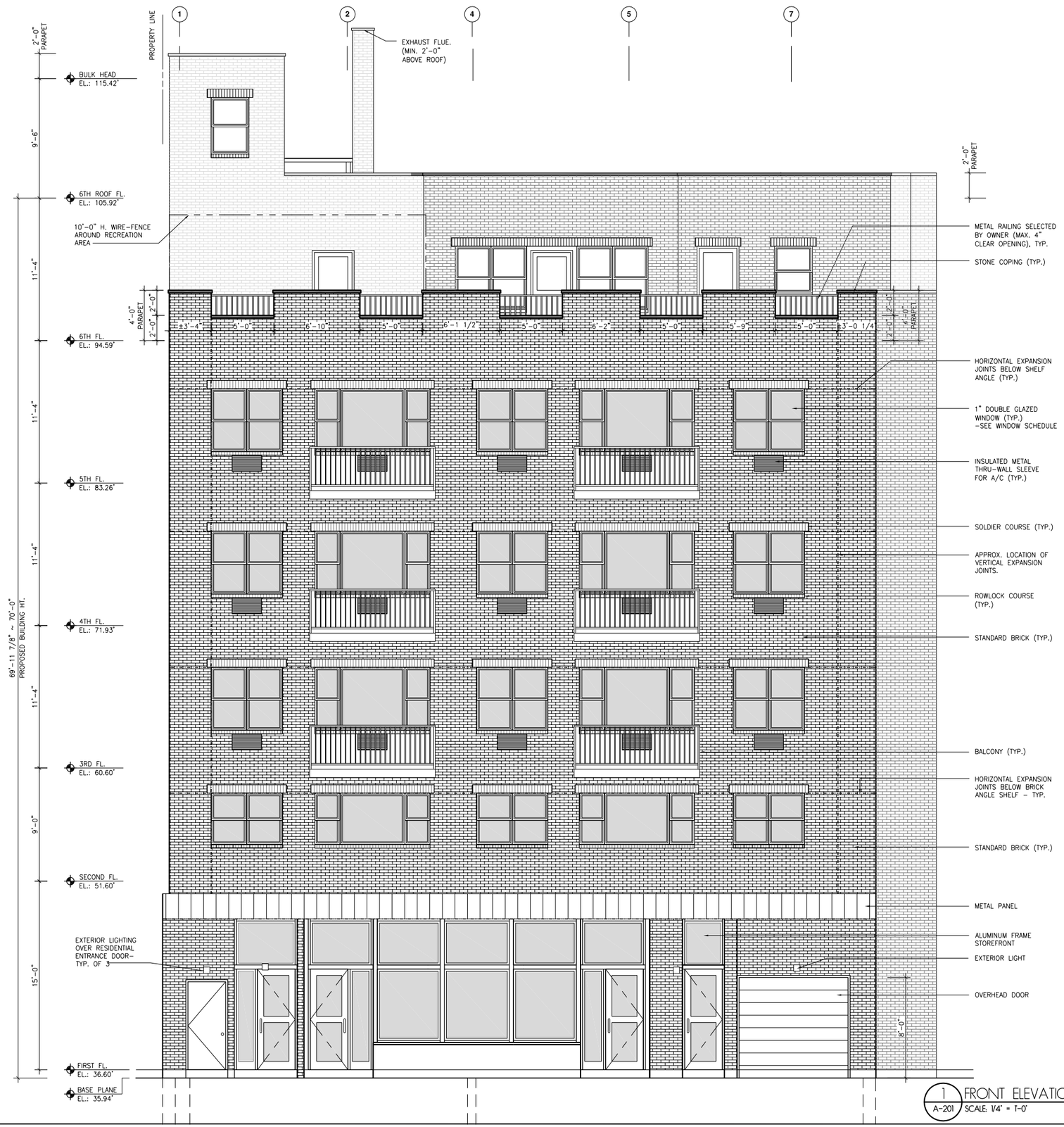
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	IL
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-110.00



1 FRONT ELEVATION (WEST)
A-201 SCALE: 1/4" = 1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

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TITLE:

FRONT ELEVATION (WEST)

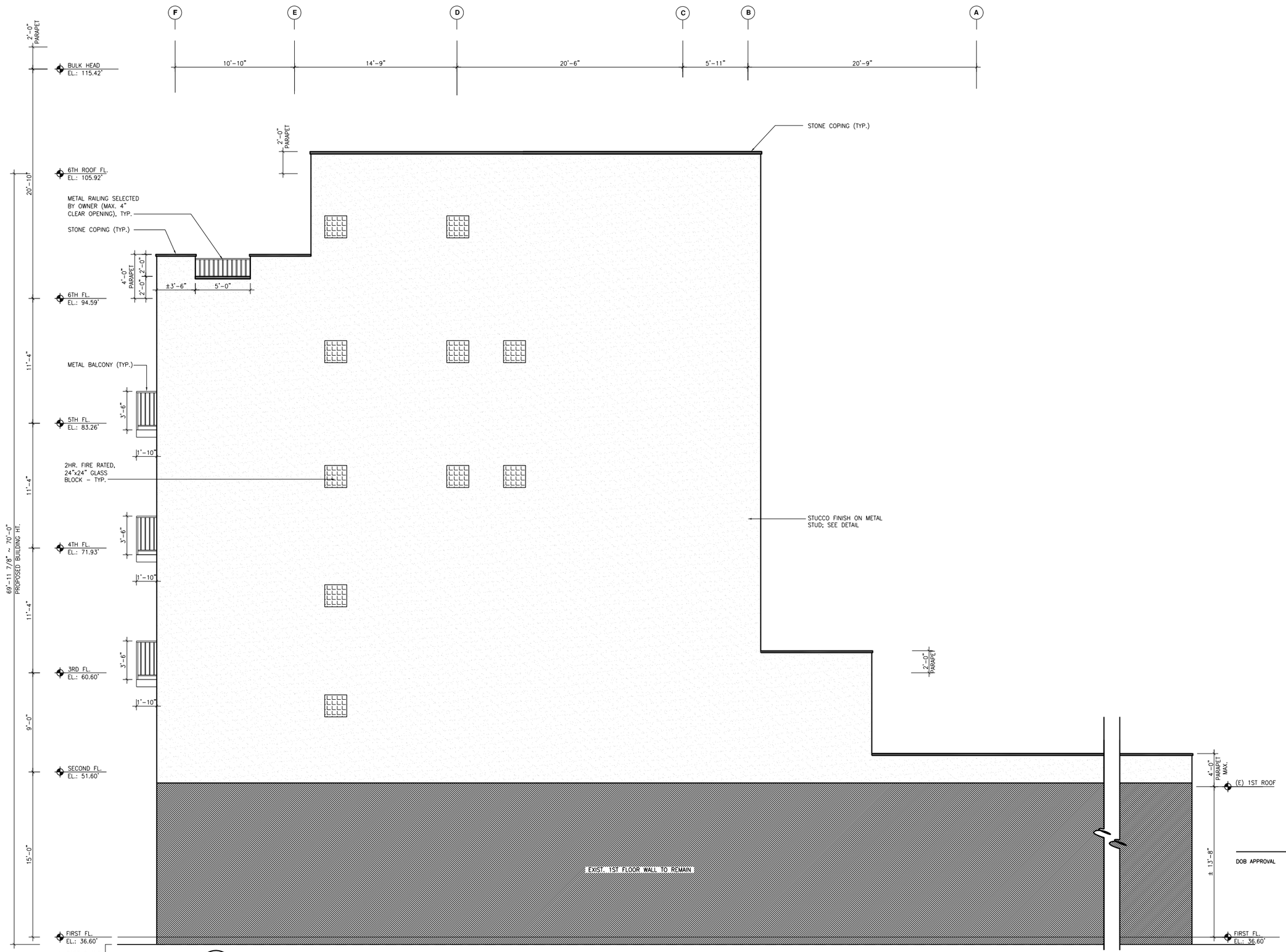
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-201.00



1 RIGHT SIDE ELEVATION (SOUTH)
A-202 SCALE: 1/4" = 1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

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NO.	DATE	REVISION

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TITLE:

RIGHT SIDE ELEVATION (SOUTH)

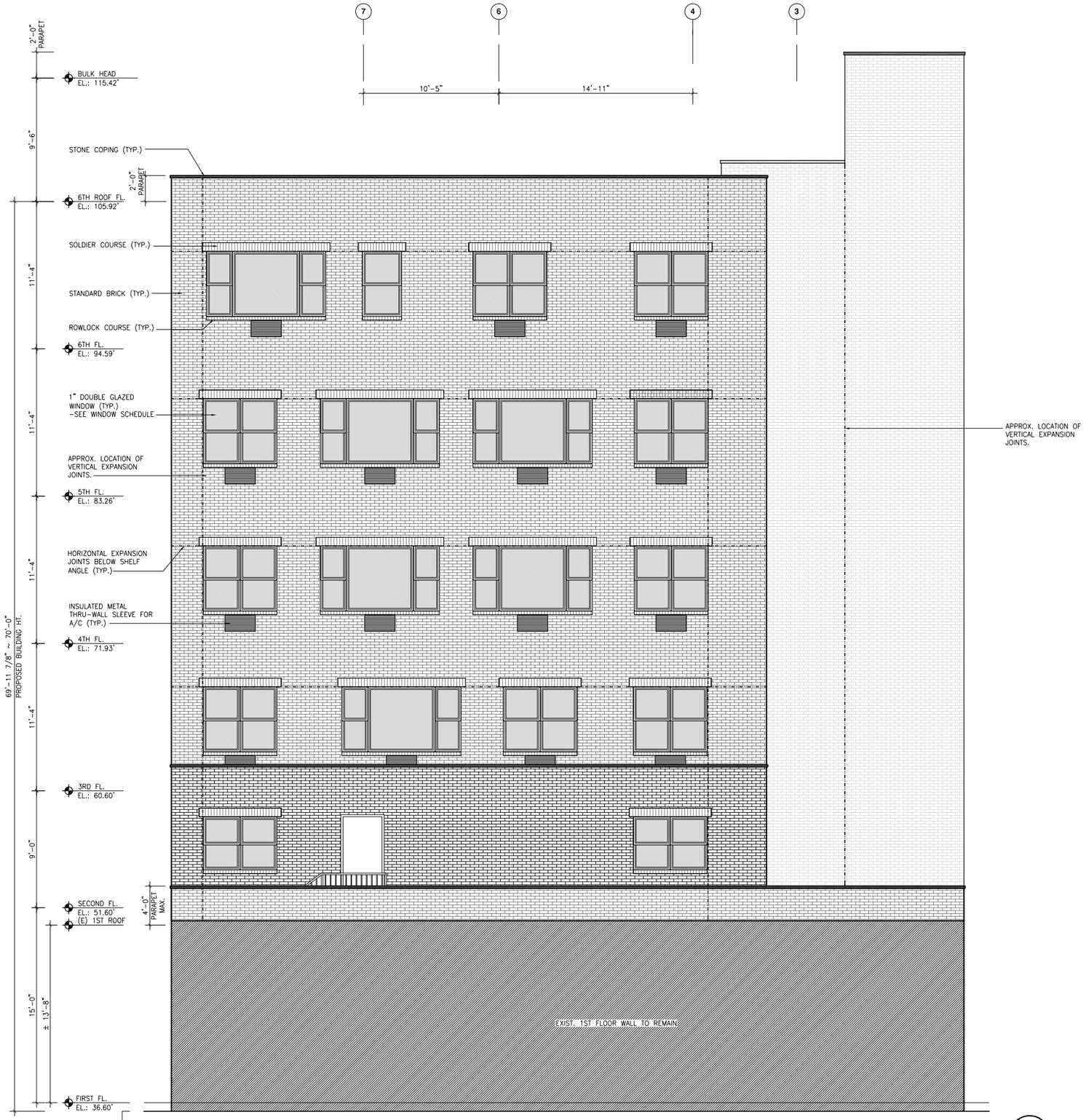
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-202.00



1 REAR ELEVATION (EAST)
A-203 SCALE: 1/4" = 1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

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TITLE:

REAR ELEVATION (EAST)

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

A-203.00

1 A-204 LEFT SIDE ELEVATION (NORTH)
SCALE: 1/4" = 1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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NO.	DATE	REVISION

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TITLE:

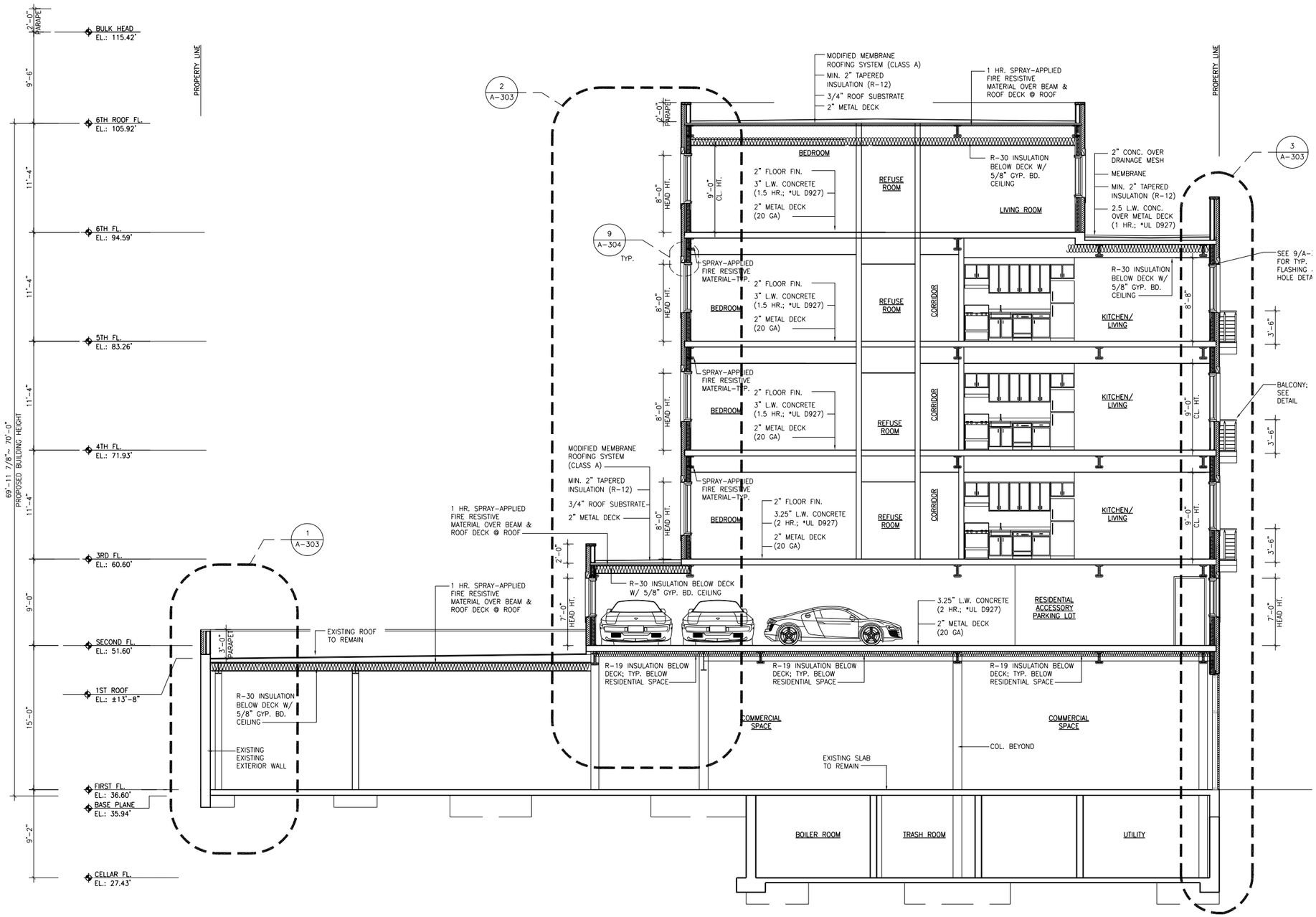
LEFT SIDE ELEVATION (NORTH)

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JK
CHECKED BY:	KL
DATE:	12/15/2014

APPLICATION NO.

DRAWING NO.:

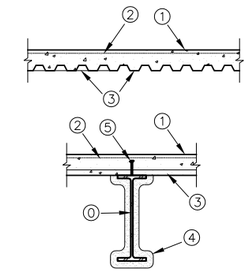
A-204.00



A BUILDING SECTION
A-301 SCALE: 3/16"=1'-0"

PROPOSED FIRE RATED STEEL BEAM & FLOOR DETAIL

UL DESIGN NO. D 927



⓪ SUPPORT – STEEL BEAM

① NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE

RATING HR	CONCRETE TYPE	CONCRETE THKNS.	APPLIED FLOOR
2	LIGHT WEIGHT	3-1/4"	2ND & 3RD
1.5	LIGHT WEIGHT	3"	4TH & 5TH
1	LIGHT WEIGHT	2-1/2"	ROOF DECK

② WELDED WIRE FABRIC

③ STEEL FLOOR AND FORM UNIT

④ SPRAY-APPLIED FIRE RESISTIVE MATERIAL

RATING HR		SPRAY THKNS.	
2		1-1/16"	
1.5		13/16"	

⑤ SHEAR-CONNECTOR STUDS

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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TITLE:

BUILDING SECTION

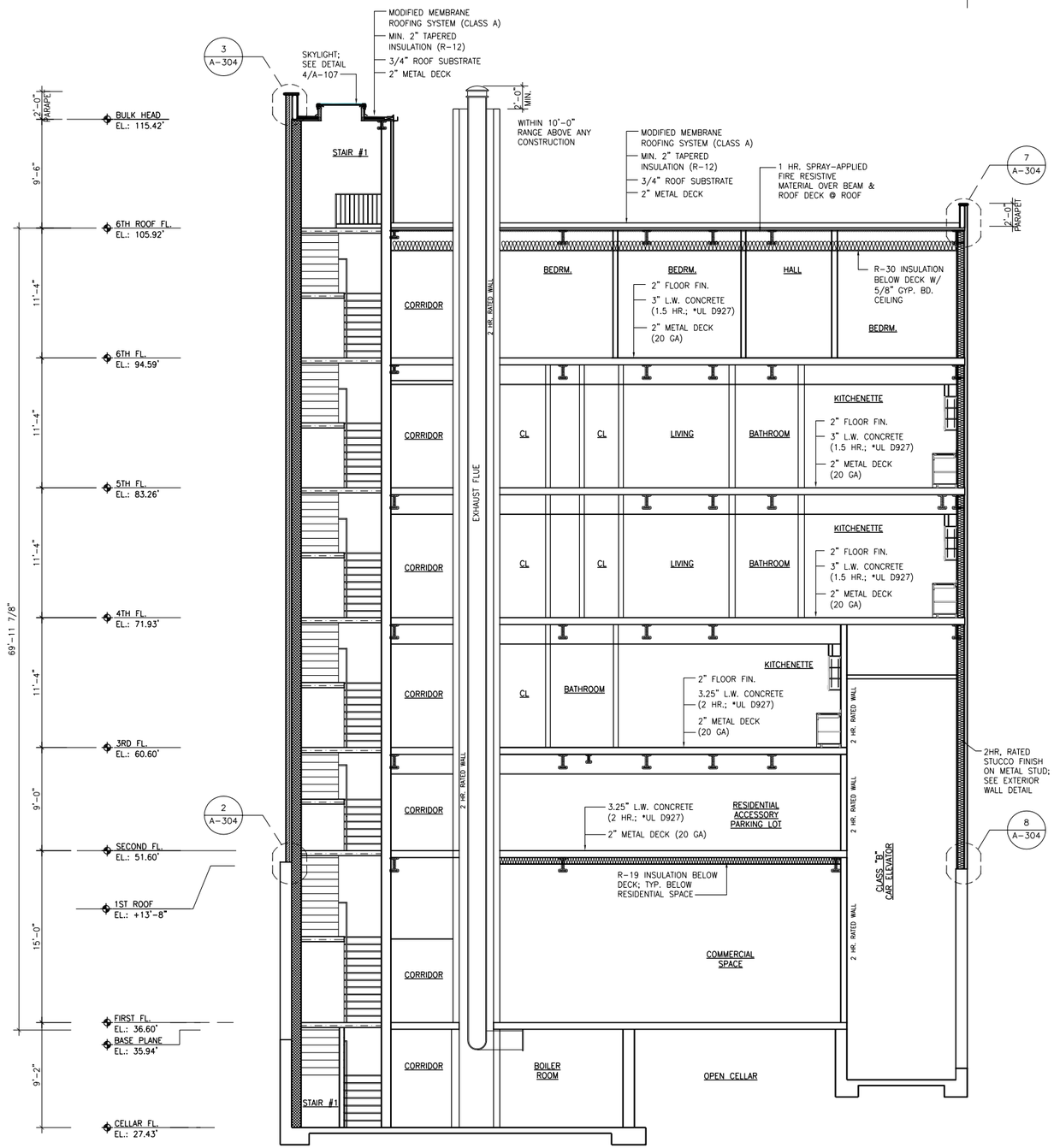
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

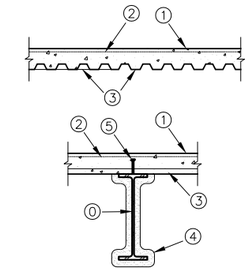
A-301.00



B A-301 BUILDING SECTION
SCALE: 3/16"=1'-0"

PROPOSED FIRE RATED STEEL BEAM & FLOOR DETAIL

UL DESIGN NO. D 927



0 SUPPORT – STEEL BEAM

1 NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE

RATING HR	CONCRETE TYPE	CONCRETE THKNS.	APPLIED FLOOR
2	LIGHT WEIGHT	3-1/4"	2ND & 3RD
1.5	LIGHT WEIGHT	3"	4TH & 5TH
1	LIGHT WEIGHT	2-1/2"	ROOF DECK

2 WELDED WIRE FABRIC

3 STEEL FLOOR AND FORM UNIT

4 SPRAY-APPLIED FIRE RESISTIVE MATERIAL

RATING HR		SPRAY THKNS.	
2		1-1/16"	
1.5		13/16"	

5 SHEAR-CONNECTOR STUDS

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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TITLE:

BUILDING SECTION

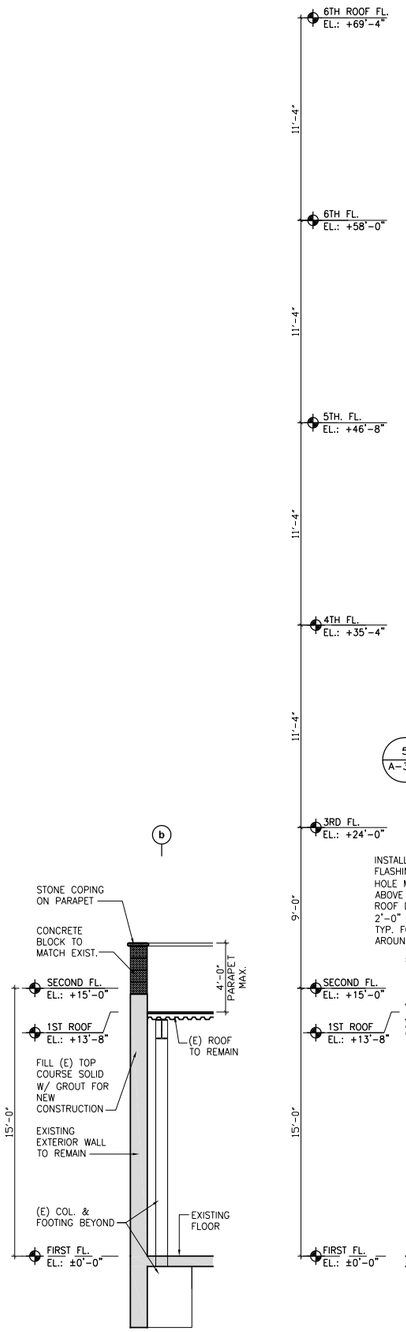
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

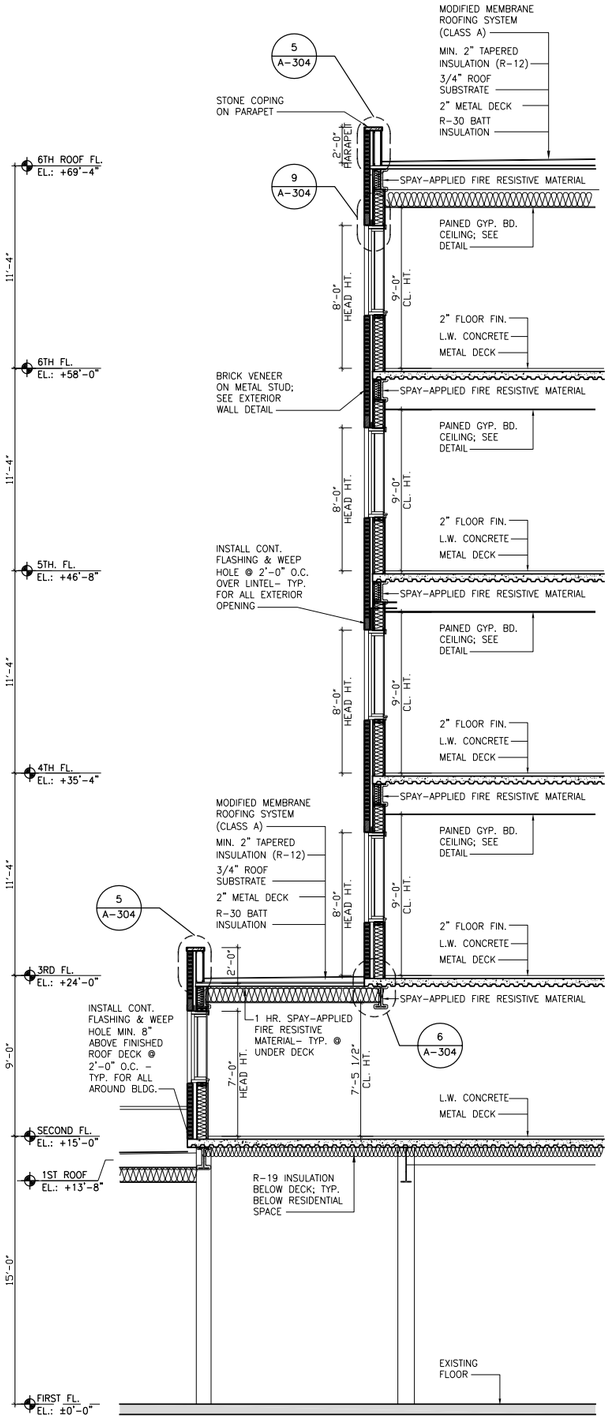
APPLICATION NO.

DRAWING NO.:

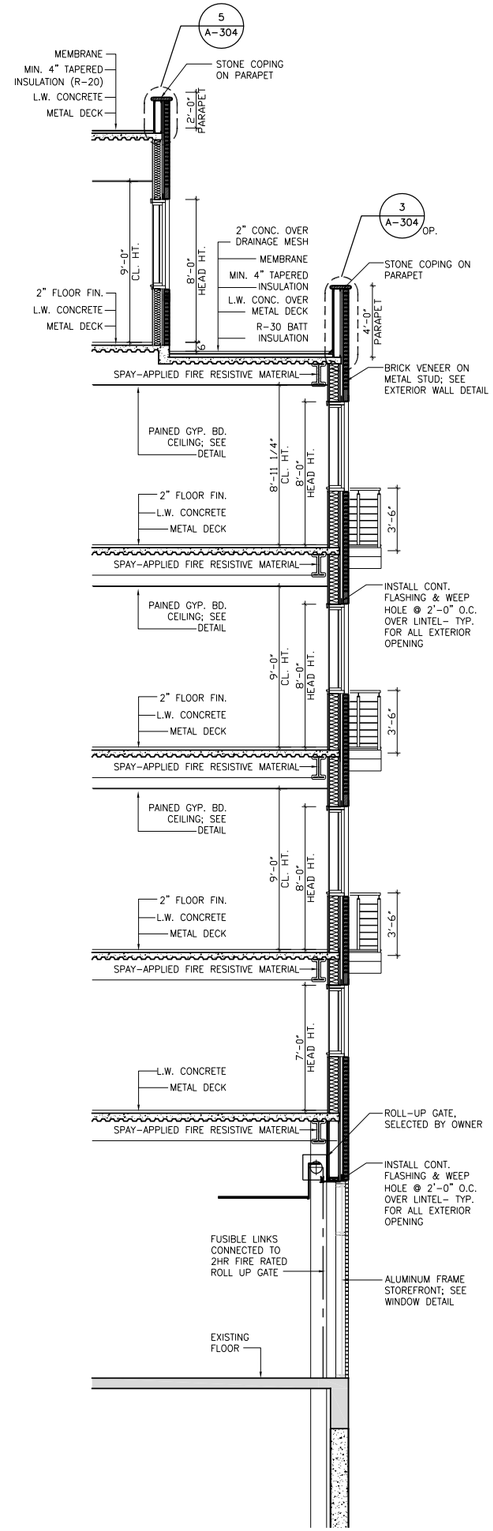
A-302.00



1 A-303 WALL SECTION
SCALE: 1/4" = 1'-0"



2 A-303 WALL SECTION
SCALE: 1/4" = 1'-0"



3 A-303 WALL SECTION
SCALE: 1/4" = 1'-0"

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
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ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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TITLE:

WALL SECTION

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

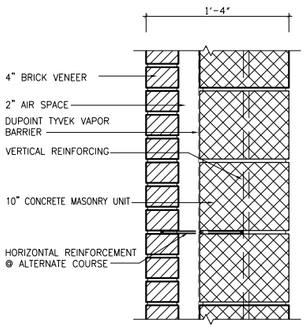
DRAWING NO.:

A-303.00

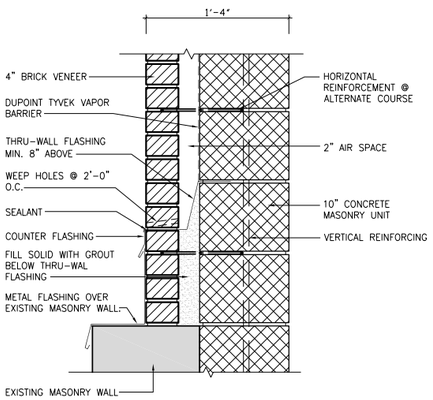
WALL DETAILS

EXTERIOR WALL

1 EXTERIOR WALL; BRICK VENEER ON CONCRETE BLOCK WALL

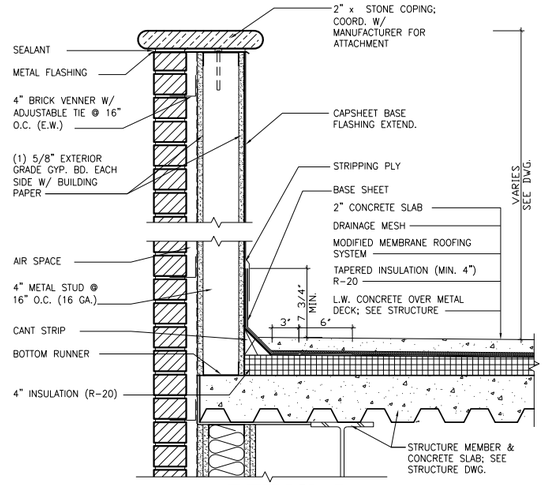


DETAIL 1

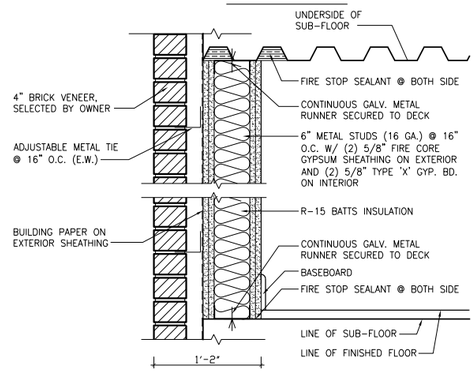


DETAIL 2

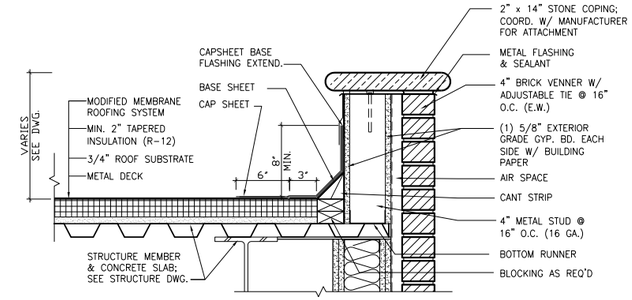
2 EXTERIOR WALL; BRICK VENEER ON METAL STUD



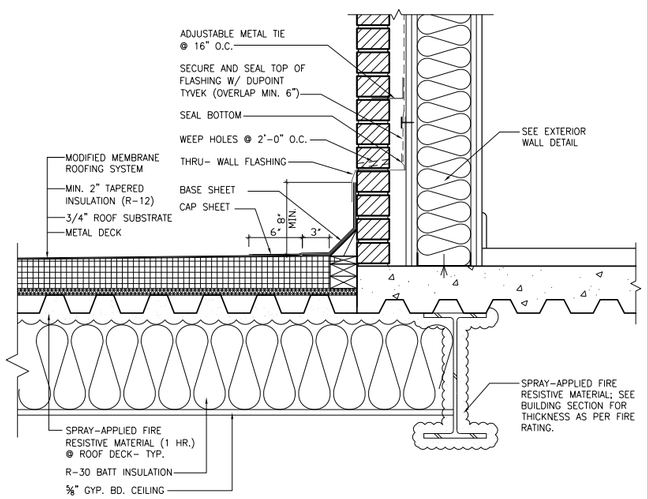
DETAIL 3



DETAIL 4

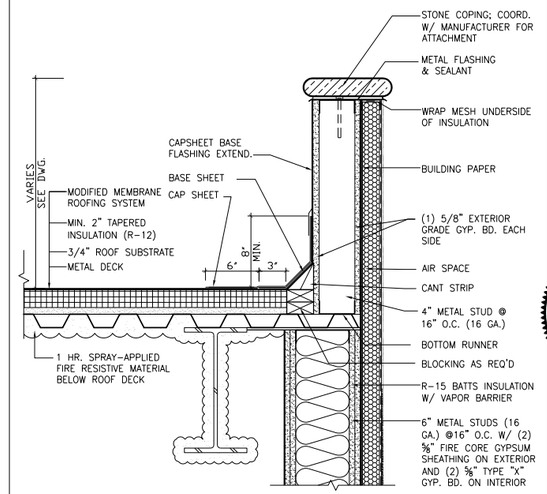


DETAIL 5

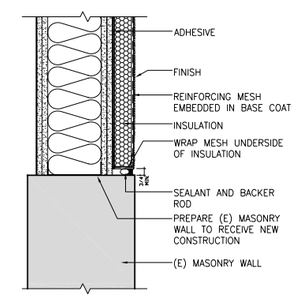


DETAIL 6

3 EXTERIOR WALL; STUCCO FINISH ON METAL STUD



DETAIL 7

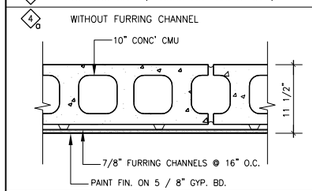


DETAIL 8

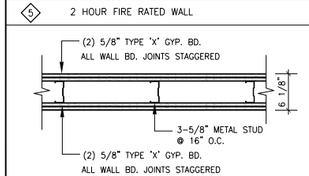
INTERIOR WALL

4 10" CMU WALL (2 HOUR FIRE RATED WALL)

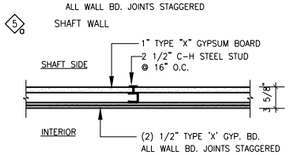
4/0 WITHOUT FURRING CHANNEL



5 2 HOUR FIRE RATED WALL

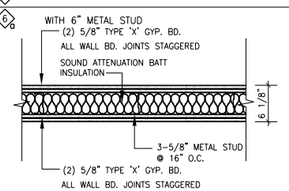


5/0 SHAFT WALL



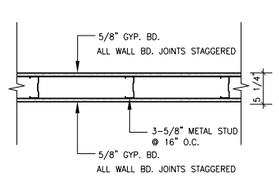
6 1 HOUR FIRE RATED WALL

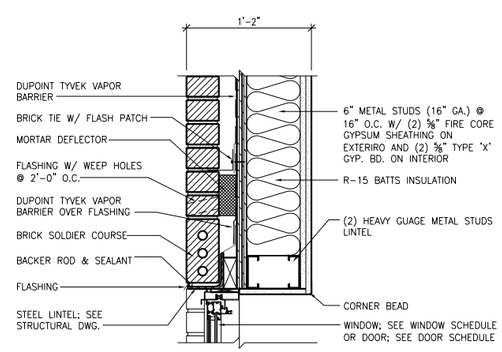
6/0 WITH 6" METAL STUD



7 NON-RATED INTERIOR WALL

7/0 WITH 6" METAL STUD





DETAIL 9

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

REGISTERED ARCHITECT KYU MYEON LEE 038647 STATE OF NEW YORK

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NEW YORK, NY 10018
NJ: 80 CRAIN RD
PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

THE PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

TITLE:

WALL DETAILS & GENERNAL DETAILS

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

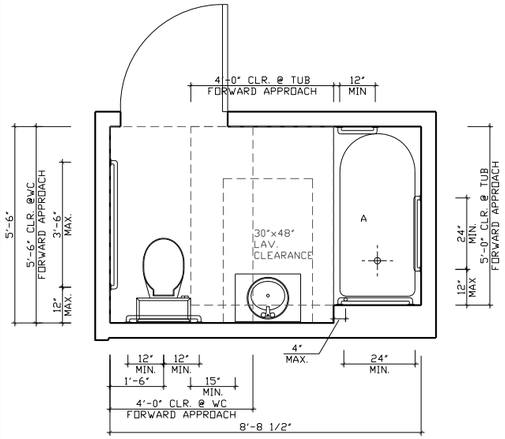
APPLICATION NO.

DRAWING NO.:

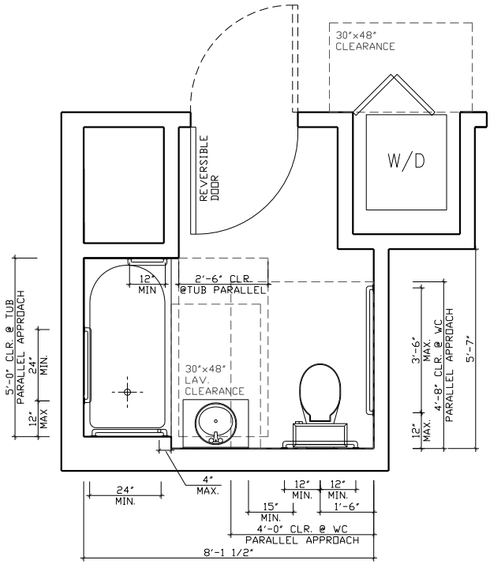
A-304.00

ADAPTABLE BATHROOM NOTES

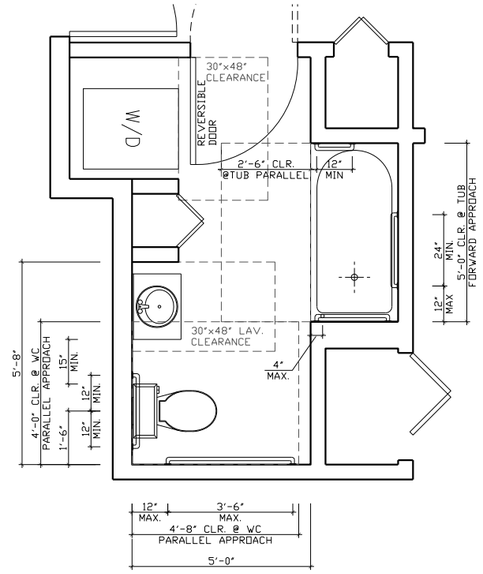
1. ALL ITEMS INCLUDING BUT NOT LIMITED TO DOOR, DOOR LEVER, FAUCETS, TOILET PAPER DISPENSER SHALL BE ADA COMPLIANT.
2. REINFORCEMENT SHALL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS AND SHOWER SEATS AT WATER CLOSETS, BATHTUBS, AND SHOWER COMPARTMENTS.
3. CABINETRY SHALL BE PERMITTED UNDER THE LAVATORY IF a. CABINETRY CAN BE REMOVED W/O REMOVAL OR REPLACEMENT OF THE LAVATORY, b. THE FLOOR FINISH EXTENDS UNDER CABINETRY.
4. DOOR OF BATHROOM SHALL BE REVERSIBLE AS INDICATED WHEN IT IS NECESSARY.



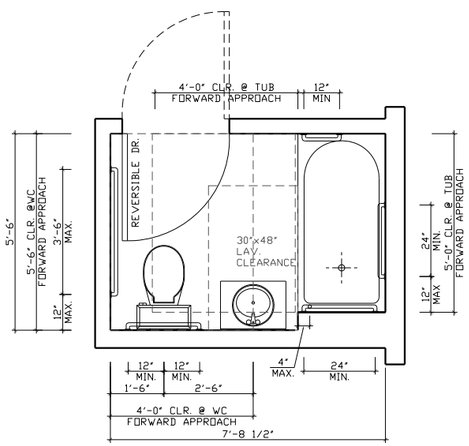
THREE BED ROOM UNIT @3RD FLOOR



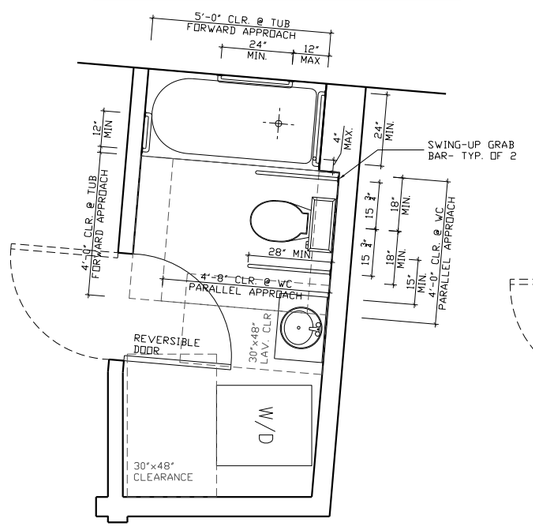
TYP. ONE BED ROOM UNIT @3RD, 4TH & 5TH FLOORS



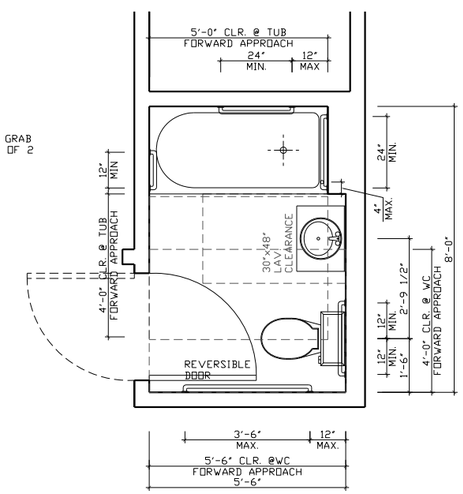
TYP. ONE BED ROOM UNIT @3RD, 4TH & 5TH FLOORS



TYP. ONE BED ROOM UNIT @ 4TH & 5TH FLOORS

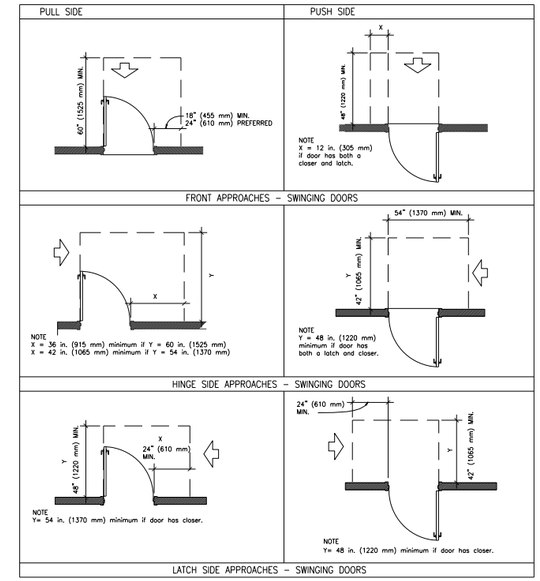


TYP. ONE BED ROOM UNIT @ 4TH & 5TH FLOORS

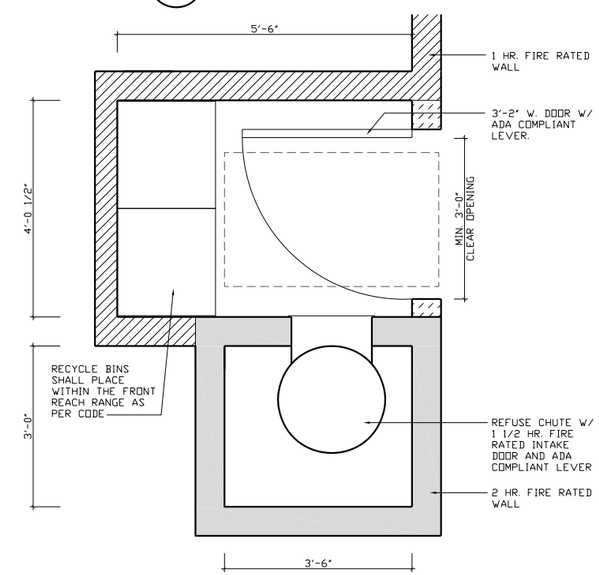


THREE BED ROOM UNIT @ 6TH FLOORS

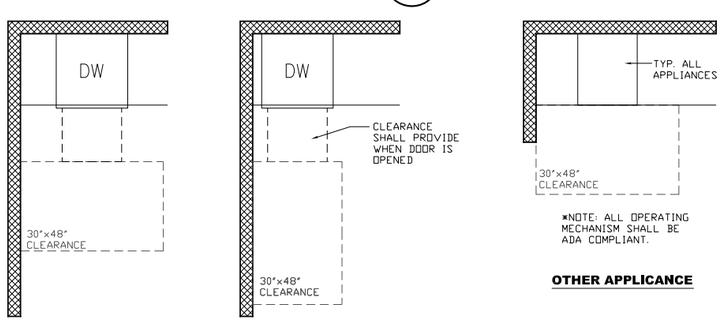
2 ADA ADAPTABLE BATHROOM PLAN DETAILS
A-405 SCALE: 1/2" = 1'-0"



3 MANEUVERING CLEARANCE
A-104 SCALE: N.T.S.

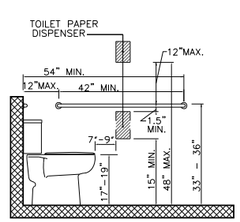


3 MANEUVERING CLEARANCE
A-104 SCALE: N.T.S.

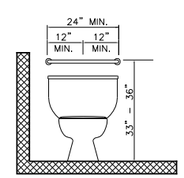


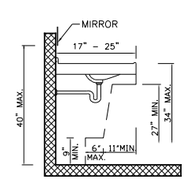
@ DISHWASHER

OTHER APPLICANCE

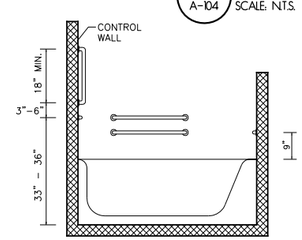


WATER CLOSET





LAVATORY



TUB

3 TYP. ADA DETAILS
A-405 SCALE: N.T.S.

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

REGISTERED ARCHITECT KYU MYEON LEE 030647 STATE OF NEW YORK

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NEW YORK, NY 10018
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PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

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TITLE:

ADA DETAILS

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

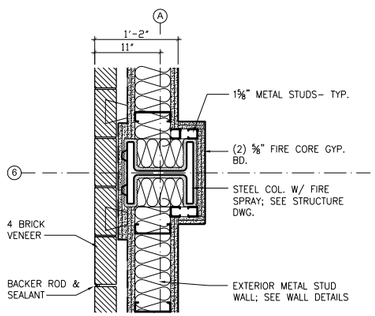
DOB APPROVAL

APPLICATION NO.

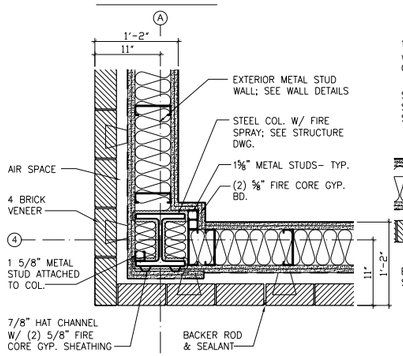
DRAWING NO.:

A-401.00

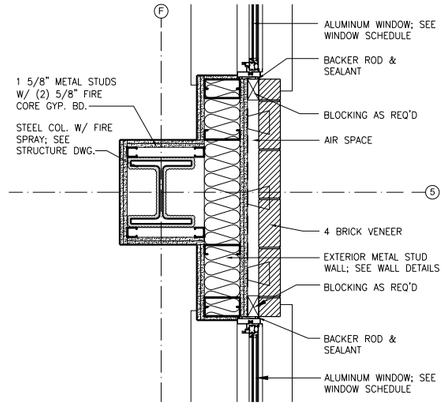
DETAIL 1



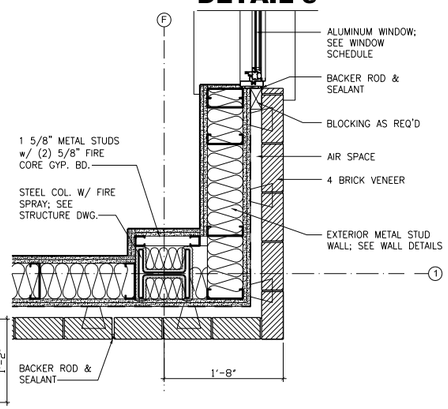
DETAIL 2



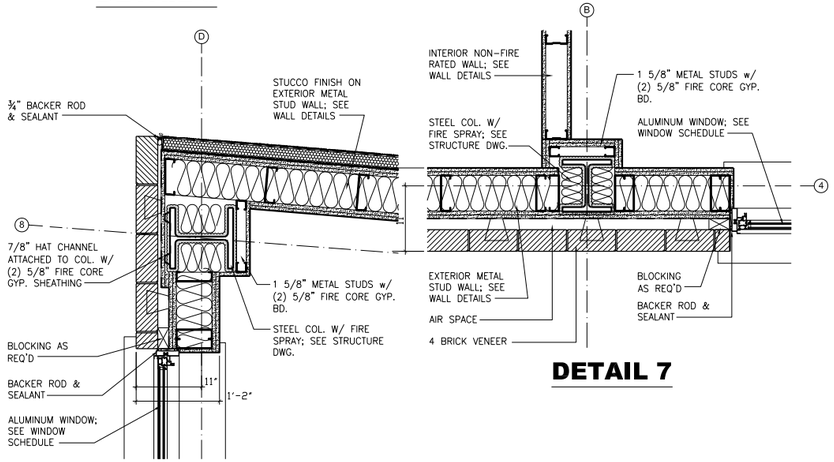
DETAIL 3



DETAIL 5



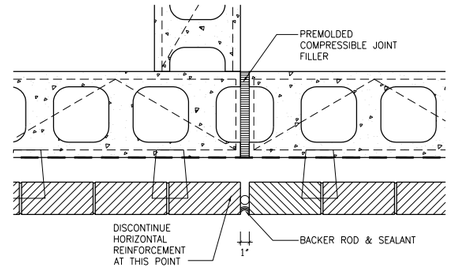
DETAIL 6



DETAIL 7

DETAIL 4

1 COLUMN DETAILS
A-403 SCALE: N.T.S.



2 EXPANSION JOINT DETAIL
A-403 SCALE: N.T.S.

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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TEL: 201 983 3344

NO.	DATE	REVISION

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TITLE:

CONSTRUCTION PLAN DETAILS

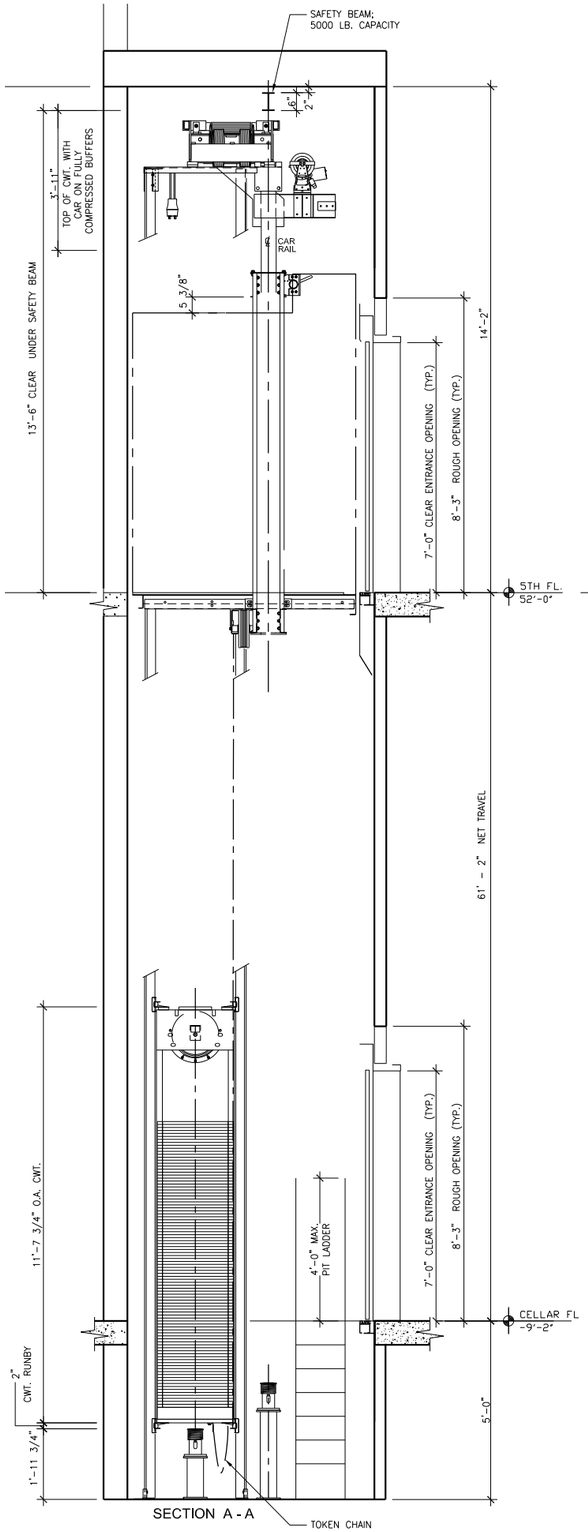
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

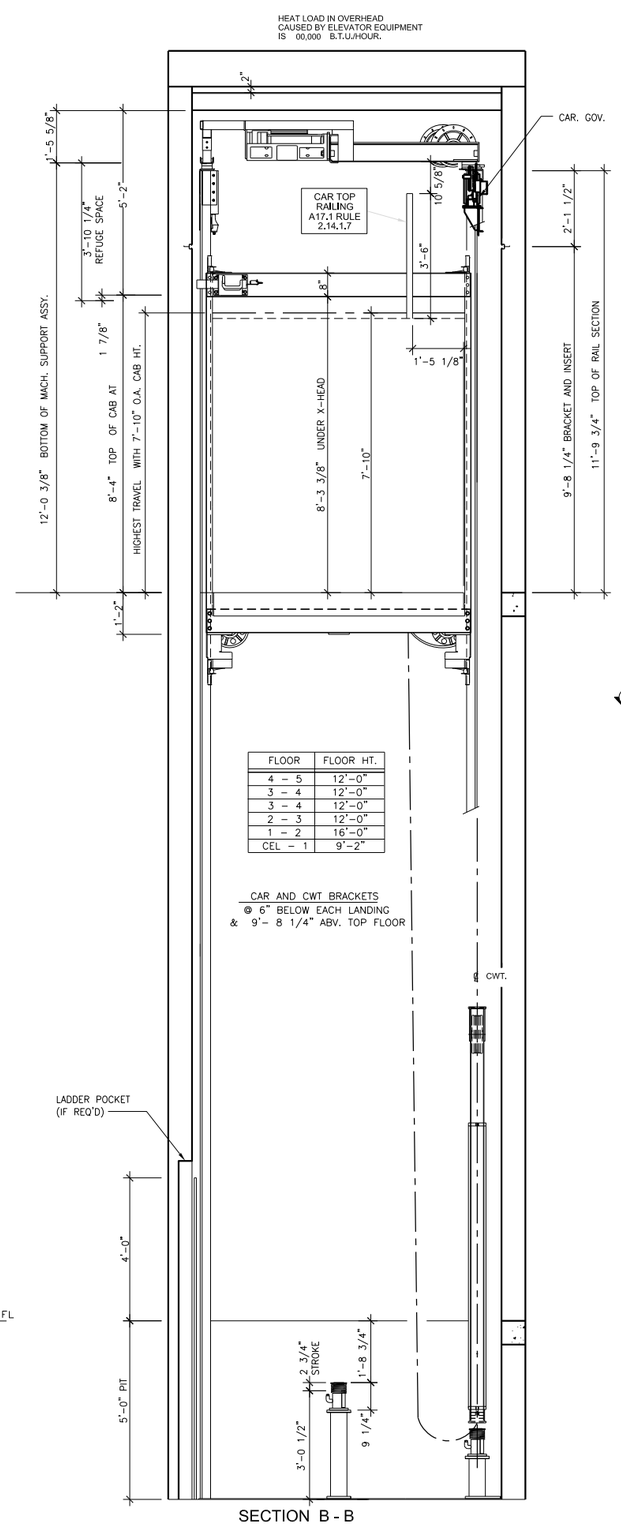
DRAWING NO.:

A-403.00



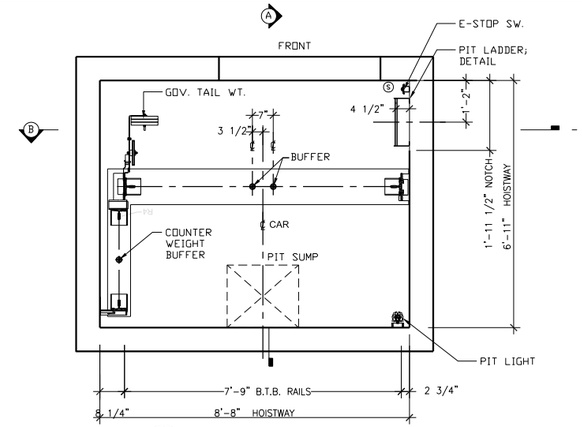
SECTION A - A

A SECTION
A-403 SCALE: 1/2" = 1'-0"

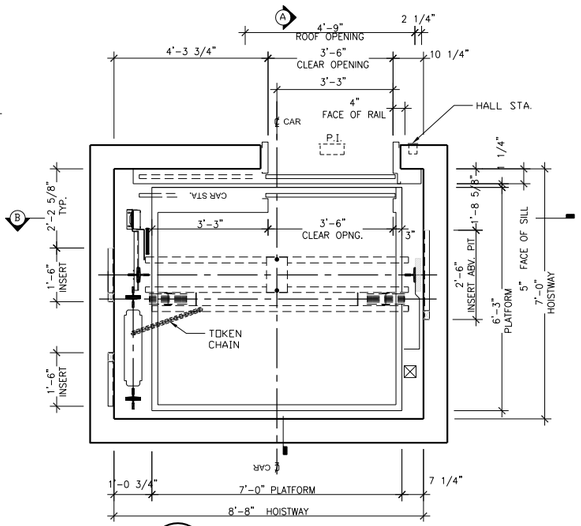


SECTION B - B

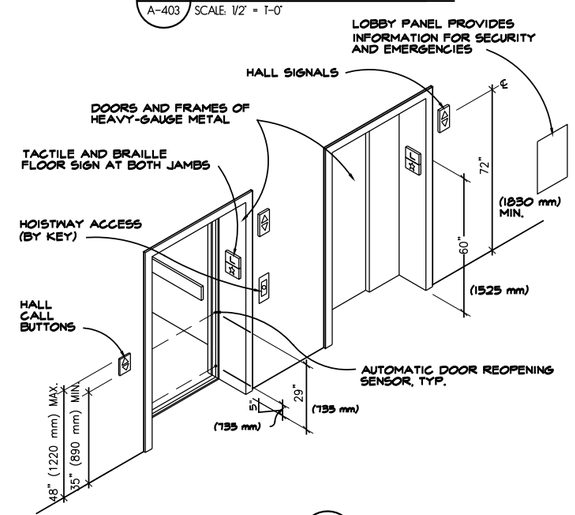
B SECTION
A-403 SCALE: 1/2" = 1'-0"

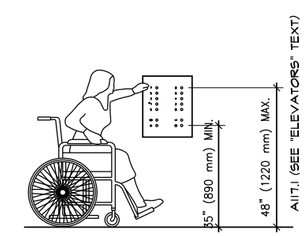


1 ELEVATOR PIT PLAN
A-403 SCALE: 1/2" = 1'-0"



2 ELEVATOR HOISTWAY PLAN
A-403 SCALE: 1/2" = 1'-0"





2 ELEVATOR LOBBY & CONTROL PANEL HEIGHT
A-403 SCALE: N.T.S.

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

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NO.	DATE	REVISION

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TITLE:

ELEVATOR DETAIL

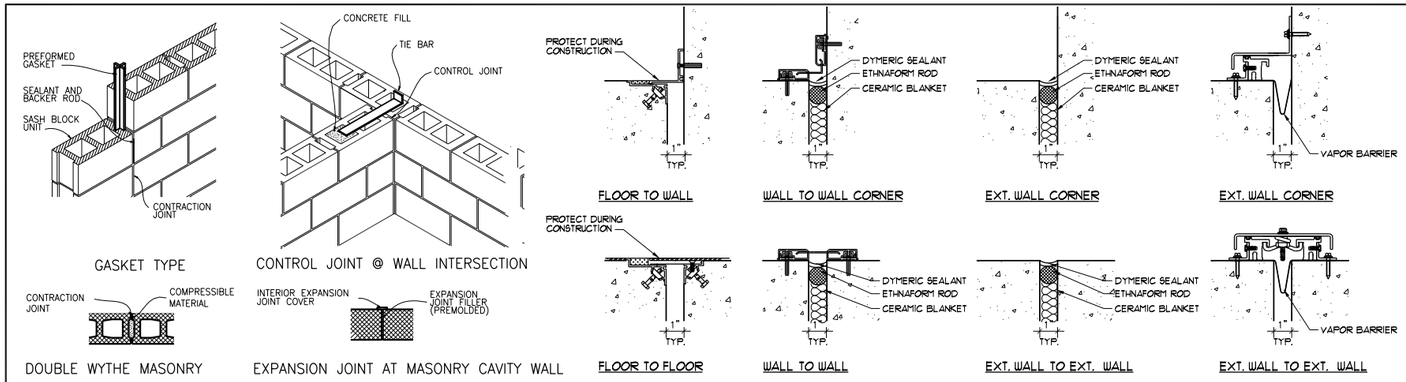
KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

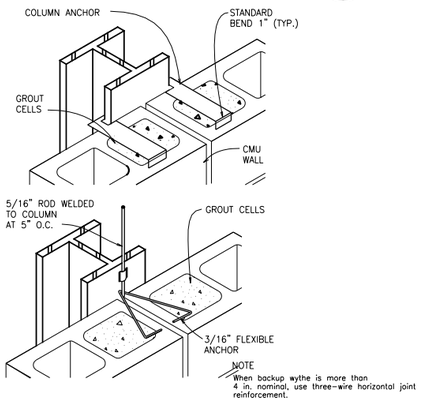
APPLICATION NO.

DRAWING NO.:

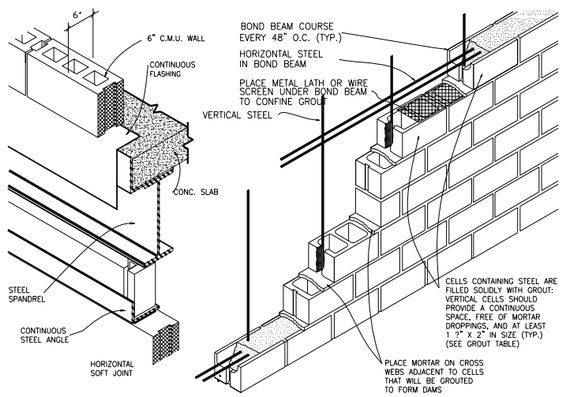
A-403.00



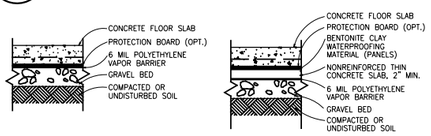
1 A-404 CONTROL & EXPANSION JOINT DETAILS
SCALE: N.T.S.



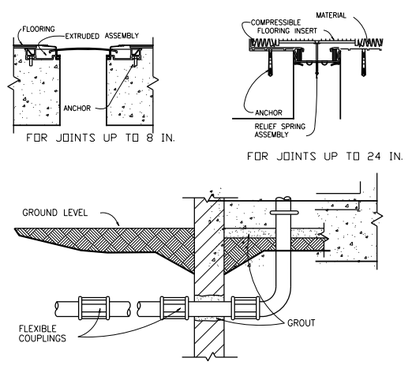
2 A-404 MASONRY TO STEEL COL. CONNECTION
SCALE: N.T.S.



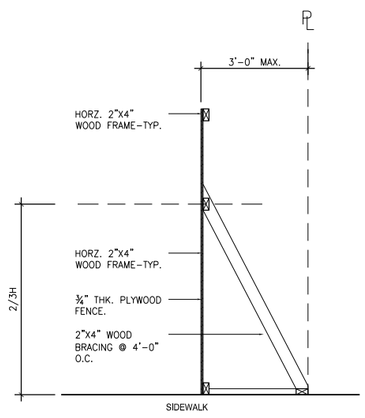
3 A-404 MASONRY WORK DETAIL - TYP.
SCALE: N.T.S.



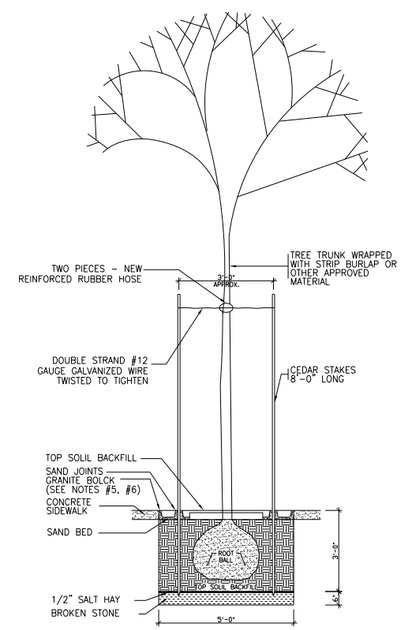
4 A-404 TYP. WATERPROOFING @ SLAB
SCALE: N.T.S.

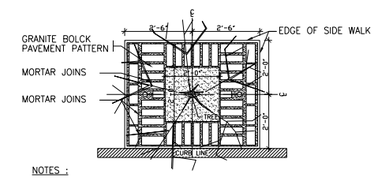


5 A-404 FLEXIBLE COUPLING BUILDING PIPING
SCALE: N.T.S.



6 A-404 CONSTRUCTION FENCE DETAIL
SCALE: N.T.S.

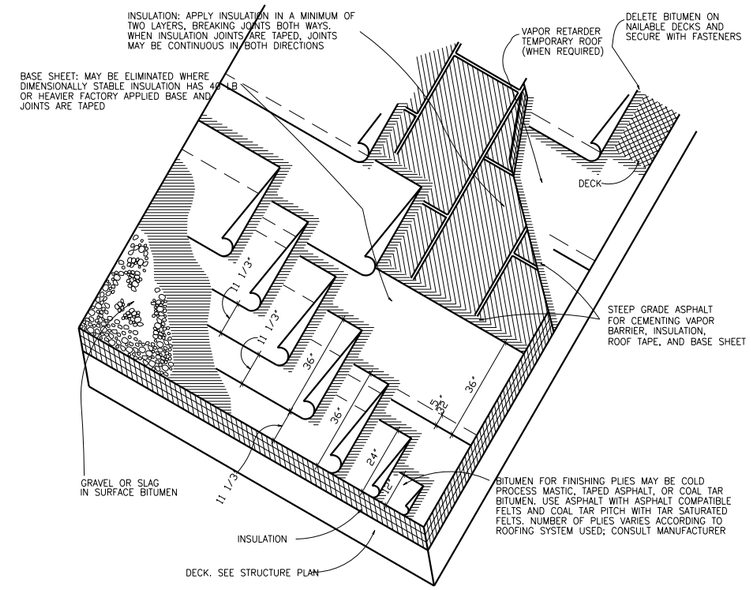




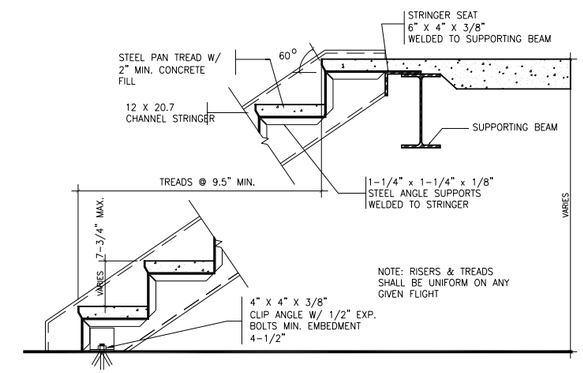
NOTES :

ALL MATERIALS AND CONSTRUCTION METHODS USED ARE TO CONFORM TO SECTION #4.16 OF THE BUREAU OF HIGHWAY OPERATIONS SPECIFICATIONS, LATEST EDITION.
PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMIT FROM THE DEPT. OF PARKS AND RECREATION FOR THE REMOVAL AND PLANTING OF TREES.
TREE PITS SHOULD BE LOCATED TWO (2) FEET MINIMUM FROM GAS, OIL, OR WATER BOXES.
TREE STAKES ARE TO BE REMOVED BY THE TREE SUBCONTRACTOR NOT LESS THAN ONE YEAR AFTER PLANTING OF SAID TREES AND PRIOR TO THE FINAL ACCEPTANCE OF THE WORK.
USE OF SIDEWALK PAVEMENT MATERIAL OTHER THAN GRANITE BLOCK MUST BE SPECIFICALLY APPROVED, IN WRITING, BY THE BUREAU OF HIGHWAY OPERATIONS.
GRANITE BLOCK IN TREE PIT SHALL BE PAID FOR UNDER ITEM NO. 6.06.

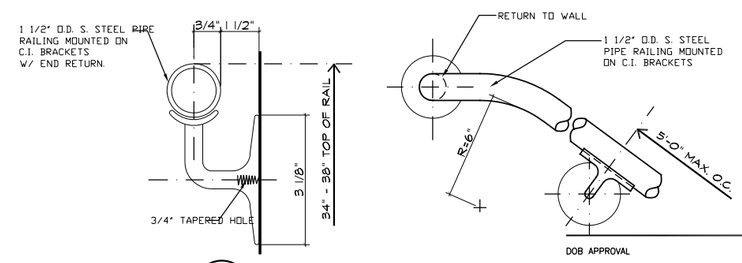
7 A-404 TREE PLANTING, STAKING TREE PIT PAVEMENT
SCALE: N.T.S.



8 A-404 20 HR. BUILT-UP ROOFING OVER INSULATION
SCALE: N.T.S.



9 A-404 TYP. STAIR DETAIL
SCALE: N.T.S.



10 A-404 HAND RAIL DETAILS
SCALE: N.T.S.

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

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NEW YORK, NY 10018
NJ: 80 CRAIN RD
PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

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TITLE:

GENERAL DETAILS

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

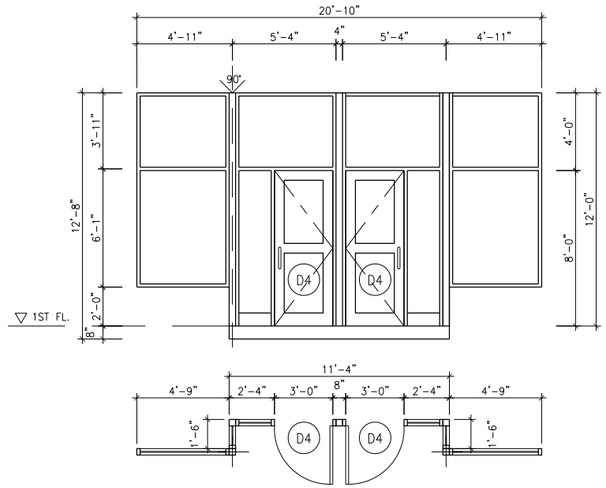
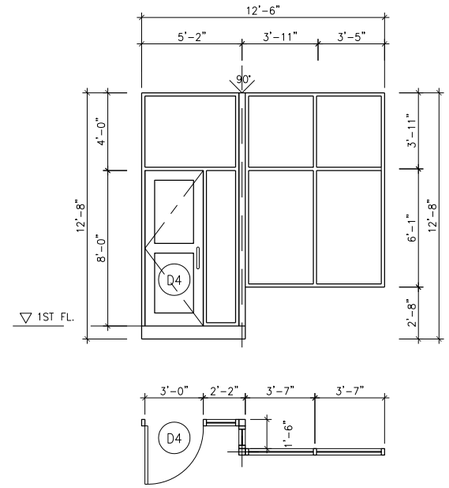
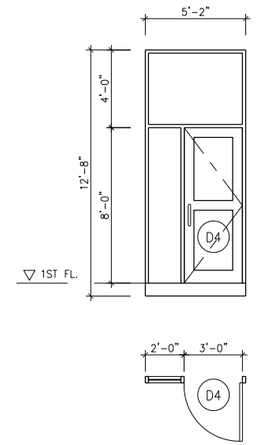
APPLICATION NO.

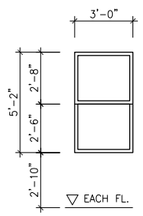
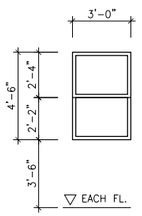
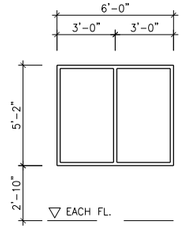
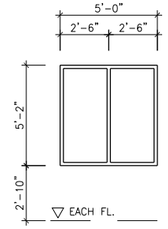
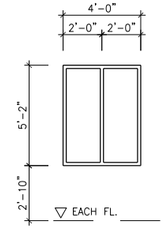
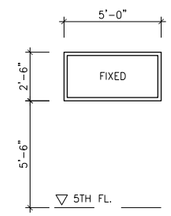
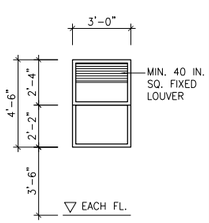
DRAWING NO.:

A-404.00

WINDOW SCHEDULE

ALL DIMENSION ARE ROUGH OPENING; COORD. W/ WINDOW MANUFACTURER OR EXACT SIZE REQUIREMET

SYMBOL	SF1 ALUMINUM FIXED WINDOW	SF2 ALUMINUM FIXED WINDOW	SF3 ALUMINUM FIXED WINDOW
ELEVATION			
GLASS	½" TEMPERED GLASS	½" TEMPERED GLASS	½" TEMPERED GLASS

SYMBOL	W1 ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW	W1A ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW	W2 ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW	W3 ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW	W4 ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW	W5 ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW
ELEVATION						
GLASS	1" DOUBLE GLAZED GLASS (U-VALUE; MAX. 0.4)	1" DOUBLE GLAZED GLASS (U-VALUE; MIN. 0.4)	1" DOUBLE GLAZED GLASS (U-VALUE; MIN. 0.4)	1" DOUBLE GLAZED GLASS (U-VALUE; MIN. 0.4)	1" DOUBLE GLAZED GLASS (U-VALUE; MIN. 0.4)	1" DOUBLE GLAZED GLASS (U-VALUE; MIN. 0.4)
		W1B ALUMINUM FRAME W/ THERMAL BREAK DOUBLE HUNG WINDOW				
						
		1" DOUBLE GLAZED GLASS (U-VALUE; MIN. 0.4)				

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

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PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

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TITLE:

WINDOW SCHEDULE DETAIL

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	INA
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

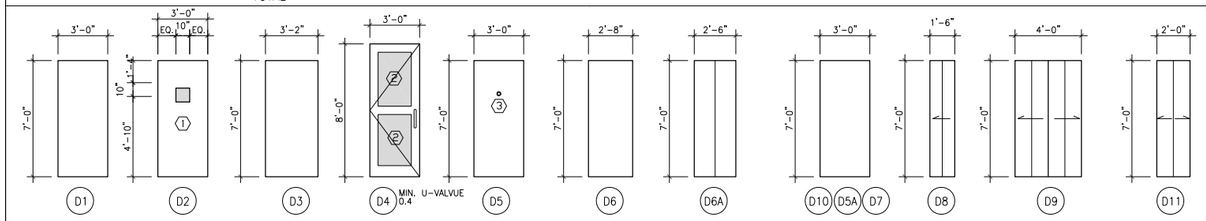
APPLICATION NO.

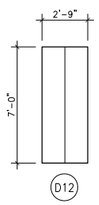
DRAWING NO.:

A-501.00

DOOR SCHEDULE

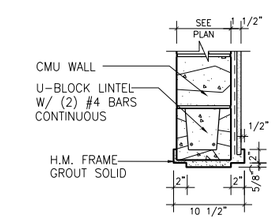
DOOR NO.	DOOR SIZE	MATERIAL	RATE	DESCRIPTION	REMARKS
D1	3'-0" X 7'-0"	HOLLOW METAL	90MIN	2HR RATED WALLS	F.P.S.C.
DA1	3'-0" X 7'-0"	HOLLOW METAL	90MIN	2HR RATED WALLS	F.P.S.C., EMERGENCY EXIT ONLY W/ ALARM
D2	3'-0" X 7'-0"	HOLLOW METAL	90MIN	2HR RATED WALLS	F.P.S.C.
D3	3'-2" X 7'-0"	HOLLOW METAL	90MIN	2HR RATED WALLS	F.P.S.C. AUTOMATIC DOOR OPENER AND OCCUPANCY SENSOR. DOOR SHALL CLOSE IF THE ROOM IS NOT OCCUPIED OR IN CASE OF POWER FAILURE
D4	3'-0" X 8'-0"	GLASS DOOR	–	ENTRANCE	TEMPERED GLASS
D5	3'-0" X 7'-0"	SOLID WOOD	45MIN	1HR RATED WALLS	PEEPHOLE DOOR
D5A	3'-0" X 7'-0"	SOLID WOOD	45MIN	1HR RATED WALLS	–
D6	2'-8" X 7'-0"	SOLID CORE WOOD	–	NON RATED WALLS	BIFOLDING DOOR
D6A	2'-6" X 7'-0"	SOLID CORE WOOD	–	NON RATED WALLS	
D7	3'-0" X 7'-0"	SOLID CORE WOOD	–	NON RATED WALLS	
D8	1'-6" X 7'-0"	HOLLOW CORE WOOD	–	NON RATED WALLS	BIFOLDING DOOR
D9	4'-0" X 7'-0"	HOLLOW CORE WOOD	–	NON RATED WALLS	BIFOLDING DOOR
D10	3-0" X 7'-0"	HOLLOW CORE WOOD	–	NON RATED WALLS	BIFOLDING DOOR
D11	2-0" X 7'-0"	HOLLOW CORE WOOD	–	NON RATED WALLS	BIFOLDING DOOR
D12	2-9" X 7'-0"	HOLLOW CORE WOOD	–	NON RATED WALLS	BIFOLDING DOOR
TOTAL					



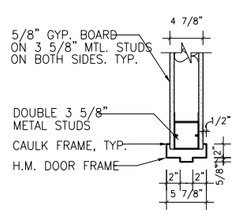


NOTES : (1) 1/4" CLEAR WIRE PLATE GLASS (2) 1/2" TEMPERED GLASS (3) PEEPHOLE

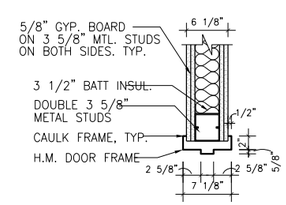
DOOR DETAILS



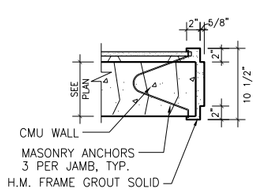
H1 HEAD



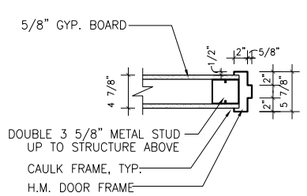
H2 HEAD



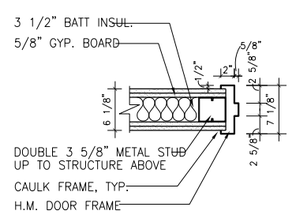
H3 HEAD



J1 JAMB



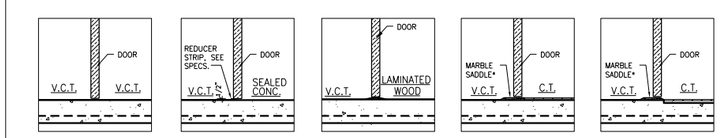
J2 JAMB



J3 JAMB

FINISH SCHEDULE

FL.	ROOM NO.	ROOM NAME	FLOOR: HARD WOOD	FLOOR: PORCELAIN TILE	FLOOR: LAMINATED	FLOOR: EPOXY PAINTED	FLOOR: EX. TO REMAIN	BASE: WOOD	BASE: CERAMIC TILE	BASE: EX. TO REMAIN	WALL: CERAMIC TILE	WALL: GYPSUM BD. PAINTED	WALL: EX. TO REMAIN	CEILING: UNFINISHED	CEILING: GYPSUM BD. PAINT	CEILING: EX. TO REMAIN	HEIGHT	REMARKS
CELLAR	001	STAIR				•						•			•	•	8'-2"	
	002	STORAGE				•						•		•			8'-2"	SEE 000
	003	STAIR				•						•			•	•	8'-2"	
	004	CORRIDOR				•						•		•			8'-2"	
	005	UTILITY RM.				•						•		•			8'-2"	
	006	BOILER RM.				•						•		•			8'-2"	
	007	TRASH RM.				•						•		•			8'-2"	
	008	MACHINE RM.				•						•		•			8'-2"	
	009	STORAGE				•						•		•			8'-2"	
	010	STAIR				•						•			•	•	8'-2"	
1ST FL.	101	RETAILS			–					–		–				–	9'-0"	
	102	STAIR				•						•			•	•	9'-0"	
	103	STAIR				•						•			•	•	9'-0"	
	104	LOBBY		•							•	•			•	•	9'-0"	
	105	STAIR				•						•			•	•	9'-0"	
	106	VESTIBULE		•							•	•			•	•	9'-0"	
	107	STAIR				•						•			•	•	9'-0"	
	108	UTILITY		•	•						•	•	•		•	•	9'-0"	
	200	ACC.PARKING			•							•			•	•	9'-0"	
	201	STAIR				•						•			•	•	9'-0"	
	202	UTILITY				•						•			•	•	9'-0"	
	203	STAIR				•						•			•	•	9'-0"	
	301	STAIR			•							•			•	•	9'-0"	SEE 000
	302	CLOSET		•						•	•	•			•	•	9'-0"	SEE 000
	303	CLOSET	•								•	•			•	•	9'-0"	
	204	CLOSET	•								•	•			•	•	9'-0"	
	305	BED RM.	•								•	•			•	•	9'-0"	
	306	LIVING RM.	•								•	•			•	•	9'-0"	
	307	KITCHENETTE		•							•	•			•	•	9'-0"	
	308	BED RM.	•								•	•			•	•	9'-0"	
	309	CLOSET	•								•	•			•	•	9'-0"	
	310	LAUNDRY		•							•	•			•	•	9'-0"	
	311	BATH		•						•	•	•			•	•	9'-0"	SEE 000
	312	KITCHENETTE		•							•	•			•	•	9'-0"	
	313	LIVING RM.	•								•	•			•	•	9'-0"	
	314	BED RM.	•								•	•			•	•	9'-0"	SEE 000
	315	CLOSET	•								•	•			•	•	9'-0"	
	316	STAIR		•								•			•	•	9'-0"	
	317	CORRIDOR	•								•	•			•	•	9'-0"	
	318	CLOSET	•								•	•			•	•	9'-0"	
	319	REFUSE	•								•	•			•	•	9'-0"	SEE 000
	320	CLOSET	•								•	•			•	•	9'-0"	
	321	BED RM.	•								•	•			•	•	9'-0"	
	322	BATH		•						•	•	•			•	•	9'-0"	
	323	BED RM.	•								•	•			•	•	9'-0"	
	324	CLOSET	•								•	•			•	•	9'-0"	
	325	LAUNDRY		•							•	•			•	•	9'-0"	
	326	KITCHENETTE		•							•	•			•	•	9'-0"	
	327	LIVING RM.	•								•	•			•	•	9'-0"	
	328	BATH		•						•	•	•			•	•	9'-0"	
	329	BED RM.	•								•	•			•	•	9'-0"	
3RD FL. & 4TH FL. & 5TH FL.	401,501	STAIR				•							•		•	•	9'-0"	
	402,502	CLOSET	•										•		•	•	9'-0"	SEE 000
	403,503	BATH		•								•	•		•	•	9'-0"	
	404,504	CLOSET	•										•		•	•	9'-0"	
	405,505	BED RM.	•										•		•	•	9'-0"	
	406,506	LIVING RM.	•										•		•	•	9'-0"	
	407,507	KITCHENETTE		•									•		•	•	9'-0"	
	408,508	BED RM.	•										•		•	•	9'-0"	SEE 000
	409,509	CLOSET	•										•		•	•	9'-0"	
	410,510	LAUNDRY		•									•		•	•	9'-0"	
	411,511	BATH		•									•		•	•	9'-0"	SEE 000
	412,512	KITCHENETTE		•									•		•	•	9'-0"	
	413,513	LIVING RM.	•										•		•	•	9'-0"	
	414,514	BED RM.	•										•		•	•	9'-0"	
	415,515	CLOSET	•										•		•	•	9'-0"	
	416,516	STAIR				•							•		•	•	9'-0"	
	417,517	CORRIDOR	•										•		•	•	9'-0"	SEE 000
	418,518	STAIR				•							•		•	•	9'-0"	
	419,519	LAUNDRY		•									•		•	•	9'-0"	
	420,520	CLOSET	•										•		•	•	9'-0"	
	421,521	BED RM.	•										•		•	•	9'-0"	
	422,522	BATH		•								•	•		•	•	9'-0"	
	423,523	LIVING RM.	•										•		•	•	9'-0"	
	424,524	KITCHENETTE		•									•		•	•	9'-0"	SEE 000
	425,525	CLOSET	•										•		•	•	9'-0"	
	426,526	LIVING RM.	•										•		•	•	9'-0"	
	427,527	KITCHENETTE		•									•		•	•	9'-0"	SEE 000
	428,528	BED RM.	•										•		•	•	9'-0"	
	429,529	CLOSET	•										•		•	•	9'-0"	
	430,530	KITCHENETTE		•									•		•	•	9'-0"	
	431,531	BATH		•								•	•		•	•	9'-0"	
6TH FL.	601	STAIR				•							•		•	•	9'-0"	
	602	UTILITY		•	•							•	•		•	•	9'-0"	SEE 000
	603	LOBBY		•									•		•	•	9'-0"	
	604	REFUSE	•										•		•	•	9'-0"	
	605	KITCHENETTE		•									•		•	•	9'-0"	
	606	STAIR				•							•		•	•	9'-0"	
	607	CLOSET	•										•		•	•	9'-0"	
	608	BED RM.	•										•		•	•	9'-0"	
	609	CLOSET	•										•		•	•	9'-0"	
	610	BED RM.	•										•		•	•	9'-0"	
	611	LAUNDRY		•									•		•	•	9'-0"	
	612	BATH		•								•	•		•	•	9'-0"	SEE 000
	613	CLOSET	•										•		•	•	9'-0"	SEE 000
	614	BED RM.	•										•		•	•	9'-0"	
	615	CLOSET	•										•		•	•	9'-0"	
	616	BATH		•								•	•		•	•	9'-0"	
	617	CLOSET	•										•		•	•	9'-0"	
	618	CORRIDOR	•										•		•	•	9'-0"	
RO.	701	STAIR				•							•		•	•	9'-0"	



PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

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NO. DATE REVISION

THE PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

TITLE:

DOOR & FINISH SCHEDULE

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	INA
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

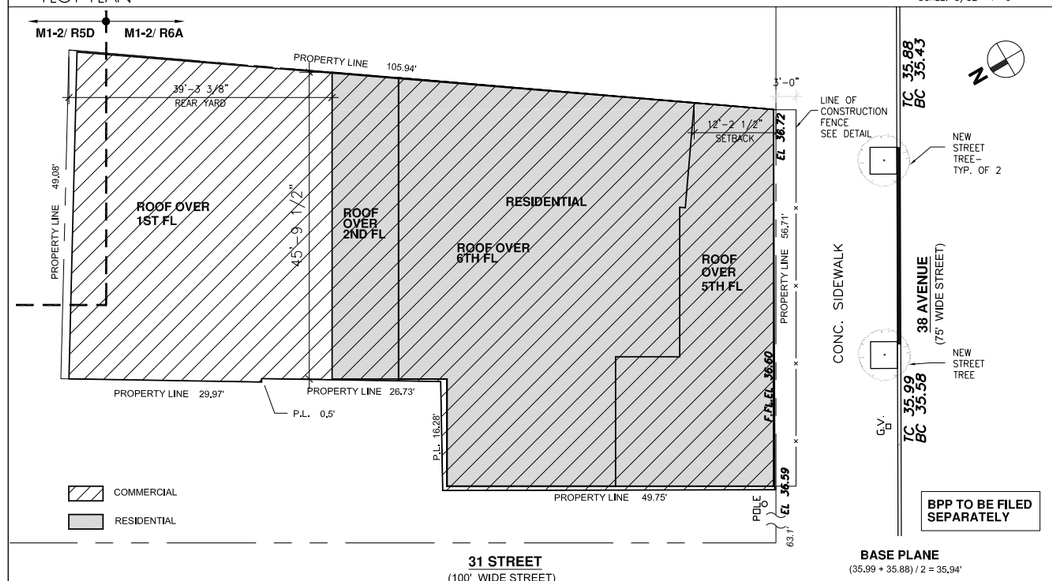
APPLICATION NO.

DRAWING NO.:

A-502

PLOT PLAN

SCALE: 3/32"=1'-0"



ZONING ANALYSIS

	ADDRESS	31-07 38TH AVENUE QUEENS, NEW YORK 11101	
	BLOCK	373	
	LOT	2	
	ZONE	M1-2/R6A & M1-2/R5D	
	MAP NO.	9B	
	CB NO.	401	
	BIN	4436763	
	USE GROUP	6 / 2	
	OCCUPANCY GROUP	M / R-2	
	LOT AREA	5,580.70 SF	
	LOT WIDTH	56.1'	
	STREET	75' WIDE - WIDE STREET	
23-145		R6A	R5D
23-141	MAX. ALLOWED F.A.R.	3.00 (QUALITY HOUSING)	2.00
	MAX. LOT COVERAGE	65%	60%
77-22	ADJUSTED F.A.R.		
		AREA	% OF LOT
	R6A	5,352.48 / 5,580.70	= 95.9 % OF ENTIRE LOT
	R5D	228.22 / 5,580.70	= 0.041 % OF ENTIRE LOT
		% F.A.R.	F.A.R.
	R6A	95.9 x 3.00	= 2.88
	R5D	4.1 x 2.00	= 0.08
		ADJUSTED F.A.R.	= 2.96
	MAX. ALLOWED F.A.R. (RESIDENTIAL)	2.96	QUALITY HOUSING (WIDE STREET) 5,588 x 2.96 = 16,518.87 S.F.
	PROPOSED F.A.R.	2.21	12,340.36 / 5,580.70 = 2.21
	MAX. ALLOWED F.A.R. (COMMERCIAL)	2.00	5,580.70 x 2 = 11,161.4 S.F.
	EXISTING F.A.R.	0.98	5,462.64 SF / 5,580.70 = 0.98
	PROPOSED F.A.R.	0.71	3,984.14 SF / 5,580.70 = 0.71
			USE GROUP 6A & 6B ALLOWED AS PER 42-00 USE GROUP 6C ALLOWED AS PER 42-13
	TOTAL PROPOSED F.A.R.	2.93	16,324.49 / 5,580.70 = 2.92 > 2.96 -> OK

PROPOSED FLOOR AREA	FLOOR	EXISTING	EXTENSION	TOTAL
	6TH FL (RES.)	- SF	2,011.62 S.F.	2,011.62 S.F.
	5TH FL (RES.)	- SF	2,990.36 S.F.	2,990.36 S.F.
	4TH FL (RES.)	- SF	2,990.36 S.F.	2,990.36 S.F.
	3RD FL (RES.)	- SF	2,990.36 S.F.	2,990.36 S.F.
	2ND FL (RES.)	- SF	494.32 S.F.	494.32 S.F.
	1ST FL (COM./RES.)	4,847.47 SF	- SF	4,847 SF
	TOTAL	4,847.47 SF	11,477.02 SF	16,324.49 SF

77-24	ADJUSTED LOT COVERAGE			
		% AREA	% COVERAGE	% OF COVERAGE
	R6A	95.9 x	65	= 62.34
	R5D	4.1 x	60	= 2.46
		ADJUSTED LOT COVERAGE		= 64.8
		MAX. LOT COVERAGE AREA		= 64.8 x 5,580.70 = 3,616.29 S.F.
23-22	DWELLING FACTOR	18 UNITS	MAX. ALLOWED F.A./ ROOMING FACTOR (16,519 SF - 3,984 SF)/ 680 = 18.43 -> 18	
	PROPOSED UNITS	12 UNITS	= 12 UNITS: OK	
23-462	SIDE YARD	NOT REQUIRED	NA	
23-47	REAR YARD	30' MIN.	39'-3" PROVIDED: OK	
23-633	MAX. BUILDING HEIGHT	70'-0"	70'-0" PROPOSED : OK	
	BASE BUILDING HEIGHT	40'-0" MIN. 60'-0" MAX.	40' < 55'-8" PROPOSED < 60'-0": OK	
25-22	PARKING REQUIREMENT	1 PER DWELLING	12 SPACE REQUIRED	
25-26	REDUCED REQUIREMENTS	50% OF DWELLING UNITS --> 12 UNITS X 50% = 6 UNITS --> 6 SPACES PROVIDED		
25-811	BICYCLE PARKING SPACES	1 PER 2 DWELLING UNITS - USE GROUP 2 --> 6 SPACE PROVIDED		
26-41	STREET TREE PLANTING	1 PER 25'	2 PROVIDED - LOT FRONTAGE IS 56.71'	

QUALITY HOUSING REGULATIONS

AS PER ZR CHAPTER 8

28-21	SIZE OF DWELLING UNITS	MIN. 400 SF PROPOSED THE SMALLEST UNIT = 742 SF > 400 SF : OK	
28-22	WINDOWS	SHALL BE DOUBLE GLAZED PROPOSED WINDOWS ARE DOUBLE GLAZED : OK	
28-23	REFUSE STORAGE AND DISPOSAL	MIN. 12 SF, MIN. 3'-0" : 21 SF, 3'-0" PROPOSED : OK	
28-31	REQUIRED RECREATION SPACE	3.3% REQUIRED: 12,340SFx3.3% =407 SF, PROPOSED : 434 OK	
28-41	DENSITY PER CORRIDOR		
	NUMBER OF DWELLING UNITS SERVED BY A CORRIDOR PER STORY = 11 IN R6 > 3 UNITS --> 50% OF CORRIDOR AREA TO BE EXCLUDED FROM FLOOR AREA.		
28-50	PARKING FOR QUAILITY HOUSING: EXCEPT AS MODIFIED BY THE PROVISIONS OF THIS SECTION, ACCESSORY OFF-STREET PARKING FOR QUALITH HOUSING DEVELOPMENTS, ENLARGMENTS OR CONVERSIONS SHALL BE PROVIDED AS SET FORTH IN ARTICLE II, CHAPTER 5, AND ARTICLE III, CHAPTER 6.		
	PARKING WAIVED AS SET FORT IN 25-261		

USE

FLOOR	EXISTING USE	U.G.	OCC.G.	PROPOSED USE	U.G.	OCC.G.	REMARKS
CELLAR	STORAGE AND METER ROOM	16	U	BOILER RM, STORAGE & METER RM	2,6	U	
1ST FL	GASOLINE SERVICE STATION	16	D-1	COMMERCIAL	6	M	
				RESIDENTIAL	2	R-2	
2ND FL	-	-	-	ACCESSORY PARKING	2B	S-2	
3RD FL	-	-	-	3 DWELLINGS	2	R-2	
4TH FL	-	-	-	4 DWELLINGS	2	R-2	
5TH FL	-	-	-	4 DWELLING	2	R-2	
6TH FL	-	-	-	1 DWELLING	2	R-2	

CONSTRUCTION CLASSIFICATION

EXISTING = CLASS - 3 NONE FIREPROOFED STRUCTURE
PROPOSED = CLASS - 1D 2 HR PROTECTED

SCOPE OF WORK

1. VERTICAL ENLARGEMENT FROM EXISTING 1 STORY TO 6 STORY BUILDING.
2. TO OBTAIN NEW CERTIFICATE OF OCCUPANCY FOR MIXED USE BUILDING AS INDICATED ON SCHEDULE "A".

CONSTRUCTION CLASSIFICATION

AS PER TABLE 3-4

PROPOSED CONSTRUCTION CLASSIFICATION: 1-C

CONSTRUCTION ELEMENTS			RATING IN HOURS
EXTERIOR WALL	3'-0" OR LESS	BEARING	2
		NON-BEARING	2
	3'-0" OR MORE BUT LESS THAN 15'-0"	BEARING	2
		NON-BEARING	2
	15'-0" OR MORE BUT LESS THAN 30'-0"	BEARING	2
		NON-BEARING	1
	30'-0" OR MORE	BEARING	2
		NON-BEARING	0
INTERIOR BEARING WALLS AND BEARING PARTITIONS			2
ENCLOSURE OF VERITICAL EXITS, EXIT PASSAGEWAYS, HOSTWAYS AND SHAFT			2
COLUMNS, GRIDERS, TRUSSES AND FRAMING		SUPPORTING 1 FLOOR	1 1/2
		SUPPORTING MORE THAN FLOOR	2
FLOOR CONSTRUCTION INCLUDING BEAMS			1 1/2
ROOF CONSTRUCTION INCLUDING BEAMS, TRUSSES AND FRAMING INCLUDING ROOF DECK		15'-0" OR LESS IN HT. ABOVE FLOOR TO LOWEST MEMBER	1
		15'-0" TO 20'-0" IN HT. ABOVE TO LOWEST MEMBER	1
		20'-0" OR MORE IN HT. ABOVE FLOOR TO LOWEST MEMBER	0

SPECIAL INSPECTION

INSPECTIONS/TESTS	CODE/SECTION
STRUCTURAL STEEL - WELDING	BC 1704.3.1
STRUCTURAL STEEL - ERECTION & BOLTING	BC 1704.3.2, BC 1704.3.3
FINAL	DIRECTIVE 14 OF 1975
STRUCTURAL SAFETY-STRUCTURAL STABILITY	BC 1704.19
CONCRETE-CAST IN PLACE	BC 1704.4
MASONRY	BC 1704.5
UNDERPINNING	BC 1704.9.1
SPRAYED FIRE-RESISTANT MATERIALS	BC 1704.11
STRUCTURAL SAFETY - STRUCTURAL STABILITY	BC 1704.19
SPRINKLER SYSTEMS	BC 1704.21
HEATING SYSTEMS	BC 1704.23
FIRE STOP, DRAFTSTOP, AND FIREBLOCK SYSTEM	BC 1704.25
PROGRESS INSPECTION ITEMS	
PRELIMINARY	28-116.2.1, BC 109.2
FRAME INSPECTION	BC 109.3.3
ENERGY CODE COMPLIANCE INSPECTIONS	BC 109.3.5
FIRE-RESISTANCE RATED CONSTRUCTION	BC 109.3.4

ENERGY CODE PROGRESS INSPECTIONS

INSPECTIONS/TESTS	CODE/SECTION
INSULATION PLACEMENT AND R VALUES	IIA2, IIA2
FENESTRATION THERMAL VALUES AND RATINGS	IIA3, IIA3
FENESTRATION RATINGS FOR AIR LEAKAGE	IIA4, IIA4
FENESTRATION AREAS	IIA5, IIA5
AIR SEALING AND INSULATION - VISUAL	IIA6, IIA6
AIR SEALING AND INSULATION - TESTING	IIA7
HVAC AND SERVICE WATER HEATING EQUIPMENT	IIB3, IIB3
HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS	IIB4, IIB4
LIGHTING IN DWELLING UNITS	IIC2, IIC2

N.Y.S. ENERGY CONSERVATION CODE NOTES

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE CHAPTER 5 [NYSECC]

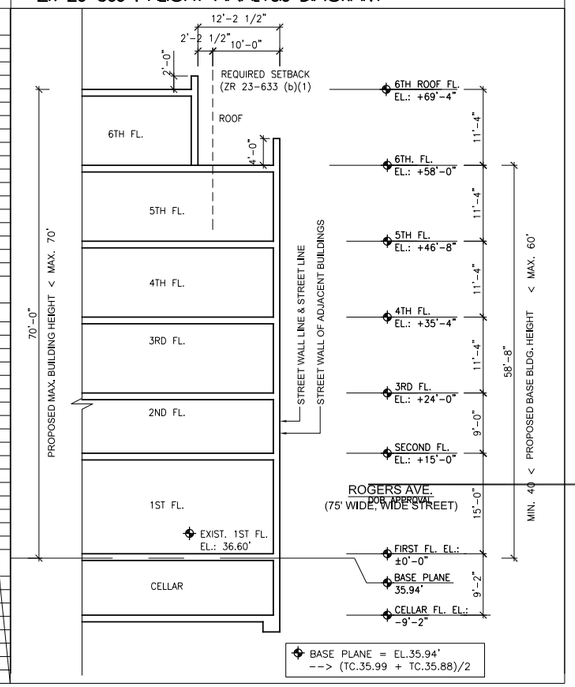
LIGHT & VENTILATION SCHEDULE

FLOOR	ROOM NO.	FLOOR AREA	LIGHTING AREA	VENTILATION OPENING	CALCULATION
THIRD FLOOR	BEDROOM 305	142 SF	29.3 SF	14.7 SF	LIGHT: 142X0.1=14.2 SF < 29.3 SF: OK VENT: 142X0.05= 7.1 SF < 14.7 SF: OK
	BEDROOM 308	130 SF	29.3 SF	14.7 SF	LIGHT: 130X0.1=13.0 SF < 29.3 SF: OK VENT: 130X0.05=7.5 SF < 14.7 SF: OK
	LIVING/KITCHEN 306/307	234 SF	47.4 SF	23.7 SF	LIGHT: 234X0.1=23.4 SF < 47.4 SF: OK VENT: 234X0.05=11.7 SF < 23.7 SF: OK
	LIVING/KITCHEN 312/313	234 SF	47.4 SF	23.7 SF	LIGHT: 234X0.1=23.4 SF < 47.4 SF: OK VENT: 234X0.05=11.7 SF < 23.7 SF: OK
	BEDROOM 314	104 SF	29.3 SF	14.7 SF	LIGHT: 104X0.1=10.4 SF < 29.3 SF: OK VENT: 104X0.05=5.2 SF < 14.7 SF: OK
	BEDROOM 321	127 SF	29.3 SF	14.7 SF	LIGHT: 127.1=12.7 SF < 29.3 SF: OK VENT: 127x0.05=6.4 SF < 14.7 SF: OK
	LIVING/KITCHEN 326/327	221 SF	47.4 SF	23.7 SF	LIGHT: 221X0.1=22.1 SF < 47.4 SF: OK VENT: 221X0.05=11.1 SF < 23.7 SF: OK
	BEDROOM 323	90 SF	29.3 SF	14.7 SF	LIGHT: 90X0.1= 9.0 SF < 29.3 SF: OK VENT: 90X0.05= 4.5 SF < 14.7 SF: OK
	BEDROOM 329	97 SF	29.3 SF	14.7 SF	LIGHT: 97X0.1=9.7 SF < 29.3 SF: OK VENT: 97X0.05=4.9 SF < 14.7 SF: OK
FOURTH FLOOR	BEDROOM 405	142 SF	29.3 SF	14.7 SF	LIGHT: 142X0.1=14.2 SF < 29.3 SF: OK VENT: 142X0.05= 7.1 SF < 14.7 SF: OK
	BEDROOM 408	130 SF	29.3 SF	14.7 SF	LIGHT: 130X0.1=13.0 SF < 29.3 SF: OK VENT: 130x0.05=6.5 SF < 14.7 SF: OK
	LIVING/KITCHEN 406/407	234 SF	47.4 SF	23.7 SF	LIGHT: 234X0.1=23.4 SF < 47.4 SF: OK VENT: 234X0.05=11.7 SF < 23.7 SF: OK
	LIVING/KITCHEN 412/413	234 SF	47.4 SF	23.7 SF	LIGHT: 234X0.1=23.4 SF < 47.4 SF: OK VENT: 234X0.05=11.7 SF < 23.7 SF: OK
	BEDROOM 414	119 SF	29.3 SF	14.7 SF	LIGHT: 119X0.1=11.9 SF < 29.3 SF: OK VENT: 119X0.05=6.0 SF < 14.7 SF: OK
	BEDROOM 421	112 SF	29.3 SF	14.7 SF	LIGHT: 112X0.1=11.2 SF < 29.3 SF: OK VENT: 112X0.05=5.6 SF < 14.7 SF: OK
	LIVING/KITCHEN 423/424	215 SF	47.4 SF	23.7 SF	LIGHT: 215X0.1=21.5 SF < 47.4 SF: OK VENT: 215X0.05=10.8 SF < 23.7 SF: OK
	LIVING/KITCHEN 426/427	311 SF	47.4 SF	23.7 SF	LIGHT: 311X0.1=31.1 SF < 47.4 SF: OK VENT: 311X0.05=15.6 SF < 23.7 SF: OK
	BEDROOM 428	102 SF	29.3 SF	14.7 SF	LIGHT: 102X0.1=10.2 SF < 29.3 SF: OK VENT: 102X0.05=5.1 SF < 14.7 SF: OK
FIFTH FLOOR	BEDROOM 505	134.0 SF	29.3 SF	14.7 SF	LIGHT: 142X0.1=14.2 SF < 29.3 SF: OK VENT: 142X0.05= 7.1 SF < 14.7 SF: OK
	BEDROOM 508	132.0 SF	29.3 SF	14.7 SF	LIGHT: 130X0.1=13.0 SF < 29.3 SF: OK VENT: 130x0.05=6.5 SF < 14.7 SF: OK
	LIVING/KITCHEN 506/507	271.4 SF	47.4 SF	23.7 SF	LIGHT: 234X0.1=23.4 SF < 47.4 SF: OK VENT: 234X0.05=11.7 SF < 23.7 SF: OK
	LIVING/KITCHEN 512/513	284.7 SF	47.4 SF	23.7 SF	LIGHT: 234X0.1=23.4 SF < 47.4 SF: OK VENT: 234X0.05=11.7 SF < 23.7 SF: OK
	BEDROOM 514	124.7 SF	29.3 SF	14.7 SF	LIGHT: 119X0.1=11.9 SF < 29.3 SF: OK VENT: 119X0.05=6.0 SF < 14.7 SF: OK
	BEDROOM 521	122.8 SF	29.3 SF	14.7 SF	LIGHT: 112X0.1=11.2 SF < 29.3 SF: OK VENT: 112X0.05=5.6 SF < 14.7 SF: OK
	LIVING/KITCHEN 523/524	273.4 SF	47.4 SF	23.7 SF	LIGHT: 215X0.1=21.5 SF < 47.4 SF: OK VENT: 215X0.05=10.8 SF < 23.7 SF: OK
	LIVING/KITCHEN 526/527	333.8 SF	47.4 SF	23.7 SF	LIGHT: 311X0.1=31.1 SF < 47.4 SF: OK VENT: 311X0.05=15.6 SF < 23.7 SF: OK
	BEDROOM 528	101.3 SF	29.3 SF	14.7 SF	LIGHT: 102X0.1=10.2 SF < 29.3 SF: OK VENT: 102X0.05=5.1 SF < 14.7 SF: OK
SIXTH FLOOR	LIVING/KITCHEN 604/605	389 SF	87.8 SF	43.9 SF	LIGHT: 389X0.1=38.9 SF < 87.8 SF: OK VENT: 389X0.05=19.5 SF < 43.9 SF: OK
	BEDROOM 608	176 SF	29.3 SF	14.7 SF	LIGHT: 176X0.1=17.6 SF < 29.3 SF: OK VENT: 176X0.05=8.8 SF < 14.7 SF: OK
	BEDROOM 610	171 SF	29.3 SF	14.7 SF	LIGHT: 171X0.1=17.1 SF < 29.3 SF: OK VENT: 171X0.05=8.6 SF < 14.7 SF: OK
	BEDROOM 616	181 SF	47.4 SF	23.7 SF	LIGHT: 181X0.1=18.1 SF < 47.4 SF: OK VENT: 181X0.05=9.1 SF < 23.7 SF: OK

DRAWING LIST

NO.	DWG. NO.	DRAWING TITLE
GENERAL		
1	T-101	PLOT PLAN AND ZONING ANALYSIS
2	T-102	GENERAL NOTES & ENERGY COMCHECK
3	T-103	NOTES & STREET TREE CHECK LISTS
4	T-104	AREA CALCULATION
ARCHITECTURE		
5	A-101	CELLAR PLAN
6	A-102	FIRST FLOOR PLAN
7	A-103	SECOND FLOOR PLAN
8	A-104	THIRD FLOOR PLAN
9	A-105	FOURTH FLOOR PLAN
10	A-106	FIFTH FLOOR PLAN
11	A-107	SIXTH FLOOR PLAN
12	A-108	ROOF PLAN & ROOF DETAILS
13	A-109	RCP (CELLAR, 1ST & 2ND FLOOR)
14	A-110	RCP (3RD, 4TH, 5TH & 6TH FLOOR)
15	A-201	FRONT ELEVATION (WEST)
16	A-202	RIGHT SIDE ELEVATION (SOUTH)
17	A-203	REAR ELEVATION (EAST)
18	A-204	LEFT SIDE ELEVATION (NORTH)
19	A-301	BUILDING SECTION
20	A-302	BUILDING SECTION
21	A-303	WALL SECTIONS
22	A-304	WALL DETAILS & GENERAL DETAILS
23	A-401	ADA DETAILS
24	A-402	ELEVATOR DETAILS
25	A-403	PLAN DETAILS
26	A-404	GENERAL DETAILS
27	A-501	DOOR & FINISH SCHEDULE
28	A-502	WALL DETAILS & GENERAL DETAILS
STRUCTURAL		
27	F0-1.00	FOUNDATION PLAN, SECTIONS &SCHEDULES
28	S-1.00	FRAMING PLAN, SECTIONS, COL. SCHEDULE
29	S-2.00	FRAMING PLAN & SECTIONS
30	S-3.00	ELEVATIONS, SECTIONS, DETAILS
31	S-4.00	TYP. DETAILS & NOTES
MECHANICAL		
32	M-001	MECHANICAL LEGEND, SYMBOLS AND NOTES
33	M-101	MECHANICAL CELLAR FLOOR PLAN
34	M-102	MECHANICAL FIRST FLOOR P LAN
35	M-103	MECHANICAL SECOND FLOOR PLAN
36	M-104	MECHANICAL THIRD FLOOR PLAN
37	M-105	MECHANICAL FOURTH FLOOR PLAN
38	M-106	MECHANICAL FIFTH FLOOR PLAN
39	M-107	MECHANICAL ROOF PLAN
40	M-200	MECHANICAL AIR RISER
41	M-300	MECHANICAL SCHEDULE SHEET
42	M-400	MECHANICAL DETAILS
43	M-401	MECHANICAL DETAILS
44	M-402	MECHANICAL DETAILS
PLUMBING		
45	P-001	PLUMBING LEGEND, DWG. LIST
46	P-101	PLUMBING CELLAR FLOOR PLAN
47	P-102	PLUMBING FIRST FLOOR P LAN
48	P-103	PLUMBING SECOND FLOOR PLAN
49	P-104	PLUMBING THIRD FLOOR PLAN
50	P-105	PLUMBING FOURTH FLOOR PLAN
51	P-106	PLUMBING FIFTH FLOOR PLAN
52	P-107	PLUMBING ROOF PLAN
53	P-200	PLUMBING DOMESTIC RISER DIAGRAM
54	P-201	PLUMBING SANITARY RISER DIAGRAM
55	P-401	PLUMGIN DETAILS
56	P-402	PLUMBING SCHEDULE
SPRINKLER		
57	SP-001	SPRINKLER LEGEND, SYMBOLS AND NOTES
58	SP-002	SPRINKLER NOTES
59	SP-101	SPRINKLER CELLAR FLOOR PLAN
60	SP-102	SPRINKLER FIRST FLOOR P LAN
61	SP-103	SPRINKLER SECOND FLOOR PLAN
62	SP-104	SPRINKLER THIRD FLOOR PLAN
63	SP-105	SPRINKLER FOURTH FLOOR PLAN
64	SP-106	SPRINKLER FIFTH FLOOR PLAN
65	SP-107	SPRINKLER ROOF PLAN
66	SP-200	SPRINKLER SPECIFICATIONS
67	SP-300	SPRINKLER RISER DIAGRAM
68	SP-400	SPRINKLER DETAILS

ZR 23-633 : HEIGHT ANALYSIS DIAGRAM



PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

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NO.	DATE	REVISION

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TITLE:

PLOT PLAN, ZONING ANALYSIS, AND NOTES

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

APPLICATION NO.

DRAWING NO.:

T-101.00

GENERAL ADMINISTRATIVE NOTES

1. THE FOLLOWING GENERAL NOTES AND PLANS COVER BASIC ZONING AND ADMINISTRATIVE REQUIREMENTS FOR BUILDINGS WITHIN FIRE LIMITS OF CODES OF THE CITY OF NEW YORK
2. ALL WORK SHALL CONFORM TO THE CITY OF NEW YORK BUILDING CODE. INITIAL FILING WITH THE BUILDING DEPARTMENT DOES NOT CONSTITUTE COMPLETENESS, CORRECTNESS OR FINALIZATION OF PLANS.
3. ONLY UPON APPROVAL BY THE BUILDING DEPARTMENT, A PERMIT MAY BE TAKEN OUT TO COMMENCE WORK. NO WORK SHOULD BE STARTED UNTIL THE BUILDING PERMIT IS SECURED BY THE CONTRACTOR.

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL CHECK AND VERIFY DIMENSIONS, DETAILS AND JOB CONDITIONS PRIOR TO COMMENCING ANY WORK, AND REPORT ANY DISCREPANCY TO ATTENTION OF ARCHITECT.
2. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE REQUIREMENTS OF SAFETY OF PUBLIC AND PROPERTY DURING CONSTRUCTION, AND SHALL BE HELD RESPONSIBLE FOR SAFE MAINTENANCE UNTIL COMPLETION OF ALL WORK.
3. NO DRAWINGS TO BE SCALED. DIMENSIONS ARE TO BE USED.
4. ARCHITECT HAS NOT BEEN RETAINED FOR THE FULL SUPERVISION OF WORK AND IT REMAINS INCUMBENT ON THE CONTRACTOR TO INFORM THE BUILDING DEPARTMENT OR ARCHITECT OF ANY DISCREPANCY OR CHANGE ON THE APPROVED PLANS AND OF ANY UNFORESEEN DEVELOPMENT THAT MAY OCCUR DURING THE COURSE OF CONSTRUCTION. ANY DEVIATION FROM THE APPROVED PLANS REQUIRE AN AMENDMENT AND APPROVAL OF SAME BY THE BUILDING DEPARTMENT.
5. LOCATIONS OF EQUIPMENT SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENT AS NECESSARY.
6. ALL WIRING, OUTLETS APPURTENANCES TO COMPLY WITH THE REQUIREMENTS OF THE N.Y.S. ELECTRICAL CODE. ALL OUTLETS, SWITCHES, BELL SYSTEMS, ETC. TO BE LOCATED AS DIRECTED BY THE OWNER IF NOT SHOWN ON PLANS.
7. CEILING OPENINGS FOR ELECTRICAL OUTLET BOXES AND RECESSED LIGHTING FIXTURE MAY NOT EXCEED 16 SQ. FT. FOR EACH 90 SQ. FT. OF CEILING AREA.
8. PIPING AND EQUIPMENT ARE INDICATED IN SCHEMATIC FORM. THE CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS, TRANSITIONS, BENDS, AND ADJUSTMENT IN LOCATION SUBJECT APPROVAL OF ARCHITECT.
9. SUSPENDED CEILING SHALL COMPLY WITH APPLICABLE SECTION OF BUILDING CODE, WITH METAL HANGERS, PURING AND RUNNERS AS REQUIRED.

GENERAL NOTES

1. ENVIRONMENTALLY HAZARDOUS MATERIALS, INCLUDING ASBESTOS CONTAINING MATERIALS,LEAD AND OTHER HAZARDOUS OR TOXIC MATERIALS ARE ENCOUNTERED DURING PERFORMANCE OF CONTRACT WORK: CONTRACTOR SHALL IMMEDIATELY STOP AFFECTED WORK, TAKE PRECAUTIONS TO PROTECT AND SHORE UP WORK, AND NOTIFY THE OWNER WHEN DIRECTED BY OWNER, CONTRACTOR SHALL COORDINATE WITH OWNERS REPRESENTATIVES.
2. THE DRAWINGS ARE PART OF THE COMPLETE CONTRACT DOCUMENTS AND WORK INDICATED ON THE DRAWINGS SHALL BE SUBJECT TO THE ENTIRE CONTRACT DOCUMENTS. DRAWINGS, SPECIFICATIONS, AND OTHER CONTRACT DOCUMENTS, WHETHER OR NOT ATTACHED HERETO, ARE COMPLEMENTARY AND THE REQUIREMENTS OF ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IT IS ESSENTIAL TO THE PROPER EXECUTION OF THE WORK THAT COORDINATION BETWEEN THE VARIOUS CONTRACT DOCUMENTS BE PROPERLY AND CONSISTENTLY MADE.
3. WHERE DRAWINGS INDICATE THE WORK IN DIAGRAMMATIC FORM, SUCH INDICATIONS SHALL BE SUBJECT TO DRAWN AND/OR WRITTEN DETAIL OR DIMENSIONAL INFORMATION PROVIDED ELSEWHERE. MAKE MODIFICATIONS IN THE LAYOUT WORK THAT MAY BE NECESSARY TO SUIT ACTUAL FIELD CONDITIONS. NOTIFY THE ARCHITECT PRIOR TO ANY SUCH MODIFICATIONS.
4. LAYOUT AND VERIFY NEW AND EXISTING CONDITIONS SO THAT WORK WILL AGREE WITH THE LINES, LEVELS, AND DIMENSIONS INDICATED ON THE DRAWINGS. NOTIFY THE ARCHITECT, AND REQUEST INSTRUCTIONS, IF THERE IS ANY DISCREPANCY BETWEEN THE DRAWINGS AND CONDITIONS ENCOUNTERED IN THE FIELD.
5. DIMENSIONS INDICATED ARE TO FINISH SURFACES, UNLESS OTHERWISE INDICATED. WHERE DIMENSIONS ARE MARKED WITH A PLUS OR MINUS (±) SIGN OR INDICATED AS V.I.F., SUCH DIMENSIONS ARE GENERALLY FOR CONVENIENCE, AND SHALL BE SUBORDINATE TO THE OTHER WRITTEN DIMENSIONS OR CONDITIONS.
6. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. LARGER SCALE DRAWINGS SHALL TAKE PRECEDENCE OVER SMALLER SCALED DRAWINGS.
7. CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR THE SELECTION AND SUPERVISION OF THE APPROPRIATE, SAFE, AND LAWFUL MEANS AND METHODS OF CONSTRUCTION AND CONSTRUCTION OPERATIONS, AND SHALL ENSURE THAT ALL CONSTRUCTION PERSONNEL ARE FULLY COGNIZANT OF THEIR RESPONSIBILITIES UNDER THE CONTRACT DOCUMENTS AND ANY OTHER APPLICABLE REQUIREMENTS.
8. ALL PRECAUTIONS ARE TO BE TAKEN TO PREVENT DIRT, NOISE, WATER AND DUST FROM PERMEATING OTHER PARTS OF THE BUILDING DURING THE PROGRESS OF THE WORK, DURING CONSTRUCTION, TEMPORARY BAFFLES AND OR TEMPORARY PARTITIONS TO SEAL OPENINGS TO PREVENT DUST AND DIRT FROM FILTERING INTO OCCUPIED AREAS ARE TO BE PROVIDED BY THE CONTRACTOR.
9. ALL WORK SHALL BE INSTALLED SO THAT ALL PARTS REQUIRED ARE READILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND REPAIR. PROVIDE ACCESS DOORS AT POINTS WHERE MEP CONTROLS ARE INSTALLED. ACCESS DOOR RATING WILL MAINTAIN AND COMPLY WITH PARTITION OR CEILING FIRE RATING IN WHICH IT IS INSTALLED. SEE ARCHITECTURAL MEP DRAWINGS.
10. CONTRACTOR SHALL MAINTAIN FREE AND UNOBSTRUCTED ACCESS FROM ALL FLOORS AND ADJACENT SPACES INTO THE EXISTING FIRE STAIRS TO OUTSIDE OF THE BUILDING AT ALL TIMES. IF THE PATHS OF EGRESS CANNOT BE MAINTAINED DURING DURING THE CONSTRUCTION. THE CONTRACTOR MUST PROVIDE ALTERNATE MEANS OF EGRESS INCLUDING ERECTING BARRICADES, TEMPORARY SIGNS, ALTERNATE PATHS OF TRAVEL, ETC. IN ORDER TO MAINTAIN A SAFE ENVIRONMENT FOR THE OCCUPANTS OF THE BUILDING.

NOTES:

1. THE PLANS AND SPECIFICATIONS ARE NOT INTENDED TO DEPICT EACH AND EVERY CONDITION OR DETAIL OF CONSTRUCTION. AS THE KNOWLEDGEABLE PARTY IN THE FIELD, THE CONTRACTOR SHALL VERIFY THAT ALL CONSTRUCTION IS COMPLETED IN A MANNER WHICH WILL PROVIDE A WATERTIGHT STRUCTURE.
2. ALL STRUCTURES ARE SUBJECT TO WEAR AND TEAR AND ENVIRONMENTAL AND MAN-MADE EXPOSURES. AS A RESULT, ALL STRUCTURES REQUIRE REGULAR AND FREQUENT MONITORING AND MAINTENANCE TO PREVENT DAMAGE AND DETERIORATION. SUCH MONITORING AND MAINTENANCE IS THE SOLE REPSONSIBLITY OF THE OWNER. THE DESIGN PROFESSIONAL SHALL HAVE NO RESPOSIBILITY FOR SUCH ISSUES OR RESULTING DAMAGES. IF ROUTINE INSPECTIONS AND MAINTENANCE OF THE PROJECT ARE NOT PROPERLY PERFORMED, DAMAGE (I.E. MOLD) TO THE STRUCTURES MAY OCCUR AND THE DESIGN PROFESSIONAL CANNOT BE HELD RESPONSIBLE FOR ANY RESULTANT DAMAGE.

DRYWALL NOTES:

1. GYPSUM WALLBOARD SHALL BE U.L. RATED FOR FIRE RESISTANCE AND CONSTRUCTED PER ASTM C-36, TYPE III, CLASS 1, STYLE 3, TAPER-EDGED AND OF THE GRADE AND FORM HEREINAFTER SPECIFIED.
2. STUDS SHALL BE 22 GAUGE METAL STUDS, CHANNEL-SHAPED HAVING NOT LESS THAN 1-1/4 INCH WIDE FLANGES.
3. STUDS SHALL BE REINFORCED WITH 2X'S WOOD CUT TO FIT STUDS AT LOCATIONS WHERE HEAVY ELECTRICAL PANELS AND SWITCHES ARE TO BE MOUNTED.
4. STUD TRACKS SHALL BE 25 GAGE METAL CHANNEL-SHAPED SIZED TO RECEIVE THE METAL STUDS, IN NOT LESS THAN 10 FOOT LENGTHS.
5. JOINT TAPE SHALL BE FIBER TYPE. TAPE AND JOINT CEMENT SHALL BE AS RECOMMENDED BY THE WALLBOARD MANUFACTURER.
6. INSULATION SHALL BE AN EFFECTIVE NOISE BARRIER, R-11, 3-1/2" THICK AND IT SHALL COMPLY WITH ASTMC665, TYPE 1 AND ASTM E119.
7. ATTACH STUD TRACK TO BUILDING CEILING/ROOF BY R.E. APPROVED METHODS. ATTACH STUD TRACK TO FLOOR WITH POWER ACTUATED ANCHORS SPACED 24" CENTER TO CENTER. RUN TRACK CONTINUOUS WALL TO WALL.
8. INSTALL METAL STUDS AS PER PROJECT DRAWINGS AND ATTACH TO TRACK WITH TWO - #8 PHILIPS PAN HEAD STSM SCREWS, ONE ON TOP AND ONE ON BOTTOM. PLACE ONE STUD AGAINST EACH WALL.
9. INSTALL INSULATION ACCORDING TO MANUFACTURER'S INSTRUCTIONS. INSULATION NEED ONLY BE INSTALLED IN WALL BETWEEN E/G ROOM AND EQUIPMENT ROOM, AND AS SHOWN ON THE DRAWINGS.
10. INSTALL GYPSUM WALL BOARD, AS PER PROJECT DRAWINGS. THE FIRST LAYER SHALL BE ATTACHED WITH 1"- LONG #6 BUGLE HEAD PHILIPS STEEL SCREWS, 8" ON CENTER AROUND PERIMETER AND 12" ON CENTER ON INTERMEDIATE STUDS. THE SECOND LAYER SHALL BE APPLIED WITH VERTICAL JOINTS OFFSET. SPACE ONE STUD FROM FIRST LAYER USING 1-5/8" LONG #6 BUGLE HEAD PHILIPS STEEL SCREWS SPACED 9" ON CENTER ALONG VERTICAL JOINTS, 12" ON CENTER AT INTERMEDIATE STUDS AND 24" ON CENTER ALONG TOP AND BOTTOM TRACKS. TRIM SHALL BE PLACED ON EDGES AT CEILING AND METAL CORNER/CASING BEADS AT WALLS (BOTH SIDES). COVE BASE SHALL BE INSTALLED ON BOTH SIDES OF THE WALL AT THE FLOOR.
11. THE SPACES BETWEEN THE TOP OF THE CEILING RUNNER AND THE METAL ROOF DECK SHALL BE FILLED WITH 4 LAYERS OF NEATLY CUT AND FITTED GYPSUM BOARD AND CEMENTED.
12. THE SPACE BETWEEN THE ENDS OF THE GYPSUM WALL AND THE METAL WALLS, AND ABOVE THE FLOOR SHALL BE CAULKED.
13. TAPING AND CEMENTING: ALL DEPRESSIONS AROUND SCREWS SHALL BE FILLED WITH JOINT CEMENT AND SANDED SMOOTH. ALL JOINTS SHALL BE COVERED WITH FIBER TAPE AND CEMENT. ALL PATCHED AREAS AND JOINTS SHALL BE SANDED SMOOTH.

MASONRY WALL NOTES

1. CONCRETE BLOCK SHALL CONFORM TO ASTM C145 GRADE N-1 F'C=1500 PSI.
2. BLOCK WORK WALLS CONSIST OF 12" HOLLOW REINFORCED BLOCK BELOW GRADE AND 8" HOLLOW REINFORCED BLOCK ABOVE GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. ALL UNITS SHALL BE PLACED IN RUNNING BOND.
4. MORTAR SHALL CONFORM TO ASTM C270 TYPE M BELOW GRADE AND TYPE S ABOVE GRADE.
5. DO NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL MORTAR HAS ATTAINED MAXIMUM STRENGTH WHERE BACKFILL IS PLACED AGAINST FOUNDATION WALLS BEFORE FLOOR CONSTRUCTION IS IN PLACE PROVIDE TEMPORARY BRACING.
6. THE FIRST BLOCK COURSE ON FOOTING SHOULD BE FILLED SOLID WITH CONCRETE.
7. EXPOSED EXTERNAL WALL EDGES SHALL BE REINFORCED AND SOLID FOR A MINIMUM OF TWO BLOCK LENGTHS OR 32".
8. CONCRETE BLOCK BELOW BEAM BEARING POINTS SHALL BE FILLED SOLID WITH CONCRETE FOR A MINIMUM OF TWO COURSES IN DEPTH AND FOR A WIDTH OF 24".
9. PLACE DUROWALL ON EVERY OTHER COURSE.
10. ALL BLOCK WORK BELOW GRADE IS TO HAVE ALL VOIDS FILLED SOLID WITH CONCRETE.

FROST PROTECTION:

ALL MASONRY SHALL BE PROTECTED AGAINST FREEZING FOR NOT LESS THAN FORTY-EIGHT (48) HOURS AFTER INSTALLATION; AND SHALL NOT BE CONSTRUCTED BELOW TWENTY -EIGHT (28) DEGREES F. DURING RISING TEMPERATURES OR BELOW THIRTY SIX (36) DEGREE F. DURING FALLING TEMPERATURES, WITHOUT TEMPORARY HEATED ENCLOSURES OR WITHOUT HEATING MATERIALS OR OTHER PRECAUTIONS NECESSARY TO PREVENT FREEZING. FROZEN MATERIALS SHALL NOT BE USED, NOR SHALL FORZEN MASONRY BUILT UPON.

BONDING:

MASONRY WALLS AND PARTITIONS SHALL BE SECURELY ANCHORED OR BONDED AT POINTS WHERE THEY INTERSECT BY ONE OF THE FOLLOWING METHODS: WALLS MAY BE BONDED BY LAYING AT LEAST FIFTY (50) PERCENT OF THE UNITS AT THE INTERSECTION IN TRUE MASONRY BOND WITH ALTERNATE UNITS HAVING A BEARING OF NOT LESS THAN EIGHT (8) INCHES UPON THE UNIT BELOW, OR THEY MAY BE ANCHORED WITH NOT LESS THAN THREE-SIXTEENTH (3/16) INCH CORROSION-RESISTANT METAL WIRE TIE JOINT REINFORCEMENT AT VERTICAL INTERVALS NOT TO EXCEED 16 INCHES, OR BY OTHER EQUIVALENT APPROVED ANCHORAGE.

BEARING:

BEAM, GIRDER AND OTHER CONCENTRATED LOADS SHALL BE PROVIDED WITH A BEARING OF SOLID MASONRY OR HOLLOW UNIT MASONRY FILLED SOLID WITH MNIMUM 2500 PSI COMPRESSIVE STRENGTH CONCRETE FULL HEIGHT OF WALL OR PIER.

BRICK VENEER:

PROVIDE UNIFORMLY SIZED UNITS COMPLYING WITH A.S.T.M. C216, GRADE SW TYPE FBS. PROVIDE LIME/CEMENT MORTOR CONFORMING TO A.S.T.M. C270, TYPE S. INSTALL GALVANIZED ANCHORS AT 16" O.C. EACH WAY WITH CADMIUM PLATED SCREWS. INSTALL FLASHING ("NERVASTRAL 11.D") AS SHOWN.

COMCHECK

COMcheck Software Version 3.9.4

Envelope Compliance Certificate

2010 New York Energy Conservation Construction Code

Section 1: Project Information

Project Type: Addition
Project Title : 14-0416

Construction Site:
31-07 38th Ave.
Queens, NY 11101

Owner/Agent:

Designer/Contractor:

Section 2: General Information

Building Location (for weather data):	Queens, New York
Climate Zone:	4a
Building Space Conditioning Type(s):	Residential
Vertical Glazing / Wall Area Rat.:	10%
Skylight Glazing / Roof Area Rat.:	1%

Activity Type(s)	Floor Area
1ST FLOOR (Retail)	2436
2ND FLOOR (Multi-family)	2326
3RD FLOOR (Multi-family)	2326
4TH FLOOR (Multi-family)	2326
5TH FLOOR (Multi-family)	1966

Section 3: Requirements Checklist

Envelope PASSES : Design 1% better than code

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Roof 1: Attic Roof with Steel Joists	2326	30.0	19.0	0.027	0.027
Skylight: 1: Metal Frame with Thermal Break:Glass, With Curb, Perf. Type: Energy code default, Single Pane, Clear, SHGC 0.30	40	---	---	1.300	0.600
Exterior Wall 1: Steel-Framed, 16" o.c.	10254	13.0	3.3	0.064	0.064
Window 1: Metal Frame with Thermal Break, Perf. Type: Other test rights/art. Product ID: NA, SHGC 0.04 (b)	546	---	---	0.400	0.600
Door 1: Glass (> 50% glazing):Metal Frame, Non-Entrance Door, Perf. Type: Other test rights/art. Product ID: NA, SHGC 0.02 (b)	144	---	---	0.400	0.600
Exterior Wall 2: Steel-Framed, 16" o.c.	2255	13.0	3.3	0.064	0.064
Window 2: Metal Frame with Thermal Break, Perf. Type: Other test rights/art. Product ID: NA, SHGC 0.04 (b)	199	---	---	0.400	0.600
Door 2: Glass (> 50% glazing):Metal Frame, Non-Entrance Door, Perf. Type: Other test rights/art. Product ID: NA, SHGC 0.02 (b)	48	---	---	0.400	0.600
Floor 1: Concrete Floor (over unconditioned space)	2326	---	19.0	0.043	0.074

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.

Air Leakage, Component Certification, and Vapor Retarder Requirements:

☐ 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.

Project Title: 14-0416
Data filename: H:\K Lee Architects\Current_Projects\2014\14-0416 31-07 38 Ave. Queens, NY 11101\Documents\COMCHECK.cak

Report date: 04/07/15
Page 1 of 2

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

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TITLE:

GENERAL NOTES & ENERGY COMCHECK

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

T-102.00

GENERAL MDL & HMC NOTES

1 BUILDING TO COMPLY WITH ART. 7 MDL & HOUSING AND MAINTENANCE CODE.

2 KITCHEN SEC. 88 MDL AND ART. 32 HMC.
a) KITCHEN SHALL BE PROVIDED WITH FACILITIES FOR COOKING AND SHALL BE EQUIPPED WITH ARTIFICIAL LIGHTING.
b) KITCHEN SHALL BE PROVIDED WITH SINK HAVING A MIN. 2" WASTE AND TRAP.
c) LIGHTING AND VENTILATION OF KITCHEN SHALL BE PROVIDED UNDER SEC. 30 MDL AND ART. 30 HMC.

d) CEILING AND WALLS, EXCLUSIVE OF DOORS, OF KITCHEN SHELL BE FIRE RETARDED WITH MATERIALS HAVING A ONE-HOUR FIRE RATING. 5/8" GYPSUM BOARD TYPE X.
e) ALL COMBUSTIBLE MATERIAL IMMEDIATELY UNDERNEATH AND WITHIN ONE FLOOR OF COOKING APPARATUS SHALL BE FIRE RETARDED AND A MIN.OF TWO FEET CLEARANCE MAINTAINED ABOVE EXPOSED COOKING SURFACES COMBUSTIBLE MATERIALS,
f) GAS RANGES TO COMPLY WITH ARTICLE 3 SEC. 64 MDL, AND TO BE OF TYPE APPROVED BY AMERICAN GAS ASSOCIATION AND UNDERWRITERS LABORATORIES INC.

3 LIGHTING AND VENTILATION: SEC. 30 MDL. AND ART. 30 HMC.

a) WINDOWS IN ALL ROOMS, EXCEPT BATHROOMS AND KITCHEN SHALL BE AT LEAST ONE-TENTH THE AREA OF THE ROOM AND BE AT LEAST 12 SF IN AREA B.S.B. AND 50% OPERABLE.

4 LIGHTING AND VENTILATION OF ROOMS, SEC. 30 MDL:
NO ROOM SHALL EXTEND IN DEPTH FROM THE STREET MORE THAN THIRTY FEET WITHOUT WINDOW OPENING ON A LAWFUL COURT.

5 WINDOWS IN ROOMS: SEC. 173 MDL.
WINDOW MIN. 10% OF ROOM AREA AND 50% OPERABLE. TOP OF WINDOW MIN. 7' ABOVE FLOOR AND OPENING DIRECTLY UPON A STREET OR UPON A YARD OR COURT WITH DIMENSIONS IN CONFORMITY WITH SEC. 172 MDL.

6 LIGHT AND VENTILATION OF ROOMS, ARTICLE D26-30.05.

a) REQUIRED WINDOWS SHALL HAVE WINDOW OPENING TO A STREET
b) SIZE OF WINDOWS MIN. 10% OF ROOM AREA, MIN. 12 SF, 50% OPERABLE, TOP OF WINDOW MIN. 7' ABOVE FLOOR.

7 LIGHTING AND VENTILATION: ARTICLE D26-32.03.
KITCHENETTES TO BE PROVIDED WITH AT LEAST SIX AIR CHANGES PER HOUR.

8 MINIMUM ROOM SIZE: ARTICLE D26-33.01, SEC. 174 MDL
MINIMUM HEIGHT OF ROOM – 7' AT POINTS OR 8' ON ANY STORY, MINIMUM HORIZONTAL DIMENSION – 8', MINIMUM FLOOR AREA 80 SF., MIN. 500 CUFT

9 ARTIFICIAL LIGHTING: SEC. 26 & 35 MDL AND ART. 19 HMC.
a) PROPER ELECTRIC LIGHTING AND EQUIPMENT SHALL BE PROVIDED AND MAINTAINED WITHIN DWELLING.
b) PROPER ELECTRIC LIGHTING AND EQUIPMENT SHALL BE INSTALLED AND MAINTAINED AT OR NEAR THE OUTSIDE OF FRONT ENTRANCE WAY AND IN EVERY REAR YARD, SIDE YARD, FRONT YARD AND COURTS. MIN. OF 50 WATTS INCANDESCENT ILLUMINATION OR EQUIVALENT AT FRONT ENTRANCE WAY AND MIN. OF 40 WATTS IN YARDS AND COURTS AND SHALL BE KEPT BURNING FROM SUNSET EACH DAY TO SUNRISE ON THE FOLLOWING DAY.
c) MAIN ENTRANCE AND VESTIBULE DOORS SHALL HAVE NOT LESS THAN FIVE (5) SF OF GLAZED SURFACES.

10 BUILDING ENTRANCE DOORS TO BE SELF-CLOSING AND HAVE SELF-LOCKING DEVICES AS PER SEC. 50-a MDL AND ART. 20 HMC.

a) BUILDING ENTRANCES AND ALL OTHER EXTERIOR ENTRANCES SHALL BE EQUIPPED WITH APPROVED TYPE AUTOMATIC SELF-CLOSING AND SELF-LOCKING DOORS.
b) APARTMENT ENTRANCE DOORS SHALL HAVE KEY LOCK WITH AT LEAST ONE KEY PROVIDED, HEAVY DUTY LATCH SET WITH DEAD BOLT AND DOOR CHAIN GUARD

11 BELLS AND SERVICE. SEC. 57 MDL. AND ART. 21 HMC.
a) BELL OR BUZZER SYSTEM SHALL BE APPROVED TYPE AND SHALL BE KEPT IN GOOD WORKING ORDER.
b) MAIL RECEPTACLES AND DIRECTORIES OF PERSONS LIVING SHALL BE PROVIDED IN BUILDING AS PER THE REGULATIONS OF THE US POST OFFICE.

12 HEAT AND HOT WATER: SEC. 79 MDL. AND ART. 17 HMC.
QUALIFIED PERSON SHALL MAKE YEARLY INSPECTION. MINIMUM TEMP. OF HEATING AND HOT WATER SHALL BE MAINTAINED.

MULTIPLE DWELLING NOTES

1 WINDOWS TO ALL ROOMS TO COMPLY WITH REQUIREMENTS SET FORTH IN SEC. 30.8 OF MDL.

2 ALL COMBUSTIBLE MATERIAL WITHIN ONE FOOT OF COOKING APARATUS TO BE PROPERLY FIRE RETARDED AND MINIMUM 2' CLEARANCE MAINTAINED ABOVE COOKING SURFACE. COMBUSTIBLE MATERIAL BETWEEN 2' AND 3' ABOVE EXPOSED SURFACE TO BE FIRE RETARDED AS PERSEC. 33.b OF MDL

3. APARTMENTS IN CLASS "A" MULTIPLE DWELLING TO HAVE AT LEAST ONE LIVING ROOM WITH AT LEAST 123 SQ. FT. IN FLOOR AREA AND FOLLOW REQUIREMENTS SET FORTH IN SEC. 31.2 MDL.

4 OWNER TO PROVIDE AND MAINTAIN LIGHTS AT OR NEAR THE OUTSIDE OF THE ENTRANCE DOORS WHICH SHALL IN AGGREGATE PROVIDE NOT LESS THAN 100 WATT INCANDESCENT ILLUMINATION AS PER SEC. 35 MDL.

5. IN THE ROOF DIRECTLY OVER EACH STAIR A VENTILATING SKYLIGHT TO BE PROVIDED WITH VENTILATORS HAVING A MINIMUM OPENING OF 40 SQ. INCHES OR WITH FIXED OR MOVABLE LOUVERS. THE ROOF OF EVERY SUCH SKYLIGHT TO BE GLAZED WITH MINIMUM 20 SQ. FEET OF PLAIN GLASS EQUIPPED WITH SUITABLE WIRE SCREENS ABOVE AND BELOW AS PER SEC. 36 MDL.

6 ALL SPACES WITHIN UNITS (EXCEPT CLOSETS) AND ALL PUBLIC HALLS, VESTIBULES, STAIRWAYS, STAIRHALLS, BUILDING ENTRANCE AND YARD WILL BE ARTIFICIALLY LIGHTED AS DESCRIBED IN SECS. 37 & 26.7 (A) MDL.

7 A PEEP HOLE IN APARTMENT ENTRY DOORS TO BE PROVIDED AS PER 51-a MDL

8 ELEVATOR DOORS TO HAVE APPROVED AUTOMATIC SAFETY DEVICE AS PER SEC. 51.3 MDL.

9 SELF-SERVICE ELEVATOR TO HAVE MIRROR AS PER SED. 51-b MDL.

10 CELLAR TO HAVE DIRECT ENTRANCE TO OUTSIDE AS PER 54 MDL.

11 ROOF RAILINGS TO BE 3'-6" MIN. AS PER SEC. 62.1 MDL.

12 GAS METERS AND APPLIANCES TO COMPLY WITH SEC. 64 MDL.

13 BUILDING BOILER TO COMPLY WITH REQUIREMENTS AS PER SEC. 65 MDL.

14 SMOKE DETECTORS SHALL BE INSTALLED IN EACH DWELLING UNIT IN CONFORMANCE WITH SEC. 68 MDL.

15 HARD-WIRED CARBON MONOXIDE DETECTORS SHALL BE PROVIDED IN EVERY DWELLING UNIT WITHIN 15 FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM.

15. PREMISES TO COMPLY WITH SEC. 75 MDL – WATER SUPPLY.

16. PREMISES TO COMPLY WITH REQUIREMENTS FOR WATER CLOSETS IN SEC. 76.1, 76.2 MDL.

17 ALL BATHROOMS SHALL HAVE WATERPROOFED FLOORS AND SUCH WATERPROOF MATERIAL SHALL EXTEND 6" ABOVE THE FLOOR, EXCEPT AT DOORS AS PER SECTION 76.1 (e)

18 BATHROOMS TO BE PROVIDED W/ APPROVED SYSTEM OF VENTILATION AS PER SEC. 76.1 j MDL .

19 PLUMBING AND DRAINAGE OF ROOFS, COURTS AND YARDS SHALL COMPLY WITH SECTION 77 MDL.

20 BUILDING HEATING REQUIREMENTS TO COMPLY WITH SEC. 79.1 MDL.

21 PAINTING OF PUBLIC AREAS AND WITHIN DWELLINGS TO COMPLY WITH SECTION 80 MDL.

MULTIPLE DWELLING NOTES CONT.

22 RECEPTACLES FOR THE COLLECTION OF WASTE TO BE PROVIDED AS PER SECTION 81 MDL.

23 ACCESS FROM EVERY LIVING ROOM AND BEDROOM SHALL BE WITHOUT PASSING THROUGH ANY BEDROOM AS PER SEC. 82 MDL.

24 BUILDING SHALL COMPLY WITH THE REQUIREMENT FOR NOISE CONTROL AS PER SECTION 84 MDL.

25 BUILDING SHALL COMPLY WITH THE REQUIREMENT FOR FIRE PROOF CONSTRUCTION AS PER SECTION 101 MDL.

26. BUILDING TO HAVE AT LEAST TWO FIRE STAIRS AS PER SEC. 102 MDL.
27 THERE WILL BE AT LEAST ONE MEANS OF EGRESS FROM EACH APARTMENT AS PER SEC. 103 MDL.

28 FIRE-STAIR BULKHEAD SHALL GIVE UNOBSTRUCTED ACCESS TO ROOF AT ALL TIMES BY MEANS OF A FIRE PROOF SELF-CLOSING DOOR AND SHALL COMPLY WITH REQUIREMENTS AS SET FORTH IN SEC. 104 MDL.
29 FIRE-STAIR TO BE CONSTRUCTED OF FIRE-PROOF MATERIAL WITH SELF-CLOSING FIRE-PROOF DOORS AT LEAST 3' WIDE AS PER SEC. 105 MDL.

30 STAIR LEADING FROM CELLAR TO BE ENTIRELY ENCLOSED WITH FIRE-PROOF WALLS AS PER SEC. 106 MDL.

31. PUBLIC HALLS AND VESTIBULES TO COMPLY WITH REQUIREMENTS SET FORTH BY SECTION 107 MDL.

HOUSING & MAINTENANCE NOTES

1 BUILDING TO COMPLY WITH LOCAL LAWS APPLICABLE TO ART. 6 HMC AND DEPARTMENT RULES AND REGULATIONS.

2 TENANTS SHALL BE NOTIFIED OF OBLIGATION TO INSTALL WINDOW GUARDS AS PER SECTION 17-123 HMC AND 131.15 H.C.N.Y.C.C., GUARDS TO BE PROVIDED AS PER TITLE 24, DEPT. OF HEALTH, CHAP. 12.

3 PAINTING OF PUBLIC AREAS AND WITHIN DWELLINGS TO COMPLY WITH SECTION 27-2013 HMC.

4 WALLS OF COURTS AND SHAFTS TO BE OF A LIGHT COLORED SURFACE AS PER SECTION 27-2015 HMC.

5 PREMISES TO BE MAINTAINED AND KEPT FREE OF RODENT AND INSECT INFESTATION AS PER SECTION 27-2017 THROUGH 27-2019 HMC.

6 DRAINAGE OF ROOFS, COURTS, AND YARDS TO COMPLY WITH SECTION 27-2027 HMC.

7 PREMISES SHALL COMPLY WITH SECTIONS 27-2028,27-2029,27-2030,27-2031 OF HMC WITH RESPECT TO HEATING AND HOT WATER.

8 RECEPTACLES FOR THE COLLECTION OF WASTE TO BE PROVIDED AS PER SECTION 27-2020 THROUGH 27-2023 HMC.

9 PROPER ELECTRIC LIGHTING EQUIPMENT WITHIN DWELLING TO PROVIDED AND MAINTAINED AS PER SECTION 27-2037 HMC.

10 PROPER ELECTRIC LIGHTS TO BE PROVIDED NEAR ENTRANCE WAY, YARDS, AND COURTS, AS PER SECTION 27-2038, 27-2039, 27-2040 HMC. ON SEPARATE CIRCUITS OR CONNECTED TO HOUSE LINE SERVICING PUBLIC HALLS, AND IN ACCORDANCE WITH REQUIREMENTS AND APPROVAL OF THE DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY AS PER SECTION 27-2025 HMC.

11 PROVIDE AND MAINTAIN LIGHTING ON EXTERIOR OF BUILDING. LIGHTS TO BE VANDAL RESISTANT. LIGHTS TO BE AT LEAST 50 WATTS AND SHALL BE PLACED AT FRONT ENTRANCE AT A HEIGHT OF BETWEEN 8'-0" AND 10'-0" ABOVE FLOOR LEVEL ADJACENT TO SUCH ENTRANCE WAY AS PER SECTION 27-2040 OF HMC.

12 SMOKE DETECTORS SHALL BE INSTALLED IN EACH DWELLING UNIT IN CONFORMANCE WITH 27-2045 HMC. OWNER SHALLL POST NOTICE OF THIS REQUIREMENT WITHIN BUILDING AS PER 12-01 THROUGH 12-04.

13 ALL APARTMENT ENTRANCE DOORS TO BE MINIMUM 2'8"CLEAR X 6'8". AND SHALL HAVE A B.S.A APPROVED PEEPHOLE APPROXIMATELY 5 FEET ABOVE FINISHED FLOOR IN THE ENTRANCE DOOR OF EACH DWELLING UNIT AS PER SECTION 27-2041 HMC.

14 KEY LOCKS IN THE ENTRANCE DOORS OF EACH DWELLING UNIT WITH AT LEAST ONE KEY TO BE PROVIDED AS PER SECTION 27-2043 HMC. HEAVY DUTY LATCH SET DEAD BOLT THUMB TURN INSIDE.

15 APPROVED TYPE MAIL RECEPTACLES AND DIRECTORY OF PERSONS LIVING IN THE DWELLING TO BE PROVIDED AS PER SECTION 27-2047 HMC AND REGULATIONS OF THE POST OFFICE DEPARTMENT.
16 FLOOR NUMERALS TO BE PROVIDED ON ALL FLOORS IN STAIR HALL. PUBLIC HALL AND AT ELEVATOR LANDINGS IN ACCORDANCE WITH SEC. 27-2048 HMC AND THE RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS.

17 PROPER STREET NUMBER TO BE PROVIDED IN FRONT ON DWELLING AS PER SECTION 82(3)-1.0 ADMIN. CODE. SEC. 27-2049 HMC AND RULES AND REGULATIONS OF BOROUGH PRESIDENT.

18 INSPECTION OF REQUIRED SPRINKLERS SHALL COMPLY WITH 27-2050 HMC.

19 OBLIGATIONS OF THE OWNER SHALL COMPLY WITH 27-2053 HMC.

20 BATHROOMS, TOILETS, AND BATHING COMPARTMENTS TO HAVE CERAMIC TILE FLOOR AND BASE. WALLS AND CEILINGS FINISHED AS PER SECTION 27-2064 HMC.

21 MECHANICALLY VENTILATED BATHROOMS TO PROVIDE 4 AIR CHANGES PER HOUR AS PER 27-2065.A (1,2,3)

22 EVERY KITCHEN AND KITCHENETTE TO BE PROVIDED WITH SINK HAVING MINIMUM 2" WASTE AND TRAP PER SECTION 27-2070 HMC.

23 ALL COMBUSTIBLE MATERIAL WITHIN ONE FOOT OF COOKING APARATUS TO BE PROPERLY FIRE RETARDED AND MINIMUM TWO FOOT CLEARANCE MAINTAINED ABOVE COOKING SURFACE. COMBUSTIBLE MATERIAL BETWEEN 2' AND 3' ABOVE EXPOSED SURFACE TO BE FIRE RETARDED AS PER SECTION 27-2072(A)

24 OCCUPANCY SHALL COMPLY WITH SECTIONS 27-2075,27-2076, 27-2077 OF HMC.

25 OWNER SHALL FILE REGISTRATION STATEMENT AS PER SECTIONS 27-2097, 27-2098, 27-2099, 27-2100, 27-2101 OF HMC.

26 REGISTRATION IDENTIFICATION SIGN CONTAINING DWELLING SERIAL NUMBER TO BE POSTED AS PER SECTION 27-2104 HMC.

MANUALS

IT IS REQUIRED THAT AN OPERATING AN MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER BY THE MECHANICAL CONTRACTOR.
THE MANUAL SHALL INCLUDE, THE FOLLOWING:

1. EQUIPMENT CAPACITY AND REQUIRED MAINTENANCE ACTIONS.

2. EQUIPMENT OPERATION AND MAINTENANCE MANUALS.

3. HVAC SYSTEM CONTROL MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS. DESIRED OR FIELD-DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS, AN CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS IN PROGRAMMING COMMENTS.

4. A COMPLETE WRITTEN NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE.

ACCESSIBILITY & ADAPTABILITY

1. HEIGHT OF WORK SURFACE: THE TOPS OF TABLES AND WORK SURFACES SHALL BE HEIGHT ADAPTABLE FROM 28" TO 34" FROM THE FLOOR.

2. MIRRORS SHALL BE HEIGHT ADAPTABLE FOR MOUNTING WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE NO HIGHER THAN 40" FROM THE FLOOR.

3. THE SINK AND THE SURROUNDING COUNTER SHALL BE ADJUSTABLE OR REPLACEABLE AS A UNIT AT VARIABLE HEIGHTS BETWEEN 28" AND 36" MEASURED FROM THE FINISHED FLOOR TO THE TOP OF THE COUNTER OR SINK RIM, OR SHALL BE MOUNTED AT A FIXED HEIGHT NO GREATER THAN 34", MEASURED FROM THE FINISHED FLOOR TO THE TOP OF HE COUNTER SURFACE OR SINK RIM.

WHERE SINKS ARE ADJUSTABLE IN HEIGHT, ROUGH-IN PLUMBING SHALL BE LOCATED TO ACCEPT CONNECTIONS OF SUPPLY AND DRAIN PIPES FOR SINK MOUNTED AT THE HEIGHT OF 18".

4. CLOTHES RODS SHALL BE ADAPTABLE TO A MAXIMUM OF 48" FROM THE FINISH FLOOR.

5. CLEAR FLOOR AREA: THE MINIMUM CLEAR FLOOR AREA REQUIRED TO ACCOMMODATE A SINGLE, STATIONERY WHEELCHAIR AND OCCUPANT IS 30" BY 48".

6. DOORWAYS INTENDED FOR USERS PASSAGE SHALL HAVE THE MINIMUM CLEAR WIDTH OF 32".

7. THRESHOLDS AT DOORWAYS: SHALL NOT EXCEED ¼" IN HEIGHT AND SHALL BE BEVELED WITH SLOPE TO FLOOR.

8. STAIR NOTES AND DETAILS

TREADS AND RISERS ARE TO COMPLY WITH THE TABLE 6-4 OF THE NEW YORK CITY BUILDING CODE FOR OCCUPANCY GROUP J2.

NOSING: THE UNDERSIDE OF NOSING SHALL BE ABRUPT. THE RADIUS OF CURVATURE AT THE LEADING EDGE OF THE TREAD SHALL BE NO GREATER THAN ½". RISER SHALL BE SLOPED OR THE UNDERSIDE OF THE NOSING SHALL HAVE AN ANGLE NOT LESS THAN 60 DEGREES FROM THE HORIZONTAL. NOSING SHALL PROJECT NO MORE THAN 1½".

9. HANDRAILS: SHALL BE INSTALLED AT BOTH SIDES OF STAIR AND SHALL BE CONTINUOUS. IF HANDRAILS ARE NOT CONTINUOUS, THEY SHALL EXTEND AT LEAST 12" BEYOND THE TOP RISER AND AT LEAST 12" PLUS THE WIDTH OF ONE TREAD BEYOND THE BOTTOM RISER. AT THE TOP, THE EXTENSION SHALL BE PARALLEL WITH THE FLOOR SURFACE. AT THE BOTTOM, THE HANDRAIL SHALL CONTINUE TO SLOPE FOR A DISTANCE OF THE WIDTH OF ONE TREAD FROM THE BOTTOM RISER; THE REMAINDER OF THE EXTENSION SHALL BE HORIZONTAL.

THE CLEAR SPACE BETWEEN THE HANDRAIL AND THE WALL SHALL BE 1½". GRIPPING SURFACES SHALL BE CONTINUOUS, WITHOUT INTERRUPTION BY NEWEL POSTS, OR OTHER ELEMENTS AND OBSTRUCTIONS.

THE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A HANDRAIL SHALL BE 1¼" TO 1½", OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. THE TOP OF THE HANDRAIL GRIPPING SURFACE SHALL BE MOUNTED BETWEEN 30" AND 34" ABOVE STAIR NOSING.

A HANDRAIL AND ANY WALL OR OTHER SURFACE ADJACENT TO IT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. EDGE SHALL HAVE A MIN. RADIUS OF 1/8.

City of New York Parks & Recreation Plan Review Checklist

NYC Parks requires the following information to be added to site plans (if applicable) for your Parks Plan Review

Tabulations and Proposed Conditions
- [ ] Floating stairs, landings, balconies
- [ ] Building lines (together with DOHMH and Parks) for all trees, drainage to level to lines within 50 ft of property lines
- [ ] Proposed tree numbers with DBH and species
- [ ] All tree load elevations (including trees)
- [ ] Tree proposed species for tree protection zones to be planted

Drawing Checklists
- [ ] Any Demolition, Excavation, Cutback for Tree Protection (Tree Protection Specifications)
- [ ] Tree (including trees street tree)
- [ ] Wash tower down (wash tower and grounds)
- [ ] Graphic legend(s)

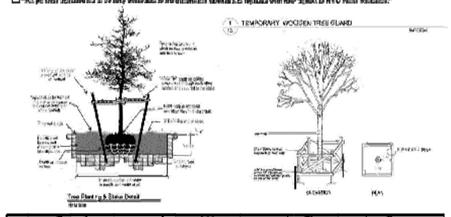
Proposed Drawings
- [ ] Existing lot and lot dimensions (plus with dimensions)
- [ ] Street and lot numbers with numerical, total numbers

Tabulations and Proposed Conditions
- [ ] Adjacent buildings and heights, etc., with applicable heights
- [ ] All proposed grade changes
- [ ] Chiller lines, chiller poles, which vapor, gas, electric, fire, water, or any other transportation lines/elements that may affect tree planting

Tabulations and Proposed Conditions
- [ ] Street furniture (including but not limited to benches, trash receptacles, newsstands, mailboxes, telephones, signs, bicycle racks, or any other structures or fixtures)
- [ ] Materials, dimensions, colors, finishes, utility boxes, grates, lights, tables, chairs, etc., bicycle racks
- [ ] Fire escapes, awnings, balconies, terraces or any structures projecting from building (and may interfere with tree)
- [ ] Sidewalk width, utility poles, curbing, utility manhole covers, subway gratings, sign-of-way, ventilation grates, vaults and hatches
- [ ] Fire hydrants, geometric indicator, street signs, traffic signs (incl. Speed, CONE 250 feet)

Drawing and Proposed Dimensions (continued)
- [ ] Outline of existing and proposed buildings, garages or any other building annotations
- [ ] Building entrances, sidewalks, balconies, steps, stairs, ramps
- [ ] Addition of significant grade changes
- [ ] Driveway dimensions, curb flares, curb cuts, pedestrian paths, and curbing (PE)
- [ ] Encroachments, items that will be located in the right of way

Questions to discuss (must be on site plans)
- [ ] "Will contract NYC Parks of this fundamental difference (and/or deviation) and affect any proposed landscaping (see site plan). Project Manager to project that any landscape or other items (and/or deviation) from NYC Parks. This includes shrubs, landscape, plantings or any other work which the designer of a tree, shrub and right-of-way, due to the proposed construction or development, will affect the planting of facility specifications. Planting may not be feasible, if necessary, the Project Manager must amend plans (see NYC Parks to be listed."
- [ ] "Final construction must comply to NYC DOH
  - Building lines to project
  - Proposed trees to represent/schedule
  - Proposed trees to plant
  - Trees to plant/plan
  - Trees to pay fees/fees/fees
- [ ] "All plans indicated as to be fully consistent to the elements identified and replaced with new trees to NYC Parks Standards."



Tree Planting & Stake Detail

Borough	Address	Phone	Fax
Manhattan	24 West 61 St. NY, NY 10023	212 360 1349	212 360 1539
Bronx	Oto Bronx Hwy Parkway Bronx, NY 10460	718 430 1399	718 430 4663
Brooklyn	93 Pennsylvania Ave Brooklyn, NY 11207	718 390 1930	718 390 1933
Queens	Flushing Meadows-Corona Pk Flushing, New York 11368	718 383 9273	718 383 9288
Staten Island	Mission Ave & Martling Ave Staten Island, NY	718 390 8040	718 816 8184
Central Forestry	Flushing Meadows-Corona Pk Flushing, New York 11368	718 390 8904	718 390 8848

ARTICLE 3-

1. DOORS LEADING TO BATHROOMS TO HAVE A 1/2" CLEAR SPACE BETWEEN BOTTOM OF DOORS AND SADDLES.

2. KITCHENETTE WALLS AND CEILINGS TO BE FIRE RETARDED WITH 5/8" THICK SHEETROCK, FIRE CODE 60, UNLESS OTHERWISE NOTED.

3. NEW 144 SQUARE INCH KITCHENETTE CENT DUCK TO BE A MINIMUM 8" WIDTH OF 24 GAUGE METAL, FIRE RETARDED WITH 5/8" S.R.F.C. 60 FOR ENTIRE RUN. PROVIDE GRAVITY DAMPERS, REGISTERS, FUSIBLE LINKS AND FAN PROVIDING AT LEAST 6 CHANGES OF AIR PER HOUR, 180 CFM PER KITCHENETTE. FAN TO BE CONNECTED LIGHT SWITCH. DUCT TO EXTEND 4'-0" ABOVE ROOF. FAN ON ROOF TO RUN CONTINUOUSLY.

4. ALL FIRE DAMPERS ARE TO BE TYPE APPROVED BY THE BOARD OF FIRE UNDERWRITERS.

5. NEW PUBLIC HALL PARTITIONS SHALL BE FIRE RETARDED WITH 5/8" THICK SHEETROCK F.C. 60 ON BOTH SIDES AND PROPERLY FIRE STOPPED.

6. ALL DOORS LEADING TO PUBLIC HALLS SHALL BE FIRE PROOF SELFCLOSING.

7. SKYLIGHT OVER PUBLIC HALL TO HAVE AT LEAST 20 SQ. FT. OF PLAIN GLASS 144 SQ. INCHES OF FIXED RIDGE VENTS, WIRE SCREEN OVER AND UNDER (OR 9 SQ. FT.. WITH 40 SQ. IN. FIXED RIDGE VENT AS PER PLAN).

8. ALL FLOOR TO BE PROPERLY DESIGNATED BY SIGNS AS PER SEC. C26-1453 ADMINISTRATIVE CODE D26-3.19 M.D.C.

9. PROPER HOUSE NUMBER TO BE DISPLAYED.

10. ENTIRE BUILDING TO COMPLY WITH LOCAL LAWS APPLICABLE TO ART. 6 WITH M.D.C. AND DEPARTMENT RULES AND REGULATIONS.

11. ALL LUMBER TO BE GRADE MARKED BEFORE DELIVERY TO SITE.

12. ALL NEW STRUCTURAL LUMBER TO BE DUGLAS FIR #1 COM. F=1400.

13. ALL WINDOW SIZES GIVEN ARE B.S.B. ALL WINDOWS ARE DOUBLE HUNG.

14. ALL MANSONARY WORK TO BE LAID IN MORTAR TYPE N.

15. ALL BATHROOMS TO HAVE TILE FLOOR AND 6" MIN. TILE BASE. WALLS AND CEILINGS PLASTERED, UNLESS OTHERWISE NOTED.

16. INDIVIDUAL G.I. VENT DUCTS FOR NEW BATHROOMS TO BE OF 24 GAUGE METAL, HAVING A MIN. CROSS SECTIONAL AREA OF ONE SQUARE FOOT. FIRE RETARDED WITH 5/8" SHEETROCK F.C. 60. ALSO PROVIDE REGISTER AND GRAVITY DAMPER WITH FUSIBLE LINK. FAN TO RUN CONTINUOUSLY FROM 6 A.M. TO 12 P.M. WITH FAN HOUSING EXTENDING 4'-0" ABOVE ROOF, M.L.D.

17. BUILDING TO COMPLY WITH SEC. 64 M.L.D. GAS METER, GAS APPLIANCES, AND ARTIFICIAL LIGHTING.

18. DRAINS FOR AREAWAY, YARD AND ROOF TO COMPLY WITH SEC. 77 M.L.D.

19. PEEPHOLES OR DOOR INTERVIEWERS, APPROVE AS PER BOARD OF STANDARDS AND APPEALS, TO BE PROVIDED IN ENTERANCE DOOR TO EACH HOUSING UNIT AS PER SEC. 51 M.L.D.

20. TWO LIGHTS, MINIMUM 50 WATTS, ONE EACH SIDE OF ENTERANCE WAY TO BE PROVIDED AS PER SEC. 35 M.L.D. AND DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY AND BUILDING DEPARTMENT RULES AND REGULATIONS.

21. PROPER AND ADEQUATE LIGHTINGS WITH A MINIMUM OF 40 WATTS TO BE PROVIDED IN YARD AND COURT AS PER SEC. 26 SUBD. 7A AND DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY AND BUILDING DEPARTMENT RULES AND REGULATIONS.

22. EVERY VESTBULE, ENTERANCE, PUBLIC AND STAIR HALLS TO BE PROVIDED WITH A MINIMUM OF 60 WATTS LIGHT AS PER SEC. 37 SUBD. 1 M.L.D.

23. SIZE OF ROOM SHALL COMPLY WITH SEC. 31 OF ARTICLE 3. 24. ALL ALCOVEDS TO COMPLY WITH SEC. 32.

24. BOILER ROOMS SHALL BE EQUIPPED WITH FIREPROOF DOORS AND ASSEMBLIES WITH (SEC. 65) THE DOORS SELF-CLOSING.

25. NO WATER CLOSET SHALL OPEN DIRECTLY INTO ANY KITCHEN OR KITCHENETTE IN A MULTIPLE DWELLING ERECTED AFTER APRIL EIGHTEENTH, NINETEEN HUNDRED TWENTY-NINE.

$173. WINDOWS IN ROOMS.

EVERY NEW WINDOWS SHALL BE TWELVE SQUARE FEET OR MORE IN AREA. AND SHALL BE SO CONSTRUCTED THAT ONE-HALF OR MORE OF ITS AREA MAY BE OPENED.

SMOKE DETECTOR NOTES

1. EACH DWELLING UNIT SHALL BE EQUIPPED WITH AN APPROVED TYPE SMOKE DETECTOR DEVICE RECEIVING PROMARY POWER FROM THE BUILDING WIRING WITH NO SWITCHES IN THE CIRCUIT OTHER THAN THE OVER CURRENT DEVICE PROTECTING THE BRANCH CIRCUIT, AS PER SEC. C26-1705. 3.

2. SMOKE DETECTORS SHALL BE EITHER THE IONIZATION-CHAMBER TYPE OR THE PHOTOELECTRIC DETECTOR TYPE, AS PER SEC. 26-1705. 4 (SUB. b).

3. ALL SMOKE DETECTORS SHALL BE INSTALLED WITHIN 15 FEET OF THE ENTRANCE TO ANY SLEEPING ROOM, AND SHALL BE WALL OR CEILING MOUNTED AS INDICATED ON PLAN, AND SHALL COMPLY WITH THE REQUIREMENTS OF N. F. P. A. #74/1980.

4. FOR MULTIPLE DWELLING, A CERTIFICATE OF SATISFACTORY INTALLATION FOR SMOKE DETECTORS SHALL BE FILED WITH THE DIVISION OF CODE ENFORCEMENT, H. P. D, 10 DAYS AFTER INSTALLATION.

BULKHEAD & SCUTTLE NOTES

BULKHEADS AND SCUTTLES SHALL CONFORM TO THE FOLLOWING PROVISIONS:

1. EVERY REQUIRED BULKHEAD TO AND THROUGH THE ROOF SHALL BE FIREPROOF OR CONSTRUCTED OF WOOD COVERED WITH METAL ON THE OUTSIDE AND FIRE-RETARDED ON THE INSIDE, AND SHALL HAVE A FIRE-RETARDED DOOR AND ASSEMBLY WITH THE DOOR SELF-CLOSING. EVERY STAIR EXTENDING THROUGH A BULKHEAD SHALL HAVE A HANDRAIL.

2. EVERY SCUTTLE SHALL BE AT LEAST TWENTY-ONE INCHES IN WIDTH AND TWENTY-EIGHT INCHES IN LENGTH, COVERED ON THE OUTSIDE WITH METAL AND PROVIDED WITH A STAIR OR STATIONARY IRON LADDER LEADING THERETO AND EASILY ACCESSIBLE TO ALL OCCUPANTS OF THE DWELLING. EVERY SCUTTLE SHALL BE LOCATED IN THE CEILING OF THE STAIR HALL ON THE TOP STORY AND ACCESS TO THE ROOF THROUGH THE SCUTTLE SHALL BE DIRECT AND UNINTERRUPTED. IT SHALL BE UNLAWFUL TO ENCLOSE OR APPROVAL MANNER THE LADDER OR STAIR LEADING TO A SCUTTLE.

3. EVERY BULKHEAD DOOR OR SCUTTLE SHALL NOT BE SELF-LOCKING AND SHALL BE FSTENED ON THE INSIDE WITH MOVABLE BOLTS, HOOKS, OR A LOCK WHICH DOES NOT REQUIRE A KEY TO OPEN FROM THE INSIDE OF THE DWELLING.

4. WHERE A DWELLING HAS A PEAK ROOF WITH A PITCH OF MORE THAN FIFTEEN DEGREES, NO BULKHEAD OR SCUTTLE, OR STAIR OR LADDER LEADING THERETO, SHALL BE REQUIRED.

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

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NEW YORK, NY 10018
NJ: 80 CRAIN RD
PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

THE PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

TITLE:

MULTIPLE DWELLING NOTES STREET TREE CHECK LISTS

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

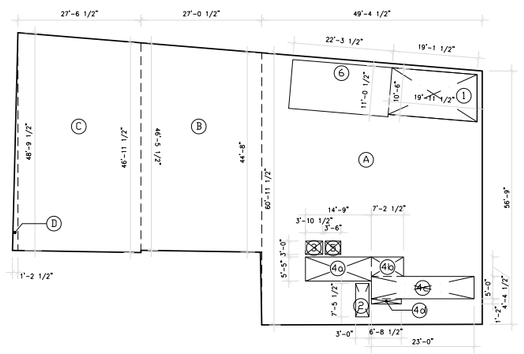
APPLICATION NO.

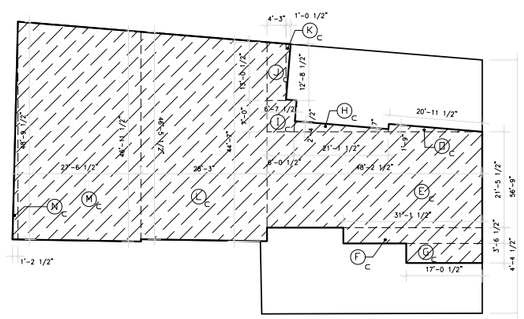
DRAWING NO.:

T-103.00

FLOOR AREA CALCULATION

1ST FLOOR





	OVERALL AREA	
Ⓐ	$\frac{(56'-0"+60'-11.5")}{2} \times 49'-4.5"$	= 2,887.16 S.F.
Ⓑ	$\frac{(44'-4"+46'-5.5")}{2} \times 27'-0.5"$	= 1,227.48 S.F.
Ⓒ	$\frac{(46'-11.5"+48'-9.5")}{2} \times 27'-6.5"$	= 1,318.48 S.F.
Ⓓ	(48'-9.5 x 1'-2.5") / 2	= 29.52 S.F.
	SUBTOTAL =	5,462.64 S.F.
	DEDUCTION	
①	$\frac{(19'1.5"+19'11.5")}{2} \times 10'6"$	ACCESSORY = 205.17 S.F.(PARKING)
②	3' x 7'-5.5" =	22.62 S.F.(CHASE)
③	3'-10.5" x 3'-0" =	11.61 S.F.(CHASE)
4a	(5'-5" x 14'-9")/2 =	39.98 S.F.(CORRIDOR)
4b	(4'-4.5" x 7'-2.5")/2 =	15.47 S.F.(CORRIDOR)
4c	(5' x 23'-2")/2 =	57.93 S.F.(CORRIDOR)
4d	(6'-8.5" x 1'-2")/2 =	3.93 S.F.(CORRIDOR)
⑤	3'-6" x 3' =	10.5 S.F.(REFUSE)
⑥	22'-3.5" x 11'-.5"	ACCESSORY = 247.96 S.F.(PARKING)
	SUBTOTAL =	615.17 S.F.

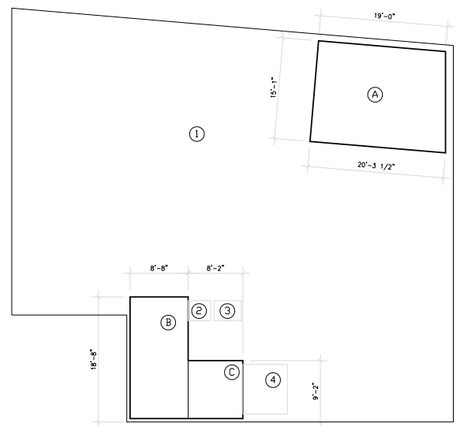
	COMMERCIAL AREA	
Ⓔc	48'-2.5" x 21'-5.5"	= 1,034.59 S.F.
Ⓕc	31'-1.5" x 3'-6.5"	= 110.16 S.F.
Ⓖc	17'-0.5" X 4'-4.5"	= 74.46 S.F.
Ⓗc	(21'-1.5" x 2'-4.5")/2	= 25.03 S.F.
Ⓘc	$\frac{(6'0.5"+6'7.5")}{2} \times 7'0"$	= 44.31 S.F.
Ⓙc	$\frac{(13'0.5" + 12'8.5")}{2} \times 4'3"$	= 55.04 S.F.
Ⓚc	(12'-8.5" x 1'-0.5") / 2	= 6.61 S.F.
Ⓛc	$\frac{(44'7" + 46'5.5")}{2} \times 28'3"$	= 1,285.941 S.F.
Ⓜc	$\frac{(46'11.5" + 48'9.5")}{2} \times 27'6.5"$	= 1,318.48 S.F.
Ⓝc	(48'-9.5" x 1'-2.5") /2	= 29.52 S.F.
	SUBTOTAL =	3,984.14 S.F.

RESIDENTIAL AREA

SUBTOTAL = OVERALL − COMMERCIAL − DEDUCTION
= 5,462.64 − 3,984.14 − 615.17
= 863.33 S.F.

TOTAL — TOTAL FIRST FLOOR
COMMERCIAL + RESIDENTIAL = 4,284.15 + 929.83 = **5213.98 S.F.**

2ND FLOOR



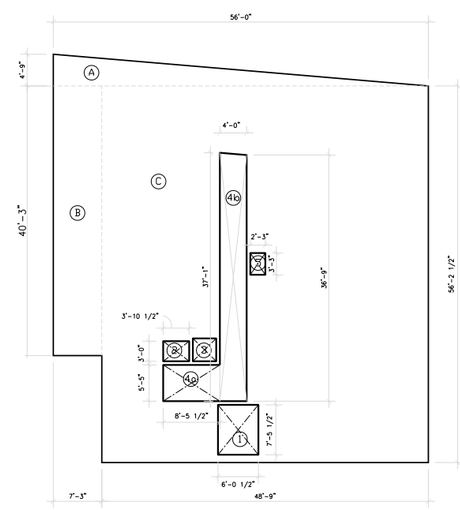
	RESIDENTIAL AREA	
Ⓐ	(19'+20'-2")X13'-7"/2	= 296.38 S.F.
Ⓑ	8'-8" X 18-8"	= 157.53 S.F.
Ⓒ	8'-2" X 9'-2"	= 70.83 S.F.

	DEDUCTION	
①	ACCESSORY PARKING	
②	CHASE	
③	REFUSE	
④	CHASE	

SUBTOTAL = 524.74 S.F.

TOTAL — RESIDENTIAL AREA − DEDUCTION = 494.32 − 0 = **494.32 S.F. (2ND FL)**

3RD FLOOR & 4TH FLOOR & 5TH FLOOR



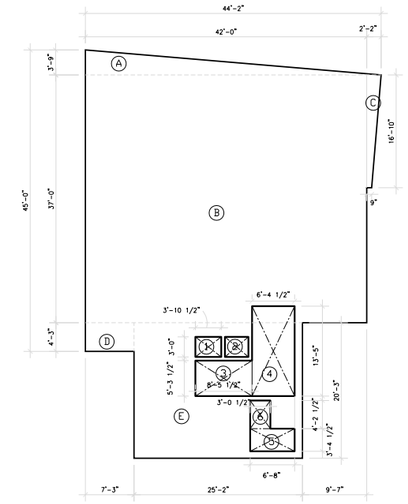
	RESIDENTIAL AREA	
Ⓐ	(4'-9" X 56')/2	= 133 S.F.
Ⓑ	7'-3" X 40-13"	= 291.81 S.F.
Ⓒ	48'-9" X 56'-2"	= 2738.29 S.F.

	DEDUCTION	
①	6'-0.5" x 7'-5.5" =	45.06 S.F.(CHASE)
②	3'-10.5" x 3'-0" =	11.61 S.F.(CHASE)
③		12 S.F.(REFUSE)
4a	(5-5" x 8'-5.5")/2 =	22.93 S.F.(CORRIDOR)
4b	$\frac{((36'-9"+37'-1")x4'-0")}{2}$ =	73.83 S.F.(CORRIDOR)
⑤	2-3" x 3'-3" =	7.31 S.F.(CHASE)

SUBTOTAL = 3163.10 S.F. SUBTOTAL = 172.74 S.F.

TOTAL — RESIDENTIAL AREA − DEDUCTION = 3,163.10 − 172.74 = **2,990.36 S.F. (3RD FL)**
RESIDENTIAL AREA − DEDUCTION = 3,163.10 − 172.74 = **2,990.36 S.F. (4TH FL)**
RESIDENTIAL AREA − DEDUCTION = 3,163.10 − 172.74 = **2,990.36 S.F. (5TH FL)**

6TH FLOOR



	RESIDENTIAL AREA	
Ⓐ	(3'-9" X 44'-2")/2	= 82.82 S.F.
Ⓑ	37'-0" X 42'	= 1,554 S.F.
Ⓒ	((2'-2"+8.5")16'-10")/2	= 24.23 S.F.
Ⓓ	4'-3.5" X 7'-3"	= 31.10 S.F.
Ⓔ	25'-2" X 20'-3"	= 509.69 S.F.

	DEDUCTION	
①	3'-10.5" x 3'-0" =	11.61 S.F.(CHASE)
②		12 S.F.(REFUSE)
③	5'-5" x 8'-5.5" =	45.85 S.F.(CORRIDOR)
④	6'-4.5" x 13-5" =	85.48 S.F.(CORRIDOR)
⑤	6'-8" x 3'-4.5" =	22.48 S.F.(CHASE)
⑥	4'-2.5" x 3'-05" =	12.80 S.F.(CHASE)

SUBTOTAL = 2,201.84 S.F. SUBTOTAL = 190.22 S.F.

TOTAL — RESIDENTIAL AREA − DEDUCTION = 2,201.84 − 190.22 = **2,011.62 S.F (6TH FL)**

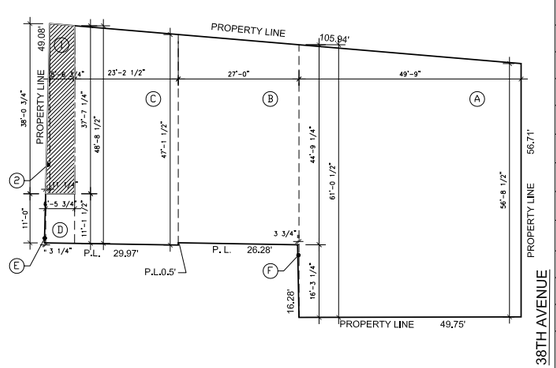
DEDUCTION

[28-23]	REFUSE STORAGE AND DISPOSAL
	12 S.F REFUSE STORAGE ROOM SHALL BE EXCLUDED FROM THE DEFINITION OF FLOOR AREA
[28-25]	DAYLIGHT IN CORRIDORS
	20 S.F. OF GLAZED AREA IN CORRIDOR --> 50% OF CORRIDOR AREA TO BE EXCLUDED FROM FLOOR AREA 5'-2' x 8'-0" STOREFRONT = 40 S.F. > 20 S.F.
[28-41]	DENSITY PER CORRIDOR
	NUMBER OF DWELLING UNITS SERVED BY A CORRIDOR PER STORY = 11 > 3 --> 50% OF CORRIDOR AREA TO BE EXCLUDED FROM FLOOR AREA
[12-10]	FLOOR AREA
	CELLAR BALCONY CHASE ACCESSORY OFF-STREET PARKING (6)iv

TOTAL RESIDENTIAL

1ST FL	863.33 SF
2ND FL	494.32 SF
3RD FL	2,990.36 SF
4TH FL	2,990.36 SF
5TH FL	2,990.36 SF
6TH FL	2,011.62 SF
TOTAL	12,340.36 SF

LOT AREA CALCULATION



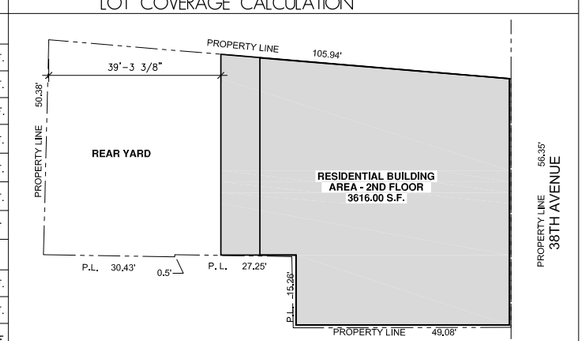
R6A

Ⓐ	$\frac{(61.04'+56.71')}{2} \times 49.75'$	= 2,929.03 S.F.
Ⓑ	$\frac{(47.12' + 44.77')}{2} \times 27.00'$	= 1,240.53 S.F.
Ⓒ	$\frac{(48.71' + 47.12')}{2} \times 23.21'$	= 1,107.25 S.F.
Ⓓ	$\frac{(11.12' + 11.00')}{2} \times 6.48'$	= 71.67 S.F.
Ⓔ	(11.00' x 0.27') / 2	= 1.48 S.F.
Ⓕ	(16.27' x 0.31') / 2	= 2.52 S.F.
	SUB TOTAL	= 5,352.48 S.F

R5D

Ⓐ	$\frac{(37.60' + 38.06')}{2} \times 5.56'$	= 210.33 S.F.
Ⓑ	(38.06' x 0.94') / 2	= 17.89 S.F.
	SUB TOTAL	= 228.22 S.F
	TOTAL	= 5,580.70 S.F

LOT COVERAGE CALCULATION



RESIDENTIAL BUILDING AREA @ 2ND FLOOR
= 3188.17 SF

LOT AREA = 5,580.70 SF

LOT COVERAGE = 3616.006 SF / 5580.70 SF = 64.79% < 64.8% --> OK

PROJECT TITLE:

NEW CERTIFICATE OF OCCUPANCY FOR MIXED BUILDING

PROJECT ADDRESS:

31-07 38TH AVENUE
QUEENS, NY 11101

ARCHITECTURE • INTERIOR DESIGN • DESIGN BUILD

K|A

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ENGINEER

LB ENGINEERING PC
SMEP ENGINEERING
NY: 567 7TH AVE (4FL)
NEW YORK, NY 10018
NJ: 80 CRAIN RD
PARAMUS, NJ 07652
TEL: 201 983 3344

NO.	DATE	REVISION

THE PLAN IS APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

TITLE:

AREA CALCULATION

KA PROJECT NO.:	14-0416
SCALE:	AS NOTED
DESIGNED BY:	
DRAWN BY:	JYK
CHECKED BY:	KL
DATE:	12/15/2014

DOB APPROVAL

APPLICATION NO.

DRAWING NO.:

T-104.00

APPENDIX 2

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Kayafas Contracting Company 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, Kayafas Contracting Company 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, Alysha Alfieri, 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 – Long Island City Branch
37-44 21 Street, Long Island City, NY 11101
(718) 752-3700
Monday: 9:00am to 8:00pm
Tuesday: 2:00pm to 7:00pm
Wednesday: 11:00pm to 7:00pm
Thursday: 11:00am to 7:00pm
Friday: 11:00am to 7:00pm
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.

Linkage with Green Building: Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use.

The number of Green Buildings that are associated with this brownfield redevelopment property will be reported in the RAR. The total square footage of green building space created as a function of this brownfield redevelopment will be quantified for residential, commercial and industrial/manufacturing uses.

Paperless Voluntary Cleanup Program: Kayafas Contracting Company 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: Kayafas Contracting Company 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. 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

31-07 38TH AVENUE
LONG ISLAND CITY, NEW YORK 11101

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TABLE OF CONTENTS

1.0 GLOSSARY OF TERMS 1-1

2.0 INTRODUCTION 2-3
2.1 SITE HISTORY 2-4
2.2 SCOPE OF WORK 2-5

3.0 KEY PERSONNEL 3-8
3.1 PROJECT MANAGER (PM) 3-8
3.2 CONSTRUCTION SUPERINTENDENT (CS) 3-8
3.3 HEALTH AND SAFETY OFFICER (HSO) 3-9
3.4 PROJECT SAFETY MANAGER (PSM) 3-10
3.5 EMPLOYEE SAFETY RESPONSIBILITIES 3-10

4.0 ACTIVITY HAZARD ANALYSIS 4-1
4.1 CHEMICAL HAZARDS 4-1
4.2 PHYSICAL HAZARDS 4-3
4.3 ENVIRONMENTAL HAZARDS 4-3
4.3.1 Heat Stress 4-4
4.3.2 Exposure to Cold 4-7
4.3.2.1 Cold Stress Conditions and Symptoms 4-7
4.3.2.2 Monitoring and Preventative Actions 4-8
4.3.3 Biological Hazards 4-12
4.3.4 Noise 4-12
4.4 VEHICLE AND HEAVY EQUIPMENT SAFETY 4-12
4.4.1 Vehicle Safety 4-12
4.4.2 Heavy Equipment Safety 4-13
4.5 TASK-SPECIFIC ACTIVITY HAZARD ANALYSES (AHA) 4-13

5.0 WORK AND SUPPORT AREAS 5-1
5.1 EXCLUSION ZONE (EZ) 5-1
5.2 CONTAMINATION - REDUCTION ZONE (CRZ) 5-1
5.3 SUPPORT ZONE (SZ) 5-1
5.4 SITE CONTROL LOG 5-1
5.5 GENERAL 5-2

6.0 PROTECTIVE EQUIPMENT 6-1
6.1 ANTICIPATED PROTECTION LEVELS 6-1
6.2 PROTECTION LEVEL DESCRIPTIONS 6-1
6.2.1 Level D 6-1

7.0 DECONTAMINATION PROCEDURES 7-1
7.1 PERSONNEL DECONTAMINATION 7-1

7.1.1 Suspected Contamination 7-1
7.1.2 Personal Hygiene 7-1
7.2 EQUIPMENT DECONTAMINATION 7-1
7.3 DISPOSAL OF WASTES 7-2
7.4 DUST /EROSION CONTROL 7-2

8.0 AIR MONITORING 8-1
8.1 WORK AREA AIR MONITORING 8-1
8.1.1 Direct Reading Air Monitoring 8-1
8.1.2 Instrumentation 8-1
8.1.3 Use And Maintenance Of Survey Equipment 8-1
8.1.4 Air Monitoring Recordkeeping 8-2
8.1.5 Action Levels 8-2

9.0 EMERGENCY RESPONSE AND CONTINGENCY PLAN (ERCP) 8-3
9.1 PRE-EMERGENCY PLANNING 9-4
9.2 EMERGENCY RECOGNITION AND PREVENTION 9-5
9.3 EMERGENCY TELEPHONE NUMBERS 9-6
9.4 PERSONNEL ROLES, LINES OF AUTHORITY, AND COMMUNICATIONS 9-9
9.4.1 Responsibilities and Duties 9-9
9.4.2 On-Site Emergency Coordinator Duties 9-9
9.5 SAFE DISTANCES AND PLACES OF REFUGE 9-11
9.6 EVACUATION ROUTES AND PROCEDURES 9-12
9.6.1 Evacuation Signals and Routes 9-12
9.6.2 Evacuation Procedures 9-12
9.7 EMERGENCY SPILL RESPONSE PROCEDURES AND EQUIPMENT 9-13
9.7.1 Notification Procedures 9-14
9.7.2 Procedure for Containing/Collecting Spills 9-14
9.7.3 Emergency Response Equipment 9-15
9.7.4 Emergency Spill Response Clean-Up Materials and Equipment 9-16
9.8 EMERGENCY CONTINGENCY PLAN 9-16
9.9 MEDICAL EMERGENCY CONTINGENCY MEASURES 9-16
9.9.1 Response 9-16
9.9.2 Notification 9-18
9.10 FIRE CONTINGENCY MEASURES 9-18
9.10.1 Response 9-19
9.11 HAZARDOUS WEATHER CONTINGENCY MEASURES 9-19
9.11.1 Response 9-19
9.11.2 Notification 9-19
9.12 SPILL/RELEASE CONTINGENCY MEASURES 9-20
9.12.1 Response 9-20

10.0 TRAINING REQUIREMENTS 10-1
10.1 SITE-SPECIFIC TRAINING ORIENTATION 10-1
10.2 DAILY SAFETY MEETINGS 10-1

FIGURES

FIGURE 2-1 SITE LOCATION MAP
FIGURE 9-1 DIRECTIONS AND HOSPITAL ROUTE MAP

TABLES

TABLE 4-1 CHEMICAL DATA
TABLE 4.3.2A COLD WEATHER INJURIES
TABLE 4.3.2B COLD STRESS PREVENTION
TABLE 4.3.2C COLD WEATHER CLOTHING REQUIREMENTS
TABLE 4.3.2D COOLING POWER OF WIND ON EXPOSED FLESH EXPRESSED AS EQUIVALENT TEMPERATURE
TABLE 4.3.2E TLV WORK/WARMUP SCHEDULE FOR FOUR-HOUR SHIFT
TABLE 9-1 EMERGENCY TELEPHONE NUMBERS

APPENDICES

APPENDIX A HEALTH AND SAFETY PLAN CERTIFICATION
HEALTH & SAFETY PLAN ACKNOWLEDGEMENT
NOTICE OF SAFETY VIOLATION
PRE-JOB SAFETY CHECKLIST

APPENDIX B HEALTH AND SAFETY PLAN AMENDMENTS AND DOCUMENTATION FORM
APPENDIX C SAFETY MEETING FORMS
AIR MONITORING FORMS

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, A-Weighted
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:	31-07 38th Avenue, Long Island City, New York
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 Fº in mm Hg

2.0 *INTRODUCTION*

The Site is located at 31-07 38th Avenue, Long Island City, New York 11101 (the "Site"). The Site is approximately 6,000 square feet and contains a one-story commercial building and is bounded by a one-story industrial warehouse to the north, 38th Street to the south, a one-story industrial warehouse to the east, and an active gasoline filling station and one-story service station to the west. Currently, the Site, a one-story warehouse, is used as an auto body repair and painting shop and contains several hydraulic oil lifts, a spray booth/oven, and a partial basement which contains an active 275 gallon aboveground storage tank, which is used by the spray booth/oven. 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

Based upon the review of the Phase I Environmental Site Assessment (ESA) Report prepared by Nova Geophysical & Environmental Services (Nova) in March 2013, the Site history was established. The Site consists of an approximately 13,900 square foot lot that is currently developed with three one-story buildings. The first building, with an address of 37-33 31st Street, is a metal works facility which consists of a one-story commercial building of approximately 2,000 square feet. The second building, with an address of 31-05 38th Avenue, is an active gasoline filling station with a one-story commercial building that is used as a service station with a combined square footage of approximately 5,000 square feet. The last building (the Site being redeveloped), with an address of 31-07 38th Avenue, is an auto body repair and paint shop housing within a one-story commercial building occupying approximately 6,000 square feet. The Phase I ESA identified the Site (31-07 38th Avenue) as a registered aboveground storage tank (AST) facility, and identified an active 275-gallon AST in the partial basement of the Site, which is used for storing number two fuel oil. The active 275 gallon AST is currently being used by the spray booth/oven. The Phase I ESA also identified the Site as having an E-Designation for hazardous materials, noise, and air quality.

The AOCs identified for this site include:

1. Presence of tetrachloroethylene (PCE) and trichloroethylene (TCE) in soil vapor underneath the Site.

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 seven (7) soil borings across the entire project Site and collected fourteen (14) soil samples for chemical analysis from the soil borings to evaluate soil quality;
4. Installed three (3) groundwater monitoring wells throughout the Site to establish groundwater flow and collected three (3) groundwater samples for chemical analysis to evaluate groundwater quality;
5. Installed one (1) soil vapor and two (2) sub-slab vapor probes around Site and collected three (3) samples for chemical analysis.

2.2 SCOPE OF WORK

Although the construction of the new commercial building involves many different activities, only those activities associated with the disturbance and handling of soils is addressed in this CHASP.

The principal tasks covered in this HASP include the following:

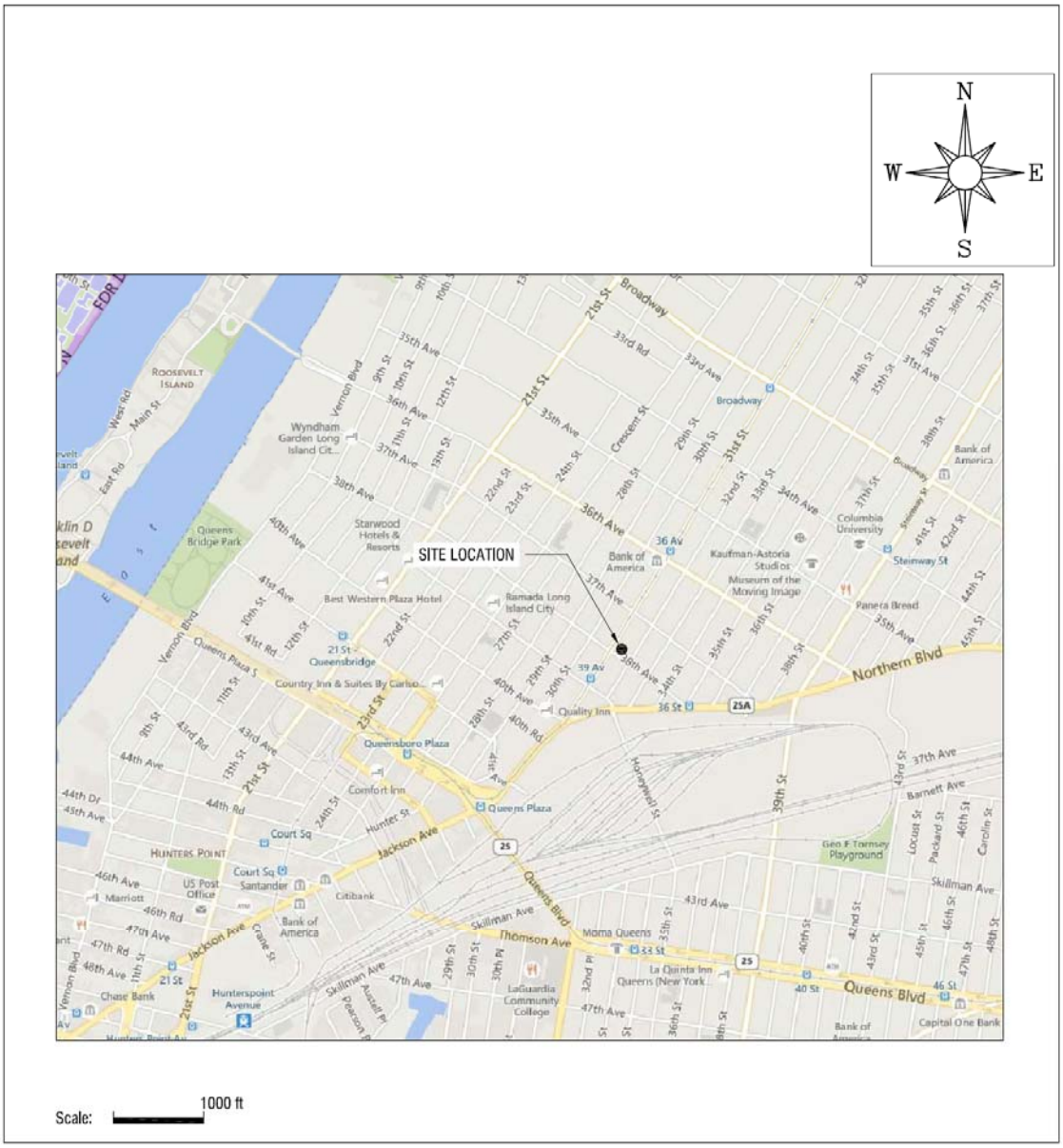
- Mobilization/demobilization,
- Sheeting and shoring,
- Excavation of urban fill and/or soil,
- Loading of urban fill into trucks for disposal,
- Installation of footings for new building, and
- Heavy equipment decontamination

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



ATHENICA ENVIRONMENTAL SERVICES, INC. Environmental Consultants	Drawn by: ANASTASIA KAKOURI	Site Plan: 31-07 38th AVENUE LONG ISLAND CITY, NEW YORK 11101
	Checked by: MICHAEL MANDAC	
	Drawing Scale: AS NOTED	
	Project No: 15-133-0416	Figure: 1
	Date: JUNE 26, 2015	Title: 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 VOCs (acetone), pesticides (4,4'-DDT), and metals (lead and zinc), groundwater including VOCs (chloroform), SVOCs (phenol and bis(2-ethylhexyl)phthalate, and metals (sodium), and soil vapor including (trichloroethylene [TCE] and tetrachloroethylene [PCE]). 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. VOCs, pesticides, and metals 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
Acetone	1,188 mg/m^3	2,400 mg/m^3	Inhalation	Slight eye, nose, respiratory irritation, Headache, dizziness, light-headedness, weakness, incoordination, sleepiness	Brain, central nervous system	Colorless liquid with a fragrant, mint-like odor
4,4'-DDT	1.0 mg/m3	1.0 mg/m3	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
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 contract	Nausea and vomiting, chills and fever, muscular aches and pains, and weakness if inhaled; skin irritant	Respiratory system, eyes, skin	Non-combustible solid

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/m^3 = 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

TABLE 4.3.2A COLD WEATHER INJURIES		
Cause	**Symptoms**	**First Aid**
		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					

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
-40 to –42	-40 to -44	30 min	5	Non-emergency work should cease		work should cease					
< -43	< -45	Non-emergency work should 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 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 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	• Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Manual lifting/ material handling	• 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	• 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	• 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	• 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 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 2015
Phase of Work Mobilization/ Demobilization		**Analysis Approved by** Spiro Dongaris
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Trenching and excavation. 2. Install shoring/ sheeting protective system.	Chemical hazards	• 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	• 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	• 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	• 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	• Maintain 10 foot minimum clearance to any overhead power lines • Call for Utility mark out prior to digging

Project Identification 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 2015
Phase of Work Mobilization/ Demobilization		**Analysis Approved by** Spiro Dongaris
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Trenching and excavation. 2. Install shoring/ sheeting protective system.	Hand and power tool usage	• 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	• 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	• 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.	• 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 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 2015
Phase of Work Mobilization/ Demobilization		**Analysis Approved by** Spiro Dongaris
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Load trucks with contaminated soils. 2. Cover and clean trucks.	Chemical hazards	• 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	• 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	• Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Manual lifting/ material handling	• 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	• 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

Project Identification 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 2015
Phase of Work Mobilization/ Demobilization		**Analysis Approved by** Spiro Dongaris
TASKS	**HAZARDS**	**CONTROL MEASURES**
	Noise	• 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.
1. Build forms. 2. Pour concrete. Remove forms.	Chemical hazards	• 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	• 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
3.	Concrete pumper	• Make sure nozzle man has eye contact with pump truck operator. • Ensure steady control over nozzle
	Splashing concrete	• 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	• 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

Project Identification 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 2015
Phase of Work Mobilization/ Demobilization		**Analysis Approved by** Spiro Dongaris
TASKS	**HAZARDS**	**CONTROL MEASURES**
	Sharp Objects	• 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
1. Build forms. 2. Pour concrete. 3. Remove forms.	Hand and power tool usage	• 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	• 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	• 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	• Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Temperature extremes.	• 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 38-23 28th Street	**Location** Long Island City, NY	**Estimated Dates** August-December 2015
Phase of Work Mobilization/ Demobilization		**Analysis Approved by** Spiro Dongaris
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Pressure wash or steam clean heavy equipment and vehicles.	Chemical hazards	• 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	• 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	• 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	• 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	• Maintain alertness to slip/trip/fall hazards • Maintain good housekeeping • Walk, do not run • Wear footwear with soles that grip
	Temperature extremes	• 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 Decont-amination	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.

- Maximum concentration of acetone found in soil is 0.061 ppm or 0.0000061%.
    - 5.0 mg/m^3 multiplied by 0.0000061 = 0.0000305 mg/m^3
    - OSHA PEL for acetone is 2,400 mg/m^3
- Maximum concentration of 4,4'-DDT found in soil is 0.0039 ppm or 0.00000039%.
    - 5.0 mg/m^3 multiplied by 0.00000039 = 0.00000195 mg/m^3
    - OSHA PEL for acetone is 1.0 mg/m^3
- Maximum concentration of lead found in soil is 94.9 ppm or 0.00949%.
    - 5.0 mg/m^3 multiplied by 0.000509 = 0.0004745mg/m^3
    - OSHA PEL for lead is 0.05 mg/m^3
- Maximum concentration of zinc found in soil is 129 ppm or 0.0129%.
    - 5.0 mg/m^3 multiplied by 0.0129 = 0.000645 mg/m^3
    - OSHA PEL for zinc has not been established.

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	• 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	• 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	• 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	• 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	• Materials at the site • Materials brought to the site	
Physical Hazards	• Fire/explosion • Slip/trip/fall • Electrocution	• Confined space • IDLH atmospheres • Excessive noise

Mechanical Hazards	• Heavy equipment • Stored energy system • Pinch points	• Electrical equipment • Vehicle traffic
Environmental Hazards	• Electrical Storms • High winds • Heavy Rain/Snow	• 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

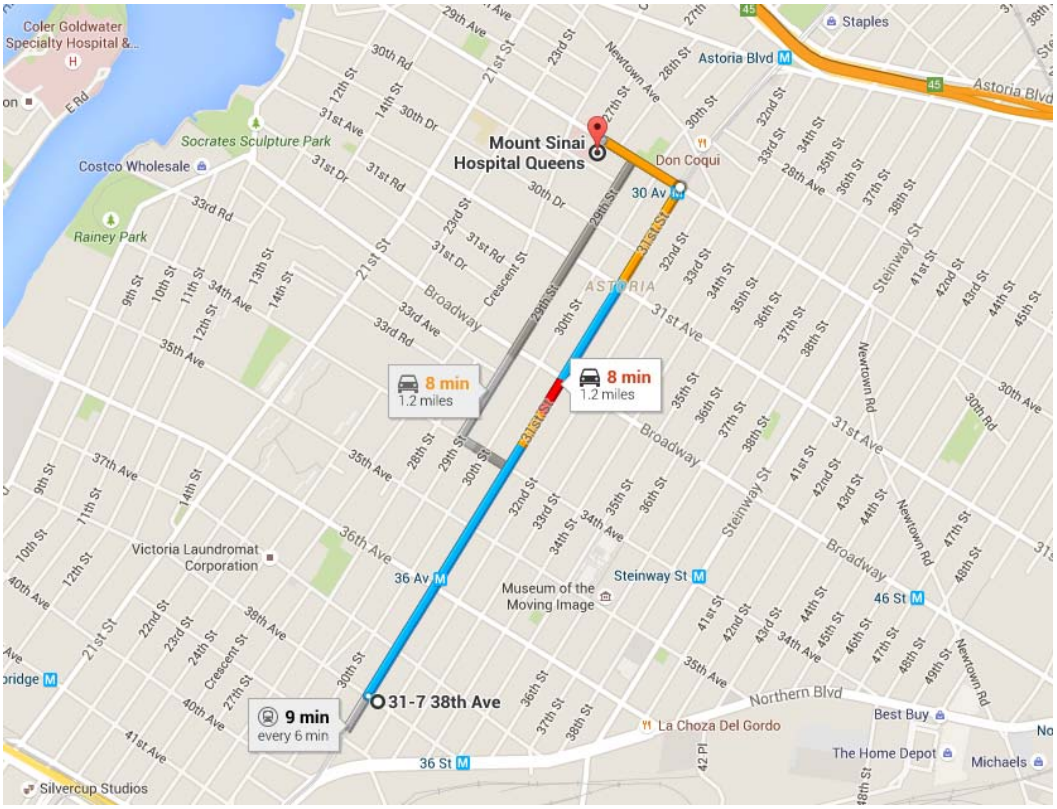
TABLE 9-1
EMERGENCY TELEPHONE NUMBERS
Emergency Medical Service……911
Police (NYPD):…… ……...911
Hospital (Mount Sinai Hospital of Queens)…….(718) 932-1000
Fire (FDNY)…… ……911
New York City Office of Emergency Management……....911
National Response Center…….……(800) 424-8802
Poison Control Center……...(800) 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: 31-07 38th Avenue
Hospital Location: Mount Sinai Hospital of Queens, 25-10 30th Avenue, Astoria, New York 11102
Information Line: (718) 932-1000

Steps	Maneuvers	Dist.
1	Head northwest on 38th Ave toward 31st St	108 feet
2	Turn right at the 1st cross street onto 31st St	1.1 miles
3	Turn left onto 30th Ave	0.2 miles
Total Est. Time: 8 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

• 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
  • 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)
	• 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***

HEALTH AND SAFETY PLAN CERTIFICATION

By signing this document, I am stating that I have read and understand the site health and safety plan for _____ (Contractor) personnel, subcontractors and visitors entering the site.

COMPANY NAME	NAME (PRINT)	SIGNATURE	DATE

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.

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

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

DAILY SAFETY REPORT

Date:	Site Name:	Site Location:

Time	Temp.	Wind Dir	Wind Spd	Conditions

Activity	PPE Worn

Time	Observations/Actions

Notes Taken By: _____

DAILY SAFETY REPORT

Date:	Site Name:	Site Location:

Time	Observations/Actions

AIR MONITORING RECORD

Site Name:	**Site Location:**	**Date:**

Time	**Respirable Particulates (mg/m^3)**	**Location**	**Activity**	**Init**

EQUIPMENT CALIBRATION RECORD

Site Name:	**Site Location:**

Date	Instrument	S/N	Battery	Zero	Init. Rdg.	Adjustments	Initials
	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			
	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			
	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			
	pDR-1500, Dusttrack or equivalent			Filter			

Calibration gases: 1. 100 ppm isobutylene, 2. 50% LEL methane, 3. 50 ppm CO, 4. 25 ppm H_2S

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:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

HSO: _____ _____ Const. Supt:
_____ **(Signature)**
(Signature)

APPENDIX 6

MANUFACTURER SPECIFICATIONS FOR VAPOR BARRIER SYSTEM

July 9, 2015

Michael Mandac
Athenica Environmental Services, Inc.
45-09 Greenpoint Ave
Long Island City, NY 11104

Dear Mr. Mandac,

I have reviewed the Remedial Investigation Report (Athenica Environmental Services) for the remediation/construction project located at 31-07 38th Avenue, Queens, NY and noted the contaminants specifically described on the following pages:

Table 2—VOCs in Soil Samples
Table 3—SVOCs in Soil Samples
Table 4—Pesticides and PCBs in Soil Samples
Table 5—TAL Metals in Soil Samples
Table 6—VOCs in Groundwater Samples
Table 7—SVOCs in Groundwater Samples
Table 8—PCBs and Pesticides in Groundwater Samples
Table 9—TAL Metals in Groundwater Samples
Table 10—Dissolved Metals in Groundwater Samples
Table 11—Sub-Slab Vapor and 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,

Erika Arens
Product Development Specialist
Engineered Films Division
Raven Industries, Inc.
(605) 357-0453
Erika.Arens@ravenind.com

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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	VBP20

APPLICATIONS

- Radon Barrier
- Methane Barrier
- VOC Barrier
- Under-Slab Vapor Retarder
- Foundation Wall Vapor Retarder

VaporBlock® Plus™
UNDERSLAB VAPOR RETARDER / GAS BARRIER

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VAPORBLOCK® PLUS™ VBP20

Under-Slab Vapor / Gas Barrier

PROPERTIES	TEST METHOD	VAPORBLOCK PLUS 20 IMPERIAL	VAPORBLOCK PLUS 20 METRIC
Appearance		White/Gold	
Thickness, Nominal		20 mil	0.51 mm
Weight		102 lbs/MSF	498 g/m²
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	0.0098 Perms grains/(ft²·hr·in·Hg)	0.0064 Perms g/(24hr·m²·mm Hg)
(after conditioning) Perms (same measurement as above permeance)	ASTM E 154 Section 8, E96 Section 11, E96 Section 12, E96 Section 13, E96	0.0079 0.0079 0.0097 0.0113	0.0052 0.0052 0.0064 0.0074
WVTR	ASTM E 96 Procedure B	0.0040 grains/hr-ft²	0.0028 gm/hr-m²
Radon Diffusion Coeffiecient	K124/02/95	< 1.1 x 10^{-13} m²/s	
Methane Permeance	ASTM D 1434	< 1.7 x 10^{-10} m²/d• atm 0.32 GTR (Gas Transmission Rate) ml/m²•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™ UNDERSLAB VAPOR RETARDER / GAS BARRIER

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, odor transmission, longevity 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. Limited Warranty available at www.RavenEFD.com

RAVEN INDUSTRIES

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Email: **efdsales@ravenind.com**
www.ravenefd.com
1/11 EFD 1125

Scan QR Code to download current technical data sheets via the Raven website.

APPENDIX 7

SPECIFICATIONS FOR SUB-SLAB DEPRESSURIZATION SYSTEM