ENVIRONMENTAL ASSESSMENT STATEMENT (EAS) FULL FORM
AND
SUPPLEMENTAL STUDIES TO THE EAS

St. Patrick's Home for the Aged and Infirm

Redevelopment of a Surface Parking Lot into a Parking Garage / Multipurpose Structure

66 Van Cortlandt Park South
Bronx, NY 10463

Lead Agency
New York City Department of City Planning
22 Reade Street
New York, NY 10007

Prepared for (Applicant):
Sister Patrick Michael
Sister Kevin Patricia
St. Patrick's Home for the Aged and Infirm
66 Van Cortlandt Park South
Bronx, NY 10463

Represented by:
Stuart Beckerman
Slater & Beckerman LLP
61 Broadway, Suite 1801
New York, NY 10006

Submitted by:
AECOM USA, Inc.

AECOM Project No. 60143621

July 31, 2013

City Environmental Quality Review
ENVIRONMENTAL ASSESSMENT STATEMENT FULL FORM

Please fill out, print and submit to the appropriate agency (see instructions)

PART I: GENERAL INFORMATION

PROJECT NAME St. Patrick's Home for the Aged and Infirm - Parking Garage / Multi-Purpose Structure

1. *Reference Numbers*

CEQR REFERENCE NUMBER (To Be Assigned by Lead Agency)	BSA REFERENCE NUMBER (If Applicable)
CEQR # 11DCP043X	BSA # 113-11-BZ
ULURP REFERENCE NUMBER (If Applicable))	**OTHER REFERENCE NUMBER(S) (If Applicable)** (e.g. Legislative Intro, CAPA, etc)
ULURP # 110102ZSX	

2a. *Lead Agency Information*

NAME OF LEAD AGENCY: New York City Department of City Planning

NAME OF LEAD AGENCY CONTACT PERSON:

ADDRESS: 22 Reade Street

CITY: New York | STATE: NY | ZIP: 10007

TELEPHONE: | FAX:

EMAIL ADDRESS:

2b. *Applicant Information*

NAME OF APPLICANT: Slater and Beckerman LLP (c/o St. Patrick's Home for the Aged & Infirm)

NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON: Neil Weisbard

ADDRESS: 61 Broadway, Suite 1801

CITY: New York | STATE: NY | ZIP: 10006

TELEPHONE: (212) 391-8045 | FAX: (212) 391-8047

EMAIL ADDRESS: nweisbard@slaterbeckerman.com

3. *Action Classification and Type*

SEQRA Classification

☐ UNLISTED ☑ TYPE I; SPECIFY CATEGORY *(see 6 NYCRR 617.4 and NYC Executive Order 91 of 1977, as amended):* Contiguous to listed historic resource

Action Type *(refer to Chapter 2, "Establishing the Analysis Framework" for guidance)*

☑ LOCALIZED ACTION, SITE SPECIFIC ☐ LOCALIZED ACTION, SMALL AREA ☐ GENERIC ACTION

4. *Project Description:*

The St. Patrick's Home for the Aged and Infirm is seeking to construct an accessory parking garage/multipurpose building with 104 spaces, to replace an existing 38 space surface parking lot. The proposed project also includes new program and storage space, and a rooftop terrace and recreation area (see Section 1.0 of the attached Supplemental Studies).

4a. *Project Location: Single Site* *(for a project at a single site, complete all the information below)*

ADDRESS: 66 Van Cortlandt Park South | NEIGHBORHOOD NAME: Van Cortlandt Park

TAX BLOCK AND LOT: Block 3252, Lot 76 | BOROUGH: Bronx | COMMUNITY DISTRICT: 8

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS:
South side of Van Cortlandt Park South, east of Saxon Avenue and west of Dixon Avenue.

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION IF ANY: R7-1 | ZONING SECTIONAL MAP NO: 1d

4b. *Project Location: Multiple Sites* *(Provide a description of the size of the project area in both City Blocks and Lots. If the project would apply to the entire city or to areas that are so extensive that a site-specific description is not appropriate or practicable, describe the area of the project, including bounding streets, etc.)*

N/A

5. *REQUIRED ACTIONS OR APPROVALS* *(check all that apply)*

City Planning Commission: YES ☑ NO ☐

- ☐ CITY MAP AMENDMENT
- ☐ ZONING MAP AMENDMENT
- ☐ ZONING TEXT AMENDMENT
- ☐ UNIFORM LAND USE REVIEW PROCEDURE (ULURP)
- ☐ CONCESSION
- ☐ UDAAP
- ☐ REVOCABLE CONSENT
- ☐ ZONING CERTIFICATION
- ☐ ZONING AUTHORIZATION
- ☐ HOUSING PLAN & PROJECT
- ☐ SITE SELECTION — PUBLIC FACILITY
- ☐ FRANCHISE
- ☐ DISPOSITION — REAL PROPERTY

ZONING SPECIAL PERMIT, SPECIFY TYPE:

- ☐ MODIFICATION OF
- ☐ RENEWAL OF
- ☑ OTHER

Special Permit pursuant to Section 74-90 for enlargement of an existing nursing home.

Board of Standards and Appeals: YES ☑ NO ☐

- ☐ SPECIAL PERMIT

EXPIRATION DATE MONTH DAY YEAR

- ☐ VARIANCE (USE)
- ☑ VARIANCE (BULK)

SPECIFY AFFECTED SECTION(S) OF THE ZONING RESOLUTION: Rear Yard

Department of Environmental Protection: YES ☐ NO ☑

Other City Approvals: YES ☐ NO ☑

- ☐ LEGISLATION
- ☐ FUNDING OF CONSTRUCTION; SPECIFY
- ☐ POLICY OR PLAN; SPECIFY
- ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL *(not subject to CEQR)*
- ☐ 384(b)(4) APPROVAL
- ☐ RULEMAKING
- ☐ CONSTRUCTION OF PUBLIC FACILITIES
- ☐ FUNDING OF PROGRAMS; SPECIFY
- ☐ PERMITS; SPECIFY:
- ☐ OTHER; EXPLAIN
- ☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC) *(not subject to CEQR)*

6. *State or Federal Actions/Approvals/Funding:* YES ☑ NO ☐ IF "YES," IDENTIFY

Funding by the New York State Department of Health

7. *Site Description:* *Except where otherwise indicated, provide the following information with regard to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory controls.*

GRAPHICS *The following graphics must be attached and each box must be checked off before the EAS is complete.* ***Each map must clearly depict*** *the boundaries of the directly affected area or areas and indicate a 400-foot radius drawn from the outer boundaries of the project site. Maps may not exceed 11×17 inches in size and must be folded to 8.5 ×11 inches for submission.*

☑ Site location map ☑ Zoning map ☑ Photographs of the project site taken within 6 months of EAS submission and keyed to the site location map

☑ Sanborn or other land use map ☑ Tax map ☐ For large areas or multiple sites, a GIS shape file that defines the project sites

PHYSICAL SETTING *(both developed and undeveloped areas)* See Supplemental Studies to the EAS

Total directly affected area (sq. ft.):	Type of waterbody and surface area (sq. ft.):	Roads, building and other paved surfaces (sq. ft.)
54,708 sq. ft. lot	N/A	54,400 sq. ft.

Other, describe (sq. ft.): N/A

8. *Physical Dimensions and Scale of Project* *(if the project affects multiple sites, provide the total development below facilitated by the action)*

Size of project to be developed: 74,737 gross sq. ft. (gross sq. ft.)

Does the proposed project involve changes in zoning on one or more sites? YES ☐ NO ☑

If 'Yes,' identify the total square feet owned or controlled by the applicant : Total square feet of non-applicant owned development:

Does the proposed project involve in-ground excavation or subsurface disturbance, including but not limited to foundation work, pilings, utility lines, or grading? YES ☑ NO ☐

If 'Yes,' indicate the estimated area and volume dimensions of subsurface disturbance (if known):

Area: 19,138 SF garage/structure footprint sq. ft. (width × length) Volume: TBD cubic feet (width × length × depth)

Does the proposed project increase the population of residents and/or on-site workers? YES ☐ NO ☑ Number of additional residents? N/A Number of additional workers? N/A

Provide a brief explanation of how these numbers were determined:

Does the project create new open space? YES ☐ NO ☑ If Yes: (sq. ft)

Using Table 14-1, estimate the project's projected operational solid waste generation, if applicable: N/A (pounds per week)

Using energy modeling or Table 15-1, estimate the project's projected energy use: 18,736,565,900 (annual BTUs)

9. *Analysis Year* *CEQR Technical Manual Chapter 2*

ANTICIPATED BUILD YEAR (DATE THE PROJECT WOULD BE COMPLETED AND OPERATIONAL): est. 2014

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: App. 12 months

WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? YES ☑ NO ☐ IF MULTIPLE PHASES, HOW MANY PHASES: N/A

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: Single phase construction lasting app. 12 months

10. *What is the Predominant Land Use in Vicinity of Project?* *(Check all that apply)*

☑ RESIDENTIAL ☐ MANUFACTURING ☑ COMMERCIAL ☑ PARK/FOREST/OPEN SPACE ☐ OTHER, Describe:

DESCRIPTION OF EXISTING AND PROPOSED CONDITIONS

The information requested in this table applies to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory control. The increment is the difference between the No-Action and the With-Action conditions.

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Land Use				
Residential	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, specify the following				
No. of dwelling units				
No. of low- to moderate income units				
No. of stories				
Gross Floor Area (sq.ft.)				
Describe Type of Residential Structures				
Commercial	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, specify the following:				
Describe type (retail, office, other)				
No. of bldgs				
GFA of each bldg (sq.ft.)				
Manufacturing/Industrial	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, specify the following:				
Type of use				
No. of bldgs				
GFA of each bldg (sq.ft.)				
No. of stories of each bldg				
Height of each bldg				
Open storage area (sq.ft.)				
If any unenclosed activities, specify				
Community Facility	YES ☑ NO ☐	YES ☑ NO ☐	YES ☑ NO ☐	
If yes, specify the following:				
Type	Nursing Home	Same	Same	New rooftop rec. room
No. of bldgs	2	Same	3	1 (74,737 total gross SF)
GFA of each bldg (sq.ft.)	118,547; 14,472	Same	New building 74,737 SF -->	10,186 rec; 6,297 storage
No. of stories of each bldg	8; 7	Same	New building 4 stores tall	New building 4 stories tall
Height of each bldg	80; 70 ft	Same	New Building 48 Ft tall	New Building 48 Ft tall
Vacant Land	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, describe:				
Publicly Accessible Open Space	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, specify type (mapped City, State, or Federal Parkland, wetland—mapped or otherwise known, other)				
Other Land Use	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, describe				
Parking				
Garages	YES ☑ NO ☐	YES ☑ NO ☐	YES ☑ NO ☐	
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces	38	38	104	66
Operating hours				24-hr
Attended or non-attended				TBD

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
Parking *(continued)*				
Lots	YES ☑ NO ☐	YES ☑ NO ☐	YES ☐ NO ☑	
If yes, specify the following:				
No. of public spaces				
No. of accessory spaces				
Operating hours				
Other (includes street parking)	YES ☑ NO ☐	YES ☑ NO ☐	YES ☐ NO ☑	
If yes, describe				
Storage Tanks				
Storage Tanks	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes, specify the following:				
Gas/Service stations	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
Oil storage facility	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
Other, identify:	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If yes to any of the above, describe:				
Number of tanks				
Size of tanks				
Location of tanks				
Depth of tanks				
Most recent FDNY inspection date				
Population				
Residents	YES ☑ NO ☐	YES ☑ NO ☐	YES ☑ NO ☐	
If any, specify number	264 beds	same	same	
Briefly explain how the number of residents was calculated:				
Businesses	YES ☐ NO ☑	YES ☐ NO ☑	YES ☐ NO ☑	
If any, specify the following:				
No. and type				
No. and type of workers by business				
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated:				
Zoning*				
Zoning classification	R7-1	Same	Same	N/A
Maximum amount of floor area that can be developed (in terms of bulk)				
Predominant land use and zoning classifications within a 0.25 mile radius of proposed project	R71 and R6	Same	Same	N/A

Attach any additional information as may be needed to describe the project.

If your project involves changes in regulatory controls that affect one or more sites not associated with a specific development, it is generally appropriate to include the total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.

**This section should be completed for all projects, except for such projects that would apply to the entire city or to areas that are so extensive that site-specific zoning information is not appropriate or practicable.*

PART II: TECHNICAL ANALYSES

INSTRUCTIONS: For each of the analysis categories listed in this section, assess the proposed project's impacts based on the thresholds and criteria presented in the CEQR Technical Manual. Check each box that applies.

- If the proposed project can be demonstrated not to meet or exceed the threshold, check the '**NO**' box.
- If the proposed project will meet or exceed the threshold, or if this cannot be determined, check the '**YES**' box.
- For each 'Yes' response, answer the subsequent questions for that technical area and consult the relevant chapter of the CEQR Technical Manual for guidance on providing additional analyses (and attach supporting information, if needed) to determine whether the potential for significant impacts exists. Please note that a 'Yes' answer does not mean that an EIS must be prepared—it often only means that more information is required for the lead agency to make a determination of significance.
- The lead agency, upon reviewing Part II, may require an applicant to either provide additional information to support the Full EAS Form. For example, if a question is answered 'No,' an agency may request a short explanation for this response.

	YES	NO
1. ***LAND USE, ZONING AND PUBLIC POLICY***: *CEQR Technical Manual Chapter 4*		
(a) Would the proposed project result in a change in land use or zoning that is different from surrounding land uses and/or zoning? Is there the potential to affect an applicable public policy? If "Yes", complete a preliminary assessment and attach.		✔
(b) Is the project a large, publicly sponsored project? If "Yes", complete a PlaNYC assessment and attach.		✔
(c) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries? If "Yes", complete the Consistency Assessment Form.		✔
2. ***SOCIOECONOMIC CONDITIONS***: *CEQR Technical Manual Chapter 5*		
(a) Would the proposed project:		
• Generate a net increase of 200 or more residential units?		✔
• Generate a net increase of 200,000 or more square feet of commercial space?		✔
• Directly displace more than 500 residents?		✔
• Directly displace more than 100 employees?		✔
• Affect conditions in a specific industry?		✔
(b) If 'Yes' to any of the above, attach supporting information to answer the following questions, as appropriate. If 'No' was checked for each category above, the remaining questions in this technical area do not need to be answered.		
(1) ***Direct Residential Displacement***		
• If more than 500 residents would be displaced, would these displaced residents represent more than 5% of the primary study area population?		✔
• If 'Yes,' is the average income of the directly displaced population markedly lower than the average income of the rest of the study area population?		
(2) ***Indirect Residential Displacement***		
• Would the expected average incomes of the new population exceed the average incomes of the study area populations?		✔
• If 'Yes,' would the population increase represent more than 5% of the primary study area population or otherwise potentially affect real estate market conditions?		
• If 'Yes,' would the study area have a significant number of unprotected rental units?		
Would more than 10 percent of all the housing units be renter-occupied and unprotected?		
Or, would more than 5 percent of all the housing units be renter-occupied and unprotected where no readily observable trend toward increasing rents and new market rate development exists within the study area?		

	YES	NO
(3) ***Direct Business Displacement***		
• Do any of the displaced businesses provide goods or services that otherwise could not be found within the trade area, either under existing conditions or in the future with the proposed project?		✔
• Do any of the displaced businesses provide goods or services that otherwise could not be found within the trade area, either under existing conditions or in the future with the proposed project?		✔
• Or, is any category of business to be displaced the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it?		✔
(4) ***Indirect Business Displacement***		
• Would the project potentially introduce trends that make it difficult for businesses to remain in the area?		✔
• Would the project capture the retail sales in a particular category of goods to the extent that the market for such goods would become saturated as a result, potentially resulting in vacancies and disinvestment on neighborhood commercial streets?		✔
(5) ***Affects on Industry***		
• Would the project significantly affect business conditions in any industry or any category of businesses within or outside the study area?		✔
• Would the project indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?		✔
3. ***COMMUNITY FACILITIES:*** *CEQR Technical Manual Chapter 6*		
(a) Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, hospitals and other health care facilities, day care centers, police stations, or fire stations?		✔
(b) Would the project exceed any of the thresholds outlined in Table 6-1 in Chapter 6?		✔
(c) If 'No' was checked above, the remaining questions in this technical area do not need to be answered. If 'Yes' was checked, attach supporting information to answer the following, if applicable.		
(1) ***Child Care Centers***		
• Would the project result in a collective utilization rate of the group child care/Head Start centers in the study area that is greater than 100 percent?		
• If Yes, would the project increase the collective utilization rate by 5 percent from the No-Action scenario?		
(2) ***Libraries***		
• Would the project increase the study area population by 5 percent from the No-Action levels?		
• If Yes, would the additional population impair the delivery of library services in the study area?		
(3) ***Public Schools***		
• Would the project result in a collective utilization rate of the elementary and/or intermediate schools in the study area that is equal to or greater than 105 percent?		
• If Yes, would the project increase this collective utilization rate by 5 percent from the No-Action scenario?		
(4) ***Health Care Facilities***		
• Would the project affect the operation of health care facilities in the area?		
(5) ***Fire and Police Protection***		
• Would the project affect the operation of fire or police protection in the area?		
4. ***OPEN SPACE:*** *CEQR Technical Manual Chapter 7*		
Would the project change or eliminate existing open space?		✔
Is the project located within an undeserved area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?		✔
If 'Yes,' would the proposed project generate more than 50 additional residents or 125 additional employees?		
Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	✔	
If 'Yes,' would the project generate more than 350 additional residents or 750 additional employees?		✔
If the project is not located within an underserved or well-served area, would it generate more than 200 additional residents or 500 additional employees?		
If 'Yes' to any of the above questions, attach supporting information to answer the following: • Does the project result in a decrease in the open space ratio of more then 5%?		✔
• If the project is within an underserved area, is the decrease in open space between 1% and 5%?		
• If 'Yes," are there qualitative considerations, such as the quality of open space, that need to be considered?		

	YES	NO
5. *SHADOWS:* *CEQR Technical Manual Chapter 8*		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?		✔
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?	✔	
If 'Yes' to either of the above questions, attach supporting information explaining whether the project's shadow reach any sunlight-sensitive resource at any time of the year. See Supplemental Studies to the EAS		
6. *HISTORIC AND CULTURAL RESOURCES:* *CEQR Technical Manual Chapter 9*		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for, or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; is listed or eligible for listing on the New York State or National Register of Historic Places; or is within a designated or eligible New York City, New York State, or National Register Historic District? See Supplemental Studies to the EAS If "Yes," list the resources and attach supporting information on whether the proposed project would affect any of these resources.	✔	
7. *URBAN DESIGN:* *CEQR Technical Manual Chapter 10*		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?	✔	
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources that is not currently allowed by existing zoning?		✔
(c) If "Yes" to either of the above, please provide the information requested in Chapter 10.		
8. *NATURAL RESOURCES:* *CEQR Technical Manual Chapter 11*		
(a) Is any part of the directly affected area within the Jamaica Bay Watershed? If "Yes", complete the Jamaica Bay Watershed Form.		✔
(b) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11? If "Yes," list the resources: Attach supporting information on whether the proposed project would affect any of these resources.		✔
9. *HAZARDOUS MATERIALS:* *CEQR Technical Manual Chapter 12*		
(a) Would the proposed project allow commercial or residential use in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?		✔
(b) Does the proposed project site have existing institutional controls (e.g. (E) designations or a Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?		✔
(c) Does the project require soil disturbance in a manufacturing zone or any development on or near a manufacturing zone or existing/historic facilities listed in Appendix 1 (including nonconforming uses)? See Supplemental Studies to the EAS		✔
(d) Does the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?		✔
(e) Does the project result in development where underground and/or aboveground storage tanks (e.g. gas stations) are or were on or near the site?		✔
(f) Does the project result in renovation of interior existing space on a site with potential compromised air quality, vapor intrusion from on-site or off-site sources, asbestos, PCBs or lead-based paint?		✔
(g) Does the project result in development on or near a government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, municipal incinerators, coal gasification or gas storage sites, or railroad tracks and rights-of-way?		✔
(h) Has a Phase I Environmental Site Assessment been performed for the site? If 'Yes," were RECs identified? Briefly identify: Phase I ESA performed in Feb 2010; no RECs were identified	✔	
(i) Based on a Phase I Assessment, is a Phase II Assessment needed?		✔
10. *INFRASTRUCTURE:* *CEQR Technical Manual Chapter 13*		
(a) Would the project result in water demand of more than one million gallons per day?		✔
(b) Is the proposed project located in a combined sewer area and result in at least 1,000 residential units or 250,000 SF or more of commercial space in Manhattan or at least 400 residential units or 150,000 SF or more of commercial space in the Bronx, Brooklyn, Staten Island or Queens?		✔
(c) Is the proposed project located in a separately sewered area and result in the same or greater development than that listed in Table 13-1 in Chapter 13?		✔
(d) Does the proposed project involve development on a site five acres or larger where the amount of impervious surface would increase?		✔
(e) Would the proposed project involve development on a site one acre or larger where the amount of impervious surface would increase and is located within the Jamaica Bay Watershed or in certain specific drainage areas including: Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek?		✔
(f) Would the proposed project be located in an area that is partially sewered or currently unsewered?		✔
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a WWTP and/or generate contaminated stormwater in a separate storm sewer system?		✔
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?		✔
(i) If "Yes" to any of the above, conduct the appopriate preliminary analyses and attach supporting documentation.		
11. *SOLID WASTE AND SANITATION SERVICES:* *CEQR Technical Manual Chapter 14*		
(a) Would the proposed project have the potential to generate 1000,000 pounds (50 tons) or more of solid waste per week?		✔
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?		✔

	YES	NO
12. *ENERGY:* *CEQR Technical Manual Chapter 15*		
Would the proposed project affect the transmission or generation of energy?		✔
13. *TRANSPORTATION:* *CEQR Technical Manual Chapter 16*		
Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?		✔
(a) If "Yes," conduct the screening analyses, attach appropriate back up data as needed for each stage, and answer the following questions:		
(1) Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour? If "Yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection? ***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peakhour. See Subsection 313 in Chapter 16 for more information.*		
(2) Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour? If "Yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway trips per station or line?		
(3) Would the proposed project result in more than 200 pedestrian trips per project peak hour? If "Yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?		
14. *AIR QUALITY:* *CEQR Technical Manual Chapter 17*		
Mobile Sources: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	✔	
Stationary Sources: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17? If 'Yes,' would the proposed project exceed the thresholds in the Figure 17-3, Stationary Source Screen Graph? (attach graph as needed)	✔	
Does the proposed project involve multiple buildings on the project site?		✔
Does the proposed project require Federal approvals, support, licensing, or permits subject to conformity requirements?		✔
Does the proposed project site have existing institutional controls (*e.g.* E) designations or a Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?		✔
If "Yes," conduct the appropriate analyses and attach any supporting documentation.		
15. *GREENHOUSE GAS EMISSIONS:* *CEQR Technical Manual Chapter 18*		
Is the proposed project a city capital project, a power plant, or would fundamentally change the City's solid waste management system?		✔
If "Yes," would the proposed project require a GHG emissions assessment based on the guidance in Chapter 18?		
If "Yes," attach supporting documentation to answer the following; Would the project be consistent with the City's GHG reduction goal?		
16. *NOISE:* *CEQR Technical Manual Chapter 19*		
Would the proposed project generate or reroute vehicular traffic?	✔	
Would the proposed project introduce new or additional receptors (see Section 124 in Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of site to that rail line?		✔
Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?		✔
Does the proposed project site have existing institutional controls (*e.g.* E-designations or a Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?		✔
If "Yes," conduct the appropriate analyses and attach any supporting documentation.		
17. *PUBLIC HEALTH:* *CEQR Technical Manual Chapter 20* Would the proposed project warrant a public health assessment based upon the guidance in Chapter 20?		✔
18. *NEIGHBORHOOD CHARACTER:* *CEQR Technical Manual Chapter 21* Based upon the analyses conducted for the following technical areas, check Yes if any of the following technical areas required a detailed analysis: Land Use, Zoning, and Public Policy, Socioeconomic Conditions, Open Space, Historic and Cultural Resources, Urban Design and Visual Resources, Shadows, Transportation, Noise.		✔
If "Yes," explain here why or why not an assessment of neighborhood character is warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary.		

		YES	NO
19.	***CONSTRUCTION IMPACTS:*** *CEQR Technical Manual Chapter 22* Would the project's construction activities involve (check all that apply):		
	• Construction activities lasting longer than two years;		✔
	• Construction activities within a Central Business District or along an arterial or major thoroughfare;		✔
	• Require closing, narrowing, or otherwise impeding traffic, transit or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc);		✔
	• Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out;		✔
	• The operation of several pieces of diesel equipment in a single location at peak construction;		✔
	• Closure of community facilities or disruption in its service;		✔
	• Activities within 400 feet of a historic or cultural resource; or	✔	
	• Disturbance of a site containing natural resources.		✔

If any boxes are checked, explain why or why not a preliminary construction assessment is warranted based on the guidance of in Chapter 22, "Construction." It should be noted that the nature and extent of any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination.

The St. Patrick's Home for the Aged and Infirm facility building is located adjacent to a designated S/NR historic resource, the Old Croton Aqueduct (S/NR #90NR02435). It is located directly east of the building under Dickinson Avenue. However, the existing surface parking lot, to be redeveloped with the proposed parking garage, is located west of the facility building, adjacent to Saxon Avenue, approximately 100 feet west from the Old Croton Aqueduct. Furthermore, the NYC LPC has provided correspondence signed January 14, 2010 stating that the St. Patrick's project site has no architectural or archaeological significance (see Appendix C of the Supplemental Studies to the EAS).

20. *APPLICANT'S CERTIFICATION*

I swear or affirm under oath and subject to the penalties for perjury that the information provided in this Environmental Assessment Statement (EAS) is true and accurate to the best of my knowledge and belief, based upon my personal knowledge and familiarity with the information described herein and after examination of pertinent books and records and/or after inquiry of persons who have personal knowledge of such information or who have examined pertinent books and records.

Still under oath, I further swear or affirm that I make this statement in my capacity as the

St. Patrick's Home for the Aged and Infirm — APPLICANT/SPONSOR

of

NAME THE ENTITY OR OWNER

the entity which seeks the permits, approvals, funding or other governmental action described in this EAS.

Check if prepared by: ☑ APPLICANT/REPRESENTATIVE or ☐ LEAD AGENCY REPRESENTATIVE (FOR CITY-SPONSORED PROJECTS)

Daniel Segal, Senior Environmental Planner, AECOM

APPLICANT/SPONSOR NAME: Daniel Segal

LEAD AGENCY REPRESENTATIVE NAME:

SIGNATURE: Daniel Segal

DATE: 7/31/13

PLEASE NOTE THAT APPLICANTS MAY BE REQUIRED TO SUBSTANTIATE RESPONSES IN THIS FORM AT THE DISCRETION OF THE LEAD AGENCY SO THAT IT MAY SUPPORT ITS DETERMINATION OF SIGNIFICANCE.

PART III: DETERMINATION OF SIGNIFICANCE (To Be Completed By Lead Agency)

INSTRUCTIONS:
In completing Part III, the lead agency should consult 6 NYCRR 617.7 and 43 RCNY §6-06 (Executive Order 91 of 1977, as amended) which contain the State and City criteria for determining significance.

1. For each of the impact categories listed below, consider whether the project may have a significant effect on the environment. For each of the impact categories listed below, consider whether the project may have a significant adverse effect on the environment, taking into account its (a) location; (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude.

IMPACT CATEGORY	Potential Significant Adverse Impact: YES	NO
Land Use, Zoning, and Public Policy		X
Socioeconomic Conditions		X
Community Facilities and Services		X
Open Space		X
Shadows		X
Historic and Cultural Resources		X
Urban Design/Visual Resources		X
Natural Resources		X
Hazardous Materials		X
Water and Sewer Infrastructure		X
Solid Waste and Sanitation Services		X
Energy		X
Transportation		X
Air Quality		X
Greenhouse Gas Emissions		X
Noise		X
Public Health		X
Neighborhood Character		X
Construction Impacts		X

2. Are there any aspects of the project relevant to the determination whether the project may have a significant impact on the environment, such as combined or cumulative impacts, that were not fully covered by other responses and supporting materials? If there are such impacts, explain them and state where, as a result of them, the project may have a significant impact on the environment.

3. ***LEAD AGENCY'S CERTIFICATION***

DEPUTY DIRECTOR, ENVIRONMENTAL REVIEW and ASSESSMENT DIVISION	NYC DEPARTMENT of CITY PLANNING
TITLE	LEAD AGENCY
CELESTE EVANS	Celeste Evans
NAME	SIGNATURE

☐ **Check this box if the lead agency has identified one or more potentially significant adverse impacts that MAY occur.**

☐ Issue ***Conditional Negative Declaration***

A ***Conditional Negative Declaration*** **(CND)** may be appropriate if there is a private applicant for an Unlisted action AND when conditions imposed by the lead agency will modify the proposed project so that no significant adverse environmental impacts would result. The CND is prepared as a separate document and is subject to the requirements in 6 NYCRR Part 617.

☐ Issue ***Positive Declaration*** and proceed to a draft scope of work for the Environmental Impact Statement.

If the lead agency has determined that the project may have a significant impact on the environment, and if a conditional negative declaration is not appropriate, then the lead agency issues a ***Positive Declaration***.

NEGATIVE DECLARATION (To Be Completed By Lead Agency)

Statement of No Significant Effect

Pursuant to Executive Order 91 of 1977, as amended, and the Rules of Procedure for City Environmental Quality Review, found at Title 62, Chapter 5 of the Rules of the City of New York and 6NYCRR, Part 617, State Environmental Quality Review, the [ ] assumed the role of lead agency for the environmental review of the proposed project. Based on a review of information about the project contained in this environmental assessment statement and any attachments hereto, which are incorporated by reference herein, the [ ] has determined that the proposed project would not have a significant adverse impact on the environment.

Reasons Supporting this Determination

The above determination is based on information contained in this EAS that finds, because the proposed project that:

No other signficant effects upon the environment that would require the preparation of a Draft Environmental Impact Statement are foreseeable. This Negative Declaration has been prepared in accordance with Article 8 of the New York State Environmental Conservation Law (SEQRA).

TITLE	LEAD AGENCY
NAME	SIGNATURE

St. Patrick's Home for the Aged and Infirm

Redevelopment of a Surface Parking Lot into a Parking Garage/Multipurpose Structure

Supplemental Studies to the Environmental Assessment Statement (Full Form)

Site:
66 Van Cortlandt Park South
Bronx, NY 10463

Leady Agency:
New York City Department of City Planning
22 Reade Street
New York, NY 10007

Prepared for (Applicant):
Sister Patrick Michael
Sister Kevin Patricia
St. Patrick's Home for the Aged and Infirm
66 Van Cortlandt Park South
Bronx, NY 10463

Represented by:
Neil Weisbard
Slater & Beckerman LLP
61 Broadway, Suite 1801
New York, NY 10006

Prepared by:
AECOM
One World Financial Center
200 Liberty Street, 25th Floor
New York, NY 10281

July 31, 2013

AECOM Project No. 60143621

Table of Contents

Figures

Tables

Appendices

1.0 PROJECT OVERVIEW

1.1 Project Description

St. Patrick's Home for the Aged and Infirm (the "Applicant" or "St. Patrick's") requests approval of an application for a special permit, pursuant to Section 74-90 of the Zoning Resolution of the City of New York ("ZR" and "Zoning Resolution"), to allow the enlargement of an existing Use Group 3 nursing home located at 66 Van Cortlandt Park South, Block 3252, Lot 76, within Community District 8 in the Borough of the Bronx (the "Project Site" or "Site"). The enlargement will consist of a four-level, approximately 74,737 gross square foot structure, which will include 104 parking spaces on three levels, new program and storage spaces, and a rooftop terrace and recreation room ("Proposed Facility").

The Project Site is an irregularly shaped corner lot on the south side of Van Cortlandt Park South and the east side of Saxon Avenue. The Project Site has a total lot area of 54,708 square feet and is located in an R7-1 zoning district, within Community District 8. The Project Site contains approximately 289 feet of frontage along Van Cortlandt Park South and 155 feet of frontage along Saxon Avenue.[1] The Project Site is improved with two buildings: an eight-story Use Group 3 nursing home containing approximately 118,547 square feet of floor area ("Nursing Home"), and a seven story Use Group 3 convent containing approximately 14,472 square feet of floor area ("Convent"). The Nursing Home contains 264 beds, areas for physical and occupational therapy, a wellness center, recreation area, a chapel, gift shop, and a resident coffee shop, as well as a surface accessory parking lot for 38 cars.

Since 1931, St. Patrick's, an affiliate of the Carmelite Sisters for the Aged and Infirm, has provided long term nursing care and short term rehabilitative care to the elderly of the Bronx. St. Patrick's creates a homelike environment, providing a wide range of services, including skilled nursing, diagnostic exams, and medical and quality management services. St. Patrick's employs approximately 375 full and part-time individuals and delivers services to an average of 260 residents daily.

The Proposed Facility will be constructed on the west side of the Project Site in the area currently occupied by the existing 38-space accessory parking lot and will have direct connections to the Nursing Home. The Proposed Facility will include 104 self-parking spaces on three-levels, as well as space for storage. The rooftop level of the Proposed Facility will contain a recreation room and an open terrace.

Level One of the Proposed Facility will be at grade with Saxon Avenue and will align with the Nursing Home's basement level. Level One will contain a 14,767 square foot parking area for 32 cars and 4,371 square feet of storage for St. Patrick's records and housekeeping. The storage space will be a double height space. Currently, the 12 foot wide curb cut to the existing parking lot is located on the southern lot line of the Project Site along Saxon Avenue. A new 22 foot wide curb cut to the Proposed Facility will also be located on Saxon Avenue, but will be re-located approximately 15 feet north of the southern lot line.

Level Two of the Proposed Facility will contain a 19,138 square foot parking area for 35 cars. There will be no access to the existing Nursing Home on Level Two. Level Three will align with the ground floor lobby level of the Nursing Home and contain a 12,841 square foot parking area for 37 cars and 6,297 square feet of storage space. The Terrace Level will align with the second floor of the Nursing Home, and will contain a 10,186 square foot recreation room and a 7,137 square foot open space terrace.

It is expected that construction of the Proposed Facility would last approximately 12 months, with construction completed and the Facility utilized/occupied in the year 2014.

[1] Dickinson Avenue, located to the east of the Project Site, is not a mapped street, and is listed on the NYC Department of Finance Tax Map as Block 3252, Tax Lot 40.

1.2 Project Purpose and Need

St. Patrick's existing buildings do not contain sufficient storage and recreation space, and its 38-space space accessory surface parking lot is unable to accommodate the parking needs of the Nursing Home and Convent. The Nursing Home is a 264 bed facility, which is approximately 96 percent occupied. A majority of the family and visitors of residents either drive to the Nursing Home, or do not live near public transportation. It is essential that there is adequate parking for the family and visitors of St. Patrick's residents. Therefore, in order to satisfy St. Patrick's need of delivering quality elderly resident services, improving the effectiveness of its employee recruitment and retention programs, as well as improving St. Patrick's competiveness as a destination of choice for individuals seeking skilled and rehabilitative care, St. Patrick's seeks approval to construct the Proposed Facility. The set of proposed site plans are provided in **Appendix A**.

The existing 38 space parking lot and the extremely limited supply of off-street parking in the Project Site surrounding neighborhood is insufficient to handle St. Patrick's current demand for parking. Furthermore, St. Patrick's is not located near a subway line and is only serviced by a limited number of bus lines. St. Patrick's employs approximately 375 full- and part-time individuals serving its 260 residents, many of whom receive visitors daily. Furthermore, St. Patrick's active outreach programs draw prospective residents, vendors and manufacturers' representatives to the Project Site. One of the defining factors in the recruitment and retention of high quality nursing home staff is the availability of on-site parking or, in the alternative, safe, secure and easily accessible off-street parking. Over the years St. Patrick's has seen the lack of adequate parking on the Project Site negatively impact the success of its employee recruitment and retention programs.

The proposed recreation room and open-air terrace will improve the quality of life for St. Patrick's residents and outreach programs. The size and configuration of the Nursing Home has constrained St. Patrick's ability to optimize the range of care it can offer to its evolving resident population. Due to the volume of wheelchairs and other ambulation aids required by the St. Patrick's typical resident population, there is a lack of adequate space in St. Patrick's existing building to accommodate a facility-wide event or planned activity. As a consequence, programs or events specifically designed to promote interaction and socialization within and among large resident groups must be limited, and in some cases, simply set aside. The Proposed Facility will satisfy St. Patrick's need of improving its Activities Department by providing a variety of stimulating activities available to each and every resident on a personal, family or group basis.

The Proposed Facility will enable St. Patrick's to relocate existing interior spaces, improving resident programs. Construction of the Proposed Facility, including the rooftop space and recreation room, will permit St. Patrick's to reallocate program space within the Buildings. The Physical Therapy Department and the Occupational Therapy Department will be redesigned resulting in the delivery of improved services to the residents of the nursing home. Presently, the Physical Therapy Department shares space with the Occupational Therapy Department. The existing space is crowded and has limited maneuverability as well as storage areas for wheelchairs and other ambulation equipment. The redesign and relocation of group activities to the new proposed rooftop terrace and recreation room will free up space for physical therapy activities and make the space accessible to residents utilizing wheelchairs.

The existing Nursing Home contains insufficient storage space. As St. Patrick's has evolved over the years, it has had to cope with the general lack of adequate on-site storage space by having to lease appropriate off-site space for record storage and the storage of various items of furniture and other seasonal items. Under these conditions, whenever a set of stored items has to be retrieved, and ultimately returned, St. Patrick's must employee additional labor, incur fees and address operational coordination. Furthermore, St. Patrick's must bypass opportunities to purchase operating supplies and materials in lower-costing bulk quantities, due to the general lack of storage space. The Proposed Facility will address this problem, by providing a secure storage space on two levels, sufficient in size to allow St. Patrick's to permanently return all items presently stored off-site, and permit it to make cost-saving bulk purchases in the future.

St. Patrick's existing facilities are located entirely on the Project Site. In order for St. Patrick's to satisfy its need of delivering quality resident services, improving the effectiveness of its employee recruitment and retention programs, as well as improving St. Patrick's Home's competiveness as a destination of choice for individuals seeking skilled and rehabilitative care, the Proposed Facility must also be located on the Project Site.

1.3 Project Location

The Project Site consists of a 54,708 square foot lot (Block 3252, Lot 76) that is part of the 118,547 gross square foot St. Patrick's Home for the Aged and Infirm Facility, which includes the adjacent seven-story, 14,472 gross square foot convent, located at 66 Van Cortlandt Park South, directly south of Van Cortlandt Park, east of Saxon Avenue and west of Dickinson Avenue, in the Borough of Bronx (see **Figures 1-1** and **1-2**; **Figures 1-3** and **1-4** provide a map key and photographs of the subject site and the surrounding area). The Project Site is located within Bronx Community District (CD) #8. The footprint of the Proposed Facility over the existing surface parking lot is approximately 19,138 square feet.

1.4 Future No-Action Condtion

Under the Future No-Action Condition (the future without the proposed action), the Project Site would not be altered by the 2014 build year. The existing surface parking lot would remain in place and operational.

1.5 Future With-Action Condition

Under the Future With-Action Condition, the existing surface parking lot would be redeveloped with the proposed parking garage and multi-purpose building, as previously discussed above in sections 1.1 and 1.2.

1.6 Required Public Approvals

The Proposed Facility is subject to the regulations under City Environmental Quality Review (CEQR). Under the State Environmental Quality Review Act (SEQRA) and its implementing regulations set forth in Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 617, State and local government agencies must complete a review of the possible environmental impacts before undertaking, funding or approving any discretionary actions. Further, local governments are permitted to promulgate their own environmental rules, provided the rules are no less protective of the environment than the State regulations. The City of New York has established CEQR as the process through which agencies of New York City review discretionary actions for the purpose of identifying the potential effects on the environment.

Under CEQR, city agencies must assess disclose and mitigate the environmental consequences of any discretionary action that the agency funds, undertakes, or approves. Actions determined not to have a significant impact on the environment, or Type II actions as promulgated by 6 NYCRR Part 617.5, are not subject to environmental review. Actions that are subject to environmental review are Type I actions and Unlisted actions. Type I actions are those actions that are listed in 6 NYCRR Part 617.4 of the State Environmental Quality Review and are presumed to have a significant effect on the environment. Unlisted actions are all other actions not listed as Type I or Type II. The proposed action is a Type I action, due to the adjacent historic resource (the Old Croton Aqueduct) to the subject site (see section **2.6** of this report).

Pursuant to ZR §74-90, an enlargement to a Use Group 3 nursing home within the boundaries of Community District 8 in the Bronx is permitted only by the grant of a City Planning Commission Special Permit.

In addition, the Applicant has received a variance, pursuant to Section 72-21 of the Zoning Resolution of the City of New York to allow the enlargement, which does not comply with the rear yard equivalent requirements of Section §24-382 of the Zoning Resolution. The variance was granted by the Board of Standards and Appeals (BSA) to permit the rear yard variance. The variance was granted by BSA on January 15, 2013 (BSA # 113-11-BZ). The adopted BSA resolution does not alter the project development in any substantial way.

This EAS and Supplement Studies to the EAS has been prepared to assist and guide the decision makers in reaching their conclusions and to ensure that they have a full understanding of the environmental consequences of the Proposed Facility. The EAS is intended to permit the analysis of environmental factors and to clarify social and environmental issues in the early planning and decision-making stage of major projects. This EAS provides a way to systematically consider environmental effects along with other aspects of project planning and design.

In 1987, the New York City Department of Buildings (“DOB”) issued new building permit, NB No. 55-87 approving the construction of the 264-bed Nursing Home replacing an existing 225-bed facility. The DOB permit was issued in 1987 contrary to ZR §74-90, which required a City Planning Commission special permit for the construction of nursing homes in Community District No. 8 in the Bronx. The Applicant has submitted a special permit application to legalize the existing Nursing Home. This follow up action is considered a Type II (CEQR No. 14DCP011X) for the purposes of this environmental review.

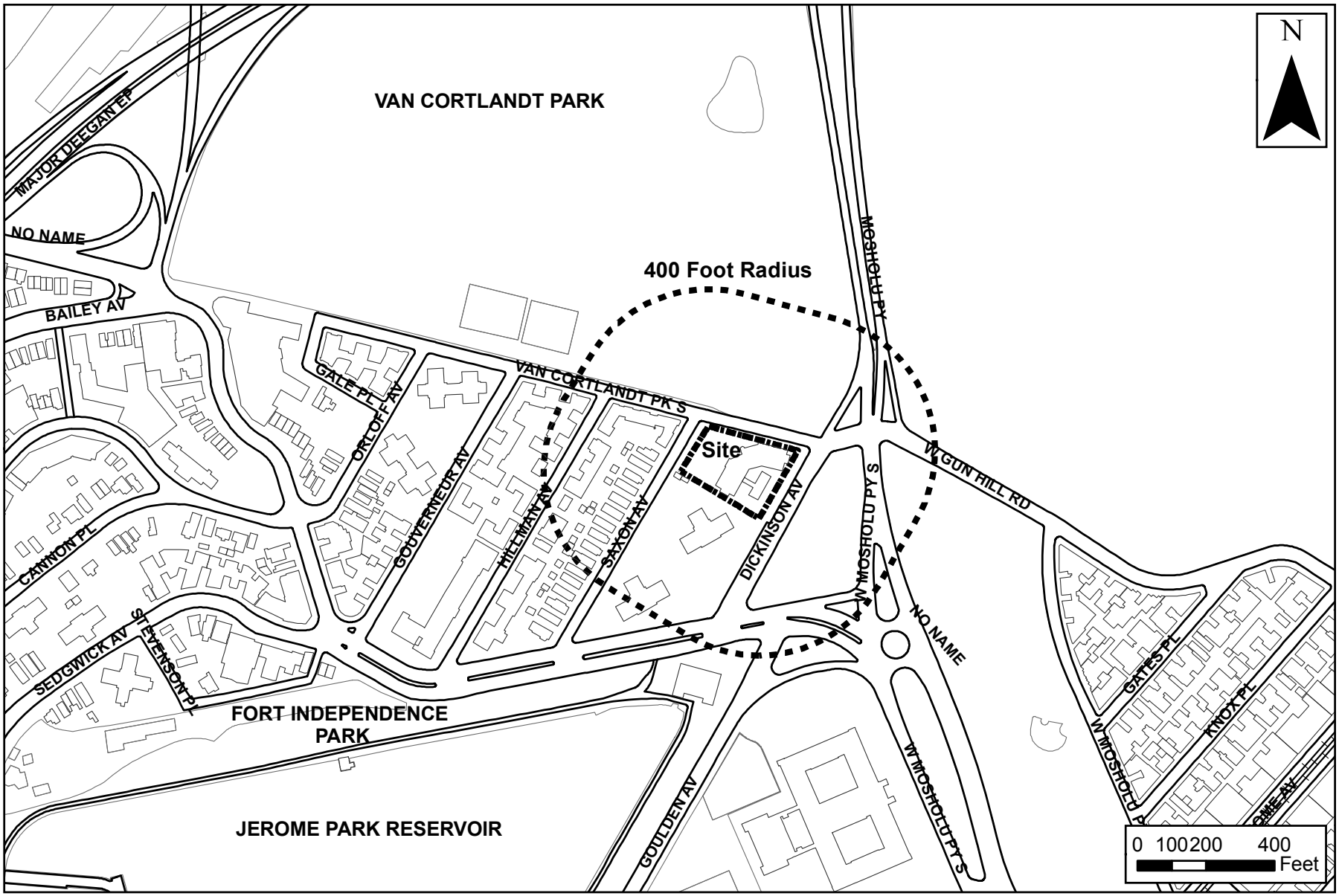


Figure 1-1
Project Site Location
St. Patrick's Home for the Aged and Infirm
Environmental Assessment Statement
Prepared by AECOM

Source: New York City Department of Finance
Note: Blue boxes indicate digitial tax map inserts.

Figure 1-2
Tax Map
St. Patrick's Home for the Aged and Infirm
Environmental Assessment Statement
Prepared by AECOM

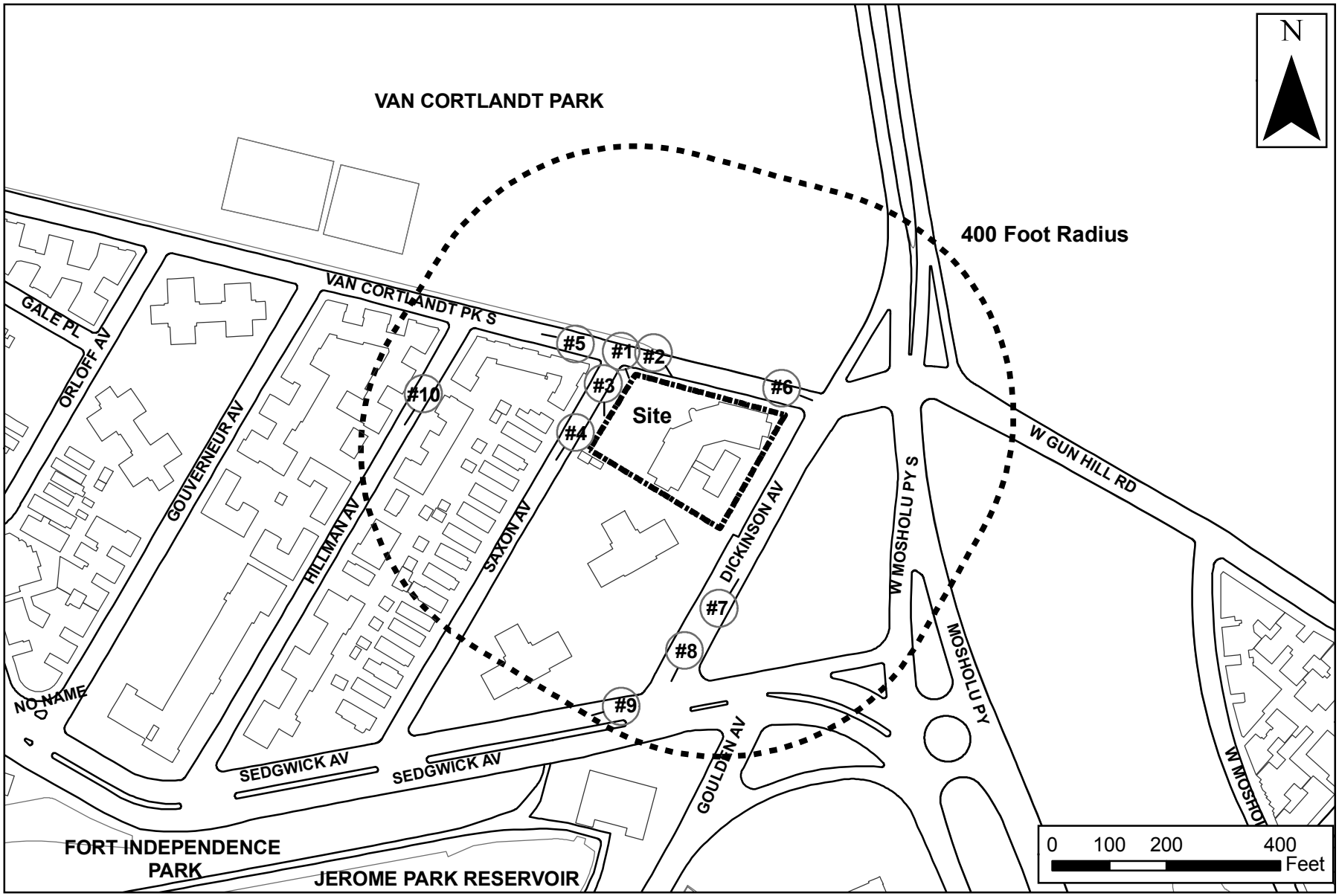


Figure 1-3
Photo Map Key
St. Patrick's Home for the Aged and Infirm
Environmental Assessment Statement
Prepared by AECOM

Figure 1-4 Photographs of the Site and Surrounding Area

Photograph 1

View of the existing surface parking lot to be redeveloped with the Proposed Facility.

Photograph 2

View of the existing surface parking lot, located adjacent to the St. Patrick's Home for the Aged and Infirm Nursing Home.

Photograph 3

View of the 20-story residential towers located south of Project Site for the Proposed Facility.

Photograph 4

View looking south along Saxon Avenue from Van Cortlandt Park South.

Photograph 5

View looking west along Van Cortlandt Park South from Saxon Avenue.

Photograph 6

View of the Mosholu Parkway and open space areas east of St. Patrick's Home for the Aged and Infirm Nursing Home.

Photograph 7

View looking north along Dickinson Avenue towards Van Cortlandt Park South and the Mosholu Parkway.

Photograph 8

View of the Jerome Park Reservoir, looking south along Dickinson Avenue towards Sedgwick Avenue.

Photograph 9

View of looking east along Sedgwick Avenue past the intersection with Saxon Avenue, with the Jerome Park Reservoir and Fort Independence Park located south of Sedgwick Avenue.

Photograph 10

View looking south along Hillman Avenue towards Sedgwick Avenue, with the Ampark Neighborhood School (X344) located on the east side of Hillman Avenue.

2.0 ENVIRONMENTAL REVIEW

The following technical sections are provided as supplemental assessments to the most recent EAS Full Form Part II: Technical Analyses of the EAS forms a series of technical thresholds for each analysis area in the respective chapter of the January 2012 update to the *CEQR Technical Manual*. If the proposed project was demonstrated not to meet or exceed the threshold, the 'NO' box in that section was checked on the EAS Full Form; thus additional analyses were not needed. If the proposed project was expected to meet or exceed the threshold, or if this was not able be determined, the 'YES' box was checked on the EAS Full Form, resulting in a preliminary analysis to determine whether further analyses were needed. For those technical sections, the relevant chapter of the *CEQR Technical Manual* was consulted for guidance on providing additional analyses (and attach supporting information, if needed) to determine whether detailed analysis was needed.

The following provided technical areas either generated a 'YES' answer per the EAS Long Form, or further clarification/information was requested by the Department of City Planning:

1. Land Use, Zoning and Public Policy
2. Shadows
3. Historic Resources
4. Urban Design and Visual Resources
5. Hazardous Materials
6. Air Quality
7. Noise
8. Construction

In the following technical sections, where a preliminary or more detailed assessment was necessary, the discussion is divided into *Existing Conditions*, *Future No-Action Condition* (a.k.a. the *Future Without the Proposed Action)*, and *Future Action Condition (*a.k.a. *the Future With the Proposed Action)*. If the project screened out of a detailed analysis, the section was not provided.

2.1 LAND USE, ZONING AND PUBLIC POLICY

The *CEQR Technical Manual* recommends that a proposed action be assessed in relation to land use, zoning, and public policy, with impacts potentially occurring if land uses or proposes zoning differs from the surrounding area. For each of these areas, a determination is made of the potential for significant impact by the proposed action. If the action does have a potentially significant impact, appropriate analytical steps are taken to evaluate the nature of the impact, possible alternatives and possible mitigation.

2.1.1 Land Use

The *CEQR Technical Manual* defines land use as the activity that is occurring on the land and within the structures that occupy it. Types of land uses can include single- and multi-family residential, commercial (retail and office), community facility/institutional and industrial/manufacturing uses, as well as vacant land and public parks (open recreational space).

Existing Conditions

The land use assessment performed considers existing land uses within the immediate area and the surrounding project study area. The Project Site and surrounding study area are located in the Bronx, within Community District #8. **Figure 2.1-1** represents the existing land use patterns within approximately 400 feet of the project site. The surrounding study area is predominantly developed with a mixture of one- and two-family residential homes, multi-family residential buildings (with accessory parking lots), community facilities (schools, nursing homes, etc.) and open space resources/parkland.

The Project Site is located along the south side of Van Cortlandt Park South, directly south of Van Cortlandt Park, east of Saxon Avenue and west of Dickinson Avenue. The subject portion of the Project Site (the existing surface parking lot) is located directly adjacent (west) of the eight-story, 264-bed St. Patrick's Home for the Aged and Infirm facility building, situated at the southwest corner of the intersection of Van Cortlandt Park South and Dickinson Avenue. South of the project site are two separate, 20-story multi-family residential buildings (located north of Sedgwick Avenue) surrounded by surface parking lots and landscaped areas. West of the Project Site (along Saxon, Hillman and Gouverneur Avenues) are a mixture of one- and two-family detached and semi-detached residential homes and low- to mid-rise multi-family apartment buildings, notably along Van Cortlandt Park South.

Directly north of the Project Site, across Van Cortlandt Park South, is the 1,146-acre Van Cortlandt Park, New York City's fourth largest park. Playing fields and playgrounds are scattered about the park's edges, surrounding a forested heartland fed by Tibbets Brook. Within the park, directly across Van Cortlandt Park South from the project site, are mature trees and grass areas. Additionally, open space/parkland is located east of the St. Patrick's Home for the Aged and Infirm facility building, across Dickinson Avenue.

The study and surrounding areas also contain several community facilities. In addition to the St. Patrick's Home for the Aged and Infirm Facility, Public School 95 (PS 95), the Sheila Mencher School, is located at 3961 Hillman Avenue approximately 800 feet southwest of the Project Site. The Dewitt Clinton High School (Bronx High School of Music) is located at 100 West Mosholu Parkway South approximately 1,000 feet southeast of the Project Site. The High School complexes are developed on the large block south of Sedgwick Avenue and east of Goulden Avenue. The Ampark Neighborhood School (X344) is located at 3990 Hillman Avenue, approximately 400 feet southwest of the Project Site.

Future No-Action Condition

In the future without the proposed action, the Project Site would not be altered. The existing surface parking lot would remain in place and operational.

Future With-Action Condition

The Proposed Facility is not expected to result in any adverse impacts on land uses on the Project Site or the surrounding study area. Under the Proposed Facility, the general use of the portion of the Project Site to be redeveloped would not change, in that the portion of the site would continue to be used for accessory parking for the St. Patrick's Home for the Aged and Infirm Facility. As the Proposed Facility would not result any CEQR thresholds being exceeded for land use or other technical areas, further CEQR assessment of land uses are not warranted.

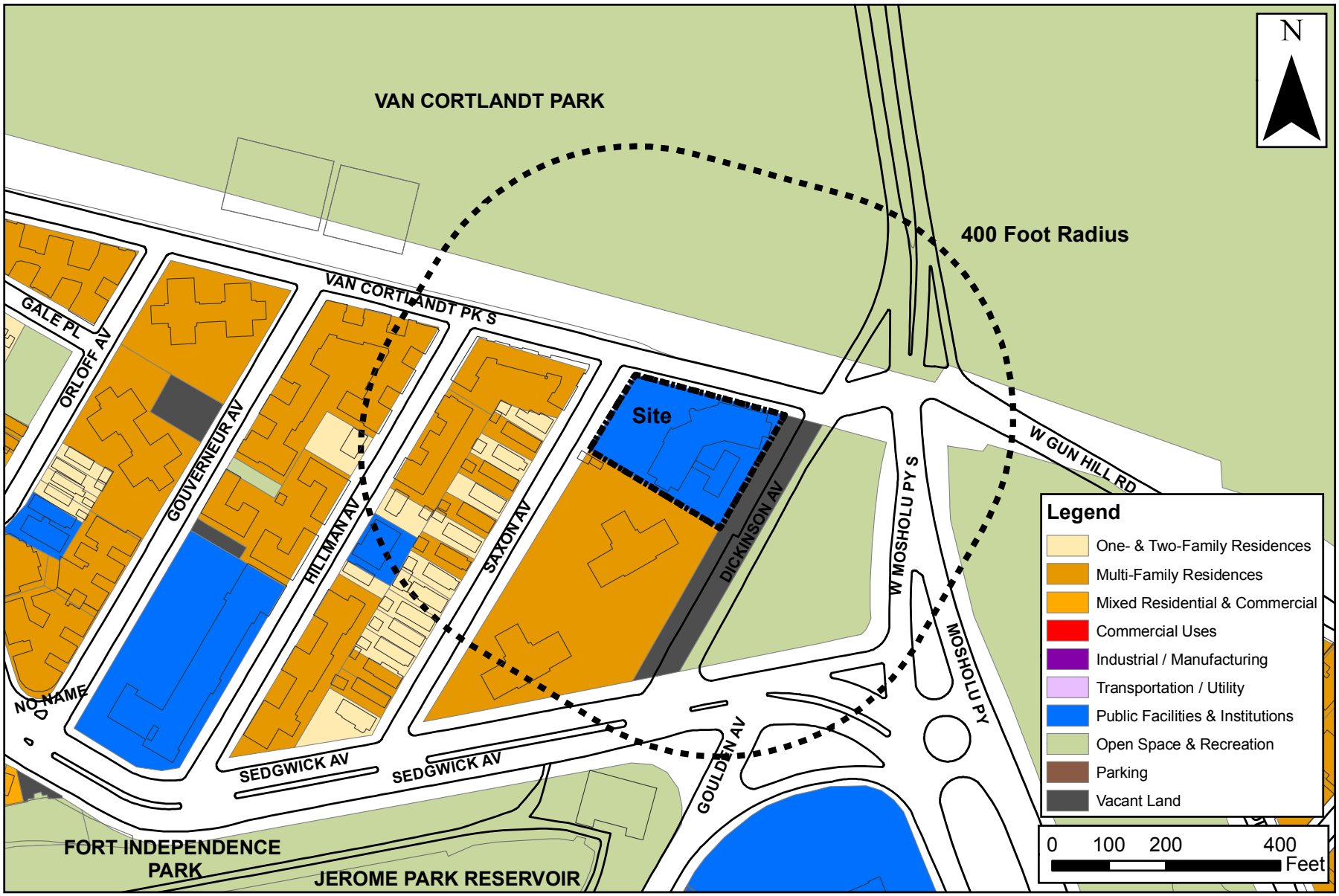


Figure 2.1-1
Land Use Map
St. Patrick's Home for the Aged and Infirm
Environmental Assessment Statement
Prepared by AECOM

2.1.2 Zoning

Existing Conditions

The *New York City Zoning Resolution* (ZR) dictates the use, density and bulk of developments within New York City. The ZR is divided into two parts: zoning text and zoning maps. The zoning text establishes the zoning districts within the City and dictates the zoning regulations governing land uses and developments. Zoning maps illustrate the boundaries of the City's zoning districts.

The City has three basic zoning district classifications: residential (R), commercial (C) and manufacturing (M) districts. These three basic classifications are further divided into low-, medium- and high-density districts, as well as into standard and contextual districts. Certain areas of the City are also established as "Special Mixed-Use Districts", which allow mixed residential and industrial neighborhoods while permitting the expansion of existing and creation of new developments with a variety of uses. The maximum bulk permitted for new developments within any zoning district is mainly governed by the district's maximum floor area ratio (FAR)[1] and minimum required open space.

Table 2.1-1 provides a summary of allowed density and building form permitted within the zoning districts designated within the 400 foot study area, while **Figure 2.1-2** (comprised of the City's Zoning Map 1d) shows the existing zoning designations for the Project Site and surrounding study area. The Project Site is located in a R7-1 district (allowing as-of-right Use Groups 1-4), a medium-density general residence district allowing apartment type buildings with an FAR range from 0.87 to 3.44, with up to a 4.0 FAR per Quality Housing Option regulations along wide streets (outside of the Manhattan Core). R7-1 districts allow commercial uses (per any mapped overlays) up to a 2.0 FAR and community facilities up to a 4.8 FAR. Building heights are governed by the sky exposure plane, with heights limited to 80 feet per Quality Housing Option regulations. The minimum required parking is 60 percent of the number of dwelling units for new residential buildings, which can be reduced to 50 percent per Quality Housing Option regulations.

Table 2.1-1 Summary of Allowed Zoning Density and Building Form in the Study Area

USE:	Residential			Commercial Overlay	Community Facility	Building Form and Bulk Controls	
Zoning District	Base FAR	Quality Housing Wide Street	Quality Housing Narrow Street	Max. FAR	Max. FAR	Building Base Streetwall:	Building Height Max.
R7-1	0.87-3.44	4.0	3.44	2.0	4.8	40'-65'*	75'-80'*
R6	0.78-2.43	2.43-3.0	2.2	2.0	4.8	40'-60'*	55'-70'*

* Quality Housing

Properties adjacent to the Project Site to the east, as well as Van Cortlandt Park to the north, are located within a surrounding R6 district (allowing as-of-right Use Groups 1-4), a medium density residential zoning district. The R6 district allows residential uses developed up to 2.43 FAR (bonusable up to 3.0 FAR through the quality housing option), and community facility use development up to 4.8 FAR. For new construction, under the quality housing option, a street wall between 40 and 60 feet is required with setbacks above the street wall ranging from 10 to 15 feet, and a maximum building height to 70 feet. Under height factor regulations the building form is dependent on the sky exposure plane, the open space ratio, and the FAR for the proposed structure.

[1] The floor area ratio, when multiplied by the area (in square feet) of a zoning lot, represents the maximum building floor area that can be developed on the lot.

Future No-Action Condition
In the future without the proposed action, the Proposed Facility would not occur, and the existing surface parking lot would remain as it currently exists. No zoning designation changes to the Project Site are expected in the future without the Proposed Facility.

Future With-Action Condition
The Proposed Facility would not result in any adverse zoning related impacts. The Proposed Facility does not include any changes to the Project Site' zoning designation; the Project Site would remain R7-1. While uses and zoning on the Project Site would not be altered, the proposed action requires a Special Permit from the NYC City Planning Commission. Pursuant to ZR §74-90, an enlargement to a Use Group 3 nursing home within the boundaries of Community District 8 in the Bronx is permitted only by the grant of a City Planning Commission Special Permit. In addition, the Applicant requests a variance, pursuant to Section 72-21 of the Zoning Resolution of the City of New York to allow the enlargement, which does not comply with the rear yard equivalent requirements of Section §24-382 of the Zoning Resolution. However, the necessity for the special permit/variance would not result in any significant adverse impacts related to zoning. Furthermore, the proposed replacement of the existing surface parking lot with the 74,737 gross square foot (20,845 zoning square foot) parking garage would not result in any other non-complying or non-conforming uses at the site (lot coverage, yards, etc.).

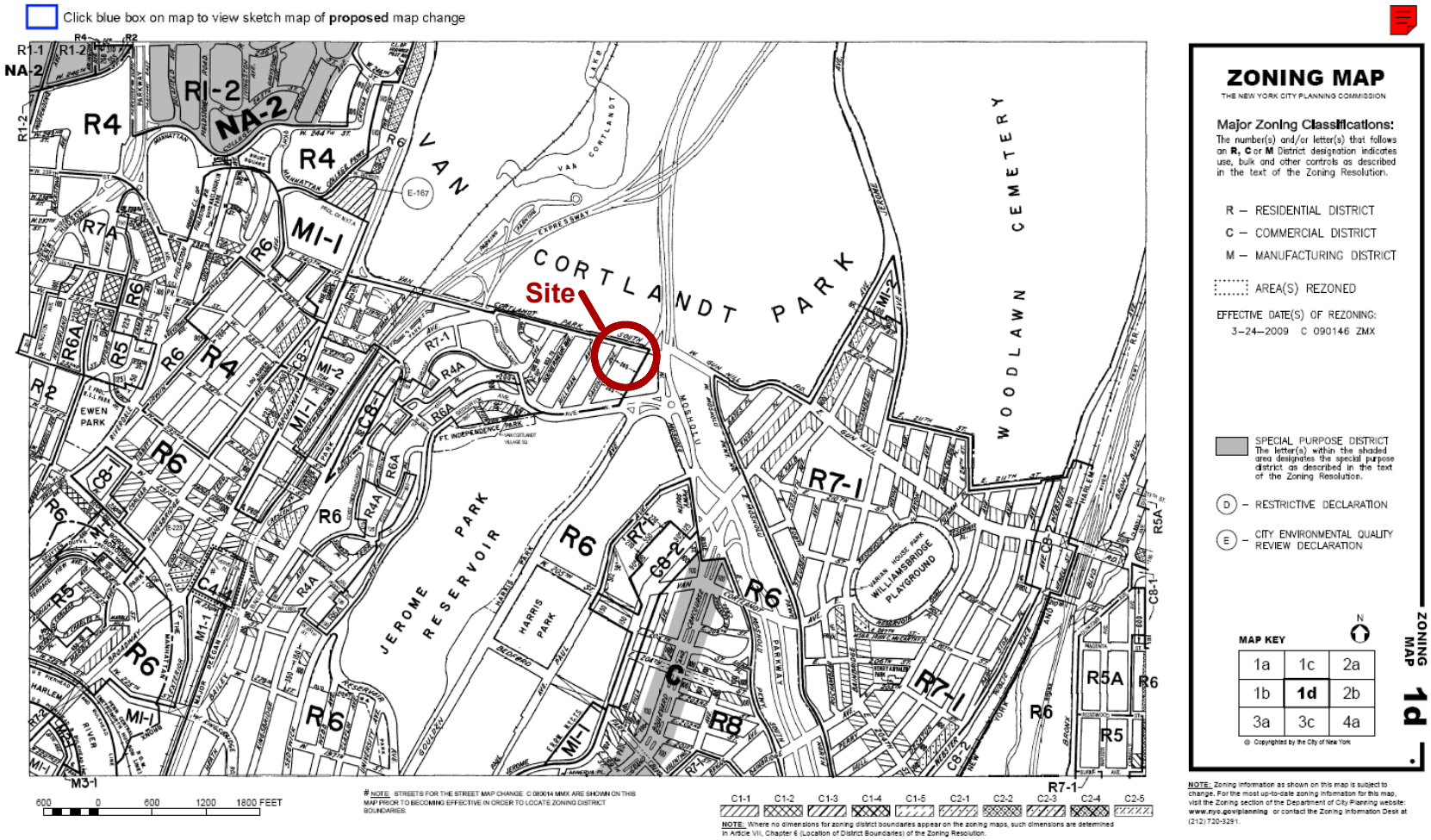
The Proposed Facility includes the Building addition to the 54,708 square foot subject lot, which currently contains the existing 118,547 square foot Nursing Home Facility and an adjacent 14,472 square foot convent (an approximate FAR of 2.5). The 74,737 gross square foot Proposed Facility (approximately 20,845 zoning square feet) would increase the total applicable square footage on the site to 153,864 square feet (an approximate new FAR of 2.8). R7-1 districts allow up to a 3.44 FAR for residential uses and 4.8 FAR for community facilities. As such, no significant adverse impacts related to zoning an anticipated as a result of the construction of the Proposed Facility, and further analysis is not warranted.

2.1.3 Public Policy

In addition to zoning, other public policies can affect the allowable land uses on a project site. However, the Project Site is not located within the boundaries of a New York City Department of Housing Preservation and Development (NYCHPD) Urban Renewal Zone or Urban Renewal Area (URA), an Economic Development Corporation (EDC) Industrial Business Zone (IBZ) or former In-Place Industrial Park (IPIP). The project site is also not located within the New York City's Coastal Management Zone (CMZ), and thus the Proposed Facility is not subject to an assessment for consistency with the City's Local Waterfront Revitalization Program (LWRP).

Bronx CD #8 2000: A River to Reservoir Preservation Strategy[2]
It should be noted that while Bronx CD #8 has an adopted community-based 197-a Plan, the Project Site is not located in an area designated as a significant part of that plan. In the fall of 2003, the CPC and the City Council approved the comprehensive plan submitted by Bronx Community Board #8 pursuant to Section 197a of the City Charter. The plan covers the entire community district, including the neighborhoods of Fieldston, Riverdale, Kingsbridge, Kingsbridge Heights, Marble Hill, Spuyten Duyvil and Van Cortlandt Village. It also includes one of the city's four Special Natural Area Districts, designated in the Zoning Resolution to guide development in areas of outstanding natural beauty. The plan's goals are to: preserve the scale and character of those neighborhoods; strengthen protections for sensitive natural features; improve the appearance and economic vitality of local commercial districts; foster economic opportunities and access to cultural and educational facilities; create additional recreational resources, enhance existing parks and promote the greening of major corridors; and preserve and educate the public about historic resources.

[2] http://www.nyc.gov/html/dcp/html/pub/197_bxcd8.shtml



Source: New York City Department of City Planning

Figure 2.1-2
Zoning Map
St. Patrick's Home for the Aged and Infirm
Environmental Assessment Statement
Prepared by AECOM

2.2 SHADOWS

According to the *CEQR Technical Manual*, if new structures or enlargements are less than 50 feet, no assessment of shadows is generally necessary, unless the site is adjacent to a light-sensitive resource. Under CEQR, an adverse shadow impact is considered to occur when the shadow from a proposed project falls on a publicly accessible open space, historic landscape or other historic resource (if the features that make the resource significant depend on sunlight), or important natural feature and adversely affects its use and/or important landscaping and vegetation or, in the case of historic resources, obscures the features or details that make that resource significant. In general, shadows on City streets and sidewalks or shadows on other buildings are not considered significant under CEQR, nor are shadows occurring within an hour and a half after sunrise or before sunset.

The proposed accessory 48-foot tall, four-story parking garage/multipurpose structure would be less than 50 feet tall. However, the project site is located directly south of Van Cortlandt Park, where shadows around noontime would potentially reach to and into the park. As such, a screening process, using shadow factor multipliers from the *CEQR Technical Manual*, was performed to assess the potential impact of shadows from the new garage structure on this open space resource.

The proposed garage structure is approximately 48 feet tall in height. Van Cortlandt Park South is approximately 60 feet wide. As such, a shadow factor[3] of anything over approximately 1.25 would reach the adjacent park to the north, when the degree angles of the shadow would be between approximately negative 45 degrees and positive 60 degrees.

The screening process includes calculations of the garage's height per approximate times (e.g., late morning thru noontime into early afternoon) and durations that shadows might be directed towards the park. Calculations were performed for the following key dates of the year for each season, per CEQR guidelines.

- June 21st – On June 21st at 6:58 a.m. (approximately an hour and a half after sunrise at 5:24 a.m.), the shadow length factor is 2.00 with a degree angle of negative 99. At 12:01 p.m., the shadow length factor is 0.31 with a degree angle of 4. At 6:01 p.m. (approximately an hour and a half before sunset at 7:30 p.m., adjusted for daylights saving time), the shadow length factor is 4.00 with a degree angle of 109. Shadows from the proposed parking garage/multipurpose building during this would not reach the park, as the degree angles of the shadows would fall primarily to the west and east of the proposed building, respectively. Shadows cast northward of the proposed building during noontime would not be long enough to reach the park, with the maximum shadow length cast towards the park 40.3 feet long.

- May 6th – On May 6th at 7:17 a.m. (approximately an hour and a half after sunrise at 5:48 a.m.), the shadow length factor is 2.02 with a degree angle of negative 89. At 12:01 p.m., the shadow length factor is 0.46 with a degree angle of 5. At 5:18 p.m. (approximately an hour and a half before sunset at 6:56 p.m., adjusted for daylights saving time), the shadow length factor is 3.29 with a degree angle of 97. Shadows from the proposed parking garage/multipurpose building during this would not reach the park, as the degree angles of the shadows would fall primarily to the west and east of the proposed building, respectively. Shadows cast northward of the proposed building during noontime would not be long enough to reach the park. The maximum shadow length cast would be 61 feet long, but at an angle away from the park.

- March 21st – On March 21st at 8:28 a.m. (approximately an hour and a half after sunrise at 6:58 a.m.), the shadow length factor is 2.01 with a degree angle of negative 64. At 12:00 p.m., the shadow length factor is 0.87 with a degree angle of negative 1. At 5:29 p.m. (approximately an

[3] Factor for shadow angle by degree (azimuth) from true north (zero degrees).

hour and a half before sunset at 7:08 p.m., adjusted for daylights saving time), the shadow length factor is 3.22 with a degree angle of 74. As such, shadows from the proposed parking garage/multipurpose building during this would not reach the park, as the degree angles of the shadows would fall primarily to the west and east of the proposed building, respectively. Shadows cast directly northward of the proposed building during noontime would generally not be long enough to reach the park, and those shadows that would reach into park in the late afternoon (starting approximately around 4:00 p.m.) would cover the border of the park for approximately an hour and half before the sun began to set. The maximum shadow length cast towards the park would be 42.2 feet long.

- December 21st – On December 21st at 8:51 a.m. (approximately an hour and a half after sunrise at 7:16 a.m.), the shadow length factor is 4.27 with a degree angle of negative 42. At 12:00 p.m., the shadow length factor is 2.07 with a degree angle of 2. At 2:53 p.m. (approximately an hour and a half before sunset at 4:31 p.m., adjusted for daylights saving time), the shadow length factor is 4.19 with a degree angle of 42. As such, shadows from the proposed parking garage/multipurpose building would reach the park during these times on this date. Shadows cast from the proposed structure would sweep the park from approximately 80 feet in the morning to approximately 40 feet at noontime to approximately 130 feet in the later afternoon. The maximum shadow length cast towards the park would be 99.36 feet long.

In order to more accurately determine if the proposed structure has the potential to result in shadow impacts, a shadow analysis was prepared by Ecosystem Strategies, Inc. (see **Appendix B**). As stated in the shadow analysis letter, previous analysis has determined that the action's shadow length had the potential to impact the Van Cortlandt Park because the longest possible length of the shadow is greater than the distance to the Park (see Figure 1/Tier 1 Complete Radius, in **Appendix B**). Additional analysis was required to determine the angle of the action's shadow in relation to true north and whether the shadow will actually fall on the Park at any time of year (see Figure 2, Tier 2 Analysis Map, in **Appendix B**), indicating that the shadow angles of the proposed action will fall on the Park during the year.

Within **Appendix B**, Figure 3A/Tier 3 Analysis shows that the action's shadow would enter the Park (the entering angle) at -65° (SLF = 3.44) and would exit at 85° (SLF = 3.3). These entering and exiting angles set the limits of shadows that the action would cast on the park at all times of the year. Using Table A-1 of the *CEQR Technical Manual*, which gives maximum SLFs (on December 21st for all shadow angles, the maximum shadow length of the building falling on the resource can be determined. Data from Table A-1 indicate a maximum shadow length from the proposed action range between 179 (48 x 3.44) feet at the entering angle and 158 (48 x 3.3) feet at the exiting angle. These calculations demonstrate that the proposed building's shadow will cross the park (see Figure 3B/Tier 3 Detailed Analysis, in **Appendix B**).

Existing and Future No-Action Condition

Under Existing Conditions and the under the Future No-Action Condition (no changes from existing conditions are expected), the project site is surrounded to the east, south and west by buildings of greater (east and south) and equal (west) height, as noted in the attached shadow analysis. These buildings shade the project site and the adjoining part at various times and at various times of year such that the impact of shadows from the proposed project would be minimal. Specifically, the existing eight-story Nursing Home structure adjoining to the west is 136 feet high. The entering and exiting angles for shadows impacting the park for this existing structure are -70° (SLF = 3.36) and would exit at 80° (SLF = 3.29). A maximum shadow length for this building is therefore 456 (245 x 3.36) and 447 (136 x 3.29). These shadows are longer than those cast by the existing structure, which would therefore have no impact on Van Cortland Park for times when the proposed project is in the shadow of the existing building adjoining to the east.

Future With-Action Condition

The shadow impact of the adjoining building is supplemented by the twenty-story apartment building adjoining to the south, which shades the property from the south. The cumulative shadow impact of these southern and eastern adjoining buildings mean that the actual angle where the shadow of the proposed

project could enter Van Cortland Park is -4°(shadow length factor 2.07). Likewise, the presence of the adjoining five-story structure to the west shades the project site so that the actual entering angle for shadows from the proposed project is - 78°(shadow length factor 3.24). These data indicate that for the with-action scenario the shadows from the proposed project are between 99 feet (48 x 2.07) and 155 (48 x 3.24) and have the potential to impact the park.

Under the Future With-Action Condition, shadows from the proposed building would reach the park only on December 21st between 12:08 p.m. and 14:53 p.m. The attached detailed analysis illustrates the entering and exiting shadows during dates in the growing season (June 21st and May 6th) and the entering and exiting shadow for December 21st. As the attached analysis indicates, the shadows would not reach the park during the growing season. The only time of year when the shadow cast by the proposed action will reach the park is during the winter.

Conclusion
As demonstrated above, shadows cast from the Proposed Facility would only reach the park across the adjacent roadway (Van Cortlandt Park South) during the winter time. Although shadows from the structure would reach the park, the potential for impacts would be minimal, as shadows from the Proposed Facility would reach into the park for limited durations only during winter, when the park is minimally used and vegetation does not rely on long-term direct sunlight exposure. Thus the proposed action would not result in a substantial reduction in sunlight on the park or a substantial reduction in the usability of the open space. Therefore, significant adverse shadow impacts are not expected and further shadow studies are not warranted.

2.3 HISTORIC RESOURCES

The proposed action is not expected to result in any significant adverse impacts to historic or archaeological resources. An assessment of historic resources is usually necessary for projects that are located in close proximity to historic or landmark structures, or for projects that require in-ground disturbance, unless such disturbance occurs in an area that has been recently excavated.

The term “historic resources” defines districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, architectural and archaeological importance. In assessing both architectural and archaeological resources, the findings of the appropriate City, State, and Federal agencies are consulted. Historic resources include: the New York City Landmarks Preservation Commission (LPC) designated landmarks, interior landmarks, scenic landmarks, and historic districts; locations being considered for landmark status by the LPC; properties/districts listed on, or formally determined eligible for inclusion on the State and/or National Register of Historic Places; locations recommended by the New York State board for listings on the State; and/or National Register (S/NR) of Historic Places and National Historic Landmarks.

Architectural Resources
The proposed action is not expected to result in any significant adverse impacts to any architectural or historic resources. The Project Site is not designated as a historic landmark or located within a designated historic district. The closest designated landmark is the Old Croton Aqueduct (S/NR #90NR02435), which runs north-south (underground) directly past the Project Site from the Bronx to Yonkers, to the New Croton Dam.

The Old Croton Aqueduct was built in 1837, in response to inadequate water supply and contaminated wells. For most of its length, the Aqueduct is a horseshoe-shaped brick tunnel 8.5 feet high by 7.5 feet wide, set on a stone foundation and protected with an earthen cover and stone facing at embankment walls. The gravity-fed tube drops 13 inches per mile. The Aqueduct became operational in 1842. The water eventually filled two above-ground reservoirs; on the present sites of the Great Lawn in Central Park (formerly the location of the Aqueduct’s rectangular receiving reservoir, which held up to 180 million gallons of water), and at the New York Public Library on Fifth Avenue. Until 1955, the Old Croton

Aqueduct brought water to New York City (the northernmost portion reopened in 1987, and continues to supply water to the town of Ossining). The New Croton Aqueduct is approximately triple the size of the Old Croton Aqueduct, much deeper underground and is located a few miles to the east of the Old Croton Aqueduct. The New Croton Aqueduct, which does not contain walking trail, began service in 1890 and remains in service today.

While the state park designation ends at the New York City line, the Old Croton Aqueduct continues for approximately five miles through the Bronx, managed by New York City Department of Parks and Recreation. Within the Bronx, the Old Croton follows a southward route through Van Cortlandt Park, past the east edge of Jerome Park Reservoir (S/NR #99NR01517, located south of Sedgwick Avenue and west of Goulden Avenue) and along Aqueduct and University avenues to the High Bridge, which once carried water in iron pipes cross the Hudson River to Manhattan.[4]

The St. Patrick's Home for the Aged and Infirm Facility building is located adjacent to this designated S/NR historic resource, with the Old Croton Aqueduct directly east of the building under Dickinson Avenue. However, the Project Site (currently an existing surface parking lot), to be redeveloped with the Proposed Facility, is located west of the Facility building, adjacent to Saxon Avenue, approximately 100 feet west from the Old Croton Aqueduct.

The closest designated NYC landmarks to the Project Site are the High Pumping Station (LP-1080), designated in July 1981, which is located approximately one-third of a mile south of the project site, and the Van Cortlandt Mansion (LP-0127) which is located within Van Cortlandt Park approximately one-half a mile northwest of the project site. The closest designated historic district is the Fieldston Historic District (LP-2138) located approximately one mile northwest of the project site.

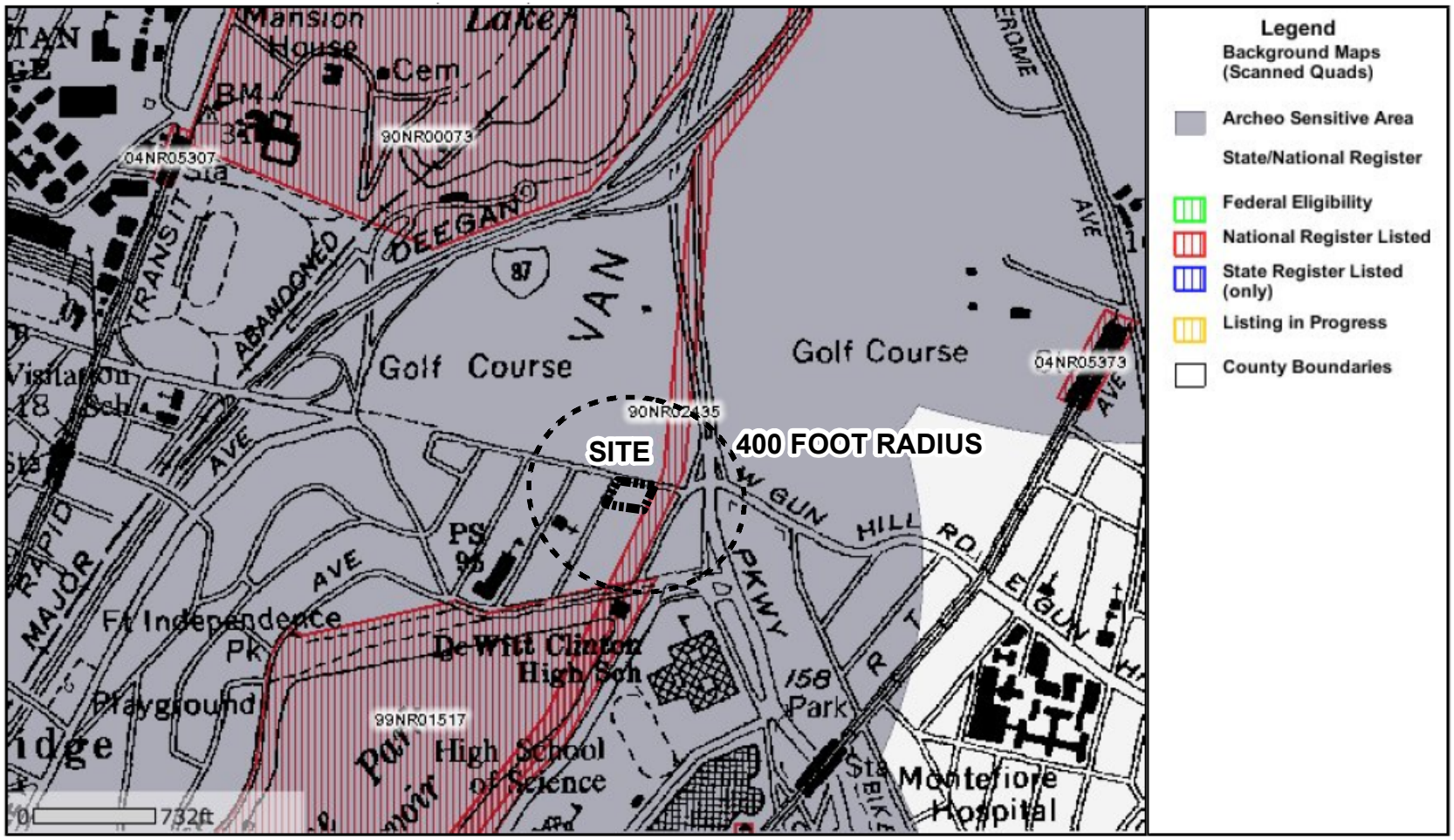
The proposed action will not result in any changes to architectural or historic resources, and none exist on the project site. As such, significant adverse impacts to historic/architectural resources in the surrounding area are not expected to occur as a result of the proposed action.

Archeological Resources

Unlike the architectural evaluation of a study area that extends beyond the footprint of a project's block and lot lines, the analysis of archeological potential and project impact is controlled by the actual footprint of the limits of soil disturbance. The Project Site and the surrounding regional area from the Hudson River to the middle of the Borough of the Bronx are situated within an archaeological (Archeo) sensitive area, as shown on **Figure 2.3-1**. However, the Project Site is currently developed with the existing surface parking lot, which will be removed to make way for the Proposed Facility. Limited in-ground construction would occur as part of the proposed action, as the construction area (the parking lot) is already developed and the proposed garage would be situated over the existing surface parking lot. As such, the potential for any archeological related impacts are minimal.

Furthermore, the NYC LPC has provided correspondence signed January 14, 2010 stating that the Project Site does not have any architectural or archaeological significance (see **Appendix C**). Therefore, as the potential for any architectural or archeological related impacts are minimal and not expected by the NYC LPC, further analysis is not warranted.

[4] http://www.aqueduct.org/node/13 (December 18, 2009).



Source: New York State Parks, Recreation and Histroic Preservation

Figure 2.3-1
New York State Historic Preservation Office GIS Public Map
St. Patrick's Home for the Aged and Infirm
Environmental Assessment Statement
Prepared by AECOM

2.4 URBAN DESIGN

According to the *CEQR Technical Manual*, urban design is the totality of components that may affect a pedestrian's experience of public space. Elements that play an important role in the pedestrian's experience include streets, buildings, visual resources, open space, and natural features, as well as wind as it relates to channelization and downwash pressure from tall buildings.

The *CEQR Technical Manual* notes an urban design assessment considers whether and how a project may change the experience of a pedestrian in the project area. The assessment focuses on the components of a proposed project that may have the potential to alter the arrangement, appearance, and functionality of the built environment. In general, an assessment of urban design is needed when the project may have effects on one or more of the elements that contribute to the pedestrian experience (e.g., streets, buildings, visual resources, open space, natural features, wind, etc.). An urban design analysis is not required if a proposed project would be constructed within existing zoning envelopes, and would not result in physical changes beyond the bulk and form permitted "as-of-right" with the zoning district.

As the proposed action includes the physical alternation of the Project Site with a requested BSA bulk variance, a preliminary analysis was conducted.

As stated in the *CEQR Technical Manual*, the study area for urban design is the area where the project may influence land use patterns and the built environment, and is generally consistent with the study area used for the land use analysis (i.e., 400 feet around the project sites). For visual resources, existing publicly accessible view corridors within the study area should be identified. The purpose of the preliminary assessment is to determine whether any physical changes proposed by a project may raise the potential to significantly and adversely affect elements of urban design, which would warrant the need for a detailed urban design and visual resources assessment.

Preliminary Analysis

The assessment for the preliminary analysis, as noted by CEQR, is provided below from **Appendix D** (Urban Design Analysis prepared by Ecosystem Strategies), with the following required information:

A concise narrative of the existing project area, the Future With-Action Condition, and the Future No-Action Condition.

The Project Site is located immediately south of the southeast corner of Van Cortlandt Park and has frontage on the south side of Van Cortland Park; the west side of Dickinson Avenue, and the east side of Saxon Avenue. Adjoining to the east is the eight-story existing St. Patrick's Home Facility; to the south are multi-story residential buildings and to the west are a mixture of single-and multi-story residential buildings. Surrounding lands include parks to the north and east and single and multi-family residential buildings are present to the west and south. Under the future without the proposed action, the Project Site would remain as a surface parking lot. Under the future with the proposed action, the Project Site would contain the Proposed Facility (the new multi-purpose structure and garage).

Aerial photograph of the study area.

An aerial photograph of the study area is provided in **Appendix G**, as part of the provided Noise Analysis prepared by Ecosystem Strategies..

Zoning, Floor Area, Heights and Lot/Tower calculations of existing and the Future With-Action Conditions.

As detailed in **Appendix D**, the Project Site is comprised of the northeast portion of Borough of Bronx Block 3252, Lot 25 (total lot area 54,708 square feet); and is located in a zoning district R7-1. The north and west boundaries of the site are marked by chain link fence, the southern boundary is marked by a brick wall, and the eastern boundary is marked by the western side of the existing St. Patrick's Nursing Home Facility building which, together with a convent building, occupies the eastern half of the lot.

The Future With-Action condition for the Project Site would include the construction of a 20,845 square foot, four story multipurpose structure including three levels of parking at the location of the currently existing parking lot. The elevation of the top of the proposed building would be 44 feet above grade along Saxon Avenue and 48 feet above grade along Van Cortlandt Park.

Zoning for the Project Site allows a floor to area ratio (FAR) of 3.44. Multiplying the lot area of 54,708 square feet by 3.44 equals a maximum floor area permitted of 188,196 square feet. The existing Nursing Home and Convent have a total floor area of 133,019 square feet. The Proposed Facility would include the addition of 20,845 square feet to that, leaving a total Future With-Action condition of 153,864 square feet. The maximum FAR for the zoning district would therefore not be exceeded by the Future With-Action condition.

Permitted Lot Coverage in R7-1 zones is 70 percent. Corner lots of 70 percent times 19,204 square feet equal a maximum of 13,443 square feet of coverage allowed. Interior/through lots of 65 percent allowed times 45,108 square feet equal a maximum of 29,320 square feet of coverage allowed. The proposed corner lot coverage at the Saxon Avenue corner lot building coverage is 6,482 square feet, and the Dickinson Avenue corner lot building coverage is 5,568 square feet. The proposed interior lot coverage is 20,845 square feet, less than the 29,320 square feet allowed.

Ground-level photographs of the site area with the immediate context.

Ground-level photographs of the Project Site and the immediate surrounding area are provided in **Figure 1-4**, as well as in the urban design analysis prepared by Ecosystems Strategies, Inc. (see **Appendix D**).

A three-dimensional representation of the Future With-Action Condition streetscape.

A three-dimensional representation of the Future With-Action Condition streetscape is provided in **Appendix D**, along with the same photograph without the representation.

If *view corridors exist within the study area, a description of the proposed project as it relates to visual resources including, as appropriate, proximity, orientation, height, bulk, etc.*

The study area does not contain any designated view corridors.

According to the *CEQR Technical Manual*, if a preliminary assessment determines that changes to the pedestrian environment are sufficiently significant to require greater explanation and further study, then a detailed urban design and visual resources analysis is appropriate. Detailed analyses are generally appropriate for all area-wide rezoning applications that include an increase in permitted floor area or changes in height and setback requirements, general large scale developments, or projects that would result in substantial changes to the built environment of a historic district, or components of an historic

building that contribute to the resource's historic significance. Conditions that merit consideration for further analysis of visual resources include when the project partially or totally blocks a view corridor or a natural or built rare or defining visual resource, or when the project changes urban design features so that the context of a natural or built visual resource is altered, such as if a project alters the street grid so that the approach to the resource changes, or if a project changes the scale of surrounding buildings so that the context changes.

The proposed action would not result in any of these conditions that would merit further detailed assessment of urban design and visual resources. While the Proposed Facility would result in a change on the project site from a surface parking lot to a parking garage structure, such changes would not result in any significant adverse impacts to pedestrians related to urban design and visual resources. The Proposed Facility is of similar bulk to adjoining multi-story residential buildings to the west and smaller than the exiting St. Patrick's Nursing Home Building adjoining to the east, and of significantly less bulk than the multi-story apartment buildings. The project would not change the scale of surrounding buildings so that the context changes and will not partially or totally block any view corridors or a natural or built visual resources.

2.5 HAZARDOUS MATERIALS

A hazardous material is any substance that poses a threat to human health or the environment. Substances that can be of concern include, but are not limited to, heavy metals, volatile and semi-volatile organic compounds, methane, polychlorinated biphenyls, and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic). According to the *CEQR Technical Manual*, the potential for significant impacts from hazardous materials can occur when: a) hazardous materials exist on a site, and b) and action would increase pathways to their exposure; or c) an action would introduce new activities or processes using hazardous materials.

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) of the Project Site was prepared by Galli Engineering, P.C. in February 2010, in order to determine if any type of environmental hazard exists within the property in question (see **Appendix E**). Environmental hazards include, but are not limited to, improper storage or handling of hazardous or toxic wastes or raw chemicals; underground storage of hazardous materials; asbestos within building materials or structures; and identification of potential off-site sources of hazardous waste contamination, such as industrial facilities or retail petroleum facilities, adjacent to the subject site. The assessment was performed in accordance with good commercial and customary practice as defined by the ASTM E-1527-05 Standard Practice for Environmental Site Assessments.

Site Conditions

Galli Engineering conducted the site inspection of the subject property on February 18, 2010. The subject property was viewed for any indication of probable and/or existing environmental hazards. Surrounding properties were also viewed to the extent possible from the subject property and public right-of-ways.

As stated in the Phase I ESA, the subject property is located at the southeast corner of Saxon Avenue and Van Cortlandt Park South, in Bronx, New York. The parking lot is mostly flat, with an elevation of 134 feet above sea level. No buildings are currently located on the subject property (the surface parking lot). The lot is paved with asphalt. Fencing is located on three sides of the lot. No dry wells or drains were visible on the lot. St. Patrick's Home for the Aged borders the property on the east side. There are pole mounted overhead lights to provide illumination. One electronic gate on Saxon Avenue provides access from the southwest corner. A man gate is located along Van Cortland Park South. A small brick building labeled "high voltage" borders the lot on the southern side. There was no visible evidence of illegal storage or dumping of asbestos containing materials, formaldehyde insulation materials or other hazardous substances or materials on the subject property. No significant areas of distressed or dead

vegetation were observed on the lot. There were no strong or noxious odors noticeable. No visible sumps, pits or other similar structures were observed on the subject property during the site inspection.

Surrounding Properties
A due diligence investigation into the potential impacts from off-site sources was conducted. The subject property is located in an area generally consisting of residential development. The subject property is bordered on the east by Dickinson Avenue, the north by Van Cortlandt Park South, the west by Saxon Avenue and on the south by Sedgwick Avenue. Fort Independence Park and Jerome Park Reservoir are located to the south of the subject property. The past and current uses of the adjoining properties are predominantly commercial. Research through Environmental Data Resources, Inc. (EDR) and examination of the properties immediately surrounding the subject property revealed no observable conditions that would normally adversely impact the environmental quality of the subject property.

Title Records
Title records were requested of the client, but were not available prior to preparation of this assessment.

Environmental Liens or Activity and Use Limitations
Activity and Use Limitations (AULs) are one indication of past or present release of a hazardous substance or petroleum products. AULs are an explicit recognition by a federal, tribal, state or local regulatory agency that residual levels of hazardous substances or petroleum products may be present on a property, and that unrestricted use of the property may not be acceptable. The AUL should provide information on the contaminant(s) of concern, the potential exposure pathway(s) that the AUL is intended to control, the environmental medium that is being controlled, and the expected performance objective(s) of the AUL. AULs are often recorded in land title records. AUL information is contained in the restrictions of record on the title, rather than a typical chain of title. An Environmental Lien Search did not identify any AULs or Environmental Liens on the subject property.

Review of Corporate Records and Interviews
A review of corporate records and personal interviews can provide useful information regarding the processes occurring on the site. Interviews with subject property representatives and review of available documentation have revealed the following information regarding the environmental quality of the subject property.

The property is a parking lot, and there were no present occupants to interview. No Underground Storage Tanks (USTs) were observed during the site inspection. No USTs were identified for the subject property on the EDR environmental database search. No Aboveground Storage Tanks (ASTs) were observed during the site inspection. No ASTs were identified for the subject property on the EDR environmental database search. There were no notices of violations or stop work orders for the subject property. Legislation enacted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) makes hazardous waste generators forever legally liable for byproducts and/or wastes they produce. This encompasses the transport and destination of these materials. There is no evidence that hazardous waste has been disposed of at the subject site.

Government Record Inventory
Galli Engineering requested and reviewed available federal, state, and local regulatory information concerning historical land use and potential environmental issues relating to the subject property. The Freedom of Information Act, (New York Public Officers Law, Article 6, Sections 84-90) provides rights of access to all government documents not exempt from disclosure. Accessible records can include paper documents plus items such as video/audio tape recordings, microfilm and computer files. Galli Engineering has made written requests for all relevant government documentation so as to identify implicit parameters affecting the environmental quality of the subject property. Typically, government agencies take up to six weeks or more to reply with any findings.

Galli Engineering retained EDR to provide a database search of environmental records maintained by Federal and New York State governments. Galli Engineering examined available environmental database

information and records for the subject property and surrounding properties to identify potential environmental impairment with respect to releases, contamination or enforcement actions. The scope of the database search conducted by EDR is in accordance with ASTM Standard E-1527-05.

Limited Scope Investigation for Possible Lead Paint
The element lead has no function in the body. It can have poisonous effects on human organs and the nervous system, causing a variety of toxic reactions. Since lead accumulates in the body more rapidly than it can be removed, repeated exposures even to small amounts may produce lead poisoning. In addition, deteriorating lead components may allow lead to become airborne. Threshold limit values have been established at 0.15 mg/m3 (in air) by the American Conference of Governmental Industrial Hygienists. The regulated concentration of lead detected in paint is defined as above 0.5 percent lead by weight (or 5,000-ppm) in Title IV of the Toxic Substances Control Act (TSCA). No painted building components were located at the subject property.

Radon
Radon is a heavy colorless, odorless, radioactive gas formed by the radioactive decay of radium. Radon is associated with specific geologic formations that contain granite, uranium minerals and certain shale and phosphate related minerals. Radon, a gas, can migrate to and accumulate in confined spaces, such as building basements. Continued exposure to radon gas has been associated with increased lung cancer risk and possible genetic damage. The USEPA has set an action level of 4 pico curies per liter (pCi/L) in air. At concentrations above this level, the USEPA recommends measures to lower the concentrations. A “Map of Radon Zones” indicates the levels of radon concentrations from testing and aerial surveys conducted in all counties in New York State. The subject property is located in Federal EPA Radon Zone 3, which is defined as an area having an indoor radon average of <2.0 pCi/L. In light of this information and the ASTM guidelines, radon concentrations are not an environmental concern for the subject property.

Asbestos Containing Material
Asbestos has been linked to various types of lung diseases. Various regulatory agencies have tolerance limits of 1 percent by weight for asbestos in materials. Any material that contains asbestos levels above this limit may be considered hazardous and may have to be abated. The Phase I assessment is not a full asbestos survey as would be required for building demolition, or identification of all possible sources of ACM, regardless of health risk. This assessment merely addresses observed suspect asbestos containing materials (ACM's) that may pose a health threat. The disposal of asbestos or asbestos containing materials (ACM) does not occur at the subject property. Suspect ACM was not observed during the site inspection.

Proximity of Property to Sensitive Ecological Areas
During the site inspection, Galli Engineering personnel did not identify any ecologically sensitive areas (i.e. wetlands, floodplains, etc.) within the subject site. Based on review of the Federal Wetland Inventory, wetland areas were identified approximately one-quarter mile to the east and south of the subject property. Therefore, in accordance with the ASTM guidelines and the NYSDEC ecological regulations, ecological areas are not an environmental concern and no restrictions on land development are indicated at the subject property.

Site Characteristics
The subject property is located within the New England physiographic province. Elevations in the area within a one mile radius of the subject property are approximately 20-186 feet above sea level. The U.S.G.S. 7.5 Minute (Topographic) Map of Yonkers, NY indicates that the elevation of the subject site is approximately 134 feet above sea level. The general topographic gradient is to the northwest. The approximate geographical location is Latitude: 40.88440 -– North (40° 53’ 3.8”) Longitude 73.8887 -– West (73° 53’ 19.3”); Universal Transverse Mercator: Zone 18. UTM X (Meters): 593628.5; UTM Y (Meters): 4526307.0.

The geology of this section of the Bronx is composed of basal amphibolite overlain by pelitic schists. It is part of the Magothy Formation, which is from the Cambrian-Ordovician age. The surficial geology of this area of the Bronx is glacial till. Till has variable texture - accumulations of mixtures of clay, silt, sand, gravel, and boulders, usually poorly sorted and relatively impermeable. Thickness is variable, from 1-50 meters. The United States Department of Agriculture (USDA) Soil Conservation Service (SCS) information indicates that the soils on the subject property are classified as Hollis. This soil type is described as very stony loam. The soil surface textures are loam. The deeper soil types are gravelly – fine sandy loam.

No surface water features are located in close proximity to the subject property. Groundwater is used as potable water in Nassau County. Two Federal United States Geologic Survey (USGS) wells were identified within a one-mile radius. One Federal FRDS Public Water Supply (PWS) System wells and three State wells were found within one mile of the subject property.

Conclusions
Based upon the Phase I investigation, the following site environmental conditions are noted to exist:

- The subject property is an asphalt paved parking lot, located at 66 Van Cortlandt Park South, Bronx NY.
- No dry wells or drains were visible on the lot.
- No petroleum storage tanks are located on the subject property.
- Suspect asbestos containing materials were not observed during the site inspection.
- No accumulation of litter, illegal dumping, storage of hazardous materials, distressed vegetation or other adverse environmental conditions were observed on the subject property at the time of inspection.

Recommendations
As stated in the Phase I ESA, no further environmental work is recommended at this property.

The New York City Department of Environmental Protection (DEP), Bureau of Environmental Planning and Analysis, has issued correspondence dated August 31, 2011 (see **Appendix F**). Based on their review of submitted environmental assessment statement and Phase I ESA, DEP issued the following comments/recommendations:

- The Applicant should submit a site-specific construction Health and Safety Plan (CHASP) for the proposed construction project. The CHASP should be submitted to DEP for review and approval. Soil disturbance should not occur without DEP's written approval of the CHASP.
- Excavated soils, which are temporarily stockpiled on site, must be covered with polyethylene sheeting while disposal options are determined. Additional testing may be required by the disposal/recycling facility. Excavated soil should not be reused for grading purposes.
- If any petroleum-impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils should be removed and properly disposed of in accordance with all New York State Department of Environmental Conservation (NYCDEC) regulations.
- Dust suppression must be maintained by the contractor during the excavation and grading activities at the site.

A CHASP was prepared by RC Dolner Inc., dated November 20, 2012 (see **Appendix F1**). The DEP reviewed the CHASP and issued a final comment letter dated December 21, 2012 (see **Appendix F**), finding the CHASP acceptable. The Applicant will continue to work with DEP or any other relevant agency to adhere to any and all applicable requests noted above, including any updates to the CHASP and submittal to DEP for review and approval prior to soil disturbance or other construction activities. As

such, significant adverse impacts regarding hazardous materials are not expected as a result of the proposed action.

2.6 AIR QUALITY

Under CEQR, an analysis of air quality impacts is undertaken to determine a proposed action's effects on ambient air quality, as well as effects on development induced by the proposed action because of ambient air quality. Besides potential air pollutants associated with construction activities, there are two types of sources for pollutants that might impact the ambient air quality: mobile and stationary sources.

Mobile Air Quality Sources
Mobile sources of air pollution come from vehicular traffic, as well as other moving sources (i.e. – trains, helicopters, boats, etc.). The primary pollutants of concern for mobile sources with a project of this nature, which predominantly involves limited employee vehicles, are carbon monoxide (CO) and particulate matter (PM).

According to the *CEQR Technical Manual*, projects, whether site-specific or generic, may result in significant mobile source air quality impacts when they increase or cause a redistribution of traffic; create any other mobile sources of pollutants (such as diesel trains, helicopters etc.); or add new uses near mobile sources (roadways, garages, parking lots, etc.). Projects requiring further assessment include:

- Projects that would result in placement of operable windows, balconies, air intakes or intake vents generally within 200 feet of an atypical source of vehicular pollutants.
- Projects that would result in the creation of a fully or partially covered roadway, would exacerbate traffic conditions on such a roadway, or would add new uses near such a roadway.
- Projects that would generate peak hour auto traffic or divert existing peak hour traffic of 170 or more auto trips in this area of the City.
- Projects that would generate peak hour heavy-duty diesel vehicle traffic or its equivalent in vehicular emissions resulting from 12 or more heavy-duty diesel vehicles (HDDVs) for paved roads with average daily traffic of fewer than 5,000 vehicles, 19 or more HDDVs for collector roads, 23 or more HDDVs for principal and minor arterials, or 23 or more HDDVs for expressways and limited-access roads.
- Projects that would result in new sensitive uses (e.g., schools or hospitals) adjacent to large existing parking facilities or parking garage exhaust vents.
- Projects that would result in parking facilities or applications to the City Planning Commission requesting the grant of a special permit or authorization for parking facilities should consult the lead agency regarding whether an air quality analysis of parking facilities is necessary.
- Projects that would result in a sizable number of other mobile sources of pollution (e.g., a heliport or a new railroad terminal, or trucking terminal).
- Projects that would substantially increase the vehicle miles traveled in a large area.

The Proposed Facility would not result in the placement of new operable windows, balconies, air intakes or intake vents within 200 feet of any atypical sources of vehicular pollutants, as the site is located adjacent to local roadways. The Proposed Facility does not involve the creation of a fully or partially covered roadway, nor would the proposed action exacerbate traffic conditions on such a roadway.

The Proposed Facility includes 104 parking spaces, less than the 170 peak hour vehicular threshold for this area of the City. The Applicant has stated that the new parking garage is expected accommodate a current shortfall in demand for staff and visitors driving to the site. According to the Applicant, the majority of trips to/from the facility by staff would continue to occur in three shifts, with visitors arriving sporadically throughout the day. Approximately 85 staff member vehicles arrive at the facility between 5:00 a.m. and 9:00 a.m. The second shift change occurs between 3:00 p.m. to 4:00 p.m., with approximately 45 to 50 staff member vehicles arriving at the facility between 2:30 p.m. to 4:30 p.m., and the staff vehicles from the first shift leaving the facility during this time. The third shift change occurs

around 11:00 p.m., with approximately 25 to 30 staff member vehicles arriving at the facility between 10:30 p.m. to 11:30 p.m., and staff vehicles from the second shift leaving during this time.

Table 2.6-1 below provides trip generation estimates during peak hours to/from the garage for staff and visitors, as provided by the Applicant/Project Sponsor. As stated above, the *CEQR Technical Manual* indicates that when an action would generate fewer than 170 peak hour trips, further mobile source assessment for air quality may not be needed. The potential vehicle trips generated by the action during the peak hours are at most around 45 vehicle trips. The proposed action includes three levels of parking with a total of 104 spaces, to replace the existing 38 space surface parking lot, resulting in a net increment of 66 spaces, to accommodate any current shortfalls in demand.

Table 2.6-1 Trip Generation Table

	Staff		Visitors		
Hour	**In**	**Out**	**In**	**Out**	**TOTAL**
5 AM – 6 AM	30	0	0	0	**30**
6 AM – 7 AM	25	15	0	0	**40**
7 AM – 8 AM	15	15	5	0	**35**
8 AM – 9 AM	15	0	10	5	**30**
9 AM – 10 AM	0	0	10	10	**20**
10 AM – 11 AM	0	10	5	5	**20**
11 AM – 12 PM	10	10	5	5	**30**
12 PM – 1 PM	10	0	5	10	**25**
1 PM – 2 PM	0	30	5	5	**40**
2 PM – 3 PM	10	25	5	5	**45**
3 PM – 4 PM	20	15	5	5	**45**
4 PM – 5 PM	20	15	5	5	**45**
5 PM – 6 PM	0	0	5	5	**10**
6 PM – 7 PM	0	10	5	5	**20**
7 PM – 8 PM	10	10	0	5	**25**
8 PM – 9 PM	10	0	0	0	**10**
9 PM – 10 PM	0	0	0	0	**0**
10 PM – 11 PM	15	25	0	0	**40**
11 PM – 12 AM	15	25	0	0	**40**
TOTAL	205	205	70	70	520

Source: Trip generation estimated from St. Patrick's Home for the Aged and Infirm

The Proposed Facility would also not generate any noticeable amounts of peak hour heavy-duty diesel vehicle traffic or its equivalent in vehicular emissions. Any such HDDVs to and from the Proposed Facility is expected to be less than 12 such trips during peak hours. The Proposed Facility would also not result in any sizable numbers of other mobile sources of pollution, as the Proposed Facility does not include a new heliport, railroad terminal, etc., nor would the Proposed Facility substantially increase the vehicle miles traveled in the surrounding area, as the action involves the replacement of a surface parking lot with a garage structure.

The Proposed Facility does not involve the placement of new sensitive uses (e.g., schools or hospitals) that would be placed adjacent to any large existing parking facilities or parking garage exhaust vents. Rather, the Proposed Facility involves the construction of a new parking garage. The proposal includes approval from the City Planning Commission (CPC) for enlargement of the nursing home; thus the CPC (the lead agency) is being consulted for the special permit. Therefore, further analysis for mobile sources of air quality is not necessary.

Stationary Air Quality Sources

According to the *CEQR Technical Manual*, projects may result in stationary source air quality impacts when one or more of the following occurs:

- New stationary sources of pollutants are created (e.g., emission stacks for industrial plants, hospitals, other large institutional uses).
- Certain new uses near existing (or planned future) emissions stacks are introduced that may affect the use.
- Structures near such stacks are introduced so that the structures may change the dispersion of emissions from the stacks so that surrounding uses are affected.
- Fossil fuels (fuel oil or natural gas) for heating/hot water, ventilation, and air conditioning systems are used.
- Large emission sources are created (e.g., solid waste or medical-waste incinerators, cogeneration facilities, asphalt/concrete plants, or power-generating plants, etc.).
- New sensitive uses are located near a large emission source.
- Medical, chemical, or research labs are created or result in new uses being located near them.
- Operation of manufacturing or processing facilities is created.
- New sensitive uses within 400 feet of manufacturing or processing facilities are created.
- New uses within 400 feet of a stack associated with commercial, institutional, or residential developments are created (and the height of the new structures would be similar to or greater than the height of the emission stack).
- Potentially significant odors are created.
- New uses near an odor-producing facility are created.
- "Non-point" sources that could result in fugitive dust are created.
- New uses near non-point sources are created.
- A generic or programmatic action is introduced that would change or create a stationary source or that would expose new populations to such a stationary source.

The proposed action would not result in any stationary source air quality impacts. The Proposed Facility would not result in the creation of any significant new stationary sources of pollutants (e.g., emission stacks for industrial plants, hospitals, other large institutional uses), nor would the Proposed Facility introduce new uses to any nearby large existing/planned emissions stacks or place new sensitive uses near a large emission source. The Proposed Facility would not change the dispersion of emissions from any existing stacks, and the Proposed Facility does not involve the creation of a large emission source. The Proposed Facility does not include the creation of any medical, chemical, or research labs or result in new uses being located near them, and the Proposed Facility does not involve the operation of manufacturing or processing facilities. The surrounding 400 foot area does not include any manufacturing or processing facilities, but rather a mixed-use residential and community facility area, and processing facility and relate facility types would not be created by the proposed action. The Proposed Facility does not include any use that would create potentially significant odors, nor would the action result in the placement of new uses near an odor-producing facility (as none are present in the area). The Proposed Facility would also not create any "Non-point" sources that could result in fugitive dust (once temporary construction activities are completed), and the action does not involve the creation of any new uses near non-point sources. The Proposed Facility is also not a generic or programmatic action that would change or create stationary sources or that would expose new populations to such a stationary source.

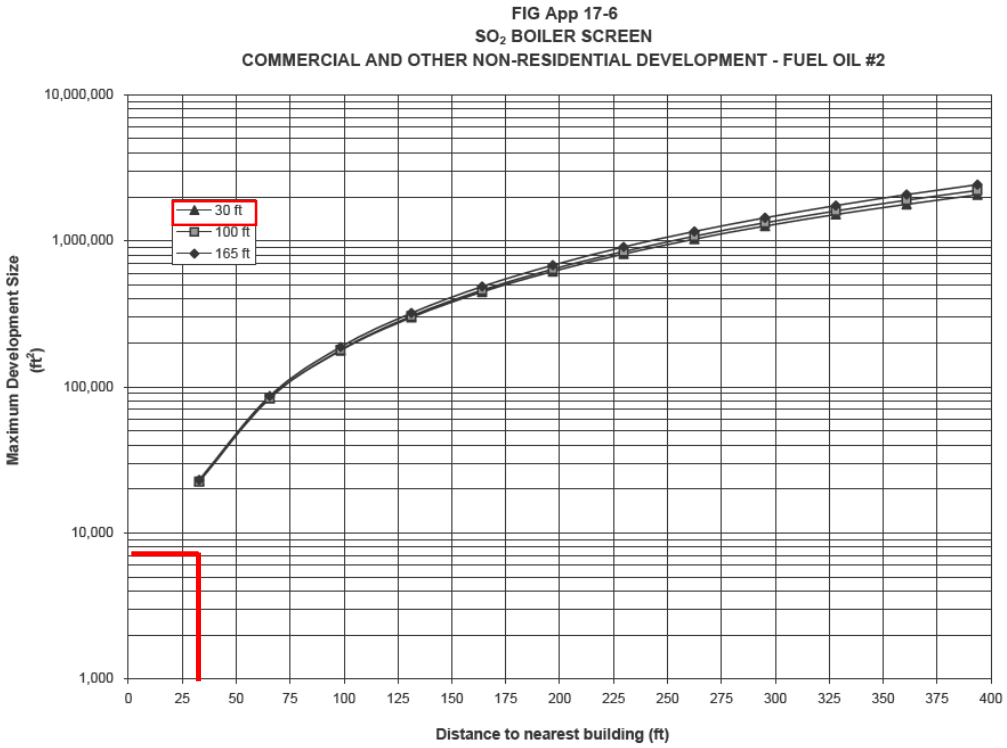
The Proposed Facility would include three levels of parking that would be open on three sides (the north, west and south sides), situated away from the existing nursing home facility building. These parking garage levels would be natural ventilated by the surrounding ambient air. As stated in *the CEQR Technical Manual*, multilevel parking facilities with at least three sides partially open are, for air quality analyses, considered in a similar manner to that of at-grade parking lots. As with at-grade lots, CO is the primary pollutant of concern for parking facilities used by automobiles, while PM is only of concern when diesel trucks or buses are to be used as part of proposed facility. The Proposed Facility is expected to

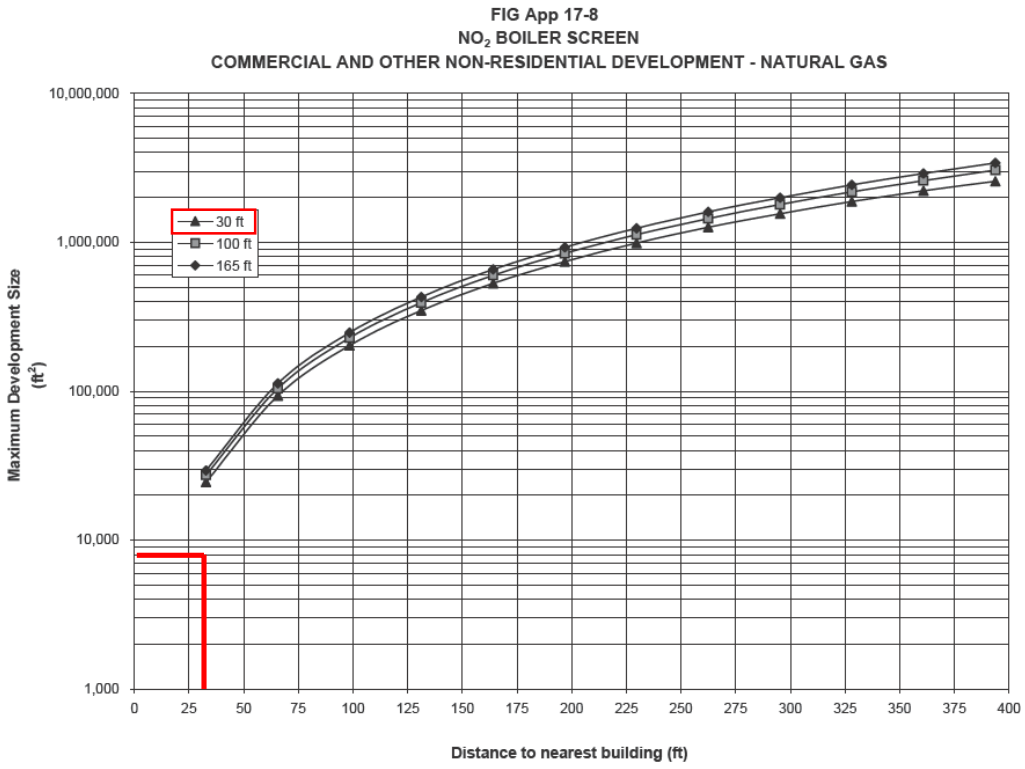
serve a noted shortly of current parking at the site, which contains 38 spaces, though more vehicles generally travel to existing surface parking lot and, when full, park on nearby on-street spaces. The Proposed Facility with 104 spaces would replace the existing 38 space surface parking lot, resulting in a net increment of 66 spaces, below the 170 vehicle trip air quality threshold. As such, modeling is not warranted, and significantly adverse CO impacts are not expected to occur.

The top level of the Proposed Facility would contain an enclosed recreation room, with an open terrace. Regarding fossil fuels for heating/hot water, ventilation, and air conditioning systems for the enclosed recreation room, the project is designed for use of either fuel oil #2 or natural gas.

The Proposed Facility would not exceed the screening analysis for stationary sources, for fuel oil #2 and/or natural gas (see **Figure 2.6-1** below) for the enclosed portion of the proposed structure (the approximately 7,900 square foot recreation room on the fourth level, including toilet and other enclosed accessory space) where the exhaust vents on the roof would be approximately at least 30 feet from the existing nursing home. The proposed action will allow for the replacement of an existing surface parking lot with a new parking garage/multipurpose structure for the St. Patrick's Home for the Aged and Infirm Facility. However, the parking garage areas of the Proposed Facility will not include any HVAC systems and/or boilers to provide heat and air conditioning within the parking garage portion of the structure; the proposed garage would be open on the sides, away from the St. Patrick's Home for the Aged and Infirm Facility building. Only the recreational room and adjacent areas on the top floor of the structure would be heated and/or cooled as needed, most likely utilizing fuel oil #2 and/or natural gas (depending on the weather, costs or other conditions). As shown in **Figure 2.6-1**, the Proposed Facility would not exceed the screening analysis for stationary sources, and all vents to be placed on the roof of the proposed parking garage/multipurpose structure would be at least 30 feet from the existing nursing home building. Therefore, significant adverse impacts related to stationary sources of air quality are not expected to occur, and further analysis is not necessary.

Figure 2.6-1 Stationary Source Screen





2.7 NOISE

Noise is defined as any unwanted sound. The *CEQR Technical Manual* recommends an analysis of two principal types of noise sources: mobile sources and stationary sources.

Mobile Noise Sources
Mobile noise sources are those which move in relation to receptors, such as automobiles, trucks, aircraft and trains. The *CEQR Technical Manual* states that an initial noise assessment may be appropriate if a proposed project would: generate or reroute vehicular traffic, or be located near a heavily trafficked thoroughfare; introduce a new receptor and would be located within one mile of an existing flight path; or be located within 1,500 feet of existing rail activity and have a direct line of sight to that rail facility.

The Proposed Facility includes the construction of a four story mixed use building containing three levels of additional parking and a total of 104 parking spaces. The net increment of new parking is considered as a new use that would generate traffic, and rerouting of traffic will in fact occur (regardless of being beneficial or not). As such, further analyses, including basic traffic counting and conversion to Passenger Car Equivalents (PCEs) are warranted. In order to determine if any increased vehicular traffic from the proposed action would result in a possible noise impact, a Noise Study Report was performed by Ecosystems Strategies, Inc. (see **Appendix G**). Investigative and analytical work was performed to address potential exceedances of CEQR Noise Exposure Guidelines for use in CEQR.

Noise data was collected at the site utilizing three noise meters for a 20 minute period on Tuesday, March 6, 2012. Noise measurements were conducted during the morning rush hour between 8:00 a.m. and 8:30 a.m. and at noon. These times were selected as the time of maximum traffic activity when the project site would likely be subject to greatest noise impacts. The noise recording equipment used was SoundPro DL with $1/8^{th}$ inch microphones (consistent with an ANSI S1.4-1971 Type II noise level meter). The instruments were calibrated before the measurement period using a Metrosonics CL304 Sound Level Calibrator to log ambient noise with an A weighting, a 3 dB exchange rate, and no threshold. The meters were then placed on standard camera tripods, approximately 5 feet above the ground and were located at three areas: Meter A: on the sidewalk east of Saxon Avenue, 50 feet south of the northern property line; Meter B: on the sidewalk south of Van Cortland Park, at the northeastern corner of the project site; and Meter C: on the sidewalk south of Van Cortlandt park, 130 feet east of the north eastern corner of the property. A fieldwork map indicating meter locations and projected building design is provided in **Appendix G**.

CEQR Noise Exposure Guidelines are promulgated in Table 19-2 of the *CEQR Technical Manual*. For sites proposed for residential development whose vehicular noise exposure exceeds a L_{10} of 70 dBA, an alternate means of ventilation should be incorporated into the building so that windows do not need to be opened at any time of year. CEQR requires L_{10} data for proposed receptor noise evaluations. L_x is the percentile level, where x is any number from 0 to 100. Here x corresponds to the percentage of the measurement time that the stated sound level has been exceeded. For example, L_{10} – 80 dBA means that measurements exceeded 80 dBA 10 percent of the measurement period. The measurement time must be specified and is denoted in parentheses (i.e., $L_{10(1)}$ corresponds to the noise level exceeded 10 percent of the time during a 1 hour period).

These results indicate that L_{10} data exterior noise levels for the meters during the morning rush hour are less than 70 dBA and therefore fall into the “Acceptable” and “Marginally Acceptable” General External Exposure categories. The 6.6 dB and 10 dB difference between meters B & C accelerating as they turn right out of Saxon Avenue onto Van Cortlandt Park and the steeper gradient of Van Cortland Park immediately west of Meter B than at Meter C.

Traffic counts for vehicles cars, trucks and busses travelling on Saxon Avenue and Van Cortlandt Park were also conducted during the analysis periods. The results show the total Future No-Action PCEs for each time period, and indicates 165 PCEs for the morning period and 121 PCEs for the noon period. As

noted in the *CEQR Technical Manual*, it takes a doubling of Noise PCEs to equal a 3db(A) change (i.e., a just perceptible change in sound levels). Since the proposed project includes the addition of 104 new parking spaces (each automobile trip being equivalent to 1 PCE), the Future With Action PCE total would not double during the AM, Noon, and PM periods of maximum ingress and egress from the parking garage. These findings support the conclusion that the 70dBA (Marginally Unacceptable) threshold would not be met by the With Action Condition.

As concluded in the noise analysis provided in **Appendix G**, noise data indicate that exterior Existing noise levels are between 56.8 and 66.8 dBA at the property line along Saxon Avenue and Van Cortlandt Part. With a 12 month construction phase, traffic in the vicinity would not significantly increase in the vicinity of the site, supporting the conclusion that there would be no meaningful difference between Existing and Future No-Action traffic noise. The Existing noise levels fall into the “Acceptable” and “Marginally Acceptable” General External Exposure categories. Traffic counts conducted during the noise studies and subsequent calculations support the conclusion that the Future With-Action condition will not significantly increase noise levels in the vicinity.

Stationary Noise Sources

The *CEQR Technical Manual* states that based upon previous studies, unless existing ambient noise levels are very low and/or stationary source levels are very high (and there are no structures that provide shielding), it is unusual for stationary sources to have significant impacts at distances beyond 1,500 feet. A detailed analysis may be appropriate if the proposed project would: cause a substantial stationary source (i.e. unenclosed mechanical equipment for manufacturing or building ventilation purposes, playground) to be operating within 1,500 feet of a receptor, with a direct line of sight to that receptor; or introduce a receptor in an area with high ambient noise levels resulting from stationary sources, such as unenclosed manufacturing activities or other loud uses. The proposed action does not meet or exceed CEQR thresholds related to stationary sources for noise, as the proposed action includes the construction of an accessory parking garage/multipurpose structure for an existing nursing home in mixed-use neighborhood.

Though the activity at the Proposed Facility may generate some operational noise, any such noise is expected to be minimal. The Proposed Facility does not include any residential units or other noise-sensitive uses; rather, the portion of the site to be developed with the new parking garage structure is currently a surface parking lot, and the use of this site as parking will continue in future with the proposed action. Furthermore, the Proposed Facility does not include any major equipment or noise generators that would impact nearby uses, including the adjacent St. Patrick’s Home for the Aged and Infirm facility building. Any related mechanical equipment that would be placed on the roof of the Proposed Facility would be located at least 30 feet from the existing nursing home building.

The Proposed Facility includes new recreation space on the top floor of the structure, consisting of an enclosed recreation room and adjacent outdoor terrace, to be used for special programs of the facility. The proposed recreation room would be located above the proposed garage space. If needed, supplemental window/wall attenuation for the proposed recreation room would be provided by the Applicant, such as the installation of double-pane windows to minimize noise propagation.

Significant adverse stationary source noise impacts to and from nearby sensitive receptors are not expected to occur as a result of the proposed action, and further analysis is not warranted.

2.8 CONSTRUCTION

The *CEQR Technical Manual* calls for a preliminary analysis of construction impacts for any action that would last longer than two years; occur within a Central Business District or along an arterial or major thoroughfare; require closing, narrowing, or otherwise impeding traffic, transit or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc; involve the construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final

build-out of the project; include the operation of several pieces of diesel equipment in a single location at peak construction; result in the closure of community facilities or disruption in its service; located within 400 feet of a historic or cultural resource; or disturbance of a site containing natural resources.

The Proposed Facility, which is expected to be constructed within an approximate 12 month construction window and be completed by the spring/summer of the 2014 year, does not meet or exceed CEQR thresholds related to construction impacts. While the Old Croton Aqueduct (underground) is located approximately 100 east of the existing eight-story St. Patrick's Home Building and adjacent Convent, the portion of the project site to be redeveloped with the Proposed Facility is located west of the Nursing Home; thus the construction site is another 200 feet away from the underground resource.

This projected volume of vehicular (car and truck) traffic likely to be generated during construction of the proposed parking garage is not expected to result in significant traffic impacts on the surrounding roadway network. All construction-related activities, including the storage of materials, locations of noise generating equipment, etc., will be conducted with awareness of the presence of the residences that adjoin the project site.

Construction noise impacts that could be caused by the operation of construction equipment on or near the site, and by the travel of construction-related car and truck traffic through the community, would be temporary. Construction noise from on-site equipment depends on the type and number of the machinery, which pieces of equipment are operating at any one time, how frequently those equipment operate throughout the work day, and how far removed they are from the site boundaries and from the nearest sensitive receptors (e.g., residences). Peak noise levels from impact equipment (e.g., pile drivers, pavement breakers, etc.) can be 100 dBA or higher at 50 feet from the equipment. Locating noisy equipment away from site boundaries, and the potential for placing noise barriers (e.g., temporary plywood walls) around the construction site or the equipment itself, could help reduce these short-term and temporary noise impacts. Construction noise is also regulated by the New York City Noise Code and by the U.S. Environmental Protection Administration (EPA) noise emission standards for construction equipment, with local and federal controls that require that certain types of construction equipment and vehicles meet specific noise emission standards.

Construction of the Proposed Facility would also likely result in increases in particulate matter from construction activity (primarily fugitive dust created by demolition, excavation, earth moving operations, etc.). Since the majority of the particles within construction-related fugitive dust are relatively large in size, much of the fugitive dust would settle to the ground within a short distance from the site and would not significantly affect nearby land uses. To insure that the increases in ambient concentrations of particulate matter caused by construction would be reduced to minimal levels, dust control measures, such as watering of affected areas and the use of dust covers on trucks, would be used during the excavation and grading activities at the site. In addition, all necessary measures would be implemented to insure compliance with the New York City Air Pollution Control Code regulating construction-related dust emissions. If these measures are implemented and sufficiently enforced by contractors, no significant air quality impacts due to fugitive dust emissions would be anticipated.

The Applicant will also submit a site-specific CHASP for the proposed construction project. The CHASP would be submitted to DEP for review and approval, and soil disturbance would not occur without DEP's written approval of the CHASP. Excavated soils, which are temporarily stockpiled on site, would be covered with polyethylene sheeting while disposal options are determined. Excavated soil would not be reused for grading purposes. If any petroleum-impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils would be removed and properly disposed of in accordance with all NYCDEC regulations.

As the proposed action would not result in any CEQR thresholds being substantially crossed related to construction impacts, further construction impact assessment is not required.

Appendices

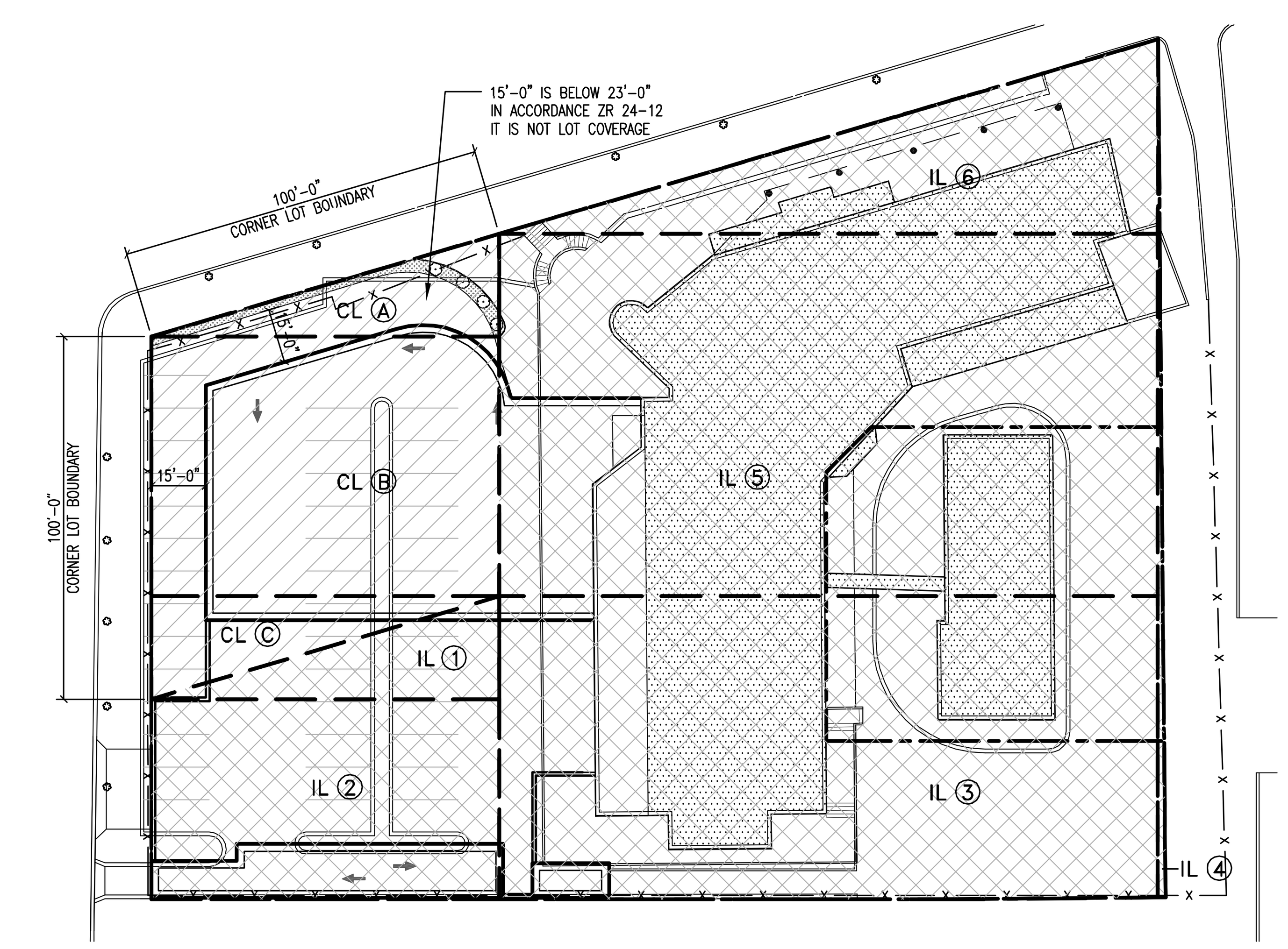
Appendix A: Site Plans prepared by David Lawrence Mammina Architect

ZONING ANALYSIS:

1. SITE INFORMATION

ZONING DISTRICT = R7-1
MAP NUMBER = 1d
COMMUNITY BOARD = 8
TAX BLOCK = 3252
TAX LOT = 76
LOT AREA = 54,708 SF (SEE SURVEY, HAYNES SURVEYOR: 05.21.2010)
USE GROUP = GROUP 3
(COMMUNITY FACILITY- NURSING HOME)

ZR	REQUIRED/ PERMITTED				PROPOSED (MULTI-PURPOSE)				
	NURSING HOME		CONVENT		NURSING HOME SPECIAL PERMIT REQUIRED				CONVENT
ZR 24-05	This is not an enlargement exceeding 20% of floor area, this is not a change in use 20% of floor area, and this is not a detached garage that is 400 square feet or greater. (NOT APPLICABLE)				NA				
ZR 24-11	**Level:**	**Gross SF**	**Level:**	**Gross SF**	**Level**	**Cars**	**Gross SF**	**Zone Flr. Area**	
	Basement Floor	13,888 SF	First Floor	2,496 SF	First Floor	32	19,138 SF	4,371 SF	Unchanged
	First Floor	10,946 SF	Second Floor	2,496 SF	Second Floor	35	19,138 SF	0 SF	(See existing convent data)
	Second Floor	10,385 SF	Third Floor	2,496 SF	Third Floor	37	19,138 SF	6,397 SF	
	Third Floor	13,888 SF	Fourth Floor	2,496 SF	Terrace Floor	0	17,323 SF	10,186 SF	
	Fourth Floor	13,888 SF	Fifth Floor	2,496 SF	Total	104	74,737 SF	20,845 SF	
	Fifth Floor	13,888 SF	Sixth Floor	2,496 SF					
	Sixth Floor	13,888 SF	Seventh Floor	2,496 SF					
	Seventh Floor	13,888 SF							
	Eighth Floor	13,888 SF	Total	14,472 SF					
	Total	118,547 SF							
	Max. floor area=	188,196 SF	Max. floor area=	262,598 sf	Max. floor area=	188,196 SF			Max. floor area= 262,598 SF
	Max F.A.R.=	3.44	Max F.A.R.=	4.8	Max F.A.R.=	3.44			Max F.A.R.= 4.8
	Floor Area=	118,547 SF			Floor area=	151,864 SF			
	F.A.R.=	2.17		.26 F.A.R.	F.A.R.=	2.8			
ZR 24-111b	Max. Corner lot =	6,713 SF	See diagram below		Corner lot =	6,692 SF			
	Max. Interior lot =	29,320 SF			Interior lot =	22,389 SF			
ZR 24-12	In the districts indicated, any portion of a building located at any height up to but not exceeding 23 feet above curb level or base plane, where applicable, may be excluded in determining the percentage of lot coverage set forthin section 24-11 (max floor area ratio and percentage of lot coverage)				None Required				
ZR 24-35b	Side yard: no side yards are required 0' or 8' if provided				None Required				
ZR 24-36	Min. required rear yards - 30' feet				None Required				
ZR 24-361c	No rear yard shall be required when such rear lot line conicides with a side lot line of an adjoining zoning lot				None Required				
ZR 24-522	Front setbacks in district where front yards are not required: in the districts indicated, where front yards are not required, if the front wall or other portion of a building or other structure is located at the street line or within the initial setback distance set forth in the following table, the height of such front wall or other portion of a building or other structure shall not exceed the maximum height and beyond the initial setback distance, the building or other structure shall not penetrate the sky exposure plane set forth in the table.				None Required				
ZR 24-56	Special provisions for zoning lots directly adjoining public parks not applicable, no new construction facing park				NA - Not adjoining a park.				
ZR 24-60	Court regulations and minimum distance between windows and walls or lot lines: not applicable				NA				
ZR 25-12	Maximum size of accessor group parking facilities: no such facility accessory to permitted community facility or commercial uses shall contain more than 150 off street parking spaces				Parking= 104 Spaces				Existing Parking= 8 spaces
ZR 25-18	Max spaces permitted community facility or commercial uses: in all district, as indicated, on a zoning lot used for permitted community facility or commercial uses, not more than one off-street parking space shall be provided for every 400 square feet of lot area.				Max. parking= 136 spaces				
ZR 25-80	All other use group 3 and use group 4 uses not otherwise listed in this table= 1 per 10,000 square feet of floor area.				Max. bicycle parking= 2 space				
ZR 25-811	However, the bicycle parking requirement set forth in the table shall be waived for bicycle parking spaces that are accessory to: (d) all other community facility uses not otherwise listed in the table where the number of required bicycle parking spaces in three or less.				None Required				



LOT COVERAGE DIAGRAM

SCALE: N.T.S.

PROJECT :
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :
--
STREET
TOWN, STATE ZIP
WEBSITE
TEL : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :
DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

MEP ENGINEERS :

DATE:	REVISION:
04.23.2013	ISSUED TO CITY PLANNING - LANDSCAPE MODICATION
03.25.2013	ISSUED TO CITY PLANNING - LANDSCAPE MODICATION
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
11.19.2010	DOB ZONING COMMENTS
08.03.2010	DOB ZONING COMMENTS
06.01.2010	ISSUED TO DOB

NORTH ARROW N
SCALE:

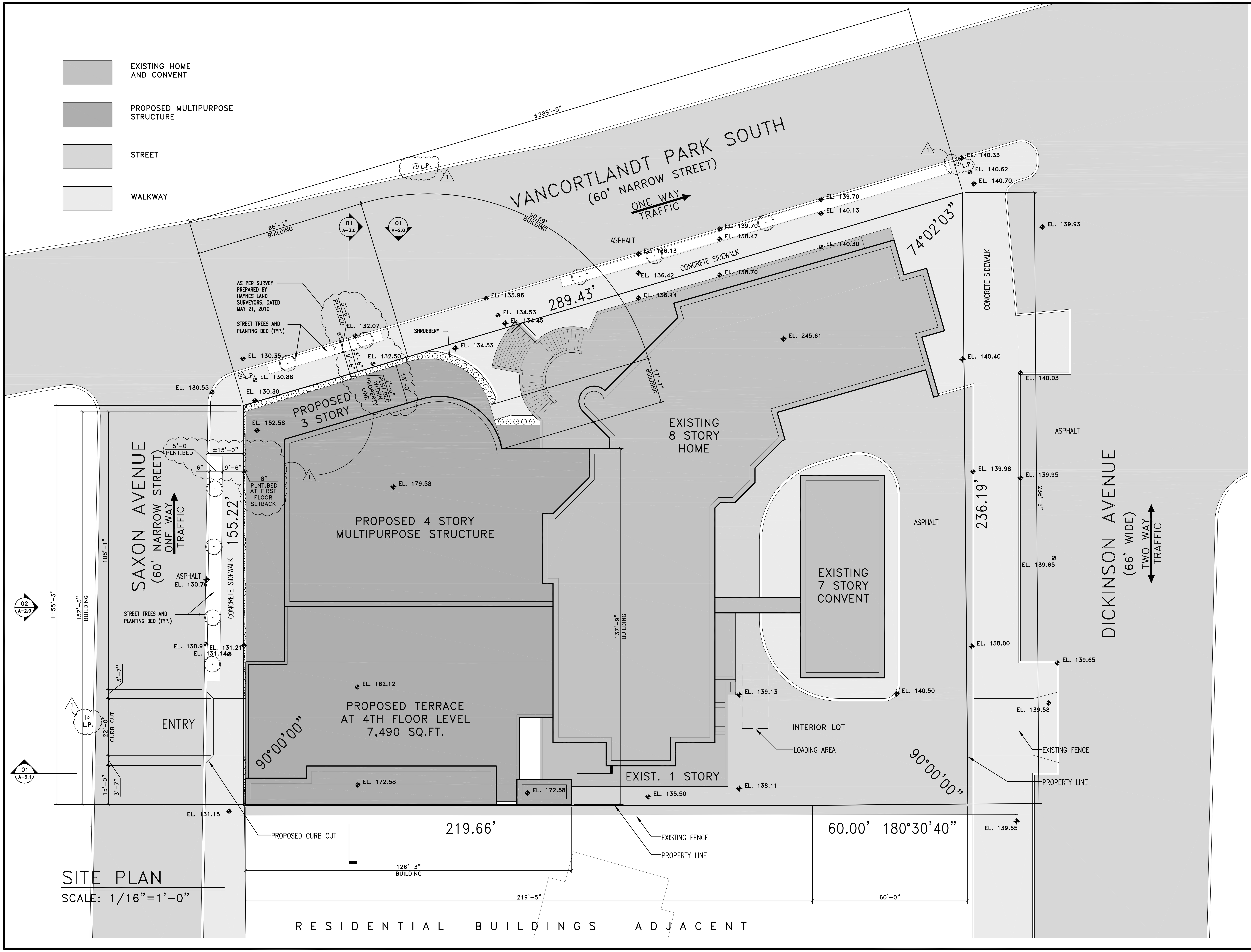
KEY PLAN:

PROPOSED MULTIPURPOSE STRUCTURE

DRAWING TITLE :
PLOT PLAN AND ZONING ANALYSIS

SEAL & SIGNATURE:
DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No:
A-0.0
DWG. OF

APP NO.:


EXISTING HOME AND CONVENT
PROPOSED MULTIPURPOSE STRUCTURE
STREET
WALKWAY
VANCORTLANDT PARK SOUTH
(60' NARROW STREET)
ONE WAY TRAFFIC
SAXON AVENUE
(60' NARROW STREET)
ONE WAY TRAFFIC
DICKINSON AVENUE
(66' WIDE)
TWO WAY TRAFFIC
EXISTING 8 STORY HOME
EXISTING 7 STORY CONVENT
PROPOSED 4 STORY MULTIPURPOSE STRUCTURE
PROPOSED 3 STORY
PROPOSED TERRACE AT 4TH FLOOR LEVEL 7,490 SQ.FT.
EXIST. 1 STORY
INTERIOR LOT
LOADING AREA
ENTRY
CURB CUT
PROPOSED CURB CUT
EXISTING FENCE
PROPERTY LINE
CONCRETE SIDEWALK
ASPHALT
SHRUBBERY
AS PER SURVEY PREPARED BY HAYNES LAND SURVEYORS, DATED MAY 21, 2010
STREET TREES AND PLANTING BED (TYP.)
PLNT.BED WITHIN PROPERTY LINE
PLNT.BED AT FIRST FLOOR SETBACK
289.43'
155.22'
219.66'
236.19'
60.00' 180°30'40"
74°02'03"
90°00'00"
±289'-5"
±155'-3"
152'-3" BUILDING
108'-1"
126'-3" BUILDING
137'-9" BUILDING
219'-5"
60'-0"
RESIDENTIAL BUILDINGS ADJACENT
SITE PLAN
SCALE: 1/16"=1'-0"

PROJECT :
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :
--
STREET TEL.: (xxx) xxx-xxxx
TOWN, STATE ZIP FAX.: (xxx) xxx-xxxx
WEBSITE

ARCHITECT :
DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

MEP ENGINEERS :

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01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB

NORTH ARROW N

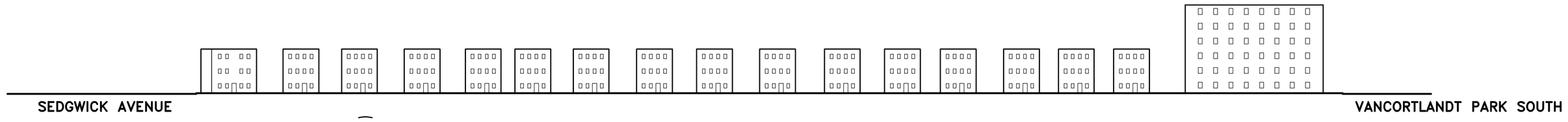
SCALE: 0 8' 16' 32'
SCALE: 1/16" = 1'-0"

KEY PLAN:
PROPOSED MULTIPURPOSE STRUCTURE

DRAWING TITLE :
SITE PLAN

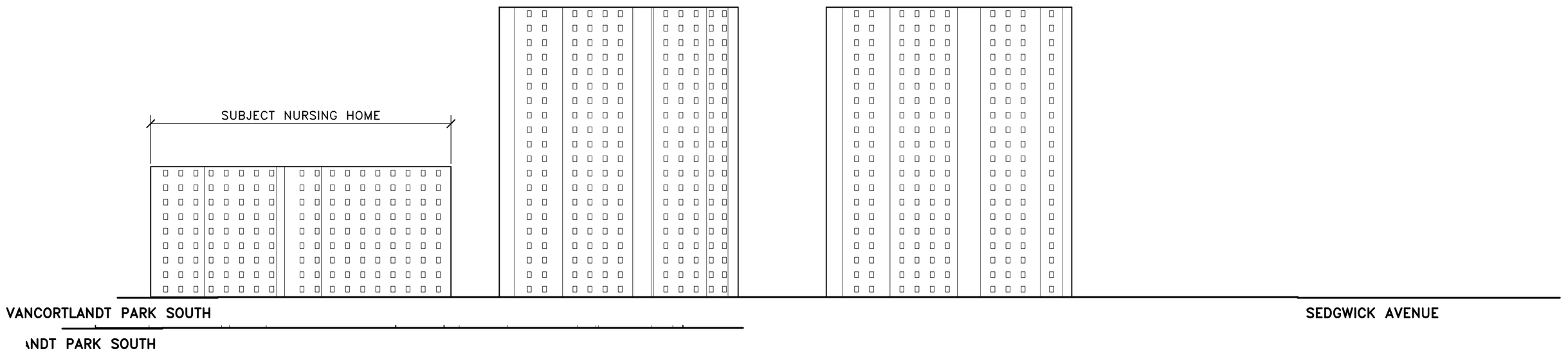
SEAL & SIGNATURE:
DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No:
A-0.1
DWG. OF

APP NO.:



01 STREETSCAPE ALONG SAXON AVENUE (LOOKING WEST)

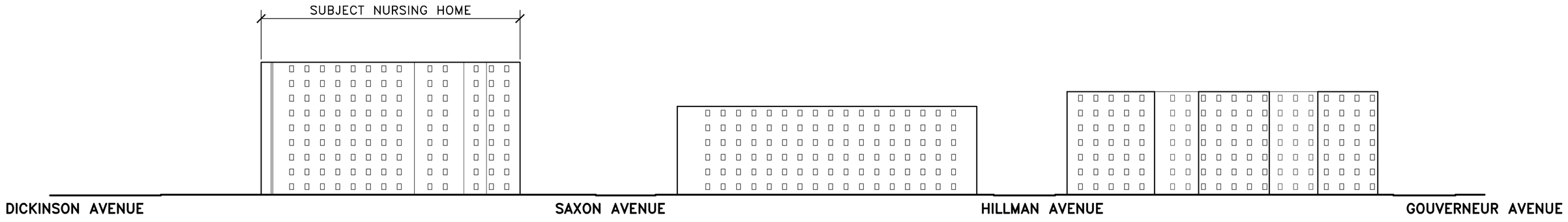
SCALE: 1/32"=1'-0"



VANDT PARK SOUTH

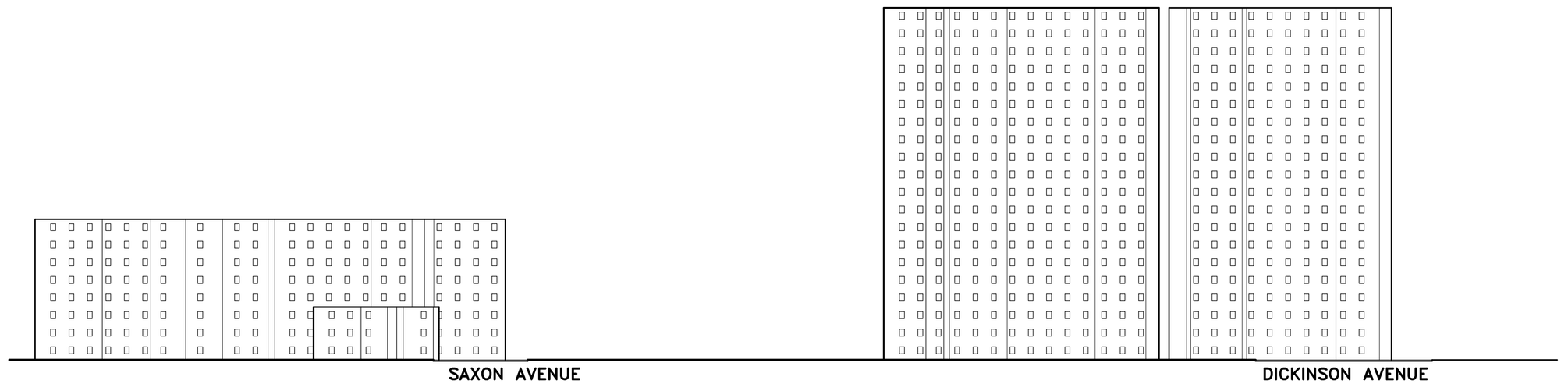
02 STREETSCAPE ALONG SAXON AVENUE (LOOKING EAST)

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



03 STREETSCAPE ALONG VANCORTLAND DRIVE SOUTH (LOOKING SOUTH)

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



04 STREETSCAPE ALONG SEDGWICK AVENUE (LOOKING NORTH)

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

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

--

STREET
TOWN, STATE ZIP
WEBSITE

TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT

241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL. 516-997-6710 FAX. 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

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04.23.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODIFICATION
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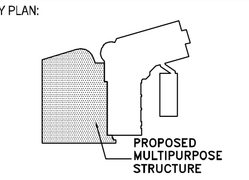
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING

NORTH ARROW: N

SCALE:

KEY PLAN:



DRAWING TITLE :

STREETSCAPES

SEAL & SIGNATURE:

DATE:
JOB NO.: 0903.00(PP111)
DRAWN BY:
CHECKED BY:

DRAWING No:

A-0.2

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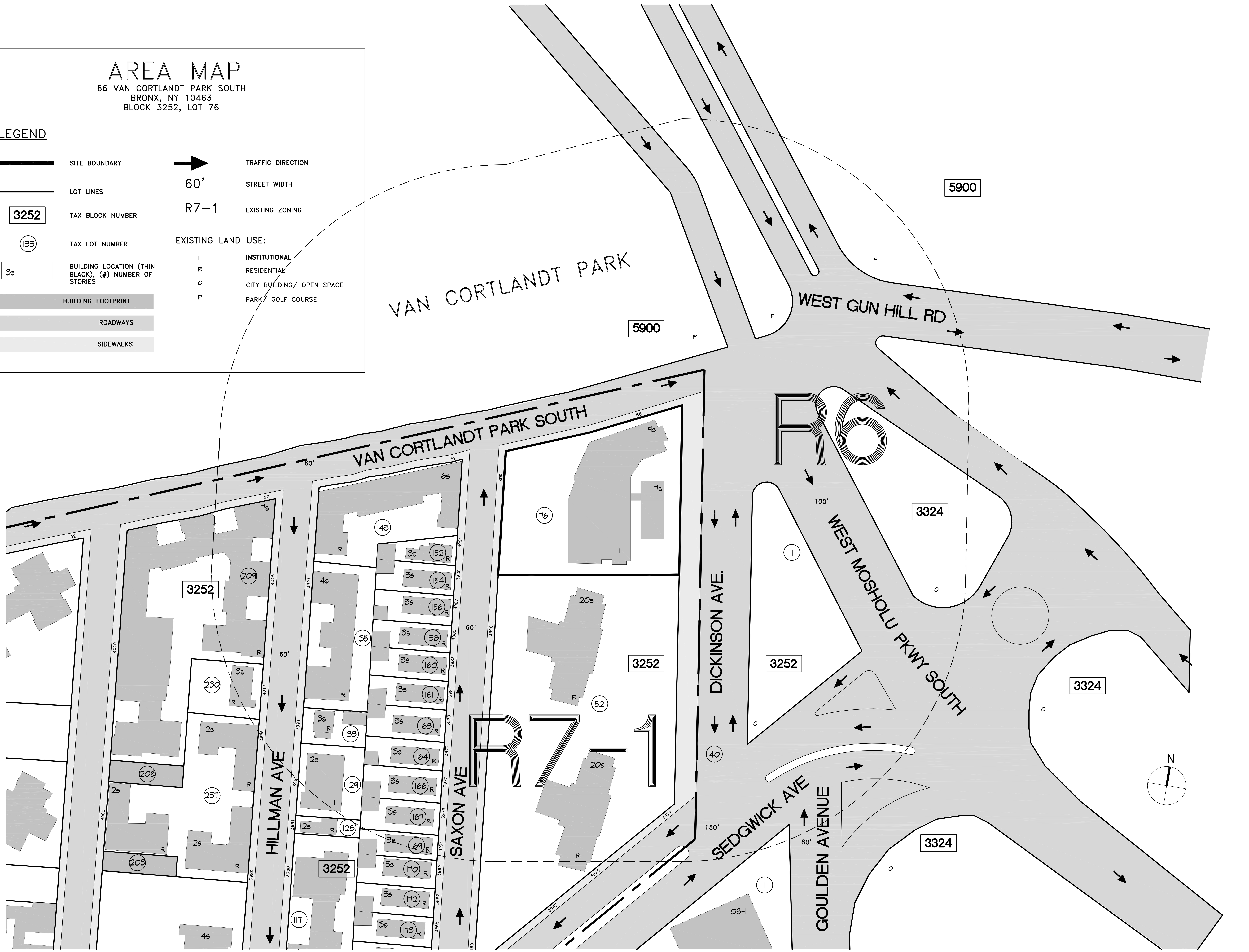
APP NO.:



PROJECT :
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

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FAX : (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

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NORTH ARROW

SCALE:

KEY PLAN:

PROPOSED MULTIPURPOSE STRUCTURE

DRAWING TITLE :

AREA MAP

SEAL & SIGNATURE:

DATE:	01-28-2013
JOB NO.:	0903 (08PP11)
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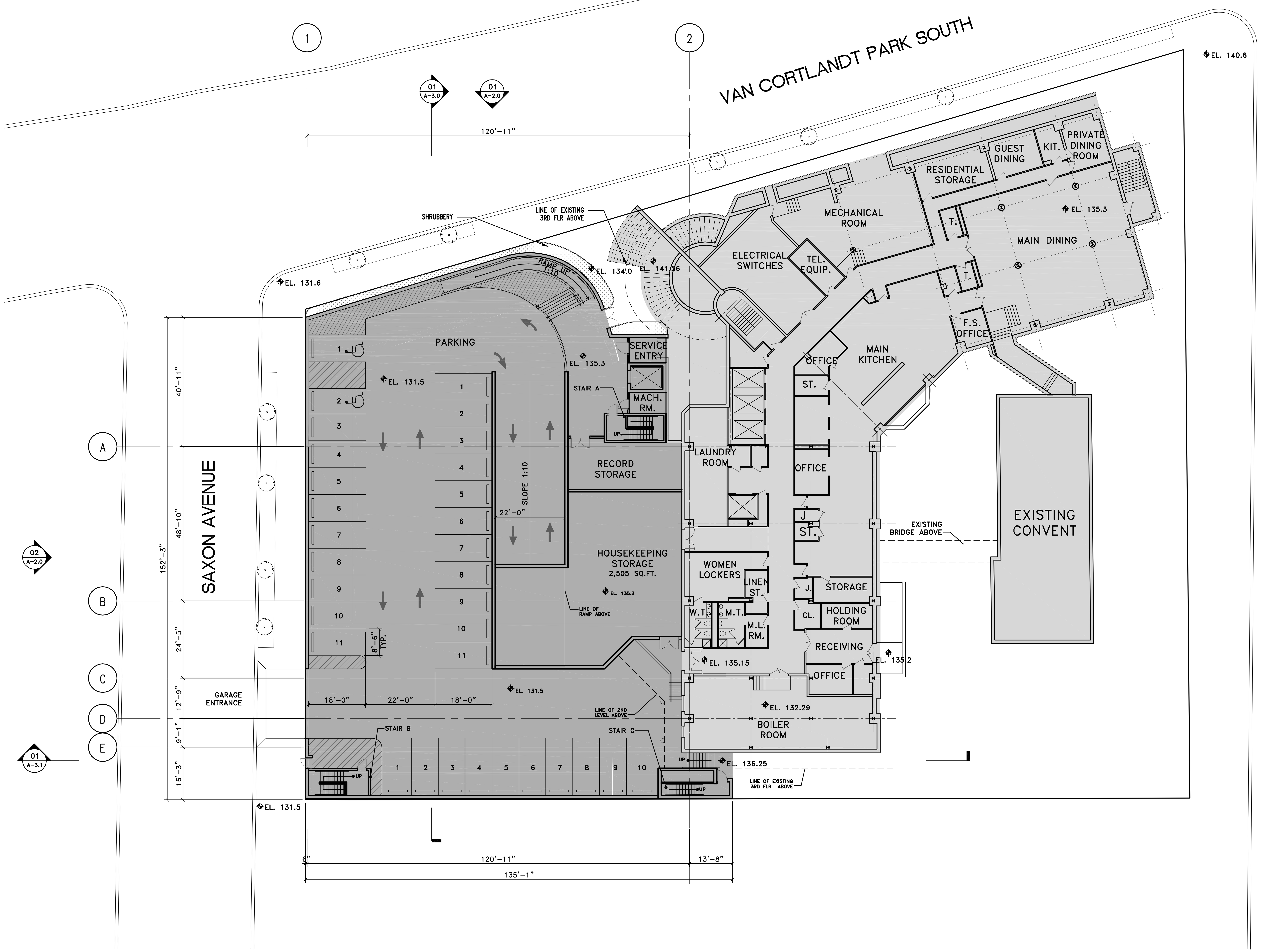
CHECKED BY:	DM
DRAWING No:	A-0.3
DWG.	OF

APP NO.:



FIRST FLOOR PLAN (32 CARS)

SCALE: 1/16"=1'-0"

NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY

PROJECT :
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :
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STREET
TOWN, STATE ZIP
WEBSITE
TEL.: (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :
DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

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01.28.2013	REVISED
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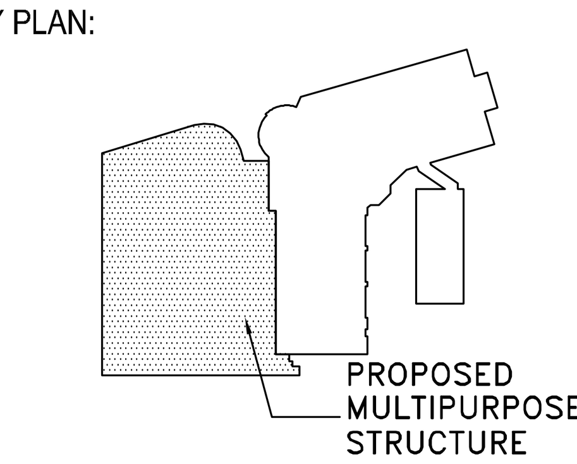
06.01.2010	ISSUED TO DOB
04.26.2010	ISSUED TO DOH

NORTH ARROW N

SCALE: 0 8' 16' 32'
SCALE: 1/16" = 1'-0"

KEY PLAN:

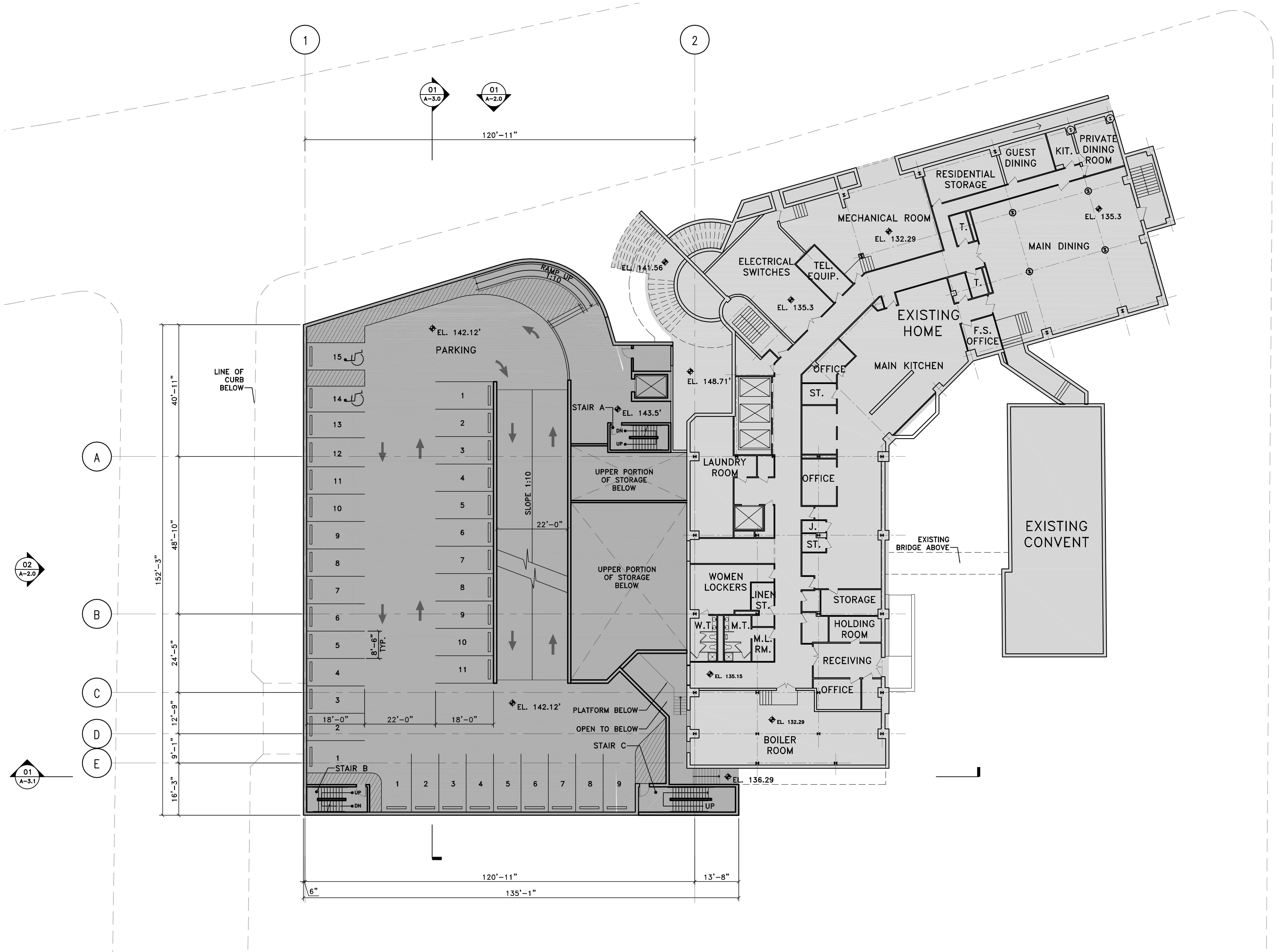


DRAWING TITLE :
FIRST FLOOR PLAN

SEAL & SIGNATURE:

DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No:
A-1.1
DWG. OF

APP NO.:



SECOND FLOOR PLAN (35 CARS)

SCALE: 1/16"=1'-0"

NOTE:
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PROJECT:
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER:
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STREET
TOWN, STATE ZIP
WEBSITE
TEL.: (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT:
DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

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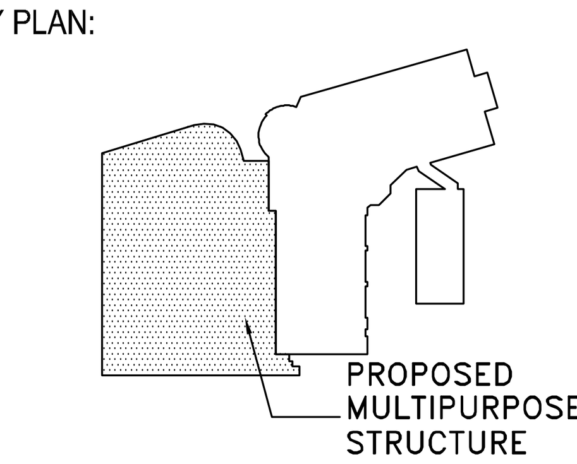
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB
04.26.2010	ISSUED TO DOH

NORTH ARROW: N
SCALE: 0 8' 16' 32'
SCALE: 1/16" = 1'-0"

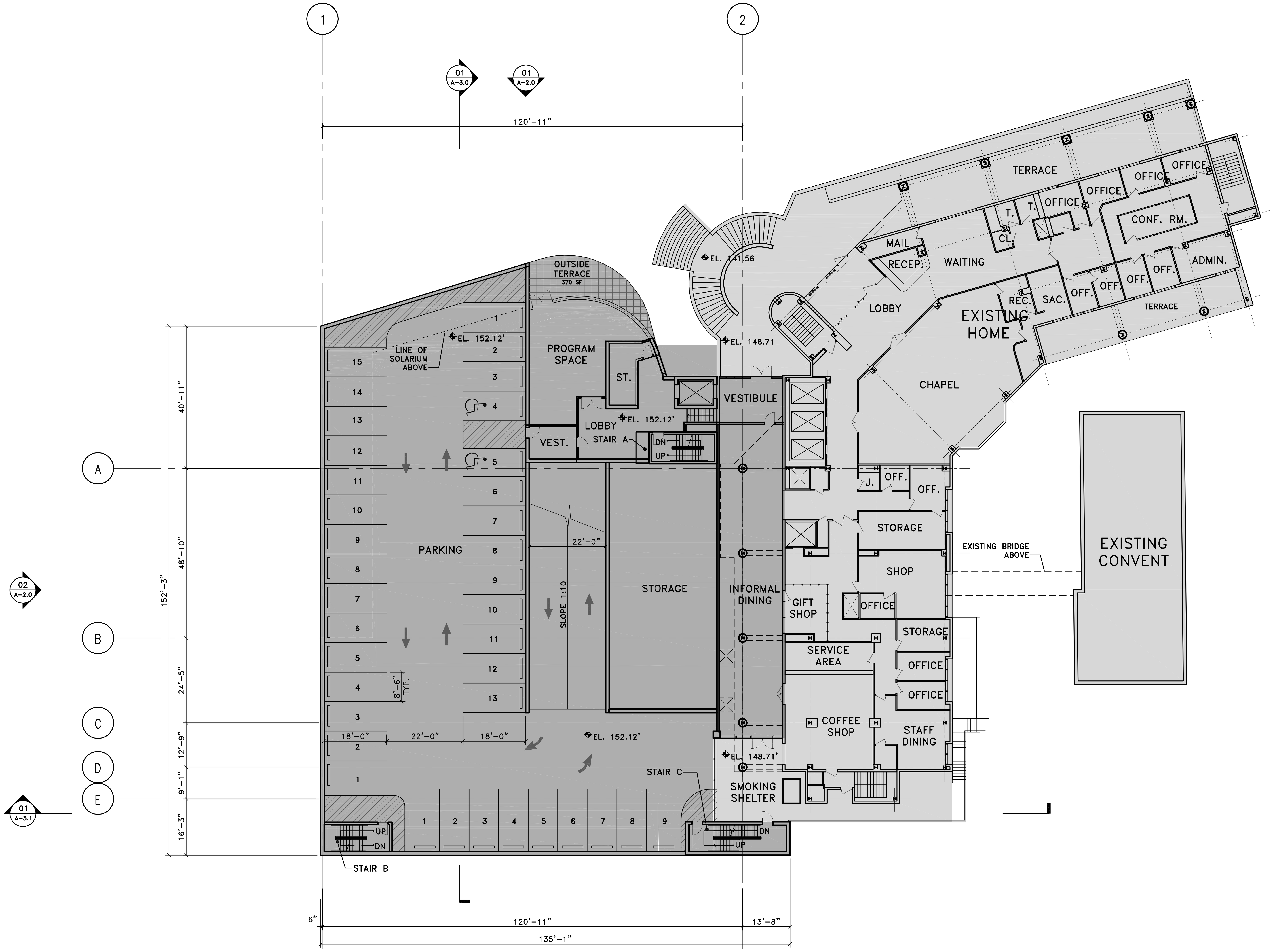
KEY PLAN:



DRAWING TITLE:
SECOND FLOOR PLAN

SEAL & SIGNATURE:
DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No:
A-1.2
DWG. OF

APP NO.:



THIRD FLOOR PLAN (37 CARS)

SCALE: 1/16"=1'-0"

NOTE:
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PROJECT :
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :
--
STREET
TOWN, STATE ZIP
WEBSITE
TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :
DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

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03.25.2013	ISSUED TO CITY PLANNING - LANDSCAPE MODICATION
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB
04.26.2010	ISSUED TO DOH

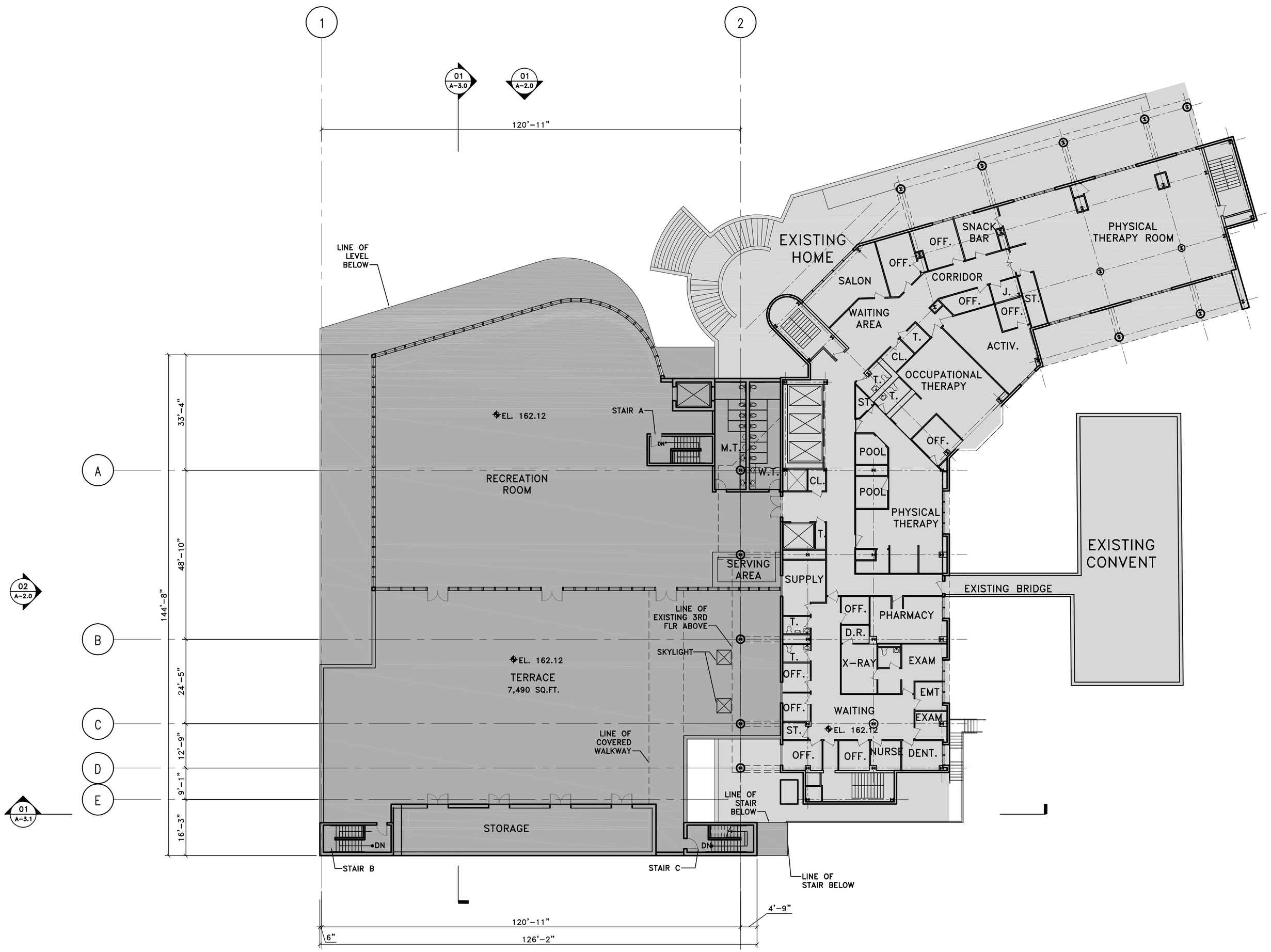
NORTH ARROW N
SCALE: 0 8' 16' 32'
SCALE: 1/16" = 1'-0"

KEY PLAN:
PROPOSED MULTIPURPOSE STRUCTURE

DRAWING TITLE :
THIRD FLOOR PLAN

SEAL & SIGNATURE:
DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No:
A-1.3
DWG. OF

APP NO.:



TERRACE FLOOR PLAN

SCALE: 1/16"=1'-0"

NOTE:

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PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

--

STREET
TOWN, STATE ZIP
WEBSITE

TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT

241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

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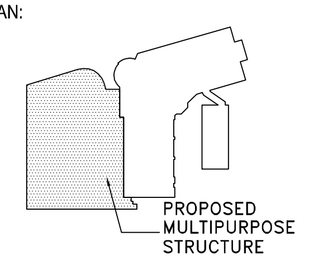
06.01.2010	ISSUED TO DOB
04.26.2010	ISSUED TO DOH

NORTH ARROW N

SCALE: 0 8' 16' 32'

SCALE: 1/16" = 1'-0"

KEY PLAN:



DRAWING TITLE :

TERRACE FLOOR PLAN

SEAL & SIGNATURE:

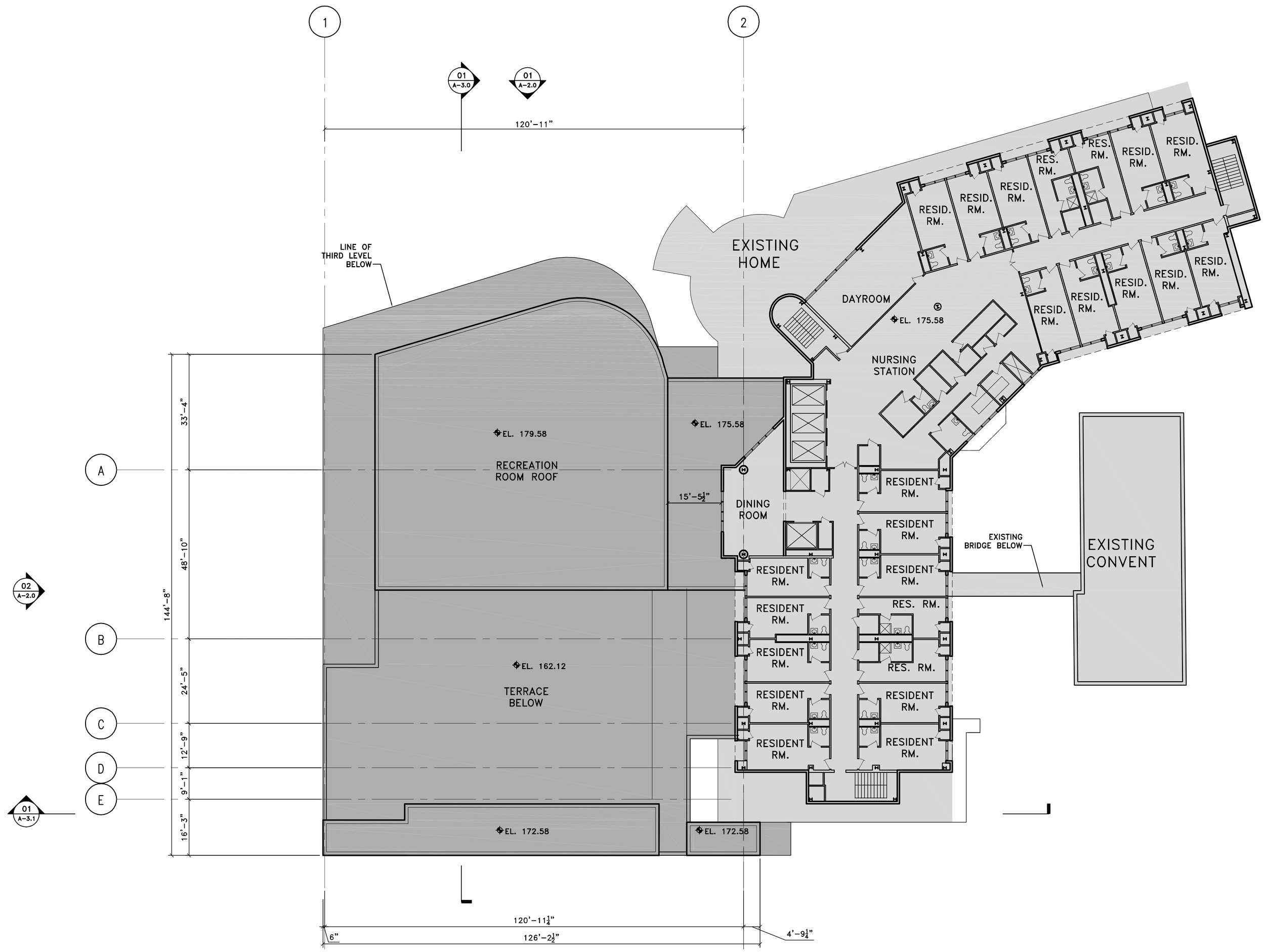
DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:

DRAWING No:

A-1.4

DWG. OF

APP NO.:



PROPOSED ADDITION | TYPICAL NURSING HOME FLOOR PLAN: 3 THRU 8

ROOF FLOOR PLAN

SCALE: 1/16"=1'-0"

NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

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STREET
TOWN, STATE ZIP
WEBSITE

TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT

241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

MEP ENGINEERS :

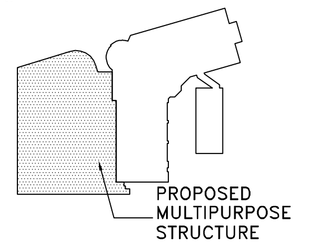
DATE:	REVISION:
04.23.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
03.25.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB
04.26.2010	ISSUED TO DOH

NORTH ARROW: N

SCALE: 0 8' 16' 32'

SCALE: 1/16" = 1'-0"

KEY PLAN:



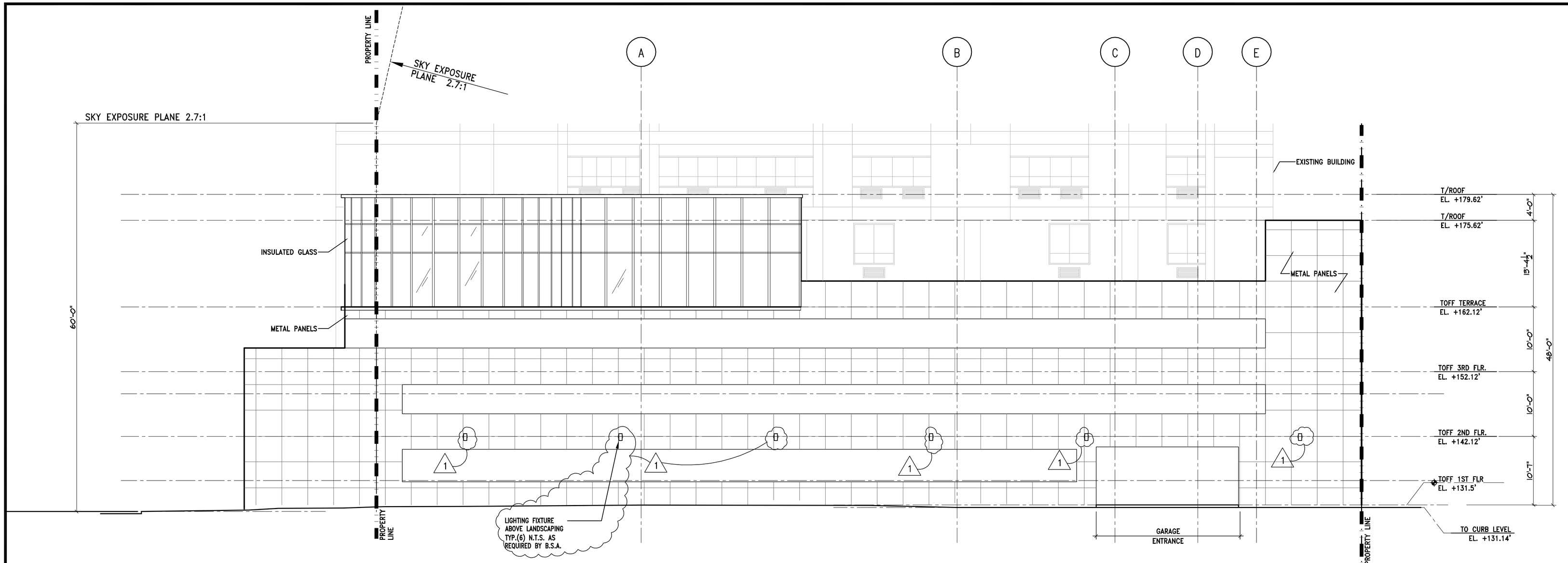
DRAWING TITLE :

ROOF FLOOR PLAN

SEAL & SIGNATURE:

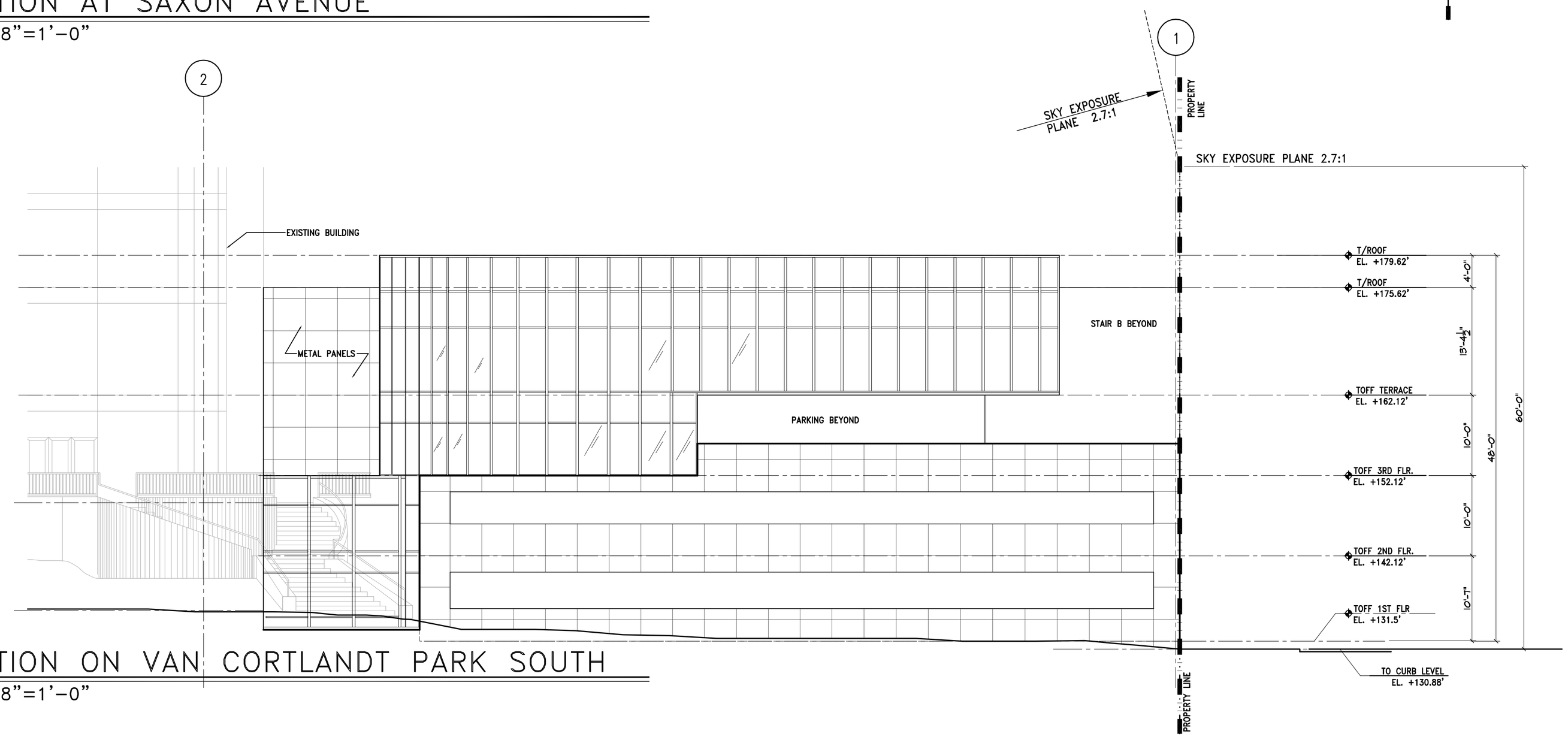
DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No: A-1.5
DWG. OF

APP NO.:



2 ELEVATION AT SAXON AVENUE

SCALE: 1/8"=1'-0"



1 ELEVATION ON VAN CORTLANDT PARK SOUTH

SCALE: 1/8"=1'-0"

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

--

STREET
TOWN, STATE ZIP
WEBSITE

TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

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04.23.2013	ISSUED TO CITY PLANNING - SHOW EXTERIOR LIGHTING
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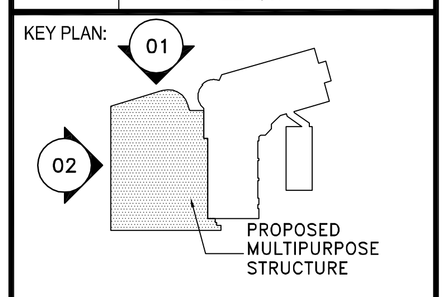
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB

NORTH ARROW: N

SCALE: 0 8' 16' 32'

SCALE: 1/16" = 1'-0"

KEY PLAN:



DRAWING TITLE :

BUILDING ELEVATIONS

SEAL & SIGNATURE:

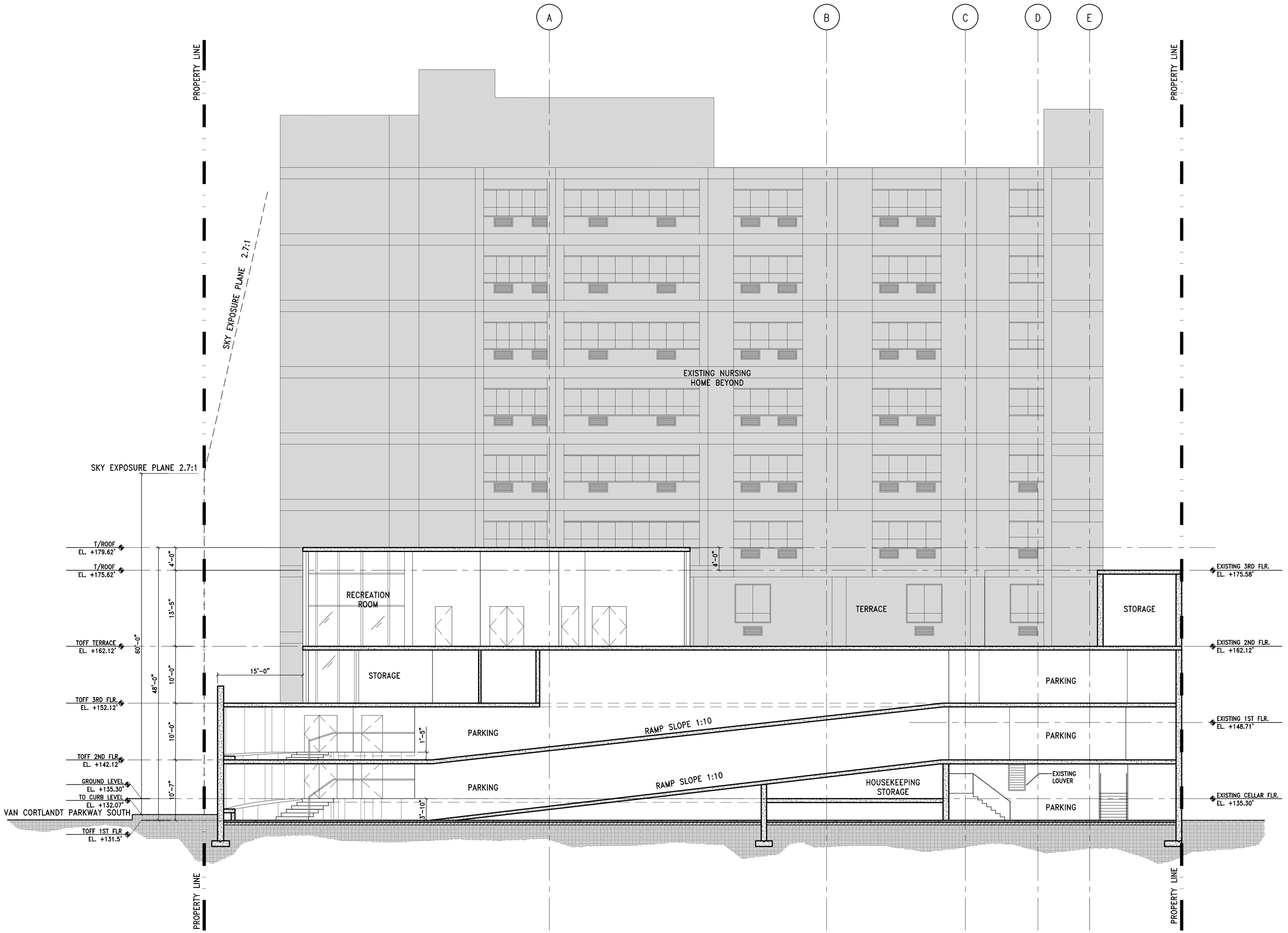
DATE:	07-27-09
JOB NO.:	0903 (08PP11)
DRAWN BY:	KS
CHECKED BY:	-

DRAWING No:

A-2.0

DWG. OF

APP NO.:



1 BUILDING SECTION

SCALE: 1/8"=1'-0"

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

--

STREET
TOWN, STATE ZIP
WEBSITE

TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

MEP ENGINEERS :

DATE:	REVISION:
04.23.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
03.25.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB
04.26.2010	ISSUED TO DOH

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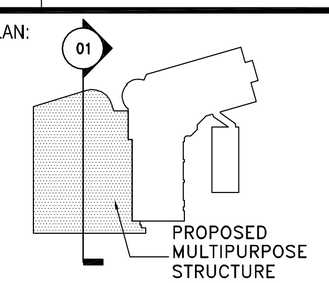
SCALE: 0 8' 16' 32'

SCALE: 1/8" = 1'-0"

KEY PLAN:



DRAWING TITLE :

BUILDING SECTIONS

SEAL & SIGNATURE:

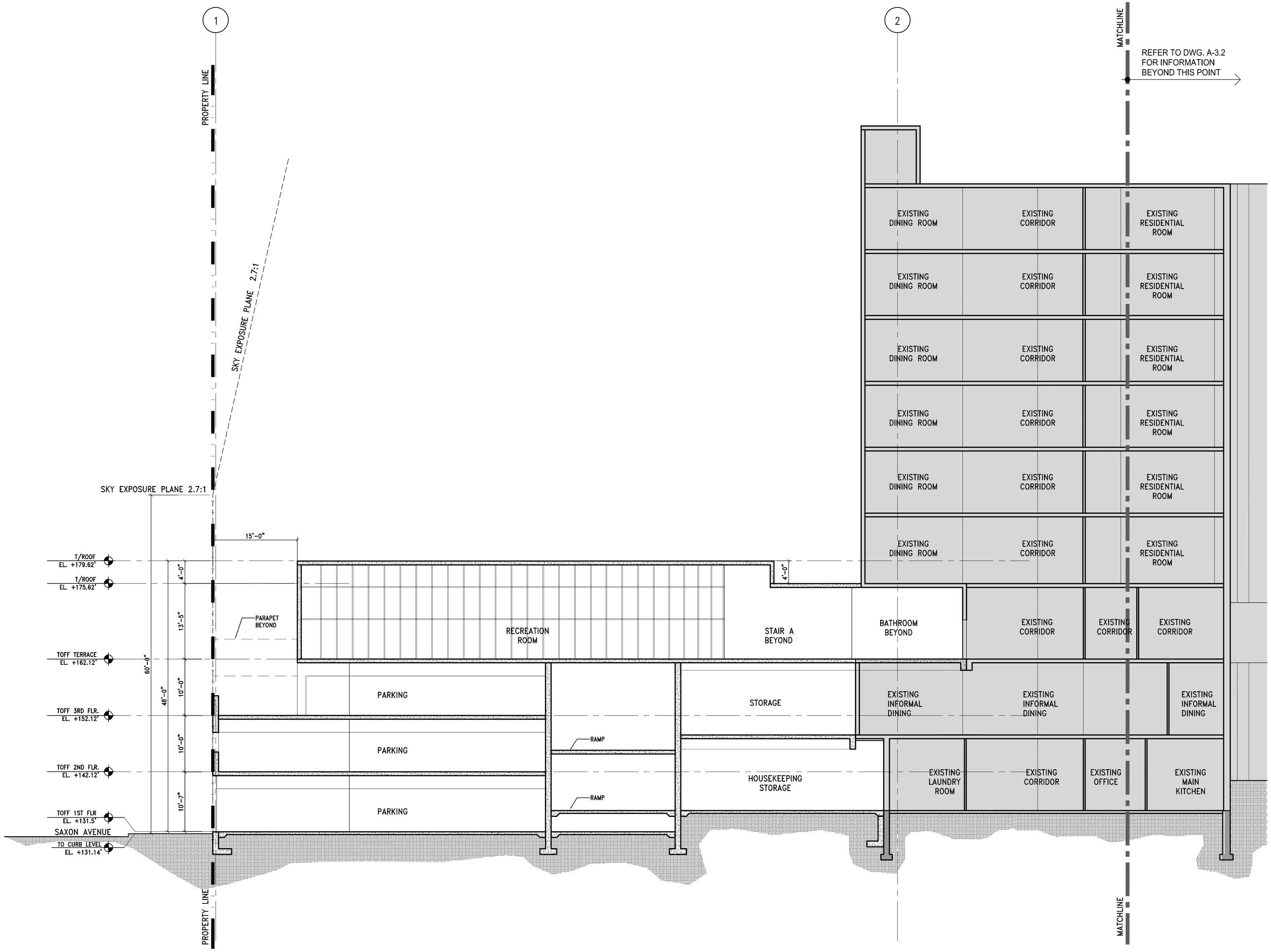
DATE: 08-18-09
JOB NO.: 0903 (08PP11)
DRAWN BY: KS
CHECKED BY: -

DRAWING No:

A-3.0

DWG. OF

APP NO.:



1 BUILDING SECTION

SCALE: 1/8"=1'-0"

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

--

STREET
TOWN, STATE ZIP
WEBSITE

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TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

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DATE:	REVISION:
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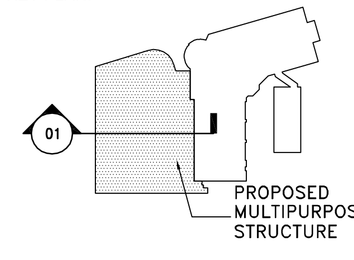
03.25.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB

NORTH ARROW N

SCALE: 0 8' 16' 32'

SCALE: 1/8" = 1'-0"

KEY PLAN:



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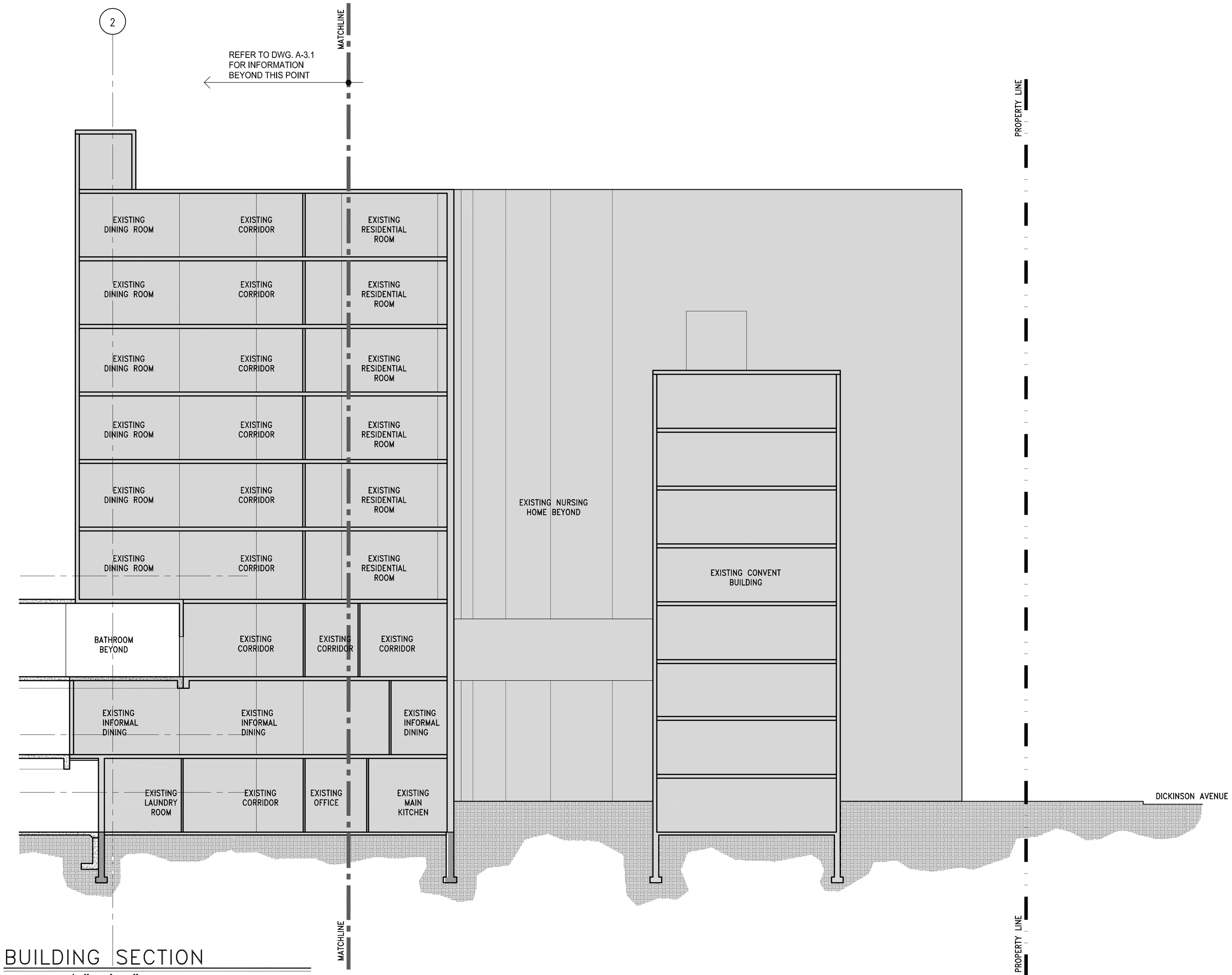
BUILDING SECTIONS

SEAL & SIGNATURE:

DATE:	08-18-09
JOB NO.:	0903 (08PP11)
DRAWN BY:	KS
CHECKED BY:	-
DRAWING No:	A-3.1
DWG.	OF

APP NO.:



1 BUILDING SECTION

SCALE: 1/8"=1'-0"

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

--

STREET
TOWN, STATE ZIP
WEBSITE

TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

STRUCTURAL ENGINEERS :

MEP ENGINEERS :

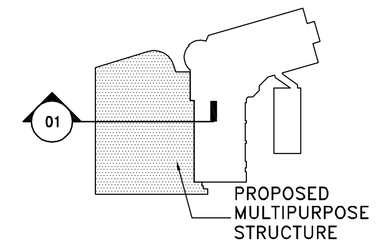
DATE:	REVISION:
04.23.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
03.25.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
01.28.2013	REVISED
05.17.2012	ISSUED TO CITY PLANNING
06.01.2010	ISSUED TO DOB

NORTH ARROW: N

SCALE: 0 8' 16' 32'

SCALE: 1/8" = 1'-0"

KEY PLAN:



DRAWING TITLE :

BUILDING SECTIONS

SEAL & SIGNATURE:

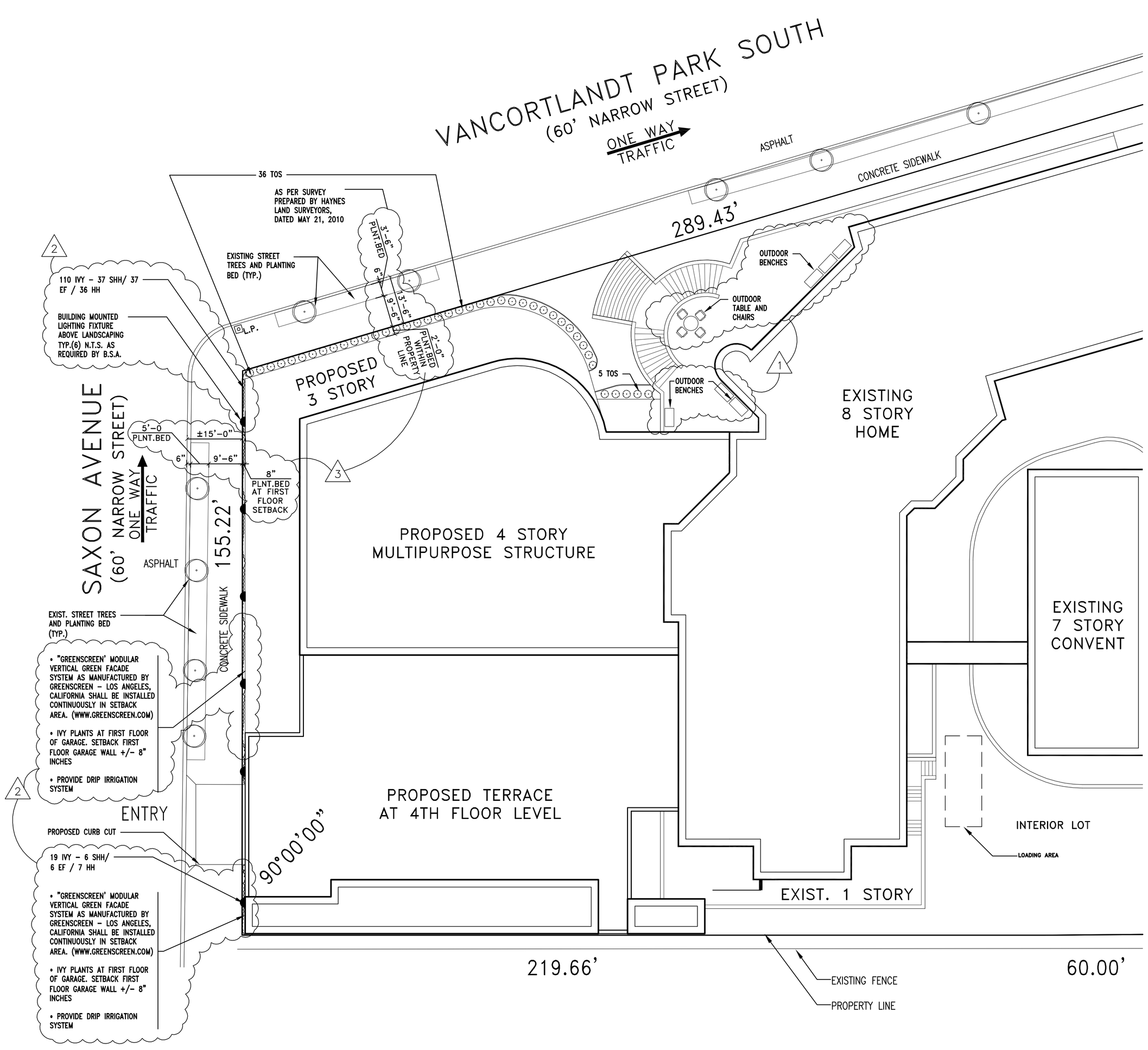
DATE:	08-18-09
JOB NO.:	0903 (08PP11)
DRAWN BY:	KS
CHECKED BY:	-

DRAWING No:

A-3.2

DWG. OF

APP NO.:



PARTIAL LANDSCAPE PLAN

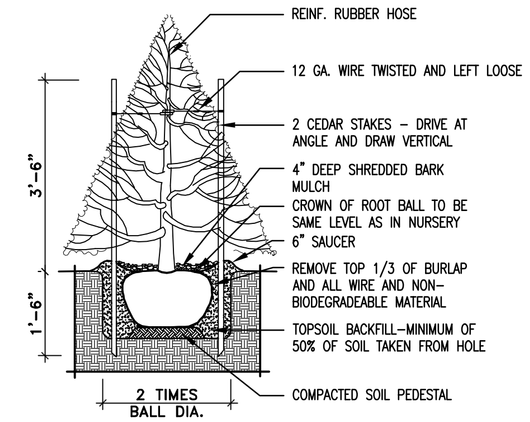
SCALE: 1/16"=1'-0"

PLANT LIST

QUAN.	KEY	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
41	TOS	THUJA OXIDENTALIS SMARGED	EMERALD ARBROVITAE (VERTICAL EVERGREEN)	3'–0'' O.C.	6 FEET TO 8 FEET HIGH
43	SHH	SUB–ZERO HEDERA HELIX	SUB–ZERO ENGLISH IVY (VERTICAL EVERGREEN)	1'–0'' O.C.	3" POTS
43	EF	EUONYMUS FORTUNEI	WINTER CREEPER IVY (VERTICAL EVERGREEN)	1'–0'' O.C.	3" POTS
43	HH	HEDERA HELIX (ORO DU BOGLIASCO)	GOLDEN ENGLISH IVY (VERTICAL EVERGREEN)	1'–0'' O.C.	3" POTS

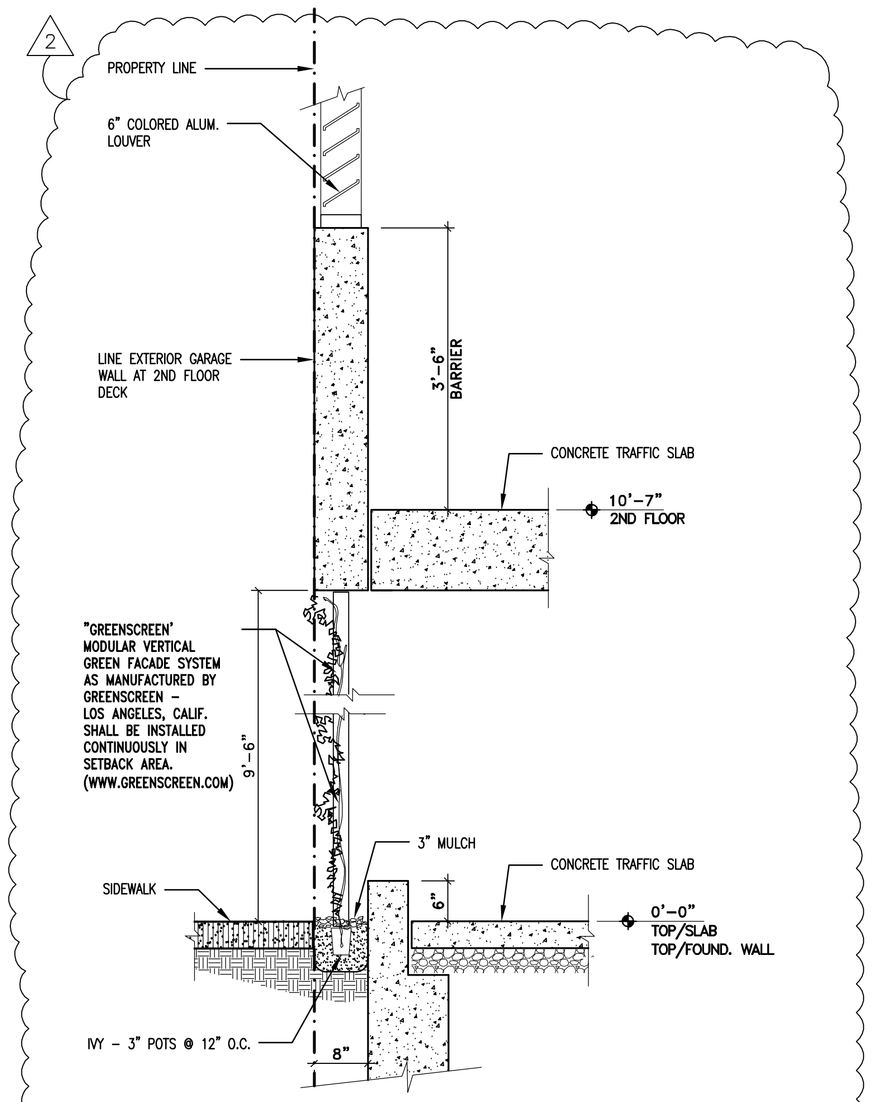
PLANTING NOTES

1. ALL PLANT MATERIALS TO BE OF HIGHEST QUALITY NURSERY GROWN STOCK.
2. ALL PLANT PITS TO BE BACK FILLED WITH TOPSOIL BLENDED WITH 0-20-0 FERTILIZER AT THE RATE OF 5 POUNDS PER YARD.
3. ALL BEDS TO BE MULCHED WITH 4" DEEP FRESH MILLED SHREDDED BARK MULCH.
4. ALL TREES TO BE PLANTED AND STAKED AS PER DETAIL.
5. ALL PLANT MATERIALS TO BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER PLANTING.
6. ALL PLANT MATERIALS ARE TO BE MAINTAINED WITH FERTILIZER AND OTHER REQUIRED MATERIALS TO MAINTAIN A NEAT AND HEALTHY APPEARANCE.
7. ALL PLANTS WHICH DIE OR BECOME DISEASED SHALL BE REPLACED BY THE CONTRACTOR.



EVERGREEN PLANTING DETAIL

SCALE: N.T.S.



EVERGREEN IVY PLANTING DETAIL

SCALE: 3/4"=1'-0"

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

–

STREET
TOWN, STATE ZIP
WEBSITE
TEL. : (xxx) xxx-xxxx
FAX.: (xxx) xxx-xxxx

ARCHITECT :

DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

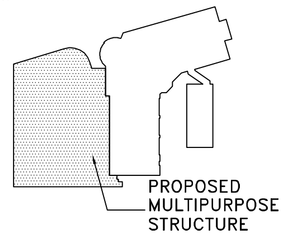
STRUCTURAL ENGINEERS :

MEP ENGINEERS :

3	04.23.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
2	03.25.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
1	01.24.2013	ISSUED TO CITY PLANNING SHOWING ADDED BENCHES
	05.17.2012	ISSUED TO CITY PLANNING
	06.01.2010	ISSUED TO DOB
	DATE:	REVISION:

NORTH ARROW
SCALE: 0 8' 16' 32'
SCALE: 1/16" = 1'-0"

KEY PLAN:



DRAWING TITLE :

LANDSCAPE PLANTING

SEAL & SIGNATURE:

DATE:	12-07-2012
JOB NO.:	0903 (08PP11)
DRAWN BY:	JN
CHECKED BY:	DM
DRAWING No:	A-4.0
DWG.	OF

APP NO.:

Appendix B: Shadow Analyses prepared by Ecosystems Strategies, Inc.

Ecosystems Strategies, Inc.
24 Davis Avenue, Poughkeepsie, NY 12603
phone 845.452.1658 | fax 845.485.7083 | ecosystemsstrategies.com

January 11, 2013

St. Patrick's Home for the Aged and Infirm
c/o Neil Weisbard
Slater & Beckerman
61 Broadway
New York, New York 10012

Re: Shadows Analysis for the proposed structure to be located at
66 Van Cortlandt Park, Borough of Bronx, New York
ESI File: SB12012.50R

Dear Mr. Weisbard:

The proposed construction of a 48 foot tall building could potentially impact Van Cortlandt Park located 65 feet to the north of the proposed action. The longest shadow from the proposed action would be 206 feet (48 feet x the shadow length factor [SLF] of 4.3) on December 21st of each year. As a result of this finding, additional shadow analysis is required.

This Additional CEQR Shadows Analysis Letter Report (Letter Report) describes the findings of this additional shadow analysis and has been prepared with reference to the requirements and terminology for such analysis set forth in Chapter 8. of the CEQR Manual. Shadow Analysis Maps and Photographs representing these findings are attached.

Shadow Entering and Exiting Angles

Existing Conditions and Future Conditions Without Action

The project site is currently an asphalt-paved parking lot at street level. No shadows are cast by the project site in its existing condition, nor would they be with the without-action condition, where the existing parking lot would remain.

With Action

Previous analysis has determined that the action's shadow *length* had the potential to impact the Van Cortlandt Park because the longest possible length of the shadow is greater than the distance to the Park (see Figure 1, Tier 1 Complete Radius). Additional analysis was required to determine the *angle* of the action's shadow in relation to true north and whether the shadow will actually fall on the Park at any time of year. As Figure 2, Tier 2 Analysis Map, indicates, the shadow angles of the proposed action will fall on the Park during the year.

Figure 3A, Tier 3 Analysis shows that the action's shadow would enter the Park (the entering angle) at -65° (SLF = 3.44) and would exit at 85° (SLF= 3.3). These entering and exiting angles set the limits of shadows that the action would cast on the park at all times of the year. Table 1, below shows the potential enter-exit times for shadows from the proposed structure entering Van Cortlandt Park.

Table1: Shadow Enter-Exit Times

Analysis Day	**December 21**	**March 21/ September 21**	**May 6/ August 6**	**June 21**
Timeframe Window	8:51 a.m. -2:53 p.m.	7:36 a.m. -4:29 p.m.	6:27 a.m. -5:18 p.m.	5.57 a.m. -6:01 p.m.
Shadow enter-exit times	12:08 a.m. -2:53 p.m.	8:28 a.m. -5:29 p.m.	9:18 a.m. -4:04 p.m.	9:44 a.m. -3:23 p.m.
Incremental shadow duration	6 hrs 2 minutes	8 hours 6 minutes	6 hours 14 minutes	5 hours 28 minutes

Using Table A-1 of the CEQR Manual, which gives maximum SLFs (on December 21st) for all shadow angles, the maximum shadow length of the building falling on the Bland Playground can be determined. Data from Table A-1 indicate a maximum shadow length from the proposed action range between 179 (48 x 3.44) feet at the entering angle and 158 (48 x 3.3) feet at the exiting angle. These calculations demonstrate that the proposed building's shadow will cross the park. See Figure 3B, Tier 3 Detailed Analysis.

Surrounding Structures

Without action

The project site is surrounded to the east, south and west by buildings of greater (east and south) and equal (west) height. These buildings shade the project site and the adjoining part at various times and at various times of year such that the impact of shadows from the proposed project would be minimal. Specifically, the existing eight-story St. Patrick's Home structure adjoining to the west is 136 feet high. The entering and exiting angles for shadows impacting the park for this existing structure are -70° (SLF = 3.36) and would exit at 80° (SLF= 3.29). A maximum shadow length for this building is therefore 456 (245 x 3.36) and 447 (136 x 3.29). These shadows are longer than those cast by the existing structure, which would therefore have no impact on Van Cortland Park for times when the proposed project is in the shadow of the existing building adjoining to the east.

The shadow impact of the adjoining building is supplemented by the twenty-story apartment building adjoining to the south, which shades the property from the south. The cumulative shadow impact of these southern and eastern adjoining buildings mean that the actual angle where the shadow of the proposed project could enter Van Cortland Park is -4°(shadow length

factor 2.07). Likewise, the presence of the adjoining five-story structure to the west shades the project site so that the actual entering angle for shadows from the proposed project is -78°(shadow length factor 3.24). These data indicate that for the with-action scenario the shadows from the proposed project are between 99 feet (48 x 2.07) and 155 (48 x 3.24) and have the potential to impact the park.

With Action

Table 2: Maximum Shadow length Factor for Each Angle from true North

Analysis Day	Jun-21	May 6	Mar 21	Dec-21
SLF -4°	0.31	0.46	0.88	2.07
Shadow length	14.8	22.0	42.2	99.36
SLF -78°	0.84	1.28	No Shadow	No Shadow
Shadow length	40.3	61	N/A	N/A

These data indicate that shadows from the proposed project would reach the park only on December 21 between 12:08 and 14:53 (See Figure 3).

The table above indicates the length of time with action shadows from the project site would fall towards the park. Figure 3B, Tier 3 Detailed Analysis illustrates the entering and exiting shadows during dates in the growing season (Jun 21 and May 6) and the entering and exiting shadow for December 21. As the figure indicates, the shadows would not reach the park during the growing season. The park at this location is comprised of unmaintained woods.

Incremental Shadow Impacts Caused by the Proposed Action

The only time of year when the shadow cast by the proposed action will reach the park is during the winter. Without action conditions at the project site are such that any shadow impacts to the park are caused by existing structures; however, the shadow impacts are less than the minimum time needed for survival. No historical and cultural resources and no open space utilization are impacted.

Conclusions and Recommendations

Per Section 400 of the CEQR Manual, the proposed project would result in no shadow impacts to the park. These findings support the conclusion that potential shadow and impacts of the proposed action on the park are not significant.

No further investigation is recommended.

Please review this document and call me at (845) 452-1658 should you have any questions or comments.

I appreciate the opportunity to provide this service to you and look forward to working with you in the future.

Sincerely,

ECOSYSTEMS STRATEGIES, INC.

Paul H. Ciminello
President

RH:ndc

Attachments: Figures

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 1 - Shadow Analysis
Tier 1 Complete Radius

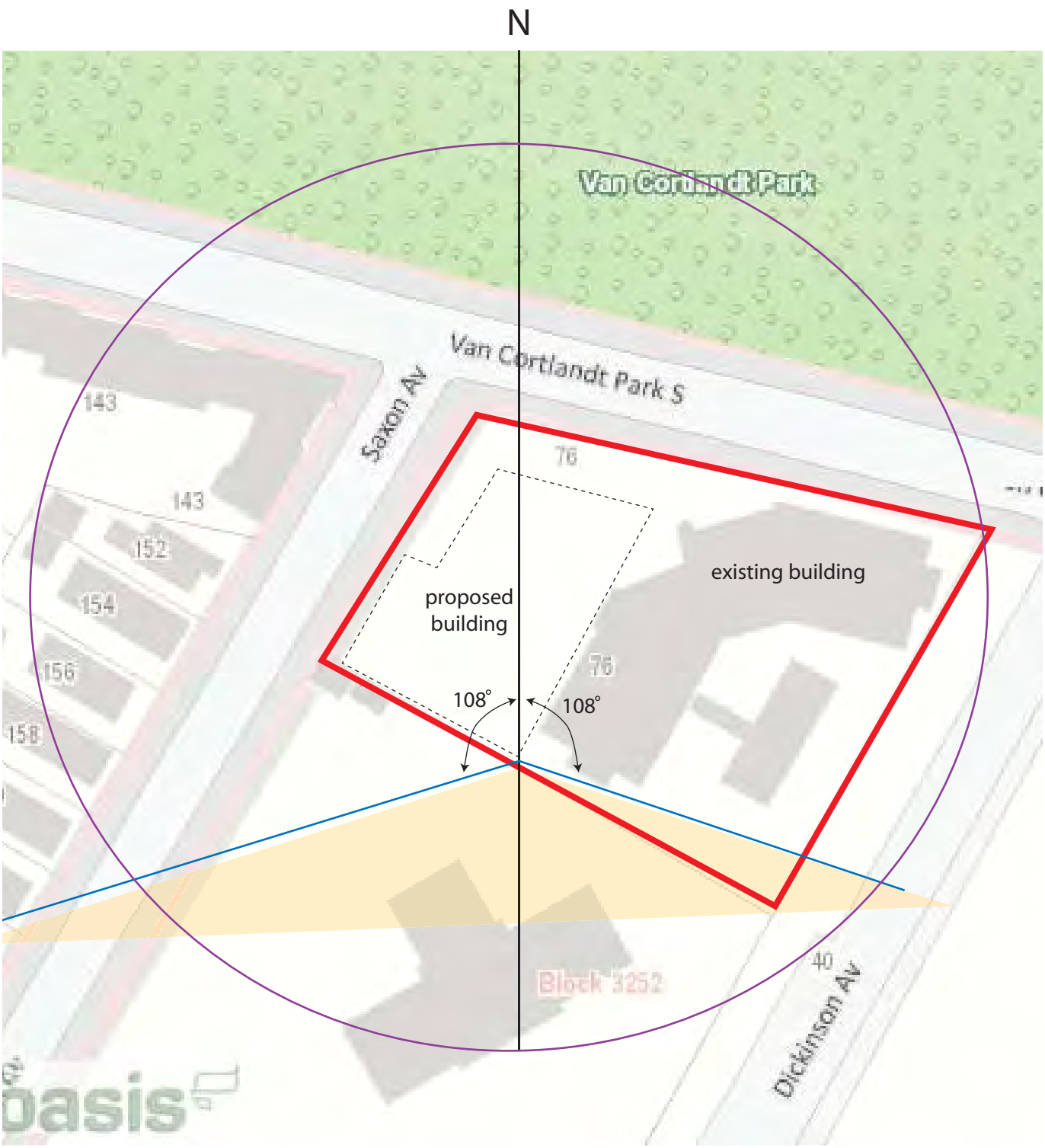
66 Van Cortlandt Park
Borough of Bronx, New York

Legend:
- proposed action site
- proposed building
- 4.3 radius

ESI File SB12012.50

April 2012

Attachment



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 2 - Shadow Analysis
Tier 2 Screening Assessment

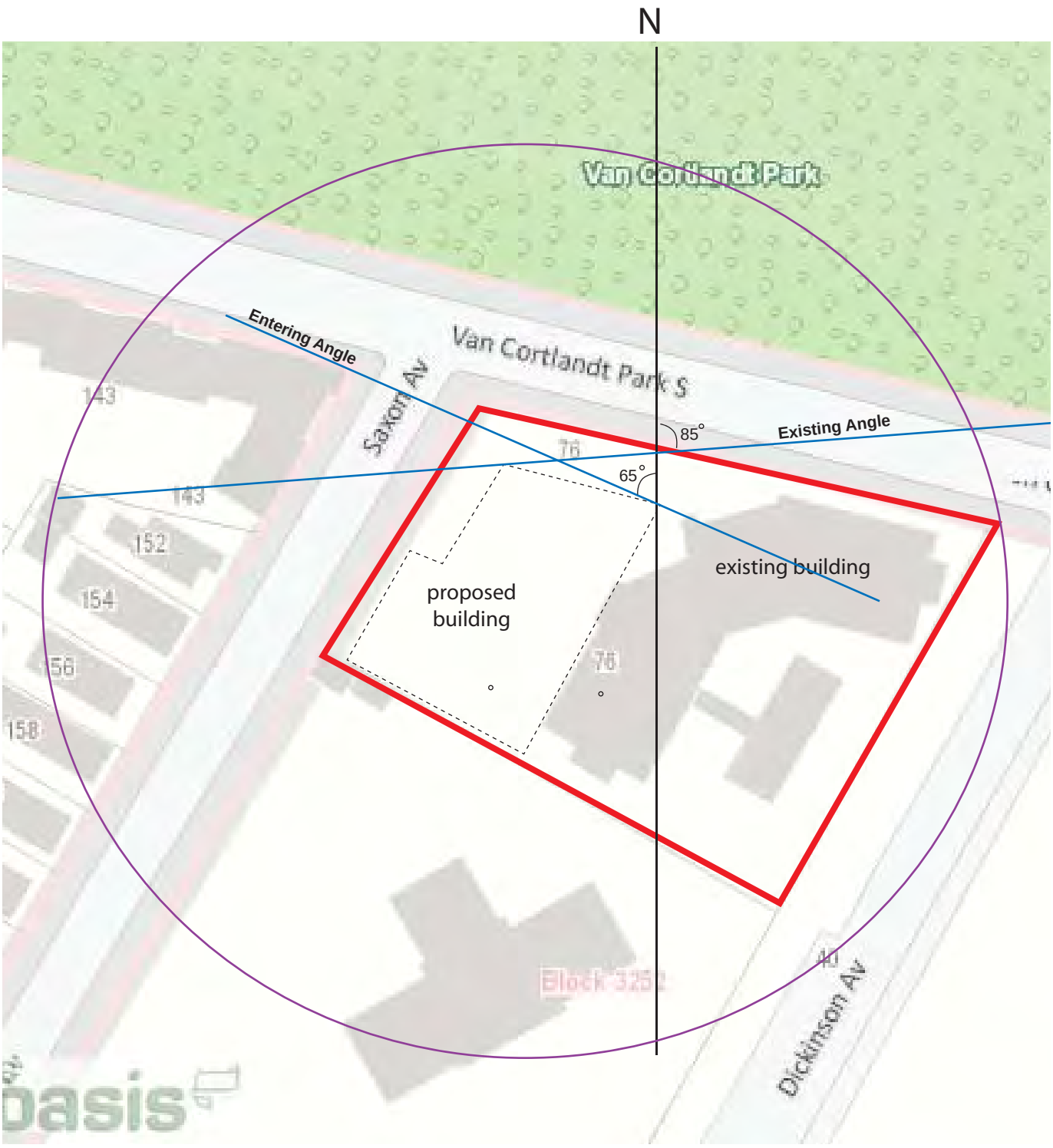
66 Van Cortlandt Park
Borough of Bronx, New York

Legend:
- proposed action site
- area that cannot be shaded by building
- 4.3 radius

ESI File SB12012.50

April 2012

Attachment



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 3A - Shadow Analysis
Tier 3 Analysis

66 Van Cortlandt Park
Borough of Bronx, New York

Legend:
- proposed action site
- 4.3 radius

ESI File SB12012.50

April 2012

Attachment

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 3B - Shadow Analysis
Tier 3 Detailed Analysis
66 Van Cortlandt Park
Borough of Bronx, New York

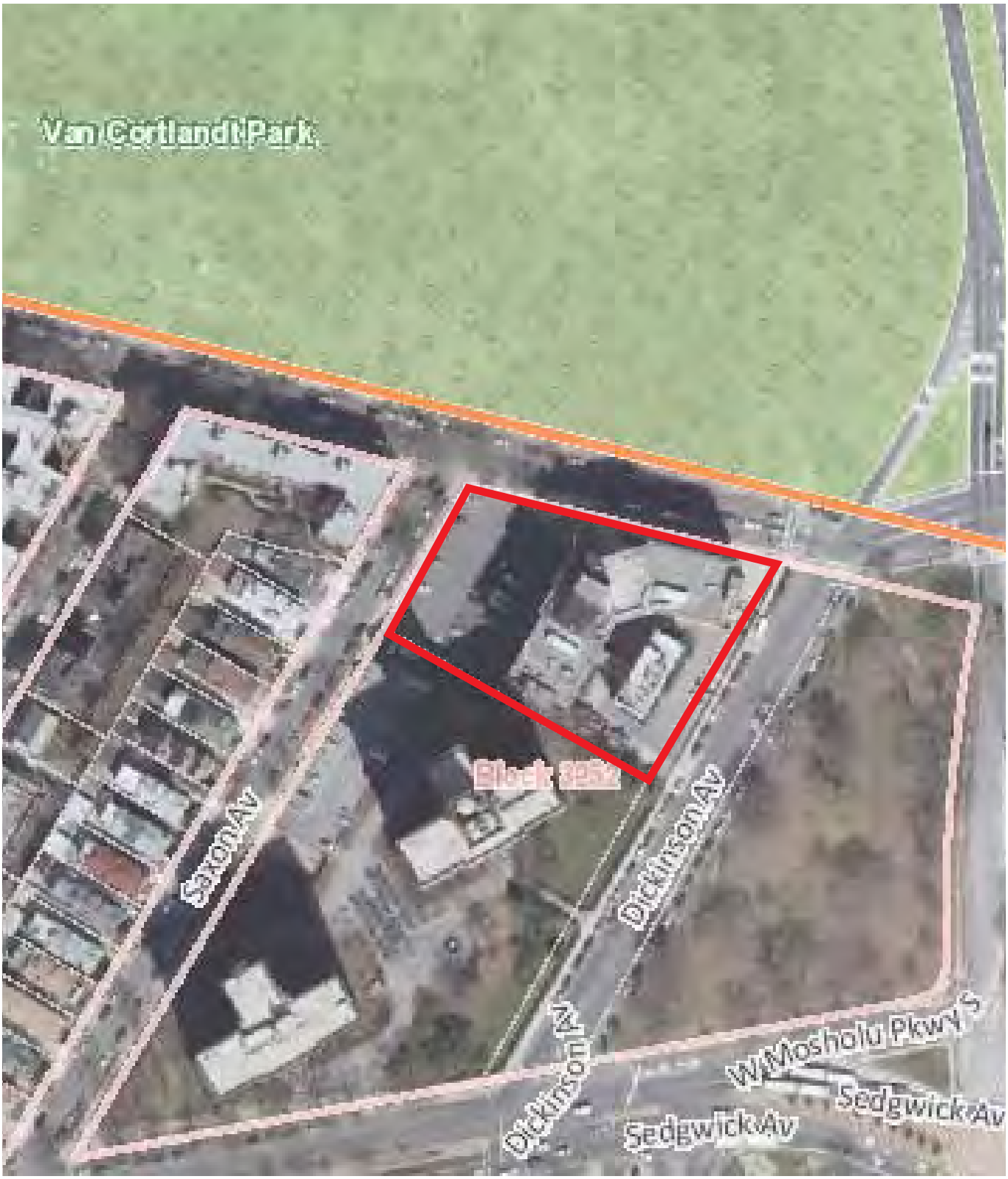
Legend:
- proposed action site
- 4.3 radius
- entering May 6
- entering June 21
- entering December 21
- exiting May 6
- exiting June 21
- exiting December 21

ESI File SB12012.50

April 2012

Attachment

Ecosystems Strategies, Inc.



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 4 - Shadow Analysis **Surrounding Structures and Shadows** 66 Van Cortlandt Park Borough of Bronx, New York	Legend: proposed action site	ESI File SB12012.50 April 2012 Attachment

Appendix C: Correspondence from the NYC Landmarks Preservation Commission

THE CITY OF NEW YORK LANDMARKS PRESERVATION COMMISSION
1 Centre Street, 9N, New York, NY 10007 (212) 669-7700 www.nyc.gov/landmarks

ENVIRONMENTAL REVIEW

NO LEAD AGENCY/NL-CEQR-X 1/8/2010

Project number **Date received**

Project: ST. PATRICK'S HOME FOR THE AGED 66 VAN CORTLANDT PARK S BBL 2032520076

[X**] No architectural significance**

[X**] No archaeological significance**

[ ] Designated New York City Landmark or Within Designated Historic District

[ ] Listed on National Register of Historic Places

[ ] Appears to be eligible for National Register Listing and/or New York City Landmark Designation

[ ] May be archaeologically significant; requesting additional materials

Comments:

Gina Santucci

1/14/2010

SIGNATURE DATE

26353_FSO_DNP_01142010.doc

Appendix D: Urban Design Analysis prepared by Ecosystems Strategies, Inc.

Ecosystems Strategies, Inc.
24 Davis Avenue, Poughkeepsie, NY 12603
phone 845.452.1658 | fax 845.485.7083 | ecosystemsstrategies.com

September 21, 2012

St. Patrick's Home for the Aged and Infirm
c/o Neil Weisbard
Slater & Beckerman
61 Broadway
New York, New York 10012

Re: Urban Design Analysis for the proposed structure to be located at
66 Van Cortlandt Park, Borough of Bronx, New York
ESI File: SB12012.50

Dear Mr. Weisbard:

The project site is located immediately south of the southeast corner of Van Cortlandt Park and since the project does not comply with zoning, urban design analysis is required.

This Urban Design Analysis Letter Report (Letter Report) describes the findings of preliminary urban design analysis prepared with reference to the requirements and terminology for such analysis set forth in Chapter 10 of the CEQR Manual. Urban design analysis maps and photographs representing these findings are attached.

Project Area

The project site is located immediately south of the southeast corner of Van Cortlandt Park and has frontage on the south side of Van Cortland Park; the west side of Dickinson Avenue, and the east side of Saxon Avenue. Adjoining to the east is the eight-story existing St. Patrick's Home building; to the south are multi-story residential buildings and to the west are a mix of single-and multi-story residential buildings. Surrounding lands include parks to the north and east and single and multi-family residential buildings are present to the west and south.

An aerial photograph of the study area; and zoning calculations; floor area calculations; Lot and tower coverage and building heights are attached. Also attached are ground level photographs of the site with the immediate context; and, a three dimensional representation of the future With Action condition streetscape.

Analysis

The project site is comprised of the northeast portion of Borough of Bronx Block 3252, Lot 25 (total lot area 54,708 sf); and is located in a zoning district R7-1. The No-Action condition includes a paved parking lot; the future With-Action condition would include the construction of a 3-4 story mixed use building at the location of the currently existing paved parking area. This use is in compliance with allowable uses for the zone. With the future No-Action condition the project site would remain a paved parking area. The north and west boundaries of the site are marked by chain link fence, the southern boundary is marked by a brick wall, and the eastern boundary is marked by the western side of the existing St. Patrick's home building which, together with a convent building, occupies the eastern half of the lot.

Zoning for the project site allows a floor to area ratio (FAR) of 3.44. Multiplying the lot area of 54,708 sf by 3.44 equals a maximum floor area permitted of 188,196 sf. The existing nursing home and convent buildings have a total floor area of 133,019 sf. The proposed project would include the addition of 20,845 sf to that, leaving a total With-Action condition of 153,864 square feet. The maximum FAR for the zoning district would not therefore be exceeded by the With-Action condition.

Permitted Lot Coverage (R7-1) = 70%
Corner Lots 70% x 19,204 sf = 13,443 sf max
Interior/through Lot 65% x 45,108 = 29,320 sf max

Proposed Corner Lot Coverage:
Saxon corner lot building coverage = 6,482 < 9590 sf (OK)
Dickinson corner lot building coverage = 5,568 <9,614 sf (OK)

Proposed Interior Lot Coverage:
New & Existing coverage = 20,845 sf < 29,320 sf (OK)

Per the attached Lot Coverage Diagram, the With-Action condition is compliant with Bulk Yard and Height and Setback regulations.

The With-Action condition for the project site would include the construction of a 20,845 square feet, four story multipurpose structure including three levels of parking at the location of the currently existing parking lot. The elevation of the top of the proposed building would be 44 feet above grade along Saxon Avenue and 48' above grade along Van Cortlandt Park.

The proposed building is of similar bulk to adjoining multi-story residential buildings to the west and smaller than the exiting St. Patrick's Home building adjoining to the east, and of significantly less bulk than the multi-story apartment buildings. The project would not change the scale of surrounding buildings so that the context changes and will not partially or totally block a view corridor or a natural or built visual resource.

These findings, together with the attached photographs, data, and maps support the conclusion that the With Action condition of the project site will not adversely impact the urban design and visual resources of the vicinity.

No further investigation is recommended.

Please review this document and call me at (845) 452-1658 should you have any questions or comments.

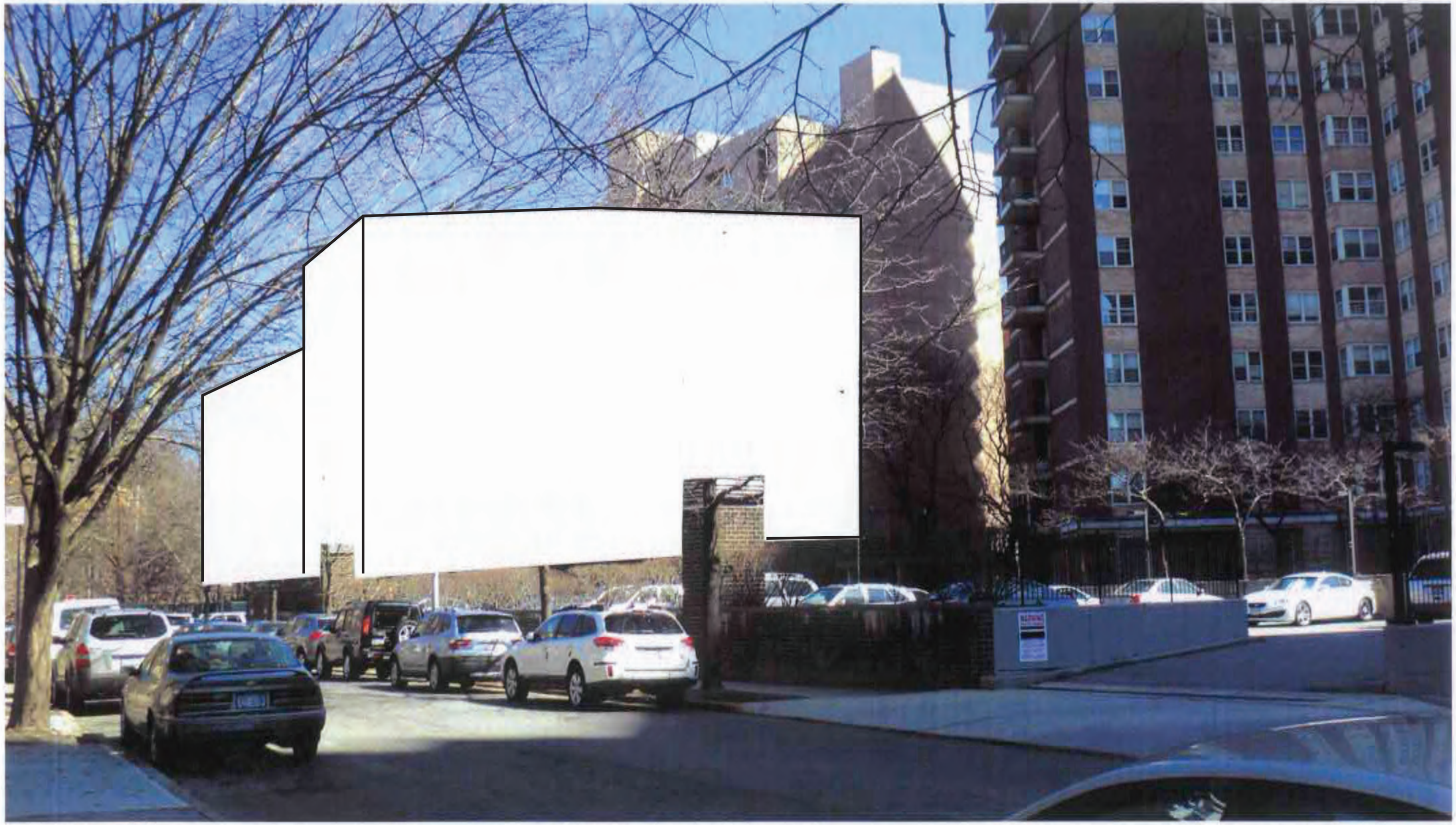
I appreciate the opportunity to provide this service to you and look forward to working with you in the future.

Sincerely,

ECOSYSTEMS STRATEGIES, INC.

Paul H. Ciminello
President

RH:ndc
Attachments
cc: File



Three dimensional representation of With Action condition, looking north along Saxon Avenue.

No Action condition, looking north along Saxon Avenue.

ZONING ANALYSIS:

1. SITE INFORMATION

ZONING DISTRICT = R7-1
MAP NUMBER = 1d
COMMUNITY BOARD = 8
TAX BLOCK = 3252
TAX LOT = 76
LOT AREA = 54,708 SF (SEE SURVEY, HAYNES SURVEYOR: 05.21.2010)
USE GROUP = GROUP 3
(COMMUNITY FACILITY- NURSING HOME)

2. ZR 24-05: STREET TREE PLANTING

THIS IS NOT AN ENLARGEMENT EXCEEDING 20% OF FLOOR AREA, THIS IS NOT A CHANGE IN USE EXCEEDING 20% OF FLOOR AREA, AND THIS IS NOT A DETACHED GARAGE THAT IS 400 SQUARE FEET OR GREATER.

3. FLOOR AREA SCHEDULE

* EXISTING NURSING HOME FLOOR AREA SUMMARY:	
LEVEL	GROSS SF
BASEMENT FLOOR	13,888 SF
FIRST FLOOR:	10,946 SF
SECOND FLOOR:	10,385 SF
THIRD FLOOR:	13,888 SF
FOURTH FLOOR:	13,888 SF
FIFTH FLOOR	13,888 SF
SIXTH FLOOR	13,888 SF
SEVENTH FLOOR	13,888 SF
EIGHTH FLOOR	13,888 SF
TOTALS:	• 118,547 SF

* EXIST. CONVENT FLR. AREA SUMMARY:	
LEVEL	GROSS SF
FIRST FLOOR:	2,496 SF
SECOND FLOOR:	2,496 SF
THIRD FLOOR:	2,496 SF
FOURTH FLOOR:	2,496 SF
FIFTH FLOOR	2,496 SF
SIXTH FLOOR	2,496 SF
SEVENTH FLOOR	2,496 SF
TOTALS:	• 14,472 SF

* BASED UPON N.B. 55/87

NEW PARKING AND FLOOR AREA SUMMARY:			
LEVEL	CARS/ LEVEL	GROSS SF	ZONING FLOOR AREA SF
FIRST FLOOR:	32	19,138 SF	4,371 SF
SECOND FLOOR:	35	19,138 SF	0 SF
THIRD FLOOR:	37	19,138 SF	6,297 SF
TERRACE FLOOR:	0	17,323 SF	10,186 SF
TOTALS:	104	74,737 SF	20,845 SF

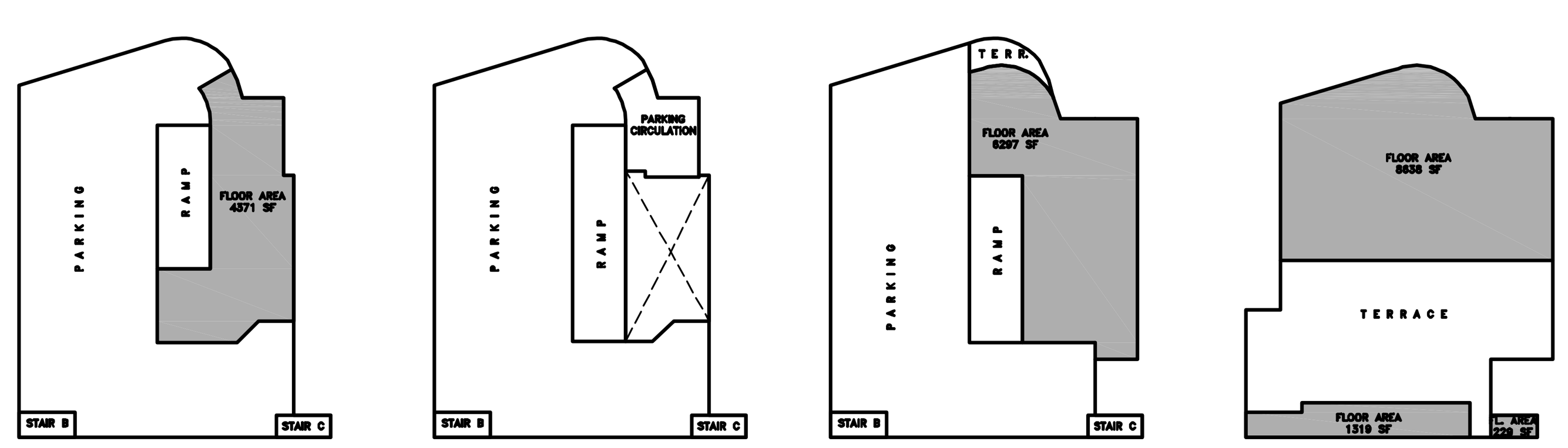
4. 24-11: FLOOR AREA RATIO (F.A.R.) AND LOT COVERAGE

MAX. FLOOR AREA PERMITTED = 3.44 (AS PER 24-111b)
F.A.R. LOT AREA X F.A.R.
54,708 SF X 3.44 = 188,196 SF (MAX FLOOR AREA PERMITTED)

EXISTING AND PROPOSED FLOOR AREA:
EXISTING NURSING HOME FLOOR AREA = 118,547 SF (N.B. 55/87)
EXISTING CONVENT AREA = 14,472 SF (N.B. 55/87)
PROPOSED MULTIPURPOSE STRUCTURE = 20,845 SF
TOTAL = 153,864 SF

EXISTING F.A.R. 133,019 SF / 54,708 SF= 2.5 > 3.44 (OK)
PROPOSED F.A.R. 153,864 SF / 54,708 SF= 2.8 > 3.44 (OK)

FLOOR AREA DIAGRAM



FIRST FLOOR — SECOND FLOOR — THIRD FLOOR — FOURTH FLOOR

ZR 24-111(b) LOT COVERAGE (SEE LOT AREA DIAGRAM)
PERMITTED LOT COVERAGE (R7-1)= 70%
CORNER LOTS 70% X 19,204 SF = 13,443 SF MAX (SEE ZR 24-12)
INTERIOR/ THROUGH LOT 65% X 45,108 SF = 29,320 SF MAX

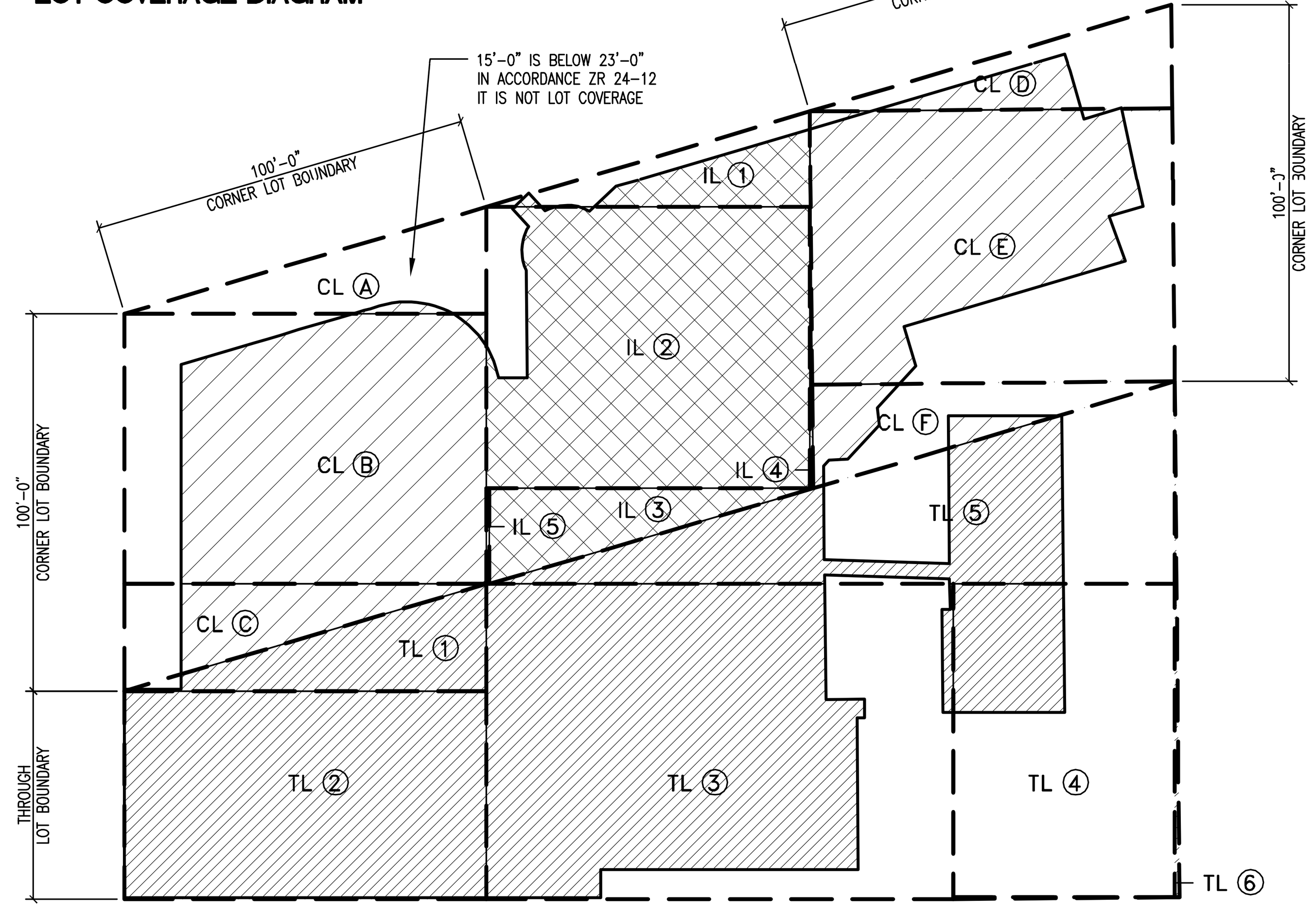
PROPOSED CORNER LOT COVERAGE:
SAXON CORNER LOT BUILDING COVERAGE = 6,482 < 9,590 SF (OK)
DICKINSON CORNER LOT BUILDING COVERAGE = 5,568 < 9,614 SF (OK)

PROPOSED INTERIOR LOT COVERAGE:
NEW & EXISTING COVERAGE = 20,854 SF < 29,320 SF (OK)

ZR 24-12 HEIGHT AND APPLICATION OF LOT COVERAGE:

IN THE DISTRICTS INDICATED, ANY PORTION OF A BUILDING LOCATED AT ANY HEIGHT UP TO BUT NOT EXCEEDING 23 FEET ABOVE CURB LEVEL OR BASE PLANE, WHERE APPLICABLE, MAY BE EXCLUDED IN DETERMINING THE PERCENTAGE OF LOT COVERAGE SET FORTH IN SECTION 24-11. (MAX FLOOR AREA RATIO AND PERCENTAGE OF LOT COVERAGE).

LOT COVERAGE DIAGRAM



CORNER LOT AREA (SAXON AND VANCORT)		
CL A	=	1,360 SF
CL B	=	6,870 SF
CL C	=	1,360 SF
CL TOTAL =		9,590 SF

CORNER LOT AREA (VAN CORT AND DICKONSON)		
CL D	=	1,322 SF
CL E	=	6,970 SF
CL F	=	1,322 SF
CL TOTAL=		9,614 SF

INTERIOR LOT AREAS (IL)		
IL 1	=	1,088 SF
IL 2	=	6,407 SF
IL 3	=	1,088 SF
IL 4	=	45 SF
IL 5	=	28 SF
IL TOTAL=		8,656 SF

THROUGH LOT AREAS (TL)		
TL 1	=	1,360 SF
TL 2	=	5,295 SF
TL 3	=	10,345 SF
TL 4	=	4,883 SF
TL 5	=	4,881 SF
TL 6	=	84 SF
TL TOTAL=		26,848 SF

5. ZR 24-30: BULK YARD REGULATIONS

YARD REGULATIONS:
ZR 24-35(b) SIDE YARD: NO SIDE YARDS ARE REQUIRED 0' OR 8' IF PROVIDED

ZR 24-36 MIN REQUIRED REAR YARDS

ZR 24-38 SPECIAL PROVISIONS FOR THROUGH LOTS

ZR 24-382 (b) ON ANY THROUGH LOT 110 FEET OR MORE IN MAXIMUM DEPTH FROM STREET TO STREET, A REAR YARD EQUIVALENTS SHALL BE PROVIDED. *NON-COMPLIANCE REQUIRES APPROVAL FROM BSA*

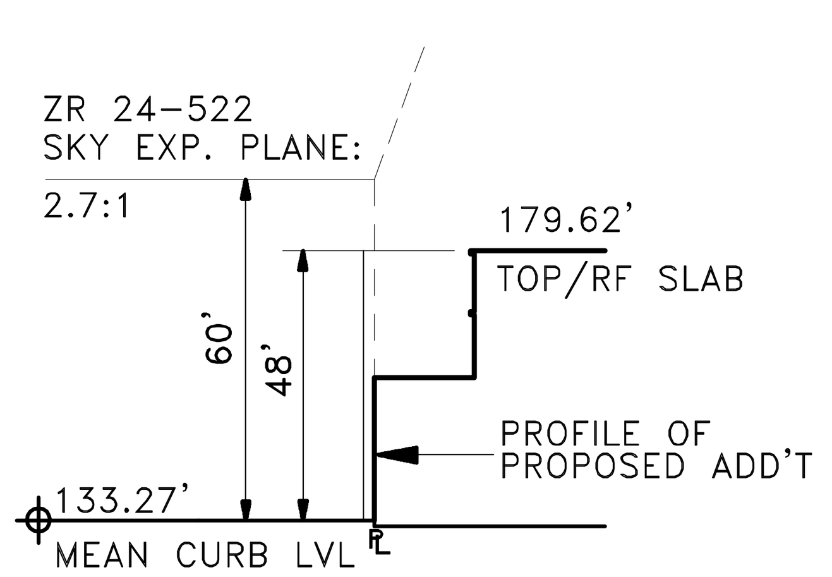
6. ZR 24-50: HEIGHT AND SETBACK REGULATIONS

CALCULATION TO ESTABLISH CURB LEVEL PER ZR 24-522 AND ZR 12-10

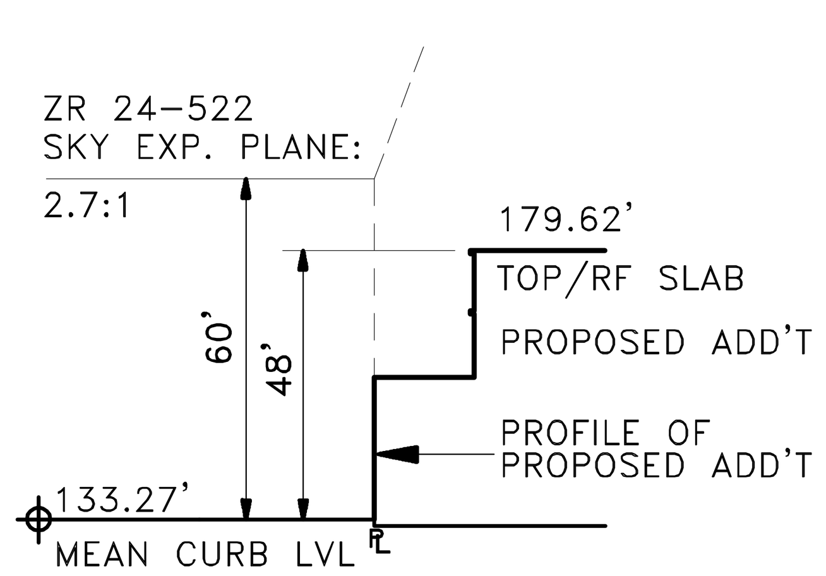
MEAN CURB ELEVATIONS AT VAN CORTLANDT PARK SOUTH:
(130.55 + 140.33) /2 = 135.44
MEAN CURB ELEVATION AT SAXON AVENUE:
(130.55 + 131.64) /2 = 131.10
CORNER LOT AVG. MEAN CURB ELEVATION
(135.44 + 131.095) /2 = 133.27

ZR 24-50 HEIGHT AND SETBACK REGULATIONS

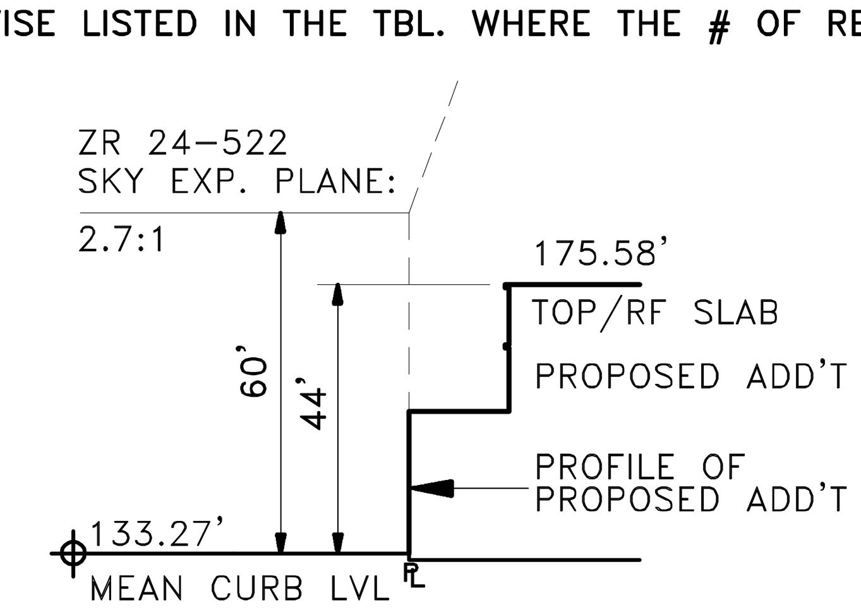
ZR 24-522 FRONT SETBACKS IN DISTRICT WHERE FRONT YARDS ARE NOT REQ'D: IN THE DISTRICTS INDICATED, WHERE FRONT YARDS ARE NOT REQ'D, IF THE FRONT WALL OR OTHER PORTION OF A BLDG. OR OTHER STRUCT. IS LOCATED AT THE STREET LINE OR WITHIN THE INITIAL SETBACK DIST. SET FORTH IN THE FOLLOWING TBL., THE HT. OF SUCH FRONT WALL OR OTHER PORTION OF A BLDG. OR OTHER STRUCT. SHALL NOT EXCEED THE MAX. HT. ABOVE CURB LVL. SET FORTH IN THE TBL. ABOVE SUCH SPECIFIED MAX. HT. & BEYOND THE INITIAL SETBACK DIST., THE BLDG. OR OTHER STRUCT. SHALL NOT PENETRATE THE SKY EXPOSURE PLANE SET FORTH IN THE TBL.



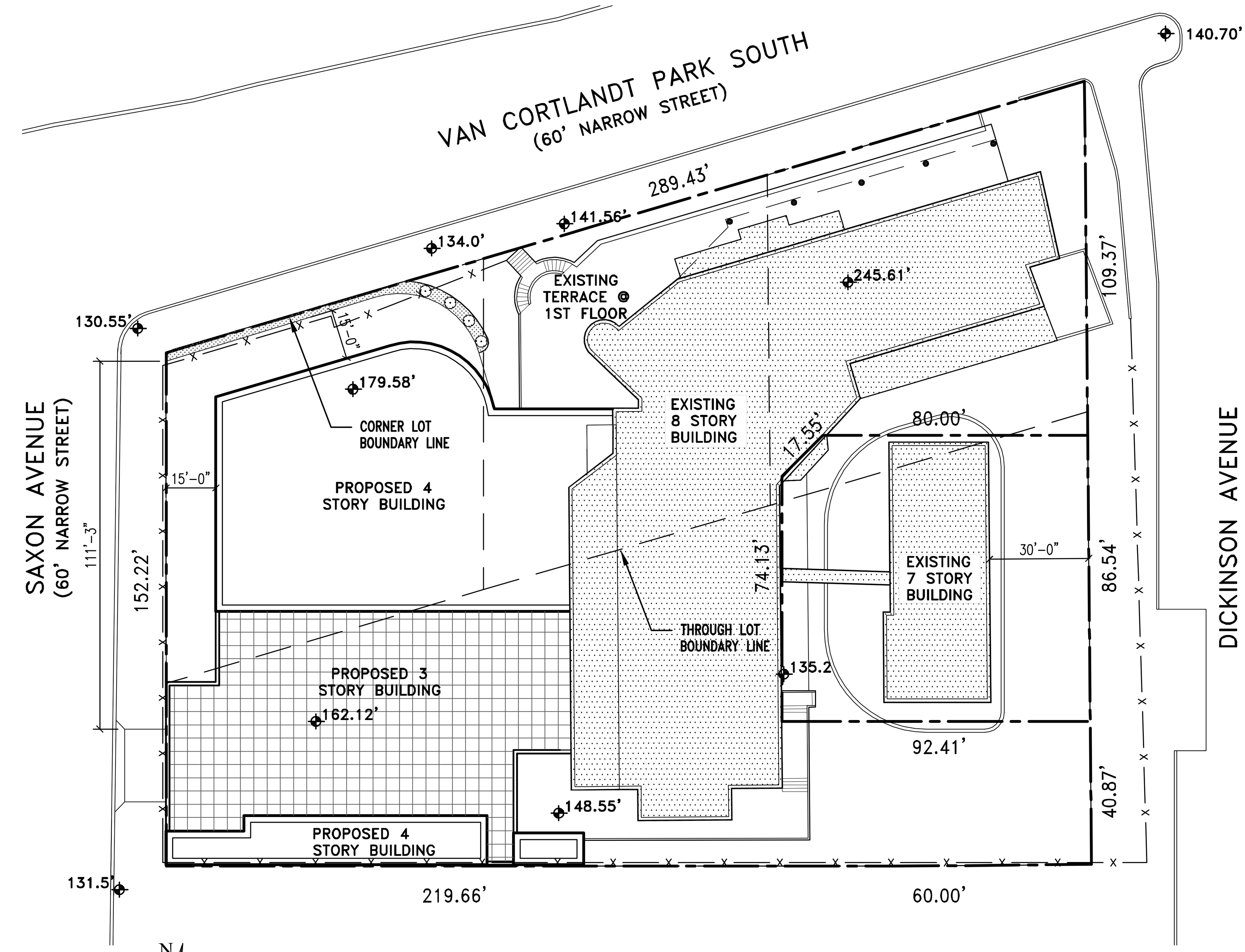
ELEV. AT SAXON AVENUE AND VAN CORT



ELEV. AT VANCORTLANDT PARK SOUTH



ELEV. AT SAXON AVENUE



PLOT PLAN

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

7. ZR 25-12: PARKING AND SPECIAL PROVISIONS

ZR 25-18 MAX SPACES PERMITTED COMMUNITY FACILITY OR COMMERCIAL USES : IN ALL DISTRICT, AS INDICATED, ON A ZONING LOT USED FOR PERMITTED COMMUNITY FACILITY OR COMMERCIAL USES, NOT MORE THAN ONE OFF-STREET PARKING SPACE SHALL BE PROVIDED FOR EVERY 400 SQUARE FEET OF LOT AREA.

LOT AREA = 54,708 SF / 400 SF = 136 MAX PK'G
PROPOSED= 104 PARKING + 8 EXISTING PARKING =
112 PARKING < 136 PARKING (OK)

ZR 24-56 SPECIAL PROVISIONS FOR ZONING LOTS DIRECTLY ADJOINING PUBLIC PARKS NOT APPLICABLE, NO NEW CONSTRUCTION FACING PARK

ZR 24-60 COURT REGULATIONS AND MINIMUM DISTANCE BETWEEN WINDOWS AND WALLS OR LOT LINES: NOT APPLICABLE

ZR 25-12 MAX SIZE OF ACCESSORY GROUP PARKING FACILITIES:
NO SUCH FACILITY ACCESSORY TO PERMITTED COMMUNITY FACILITY OR COMMERCIAL USES SHALL CONTAIN MORE THAN 150 OFF-STREET PARKING SPACES

PROPOSED PARKING SPACES = 104 < 150 PARKING SPACES (OK)

PARKING:
EXISTING PARKING (BASED UPON N.B. 55/87) 38

NEW GARAGE PARKING FACILITY 104

ZR 25-12
MAX. # PARKING SPACES: 136
PARKING SPACES PROVIDED: 112

ZR 25-30 REQ'D OFF ST. PARKING
NURSING HOMES: 1 PER 20 BEDS
NO. EXISTING BEDS: 264
264 / 20 = 14

CONVENT: 1 PER 20 BEDS
NO. EXISTING BEDS: 28
28/ 8 = 2

8. ZR 25-80: BICYCLE PARKING

ALL OTHER USE GROUP 3 AND USE GROUP 4 USES NOT OTHERWISE LISTED IN THIS TABLE= 1 PER 10,000 SQUARE FEET OF FLOOR AREA.

PROPOSED FLOOR AREA: 20,845 SF / 10,000 SF= 2 PARKING SPACES

ZR 25-811 HOWEVER, THE BICYCLE PKG. REQ'T SET FORTH IN THE TBL. SHALL BE WAIVED FOR BICYCLE PKG. SPACES THAT ARE ACCESSORY TO: (d) ALL OTHER COMMUNITY FACILITY USES NOT OTHERWISE LISTED IN THE TBL. WHERE THE # OF REQ'D BICYCLE PKG. SPACES IS THREE OR LESS.

PROJECT:
ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER:
--
STREET TEL.: (xxx) xxx-xxxx
TOWN, STATE ZIP FAX.: (xxx) xxx-xxxx
WEBSITE

ARCHITECT:
DAVID LAWRENCE MAMMINA ARCHITECT
241 RUSHMORE AVENUE • CARLE PLACE, NEW YORK 11514
TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

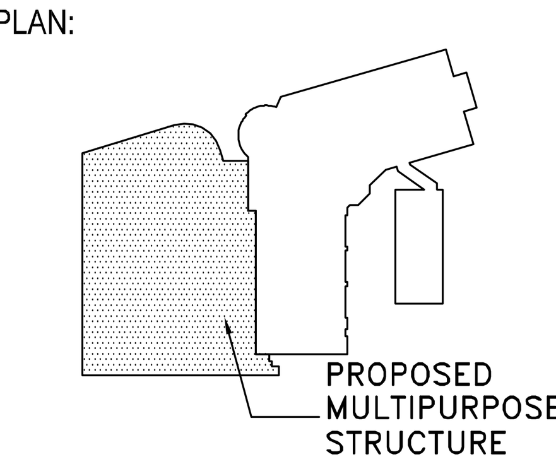
STRUCTURAL ENGINEERS:

MEP ENGINEERS:

DATE:	REVISION:
08.04.11	BSA SUBMISSION
08.03.11	BSA SUBMISSION
05.26.11	ALT I/SI COMMENTS
11.19.10	DOB ZONING COMMENTS
08.03.10	DOB ZONING COMMENTS
06.01.10	ISSUED TO DOB

NORTH ARROW: N — SCALE:

KEY PLAN:

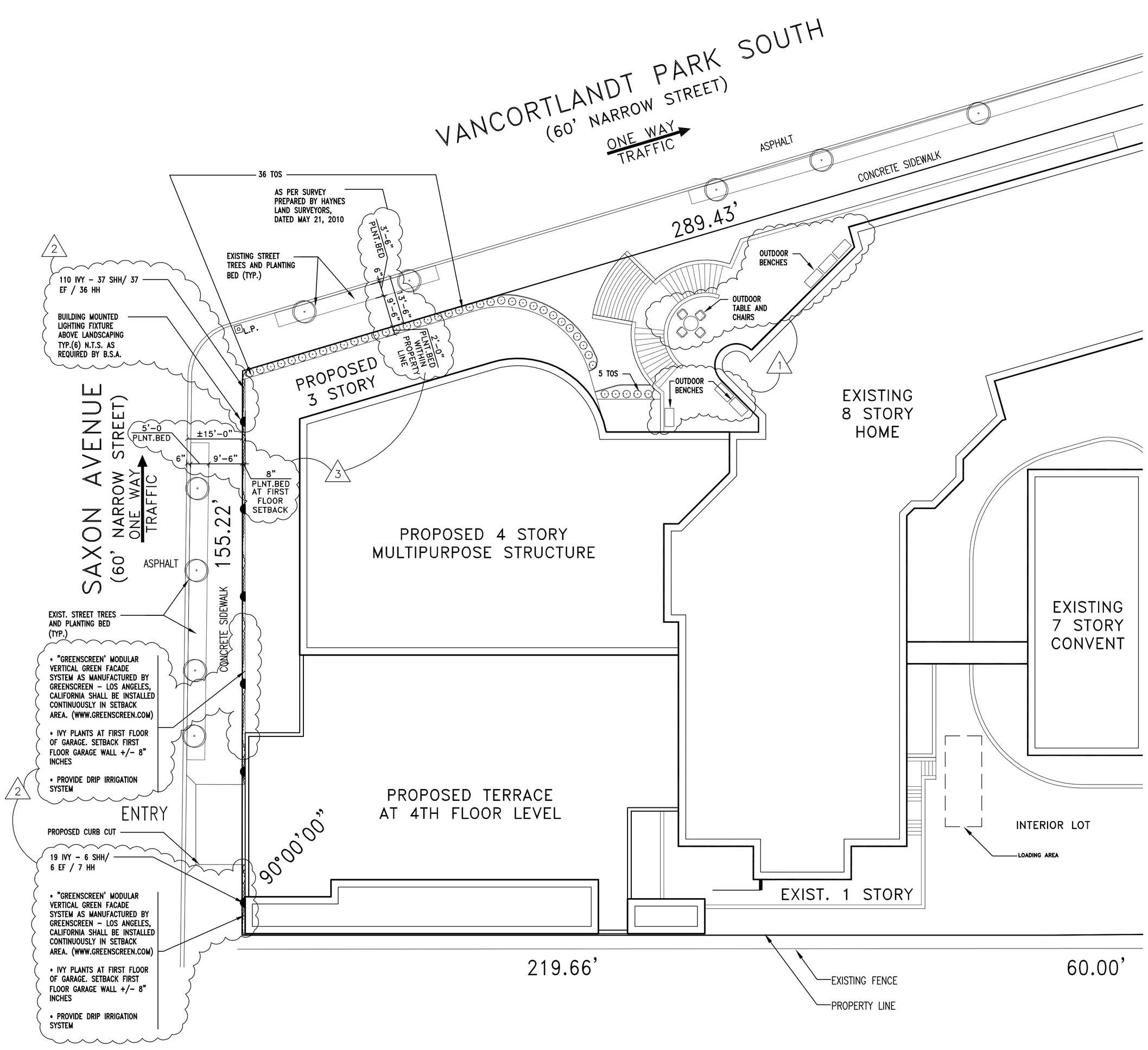


DRAWING TITLE:
PLOT PLAN AND ZONING ANALYSIS

SEAL & SIGNATURE:

DATE:
JOB NO.: 0903 (08PP11)
DRAWN BY:
CHECKED BY:
DRAWING No:
A-0.0
DWG. OF

APP NO.:



PARTIAL LANDSCAPE PLAN

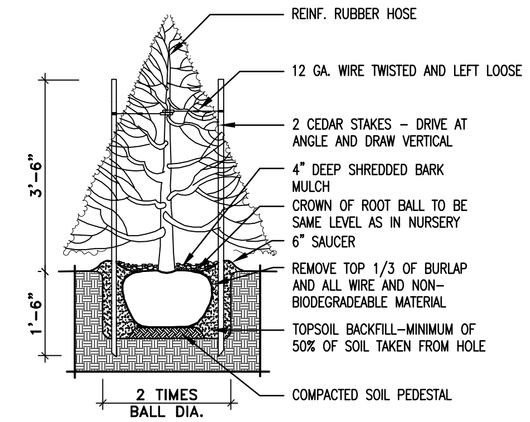
SCALE: 1/16"=1'-0"

PLANT LIST

QUAN.	KEY	BOTANICAL NAME	COMMON NAME	SPACING	SIZE
41	TOS	THUJA OXIDENTALIS SMARGED	EMERALD ARBROVITAE (VERTICAL EVERGREEN)	3'–0'' O.C.	6 FEET TO 8 FEET HIGH
43	SHH	SUB–ZERO HEDERA HELIX	SUB–ZERO ENGLISH IVY (VERTICAL EVERGREEN)	1'–0'' O.C.	3" POTS
43	EF	EUONYMUS FORTUNEI	WINTER CREEPER IVY (VERTICAL EVERGREEN)	1'–0'' O.C.	3" POTS
43	HH	HEDERA HELIX (ORO DU BOGLIASCO)	GOLDEN ENGLISH IVY (VERTICAL EVERGREEN)	1'–0'' O.C.	3" POTS

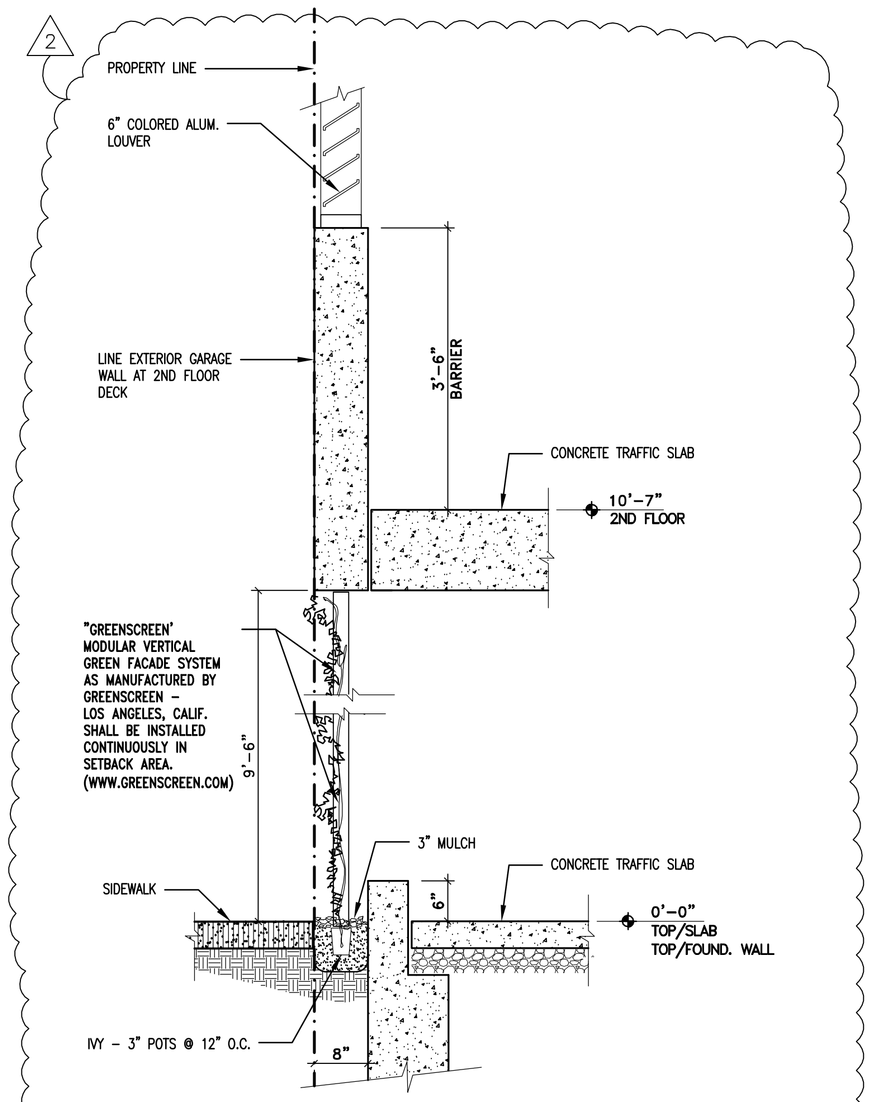
PLANTING NOTES

1. ALL PLANT MATERIALS TO BE OF HIGHEST QUALITY NURSERY GROWN STOCK.
2. ALL PLANT PITS TO BE BACK FILLED WITH TOPSOIL BLENDED WITH 0-20-0 FERTILIZER AT THE RATE OF 5 POUNDS PER YARD.
3. ALL BEDS TO BE MULCHED WITH 4" DEEP FRESH MILLED SHREDDED BARK MULCH.
4. ALL TREES TO BE PLANTED AND STAKED AS PER DETAIL.
5. ALL PLANT MATERIALS TO BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER PLANTING.
6. ALL PLANT MATERIALS ARE TO BE MAINTAINED WITH FERTILIZER AND OTHER REQUIRED MATERIALS TO MAINTAIN A NEAT AND HEALTHY APPEARANCE.
7. ALL PLANTS WHICH DIE OR BECOME DISEASED SHALL BE REPLACED BY THE CONTRACTOR.



EVERGREEN PLANTING DETAIL

SCALE: N.T.S.



EVERGREEN IVY PLANTING DETAIL

SCALE: 3/4"=1'-0"

PROJECT :

ST. PATRICK'S HOME
MULTIPURPOSE STRUCTURE
BRONX, NEW YORK

OWNER / DEVELOPER :

–

STREET
TOWN, STATE ZIP
WEBSITE
TEL. : (xxx) xxx-xxxx
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ARCHITECT :

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TEL 516-997-6710 FAX 516-997-6719
E-MAIL DAVID.MAMMINA@DLMarchitect.com

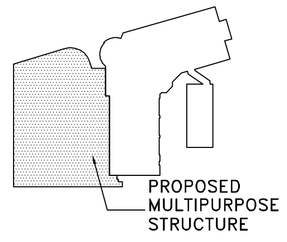
STRUCTURAL ENGINEERS :

MEP ENGINEERS :

3	04.23.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
2	03.25.2013	ISSUED TO CITY PLANNING – LANDSCAPE MODICATION
1	01.24.2013	ISSUED TO CITY PLANNING SHOWING ADDED BENCHES
	05.17.2012	ISSUED TO CITY PLANNING
	06.01.2010	ISSUED TO DOB
	DATE:	REVISION:

NORTH ARROW
SCALE: 0 8' 16' 32'
SCALE: 1/16" = 1'-0"

KEY PLAN:



DRAWING TITLE :

LANDSCAPE PLANTING

SEAL & SIGNATURE:

DATE:	12-07-2012
JOB NO.:	0903 (08PP11)
DRAWN BY:	JN
CHECKED BY:	DM
DRAWING No:	A-4.0
DWG.	OF

APP NO.:

Appendix E: Phase I Environmental Site Assessment prepared by Galli Engineering, P.C.

Phase I Environmental Site Assessment

February 19, 2010
ASTM E 1527-05

Privileged and Confidential Information
Disclose only to Authorized Parties

Conducted at:

Parking Lot
66 Van Cortlandt Park South
Bronx, NY 10463

Tax Map Designation:

Block: 3252 Lot: 76

Prepared for:

AECOM
200 Liberty Street
New York, NY 10281

Prepared by:

Galli Engineering, P.C.
734 Walt Whitman Road, Suite 402A
Melville, NY 11747

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

Galli Engineering, P.C. has performed this Phase I Environmental Site Assessment (ESA) of the property located at 66 Van Cortlandt Park South, Bronx, New York 10281 - Tax Map Designation: Block: 3252, Lots: 76. herein identified as the “Subject Property”. This Phase I ESA was prepared in accordance with the scope and limitations of ASTM E-1527-05.

1.1 Purpose

The purpose of the ASTM Standard is to define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 42 U.S.C. 9601) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (hereinafter, the "landowner liability protections," or "LLPs"): that is, the practice that constitutes "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined at 42 U.S.C. 9601(35) (B).

The purpose of this Phase I Environmental Assessment is to determine if any type of environmental hazard exists within the property in question. Environmental hazards include, but are not limited to, improper storage or handling of hazardous or toxic wastes or raw chemicals; underground storage of hazardous materials; asbestos within building materials or structures; and identification of potential off-site sources of hazardous waste contamination, such as industrial facilities or retail petroleum facilities, adjacent to the subject site.

This assessment is intended to satisfy the criteria set forth in the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments, as published in ASTM E-1527-05. Banks, insurance companies, and prospective property purchasers require an understanding of existing and past property conditions and uses in order to assess the potential liabilities associated with a property. A qualified environmental professional as defined in the ASTM Standard has completed this assessment. The objectives of this Environmental Site Assessment are as follows:

- Establish a basis of understanding of the past and present land uses of the subject property in order to identify potential environmental and/or public health risks.
- Establish a basis of understanding of the past and present surrounding land uses and environmental resources in order to determine their impact on the environmental quality of the subject property.
- Identify any known or potential items in non-compliance with applicable Local, State, or Federal environmental laws and regulations, and subsequently specify how these items can be brought into compliance.
- Identify, to the extent feasible, recognized environmental conditions in connection with the subject and surrounding properties. "Recognized environmental conditions" are defined by ASTM as:

> *"The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of a property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. This term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions. "*

1.2 Special Terms and Conditions

It is the responsibility of the user(s) of this report (i.e., the purchaser, lender, owner, potential tenant, or property manager) to provide certain information utilized in the report. This would include reporting any environmental cleanup liens that are filed or recorded against the site; activity and land use limitations that are in place on the site or that have been filed or recorded in a registry; specialized knowledge or experience of the person seeking to qualify for the "Landowner Liability Protection" (LLP); relationship of the purchase price to the fair market value

of the property if it were not contaminated; commonly known or reasonable ascertainable information about the property; and the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation.

The level of inquiry is uniform in each Phase I Environmental Site Assessment (ESA); however, the availability of information, relevance, and quality of information can vary. As per ASTM Standards, the "environmental professional is not required to verify independently the information provided, but may rely on information provided unless he or she has actual knowledge that certain information is incorrect or unless it is obvious that certain information is incorrect based on other information obtained in the Phase I ESA or otherwise actually known to the environmental professional." Personnel involved in report preparation will make judgments on the accuracy of user provided information and conduct additional research as necessary in order to meet the requirement of identifying recognized environmental conditions on the subject property.

ASTM refers to a number of standard sources of historic information. Galli Engineering will seek to research as many sources of historic information as may be available as a means of cross confirmation. However, according to ASTM Standard Practice for Environmental Site Assessments (E-1527-05), "the environmental professional is required to review only record information that is reasonably ascertainable", wherein reasonably ascertainable is defined as information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints, and (3) practically reviewable." ASTM defines reasonable time constraints for providing information as being provided by the source within twenty days of receiving a written request. Practically reviewable means that "the information is provided by the source in a manner and in a form that, upon examination, yield information relevant to the property without the need for extraordinary analysis of irrelevant data."

Based on ASTM Standards, the Phase I ESA is not intended to include any sampling and analysis of materials associated with the subject property (i.e., soil, water, air, or building materials).

1.3 Limitations and Exceptions

This assessment is dated, and is only valid for activities that occurred prior to the date of the site visit. Activities, liabilities, and alterations to the subject property subsequent to the date of the site visit are not included in the assessment. Under the ASTM Standard, this Phase I ESA has a shelf life of one year.

This assessment is intended to assess the potential for public health or environmental liabilities based upon examination of the subject property in accordance with ASTM Standards. The ASTM Standards provide specific guidance with regard to radon, asbestos, lead in drinking water, lead-based paint and polychlorinated biphenyls (PCBs). Petroleum products are included in the scope of practice because they are of concern with respect to many parcels of commercial real estate and current custom and usage is to include an inquiry into the presence of petroleum products when doing an environmental site assessment of commercial real estate. Inclusion of petroleum products within the scope of this practice is not based upon the applicability, if any, of CERCLA to petroleum products. Under the petroleum exclusion of CERCLA (42 U.S.C. 9601 (14)), petroleum and crude oil have been explicitly excluded from the definition of hazardous substances under CERCLA.

Analysis of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) implications with regard to the innocent landowner defense under Superfund finds that naturally occurring radon is not subject to CERCLA liability and is appropriately considered as a non-scope issue. Accordingly, this assessment will only provide general guidance on this issue, and will not involve or recommend air monitoring for radon gas.

Similarly, the ASTM Standards do not recognize liability with regard to asbestos that is part of the building materials of a structure, in accordance with CERCLA innocent landowner defense under Superfund. However, if asbestos containing material was disposed of on a property, such practice would be subject to Superfund response actions and should be identified consistent with ASTM guidelines. In the interest of serving the client and addressing the needs of the user, this assessment will address observed suspect asbestos containing materials (ACM's) that may pose a health threat. This assessment is not a full asbestos survey as would be required for building demolition, or identification of all possible sources of ACM, regardless of health risk.

Lead in drinking water and lead-based paint are also issues considered to be non-scope under CERCLA innocent landowner defense under Superfund. Lead based paint was in use for many years, and it is likely that many older buildings will have surfaces coated with lead based paint. As a general rule, painted surfaces should be maintained and ingestion of paint products should be avoided. If on-site disposal of these materials were involved, disclosure of this practice would be subject to the scope of this environmental assessment. Lead in drinking water generally occurs as a result of past use of high lead content solder. Water left stagnant in pipes overnight or longer may leach lead from these joints and affect drinking water quality. As a general rule, water should run for several minutes in the morning where such plumbing may be present.

This assessment will not identify all potential sources of PCB containing oils. Common sources of these materials include transformers and fluorescent lamp ballasts. Electric service transformers may include ground level or pole-mounted units. These transformers are owned and maintained by regional public utilities. Should a release of the contents occur, the responsible utility company must assume liability regardless of PCB content. Galli Engineering does not anticipate financial liability to the subject property owner unless the property owner or occupant causes a release due to gross negligence or willful act. The use of PCBs was banned effective July 1, 1979 under the Toxic Substance Control Act (TSCA), and most transformers containing PCBs have been changed out. Aggressive and destructive testing, which would be required for definitive identification of PCB containing oils, is beyond the scope of this study.

Controlled substances are not included within the scope of this standard. Persons conducting an environmental site assessment as part of an EPA Brownfields Assessment and Characterization Grant awarded under CERCLA 42 U.S.C. 9604(k)(2)(B) must include controlled substances as defined in the Controlled Substances Act (21 U.S.C. 802) within the scope of the assessment investigations to the extent directed in the terms and conditions of the specific grant or cooperative agreement. Additionally, an evaluation of business environmental risk associated with a parcel of commercial real estate may necessitate investigation beyond that identified in this practice.

The accuracy of any assessment is limited to the information available during the time of the site visit; the records, files, and drawings provided by the owner and released by governmental agencies; and the accuracy and completeness of the information provided during interviews.

1.4 Project Specifications

The date of inspection and the key personnel involved in the preparation of this report are provided below.

Inspection Date:	February 18, 2010
Report Date:	February 19, 2010
Project Manager:	Richard D. Galli, P.E.
Inspector/Prepared by:	Scott Davidow

This assessment was performed in accordance with good commercial and customary practice as defined by the ASTM E-1527-05 Standard Practice for Environmental Site Assessments. Presented herein are the results of the Phase I ESA conducted by Galli Engineering on the Subject Property. Galli Engineering prepared this site assessment under contract with AECOM in order to satisfy requirements as stipulated by said user (ASTM E-1527-05).

AECOM	Client	Two Copies
Galli Engineering, P.C. corporate records	Assessor	One Copy

2.0 SITE CONDITIONS

Mr. Scott Davidow with Galli Engineering conducted the site inspection of the subject property on February 18, 2010. The subject property was viewed for any indication of probable and/or existing environmental hazards. Surrounding properties were also viewed to the extent possible from the subject property and public right-of-ways. Photographs taken of the subject property on said date are provided for review in Appendix B.

2.1 Site Description

The subject property is a parking lot located in Bronx, NY. A description of the land is provided below.

The subject property is located at the southeast corner of Saxon Avenue and Van Cortlandt Park South, in Bronx, New York. The lot is mostly flat, with an elevation of 134 feet above sea level. No buildings are currently located on the subject property. The lot is paved with asphalt. Fencing is located on three sides of the lot. No dry wells or drains were visible on the lot. St. Patrick's Home for the Aged borders the property on the east side. There are pole mounted overhead lights to provide illumination. One electronic gate on Saxon Avenue provides access from the southwest corner. A man gate is located along Van Cortland Park South. A small brick building labeled "high voltage" borders the lot on the southern side. There was no visible evidence of illegal storage or dumping of asbestos containing materials, formaldehyde insulation materials or other hazardous substances or materials on the subject property. No significant areas of distressed or dead vegetation were observed on the lot. There were no strong or noxious odors noticeable. No visible sumps, pits or other similar structures were observed on the subject property during the site inspection.

2.2 Surrounding Properties

A due diligence investigation into the potential impacts from off-site sources was conducted. The subject property is located in an area generally consisting of residential development.

The subject property is bordered on the east by Dickinson Avenue, the north by Van Cortlandt Park South, the west by Saxon Avenue and on the south by Sedgwick Avenue. Fort Independence Park and Jerome Park Reservoir are located 1/8 mile south of the subject property.

The past and current uses of the adjoining properties are predominantly commercial. Research through EDR and examination of the properties immediately surrounding the subject property revealed no observable conditions that would normally adversely impact the environmental quality of the subject property.

3.0 USER PROVIDED INFORMATION

3.1 Title Records

Title records were requested of the client, but were not available prior to preparation of this assessment.

3.2 Environmental Liens or Activity and Use Limitations

Activity and Use Limitations (AULs) are one indication of past or present release of a hazardous substance or petroleum products. AULs are an explicit recognition by a federal, tribal, state or local regulatory agency that residual levels of hazardous substances or petroleum products may be present on a property, and that unrestricted use of the property may not be acceptable. The AUL should provide information on the contaminant(s) of concern, the potential exposure pathway(s) that the AUL is intended to control, the environmental medium that is being controlled, and the expected performance objective(s) of the AUL. AULs are often recorded in land title records. AUL information is contained in the restrictions of record on the title, rather than a typical chain of title.

An Environmental Lien Search did not identify any AULs or Environmental Liens on the subject property.

4.0 REVIEW OF CORPORATE RECORDS AND INTERVIEWS

A review of corporate records and personal interviews can provide useful information regarding the processes occurring on the site. Interviews with subject property representatives and review of available documentation have revealed the following information regarding the environmental quality of the subject property.

4.1 Interviews with Past and Present Owners, Operators and Occupants

The property is a parking lot, and there are no present owners or occupants to interview.

4.2 Underground Storage Tanks (USTs)

No USTs were observed during the site inspection. No USTs were identified for the subject property on the EDR environmental database search.

4.3 Aboveground Storage Tanks (ASTs)

No ASTs were observed during the site inspection. No ASTs were identified for the subject property on the EDR environmental database search.

4.4 Notice of Violation and/or Stop Work Order

There were no notices of violations or stop work orders for the subject property.

4.5 Waste Management Audit

Legislation enacted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) makes hazardous waste generators forever legally liable for byproducts and/or wastes they produce. This encompasses the transport and destination of these materials. There is no evidence that hazardous waste has been disposed of at the subject site.

5.0 GOVERNMENT RECORD INVENTORY

Galli Engineering requested and reviewed available federal, state, and local regulatory information concerning historical land use and potential environmental issues relating to the subject property. The results of these inquiries and associated records research are discussed in this section.

5.1 Freedom of Information Act Requests

The Freedom of Information Act, (New York Public Officers Law, Article 6, Sections 84-90) provides rights of access to all government documents not exempt from disclosure. Accessible records can include paper documents plus items such as video/audio tape recordings, microfilm and computer files. Galli Engineering has made written requests for all relevant government documentation so as to identify implicit parameters affecting the environmental quality of the subject property (Appendix D). Typically, government agencies take up to six weeks or more to reply with any findings. Copies of any significant information received after issuance of this report will be forwarded to the client.

5.2 Environmental Database Search

Galli Engineering retained Environmental Data Resources, Inc. (EDR) to provide a database search of environmental records maintained by Federal and New York State governments. Galli Engineering examined available environmental database information and records for the subject property and surrounding properties to identify potential environmental impairment with respect to releases, contamination or enforcement actions.

The scope of the database search conducted by EDR is in accordance with ASTM Standard E-1527-05. The specific Federal and State databases searched by EDR are listed below. A description of these databases can be reviewed on pages GR-1 through GR-24 of the EDR Report. A copy of the EDR Report is provided in Appendix C.

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
ERNS	Emergency Response Notification System
RCRA-LQG	Resource Conservation and Recovery Act Information
RCRA-TSD	Resource Conservation and Recovery Act Information

FEDERAL ASTM SUPPLEMENTAL

BRS	Biennial Report System
CONSENT	Superfund (CERCLA) Consent Decrees
Delisted NPL	National Priority List Deletions
DOD	Department of Defense Sites
FINDS	Facility Index System
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FUDS	Formerly Used Defense Sites
HMIRS	Hazardous Materials Information Reporting System
INDIAN RESERV	Indian Reservations
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
ODI	Open Dump Inventory
PADS	PCB Activity Database System
RAATS	RCRA Administrative Action Tracking System
ROD	Records Of Decision
SSTS	Section 7 Tracking Systems
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
UMTRA	Uranium Mill Tailings Sites

STATE ASTM STANDARD

SHWS	Inactive Hazardous Waste Disposal Sites in New York State
SWF/LF	Solid Waste Facilities/Landfill Sites Register
LTANKS	Leaking Storage Tank Incident Reports

UST	Petroleum Bulk Storage Database
CBS UST	Chemical Bulk Storage Database
MOSF	Major Oil Storage Facilities Database
VCP	Voluntary Cleanup Agreements
SWTIRE	Registered Waste Tire Storage & Facility List
SWRCY	Registered Recycling Facility List

STATE OR LOCAL ASTM SUPPLEMENTAL

HSWDS	Hazardous Substance Waste Disposal Site Inventory
AST	Petroleum Bulk Storage
CBS AST	Chemical Bulk Storage Database
MOSF	Major Oil Storage Facility
DEL SHWS	Delisted Registry Sites
DRYCLEANERS	Registered Drycleaners
AIRS	Air Emissions Data
SPDES	State Pollutant Discharge Elimination System
SPILLS	Spills Information Database

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas	Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US Brownfields	A listing of Brownfield Sites
Brownfields	Brownfields Site List
VCP	Voluntary Cleanup Agreements
INST CONTROL	ELUR Sites

EDR Database Search of Subject Property:

Review of the EDR database report has revealed that the property at 66 Van Cortlandt Park South was listed on the following databases searched by EDR.

Site	Database(s)	EPA ID
SAINT PATRICKS HOME 66 VAN CORTLANDT PARK SO BRONX, NY 10463	HIST UST	N/A
SAINT PATRICKS HOME 66 VAN CORTLANDT PARK SO BRONX, NY 10463	UST	N/A
CON EDISON - MH 12128 66 VAN CORTLANDT SOUTH BRONX, NY 10451	RCRA-NonGen MANIFEST	NYP004116265
CON EDISON - MH 12128 66 VAN CORTLANDT SOUTH BRONX, NY 10451	FINDS	N/A

EDR Database Search of Off-Site Locations:

Review of the EDR database report has revealed the following:

The map findings summary from EDR listed 13 Leaking Storage Tank Incident Report (LTANKS) sites, three Underground Storage Tank (UST) sites, nine Aboveground Storage Tank (AST) site, one formerly used defense site (FUDS) and six NY Manifest sites all within their respective search distances.

LTANKS: NYSDEC Leaking Storage Tank Incident Reports

This database is an inventory of leaking tanks reported from April 1, 1986 through the most recent update. These tanks can be either leaking USTs or ASTs.

A review of the LTANKS list has revealed that there are 13 leaking storage tank sites within ½ mile of the subject property. These sites are identified below:

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
75 W. MOSHOLU PKWY. Date Closed: 12/20/2002	*75 W. MOSHOLU PKWY.*	*ESE 1/8 - 1/4 (0.209 mi.)*	*D14*	*63*
APARTMENT Date Closed: 9/15/2005	3439 KNOX PLACE	ESE 1/4 - 1/2 (0.323 mi.)	23	119
MOSHOLU MONTIEFORE CTR Date Closed: 5/3/2005	*3450 DEKALB AVE*	*ESE 1/4 - 1/2 (0.430 mi.)*	*28*	*129*
25 GUNHILL ASSOC Date Closed: 12/23/1998	*25 EAST GUNHILL RD*	*ESE 1/4 - 1/2 (0.440 mi.)*	*29*	*132*
Not reported Date Closed: 5/14/1999	*3540 DEKALD AVE*	*ESE 1/4 - 1/2 (0.463 mi.)*	*31*	*137*
50 VANCORTLAND AVE Date Closed: 3/6/2003	*50 VANCORTLAND AVE*	*SSE 1/4 - 1/2 (0.498 mi.)*	*34*	*144*

Lower Elevation	Address	Direction / Distance	Map ID	Page
MAJOR DEEGAN SO/VAN CORTL Date Closed: 11/23/1998	*MAJOR DEEGAN SO/VAN COR*	*NW 1/4 - 1/2 (0.337 mi.)*	*24*	*120*
APT HOUSE Date Closed: 2/16/2006	3873 ORLOFF AVE	W 1/4 - 1/2 (0.377 mi.)	25	123
APT HOUSE Date Closed: 5/3/2005	3840 CANNON PL	WSW 1/4 - 1/2 (0.398 mi.)	26	124
3855 ORLOFF AVE Date Closed: 10/9/1997	*3855 ORLOFF AVE*	*W 1/4 - 1/2 (0.403 mi.)*	*27*	*126*

Lower Elevation	Address	Direction / Distance	Map ID	Page
3605 SEDGEWICK AVE. Date Closed: 10/12/1992	*3605 SEDGEWICK AVE.*	*WSW 1/4 - 1/2 (0.453 mi.)*	*30*	*134*
Not reported Date Closed: 4/12/2004	3810 BAILEY AVE	W 1/4 - 1/2 (0.478 mi.)	32	140
160 VAN CORTLANDT PK. SO. Date Closed: 2/23/1993	*160 VAN CORTLANDT PK. S*	*WNW 1/4 - 1/2 (0.480 mi.)*	*33*	*141*

Based on the information available within the scope of the ASTM Phase I Standard, the potential impact from these sites on the subject property cannot be determined.

UST: Petroleum Bulk Storage Database

The Underground Storage Tank database lists registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database.

A review of the UST list has revealed that there are three underground storage tank sites within 1/4 mile of the subject property. These sites are identified below.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DEWITT CLINTON HS	100 W MOSHOLU PARKWAY	SSE 1/8 - 1/4 (0.207 mi.)	C12	53
Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
91 VAN CORTLANDT AVE	*91 VAN CORTLANDT AVE W*	*WSW 1/8 - 1/4 (0.236 mi.)*	*16*	*70*
A.H. CONSUMERS SOCIETY INC STO	*50 VAN CORTLANDT AVENUE*	*WSW 1/8 - 1/4 (0.237 mi.)*	*E18*	*96*

Based on the information available within the scope of the ASTM Phase I Standard, the potential impact from these sites on the subject property cannot be determined.

AST: Aboveground Storage Tank Database

The Aboveground Storage Tank Database lists registered ASTs. The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database.

A review of the AST list has revealed that there are nine AST site within ¼ mile of the subject property. These sites are identified below.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
134 E MOSHOLU PARKWAY S	134 W MOSHOLU PARKWAY S	SSE 1/8 - 1/4 (0.166 mi.)	8	23
DEWITT CLINTON HS	100 W MOSHOLU PARKWAY	SSE 1/8 - 1/4 (0.207 mi.)	C10	31
HUNTER HALL, LLC	75 WEST MOSHOLU PARKWAY	ESE 1/8 - 1/4 (0.209 mi.)	D13	59
APARTMENT HOUSE	*55 WEST MOSHOLU PARKWAY*	*SE 1/8 - 1/4 (0.242 mi.)*	*F20*	*105*
JORIF ASSOCIATES	*51 WEST MOSHOLU PARKWAY*	*SE 1/8 - 1/4 (0.249 mi.)*	*F21*	*109*
66 WEST GUN HILL ROAD	*66 WEST GUN HILL ROAD*	*ESE 1/8 - 1/4 (0.250 mi.)*	*22*	*114*
Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
3971 GOUVERNEUR HSE APT HOUSE	*3971 GOUVERNEUR AVE*	*WSW 1/8 - 1/4 (0.205 mi.)*	*B9*	*26*
3951 GOUVERNEUR AVE	*3951 GOUVERNEUR AVE*	*WSW 1/8 - 1/4 (0.222 mi.)*	*B15*	*65*
91 VAN CORTLANDT AVE	*91 VAN CORTLANDT AVE W*	*WSW 1/8 - 1/4 (0.236 mi.)*	*16*	*70*

Based on the information available within the scope of the ASTM Phase I Standard, the potential impact from this site on the subject property cannot be determined.

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list has revealed that there is one FUDS site within ⅛ of a mile of the subject property. This site is identified below.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NAVY TRAINING SCHOOL		SSW 1/2 - 1 (0.851 mi.)	35	146

Based on the information available within the scope of the ASTM Phase I Standard, the potential impact from these sites on the subject property cannot be determined.

NY MANIFEST: Manifest Documents

A manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the NY MANIFEST list has revealed that there are six Manifest generators within approximately ¼ mile of the subject property. These sites are identified below.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CON ED - MH 28995	*W GUNHILL RD 200'*	*E 0 - 1/8 (0.090 mi.)*	*6*	*19*
DE WITT CLINTON HIGH SCHOOL	*100 W MOSHOLU PKWY S*	*SSE 1/8 - 1/4 (0.207 mi.)*	*C11*	*37*
Lower Elevation	**Address**	**Direction / Distance**	**Map ID**	**Page**
CONSOLIDATED EDISON	VAN CORTLANDT PK S /	WNW 0 - 1/8 (0.012 mi.)	A5	18
CONSOLIDATED EDISON	SEDGWICK AVE / SAXON	SSW 1/8 - 1/4 (0.157 mi.)	7	20
HUE PHAM CLEANERS	*56 VAN CORLANDT AVE W*	*WSW 1/8 - 1/4 (0.237 mi.)*	*E17*	*81*
CONSOLIDATED EDISON	SEDGWICK AVE / VAN CO	WSW 1/8 - 1/4 (0.241 mi.)	19	103

Based on the information available within the scope of the ASTM Phase I Standard, the potential impact from these sites on the subject property cannot be determined.

Orphan Sites:

EDR also identified 20 “orphan” sites within the subject property region; however, due to inadequate address/location information these sites could not be mapped by EDR. Potential impact to the subject property from these sites cannot be identified based on available information.

5.3 Site History

The purpose of reviewing historical use sources is to identify any prior use of the property or adjoining properties, which could lead to the presence of recognized environmental conditions that may adversely affect the property. Galli Engineering retained Environmental Data Resources, Inc. (EDR) to provide available historical information for the subject property. Copies of this historical documentation are provided in Appendix F.

Aerial photographs were available from EDR for the years of 1954 through 2006. Copies of the aerial photographs are included in Appendix F. The following historical information was extracted from the aerial photographs.

1954 Aerial Photograph:

The subject property is visible in the center part of the 1954 photograph. The property is developed as a parking lot. St. Patrick’s Home for the Aged is located just east of the lot. The surrounding area is highly developed, with residential homes to the west across Saxon Avenue and apartments to the south of the property.

1966, 1975, 1984, 1989, 1994, 2006 Aerial Photographs:

The subject property and surrounding properties appear similar to the 1954 photograph.

USGS Historic Topographic Maps were available from EDR for the years 1897 through 1998. Copies of the Topographic Maps are included in Appendix F. The following historical information was extracted from the Topographic Maps.

1897 Topographic Map, Harlem Quadrangle:

Details of the subject property cannot be discerned from this view, but it is in an area of the Bronx that is lightly developed on this map.

1947 Topographic Map, Yonkers Quadrangle:

The subject property is located south of Van Cortlandt Park South, and east of a large building (St. Patrick's Home for the Aged). Light development appears to the west and south. Jerome Park Reservoir is located south of the property.

1966 Topographic Map, Yonkers Quadrangle:

The subject property is developed on this map, and appears similar to the 1947 topographic map. Increased development is visible to the west and south.

1979 Topographic Map, Yonkers Quadrangle:

The subject property is developed on this map, and appears similar to the 1966 topographic map.

1998 Topographic Maps, Yonkers Quadrangle:

The subject property is developed on this map, and appears similar to the 1979 topographic map.

Sanborn Maps were available from EDR for the years 1896 through 2007. Copies of the Sanborn Maps are included in Appendix F. The following historical information was extracted from the Sanborn Maps.

1896, 1900, 1914 Sanborn Maps:

The subject property is not developed on these maps.

1950 Sanborn Map:

The subject property is developed as a parking lot adjacent to St. Patrick's Home for the aged on this map.

1978 Sanborn Map:

The subject property is developed as a parking lot adjacent to St. Patrick's Home for the aged on this map. Additional structures have been built to the south.

1981, 1984, 1989 Sanborn Maps:

The subject property appears similar to the 1978 Sanborn.

1991 Sanborn Map:

The subject property appears similar to the 1978 Sanborn. St. Patrick's has been renovated.

1992, 1993, 1995, 1996, 1998, 2001, 2002, 2003, 2004, 2005, 2006, 2007 Sanborn Maps:

The subject property appears similar to the 1991 Sanborn.

The City Directory Abstract, available for review in Appendix F, was accessible from the EDR, spanning the years 1927-2005.

6.0 LIMITED SCOPE INVESTIGATION OF POSSIBLE LEAD PAINT

The element lead has no function in the body. It can have poisonous effects on human organs and the nervous system, causing a variety of toxic reactions. Since lead accumulates in the body more rapidly than it can be removed, repeated exposures even to small amounts may produce lead poisoning. In addition, deteriorating lead components may allow lead to become airborne. Threshold limit values have been established at 0.15 mg/m^3 (in air) by the American Conference of Governmental Industrial Hygienists. The regulated concentration of lead detected in paint is defined as above 0.5% lead by weight (or 5,000-ppm) in Title IV of the Toxic Substances Control Act (TSCA).

No painted building components were located at the subject property.

7.0 RADON

Radon is a heavy colorless, odorless, radioactive gas formed by the radioactive decay of radium. Radon is associated with specific geologic formations that contain granite, uranium minerals and certain shale and phosphate related minerals. Radon, a gas, can migrate to and accumulate in confined spaces, such as building basements. Continued exposure to radon gas has been associated with increased lung cancer risk and possible genetic damage.

The USEPA has set an action level of 4 pico curies per liter (pCi/L) in air. At concentrations above this level, the USEPA recommends measures to lower the concentrations. A "Map of Radon Zones" indicates the levels of radon concentrations from testing and aerial surveys conducted in all counties in New York State. The subject property is located in Federal EPA Radon Zone 3, which is defined as an area having an indoor radon average of <2.0 pCi/L. Maps depicting the indoor radon living and basement areas of Bronx County are included in Appendix E.

In light of this information and the ASTM guidelines, radon concentrations are not an environmental concern for the subject property.

8.0 ASBESTOS CONTAINING MATERIAL

Asbestos has been linked to various types of lung diseases. Various regulatory agencies have tolerance limits of 1% by weight for asbestos in materials. Any material that contains asbestos levels above this limit may be considered hazardous and may have to be abated.

This Phase I assessment is not a full asbestos survey as would be required for building demolition, or identification of all possible sources of ACM, regardless of health risk. This assessment merely addresses observed suspect asbestos containing materials (ACM's) that may pose a health threat.

The disposal of asbestos or asbestos containing materials (ACM) does not occur at the subject property. Suspect ACM was not observed during the site inspection.

9.0 PROXIMITY OF PROPERTY TO SENSITIVE ECOLOGICAL AREAS

During the site inspection, Galli Engineering personnel did not identify any ecologically sensitive areas, i.e. wetlands, floodplains, within the subject site. Based on review of the Federal Wetland Inventory, wetland areas were identified ¼ mile to the east and south of the subject property.

Therefore, in accordance with the ASTM guidelines and the NYSDEC ecological regulations, ecological areas are not an environmental concern and no restrictions on land development are indicated at the subject property.

10.0 SITE CHARACTERISTICS

10.1 Physiography and Topography

The subject property is located within the New England physiographic province. Elevations in the area within a one mile radius of the subject property are approximately 20-186 feet above sea level.

The U.S.G.S 7.5 Minute (Topographic) Map of Yonkers, NY indicates that the elevation of the subject site is approximately 134 feet above sea level. The general topographic gradient is to the northwest. The approximate geographical location is Latitude: 40.88440 -– North (40° 53' 3.8") Longitude 73.8887 -– West (73° 53' 19.3"); Universal Transverse Mercator: Zone 18. UTM X (Meters): 593628.5; UTM Y (Meters): 4526307.0.

10.2 Geology

The geology of this section of the Bronx is composed of basal amphibolite overlain by pelitic schists. It is part of the Magothy Formation, which is from the Cambrian-Ordovician age. The surficial geology of this area of the Bronx is glacial till. Till has variable texture - accumulations of mixtures of clay, silt, sand, gravel, and boulders, usually poorly sorted and relatively impermeable. Thickness is variable, from 1-50 meters.

10.3 Soils

The United States Department of Agriculture (USDA) Soil Conservation Service (SCS) information indicates that the soils on the subject property are classified as Hollis. This soil type is described as very stony loam. The soil surface textures are loam. The deeper soil types are gravelly – fine sandy loam.

10.4 Surface and Groundwater Resources

No surface water features are located in close proximity to the subject property. Groundwater is used as potable water in Nassau County. Two Federal United States Geologic Survey (USGS) wells were identified within a one-mile radius. One Federal FRDS Public Water Supply (PWS)

System wells and three State wells were found within one mile of the subject property. Detailed information on wells is provided on pages A-5 through A-9 of the EDR report (see Appendix C).

11.0 PREVIOUS SITE INVESTIGATIONS

No previous studies have been identified by the client.

12.0 DATA GAPS

The All Appropriate Inquiry rule requires that the environmental professional: (1) identify data gaps that remain after the conduct of all required activities; (2) identify the sources of information consulted to address such data gaps; and (3) comment upon the significance of such data gaps with regard to his or her ability to identify conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the property.

Data gaps are defined as the inability to obtain information required by the standards and practices listed in the regulation, despite good faith efforts by the environmental professional or prospective landowner. Data gaps and the effect of the data gaps on the environmental professional's ability to provide an opinion are listed in this section. The individuals and information sources that were contacted in order to address the data gaps are also listed in this section.

Freedom of Information Act requests can be identified as a data gap for the subject property. Typically, government agencies take up to six weeks or more to reply with any findings. Also, storage tanks are not always registered properly with the State, preventing them from being included in a FOIL document return. Copies of any significant information received after issuance of this report will be forwarded to the client.

A title search was requested of the client, but was not available prior to preparation of this assessment. Title records generally reveal the parcel boundaries, address and block and lot and encumbrances against the property. These may include legally binding right-of-ways, or environmental restrictions.

13.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions:

Galli Engineering, P.C. has performed this Phase I Environmental Site Assessment of the building located at 66 Van Cortlandt Park South, Bronx, NY 10281 in accordance with the scope and limitations of ASTM E-1527-05. Based upon Galli's Phase I investigation, the following site environmental conditions exist.

- The subject property is an asphalt paved parking lot, located at 66 Van Cortlandt Park South, Bronx NY.
- No dry wells or drains were visible on the lot.
- No petroleum storage tanks are located on the subject property.
- Suspect asbestos containing materials were not observed during the site inspection.
- No accumulation of litter, illegal dumping, storage of hazardous materials, distressed vegetation or other adverse environmental conditions were observed on the subject property at the time of inspection.

Recommendations:

- No further environmental work is recommended at this property.

14.0 LIMITATIONS

The purpose of this investigation was to identify potential sources of contamination at the property, and to satisfy the all-appropriate inquiry standard set forth in Section 9601 (35-b) of CERCLA. The findings and conclusions set forth in this report are based upon information that was available to Galli Engineering, P.C. during its inspection of the property, and after review of selected records and documents. If new information becomes available concerning the property after this date, or if the property is used in a manner other than that which is identified in this report, the findings and conclusions contained herein may have to be modified. Additionally, while this investigation was performed in accordance with good commercial and customary practice and protocols generally accepted within the consulting industry, Galli Engineering, P.C. cannot guarantee that the property is completely free of hazardous substances or other materials or conditions that could subject AECOM to potential liability. The presence or absence of any such condition can only be confirmed through the collection and analysis of soil and groundwater samples, which was beyond the scope of this investigation.

Future events and/or investigation could change the findings stated herein. Should additional investigations encounter differing conditions, sections of this report may require modification.

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

GALLI ENGINEERING, P.C.

_____ _____

Richard D. Galli, P.E. Date

President

Appendix F: Correspondence from the NYC Department of Environmental Protection

Environmental Protection

Carter H. Strickland, Jr.
Commissioner

Angela Licata
Deputy Commissioner
of Sustainability
alicata@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373
T: (718) 595-4398
F: (718) 595-4479

December 21, 2012

Mr. Robert Dobruskin
Director, Environmental Assessment and Review Division
New York City Department of City Planning
22 Reade Street, Room 4E
New York, New York 10007-1216

Re: St. Patrick's Home for the Aged and Infirm
Parking Garage/Multipurpose Structure
66 Van Cortlandt Park South
Block 3252, Lot 66
DEP # 12DEPTECH007X / CEQR # 11DCP043X
Bronx, New York

Dear Mr. Dobruskin:

The New York City Department of Environmental Protection, Bureau of Environmental Planning and Analysis (DEP) has reviewed the November 2012 Construction Health and Safety Plan (CHASP) prepared by RCDolner LLC on behalf of Slater and Beckerman LLP (c/o St. Patrick's Home for the Aged and Infirm), (applicant) for the above referenced project. It is our understanding that the applicant is seeking a special permit from the New York City Department of City Planning (DCP) to construct a 74,737 gross square foot (gsf) four-level accessory parking garage/multipurpose structure, with approximately 104 spaces on three levels, to replace an existing surface accessory parking lot on the project site. The proposed project also includes a new program and storage space, as well as a rooftop terrace and recreation room on top of the proposed garage for special programs by the facility. The project site currently contains an asphalt paved parking lot, consisting of approximately 38 parking spaces, which serve the adjacent 264-bed skilled nursing facility operated by the St. Patrick's Home for the Aged and Infirm facility. The eight-story, approximately 118,547 gsf nursing facility (as well as the adjacent seven-story, 14,472 gsf convent) would not be altered as a result of this proposed action. The project site is located in the Van Cortlandt Park neighborhood of Bronx Community District 8, and is bordered to the east by Dickinson Avenue, the north by Van Cortlandt Park South, the west by Saxon Avenue, and to the south by Sedgwick Avenue. The subject portion of the project site (the existing surface parking lot) is located directly adjacent (west) of the St. Patrick's Home for the Aged and Infirm facility building, situated at the southwest corner of the intersection of Van Cortlandt Park South and Dickinson Avenue.

Based upon our review of the submitted documentation, we have the following comments and recommendations to DCP:

- DCP should instruct the applicant to include the names and phone numbers of Site Supervisor and Alternates in the CHASP.

DEP finds the November 2012 CHASP for the proposed project acceptable as long as the aforementioned information is incorporated into the CHASP. DCP should instruct the applicant that at the completion of the project, a Professional Engineer (P.E.) certified Remedial Closure Report should be submitted to DEP for review and approval.

Future correspondence related to this project should include the following tracking number **12DEPTECH007X**. If you have any questions, you may contact Mr. Wei Yu at (718) 595-4358.

Sincerely,

Maurice S. Winter
Deputy Director, Site Assessment

c: E. Mahoney
M. Winter
W. Yu
T. Estesen
M. Wimbish
L. Dorestant – DCP
C. Evans – DCP
File

Environmental Protection

Carter H. Strickland, Jr.
Commissioner

Angela Licata
Deputy Commissioner
Environmental Planning and Analysis
alicata@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373
T: (718) 595-4398
F: (718) 595-4479

August 31, 2011

Mr. Robert Dobruskin
Director, Environmental Assessment and Review Division
New York City Department of City Planning
22 Reade Street, Room 4E
New York, New York 10007-1216

Re: St. Patrick's Home for the Aged and Infirm
Parking Garage/Multipurpose Structure
66 Van Cortlandt Park South
Block 3252, Lot 66
DEP # 12DEPTECH007X / CEQR # 11DCP043X
Bronx, New York

Dear Mr. Dobruskin:

The New York City Department of Environmental Protection, Bureau of Environmental Planning and Analysis (DEP) has reviewed the October 2010 Environmental Assessment Statement prepared by AECOM USA, Inc. and the February 2010 Phase I Environmental Site Assessment Report (Phase 1) prepared by Galli Engineering, P.C., on behalf of Slater and Beckerman LLP (c/o St. Patrick's Home for the Aged and Infirm), (applicant) for the above referenced project. It is our understanding that the applicant is seeking a special permit from the New York City Department of City Planning (DCP) to construct a 74,737 gross square foot (gsf) four-level accessory parking garage/multipurpose structure, with approximately 104 spaces on three levels, to replace an existing surface accessory parking lot on the subject portion of the project site. The proposed project also includes a new program and storage space, as well as a rooftop terrace and recreation room on top of the proposed garage for special programs by the facility. The project site currently contains an asphalt paved parking lot, consisting of approximately 38 parking spaces, which serve the adjacent 264-bed skilled nursing facility operated by the St. Patrick's Home for the Aged and Infirm facility. The eight-story, approximately 118,547 gsf nursing facility (as well as the adjacent seven-story, 14,472 gsf convent) would not be altered as a result of this proposed action. The project site is located in the Van Cortlandt Park neighborhood of Bronx Community District 8, and is bordered to the east by Dickinson Avenue, the north by Van Cortlandt Park South, the west by Saxon Avenue, and to the south by Sedgwick Avenue. The subject portion of the project site (the existing surface parking lot) is located directly adjacent (west) of the St. Patrick's Home for the Aged and Infirm facility building, situated at the southwest corner of the intersection of Van Cortlandt Park South and Dickinson Avenue.

The February 2010 Phase I report revealed that historical on-site and surrounding area land uses consisted of residential and commercial uses including a parking lot, residential homes, and apartments.

Based upon our review of the submitted documentation, we have the following comments/recommendations to DCP:

- DCP should instruct the applicant to submit a site-specific construction Health and Safety Plan (CHASP) for the proposed construction project. The CHASP should be submitted to DEP for review and approval. Soil disturbance should not occur without DEP's written approval of the CHASP.

- DCP should instruct the applicant that excavated soils, which are temporarily stockpiled on-site, must be covered with polyethylene sheeting while disposal options are determined. Additional testing may be required by the disposal/recycling facility. Excavated soil should not be reused for grading purposes.

- DCP should instruct the applicant that if any petroleum-impacted soils (which display petroleum odors and/or staining) are encountered during the excavation/grading activities, the impacted soils should be removed and properly disposed of in accordance with all New York State Department of Environmental Conservation (NYSDEC) regulations.

- DCP should instruct the applicant that dust suppression must be maintained by the contractor during the excavating and grading activities at the site.

Future correspondence related to this project should include the following tracking number **12DEPTECH007X**. If you have any questions, you may contact Mr. Wei Yu at (718) 595-4358.

Sincerely,

Maurice S. Winter
Deputy Director, Site Assessment

c: E. Mahoney
M. Winter
M. Myrie
W. Yu
T. Estesen
M. Wimbish
D. Doobay – DCP
C. Evans – DCP
File

Appendix F1: CHASP Prepared by RC Dolner Inc.

Construction Health and Safety Plan

November 20, 2012

Project:

St. Patrick's Home for the Aged and Infirm

Parking Garage/Multipurpose Structure

66 Van Corttlandt Park South

Bronx, NY 10463

Block 3252, Lot 66

DEP#: 12DEPTECH007X

CEQR #: 11DCP043X

ULURP #: 1100102ZSX

Prepared for:

St. Patrick's Home for the Aged and Infirm

66 Van Corttlandt Park South

Bronx, NY 10463

Submitted to:

The New York City Department of Environmental Protection

Bureau of Environmental Planning and Analysis

59-17 Junction Boulevard

Flushing, NY 11373

RCDolner LLC
192 Lexington Avenue
3rd Floor
New York, NY 10016
T 212.531.8600
F 212.633.1108
120 Broadway
Suite 955
New York, NY 10271
T 646.503.3500
F 646.532.2895
www.rcdolner.com

TABLE OF CONTENTS

1 INTRODUCTION

This Construction Health and Safety Plan (CHASP) describes the procedures to be followed in order to reduce employee exposure to potential health and safety hazards that may be present during environmental investigation activities being performed at the site. The emergency response procedures necessary to respond to such hazards are also described within this CHASP. All activities performed under this CHASP are targeted to comply with Occupational Safety and Health Administration (OSHA) Regulations 29 CFR Part 1910.1025.

This document is not, nor does it purport to be, a complete description of all safety and health requirements applicable to work performed at the site. Rather, the CHASP is a general overview of the compliance policies and work practices applicable to the primary tasks and hazards associated with the environmental assessment portion of the development project, as well as a recitation of minimum safety and health compliance obligations for contractors, subcontractors and workers at the site. All subcontractors of any tier operating at the worksite are obligated to implement and maintain comprehensive safety and health plans for their own employees and to ensure that their employees comply with all applicable safety and health requirements. All subcontractors operating at the worksite should refer to the applicable specific OSHA Standards for detailed requirements.

1.1 Purpose

The purpose of this CHASP is to provide the contractors' field personnel, as well as other site-occupants, with an understanding of the potential chemical and physical hazards that exist or may arise while portions of this project are being performed. To this end, this CHASP also presents information on the progression of the environmental restoration activities and specific details regarding the handling of materials excavated from the site.

The primary objective is to ensure the well being of all field personnel and the community surrounding this site. In order to accomplish this, project staff and approved subcontractors of any tier shall acknowledge and adhere to the policies and procedures established herein. Accordingly, all personnel assigned to the remediation activities associated with this project (Remedial Personnel) shall read this CHASP and sign the Agreement and Acknowledgment Statement (Appendix F) to certify that they have read, understood, and agree to abide by its provisions. A copy of this CHASP will be available to anyone that requests it. Personnel involved in construction activities (Construction Personnel) and other Personnel (e.g. government officials, administrators, bank inspectors, assessors, etc.) that will have limited exposure to the site native soil/fill material during construction activities will be instructed on how to reduce the probability of exposure to site contaminants, but will not be required read the CHASP.

1.2 Project Description

St. Patrick's Home for the Aged and Infirm (the "Applicant" or "St. Patrick's") requests approval of an application for a special permit, pursuant to Section 74-90 of the Zoning Resolution of the City of New York ("ZR" and "Zoning Resolution"), to allow the enlargement of an existing Use Group 3 nursing home located at 66 Van Cortlandt Park South, Block 3252, Lot 76, within Community District 8 in the Borough of the Bronx (the "Premises" or "Site"). The enlargement will consist of a four-level, approximately 74,737 gross square foot structure, which will include 104 parking spaces on three levels, new program and storage spaces, and a rooftop terrace and recreation room ("Proposed Facility").

The Premises is an irregularly shaped corner lot on the south side of Van Cortlandt Park South and the east side of Saxon Avenue. The Premises has a total lot area of 54,708 square feet and is located in an R7-1 zoning district, within Community District 8. The Premises contains approximately 289 feet of frontage along Van Cortlandt Park South and 155 feet of frontage along Saxon Avenue.1 The Premises is improved with two buildings: an eight-story Use Group 3 nursing home containing approximately 118,547 square feet of floor area ("Nursing Home"), and a seven story Use Group 3 convent containing approximately 14,472 square feet of floor area ("Convent"). The Nursing Home contains 264 beds, areas for physical and occupational therapy, a wellness center, recreation area, a chapel, gift shop, and a resident coffee shop, as well as a surface accessory parking lot for 38 cars.

Since 1931, St. Patrick's, an affiliate of the Carmelite Sisters for the Aged and Infirm, has provided long term nursing care and short term rehabilitative care to the elderly of the Bronx. St. Patrick's creates a homelike environment, providing a wide range of services, including skilled nursing, diagnostic exams, and medical and quality management services. St. Patrick's employs approximately 375 full and parttime individuals and delivers services to an average of 260 residents daily.

The Proposed Facility will be constructed on the west side of the Premises in the area currently occupied by the existing 38-space accessory parking lot and will have direct connections to the Nursing Home. The Proposed Facility will include 104 self-parking spaces on three-levels, as well as space for storage. The rooftop level of the Proposed Facility will contain a recreation room and an open terrace.

Level One of the Proposed Facility will be at grade with Saxon Avenue and will align with the Nursing Home's basement level. Level One will contain a 14,767 square foot parking area for 32 cars and 4,371 square feet of storage for St. Patrick's records and housekeeping. The storage space will be a double height space. A 22-foot wide curb cut would be situated on Saxon Avenue, approximately 100 feet from the intersection. Level Two of the Proposed Facility will contain a 19,138 square foot parking area for 35 cars. There will be no access to the existing Nursing Home on Level Two. Level Three will align with the ground floor lobby level of the Nursing Home and contain a 12,841 square foot parking area for 37 cars and 6,297 square feet of

storage space. The Terrace Level will align with the second floor of the Nursing Home, and will contain a 7,323 square foot recreation room and a 10,000 square foot open space terrace.

It is expected that construction of the Proposed Facility would last approximately 12 months, with construction completed and the Facility utilized/occupied in the year 2014.

2 APPLICATION OF HEALTH AND SAFETY PLAN

The procedures of this CHASP apply for any person that will enter the boundaries of the site or a portion of the Site during environmental remediation activities or construction, until the existing soil/fill material has been covered with either a paved surface or an uncontaminated soil cap. When the Project Manager has designated an area of the site as clear of any environmental issues, construction contractors and subcontractors of any tier will perform the balance of the work in accordance with their individual OSHA-compliant corporate CHASP.

2.1 Restoration Personnel

Employees of contractors and subcontractors of any tier performing the following activities will be considered Restoration Personnel:

- Excavation of native soil/fill material
- Loading of native soil/fill onto vehicles
- Processing of native soil/fill into components
- Transporting of native soil/fill across the site
- Sampling of native soil/fill material for subsequent physical or chemical analysis
- Cleaning or decontaminating equipment or personnel
- Handling of ground waters

All subcontractors, of any tier, must submit a CHASP to the Site Health and Safety Officer for review and approval prior to mobilizing to the site. Only CHASPs that comply with this CHASP will be approved. Where a subcontractors CHASP is deficient, the Site Health and Safety Officer will provide written notification of any required changes. Approved CHASPs will be submitted to the Project Manager and retained on-site for reference by the Site Health and Safety Officer.

2.1.1 Construction Personnel

For this document, "Construction Personnel" is the term given for those employees of contractors and subcontractors of any tier performing activities associated with site development other than those performed by the Remedial Personnel. This designation does not preclude that

Construction Personnel will traverse or work upon native soil/fill material, rather, it infers that it will not involve performing tasks that will create a route of exposure to the contaminants contained therein. Construction Personnel will receive instruction to limit the potential for exposure to these contaminants. Construction Personnel will be prohibited from entering Environmental Remediation Areas (i.e., active excavation / handling / processing areas, loading areas, exclusion zones or support zones).

3 KEY PERSONNEL / IDENTIFICATION OF HEALTH & SAFETY PERSONNEL

3.1 Key Personnel

A list of the pertinent personnel authorized to be present on site is as follows:

Title Name Telephone Number

Project Manager: Boro Atanasoski (O) 201-438-1188 Faith Environmental (C) 971-399-3625

Field Operations Leader: Viktor Antonic (O) 201-438-1188 Faith Environmental

Site Health & Safety Officer: Ismail Cekic (O) 201-438-1188 Faith Environmental

3.2 Organizational Responsibility

3.2.1 Project Manager

The Project Manager will be responsible for implementing the project and obtaining any necessary personnel or resources for the completion of the project. Specific duties will include:

- Coordinating the activities of all construction and Remedial Personnel, to include informing them of the required Personal Protective Equipment (PPE) and insuring their signature acknowledging this CHASP;

- Selecting a Site Health and Safety Officer and field personnel for the work to be undertaken on site;

- Ensuring that the tasks assigned are being completed as planned and on schedule;

- Providing authority and resources to ensure that the Site Health and Safety Officer is able to implement and manage safety procedures;

- Preparing reports and recommendations about the project to clients and affected personnel;

- Ensuring that all persons allowed to enter the site (e.g.., EPA, contractors, state officials, visitors) are made aware of the potential hazards associated with the substances known or suspected to be on site, and are knowledgeable as to the on-site copy of the specific CHASP;

- Ensuring that the Site Health and Safety Officer is aware of all of the provisions of this CHASP and is instructing all personnel on site about the safety practices and emergency procedures defined in the plan;

- Serving as liaison with public officials where there is no Public Affairs official designated.

3.2.2 Field Operations Leader

The Field Operations Leader will be responsible for field operations and safety. Specific duties will include, but are not limited to:

- Scheduling with the construction company and their subcontractors;

- Coordinating with the Site Health and Safety Officer in determining protection levels;

- Documenting field activities;

- Coordinate activities between environmental and construction personnel.

- Coordination with waste management contractors.

- Review and approval of waste disposal facilities.

In the event that the Project Manager and the Site Health and Safety Officer are not on site, the Field Operations Leader will assume all responsibility of the Site Health and Safety Officer.

3.2.3 Site Health and Safety Officer

The Site Health and Safety Officer shall be responsible for the implementation of the CHASP on site. Specific duties will include:

- Monitoring the compliance of construction and environmental remediation activities personnel (field personnel) for the routine and proper use of the PPE that has been designated for each task;

- Routinely inspecting PPE and clothing to ensure that it is in good condition and is being stored and maintained properly;

- Stopping work on the site or changing work assignments or procedures if any operation threatens the health and safety of workers or the public;

- Monitoring personnel who enter and exit the site and all controlled access points.

- Reporting any signs of fatigue, work-related stress, or chemical exposures to the Project Manager;

- Dismissing field personnel from the site if their actions or negligence endanger themselves, co-workers, or the public, and reporting the same to the Project Manager;

- Reporting any accidents or violations of the CHASP plan to the Project Manager and documenting the same for the project in the records;

- Knowing emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire and police departments;

- Ensuring that all project-related personnel have signed the personnel agreement and acknowledgments form contained in this CHASP;

- Coordinate upgrading and downgrading PPE as necessary due to changes in exposure levels, monitoring results, weather, and other site conditions;

- Perform air monitoring with approved instruments in accordance with requirements stated in this CHASP.

4 HEALTH AND SAFETY RISK ANALYSIS

The field tasks covered by the CHASP will include material excavation with hydraulic equipment and hand tools, the manual sorting of materials, and containerization of soil and groundwater samples. Additionally, standard job task hazards that are inherent to a construction project will exist.

4.1 Explosion and Fire

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to explosion and fire. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Fire Protection and Prevention Standard, set forth at 29 C.F.R. § 1910 part 1926.35, as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations. The following are possible fire and explosion hazards that may be encountered on the job site along with fire preventive measures to take.

4.1.1 Flammable Vapors

The presence of flammable vapors can pose a potential fire and health hazard. Hazard reduction procedures include monitoring the ambient air with an oxygen/LEL meter (combustible gas

indicator). If the LEL reading exceeds 20%, all work will stop and employees will leave the site immediately and contact the fire department. For OSHA-defined "confined space" activities, work will stop if the LEL reading exceeds 10%.

4.1.2 High Oxygen Levels

Atmospheres that contain a level of oxygen greater than 23% pose an extreme fire hazard (the usual ambient oxygen level is approximately 20.5%). All personnel encountering atmospheres that contain a level of oxygen greater than 23% must evacuate the site immediately and must notify the Fire Department. If the oxygen level is less than 19.5%, do not enter the space without level B PPE.

4.1.3 Fire Prevention

- During equipment operation, periodic vapor concentration measurements should be taken with an explosimeter or combustimeter. If at any time the vapor concentrations exceed 20% of the lower explosive limit (LEL), then the Site Health and Safety Officer or designated field worker should immediately shut down all operations.

- Only approved safety cans will be used to transport and store flammable liquids.

- All gasoline and diesel-driven engines requiring refueling must be shut down and allowed to cool prior to filling.

- Smoking is not allowed during any operations within the work area in which petroleum products or solvents in free-floating, dissolved, or vapor forms, or other flammable liquids may be present.

- No open flame or spark is allowed in any area containing petroleum products or other flammable liquids.

4.2 Operational Safety Hazards

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to earth moving equipment. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Excavation Standard, set forth at 29 C.F.R. § 1910 Subpart P as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

4.2.1 Heavy Machinery / Equipment

All site employees must remain aware of those site activities that involve the use of heavy equipment and machinery. Respiratory protection and protective eyewear may be worn frequently during site activities. This protective equipment significantly reduces peripheral

vision of the wearer. Therefore, it is essential that all employees at the site exercise extreme caution during operation of equipment and machinery to avoid physical injury to themselves or others.

4.2.2 Vehicular Traffic

All employees will be required to wear a fluorescent safety vest at all times while on site. In addition, supplemental traffic safety equipment use can be exercised when warranted by specific task. Supplemental equipment can be items such as cones, flags, barricades, and/or caution tape. Drivers of waste transportation vehicles will only exit vehicles in designated areas within the Support Zone. During this time, drivers will only be allowed to inspect the placement of waste loads and cover their trailers.

4.3 Noise Hazards

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to noise hazards. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Occupational Noise Exposure Standard, set forth at 29 C.F.R. § 1910 part 1926.52, as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

Hearing protection shall be provided to the employees where sound pressure levels exceed 85 dB. Hearing protection shall be worn where sound pressure levels in areas and/or on equipment exceeds 90 dB. Typical heavy excavation operations have been monitored with a sound level meter and indicate that hearing protection is required for all personnel while engaged in this action.

4.4 Safe Material Handling

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to safe material (soil/fill) handling. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Eye and Face, and Respiratory Safety Standards, set forth at 29 C.F.R. § 1910 Parts 1926.102 and 1926.103 as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

Skin and eye contact with contaminated soil/fill or materials in contact with the soil/fill may occur during excavation, handling and decontamination activities. Nitrile gloves and approved safety glasses must be worn to prevent exposure to the associated contaminants. Employees working at or near (within ten feet of) excavation fronts could be required to wear respiratory protection. If necessary, all associated activities will be performed pursuant to 29 C.F.R. § 1910 Parts 1926.134 (a)(2) and 1926.55.

4.5 Temperature Hazards

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to temperature stresses. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Technical Manual (TED 1-0.15A), Section III – Chapter 4 (1999) as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

Since climatic changes cannot be avoided, work schedules will be adjusted to provide time intervals for intake of juices, juice products, and water in an area free from contamination and in quantities appropriate for fluid replacement to prevent heat stress conditions from occurring.

4.5.1 Types of Heat Stress

Heat stress may occur even in moderate temperature areas and may present any or all of the following:

4.5.1.1 Heat Rash

Result of continuous exposure to heat, humid air, and chafing clothes. Heat rash is uncomfortable and decreases the ability to tolerate heat.

4.5.1.2 Heat Cramps

Result of the inadequate replacement of body electrolytes lost through perspiration. Signs include severe spasms and pain in the extremities and abdomen.

4.5.1.3 Heat Exhaustion

Result of increased stress on the vital organs of the body in the effort to meet the body's cooling demands. Signs include shallow breathing; pale, cool, moist skin; profuse sweating; and dizziness.

4.5.1.4 Heat Stroke

Result of overworked cooling system. Heat stroke is the most serious form of heat stress. Body surfaces must be cooled and medical help must be obtained immediately to prevent severe injury and/or death. Signs include red, hot, dry skin, absence of perspiration, nausea, dizziness and confusion, strong, rapid pulse that could lead to coma or death.

4.5.2 Heat Stress Prevention

A. Replace body fluids (water and electrolytes) lost through perspiration. Solutions may include a 0.1% salt and water solution or commercial mixes such as "Gatorade". Employees must be encouraged to drink more than the amount required in order to satisfy thirst.

B. Use cooling devices to aid the natural body ventilation. Cooling occurs through evaporation of perspiration and limited body contact with heat-absorbing protective clothing. Utilize fans and air conditioners to assist in evaporation. Long, cotton underwear is suggested to absorb perspiration and limit any contact with heat-absorbing protective clothing (i.e., coated Tyvek suits).

C. Conduct non-emergency response activities in the early morning or evening during very hot weather.

D. Provide shelter against heat and direct sunlight to protect personnel. Take breaks in shaded areas.

E. Rotate workers utilizing protective clothing during hot weather.

F. Establish a work regime that will provide adequate rest periods, with personnel working in shifts.

4.6 Cold Exposure Hazards

Work schedules will be adjusted to provide sufficient rest periods in a heated area for warming up during operations conducted in cold weather. Also, thermal protective clothing such as wind and/or moisture resistant outerwear is recommended to be worn.

If work is performed continuously in the cold at or below -7 °C (20 °F), including wind chill factor, heated warming shelters (tents, cabins, company vehicles, rest rooms, etc.) shall be made available nearby and the worker should be encouraged to use these shelters at regular intervals, the frequency depending on the severity of the environmental exposure. The onset of heavy shivering, frostnip, the feeling of excessive fatigue, drowsiness, irritability, or euphoria, are indications for immediate return to the shelter. When entering the heated shelter, the outer layer of clothing shall be removed and the remainder of the clothing loosened to permit sweat evaporation. A change of dry work clothing shall be provided as necessary to prevent workers from returning to their work with wet clothing.

Dehydration, or the loss of body fluids, occurs in the cold environment and may increase the susceptibility of the worker to cold injury due to a significant change in blood flow to the extremities. Warm sweet drinks and soups should be provided at the work site to provide caloric intake and fluid volume. The intake of coffee should be limited because of a diuretic and circulatory effect (adapted from TLV's and Biological Exposure Indices 1988-1989, ACGIH).

5 PERSONNEL TRAINING

5.1 Pre-assignment and OSHA Training

All Remedial Personnel that will be in direct contact (that is hand digging, sampling, processing) with the native soil/fill materials must complete an initial 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training course and, where necessary, a current eight hour refresher course (as required annually after initial 40-hour training completion). Restoration Personnel that will not be in direct contact with native soil/fill materials are only required to prove they have read and understood the procedures presented in this CHASP.

On-site managers and supervisors of Restoration Personnel (Field Operations Leader, Site Health and Safety Officer) directly responsible for employees engaged in hazardous substance operations have received an initial 40-hour HAZWOPER training course and an additional (above the 40-hour HAZWOPER) eight hours of supervisory training. These training requirements comply with the OSHA Hazardous Waste Operations and Emergency Response Regulation, 29 CFR 1910.120. The Site Health and Safety Officer will be certified in First Aid and Cardiovascular Pulmonary Resuscitation.

The Site Health and Safety Officer will conduct an on-site training meeting for all Construction Personnel and observers that could potentially be exposed to the native soil/fill material during construction activities. Training meetings will be provided routinely for any new project personnel. This program will cover specific health and safety equipment and protocols and potential problems inherent to each project operation. The Site Health and Safety Officer will be present for any activities being performed by Construction Personnel that will involve the handling of soil/fill during construction activities to provide supervision on exposure reduction. This may include insuring the use of proper PPE and air quality monitoring.

5.2 Respirator Requirements

5.2.1 Respirator Requirements and Fit Testing

The OSHA respiratory protection standard, 29 CFR 1910.134, under paragraph (f)(2), requires fit testing for all employees using tight fitting respirators including filtering facepiece respirator. The fit test must be performed before the respirator is used and must be repeated at least annually and whenever a different respirator facepiece is used or a change in the employee's physical condition could affect the respirator fit.

The user seal check is a separate requirement under paragraph (g)(1)(iii) and must be performed each time the employee dons the respirator. Employers must adhere to the recommendations of the respirator's manufacturer; different manufacturers recommend different procedures.

5.2.2 Medical Surveillance

OSHA requires a medical evaluation to determine whether each employee required to wear a respirator is physically able to wear a respirator and perform the work. This evaluation can be a

medical examination or an evaluation of employee responses to the OSHA Respirator Medical Evaluation Questionnaire located in Appendix C of the Respiratory Protection Standard. Either method must be performed by a physician or other licensed healthcare professional. Appendix E has a copy of the forms to be completed.

A medical examination may be necessary whenever the employee gives a positive response to any of questions 1 through 8 in Appendix C, Part A, Section 2.

6 PERSONAL PROTECTIVE EQUIPMENT

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to personal protective equipment. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Personal Protective Equipment Standard, set forth at 29 C.F.R. § 1910.Part 1926.28(a) as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

The purpose of personal protective clothing and equipment (PPE) is to shield or isolate individuals from the chemical, physical, and biological hazards that may be encountered on-site when engineering and other controls are not feasible or cannot provide adequate protection. Careful selection and use of adequate PPE should protect the health of all on-site workers. No single combination of PPE is capable of protecting against all hazards. Therefore, PPE should be used in conjunction with, not in place of, other protective methods, such as engineering controls and safe work practices.

Site-specific chemicals of concern include semi-volatile organic compounds. These chemicals are of moderate to low hazard. Therefore, level D personal protective equipment will be required at all times when on site. The following is a breakdown of the types of protective clothing and equipment to be used during the site activities.

6.1.1 Levels of Protection

The Site Health and Safety Officer will determine whether a level of protection should be upgraded or downgraded. Changes in the level of protection will be recorded in the dedicated site logbook along with the rationale for the changes (see Section 7.1.3 for additional information on PPE upgrades). Level D PPE will be the minimum requirement at all times during the environmental remediation portion of the project.

6.1.2 Level D Personal Protective Equipment

All initial site access and activities will be done in Level D attire. Level D protection is sufficient under conditions where no contaminants are present or those activities that do not pose a potential threat of unexpected inhalation of or contact with hazardous levels of any substances.

Typical Level D activities may include sediment, logging and groundwater sampling, and as surficial site surveys.

- Hard hat
- Safety glasses (as appropriate)
- Fluorescent vest
- Hearing protection (as appropriate)

6.1.3 Modified Level D Personal Protective Equipment

- Hard hat
- Safety glasses
- Fluorescent vest
- Nitrile "N-Dex" inner gloves
- Latex outer boots (chemical resistant)
- Polyethylene coated Tyvek suit
- Hearing protection (as appropriate)

6.1.4 Level C Personal Protective Equipment

Level C protection, as described in this plan, will be available at a minimum for those activities that involve surface and subsurface soil (strata disturbance such as well installation, and all subsurface media sampling activities such as split-spoon sampling and borings). Level C protection equipment should be readily available at all times. Consistent with OSHA training, prior to donning Level C, oxygen percent must be continuously monitored.

- Buddy system required at all times
- Full face respirator with NIOSH approved OV/AG/HEPA combination cartridges (MSA GMC-H)
- Saranex coated Tyvek Suit
- Inner Nitrile "N-Dex" gloves
- Outer Nitrile (NBR) gloves
- Outer boots (chemical resistant)

- Hard hat
- Hearing protection (as appropriate)

6.1.5 Level B Personal Protective Equipment

Some activities may require Level B protection. In atmospheres potentially containing toluene and xylenes, the protective ensemble should include chemical resistant clothing since the two compounds have skin absorption potential. Regional Health and Safety representatives must be on site upon start-up of any project requiring level B protection. This should be understood to include subcontractors conducting Level B activity.

- Buddy system required at all times
- Supplied air respirator or SCBA
- Saranex coated Tyvek Suit
- Inner Nitrile "N-Dex" gloves
- Outer Nitrile (NBR) gloves
- Outer boots (chemical resistant)
- Hard hat
- Hearing protection (as appropriate)

6.1.6 Personal Use Factors and Equipment Change Out Schedule

Prohibitive or precautionary measures should be taken as necessary to prevent workers from jeopardizing safety during equipment use.

If necessary, all respiratory protective equipment used will be approved by NIOSH/MSHA. Respirator cartridges will be changed once per eight-hour shift at a minimum. This can be accomplished at the end of the workday during respirator decontamination. Employees working within the excavation front should change the cartridge of their respirators once every four hours. If odor breakthrough is detected while wearing the respirator or if breathing becomes difficult, change cartridges immediately. A filter change out schedule is provided below.

Remedial Worker	Work Area	Filter Type	Replacement Rate
Site Screener	EZ – At Excavation Front	MSA GMC-H	Every 4 Hours
Laborer	EZ – At Excavation Front	MSA GMC-H	Every 2 Hours
	SZ, CRZ	MSA GMC-H	Every 8 Hours
Equipment Operator	EZ	MSA GMC-H	Every 4 Hours
	SZ, CRZ	MSA GMC-H	Every 8 Hours
Administrator	EZ	MSA GMC-H	Every 4 Hours
	SZ, CRZ	MSA GMC-H	Every 8 Hours

When utilizing protective garments such as Tyvek suits, gloves, and booties, all seams between protective items will be sealed with duct tape.

Contact with contaminated surfaces, or surfaces suspected of being contaminated, should be avoided. This includes walking through, kneeling in, or placing equipment in puddles, mud, discolored surfaces, or on drums and other containers.

Eating, smoking, drinking, and/or the application of cosmetics in the immediate work area is prohibited. Ingestion of contaminants or absorption of contaminants into the skin may occur.

The use of contact lenses on the job site is strongly advised against. Contact lenses may trap contaminants and/or particulate between the lens and eye, causing irritation. However, when glasses are not available, contact lenses are preferred over faulty vision. When contact lenses are worn, safety glasses and/or goggles must be worn at all times while on the job site. Wearing contact lenses with a respirator in a contaminated atmosphere is prohibited under 29 CFR ss1910.134 (e)(5)(iii).

7 AIR MONITORING PROGRAM

During excavation, waste handling, and material transport, the air in work areas will be sampled periodically (on the site and at the property lines) for the presence of contaminants. Levels of organic vapors in the ambient air will be monitored during the fieldwork to ensure that appropriate levels of respiratory protection are employed at all times. Additionally, the testing will be performed to determine if changes to this plan are warranted to protect workers and the environment.

7.1 Organic Compounds

When deemed appropriate, a member of the safety team will use a real-time, organic vapor analyzer to monitor the concentration VOCs in the air in the work areas, and will determine when changes in site operations and personal protection equipment are necessary. No changes in the levels of respiratory protection specified above will be made without the approval of the site safety supervisor and the project team leader.

During the environmental restoration activities, the site workers will use a photo ionization detector (PID) and/or a combustible gas indicator (CGI) to monitor levels of organic vapor in the air and verify that they are within the safety guidelines established by the preliminary assessment of the risks associated with site investigations. The PID has an audible alarm set for 5 ppm (the lowest action threshold presented within this plan). If used, the GCI will have an audible alarm set to detect explosive atmospheres. Testing will be performed as necessary within the exclusion zone and at the nearest down-wind property line.

Screening activities with respect to soil quality are detailed in section 8 of this report. At a minimum, where monitoring equipment is used, the following information will be logged.

- Instrument type and detection range
- Control settings
- Reading locations
- Atmospheric conditions
- Calibration Records – To be performed a minimum of once per day

For health and safety purposes, the benzene concentration in air will be identified as 2% of the total concentration of detected hydrocarbons. This method is consistent with air monitoring conducted by the NYSDEC.

The data collected during monitoring will be used to guide site operations in a manner that is consistent with the New York State Department of Environmental Conservation, DER-I0 Technical Guidance for Site Investigation and Remediation, Generic Community Air Monitoring Plan.

Accordingly, 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 must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can 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 must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can 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 must be shutdown.

7.2 Fugitive Emissions and Odor Monitoring

Airborne fugitive particulate emissions at the site EZ and at the nearest down wind property line will be measured by the Site Safety Officer on a continuous basis during waste handling activities. The measurements will be made using a portable particulate monitoring device

manufactured by the Casella Corporation. The monitoring device is capable of detecting airborne particulate (PM-10) at concentrations ranging from 1 to 1000 micrograms per cubic meter (ug/m3). Detected concentrations are logged within the instrument memory and can be retrieved using Microsoft Windows-based software provided by the manufacturer. Retrieved data cab be imported into standard PC-based spreadsheet and database software for analysis and report presentation.

At a minimum, where the particulate monitoring device is used, the following information will be logged.

- Instrument type and detection range
- Control settings
- Reading locations
- Atmospheric conditions
- Calibration Records – To be performed a minimum of once per day

The data collected during monitoring will be used to guide site operations in a manner that is consistent, or due to the presence of heavy metal contaminants within the soil is more restrictive than those presented within the New York State Department of Environmental Conservation, DER-I0 Technical Guidance for Site Investigation and Remediation, Generic Community Air Monitoring Plan.

If during handling or the historic fill the total downwind PM-10 particulate level is 150 micrograms per cubic meter (ug/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then the handling activities must immediately stop, and the dust suppression techniques listed in section 8.3 of this document must be employed. Activities cannot resume until the mitigating measures result in a net downwind PM-10 particulate concentration below150 ug/m3.

If during handling of certified clean soil the total downwind PM-10 particulate level is 200 micrograms per cubic meter (ug/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques listed in section 8.3 of this document must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 200 ug/m3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM - 10 particulate levels are greater than 150 ug/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls

are successful in reducing the downwind PM-IO particulate concentration to within 150 ug/m3 of the upwind level and in preventing visible dust migration.

Because the detection of odors is subjective, the Site Health and Safety Officer will be charged with the responsibility of making a determination if measures are required to abate odors. Since the contaminant concentrations in the soil/fill are generally below the odor threshold, the odor sources during the site will be the operation of diesel engines associated with hydraulic material handling and transportation.

7.3 Site Matrix for Protection Level Determinations

Action levels represent those conditions requiring an upgrade of personal protective equipment (PPE). The information presented below applies to the above chemical constituents. All air monitoring results should be logged in the Site Safety Log. The following tables provide for quick reference for each monitored parameter.

Ionization Detector Response

	Photoionization Detector (PID)
Concentrations (in ppm)	**Level of PPE Required/Procedure**
0.0 to 15.0	Level D
15.1 to 250.0	Level C
> 750.0	Immediately withdraw from the area

Combustible Gas Response

	Combustible Gas Indicator (CGI)
Results (% of LEL)	**Level of PPE Required/Procedure**
0.0 to 20.0	Level D - Continue with normal activity
Above 20.0	Discontinue all site restoration activities - Immediately withdraw from the area and implement emergency procedures presented in Section 11 of this document.

Particulate Detector Response

Real Time Particulate Detection Meter	
Results (mg/m3)	**Level of PPE Required/Procedure**
0.0 to 5.0	Continue with normal activity – Level D
>5.0	Level C Protection - Discontinue site activities – initiate dust control activities listed in Section 8.3 of this document

7.4 Work Zone Definitions

Work and support areas shall be established based on ambient air data and proposed work sites. They shall be established in order to contain contamination within the smallest areas possible and shall ensure that each employee has the proper PPE for the area or zone in which work is to be performed.

7.4.1 Exclusion Zone (EZ)

It is within this zone that the excavation or environmental remediation activities such as tank abandonment operations (as described in 8.1.1.1) are performed. No one shall enter this zone unless the appropriate PPE is donned. The location of this zone will change as the construction-related excavation activities are performed.

7.4.2 Contaminant Reduction Zone (CRZ)

It is within this zone that the decontamination process is undertaken. Personnel and their equipment must be adequately decontaminated before leaving this zone for the support zone. This zone will be set up between the EZ (no less than 100 feet away) and the site boundary.

7.4.3 Support Zone (SZ)

The support zone is considered to be uncontaminated; as such, protective clothing and equipment are not required but should be available for use in emergencies. All equipment and materials are stored and maintained within this zone. Protective clothing is put on within the SZ before entering the EZ or the CRZ. The SZ will be established in a safe environment at least 50 feet away from the EZ.

7.4.4 Fugitive Dust Control Measures

To prevent the occurrence of fugitive emissions the following procedures will be implemented.

- A strict facility speed limit will be set at 15 miles per hour.
- Roads will be wetted using potable water.
- Media stockpiles over 500 cubic yards will be covered with plastic poly sheeting.
- Excavation and handling activities will be halted where winds exceed 40 miles per hour.
- Loading and mechanical screening of material will be performed within the central portions of the site as to provide maximum distance to the property lines.
- Media handled about the site will be covered while being transported within trucks.

7.5 Backfilling

All backfill material must be demonstrated to be free of any detectable concentrations of organic compounds and have concentrations of inorganic compounds that are consistent with uncontaminated regional soils (McGovern, NYSDEC, 1987).

8 GENERAL SAFETY AND HEALTH PROVISIONS

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to general safety and health provisions. Rather, contractors, subcontractors and workers at the site must refer to OSHA's General Safety and Health Provision Standard, set forth at 29 C.F.R. § 1910 subparts C and G as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations

8.1 Safety Practices / Standing Orders

The following are important safety precautions that will be enforced during work activities:

1 Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand¬to-mouth transfer and ingestion of material is prohibited in any area designated as contaminated.

2 Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activity.

3 Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garments are removed.

4 No excessive facial hair that interferes with the effectiveness of a respirator will be permitted on personnel required to wear respiratory protection equipment. The respirator must seal against the face so that the wearer receives air only through the air purifying cartridges attached to the respirator. Fit testing shall be performed prior to respirator use to ensure the wearer obtains a proper seal.

5 Contact with potentially contaminated surfaces should be avoided whenever possible. One should not walk through puddles; kneel on the ground; lean, sit, or place equipment on drums, containers, vehicles, or the ground.

6 Medicine and alcohol can potentate the effect from exposure to certain compounds. Prescribed drugs and alcoholic beverages should not be consumed by personnel involved in the project.

7 Personnel and equipment in the work areas should be minimized, consistent with effective site operations.

8 Work areas for various operational activities should be established.

9 Procedures for leaving the work area must be planned and implemented prior to going to the site. Work areas and decontamination procedures must be established on the basis of prevailing site conditions.

10 Respirators will be issued for the exclusive use of one worker and will be cleaned and disinfected after each use.

11 Safety gloves and boots shall be taped to the disposable, chemical-protective suits as necessary.

12 All unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.

13 Noise mufflers or earplugs may be required for all site personnel working around heavy equipment. This requirement will be at the discretion of the Site Health and Safety Officer. Disposable, form-fitting plugs are preferred.

14 Cartridges for air-purifying respirators in use will be changed daily at a minimum.

8.2 Buddy System

Site personnel will employ the buddy system when working under certain circumstances, such as enclosed spacing. Under the buddy system, each site worker is responsible for monitoring the well-being of another worker. No one will work alone when the buddy system is implemented. At no time will fewer than two employees be present at the site if activities are underway.

8.3 Site Communications Plan

Mobile telephone and/or two-way radios will be used to communicate between the work parties on the site. The following standard hand signals will be used in case of failure of radio communication:

- Hands on top of head = Need assistance
- Thumbs up = OK, I am alright, I understand
- Thumbs down = No, negative

Personnel in the Contaminated Zone should remain in constant radio communication or within sight of the project team leader. Any failure of radio communication will require the team leader to evaluate whether personnel should leave the zone.

8.4 Retention of Records

The following records will be maintained on-site and in corporate records for no less than three years.

- Fit test results
- OSHA Training Certification
- Medical Questionairre and/or Medical Clearance
- Medical Data Sheets
- Accident Report Form

9 DECONTAMINATION PLAN

9.1 General

Personnel involved in work activities at the site may be exposed to compounds in a number of ways, despite the most stringent protective procedures. Site personnel may come in contact with vapors, gases, mists, particulates in the air, or other site media while performing site duties. Use of monitoring instruments and site equipment can also result in exposure and transmittal of hazardous substances.

In general, decontamination involves scrubbing with a detergent water solution followed by clean water rinses. All disposable items shall be disposed of in a dry container. Certain parts of contaminated respirators, such as harness assemblies and leather or cloth components, are difficult to decontaminate. If grossly contaminated, they may have to be discarded. Rubber components can be soaked in detergent and water and scrubbed with a brush. In addition to being contaminated, all respirators, non-disposable protective clothing, and other personal articles must be sanitized or replaced before they can be used again if they become soiled from exhalation, body oils, and perspiration. The manufacturer's instructions should be followed in sanitizing the respirator masks.

The Site Health and Safety Officer will be responsible for the proper maintenance, decontamination, and sanitizing of any respirator equipment that may be used on-site.

The decontamination zone layout and procedures should match the prescribed levels of personal protection.

The following procedures have been established to provide site personnel with minimum guidelines for proper decontamination. Personnel leaving the point of operations designated as the EZ must follow these minimum procedures. The decontamination process shall take place within the contaminant reduction zone.

9.2 Minimum Decontamination Procedure

Personnel leaving the point of operations should remove or change outer gloves. At a minimum, boots shall be cleaned of all accumulated soil/fill. Outer boots must be properly washed where gross contamination is evident or disposed of. If Tyvek suits are being utilized, they should be removed or changed. Personnel should remove the Tyvek suits so that the inner clothing does not come in contact with any contaminated surfaces. After Tyvek removal, personnel shall remove and discard outer Nitrile gloves. Personnel shall then remove the respirator, where applicable. Respirators shall be disinfected between uses with towelettes or other sanitary methods. Potable water, at a minimum, will be present so that site personnel can thoroughly wash hands and face after leaving the point of operations.

The Site Health and Safety Officer will monitor decontamination procedures to ensure their effectiveness. Modifications of the decontamination procedure may be necessary as determined by the Site Health and Safety Officer's observations.

9.3 Standard Decontamination Procedure

The following decontamination procedures should be implemented during site operations for the appropriate level of protection.

9.3.1 Level B

Segregated equipment drop	Deposit equipment (tools, sampling devices, notes, monitoring instruments, radios, etc.) used on the site onto plastic drop cloths.
Boot covers and glove wash	Outer boots and outer gloves should be scrubbed with a decontamination solution of detergent and water or replaced.
Rinse off boot covers and gloves	Decontamination solution should be rinsed off boot covers and gloves using generous amounts of water. Repeat as many times as necessary.
Tape removal	Remove tape from around boots and gloves and place into container with plastic liner.
Boot cover removal	Remove disposable boot covers and place into container with plastic liner.
Outer glove removal	Remove outer gloves and deposit in container with plastic liner.
Suit / safety boot wash	Completely wash splash suit, SCBA, gloves, and safety boots. Care should be exercised that no water is allowed into the SCBA regulator. It is suggested that the SCBA regulator be wrapped in plastic.
Suit / safety boot rinse	Thoroughly rinse off all decontamination solution from protective clothing.
Tank or canister changes	This is the last step in the decontamination procedure for those workers wishing to change air tanks and return to the EZ. The worker's air tank or cartridge is exchanged, new outer glove and boot covers are donned, and joints taped.
Removal of safety boots	Remove safety boots and deposit in container with a plastic liner.
SCBA backpack removal	Without removing the face piece, the SCBA backpack should be removed and placed on a table. The face piece should then be disconnected from the remaining SCBA unit and then proceed to the next station.
Splash suit removal	With care, remove the splash suit. The exterior of the splash suit should not come in contact with any inner layers of clothing.
Inner glove wash	The inner gloves should be washed with a mild decontamination solution (detergent / water).
Inner glove rinse	Generously rinse the inner gloves with water.
Face piece removal	Without touching the face with gloves, remove the face piece. The face piece should be deposited into a container that has a plastic liner.
Inner glove removal	Remove the inner glove and deposit into a container that has a plastic liner.
Field wash	Wash hands and face thoroughly. If highly toxic, skin corrosive, or skin absorbent materials are known or suspected to be present, a shower should be taken.

9.3.2 Level C and Level D

The decontamination procedure for Level C and Level D will be satisfied with the Minimum procedures outlined in section 8.2.

10 EMERGENCY RESPONSE / CONTINGENCY

10.1Pre-Emergency Planning

In order to properly prepare for emergencies, Material Safety Data Sheets (MSDS) will be maintained on-site for the type of contaminants to which workers may be exposed. Based upon the results of previous investigations, these contaminants consist of a mixture of organic compounds consistent with those found within diesel and/or heating oil. The MSDS for both products are presented on the following pages.

In the event a suspected or known hazardous substance or substance container is encountered during site activities, a contingency plan will be triggered (see Section 11.3).

10.1.1 Pesticides & PCB's Pesticides

ENVIRONMENTAL RESOURCE ASSOCIATES -- PESTICIDES & PCB'S PESTICIDS -- 6810-00F030787

========== Product Identification ==========

Product ID:PESTICIDES & PCB'S PESTICIDS
MSDS Date:09/30/1987
FSC:6810
NIIN:00F030787
MSDS Number: BSLVW
=== Responsible Party ===
Company Name:ENVIRONMENTAL RESOURCE ASSOCIATES
Address:5540 MARSHALL ST
City:ARVADA
State:CO
ZIP:80002-3108
Country:US
Info Phone Num:303-431-8454
Emergency Phone Num:303-431-8454
Preparer's Name:DANIEL THAU TEITELBAUM
CAGE:1R664
=== Contractor Identification ===
Company Name:ENVIRONMENTAL RESOURCE ASSOCIATES
Address:5540 MARSHALL STREET
Box:City:ARVADA
State:CO
ZIP:80002
Country:US
Phone:303-431-8454
CAGE:1R664

========== Composition/Information on Ingredients ==========

Ingred Name:LINDANE, G-BHC, CYCLOHEXANE,1,2,3,4,5,6-HEXACHLORO
(SUSPECTED HUMAN CARCINOGEN)
CAS:58-89-9
RTECS #:GV4900000
OSHA PEL:0.5 MG/CUM (SKIN)
ACGIH TLV:0.5 M/CUM (SKIN)
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:METHOXYCHLOR
CAS:72-43-5
RTECS #:KJ3675000
OSHA PEL:15 MG/CUM
ACGIH TLV:10 MG/CUM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:METHYL CHLOROFORM (1,1,1-TRICHLOROETHANE) (CHLOROTHENE NU),
AEROTHANE TT, CHLOROTHENE
CAS:71-55-6

RTECS #:KJ2975000
Other REC Limits:450 PPM STEL
OSHA PEL:350 PPM
ACGIH TLV:1910 MG/CUM
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS
Ozone Depleting Chemical:1

Ingred Name:METHANOL (METHYL ALCOHOL), COLUMBIAN SPIRITS
CAS:67-56-1
RTECS #:PC1400000
Fraction by Wt: 99.2%
Other REC Limits:200 PPM
OSHA PEL:260 MG/CUM
ACGIH TLV:262 MG/CUM (SKIN)
EPA Rpt Qty:5000 LBS
DOT Rpt Qty:5000 LBS

Ingred Name:POLYCHLORINATED BIPHENYL, PCB, AROCLOR 1016 (CL 41%)
CAS:12674-11-2
RTECS #:TQ1351000
Other REC Limits:0.001 MG/CUM NIOSH
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:CHLORODIPHENYL (42% CL), PCB, POLYCHLORINATED BIPHENYL,
AROCHLOR 1242
CAS:53469-21-9
RTECS #:TQ1356000
Other REC Limits:0.001 MG/CUM NIOSH
OSHA PEL:1 MG/CUM
ACGIH TLV:1 MG/CUM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:POLYCHLORINATED BIPHEYNL, PCB, AROCLOR 1248, (CL 48%)
CAS:12672-29-6
RTECS #:TQ1358000
Other REC Limits:0.001 MG/CUM NIOSH
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:CHLORODIPHENYL (54% CL), PCB, AROCLOR 1254, POLYCHLORINATED
BIPHENYL (SUSPECTED HUMAN CARCINOGEN)
CAS:11097-69-1
RTECS #:TQ1360000
Other REC Limits:0.001 MG/CUM NIOSH
OSHA PEL:0.5 MG/CUM (SKIN)
ACGIH TLV:0.5 MG/CUM (SKIN)
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:POLYCHLORINATED BIPHENYL, PCB, AROCLOR 1260, (CL 60%)
CARCINOGEN BY NTP & IARC.
CAS:11096-82-5
RTECS #:TQ1362000
Other REC Limits:0.001 MG/CUM NIOSH

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EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:ALDRIN
CAS:309-00-2
RTECS #:IO2100000
OSHA PEL:0.25 MG/CUM
ACGIH TLV:0.25 MG/CUM (SKIN)
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:CHLORDANE (SUSPECTED HUMAN CARCINOGEN)
CAS:57-74-9
RTECS #:PB9800000
Other REC Limits:0.5 MG/CUM (SKIN)
OSHA PEL:0.5 MG/CUM
ACGIH TLV:0.5 MG/CUM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:DDT ISOMERS (DICHLORODIPHENYL-TRICHLOROETHANE) (SUSPECTED
    HUMAN CARCINOGEN)
CAS:50-29-3
RTECS #:KJ3325000
ACGIH TLV:1 MG/CUM (SKIN)
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:1,1,1-TRICHLORO-2- O-CHLOROPHENYL!-2- P-CHLOROPHENYL!ETHANE
CAS:789-02-6
RTECS #:KH7910000

Ingred Name:4,4'-DDE
CAS:72-55-9
RTECS #:KV9450000
Other REC Limits:1 MG/CUM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:ETHYLENE,
    1,1-DICHLORO-2-(O-CHLOROPHENYL)-2-(P-CHLOROPHENYL)-
CAS:3424-82-6
RTECS #:KV9454000

Ingred Name:4,4'-DDD
CAS:72-54-8
RTECS #:KI0700000
Other REC Limits:1 MG/CUM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:1-CHLORO-2-(2,2-DICHLORO-1-(4-CHLOROPHENYL)ETHYL)BENZENE
CAS:53-19-0
RTECS #:KH7880000

Ingred Name:DIELDRIN (SUSPECTED HUMAN CARCINOGEN)
CAS:60-57-1
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RTECS #:IO1750000
OSHA PEL:0.25 MG/CUM (SKIN)
ACGIH TLV:0.25 MG/CUM (SKIN)
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:ENDRIN
CAS:72-20-8
RTECS #:IO1575000
OSHA PEL:0.1 MG/CUM
ACGIH TLV:0.1 MG/CUM (SKIN)
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:ENDOSULFAN
CAS:115-29-7
RTECS #:RB9275000
ACGIH TLV:0.1 MG/CUM
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:HEPTACHLOR
    INTENDED CHANGE (IC)
CAS:76-44-8
RTECS #:PC0700000
OSHA PEL:0.5 MG/CUM (SKIN)
ACGIH TLV:0.5 MG/CUM (SKIN) A2
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:HEPTACHLOR EPOXIDE;
    1,4,5,6,7,8,8-HEPTACHLORO-2,3-EPOXY-3A,4,7,7A-TETRAHYDRO-4,7
CAS:1024-57-3
RTECS #:PB9450000
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:HEXACHLOROBENZENE
CAS:118-74-1
RTECS #:DA2975000
EPA Rpt Qty:10 LBS
DOT Rpt Qty:10 LBS

========== Hazards Identification ==========

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:YES
Health Hazards Acute and Chronic:PRIMARY IRRITANT. IRRITATES & DAMAGES
    ALL TISSUES. MAY CAUSE LIVER, KIDNEY & LUNG DAMAGE, CARDIAC
    ARRYTHMIA. MAY SENSITIZE THE HEART TO EPINEPHRINE. SKIN: ALLERGIC
    DERMATITIS OR CHLORACNE. MAY CAUSE C ANCER IN HUMANS. MAY CAUSE
    ACIDOSIS & BLINDNESS.
Explanation of Carcinogenicity:SEE INGREDIENTS
Effects of Overexposure:SKIN: RED, DRY, SCALY, CRACKING & WEEPING.
    INHALATION: COUGHING, WHEEZING. INGESTION: JAUNDICE, NAUSEA,
    VOMITING, UREMIA & ACIDOSIS.
Medical Cond Aggravated by Exposure:DERMATITIS, LIVER DISEASE, KIDNEY

DISEASE

========== First Aid Measures ==========

First Aid:INHALATION: REMOVE TO FRESH AIR. BE PREPARED TO DO CPR. INGESTION: GIVE SYRUP OF IPECAC 60CC W/180CC WATER. SKIN: WASH W/WATER. OBTAIN MEDICAL ATTENTION IN ALL CASES.

========== Fire Fighting Measures ==========

Flash Point Method:TOC
Flash Point:15.5C
Extinguishing Media:DRY CHEMICAL, CO2, ALCOHOL FOAM
Fire Fighting Procedures:IF LARGE AMOUNTS INVOLVED IN FIRE, USE SELF-CONTAINED BREATHING APPARATUS & WET DOWN TO KEEP FROM EXPLODING. USE WATER MIST OR ALCOHOL FOAM.
Unusual Fire/Explosion Hazard:MAY FORM CO, PHOSGENE, & CARBONYL BROMIDE IN FIRE.

========== Accidental Release Measures ==========

Spill Release Procedures:DAM UP & ABSORB. VENTILATE AREA. CALL CLEANUP TEAM. DON'T WASH TO DRAINS.

========== Handling and Storage ==========

Handling and Storage Precautions:AVOID FREEZING, BREAKAGE. STORE AWAY FROM INCOMPATIBLE MATERIALS.
Other Precautions:HANDLE W/CARE. MATERIAL CONTAINS CARCINOGENS.

========== Exposure Controls/Personal Protection ==========

Respiratory Protection:USE ORGANIC VAPOR CARTRIDGE, FULL FACE-PIECE, SELF-CONTAINED OR AIR-SUPPLIED RESPIRATOR
Ventilation:USE IN HOOD
Protective Gloves:VITON OR NEOPRENE
Eye Protection:SPLASH GOGGLES
Other Protective Equipment:LABORATORY COAT, CLOSE SHOES
Supplemental Safety and Health
EACH SAMPLE WILL CONTAIN BETWEEN THREE & EIGHT PESTICIDES & ONE OR TWO AROCLORS.

========== Physical/Chemical Properties ==========

Boiling Pt:B.P. Text:64.5C
Vapor Density:1.11
Spec Gravity:0.792
Solubility in Water:COMPLETE
Appearance and Odor:CLEAR, COLORLESS LIQUID W/ORGANIC ODOR

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
CHROMIC ANHYDRIDE, IODINE, ETHANOL, MERCURIC OXIDE, POTASSIUM HYDROXIDE, SODIUM HYDROXIDE, CHLOROFORM, LEAD PERCHLORATE
Hazardous Decomposition Products:CO, PHOSGENE, CARBONYL BROMIDE

========== Disposal Considerations ==========

Waste Disposal Methods:INCINERATE OR DISPOSE AS HAZARDOUS WASTE IN ACCORDANCE W/FEDERAL, STATE & LOCAL REGULATIONS.

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10.1.2 PCBs Material Safety Data Sheet

AEROVOC INC. -- P103F337,POLYCHLORINATED BIPHENYLS (PCBS) -- 5910-00-086-2688

========== Product Identification ==========

Product ID:P103F337,POLYCHLORINATED BIPHENYLS (PCBS)
MSDS Date:10/15/1985
FSC:5910
NIIN:00-086-2688
MSDS Number: BCYGD
=== Responsible Party ===
Company Name:AEROVOC INC.
Address:740 BELLEVILLE AVE
City:NEW BEDFORD
State:MA
ZIP:02745
Country:US
Info Phone Num:508-994-9607
Emergency Phone Num:508-994-9607
Preparer's Name:JOHN H. CRADDOCK
CAGE:KO040
=== Contractor Identification ===
Company Name:AEROVOC INC.
Address:740 BELLEVILLE AVE
Box:City:NEW BEDFORD
State:MA
ZIP:02745
Country:US
Phone:508-994-9607
CAGE:KO040
Company Name:AEROVOX INC.
Address:740 BELLEVILLE AVE
Box:City:NEW BEDFORD
State:MA
ZIP:02745-6010
Country:US
Phone:508-994-9661 / 508-994-9635

CAGE:00656
Company Name:MONSANTO COMPANY
Address:800 N LINDBERGH BLVD
Box:City:SAINT LOUIS
State:MO
ZIP:63167
Country:US
Phone:314-694-6661 OR 800-332-3111
CAGE:76541

========== Composition/Information on Ingredients ==========

Ingred Name:POLYCHLORINATED BIPHENYLS (PCBS) (SARA III)
CAS:1336-36-3
RTECS #:TQ1350000
Fraction by Wt: >99.9%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:0.5 MG/M3 SKIN
ACGIH TLV:0.5 MG/M3 SKIN
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

========== Hazards Identification ==========

LD50 LC50 Mixture:ORAL LD50(RAT);8.65GM/KG(42%CHLORINATED)
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:NO
Health Hazards Acute and Chronic:ACUTE: EYES: IRRITATING. SKIN: DRYING, CRACKING, CHLORACNE. INHALATION: MAY CAUSE LIVER INJURY. INGESTION: SLIGHTLY TOXIC. LD50 ORAL RATS: 8.65 GM/KG FOR 42% CHLORINATED AND 11.9 GM/KG FOR 50% CHLORIN ATED. CHRONIC: TESTS HAVE NOT DEMONSTRATED CHRONIC HUMAN ILLNESSES SUCH AS CANCER/NEUROLOGICAL/CARDIOVASCULAR EFFECTS.
Explanation of Carcinogenicity:NTP: LISTED AC. ANTICIPATED TO BE CARCINOGENS. IARC: LISTED 2A. PROBABLY CARCINOGENIC TO HUMANS. OSHA; NOT LISTED.
Effects of Overexposure:EYES: IRRITATION. SKIN: DRYING,CHLORACNE. INHALATION: MAY CAUSE LIVER INJURY. INGESTION: SLIGHTLY TOXIC. NUMEROUS EPIDEMIOLOGICAL STUDIES OF HUMANS HAVE NOT DEMONSTRATED ANY STATISTICALLY SIGNIFICANT CAUSAL RELATIONSHIP BETWEEN PCB EXPOSURE AND CHRONIC HUMAN ILLNESSES SUCH AS CANCER/NEUROLOGICAL/CARDIOVASCULAR EFFECTS.
Medical Cond Aggravated by Exposure:PCBS CAN CAUSE DERMATOLOGICAL SYMPTOMS; HOWEVER THESE ARE REVERSIBLE UPON REMOVAL OF EXPOSURE SOURCE.

========== First Aid Measures ==========

First Aid:EYES: FLUSH WITH LARGE AMOUNTS OF WATER.PETROLATUM-BASED OPHTHALMIC OINTMENT MAY BE APPLIED FOR IRRITATION. SKIN: REMOVE CONTAMINATED CLOTHING. WASH SKIN WITH SOAP AND WATER. HOT PCBS MAY CAUSE BURNS. INHALATION: MOVE TO FRESH AIR.IF IRRITATION PERSISTS,GET MEDICAL ATTENTION. INGESTION: GET MEDICAL ATTENTION.DO NOT INDUCE VOMITING OR GIVE OILY LAXITIVES.FOR LARGE AMOUNTS GASTRIC LAVAGE SUGGESTED.

========== Fire Fighting Measures ==========

Flash Point:383F,195C
Extinguishing Media:NONE SPECIFIED BY MANUFACTURER.
Fire Fighting Procedures:STANDARD FIRE FIGHTING WEARING APPAREL AND SCAB SHOULD BE WORN WHEN FIGHTING FIRES INVOLVING FIRES INVOLVING EXPOSURE TO CHEMICAL COMBUSTION PRODUCTS.
Unusual Fire/Explosion Hazard:AT TEMPERATURE IN RANGE OF 600-650C IN PRESENCE OF EXCESS OXYGEN PCBS MAY FORM POLYCHLORINATED DIBENZOFURANS (PCDFS).

========== Accidental Release Measures ==========

Spill Release Procedures:VENTILATE AREA. PREVENT LOSS TO SEWER SYSTEMS, NAVIGABLE WATERWAYS AND STREAMS. CONTAIN SPILL WITH DIKE. PUMP LIQUID TO SUITABLE WASTE CONTAINER. ABSORB RESIDUAL SPILL WITH ABSORBENTS SUCH AS SAND, VE RMICULITE. ISOLATE AREA AND NOTIFY AUTHORITIES.
Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

========== Handling and Storage ==========

Handling and Storage Precautions:STORAGE MUST FOLLOW RCRA REQUIREMENTS. AVOID PROLONGED BREATHING OF VAPORS OR MISTS. AVOID CONTACT WITH EYES OR PROLONGED CONTACT WITH SKIN.
Other Precautions:FEDERAL REGULATIONS UNDER THE TOXIC SUBSTANCES CONTROL ACT REQUIRE PCBS AND PCB ITEMS TO BE MARKED. CHECK FEDERAL REGULATIONS FOR DETAILS.

========== Exposure Controls/Personal Protection ==========

Respiratory Protection:USE NIOSH/MSHA APPROVED EQUIPMENT WHEN AIRBORNE EXPOSURE LIMITS ARE EXCEEDED. FULL FACEPIECE EQUIPMENT RECOMMENDED. HIGH AIRBORNE CONCENTRATIONS MAY REQUIRE USE OF SCBA OR SUPPLIED AIR RESPIRATOR.
Ventilation:RECOMMEND LOCAL MECHANICAL EXHAUST VENTILATION AT SOURCES OF AIR CONTAMINATION SUCH AS OPEN PROCESS EQUIPMENT.
Protective Gloves:WEAR APPROPRIATE PROTECTIVE GLOVES.
Eye Protection:WEAR CHEMICAL SPLASH GOGGLES,FACESHIELD.
Other Protective Equipment:WEAR PROTECTIVE CLOTHING THAT PROVIDE A BARRIER TO PREVENT SKIN CONTACT. PROVIDE EYE WASH STATION AND SAFETY SHOWER.
Work Hygienic Practices:WASH AFTER HANDLING AND BEFORE EATING,DRINKING,SMOKING.LAUNDER CONTAMINATED CLOTHING/PROTECTIVE EQUIPMENT BEFORE REUSE.
Supplemental Safety and Health
IF A PCB TRANSFORMER IS INVOLVED IN A FIRE-RELATED INCIDENT, THE OWNER OF THE TRANSFORMER MAY BE REQUIRED TO REPORT THE INCIDENT. CONSULT AND FOLLOW APPROPRIATE FEDERAL, STATE, AND LOCAL REGULATIONS.

========== Physical/Chemical Properties ==========

HCC:T6
Boiling Pt:B.P. Text:644F,340C
Vapor Pres:0.005
Spec Gravity:1.2-1.6
Appearance and Odor:LIGHT STRAW-COLOR LIQUID,AROMATIC ODOR.

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
STRONG OXIDIZERS.
Stability Condition to Avoid:FLAMES, HOT SURFACES.
Hazardous Decomposition Products:DURING FIRES, PCBS MAY PRODUCE BOTH CHLORINATED DIOXINS (PCDDS) AND FURANS (PCDFS).

========== Disposal Considerations ==========

Waste Disposal Methods:DISPOSAL OF PCB AND PCB ITEMS IS REGULATED BY GOVERNMENT. WASTES AND ITEMS CONTAINING PCBS (E.G.,WIPING CLOTHS, ABSORBENT MATERIAL, CLOTHING, ETC.) SHOULD BE PLACED IN PROPER CONTAINERS FOR DISPOSAL B ASED ON LOCAL, STATE AND FEDERAL REGULATIONS.

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10.1.3 Chlorinated Solvent

ELDORADO CHEMICAL COMPANY, INC. -- CHLORINATED SOLVENT ID PR-3500 -- 8010-00-181-7568

========== Product Identification ==========

Product ID:CHLORINATED SOLVENT ID PR-3500
MSDS Date:07/27/1988
FSC:8010
NIIN:00-181-7568
MSDS Number: BHDBS
=== Responsible Party ===
Company Name:ELDORADO CHEMICAL COMPANY, INC.
Address:14350 LOOKOUT ROAD
Box:34837
City:SAN ANTONIO
State:TX
ZIP:78265
Country:US
Info Phone Num:512-653-9323
Emergency Phone Num:1-800-531-1088
Preparer's Name:PAT E. SMITH
CAGE:55208
=== Contractor Identification ===
Company Name:ELDORADO CHEMICAL COMPANY, INC.
Address:14350 LOOKOUT ROAD
Box:34837
City:SAN ANTONIO

State:TX
ZIP:78265-4837
Country:US
Phone:800-531-1088/ 210-653-2060
CAGE:55208

========== Composition/Information on Ingredients ==========

Ingred Name:METHYLENE CHLORIDE (SARA III)
CAS:75-09-2
RTECS #:PA8050000
Fraction by Wt: 50%
OSHA PEL:500 PPM/C,1000; Z2
ACGIH TLV:50 PPM, A2; 9192
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS

Ingred Name:PHENOL
CAS:108-95-2
RTECS #:SJ3325000
Fraction by Wt: 17%
OSHA PEL:5 PPM
ACGIH TLV:5 PPM
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS

Ingred Name:SODIUM CHROMATE
CAS:7775-11-3
Fraction by Wt: 0.8%
ACGIH TLV:.5 PPM
EPA Rpt Qty:10 LBS
DOT Rpt Qty:10 LBS

========== Hazards Identification ==========

Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:SKIN CONTACT MAY RESULT IN DERMATITIS.
INHALATION REDUCES OXYGEN IN BLOOD.
Effects of Overexposure:INHALATION: DIZZINESS, NARCOSIS, NAUSEA,
REDUCES OXYGEN IN BLOOD. SKIN CONTACT MAY PRODUCE
DERMATITIS. SKIN ABSORPTION: CONTACT IS PAINFUL. EYE CONTACT:
BURNS EYES IMMEDIATELY

========== First Aid Measures ==========

First Aid:EYES: FLUSH WITH WATER FOR 15 MINUTES. CONSULT PHYSICIAN.
SKIN: FLUSH WITH WATERFOR 15 MINUTES, WASH WITH SOAP AND WATER.
INHALATION: REMOVE TO FRESH AIR.

========== Fire Fighting Measures ==========

Autoignition Temp:Autoignition Temp Text:1200F
Fire Fighting Procedures:SELF-CONTAINED BREATHING APPARATUS REQUIRED
Unusual Fire/Explosion Hazard:TOXIC CHLORIDE FUMES MAY BE GENERATED BY
CONTACT WITH FLAME.

========== Accidental Release Measures ==========

Spill Release Procedures:RINSE WITH WATER

========== Exposure Controls/Personal Protection ==========

Respiratory Protection:SELF-CONTAINED BREATHING APPARATUS REQUIRED IF
LIMITS EXCEED.
Ventilation:RESPIRATORY
Protective Gloves:POLYETHYLENE
Eye Protection:FACE SHIELD AND GOGGLES
Other Protective Equipment:RUBBER APRON & BOOTS
Supplemental Safety and Health
NK

========== Physical/Chemical Properties ==========

HCC:T4
Boiling Pt:B.P. Text:120F
Vapor Pres:380 MM
Vapor Density:2.9
Spec Gravity:1.15
pH:9.2
Evaporation Rate & Reference:(WATER = 1) 1
Solubility in Water:PARTIALLY SOLUBLE
Appearance and Odor:THICK YELLOW LIQUID, PHENOL ODOR
Percent Volatiles by Volume:70

========== Stability and Reactivity Data ==========

STRONG ALKALIS, STRONG OXIDIZERS
Hazardous Decomposition Products:HEAT WILL PRODUCE DICHLOROMETHANE
FUMES

========== Disposal Considerations ==========

Waste Disposal Methods:CONSULT FEDERAL, STATE, AND LOCAL REGULATORY
AGENCIES FOR PROPER DISPOSAL.

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assume responsibility for the suitability of this information to their
particular situation.

10.1.4 Degreaser Solvent

P-T TECHNOLOGIES, INC. -- DEGREASER SOLVENT -- 7930-01-436-7893

========== Product Identification ==========

Product ID:DEGREASER SOLVENT
MSDS Date:09/23/1997

FSC:7930
NIIN:01-436-7893
MSDS Number: CGNPC
=== Responsible Party ===
Company Name:P-T TECHNOLOGIES, INC.
Address:108 4TH AVE. S.
City:SAFETY HARBOR
State:FL
ZIP:34695
Country:US
Info Phone Num:800-441-7874
Emergency Phone Num:800-441-7874
CAGE:0JVH6
=== Contractor Identification ===
Company Name:P-T TECHNOLOGIES INC
Address:108 4TH AVENUE, SOUTH
Box:City:SAFETY HARBOR
State:FL
ZIP:34695
Country:US
Phone:813-726-4644
CAGE:0JVH6

========== Composition/Information on Ingredients ==========

Ingred Name:ORANGE OIL, TERPENES (NON-HAZARDOUS)
CAS:68647-72-3
Other REC Limits:NONE RECOMMENDED

Ingred Name:PARAFFINIC OILS (NON-HAZARDOUS)
CAS:64771-72-8
Other REC Limits:NONE RECOMMENDED

========== Hazards Identification ==========

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:EYE: IRRIT, TEARING, REDNESS. SKIN: DEFATTING, DRYNESS, DERMATITIS. INHAL: RESPIRATORY TRACT IRRIT, NAUSEA, DIZZY, HEADACHE. INGEST: ACUTE ORAL TOXICITY, NAUSEA, VOMIT, GI IRRIT, ASPIRATION INTO LUNGS .

========== First Aid Measures ==========

First Aid:EYE: FLUSH W/WATER FOR 15 MINUTES. SKIN: WASH W/SOAP AND WATER. INHAL: GET FRESH AIR. INGEST: DONT INDUCE VOMIT. PRODUCT CONTAINS HYDROCARBONS. IN ALL CASES, GET MED AID.

========== Fire Fighting Measures ==========

Flash Point Method:TCC
Flash Point:144F,62C
Autoignition Temp:Autoignition Temp Text:410F
Lower Limits:1.3
Upper Limits:8.9
Extinguishing Media:CO2, FOAM, DRY CHEMICAL, CLASS B FOR FIRE PROCEDURES.

Fire Fighting Procedures:COMBUSTIBLE LIQUID, CAN FORM COMBUSTIBLE MIXTURES AT OR ABOVE FLASH POINT.

========== Accidental Release Measures ==========

Spill Release Procedures:LAND SPILL: REMOVE IGNITS, CONTAIN SPILL, RECOVER FREE PRODUCTS, ABSORB W/SUITABLE CHEMICAL ABSORBENT FOR DISPOSAL. WATER SPILL: REMOVE FROM WATER BY SKIMMING, OR USE SUITABLE ABSORBENT.

========== Handling and Storage ==========

Handling and Storage Precautions:STORAGE TEMPERATURE AMBIENT KEEP AWAY FROM HEAT AND IGNITS. KEEP PRODUCT CONTAINER CLOSED WHEN NOT IN USE.

========== Exposure Controls/Personal Protection ==========

Ventilation:MECHANICAL DILUTION VENTILATION RECOMMENDED IN CONFINED AREAS, HEATED >AMBIENT TEMPERATURES OR IS AGITATED.
Protective Gloves:SOLVENT RESISTANT
Eye Protection:SAFETY GLASSES
Supplemental Safety and Health
NK

========== Physical/Chemical Properties ==========

Boiling Pt:B.P. Text:380 TO 430F
Vapor Pres:<1 @ 20C
Vapor Density:>1 AIR=1
Spec Gravity:0.76
VOC Pounds/Gallon:756
pH:NA
Evaporation Rate & Reference:3.2 N BUAC = 100
Solubility in Water:NON-MISCIBLE
Appearance and Odor:COLORLESS LIQUID, W/CHARACTERISTIC ODOR.
Percent Volatiles by Volume:100

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
STRONG OXIDIZING AGENTS
Hazardous Decomposition Products:CARBON DIOXIDE, CARBON MONOXIDE, SMOKE.

========== Disposal Considerations ==========

Waste Disposal Methods:INCINERATE OR BURY IN APPROVED LANDFILL IN ACCORDANCE W/STATE, FEDERAL AND LOCAL REGULATIONS.

========== Other Information ==========

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10.1.5 Tetrachloroethylene

Tetrachloroethylene

ACC# 22900

Section 1 - Chemical Product and Company Identification

MSDS Name: Tetrachloroethylene
Catalog Numbers: C182 20, C182 4, C182-20, C182-4, C18220, C1824, O4586 4, O4586-4, O45864
Synonyms: Ethylene tetrachloride; Tetrachlorethylene; Perchloroethylene; Perchlorethylene
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
127-18-4	Tetrachloroethylene	99.0+	204-825-9

Hazard Symbols: XN N
Risk Phrases: 40 51/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Irritant. May cause severe eye and skin irritation with possible burns. May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects. May cause cancer based on animal studies. **Caution!** May cause respiratory tract irritation.
Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects
Eye: Contact with eyes may cause severe irritation, and possible eye burns.
Skin: May cause severe irritation and possible burns.
Ingestion: May cause central nervous system depression, kidney damage, and liver

damage. Symptoms may include: headache, excitement, fatigue, nausea, vomiting, stupor, and coma. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: Inhalation of vapor may cause respiratory tract irritation. May cause central nervous system effects including vertigo, anxiety, depression, muscle incoordination, and emotional instability.
Chronic: Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause defatting and dermatitis. May cause respiratory tract cancer. May cause adverse nervous system effects including muscle tremors and incoordination. May cause liver and kidney damage. May cause reproductive and fetal effects.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid if irritation develops or persists. Wash clothing before reuse. Flush skin with plenty of soap and water.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Containers may explode in the heat of a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.
Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section.

Flush down the spill with a large amount of water. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not reuse this container. Avoid breathing vapors from heated material. Avoid contact with skin and eyes. Keep container tightly closed. Keep away from flames and other sources of high temperatures that may cause material to form vapors or mists.
Storage: Keep away from heat and flame. Store in a cool, dry place. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Tetrachloroethylene	25 ppm TWA; 100 ppm STEL	150 ppm IDLH	100 ppm TWA; 200 ppm Ceiling

OSHA Vacated PELs: Tetrachloroethylene: 25 ppm TWA; 170 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: sweetish odor
pH: Not available.
Vapor Pressure: 15.8 mm Hg
Vapor Density: 5.2
Evaporation Rate:9 (ether=100)
Viscosity: 0.89 mPa s 20 deg C
Boiling Point: 121 deg C

Freezing/Melting Point:-22.3 deg C
Decomposition Temperature:150 deg C
Solubility: Nearly insoluble in water.
Specific Gravity/Density:1.623
Molecular Formula:C2Cl4
Molecular Weight:165.812

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, excess heat.
Incompatibilities with Other Materials: Strong bases, metals, liquid oxygen, dinitrogen tetroxide.
Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 127-18-4: KX3850000
LD50/LC50:
CAS# 127-18-4:
Draize test, rabbit, eye: 162 mg Mild;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 810 mg/24H Severe;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 5200 ppm/4H;
Inhalation, rat: LC50 = 34200 mg/m3/8H;
Oral, mouse: LD50 = 8100 mg/kg;
Oral, rat: LD50 = 2629 mg/kg;<BR.

Carcinogenicity:
CAS# 127-18-4:
ACGIH: A3 - Animal Carcinogen
California: carcinogen; initial date 4/1/88
NIOSH: potential occupational carcinogen
NTP: Suspect carcinogen
OSHA: Possible Select carcinogen
IARC: Group 2A carcinogen
Epidemiology: Epidemiologic studies have given inconsistent results. Studi es have shown that tetrachloroethylene has not caused canc er in exposed workers. The studies have serious weakne sses such as mixed exposures. In tests with rats and mice, i t appeared that tissue destruction or peroxisome prolifera tion rather than genetic mechanisms were the cause of the observed increases in normally occurring cancers. The oral mouse TDLo that was tumorigenic was 195 gm/kg/50W-I.
Teratogenicity: Has caused musculoskeletal abnormalities. Has caused morphological transformation at a dose of 97mol/L in a study using rat embryos.

Reproductive Effects: Has caused behavioral, biochemical, and metabolic effects on newborn rats when the mother was exposed to the TCLo of 900 ppm/7H at 7-13 days after conception. A dose of 300 ppm/7H 6-15 days after conception caused post-implantation mortality.
Neurotoxicity: No information available.
Mutagenicity: Not mutagenic in Escherichia coli. No mutagenic effects were seen in rat liver after exposure at 200 ppm for 10 weeks. No chromosome changes were seen in the bone marrow cells of exposed mice.
Other Studies: A case of 'obstructive jaundice' in a 6-week old infant has been attributed to tetrachloroethylene in breast milk.

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 5.28 mg/L; 96 Hr.; Static Condition, 12 degrees C Fathead Minnow: LC50 = 18.4 mg/L; 96 Hr.; Flow-through condition Bluegill/Sunfish: LC50 = 12.9 mg/L; 96 Hr.; Static Condition ria: Phytobacterium phosphoreum: EC50 = 120.0 mg/L; 30 minutes; Microtox test No data available.
Environmental: In soil, substance will rapidly evaporate. In water, it will evaporate. In air, it can be expected to exist in the vapor phase.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: CAS# 127-18-4: waste number U210.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	TETRACHLOROETHYLENE				TETRACHLOROETHYLENE
Hazard Class:	6.1				6.1
UN Number:	UN1897				UN1897
Packing Group:	III				III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 127-18-4 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 127-18-4: Effective Date: 6/1/87; Sunset Date: 6/1/97
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

CERCLA Hazardous Substances and corresponding RQs
CAS# 127-18-4: 100 lb final RQ; 45.4 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 127-18-4: acute.
Section 313
This material contains Tetrachloroethylene (CAS# 127-18-4, 99 0%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 127-18-4 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. CAS# 127-18-4 is listed as a Priority Pollutant under the Clean Water Act. CAS# 127-18-4 is listed as a Toxic Pollutant under the Clean Water Act.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 127-18-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act: WARNING: This product contains Tetrachloroethylene, a chemical known to the state of California to cause cancer. California No Significant Risk Level: CAS# 127-18-4: 14 ug/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols:
XN N
Risk Phrases:
R 40 Limited evidence of a carcinogenic effect.
R 51/53 Toxic to aquatic organisms; may cause
long-term adverse effects in the aquatic environment.

Safety Phrases:
S 23 Do not inhale gas/fumes/vapour/spray.

S 36/37 Wear suitable protective clothing and gloves.
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)
CAS# 127-18-4: 3
Canada - DSL/NDSL
CAS# 127-18-4 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of D1B, D2A.
Canadian Ingredient Disclosure List
CAS# 127-18-4 is listed on the Canadian Ingredient Disclosure List.
Exposure Limits
CAS# 127-18-4: OEL-ARAB Republic of Egypt:TWA 5 ppm (35 mg/m3);Skin OEL-AUSTRALIA:TWA 50 ppm (335 mg/m3);STEL 150 ppm;CAR OEL-BELGIUM:TWA 50 ppm (339 mg/m3);STEL 200 ppm (1368 mg/m3) OEL-CZECHOSLOVAKIA:TWA 250 mg/m3;STEL 1250 mg/m3 OEL-DENMARK:TWA 30 ppm (200 mg/m3);Skin OEL-FINLAND:TWA 50 ppm (335 mg/m3);STEL 75 ppm (520 mg/m3);Skin OEL-FRANCE:TWA 50 ppm (335 mg/m3) OEL-GERMANY:TWA 50 ppm (345 mg/m3);Carcinogen OEL-HUNGARY:STEL 50 mg/m3;Skin;Carcinogen OEL-JAPAN:TWA 50 ppm (340 mg/m3) OEL-THE NETHERLANDS:TWA 35 ppm (240 mg/m3);Skin OEL-THE PHILIPPINES:TWA 100 ppm (670 mg/m3) OEL-POLAND:TWA 60 mg/m3 OEL-RUSSIA:TWA 50 ppm;STEL 10 mg/m3 OEL-SWEDEN:TWA 10 ppm (70 mg/m3);STEL 25 ppm (170 mg/m3) OEL-SWITZERLAND:TWA 50 ppm (345 mg/m3);STEL 100 ppm;Skin OEL-THAILAND:TWA 100 ppm;STEL 200 ppm OEL-UNITED KINGDOM:TWA 50 ppm (335 mg/m3);STEL 15 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 6/17/1999
Revision #3 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

10.1.6 Zinc Material Safety Data Sheet

Section 1 Identification			
Product Number:	C2980	Health:	1
Product Name:	Zinc Metal Reagent Grade, Powder (dust)	Flammability	2
Trade/Chemical Synonyms		Reactivity	1
Formula:	Zn	Hazard Rating: Least Slight Moderate High Extreme 0 1 2 3 4	
RTECS:	ZG8600000		

C.A.S	CAS# 7740-66-6	0 1 2 3 4 NA = Not Applicable NE = Not Established

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Zinc Metal	CAS# 7740-66-6	100%	W/W	OSHA TWA 5 mg/m^3

Section 3 Hazard Identification (Also see section 11)

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Section 4 First Aid Measures

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: CALL A PHYSICIAN. SKIN: Wash exposed area with soap and water.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconcious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type:	Smother with dry powder (i.e.: sand, sodium chloride, magnesium oxide).
Fire/Explosion Hazards:	Dust, in moist air can generate sufficient heat to ignite the hydrogen gas released. Metal burns at high tempuratures.
Fire Fighting Procedure:	Avoid water. Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Avoid water. Remove all sources of ignition. Ventilate area of leak or spill. Wear respiratory protection. Do not disperse dust into air. Use non-sparking tools to pick up and place in closed dry container.

Section 7 Handling and Storage

Store in a cool, dry, well-ventilated place away from incompatible materials. Wash thoroughly after handling.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☑ Local Exhaust: ☐

Hand Protection: NIOSH Approved Gloves

Eye Protection: Safety Glasses

Other Protective Equipment: Use safe laboratory handling procedures.

Section 9 Physical and Chemical Properties

Melting Point:	419° C	Specific Gravity	7.14
Boiling Point:	907° C	Percent Volatile by Volume:	N/A
Vapor Pressure:	N/A	Evaporation Rate:	N/A
Vapor Density:	N/A	Evaporation Standard:	
Solubility in Water:	Not soluble	Auto ignition Temperature:	460° C
Appearance and Odor:	Gray, blue matallic powder / no odor	Lower Flamm. Limit in Air:	N/E
Flash Point:	information not available	Upper Flamm. Limit in Air:	N/E

Section 10 Stability and Reactivity Information

Stability: Stable Conditions to Avoid: Heat and moisture

Materials to Avoid:

Hazardous Decomposition Products:
Hydrogen gas, Zinc oxide fumes

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

Conditions aggravated/Target organs: Persons with preexisting skin or respiratory disorders may be more susceptible. Acute: Irritation possible to skin, eyes, lungs, mucous membranes, and GI tract. If heated fumes may cause "zinc fume fever". Chronic: None known.

DOT Classification: Zinc Dust, 4.3, UN1436, PG II

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0 Date Entered: 9/1/2005 Approved by: WPF

10.1.7 Magnesium Material Safety Data Sheet

Section 1 Identification

Product Number:	C2009
Product Name:	Magnesium Laboratory Grade, Turnings
Trade/Chemical Synonyms	
Formula:	Mg
RTECS:	OM2100000
C.A.S	CAS# 7439-95-4

Health:	1
Flammability	2
Reactivity	2

Hazard Rating:

Least Slight Moderate High Extreme
0 1 2 3 4

NA = Not Applicable NE = Not Established

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Magnesium	CAS# 7439-95-4	100%	W/W	None established

Section 3 Hazard Identification (Also see section 11)

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Section 4 First Aid Measures

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: SKIN: Wash exposed area with soap and water. If irritation persists, seek medical attention.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type: Melting flux/dry sand &/or metal exting pwdr. DO NOT USE WATER!

Fire/Explosion Hazards: Dangerous in the form of dust or flakes. When heated in air to near melting point, may ignite and burn.
Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Remove all sources of ignition wear protective equipment. Clean up in a manner that doen't disperse dust. Sweep up and containerize for later reclaimation.

Section 7 Handling and Storage

Store in a cool, dry, well-ventilated place away from incompatible materials. Wash thoroughly after handling.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☐ Local Exhaust: ☑

Hand Protection: Wear appropriate gloves to prevent skin exposure

Eye Protection: Face Shield and chem worker goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

Section 9 Physical and Chemical Properties

Melting Point:	649 ° C	Specific Gravity	1.74
Boiling Point:	1110° C	Percent Volatile by Volume:	N/A
Vapor Pressure:	1mm@621°	Evaporation Rate:	N/A
Vapor Density:	information not available	Evaporation Standard:	
Solubility in Water:	Not soluble	Auto Ignition Temperature:	Not applicable
Appearance and Odor:	Silver solid, odorless	Lower Flamm. Limit in Air:	Not applicable
Flash Point:	Not known	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable Conditions to Avoid: Moisture, Incompatible substances

Materials to Avoid:
Oxides, carbonates, cyanides, chlorinated hydrocarbons

Hazardous Decomposition Products:
Fire produces toxic fumes and vapors

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

Inhalation of dust may irritate respiratory tract and may cause coughing, chest pain, and fever. Ingestion may cause stomach pain and diarrhea. Particles imbedded in the skin may cause eruptions. Molten magnesium may cause serious burns. Conditions aggravated/target organs: Persons with pre-existing eye, skin, or respiratory conditions may be more susceptible.

DOT Classification: Magnesium Turnings, 4.1, UN1869, PG III

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:1 Date Entered: 9/1/2005 Approved by: WPF

10.1.8 Copper Material Safety Data Sheet

Section 1 Identification

Product Number:	C1610	Health:	1
Product Name:	Copper Reagent A.C.S., Granular	Flammability	0

Trade/Chemical Synonyms	
Formula:	Cu
RTECS:	GL5325000
C.A.S	CAS# 7440-50-8

Reactivity	0
Hazard Rating:	
Least Slight Moderate High Extreme	
0 1 2 3 4	
NA = Not Applicable NE = Not Established	

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Copper	CAS# 7440-50-8	100%	W/W	OSHA TWA 1 mg (Cu)/mƒ (dust, mist)

Section 3 Hazard Identification (Also see section 11)

Generally not hazardous in normal handling, however good laboratory practices should always be used. Avoid long term exposure to skin or by inhalation.

Section 4 First Aid Measures

Generally not hazardous in normal handling, however good laboratory practices should always be used. Avoid long term exposure to skin or by inhalation.

FIRST AID: SKIN: Wash exposed area with soap and water. If irritation persists, seek medical attention.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: Give several glasses of milk or water. Vomiting may occur spontaneously, but it is not necessary to induce. Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type: Any means suitable for extinguishing surrounding fire

Fire/Explosion Hazards: None Known.

Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Sweep up and place in suitable (fiberboard) containers for reclamation or later disposal.

Section 7 Handling and Storage

Store in a cool dry place. This Material is not considered hazardous. Handle using safe laboratory practices.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:None required

Ventilation: Mechanical: ☐ Local Exhaust: ☑

Hand Protection: Wear appropriate gloves to prevent skin exposure

Eye Protection: Splash Goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

Section 9 Physical and Chemical Properties

Melting Point:	1083°C	Specific Gravity	8.94
Boiling Point:	2595°C	Percent Volatile by Volume:	N/A
Vapor Pressure:	1 mm Hg @1628°C	Evaporation Rate:	N/A
Vapor Density:	N/A	Evaporation Standard:	

Solubility in Water:	Insoluble	Auto ignition Temperature:	Not applicable
Appearance and Odor:	Reddish, lusterous metal	Lower Flamm. Limit in Air:	Not applicable
Flash Point:	N/A	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable Conditions to Avoid: Avoid contact with incompatible materials.

Materials to Avoid:
Acetylene, magnesium metal (as copper dust)

Hazardous Decomposition Products:
None

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

Can irritate eyes, mucous membranes, and pharynx. Can cause nausea, ulcer perforation, metal taste and dermatitis. Conditions aggravated/target organs: Persons with pre-existing eye, skin, or respiratory conditions may be more susceptible

DOT Classification: Not Regulated

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0.1 Date Entered: 9/1/2005 Approved by: WPF

10.1.9 Cadmium Material Safety Data Sheet

Section 1 Identification

Product Number:	C1407
Product Name:	Cadmium Chloride Reagent A.C.S., Crystal
Trade/Chemical Synonyms	
Formula:	CdCl'½2 1/2 H'O
RTECS:	EV0178000
C.A.S	CAS# 7790-78-5

Health:	2
Flammability	0
Reactivity	0
Hazard Rating:	

Least Slight Moderate High Extreme
0 1 2 3 4
NA = Not Applicable NE = Not Established

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Cadmium Chloride	CAS# 7790-78-5	100%	W/W	OSHA TWA 0.2 mg/m*f* (Cd)

Section 3 Hazard Identification (Also see section 11)

May be fatal if inhaled, swallowed or absorbed thru the skin Avoid all contact. Use with adequate ventilation. Wash thoroughly after use. Keep container closed.

Section 4 First Aid Measures

May be fatal if inhaled, swallowed or absorbed thru the skin Avoid all contact. Use with adequate ventilation. Wash thoroughly after use. Keep container closed.

FIRST AID: SKIN: Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious

person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type: Any means suitable for extinguishing surrounding fire

Fire/Explosion Hazards: Thermal decomposition produces highly toxic fumes.

Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Evacuate area. Wear self-contained breathing apparatus and protective clothing. Eliminate all sources of ignition.

Section 7 Handling and Storage

Store in a cool, dry, well-ventilated place away from incompatible materials. Wash thoroughly after handling.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☑ Local Exhaust: ☑

Hand Protection: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

Section 9 Physical and Chemical Properties

Melting Point:	568° C	Specific Gravity	Informaiton not available
Boiling Point:	960° C	Percent Volatile by Volume:	0
Vapor Pressure:	10mm @ 656°C	Evaporation Rate:	0
Vapor Density:	Information not available	Evaporation Standard:	
Solubility in Water:	Soluble	Auto ignition Temperature:	Not applicable
Appearance and Odor:	Colorless crystals , odorless	Lower Flamm. Limit in Air:	Not applicable
Flash Point:	N/A	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable

Conditions to Avoid: None known

Materials to Avoid:
Oxidizing agents

Hazardous Decomposition Products:
None

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

Effects of overexposure.Acute: Material is irritating to mucous membranes and upper respiratory tract. Chronic: Carcinogen. May cause congenital malformation in the fetus. Exposure can cause damage to the kidneys and lungs.

DOT Classification: Cadmium Compound, 6.1, UN2570, PG II Marine Pollutant

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0 Date Entered: 9/1/2005 Approved by: WPF

10.1.10 Diesel Engine Oil Material Safety Data Sheet

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: N9000 DIESEL ENGINE OIL
SUPPLIER: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA 22037
24 - Hour Health and Safety Emergency (call collect): 609-737-4411
24 - Hour Transportation Emergency (Primary) CHEMTREC: 800-424-9300
(Secondary) 281-834-3296
Product and Technical Information: 800-443-9966
MSDS Fax on Demand: 613-228-1467, other MSDS information: 856-224-4644

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2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: BASE OIL AND ADDITIVES
GLOBALLY REPORTABLE MSDS INGREDIENTS:

Substance Name	Approx. Wt%
CALCIUM ALKYLENE PHENATE SULFIDE CARBONATE (OVERBASED) (122384-87-6)	1-5
CALCIUM LONG-CHAIN ALKARYL SULFONATES (LOW OVERBASED) (156619-82-8)	1-5

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3. HAZARDS IDENTIFICATION

Under normal conditions of use, this product is not considered hazardous according to regulatory guidelines (See section 15).
EMERGENCY OVERVIEW: Clear Dark Amber Liquid. DOT ERG No. : NA
POTENTIAL HEALTH EFFECTS: Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation.
For further health effects/toxicological data, see Section 11.

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4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water. Remove and clean oil soaked clothing daily and wash affected area. (See Section 16 - Injection Injury)
INHALATION: Not expected to be a problem. However, if respiratory irritation, dizziness, nausea, or unconsciousness occurs due to excessive vapor or mist exposure, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or mouth-to-mouth resuscitation.
INGESTION: Not expected to be a problem. Seek medical attention if discomfort occurs. Do not induce vomiting.

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5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may

be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None.
COMBUSTION PRODUCTS: Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.
Flash Point C(F): 204(400) (ASTM D-92).
Flammable Limits (approx.% vol.in air) - LEL: 0.9%, UEL: 7.0%
NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0

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6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to Coast Guard National Response Center toll free number (800)424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.
PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:
LAND SPILL: Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping or contain spilled material with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.
WATER SPILL: Confine the spill immediately with booms. Warn other ships in the vicinity. Notify port and other relevant authorities. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.
ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.
PERSONAL PRECAUTIONS: See Section 8

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7. HANDLING AND STORAGE

HANDLING: No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.
STORAGE: Keep containers closed when not in use. Do not store in open or unlabelled containers. Store away from strong oxidizing agents and combustible materials. Do not store near heat, sparks, flame or strong oxidants.
SPECIAL PRECAUTIONS: Prevent small spills and leakages to avoid slip hazard.
EMPTY CONTAINER WARNING: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove.

Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
When mists/aerosols can occur, the following are recommended: 5 mg/m3 (as oil mist)- ACGIH Threshold Limit Value (TLV), 10 mg/m3 (as oil mist) - ACGIH Short Term Exposure Limit (STEL), 5 mg/m3 (as oil mist) - OSHA Permissible Exposure Limit (PEL)
VENTILATION: If mists are generated, use adequate ventilation, local exhaust or enclosures to control below exposure limits.
RESPIRATORY PROTECTION: If mists are generated, and/or when ventilation is not adequate, wear approved respirator.
EYE PROTECTION: If eye contact is likely, safety glasses with side shields or chemical type goggles should be worn.
SKIN PROTECTION: Not normally required. When splashing or liquid contact can occur frequently, wear oil resistant gloves and/or other protective clothing. Good personal hygiene practices should always be followed.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.
APPEARANCE: Liquid
COLOR: Clear Dark Amber
ODOR: Mild
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C(F): > 391(735)
MELTING POINT C(F): NA
FLASH POINT C(F): 204(400) (ASTM D-92)
FLAMMABILITY (solids): NE
AUTO FLAMMABILITY C(F): NA
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: NE
VAPOR DENSITY: NE
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 0.89
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: > 100.0
VISCOSITY AT 100 C, cSt: > 10.0
POUR POINT C(F): -12(10)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: NE
DMSO EXTRACT, IP-346 (WT.%): <3, for mineral oil only
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES
FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

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10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat and high energy sources of ignition.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Product does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION: Will not occur.

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11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.
EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.
SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.
OTHER ACUTE TOXICITY DATA: Although an acute inhalation study was not performed with this product, a variety of mineral and synthetic oils, such as those in this product, have been tested. These samples had virtually no effect other than a nonspecific inflammatory response in the lung to the aerosolized mineral oil. The presence of additives in other tested formulations (in approximately the same amounts as in the present formulation) did not alter the observed effects.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

No significant adverse effects were found in studies using repeated dermal applications of similar formulations to the skin of laboratory animals for 13 weeks at doses significantly higher than those expected during normal industrial exposure. The animals were evaluated extensively for effects of exposure (hematology, serum chemistry, urinalysis, organ weights, microscopic examination of tissues etc.).

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

No teratogenic effects would be expected from dermal exposure, based on laboratory developmental toxicity studies of major components in this formulation and/or materials of similar composition.

---CHRONIC TOXICOLOGY (SUMMARY)---

Repeated and/or prolonged exposure may cause irritation to the skin, eyes or respiratory tract. Overexposure to oil mist may result in oil droplet deposition and/or granuloma formation. For mineral base oils: Base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as Modified Ames Test, IP-346, and/or other analytical methods. For

synthetic base oils: The base oils in this product have been tested in the Ames assay and other tests of mutagenicity with negative results. These base oils are not expected to be carcinogenic with chronic dermal exposures.

---SENSITIZATION (SUMMARY)---

Not expected to be sensitizing based on tests of this product, components, or similar products.

---OTHER TOXICOLOGY DATA---

Used gasoline engine oils have shown evidence of skin carcinogenic activity in laboratory tests when no effort was made to wash the oil off between applications. Used oil from diesel engines did not produce this effect.

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12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS: This product is expected to be inherently biodegradable. Bioaccumulation is unlikely due to the very low water solubility of this product, therefore bioavailability to aquatic organisms is minimal. Available ectoxicity data (LL50 >1000 mg/L) indicates that adverse effects to aquatic organisms are not expected from this product. When released into the environment, adsorption to sediment and soil will be the predominant behavior.

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13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity. The unused product is not formulated with substances covered by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

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14. TRANSPORT INFORMATION

USA DOT: NOT REGULATED BY USA DOT.
RID/ADR: NOT REGULATED BY RID/ADR.
IMO: NOT REGULATED BY IMO.
IATA: NOT REGULATED BY IATA.
STATIC ACCUMULATOR (50 picosiemens or less): YES

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15. REGULATORY INFORMATION

US OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this product is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.
EU Labeling: Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labeling not required.
Governmental Inventory Status: All components comply with TSCA.
U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:
This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".
SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

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16. OTHER INFORMATION

USE: COMMERCIAL ENGINE OIL
NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBS.
Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:
INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.
INDUSTRIAL LABEL
Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation. Always observe good hygiene measures. First Aid: Wash skin with soap and water. Flush eyes with water. If overcome by fumes or vapor, remove to fresh air. If ingested do not induce vomiting. If symptoms persist seek medical assistance. Read and understand the MSDS before using this product.
****
For Internal Use Only: MHC: 1* 1* 1* 1* 1*, MPPEC: A, TRN: 7312229-00, CMCS97: 97P835, REQ: PS+C, SAFE USE: L
EHS Approval Date: 30SEP2001
****

10.1.11 Lead-Free Gasoline; No-lead Gasoline – Gasoline, Unleaded Material Safety Data Sheet

NSN: 9130012084172
Manufacturer's CAGE: 8P539
Part No. Indicator: A
Part Number/Trade Name: LEAD-FREE GASOLINE; NO-LEAD GASOLINE

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General Information

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Item Name: GASOLINE,UNLEADED

Date MSDS Prepared: 23FEB90
Safety Data Review Date: 21OCT94
Supply Item Manager: KY
MSDS Serial Number: BVHJT
Specification Number: VV-G-1690
Spec Type, Grade, Class: CIVGAS
Hazard Characteristic Code: F2
Unit Of Issue: DR
Unit Of Issue Container Qty: 55 GALLONS
Type Of Container: DRUM, 18 GAGE
Net Unit Weight: 325.2 LBS

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Ingredients/Identity Information

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Proprietary: NO
Ingredient: HYDROCARBONS, AROMATIC
Ingredient Sequence Number: 01
Percent: 15-35
NIOSH (RTECS) Number: 1008732HA
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: SATURATED HYDROCARBONS
Ingredient Sequence Number: 02
Percent: 60-75
NIOSH (RTECS) Number: 1006886SH
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: UNSATURATED HYDROCARBONS
Ingredient Sequence Number: 03
Percent: 1-15
NIOSH (RTECS) Number: 1006887UH
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

Proprietary: NO
Ingredient: DYE AND OTHER ADDITIVES
Ingredient Sequence Number: 04
Percent: 0.02
NIOSH (RTECS) Number: 1003746AD
OSHA PEL: NOT ESTABLISHED
ACGIH TLV: NOT ESTABLISHED
Other Recommended Limit: NONE RECOMMENDED

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Physical/Chemical Characteristics

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Appearance And Odor: BLUE OR CLEAR, TYPICAL HYDROCARBON ODOR.
Boiling Point: 90.0F,32.2C
Vapor Pressure (MM Hg/70 F): 414 @100C
Vapor Density (Air=1): 3-4
Specific Gravity: 0.71-0.77
Solubility In Water: NEGLIGIBLE.

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Fire and Explosion Hazard Data

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Flash Point: -50F,-46C
Flash Point Method: TCC
Lower Explosive Limit: 1.3
Upper Explosive Limit: 6
Extinguishing Media: ANY UL APPROVED CLASS B MEDIA SUCH AS FOAM, CARBON DIOXIDE, DRY CHEMICAL.
Special Fire Fighting Proc: NONE SPECIFIED BY MFG; HOWEVER USE APPROPRIATE PROTECTIVE EQPMT INCLUDING SELF-CONTAINED BREATHING APPARATUS.
Unusual Fire And Expl Hazrds: NONE SPECIFIED BY MFG; HOWEVER MATL IS HEAVIER THAN AIR AND WILL TRAVEL LONG DISTANCES & FLASHBACK. EXPLOSIVE MIXTURE FORMS W/GASOLINE & AIR.

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Reactivity Data

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Stability: YES
Cond To Avoid (Stability): NONE SPECIFIED BY MFG; HOWEVER AVOID OPEN FLAMES/HEAT/SPARKS/OTHER IGNITION SOURCES.
Materials To Avoid: OXIDIZERS.
Hazardous Decomp Products: NONE SPECIFIED BY MFG.
Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT.

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Health Hazard Data

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LD50-LC50 Mixture: UNKNOWN
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: ACUTE:EYE:IRRIT @ HIGH VAP LEVELS OR DIRECT CONTACT W/FLUID. SKIN:IRRIT ON PROLONG CONTACT W/LIQ, DERM RESULTING FROM DEFATTING NATURE OF LIQ. SYSTEMATIC:CNS EFFECTS (NARCOSIS) @ HIGH VAP LEVELS; MUC MEMBRANE IRRIT, PNEUMONIA. INGEST:GASTROINTESTINAL DISTRUBANCES. CHRONIC:PERIPERAL NERVOUS SY EFFECTS, BLOOD ALTERATIONS
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: YES
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: PER MSDS:NONE STATED; HOWEVER CONTAINS GASOLINE WHICH IS CONSIDERED BY IARC TO BE POTENTIAL CARCINOGEN.
Signs/Symptoms Of Overexp: EYE & SKIN IRRITATION. DERMATITIS. NARCOSIS. GI DISTURBANCES:NAUSEA, DIARRHEA, STOMACH PAINS.
Med Cond Aggravated By Exp: NONE SPECIFIED BY MFG.
THOROUGHLY WASH AREA W/SOAP & WATER. INHAL:REMOVE FROM CONTAMINATED AREA. ADMINISTER ARTIFICIAL RESP IF NECESSARY. CALL PHYSICIAN. INGEST:GIVE A VEGETABLE OIL TO RETARD ABSORPTION. DO NOT INDUCE VOMITING. CALL PHYSICIAN.

FATAL DOSE ADULT HUMAN APPROX 350G, CHILD APPROX 10-13G.

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Precautions for Safe Handling and Use

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Steps If Matl Released/Spill: KEEP PUBLIC AWAY. SHUT OFF SOURCE W/O RISK. ADVISE POLICE & NAT RESP CENTER 800-424-8802 IF SUBSTANCE HAS ENTERED A WATER COURSE OR SEWER. CONTAIN LIQ W/EARTH, SAND. RECOVER FREE LIQ BY PPUMPING OR W/SUITABLE ABSORBENT.
Neutralizing Agent: NONE SPECIFIED BY MFG.
Waste Disposal Method: UNDER MANY SPILL SITUATIONS LIQ CAN BE RECOVERED & RECLAIMED. WHERE SOLID ABSORBENTS ARE USED THEY SHOULD BE INCINERATED PER APPLICABLE STATE & LOCAL REGULATIONS.
Precautions-Handling/Storing: USE APPROPRIATE GROUNDING-DISPENSING PROCEDURES. STORE IN RELATIVELY COOL PLACE. DO NOT EXPOSE TO HEAT, OPEN FLAME OR OXIDANTS.
Other Precautions: NONE SPECIFIED BY MFG.

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Control Measures

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Respiratory Protection: FOR EXPOSURES IN EXCESS OF EXPOSURE LIMITS CHEMICAL CARTRIDGE RESPIRATOR OR AIR SUPPLIED EQUIPMENT.
Ventilation: LOCAL EXHAUST REQUIRED & EXPLOSION PROOF EQUIPMENT.
Protective Gloves: IMPERMEABLE GLOVES.
Eye Protection: NONE SPECIFIED HOWEVER SAF GLASSES/GOGG
Other Protective Equipment: NONE SPEICFIED BY MFG.
Work Hygienic Practices: WASH HANDS AFTER HANDLING & PRIOR TO EAT/DRINK/ SMOKE/USE OF TOILET FACILITIES. FOLLOW GOOD WORK HYGIENE PRACTICES.

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Transportation Data

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Trans Data Review Date: 94294
DOT PSN Code: GTN
DOT Proper Shipping Name: GASOLINE
DOT Class: 3
DOT ID Number: UN1203
DOT Pack Group: II
DOT Label: FLAMMABLE LIQUID
IMO PSN Code: HRV
IMO Proper Shipping Name: GASOLINE
IMO Regulations Page Number: 3141
IMO UN Number: 1203
IMO UN Class: 3.1
IMO Subsidiary Risk Label: -
IATA PSN Code: MUC
IATA UN ID Number: 1203
IATA Proper Shipping Name: GASOLINE
IATA UN Class: 3
IATA Label: FLAMMABLE LIQUID
AFI PSN Code: MUC

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Label Required: YES
Technical Review Date: 21OCT94
Label Status: F

Common Name: LEAD-FREE GASOLINE; NO-LEAD GASOLINE
Signal Word: DANGER!
Acute Health Hazard-Moderate: X
Contact Hazard-Moderate: X
Fire Hazard-Severe: X
Reactivity Hazard-None: X
Special Hazard Precautions: ACUTE:EYE:IRRIT @ HIGH VAP LEVELS OR DIRECT CONTACT W/FLUID. SKIN:IRRIT ON PROLONG CONTACT W/LIQ, DERM RESULTING FROM DEFATTING NATURE OF LIQ. SYSTEMATIC:CNS EFFECTS (NARCOSIS) @ HIGH VAP LEVELS; MUC MEMBRANE IRRIT, PNEUMONIA. INGEST:GASTROINTESTINAL DISTRUBANCES. CHRONIC:PERIPERAL NERVOUS SYS EFFECTS, BLOOD ALTERATIONS. 1STAID:EYE:FLUSH FOR @ LEAST 15MINS W/WATER. SKIN:THOROUGHLY WASH AREA W/ SOAP & WATER. INHAL:REMOVE FROM CONTAMINATED AREA. ADMINISTER ARTIFICIAL RESP IF NECESSARY. CALL PHYSICIAN. INGEST:GIVE A VEGETABLE OIL TO RETARD ABSORPTION. DO NOT INDUCE VOMITING. CALL PHYSICIAN. FATAL DOSE ADULT HUMAN APPROX 350G, CHILD APPROX 10-13G.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: BELL FUELS, INC
Label Street: 4116 WEST PATERSON AVE
Label City: CHICAGO
Label State: IL
Label Zip Code: 60646
Label Country: US
Label Emergency Number: 312-286-0200

10.1.12 Lead Material Safety Data Sheet

SECTION 1. GENERAL INFORMATION

FREE ELMENTAL LEAD; LEAD SALTS

SECTION 2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient	Approximate Percent by Weight	C.A.S. Number	Occupational Exposure Limits (OELs)		LD_{50}/LC_{50} Species and Route
Lead	99+%	7439-92-1	OSHA PEL	0.05mg/m^3	No Data
			ACGIH TLV	0.05mg/m^3	
			NIOSH REL	<0.10mg/m^3	

NOTE: OELs for individual jurisdictions may differ from OSHA PELs. Check with local authorities for the applicable OELs in your jurisdiction. OSHA - Occupational Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; NIOSH - National Institute for Occupational Safety and Health. OEL – Occupational Exposure Limit, PEL – Permissible Exposure Limit. TLV – Threshold Limit Value, REL – Recommended Exposure Limit.

Trade Names and Synonyms: Lead; Pb; Plumbum; Metallic Lead; Inorganic Lead; ASTM B29; TADANAC Lead, Low-Alpha Lead.

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview: A bluish-white to silvery-grey heavy, soft metal that does not burn in bulk. Finely-divided lead dust clouds are a moderate fire hazard and moderate explosion hazard, however. When heated in air highly toxic lead oxide fumes can be generated. Inhalation or ingestion of lead may produce both acute and chronic health effects. Possible cancer and reproductive hazard. SCBA and full protective clothing required for fire emergency response personnel.

Potential Health Effects: Inhalation or ingestion of lead dust or fumes may result in headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia and leg, arm, and joint pain. Prolonged exposure may also cause central nervous system damage (e.g., fatigue, headaches, tremors, hypertension), gastrointestinal disturbances, anemia, kidney dysfunction and possible reproductive effects. Pregnant women should be protected from excessive exposure to prevent lead crossing the placental barrier and causing infant neurological disorders. Lead is classified as an A3 Carcinogen by the ACGIH and as a 2B Carcinogen by IARC. (see Toxicological Information, Section 11)

Potential Environmental Effects: Lead metal has low bioavailability but its compounds can be hazardous in the environment at low concentrations. They can be particularly toxic in the aquatic environment. Lead bioaccumulates in plants and animals in both the aquatic and terrestrial environments. (see Ecological Information, Section 12)

EU Risk Phrase(s): R61 - May cause harm to unborn child; R62 - Possible risk of impaired fertility; R20/22 - Harmful by inhalation and if swallowed; R33 - Danger of cumulative effects.

SECTION 4. FIRST AID MEASURES

Eye Contact: Flush with warm, running water, including under the eyelids, to remove dust particle(s). If irritation persists seek medical attention.

Skin Contact: *Dust:* Remove contaminated clothing and wash affected area with soap and warm water. Launder contaminated clothing before reuse. Seek medical attention if irritation develops or persists. *Molten Metal:* Flush contact area to solidify and cool but do not attempt to remove encrusted material or clothing. Cover burns and seek medical attention immediately.

Inhalation: Remove victim from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. Keep affected person warm and at rest. Medical oxygen may be administered, if available, where breathing is difficult. Seek immediate medical attention.

Ingestion: If victim is conscious and can swallow, dilute stomach contents with 2-4 cupfuls of water or milk. Do not induce vomiting. Seek medical attention and bring a copy of this MSDS. Never give anything by mouth to an unconscious person.

SECTION 5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Massive metal is not flammable or combustible. Finely-divided lead dust or powder is a moderate fire hazard and moderate explosion hazard when dispersed in the air at high concentrations and exposed to heat, flame, or incandescents. Explosions may also occur upon contact with certain incompatible materials (see Stability and Reactivity, Section 10).

Extinguishing Media: Use any means of extinction appropriate for surrounding fire conditions such as water spray, carbon dioxide, dry chemical, or foam.

Fire Fighting: If possible, move material from fire area and cool material exposed to flame. Highly toxic lead oxide fumes may evolve in fires. Fire fighters must be fully trained and wear full protective clothing including an approved, self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask.

Flashpoint and Method: Not Applicable.

Upper and Lower Flammable Limit: Not Applicable.

Autoignition Temperature: Not Applicable.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Procedures for Cleanup: Control source of spillage if possible to do so safely. Restrict access to the area until completion of clean-up. Clean up spilled material immediately, observing precautions in Section 8, Personal Protection. Molten metal should be allowed to solidify before cleanup. If solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment (see Section 8) and use methods which will minimize dust generation (e.g., vacuum solids). Return uncontaminated spilled material to the process if possible. Place contaminated material in suitable labeled containers for recovery or disposal. Treat or dispose of waste material in accordance with all local, regional, and national requirements.

Personal Precautions: Persons responding to an accidental release should wear protective clothing, gloves and a respirator (see also Section 8). Close-fitting safety goggles may be necessary in some circumstances to prevent eye contact with dust and fume. Where molten metal is involved, wear heat-resistant gloves and suitable clothing for protection from hot-metal splash as well as a respirator to protect against inhalation of lead fume. Workers should wash and change clothing following cleanup of a lead spill to prevent personal contamination with lead dust.

Environmental Precautions: Lead metal has limited bioavailability but its compounds can pose a severe threat to the aquatic and terrestrial environments. Contamination of water and soil should be prevented.

SECTION 7. HANDLING AND STORAGE

Store in a dry, covered area away from incompatible materials, strong acids and food or feedstuffs. Solid metal suspected of containing moisture should be THOROUGHLY DRIED before being added to a molten bath. Otherwise, entrained moisture

could expand explosively and spatter molten metal out of the bath. Always practice good personal hygiene. Refrain from eating, drinking, or smoking in work areas. Thoroughly wash hands before eating, drinking, or smoking in appropriate, designated areas as well as at the end of the workday. No special packaging materials are required.

EU Safety Phrase(s): S53 - Avoid exposure - obtain special instructions before use; S45 – In case of accident, or if you feel unwell, seek medical advice immediately (show label where possible).

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Protective Clothing: Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact when lead is processed. Appropriate eye protection should be worn where fume or dust is generated. Where hot or molten metal is handled, heat resistant gloves, goggles or face shield, and clothing to protect from hot metal splash should be worn. Safety type boots are recommended.

Do not eat, drink or smoke in work areas. Thoroughly wash hands before eating, drinking, or smoking in appropriate, designated areas as well as at the end of the workday. A double locker-shower system with separate clean and dirty sides is usually required for lead handling operations. Remove contaminated clothing promptly and discard or launder before reuse. Inform laundry personnel of contaminants hazards.

Ventilation: Use adequate local or general ventilation to maintain the concentration of lead fumes in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhaust system. Local exhaust is recommended for melting, casting, grinding, burning, and use of powders.

Respirators: Where lead dust or fumes are generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-100 particulate filter cartridge). When exposure levels are unknown, a self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask should be worn.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Malleable, bluish-white or silvery-grey metal	**Odour:** None	**Physical State:** Solid	**pH:** Not Applicable
Vapour Pressure: 1.3 mm Hg at 970°C (negligible @ 20°C)	**Vapour Density:** Not Applicable	**Boiling Point/Range:** 1,740°C	**Freezing/Melting Point/Range:** 328°C
Specific Gravity: 11.34	**Evaporation Rate:** Not Applicable	**Coefficient of Water/Oil Distribution:** Not Applicable	**Odour Threshold:** None
Solubility: Insoluble in water			

SECTION 10. STABILITY AND REACTIVITY

Stability & Reactivity: Massive metal is stable under normal temperatures and pressures. Fresh cut or cast lead surfaces tarnish rapidly due to the formation of an insoluble protective layer of basic lead carbonate.

Incompatibilities: Lead reacts vigorously with strong oxidizers, such as hydrogen peroxide and chlorine trifluoride, and active metals, such as sodium and potassium. Powdered lead metal in contact with disodium acetylide, chlorine trifluoride, sodium carbide or fused ammonium nitrate poses a risk of explosion. Solutions of sodium azide in contact with lead metal can form lead azide, which is a detonating compound. A lead-zirconium alloy (10-70% Zr) will ignite when struck with a hammer.

Hazardous Decomposition Products: High temperature operations such as oxy-acetylene cutting, electric arc welding or overheating a molten bath will generate highly toxic lead oxide fume. Lead oxide is highly soluble in body fluids and the particle size of the metal fumes is largely within the respirable size range, which increases the likelihood of inhalation and deposition of the fume within the body.

SECTION 11. TOXICOLOGICAL INFORMATION

General: Lead accumulates in bone and body organs once it enters the body. Elimination from the body is slow. Initial and periodic medical examinations are advised for persons repeatedly exposed to levels above the exposure limits of lead dust or

fumes. Once lead enters the body, it can affect a variety of organ systems, including the nervous system, kidneys, reproductive system, blood formation, and gastrointestinal system. The primary routes of exposure to lead are inhalation or ingestion of dust and fumes.

Acute:
Skin/Eye: Contact with dust or fume may cause local irritation but would not cause tissue damage.

Inhalation: Exposure to lead dust or fume may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anemia, and pain in legs, arms, and joints. An acute, short-term dose of lead could cause acute encephalopathy with seizures, coma, and death. However, short-term exposure of this magnitude is rare. Kidney damage, as well as anemia, can occur from acute exposure.

Ingestion: Symptoms due to ingestion of lead dust or fume would be similar to those from inhalation. Other health effects such as metallic taste in the mouth and constipation or bloody diarrhea might also be expected to occur.

Chronic:
Prolonged exposure to lead dust and fume may produce many of the symptoms of short-term exposure and may also cause central nervous system damage, gastrointestinal disturbances, anemia, and, rarely, wrist drop. Reduced hemoglobin production has been associated with low lead exposures. Symptoms of central nervous system damage due to moderate lead exposure include fatigue, headaches, tremors and hypertension. Very high lead exposure can result in lead encephalopathy with symptoms of hallucinations, convulsions, and delirium. Kidney dysfunction and possible injury has also been associated with chronic lead poisoning. Chronic over-exposure to lead has been implicated as a causative agency for the impairment of male and female reproductive capacity. Pregnant women should be protected from excessive exposure as lead can cross the placental barrier and unborn children may suffer neurological damage or developmental problems due to excessive lead exposure in pregnant women. Teratogenic and mutagenic effects from exposure to lead have been reported in some studies but not in others. The literature is inconsistent and no firm conclusions can be drawn at this time. Lead and lead compounds are listed as an A3 Carcinogen (Confirmed Animal Carcinogen with Unknown Relevance to Humans) by the ACGIH and as a Group 2B Carcinogen (possibly carcinogenic to humans) by IARC. The NTP, OSHA and the EU do not currently list lead as a human carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

While lead metal is insoluble, its processing or extended exposure in the aquatic and terrestrial environments may lead to the release of lead in bioavailable forms. Lead compounds are not particularly mobile in the aquatic environment but can be toxic to organisms, especially fish, at low concentrations. Water hardness, pH and dissolved organic carbon content are factors which regulate the degree of toxicity. In soil, lead is generally not very mobile or bioavailable as it can become strongly sorbed on soil particles, increasingly so over time, to a degree dependent on soil properties. Lead bioaccumulates in plants and animals in both the terrestrial and aquatic environments.

SECTION 13. DISPOSAL CONSIDERATIONS

If material cannot be returned to process or salvage, dispose of in accordance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME ..... Not a regulated product in ingot form.
TRANSPORT CANADA AND U.S. DOT CLASSIFICATION ..... Not Applicable
TRANSPORT CANADA AND U.S. DOT PIN ..... Not Applicable
MARINE POLLUTANT ..... No
IMO CLASSIFICATION ..... Not Regulated

SECTION 15. REGULATORY INFORMATION

U.S.
Ingredient Listed on TSCA Inventory ..... Yes

Hazardous Under Hazard Communication Standard ..... Yes

CERCLA Section 103 Hazardous Substances ..... Lead RQ: 10 lbs. (4.54 kg.)*
*reporting not required when diameter of the pieces of solid metal released is equal to or exceeds 100 micrometers (0.004 inches).

EPCRA Section 302 Extremely Hazardous Substance ..... No

Disclaimer:

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10.1.13 Arsenic Material Safety Data Sheet

I. GENERAL INFORMATION

Trade Name: Arsenic **Formula**: As
Chemical Family: Metallic element **CAS #**: 7440-38-2

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2. HAZARDOUS INGREDIENTS

Hazardous Components % OSHA/PEL ACGIH/TLV Sec. 313
Arsenic 0-100 10 ug/m^3 0.01 mg/m^3 Yes

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3. PHYSICAL DATA

Boiling Point: 613 °C (Sublimes) **Melting Point**: 817 °C
Vapor Density (Air=1): N/A **Vapor Pressure**: 1mm @ 372 °C
Solubility in H_2O: Insoluble **% Volatiles**: 0
Appearance and Odor: Steel-grey brittle solid, no odor. **Specific gravity (H_2O=1)**: 5.72gm/cc

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4. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A **Autoignition Temp**: N/A
Flammability: **Lower**: N/A **Upper**: N/A

Extinguishing Media: Do not use water. Use carbon dioxide, dry chemical extinguishing agents, dry sand, dry ground dolomite.
Special Firefighting Procedures: Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing if involved in fire.

Unusual Fire and Explosion Hazard: Slight explosion hazard in the form of a dust when exposed to flame. Moderate fire hazard in the form of dust when exposed to heat or flame or by chemical reaction.

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5. HEALTH HAZARD INFORMATION

Effects of Exposure:

Acute arsenic poisoning (from ingestion) results in marked irritation of the stomach and intestines with nausea, vomiting and diarrhea. In severe cases the vomitus and stools are bloody and the patient goes into collapse and shock with weak, rapid pulse, cold sweats, coma and death. Chronic arsenic poisoning, whether through ingestion or inhalation, may manifest itself in many different ways. There may be disturbances of the digestive system such as loss of appetite, cramps, nausea, constipation or diarrhea. Liver damage may occur, resulting in jaundice. Disturbances of the blood, kidneys and nervous system are not infrequent. Arsenic can cause a variety of skin abnormalities including itching, pigmentation and even cancerous changes. A characteristic of arsenic poisoning is the great variety of symptoms that can be

produced. A recognized carcinogen of the skin, lungs, liver. An experimental carcinogen of the mouth, esophagus, larynx, bladder and para nasal sinus. (Sax, Dangerous Properties of Industrial Materials)

Acute Effects:

Inhalation: Causes irritation of mucous membranes and respiratory tract, metallic taste, pharyngitis, bloody nose, perforation of the nasal septum.
Ingestion: May cause vomiting, diarrhea and nausea.
Skin: Causes moderate irritation, skin sensitization.
Eye: Causes moderate irritation.

Chronic Effects:

Inhalation: May cause cancer (skin and lung).
Ingestion: May cause cancer (skin and lung).
Skin: Can cause eczematous dermatitis, pigmentation, hyperkeratosis.
Eye: None known

Other Health Hazards: There is evidence that arsenic may cross the placental barrier. Arsenic is a neurotoxin. Poisoning may affect the heart, GI system, kidneys and liver.

Routes of Entry: Inhalation, ingestion.
Medical Conditions Generally Aggravated by Exposure: No data
Carcinogenicity: **NTP**: Yes **IARC**: Yes **OSHA**: Yes

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: No specific information available, one should obtain medical attention.
INGESTION: No data available but one should obtain medical attention.
SKIN: Remove contaminated clothing, flood skin with large amounts of water. If irritation persists seek medical attention.
EYE: Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.

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6. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Incompatibles, exposure to air.
Incompatibility (Materials to Avoid): Acids, acid fumes, oxidizing agents, halogens, heat, palladium, zinc, platinum, nitrogen trichloride, silver nitrate, acetylenes, chlorosylamine, chromium (VI) oxide, sodium peroxide, dirubidium acetylide.

Hazardous Decomposition Products: At temperatures above the melting point, metal oxide fumes may be evolved. Under reducing conditions (i.e. any strong acid or base plus an active metal) or in the presence of nascent hydrogen, highly toxic arsine gas may be
evolved.
Hazardous Polymerization: Will not occur.

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7. SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled: Any method which keeps dust to a minimum is acceptable. Vacuuming is preferred for dust. Use approved respiratory protection if possibility of dust/fume exposure exists. Do not use compressed air for cleaning.

Waste Disposal Method: Dispose of in accordance with all State, Federal and Local regulations.

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8. SPECIAL PROTECTION INFORMATION

Respiratory Protection: Where airborne exposures may exceed OSHA/ACGIH permissible air concentrations, the minimum respiratory protection recommended is a negative pressure air purifying respirator with cartridges that are NIOSH/MSHA approved against dust, fumes and mists having a TWA less than 0.05 mg/m^3.

Ventilation: Glove bag or box preferred.

Protective Gloves: Rubber
Eye/Face Protection: ANSI approved safety goggles with a full face shield.

Other Protective Equipment: Full protective clothing, lab coat and apron, flame and chemical resistant coveralls, is recommended for exposures that exceed permissible air concentrations. All contaminated clothing should be removed before leaving plant premises.

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9. SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Use of approved respirators is required for applications where adequate ventilation cannot be provided. Activities which generate dust or fume should be avoided. When melted, the temperature should be kept as low as possible. Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash thoroughly after use.

Work Practices: Avoid inhalation or ingestion. Practice good housekeeping and personal hygiene procedures. No tobacco or food in the work area. Wash thoroughly before eating or smoking. Shower and change clothes at end of work shift. Do not wear contaminated clothing home. Do not blow dust off clothing with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing.

Danger: Poison, causes skin and lung cancer.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

10.1.14 Selenium Material Safety Data Sheet

Section 1 Identification			
Product Number:	C2450	Health:	2
Product Name:	Selenium Metal 99.5% Powder	Flammability	1
Trade/Chemical Synonyms		Reactivity	0
Formula:	Se	Hazard Rating:	
RTECS:	VS7700000	Least Slight Moderate High Extreme 0 1 2 3 4	
C.A.S	CAS# 7782-49-2	NA = Not Applicable NE = Not Established	

Section 2 Component Mixture					
Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Selenium Metal 99.5%	CAS# 7782-49-2	100%	W/W	OSHA TWA 0.2 mg/m*f*

Section 3 Hazard Identification (Also see section 11)

May be fatal if inhaled, swallowed or absorbed thru the skin Avoid all contact. Use with adequate ventilation. Wash thoroughly after use. Keep container closed.

Section 4 First Aid Measures

May be fatal if inhaled, swallowed or absorbed thru the skin Avoid all contact. Use with adequate ventilation. Wash thoroughly after use. Keep container closed.

FIRST AID: SKIN: Wash exposed area with soap and water. If irritation persists, seek medical attention.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type:	Dry chemical powder or appropriate foam. Do not use water jet.
Fire/Explosion Hazards:	May be combustible at high temperature. Emits TOXIC fumes under fire conditions.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Evacuate area. Wear self-contained breathing apparatus and protective clothing. Eliminate all sources of ignition.

Section 7 Handling and Storage

Store in a cool dry well ventilated area. Keep away from heat and flame. Do not get in eyes, on skin, or on clothing. Keep tightly closed.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation:	Mechanical: ☑	Hand Protection: Wear appropriate gloves to prevent skin exposure
	Local Exhaust: ☐	Eye Protection: Splash Goggles

Other Protective Equipment: Wear appropriate clothing to prevent skin exposure. Impervious clothing to prevent exposure.

Section 9 Physical and Chemical Properties

Melting Point:	217°C	Specific Gravity	4.810
Boiling Point:	690°C	Percent Volatile by Volume:	0
Vapor Pressure:	Not available	Evaporation Rate:	Not available
Vapor Density:	Not available	Evaporation Standard:	Not available
Solubility in Water:	insoluble	Auto ignition Temperature:	Not applicable
Appearance and Odor:	odorless metallic powder	Lower Flamm. Limit in Air:	Not available
Flash Point:	Not available	Upper Flamm. Limit in Air:	Not available

Section 10 Stability and Reactivity Information

Stability: yes Conditions to Avoid: vapors and heat.

Materials to Avoid:
Oxidizing materials,and acids

Hazardous Decomposition Products:
TOXIC fumes.

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

DANGER!! Vapors if inhaled or absorbed through the skin can be POISONIOUS!! Effects of over exposure:lung irritation and dermatitis. Acute: Dust is TOXIC . HARMFUL if swallowed. Stomach pains,vomiting, diarrhea, coughing and chest pains, diffuculty in breathing. Chronic: none are specified by manufacturer. Target organs: upper respiratory tract and eyes. Conditions aggravated/target organs. Persons with pre-existing eye,skin or respiratory conditions may be more susceptible.

DOT Classification: Selenium compounds n.o.s. (Selenium powder), 6.1, UN3283, PG III

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0.1 Date Entered: 9/1/2006 Approved by: WPF

10.1.15 Nickel Material Safety Data Sheet

Section 1 Identification

Product Number:	C2156
Product Name:	Nickel Metal Laboratory Grade, Shot
Trade/Chemical Synonyms	
Formula:	Ni
RTECS:	QR5950000
C.A.S	CAS# 7440-02-0

Health:	3
Flammability	0
Reactivity	0

Hazard Rating:

Least Slight Moderate High Extreme
0 1 2 3 4

NA = Not Applicable NE = Not Established

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:

☐	Nickel Metal	CAS# 7440-02-0	100	W/W	OSHA TWA 1 mg/mƒ

Section 3 Hazard Identification (Also see section 11)

May be fatal if inhaled, swallowed or absorbed thru the skin Avoid all contact. Use with adequate ventilation. Wash thoroughly after use. Keep container closed.

Section 4 First Aid Measures

May be fatal if inhaled, swallowed or absorbed thru the skin Avoid all contact. Use with adequate ventilation. Wash thoroughly after use. Keep container closed.

FIRST AID: CALL A PHYSICIAN. SKIN: Remove contaminated clothing. Wash exposed area with soap and water.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type:	Use agents for metal, such as graphite
Fire/Explosion Hazards:	Dust at sufficient concentrations can form explosive mixtures with air.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Evacuate area. Wear self-contained breathing apparatus and protective clothing. Eliminate all sources of ignition.

Section 7 Handling and Storage

Store in a cool, dry, well-ventilated place away from incompatible materials. Wash thoroughly after handling.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☑ Local Exhaust: ☑

Hand Protection: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Section 9 Physical and Chemical Properties

Melting Point:	1455° C	Specific Gravity	8.9
Boiling Point:	2732° C	Percent Volatile by Volume:	N/A
Vapor Pressure:	1 @ 1810° C	Evaporation Rate:	N/A
Vapor Density:	N/A	Evaporation Standard:	
Solubility in Water:	Insoluble	Auto ignition Temperature:	Not applicable
Appearance and Odor:	Silvery white metallic powder	Lower Flamm. Limit in Air:	Not applicable
Flash Point:	N/A	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable Conditions to Avoid: Avoid contact with incompatible materials.

Materials to Avoid:
mineral acids, strong oxidizers

Hazardous Decomposition Products:

Hydrogen gas Hazardous Polymerization:Will Not Occur Condition to Avoid:None known

Section 11 Additional Information
Dust may irritate eyes skin and respiratory tract. Conditions aggravated: Athsma, emphysema, etc. Persons with pre-existing eye, skin or respiratory conditions may be more susceptible.
DOT Classification: Not Regulated
DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.
Revision No:0 Date Entered: 9/1/2006 Approved by: WPF

10.1.16 Chromium Material Safety Data Sheet

Section 1 Identification			
Product Number:	C1503	Health:	2
Product Name:	Chromium	Flammability	1
Trade/Chemical Synonyms		Reactivity	0
Formula:	Cr	Hazard Rating:	
RTECS:	GB4200000	Least Slight Moderate High Extreme 0 1 2 3 4	
C.A.S	CAS# 7440-47-3	NA = Not Applicable NE = Not Established	

Section 2 Component Mixture					
Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Chromium	CAS# 7440-47-3	100%	w/w	OSHA TWA 1 mg/mƒ

Section 3 Hazard Identification (Also see section 11)
May be harmful if swallowed. May cause irritation. Avoid breathing vapors, or dusts. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Section 4 First Aid Measures
May be harmful if swallowed. May cause irritation. Avoid breathing vapors, or dusts. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed. FIRST AID: SKIN: Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures	
Fire Extinguisher Type:	Carbon Dioxide, dry chemical or sand. Do not disturb burning metal while extinguishing the fire.
Fire/Explosion Hazards:	Dust at sufficient concentrations can form explosive mixtures with air.

Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Sweep up and place in suitable (fiberboard) containers for reclamation or later disposal.

Section 7 Handling and Storage

Precautions such as the use of inert atmosphere are advisable when sizing material to minus 100 mesh and when 50% is minus 200 mesh

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☐ Local Exhaust: ☑

Hand Protection: NIOSH Approved Gloves

Eye Protection: Splash Goggles

Section 9 Physical and Chemical Properties

Melting Point:	3326 Deg. F	Specific Gravity	7.14
Boiling Point:	3992 Deg. F	Percent Volatile by Volume:	N/A
Vapor Pressure:	N/A	Evaporation Rate:	N/A
Vapor Density:	N/A	Evaporation Standard:	
Solubility in Water:	Not soluble	Auto ignition Temperature:	Not applicable
Appearance and Odor:		Lower Flamm. Limit in Air:	Not applicable
Flash Point:	N/A	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable Conditions to Avoid: Avoid contact with incompatible materials.

Materials to Avoid:
Acidic conditions

Hazardous Decomposition Products:
Not known to occur

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

Overexposure to dust may irritate eyes, nose or throat. Conditions aggravated/target organs. Persons with pre-existing eye, skin or respiratory conditions may be more susceptible.

DOT Classification: Not Regulated

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0 Date Entered: 9/1/2006 Approved by: WPF

10.1.17 Calcium Material Safety Data Sheet

Section 1 Identification

Product Number:	C1411	Health:	3
Product Name:	Calcium Metal Reagent Grade	Flammability	3

Trade/Chemical Synonyms		Reactivity	2
Formula:	Ca	Hazard Rating:	
RTECS:	EV8040000	Least Slight Moderate High Extreme 0 1 2 3 4	
C.A.S	CAS# 7440-70-2	NA = Not Applicable NE = Not Established	

Section 2 Component Mixture

Sara 313	Component	CAS Number	%	Dim	Exposure Limits:
☐	Calcium Metal	CAS# 7440-70-2	100 %	W/W	None established

Section 3 Hazard Identification (Also see section 11)

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

Section 4 First Aid Measures

Keep away from heat and ignition sources. Harmful if swallowed. Avoid breathing vapors. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed.

FIRST AID: CALL A PHYSICIAN. SKIN: In case of contact, immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: Give several glasses of milk or water. Vomiting may occur spontaneously, but DO NOT INDUCE! Never give anything by mouth to an unconscious person.

Section 5 Fire Fighting Measures

Fire Extinguisher Type:	G-1 powder, Pyrene, Dry lime(not limestone)
Fire/Explosion Hazards:	Evolves hydrogen gas when heated or in contact with acids, moisture. Finely divided calcium is considered pyrophoric and will explode if ignited.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

Section 6 Accidental Release Measures

Collect spilled material for reclamaion or disposal in sealed containers.

Section 7 Handling and Storage

Store in a cool dry well ventilated area. Keep away from heat and flame. Do not get in eyes, on skin, or on clothing.

Section 8 Exposure Controls & Personal Protection

Respiratory Protection:NIOSH/MSHA-approved respirator

Ventilation: Mechanical: ☐ Local Exhaust: ☐

Hand Protection: Wear appropriate gloves to prevent skin exposure

Eye Protection: Goggles and Face Shield

Section 9 Physical and Chemical Properties

Melting Point:	Information not available	Specific Gravity	1.55
Boiling Point:	2817 Deg F	Percent Volatile by Volume:	0
Vapor Pressure:	0	Evaporation Rate:	0
Vapor Density:	Information not available	Evaporation Standard:	
Solubility in Water:	Reacts with water	Auto ignition Temperature:	Not applicable
Appearance and Odor:	Gray metallic solid, no odor	Lower Flamm. Limit in Air:	Not applicable
Flash Point:	None	Upper Flamm. Limit in Air:	Not applicable

Section 10 Stability and Reactivity Information

Stability: Stable Conditions to Avoid: Product is unstable when exposed to water. Moisture, water, high temperatures, sparks, and open flames

Materials to Avoid:
Water, Alali metal hydroxides and carbonates, acids.

Hazardous Decomposition Products:
Hydrogen and calcium hydroxide.

Hazardous Polymerization:Will Not Occur

Condition to Avoid:None known

Section 11 Additional Information

Contact with skin while moist or perspired may cause burns due to reactions. Eye contact can cause irritaiton. If inhaled can cause irritation to mucous membranes.If ingested can cause burns of mouth and esophogus.If comes in contact with skin or eyes wash with water. If inhaled rlemove to fresh air . If ingested, Do not induce vomiting . For all above situation get medical assistance immediately. Persons with pre-existing disorders may be more susceptible

DOT Classification: Calcium, 4.3, UN1401, PG II

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

Revision No:0 Date Entered: 9/1/2006 Approved by: WPF

10.1.18 Beryllium Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION
Beryllia Ceramic
SYNONYMS
MANUFACTURER
Beryllium Oxide
Beryllia
Thermalox Brush Ceramic Products, Inc.
6100 S. Tucson Boulevard
Tucson, Arizona 85706
Phone: (520) 746-0699
Fax: (520) 573-9077 *CHEMICAL FAMILY* Beryllium Compound
Transportation Emergency
Call Chemtrec at: *CUSTOMER SERVICE*
Domestic: (800) 424-9300 Brush Wellman Inc.
International: (703) 527-3887 Product Stewardship Department
Other Emergency 17876 St. Clair Avenue
Call Brush Wellman at: (800) 862-4118 Cleveland, Ohio 44110
Phone: (800) 862-4118
Revised: 01-12-06 Fax: (216) 383-4091
Replaces: MSDS C10 (01-13-03) Websites www.brushwellman.com
2. COMPOSITION/INFORMATION ON INGREDIENTS
CHEMICAL COMPOSITION (Percent by Weight)
BRUSH WELLMAN PRODUCT
CONSTITUENTS CAS Numbers Beryllia Ceramic

Beryllium Oxide 1304-56-9 100
Hazard Communication regulations of the U.S. Occupational Safety and Health Administration apply to this product. NOTE: As used in this Material Safety Data Sheet, the term "particulate" refers to dust, mist, fume, fragments, particles and/or powder.

3. HAZARD IDENTIFICATION

3.1 EMERGENCY OVERVIEW

White solid, which poses little or no immediate hazard in solid form. See label in Section 16. If the material is involved in a fire; pressure-demand self-contained breathing apparatus and protective clothing must be worn by persons potentially exposed to the airborne particulate during or after a fire.

3.2 POTENTIAL HEALTH EFFECTS

Exposure to the elements listed in Section 2 by inhalation, ingestion, and skin contact can occur when sintering, machining, grinding, sanding, abrasive cutting, polishing, laser scribing and trimming, chemical etching, crushing, or otherwise abrading the surface of this material in a manner which generates particulate. Volatile beryllium hydroxide can be formed when firing solid BeO parts at temperatures greater than 900°C in a moist atmosphere such as in a hydrogen atmosphere sintering furnace. Exposure may also occur during repair or maintenance activities on contaminated equipment such as: furnace rebuilding, maintenance or repair of air cleaning equipment, structural renovation, etc. Particulate depositing on hands, gloves, and clothing, can be transferred to the breathing zone and inhaled during normal hand to face motions such as rubbing of the nose or eyes, sneezing, coughing, etc.

3.2.1. Inhalation

Beryllium Oxide: The beryllium in this product is not known to cause acute health effects. Inhaling particulate containing beryllium may cause a serious, chronic lung disease called Chronic Beryllium Disease (CBD) in some individuals. See section 3.2.5 Chronic (long-term health effects).

3.2.2. Ingestion

Ingestion can occur from hand, clothing, food and drink contact with particulate during hand to mouth activities such as eating, drinking, smoking, nail biting, etc. Beryllium Oxide: The health effect of ingestion of beryllium in the form found in this product is unknown.

3.2.3. Skin

Skin contact with this material may cause, in some sensitive individuals, an allergic dermal response. Skin contact may cause irritation. Symptoms include redness, itching and pain. Beryllium Oxide: Particulate that becomes lodged under the skin has the potential to induce sensitization and skin lesions.

3.2.4. Eyes

Exposure may result from direct contact with airborne particulate or contact to the eye with contaminated hands or clothing. Damage can result from irritation or mechanical injury to the eyes by particulate.

3.2.5. Chronic (long-term health effects)

Beryllium Oxide: Inhaling particulate containing beryllium may cause a serious, chronic lung disease called chronic beryllium disease (CBD) in some individuals. Over time lung disease can be fatal. Chronic beryllium disease is a hypersensitivity or allergic condition in which the tissues of the lungs become inflamed. This inflammation, sometimes with accompanying fibrosis (scarring), may restrict the exchange of oxygen between the lungs and the bloodstream. Medical science suggests that CBD may be related to genetic factors.

3.2.6. Carcinogenic References

Beryllium Oxide: The International Agency for Research on Cancer (IARC) lists beryllium as a Group 1 – Known Human Carcinogen. The National Toxicology Program (NTP) lists beryllium as known to be human carcinogens. The ACGIH lists beryllium as an A1 – Confirmed Human Carcinogen. IARC lists beryllium as a known human carcinogen (Group1) and notes that the work environment of workers involved in refining, machining and producing beryllium metal was associated with an increased risk of lung cancer, "the greater excess was in workers hired before 1950 when exposures to beryllium in the work place were relatively uncontrolled and much higher than in subsequent decades"; and "the highest risk for lung cancer being observed among individuals diagnosed with acute beryllium-induced pneumonitis, who represent a group that had the most intense exposure to beryllium." IARC further noted that "Prior to 1950, exposure to beryllium in working environments was usually very high, and concentrations exceeding 1 mg/m3 [1000 micrograms per cubic meter] were not unusual."

3.2.7. Medical Conditions Aggravated by Exposure

Persons with impaired pulmonary function, airway diseases, or conditions such as asthma, emphysema, chronic bronchitis, etc. may incur further impairment if particulate is inhaled. If prior damage or disease to the neurologic (nervous), circulatory, hematologic (blood), or urinary (kidney) systems has occurred, proper screening or examinations should be conducted on individuals who may be exposed to further risk where handling and use of this

material may cause exposure. Beryllium Oxide: The effects of chronic beryllium disease on the lungs and heart are additive to the effects of other health conditions.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Ecological Information (Section 12)

4. FIRST AID MEASURES

FIRST AID PROCEDURES

INHALATION: Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.

INGESTION: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

SKIN: Thoroughly wash skin cuts or wounds to remove all particulate debris from the wound. Seek medical attention for wounds that cannot be thoroughly cleansed. Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work. Obtain medical help for persistent irritation. Material accidentally implanted or lodged under the skin must be removed.

EYES: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

NOTE TO PHYSICIANS

Treatment of Chronic Beryllium Disease: There is no known treatment which will cure chronic beryllium disease. Prednisone or other corticosteroids are the most specific treatment currently available. They are directed at suppressing the immunological reaction and can be effective in diminishing signs and symptoms of chronic beryllium disease. In cases where steroid therapy has had only partial or minimal effectiveness, other immunosuppressive agents, such as cyclophosphamide, cyclosporine, or methotrexate, have been used. These latter agents remain investigational. Further, in view of the potential side effects of all the immunosuppressive medications, including steroids such as prednisone, they should be used only under the direct care of a physician. In general, these medications should be reserved for cases with significant symptoms and/or significant loss of lung function. Other symptomatic treatment, such as oxygen, inhaled steroids or bronchodilators, may be prescribed by some physicians and can be effective in selected cases. The decision about when and with what medication to treat is a judgment situation for individual physicians. For the most part, treatment is reserved for those persons with symptoms and measurable loss of lung function. The value of starting oral steroid treatment, before signs or symptoms are evident, remains a medically unresolved issue. The effects of continued low exposure to beryllium are unknown for individuals who are sensitized to beryllium or who have a diagnosis of chronic beryllium disease. It is generally recommended that persons who are sensitized to beryllium or who have CBD terminate their occupational exposure to beryllium.

5. FIRE FIGHTING MEASURES

Flash Point Not Applicable

Explosive Limits Not Applicable

Extinguishing Media Not Applicable

Unusual Fire and Explosion

Hazards

Not Applicable

Special Fire Fighting Procedures If this material becomes airborne as a respirable particulate during a fire situation, pressure-demand self-contained breathing apparatus must be worn by firefighters or any other persons potentially exposed.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

If this material is a particulate, establish a restricted entry zone based on the severity of the spill. Persons entering the restricted zone must wear adequate respiratory protection and protective clothing appropriate for the severity of the spill (see Section 8). Cleanup spills with a vacuum system utilizing a high efficiency particulate air (HEPA) filtration system followed by wet cleaning methods. Special precautions must be taken when changing filters on HEPA vacuum cleaners used to clean up hazardous materials. Be careful to minimize airborne generation of particulate and avoid contamination of air and water. Depending upon the quantity of material released into the environment, the incident may be required to be reported to the National Response Center at (800) 424-8802 as well as the State Emergency Response Commission and Local Emergency Planning Committee.

7. HANDLING AND STORAGE

HANDLING

Particulate may enter the body through cuts, abrasions or other wounds on the surface of the skin. Wear gloves when handling parts with loose surface particulate or sharp edges.

STORAGE

Store in a dry area.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

8.1 VENTILATION AND ENGINEERING CONTROLS

Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne particulate. Where utilized, exhaust inlets to the ventilation system must be positioned as close as possible to the source of airborne generation. Avoid disruption of the airflow in the area of a local exhaust inlet by equipment such as a man-cooling fan. Check ventilation equipment regularly to ensure it is functioning properly. Provide training on the use and operation of ventilation to all users. Use qualified professionals to design and install ventilation systems.

8.2WORK PRACTICES

Develop work practices and procedures that prevent particulate from coming in contact with worker skin, hair, or personal clothing. If work practices and/or procedures are ineffective in controlling airborne exposure or visual particulate from deposition on skin, hair, or clothing, provide appropriate cleaning/washing facilities. Procedures should be written that clearly communicate the facility's requirements for protective clothing and personal hygiene. These clothing and personal hygiene requirements help keep particulate from being spread to non-production areas or from being taken home by the worker. Never use compressed air to clean work clothing or other surfaces. Fabrication processes may leave a residue of particulate on the surface of parts, products or equipment that could result in employee exposure during subsequent material handling activities. As necessary, clean loose particulate from parts between processing steps. As a standard hygiene practice, wash hands before eating or smoking.
To prevent exposure, remove surface scale or oxidation formed on cast or heat treated products in an adequately ventilated process prior to working the surface.

8.3 WET METHODS

Machining operations conducted under a flood of liquid coolant require complete hooded containment and local exhaust ventilation. Openings into the hood must be baffled to prevent release of fast moving particulate. The cycling through a machine of liquid lubricant/coolant containing finely divided beryllium particulate in suspension can result in the concentration building to a point where the particulate may become airborne during use. Prevent coolant from splashing onto floor areas, external structures or operators' clothing. Utilize a coolant filtering system to remove particulate from the coolant.

8.4 RESPIRATORY PROTECTION

When airborne exposures exceed or have the potential to exceed the occupational limits shown in Section 8.13, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Exposure to unknown concentrations of particulate requires the wearing of a pressure-demand airline respirator or pressure-demand self-contained breathing apparatus (SCBA). Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.

8.5 OTHER PROTECTIVE EQUIPMENT

Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities such as machining, furnace rebuilding, air cleaning equipment filter changes, maintenance, furnace tending, etc. Contaminated work clothing and overgarments must be managed in a controlled manner to prevent secondary exposure to workers of third parties, to prevent the spread of particulate to other areas, and to prevent particulate from being taken home by workers.

8.6 PROTECTIVE GLOVES

Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.

8.7 EYE PROTECTION

Wear safety glasses, goggles, face shield, or welder's helmet when risk of eye injury is present, particularly during melting, casting, machining, grinding, welding, powder handling, etc.

8.8 HOUSEKEEPING

Use vacuum and wet cleaning methods for particulate removal from surfaces. Be certain to de-energize electrical systems, as necessary, before beginning wet cleaning. Use vacuum cleaners with high efficiency particulate air (HEPA). Do not use compressed air, brooms, or conventional vacuum cleaners to remove particulate from surfaces as this activity can result in elevated exposures to airborne particulate. Follow the manufacturer's instructions when performing maintenance on HEPA filtered vacuums used to clean hazardous materials.

8.9 MAINTENANCE

During repair or maintenance activities the potential exists for exposures to particulate in excess of the occupational standards. Under these circumstances, protecting workers can require the use of specific work practices or

procedures involving the combined use of ventilation, wet and vacuum cleaning methods, respiratory protection, decontamination, special protective clothing, and when necessary, restricted work zones.

8.10 EXPOSURE CHARACTERIZATION

Determine exposure to airborne particulate by air sampling in the employee breathing zone, work area, and department. Utilize an Industrial Hygienist or other qualified professional to specify the frequency and type of air sampling. Develop and utilize a sampling strategy which identifies the extent of exposure variation and provides statistical confidence in the results. Conduct an exposure risk assessment of processes to determine if conditions or situations exist which dictate the need for additional controls or improved work practices. Make air sample results available to employees.

8.11 MEDICAL SURVEILLANCE

Beryllium Oxide: Medical surveillance for beryllium health effects includes (1) skin examination, (2)respiratory history, (3) examination of the lungs, (4) lung function tests (FVC and FEV1), and (5) periodic chest x-ray. In addition, a specialized, specific, immunological blood test, the beryllium blood lymphocyte proliferation test (BLPT), is available to assist in the diagnosis of beryllium related reactions. Individuals who have an abnormal BLPT are normally referred to a lung specialist for additional specific tests to determine if chronic beryllium disease is present. Note: Substantial inter- and intra-laboratory disagreement exists among the laboratories that conduct this test. The BLPT does not at this time meet the criteria for a screening test. Despite its limitations however, the BLPT remains a useful disease surveillance tool.

8.12 RISK FACTORS

Specific genetic factors have been identified and have been shown to increase an individual's susceptibility to CBD. Medical testing is available to detect genetic factors in individuals.

8.13 OCCUPATIONAL EXPOSURE LIMITS

CONSTITUENTS	OSHA*			ACGIH*		NIOSH RTECS NUMBER
	PEL	CEILING	PEAK	TLV	TLV-STEL	
Beryllium Oxide (as Be)	0.002	0.005	0.025	0.002	0.01	DS4025000

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Boiling Point (°F):	Not Applicable	Radioactivity:	Not Applicable
Evaporation Rate:	Not Applicable	Solubility:	None
Freezing Point (°F):	Not Applicable	Sublimes At (°F):	Not Applicable
Odor:	None	Vapor Density (Air = 1):	Not Applicable
pH:	Not Applicable	Vapor Pressure (mmHg):	Not Applicable
Physical State:	Solid	% Volatiles By Volume:	None
Color:	White	Melting Point (°F):	4455 (BeO)
Density (lb/in3):	0.103 (BeO)		

10. STABILITY AND REACTIVITY

General Reactivity	This material is stable
Incompatibility (materials to avoid)	Not Applicable
Hazardous Decomposition Products	None under normal conditions of use
Hazardous Polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION

For questions concerning toxicological information, write to: Medical Director, Brush Wellman Inc., 14710. West Portage River South Road, Elmore, Ohio 43416-9502.

12. ECOLOGICAL INFORMATION

This material can be recycled; contact your Sales Representative.

13. DISPOSAL CONSIDERATIONS

BYPRODUCT RECYCLING

When recycled (used in a process to recover metals), this material is not classified as hazardous waste under federal law. Seal particulate or particulate containing materials inside two plastic bags, place in a DOT approved container, and label appropriately.

SOLID WASTE MANAGEMENT

When recycled (used in a process to recover metals), this material is not classified as hazardous waste under federal law. When spent products are declared solid wastes (no longer recyclable), they must be labeled, managed and disposed of, in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

There are no U.S. Department of Transportation hazardous material regulations which apply to the packaging and labeling of this product as shipped by Brush Ceramic Products. Hazard Communication regulations of the U.S. Occupational Safety and Health Administration require this product be labeled.

15. REGULATORY INFORMATION

15.1 UNITED STATES FEDERAL REGULATIONS

15.1.1. Occupational Safety and Health Administration (OSHA)

Air contaminants, 29 CFR 1910.1000

Hazard Communication Standard, 29 CFR 1910.1200

15.1.2. Environmental Protection Agency (EPA)

AMBIENT AIR EMISSIONS: Beryllium-containing materials are subject to the National Emission Standard for Beryllium as promulgated by EPA (40 CFR 61, Subpart C). The National Emission Standard for beryllium is 0.01 micrograms per cubic meter (30 day average) in ambient air for those production facilities which have been qualified to be regulated through ambient air monitoring. Other facilities must meet a 10 gram per 24- hour total site emission limit. Most process air emission sources will require an air permit from a local and/or state air pollution control agency. The use of air cleaning equipment may be necessary to achieve the permissible emission. Tempered makeup air should be provided to prevent excessive negative pressure in a building. Direct recycling of cleaned process exhaust air is not recommended. Plant exhausts should be located so as not to re-enter the plant through makeup air or other inlets. Regular maintenance and inspection of air cleaning equipment and monitoring of operating parameters is recommended to ensure adequate efficiency is maintained.

WASTEWATER: Wastewater regulations can vary considerably. Contact your local and state governments to determine their requirements.

TOXIC SUBSTANCES CONTROL ACT: Component(s) of this material is/are listed on the TSCA Chemical Substance Inventory of Existing Chemical Substances

SARA TITLE III REPORTING REQUIREMENTS: On February 16, 1988 the U.S. Environmental Protection Agency (EPA) issued a final rule that implements the requirements of the Superfund Amendments and Reauthorization Act (SARA) Title III, Section 313 (53) Federal Register 4525. Title III is the portion of SARA concerning emergency planning and community right-to-know issues. Section 313 covers annual emission reporting on specific chemicals which are manufactured, processed or used at certain U.S. Industrial facilities.

Brush Ceramic products are reportable under the Section 313 category of Compounds and/or Mixtures. These mixtures contain beryllium a reportable constituent. The specific chemical makeup, concentration by weight and the Chemical Abstracts Services number for each of our products is provided in Sections 2. You may obtain additional information by calling the EPA SARA Title III Hotline at 1-800-535-0202 (or 703 412 9810).

15.2 STATE REGULATIONS

Beryllium Oxide

- Is listed on the following state right to know lists: California, (listed as * * no name **), New Jersey, Florida, Pennsylvania, Minnesota, (listed as * * no name **) and Massachusetts.
- The following statements are made in order to comply with the California State Drinking Water Act - Warning: This product contains Beryllium Oxide, listed as " ** undefined **", a chemical known to the state of California to cause cancer.
- California No Significant Risk Level: CAS# 1304-56-9: No significant risk level = 0.1 ug/day

10.1.19 Mercury Material Safety Data Sheet

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1. GENERAL INFORMATION

Synonyms: Quicksilver; hydrargyrum; Liquid Silver
CAS No.: 7439-97-6
Molecular Weight: 200.59
Chemical Formula: Hg

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
Mercury	7439-97-6	90 - 100%	Yes

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3. HAZARDS IDENTIFICATION

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. MAY BE FATAL IF SWALLOWED OR INHALED. HARMFUL IF ABSORBED THROUGH SKIN. AFFECTS THE KIDNEYS AND CENTRAL NERVOUS SYSTEM. MAY CAUSE ALLERGIC SKIN REACTION.

Health Rating: 4 - Extreme (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Life)
Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES
Storage Color Code: Blue (Health)

Potential Health Effects

Inhalation:
Mercury vapor is highly toxic via this route. Causes severe respiratory tract damage. Symptoms include sore throat, coughing, pain, tightness in chest, breathing difficulties, shortness of breath, headache, muscle weakness, anorexia, gastrointestinal disturbance, ringing in the ear, liver changes, fever, bronchitis and pneumonitis. Can be absorbed through inhalation with symptoms similar to ingestion.
Ingestion:
May cause burning of the mouth and pharynx, abdominal pain, vomiting, corrosive ulceration, bloody diarrhea. May be followed by a rapid and weak pulse, shallow breathing, paleness, exhaustion, tremors and collapse. Delayed death may occur from renal failure. Gastrointenstinal uptake of mercury is less than 5% but its ability to penetrate tissues presents some hazard. Initial symptoms may be thirst, possible abdominal discomfort.

Skin Contact:
Causes irritation and burns to skin. Symptoms include redness and pain. May cause skin allergy and sensitization. Can be absorbed through the skin with symptoms to parallel ingestion.

Eye Contact:
Causes irritation and burns to eyes. Symptoms include redness, pain, blurred vision; may cause serious and permanent eye damage.
Chronic Exposure:
Chronic exposure through any route can produce central nervous system damage. May cause muscle tremors, personality and behavior changes, memory loss, metallic taste, loosening of the teeth, digestive disorders, skin rashes, brain damage and kidney damage. Can cause skin allergies and accumulate in the body. Repeated skin contact can cause the skin to turn gray in color. A suspected reproductive hazard; may damage the developing fetus and decrease fertility in males and females.
Aggravation of Pre-existing Conditions:
Persons with nervous disorders, or impaired kidney or respiratory function, or a history of allergies or a known sensitization to mercury may be more susceptible to the effects of the substance.

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4. FIRST AID MEASURES

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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5. FIRE FIGHTING MEASURES

Fire:
Not considered to be a fire hazard.
Explosion:
Not considered to be an explosion hazard.
Fire Extinguishing Media:
Use any means suitable for extinguishing surrounding fire. Do not allow water runoff to enter sewers or waterways.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Undergoes hazardous reactions in the presence of heat and sparks or ignition. Smoke may contain toxic mercury or mercuric oxide. Smoke may contain toxic mercury or mercuric oxide.

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6. ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Clean-up personnel require protective clothing and respiratory protection from vapor.

Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate misting. Sprinkle area with sulfur or calcium polysulfide to suppress mercury. Do not flush to sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. HANDLING AND STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Do not use or store on porous work surfaces (wood, unsealed concrete, etc.). Follow strict hygiene practices. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTIVE EQUIPMENT

Airborne Exposure Limits:
- OSHA Acceptable Ceiling Concentration:
mercury and mercury compounds: 0.1 mg/m3 (TWA), skin
- ACGIH Threshold Limit Value (TLV):
inorganic and metallic mercury, as Hg: 0.025 mg/m3 (TWA) skin, A4 Not classifiable as a human carcinogen.
- ACGIH Biological Exposure Indices:
total inorganic mercury in urine (preshift): 35 ug/g creatinine;
total inorganic mercury in blood (end of shift): 15 ug/l.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with a mercury vapor or chlorine gas cartridge may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with a mercury vapor or chlorine gas cartridge may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Silver-white, heavy, mobile, liquid metal.
Odor: Odorless.
Solubility: Insoluble in water.
Density: 13.55
pH: No information found.
% Volatiles by volume @ 21C (70F): 100
Boiling Point: 356.7C (675F)
Melting Point: -38.87C (-38F)
Vapor Density (Air=1): 7.0
Vapor Pressure (mm Hg): 0.0018 @ 25C (77F)
Evaporation Rate (BuAc=1): 4

10. STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products: At high temperatures, vaporizes to form extremely toxic fumes.
Hazardous Polymerization: Will not occur.
Incompatibilities: Acetylenes, ammonia, ethylene oxide, chlorine dioxide, azides, metal oxides, methyl silane, lithium, rubidium, oxygen, strong oxidants, metal carbonyls.
Conditions to Avoid: Heat, flames, ignition sources, metal surfaces and incompatibles.

11. TOXICOLOGICAL INFORMATION

Toxicological Data: Investigated as a tumorigen, mutagen, reproductive effector.
Reproductive Toxicity: All forms of mercury can cross the placenta to the fetus, but most of what is known has been learned from experimental animals. See Chronic Health Hazards.
Carcinogenicity: EPA / IRIS classification: Group D1 - Not classifiable as a human carcinogen.

--------\Cancer Lists\----------
---NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
Mercury (7439-97-6)	No	No	3

12. ECOLOGICAL INFORMATION

Environmental Fate: This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. This material is expected to significantly bioaccumulate.
Environmental Toxicity: This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l.

13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste

management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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14. TRANSPORTATION INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: RQ, MERCURY
Hazard Class: 8
UN/NA: UN2809
Packing Group: III
Information reported for product/size: 1LB

International (Water, I.M.O.)

Proper Shipping Name: MERCURY
Hazard Class: 8
UN/NA: UN2809
Packing Group: III
Information reported for product/size: 1LB

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15. OTHER INFORMATION

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **0**
Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. MAY BE FATAL IF SWALLOWED OR INHALED. HARMFUL IF ABSORBED THROUGH SKIN. AFFECTS THE KIDNEYS AND CENTRAL NERVOUS SYSTEM. MAY CAUSE ALLERGIC SKIN REACTION.
Label Precautions:
Do not get in eyes, on skin, or on clothing.
Do not breathe vapor.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
No Changes.

Disclaimer: Follows next page

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10.2 Emergency Contact Information

In the event of an accident or emergency situation, emergency procedures will be executed. Said procedures can and will be executed by the first person to observe an accident or emergency situation. The Project Field Manager will be notified about the situation immediately after emergency procedures are implemented.

10.2.1 Emergency Contacts

Emergency:	911	
Hospital:	718-519-5000	North Central Bronx Hospital
Police:	911	Police
Fire Department:	911	NYFD
Chemtrec:	800-424-9300	
Poison Control Center:	800-336-6997	
National Response Center:	800-424-8802	
US EPA (24-hour hotline):	800-424-9346	

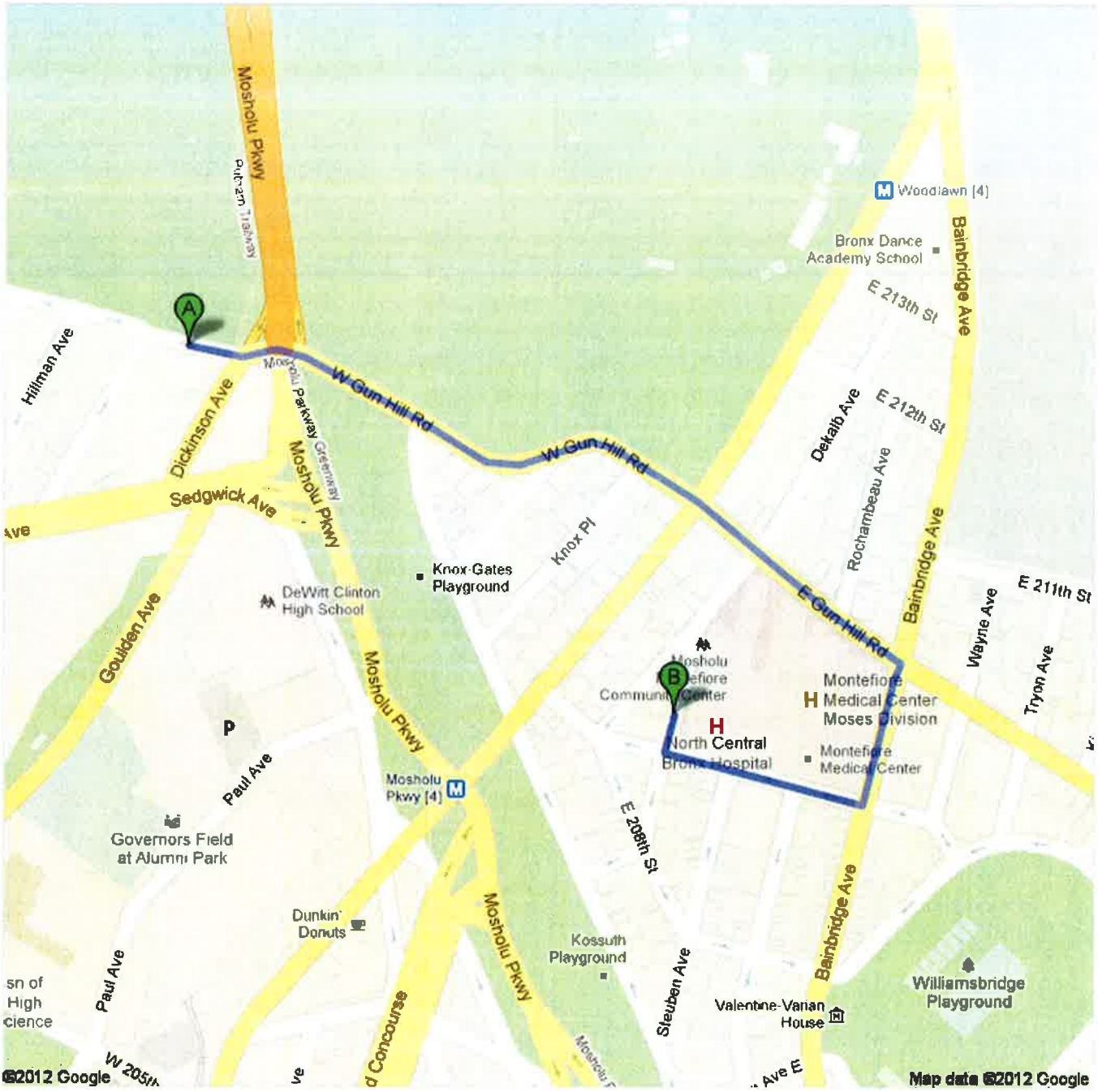
66 Van Cortlandt Park S, Bronx, NY 10463

1. Head **east** on **Van Cortlandt Park S** toward **Putnam Trailway**	go 341 ft total 341 ft
2. Continue onto **W Gun Hill Rd** About 2 mins	go 0.5 mi total 0.6 mi
3. Turn right onto **Bainbridge Ave**	go 0.1 mi total 0.7 mi
4. Take the 1st right onto **E 210th St**	go 0.1 mi total 0.8 mi
5. Take the 1st right onto **Kossuth Ave** Destination will be on the right	go 151 ft total 0.9 mi

North Central Bronx Hospital
3424 Kossuth Avenue, Bronx, NY 10467

Google

Directions to North Central Bronx Hospital
3424 Kossuth Avenue, Bronx, NY 10467
0.9 mi – about 4 mins



10.2.2 Utility Emergencies / Initiating Subsurface Investigation Work

Where necessary, utility markouts will be called in via the one call center or to the individual entities listed below.

Mark Out One-Call Center	800-272-4480	New York A11
Gas Company:	800-752-6633	Con Edison
Telephone Company:	800-230-9800	Verizon
Electric Company:	800-752-6633	Con Edison

10.3Contingency / Evacuation Plan

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to emergency procedures. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Employee Emergency Action Plan Standard, set forth at 29 C.F.R. § 1910 Part 1926.35(a), as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

If an unknown substance or substance container is encountered during site activities, the following contingency plan will be triggered.

1. The Site Health and Safety Officer, Project Manager and Field Operations Leader will be notified and an Exclusion Zone (the aerial extent of which will be determined by the above safety staff) will be established.
2. All staff will be evacuated from the Exclusion Zone.
3. Air monitoring will be conducted down-wind of the Exclusion Zone.
4. The NYSDEC, as well as any other Government regulatory agency whose need may be prompted by the particular situation, will be notified.
5. Upon arrival of the NYSDEC or Government regulatory agency representative(s), site control will transfer to the appropriate Government personnel.

It may be possible that a situation could develop site emergency could necessitate the evacuation of all personnel from the site. If such a situation develops, an audible alarm shall be given for site evacuation (consisting of an air horn). Personnel shall evacuate the site in a calm and controlled fashion and regroup at a predetermined location. The route of evacuation will be dependent on wind direction, severity, type of incident, etc. The site must not be re-entered until back-up help, monitoring equipment, and/or personal protective equipment are on hand and the appropriate regulatory agencies have been notified.

10.4Emergency Medical Treatment Procedures

This Section is not, nor does it purport to be, a comprehensive recitation of safety and health requirements applicable to medical treatment and first aid. Rather, contractors, subcontractors and workers at the site must refer to OSHA's Medical Services and First Aid Standard, set forth at 29 C.F.R. § 1910 Part 1926.23 and 1926.50, as well as all supporting OSHA Compliance Directives and Letters of Interpretation, for complete information on safety and health compliance obligations.

All injuries, no matter how slight, will be reported to the site safety supervisor immediately. The safety supervisor will complete an accident report for all incidents (Appendix B).

Some injuries, such as severe lacerations or burns, may require immediate treatment. Unless required due to immediate danger, seriously injured persons should not be moved without direction from attending medical personnel.

10.4.1 Standard Procedures for Injury

1. Notify the Site Health and Safety Officer, Project Manager, and the NYCDEP and NYCDHPD of all accidents, incidents, and near emergency situations.
2. If the injury is minor, trained personnel should proceed to administer appropriate first aid.
3. Telephone for ambulance/medical assistance if necessary. Whenever possible, notify the receiving hospital of the nature of physical injury or chemical overexposure. If no phone is available, transport the person to the nearest hospital. Refer to the map in section 11.2.1.
4. When transporting an injured person to a hospital, bring this Health and Safety Plan with the attached MSDS to assist medical personnel with diagnosis and treatment.

10.4.2 Chemical Overexposure

In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first aid, and, if applicable, cardiopulmonary resuscitation. Different routes of exposure and their respective first aid/poison management procedures are outlined below.

Ingestion	Do not induce vomiting unless prompted by a health professional. Transport person to nearest hospital immediately.
Inhalation / Confined Space	Do not enter a confined space to rescue someone who has been overcome unless properly equipped and a standby person present.
Inhalation / Other	Move the person from the contaminated environment. Initiate CPR if necessary. Call or have someone call for medical assistance. Refer to MSDS for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible.

Skin Contact / Non-Caustic Contaminant (Petroleum, Gasoline, etc.)	Wash off skin with a large amount of water immediately. Remove any affected clothing and rewash skin using soap, if available. Transport person to a medical facility if necessary.
Skin Contact / Corrosive Contaminant (Acids, Hydrogen Peroxide, etc.)	Wash off skin with a large amount of water immediately. Remove any affected clothing and rewash skin with water. Transport person to a medical facility if necessary.
Eyes	Hold eyelids open and rinse the eyes immediately with large amounts of water for 15 minutes. Never permit the eyes to be rubbed. Transport person to a medical facility as soon as possible.

10.4.3 First Aid for Injuries Incurred During Field Work

A first aid kit and an emergency eyewash will be available on-site. Field crews, when performing field operations, will carry portable first aid kits that include emergency eye wash stations.

10.4.4 First Aid Equipment List

The first aid kit(s) kept at the site will consist of a weatherproof container with individually sealed packages for each type of item.

The kit will include at least the following items:

- Gauze roller bandages, 1-inch and 2-inch
- Gauze compress bandages, 4-inch
- Gauze pads, 2-inch
- Adhesive tape, 1-inch
- Bandage, 1-inch
- Butterfly bandages
- Triangular bandages, 40-inch
- Ampules of ammonia inhalants
- Antiseptic applicators or swabs
- Burn dressing and sterilized towels
- Surgical scissors
- Eye dressing
- Portable emergency eye wash
- Emergency oxygen supply
- Alcohol
- Hydrogen peroxide
- Clinical grade thermometer

- Tourniquet

10.4.5 Other Emergency Equipment

One portable fire extinguisher with a rating (ratio) of 20 pound A/B/C and one portable fire extinguisher with a rating of 2A will be conspicuously and centrally located between the restricted and non-restricted zones. In addition, similar extinguishers of the same size and class will be located in the site office trailer so that maximum travel distance to the nearest unit shall not exceed 50 feet. Portable extinguishers will be properly tagged with inspection dates and maintained in accordance with standard maintenance procedures for portable fire extinguishers. Field personnel will be trained in fire extinguisher use before field operations begin.

An emergency at any part of the site, such as fire or chemical release, might require that some appropriately trained site workers direct traffic on or near the site.
The following safety equipment to be used for traffic should be kept readily available on site in the field office:

- reflective/fluorescent vests
- flares
- traffic cones (and flags, or the equivalent, as needed)
- hazard tape (barricades as needed)
- working flashlights

10.5Record of Injuries Incurred On-Site

10.5.1 Occupational Injuries and Illnesses Form (OSHA 200)

All occupational injuries and illnesses that are required to be recorded under the Occupational Safety and Health Act will be registered on OSHA Form 200 (see Appendix C). The site safety supervisor will record occupational injuries and illnesses within 48 hours of occurrence, as required by statute.

10.5.2 Employer's First Report of Injury

The site safety supervisor for all accidents involving work injury at the site will complete this form (Appendix D). Follow-up procedures will include investigation of each accident or near-miss by the safety supervisor to assure that no similar accidents occur in the future.

APPENDIX A
Accident Report Form

Employee Accident Report

EMPLOYEE

Name_____ SS#_____ Emp ID#_____

Home Address_____
Street city zip code phone

Sex: M F Birth Date_____ Age:_____ Employment Status: Full time _____Part time _____%_____

Job Title _____Time in Present Position _____ Yrs _____Months

Department _____Work Address_____
building/room # phone

Supervisor_____
name building/room # phone

Accident Date_____ Time _____am/pm Location_____

What were you doing and using (tools, chemicals, equipment, etc.) when the accident occurred? Describe what happened.

_____

_____

_____

Was this part of your normal job duty? _____ Yes _____No

Parts of body affected or injured_____

Witnesses:_____/_____

name phone name phone

Report prepared by (if different from the injured employee)_____
name phone

I understand that it is my right to apply for Workers' Compensation benefits and that I have two years from the date of this accident to do so. For more information regarding workers' compensation, call the New York State Department of Labor. I also authorize release of medical information regarding this accident to the Prime Contractors claim administrators.

EMPLOYEE SIGNATURE:_____DATE:_____

SUPERVISOR/CHARGE PERSON

This accident was reported to me on _____at_____ Cost Center/Dept # _____
(date) (time)

IS FURTHER INVESTIGATION REQUIRED? ___Yes ___No _____
Supervisor/Charge Person Signature Date

HEALTH CARE PROVIDER

Treated by:_____
print name signature

Address_____
name of facility street city state zip code phone

Hospitalized overnight as inpatient? _____yes _____no (if emergency room only mark no)

Diagnosis/Assessment_____

Parts of body affected_____

Reaggravation of previous work injury? _____ yes _____no Date of initial injury_____

APPENDIX B

OSHA 200 Form

OMB DISCLOSURE STATEMENT

Public reporting burden for this collection of information is estimated to vary from 4 to 30 (time in minutes) per response with an average of 15 (time in minutes) per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments regarding this estimate or any other aspect of this information collection, including suggestions for reducing this burden, please send them to the OSHA Office of Statistics, Room N-3644, 200 Constitution Avenue, N.W. Washington, D.C. 20210

Instructions for OSHA No. 200

I. Log and Summary of Occupational Injuries and Illnesses

Each employer who is subject to the recordkeeping requirements of the Occupational Safety and Health Act of 1970 must maintain for each establishment, a log of all recordable occupational injuries and illnesses. This form (OSHA No. 200) may be used for that purpose. A substitute for the OSHA No. 200 is acceptable if it is as detailed, easily readable, and understandable as the OSHA No. 200.

Enter each recordable case on the log within six (6) workdays after learning of its occurrence. Although other records must be maintained at the establishment to which they refer, it is possible to prepare and maintain the log at another location, using data processing equipment if desired. If the log is prepared elsewhere, a copy updated to within 45 calendar days must be present at all times in the establishment.

Logs must be maintained and retained for five (5) years following the end of the calendar year to which they relate. Logs must be available (normally at the establishment) for inspection and copying by representatives of the Department of Labor, or the Department of Health and Human Services, or States accorded jurisdiction under the Act. Access to the log is also provided to employees, former employees and their representatives.

II. Changes in Extent of or Outcome of Injury or Illness

If, during the 5-year period the log must be retained, there is a change in an extent and outcome of an injury or illness which affects entries in columns 1, 2, 6, 8, 9, or 13, the first entry should be lined out and a new entry made. For example, if an injured employee at first required only medical treatment but later lost workdays away from work, the check in column 6 should be lined out and checks entered in columns 2 and 3 and the number of lost workdays entered in column 4.

In another example, if an employee with an occupational illness lost wordays, returned to work, and then died of the illness, any entries in columns 9 through 12 would be lined out and the date of death entered in column 8.

The entire entry for an injury or illness should be lined out if later found to be nonrecordable. For example, an injury which is later determined not to be work related, or which was initially thought to involve medical treatement but later was determined to have involved only first aid.

III. Posting Requirements

A copy of the totals and information following the total line of the last page for the year, must be posted at each establishment in the place or places where notices to employees are customarily posted. This copy must be posted no later than February 1 and must remain in place until March 1. Even though there were no injuries or illnessed during the year, zeros must be entered on the totals line, and the form posted.

The person responsible for the annual summary totals shall certify that the totals are true and complete by signing at the bottom of the form.

IV. Instructions for Completing Log and Summary of Occupational injuries and illnesses

Column A - CASE OR FILE NUMBER. Self Expanatory

Column B - DATE OF INJURY OR ONSET OF ILLNESS

For occupational injuries, enter the date of the work accident which resulted in the injury. For occupational illnesses, enter the date of initial diagnosis of illness, or, if absence from work occurred before diagnosis, enter the first day of the absence attributable to the illness which was later diagnosed or recognized.

Columns C through F - Self Explanatory

Columns 1 and 8 - INJURY OR ILLNESS-RELATED DEATHS - Self Explanatory

Columns 2 and 9 - INJURIES OR ILLNESSES WITH LOST WORKDAYS - Self Explanatory

Any injury which involves days away from work, or days of restricted work activitiy, or both, must be recorded since it always involves one or more of the criteria for recordability.

Columns 3 and 10 - INJURIES OR ILLNESSES INVOLVING DAYS AWAY FROM WORK - Self Explanatory

Columns 4 and 11 - LOST WORKDAYS -- DAYS AWAY FROM WORK.

Enter the number of workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness. The number of lost workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work. NOTE: For employees not having a regularly scheduled shift, such as certain truck drivers, construction workers, farm labor, casual labor, part-time employees, etc., it may be necessary to estimate the number of lost workdays. Estimates of lost workdays shall be based on prior work history of the employee AND days worked by employees, not ill or injured, working in the department and/or occupation of the ill or injured employee.

Columns 5 and 12 - LOST WORKDAYS -- DAYS OF RESTRICTED WORK ACTIVITY.

Enter the number of workdays (consecutive or not) on which because of injury or illness:

(1) the employee was assigned to another job on a temporary basis, or

(2) the employee worked at a permanent job less than full time, or

(3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of lost workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

Columns 6 and 13 - INJURIES OR ILLNESSES WITHOUT LOST WORKDAYS - Self Explanatory

Columns 7a through 7g - TYPE OF ILLNESS. Enter a check in only *one* column for each illness.

TERMINATION OR PERMANENT TRANSFER - Place an asterisk to the right of the entry in columns 7a through 7g (type of illness) which represented a termination of employment or permanent transfer.

V. Totals

Add number of entries in columns 1 and 8.

Add number of checks in columns 2, 3, 6, 7, 9, 10 and 13.

Add number of days in columns 4, 5, 11 and 12.

Yearly totals for each column (1-13) are required for posting. Running or page totals may be generated at the discretion of the employer.

In an employee's loss of workdays is continuing at the time the totals are summarized, estimate the number of future workdays the employee will lose and add that estimate to the workdays already lost and include this figure in the annual totals. No further entries are to be made with respect to such cases in the next year's log.

VI. Definitions

OCCUPATIONAL INJURY is any injury such as a cut, fracture, sprain, amputation, etc. which results from a work accident or from an exposure involving a single incident in the work environment. NOTE: Conditions resulting from animal bites, such as insect or snake bites or from one-time exposure to chemicals, are considered to be injuries.

OCCUPATIONAL ILLNESS of an employee is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact.

The following listing gives the categories of occupational illnesses and disorders that will be utilized for the purpose of classifying recordable illnesses. For porposes of information, examples of each category are given. These are typical examples, however, and are not to be considered the complete listing of the types of illnesses and disorders that are to be counted under each category.

7a. Occupational Skin Diseases or Disorders. Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; chrome ulcers; chemical burns or inflamation, etc.

7b. Dust Diseases of the Lungs (Pneumaconioses). Examples: Silicosis, asbestosis and other asbestos-related diseases, coal worker's pneumaconioses, byssinosis, siderosis, and other pneumaconioses.

7c. Respiratory Conditions Due to Toxic Agents. Examples: Pneumonitis, pharyngitis, rhinitis or acute congestion due to chemicals, dusts, gases, or fumes; farmer's lung; etc.

7d. Poisoning (Systemic Effects of Toxic Materials). Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays such as parathion, lead arsenate; poisoning by other chemicals such as formaldehyde, plastics, and resins; etc.

7e. Disorders Due to Physical Agents (Other than Toxic Materials). Examples: Heatstroke, sunstroke, heat exhaustion, and other effects of environmental heat, freezing, frostbite, and effects of exposure to low temperatures; caisson disease; effects of ionizing radiation (isotopes, X-rays, radium); effects of nonionizing radiation (welding flash, ultraviolet rays, microwaves, sunburn); etc.

7f. Disorders Associated with Repeated Trauma. Examples: Noise-induced hearing loss; synovitis, tenosynovitis, and bursitis. Raynaud's phenomena; and other conditions due to repeated motion, vibration, or pressure.

7g. All Other Occupational Illnesses. Examples: Anthrax, brucellosis, infectious hepatitis, malignant and benign tumors, food poisoning, histoplasmosis, coccidioidomycosis, etc.

MEDICAL TREATMENT includes treatment (other than first aid) administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does NOT include first aid treatment (one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care) even though provided by a physician or registered professional personnel.

ESTABLISHMENT: A single physical location where business is conducted or where services or industrial operations are performed (for example: a factory, mill, store, hotel, resturant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office). Where distinctly separate activities are performed at a single physicial location, such as construction activities operated from the same physical locations as a lumber yard, each activity shall be treated as a separate establishment.

For firms engaged in activities which may be physically dispersed, such as agriculture; construction; transportation; communications and electric, gas, and sanitary services, records may be maintained at a place to which employees report each day.

Records for personnel who do not primarily report or work at a single establishment, such as traveling salesmen, technicians, engineers, etc., shall be maintained at the location from which they are paid or the base from which personnel operate to carry out their activities.

WORK ENVIRONMENT is comprised of the physical location, equipment, materials processed or used, and the kinds of operations performed in the course of an employee's work, wether on or off the employer's premisis.

APPENDIX C

Safety Meeting Sheet

DATE	EMPLOYEE NAME	SAFETY OFFICER/SUPERVISOR	ACKNOLEDGEMENT THAT YOU HAVE READ AND UNDERSTSAND THE HASP SUPPLEMENT – TARGET SAFETY TOPIC FOR CONSTRUCTION PERSONNEL

APPENDIX D

Vapor Monitoring Sheet

Air Quality Chart Data						MAP
Event #	1	2	3	4	5	
Date/Time						
Location						
Tester						
Weather						
Instrument						
Calibration						
Ambient/Unit						
Reading/Unit						

NOTES FOR EVENTS:	

Ionization Detector Response

Photoionization Detector (PID)	
Concentrations (in ppm)	**Level of PPE Required**
0.0 to 5.0	Level D
5.0 to 250.0	Level C
250.0 to 750.0	Level B
Above 750.0	Immediately withdraw from the area

Combustible Gas Response

Combustible Gas Indicator (CGI)	
Results (% of LEL)	**Procedure**
0.0 to 20.0	Continue with normal activity
Above 20.0	Immediately withdraw from the area

Oxygen Detector Response

Combustible Gas Indicator (CGI)	
Results (% Oxygen)	**Procedure**
0.0 to 19.5	Level B PPE is required
19.5 to 23.0	Continue with normal activity
Above 23.0	Immediately withdraw from the area

APPENDIX E
OSHA Respirator Medical Evaluation Questionnaire

Attachment 4
Appendix C to 1910.134:OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:
Can you read (circle one): Yes No
Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place
that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health
care professional who will review it.
Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been
selected to use any type of respirator (please print).
1. Today's date:_____
2. Your name:_____
3. Your age (to nearest year):_____
4. Sex (circle one): Male Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title:_____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire
(include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire
(circle one): . . . . . Yes No
11. Check the type of respirator you will use (you can check more than one category):
a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained
breathing apparatus).
12. Have you worn a respirator (circle one): . . . . . Yes No
If "yes," what
type(s):_____
_____
_____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been
selected to use any type of respirator (please circle "yes" or "no").

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: . . . . . Yes No
2. Have you ever had any of the following conditions?
a. Seizures (fits): . . . . . Yes No
b. Diabetes (sugar disease): . . . . . Yes No
c. Allergic reactions that interfere with your breathing: . . . . . Yes No
d. Claustrophobia (fear of closed-in places): . . . . . Yes No
e. Trouble smelling odors (except when you had a cold): . . . . . Yes No
3. Have you ever had any of the following pulmonary or lung problems?
a. Asbestosis: . . . . . Yes No
b. Asthma: . . . . . Yes No
c. Chronic bronchitis: . . . . . Yes No
d. Emphysema: . . . . . Yes No
e. Pneumonia: . . . . . Yes No
f. Tuberculosis: . . . . . Yes No
g. Silicosis: . . . . . Yes No
h. Pneumothorax (collapsed lung): . . . . . Yes No
i. Lung cancer: . . . . . Yes No
j. Broken ribs: . . . . . Yes No
k. Any chest injuries or surgeries: . . . . . Yes No
l. Any other lung problem that you've been told about: . . . . . Yes No
4. Do you currently have any of the following symptoms of pulmonary or lung illness?
a. Shortness of breath: . . . . . Yes No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes No
c. Shortness of breath when walking with other people at an ordinary pace on level ground: . . Yes No
d. Have to stop for breath when walking at your own pace on level ground: . . . . . Yes No
e. Shortness of breath when washing or dressing yourself: . . . . . Yes No
f. Shortness of breath that interferes with your job: . . . . . Yes No
g. Coughing that produces phlegm (thick sputum): . . . . . Yes No
h. Coughing that wakes you early in the morning: . . . . . Yes No
i. Coughing that occurs mostly when you are lying down: . . . . . Yes No
j. Coughing up blood in the last month: . . . . . Yes No
k. Wheezing: . . . . . Yes No
l. Wheezing that interferes with your job: . . . . . Yes No
m. Chest pain when you breathe deeply: . . . . . Yes No
n. Any other symptoms that you think may be related to lung problems: . . . . . Yes No
5. Have you ever had any of the following cardiovascular or heart problems?
a. Heart attack: . . . . . Yes No
b. Stroke: . . . . . Yes No
c. Angina: . . . . . Yes No
d. Heart failure: . . . . . Yes No
e. Swelling in your legs or feet (not caused by walking): . . . . . Yes No
f. Heart arrhythmia (heart beating irregularly): . . . . . Yes No
g. High blood pressure: . . . . . Yes No
h. Any other heart problem that you've been told about: . . . . . Yes No

6. Have you ever had any of the following cardiovascular or heart symptoms?
a. Frequent pain or tightness in your chest: . . . . . Yes No
b. Pain or tightness in your chest during physical activity: . . . . . Yes No
c. Pain or tightness in your chest that interferes with your job: . . . . . Yes No
d. In the past two years, have you noticed your heart skipping or missing a beat: . . . . . Yes No
e. Heartburn or indigestion that is not related to eating: . . . . . Yes No
f. Any other symptoms that you think may be related to heart or circulation problems: . . . . . Yes No
7. Do you currently take medication for any of the following problems?
a. Breathing or lung problems: . . . . . Yes No
b. Heart trouble: . . . . . Yes No
c. Blood pressure: . . . . . Yes No
d. Seizures (fits): . . . . . Yes No
8. Has your wearing a respirator caused any of the following problems? (If you've never used a respirator, check the following space __ and go to question 9:)
a. Eye irritation: . . . . . Yes No
b. Skin allergies or rashes: . . . . . Yes No
c. Anxiety that occurs only when you use the respirator: . . . . . Yes No
d. Unusual weakness or fatigue: . . . . . Yes No
e. Any other problem that interferes with your use of a respirator: . . . . . Yes No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers
to this questionnaire: . . . . . Yes No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been
selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently): . . . . . Yes No
11. Do you currently have any of the following vision problems?
a. Wear contact lenses: . . . . . Yes No
b. Wear glasses: . . . . . Yes No
c. Color blind: . . . . . Yes No
d. Any other eye or vision problem: . . . . . Yes No
12. Have you ever had an injury to your ears, including a broken ear drum: . . . . . Yes No
13. Do you currently have any of the following hearing problems?
a. Difficulty hearing: . . . . . Yes No
b. Wear a hearing aid: . . . . . Yes No
c. Any other hearing or ear problem: . . . . . Yes No
14. Have you ever had a back injury: . . . . . Yes No
15. Do you currently have any of the following musculoskeletal problems?
a. Weakness in any of your arms, hands, legs, or feet: . . . . . Yes No
b. Back pain: . . . . . Yes No
c. Difficulty fully moving your arms and legs: . . . . . Yes No
d. Pain or stiffness when you lean forward or backward at the waist: . . . . . Yes No
e. Difficulty fully moving your head up or down: . . . . . Yes No
f. Difficulty fully moving your head side to side: . . . . . Yes No
g. Difficulty bending at your knees: . . . . . Yes No
h. Difficulty squatting to the ground: . . . . . Yes No

i. Difficulty climbing a flight of stairs or a ladder carrying more than 25 lbs: . . . . . Yes No
j. Any other muscle or skeletal problem that interferes with using a respirator: . . . . . Yes No
Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at
the discretion of the health care professional who will review the questionnaire.
1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal
amounts of oxygen: . . . . . Yes No
If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: . . . . . Yes No
2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g.,
gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: . . . . . Yes No
If "yes," name the chemicals if you know them:_____
_____
_____
3. Have you ever worked with any of the materials, or under any of the conditions, listed below:
a. Asbestos: . . . . . Yes No
b. Silica (e.g., in sandblasting): . . . . . Yes No
c. Tungsten/cobalt (e.g., grinding or welding this material): . . . . . Yes No
d. Beryllium: . . . . . Yes No
e. Aluminum: . . . . . Yes No
f. Coal (for example, mining): . . . . . Yes No
g. Iron: . . . . . Yes No
h. Tin: . . . . . Yes No
i. Dusty environments: . . . . . Yes No
j. Any other hazardous exposures: . . . . . Yes No
If "yes," describe these
exposures:_____
_____
___
_____
___
4. List any second jobs or side businesses you
have:_____
_____
____
5. List your previous
occupations:_____
_____
_____
6. List your current and previous
hobbies:_____
_____
_____
7. Have you been in the military services? . . . . . Yes No
If "yes," were you exposed to biological or chemical agents (either in training or combat): . . . . . Yes No
8. Have you ever worked on a HAZMAT team? . . . . . Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): . . . . . Yes No

If "yes," name the medications if you know them:_____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: . . . . . Yes No

b. Canisters (for example, gas masks): . . . . . Yes No

c. Cartridges: . . . . . Yes No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

a. Escape only (no rescue): . . . . . Yes No

b. Emergency rescue only: . . . . . Yes No

c. Less than 5 hours per week: . . . . . Yes No

d. Less than 2 hours per day: . . . . . Yes No

e. 2 to 4 hours per day: . . . . . Yes No

f. Over 4 hours per day: . . . . . Yes No

12. During the period you are using the respirator(s), is your work effort:

a. Light (less than 200 kcal per hour): . . . . . Yes No

If "yes," how long does this period last during the average shift:_____hrs._____mins.

Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): . . . . . Yes No

If "yes," how long does this period last during the average shift:_____hrs._____mins.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy (above 350 kcal per hour): . . . . . Yes No

If "yes," how long does this period last during the average shift:_____hrs._____mins.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and or equipment (other than the respirator) when you're using your respirator: . . . . . Yes No

If "yes," describe this protective clothing and or equipment:_____

---

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): . . . . . Yes No

15. Will you be working under humid conditions: . . . . . Yes No

16. Describe the work you'll be doing while you're using your respirator(s):

_____

_____

_____

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for
example, confined spaces, life-threatening gases):

_____

_____

_____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when
you're using your respirator(s):
Name of the first toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift_____
Name of the second toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
Name of the third toxic substance:_____
Estimated maximum exposure level per shift:_____
Duration of exposure per shift:_____
The name of any other toxic substances that you'll be exposed to while using your respirator:

_____

_____

_____

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and
well-being of others (for example, rescue, security):

_____

_____

_____

_____

Apéndice C: Cuestionario de Evaluación Médico obligado por la OSHA (La agencia de seguridad y salud ocupacional)

Parte 29 CFR 1910.134 Mandatorio para Proteccion del Sistema Respiratorio

Marque con un circulo para indicar sus respuestas a cada pregunta.
Para el empleado: Puede usted leer (circule uno): Sí o No
Su patrón debe dejarlo responder estas preguntas durante horas de trabajo o en un tiempo y lugar que sea conveniente para usted. Para mantener este cuestionario confidencial, su patrón o supervisor no debe ver o revisar sus respuestas. Su patrón debe informarle a quien dar o enviar este cuestionario para ser revisado por un
profesional de sanidad con licencia autorizado por el estado.

Parte A. Sección 1. (Mandatorio). La siguiente información debe de ser proveida por cada empleado que ha
sido seleccionado para usar cualquier tipo de respirador (escriba claro por favor).

1. Fecha :_____
2. Nombre:_____
3. Edad:_____
4. Su sexo (circule uno) Masculino o Femenino
5. Altura: _____pies _____pulgadas
6. Peso: _____libras
7. Su ocupación, título o tipo de trabajo: _____
8. Número de teléfono al donde pueda ser llamado por un profesional de sanidad con licencia que revisara este cuestionario (incluya el área):_____
9. Indique la hora mas conveniente para llamarle a este numero:_____
10. ¿Le ha informado su patrón como comunicarse con el profesional de sanidad con licencia que va a revisar
este cuestionario (circule una respuesta)? . . . . . Sí o No
11. Anote el tipo de equipo protector respíratorio que va utilizar (puede anotar mas de una categoría)
a._____ Respirador disponible de clase N, R, o P (por ejemplo: respirador de filtro mécanico, respirador sin
cartucho)
b._____ Otros tipos (respirador con cartucho químico, máscara con cartucho químico, máscara con manguera con soplador (PAPR),máscara con manguera sin soplador (SAR), aparato respiratorio autónomos (SCBA)).
12. ¿Ha usado algun tipo de respirador ? . . . . . Sí o No

Si ha usado equipo protector respíratorio, que tipo(s) ha utilizado:

_____
_____

Parte A. Seccion 2. (Mandatorio): Preguntas del 1 al 9 deben ser contestadas por cada empleado que fue seleccionado a usar cualquier tipo de respirador. Marque con un circulo para indicar sus repuestas.

1. ¿Corrientemente fuma tabaco, o ha fumado tabaco durante el ultimo mes? . . . . . Sí o No

2. ¿Ha tenido algunas de las siguientes condiciones medicas?

a. Convulsiones : . . . . . Sí o No
b. Diabetes (azucar en la sangre): . . . . . Sí o No
c. Reacciones alergicas que no lo deja respirar: . . . . . Sí o No
d. Claustrofobia (miedo de estar en espacios cerrados): . . . . . Sí o No
e. Dificultad oliendo excepto cuando ha cogido un resfriado: . . . . . Sí o No

3. ¿Ha tenido algunas de los siguientes problemas pulmonares?

a. Asbestosis: . . . . . Sí o No
b. Asma: . . . . . Sí o No
c. Bronquitis cronica: . . . . . Sí o No
d. Emfisema: . . . . . Sí o No
e. Pulmonía: . . . . . Sí o No
f. Tuberculosis: . . . . . Sí o No
g. Silicosis: . . . . . Sí o No
h. Neumotorax (pulmon colapsado): . . . . . Sí o No
i. Cáncer en los pulmones: . . . . . Sí o No
j. Costillas quebradas: . . . . . Sí o No
k. Injuria o cirujía en el pecho: . . . . . Sí o No
l. Algun otro problema de los pulmones que le ha dicho su medico: . . . . . Sí o No

4. ¿Corrientemente tiene alguno de los siguientes síntomas o enfermedades en sus pulmones?

a. Respiración dificultosa . . . . . Sí o No
b. Respiración dificultosa cuando camina rapido sobre terreno plano o subiendo una colina: Sí o No
c. Respiración dificultosa cuando camina normalmente con otras personas sobre terreno plano: Sí o No
d. Cuando camina normalmente en terreno plano se encuentra corto de resuello? . . . . . Sí o No
e. Respiración dificultosa cuando se esta bañando o vistiendo: . . . . . Sí o No
f. Respiración dificultosa que lo impede trabajar: . . . . . Sí o No
g. Tos con flema: . . . . . Sí o No
h. Tos que lo despierta temprano en la mañana: . . . . . Sí o No
i. Tos que occure cuando esta acostado: . . . . . Sí o No
j. Ha tosido sangre en el ultimo mes: . . . . . Sí o No
k. Silbar o respirar con mucha dificultad: . . . . . Sí o No
l. Silbar que lo impede trabajar: . . . . . Sí o No
m. Dolor del pecho cuando respira profundamente: . . . . . Sí o No
n. Otros símtomas que crea usted estar relacionados a los pulmones: . . . . . Sí o No

5. ¿Ha tenido algunos de los siguientes problemas con el corazón?

a. Ataque cardiaco: . . . . . Sí o No
b. Ataque cerebrovascular: . . . . . Sí o No
c. Dolor en el pecho: . . . . . Sí o No
d. Falla de corazón: . . . . . Sí o No
e. Hinchazón en las piernas o pies (que no sea por caminar): . . . . . Sí o No
f. Latidos irregulares del corazón: . . . . . Sí o No
g. Alta presión: . . . . . Sí o No
h. Algun otro problema cardio-vascular o cardiaco: . . . . . Sí o No

6. ¿Ha tenido algunos de los siguientes síntomas causados por su corazón?

a. Dolor de pecho frecuente o pecho apretado: . . . . . Sí o No
b. Dolor o pecho apretado durante actividad fisica: . . . . . Sí o No

c. Dolor o pecho apretado que no lo deja trabajar normalmente: . . . . . Sí o No
d. En los ultimos dos años ha notado que su corazón late irregularmente: . . . . . Sí o No
e. Dolor en el pecho o indigestion que no es relacionado a la comida: . . . . . Sí o No
f. Algunos otros síntomas que usted piensa ser causado por problemas de su corazón o de su circulation.
. . . . . Sí o No
7. ¿Esta tomando medicina por algunso de los siguientes problemas?
a. Respiración dificultosa: . . . . . Sí o No
b. Problemas del corazón: . . . . . Sí o No
c. Alta presión : . . . . . Sí o No
d. Convulsiones: . . . . . Sí o No
8. ¿Le ha causado alguno de los siguientes problemas usando el respirador? (si no ha usado un respirador, deje
esta pregunta en blanco__ y continue con pregunta 9).
a. Irritación de los ojos: . . . . . Sí o No
b. Alergias del cutis o sarpullido: . . . . . Sí o No
c. Ansiedad que ocurre solamente cuando usa el respirado: . . . . . Sí o No
d. Debilidad, falta de vigor o fatiga desacostumbrada: . . . . . Sí o No
e. Algun otro problema que le impida utilizar su respirador: . . . . . Sí o No
9. ¿Le gustaria hablar con el profesional de sanidad con licencia autorizado por el estado que revisara este cuestionario sobre sus respuestas? . . . . . Sí o No

Las preguntas del 10 al 15 deben ser contestadas por los empleados seleccionados para usar una máscara con cartucho químico o aparato respiratorio autónomo (SCBA). Los empleados que usan otro tipo de respirador no tienen que contestar estas preguntas.

10. ¿Ha perdido la vista en cualquiera de sus ojos (temporalmente o permanente): . . . . . Sí o No
11. ¿Corrientemente tiene algunos de los siguientes problemas con su vista?
a. Usa lentes de contacto: . . . . . Sí o No
b. Usa lentes: . . . . . Sí o No
c. Daltoniano (dificultad distinguiendo colores): . . . . . Sí o No
d. Tiene algún problema con sus ojos o su vista: . . . . . Sí o No
12. ¿Ha tenido daño en sus oidos incluyendo rotura del tímpano: . . . . . Sí o No
13. ¿Corrientemente tiene uno de las siguientes problemas para oir?
a. Dificultad oyendo: . . . . . Sí o No
b. Usa un aparato para oir: . . . . . Sí o No
c. Tiene algun otro problema con sus oidos o dificultad escuchando: . . . . . Sí o No
14. ¿Se ha dañado o lastimado su espalda? . . . . . Sí o No
15. ¿Tiene uno de los siguientes problemas de su aparato muscular or eskeleto?
a. Debilidad en sus brazos, manos, piernas o pies : . . . . . Sí o No
b. Dolor de espalda: . . . . . Sí o No
c. Dificultad para mover sus brazos y piernas completamente: . . . . . Sí o No
d. Dolor o engarrotamiento cuando se inclina para adelante o para atras: . . . . . Sí o No
e. Dificultad para mover su cabeza para arriba o para abajo completamente: . . . . . Sí o No
f. Dificultad para mover su cabeza de lado a lado: . . . . . Sí o No
g. Dificultad para agacharse doblando sus rodillas: . . . . . Sí o No
h. Dificultad para agacharse hasta tocar el piso: . . . . . Sí o No
i. Dificultad subiendo escaleras cargando mas de 25 libras: . . . . . Sí o No
j. Alguno problema muscular o con sus huesos que le evite usar un respirador: . . . . . Sí o No

Parte B - Las siguientes preguntas pueden ser agregadas al cuestionario a discrecion del profesional de
sanidad con licencia autorizado por el estado.

1. ¿Esta trabajando en las alturas arriba de 5,000 pies o en sitios que tienen menos oxígeno de lo normal? . . . . . Sí o No

Si la respuesta es "Sí", se ha sentido mareado, o ha tenido dificultad respirando, palpitaciones, o cualquier otro
síntoma que usted no tiene cuando no esta trabajando bajo estas condiciones: . . . . . Sí o No

2. ¿En el trabajo o en su casa, ha estado expuesto a solventes o contaminantes peligrosos en el aire (por ejemplo,
humos, neblina o polvos) o ha tenido contacto del cutis con químicas peligrosas? . . . . . Sí o No

Escriba las químicas y productos con las que ha estado expuesto, si sabe cuales
son:_____

3. ¿Ha trabajado con los siguientes materiales o las condiciones anotadas abajo?:

a. Asbestos: . . . . . Sí o No
b. Sílice (Limpiar mediante un chorro de arena): . . . . . Sí o No
c. Tungsteno/Cobalto (pulverizar o soldadura): . . . . . Sí o No
d. Berilio: . . . . . Sí o No
e. Aluminio: . . . . . Sí o No
f. Carbón de piedra (minando): . . . . . Sí o No
g. Hierro: . . . . . Sí o No
h. Estaño: . . . . . Sí o No
i. Ambiente polvoriento: . . . . . Sí o No
j. Otra exposicion peligrosa: . . . . . Sí o No

Describa las exposiciones peligrosas:

_____
_____

4. ¿Tiene usted otro trabajo o un negocio aparte de este?

_____
_____

5. Apunte su previos trabajos:

_____

6. Apunte sus pasatiempos:

_____
_____

7. ¿Tiene servicio militar? . . . . . Sí o No

Si la respuesta es "Sí", ha estado expuesto a agentes químicos o biologicos durante entrenamiento o combate: . . . . . Sí o No

8. ¿Alguna vez ha trabajado en un equipo de HAZMAT (equipo respondedor a incidentes de materiales peligosos con emergencia)? . . . . . Sí o No

9. ¿Esta tomando alguna medicina que no haya mencionado en este cuestionario (incluyendo remedios caseros o
medicinas que compra sin receta)? . . . . . Sí o No
Si la respuesta es "Sí", cuales son_____
10. ¿Va a usar algunas de las siguientes partes con su respirador?
a. filtros HEPA (filtro de alta eficiencia que remueve partículas tóxicas en la atmósfera): . . . . Sí o No
b. Canastillo (por ejemplo, máscara para gas): . . . . . Sí o No
c. Cartuchos: . . . . . Sí o No
11. ¿Cuántas veces espera usar un respirador?
a. Para salir de peligro solamente (no rescates): . . . . . Sí o No
b. Recates de emergencia solamente: . . . . . Sí o No
c. Menos de 5 horas *por semana*: . . . . . Sí o No
d. Menos de 2 horas *por día*: . . . . . Sí o No
e. 2 a 4 horas *por día*: . . . . . Sí o No
f. Mas de 4 horas *por día*: . . . . . Sí o No
12. ¿Durante el tiempo de usar el respirador, su trabajo es...?
a. **Ligero** (menos de 200 kcal por hora): . . . . . Sí o No
Si la respuesta es "sí", cuanto tiempo dura la obra _____horas _____minutos
Ejemplos de trabajos ligeros: estar sentado escribiendo, escribiendo a máquina, diseñando, trabajando la línea de
montaje, o estar parado gobernando un taladro o máquinas:
b. **Moderado** (200-350 kcal por hora): . . . . . Sí o No
Si la respuesta es "sí"cuanto tiempo dura en promedio por jornada _____horas_____minutos
Ejemplos de trabajos moderados : sentado clavando o archivando; manejando un camión o autobús en trafico
pesado; estar de pie taladrando, clavando, trabajando la línea de montaje, o transferiendo una carga (de 35 libras)
a la altura de la cintura; caminando sobre tierra plana a 2 millas por hora o bajando a 3 millas por hora; empujando una carretilla con una carga pesada (de 100 libras) sobre terreno plano.
c. **Pesado** (mas de 350 kcal por hora): . . . . . Sí o No
Si la respuesta es "sí"cuanto tiempo dura en promedio por jornada _____horas_____minutos
Ejemplos de trabajos pesados: levantando cargas pesadas (mas de 50 libras) desde el piso hasta la altura de la
cintura o los hombros; trabajando cargando o descargando; transpalear; estar de pie trabajando de albañil o demenuzando moldes; subiendo a 2 millas por hora; subiendo la escalera con una carga pesada (mas de 50 libras).
13. ¿Va a estar usando ropa o equipo protectivo cuando use el respirador? . . . . . Sí o No
Si la respuesta es "sí" describa que va a estar
usando_____
_____
_____
14. ¿Va a estar trabajando en condiciones calurosas (temperatura mas de 77 grados F)? . . . . . Sí o No
15. ¿Va a estar trabajando en condiciones humedas? . . . . . Sí o No

16. Describa el tipo de trabajo que va a estar usted haciendo cuando use el respirador.

_____

_____

17. Describa cualquier situacion especial o peligrosa que pueda encontrar cuando este usando el respirador (por
ejemplo, espacios encerrados, gases que lo puedan matar, etc.)

_____

18. Provea la siguiente informacion si la sabe, por cada sustancia tóxica que usted va a estar expuesto cuando
este usando el respirador(s):
Nombre de la primera sustancia tóxica_____
Maximo nivel de exposición por jornada de trabajo_____
Tiempo de exposición por jornada_____
Nombre de la segunda sustancia tóxica_____
Maximo nivel de exposición por jornada de trabajo_____
Tiempo de exposición por jornada_____
Nombre de la tercera sustancia tóxica_____
Máximo nivel de exposición por jornada de trabajo_____
Tiempo de exposición por jornada_____
El nombre de cualquier sustancia tóxica que usted va a estar expuesto cuando este usted usando el respirador_____

_____

19. Describa alguna responsabilidad especial que usted va a tener cuando usted este usado el respirador(s) que
pueda afectar la seguridad o la vida de otros (por ejemplo, rescate, seguridad).

_____

APPENDIX F

Agreement and Acknowledgement Statement

Agreement and Acknowledgement Statement

By signing within the space provided below you are agreeing that you have read and fully understand the contents of the Health and Safety Plan and you are agreeing to conduct yourself in accordance with the procedures and protocols described. You also agree to notify the site Health and Safety Officer of anyone on-site conducting themselves or creating in a manner or creating a condition or situation on-site that is prohibited within the Health and Safety Plan. Furthermore, by signing this form, you are acknowledging that you have had the opportunity to ask, and have received the answer to any questions about the content of the Health and Safety Plan or its interpretation.

NAME	DATE	SIGNATURE

Appendix G: Noise Analysis prepared by Ecosystems Strategies, Inc.

NOISE STUDY REPORT

For the St. Patrick's Home for the Aged and Infirm Property

located at

66 Van Cortlandt Park
Bronx County, New York

March 2012
(Rev. January 2013)

ESI File: SB12012.50R

Prepared by

Ecosystems Strategies, Inc.
24 Davis Avenue, Poughkeepsie, NY 12603
phone 845.452.1658 | fax 845.485.7083 | ecosystemsstrategies.com

Ecosystems Strategies, Inc.

NOISE STUDY REPORT

For the St. Patrick's Home for the Aged and Infirm Property

located at

66 Van Cortlandt Park
Bronx County, New York

September 2012
(Rev. January 2013)

ESI File: SB12012.50R

Prepared By:

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, New York 12603

Prepared For:

St. Patrick's Home for the Aged and Infirm
c/o Neil Weisbard
Slater & Beckerman
61 Broadway
New York, New York 10012

Services performed by Ecosystems Strategies, Inc. and summarized in this Noise Study Report have been conducted in accordance with City Environmental Quality Review (CEQR) guidelines.

The undersigned has reviewed this Noise Study Report and certifies to St. Patrick's Home for the Aged and Infirm, that the information provided in this document is accurate as of the date of issuance by this office.

Paul H. Ciminello
President

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This Noise Study Report (Report) documents environmental fieldwork performed by Ecosystems Strategies, Inc. (ESI) at the property located at 66 Van Cortlandt Park, Borough of Bronx, New York (hereafter referred to as the "Site"). Investigative and analytical work was performed to address potential exceedances of CEQR Noise Exposure Guidelines for use in City Environmental Impact Review (see Section 1.4, below). The specific purpose of this Report is to summarize the work performed by ESI, and to suggest, if appropriate, further investigative and/or remedial options regarding community CEQR Noise Exposure Guidelines.

This Report describes all fieldwork methodologies for the work conducted by this office, includes discussions of the resulting analytical data, and provides conclusions and recommendations drawn from the fieldwork and analytical data.

1.2 Limitations

Services summarized in this Report were performed in accordance with generally accepted practices and established American National Standards Institute's Standard Methods (ANSI S1-1.2-1962(R1976) for the Physical Measurement of Sound and ANSI S1-1.13-1971(R1976) for the Measurement of Sound Pressure Levels.

1.3 Site Location and Description

The Site is a 54,708 square foot parcel with frontage on the south side of Van Cortlandt Park, the west side of Dickinson Avenue and the east side of Saxon Avenue. The western portion is currently occupied by a paved parking lot. The eastern portion is occupied by an existing multi-story residential building and a convent building.

A Vicinity Map shows that the location of the Site and major noise sources and a Fieldwork Map indicating the layout of the proposed building relative to the Site are provided in Appendix A.

1.4 Conditions of Concern

The proposed project includes the construction of a four story mixed use building containing three levels of additional parking and a total of 104 parking spaces. The net increment of new parking is considered as a new use that would generate traffic, and rerouting of traffic will in fact occur (regardless of being beneficial or not). As such, further analyses, including basic traffic counting and conversion to Passenger Car Equivalents (PCEs) are warranted.

2.0 NOISE STUDY

2.1 Summary of Services

In order to achieve the purpose specified in Section 1.1, above, ESI collected noise data at the site utilizing three noise meters for a 20 minute period on Tuesday, March 6, 2012. Noise measurements were conducted during the morning rush hour between 8:00 and 8:30 AM and at noon. These times were selected as the time of maximum traffic activity when the project site would likely be subject to greatest noise impacts.

This Report is divided into individual sections that document fieldwork methodology (Section 2.2) and data results (Section 2.3), and present ESI's conclusions and recommendations (Section 3.0).

2.2 Fieldwork Methodology

2.2.1 Noise Meter Calibration and Placement

The noise recording equipment used was SoundPro DL with $^{1}/_{8}^{th}$ inch microphones, (consistent with an ANSI S1.4-1971 Type II noise level meter). The instruments were calibrated before the measurement period using a Metrosonics CL304 Sound Level Calibrator to log ambient noise with an A weighting, a 3 dB exchange rate, and no threshold. The meters were then placed on standard camera tripods, approximately 5 feet above the ground and were located as follows:

- On the sidewalk east of Saxon Avenue, 50 feet south of the northern property line (Meter A).
- On the sidewalk south of Van Cortland Park, at the northeastern corner of the project site (Meter B).
- On the sidewalk south of Van Cortlandt park, 130 feet east of the north eastern corner of the property (Meter C).

A Fieldwork Map indicating meter locations and projected building design is provided in Appendix A.

2.2.2 Weather Conditions

During the measurement periods the temperature ranged between 39 and 43 ^{o}F. Winds averaged 4 mph with a maximum speed of 10 mph. Relative humidity averaged 38% and barometric pressure was steady, between 30.4 and 30.6 inches. There was no precipitation during the data collection period.

2.3 Data Analysis

2.3.1 CEQR Noise Exposure Guidelines

CEQR Noise Exposure Guidelines are promulgated in Table 19-2 of the CEQR Manual. For sites proposed for residential development whose vehicular noise exposure exceeds a L_{10} of 70 dBA, an alternate means of ventilation should be incorporated into the building so that windows do not need to be opened at any time of year. See Table 1, below for a summary of Noise Exposure Guidelines.

Table 1: Residential Noise Exposure Guidelines

		Acceptable	Marginally Acceptable	Marginally Unacceptable	Clearly Unacceptable
Time Period	(7 AM - 10 PM)	L_{10}≤65 dBA	65<L_{10} 70 dBA	70<L_{10} ≤80 dBA	L_{10} >80 dBA
	(10 PM – 7 AM)	L_{10}≤55 dBA	55<L_{10} 70 dBA	70<L_{10} ≤80 dBA	L_{10} >80 dBA

2.3.2 L_{10} (10 Percentile Sound Level)

CEQR requires L_{10} data for proposed receptor noise evaluations. L_x is the percentile level, where x is any number from 0 to 100. Here x corresponds to the percentage of the measurement time that the stated sound level has been exceeded. For example, L_{10} – 80 dBA means that measurements exceeded 80 dBA 10 percent of the measurement period. The measurement time must be specified and is denoted in parentheses (i.e., $L_{10(1)}$ corresponds to the noise level exceeded 10 percent of the time during a 1 hour period).

2.3.3 Results and Discussion

A summary of the results is presented below. Session Reports are provided in Appendix B, recommendations regarding these findings are located in Section 3.0.

Table 2: Results of Noise Study

Meter ID	Date and Time	Weather Conditions	Peak $L_{10(1)}$ (10 PM – 7 AM)
Meter A	3/06/2012 08:04-08:24	Overcast. No precipitation. Temp: 39 degrees F Average Wind Speed 10. Average humidity 38%. Barometric pressure steady, between 30.4 and 30.6.	61.8
Meter B			66.4
Meter C			59.8
Meter A	3/06/2012 012:07-12:28	Overcast. No precipitation. Temp: 43 degrees F Average Wind Speed 10. Average humidity 38%. Barometric pressure steady, between 30.4 and 30.6.	64.5
Meter B			66.8
Meter C			56.8

These results indicate that L_{10} data exterior noise levels for the meters during the morning rush hour are less than 70 dBA and therefore fall into the “Acceptable” and “Marginally Acceptable” General External Exposure categories. The 6.6 dB and 10 dB difference between meters B & C

can be accounted for by the increased vehicle noise in the vicinity of meter B from vehicles accelerating as they turn right out of Saxon Avenue onto Van Cortlandt Park and the steeper gradient of Van Cortland Park immediately west of Meter B than at Meter C.

2.3.4 Traffic Counts

Table 3 (Appendix C) shows traffic counts for vehicles cars, trucks and busses travelling on Saxon Avenue and Van Cortlandt Park during the analysis periods. The table shows the total No Action PCEs for each time period and indicates 165 PCEs for the morning period and 121 PCEs for the noon period. Per the CEQR Manual, it takes a doubling of Noise PCEs to equal a 3db(A) change (i.e.a just perceptible change in sound levels). Since the proposed project includes the addition of 104 new parking spaces (each automobile trip being equivalent to 1 PCE) the With Action PCE total would not double during the AM, Noon and PM periods of maximum ingress and egress from the parking garage. These findings support the conclusion that the 70dBA (Marginally Unacceptable) threshold would not be met by the With Action Condition.

3.0 CONCLUSIONS AND RECOMMENDATIONS

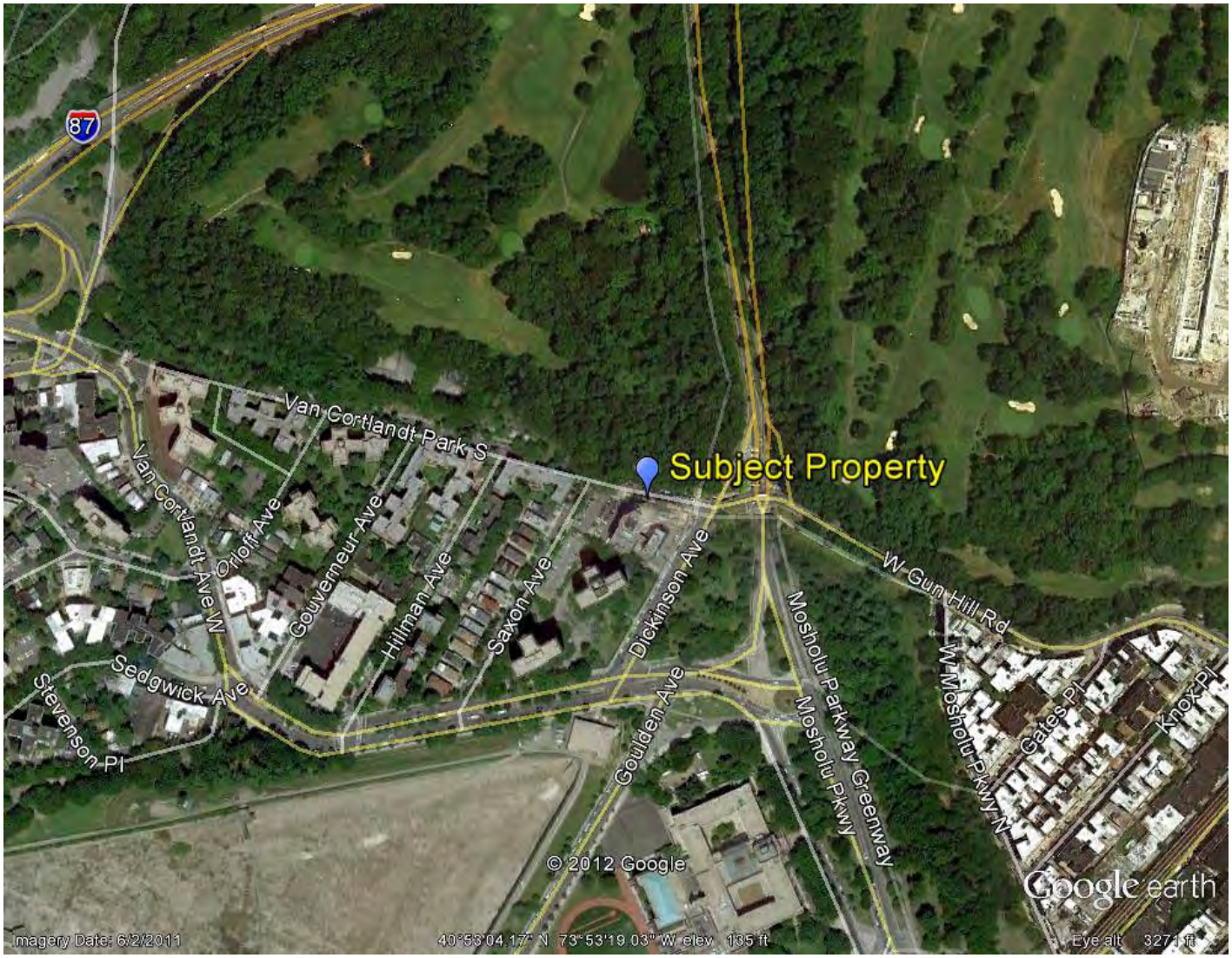
This office has completed the services summarized in Section 2.0 of this Report for the property located at 66 Van Cortlandt Park, Borough of Bronx, New York. Services included the collection and analysis of noise data for the Site and a comparison with CEQR Noise Exposure Guidelines.

Based on the services provided and data generated, the following conclusions and recommendations (in **bold**) have been made:

> Noise data indicate that exterior Existing noise levels are between 56.8 and 66.8 dBA at the property line along Saxon Avenue and Van Cortlandt Part. With a 12 month construction phase, traffic in the vicinity would not significantly increase in the vicinity of the site, supporting the conclusion that there would be no meaningful difference between Existing and No Action traffic noise. The Existing noise levels fall into the “Acceptable” and “Marginally Acceptable” General External Exposure categories. Traffic counts conducted during the noise studies and subsequent calculations support the conclusion that the With Action condition will not significantly increase noise levels in the vicinity.
>
> **No further investigation or mitigation is recommended.**

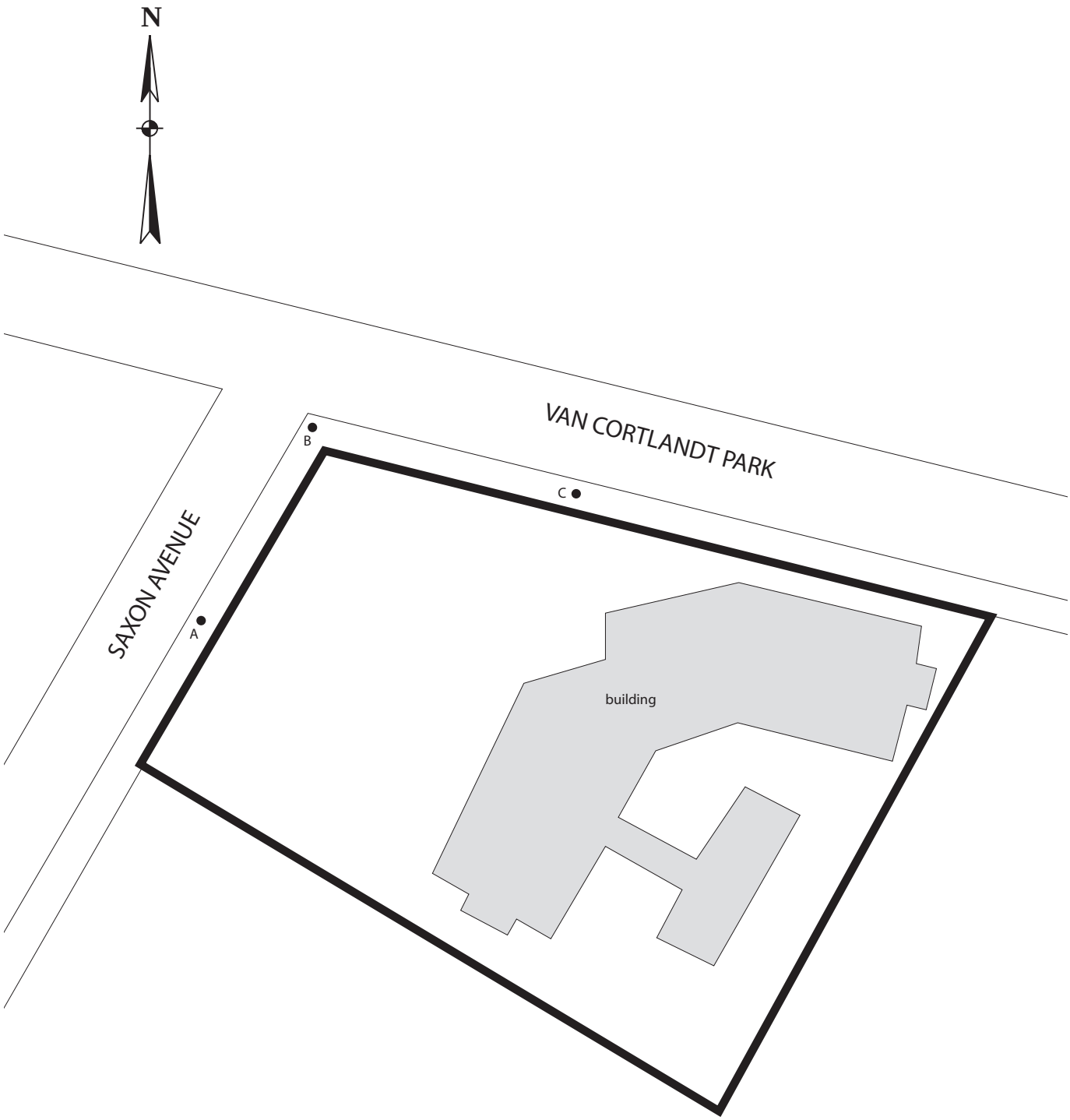
APPENDIX A

Maps



Vicinity Map 66 Van Cortlandt Park Bronx County, New York	N	ESI File: SB12012.50 September 2012 Appendix A

Ecosystems Strategies, Inc.



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Fieldwork Map

66 Van Cortlandt Park
Bronx County, Nerw York

Legend:

- subject property border
- noise meter location

ESI File: SB12012.50

September 2012

Not to scale

Appendix A

APPENDIX B

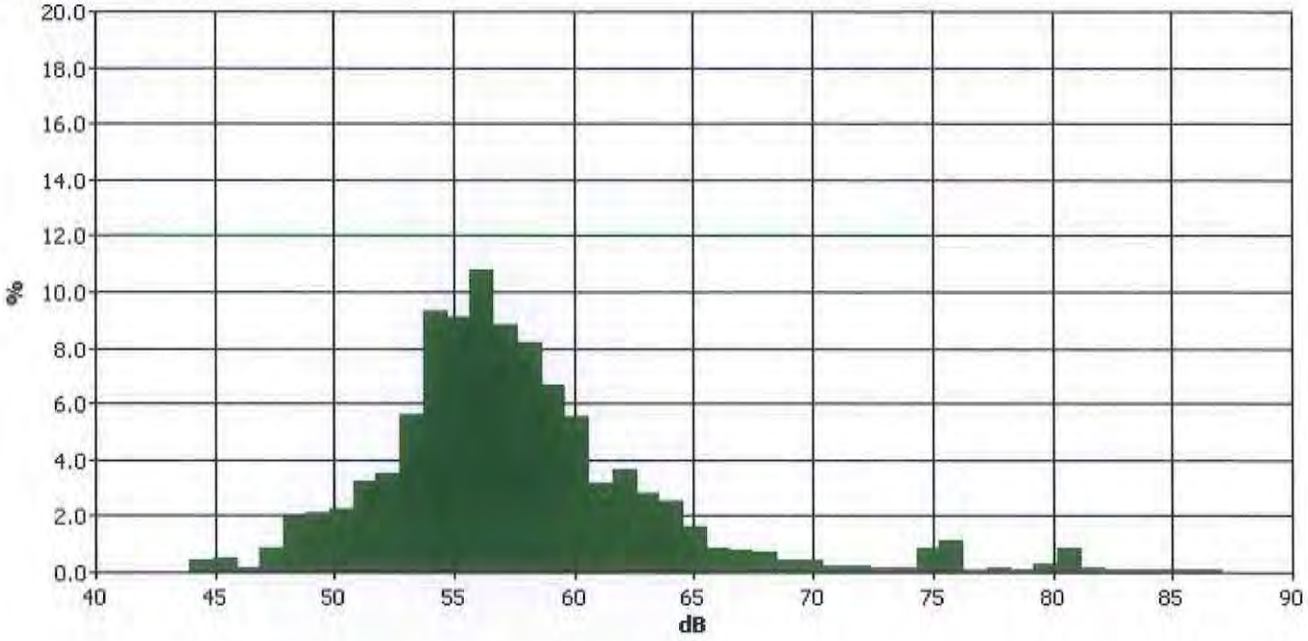
Session Reports

Session Report

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	66.6 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



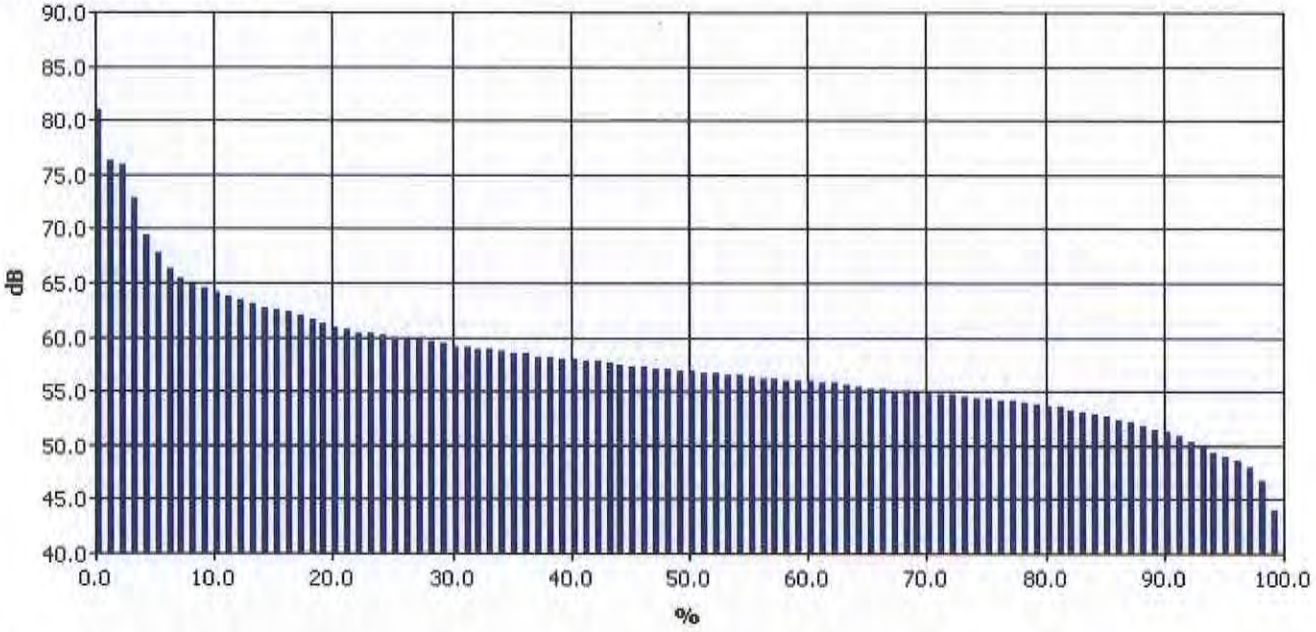
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4
45.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.5
46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
47.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.9
48.0	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.2	0.2	1.9
49.0	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	2.1
50.0	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	2.2
51.0	0.2	0.2	0.2	0.3	0.4	0.3	0.4	0.5	0.4	0.3	3.2
52.0	0.3	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.5	3.5
53.0	0.5	0.7	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	5.6
54.0	0.7	0.6	0.9	0.9	0.7	0.8	1.0	1.1	1.3	1.3	9.3
55.0	1.0	0.9	0.9	1.0	0.9	0.7	0.8	0.8	0.9	1.2	9.1
56.0	1.3	1.2	0.8	1.4	1.1	1.0	1.0	0.9	1.1	1.0	10.8
57.0	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	8.8
58.0	0.7	0.9	0.9	1.0	0.9	0.7	0.9	0.8	0.7	0.7	8.2
59.0	0.8	1.0	0.7	0.7	0.7	0.5	0.5	0.5	0.7	0.6	6.6
60.0	0.9	0.8	0.8	0.7	0.6	0.4	0.3	0.3	0.4	0.3	5.6
61.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.1
62.0	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.4	3.6
63.0	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	2.8
64.0	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.2	2.5
65.0	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	1.6
66.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
67.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
68.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.7
69.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
70.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.8
76.0	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	1.1
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
81.0	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.8
82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
87.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

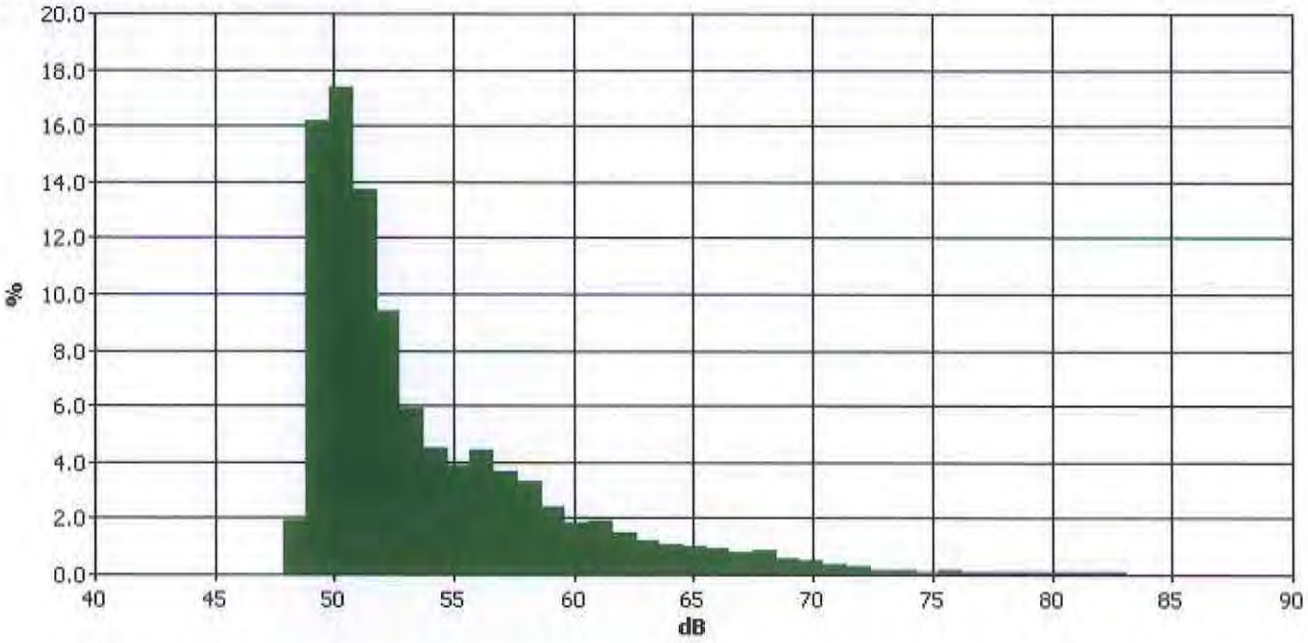
	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		81.0	76.2	75.8	72.7	69.3	67.8	66.3	65.4	64.9
10%	64.5	64.1	63.7	63.3	63.0	62.7	62.4	62.2	61.9	61.5
20%	61.2	60.9	60.6	60.3	60.2	60.1	59.9	59.8	59.7	59.5
30%	59.3	59.1	59.0	58.9	58.8	58.6	58.5	58.4	58.2	58.1
40%	58.0	57.9	57.8	57.7	57.6	57.4	57.3	57.2	57.1	57.0
50%	56.9	56.8	56.7	56.6	56.5	56.4	56.3	56.2	56.1	56.0
60%	55.9	55.9	55.8	55.7	55.5	55.4	55.3	55.2	55.1	55.0
70%	54.9	54.8	54.7	54.6	54.5	54.4	54.3	54.2	54.1	53.9
80%	53.8	53.6	53.5	53.3	53.0	52.9	52.6	52.4	52.1	51.7
90%	51.5	51.2	50.8	50.3	49.9	49.3	48.9	48.5	47.9	46.7
100%	43.9									

Session Report

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	--	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	5 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



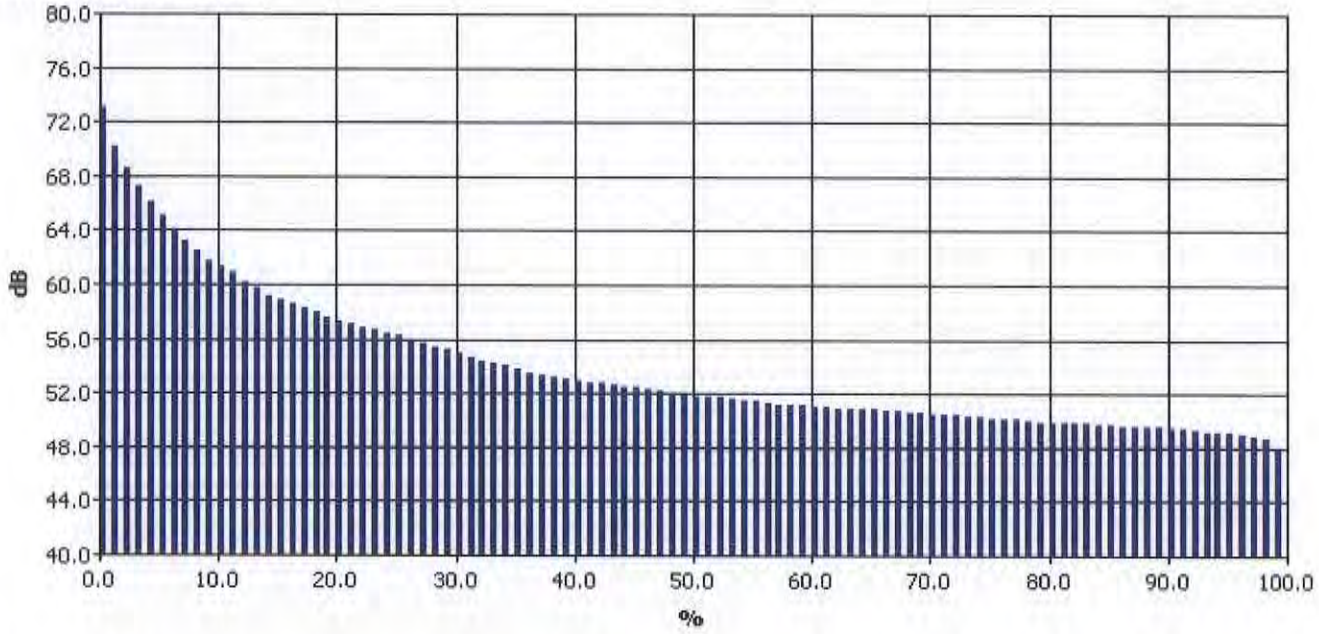
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.4	0.4	0.5	1.9
49.0	0.8	1.1	1.1	1.7	1.4	1.6	1.8	2.2	2.2	2.4	16.2
50.0	2.1	1.5	1.1	1.4	1.7	1.8	1.7	1.8	1.9	2.2	17.4
51.0	1.9	1.9	1.5	1.6	1.3	1.1	1.2	1.1	1.2	1.0	13.7
52.0	1.0	0.8	0.8	1.0	0.9	1.0	1.0	0.9	1.0	1.0	9.4
53.0	0.8	0.8	0.5	0.7	0.6	0.6	0.5	0.4	0.4	0.5	5.9
54.0	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.4	0.3	4.5
55.0	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	3.8
56.0	0.4	0.5	0.3	0.5	0.5	0.5	0.4	0.5	0.4	0.4	4.4
57.0	0.3	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	3.6
58.0	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	3.3
59.0	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2.4
60.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	1.8
61.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	1.9
62.0	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.5
63.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.2
64.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
65.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
66.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
67.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
68.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
69.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.6
70.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5
71.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
81.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

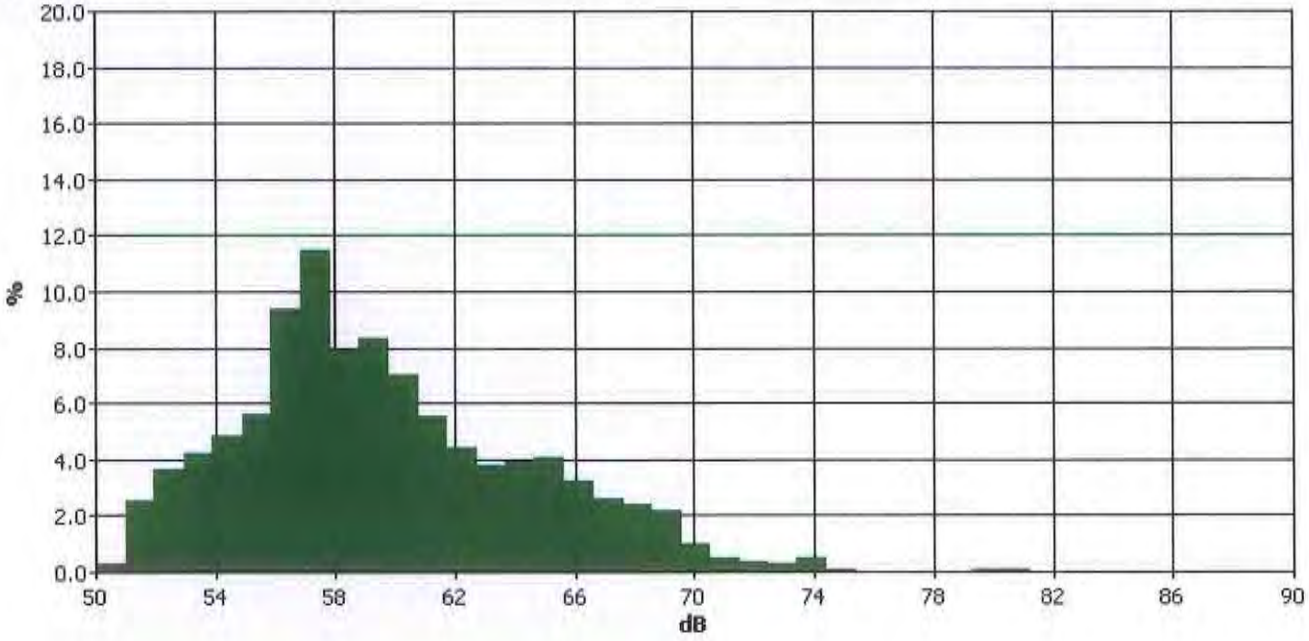
	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		73.0	70.1	68.5	67.3	66.1	65.1	64.1	63.2	62.5
10%	61.8	61.3	60.8	60.2	59.7	59.2	58.8	58.5	58.2	57.9
20%	57.6	57.3	57.1	56.8	56.6	56.4	56.2	55.9	55.7	55.4
30%	55.2	54.9	54.6	54.4	54.2	54.0	53.8	53.5	53.3	53.2
40%	53.0	52.9	52.8	52.7	52.6	52.5	52.4	52.3	52.2	52.1
50%	51.9	51.8	51.7	51.7	51.6	51.5	51.4	51.3	51.2	51.2
60%	51.1	51.0	51.0	50.9	50.9	50.8	50.8	50.7	50.7	50.6
70%	50.6	50.5	50.5	50.4	50.3	50.3	50.2	50.2	50.1	50.0
80%	49.9	49.9	49.8	49.8	49.8	49.7	49.7	49.6	49.6	49.5
90%	49.5	49.4	49.4	49.3	49.2	49.2	49.1	49.0	48.9	48.7
100%	47.8									

Session Report

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	63.2 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	5 dB
Weighting	2	C	Response	2	FAST

Statistics Chart



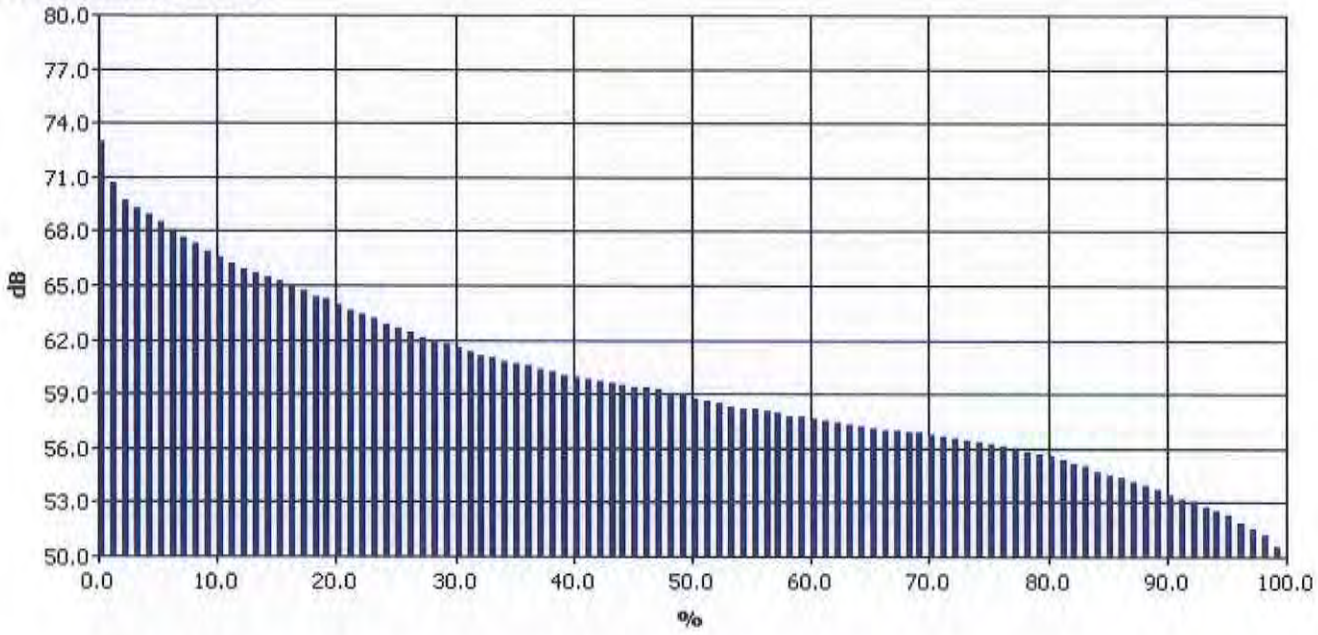
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3
51.0	0.2	0.1	0.1	0.3	0.4	0.4	0.3	0.3	0.2	0.2	2.5
52.0	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.3	0.4	0.3	3.7
53.0	0.5	0.5	0.7	0.4	0.2	0.3	0.4	0.4	0.4	0.4	4.2
54.0	0.7	0.6	0.3	0.5	0.6	0.6	0.5	0.3	0.4	0.4	4.8
55.0	0.4	0.5	0.6	0.7	0.7	0.5	0.5	0.6	0.5	0.6	5.6
56.0	0.6	0.7	0.9	0.9	1.0	0.9	1.0	1.0	1.2	1.2	9.4
57.0	1.4	1.7	1.1	1.1	1.1	0.8	1.0	1.1	1.2	1.0	11.5
58.0	0.9	0.9	0.8	0.7	0.8	0.8	1.0	0.7	0.7	0.7	7.9
59.0	0.7	0.7	0.7	0.7	0.9	0.8	0.9	1.0	1.1	0.9	8.3
60.0	0.9	0.9	0.5	0.8	0.7	0.7	0.7	0.7	0.5	0.5	7.0
61.0	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.5	0.4	0.5	5.5
62.0	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.4	4.4
63.0	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	3.8
64.0	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	3.9
65.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	4.1
66.0	0.4	0.3	0.2	0.3	0.4	0.3	0.4	0.3	0.3	0.3	3.2
67.0	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	2.6
68.0	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	2.4
69.0	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	2.2
70.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	1.0
71.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.5
72.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
74.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.5
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
81.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

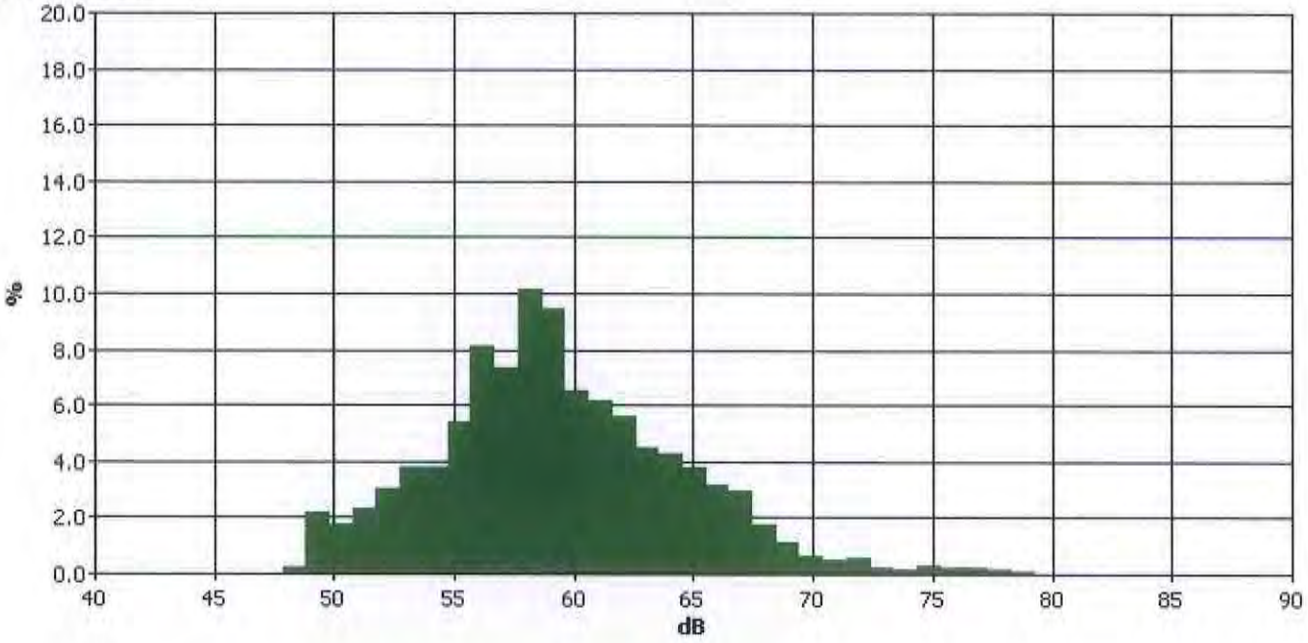
	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		72.9	70.6	69.7	69.2	68.9	68.5	68.0	67.6	67.3
10%	66.8	66.5	66.2	65.9	65.6	65.4	65.2	64.9	64.7	64.4
20%	64.2	63.9	63.6	63.4	63.1	62.8	62.6	62.4	62.1	61.9
30%	61.7	61.5	61.3	61.1	61.0	60.8	60.6	60.5	60.3	60.2
40%	60.0	59.9	59.8	59.7	59.6	59.5	59.4	59.3	59.2	59.0
50%	58.9	58.7	58.6	58.5	58.3	58.2	58.1	58.0	57.9	57.7
60%	57.7	57.6	57.5	57.4	57.3	57.2	57.1	57.0	57.0	56.9
70%	56.8	56.7	56.6	56.5	56.4	56.3	56.2	56.1	56.0	55.8
80%	55.7	55.5	55.3	55.1	55.0	54.7	54.5	54.3	54.1	53.9
90%	53.7	53.4	53.1	53.0	52.7	52.5	52.3	51.9	51.5	51.2
100%	50.5									

Session Report

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	--	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	5 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



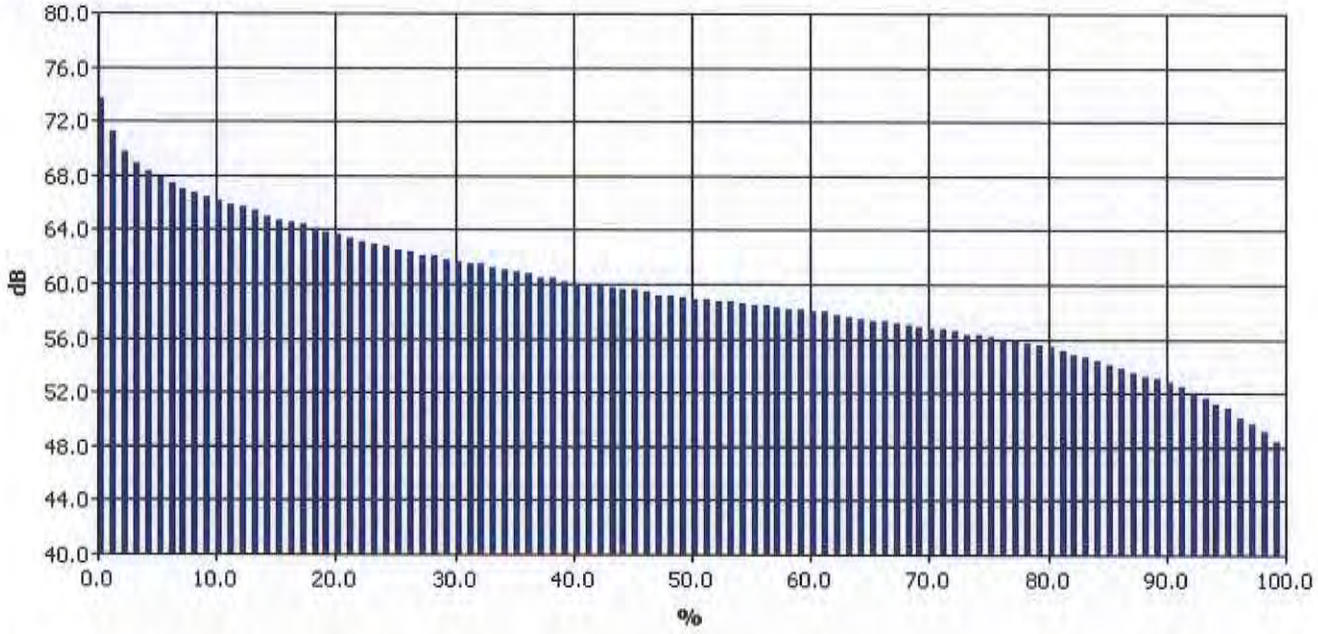
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
49.0	0.1	0.2	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.2	2.2
50.0	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	1.8
51.0	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.3	2.3
52.0	0.3	0.2	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	3.0
53.0	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.5	0.4	3.8
54.0	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.8
55.0	0.5	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.8	5.4
56.0	0.7	0.8	0.6	0.7	0.8	0.8	1.0	0.9	0.9	1.0	8.1
57.0	0.7	0.7	0.9	0.8	0.7	0.8	0.7	0.7	0.6	0.7	7.4
58.0	0.9	1.0	1.2	0.9	1.0	1.1	1.0	1.0	1.1	1.0	10.1
59.0	1.0	1.2	0.9	1.0	0.8	0.9	0.9	1.0	1.0	0.7	9.4
60.0	0.8	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.6	0.5	6.5
61.0	0.5	0.5	0.6	0.7	0.6	0.6	0.7	0.7	0.5	0.6	6.1
62.0	0.6	0.7	0.7	0.4	0.6	0.6	0.5	0.5	0.4	0.5	5.6
63.0	0.6	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.4	0.4	4.4
64.0	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.3	4.2
65.0	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.4	0.5	0.4	3.8
66.0	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.2	3.2
67.0	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	2.9
68.0	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	1.7
69.0	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	1.1
70.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.6
71.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
72.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

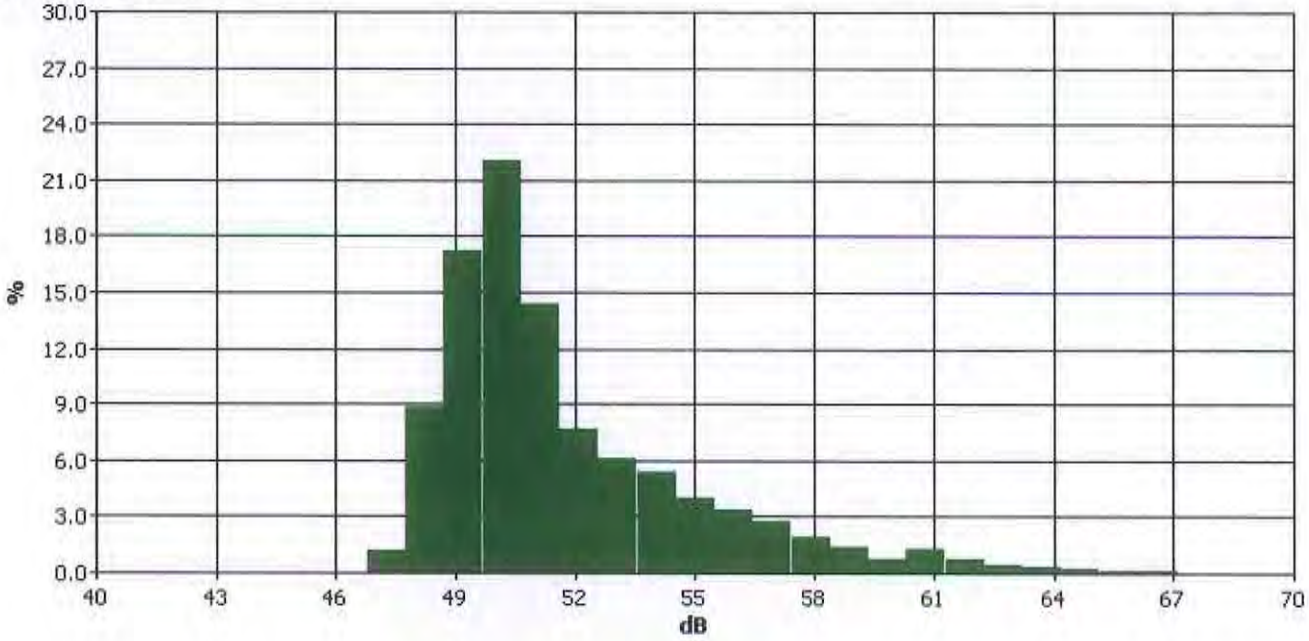
	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		73.6	71.2	69.7	68.8	68.2	67.8	67.4	67.0	66.7
10%	66.4	66.1	65.8	65.6	65.3	65.0	64.7	64.5	64.3	64.0
20%	63.8	63.6	63.3	63.1	62.9	62.7	62.5	62.3	62.1	62.0
30%	61.8	61.6	61.5	61.4	61.2	61.0	60.9	60.7	60.5	60.4
40%	60.2	60.0	59.9	59.8	59.7	59.6	59.5	59.4	59.2	59.1
50%	59.0	58.9	58.8	58.7	58.7	58.5	58.4	58.4	58.3	58.1
60%	58.1	58.0	57.9	57.7	57.6	57.4	57.3	57.2	57.1	56.9
70%	56.8	56.7	56.6	56.5	56.3	56.2	56.1	55.9	55.8	55.6
80%	55.5	55.3	55.0	54.8	54.6	54.4	54.1	53.8	53.5	53.2
90%	53.0	52.7	52.4	52.0	51.6	51.2	50.8	50.1	49.7	49.2
100%	48.4									

Session Report

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	54 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	5 dB
Weighting	2	C	Response	2	FAST

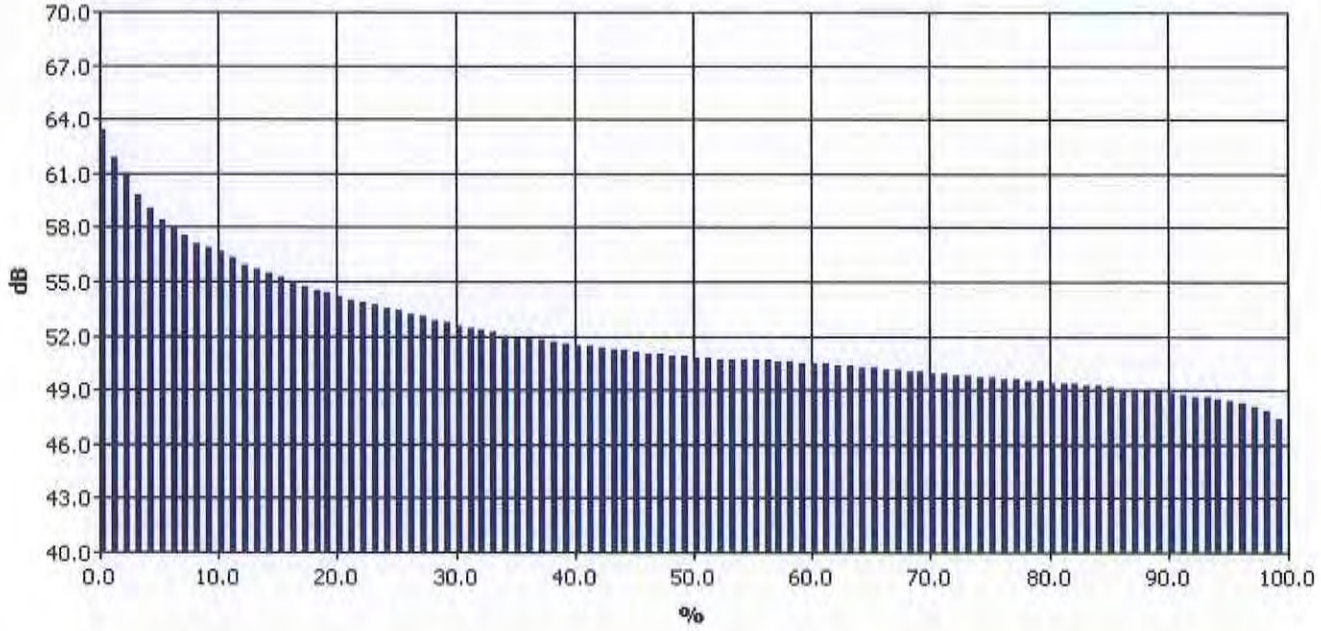
Statistics Chart



Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.4	1.2
48.0	0.4	0.6	0.3	0.3	0.7	0.9	1.3	1.2	1.4	1.6	8.8
49.0	1.4	1.9	1.5	1.5	1.4	1.9	1.9	2.0	1.8	1.9	17.2
50.0	2.4	2.2	2.0	2.1	1.9	2.3	2.3	2.5	2.3	2.2	22.1
51.0	1.9	2.1	1.1	1.8	1.6	1.4	1.5	1.2	1.0	0.8	14.3
52.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	7.7
53.0	0.6	0.5	0.6	0.6	0.5	0.6	0.7	0.7	0.7	0.8	6.1
54.0	0.6	0.6	0.4	0.5	0.6	0.5	0.6	0.7	0.5	0.5	5.4
55.0	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.4	4.0
56.0	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	3.4
57.0	0.4	0.3	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	2.7
58.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	1.9
59.0	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	1.4
60.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
61.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.2
62.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7
63.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.5
64.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
65.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

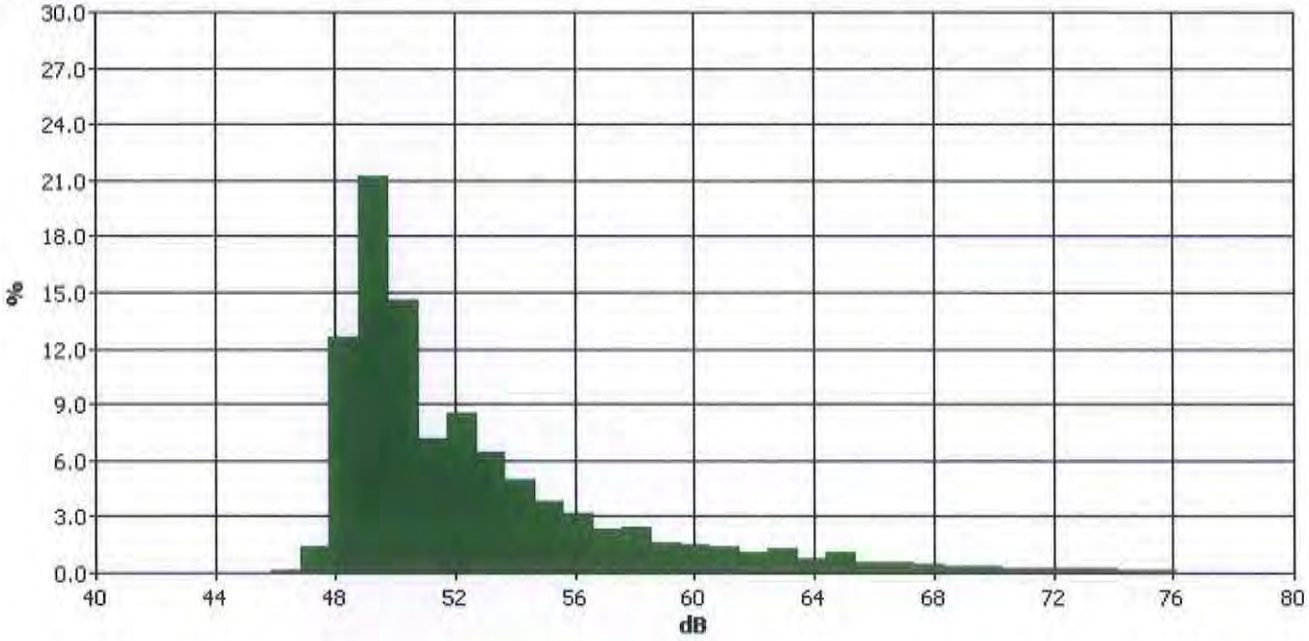
	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		63.4	61.8	61.0	59.8	59.0	58.4	57.9	57.5	57.1
10%	56.8	56.6	56.3	55.9	55.6	55.4	55.2	54.9	54.7	54.5
20%	54.3	54.1	53.9	53.8	53.7	53.5	53.4	53.2	53.0	52.8
30%	52.7	52.5	52.4	52.3	52.2	52.0	51.9	51.8	51.7	51.6
40%	51.5	51.4	51.4	51.3	51.2	51.2	51.1	51.0	51.0	50.9
50%	50.9	50.8	50.8	50.7	50.7	50.7	50.6	50.6	50.5	50.5
60%	50.4	50.4	50.4	50.3	50.3	50.2	50.2	50.1	50.1	50.0
70%	50.0	49.9	49.9	49.8	49.8	49.7	49.7	49.6	49.6	49.5
80%	49.5	49.4	49.4	49.3	49.2	49.2	49.1	49.0	49.0	48.9
90%	48.9	48.8	48.7	48.6	48.6	48.5	48.4	48.3	48.0	47.8
100%	47.4									

Session Report

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	58.4 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	SLOW

Statistics Chart



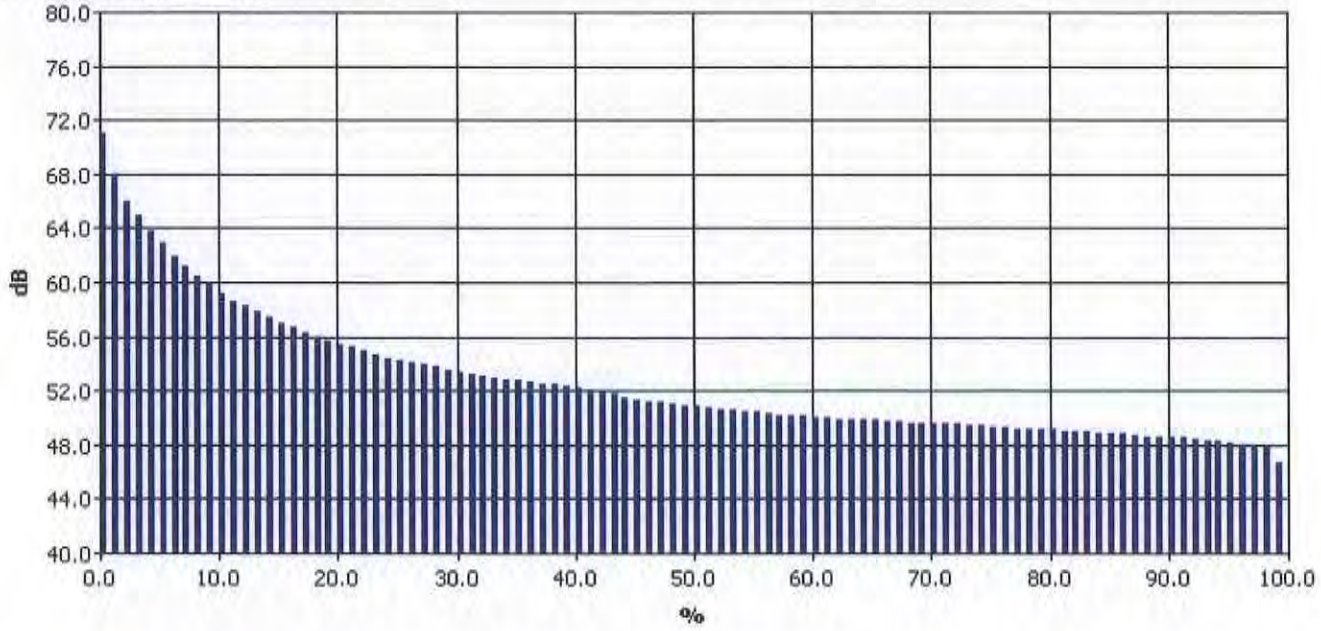
Statistics Table

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
47.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	1.3
48.0	0.7	0.9	1.3	1.3	1.1	1.2	1.5	1.6	1.4	1.6	12.6
49.0	1.9	2.1	2.0	2.2	2.0	2.1	2.4	2.5	2.1	2.1	21.2
50.0	2.1	2.0	1.2	1.4	1.3	1.2	1.3	1.4	1.3	1.2	14.6
51.0	1.1	0.9	0.7	0.7	0.7	0.5	0.5	0.6	0.6	0.6	7.1
52.0	0.7	0.7	0.6	0.7	1.0	1.2	1.1	0.9	0.8	0.8	8.5
53.0	0.8	0.8	0.4	0.6	0.7	0.6	0.6	0.5	0.6	0.7	6.4
54.0	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	4.9
55.0	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.8
56.0	0.4	0.4	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.3	3.2
57.0	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	2.4
58.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	2.4
59.0	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	1.6
60.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	1.5
61.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	1.3
62.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
63.0	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.2
64.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7
65.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
66.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.5
67.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.5
68.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.4
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
71.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
73.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		71.0	68.0	66.0	64.9	63.7	62.9	61.9	61.1	60.5
10%	59.8	59.1	58.6	58.2	57.8	57.4	57.0	56.6	56.3	56.0
20%	55.7	55.4	55.2	54.9	54.6	54.4	54.2	54.0	53.9	53.7
30%	53.5	53.4	53.2	53.0	52.9	52.8	52.7	52.6	52.5	52.4
40%	52.3	52.2	52.0	51.9	51.7	51.5	51.3	51.2	51.1	51.0
50%	50.9	50.8	50.7	50.6	50.6	50.5	50.4	50.3	50.2	50.2
60%	50.1	50.0	50.0	49.9	49.9	49.8	49.8	49.7	49.7	49.6
70%	49.6	49.6	49.5	49.5	49.4	49.4	49.3	49.3	49.2	49.2
80%	49.1	49.1	49.0	49.0	49.0	48.9	48.8	48.8	48.7	48.6
90%	48.6	48.5	48.5	48.4	48.3	48.2	48.1	48.0	47.9	47.8
100%	46.7									

APPENDIX C

Traffic Counts

Noise Data and Traffic Counts for 66 Van Cortlandt Park

Meter A AM Timestamp	Leq-1	Lmax-1	Lmin-1	Traffic travelling from south to north along Saxon Avenue: Cars	Trucks	Buses
3/6/2012 8:04	57.5	67.7	50.1	1	0	0
3/6/2012 8:05	56.6	63.1	50.5	0	0	0
3/6/2012 8:06	51.6	55.3	50.6	0	0	0
3/6/2012 8:07	51.9	59.5	49.4	0	0	0
3/6/2012 8:08	52.1	58.1	49.7	0	0	0
3/6/2012 8:09	52.6	59.3	49.8	1	0	0
3/6/2012 8:10	51.8	56.4	49.8	0	0	0
3/6/2012 8:11	57	68.8	51.2	1	0	0
3/6/2012 8:12	56.1	61.8	49.5	0	0	0
3/6/2012 8:13	51.5	56.7	48.7	0	0	0
3/6/2012 8:14	51	58	48.5	0	0	0
3/6/2012 8:15	52	57.9	47.5	0	0	0
3/6/2012 8:16	56.6	66.1	49.7	1	0	0
3/6/2012 8:17	50.9	59.7	48.3	0	0	0
3/6/2012 8:18	58.7	65.8	49.7	1	0	0
3/6/2012 8:19	49.9	53.3	48.1	0	0	0
3/6/2012 8:20	49.6	51.7	48	0	0	0
3/6/2012 8:21	49.8	56.5	48.4	0	0	0
3/6/2012 8:22	52.4	57	48.8	0	0	0
3/6/2012 8:23	55.5	61.1	48.4	0	0	0
3/6/2012 8:24	50.1	57	47.5	0	0	0
Total				5	0	0
			PCEs	**5**		
				L_{10} = 61.1		

Meter B AM	Leq-1	Lpk-1	Lmax-1
3/6/2012 8:04	49.7	63.5	50.3
3/6/2012 8:05	54.7	70	56.7
3/6/2012 8:06	55.8	68.1	58.7
3/6/2012 8:07	49	61.5	49.3
3/6/2012 8:08	49.8	63.2	50.2
3/6/2012 8:09	49.6	62.4	49.9
3/6/2012 8:10	52.4	63.6	55.1
3/6/2012 8:11	51.9	64.5	52.9
3/6/2012 8:12	71.2	90.3	73.5
3/6/2012 8:13	68.5	81.4	73.2
3/6/2012 8:14	48.2	61.8	48.4
3/6/2012 8:15	48.4	62.3	49.9
3/6/2012 8:16	49.3	64.1	49.7
3/6/2012 8:17	48	60.5	48.3
3/6/2012 8:18	54.6	71.4	57.3
3/6/2012 8:19	48.4	62.1	48.8
3/6/2012 8:20	49.1	62	49.7
3/6/2012 8:21	48.4	65.7	49.2
3/6/2012 8:22	49.5	62.6	50.1
3/6/2012 8:23	56.9	71	59.3
3/6/2012 8:24	49.2	67.9	50.1
			8
			L_{10} = 66.4

Meter C AM	Leq-1	Lpk-1	Lmax-1	Traffic travelling from west to east along Van Cortlandt Park: Cars	Trucks	Buses
3/6/2012 8:04	58	89.4	63.7	2	0	0
3/6/2012 8:05	59	73.5	59.3	0	0	0
3/6/2012 8:06	55.1	80.7	56.5	3	0	0
3/6/2012 8:07	55	70.5	55.9	0	0	0
3/6/2012 8:08	62.9	89.4	64.9	0	0	0
3/6/2012 8:09	59.9	90.1	64.5	1	0	0
3/6/2012 8:10	64.7	78.7	66.3	1	0	1
3/6/2012 8:11	57.7	75.6	59.7	4	0	0
3/6/2012 8:12	54.7	69	56.1	1	0	1
3/6/2012 8:13	58.5	78.5	62.4	0	0	1
3/6/2012 8:14	60.8	79.8	64.1	1	0	1
3/6/2012 8:15	57.2	70.8	58.6	2	0	0
3/6/2012 8:16	58	75	59.6	1	0	0
3/6/2012 8:17	76.3	89.2	76.5	1	0	1
3/6/2012 8:18	58.6	75.1	59.4	2	0	1
3/6/2012 8:19	60.1	72.9	60.3	2	0	0
3/6/2012 8:20	55.1	79.2	56.3	0	0	0
3/6/2012 8:21	61	77.1	64.4	0	0	0
3/6/2012 8:22	55	67.8	55.5	0	0	1
3/6/2012 8:23	59.4	73.2	60.1	0	0	0
3/6/2012 8:24	61.1	83.1	64.4	0	0	1
				21	0	8
			PCE	21	0	144	**165**
				L_{10} = 59.8		

Meter A Noon Timestamp	Leq-1	Lpk-1	Lmax-1	Cars	Trucks	Buses
3/6/2012 0:07	59.4	89.4	63.7	0	0	0
3/6/2012 0:08	61	86.9	63.1	1	0	0
3/6/2012 0:09	59.6	73.7	61	0	0	0
3/6/2012 0:10	60.6	67.9	66.6	0	0	0
3/6/2012 0:12	63.8	84.2	65.8	1	0	0
3/6/2012 0:12	58.3	74.4	58.8	0	0	0
3/6/2012 0:13	62.3	77.9	65.8	1	0	0
3/6/2012 0:14	53.6	68.5	55.1	0	0	0
3/6/2012 0:15	56.2	71.2	58.3	0	0	0
3/6/2012 0:16	57.3	72.1	59.4	0	0	0
3/6/2012 0:17	56.1	70.3	56.4	1	0	0
3/6/2012 0:18	56.5	69.7	57.1	0	0	0
3/6/2012 0:19	64	78	66.4	1	0	0
3/6/2012 0:20	76	88.1	76.1	0*	0	0
3/6/2012 0:21	54.3	69.9	56.5	0	0	0
3/6/2012 0:22	58.7	73.7	59.6	1	0	0
3/6/2012 0:23	54.2	69.3	56	1	0	0
3/6/2012 0:24	54.9	68.7	55.4	0	0	0
3/6/2012 0:25	60.4	74	61.6	1	0	0
3/6/2012 0:26	56.1	74.3	56.8	0	0	0
3/6/2012 0:27	53.6	67	54	0	0	0
				8	0	0
			PCEs	8	0	0
				L_{10} = 64.5		

Meter B Noon	Leq-1	Lmax-1	Lmin-1
3/6/2012 0:07	58.3	73.6	62.6
3/6/2012 0:08	64	74.3	56
3/6/2012 0:09	63.7	70.7	57.1
3/6/2012 0:10	68.7	81.4	53.7
3/6/2012 0:12	64	71.6	57.9
3/6/2012 0:12	63.8	70.3	54.2
3/6/2012 0:13	64	75.2	55.1
3/6/2012 0:14	61.9	73.3	51.4
3/6/2012 0:15	61	68.3	53.1
3/6/2012 0:16	61.7	67.7	51.4
3/6/2012 0:17	60.4	69.1	52.9
3/6/2012 0:18	56.9	66.8	50.6
3/6/2012 0:19	64.7	74.8	54.4
3/6/2012 0:20	63.6	70.4	51.1
3/6/2012 0:21	65	74.6	54.9
3/6/2012 0:22	63.7	70.2	55.8
3/6/2012 0:23	64.3	74.7	52.2
3/6/2012 0:24	59.5	69.3	50.8
3/6/2012 0:25	61.5	72.1	51.3
3/6/2012 0:26	62.5	68.2	52.7
3/6/2012 0:27	62.7	66.8	56.3
			8
			L_{10} = 66.8

Meter C Noon	Leq-1	Lpk-1	Lmax-1	Cars	Trucks	Buses
3/6/2012 0:07	59.3	89.4	63.7	0	0	2
3/6/2012 0:08	55.2	67.3	58.1	1	0	0
3/6/2012 0:09	69	84.6	74.5	1	0	0
3/6/2012 0:10	60.6	67.9	66.6	3	0	1
3/6/2012 0:12	63.8	84.2	65.8	2	0	0
3/6/2012 0:12	61.7	92.6	65.4	1	0	0
3/6/2012 0:13	53	71.8	55	0	0	0
3/6/2012 0:14	61.6	76.6	66.8	0	0	0
3/6/2012 0:15	45	67.9	45.8	0	0	0
3/6/2012 0:16	54.4	69.9	59.1	1	0	1
3/6/2012 0:17	51.5	64.8	52	0	0	0
3/6/2012 0:18	56.4	70.6	56.9	0	0	0
3/6/2012 0:19	53.8	69.4	55.3	1	0	0
3/6/2012 0:20	76.5	86.8	82.6	1*	0	0
3/6/2012 0:21	58.1	71.1	59	1	0	0
3/6/2012 0:22	66.5	80.1	70.9	0	0	1
3/6/2012 0:23	58.3	73.6	62.6	0	0	1
3/6/2012 0:24	60.9	78.5	64.2	0	0	0
3/6/2012 0:25	53.4	77.1	54.3	0	0	0
3/6/2012 0:26	56.2	75.1	56.8	1	0	0
3/6/2012 0:27	51.7	71.5	54.9	1	0	0
				13	0	6
			PCE	13	0	108	**121**
				L_{10} = 56.8		

* motorcycle

* motorcycle

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AECOM
20 Exchange Place, 13th Floor
New York, NY 10005
T 212.991.2100
F 212.510.2599
www.aecom.com