PROPOSED AVENUE 'Z' ELEVATION

SCALE: 1" = 16'-0"

STATE OF NEW YORK
STEVEN J. SCHNEIDER
054776
LICENSED PROFESSIONAL ENGINEER

SCALE: AS NOTED | DATE: -

Board of Standards and Appeals

2102 Avenue 'Z'
Brooklyn NY

RA / PE OF RECORD:

DESIGN CONSULTING INSPECTION INVESTIGATION

866 Johnston Drive
Watchung, NJ 07069
Tel: 908-755-0059
Email: satomicman@aol.com

SCHNEIDER ASSOCIATES
ENGINEERING AND DESIGN SERVICES

DESIGNED BY:

DSA
Design Studio Associates
Design | Zoning | Code Consultants

info@dsany.com
ph: 718.569.2112
fax: 718.360.4571

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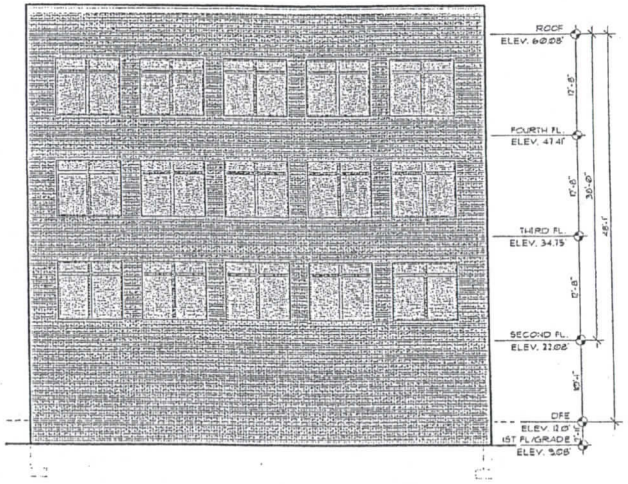

PROPOSED EAST 21ST STREET ELEVATION

SCALE: 1" = 16'-0"

STATE OF NEW YORK
STEVEN I. SCHNEIDER
054776
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY :

DSA

info@dsany.com
ph:718.569.2112
fax:718.360.4571

RA / PE OF RECORD :

866 Johnston Drive
Watchung, NJ 07069
Tel: 908-755-0059
Email: salomleman@aol.com

CONSULTING
INVESTIGATION
DESIGN
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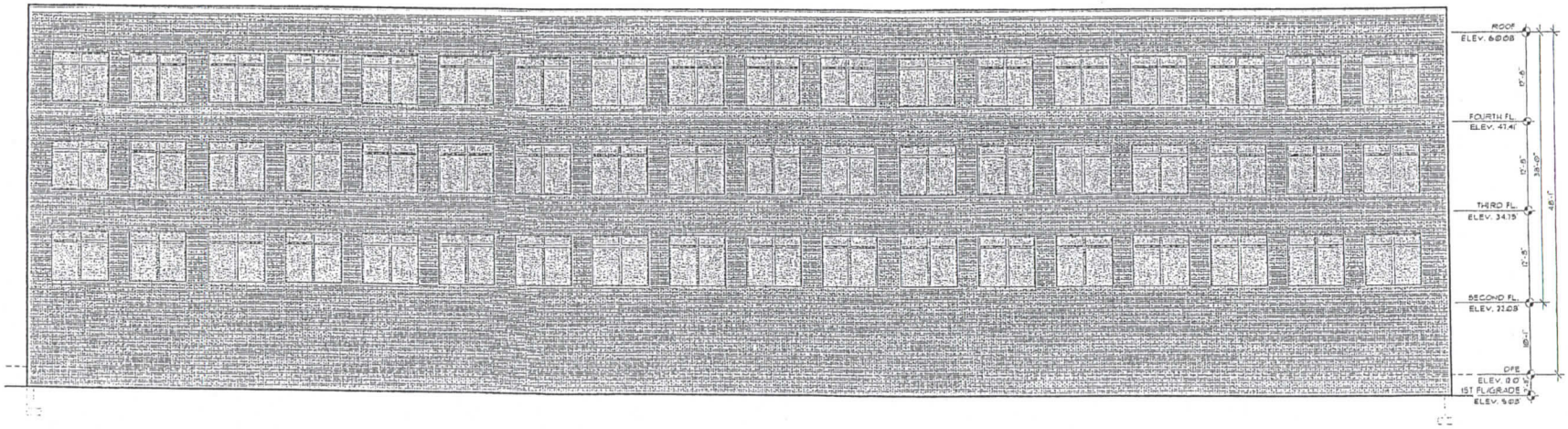

PROPOSED JEROME AVENUE ELEVATION

SCALE: 1" = 16'-0"

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STEVEN SCHNEIDER
054776
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY:

DSA
Design Studio Associates
Design | Zoning | Code Consultants

info@dsany.com
ph:718.569.2112
fax:718.360-4571

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RA / PE OF RECORD:

CONSULTING INSPECTION INVESTIGATION

866 Johnston Drive
Watchung, NJ 07069
Tel: 908-754-0059
Email: satomicnar@aol.com

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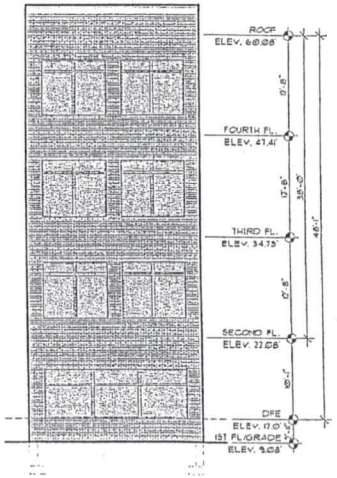

PROPOSED EAST 22ND STREET ELEVATION

SCALE: 1" = 16'-0"

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DESIGNED BY :

info@dsnny.com
ph:718.569.2112
fax:718.360-4571

RA / PE OF RECORD :

866 Johnston Drive
Watchung, NJ 07069
Tel: 908-755-0059
Email: satornlemann@aol.com

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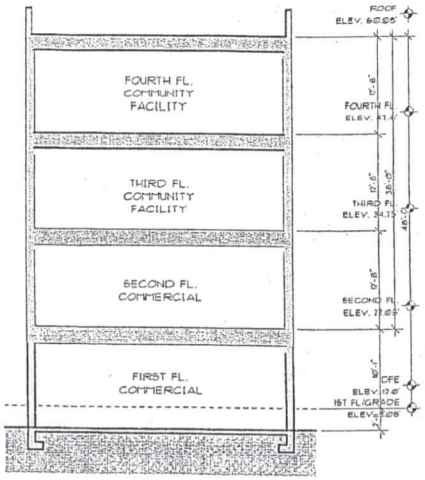

PROPOSED CROSS-SECTION

SCALE: 1" = 16'-0"

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DESIGN
CONSULTING
INVESTIGATION
INSPECTION

866 Johnston Drive
Watchung, NJ 07069
Tel: 908-755-0059
Email: satomicman@aol.com

SCHNEIDER ASSOCIATES
ENGINEERING AND DESIGN SERVICES

DESIGNED BY :

info@dsany.com
ph:718.569.2112
fax:718.360-4571

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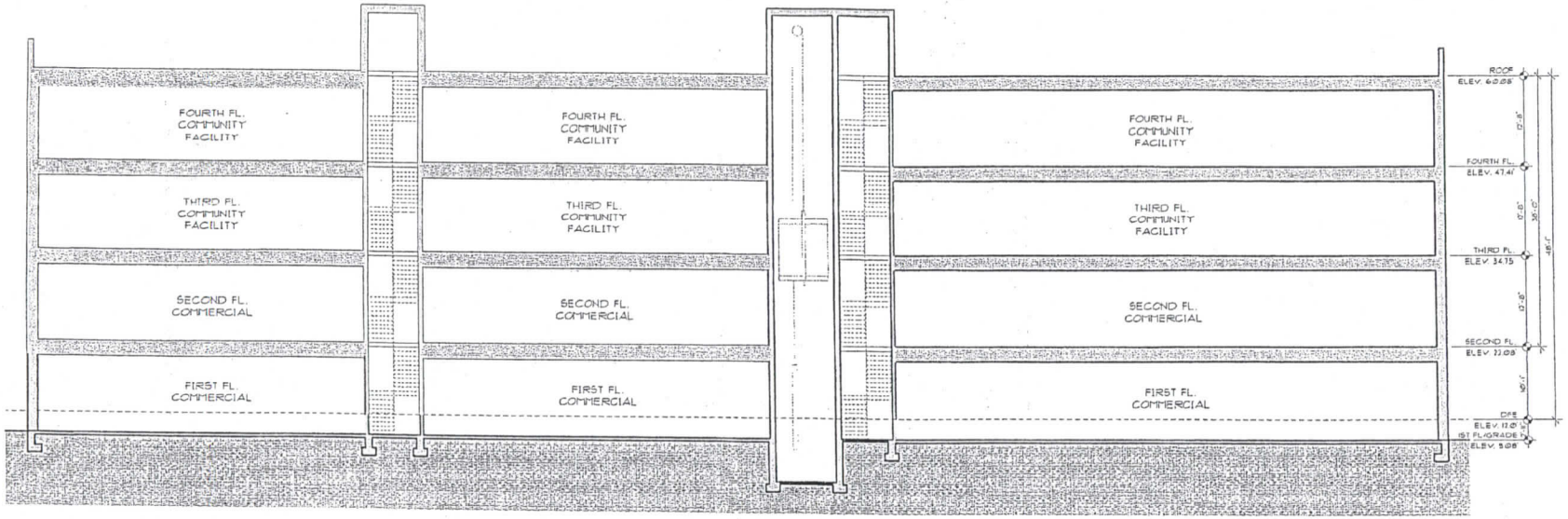

PROPOSED LONGITUDINAL SECTION

SCALE: 1" = 16'-0"

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054776

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2102 Avenue 'Z'
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CONSULTING DESIGN INSPECTION INVESTIGATION

866 Johnston Drive
Watchung, NJ 07069
Tel: 908-755-0059
Email: satomicman@aol.com

SCHNEIDER ASSOCIATES
ENGINEERING AND DESIGN SERVICES

DESIGNED BY:

DSA

info@dsany.com
ph: 718.569.2112
fax: 718.360-4571

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April 22, 2015

NYC Board of Standards and Appeals
40 Rector Street, 9th Floor
New York, New York 10006

Re: 2102-2112 Avenue Z, Brooklyn, NY
Block 7441, Lot 371

Dear BSA Board Members:
Environmental Business Consultants (EBC) has reviewed available historical documents and environmental reports on the above referenced property as part of an evaluation to ascertain its current environmental condition. The following is a summary of our findings.

Historic Use
According to the Certificates of Occupancy issued to the property, it has historically been used as a gas station since 1958. The property remained in use as a gas station until at least 1995 when the underground gasoline tanks were removed. However, according to DOB permit No. 300414763-01-EW OT issued in February 1995, 11 underground tanks were to be removed and replaced with (3) 4,000 gallon tanks. In addition permit No: 320151544-01-AL was filed in September 2011 seeking to extend the term of the BSA variance for use as a gas station. In either case, the site continued to be operated as an auto repair shop to the present time.

Underground Storage Tanks
According to the Petroleum Bulk Storage (PBS) database maintained by the NYSDEC, eleven 550 gallon tanks used for gasoline are registered to the property. Inexplicably there are two PBS facility listings for this property: Facility No. 2-146234 issued for 2112 Avenue Z, which lists Power Test Realty Co., Ltd. as the owner and Facility No. 2-600376 issued for 2102 Avenue Z which lists Triangle Service Station as the owner.

The listing for 2112 Avenue Z shows that eleven tanks with an install date of 4/1/56 were removed on 3/1/95. The listing for 2102 Avenue Z shows that eleven tanks with an unknown install dated were removed on 4/5/95. To complicate matters further, Tyree Brothers Environmental Services stated in a letter dated 6/21/01 to NYCFD in response to a violation order, that twelve 550 gallon underground gasoline tanks and one 550 gallon underground waste oil tank were removed on 4/5/95. An affidavit submitted to NYCFD on 10/22/01 by Omega-Algebra Engineering LLC stated that one 550 gallon underground heating oil tank was removed from the property on 10/16/01.

1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961
PHONE 631.504.6000
FAX 631.924.2870

This would bring the total number of USTs associated with the site to 14, however the DEC database only lists 11. This still does not explain two facility ID numbers under different addresses and the discrepancy between the tank removal dates.

NYSDEC Spill Files

There are 4 NYSDEC spill numbers associated with the property:
Spill no. 93-09371, reported on 11/02/93, closed on 4/4/06
Spill no. 94-01301, reported on 4/27/94, closed on 2/27/03
Spill no. 94-13634, reported on 1/12/95, closed on 5/9/05
Spill no. 95-01297, reported on 5/1/95, closed on 5/15/95

The 1993 spill file was the primary file related to gasoline contamination at the site. The spill, which was related to the tank system, was fairly extensive resulting in free phase gasoline extending beneath Jerome Avenue to residential properties to the south. Dissolved gasoline components were also present in the shallow groundwater which is less than 10 feet below grade. Remedial activity consisted of two pumping wells, one installed on the south side of Jerome Avenue and one installed at a later date on the north side. The pumping system appears to have been in operation in some form over a 10 year period from 1994 to at least 2004.

Although the NYSDEC closed the spill file in 2006, it is very likely that significant contamination remains both on and off the property. Note that there is no record of any soil remediation conducted at the site and no indication of any enhanced groundwater remedial activity. The use of pumping wells (pump & treat) while effective at maintaining hydraulic control and preventing further migration of contaminant plumes, is an ineffective method of remediating soil and groundwater.

It is also important to note that there is no information on contaminant concentrations in soil or any on-site data concerning soil or groundwater quality. The monitoring well network was located entirely off-site in the sidewalks north and south of Jerome Avenue. In addition, groundwater samples at the site were historically only analyzed for five gasoline parameters excluding important residual contaminants such as 1,2,4 and 1,3,5-trimethylbenzene. Contaminants which are known to persist for longer periods of time in high concentrations, and which frequently drive remedial efforts. This omission was likely due to a combination of the timing of the release and obstinacy on the part of Getty who was responsible for the spill. At the time, in the early to mid-1990's, it was common practice to only test samples for the abbreviated list.

Conclusions

As discussed it is likely that significant levels of contamination remain on and off of the property and will be encountered during redevelopment. When the contamination is exposed, a new spill file will be reported to the DEC as required by law. It is important to note that DEC's cleanup standards were revised in 2010 and it is likely that additional remediation of the site will be required to obtain spill closure. This activity would likely consist of a combination of excavation/disposal, chemical oxidant treatment and a vapor barrier / venting system beneath the new building's foundation.

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PHONE 631.504.6000
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EBC is recommending that the developer include a contingency for remedial activity as part of their redevelopment plans a construction budget for the Site. This would include the following items:

- Excavation of this area to a depth of 12 feet would result in approximately 711 cubic yards (1,066 tons) for disposal assuming the top 4 ft is clean and can be returned into the excavation.

  Cost: Soil disposal 1,066 tons x $80/ton = $ 85,280

- Due to the likely presence of volatile organic compounds, treatment will be necessary prior to discharge to the NYC sewer system.

  Cost: Treatment system costs = $ 5,000
  Permits and Testing = $6,000

- Chemical oxidant treatment. Chemical oxidants such as activated sodium persulfate would be broadcast directly into the open excavation to treat any residuals and to assist in obtaining spill closure from the NYSDEC.

  Cost: 4 pallets of oxidant = $ 10,752 lbs x $ 3.50/lb = $ 37,632

- Work Plans, Reporting and Oversight. At a minimum a Remedial Action Work Plan will be required by DEC along with a Remedial Action Completion Report. Soil screening, air monitoring/daily reporting and endpoint sampling will be required as part of the project. .

  Cost: Remedial Action Work Plan $ 3,000

  Construction Health and Safety Plan = $ 1,500
  Air Monitoring / Soil Screening $ 850/day x 10 days = $ 8,500
  Endpont sampling 10 samples x $ 250/sample = $ 2,500
  Completion Report = $ 5,000
  Scoping Meetings = $ 3,000

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- Vapor Barrier and Subslab Depressurization System. It is likely that the DEC will require a vapor barrier and SSD system to protect the new building from potential vapor intrusion. The materials used are relatively inexpensive and can be installed by the foundation contractor with no need for a specialty environmental company. The installation must be inspected by a PE or someone under the direct supervision of a PE to assure that the installation is performed correctly and according to design.

  Cost: 20 mil vapor barrier VB 20 or equivalent: $ 0.35/sf x = $ 2,800
  Sealant Tape: 10 rolls x $35/roll = $ 350
  SSDS Materials $ 2,500
  SSDS Fans, gauges, alarm: 2 x $ 500 = $ 1,000
  Installation $ 25,000
  PE Inspections 5 x $ 500 = $ 2,500

TOTAL RECOMMENDED CONTINGENCY BUDGET ALLOCATION: $ 191,562
TOTAL RECOMMENDED CONTINGENCY PROJECT DELAY ALLOCATION: 60 days

Note that this estimate is based on suspect (but unknown) conditions and our considerable experience on recent DEC managed projects. However, the degree of remediation will ultimately be dependant on the nature and extent of residual contamination and the requirements of the NYSDEC.

Please call if you have any questions or would like to discuss the project further.

Very truly yours,
Environmental Business Consultants

Charles B. Sosik, P.G., P.H.G.
Principal

1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870