GRANT engineering

139 Fulton St. | Suite 907 | New York, NY 10038
www.GRANTpllc.com

March 27, 2015

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

Re: VCP # 13CVCP155K
E-Designation # 13EHAZ341K
50 Greenpoint Avenue, Brooklyn, NY
Remedial Action Work Plan (RAWP) Stipulation List

Dear Mr. Chawla:

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

1. The criterion attached in **Appendix 1** will be utilized if additional petroleum containing tank or vessel is identified during the remedial action or subsequent redevelopment excavation activities. All petroleum spills will be reported to the NYSDEC hotline as required by applicable laws and regulations. This contingency plan is designed for heating oil tanks and other small or moderately sized storage vessels. If larger tanks, such as gasoline storage tanks are identified, OER will be notified before this criterion is utilized.

2. A pre-construction meeting is required prior to start of remedial excavation work at the site. A pre-construction meeting will be held at the site and will be attended by OER, the developer or developer representative, the consultant, excavation/general contractor, and if applicable, the soil broker.

3. Dewatering will be performed in full compliance with applicable laws, rules and regulations. Dewatering permit will be obtained from NYCDEP prior to construction activities.

4. A pre-approval letter from all disposal facilities will be provided to OER prior to any soil/fill material removal from the site. Documentation specified in the RAWP - Appendix 3 - Section 1.6 “Materials Disposal Off-Site” will be provided to OER. If a different disposal facility for the soil/fill material is selected, OER will be notified immediately.

5. Signage for the project will include a sturdy placard mounted in a publically accessible right of way to building and other permits signage will consist of the NYC VCP Information Sheet (attached **Appendix 2**) announcing the remedial action. The Information sheet will be laminated and permanently affixed to the placard.

6. If your site contains hazardous waste that will be excavated and disposed of offsite, OER can work with your development team to seek an exemption for your property from the $130/ton state Hazardous Waste Program Fee. To qualify for an exemption, your site must be enrolled in the city Voluntary Cleanup Program; hazardous waste must result from remedial action set forth in a cleanup plan approved by OER; and OER must oversee the cleanup. It is the applicant's responsibility to notify your OER Project Manager, copying supervising Project Manager and Shaminder Chawla, before hazardous waste is shipped from your site. Unless the Department of Environmental Conservation is notified before waste is shipped from your site, you may not receive an exemption from the fee. The exemption does not cover, and you remain liable for, the Special Assessment on Hazardous Waste (established by ECL§ 27-0923) which charges a fee of up to $27 per ton for hazardous waste generated that is due at the State Department of Taxation and Finance 30 days after the end of the quarter in which the waste was generated. **Appendix 3** includes additional information about the Exemption for Hazardous Waste Program Fee.

7. Collection and analysis of 5 end-point samples from the bottom of the excavation will be collected to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs. A map indicating end-point sampling locations is attached in **Appendix 4**. Samples will be analyzed for contaminants of concern VOCs, SVOCs, Metals, PCBs, and Pesticides.

8. OER requires parties seeking City Brownfield Incentive Grants to carry insurance. For a cleanup grant, both the excavator and the trucking firm(s) that handle removal of soil must carry or be covered under a commercial general liability (CGL) policy that provides $1 million per claim in coverage. OER recommends that excavators and truckers also carry contractor's pollution liability (CPL) coverage, also providing $1 million per claim in coverage. The CGL policy, and the CPL policy if obtained, must name the City of New York, the NYC Economic Development Corporation, and Brownfield Redevelopment Solutions as additional insured. For an investigation grant, an environmental consultant must be a qualified vendor in the BIG program and carry $1 million of professional liability (PL) coverage. A fact sheet regarding insurance is attached as **Appendix 5**.

9. Daily reports will be provided during active excavation work. If no work is performed for extended time period, daily report frequency will be reduced to weekly basis. Daily report template is attached in **Appendix 6.**

10. The Proposed development will include one (1) 7-story residential building constructed on the 15,600 square foot site. The main excavation for the basement of the proposed development will be limited to a footprint between 3,000 and 3,100 square feet, to a depth of 10 feet below grade (ft bg) and 15 ft bg in the area of the elevator pit. Two additional excavations will be advanced flanking each side of the main excavation to a depth of 4 ft bg and will total approximately between 2,500 and 3,000 square feet throughout the perimeter of the footings and grade beams located within the perimeter of the new building. Development plans are attached in **Appendix 7**.

11. **Appendix 8** includes design plans for an active Sub-Slab Depressurization System (SSDS) that will be installed beneath the foundation of the proposed slab on grade portion of the building. This area will be excavated to approximately 4 feet below grade. An SSDS will not be installed beneath the basement of the proposed building since excavation will occur to depths between 10 to 15 feet below grade. The groundwater table is present at depths of approximately 8 to 11 feet below grade and an SSDS beneath the basement will not effective if installed within groundwater;

12. A waterproof vapor barrier will be installed beneath the structure's slab and along foundation sidewalls. The barrier chosen for this project is manufactured by Grace and is identified as the Grace Preprufe 300R and 160R waterproofing product. This barrier will also act as waterproofing for the proposed building foundation that will be excavated to depths within the water table. **Appendix 9** provides manufactures specifications and PE/RA certified building plans with the extent of the vapor barrier installation details (penetrations, joints, etc.) with respect to the proposed foundation, footings, etc.

13. An engineered composite site cover will be placed over the entire portion of the Site that is not covered by the proposed building footprint. The composite cover system will be comprised of concrete foundation/slabs. Drawings of the composite site cover are provided as **Appendix 10.**

14. Track 4 SCOs are proposed for this project:

Contaminant	**Track 4 SCOs**
Total SVOCs	250 ppm
Lead	1200 ppm
Mercury	2.0 ppm
Barium	700 ppm

Sincerely,

Stephen Morse, PE, LEED AP O+M

Cc: Alysha Alfieri, NYCOER

Appendix 1

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

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

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

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

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

<u>Impacted Soil Excavation Methods</u>

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

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

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

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

- Wear appropriate health and safety equipment as outlined in the Health and Safety Plan.
- Prior to excavation, ensure that the area is clear of utility lines or other obstructions. Lay plastic sheeting on the ground next to the area to be excavated.
- Using a rubber-tired backhoe or track mounted excavator, remove overburden soils and stockpile, or dispose of, separate from the impacted soil.

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

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

Appendix 2
NYC VCP Signage

NYC Voluntary Cleanup Program

50 Greenpoint Avenue

Site #: 13CVCP155K

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

For more information,
log on to: www.nyc.gov/oer
Or scan with smart phone:

If you have questions or would like more information, please contact:
Shaminder Chawla at (212) 442-3007
or email us at brownfields@cityhall.nyc.gov

Appendix 3

Hazardous Waste Fee Exemption Fact Sheet

PlaNYC

NYC Office of Environmental Remediation

Exemption from the Hazardous Waste Program Fee

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

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

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

Process for obtaining a Hazardous Waste Program Fee exemption:

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

1. OER will prepare a Notice of Potential Generation after a soil test shows a site contains hazardous waste. To prepare this Notice, you must provide your OER project manager with:

   - the site's EPA generator ID number;
   - the date of the soil test confirming hazardous waste;
   - the amount of hazardous waste in tons that you anticipate shipping offsite; and
   - the anticipated dates for the start and completion of remediation.

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

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

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

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

For further information, please contact:

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

or

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

Office of Environmental Remediation

Exemption from the Hazardous Waste Program Fee

Ongoing Obligations:

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

- File a Hazardous Waste Annual Report with DEC by March 1 of each year if your site generated 15 tons of hazardous waste or more in the relevant calendar year. For details, see http://www.dec.ny.gov/chemical/8770.html To set forth the basis for an exemption from the Hazardous Waste Program Fee, put an X in the Exempt Remedial box in Box H of Section 1 of the Waste Generation and Management (GM) form and in the Comments Box (at the bottom of the form) include "New York City Voluntary Cleanup Program, VCP Site Number_____}"; and

- Make quarterly payments of the Special Assessment on Hazardous Waste to the state Department of Taxation and Finance. For details see: http://www.tax.ny.gov/bus/haz/hzrdwste.htm

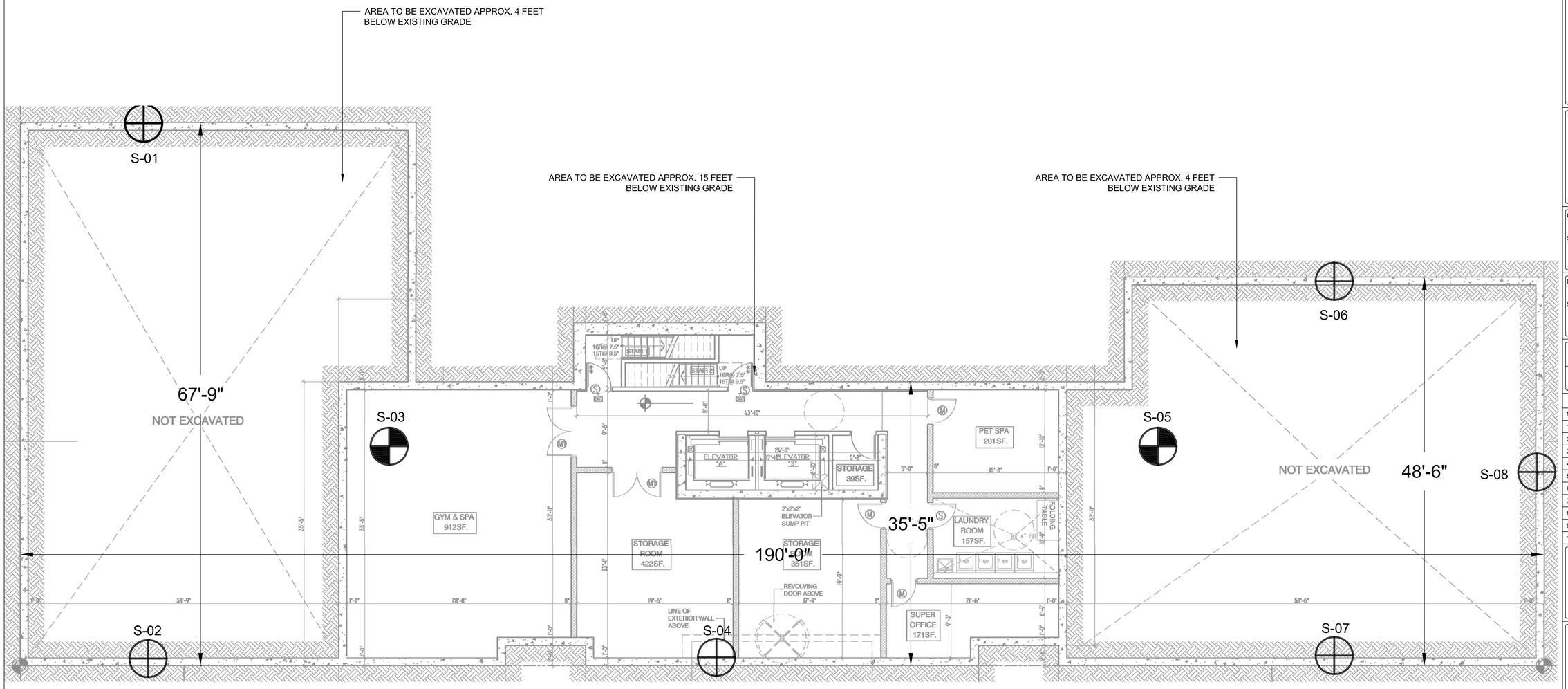
Appendix 4

End-Point Sampling Map

LEGEND

SIDEWALL END POINT SAMPLE

BOTTOM END POINT SAMPLE



1 PLAN VIEW
N.T.S.

NOTES

Removal actions under this plan will be performed in conjunction with confirmation end-point sampling as per the Remedial Action Work Plan, dated July 31, 2013. Post-excavation end-point sampling and testing will be performed promptly following materials removal and completed prior to Site development activities. To evaluate attainment of Track 4 Site-Specific SCOs, samples will be collected and analyzed for trigger compounds and elements established on the Track 4 Site-Specific SCO list. The approximate collection location of the six endpoint soil samples is shown on the figure. The end-point sampling and testing will be performed promptly following excavation and will be completed prior to any Site development activities. In addition, hotspot removal actions will be performed in conjunction with remedial end point sampling at a frequency which will consist of the following:

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 6-inch interval at the excavation floor. Samples taken after 24 hours should be taken at 6 to 12 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 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 towards locations and depths of the highest expected contamination. New York State ELAP certified labs will be used for all end-point sample analyses. Labs for 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.

End-point samples will be analyzed for trigger analytes (those for which SCO exceedances are identified 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/Herbicides/PCBs by EPA Method 8081/8321/8082.

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

GRANT engineering

REGISTERED DESIGN PROFESSIONAL OF RECORD
STEPHEN A. MORSE
OF
GRANT engineering
139 FULTON ST, SUITE 907
NEW YORK, NY
WET INK SIGNATURE AND STAMP

X

REGISTERED DESIGN PROFESSIONALS

OWNER'S NAME:
PINE BUILDERS CORP
STREET ADDRESS:
1339-41 PROSPECT AVE
BROOKLYN, NY 11218

PROJECT NAME:
50 GREENPOINT AVE
STREET ADDRESS:
50 GREENPOINT AVE
BROOKLYN, NY 11222

BOROUGH	BLOCK No.
BROOKLYN	2652
LOT No.	DATE OF ORIGINAL
1	MARCH 27, 2015

APPROVED REVISIONS

No.	DESCRIPTION	APPROVED BY	DATE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

DOB BSCAN STICKER

DOB EMPLOYEE STAMP AND SIGNATURE

DRAWING TITLE
END POINT SAMPLING PLAN

DOB BUILDING PLAN IDENTIFICATION NUMBER
ENV-003.00

ALT 1 / NB APPLICATION No.

Appendix 5

BIG Program Insurance Fact Sheet

FACT SHEET – BIG PROGRAM INSURANCE REQUIREMENTS

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

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

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

- Its general contractor or excavation/foundation contractor hired to perform remedial work must maintain Commercial General Liability (CGL) insurance of at least $1M per occurrence and $2M in the general aggregate. It is recommended that the general contractor or excavation/foundation contractor also maintain a Contractors Pollution Liability policy (CPL) of at least $1M per occurrence.

- Its subcontractors who are hired by the general contractor etc. to perform remedial work at a site, including soil brokers and truckers, must also maintain a CGL policy in the amount and with the terms set forth above. It is recommended that subcontractors also maintain a CPL policy in the amount and with the terms set forth above.

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

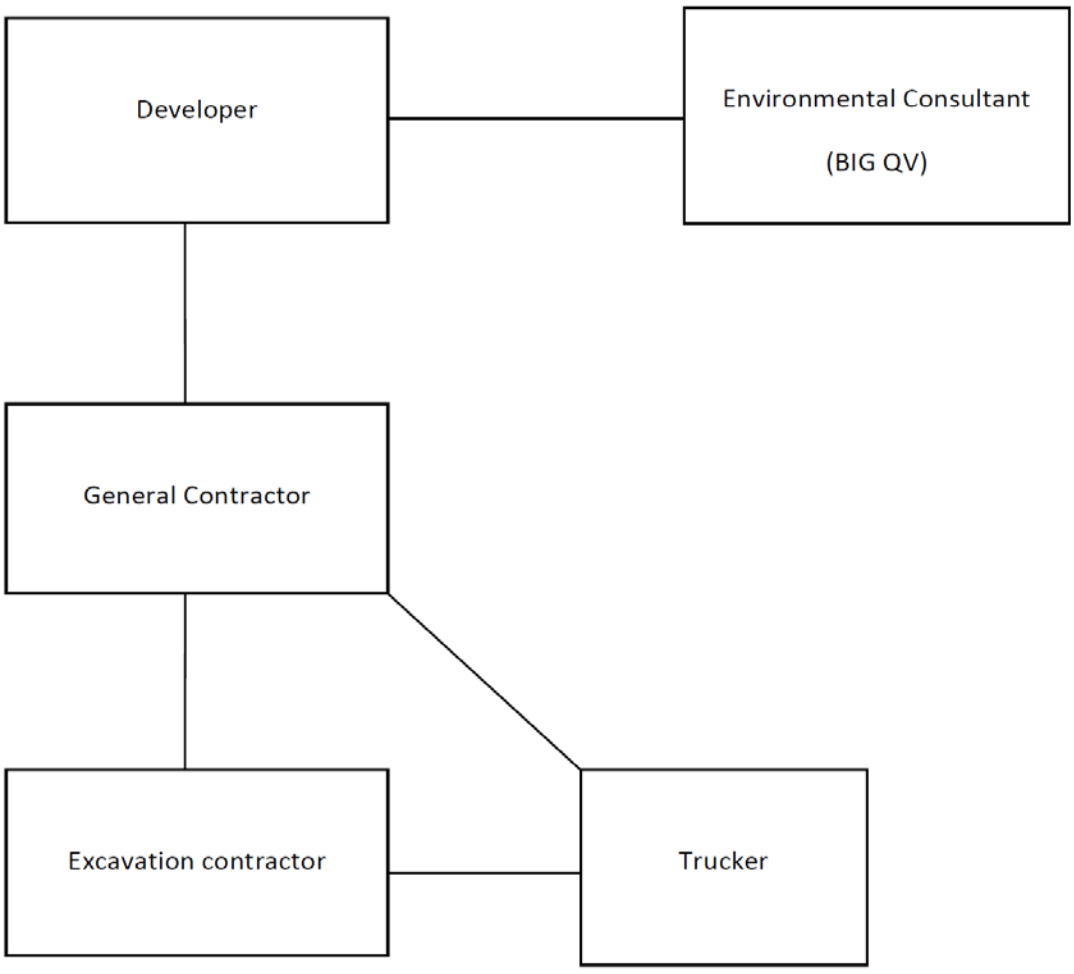
- Its environmental consultant(s) hired to oversee the cleanup must be:
  a. a BIG Qualifed Vendor; and
  b. maintain Professional Liability (PL) insurance of $1M per claim and annual aggregate.

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

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

Example of Contractual Relationships for Cleanup Work

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



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

BIG Program Additional Insureds

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

"City and its officials and employees"
New York City Mayor's Office of Environmental Remediation
253 Broadway, 14th Floor
New York, NY 10007

"NYC EDC and its officials and employees"
New York City Economic Development Corporation
110 William Street
New York, NY 10038

"BIG Grant Administrator and its officials and employees"
Brownfield Redevelopment Solutions, Inc.
739 Stokes Road, Units A & B
Medford, NJ 08055

Appendix 6
Daily Report Template

Office of Environmental Remediation

Daily Status Report Template

Version 1.3

Generic Template for Daily Status Report

Instructions

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

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

Daily Status Reports

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

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

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

DAILY STATUS REPORT

Prepared By: Enter Your Name Here

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

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

Consultant: Person(s) Name and Company Name	Safety Officer: Person(s) Name and Company Name
General Contractor: Person(s) Name and Company Name	Site Manager/ Supervisor: Person(s) Name and Company Name
Work Activities Performed (Since Last Report): Provide details about the work activities performed.	
Working In Grid #: A1, B1, C1	

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

Air Monitoring (Since Last Report): No air monitoring performed or provide details
Problems Encountered: No problems encountered or provide details
Planned Activities for the Next Day/ Week: Provide details about the work activities planned for the next day/ week.

Example:

Facility # **Name/ Location** **Type of Waste** **Solid <u>Or</u> Liquid**	Facility # Name Location Type of Waste Solid *<u>Or</u>* Liquid	Facility # Name Location Type of Waste Solid *<u>Or</u>* Liquid	Facility # Name Location Type of Waste Solid *<u>Or</u>* Liquid	Facility # Name Location Type of Waste Solid *<u>Or</u>* Liquid	# # # # # # # Clean Earth Carteret, NJ petroleum soils Solid

(Trucks, Cu.Yds. <u>Or</u> Gallons)	Trucks	Cu. Yds. *Or* Gallons	Trucks	Cu. Yds. *Or* Gallons	Trucks	Cu. Yds. *Or* Gallons	Trucks	Cu. Yds. *Or* Gallons	Trucks	Cu. Yds.
Today									5	120
Total									25	600

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

<u>Site Grid Map</u>

Insert the site grid map here

Photo Log

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

Photo 3 – provide a caption	Insert Photo Here – Photo of the work activities performed

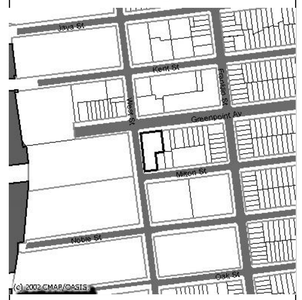
Appendix 7
Redevelopment Plans

RESIDENTIAL DEVELOPMENT

50 GREENPOINT AVENUE/74-88 WEST STREET, BROOKLYN, NEW YORK 11222

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

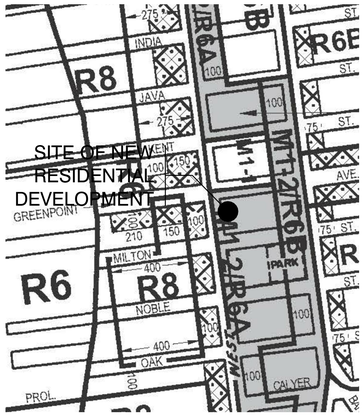
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
TITTLE SHEET

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. T-001.01
checked K.F.	



1 Z-001 ZONING MAP 12C NTS


EAST RIVER
BOROUGH OF QUEENS
BOROUGH OF BROOKLYN
MX-8
M1-2/R6B
M1-1
M3-1
R8
R7-2
R6
R6A
R6B
C1-8
C6-4A
C6-2A
C6-2
C4-4A
C4-4
C4-3
C4-2
C4-2A
C2-4
C1-6
C1-6A
C1-5
C1-4
C1-3
C1-2
C1-1
C6-1
C6-1A
C6-2M
C6-2G
C6-2H
C6-3
C6-3A
C6-3D
C6-3X
C6-4
C6-4M
C6-4X
C6-5
C6-5A
C6-5M
C6-6
C6-7
C6-7T
C6-9
C8-1
C8-2
C8-3
C8-4
C8-4A
C8-5
C8-8
C8-9
M1-2
M1-4
M1-5
M1-5A
M1-5B
M1-5M
M1-6
M1-6D
M1-6M
M2-1
M2-2
M3-2
M3-2A
M4-1
M4-2
M4-2/R6A
M4-2/R6B
M4-2A
M4-2A/R6A
M4-2A/R6B
M4-3
M4-3A
M4-3A/R6A
M4-3A/R6B
M4-3A/R7-2
M4-3A/R7A
M4-3A/R7X
M4-3A/R8
M4-3A/R8A
M4-3A/R8B
M4-3A/R8X
M4-3A/R9
M4-3A/R9A
M4-3A/R9X
M4-3A/R10
M4-3A/R10A
M4-3A/R10X
M4-3A/C6-2A
M4-3A/C6-3A
M4-3A/C6-4A
M4-3A/C6-4X
M4-3A/C8-2
M4-3A/C8-3
M4-3A/C8-4
M4-3A/C8-5
M4-3A/C8-8
M4-3A/C8-9
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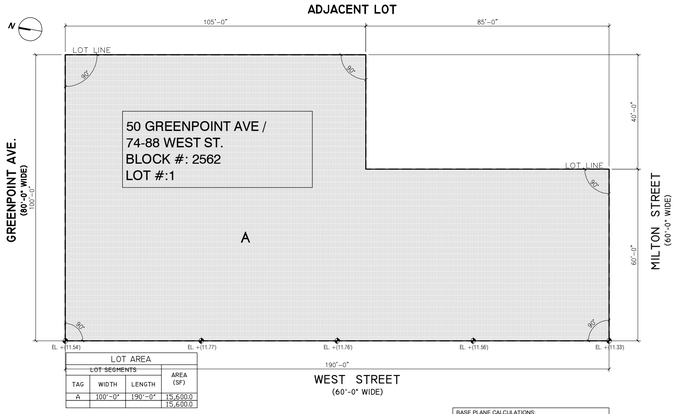
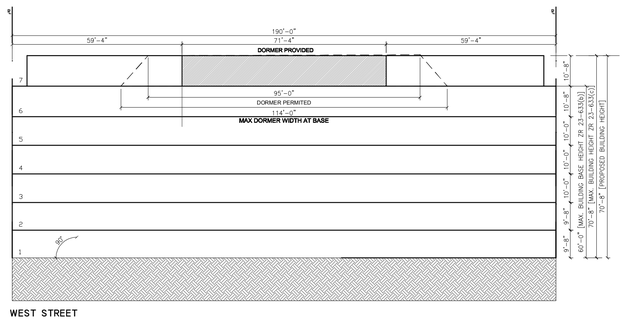


LOT AREA			
LOT SEGMENTS			
TAG	WIDTH	LENGTH	AREA (SF)
A	100'-0"	190'-0"	15,600.0
			15,600.0

BASE PLANE CALCULATIONS:

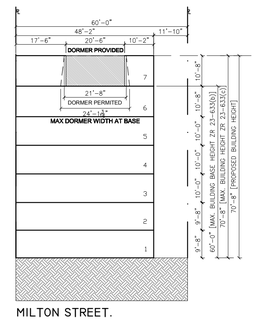
(11.54' + 11.77' + 11.76' + 11.56' + 11.40')/5
Base plane = 11.60' or 11'-7 1/4"

1 Z-002 LOT AREA CALCULATION DIAGRAM
1"=25'-0"



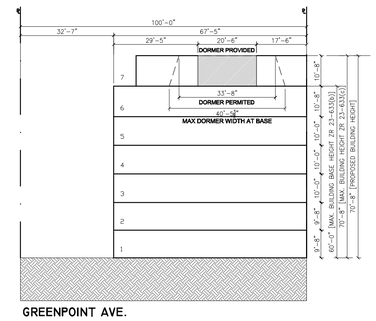
DORMER CALCULATIONS:

Total street wall = 190'
60% of 190' = 114.00'
Height above permitted base = 10.0' = 10%
10% of 190' = 19.00'
114.00' - 19.00' = 95.00'
Permitted @ 7th floor = 95'-0"
Dormer provided = 71'-4" - Complies



DORMER CALCULATIONS:

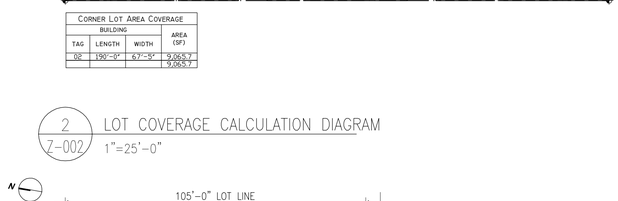
Total street wall = 48'-2"
60% of 48.17' = 24.10'
Height above permitted base = 10.0' = 10%
10% of 24.10' = 2.40'
24.10' - 2.40' = 21.70'
Permitted @ 7th floor = 21'-8"
Dormer provided = 20'-6" - Complies



DORMER CALCULATIONS:

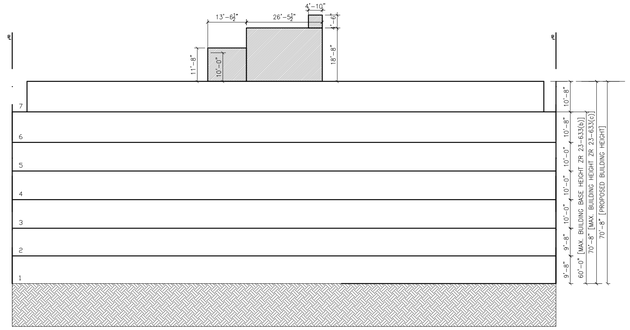
Total street wall = 67'-5"
60% of 67.42' = 40.45'
Height above permitted base = 10.0' = 10%
10% of 67.42' = 6.75'
40.45' - 6.75' = 33.70'
Permitted @ 7th floor = 33'-8"
Dormer provided = 21'-0" - Complies

4 Z-002 DORMER CALCULATION DIAGRAM
1"=25'-0"



CORNER LOT AREA COVERAGE			
BUILDING			
TAG	LENGTH	WIDTH	AREA (SF)
02	190'-0"	67'-5"	9,063.7
			9,063.7

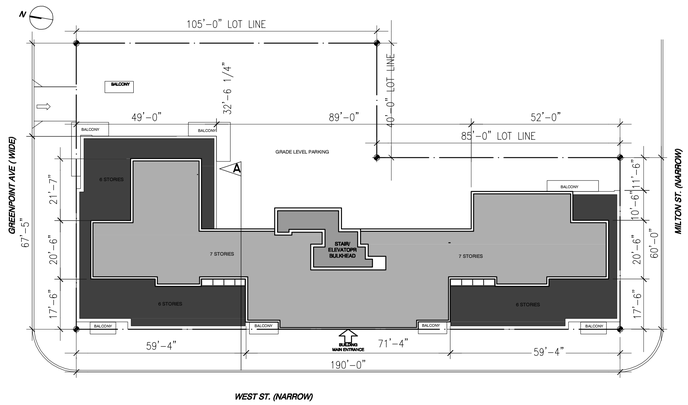
2 Z-002 LOT COVERAGE CALCULATION DIAGRAM
1"=25'-0"



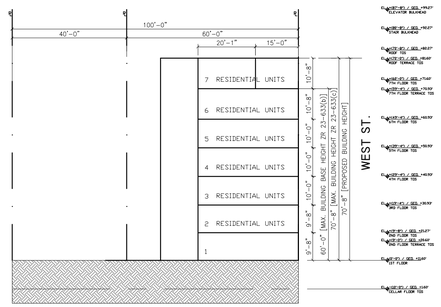
BULKHEAD CALCULATIONS:

Wall width = 190'-0"
Max allowed bulkhead obstruction = 190' x 8 = 1,520 sf
Bulkhead obstruction = 673.5 SF COMPLIES

5 Z-002 BULKHEAD CALCULATION DIAGRAM
1"=25'-0"



3 Z-002 SITE PLAN
1"=25'-0"



SECTION A

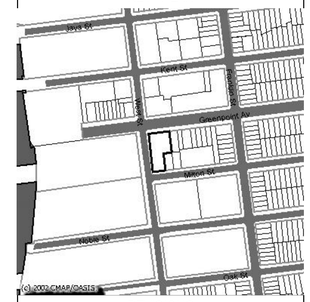
DORMER CALCULATIONS:

Total street wall = 67'-5"
60% of 67.42' = 40.45'
Height above permitted base = 10.0' = 10%
10% of 67.42' = 6.75'
40.45' - 6.75' = 33.70'
Permitted @ 7th floor = 33'-8"
Dormer provided = 21'-0" - Complies

6 Z-002 BUILDING SECTION DIAGRAM
1"=25'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
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WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ZONING ANALYSIS

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. Z-002.01
checked K.F.	

NYC Buildings

ZRD1: Zoning Resolution Determination Form

Orient and affix BIS job number label here

Must be typewritten.

1 Location Information *Required for all requests on filed applications.*

House No(s) 50 Street Name GREENPOINT AVENUE

Borough BROOKLYN Block 2562 Lot 1 BIN 3817230 CB No. 31

2 Applicant Information *Required for all requests on filed applications.*

Last Name FISCHER First Name KARL Middle Initial

Business Name KARL FISCHER, ARCHITECT Business Telephone (212) 219-9733

Business Address 530 BROADWAY, 9TH FLOOR Business Fax (212) 219-8980

City NEW YORK State NY Zip 10012 Mobile Telephone

E-Mail KARL@KFARCHITECT.COM License Number 021282

License Type ☐ P.E. ☒ R.A. **DOB PENS ID # (if available)**

3 Attendee Information *Required if different from Applicant in section 2 or no Applicant.*

Relationship to the property: ☒ Filing Representative ☐ Attorney ☐ Other:

Last Name GOLDZAL First Name JOEY Middle Initial

Business Name JM ZONING Business Telephone (212) 964-4464

Business Address 299 BROADWAY Business Fax

City NEW YORK State NY Zip 10007 Mobile Telephone

E-Mail JOEY@JMZONING.COM License/Registration # (if P.E./R.A./Attorney)

DOB PENS ID # (if available) G41049

4 Nature of Request *Required for all requests. Only **one** request may be submitted per form.*

Note: Use this form only to request Zoning Resolution determination (for all other requests, use CCD1 form)

Determination request issued to: ☒ Borough Commissioner's Office ☐ Technical Affairs

Job associated with this request? ☐ Yes (provide job#/doc#/examiner name below) ☒ No

Job Number:_____ Document Number:_____ Examiner:_____

Has this request been previously denied? ☐ Yes ***(attach all denied request form(s) and attachment(s))*** ☐ No

Indicate total number of pages submitted with this request, including attachments: ***(attachment may not be larger than 11" x 17")***

Indicate relevant Zoning Resolution section(s): ZR 12-10 COURTS, ZR 23-84, ZR 23-85

Indicate all Buildings Department officials that you have previously reviewed this issue with (if any):

☐ Borough Commissioner ☐ Code & Zoning Specialist ☐ General Counsel's Office

☐ Deputy Borough Commissioner ☐ Chief Plan Examiner ☐ Other:

ADMINISTRATIVE USE ONLY

Reference #: Appointment date: Appointment time:

Appointment Scheduled With:

Comments:

Reviewed By: Date Time:

REVIEWED BY
David Aigner
Senior Zoning Specialist
Buildings
APPROVED
Control No.: 37007
Date: 12/8/14
Page: 1 of 5

6/09

ZRD1 PAGE 2

5 Description of Request (additional space is available on page 3)

Note: Buildings Department officials will only interpret or clarify the Zoning Resolution. Any request for variations of the Zoning Resolution must be filed with the Board of Standards and Appeals (BSA) or the Department of City Planning (DCP).

Please itemize all attachments, including plans/sketches, submitted with this form. If request is based on a plan examiner objection, type in the applicable objection text exactly as it appears on the objection sheet.

THE ABOVE REFERENCED BUILDING IS A PROPOSED 7 STORY RESIDENTIAL BUILDING. THE PROPOSED PROPERTY IS SUBJECT TO CORNER LOT REGULATIONS AS THE LOT IS LOCATED WITHIN 100 FEET OF A CORNER

ZR 12-10 DEFINITION OF COURTS

Court (12/15/61)
A "court" is either an #inner court# or an #outer court#.

Court, inner (12/15/61)
An "inner court" is any open area, other than a #yard# or portion thereof, which is unobstructed from its lowest level to the sky and which is bounded by either:
(a) #building# walls; or
(b) #building# walls and one or more #lot lines# other than a #front lot line#; or
(c) #building# walls, except for one opening on any open area along a #side lot line# or #rear lot line# which has a width of less than 30 feet at any point.

Court, outer (12/15/61)
An "outer court" is any open area, other than a #yard# or portion thereof, which is unobstructed from its lowest level to the sky and which, except for one opening upon:
(a) a #front lot line#;
(b) a #front yard#;
(c) a #rear yard#; or
(d) any open area along a #rear lot line#, or along a #side lot line# having a width or depth of at least 30 feet, and which open area extends along the entire length of such #rear# or #side lot line#; and is bounded by either #building# walls, or #building# walls and one or more #lot lines# other than a #front lot line#.

THERE IS A PROPOSED OPEN SPACE ON THE PROPERTY ADJACENT TO A SIDE YARD. THIS OPEN SPACE (AS INDICATED ON THE ENCLOSED SKETCH) DOES NOT MEET THE DEFINITION OF AN INNER OR OUTER COURT AS PER ZR 12-10 (SEE ABOVE). THIS OPEN SPACE DOES NOT PROVIDE ANY REQUIRED LIGHT AND AIR FOR THE PROPOSED RESIDENTIAL UNITS.

PLEASE AFFIRM THAT BASED ON THIS, THIS OPEN SPACE DOES NOT NEED TO COMPLY WITH ZR 23-84 AND ZR 23-85 (OUTER AND INNER COURT REGULATIONS). PLEASE ACCEPT AS OPEN SPACE WITH DIMENSIONS PROVIDED ON THE ENCLOSED PLAN.

Note: Buildings Department Determination will be issued on the ZRD1 Response Form

ADMINISTRATIVE USE ONLY

Reviewed By: Date: Time:

REVIEWED BY
David Aigner
Senior Zoning Specialist
Buildings
APPROVED
Control No.: 37007
Date: 12/8/14
Page: 2 of 5

6/09

ZRD1 PAGE 3

6 Description of Request (use this section if additional space is required for description)

Note: Buildings Department Determination will be issued on the ZRD1 Response Form

7 Statements and Signature *Required for all requests*

I hereby state that all of the above information is correct and complete to the best of my knowledge. Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both. It is unlawful to give to a City employee, or for a City employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine, or both.

Name (please print) KARL FISCHER

Signature Date

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

P.E. / R.A. Seal *(Affix seal, signature and date over seal – not required for Attorneys on initial applications)*

ADMINISTRATIVE USE ONLY

Reviewed By: Date Time:

REVIEWED BY
David Aigner
Senior Zoning Specialist
Buildings
APPROVED
Control No.: 37007
Date: 12/8/14
Page: 3 of 5

6/09

ZRD1/CCD1 Response Form

Location Information (To be completed by a Buildings Department official if applicable)

House No(s) 50 Street Name Greenpoint Avenue

Borough Brooklyn Block 2562 Lot 1 BIN 3817230 Job No.

DETERMINATION (To be completed by a Buildings Department official)

Request has been: ☑ Approved ☐ Denied ☐ Approved with conditions

Follow-up appointment required? ☐ Yes ☑ No

Primary Zoning Resolution or Code Section(s): ZR 12-10 "court, inner", "court, outer"

Other secondary Zoning Resolution or Code Section(s):

Comments:

The request, to determine that an open area created to the rear of a proposed residential building as shown, is not subject to court regulations, is hereby approved.

Because the subject open area opens upon a non-required open area toward the center of the zoning lot, such area cannot be described within ZR 12-10 "court, inner" nor "court, outer" which do not account for such an opening. Thus, court requirements are not applicable and the request is approved.

Note: If determination is not uploaded via eSubmit or scanned (whichever is applicable), it will be deemed invalid.

REVIEWED BY
David Aigner
Senior Zoning Specialist
Buildings
APPROVED
Control No.: 37007
Date: 12/8/14
Page: 4 of 5

Name of Authorized Reviewer (please print): David J. Aigner

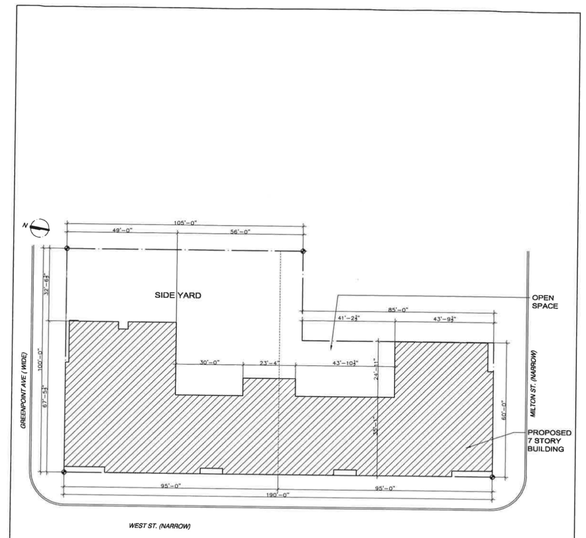
Title (please print): Senior Zoning Specialist (on behalf of NYC Development Hub)

Authorized Signature: Date: Time:

Issuers: write signature, date, and time on each page of the request forms; and attach this form .

Note: Determination will expire if construction document approval is not obtained within 12 months of issuance.

6/09



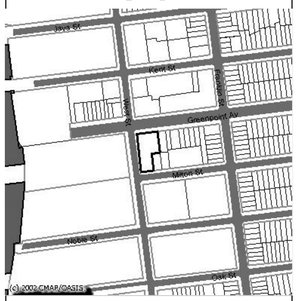
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

REVIEWED BY
David Aigner
Senior Zoning Specialist
APPROVED
Control No.: 37007
Date: 12/8/14
Page: 5 of 5

KARL FISCHER ARCHITECTE OAQ OAA RAIC AIA	GREENPOINT RESIDENTIAL PROJECT 50 GREENPOINT AVE, BROOKLYN PROJET #: 06-71/14-41	DATE: 2014-10-07	ECHELLE: 1/32"=1'-0"
		TITRE:	REVISION: SK-01

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

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2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
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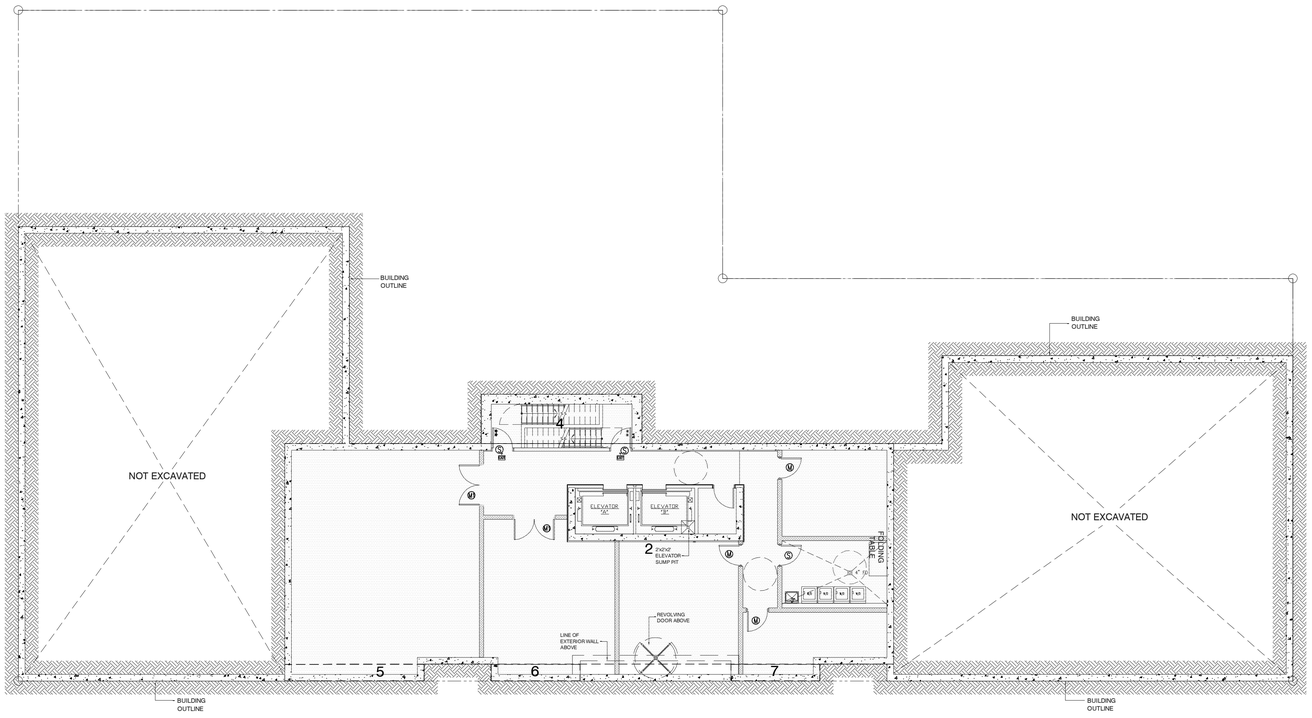
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

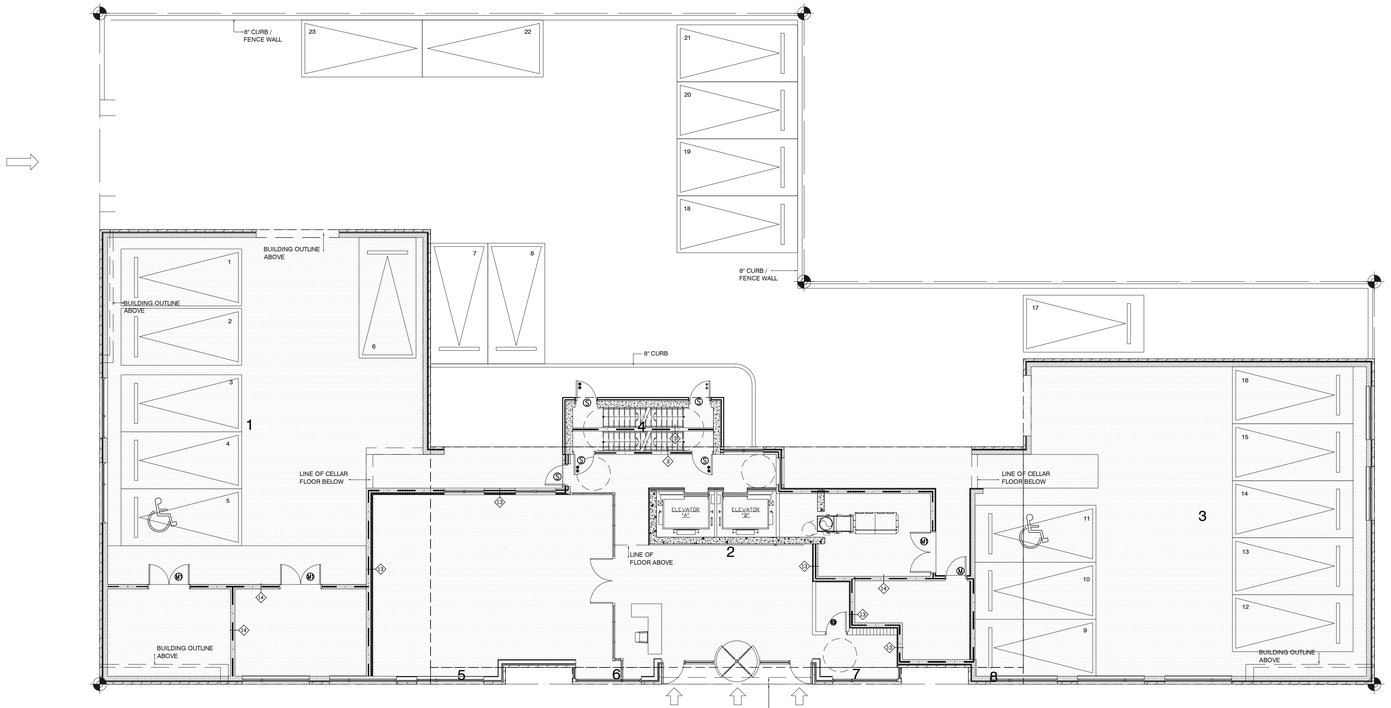
drawing title
ZONING ANALYSIS

scale	NTS	project no.	06-71 / 14-41
date	12/17/2014	revision no.	0
drawn	.	drawing no.	Z-003.01
checked	K.F.		



GROSS AREA CALCULATION			
FLOOR AREA			AREA (S.F.)
TAG	LENGTH	WIDTH	
2	32'-11"	90'-9 3/8"	2,986.9
4	7'-4 1/2"	24'-0"	176.2
5	2'-5 3/4"	20'-9 1/8"	51.5
6	2'-5 3/4"	13'-3 1/2"	32.9
7	2'-5 3/4"	13'-3 1/2"	32.9
			3,280.3

2 CELLAR GROSS AREA DIAGRAM
3/32"=1'-0"



GROSS AREA CALCULATION			
FLOOR AREA			AREA (S.F.)
TAG	LENGTH	WIDTH	
1	67'-9"	49'-4"	3,342.7
2	32'-10 3/8"	88'-4"	2,907.0
3	48'-6 1/4"	52'-4"	2,538.7
4	7'-4 1/2"	24'-0"	176.2
5	2'-5 3/4"	11'-1 1/8"	27.7
6	2'-5 3/4"	13'-3 1/2"	32.9
7	2'-5 3/4"	13'-3 1/2"	32.9
8	2'-5 3/4"	8'-2"	20.3
			9,078.3

1 GROUND FLOOR GROSS AREA DIAGRAM
3/32"=1'-0"

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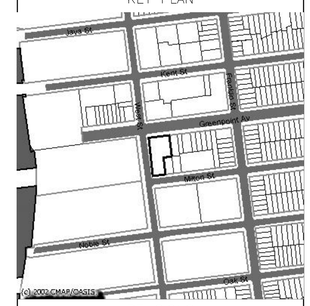
KEY PLAN



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MEP ENGINEER:

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project title
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RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ZONING ANALYSIS
GROSS FLOOR AREA

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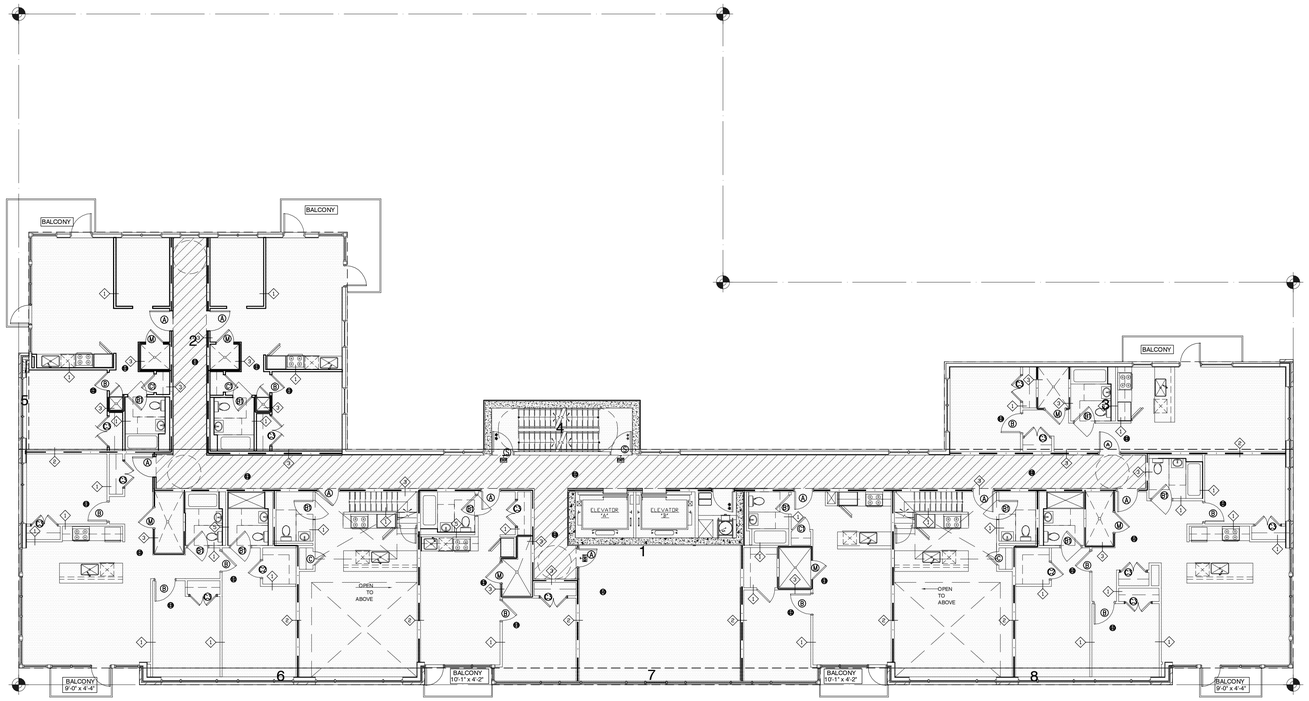
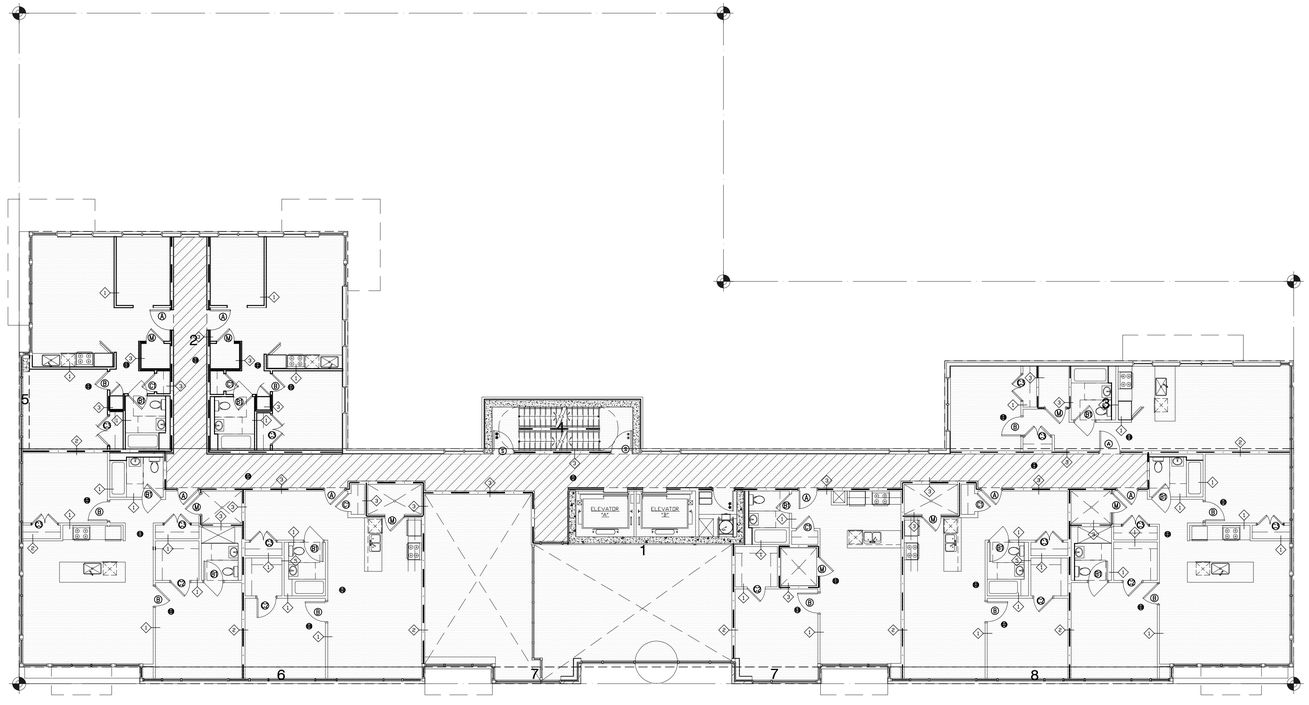


GROSS AREA CALCULATION			
FLOOR AREA			AREA (S.F.)
TAG	LENGTH	WIDTH	
1	32'-7"	190'-0"	6,190.8
2	32'-4 ½"	47'-6"	1,537.7
3	13'-1"	52'-0"	680.3
4	7'-4"	23'-4"	171.1
5	14'-4 ½"	1'-6"	21.6
6	2'-6"	42'-6"	106.2
7	2'-6"	49'-0"	122.5
8	2'-6"	42'-6"	106.2
			8,936.4

2 3RD TO 6TH FLOOR GROSS AREA DIAGRAM
3/32"=1'-0"



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FLOOR AREA			AREA (S.F.)
TAG	LENGTH	WIDTH	
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4	7'-4"	23'-4"	171.1
5	14'-4 ½"	1'-6"	21.6
6	2'-6"	42'-6"	106.2
7	2'-6"	13'-3"	33.1
7	2'-6"	13'-3"	33.1
8	2'-6"	42'-6"	106.2
			8,880.1

GREENPOINT AVE. (WIDE)

MILTON ST. (NARROW)

1 2ND FLOOR GROSS AREA DIAGRAM
3/32"=1'-0"

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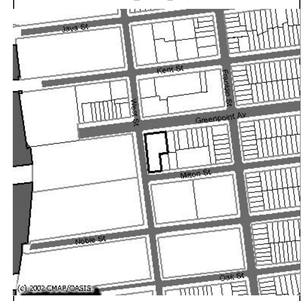
KEY PLAN



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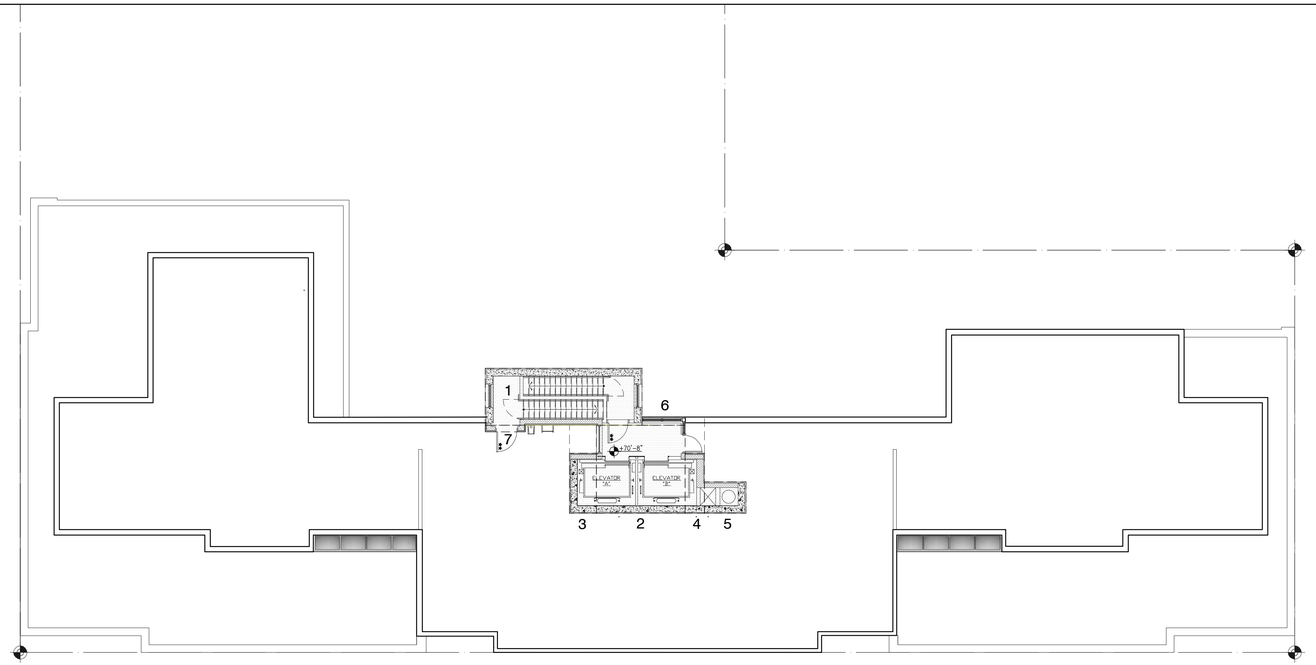
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ZONING ANALYSIS
GROSS FLOOR AREA

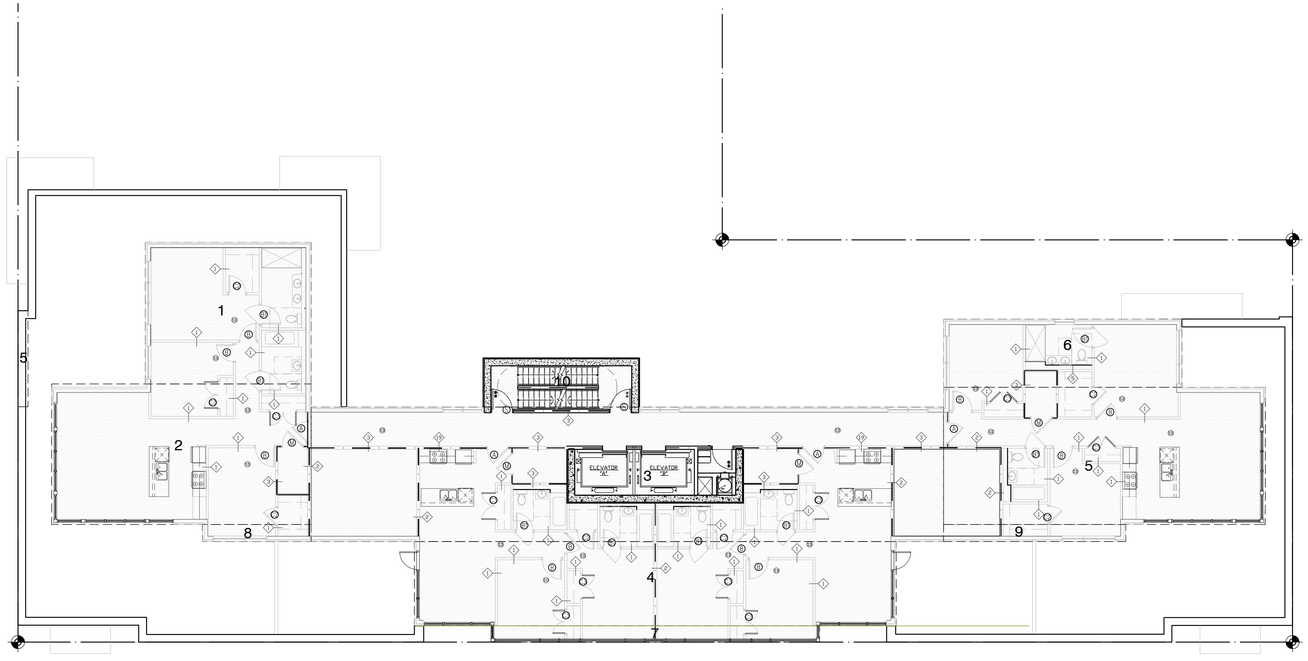
scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. Z-005.01
checked K.F.	



MILTON ST. (NARROW)

GROSS AREA CALCULATION			
FLOOR AREA			AREA (S.F.)
TAG	LENGTH	WIDTH	
1	8'-6"	23'-4"	198.3
2	13'-2"	13'-2 3/4"	174.2
3	8'-11 1/2"	4'-0 1/4"	36.0
4	8'-11 3/8"	2'-10 1/2"	25.7
5	4'-8 3/8"	6'-2"	29.0
6	1'-2 1/4"	6'-5 1/2"	7.7
7	1'-0"	5'-11 3/8"	6.0
			476.9

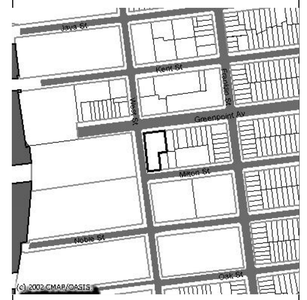
2 BULKHEAD GROSS AREA DIAGRAM
3/32"=1'-0"



GROSS AREA CALCULATION			
FLOOR AREA			AREA (S.F.)
TAG	LENGTH	WIDTH	
1	21'-1 1/4"	24'-8 1/2"	521.5
2	21'-0"	38'-8 1/4"	812.4
3	20'-0 3/4"	94'-3 3/8"	1,891.4
4	12'-6 3/4"	71'-9 3/4"	901.9
5	20'-6"	47'-11 1/2"	982.6
6	10'-1 3/4"	35'-6"	359.8
7	2'-5 3/8"	49'-0"	119.7
8	2'-6 1/2"	16'-2 1/2"	40.9
9	2'-6 1/2"	27'-1 7/8"	68.5
10	7'-4"	23'-4"	171.1
			5,869.7

1 7TH FLOOR GROSS AREA DIAGRAM
3/32"=1'-0"

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
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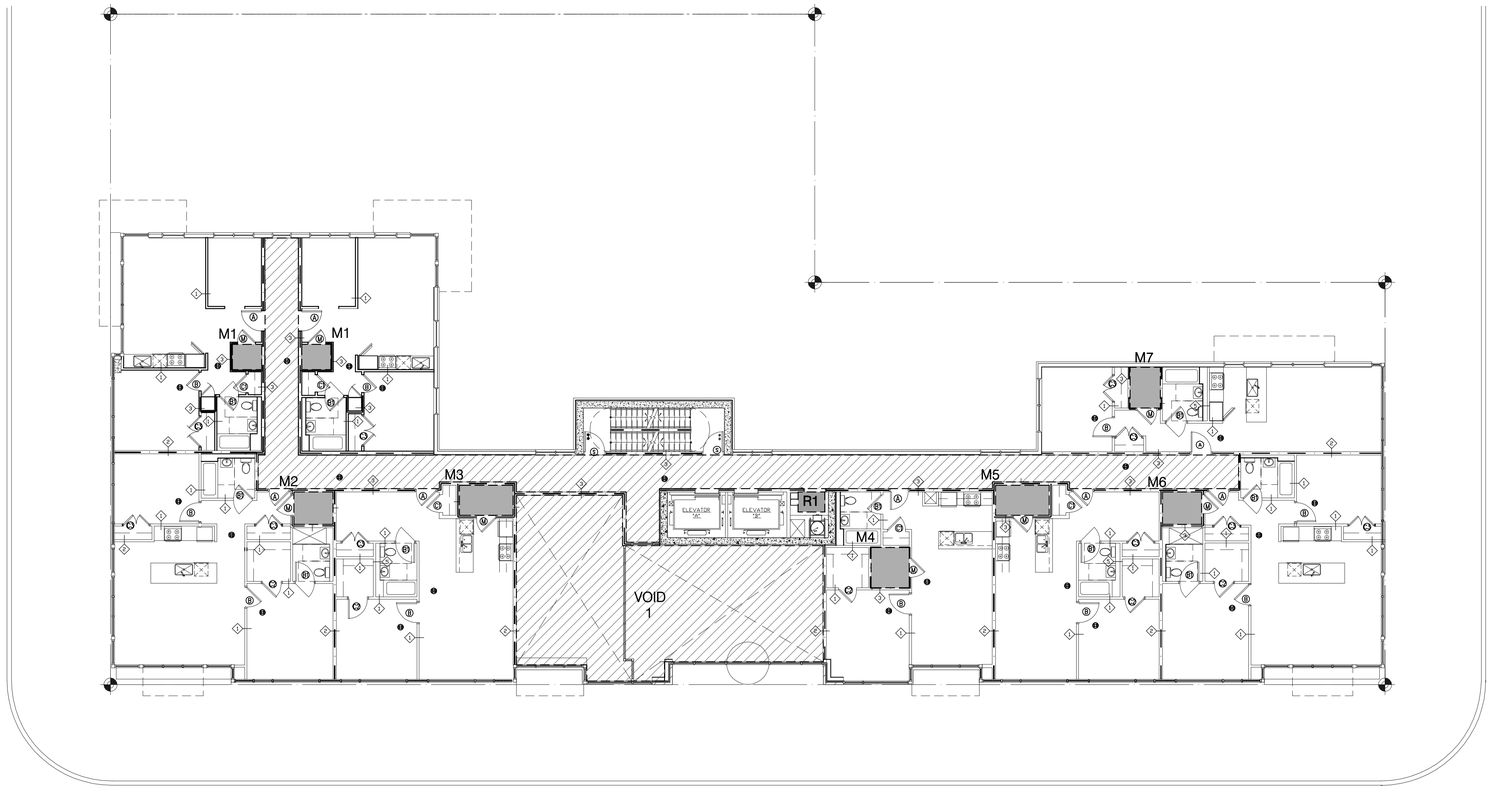


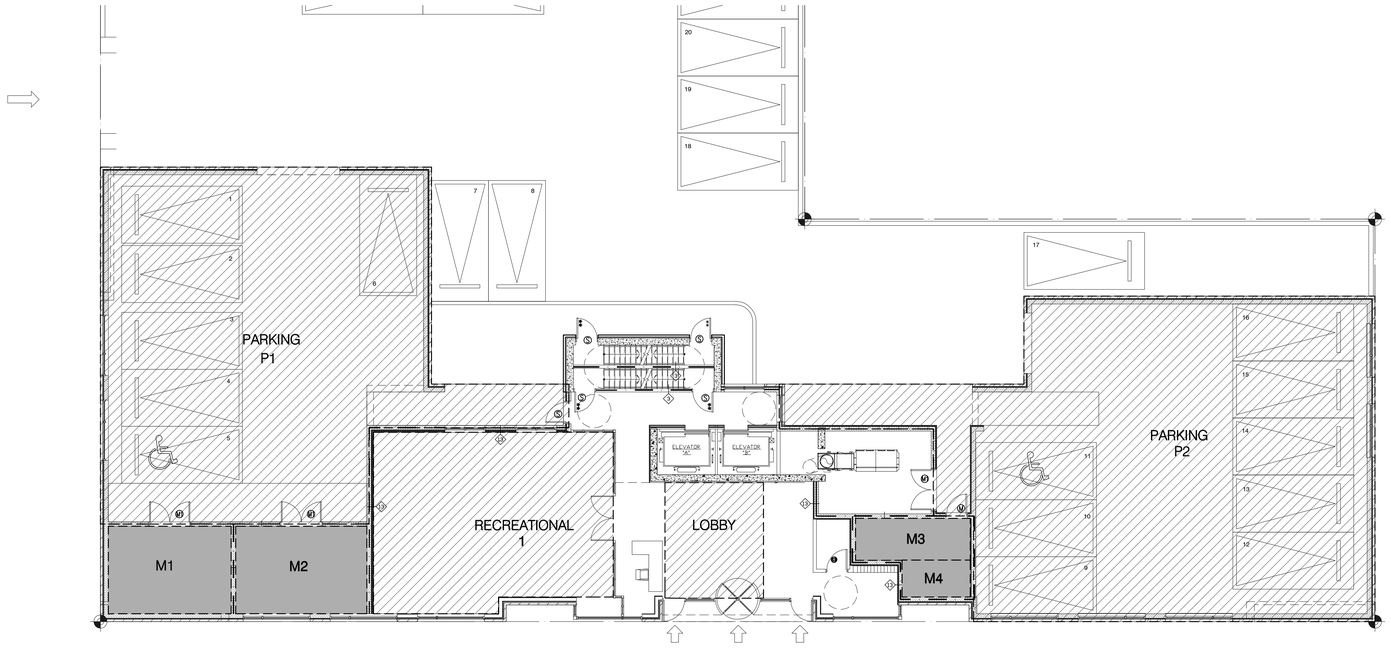
2 2ND FLOOR DEDUCTIONS
3/32"=1'-0"

Q.H. DEDUCTION			
VOID			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
01	45'-9"	27'-8"	949.6
			949.6

MECH. DEDUCTION					
QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
2	01	3'-9"	4'-4"	16.3	32.6
1	02	4'-10"	5'-10"	28.2	28.2
1	03	4'-6"	8'-0"	36.0	36.0
1	04	6'-0"	5'-9"	34.2	34.2
1	05	4'-6"	8'-0"	36.0	36.0
1	06	4'-10"	5'-10"	28.2	28.2
1	07	6'-1"	4'-6"	27.2	27.2
					222.4

Q.H. DEDUCTION			
CORRIDOR - DAYLIGHT & DENSITY			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
199	146'-2"	45'-4"	917.6
			917.6

Q.H. DEDUCTION			
REFUSE ROOM			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
204	4'-0"	3'-0"	12.0
			12.0



1 1ST FLOOR DEDUCTIONS
3/32"=1'-0"

Q.H. DEDUCTION			
PARKING			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
01	69'-10"	53'-3"	2,625.8
02	88'-10"	48'-6"	3,074.8
			5,700.6

Q.H. DEDUCTION			
RECREATIONAL SPACE			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
196	35'-9"	27'-1"	924.8
			924.8

MECH. DEDUCTION					
QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
1	01	13'-1"	18'-4"	239.0	239.0
1	02	13'-0"	19'-7"	254.7	254.7
1	03	6'-3"	17'-1"	106.9	106.9
1	04	5'-6"	10'-2"	55.9	55.9
					656.5

Q.H. DEDUCTION			
CORRIDOR - DAYLIGHT			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
1	17'-3"	14'-9"	253.7
			253.7

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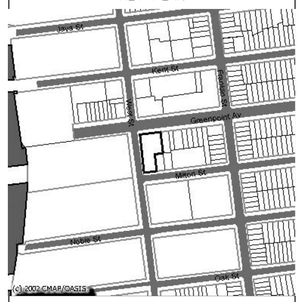

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drawing title
FLOOR AREA DEDUCTIONS

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drawn .	drawing no. Z-007.01
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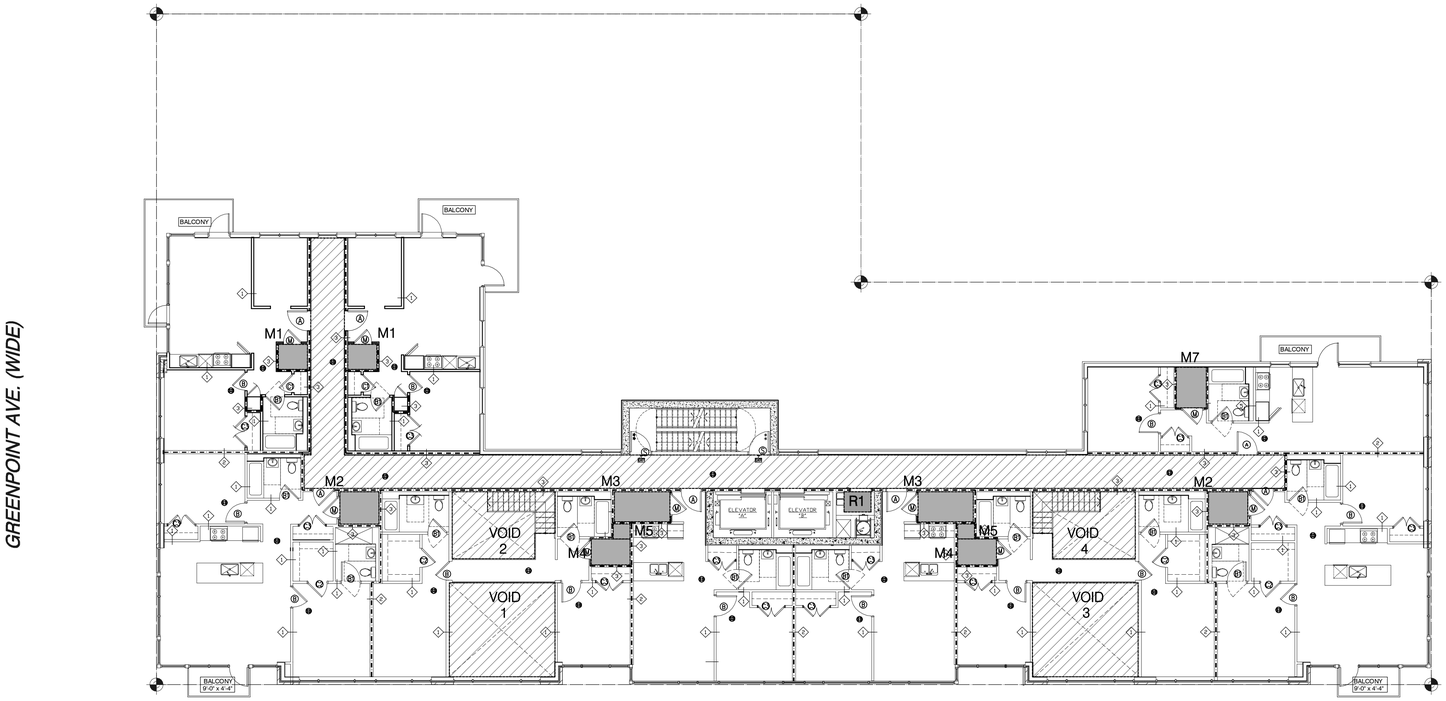


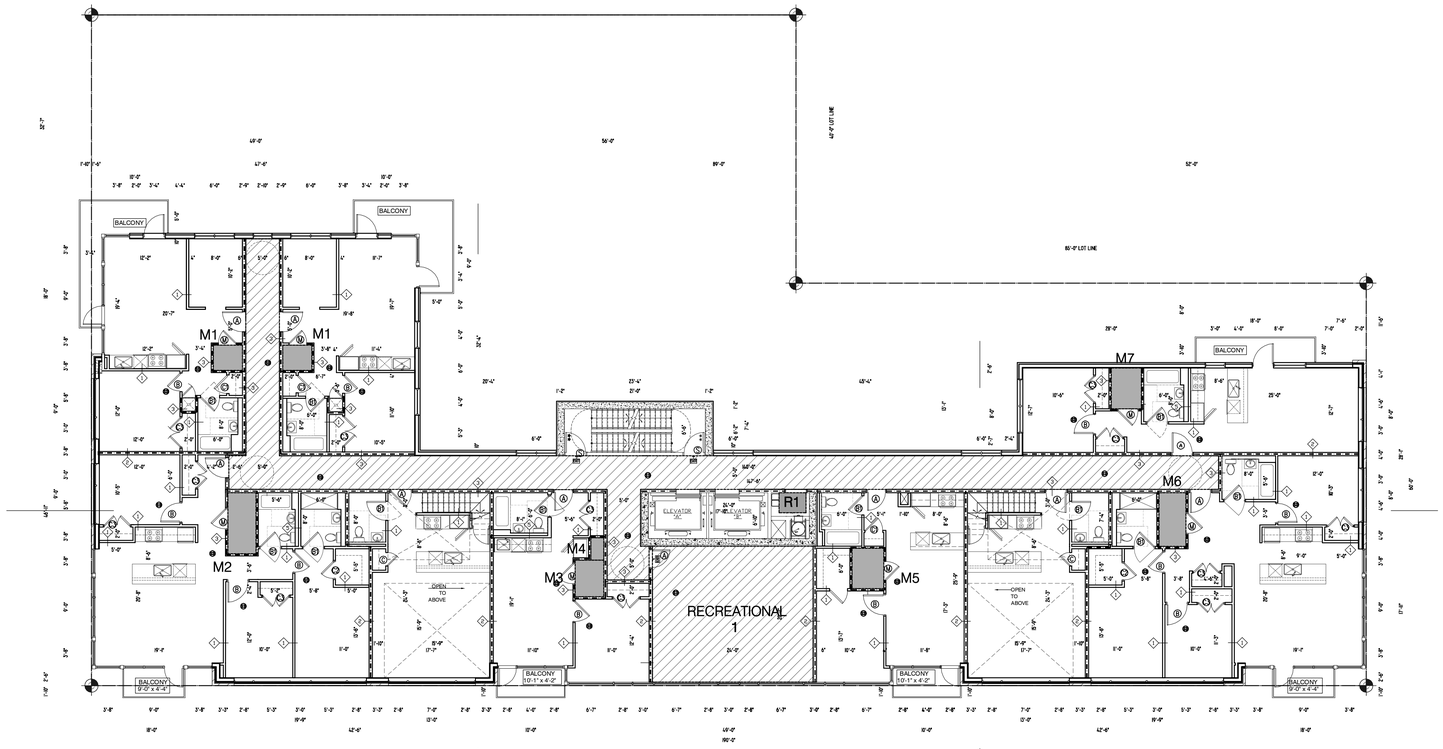
2 4TH FLOOR DEDUCTIONS
3/32"=1'-0"

Q.H. DEDUCTION			
VOID			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
01	15'-9"	14'-0"	220.8
03	15'-9"	14'-0"	220.8
205	15'-4"	10'-0"	141.6
206	15'-4"	10'-0"	141.6
			724.7

MECH. DEDUCTION					
QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
2	01	3'-9"	4'-4"	16.3	32.6
1	02	4'-10"	5'-10"	28.2	28.2
1	02	4'-10"	5'-10"	28.2	28.2
1	03	4'-6"	8'-3"	36.9	36.9
1	03	4'-6"	8'-3"	36.9	36.9
2	04	3'-11"	5'-10"	22.5	45.0
2	05	2'-3"	2'-6"	5.6	11.2
1	07	6'-1"	4'-6"	27.2	27.2
					246.2

Q.H. DEDUCTION			
CORRIDOR - DAYLIGHT & DENSITY			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
199	146'-2"	37'-4"	892.4
			892.4

Q.H. DEDUCTION			
REFUSE ROOM			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
204	4'-0"	3'-0"	12.0
			12.0



1 3RD FLOOR DEDUCTIONS
3/32"=1'-0"

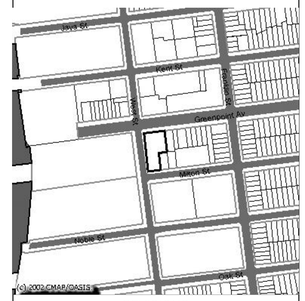
MECH. DEDUCTION					
QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
2	01	3'-9"	4'-4"	16.3	32.6
1	02	9'-1"	4'-2"	38.2	38.2
1	03	5'-5"	4'-3"	23.3	23.3
1	04	3'-4"	1'-11"	6.5	6.5
1	05	6'-0"	4'-9"	28.3	28.3
1	06	8'-0"	4'-0"	32.0	32.0
1	07	6'-1"	4'-6"	27.2	27.2
					188.1

Q.H. DEDUCTION			
CORRIDOR - DAYLIGHT & DENSITY			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
199	147'-6"	50'-10"	973.7
			973.7

Q.H. DEDUCTION			
REFUSE ROOM			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
204	4'-0"	3'-0"	12.0
			12.0

Q.H. DEDUCTION			
RECREATIONAL SPACE			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
196	24'-0"	20'-2"	484.3
			484.3

KEY PLAN



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scale 1/8"=1'0"	project no. 06-71 / 14-41
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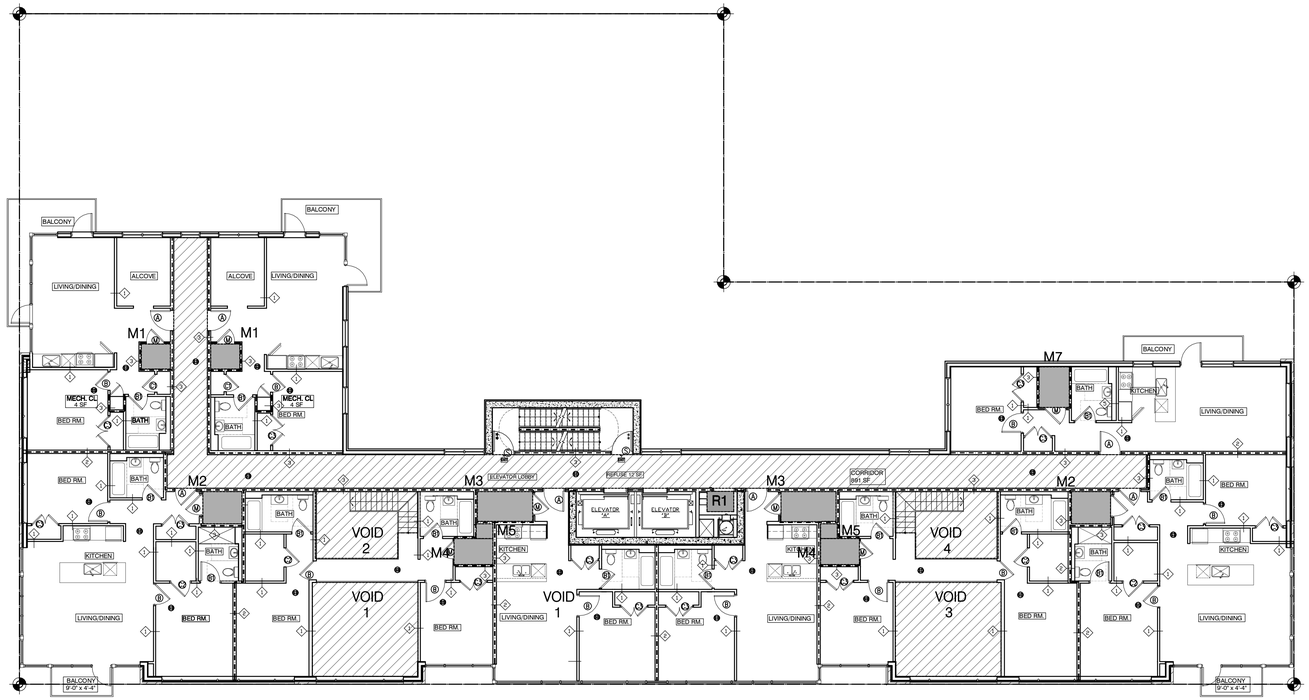
GREENPOINT AVE. (WIDE)



Q.H. DEDUCTION

VOID			
NUMBER	LENGTH	WIDTH	AREA (S.F.)
01	15'-9"	14'-0"	220.8
03	15'-9"	14'-0"	220.8
205	15'-4"	10'-0"	141.6
206	15'-4"	10'-0"	141.6
			724.7

MECH. DEDUCTION

QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
2	01	3'-9"	4'-4"	16.3	32.6
1	02	4'-10"	5'-10"	28.2	28.2
1	02	4'-10"	5'-10"	28.2	28.2
1	03	4'-6"	8'-3"	36.9	36.9
1	03	4'-6"	8'-3"	36.9	36.9
2	04	3'-11"	5'-10"	22.5	45.0
2	05	2'-3"	2'-6"	5.6	11.2
1	07	6'-1"	4'-6"	27.2	27.2
					246.2

Q.H. DEDUCTION

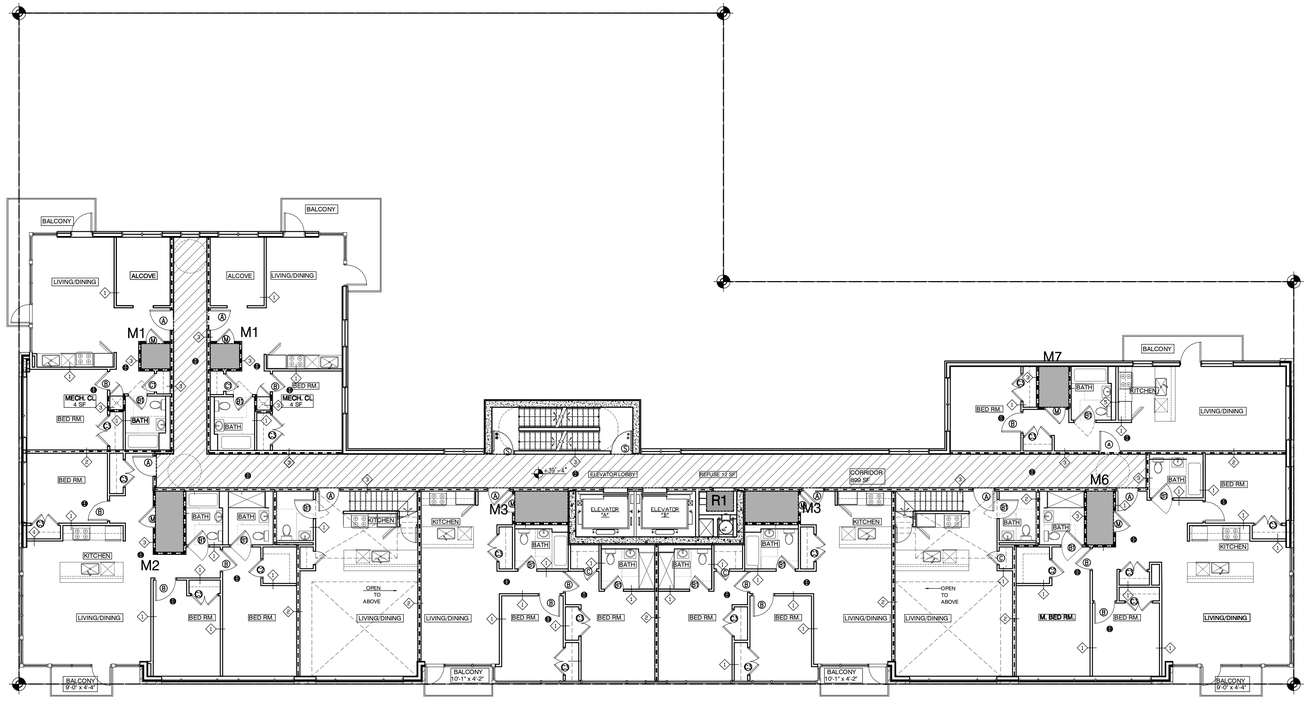
CORRIDOR - DAYLIGHT & DENSITY			
NUMBER	LENGTH	WIDTH	AREA (S.F.)
199	146'-2"	37'-4"	892.4
			892.4

Q.H. DEDUCTION

REFUSE ROOM			
NUMBER	LENGTH	WIDTH	AREA (S.F.)
204	4'-0"	3'-0"	12.0
			12.0

2 6TH FLOOR DEDUCTIONS
3/32"=1'-0"

GREENPOINT AVE. (WIDE)



MECH. DEDUCTION

QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
2	01	3'-9"	4'-4"	16.3	32.6
1	02	9'-1"	4'-2"	38.2	38.2
2	03	4'-8"	7'-11"	37.1	74.2
1	06	8'-0"	4'-0"	32.0	32.0
1	07	6'-1"	4'-6"	27.2	27.2
					204.2

Q.H. DEDUCTION

CORRIDOR - DAYLIGHT & DENSITY			
NUMBER	LENGTH	WIDTH	AREA (S.F.)
199	147'-6"	37'-4"	899.7
			899.7

Q.H. DEDUCTION

REFUSE ROOM			
NUMBER	LENGTH	WIDTH	AREA (S.F.)
204	4'-0"	3'-0"	12.0
			12.0

1 5TH FLOOR DEDUCTIONS
3/32"=1'-0"

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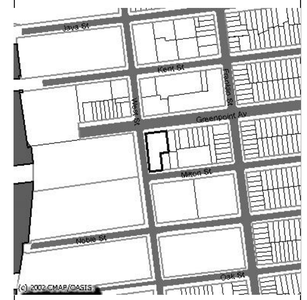

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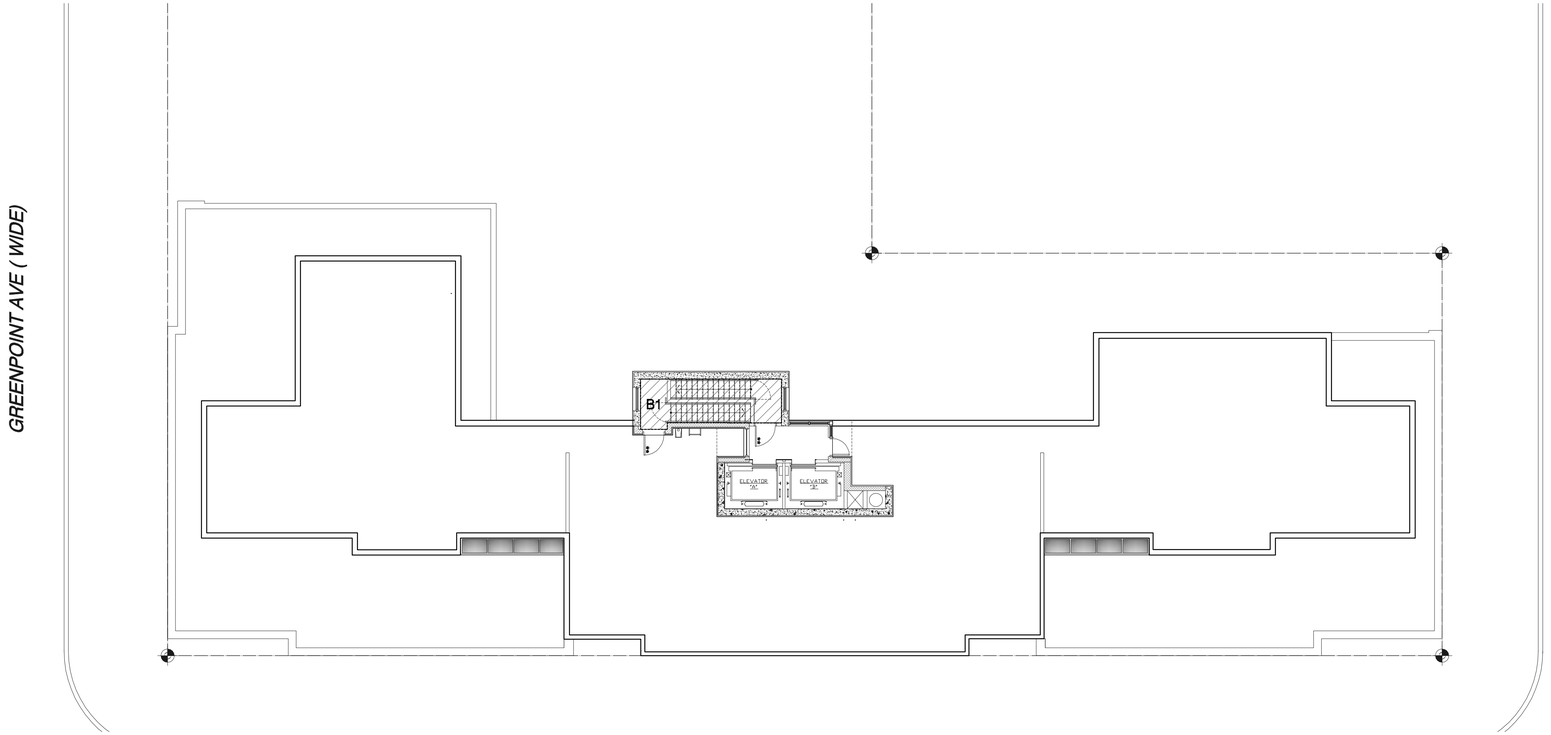
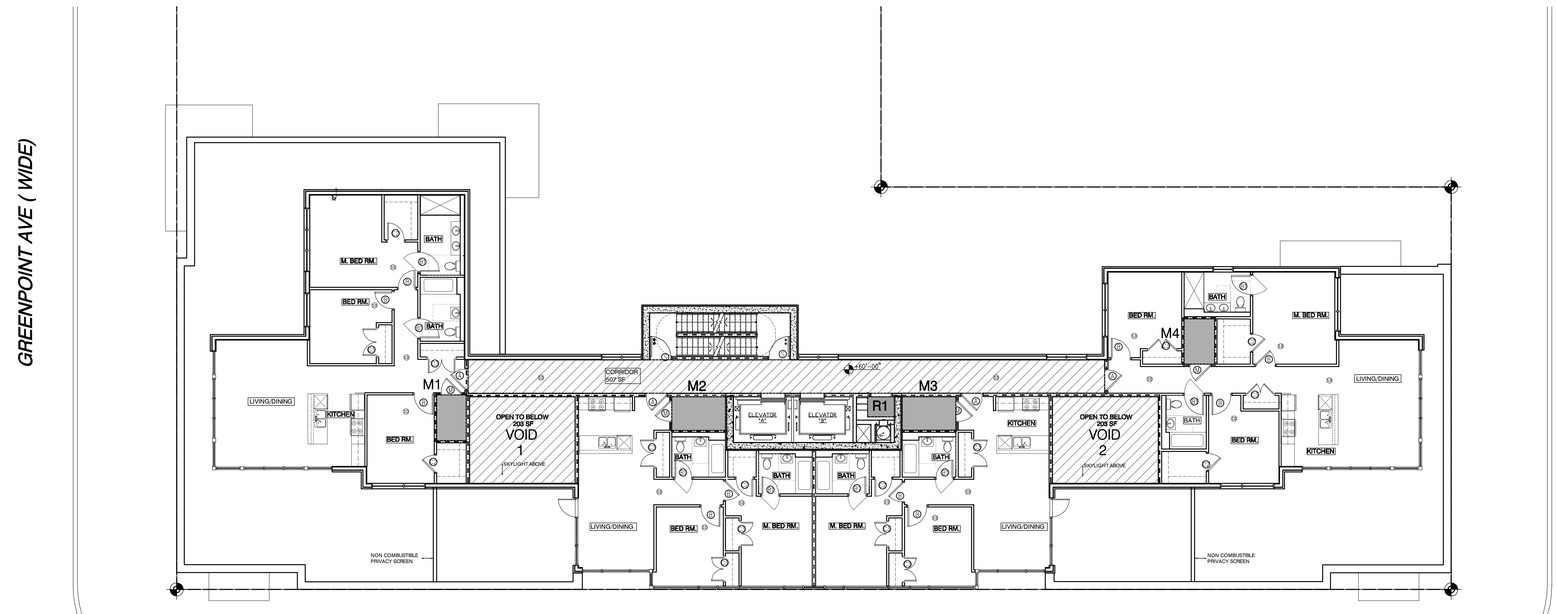


2 ROOF DEDUCTIONS
3/32"=1'-0"

FLOOR AREA DEDUCTIONS
ROOF

Q.H. DEDUCTION			
STAIR & ELEVATOR BULKHEAD			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
01	21'-0"	7'-6"	140.7
			140.7



1 7TH FLOOR DEDUCTIONS
3/32"=1'-0"

Q.H. DEDUCTION			
VOID			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
01	15'-9"	12'-11"	203.2
02	15'-9"	12'-11"	203.2
			406.4

MECH. DEDUCTION					
QUANTITY	TAG	LENGTH	WIDTH	AREA (S.F.)	TOTAL AREA (S.F.)
1	01	6'-10"	4'-5"	30.1	30.1
1	04	6'-9"	4'-7"	30.9	30.9
1	207	5'-0"	8'-0"	40.1	40.1
1	208	5'-0"	8'-0"	39.8	39.8
					140.9

Q.H. DEDUCTION			
CORRIDOR - DAYLIGHT & DENSITY			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
209	94'-11"	5'-0"	474.4
			474.4

Q.H. DEDUCTION			
REFUSE ROOM			AREA (S.F.)
NUMBER	LENGTH	WIDTH	
210	4'-0"	3'-0"	12.0
			12.0

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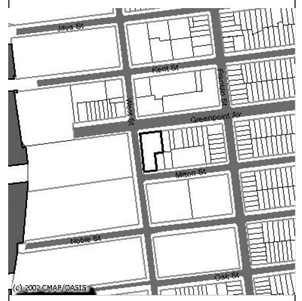

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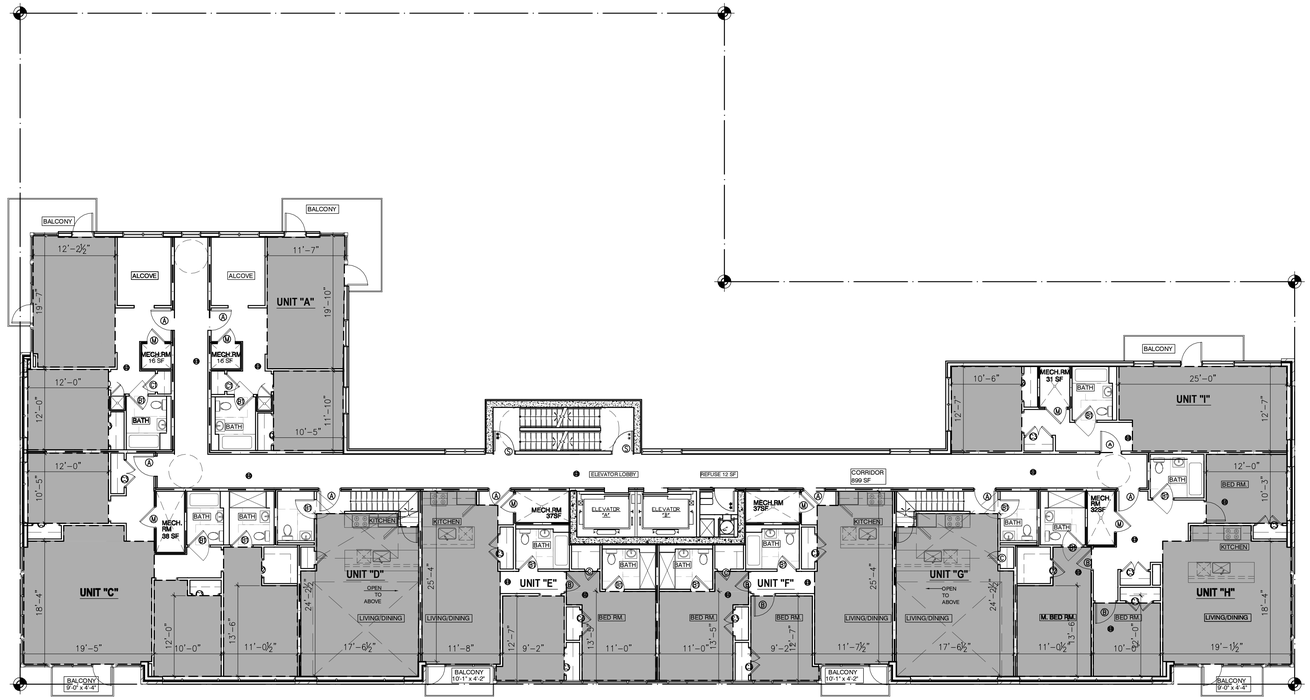
GREENPOINT AVE. (WIDE)



UNIT 'A'

LIVING/DINING ROOM 223 SF
REQUIRED MIN. LIGHT: 225
SF x10%=23 SF
REQUIRED MIN. AIR: 225 SF x
5%=11 SF
PROPOSED LIGHT: 55 SF
PROPOSED AIR: 36 SF

BEDROOM 123 SF
REQUIRED MIN. LIGHT: 123
SF x10%=12 SF
REQUIRED MIN. AIR: 123 SF x
5%= 6 SF
PROPOSED LIGHT: 20 SF
PROPOSED AIR: 11 SF

UNIT 'B'

LIVING/DINING ROOM 236 SF
REQUIRED MIN. LIGHT: 236
SF x10%=24 SF
REQUIRED MIN. AIR: 236 SF x
5%=12 SF
PROPOSED LIGHT: 122 SF
PROPOSED AIR: 55 SF

BEDROOM 144 SF
REQUIRED MIN. LIGHT: 144
SF x10%=14 SF
REQUIRED MIN. AIR: 144 SF x
5%= 7 SF
PROPOSED LIGHT: 49 SF
PROPOSED AIR: 11 SF

UNIT 'C'

LIVING/DINING ROOM 371 SF
REQUIRED MIN. LIGHT: 371
SF x10%=37 SF
REQUIRED MIN. AIR: 371 SF x
5%=19 SF
PROPOSED LIGHT: 179 SF
PROPOSED AIR: 48 SF

BEDROOM 132 SF
REQUIRED MIN. LIGHT: 132
SF x10%=13 SF
REQUIRED MIN. AIR: 132 SF x
5%= 7 SF
PROPOSED LIGHT: 47 SF
PROPOSED AIR: 11 SF

BEDROOM 125 SF
REQUIRED MIN. LIGHT: 125
SF x10%=13 SF
REQUIRED MIN. AIR: 125 SF x
5%= 6 SF
PROPOSED LIGHT: 49 SF
PROPOSED AIR: 11 SF
M. BEDROOM 182 SF
REQUIRED MIN. LIGHT: 182
SF x10%=18 SF
REQUIRED MIN. AIR: 182 SF x
5%=9 SF
PROPOSED LIGHT: 47 SF
PROPOSED AIR: 11 SF

UNIT 'D'

LIVING/SLEEPING ROOM 400 SF
REQUIRED MIN. LIGHT: 400
SF x10%=40 SF
REQUIRED MIN. AIR: 400 SF x
5%=20 SF
PROPOSED LIGHT: 107 SF
PROPOSED AIR: 22 SF

UNIT 'E'

LIVING/DINING ROOM 290 SF
REQUIRED MIN. LIGHT: 290
SF x10%=29 SF
REQUIRED MIN. AIR: 290 SF x
5%=14 SF
PROPOSED LIGHT: 57 SF
PROPOSED AIR: 11 SF

BEDROOM 118 SF
REQUIRED MIN. LIGHT: 118
SF x10%=12 SF
REQUIRED MIN. AIR: 118 SF x
5%= 6 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

M. BEDROOM 166 SF
REQUIRED MIN. LIGHT: 166
SF x10%=17 SF
REQUIRED MIN. AIR: 166 SF x
5%= 8 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

UNIT 'F'

LIVING/DINING ROOM 289 SF
REQUIRED MIN. LIGHT: 289
SF x10%=29 SF
REQUIRED MIN. AIR: 289 SF x
5%=14 SF
PROPOSED LIGHT: 57 SF
PROPOSED AIR: 11 SF

BEDROOM 118 SF
REQUIRED MIN. LIGHT: 118
SF x10%=12 SF
REQUIRED MIN. AIR: 118 SF x
5%= 6 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

M. BEDROOM 166 SF
REQUIRED MIN. LIGHT: 166
SF x10%=17 SF
REQUIRED MIN. AIR: 166 SF x
5%= 8 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

UNIT 'G'

LIVING/SLEEPING ROOM 399 SF
REQUIRED MIN. LIGHT: 399
SF x10%=40 SF
REQUIRED MIN. AIR: 399 SF x
5%=20 SF
PROPOSED LIGHT: 107 SF
PROPOSED AIR: 22 SF

UNIT 'H'

LIVING/DINING ROOM 371 SF
REQUIRED MIN. LIGHT: 371
SF x10%=37 SF
REQUIRED MIN. AIR: 371 SF x
5%=19 SF
PROPOSED LIGHT: 179 SF
PROPOSED AIR: 48 SF

BEDROOM 109 SF
REQUIRED MIN. LIGHT: 109 SF x10%=11 SF
REQUIRED MIN. AIR: 109 SF x
5%= 5 SF
PROPOSED LIGHT: 47 SF
PROPOSED AIR: 11 SF

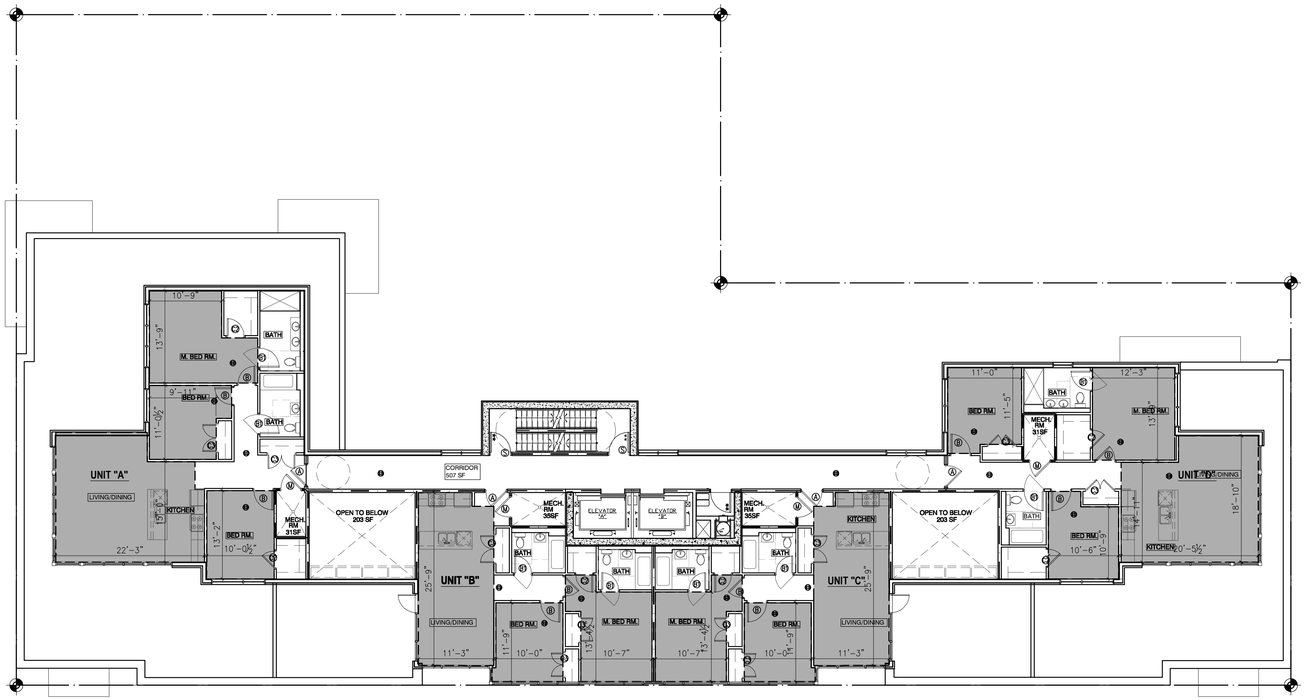
BEDROOM 124 SF
REQUIRED MIN. LIGHT: 124
SF x10%=12 SF
REQUIRED MIN. AIR: 124 SF x
5%= 6 SF
PROPOSED LIGHT: 49 SF
PROPOSED AIR: 11 SF
M. BEDROOM 183 SF
REQUIRED MIN. LIGHT: 183
SF x10%=18 SF
REQUIRED MIN. AIR: 183 SF x
5%=9 SF
PROPOSED LIGHT: 47 SF
PROPOSED AIR: 11 SF

UNIT 'I'

LIVING/DINING ROOM 305 SF
REQUIRED MIN. LIGHT: 305
SF x10%=31 SF
REQUIRED MIN. AIR: 305 SF x
5%=15 SF
PROPOSED LIGHT: 102 SF
PROPOSED AIR: 44 SF

BEDROOM 132 SF
REQUIRED MIN. LIGHT: 132
SF x10%=13 SF
REQUIRED MIN. AIR: 132 SF x
5%= 7 SF
PROPOSED LIGHT: 45 SF
PROPOSED AIR: 11 SF

2 TYPICAL FLOOR LIGHT & AIR CALCULATIONS
3/32"=1'-0"



UNIT 'A'

LIVING/DINING ROOM 386 SF
REQUIRED MIN. LIGHT: 386
SF x10%=39 SF
REQUIRED MIN. AIR: 386 SF x
5%=19 SF
PROPOSED LIGHT: 174 SF
PROPOSED AIR: 68 SF

BEDROOM 132 SF
REQUIRED MIN. LIGHT: 132
SF x10%=13 SF
REQUIRED MIN. AIR: 132 SF x
5%= 7 SF
PROPOSED LIGHT: 45 SF
PROPOSED AIR: 11 SF

BEDROOM 121 SF
REQUIRED MIN. LIGHT: 121
SF x10%=12 SF
REQUIRED MIN. AIR: 121 SF x
5%= 6 SF
PROPOSED LIGHT: 31 SF
PROPOSED AIR: 11 SF

M. BEDROOM 184 SF
REQUIRED MIN. LIGHT: 184
SF x10%=18 SF
REQUIRED MIN. AIR: 184 SF x
5%=9 SF
PROPOSED LIGHT: 47 SF
PROPOSED AIR: 11 SF

UNIT 'B'

LIVING/DINING ROOM 283 SF
REQUIRED MIN. LIGHT: 283
SF x10%=28 SF
REQUIRED MIN. AIR: 283 SF x
5%=14 SF
PROPOSED LIGHT: 112 SF
PROPOSED AIR: 30 SF

BEDROOM 119 SF
REQUIRED MIN. LIGHT: 119
SF x10%=12 SF
REQUIRED MIN. AIR: 119 SF x
5%= 6 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

M. BEDROOM 160 SF
REQUIRED MIN. LIGHT: 160
SF x10%=16 SF
REQUIRED MIN. AIR: 160 SF x
5%= 8 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

UNIT 'C'

LIVING/DINING ROOM 283 SF
REQUIRED MIN. LIGHT: 283
SF x10%=28 SF
REQUIRED MIN. AIR: 283 SF x
5%=14 SF
PROPOSED LIGHT: 112 SF
PROPOSED AIR: 30 SF

BEDROOM 119 SF
REQUIRED MIN. LIGHT: 119
SF x10%=12 SF
REQUIRED MIN. AIR: 119 SF x
5%= 6 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

M. BEDROOM 160 SF
REQUIRED MIN. LIGHT: 160
SF x10%=16 SF
REQUIRED MIN. AIR: 160 SF x
5%= 8 SF
PROPOSED LIGHT: 56 SF
PROPOSED AIR: 11 SF

UNIT 'D'

LIVING/DINING ROOM 352 SF
REQUIRED MIN. LIGHT: 352
SF x10%=35 SF
REQUIRED MIN. AIR: 352 SF x
5%=18 SF
PROPOSED LIGHT: 174 SF
PROPOSED AIR: 68 SF

BEDROOM 124 SF
REQUIRED MIN. LIGHT: 124
SF x10%=12 SF
REQUIRED MIN. AIR: 124 SF x
5%= 6 SF
PROPOSED LIGHT: 45 SF
PROPOSED AIR: 11 SF

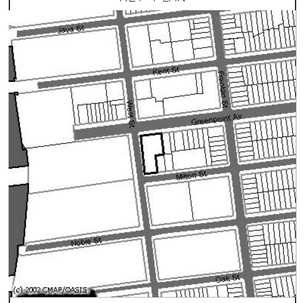
BEDROOM 132 SF
REQUIRED MIN. LIGHT: 132
SF x10%=13 SF
REQUIRED MIN. AIR: 132 SF x
5%= 7 SF
PROPOSED LIGHT: 45 SF
PROPOSED AIR: 11 SF

M. BEDROOM 168 SF
REQUIRED MIN. LIGHT: 168
SF x10%=17 SF
REQUIRED MIN. AIR: 168 SF x
5%=8 SF
PROPOSED LIGHT: 45 SF
PROPOSED AIR: 11 SF

1 7TH FLOOR LIGHT & AIR CALCULATIONS
3/32"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
LIGHT & AIR CALCULATIONS

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. Z-011.01
checked K.F.	

GENERAL NOTES:

1. THE PROPOSED WORK ON THESE DRAWINGS SHALL COMPLY WITH NEW YORK CITY BUILDING CODE REQUIREMENTS, INCLUDING LOCAL LAW #17/95 (EARTHQUAKE CODE).
2. THE GENERAL CONTRACTOR SHALL OBTAIN CONSTRUCTION PERMIT AND PAY ALL REQUIRED FEES TO THE D.O.B. BASED ON THE PROPOSED WORK OF THIS DRAWING FROM NEW YORK CITY BUILDING DEPARTMENT PRIOR TO START OF WORK.
3. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH THE NEW YORK CITY ELECTRICAL CODE. HE SHALL BE RESPONSIBLE FOR SCHEDULING ALL REQUIRED INSPECTIONS AND OBTAINING ALL REQUIRED ELECTRICAL SIGN-OFFS AND CERTIFICATES OF COMPLETION FROM THE DEPARTMENT OF BUILDING'S ELECTRICAL DIVISION.
4. ALL PLUMBING WORK SHALL BE PERFORMED BY A LICENSED PLUMBER IN ACCORDANCE WITH THE NEW YORK CITY PLUMBING CODE. HE SHALL BE RESPONSIBLE FOR SCHEDULING ALL REQUIRED INSPECTIONS AND OBTAINING ALL REQUIRED PLUMBING SIGN-OFFS AND CERTIFICATES OF COMPLETION FROM THE DEPARTMENT OF BUILDING'S PLUMBING DIVISION.
5. THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS ON THE SITE PRIOR TO START OF WORK. HE SHALL NOTIFY THE ARCHITECT/ENGINEER OF RECORD OF ANY DISCREPANCIES AND/OR CHANGE OF LAYOUT BETWEEN THE FIELD CONDITIONS AND THESE DRAWINGS IMMEDIATELY. FAILURE TO DO SO WILL INDICATE THE GENERAL CONTRACTOR'S ACCEPTANCE OF THESE DRAWINGS AND WILLINGNESS TO TAKE FULL RESPONSIBILITY FOR SAID WORK BEING PERFORMED.
6. THE ARCHITECT/ENGINEER OF RECORD HAS NOT BEEN RETAINED TO SUPERVISE THE CONSTRUCTION.
7. THE GENERAL CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED ARCHITECT/ENGINEER FOR ALL REQUIRED SPECIAL INSPECTIONS.
8. THE GENERAL CONTRACTOR SHALL OBTAIN SIGN-OFF FROM THE DEPARTMENT OF BUILDINGS AFTER COMPLETION OF WORK.
9. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL BE KNOWLEDGEABLE OF CONDITIONS THEREON. HE SHALL INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND SHALL NOTIFY THE OWNER OF ANY CONDITIONS REQUIRING MODIFICATIONS BEFORE PROCEEDING WITH THE WORK.
10. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL GENERAL NOTES. ABBREVIATIONS AND SYMBOLS. ALL NOTES ARE TO BE REVISED AND APPLIED TO RELATED BUILDING COMPONENTS.
11. NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS TO BE REVIEWED AND NOTES ON ANY ONE SHEET TO BE APPLIED ON RELATED DRAWINGS AND DETAILS.
12. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. WHERE SPECIFIED DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
13. ALL ELEVATOR OPENINGS SHALL BE CERTIFIED BY THE ELEVATOR SUBCONTRACTOR PRIOR TO FORMING. REQUIRED MODIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR APPROVAL PRIOR TO FORMING.
14. REFER TO CERTIFIED MECHANICAL AND ELECTRICAL CONTRACTORS DRAWINGS AND MANUFACTURER'S TEMPLATE DRAWINGS FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, BOLT SETTING TEMPLATES, ISOLATIONS, SPRING ISOLATION, ETC., NOT SHOWN ON THE DRAWINGS.
15. CONTRACTOR TO COORDINATE ALL EQUIPMENT BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS' EQUIPMENT BASES AND HOUSEKEEPING PADS TO BE A MINIMUM OF 4" HIGH UNLESS OTHERWISE NOTED.
16. CONCRETE PADS AND MOUNTINGS IN MECHANICAL SPACES SHALL BE COORDINATED WITH ELECTRICAL AND PLUMBING CONTRACTORS.
17. CONTRACTOR TO COORDINATE ALL MECHANICAL AND ELECTRICAL FLOOR AND WALL SLEEVES AND ALL MECHANICAL SHAFTS WITH MECHANICAL, PLUMBING, FIRE-PROTECTION, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS.
18. PROVIDE ACCESS PANELS AS APPLICABLE AND AS REQUIRED FOR MECHANICAL EQUIPMENT. ALL ACCESS PANELS SHALL BE CONCEALED, AND LOCATIONS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO PROCEEDING.
19. PORTABLE FIRE EXTINGUISHERS LOCATED ON THE DRAWINGS SHALL RECEIVE APPROVAL OF FIRE DEPARTMENT PRIOR TO INSTALLATION. (N/A)
20. ALL SPRINKLER HEADS IN ACOUSTICAL TILE SHALL BE INSTALLED CENTERED IN THE ACOUSTICAL TILE.
21. ALL EXTERIOR HANDRAILS AND EXTERIOR EXPOSED METAL SHALL BE GALVANIZED AND PAINTED UNLESS NOTED OTHERWISE.
22. ALL EXTERIOR DOORS SHALL PREVENT AIR LEAKAGE/INFILTRATION AROUND THEIR PERIMETER WHEN IN A CLOSED POSITION.
23. ALL EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOFS, AND BETWEEN WALLS AND PANELS AT PENETRATION OF UTILITIES THROUGH THE ENVELOPE SHALL BE SEALED, CAULKED OR WEATHER STRIPPED TO PREVENT AIR LEAKAGE/INFILTRATION.
24. ALL EXTERIOR SOFFITS SHALL BE CONSTRUCTED WITH RIGID GALVANIZED METAL FRAME MEMBERS AND SHALL RESIST UPLIFTING WIND LOADS OF 1.5 TIMES THE WIND PRESSURE DIAGRAM.
25. ALL EXTERIOR SOFFITS SHALL BE INSTALLED TO PROVIDE A U' VALUE OF 0.09, SHALL HAVE A VAPOR BARRIER AND SHALL BE PROPERLY SEALED AGAINST AIR INFILTRATION.
26. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID MOLECULAR BREAKDOWN.
27. FUTURE TENANT DEVELOPMENT TO BE COVERED UNDER SEPARATE PERMITS.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL AND REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF WORK.
29. THE CONTRACTOR SHALL REPLACE AND REPAIR MISSING OR BROKEN SIDEWALK, CURB, OR ROADWAY DAMAGED DURING CONSTRUCTION AS DIRECTED BY THE NYC DEPARTMENT OF BUILDINGS, NYC DEPARTMENT OF TRANSPORTATION, OR OTHER AGENCIES.

DIMENSIONING:

1. ALL WALLS ARE ORTHOGONAL TO THE PROPERTY LINES UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE KNOWLEDGEABLE OF WHICH PROPERTY LINE DETERMINES THE ORIENTATION OF EACH WALL, AND SHALL NOTIFY THE ARCHITECT OF ANY CONDITIONS REQUIRING CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
2. PARTITIONS ARE DIMENSIONED TO THE FURNISHED FACE OF THE WALL UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS SHALL HAVE PREFERENCE OVER SCALE.
4. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE PROCEEDING WITH THE WORK. THE ARCHITECT SHALL BE NOTIFIED OF ANY CORRECTIONS.
5. WHEN UNDIMENSIONED PARTITIONS APPEAR IN CONJUNCTION WITH DOOR OPENINGS, THE DOOR WIDTH AND DOOR FRAME DETAILS DETERMINE THE LOCATION OF THE ADJACENT WALLS AND FRAMES.

PARTITION NOTES:

1. DEFLECTION FOR ALL PARTITIONS SHALL NOT EXCEED 1/240TH OF THE SPAN MAXIMUM FOR TYPICAL GYPSUM PARTITIONS, OR 1/360 FOR WOOD-CLAD PARTITIONS, OR STONE-CLAD PARTITION SYSTEMS.
2. WATER RESISTANT DRYWALL (FOR THE FULL HEIGHT OF THE PARTITION CONSTRUCTION) SHALL BE USED IN TOILETS, SHOWERS, SERVICE ROOMS, ETC. USE STANDARD GYPSUM BOARD FOR CEILING CONSTRUCTION.
3. PENETRATIONS: COORDINATE WITH MECHANICAL CONTRACTOR FOR OPENINGS REQUIRED FOR RETURN AIR IN FULL HEIGHT PARTITIONS.
4. PROVIDE LATERAL BRACING TO STRUCTURE ABOVE FINISHED CEILINGS FOR PARTITIONS EXCEEDING UNSUPPORTED HEIGHTS INDICATED ON DRAWINGS.
5. PROVIDE HORIZONTAL CONTROL JOINTS AT 12'-0" O.C. IN THE VERTICAL DIRECTION UNLESS NOTED OTHERWISE.
6. PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CONSTRUCTION SUCH THAT PARTITION OR FURRING RUNS DO NOT EXCEED 30', AND CEILING DIMENSIONS DO NOT EXCEED 50' IN EITHER DIRECTION WITH PERIMETER RELIEF OR 30' WITHOUT PERIMETER RELIEF.
7. PROVIDE VERTICAL CONTROL JOINTS WITH SEALANT IN MASONRY WALLS AS SHOWN IN DRAWINGS WITH MAXIMUM SPACING OF 25'-0'.
8. COMPLETELY SEAL WITH ACOUSTICAL SEALANT HEADS, BASES, AND ENDS, PLUS ALL PENETRATIONS (INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, AND PLUMBING WORK).
9. PROVIDE SOUND BLANKETS AS INDICATED.

SEISMIC/EARTHQUAKE CODE NOTES (NYC BUILDING CODE CHAPTER 16 STRUCTURAL DESIGN):

1. EARTHQUAKE LOADS - EVERY BUILDING, STRUCTURE AND PORTION THEREOF SHALL, AT A MINIMUM BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF SEISMIC GROUND MOTIONS.
2. NEW CONCRETE BLOCK WALLS TO HAVE STANDARD LADDER TYPE HORIZONTAL REINFORCEMENT AT 16 INCHES ON CENTER VERTICALLY.
3. PROVIDE BOND BEAM WITH TWO #6 REBARS AT TOP OF EACH FLOOR.
4. NEW CONSTRUCTION HAS BEEN DESIGNED IN COMPLIANCE WITH SEISMIC CODE LOCAL LAW 10/95 RULES AND REGULATIONS.
5. THESE PLANS COMPLY WITH THE SEISMIC CODE REQUIREMENTS OF LOCAL LAW17/95 RULES AND REGULATIONS.

WIND LOAD NOTES (NYC BUILDING CODE CHAPTER 16 STRUCTURAL DESIGN, SECTION BC 1609):

1. WIND LOADS - THE STRUCTURAL FRAME AND EXTERIOR COMPONENTS OF ALL BUILDINGS, SIGNS, TANKS AND OTHER EXPOSED CONSTRUCTION SHALL BE DESIGNED TO RESIST MINIMUM PRESSURES DUE TO WIND. WIND SHALL BE ASSUMED TO ACT FROM ANY HORIZONTAL DIRECTION. FOR CONTINUOUS FRAMING, THE EFFECTS OF PARTIAL LOADING CONDITIONS SHALL BE CONSIDERED.

OCCUPANCY FIRE-RESISTANCE RATINGS:

1. CONSTRUCTION: TYPE IB NON-COMBUSTIBLE CONSTRUCTION - SPRINKLERED.
2. UNLESS NOTED OTHERWISE ALL COLUMNS, BEAMS AND OTHER STRUCTURAL MEMBERS SHALL HAVE SPRAYED ON FIREPROOFING INSTALLED AT THE REQUIRED THICKNESS AND DENSITY TO ACHIEVE THE THE HOURLY RATINGS AS SET FORTH HEREAFTER. ALL SPRAYED-ON FIREPROOFING SHALL COMPLY WITH SECTION BC 720: TABLE 720.1 AND ALL INSPECTION REQUIREMENTS OF THE BUILDING CODE OF NEW YORK CITY.
3. ALL RATED PARTITIONS SHALL RUN PAST STRUCTURAL BEAMS, TO THE UNDERSIDE OF STRUCTURAL SLAB, WHERE THE PARTITIONS TERMINATE TO THE UNDERSIDE OF STRUCTURAL BEAMS, THE STRUCTURAL BEAMS SHALL HAVE ADDITIONAL SPRAYED-ON FIREPROOFING TO ACHIEVE AN AREA SEPARATION RATING EQUAL TO THAT OF THE PARTITION RATING, IF REQUIRED.
4. SPACE BETWEEN SLAB AND EXTERIOR WALL AND ALL OPENINGS IN THE FLOOR SLABS INCLUDING SPACES BETWEEN DUCTS, CONDUIT, PIPING, ETC., (EXCEPT WHEN COMPLETELY ENCLOSED BY FIRE RATED CONSTRUCTION), SHALL BE SAFED-C/F (FILLED) WITH APPROVED SAFING MATERIAL TO MAINTAIN FIRE RATING CONTINUITY OF THE FLOOR CONSTRUCTION. ALL JOINTS OF ANY ELEMENT OF CONSTRUCTION SHALL BE TIGHT AND PREVENT THE PASSAGE OF SMOKE OR FLAME.
5. WHERE MASONRY WALLS AT INTERIOR LOT LINES ARE BROKEN TO ACCOMMODATE STRUCTURE THEREBY REDUCING THE FIRE RATING OF THE WALL AT THE STRUCTURE, THEN THE STRUCTURE SHALL BE FIREPROOFED AT THE REQUIRED WALL RATING.
6. ALL FIRE RESISTIVE (LABELED) FIRE DOORS SHALL HAVE THE APPROPRIATE LABELS AFFIXED TO BOTH DOOR AND FRAME.
7. A FINISH OR FIRE RATING INDICATION ON A WALL SHALL MEAN THE ENTIRE LENGTH OF WALL IS TO BE FINISHED OR FIRE RATED AS INDICATED.
8. ALL PIPING, DUCTS, ETC., THAT PENETRATE FLOOR SLABS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE FIRE RESISTIVE AND STRUCTURAL INTEGRITY OF THE BUILDING.
9. WHERE INTERIOR FINISH MATERIALS ARE SPACED (FURRED) FROM THEIR SUPPORTING MEMBERS, THE CONCEALED SPACES CREATED SHALL BE FIRE STOPPED AS REQUIRED BY CODE.
10. ALL RATINGS SHALL COMPLY WITH NEW YORK CITY BUILDING CODE CHAPTER 7 FIRE-RESISTANCE-RATED CONSTRUCTION.
11. LINTELS OVER OPENINGS WIDER THAN 4 FEET IN MASONRY WALLS SHALL BE FIRE PROTECTED AS REQUIRED BY SECTION BC 714.2.
12. WHERE PIPES, WIRES, CONDUITS, DUCTS, ETC. PIERCE FIRE PROTECTION OF INDIVIDUALLY ENCASED STRUCTURAL MEMBERS, SUCH PENETRATION SHALL NOT EXCEED 2% OF ANY ONE FACE OF SUCH PROTECTION, AND SHALL BE CLOSED OFF WITH CLOSE-FITTING METAL ESCUTCHEONS OR PLATES AND CONCEALED SPACE SHALL BE FIRESTOPPED AT EACH STORY AS PER BC 714.3.
13. FIRE BARRIER WALLS SHALL COMPLY WITH PROVISIONS OF BC 706 AND SHALL EXTEND FROM THE TOP OF THE FLOOR/ CEILING ASSEMBLY BELOW TO THE UNDERSIDE OF THE FLOOR ABOVE. THESE WALLS SHALL BE CONTINUOUS THROUGH CONCEALED SPACES IN THE FLOOR AND ROOF CONSTRUCTION, HOLLOW VERTICAL SPACES WITHIN THE FIRE BARRIER WALL SHALL BE FIRESTOPPED AT EVERY FLOOR.
14. FLOOR AND ROOF ASSEMBLIES REQUIRED TO HAVE A FIRE-RESISTANCE RATING SHALL COMPLY WITH SECTION BC 711.
15. THROUGH PENETRATIONS AND MEMBRANE PENETRATIONS OF FIRE RATED CONSTUCTION SHALL COMPLY WITH THE REGULATIONS SET FORTH IN SECTION BC 712, IN ADDITION, DUCTS AND TRANSFER OPENINGS SHALL COMPLY WITH THE REGULATIONS SET FORTH IN SECTION BC 716 AND THE NEW YORK CITY MECHANICAL CODE. SHAFT ENCLOSURES SHALL COMPLY WITH THE REGULATIONS SET FORTH IN BC 707.
16. OPENINGS IN FIRE RATED CONSTUCTION TO COMPY WITH SECTION BC 715.
17. CONCEALED SPACES WITHIN PARTITIONS, WALLS, FLOORS, STAIR, FURRING, PIPE SPACES, COLUMN ENCLOSURES, ETC., SHALL BE FIRE STOPPED IN COMPLIANCE WITH REGULATIONS SET FORTH IN SECTION BC 717.
18. OCCUPANCY CLASSIFICATION: RESIDENTIAL GROUP R-2.
19. ALLOWABLE HEIGHT AND BUILDING AREAS LIMITATIONS TABLE 503 OF 2008 NYC BUILDING CODE.

TABLE 503
ALLOWABLE HEIGHT AND BUILDING AREAS[a]
Height limitations shown as stories above grade plane.
Area limitations as determined by "Area, Building" per floor.

		TYPE OF CONSTRUCTION							
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V
		A	B	A	B	A	B	HT	A B
GROUP	Hgt (feet)	UL	160[e]	65	55	65	55	65	50 40
A-1	S	UL	UL	8	3	8	3	3	2
	A	UL	UL	17,500	10,500	14,700	5,940	15,000	6,440 5,500
A-2	S	UL	UL	8	3	8	3	3	2
	A	UL	UL	17,500	9,500	14,000	5,940	15,000	6,440 5,500
A-3	S	UL	UL	8	3	8	3	3	2
	A	UL	UL	17,500	9,500	14,000	5,940	15,000	6,440 5,500
A-4	S	UL	UL	8	3	8	3	3	2
	A	UL	UL	17,500	9,500	14,000	5,940	15,000	6,440 5,500
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL UL
	A	UL	UL	UL	UL	UL	UL	UL	UL UL
B	S	UL	UL	8	4	8	4	6	3 2
	A	UL	UL	UL	37,500	10,500	28,500	9,016	36,000 8,440 5,500
E	S	UL	UL	8	3	8	4	6	3 2
	A	UL	UL	26,000	10,500	23,500	9,016	25,500	8,440 5,500
F-1	S	UL	UL	8	4	8	4	5	3 2
	A	UL	UL	UL	12,500	8,500	7,500	8,000	10,000 3,000 1,000
F-2	S	UL	UL	8	4	8	4	5	3 2
	A	UL	UL	UL	37,500	10,500	28,500	9,016	30,000 8,440 5,500
H-1	S	1	1	1	1	1	1	1	NP NP
	A	21,000	16,500	11,000	7,500	9,500	7,000	10,500	7,500 NP
H-2[g]	S	3	2	2	1	2	1	2	1 1
	A	21,000	16,500	11,000	7,500	9,500	7,000	10,500	7,500 3,000
H-3[g]	S	UL	4	4	2	4	2	4	2 1
	A	UL	60,000	26,500	14,000	17,500	13,000	25,000	10,000 5,500
H-4	S	UL	UL	8	3	8	3	5	3 2
	A	UL	UL	UL	37,500	17,500	28,500	17,500	36,000 16,500 6,500
H-5	S	3	3	3	3	3	3	3	2 1
	A	UL	UL	UL	37,500	23,000	28,500	19,000	36,000 16,000 9,000
I-1	S	UL	UL	8	6	NP	4	5	NP NP
	A	UL	UL	10,000	NP	16,500	5,600	18,000	NP NP
I-2	S	UL	UL	4	3	5	3	5	NP NP
	A	UL	UL	7,000	3,500	5,000	1,200	6,500	2,000 NP
I-3	S	UL	UL	4	3	5	3	5	NP NP
	A	UL	UL	7,000	3,500	5,000	1,200	6,500	2,000 NP
I-4	S	UL	UL	8	6	NP	4	5	NP NP
	A	UL	UL	26,500	9,500	23,500	5,600	25,500	8,400 5,500
M	S	UL	UL	8	6	NP	4	6	NP NP
	A	UL	UL	25,500	9,500	18,500	5,600	14,000	8,400 5,500
R-1	S	UL	UL	UL	4	NP	3	NP	NP NP
	A	UL	UL	UL	16,000	NP	24,000	NP	20,500 NP
R-2	S	UL	UL	UL	4	NP	3	NP	NP NP
	A	UL	UL	UL	16,000	NP	24,000	5,600	20,500 NP
R-3	S	UL	UL	UL	4	5	3	6	3 3
	A	UL	UL	UL	37,500	16,500	28,500	9,016	30,000 8,440 5,500
S-1	S	UL	6	6	3	6	3	4	3 2
	A	UL	40,000	12,000	9,000	9,500	7,500	12,000	7,500 3,000 1,200
S-2[c]	S	UL	UL	UL	6	7	6	6	3 2
	A	UL	UL	UL	15,000	10,000	10,000	9,000	10,000 8,400 5,500
U[f]	S	UL	5	4	2	3	2	4	2 1
	A	UL	35,000	10,000	8,500	14,000	8,500	18,000	9,000 5,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².
UL = Unlimited, NP = Not permitted.

Not permitted in Fire District
Not permitted in Fire District without sprinklers

a. See the following sections for general exceptions to Table 503.
1. Section 504.2, Allowable height increase due to automatic sprinkler system installation.
2. Section 506.2, Allowable area increase due to frontage.
3. Section 506.3, Allowable area increase due to automatic sprinkler system installation.
4. Section 507, Unlimited area building.
b. For open parking structures, see Section 406.3.
c. For private garages, see Section 406.1.
d. See Section 415.5 for limitations.
e. Except that Occupancies F-1, M, S-1 and S-2 in Groups B, F-1, H-3 through H-5, S-1, S-2 and U, buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be unlimited in height.

20. REQUIRED SEPARATION OF OCCUPANCIES (HOURS) TABLE 508.3.3 OF 2008 NYC BUILDING CODE.

TABLE 508.3.3
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)[a]

USE	A-1	A-2	A-3	A-4	A-5	F	F-1	F-2	H-1	H-2	H-3	H-4	H-5	I-1	I-2	I-3	I-4	M	R-1	R-2	R-3	R-4	S-1	S-2	U
A-1	—	—	—	—	—	2	2	1	3	1	NP	1	NP	1	2	2	2	2	2	2	1	2	2	1	3
A-2	—	—	—	—	—	2	2	1	3	1	NP	1	NP	1	2	2	2	2	2	2	1	2	2	1	3
A-3	—	—	—	—	—	2	2	1	3	1	NP	1	NP	1	2	2	2	2	2	2	1	2	2	1	3
A-4	—	—	—	—	—	3	3	2	3	2	NP	2	NP	2	3	3	3	3	3	3	2	3	3	2	3
A-5	—	—	—	—	—	3	3	2	3	2	NP	2	NP	2	3	3	3	3	3	3	2	3	3	2	3
B	—	—	—	—	—	2	2	1	3	1	NP	1	NP	1	2	2	2	2	2	2	1	2	2	1	3
E	—	—	—	—	—	3	3	2	NP	2	NP	2	NP	2	3	3	3	3	3	3	2	3	3	2	3
F-1	—	—	—	—	—	2	2	1	NP	1	NP	1	NP	1	2	2	2	2	2	2	1	2	2	1	3
F-2	—	—	—	—	—	1	1	1	NP	1	NP	1	NP	1	2	2	2	2	2	2	1	2	2	1	3
H-1	—	—	—	—	—	3	3	2	4	2	NP	2	NP	2	4	4	4	4	4	4	3	4	4	3	4
H-2	—	—	—	—	—	2	2	1	2	1	NP	1	NP	1	3	3	3	3	3	3	2	3	3	2	3
H-3	—	—	—	—	—	2	2	1	NP	1	NP	1	NP	1	3	3	3	3	3	3	2	3	3	2	3
H-4	—	—	—	—	—	2	2	1	3	1	NP	1	NP	1	3	3	3	3	3	3	2	3	3	2	3
H-5	—	—	—	—	—	2	2	1	3	1	NP	1	NP	1	3	3	3	3	3	3	2	3	3	2	3
I-1	—	—	—	—	—	2	2	1	4	2	NP	2	NP	1	3	3	3	3	3	3	2	3	3	2	3
I-2	—	—	—	—	—	3	3	2	4	3	NP	3	NP	2	4	4	4	4	4	4	3	4	4	3	4
I-3	—	—	—	—	—	3	3	2	4	3	NP	3	NP	2	4	4	4	4	4	4	3	4	4	3	4
I-4	—	—	—	—	—	3	3	2	4	3	NP	3	NP	2	4	4	4	4	4	4	3	4	4	3	4
M	—	—	—	—	—	2	2	1	4	2	NP	2	NP	2	4	4	4	4	4	4	3	4	4	3	4
R-1	—	—	—	—	—	2	2	1	4	2	NP	2	NP	2	4	4	4	4	4	4	3	4	4	3	4
R-2	—	—	—	—	—	2	2	1	4	2	NP	2	NP	2	4	4	4	4	4	4	3	4	4	3	4
R-3	—	—	—	—	—	1	1	1	3	1	NP	1	NP	1	3	3	3	3	3	3	2	3	3	2	3
R-4	—	—	—	—	—	2	2	1	4	2	NP	2	NP	2	4	4	4	4	4	4	3	4	4	3	4
S-1	—	—	—	—	—	2	2	1	4	2	NP	2	NP	2	4	4	4	4	4	4	3	4	4	3	4
S-2	—	—	—	—	—	3	3	2	4	3	NP	3	NP	2	4	4	4	4	4	4	3	4	4	3	4
U	—	—	—	—	—	2	2	1	3	2	NP	2	NP	2	3	3	3	3	3	3	2	3	3	2	3

For SI: 1 square foot = 0.0929 m².
a. See Section 508.3.3 for reduction permitted.
b. Occupancy separation need not be provided for storage areas serving Group B or M if any of the following conditions apply:
1. The storage area is less than 10 percent of the floor area of the story and less than 2500 square feet (276.7 m²).
2. The storage area is provided with an automatic fire-extinguishing system and is less than 3,000 square feet (278.7 m²) or 10 percent of the storage area is less than 3,000 square feet (929 m²).
Reserved.
d. For private garages and carports, see Section 406.1.4.
e. Open parking garages must comply with the occupancy separation setting since that they serve, provided:
1. The parking supports is owned directly to the roadways and
2. A shaft consists of noncombustible materials, at least 28 inches (600 mm) down from the ceiling, is provided to separate the cooking facilities from the restaurant seating areas; and
3. Sprinkler heads conforming in accordance with the provisions of this code are provided in the kitchen side of the curtain, within 24 inches (610 mm) of the curtain opening, and any other openings excluding doors between the kitchen and the seating areas, and spaced not more than 60 inches (1220 mm) on center for each opening that is more than 60 inches (1520 mm) wide.

21. FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS) TABLE 601 OF 2008 NYC BUILDING CODE.

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[d]	B	A[d]	B	HT	A[d]	B
Structural frame[e] including columns, girders, trusses	3[b]	2[b]	1	0	1	0	HT	1	0
Bearing walls Exterior[d, i]	3	2	1	0	2	2	1	1	0
Interior	3[b]	2[b]	1	0	1	0	1HT	1	0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[e]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction[h] Including supporting beams and joists	2	2	1	0	1	0	HT	1	0
Roof construction Including supporting beams and joists	1½[f]	1[f]	1[f]	0[f]	1[f]	0	HT	1[f]	0

For SI: 1 foot = 304.8 mm.
a. The fire-resistance rating of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
b. 1. Except in Factory-Industrial (F-1), Hazardous (H), Mercantile (M) and Moderate-Hazard Storage (S-1) occupancies, fire protection of structural members shall not be required, including protection of roof framing supporting loads on columns or walls, where such roof framing is more than 20 feet or more above any floor immediately below. Fire-retardant-treated wood shall be allowed to be used for such unprotected members.
2. Except in Factory-Industrial (F-1) occupancies subject to regulation under Sections 2646.1 and 2646.2 of the *New York State Labor Law*, and in Group U, R-1, R-2 and Group R-3 occupancies, no fire protection is required where a 1-hour fire-resistance rating is required.
3. Except in Factory-Industrial (F-1) occupancies subject to regulation under Sections 2646.1 and 2646.2 of the *New York State Labor Law*, and in Group U, R-1, R-2 and Group R-3 occupancies, in Type I and II construction, fire-retardant -treated wood shall be allowed in buildings including gables and trusses as part of the roof construction when the building is:
i. Type II construction of any height; or
ii. Type I construction two stories or less; or when over two stories, the vertical distance from the upper floor to the roof is 20 feet or more.
c. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.
d. Not less than the fire-resistance rating required by other sections of this code.
e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
f. See footnote (a) of Table 602.
g. See Section 508.3.3 for additional requirements.
h. Type V construction is not permitted inside fire districts except as provided for in Section D105.1 of Appendix D.

22. FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE TABLE 602 OF 2008 NYC BUILDING CODE.

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE[a, c, d, e]

| FIRE SEPARATION DISTANCE (feet) | TYPE OF CONSTRUCTION | OCCUPANCY G

HOUSING MAINTENANCE CODE NOTES

1. DUTIES OF THE OWNER SHALL BE AS PER SECTION D26-10.01 OF H.M.C.
2. DUTIES OF TENANTS SHALL BE AS PER SECTIONS D26-10.03 & 10.05 OF H.M.C.
3. THE OWNER OF THE MULTIPLE DWELLINGS SHALL KEEP THE PREMISES IN GOOD REPAIR.
4. OWNER'S RIGHT OF ACCESS SHALL BE AS PER SECTION D26-10.07 OF H.M.C.
5. INTERIOR OF DWELLING UNIT SHALL BE CLEANED AS PER SECTION D26-11.05 OF H.M.C.
6. THE OWNER SHALL KEEP THE ROOF, YARDS, COURTS & OTHER OPEN SPACES CLEAN & FREE FROM DIRT, FILTH, GARBAGE OR OTHER OFFENSIVE MATERIALS.
7. PAINTING OF PUBLIC PARTS & WITHIN DWELLINGS TO COMPLY WITH SECTION D26-12.01 OF H.M.C.
8. PAINTING OF WINDOW FRAMES TO COMPLY WITH SECTION D26-12.03 OF H.M.C.
9. PREMISES TO BE MAINTAINED & KEPT FREE OF RODENT & INSECT INFESTATION AS PER SECTIONS D26-13.03 & D26-13.05 OF H.M.C.
10. RECEPTACLES FOR COLLECTION OF WASTE MATTER TO BE PROVIDED AS PER SECTION D26-14.03 & D26-14.05 OF H.M.C.
11. SANITARY FACILITIES IN MULTIPLE DWELLINGS & LIGHT & VENTILATION FOR TOILET COMPARTMENTS SHALL BE AS PER SECTIONS D26-31.01, D26-31.03, D26-31.05, D26-31.07, & D26-31.11 OF H.M.C.
12. PROVIDE & MAINTAIN A SUPPLY OF PURE & WHOLESOME WATER SUFFICIENT IN QUANTITY & AT SUFFICIENT PRESSURE TO KEEP ALL PLUMBING FIXTURES ADEQUATELY SUPPLIED FOR THEIR SANITARY MAINTENANCE AS PER SECTIONS D26-15.01 & D26-15.03 OF H.M.C.
13. MAINTAIN & KEEP IN GOOD REPAIR THE PLUMBING & DRAINAGE SYSTEM INCLUDING WATER CLOSETS, TOILETS, SINKS & OTHER FIXTURES AS PER D26-16.01 OF H.M.C.
14. DRAINAGE OF ROOFS, COURTS & YARDS SHALL COMPLY WITH D26-16.03 OF H.M.C.
15. HEAT & HOT WATER REQUIREMENTS AS PER ARTICLE 17 OF H.M.C. CENTRAL HEATING SYSTEM AS PER BUILDING CODES; MINIMUM TEMPERATURES TO BE MAINTAINED AS PER SECT. D26-17.03. CENTRAL HEATING SYSTEM TO BE INSPECTED YEARLY BY QUALIFIED PERSON IN ACCORDANCE WITH SECTION D26-17.05 OF H.M.C. SUPPLY OF HOT WATER AS PER SECTION D26-17.07 OF H.M.C.
16. YEARLY INSPECTIONS OF CENTRAL HEATING PLANT BY QUALIFIED PERSON TO BE MADE AS PER SECTION D26-17.05 OF H.M.C.
17. PROVIDE ELECTRIC LIGHTING EQUIPMENT IN ALL DWELLINGS AS PER SECTIONS D26-19.01 OF H.M.C. AND C26-605AC, C26-1203AC, & SECTION 26 TO 35 OF MDL.
18. PROVIDE & MAINTAIN ELECTRIC LIGHTING FIXTURES IN EVERY PUBLIC HALL, STAIR OR FIRE STAIR, ENTRANCE WAY, COURT, OR YARD IN ACCORDANCE WITH SECTIONS D26-19.03, D26-19.05, & D26-19.07 OF H.M.C.
19. PROPER ELECTRIC LIGHTS TO BE PROVIDED NEAR ENTRANCE WAYS, YARDS & COURTS AS PER SECTION D26-19.07 OF H.M.C., ON SEPARATE CIRCUIT OR CONNECTED TO HOUSE LINE SERVICING PUBLIC HALLS, AND IN ACCORDANCE WITH REQUIREMENTS & APPROVAL OF THE DEPARTMENT OF WATER SUPPLY, GAS & ELECTRICITY.
20. BOARD OF STANDARDS & APPEALS APPROVED TYPE PEEPHOLES APPROXIMATELY 5 FEET ABOVE FINISHED FLOOR TO BE PROVIDED IN ENTRANCE DOORS OF DWELLING UNITS AS PER SECTION D26-20.01 OF H.M.C. & DEPARTMENT RULES & REGULATIONS.
21. ENTRANCE DOORS SHALL BE PROVIDED WITH HEAVY DUTY LATCH SET & A HEAVY DUTY DEAD BOLT OPERABLE WITH A KEY FROM THE OUTSIDE & A THUMB-TURN FROM THE INSIDE; EQUIP DOORS WITH A CHAIN DOOR GUARD SO AS TO PERMIT PARTIAL OPENING AS PER SECTION D26-20.05 OF H.M.C.
22. KEY LOCK IN THE ENTRANCE DOOR TO EACH DWELLING UNIT WITH AT LEAST ONE KEY TO BE PROVIDED BY OWNER AS PER D26-20.05 OF H.M.C.
23. PROPERLY MOUNTED & SECURED POLISHED METAL VIEWING MIRRORS TO BE PROVIDED WITHIN SELF-SERVICE ELEVATORS AS PER SECTION D26-20.03 OF H.M.C. & DEPARTMENT RULES & REGULATIONS.
24. APPROVED TYPE MAIL RECEPTACLES & DIRECTORY OF PERSONS LIVING IN DWELLING TO BE PROVIDED AS PER SECTION D26-21.01 OF H.M.C. & REGULATIONS OF POST OFFICE DEPARTMENT.
25. PROPER FLOOR SIGNS TO BE PROVIDED IN PUBLIC HALL NEAR STAIRS & ELEVATORS & WITHIN STAIR ENCLOSURE AS PER SECTION D26-21.03 OF H.M.C. & DEPARTMENT RULES & REGULATIONS.
26. PROPER STREET NUMBERS PLAINLY VISIBLE FROM THE SIDEWALK IN FRONT OF THE DWELLING TO BE POSTED ON THE DWELLING AS PER SECTION D26-21.05 OF H.M.C. AND RULES & REGULATIONS OF BOROUGH PRESIDENT.
27. A RESIDENT MANAGER RESPONSIBLE FOR OPERATION & MAINTENANCE OF ROOMING UNITS TO BE PROVIDED AS PER SECTION D26-21.09 OF H.M.C.
28. PROPER JANITORIAL SERVICES TO BE PROVIDED AS PER SECTION D26-22.03 OF H.M.C.
29. ALL COMBUSTIBLE MATERIALS WITHIN ONE FOOT OF COOKING APPARATUS TO BE PROPERLY FIRE RETARDED & MINIMUM 2-FOOT CLEARANCE MAINTAINED ABOVE EXPOSED COOKING SURFACE. COMBUSTIBLE MATERIAL BETWEEN 2 FEET & 3 FEET ABOVE EXPOSED COOKING SURFACE TO BE FIRE RETARDED. SECTION D26-32.05 OF H.M.C. & DEPARTMENT RULES & REGULATIONS.
30. MINIMUM ROOM SIZE SHALL BE AS PER D26-33.01 AND MAXIMUM OCCUPANCY SHALL BE AS PER D26-33.03 OF H.M.C.
31. NATURAL LIGHT AND VENTILATION SHALL BE PROVIDED AS PER D26-30.14 AND 30.03 OF HMC.
32. KITCHENS AND KITCHENETTES SHALL BE PROVIDED WITH PROPER FACILITIES, EQUIPMENT, LIGHTING, VENTILATION AND FIRE PROTECTION AS PER D26- 32.01, 32.03, AND 32.05 OF H.M.C.
33. NO KITCHEN SHALL BE OCCUPIED FOR SLEEPING PURPOSES. SECTION D26-33.05 OF H.M.C.
34. MAXIMUM TWO BOARDERS, ROOMERS OR LODGERS PERMITTED TO EACH FAMILY EXCEPT THAT MAXIMUM ONE BOARDER, ROOMER OR LODGER PERMITTED IF LOCATED IN ZONING FOR ONE & TWO FAMILY DWELLINGS.
35. OCCUPANCY OF CELLARS AND BASEMENTS SHALL BE AS PER D26-34.01, 34.03, AND 34.05 OF H.M.C.
36. REGISTRATION STATEMENT TO BE FILED AS PER SECTION D26-41.01 & D26-41.03 OF H.M.C.
37. REGISTRATION IDENTIFICATION, SIGN CONTACT (OWNER AND MANAGEMENT), AND DWELLING SERIAL NUMBER TO BE POSTED AS PER SECTION D26-41.15 OF H.M.C.
38. IDENTIFICATION OF MANAGING AGENT OR OWNER TO BE INDICATED ON TENANT'S RENT RECEIPT AS PER SECTION D26-41.17 OF H.M.C.

NOTE:
HOUSING MAINTENANCE CODE NOTES APPLY TO THE OWNER AFTER OCCUPANCY AND ARE NOT SUBJECT TO COMPLIANCE BY CM DURING CONSTRUCTION.

MULTIPLE DWELLING LAW NOTES:

1. LIGHTING AND VENTILATION OF ROOMS SHALL BE AS PER SECTION 31 OF MDL.
2. SIZE OF ROOMS AS PER SECTION 31 OF MDL.
3. ALCOVES SHALL BE AS PER SECTION 32 OF MDL
4. COOKING SPACES SHALL BE AS PER SECTION 33 OF MDL.
5. ROOMS IN BASEMENTS AND CELLARS SHALL BE AS PER SECTION 34 OF MDL.
6. BUILDING ENTRANCE DOORS AND LIGHTS SHALL BE AS PER SECTION 35 OF MDL.
7. WINDOWS AND SKYLIGHTS FOR PUBLIC HALLS AND STAIRS SHALL BE AS PER SECTION 36 OF MDL.
8. ARTIFICIAL HALL LIGHTING SHALL BE AS PER SECTION 37 OF MDL.
9. ENTRANCE HALLS TO BE AS PER SECTION 50 OF MDL.
10. BUILDING ENTRANCE DOORS, LOCKS AND INTERCOM SYSTEM SHALL BE SECTION 50-A OF MDL.
11. ALL SHAFTS, ELEVATORS AND DUMBWAITERS SHALL BE AS PER SECTION 51 OF MDL.
12. APARTMENT PEEPHOLES SHALL BE AS PER SECTION 51-A OF MDL.
13. MIRRORS IN SELF-SERVICE ELEVATORS SHALL BE AS PER SECTION 51-B OF MDL.
14. STAIRS SHALL BE AS PER SECTION 52 OF MDL.
15. FIRE ESCAPES SHALL BE AS PER SECTION 53 OF MDL.
16. WAINSCOTING SHALL BE AS PER SECTION 55 OF MDL.
17. ENTRANCE BOLTS AND MAIL BOXES SHALL BE AS PER SECTION 57 OF MDL.
18. ALL INCOMBUSTIBLE MATERIALS SHALL BE AS PER SECTION 58 OF MDL.
19. PARAPETS AND GUARD RAILINGS SHALL BE AS PER SECTION 62 OF MDL.
20. BELOW GRADE FLOORS SHALL COMPLY AS PER SECTION 63 OF MDL.
21. LIGHTING, GAS METERS, GAS AND OIL APPLIANCES, SHALL BE AS PER SECTION 64 OF MDL.
22. BOILER ROOMS SHALL BE AS PER SECTION 65 OF MDL.
23. WATER SUPPLY SHALL BE AS PER SECTION 75 OF MDL
24. WATER CLOSET AND BATH ACCOMMODATIONS SHALL BE AS PER SECTION 76 OF MDL.
25. PLUMBING AND DRAINAGE SHALL BE AS PER SECTION 77 OF MDL.
26. REPAIRS SHALL BE MADE AS PER SECTION 78 OF MDL.
27. HEAT SHALL BE PROVIDED AS PER SECTION 79 OF MDL.
28. CLEANLINESS SHALL BE AS PER SECTION 80 OF MDL.
29. RECEPTACLES FOR WASTE MATTER SHALL BE AS PER SECTION 81 OF MDL.
30. PRIVACY SHALL BE AS PER SECTION 82 OF MDL.
31. JANITORIAL SERVICES SHALL BE AS PER SECTION 83 OF MDL.
32. CONSTRUCTION STANDARDS FOR THE CONTROL OF NOISE SHALL BE AS PER SECTION 84 OF MDL.

ARTICLE N0. 4:

33. FIRE PROOF CONSTRUCTION AS PER SECT. 101 OF MDL.
34. FIRE PROOF STAIRS AS PER SECT. 102 OF MDL.
35. EGRESS FROM APARTMENTS AS PER SECT. 103 OF MDL.
36. STAIR BULKHEAD AS PER SECT. 104 OF MDL.
37. SEPARATION AND VENTILATION OF FIRE PROOF STAIRS AS PER SECT. 105 OF MDL.
38. CELLAR AND BASEMENT FIRE STAIRS AS PER SECT. 106 OF MDL.
39. PUBLIC HALL AS PER SECT. 107 OF MDL.
40. PARTITIONS AS PER SECT. 108 OF MDL.
41. INTERIOR WATER CLOSETS AND BATHROOMS AS PER SECT. 115 OF MDL.

MULTIPLE DWELLING LAW - M.D.L. 277:

1. (a) EXTERIOR WALLS 3 HOUR FIRE RATED OR 30'-0" SEPARATION
   (b) LOT LINE WINDOWS PER TABLE 3-4, CHAPTER 26 OF THE ADMINISTRATIVE CODE OF THE CITY OF NEW YORK OR ONE SPRINKLER HEAD.

2. BUILDING TO BE:
   (a) FIREPROOF , NO HEIGHT LIMIT
   (c) COMPLY WITH TABLE 503

3. MANUFACTURING/COMMERCIAL USE : LIMITED TO 2 ND FLOOR & BELOW (PROPOSED @ BASEMENT FLOOR)

4. MANUFACTURING/COMMERCIAL : WET SPRINKLER REQUIRED

5. TENANTS TO HAVE ONE HOUR FIRE SEPARATION

6. CELLAR TO HAVE FIRE RETARDED CEILING PER M.D.L. 61, COMMERCIAL SPACES TO HAVE FIRE RETARDED CEILING PER M.D.L. 61
7. (b) i) A) EVERY DWELLING UNIT MIN. ONE WINDOW WITH 15'-0" SEPARATION MINIMUM
      E) IN NO EVENT SHALL THE DISTANCE BETWEEN SUCH WINDOWS AND THE REAR LOT LINE BE LESS THAN 5'-0"
   ii) A) 10% WINDOW FOR ROOMS UP TO 500 sq.ft.
      B) DECREASE BY 1% FOR EVERY 100 sq.ft. GREATER THAN 500 sq.ft. TO A MINIMUM OF 5%
      C) IN NO EVENT SHALL THE DISTANCE BETWEEN SUCH WINDOWS AND THE REAR LOT LINE BE LESS THAN 5'-0"
      D) 50% OPERABLE
   (c) NO INTERIOR ROOMS PERMITTED, HOME OCCUPATION SPACES TO BE MECHANICALLY VENTILATED
   (d) NO ENLARGEMENTS EXCEPT WHERE UNDERLYING DISTRICT PERMITS RESIDENTIAL USE
   (e) 40% OPEN KITCHEN PART OF ADJACENT SPACE
   (f) TOILET VENTILATION 50 CPM BY MECHANICAL MEANS
   (g) SMOKE DETECTOR OUTSIDE OF EACH SLEEPING AREA

8. ONE HOUR FIRE PARTITION BETWEEN APARTMENTS WITH FIREPROOF SELF CLOSING ENTRY DOOR. ALL WINDOWS ON FIRE ESCAPES TO BE WIRE GLASS.

9. EGRESS:
   (b) (ii) EGRESS FROM FIREPROOF BUILDING: AN ENCLOSED HALLWAY AND TWO INDEPENDENTLY ENCLOSED STAIRS.

10. SKYLIGHT 20 sq.ft. IN STAIR WITH 144 sq.ft. IN FIXED OPENING

11. ALL SHAFTS 2 HOUR FIRE RATED

12. COOKING SPACE TO COMPLY WITH M.D.L. 33

13. M.D.L. TITLE 3 ARTICLE 3 SHALL APPLY

14. INTERIOR IRON COLUMNS TO BE 3 HOUR PROTECTED OR SPRINKLED

15. ELEVATOR SHAFTS TO BE 2 HOUR RATED NON COMBUSTIBLE

M.D.L. 278 BUILDING TO COMPLY WITH THE FOLLOWING:

ARTICLE:
1. INTRODUCTORY PROVISIONS
2. MISCELLANEOUS APPLICATION EXCEPT SUBDIVISION 2 OF SECTION 9
8. REQUIREMENTS AND REMEDIES
9. REGISTRY OF NAMES & SERVICE OF PAPERS
10. PROSTITUTION
11. LAWS REPEALED: SAVING CLAUSE: EFFECT

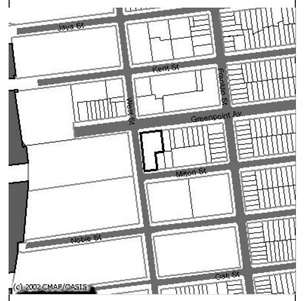
SECTION:
28. TWO OR MORE BUILDING ON SAME LOT N/A
29. PAINTING OF COURTS & SHAFTS
31. SIZE OF ROOMS SUBDIVISION 6 ONLY
37. ARTIFICIAL HALL LIGHTING
53. FIRE ESCAPES
55. WAINSCOTING SUBDIVISION 2 ONLY
56. FRAME BUILDINGS AND EXTENSIONS : N/A
57. BELLS: MAIL RECEPTACLES
58. INCOMBUSTIBLE MATERIALS
59. BAKERIES AND FAT BOILING N/A
60. MOTOR VEHICLE STORAGE N/A
61. BUSINESS USES (EXCEPT PARA. C OF SUBDIVISION 1 AND SUBDIVISION 3)
62. PARAPETS, GUARD RAILINGS AND WIRES

NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
WINDOW GUARD REGULATIONS OF THE CITY OF NY 6-30-91: CHAPTER 12
§12-11: SPECIFICATIONS FOR WINDOW GUARDS FOR OTHER THAN DOUBLE HUNG WINDOWS.

A. APPLICATIONS FOR APPROVAL OF WINDOW GUARDS FOR USE IN OTHER THAN DOUBLE HUNG WINDOWS SHALL SPECIFY THE WINDOW TYPE(S) FOR WHICH THE GUARD SUBMITTED IS INTENDED. MOUNTING MATERIALS AND INSTRUCTIONS FOR INSTALLATION FOR EACH SPECIFIC TYPE OF WINDOW MUST BE INCLUDED WITH THE APPLICATION AND MUST BE PROVIDED TO THE CONSUMER WITH THE GUARDS.
B. GUARDS SHALL BE CONSTRUCTED SO AS TO REJECT THE PASSAGE OF A SOLID FIVE (5) INCH SPHERE AT EVERY SPACE AND INTERVAL.
C. GUARDS INTENDED FOR ENCASEMENTS, SLIDERS, AND OTHER TYPES OR COMBINATIONS WINDOWS IN WHICH THE HEIGHT OF THE OPENINGS ARE NOT SUBJECT TO LIMITATION, MUST BE OF SUCH SIZE AS TO FILL THE ENTIRE APERTURE, AND MUST REJECT PASSAGE OF A SOLID FIVE (5) INCH SPHERE AT EVERY SPACE AND INTERVAL.
   1. WHEN APPROVED LIMITING DEVICES ARE UTILIZED IN LIEU OF WINDOW GUARDS, THE SIZE OF ANY UNGUARDED OPENING MAY NOT EXCEED 4 ½ INCHES SO AS TO REJECT PASSAGE OF A SOLID FIVE (5) INCH SPHERE AT EVERY SPACE AND INTERVAL.
   2. ON GUARDS UTILIZING NON-TELESCOPING BARS, THERE SHALL BE A PERMANENT SPOT WELD ON AT LEAST TWO (2) OF THE HORIZONTAL BARS SO AS TO PROVIDE A MINIMUM OF TWO (2) INCHES OVERLAP WHEN FULLY EXTENDED.
   3. ON TELESCOPING BARS, WHEN THE GUARD IS EXTENDED TO THE MAXIMUM ALLOWABLE WIDTH, THERE SHALL BE A MINIMUM OVERLAP OF FIVE (5) INCHES OR 1/3 OF THE LENGTH OF THE BAR, WHICHEVER IS GREATER.
   4. A PERMANENT LABEL SHALL BE AFFIXED ON AT LEAST ONE HORIZONTAL BAR ONE EACH FACING SURFACE. SAID LABEL SHALL READ: **WARNING! EXTENSION OF THIS GUARD BEYOND ___ INCHES IS DANGEROUS AND ILLEGAL.** *INSERT THE NUMBER OF INCHES APPROPRIATE TO THE PARTICULAR MODEL IN THIS SPACE.
   5. ON TELESCOPING GUARDS, THERE SHALL BE AN ADDITIONAL STILE OR OTHER APPROVED SUPPORT(S), AT THE TELESCOPING OPENING OF THE OUTER TUBING OF THE BARS, THAT SHALL PREVENT THE SPREADING OF THE BARS.
D. GUARDS SHALL BEAR A ONE HUNDRED AND FIFTY POUND (150 LB.) LOAD AT IT'S CENTER SPAN WHEN EXTENDED TO IT'S MAXIMUM WIDTH. A TEST WITH GUARDS ATTACHED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION MUST BE PERFORMED AND RESULTS CERTIFIED BY A PROFESSIONAL ENGINEER OR INDEPENDENT TESTING LABORATORY. THE INFORMATION SHALL INCLUDE ANY FINDING OF A PERMANENT OR TEMPORARY DISTORTION.
E. EACH CHANNEL STILE SHALL HAVE AT LEAST TWO (2) MOUNTING HOLES. IF GUARD IS MORE THAN 15 INCHES HIGH, ADDITIONAL MOUNTING HOLES ARE REQUIRED TO PROVIDE A MAXIMUM OF 18 INCHES BETWEEN MOUNTING HOLES.
F. COATING OF GUARDS SHALL BE UNLEADED. STATEMENT FROM THE PAINT MANUFACTURER ATTESTING TO THIS FACT SHALL ACCOMPANY THE APPLICATION FOR WINDOW GUARD APPROVAL.
G. CODED MANUFACTURER'S IDENTIFICATION SYMBOL (GUARD MODEL), HEALTH DEPARTMENT APPROVAL NUMBER, AND FABRICATION DATE SYMBOLS (MONTH AND YEAR),SHALL BE IMPRINTED ON ONE OF THE END STILES SO LOCATED AS TO BE READILY VISIBLE WHEN VIEWED FROM WITHIN THE ROOM WHERE THE GUARD HAS BEEN INSTALLED.
H. SLIDING WINDOWS AND VERTICAL PIVOTING WINDOWS MAY USE STOPPING DEVICES IN LIEU OF WINDOW GUARDS AS FOLLOWS:
   1. SLIDING WINDOWS. A SOLID METAL BLOCK, MEASURING AT LEAST ONE HALF THE DEPTH OF THE WINDOW TRACK AND ONE HALF THE WIDTH, SHALL BE SECURELY FASTENED BY TWO (2) SCREWS IN THE BOTTOM WINDOW TRACK, AND A SOLID METAL BLOCK OR AN "L" SHAPED METAL STOP SHALL BE SECURELY FASTENED BY TWO (2) SCREWS IN THE UPPER WINDOW TRACK, TO PREVENT THE WINDOW FROM OPENING MORE THAN 4 ½ INCHES.
   2. VERTICAL PIVOTING WINDOWS. METAL STOPPING DEVICES SHALL BE SECURELY FASTENED TO THE UPPER AND LOWER WINDOW FRAMES BY TWO (2) SCREWS SO AS TOPREVENT THE WINDOW FROM PIVOTING OPEN MORE THAN 4 ½ INCHES. THE HEIGHT OF THE STOPPING DEVICES SHALL EXTEND NO LESS THAN ONE INCH, NO LESS THAN TWO INCHES BEYOND THE WINDOW FRAME AS NEEDED TO STOP THE WINDOW.
I. FOR TYPES OF NON-DOUBLE HUNG WINDOWS, OTHER THAN THOSE DESCRIBED IN SUBDIVISION (H) AND IN SPECIAL SITUATIONS WHERE THE STOPS DESCRIBED IN SUBDIVISIONS (H) (1) AND (H) (2) CANNOT BE USED, APPLICATION MAY BE MADE TO THE WINDOW GUARD POLICY AND ACCEPTANCE BOARD FOR APPROVAL OF AN ALTERNATE STOPPING DEVICE.
J. SCREWS USED TO MOUNT WINDOW GUARDS AND STOPPING DEVICES SHALL BE ONE WAY METAL, SCREWS OR TAMPER RESISTANT SCREWS. TAMPER RESISTANT SCREWS ARE DEFINED AS SCREWS REQUIRING SPECIAL TOOLS FOR INSTALLATION AND/OR REMOVAL, WHICH TOOLS ARE NOT READILY AVAILABLE IN RETAIL HARDWARE STORES. ALL TAMPER RESISTANT SCREWS SHALL BE COUNTER-SUNK FLUSH WITH THE STILE OR STOPPING DEVICE.
   1. APPROPRIATE SCREWS SHALL BE A MINIMUM SIZE #10 AND SHALL BE LONG ENOUGH TO PENETRATE ONE INCH INTO A WOODEN FRAME, OR
   2. SHALL BE OF ADEQUATE TYPE, SIZE, AND LENGTH TO BE SECURELY FASTENED TO A METAL WINDOW FRAME. MANUFACTURERS SHALL SUPPLY ALL REQUIRED SCREWS.
K. EACH GUARD SOLD SHALL BE SOLD WITH A SELF-CONTAINED ENVELOPE OR PLASTIC BAG CONTAINING:
   1. APPROVED INSTALLATION INSTRUCTIONS,
   2. APPROVED STOPPING DEVICES, AND
   3. SPECIFIED SCREWS NEEDED FOR INSTALLATION OF THE WINDOW GUARD AND/OR STOPPING DEVICES. IF WOOD SCREWS ARE SUPPLIED BY A MANUFACTURER, A WARNING LABEL OR MESSAGE IMPRINTED ON THE PACKAGING SHALL WARN THAT FOR METAL INSTALLATIONS, APPROPRIATE TYPE, SIZE, AND LENGTH SCREWS MUST BE SUBSTITUTED. THIS WARNING SHALL BE IMPRINTED ON THE PACKAGING CONTAINER.
L. INSTRUCTIONS FOR SAFE INSTALLATION OF WINDOW GUARDS SHALL BE PROVIDED BY THE MANUFACTURER FOR EACH SPECIFIC TYPE OF WINDOW FOR WHICH THEY ARE INTENDED.
   1. INSTRUCTIONS SHALL SPECIFY THAT WINDOW GUARDS MAY NOT BE INSTALLED ON WINDOWS PROVIDING ACCESS TO FIRE ESCAPES.
   2. INSTRUCTIONS SHALL SPECIFY MAXIMUM WINDOW WIDTH AND HEIGHT FOR WHICH GUARD IS INTENDED, AND SHALL CONTAIN THE FOLLOWING PROMINENTLY PRINTED WORDING: **WARNING! USE OF THIS GUARD BEYOND SPECIFIED MAXIMUM WIDTH IS DANGEROUS AND ILLEGAL!**
   3. INSTRUCTIONS SHALL PROMINENTLY WARN THAT GUARDS MUST BE INSTALLED ONLY IN SOUND (NON-ROTTING) MOUNTINGS OR TRACKS.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER
ARCHITECT
OAQ OAA RAIC AIA

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980

1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409

WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

KARL FISCHER
021282

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
GENERAL NOTES

scale N.T.S.	project no. 06-71 / 14-41
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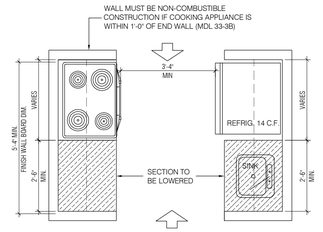
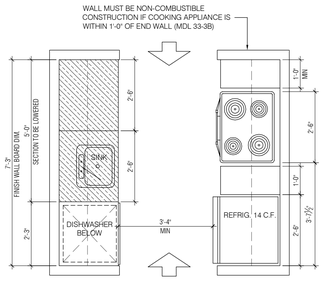
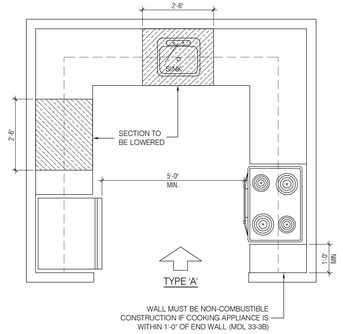
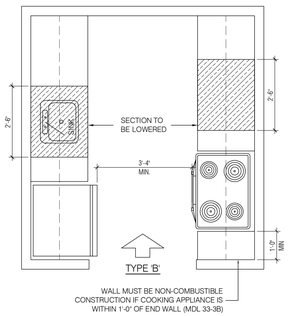


MIN. PERMISSIBLE KITCHEN SIZE

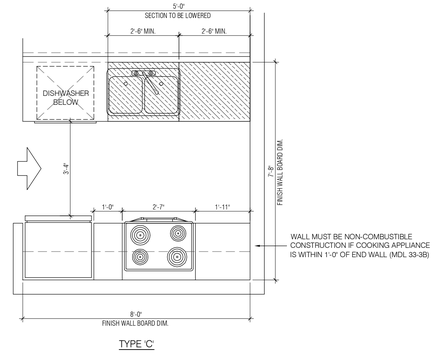


PASS-THROUGH KITCHEN CLEARANCE





"U" SHAPED KITCHEN CLEARANCE



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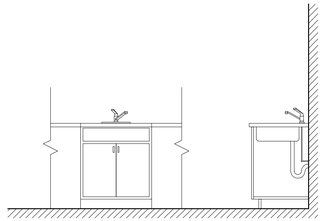
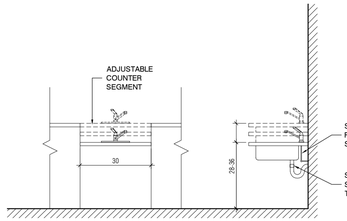
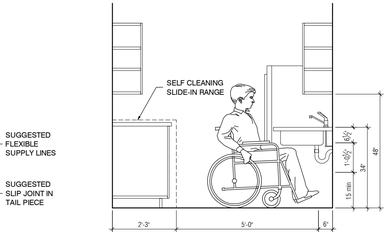


(A) BEFORE REMOVAL OF CABINETS AND BASE



(B) CABINETS AND BASE REMOVED AND HEIGHT ALTERNATIVES



(C) CLEAR FLOOR SPACE UNDER WORK SURFACE

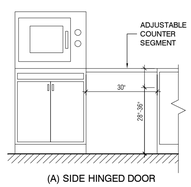
COUNTER WORK SERVICE

(A) BEFORE REMOVAL OF CABINETS AND BASE

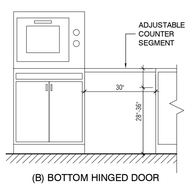
(B) CABINETS AND BASE REMOVED AND HEIGHT ALTERNATIVES

KITCHEN SINK

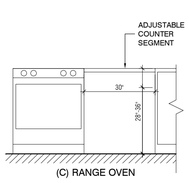
KITCHEN CLEARANCE DIMENSIONS



(A) SIDE HINGED DOOR

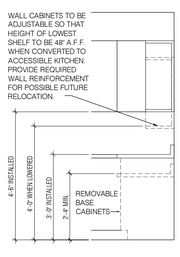


(B) BOTTOM HINGED DOOR

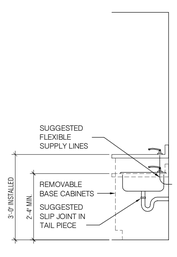


(C) RANGE OVEN

OVENS WITHOUT SELF CLEANING FEATURE

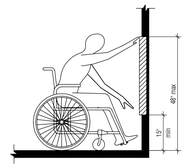


ADAPTABLE KITCHEN LOWERABLE WORK SURFACE
LOWERABLE WALL CABINETS

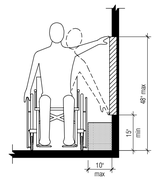


ADAPTABLE KITCHEN
LOWERABLE SINK COUNTER

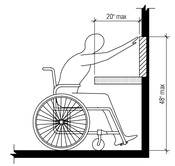
REACH RANGES



UNOBSTRUCTED FORWARD REACH



UNOBSTRUCTED SIDE REACH



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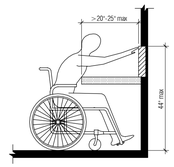
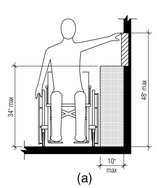


(b)

OBSTRUCTED HIGH FORWARD REACH



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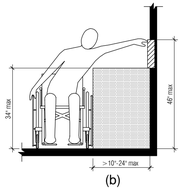
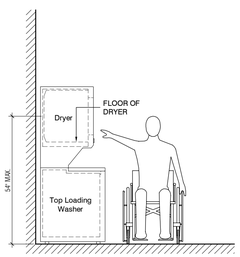


(b)

OBSTRUCTED HIGH SIDE REACH



STACKED WASHER/DRYER UNIT WITH DRYER AND ALL CONTROLS WITHIN REACH RANGE OF SEATED USER

ADAPTABLE KITCHENS (CAPABLE OF POSSIBLE FUTURE CONVERSION TO ACCESSIBLE KITCHENS)

GENERAL NOTES:

1. ONE LOWERABLE WORK SURFACE, 30" WIDE, IS REQUIRED, WITH REMOVABLE BASE CABINETS. HEIGHT TO BE ADJUSTABLE BETWEEN 28" AND 36" AFF TO COUNTERTOP.
2. ONE LOWERABLE SINK SURFACE, 30" WIDE, IS REQUIRED, WITH REMOVABLE BASE CABINETS. HEIGHT TO BE ADJUSTABLE BETWEEN 28" AND 36" AFF TO COUNTERTOP.
3. OVENS ARE ASSUMED TO BE SELF-CLEANING TYPE. IF OTHERWISE, PROVIDE A MINIMUM 30" ADJUSTABLE COUNTER SPACE WITH REMOVABLE BASE CABINETS NEXT TO OVEN.
4. A MINIMUM 36" TURNAROUND SPACE UNDER THE COUNTER WITH REMOVABLE BASE CABINETS SHALL BE PROVIDED IN DEEP CLOSED ENDED GALLEY KITCHENS AND OTHER U-SHAPED KITCHENS WHERE THE CLEARANCE BETWEEN CABINETS IS LESS THAN 5'-0". THE MINIMUM CLEARANCE BETWEEN CABINETS SHALL BE 40".
5. 48" A.F.F. WHEN CONVERTED TO ACCESSIBLE KITCHEN. PROVIDE REQUIRED WALL REINFORCEMENT FOR POSSIBLE FUTURE RELOCATION.

GENERAL NOTES:

ACCESSIBLE ROUTE:
A CONTINUOUS UNOBSTRUCTED PATH CONNECTING ALL ACCESSIBLE SPACES AND ROOMS IN A BUILDING THAT CAN BE NEGOTIATED BY ALL CATEGORIES OF PEOPLE HAVING PHYSICAL DISABILITIES.

PORTIONS OF ACCESSIBLE ROUTES WITH SLOPES OF MORE THAN 1:20 ARE RAMPS AND SHALL COMPLY WITH REQUIREMENTS FOR RAMPS.

AN INTERIOR ACCESSIBLE ROUTE SHALL BE PROVIDED FROM THE ENTRANCE OF THE BUILDING TO ALL DWELLING UNITS IN THE BUILDING. ALL DWELLING UNITS ARE TO BE ADAPTABLE.

ADAPTABLE DWELLING UNITS:
DWELLING UNITS WHICH ARE CONSTRUCTED ON AN ACCESSIBLE ROUTE AND EQUIPPED AS SET FORTH IN REFERENCE STANDARD RS 4-6 OF THE NYC BUILDING CODE SO THAT THEY CAN BE CONVERTED TO BE USED, WITH A MINIMUM OF STRUCTURAL CHANGE, BY ALL CATEGORIES OF PERSONS HAVING PHYSICAL DISABILITIES.

ALL DOORS TO BE PROVIDED WITH HANDICAP COMPLIANT HARDWARE AND SADDLES AS PER SEC. 4.13, ANSI A117.1. ADAPTABLE DWELLING UNITS SHALL BE EQUIPPED WITH DOOR WIDTHS AND CLEAR FLOOR SPACES FOR POSSIBLE OCCUPANTS WITH PHYSICAL DISABILITIES. ADAPTABLE SPACES WITHIN DWELLING UNITS SHALL INCLUDE KITCHENS AND BATHROOMS AND THEIR RESPECTIVE DOORWAYS.

THE INFORMATION SHOWN ON THIS DRAWING IS FOR GUIDANCE PURPOSES ONLY AND OUTLINE THE MOST COMMON ACCESSIBILITY CRITERIA APPLICABLE TO THIS JOB. THEY DO NOT CONSTITUTE A COMPREHENSIVE DESCRIPTION OF ALL POSSIBLE CRITERIA WHICH ARE GIVEN IN RS 4-6 OF THE NYC BUILDING CODE AND ANSI A1117.1 - 1986 AS MODIFIED BY RS 4-6.

THE GENERAL CONTRACTOR MUST DO ALL WORK IN ACCORDANCE WITH THESE REGULATIONS.

ICC/ANSI A117.1- 2003 COMMON LAUNDRY ROOM NOTES:

CHAPTER 6. PLUMBING ELEMENTS AND FACILITIES

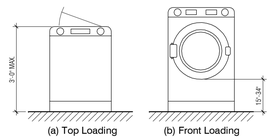
611 WASHING MACHINES AND CLOTHES DRYERS

611.1 GENERAL. ACCESSIBLE WASHING MACHINES AND CLOTHES DRYERS SHALL COMPLY WITH SECTION 611.

611.2 CLEAR FLOOR SPACE. A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305, POSITIONED FOR PARALLEL APPROACH, SHALL BE PROVIDED. THE CLEAR FLOOR SPACE SHALL BE CENTERED ON THE APPLIANCE.

611.3 OPERABLE PARTS. OPERABLE PARTS, INCLUDING DOORS, LINT SCREENS, DETERGENT AND BLEACH COMPARTMENTS, SHALL COMPLY WITH SECTION 309.

611.4 HEIGHT. TOP LOADING MACHINES SHALL HAVE THE DOOR TO THE LAUNDRY COMPARTMENT 36 INCHES (915 mm) MAXIMUM ABOVE THE FLOOR. FRONT LOADING MACHINES SHALL HAVE THE BOTTOM OF THE OPENING TO THE LAUNDRY COMPARTMENT 15 INCHES (380 mm) MINIMUM AND 34 INCHES (865 mm) MAXIMUM ABOVE THE FLOOR.



(a) Top Loading (b) Front Loading

Fig. 611.4

HEIGHT OF LAUNDRY EQUIPMENT

CHAPTER 9. BUILT-IN FURNISHINGS AND EQUIPMENT

902 DINING SURFACES AND WORK SURFACES

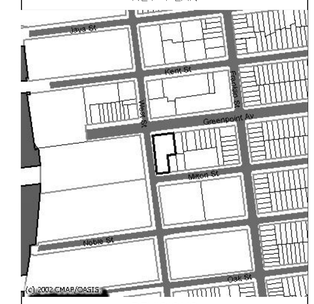
902.1 GENERAL. ACCESSIBLE DINING SURFACES AND WORK SURFACES SHALL COMPLY WITH SECTION 902.

902.2 CLEAR FLOOR SPACE. CLEAR FLOOR SPACE COMPLYING WITH SECTION 305, POSITIONED FOR A FORWARD APPROACH, SHALL BE PROVIDED. KNEE AND TOE CLEARANCE COMPLYING WITH SECTION 306 SHALL BE PROVIDED.

902.3 HEIGHT. THE TOPS OF DINING SURFACES AND WORK SURFACES SHALL BE 28 INCHES (710 mm) MINIMUM AND 34 INCHES (865 mm) MAXIMUM IN HEIGHT ABOVE THE FLOOR.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

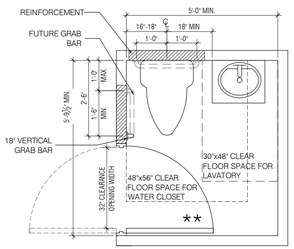
Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

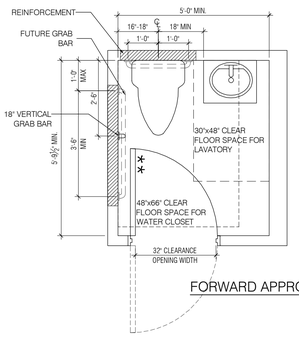
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ADA NOTES & DIAGRAMS

scale N.T.S.	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. G-003.01
checked K.F.	



PARALLEL APPROACH



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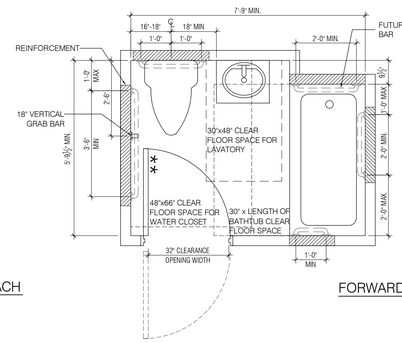

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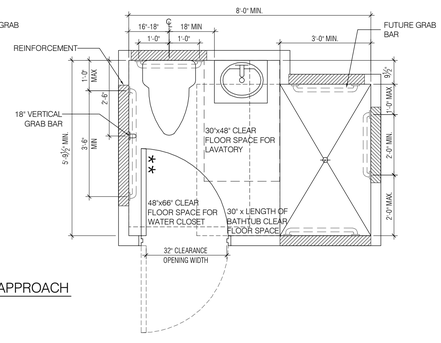
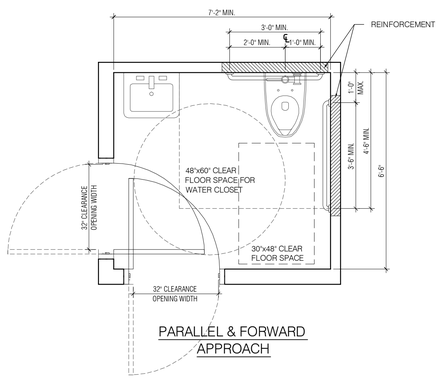
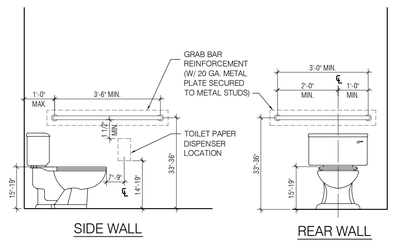


APPENDIX 'P' BATHROOM

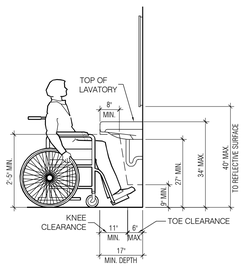


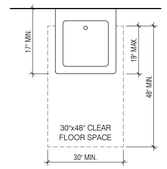
PARALLEL & FORWARD APPROACH



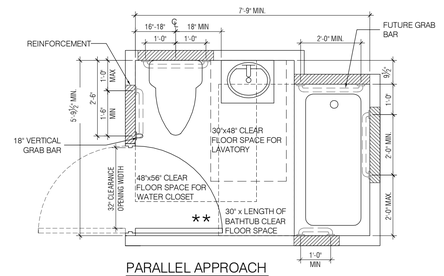
SIDE WALL REAR WALL

ACCESSIBLE TOILET (INDIVIDUAL USE)

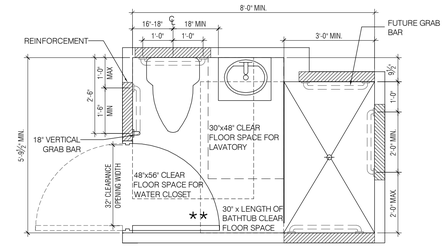




ACCESSIBLE BATHROOM



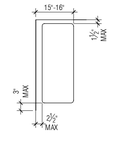
PARALLEL APPROACH



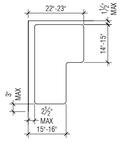
FORWARD APPROACH

**NOTE:DOOR SWING - APPENDIX 'P' TOILET & BATHING FACILITY

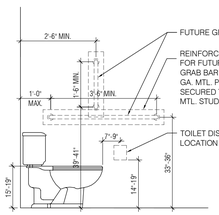
THE DOOR & FRAME ARE PROVIDED WITH MORTISED HINGE & LATCH BLANKS TO PERMIT FUTURE REVERSAL OF THE DOOR ON THE SAME FRAMES USING COMMON HAND TOOLS AND WITHOUT FURTHER ALTERATIONS TO THE DOOR & FRAMES. SUCH FUTURE SWING OF THE DOOR SHALL NOT OBSTRUCT THE MANEUVERING CLEARANCES REQUIRED AT THE DOOR OR DOORWAY.



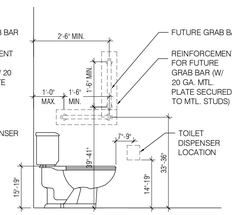
RECTANGULAR SHOWER COMPARTMENT SEAT



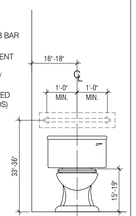
L-SHAPE SHOWER COMPARTMENT SEAT



SIDE WALL - TYPE 'A'

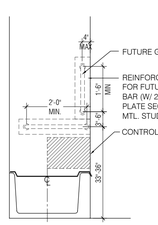


SIDE WALL - TYPE 'B'
(EXCEPTION FOR SIDE WALL THAT CANNOT ACCOMODATE A 42" GRAB BAR)

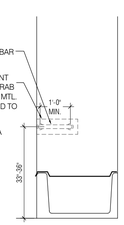


REAR WALL

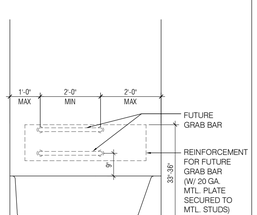
WATER CLOSET



CONTROL END WALL

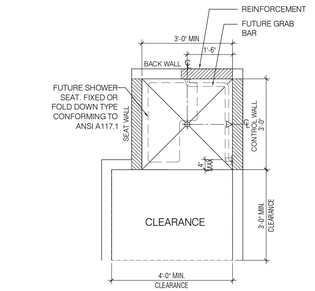


END WALL

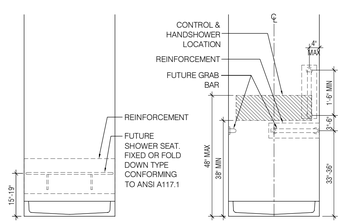


BACK WALL

BATHTUB

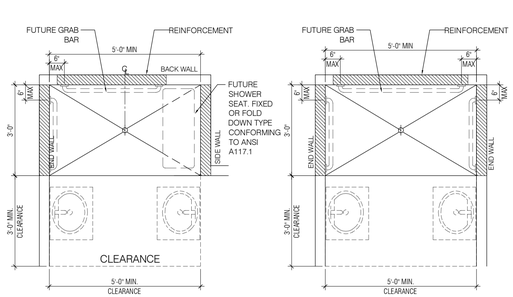


PLAN

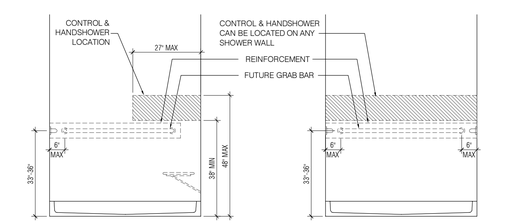


SEAT WALL CONTROL WALL

TRANSFER-TYPE SHOWER STALL

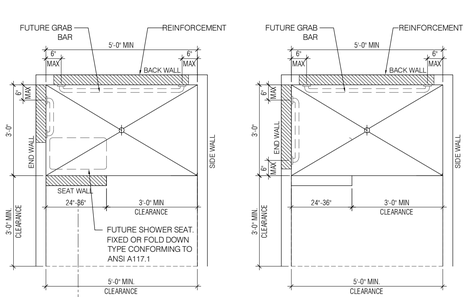


W/ SEAT W/O SEAT

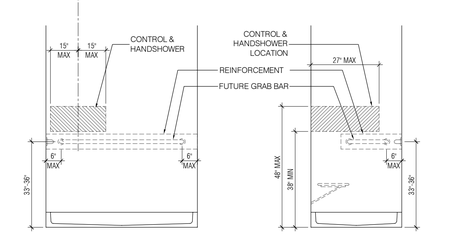


BACK WALL W/ SEAT BACK WALL W/O SEAT

STANDARD ROLL IN TYPE SHOWER COMPARTMENT



W/ SEAT W/O SEAT



BACK WALL W/ SEAT END WALL W/ SEAT

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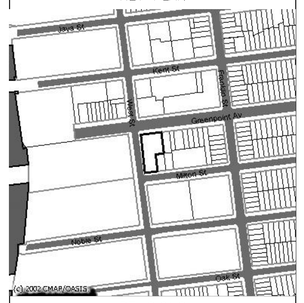
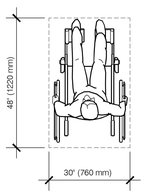


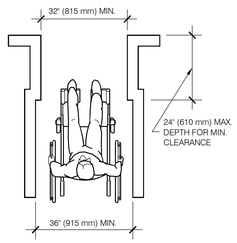
REVISIONS

no.	date	description

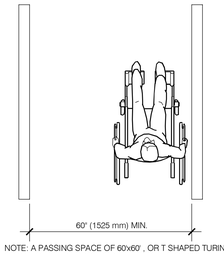


CLEAR FLOOR SPACE
FOR SINGLE WHEELCHAIR

NOTE:
32 in. clearance min. is allowed on the accessible route only at doorways.

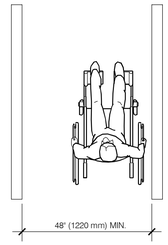


MIN. CLEAR WIDTH
FOR SINGLE WHEELCHAIR

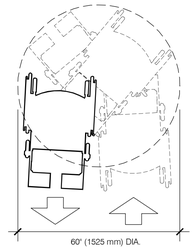


NOTE: A PASSING SPACE OF 60x60" , OR T SHAPED TURING SPACE, SHALL BE PROVIDED AT INTERVALS OF 200'.

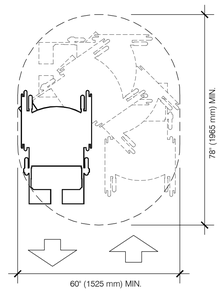
MIN. CLEAR WIDTH
FOR TWO WHEELCHAIRS



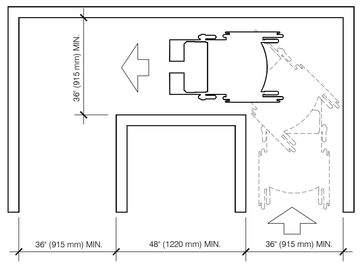
MIN. CLEAR WIDTH
FOR ONE WHEELCHAIR AND
ONE AMBULATORY PERSON



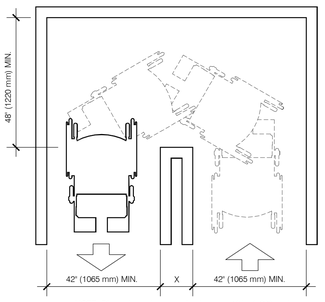
SPACE NEEDED TO
TURN A WHEELCHAIR



SPACE NEEDED
FOR SMOOTH U-TURN

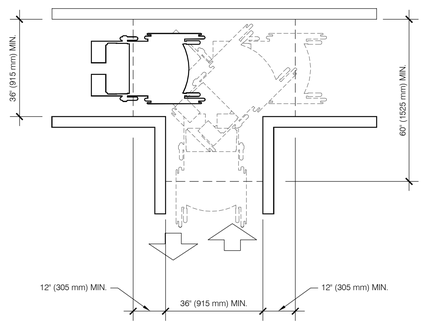


90° WHEELCHAIR TURN

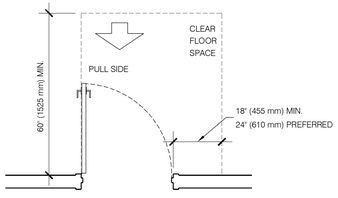


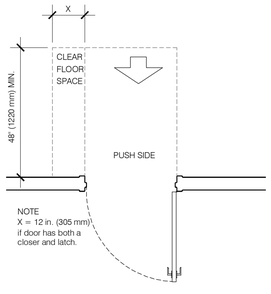
NOTE: Dimensions shown apply when x < 48 in. (1220 mm).

U-TURN AROUND AN OBSTRUCTION

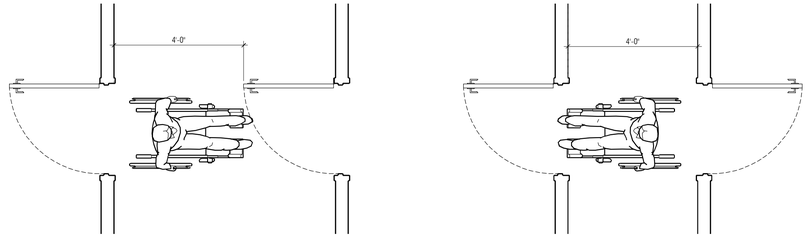


T-SHAPED SPACE FOR 180° TURN

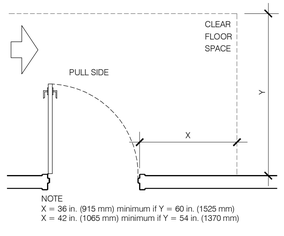


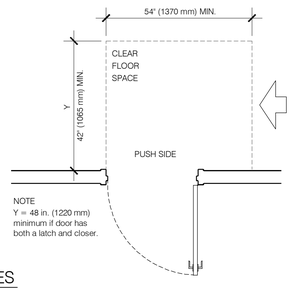


FRONT APPROACHES
SWINGING DOOR

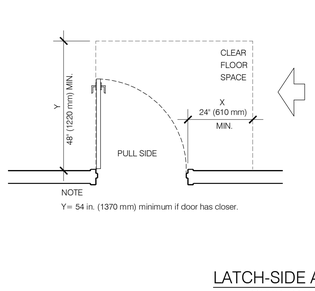


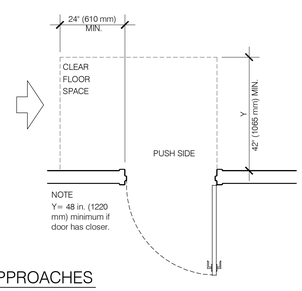
TWO HINGED DOORS
IN SERIES



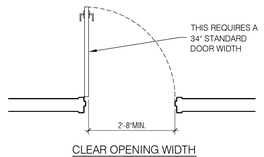


HINGE-SIDE APPROACHES
SWINGING DOOR

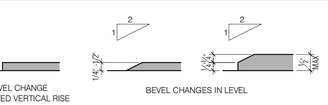




LATCH-SIDE APPROACHES
SWINGING DOOR



CLEAR OPENING WIDTH
SWINGING DOOR



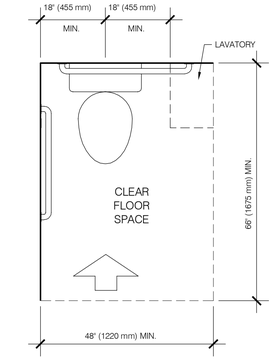
CARPET ON FLOOR SURFACE

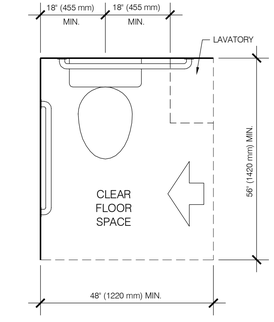
MAX. LEVEL CHANGE PERMITTED VERTICAL RISE

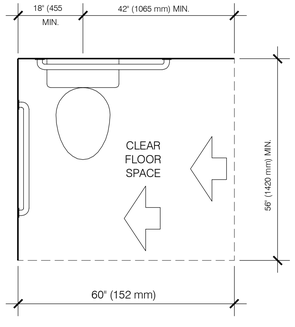
BEVEL CHANGES IN LEVEL

FOR VERTICAL RISE GREATER THAN 1", RAMP MUST BE PROVIDED.
MAX. SLOPE 1:20, ELSE REQUIRES HANDRAILS.

HEIGHT CHANGES AND FLOOR SADDLES







CLEAR FLOOR SPACE AT WATER CLOSETS

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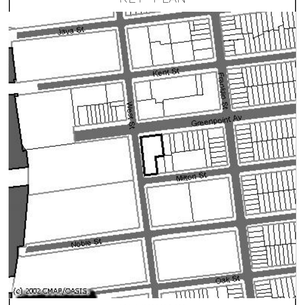

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ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
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checked K.F.	

ICC/ANSI A117.1- 2003 & ASME/ANSI 17.1-2000 NOTES:

407 ELEVATORS

407.1 GENERAL. ELEVATORS SHALL COMPLY WITH SECTION 407 AND ASME A17.1 LISTED IN SECTION 105.2.5. ELEVATORS SHALL BE PASSENGER ELEVATORS AS CLASSIFIED BY ASME A17.1. ELEVATOR OPERATION SHALL BE AUTOMATIC.

407.2.1 CALL CONTROLS. CALL BUTTONS SHALL BE RAISED OR FLUSH. OBJECTS BENEATH HALL CALL BUTTONS SHALL PROTRUDE 1 INCH MAXIMUM. CALL BUTTONS AND KEYPADS SHALL BE LOCATED 15-48" ABOVE THE GROUND MEASURED TO THE CENTER LINE OF THE HIGHEST OPERABLE POINT. CALL BUTTONS SHALL BE .75" INCH MINIMUM IN THE SMALLEST DIMENSION. A CLEAR FLOOR SPACE OF 30" X 48" MINIMUM SHALL BE PROVIDED AT ALL CALL CONTROLS. THE CALL BUTTON THAT DESIGNATES THE UP DIRECTION SHALL BE LOCATED ABOVE THE CALL BUTTON THAT DESIGNATES THE DOWN DIRECTION. CALL BUTTONS SHALL HAVE VISIBLE SIGNALS TO INDICATE WHEN EACH CALL IS REGISTERED AND WHEN EACH CALL IS ANSWERED.

407.2.2 HALL SIGNALS. A VISUAL AND AUDIBLE SIGNAL SHALL BE PROVIDED AT EACH HOISTWAY ENTRANCE TO INDICATE WHICH CAR IS ANSWERING A CALL AND THE CARS' DIRECTION OF TRAVEL. WHERE IN-CAR SIGNALS ARE PROVIDED THEY SHALL BE VISIBLE FROM THE FLOOR AREA ADJACENT TO THE HALL CALL BUTTONS. VISIBLE SIGNAL FIXTURES SHALL BE CENTERED AT 72" MINIMUM ABOVE THE FLOOR. THE VISUAL SIGNAL ELEMENTS SHALL BE 2.5 INCHES MINIMUM MEASURED ALONG THE VERTICAL CENTERLINE OF THE ELEMENT. SIGNALS SHALL BE VISIBLE FROM THE FLOOR AREA ADJACENT TO THE HALL CALL BUTTON. AUDIBLE SIGNALS SHALL SOUND ONCE FOR THE UP DIRECTION AND TWICE FOR THE DOWN DIRECTION AT MAXIMUM FREQUENCY OF 1500 HZ, OR SHALL HAVE VERBAL ANNUNCIATORS THAT STATE THE WORD "UP" OR "DOWN" BETWEEN A FREQUENCY OF 300 AND 3,000 HZ. THE AUDIBLE SIGNAL OR VERBAL ANNUNCIATOR SHALL BE 10 DBA MINIMUM ABOVE AMBIENT BUT SHALL NOT EXCEED 80 DBA, MEASURED AT THE HALL CALL BUTTON.

407.2.3 HOISTWAY SIGNS. FLOOR DESIGNATIONS SHALL BE PROVIDED IN TACTILE CHARACTERS LOCATED ON BOTH JAMBS OF THE ELEVATOR HOISTWAY ENTRANCES. TACTILE CHARACTERS SHALL BE 2" MINIMUM IN HEIGHT. A TACTILE STAR SHALL BE PROVIDED ON BOTH JAMBS AT THE MAIN ENTRY LEVEL.

407.3.2 ELEVATOR DOORS SHALL BE HORIZONTAL SLIDING TYPE. CAR GATES SHALL BE PROHIBITED. ELEVATOR HOISTWAY AND CAR DOORS SHALL OPEN AND CLOSE AUTOMATICALLY.

407.3.3 REOPENING DEVICE. ELEVATOR DOORS SHALL BE PROVIDED WITH A REOPENING DEVICE COMPLYING WITH SECTION 703.3 OF ANSI A117.1 THAT SHALL STOP AND REOPEN A CAR DOOR AND HOISTWAY DOOR AUTOMATICALLY IF THE DOOR BECOMES OBSTRUCTED BY AN OBJECT OR PERSON. THE REOPENING DEVICE SHALL REMAIN EFFECTIVE FOR 20 SECONDS MINIMUM.

407.3.4 DOOR AND SIGNAL TIMING. THE MINIMUM ACCEPTABLE TIME FROM THE NOTIFICATION THAT A CAR IS ANSWERING A CALL UNTIL THE DOORS OF THAT CAR START TO CLOSE SHALL BE CALCULATED FROM THE FOLLOWING EQUATION:

T = D/(1.5 FT/S) OR T = D/ (455MM/S) = 5 SECONDS MINIMUM.

WHERE T = THE TOTAL TIME IN SECONDS AND D = THE DISTANCE (IN FEET OR MILLIMETERS) FROM THE POINT IN THE LOBBY OR CORRIDOR 60 INCHES DIRECTLY IN FRONT OF THE FARTHEST CALL BUTTON CONTROLLING THAT CAR TO THE CENTERLINE OF THE DOOR.

407.3.5 DOOR DELAY. ELEVATOR DOORS SHALL REMAIN FULLY OPEN IN RESPONSE TO A CAR CALL FOR 3 SECONDS MINIMUM.

407.4.1 CAR DIMENSIONS. INSIDE OF CAR DIMENSIONS SHALL COMPLY WITH TABLE 407.4.1 AS MODIFIED BY BC 3002.4 STATING THE MINIMUM INSIDE DIMENSIONS OF ELEVATOR CARS SHALL ACCOMMODATE A 24" BY 76" HOSPITAL STRETCHER.

407.4.2 FLOOR SURFACES IN ELEVATORS SHALL BE STABLE, FIRM, AND SLIP RESISTANT AND SHALL COMPLY WITH SECTION 302 OF ICC/ANSI A117.1.

407.4.5 ILLUMINATION. THE LEVEL OF ILLUMINATION AT THE CAR CONTROLS, PLATFORM, CAR THRESHOLD AND CAR LANDING SILL SHALL BE A 5 FOOT-CANDLES (54 LUX) MINIMUM.

407.4.6 ELEVATOR CAR CONTROLS. CONTROLS SHALL BE LOCATED 15-48" ABOVE THE GROUND MEASURED TO THE CENTER LINE OF THE HIGHEST OPERABLE POINT. EXCEPTION WHERE THE ELEVATOR SERVES MORE THAN 16 OPENINGS AND A PARALLEL APPROACH TO THE CONTROLS IS PROVIDED, IN WHICH CASE BUTTONS WITH FLOOR DESIGNATIONS SHALL BE PERMITTED TO BE 54 INCHES MAXIMUM ABOVE THE FLOOR.

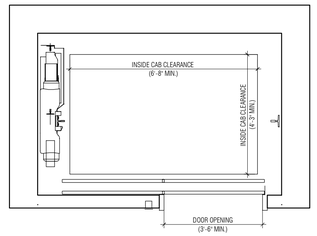
407.4.6.2 CAR CONTROL BUTTONS WITH FLOOR DESIGNATIONS SHALL BE RAISED OR FLUSH, AND 3/4 INCH MINIMUM IN THEIR SMALLEST DIMENSION. BUTTONS SHALL BE ARRANGED IN ASCENDING ORDER. WHEN TWO OR MORE COLUMNS OF BUTTONS ARE PROVIDED THEY SHALL BE READ FROM LEFT TO RIGHT.

407.4.6.4 EMERGENCY CONTROLS. EMERGENCY CONTROL BUTTONS SHALL HAVE THEIR CENTERLINES 35 INCHES MINIMUM ABOVE THE FLOOR. EMERGENCY CONTROLS, INCLUDING THE EMERGENCY ALARM SHALL BE GROUPED AT THE BOTTOM OF THE PANEL.

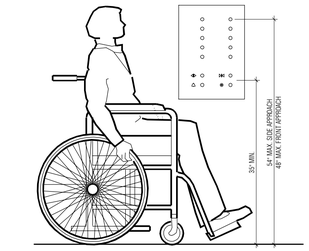
407.4.7 DESIGNATIONS AND INDICATORS OF CAR CONTROLS. CONTROL BUTTONS SHALL BE IDENTIFIED BY TACTILE CHARACTERS COMPLYING WITH SECTION 703.3. TACTILE CHARACTER AND BRAILLE DESIGNATIONS SHALL BE PLACED IMMEDIATELY TO THE LEFT OF THE CONTROL BUTTON TO WHICH THE DESIGNATIONS APPLY. BUTTONS WITH FLOOR DESTINATIONS SHALL BE PROVIDED WITH VISIBLE INDICATORS TO SHOW THAT A CALL HAS BEEN REGISTERED. THE VISIBLE INDICATION SHALL EXTINGUISH WHEN THE CAR ARRIVES AT THE DESIGNATED FLOOR.

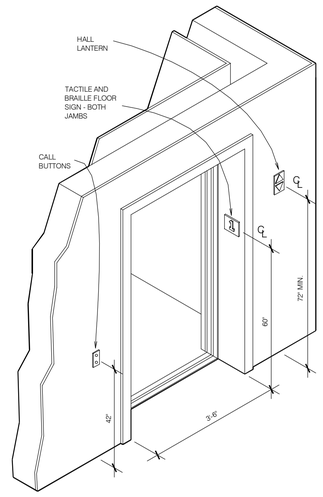
407.4.9 CAR POSITION INDICATORS. AUDIBLE AND VISIBLE CAR POSITION INDICATORS SHALL BE PROVIDED IN ELEVATOR CARS. VISIBLE INDICATORS SHALL BE LOCATED ABOVE THE CAR CONTROL PANELS OR ABOVE THE DOOR; CHARACTERS SHALL BE 1/2 INCH HIGH MINIMUM IN HEIGHT. AS THE CAR PASSES A FLOOR AND WHEN A CAR STOPS AT A FLOOR SERVED BY THE ELEVATOR, THE CORRESPONDING CHARACTER SHALL ILLUMINATE. AUDIBLE INDICATORS SHALL SIGNAL AS AN AUTOMATIC VERBAL ANNUNCIATOR THE ANNOUNCES THE FLOOR AT WHICH THE CAR IS ABOUT TO STOP; THE VERBAL ANNOUNCEMENT INDICATING THE FLOOR SHALL BE COMPLETED PRIOR TO THE INITIATION OF THE DOOR OPENING. THE VERBAL ANNUNCIATOR SHALL BE 10 DBA MINIMUM ABOVE AMBIENT BUT SHALL NOT EXCEED 80 DBA, MEASURED AT THE ANNUNCIATOR.

407.4.10 EMERGENCY COMMUNICATIONS. EMERGENCY TWO WAY COMMUNICATION SYSTEMS BETWEEN THE ELEVATOR CAR AND A POINT OUTSIDE THE HOISTWAY SHALL COMPLY WITH SECTION 407.4.10 AND ASME/ANSI A17.1 LISTED IN SECTION 105.2.5. THE MIDPOINT OF THE HIGHEST OPERABLE PART OF A TWO WAY COMMUNICATION SYSTEM SHALL NOT EXCEED 48 INCHES; TACTILE CHARACTERS AND SYMBOLS SHALL BE PROVIDED ADJACENT TO THE DEVICE IN COMPLIANCE WITH SECTIONS 703.3 AND 407.4.7.1.3 OF ICC/ANSI A117.1-2003.



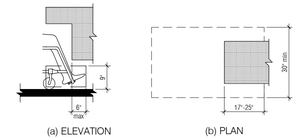
TYPICAL ADA ELEVATOR PLAN





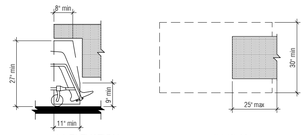
ELEVATOR REQUIREMENTS

KNEE AND TOE CLEARANCE



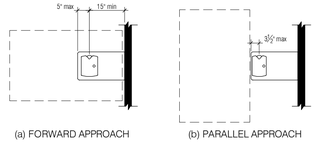
(a) ELEVATION (b) PLAN

TOE CLEARANCE



(a) ELEVATION (b) PLAN

KNEE CLEARANCE



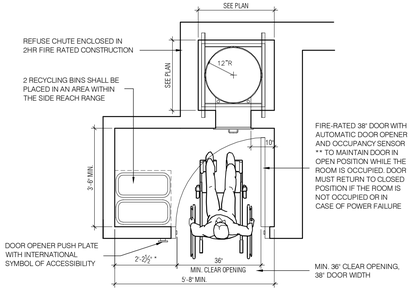
(a) FORWARD APPROACH (b) PARALLEL APPROACH

DRINKING FOUNTAIN SPOUT LOCATION

ACCESSIBLE COMMON-USE REFUSE DISPOSAL/STORAGE ROOM NOTES:

COMMON-USE REFUSE DISPOSAL/STORAGE ROOM THAT ARE REQUIRED TO BE ACCESSIBLE PURSUANT TO NYC B.C. CHAPTER 11 SECTION 1107 AND ICC/ANSI117.1., BUT NOT LIMITED TO, WHEELCHAIR TURNING SPACE, CLEAR FLOOR OR GROUND SPACE FOR WHEELCHAIRS, AND MANEUVERING CLEARANCES AT THE DOOR PROVIDED THE FOLLOWING:

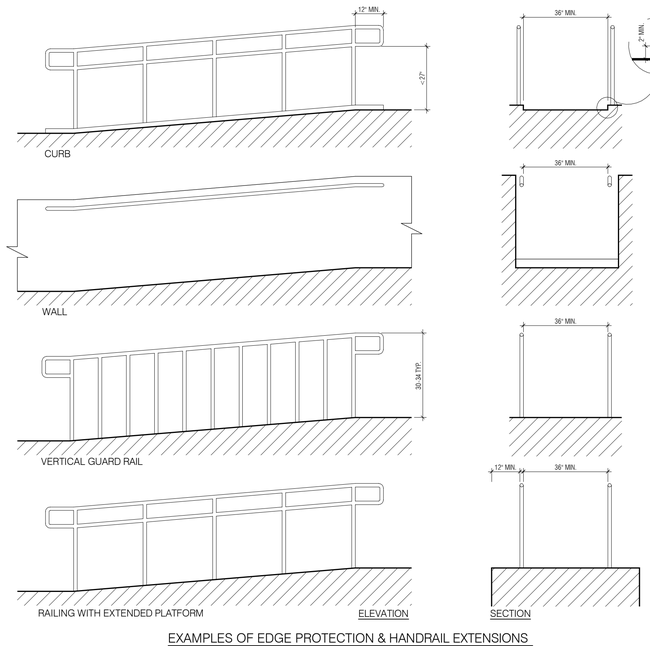
1. THE REFUSE DISPOSAL/STORAGE ROOM SHALL BE DESIGNED SO THAT THE WHEELCHAIR USER CAN ENTER THE ROOM HEAD ON, AND BACK OUT WITHOUT TURNING OR CHANGING DIRECTION, NYC DEPARTMENT OF BUILDINGS MEMO DATED JULY 3, 2007
2. THE REFUSE DISPOSAL/STORAGE ROOM SHALL BE PROVIDED WITH MANEUVERING CLEARANCE INCLUDING A MINIMUM OF 36" CLEAR WIDTH AT THE DOORWAY FOR A FORWARD APPROACH AS PER ICC/ANSI117.1. SUCH CLEAR WIDTH AT THE DOOR SHALL BE MEASURED BETWEEN THE FACE OF THE DOOR AND STOP, WITH THE DOOR OPEN 90 DEGREES. THIS WILL TYPICALLY REQUIRE A 38" WIDE DOOR.
3. THE DOOR OF THE REFUSE DISPOSAL/STORAGE ROOM SHALL COMPLY WITH ICC/ANSI117.1 (MANEUVERING CLEARANCES AT DOORS) EXCEPT SUCH CLEARANCE IS NOT REQUIRED INSIDE THE REFUSE DISPOSAL/STORAGE ROOM. THRESHOLDS AT THE DOORWAY SHALL COMPLY WITH ICC/ANSI117.1.
4. THE DOOR OF THE REFUSE DISPOSAL/STORAGE ROOM SHALL BE A FULL POWERED AUTOMATIC DOOR COMPLYING WITH ICC/ANSI117.1. CONTROLS FOR THE AUTOMATIC DOOR SHALL BE PROVIDED WITHIN THE REACH RANGE PERMITTED IN ICC/ANSI117.1 AND SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE. ROOM IDENTIFICATION AND SYMBOL OF ACCESSIBILITY SHALL BE PROVIDED NEAR THE CONTROL AND SHALL COMPLY WITH ICC/ANSI117.1.
5. AN OCCUPANCY SENSOR SHALL BE PROVIDED IN THE REFUSE DISPOSAL/STORAGE ROOM TO DETECT THE PRESENCE AND THE ABSENCE OF OCCUPANTS. UPON THE DETECTION OF AN OCCUPANT IN THE ROOM, THE DOOR SHALL BE MAINTAINED IN THE OPEN POSITION DURING THE ENTIRE PERIOD OF OCCUPANCY OF THE ROOM. UPON THE ABSENCE OF AN OCCUPANT IN THE ROOM, THE DOOR SHALL AUTOMATICALLY RETURN TO THE CLOSED POSITION.
6. THE AUTOMATIC DOOR OF THE REFUSE DISPOSAL/STORAGE ROOM SHALL RETURN TO THE CLOSED POSITION IN THE CASE OF POWER FAILURE, UPON THE ACTIVATION OF THE FIRE ALARM SYSTEMS (IF A FIRE ALARM SYSTEM IS PROVIDED IN THE BUILDING), OR UPON THE ACTIVATION OF SMOKE DETECTORS.
7. THE REFUSE DISPOSAL/STORAGE ROOM SHALL BE PROVIDED WITH A FIRE-RATED DOOR THAT REMAINS CLOSED DURING PERIODS OF NON USE. THE PLACEMENT OF THE STORAGE BINS AND/OR SHELVES AND THE LOCATION OF THE REFUSE CHUTE ACCESS OPENING SHALL COMPLY WITH THE REACH RANGES OF ICC/ANSI117.1.
8. ALL CONTROLS AND OPERATING MECHANISMS SHALL COMPLY WITH ICC/ANSI117.1.



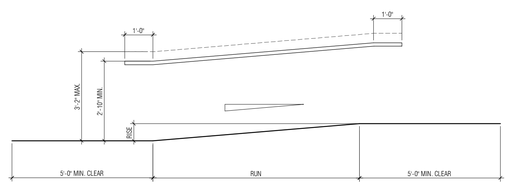
** THE OCCUPANCY SENSOR MAY BE:
1. WEIGHT-SENSITIVE FLOOR MAT
2. INFRARED SENSOR
3. OTHER EQUIVALENT TECHNOLOGY

* VARIABLE DIMENSION. MUST BE OF SUFFICIENT SIZE TO ACCOMMODATE 2 DIFFERENT RECYCLING BINS AND BE WITHIN THE SIDE REACH RANGE

TYPICAL REFUSE DISPOSAL ROOM PLAN

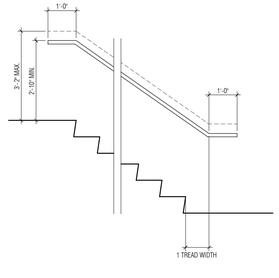


EXAMPLES OF EDGE PROTECTION & HANDRAIL EXTENSIONS

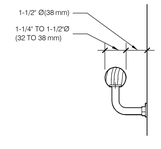


SLOPE	MAXIMUM RISE	MAXIMUM RUN
1:12 TO 1:15	30 INCHES	30 FEET
1:16 TO 1:19	30 INCHES	40 FEET
1:20	30 INCHES	50 FEET

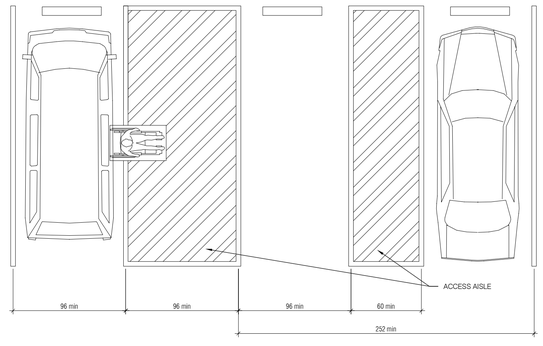
RAMP REQUIREMENTS



HANDRAIL REQUIREMENTS FOR STAIRS



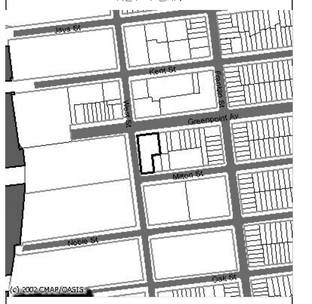
HANDRAIL REQUIREMENTS (WALL MOUNTED)



DIMENSIONS OF PARKING SPACES

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ADA NOTES & DIAGRAMS

scale N.T.S.	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. G-006.01
checked K.F.	

COMcheck Software Version 3.9.4

Envelope Compliance Certificate

2010 New York Energy Conservation Construction Code

Section 1: Project Information

Project Type: **New Construction**
Project Title :

Construction Site:
50 Greenpoint Avenue
Brooklyn, NY 11222

Owner/Agent:

Designer/Contractor:
Karl Fischer Architect
530 Broadway
9th floor
New York, NY 10012

Section 2: General Information

Building Location (for weather data):	**Kings, New York**
Climate Zone:	**4a**
Building Space Conditioning Type(s):	**Nonresidential**
Vertical Glazing / Wall Area Pct.:	**40%**
Skylight Glazing / Roof Area Pct.:	**1%**

Activity Type(s)	Floor Area
Multifamily	57556
Parking Garage	5701

Section 3: Requirements Checklist

Envelope **PASSES**: Design 0.1% 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)
Exterior Wall 1: Steel-Framed, 16" o.c.	32217	19.0	14.0	0.043	0.064
Window 1: Metal Frame with Thermal Break, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	14346	---	---	0.450	0.550
Window 3: Metal Frame Curtain Wall/Storefront, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	375	---	---	0.550	0.500
Door 3: Glass (> 50% glazing):Metal Frame, Entrance Door, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	760	---	---	0.450	0.650
Exterior Wall 2: Solid Concrete:8" Thickness,Normal Density , Furring: None	3584	---	0.0	0.090	0.104
Window 4: Metal Frame, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	435	---	---	0.600	0.550
Exterior Wall 3: Solid Concrete:12" Thickness,Normal Density , Furring: None	4414	---	8.0	0.100	0.104
Window 5: Metal Frame with Thermal Break, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	143	---	---	0.450	0.550
Door 4: Insulated Metal, Swinging	63	---	---	0.200	0.700
Door 5: Glass (> 50% glazing):Metal Frame, Non-Entrance Door, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	21	---	---	0.450	0.550
Roof 1: Insulation Entirely Above Deck	8936	---	19.0	0.051	0.048
Skylight 1: Metal Frame with Thermal Break,Glass, No Curb, Perf. Type: Other testing/cert. Product ID: na, SHGC 0.40 (c)	61	---	---	0.450	0.600

Floor 1: Slab-On-Grade:Unheated	3235	---	---	---	---
Floor 2: Concrete Floor (over unconditioned space)	5701	---	8.0	0.090	0.087
Basement Wall 1: Solid Concrete:12" Thickness, Normal Density, Furring: None, Wall Ht 10.0, Depth 3.0, 10.0	2700	---	0.0	0.630	0.579

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) 'Other' components require supporting documentation for proposed U-factors.
(c) Fenestrations 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.
2. ☐ Windows, doors, and skylights certified as meeting leakage requirements.
3. ☐ Component R-values & U-factors labeled as certified.
4. ☐ No roof insulation is installed on a suspended ceiling with removable ceiling panels.
5. ☐ 'Other' components have supporting documentation for proposed U-Factors.
6. ☐ Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
7. ☐ Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
8. ☐ Cargo doors and loading dock doors are weather sealed.
9. ☐ Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with gasket or caulk.
10. ☐ Building entrance doors have a vestibule equipped with self-closing devices.
    Exceptions:
    - ☐ Building entrances with revolving doors.
    - ☐ Doors not intended to be used as a building entrance.
    - ☐ Doors that open directly from a space less than 3000 sq. ft. in area.
    - ☐ Doors used primarily to facilitate vehicular movement or materials handling and adjacent personnel doors.
    - ☐ Doors opening directly from a sleeping/dwelling unit.

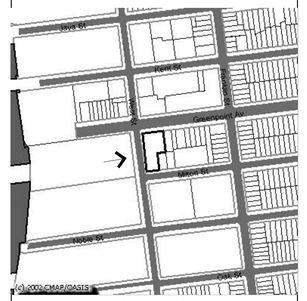
Section 4: Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2010 New York Energy Conservation Construction Code requirements in COMcheck Version 3.9.4 and to comply with the mandatory requirements in the Requirements Checklist.

When a Registered Design Professional has stamped and signed this page, they are attesting that to the best of his/her knowledge, belief, and professional judgment, such plans or specifications are in compliance with this code.

Name - Title | Signature | Date 12/16/2014

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
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1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

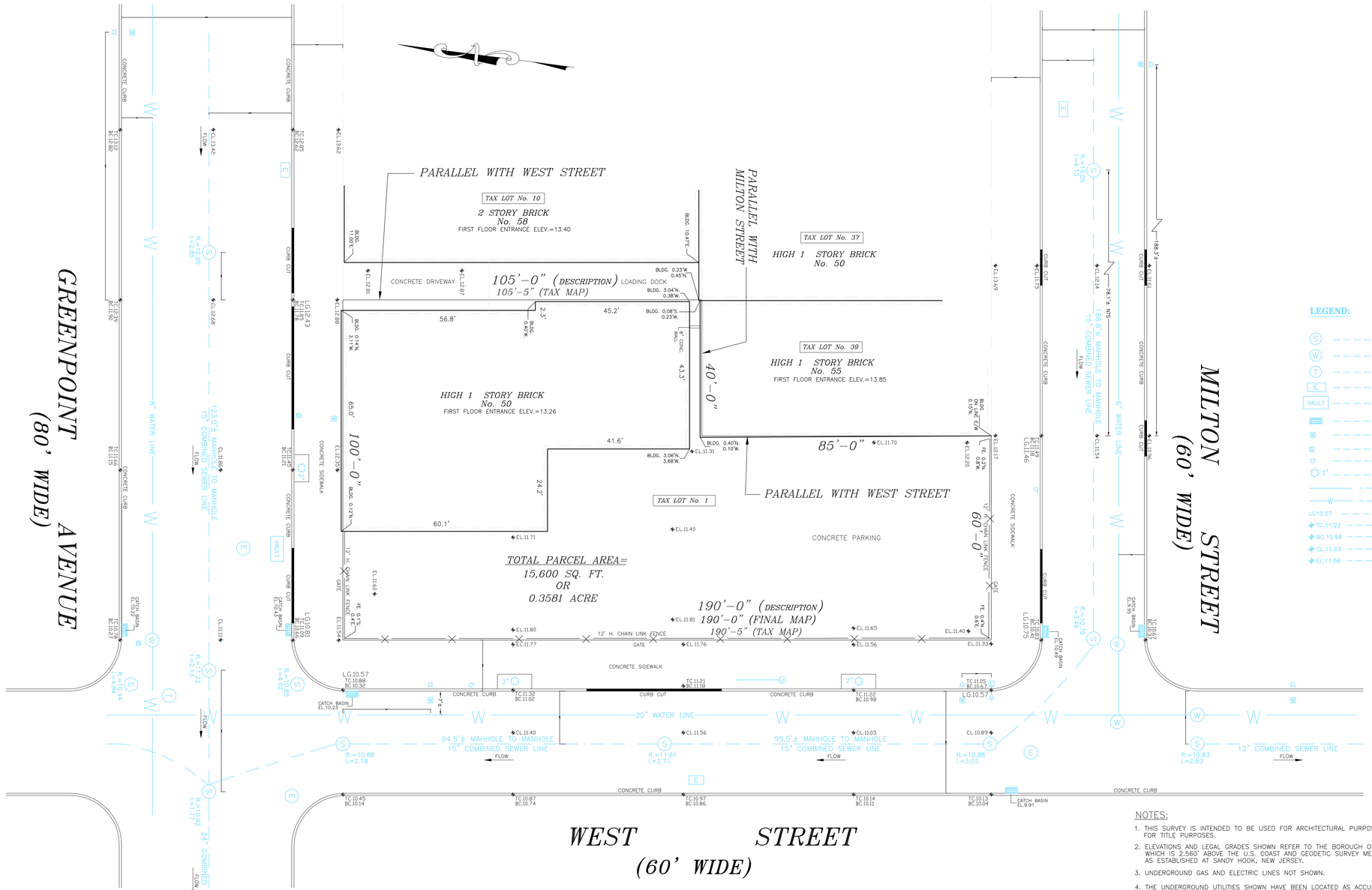
MEP ENGINEER:
Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ENERGY CALCULATIONS

scale N.T.S.	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. EN-100.01
checked K.F.	



1 SITE SURVEY
Z-001

1 inch = 15ft.

0

GRAPHIC SCALE (IN FEET)

LEGEND:

- (S) COMBINED SEWER MANHOLE
- (W) WATER MANHOLE
- (T) TELEPHONE MANHOLE
- E ELECTRIC BOX
- VAULT ELECTRIC VAULT
- CATCH BASIN
- WATER VALVE
- GAS VALVE
- FIRE HYDRANT
- 2" TREE WITH DIAMETER
- SEWER LINE
- W WATER LINE
- LG10.57 LEGAL GRADE
- TC.11.22 TOP OF CURB ELEVATION
- BC.10.98 BOTTOM OF CURB ELEVATION
- CL.11.03 CENTERLINE ELEVATION
- EL.11.56 SPOT ELEVATION

NOTES:

1. THIS SURVEY IS INTENDED TO BE USED FOR ARCHITECTURAL PURPOSES ONLY AND CAN NOT BE USED FOR TITLE PURPOSES.
2. ELEVATIONS AND LEGAL GRADES SHOWN REFER TO THE BOROUGH OF BROOKLYN DATUM WHICH IS 2.560' ABOVE THE U.S. COAST AND GEODETIC SURVEY MEAN SEA LEVEL DATUM AS ESTABLISHED AT SANDY HOOK, NEW JERSEY.
3. UNDERGROUND GAS AND ELECTRIC LINES NOT SHOWN.
4. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED AS ACCURATELY AS POSSIBLE FROM FIELD SURVEY INFORMATION AND N.Y.C.D.E.P. RECORD DRAWINGS. THE SURVEYOR MAKES NO GUARANTIES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES AND THEREFOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
5. THE APPROPRIATE AGENCIES AND/OR UTILITY COMPANIES SHOULD BE CONSULTED BEFORE DESIGNING ANY CONNECTIONS.
6. IN COMPLIANCE WITH INDUSTRIAL CODE 53 OF NEW YORK STATE IT IS REQUIRED THAT SUBSURFACE SERVICES, INCLUDING THE UNDERGROUND MAIN, BE MARKED AND IDENTIFIED BY THE UTILITY COMPANIES AND CITY AGENCIES BEFORE PERFORMING ANY DIGGING OR DRILLING ON THIS SITE
7. THERE ARE NO VISIBLE STREAMS OR WATERCOURSES RUNNING ON, ACROSS, OR ADJACENT TO THE SUBJECT PROPERTY.
8. EASEMENTS, IF ANY, NOT SHOWN.

Arnold Pecheny, P.L.S.
NYS License No. 050521

POLARIS LAND SURVEYING, P.C.
31 BERGEN BEACH PL., BROOKLYN, N.Y. 11234
(718) 942-4891
(917) 518-3435

SURVEY OF PROPERTY
SITUATED IN BOROUGH OF BROOKLYN
COUNTY OF KINGS, CITY & STATE OF NEW YORK
BLOCK 2562 LOT 1

DATE: 05/01/05 | SCALE: 1"=15' | JOB No.: 05021

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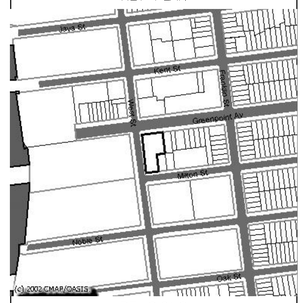
KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

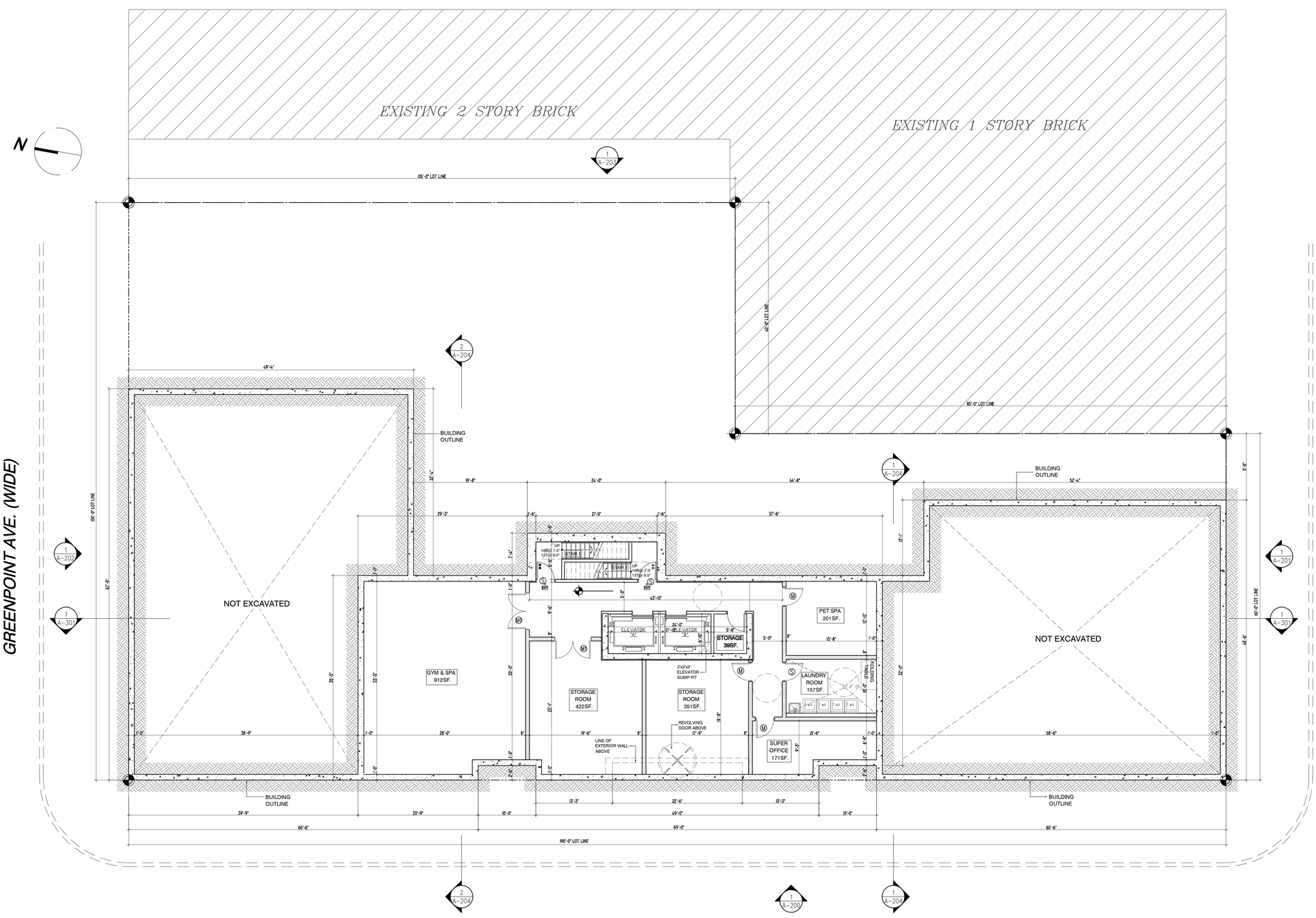
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
SCHEME 1
SURVEY

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-001.01
checked K.F.	



1 A-102 CELLAR FLOOR PLAN
1/8"=1'-0"

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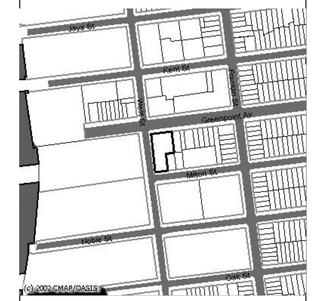

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

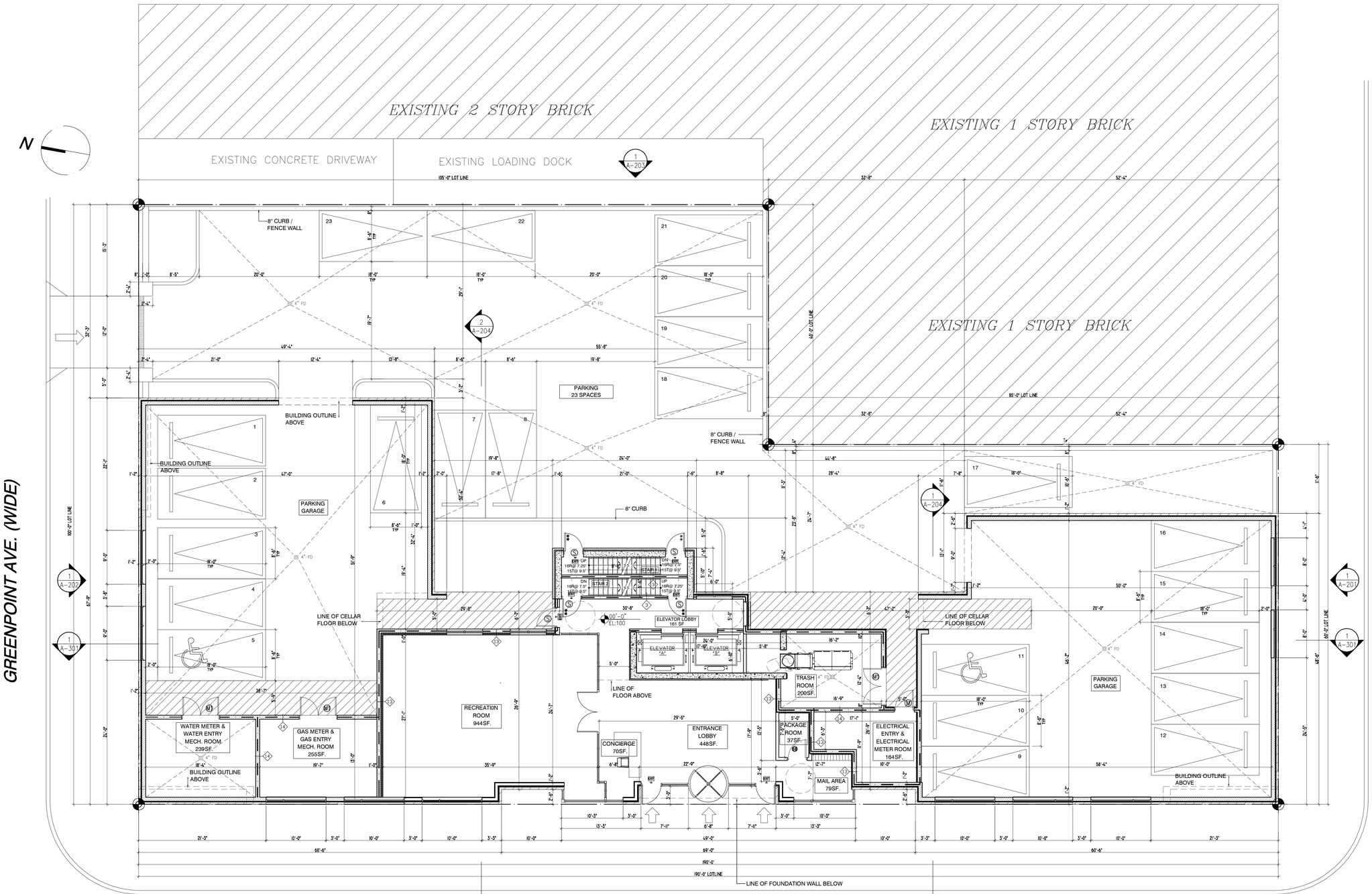
ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
CELLAR FLOOR P LAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-101.01
checked K.F.	



1 A-102 FIRST FLOOR PLAN
1/8"=1'-0"

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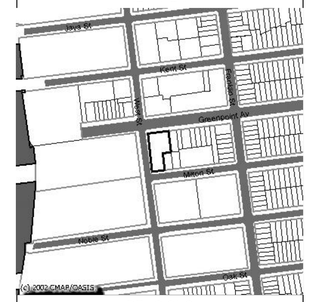

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
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WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

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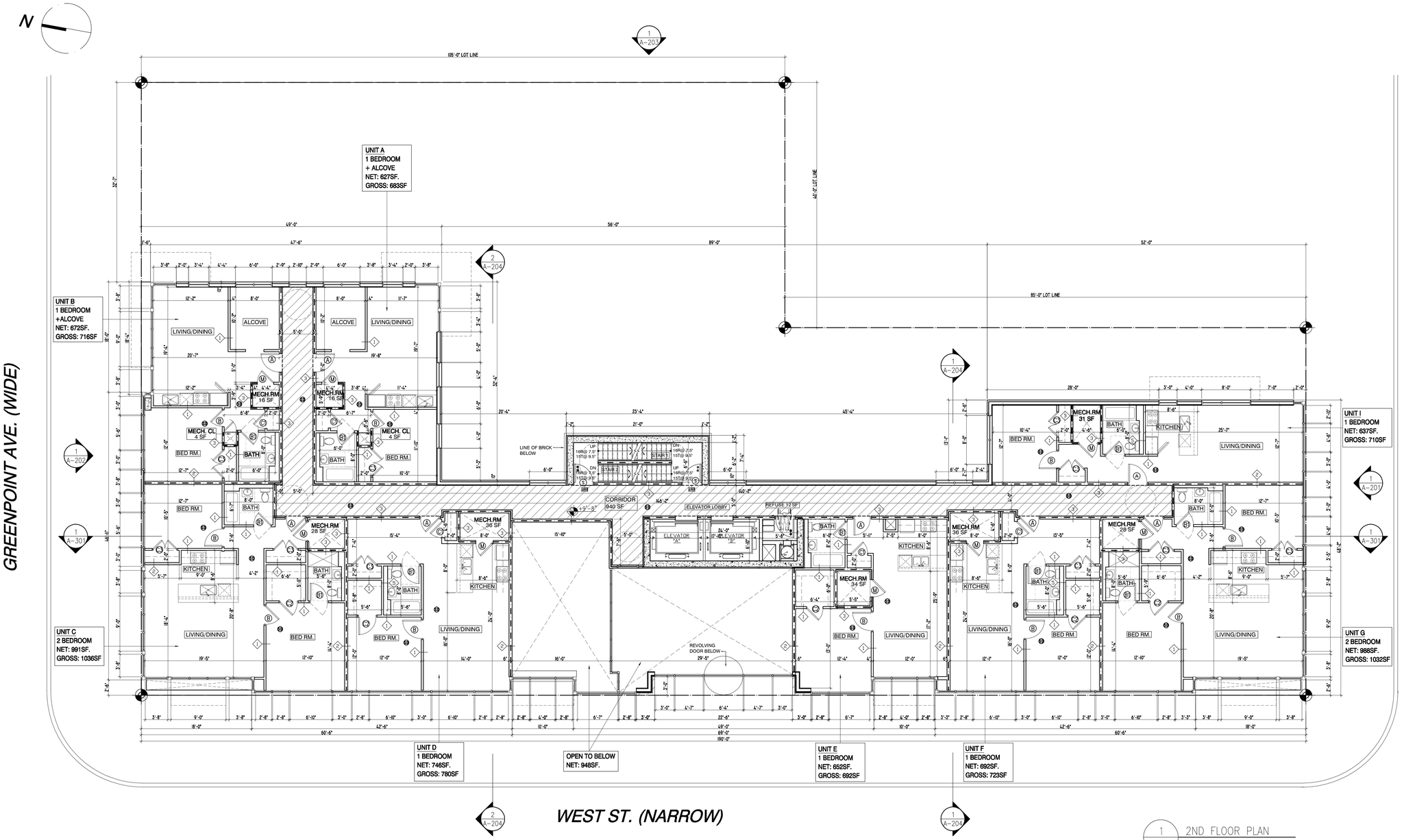
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRST FLOOR P LAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-102.01
checked K.F.	



2ND FLOOR PLAN

1/8"=1'-0"

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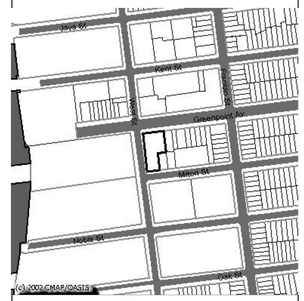

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

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KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
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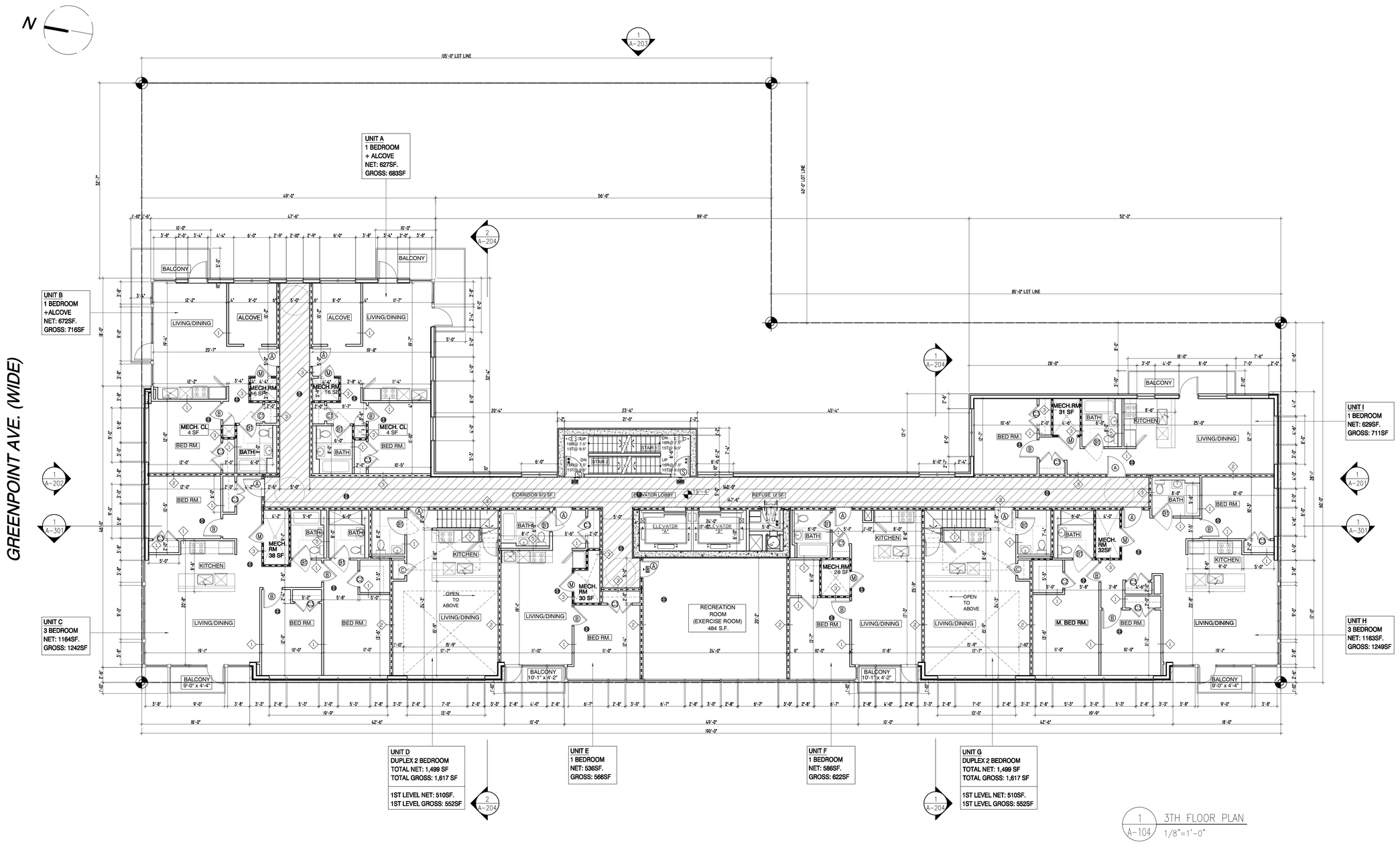
BROOKLYN, NY

drawing title
2ND FLOOR PLAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn	drawing no. A-103.01
checked K.F.	



1 3TH FLOOR PLAN
A-104 1/8"=1'-0"

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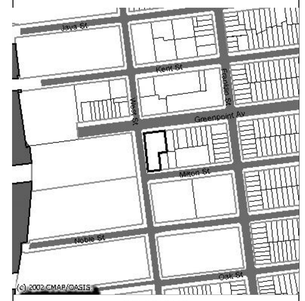

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no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980

1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409

WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

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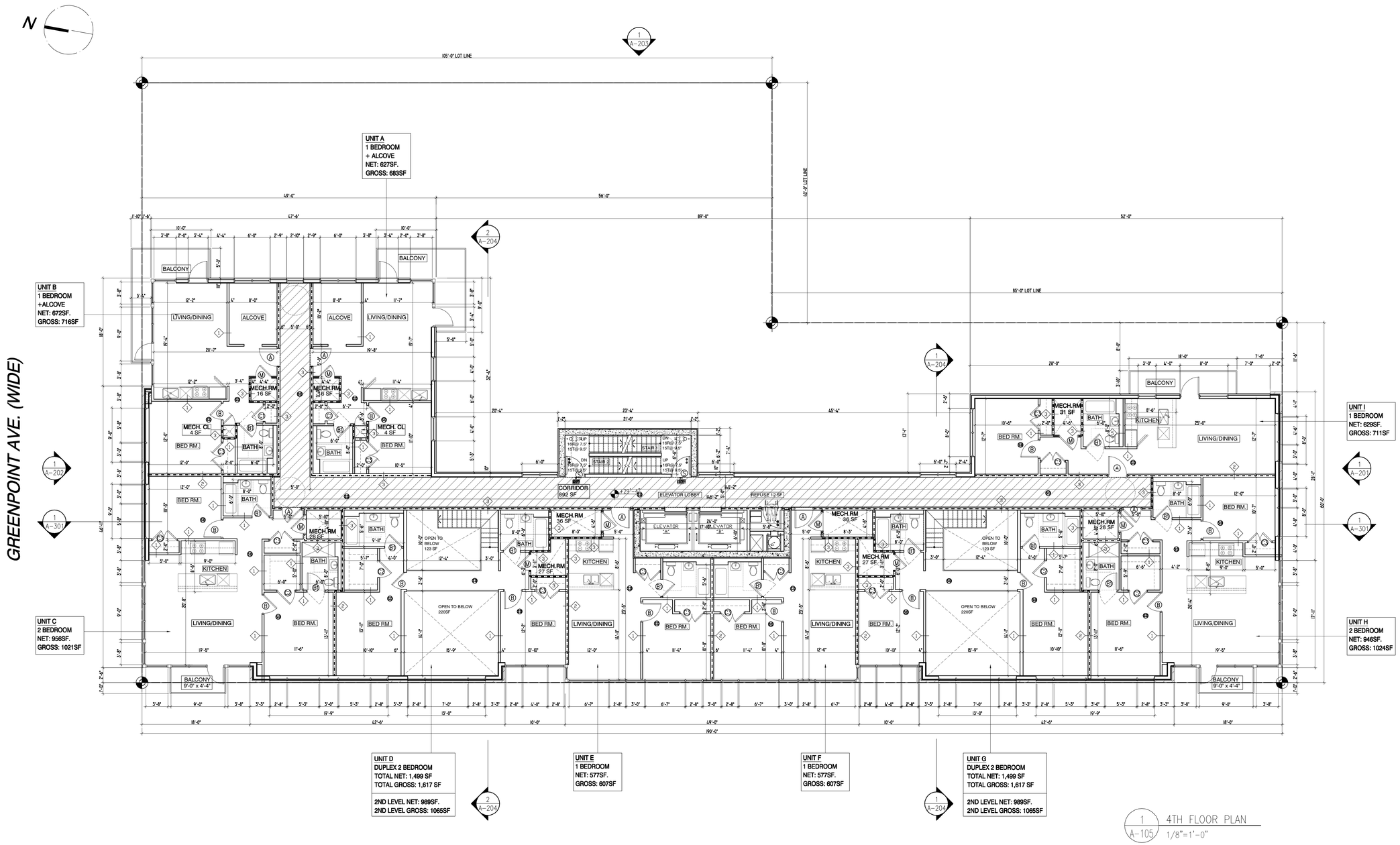
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
3TH FLOOR PLAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-104.01
checked K.F.	



1 A-105 4TH FLOOR PLAN
1/8"=1'-0"

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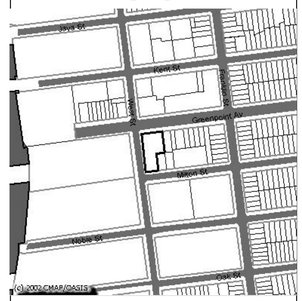

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no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

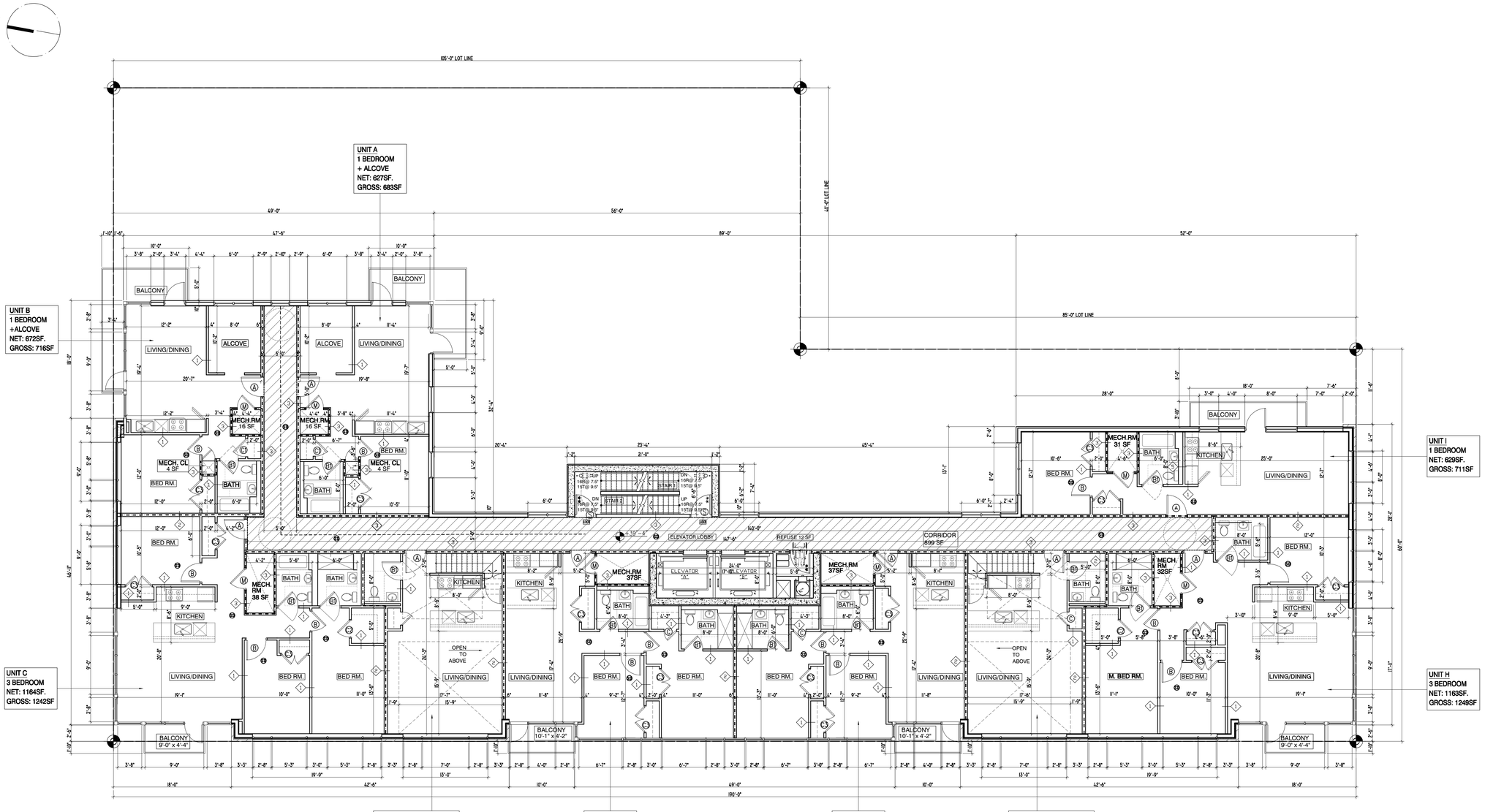
ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
4TH FLOOR PLAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-105.01
checked K.F.	



1 A-106 5TH FLOOR PLAN
1/8"=1'-0"

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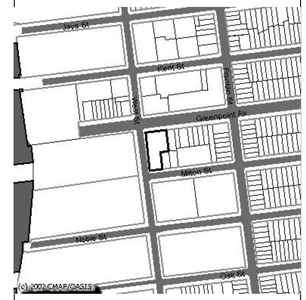

REVISIONS

no.	date	description

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ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
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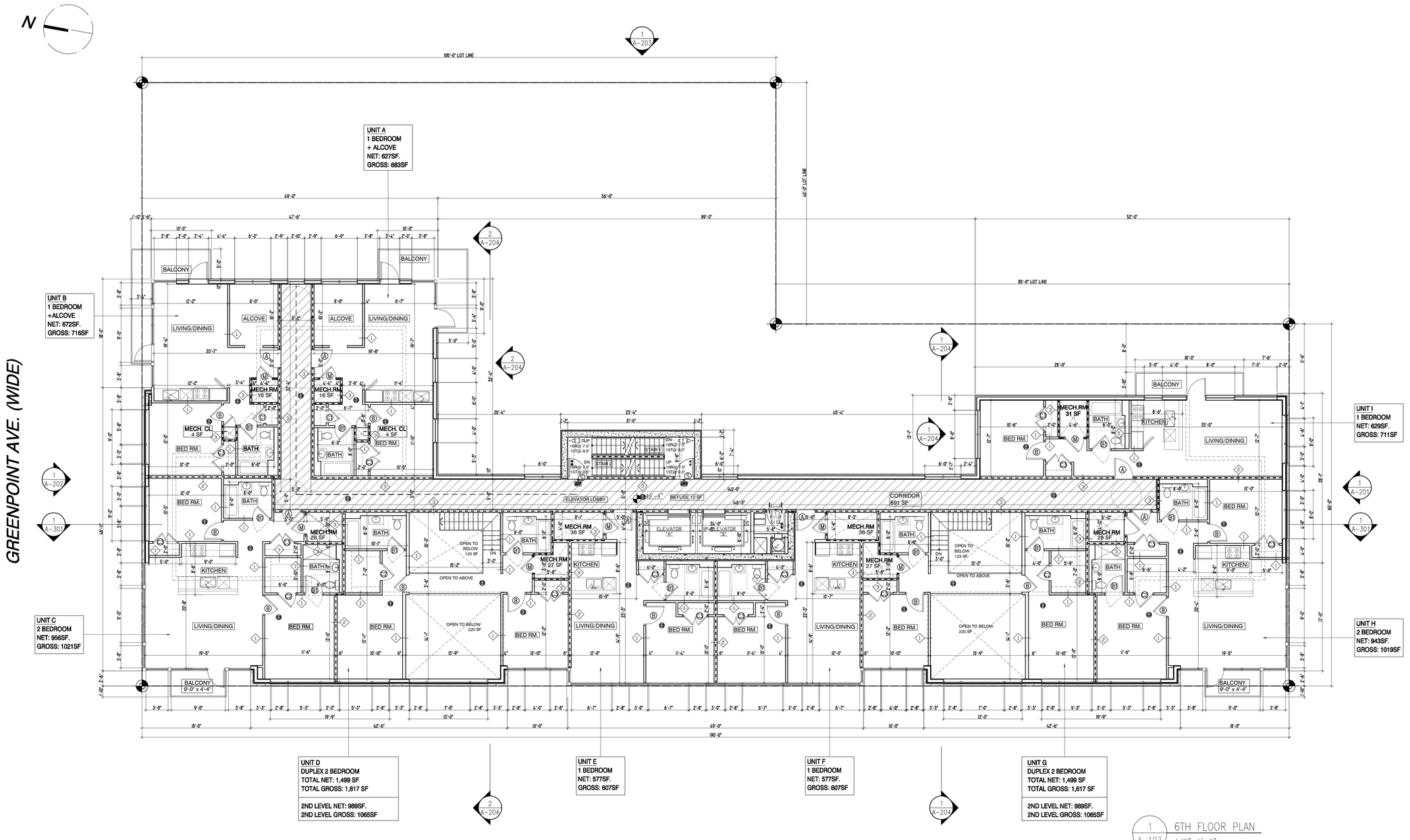
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
5TH FLOOR PLAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn	drawing no.
checked K.F.	A-106.01



1 A-107 6TH FLOOR PLAN
1/8"=1'-0"

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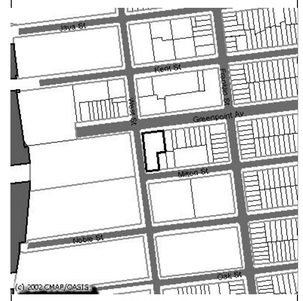

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

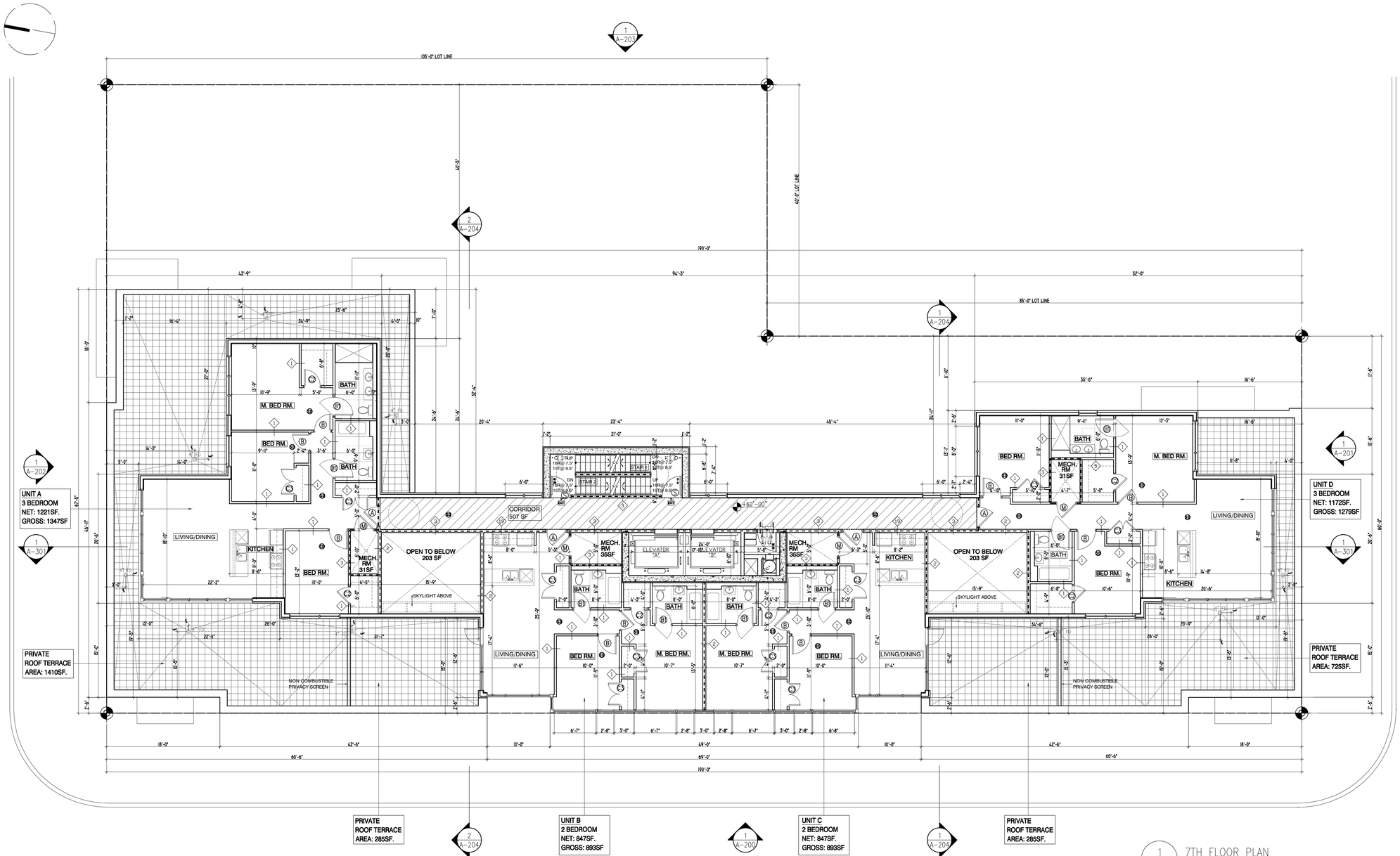
ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
6TH FLOOR PLAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-107.01
checked K.F.	



1
A-108
7TH FLOOR PLAN
1/8"=1'-0"

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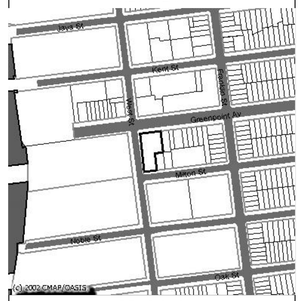

REVISIONS

no.	date	description

no.	date	description
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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

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505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL
FISCHER
ARCHITECT
OAQ OAA RAIC AIA

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219–9733 FAX: (212) 219–8980
1420 NOTRE–DAME WEST, MONTREAL, QC H3C 1K9
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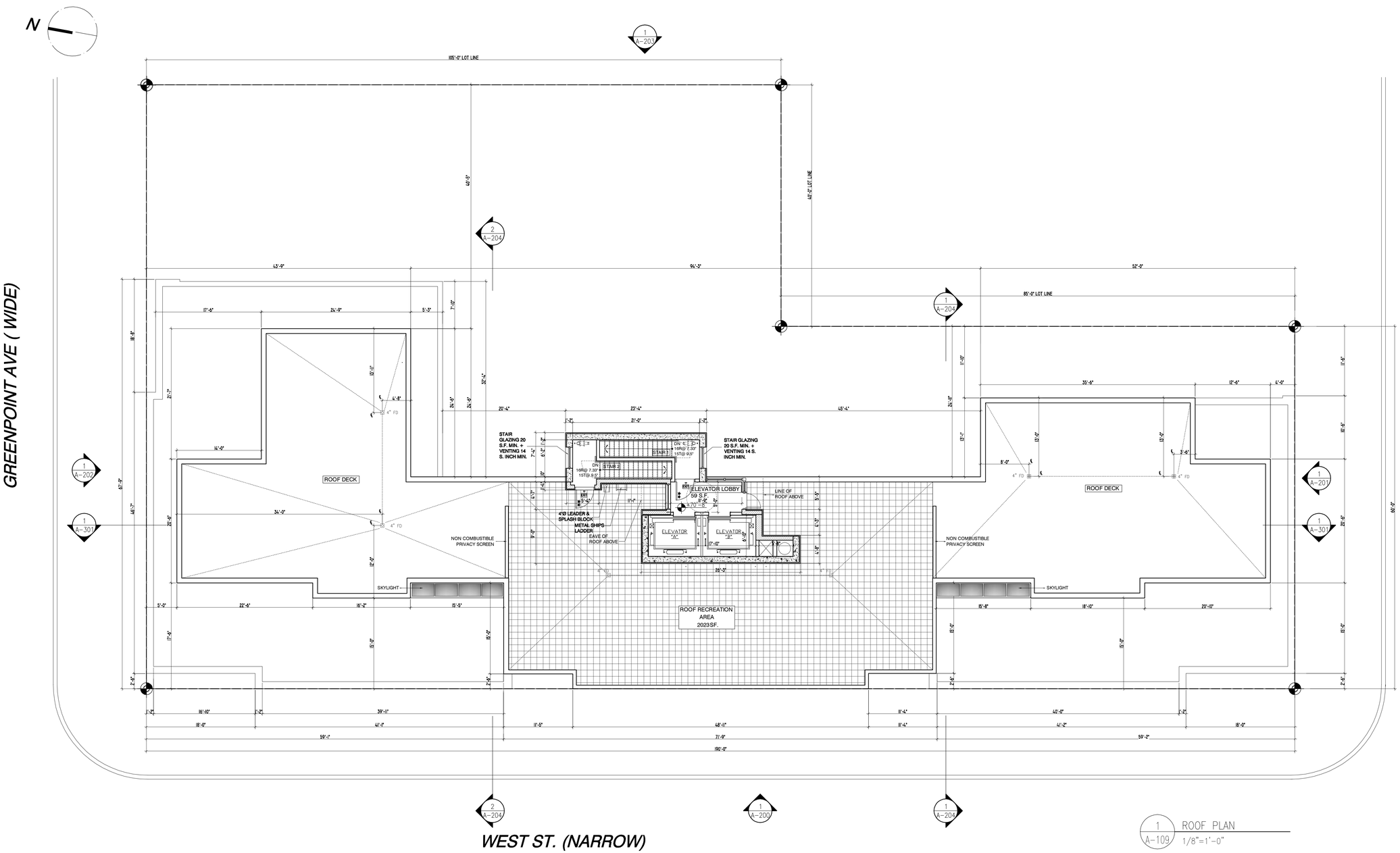
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
7TH FLOOR PLAN

scale	1/8"=1'0"	project no.	06-71 / 14-41
date	12/17/2014	revision no.	0
drawn	,	drawing no.	
checked	K.F.		A-108.01



1 A-109 ROOF PLAN
1/8"=1'-0"

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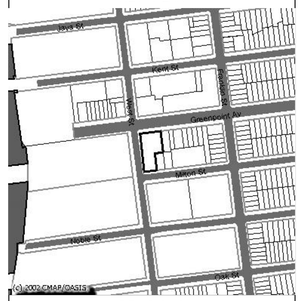
KEY PLAN



REVISIONS

no.	date	description

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

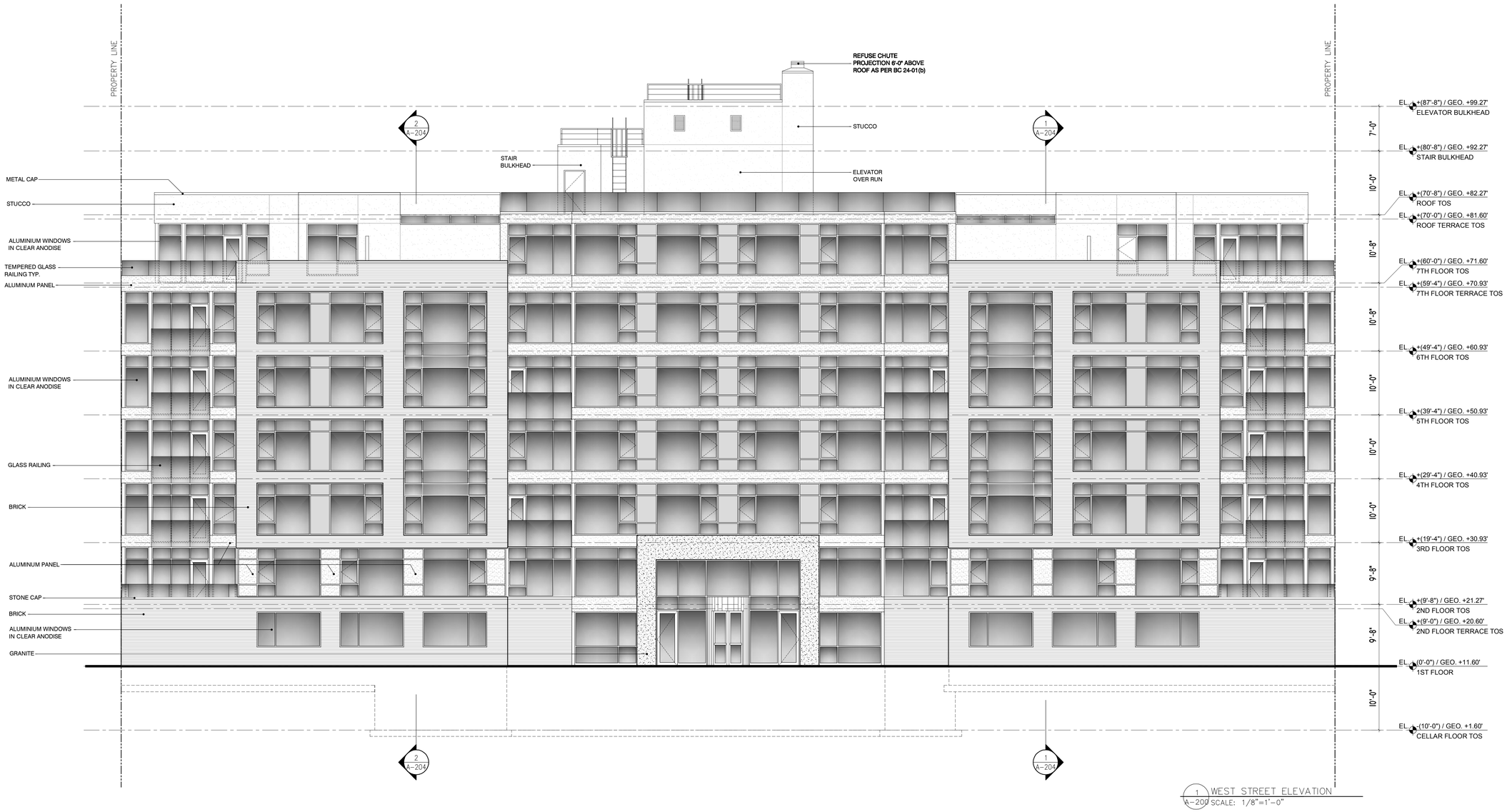
ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

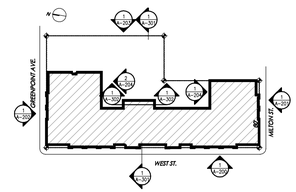
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ROOF PLAN

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-109.01
checked K.F.	



1 A-200 WEST STREET ELEVATION
SCALE: 1/8"=1'-0"



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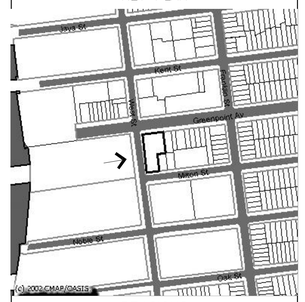
KEY PLAN



REVISIONS

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3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

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STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

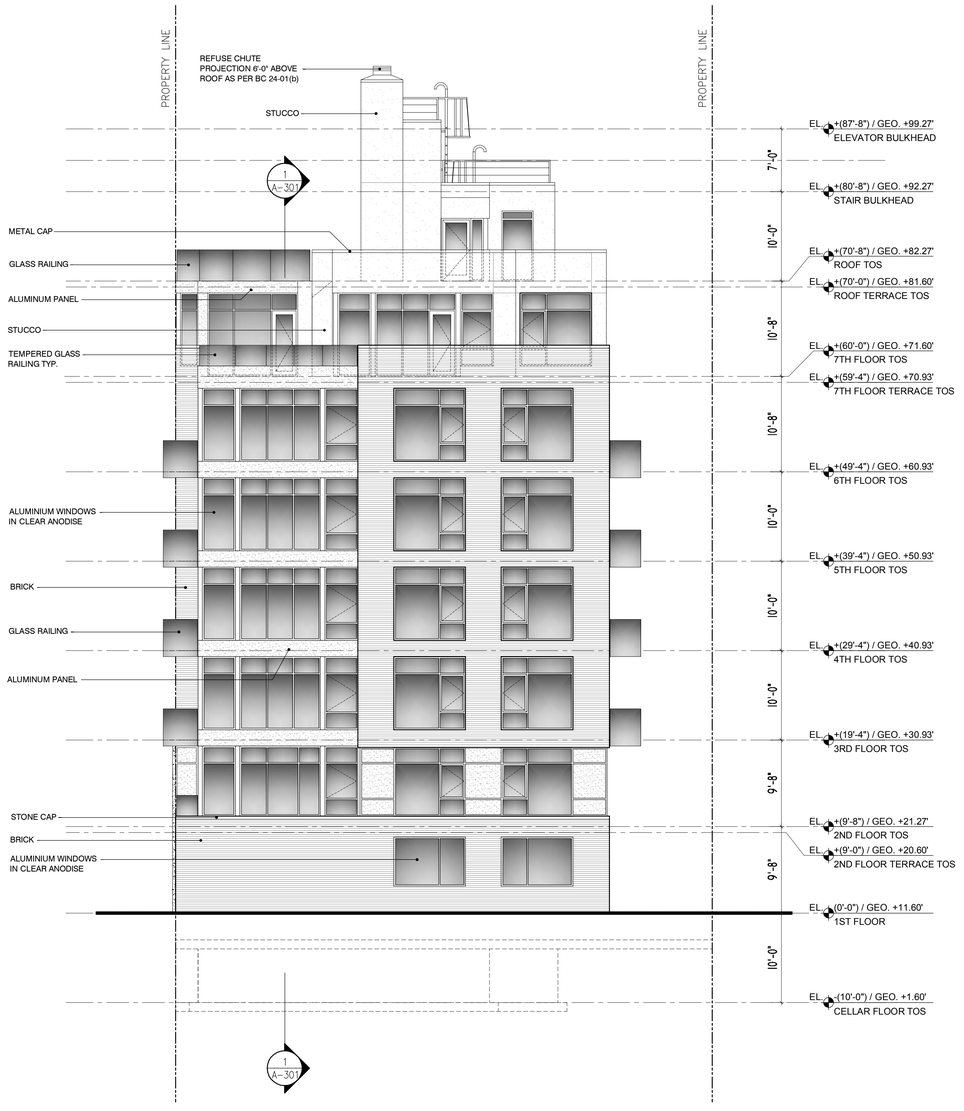
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailinfo@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021286 STATE OF NEW YORK

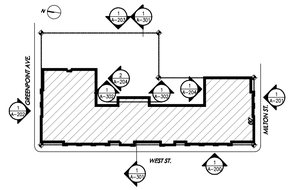
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
WEST STREET ELEVATION

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-200.01
checked K.F.	



1 A-201 MILTON STREET ELEVATION
SCALE: 1/8"=1'-0"



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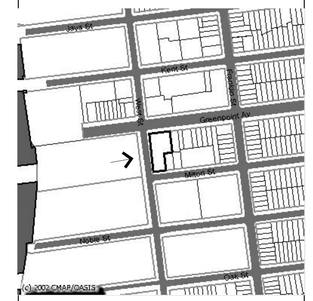
KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
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2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

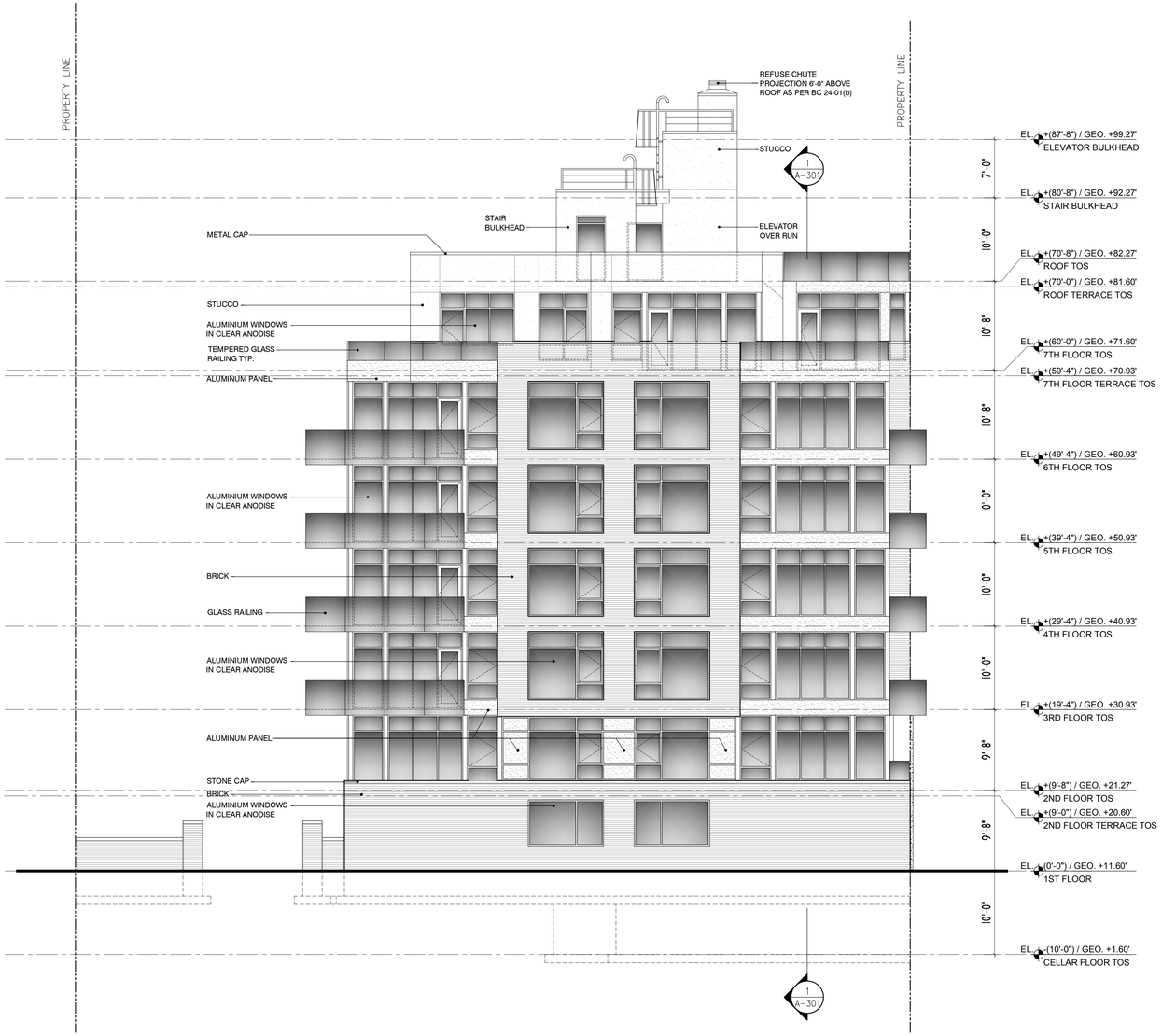
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4157 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

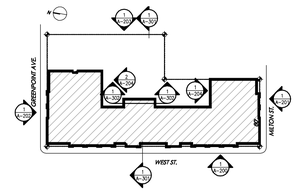
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MILTON STREET ELEVATION

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-201.01
checked K.F.	



1 A-202 GREENPOINT AVENUE ELEVATION
SCALE: 1/8"=1'-0"



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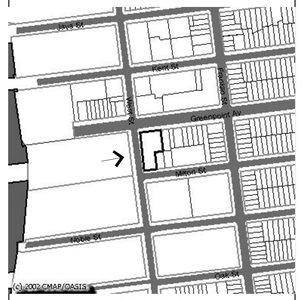
KEY PLAN



REVISIONS

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2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

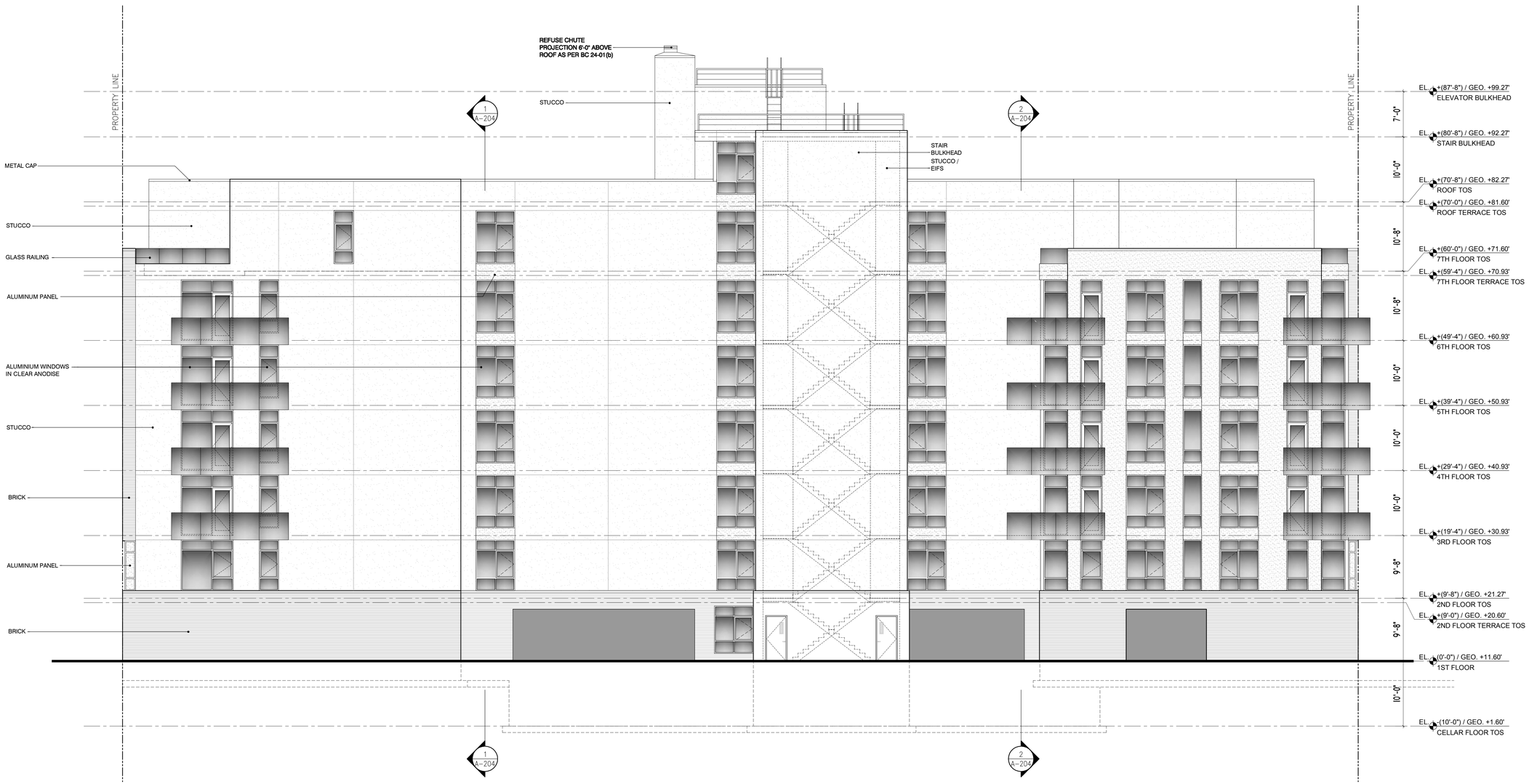
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8950
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

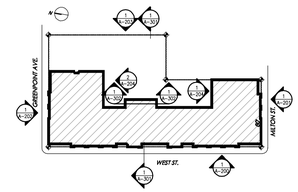
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
GREENPOINT AVENUE ELEVATION

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-202.01
checked K.F.	



1 REAR ELEVATION
A-203 SCALE: 1/8"=1'-0"



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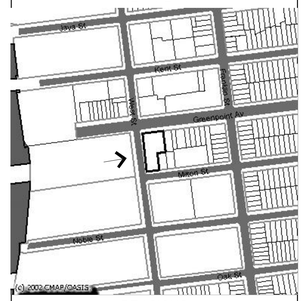
KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
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ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA

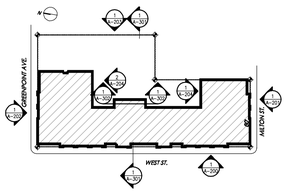
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

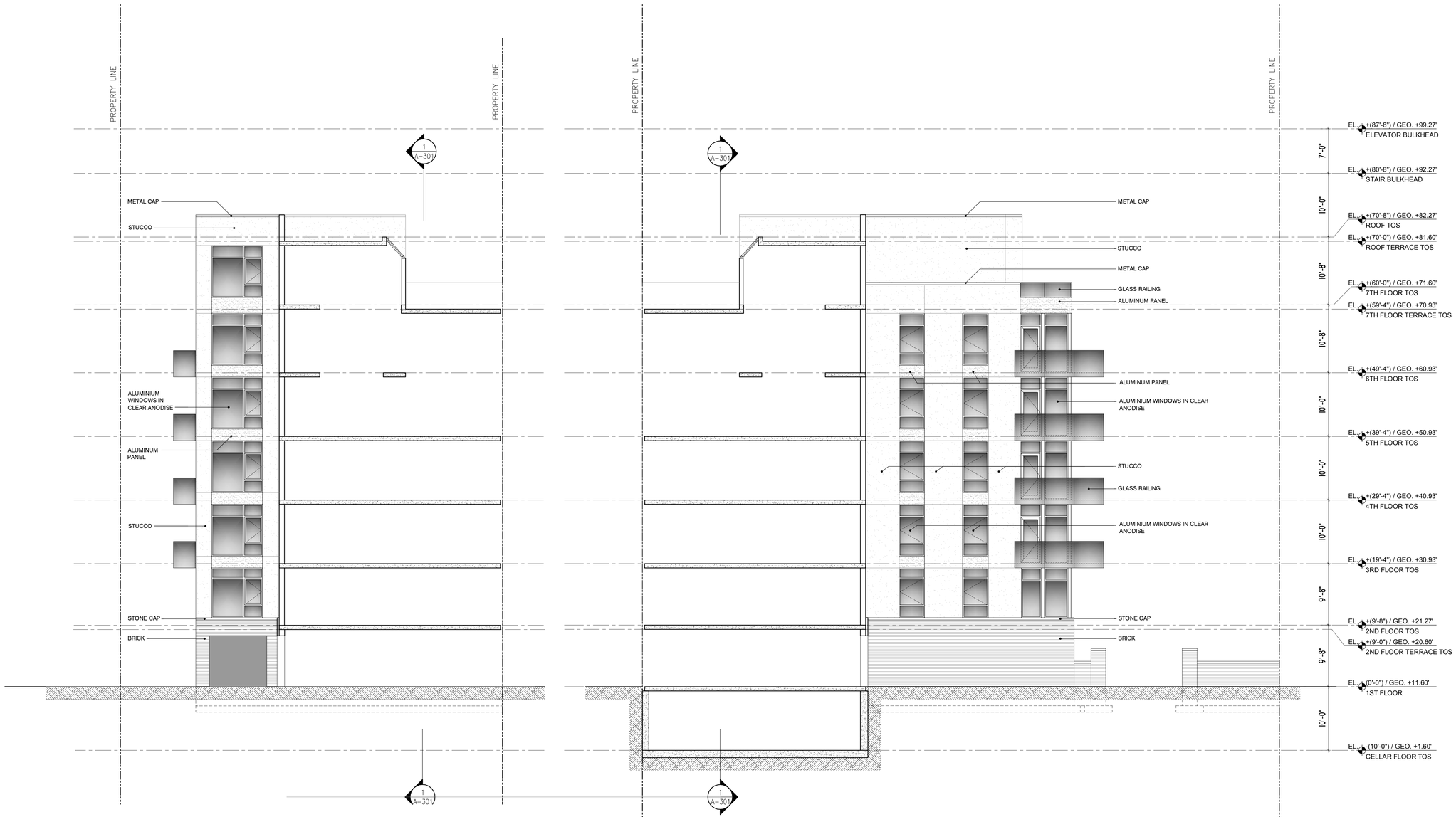
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
REAR ELEVATION

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-203.01
checked K.F.	





1 A-204 SIDE ELEVATION
SCALE: 1/8"=1'-0"

2 A-204 SIDE ELEVATION
SCALE: 1/8"=1'-0"

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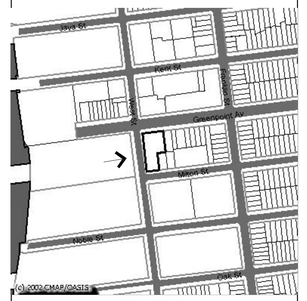
KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA

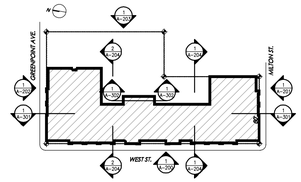
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

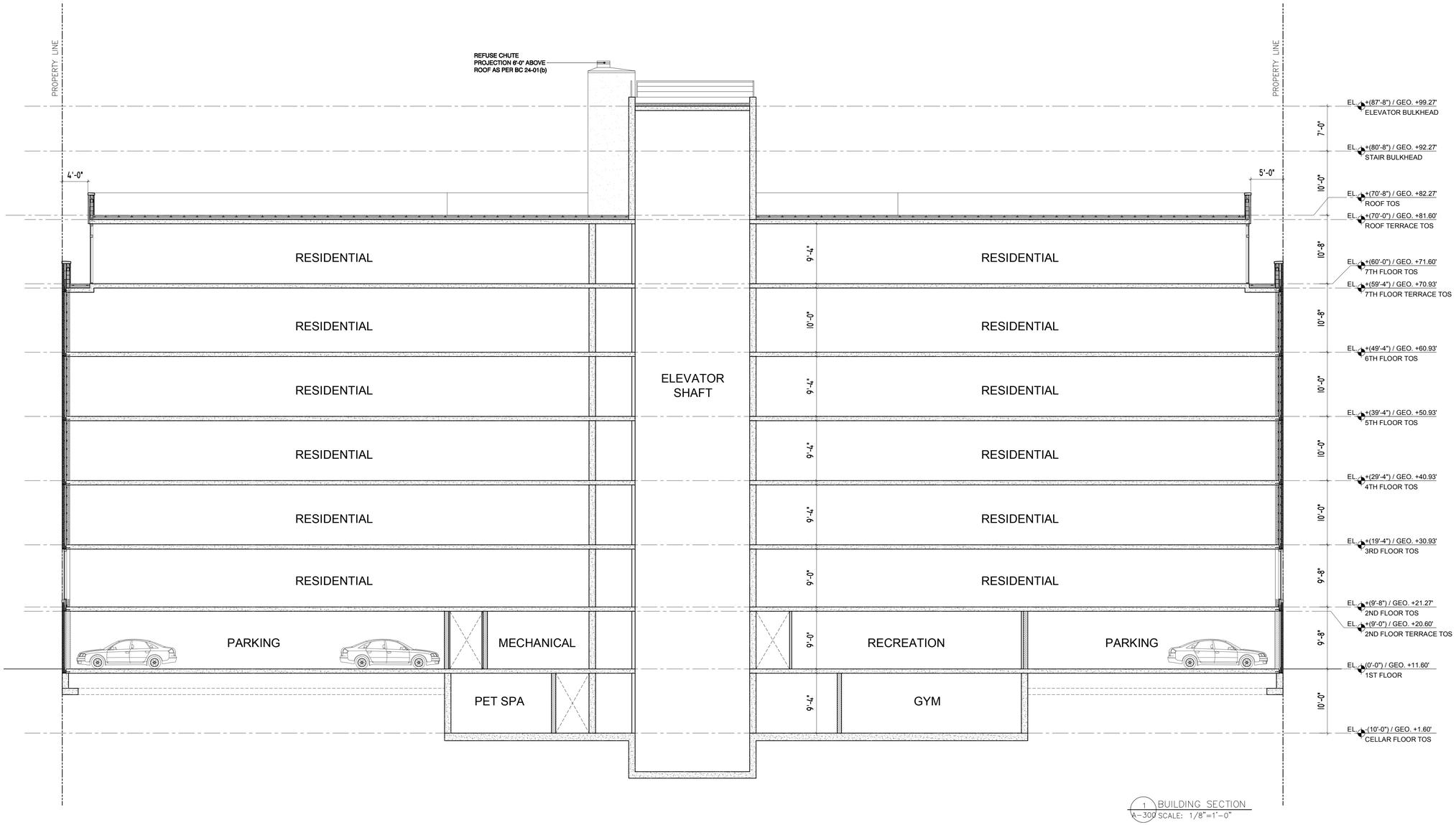
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
SIDE ELEVATION

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-204.01
checked K.F.	





1 BUILDING SECTION
A-300 SCALE: 1/8"=1'-0"

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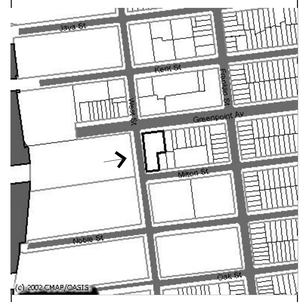

REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
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2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

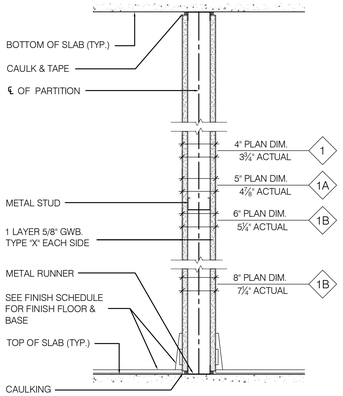
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail4fo@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BUILDING SECTION

scale 1/8"=1'0"	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-300.01
checked K.F.	

1 INTERIOR PARTITION
1 HR, 39 STC - UL DESIGN #U410



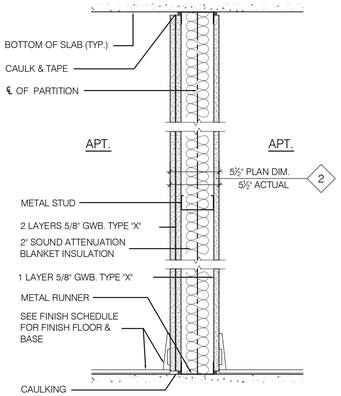
1 PARTITIONS WITHIN APARTMENTS TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON EACH SIDE OF 2-1/2" MTL. STUDS @ 16" O.C. (12" O.C. @ KITCHEN CABINET & ELECTRICAL PANEL LOCATIONS). AT FLOOR TO CEILING HEIGHTS GREATER THAN 13-10" USE PARTITION TYPE 1A.

1A PARTITIONS WITHIN APARTMENTS TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON EACH SIDE OF 3-5/8" MTL. STUDS @ 16" O.C. AT FLOOR TO CEILING HEIGHTS GREATER THAN 17'-11" USE PARTITION TYPE 1B.

1B PARTITIONS AT ELECTRICAL PANEL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON EACH SIDE OF 4" MTL. STUDS @ 16" O.C. AT FLOOR TO CEILING HEIGHTS GREATER THAN 19'-2" USE PARTITION TYPE 1C.

1C PARTITIONS AT KITCHEN PLUMBING TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON EACH SIDE OF 6" MTL. STUDS @ 16" O.C. AT FLOOR TO CEILING HEIGHTS GREATER THAN 26'-1" PARTITION TYPE NOT TO BE USED.

2 BETWEEN APARTMENTS
1 HR, 50 STC - UL DESIGN #U419

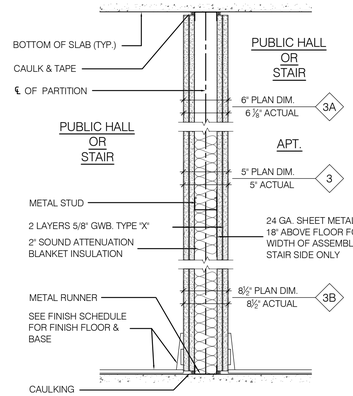


2 PARTITIONS BETWEEN APARTMENTS TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. TYPE 'X" ON ONE SIDE W/ ONE LAYER GWB. TYPE 'X" ON OTHER SIDE OF 3-5/8" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS. AT FLOOR TO CEILING HEIGHTS GREATER THAN 20'-2" USE PARTITION TYPE 2A.

2A PARTITIONS BETWEEN APARTMENTS @KITCHEN PLUMBING TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. TYPE "X" ON ONE SIDE W/ ONE LAYER GWB. TYPE "X" ON OTHER SIDE OF 4" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS. AT FLOOR TO CEILING HEIGHTS GREATER THAN 21'-7" USE PARTITION TYPE 2B.

2B PARTITIONS BETWEEN APARTMENTS TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. TYPE "X" ON ONE SIDE W/ ONE LAYER GWB. TYPE "X" ON OTHER SIDE OF 6" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS. AT FLOOR TO CEILING HEIGHTS GREATER THAN 28'-6" PARTITION TYPE NOT TO BE USED.

3 BETWEEN PUBLIC HALL OR STAIR AND APARTMENTS
2 HR, 51 STC - UL DESIGN #U411

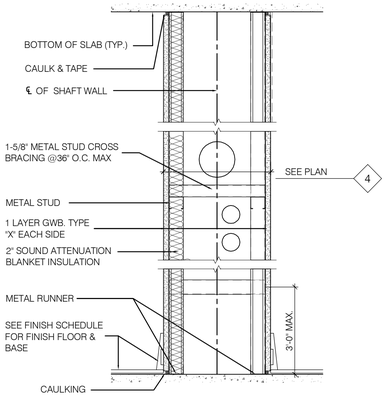


3 PARTITIONS BETWEEN PUBLIC HALL OR STAIR & APARTMENTS TO BE AS FOLLOWS: 2 LAYER OF 5/8" GWB. TYPE "X" ON EACH SIDE OF 3-5/8" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS. NO INSULATION AT WALLS BETWEEN PUBLIC HALLS & STAIRS OR OTHER NON-RESIDENT SPACES. AT FLOOR TO CEILING HEIGHTS GREATER THAN 20'-2" USE PARTITION TYPE 3A.

3A PARTITIONS BETWEEN PUBLIC HALL OR STAIR & APARTMENTS TO BE AS FOLLOWS: 2 LAYER OF 5/8" GWB. TYPE "X" ON EACH SIDE OF 4" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS. NO INSULATION AT WALLS BETWEEN PUBLIC HALLS & STAIRS OR OTHER NON-RESIDENT SPACES. AT FLOOR TO CEILING HEIGHTS GREATER THAN 21'-7" USE PARTITION TYPE 3B.

3B PARTITIONS BETWEEN PUBLIC HALL OR STAIR & APARTMENTS TO BE AS FOLLOWS: 2 LAYER OF 5/8" GWB. TYPE "X" ON EACH SIDE OF 6" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS. NO INSULATION AT WALLS BETWEEN PUBLIC HALLS & STAIRS OR OTHER NON-RESIDENT SPACES. AT FLOOR TO CEILING HEIGHTS GREATER THAN 26'-1" PARTITION TYPE NOT TO BE USED.

4 PIPE CHASE WITHIN APARTMENT
1 HR, BSA # 173-77-SM, UL DESIGN #U420

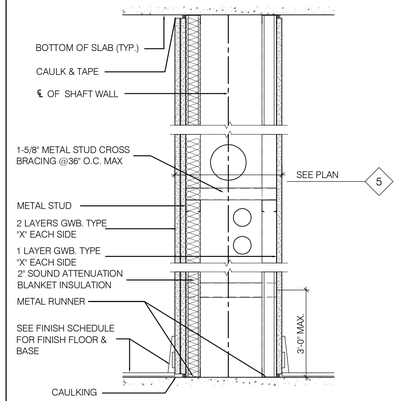


4 PIPE CHASE WITHIN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON EACH SIDE OF 1-5/8" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 13-3" USE PARTITION TYPE 4A.

4A PIPE CHASE WITHIN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON EACH SIDE OF 2-1/2" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 17'-6" USE PARTITION TYPE 4B.

4B PIPE CHASE WITHIN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON EACH SIDE OF 3-5/8" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 22'-9" PARTITION TYPE NOT TO BE USED.

5 PIPE CHASE BETWEEN APARTMENTS
1 HR, 50 STC - BSA # 173-77-SM, UL DESIGN #U420

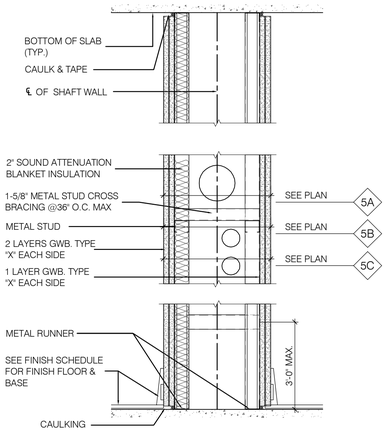


5 PIPE CHASE BETWEEN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON ONE SIDE OF 1-5/8" METAL STUDS @ 16" O.C. & 2 LAYERS OF 5/8" WR GWB. ON OPPOSITE SIDE WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 14'-6" USE PARTITION TYPE 5A.

5A PIPE CHASE BETWEEN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON ONE SIDE OF 2-1/2" METAL STUDS @ 16" O.C. & 2 LAYERS OF 5/8" WR GWB. ON OPPOSITE SIDE WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 19'-0" USE PARTITION TYPE 5B.

5B PIPE CHASE BETWEEN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON ONE SIDE OF 1-5/8" METAL STUDS @ 16" O.C. & 2 LAYERS OF 5/8" WR GWB. ON OPPOSITE SIDE WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 23'-6" PARTITION TYPE NOT TO BE USED.

6 CHASE WALL
2 HR, 51 STC - BSA # 173-77-SM, UL DESIGN #U420

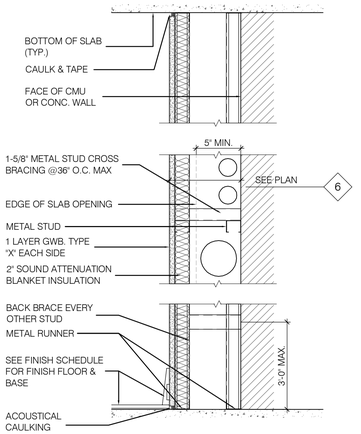


6 CHASE WALL TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. ON ONE SIDE OF 1-5/8" METAL STUDS @ 16" O.C. & 2 LAYERS OF 5/8" GWB. ON OPPOSITE SIDE OF CHASE WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 14'-6" USE PARTITION TYPE 6A.

6B CHASE WALL TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. ON ONE SIDE OF 2-1/2" METAL STUDS @ 16" O.C. & 2 LAYERS OF 5/8" GWB. ON OPPOSITE SIDE OF CHASE WITH 2" SOUND ATTENUATION BLANKET INSULATION. AT FLOOR TO CEILING HEIGHTS GREATER THAN 19'-0" USE PARTITION TYPE 6B.

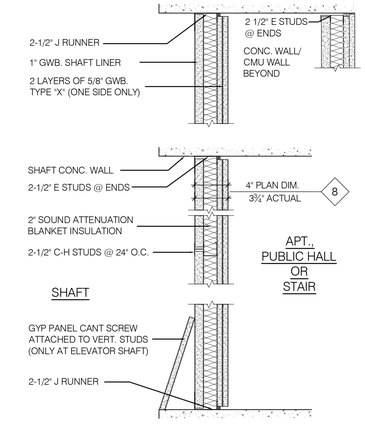
6C CHASE WALL TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. ON ONE SIDE OF 3-5/8" METAL STUDS @ 16" O.C. & 2 LAYERS OF 5/8" GWB. ON OPPOSITE SIDE OF CHASE.

7 PIPE CHASE @ C.M.U. OR CONC. WALL
-



7 PIPE CHASE TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON FINISH SIDE OF 1-5/8" METAL STUDS @ 16" O.C.

8 MECH. SHAFTWALL, ELEVATOR OR STAIR SHAFTS
2 HR, 50STC - BSA # 542-68-SM, UL DESIGN #U415

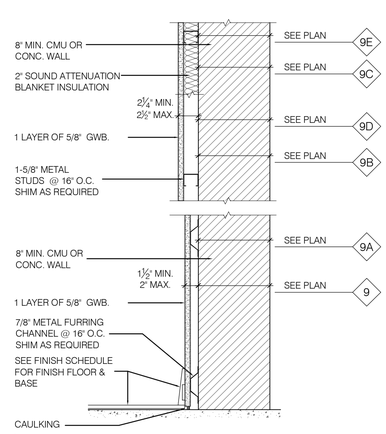


8 MECH. SHAFT WALL, ELEVATOR OR STAIR SHAFT TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GWB. TYPE "X" ON FINISH SIDE & 1" GWB. LINER PANEL ON SHAFT SIDE OF 2-1/2" C-H METAL STUDS @ 24" O.C. MAX. W/ 2" SOUND ATTENUATION BLANKET INSULATION. OMIT SOUND INSULATION @ ELEC. RISER SHAFTS. AT FLOOR TO CEILING HEIGHTS GREATER THAN 13'-4" USE PARTITION TYPE 8A.

8A MECH. SHAFT WALL, ELEVATOR OR STAIR SHAFT TO BE AS FOLLOWS: AS WALL TYPE "8" W/ 4" C-H METAL STUDS.

8B MECH. SHAFT WALL, ELEVATOR OR STAIR SHAFT TO BE AS FOLLOWS: AS WALL TYPE "8" W/ 6" C-H METAL STUDS.

9 FURRING ON INTERIOR CONCRETE OR C.M.U. WALL
3 HR - UL DESIGN #U914



9 FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 7/8" METAL FURRING CHANNEL @16" O.C.

9A FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 1-5/8" METAL STUDS @ 16" O.C. BACK BRACED EVERY OTHER STUD OVER CONCRETE OR CMU WALL.

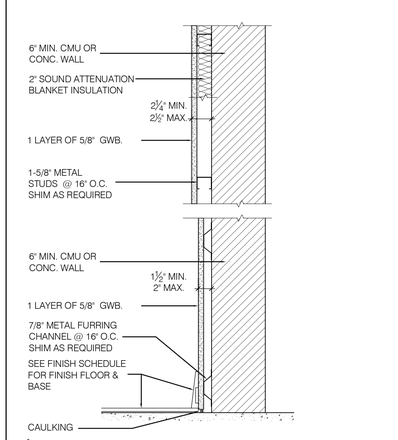
9B FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 2-1/2" METAL STUDS @ 16" O.C. BACK BRACED EVERY OTHER STUD OVER CONCRETE OR CMU WALL.

9C FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: AS WALL TYPE "9B" W/ 2" SOUND ATTENUATION BLANKET INSULATION.

9D FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 3-5/8" METAL STUDS @ 16" O.C. BACK BRACED EVERY OTHER STUD OVER CONCRETE OR CMU WALL.

9E FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: AS WALL TYPE "9D" W/ 2" SOUND ATTENUATION BLANKET INSULATION.

10 FURRING ON INTERIOR CONCRETE OR C.M.U. WALL
2 HR, 39 STC - UL DESIGN #U914



10 FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 7/8" METAL FURRING CHANNEL @16" O.C.

10A FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 1-5/8" METAL STUDS @ 16" O.C. BACK BRACED EVERY OTHER STUD OVER CONCRETE OR CMU WALL.

10B FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 2-1/2" METAL STUDS @ 16" O.C. BACK BRACED EVERY OTHER STUD OVER CONCRETE OR CMU WALL.

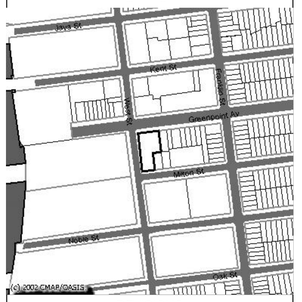
10C FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: AS WALL TYPE "10B" W/ 2" SOUND ATTENUATION BLANKET INSULATION.

10D FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 3-5/8" METAL STUDS @ 16" O.C. BACK BRACED EVERY OTHER STUD OVER CONCRETE OR CMU WALL.

10E FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: AS WALL TYPE "10D" W/ 2" SOUND ATTENUATION BLANKET INSULATION.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

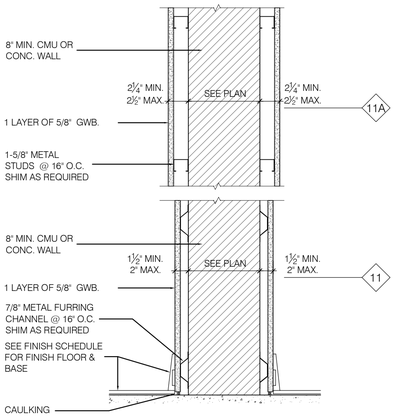
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
WALL TYPES

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-500.01
checked K.F.	

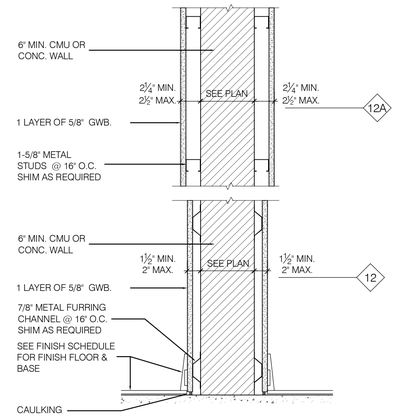
11 FURRING ON INTERIOR CONCRETE OR C.M.U. WALL
3 HR - UL DESIGN #U910



11 FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 7/8" METAL FURRING CHANNEL @16" O.C. ON EACH SIDE OF WALL.

11A FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 1-5/8" METAL STUDS @ 16" O.C. ON EACH SIDE OF WALL.

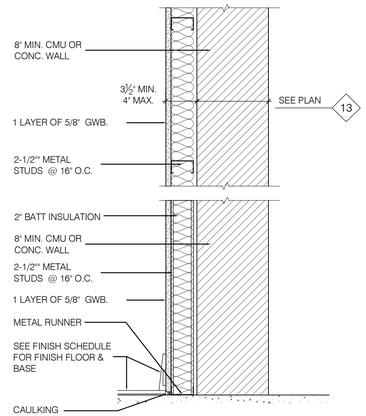
12 FURRING ON INTERIOR CONCRETE OR C.M.U. WALL
2 HR, 39 STC - UL DESIGN #U910



12 FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 7/8" METAL FURRING CHANNEL @16" O.C. ON EACH SIDE OF WALL.

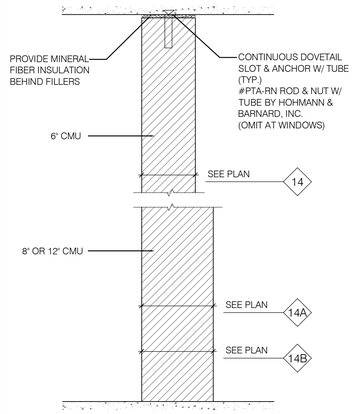
12A FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 1-5/8" METAL STUDS @ 16" O.C. ON EACH SIDE OF WALL.

13 FURRING ON INTERIOR CONCRETE OR C.M.U. WALL
3 HR - UL DESIGN #U914



13 FURRING ON INTERIOR CMU OR CONCRETE WALL TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 2-1/2" METAL STUDS @ 16" O.C. W/ BATT INSULATION.

14 INTERIOR CONCRETE OR C.M.U. WALL
2 HR, 39 STC - UL DESIGN #U906



14 6" CMU (CONCRETE MASONRY UNITS)

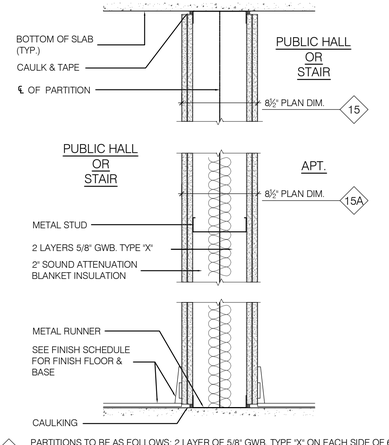
14A 8" CMU (CONCRETE MASONRY UNITS)

14B 12" CMU (CONCRETE MASONRY UNITS)

GENERAL NOTES:

1. ALL AREAS RECEIVING GWB CONSIDERED TO BE A WET AREA SUCH AS KITCHENS AND BATHROOMS SHALL RECEIVE WATER RESISTANT GWB. ALL WET AREAS DESIGNATED AS TILE FINISH SHALL RECEIVE 1 LAYER OF ½" WATER RESISTANT GWB OR EQUAL.
2. IN GENERAL, SPACE METAL FRAME MEMBERS @16" O.C. MAX. EXCEPT OTHERWISE NOTED; (12" O.C. @ KITCHEN CABINET LOCATIONS).
3. ALL METAL STUD FRAMING FOR FIRE RATED WALLS TO BE 20 GA. MIN.
4. PROVIDE A CONTINUOUS BEAD OF ACOUSTICAL SEALANT AROUND THE ENTIRE PERIMETER OF BOTH SIDES TOP AND BOTTOM OF PARTITIONS THAT DEMISE UNITS AND ARE FIRE RATED.
5. EACH LAYER OF GWB OF FIRE RATED WALLS TO RECEIVE TAPE AND SPACKLE ON INTERIOR SIDE.
7. TAPE AND SPACKLE ALL FIRE RATED WALLS PRIOR TO INSTALLATION OF TUBS, TOILETS, SINKS, CABINETS, ALL BUILT IN ITEMS, ETC., TO OBTAIN REQUIRED FIRE RATING OF THE SPECIFIED WALL.
8. WHENEVER CABINETS OR OTHER EQUIPMENT IS SHOWN (IN PLAN) MOUNTED TO METAL FRAMED PARTITIONS, PROVIDE 16GA SHEET STEEL REINFORCEMENT AT LEAST 9" TALL BETWEEN STUDS AND WALL BOARD. COORDINATE MOUNTING HEIGHT W/ EQUIPMENT OR CABINET BEING MOUNTED.
9. PROVIDE MISCELLANEOUS STEEL BRACING AT ALL HANDICAPPED RAIL AND GUARD RAIL ANCHORS. REFER TO HANDICAP SPECIFICATIONS AND COORDINATE W/ PLUMBER.
10. REFER TO SPECIFICATIONS IF PROVIDED FOR FURTHER INFORMATION.

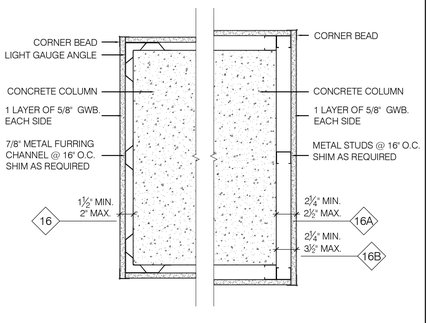
15 BEARING WALL PARTITION
2 HR, 51 STC - UL DESIGN #U425



15 PARTITIONS TO BE AS FOLLOWS: 2 LAYER OF 5/8" GWB. TYPE "X" ON EACH SIDE OF 6" METAL STUDS @ 16" O.C WITHOUT INSULATION.

15A LOAD BEARING PARTITIONS TO BE AS FOLLOWS: 2 LAYER OF 5/8" GWB. TYPE "X" ON EACH SIDE OF 6" METAL STUDS @ 16" O.C. W/ 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS.

16 FURRING CONCRETE COLUMN
2 HR, 50STC -

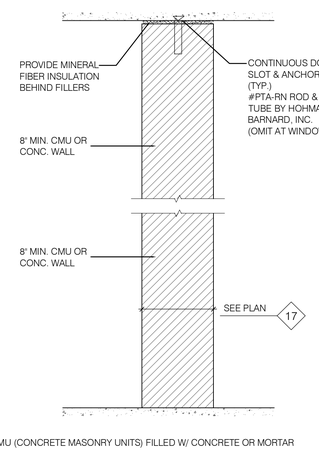


16 FURRING ON CONCRETE COLUMN TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 7/8" METAL FURRING CHANNEL @ 16" O.C., CORNERS TO BE REINFORCED WITH METAL PRE FORMED CORNER BEAD

16A FURRING ON CONCRETE COLUMN TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 1-5/8" METAL STUDS @ 16" O.C., CORNERS TO BE REINFORCED WITH METAL PRE FORMED CORNER BEAD

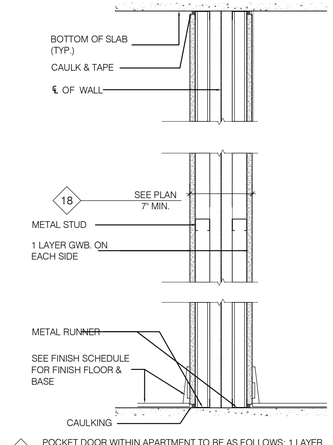
16B FURRING ON CONCRETE COLUMN TO BE AS FOLLOWS: 1 LAYER OF 5/8" GWB. ON 2-1/2" METAL STUDS @ 16" O.C., CORNERS TO BE REINFORCED WITH METAL PRE FORMED CORNER BEAD

17 INTERIOR CONCRETE OR C.M.U. WALL
3 HR - UL DESIGN #U907



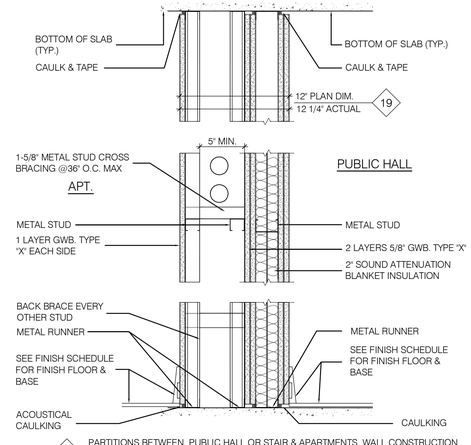
17 8" CMU (CONCRETE MASONRY UNITS) FILLED W/ CONCRETE OR MORTAR

18 POCKET DOOR WALL WITHIN APARTMENT
-



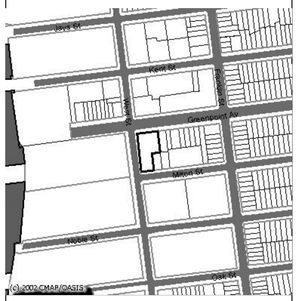
18 POCKET DOOR WITHIN APARTMENT TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON EACH SIDE OF 1-5/8" METAL STUDS @ 16" O.C.

19 2 HR KITCHEN CHASE WALL & HORIZ GAS LINE ENCLOSURE
2 HR, 51 STC - UL 263, DESIGN NO. U411



19 PARTITIONS BETWEEN PUBLIC HALL OR STAIR & APARTMENTS, WALL CONSTRUCTION ACCOMODATING HORIZONTAL RUN OF GAS LINE AND PLUMBING TO BE AS FOLLOWS: 1 LAYER OF 5/8" WR GWB. ON FINISH SIDE OF 1-5/8" METAL STUDS @ 16" O.C. 2 LAYER OF 5/8" GWB ON BOTH SIDES. TYPE "X" ON EACH SIDE OF 2-1/2" METAL STUDS @ 16" O.C. WITH 2" SOUND ATTENUATION BLANKET INSULATION BETWEEN STUDS.

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

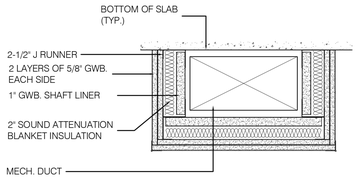
MEP ENGINEER:
Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

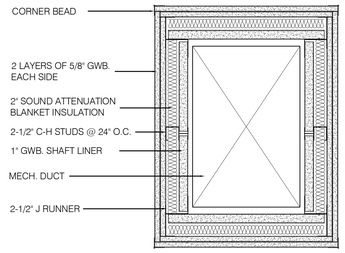
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
WALL TYPES

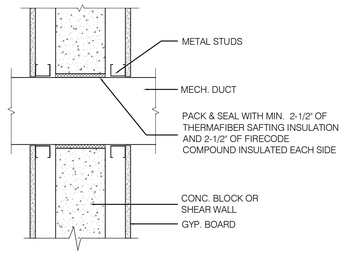
scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-501.01
checked K.F.	



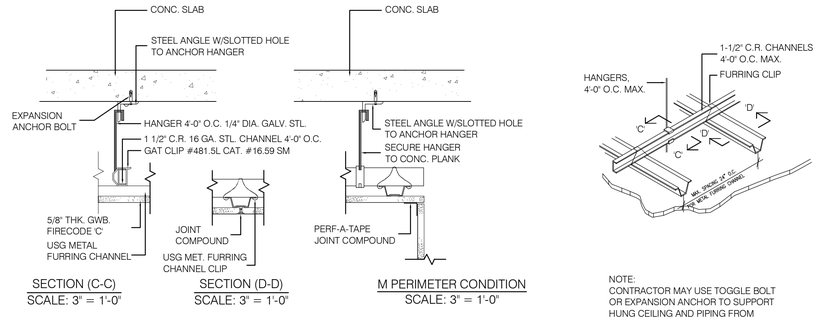
DUCT FIRE PROOFING @ HORIZONTAL OFFSET
2HR FIRE RATED



TYPICAL MECH. DUCT ENCLOSURE
2HR FIRE RATED



HORIZONTAL DUCT PENETRATIONS



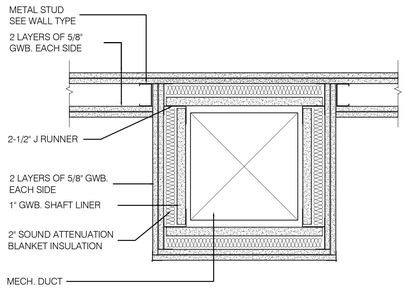
SECTION (C-C)
SCALE: 3" = 1'-0"

SECTION (D-D)
SCALE: 3" = 1'-0"

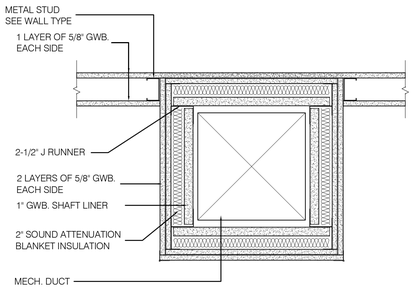
M PERIMETER CONDITION
SCALE: 3" = 1'-0"

NOTE:
CONTRACTOR MAY USE TOGGLE BOLT
OR EXPANSION ANCHOR TO SUPPORT
HUNG CEILING AND PIPING FROM
CONC. SLAB

GYPSUM WALLBOARD HUNG CEILING DETAILS
SEE REFLECTED CEILING PLAN



TYPICAL MECH. DUCT ENCLOSURE
2HR FIRE RATED W/ 2HR FIRE RATED WALL



TYPICAL MECH. DUCT ENCLOSURE
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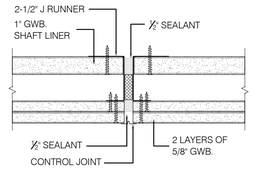
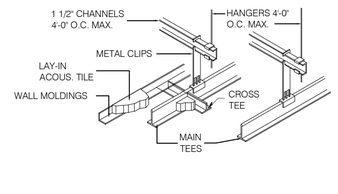
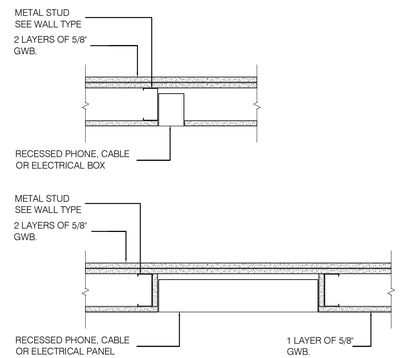


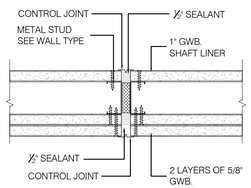
CONTROL JOINT @ SHAFT WALL
2HR FIRE RATED



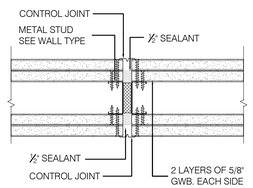
TYP. LAY-IN ACOUSTICAL TILE CEILING DETAILS
SEE REFLECTED CEILING PLAN



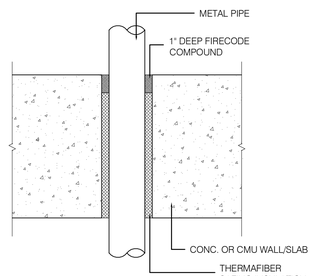
RECESSED TELEPHONE / ELECTRICAL PANEL/BOX
@ 1HR FIRE RATED WALLS BETWEEN APARTMENTS



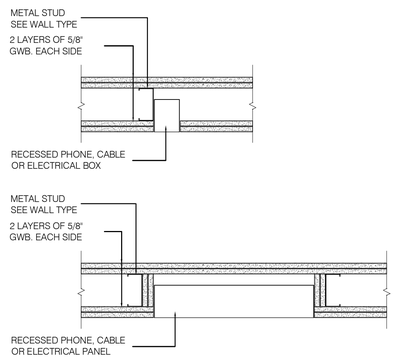
CONTROL JOINT @ INTERIOR WALL
1HR FIRE RATED BETWEEN APARTMENTS



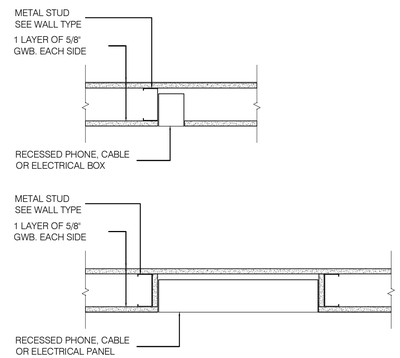
CONTROL JOINT @ INTERIOR WALL
2HR FIRE RATED



TYPICAL PIPE PENETRATION
FIRE ASSEMBLY DETAIL

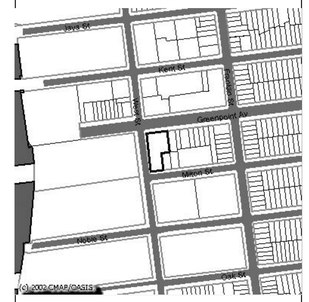


RECESSED TELEPHONE / ELECTRICAL PANEL/BOX
@ 2HR FIRE RATED WALLS



RECESSED TELEPHONE / ELECTRICAL PANEL/BOX
@ NON-RATED WALLS

KEY PLAN



REVISIONS

no.	date	description
4	121714	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

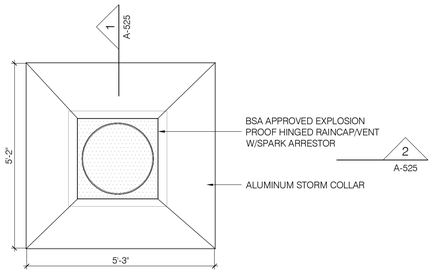
KARL FISCHER ARCHITECT
OAQ OAA PAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10013
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

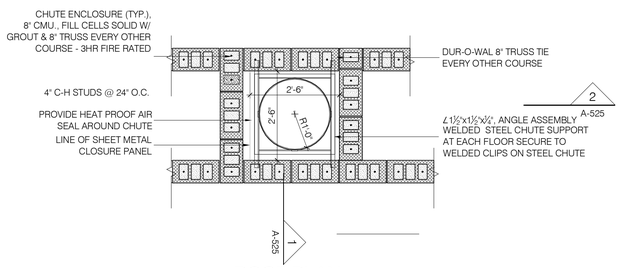
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ARCHITECTURAL DETAILS

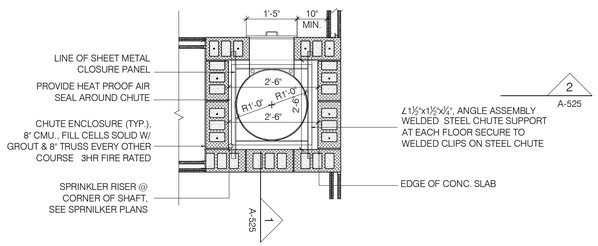
scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-502.01
checked K.F.	



RAINCAP/VENT PLAN



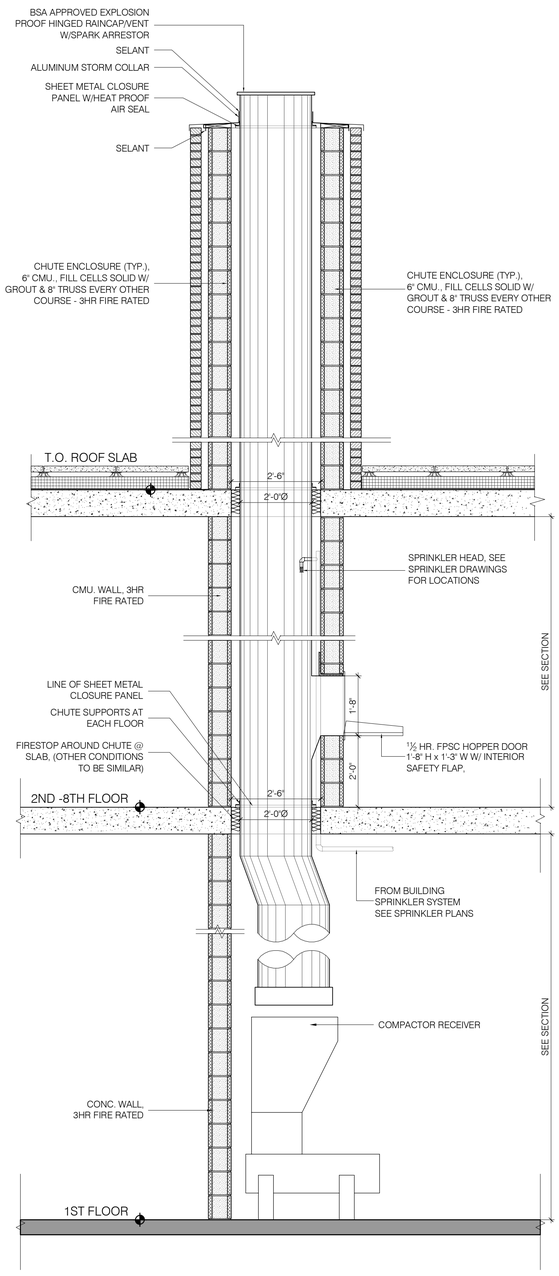
ROOF PLAN

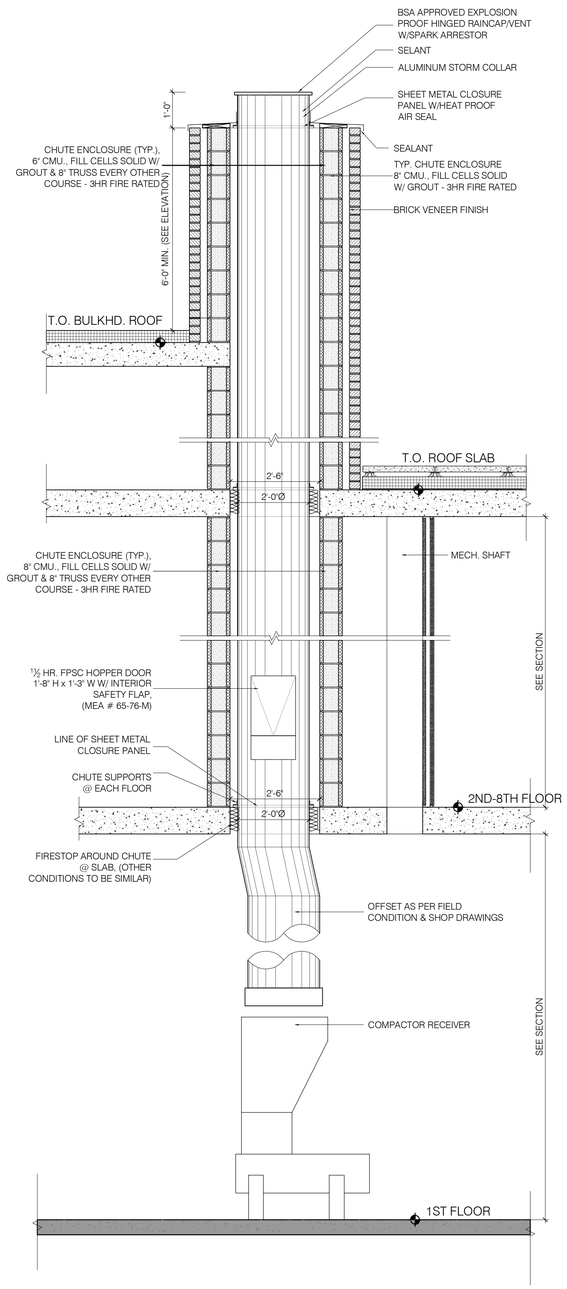


1ST TO 7TH FLOOR PLAN

COMPACTOR ROOM & REFUSE CHUTE ENCLOSURE NOTE:

1. PROVIDE 3HR FIRE RATED WALLS & CEILING FOR REFUSE CHUTE & COMPACTOR ROOM.
2. CMU "CONC. BLOCK" NOMINAL SIZE 8"x8"x16" TO BE LAID IN FULL BED OF ⅜" MORTAR, VERTICAL JOINTS STAGGERED.
3. REFUSE CHUTE & COMPACTOR ROOM ENCLOSURE TO HAVE MIN. OF 50 STC RATING.
4. MEA # 65-76M





1 A-503 REFUSE CHUTE PLAN DETAIL
1/2"=1'-0"

2 A-503 REFUSE CHUTE SECTION DETAIL
1/2"=1'-0"

3 A-503 REFUSE CHUTE SECTION DETAIL
1/2"=1'-0"

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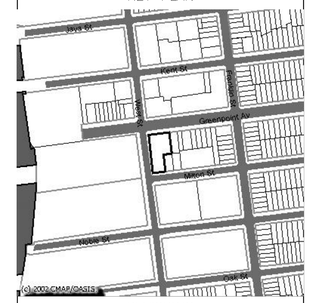
KEY PLAN



REVISIONS

no.	date	description

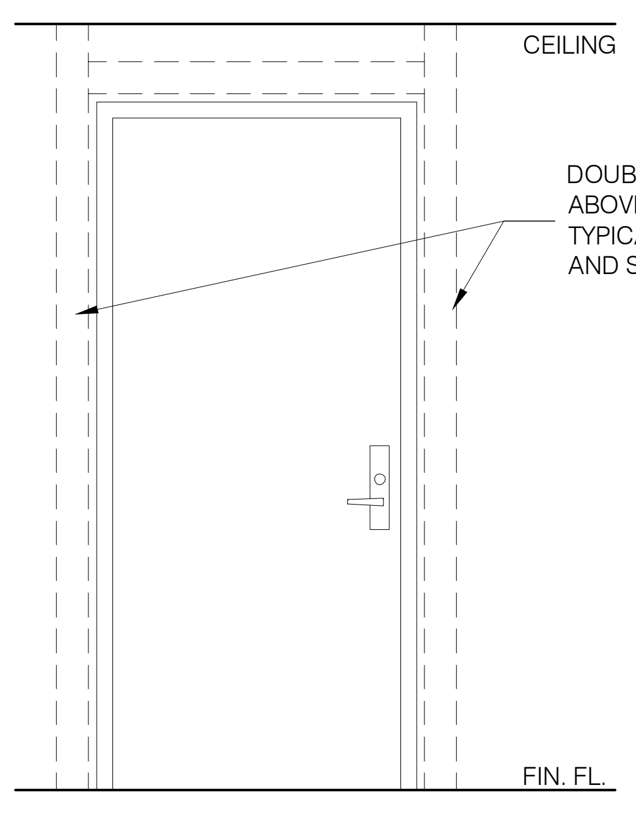
DOOR SCHEDULE

	LOCATION	TYPE	SIZE WIDTH	SIZE HEIGHT	SIZE THICKNESS	MATERIAL DOOR	MATERIAL FRAME	MATERIAL SADDLE	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	FIRE RATING	HDWR SET	REMARKS
RESIDENTIAL UNITS	**RECREATION ROOM ENTRANCE	D	(2)3'-0"	7'-0"	1-3/4"	HM	HM					1-1/2 HR		
	**APARTMENT ENTRANCE	A	3'-0"	7'-0"	1-3/4"	HM	HM					1-1/2 HR		
	BEDROOM	B	2'-10"	7'-0"	1-3/4"	SC	WD							
	BEDROOM (IH UNITS)	B*	3'-0"	7'-0"	1-3/4"	SC	WD							
	BATHROOM	B1	2'-10"	7-0"	1-3/4"	SC	WD							
	BATHROOM (IH UNITS)	B1+	3'-0"	7-0"	1-3/4"	SC	WD							POCKET DOOR
	CLOSET	C	2'-4"	7'-0"	1-3/4"	SC	WD							
	CLOSET	C1	2'-8"	7'-0"	1-3/4"	SC	WD							
	CLOSET	C2	2'-10"	7'-0"	1-3/4"	SC	WD							
	CLOSET	C3	(2)2'-0"	7'-0"	1-3/4"	SC	WD							
TYPICAL SERVICE	**STAIR	S	3'-0"	7'-0"	1-3/4"	HM	HM					1-1/2 HR		
	**STAIR AT BULKHEAD	S1	3'-0"	7-0"	1-3/4"	HM	HM					3/4 HR		PROVIDE INSULATED DOOR & PROVIDE 4" HEADER
	REFUSE ROOM	R	3'-3"	7'-0"	1-3/4"	HM	HM					1-1/2 HR		SEE NOTE (2)
	**COMPACTOR ROOM	R1	3'-0"	7-0"	1-3/4"	HM	HM					1-1/2 HR		
	**STORAGE/ MECHANICAL ROOMS	M	3'-0"	7-0"	1-3/4"	HM	HM					1-1/2 HR		
	**STORAGE/ MECHANICAL ROOMS	M1	(2) 3'-0"	7-0"	1-3/4"	HM	HM					1-1/2 HR		
	**EXIT DOOR AT 1ST FLOOR	E	3'-0"	7'-10"	1-3/4"	HM	HM							PROVIDE INSULATED DOOR W/ NO EXTERIOR HARDWARE

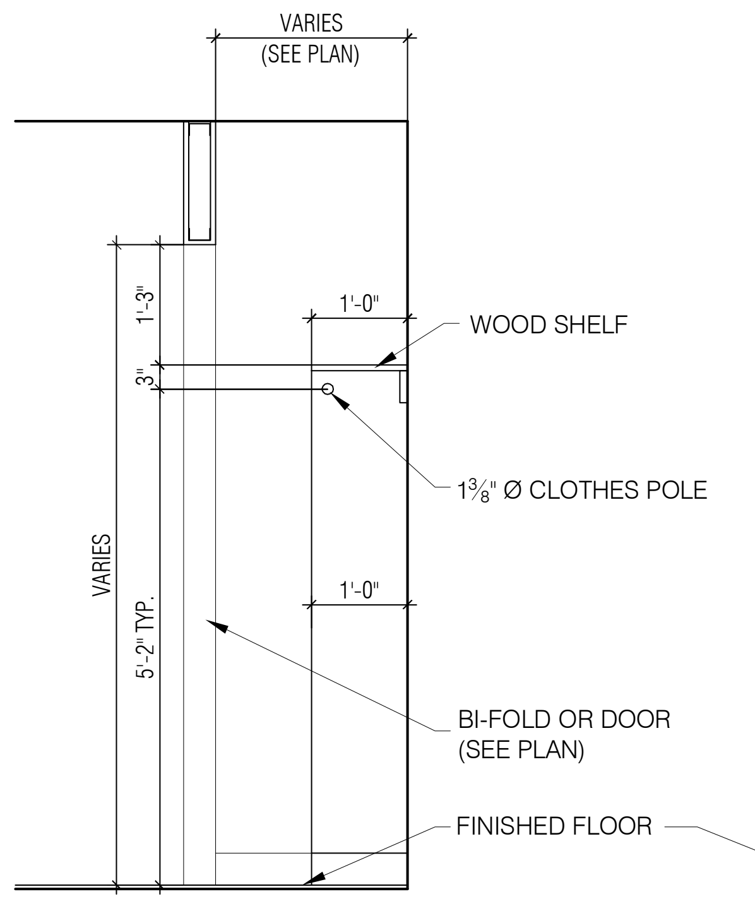
DOORS NOTES:

1. ** SELF-CLOSING DOORS.
2. REFUSE ROOM DOORS TO BE MIN. OF 38" WIDE DOORS WITH AUTOMATIC DOOR OPENER AND OCCUPANCY SENSOR TO REMAIN IN OPEN POSITION WHILE THE ROOM IS OCCUPIED. DOOR MUST RETURN TO CLOSED POSITION IF THE ROOM IS NOT OCCUPIED OR IN CASE OF POWER FAILURE.
3. ALL BATHROOM DOORS TO HAVE ½" OF UNDERCUT.
4. DOORS UNDERCUT WILL VARY W/ FLOOR FINISH.
5. ALL DOORS TO BE INSTALLED ON THE SAME HEIGHT ABOVE CONC. SLAB, GC TO VERIFY FLOOR FINISHES.
6. GC TO COORDINATE DOORS SWING WITH FLOOR PLANS.

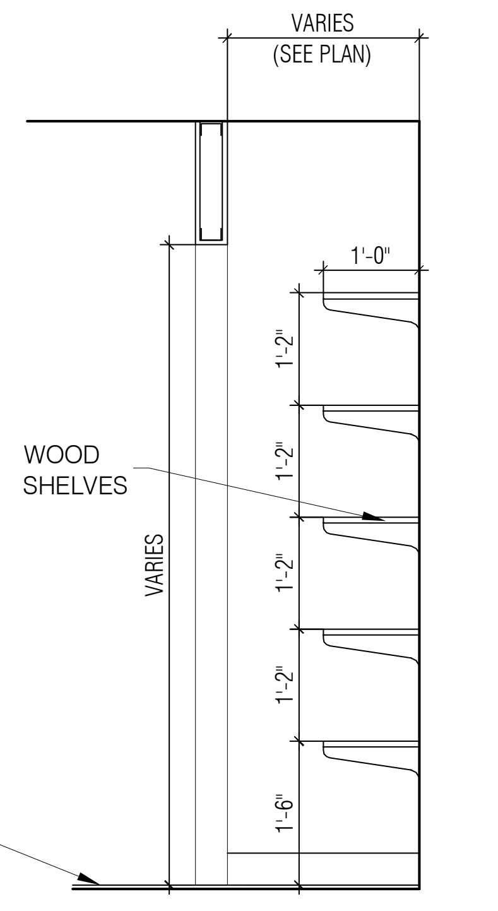
DOOR & CLOSET DETAILS



DOOR FRAMING DETAIL (TYP.)

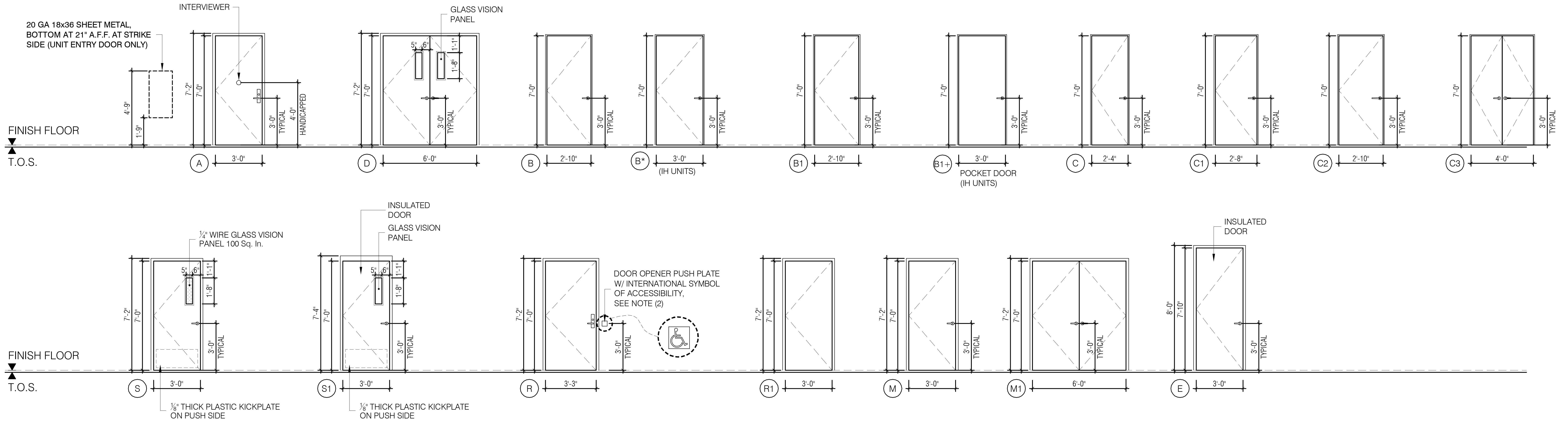


APARTMENT CLOSET & W.I.C. (TYPICAL)



APARTMENT LINEN CLOSET (TYPICAL)

DOOR TYPES



LEGEND:

(?) DOOR TYPE

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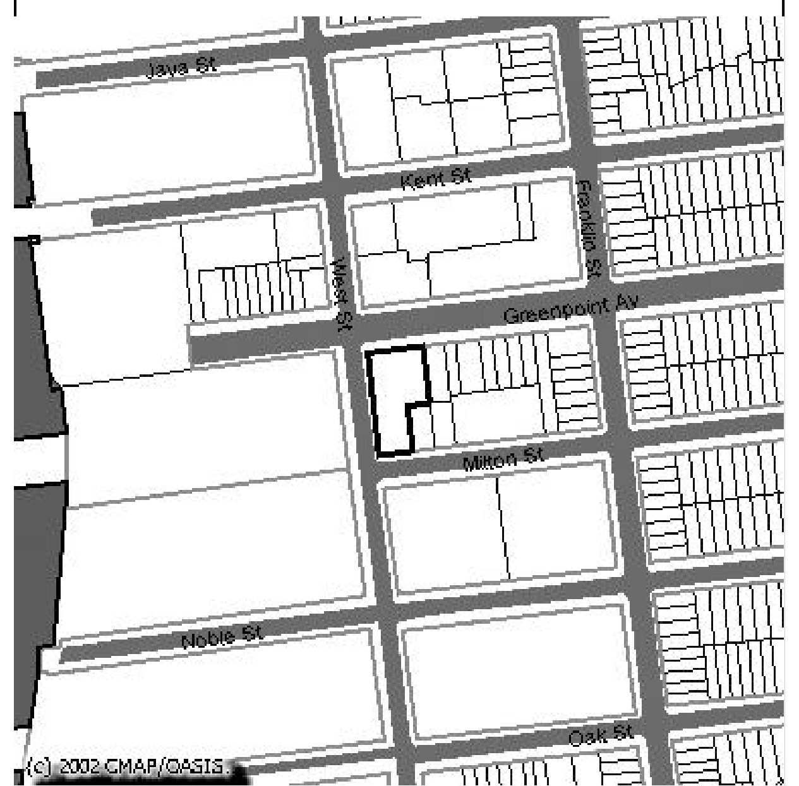
KEY PLAN



REVISIONS

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1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

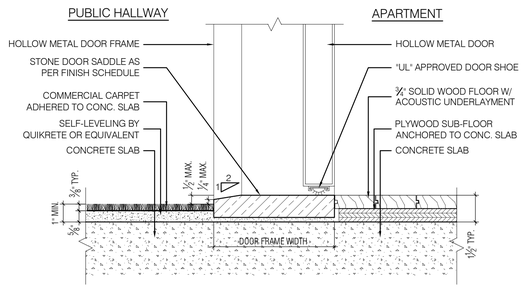
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

REGISTERED ARCHITECT
KARL FISCHER
021282
STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
DOOR SCHEDULE

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-700.01
checked K.F.	



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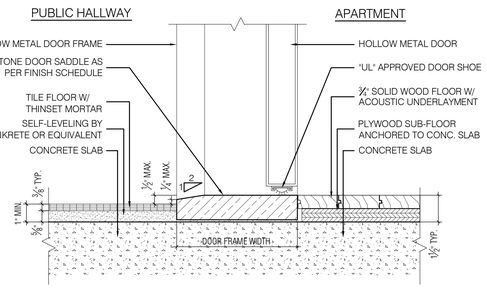

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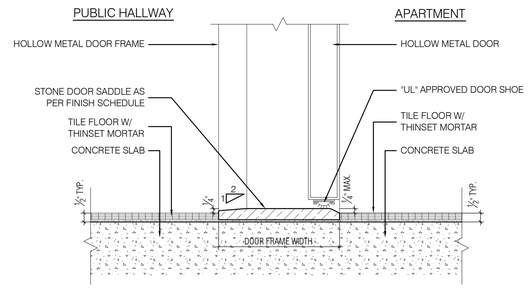

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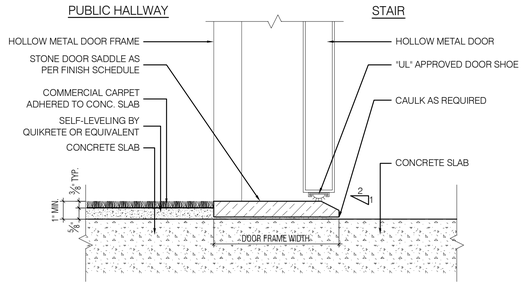
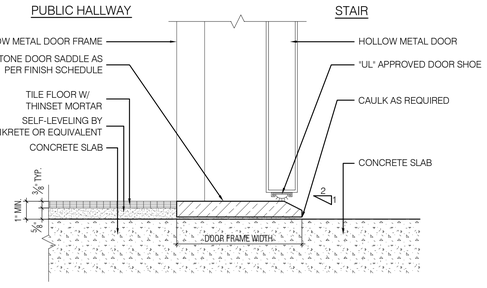
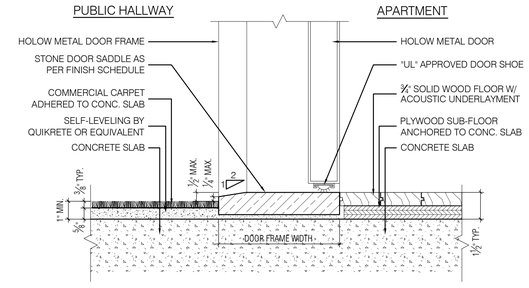


STAIR DOOR



STAIR DOOR



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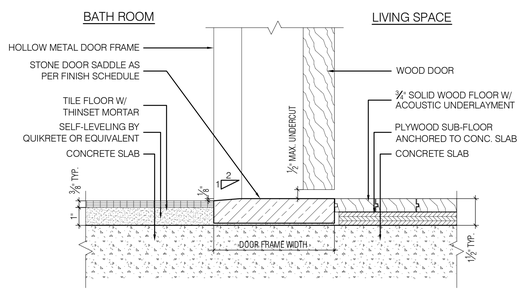
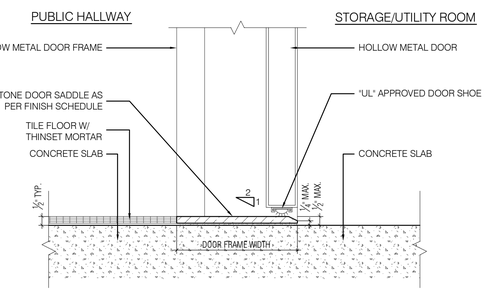
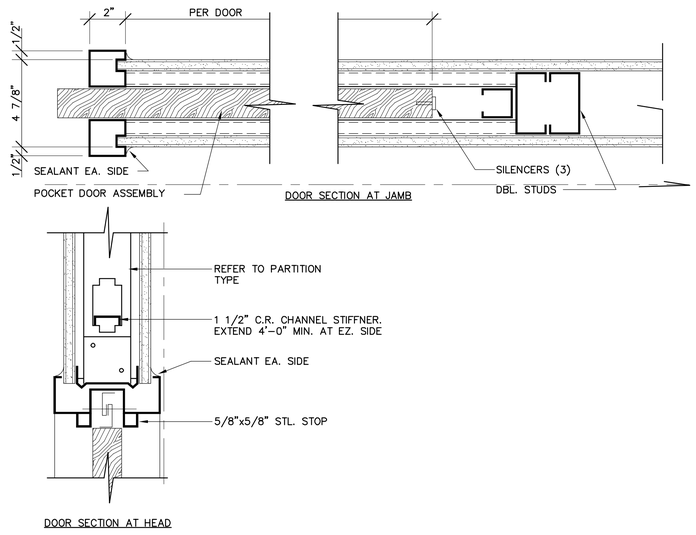


BATH ROOM DOOR



STORAGE/UTILITY ROOM DOOR



POCKET DOOR (BATHROOM @ HPD UNITS)

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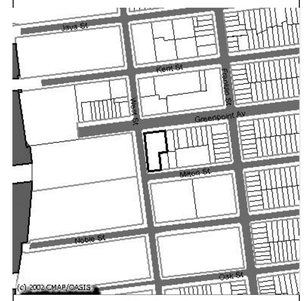
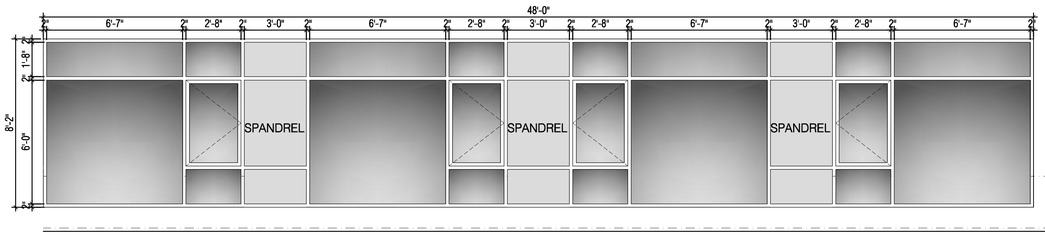
KEY PLAN



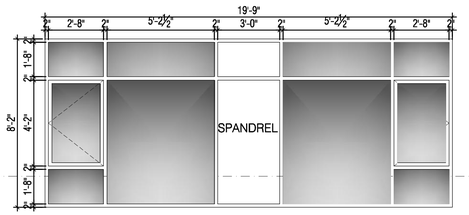
REVISIONS

no.	date	description



W 1A

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.



W 2A

LIGHT PROVIDED = XX SF
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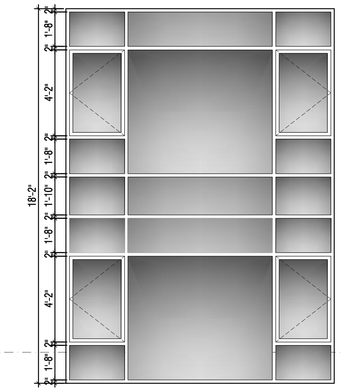


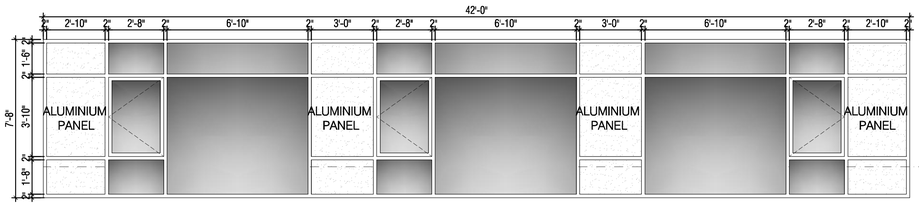
W 3A

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

GLAZING LESS THAN 30" ABOVE FLOOR LEVEL DOES NOT CONTRIBUTE TO NATURAL LIGHT

2'-6" FINISH FLOOR

T.O.S.



W 4A

LIGHT PROVIDED = XX SF
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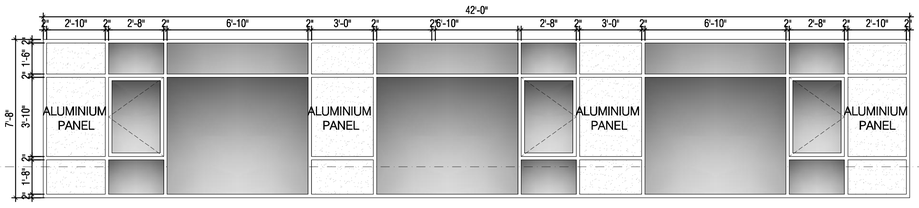


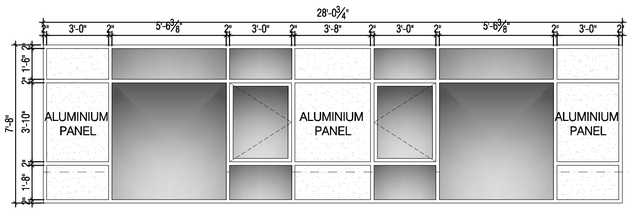
W 4B

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

GLAZING LESS THAN 30" ABOVE FLOOR LEVEL DOES NOT CONTRIBUTE TO NATURAL LIGHT

2'-6" FINISH FLOOR

T.O.S.



W 5A

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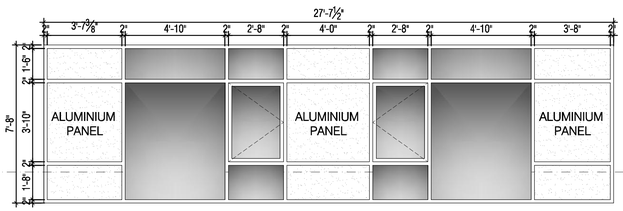


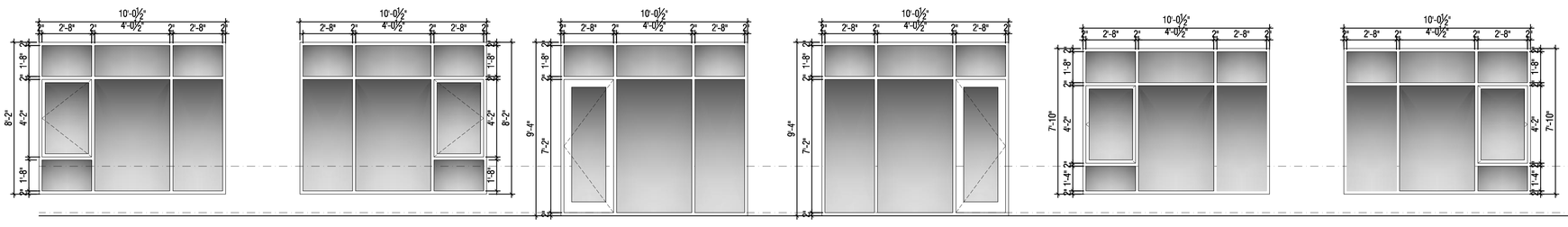
W 6A

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

GLAZING LESS THAN 30" ABOVE FLOOR LEVEL DOES NOT CONTRIBUTE TO NATURAL LIGHT

2'-6" FINISH FLOOR

T.O.S.



W 7A

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

W 7B

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

W 7C

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

W 7D

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

W 7F

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

W 7G

LIGHT PROVIDED = XX SF
AIR PROVIDED = XX SF.

GLAZING LESS THAN 30" ABOVE FLOOR LEVEL DOES NOT CONTRIBUTE TO NATURAL LIGHT

2'-6" FINISH FLOOR

T.O.S.

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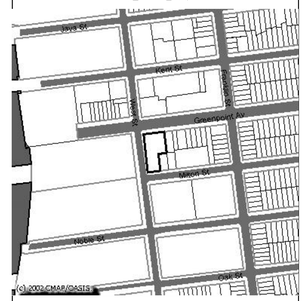
KEY PLAN



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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0459
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

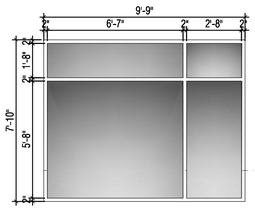
project title

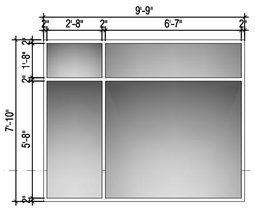
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

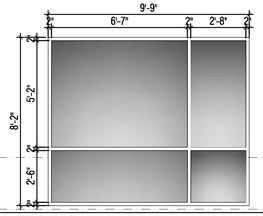
drawing title

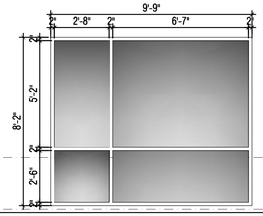
WINDOW SCHEDULE

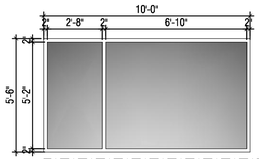
scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-702.01
checked K.F.	

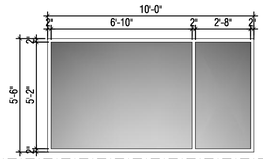


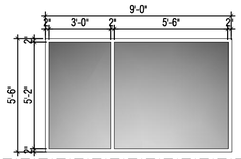


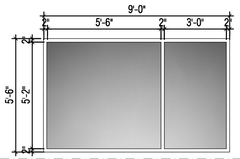


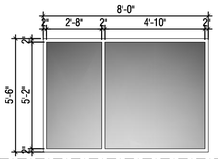


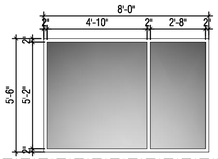


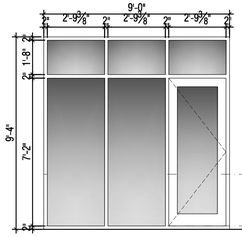


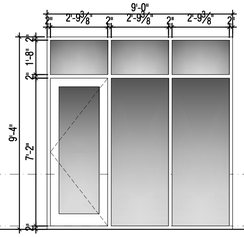


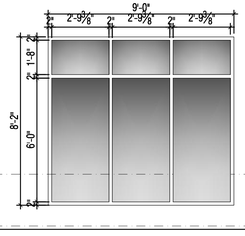


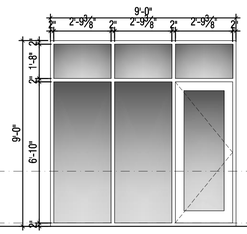


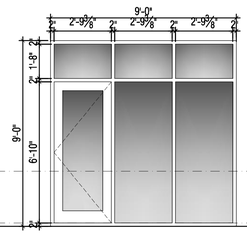


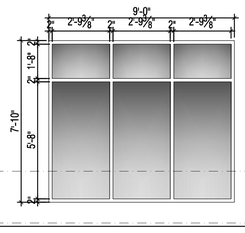


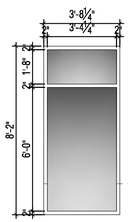


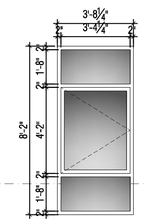


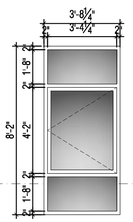


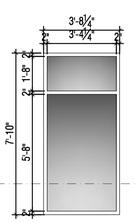


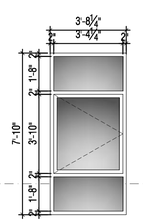


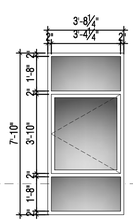


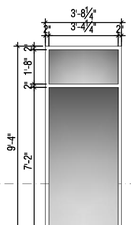


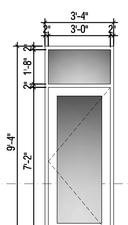


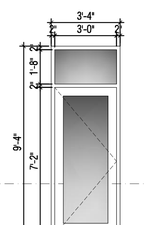


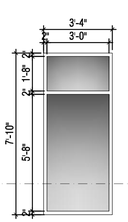


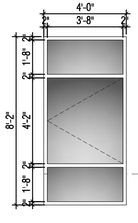


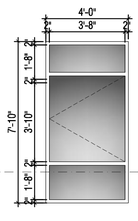


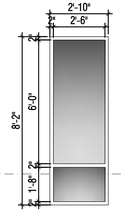


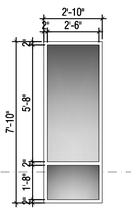


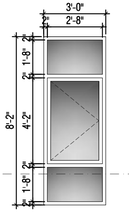


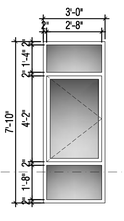


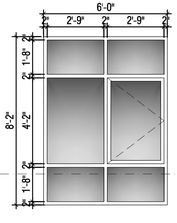


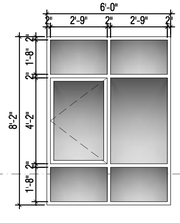


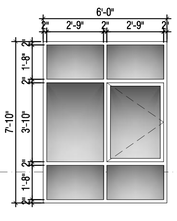


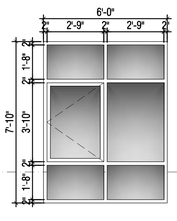


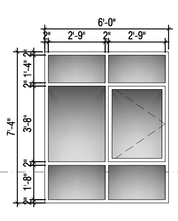


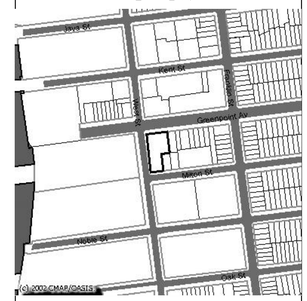












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KARL FISCHER 021282

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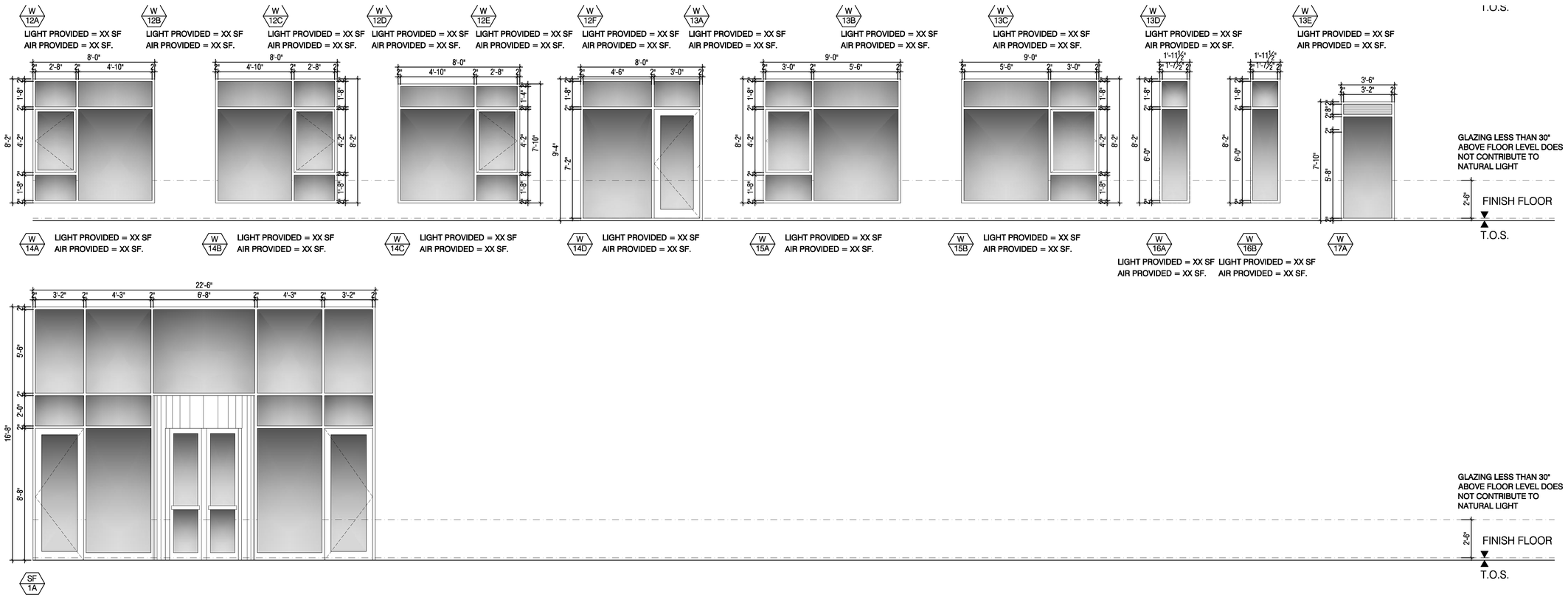


WINDOWS & EXTERIOR DOORS NOTES:

1. ALL WINDOWS AND DOORS GLASS TO BE CLEAR NON-TINTED.
2. GC TO COORDINATE WINDOWS & DOORS SWING WITH FLOOR PLANS.
3. ALL WINDOWS TO BE CONSTRUCTED OF ALUMINUM FRAME WITH THERMAL BREAK, DOUBLE PANE WITH LOW-E, CLEAR, SHGC 0.54, UF 0.31, SEE ENVELOPE COMPLIANCE CERTIFICATE.
4. ALL DOORS TO BE CONSTRUCTED OF ALUMINUM FRAME WITH THERMAL BREAK, DOUBLE PANE WITH LOW-E, CLEAR, SHGC 0.45, UF 0.31, SEE ENVELOPE COMPLIANCE CERTIFICATE.
5. ALL WINDOWS & DOORS TO COMPLY WITH OER #11EH-N222K FOR NOISE CONTROL AS REQUIRED FOR E-183 DESIGANTED AREA.
6. WINDOWS FRAME TO HAVE TRICKLE VENT INSTALLED AS PER OER #11EH-N222K.
7. PROVIDE DOOR CLOSURE IN THE INSIDE OF ALL DOORS AT 1ST FLOOR & ROOF LEVEL.

LOT LINE WINDOW NOTES:

1. ALL LOT LINE WINDOWS TO BE PROTECTED WITH SPRINKLER HEAD ON THE OCCUPIED SIDE SPACED NO MORE THAN 6'-0" APART (NOT LESS THAN ONE HEAD PER WINDOW) AND A DISTANCE AWAY FROM THE GLASS TO INSURE COMPLETE GLASS WETTING UPON ACTIVATION, SEE SPRINKLER PLANS.
2. ALL LOT LINE WINDOWS SHALL BE WIRED, LAMINATED OR TEMPERED GLASS.
3. ALL LOT LINE WINDOWS SHALL COMPLY WITH SEC. BC 715.4.
4. ALL LOT LINE WINDOWS AREA SHALL COMPLY WITH TABLE 704.8, SEE SHEET (A-702).

ENERGY CODE NOTES:

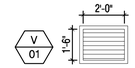
1. ECC 502.3; 1 RCNY 5000-01 (g) (1). WINDOWS TO HAVE A U-FACTOR OF 0.450 AND SHGC VALUE OF 0.40. STOREFRONT WINDOWS AND DOORS TO HAVE A U-FACTOR OF 0.550 AND SHGC VALUE OF 0.40.
2. ECC 502.4.1. AIR LEAKAGE OF WINDOW/DOOR ASSEMBLIES SHALL BE DETERMINED IN ACCORDANCE WITH AAMA/WDMA/CSA 101/I.S.2/A440, OR NFRC 400 BY AN ACCREDITED, INDEPENDENT LABORATORY, AND LABELED AND CERTIFIED BY THE MANUFACTURER AND SHALL NOT EXCEED 0.3 CFM PER SQUARE FOOT(1.5 L/S/M2), AND SWINGING DOORS NO MORE THAN 0.5 CFM PER SQUARE FOOT(2.6 L/S/M2).

LEGEND:

? / 07 — WINDOW TYPE

GLAZING LEGEND:

TG	TEMPERED INSULATED GLAZING
T	TEMPERED SINGLE PANE GLAZING
TO	TEMPERED OPAQUE INSULATED GLAZING
G	SINGLE PANE GLAZING
IG	INSULATED GLAZING
OG	OPAQUE INSULATED GLAZING
WG	WIRED GLASS
L	LOUVER (SEE MECH. DRAWINGS)



LOUVER PROVIDED = 3 SQ. FT.

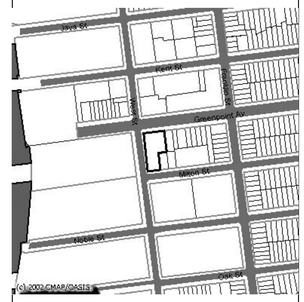
ELEVATOR HOISTWAY VENT
HOISTWAY AREA = 8'-6" x 6'-8" = 56.7 SF
MIN. VENT SIZE REQUIRED = 56.7 x 3½% =2.0 SF
NUMBER OF CABS IN HOISTWAY = 1
MIN. REQUIRED VENT SIZE = 3 SF

ELEVATOR HOISTWAY VENT NOTES:

1. HOISTWAY LOUVER VENT TO HAVE BIRD AND INSECT SCREENS.
2. REFER TO FLOOR PLANS & ELEVATIONS FOR LOCATION.
3. REFER TO MECH. PLANS FOR SPECS.

502.4.4 OUTDOOR AIR INTAKES AND EXHAUST OPENINGS:
STAIR AND ELEVATOR SHAFT VENTS AND OTHER OUTDOOR AIR INTAKES AND EXHAUST OPENINGS INTEGRAL TO THE BUILDING ENVELOPE SHALL BE EQUIPPED WITH NOT LESS THAN A CLASS I MOTORIZED, LEAKAGE-RATED DAMPER WITH A MAXIMUM LEAKAGE RATE OF 4 CFM PER SQUARE FOOT (6.8 L/S M2) AT 1.0 INCH WATER GAUGE (W.G.) (1250 PA) WHEN TESTED IN ACCORDANCE WITH AMCA 500D.
EXCEPTION: GRAVITY (NONMOTORIZED) DAMPERS ARE PERMITTED TO BE USED IN BUILDINGS LESS THAN THREE STORIES IN HEIGHT ABOVE GRADE.

KEY PLAN



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505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ QAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
WINDOW SCHEDULE

scale NTS	project no. 06-71 / 14-41
date 12/17/2014	revision no. 0
drawn .	drawing no. A-704.01
checked K.F.	

COMcheck Software Version 3.9.4

Interior Lighting Compliance Certificate

2010 New York Energy Conservation Construction Code

Section 1: Project Information

Project Type: **New Construction**
Project Title : 50 GREEN POINT AVE.

Construction Site:
74-88 WEST STREET
BROOKLYN
NEW YORK, NY

Owner/Agent:

Designer/Contractor:
ETTINGER ENGINEERING
505 8TH AVENUE
24TH FLOOR
NEW YORK, NY 10001
212-244-2410

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B x C)
Residential (Multifamily)	46412	0.7	32488
Base Building (Multifamily)	18743	0.7	13120
		Total Allowed Watts =	45609

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Residential (Multifamily 46412 sq.ft.)				
LED 1: L01: RECESSED LED DOWN LIGHT: LED PAR 11W:	1	172	11	1892
LED 2: L02: LED LIGHT FOR BATHROOM: LED PAR 11W:	1	48	11	528
Linear Fluorescent 1: L06: BATHROOM MIRROR LIGHT: 22" T5 14W: Electronic:	1	70	8	560
Base Building (Multifamily 18743 sq.ft.)				
LED 3: L07: DOWN LIGHT FOR CORRIDORS & LOBB: LED PAR 11W:	1	112	11	1232
Linear Fluorescent 2: L09: STAIRS LIGHT: 24" T8U 32W: Electronic:	2	18	64	1152
Linear Fluorescent 3: L12: FLUORESCENT LIGHT FOR ELEV SHAF: 48" T8 32W (Super T8): Electronic:	2	2	64	128
Incandescent 1: L13: WALL MOUNTED ELEV PIT LIGHT: Incandescent 150W:	1	2	150	300
Linear Fluorescent 4: PG: BACK OF HOUSE LIGHTS: 48" T5 28W: Electronic:	1	31	54	1674
Linear Fluorescent 5: RA: GYM & MECH. CLOSET LIGHTS: 48" T5 54W: Electronic:	1	65	54	3510
LED 4: XI: EXIT SIGNS: LED PAR 7W:	1	19	5	95
			Total Proposed Watts =	11071

Section 4: Requirements Checklist

Interior Lighting PASSES: Design 76% better than code.

Lighting Wattage:

☒ 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
45609	11071	YES

Controls, Switching, and Wiring:

☒ 2. Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to vertical fenestration.

☒ 3. Daylight zones have individual lighting controls independent from that of the general area lighting.

Exceptions:

☒ Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device.

☒ Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a separate switch for general area lighting.

☒ 4. Independent controls for each space (switch/occupancy sensor).

Exceptions:

☒ Areas designated as security or emergency areas that must be continuously illuminated.

☒ Lighting in stairways or corridors that are elements of the means of egress.

☒ 5. Master switch at entry to hotel/motel guest room.

☒ 6. Individual dwelling units separately metered.

☐ 7. Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control of the nonexempt lighting.

☒ 8. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

☒ Only one luminaire in space.

☒ An occupant-sensing device controls the area.

☒ The area is a corridor, storeroom, restroom, public lobby or sleeping unit.

☒ Areas that use less than 0.6 Watts/sq.ft.

☒ 9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Exceptions:

☒ Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security.

☒ 10. Photocell/astronomical time switch on exterior lights.

Exceptions:

☐ Lighting intended for 24 hour use.

☒ 11. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

☒ Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting systems have been designed to meet the 2010 New York Energy Conservation Construction Code requirements in COMcheck Version 3.9.4 and will comply with the mandatory requirements in the Requirements Checklist.

ERIC S. ETTINGER — Name - Title
Signature
12/04/2014 — Date

COMcheck Software Version 3.9.4

Exterior Lighting Compliance Certificate

2010 New York Energy Conservation Construction Code

Section 1: Project Information

Project Type: **New Construction**
Project Title : 50 GREEN POINT AVE.
Exterior Lighting Zone: **2 (Residentially zoned area)**

Construction Site:
74-88 WEST STREET
BROOKLYN
NEW YORK, NY

Owner/Agent:

Designer/Contractor:
ETTINGER ENGINEERING
505 8TH AVENUE
24TH FLOOR
NEW YORK, NY 10001
212-244-2410

Section 2: Exterior Lighting Area/Surface Power Calculation

A Exterior Area/Surface	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B x C)	F Proposed Watts
ROOF (Other door (not main entry))	10 ft of door width	20	Yes	200	30
			Total Tradable Watts* =	200	30
			Total Allowed Watts =	200	
			Total Allowed Supplemental Watts** =	600	

* Wattage tradeoffs are only allowed between tradable areas/surfaces.
** A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Section 3: Exterior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
ROOF (Other door (not main entry) 10 ft of door width): Tradable Wattage				
LED 1: L21: WALL MOUNTED LIGHT FOR ROOF: LED PAR 15W:	1	2	15	30
			Total Tradable Proposed Watts =	30

Section 4: Requirements Checklist

Lighting Wattage:

☐ 1. Within each non-tradable area/surface, total proposed watts must be less than or equal to total allowed watts. Across all tradable areas/surfaces, total proposed watts must be less than or equal to total allowed watts.
Compliance: Passes.

Controls, Switching, and Wiring:

☒ 2. All exemption claims are associated with fixtures that have a control device independent of the control of the nonexempt lighting.

☐ 3. Lighting not designated for dusk-to-dawn operation is controlled by either a a photosensor (with time switch), or an astronomical time switch.

☒ 4. Lighting designated for dusk-to-dawn operation is controlled by an astronomical time switch or photosensor.

☒ 5. All time switches are capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.

Exterior Lighting Efficacy:

☒ 8. All exterior building grounds luminaires that operate at greater than 100W have minimum efficacy of 60 lumen/watt.

Exceptions:

☐ Lighting that has been claimed as exempt and is identified as such in Section 3 table above.

☐ Lighting that is specifically designated as required by a health or life safety statue, ordinance, or regulation.

☐ Emergency lighting that is automatically off during normal building operation.

☐ Lighting that is controlled by motion sensor.

Section 5: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting systems have been designed to meet the 2010 New York Energy Conservation Construction Code requirements in COMcheck Version 3.9.4 and will comply with the mandatory requirements in the Requirements Checklist.

ERIC S. ETTINGER — Name - Title
Signature
12/04/2014 — Date

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:
Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
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TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ELECTRICAL LIGHTING
ENERGY COMPLIANCE

scale N.T.S	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. EN-001.00
checked --	

COMcheck Software Version 3.9.4

Mechanical Compliance Certificate

2010 New York Energy Conservation Construction Code

Section 1: Project Information

Project Type: **New Construction**
Project Title : 50 GREENPOINT

Construction Site:	Owner/Agent:	Designer/Contractor:
74-88 WEST STREET BROOKLYN, NY	KARL FISCHER ARCHITECT 530 BROADWAY NEW YORK, NY 10012 212.219.97.33	ETTINGER ENGINEERING ASSOCIATES 505 8TH AVE. NEW YORK, NY 10018 212.244.2410

Section 2: General Information

Building Location (for weather data): **New York, New York**
Climate Zone: **4a**

Section 3: Mechanical Systems List

Quantity **System Type & Description**

1 ACCU-1-1 (Single Zone) : Split System Heat Pump
Heating Mode: Capacity = 60 kBtu/h,
Proposed Efficiency = 3.70 COP, Required Efficiency = 3.30 COP
Cooling Mode: Capacity = 66 kBtu/h, , No Economizer , Economizer exception: Filtration Requirements
Proposed Efficiency = 16.50 EER, Required Efficiency = 11.00 EER
Fan System: HORIZONTAL - 54 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 8 Supply, Constant Volume, 1480 CFM, 0.5 motor nameplate hp

5 ACCU-C1 (Single Zone) : Split System Heat Pump
Heating Mode: Capacity = 36 kBtu/h,
Proposed Efficiency = 12.15 HSPF, Required Efficiency = 7.70 HSPF
Cooling Mode: Capacity = 40 kBtu/h,
Proposed Efficiency = 14.30 SEER, Required Efficiency = 13.00 SEER
Fan System: HORIZONTAL - 48 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 7 Supply, Constant Volume, 1400 CFM, 0.5 motor nameplate hp

1 ACCU-C2 (Single Zone) : Split System Heat Pump
Heating Mode: Capacity = 48 kBtu/h,
Proposed Efficiency = 12.15 HSPF, Required Efficiency = 7.70 HSPF
Cooling Mode: Capacity = 54 kBtu/h, , No Economizer , Economizer exception: Filtration Requirements
Proposed Efficiency = 14.50 SEER, Required Efficiency = 13.00 SEER
Fan System: HORIZONTAL - 48 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 7 Supply, Constant Volume, 1400 CFM, 0.5 motor nameplate hp

1 ACCU-C3 (Single Zone) : Split System Heat Pump
Heating Mode: Capacity = 60 kBtu/h,
Proposed Efficiency = 3.70 COP, Required Efficiency = 3.30 COP
Cooling Mode: Capacity = 66 kBtu/h, , No Economizer , Economizer exception: Filtration Requirements
Proposed Efficiency = 16.50 EER, Required Efficiency = 11.00 EER
Fan System: HORIZONTAL - 54 -- Compliance (Motor nameplate HP method) : Passes

Principal Mechanical Designer-Name Signature Date

Fans:
FAN 8 Supply, Constant Volume, 1480 CFM, 0.5 motor nameplate hp

1 ACCU-1-2 (Single Zone) : Split System Heat Pump
Heating Mode: Capacity = 60 kBtu/h,
Proposed Efficiency = 3.70 COP, Required Efficiency = 3.30 COP
Cooling Mode: Capacity = 66 kBtu/h, , No Economizer , Economizer exception: Filtration Requirements
Proposed Efficiency = 16.50 EER, Required Efficiency = 11.00 EER
Fan System: HORIZONTAL - 54 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 8 Supply, Constant Volume, 1480 CFM, 0.5 motor nameplate hp

1 ACCU-1-3 (Single Zone) : Split System Heat Pump
Heating Mode: Capacity = 60 kBtu/h,
Proposed Efficiency = 3.70 COP, Required Efficiency = 3.30 COP
Cooling Mode: Capacity = 66 kBtu/h, , No Economizer , Economizer exception: Filtration Requirements
Proposed Efficiency = 16.50 EER, Required Efficiency = 11.00 EER
Fan System: HORIZONTAL - 54 -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 8 Supply, Constant Volume, 1480 CFM, 0.5 motor nameplate hp

Section 4: Requirements Checklist

Requirements Specific To: ACCU-1-1 :
☑ 1. Equipment minimum efficiency: Heat Pump: 3.30 COP 11.00 EER
☐ 2. Integrated economizer is required for this location and system.

Requirements Specific To: ACCU-C1 :
☑ 1. Equipment minimum efficiency: Heat Pump: 7.70 HSPF 13.00 SEER

Requirements Specific To: ACCU-C2 :
☑ 1. Equipment minimum efficiency: Heat Pump: 7.70 HSPF 13.00 SEER
☐ 2. Integrated economizer is required for this location and system.

Requirements Specific To: ACCU-C3 :
☑ 1. Equipment minimum efficiency: Heat Pump: 3.30 COP 11.00 EER
☑ 2. Integrated economizer is required for this location and system.

Requirements Specific To: ACCU-1-2 :
☑ 1. Equipment minimum efficiency: Heat Pump: 3.30 COP 11.00 EER
☑ 2. Integrated economizer is required for this location and system.

Requirements Specific To: ACCU-1-3 :
☑ 1. Equipment minimum efficiency: Heat Pump: 3.30 COP 11.00 EER
☑ 2. Integrated economizer is required for this location and system.

Generic Requirements: Must be met by all systems to which the requirement is applicable:
☐ 1. Plant equipment and system capacity no greater than needed to meet loads
Exception(s):
☐ Standby equipment automatically off when primary system is operating
☐ Multiple units controlled to sequence operation as a function of load
☑ 2. Minimum one temperature control device per system
☐ 3. Minimum one humidity control device per installed humidification/dehumidification system
☑ 4. Load calculations per ASHRAE/ACCA Standard 183.
☑ 5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
Exception(s):
☐ Continuously operating zones
☐ 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum
☑ 7. R-5 supply and return air duct insulation in unconditioned spaces
R-8 supply and return air duct insulation outside the building
R-8 insulation between ducts and the building exterior when ducts are part of a building assembly
Exception(s):
☑ Ducts located within equipment
☑ Ducts with interior and exterior temperature difference not exceeding 15°F.

☑ 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
☑ 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics
☑ 10. Hot water pipe insulation: 1.5 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in.
Chilled water/refrigerant/brine pipe insulation: 1.5 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in.
Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.
Exception(s):
☑ Piping within HVAC equipment.
☑ Fluid temperatures between 55 and 105°F.
☑ Fluid not heated or cooled with renewable energy.
☑ Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).
☑ Runouts <4 ft in length.
☑ 11. Operation and maintenance manual provided to building owner
☑ ☑ 12. Balancing devices provided in accordance with IMC 603.17
☐ 13. Demand control ventilation (DCV) present for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2) and served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm.
Exception(s):
☐ Systems with heat recovery.
☐ Multiple-zone systems without DDC of individual zones communicating with a central control panel.
☐ Systems with a design outdoor airflow less than 1200 cfm.
☐ Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1200 cfm.
☑ 14. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
Exception(s):
☐ Gravity dampers acceptable in buildings <3 stories
☐ 15. Automatic controls for freeze protection systems present
☑ 16. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted
Exception(s):
☐ Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.
☐ Systems serving spaces that are heated and not cooled to less than 60°F.
☐ Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar energy.
☐ Heating systems in climates with less than 3600 HDD.
☐ Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.
☐ Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
☐ Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this [illegible] is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed [illegible] been designed to meet the 2010 New York Energy Conservation Construction Code requirements in COMcheck [illegible] comply with the mandatory requirements in the Requirements Checklist.

ERIC S. ETTINGER — Name - Title
Signature
DEC 15, 2014 — Date

STATE OF NEW YORK ERIC S. ETTINGER 060280 PROFESSIONAL ENGINEER

Section 6: Post Construction Compliance Statement

☐ HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
☐ HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
☐ Written HVAC balancing and operations report provided to the owner.

The above post construction requirements have been completed.

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description

ISSUES

no.	date	description

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL QC H3C 1K9
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WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ELECTRICAL LIGHTING
MECHANICAL COMPLIANCE

scale N.T.S	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. EN-002.00
checked --	

NOTES:

1. THE SUGGESTED FIRE ALARM MANUFACTURER FOR THIS FACILITY IS EDWARDS EST PRODUCTS. ELECTRICAL CONTRACTORS CAN CONTACT DANA FERRER AT EDWARDS (860-284-3432 OR DANA.FERER@FS.UTC.COM) FOR A LIST OF NYC APPROVED EST FIRE ALARM VENDORS.
2. ALL WIRING, POWER, CONDUCTORS, CONDUITS ETC. SHALL MEET THE 2011 NYC ELECTRICAL CODE.
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2008 NYC BUILDING CODE AND IN ACCORDANCE WITH APPENDIX Q AND K, NYC FIRE ALARM RULES, AND 2002 NFPA 72 AS AMENDED BY APPENDIX Q.
4. ALL FIRE ALARM EQUIPMENT SHALL BE NYC APPROVED (MEA, BSA OR COA APPROVED).
5. ALL FIRE ALARM CIRCUITS SHALL BE SIZED TO A MAXIMUM OF 80%OF CAPACITY.
6. ALL FIRE ALARM CIRCUITS SHALL BE WIRED NFPA STYLE 4/Y/B (CLASS B) WITH THE EXCEPTION OF THE NETWORK CIRCUIT WHICH SHALL BE NFPA STYLE 7 (CLASS A WITH ISOLATION). DUAL CLASS B NETWORKING IS NOT STYLE 7 AND WILL NOT BE APPROVED. ALL AUDIBLE AND VISUAL CIRCUITS SHALL BE STYLE Y/CLASS B AND NYC SPLIT A/B. SPLIT A/B CIRCUITS SHALL BE WIRED SO THAT EVERY OTHER DEVICE IS WIRED ON AN ALTERNATE CIRCUIT. ALL FIRE ALARM SPEAKER WIRING FOR ONE-WAY VOICE IN R2 APARTMENT BUILDINGS SHALL BE WIRED NFPA CLASS A/STYLE Z.
7. CONDUITS MAY NOT ENTER THE TOP OF ANY FIRE ALARM EQUIPMENT CABINET.
8. ALL FIRE ALARM EQUIPMENT SHALL BE INSTALLED WITH AESTHETICS IN MIND. CABINETS SHALL BE SEMI FLUSH MOUNTED AND CABLE TRAYS SHALL BE HIDDEN.
9. ALL FIRE ALARM CABINETS AND JUNCTION BOXES SHALL BE PAINTED FIRE DEPARTMENT RED. ALL FIRE ALARM CABINETS SHALL BE CLEARLY LABELED WITH A NYC APPROVED LAMINATE ENGRAVED LABEL.
10. ALL FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. ALL TERMINALS SHALL BE NUMBERED AND LABELED. ALL CONNECTIONS SHALL BE EITHER SOLDERED, APPROVED TERMINAL STRIPS OR SCOTCH LOCKS.
11. ALL LOW VOLTAGE FIRE ALARM CONDUCTORS SHALL BE PROTECTED BY EITHER BUILDING CONSTRUCTION OR CONDUIT TO 8 FEET ABOVE THE FINISHED FLOOR. LOADING DOCKS, GARAGES, SUPPRESSION AND EXTINGUISHING SYSTEM WIRING, MECHANICAL AND ELECTRICAL ROOMS AND OTHER LOCATIONS SUBJECT TO MECHANICAL DAMAGE SHALL BE IN FULL RIGID CONDUIT. IN ALL OTHER AREAS, NYC APPROVED WIRE MAY BE RUN WITHOUT CONDUIT ABOVE 8 FT. PROVIDED IT MEETS NYC ARTICLE 760 AND CONNECTS TO BUILDING CONSTRUCTION USING A NYC APPROVED MEANS.
12. FIRE ALARM CABLES SHALL NOT BE MIXED WITH NON FIRE ALARM CABLING. LOW VOLTAGE FIRE ALARM CABLING SHALL NOT BE MIXED OR WIRED NEAR ANY AC CIRCUIT.
13. ALL LOW VOLTAGE WIRING SHALL BE FPLP 150 DEGREE C NYC CERTIFIED WIRE. ALL NOTIFICATION CIRCUITS SHALL BE A MINIMUM OF 14 AWG AND ALL OTHER LOW VOLTAGE FIRE ALARM CIRCUITS SHALL BE 16 AWG MINIMUM.
14. VERTICAL RISER CABLE FOR ALL SYSTEMS THAT INCLUDE STAGED EVACUATION (ANYTHING OTHER THAN A GENERAL ALARM SEQUENCE) SHALL BE INSTALLED IN A 2 HOUR RATED SHAFT.
15. POLARITY SHALL BE OBSERVED ON ALL CIRCUITS. T-TAPPING SHALL NOT BE ALLOWED ON ANY NOTIFICATION CIRCUITS (HORN, STROBE OR SPEAKER). T-TAPPING SHALL NOT BE PERMITTED ON ADDRESSABLE CIRCUITS WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER.
16. ALL WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
17. SHIELDED CONDUCTORS OR RUNNING IN SEPARATE RACEWAY SHALL BE AS INSTRUCTED BY THE FIRE ALARM MANUFACTURER'S DOCUMENTATION. ALL NON-POWER LIMITED WIRING, INCLUDING CIRCUITS FOR CENTRALIZED AMPLIFIERS SHALL BE RUN IN A SEPARATE RACEWAY (NOTE: CENTRALIZED AMPLIFIERS AMP RACKS ARE NOT PERMITTED ON NEW SYSTEMS).
18. FIRE ALARM EQUIPMENT SHALL BE POWERED THROUGH AN APPROVED FUSE DISCONNECT SWITCH (FDS) CONNECTED AHEAD OF THE MAIN SERVICE SWITCH. THE FDS SHALL BE HEAVY DUTY (200,000 RMS SHORT CIRCUIT AMPS) SAFETY SWITCH @30 AMPS MINIMUM, PAINTED RED, INCLUDE A GROUND AND NEUTRAL KIT WITH GROUNDING SCREW (TO BOND NEUTRAL), INCLUDE A PADLOCK WITH Y1 CYLINDER KEYED TO A NYC/FDNY 2642 KEY (USE ABUS RE-KEYABLE 83-45 OR EQUIVALENT LOCK). ALL WIRING SHALL BE #10 MINIMUM THHN OR EQUIVALENT RUN IN 3/4 INCH EMT/RGS AND IN ACCORDANCE WITH NYC REQUIREMENTS. THE GROUND TO THE FDS SHALL BE MADE USING A NYC ACCEPTED METHOD (SEE NYC ELECTRICAL CODE), AND THE GROUND WIRE TO THE FDS SHALL BE #8 MINIMUM (LARGER IF NECESSARY TO MEET FEED SIZE). THE EQUIPMENT GROUND LEAVING FROM THE FDS CONNECTING TO THE FIRE ALARM EQUIPMENT SHALL INCLUDE A #10 GREEN GROUND. THE FDS PANEL SHALL BEAR AN ENGRAVED WHITE-CORE PHENOLIC OR BAKELITE IDENTIFICATION NAMEPLATE STATING IN MINIMUM ONE-QUARTER INCH (1/4") HIGH WHITE LETTERS ON A RED BACKGROUND "FIRE ALARM FUSED DISCONNECT".
19. WHERE ADDITIONAL CIRCUITS ARE REQUIRED BY THE FIRE ALARM SYSTEM, A FUSED CUTOUT, PROPERLY SIZED SHALL BE INCLUDED, WIRED AFTER THE FDS. THE SIZE OF THE FUSES SHALL BE SIZED APPROPRIATELY BUT BE TWENTY (20) AMPERES MINIMUM AND EACH CIRCUIT SHALL ONLY FEED ONE "INDIVIDUAL" FIRE ALARM SYSTEM COMPONENT. THE FUSED CUT-OUT PANEL SHALL BEAR AN ENGRAVED WHITE-CORE PHENOLIC OR BAKELITE IDENTIFICATION NAMEPLATE STATING IN MINIMUM ONE-QUARTER INCH (1/4") HIGH WHITE LETTERS ON A RED BACKGROUND "FIRE ALARM FUSED CUT-OUT". THE NEUTRAL SHALL NOT BE BONDED IN THE FUSED CUTOUT.
20. A CENTRAL STATION DIALER AND TWO DEDICATED PHONE LINES SHALL BE PROVIDED. THE DIALER SHALL BE CAPABLE OF SENDING THE FOLLOWING EVENTS: ALARM, MANUAL STATION, WATERFLOW, SUPERVISORY, CARBON MONOXIDE, TROUBLE, PUMP RUNNING AND PUMP TROUBLE.
21. ALL AREA OR DUCT SMOKE DETECTORS SHALL BE PHOTO-ELECTRIC TYPE.
22. SMOKE DETECTORS MUST BE MOUNTED AT LEAST 3 FT AWAY FROM ANY AIR REGISTER.
23. ALL CEILING MOUNT DEVICES MUST BE SECURELY FASTENED TO BUILDING CONSTRUCTION.
24. DEVICE LOCATIONS MUST BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
25. DUCT MOUNTED SMOKE DETECTORS SHALL BE MOUNTED ON THE DUCTWORK IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. ALL DUCT DETECTORS SHALL BE PROVIDED WITH A REMOTE LED.
26. MANUAL STATIONS SHALL BE MOUNTED 48 INCHES ABOVE THE FINISHED FLOOR TO THE HANDLE OF THE STATION AND SHALL BE PAINTED FIRE DEPARTMENT RED. ALL MANUAL STATION SHALL BE INSTALLED SO THAT THEY ARE KEPT UN-OBSTRUCTED AT ALL TIMES.
27. ALL STROBE LIGHTS SHALL BE UL-1971 APPROVED/LISTED. THE MINIMUM CANDELA IS 15 UNLESS OTHERWISE NOTED.
28. NOTIFICATION DEVICES THAT INCLUDE A STROBE SHALL BE MOUNTED 80 INCHES OFF THE FINISHED FLOOR TO THE BOTTOM OF THE STROBE, NOT NECESSARILY THE ELECTRICAL BOX.
29. ALL AUXILIARY RELAYS FOR FAN SHUTDOWN, DOOR RELEASE, DAMPER CONTROL, ELEVATOR CONTROL, ETC SHALL BE WIRED A MAXIMUM OF 3 FT FROM THE CONTROLLED DEVICE. THE AUXILIARY RELAY SHALL FUNCTION WITHIN THE REQUIRED VOLTAGE AND CURRENT OF THE CONTROLLED DEVICE. SLAVE OR INTERPOSING RELAYS SHALL BE INCLUDED AND POWERED BY THE FIRE ALARM CONTROL PANEL IN A FAIL-SAFE (FIRE FUNCTION) POSITION. POWER TO THE INTERPOSING RELAY SHALL BE MONITORED BY THE FIRE ALARM SYSTEM.
30. THE NYC FIRE DEPARTMENT SHALL APPROVE THE PLANS PRIOR TO THE BEGINNING OF ANY WORK.
31. LOCATIONS OF ALL FIRE ALARM EQUIPMENT SHALL BE SUBJECT TO THE NYC DEPARTMENT OF BUILDINGS AND FDNY APPROVAL. NO CHANGE OR MODIFICATION TO THE SYSTEM OR PLANS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. IF ANY CHANGES ARE MADE TO THE DRAWINGS PRIOR TO OR DURING INSTALLATION, AS BUILT PLANS SHALL BE PREPARED BY THE ENGINEER AND FILED WITH THE APPROPRIATE NYC AGENCIES FOR FINAL ACCEPTANCE.
32. THE CONTRACTOR SHALL RETAIN A NY STATE PE TO SIGN AND SEAL ALL NECESSARY DOCUMENTS REQUIRED FOR INSPECTION AND TO OBTAIN A FINAL LETTER OF APPROVAL. THIS SHALL INCLUDE A SIGNED AND SEALED 11X17 AS-BUILT DRAWING, STATEMENT OF OPERATION, AN NFPA PROGRAMMING MATRIX, AND THE CONTRACTORS SIGNED AND SEALED A-433 FORM. THESE DOCUMENTS SHALL BE SUBMITTED AS NECESSARY TO THE NYC FIRE DEPARTMENT/NYC DEPARTMENT OF BUILDINGS TO OBTAIN A FIRE ALARM INSPECTION. IF A LETTER OF DEFECT IS ISSUED, THE CONTRACTOR SHALL CORRECT ALL ITEMS AND SUBMIT A SIGNED AND SEALED CERTIFICATE OF CORRECTION TO THE NYC FIRE DEPARTMENT TO OBTAIN A FINAL LETTER OF APPROVAL AT NO ADDITIONAL COST.
33. CARBON MONOXIDE (CO) AND COMBINATION SMOKE AND CO DETECTORS SHALL BE FULLY ADDRESSABLE (EST SIGA2 SERIES OR EQUAL) AND INCLUDE A SOUNDER BASE. MANUFACTURERS THAT DO NOT OFFER AN ADDRESSABLE CO OR SMOKE/CO TYPE DEVICE SHALL INCLUDE SEPARATE CO AND SMOKE DETECTORS, EACH WITH AN INTERNAL SYNCHRONIZED TEMPORAL 3 AND 4 SOUNDERS, AND THE NECESSARY MONITORING DEVICES SO THAT THE FIRE ALARM SYSTEM MAY MONITOR BOTH TYPES SEPARATELY. IF POWERED SEPARATELY (24VDC), POWER TO THE DEVICE SHALL ALSO BE SUPERVISED.
34. BOOSTER POWER SUPPLIES SHALL BE PROVIDED AS NECESSARY FOR STROBE CIRCUIT DRAW AND LENGTHY STROBE CIRCUIT RUNS. PROVIDE A SEPARATE 120V POWER FEED FOR EACH BOOSTER AS WELL AS A SMOKE DETECTOR MOUNTED DIRECTLY ABOVE IT.
35. AUDIBLE NOTIFICATION DESIGN GOALS FOR THIS PROJECT ARE AS FOLLOWS.
36. CONTRACTOR TO PROVIDE SECURITY SYSTEM INTERFACE TO FIRE ALARM SYSTEM.
37. ALL OUTDOOR FIRE ALARM DEVICES SHALL BE WEATHERPROOF TYPE.
38. ALL FIRE ALARM DEVICES INSIDE GAS METER ROOM SHALL BE EXPLOSION PROOF TYPE.

FIRE ALARM DRAWING LIST

DRAWING #	NAME
FA-001.00	FIRE ALARM DRAWING LIST & NOTES
FA-100.00	FIRE ALARM CELLAR FLOOR PLAN
FA-101.00	FIRE ALARM 1ST FLOOR PLAN
FA-102.00	FIRE ALARM 2ND FLOOR PLAN
FA-103.00	FIRE ALARM 3RD FLOOR PLAN
FA-104.00	FIRE ALARM 4TH FLOOR PLAN
FA-105.00	FIRE ALARM 5TH FLOOR PLAN
FA-106.00	FIRE ALARM 6TH FLOOR PLAN
FA-107.00	FIRE ALARM 7TH FLOOR PLAN
FA-108.00	FIRE ALARM ROOF FLOOR PLAN
FA-200.00	FIRE ALARM RISER DIAGRAM

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

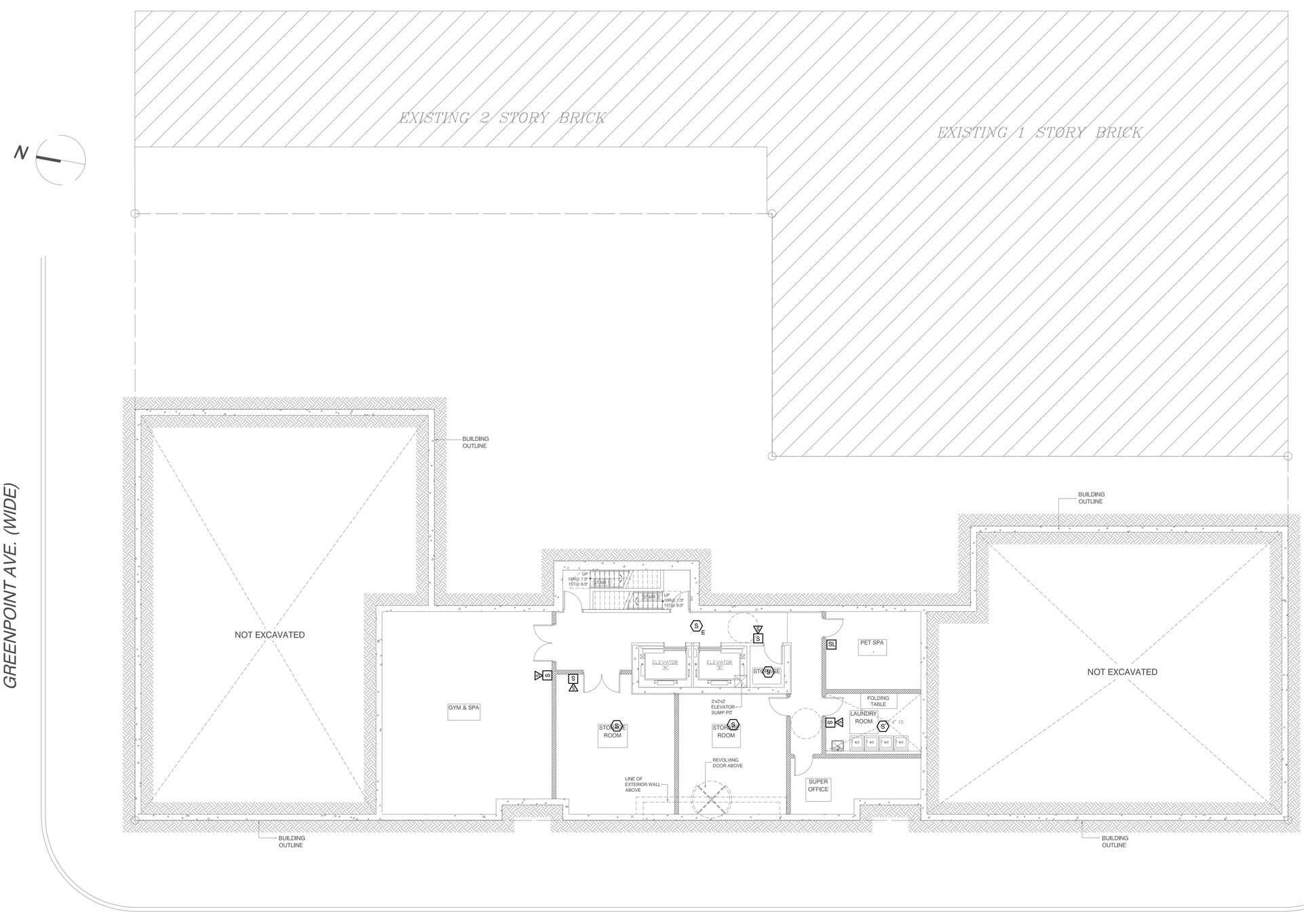
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
LEAD SHEET

scale N.T.S	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. FA-001.00
checked --	



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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

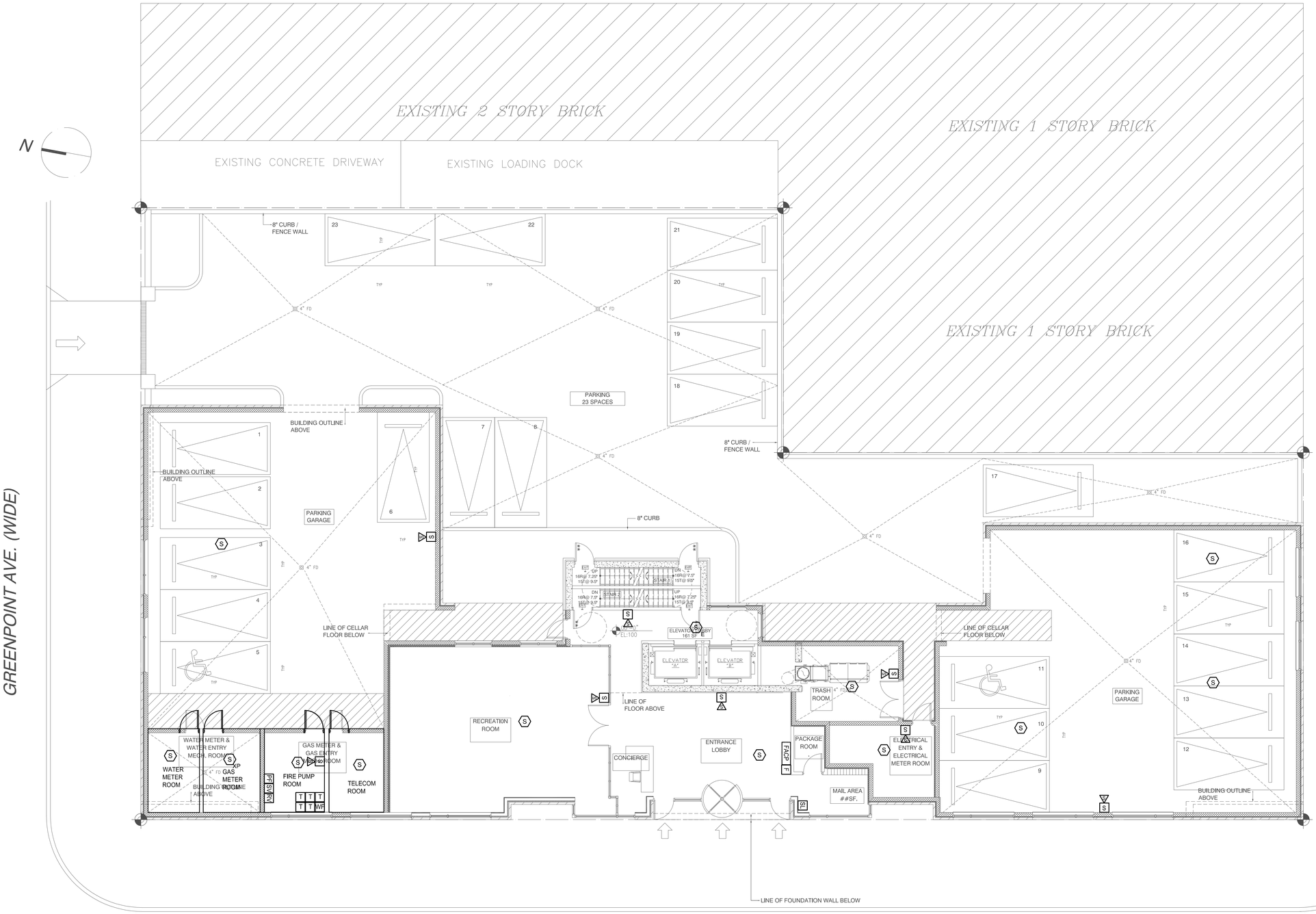
project title

50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title

FIRE ALARM
CELLAR FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn __	drawing no.
checked __	FA-100.00



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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
QAS QAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
GROUND FLOOR PLAN

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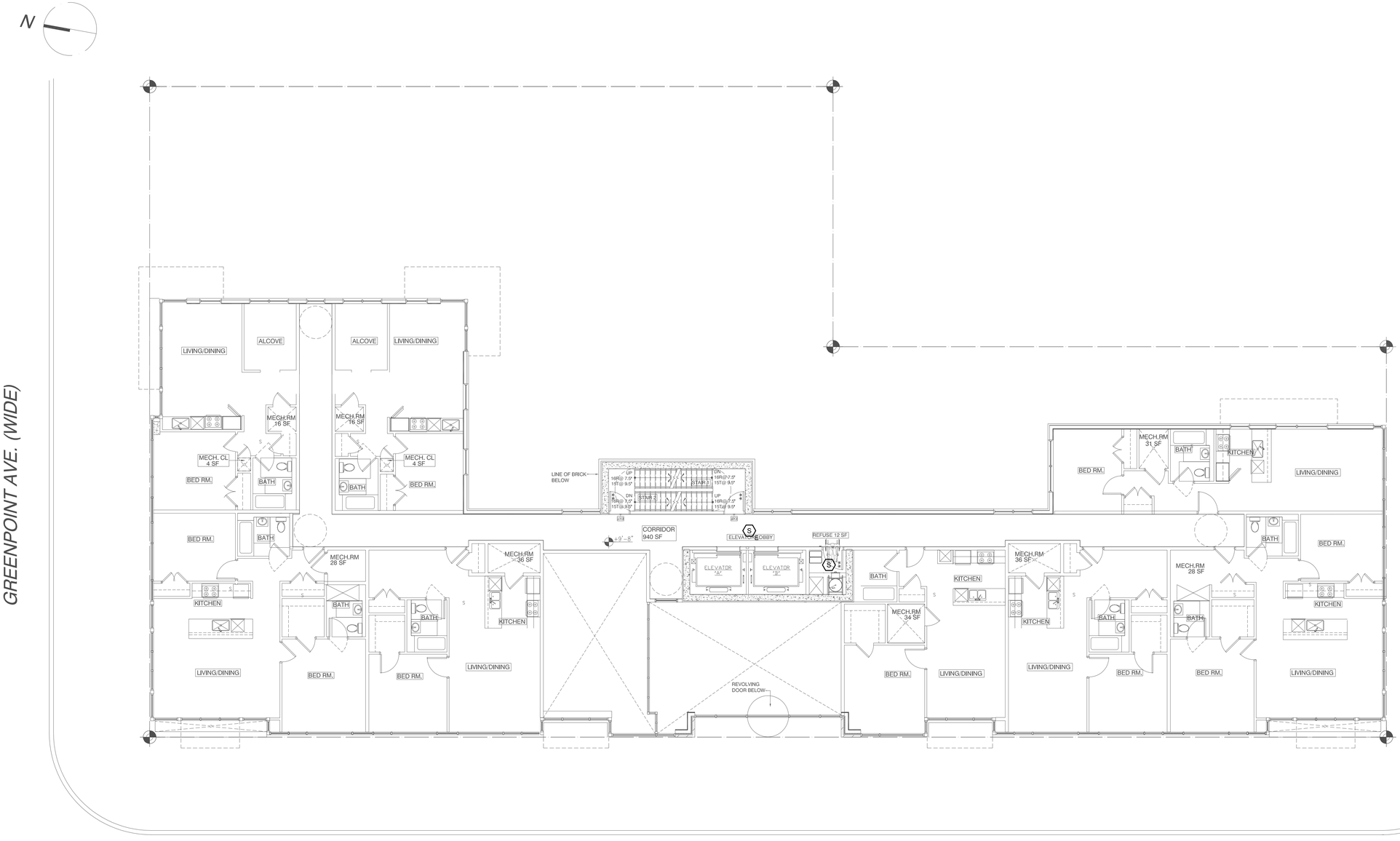
date 10/08/2014	revision no. --
drawn --	drawing no. FA-101.00
checked --	



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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
QAG QAA RAIC AIA

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
2ND FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn __	drawing no. FA-102.00
checked __	

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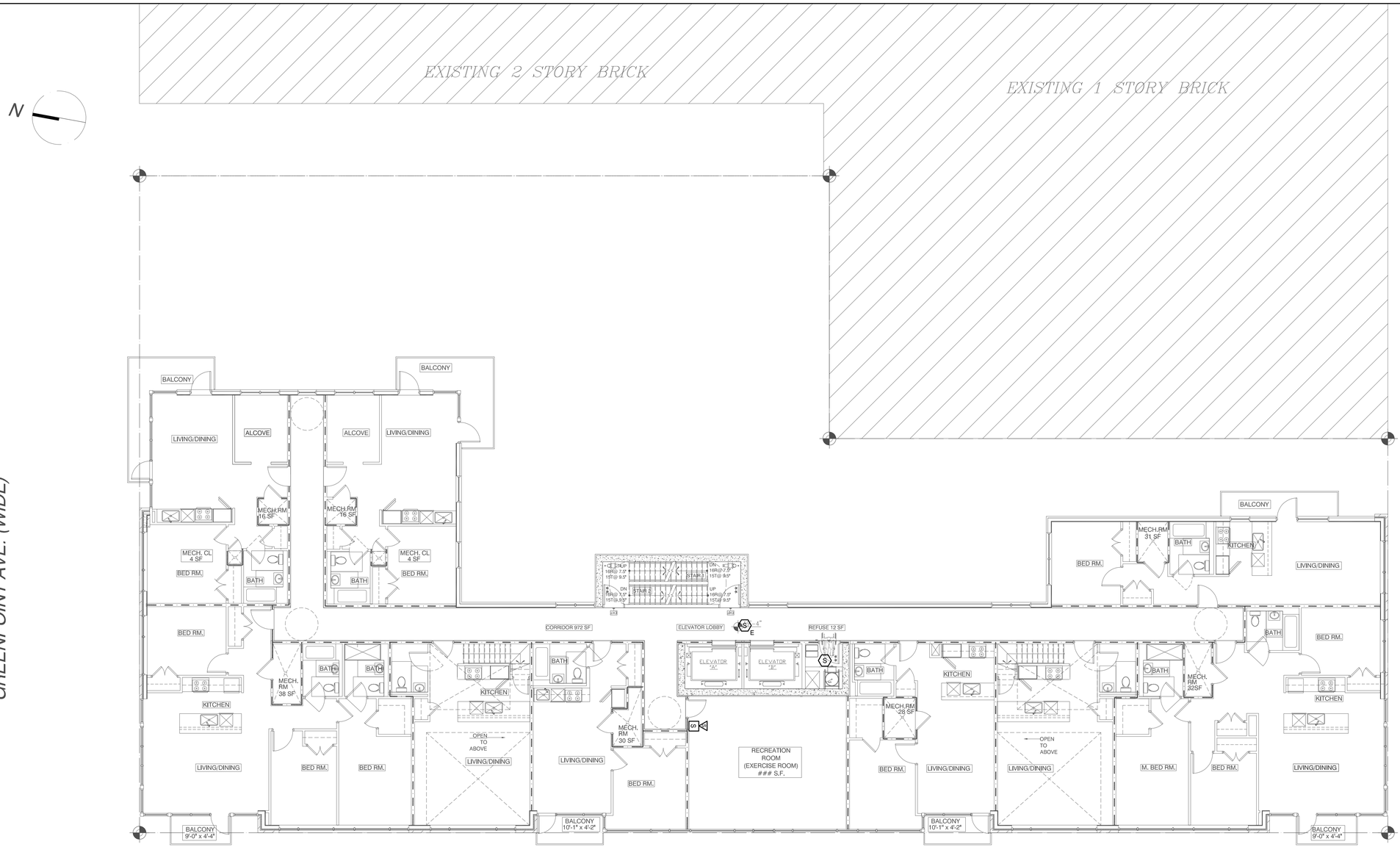

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
3RD FLOOR PLAN

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date 10/08/2014	revision no. --
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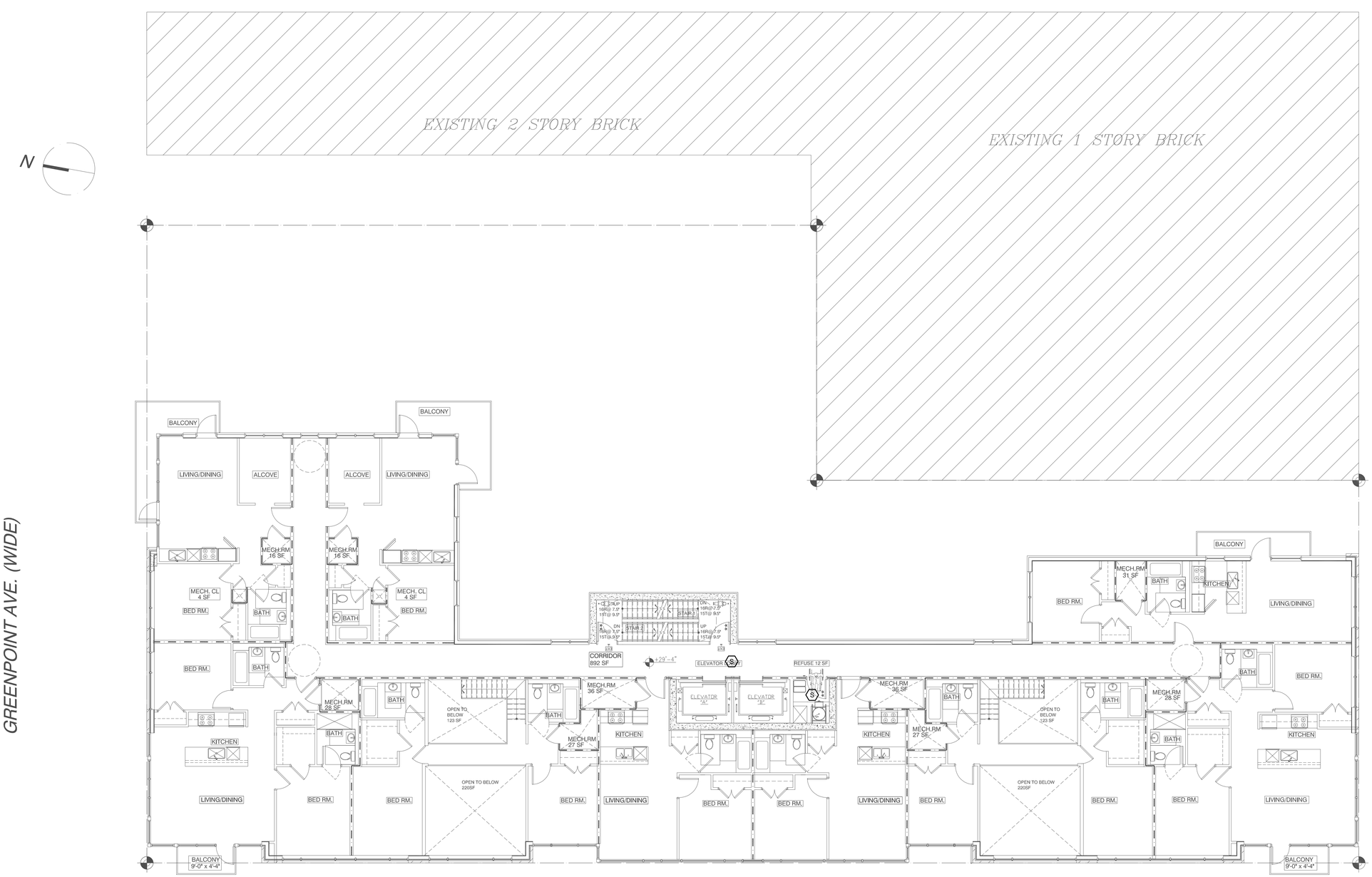

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th. FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8950
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.KarlArchitect.com E-MAIL:mail@KarlArchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
4TH FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. FA-104.00
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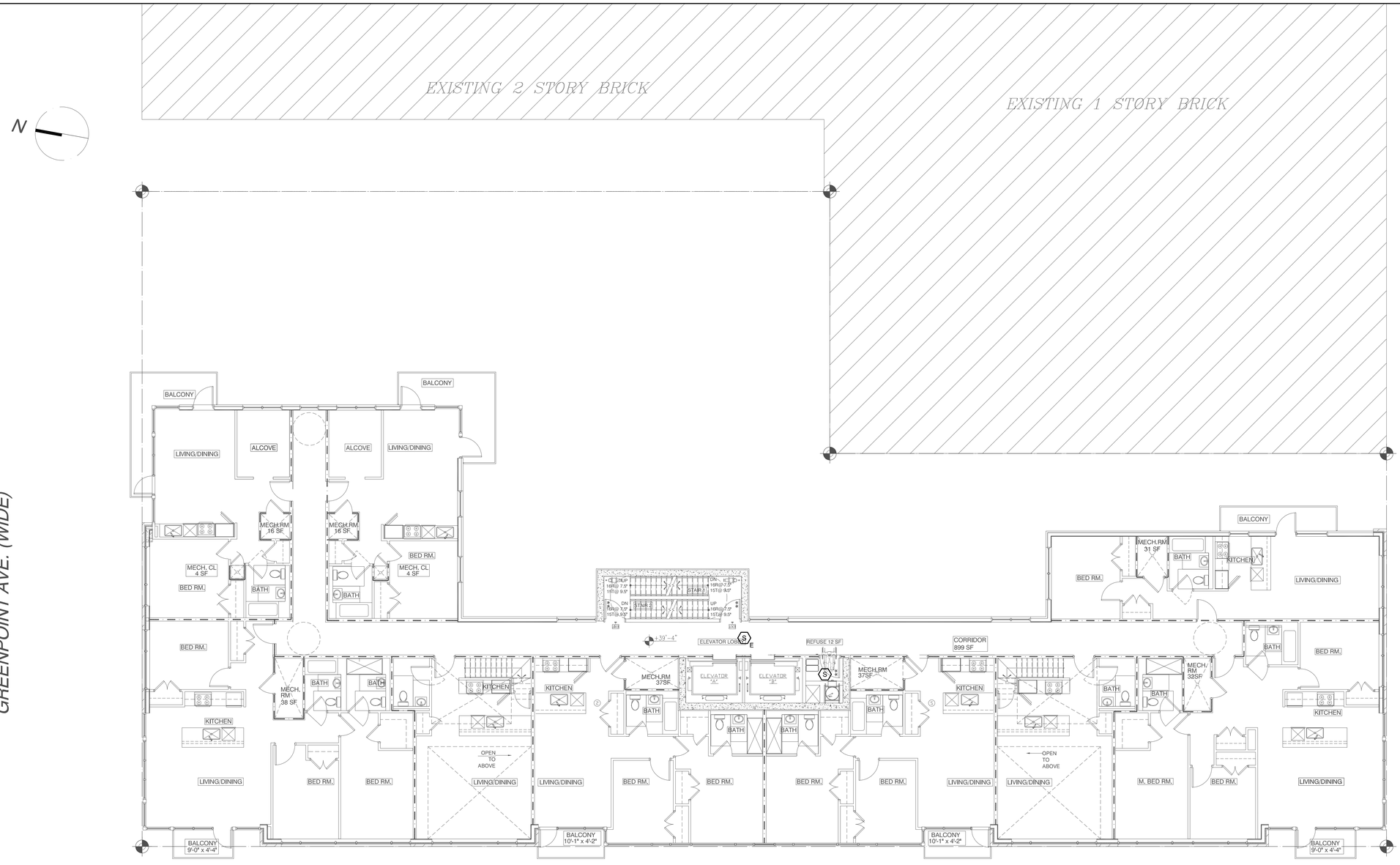
GREENPOINT AVE. (WIDE)



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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
5TH FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
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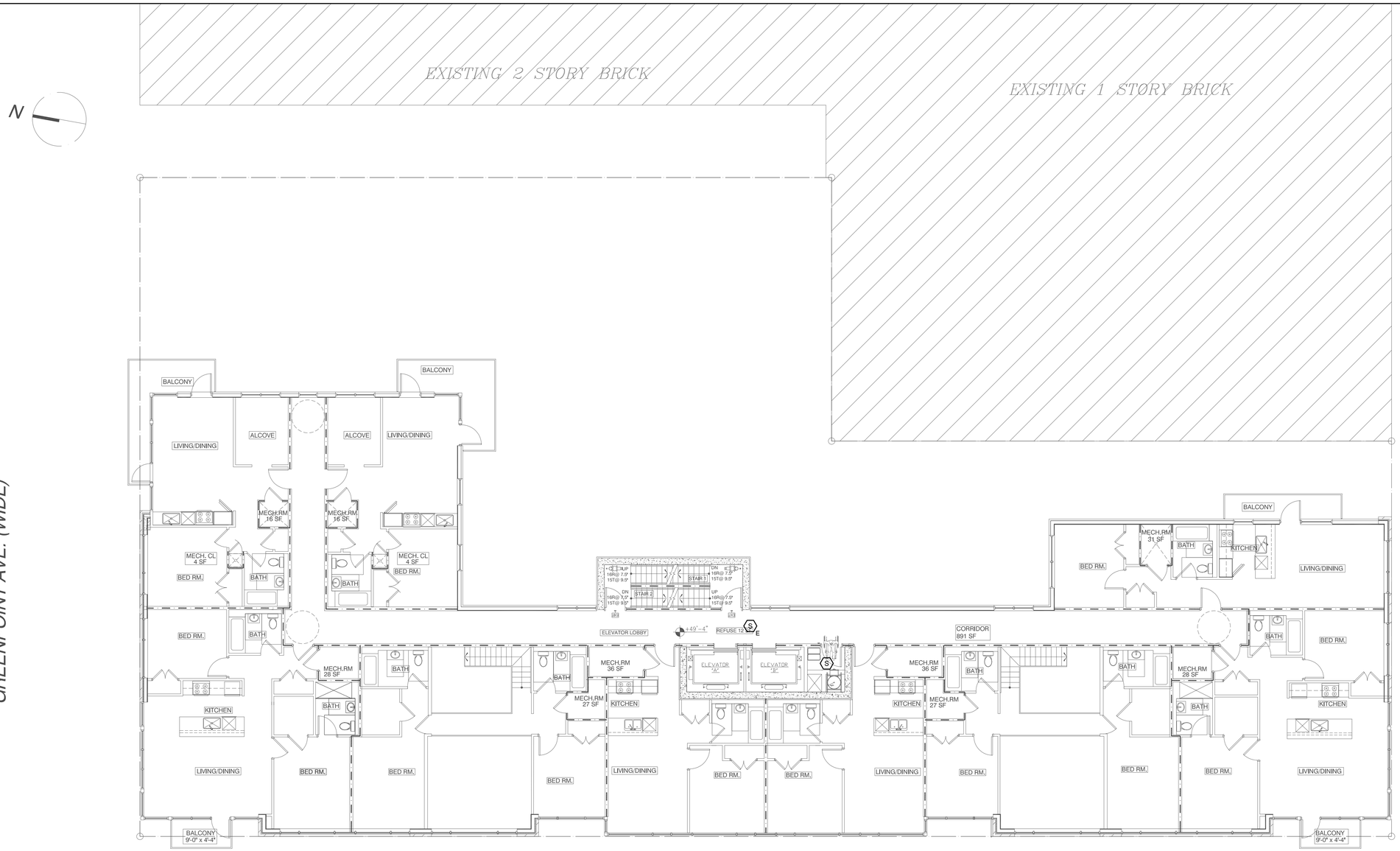
checked --	



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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021242 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
6TH FLOOR PLAN

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date 10/08/2014	revision no. --
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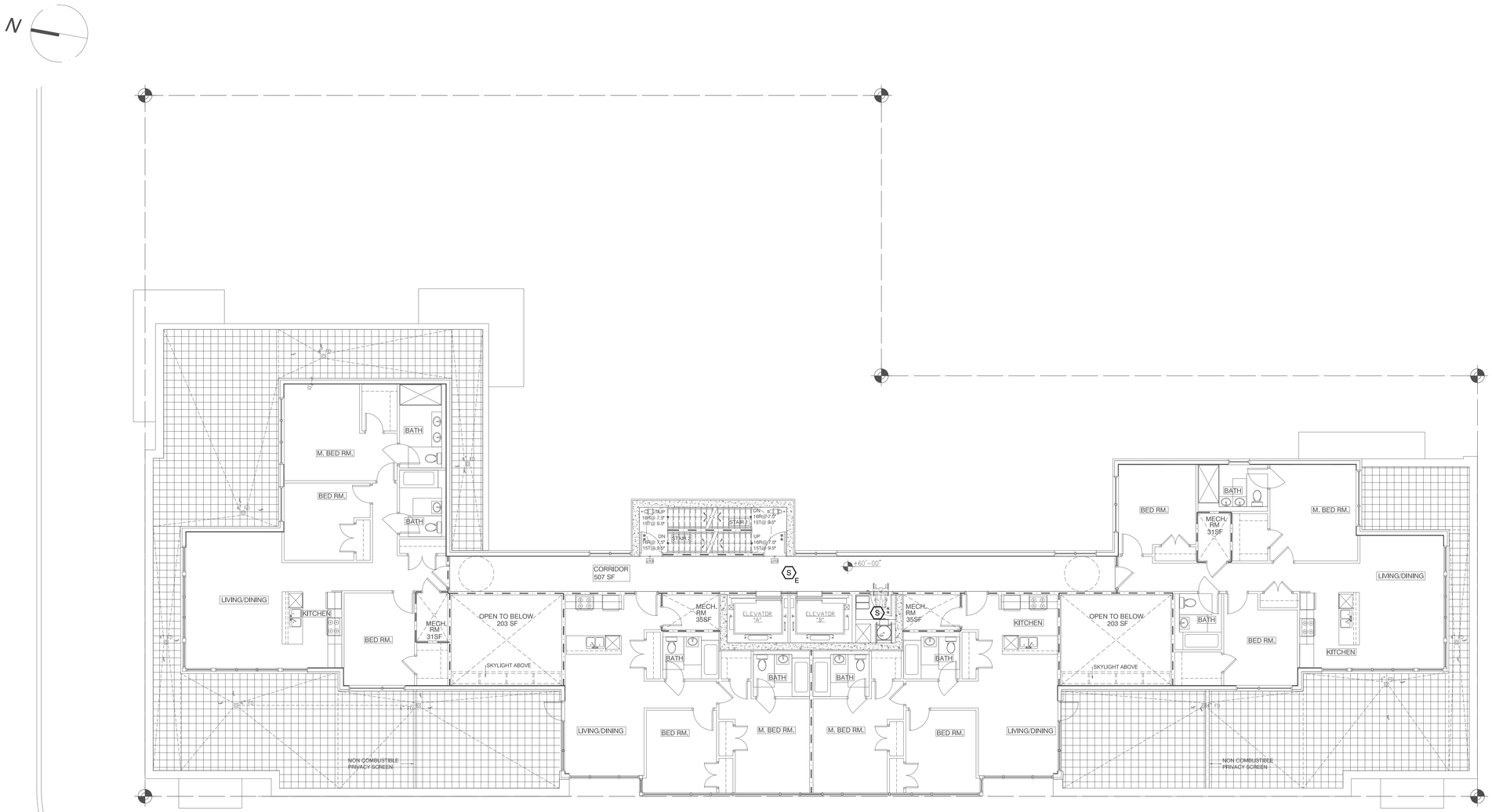

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
7TH FLOOR PLAN

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date 10/08/2014	revision no. --
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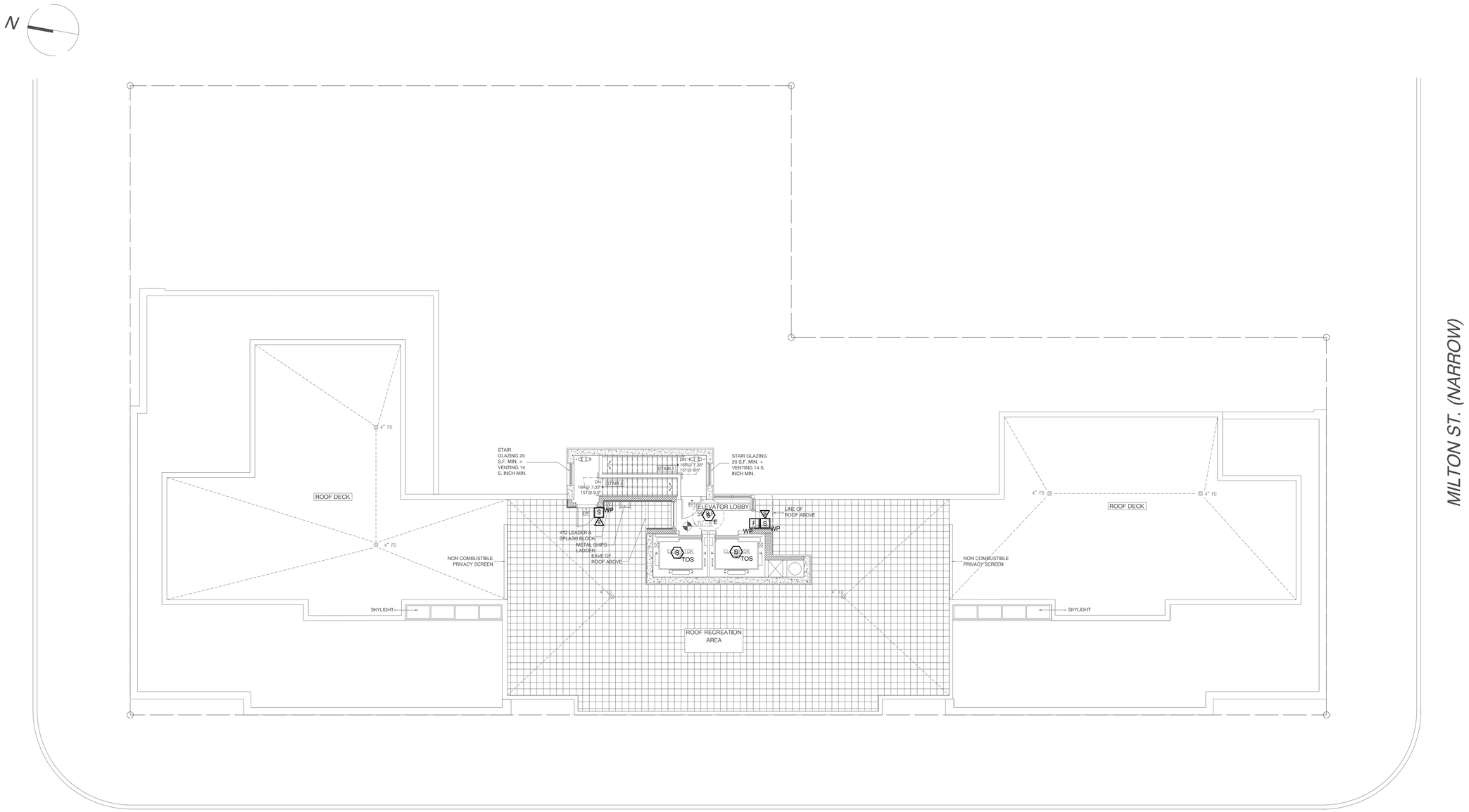

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRE ALARM
ROOF PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
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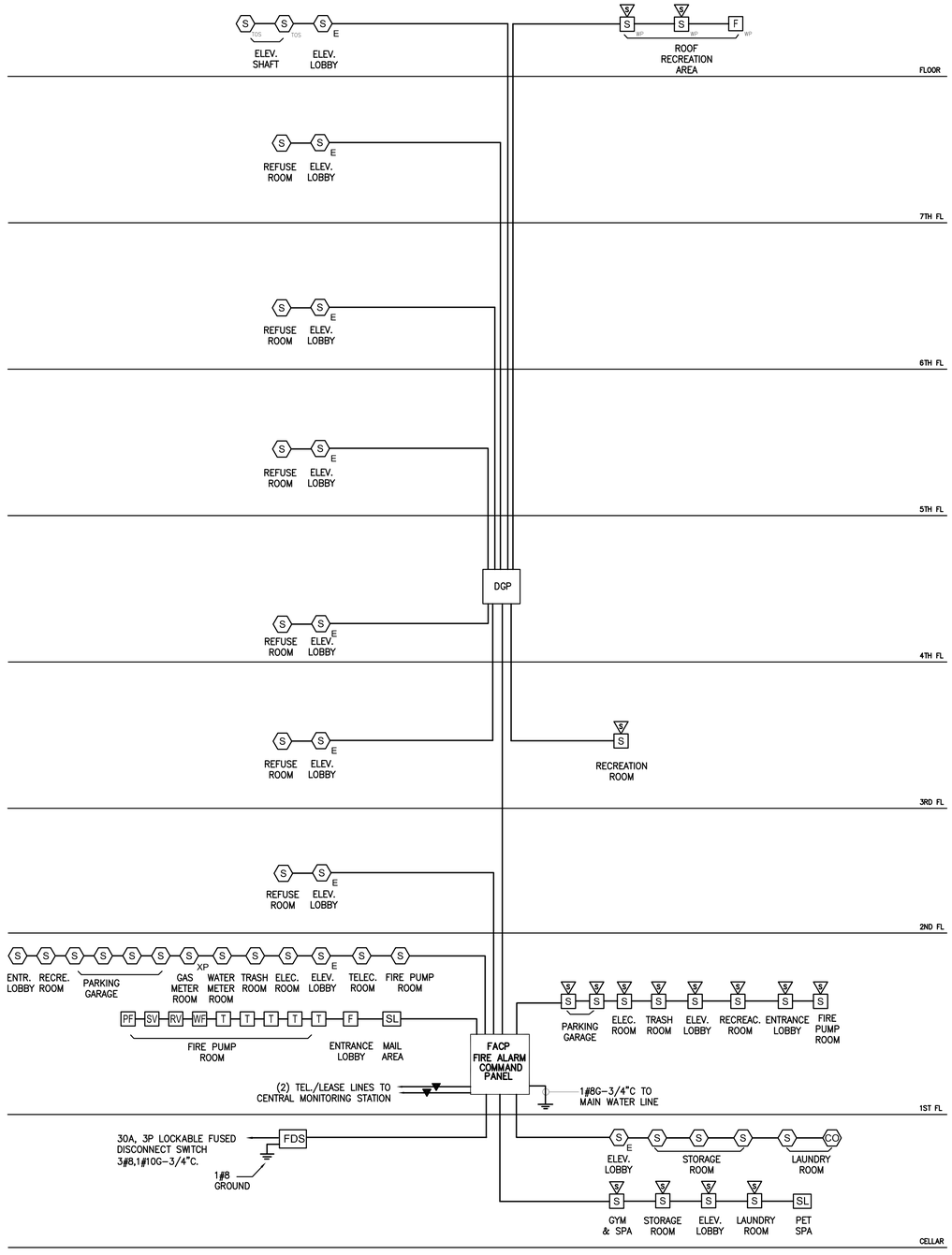

FIRE ALARM RISER DIAGRAM

NTS.

SYSTEM OUTPUTS / SYSTEM INPUTS INITIATING DEVICES		CONTROL UNIT ANNUNCIATION						NOTIFICATION					FIRE SAFETY CONTROL					
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	MANUAL PULL STATION	●			●	●	●											1
2	AREA SMOKE DETECTOR	●			●	●		●					●					2
3	HEAT DETECTOR	●			●	●		●					●					3
4	DUCT SMOKE DETECTOR	●			●	●		●					●					4
5	ELEVATOR MACHINE ROOM / ELEVATOR LOBBY / TOP OF ELEVATOR SHAFT DETECTORS	●			●	●		●					●	●				5
6	WATERFLOW SWITCH	●			●	●			●				●	●				6
7	SPRINKLER CONTROL VALVE/ TAMPER SWITCH		●		●	●				●								7
8	FIRE ALARM AC POWER FAILURE			●	●	●					●							8
9	FIRE ALARM SYSTEM LOW BATTERY			●	●	●					●							9
10	OPEN CIRCUIT			●	●	●					●							10
11	GROUND CIRCUIT			●	●	●					●							11
12	FIRE PUMP 'RUNNING', 'POWER FAILURE' AND 'PHASE REVERSAL'		●		●	●				●								12

SYMBOL LIST

- (S) – SMOKE DETECTOR
- (S)XP – SMOKE DETECTOR EXPLOSION PROOF
- (CO) – CARBON MONOXIDE DETECTOR
- T – TAMPER SWITCH
- WF – WATERFLOW SWITCH
- PF – PUMP FAILURE
- SV – PUMP RUNNING
- RV – PUMP REVERSAL
- F – MANUAL PULL STATION
- SL – STROBE ONLY
- (S) – COMBINATION SPEAKER/STROBE
- – SPEAKER ONLY
- DGP – DATA GATHERING PANEL
- FACP – FIRE ALARM COMMAND PANEL
- FDS – FUSE DISCONNECT SWITCH
- WP – INDICATES WEATHERPROOF TYPE
- XP – INDICATES EXPLOSION PROOF TYPE
- TOS – INDICATES TOP OF SHAFT

SEQUENCE OF OPERATIONS:

1– OPERATION OF A MANUAL PULL STATION SHALL:
- – INITIATE ALARM AT FCS
- – DISPLAY THE APPROPRIATE ZONE AT FCS
- – TRANSMIT SIGNAL TO FIRE DEPARTMENT VIA CENTRAL STATION

2– ACTIVATION OF ANY AREA SMOKE OR HEAT DETECTOR SHALL:
- – EFFECT THE SAME ACTION AS A MANUAL PULL STATION AND
- – SHUTDOWN ALL AIR HANDLING UNITS ABOVE 2000 CFM
- – OPERATE ALL REQUIRED DAMPER RELAYS

3– ACTIVATION OF DUCT SMOKE DETECTOR SHALL:
- – EFFECT THE SAME ACTION AS AN AREA SMOKE DETECTOR

4– ACTIVATION OF EMR OR TOP OF SHAFT SMOKE DETECTOR SHALL:
- – EFFECT THE SAME ACTION AS AN AREA SMOKE DETECTOR AND
- – RECALL ELEVATOR TO GROUND LEVEL AND DISABLE

5– ACTIVATION OF WATERFLOW SWITCH SHALL:
- – EFFECT THE SAME ACTION AS AN AREA SMOKE DETECTOR AND
- – RECALL ELEVATOR TO GROUND LEVEL AND DISABLE

6– ACTIVATION OF TAMPER SWITCH SHALL:
- – INITIATE SUPERVISORY SIGNAL AT FCS
- – DISPLAY THE APPROPRIATE ZONE AT FCS
- – TRANSMIT SIGNAL TO FIRE DEPARTMENT VIA CENTRAL STATION

7– ALL DEVICE AND SYSTEM TROUBLE CONDITIONS SHALL:
- – INITIATE TROUBLE SIGNAL AT FCS
- – DISPLAY THE APPROPRIATE ZONE AT FCS
- – TRANSMIT SIGNAL TO FIRE DEPARTMENT VIA CENTRAL STATION

8– ACTIVATION OF FIRE PUMP "RUNNING", "POWER FAILURE" AND "PHASE REVERSAL" STATUS SHALL:
- – INITIATE SUPERVISORY SIGNAL AT FCS
- – DISPLAY THE APPROPRIATE ZONE AT FCS
- – TRANSMIT SUPERVISORY SIGNAL TO FIRE DEPARTMENT VIA CENTRAL STATION

FIRE COMMAND CENTER NOTES:

THE FIRE COMMAND CENTER SHALL CONTAIN THE FOLLOWING FEATURES AS APPLICABLE:

1. THE EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM UNIT
2. THE FIRE DEPARTMENT COMMUNICATIONS UNIT
3. FIRE DETECTION AND ALARM SYSTEM ANNUNCIATOR UNIT
4. ANNUNCIATOR VISUALLY INDICATING THE LOCATION OF THE ELEVATORS AND WHETHER THEY ARE OPERATIONAL
5. STATUS INDICATORS AND CONTROLS FOR AIR-HANDLING SYSTEMS
6. THE FIRE-FIGHTER'S CONTROL PANEL FOR SMOKE CONTROL SYSTEMS
7. CONTROLS FOR UNLOCKING STAIRWAY DOORS SIMULTANEOUSLY
8. SPRINKLER VALVE AND WATER-FLOW DETECTOR DISPLAY PANELS
9. EMERGENCY POWER STATUS INDICATORS
10. A TELEPHONE FOR FIRE DEPARTMENT USE WITH CONTROLLED ACCESS TO THE PUBLIC TELEPHONE SYSTEM
11. FIRE PUMP STATUS INDICATORS

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description

ISSUES

no.	date	description

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
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POWER RISER DIAGRAM

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HVAC LEGEND

LEGEND	DESCRIPTION
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHC	ABOVE HUNG CEILING
AP	ACCESS PANEL
BDD	BACKDRAFT DAMPER
BR	BOTTOM REGISTER
BTU	BRITISH THERMAL UNIT
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CR	CEILING REGISTER
CV	CORRIDOR VENTILATION
CW	COLD WATER
CWS/R	CONDENSER WATER SUPPLY/RETURN
D	DRAIN (CONDENSATE)
EH	ELECTRIC HEATER
ESP	EXTERNAL STATIC PRESSURE
EV	EXHAUST VENTILATION
FA	FACE AREA
FAI	FRESH AIR INTAKE
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD/AD	FIRE DAMPER W/ ACCESS DOOR COMBINATION
FSD/AD	FIRE SMOKE DAMPER W/ ACCESS DOOR
GC	GENERAL CONTRACTOR
GEF	GENERAL EXHAUST FAN
GPM	GALLONS PER MINUTE
GV	GARAGE VENTILATION
GX	GENERAL EXHAUST
H	HEIGHT
H&V	HEATING AND VENTILATING
HC	HEATING COIL
HP	HORSEPOWER
HW	HOT WATER
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
L	LENGTH
MBH	1000 BTUH
MD	MOTORIZED DAMPER
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NO TO SCALE
OAI	OUTSIDE AIR INTAKE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
SA	SUPPLY AIR
SP,HD	SPRINKLER HEAD
SP	STATIC PRESSURE
TH	TOE HEATER
TOS	TOP OF SLAB
TR	TOP REGISTER
TX	TOILET EXHAUST
TWS	COOLING TOWER WATER SUPPLY
TWR	COOLING TOWER WATER RETURN
TV	TOILET VENTILATION
TEF	TOILET EXHAUST FAN
W	WIDTH
WMS	WIRE MESH SCREEN
WSHP	WATER SOURCE HEAT PUMP
VD	VOLUME DAMPER
UOS	UNDERSIDE OF SLAB

DESIGNATION SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXHAUST RISER	AC 1	AIR CONDITIONING UNIT
	LAUNDRY EXHAUST RISER	EF 1	EXHAUST FAN UNIT
	TOILET EXHAUST RISER	S 1	HOT WATER SUPPLY RISER
	CORRIDOR VENTILATION RISER	R 1	HOT WATER RETURN RISER

GENERAL SEALING NOTES:

1. INSTALL SILICONE CAULK (TREMCO OR EQUIVALENT) TO SEAL PERIMETER OF ALL HVAC ACCESS DOOR FRAMES AND DRYWALL CONSTRUCTION.
2. ALL CURBS SHALL BE SEALED WITH LOW VOC MASTIC OR OTHER UL-181 COMPLAINT MATERIAL TO SEAL DUCT PENETRATION THROUGH ROOF. APPLY MASTIC PRIOR TO INSTALLATION OF ROOF CURBS. INSTALL MASTIC AS PER MANUFACTURER'S REQUIREMENTS.
3. ALL VENTILATION DUCTWORK MUST BE SEALED W/ MASTIC OR OTHER UL-181 COMPLAINT MATERIAL AT SEAMS, JUNCTIONS AND TAKE-OFF LOCATIONS. VENTILATION DUCTWORK SHOULD ALSO BE SEALED TO SHEETROCK BEHIND REGISTERS.
4. APPLY LOW VOC MASTIC OR OTHER UL-181 COMPLAINT MATERIAL CONTINUOUSLY AT ALL TRANVERSE DUCT JOINTS. MASTIC SHALL BE APPLIED TO EXPOSED PART OF MALE FITTING AFTER THE FITTING COLLAR OR CRIMPED END IS FULLY STARTED INTO THE DUCT, BUT BEFORE IT IS PUSHED TO THE BEAD STOP.
   a. ONCE MASTIC IS INITIALLY APPLIED TO JOINT, PUSH FITTING TO THE BEAD STOP AND MECHANICALLY FASTEN THE JOINT WITH SHEET METAL SCREWS OR RIVETS.
4. APPLY LOW VOC MASTIC OR OTHER UL-181 COMPLAINT MATERIAL CONTINUOUSLY AROUND ALL JOINTS BETWEEN TAKE-OFF DUCTS AND SHAFTS.
5. GENERALLY APPLY MASTIC TO THE OUTSIDE OF JOINTS IN A MINIMUM 2-1/2" WIDE BAND COVERING THE SCREWS OR RIVETS AND JOINT GAP.
6. PROVIDE EXPANDED CLOSED CELL FOAM RATED FOR 220 DEG F AT GYPSUM BOARD PENETRATIONS OF COPPER HEATING PIPES. SEAL GAP BETWEEN CLOSED CELL FOAM INSULATION AND GYPSUM BOARD WITH SILICONE CAULK.
7. FOR CENTRAL SHAFTS, CONTRACTOR SHALL ENSURE TIGHT DUCT CONSTRUCTION THROUGH QUALITY CONTROL OF MANUAL SEALING AS PER PERFORMANCE BASED SPECIFICATIONS OR THROUGH THE USE OF AN AUTOMATED SEALING SYSTEM.
8. ALL DUCT TRANSITIONAL JUNCTIONS HAVE BEEN SEALED WITH MASTIC OR OTHER UL-181 COMPLIANT MATERIAL.
9. GAP BETWEEN TAKE OFF DUCT AND GYPSUM BOARD HAS BEEN EFFECTIVELY SEALED.

HVAC SYMBOL LIST

SYMBOL	DESCRIPTION
	CEILING EXHAUST OR RETURN AIR OR REGISTER
	DUCT
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN DUCT UP
	RETURN DUCT DOWN
M	AUTOMATIC DAMPER, MOTORIZED
FD SD	FIRE DAMPER / SMOKE DAMPER
	VOLUME DAMPER
T	THERMOSTAT
S	WALL SWITCH
P	PRESSURE TROL
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	RELIEF OR SAFETY VALVE
	3-WAY AUTOMATIC CONTROL VALVE
	PRESSURE REDUCING VALVE
	STRAINER
	UNION FITTING
	PIPE GUIDE
	PIPE ANCHOR
	CAPPED OUTLET
	EXPANSION LOOP
	EXPANSION JOINT
AV	AUTOMATIC AIR VENT
	MANUAL AIR VENT
P	PRESSURE GAUGE
	THERMOMETER
	PIPE UP
	PIPE DOWN
	PIPE STUB UP
	FLOW DIRECTION
	SQUARE VANED ELBOW
	RADIUS ELBOW
SD	DUCT SMOKE DETECTOR
	ACOUSTICALLY LINED DUCTWORK
	DUCTWORK IN RATED ENCLOSURE
	BALANCING VALVE
	CIRCUIT SETTER VALVE
CO	CARBON MONOXIDE DETECTING SENSOR
	CONDENSATE PIPE CLEAN OUT

MECHANICAL EQUIPMENT AND BUILDING SYSTEMS SHALL BE CONSTRUCTED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE 2008 NEW YORK CITY MECHANICAL CODE AND THE 2008 NEW YORK CITY FUEL GAS CODE. BC 2801.1

ALL HANDICAP ACCESSIBILITY NOTES AND DIMENSIONS FILED UNDER NEW BUILDING APPLICATION.

GENERAL HVAC NOTES:

1. NATURALLY VENTILATED SPACES SHALL BE PERMANENTLY OPEN TO AND WITHIN 25 FT OF OPERABLE WALL OR ROOF OPENINGS TO THE OUTDOORS, THE OPENABLE AREA OF WHICH IS A MINIMUM OF 4% OF THE NET OCCUPIABLE FLOOR AREA. WHERE OPENINGS ARE COVERED WITH LOUVERS OR OTHERWISE OBSTRUCTED, OPENABLE AREA SHALL BE BASED ON THE FREE UNOBSTRUCTED AREA THROUGH THE OPENING. WHERE INTERIOR SPACES WITHOUT DIRECT OPENINGS TO THE OUTDOORS ARE VENTILATED THROUGH ADJOINING ROOMS, THE OPENING BETWEEN ROOMS SHALL BE PERMANENTLY UNOBSTRUCTED AND HAVE A FREE AREA OF NOT LESS THAN 8% OF THE AREA OF THE INTERIOR ROOM NOR LESS THAN 25 SQ.FT.
2. REQUIRED OPERABLE OPENINGS SHALL BE READILY ACCESSIBLE TO BUILDING OCCUPANTS WHENEVER THE SPACE IS OCCUPIED.
3. EXHAUST DUCTS THAT ARE TO BE SEALED IN ACCORDANCE WITH SMACNA SEAL CLASS A.2.
4. MECHANICAL VENTILATION SYSTEMS SHALL INCLUDE CONTROLS, MANUAL OR AUTOMATIC, THAT ENABLES THE FAN SYSTEM TO OPERATE WHENEVER THE SPACES SERVED ARE OCCUPIED. THE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE MINIMUM OUTDOOR AIRFLOW AS REQUIRED BY SYSTEM DESIGN.
5. ALL AIRSTREAM SURFACES IN EQUIPMENT AND DUCTS IN THE HEATING, VENTILATING, AND AIR-CONDITIONING SYSTEM SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS.
6. OUTDOOR AIR INTAKES, INCLUDING DOORS AND WINDOWS THAT ARE REQUIRED AS PART OF A NATURAL VENTILATION SYSTEM, SHALL BE LOCATED SUCH THAT THE SHORTEST DISTANCE FROM THE INTAKE TO ANY SPECIFIC POTENTIAL OUTDOOR CONTAMINANT SOURCE SHALL BE EQUAL TO OR GREATER THAN THE SEPARATION DISTANCE NOTED ON PLANS OR SPECIFICATIONS.
7. OUTDOOR AIR INTAKES THAT ARE PART OF THE MECHANICAL VENTILATION SYSTEM SHALL BE DESIGNED TO MANAGE RAIN ENTRAINMENT IN ACCORDANCE THE SPECIFICATIONS.
8. AIR HANDLING AND DISTRIBUTION EQUIPMENT MOUNTED OUTDOORS SHALL BE DESIGNED TO PREVENT RAIN INTRUSION INTO THE AIRSTREAM WHEN TESTED AT DESIGN AIRFLOW AND WITH NO AIRFLOW.
9. WHERE CLIMATE DICTATES, OUTDOOR AIR INTAKES THAT ARE PART OF THE MECHANICAL VENTILATION SYSTEM SHALL BE DESIGNED TO MANAGE MELTED SNOW BLOWN OR DRAWN INTO THE SYSTEM BY PROVIDING SUITABLE ACCESS DOORS TO PERMIT CLEANING SHALL BE PROVIDED OR OUTDOOR AIR DUCTWORK (OR PLENUMS) SHALL PITCH TO DRAINS DESIGNED IN ACCORDANCE WITH THE DRIP PAN REQUIREMENTS.
10. OUTDOOR AIR INTAKES SHALL INCLUDE A SCREENING DEVICE DESIGNED TO PREVENT PENETRATION BY A 1/2 IN. DIAMETER PROBE. THE SCREENING DEVICE MATERIAL SHALL BE CORROSION RESISTANT. THE SCREENING DEVICE SHALL BE LOCATED, OR OTHER MEASURES SHALL BE TAKEN, TO PREVENT BIRD NESTING WITHIN THE OUTDOOR AIR INTAKE.
11. THE DISCHARGE FROM NON-COMBUSTION EQUIPMENT THAT CAPTURES THE CONTAMINANTS GENERATED BY THE EQUIPMENT SHALL BE DUCTED DIRECTLY TO THE OUTDOORS.
12. FUEL-BURNING APPLIANCES, BOTH VENTED AND UN-VENTED, SHALL BE PROVIDED WITH SUFFICIENT AIR FOR COMBUSTION AND ADEQUATE REMOVAL OF COMBUSTION PRODUCTS, IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS, PRODUCTS OF COMBUSTION FROM VENTED APPLIANCES SHALL BE VENTED DIRECTLY OUTDOORS.
13. DRAIN PANS, INCLUDING THEIR OUTLETS AND SEALS, SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS.
14. VENTILATION EQUIPMENT SHALL BE INSTALLED WITH SUFFICIENT WORKING SPACE FOR INSPECTION AND ROUTINE MAINTENANCE (E.G., FILTER REPLACEMENT AND FAN BELT ADJUSTMENT AND REPLACEMENT).
15. ACCESS DOORS, PANELS, OR OTHER MEANS SHALL BE PROVIDED AND SIZED TO ALLOW CONVENIENT AND UNOBSTRUCTED ACCESS SUFFICIENT TO INSPECT, MAINTAIN, AND CALIBRATE ALL VENTILATION SYSTEM COMPONENTS FOR WHICH ROUTINE INSPECTION, MAINTENANCE, OR CALIBRATION IS NECESSARY. VENTILATION SYSTEM COMPONENTS COMPRISE, FOR EXAMPLE, AIR-HANDLING UNITS, FAN-COIL UNITS, WATER-SOURCE HEAT PUMPS, OTHER TERMINAL UNITS, CONTROLLERS, AND SENSORS.
16. ACCESS DOORS, PANELS, OR OTHER MEANS SHALL BE PROVIDED IN VENTILATION EQUIPMENT, DUCTWORK, AND PLENUMS, LOCATED AND SIZED TO ALLOW CONVENIENT AND UNOBSTRUCTED ACCESS FOR INSPECTION, CLEANING, AND ROUTINE MAINTENANCE AS PER SPECIFICATIONS.
17. AIR SHALL BE CLASSIFIED, AND ITS RECIRCULATION SHALL BE LIMITED IN ACCORDANCE WITH THE SPECIFICATIONS.
18. PROVIDE VIBRATION ISOALTION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
19. MAINTAIN A MINIMUM OF 6'-6" CLEARANCE TO UNDERSIDE OF PIPES DUCTS, SUSPENDED EQUIPMENT, ETC. THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
20. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND EQUIPMENT A MINIMUM OF 6 INCHES ON EACH SIDE.
21. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT.
22. ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
23. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET WITH "P" TRAP, AND PIPES TO NEAREST DRAIN. SEE DETAIL DRAWINGS FOR CONDENSATE TRAP DETAILS.
24. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
25. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
26. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATION AND MAXIMUM ADJUSTABLE STOPS.
27. ALL FANS SHALL NOT BE ON TIMERS FOR KITCHEN TOILET EXHAUST SYSTEMS.
28. RESIDENTIAL APARTMENT EXHAUST. DUCTWORK SHALL BE RIGID SHEET METAL MINIMUM GAUGE NUMBER 26.
29. CONSTANT AIR FLOW REGULATORS BY ALDES SHALL BE PROVIDED ON ALL SUPPLY AND EXHAUST REGISTERS UNLESS OTHERWISE NOTED.
30. INTERNAL ACOUSTIC DUCT LINING WITH A THICKNESS OF 1 INCH SHALL BE PROVIDED FOR A MINIMUM DISTANCE OF 20 FT UPSTREAM OF ALL EXHAUST FANS SERVING APARTMENT AREAS AS WELL AS UP AND DOWNSTREAM OF CORRIDOR SUPPLY UNITS AND AC UNITS.

NEW YORK ENERGY CODE NOTES:

1. STAIR AND ELEVATOR SHAFT VENTS AND OTHER OUTDOOR AIR INTAKES AND EXHAUST OPENINGS INTEGRAL TO THE BUILDING ENVELOPE SHALL BE EQUIPPED WITH NOT LESS THAN A CLASS I MOTORIZED, LEAKAGE RATED DAMPER WITH A MAXIMUM LEAKAGE RATE OF 4 CFM PER SQUARE FOOT AT 1.0 INCH WATER GAUGE (W.G.) WHEN TESTED IN ACCORDANCE WITH AMCA 500D. GRAVITY (NON-MOTORIZED) DAMPERS ARE PERMITTED TO BE USED IN BUILDINGS LESS THAN THREE STORIES IN HEIGHT ABOVE GRADE.
2. BOTH OUTDOOR AIR SUPPLY AND EXHAUST DUCTS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE. GRAVITY DAMPERS SHALL BE PERMITTED IN BUILDINGS LESS THAN THREE STORIES IN HEIGHT. GRAVITY DAMPERS SHALL BE PERMITTED FOR OUTSIDE AIR INTAKE OR EXHAUST AIRFLOWS OF 300 CFM OR LESS.
3. HEAT TRACE SYSTEMS SHALL TURN OFF AUTOMATICALLY OR MANUALLY WHEN THE PIPING SYSTEM IS ABOVE FREEZING CONDITIONS.
4. HOT WATER SYSTEM PUMPS SHALL BE TURNED OFF AUTOMATICALLY OR MANUALLY WHEN THE HOT WATER SYSTEM IS NOT IN OPERATION.
5. ONE THERMOSTAT WITH SETBACK CONTROLS PER ZONE. EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM. EXCEPTIONS:
   - ZONES THAT WILL BE OPERATED CONTINUOUSLY.
   - ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.
6. THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F OR UP TO 85°F.
7. THERMOSTATIC CONTROLS PROVIDING BOTH HEATING AND COOLING SHALL HAVE A MINIMUM DEAD BAND OF AT LEAST 5°F, EXCEPT FOR UNITS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
8. HYDRONIC HEATING AND COOLING COILS MUST BE EQUIPPED WITH A WAY TO PRESSURE TEST CONNECTIONS AND MEASURE AND BALANCE WATER FLOW AND PRESSURE
9. AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.
10. CONTRACTOR SHALL PROVIDE AN OPERATING AND MAINTENANCE MANUAL TO THE BUILDING OWNER. THE MANUAL SHALL INCLUDE, AT LEAST, THE FOLLOWING: EQUIPMENT CAPACITY (INPUT AND OUTPUT) AND REQUIRED MAINTENANCE ACTIONS, EQUIPMENT OPERATION AND MAINTENANCE MANUALS, HVAC SYSTEM CONTROL MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS, AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS AND A COMPLETE WRITTEN NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE.
11. THE MINIMUM FLOW RATE OF OUTDOOR AIR THAT THE VENTILATION SYSTEM MUST BE CAPABLE OF SUPPLYING DURING ITS OPERATION SHALL BE PERMITTED TO BE BASED ON THE RATE PER PERSON INDICATED IN THE NYC MECHANICAL CODE AND THE ACTUAL NUMBER OF OCCUPANTS PRESENT. INTERMITTENT EXHAUST SHALL BE PERMITTED WHERE AN INDIVIDUAL EXHAUST DUCT AND FAN ARE PROVIDED AND THE OPERATION OF THE FAN IS CONTROLLED BY OCCUPANTS OF THE SPACE BEING VENTED.
12. EACH AIR DISTRIBUTION SYSTEM SHALL BE PROVIDED WITH NOT LESS THAN ONE MANUAL CONTROL TO STOP THE OPERATION OF THE SUPPLY, RETURN, AND EXHAUST FANS(S) IN AN EMERGENCY. THE MANUAL CONTROL SUCH AS UNIT DISCONNECT SWITCH SHALL BE PROVIDED AT AN APPROVED LOCATION.
13. MECHANICAL VENTILATION SYSTEMS FOR ENCLOSED PARKING GARAGES ARE NOT REQUIRED TO OPERATE CONTINUOUSLY WHERE THE SYSTEM IS ARRANGED TO OPERATE AUTOMATICALLY UPON DETECTION OF A CONCENTRATION OF CARBON MONOXIDE OF 25 PARTS PER MILLION (PPM) BY APPROVED AUTOMATIC DETECTION DEVICES.
14. UNINHABITED SPACES, SUCH AS CRAWL SPACES AND ATTICS, SHALL BE PROVIDED WITH NATURAL VENTILATION OPENINGS OR SHALL BE PROVIDED WITH A MECHANICAL EXHAUST AND SUPPLY AIR SYSTEM AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

BUILDING DEPARTMENT NOTES:

1. UPON COMPLETION OF VENTILATION SYSTEM, A TEST SHALL BE CONDUCTED UNDER THE PRESENCE AND DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT QUALIFIED TO CONDUCT SUCH TESTS. THE TESTS SHALL SHOW COMPLIANCE WITH CODE REQUIREMENTS FOR VENTILATION AND PROPER FUNCTION OF ALL OPERATING DEVICES, BEFORE THE SYSTEM IS APPROVED.
2. THE LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT WHO CONDUCTS THE TESTS SHALL FILE THE CERTIFICATE AS TO WHETHER THE SYSTEM COMPLIES WITH APPLICABLE LAWS. THE TEST AND REPORT SHALL BE MADE IN A MANNER SATISFACTORY TO THE SUPERINTENDENT.
3. A STATEMENT SHALL BE FILED BY THE OWNER THAT THE SYSTEM OF VENTILATION WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THIS BUILDING AS ORDERED IN THE APPLICABLE SECTION OF THE CODE.
4. NEW YORK CITY MECHANICAL CODE CHAPTER 4 SECTION 401 SHALL GOVERN THE VENTILATION OF SPACES WITHIN A BUILDING INTENDED TO BE OCCUPIED.
5. MECHANICAL VENTILATION BY A METHOD OF SUPPLY AIR AND RETURN OR EXHAUST AIR SHALL BE PROVIDED AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 4, SECTION 403. THE AMOUNT OF SUPPLY AIR SHALL BE APPROXIMATELY EQUAL TO THE AMOUNT OF RETURN AND EXHAUST AIR. THE SYSTEM SHALL NOT BE PROHIBITED FROM PRODUCING NEGATIVE OR POSITIVE PRESSURE. THE SYSTEM TO CONVEY VENTILATION AIR SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NEW YORK CITY MECHANICAL CODE CHAPTER 6.
6. MECHANICAL VENTILATION SYSTEMS SHALL BE PROVIDED WITH MANUAL OR AUTOMATIC CONTROLS AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 4 SECTION 405.
7. THE DESIGN, CONSTRUCTION AND INSTALLATION OF MECHANICAL EXHAUST SYSTEMS, INCLUDING DUST, STOCK AND REFUSE CONVEYOR SYSTEMS, EXHAUST SYSTEMS SERVING COMMERCIAL COOKING APPLIANCES AND ENERGY RECOVERY VENTILATIONSYSTEMS SHALL BE AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 5 SECTION 501.
8. MECHANICAL AND PASSIVE SMOKE CONTROL SYSTEMS THAT ARE REQUIRED BY THE NEW YORK CITY MECHANICAL CODE SHALL BE AS PER NEW YORK CITY MECHANICAL CODE SECTION 513. GENERAL DESIGN REQUIREMENTS SHALL BE AS PER NEW YORK CITY MECHANICAL CODE SECTION 513.2. SPECIAL INSPECTION AND TEST REQUIREMENTS SHALL BE AS PER NEW YORK CITY MECHANICAL CODE SECTION 513.3.
9. DUCT SYSTEMS USED FOR THE MOVEMENT OF AIR IN AIR-CONDITIONING, HEATING, VENTILATING AND EXHAUST SYSTEMS SHALL CONFORM TO THE PROVISIONS OF NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 601.
10. THE INSTALLATION AND CONSTRUCTION OF DUCTWORK SHALL BE AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 603.
11. PROTECTION OF DUCT PENETRATIONS AND AIR TRANSFER OPENINGS IN ASSEMBLIES REQUIRED TO BE PROTECTED SHALL BE AS PER NEW YORK CITY MECHANICAL CODE CHAPTER 6, SECTION 607. FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND CEILING RADIATION DAMPERS SHALL BE PROVIDED AT THE LOCATIONS PRESCRIBED IN SECTIONS 607.5.1 THROUGH 607.5.5. WHERE AN ASSEMBLY IS REQUIRED TO HAVE BOTH FIRE DAMPERS AND SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS OR A FIRE DAMPER AND A SMOKE DAMPER SHALL BE REQUIRED.
12. DUCT AND AIR TRANSFER OPENINGS THAT PENETRATE FIRE RATED PARTITIONS SHALL COMPLY WITH ALL REQUIREMENTS LISTED UNDER THE BUILDING CODE SECTION 716 AS APPLICABLE TO SYSTEM DESIGN.
13. CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN AND PAY FOR TESTING SERVICES AND SPECIAL INSPECTIONS AS PER CHAPTER 17 OF THE NYC BUILDING CODE.
13. CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN AND PAY FOR TESTING SERVICES AND PROGESS INSPECTIONS AS PER NYC ENERGY CONSTRUCTION CODE..

GENERAL EQUIPMENT NOTES:

1. TYPICAL FIRE DAMPERS SHALL BE RUSKIN TYPE B BSA # 272-7-SA, OR EQUAL APPROVED FOR USE IN NEW YORK CITY.
2. FIRE DAMPERS TO BE USED WITH WALL REGISTERS SHOULD BE UL CLASSIFIED, 1 1/2 HR RATING. SIMILAR TO ARLAN MODEL UL10RD WITH BSA NO. 291-60-SA.
3. LOUVERS SHALL BE SIMILAR TO GREENHECK MODEL EDJ-401, 930 FPM FREE AREA VELOCITY, WATER PENETRATION STARTING POINT, ±50% FREE AREA. COORDINATE WITH GENERAL CONTRACTOR. LOUVERS SHALL RESTRICT WIND-DRIVEN RAIN PENETRATION TO LESS THAN 2.36 OZ/FT2*H WHEN SUBJECTED TO A SIMULATED RAINFALL OF 3 IN. PER HOUR AND A 29 MPH WIND VELOCITY AT THE DESIGN OUTDOOR AIR INTAKE RATE WITH THE AIR VELOCITY CALCULATED BASED ON THE LOUVER FACE AREA. LOUVER PERFORMANCE CORRESPONDS TO CLASS A (99 EFFECTIVENESS) WHEN RATED ACCORDING TO AMCA 511-99 AND TESTED PER AMCA 500-L-99.
4. ALL REGISTERS SHALL BE INSTALLED WITH A CONSTANT REGISTER BOX. THE CONSTANT AIRFLOW REGULATOR SHALL BE FOR INSTALLATION WITH FIRE DAMPER. SIMILAR TO ALDES MODEL CAR-FE.
5. PROVIDE PRESSURE DIFFERENTIAL SENSOR ON LINT TRAP FOR DRYER EXHAUST SYSTEM.
6. CONTRACTOR SHALL MANAGE THE WATER THAT PENETRATES OUTDOOR AIR INTAKE OPENING BY PROVIDING A DRAINAGE AREA AND/OR MOISTURE REMOVAL DEVICES.
7. ALL MOTORS 1HP AND LARGER SHALL BE NEMA PREMIUM EFFICIENCY.
8. ALL THERMOSTATS SHALL BE AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.
9. ALL HEATING STORAGE TANKS SHALL BE PROVIDED WITH MIN. R-12.5 INSULATION.
10. ALL HEAT TRACE SYSTEMS SHALL BE CONTROLLED OFF PIPE TEMPERATURE AND NOT SPACE AIR TEMPERATURE.
11. FLEXIBLE DUCT CONNECTIONS WILL NOT BE PROVIDED IN COMMUNITY AMENITY AREAS.

ENERGY CODE PROGRESS INSPECTIONS (TR8 BC 109.3.5):

- FENESTRATION THERMAL VALUES AND RATINGS
- FENESTRATION RATINGS FOR AIR LEAKAGE
- FENESTRATION AREAS
- AIR SEALING AND INSULATION — VISUAL
- VESTIBULES
- DAMPERS INTEGRAL TO BUILDING ENVELOPE
- HVAC AND SERVICE WATER HEATING EQUIPMENT
- HVAC AND SERVICE WATER HEATING SYSTEM CONTROLS
- DUCT PLENUM AND PIPING INSULATION AND SEALING
- DUCT LEAKAGE TESTING
- ELECTRICAL METERING
- LIGHTING IN DWELLING UNITS
- INTERIOR LIGHTING POWER
- EXTERIOR LIGHTING POWER
- LIGHTING CONTROLS
- EXIT SIGNS
- TANDEM WIRING
- ELECTRICAL MOTORS
- MAINTENANCE INFORMATION
- PERMANENT CERTIFICATE

DRAWING LIST

CEILING DIFFUSER SCHEDULE	
CFM RANGE	DIFFUSER SIZE
UP TO 100	6x6
105-225	9x9
230-400	12x12
405-625	15x5
630-900	18x8
905-1,200	24x24

CEILING DIFFUSERS BASED ON TITUS MODEL TDC (WITH OPPOSED BLADE DAMPERS, EQUALIZING GRID, NC LEVEL MAX. 25)

REGISTER SCHEDULE (RETURN-EXHAUST AIR DUCTED)	
CFM RANGE	REGISTER SIZE
UP TO 100	6x6
185-235	8x8 (10x6)
240-350	10x10 (16x6)
355-485	12x12 (24x6)
490-645	14x14 (24x8)
650-825	18x18
830-1,025	22x22
1,030-1,255	24x24
1,260-1500	24x24

CEILING REGISTERS BASED ON TITUS MODEL 350RL (WITH OPPOSED BLADE DAMPER 0.67" SPACING/35 DEG. FIXED DEFL.) NC LEVEL - 25 MAX.

TOP & BOTTOM SUPPLY REGISTER SCHEDULE	
CFM RANGE	REGISTER SIZE
UP TO 70	6x6
75-150	8x6
155-200	10x6
205-240	12x6
245-280	14x6
285-340	16x6 OR 12x8
345-370	18x6
375-430	20x6 OR 12x10
435-520	24x6 OR 18x8
525-890	24x10
895-950	24x12

SUPPLY REGISTERS BASED ON TITUS MODEL 300RL (WITH OPPOSED BLADE DAMPER NC LEVEL MAX 25)

ARCHITECTURAL CEILING DIFFUSER SCHEDULE	
CFM RANGE	DIFFUSER

HP- ACCU-

VARIABLE REFRIGERANT FLOW - SLIT AIR CONDITIONING EQUIPMENT

BASEIS OF DESIGN: MITSUBISHI

INDOOR UNITS

UNIT NO.	SERVICE	LOCATION	MODEL NO.	TOTAL AIR QUANTITY (CFM)	MIN. OUTDOOR AIR (CFM)	EXTERNAL S.P. (IN. W.G.)	MOTOR TYPE	MOTOR KW	MIN CIRC. AMPS	MAX FUSE AMPS	VOLT/PH	WEIGHT LBS	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	COOLING		HEATING
															EAT DB (°F)	EAT WB (°F)	EAT DB (°F)
HP-C-1	GYM & SPA	CELLAR	PEFY-P36NMAU-E3	1,160	225	0.5	DC	0.24	3.32	15	208/1	86	36	40	80	67	70
HP-C-2	GYM & SPA	CELLAR	PEFY-P36NMAU-E3	1,160	225	0.5	DC	0.24	3.32	15	208/1	87	36	40	80	67	70
HP-C-3	SUPER OFFICE	CELLAR	PEFY-P12NMAU-E3	370	110	0.5	DC	0.09	1.2	15	208/1	49	12	13.5	80	67	70
HP-C-4	PET SPA	CELLAR	PEFY-P24NMAU-E3	880	250	0.5	DC	0.17	2.73	15	208/1	67	24	27	80	67	70
HP-1-1	ELECTRIC ROOM	FIRST FL.	PEFY-P18NMAU-E3	600	60	0.5	DC	0.11	1.56	15	208/1	58	18	20	80	67	70
HP-1-2	REC ROOM	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-1-3	LOBBY	2ND FLOOR	PEFY-P48NMAU-E3	1,400	280	0.5	DC	0.34	3.41	15	208/1	86	48	54	80	67	70
HP-2-A	UNIT A	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-2-B	UNIT B	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-2-C	UNIT C	2ND FLOOR	PEFY-P48NMAU-E3	1,400	280	0.5	DC	0.34	3.41	15	208/1	86	48	54	80	67	70
HP-2-D	UNIT D	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-2-E	UNIT E	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-2-F	UNIT F	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-2-G	UNIT G	2ND FLOOR	PEFY-P54NMAU-E3	1,480	296	0.5	DC	0.36	3.31	15	208/1	86	54	60	80	67	70
HP-2-H	UNIT H	2ND FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-3-A	UNIT A	3RD FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-3-B	UNIT B	3RD FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-3-C1	UNIT C	3RD FLOOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-3-C2	UNIT C	3RD FLOOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-3-D	UNIT D	3RD FLOOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-3-E	UNIT E	3RD FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-3-F1	UNIT F	3RD FLOOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-3-F2	UNIT F	3RD FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-3-G	UNIT G	3RD FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-4-A	UNIT A	4TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-4-B	UNIT B	4TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-4-C	UNIT C	4TH FLOOR	PEFY-P48NMAU-E3	1,400	280	0.5	DC	0.34	3.41	15	208/1	86	48	54	80	67	70
HP-4-D	UNIT D - 3RD & 4TH FL.	4TH FLOOR	PVFY-P48E00A	1,400	280	0.5	DC	0.362	2.51	15	208/1	160	48	54	80	67	70
HP-4-E	UNIT E	4TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-4-F	UNIT F	4TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-4-G	UNIT G - 3RD & 4TH FL.	4TH FLOOR	PVFY-P48E00A	1,400	280	0.5	DC	0.362	2.51	15	208/1	160	48	54	80	67	70
HP-4-H	UNIT H	4TH FLOOR	PEFY-P54NMAU-E3	1,480	296	0.5	DC	0.36	3.31	15	208/1	86	54	60	80	67	70
HP-5-A	UNIT A	5TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-5-B	UNIT B	5TH FLLOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-5-C1	UNIT C	5TH FLLOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-5-C2	UNIT C	5TH FLLOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-5-D1	UNIT D	5TH FLLOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-5-D2	UNIT D	5TH FLLOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-5-E1	UNIT E	5TH FLLOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-5-E2	UNIT E	5TH FLLOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-5-F1	UNIT F	5TH FLLOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-5-F2	UNIT F	5TH FLLOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-5-G	UNIT G	5TH FLLOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-6-A	UNIT A	6TH FLLOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-6-B	UNIT B	6TH FLLOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-6-C	UNIT C	6TH FLOOR	PEFY-P48NMAU-E3	1,400	280	0.5	DC	0.34	3.41	15	208/1	86	48	54	80	67	70
HP-6-D	UNIT D - 5TH & 6TH FL.	6TH FLOOR	PVFY-P48E00A	1,400	280	0.5	DC	0.362	2.51	15	208/1	160	48	54	80	67	70
HP-6-E	UNIT E	6TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-6-F	UNIT F	6TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-6-G	UNIT D - 5TH & 6TH FL.	6TH FLOOR	PVFY-P48E00A	1,400	280	0.5	DC	0.362	2.51	15	208/1	160	48	54	80	67	70
HP-6-H	UNIT H	6TH FLOOR	PEFY-P54NMAU-E3	1,480	296	0.5	DC	0.36	3.31	15	208/1	86	54	60	80	67	70
HP-6-I	UNIT I	6TH FLOOR	PEFY-P30NMAU-E3	880	176	0.5	DC	0.17	2.73	15	208/1	67	30	34	80	67	70
HP-7-A1	UNIT A	7TH FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-7-A2	UNIT A	7TH FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-7-B1	UNIT B	7TH FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-7-B2	UNIT B	7TH FLOOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-7-C1	UNIT C	7TH FLOOR	PVFY-P24E00A	700	140	0.5	DC	0.258	1.64	15	208/1	108	24	27	80	67	70
HP-7-C2	UNIT C	7TH FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-7-D1	UNIT D	7TH FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-7-D2	UNIT D	7TH FLOOR	PVFY-P36E00A	1000	200	0.5	DC	0.324	2.14	15	208/1	120	36	40	80	67	70
HP-2-1	CORRIDOR	2ND FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-2-2	CORRIDOR	2ND FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-2-3	CORRIDOR	2ND FLOOR	PFFY-P12NRMU-E	301	15.05	1.2	INDUCTION	-	0.34	15	208/2	46	12	13.5	80	67	70
HP-2-4	CORRIDOR	2ND FLOOR	PFFY-P12NRMU-E	302	15.1	2.2	INDUCTION	-	0.34	15	208/3	47	12	13.5	80	67	70
HP-3-1	CORRIDOR	3RD FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-3-2	CORRIDOR	3RD FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-3-3	CORRIDOR	3RD FLOOR	PFFY-P12NRMU-E	301	15.05	1.2	INDUCTION	-	0.34	15	208/2	46	12	13.5	80	67	70
HP-3-4	CORRIDOR	3RD FLOOR	PFFY-P12NRMU-E	302	15.1	2.2	INDUCTION	-	0.34	15	208/3	47	12	13.5	80	67	70
HP-4-1	CORRIDOR	4TH FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-4-2	CORRIDOR	4TH FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-4-3	CORRIDOR	4TH FLOOR	PFFY-P12NRMU-E	301	15.05	1.2	INDUCTION	-	0.34	15	208/2	46	12	13.5	80	67	70
HP-4-4	CORRIDOR	4TH FLOOR	PFFY-P12NRMU-E	302	15.1	2.2	INDUCTION	-	0.34	15	208/3	47	12	13.5	80	67	70
HP-5-1	CORRIDOR	5TH FLLOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-5-2	CORRIDOR	5TH FLLOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-5-3	CORRIDOR	5TH FLLOR	PFFY-P12NRMU-E	301	15.05	1.2	INDUCTION	-	0.34	15	208/2	46	12	13.5	80	67	70
HP-5-4	CORRIDOR	5TH FLLOR	PFFY-P12NRMU-E	302	15.1	2.2	INDUCTION	-	0.34	15	208/3	47	12	13.5	80	67	70
HP-6-1	CORRIDOR	6TH FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-6-2	CORRIDOR	6TH FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-6-3	CORRIDOR	6TH FLOOR	PFFY-P12NRMU-E	301	15.05	1.2	INDUCTION	-	0.34	15	208/2	46	12	13.5	80	67	70
HP-6-4	CORRIDOR	6TH FLOOR	PFFY-P12NRMU-E	302	15.1	2.2	INDUCTION	-	0.34	15	208/3	47	12	13.5	80	67	70
HP-7-1	CORRIDOR	7TH FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70
HP-7-2	CORRIDOR	7TH FLOOR	PFFY-P12NRMU-E	300	15	0.2	INDUCTION	-	0.34	15	208/1	45	12	13.5	80	67	70

CONDENSING SECTION

UNIT DESIG.	LOCATION	MODEL NO.	SECTION WEIGHT (LBS)	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	EER	SEER	COP	VOLTS/PH	KW	MCA	MAX FUSE
ACCU-C1	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-C2	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-C3	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-1-1	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-1-2	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-1-3	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-2-A	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-2-B	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-2-C	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-2-D	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-2-E	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-2-F	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-2-G	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-2-H	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-3-A	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-3-B	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-3-C	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-3-D	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-3-E	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-3-F	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-3-G	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-4-A	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-4-B	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-4-C	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-4-D	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-4-E	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-4-F	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-4-G	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-4-H	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-5-A	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-5-B	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-5-C	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-5-D	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-5-E	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-5-F	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-5-G	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-6-A	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-6-B	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-6-C	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-6-D	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-6-E	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-6-F	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-6-G	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-6-H	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-6-I	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40
ACCU-7-A	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-7-B	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-7-C	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-7-D	ROOF	PUMY-P60NKMU-BS	313	60	66	11.3	16.5	3.7	208/1	3	35	42
ACCU-2-1	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-3-2	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-4-1	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-5-2	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-6-2	ROOF	PUMY-P48NHMU-BS	287	48	54	8.4	14.5	3.56	208/1	2.4	26	40
ACCU-7-1	ROOF	PUMY-P36NHMU-BS	287	36	40	10.75	14.3	3.56	208/1	2.4	26	40

1. ALL UNITS SHALL BE R -410 REFRIGERANT.
2. PROVIDE CARBON DIOXIDE DETECTOR FOR ALL UNITS.
3. PIPE SIZE AND REFRIGERANT QUANTITY TO BE INSTALLED BY THE CONTRACTOR PER MANUFACTURE'S STANDARD.
4. PROVIDE REMOTE CONTROLLER FOR ALL UNITS PER MANUFACTURER RECOMMENDATION.

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ISSUES

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ, QAA, RAIC, AIA

REGISTERED ARCHITECT KARL FISCHER 021294 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
SCHEDULE I

scale N.T.S	project no. 1427
date 10/08/2014	revision no. --
drawn _ _	drawing no. M-002.00
checked _ _	

EF - EXHAUST FAN	TXF - TRASH EXHAUST FAN
TSF - TRASH SUPPLY FAN	LEF - LAUNDRY EXHAUST FAN
GSF - GENERAL SUPPLY FAN	TVF - TOILET VENTILATION FAN
GEF - GENERAL EXHAUST FAN	LSF - LAUNDRY SUPPLY FAN

FAN SCHEDULE — **BASIS OF DESIGN:** **GREENHECK**

FAN NO.	LOCATION	AREA OR SYSTEM SERVED	CFM	TOTAL PRESS. (IN W.G.)	MODEL NO.	FAN RPM	FAN BHP	FAN TYPE	DRIVE	DISCHARGE	MOTOR DATA				EMERG. POWER (YES OR NO)	SONES	DIMENSIONS (INCHES)			WT	REMARKS
											HP	VOLT/PH	NO. OF CYC.	MOTOR WINDING			L	W	H		
GSF-1	CELLAR	ALL ROOMS	1,110	0.50	SQ-120-VG	1,361	0.23	INLINE	DIRECT	-	1/4	115/1	-	1	-	8.5	23.00	19.00	15.88	57.0	
GEF-1	CELLAR	PET SPA	250	0.50	SQ-95-VG	1,388	0.07	INLINE	DIRECT	-	1/6	115/1	-	1	-	6.9	18.00	15.00	15.00	49.0	
GEF-2	CELLAR	STORAGE RMS	180	0.50	SQ-95-VG	1,418	0.07	INLINE	DIRECT	-	1/6	115/1	-	1	-	7.0	18.00	15.00	15.00	49.0	
GEF-3	CELLAR	SUPER. OFFICE	110	0.50	SQ-97-VG	1,296	0.06	INLINE	DIRECT	-	1/4	115/1	-	1	-	9.1	23.00	15.00	15.00	49.0	
GEF-4	GROUND FL.	GYM & SPA	550	0.50	SQ-99-VG	1,399	0.14	INLINE	DIRECT	-	1/4	115/1	-	1	-	10.2	23.00	15.00	15.00	49.0	
TSF-1	GROUND FL.	TRASH ROOM	310	0.50	V	1,418	0.07	INLINE	DIRECT	-	1/6	115/1	-	1	-	7.0	18.00	15.00	15.00	49.0	
TXF-1	GROUND FL.	TRASH ROOM	300	0.50	SQ-95-BG	1,418	0.07	INLINE	DIRECT	-	1/6	115/1	-	1	-	7.0	18.00	15.00	15.00	49.0	
TEF-1	ROOF	BATHROOMS	600	1.00	SWD-10-VG	1,475	0.17	UTILITY	DIRECT	TH	1/4	115/1	-	1	-	9.6	23.85	18.75	26.63	75.0	
TEF-2	ROOF	BATHROOMS	700	1.00	SWD-10-VG	1,542	0.02	UTILITY	DIRECT	TH	1/4	115/1	-	1	-	10.1	23.85	18.75	26.63	75.0	
LSF-1	CELLAR	LAUNDRY RM.	1,200	0.50	SQ-120-VG	1,361	0.23	INLINE	DIRECT	-	1/4	115/1	-	1	-	8.5	23.00	19.00	15.88	57.0	
LEF-1	CELLAR	LAUNDRY RM.	1,200	0.50	SQ-120-VG	1,361	0.23	INLINE	DIRECT	-	1/4	115/1	-	1	-	8.5	23.00	19.00	15.88	57.0	

EDH-		**ELECTRIC DUCT HEATER**				BASIS OF DESIGN:	MARKEL		
UNIT DESIGN	LOCATION	SERVING	CFM	KW	VOLT/PH	STAGE	DUCT SIZE	MODEL NO.	TYPE
EDH-1	2ND-4TH FL.	LAUNDRY AND STORAGE	1,320	25.0	208/3	2	30x10	HF SERIES	

EH-	**ELECTRIC HEATER SCHEDULE**							BASIS OF DESIGN:	MARKEL		
TAG NO.	**LOCATION**	**MODEL NO.**	**TYPE**	**CAP. (MBH)**	**ELECTRIC DATA**			**DIMENSION**			**REMARKS**
					V/P	**KW**	**MAX FUSE**	**W (IN)**	**D (IN)**	**H (IN)**	
EH-A	ROOF ELV. LOBBY	HF4410T2RP	WALL HEATER	2,560	208/1	0.75	10.0	16 7/8	3 1/2	8	
EH-B	ROOF STAIRWELL	F4420T2RP	WALL HEATER	6,826	208/1	2.00	15.0	16 7/8	3 1/2	8	

1. CABINET FINISH AND COLORS SHALL BE AS PER ARCHITECT.
2. FURNISH UNITS WITH DISCONNECT SWITCH, TRANSFORMER, INTEGRAL THERMOSTAT, CONTACTORS, RELAYS AND ALL REQUIRED CONTROLS
3. ALL ELECTRIC HEATERS SHALL BE THERMOSTATICALLY CONTROLLED AND PROVIDED WITH HIGH-MED-LOW FAN SPEED SWITCH CONTROLS.

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KEY PLAN

REVISIONS

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no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

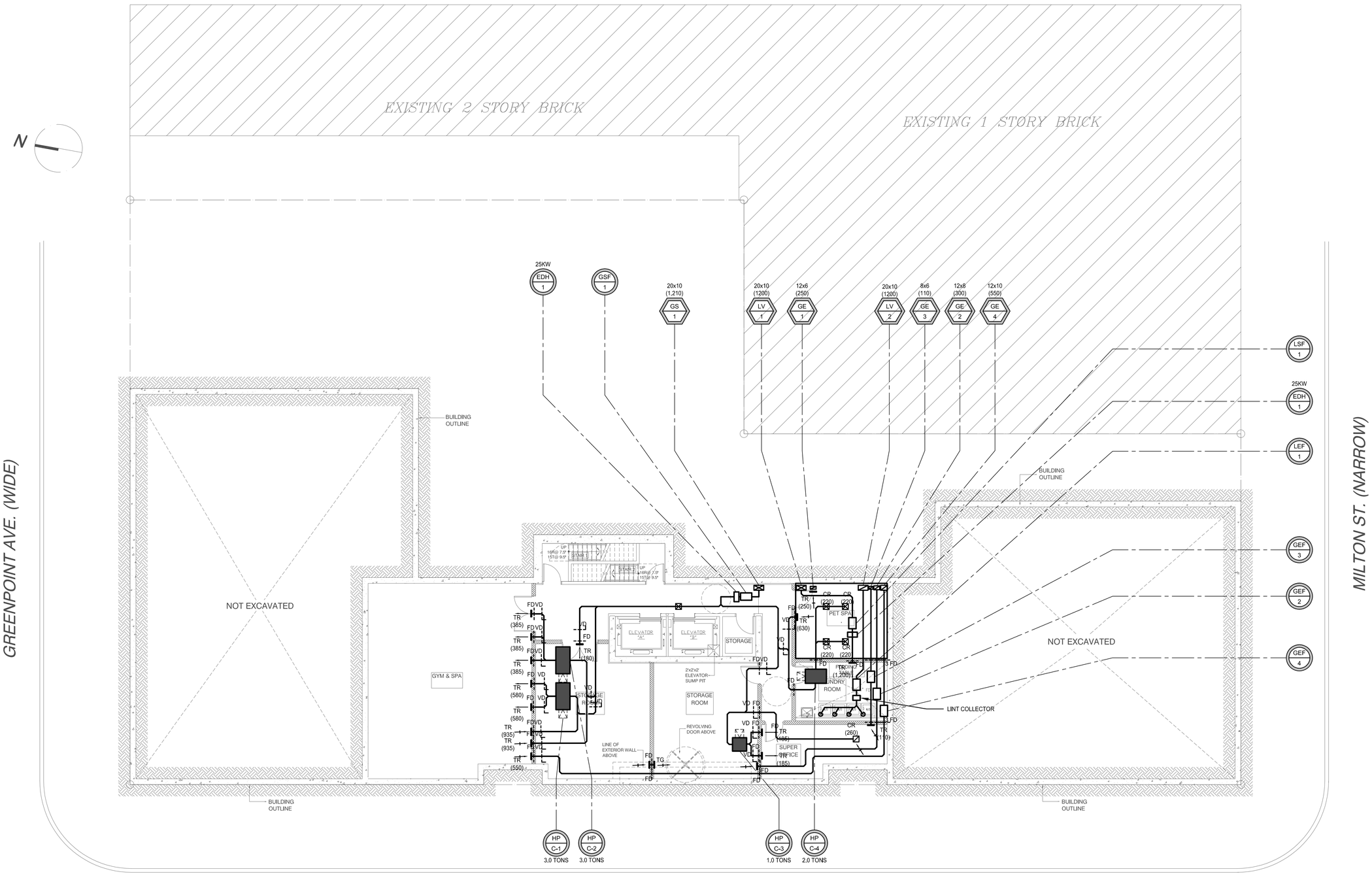
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

021282

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
SCHEDULE II

scale N.T.S	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no.
checked --	M-003.00



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UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
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Phone: 212.244.2410 – 2412 Fax: 212.643.1606

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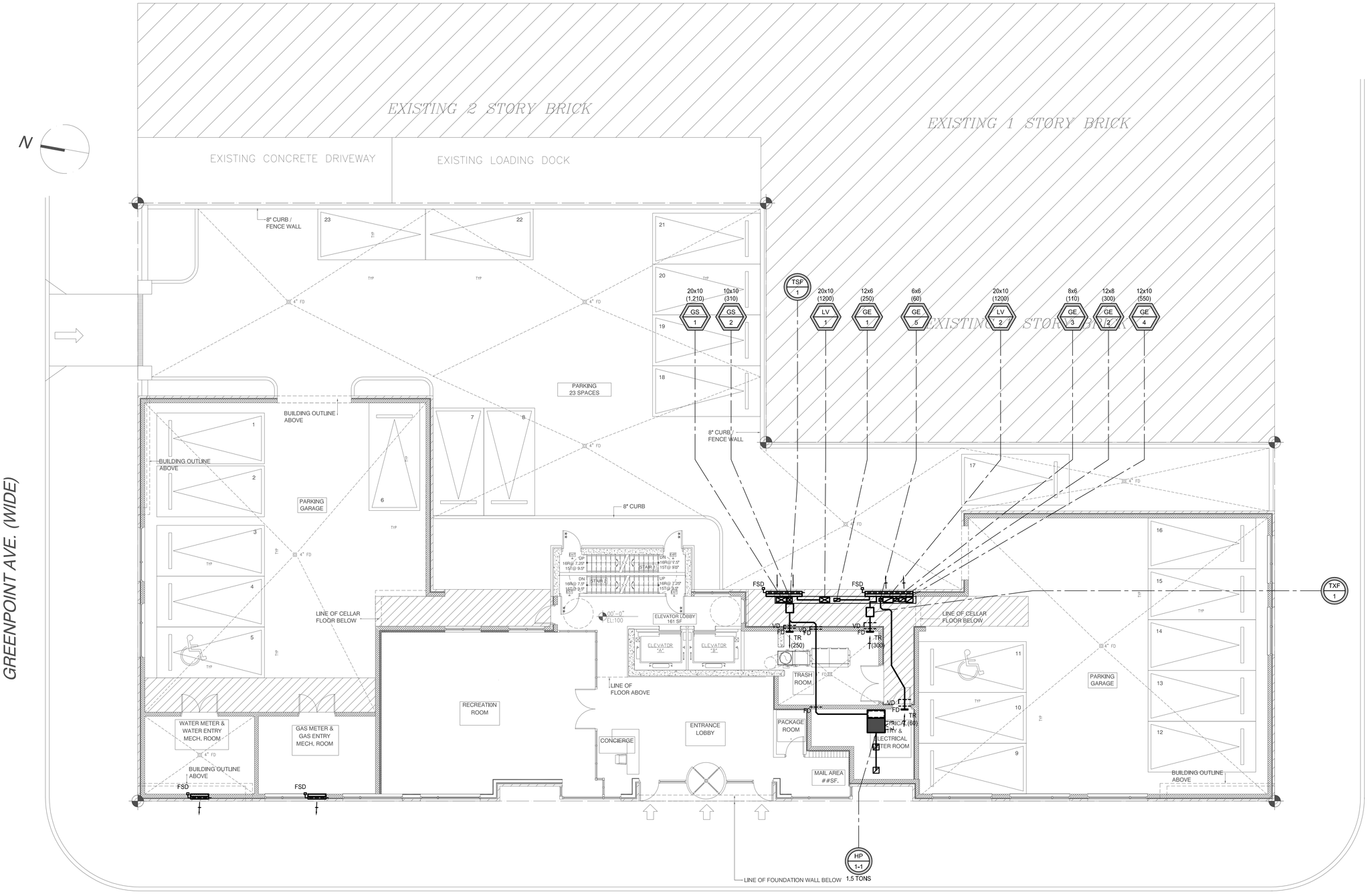
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
CELLAR FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn — —	drawing no. M-100.00
checked — —	



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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

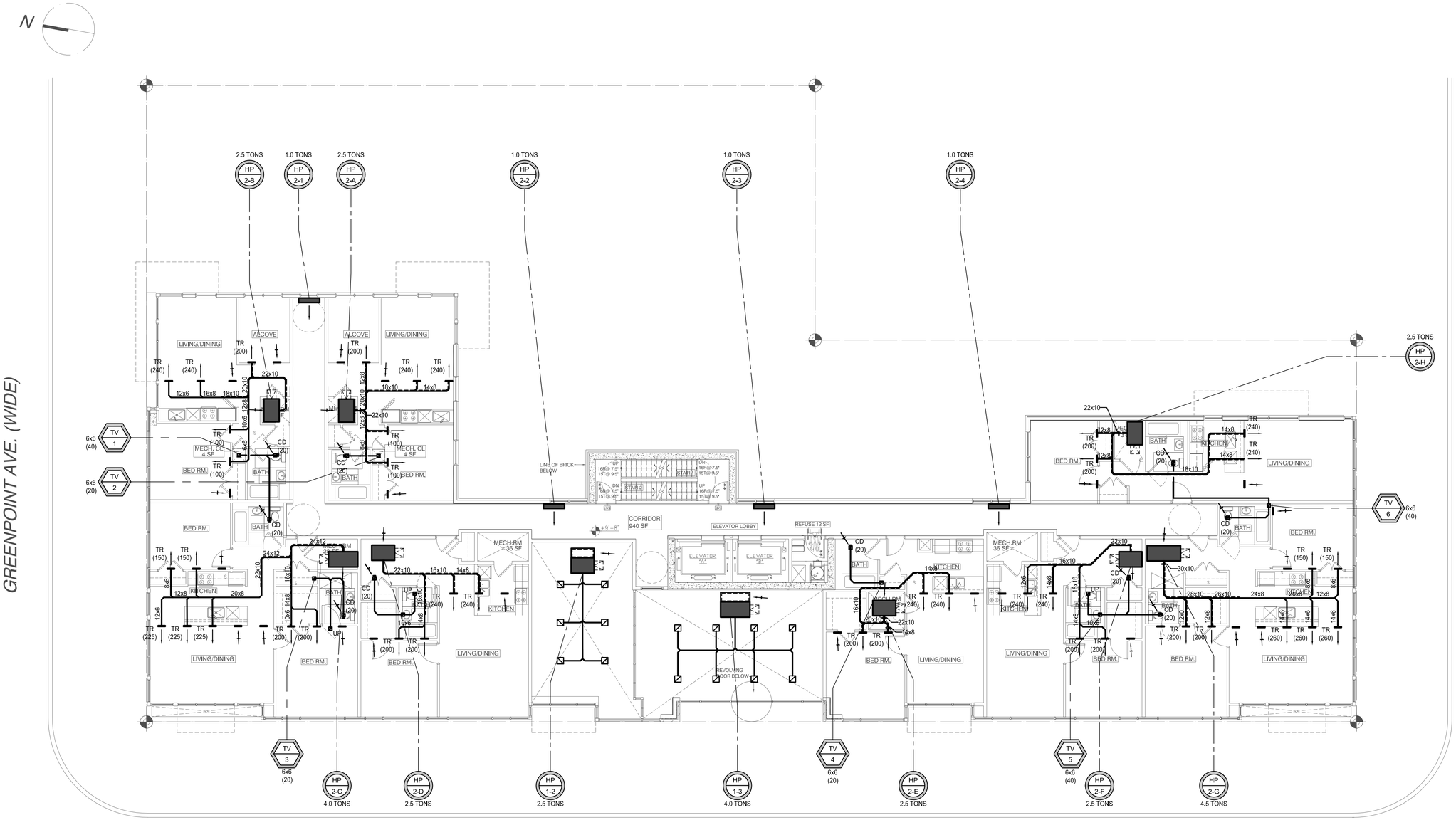
project title

50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title

MECHANICAL
GROUND FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. M-101.00
checked --	



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UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ CAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailinfo@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
2ND FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. M-102.00
checked --	

GREENPOINT AVE. (WIDE)

N

EXISTING 2 STORY BRICK

EXISTING 1 STORY BRICK

2.5 TONS HP 3-B | 1.0 TONS HP 3-2 | 2.5 TONS HP 3-A | 1.0 TONS HP 3-3 | 1.0 TONS HP 3-4 | 1.0 TONS HP 3-5 | 2.5 TONS HP 3-G

HP 3-C1 2.0 TONS | HP 3-C2 2.0 TONS

BALCONY | LIVING/DINING | ALCOVE | BED RM. | BATH | KITCHEN | MECH. CL. 4 SF | MECH. RM. 38 SF | MECH. RM. 73 SF | OPEN TO ABOVE | M. BED RM.

CORRIDOR 972 SF | ELEVATOR LOBBY | ELEVATOR "A" | ELEVATOR "B" | REFUSE 12 SF | STAIR 1 | STAIR 2

RECREATION ROOM (EXERCISE ROOM) ### S.F.

BALCONY 9'-0" x 4'-4" | BALCONY 10'-1" x 4'-2" | BALCONY 10'-1" x 4'-2" | BALCONY 9'-0" x 4'-4"

TV 1 6x6 (60) | TV 2 6x6 (40) | TV 3 6x6 (40) | TV 7 6x6 (40) | TV 8 6x6 (20) | TV 4 6x6 (40) | TV 5 6x6 (80) | TV 6 6x6 (80)

HP 3-D 2.0 TONS | HP 3-1 3.0 TONS | HP 3-E 2.5 TONS | HP 3-F1 2.0 TONS | HP 3-F2 3.0 TONS

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Ettinger Engineering Associates
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Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

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50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title

MECHANICAL
3RD FLOOR PLAN

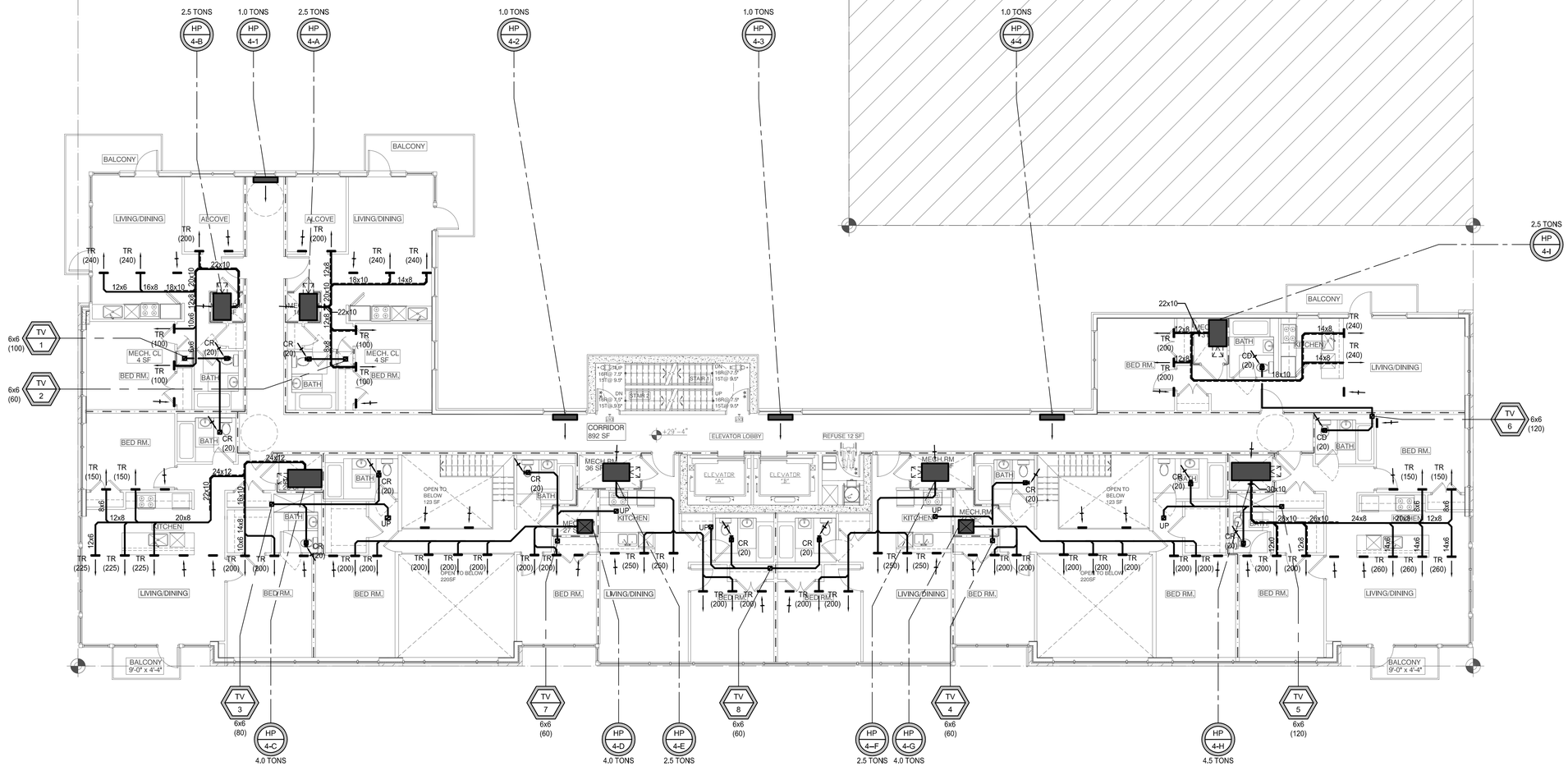
scale 1/8"=1'0"	project no. 1427
date 10/08/2014	revision no. --
drawn --	drawing no. M-103.00
checked --	

GREENPOINT AVE. (WIDE)

N

EXISTING 2 STORY BRICK

EXISTING 1 STORY BRICK



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UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailinfo@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
4TH FLOOR PLAN

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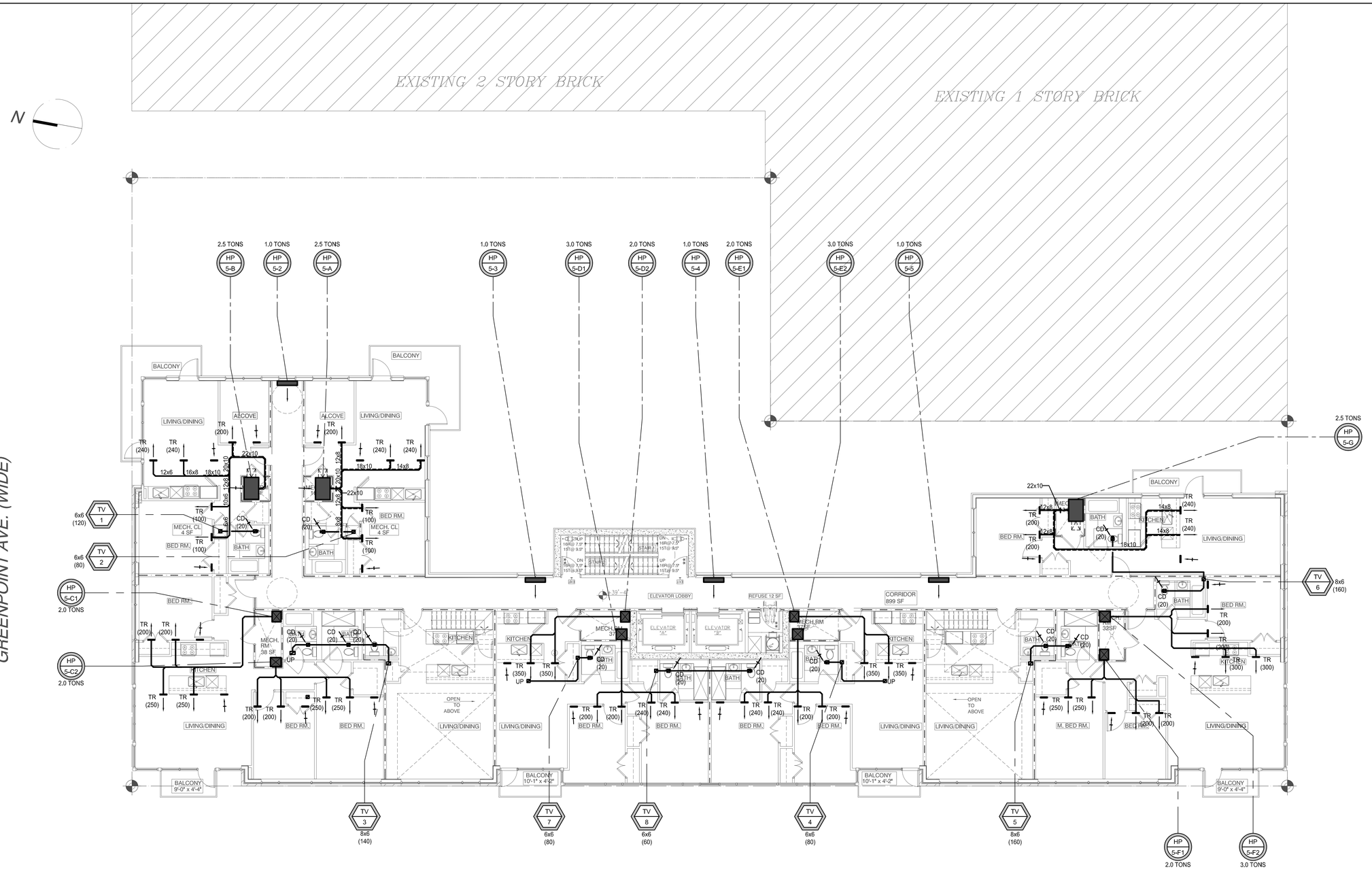

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KEY PLAN

REVISIONS

no.	date	description

no.	date	description

ISSUES

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title

50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title

MECHANICAL
5TH FLOOR PLAN

scale 1/8"=1'0"	project no. 1427
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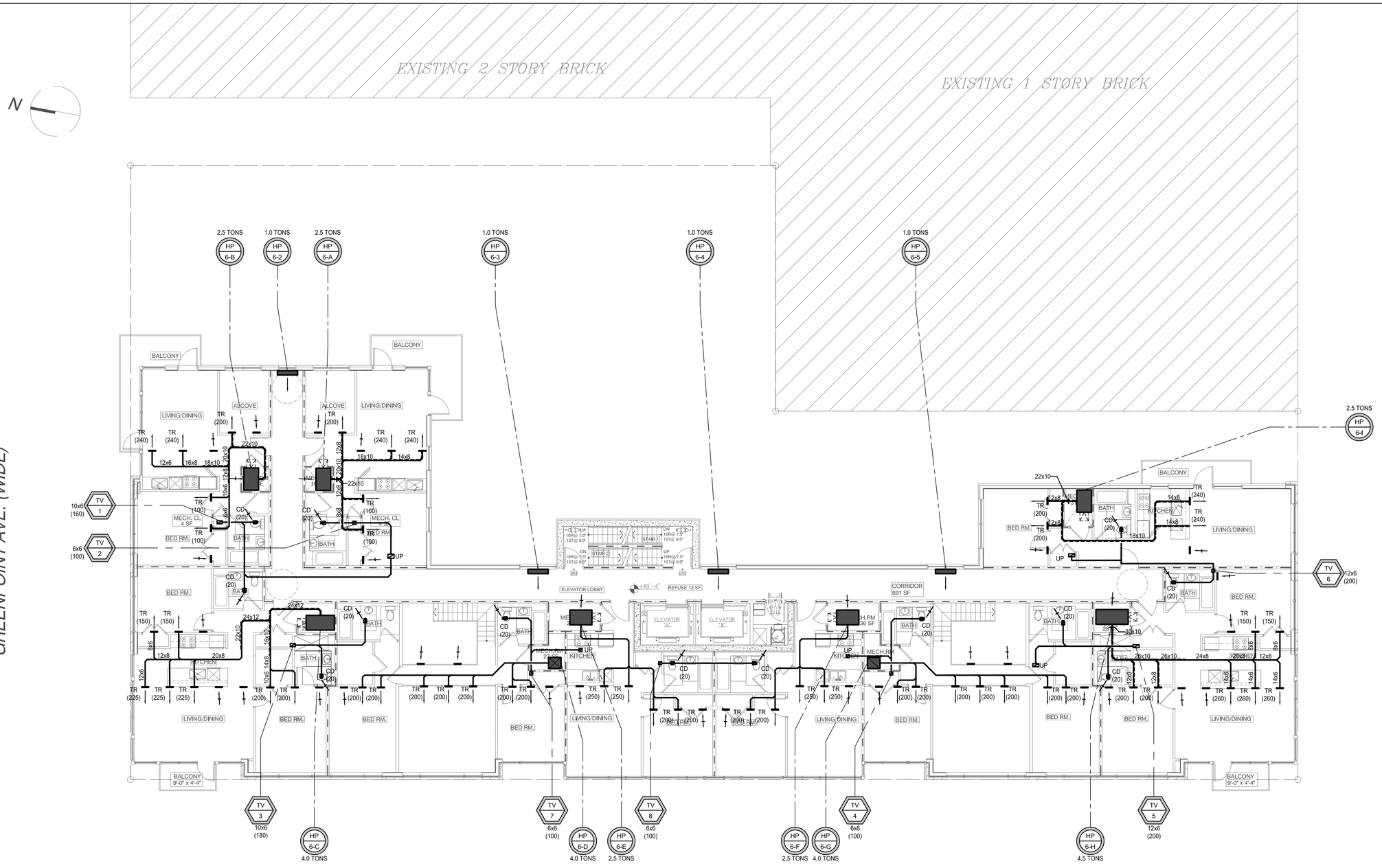

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER
ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkfa@kfarchitect.com

KARL FISCHER
021282

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
6TH FLOOR PLAN

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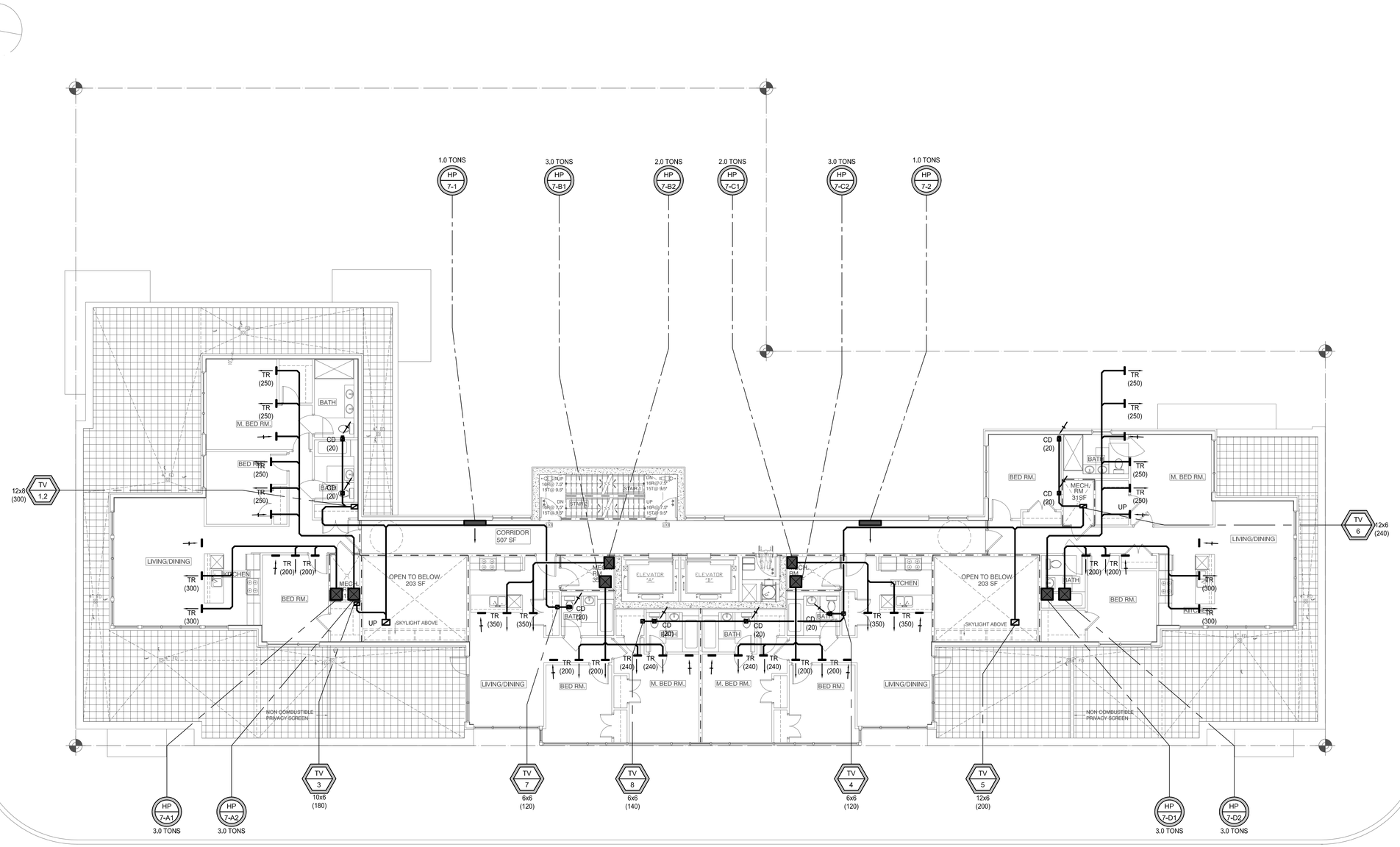

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UNION NJ 07083

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Phone: 212.244.2410 – 2412 Fax: 212.643.1606

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KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
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1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailinfo@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

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50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
MECHANICAL
7TH FLOOR PLAN

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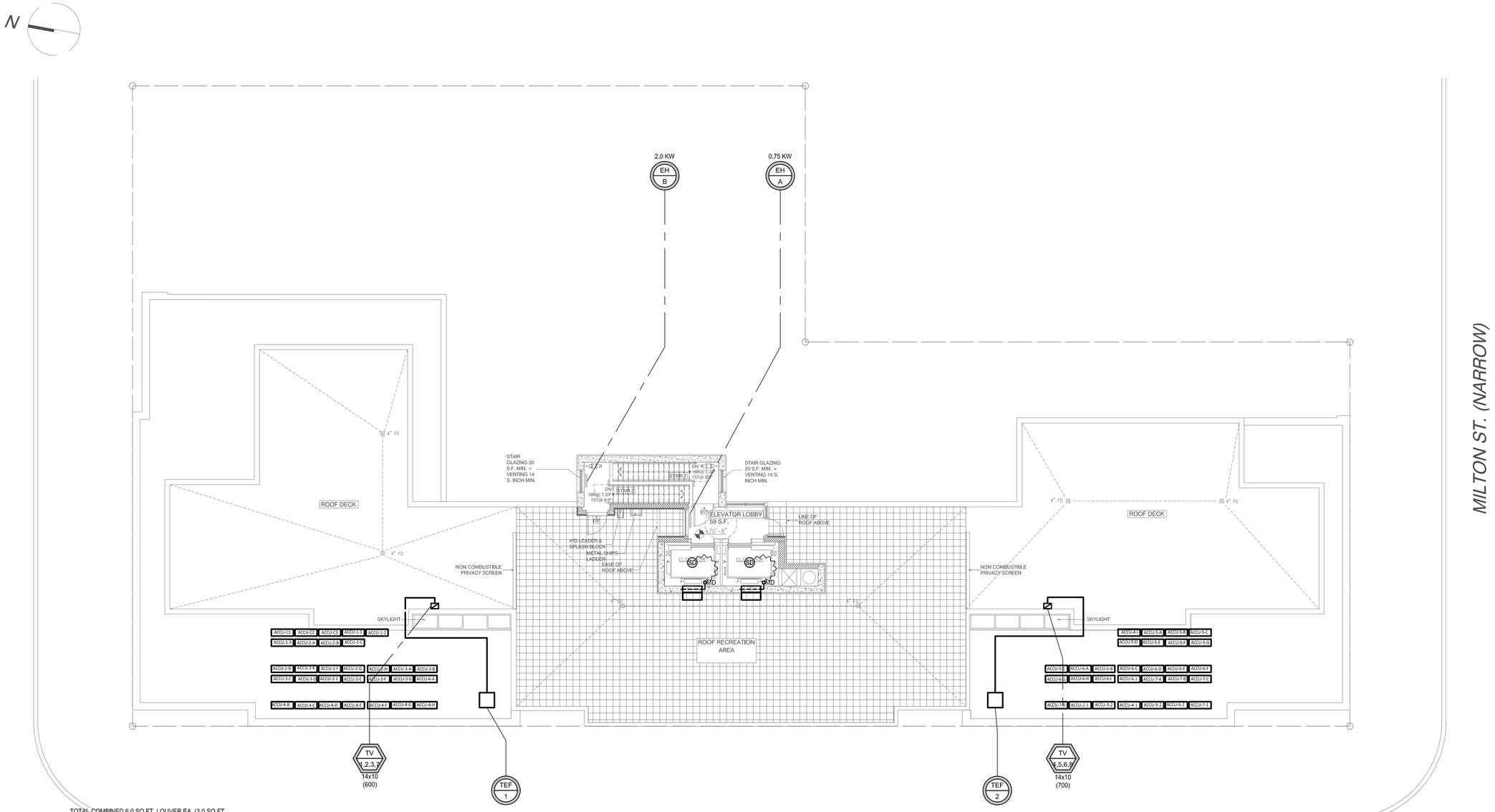

TOTAL COMBINED 6.0 SQ.FT. LOUVER EA. (3.0 SQ.FT. FREE AREA) FOR ELEV. SMOKE VENT. 2.0 SQ.FT. SHALL BE PERMANENTLY OPEN AND 4.0 SQ.FT. SHALL BE SMOKE ALARM OPERATED. LOUVER SHALL BE GREENHECK EDJ-430 OR EQUAL, ALUMINUM AND DRAINABLE. 100% OPEN UPON ACTIVATION OF A SMOKE DETECTOR PLACED AT THE TOP OF HOISTWAY (BELOW THE ELEVATOR MACHINE ROOM)

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ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

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530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

project title

50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title

MECHANICAL
ROOF PLAN

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date 10/08/2014	revision no. --
drawn _ _	drawing no. M-108.00
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PLUMBING SYMBOL LIST

SYMBOL		DESCRIPTION	
S	SOIL OR WASTE PIPING (S) (SAN) (W)	A.B.D.	AUTOMATIC BALL DRIP
	PIPING BELOW GROUND	A.D.	ACCESS DOOR
ST	LEADER (L) (LDR) (ST) (ST-CONTROLLED) (ST-TANK)	A. DR.	AREA DRAIN
	VENT PIPING (V)	B.T.	BATH TUB
	COLD WATER PIPING (CW)	C.F.H.	CUBIC FEET PER HOUR
	HOT WATER PIPING (HW)	C.F.S.	CUBIC FEET PER SECOND
	HOT WATER CIRCULATING PIPING (HWR)	CLG.	CEILING
G	GAS PIPING (COOKING)	C.O.	CLEANOUT
G_H	GAS PIPING (HEATING)	C.O.D.P.	CLEAN OUT DECK PLATE
G_R	GAS PIPING (ROOF TOP UNITS)	C.V.	CHECK VALVE
PD	PUMP DISCHARGE PIPING (P.D.)	DN.	DOWN
FM	FORCED MAIN PIPING (FM.)	EL.	ELEVATION
	BALL VALVE (B.V.)	F.A.I.	FRESH AIR INLET
	GATE VALVE (G.V.)	F.D. FL. DR.	FLOOR DRAIN
	LOCKSHIELD VALVE (GLOBE VALVE)	FL.	FLOOR
	PLUG VALVE	F.U.	FIXTURE UNITS
	CHECK VALVE (C.V.)	FUN. DR.	FUNNEL DRAIN
	HOSE BIBB (H.B.) SILL COCK (S.C.)	GD	GAS(DOMESTIC)
	VACUUM BREAKER (V.B.)	GH	GAS (HEATING)
	PRESSURE RELIEF VALVE PRESS. & TEMP. RELIEF VALVE	GCG	GAS (COGEN)
		INV.	INVERT
	PRESSURE REGULATING VALVE	LAV.	LAVATORY
	STRAINER	MH.	MANHOLE
	"P" TRAP FOR LAV., SINK, ETC.	M.S.	MOP SINK
	CLEANOUT DECK PLATE/ CLEANOUT (C.O.D.P. / CO)	N.I.C.	NOT IN CONTRACT
		O.S.&Y.	OUTSIDE SCREW & YOKE
	SHOCK ABSORBER	P.C.	PLUG COCK
	ANCHOR	P.O.	PLUGGED OUTLET
	GUIDE	R.P.Z.	REDUCED PRESSURE ZONE BACKFLOW PREVENTOR
	PRESSURE GAUGE	R.D.	ROOF DRAIN
	THERMOMETER	R.T.	RUNNING TRAP
		R.C.V.	RISER CONTROL VALVE
	TEMPERATURE REGULATOR	SAN.	SANITARY LINE
	WALL HYDRANT (W.H.)	SH.- SHWR.	SHOWER
		SK.	SINK
	PIPING COVERED WITH ELECTRIC HEAT TRACING CABLE & INSULATION	S.S.	SERVICE SINK
		ST.	STORM LINE
	UNION CONNECTION	T.D.	TERRACE DRAIN
		T.S.	TAMPER SWITCH
	EXPANSION JOINT	V.T.R.	VENT THRU ROOF
	AUTOMATIC AIR VENT VALVE	W.C.	WATER CLOSET
	SHUT-OFF VALVES	C.B.	CATCH BASIN
5"(292)	PIPE SIZE & FU COUNT	L.M	LAUNDRY MATE
	SANITARY PIPING DROP AND RISE ONLY	TRD	TRENCH DRAIN
	DOMESTIC SUPPLY PIPING DROP AND RISE ONLY		
	DOMESTIC SUPPLY PIPING UP AND DOWN (UNLESS OTHERWISE NOTED)		
	SANITARY PIPING UP AND DOWN (UNLESS OTHERWISE NOTED)		
	SANITARY TRAP		
	CHECK VALVE		
	ANCHOR IN VERTICAL PIPE		

STACK & RISER SYMBOLS

SP 1	SOIL WASTE & VENT STACKS & WATER RISERS
SP 1	STORM LEADER
SP 1	GAS RISER
	CONTROLED FLOW ROOF DRAIN

NOTE: THE KEY OF SYMBOLS INDICATED IS FOR CONVENIENCE ONLY AND ITEMS INDICATED ARE NOT NECESSARILY WITHIN THE SCOPE OF THE WORK.

FIXTURE CONNECTION SCHEDULE

FIXTURE	ABBREV.	SYMBOL	SOIL / WASTE	INDIRECT WASTE	VENT	COLD WATER	HOT WATER	REMARKS
WATER CLOSET	W.C.		4"	-	2"	1/2"	-	FLUSH TANK BACK OUTLET
LAVATORY	LAV.		1-1/2"	-	1-1/2"	1/2"	1/2"	COUNTER TOP
BATH TUB	TUB		2"	-	1-1/2"	1/2"	1/2"	ENAMELED STEEL
KITCHEN SINK	S.K.		2"	-	1-1/2"	1/2"	1/2"	STAINLESS STEEL
DISHWASHER	D.W.		-	1-1/2"	-	-	1/2"	PROVIDE DISHWASHER FITTING
LAUNDRY SINK	L.T.		2"	-	1-1/2"	1/2"	1/2"	ENAMEL CAST IRON
WASHING MACHINE	W.M.		-	2"	-	3/4"	3/4"	CONNECT TO LAUNDRYMATE FITTING
MOP SINK	M.R.		3"	-	1-1/2"	1/2"	1/2"	MOLDED STONE
WATER CLOSET	W.C.		4"	-	2"	1 1/4"	-	FLUSH VALVE WALL HUNG
SIDE OUTLET SHOWER	S.H		2"	-	1 1/2"	1/2"	1/2"	SIDE OUTLET
SHOWER	S.H		2"	-	1 1/2"	1/2"	1/2"	CENTER OUTLET
WASHER / DRYER	W/D		2"	-	1 1/2"	3/4"	3/4"	

PLUMBING BUILDING DEPARTMENT NOTES

1. ALL WORK WILL CONFORM TO THE NEW YORK CITY PLUMBING CODE 2008 EDITION.
2. ALL PIPING PASSING THROUGH OR UNDER WALLS OR FOOTINGS SHALL BE PROTECTED FROM BREAKAGE AND CORROSION - CHAPTER 3, PC 305.5.
3. TRENCHING, EXCAVATION AND BACKFILLING - CHAPTER 3, PC 300.
4. ALL SLEEVES SHALL BE AS PER CHAPTER 3, PC 305.5.
5. RODENTPROOFING SHALL BE AS PER CHAPTER 3, PC 304, AND APPENDIX F.
6. TOILET FACILITIES FOR WORKMAN SHALL BE AS PER CHAPTER 3, PC 311.
7. MATERIALS FOR PLUMBING SHALL CONFORM TO TABLES 702.1, 702.2, 702.3 AND 702. SHALL BE IDENTIFIED AS PER PC 702.
8. PIPING SYSTEMS MATERIALS SHALL BE AS PER PC 702.
9. MINIMUMUM NUMBER OF PLUMBING FIXTURES WILL COMPLY WITH P403 TABLE 403.1.
10. FLUSHING DEVICES FOR WATER CLOSETS SHALL BE AS PER PC 425.1 THROUGH PC 425.3.2. SECTION PC 420 AS PER WATER CLOSET.
11. SIZE OF WASTE OUTLETS FOR PLUMBING FIXTURES:

WATER CLOSET	AS PER	SECTION PC 420
LAVATORY	AS PER	SECTION PC 416
BATHTUB	AS PER	SECTION PC 407
SINK	AS PER	SECTION PC 418
DISHWASHER	AS PER	SECTION PC 409
AUTOMATIC CLOTHES WASHER	AS PER	SECTION PC 406
LAUNDRY TRAY	AS PER	SECTION PC 415
FLOOR DRAIN	AS PER	SECTION PC 412

12. TRAP AND CLEANOUTS WILL BE PROVIDED AS PER CHAPTER 10 & PC 708.
13. BUILDING HOUSE TRAP SHALL BE AS PER CHAPTER 10, PC 1002.2.
14. DRAINAGE PIPE CLEANOUTS SHALL BE AS PER PC 708.
15. HANGERS AND PIPING SUPPORTS SHALL BE AS PER CHAPTER 3, PC 308.
16. WATER SUPPLY AND DISTRIBUTION SHALL BE AS PER CHAPTER 6.
17. WATER SUPPLY DISTRIBUTION SYSTEM SHALL BE AS PER CHAPTER 6, PC 604 WITH MINIMUM RATE OF FLOW AND PRESSURE AS PER TABLE 604.3, AND 604.4.
18. HOUSE AND BOOSTER PUMPS SHALL BE AS PER CHAPTER 6.
19. WATER SUPPLY WILL BE PROTECTED AGAINST BACKFLOW AND BACKSIPHONAGE AS PER CHAPTER 6.
20. SANITARY DRAINAGE PIPING WILL CONFORM TO PC 701.
21. SIZING OF THE SANITARY DRAINAGE PIPING SHALL BE AS PER CHAPTER 7, PC 710.
22. VENT PIPING SHALL CONFORM TO CHAPTER 9.
23. STORM DRAINAGE PIPING SHALL BE AS PER CHAPTER 11.
24. ALL GAS PIPING SHALL BE AS PER CHAPTER 4 OF THE NYC FUEL GAS CODE 2008.
25. PROVIDE STERILIZATION OF DOMESTIC WATER AS PER CHAPTER 6, PC 610.

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

PLUMBING GENERAL NOTES

1. THE CONTRACTOR FOR THIS WORK SHALL CAREFULLY INSPECT AND ACQUAINT THEMSELVES WITH EXISTING CONDITIONS IN ORDER THAT HE FULLY UNDERSTANDS THE WORK REQUIRED. HE SHALL FIELD MEASURE AND VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE PROCEEDING WITH THE WORK.
2. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS OF EXISTING SERVICES AND UTILITIES BEFORE STARTING ANY WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT AND ENGINEER FOR RESOLUTION.
3. PIPING LAYOUTS ARE DIAGRAMMATIC AND INTENDED TO SHOW GENERAL ARRANGEMENT, SIZE, AND CAPACITY. ALL OFFSETS ARE NOT NECESSARILY SHOWN. THE PLUMBING CONTRACTOR SHALL ARRANGE AND COORDINATE THE WORK, FURNISH NECESSARY OFFSETS, VALVES, VENTS, AND FITTINGS TO AVOID CONFLICTS, WITH OTHER MECHANICAL AND ELECTRICAL SERVICES AND WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS.
4. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AND/OR REMOVAL OF CEILING TILES IN ALL EXISTING AREAS AS REQUIRED UNDER THIS CONTRACT. PATCH ALL WALL AND/OR FLOOR OPENINGS AS NECESSARY, REPLACE ANY DAMAGED CEILING TILES, PAINT WALLS AND CEILINGS TO MATCH EXISTING CONDITIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF DEBRIS GENERATED BY THIS WORK AND WORKERS AT THE END OF EACH WORKING DAY, FOR GENERAL GOOD HOUSEKEEPING BY HIS WORKERS, AND SHALL SUPPLY DEBRIS CONTAINER(S) DUMPSTER(S) AS REQUIRED.
6. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE WALLS AND WALLS WHICH REQUIRE SEALING. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL FLOOR AND WALL PENETRATIONS WITH FIRE RATED SEALANT BEFORE FINAL PAYMENT.
7. THE CONTRACTOR SHALL REPLACE ANY PIPING SYSTEM AND COMPONENTS WHICH DO NOT PASS TESTING PROCEDURES SPECIFIED AND RETEST REPAIRED PORTIONS OF THE SYSTEM.
8. THE CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO AL PLUMBING EQUIPMENT, EQUIPMENT SUPPLIED BY OTHERS, INCLUDING REQUIRED FAUCETS, STOPS, VALVES, FITTINGS, TRAPS, ETC.
9. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL INDIRECT WASTE PIPING.
10. THE CONTRACTOR SHALL RUN ALL PIPING TO AVOID REINFORCING AND/OR FOOTINGS AT ALL COLUMN LINES.
11. DOMESTIC COLD WATER, HOT WATER & CIRCULATION HOT WATER PIPE WILL BE INSULATED.

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
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REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

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50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
LEAD SHEET

scale N.T.S	project no. 1427
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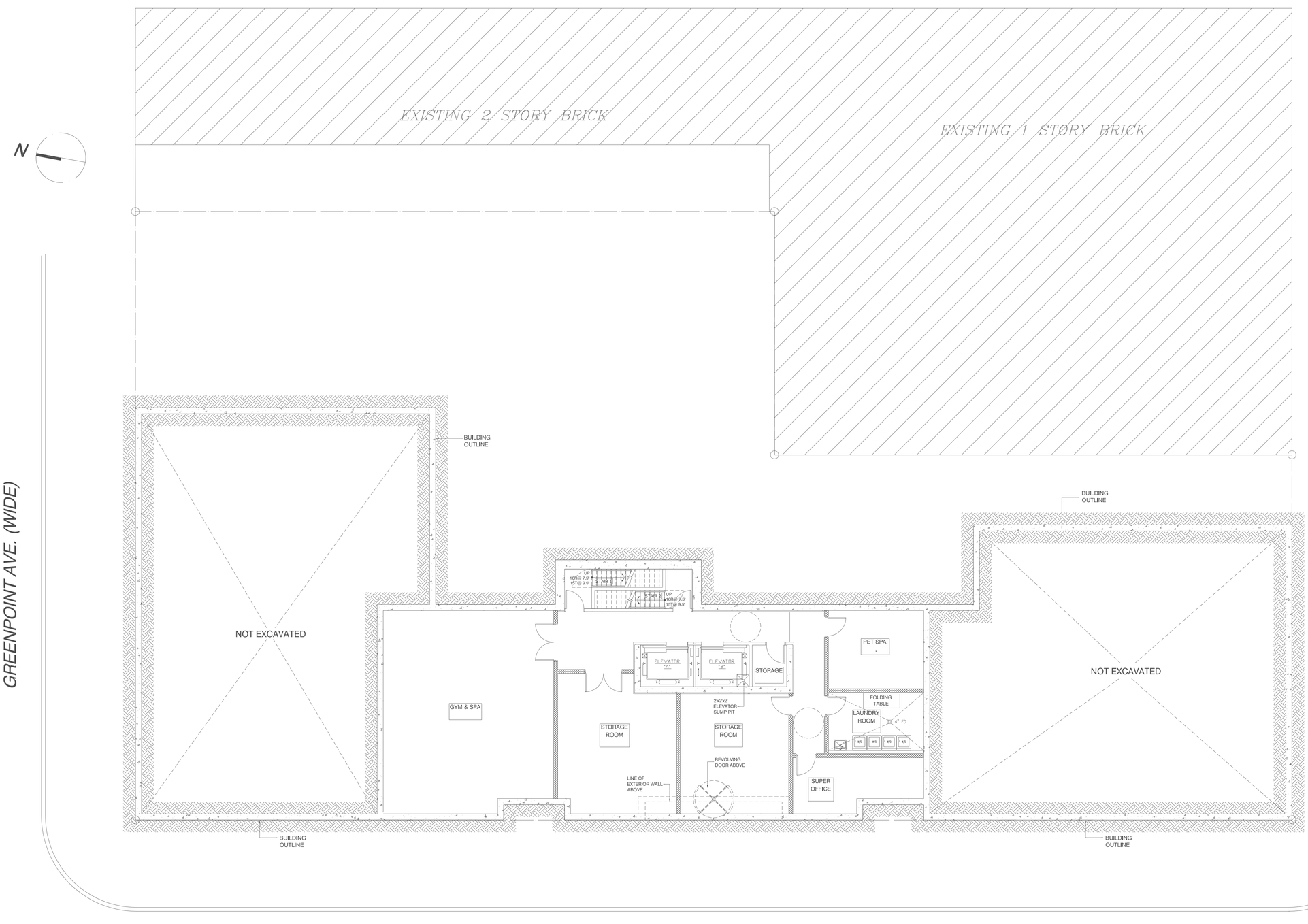

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PLUMBING
UNDERGROUND PLAN

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GREENPOINT AVE. (WIDE)

MILTON ST. (NARROW)

WEST ST. (NARROW)

N

EXISTING 2 STORY BRICK

EXISTING 1 STORY BRICK

DRYWELL

DRYWELL

DRYWELL

BUILDING OUTLINE

P 22 | P 21 | P 20

P 19 | P 18 | P 17 | P 16 | P 2 | P 1

DN.

L 8 | L 7 | L 1

DN.

4"SAN UP TO FD

4"

CODP

NOT EXCAVATED

4"SAN UP TO FD

4"

4"SAN UP TO FD

4"

CODP

BUILDING OUTLINE

GYM & SPA

UP 16R@ 7.5" 15T@ 9.5"

STAIR 1

STAIR 3

UP 16R@ 7.5" 15T@ 9.5"

ELEVATOR "A"

ELEVATOR "B"

STORAGE

2'x2'x2'(H) ELEVATOR SUMP PUMP

6PPD

ELEVATOR SUMP PIT

2" SUMP PUMP DISCHARGE

1 1/2"

INSTANT ELECTRIC HOT WATER HEATER

MECHANICAL ROOM

STORAGE ROOM

REVOLVING DOOR ABOVE

LINE OF EXTERIOR WALL ABOVE

PET SPA

FOLDING TABLE

LAUNDRY ROOM

4"FD

3"V

3"V UP

SUPER OFFICE

2"

CODP

6" STORM WATER TRAP

8" SANITARY HOUSE TRAP

4"FAI UP

DUPLEX SEWAGE EJECTOR IN 42"x42"x72" DEEP PIT

8" COMBINED SERVICE

L 2 | L 3 | L 4 | L 5 | L 6

BUILDING OUTLINE

DN.

P 3 | P 4 | P 5 | P 6 | P 7

P 8 | P 9 | P 10 | P 11 | P 12

P 13 | P 14 | P 15

4"FD

CODP

4"

NOT EXCAVATED

BUILDING OUTLINE

6" DCDA DEVICE W/BYPASS METER

3/4" CW & HW HB

3/4" HOSE BIBB W-VB

INSTANT ELECTRIC DOMESTIC HOT WATER HEATER

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OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
CELLAR FLOOR PLAN

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date 10/08/2014	revision no. --
drawn --	drawing no. P-101.00
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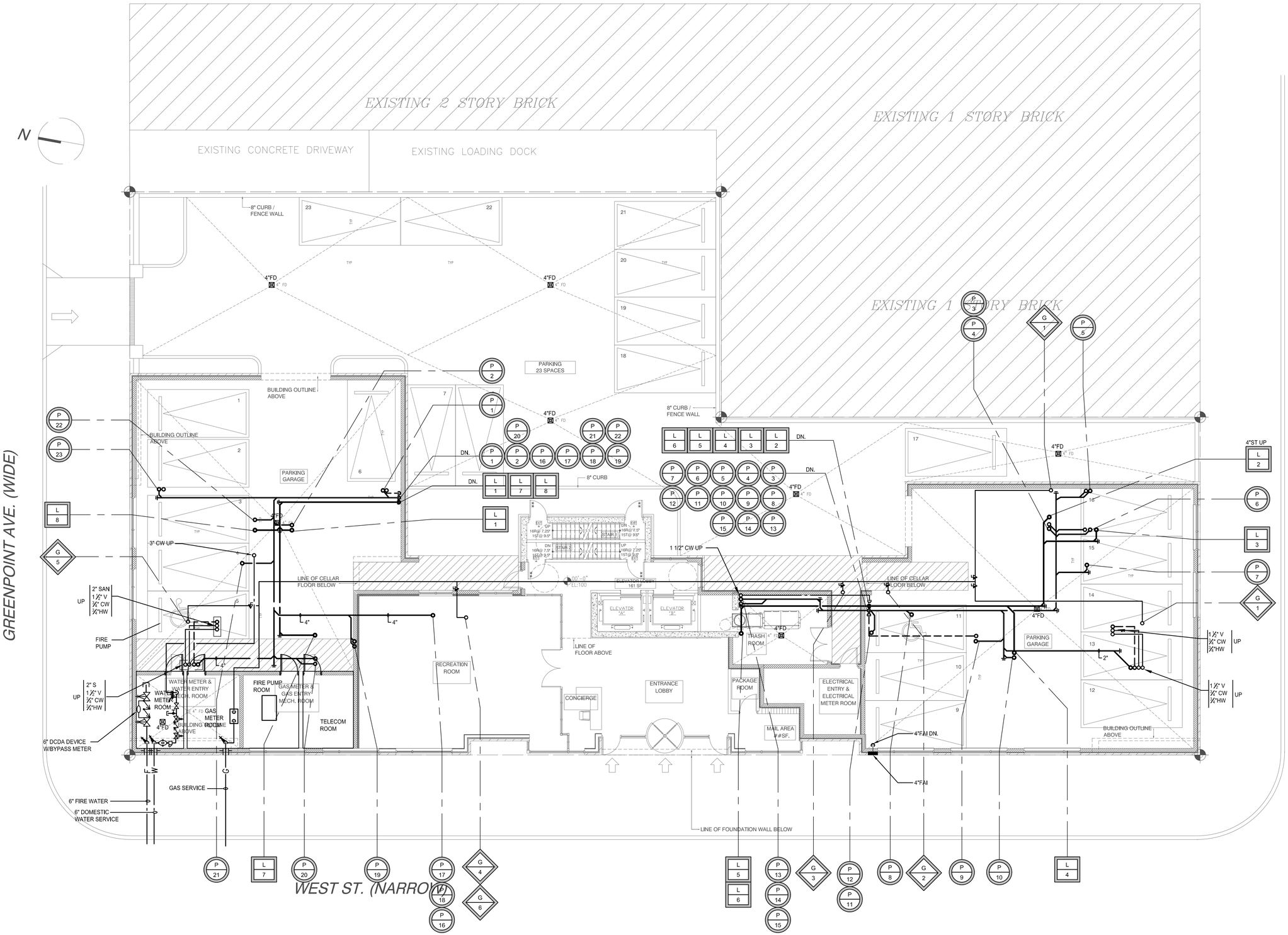

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KEY PLAN

REVISIONS

no.	date	description

ISSUES

no.	date	description

STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
QAIC QAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

project title

50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title

PLUMBING
GROUND FLOOR PLAN

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date 10/08/2014	revision no. --
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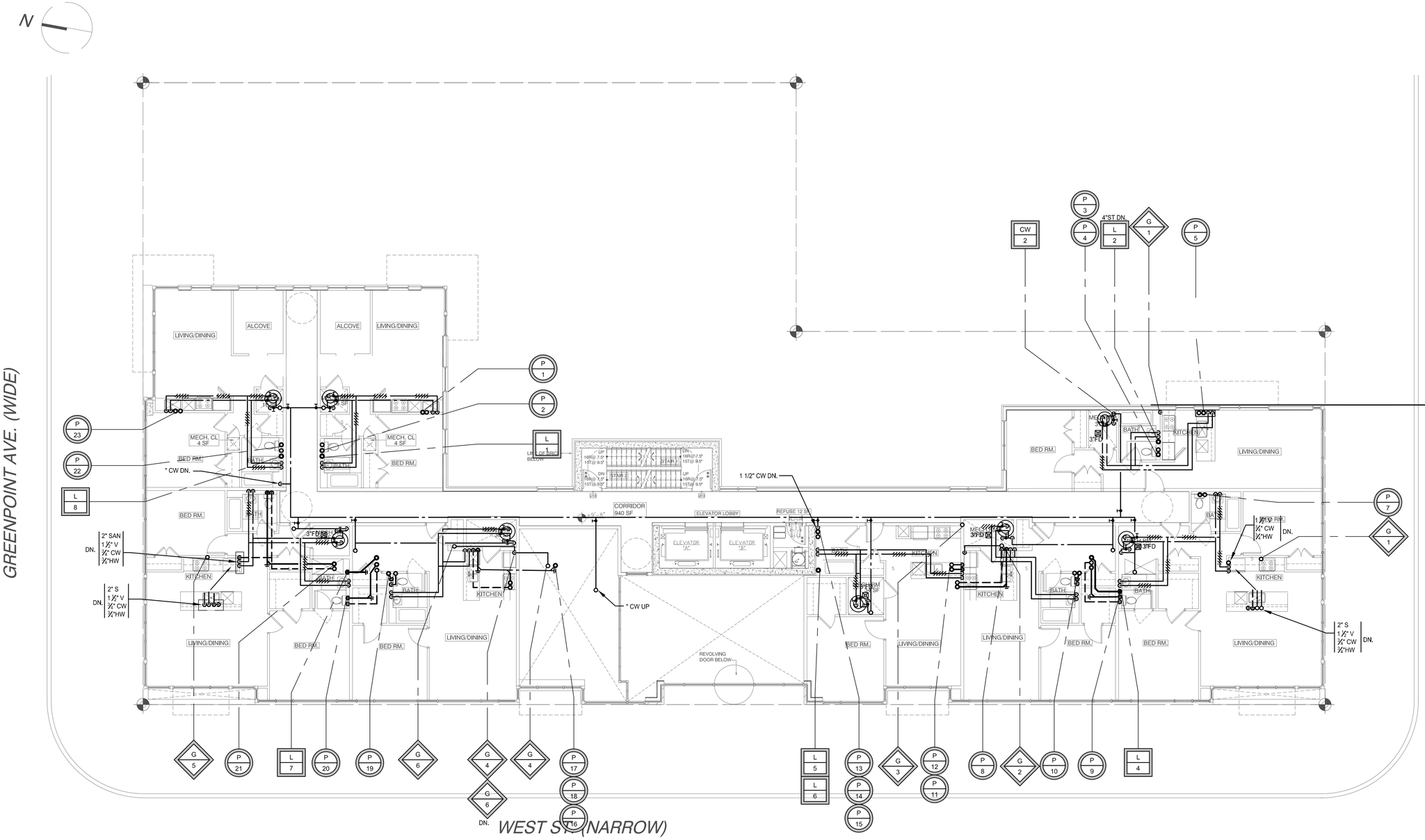

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
2ND FLOOR PLAN

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date 10/08/2014	revision no. --
drawn __	drawing no. P-103.00
checked __	

GREENPOINT AVE. (WIDE)

N

EXISTING 2 STORY BRICK

EXISTING 1 STORY BRICK

BALCONY
LIVING/DINING
ALCOVE
BED RM.
MECH. CL 4 SF
BATH
KITCHEN
CORRIDOR 972 SF
ELEVATOR LOBBY
REFUSE 12 SF
ELEVATOR "A"
ELEVATOR "B"
STAIR 1
STAIR 2
RECREATION ROOM / (EXERCISE ROOM) ### S.F.
OPEN TO ABOVE
M. BED RM.
MECH. 30 SF
BALCONY 9'-0" x 4'-4"
BALCONY 10'-1" x 4'-2"

"CW UP
"HW UP
"CW
"HW
4"ST DN.
3"FD
6"FD
DN.
2" SAN
1½" V
¾" CW
¾"HW
2" S
1½" V
¾" CW
¾"HW

P 1, P 2, P 3, P 4, P 5, P 7, P 8, P 9, P 10, P 11, P 12, P 13, P 14, P 15, P 16, P 17, P 18, P 19, P 20, P 21, P 22, P 23
L 1, L 2, L 4, L 5, L 6, L 7, L 8
G 1, G 2, G 3, G 4, G 5, G 6
CW 2

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UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

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OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
3RD FLOOR PLAN

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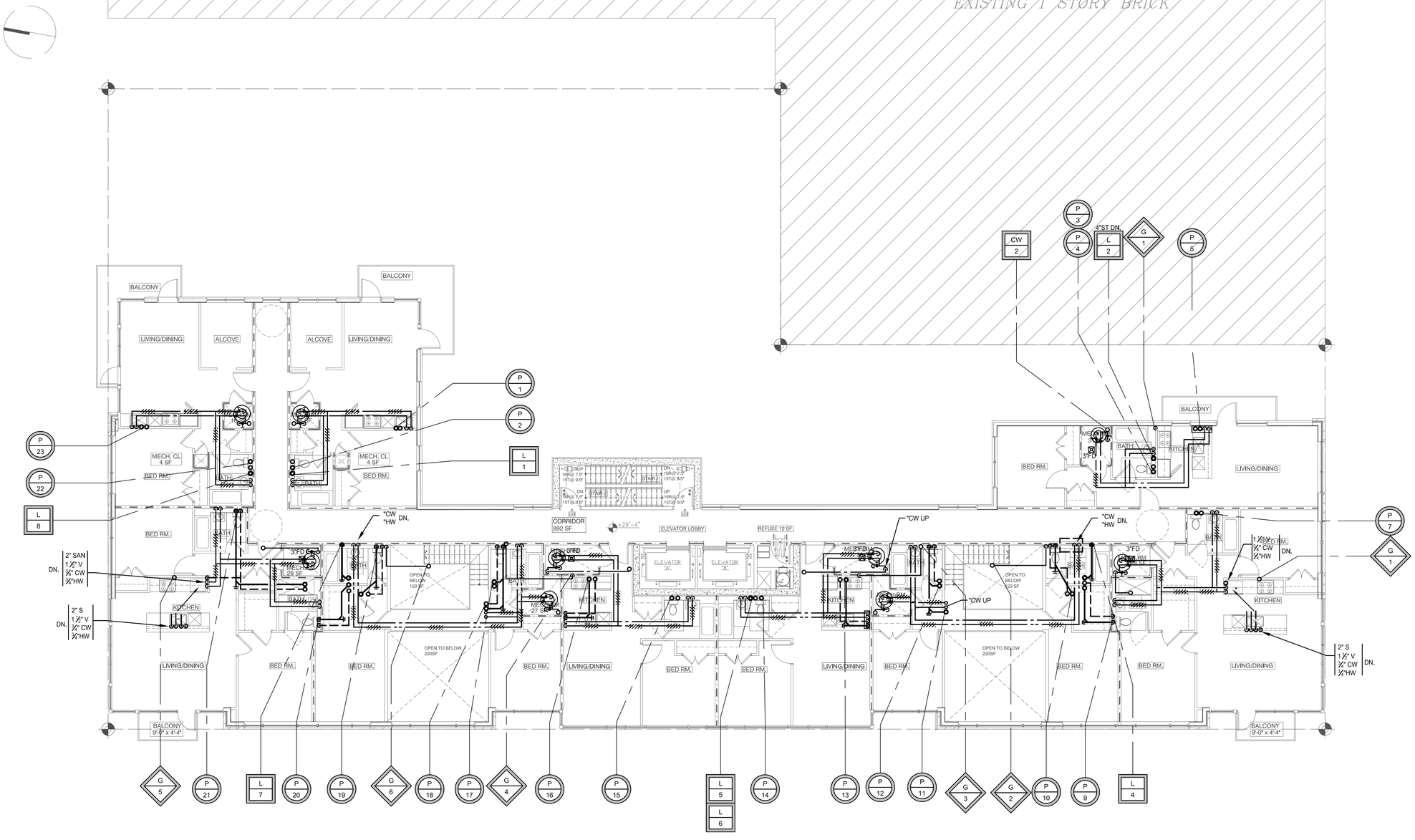
date 10/08/2014	revision no. --
drawn --	drawing no. P-104.00
checked --	

GREENPOINT AVE. (WIDE)

N

EXISTING 2 STORY BRICK

EXISTING 1 STORY BRICK



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no.	date	description

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
4TH FLOOR PLAN

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date 10/08/2014	revision no. --
drawn __	drawing no. P-105.00
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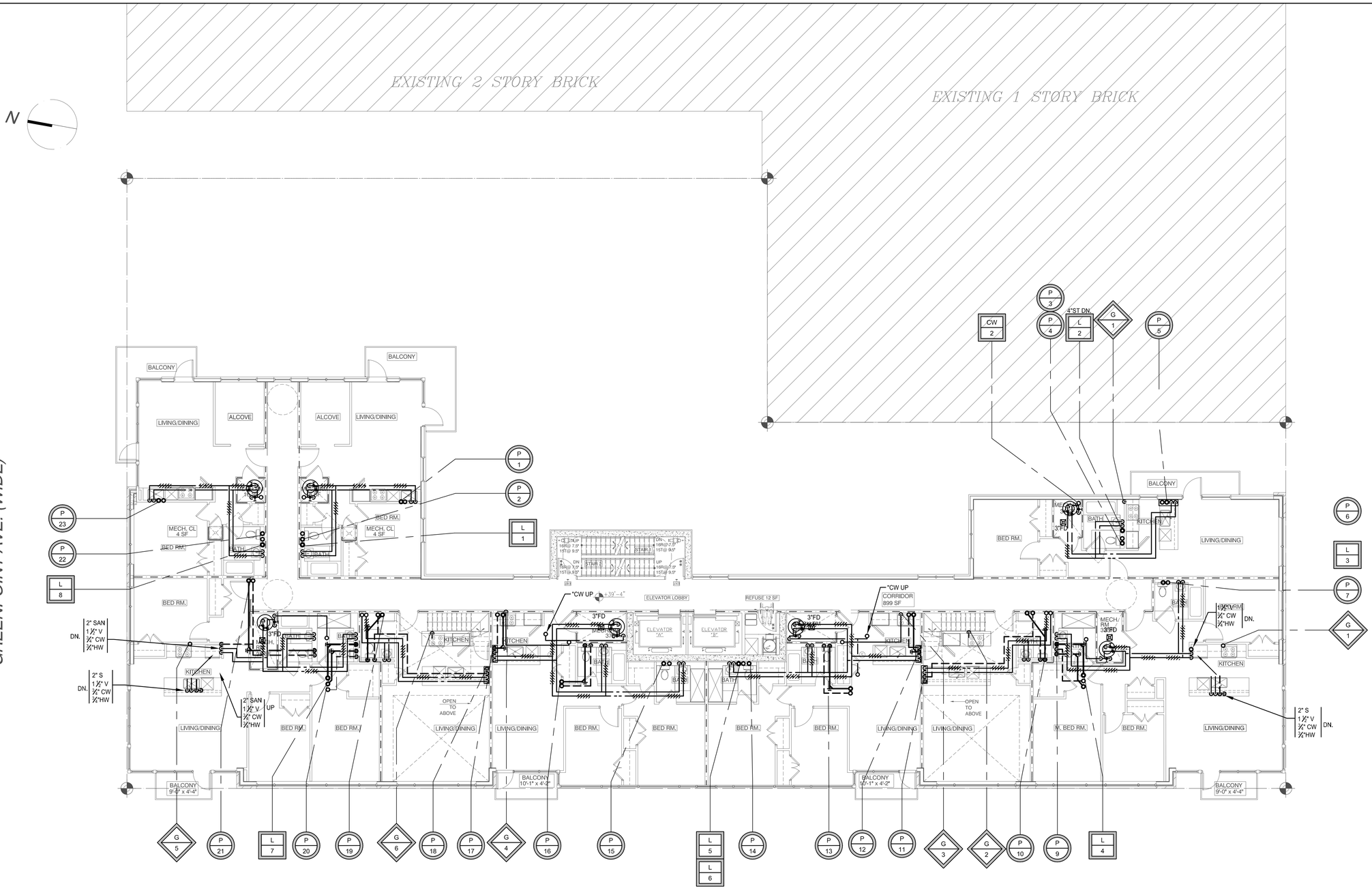

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
5TH FLOOR PLAN

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drawn --	drawing no. P-106.00
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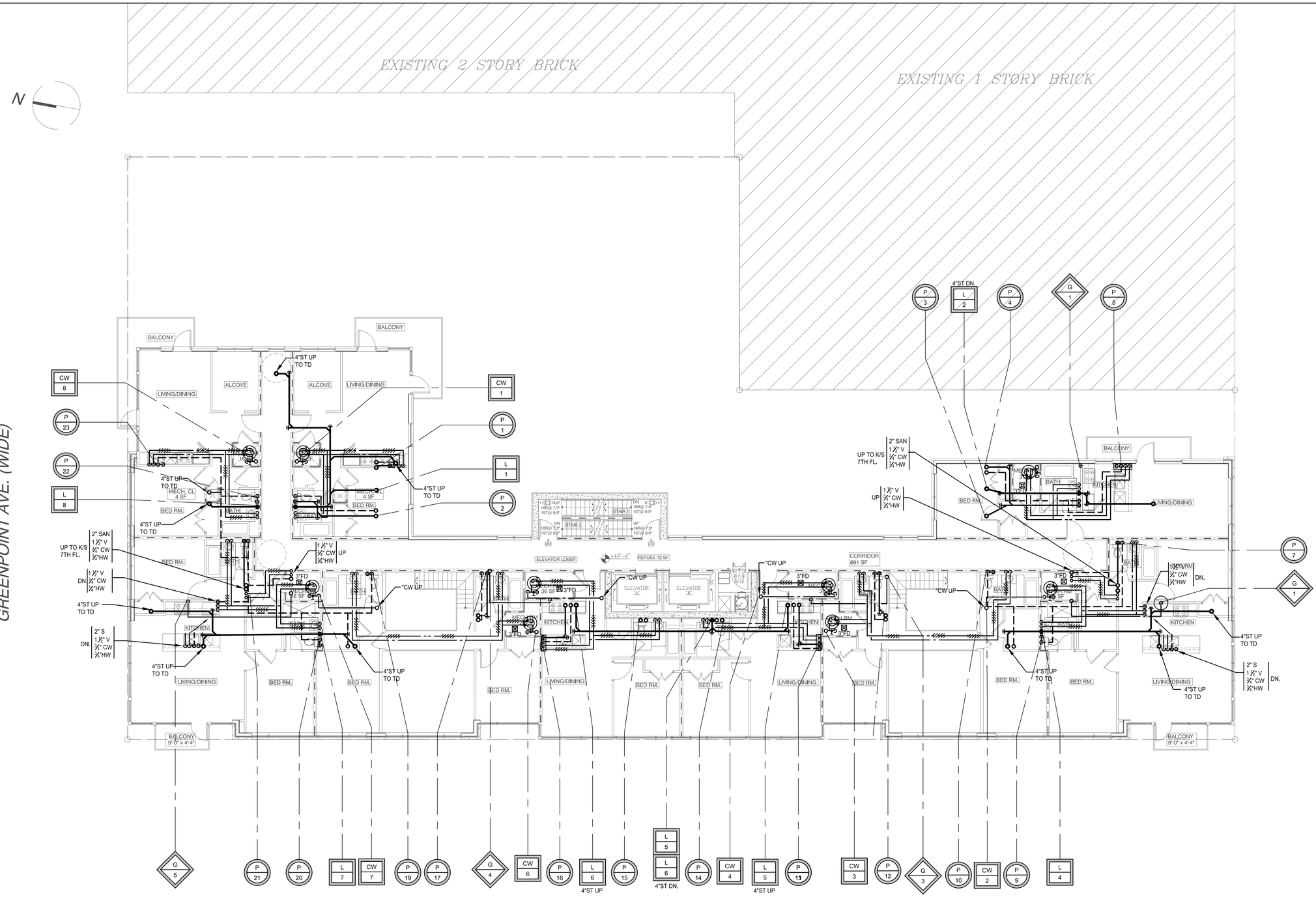

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
6TH FLOOR PLAN

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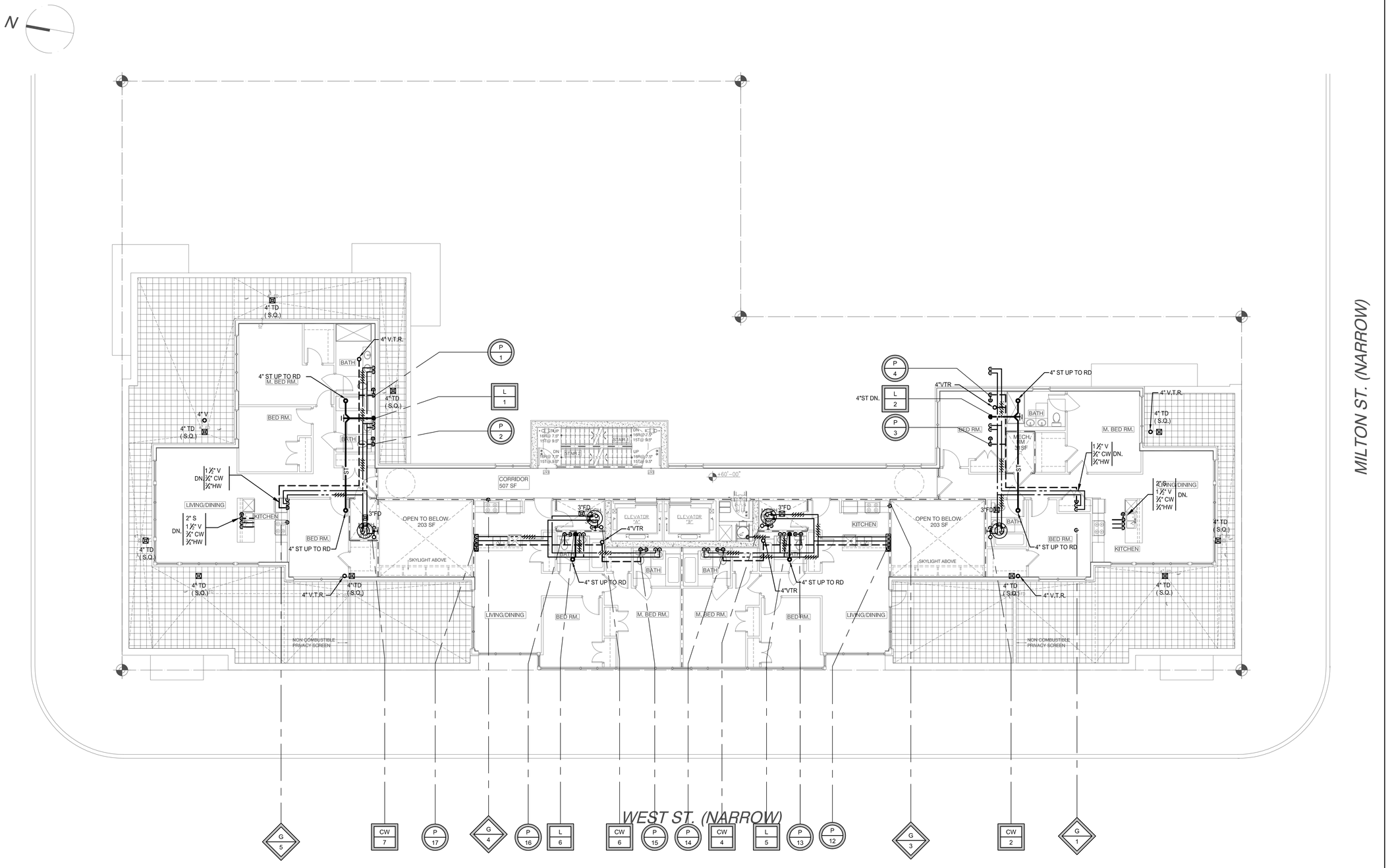

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ISSUES

no.	date	description

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
7TH FLOOR PLAN

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date 10/08/2014	revision no. --
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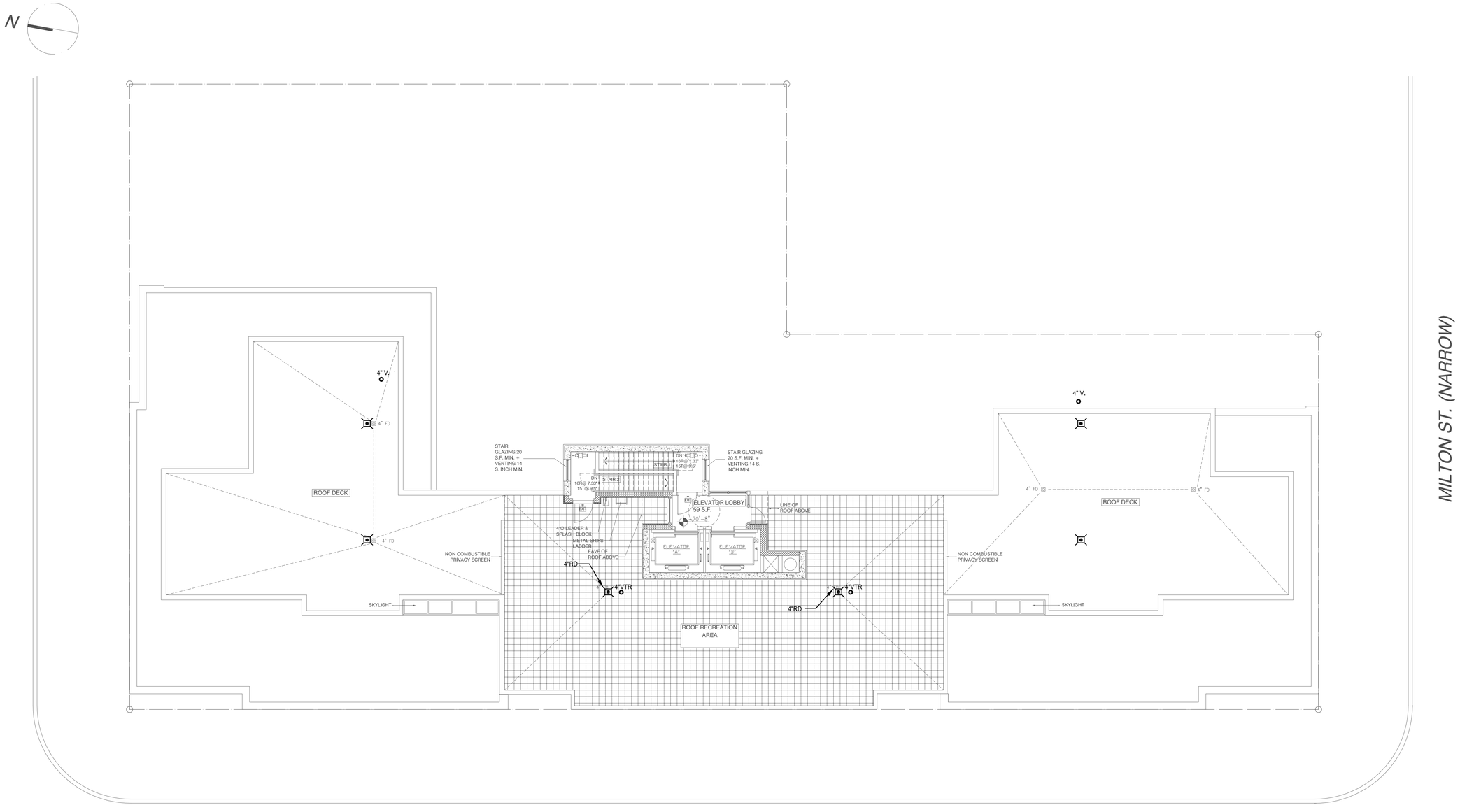

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no.	date	description

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TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PLUMBING
7TH FLOOR PLAN

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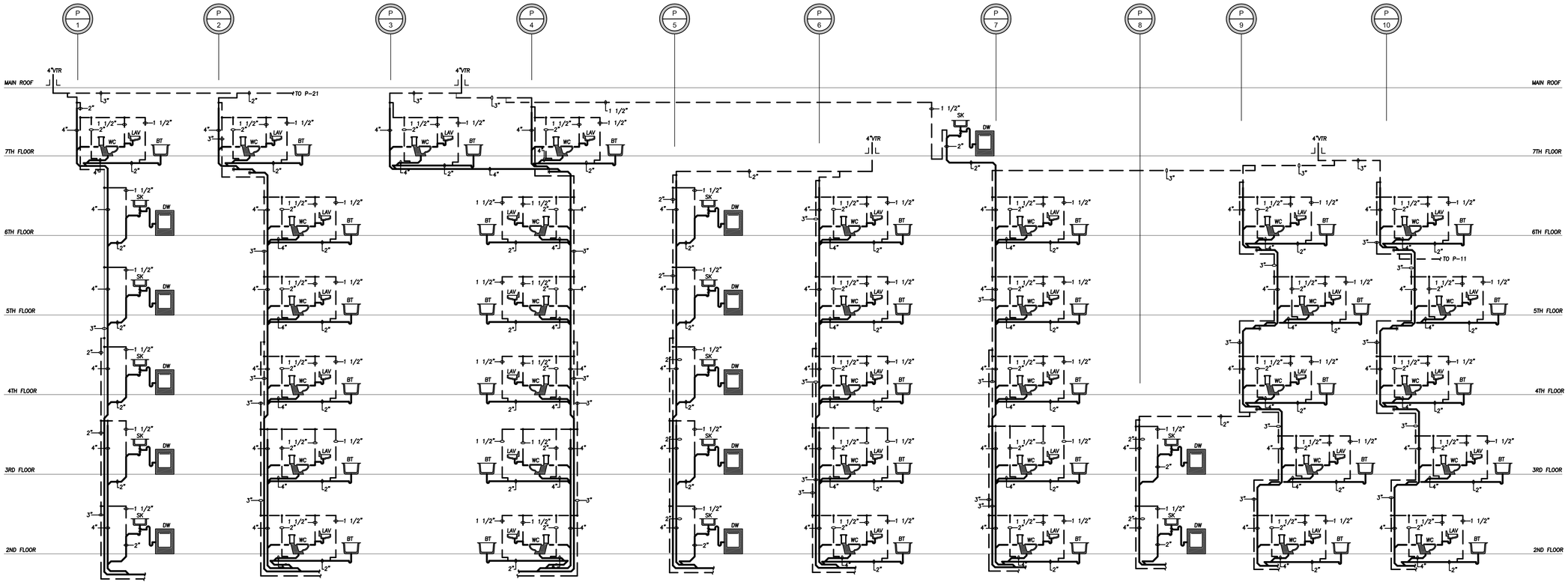

SCHEMATIC SANITARY RISER DIAGRAM

NOT TO SCALE

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1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates

505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 – 2412 Fax: 212.643.1606

ARCHITECT:

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailkf@kfarchitect.com

project title
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RESIDENTIAL PROJECT
BROOKLYN, NY

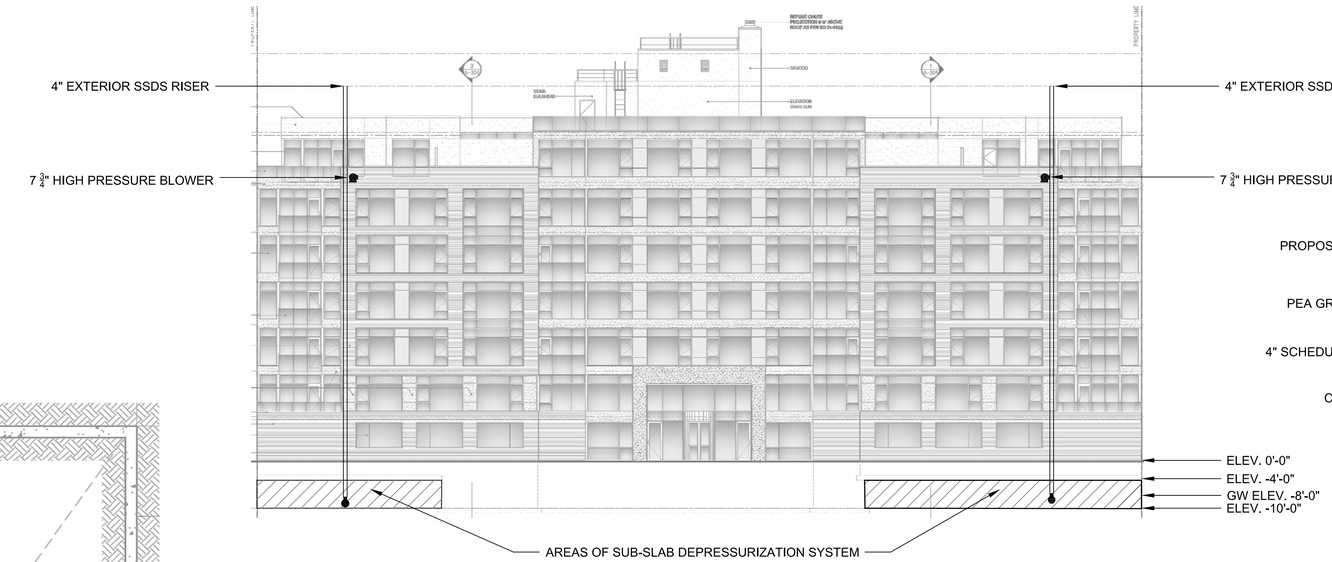
drawing title
PLUMBING
SANITARY RISER DIAGRAM

scale N.T.S	project no. 1427
date 10/08/2014	revision no. --
drawn E.K.	drawing no. P-200.00
checked __	

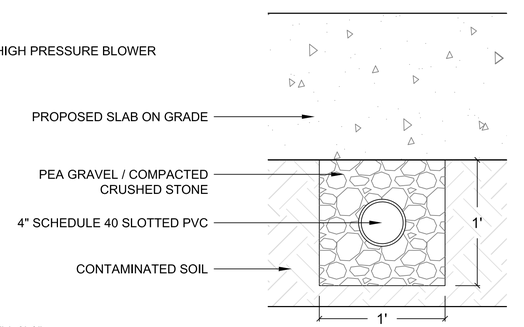
Appendix 8
SSDS Plan

LEGEND

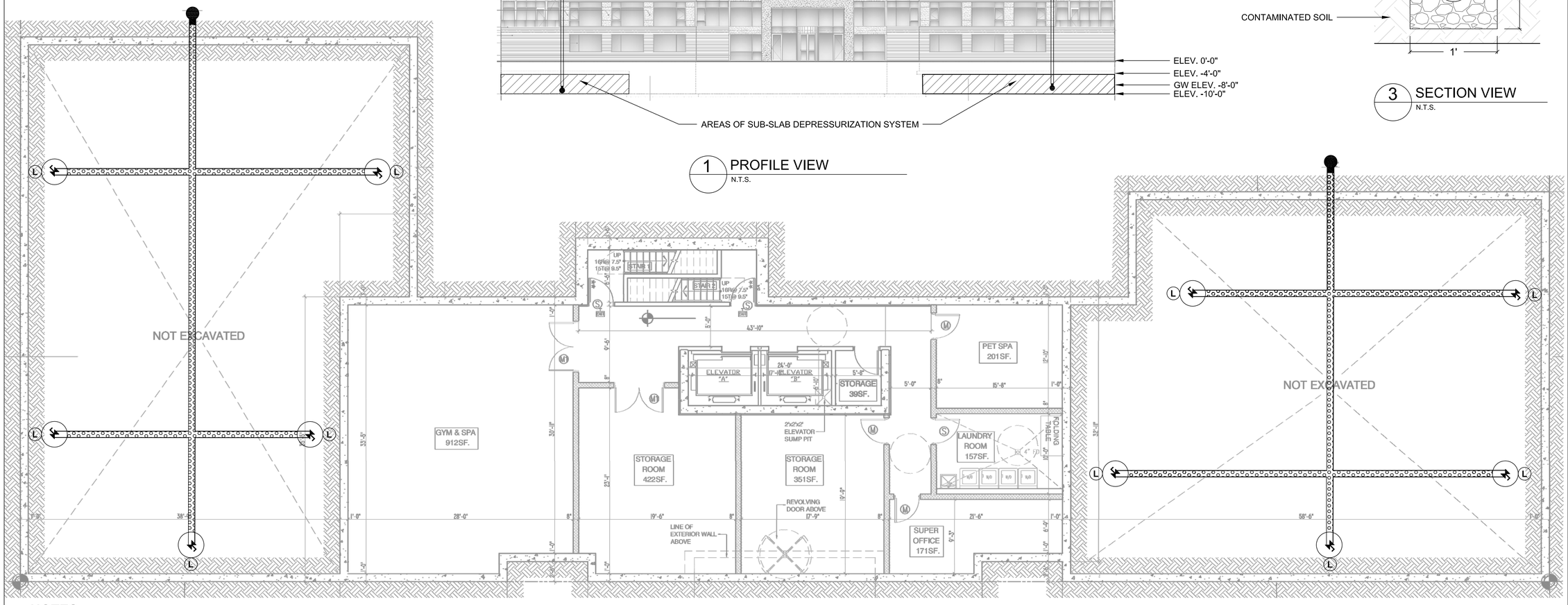
- 6" MANHOLE COVER
- INCLINED LIQUID MANOMETER
- $\frac{1}{4}$" STOPCOCK VALVE
- 4" EXTERIOR CAST IRON RISER
- 4" 40 PVC SLOTTED PIPING (0.02" SLOT)
- 7 $\frac{3}{4}$" HIGH PRESSURE BLOWER



1 PROFILE VIEW
N.T.S.



3 SECTION VIEW
N.T.S.



2 PLAN VIEW
N.T.S.

NOTES

1. LOCATION OF ALL COMPONENTS OF SYSTEM MAY VARY BASED ON SITE CONDITIONS AND MUST BE REVIEWED AND APPROVED BY THE FIELD ENGINEER OF RECORD.
2. ELECTRICAL POWER WILL BE PROVIDED FROM THE EXISTING ELECTRICAL DISTRIBUTION PANEL LOCATION IN THE BUILDING.
3. ALL ELECTRICAL CONNECTIONS TO BE MADE BY A NYS LICENSED ELECTRICIAN.
4. INSTALLATION TO COMPLY ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

GRANT engineering

REGISTERED DESIGN PROFESSIONAL OF RECORD
STEPHEN A. MORSE
OF
GRANT engineering
139 FULTON ST, SUITE 907
NEW YORK, NY
WET INK SIGNATURE AND STAMP

X

REGISTERED DESIGN PROFESSIONALS

OWNER'S NAME:
PINE BUILDERS CORP
STREET ADDRESS:
1339-41 PROSPECT AVE
BROOKLYN, NY 11218

PROJECT NAME:
50 GREENPOINT AVE
STREET ADDRESS:
50 GREENPOINT AVE
BROOKLYN, NY 11222

BOROUGH	BLOCK No.
BROOKLYN	2652
LOT No.	DATE OF ORIGINAL
1	MARCH 27, 2015

APPROVED REVISIONS

No.	DESCRIPTION	APPROVED BY	DATE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

DOB BSCAN STICKER

DOB EMPLOYEE STAMP AND SIGNATURE

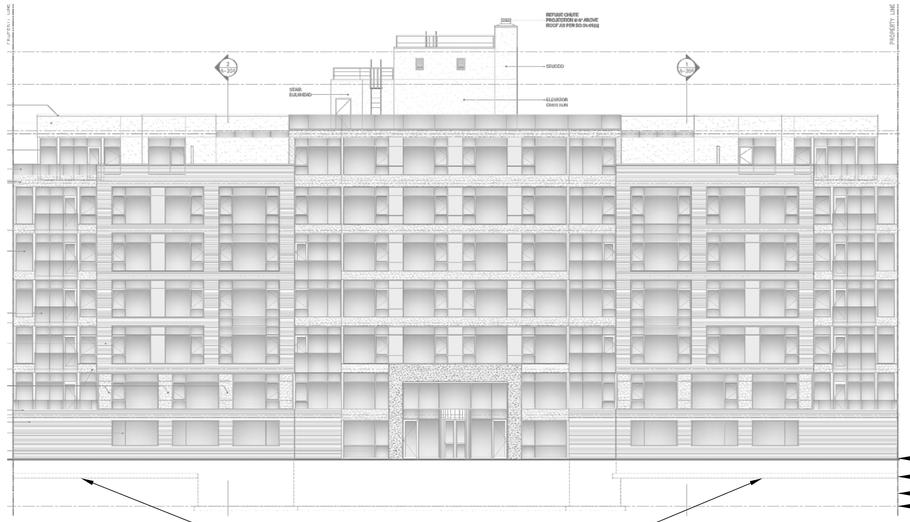
DRAWING TITLE
SSDS INSTALLATION PLAN

DOB BUILDING PLAN IDENTIFICATION NUMBER
ENV-001.00

ALT 1 / NB APPLICATION No.

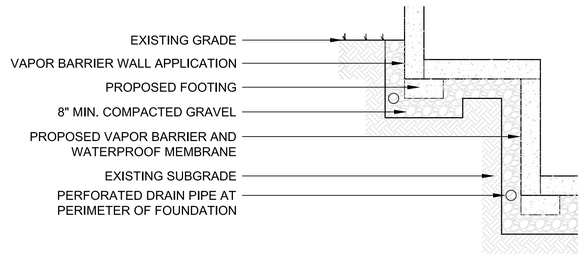
Appendix 9

Vapor Barrier Plans and Specifications

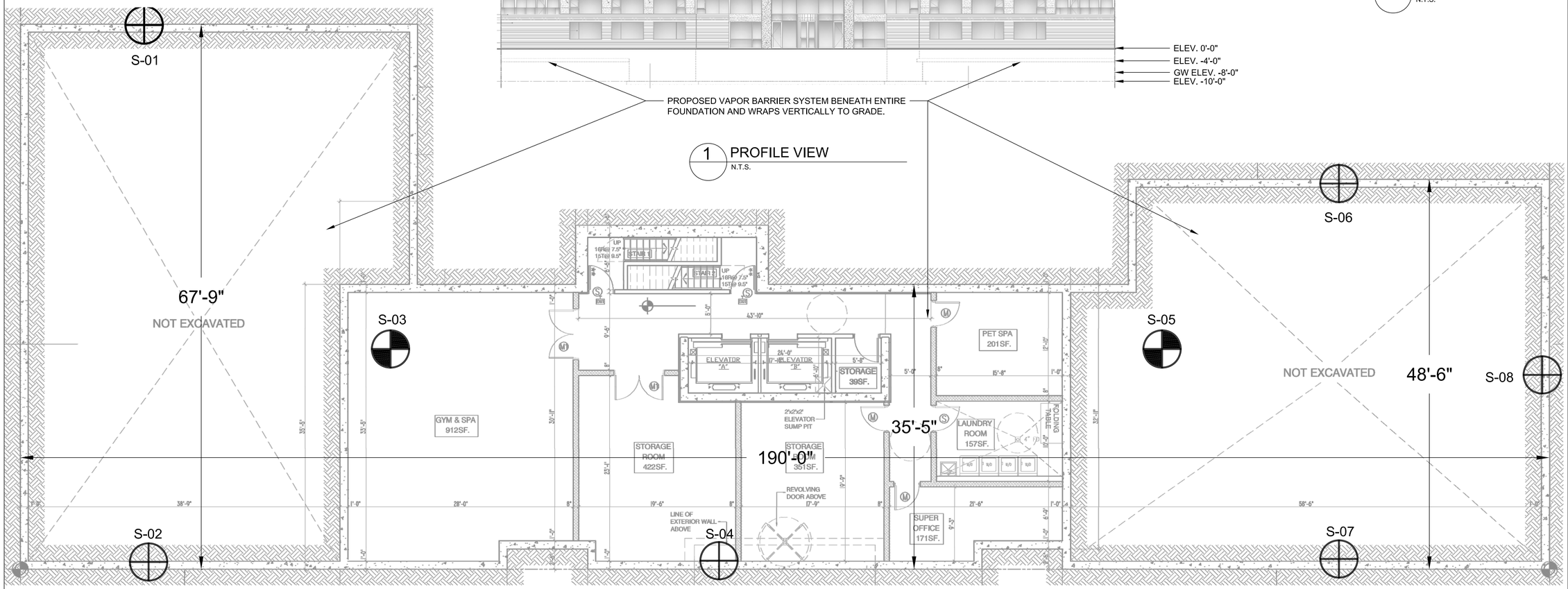


PROPOSED VAPOR BARRIER SYSTEM BENEATH ENTIRE FOUNDATION AND WRAPS VERTICALLY TO GRADE.

1 PROFILE VIEW
N.T.S.



3 SECTION VIEW
N.T.S.



2 PLAN VIEW
N.T.S.

NOTES

1. CONTRACTOR SHALL INSTALL THE VAPOR BARRIER PER THE MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES.
2. INSTALLATION TO COMPLY ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
3. VAPOR BARRIER MUST BE CONTINUOUS WITH NO GAPS, PUNCTURES, OR UNSEALED PENETRATIONS.
4. CONTRACTOR SHALL PREPARE THE SOIL BELOW THE MEMBRANE BY REMOVING LARGE AND SHARP STONES AND DEBRIS TO PREVENT PUNCTURES.

GRANT engineering

REGISTERED DESIGN PROFESSIONAL OF RECORD
STEPHEN A. MORSE
OF
GRANT engineering
139 FULTON ST, SUITE 907
NEW YORK, NY
WET INK SIGNATURE AND STAMP

X

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1339-41 PROSPECT AVE
BROOKLYN, NY 11218

PROJECT NAME:
50 GREENPOINT AVE
STREET ADDRESS:
50 GREENPOINT AVE
BROOKLYN, NY 11222

BOROUGH	BLOCK No.
BROOKLYN	2652
LOT No.	DATE OF ORIGINAL
1	MARCH 27, 2015

APPROVED REVISIONS

No.	DESCRIPTION	APPROVED BY	DATE
1.			
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3.			
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9.			
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DOB BSCAN STICKER

DOB EMPLOYEE STAMP AND SIGNATURE

DRAWING TITLE
VAPOR BARRIER INSTALLATION PLAN

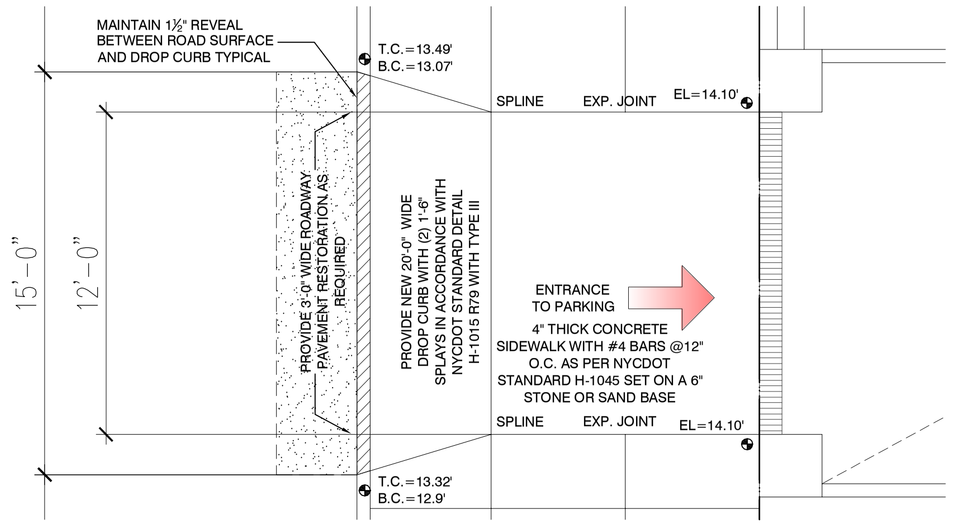
DOB BUILDING PLAN IDENTIFICATION NUMBER
ENV-002.00

ALT 1 / NB APPLICATION No.

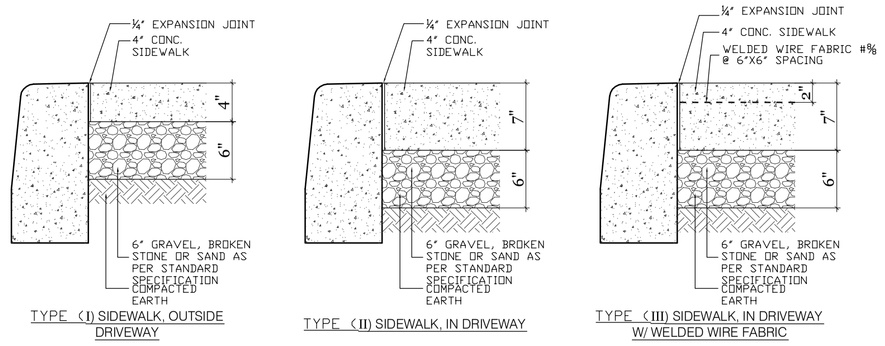
Appendix 10
Composite Cover Figures

LEGEND

(T) TELEPHONE MANHOLE	STREET SIGN
(E) ELECTRIC MANHOLE	HYDRANT
(W) WATER MANHOLE	EL. SPOT ELEVATION
(S) SEWER MANHOLE	W WATER VALVE
G GAS VALVE	EB ELECTRIC BOX
TC TOP OF CURB	TB TELEPHONE BOX
BC BOTTOM OF CURB	CB CATCH BASIN
L.G. LEGAL GRADE	NEW TREE
INV. INVERT ELEVATION	HANDICAP RAMP
F.F. FIRST FLOOR ELEVATION	DROP CURB
CL CENTERLINE	SUBWAY VENT
AREA OF PAVEMENT IMPROVEMENT	PLANTED STRIP

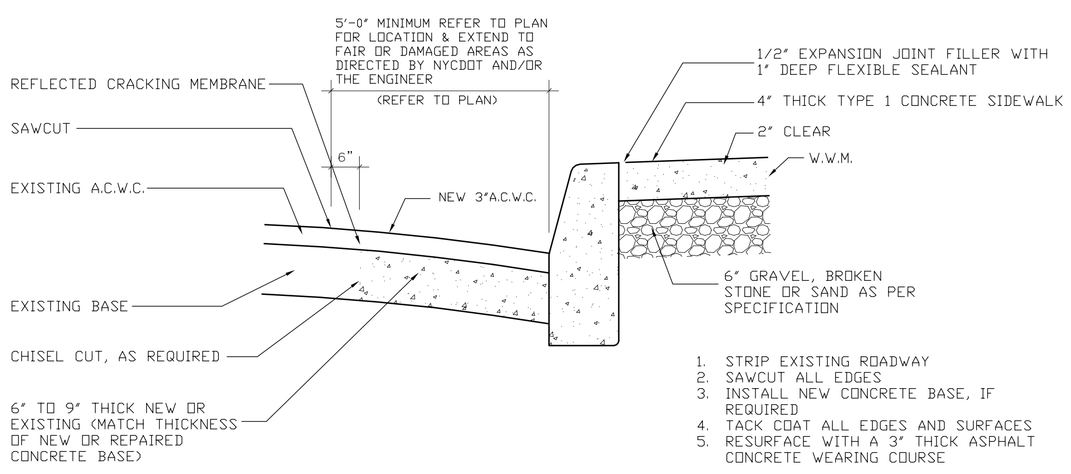


5 CC-001 **PLAN AT NEW DROP CURB ON GREENPOINT AVENUE**
N.T.S.



DOT STANDARD - H 1045

3 CC-001 **SIDEWALK DETAILS**
N.T.S.



2 CC-001 **CONCRETE CURB DETAIL**
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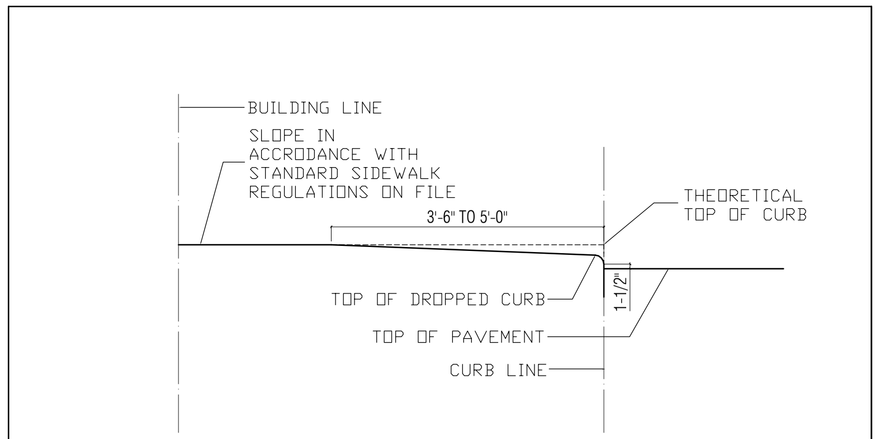

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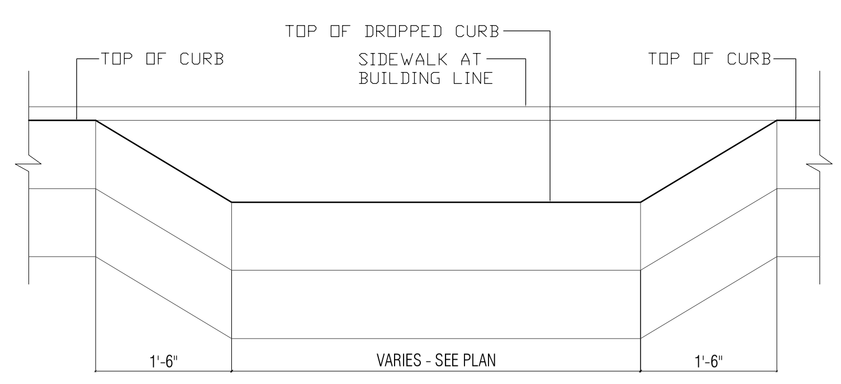
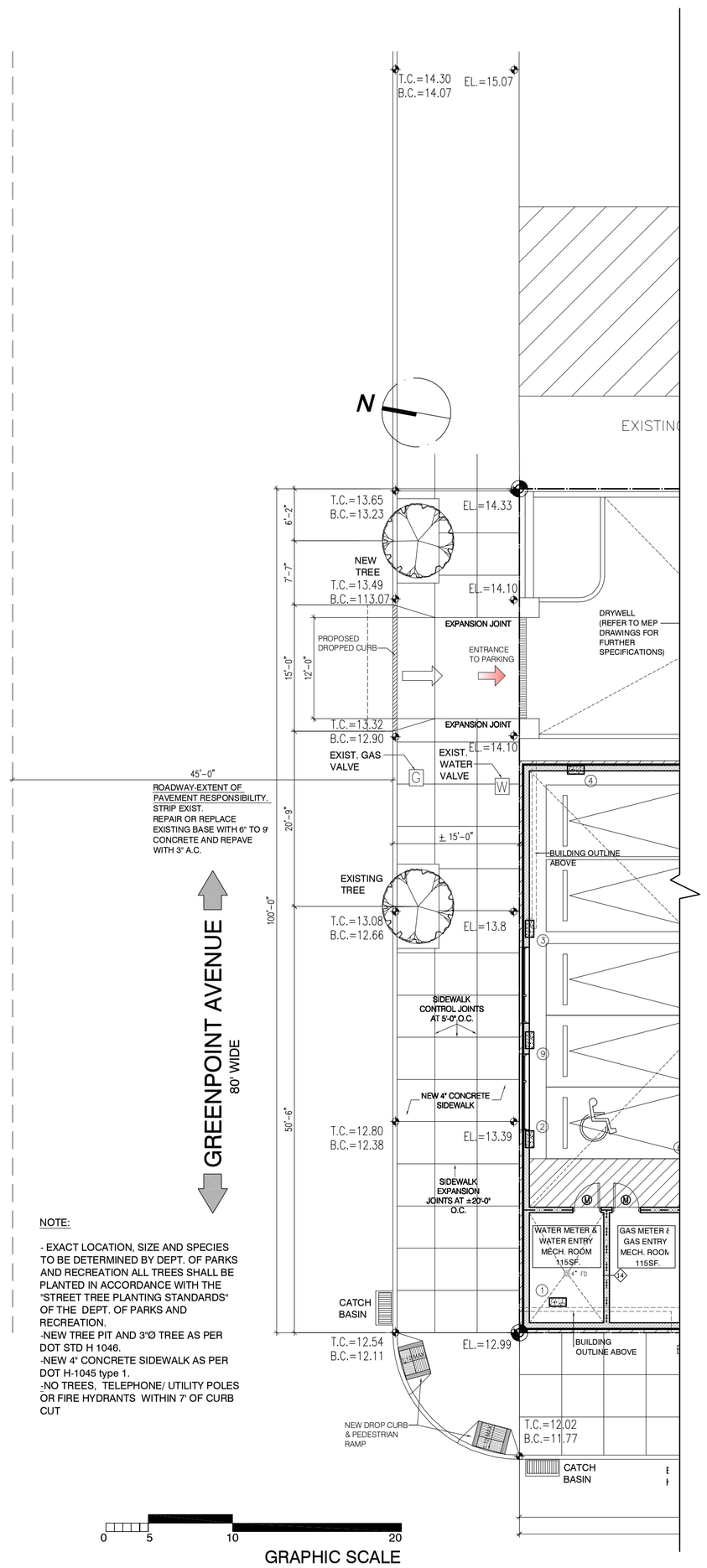


ELEVATION

DOT STANDARD - H 1015 R79

4 CC-001 **DROP CURB PROFILE @ DRIVEWAY**
N.T.S.



NOTE:
- EXACT LOCATION, SIZE AND SPECIES TO BE DETERMINED BY DEPT. OF PARKS AND RECREATION ALL TREES SHALL BE PLANTED IN ACCORDANCE WITH THE "STREET TREE PLANTING STANDARDS" OF THE DEPT. OF PARKS AND RECREATION.
-NEW TREE PIT AND 3"Ø TREE AS PER DOT STD H 1046.
-NEW 4" CONCRETE SIDEWALK AS PER DOT H-1045 type 1.
-NO TREES, TELEPHONE/ UTILITY POLES OR FIRE HYDRANTS WITHIN 7' OF CURB CUT

1 CC-001 **PARTIAL SITE PLAN ALONG GREENPOINT AVENUE**
3/32"=1'-0"

KEY PLAN

REVISIONS

no.	date	description
4	011615	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

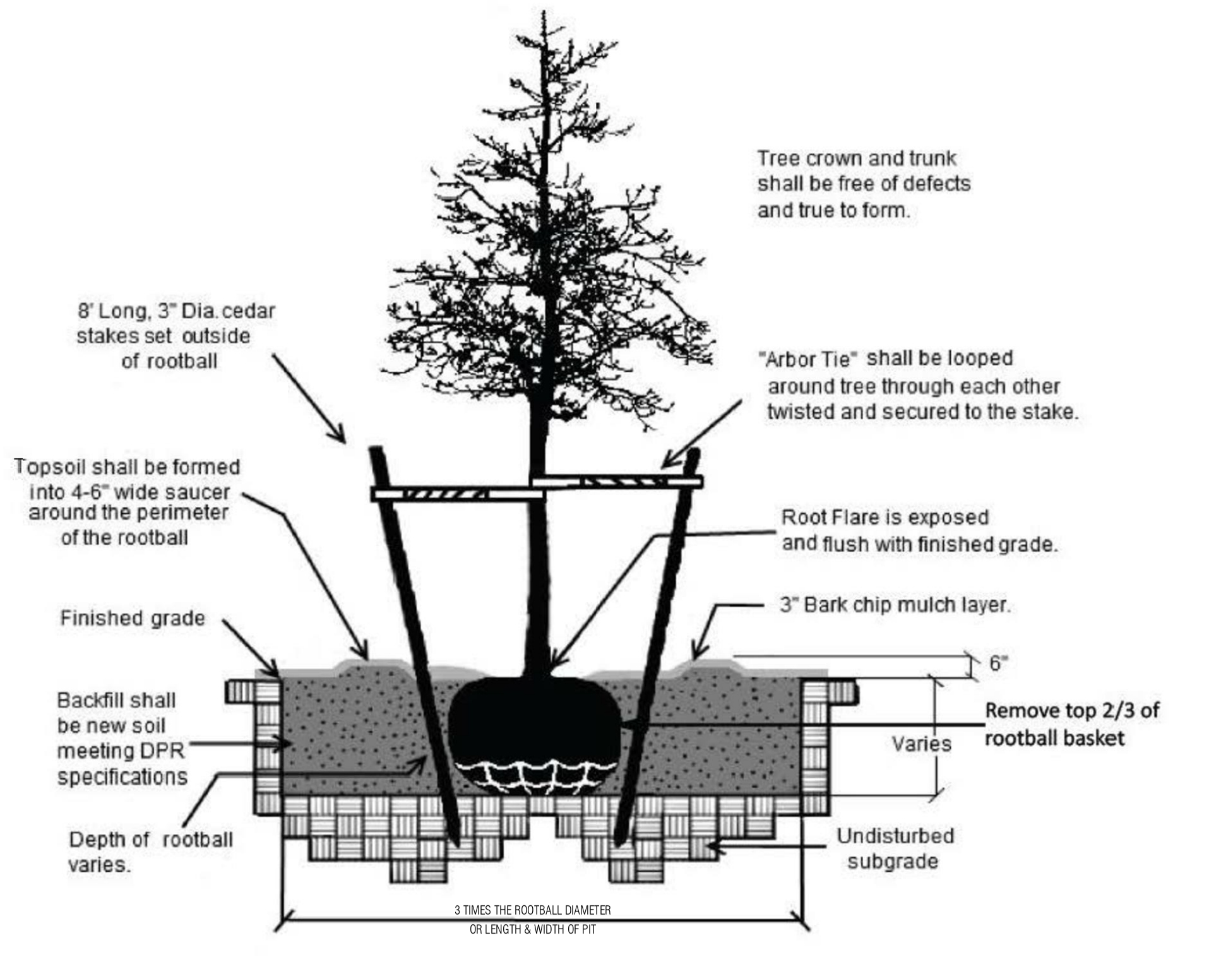
MEP ENGINEER:
Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 t 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8985
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
DROPPED CURB PLAN

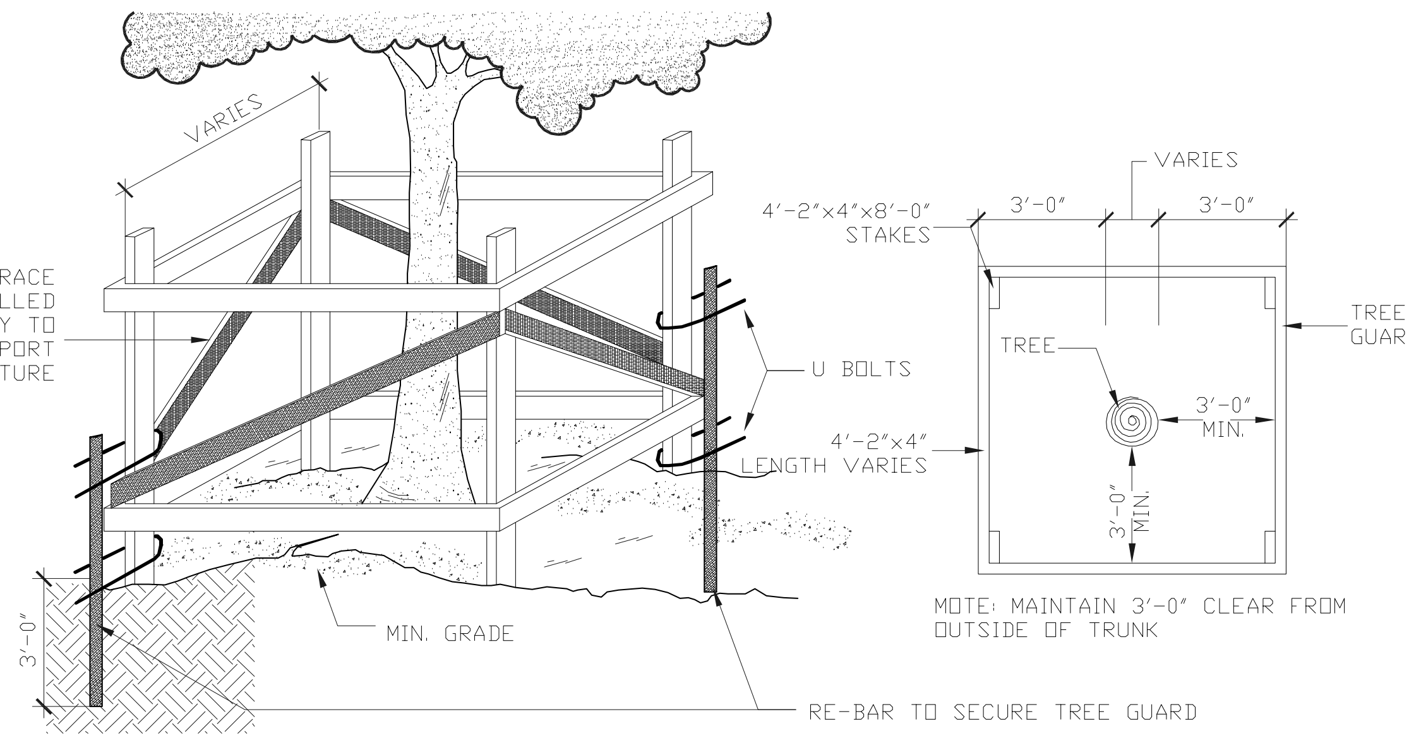
scale AS NOTED	project no. 06-71 / 14-41
date JAN. 15	revision no. 4
drawn .	drawing no. CC-001.01
checked K.F.	



2 TREE PLANTING & STAKE DETAIL

BPP-001

N.T.S.



3 TEMPORARY WOODEN TREE GUARD

BPP-001

N.T.S.

GUIDELINES FOR STREET TREE PLANTING AS PER THE CITY OF NEW YORK PARKS AND RECREATION

GUIDELINES FOR STREET TREE PLANTING:
THE FOLLOWING GUIDELINES ARE ISSUED TO LIMIT WHERE POSSIBLE REQUESTS FOR TREE PLANTING WHICH MIGHT BE INAPPROPRIATE FOR A NUMBER OF REASONS. NO GUIDELINES CAN BE COMPLETE OR ABSOLUTE, HOWEVER, AND THEREFORE, ALL SITES SUBMITTED BY COMMUNITY BOARDS WILL BE INSPECTED IN THE FIELD BY DEPARTMENT OF PARKS URBAN FORESTERS. IT IS OUR EXPERIENCE THAT ONLY HALF THE SITES REQUIRED FOR TREE PLANTING ARE IN FACT SUITABLE. SELECTION AMONG THE SEVERAL VARIETIES OF TREES SUITABLE AND AVAILABLE FOR PLATING ALONG STREETS WILL BE MADE BY DEPARTMENTAL FORESTERS. FACTORS INFLUENCING THE SELECTION ARE MANY, INCLUDING THE TYPES OF TREES ALREADY ON THE BLOCK AND THE EVENTUAL SPREAD OF THE TREE BRANCHES, WHICH WOULD AFFECT THE TREE SPACING AS WELL AS THE PROXIMITY TO STREET LIGHTS, FIRE ESCAPES, TRAFFIC SIGNS, ETC.

TREE PITS:

1. TREE PITS SHALL NOT BE PLACED DIRECTLY IN FRONT OF A BUILDING ENTRANCE IN ORDER TO PERMIT EASY ACCESS BY THE FIRE DEPARTMENT.
2. MINIMUM TREE PIT SIZE, NORMAL TO WIDE SIDEWALKS: 4 FEET X 5 FEET X 3 FEET DEEP. NARROW SIDEWALKS: 3 FEET X 6 FEET X 3 FEET DEEP.
3. DISTANCE FROM ANOTHER TREE (CENTER TO CENTER OF PIT): 20 TO 40 FEET DEPENDING ON TREE VARIETY AND OTHER CONDITIONS ON THE BLOCK. (MIN. 25FT. UNLESS GINKGO)
4. DISTANCE FROM A STREET LIGHT: ABOUT 25 FT (VARIES WITH TREE SPECIES)
5. DISTANCE FROM A STOP SIGN: 40 FT.
6. DISTANCE FROM A TRAFFIC SIGN: 6 FEET. TREES SHOULD NOT BLOCK VISIBILITY OF TRAFFIC SIGN IN THE DIRECTION OF MOVING TRAFFIC.
7. DISTANCE FROM A PARKING METER: NO MORE THAN 5 FEET BEHIND METER TO GIVE ACCESS TO CAR DOOR AND LIMIT DISTANCE FROM TREE.(WHERE HOOD IS)
8. DISTANCE FROM A GAS OR WATER VALVE IN THE SIDEWALK: 2 FEET FROM THE EDGE OF THE PIT.
9. DISTANCE FROM AN OIL FILL PIPE IN THE SIDEWALK: 4 FEET.
10. DISTANCE FROM A COAL CHUTE: 6 FEET
11. DISTANCE FROM A FIRE HYDRANT: 5 FEET FROM THE EDGE OF A PIT.
12. DISTANCE FROM A CURB CUT OR DRIVEWAY: 7 FEET (VARIABLE)
13. DISTANCE FROM THE BUILDING LINE OR PROPERTY LINE AT A STREET INTERSECTION: 40 FEET.
14. SIDEWALKS MUST REMAIN A MINIMUM OF 6 FEET WIDE BETWEEN TREE PITS AND ANY OPPOSITE OBSTRUCTION, EG. BUILDING WALLS, STOOPS, RAILINGS, ETC. WIDTH SHOULD BE WIDER IF THE SIDEWALK IS HEAVILY USED.
15. ALL TREE PITS MUST BE CONTIGUOUS TO THE STREET CURB (EXCEPT AS NOTED IN # 16, BELOW)
16. TREES MAY BE PLATED ON EITHER SIDE OF SIDEWALKS (IF ANY EXIST) IN LAWN AREAS WHERE THERE IS SUFFICIENT ROOM BETWEEN THE PROPERTY LINE AND THE STREET CURB. THOSE TREE PITS MAY BE SEEDED FOR GRASS IN LIEU OF PAVING WITH CONCRETE OR GRANITE BLOCKS .

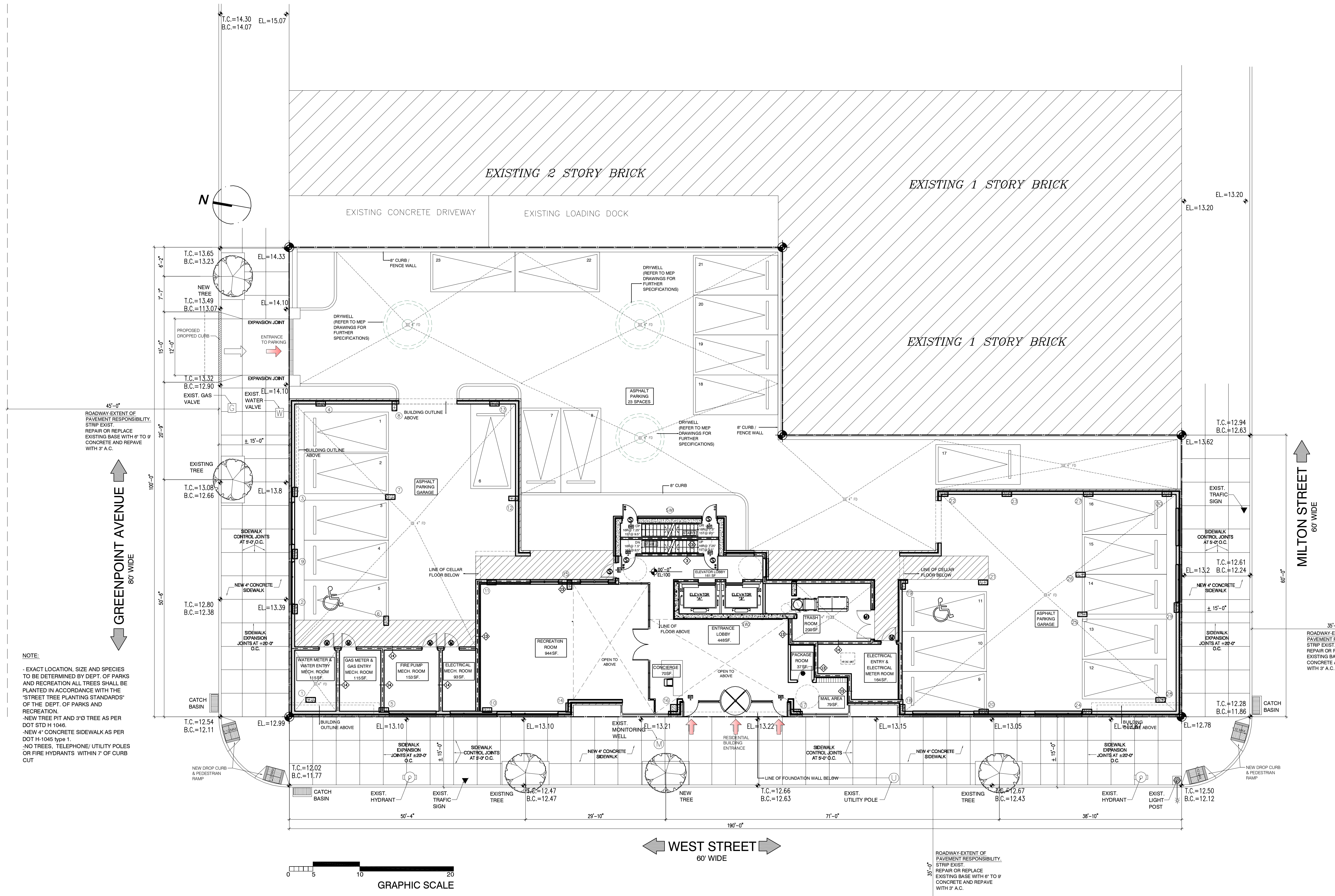
PLANTING NOTES:

1. WRITTEN NOTIFICATION WILL BE MADE TO THE DEPARTMENT OF PARKS AND RECREATION PRIOR TO THE COMMENCEMENT OF SUCH WORK
2. NO DELETERIOUS, CAUSTIC OR ACID MATERIALS SHALL BE DUMPED OR MIXED WITHIN 10' OF SUCH TREE.
3. ALL PLANT MATERIAL TO BE VIGOROUS, FREE OF INJURY OR DEFECTS. ALL PLANT MATERIAL TO BE TRUE REPRESENTATIVES OF THEIR SPECIES.
4. ALL B&B MATERIAL IS TO HAVE BALL/PLANT SIZE RELATIONSHIP AS SPECIFIED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
5. NO SUBSTITUTION WILL BE ACCEPTED UNLESS AUTHORIZED BY THE LANDSCAPE ARCHITECT.
6. THE LANDSCAPE ARCHITECT MAY REJECT ANY MATERIAL WHICH DOES NOT REPRESENT SPECIES AS OUTLINED IN PLANT LIST.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING QUANTITIES SHOWN ON THE PLANS AND MUST INSTALL MATERIAL IN A WORKMANLIKE MANNER.
8. ALL TREES TO BE PLANTED 5'-0" MIN. FROM DRAINAGE STRUCTURES AND DRAINAGE LINES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF DRAINAGE STRUCTURES ON SITE.

NEW STREET TREES					
LOCATION	REQ. TREES	EXISTING	NEW ONSITE	NEW OFFSITE	TOTAL
GREENPOINT AVE.	5	1	1	3	5
WEST STREET	8	2	1	5	8
MILTON STREET	2	0	0	2	2
TOTAL	15	3	2	10	15

LEGEND

Ⓣ	TELEPHONE MANHOLE	▲	STREET SIGN
Ⓔ	ELECTRIC MANHOLE		HYDRANT
Ⓦ	WATER MANHOLE	EL	SPOT ELEVATION
Ⓢ	SEWER MANHOLE	W	WATER VALVE
G	GAS VALVE	EB	ELECTRIC BOX
TC	TOP OF CURB	TB	TELEPHONE BOX
BC	BOTTOM OF CURB	CB	CATCH BASIN
L.G.	LEGAL GRADE		NEW TREE
INV.	INVERT ELEVATION		HANDICAP RAMP
F.F.	FIRST FLOOR ELEVATION	▨	DROP CURB
CL.	CENTERLINE	▦	SUBWAY VENT
▧	AREA OF PAVEMENT IMPROVEMENT		PLANTED STRIP



NOTE:

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-NEW TREE PIT AND 3"Ø TREE AS PER DOT STD H 1046.
-NEW 4" CONCRETE SIDEWALK AS PER DOT H-1045 type 1.
-NO TREES, TELEPHONE/ UTILITY POLES OR FIRE HYDRANTS WITHIN 7' OF CURB CUT

1 OVERALL BPP PLAN

BPP-001

1/16"=1'-0"

LIST OF ESTIMATED QUANTITIES
GREENPOINT AVENUE

New Curb	100'-0"	Lin. ft.
New Sidewalk	1,500	Sq. ft.
New Roadway	N/A	Sq. yds.
New Trees	5 REQUIRED: 2 ON-SITE, 3 OFF-SITE	Each
New CBs	N/A	Each
New DIP	N/A	Lin. ft.
New Manholes	N/A	Each

LIST OF ESTIMATED QUANTITIES
WEST STREET

New Curb	190'-0"	Lin. ft.
New Sidewalk	2,850	Sq. ft.
New Roadway	N/A	Sq. yds.
New Trees	8 REQUIRED: 3 ON-SITE, 5 OFF-SITE	Each
New CBs	N/A	Each
New DIP	N/A	Lin. ft.
New Manholes	N/A	Each

LIST OF ESTIMATED QUANTITIES
MILTON STREET

New Curb	60'-0"	Lin. ft.
New Sidewalk	900	Sq. ft.
New Roadway	N/A	Sq. yds.
New Trees	2 REQUIRED: 0 ON-SITE, 2 OFF-SITE	Each
New CBs	N/A	Each
New DIP	N/A	Lin. ft.
New Manholes	N/A	Each

KEY PLAN

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no.	date	description

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ISSUES

STRUCTURAL ENGINEER:
TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:
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505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 ï 2412 Fax: 212.643.1606

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TEL: (212) 219-9733 FAX: (212) 219-8980
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REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
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drawing title
BUILDING PAVERS PLAN

scale AS NOTED	project no. 06-71 / 14-41
date JAN. 15	revision no. 4
drawn	drawing no. BPP-001.01
checked K.F.	

LEGEND

T	TELEPHONE MANHOLE	▲	STREET SIGN
E	ELECTRIC MANHOLE	H	HYDRANT
W	WATER MANHOLE	EL.	SPOT ELEVATION
S	SEWER MANHOLE	W	WATER VALVE
G	GAS VALVE	EB	ELECTRIC BOX
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INV.	INVERT ELEVATION		HANDICAP RAMP
F.F.	FIRST FLOOR ELEVATION		DROP CURB
CL.	CENTERLINE		SUBWAY VENT
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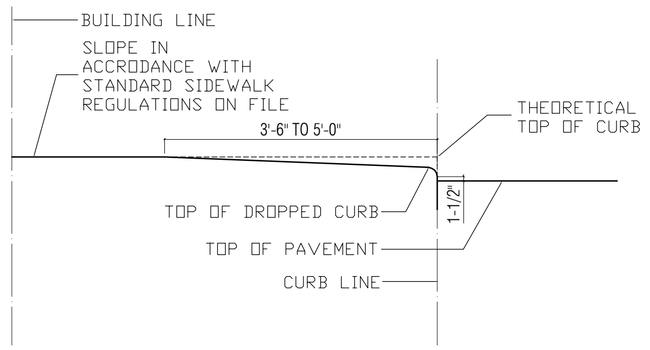

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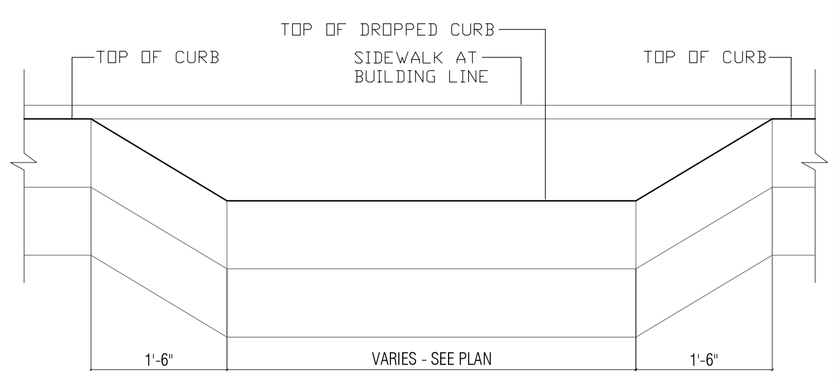
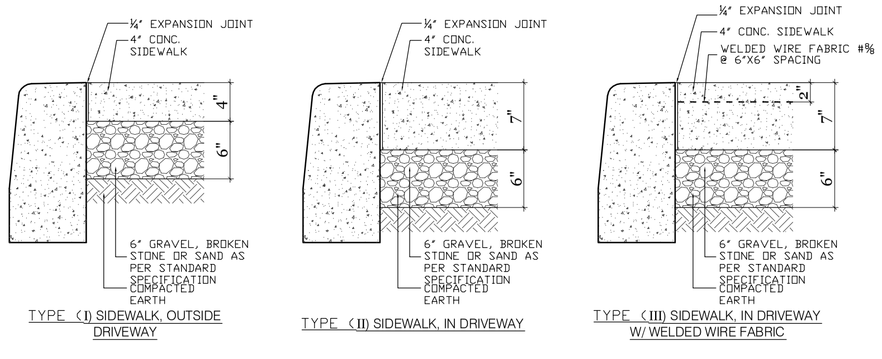


ELEVATION

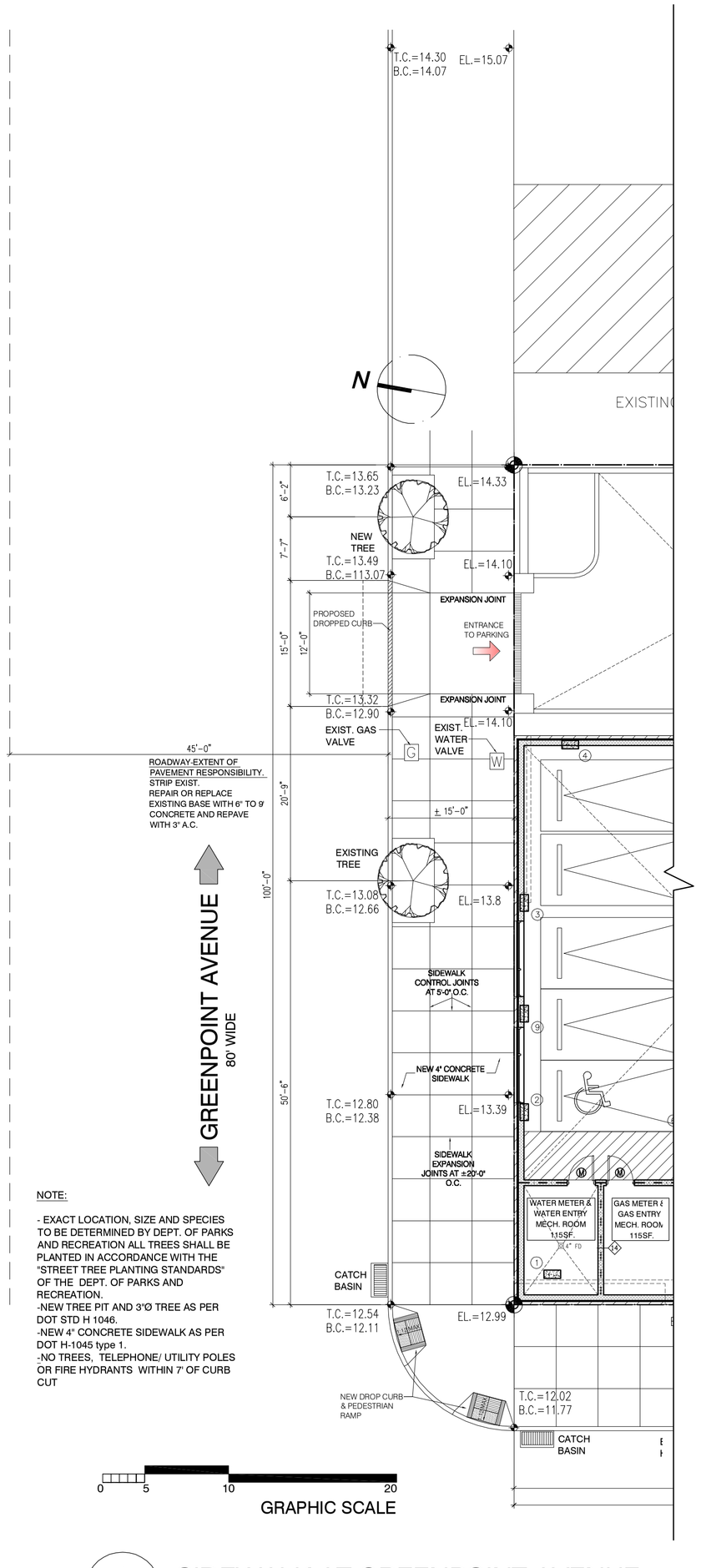
DOT STANDARD - H
1015 R79

3 BPP-002 DROP CURB PROFILE AT DRIVEWAY
N.T.S.



DOT STANDARD - H 1045

4 BPP-002 SIDEWALK DETAILS
N.T.S.



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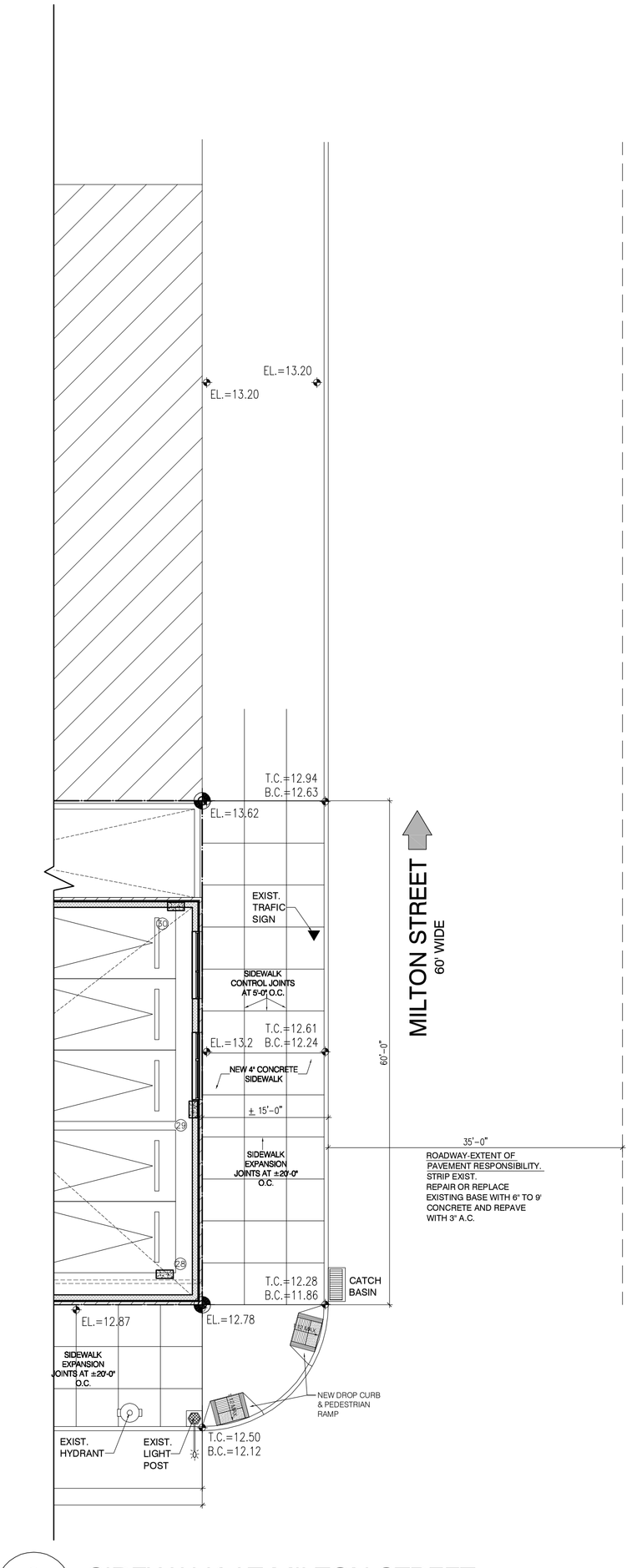
-NEW 4" CONCRETE SIDEWALK AS PER DOT H-1045 type 1.
-NO TREES, TELEPHONE/ UTILITY POLES OR FIRE HYDRANTS WITHIN 7' OF CURB CUT

1 BPP-002 SIDEWALK AT GREENPOINT AVENUE
3/32"=1'-0"

LIST OF ESTIMATED QUANTITIES
GREENPOINT AVENUE

New Curb	100'-0"	Lin. ft.
New Sidewalk	1,500	Sq. ft.
New Roadway	N/A	Sq. yds.
New Trees	5 REQUIRED: 2 ON-SITE, 3 OFF-SITE	Each
New CBs	N/A	Each
New DIP	N/A	Lin. ft.
New Manholes	N/A	Each



2 BPP-002 SIDEWALK AT MILTON STREET
3/32"=1'-0"

LIST OF ESTIMATED QUANTITIES
MILTON STREET

New Curb	60'-0"	Lin. ft.
New Sidewalk	900	Sq. ft.
New Roadway	N/A	Sq. yds.
New Trees	2 REQUIRED: 0 ON-SITE, 2 OFF-SITE	Each
New CBs	N/A	Each
New DIP	N/A	Lin. ft.
New Manholes	N/A	Each

KEY PLAN

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TITAN ENGINEERS PC
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505 8th Avenue 24th Floor New York, NY 10018
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KARL FISCHER ARCHITECT
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REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK
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TEL: (212) 219-9733 FAX: (212) 219-8980
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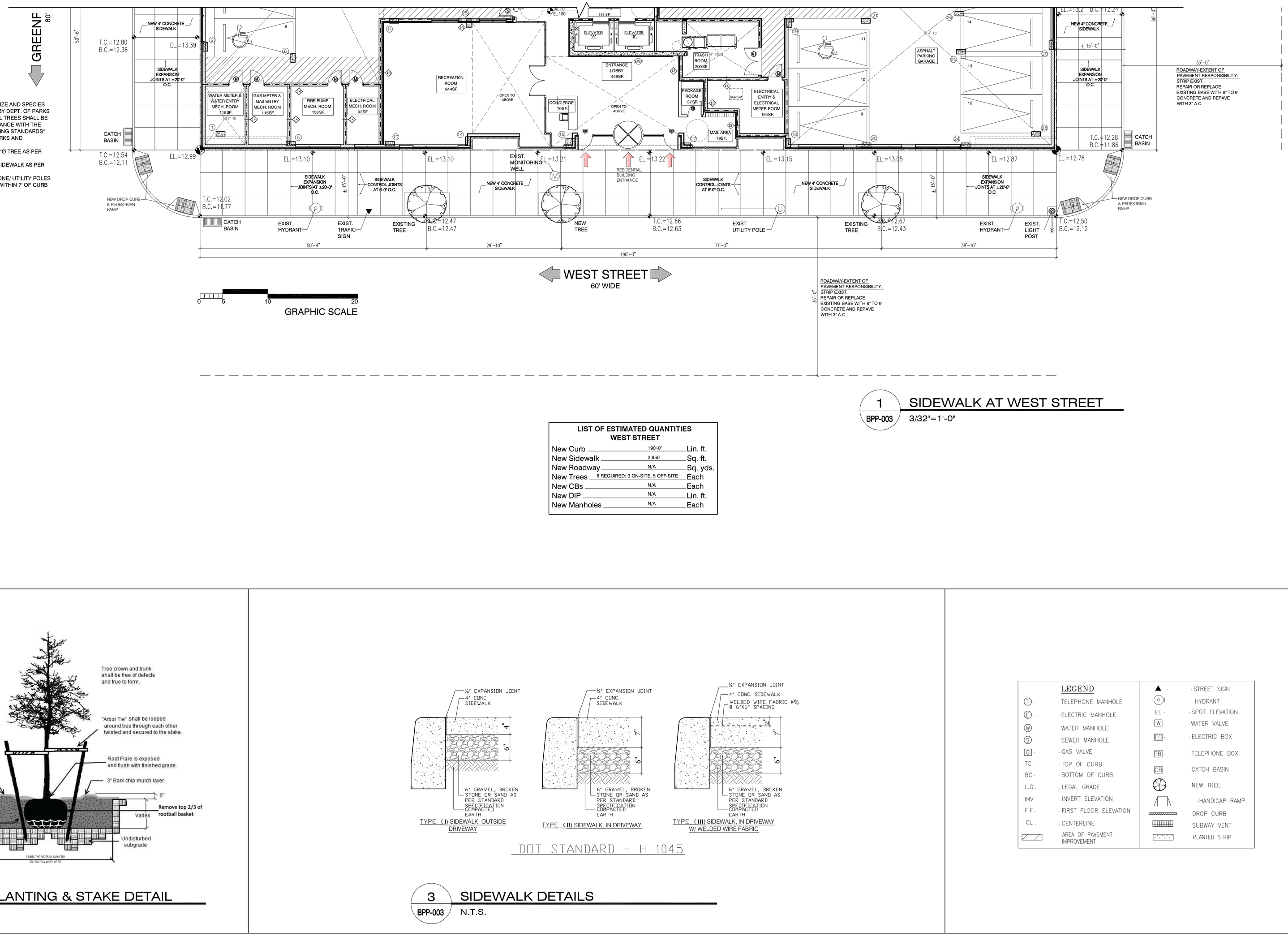
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BUILDING PAVERS PLAN

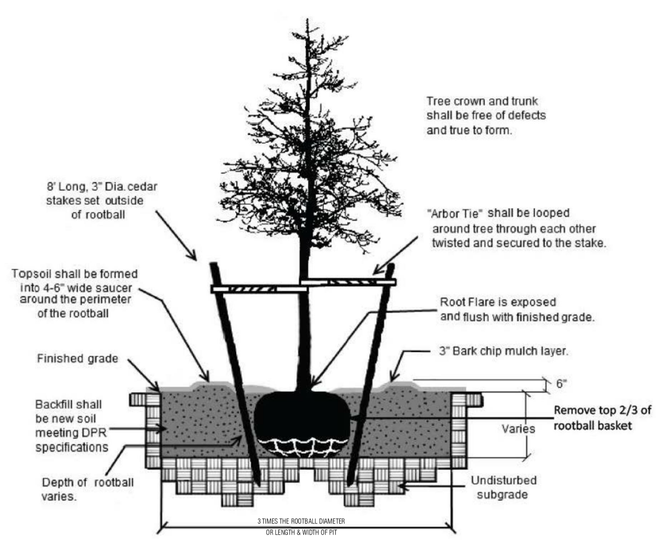
scale AS NOTED	project no. 06-71 / 14-41
date JAN. 15	revision no. 4
drawn .	drawing no. BPP-002.01
checked K.F.	



1 BPP-003 SIDEWALK AT WEST STREET
3/32"=1'-0"

LIST OF ESTIMATED QUANTITIES
WEST STREET

New Curb	190'-0"	Lin. ft.
New Sidewalk	2,850	Sq. ft.
New Roadway	N/A	Sq. yds.
New Trees	8 REQUIRED: 3 ON-SITE, 5 OFF-SITE	Each
New CBs	N/A	Each
New DIP	N/A	Lin. ft.
New Manholes	N/A	Each



2 BPP-003 TREE PLANTING & STAKE DETAIL
N.T.S.

DOT STANDARD - H 1045

3 BPP-003 SIDEWALK DETAILS
N.T.S.

LEGEND

T	TELEPHONE MANHOLE		STREET SIGN
E	ELECTRIC MANHOLE		HYDRANT
W	WATER MANHOLE	EL	SPOT ELEVATION
S	SEWER MANHOLE	W	WATER VALVE
G	GAS VALVE	EB	ELECTRIC BOX
TC	TOP OF CURB	TB	TELEPHONE BOX
BC	BOTTOM OF CURB	CB	CATCH BASIN
L.G.	LEGAL GRADE		NEW TREE
INV.	INVERT ELEVATION		HANDICAP RAMP
F.F.	FIRST FLOOR ELEVATION		DROP CURB
CL	CENTERLINE		SUBWAY VENT
	AREA OF PAVEMENT IMPROVEMENT		PLANTED STRIP

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

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STRUCTURAL ENGINEER:

TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:

Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 t 2412 Fax: 212.643.1606

ARCHITECT:

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AIA AIA PAIC AIA

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
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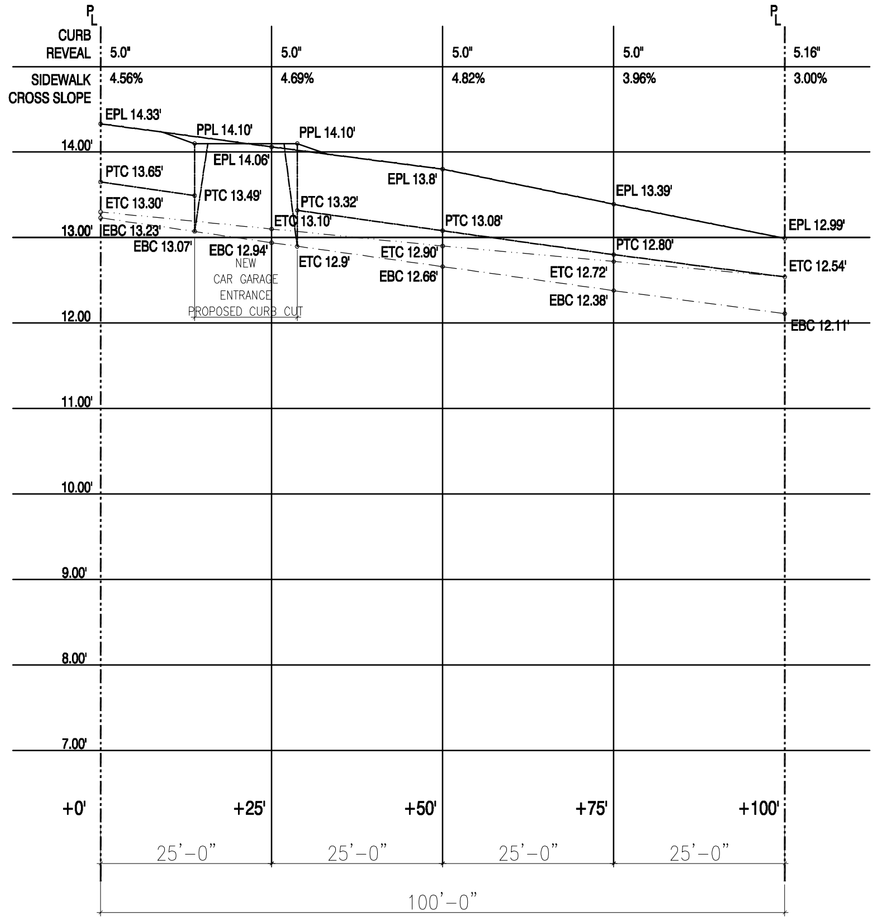
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BUILDING PAVERS PLAN

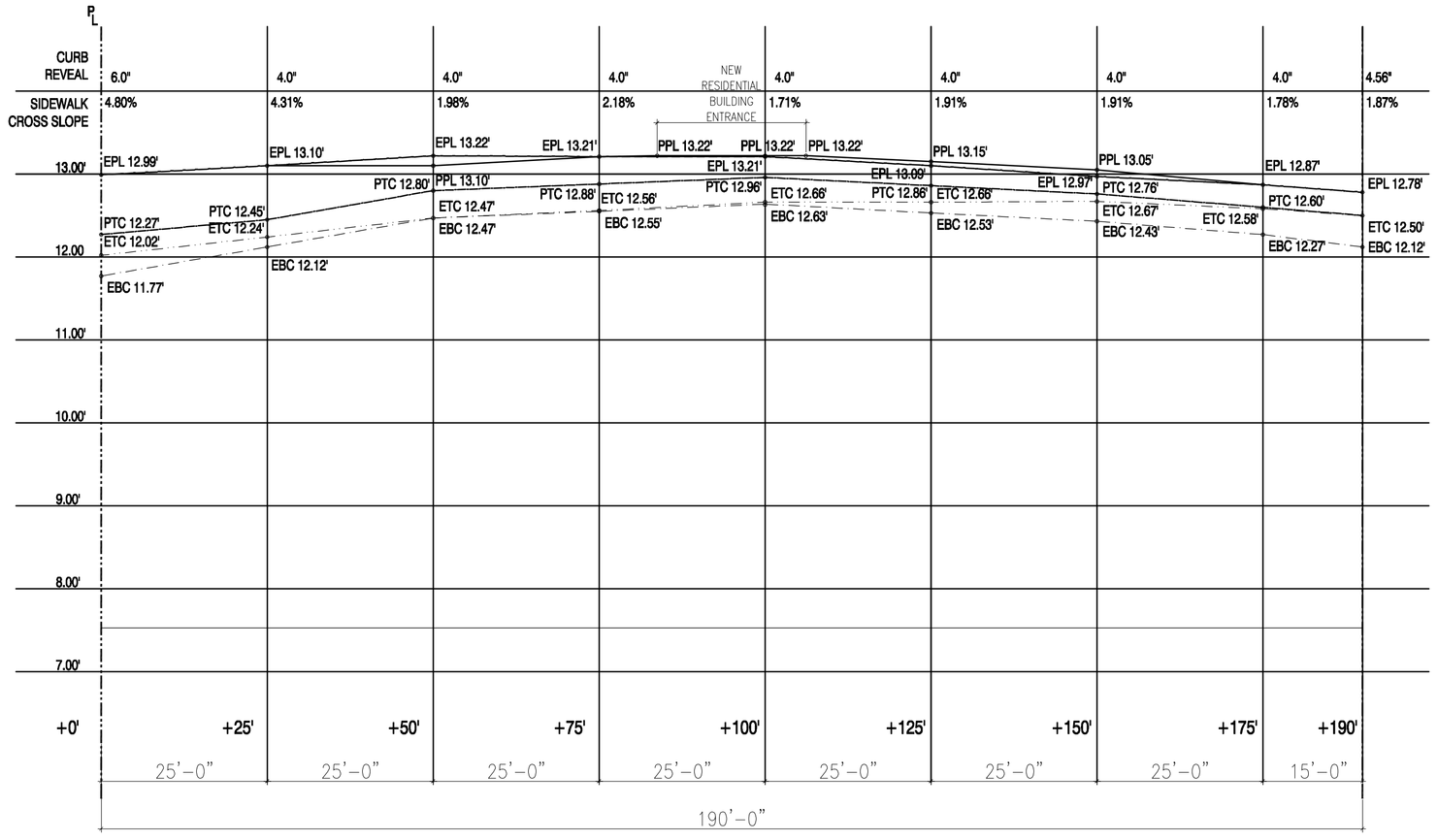
scale	AS NOTED	project no.	06-71 / 14-41
date	JAN. 15	revision no.	4
drawn	.	drawing no.	BPP-003.01
checked	K.F.		



EPL - EXISTING PROPERTY LINE
ECL - EXISTING CENTER LINE
ETC - EXISTING TOP OF CURB
EBC - EXISTING BOTTOM OF CURB
PPL - PROPOSED PROPERTY LINE
PTC - PROPOSED TOP OF CURB
PBC - PROPOSED BOTTOM OF CURB

PROFILE @ GREENPOINT AVENUE

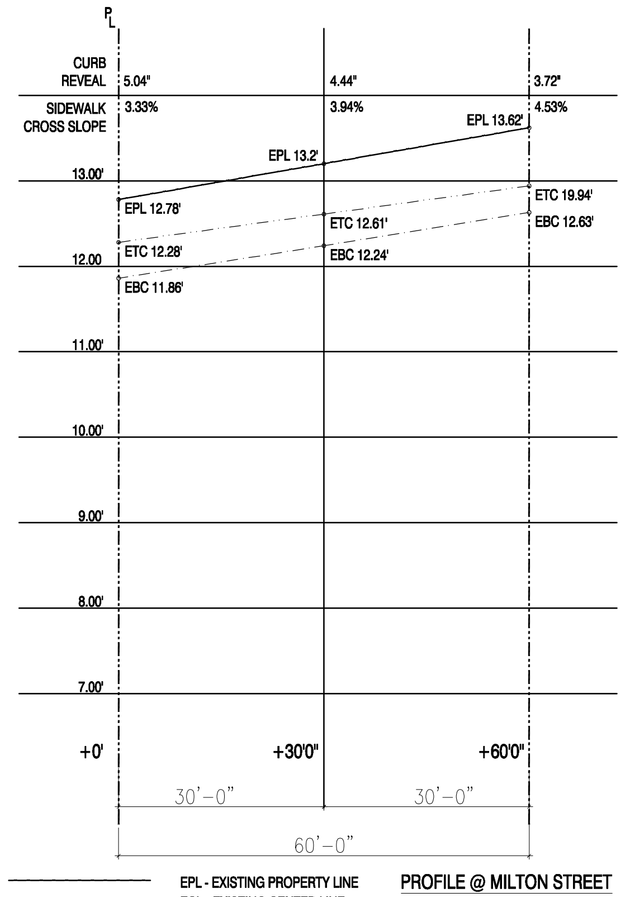
SCALE: HORIZONTAL - 1' = 25'
SCALE: VERTICAL - 1-1/2" = 1'



EPL - EXISTING PROPERTY LINE
ECL - EXISTING CENTER LINE
ETC - EXISTING TOP OF CURB
EBC - EXISTING BOTTOM OF CURB
PPL - PROPOSED PROPERTY LINE
PTC - PROPOSED TOP OF CURB
PBC - PROPOSED BOTTOM OF CURB

PROFILE @ WEST STREET

SCALE: HORIZONTAL - 1' = 25'
SCALE: VERTICAL - 1-1/2" = 1'



EPL - EXISTING PROPERTY LINE
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EBC - EXISTING BOTTOM OF CURB
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PTC - PROPOSED TOP OF CURB
PBC - PROPOSED BOTTOM OF CURB

PROFILE @ MILTON STREET

SCALE: HORIZONTAL - 1' = 25'
SCALE: VERTICAL - 1-1/2" = 1'

LIST OF STANDARDS

PEDESTRIAN RAMP H-1010-R09/06
DROP CURB H-1015-R79
CONCRETE CURB H-1044
4" THICK CONC. SIDEWALK H-1045 TYPE I
7" THICK CONC. SIDEWALK H-1045 TYPE II
TREES IN TREE PITS H-1046

***NOTE:** THE CONTRATOR IS RESPONSIBLE FOR OBTAINING AND USING THE LATEST DEPARTMENT OF TRANSPORTATION, CONSTRUCTION DETAILS & SPECIFICATIONS

LEGENDS

LEGAL GRADE L.G
EXIST. TOP OF CURB E.T.C
EXIST. BOTTOM OF CURB E.B.C
PROP. TOP OF CURB P.T.C
PROP. BOTTOM OF CURB P.B.C
EXIST. CENTER LINE E.C.L
PROP. P.L EL. P.P.L
NEW ASPHALTIC CONCRETE
NEW CURB
NEW SIDEWALK

GENERAL REQUIREMENTS

1. ALL DESIGNS, MATERIAL. CONSTRUCTION METHODS AND METHODS AND WORKMANSHIP SHALL CONFORM WITH THE FOLLOWING PUBLICATIONS OF BUREAU OF HIGHWAYS: STANDARD SPECIFICATIONS, STANDARD DETAILS OF CONSTRUCTION: RULES OF THE BUREAU OF HIGHWAY OPERATIONS; GUIDELINES FOR THE DESIGN OF INFRASTRUCTURE COMPONENTS.

2. ALL NON-STANDARDS MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE SPECIFICALLY APPROVED IN WRITING.

3. ANY WORK NOT COMPLYING WITH THE REQUIREMENTS OF THE DOT SHALL BE REMOVED AND REPLACED.

4. THIS PLAN SHALL BE VALID FOR THE ISSUANCE OF CONSTRUCTION PERMITS FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL OR SELF-CERTIFICATION, AS APPLICABLE.

5. ALL SIDEWALK AND STREET AREAS CONSTRUCTED UNDER THIS PLAN SHALL REMAIN OPEN TO THE PUBLIC AT ALL TIMES.

ISSUANCE OF PERMITS

6. NO SIDEWALK, CURB OR ROADWAY WORK SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH HIGHWAY SUPERINTENDENT. APPLICATION SHALL BE MADE THREE DAYS BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL HAVE ALL REQUIRED INSURANCE COVERAGE ON FILE.

7. NO WORK ON DRAINAGE STRUCTURES SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH OFFICE OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

8. ANY VAULT WORK AT THE SITE SHALL BE DONE AS PER THE APPLICABLE RULES OF THE DOT AND THE DEPT. OF BUILDINGS.

CONSTRUCTION ACTIVITY

9. A CONSTRUCTION PLAN SHOWING MAINTENANCE AND PROTECTION OF TRAFFIC, INCLUDING PLACEMENT OF SIDEWALK, BRIDGES, BARRIERS AND SIGNAGE, SHALL BE SUBMITTED TO THE BOROUGH HIGHWAY OFFICE BEFORE CONSTRUCTION BEGINS.

10. NO SIDEWALK SHALL BE CLOSED WITHOUT A PERMIT. PEDESTRIAN AND TRAFFIC SAFETY SHALL BE PROTECTED AT ALL TIMES. ROADWAY CLOSINGS SHALL BE AS DIRECTED.

11. THE SITE SHALL BE MAINTAINED IN A CLEAN AND SAFE CONDITION.

FINAL SIGN-OFF

12. PERMITS SHALL BE PRESENTED FROM ALL PUBLIC AGENCIES AND UTILITIES HAVING OWNERSHIP OF STRUCTURES RELOCATED OR REMOVED DURING CONSTRUCTION.

13. ALL PAVEMENT MARKING INCLUDING THERMOSPLASTIC LANE DIVIDERS, REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN KIND TO THE BUREAU OF TRAFFIC STANDARDS.

14. ALL EXISTING CATCH BASINS ON SITE SHALL BE CLEANED AND MADE OPERABLE. 3

15. ALL DAMAGE CAUSED BY CONSTRICTION ON THIS PROJECT OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AS DIRECTED.

16. THE ROADWAY SHALL BE PAVED TO THE REQUIREMENTS OF THE DOT AND AS DIRECTED

PROFESSIONAL CERTIFICATION

I AM SUBMITTING THIS PLAN UNDER CERTIFICATION IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS

SIGNATURE _____ DATE _____

DOB APPROVAL

PROPOSED AND EXISTING WORK SHOWN HERE REVIEWED FOR COMPLIANCE WITH ALL APPLICABLE RULES AND REQUIREMENTS
BY :

PLAN EXAMINER

APPROVAL FOR ISSUANCE OF WORK PERMITS GRANTED BY:

CHIEF / BUILDERS PAVEMENT SECTION DATE

I, KARL FISCHER, A FULLY LICENSED ARCHITECT IN THE STATE OF NEW YORK, DO HEREBY CERTIFY THAT THE FIELD AND OFFICE WORK REQUIRED IN THE PREPARATION OF THIS PLAN WAS DONE BY ME OR ONE OF MY REGULAR EMPLOYEES UNDER MY SUPERVISION AND THAT NO PART OF THE WORK WAS DONE BY ANY EMPLOYEE OF THE CITY OF NEW YORK.

I FURTHER CERTIFY THAT THE EXTENT AND TYPE OF PAVEMENT, CURBS, SIDEWALKS, DRAINAGE FACILITIES, STRUCTURES AND APPURTENANCES CONFORM TO THE CURRENT BUILDERS PAVEMENT REGULATIONS OF THE DIVISIONS OF HIGHWAY ENGINEERING, BUREAU OF TRAFFIC OF THE DEPARTMENT OR TRANSPORTATION, CITY OF NEW YORK.

D.O.B APPROVAL OF DESIGN ELEMENTS
FOR SELF-CERTIFICATION PROJECTS ONLY

ITEMS REQUIRING D.O.B APPROVAL APPROVAL BY DATE

KEY PLAN

REVISIONS

no.	date	description
4	011615	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
TITAN ENGINEERS PC
1331 STUYVESANT AVE
UNION NJ 07083

MEP ENGINEER:
Ettinger Engineering Associates
505 8th Avenue 24th Floor New York, NY 10018
Phone: 212.244.2410 1 2412 Fax: 212.643.1606

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8989
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

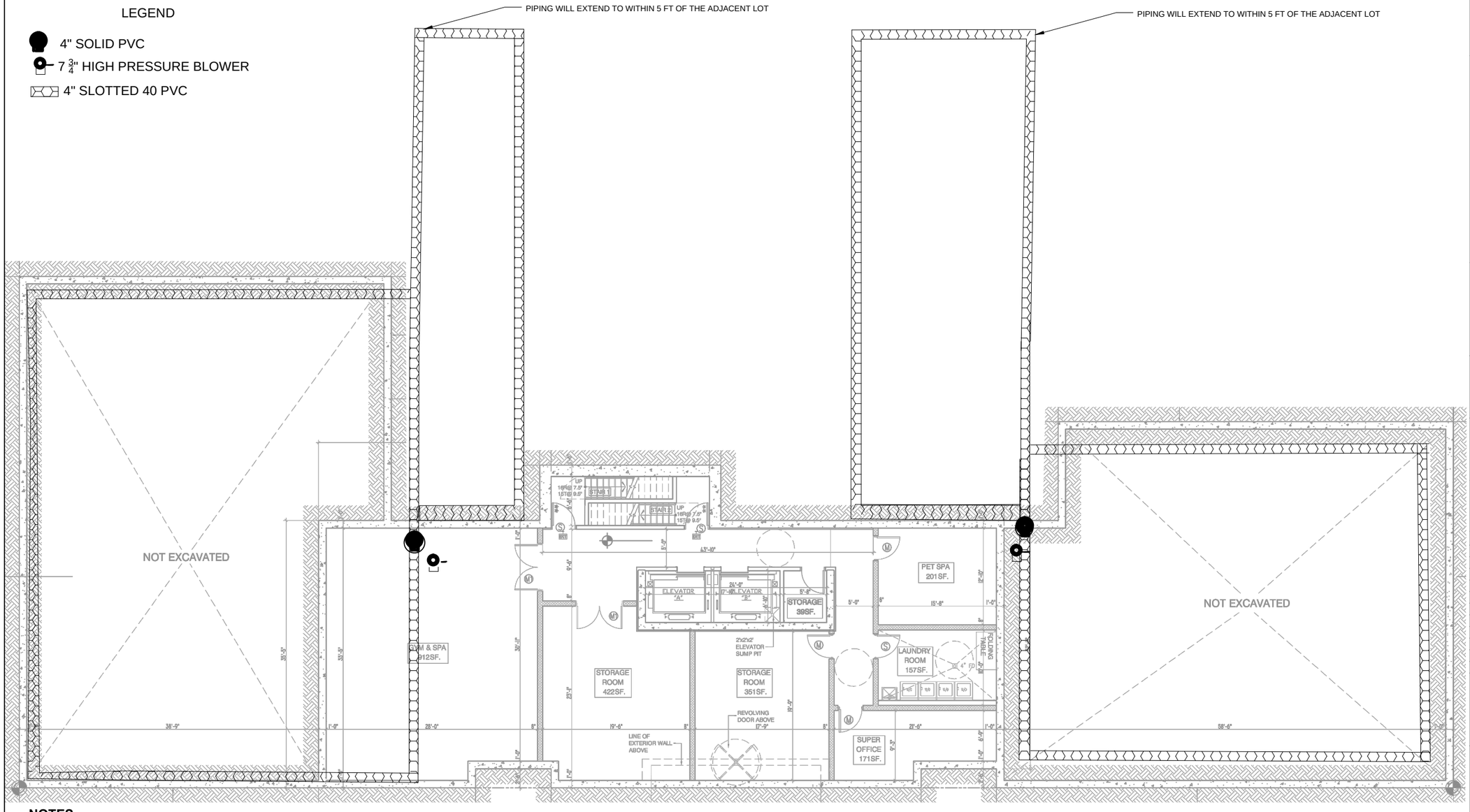
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BUILDING PAVERS PLAN

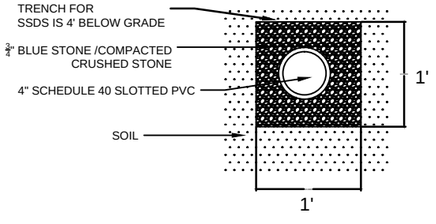
scale: AS NOTED	project no.: 06-71 / 14-41
date: JAN. 15	revision no.: 4
drawn: .	drawing no.: BPP-004.01
checked: K.F.	

LEGEND

- 4" SOLID PVC
- 7 3/4" HIGH PRESSURE BLOWER
- 4" SLOTTED 40 PVC



1 PLAN VIEW
N.T.S.



2 SECTION VIEW
N.T.S.

NOTES

1. LOCATION OF ALL COMPONENTS OF SYSTEMS MAY VARY BASED ON SITE CONDITIONS AND MUST BE REVIEWED AND APPROVED BY THE FIELD ENGINEER OF RECORD.
2. ELECTRICAL POWER WILL BE PROVIDED FROM THE EXISTING ELECTRICAL DISTRIBUTION PANEL LOCATION IN THE BUILDING.
3. ALL ELECTRICAL CONNECTIONS TO BE MADE BY A NYS LICENSED ELECTRICIAN.
4. INSTALLATION TO COMPLY ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

GRANT engineering

REGISTERED DESIGN PROFESSIONAL OF RECORD
STEPHEN A. MORSE
OF
GRANT engineering
139 FULTON ST, SUITE 907
NEW YORK, NY
WET INK SIGNATURE AND STAMP

REGISTERED DESIGN PROFESSIONALS

OWNER'S NAME:
PINE BUILDERS CORP
STREET ADDRESS:
1339-41 PROSPECT AVE
BROOKLYN, NY 11218

PROJECT NAME:
50 GREENPOINT AVE
STREET ADDRESS:
50 GREENPOINT AVE
BROOKLYN, NY 11222

BOROUGH	BLOCK No.
BROOKLYN	2652
LOT No.	DATE OF ORIGINAL
1	MARCH 27, 2015

APPROVED REVISIONS

No.	DESCRIPTION	APPROVED BY	DATE
1.	SSDS REVISED	RT	4-27-15
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

DOB BSCAN STICKER

DOB EMPLOYEE STAMP AND SIGNATURE

DRAWING TITLE
VAPOR BARRIER INSTALLATION PLAN

DOB BUILDING PLAN IDENTIFICATION NUMBER
ENV-002.00

ALT 1 / NB APPLICATION No.

50 GREENPOINT AVENUE

BROOKLYN, NEW YORK

Remedial Action Work Plan

NYC VCP Number: 13CVCP155K
E-Designation Site Number: 13EHAZ341K

Prepared for:
Euro Builders
119 Lorimer Street
Brooklyn, NY 11206

Prepared by:

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS

1808 Middle Country Road
Ridge, NY 11961

JUNE 2013

(REVISED JULY 2013)

REMEDIAL ACTION WORK PLAN
TABLE OF CONTENTS

TABLES

FIGURES

ATTACHMENTS

LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
CSOP	Contractors Site Operation Plan
ECs/ICs	Engineering and Institutional Controls
HASP	Health and Safety Plan
VCA	Voluntary Cleanup Agreement
NOC	Notice of Completion
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	NYSDEC Division of Environmental Remediation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
OSHA	United States Occupational Health and Safety Administration
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
SVOC	Semi-Volatile Organic Compound
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

CERTIFICATION

I, Ariel Czemerinski, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the Redevelopment Project located at 50 Greenpoint Avenue, Site number 13CVCP155K.

I certify that 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

_____

NYS PE License Number

_____

Signature

_____

Date

PE Stamp

EXECUTIVE SUMMARY

Euro Builders has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a 15,600-ft^2 Site located at 50 Greenpoint Avenue in Brooklyn, 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 Current Usage

The Site is located at 50 Greenpoint Avenue in the Greenpoint section of Brooklyn, New York, and is identified as Block 2562 and Lot 1 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 15,600-square feet and is bounded by Greenpoint Avenue and Block 2557 Lot 1 (multi-story commercial building) to the north, Milton Street and Block 2565 Lot 1 (multi-story industrial building) to the south, Block 2562 Lots 10, 37 and 39 (lot 10 is a multi-story industrial building and lots 37 and 39 are single story industrial buildings) to the east, and West Street and Block 2556 Lot 1 (single story industrial building) to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is undeveloped vacant and uncapped, the lot is currently being used for container storage.

Summary of Proposed Redevelopment Plan

The proposed future use of the Site will consist of redeveloping the lot with a 6-story residential apartment building. The new structure will cover the entire lot and includes a full cellar which will be utilized for indoor parking for 24 vehicles, storage and utility rooms. The first floor will include additional parking for 4 vehicles, indoor recreation space, residential lobby, residential units, and paved outdoor recreation areas. The basement level and foundation will require excavation of the entire Site to a depth of approximately 10.5 feet below grade with additional excavation to approximately 15 feet below grade for the elevator pit. Assuming an excavation volume of 15,660 s.f. and 10.5 feet deep, the total excavated volume of soil for the entire Site will be approximately 6,066 cubic yards (9,100 tons). Layout of the proposed site development is presented in Figure 3. The current zoning designation is R6 with a C2-4 commercial overlay.

The proposed use is consistent with existing zoning for the property.

Summary of the Remedy

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 1 Unrestricted Use Soil Cleanup Objectives (SCOs);
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas;
5. Excavation and removal of soil/fill exceeding Track 1 SCOs. For development purposes, the entire property will be excavated to a depth of 10.5 feet below grade. A small portion of property will be excavated to the depths of 15 feet below grade. More than 9,100 tons of soil/fill will be excavated during remediation and development;
6. 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;
7. Removal of underground storage tanks (if encountered) and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State and Federal laws and regulations;
8. Transportation and off-Site disposal of all soil/fill material at 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;

9. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
11. As part of development, installation of a vapor barrier/waterproofing membrane below the basement concrete slab and behind the foundation walls of the proposed building;
12. As part of development, construction and maintenance of an engineered composite cover consisting of a 6 inch thick concrete basement slab over the entire site;
13. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations;
14. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;
15. 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, if Track 1 SCOs are not achieved, describes all Engineering and Institutional Controls to be implemented at the Site;
16. If Track 1 is not achieved, submission of an approved Site Management Plan (SMP) in the 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; and
17. If Track 1 is not achieved, the property will continue to be flagged with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in the 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 Office of Environmental Remediation created the New York City Voluntary Cleanup Program (NYC VCP) to provide governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan ("cleanup plan") describes the findings of prior environmental studies that show the location of 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.

Remedial Investigation and Cleanup Plan. Under the NYC VCP, a thorough cleanup 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 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 the performance of 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 plan are in compliance with safety requirements of the United States Occupational Safety and Health Administration (OSHA). This plan includes many protective elements including those discussed below.

Site Safety Coordinator. This project has a designated Site Safety Coordinator to implement the Health and Safety Plan. The Site Safety Coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site Safety Coordinator is Mr. Kevin Waters of Environmental Business Consultants. Mr. Waters can be reached at (631) 504-6000.

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 only to workers performing specific tasks including removing hazardous 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 (CAMP). Results will be regularly reported to the NYC OER. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a 'Contingency Plan').

Odor, Dust and Noise Control. This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with NYC noise control standards. If you observe problems in these areas, please contact the on-Site Project Manager, Kristen DiScenza (631) 504-6000 or NYC Office of Environmental Remediation Project Manager, Jennifer Pati (212) 341-2034.

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.

Storm-Water Management. To limit the potential for soil erosion and discharge, this cleanup plan has provisions for storm-water management. The main elements of the storm water 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 are 7:00AM to 6:00PM Monday through Friday.

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, provides project contact names and numbers, and locations of 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, Ms. Kristen DiScenza (EBC) at (631) 504-6000, the NYC Office of Environmental Remediation Project Manager, Jennifer Pati at (212) 341-2034, 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, odors 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 all 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-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 a Remedial Action Report) that will be available for you to review in the public document repositories located at the Greenpoint Library (107 Norman Avenue, Brooklyn, NY 11222).

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 OER. Requirements that the property owner must comply with are established through a city environmental designation. 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 SITE BACKGROUND

Euro Builders has applied to enroll in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 50 Greenpoint Avenue in the Greenpoint section of Brooklyn, 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 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, complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

1.1 Site Location and Current Usage

The Site is located at 50 Greenpoint Avenue in the Greenpoint section of Brooklyn, New York, and is identified as Block 2562 and Lot 1 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 15,600-square feet and is bounded by Greenpoint Avenue and Block 2557 Lot 1 (multi-story commercial building) to the north, Milton Street and Block 2565 Lot 1 (multi-story industrial building) to the south, Block 2562 Lots 10, 37 and 39 (lot 10 is a multi-story industrial building and lots 37 and 39 are single story industrial buildings) to the east, and West Street and Block 2556 Lot 1 (single story industrial building) to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is undeveloped vacant and uncapped, the lot is currently being used for container storage.

1.2 Proposed Redevelopment Plan

The proposed future use of the Site will consist of redeveloping the lot with a 6-story residential apartment building. The new structure will cover the entire lot and includes a full cellar which will be utilized for indoor parking for 24 vehicles, storage and utility rooms. The first floor will include additional parking for 4 vehicles, indoor recreation space, residential lobby, residential units, and paved outdoor recreation areas. The basement level and foundation will require

excavation of the entire Site to a depth of approximately 10.5 feet below grade with additional excavation to approximately 15 feet below grade for the elevator pit. Assuming an excavation volume of 15,660 s.f. and 10.5 feet deep, the total excavated volume of soil for the entire Site will be approximately 6,066 cubic yards (9,100 tons). Layout of the proposed site development is presented in Figure 3. The current zoning designation is R6 with a C2-4 commercial overlay. 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 area surrounding the Site consists of a mix of commercial, industrial and residential properties. Figure 4 shows the surrounding land usage of the adjacent properties listed below as well as additional properties located up to 500 feet away from the Site. No hospitals, daycare facilities or schools are located within a 250 ft radius of the Site.

Surrounding Property Usage

Direction	Property Description
North – Opposite side of Greenpoint Avenue	Block 2557, Lot 1 (37 Greenpoint Avenue) – Developed with a multi-story commercial building.
South – Opposite side of Milton Street	Block 2565, Lot 1 (62 West Street) – Developed with a multi-story industrial building.
East – Adjacent property	Block 2562, Lots 10, 37 and 39 (56 Greenpoint Avenue, 53/55 and 57/59 Milton Street) – Lot 10 is developed with a multi-story industrial building and Lots 37 and 39 are developed with single story industrial buildings.
West – Opposite side of West Street	Block 2556, Lot 1 (97 West Street) – Developed with a single story industrial building.

Figure 4 shows the surrounding land usage.

1.4 Remedial Investigation

A remedial investigation was performed and the results are documented in a companion document called "*Remedial Investigation Report, 50 Greenpoint Avenue, Brooklyn, NY*", dated June, 2013 (RIR).

Summary of Past Uses of Site and Areas of Concern

A Phase I was completed by Hydrotech Environmental (HTE) in November 2003 which identified the Site as being utilized as a gas station and automobile repair facility from 1942 to 1965. Three underground storage tanks were identified on Fire Insurance maps prior to 1978. There are no records that the tanks were ever registered or removed. Two above ground storage tanks, a 550 gallon diesel fuel tank and a 275 gallon waste oil tank were also present in 2003. A "drain" was noted in the work yard south of the former office area and west of the former garage are. Both above ground storage tanks identified in the 2003 Phase I had been removed prior to a subsurface investigation completed in 2006.

Summary of the Work Performed under the Remedial Investigation

Euro Builders performed the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed six soil borings across the entire project Site, and collected twelve soil samples and one duplicate soil sample for chemical analysis from the soil borings to evaluate soil quality;
3. Installed four groundwater monitoring wells throughout the Site to establish groundwater flow and collected four groundwater samples and one duplicate groundwater sample for chemical analysis to evaluate groundwater quality; and
4. Installed five soil vapor probes around Site perimeter and collected five samples for chemical analysis.

Summary of Environmental Findings

1. Elevation of the property is approximately 21 feet.
2. Depth to groundwater ranges from 8.97 to 10.18 feet at the Site.
3. Groundwater flow is generally from northeast to southwest beneath the Site.
4. Depth to bedrock is at the Site is greater than 100 feet.
5. The stratigraphy of the Site, from the surface down, consists of 3 feet of historic fill underlain by native brown silty sand.

6. Soil/fill samples collected during the RI showed two VOCs, 1,2-dichlorobenzene (1,200 µg/Kg) and tetrachloroethene (1,700 µg/Kg) detected above Track 1 Unrestricted Use SCOs in one of the six shallow samples. Six other VOCs (including dichlorobenzene, naphthalene, xylene and TCE were detected below Unrestricted Use SCOs. No other VOCs were detected in any soil sample. Seven SVOCs including benzo(a)anthracene (max. of 21,100 µg/Kg), benzo(a)pyrene (max. of 16,000 µg/Kg), benzo(k)fluoranthene (max of 6,700 µg/Kg), chrysene (max. of 22,000 µg/Kg), dibenzo(a,h)anthracene (max. of 1,300 µg/Kg), and indeno(1,2,3-cd)pyrene (max. of 3,800 µg/Kg) were detected above their respective Track 2 Restricted Residential Use SCOs within five of the six shallow samples. The SVOCs detected above Restricted Residential SCOs are all PAH compounds and their concentrations and distribution indicate that they are associated with historic fill material observed during the sampling. One pesticide, 4,4'-DDT, was detected slightly above Unrestricted Use SCOs in two of the six shallow samples at a maximum concentration of 3.8 µg/Kg and one PCB, PCB-1260, was detected above its Unrestricted Use SCO at a concentration of 520 µg/Kg in one of the six shallow samples. Both pesticide and PCB concentrations were well below Restricted Residential SCOs. Eight metals including barium (785 µg/Kg), cadmium (max. of 6.41 µg/Kg), chromium (31.2 µg/Kg), copper (max. of 1,660 µg/Kg), lead (max. of 2,850 µg/Kg), mercury (max. of 3.2 µg/Kg), nickel (max. of 48.4 µg/Kg) and zinc (max. of 5,150 µg/Kg) exceeded Unrestricted Use SCOs in all six shallow samples and one deep sample. Of these metals, barium, cadmium, copper, lead, mercury and zinc also exceeded Restricted Residential SCOs. Other than two metals, VOCs, SVOCs, pesticides and PCPs were not detected above Unrestricted Use SCOs within any of the six deep soil samples. Overall, the findings were consistent with observations for historical fill sites in the areas throughout NYC.
7. Groundwater samples collected during the RI showed no detectable concentrations of pesticides or PCBs in any of the four samples. Three VOCs were detected slightly above GQS within two of the four monitoring wells and included 1,1,2,2-tetrachloroethene, tetrachloroethene and trichloroethene. Eleven SVOCs were detected in one or more of the four monitoring wells, but only five were detected at a concentration above GQS. Metals

including iron, lead, manganese, and sodium were detected above their respective NYSDEC Groundwater Quality Standards in all four dissolved groundwater samples.

8. Soil vapor samples collected during the RI showed petroleum and chlorinated VOCs at moderate to high concentrations. Tetrachloroethene (PCE) was identified in all five soil vapor samples, however concentrations were only detected above the State DOH guidance values in four of the five samples, at a maximum concentration of 983 $\mu g/m^3$. Trichloroethene was also detected in all five samples, and was only detected above the State DOH guidance value in four of the five samples, at a maximum concentration of 865 $\mu g/m^3$. 1,1,1-TCA (max. of 11.7 $\mu g/m^3$) and carbon tetrachloride (max. of 2.39 $\mu g/m^3$) were also detected in Site soil vapor at concentrations below State DOH guidance values in all samples. Concentrations of petroleum-related VOCs (BTEX) ranged from 192 $\mu g/m^3$ in SG4 to 496.3 $\mu g/m^3$ in SG1. Overall the highest reported concentrations were for PCE (maximum of 983 $\mu g/m^3$) and TCE (maximum of 865 $\mu g/m^3$.

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.

1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961
PH: 631.504.6000
FAX: 631.928.2780

2.0 REMEDIAL ACTION OBJECTIVES

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

Groundwater

- Remove contaminant sources causing impact to groundwater.
- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

Soil

- Prevent direct contact with contaminated soil.
- Prevent exposure to contaminants volatilizing from contaminated soil.
- Prevent migration of contaminants that would result in groundwater contamination.

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 under 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 exceedence of applicable standards, criteria and guidance values (SCGs). A remedy is then developed 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.

The following is a detailed description of the alternatives analysis and remedy selection to address impacted media at the Site. As required, a minimum of two remedial alternatives (including a Track 1 scenario) are evaluated, as follows:

Alternative 1 involves

- Establishment of NYSDEC Part 375 Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs).
- Removal of all soil/ fill exceeding Unrestricted Use SCOs throughout the Site and confirmation that 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 require excavation to a depth of approximately 3 feet across the entire Site to remove all historic fill, with additional excavation to 13 feet to remove metal exceedences in the area of SB1. However, redevelopment plans only require

excavation across the Site to a depth of approximately 10.5 feet to construct the new building's cellar level. Therefore, additional excavation beyond construction requirements would be needed to remove all soil/fill containing analytes at concentrations above Unrestricted Use SCOs.

- No Engineering or Institutional Controls are required for a Track 1 cleanup, but a waterproofing membrane would be installed beneath the basement foundation and behind foundation sidewalls of the new building as a part of development to prevent any potential future exposures from soil vapor.
- As part of new development, placement of a final cover over the entire Site.

Alternative 2 involves:

- Establishment of Track 4 Site-Specific SCOs;
- Removal of all soil/fill exceeding Track 4 Site-Specific SCOs and confirmation that Track 4 has been achieved with post-excavation endpoint sampling. Excavation for construction of the cellar would take place to a depth of approximately 10.5 feet with additional excavation to approximately 15 feet below grade for the elevator pit. If soil/ fill containing VOCs, SVOCs, PCBs, pesticides, or metals at concentrations above Track 4 Site-Specific SCOs is still present at the base of the excavation after removal of all soil required for construction of the new building is complete, additional excavation will be performed to meet Track 4 Site-Specific SCOs;
- Placement of a final cover over the entire Site to prevent exposure to remaining soil/fill;
- Installation of a waterproofing membrane beneath the building slab and along foundation side walls to prevent any potential future exposures from soil vapor;
- Establishment of use restrictions including prohibitions on the use of groundwater from the Site; prohibitions of sensitive 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 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; and
- Continued registration as an E-designated property to memorialize the remedial action

and the Engineering and Institutional Controls required by this RAWP.

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 contaminated soil/fill exceeding Track 1 Unrestricted Use SCOs and groundwater protection standards, thus eliminating potential for direct contact with contaminated soil/fill once construction is complete and eliminating the risk of contamination leaching into groundwater.

Alternative 2 would achieve comparable protections of human health and the environment by excavating the historic fill at the Site and by ensuring that remaining soil/fill on-Site meets Track 4 Site-Specific SCOs, 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 would ensure that the composite cover system remains intact and protective. Establishment of Track 4 Site-Specific SCOs 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 use of groundwater for potable supply would be prevented as its use is prohibited by city laws and regulations. Potential future migration of soil vapors into the new building would be prevented by installing a waterproofing membrane below the new building's basement slab and continuing the vapor barrier/waterproofing membrane around foundation walls.

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, SCGs and RAOs for soil through removal of soil to achieve Track 1 Unrestricted Use SCOs and groundwater protection standards. Management of potential future soil vapor would also be achieved by installing a vapor barrier/waterproofing membrane below the new building's basement slab and continuing the waterproofing membrane around foundation walls, as part of development.

Alternative 2 would achieve compliance with the remedial goals, SCGs and RAOs for soil through removal of soil to meet Track 4 Site-Specific SCOs. Compliance with SCGs for soil vapor would also be achieved by installing a vapor barrier/waterproofing membrane below the new building's basement slab and continuing the waterproofing membrane around 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) that comply with the applicable SCGs shall 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 effects on public health and the environment during implementation of the remedial action, including protection of the community, environmental impacts, time until remedial response objectives are achieved, and protection of workers during remedial actions.

Both Alternative 1 and Alternative 2 have similar short-term effectiveness during their respective implementations, 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. However, short term impacts would be higher for Alternative 1 to remove greater amount of historical fill material from below excavation depth required for the proposed building. However, focused attention to means and methods during the remedial action during a Track 1 removal action, including community air monitoring and appropriate truck routing, would minimize or negate the overall impact of these.

An additional short-term adverse impact and risks to the community associated with both remedial alternatives is increased truck traffic. Alternative 1 will require approximately 375, 25-ton capacity truck trips would be necessary to transport fill and soil excavated during Site development. Alternative 2 will require approximately 364, 25-ton capacity truck trips would be necessary to transport fill and soil excavated during Site development. Truck traffic will be routed on the most direct course using major thoroughfares where possible and flaggers will be used to protect pedestrians at Site entrances and exits.

The effects of these potential adverse impacts to the community, workers and the environment will be minimized through implementation of corresponding 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) will be protected from on-Site contaminants (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 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 Engineering Controls.

Alternative 1 would achieve long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill and enabling unrestricted usage of the property.

Alternative 2 would provide long-term effectiveness by removing most on-Site contamination and attaining Track 4 Site-Specific SCOs; a composite cover system across the Site, maintaining use restrictions, establishing an SMP to ensure long-term management of Institutional Controls (ICs) Engineering Controls (ECs), and maintaining continued 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 will provide continued high level of protection in perpetuity.

Both alternatives would result in removal of soil contamination exceeding the SCOs providing the highest level, most effective, and permanent remedy over the long-term with respect to a remedy for contaminated soil, which will eliminate any migration to groundwater. Potential sources of soil vapor and groundwater contamination will also be eliminated as part of the remedy.

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 SCOs.

Alternative 2 would likely remove most of the historic fill at the Site, and any remaining on-Site soil beneath the new building area will meet Track 4 - Site-Specific SCOs. Alternative 1 would eliminate a greater total mass of contaminants on Site.

The removal of soil to 10.5 feet for the new development in both scenarios would probably result in relatively minor differences 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 Alternatives 1 and 2 are readily available and have been proven effective in remediating the contaminants associated with the Site. They use standard materials and services that are well established technology. The reliability of each remedy is also high. There are no special difficulties associated with any of the activities proposed.

Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

Since historic fill at the Site was found during the RI to only extend to a depth of up to 3 feet below grade, and the new building requires excavation of the entire Site to a depth of 10.5 feet, the costs associated with both Alternative 1 and Alternative 2 would likely be the comparable.
The costs associated with Alternative 1 would be slightly higher to remove additional soils in one boring location to achieve Track 1 SCOs. Alternative 1 would require excavation of all historic fill across the entire Site to depth of 3 feet across the majority of the Site with additional excavation to 13 feet to remove metal exceedances in the area of SB1, and Alternative 2 would require excavation only of soil exceeding Track 4 Site-Specific SCOs remains after excavation for the new building. Long-term costs for Alternative 2 would likely be higher than Alternative 1 based on implementation of a Site Management Plan as part of Alternative 2.

The remedial plan creates an approach that combines the remedial action with the redevelopment of the Site, including the construction of the building foundation and subgrade structures. The remedial plan is also cost effective in that it will take into consideration the selection of the closest and most appropriate disposal facilities to reduce transportation and disposal costs during the excavation of historic fill and other soils during the 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 Attachment B.

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 proposed redevelopment of the Site is compatible with its current zoning and is consistent with recent development patterns. Following remediation, the Site will meet either Track 1 Unrestricted Use or Track 4 Site-Specific SCOs, both of which are appropriate for its planned residential use. However, the Track 1 alternative does not allow ECs or ICs that would provide protection against off-Site vapor migration which would be needed for residential use. Improvements in the current environmental condition of the property achieved by both alternatives are also consistent with the City's goals for cleanup of contaminated land and bringing such properties into productive reuse. Both alternatives are equally protective of natural resources and cultural resources.

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 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. To the

extent practicable, energy efficient building materials, appliances, and equipment will be utilized to complete the development. A complete list of green remedial activities considered as part of the NYC VCP is included in the Sustainability Statement, included as Appendix D.

4.0 REMEDIAL ACTION

4.1 Summary of Preferred Remedial Action

The preferred remedial action alternative is the Track 1 Alternative. The preferred remedial action alternative achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative 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 1 Unrestricted Use Soil Cleanup Objectives (SCOs);
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas;
5. Excavation and removal of soil/fill exceeding Track 1 SCOs. For development purposes, the entire property will be excavated to a depth of 10.5 feet below grade. A small portion of property will be excavated to the depths of 15 feet below grade. More than 9,100 tons of soil/fill will be excavated during remediation and development;
6. 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;
7. Removal of underground storage tanks (if encountered) and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State and Federal laws and regulations;
8. Transportation and off-Site disposal of all soil/fill material at 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;

9. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
11. As part of development, installation of a vapor barrier/waterproofing membrane below the basement concrete slab and behind the foundation walls of the proposed building;
12. As part of development, construction and maintenance of an engineered composite cover consisting of a 6 inch thick concrete basement slab over the entire site;
13. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations;
14. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;
15. 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, if Track 1 SCOs are not achieved, describes all Engineering and Institutional Controls to be implemented at the Site;
16. If Track 1 is not achieved, submission of an approved Site Management Plan (SMP) in the 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; and
17. If Track 1 is not achieved, the property will continue to be flagged with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in the RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

4.2 Soil Cleanup Objectives and Soil/Fill Management

Track 1 Soil Cleanup Objectives (SCOs) are proposed for this project. The SCOs for this Site are listed in Table 1.

If Track 1 is not achieved, the following Track 4 Site-Specific SCOs will be used:

Contaminant	Track 4 SCOs
Total SVOCs	250 ppm
Lead	700 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 Attachment D.

Soil and fill management at the Site will include impacted soil removal and disposal within the development cut. The location of planned excavations is shown in Figure 5.

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.

Estimated Soil/Fill Removal Quantities

The total quantity of soil/fill expected to be excavated and disposed off-Site is 9,100 tons.
Disposal location(s) will be reported promptly to the OER Project Manager prior to the start of the remedial action.

End-Point Sampling

Removal actions under this plan will be performed in conjunction with remedial end-point sampling. The RI provided endpoint data that met Track 1 - Site Specific SCOs at the 11 to 13 feet interval, with the exception of the SB1 location, which showed slightly elevated concentrations of lead and zinc. Additional post-excavation end-point sampling and testing will be performed promptly following materials removal and completed prior to Site development activities. To evaluate attainment of Track 1- Unrestricted Use SCOs, five post excavation soil

samples will be collected and analyzed for VOCs, SVOCs, and TAL Metals. The approximate collection location of the endpoint soil samples is shown in Figure 6.

In addition, if hotspots are encountered, hotspot removal end-point sampling frequency will consist of the following:

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 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.

New York State ELAP certified labs will be used for all end-point sample analyses. Labs for 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. End-point samples will be analyzed for trigger analytes (those for which SCO exceedence is identified) utilizing the following methodology:

Soil analytical methods will include:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270; and
- Target Analyte List metals; and

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization 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.

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

Prepare field blanks by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. Trip blanks will not be used for samples to be analyzed for metals, SVOCs or pesticides. One blind duplicate sample will be prepared and submitted for analysis every 20 samples.

Import and Reuse of Soils

Import of soils onto the property and reuse of soils already on-Site will be performed in conformance with the Soil/Materials Management Plan in Attachment D. The estimated quantity of soil to be imported into the Site for backfill and cover soil is 0 tons. The estimated quantity of onsite soil/fill expected to be reused/relocated on Site is 0 tons.

4.3 Engineering Controls

The excavation required for the proposed Site development will achieve Track 1 Unrestricted Use SCOs. No Engineering Controls are required to address residual contamination at the Site. However, the following elements will be incorporated into the foundation design as part of the development: composite cover system and waterproofing membrane. If Track 1 is not achieved, these two elements will constitute Engineering Controls that will be employed in the remedial action to address residual contamination remaining at the Site.

Composite Cover System

As part of new development, the entire property will be covered by an engineered, permanent composite cover. system. This composite cover system will be comprised of 6-inch thick concrete-building slab beneath the area of the proposed building, which spans the entire footprint of the lot, and will act as permanent engineering control for the Site.

If Track 1 SCOs are not achieved at the Site, the composite cover system will be a permanent engineering control. The system will be inspected and reported at specified intervals as required by this RAWP and the SMP. A Soil 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

Vapor Barrier/Waterproofing Membrane

As part of development, migration of potential soil vapor from offsite in the future will be achieved with a combination of building slab and vapor barrier/waterproofing membrane. A vapor barrier/waterproofing membrane will be installed as part of development of the building foundation, since the basement level will be installed below the water table surface. The extent of the proposed waterproofing membrane is provided in Figure 7.

The waterproofing membrane will be the Preprufe 300R system as manufactured by Grace or an approved equivalent system. Preprufe 300 is a 1.2 mm (0.046 in) thick HDPE film with a pressure sensitive adhesive that bonds to the poured concrete. It is suitable for both under slab and vertical wall applications. The work will be inspected as necessary to meet the requirements of the product warranty.

The project's Professional Engineer licensed by the State of New York will have primary direct responsibility for overseeing the implementation of the vapor barrier/waterproofing membrane. Product specification sheets are provided in Attachment E. The Remedial Action Report will include photographs (maximum of two photos per page) of the installation process, PE/RA certified letter (on company letterhead) from the primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturers certificate of warranty.

4.4 Institutional Controls

Institutional Controls are not required on sites that achieve Track 1 Remedial Action. If Track 1 SCOs are not achieved, Institutional Controls (IC) will be utilized in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. Institutional Controls are listed below. Long-term employment of EC/ICs will be implemented under a site-specific Site Management Plan (SMP) that will be included in the RAR. The property will continue to be registered with an E-Designation by the NYC Buildings Department.

Institutional Controls for this remedial action are:

- 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 Site Management Plan which will note that the property owner and property owner's successors and assigns must comply with the approved SMP;
- Submittal of a Site Management Plan in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, , inspection, and certification of ECs and ICs. 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 annually and will comply with RCNY §43-1407(l)(3).
- Vegetable gardens and farming on the Site are prohibited;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP;
- The Site will be used for residential use and will not be used for a higher level of use without prior approval by OER.

4.5 Site Management Plan

Site Management is not required for Track 1 Remedial Actions. However, if Track 1 Unrestricted Use SCOs are not achieved, Site Management will be 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 the DCR and 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 DCR and 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; and (3) inspection and certification of EC's.

Site management activities, reporting, and EC/IC certification will be scheduled on an periodic basis to be established in 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 31 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 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.

Investigations reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA). 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 by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This EA 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 Sources

Based on the results of the Remedial Investigation Report, historic fill was encountered at the Site only to a depth of approximately 3 feet. The following contaminants of concern were

detected within the historic fill:

Soil

- VOCs including 1,2-dichlorobenzene and tetrachloroethene exceeding Unrestricted Use SCOs;
- SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene exceeding Restricted Residential SCO;
- Metals including barium, cadmium, copper, lead, mercury and zinc exceeding Restricted Residential SCOs;
- One pesticides 4,4'-DDT was identified but did not exceed Restricted Residential SCOs; and
- PCB-1260 was identified but did not exceed Restricted Residential SCOs

Groundwater

- Chlorinated VOCs including 1,1,2,2-tetrachloroethane, tetrachloroethene, and trichlorothene at concentrations exceeding GQS;
- SVOCs including benzo(a)anthracene, benzo(b)-fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeding GQSs; and
- Metals including iron, lead, manganese, and sodium exceeding GQSs.

Soil vapor

- Chlorinated VOCs including carbon tetrachloride and TCA detected at trace concentrations and well below NYS DOH monitoring thresholds;
- Chlorinated VOCs including PCE and TCE detected at concentrations exceeding NYS DOH monitoring thresholds;
- Petroleum VOCs detected at moderate concentrations including benzene, toluene, ethyl-benzene and xylene; and
- Acetone and ethanol at moderate levels.

Nature, Extent, Fate and Transport of Contaminants

The information compiled during previous investigations has confirmed the presence of

contaminated fill material from surface grade to an approximate depth of 3 feet bgs. SVOCs, and metals are present in the historic fill materials throughout the Site. Although SVOCs found in soil were also detected in the groundwater samples at concentrations above their respective GQSs, they are not likely attributable to an on-Site source because no contaminants were reported within any of the deeper soil samples collected at the Site. Concentrations of dissolved metals in the groundwater were significantly lower than the total levels of metals in groundwater. The levels of chlorinated VOCs identified in the soil vapor exceeded guidance levels issued by New York State DOH, VOCs were only detected above Unrestricted Use SCOs in one of the 6 shallow samples. No VOCs were detected in any of the deep soil samples collected.

Receptor Populations

On-Site Receptors – The Site is currently undeveloped and uncapped. Potential on-Site receptors are Site representatives and trespassers. During redevelopment of the Site, the on-Site potential receptors will include construction workers, Site representatives, and visitors. Once the Site is redeveloped, the on-Site potential sensitive receptors will include adult and child building residents, workers and visitors.

Off-Site Receptors - Potential off-Site receptors within a 0.25-mile radius of the Site include: adult and child residents, and commercial and construction workers, pedestrians, trespassers, and cyclists, based on the following:

1. Commercial Businesses (up to 0.25 mile) – existing and future
2. Residential Buildings (up to 0.25 mile) – existing and future
3. Building Construction/Renovation (up to 0.25 mile) – existing and future
4. Pedestrians, Trespassers, Cyclists (up to .25 mile) – existing and future
5. Schools (up to .25 mile) – existing and future.

Potential Routes of Exposure

The five elements of an exposure pathway are:

1) The source of contamination;
2) The environmental media and transport mechanisms - direct contact, ingestion, and inhalation;
3) The point of exposure;

4) The route of exposure;

5) The receptor population.

An exposure pathway is considered complete when all five elements of an exposure pathway are documented. A potential pathway exists when any one or more of the five elements comprising an exposure pathway cannot be determined. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future. Three potential primary routes exist by which chemicals can enter the body:

- Ingestion of water, fill, or soil;
- Inhalation of vapors and particulates; and
- Dermal contact with water, fill, or soil.

The work performed at the Site will include excavation of soil/fill material, and general construction activities. The construction and remediation work at the Site will expose the contaminants to the on-Site workers in a variety of ways listed above. These exposures will be limited to short durations through the intrusive work. A Construction Health and Safety Plan (CHASP) will be implemented during remediation work for the safety of on-Site workers and off-Site local population. Upon completion of the remedial activities, the Site will achieve Track 1 Unrestricted Use SCOs and the Site will be covered by the engineered composite cover (i.e., building slab and vapor/moisture barrier). This will prevent direct exposure to humans from any off-Site contamination.

Potential Points of Exposure

Current Conditions: The potential for exposure to surficial historic fill exists under current conditions because the Site is uncapped. Groundwater is marginally contaminated but is not exposed at the Site, and because the Site is served by the public water supply and groundwater use for potable supply is prohibited, groundwater is not used at the Site, and there is no potential for exposure. As there is currently no structure onsite, accumulation of soil vapor cannot pose an exposure threat.

Construction/Remediation Activities: Once redevelopment activities begin, construction 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 soil, fill, and groundwater. Similarly, off-Site receptors could be exposed to dust and vapors from on-Site activities. 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: Once the remedial actions and redevelopment of the Site has been completed, there will be no potential on-Site or off-Site exposure pathways. Not only will soil/fill exceeding Track 1 - Unrestricted Use SCOs be removed, but the Site will also be fully capped with a basement concrete slab, which will prevent contact with soil. Any exposures to vapors will be prevented by the installation of a waterproofing membrane as part of development,

Overall Human Health Exposure Assessment

The proposed development will consist of the construction a new 6-story apartment building with a full basement, beneath the entire footprint of the property. Soil/fill material exceeding Part 375 Unrestricted Use SCOs will be removed during Site development, eliminating potential impacts to human health or the environment. If there is any remaining residual VOC, metal or SVOC-impacted soil that is not excavated, it will be removed to achieve Track 1, thereby eliminating the exposure pathway. Additionally, the impermeable cap (i.e., the proposed development) and waterproofing membrane will eliminate exposure pathways to contaminated groundwater and soil vapor and related potential impacts to human health.

There are potential complete exposure pathways for the current site condition. There is a potential complete exposure pathway that requires mitigation during implementation of the remedy. There is no complete exposure pathway under future conditions after the site is developed. Under current conditions, on-Site exposure pathways exist for contractors and others that may access the Site. 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. After the remedial action is complete, there will be no remaining exposure pathways to on-Site soil/fill or groundwater, as all soil above Unrestricted Use SCOs will have been removed and a waterproofing membrane will have been installed as part of development. If Track 1 remedy is not achieved, continued protection after the remedial action will be achieved by the implementation of site management including periodic inspection and certification of the performance of remedial controls

5.0 REMEDIAL ACTION MANAGEMENT

5.1 Project Organization and Oversight

Principal personnel who will participate in the remedial action include Kristen DiScenza, Project Manager-EBC and Kevin Waters, Field Operations Officer-EBC. The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Ariel Czemerinski P.E., AMC Engineering and Charles Sosik P.G. EBC.

5.2 Site Security

Site access will be controlled by a chain link or wooden construction fence, which will surround the property.

5.3 Work Hours

The hours for operation of remedial construction will be from 7:00AM to 6:00PM. These hours conform to the New York City Department of Buildings construction code requirements.

5.4 Construction Health and Safety Plan

The Health and Safety Plan is included in Appendix 4. The Site Safety Coordinator will be Kevin Waters - EBC. 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, including 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 be required to sign an HASP acknowledgment. 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 HASP. 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 baling/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/m^3) 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/m^3 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/m^3 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/m^3 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 to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Markout 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

Based on the planned excavation depth, Site dewatering may be necessary. Water removed from the base of the excavation will be discharged into the New York City sewer system. Euro Builders will obtain prior approval from the New York City Department of Environmental Protection (NYCDEP). 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 gorundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria.

Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations. Staging locations will be reported to OER prior to the start of the remedial action.

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 roads 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 NYC VCP 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 potable 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; lose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from holes, 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, haybales; 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 by 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. Storm-water control systems and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off-Site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If 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. If the source of the spill is ongoing and can be identified, it should be stopped it this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

Storm Response Reporting

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

5.8 Traffic Control

Drivers of trucks leaving the NYC VCP 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 will be west on Greenpoint Avenue to McGuinness Blvd to Interstate 278 - Brooklyn Queens Expressway.

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 day. Those reports will include:

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

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

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 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 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;
- As-built drawings for all constructed remedial elements, required certifications, manifests and other written and photographic documentation of remedial work performed under this remedy;
- Site Management Plan;
- 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 and all material characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action and DUSR;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Account of the source area locations and characteristics of all contaminated material removed from the Site including a map showing source areas;
- Account 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.
- If Track 1 Remedial Action is not acheived, continue flagging of the property with an E-Designation by the NYC Department of Buildings.
- Reports and supporting material will be submitted in digital form.

Remedial Action Report Certification

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

I, _____, am currently a professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the Site name Site Site number.

I certify that the OER-approved Remedial Action Work Plan dated month day year and Stipulations in a letter dated month day, year; if any 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.

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 6 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	2	6
Demobilization	10	1
Submit Remedial Action Report	20	-

1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961
PH: 631.504.6000
FAX: 631.928.2780

TABLES

TABLE 1
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
METALS							
Arsenic	7440-38 -2	16[f]	16[f]	16[f]	16[f]	13[f]	16[f]
Barium	7440-39 -3	350[f]	400	400	10,000 [d]	433	820
Beryllium	7440-41 -7	14	72	590	2,700	10	47
Cadmium	7440-43 -9	2.5[f]	4.3	9.3	60	4	7.5
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1[e]	19
Chromium, trivalent[h]	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50 -8	270	270	270	10,000 [d]	50	1,720
Total Cyanide [h]		27	27	27	10,000 [d]	NS	40
Lead	7439-92 -1	400	400	1,000	3,900	63[f]	450
Manganese	7439-96 -5	2,000[f]	2,000[f]	10,000 [d]	10,000 [d]	1600[f]	2,000[f]
Total Mercury		0.81[j]	0.81[j]	2.8[j]	5.7[j]	0.18[f]	0.73
Nickel	7440-02 -0	140	310	310	10,000 [d]	30	130
Selenium	7782-49 -2	36	180	1,500	6,800	3.9[f]	4[f]
Silver	7440-22 -4	36	180	1,500	6,800	2	8.3
Zinc	7440-66 -6	2200	10,000 [d]	10,000 [d]	10,000 [d]	109[f]	2,480
PESTICIDES / PCBs							
2,4,5-TP Acid (Silvex)	93-72-1	58	100[a]	500[b]	1,000[c]	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 [e]	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 [e]	136
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 [e]	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04[g]	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71 -9	0.91	4.2	24	47	1.3	2.9
delta-BHC	319-86-8	100[a]	100[a]	500[b]	1,000[c]	0.04[g]	0.25
Dibenzofuran	132-64-9	14	59	350	1,000[c]	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan II	33213-65-9	4.8[i]	24[i]	200[i]	920[i]	NS	102
Endosulfan sulfate	1031-07 -8	4.8[i]	24[i]	200[i]	920[i]	NS	1,000[c]
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36 -3	1	1	1	25	1	3.2
SEMI-VOLATILES							
Acenaphthene	83-32-9	100[a]	100[a]	500[b]	1,000[c]	20	98
Acenapthylene	208-96-8	100[a]	100[a]	500[b]	1,000[c]	NS	107
Anthracene	120-12-7	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benz(a)anthracene	56-55-3	1[f]	1[f]	5.6	11	NS	1[f]
Benzo(a)pyrene	50-32-8	1[f]	1[f]	1[f]	1.1	2.6	22
Benzo(b) fluoranthene	205-99-2	1[f]	1[f]	5.6	11	NS	1.7
Benzo(g,h,i) perylene	191-24-2	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Benzo(k) fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1[f]	3.9	56	110	NS	1[f]
Dibenz(a,h) anthracene	53-70-3	0.33[e]	0.33[e]	0.56	1.1	NS	1,000[c]
Fluoranthene	206-44-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Fluorene	86-73-7	100[a]	100[a]	500[b]	1,000[c]	30	386
Indeno(1,2,3-cd) pyrene	193-39-5	0.5[f]	0.5[f]	5.6	11	NS	8.2
m-Cresol	108-39-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
Naphthalene	91-20-3	100[a]	100[a]	500[b]	1,000[c]	NS	12
o-Cresol	95-48-7	100[a]	100[a]	500[b]	1,000[c]	NS	0.33[e]
p-Cresol	106-44-5	34	100[a]	500[b]	1,000[c]	NS	0.33[e]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8[e]	0.8[e]
Phenanthrene	85-01-8	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]
Phenol	108-95-2	100[a]	100[a]	500[b]	1,000[c]	30	0.33[e]
Pyrene	129-00-0	100[a]	100[a]	500[b]	1,000[c]	NS	1,000[c]

TABLE 1
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
VOLATILES							
1,1,1-Trichloroethane	71-55-6	100[a]	100[a]	500[b]	1,000[c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100[a]	100[a]	500[b]	1,000[c]	NS	0.33
1,2-Dichlorobenzene	95-50-1	100[a]	100[a]	500[b]	1,000[c]	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02[f]
cis-1,2-Dichloroethene	156-59-2	59	100[a]	500[b]	1,000[c]	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100[a]	100[a]	500[b]	1,000[c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1[e]	0.1[e]
Acetone	67-64-1	100[a]	100[b]	500[b]	1,000[c]	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100[a]	100[a]	500[b]	1,000[c]	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100[a]	100[a]	500[b]	1,000[c]	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33[e]	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100[a]	100[a]	500[b]	1,000[c]	100[a]	0.12
Methyl tert-butyl ether	1634-04 -4	62	100[a]	500[b]	1,000[c]	NS	0.93
Methylene chloride	75-09-2	51	100[a]	500[b]	1,000[c]	12	0.05
n-Propylbenzene	103-65-1	100[a]	100[a]	500[b]	1,000[c]	NS	3.9
sec-Butylbenzene	135-98-8	100[a]	100[a]	500[b]	1,000[c]	NS	11
tert-Butylbenzene	98-06-6	100[a]	100[a]	500[b]	1,000[c]	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100[a]	100[a]	500[b]	1,000[c]	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5-Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20 -7	100[a]	100[a]	500[b]	1,000[c]	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD). Footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

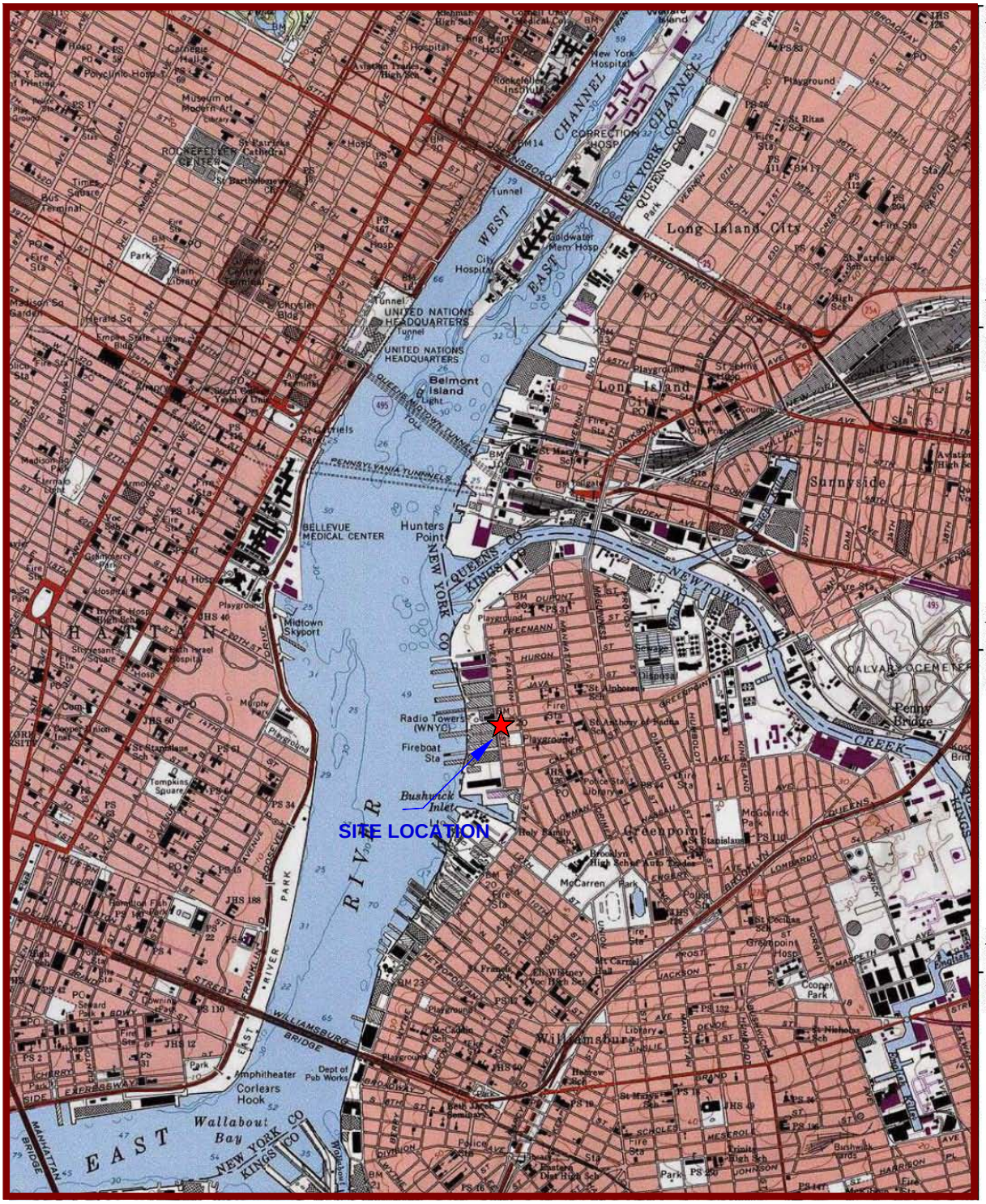
b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

FIGURES

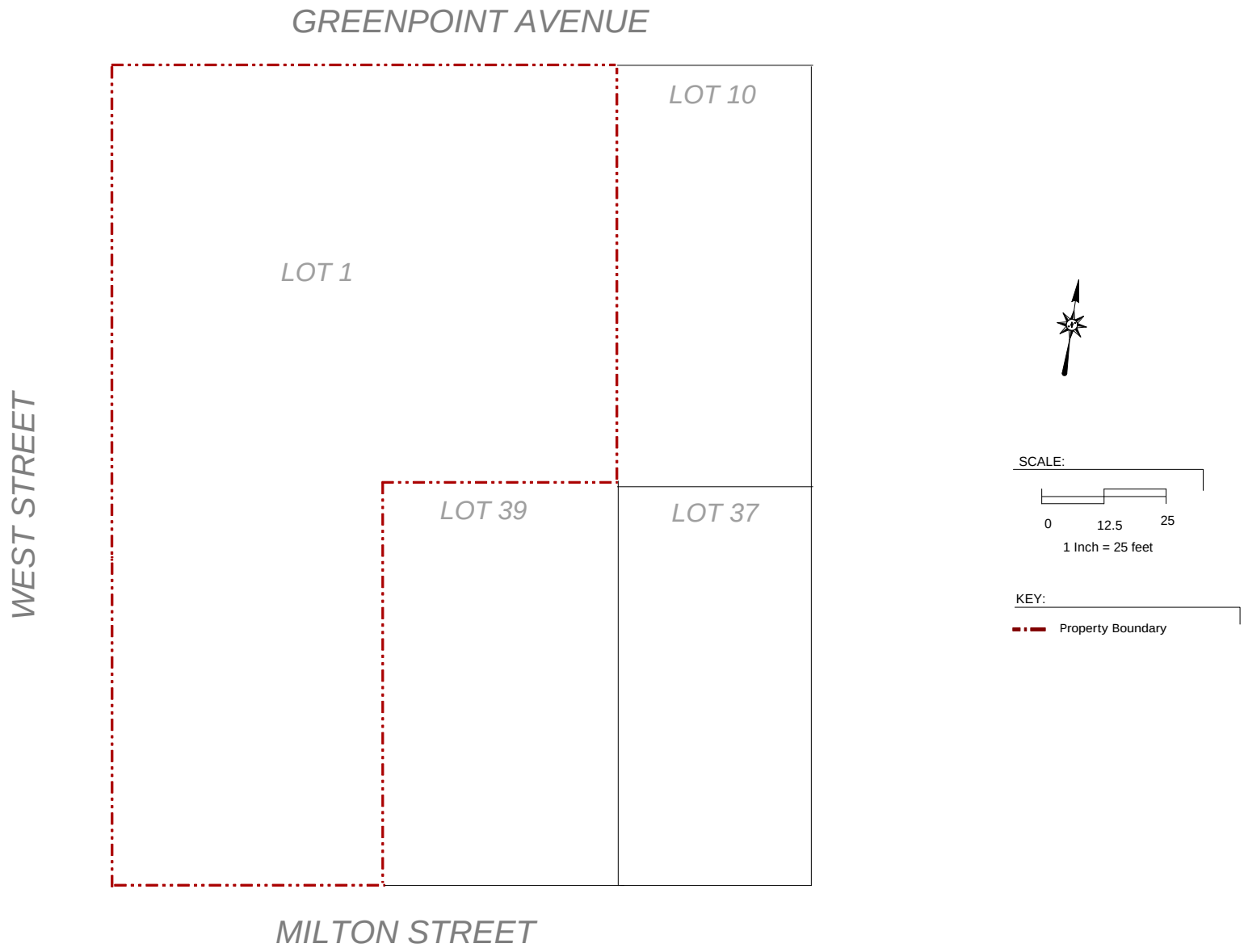


USGS Brooklyn Quadrangle 1995, Contour Interval = 10 feet

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
Phone 631.504.6000
Fax 631. 924 .2870

50 GREENPOINT AVENUE
BROOKLYN, NY

FIGURE 1 SITE LOCATION MAP



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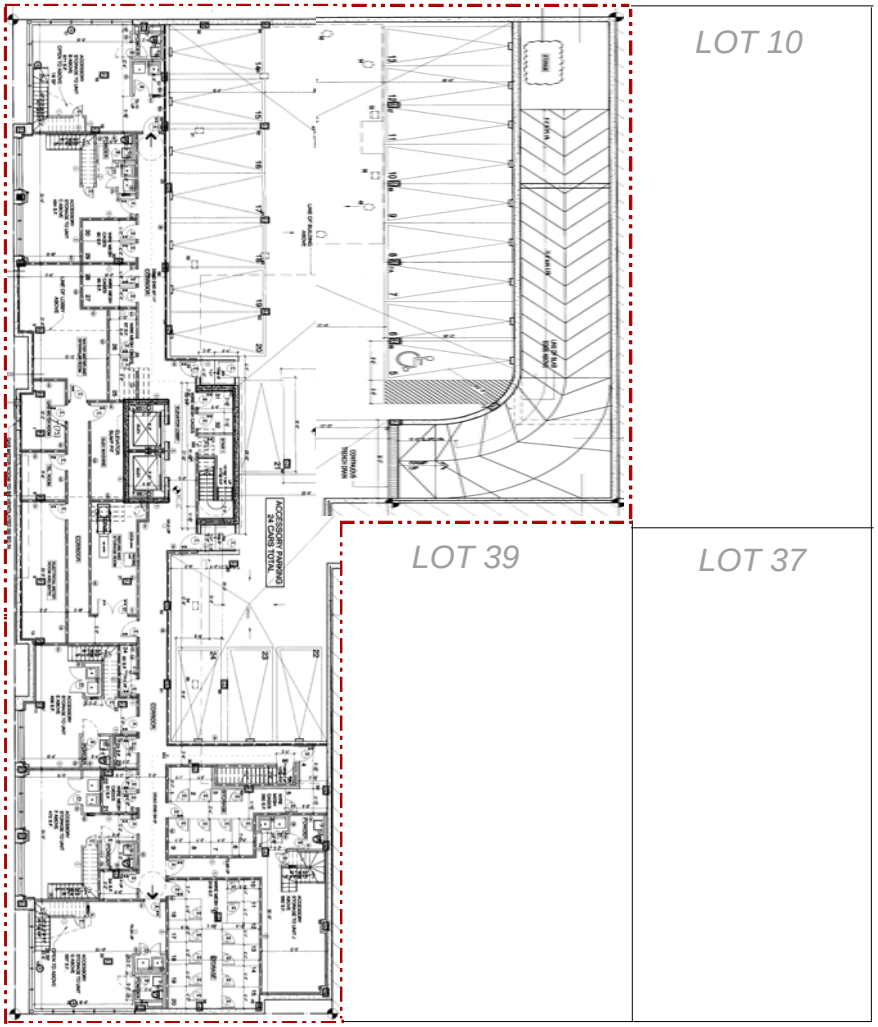
Fax 631.924.2780

50 GREENPOINT AVENUE
BROOKLYN, NY

FIGURE 2 SITE BOUNDARY MAP

GREENPOINT AVENUE



WEST STREET

MILTON STREET

SCALE:

0 12.5 25

1 Inch = 25 feet

KEY:

Property Boundary

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Phone 631.504.6000
Fax 631.924.2780

50 GREENPOINT AVENUE
BROOKLYN, NY

FIGURE 2 SITE BOUNDARY MAP

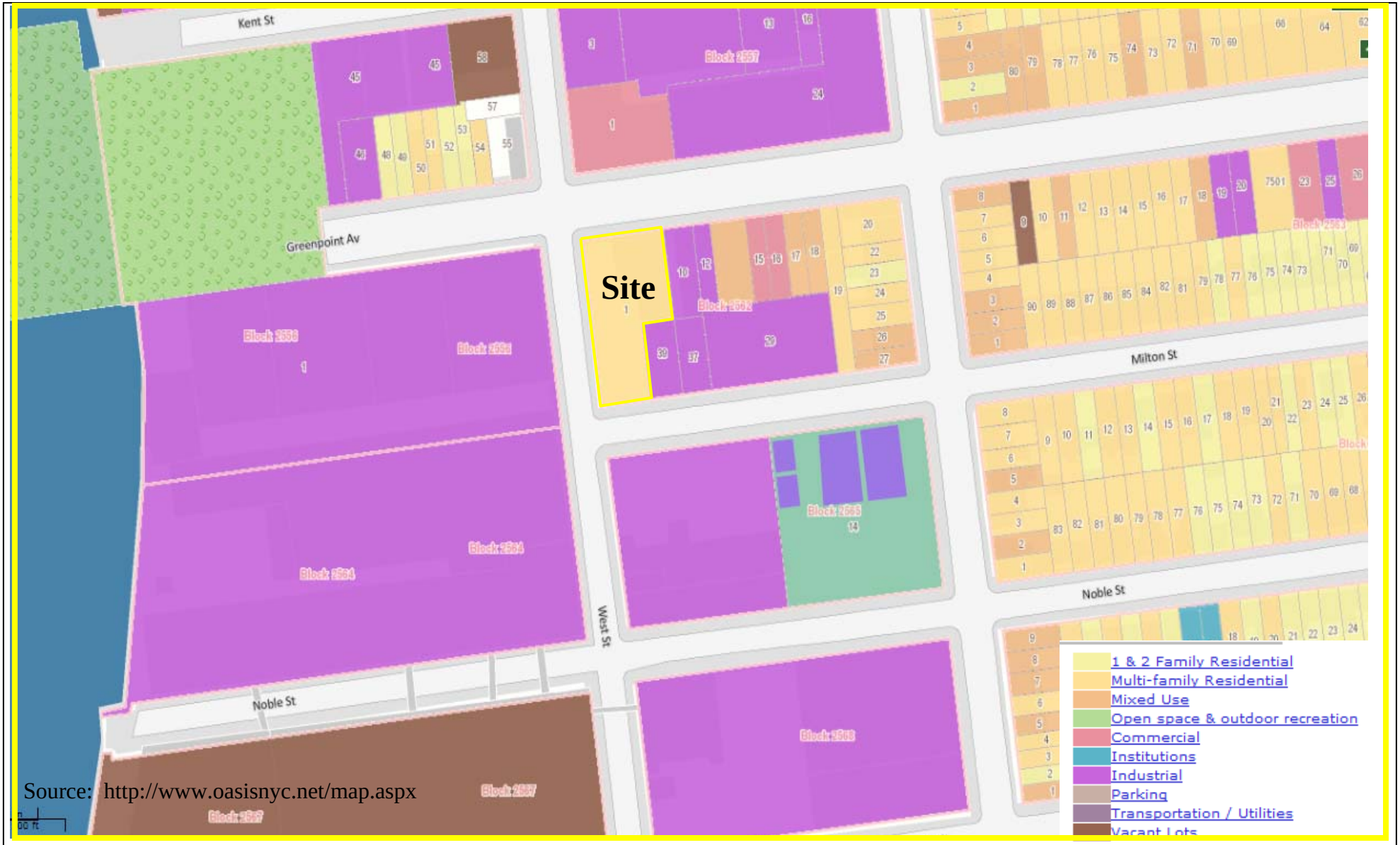


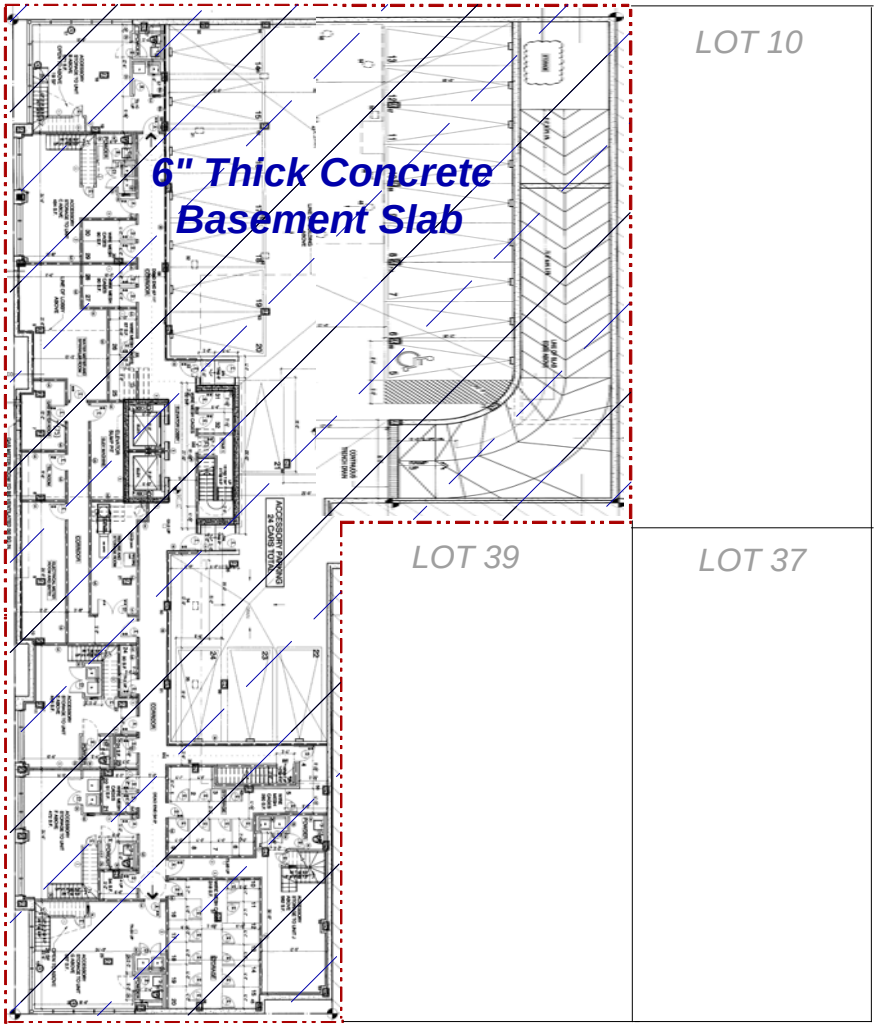
FIGURE 4
SURROUNDING LAND USE MAP

50 GREENPOINT AVENUE, BROOKLYN, NY

HAZARDOUS MATERIALS REMEDIAL INVESTIGATION REPORT

EBC
ENVIRONMENTAL BUSINESSS CONSULTANTS
1808 MIDDLE COUNTRY ROAD, RIDGE, NEW YORK 11961
PHONE: (631) 504-6000 FAX: (631) 924-2870

GREENPOINT AVENUE



WEST STREET

MILTON STREET

SCALE:

0 12.5 25

1 Inch = 25 feet

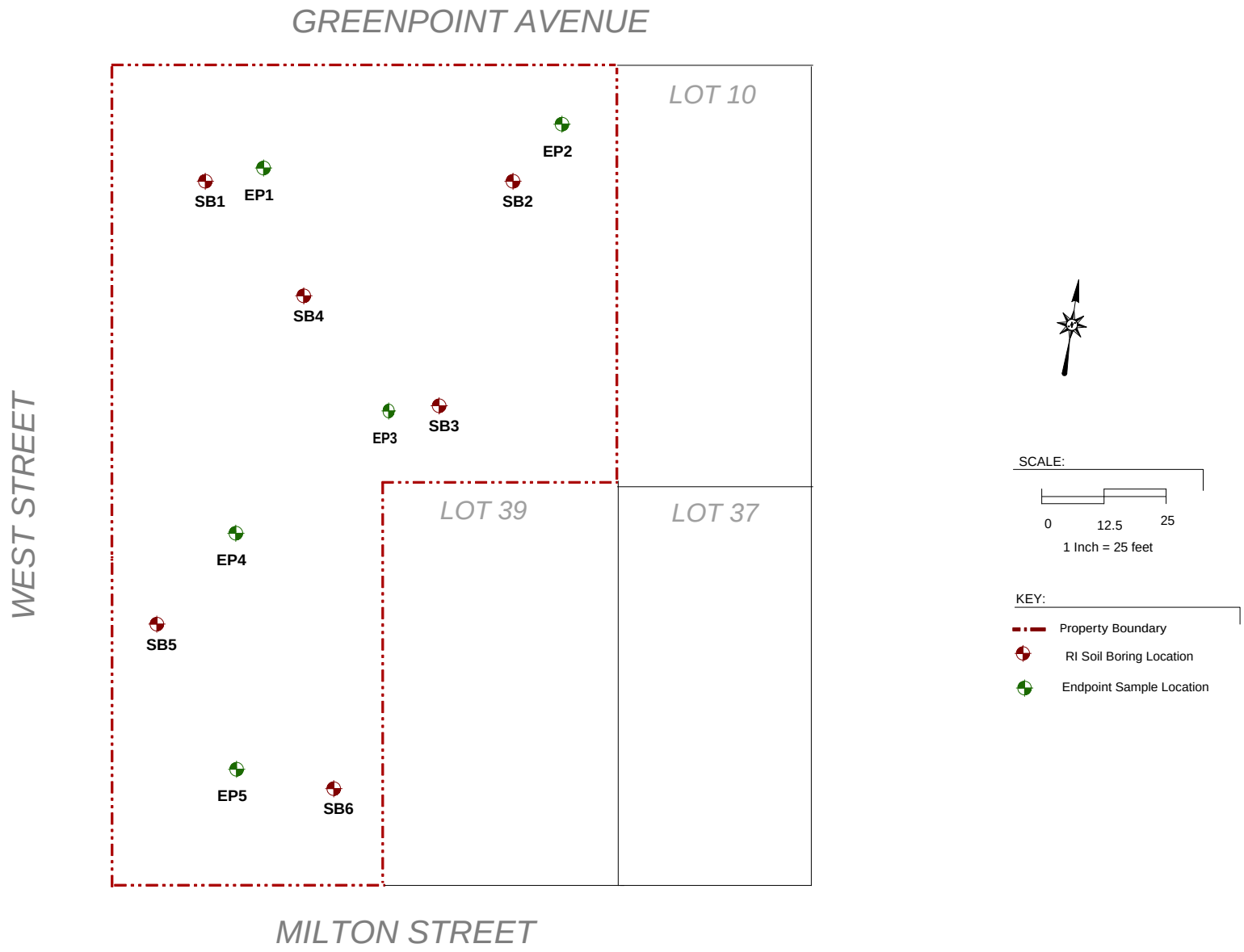
KEY:

Property Boundary

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
1808 MIDDLE COUNTRY ROAD. RIDGE. NY 11961
Phone 631.504.6000
Fax 631.924.2780

50 GREENPOINT AVENUE
BROOKLYN, NY

FIGURE 5 EXCAVATION AND CAPPING PLAN



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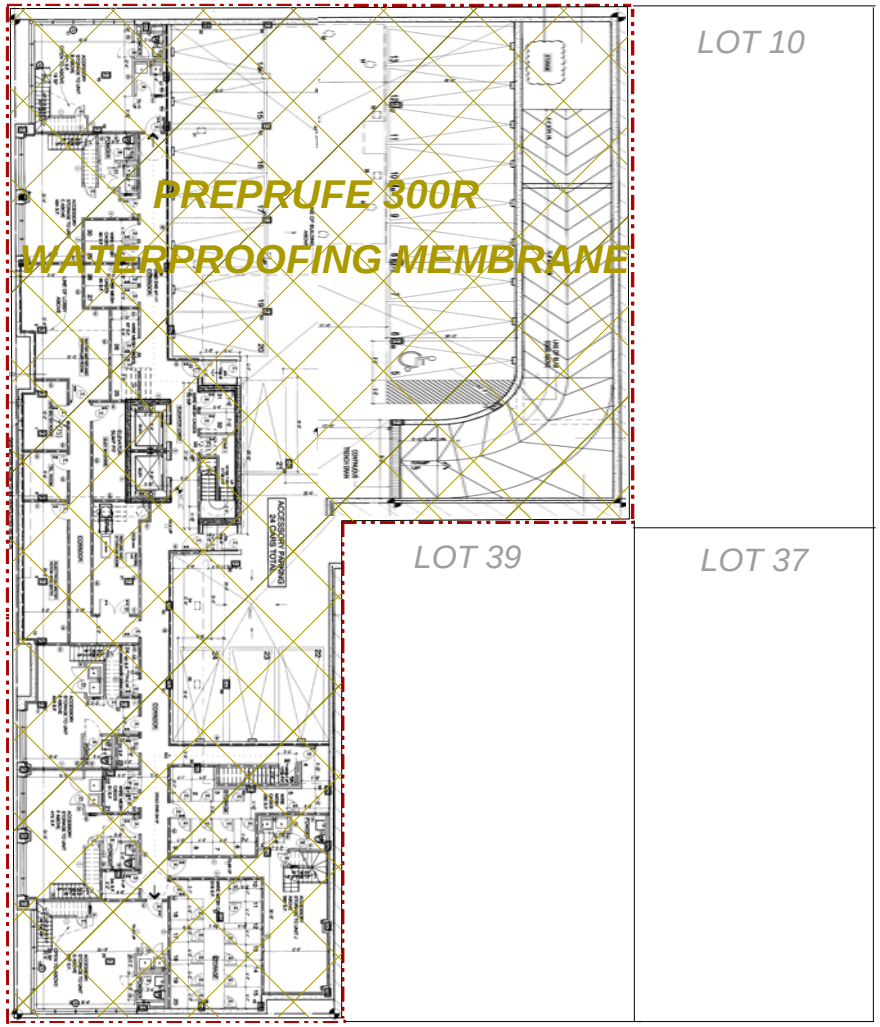
1808 MIDDLE COUNTRY ROAD. RIDGE. NY 11961
Phone 631.504.6000
Fax 631.924.2780

50 GREENPOINT AVENUE
BROOKLYN, NY

FIGURE 6 ENDPOINT SAMPLING PLAN

GREENPOINT AVENUE



MILTON STREET

SCALE:

0 12.5 25

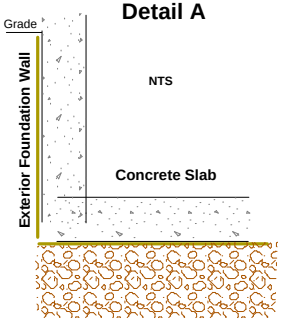
1 Inch = 25 feet

KEY:

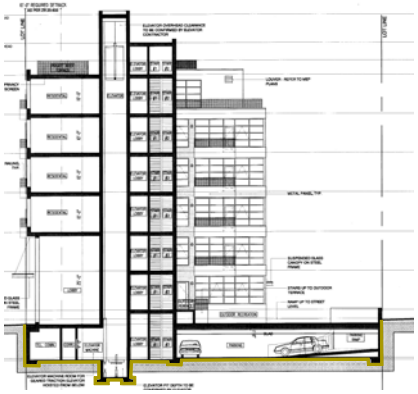
Property Boundary

Preprufe 300R

Detail A



Detail B



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1808 MIDDLE COUNTRY ROAD. RIDGE. NY 11961
Phone 631.504.6000
Fax 631.924.2780

50 GREENPOINT AVENUE
BROOKLYN, NY

FIGURE 7

WATERPROOFING MEMBRANE PLAN

ATTACHMENT A
PROPOSED DEVELOPMENT PLANS

• 50 GREENPOINT AVE. / 74-88 WEST ST. •

New Residential Project
Brooklyn, New York

1420 NOTRE DAME WEST, MONTREAL, QUE. H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

530 BROADWAY, 9TH FLOOR, NEW YORK, NY. 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
WEB SITE: www.kfarchitect.com E-MAIL:karlfischer@kfarchitect.com

KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA

ARCHITECTURAL:

A-000	COVER SHEET
A-001	SURVEY
A-002	AREA CALCULATIONS
A-003	FLOORS (1-4) LIGHT & AIR CALCULATIONS
A-004	FLOORS (5-6) LIGHT & AIR CALCULATIONS
A-005	DEDUCTION CALCULATIONS
A-100	ZONING ANALYSIS
A-100B	ZONING ANALYSIS / SITE PLAN
A-100C	ZONING ANALYSIS / BULKHEAD CALCULATIONS
A-101	CELLAR FLOOR PLAN
A-102	FIRST FLOOR PLAN
A-103	2ND FLOOR PLAN
A-104	3RD FLOOR PLAN
A-105	4TH FLOOR PLAN
A-106	5TH FLOOR PLAN
A-107	6TH FLOOR PLAN
A-108	ROOF PLAN
A-109	BULKHEAD PLAN
A-110	BUILDERS PAVEMENT PLAN
A-111	WALL TYPES

ARCHITECTURAL:

A-200	WEST STREET ELEVATION
A-201	MILTON STREET ELEVATION
A-202	GREENPOINT AVE & PARTIAL REAR ELEVATION
A-203	REAR ELEVATION
A-301	BUILDING SECTION
A-302	PARTIAL STAIR SECTION
A-601	WINDOW SCHEDULE
A-701	DOOR SCHEDULE
AN-101	NOTES 1/5
AN-102	NOTES 2/5
AN-103	NOTES 3/5
AN-104	NOTES 4/5
AN-105	NOTES 5/5

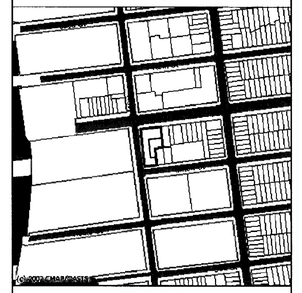
EXAMINED FOR PLUMBING, BOILERS AND FIRE PREVENTION RELATIVE TO APPLICATION NO. 2 OF 1975
AUG 2 8 2007
YOHAY ALBO

SPRINKLER APPLICATION FILED UNDER #302329772
BUILDERS PAVEMENT PLAN TO BE FILED SEPARATELY

IN PROGRESS
AUGUST 8 2007

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973.242.2626
FAX: 973-242-2676 www.axisd.com

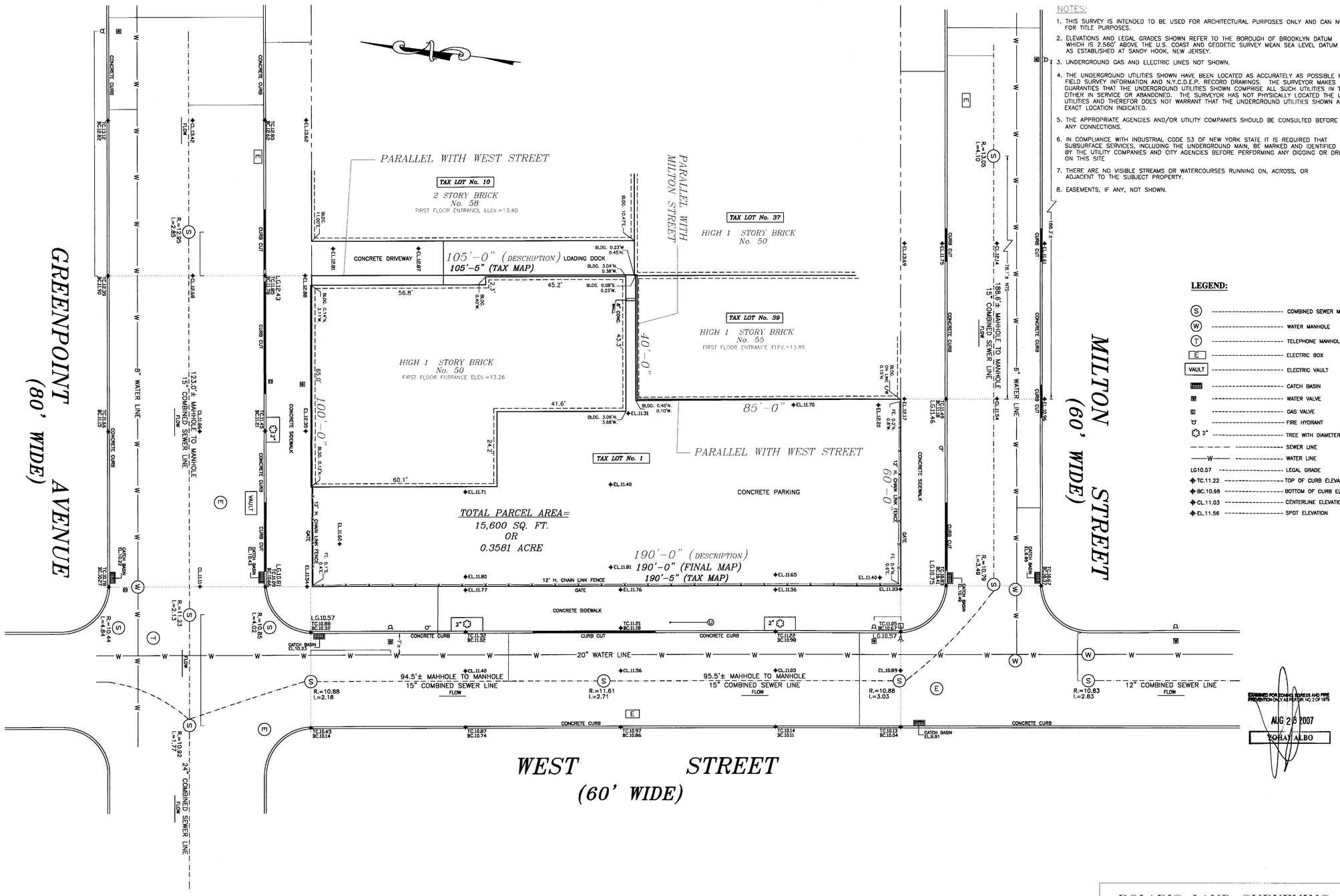
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8005
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
REGISTERED ARCHITECT KARL FISCHER 021492 STATE OF NEW YORK
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
COVER SHEET

scale	project no. 06-71
date SEPTEMBER 06	revision no. 0
drawn K.A.	drawing no. A-000
checked K.F.	



NOTES:

1. THIS SURVEY IS INTENDED TO BE USED FOR ARCHITECTURAL PURPOSES ONLY AND CAN NOT BE USED FOR TITLE PURPOSES.
2. ELEVATIONS AND LEGAL GRADES SHOWN REFER TO THE BOROUGH OF BROOKLYN DATUM WHICH IS 2.560' ABOVE THE U.S. COAST AND GEODETIC SURVEY MEAN SEA LEVEL DATUM AS ESTABLISHED AT SANDY HOOK, NEW JERSEY.
3. UNDERGROUND GAS AND ELECTRIC LINES NOT SHOWN.
4. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED AS ACCURATELY AS POSSIBLE FROM FIELD SURVEY INFORMATION AND N.Y.C.D.E.P. RECORD DRAWINGS. THE SURVEYOR MAKES NO GUARANTIES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES AND THEREFOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
5. THE APPROPRIATE AGENCIES AND/OR UTILITY COMPANIES SHOULD BE CONSULTED BEFORE DESIGNING ANY CONNECTIONS.
6. IN COMPLIANCE WITH INDUSTRIAL CODE 53 OF NEW YORK STATE IT IS REQUIRED THAT SUBSURFACE SERVICES, INCLUDING THE UNDERGROUND MAIN, BE MARKED AND IDENTIFIED BY THE UTILITY COMPANIES AND CITY AGENCIES BEFORE PERFORMING ANY DIGGING OR DRILLING ON THIS SITE
7. THERE ARE NO VISIBLE STREAMS OR WATERCOURSES RUNNING ON, ACROSS, OR ADJACENT TO THE SUBJECT PROPERTY.
8. EASEMENTS, IF ANY, NOT SHOWN.

LEGEND:

- (S) ---------- COMBINED SEWER MANHOLE
- (W) ---------- WATER MANHOLE
- (T) ---------- TELEPHONE MANHOLE
- E ---------- ELECTRIC BOX
- VAULT ---------- ELECTRIC VAULT
- ---------- CATCH BASIN
- ---------- WATER VALVE
- ---------- GAS VALVE
- ---------- FIRE HYDRANT
- 2" ---------- TREE WITH DIAMETER
- ---------- SEWER LINE
- ---------- WATER LINE
- LG10.57 ---------- LEGAL GRADE
- TC.11.22 ---------- TOP OF CURB ELEVATION
- BC.10.98 ---------- BOTTOM OF CURB ELEVATION
- CL.11.03 ---------- CENTERLINE ELEVATION
- EL.11.56 ---------- SPOT ELEVATION

UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

COPIES OF THIS SURVEY MAP NOT BEARING THE LAND SURVEYOR'S INKED SEAL OR HIS EMBOSSED SEAL AND ORIGINAL SIGNATURE SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY.

CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

GUARANTEES OR CERTIFICATIONS INDICATED HEREON SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY, AND LENDING INSTITUTION. GUARANTEES OR CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

THE OFFSETS OR DIMENSIONS SHOWN HEREON FROM THE STRUCTURES TO THE PROPERTY LINES ARE FOR A SPECIFIC PURPOSE AND USE AND, THEREFORE ARE NOT INTENDED TO GUIDE THE ERECTION OF FENCES, RETAINING WALLS, POOLS, PATIOS, PLANTING AREA, ADDITIONS TO BUILDING OR ANY OTHER CONSTRUCTION.

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER DR NO. 2 OF 1975
AUG 29 2007
YOHAY ALBO

Arnold Pecheny, P.L.S.
NYS License No. 050521

POLARIS LAND SURVEYING, P.C.
31 BERGEN BEACH PL., BROOKLYN, N.Y. 11234
(718) 942-4891
(917) 518-3435

SURVEY OF PROPERTY
SITUATED IN BOROUGH OF BROOKLYN
COUNTY OF KINGS, CITY & STATE OF NEW YORK
BLOCK 2562 LOT 1

DATE: 05/01/05 | SCALE: 1"=15' | JOB No.: 05021

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973.242.0626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 8th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-5980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

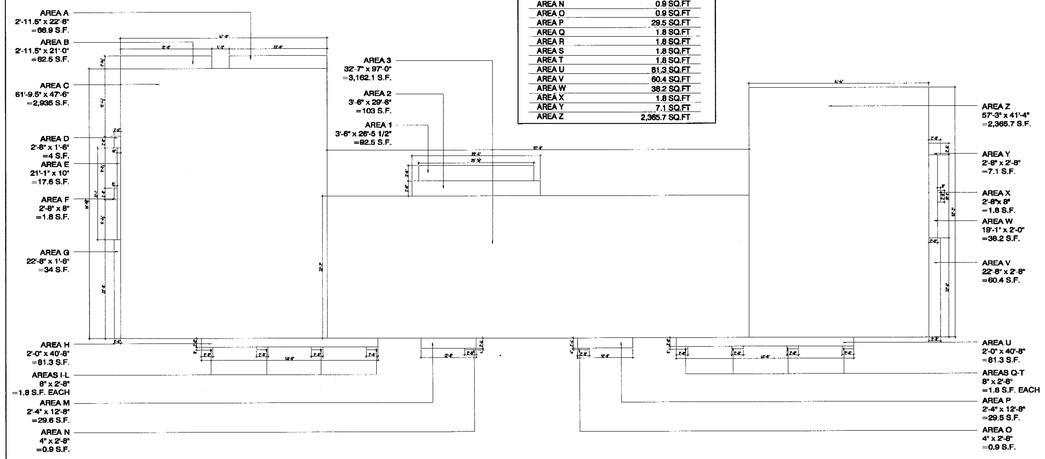
drawing title
SURVEY

scale	AS INDICATED	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-001
checked	K.F.		

GROUND FLOOR

AREA (#)	AREA SUB TOTALS
AREA A	66.9 SQ.FT
AREA B	62.5 SQ.FT
AREA C	2,935 SQ.FT
AREA D	4 SQ.FT
AREA E	17.6 SQ.FT
AREA F	1.8 SQ.FT
AREA G	34 SQ.FT
AREA H	81.3 SQ.FT
AREA I	1.8 SQ.FT
AREA J	1.8 SQ.FT
AREA K	1.8 SQ.FT
AREA L	1.8 SQ.FT
AREA M	29.5 SQ.FT
AREA N	0.9 SQ.FT
AREA O	0.9 SQ.FT
AREA P	29.5 SQ.FT
AREA Q	1.8 SQ.FT
AREA R	1.8 SQ.FT
AREA S	1.8 SQ.FT
AREA T	1.8 SQ.FT
AREA U	81.3 SQ.FT
AREA V	60.4 SQ.FT
AREA W	38.2 SQ.FT
AREA X	1.8 SQ.FT
AREA Y	7.1 SQ.FT
AREA Z	2,365.7 SQ.FT

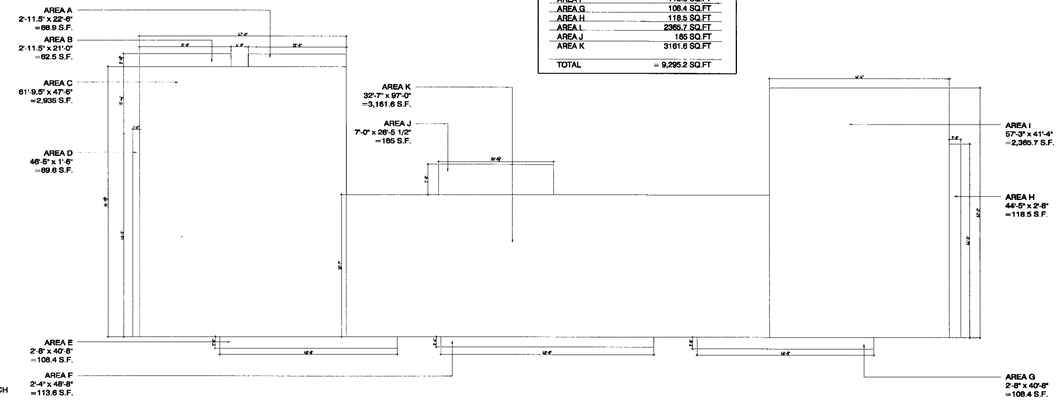
AREA (#)	AREA SUB TOTALS
AREA 1	92.5 SQ.FT
AREA 2	103 SQ.FT
AREA 3	3,162.1 SQ.FT
TOTAL	= 9,190.4 SQ.FT



1 A-002 GROUND FLOOR PLAN
1/16"=1'-0"

THIRD, FOURTH, AND FIFTH FLOOR

AREA (#)	AREA SUB TOTALS
AREA A	66.9 SQ.FT
AREA B	62.5 SQ.FT
AREA C	2,935 SQ.FT
AREA D	69.6 SQ.FT
AREA E	108.4 SQ.FT
AREA F	113.6 SQ.FT
AREA G	108.4 SQ.FT
AREA H	118.5 SQ.FT
AREA I	2365.7 SQ.FT
AREA J	185 SQ.FT
AREA K	3161.6 SQ.FT
TOTAL	= 9,295.2 SQ.FT

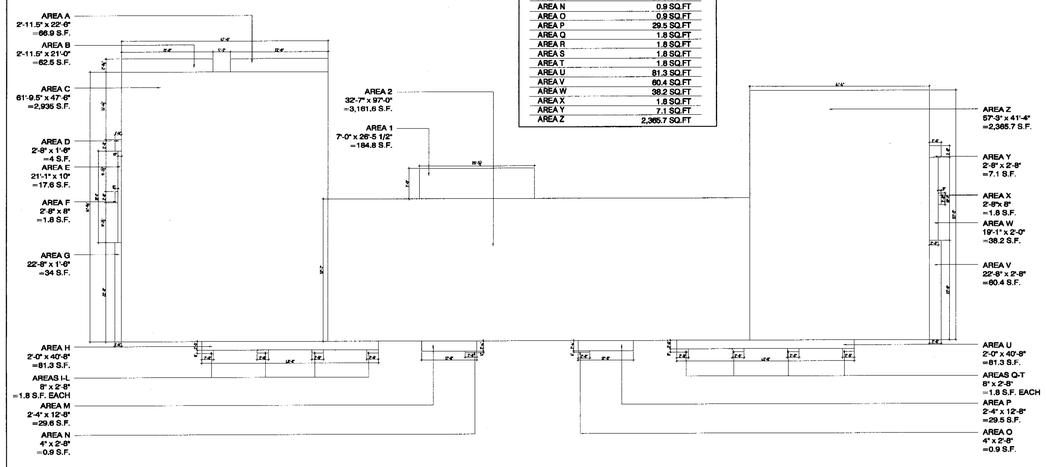


3 A-002 3RD & 4TH FLOOR PLANS
1/16"=1'-0"

SECOND FLOOR

AREA (#)	AREA SUB TOTALS
AREA A	66.9 SQ.FT
AREA B	62.5 SQ.FT
AREA C	2,935 SQ.FT
AREA D	4 SQ.FT
AREA E	17.6 SQ.FT
AREA F	1.8 SQ.FT
AREA G	34 SQ.FT
AREA H	81.3 SQ.FT
AREA I	1.8 SQ.FT
AREA J	1.8 SQ.FT
AREA K	1.8 SQ.FT
AREA L	1.8 SQ.FT
AREA M	29.5 SQ.FT
AREA N	0.9 SQ.FT
AREA O	0.9 SQ.FT
AREA P	29.5 SQ.FT
AREA Q	1.8 SQ.FT
AREA R	1.8 SQ.FT
AREA S	1.8 SQ.FT
AREA T	1.8 SQ.FT
AREA U	81.3 SQ.FT
AREA V	60.4 SQ.FT
AREA W	38.2 SQ.FT
AREA X	1.8 SQ.FT
AREA Y	7.1 SQ.FT
AREA Z	2,365.7 SQ.FT

AREA (#)	AREA SUB TOTALS
AREA 1	184.8 SQ.FT
AREA 2	3,161.8 SQ.FT
TOTAL	= 9,179.2 SQ.FT

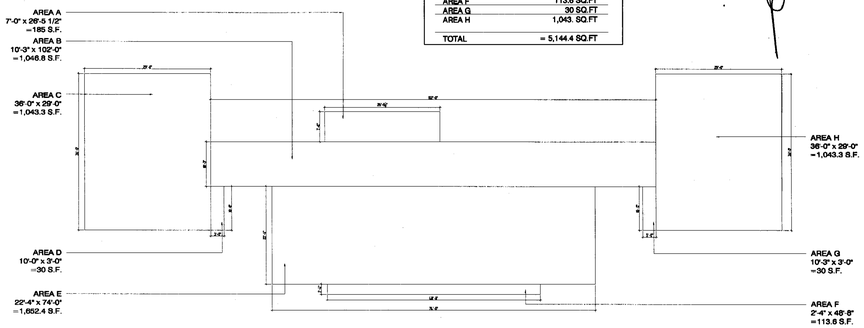


2 A-002 2ND FLOOR PLAN
1/16"=1'-0"

THIRD, FOURTH, AND FIFTH FLOOR

AREA (#)	AREA SUB TOTALS
AREA A	185 SQ.FT
AREA B	1,046.8 SQ.FT
AREA C	1,043.3 SQ.FT
AREA D	30 SQ.FT
AREA E	1,652.4 SQ.FT
AREA F	113.6 SQ.FT
AREA G	30 SQ.FT
AREA H	1,043. SQ.FT
TOTAL	= 5,144.4 SQ.FT

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY. SEE BSC#: NO 2 OF 1979
AUG 2 6 2007
YORAV ALBO



4 A-002 5TH & 6TH FLOOR PLANS
1/16"=1'-0"

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KEY PLAN

REVISIONS

no.	date	description
		302319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1920
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2676
FAX. 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

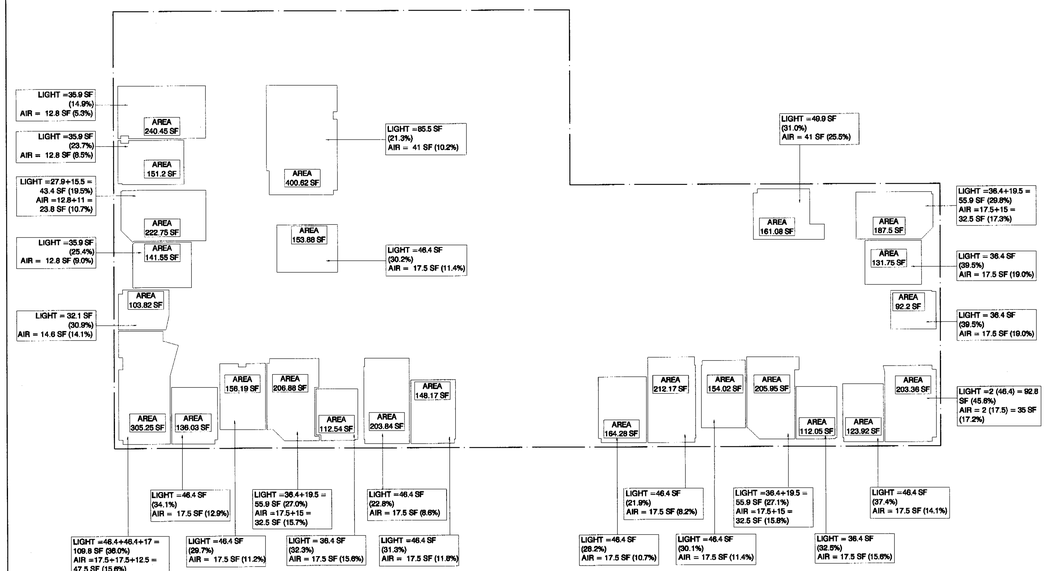
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.karlfischer.com E-MAIL:mail@karlfischer.com

REGISTERED ARCHITECT KARL FISCHER 021802 STATE OF NEW YORK

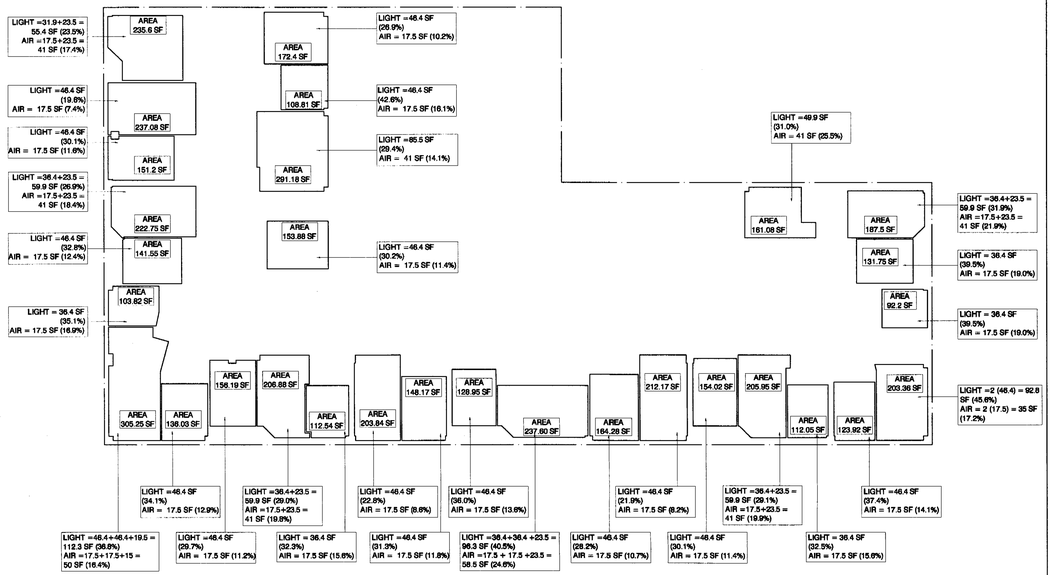
project title
50 GREENPOINT AVE / 74-88 WEST STREET RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
AREA CALCULATIONS

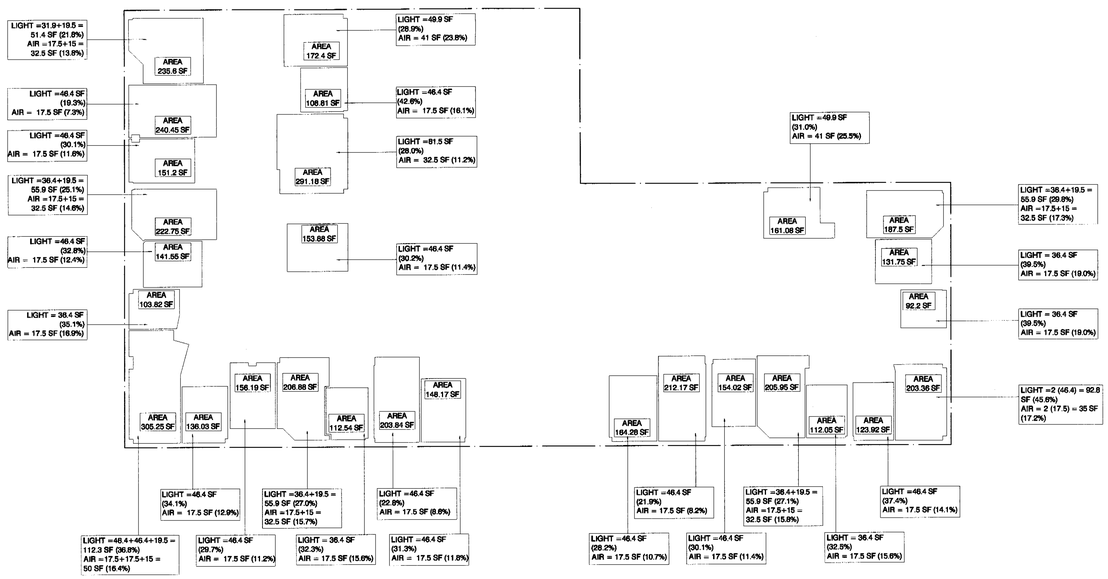
scale	1/16"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-002
checked	K.F.		



1 A-003 1ST FLOOR PLAN
1/16"=1'-0"



3 A-003 3RD & 4TH FLOOR PLAN
1/16"=1'-0"



2 A-003 2ND FLOOR PLAN
1/16"=1'-0"

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER DOB, NO. 2 OF 1975
AUG 28 2007
YNHAYALBO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1900
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2676
FAX: 973-242-2676 www.axisdg.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8016
FAX: 212.643.8016

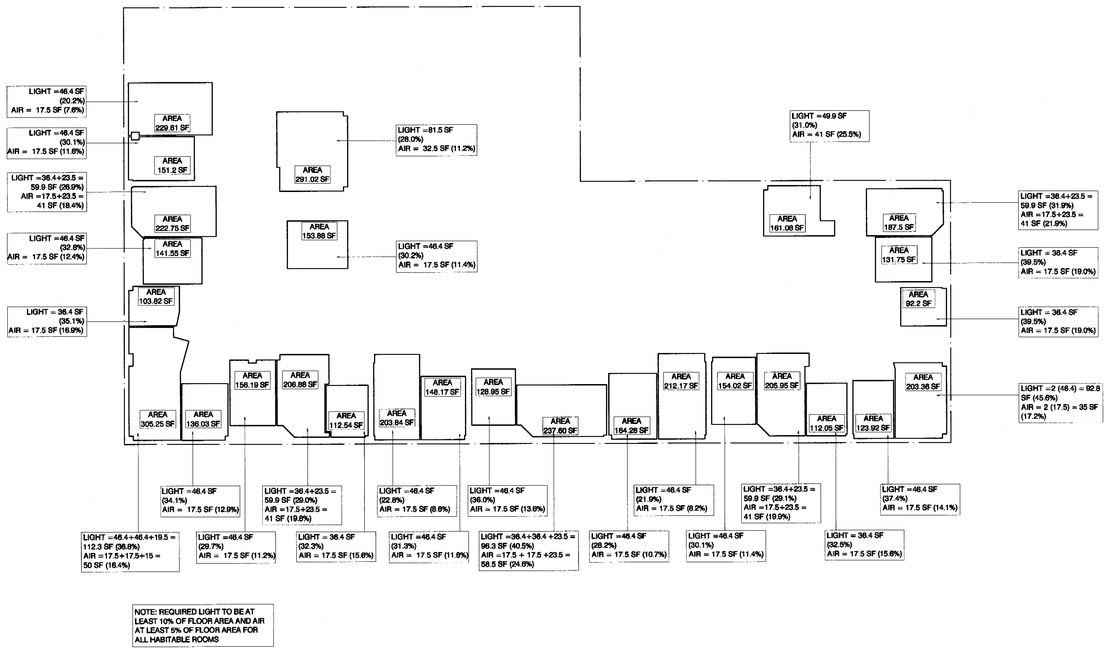
ARCHITECT:
KARL FISCHER ARCHITECT
CASO CAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

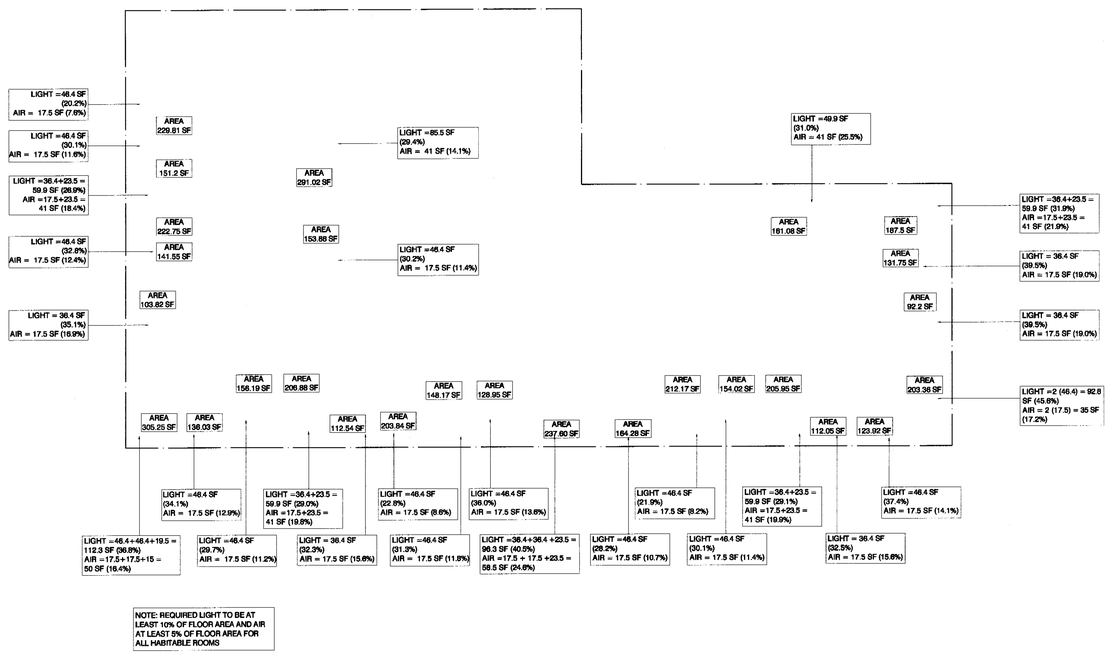
drawing title
LIGHT & AIR CALCULATIONS

scale	1/16"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-003
checked	K.F.		



1 / A-004 5TH FLOOR PLAN

1/16"=1'-0"



2 / A-004 6TH FLOOR PLAN

1/16"=1'-0"

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY. REFER TO NO. 2 OF 1975

AUG 2 8 2007

YOHAY ELBO

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KEY PLAN

REVISIONS

no.	date	description
		3029190894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1950
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

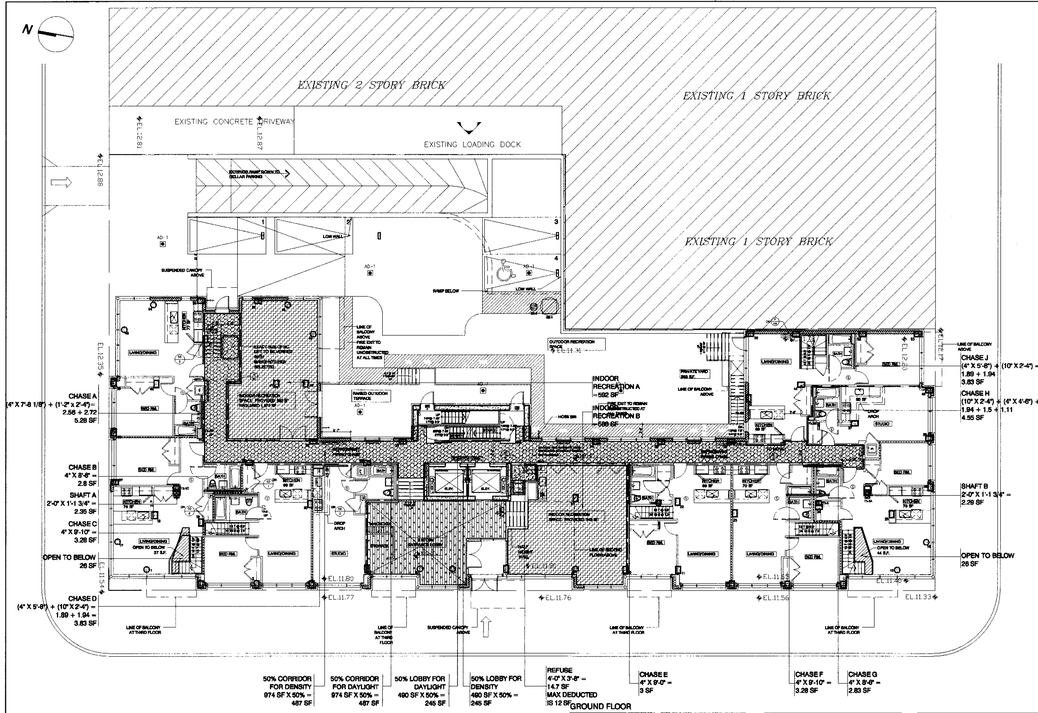
ARCHITECT:
KARL FISCHER ARCHITECT
CAQ CAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021298 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
LIGHT & AIR CALCULATIONS

scale	1/16"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-004
checked	K.F.		



1 1ST FLOOR PLAN
A-005 1/16"=1'-0"

GROUND FLOOR

SHAFT	AREA SF
SHAFT A	2.35
SHAFT B	2.29
TOTAL	4.64

REC	AREA SF
REC A	592
REC B	588
TOTAL	1,180

CHASE	AREA SF
CHASE A	5.28
CHASE B	2.8
CHASE C	3.28
CHASE D	3.83
CHASE E	3
CHASE F	3.28
CHASE G	2.83
CHASE H	4.55
CHASE J	3.83
TOTAL	32.68

LEGEND
- REFUSE ROOM-FLOOR AREA TO BE DEDUCTED
- MECHANICAL SHAFTS-FLOOR AREA TO BE DEDUCTED
- CHASE- FLOOR AREA TO BE DEDUCTED
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR LIGHT & AIR
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR DENSITY
- LOBBY- 50% OF AREA TO BE DEDUCTED FOR LIGHT & AIR
- LOBBY- 50% OF AREA TO BE DEDUCTED FOR DENSITY
- INDOOR RECREATION - FLOOR AREA TO BE DEDUCTED
- AREA OPEN TO BELOW- AREA TO BE DEDUCTED

DEDUCTIONS:

CHASE	= 32.68 SF
SHAFTS	= 4.64 SF
CORRIDOR DAYLIGHT	= 487 SF
CORRIDOR DENSITY	= 487 SF
LOBBY DAYLIGHT	= 245 SF
LOBBY DENSITY	= 245 SF
RECREATION	= 1,180
REFUSE	= 12 SF
OPEN TO BELOW	= 52 SF
TOTAL	= 2,745.32 SF

GROSS AREA	= 9,190 SF
NET FLOOR AREA	= 6,445 SF

THIRD, FOURTH, FIFTH FLOOR

SHAFT	AREA SF
SHAFT A	6.33
SHAFT B	3.47
SHAFT C	2.35
SHAFT D	5.59
TOTAL	17.74

CHASE	AREA SF
CHASE A	5.28
CHASE B	5.28
CHASE C	3.28
CHASE D	3
CHASE E	3
CHASE F	4
CHASE G	3
CHASE H	3
CHASE J	3.43
CHASE K	3.47
CHASE L	3
CHASE M	3
CHASE N	2.89
CHASE P	7.94
TOTAL	53.57

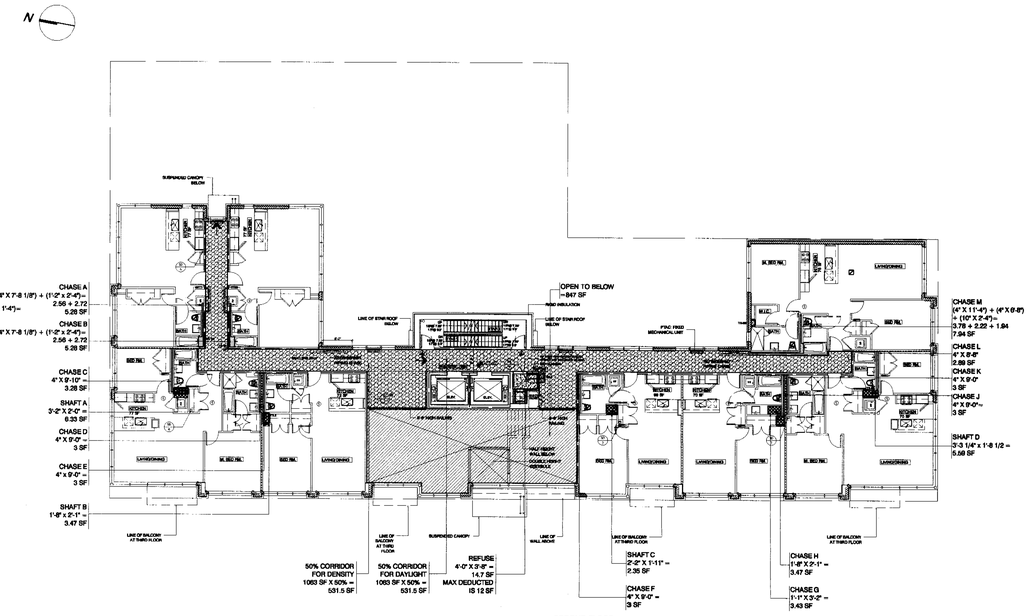
LEGEND
- REFUSE ROOM-FLOOR AREA TO BE DEDUCTED
- MECHANICAL SHAFTS-FLOOR AREA TO BE DEDUCTED
- CHASE- FLOOR AREA TO BE DEDUCTED
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR LIGHT & AIR
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR DENSITY

DEDUCTIONS:

CHASE	= 53.57 SF
SHAFTS	= 17.74 SF
CORRIDOR DAYLIGHT	= 438.5 SF
CORRIDOR DENSITY	= 438.5 SF
REFUSE	= 12 SF
TOTAL	= 960.31 SF

GROSS AREA	= 9,295 SF
NET FLOOR AREA	= 8,335 SF

3 3RD, 4TH & 5TH FLOOR PLAN
A-005 1/16"=1'-0"



2 2ND FLOOR PLAN
A-005 1/16"=1'-0"

SECOND FLOOR

SHAFT	AREA SF
SHAFT A	6.33
SHAFT B	3.47
SHAFT C	2.35
SHAFT D	5.59
TOTAL	17.74

CHASE	AREA SF
CHASE A	5.28
CHASE B	5.28
CHASE C	3.28
CHASE D	3
CHASE E	3
CHASE F	3
CHASE G	3.43
CHASE H	3.47
CHASE J	3
CHASE K	3
CHASE L	2.89
CHASE M	7.94
TOTAL	46.57

LEGEND
- REFUSE ROOM-FLOOR AREA TO BE DEDUCTED
- MECHANICAL SHAFTS-FLOOR AREA TO BE DEDUCTED
- CHASE- FLOOR AREA TO BE DEDUCTED
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR LIGHT & AIR
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR DENSITY
- AREA OPEN TO BELOW- AREA TO BE DEDUCTED

DEDUCTIONS:

CHASE	= 46.57 SF
SHAFTS	= 17.74 SF
CORRIDOR DAYLIGHT	= 531.5 SF
CORRIDOR DENSITY	= 531.5 SF
REFUSE	= 12 SF
OPEN TO BELOW	= 847 SF
TOTAL	= 1,986.31 SF

GROSS AREA	= 9,179 SF
NET FLOOR AREA	= 7,193 SF

SIXTH FLOOR

SHAFT	AREA SF
SHAFT A	5.33
SHAFT B	2.35
SHAFT C	5.4
TOTAL	13.08

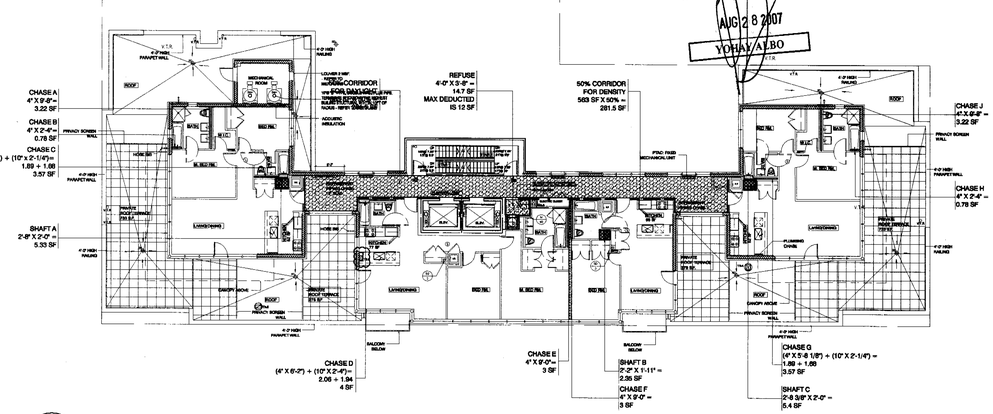
CHASE	AREA SF
CHASE A	3.22
CHASE B	0.78
CHASE C	3.57
CHASE D	4
CHASE E	3
CHASE F	3
CHASE G	3.57
CHASE H	0.78
CHASE J	3.22
TOTAL	25.14

LEGEND
- REFUSE ROOM-FLOOR AREA TO BE DEDUCTED
- MECHANICAL SHAFTS-FLOOR AREA TO BE DEDUCTED
- CHASE- FLOOR AREA TO BE DEDUCTED
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR LIGHT &AIR
- CORRIDOR- 50% OF AREA TO BE DEDUCTED FOR DENSITY

DEDUCTIONS:

CHASE	= 25.14 SF
SHAFTS	= 13.08 SF
CORRIDOR DAYLIGHT	= 281.5 SF
CORRIDOR DENSITY	= 281.5 SF
REFUSE	= 12 SF
TOTAL	= 613.22 SF

GROSS AREA	= 5,144 SF
NET FLOOR AREA	= 4,531 SF



4 6TH FLOOR PLAN
A-005 1/16"=1'-0"

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KEY PLAN

REVISIONS

no.	date	description
		3028196941
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1901
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2026
FAX: 973-242-2676 www.axisdg.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.3006
FAX: 212.643.8016

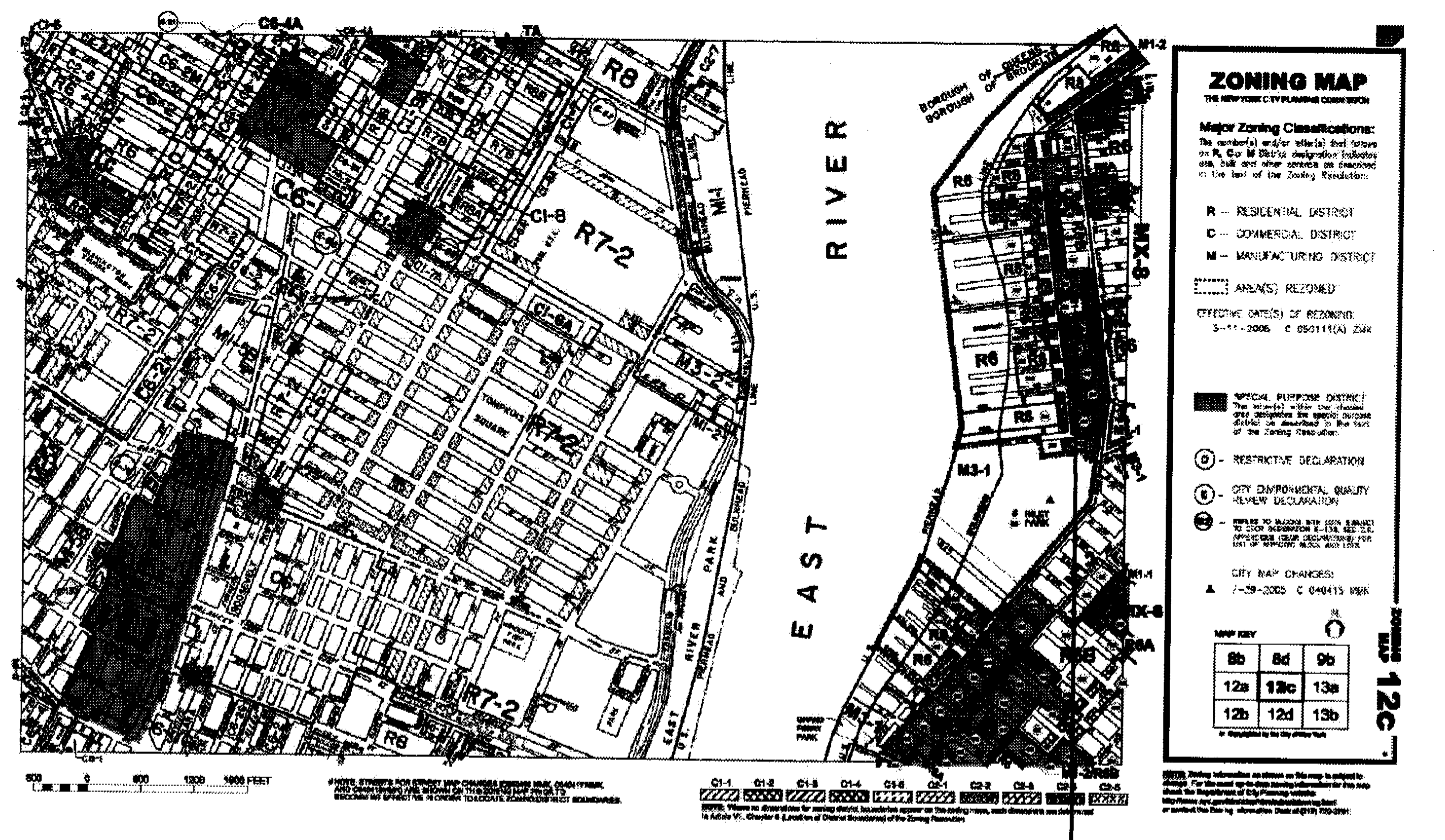
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

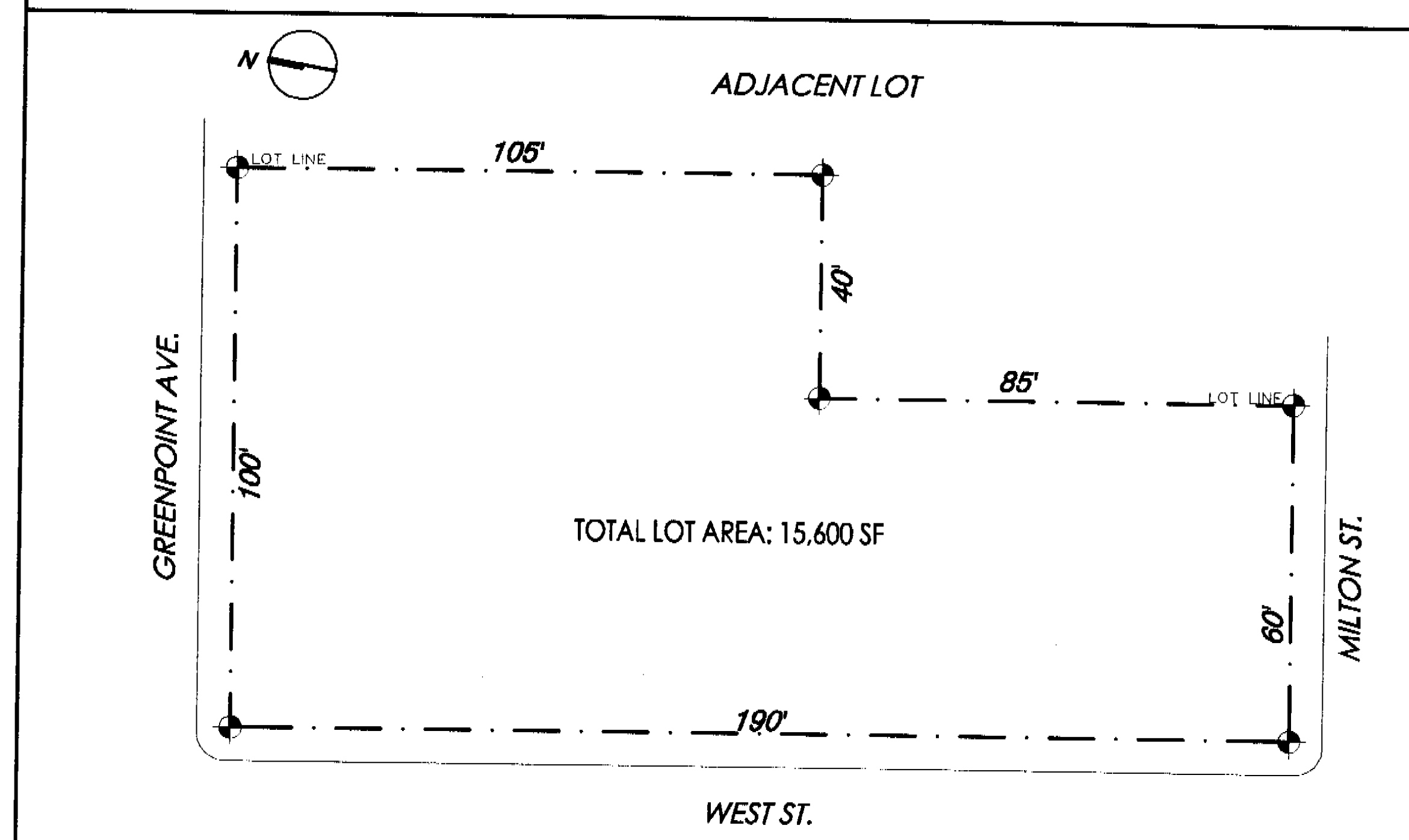
project title
50 GREENPOINT AVE / 74-88 WEST STREET RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
DEDUCTION CALCULATIONS

scale	1/16"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-005
checked	K.F.		

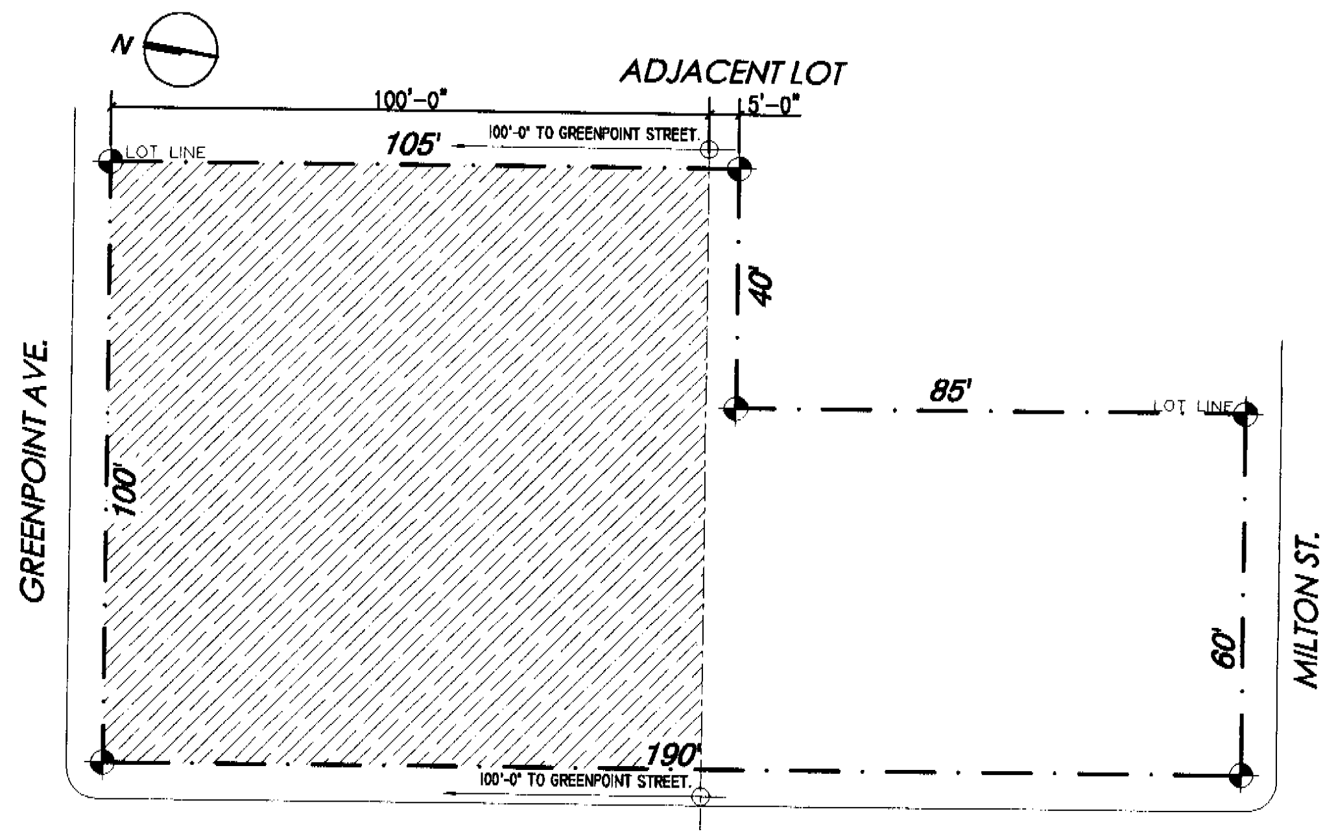


1 / A-100 ZONING MAP 12C
date 03/01/06



2 / A-100 PLOT PLAN
1/32"=1'-0"

50 GREENPOINT AVE /
74-88 WEST ST.
BLOCK #: 2562
LOT #:1



3 / A-100 LOT DIAGRAM
1/32"=1'-0"

ZONING REGULATIONS (RESIDENTIAL) : CONTINUED		CONFORMING CONDITIONS: CONTINUED
ZR 123-66	HEIGHT AND SETBACK REGULATIONS FOR MX-8 HEIGHT TO BE MEASURED FROM BASE PLANE	COMPLIES - HEIGHT MEASURED FROM BASE PLANE BASE PLANE = EL. 11'-7" (SEE CALCS THIS PAGE)
ZR 123-662 (b) ZR 23-663	HEIGHT AND SETBACK MIN. BASE = 40'-0" (R6A) MAX. BASE = 60'-0" (R6A) SETBACK = 15'-0" (NARROW ST) MILTON & WEST ST SETBACK = 10'-0" (WIDE ST) GREENPOINT AVE. MAX. HEIGHT = 70'-0" (R6A)	COMPLIES TO REQUIREMENTS SEE DIAGRAMS ON ZONING SHEET 100C PROVIDED: BASE HEIGHT = 60'-0" BUILDING HEIGHT = 70'-0" SETBACK = WIDE - 10'-0" NARROW - 15'-0"
ZR 123-662 (c)	PERMITTED OBSTRUCTIONS AND DORMER PROVISIONS OBSTRUCTIONS PERMITTED AS PER ZR 23-62	COMPLIES TO REQUIREMENTS REFER TO CALCULATIONS ON Z-100C
PARKING REQUIREMENTS		
ZR 123-72	ACCESSORY OFF-STREET PARKING IS REQUIRED AS PER ARTICLE II CHAPTER 5	COMPLIES, ALL ACCESSORY PARKING PROVIDED ON SITE
ZR 25-23	ACCESSORY PARKING FOR QUALITY HOUSING = 50% OF DWELLING UNITS NOTE: 1 SPOT BUT NOT LESS THAN 5% OF TOTAL PARKING SPACES SHALL BE SUITABLE FOR USE BY THE DISABLED.	48 DWELLING UNITS X 50% = 24 SPACES REQUIRED 24 SPACES PROVIDED 5% OF 24 PARKING SPACES = 1 DISABLED SPACE REQUIRED 1 SPACE PROVIDED FOR DISABLED
ZR 26-15	CURB CUTS NO CURB CUTS ARE PERMITTED ON WIDE STREETS	CURB CUT AT EXISTING LOCATION ON GREENPOINT AVE (WIDE STREET)

FLOOR	TOTAL AREA	SELLABLE RESIDENTIAL AREA	SELLABLE STORAGE	SELLABLE PRIVATE ROOF TERRACE	TERRACE / BALCONY	RESIDENTIAL UNITS																
						A	TERR BALC	B	TERR BALC	C	TERR BALC	D	TERR BALC	E	TERR BALC	F	TERR BALC	G	H	TERR BALC	J	TERR BALC
CELLAR	15,319.0	3,111						571		484				443		475		576			562	
1	9,196.0	5,590				684		733		644		422		[illegible]		644		671	403		731	[illegible]
2	9,196.0	6,797				717	[illegible]	684		1,057		678		662		677		1,055	1,096	[illegible]		
3	9,329.0	8,092				717	[illegible]	684		1,070	[illegible]	697		1,162	[illegible]	655	[illegible]	697	1,067	[illegible]	1,104	[illegible]
4	9,329.0	8,092				717	[illegible]	684		1,070	[illegible]	697		1,162	[illegible]	655	42	697	1,067	[illegible]	1,104	[illegible]
5	9,329.0	8,092				717	[illegible]	684		1,070	[illegible]	697		1,162	42	655	42	697	1,067	[illegible]	1,104	[illegible]
6	5,155.0	6,069				1,097	[illegible]	1,180	[illegible]	673	[illegible]	1,097	[illegible]									
TOTAL*	51,534	42,732	1,168	900	3,662		969		278		422		733		126		126			256		752
TOTAL	66,853.0																					

Note: The areas shown are calculated to the outside face of exterior walls and to the center line of dividing walls

* ABOVE GROUND

▩	OUTDOOR SPACE
2	STUDIO
22	1 BEDROOM
5	1 BEDROOM DUPLEX
19	2 BEDROOM
48	UNITS TOTAL

Parking required 50% of 48 = 24 spots
1 handicap parking required

BUILDING	GROSS FLOOR AREA	ALLOWABLE DEDUCTIONS							NET FLOOR AREA FOR F.A.R.	F.A.R.
		RECREATION	OPEN TO BELOW	MECH. (1)	REFUSE ROOM	DENSITY PER CORRIDOR 50% (2)	DAYLIGHT IN CORRIDOR 50% (2)	TOTAL		
CELLAR	15,319.00	0.0	0.00	459.57	0.00	0.00	0.00	0.00	0.000	
1	9,196.00	1,241.0	52.00	274.32	12.00	706.50	706.50	2,992.32	6,203.68	
2	9,196.00	0.0	847.00	250.47	12.00	536.00	536.00	2,181.47	7,014.53	
3	9,329.00	0.0	0.00	279.87	12.00	442.00	442.00	1,175.87	8,153.13	
4	9,329.00	0.0	0.00	279.87	12.00	442.00	442.00	1,175.87	8,153.13	
5	9,329.00	0.0	0.00	279.87	12.00	442.00	442.00	1,175.87	8,153.13	
6	5,155.00	0.0	0.00	154.65	12.00	281.50	281.50	729.65	4,425.35	
TOTAL	51,534.00	1,241.00	899.00	1,978.62	72.00	2,850.00	2,850.00	9,890.62	42,102.95	2.699

Note 1 : Mechanical deduction 3%
Note 2 : Lot area 15,600 SF

-17.05 SF
UNDERBUILT

Permitted area = 2.7*15600 = 42,120.00 sf

BASE PLANE	STREET FRONTAGE
(REFER TO SITE PLAN SHEET A-100B) GREENPOINT AVE = EL. 12.88 & 11.54 12.88-11.54 = 1.34 1.34 / 2 = 0.67 12.88 - 0.67 = 12.21 GREENPOINT STREET = EL. 12.21	67'-5" 21.2 % OF TOTAL
WEST STREET = EL. 11.54 & 11.33 11.54 - 11.33 = 0.21 0.21 / 2 = 0.105 11.54 - 0.105 = 11.435 WEST STREET = EL. 11.435	190'-0" 59.9 % OF TOTAL
MILTON STREET = EL. 12.17 & 11.33 12.17 - 11.33 = 0.84 0.84 / 2 = 0.42 12.17 - 0.42 = 11.75 MILTON STREET = EL. 11.75	60'-0" 18.9 % OF TOTAL

BASE PLANE = EL. 12.21 & 11.435 & 11.75
(21.2% OF 12.21)+(59.9% OF 11.435) +(18.9% OF 11.75) =
(2.589) + (6.850) + (2.221) = 11.66
BASE PLANE CALCULATED = EL. 11.66
BASE PLANE USED = EL. 11.6

ZONING ANALYSIS

LOT AREA: = 15,600 S.F.
BLOCK #: 2562
LOT #: 1

EXISTING ZONING : M1-2 / R6A / MX-8 COMMUNITY DISTRICT BROOKLYN 1
PROPOSED USE: U.G. 2 RESIDENTIAL QUALITY HOUSING
ZONING MAP #: 12c

QUALITY HOUSING REGULATIONS:		CONFORMING CONDITIONS:
ZR 28-12	STREET TREES ONE TREE PER 25'-0" OF STREET FRONTAGE TREES SHALL BE MIN 3" CALIPER AT TIME OF PLANTING AND BE PLACED AT APPROX. EQUAL INTERVALS.	190' / 25' = 8 TREES (WEST ST.) 100' / 25' = 4 TREES (GREENPOINT AVE.) 60' / 25' = 2 TREES (MILTON ST.)
ZR 28-21	MIN. UNIT SIZE = 400 S.F.	MIN UNIT PROVIDED = 402 S.F.
ZR 28-22	WINDOWS SHALL BE DOUBLE GLAZING	DOUBLE GLAZING PROVIDED ON ALL WINDOWS
ZR 28-23	REFUSE STORAGE 2.9 CU.FT. PER DWELLING UNIT	2.9 CU. FT. X 48 UNITS = 139.2 CU. FT. REQUIRED 113 SF x 8'-0" = 904 CU. FT. PROVIDED
ZR 28-23	REFUSE DISPOSAL ROOM 12 S.F. PER STORY WITH MIN DIMENSION OF 3'-0" 3'-0" x 4'-0" MIN REFUSE ROOM REQUIRED	1 REFUSE ROOM (3'-8" X 4'-0") PROVIDED / FLOOR AREA 14.7 S.F. FLOOR SPACE PROVIDED / FLOOR
ZR 28-24	LAUNDRY FACILITIES 1 WASHING MACHINE PER 20 DWELLING UNITS	INDIVIDUAL LAUNDRY ROOM PROVIDED IN EACH APARTMENT
ZR 28-25	DAYLIGHT IN CORRIDORS 50% OF S.F OF CORRIDOR MAY BE EXCLUDED FROM FAR IF A WINDOW WITH A CLEAR, NON-TINTED, GLAZED AREA OF A MIN 20 S.F. IS PROVIDED, IT IS VISIBLE FROM 50% OF CORRIDOR OR VERTICAL CIRCULATION CORE AND IS LOCATED MIN 20'-0" FROM A WALL OR A SIDE OR REAR LOT LINE	COMPLIES TO GLAZING REQUIREMENTS PARTIAL DEDUCTION FOR FIRST FLOOR LOBBY FULL DEDUCTION ON 2ND THROUGH 6TH FLOORS SEE DEDUCTIONS SHEET FOR CALCULATIONS
ZR 28-31	RECREATIONAL SPACE FOR BLDG. WITH 9 D.U. OR MORE MIN. 3.3% OF RESIDENTIAL FLOOR AREA (net)	REQUIRED SPACE= 3.3% X 51,534 S.F. =1,701 SF SPACE PROVIDED = 1,241 S.F. INDOORS SPACE PROVIDED = 460 S.F. OUTDOORS
ZR 28-32	RECREATIONAL SPACE STANDARDS - ACCESSIBLE - MIN. DIMENSION 15-'0" - MIN. 225 S.F. IF OUTDOORS - MIN. 300 S.F. IF INDOORS - MIN. 9.5% WINDOW IF INDOORS	COMPLIES WITH REQUIREMENTS - ACCESSIBLE - MIN. DIMENSION PROVIDED 16'-8" - PROVIDED 2,253 S.F. OUTDOORS - PROVIDED 1,241 S.F. INDOORS - 9.5% X 1,244 = 118 S.F. WINDOW (153 S.F. PROVIDED)
ZR 28-33	PLANTING AREAS SPACE BETWEEN BUILDING WALL & STREET LINE SHALL BE PLANTED	N/A
ZR 28-41	DENSITY PER CORRIDOR 50 % OF S.F. OF CORRIDOR MAY BE EXCLUDED FROM FAR IF # OF DWELLING UNITS SERVED BY CORRIDOR ON EACH STORY DOES NOT EXCEED 11	LESS THAN 11 UNITS PER FLOOR PROVIDED
ZONING REGULATIONS (RESIDENTIAL) :		CONFORMING CONDITIONS:
ZR 123-20 ZR 22-00	IN MX DISTRICTS ALL USES PERMITTED IN THE DESIGNATED RESIDENCE DISTRCT AND M1 DISTRICT SHALL BE PERMITTED. USE GROUP PERMITTED IN R6A DISTRICT: RESIDENTIAL: 1-2 COMMUNITY FACILITY: 3-4	PROPOSED USE: U.G. 2 RESIDENTIAL QUALITY HOUSING WITHOUT LOW INCOME BONUS NO MIXED USE
ZR 123-31	LOCATION OF USE IN MIXED USE BUILDINGS	COMPLIES - THIS IS NOT A MIXED USE PROJECT
ZR 123-61	ALL BUILDINGS WITHIN SPECIAL MIXED USE DISTRICT MX-8 SHALL COMPLY WITH: RESIDENTIAL USES - ARTICLE 2 CHAPTER 3	COMPLIES WITH RESIDENTIAL USES ARTICLE 2 CHAPTER 3
ZR 123-62	MAXIMUM FLOOR AREA RATIO FOR COMMUNITY FACILITY	COMPLIES - NO COMMUNITY FACILITY PROVIDED
ZR 123-63 ZR 123-64 (a) (3)	MAX. FLOOR AREA RATIO AND LOT COVERAGE FOR RESIDENTIAL BUILDINGS SHALL USE SECTION 23-145 IN LIEU OF 23-142, 23-143, AND 23-147	BUILDING COMPLIES WITH ZR 23-145
ZR 23-144 ZR 23-942	MAX. FLOOR AREA RATIO (FAR) FOR RESIDENTIAL QUALITY HOUSING WITHOUT INCLUSIONARY BONUS (R6A)= 2.7 MAX. DEVELOPMENT ALLOWED = 2.7 X 15,600 S.F. = 42,120 S.F.	PROVIDED = 2.7 PROVIDED = 42,102.95 S.F
ZR 23-145	MAX. LOT COVERAGE R6A (CORNER LOT) = 80% PERMITTED 80% OF 15,600 = 12,480 S.F.	LOT COVERAGE PROVIDED 9,196 S.F. = 58.9%
ZR 23-132	OPEN SPACE PERMITTED OBSTRUCTIONS BALCONIES MAY PROJECT INTO OR OVER OPEN SPACE PROVIDED THAT THEY -DO NOT PROJECT BY A DISTANCE GREATER THAN 7'-0" -DO NOT COVER MORE THAN 10% OF THE AREA DESIGNATED AS OUTDOOR RECREATION SPACE SEE ZR 28-30 - ARE UNENCLOSED EXCEPT FOR A RAILING NOT LESS THAN 50% OPEN AND NOT EXCEEDING 4'-6" IN HEIGHT - ARE LOCATED HIGHER THAN THE FLOOR LEVEL OF THE THIRD STORY OF A BUILDING - HAVE AN AGGREGATE LENGTH, AT THE LEVEL OF ANY STORY, < 50% OF THE LENGTH AT THAT LEVEL OF THE PLANE SURFACE OF THE BUILDING WALL FROM WHICH IT PROJECTS	COMPLIES TO REQUIREMENTS EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY, AS PER DIR. NO. 2 OF 1975 AUG 28 2007 YOHAY ALBO
ZR 23-22	MAX. No. OF DWELLING UNITS = RESIDENTIAL FLOOR AREA / FACTOR (680)	42,102.95 S.F / 680 = 61.9 UNITS MAX PROVIDED = 48
ZR 123-651	YARD REGULATIONS FOR RESIDENTIAL BUILDINGS IN MX-8 NO FRONT YARDS OR SIDE YARDS ARE REQUIRED IF ANY SIDE YARD IS PROVIDED AT ANY LEVEL SUCH AREA SHALL HAVE A MIN. WIDTH OF 8'-0"	COMPLIES REFER ZR 23-45, ZR 23-462, ZR 23-47
ZR 23-45	FRONT YARD - NOT REQUIRED	PROVIDED = 0'-0"
ZR 23-462	SIDE YARD = 0'-0" OR 8'-0"	PROVIDED = 0'-0"
ZR 23-47	REAR YARD -NOT REQUIRED ON CORNER LOT	PROVIDED = 0'-0" (CORNER LOT)
ZR 123-652	YARD REGULATIONS FOR MIXED USE BUILDINGS	DOES NOT APPLY - NOT A MIXED USE PROJECT
ZR 23-62	PERMITTED OBSTRUCTIONS (PROPOSED) THE FOLLOWING SHALL NOT BE CONSIDERED OBSTRUCTIONS AND MAY PENETRATE A MAX HEIGHT LIMIT: PARAPET WALLS NOT MORE THAN 4'-0" HIGH, ELEVATOR OR STAIR BULKHEAD, ROOF WATER TANKS, COOLING TOWERS (INCLUDING ENCLOSURES), CHIMNEYS OR FLUES, EACH HAVING AN AGGREGATE WIDTH OF STREET WALLS EQUAL	TO NOT MORE THAN 30'. THE PRODUCT, IN SF, OF THE AGGREGATE WIDTH OF STREET WALLS OF SUCH OBSTRUCTION FACING EACH STREET FRONTAGE, TIMES THEIR AVERAGE HEIGHT, IN FT, SHALL NOT EXCEED A FIGURE EQUAL TO 4 TIMES THE WIDTH, IN FT, OF THE STREET WALL BUILDING FACING SUCH FRONTAGE (SEE ZONING SHEET 100C)
ZR 23.621 (c)	DORMER ALLOWED WITHIN A REQUIRED SETBACK DISTANCE. MAY EXCEED MAX BASE HEIGHT IF ON ANY STREET FRONTAGE, THE AGGREGATE WIDTH OF ALL DORMERS AT THE MAX BASE HEIGHT DOES NOT EXCEED 60% OF THE LENGTH OF THE STREET WALL OF THE HEIGHEST STORY ENTIRELY BELOW THE MAX BASE HEIGHT. FOR EACH FOOT OF HEIGHT ABOVE THE MAX BASE HEIGHT, THE AGGREGATE WIDTH OF ALL DORMERS SHALL BE DECREASED BY 1% OF THE STREET WALL WIDTH OF THE HIGHEST STORY ENTIRELY BELOW THE MAX BASE HEIGHT	COMPLIES TO REQUIREMENTS SEE DORMER DIAGRAMS ON ZONING SHEET 100C

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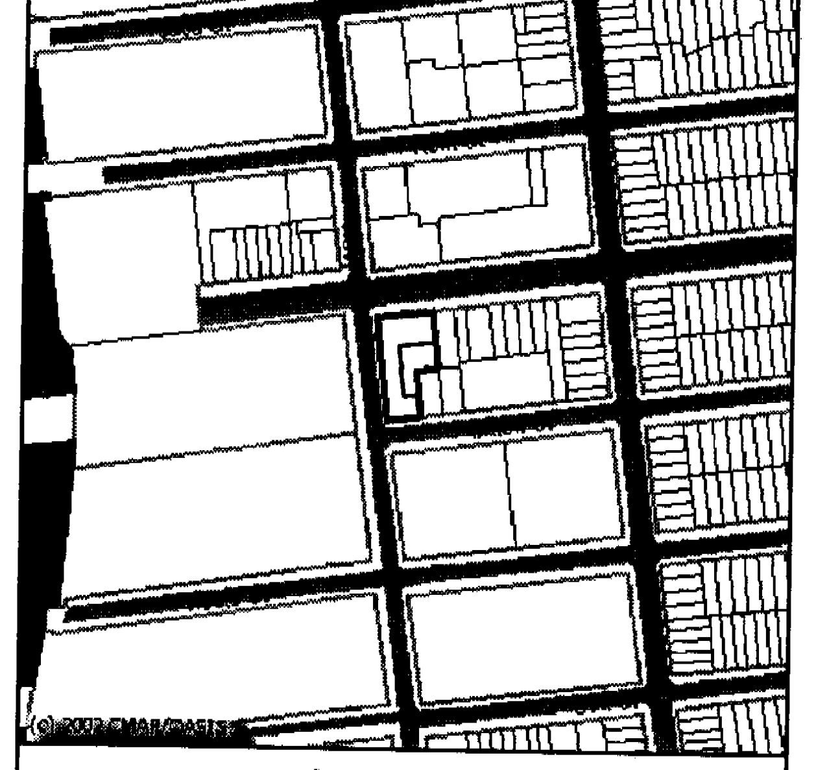
KEY PLAN



REVISIONS

no.	date	description

302319694

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4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
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STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
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checked	K.F.		

TAX LOT No. 10

2 STORY BRICK No. 58

FIRST FLOOR ENTRANCE ELEV.=13.40

TAX LOT No. 37

HIGH 1 STORY BRICK No. 50

TAX LOT No. 39

TAX LOT No. 1

TOTAL PARCEL AREA= 15,600 SQ. FT.

40'-0"

BLDG. 11.00'E.

BLDG. 10.47'E.

BLDG. 0.23'W 0.45'N.

BLDG. 0.08'S. 0.23'W.

8" CONC. WALL

CONCRETE DRIVEWAY

LOADING DOCK

CURB CUT

ACCESS TO RESIDENTIAL PARKING

CONCRETE CURB

CONCRETE SIDEWALK

VAULT

EL.12.81

EL.12.87

EL.12.88

EL.13.69

EL.11.75

LG.12.43
TC.11.85
BC.11.78

TC.11.45
BC.11.21

TC.11.49
BC.11.18
LG.11.45

EL.12.35

EL.12.47

EL.11.31

EL.11.54

EL.11.77

EL.11.6

EL.11.76

EL.11.56

EL.11.33

49'-0"

41'-4"

2'-8"

29'-0"

4'-0"

22'-6"

19'-7"

28'-0"

49'-5½"

15'-0" SETBACK (10'-0" REQUIRED)

ROOF BELOW 5 STORIES + CELLAR

PRIVATE ROOF TERRACE BELOW 5 STORIES + CELLAR

52'-0"

11'-0"

22'-4"

5'-0" SETBACK

6'-0" SETBACK

46'-5"

40'-0"

20'-0"

38'-0"

48'-8"

2'-8"

10'-0"

NEW ELEVATION AT ENTRANCE

EXTENT OF DORMER

SEE CALCULATIONS ZONING SHEET 100C

SIDEWALK WIDTH 15'-0"

7'± 8'-6"±

25'-8"

TC.11.32
BC.11.02

TC.11.21
BC.11.18

TC.11.22
BC.10.98

TC.11.05
BC.10.67

LG.10.57

TC.10.83
BC.10.41

TC.10.75

LG.10.57
TC.10.88
BC.10.32

LG.10.81
TC.11.09
BC.10.66

R.=10.85
l.=4.02

CATCH BASIN EL.10.23

CATCH BASIN EL.10.43

CATCH BASIN EL.10.49

CATCH BASIN EL.9.91

TC.10.13
BC.10.04

2" EXISTING TREE

NEW TREE (AS PER ZR 28-12)

RESIDENTIAL ENTRANCE

CURB CUT

20" WATER LINE

CL.11.40

CL.11.56

CL.11.03

CL.10.89

94.5'± MAHHOLE TO MANHOLE
15" COMBINED SEWER LINE
FLOW

95.5'± MAHHOLE TO MANHOLE
15" COMBINED SEWER LINE
FLOW

R.=10.88
l.=2.18

R.=11.61
l.=2.71

R.=10.88
l.=3.03

S

E

W

G

WEST STREET (60' WIDE)

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER BR. NO. 13-04 MEA

AUG 2 8 2007

YONAY ALBO

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KEY PLAN

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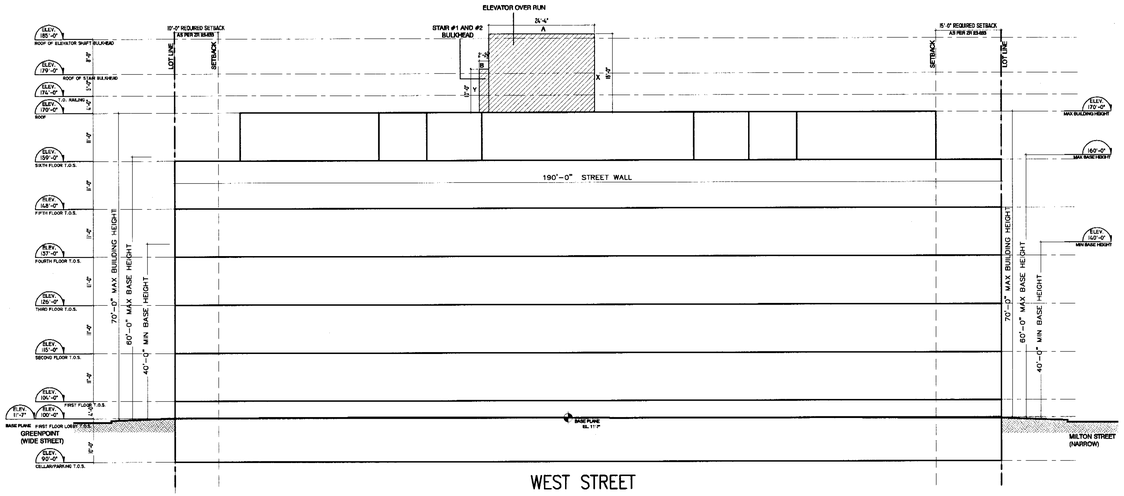
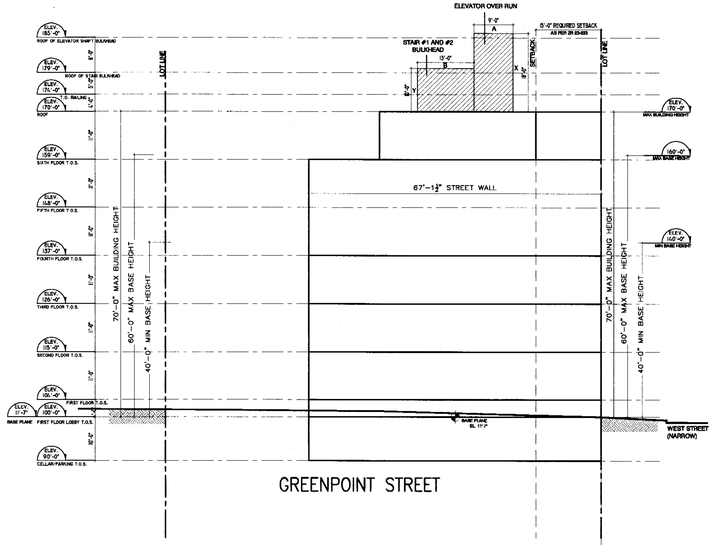


WEST STREET

1 A-100C PERMITTED OBSTRUCTION ZR 23-62d WEST STREET

1/16"=1'-0"

ZR 23-62(D) PERMITTED OBSTRUCTIONS IN MAXIMUM HEIGHT LIMIT:	
MAXIMUM WIDTH PERMITTED = 30'-0"	MAXIMUM WIDTH PROVIDED = 26'-2 1/2"
MAXIMUM SQUARE FOOT = 4 x STREET WALL = 4 x 190' = 760.0 S.F.	PROVIDED = [(X+Y)/2] x (A+B) = [(18+10.0)/2] x (24.33+2.21) = 14 x 26.54 = 371.56 S.F.

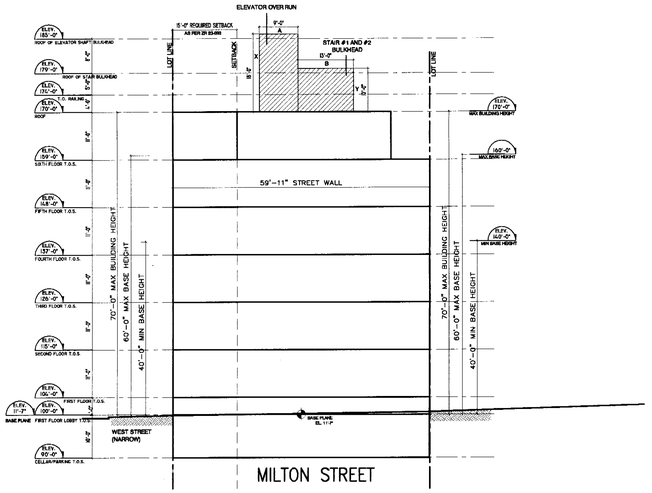


GREENPOINT STREET

2 A-100C PERMITTED OBSTRUCTION ZR 23-62d GREENPOINT STREET

1/16"=1'-0"

ZR 23-62(D) PERMITTED OBSTRUCTIONS IN MAXIMUM HEIGHT LIMIT:	
MAXIMUM WIDTH PERMITTED = 30'-0"	MAXIMUM WIDTH PROVIDED = 22'-0"
MAXIMUM SQUARE FOOT = 4 x STREET WALL = 4 x 67'-1 1/2" = 268.5 S.F.	PROVIDED = [(X+Y)/2] x (A+B) = [(18+10.0)/2] x (9+13) = 14 x 22 = 308 S.F. RECON REQUIRED

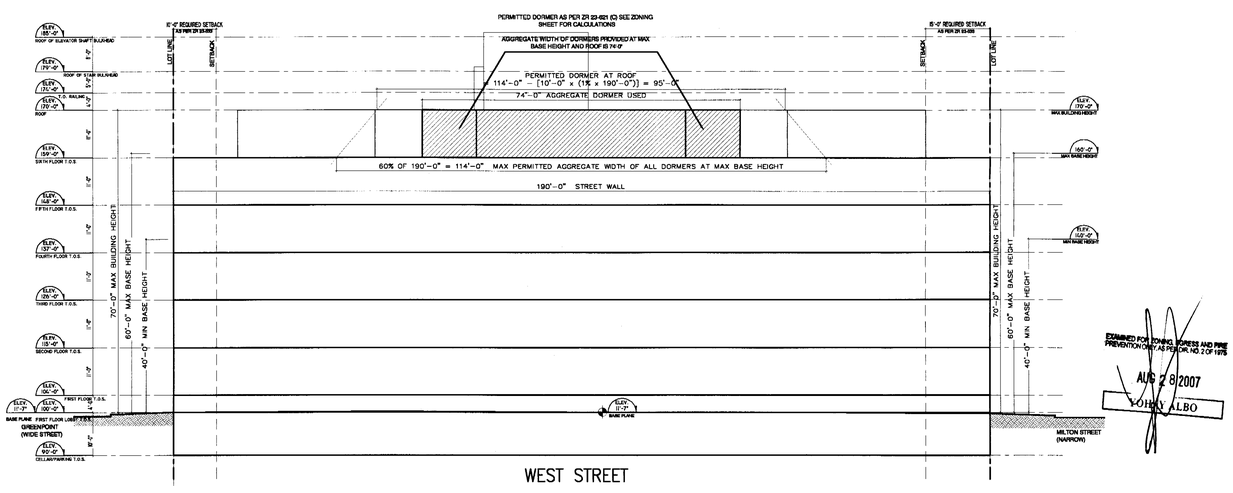


MILTON STREET

ZR 23-62(D) PERMITTED OBSTRUCTIONS IN MAXIMUM HEIGHT LIMIT:	
MAXIMUM WIDTH PERMITTED = 30'-0"	MAXIMUM WIDTH PROVIDED = 22'-0"
MAXIMUM SQUARE FOOT = 4 x STREET WALL = 4 x 59'-11" = 239.67 S.F.	PROVIDED = [(X+Y)/2] x (A+B) = [(18+10.0)/2] x (9+13) = 14 x 22 = 308 S.F. RECON REQUIRED

3 A-100C PERMITTED OBSTRUCTION ZR 23-62d MILTON STREET

1/16"=1'-0"



WEST STREET

4 A-100C DORMER CALCULATIONS – ZR 23-621c

1/16" = 1'-0"

WEST STREET	ZR 23-621 DORMER AS PERMITTED OBSTRUCTION
	60% OF STREET WALL AT MAX. BASE HEIGHT
	190.0' x 60 % / 100 = 114.0' MAX. WIDTH OF DORMER AT MAX. BASE HEIGHT
	190.0' x 1 % / 100 = 1.9' = 1% OF STREET WALL WIDTH
	114.0' - (1.9' x 10.0') = 95.0' MAX. WIDTH OF DORMER AT ROOF OF BUILDING
	74'-0" = AGGREGATE WIDTH OF DORMERS PROVIDED

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER DOB, NO 2 OF 1975

AUG 28 2007

VOHEN ALBO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisdg.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8086
FAX: 212.643.8016

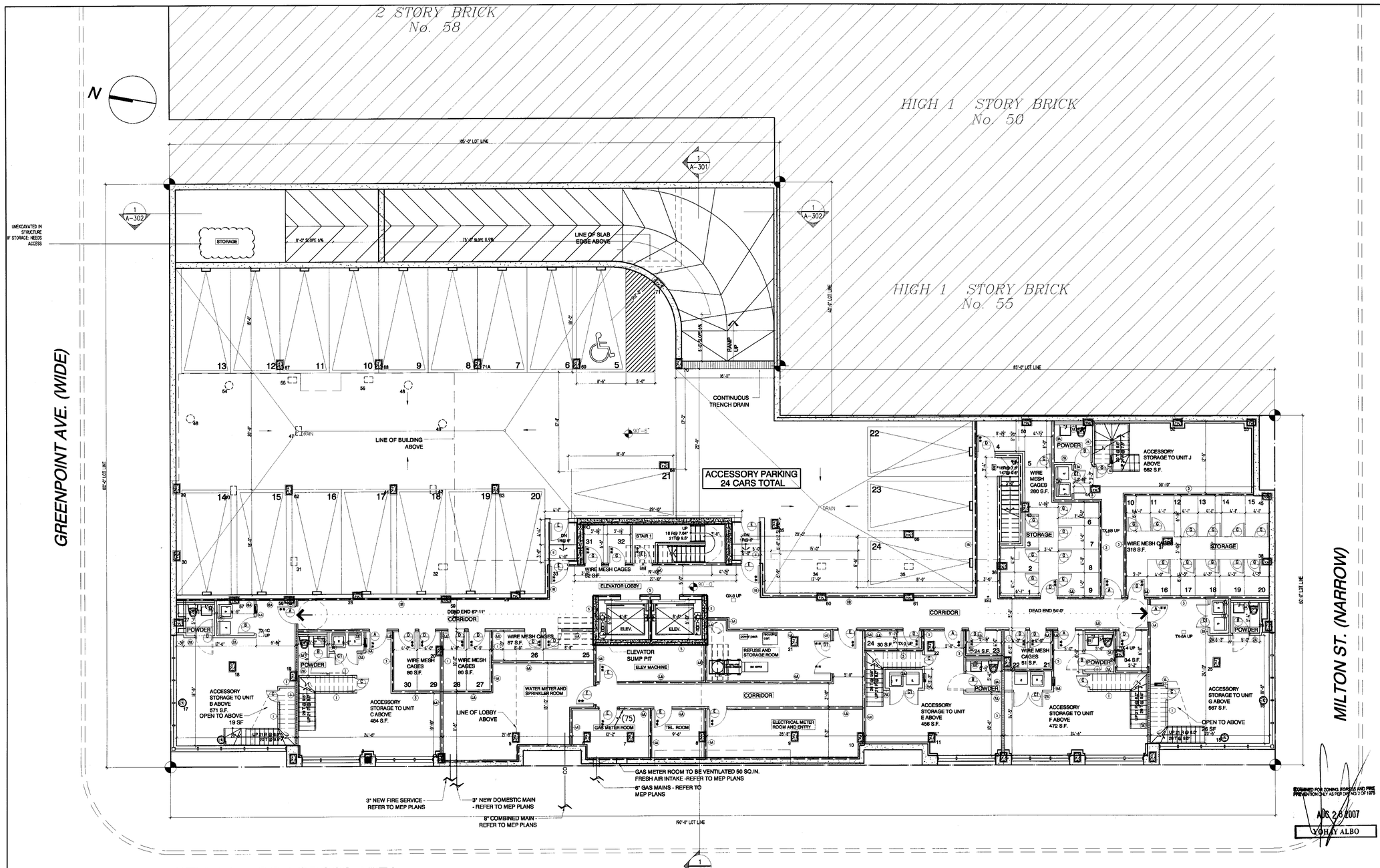
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 5th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-9285
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.MonkNet.com E-MAIL:mail@MonkNet.com

REGISTERED ARCHITECT KARL FISCHER 021283 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
ZONING ANALYSIS
BULKHEAD AND DORMER CALCULATIONS

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-100C
checked	K.F.		



CELLAR FLOOR GROSS AREA
15,319 S.F.

NOTES:	LEGEND		NOTE: REFER TO WALL TYPES FOR FIRE RATINGS
1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG. AS PER BC27-9.32(a)(i). NOTE: 301 520 806 IF REQUIRED	(S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17 14. IT SHALL BE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM	RECREATION SPACE	1 HR. FIRE RATED WALL
2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS	** INDICATES DOORS TO BE 1-1/2 HR. FPSC	MECHANICAL VENTILATION	2 HR. FIRE RATED WALL
3- FOR WALL TYPES REFER TO SHEET# A-111	* INDICATES DOORS TO BE 3/4 HR FPSC	RD ROOF DRAIN	INSULATED WALL
4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105	EXIT EXIT SIGN	FLOOR DRAIN TERRACE DRAIN	SHEETROCK WALL
5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE	W/D WASHER & DRYER	2 WALL TYPE TAG (REFER TO A-111)	CMU WALL
	T.O.S. TOP OF SLAB	FUTURE DOOR SWING FOR BARRIER-FREE DESIGN	CONCRETE FOUNDATION WALL

PARKING REQUIRED (50% OF UNITS): 24
PARKING PROVIDED: 24

PARKING REQUIRED FOR DISABLED (5% OF 24 SPACES): 1
PARKING PROVIDED: 1

PROVIDE CONTROLLED LIGHTING SYSTEM FOR RAMP

1 / A-101 CELLAR FLOOR PLAN
1/8"=1'-0"

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KEY PLAN

REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisdg.com

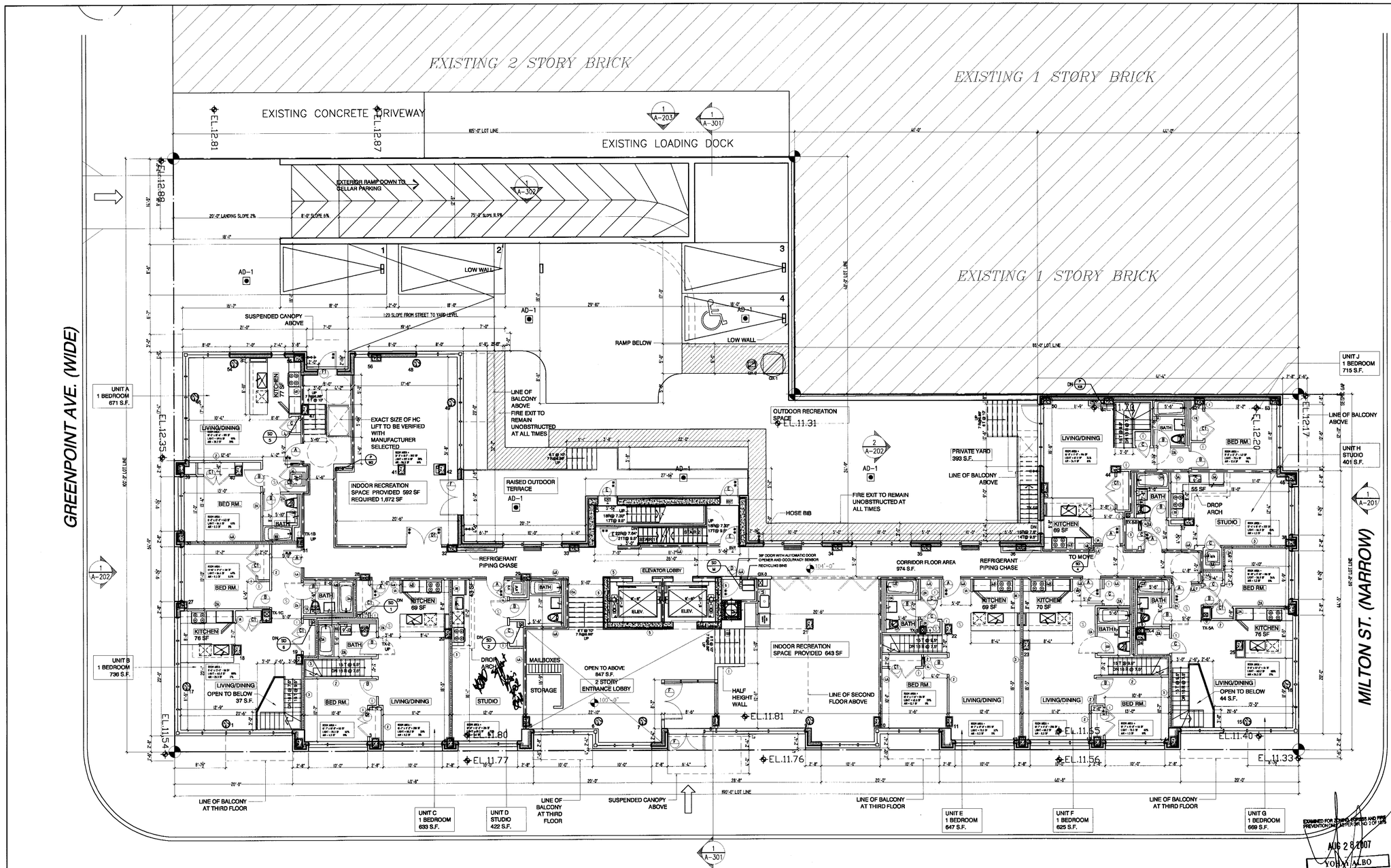
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 8th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.karlarchitect.com E-MAIL:mail@karlarchitect.com

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
CELLAR FLOOR PLAN
90'-0" 90'-6"

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-101
checked	K.F.		



FIRST FLOOR GROSS AREA
9,190 S.F.

NOTES:

1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUCHOUT THE BLDG. AS PER BC27-932(a)(i), NOTE: 301 520 806 IF REQUIRED

2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS

3- FOR WALL TYPES REFER TO SHEET# A-111

4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105

5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE

LEGEND

- (S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17-14. IT SHALL BE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM
- ** INDICATES DOORS TO BE 1-1/2 HR. FPSC
- * INDICATES DOORS TO BE 3/4 HR FPSC
- EXIT EXIT SIGN
- W/D WASHER & DRYER
- T.O.S. TOP OF SLAB

- RECREATION SPACE
- MECHANICAL VENTILATION
- RD ROOF DRAIN
- FLOOR DRAIN TERRACE DRAIN
- 2 WALL TYPE TAG (REFER TO A-111)
- FUTURE DOOR SWING FOR BARRIER-FREE DESIGN

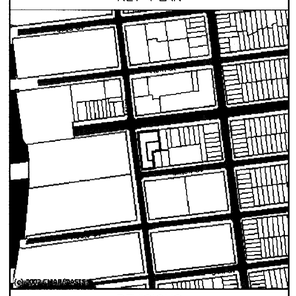
NOTE: REFER TO WALL TYPES FOR FIRE RATINGS

- 1 HR. FIRE RATED WALL
- 2 HR. FIRE RATED WALL
- INSULATED WALL
- SHEETROCK WALL
- CMU WALL
- CONCRETE FOUNDATION WALL

1/A-102 FIRST FLOOR PLAN 1/8"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2676
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.6015

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

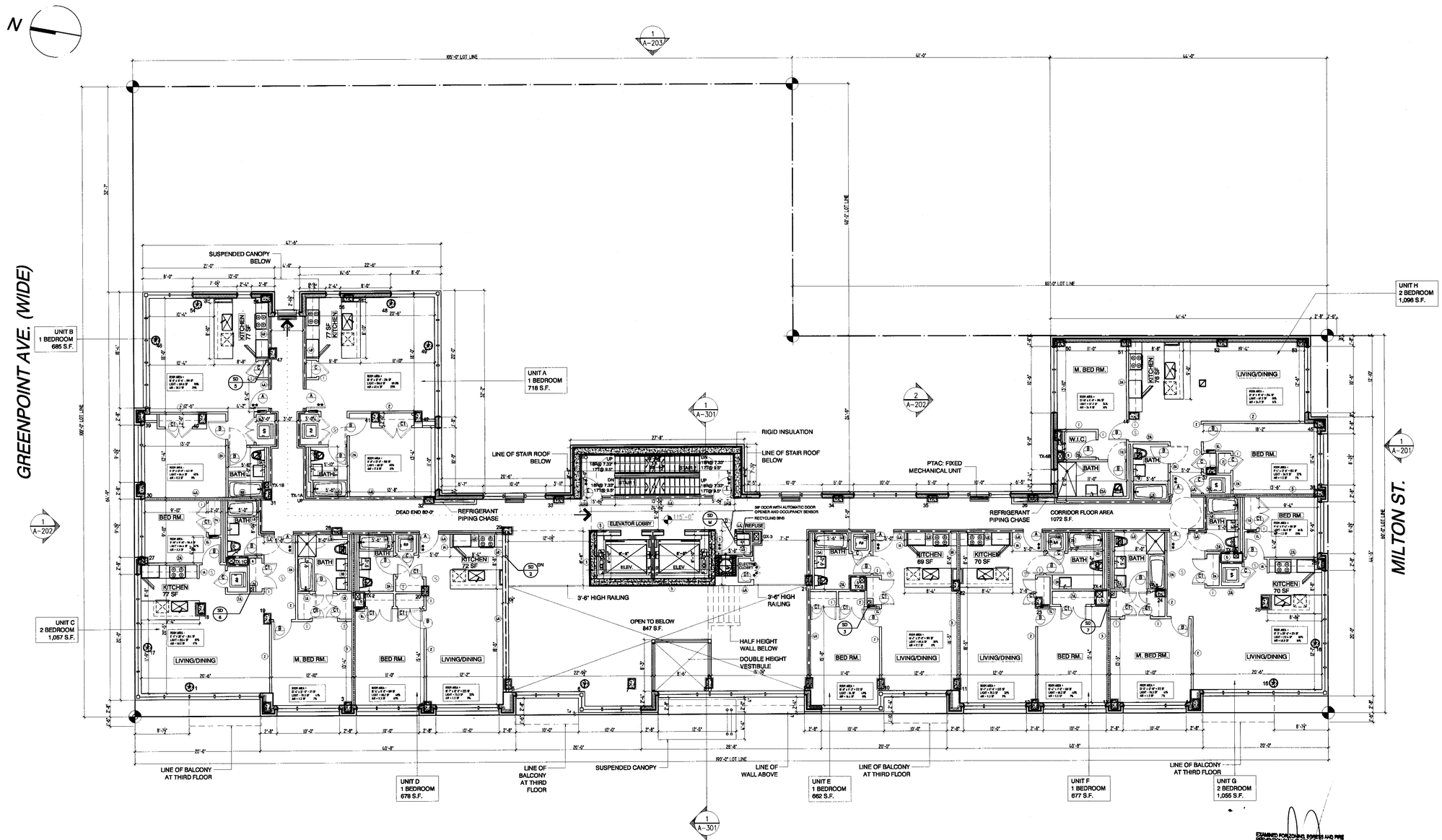
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

EXAMINED FOR STRUCTURES AND FIRE PREVENTION AS PER MR NO 2 OF 1975

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
FIRST FLOOR P LAN
100'-0" 104'-0"

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-102
checked	K.F.		



SECOND FLOOR GROSS AREA
9,179 S.F.

NOTES:	LEGEND		NOTE: REFER TO WALL TYPES FOR FIRE RATINGS
1– ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG. AS PER BC27-932(a)(i), NOTE: 301 520 806 IF REQUIRED	(S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17-14. IT SHALL BE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM	RECREATION SPACE	1 HR. FIRE RATED WALL
2– USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS	** INDICATES DOORS TO BE 1-1/2 HR. FPSC	MECHANICAL VENTILATION	2 HR. FIRE RATED WALL
3– FOR WALL TYPES REFER TO SHEET# A-111	* INDICATES DOORS TO BE 3/4 HR FPSC	RD ROOF DRAIN	INSULATED WALL
4– FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105	EXIT EXIT SIGN	FLOOR DRAIN TERRACE DRAIN	SHEETROCK WALL
5– ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE	W/D WASHER & DRYER	2 WALL TYPE TAG (REFER TO A-111)	CMU WALL
	T.O.S. TOP OF SLAB	FUTURE DOOR SWING FOR BARRIER-FREE DESIGN	CONCRETE FOUNDATION WALL

1 A-103 2ND FLOOR PLAN 1/8"=1'-0"

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER DOB NO. 2 OF 1975
AUG 2 8 2007
YORAY ALBO

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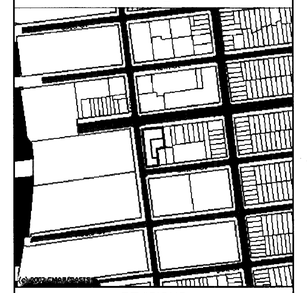
KEY PLAN



REVISIONS

no.	date	description
		3023189894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242.3626
FAX: 973-242-2676 www.axisd.com

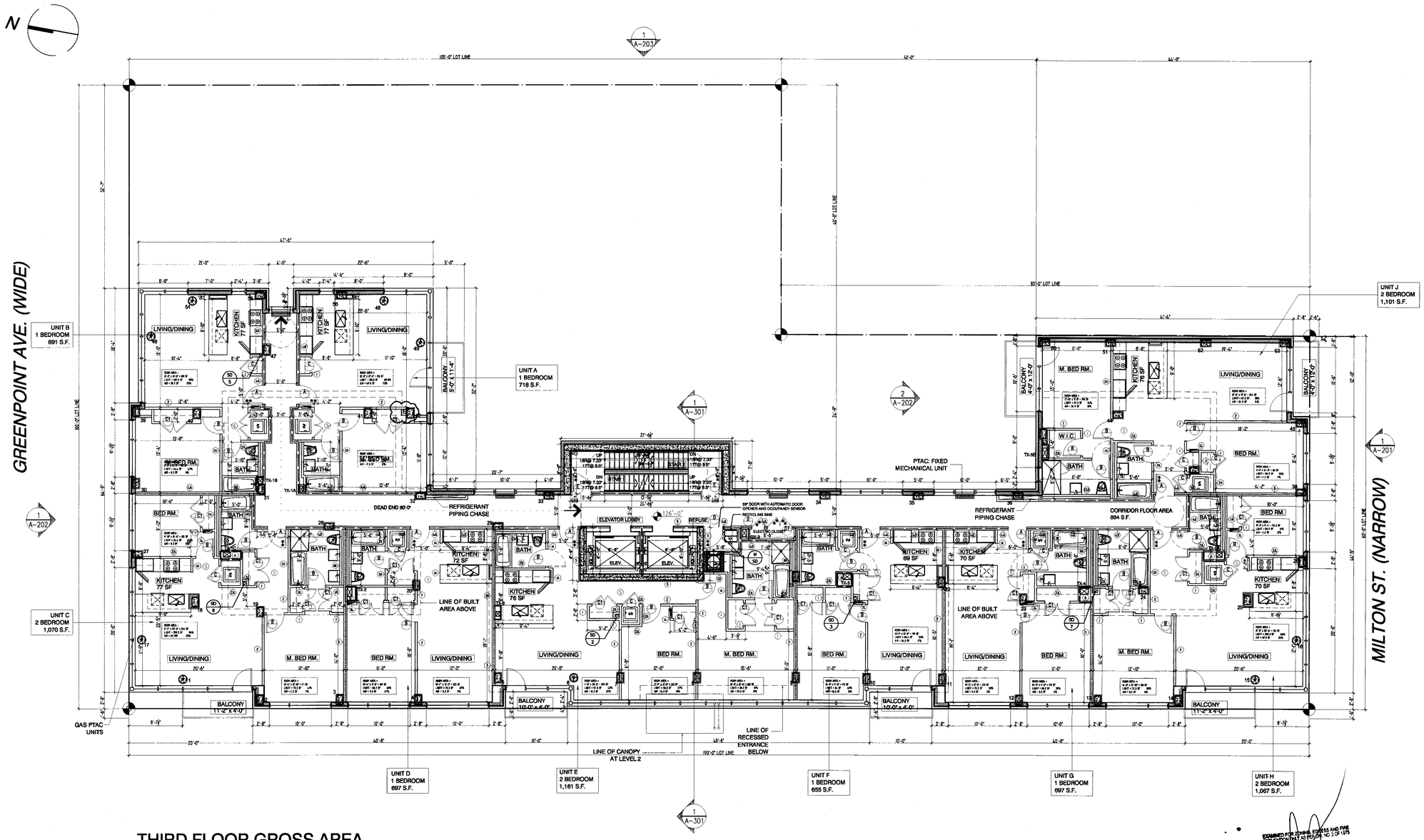
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.0006
FAX: 212.643.0016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-5980
1420 NOTRE-DAME, WEST, MONTREAL, QC H3C 1S9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
2ND FLOOR PLAN

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-103
checked	K.F.		



THIRD FLOOR GROSS AREA
9,295 S.F.

NOTES:

1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG. AS PER BC27-932(a)(i), NOTE: 301 520 806 IF REQUIRED

2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS

3- FOR WALL TYPES REFER TO SHEET# A-111

4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105

5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE

LEGEND

- (S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17-14. IT SHALL BE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM
- ** INDICATES DOORS TO BE 1-1/2 HR. FPSC
- * INDICATES DOORS TO BE 3/4 HR FPSC
- EXIT SIGN
- W/D WASHER & DRYER
- T.O.S. TOP OF SLAB

- RECREATION SPACE
- MECHANICAL VENTILATION
- RD ROOF DRAIN
- FLOOR DRAIN TERRACE DRAIN
- (2) WALL TYPE TAG (REFER TO A-111)
- FUTURE DOOR SWING FOR BARRIER-FREE DESIGN

NOTE: REFER TO WALL TYPES FOR FIRE RATINGS

- 1 HR. FIRE RATED WALL
- 2 HR. FIRE RATED WALL
- INSULATED WALL
- SHEETROCK WALL
- CMU WALL
- CONCRETE FOUNDATION WALL

1 / A-104 — 3RD FLOOR PLAN
1/8"=1'-0"

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION PER LAS PC/FC NO. 2 OF 1975
AUG 28 2007
VINAY ALBO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		3023196694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisd.com

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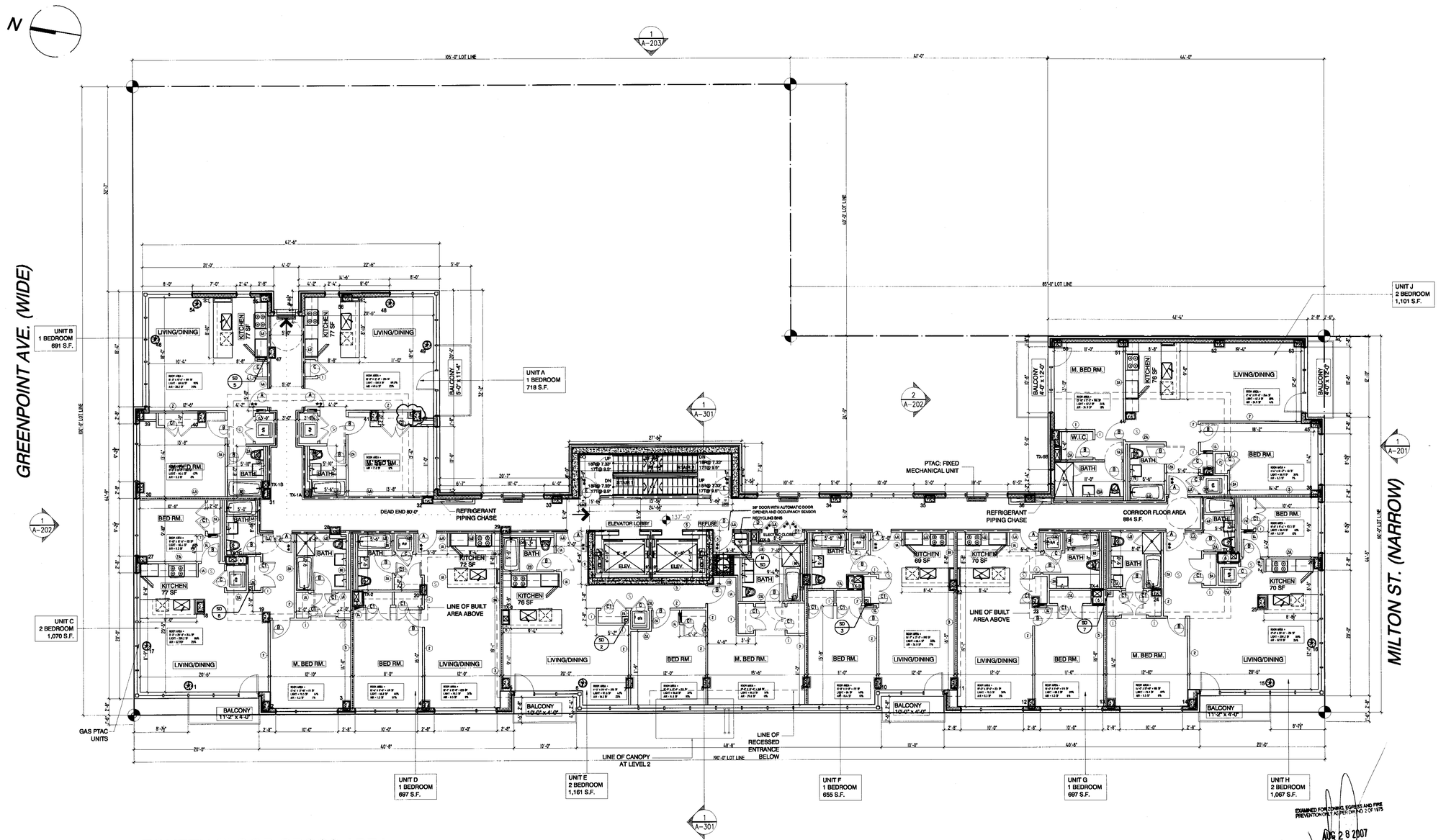
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8616

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
THIRD FLOOR P LAN

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-104
checked	K.F.		



FOURTH FLOOR GROSS AREA
9,295 S.F.

NOTES:

1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG. AS PER BC27-932(a)(i), NOTE: 301 520 806 IF REQUIRED

2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS

3- FOR WALL TYPES REFER TO SHEET# A-111

4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105

5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE

LEGEND

- (S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17-14. IT SHALL BE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM
- ** INDICATES DOORS TO BE 1-1/2 HR. FPSC
- * INDICATES DOORS TO BE 3/4 HR FPSC
- EXIT EXIT SIGN
- W/D WASHER & DRYER
- T.O.S. TOP OF SLAB

- RECREATION SPACE
- MECHANICAL VENTILATION
- RD ROOF DRAIN
- FLOOR DRAIN / TERRACE DRAIN
- 2 WALL TYPE TAG (REFER TO A-111)
- FUTURE DOOR SWING FOR BARRIER-FREE DESIGN

NOTE: REFER TO WALL TYPES FOR FIRE RATINGS

- 1 HR. FIRE RATED WALL
- 2 HR. FIRE RATED WALL
- INSULATED WALL
- SHEETROCK WALL
- CMU WALL
- CONCRETE FOUNDATION WALL

1/A-105 4TH FLOOR PLAN 1/8"=1'-0"

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KEY PLAN

REVISIONS

no.	date	description
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3	070703	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-0346
FAX: 973-242-2676 www.axisd.com

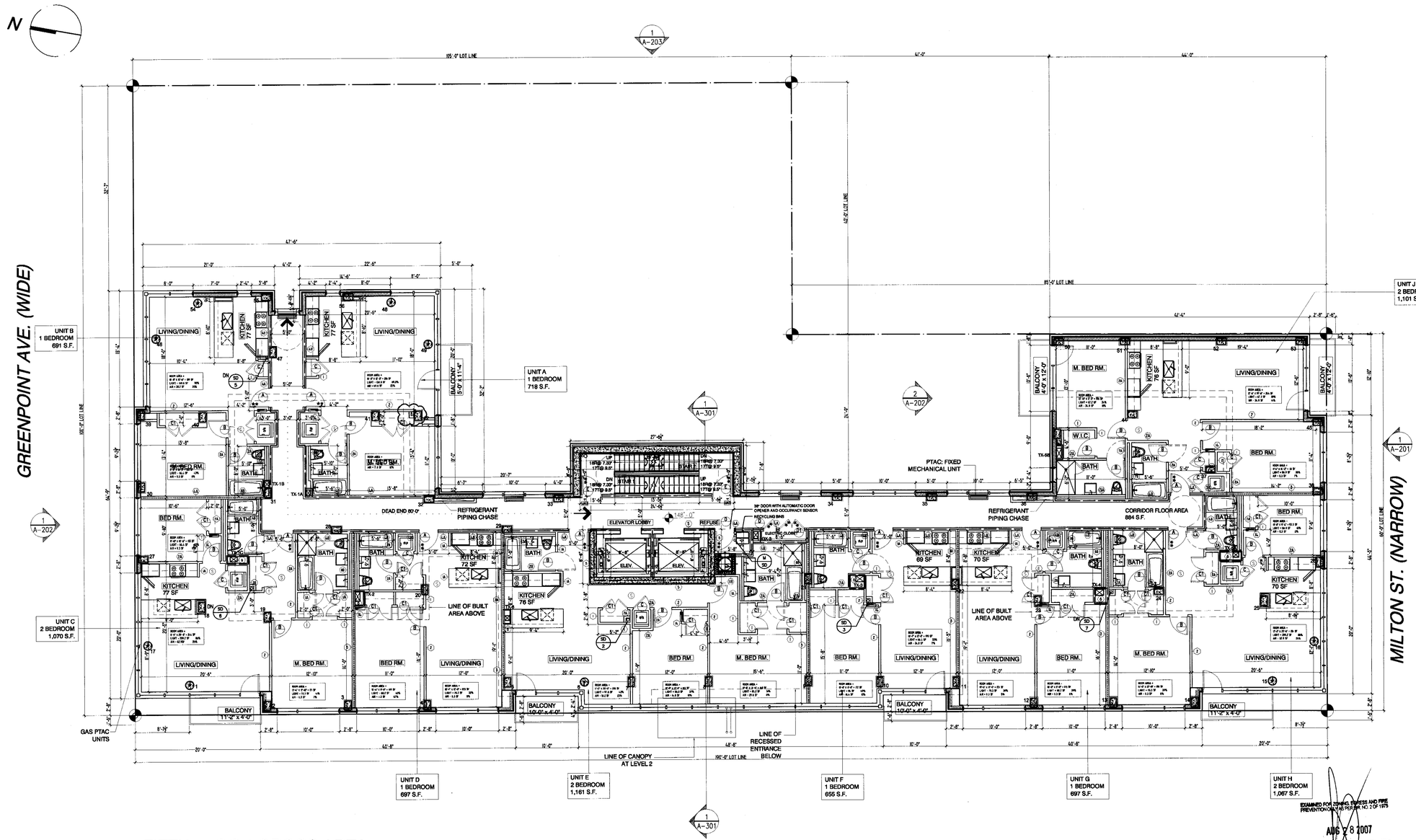
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC.
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 6th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8986
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.karlfischerarchitect.com E-MAIL:mailinfo@karlfischerarchitect.com
REGISTERED ARCHITECT K. FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
4TH FLOOR PLAN

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-105
checked	K.F.		



FIFTH FLOOR GROSS AREA
9,295 S.F.

NOTES:	LEGEND		
1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG AS PER BC27-932(a)(i). NOTE: 301 520 806 IF REQUIRED	(S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17-14. IT SHALL BE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM	RECREATION SPACE	NOTE: REFER TO WALL TYPES FOR FIRE RATINGS
2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS	** INDICATES DOORS TO BE 1-1/2 HR. FPSC	MECHANICAL VENTILATION	1 HR. FIRE RATED WALL
3- FOR WALL TYPES REFER TO SHEET# A-111	* INDICATES DOORS TO BE 3/4 HR FPSC	RD ROOF DRAIN	2 HR. FIRE RATED WALL
4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105	EXIT EXIT SIGN	FLOOR DRAIN TERRACE DRAIN	INSULATED WALL
5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE	W/D WASHER & DRYER	2 WALL TYPE TAG (REFER TO A-111)	SHEETROCK WALL
	T.O.S. TOP OF SLAB	FUTURE DOOR SWING FOR BARRIER-FREE DESIGN	CMU WALL
			CONCRETE FOUNDATION WALL

1 A-106 — 5TH FLOOR PLAN
1/8"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.6008
FAX: 212.643.6016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 6th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.KarlFischerArchitect.com E-MAIL:mail@KarlFischerArchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER BR NO. 2 OF 1975
AUG 28 2007
YCHAI ALBO

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
5TH FLOOR PLAN

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-106
checked	K.F.		

N

GREENPOINT AVE. (WIDE)

MILTON ST. (NARROW)

1/A-203

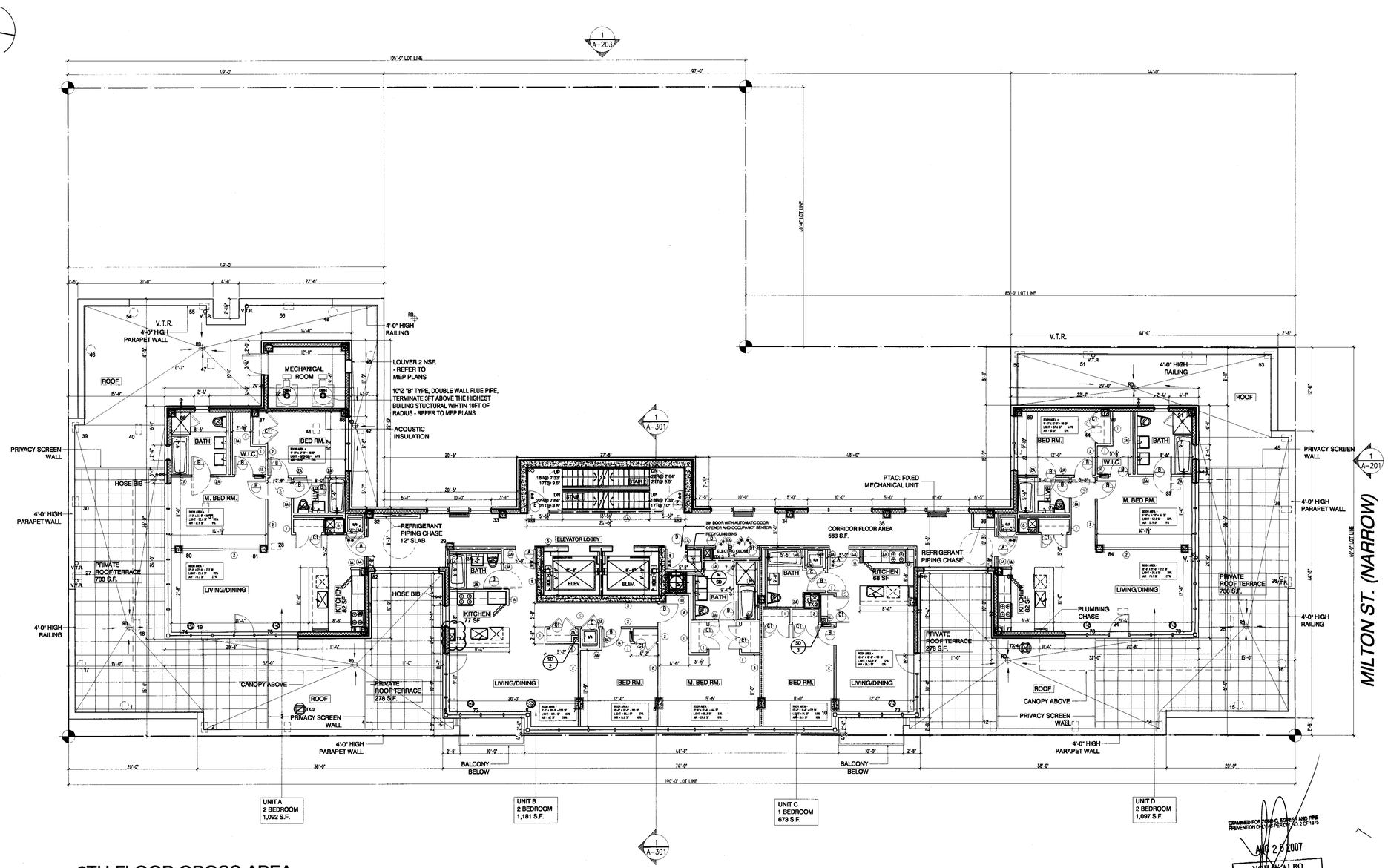
1/A-301

1/A-202

1/A-201

1/A-200 WEST ST. (NARROW)

1/A-107



6TH FLOOR GROSS AREA
5,311 S.F.

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER DOB NO. 2 OF 1975

AUG 28 2007

YORAM ALBO

NOTES:

1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG AS PER BC27-932(a)(i), NOTE: 301 520 806 IF REQUIRED

2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS

3- FOR WALL TYPES REFER TO SHEET# A-111

4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105

5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE

LEGEND

- (S) ELECTRONICALLY INTERCONNECTED COMBINED SMOKE DETECTORS & CARBON MONOXIDE ALARMS SHALL COMPLY WITH RS 17-13 AND INSTALLED IN ACCORDANCE WITH RS 17-14. IT SHALL DE PROVIDED IN EVERY DWELLING UNITS WITHIN FIFTEEN FEET OF THE PRIMARY ENTRANCE OF EACH BEDROOM
- ** INDICATES DOORS TO BE 1-1/2 HR. FPSC
- * INDICATES DOORS TO BE 3/4 HR FPSC
- EXIT EXIT SIGN
- W/D WASHER & DRYER
- T.O.S. TOP OF SLAB

- RECREATION SPACE
- MECHANICAL VENTILATION
- RD ROOF DRAIN
- FLOOR DRAIN TERRACE DRAIN
- 2 WALL TYPE TAG (REFER TO A-111)
- FUTURE DOOR SWING FOR BARRIER-FREE DESIGN

NOTE: REFER TO WALL TYPES FOR FIRE RATINGS

- 1 HR. FIRE RATED WALL
- 2 HR. FIRE RATED WALL
- INSULATED WALL
- SHEETROCK WALL
- CMU WALL
- CONCRETE FOUNDATION WALL

1/A-107 6TH FLOOR PLAN 1/8"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		3029319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2526
FAX: 973-242-2676 www.axisd.com

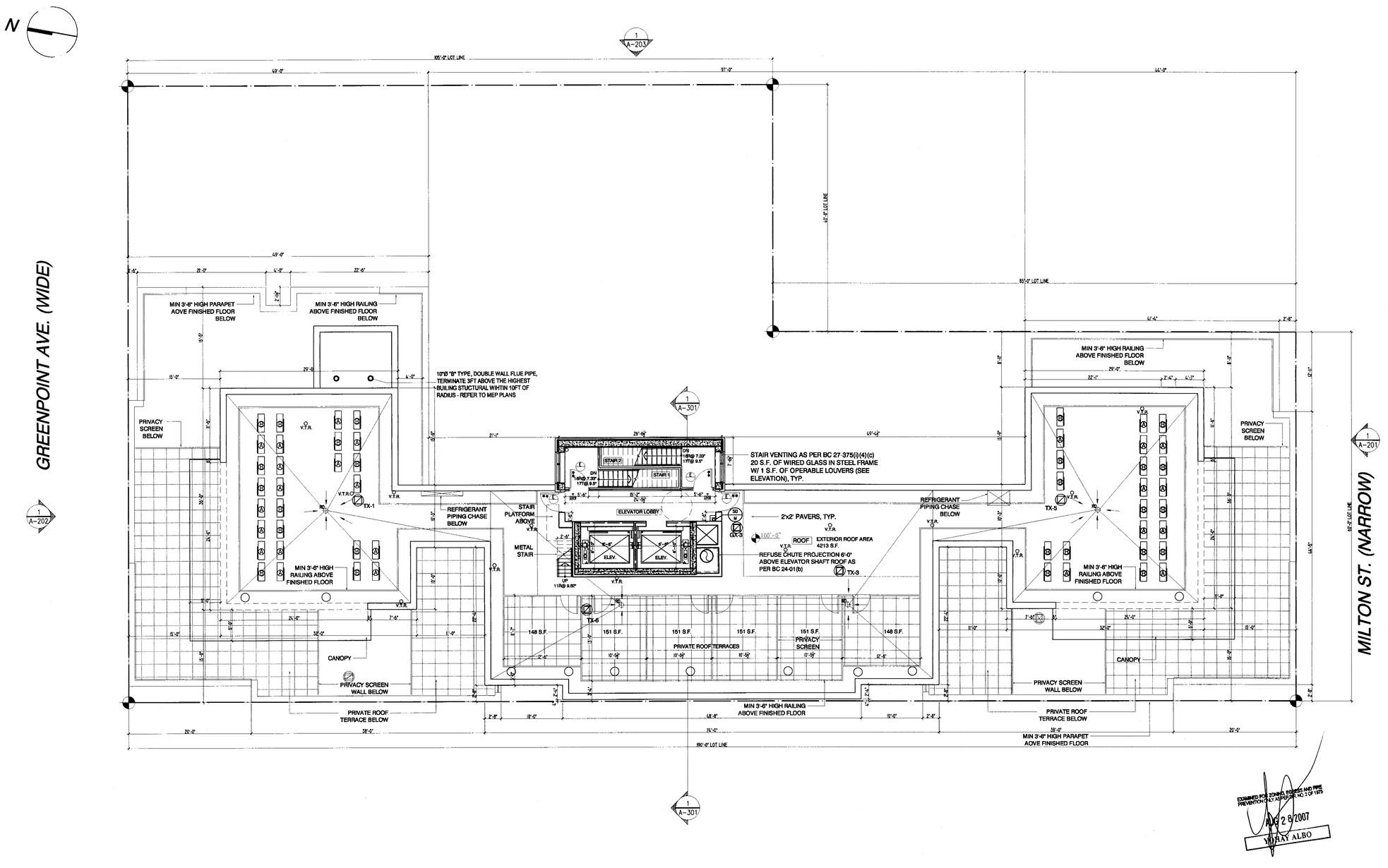
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8946

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021262 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
6TH FLOOR PLAN

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-107
checked	K.F.		



EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS REQUIRED BY NO. 2 OF 1975

AUG 28 2007

VINAY ALBO

NOTES:

1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG. AS PER BC27-9.32(a)(i), NOTE: 301 520 806 IF REQUIRED

2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS

3- FOR WALL TYPES REFER TO SHEET# A-111

4- FOR GENERAL NOTES, SPECS, CODES & ADA REGULATIONS REFER TO SHEETS AN-101 TO AN-105

5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE

LEGEND

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- * INDICATES DOORS TO BE 3/4 HR FPSC
- EXIT EXIT SIGN
- W/D WASHER & DRYER
- T.O.S. TOP OF SLAB

- RECREATION SPACE
- MECHANICAL VENTILATION
- RD ROOF DRAIN
- FLOOR DRAIN TERRACE DRAIN
- 2 WALL TYPE TAG (REFER TO A-111)
- FUTURE DOOR SWING FOR BARRIER-FREE DESIGN

NOTE: REFER TO WALL TYPES FOR FIRE RATINGS

- 1 HR. FIRE RATED WALL
- 2 HR. FIRE RATED WALL
- INSULATED WALL
- SHEETROCK WALL
- CMU WALL
- CONCRETE FOUNDATION WALL

1 A-108 ROOF PLAN
1/8"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8986
1420 NOTRE-DAME WEST, MONTREAL QC H3C 1H9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mailto@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

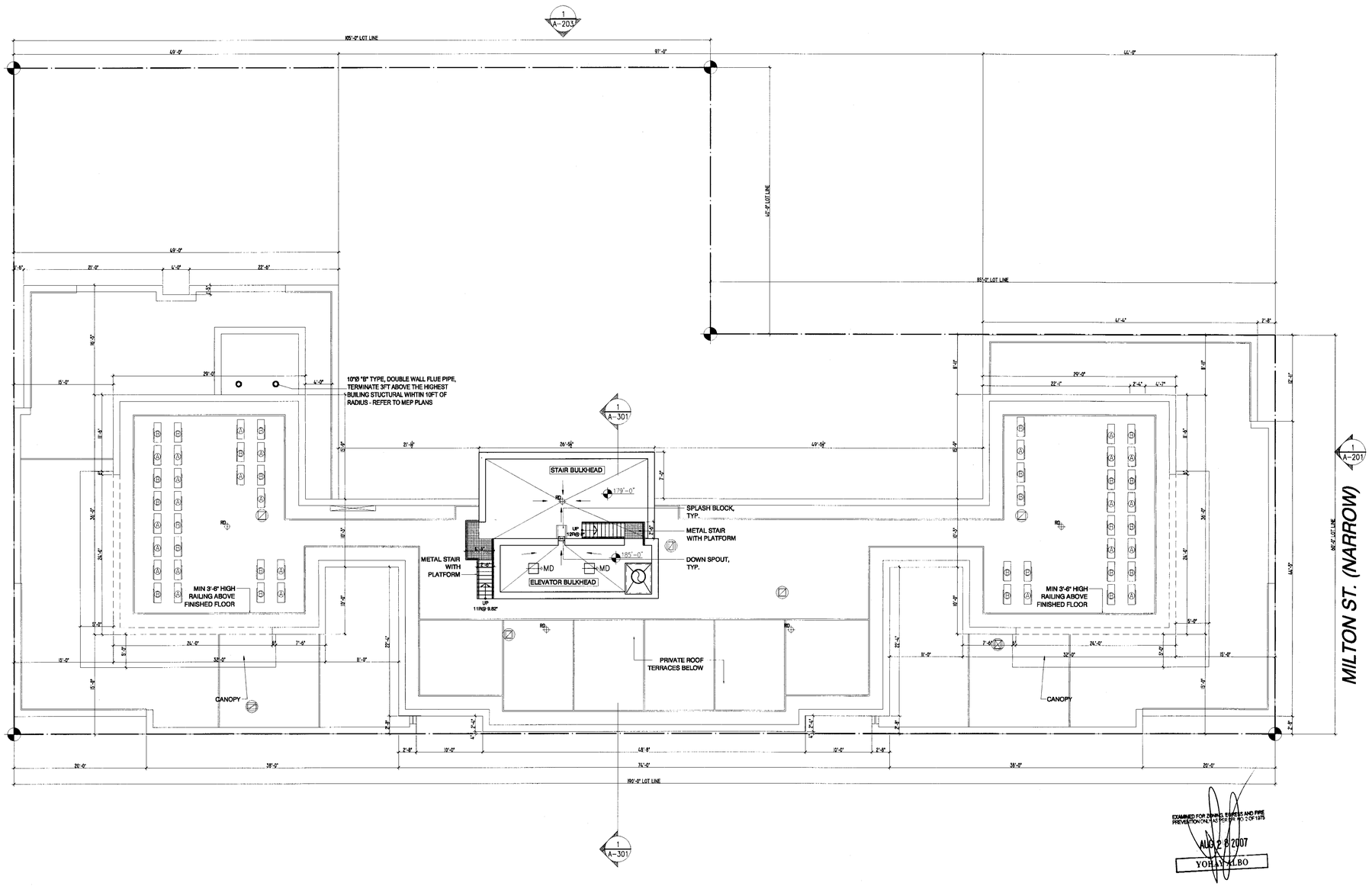
drawing title
ROOF PLAN

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-108
checked	K.F.		

N

GREENPOINT AVE. (WIDE)

MILTON ST. (NARROW)



EXAMINED FOR ZONING, EXITS AND FIRE PREVENTION ONLY AS PER BC 27-132 & 27-375

AUG 2 8 2007

YOHAN ALBO

NOTES:

1- ALL FLOORS TO BE FULLY SPRINKLERED WITH AUTOMATIC SPRINKLER SYSTEM AS PER LL10/99 NOTE: 301 520 815 AND STANDPIPE THROUGHOUT THE BLDG AS PER BC27 932(a)(i). NOTE: 301 520 806 IF REQUIRED

2- USE WATER PROOF SHEETROCK IN SHOWERS & AROUND BATH TUBS

3- FOR WALL TYPES REFER TO SHEET# A-111

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5- ALL BATHROOM & KITCHEN DOORS SHALL BE ADAPTABLE

LEGEND

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- EXIT EXIT SIGN
- W/D WASHER & DRYER
- T.O.S. TOP OF SLAB

- RECREATION SPACE
- MECHANICAL VENTILATION
- RD ROOF DRAIN
- FLOOR DRAIN TERRACE DRAIN
- 2 WALL TYPE TAG (REFER TO A-111)
- FUTURE DOOR SWING FOR BARRIER-FREE DESIGN

NOTE: REFER TO WALL TYPES FOR FIRE RATINGS

- 1 HR. FIRE RATED WALL
- 2 HR. FIRE RATED WALL
- INSULATED WALL
- SHEETROCK WALL
- CMU WALL
- CONCRETE FOUNDATION WALL

1 A-109 BULKHEAD PLAN
1/8"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302819894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973.242.2662
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8036
FAX: 212.643.8016

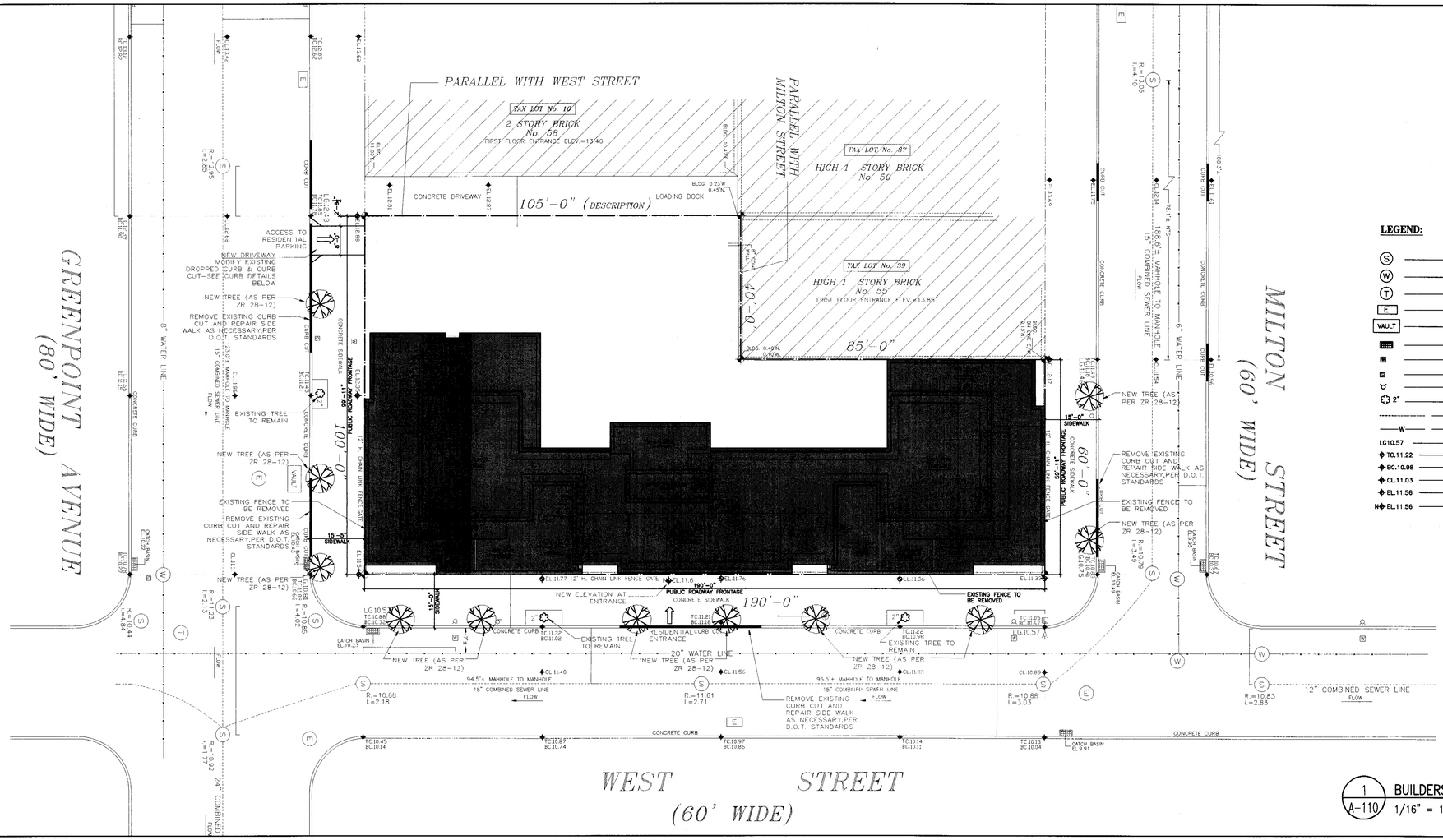
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.karlfischer.com E-MAIL:mailbox@karlfischer.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BULKHEAD PLAN

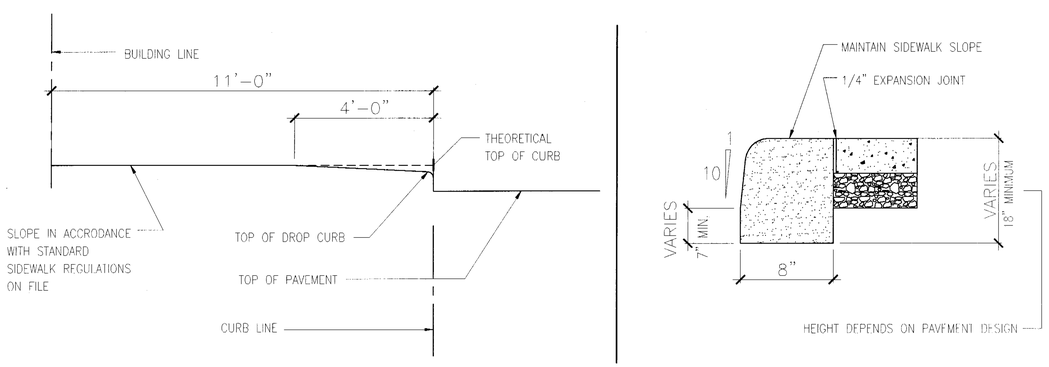
scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-109
checked	K.F.		



LEGEND:

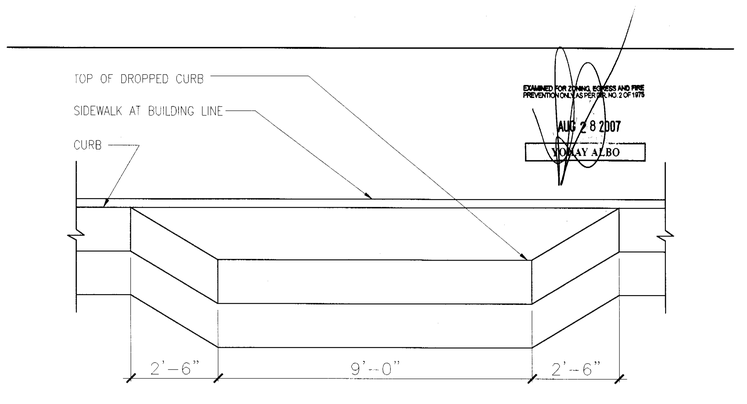
- (S) — COMBINED SEWER MANHOLE
- (W) — WATER MANHOLE
- (T) — TELEPHONE MANHOLE
- E — ELECTRIC BOX
- VAULT — ELECTRIC VAULT
- CATCH BASIN
- WATER VALVE
- GAS VALVE
- FIRE HYDRANT
- 2" — TREE WITH DIAMETER
- SEWER LINE
- W — WATER LINE
- LG10.57 — EXISTING LEGAL GRADE
- TC.11.22 — EXISTING TOP OF CURB ELEVATION
- BC.10.98 — EXISTING BOTTOM OF CURB ELEVATION
- CL.11.03 — EXISTING CENTERLINE ELEVATION
- EL.11.56 — EXISTING SPOT ELEVATION
- NEL.11.56 — NEW SPOT ELEVATION

1 A-110 BUILDERS PAVEMENT PLAN
1/16" = 1'-0"



SECTION

DETAIL



ELEVATION

2 A-110 CURB DETAILS
1/2" = 1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		3028319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1922
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8026
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OAQ OAA RAIC AIA
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TEL: (212) 219-9733 FAX: (212) 219-8980
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TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

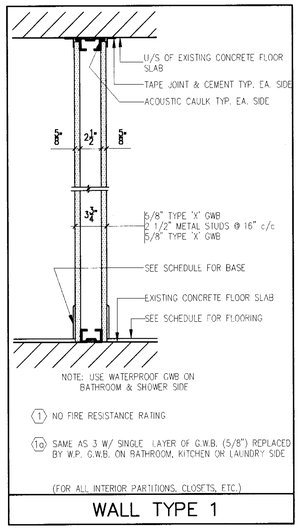
EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY AS PER BR. NO. 2 OF 1975
AUG 28 2007
BOROUGH ARCHITECT

REGISTERED ARCHITECT KARL FISCHER 021982 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BUILDERS PAVEMENT PLAN

scale		project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-110
checked	K.F.		

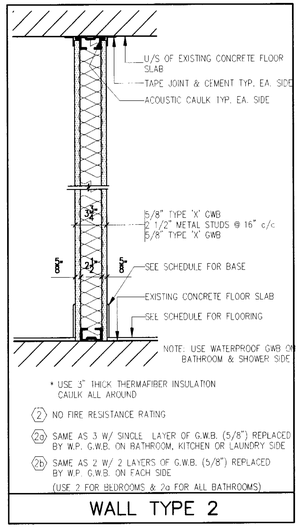


(1) NO FIRE RESISTANCE RATING

(1a) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

(FOR ALL INTERIOR PARTITIONS, CLOSETS, ETC.)

WALL TYPE 1



* USE 3" THICK THERMAFIBER INSULATION CAULK ALL AROUND

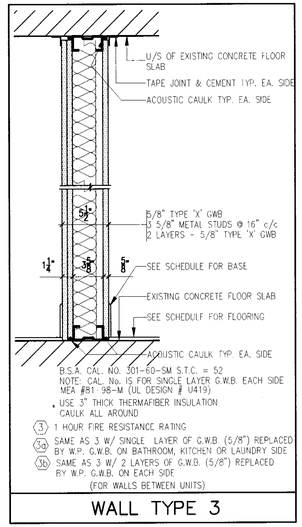
(2) NO FIRE RESISTANCE RATING

(2a) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

(2b) SAME AS 2 W/ 2 LAYERS OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON EACH SIDE

(USE 2 FOR BEDROOMS & 2a FOR ALL BATHROOMS)

WALL TYPE 2



B.S.A. CAL. NO. 501-60-SM S.T.C. = 52
NOTE: CAL. No. IS FOR SINGLE LAYER G.W.B. EACH SIDE
MEA #81-98-M (UL DESIGN # U419)

* USE 3" THICK THERMAFIBER INSULATION CAULK ALL AROUND

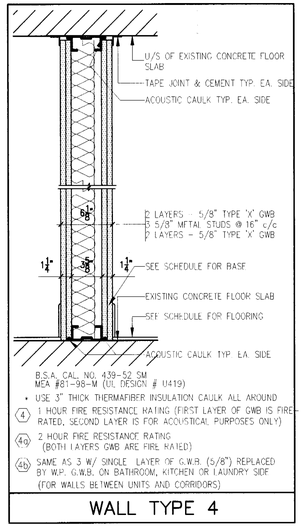
(3) 1 HOUR FIRE RESISTANCE RATING

(3a) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

(3b) SAME AS 3 W/ 2 LAYERS OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON EACH SIDE

(FOR WALLS BETWEEN UNITS)

WALL TYPE 3



B.S.A. CAL. NO. 439-52 SM
MEA #81-98-M (UL DESIGN # U419)

* USE 3" THICK THERMAFIBER INSULATION CAULK ALL AROUND

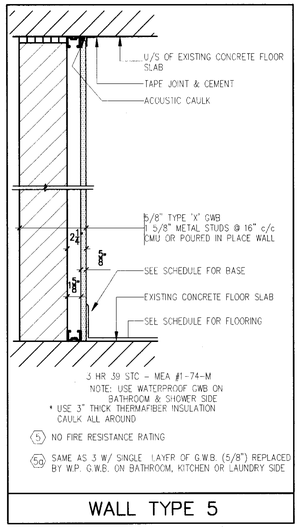
(4) 1 HOUR FIRE RESISTANCE RATING (FIRST LAYER OF GWB IS FIRE-RATED, SECOND LAYER IS FOR ACOUSTICAL PURPOSES ONLY)

(4a) 2 HOUR FIRE RESISTANCE RATING (BOTH LAYERS GWB ARE FIRE RATED)

(4b) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

(FOR WALLS BETWEEN UNITS AND CORRIDORS)

WALL TYPE 4



3 HR 39 STC - MEA #1-74-M

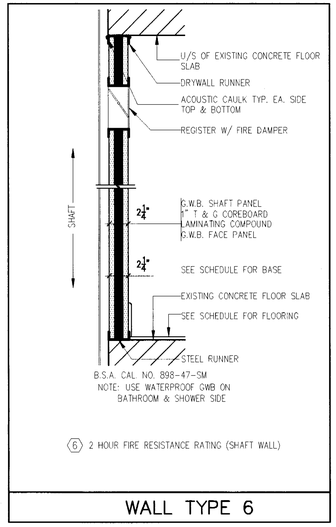
NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

* USE 3" THICK THERMAFIBER INSULATION CAULK ALL AROUND

(5) NO FIRE RESISTANCE RATING

(5a) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

WALL TYPE 5

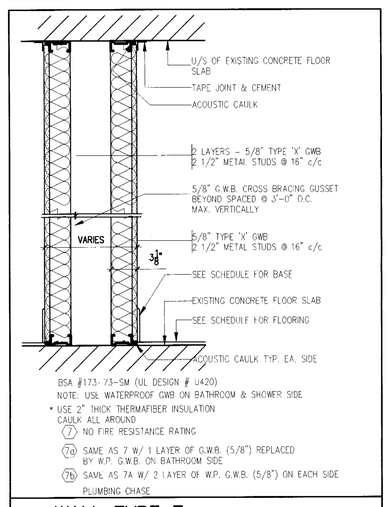


B.S.A. CAL. NO. 898-47-SM

NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

(6) 2 HOUR FIRE RESISTANCE RATING (SHAFT WALL)

WALL TYPE 6



BSA #173-73-SM (UL DESIGN # U420)

NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

* USE 2" THICK THERMAFIBER INSULATION CAULK ALL AROUND

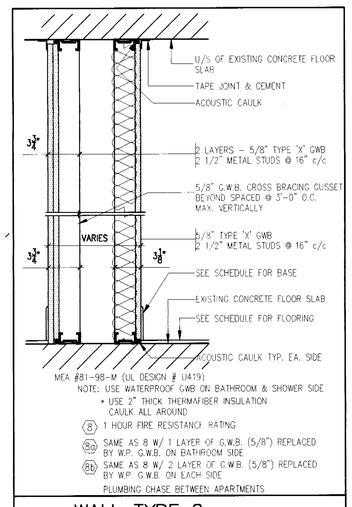
(7) NO FIRE RESISTANCE RATING

(7a) SAME AS 7 W/ 1 LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM SIDE

(7b) SAME AS 7A W/ 2 LAYER OF W.P. G.W.B. (5/8") ON EACH SIDE

PLUMBING CHASE

WALL TYPE 7



MEA #81-98-M (UL DESIGN # U419)

NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

* USE 2" THICK THERMAFIBER INSULATION CAULK ALL AROUND

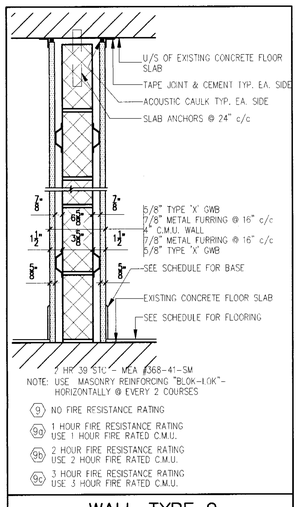
(8) 1 HOUR FIRE RESISTANCE RATING

(8a) SAME AS 8 W/ 1 LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM SIDE

(8b) SAME AS 8 W/ 2 LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON EACH SIDE

PLUMBING CHASE BETWEEN APARTMENTS

WALL TYPE 8



2 HR 39 STC - MEA #368-41-SM

NOTE: USE MASONRY REINFORCING "BLOK-LOK"- HORIZONTALLY @ EVERY 2 COURSES

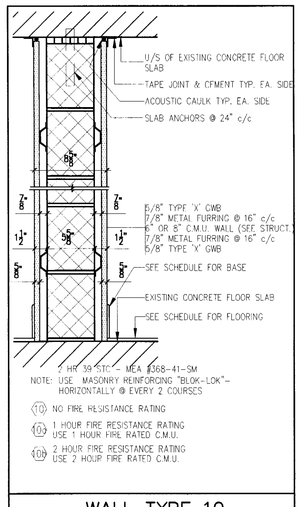
(9) NO FIRE RESISTANCE RATING

(9a) 1 HOUR FIRE RESISTANCE RATING USE 1 HOUR FIRE RATED C.M.U.

(9b) 2 HOUR FIRE RESISTANCE RATING USE 2 HOUR FIRE RATED C.M.U.

(9c) 3 HOUR FIRE RESISTANCE RATING USE 3 HOUR FIRE RATED C.M.U.

WALL TYPE 9



2 HR 39 STC - MEA #368-41-SM

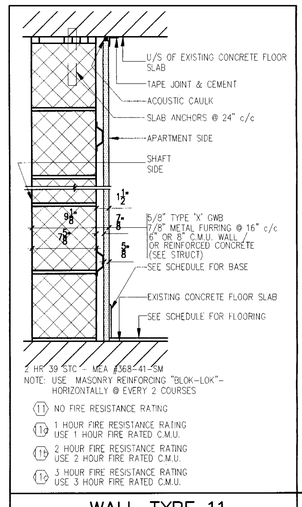
NOTE: USE MASONRY REINFORCING "BLOK-LOK"- HORIZONTALLY @ EVERY 2 COURSES

(10) NO FIRE RESISTANCE RATING

(10a) 1 HOUR FIRE RESISTANCE RATING USE 1 HOUR FIRE RATED C.M.U.

(10b) 2 HOUR FIRE RESISTANCE RATING USE 2 HOUR FIRE RATED C.M.U.

WALL TYPE 10



2 HR 39 STC - MEA #368-41-SM

NOTE: USE MASONRY REINFORCING "BLOK-LOK"- HORIZONTALLY @ EVERY 2 COURSES

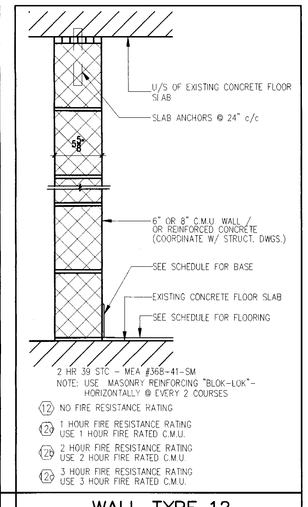
(11) NO FIRE RESISTANCE RATING

(11a) 1 HOUR FIRE RESISTANCE RATING USE 1 HOUR FIRE RATED C.M.U.

(11b) 2 HOUR FIRE RESISTANCE RATING USE 2 HOUR FIRE RATED C.M.U.

(11c) 3 HOUR FIRE RESISTANCE RATING USE 3 HOUR FIRE RATED C.M.U.

WALL TYPE 11



2 HR 39 STC - MEA #368-41-SM

NOTE: USE MASONRY REINFORCING "BLOK-LOK"- HORIZONTALLY @ EVERY 2 COURSES

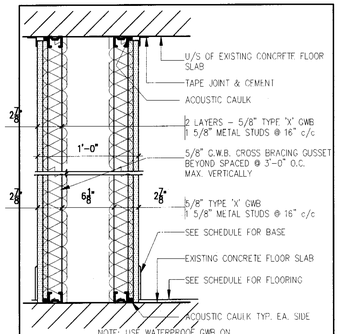
(12) NO FIRE RESISTANCE RATING

(12a) 1 HOUR FIRE RESISTANCE RATING USE 1 HOUR FIRE RATED C.M.U.

(12b) 2 HOUR FIRE RESISTANCE RATING USE 2 HOUR FIRE RATED C.M.U.

(12c) 3 HOUR FIRE RESISTANCE RATING USE 3 HOUR FIRE RATED C.M.U.

WALL TYPE 12



NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

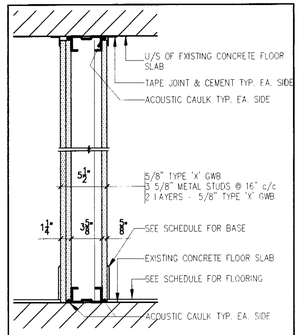
USE 2" THICK THERMAFIBER INSULATION

* CAULK ALL AROUND

(13) 2 HRS FIRE RESISTANCE RATING

(13a) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

WALL TYPE 13

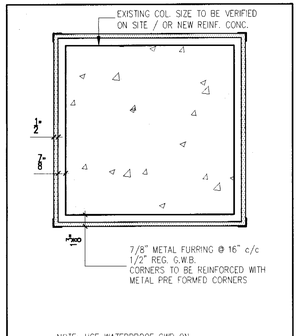


(14) 1 HOUR FIRE RESISTANCE RATING

(14a) SAME AS 3 W/ SINGLE LAYER OF G.W.B. (5/8") REPLACED BY W.P. G.W.B. ON BATHROOM, KITCHEN OR LAUNDRY SIDE

(FOR ELECTRICAL PANEL WALLS)

WALL TYPE 14

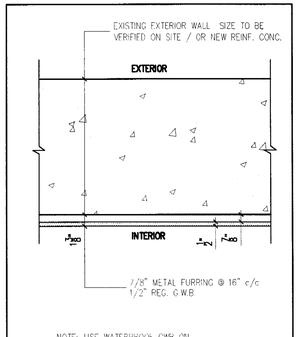


NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

(15) NO FIRE RESISTANCE RATING

TYPICAL INTERIOR COLUMNS

WALL TYPE 15

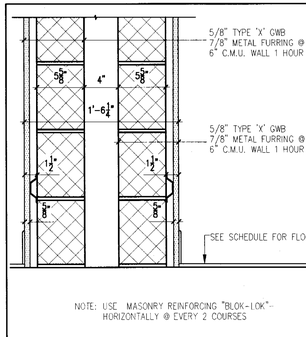


NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

(16) NO FIRE RESISTANCE RATING

TYPICAL EXTERIOR WALL

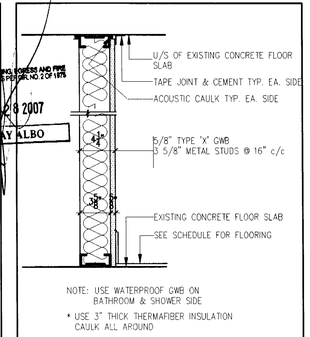
WALL TYPE 16



NOTE: USE MASONRY REINFORCING "BLOK-LOK"- HORIZONTALLY @ EVERY 2 COURSES

(17) 2 HOURS FIRE RESISTANCE RATING

WALL TYPE 17



NOTE: USE WATERPROOF GWB ON BATHROOM & SHOWER SIDE

* USE 3" THICK THERMAFIBER INSULATION CAULK ALL AROUND

(18) NO FIRE RESISTANCE RATING

(18a) 2 HOURS FIRE RESISTANCE RATING SAME AS 18 ON A 2 HOURS FIRE RESISTANCE 8" C.M.U. BACKING

WALL TYPE 18

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description

302319894

no.	date	description
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

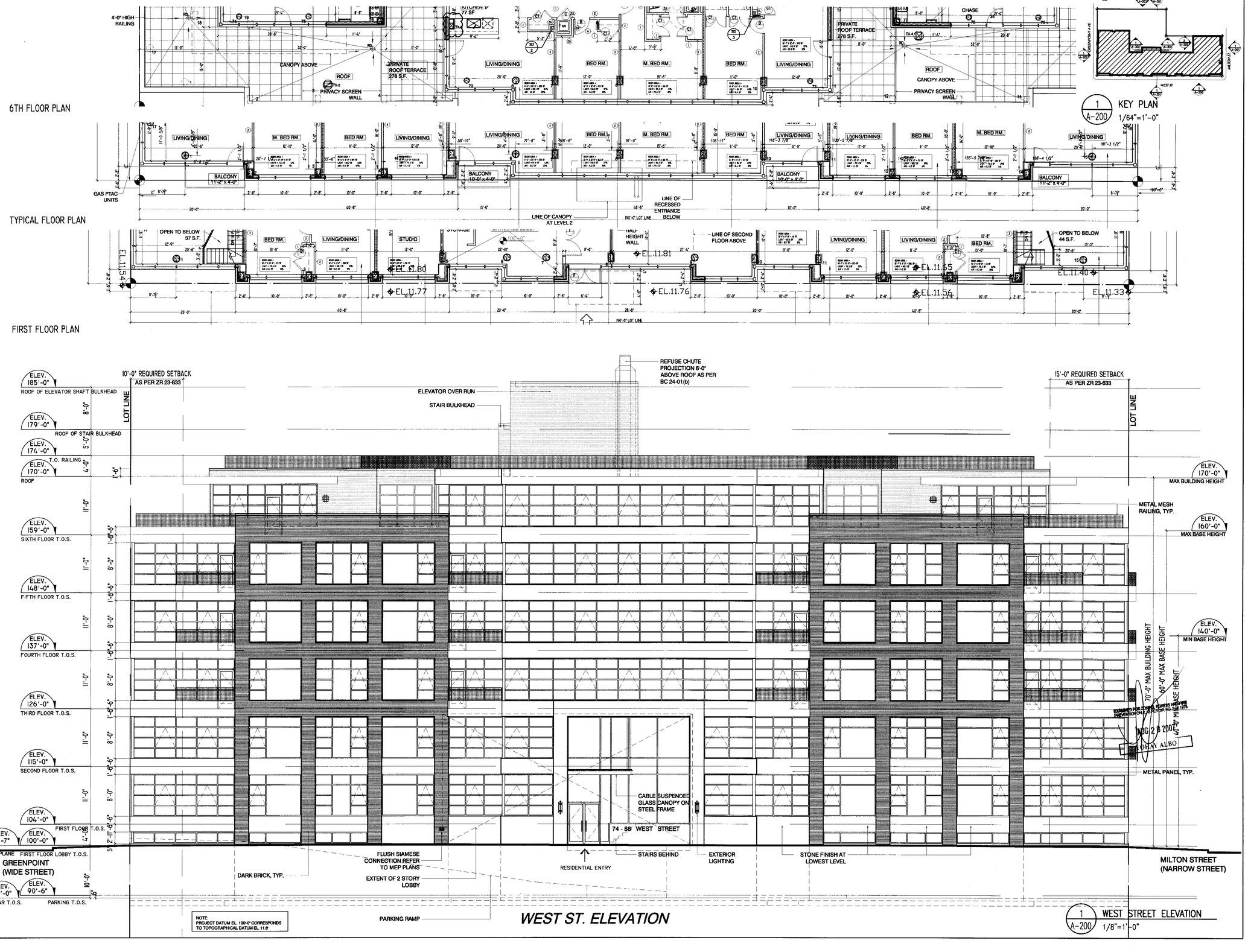
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8080
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021292 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
WALL TYPES

scale	N.T.S.	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-111
checked	K.F.		



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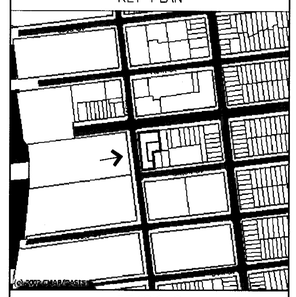
KEY PLAN



REVISIONS

no.	date	description
		302819694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
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2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1928
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242.2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
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OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8880
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

REGISTERED ARCHITECT KARL FISCHER 021268 STATE OF NEW YORK

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY. SEE BSA CALENDAR NO. 144-75 BZ

AUG 2 8 2007

BOROUGH OF BROOKLYN ALBO

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

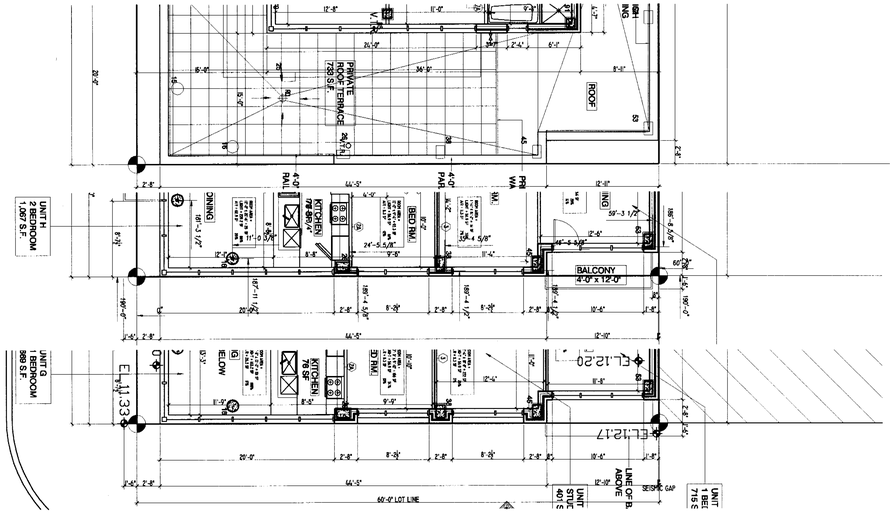
drawing title
WEST STREET ELEVATION

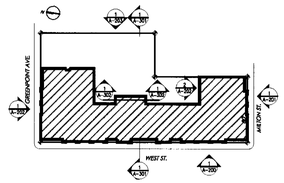
scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-200
checked	K.F.		

6TH FLOOR PLAN

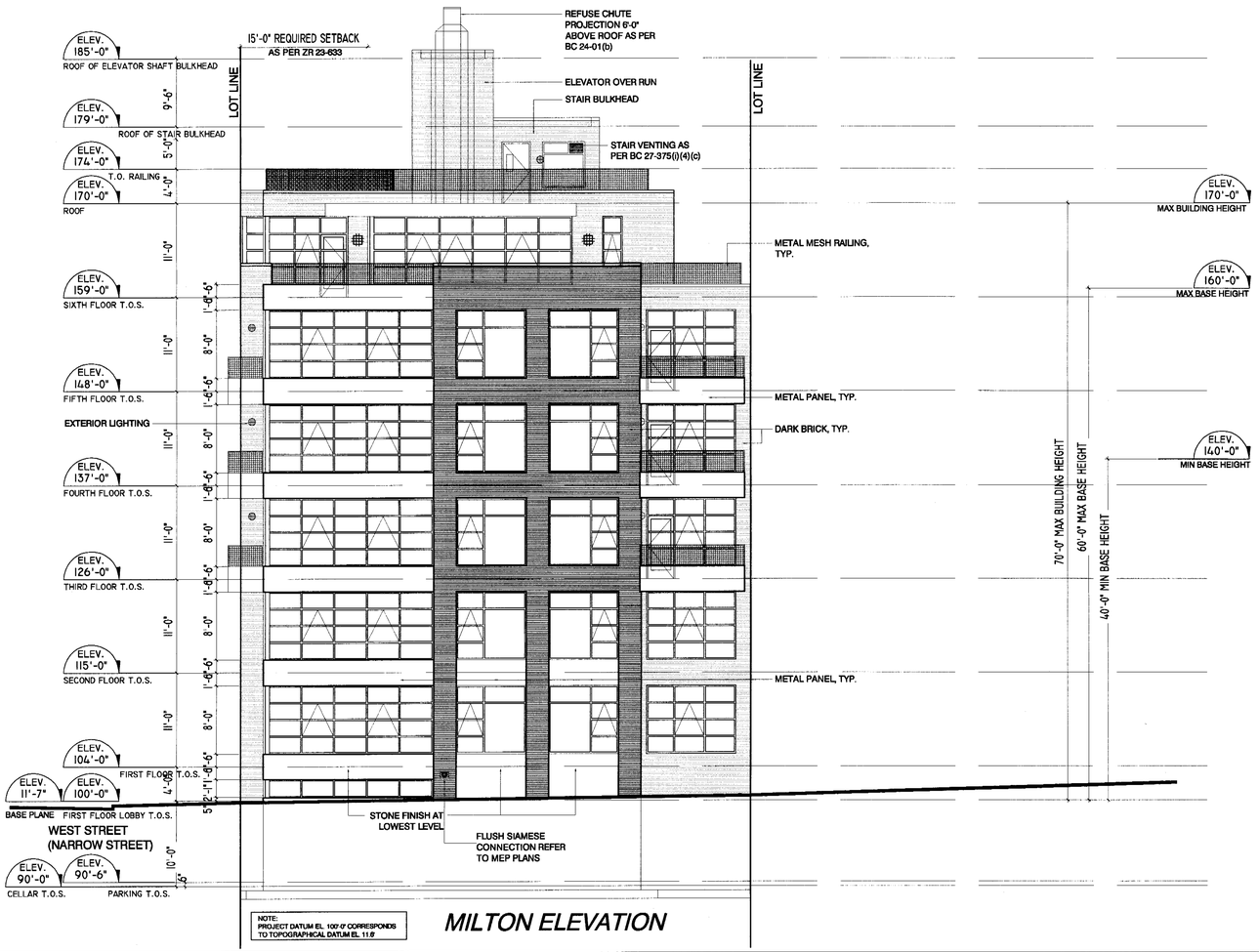
TYPICAL FLOOR PLAN

FIRST FLOOR PLAN





2 / A-201 KEY PLAN
1/64"=1'-0"



NOTE:
PROJECT DATUM EL. 100'-0" CORRESPONDS TO TOPOGRAPHICAL DATUM EL. 11.6'

MILTON ELEVATION

1 / A-201 MILTON STREET ELEVATION
1/8"=1'-0"

EXAMINED FOR ZONING EGRESS AND FIRE PREVENTION ONLY AS PER DIR. NO. 2 OF 1975
AUG 28 2007
YOSEF ALDO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ. 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisdesgn.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.2006
FAX: 212.643.8016

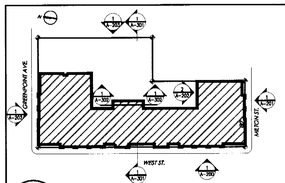
ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.karlfischer.com E-MAIL:mail@karlfischer.com

REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

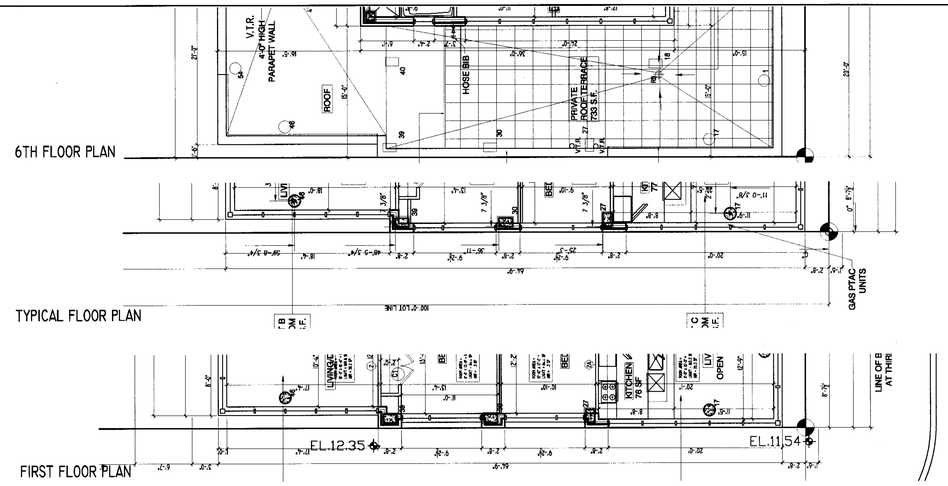
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

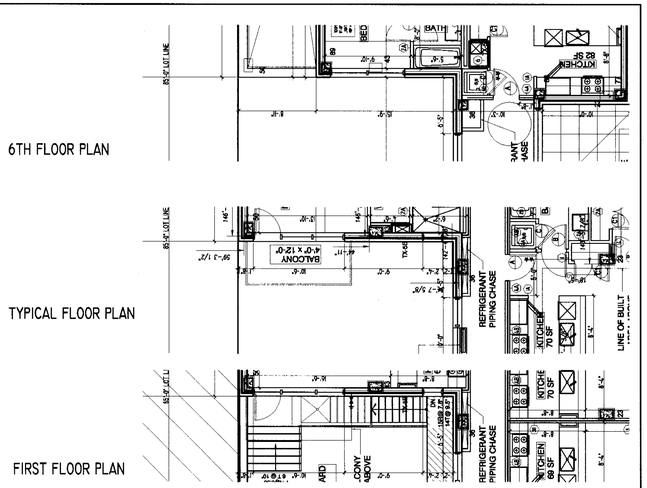
drawing title
MILTON STREET ELEVATION

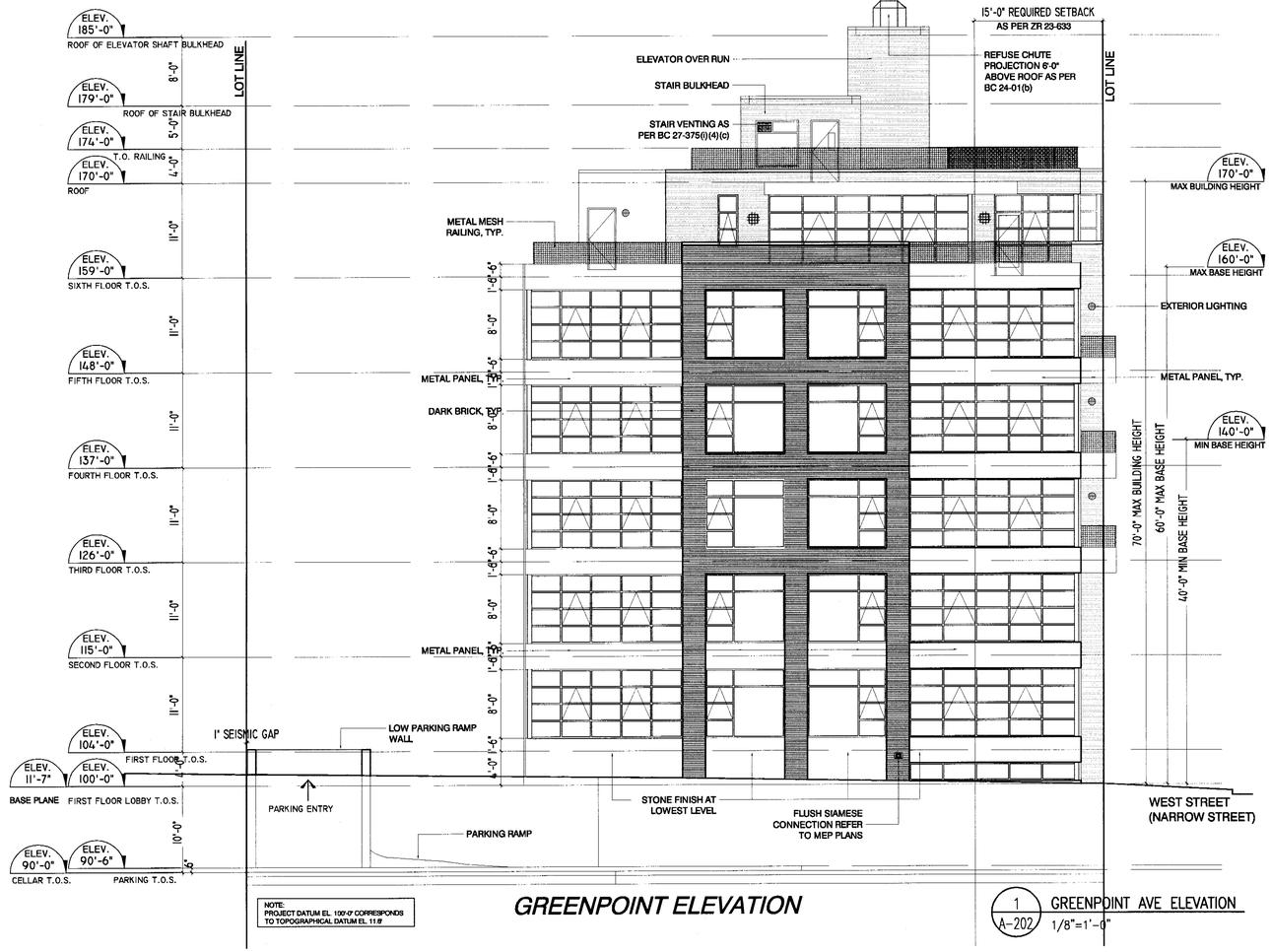
scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-201
checked	K.F.		



3 A-202 KEY PLAN 1/64"=1'-0"



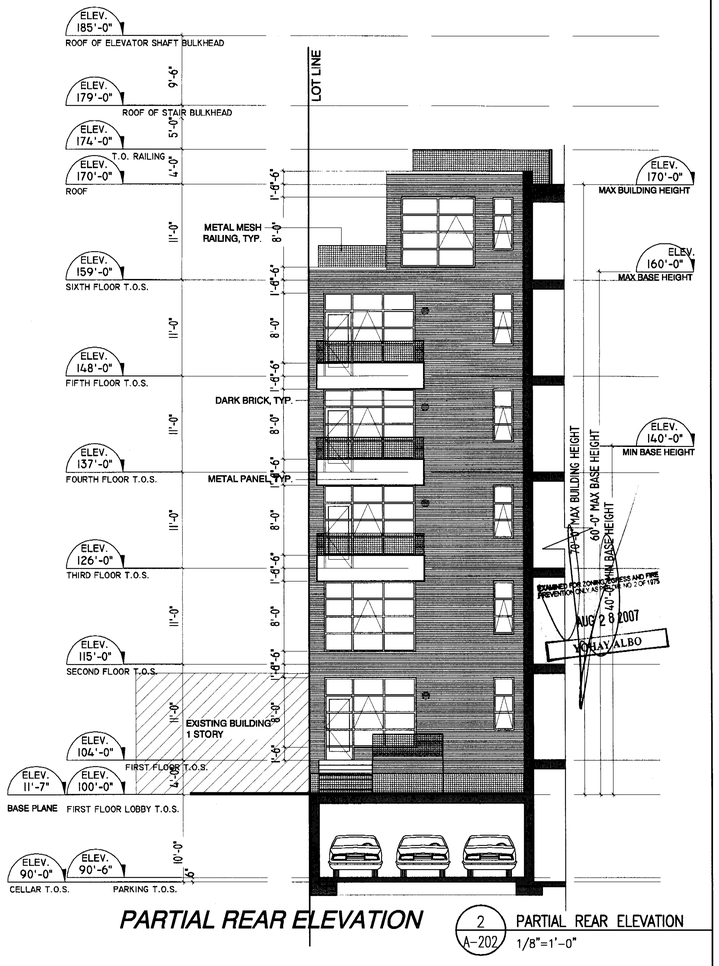




NOTE: PROJECT DATUM EL. 100'-0" CORRESPONDS TO TOPOGRAPHICAL DATUM EL. 11.8'

GREENPOINT ELEVATION

1 A-202 GREENPOINT AVE ELEVATION 1/8"=1'-0"



PARTIAL REAR ELEVATION

2 A-202 PARTIAL REAR ELEVATION 1/8"=1'-0"

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		3028319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisdg.com

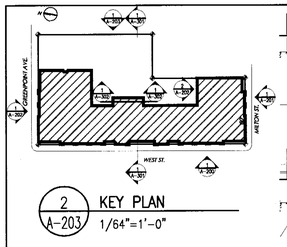
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ CAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL: mailbox@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

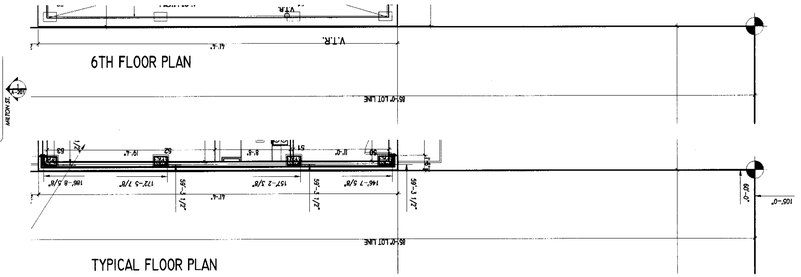
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

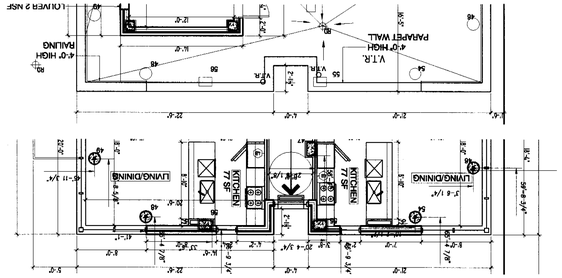
drawing title
GREENPOINT AVE ELEVATION

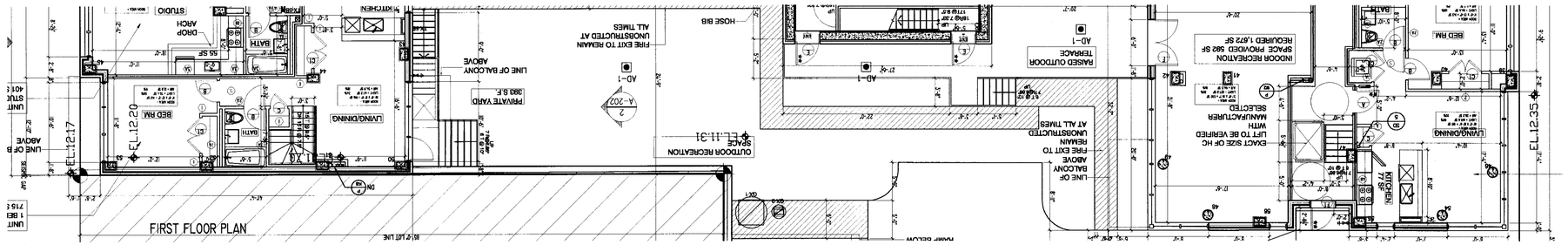
scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-202
checked	K.F.		

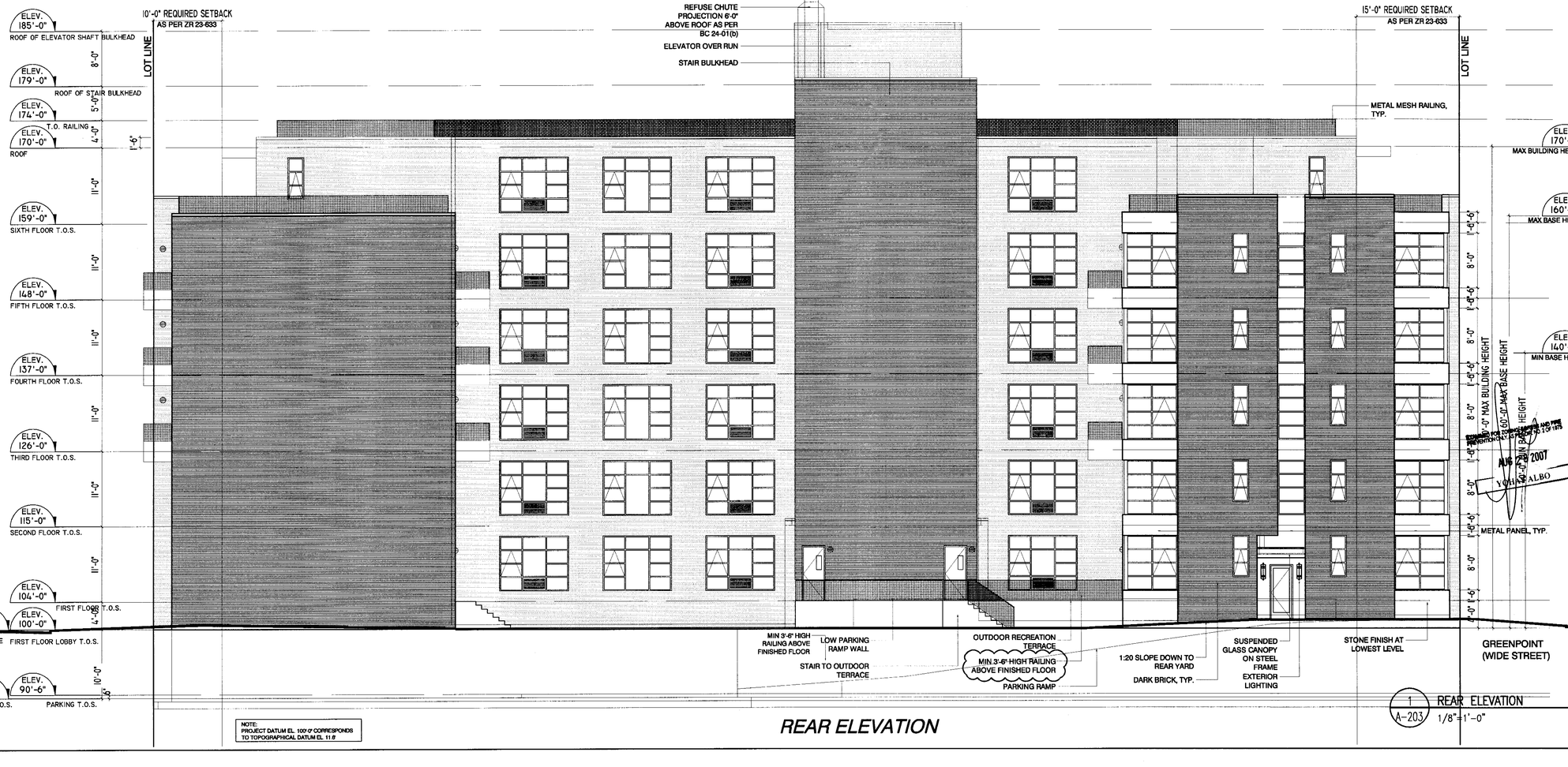


2 KEY PLAN
A-203 1/64"=1'-0"









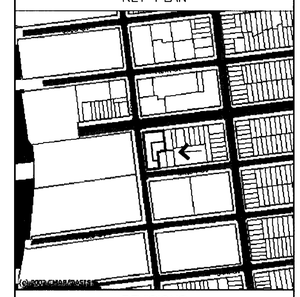
NOTE:
PROJECT DATUM EL. 100'-0" CORRESPONDS TO TOPOGRAPHICAL DATUM EL. 11.6'

1 REAR ELEVATION
A-203 1/8"=1'-0"

REAR ELEVATION

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
		302319694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973.242.2626
FAX: 973-242-2676 www.axisd.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ CAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL: mail@kfarchitect.com

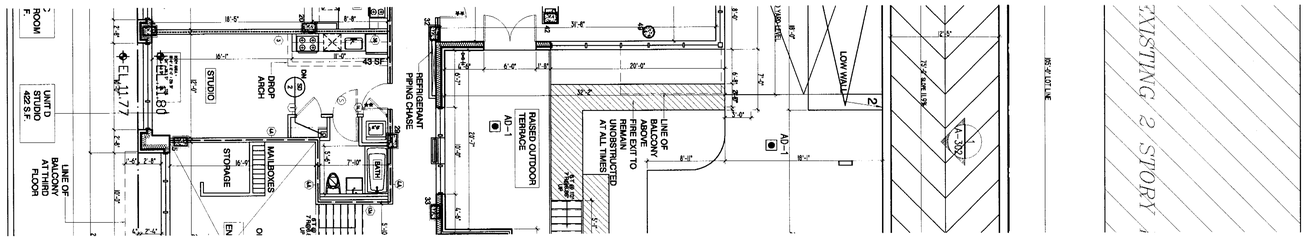
REGISTERED ARCHITECT KARL FISCHER 024282 STATE OF NEW YORK

APPROVED FOR CONSTRUCTION AUG 2 2007 YOUNG ALBO

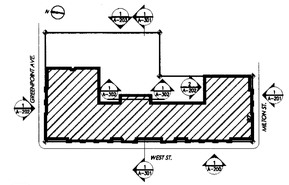
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
REAR ELEVATION

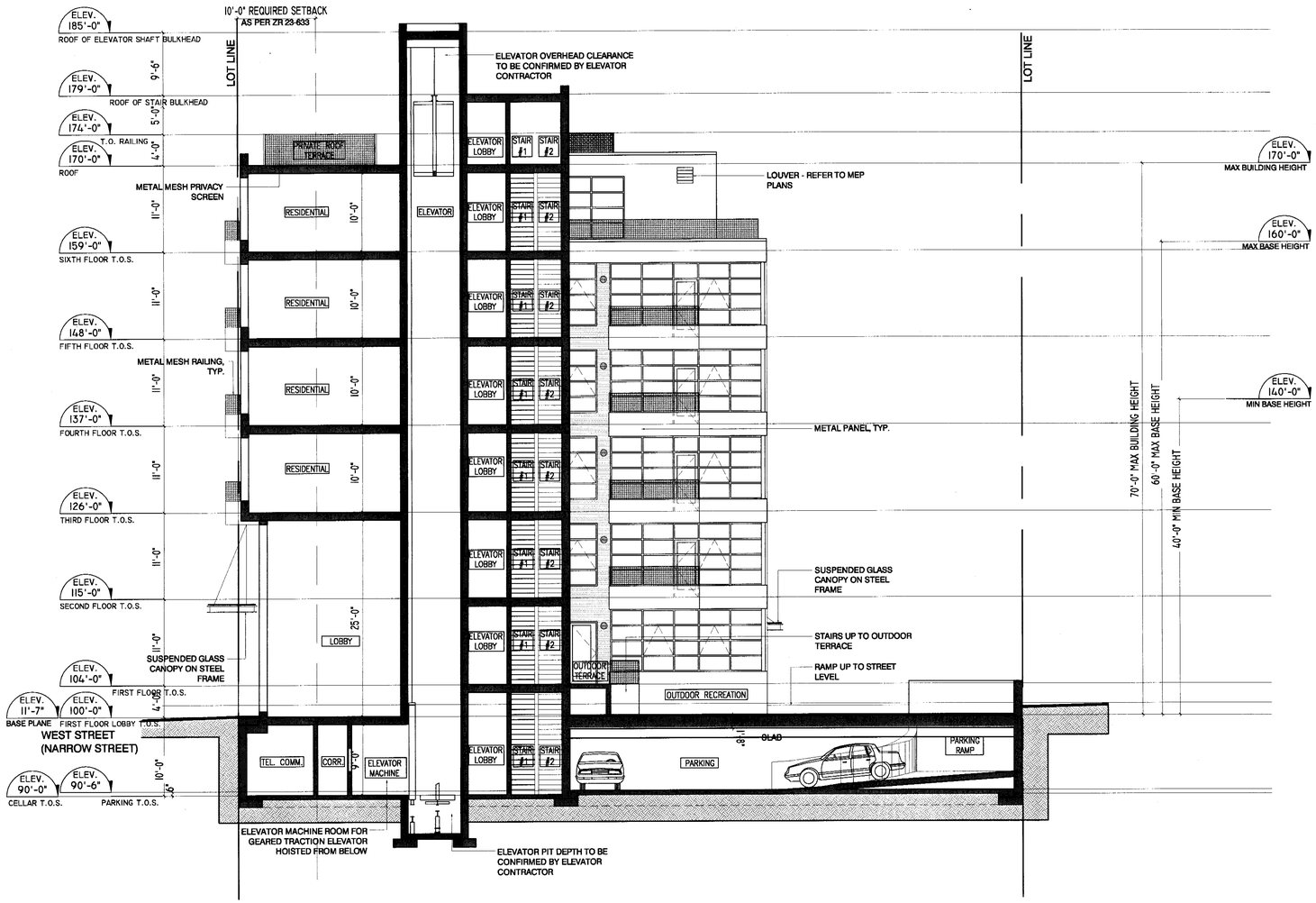
scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-203
checked	K.F.		



FIRST FLOOR PLAN



2 A-301 KEY PLAN
1/64"=1'-0"



1 A-301 SECTION
1/8"=1'-0"

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION ONLY. SEE LETTER NO. 2 OF 1975
AUG 2 8 2007
TOMAY ALBO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		3029196694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1924
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisdg.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

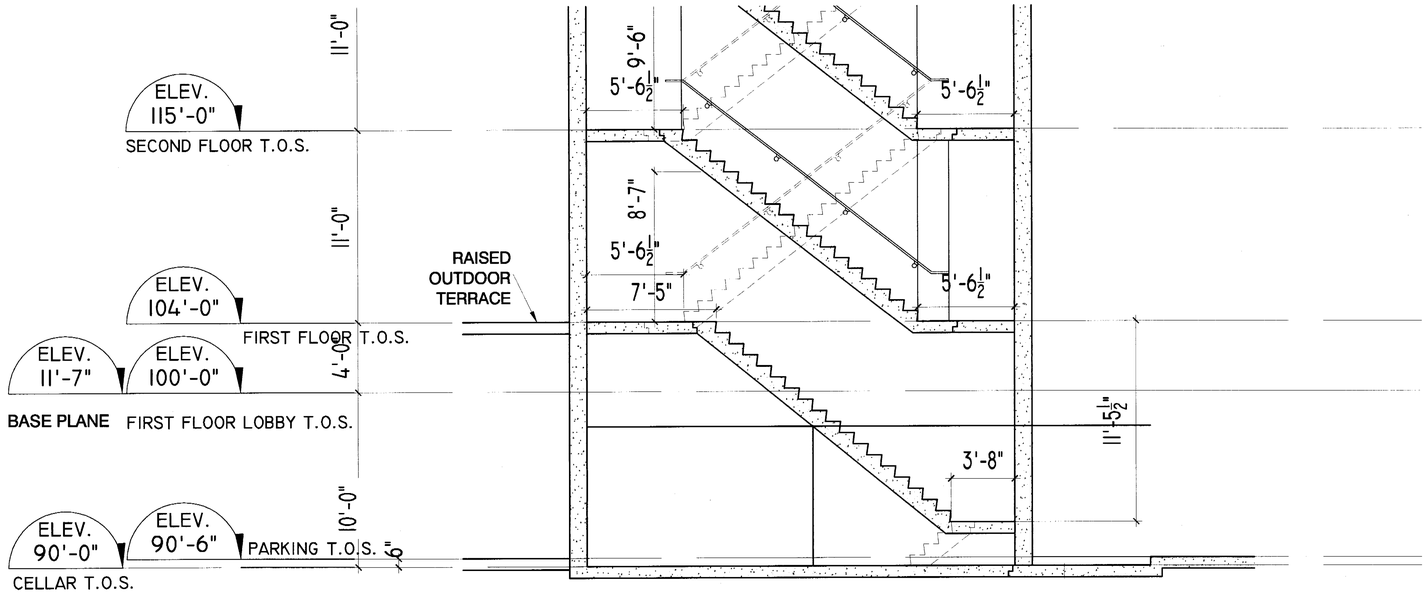
ARCHITECT:
KARL FISCHER ARCHITECT
OAS OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8080
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1G9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

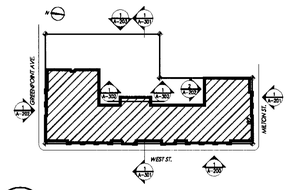
REGISTERED ARCHITECT KARL FISCHER 021282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
BUILDING SECTION

scale	1/8"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-301
checked	K.F.		





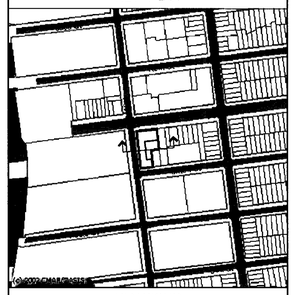
2 / A-302 KEY PLAN
1/64"=1'-0"

1 / A-302 SECTION
1/4"=1'-0"

EXAMINED FOR ZONING, EXPRESS AND FIRE PREVENTION ONLY AS PER DRW. NO. 2 OF 1975
AUG 2 3 2007
YORGAY ALIBO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN



REVISIONS

no.	date	description
		302819694
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1324
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242-2626
FAX: 973-242-2676 www.axisdg.com

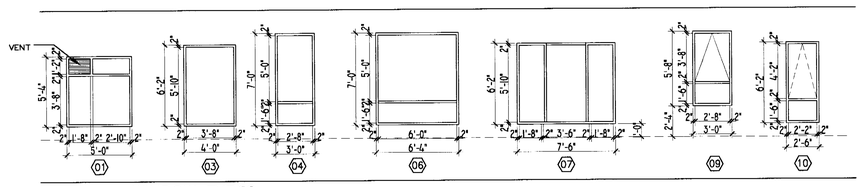
MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
REGISTERED ARCHITECT KARL FISCHER 021332 STATE OF NEW YORK
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com

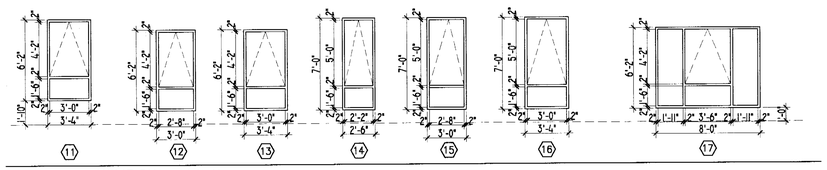
project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
PARTIAL STAIR SECTION

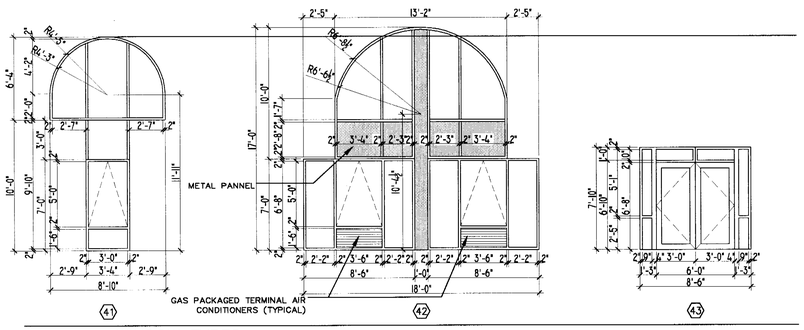
scale	INDICATED	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-302
checked	K.F.		



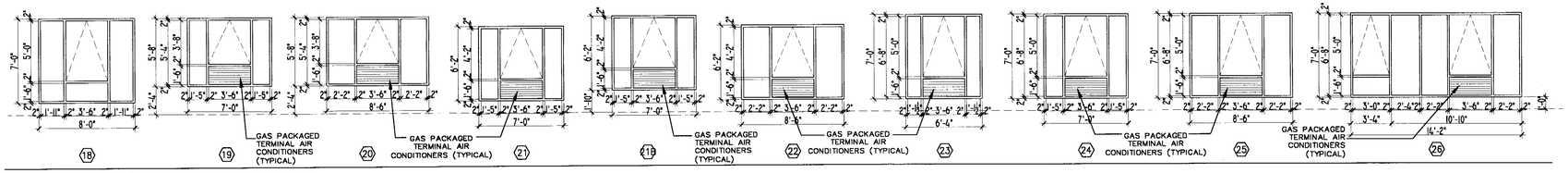
WINDOW TYPES
SCALE: 3/16" = 1'-0"



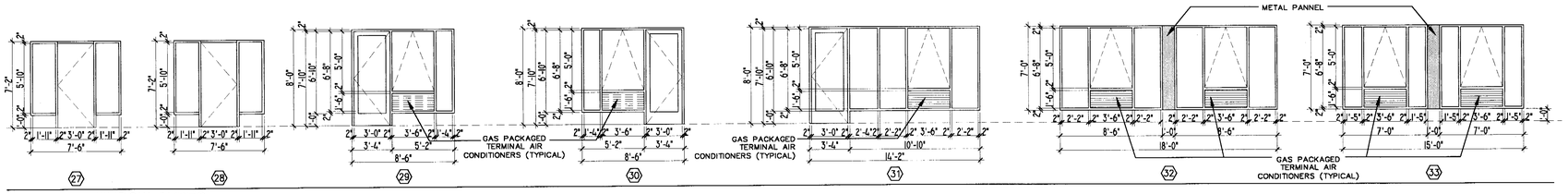
WINDOW TYPES
SCALE: 3/16" = 1'-0"



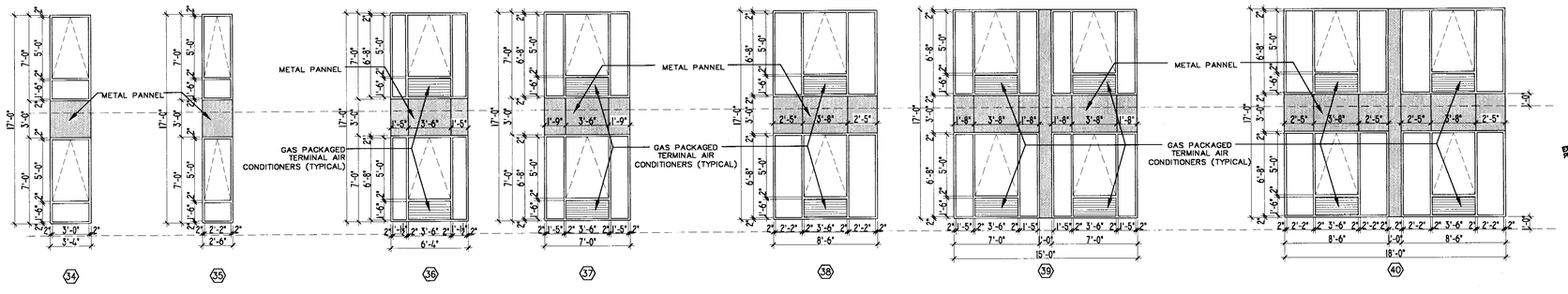
WINDOW TYPES
SCALE: 3/16" = 1'-0"

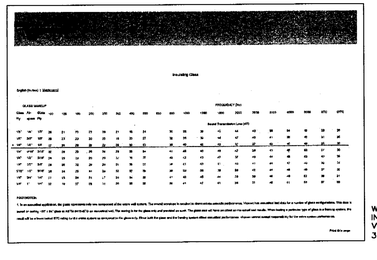


WINDOW TYPES
SCALE: 3/16" = 1'-0"



WINDOW TYPES
SCALE: 3/16" = 1'-0"





WINDOWS TO BE INSULATED GLASS BY VIRACON WITH A MIN 35Db(A)

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		302319894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1824
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242.2626
FAX: 973-242-2676 www.axisdg.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
545 8TH AVENUE
NEW YORK, NY 10018
NY: 212.643.8006
FAX: 212.643.8016

ARCHITECT:
KARL FISCHER ARCHITECT
OAQ OAA RAIC AIA
530 BROADWAY, 8th FLOOR, NEW YORK, NY 10013
TEL: (212) 219-9733 FAX: (212) 219-8980
1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1H9
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.karlarchitect.com E-MAIL:mail@karlarchitect.com

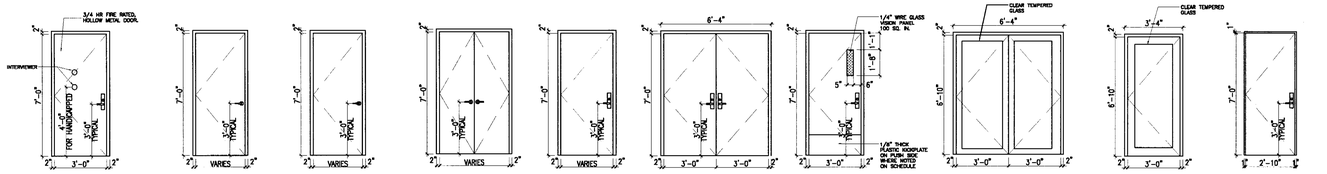
REGISTERED ARCHITECT KARL FISCHER 026282 STATE OF NEW YORK

EXAMINED FOR LIVING SAFETY AND FIRE PREVENTION AS PER CHAPTER 2 OF 1975
AUG 28 2007
YOHAN ALBO

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
WINDOW SCHEDULE

scale	3/16"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-601
checked	K.F.		



A	B	C	C-1	D	D-1	E	F	F-1	G
HOLLOW METAL DOOR 1 1/2 HR FIRE RATED APARTMENT ENTRANCE	SOLID CORE WOOD DOOR ROOMS, BATHROOMS, WIC	HOLLOW CORE WOOD DOOR CLOSET DOORS	HOLLOW CORE WOOD DOOR CLOSET DOORS	HOLLOW METAL DOOR 1 1/2 HR FIRE RATED REFUSE ROOM DOORS	FLUSH HOLLOW METAL DOOR 1 1/2 HR FIRE RATED REFUSE ROOM DOORS	HOLLOW METAL DOOR 1 1/2 HR FIRE RATED STAIRWELL DOORS	ALUMINUM INSULATED DOOR CLEAR TEMPERED GLASS VESTIBULE DOOR	ALUMINUM INSULATED DOOR CLEAR TEMPERED GLASS CORRIDOR DOOR	WIRE MESH DOOR STORAGE CAGE DOORS

DOOR TYPES

SCALE: 1/4" = 1'-0"

A – APPARTMENT ENTRANCE DOORS
B – BETWEEN ROOMS
C – SINGLE HOLLOW CLOSET DOOR
C-1 – DOUBLE HOLLOW CLOSET DOOR
D – BIFOLD CLOSET DOOR
D-1 – DOUBLE BIFOLD CLOSET DOOR
E – FIRE RATED REFUSE DOOR
F – FIRE RATED STAIRWELL DOOR
G – LOBBY ENTRANCE DOORS

EXAMINED FOR ZONING, EGRESS AND FIRE PREVENTION PER ARTICLE 2 OF 1979
AUG 28 2007
YORAM ALGO

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE THE DRAWING. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE CONSULTANTS.

KEY PLAN

REVISIONS

no.	date	description
		3028190894
4	070814	RE-ISSUED FOR PERMIT TO D.O.B.
3	070705	RE-ISSUED FOR PERMIT TO D.O.B.
2	070530	RE-ISSUED FOR PERMIT TO D.O.B.
1	070110	ISSUED FOR PERMIT TO D.O.B.
no.	date	description

ISSUES

STRUCTURAL ENGINEER:
AXIS DESIGN GROUP
744 BROAD STREET, SUITE 1824
NEWARK, NJ 07102
NY: 212.288.7120 NJ: 973-242.2626
FAX: 973-242-2676 www.axisdg.com

MEP ENGINEER:
GLICKMAN ENGINEERING PLLC
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OAQ OAA RAIC AIA
530 BROADWAY, 9th FLOOR, NEW YORK, NY 10012
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1420 NOTRE-DAME WEST, MONTREAL, QC H3C 1K8
TEL: (514) 933-4137 FAX: (514) 933-0409
WEB SITE: www.kfarchitect.com E-MAIL:mail@kfarchitect.com
REGISTERED ARCHITECT KARL FISCHER 031282 STATE OF NEW YORK

project title
50 GREENPOINT AVE / 74-88 WEST STREET
RESIDENTIAL PROJECT
BROOKLYN, NY

drawing title
DOOR SCHEDULE

scale	1/4"=1'0"	project no.	06-71
date	SEPTEMBER 06	revision no.	0
drawn	K.A.	drawing no.	A-701
checked	K.F.		

ATTACHMENT B
CITIZEN PARTICIPATION PLAN

ATTACHMENT B

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Euro Builders 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, Euro Builders 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, Jennifer Pati, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 341-2034

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 in the nearest public library that maintains evening and weekend hours. 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. Euro Builders will inspect the repositories to ensure that they are fully populated with project information. The repository for this project is:

Repository Name: Greenpoint Library

Repository Address: 107 Norman Avenue, Brooklyn, NY

Repository Telephone Number: 718-349-8504

Repository Hours of Operation:

Mon	10:00 AM - 6:00PM
Tue	10:00 AM - 6:00 PM
Wed	10:00 AM - 8:00 PM
Thu	1:00 PM - 8:00 PM
Fri	10:00 AM - 6:00 PM
Sat	10:00 AM - 5:00 PM
Sun	closed

Digital Documentation. NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

Identify Issues of Public Concern. The major issues of concern to the public will be potential impacts of nuisance odors and dust during the disturbance of historic fill soils at the Site. This work will be performed in accordance with procedures which will be specified under a detailed Remedial Program which considers and takes preventive measures for exposures to future residents of the property and those on adjacent properties during construction. Detailed plans to monitor the potential for exposure including a Construction Health and Safety Plan and a

Community Air Monitoring Plan are required components of the remedial program. Implementation of these plans will be under the direct oversight of the New York City Department of Environmental Remediation (NYCOER).

These plans will specify the following worker and community health and safety activities during remedial activity at the Site:

- On-Site air monitoring for worker protection,
- Perimeter air monitoring for community protection.

The Health and Safety Plan and the Community Air Monitoring Plan prepared as part of the Remedial Action Work Plan will be available for public review at the document repository.

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 prepared by Euro Builders, reviewed and approved by OER prior to distribution and mailed by Euro Builders. 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. See flow chart on the following page, which identifies when during the NYC VCP public notices are issued: These steps include:

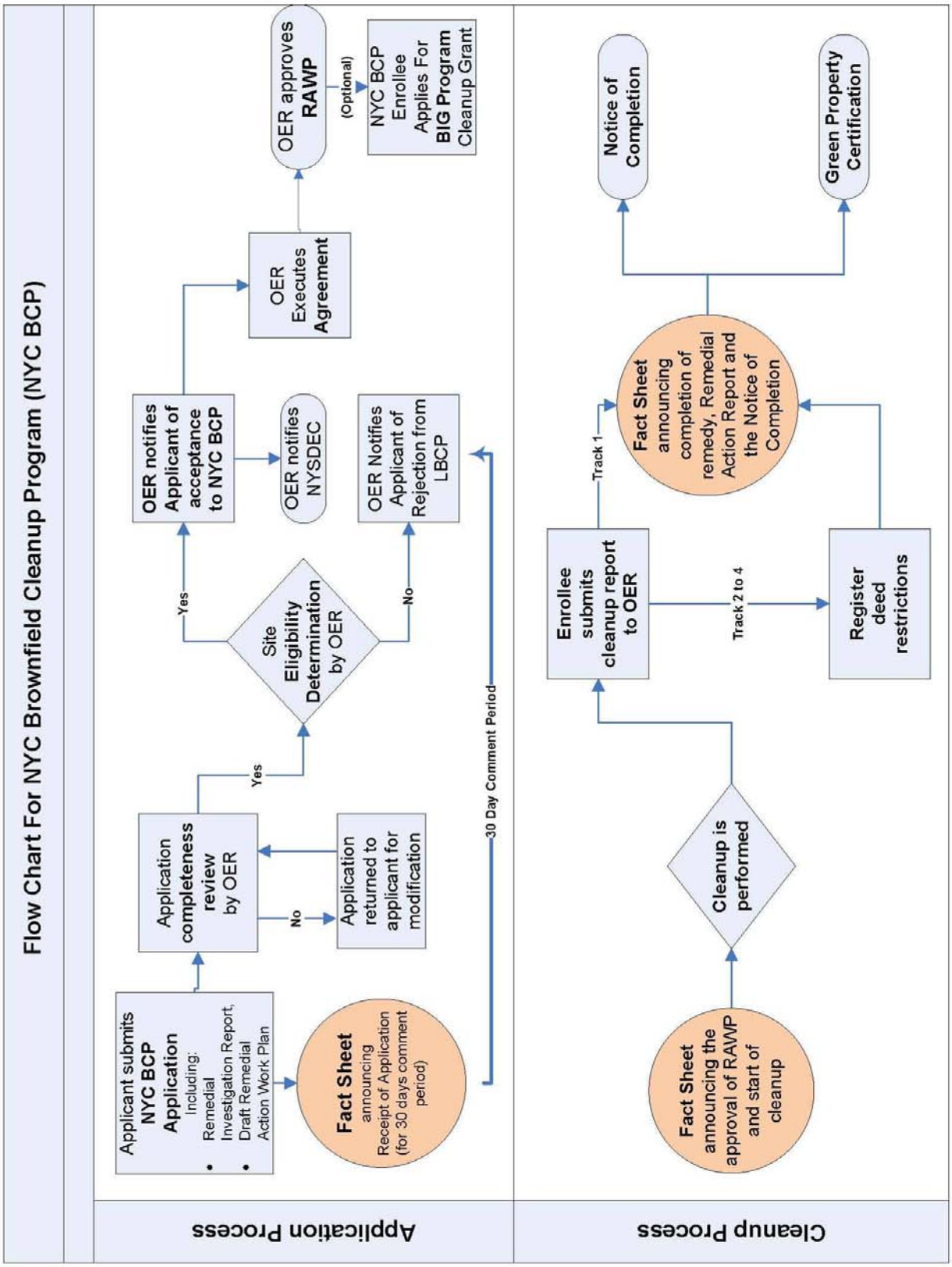
- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan.**

  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


Flow Chart For NYC Brownfield Cleanup Program (NYC BCP)
Application Process
Cleanup Process
Applicant submits NYC BCP Application Including:
Remedial Investigation Report,
Draft Remedial Action Work Plan
Fact Sheet announcing Receipt of Application (for 30 days comment period)
Application completeness review by OER
No
Application returned to applicant for modification
Yes
Site Eligibility Determination by OER
Yes
OER notifies Applicant of acceptance to NYC BCP
OER notifies NYSDEC
OER Executes Agreement
OER approves RAWP
(Optional)
NYC BCP Enrollee Applies For BIG Program Cleanup Grant
No
OER Notifies Applicant of Rejection from LBCP
30 Day Comment Period
Fact Sheet announcing the approval of RAWP and start of cleanup
Cleanup is performed
Enrollee submits cleanup report to OER
Track 1
Track 2 to 4
Register deed restrictions
Fact Sheet announcing completion of remedy, Remedial Action Report and the Notice of Completion
Notice of Completion
Green Property Certification

ATTACHMENT C
SUSTAINABILITY STATEMENT

ATTACHMENT C
SUSTAINABILITY STATEMENT

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

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

This project intends to use recycled concrete aggregate wherever possible in grading and backfilling the Site. 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.

Reduce Consumption of Virgin and Non-Renewable Resources. Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

The project will reduce the consumption of virgin materials by substituting recycled concrete aggregate for mined gravel and/or sand backfill whenever possible. An estimate of the quantity (in tons) of virgin and non-renewable resources, the use of which will be avoided 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.

Recycled concrete materials and other backfill materials will be locally sourced reducing the energy consumption associated with transporting these materials to the Site. 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.

Paperless Voluntary Cleanup Program. Euro Builders 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. Euro Builders 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.

1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961
PH: 631.504.6000
FAX: 631.928.2780

ATTACHMENT D
SOIL/MATERIALS MANAGEMENT PLAN

ATTACHMENT D
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 RAR. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of the Notice of Completion.

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; and
- 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 will be west on Greenpoint Avenue to McGuinness Blvd to Interstate 278 - Brooklyn Queens Expressway.

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 Brooklyn, New York 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 RAR.

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 RAR.

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 RAR. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the RAR. 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 established in this plan may be reused on-Site. The soil cleanup objectives for on-Site reuse are listed in Table 1. '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 comparable soil/fill material, 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 RAWP are followed.

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

1.8 DEMARCATION

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

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

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

1.9 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in Table 1.

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 RAWP. The RAR 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.

Source Screening and 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 RAR. 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 STORM-WATER POLLUTION PREVENTION

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (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

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 the Remedial Action Report.

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 the Remedial Action Report.

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.

ATTACHMENT E
SITE SPECIFIC CONSTRUCTION HEALTH AND SAFETY PLAN

50 GREENPOINT AVENUE

BROOKLYN, NEW YORK

Block 2562, Lot 1

CONSTRUCTION HEALTH AND SAFETY PLAN

JUNE 2013

Prepared By:

EBC

ENVIRONMENTAL BUSINESS

1808 Middle Country Road

Ridge, NY 11961

HEALTH AND SAFETY PLAN

Site:	**Redevelopment Project**
Location:	**50 Greenpoint Avenue, Brooklyn, NY**
Prepared By:	**ENVIRONMENTAL BUSINESS CONSULTANTS**
Date Prepared:	**June- 2013**
Version:	**1**
Revision:	**0**

Project Description:

Waste types:	Solid
Characteristics:	Volatile Organic Compounds, Semi-Volatile Organic Compounds, and metals in historic fill (From grade to depths as great as 3 feet)
Overall Hazard:	Low

ENVIRONMENTAL BUSINESS CONSULTANTS (EBC) AND EBC'S SUBCONTRACTORS DO NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS WHICH MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDELINES IN THIS PLAN WERE PREPARED SPECIFICALLY FOR THIS SITE AND SHOULD NOT BE USED ON ANY OTHER SITE WITHOUT PRIOR RESEARCH AND EVALUATION.

CONSTRUCTION HEALTH AND SAFETY PLAN
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EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY11961
Phone 631.604.4000
Fax 631.924.2870

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APPENDICES

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
1808 MIDDLE COUNTRY ROAD
RIDGE, NY11961
PHONE 631.604.4000
FAX 631.924.2870

STATEMENT OF COMMITMENT

This Construction Health and Safety Plan (CHASP) has been prepared to ensure that workers are not exposed to risks from hazardous materials during the Remedial Activities planned for 62 Box Street, Brooklyn, New York.

This CHASP, which applies to persons present at the site actually or potentially exposed to hazardous materials, describes emergency response procedures for actual and potential chemical hazards. This CHASP is also intended to inform and guide personnel entering the work area or exclusion zone. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy by signing off on receipt of their individual copy of the document. The General Contractor and their subcontractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees. The General contractor has the option of adopting this CHASP or providing its own for the planned scope of work under the Remedial Action Plan.

1.0 INTRODUCTION

This document describes the health and safety guidelines developed by Environmental Business Consultants (EBC) for implementation of a Remedial Action Plan at Redevelopment Project located at 50 Greenpoint Avenue and exposure to hazardous materials or wastes during the removal of underground storage tanks and the excavation and loading of contaminated soil. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this CHASP, including the attachments, addresses safety and health hazards related to subsurface sample collection activities and is based on the best information available. The CHASP may be revised by EBC at the request of the Owner or the New York City Office of Environmental Remediation (NYCOER) upon receipt of new information regarding site conditions. Changes will be documented by written amendments signed by EBC's Project Manager, site safety officer and/or the EBC Health and Safety Consultant.

1.1 Scope

This CHASP addresses the potential hazards related to the site Remedial Action Plan (RAP). The RAP activities are as described below:

1) Site mobilization of General Contractor (GC) and Subcontractors to install the buildings' foundations.
    a) Excavate historic fill to a depth of approximately 3 feet for the entire lot for construction of a cellar level for the new building.

1.2 Application

The CHASP applies to all personnel involved in the above tasks who wish to gain access to active work areas, including but not limited to:

- General Contractor
- EBC employees and subcontractors;
- Client representatives; and
- Federal, state or local representatives.

1.3 Site Safety Plan Acceptance, Acknowledgment and Amendments

The project superintendent and the site safety officer are responsible for informing personnel (EBC employees and/or owner or owners representatives) entering the work area of the contents of this plan and ensuring that each person signs the safety plan acknowledging the on-site hazards and procedures required to minimize exposure to adverse effects of these hazards. A copy of the Acknowledgement Form is included in **Appendix A**.

Site conditions may warrant an amendment to the CHASP. Amendments to the CHASP are acknowledged by completing forms included in **Appendix B**.

1.4 Key Personnel - Roles and Responsibilities

Personnel responsible for implementing this Construction Health and Safety Plan are:

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

Name	Title	Address	Contact Numbers
Ms. Kristen DiScenza	EBC Project Manager	1808 Middle Country Road Ridge, NY 11961	(631) 504-6000 Cell (516) 652-8338
Mr. Kevin Waters	EBC Site Safety Officer	1808 Middle Country Road Ridge, NY 11961	(631) 504-6000

The project manager is responsible for overall project administration and, with guidance from the site safety officer, for supervising the implementation of this CHASP. The site safety officer will conduct daily (tail gate or tool box) safety meetings at the project site and oversee daily safety issues. Each subcontractor and supplier (defined as an OSHA employer) is also responsible for the health and safety of its employees. If there is any dispute about health and safety or project activities, on-site personnel will attempt to resolve the issue. If the issue cannot be resolved at the site, then the project manager will be consulted.

The site safety officer is also responsible for coordinating health and safety activities related to hazardous material exposure on-site. The site safety officer is responsible for the following:

1. Educating personnel about information in this CHASP and other safety requirements to be observed during site operations, including, but not limited to, decontamination procedures, designation of work zones and levels of protection, air monitoring, fit testing, and emergency procedures dealing with fire and first aid.

2. Coordinating site safety decisions with the project manager.

3. Designating exclusion, decontamination and support zones on a daily basis.

4. Monitoring the condition and status of known on-site hazards and maintaining and implementing the air quality monitoring program specified in this CHASP.

5. Maintaining the work zone entry/exit log and site entry/exit log.

6. Maintaining records of safety problems, corrective measures and documentation of chemical exposures or physical injuries (the site safety officer will document these conditions in a bound notebook and maintain a copy of the notebook on-site).

The person who observes safety concerns and potential hazards that have not been addressed in the daily safety meetings should immediately report their observations/concerns to the site safety officer or appropriate key personnel.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

2.0 SITE BACKGROUND AND SCOPE OF WORK

The Site is located at 50 Greenpoint Avenue in the Greenpoint section of Brooklyn, New York, and is identified as Block 2562 and Lot 1 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 15,600-square feet and is bounded by Greenpoint Avenue and Block 2557 Lot 1 (multi-story commercial building) to the north, Milton Street and Block 2565 Lot 1 (multi-story industrial building) to the south, Block 2562 Lots 10, 37 and 39 (lot 10 is a multi-story industrial building and lots 37 and 39 are single story industrial buildings) to the east, and West Street and Block 2556 Lot 1 (single story industrial building) to the west. A map of the site boundary is shown in Figure 2. Currently, the Site is undeveloped vacant and uncapped, the lot is currently being used for container storage.

The proposed future use of the Site will consist of redeveloping the lot with a 6-story residential apartment building. The new structure will cover the entire lot and includes a full cellar which will be utilized for indoor parking for 24 vehicles, storage and utility rooms. The first floor will include additional parking for 4 vehicles, indoor recreation space, residential lobby, residential units, and paved outdoor recreation areas. The basement level and foundation will require excavation of the entire Site to a depth of approximately 10.5 feet below grade with additional excavation to approximately 15 feet below grade for the elevator pit. Layout of the proposed site development is presented in Figure 3. The current zoning designation is R6 with a C2-4 commercial overlay. The proposed use is consistent with existing zoning for the property.

2.1 Prior Investigations

2.1.1 Remedial Investigation Report

A Phase II Environmental Site Investigation was completed by P.W. Grosser Consulting in 2006. A geophysical survey was completed to determine if the UST's identified on the fire insurance maps or additional UST's were still present onsite. Two anomalies were identified; one on the northwestern portion of the property consistent with a UST and the second on the northeastern portion of the property believed to be steel and debris. Both above ground storage tanks identified in the 2003 Phase I has been removed prior to the 2006 investigation and the "drain" noted in the southern work yard was filled to grade with sediment.

A total of five soil borings were completed across the site, soil was collected continuously from grade to the top of the water table, approximately 10 feet below grade, at each location. Soils were field screened for the presence of volatile organic compounds with a photo-ionization detected (PID) and visually inspected for evidence of contamination. Soils encountered consisted of fill material to a depth of approximately 2-4 feet with sands to a depth of 12 feet. Two samples were retained from each boring, 0 to 2 feet below grade and 10 to 12 feet below grade, to characterize soil conditions for disposal and to meet anticipated NYCDEP requirements.

A total of three groundwater samples were collected from select boring locations, at approximately 10 to 12 feet below grade.

Analytical results indicated multiple SVOCs and metals were detected at concentrations above their respective NYSDEC RSCOs in all of the five shallow soil samples collected. The SVOCs detected are consistent with those which are typically found in historic will material across NYC. No SVOCs were detected in any of the deep soil samples. No VOCs, PCBs or pesticides were

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

detected in any of the ten soil samples obtained across the Site.

No VOCs, SVOCs, PCBs or pesticides were detected above NYSDEC TOGs Ambient Water Quality Standards in any of the three groundwater samples obtained. Only one metal, cadmium, was detected above its respective NYSDEC standard in each of the three filtered groundwater samples analyzed

2.1.2 Remedial Investigation Report

EBC performed a subsurface investigation at the Site consisting of the following;

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed six soil borings across the entire project Site, and collected twelve soil samples and one duplicate soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed four groundwater monitoring wells throughout the Site to establish groundwater flow and collected four groundwater samples from existing and temporary monitoring wells for chemical analysis to evaluate groundwater quality; and
4. Installed five soil vapor probes throughout the Site and collected five samples for chemical analysis.

Soil Sampling Results

Soil/fill samples collected during the RI showed two VOCs, 1,2-dichlorobenzene (1,200 µg/Kg) and tetrachloroethene (1,700 µg/Kg) detected above Unrestricted Use SCOs in one of the six shallow samples obtained, SB3. No other VOCs were detected above standards. Seven SVOCs including benzo(a)anthracene (max. of 21,100 µg/Kg), benzo(a)pyrene (max. of 16,000 µg/Kg), benzo(k)fluoranthene (max of 6,700 µg/Kg), chrysene (max. of 22,000 µg/Kg), dibenzo(a,h)anthracene (max. of 1,300 µg/Kg), and indeno(1,2,3-cd)pyrene (max. of 3,800 µg/Kg) were detected above their respective Restricted Residential Use SCOs within five of the six shallow samples. The SVOCs detected above Restricted Residential SCOs are all PAH compounds and their concentrations and distribution indicate that they are associated with historic fill material observed during the sampling. One pesticide, 4,4'-DDT, was detected slightly above Unrestricted Use SCOs in two of the six shallow samples at a maximum concentration of 3.8 µg/Kg and one PCB, PCB-1260, was detected above its Unrestricted Use SCO at a concentration of 520 µg/Kg in one of the six shallow samples. Both pesticide and PCB concentrations were well below Restricted Residential SCOs. Eight metals including barium (785 µg/Kg), cadmium (max. of 6.41 µg/Kg), chromium (31.2 µg/Kg), copper (max. of 1,660 µg/Kg), lead (max. of 2,850 µg/Kg), mercury (max. of 3.2 µg/Kg), nickel (max. of 48.4 µg/Kg) and zinc (max. of 5,150 µg/Kg) exceeded Unrestricted Use SCOs in all six shallow samples and one deep sample, SB1. Of these metals, barium, cadmium, copper, lead, mercury and zinc also exceeded Restricted Residential SCOs. Silver was detected above Unrestricted Use SCOs in the duplicate sample, however silver was not detected in any other sample. Other than two metals, VOCs, SVOCs, pesticides and PCPs were not detected above Unrestricted Use SCOs within any of the six deep soil samples. Overall, the findings were consistent with observations for historical fill sites in the areas throughout NYC.

EBC
Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

Groundwater Sampling Results

Groundwater data collected during this RI showed no detectable concentrations of pesticides or PCBs in any of the four samples. Three VOCs were detected slightly above GQS within two of the four monitoring wells (GW3 and GW4) and included 1,1,2,2-tetrachloroethene, tetrachloroethene and trichloroethene.

Eleven SVOCs were detected in one or more of the four monitoring wells, but only five were detected at a concentration above GQS. No exceedences were detected in samples obtained from monitoring wells GW2 and GW4.

The metals iron, lead, manganese, and sodium were detected above their respective NYSDEC Groundwater Quality Standards in all four dissolved groundwater samples.

Soil Vapor Sampling Results

Soil vapor samples collected during the RI showed petroleum and chlorinated VOCs at moderate to high concentrations. Tetrachloroethene (PCE) was identified in all five soil vapor samples, however concentrations were only detected above the State DOH guidance values in four of the five samples, at a maximum concentration of 983 $\mu g/m^3$. Trichloroethene was also detected in all five samples, and was only detected above the State DOH guidance value in four of the five samples, at a maximum concentration of 865 $\mu g/m^3$. 1,1,1-TCA (max. of 11.7 $\mu g/m^3$) and carbon tetrachloride (max. of 2.39 $\mu g/m^3$) were also detected in Site soil vapor at concentrations below State DOH guidance values in all samples. Concentrations of petroleum-related VOCs (BTEX) ranged from 192 $\mu g/m^3$ in SG4 to 496.3 $\mu g/m^3$ in SG1. Overall the highest reported concentrations were for tetrachloroethene (maximum of 983 $\mu g/m^3$) and trichloroethene (maximum of 865 $\mu g/m^3$).

2.2 Description of Remedial Action Plan

Site activities included within the Remedial Action Plan that are included within the scope of this HASP include the following:

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. Perform a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Establish Track 1 Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
6. Excavation and removal of soil/fill exceeding Track 1 Unrestricted Use SCOs, including excavation of soil/fill to a depth of approximately 10.5 feet below grade across the entire Site.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
8. Removal of underground storage tanks (if encountered) and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with

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Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

applicable local, State and Federal laws and regulations.

9. Transportation and off-Site disposal of all soil/fill material at 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.
10. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
11. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
12. Installation of a waterproofing membrane below the concrete slab underneath the building, as well as behind the foundation walls of the proposed building.
13. Construction and maintenance of an engineered composite cover consisting of a 6" thick concrete slab across the footprint of the new building.
14. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
15. Submission of a RAR that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.
16. Submission of an approved Site Management Plan (SMP) in the 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.
17. Recording of a Declaration of Covenants and Restrictions that includes a listing of Engineering Controls and a requirement that management of these controls must be in compliance with an approved SMP; and Institutional Controls including 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.

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3.0 HAZARD ASSESSMENT

This section identifies the hazards associated with the proposed scope of work, general physical hazards that can be expected at most sites; and presents a summary of documented or potential chemical hazards at the site. Every effort must be made to reduce or eliminate these hazards. Those that cannot be eliminated must be guarded against using engineering controls and/or personal protective equipment.

3.1 Physical Hazards

3.1.1 Tripping Hazards

An area of risk associated with on-site activities are presented by uneven ground, concrete, curbstones or equipment which may be present at the site thereby creating a potential tripping hazard. During intrusive work, care should be taken to mark or remove any obstacles within the exclusion zone.

3.1.2 Climbing Hazards

During site activities, workers may have to work on excavating equipment by climbing. The excavating contractor will conform with any applicable NIOSH and OSHA requirements or climbing activities.

3.1.3 Cuts and Lacerations

Field activities that involve excavating activities usually involve contact with various types of machinery. A first aid kit approved by the American Red Cross will be available during all intrusive activities.

3.1.4 Lifting Hazards

Improper lifting by workers is one of the leading causes of industrial injuries. Field workers in the excavation program may be required to lift heavy objects. Therefore, all members of the field crew should be trained in the proper methods of lifting heavy objects. All workers should be cautioned against lifting objects too heavy for one person.

3.1.5 Utility Hazards

Before conducting any excavation, the excavation contractor will be responsible for locating and verifying all existing utilities at each excavation.

3.1.6 Traffic Hazards

All traffic, vehicular and pedestrian, shall be maintained and protected at all times consistent with local, state and federal agency regulations regarding such traffic and in accordance with NYCDOT guidelines. The excavation contractor shall carry on his operations without undue interference or delays to traffic. The excavation contractor shall furnish all labor, materials, guards, barricades, signs, lights, and anything else necessary to maintain traffic and to protect his work and the public, during operations.

3.2 Work in Extreme Temperatures

Work under extremely hot or cold weather conditions requires special protocols to minimize the chance that employees will be affected by heat or cold stress.

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3.2.1 Heat Stress

The combination of high ambient temperature, high humidity, physical exertion, and personal protective apparel, which limits the dissipation of body heat and moisture, can cause heat stress.

The following prevention, recognition and treatment strategies will be implemented to protect personnel from heat stress. Personnel will be trained to recognize the symptoms of heat stress and to apply the appropriate treatment.

1. Prevention
    a. Provide plenty of fluids. Available in the support zone will be a 50% solution of fruit punch and water or plain water.
    b. Work in Pairs. Individuals should avoid undertaking any activity alone.
    c. Provide cooling devices. A spray hose and a source of water will be provided to reduce body temperature, cool protective clothing and/or act as a quick-drench shower in case of an exposure incident.
    d. Adjustment of the work schedule. As is practical, the most labor-intensive tasks should be carried out during the coolest part of the day.

2. Recognition and Treatment
    a Heat Rash (or prickly heat):
        Cause: Continuous exposure to hot and humid air, aggravated by chafing clothing.
        Symptoms: Eruption of red pimples around sweat ducts accompanied by intense itching and tingling.
        Treatment: Remove source or irritation and cool skin with water or wet cloths.

    b. Heat Cramps (or heat prostration)
        Cause: Profuse perspiration accompanied by inadequate replenishment of body water and electrolytes.
        Symptoms: Muscular weakness, staggering gait, nausea, dizziness, shallow breathing, pale and clammy skin, approximately normal body temperature.
        Treatment: Perform the following while making arrangement for transport to a medical facility. Remove the worker to a contamination reduction zone. Remove protective clothing. Lie worker down on back in a cool place and raise feet 6 to 12 inches. Keep warm, but loosen all clothing. If conscious, provide sips of salt-water solution, using one teaspoon of salt in 12 ounces of water. Transport to a medical facility.
    c. Heat Stroke
        Cause: Same as heat exhaustion. This is also an extremely serious condition.
        Symptoms: Dry hot skin, dry mouth, dizziness, nausea, headache, rapid pulse.
        Treatment: Cool worker immediately by immersing or spraying with cool water or sponge bare skin after removing protective clothing. Transport to hospital.

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3.2.2 Cold Exposure

Exposure to cold weather, wet conditions and extreme wind-chill factors may result in excessive loss of body heat (hypothermia) and /or frostbite. To guard against cold exposure and to prevent cold injuries, appropriate warm clothing should be worn, warm shelter must be readily available, rest periods should be adjusted as needed, and the physical conditions of on-site field personnel should be closely monitored. Personnel and supervisors working on-site will be made aware of the signs and symptoms of frost bite and hypothermia such as shivering, reduced blood pressure, reduced coordination, drowsiness, impaired judgment, fatigue, pupils dilated but reactive to light and numbing of the toes and fingers.

3.3 Chemical Hazards

Soil collected from the site as part of several subsurface investigations performed at the site have revealed elevated levels of SVOCs, metals and pesticides in historic fill at the Site.

Semi-Volatile organic compounds reported to be present at elevated concentrations in historic fill materials at the Site include the following:

Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(a)pyrene	Dibenzo(a,h)anthracene
Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene	Chrysene	

Metals reported to be present at elevated concentrations in historic fill materials at the Site include the following:

Barium	Lead	Mercury	Zinc
Cadmium	Chromium	Copper	Nickel

Pesticides and PCBS reported to be present at elevated concentrations in historic fill materials at the Site include the following:

4,4'-DDT	PCB-1260

The primary routes of exposure to identified contaminants in soil to on-site construction workers are through inhalation, ingestion and absorption.

Appendix C includes information sheets for all detected chemicals that may be encountered at the site.

3.3.1 Respirable Dust

Dust may be generated from vehicular traffic and/or excavation activities. If visible observation detects elevated levels of dust, a program of wetting will be employed by the site safety officer. If elevated dust levels persist, the site safety office will employ dust monitoring using a particulate monitor (Miniram or equivalent). If monitoring detects concentrations greater than 5,000 µg/m3 over daily background, the site safety officer will take corrective actions as defined herein, including the use of water for dust suppression and if this is not effective, requiring workers to wear APRs with efficiency particulate air (HEPA) cartridges.

Absorption pathways for dust and direct contact with soils or groundwater will be mitigated with the implementation of latex gloves, hand washing and decontamination exercises when necessary.

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3.3.2 Dust Control and Monitoring During Earthwork

Dust generated during excavation activities or other earthwork may contain contaminants identified in soils at the site. Dust will be controlled by wetting the working surface with water. Calcium chloride may be used if the problem cannot be controlled with water. Air monitoring and dust control techniques are specified in a site specific Dust Control Plan (if applicable). Site workers will not be required to wear APR's unless dust concentrations are consistently over 5,000 $\mu g/m^3$ over site-specific background in the breathing zone as measured by a dust monitor unless the site safety officer directs workers to wear APRs. The site safety officer will use visible dust as an indicator to implement the dust control plan.

3.3.3 Organic Vapors

Although no VOCs were detected within any of the soil samples collected at the Site, the site safety officer will periodically monitor organic vapors with a Photo-ionization Detector (PID) during excavation activities to determine whether organic vapor concentrations exceed action levels shown in Section 5 and/or the Community Air Monitoring Plan.

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4.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) shall be selected in accordance with the site air monitoring program, OSHA 29 CFR 1910.120(c), (g), and 1910.132. Protective equipment shall be NIOSH approved and respiratory protection shall conform to OSHA 29 CFR Part 1910.133 and 1910.134 specifications; head protection shall conform to 1910.135; eye and face protection shall conform to 1910.133; and foot protection shall conform to 1910.136. The only true difference among the levels of protection from D thru B is the addition of the type of respiratory protection. **It is anticipated that work will be performed in Level D PPE.**

4.1 Level D

Level D PPE shall be donned when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for inhalation of, or contact with, hazardous concentrations of harmful chemicals. Level D PPE consists of:

- standard work clothes, coveralls, or tyvek, as needed;
- steel toe and steel shank work boots;
- hard hat;
- gloves, as needed;
- safety glasses;
- hearing protection;
- equipment replacements are available as needed.

4.2 Level C

Level C PPE shall be donned when sustained concentrations of measured total organic vapors in the breathing zone exceed background concentrations (using a portable OVA, or equivalent), by more than 5 ppm. The specifications on the APR filters used must be appropriate for contaminants identified or expected to be encountered. Level C PPE shall be donned when the identified contaminants have adequate warning properties and criteria for using APR have been met. Level C PPE consists of:

- chemical resistant or coated tyvek coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves (surgical gloves);
- disposable outer gloves;
- full face APR fitted with organic vapor/dust and mist filters or filters appropriate for the identified or expected contaminants;
- hard hat;
- splash shield, as needed; and,
- ankles/wrists taped with duct tape.

The site safety officer will verify if Level C is appropriate by checking organic vapor concentrations using compound and/or class-specific detector tubes.

The exact PPE ensemble is decided on a site-by-site basis by the Site Safety Officer with the intent to provide the most protective and efficient worker PPE.

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4.3 Activity-Specific Levels of Personal Protection

The required level of PPE is activity-specific and is based on air monitoring results (Section 4.0) and properties of identified or expected contaminants. **It is expected that site work will be performed in Level D.** If air monitoring results indicate the necessity to upgrade the level of protection, engineering controls (i.e. Facing equipment away from the wind and placing site personnel upwind of excavations, active venting, etc.) will be implemented before requiring the use of respiratory protection.

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5.0 AIR MONITORING AND ACTION LEVELS

29 CFR 1910.120(h) specifies that monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

5.1 Air Monitoring Requirements

If excavation work is performed, air will be monitored for VOCs with a portable ION Science 3000EX photoionization detector, or the equivalent. If necessary, Lower Explosive Limit (LEL) and oxygen will be monitored with a Combustible Gas Indicator (CGI). If appropriate, fugitive dust will be monitored using a MiniRam Model PDM-3 aerosol monitor. Air will be monitored when any of the following conditions apply:

- initial site entry;
- during any work where a potential IDLH condition or flammable atmosphere could develop;
- excavation work begins on another portion of the site;
- contaminants, other than those previously identified, have been discovered;
- each time a different task or activity is initiated;
- during trenching and/or excavation work.

The designated site safety officer will record air monitoring data and ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. Instruments will be zeroed daily and checked for accuracy. Monitoring results will be recorded in a field notebook and will be transferred to instrument reading logs.

5.2 Work Stoppage Responses

The following responses will be initiated whenever one or more of the action levels necessitating a work stoppage are exceeded:

1 The SSO will be consulted immediately
2 All personnel (except as necessary for continued monitoring and contaminant migration, if applicable) will be cleared from the work area (eg from the exclusion zone).
3 Monitoring will be continued until intrusive work resumes.

5.3 Action Levels During Excavation Activities

Instrument readings will be taken in the breathing zone above the excavation pit unless otherwise noted. Each action level is independent of all other action levels in determining responses.

Organic Vapors (PID)	LEL %	Responses
0-1 ppm above background	0%	• Continue excavating • Level D protection • Continue monitoring every 10 minutes
1-5 ppm Above Background, Sustained Reading	1-10%	• Continue excavating • Go to Level C protection or employ

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		engineering controls • Continue monitoring every 10 minutes
5-25 ppm Above Background, Sustained Reading	10-20%	• Discontinue excavating, unless PID is only action level exceeded. • Level C protection or employ engineering controls • Continue monitoring for organic vapors 200 ft downwind • Continuous monitoring for LEL at excavation pit
>25 ppm Above Background, Sustained Reading	>20%	• Discontinue excavating • Withdraw from area, shut off all engine ignition sources. • Allow pit to vent • Continuous monitoring for organic vapors 200 ft downwind.

Notes: Air monitoring will occur in the breathing zone 30 inches above the excavation pit. Readings may also be taken in the excavation pit but will not be used for action levels.

If action levels for any one of the monitoring parameters are exceeded, the appropriate responses listed in the right hand column should be taken. If instrument readings do not return to acceptable levels after the excavation pit has been vented for a period of greater than one-half hour, a decision will then be made whether or not to seal the pit with suppressant foam.

If, during excavation activities, downwind monitoring PID readings are greater than 5 ppm above background for more than one-half hour, excavation will stop until sustained levels are less then 5 ppm (see Community Air Monitoring Plan).

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6.0 SITE CONTROL

6.1 Work Zones

The primary purpose of site controls is to establish the perimeter of a hazardous area, to reduce the migration of contaminants into clean areas, and to prevent access or exposure to hazardous materials by unauthorized persons. When operations are to take place involving hazardous materials, the site safety officer will establish an exclusion zone, a decontamination zone, and a support zone. These zones "float" (move around the site) depending on the tasks being performed on any given day. The site safety officer will outline these locations before work begins and when zones change. The site safety officer records this information in the site log book.

Due to the dimensions of the Site and the work area, it is expected that an exclusion zone will include the entire fenced area with the exception of the construction entrance area, which will serve as the decontamination zone. A support zone if needed will be located outside of the fenced area. All onsite workers engaged in the excavation of hazardous or contaminated materials must provide evidence of OSHA 24 or 40-hour Hazardous Waste Operations and Emergency Response Operations training to conduct work within the exclusion zone established by the site safety officer. The exclusion zone is defined by the site safety officer but will typically be a 50-foot area around work activities. Gross decontamination (as determined by the site Health and Safety Officer) is conducted in the exclusion zone; all other decontamination is performed in the decontamination zone or trailer, if provided.

Protective equipment is removed in the decontamination zone. Disposable protective equipment is stored in receptacles staged in the decontamination zone, and non-disposable equipment is decontaminated. All personnel and equipment exit the exclusion zone through the decontamination zone. If a decontamination trailer is provided the first aid equipment, an eye wash unit, and drinking water are kept in the decontamination trailer.

The support zone is used for vehicle parking, daily safety meetings, and supply storage. Eating, drinking, and smoking are permitted only in the support zone. When a decontamination trailer is not provided, the eye wash unit, first aid equipment, and drinking water are kept at a central location designated by the site safety officer.

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7.0 CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms: illnesses, injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather.

Emergency telephone numbers and a map to the hospital will be posted in the command post. Site personnel should be familiar with the emergency procedures, and the locations of site safety, first aid, and communication equipment.

7.1 Emergency Equipment On-site

Private telephones:	Site personnel.
Two-way radios:	Site personnel where necessary.
Emergency Alarms:	On-site vehicle horns*.
First aid kits:	On-site, in vehicles or office.
Fire extinguisher:	On-site, in office or on equipment.

* Horns: Air horns will be supplied to personnel at the discretion of the project superintendent or site safety officer.

7.2 Emergency Telephone Numbers

General Emergencies	911
Kings County Police	911
NYC Fire Department	911
The Brooklyn Hospital Center	(718) 250-8000
NYSDEC Spills Hotline	1-800-457-7362
NYCDEP Project Manager	(212) 442-7126
NYC Department of Health	(212) 676-2400
National Response Center	1-800-424-8802
Poison Control	1-800-222-1222
Project Manager	1-631-504-6000
Site Safety Officer	1-631-504-6000

7.3 Personnel Responsibilities During an Emergency

The project manager is primarily responsible for responding to and correcting any emergency situations. However, in the absence of the project manager, the site safety officer shall act as the project manager's on-site designee and perform the following tasks:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, evacuate and secure the site, or upgrade/downgrade the level of protective clothing and respiratory protection;

- Ensure that appropriate federal, state, and local agencies are informed and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. If toxic materials are released to the air, the local authorities should be informed in order to assess the need for evacuation;

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- Ensure appropriate decontamination, treatment, or testing for exposed or injured personnel;

- Determine the cause of incidents and make recommendations to prevent recurrence; and,

- Ensure that all required reports have been prepared.

The following key personnel are planned for this project:

- Project Manager — Ms. Kristen DiScenza (631) 504-6000
- Site Safety Officer — Mr. Kevin Waters (631) 504-6000

7.4 Medical Emergencies

A person who becomes ill or injured in the exclusion zone will be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination will be completed and first aid administered prior to transport. First aid will be administered while waiting for an ambulance or paramedics. A Field Accident Report (**Appendix D**) must be filled out for any injury.

A person transporting an injured/exposed person to a clinic or hospital for treatment will take the directions to the hospital (**Appendix D**).and information on the chemical(s) to which they may have been exposed (**Appendix C**).

7.5 Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. The site safety officer or his designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-site. If it is safe to do so, site personnel may:

- use fire fighting equipment available on site; or,
- remove or isolate flammable or other hazardous materials that may contribute to the fire.

7.6 Evacuation Routes

Evacuation routes established by work area locations for each site will be reviewed prior to commencing site operations. As the work areas change, the evacuation routes will be altered accordingly, and the new route will be reviewed.

Under extreme emergency conditions, evacuation is to be immediate without regard for equipment. The evacuation signal will be a continuous blast of a vehicle horn, if possible, and/or by verbal/radio communication. When evacuating the site, personnel will follow these instructions:

- Keep upwind of smoke, vapors, or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation through the decontamination corridor is not possible, personnel should remove contaminated clothing once they are in a safe location and leave it near the exclusion zone or in a safe place.

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- The site safety officer will conduct a head count to ensure that all personnel have been evacuated safely. The head count will be correlated to the site and/or exclusion zone entry/exit log.
- If emergency site evacuation is necessary, all personnel are to escape the emergency situation and decontaminate to the maximum extent practical.

7.7 Spill Control Procedures

Spills associated with site activities may be attributed to project equipment and include gasoline, diesel and hydraulic oil. In the event of a leak or a release, site personnel will inform their supervisor immediately, locate the source of spillage and stop the flow if it can be done safely. A spill containment kit including absorbent pads, booms and/or granulated speedy dry absorbent material will be available to site personnel to facilitate the immediate recovery of the spilled material. Daily inspections of site equipment components including hydraulic lines, fuel tanks, etc. will be performed by their respective operators as a preventative measure for equipment leaks and to ensure equipment soundness. In the event of a spill, site personnel will immediately notify the NYSDEC (1-800-457-7362), and a spill number will be generated.

7.8 Vapor Release Plan

If work zone organic vapor (excluding methane) exceeds 5 ppm, then a downwind reading will be made either 200 feet from the work zone or at the property line, whichever is closer. If readings at this location exceed 5 ppm over background, the work will be stopped.

If 5 ppm of VOCs are recorded over background on a PID at the property line, then an off-site reading will be taken within 20 feet of the nearest residential or commercial property, whichever is closer. If efforts to mitigate the emission source are unsuccessful for 30 minutes, then the designated site safety officer will:

- contact the local police;
- continue to monitor air every 30 minutes, 20 feet from the closest off-site property. If two successive readings are below 5 ppm (non-methane), off-site air monitoring will be halted.
- All property line and off site air monitoring locations and results associated with vapor releases will be recorded in the site safety log book.

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APPENDIX A

SITE SAFETY ACKNOWLEDGEMENT FORM

DAILY BREIFING SIGN-IN SHEET

Date:_____ Person Conducting Briefing:_____

Project Name and Location:_____

1. AWARENESS (topics discussed, special safety concerns, recent incidents, etc…):

_____

_____

_____

_____

2. OTHER ISSUES (HASP changes, attendee comments, etc…):

_____

_____

_____

3. ATTENDEES (Print Name):

1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

APPENDIX B

SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT FORM

Site Safety Plan Amendment #: _____

Site Name: _____

Reason for Amendment: _____

_____

_____

_____

Alternative Procedures: _____

_____

_____

_____

Required Changes in PPE: _____

_____

_____

_____

_____ _____

Project Superintendent (signature) **Date**

_____ _____

Health and Safety Consultant (signature) **Date**

_____ _____

Site Safety Officer (signature) **Date**

APPENDIX C

CHEMICAL HAZARDS

CHEMICAL HAZARDS

The attached International Chemical Safety Cards are provided for contaminants of concern that have been identified in soils and/or groundwater at the site.

International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

Barium sulphate
Blanc fixe
Artificial barite
$BaSO_4$
Molecular mass: 233.43

ICSC # 0827
CAS # 7727-43-7
RTECS # CR0600000
October 20, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P1 filter respirator for inert particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0827

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** ODOURLESS TASTELESS, WHITE OR YELLOWISH CRYSTALS OR POWDER. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Reacts violently with aluminium powder. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 mg/m³ as TWA; (ACGIH 2004). MAK: (Inhalable fraction) 4 mg/m³; (Respirable fraction) 1.5 mg/m³; (DFG 2004). OSHA PEL†: TWA 15 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH REL: TWA 10 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH IDLH: N.D. See: IDLH INDEX **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol. **INHALATION RISK:** Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Lungs may be affected by repeated or prolonged exposure to dust particles , resulting in baritosis (a form of benign pneumoconiosis).
PHYSICAL PROPERTIES	Melting point (decomposes): 1600°C Density: 4.5 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	

NOTES

Occurs in nature as the mineral barite; also as barytes, heavy spar. Card has been partly updated in October 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

COPPER

ICSC: 0240

Cu
(powder)

ICSC # 0240
CAS # 7440-50-8
RTECS # GL5325000
September 24, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Special powder, dry sand, NO other agents.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Headache. Shortness of breath. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder. Then remove to safe place. (Extra personal protection: P2 filter respirator for harmful particles).	Separated from - See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0240

International Chemical Safety Cards

COPPER

ICSC: 0240

I

M

P

PHYSICAL STATE; APPEARANCE:
RED POWDER, TURNS GREEN ON EXPOSURE TO MOIST AIR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

O **R** **T** **A** **N** **T** **D** **A** **T** **A**	Shock-sensitive compounds are formed with acetylenic compounds, ethylene oxides and azides. Reacts with strong oxidants like chlorates, bromates and iodates, causing explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.2 mg/m³ fume (ACGIH 1992-1993). TLV (as Cu, dusts & mists): 1 mg/m³ (ACGIH 1992-1993). Intended change 0.1 mg/m³ Inhal., A4 (not classifiable as a human carcinogen); MAK: 0.1 mg/m³ (Inhalable fraction) Peak limitation category: II(2) Pregnancy risk group: D (DFG 2005). OSHA PEL*: TWA 1 mg/m^3 *Note: The PEL also applies to other copper compounds (as Cu) except copper fume. NIOSH REL*: TWA 1 mg/m^3 *Note: The REL also applies to other copper compounds (as Cu) except Copper fume. NIOSH IDLH: 100 mg/m^3 (as Cu) See: 7440508	**EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of fumes may cause metal fume fever. See Notes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES	Boiling point: 2595°C Melting point: 1083°C Relative density (water = 1): 8.9	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

The symptoms of metal fume fever do not become manifest until several hours.

ADDITIONAL INFORMATION

ICSC: 0240 **COPPER**

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

Lead metal
Plumbum
Pb
Atomic mass: 207.2
(powder)

ICSC # 0052
CAS # 7439-92-1
RTECS # OF7525000
October 08, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT DISPERSION OF DUST! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles.	Separated from food and feedstuffs incompatible materials See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0052

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
BLUISH-WHITE OR SILVERY-GREY SOLID IN VARIOUS FORMS. TURNS TARNISHED ON EXPOSURE TO AIR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On heating, toxic fumes are formed. Reacts with oxidants. Reacts with hot concentrated nitric acid, boiling concentrated hydrochloric acid and sulfuric acid. Attacked by pure water and by weak organic acids in the presence of oxygen.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.05 mg/m³ A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2004).
MAK:
Carcinogen category: 3B; Germ cell mutagen group: 3A; (DFG 2004).
EU OEL: as TWA 0.15 mg/m³ (EU 2002).
OSHA PEL*: 1910.1025 TWA 0.050 mg/m^3 See Appendix C *Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C *Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH IDLH: 100 mg/m^3 (as Pb) See: 7439921

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood bone marrow central nervous system peripheral nervous system kidneys , resulting in anaemia, encephalopathy (e.g., convulsions), peripheral nerve disease, abdominal cramps and kidney impairment. Causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES		
	Boiling point: 1740°C	Density: 11.34 g/cm3
	Melting point: 327.5°C	Solubility in water: none

ENVIRONMENTAL DATA	
	Bioaccumulation of this chemical may occur in plants and in mammals. It is strongly advised that this substance does not enter the environment. 

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-51S1872

ADDITIONAL INFORMATION

ICSC: 0052 **LEAD**

International Chemical Safety Cards

NICKEL

ICSC: 0062

Ni
Atomic mass: 58.7
(powder)

ICSC # 0062
CAS # 7440-02-0
RTECS # QR5950000
EC # 028-002-00-7
October 17, 2001 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable as dust. Toxic fumes may be released in a fire.		Dry sand. NO carbon dioxide. NO water.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION	Cough. Shortness of breath.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Vacuum spilled material. Carefully collect remainder, then remove to safe place. Personal protection: P2 filter respirator for harmful particles.	Separated from strong acids.	Xn symbol R: 40-43 S: 2-22-36

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0062

International Chemical Safety Cards

NICKEL

ICSC: 0062

I

PHYSICAL STATE; APPEARANCE:
SILVERY METALLIC SOLID IN VARIOUS FORMS.

PHYSICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of the dust.

IMPORTANT DATA	Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** Reacts violently, in powder form, with titanium powder and potassium perchlorate, and oxidants such as ammonium nitrate, causing fire and explosion hazard. Reacts slowly with non-oxidizing acids and more rapidly with oxidizing acids. Toxic gases and vapours (such as nickel carbonyl) may be released in a fire involving nickel. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (Inhalable fraction) 1.5 mg/m³ as TWA A5 (not suspected as a human carcinogen); (ACGIH 2004). MAK: (Inhalable fraction) sensitization of respiratory tract and skin (Sah); Carcinogen category: 1; (DFG 2004). OSHA PEL*†: TWA 1 mg/m^3 *Note: The PEL does not apply to Nickel carbonyl. NIOSH REL*: Ca TWA 0.015 mg/m^3 See Appendix A *Note: The REL does not apply to Nickel carbonyl. NIOSH IDLH: Ca 10 mg/m^3 (as Ni) See: 7440020	**INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation. Inhalation of fumes may cause pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation exposure may cause asthma. Lungs may be affected by repeated or prolonged exposure. This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 2730°C Melting point: 1455°C Density: 8.9 g/cm3	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

At high temperatures, nickel oxide fumes will be formed. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance.

ADDITIONAL INFORMATION

ICSC: 0062 **NICKEL**

International Chemical Safety Cards

MERCURY

ICSC: 0056

Quicksilver
Liquid silver
Hg
Atomic mass: 200.6

ICSC # 0056
CAS # 7439-97-6
RTECS # OV4550000
UN # 2809
EC # 080-001-00-0
April 22, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Diarrhoea. Shortness of breath. Vomiting. Fever or elevated body temperature.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area in case of a large spill! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs Well closed.	Special material. Do not transport with food and feedstuffs. T symbol N symbol R: 23-33-50/53 S: 1/2-7-45-60-61 UN Hazard Class: 8 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

MERCURY

ICSC: 0056

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
ODOURLESS, HEAVY AND MOBILE SILVERY LIQUID METAL.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. Reacts violently with ammonia and halogens causing fire and explosion hazard. Attacks aluminium and many other metals forming amalgams.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.025 mg/m³ as TWA (skin) A4 BEI issued (ACGIH 2004).
MAK: 0.1 mg/m³ Sh
Peak limitation category: II(8) Carcinogen category: 3B (DFG 2003).
OSHA PEL†: C 0.1 mg/m^3
NIOSH REL: Hg Vapor: TWA 0.05 mg/m^3 skin
Other: C 0.1 mg/m^3 skin
NIOSH IDLH: 10 mg/m^3 (as Hg) See: 7439976

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour and through the skin , also as a vapour!

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the skin. Inhalation of the vapours may cause pneumonitis. The substance may cause effects on the central nervous systemandkidneys. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system kidneys , resulting in irritability, emotional instability, tremor, mental and memory disturbances, speech disorders. Danger of cumulative effects. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point: 357°C
Melting point: -39°C
Relative density (water = 1): 13.5
Solubility in water:
none

Vapour pressure, Pa at 20°C: 0.26
Relative vapour density (air = 1): 6.93
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.009

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. No odour warning if toxic concentrations are present. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-80GC9-II+III

ADDITIONAL INFORMATION

ICSC: 0056 **MERCURY**

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

Blue powder
Merrillite
Zn
Atomic mass: 65.4
(powder)

ICSC # 1205
CAS # 7440-66-6
RTECS # ZG8600000
UN # 1436 (zinc powder or dust)
EC # 030-001-00-1
October 24, 1994 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with acid(s), base (s) and incompatible substances (see Chemical Dangers).	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Risk of fire and explosion on contact with acid(s), base(s), water and incompatible substances.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Prevent deposition of dust.	In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•**INHALATION**	Metallic taste and metal fume fever. Symptoms may be delayed (see Notes).	Local exhaust.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin.	Protective gloves.	Rinse and then wash skin with water and soap.
•**EYES**		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Extinguish or remove all ignition sources. Do NOT wash away into sewer. Sweep spilled substance into containers. then remove to safe place. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from acids, bases oxidants Dry.	Airtight. F symbol N symbol R: 15-17-50/53 S: 2-7/8-43-46-60-61 UN Hazard Class: 4.3 UN Subsidiary Risks: 4.2

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
ODOURLESS GREY TO BLUE POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. The substance is a strong reducing agent and reacts violently with oxidants. Reacts with water and reacts violently with acids and bases forming flammable/explosive gas (hydrogen - see ICSC0001) Reacts violently with sulfur, halogenated hydrocarbons and many other substances causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
Inhalation of fumes may cause metal fume fever. The effects may be delayed.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis.

PHYSICAL PROPERTIES

Boiling point: 907°C
Melting point: 419°C
Relative density (water = 1): 7.14
Solubility in water: reaction
Vapour pressure, kPa at 487°C: 0.1
Auto-ignition temperature: 460°C

ENVIRONMENTAL DATA

N O T E S

Zinc may contain trace amounts of arsenic, when forming hydrogen, may also form toxic gas arsine (see ICSC 0001 and ICSC 0222). Reacts violently with fire extinguishing agents such as water, halons, foam and carbon dioxide. The symptoms of metal fume fever do not become manifest until several hours later. Rinse contaminated clothes (fire hazard) with plenty of water.

Transport Emergency Card: TEC (R)-43GWS-II+III
NFPA Code: H0; F1; R1;

ADDITIONAL INFORMATION

ICSC: 1205 **ZINC POWDER**

International Chemical Safety Cards

DDT

ICSC: 0034

Dichlorodiphenyltrichloroethane
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane
2,2-bis(p-Chlorophenyl)-1,1,1-trichloroethane
1,1'-(2,2,2-Trichloroethylidene)bis(4-chlorobenzene)
p,p'-DDT
$C_{14}H_9Cl_5$
Molecular mass: 354.5

ICSC # 0034
CAS # 50-29-3
RTECS # KJ3325000
UN # 2761
EC # 602-045-00-7
April 20, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Tremors. Diarrhoea. Dizziness. Headache. Vomiting. Numbness. Paresthesias. Hyperexcitability. Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT let this chemical enter the environment. Sweep spilled substance into sealable non-metallic containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Provision to contain effluent from fire extinguishing. Separated from iron, aluminum and its salts, food and feedstuffs See Chemical Dangers.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 25-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

DDT

ICSC: 0034

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS WHITE POWDER.
TECHNICAL PRODUCT IS WAXY SOLID.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
On combustion, forms toxic and corrosive fumesincludinghydrogen chloride. Reacts with aluminium and iron.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 mg/m³ as TWA A3 (ACGIH 2004).
MAK: 1 mg/m³ H
Peak limitation category: II(8)
(DFG 2003).
OSHA PEL: TWA 1 mg/m^3 skin
NIOSH REL: Ca TWA 0.5 mg/m^3 See Appendix A
NIOSH IDLH: Ca 500 mg/m^3 See: 50293

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
May cause mechanical irritation. The substance may cause effects on the central nervous system , resulting in convulsions and respiratory depression Exposure at high levels may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system and liver. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 260°C
Melting point: 109°C
Density: 1.6
g/cm3

Solubility in water: poor
Octanol/water partition coefficient as log Pow: 6.36

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to birds. Bioaccumulation of this chemical may occur along the food chain, for example in milk and aquatic organisms. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Consult national legislation. Agritan, Azotox, Anofex, Ixodex, Gesapon, Gesarex, Gesarol, Guesapon, Clofenotane, Zeidane, Dicophane, Neocid are trade names.

Transport Emergency Card: TEC (R)-61GT7-III

ADDITIONAL INFORMATION

ICSC: 0034 **DDT**

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

Dibenzo(b,jk)fluorene
8,9-Benzofluoranthene
11,12-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0721
CAS # 207-08-9
RTECS # DF6350000
EC # 601-036-00-5
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0721

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

I **M**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin.

P O R T A N T D A T A	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004). **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 480°C Melting point: 217°C Solubility in water: none Octanol/water partition coefficient as log Pow: 6.84
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in crustacea and in fish. 

N O T E S

Benzo(k)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(k)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0721 **BENZO(k)FLUORANTHENE**

International Chemical Safety Cards

BENZO(g,h,i)FLUORANTHENE

ICSC: 0527

2,13-Benzofluoranthene
Benzo(mno)fluoranthene
$C_{18}H_{10}$
Molecular mass: 226.3

ICSC # 0527
CAS # 203-12-3
RTECS # DF6140000
March 25, 1998 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, powder.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention. Wear protective gloves when administering first aid.
•EYES		Safety goggles, face shield, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0527

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(g,h,i)FLUORANTHENE

ICSC: 0527

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin.

O R T A N T D A T A	**CHEMICAL DANGERS:** The substance decomposes on heating producing toxic fumes. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	**INHALATION RISK:** **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** See Notes.
PHYSICAL PROPERTIES	Melting point: 149°C Solubility in water: none Vapour pressure, Pa at 20°C: <10	Relative vapour density (air = 1): 7.8 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.0 Octanol/water partition coefficient as log Pow: 7.23
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to the total environment. In the food chain important to humans, bioaccumulation takes place, specifically in oils and fats. 	

N O T E S

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Also consult ICSC #0720 and 0721.

ADDITIONAL INFORMATION

ICSC: 0527 **BENZO(g,h,i)FLUORANTHENE**

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

Benz(e)acephenanthrylene
2,3-Benzofluoroanthene
Benzo(e)fluoranthene
3,4-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0720
CAS # 205-99-2
RTECS # CU1400000
EC # 601-034-00-4
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0720

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

I	**PHYSICAL STATE; APPEARANCE:** COLOURLESS CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation

IMPORTANT DATA	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: A2 (suspected human carcinogen); (ACGIH 2004). MAK: Carcinogen category: 2; (DFG 2004). of its aerosol and through the skin. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans. May cause genetic damage in humans.
PHYSICAL PROPERTIES	Boiling point: 481°C Melting point: 168°C Solubility in water: none Octanol/water partition coefficient as log Pow: 6.12
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. 

N O T E S

Benzo(b)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(b)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0720 **BENZO(b)FLUORANTHENE**

International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104

Benz(a)pyrene
3,4-Benzopyrene
Benzo(d,e,f)chrysene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0104
CAS # 50-32-8
RTECS # DJ3675000
EC # 601-032-00-3
October 17, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants.	T symbol N symbol R: 45-46-60-61-43-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0104

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
PALE-YELLOW CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts with strong oxidants causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: Exposure by all routes should be carefully controlled to levels as low as possible A2 (suspected human carcinogen); (ACGIH 2005).
MAK:
Carcinogen category: 2; Germ cell mutagen group: 2; (DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is carcinogenic to humans. May cause heritable genetic damage to human germ cells. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 496°C
Melting point: 178.1°C
Density: 1.4
g/cm³

Solubility in water: none (<0.1 g/100 ml)
Vapour pressure :
negligible
Octanol/water partition coefficient as log Pow: 6.04

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish, in plants and in molluscs. The substance may cause long-term effects in the aquatic environment.

NOTES

Do NOT take working clothes home. Benzo(a)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAHs) in the environment, usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.

ADDITIONAL INFORMATION

International Chemical Safety Cards

BENZ(a)ANTHRACENE

ICSC: 0385

1,2-Benzoanthracene
Benzo(a)anthracene
2,3-Benzphenanthrene
Naphthanthracene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 0385
CAS # 56-55-3
RTECS # CV9275000
EC # 601-033-00-9
October 23, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.		Water spray, powder. In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0385

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ICSC: 0385

BENZ(a)ANTHRACENE

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW BROWN FLUORESCENT FLAKES OR POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A2 (suspected human carcinogen); (ACGIH 2004).
MAK:
Carcinogen category: 2 (as pyrolysis product of organic materials)
(DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Sublimation point: 435°C
Melting point: 162°C
Relative density (water = 1): 1.274
Solubility in water:
none

Vapour pressure, Pa at 20°C: 292
Octanol/water partition coefficient as log Pow: 5.61

ENVIRONMENTAL DATA

Bioaccumulation of this chemical may occur in seafood.

N O T E S

This substance is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. Tetraphene is a common name. Card has been partly updated in October 2005 and August 2006: see sections Occupational Exposure Limits, EU classification.

ADDITIONAL INFORMATION

ICSC: 0385 **BENZ(a)ANTHRACENE**

Material Safety Data Sheet

Version 3.1
Revision Date 03/22/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dibenzofuran

Product Number : 236373
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion

HMIS Classification
Health hazard: 2
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Diphenylene oxide

Formula : $C_{12}H_8O$
Molecular Weight : 168.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Dibenzofuran			
132-64-9	205-071-3	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	crystalline
Colour	white, beige

Safety data

pH	no data available
Melting point	80 - 82 °C (176 - 180 °F) - lit.
Boiling point	154 - 155 °C (309 - 311 °F) at 27 hPa (20 mmHg) - lit.
Flash point	130.0 °C (266.0 °F) - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 3.77

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: HP4430000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	NOEC - Cyprinodon variegatus (sheepshead minnow) - 1 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 1.05 mg/l - 96.0 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Dibenzofuran)
Reportable Quantity (RQ): 100 lbs
Marine pollutant: Marine pollutant
Poison Inhalation Hazard: No

IMDG

UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Dibenzofuran)
Marine pollutant: Marine pollutant

IATA
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Dibenzofuran)

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

DIBENZO(a,h)ANTHRACENE

ICSC: 0431

1,25,6-Dibenzanthracene
$C_{22}H_{14}$
Molecular mass: 278.4

ICSC # 0431
CAS # 53-70-3
RTECS # HN2625000
EC # 601-041-00-2
October 23, 1995 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, powder.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	Redness. Swelling. Itching.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0431

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DIBENZO(a,h)ANTHRACENE

ICSC: 0431

I

M

P

O

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALLINE POWDER.

PHYSICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration

R T A N T D A T A	**CHEMICAL DANGERS:** **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the skin , resulting in photosensitization. This substance is probably carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 524°C Melting point: 267°C Relative density (water = 1): 1.28	Solubility in water: none Octanol/water partition coefficient as log Pow: 6.5
ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in seafood. 	

N O T E S

This is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. DBA is a commonly used name. This substance is one of many polycyclic aromatic hydrocarbons (PAH).

ADDITIONAL INFORMATION

ICSC: 0431 **DIBENZO(a,h)ANTHRACENE**

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

Benzoaphenanthrene
1,2-Benzophenanthrene
1,2,5,6-Dibenzonaphthalene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 1672
CAS # 218-01-9
RTECS # GC0700000
UN # 3077
EC # 601-048-00-0
October 12, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Dry powder. Foam. Carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	T symbol N symbol R: 45-68-50/53 S: 53-45-60-61 UN Hazard Class: 9 UN Packing Group: III Signal: Warning Aqua-Cancer Suspected of causing cancer Very toxic to aquatic life with long lasting effects Very toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO BEIGE CRYSTALS OR POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes Reacts violently with strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2006).
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 448°C
Melting point: 254 - 256°C
Density: 1.3 g/cm³

Solubility in water:
very poor
Octanol/water partition coefficient as log Pow: 5.9

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in seafood. It is strongly advised that this substance does not enter the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. This substance does not usually occur as a pure substance but as a component of polyaromatic hydrocarbon (PAH) mixtures. Human population studies have associated PAH's exposure with cancer and cardiovascular diseases.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

o-Phenylenepyrene
2,3-Phenylenepyrene
$C_{22}H_{12}$
Molecular mass: 276.3

ICSC # 0730
CAS # 193-39-5
RTECS # NK9300000
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0730

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin. **INHALATION RISK:**

O R T A N T D A T A	**CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004).	Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 536°C Melting point: 164°C Solubility in water: none	Octanol/water partition coefficient as log Pow: 6.58
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in fish. 	

N O T E S

Indeno(1,2,3-cd)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing Indeno(1,2,3-c,d)pyrene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0730 **INDENO(1,2,3-cd)PYRENE**

Material Safety Data Sheet

Version 4.0
Revision Date 07/24/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Phenanthrene
Product Number	:	695114
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Harmful by ingestion., Irritant

Other hazards which do not result in classification
Photosensitizer.

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard:	2
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.

Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_{14}H_{10}$
Molecular Weight : 178.23 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Phenanthrene			
85-01-8	201-581-5	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control	Update	Basis

			parameters		
Phenanthrene	85-01-8	TWA	0.2 mg/m3	1993-06-30	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.2 mg/m3	1989-03-01	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses with side-shields conforming to EN166

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	98 - 100 °C (208 - 212 °F)
Boiling point	340 °C (644 °F)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	1.063 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 4.57

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - mouse - 700.0 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
Causes photosensitivity. Exposure to light can result in allergic reactions resulting in dermatologic lesions, which can vary from sunburnlike responses to edematous, vesiculated lesions, or bullae

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Phenanthrene)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 3.2 mg/l - 96.0 h
	LC100 - other fish - 1.5 mg/l - 1.0 h
Toxicity to daphnia	EC50 - Daphnia magna (Water flea) - 0.86 mg/l - 24 h

and other aquatic invertebrates.

EC50 - Daphnia magna (Water flea) - 0.38 mg/l - 48 h

Toxicity to algae EC50 - Chlorella vulgaris (Fresh water algae) - 1.20 mg/l - 3 h

Persistence and degradability

Biodegradability Result: 55 - 95 % - Partially biodegradable.

Bioaccumulative potential

Bioaccumulation Pimephales promelas (fathead minnow) - 28 d
Bioconcentration factor (BCF): 5,100

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Phenanthrene)
Reportable Quantity (RQ): 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Phenanthrene)
Marine pollutant: No

IATA

UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Phenanthrene)

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards

Harmful by ingestion., Irritant

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Phenanthrene	85-01-8	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Phenanthrene	85-01-8	1990-01-01

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

PYRENE

ICSC: 1474

Benzo (d,e,f) phenanthrene
beta-Pyrene
$C_{16}H_{10}$
Molecular mass: 202.26

ICSC # 1474
CAS # 129-00-0
RTECS # UR2450000
November 27, 2003 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Water spray, carbon dioxide, dry powder, alcohol-resistant foam, foam.
EXPLOSION			
EXPOSURE			
•INHALATION		Avoid inhalation of dust	Fresh air, rest.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Do NOT induce vomiting. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder Do NOT let this chemical enter the environment. (Extra personal protection: P2 filter respirator for harmful particles.)	Separated from strong oxidants. Keep in a well-ventilated room.	Do not transport with food and feedstuffs. R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1474

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

PYRENE

ICSC: 1474

I **M**	**PHYSICAL STATE; APPEARANCE:** YELLOW COLOURLESS SOLID IN VARIOUS FORMS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation through the skin and by ingestion

P O R T A N T D A T A	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating producing irritating fumes **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK not established. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** Exposure to sun may provoke an irritating effect of pyrene on skin and lead to chronic skin discoloration. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**

PHYSICAL PROPERTIES	Boiling point: 404°C Melting point: 151°C Density: 1.27 g/cm3	Solubility in water: 0.135 mg/l at 25°C Vapour pressure, Pa at °C: 0.08 Octanol/water partition coefficient as log Pow: 4.88
ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in crustacea,in fish,in milk,in algae andin molluscs. It is strongly advised that this substance does not enter the environment. 	

N O T E S

Pyrene is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, pyrene may be encountered as a laboratory chemical in its pure form. Health effects of exposure to the substance have not been investigated adequately. See ICSC 1415 Coal-tar pitch.

ADDITIONAL INFORMATION

ICSC: 1474 **PYRENE**

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

APPENDIX D

HOSPITAL INFORMATION AND MAP

FIELD ACCIDENT REPORT

FIELD ACCIDENT REPORT

This report is to be filled out by the designated Site Safety Officer after EVERY accident.

PROJECT NAME _____ PROJECT. NO._____

Date of Accident _____ Time _____ Report By _____

Type of Accident (Check One):

( ) Vehicular ( ) Personal ( ) Property

Name of Injured _____ DOB or Age _____

How Long Employed _____

Names of Witnesses _____

_____

Description of Accident _____

_____

_____

Action Taken _____

_____

_____

Did the Injured Lose Any Time? _____ How Much (Days/Hrs.)? _____

Was Safety Equipment in Use at the Time of the Accident (Hard Hat, Safety Glasses, Gloves, Safety Shoes, etc.)? _____

_____

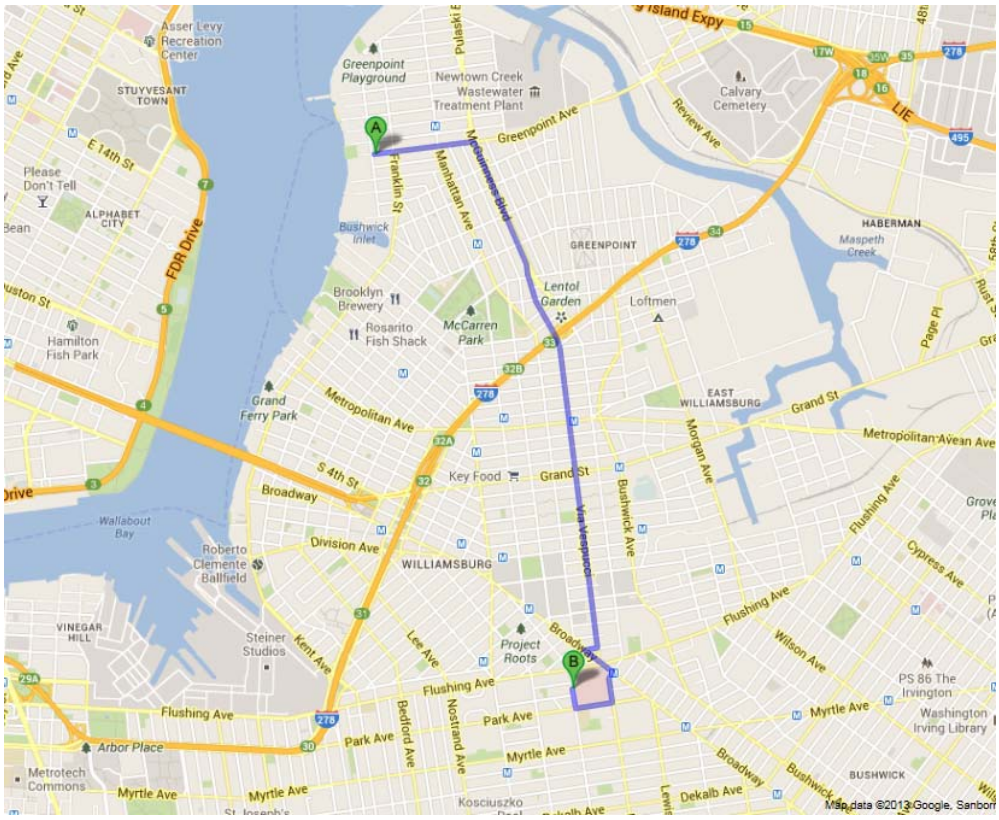
(If not, it is the EMPLOYEE'S sole responsibility to process his/her claim through his/her Health and Welfare Fund.)

INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

HOSPITAL INFORMATION AND MAP

The hospital nearest the site is:

WOODHUL MEDICAL CENTER
760 Broadway, Brooklyn, New York 11206
718-963-8000
3.0 Miles – About 12 Minutes



A 50 Greenpoint Ave, Brooklyn, NY 11222

1.	Head **east** on **Greenpoint Ave** toward **Franklin St** About 2 mins	go 0.4 mi total 0.4 mi
2.	Turn right onto **McGuinness Blvd** About 1 min	go 0.5 mi total 0.9 mi
3.	Slight right onto **Graham Ave** About 6 mins	go 1.5 mi total 2.5 mi
4.	Turn right onto **Debevoise St**	go 272 ft total 2.5 mi
5.	Take the 1st left onto **Broadway** About 1 min	go 0.1 mi total 2.7 mi
6.	Take the 3rd right onto **Marcus Garvey Blvd**	go 0.1 mi total 2.8 mi
7.	Take the 1st right onto **Park Ave**	go 0.1 mi total 2.9 mi
8.	Take the 1st right onto **Throop Ave**	go 404 ft total 3.0 mi

B **Woodhull Medical and Mental Health Center**
760 Broadway Brooklyn, New York 11206

ATTACHMENT F
WATERPROOFING MEMBRANE SPECIFICATIONS

GRACE

PREPRUFE® 300R & 160R

Pre-applied waterproofing membranes that bond integrally to poured concrete for use below slabs or behind basement walls on confined sites

Description

Preprufe® 300R & 160R membranes are unique composite sheets comprising a thick HDPE film, an aggressive pressure sensitive adhesive and a weather resistant protective coating.

Unlike conventional non-adhering membranes, which are vulnerable to water ingress tracking between the unbonded membrane and structure, the unique Preprufe bond to concrete prevents ingress or migration of water around the structure.

The Preprufe R System includes:

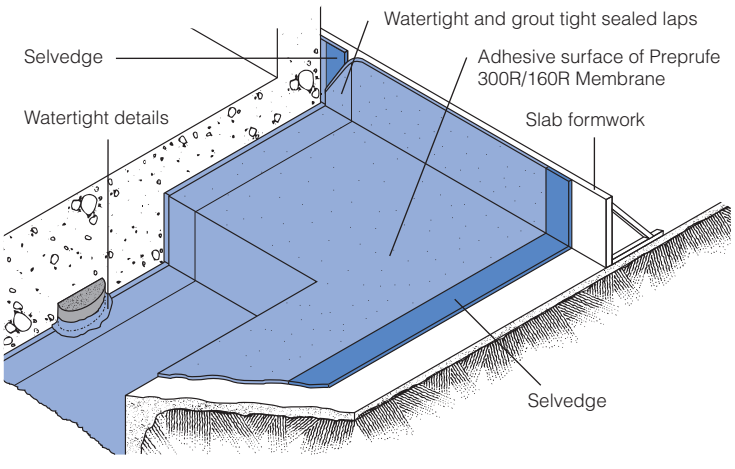
- **Preprufe 300R**—heavy-duty grade for use below slabs and on rafts (i.e. mud slabs). Designed to accept the placing of heavy reinforcement using conventional concrete spacers.
- **Preprufe 160R**—thinner grade for blindside, zero property line applications against soil retention systems.
- **Preprufe Tape LT**—for covering cut edges, roll ends, penetrations and detailing (temperatures between 25°F (-4°C) and 86°F (+30°C)).
- **Preprufe Tape HC**—as above for use in Hot Climates (minimum 50°F (10°C)).
- **Bituthene® Liquid Membrane**—for sealing around penetrations, etc.
- **Adcor™ ES**—waterstop for joints in concrete walls and floors
- **Preprufe Tieback Covers**—preformed cover for soil retention wall tieback heads
- **Preprufe Preformed Corners**—preformed inside and outside corners

Preprufe 300R & 160R membranes are applied either horizontally to smooth prepared concrete, carton forms or well rolled and compacted earth or crushed stone substrate; or vertically to permanent formwork or adjoining structures. Concrete is then cast directly against the adhesive side of the membranes. The specially developed Preprufe adhesive layers work together to form a continuous and integral seal to the structure.

Preprufe can be returned up the inside face of slab formwork but is not recommended for conventional twin-sided formwork on walls, etc. Use Bituthene self-adhesive membrane or Procor® fluid applied membrane to walls after removal of formwork for a fully bonded system to all structural surfaces.

Advantages

- **Forms a unique continuous adhesive bond to concrete poured against it**—prevents water migration and makes it unaffected by ground settlement beneath slabs
- **Fully-adhered watertight laps** and detailing
- **Provides a barrier to water, moisture and gas**—physically isolates the structure from the surrounding ground
- **BBA Certified** for basement Grades 2, 3, & 4 to BS 8102:1990
- **Zero permeance** to moisture
- **Solar reflective**—reduced temperature gain
- **Simple and quick to install**—requiring no priming or fillets
- **Can be applied to permanent formwork**—allows maximum use of confined sites
- **Self protecting**—can be trafficked immediately after application and ready for immediate placing of reinforcement
- **Unaffected by wet conditions**—cannot activate prematurely
- **Inherently waterproof, non-reactive system:**
  - not reliant on confining pressures or hydration
  - unaffected by freeze/thaw, wet/dry cycling
- **Chemical resistant**—effective in most types of soils and waters, protects structure from salt or sulphate attack



Drawings are for illustration purposes only.
Please refer to graceconstruction.com for specific application details.

BBA BRITISH BOARD OF AGREMENT CERTIFICATE No. 97/3325

Installation

The most current application instructions, detail drawings and technical letters can be viewed at graceconstruction.com. For other technical information contact your local Grace representative.

Preprufe 300R & 160R membranes are supplied in rolls 4 ft (1.2 m) wide, with a selvedge on one side to provide self-adhered laps for continuity between rolls. The rolls of Preprufe Membrane and Preprufe Tape are interwound with a disposable plastic release liner which must be removed before placing reinforcement and concrete.

Substrate Preparation

All surfaces—It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 0.5 in. (12 mm). Grout around all penetrations such as utility conduits, etc. for stability (see Figure 1).

Horizontal—The substrate must be free of loose aggregate and sharp protrusions. Avoid curved or rounded substrates. When installing over earth or crushed stone, ensure substrate is well compacted to avoid displacement of substrate due to traffic or concrete pour. The surface does not need to be dry, but standing water must be removed.

Vertical—Use concrete, plywood, insulation or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 0.5 in. (12 mm) out of alignment.

Membrane Installation

Preprufe can be applied at temperatures of 25°F (-4°C) or above. When installing Preprufe in cold or marginal weather conditions 55°F (<13°C) the use of Preprufe Tape LT is recommended at all laps and detailing. Preprufe Tape LT should be applied to clean, dry surfaces and the release liner must be removed immediately after application. Alternatively, Preprufe Low Temperature (LT) is available for low temperature condition applications. Refer to Preprufe LT data sheet for more information.

Horizontal substrates—Place the membrane HDPE film side to the substrate with the clear plastic release liner facing towards the concrete pour. End laps should be staggered to avoid a build up of layers. Leave plastic release liner in position until overlap procedure is completed (see Figure 2).

Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller. Completely remove the plastic liner to expose the protective coating. Any initial tack will quickly disappear.

Refer to Grace Tech Letter 15 for information on suitable rebar chairs for Preprufe.

Vertical substrates—Mechanically fasten the membrane vertically using fasteners appropriate to the substrate with the the clear plastic release liner facing towards the concrete pour. The membrane may be installed in any convenient length. Fastening can be made through the selvedge using a small and low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps. Immediately remove the plastic release liner.

Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Roll firmly to ensure a watertight seal.

Roll ends and cut edges—Overlap all roll ends and cut edges by a minimum 3 in. (75 mm) and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary. Allow to dry and apply Preprufe Tape LT (or HC in hot climates) centered over the lap edges and roll firmly (see Figure 3). Immediately remove printed plastic release liner from the tape.

Details

Refer to Preprufe Field Application Manual, Section V Application Instructions or visit graceconstruction.com. This manual gives comprehensive guidance and standard details.

Membrane Repair

Inspect the membrane before installation of reinforcement steel, formwork and final placement of concrete. The membrane can be easily cleaned by power washing if required. Repair damage by wiping the area with a damp cloth to ensure the area is clean and free from dust, and allow to dry. Repair small punctures (0.5 in. (12 mm) or less) and slices by applying Preprufe Tape centered over the damaged area and roll firmly. Remove the release liner from the tape. Repair holes and large punctures by applying a patch of Preprufe membrane, which extends 6 in. (150 mm) beyond the damaged area. Seal all edges of the patch with Preprufe Tape, remove the release liner from the tape and roll firmly. Any areas of damaged adhesive should be covered with Preprufe Tape. Remove printed plastic release liner from tape. Where exposed selvedge has lost adhesion or laps have not been sealed, ensure the area is clean and dry and cover with fresh Preprufe Tape, rolling firmly. Alternatively, use a hot air gun or similar to activate adhesive and firmly roll lap to achieve continuity.

Pouring of Concrete

Ensure the plastic release liner is removed from all areas of Preprufe membrane and tape.

It is recommended that concrete be poured within 56 days (42 days in hot climates) of application of the membrane. Following proper ACI guidelines, concrete must be placed carefully and consolidated properly to avoid damage to the membrane. Never use a sharp object to consolidate the concrete.

Removal of Formwork

Preprufe membranes can be applied to removable formwork, such as slab perimeters, elevator and lift pits, etc. Once the concrete is poured the formwork must remain in place until the concrete has gained sufficient compressive strength to develop the surface bond. Preprufe membranes are not recommended for conventional twin-sided wall forming systems.

A minimum concrete compressive strength of 1500 psi (10 N/mm^2) is recommended prior to stripping formwork supporting Preprufe membranes. Premature stripping may result in displacement of the membrane and/or spalling of the concrete.

Refer to Grace Tech Letter 17 for information on removal of formwork for Preprufe.

Figure 1

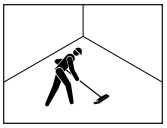


Figure 2

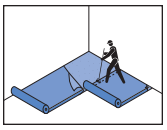
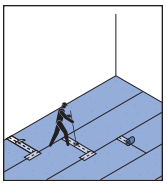
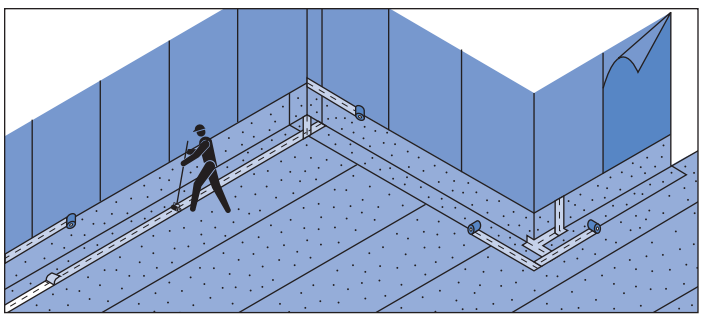


Figure 3

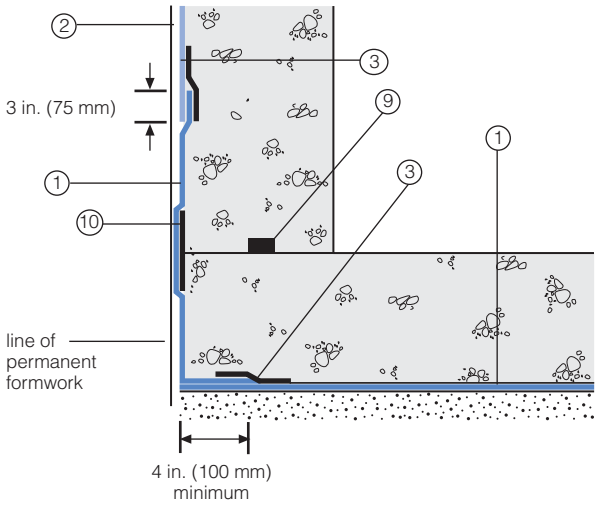




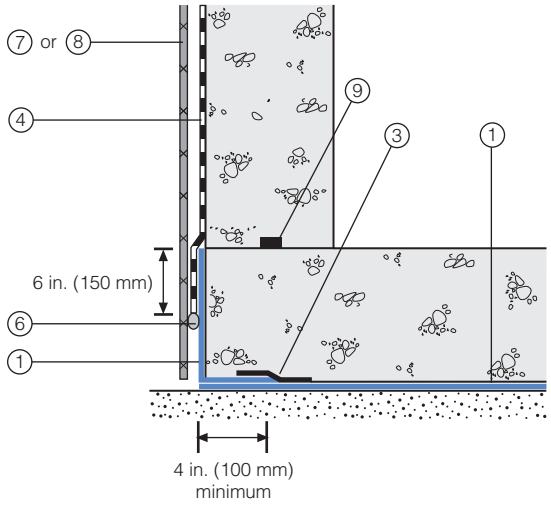
Detail Drawings

Details shown are typical illustrations and not working details. For a list of the most current details, visit us at graceconstruction.com. For technical assistance with detailing and problem solving please call toll free at 866-333-3SBM (3726).

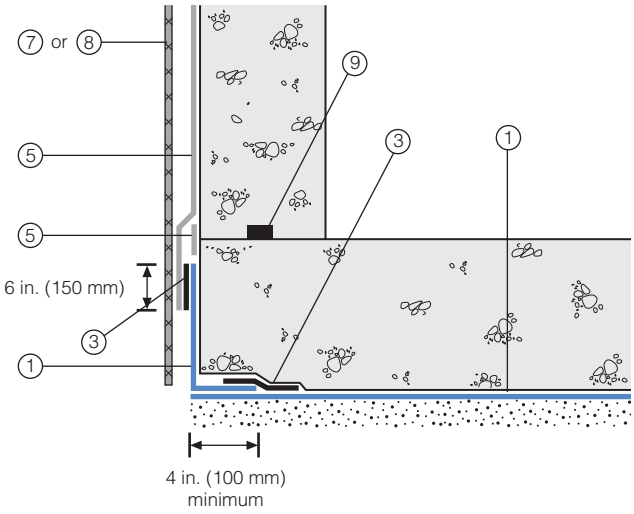
Wall base detail against permanent shutter



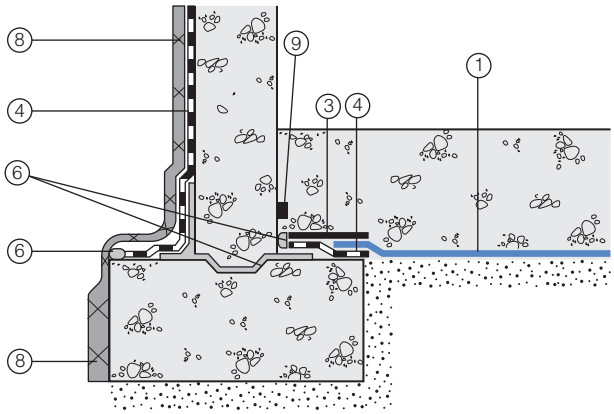
Bituthene wall base detail (Option 1)



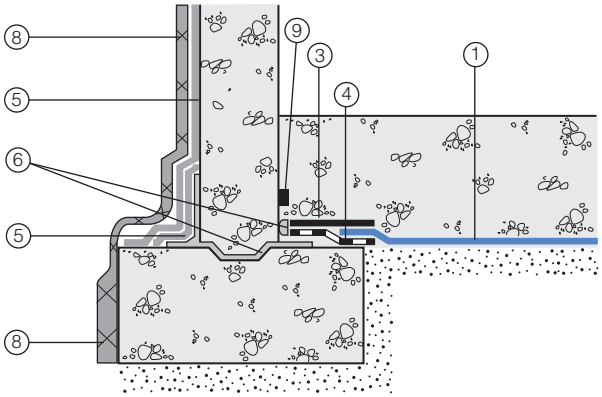
Procor wall base detail (Option 1)



Bituthene wall base detail (Option 2)



Procor wall base detail (Option 2)



1 Preprufe 300R
2 Preprufe 160R
3 Preprufe Tape
4 Bituthene
5 Procor
6 Bituthene Liquid Membrane
7 Protection
8 Hydroduct®
9 Adcor ES
10 Preprufe CJ Tape

Supply

Dimensions (Nominal)	Preprufe 300R Membrane	Preprufe 160R Membrane	Preprufe Tape (LT or HC*)
Thickness	0.046 in. (1.2 mm)	0.032 in. (0.8 mm)	
Roll size	4 ft x 98 ft (1.2 m x 30 m)	4 ft x 115 ft (1.2 m x 35 m)	4 in. x 49 ft (100 mm x 15 m)
Roll area	392 ft^2 (36 m^2)	460 ft^2 (42 m^2)	
Roll weight	108 lbs (50 kg)	92 lbs (42 kg)	4.3 lbs (2 kg)
Minimum side/end laps	3 in. (75 mm)	3 in. (75 mm)	3 in. (75 mm)
* LT denotes Low Temperature (between 25°F (-4°C) and 86°F (+30°C)) HC denotes Hot Climate (50°F (>+10°C))			
Ancillary Products			
Bituthene Liquid Membrane—1.5 US gal (5.7 liter) or 4 US gal (15.1 liter)			

Physical Properties

Property	Typical Value 300R	Typical Value 160R	Test Method
Color	white	white	
Thickness	0.046 in. (1.2 mm)	0.032 in. (0.8 mm)	ASTM D3767
Lateral Water Migration Resistance	Pass at 231 ft (71 m) of hydrostatic head pressure	Pass at 231 ft (71 m) of hydrostatic head pressure	ASTM D5385, modified[1]
Low temperature flexibility	Unaffected at -20°F (-29°C)	Unaffected at -20°F (-29°C)	ASTM D1970
Resistance to hydrostatic head	231 ft (71 m)	231 ft (71 m)	ASTM D5385, modified[2]
Elongation	500%	500%	ASTM D412, modified[3]
Tensile strength, film	4000 psi (27.6 MPa)	4000 psi (27.6 MPa)	ASTM D412
Crack cycling at -9.4°F (-23°C), 100 cycles	Unaffected, Pass	Unaffected, Pass	ASTM C836
Puncture resistance	221 lbs (990 N)	100 lbs (445 N)	ASTM E154
Peel adhesion to concrete	5 lbs/in. (880 N/m)	5 lbs/in. (880 N/m)	ASTM D903, modified[4]
Lap peel adhesion	5 lbs/in. (880 N/m)	5 lbs/in. (880 N/m)	ASTM D1876, modified[5]
Permeance to water vapor transmission	0.01 perms (0.6 ng/(Pa x s x m^2))	0.01 perms (0.6 ng/(Pa x s x m^2))	ASTM E96, method B
Water absorption	0.5%	0.5%	ASTM D570

Footnotes:

1. Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the membrane.
2. Hydrostatic head tests of Preprufe Membranes are performed by casting concrete against the membrane with a lap. Before the concrete cures, a 0.125 in. (3 mm) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to the head indicated.
3. Elongation of membrane is run at a rate of 2 in. (50 mm) per minute.
4. Concrete is cast against the protective coating surface of the membrane and allowed to properly dry (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 2 in. (50 mm) per minute at room temperature.
5. The test is conducted 15 minutes after the lap is formed (per Grace published recommendations) and run at a rate of 2 in. (50 mm) per minute.

Specification Clauses

Preprufe 300R or 160R shall be applied with its adhesive face presented to receive fresh concrete to which it will integrally bond. Only Grace Construction Products approved membranes shall be bonded to Preprufe 300R/160R. All Preprufe 300R/160R system materials shall be supplied by Grace Construction Products, and applied strictly in accordance with their instructions. Specimen performance and formatted clauses are also available.

NOTE: Use Preprufe Tape to tie-in Procor with Preprufe.

Health and Safety

Refer to relevant Material Safety data sheet. Complete rolls should be handled by a minimum of two persons.

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For technical assistance call toll free at 866-333-3SBM (3726)

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GRACE

Section 071324
Pre-Applied Sheet Membrane Waterproofing

PART 1 — GENERAL

1.01 SUMMARY

A. The Work of this Section includes, but is not limited to, pre-applied sheet membrane waterproofing that forms an integral bond to poured concrete for the following applications:

1. Vertical Applications: Membrane applied against soil retention system prior to placement of concrete foundation walls;
2. Horizontal Applications: Membrane applied on prepared subbase prior to placement of concrete slabs.

B. Related sections include, but are not limited to, the following:

1. Section 031000 - Concrete Forming
2. Section 312000 – Earth Moving
3. Section 031500 – Concrete Accessories
4. Section 031500 – Hydrophilic Waterstop
5. Section 316200 - Driven Piles
6. Section 316400 - Caissons
1. Section 032000 - Concrete Reinforcing
2. Section 033000 – Cast-In-Place Concrete

NOTE TO SPECIFIER: For vertical applications, coordinate with concrete formwork section to require one-sided wall forming system to minimize punctures to the sheet membrane waterproofing during formwork installation.

1.02 SUBMITTALS

A. Submit manufacturer's product data, installation instructions and membrane samples for approval.

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. American Society for Testing and Materials (ASTM):

C 836 Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course

D 412 Standard Test Methods for Rubber Properties in Tension

D 570 Standard Test Method for Water Absorption of Plastics

D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

D 1876 Standard Test Method for Peel Release of Adhesives (T-Peel)

D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

D 3767 Standard Practice for Rubber - Measurements of Dimensions

D 5385 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes

E 96 Standard Test Methods for Water Vapor Transmission of Materials

E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

1.04 QUALITY ASSURANCE

A. Manufacturer: Sheet membrane waterproofing system shall be manufactured and marketed by a firm with a minimum of 20 years experience in the production and sales of sheet membrane waterproofing. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past 5 years.

B. Installer: A firm which has at least 3 years experience in work of the type required by this section.

C. Materials: For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.

D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

E. Schedule Coordination: Schedule work such that membrane will not be left exposed to weather for longer than that recommended by the manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's instructions. Protect from damage from weather, excessive temperature and construction operations. Remove and dispose of damaged material in accordance with applicable regulations.

1.06 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials used. Proceed with installation only when the substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

1.07 WARRANTY

A. Sheet Membrane Waterproofing: Provide written five year material warranty issued by the membrane manufacturer upon completion of work.

PART 2 — PRODUCTS

2.01 MATERIALS

A. Pre-applied Integrally Bonded Sheet Waterproofing Membrane: Preprufe® 300R Membrane [or Preprufe 300LT Membrane for application temperatures between 25°F (-4°C) and 60°F (+16°C)] by Grace Construction Products, a 1.2mm (0.046 in) nominal thickness composite sheet membrane comprising 0.8 mm (0.030 in.) of high density polyethylene film, and layers of specially formulated synthetic adhesive layers. The membrane shall form an integral and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete. Provide membrane with the following physical properties:

NOTE TO SPECIFIER: Preprufe 300R and Preprufe 300LT can both be installed at temperatures 25°F (-4°C) and above. For temperatures 25°F (-4°C) to 55°F (13°C) Grace Technical Bulleting #16 states the use of Preprufe LT Tape is recommended at all sidelaps when using Preprufe 300R. Alternatively, contractors may elect the use of Preprufe 300LT which does not require the use of Preprufe LT Tape at sidelaps in temperature ranges 25°F (-4°C) to 55°F (13°C). For this reason, Grace suggests that both products be incorporated into the specification.

PHYSICAL PROPERTIES FOR PREPRUFE 300R (or 300LT) MEMBRANE:

Property	Test Method	Typical Value
Color		White
Thickness	ASTM D 3767 Method A	1.2 mm (0.046 in.) nominal
Lateral Water Migration Resistance	ASTM D 5385 Modified[1]	Pass at 71 m (231 ft) of hydrostatic head pressure
Low Temperature Flexibility	ASTM D 1970	Unaffected at -29°C (-20°F)
Elongation	ASTM D 412 Modified[2]	500%
Crack Cycling at -23°C (-9.4°F), 100 Cycles	ASTM C 836	Unaffected, Pass
Tensile Strength, film	ASTM D 412	27.6 MPa (4,000 lbs/in.^{2})
Peel Adhesion to Concrete	ASTM D 903 Modified[3]	880 N/m (5.0 lbs/in.)
Lap Adhesion	ASTM D 1876 Modified[4]	880 N/m (5.0 lbs/in.)
Resistance to Hydrostatic Head	ASTM D 5385 Modified[5]	71 m (231 ft)
Puncture Resistance	ASTM E 154	990 N (221 lbs)
Permeance	ASTM E 96 Method B	0.6 ng/Pa x s x m^2 (0.01 perms)
Water Absorption	ASTM D 570	0.5%

Footnotes:

1. *Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the blind side waterproofing membrane. A hydrostatic head pressure of 71 m (231 ft) of water is the limit of the apparatus.*
2. *Elongation of membrane is run at a rate of 50 mm (2 in.) per minute.*
3. *Concrete is cast against the protective coating surface of the membrane and allowed to cure (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.*
4. *The test is conducted 15 minutes after the lap is formed as per manufacturer's instructions and run at a rate of 50 mm (2 in.) per minute.*
5. *Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a head of 71 m (231 ft) of water which is the limit of the apparatus.*

B. Pre-applied Integrally Bonded Sheet Waterproofing Membrane: Preprufe® 160R Membrane [or Preprufe 160LT Membrane for application temperatures between 25°F (-4°C) and 60°F (+16°C)] by Grace Construction Products, a 1.0mm (0.032 in) nominal thickness composite sheet membrane comprising 0.4 mm (0.016 in.) of high density polyethylene film, and layers of specially formulated synthetic adhesive layers. The membrane shall form an integral and permanent bond to poured concrete to prevent water migration at the interface of the membrane and structural concrete. Provide membrane with the following physical properties:

NOTE TO SPECIFIER: Preprufe 160R and Preprufe 160LT can both be installed at temperatures 25°F (-4°C) and above. For temperatures 25°F (-4°C) to 55°F (13°C) Grace Technical Bulleting #16 states the use of Preprufe LT Tape is recommended at all sidelaps when using Preprufe 160R. Alternatively, contractors may elect the use of Preprufe 160LT which does not require the use of Preprufe LT Tape at sidelaps in temperature ranges 25°F (-4°C) to 55°F (13°C). For this reason, Grace suggests that both products be incorporated into the specification.

PHYSICAL PROPERTIES FOR PREPRUFE 160R (or 160LT) MEMBRANE:

Property	Test Method	Typical Value
Color		White
Thickness	ASTM D 3767 Method A	1.0 mm (0.032 in.) nominal
Lateral Water Migration Resistance	ASTM D5385, Modified[1]	Pass at 71 m (231 ft) of hydrostatic head pressure
Low Temperature Flexibility	ASTM D 1970	Unaffected at -29°C (-20°F)
Elongation	ASTM D 412 Modified[2]	500%
Crack Cycling at -23°C (-9.4°F), 100 Cycles	ASTM C 836	Unaffected, Pass
Tensile Strength, film	ASTM D 412	27.6 MPa (4,000 lbs/in.^{2})
Peel Adhesion to Concrete	ASTM D 903 Modified[3]	880 N/m (5.0 lbs/in.)
Lap Adhesion	ASTM D 1876 Modified[4]	880 N/m (5.0 lbs/in.)
Resistance to Hydrostatic Head	ASTM D 5385 Modified[5]	Pass at 71 m (231 ft)
Puncture Resistance	ASTM E 154	445 N (100 lbs)
Permeance	ASTM E 96 Method B	0.6 ng/Pa x s x m^2 (0.01 perms)
Water Absorption	ASTM D 570	0.5%

Footnotes:

1. *Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the blind side waterproofing membrane. A hydrostatic head pressure of 71 m (231 ft) of water is the limit of the apparatus.*
2. *Elongation of membrane is run at a rate of 50 mm (2 in.) per minute.*
3. *Concrete is cast against the protective coating surface of the membrane and allowed to cure (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.*
4. *The test is conducted 15 minutes after the lap is formed as per manufacturer's instructions and run at a rate of 50 mm (2 in.) per minute.*
5. *Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a head of 71 m (231 ft) of water which is the limit of the apparatus.*

C. Waterstop: Adcor™ ES hydrophilic non-bentonite waterstop by Grace Construction Products for non-moving concrete construction joints.

PHYSICAL PROPERTIES FOR GRACE ADCOR™ ES HYDROPHYLIC WATERSTOP:

Property	Typical Value
Color	Green
Size	1.0 in. x ½ in. x 16 ft. rolls (25.4 mm x 12.7 mm x 4.9 m)
Hydrostatic Head Resistance	70 m (231 ft)
Wet - Dry Cycling [25 Cycles @ 231 ft. (70 m)]	No Effect
Adhesion to Concrete using Adcor ES Adhesive	Excellent

D. Preformed Soil Retention Wall Tieback Cover: Preprufe Tieback Cover by Grace Construction Products as a prefabricated detail for soil retention wall tiebacks.

E. Preformed Inside and Outside Corners: Preprufe Preformed Corners by Grace Construction Products as prefabricated inside and outside corners.

F. Tape for covering cut edges, roll ends, penetrations and detailing: Preprufe Tape LT (for temperatures between 25°F (-4°C) and 86°F (+30°C)) and Preprufe Tape HC (for use in Hot Climates, minimum 50°F (10°C))

G. Miscellaneous Materials: accessories specified or acceptable to manufacturer of pre-applied waterproofing membrane.

PART 3 — EXECUTION

3.01 EXECUTION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the Contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 SUBSTRATE PREPARATION

A. It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 0.5 in. (12 mm). Grout around all penetrations such as utility conduits, etc. for stability.

1. Horizontal Surfaces - The substrate must be free of loose aggregate and sharp protrusions. Avoid curved or rounded substrates. When installing over earth or crushed stone, ensure substrate is well compacted to avoid displacement of substrate due to traffic or concrete pour. The surface does not need to be dry, but standing water must be removed.

2. Vertical Surfaces - Use concrete, plywood, insulation or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 0.5 in. (12 mm) out of alignment.

3.03 INSTALLATION, HORIZONTAL APPLICATIONS

A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

1. Place the membrane HDPE film side to the substrate with the clear plastic release liner facing towards the concrete pour. End laps should be staggered to avoid a build-up of layers.
2. Leave the plastic release liner in position until overlap procedure is completed.
3. Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap.
4. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller.
5. Completely remove the plastic liner to expose the protective coating. Any initial tack will quickly disappear.

3.04 INSTALLATION, VERTICAL APPLICATIONS

A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

1. Mechanically fasten the membrane vertically using fasteners appropriate to the substrate with the clear plastic release liner facing towards the concrete pour. The membrane may be installed in any convenient length.
2. Fastening through the selvedge using a small and low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps.
3. Immediately remove the plastic release liner.
4. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap.
5. Roll firmly to ensure a watertight seal.
6. Overlap all roll ends and cut edges by a minimum 3 in. (75 mm) and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary.
7. Allow to dry and apply Preprufe Tape LT (or HC in hot climates) centered over the lap edges and roll firmly.
8. Immediately remove printed plastic release liner from the tape.

3.05 WATERSTOP INSTALLATION

A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

1. Secure Adcor ES using masonry nails 1½ in. - 2 in. (40 mm – 50 mm) long with a washer ¾ in. (20 mm) in diameter. Hilti EM6-20-12 FP8 shot fired fixings with ¼ in. (6 mm) nuts and ¾ in. (20 mm) diameter washers may also be used. Fixings should be spaced at a maximum of 12 in. (300 mm) centers with a minimum spacing that ensures proper contact to substrate.
2. On irregular concrete faces, or on vertical surfaces, apply a ½ in. (12 mm) bead of Adcor ES Adhesive as bedding for Adcor ES.

3. Adcor ES joints should overlap a minimum of 4 in. (100 mm), ensuring full contact between jointed pieces.

3.06 PROTECTION

A. Protect membrane in accordance with manufacturer's recommendations until placement of concrete. Inspect for damage just prior to placement of concrete and make repairs in accordance with manufacturer's recommendations.

END OF SECTION

Document Code: GSWP-001B Updated: 7/2012