Myrtle Avenue Text Amendment EAS
CEQR #: 18DCP155K
ULURP #: 180188 ZRK
5/18/18

City Environmental Quality Review
ENVIRONMENTAL ASSESSMENT STATEMENT (EAS) FULL FORM

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

Part I: GENERAL INFORMATION

PROJECT NAME Myrtle Avenue Text Amendment

1. *Reference Numbers*

CEQR REFERENCE NUMBER (to be assigned by lead agency)	BSA REFERENCE NUMBER (if applicable)
18DCP155K	
ULURP REFERENCE NUMBER (if applicable)	OTHER REFERENCE NUMBER(S) (if applicable)
180188 ZRK	(*e.g.*, legislative intro, CAPA)

2a. *Lead Agency Information*	**2b. *Applicant Information***
NAME OF LEAD AGENCY	NAME OF APPLICANT
New York City Planning Commission (CPC)	Red Apple 180 Myrtle Avenue Development, LLC; Red Apple Myrtle Avenue Development II, LLC; Red Apple 81 Fleet Place Development, LLC
NAME OF LEAD AGENCY CONTACT PERSON	NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON
Robert Dobruskin	Robert Zorn
ADDRESS 120 Broadway, 31st Floor	ADDRESS 800 Third Avenue
CITY New York City / STATE NY / ZIP 10271	CITY New York City / STATE NY / ZIP 10022
TELEPHONE 212-720-3423 / EMAIL rdobrus@planning.nyc.gov	TELEPHONE 212-262-5528 / EMAIL TO COME

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): 617.4(b)(9)

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*

Red Apple 180 Myrtle Avenue Development, LLC; Red Apple Myrtle Avenue Development II, LLC; and Red Apple 81 Fleet Place Development, LLC, which are colletively "the applicant," is seeking a text amendment to the Special Downtown Brooklyn District, ZR section 101-11 to modify the ground-floor use regulations for 180 Myrtle Avenue, 218 Myrtle Avenue, and 81 Fleet Place (the "Proposed Action"). Ground-floor use regulations currently limit ground-floor uses within 50 feet of the street line to commercial uses listed in Use Groups (UG) 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9, as well as libraries, museums, and non-commercial art galleries from Community Facility UG 3. The Proposed Actions would allow all non-residential uses listed in UG 3, 4, 5 ,6, 7, 8, 9, and 14 to be permitted at 180 Myrtle Avenue, 218 Myrtle Avenue, and 81 Fleet Place within 50 feet of the Myrtle Avenue street frontage, rather than only the Use Groups listed above. The residential use, square footage, height, floors, number of dwelling units, and number of parking spaces would not change under the Proposed Action. See Attachment A, "Project Description and Supplemental Analyses" for more information.

Project Location

BOROUGH Brooklyn	COMMUNITY DISTRICT(S) 2	STREET ADDRESS 180 Myrtle Avenue, 218 Myrtle Avenue, and 81 Fleet Place
TAX BLOCK(S) AND LOT(S) Block 2061, Lots 1, 101, and 110		ZIP CODE 11201

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS On the block bound by Myrtle Avenue to the north, Ashaland Place to the east, Willougby Street to the south, and Fleet Place to the west.

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION, IF ANY	ZONING SECTIONAL MAP NUMBER
R7-1, C2-4 overlay, Special Downtown Brooklyn District.	16c

5. *Required Actions or Approvals* (check all that apply)

City Planning Commission: ☒ YES ☐ NO ☐ UNIFORM LAND USE REVIEW PROCEDURE (ULURP)

☐ CITY MAP AMENDMENT	☐ ZONING CERTIFICATION	☐ CONCESSION
☐ ZONING MAP AMENDMENT	☐ ZONING AUTHORIZATION	☐ UDAAP
☒ ZONING TEXT AMENDMENT	☐ ACQUISITION—REAL PROPERTY	☐ REVOCABLE CONSENT

☐ SITE SELECTION—PUBLIC FACILITY ☐ DISPOSITION—REAL PROPERTY ☐ FRANCHISE
☐ HOUSING PLAN & PROJECT ☐ OTHER, explain:
☐ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:
SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

***Board of Standards and Appeals*:** ☐ YES ☒ NO
☐ VARIANCE (use)
☐ VARIANCE (bulk)
☐ SPECIAL PERMIT (if appropriate, specify type: ☐ modification; ☐ renewal; ☐ other); EXPIRATION DATE:
SPECIFY AFFECTED SECTIONS OF THE ZONING RESOLUTION

***Department of Environmental Protection*:** ☐ YES ☒ NO If "yes," specify:

Other City Approvals Subject to CEQR (check all that apply)
☐ LEGISLATION
☐ RULEMAKING
☐ CONSTRUCTION OF PUBLIC FACILITIES
☐ 384(b)(4) APPROVAL
☐ OTHER, explain:
☐ FUNDING OF CONSTRUCTION, specify:
☐ POLICY OR PLAN, specify:
☐ FUNDING OF PROGRAMS, specify:
☐ PERMITS, specify:

Other City Approvals Not Subject to CEQR (check all that apply)
☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC)
☐ LANDMARKS PRESERVATION COMMISSION APPROVAL
☐ OTHER, explain:

***State or Federal Actions/Approvals/Funding*:** ☐ YES ☒ NO If "yes," specify:

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

***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 x 17 inches in size and, for paper filings, must be folded to 8.5 x 11 inches.*

☒ SITE LOCATION MAP ☒ ZONING MAP ☒ SANBORN OR OTHER LAND USE MAP
☒ TAX MAP ☐ FOR LARGE AREAS OR MULTIPLE SITES, A GIS SHAPE FILE THAT DEFINES THE PROJECT SITE(S)
☒ PHOTOGRAPHS OF THE PROJECT SITE TAKEN WITHIN 6 MONTHS OF EAS SUBMISSION AND KEYED TO THE SITE LOCATION MAP

Physical Setting (both developed and undeveloped areas)
Total directly affected area (sq. ft.): 88,181 (lot area)
Waterbody area (sq. ft.) and type: 0
Roads, buildings, and other paved surfaces (sq. ft.): 88,1810
Other, describe (sq. ft.): 0

7. *Physical Dimensions and Scale of Project* (if the project affects multiple sites, provide the total development facilitated by the action)
SIZE OF PROJECT TO BE DEVELOPED (gross square feet): -8,178 commercial gsf, +8,178 community facility gsf.
NUMBER OF BUILDINGS: 3 (existing)
GROSS FLOOR AREA OF EACH BUILDING (sq. ft.): 248,512 (180 Myrtle Ave), 110,912 (218 Myrtle Ave), and 265,417 (81 Fleet Place).
HEIGHT OF EACH BUILDING (ft.): 157 ft (180 Myrtle Ave), 85 ft (218 Myrtle Ave), and 156 ft (81 Fleet Place).
NUMBER OF STORIES OF EACH BUILDING: 15 (180 Myrtle Ave), 9 (218 Myrtle Ave), and 15 (81 Fleet Place).

Does the proposed project involve changes in zoning on one or more sites? ☒ YES ☐ NO
If "yes," specify: The total square feet owned or controlled by the applicant: 88,181 (lot area)
The total square feet not owned or controlled by the applicant: 0

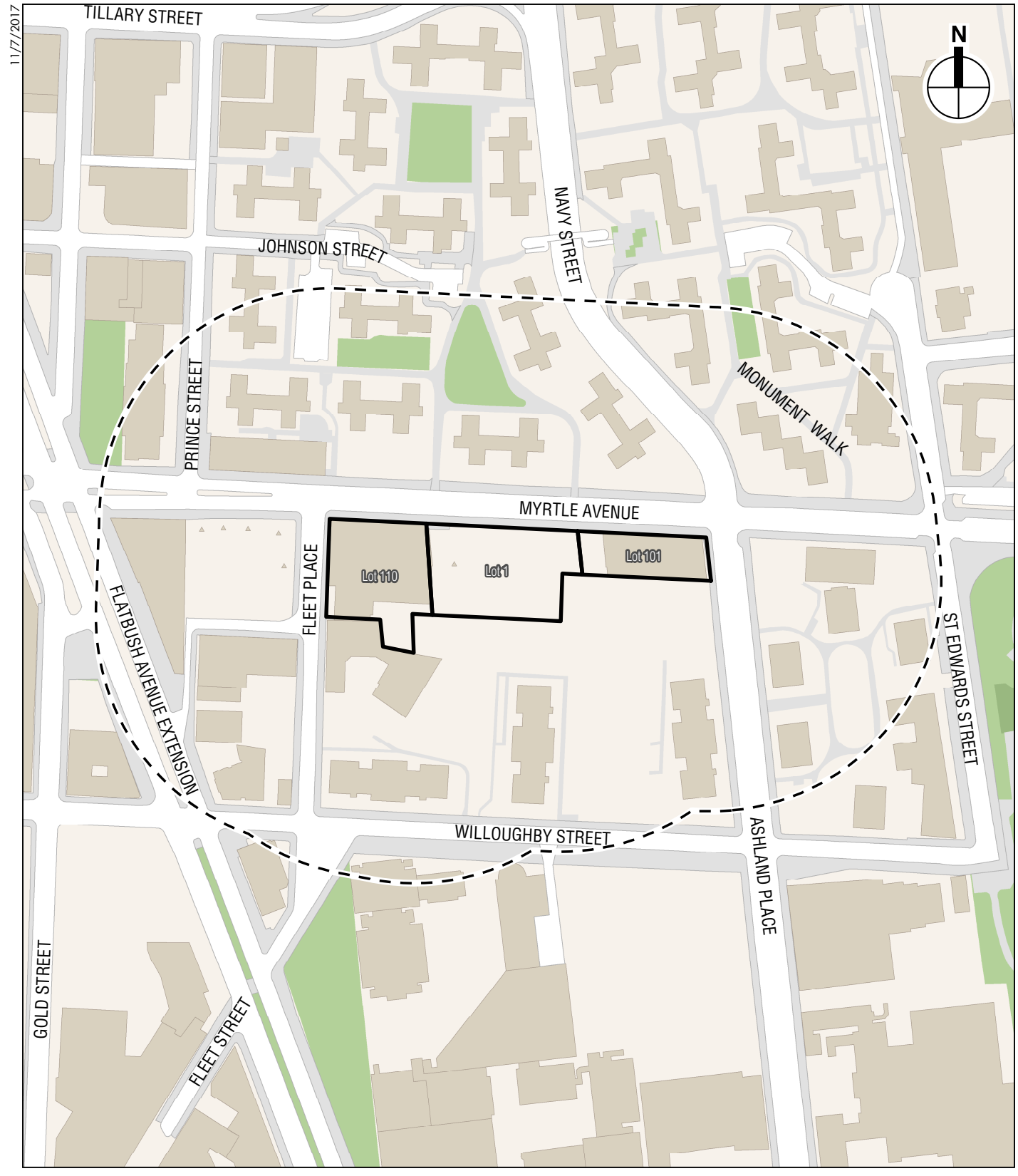
Does the proposed project involve in-ground excavation or subsurface disturbance, including, but not limited to foundation work, pilings, utility lines, or grading? ☐ YES ☒ NO
If "yes," indicate the estimated area and volume dimensions of subsurface disturbance (if known):
AREA OF TEMPORARY DISTURBANCE: sq. ft. (width x length) VOLUME OF DISTURBANCE: cubic ft. (width x length x depth)
AREA OF PERMANENT DISTURBANCE: sq. ft. (width x length)

8. *Analysis Year* CEQR Technical Manual Chapter 2

ANTICIPATED BUILD YEAR (date the project would be completed and operational): 2020
ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: Interior conversions only.
WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? ☒ YES ☐ NO IF MULTIPLE PHASES, HOW MANY?
BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE:

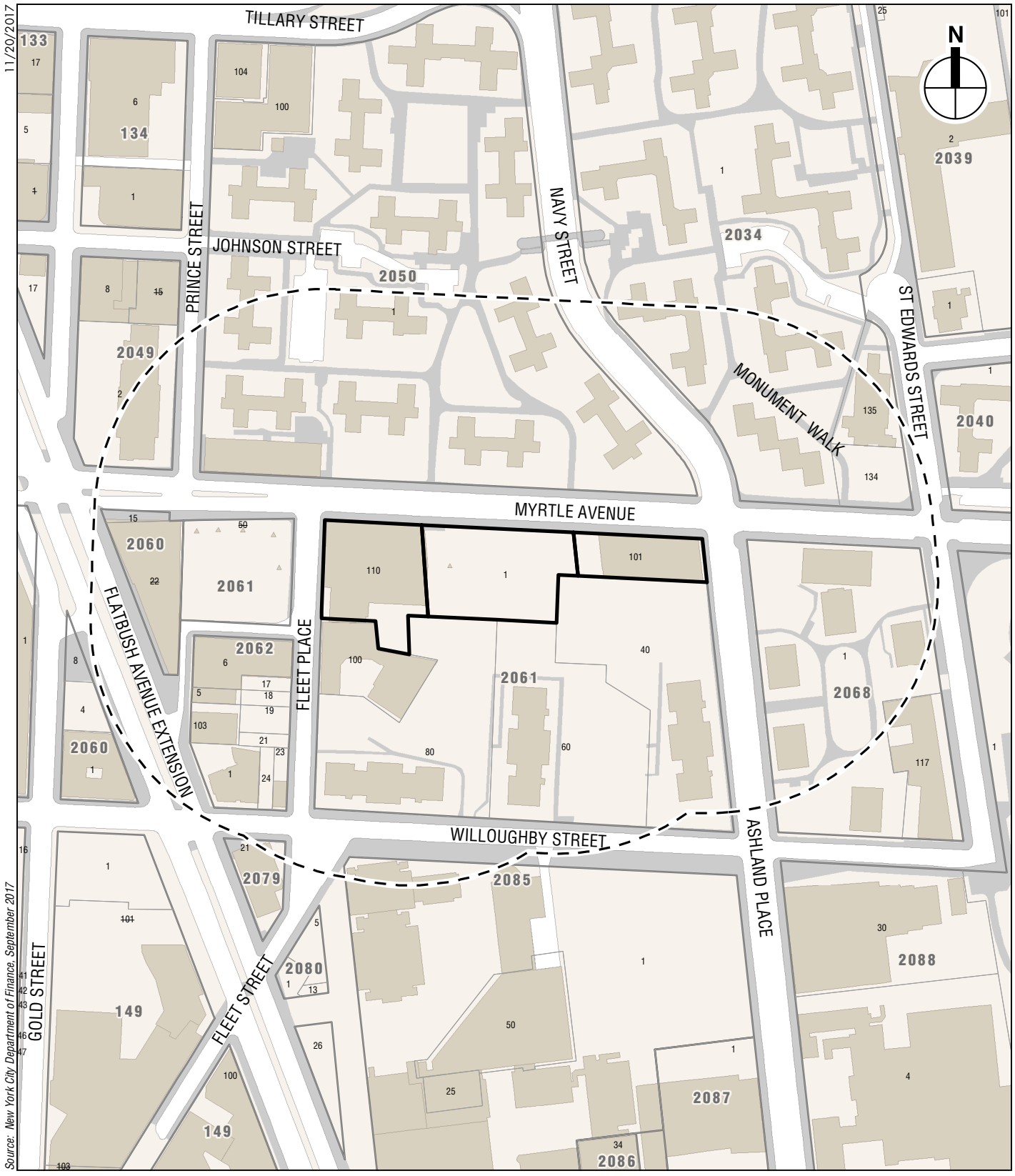
9. *Predominant Land Use in the Vicinity of the Project* (check all that apply)

☒ RESIDENTIAL	☐ MANUFACTURING	☒ COMMERCIAL	☒ PARK/FOREST/OPEN SPACE	☒ OTHER, specify: Instituional uses.



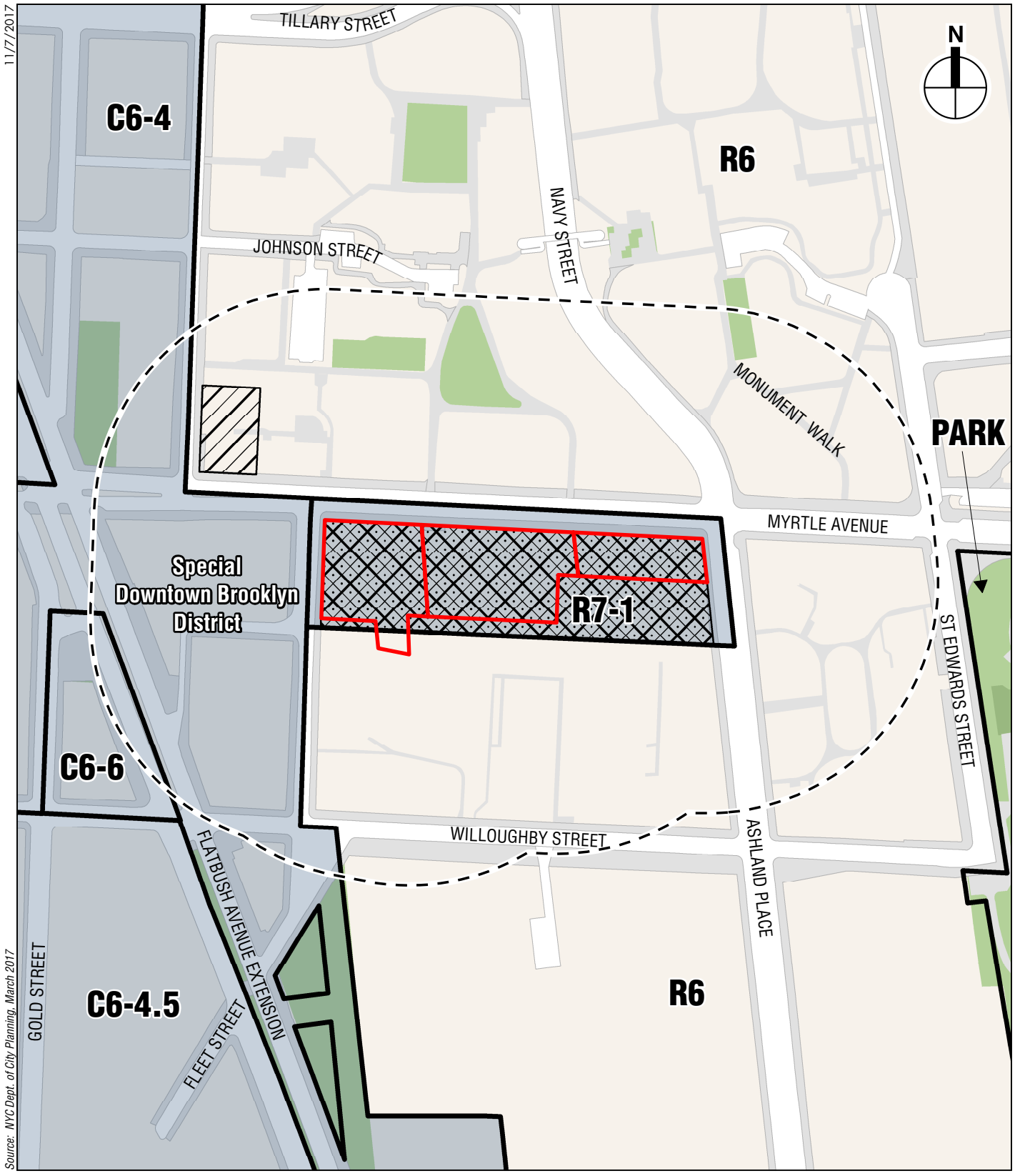
MYRTLE AVENUE TEXT AMENDMENT

Project Location
Figure 1



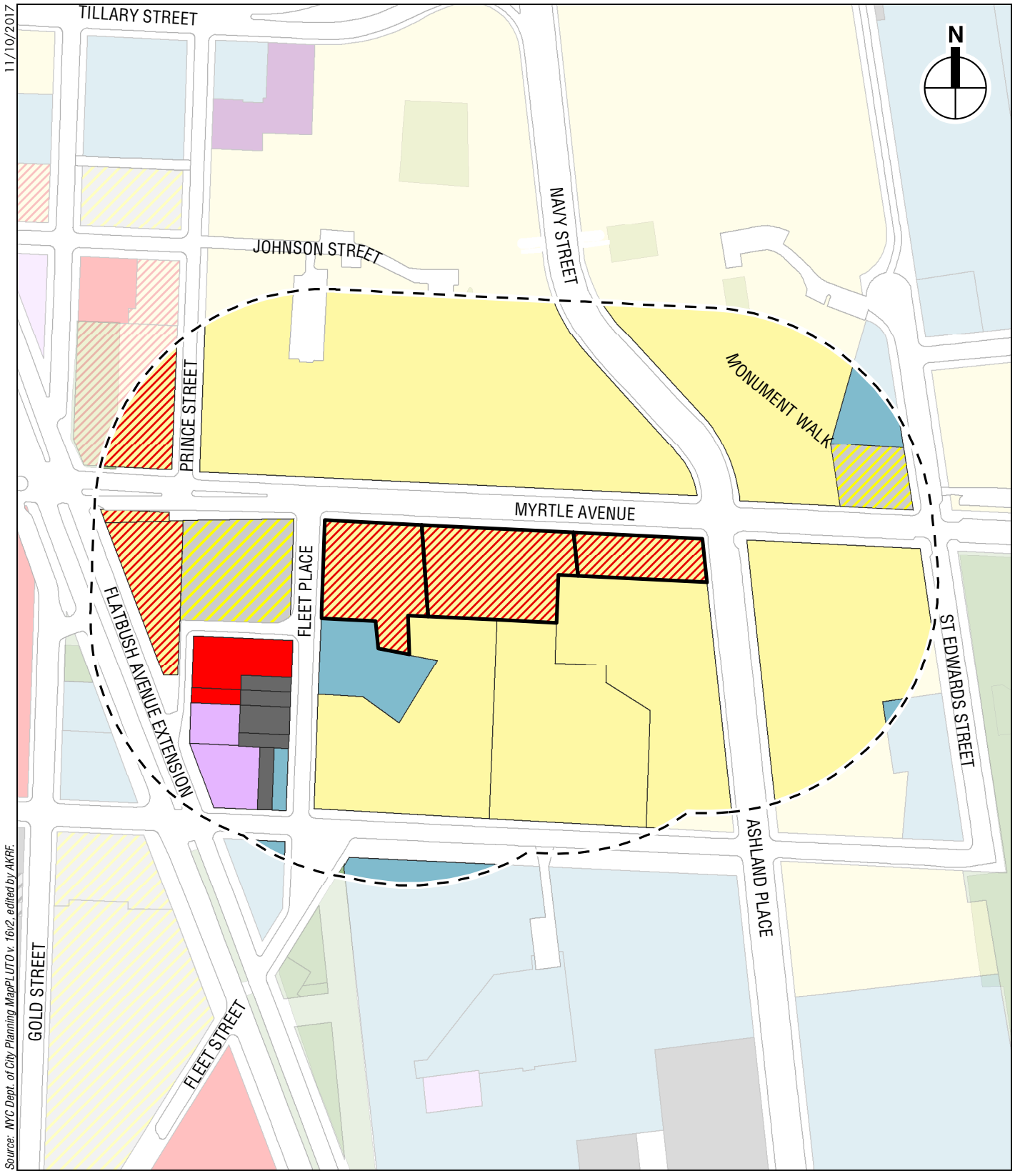
Tax Map
Figure 2

MYRTLE AVENUE TEXT AMENDMENT



MYRTLE AVENUE TEXT AMENDMENT

Zoning
Figure 3

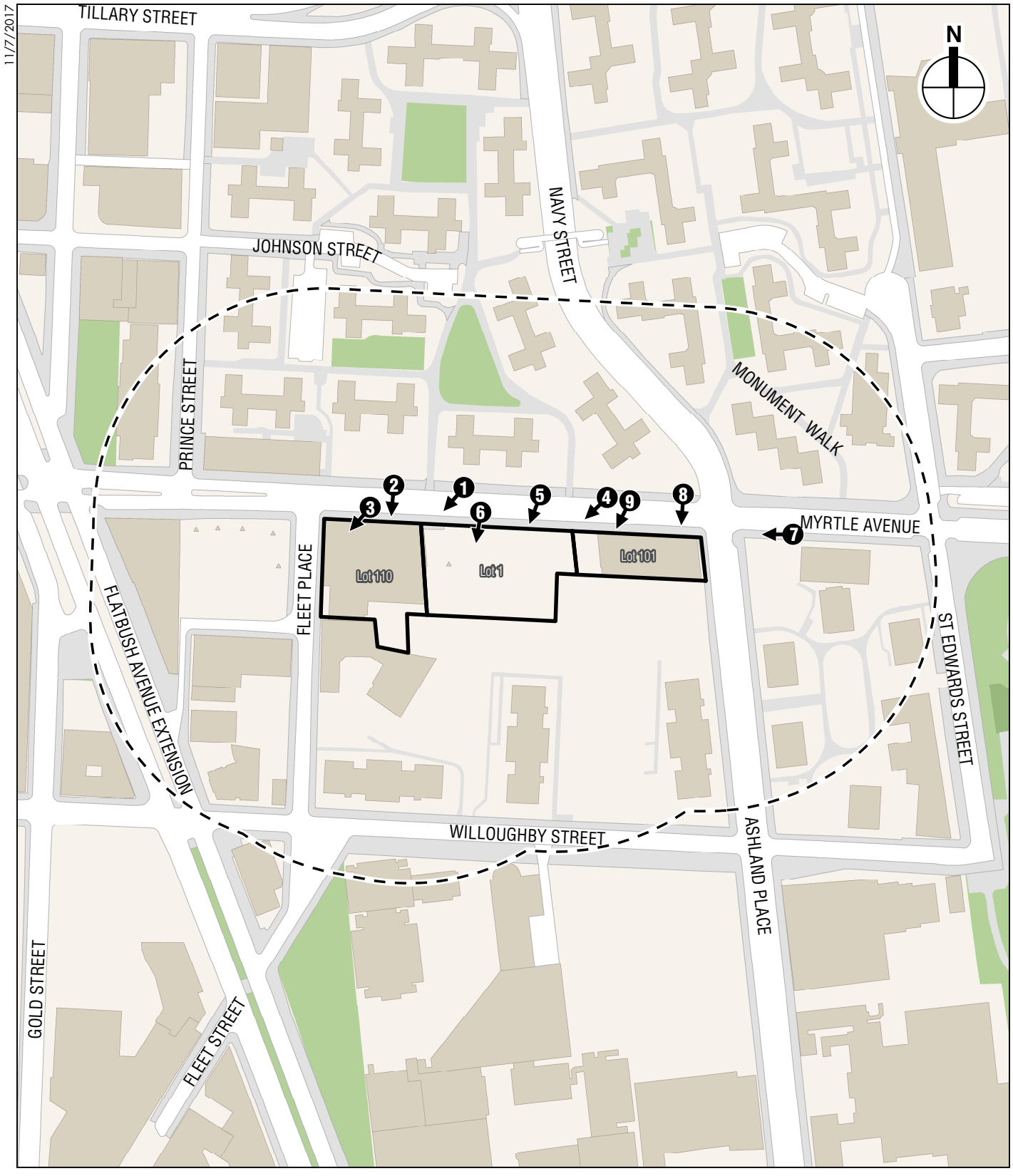


Project Sites
Study Area (400-foot boundary)
Commercial and Office Buildings
Parking Facilities
Public Facilities and Institutions
Residential
Residential with Commercial Below
Transportation and Utility
Under Construction

0 400 FEET

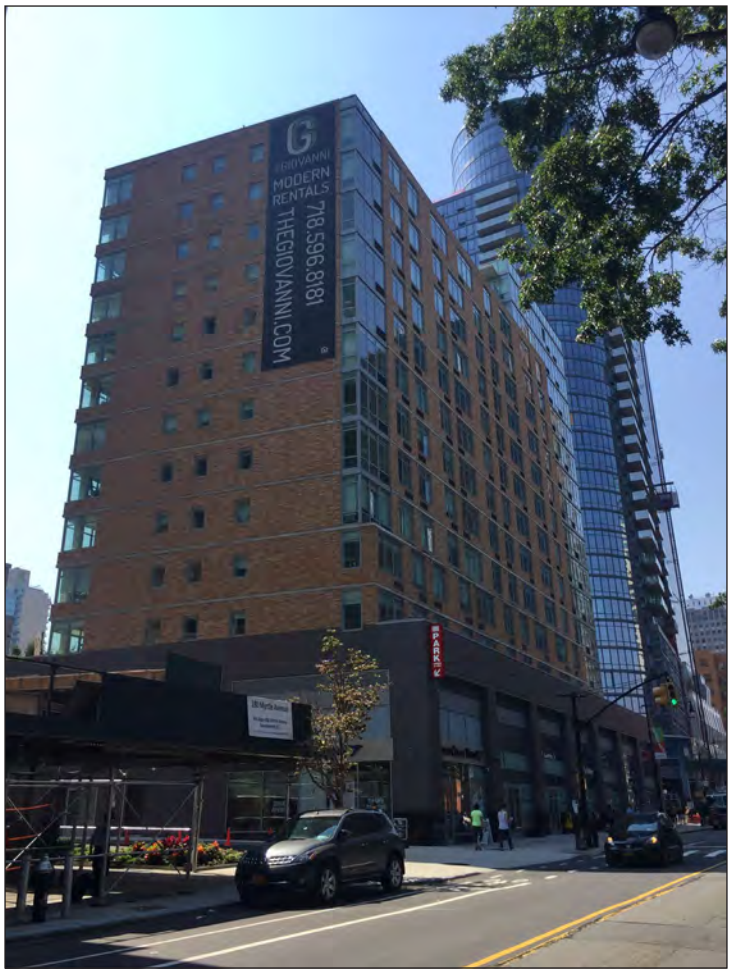
MYRTLE AVENUE TEXT AMENDMENT

Existing Land Use
Figure 4



MYRTLE AVENUE TEXT AMENDMENT

Photograph Location Key
Figure 5



1

2

Photographs
Figure 6a

3

4

Photographs
Figure 6b

5

6

Photographs
Figure 6c

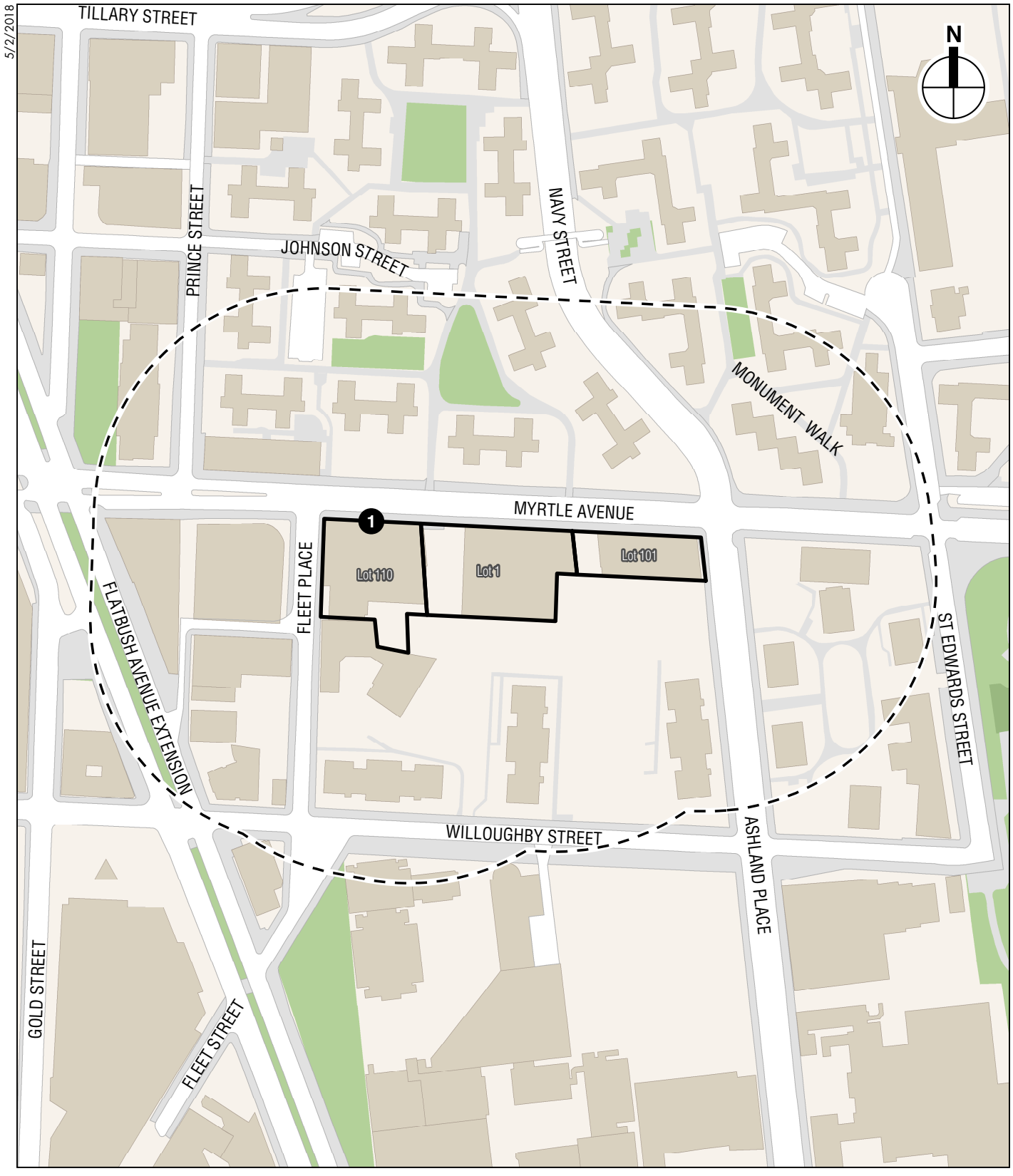
7

8

Photographs
Figure 6d

9

Photographs
Figure 6e



MYRTLE AVENUE TEXT AMENDMENT

Noise Receptor Location
Figure 7

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:				
Describe type of residential structures	3 residential apartment buildings with ground floor retail space.	3 residential apartment buildings with ground floor retail space.	3 residential apartment buildings with ground floor retail space.	None
No. of dwelling units	528	528	528	0
No. of low- to moderate-income units	46	46	46	0
Gross floor area (sq. ft.)	589,587	589,587	589,587	0
Commercial	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify the following:				
Describe type (retail, office, other)	Retail/Vacant	Retail/Vacant	Retail	None
Gross floor area (sq. ft.)	35,254	35,254 (of which approximately 8,178 gsf will remain unoccupied)	27,076	-8,178
Manufacturing/Industrial	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If "yes," specify the following:				
Type of use				
Gross floor area (sq. ft.)				
Open storage area (sq. ft.)				
If any unenclosed activities, specify:				
Community Facility	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify the following:				
Type			Any CF use permitted by underyling zoning.	
Gross floor area (sq. ft.)	500	500	8,678	+8,178
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 Uses	☐ 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	287	287	287	0
Operating hours				
Attended or non-attended				
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:				

	EXISTING CONDITION	NO-ACTION CONDITION	WITH-ACTION CONDITION	INCREMENT
POPULATION				
Residents	☒ YES ☐ NO	☒ YES ☐ NO	☒ YES ☐ NO	
If "yes," specify number:	1,542	1,542	1,542	0
Briefly explain how the number of residents was calculated:	The number of Dwelling Units was multiplied by the Community District 2 average household size of 2.92			
Businesses	☒ YES ☐ NO	☒ YES ☐ NO	☐ YES ☐ NO	
If "yes," specify the following:				
No. and type	Retail	Retail	Retail	None
No. and type of workers by business	71	71	71	0
No. and type of non-residents who are not workers				
Briefly explain how the number of businesses was calculated:	The sf of retail space was divided by 1 employee per 333 sf.			
Other (students, visitors, concert-goers, *etc.*)	☐ YES ☒ NO	☐ YES ☒ NO	☐ YES ☒ NO	
If any, specify type and number:				
Briefly explain how the number was calculated:				
ZONING				
Zoning classification	R7-1/C2-4	R7-1/C2-4	R7-1/C2-4	
Maximum amount of floor area that can be developed	4.8 FAR	4.8 FAR	4.8 FAR	None
Predominant land use and zoning classifications within land use study area(s) or a 400 ft. radius of proposed project	Residentail, commercial, instituional, park.	Residentail, commercial, instituional, park.	Residentail, commercial, instituional, park.	None
Attach any additional information that may be needed to describe the project. If your project involves changes that affect one or more sites not associated with a specific development, it is generally appropriate to include total development projections in the above table and attach separate tables outlining the reasonable development scenarios for each site.				

Part II: TECHNICAL ANALYSIS

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, provide additional analyses (and, if needed, attach supporting information) based on guidance in the CEQR Technical Manual 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 means that more information may be required for the lead agency to make a determination of significance.
- The lead agency, upon reviewing Part II, may require an applicant to 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 different from surrounding land uses?	☐	☒
(b) Would the proposed project result in a change in zoning different from surrounding zoning?	☐	☒
(c) Is there the potential to affect an applicable public policy?	☐	☒
(d) If "yes," to (a), (b), and/or (c), complete a preliminary assessment and attach. See Attachment B.		
(e) Is the project a large, publicly sponsored project?	☐	☒
o If "yes," complete a PlaNYC assessment and attach.		
(f) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries?	☐	☒
o If "yes," complete the Consistency Assessment Form.		
2. *SOCIOECONOMIC CONDITIONS*: CEQR Technical Manual Chapter 5		
(a) Would the proposed project:		
o Generate a net increase of more than 200 residential units *or* 200,000 square feet of commercial space?	☐	☒
▪ If "yes," answer *both* questions 2(b)(ii) and 2(b)(iv) below.		
o Directly displace 500 or more residents?	☐	☒
▪ If "yes," answer questions 2(b)(i), 2(b)(ii), and 2(b)(iv) below.		
o Directly displace more than 100 employees?	☐	☒
▪ If "yes," answer questions under 2(b)(iii) and 2(b)(iv) below.		
o Affect conditions in a specific industry?	☐	☒
▪ If "yes," answer question 2(b)(v) below.		
(b) If "yes" to any of the above, attach supporting information to answer the relevant questions below. If "no" was checked for each category above, the remaining questions in this technical area do not need to be answered.		
i. Direct Residential Displacement		
o If more than 500 residents would be displaced, would these residents represent more than 5% of the primary study area population?	☐	☐
o 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?	☐	☐
ii. Indirect Residential Displacement		
o Would expected average incomes of the new population exceed the average incomes of study area populations?	☐	☐
o If "yes:"		
▪ Would the population of the primary study area increase by more than 10 percent?	☐	☐
▪ Would the population of the primary study area increase by more than 5 percent in an area where there is the potential to accelerate trends toward increasing rents?	☐	☐
o If "yes" to either of the preceding questions, would more than 5 percent of all housing units be renter-occupied and unprotected?	☐	☐
iii. Direct Business Displacement		
o Do any of the displaced businesses provide goods or services that otherwise would not be found within the trade area, either under existing conditions or in the future with the proposed project?	☐	☐

	YES	NO
o Is any category of business to be displaced the subject of other regulations or publicly adopted plans to preserve, enhance, or otherwise protect it?	☐	☐
iv. Indirect Business Displacement		
o Would the project potentially introduce trends that make it difficult for businesses to remain in the area?	☐	☐
o Would the project capture retail sales in a particular category of goods to the extent that the market for such goods would become saturated, potentially resulting in vacancies and disinvestment on neighborhood commercial streets?	☐	☐
v. Effects on Industry		
o Would the project significantly affect business conditions in any industry or any category of businesses within or outside the study area?	☐	☐
o 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) Direct Effects		
o Would the project directly eliminate, displace, or alter public or publicly funded community facilities such as educational facilities, libraries, health care facilities, day care centers, police stations, or fire stations?	☐	☒
(b) Indirect Effects		
i. Child Care Centers		
o Would the project result in 20 or more eligible children under age 6, based on the number of low or low/moderate income residential units? (See Table 6-1 in Chapter 6)	☐	☒
o If "yes," 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?	☐	☐
o If "yes," would the project increase the collective utilization rate by 5 percent or more from the No-Action scenario?	☐	☐
ii. Libraries		
o Would the project result in a 5 percent or more increase in the ratio of residential units to library branches? (See Table 6-1 in Chapter 6)	☐	☒
o If "yes," would the project increase the study area population by 5 percent or more from the No-Action levels?	☐	☐
o If "yes," would the additional population impair the delivery of library services in the study area?	☐	☐
iii. Public Schools		
o Would the project result in 50 or more elementary or middle school students, or 150 or more high school students based on number of residential units? (See Table 6-1 in Chapter 6)	☐	☒
o If "yes," 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 100 percent?	☐	☐
o If "yes," would the project increase this collective utilization rate by 5 percent or more from the No-Action scenario?	☐	☐
iv. Health Care Facilities		
o Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
o If "yes," would the project affect the operation of health care facilities in the area?	☐	☐
v. Fire and Police Protection		
o Would the project result in the introduction of a sizeable new neighborhood?	☐	☒
o If "yes," would the project affect the operation of fire or police protection in the area?	☐	☐
4. *OPEN SPACE*: CEQR Technical Manual Chapter 7		
(a) Would the project change or eliminate existing open space?	☐	☒
(b) Is the project located within an under-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
(c) If "yes," would the project generate more than 50 additional residents or 125 additional employees?	☐	☐
(d) Is the project located within a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?	☐	☒
(e) If "yes," would the project generate more than 350 additional residents or 750 additional employees?	☐	☐
(f) If the project is located in an area that is neither under-served nor well-served, would it generate more than 200 additional residents or 500 additional employees?	☐	☒
(g) If "yes" to questions (c), (e), or (f) above, attach supporting information to answer the following:		
o If in an under-served area, would the project result in a decrease in the open space ratio by more than 1 percent?	☐	☐

	YES	NO
o If in an area that is not under-served, would the project result in a decrease in the open space ratio by more than 5 percent?	☐	☐
o If "yes," are there qualitative considerations, such as the quality of open space, that need to be considered? Please specify:	☐	☐
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?	☐	☒
(c) If "yes" to either of the above questions, attach supporting information explaining whether the project's shadow would reach any sunlight-sensitive resource at any time of the year.		
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; that is listed or eligible for listing on the New York State or National Register of Historic Places; or that is within a designated or eligible New York City, New York State or National Register Historic District? (See the GIS System for Archaeology and National Register to confirm)	☒	☐
(b) Would the proposed project involve construction resulting in in-ground disturbance to an area not previously excavated?	☐	☒
(c) If "yes" to either of the above, list any identified architectural and/or archaeological resources and attach supporting information on whether the proposed project would potentially affect any architectural or archeological resources.		
7. *URBAN DESIGN AND VISUAL RESOURCES*: 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 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) Does the proposed project site or a site adjacent to the project contain natural resources as defined in Section 100 of Chapter 11?	☐	☒
o If "yes," list the resources and attach supporting information on whether the project would affect any of these resources.		
(b) Is any part of the directly affected area within the Jamaica Bay Watershed?	☐	☒
o If "yes," complete the Jamaica Bay Watershed Form and submit according to its instructions.		
9. *HAZARDOUS MATERIALS*: CEQR Technical Manual Chapter 12		
(a) Would the proposed project allow commercial or residential uses 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) designation or Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?	☒	☐
(c) Would the project require soil disturbance in a manufacturing area or any development on or near a manufacturing area or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?	☐	☒
(d) Would 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) Would the project result in development on or near a site that has or had underground and/or aboveground storage tanks (*e.g.*, gas stations, oil storage facilities, heating oil storage)?	☐	☒
(f) Would the project result in renovation of interior existing space on a site with the potential for compromised air quality; vapor intrusion from either on-site or off-site sources; or the presence of asbestos, PCBs, mercury or lead-based paint?	☐	☒
(g) Would the project result in development on or near a site with potential hazardous materials issues such as government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, coal gasification or gas storage sites, railroad tracks or rights-of-way, or municipal incinerators?	☐	☒
(h) Has a Phase I Environmental Site Assessment been performed for the site?	☒	☐
o If "yes," were Recognized Environmental Conditions (RECs) identified? Briefly identify: For 180 Myrtle Place and 81 Fleet Place groundwater contamination with tetrachlorothene in wells along Myrtle Avenue were recognized. The sites are proposed Brownfield with Hazmat E-Designations. For 218 Myrtle Avenue a nearby drycleaners and underground petroleum storage tanks (USTs) were identified. All RECs were addressed as part of the construction of the three buildings.	☒	☐
(i) Based on the Phase I Assessment, is a Phase II Investigation needed?	☐	☐
10. *WATER AND SEWER INFRASTRUCTURE*: CEQR Technical Manual Chapter 13		

	YES	NO
(a) Would the project result in water demand of more than one million gallons per day?	☐	☒
(b) If the proposed project located in a combined sewer area, would it result in at least 1,000 residential units or 250,000 square feet or more of commercial space in Manhattan, or at least 400 residential units or 150,000 square feet or more of commercial space in the Bronx, Brooklyn, Staten Island, or Queens?	☐	☒
(c) If the proposed project located in a separately sewered area, would it result in the same or greater development than that listed in Table 13-1 in Chapter 13?	☐	☐
(d) Would the project involve development on a site that is 5 acres or larger where the amount of impervious surface would increase?	☐	☒
(e) If the project 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, would it involve development on a site that is 1 acre or larger where the amount of impervious surface would increase?	☐	☒
(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 Wastewater Treatment Plant and/or contribute contaminated stormwater to 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 appropriate preliminary analyses and attach supporting documentation.		
11. *SOLID WASTE AND SANITATION SERVICES*: CEQR Technical Manual Chapter 14		
(a) Using Table 14-1 in Chapter 14, the project's projected operational solid waste generation is estimated to be (pounds per week): 923		
o Would the proposed project have the potential to generate 100,000 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?	☐	☒
o If "yes," would the proposed project comply with the City's Solid Waste Management Plan?	☐	☐
12. *ENERGY*: CEQR Technical Manual Chapter 15		
(a) Using energy modeling or Table 15-1 in Chapter 15, the project's projected energy use is estimated to be (annual BTUs): 2,050,225		
(b) Would the proposed project affect the transmission or generation of energy?	☐	☒
13. *TRANSPORTATION*: CEQR Technical Manual Chapter 16		
(a) Would the proposed project exceed any threshold identified in Table 16-1 in Chapter 16?	☐	☒
(b) If "yes," conduct the appropriate screening analyses, attach back up data as needed for each stage, and answer the following questions:		
o 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 peak hour. See Subsection 313 of Chapter 16 for more information.*	☐	☐
o 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/rail trips per station or line?	☐	☐
o 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		
(a) *Mobile Sources*: Would the proposed project result in the conditions outlined in Section 210 in Chapter 17?	☐	☒
(b) *Stationary Sources*: Would the proposed project result in the conditions outlined in Section 220 in Chapter 17?	☐	☒
o If "yes," would the proposed project exceed the thresholds in Figure 17-3, Stationary Source Screen Graph in Chapter 17? (Attach graph as needed)	☐	☐
(c) Does the proposed project involve multiple buildings on the project site?	☒	☐
(d) Does the proposed project require federal approvals, support, licensing, or permits subject to conformity requirements?	☐	☒
(e) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?	☐	☒
(f) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation.		
15. *GREENHOUSE GAS EMISSIONS*: CEQR Technical Manual Chapter 18		
(a) Is the proposed project a city capital project or a power generation plant?	☐	☒

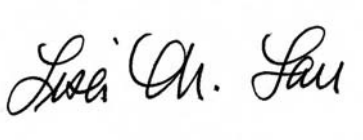
	YES	NO
(b) Would the proposed project fundamentally change the City's solid waste management system?	☐	☒
(c) Would the proposed project result in the development of 350,000 square feet or more?	☐	☒
(d) If "yes" to any of the above, would the project require a GHG emissions assessment based on guidance in Chapter 18?	☐	☐
o If "yes," would the project result in inconsistencies with the City's GHG reduction goal? (See Local Law 22 of 2008; § 24-803 of the Administrative Code of the City of New York). Please attach supporting documentation.	☐	☐
16. *NOISE*: CEQR Technical Manual Chapter 19		
(a) Would the proposed project generate or reroute vehicular traffic?	☐	☒
(b) 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?	☐	☒
(c) 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?	☐	☒
(d) Does the proposed project site have existing institutional controls (*e.g.*, (E) designation or Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?	☐	☒
(e) If "yes" to any of the above, conduct the appropriate analyses and attach any supporting documentation.		
17. *PUBLIC HEALTH*: CEQR Technical Manual Chapter 20		
(a) Based upon the analyses conducted, do any of the following technical areas require a detailed analysis: Air Quality; Hazardous Materials; Noise?	☐	☒
(b) If "yes," explain why an assessment of public health is or is not warranted based on the guidance in Chapter 20, "Public Health." Attach a preliminary analysis, if necessary.		
18. *NEIGHBORHOOD CHARACTER*: CEQR Technical Manual Chapter 21		
(a) Based upon the analyses conducted, do any of the following technical areas require 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?	☐	☒
(b) If "yes," explain why an assessment of neighborhood character is or is not warranted based on the guidance in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary.		
19. *CONSTRUCTION*: CEQR Technical Manual Chapter 22		
(a) Would the project's construction activities involve:		
o Construction activities lasting longer than two years?	☐	☒
o Construction activities within a Central Business District or along an arterial highway or major thoroughfare?	☐	☒
o Closing, narrowing, or otherwise impeding traffic, transit, or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, *etc.*)?	☐	☒
o Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out?	☐	☒
o The operation of several pieces of diesel equipment in a single location at peak construction?	☐	☒
o Closure of a community facility or disruption in its services?	☐	☒
o Activities within 400 feet of a historic or cultural resource?	☐	☒
o Disturbance of a site containing or adjacent to a site containing natural resources?	☐	☒
o Construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap or last for more than two years overall?	☐	☒
(b) If any boxes are checked "yes," explain why a preliminary construction assessment is or is not warranted based on the guidance 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.		

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 the 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 applicant or representative of the entity that seeks the permits, approvals, funding, or other governmental action(s) described in this EAS.

APPLICANT/REPRESENTATIVE NAME	SIGNATURE	DATE

Lisa Lau, AKRF, Inc.		5-18-18

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

2. Are there any aspects of the project relevant to the determination of 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? ☐ YES ☒ NO

If there are such impacts, attach an explanation stating whether, as a result of them, the project may have a significant impact on the environment.

3. Check determination to be issued by the lead agency:

☐ **Positive Declaration**: 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* and prepares a draft Scope of Work for the Environmental Impact Statement (EIS).

☐ **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 of 6 NYCRR Part 617.

☒ **Negative Declaration:** If the lead agency has determined that the project would not result in potentially significant adverse environmental impacts, then the lead agency issues a *Negative Declaration*. The *Negative Declaration* may be prepared as a separate document (see template) or using the embedded Negative Declaration on the next page.

4. ***LEAD AGENCY'S CERTIFICATION***

TITLE	LEAD AGENCY
Deputy Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME	DATE
Olga Abinader	5/18/2018

SIGNATURE

NEGATIVE DECLARATION (Use of this form is optional)

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 6 NYCRR, Part 617, State Environmental Quality Review, the Department of City Planning, acting on behalf of the City Planning Commission 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 lead agency 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, which finds that the proposed project:
and related actions sought before the City Planning Commission would have no significant effect on the quality of the environment. Reasons supporting this Determination are noted below.

Noise:
1. An (E) designation (E-482) for noise has been incorporated into the proposed actions. Refer to "Determination of Significance Appendix: (E) Designation" for a list of sites affected by the revised (E) designation and applicable (E) designation requirements. This (E) designation will supersede the (E) designation (E-124) for noise placed on multiple lots in the project area as part of the Special Downtown Brooklyn District Rezoning (CEQR No. 03DME016K). With these measures in place, the proposed actions would not result in significant adverse impacts to noise or hazardous materials.

Land Use, Zoning and Public Policy
3. This EAS Includes a detailed Land Use, Zoning and Public Policy section, which analyzes the potential significance of the proposed action on land use, zoning and public policy in the study area. The proposed text amendment would modify the Ground Floor Use Regulations of the Special Downtown Brooklyn District to allow any non-residential use permitted by underlying zoning at the ground floor level on the three Project Sites. The proposed action would facilitate a change of use from commercial to community facility in an area characterized by diverse uses including residential, commercial, mixed residential/commercial and community facility uses. The analysis concludes that no significant adverse impacts related to Land Use, Zoning and Public Policy would result from the proposed action.

No other significant 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
Deputy Director, Environmental Assessment and Review Division	Department of City Planning, acting on behalf of the City Planning Commission
NAME	DATE
Olga Abinader	5/18/2018
SIGNATURE	

TITLE	
Chair, Department of City Planning	
NAME	DATE
Marisa Lago	5/21/2018
SIGNATURE	

Determination of Significance Appendix: (E) Designation

An (E) Designation **(E-482)** related to noise will be assigned to 81 Fleet Place (Block 2061, Lot 110) and 218 Myrtle Avenue (Block 2061, Lot 101) in order to preclude significant adverse impacts, as noted below. The (E) designation (E-482) supersedes a previously-assigned (E) designation (E-124) assigned to the affected sites in connection with the Special Downtown Brooklyn District Rezoning (CEQR Number 03DME016K). The (E) Designation requirements are as follows:

81 Fleet Place (Block 2061, Lot 110)

In order to ensure an acceptable interior noise environment, future ground-floor community facility uses must provide a closed-window condition with a minimum of 28 dB(A) window/wall attenuation on all facades in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning.

218 Myrtle Avenue (Block 2061, Lot 101)

In order to ensure an acceptable interior noise environment, future ground-floor community facility uses must provide a closed-window condition with a minimum of 28 dB(A) window/wall attenuation on all facades in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning.

A. PROJECT DESCRIPTION

Red Apple 180 Myrtle Avenue Development, LLC; Red Apple Myrtle Avenue Development II, LLC; Red Apple 81 Fleet Place Development, LLC, which are collectively "the Applicant," are seeking a text amendment to the Special Downtown Brooklyn District (SDBD), ZR Section 101-11, to modify the ground-floor use regulations for 180 Myrtle Avenue, 218 Myrtle Avenue, and 81 Fleet Place (Block 2061, Lots 1, 101, and 110; "the Project Sites"). Zoning Resolution (ZR) Section 101-11 currently limits ground floor uses within 50 feet of the street line to commercial uses listed in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9, as well as libraries, museums, and non-commercial art galleries from UG 3 (the "Ground Floor Use Regulations"). Further, lobbies for uses not permitted on the ground floor are allowed for up to 25 percent of the street wall width of the building or 40 feet, whichever is less.

The Project Sites are located in a R7-1 district with a C2-4 overlay, and are also located in the SDBD. The three sites occupy the northern portion of a block bounded to the north by Myrtle Avenue, to the east by Ashland Place, to the south by Willoughby Street, and to the west by Fleet Place, see Figure 1. The Project Sites are currently occupied by the Applicant's three buildings: "The Margo," a 248,512-gross-square-foot (gsf) building at 180 Myrtle Avenue; "The Andrea," an 110,912-gsf building at 218 Myrtle Avenue; and "The Giovanni," a 265,417-gsf building at 81 Fleet Place. The proposed text modification to the SDBD would allow all non-residential uses listed in UG 3, 4, 5, 6, 7, 8, 9 and 14 to be permitted in the project area within 50 feet of the street frontage, rather than only museum, library, and gallery uses from Use Groups 3 and commercial uses in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9 (the "Proposed Action"). It is anticipated that this change would replace approximately 8,178 square feet (sf) of currently unoccupied commercial space with community facility uses. Collectively these changes constitute the "Proposed Project." Existing limitations on the width of lobbies for uses not permitted on the ground floor would continue to apply to residential use.

PURPOSE AND NEED

The Proposed Action is being sought because the Applicant has had difficulty finding commercial establishments to occupy the ground floor retail space across the three Project Sites. 16,355 sf of the 35,254 total sf of retail space on the ground floor of the three buildings is unoccupied at the moment, and the owners have received inquiries from community facilities operators in regard to locating within the buildings. They are however, currently prevented from doing so by the Ground Floor Use Regulations discussed above. Modifying the Ground Floor Use Regulations would afford the owners flexibility necessary to fully lease their ground floor spaces.

B. FRAMEWORK FOR ANALYSIS

This document has been prepared using the guidelines presented in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*.

EXISTING CONDITIONS

The analysis framework begins with an assessment of existing conditions on the project site and in the relevant study area because these can be most directly measured and observed. The assessment of existing conditions does not represent the conditions against which the proposed project is measured, but serves as a baseline for the projection of future conditions with and without the proposed project and the analysis of project impacts.

THE FUTURE WITHOUT THE PROPOSED ACTION

The future without the proposed action (the "No Action" condition) describes a future baseline condition to which the changes that are expected to result from the proposed text amendment are compared. For each required technical analysis, approved or designated development projects within the appropriate study area that are likely to be completed by the 2020 analysis year are considered.

Absent the proposed action, the project site would remain in its current state. The Ground Floor Use Modifications would not be modified and the permitted uses for the approximately 16,355 sf of unoccupied space would remain limited to uses listed in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9, as well as libraries, museums, and non-commercial art galleries from UG 3.

THE FUTURE WITH THE PROPOSED ACTION

The identification of potential environmental impacts is based upon the comparison of the future without the proposed project to conditions in the future with the proposed project. In certain technical areas such as transportation, this comparison can be quantified and the severity of the impact rated in accordance with the *CEQR Technical Manual*. In other technical areas, (e.g., neighborhood character), the analysis is qualitative in nature. The methodology for each analysis is presented at the start of each technical analysis. As summarized in the following screening analyses and attachments, the proposed action would not result in any significant adverse impacts.

As discussed above, in the future with the proposed action, the Ground Floor Use Regulations would be modified for the three Project Sites to allow all non-residential uses listed in UG 3, 4, 5, 6, 7, 8, 9, and 14 to be permitted within 50 feet of the streetwall on the ground floor level.

C. SUPPLEMENTAL ANALYSES

LAND USE, ZONING, AND PUBLIC POLICY

See Attachment B, "Land Use, Zoning, and Public Policy."

SOCIOECONOMIC CONDITIONS

According to the *CEQR Technical Manual*, a socioeconomic assessment should be conducted if a project may reasonably be expected to create substantial socioeconomic changes within the area affected by the project that would not occur in the absence of the project. Projects that would trigger a CEQR analysis include the following:

- Direct displacement of 500 or more residents or more than 100 employees.
- Direct displacement of a business that is uniquely significant because its products or services are dependent on its location; it is the subject of other regulations or publicly adopted plans aimed at its preservation because of its type or location; or it serves a population that is uniquely dependent on its services, in its particular location.

- The development of 200 residential units or more or 200,000 sf or more of commercial use that is markedly different from existing uses, development, and activities in the neighborhood. This type of development may lead to indirect residential or business displacement, respectively.
- The development of 200,000 sf or more of retail on a single development site, creating the potential to draw a substantial amount of sales from existing businesses within the study area. This type of development may lead to indirect business displacement due to market saturation.
- Impacts on a specific industry; for example, if a substantial number of residents or workers depend on the goods or services provided by the specific affected business, or if it would result in the loss or diminution of a certain product or service that is important within the City.

The Proposed Action would involve a text amendment to allow any non-residential use within UG 3, 4, 5, 6, 7, 8, 9, and 14 on ground floors of the Project Sites, and is anticipated to permit 8,178 gsf of community facility uses on those sites. Therefore, the Proposed Project would not result in significant adverse socioeconomic impacts, and further analysis is not warranted.

COMMUNITY FACILITIES AND SERVICES

The Proposed Project would not displace any community facilities. In addition, the Proposed Project does not require an analysis of potential indirect effects on community facilities, following the guidance of the *CEQR Technical Manual*:

- Schools, Child Care Facilities, Libraries: The proposed project would not result in any housing units. Therefore, the proposed project would not result in significant adverse impacts to schools, child care facilities, and libraries in the area and no further analyses are warranted.
- Police/Fire Protection Services and Health Care Facilities: Because the proposed project would not introduce a sizeable new neighborhood, an assessment of police/fire protection services and health care facilities is not warranted.

Overall, the Proposed Project would not result in any significant adverse impacts to community facilities and services and no further analysis is warranted.

OPEN SPACE

Open space is defined as publicly or privately owned land that is publicly accessible and operates, functions, or is available for leisure, play or sport, or set aside for the protection and/or enhancement of the natural environment. The *CEQR Technical Manual* recommends conducting an open space assessment for projects that would result in the physical loss of, or limit access to, an open space, change the use of an open space so that it no longer serves the same user population, or affect the usefulness of public open space due to pollution or shadows. An open space assessment may also be necessary for projects that would generate enough new residents or workers to noticeably diminish the capacity of an area's open spaces to serve the future population.

The Proposed Project would not directly affect any open space. The Proposed Project is in a designated area of Brooklyn's Community District 2 that is considered neither "well-served" nor "underserved" by open space; therefore, the threshold for assessment is the introduction of 200 residents or 500 employees. The Proposed Project would not exceed this analysis threshold, and therefore no further analysis is warranted.

SHADOWS

The Proposed Action would involve a text amendment to allow any non-residential use within UG 3, 4, 5, 6, 7, 8, 9, and 14 on ground floors of the Project Sites, and would not result in a new

structure that could cast new shadows on sunlight-sensitive resources. Therefore, in accordance with *CEQR Technical Manual* guidelines, a shadows analysis is not warranted.

HISTORIC AND CULTURAL RESOURCES

The Proposed Project would allow for currently vacant ground floor space in an existing building to be converted to community facility use. It would not result in any in-ground disturbance or below-grade construction; nor would it allow for the development of additional FAR at the project site, and thus would not alter the bulk of the existing building.

ARCHITECTURAL RESOURCES

While the R.V. Ingersoll Houses are located within 90 feet of the Proposed Project, the conversion of the use of interior space within an existing building would not be expected to have any construction-related impacts (such as vibration) on this architectural resource. The Proposed Project also would not result in any visual or contextual effects on the two architectural resources in the study area (the S/NR eligible R.V. Ingersoll Houses and the S/NR-eligible Church of St. Michael and St. Edward).

ARCHAEOLOGICAL RESOURCES

As the Proposed Project would not result in any in-ground disturbance or construction, it would not have the potential to affect any archaeological resources, if such resources were present on the site. Therefore, the Proposed Project would not result in significant adverse impacts to historic architectural or archaeological resources, and no further analysis is required.

URBAN DESIGN AND VISUAL RESOURCES

The Proposed Action would involve a text amendment to allow any non-residential use within UG 3, 4, 5, 6, 7, 8, 9, and 14 on ground floors of the Project Sites. The Proposed Project would only allow new community facility space on the ground floors and would not result in any new above-ground structures, nor would it change the form, arrangement, or use of the blocks and streets to interrupt the general pattern of an area. In addition, the Proposed Project would not affect the consistency of street walls, curb cuts, pedestrian flow, or other streetscape elements. Therefore, in accordance with *CEQR Technical Manual* guidelines, an urban design and visual resources analysis is not warranted.

NATURAL RESOURCES

A natural resources assessment is conducted when a natural resource is present on or near the project site and when an action involves the disturbance of that resource. The *CEQR Technical Manual* defines natural resources as water resources, including surface waterbodies and groundwater; wetland resources, including freshwater and tidal wetlands; upland resources, including beaches, dunes, and bluffs, thickets, grasslands, meadows and old fields, woodlands and forests, and gardens and other ornamental landscaping; and built resources, including piers and other waterfront structures. The Project Sites are occupied by three existing buildings and are located in a fully developed area in Downtown Brooklyn. There are no significant natural resources on the site and no changes to the existing buildings would result with the Proposed Actions. The Proposed Project would not result in any significant adverse impacts on natural resources. Therefore, in accordance with *CEQR Technical Manual* guidelines, a natural resources analysis is not warranted.

HAZARDOUS MATERIALS

The Project Sites are located in Downtown Brooklyn, within an area zoned for residential use. A Phase I Environmental Site Assessment (ESA) was completed for each of the three Project Sites prior to their development. The Phase I ESA for 180 Myrtle Avenue was completed in July 2013, the one for 218 Myrtle Avenue in June 2005, and the one for 81 Fleet Place in June of 2012. These reports revealed several Recognized Environmental Conditions (RECs). 180 Myrtle Avenue and 81 Fleet Place were recognized as having groundwater contamination with tetrachlorothene in wells along Myrtle Avenue. For 218 Myrtle Avenue a nearby drycleaners and underground petroleum storage tanks (USTs) were identified. All RECs were addressed as part of the development of the existing buildings on the three Project Sites.

All three properties that constitute the Project Sites are also the subject of E-124 (E) Designations, implemented as part of the Special Downtown Brooklyn District (SDBD) rezoning of the area. E-124 is specifically related to underground gasoline storage tanks with hazardous materials implications and window wall attenuation and alternative ventilation needed to meet noise requirements. Despite no "Remediation Date" having been reflected in the appropriate column within ZR Appendix C, we believe that these (E) Designations are no longer active. These obligations would have been required to be fully met during the development of the three buildings located on the Project Sites, each of which were developed subsequent to the rezoning and implementation of the (E) Designations. In any event, the Proposed Action and resulting change of use would not trigger any such environmental requirements and would not include any subsurface disturbance on the Project Sites.

The Proposed Project would result in the conversion of currently vacant ground floor retail spaces into community facility uses. Consistent with Chapter 12 of the *CEQR Technical Manual*, a hazardous materials assessment is not required, as the Proposed Project would not involve the use of hazardous materials or entail subsurface disturbance or result in a change to a more sensitive use (e.g., residential). Therefore, the Proposed Project would not result in any significant adverse impacts related to hazardous materials, and no further assessment is warranted.

WATER AND SEWER INFRASTRUCTURE

The *CEQR Technical Manual* outlines the following guidelines for assessments of water and sewer infrastructure.

- Water Supply: a preliminary water supply analysis should be conducted only for actions that would have exceptionally large demand for water, such as power plants, very large cooling systems, or large developments (e.g., those that use more than 1 million gallons per day [mgd]). In addition, actions located at the extremities of the water distribution system should be analyzed (such as the Rockaway Peninsula and Coney Island).
- Wastewater Conveyance and Treatment: in combined sewer areas, generally only projects with very large flows (e.g., 400 residential units or 150,000 sf of commercial and/or community facility space or more in the Bronx, Brooklyn, Staten Island, or Queens) could have the potential for significant impacts on sewage treatment and should be analyzed. Any development that is located within a specific drainage including the Gowanus Canal and involve development where the impervious surface would increase should also be analyzed.
- Stormwater Management: an assessment of stormwater is appropriate for projects that result in certain industrial activities; that would be served by a separate storm system, projects

located in partially sewered or unsewered areas; and projects that involve construction of a new stormwater outfall.

The Proposed Action would involve a text amendment allow any non-residential use within UG 3, 4, 5, 6, 7, 8, 9, and 14 on the ground floors of the Project Sites, permitting an additional 8,178 gsf of community facility uses instead of retail uses. With approximately 71 additional employees, the Proposed Project would not generate an exceptionally large incremental demand for water or sewage treatment services. It would not increase the amount of impervious surface on the Project Site as they are already developed with three existing buildings. The Proposed Project is located in a combined sewer area and would not involve the construction of a new stormwater outfall. Therefore, in accordance with *CEQR Technical Manual* guidelines, no further analysis is warranted, and the Proposed Project would not result in any significant adverse impacts to water and sewer infrastructure.

SOLID WASTE AND SANITATION SERVICES

The *CEQR Technical Manual* states that few projects generate substantial amounts of solid waste (50 tons per week or more) that would result in a significant adverse impact.

The Proposed Action would involve a text amendment to allow any non-residential use within UG 3, 4, 5, 6, 7, 8, 9, and 14 on the ground floors of the Project Sites, adding an additional 8,178 gsf of community facility uses. Based on Table 14-1 in the *CEQR Technical Manual*, the Proposed Project would generate 923 pounds per week of solid waste, well under the 50 tons per week or more threshold that CEQR defines as affecting the City's capacity to handle solid waste and warranting further analysis.[1] Therefore, the proposed project would not result in any significant adverse impacts to solid waste and sanitation services, and no further analysis is required.

ENERGY

According to the *CEQR Technical Manual*, a detailed assessment of energy impacts is only required for projects that would significantly affect the transmission or generation of energy or that would result in substantial consumption of energy. The Proposed Project is not expected to generate a substantial new demand for energy and would not affect the transmission or generation of energy.[2] Therefore, the Proposed Project would not result in significant adverse impacts to energy supply or consumption, and no further analysis is warranted.

TRANSPORTATION

According to the *CEQR Technical Manual*, a detailed assessment of transportation impacts is only required for projects that would meet the thresholds identified in Table 16-1 of the *CEQR Technical Manual*. The Proposed Project is located in Zone 1, and would not meet the threshold of 25,000 additional gsf of community facility uses to warrant a detailed analysis. Therefore, the Proposed Project would not result in significant adverse impacts to transportation, and no further analysis is required.

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[1] This number was calculated by multiplying the projected number of employees at the project site (71) by a rate of 13 pounds per week, the Office Building rate provided by *CEQR Technical Manual* Table 14-1.

[2] The Proposed Project is expected to consume 2,050,225 additional MBtu's, calculated by multiplying the incremental square footage of 8,178 sf by a rate of 250.7 MBtu/sf, the institutional rate provided by *CEQR Technical Manual* Table 15-1.

AIR QUALITY

The Proposed Project would result in the conversion of currently vacant ground floor retail spaces into community facility uses. As described above, the Proposed Project would not induce a substantial amount of new traffic in the study area.

HEATING AND HOT WATER SYSTEM SCREENING

The cellar and ground floor commercial tenant spaces of the 218 Myrtle Avenue building, which was constructed in 2008, were designed to be served by the building's natural gas-fired boiler system, which exhausts to the roof of the building. Since these spaces are already served by the existing boiler system, future community facility tenants would be expected to utilize the same system and no new exhaust locations for heating and hot water equipment would be required with the Proposed Project. For the 81 Fleet Place and 180 Myrtle Avenue buildings, which have already been constructed, the ground floor tenant spaces are not designed to be served by the buildings' heating and hot water systems. Tenants would need to fit out the mechanical systems to provide heating and hot water services. For 180 Myrtle Avenue, exhaust flue ducting for gas-fired mechanical systems was installed by the building developer, which allows tenant-installed fossil fuel-fired equipment to be connected. The flue exhausts are located on the southeast portion of the building, in a mechanical penthouse located above the 2nd floor roof. With the Proposed Project it is expected that community facility tenants in this building would utilize the existing exhaust ducting, therefore, the exhaust locations would not change. Similarly, for 81 Fleet Place, a mechanical penthouse is located on the southeast portion of the building, above the 2nd floor roof. With the Proposed Project it is expected that community facility tenants in this building would install heating and hot water equipment that exhausts to the mechanical penthouse area, since for this building (as well as the existing 180 Myrtle Avenue building), exhausting emissions from fossil fuel-fired heating and hot water equipment to other potential locations is not considered feasible due to the amenity space uses on the 2nd floor roof, and New York City Building Code requirements regarding height and setback requirements for venting natural gas-fired equipment.

To evaluate potential air quality impacts from ground floor tenants in these buildings, a screening analysis was performed using the *CEQR Technical Manual* screening procedure for heating and hot water systems (see **Appendix A**). The results of the screening analyses demonstrate that the ground floor tenant spaces would not result in a significant adverse impact on air quality; therefore, no new stationary sources would be introduced to the Project Sites.

Though there is a separate building on each of the three Project Sites, there would not be any potential for an air quality impact resulting from a change on one project site to affect another, or with respect to cumulative impacts off site. There are no large or major stationary sources in the area that would result in an impact on the proposed ground floor uses. Therefore the Proposed Project would not result in significant adverse impacts to air quality from heating and hot water systems.

INDUSTRIAL SOURCE SCREENING

A portion of the Project is located adjacent to the Special Downtown Brooklyn Zoning District. A review was conducted to identify manufacturing or industrial air pollutant emission sources within 400 feet of the project site. A search of DEP's online permit search database was used to identify any permitted industrial sources in the study area.[3] No permitted sources were identified;

[3] DEP. *NYC DEP CATS Information.* https://a826-web01.nyc.gov/dep.boilerinformationext. Accessed February 16, 2018.

therefore, no significant air quality impacts on the Proposed Project from manufacturing or industrial air pollutant admission sources would be expected to occur.

GREENHOUSE GAS EMISSIONS

The *CEQR Technical Manual* typically requires an assessment of a project's greenhouse gas (GHG) emissions and its consistency with the City's policy to reduce GHG emissions only if warranted by specific characteristics of the project. Examples of such characteristics include requiring power generation or significantly affecting the City's solid waste management system. The Proposed Project does not meet any of these thresholds for analysis, and therefore it would not result in any significant greenhouse gas emission impacts.

NOISE

According to the *CEQR Technical Manual*, a noise analysis is appropriate if an action would generate any mobile or stationary sources of noise or would be located in an area with high ambient noise levels. The Proposed Project would not result in a doubling of traffic over current levels, which is the change in traffic that results in perceptible changes to noise levels. In addition, the conversion of part of the vacant ground floor retail spaces to community facility uses would not generate any additional stationary source noise over existing conditions. Therefore, no significant adverse noise impacts are expected to result from the Proposed Project and no further analysis is necessary.

All three properties that constitute the Project Sites are also the subject of E-124 (E) Designations, implemented as part of the SDBD rezoning of the area. E-124 includes requirements for sufficient window/wall attenuation and alternative ventilation needed to provide acceptable interior noise levels according to *CEQR Technical Manual* noise exposure guidance. The E-124 noise attenuation requirements on Block 2061 were based on a maximum L_{10} noise level of 71.7 dBA, which according to the then-current 2001 *CEQR Technical Manual* required 30 dBA window/wall attenuation for residential or community facility uses and 25 dBA window/wall attenuation for commercial/retail uses. Under the current 2014 *CEQR Technical Manual* noise exposure guidelines, this noise level would require 28 dBA window/wall attenuation for residential or community facility uses and 23 dBA window/wall attenuation for commercial/retail uses. The three buildings located on the Project Sites were each developed in accordance with the requirements of E-124, including the provision of sufficient window/wall attenuation and an alternate means of ventilation. This included a review and approval of the buildings' designs by the New York City Office of Environmental Remediation (NYCOER) to ensure that the designs would provide the necessary measures to ensure acceptable interior noise levels, and a review and approval of the buildings' construction to ensure that they were constructed according to the previously approved designs. The final Noise Installation Reports filed for each building indicate that they were constructed to provide at least 28 dBA window/wall attenuation for residential uses and at least 23 dBA window/wall attenuation for amenity spaces (e.g., exercise rooms, lounges) along with alternate means of ventilation, which satisfy the noise requirements of E-124. Specifically, the OER-approved Noise Installation Report for 180 Myrtle Ave (see **Appendix B**) indicate that the non-residential spaces were constructed to provide at least 30 dBA window/wall attenuation, which would make them suitable for any type of community facility use according to CEQR noise exposure guidance. The installation report is included as an attachment to this document, and demonstrate that these buildings provide acceptable interior noise levels according to CEQR noise exposure guidance. Therefore, the Proposed Project would not have the potential to result in a significant adverse impact pertaining to noise.

For 81 Fleet Place and 218 Myrtle Avenue, exterior noise level measurements were used to determine the necessary level of window/wall attenuation for the proposed community facility uses to achieve acceptable interior noise levels. The *CEQR Technical Manual* defines attenuation requirements for buildings based on exterior noise level (see **Table A-1**). Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for daycare/classroom uses and 50 dBA or lower for retail, administrative, laboratory, or office uses, and are determined based on exterior $L_{10(1)}$ noise levels.

Table A-1
Required Attenuation Values to Achieve Acceptable Interior Noise Levels

	Marginally Unacceptable				Clearly Unacceptable
Noise Level with Proposed Actions	$70 < L_{10} \leq 73$	$73 < L_{10} \leq 76$	$76 < L_{10} \leq 78$	$78 < L_{10} \leq 80$	$80 < L_{10}$
Attenuation[A]	(I) 28 dBA	(II) 31 dBA	(III) 33 dBA	(IV) 35 dBA	$36 + (L_{10}–80)$[B] dBA

Notes:
[A] The above composite window-wall attenuation values are for daycare/classroom. Retail, administrative, laboratory, or office would be 5 dBA less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.
[B] Required attenuation values increase by 1 dBA increments for L_{10} values greater than 80 dBA.

Existing noise levels at the project site were measured at on the sidewalk outside of 81 Fleet Place (see Figure 7). At the receptor site, 20-minute spot noise measurements were conducted on March 14, 2018 during typical weekday AM (7:00 AM–9:00 AM), midday (MD) (12:00 PM–2:00 PM), and PM (4:30 PM–6:30 PM) peak periods.

Measurements were performed using Brüel & Kjær Sound Level Meters (SLM) Type 2260, Brüel & Kjær ½-inch microphone Type 4189, and a Brüel & Kjær Sound Level Calibrator Type 4231. The Brüel & Kjær SLM is a Type 1 instrument according to ANSI Standard S1.4-1983 (R2006). The SLM has a laboratory calibration date within 1 year of the date of the measurement, as is standard practice. At the site, the microphone was mounted at a height of approximately 4 feet above the ground and was mounted away from any large reflecting surfaces that could affect the sound level measurement. The SLM was calibrated before and after the reading with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements at the location were made on the A-scale (dBA). The data were digitally recorded by the SLM and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. A windscreen was used during all sound measurements except for calibration. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

The results of the measurements of existing noise levels are summarized in **Table A-2**. Vehicular traffic was the dominant noise source throughout the study area. Noise levels are moderate to relatively high and reflect the level of vehicular activity on the adjacent roadway.

Table A-2
Existing Noise Levels (in dBA)

Receptor	Measurement Location	Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	81 Fleet Place/218 Myrtle Avenue	AM	67.1	77.0	70.3	62.4	57.7
		MD	66.0	76.0	69.9	61.2	57.1
		PM	68.0	75.9	69.5	63.0	58.0

Note: (1) Field measurements were performed by AKRF, Inc. on March 14, 2018.

In terms of *CEQR Technical Manual* criteria, noise levels at 81 Fleet Place are in the "marginally unacceptable" category.

As described above, the required level of attenuation for the ground-floor commercial space at 81 Fleet Place and 218 Myrtle Avenue was 23 dBA per E-124. This requirement is consistent with the measured noise levels outside of 81 Fleet Place. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower for daycare/classroom uses and 50 dBA or lower for retail, administrative, laboratory, or office uses and are determined based on exterior $L_{10(1)}$ noise levels. The measured noise levels at 81 Fleet Place indicate that 28 dBA window/wall attenuation would be required to meet the *CEQR Technical Manual* interior noise level requirements for daycare/classroom type community facility use.

The attenuation of a composite structure is a function of the attenuation provided by each of its component parts and how much of the area is made up of each part. Normally, a building façade consists of wall, glazing, and any vents or louvers associated with the building mechanical systems in various ratios of area. The 81 Fleet Place building's ground-floor space includes façade measures providing at 23 dBA window/wall attenuation as well as an alternate means of ventilation. If the ground floor space were to be tenanted with a noise-sensitive community facility use such as daycare or classroom use, the façade of this space would be improved using interior acoustical windows or replacement windows to provide at least 28 dBA window/wall attenuation. The alternate means of ventilation would remain.

To ensure the provision of such measures to provide acceptable interior noise levels, a Noise (E) Designation (E-482) would be placed on the 81 Fleet Place (i.e., Block 2061 Lot 110) and 218 Myrtle Avenue (Block 2061, Lot 101) sites as part of the Proposed Project[4]. The (E) designation requirements would be as follows:

81 Fleet Place (i.e., Block 2061 Lot 110): To ensure an acceptable interior noise environment, future ground-floor community facility uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all façades in order to maintain an interior noise level not greater than 45 dBA. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes but is not limited to central air conditioning.

218 Myrtle Avenue (i.e., Block 2061 Lot 101): To ensure an acceptable interior noise environment, future ground-floor community facility uses must provide a closed-window condition with a minimum of 28 dBA window/wall attenuation on all façades in order to maintain an interior noise level not greater than 45 dBA. To maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes but is not limited to central air conditioning.

The New York City Office of Environmental Remediation (OER) is responsible for enforcement of the noise (E) Designation for project buildings. To demonstrate compliance with the noise (E) Designation, a Noise Remedial Action Plan (RAP) must be submitted to OER for the project building, describing the specific façade construction and alternate means of ventilation that will be used to meet the noise (E) Designation. If OER approves the RAP for the building, it will issue a Notice to Proceed (NTP) allowing fit-out construction to begin on the (E) designated site. Subsequently, a Noise Installation Report would be filed with the OER to demonstrate that the

[4] The noise (E) designation (E-482) to be placed on Block 2061 Lots 101 and 110 as part of the Proposed Project will supersede the existing E-124 requirements at this site.

approved design was installed, and if the OER approves the Noise Installation Report, the space could obtain a Certificate of Occupancy. By adhering to these requirements, the improved façade would provide sufficient attenuation to meet the *CEQR Technical Manual* interior noise level requirement of no greater than 45 dBA $L_{10(1)}$ for daycare/classroom uses and no greater than 50 dBA $L_{10(1)}$ for retail, laboratory, administrative, or office uses. With these measures in place, there would be no potential for significant adverse noise impacts.

PUBLIC HEALTH

The Proposed Project would not result in any significant unmitigated adverse impacts to air quality, water quality, hazardous materials, noise, or any other CEQR analysis areas. Therefore, the Proposed Project would not result in any significant adverse impacts to public health, and no further analysis is necessary.

NEIGHBORHOOD CHARACTER

According to the *CEQR Technical Manual*, neighborhood character is defined as an amalgam of various elements that give neighborhoods their distinct "personality." As explained above and in the attachments to this EAS, the Proposed Project would not result in any significant adverse impacts in the areas of analysis that contribute to a neighborhood's character. Therefore, the Proposed Project would not result in significant adverse impacts to neighborhood character.

CONSTRUCTION

The activities associated with the modification of interior spaces on the Project Sites' ground floors for community facility uses would be expected to result in conditions typical of construction projects in New York City, over a period of less than 24 months. Construction activities would be carried out in accordance with New York City laws and regulations, which allow construction activities between 7:00 AM and 6:00 PM on weekdays. If work is required outside of normal hours, necessary approvals would be obtained from the appropriate agencies (i.e., the New York City Department of Buildings and New York City Department of Environmental Protection). All necessary measures would be implemented to ensure adherence to the New York City Air Pollution Control Code regulating construction-related dust emissions and the New York City Noise Control Code regulating construction noise. If needed, Maintenance and Protection of Traffic plans would be developed for any curb-lane and/or sidewalk closures. Approval of these plans and implementation of all temporary closures during construction would be coordinated with the New York City Department of Transportation's Office of Construction Mitigation and Coordination.

Overall, through implementation of the measures described above, adverse effects associated with the construction activities would be minimized. Accordingly, the Proposed Project would not result in significant adverse construction impacts, and no further analysis is required. ✷

Attachment B: Land Use, Zoning, and Public Policy

A. INTRODUCTION

As described in Attachment A, "Project Description and Supplemental Analyses," the Applicant is seeking a discretionary action to modify the Ground Floor Use Requirements of the Special Downtown Brooklyn District (SDBD), which currently only allow uses listed in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9, as well as libraries, museums, and non-commercial art galleries from UG 3, to allow all non-residential uses listed in UG 3, 4, 5, 6, 7, 8, 9, and 14 to be permitted on the ground floor of the Project Sites within 50 feet of the Myrtle Avenue frontage (the "Proposed Actions"). It is anticipated that this action would allow the applicant to lease approximately 8,178 sf of the currently unoccupied ground floor spaces to community facility uses (the "Proposed Project"). The Project Sites are located at 180 Myrtle Avenue, 218 Myrtle Avenue, and 81 Fleet Place (Block 2061, Lots 1, 101, and 110, respectively). The Proposed Project would allow the Applicant, the owners of the buildings on the Project Sites, the flexibility necessary to fully lease the 16,355 sf of ground floor space that is currently unoccupied. To facilitate the Proposed Project, one discretionary action from the City Planning Commission (CPC) is required.

This attachment assesses the potential impacts of the Proposed Project on the land use, zoning, and public policy of the Project Sites and in the surrounding study area. The assessment concludes that the Proposed Project would be compatible with existing land uses and planned developments in the surrounding community, and that the Proposed Actions would not result in any significant adverse impacts to land use, zoning, or public policy.

B. METHODOLOGY

The Project Sites are located in the Downtown Brooklyn neighborhood of Brooklyn in Community District 2. This analysis of land use, zoning, and public policy examines the area within 400 feet of the project site—the area in which, according to the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, the Proposed Project could reasonably be expected to cause potential effects. The land use study area is generally bound by Johnson Street to the north, St. Edwards Street to the east, Willoughby Street to the south, and Flatbush Avenue Extension to the west (see Figure 4).

The analysis begins by considering existing conditions in the study area in terms of land use, zoning, and public policy. The analysis then projects land use, zoning, and public policy in the future without the proposed project in the 2020 analysis year by identifying developments and potential policy changes expected to occur within that time frame. Probable impacts of the Proposed Project are then identified by comparing conditions with the Proposed Project to those projected conditions without the Proposed Project.

C. EXISTING CONDITIONS

LAND USE

PROJECT SITES

The Project Sites consist of three tax lots that contain three mixed-use buildings owned by the Applicant. The building at 180 Myrtle Avenue (Block 2061, Lot 1), named "The Margo," is a 245,512-gross-square-foot (gsf), 15-story building. The building at 218 Myrtle Avenue (Block 2061, Lot 101), named "The Andrea," is a 110,912-gsf, nine-story building. The building at 81 Fleet Place (Block 2061, Lot 110), named "The Giovanni," is a 265,417-gsf, 15-story building. All three buildings are mixed residential and commercial buildings with the commercial retail uses located on the ground floors.

STUDY AREA

The 400-foot study area contains a mix of land uses, including residential, commercial, parking, institutional, transportation and utility, and mixed uses (see Figure 4). Directly to the north of the Project Sites across Myrtle Avenue are the twenty apartment towers and one community center of the New York City Housing Authority's Ingersoll complex located on the superblock bounded by Tillary Street to the north, Navy Street to the east, Myrtle Avenue to the south, and Prince Street to the west. Heart's Home USA, a Catholic charity that operates community centers, is located in the former Church of St. Michael and St. Edward on the same superblock as the Ingersoll houses in the northeastern portion of the study area. To the east of the Project Sites are the five apartment towers of the Kingsview Homes co-op complex.

To the south of the Project Sites are three more apartment towers and a child-care center. Further to the south across Willoughby Street is Long Island University's Brooklyn Campus. Southwest of the Project Sites is a small block containing commercial buildings, a car wash, a New York City Transit Authority Ventilation building, and parking. To the west of the Project Sites is the Toren condominium tower and 86 Fleet Place, an under construction 394,000-square-foot building also being developed by the applicant and expected to open soon. Finally, at the northwestern edge of the study area is the Avalon Fort Greene, an upscale apartment tower with retail uses on the ground floor.

ZONING AND PUBLIC POLICY

PROJECT SITES

The Project Sites are located in an R7-1 zoning district with a C2-4 commercial overlay (see Figure 3). R7 zoning districts are medium-density residential zoning districts. Buildings can be developed under two sets of bulk regulations, Height Factor regulations and Quality Housing regulations. Height Factor regulations produce buildings set back from the street with large amounts of open space. The maximum floor to area ratio (FAR) is 3.44 and heights are not limited, but the building may not penetrate the sky exposure plane which begins at 60 feet above the street line and then slopes inward. Height factor buildings in R7-1 districts require parking for 60 percent of dwelling units. Quality Housing regulations produce shorter buildings set at or near the street line that cover more of the zoning lot. The maximum FAR is 4.0 on a wide street or 3.44 on a narrow street. There is a minimum base height before setback of 40 feet and a maximum base height before setback of 60 feet. Maximum building heights are 80 feet on a wide street or 75 feet on a narrow street. Parking is required for 50 percent of dwelling units.

A C2-4 overlay is also mapped on the Project Sites. C2-4 overlays are commercial overlays mapped within residential zoning districts along streets that serve local retail needs. Such uses often include

grocery stores and restaurants, with C2 overlays permitting a slight wider range of uses as compared to C1 overlays. When mapped in an R7 district, the maximum commercial FAR is 2.0.

The Project Sites are also located in the Special Downtown Brooklyn District (SDBD). The SDBD, established in 2001 and substantially modified in 2004, established special height and setback regulations and urban design guidelines to promote and support the continued growth of Downtown Brooklyn as a unique mixed-use area. Provisions of the SDBD increase the maximum FAR for residential buildings or the residential portions of mixed use buildings in lieu of typical zoning regulations to 4.0.

Among these special regulations are the Ground Floor Use Requirements affecting Project Site; set forth in ZR Section 101-11 which states that "uses within stories that have a floor level within five feet of curb level, and within 50 feet of the street line, shall be limited to commercial uses listed in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, 9, 10, 11, 12A, 12B, and 12C, where such uses are permitted by the underlying district. In addition, libraries, museums, and non-commercial art galleries shall be permitted. A building's street frontage shall be allocated exclusively to such uses, except for Type 2 lobby space, entryways, or entrances to subway stations provided in accordance with the provisions of Section 37-33 (Maximum Width of Certain Uses).

STUDY AREA

The study area around the Project Sites contains three other zoning districts and one overlay aside from the R7-1 and C2-4 overlay on the Project Sites. These include an R6 district, a C6-4 district, a C6-6 district, and a C1-3 overlay.

An R6 district is mapped in the majority of the study area, including the northern, eastern, and southern portions of it, extending west to Fleet Place and Prince Street. R6 districts are medium-density residential districts that permit a wide variety of housing types. As with the R7 district described above, buildings may be developed under either Height Factor or Quality Housing bulk regulations. Under Height Factor regulations the maximum FAR is 2.43 and heights are governed by the sky exposure plane which begins 60 feet above the street line. Parking is required for 70 percent of dwelling units (or 50 percent if the zoning lot is 10,000 square feet or less). Under Quality Housing regulations the maximum FAR is 3.0 on a wide street and 2.2 on a narrow street. The minimum base height before setback is 40 feet on a wide street and 30 feet on a narrow street, and the maximum base height before setback is 60 feet on a wide street and 45 feet on a narrow street. Maximum building heights in R6 districts are 70 feet on a wide street and 55 feet on a narrow street. Parking is required for 50 percent of dwelling units.

C6 districts are high-density commercial zoning districts often mapped in central areas. Both C6-4 and C6-6 districts are mapped within the study area. The C6-4 district is mapped to the west of Fleet Place and Prince Street, and the C6-6 district is mapped on the block bounded to the north and east by Flatbush Avenue Extension, to the south by Willoughby Street, and to the west by Gold Street. C6-4 districts have a maximum commercial FAR of 10.0 and C6-6 districts have a maximum commercial FAR of 15.0 (with a bonus of up to 20 percent for a public plaza in both districts). Except for the C6-2A, C6-3A, C6-3X, C6-4A, C6-3D, and C6-4X subtypes, all C6 buildings may penetrate the sky exposure plane and are not limited in height.

Finally, a small C1-3 commercial overlay is mapped within the R6 district on the northeastern corner of Myrtle Avenue and Prince Street. C1-4 commercial overlays are similar to the C2-4 commercial overlay described above, but are limited to fewer permitted uses.

The areas covered by the C6-4 and C6-6 commercial districts (in addition to the Project Sites) are also located in the SDBD.

Table B-1
Zoning Districts in the Study Area

Zoning District	Maximum FAR[1]	Uses/Zone Type
R7-1	0.87 to 3.44[2] 4.0[3,4]	Medium density residential district
R6	0.78 to 2.43[2] 3.0[3]	Medium density residential district
C6-4	10.0[5]	High-density commercial district
C6-6	15.0[5]	High-density commercial district
C1-3	2.0	Commercial overlay
C2-4	2.0	Commercial overlay

Notes:
[1] Floor area ratio (FAR) is a measure of density establishing the amount of development allowed in proportion to the base lot area. For example, a lot of 10,000 square feet with a FAR of 1 has an allowable building area of 10,000 square feet. The same lot with an FAR of 10 has an allowable building area of 100,000 square feet.
[2] Under Height Factor bulk regulations.
[3] Under Quality Housing bulk regulations.
[4] Under the provisions of the Special Downtown Brooklyn District (SDBD).
[5] With a bonus of up to 20 percent for a public plaza.
Source: *New York City Zoning Resolution*

D. THE FUTURE WITHOUT THE PROPOSED ACTION

LAND USE

PROJECT SITES

In the future without the Proposed Project, it is assumed that the Ground Floor Use Regulations of the SDBD would remain in effect, and only uses listed in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9, as well as libraries, museums, and non-commercial art galleries from UG 3 would be permitted on the ground floors of the Project Sites. Therefore, all 16,355 sf of unoccupied ground floor retail space on the Project Sites would remain limited to uses listed in UG 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9, as well as libraries, museums, and non-commercial art galleries from UG 3.

STUDY AREA

Current land use and development trends within the study area are expected to continue in the future without the Proposed Project. There are three known projects in the study area that are expected to be completed by the 2020 build year. 86 Fleet Place is being constructed directly to the west of the Project Sites across Fleet Place. 86 Fleet Place is expected to be completed shortly and will contain 393,953 sf building, including 440 dwelling units and 10,813 sf of ground floor retail space. A new building at 112 Fleet Place, approximately 250 feet to the southwest of the Project Sites, will add 20 dwelling units the study area. Finally, a new building under construction approximately 250 feet to the east of the Project Sites at 112 St. Edward's Street will add 146 dwelling units to the study area. In total, 606 dwelling units and 10,813 sf of retail space will be added to the study area by the Proposed Project's 2020 build year.

ZONING AND PUBLIC POLICY

There are no changes to zoning or public policy in the study area that are expected to be implemented by the 2020 build year.

E. THE FUTURE WITH THE PROPOSED ACTON

LAND USE

PROJECT SITES

In the future with the Proposed Project (the "With Action Scenario"), the Ground Floor Use Regulations of the SDBD would be modified to allow any non-residential use permitted by underlying zoning at the ground floor level. It is anticipated that in the With Action Scenario approximately 8,178 sf of the existing and partially unoccupied 35,254 sf of retail floor area would be displaced for UG 3 and 4 community facility uses. This represents approximately 50 percent of the 16,355 square feet of currently unoccupied ground floor retail space across the three Project Sites. A portion of the existing unoccupied ground floor retail spaces may be tenanted by the 2020 analysis year; therefore, for the purposes of this EAS, we have assumed that approximately 50 percent of the currently unoccupied spaces would be occupied by retail uses and the remaining 50 percent by community facility uses in the future with the Proposed Project.

The With Action Scenario would also permit a potential future change in use in the remaining retail space on the ground floors of 180 Myrtle Avenue, 218 Myrtle Avenue, and 81 Fleet Place beyond the 2020 build year.

STUDY AREA

The Proposed Project would be compatible with existing uses in the study area. The study area would be expected to continue to be an area with a diverse mix of uses. Several community facility uses already exist within the study area, including the Ingersoll Community Center directly across Myrtle Avenue from one of the Project Sites (81 Fleet Place). Furthermore the newly occupied ground floor spaces would help to further activate the streetscape, improving the pedestrian experience along Myrtle Avenue. Overall, the Proposed Project would not result in any significant adverse impacts to land use in on the Project Sites or within the study area.

ZONING AND PUBLIC POLICY

PROJECT SITES

In the future with the Proposed Project (the "With Action Scenario"), the Ground Floor Use Regulations of the SDBD would be modified to allow any non-residential use permitted by underlying zoning at the ground floor level and within 50 feet of the street wall, subject to limitations on the width of a lobby serving residential use on the upper floors. This includes UG 3 and 4 community facility uses and UG 5, 6, 7, 8, 9, and 14 commercial uses, in addition to currently permitted uses from UG 3, 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, and 9. These modifications would only apply to the Project Sites and would not affect any other provisions of the SDBD.

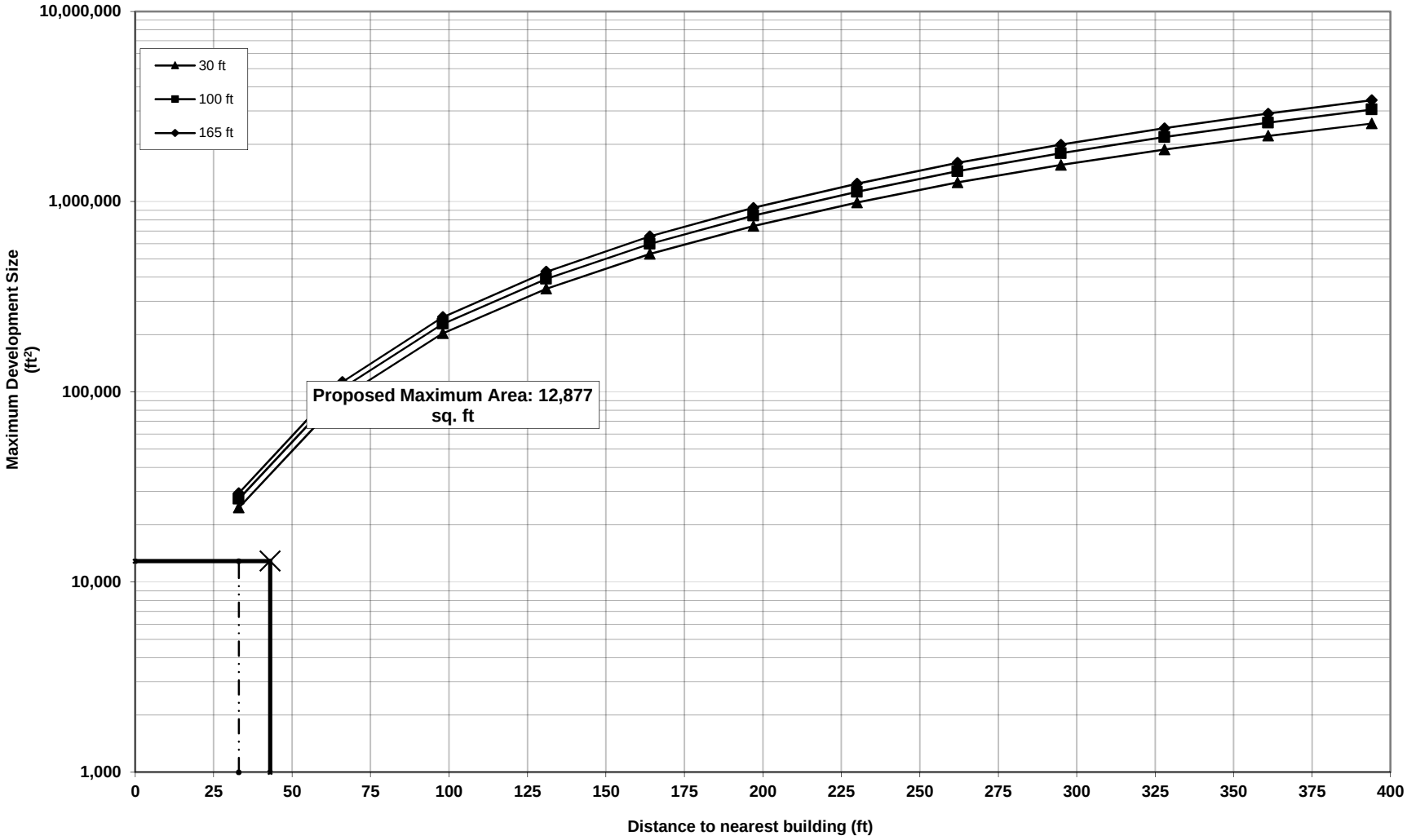
STUDY AREA

The Proposed Action would be specific to the Project Sites and would not affect zoning or public policy on any other sites. In addition, the newly permitted uses would be compatible with the zoning of the surrounding area and would not result in any impacts. Overall, the Proposed Project would not result in any significant adverse impacts to zoning or public policy. ✷

Appendix A
Air Quality Backup

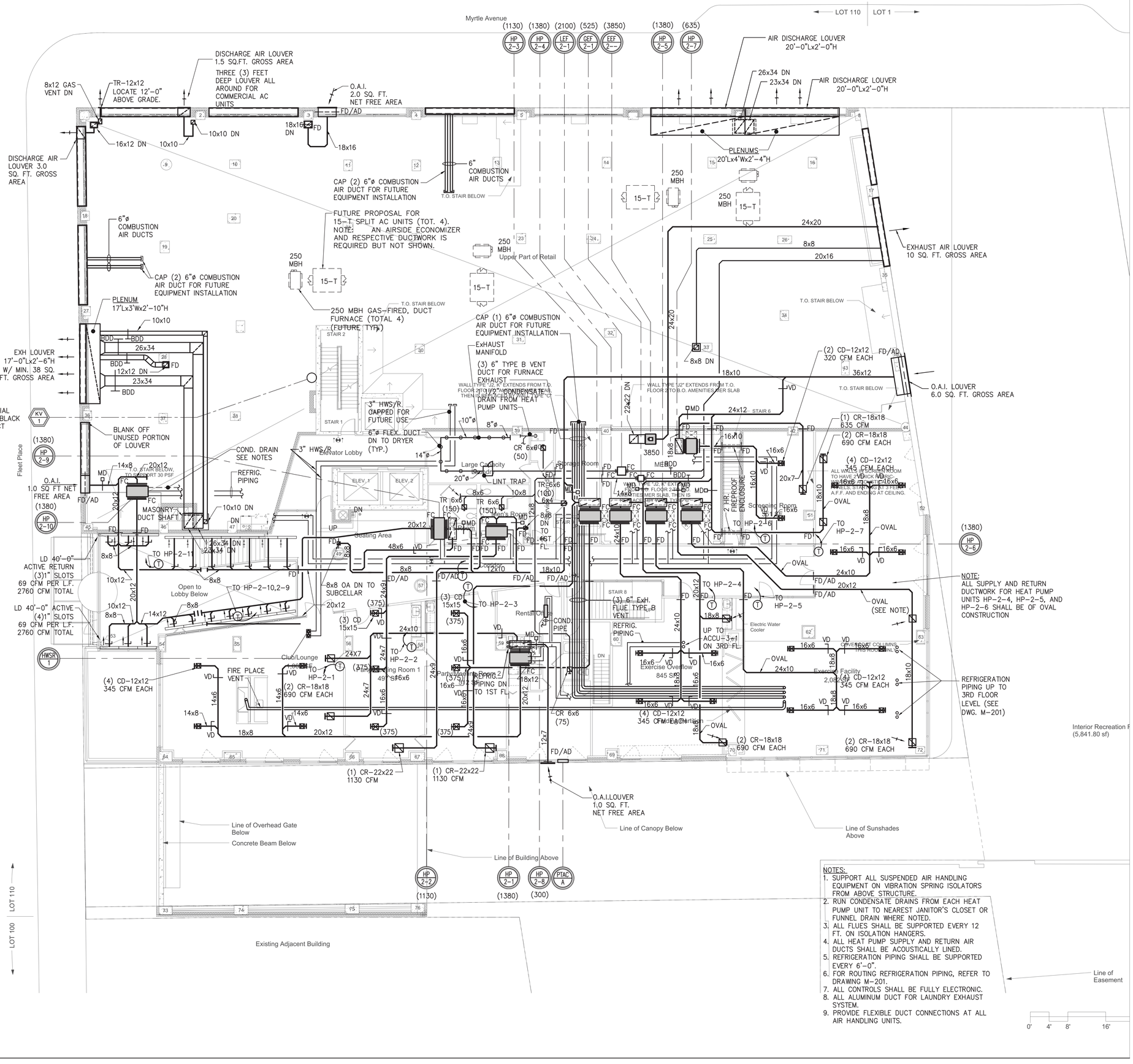
HVAC Screening Analysis
Site: 81 Fleet
Date: 4/24/2018
Pass

FIG App 17-8
NO_2 BOILER SCREEN
COMMERCIAL AND OTHER NON-RESIDENTIAL DEVELOPMENT - NATURAL GAS



Stack Height: 33 ft
Distance to Nearest Building of Similar or Greater Height: 43 ft
Proposed Maximum SQFA: 12,877 sq. ft
Minimum Allowable Distance to Nearest Building: 33 ft

Notes:



NOTES:
1. SUPPORT ALL SUSPENDED AIR HANDLING EQUIPMENT ON VIBRATION SPRING ISOLATORS FROM ABOVE STRUCTURE.
2. RUN CONDENSATE DRAINS FROM EACH HEAT PUMP UNIT TO NEAREST JANITOR'S CLOSET OR FUNNEL DRAIN WHERE NOTED.
3. ALL FLUES SHALL BE SUPPORTED EVERY 12 FT. ON ISOLATION HANGERS.
4. ALL HEAT PUMP SUPPLY AND RETURN AIR DUCTS SHALL BE ACOUSTICALLY LINED.
5. REFRIGERATION PIPING SHALL BE SUPPORTED EVERY 6'-0".
6. FOR ROUTING REFRIGERATION PIPING, REFER TO DRAWING M-201.
7. ALL CONTROLS SHALL BE FULLY ELECTRONIC.
8. ALL ALUMINUM DUCT FOR LAUNDRY EXHAUST SYSTEM.
9. PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL AIR HANDLING UNITS.

81 Fleet Place

Brooklyn, NY 11201

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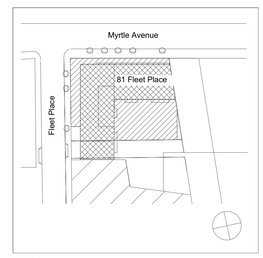
Maria-Teresa Fernandez
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Apr 4, 2013 - 11:49 AM
NYC Development Hub

02-28-13	ISSUED FOR BLDG DEPT APPROVAL
01-30-13	BULLETIN NO.1
11-16-12	FOR CONSTRUCTION
Revisions	



Key Plan

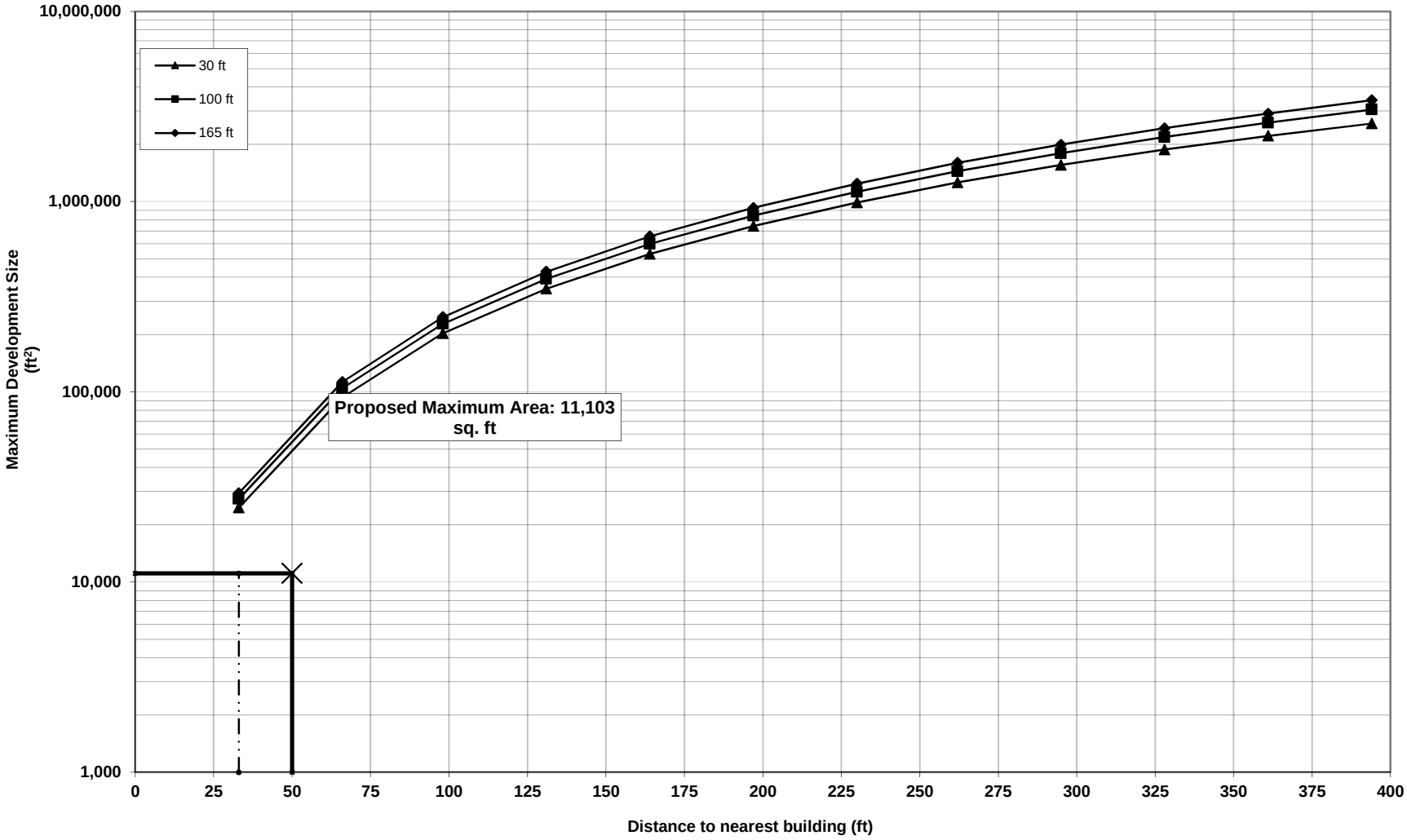
HVAC 2ND FLOOR PLAN

Date	September 28, 2012
Scale	1/8" = 1'-0"
Drawn By	---
Checked By	---
Project No.	1204
Seal	
Sheet No.	7 of 21

M-103.00

HVAC Screening Analysis
Site: 180 Myrtle A
Date: 4/24/2018
Pass

FIG App 17-8
NO_2 BOILER SCREEN
COMMERCIAL AND OTHER NON-RESIDENTIAL DEVELOPMENT - NATURAL GAS



Stack Height: 65 ft
Distance to Nearest Building of Similar or Greater Height: 50 ft
Proposed Maximum SQFA: 11,103 sq. ft
Minimum Allowable Distance to Nearest Building: 33 ft

Notes:

180 Myrtle Avenue

Brooklyn, NY 11201

Maria-Teresa Fernandez
APPROVED
Under Directive 2 of 1975
Date: 10/30/2014:
NYC Development Hub

Red Apple 180 Myrtle Avenue Development LLC
823 11th Avenue
New York, NY 10019

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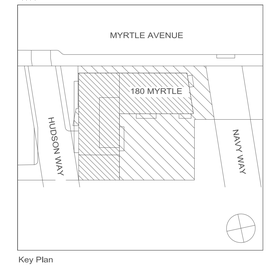
DOB #320592747-01

09-24-14	BULLETIN # 8	3
08-27-14	BULLETIN # 5	2
05-29-14	BULLETIN # 2	1
05-05-14	100% REVISED CONSTRUCTION DOCUMENTS	
04-15-14	95% REVISED CONSTRUCTION DOCUMENTS	
01-24-14	90% CONSTRUCTION DOCUMENTS	
12-20-13	PRICING SET	
11-26-13	ISSUE FOR DOB	
11-13-13	PROGRESS SET	
11-04-13	SCHEMATIC DESIGN	
10-10-13	SCHEMATIC DESIGN	

Revisions

Issue:



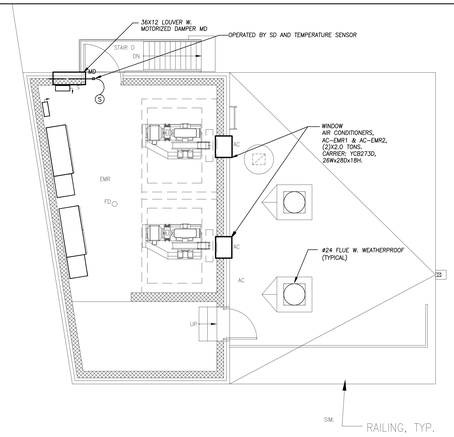
Key Plan

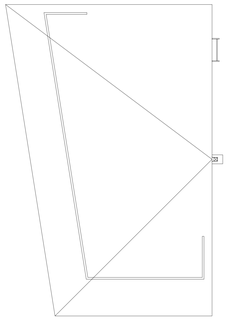
HVAC
2nd Floor Plan

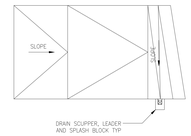
Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

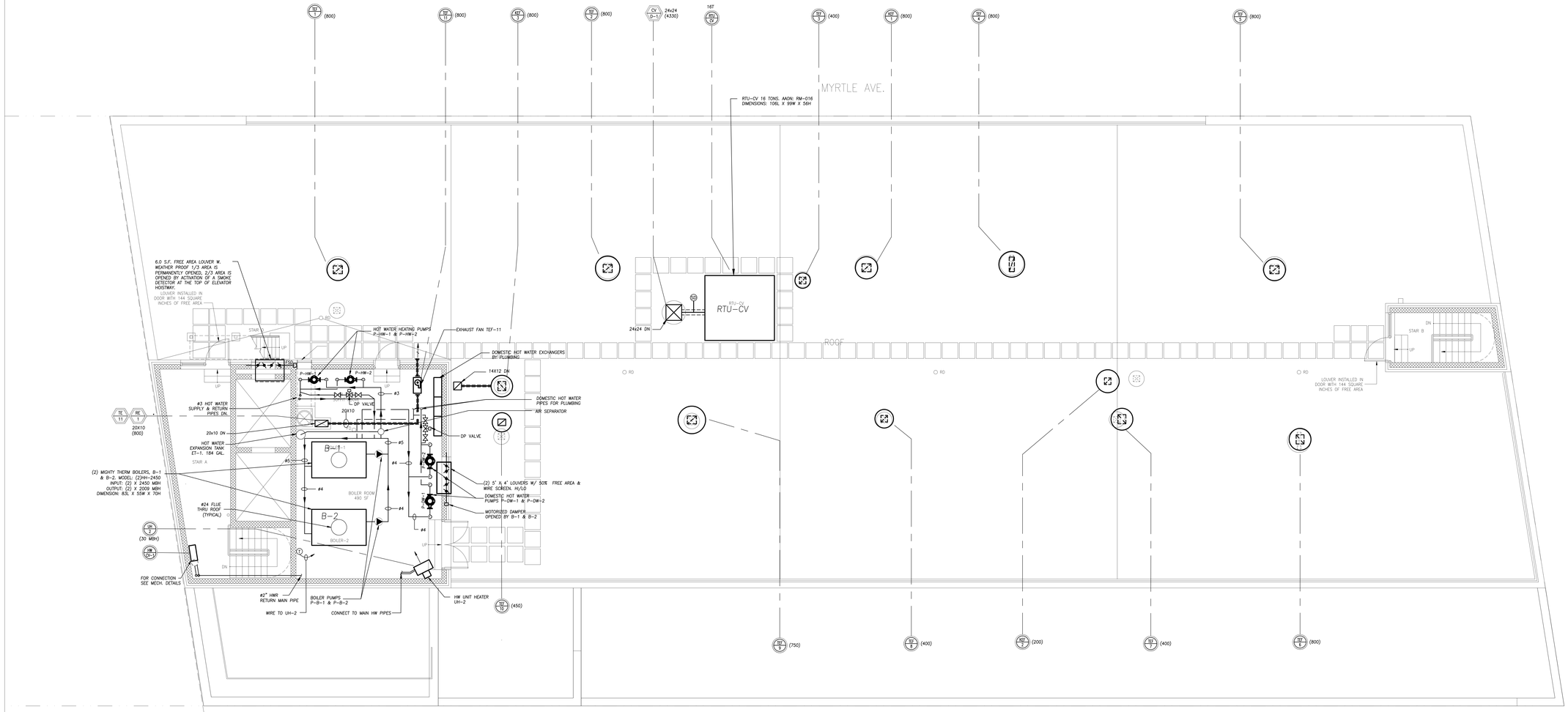
Sheet No.:

M-102.01









Myrtle Avenue Development

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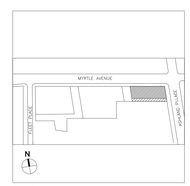
JUNE 30,2008

FOR ESTEMATING PURPOSES ONLY
NOT FOR CONSTRUCTION

08/15/08	100% ISSUE FOR CONSTRUCTION
~~07/11/08~~	~~90% PROGRESS SET~~
07/02/08	90% PROGRESS SET
06/05/08	PROGRESS SET
05/20/08	ISSUED FOR DOB FILING
05/16/08	70% PROGRESS SET

Revisions



Key Plan

HVAC ROOF AND BULKHEAD FLOOR PLAN

Date JUNE 30, 2008
Scale 1/4"=1'-0"
Drawn By
Checked By
Project No. 987 Seal

Sheet No. **M-105**

I:\987\Arch\[Building D...

Appendix B
OER Reports

INSTALLATION REPORT CERTIFICATION

I, William Stein FAIA, am currently a registered architect licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the 81 Fleet Place Site (NYC Block 2061 and Lot 110).

I certify that the Site description presented in this Installation Report is identical to the Site description and associated amendments presented in the Notice to Proceed issued by DEP/OER to the NYC DOB on 11/8/2012.

I certify that the OER-approved Remedial Action Plan dated 9/14/2012 and confirmed via email on 10/5/12 was implemented and that all requirements in that document have been complied with.

I certify that the remedial activities were observed by qualified professionals under my supervision and that the remediation requirements set forth in the Remedial Action Plan have been achieved.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

William Stein

Name

014686-1

NYS P.E./R.A. License Number

Signature

P.E./R.A. Stamp

August 18, 2015

NYC Office of Environmental Remediation
100 Gold Street, 2nd Floor
New York, New York 10038

Attn.: Maurizio Marezio Bertini, PhD
Section Chief

Re: **81 Fleet Place, Brooklyn, New York - Installation Report**
E-124: Block 2061, Lot 110 (Formerly P/O Lot 1), Brooklyn CD2
OER #Project #12EH-N539/NYC VCP Project #13CVCP094K/DEP#08DEPTECH214K

Dear Mr. Bertini:

All windows and alternate means of ventilation components at 81 Fleet Place have been installed per previously filed letters to OER.

On the ground floor retail spaces and ground floor lobby, curtain wall system is supplied by EFCO Series 5600. It is comprised of 1" insulated glazing consisting of ¼" annealed glass, ½" air space and ¼" annealed glass. OITC test data of EFCO Series 5600 system complies with 23 dBA requirements of E-124.

On residential floors 2 – 15, windows are EFCO Series 3903 Casement windows, with 1 and 1/16" glazing units, comprised of ¼" annealed glass, ½" air space and $^{5}/_{16}$" annealed glass. These windows have been tested for acoustical properties, and achieved OITC 29 in a test laboratory. The window reduction requirement of OITC 28dBA is thus met.

Alternate Means of Ventilation in every residential room is provided by PTAC units manufactured by IslandAire (Product line: EZ Series GS – Direct Vent Gas-Fired PTAC). Fresh air will be introduced into the common residential and amenity spaces via ducted air, which is connected to Daikin, Greenheck and AAON air handling units which have louvers taking in air from outside the building fascia.

August 18, 2015

81 Fleet Place is a 15-story building mixed use building with two cellar levels, rising 156.46' above base plane, located in Brooklyn, New York. The sub-cellar and cellar levels contain mechanical/utility rooms, storage and parking space. There are 205 residential units, as well as common lounges and exercise facility on the amenities floor.

Please find enclosed signed and stamped "AS BUILT" plans and elevations and photographs of each façade of the building showing installed windows and alternate means of ventilation.

Thank you for your assistance.

Sincerely yours,

William Stein FAIA
Principal

Encl: Signed and stamped "AS BUILT" plans and elevations
Photographs of each façade of the building as of July 17, 2015
Email Confirmation of approval of window substitution dated August 8, 2013

H:\1126\DOCS\4.0 Regulatory\4.04 OER\15-0818 81 Fleet – OER Installation Report

Myrtle Avenue

LOT 110 LOT 1

Existing Electric Vault Above

167' - 9 1/8"

ANGLE OF FOUNDATION WALL TO FOLLOW LINE OF SHORING, V.I.F.

Electric Vault Location Above

Fleet Place

LOT 110

LOT 100

UPPER AND LOWER COMPARTMENTS (TYP.)

Stagger doors for upper and lower storage compartments and provide floors at same.

WIRE MESH PARTITIONS (TYP.)

4" FD (TYP.)

PIT COVER FOR EJECTOR PIT

BATHROOM TYPE 6

STAIR 1

STAIR 2

STAIR 7

Inspection Platform

ST. LADDER

ELEV. 1

Subway Grating Inspection Platform Above (EL: 26.17')

Sump w/ grating EL: 4.00'

Elevator Pit EL: 0.00'

Sump w/ grating EL: -2.00'

Car Elevator Pit EL: 1.00'

CAR ELEVATOR #1

CAR ELEVATOR #2

63 Spaces

FUTURE K.O. PANEL

Pile Caps (Above)

Line of Easement

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.

NOTE:
1. Provide embedded steel angle protection at outside corners of all columns and walls in parking garage. See drawing 9/A-605
2. Provide structural support for grating at required elevation.

0' 4' 8' 16' 32'

N

1 [redacted]
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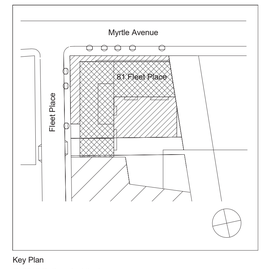
AS BUILT	7/20/15

3	BULLETIN #11	12/24/13
2	BULLETIN #4	06/14/13
1	BULLETIN #2	02/26/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - Sub-Cellar

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STERN 014686 STATE OF NEW YORK

Sheet No.
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A-100.01

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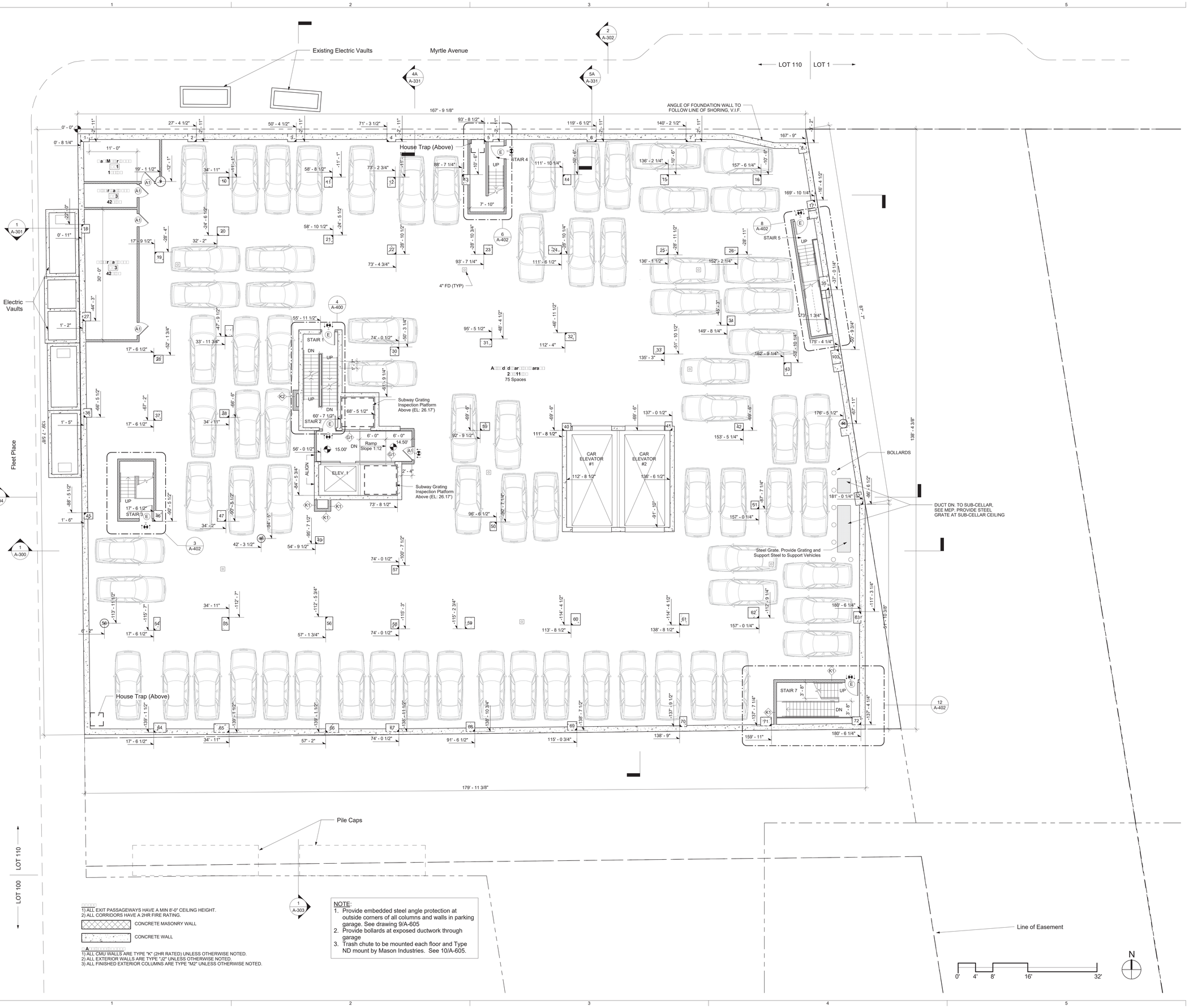

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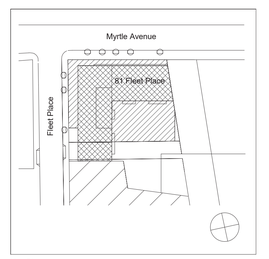
AS BUILT	7/20/15

3	BULLETIN #6	07/03/13
2	BULLETIN #4	06/14/13
1	BULLETIN #2	02/26/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - Cellar

Date	May 29, 2013
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

Sheet No.

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A-101.02

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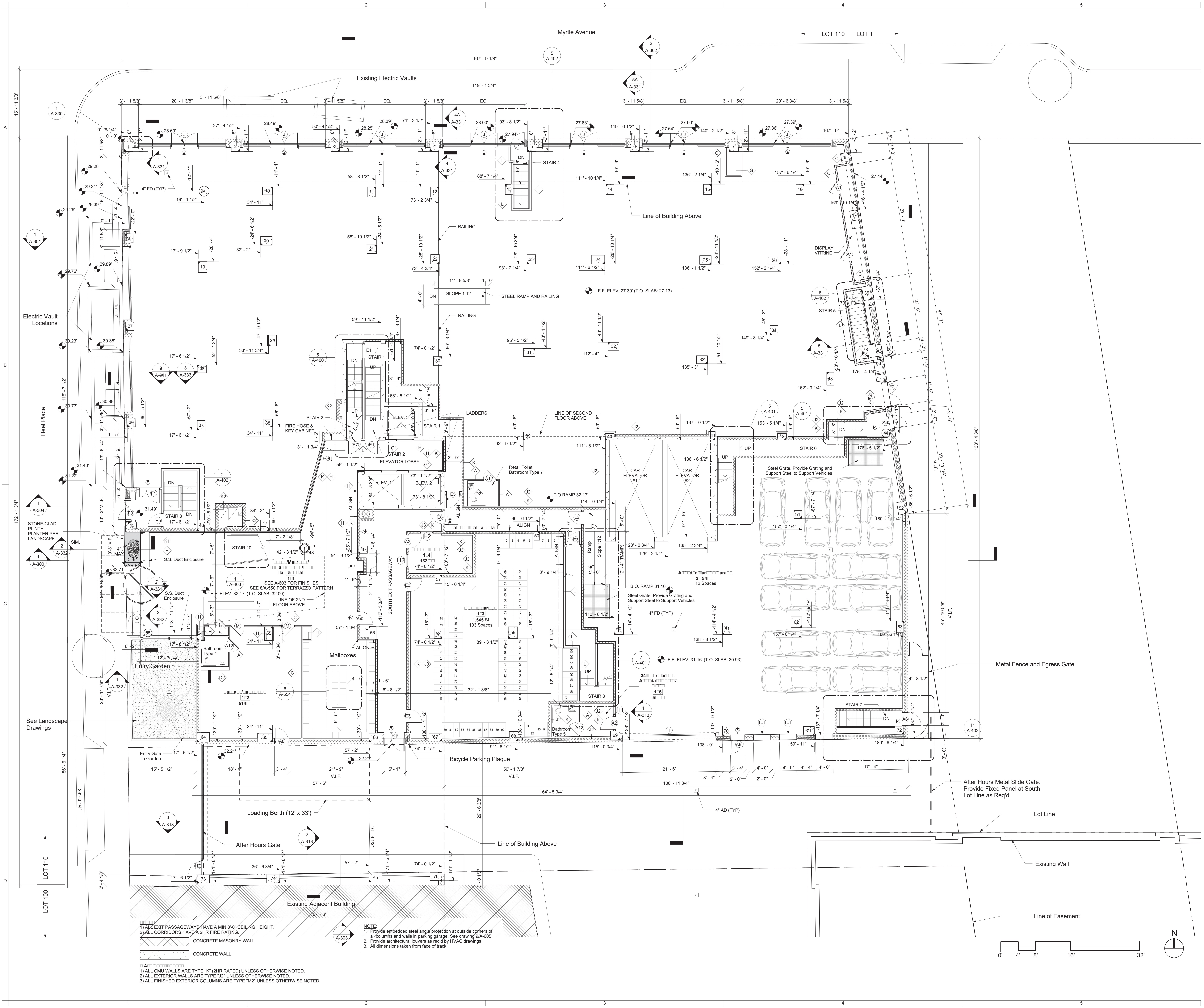

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

▨	CONCRETE MASONRY WALL
░	CONCRETE WALL

A

1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.

NOTE:
1. Provide embedded steel angle protection at outside corners of all columns and walls in parking garage. See drawing 9/A-605
2. Provide architectural louvers as req'd by HVAC drawings
3. All dimensions taken from face of track

1 a

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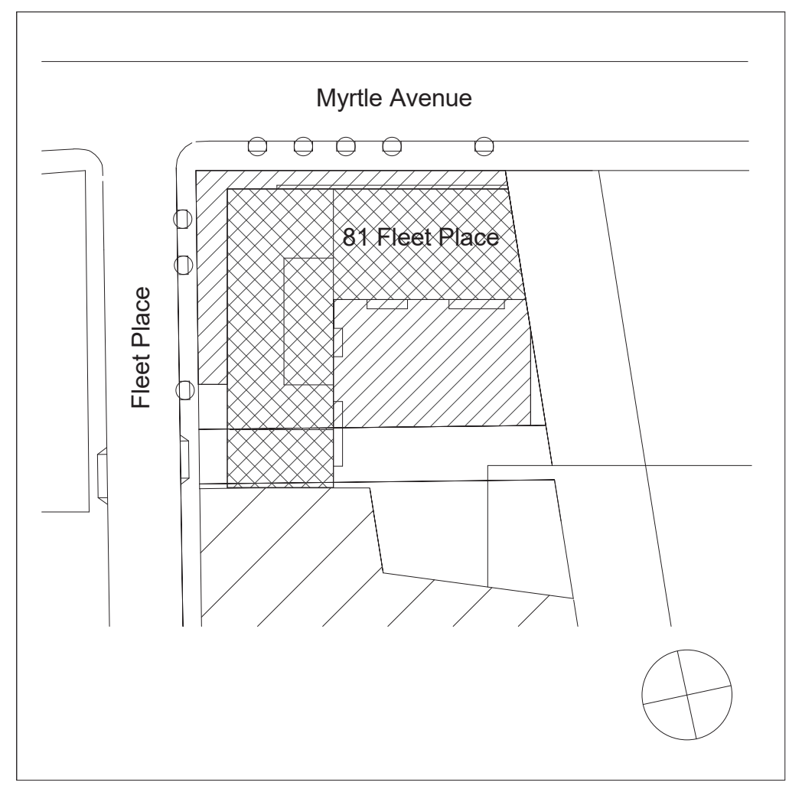
AS BUILT		7/20/15
6	BULLETIN #25	6/12/15
5	BULLETIN #23	11/26/14
4	BULLETIN #9	11/18/13
3	BULLETIN #6	07/03/13
FOR CONSTRUCTION		12/20/12
100% SUBMISSION		11/16/12

Revisions



Key Plan

Floor Plan - 1st Floor

Date May 29, 2013
Scale As indicated
Drawn By Author
Checked By Checker
Project No. 1126
Seal

REGISTERED ARCHITECT
WILLIAM STEIN
014686-1
STATE OF NEW YORK

William Stein

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A-102.02

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Myrtle Avenue

LOT 110 | LOT 1

Fleet Place

LOT 110

LOT 100

Upper Part of Retail

Interior Recreation Rooms
(5,841.80 sf)

Seating Area

Open to Lobby Below

Existing Adjacent Building

T.O. STAIR BELOW

T.O. STAIR BELOW.
2 HR RATED GWB CEILING

WALL TYPE "J2" EXTENDS FROM T.O. FLOOR 2 TO B.O. AMENITIES MER SLAB

WALL TYPE "J2" EXTENDS FROM T.O. FLOOR 2 TO B.O. AMENITIES MER SLAB, THEN IS REPLACED BY WALL TYPE "C"

WALL TYPE "J2" EXTENDS FROM T.O. FLOOR 2 TO B.O. AMENITIES MER SLAB, THEN IS REPLACED BY WALL TYPE "C"

2HR. DUCT ENCLOSURE ABOVE

The Screening Room will have acoustically-absorbent finish treatments on the walls from 3'-0" AFF to ceiling. This is slotted wood with 2" duct liner behind it. the ceiling should be sound-absorptive 2" thick Owens Corning SelectSound Black duct liner board adhered to the ceiling.

Stair #8 - Corridor wall is 2 HR Pyro-Stop glazing and compatible 2 HR frame. Door to be glazed with Fire-Lite Plus.

Full-height mirror, see elevations

Drinking Fountain

Excercise equipment N.I.C., typ.

CoverCoat columns this room only

Provide motorized Sol-R-Veil shades, all windows, at exercise room and playroom, including power controls

Metal Fence and Egress Gate

Line of Overhead Gate Below

Concrete Beam Below

Line of Building Above

Line of Sunshades Above

Line of Easement

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

A
1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.

NOTE:
1. Club/Lounge direct vent gas fire place is as specified. See mechanical drawings for vent location.
2. Exercise equipment is not included.
3. Bench in Seating Area will match lobby wood paneling. Bench will have a back. Top rail of bench and front edge of bench to be solid stock. Balance to be veneer.
4. All dimensions taken from face of track.

0' 4' 8' 16' 32'

N

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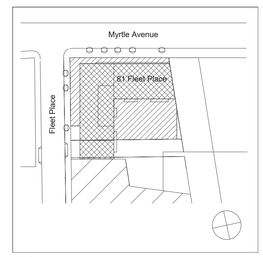
AS BUILT	7/20/15

7	BULLETIN #23	11/26/14
6	BULLETIN #16	04/22/14
5	BULLETIN #14	03/10/14
4	BULLETIN #11	12/24/13
FOR CONSTRUCTION		12/20/12
100% SUBMISSION		11/16/12

Revisions



Key Plan

Floor Plan - 2nd Floor

Date	Decmber 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

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LOT 110 | LOT 1

LOT 110

LOT 100

GAS METER ROOM PIPING

ROOF PAVERS (TYP.)

Private Terrace (Typ)

Terrace A

Terrace B

Terrace C

Terrace D

Terrace E

Terrace F

Terrace G

Terrace H

Terrace L

Terrace M

Terrace R

Terrace S

Terrace T

4'-6" FENCE (50% OPEN) SEE A-207

6'-0" FENCE (10% OPEN)

3'-8" PARAPET

A 1BR 773 SF

B 1BR 721 SF

C 1BR 732 SF

D 2BR 978 SF

E 2BR 931 SF

F 1BR 793 SF

G 1BR 671 SF

H 0BR 482 SF

J 2BR 920 SF

L 1BR 618 SF

M 1BR 622 SF

Q 1BR 664 SF

R 0BR 479 SF

S 1BR 658 SF

T 1BR 658 SF

BEDROOM (134 SF)

BEDROOM (175 SF)

LIVING/DINING/ KITCHEN (341 SF)

LIVING/DINING/ KITCHEN (344 SF)

LIVING/DINING/KITCHEN (359 SF)

BEDROOM (200 SF)

BEDROOM (209 SF)

LIVING/DINING/KITCHEN (337 SF)

BEDROOM (160 SF)

BEDROOM (199 SF)

BEDROOM 2 (162 SF)

LIVING/DINING/KITCHEN (300 SF)

KITCHENETTE (76 SF)

LIVING/DINING (266 SF)

BEDROOM (172 SF)

LIVING/DINING/KITCHEN (316 SF)

BEDROOM (181 SF)

LIVING/DINING/ SLEEPING (246 SF)

BEDROOM 2 (119 SF)

BEDROOM (129 SF)

LIVING/DINING/KITCHEN (337 SF)

BEDROOM (177 SF)

LIVING/DINING/ KITCHEN (300 SF)

BEDROOM (177 SF)

LIVING/DINING/ SLEEPING (263 SF)

BEDROOM (168 SF)

LIVING/DINING/KITCHEN (291 SF)

BEDROOM (175 SF)

BEDROOM (161 SF)

LIVING/DINING/KITCHEN (280 SF)

LIVING/DINING/ KITCHEN (289 SF)

Bathroom Type 1

Bathroom Type 3

STAIR 1

STAIR 2

STAIR 8

ELEV. 1

ELEV. 2

ELEV. 3

OUTDOOR BAR, COUNTER AND KITCHEN WRAP

BBQ GRILLES

OPEN TO BELOW

Provide Steel ladder and gate to EL. 60.00'

60.00'

SUNSHADES BELOW

SEE LANDSCAPE DWG L-300 FOR TERRACE LAYOUT

SEE LANDSCAPE DRAWINGS

Semi-Rigid Insulation Mechanically Fastened to Bottom of Floor 4 Slab above Drive-Thru (Includes Sides and Bottoms of Beams this floor only)

CONCRETE BEAM-TYP. SEE STRUCTURAL DWGS

LINE OF STUCCO WALL BELOW

Existing Adjacent Building (Below)

TERRACE ENCLOSURE CALCULATIONS: 3RD FLOOR

Terrace 'R':
(2 x 21'-10") + (2 x 14'-5") = 72'-6" Total Perimeter
Enclosed per ZR 12-10: 21'-10" + 14'-5" = 36'-3"
Open per ZR 12-10: 21'-10" + 14'-5" = 36'-3"
36'-3" / 72'-6" = 50% Enclosed (Complies)

Terrace 'S':
(2 x 27'-6") + (2 x 15'-0") = 85'-0" Total Perimeter
Enclosed per ZR 12-10: 27'-6" + 15'-0" = 42'-6"
Open per ZR 12-10: 27'-6" + 15'-0" = 42'-6"
42'-6" / 85'-0" = 50% Enclosed (Complies)

Terrace 'T':
(2 x 27'-6") + (2 x 15'-0") = 85'-0" Total Perimeter
Enclosed per ZR 12-10: 27'-6" + 15'-0" = 42'-6"
Open per ZR 12-10: 27'-6" + 15'-0" = 42'-6"
42'-6" / 85'-0" = 50% Enclosed (Complies)

Terrace 'A':
15'-0" + 2'-10" + 24'-0" 26'-8" + 2'-6" + 36'-0" + 45'-0" + 6'-6" = 158'-6" Total Perimeter
Enclosed per ZR 12-10: 15'-0" + 2'-10" + 24'-0" 26'-8" + 2'-6" = 71'-0"
Open per ZR 12-10: 36'-0" + 45'-0" + 6'-6" = 87'-6"
71'-0" / 158'-6" = 45% Enclosed (Complies)

Terrace 'B':
(2 x 26'-10") + (2 x 6'-6") = 66'-8" Total Perimeter
Enclosed per ZR 12-10: 26'-10" + 6'-6" = 33'-4"
Open per ZR 12-10: 26'-10" + 6'-6" = 33'-4"
33'-4" / 66'-8" = 50% Enclosed (Complies)

Terrace 'C':
(2 x 26'-11") + (2 x 6'-6") = 66'-10" Total Perimeter
Enclosed per ZR 12-10: 26'-11" + 6'-6" = 33'-5"
Open per ZR 12-10: 26'-11" + 6'-6" = 33'-5"
33'-5" / 66'-10" = 50% Enclosed (Complies)

Terrace 'D':
(2 x 36'-1") + (2 x 6'-6") = 85'-2" Total Perimeter
Enclosed per ZR 12-10: 36'-1" + 6'-6" = 42'-7"
Open per ZR 12-10: 36'-1" + 6'-6" = 42'-7"
42'-7" / 85'-2" = 50% Enclosed (Complies)

Terrace 'E':
(2 x 31'-0") + (2 x 6'-6") = 75'-0" Total Perimeter
Enclosed per ZR 12-10: 31'-0" + 6'-6" = 37'-6"
Open per ZR 12-10: 31'-0" + 6'-6" = 37'-6"
37'-6" / 75'-0" = 50% Enclosed (Complies)

Terrace 'M':
(2 x 26'-2") + (2 x 9'-11") = 72'-2" Total Perimeter
Enclosed per ZR 12-10: 26'-2" + 9'-11" = 36'-1"
Open per ZR 12-10: 26'-2" + 9'-11" = 36'-1"
36'-1" / 72'-2" = 50% Enclosed (Complies)

Terrace 'L':
(2 x 26'-8") + (2 x 9'-11") = 73'-2" Total Perimeter
Enclosed per ZR 12-10: 26'-8" + 9'-11" = 36'-7"
Open per ZR 12-10: 26'-8" + 9'-11" = 36'-7"
36'-7" / 73'-2" = 50% Enclosed (Complies)

Terrace 'H':
(2 x 19'-2") + (2 x 9'-11") = 58'-2" Total Perimeter
Enclosed per ZR 12-10: 19'-2" + 9'-11" = 29'-1"
Open per ZR 12-10: 19'-2" + 9'-11" = 29'-1"
29'-1" / 58'-2" = 50% Enclosed (Complies)

Terrace 'G':
(2 x 27'-2") + (2 x 9'-11") = 74'-2" Total Perimeter
Enclosed per ZR 12-10: 27'-2" + 9'-11" = 37'-1"
Open per ZR 12-10: 27'-2" + 9'-11" = 37'-1"
37'-1" / 74'-2" = 50% Enclosed (Complies)

Terrace 'F':
(2 x 28'-8") + (2 x 9'-11") = 77'-2" Total Perimeter
Enclosed per ZR 12-10: 28'-8" + 9'-11" = 38'-7"
Open per ZR 12-10: 28'-8" + 9'-11" = 38'-7"
38'-7" / 77'-2" = 50% Enclosed (Complies)

GENERAL NOTES
- ALL DIMENSIONS TAKEN FROM FACE OF TRACK
- HINGE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENING TO BE 4" FROM ADJACENT WALL.
- STRIKE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENINGS TO BE 18" MINIMUM FROM ADJACENT WALL ON PULL SIDE OF ANY DOOR.
- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
- MINIMUM DEPTH OF ALL CLOSETS TO BE 24" MEASURES FINISH TO FINISH EXCEPT WHERE CLOSET IS ADJACENT TO A LAUNDRY CLOSET WHERE LAUNDRY DIMENSION WILL GOVERN.
- MINIM DEPTH OF LAUNDRY CLOSET IS TO BE 2' - 9" MEASURED FINISH TO FINISH AND MINIMUM WIDTH IS TO BE 2' - 6" MEASURED FINISH TO FINISH
- LENGTH OF RETURN WALL AT KITCHENS IS TO BE 2' - 9".
- SEE 6/A-403 (FLOOR PLAN - TYPICAL CORE) FOR TYPICAL CORE, TRASH ROOM, ELEVATOR LOBBY AND CORRIDOR DIMENSIONS
- PIPE CHASE BETWEEN APARTMENTS (WALL TYPE 'D') TO SHARE THE CENTERLINE OF APARTMENT DEMISING PARTITION UNLESS OTHERWISE NOTED.
- TRASH CHUTE TO BE MOUNTED EACH FLOOR AND TYPE ND MOUNT BY MASON INDUSTRIES. SEE 10/A-605

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EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

0' 4' 8' 16' 32'

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AS BUILT	7/20/15
7 BULLETIN #22	10/24/14
6 BULLETIN #20	08/14/14
5 BULLETIN #17	05/21/14
4 BULLETIN #12	01/31/14
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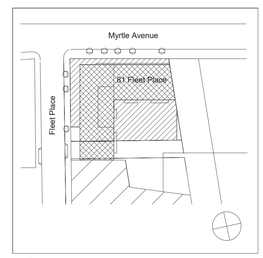
100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - 3rd Floor

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Sheet No.	A-104.02

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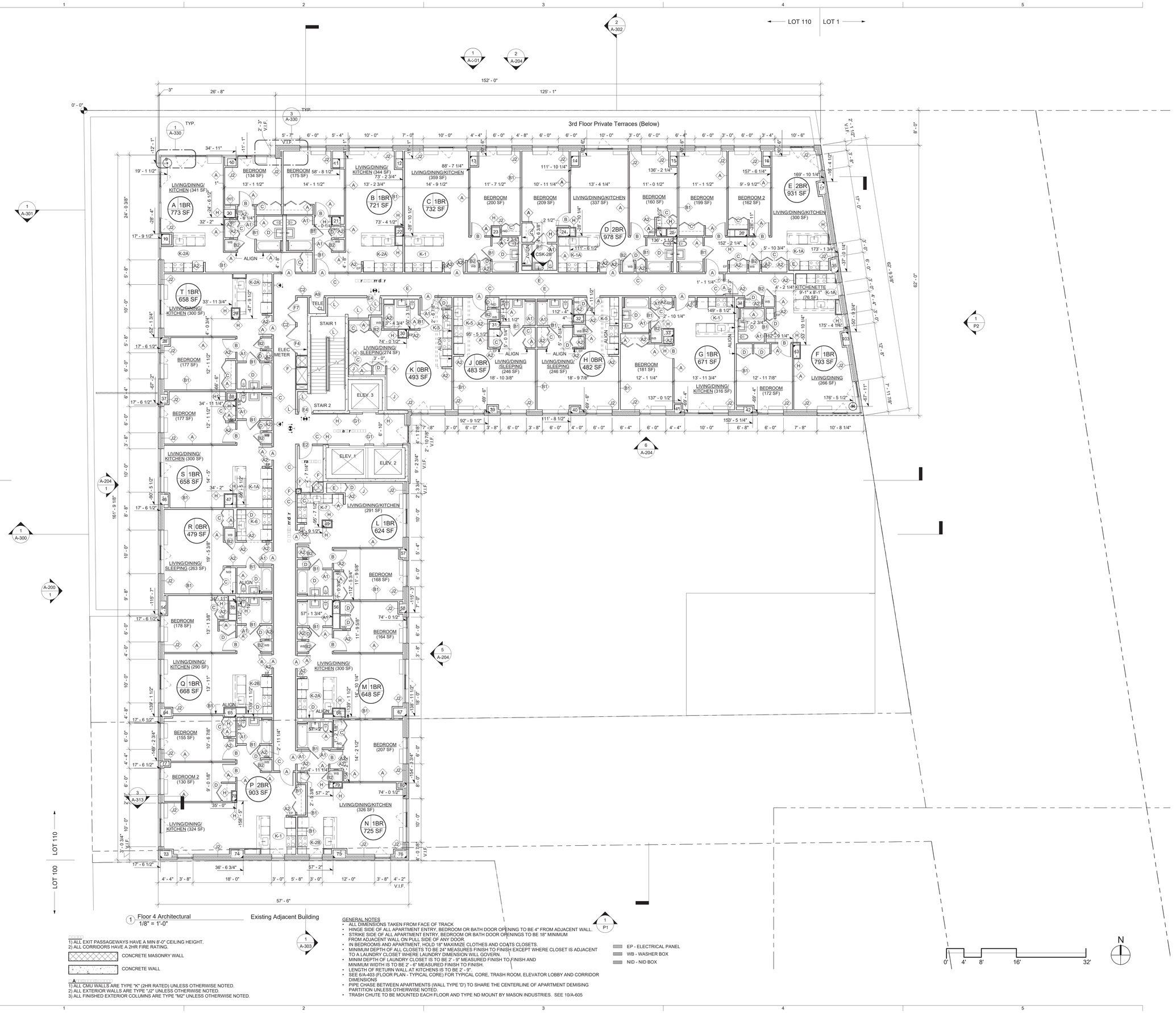

1 Floor 4 Architectural
1/8" = 1'-0"

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AS BUILT	7/20/15

3	BULLETIN #12	01/31/14
2	BULLETIN #6	07/03/13
1	BULLETIN #5	06/21/13
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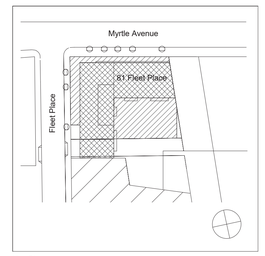
Revisions



Key Plan

Floor Plan - 4th Floor

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
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Seal	REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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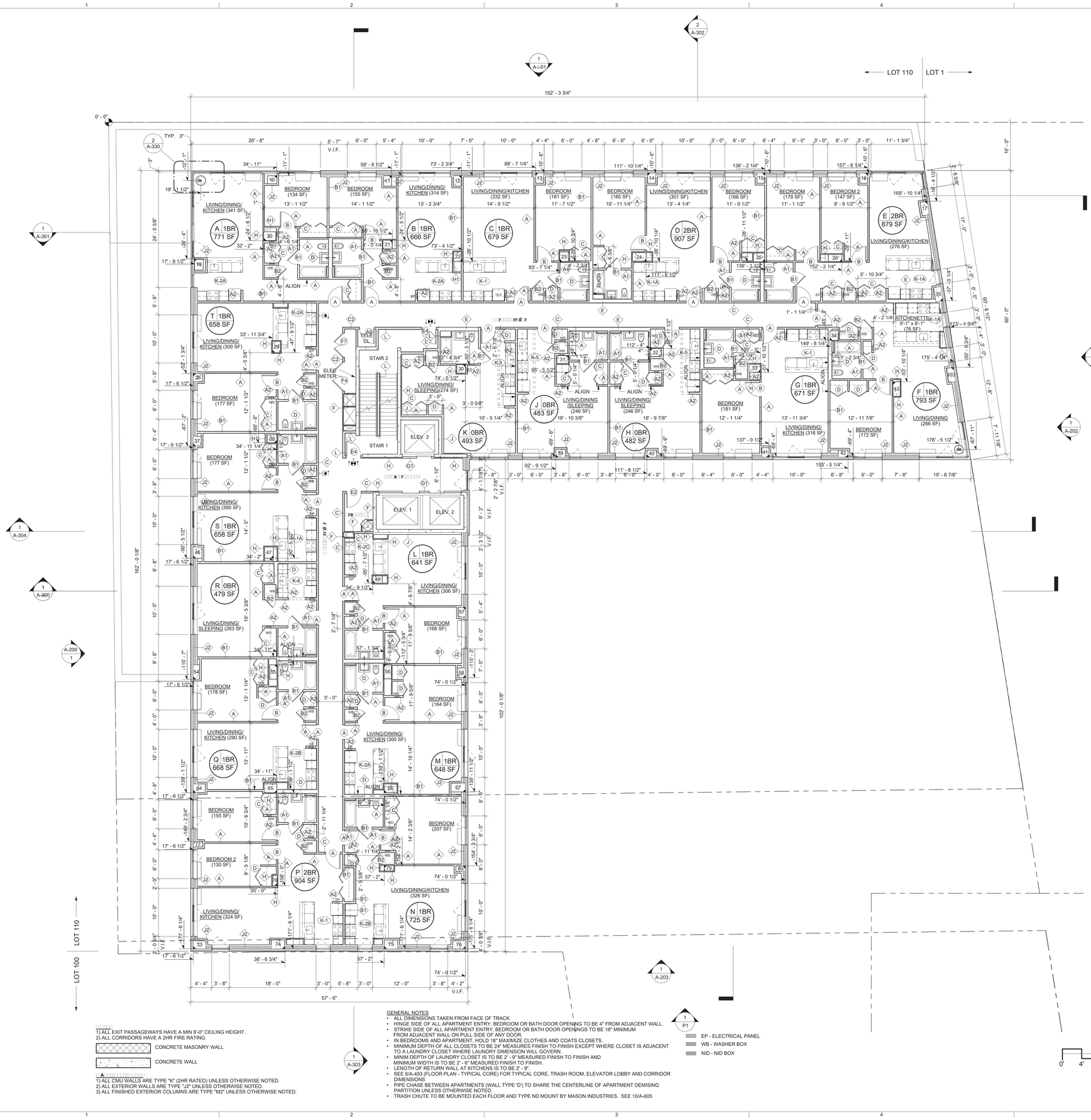

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3	BULLETIN #12	01/31/14
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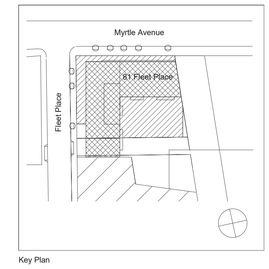
Revisions



Key Plan

Floor Plan - 5th to 7th Floors

Date	December 20, 2012
Scale	As indicated
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Seal	

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A-106.02

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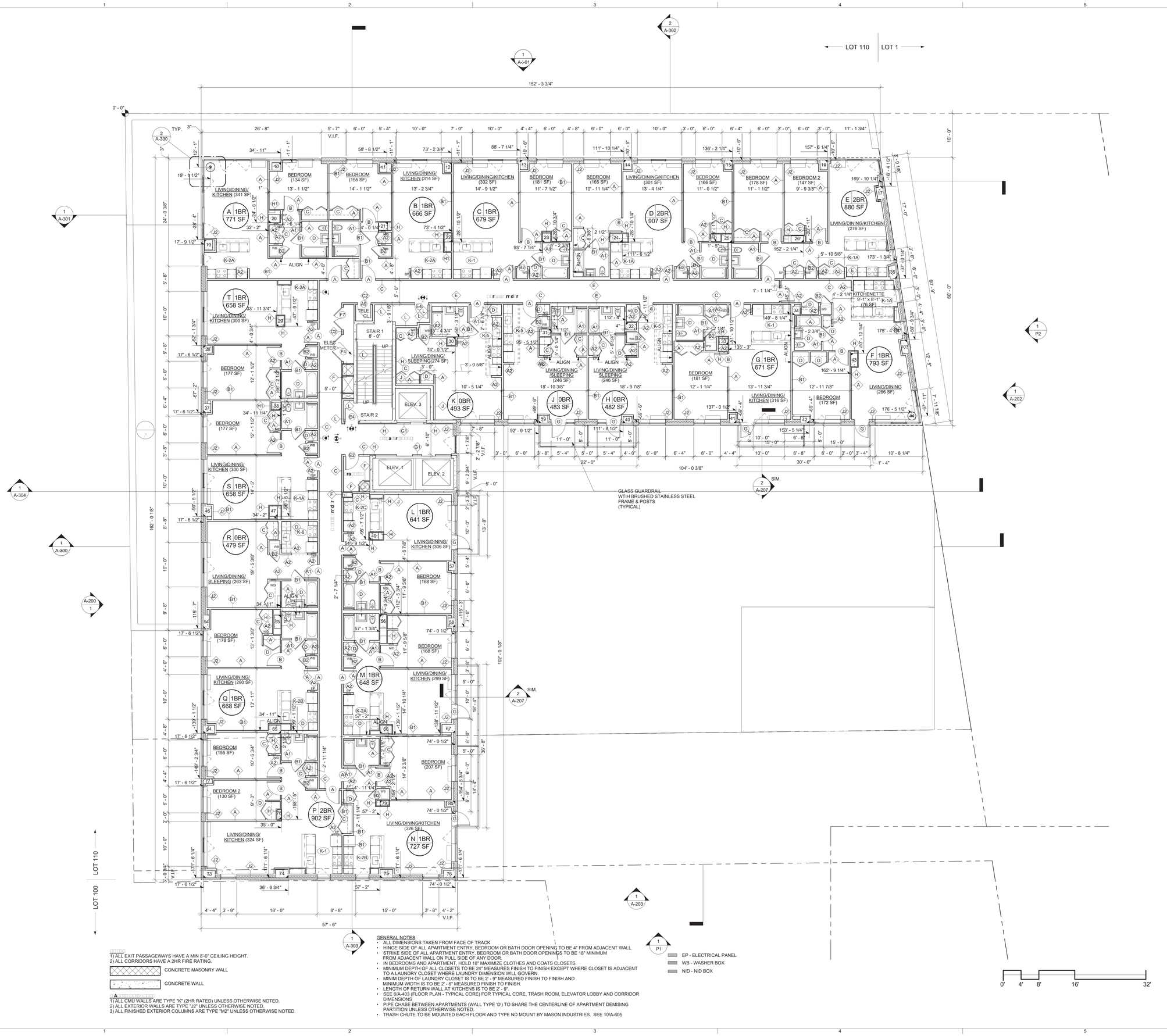

GENERAL NOTES
- ALL DIMENSIONS TAKEN FROM FACE OF TRACK
- HINGE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENING TO BE 4" FROM ADJACENT WALL.
- STRIKE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENINGS TO BE 18" MINIMUM FROM ADJACENT WALL ON PULL SIDE OF ANY DOOR.
- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
- MINIMUM DEPTH OF ALL CLOSETS TO BE 24" MEASURES FINISH TO FINISH EXCEPT WHERE CLOSET IS ADJACENT TO A LAUNDRY CLOSET WHERE LAUNDRY DIMENSION WILL GOVERN.
- MINIM DEPTH OF LAUNDRY CLOSET IS TO BE 2' - 9" MEASURED FINISH TO FINISH AND MINIMUM WIDTH IS TO BE 2' - 6" MEASURED FINISH TO FINISH.
- LENGTH OF RETURN WALL AT KITCHENS IS TO BE 2' - 9".
- SEE 6/A-403 (FLOOR PLAN - TYPICAL CORE) FOR TYPICAL CORE, TRASH ROOM, ELEVATOR LOBBY AND CORRIDOR DIMENSIONS
- PIPE CHASE BETWEEN APARTMENTS (WALL TYPE 'D') TO SHARE THE CENTERLINE OF APARTMENT DEMISING PARTITION UNLESS OTHERWISE NOTED.
- TRASH CHUTE TO BE MOUNTED EACH FLOOR AND TYPE ND MOUNT BY MASON INDUSTRIES. SEE 10/A-605

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.

EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

0' 4' 8' 16' 32'

N

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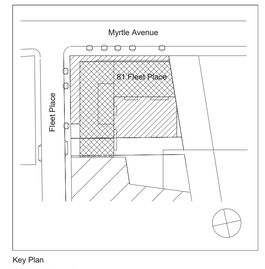
tel 212-874-0214

AS BUILT	7/20/15

3	BULLETIN #12	01/31/14
2	PAA #3	10/09/13
1	BULLETIN #5	06/21/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - 8th to 11th Floors

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

Sheet No.
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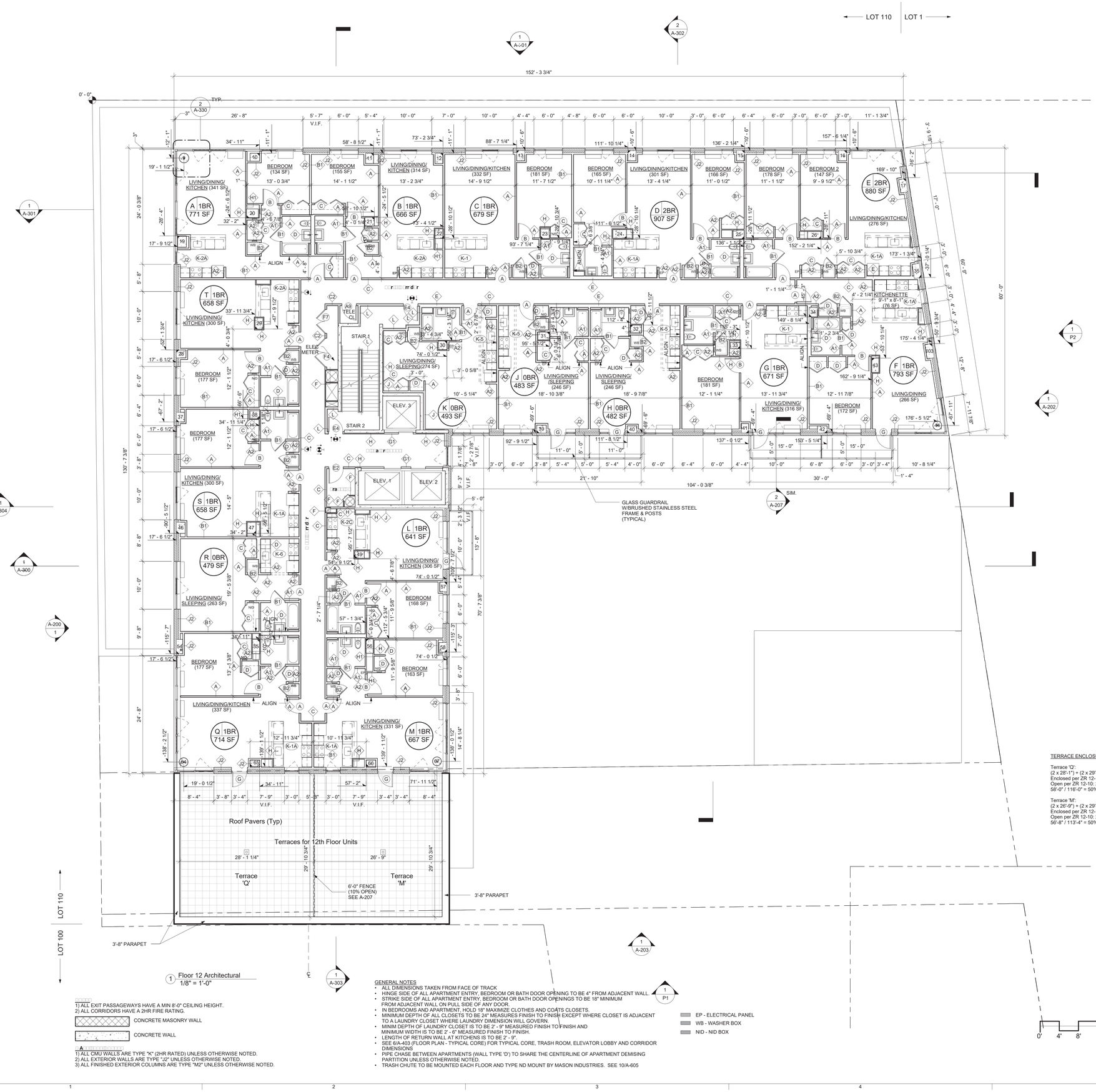

1 Floor 12 Architectural
1/8" = 1'-0"

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

A

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3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.

GENERAL NOTES

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EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

TERRACE ENCLOSURE CALCULATIONS: 12TH FLOOR

Terrace 'Q':
(2 x 28'-1") + (2 x 29'-11") = 116'-0" Total Perimeter
Enclosed per ZR 12-10: 28'-1" + 29'-11" = 58'-0"
Open per ZR 12-10: 28'-1" + 29'-11" = 58'-0"
58'-0" / 116'-0" = 50% Enclosed (Complies)

Terrace 'M':
(2 x 26'-9") + (2 x 29'-11") = 113'-4" Total Perimeter
Enclosed per ZR 12-10: 26'-9" + 29'-11" = 56'-8"
Open per ZR 12-10: 26'-9" + 29'-11" = 56'-8"
56'-8" / 113'-4" = 50% Enclosed (Complies)

0' 4' 8' 16' 32'

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3	BULLETIN #12	01/31/14
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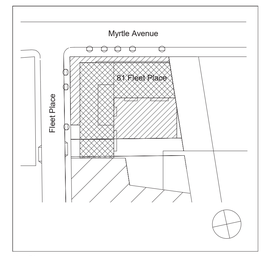
FOR CONSTRUCTION		12/20/12
100% SUBMISSION		11/16/12

Revisions



Key Plan

Floor Plan - 12th Floor

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	A-108.02

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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LOT 110 | LOT 1

152' - 3 3/4"

0' - 0"

TYP.

104' - 0 3/8"

130' - 7 3/8"

60' - 0"

70' - 7 3/8"

24' - 8"

LOT 110

LOT 100

Terraces for 12th Floor Units (Below)

A 1BR 771 SF
B 1BR 666 SF
C 1BR 832 SF
D 1BR 803 SF
E 1BR 834 SF
F 1BR 844 SF
G 1BR 783 SF
H 1BR 788 SF
K 0BR 493 SF
L 1BR 641 SF
M 1BR 665 SF
Q 1BR 737 SF
R 0BR 479 SF
S 1BR 668 SF
T 1BR 658 SF

BEDROOM (134 SF) · BEDROOM (155 SF) · LIVING/DINING/KITCHEN (314 SF) · LIVING/DINING/KITCHEN (403 SF) · BEDROOM (204 SF) · BEDROOM (204 SF) · BEDROOM (207 SF) · LIVING/DINING/KITCHEN (375 SF) · LIVING/DINING/KITCHEN (341 SF) · LIVING/DINING/KITCHEN (402 SF) · KITCHENETTE 9'-5" x 8'-1" (76 SF) · LIVING/DINING/KITCHEN (300 SF) · BEDROOM (177 SF) · LIVING/DINING (314 SF) · LIVING/DINING/KITCHEN (366 SF) · LIVING/DINING/KITCHEN (376 SF) · BEDROOM (203 SF) · BEDROOM (168 SF) · BEDROOM (199 SF) · LIVING/DINING/SLEEPING (274 SF) · LIVING/DINING/SLEEPING (263 SF) · LIVING/DINING/KITCHEN (306 SF) · BEDROOM (168 SF) · BEDROOM (163 SF) · LIVING/DINING/KITCHEN (337 SF) · LIVING/DINING/KITCHEN (331 SF)

STAIR 1 · STAIR 2 · ELEV. 1 · ELEV. 2 · ELEV. 3 · ELEC. METER · TELE CL

V.I.F. · SIM. · ALIGN

GENERAL NOTES

- ALL DIMENSIONS TAKEN FROM FACE OF TRACK
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WB - WASHER BOX
NID - NID BOX

NOTES

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2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

A[illegible]

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0' 4' 8' 16' 32'

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	AS BUILT	7/20/15
4	BULLETIN #21	10/07/14
3	BULLETIN #12	01/31/14
2	PAA #3	10/09/13
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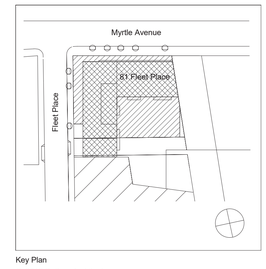
Revisions



Key Plan

Floor Plan - 13th Floor (Marketing - Floor 14)

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

Sheet No.
__ of __
A-109.03

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LOT 110 | LOT 1

LOT 110

LOT 100

0' - 0"

57' - 6"
56' - 11 7/8"

130' - 7 3/8"

3'-8" PARAPET

A 1BR 764 SF
B 1BR 698 SF
C 1BR 670 SF
D 1BR 638 SF
E 1BR 669 SF
F 1BR 785 SF
G 1BR 708 SF
H 1BR 709 SF

LIVING/DINING/KITCHEN (358 SF)
BEDROOM (150 SF)
LIVING/DINING/KITCHEN (294 SF)
LIVING/DINING/KITCHEN (320 SF)
BEDROOM (162 SF)
BEDROOM (203 SF)
LIVING/DINING/KITCHEN (308 SF)
LIVING/DINING/KITCHEN (303 SF)
BEDROOM (206 SF)
BEDROOM (198 SF)
LIVING/DINING/KITCHEN (363 SF)
BEDROOM (187 SF)
ELEV. 3
STAIR 2
ELEV. 1
ELEV. 2
LIVING/DINING/KITCHEN (306 SF)
BEDROOM (168 SF)
BEDROOM (163 SF)
LIVING/DINING/KITCHEN (331 SF)
ELEC METER
ON STAIR 1
UP
ON
ALIGN

Terrace 'A'
Terrace 'B'
Terrace 'C'
Terrace 'D'
Terrace 'E'
Terrace 'F'
Terrace 'G'
Terrace 'H'

Terraces for 14th Floor units and 13th Floor units (below)

PLANTING BOX
6'-0" FENCE (10% OPEN)
4'-6" FENCE (50% OPEN)
4'-6" FENCE (50% OPEN) SEE A-207
Prefab Stair Bulkhead (typ.)

SIM.
TYP.

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
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CONCRETE WALL

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NID - NID BOX

TERRACE ENCLOSURE CALCULATIONS: 14TH FLOOR

Terrace 'A':
15'-1" + 28'-8" + 3'-8" + 1'-9" + 11'-5" + 30'-6" = 91'-0" Total Perimeter
Enclosed per ZR 12-10: 3'-8" + 1'-9" + 30'-6" = 35'-10"
Open per ZR 12-10: 15'-1" + 28'-8" + 11'-5" = 55'-2"
35'-10" / 91'-0" = 39% Enclosed (Complies)

Terrace 'B':
14'-11" + 22'-10" + 10'-6" + 4'-1" + 7'-4" + 4'-4" + 11'-6" = 75'-6" Total Perimeter
Enclosed per ZR 12-10: 14'-11" + 10'-6" + 7'-4" + 4'-4" = 37'-1"
Open per ZR 12-10: 22'-10" + 4'-1" + 11'-6" = 38'-5"
37'-1" / 75'-6" = 49% Enclosed (Complies)

Terrace 'C':
21'-6" + 24'-0" + 18'-11" + 5'-9" + 6'-10" + 7'-6" + 4'-3" + 10'-6" = 99'-3" Total Perimeter
Enclosed per ZR 12-10: 24'-0" + 7'-6" + 10'-6" = 42'-0"
Open per ZR 12-10: 21'-6" + 18'-11" + 5'-9" + 6'-10" + 4'-3" = 57'-3"
42'-0" / 99'-3" = 42% Enclosed (Complies)

Terrace 'D':
28'-5" + 24'-0" + 28'-5" + 24'-0" = 104'-10" Total Perimeter
Enclosed per ZR 12-10: 24'-0" + 24'-0" = 48'-0"
Open per ZR 12-10: 28'-5" + 28'-5" = 56'-10"
48'-0" / 104'-10" = 46% Enclosed (Complies)

Terrace 'E':
20'-4" + 28'-4" + 22'-6" + 26'-0" = 96'-10" Total Perimeter
Enclosed per ZR 12-10: 22'-6" + 26'-0" = 48'-6"
Open per ZR 12-10: 20'-4" + 28'-4" = 48'-10"
48'-6" / 96'-10" = 50% Enclosed (Complies)

Terrace 'F':
18'-7" + 31'-7" + 23'-6" + 31'-2" = 104'-10" Total Perimeter
Enclosed per ZR 12-10: 18'-7" + 31'-2" = 49'-9"
Open per ZR 12-10: 31'-7" + 23'-6" = 55'-1"
49'-9" / 104'-10" = 47% Enclosed (Complies)

Terrace 'G':
28'-2" + 24'-0" + 28'-2" + 24'-0" = 104'-4" Total Perimeter
Enclosed per ZR 12-10: 24'-0" + 24'-0" = 48'-0"
Open per ZR 12-10: 28'-2" + 28'-2" = 56'-4"
48'-0" / 104'-4" = 46% Enclosed (Complies)

Terrace 'H':
20'-0" + 24'-0" + 28'-5" + 9'-8" + 7'-8" + 14'-4" = 104'-10" Total Perimeter
Enclosed per ZR 12-10: 24'-0" + 7'-8" + 14'-4"= 46'-0"
Open per ZR 12-10: 20'-9" + 28'-5" + 9'-8" = 58'-10"
46'-0" / 104'-10" = 44% Enclosed (Complies)

0' 4' 8' 16' 32'

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AS BUILT	7/20/15
6 BULLETIN #21	10/07/14
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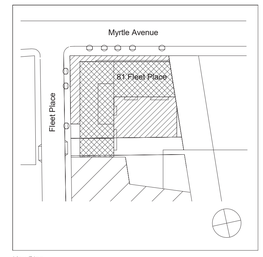
FOR CONSTRUCTION	12/20/12
100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - 14th Floor (Marketing - Floor 15)

Date	Decmber 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	A-110.03
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REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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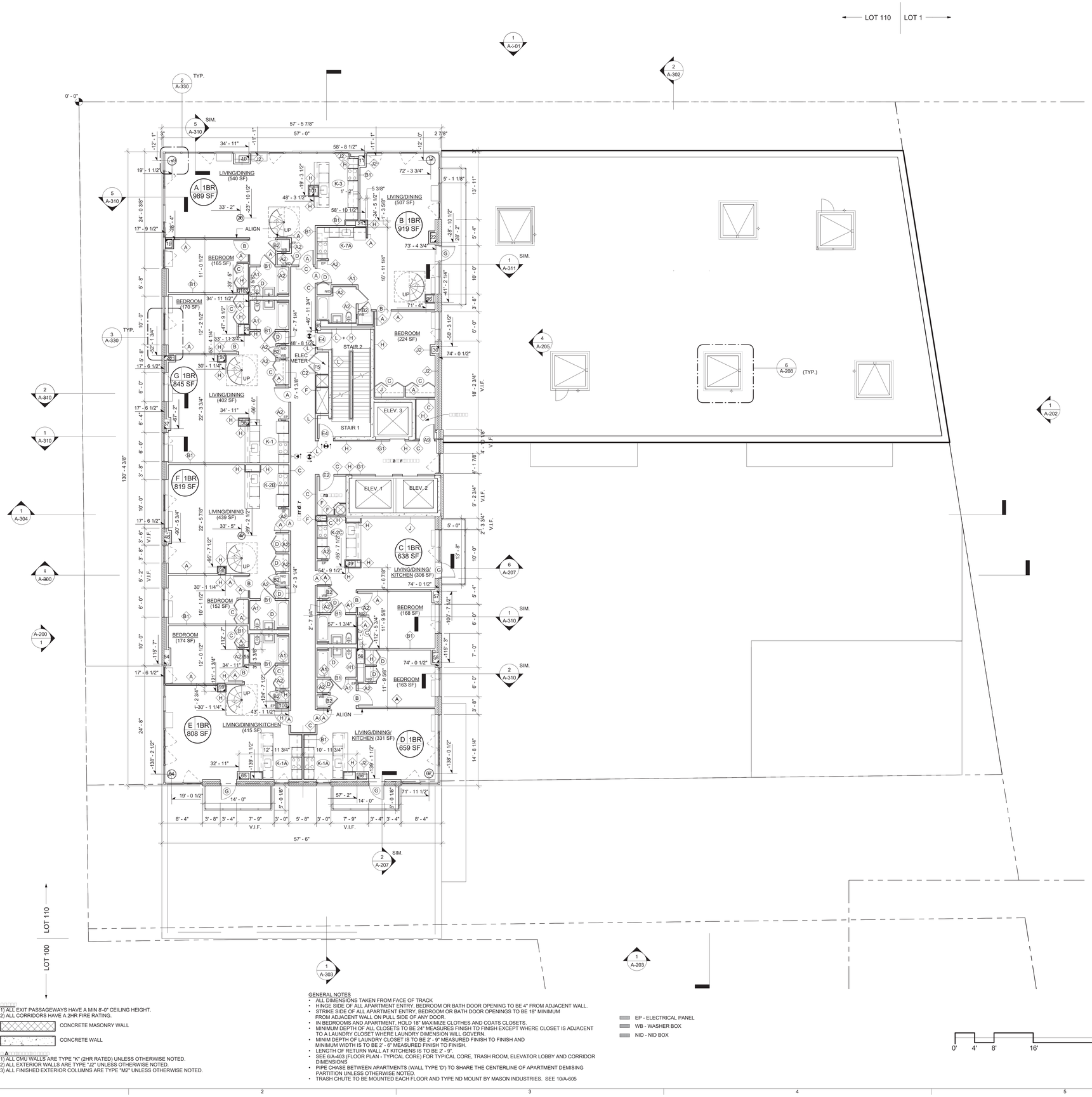

GENERAL NOTES

- ALL DIMENSIONS TAKEN FROM FACE OF TRACK
- HINGE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENING TO BE 4" FROM ADJACENT WALL.
- STRIKE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENINGS TO BE 18" MINIMUM FROM ADJACENT WALL ON PULL SIDE OF ANY DOOR.
- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
- MINIMUM DEPTH OF ALL CLOSETS TO BE 24" MEASURES FINISH TO FINISH EXCEPT WHERE CLOSET IS ADJACENT TO A LAUNDRY CLOSET WHERE LAUNDRY DIMENSION WILL GOVERN.
- MINIM DEPTH OF LAUNDRY CLOSET IS TO BE 2' - 9" MEASURED FINISH TO FINISH AND MINIMUM WIDTH IS TO BE 2' - 6" MEASURED FINISH TO FINISH.
- LENGTH OF RETURN WALL AT KITCHENS IS TO BE 2' - 9".
- SEE 6/A-403 (FLOOR PLAN - TYPICAL CORE) FOR TYPICAL CORE, TRASH ROOM, ELEVATOR LOBBY AND CORRIDOR DIMENSIONS
- PIPE CHASE BETWEEN APARTMENTS (WALL TYPE 'D') TO SHARE THE CENTERLINE OF APARTMENT DEMISING PARTITION UNLESS OTHERWISE NOTED.
- TRASH CHUTE TO BE MOUNTED EACH FLOOR AND TYPE ND MOUNT BY MASON INDUSTRIES. SEE 10/A-605

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.

EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

0' 4' 8' 16' 32'

N

1

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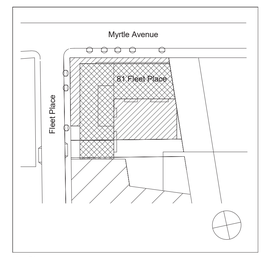
AS BUILT	7/20/15
4 BULLETIN #21	10/07/14
3 PAA #3	10/09/13
2 BULLETIN #8	09/06/13
1 BULLETIN #5	06/21/13
FOR CONSTRUCTION	12/20/12
100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - 15th Floor (Marketing - Floor 16)

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	A-111.03
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REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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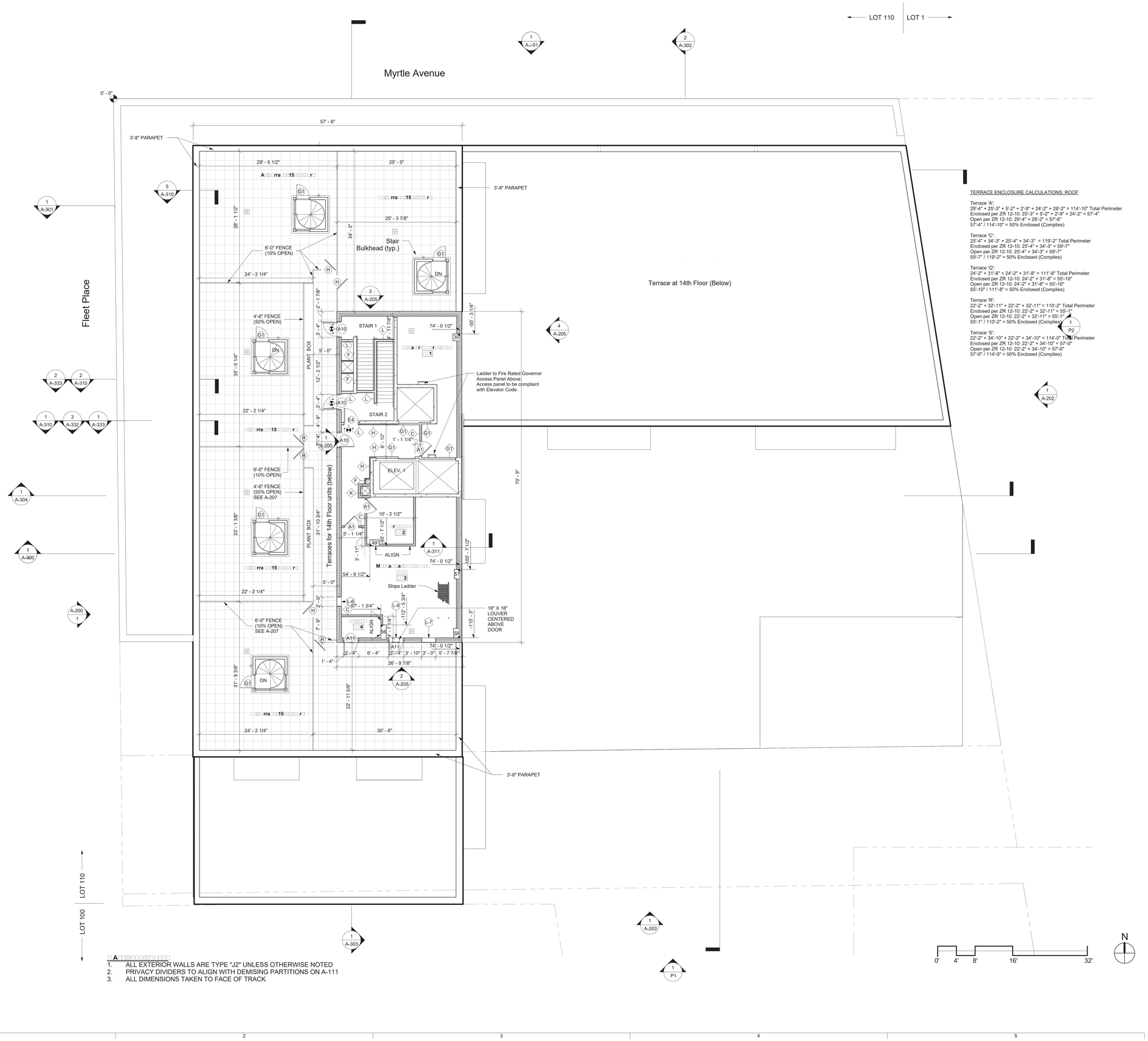

A

1. ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED
2. PRIVACY DIVIDERS TO ALIGN WITH DEMISING PARTITIONS ON A-111
3. ALL DIMENSIONS TAKEN TO FACE OF TRACK

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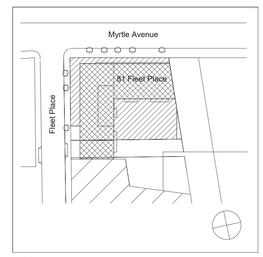
AS BUILT		7/20/15
5	PAA #4	2/9/15
4	BULLETIN #20	08/14/14
3	BULLETIN #17	05/21/14
2	PAA #3	10/09/13
FOR CONSTRUCTION		12/20/12
100% SUBMISSION		11/16/12

Revisions



Key Plan

Floor Plan - Roof

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

Sheet No.
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LOT 110 | LOT 1

0' - 0"

2 STORIES

4 STORIES

13 STORIES

15 STORIES

2 STORIES

11 STORIES

70' - 9"

26' - 9 7/8"

LOT 110

LOT 100

ADD ALTERNATE - PROVIDE WEATHERPROOF SOUND ATTENUATING GENERATOR ENCLOSURE BY PRITCHARD BROWN - 35 DB REDUCTION REQUIRED.

UP

Emergency Generator

Smoke Hatches

Gooseneck

Ladder to Governor Access Panel Above

Smoke Hatch

Gas Vent

Ring Beam Above

Upset Beams and steel beam dunnage for Water Tank
See Structural Dwgs.

Louver Screen

Access Hatch

Steel Posts and Beam Framing
See Structural Dwgs.

Trash Chute Vent
Trash Room Vent

Elevator 1 Overrun

Water Tank

0' 4' 8' 16' 32'

N

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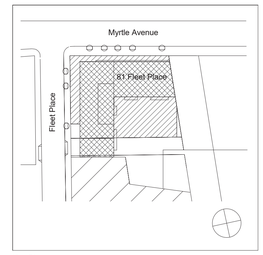
AS BUILT	7/20/15
FOR CONSTRUCTION	12/20/12
100% SUBMISSION	11/16/12

Revisions



Key Plan

Floor Plan - Bulkhead

Date	Decmber 20, 2012
Scale	1/8" = 1'-0"
Drawn By	Author
Checked By	Checker
Project No.	1126

Seal

REGISTERED ARCHITECT WILLIAM STERN 014886-1 STATE OF NEW YORK

Sheet No.

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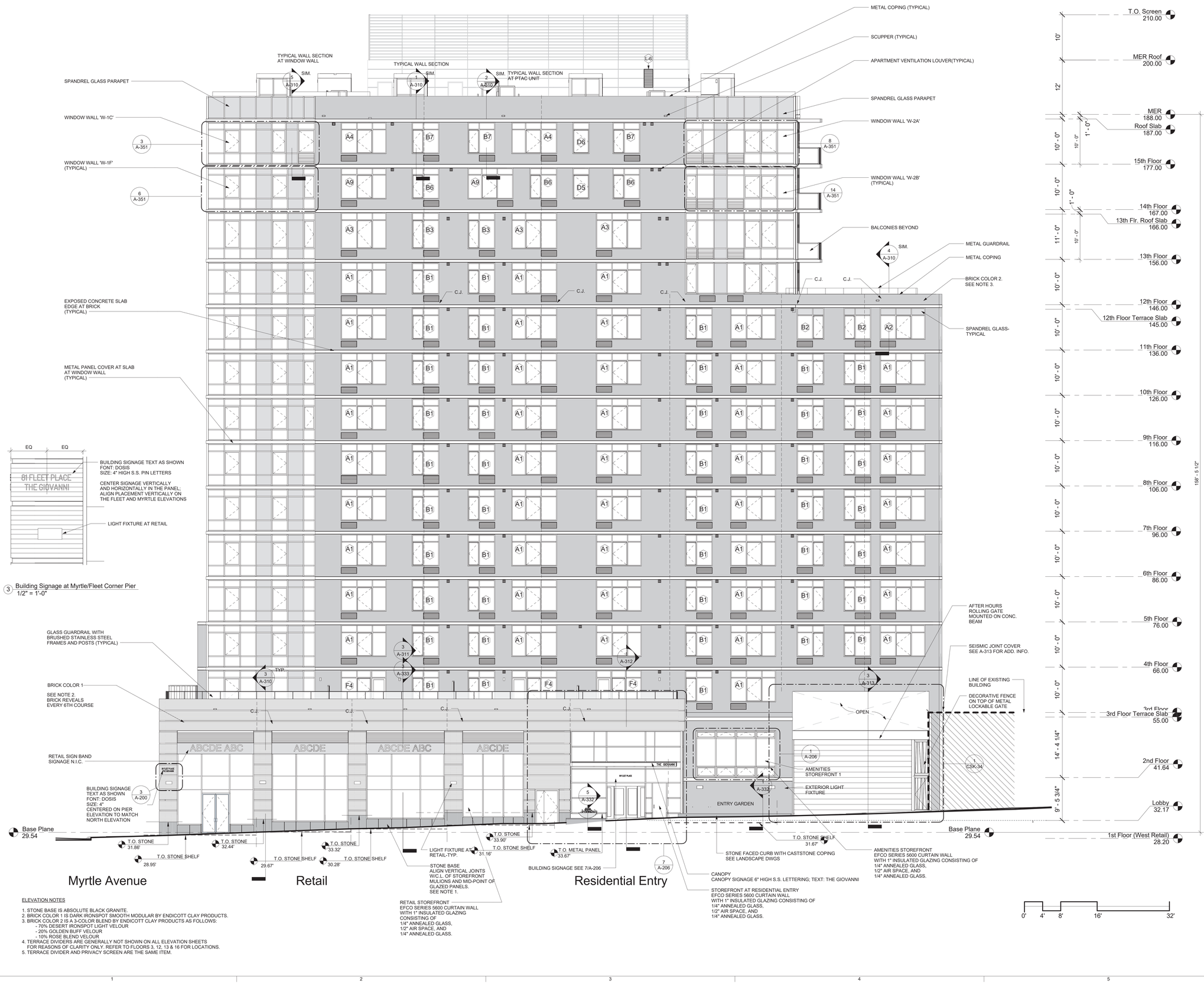

EQ EQ

81 FLEET PLACE
THE GIOVANNI

BUILDING SIGNAGE TEXT AS SHOWN
FONT: DOSIS
SIZE: 4" HIGH S.S. PIN LETTERS

CENTER SIGNAGE VERTICALLY AND HORIZONTALLY IN THE PANEL; ALIGN PLACEMENT VERTICALLY ON THE FLEET AND MYRTLE ELEVATIONS

LIGHT FIXTURE AT RETAIL

3 Building Signage at Myrtle/Fleet Corner Pier
1/2" = 1'-0"

ELEVATION NOTES

1. STONE BASE IS ABSOLUTE BLACK GRANITE.
2. BRICK COLOR 1 IS DARK IRONSPOT SMOOTH MODULAR BY ENDICOTT CLAY PRODUCTS.
3. BRICK COLOR 2 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS:
   - 70% DESERT IRONSPOT LIGHT VELOUR
   - 20% GOLDEN BUFF VELOUR
   - 10% ROSE BLEND VELOUR
4. TERRACE DIVIDERS ARE GENERALLY NOT SHOWN ON ALL ELEVATION SHEETS FOR REASONS OF CLARITY ONLY. REFER TO FLOORS 3, 12, 13 & 16 FOR LOCATIONS.
5. TERRACE DIVIDER AND PRIVACY SCREEN ARE THE SAME ITEM.

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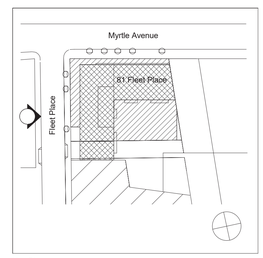
AS BUILT	7/20/15
5 BULLETIN #25	6/12/15
4 BULLETIN #23	11/26/14
3 BULLETIN #9	11/18/13
2 PAA #3	10/09/13
FOR CONSTRUCTION	12/20/12
100% SUBMISSION	11/16/12

Revisions



Key Plan

West Elevation at Fleet Place

Date	Decmber 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	A-200.00
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REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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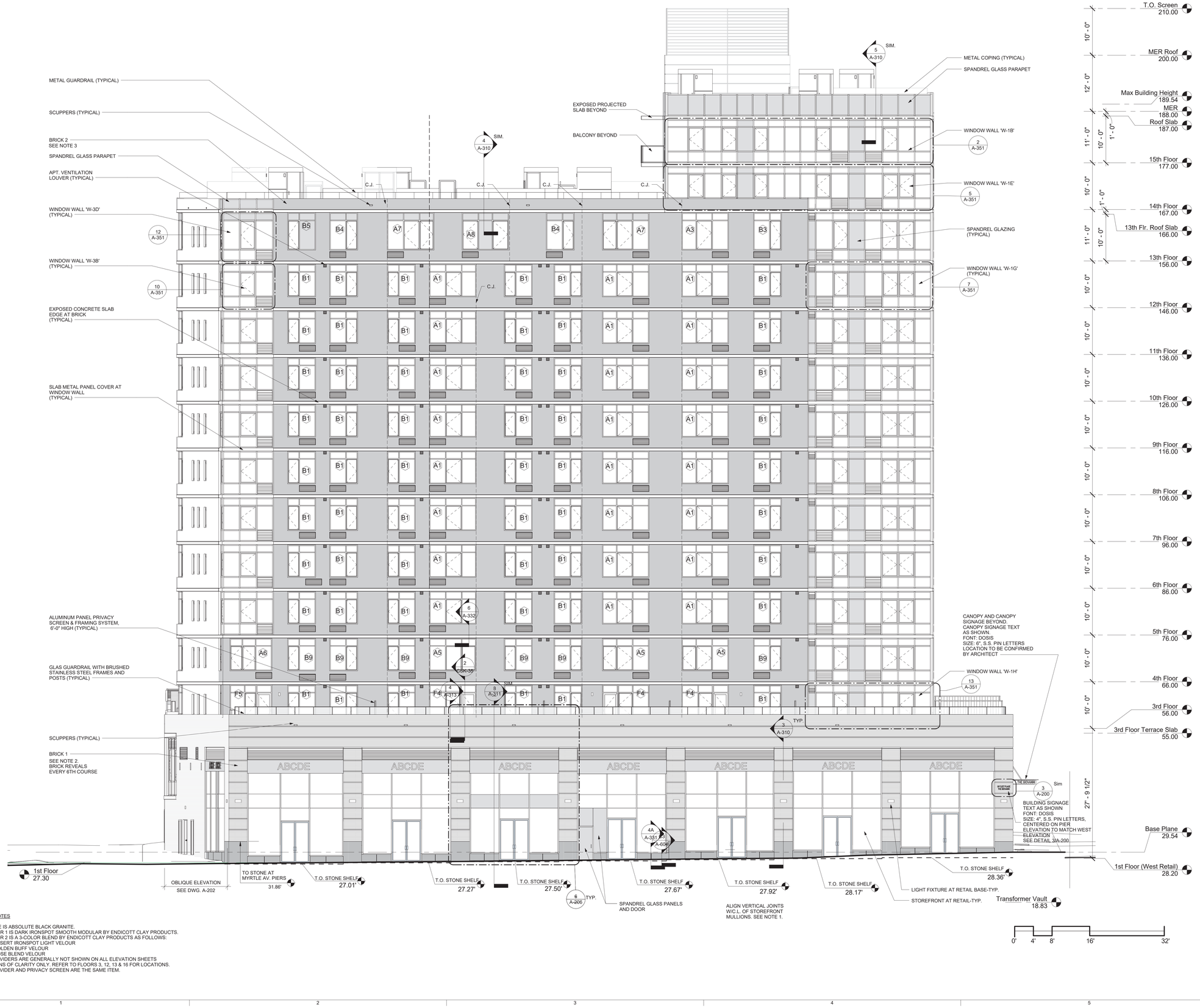

ELEVATION NOTES

1. STONE BASE IS ABSOLUTE BLACK GRANITE
2. BRICK COLOR 1 IS DARK IRONSPOT SMOOTH MODULAR BY ENDICOTT CLAY PRODUCTS.
3. BRICK COLOR 2 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS:
   - 70% DESERT IRONSPOT LIGHT VELOUR
   - 20% GOLDEN BUFF VELOUR
   - 10% ROSE BLEND VELOUR
4. TERRACE DIVIDERS ARE GENERALLY NOT SHOWN ON ALL ELEVATION SHEETS FOR REASONS OF CLARITY ONLY. REFER TO FLOORS 3, 12, 13 & 16 FOR LOCATIONS.
5. TERRACE DIVIDER AND PRIVACY SCREEN ARE THE SAME ITEM.

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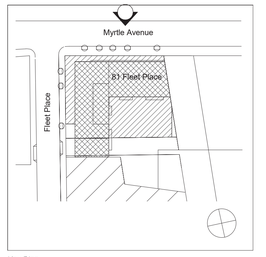
AS BUILT	7/20/15

3	BULLETIN #23	11/26/14
2	BULLETIN #9	11/18/13
1	PAA #3	10/09/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions



Key Plan

North Elevation at Myrtle Avenue

Date	December 20, 2012
Scale	As indicated
Drawn By	EV
Checked By	IM
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

Sheet No.

___ of ___

A-201.00

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ELEVATION NOTES

1. STONE BASE IS ABSOLUTE BLACK GRANITE.
2. BRICK COLOR 1 IS DARK IRONSPOT SMOOTH MODULAR BY ENDICOTT CLAY PRODUCTS.
3. BRICK COLOR 2 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS:
   - 70% DESERT IRONSPOT LIGHT VELOUR
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4. TERRACE DIVIDERS ARE GENERALLY NOT SHOWN ON ALL ELEVATION SHEETS FOR REASONS OF CLARITY ONLY. REFER TO FLOORS 3, 12, 13 & 16 FOR LOCATIONS.
5. TERRACE DIVIDER AND PRIVACY SCREEN ARE THE SAME ITEM.

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AS BUILT	7/20/15

3	BULLETIN #14	03/10/14
2	BULLETIN #9	11/18/13
1	PAA #3	10/09/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions

Key Plan

East Elevation

Date	Decmber 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	A-202.01
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REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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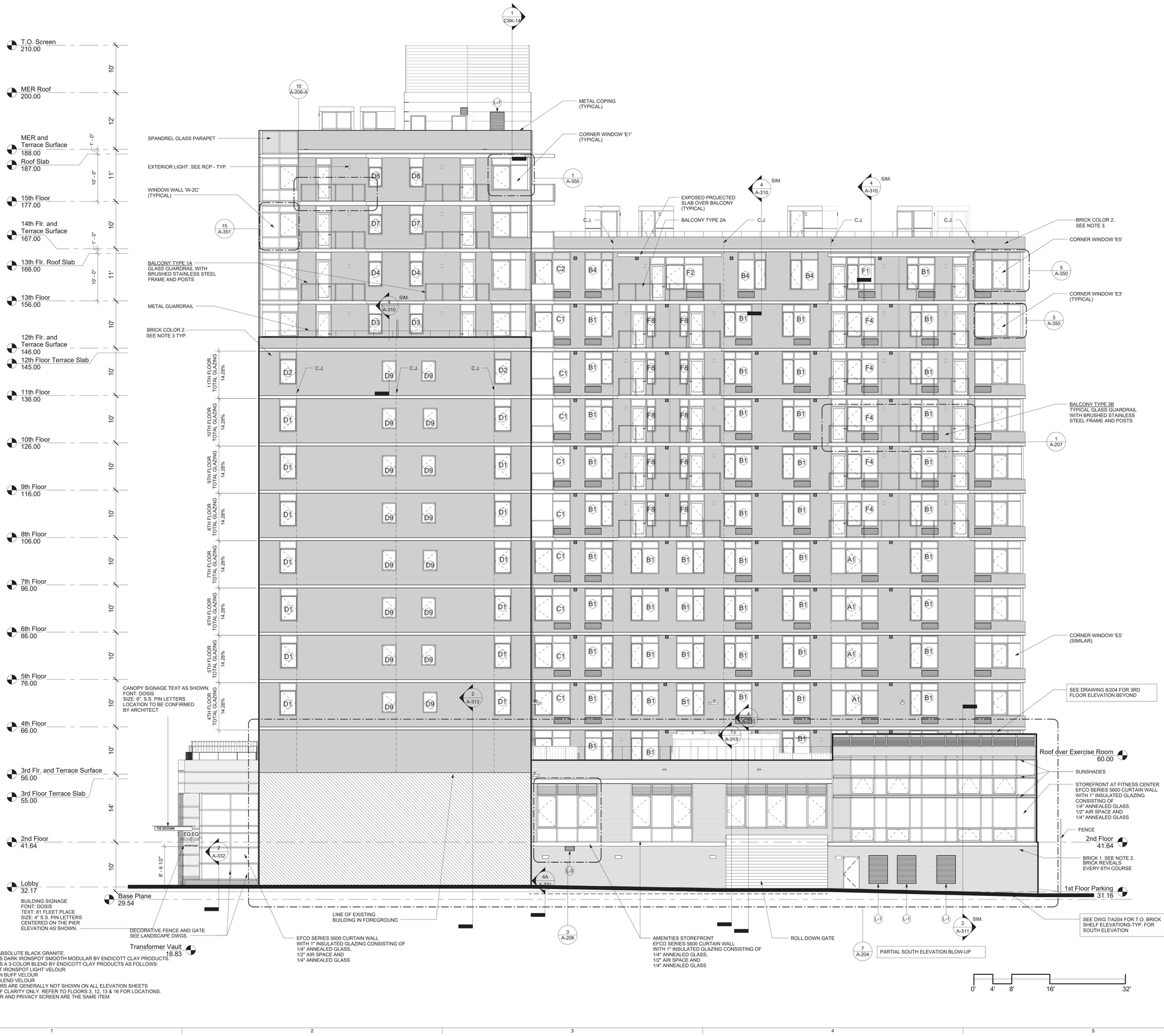

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fax 914-965-6546

Site Civil Engineer
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New York, NY 10016
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fax 212-929-5605

Geotechnical Engineer
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360 West 31st Street, 8th Floor
New York, New York 10001

Environmental Engineer
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Melville, NY 11747
tel 631-271-9292

Conveying Consultant
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tel 973-994-9220

Lighting Consultant
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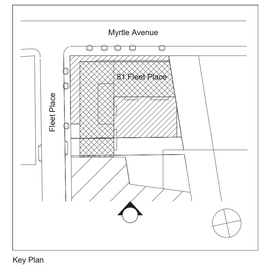
173 West 81st Street, Suite 2
New York, NY 10024
tel 212-874-0214

AS BUILT	7/20/15

2	BULLETIN #23	11/26/14
1	PAA #3	10/09/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions



Key Plan

South Elevation

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STEIN 014886-1 STATE OF NEW YORK

Sheet No.
___ of ___

A-203.01

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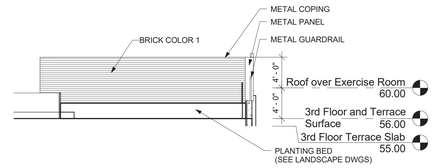
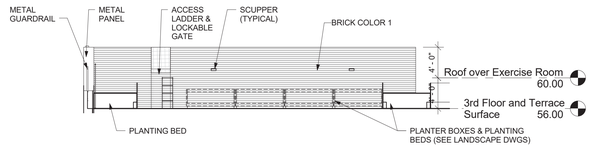
1 Partial West Elevation at 3rd Floor Terrace
1/8" = 1'-0"

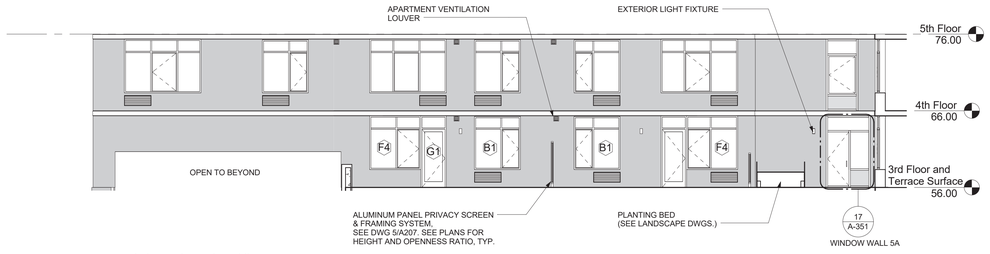
2 Partial North Elevation at 3rd Floor Terrace
1/8" = 1'-0"



3 Partial West Elevation at 3rd Floor Mechanical Equipment Screen
1/8" = 1'-0"

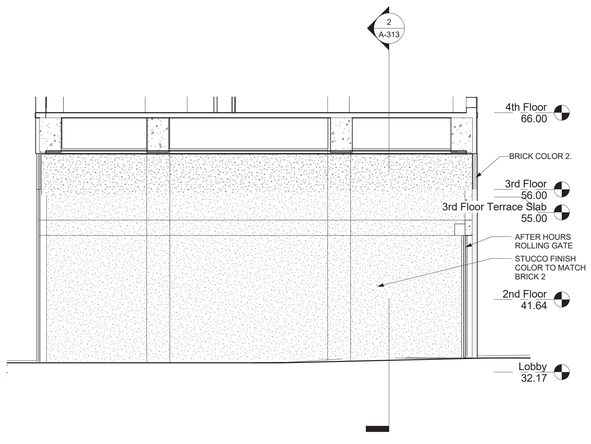


4 Partial North Elevation at 3rd Floor Mechanical Equipment Screen
1/8" = 1'-0"

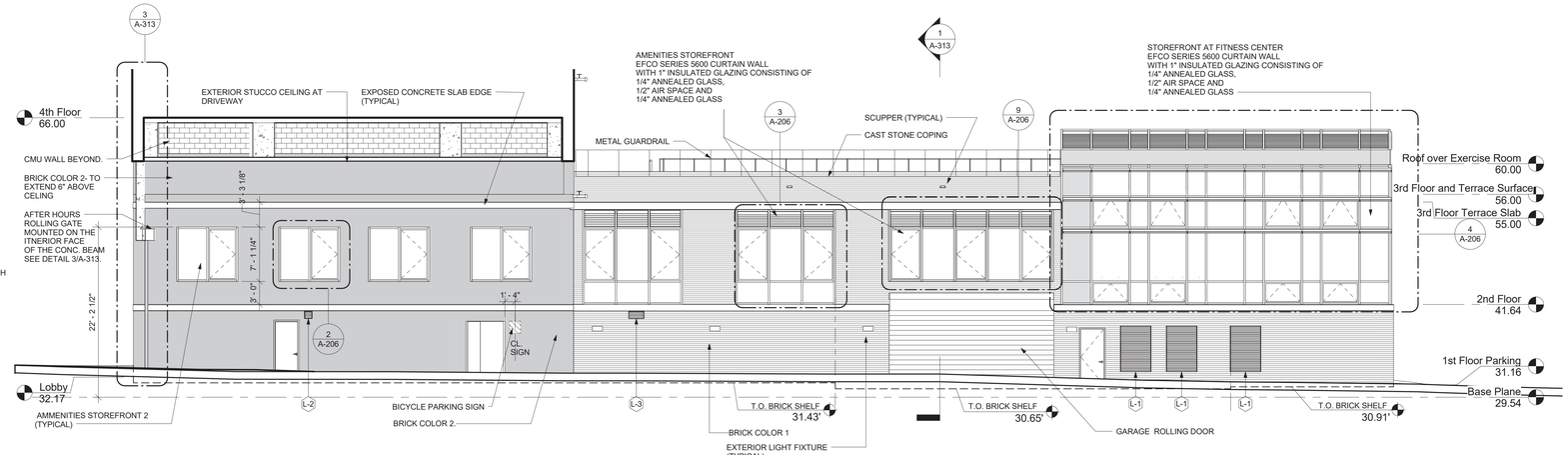


5 Partial East Elevation at 3rd Floor
1/8" = 1'-0"

6 Partial South Elevation at 3rd Floor
1/8" = 1'-0"



8 Partial North Elevation at Driveway
1/8" = 1'-0"



7 Partial South Elevation
1/8" = 1'-0"

1 [illegible]
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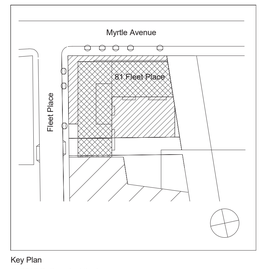
AS BUILT	7/20/15

1 PAA #3	10/09/13
FOR CONSTRUCTION	12/20/12
100% SUBMISSION	11/16/12

Revisions



Key Plan

Building Elevations

Date	December 20, 2012
Scale	1/8" = 1'-0"
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	
___ of ___	A-204.01

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

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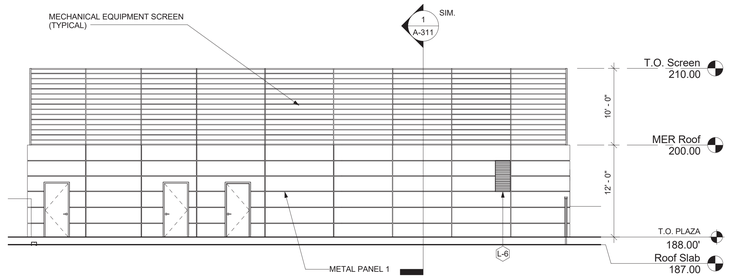
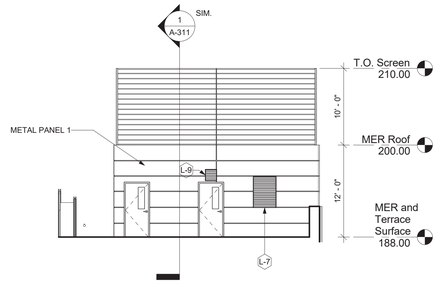
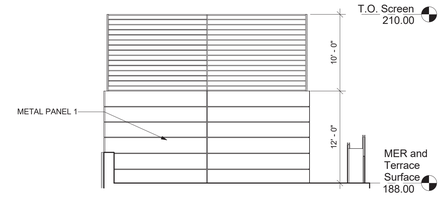


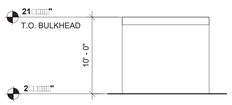
1 Bulkhead West Elevation
1/8" = 1'-0"



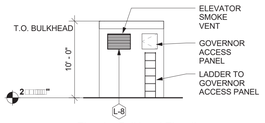
2 Bulk Head South Elevation
1/8" = 1'-0"



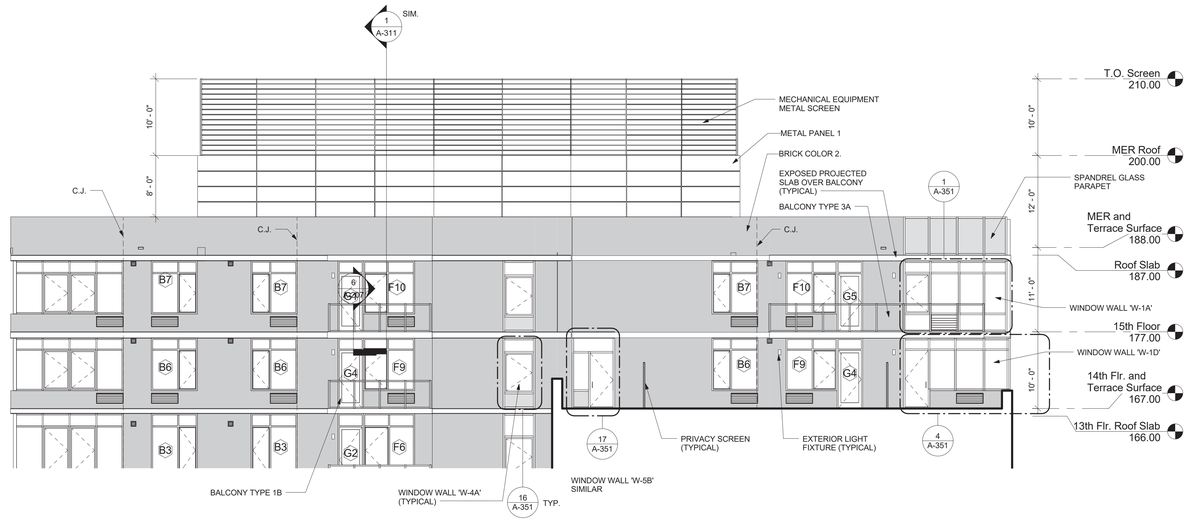
3 Bulk Head North Elevation
1/8" = 1'-0"



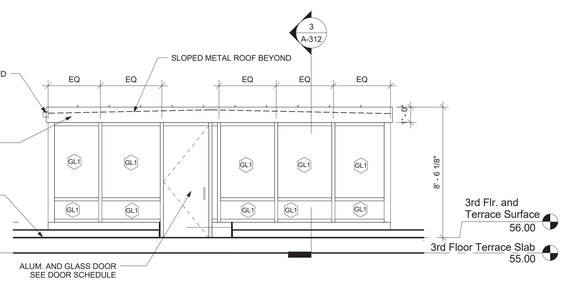
9 Elevator Bulkhead Elevation
1/8" = 1'-0"



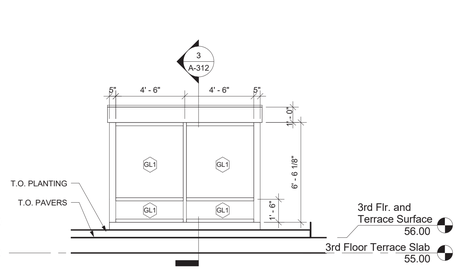
10 Elevator Bulkhead Elevation
1/8" = 1'-0"



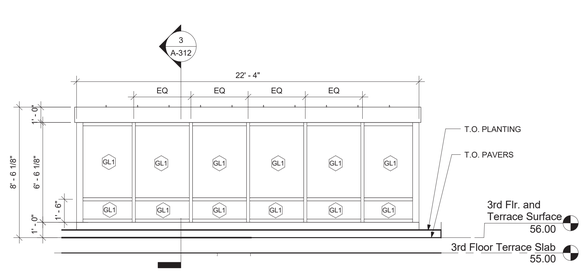
4 Partial East Elevation
1/8" = 1'-0"



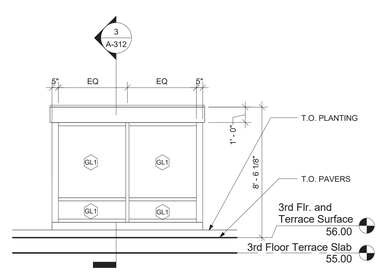
5 North Elevation at Stair #8 Bulkhead
1/4" = 1'-0"



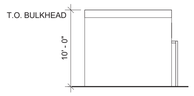
7 West Elevation at Stair #8 Bulkhead
1/4" = 1'-0"



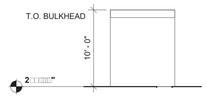
6 South Elevation at Stair #8 Bulkhead
1/4" = 1'-0"



8 East Elevation Stair #8 Bulkhead
1/4" = 1'-0"



11 Elevator Bulkhead Elevation
1/8" = 1'-0"



12 Elevator Bulkhead Elevation
1/8" = 1'-0"

1

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AS BUILT	7/20/15

1	PAA #3	10/09/13
	FOR CONSTRUCTION	12/20/12
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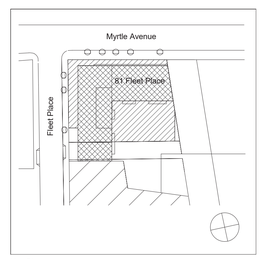
Revisions



Key Plan

Building Elevations

Date	Decmber 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	
Sheet No.	A-205.01
___ of ___	

REGISTERED ARCHITECT
WILLIAM STEIN
014686-1
STATE OF NEW YORK

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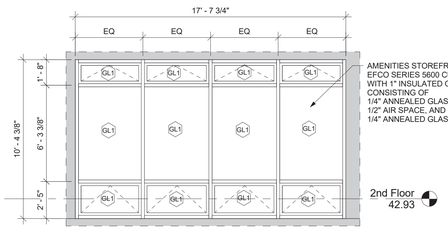
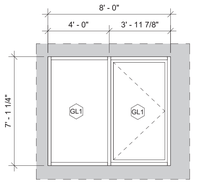
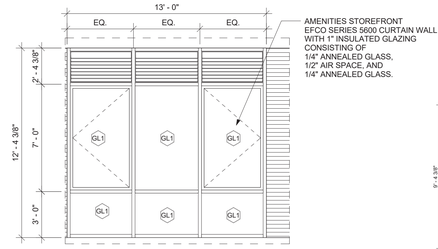


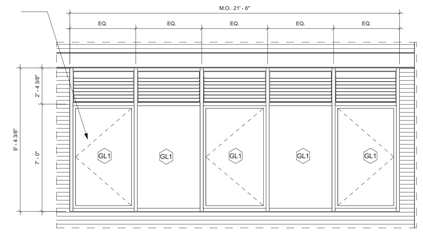
1 Ammenities Storefront 1
1/4" = 1'-0"



2 Ammenities Storefront 2
1/4" = 1'-0"



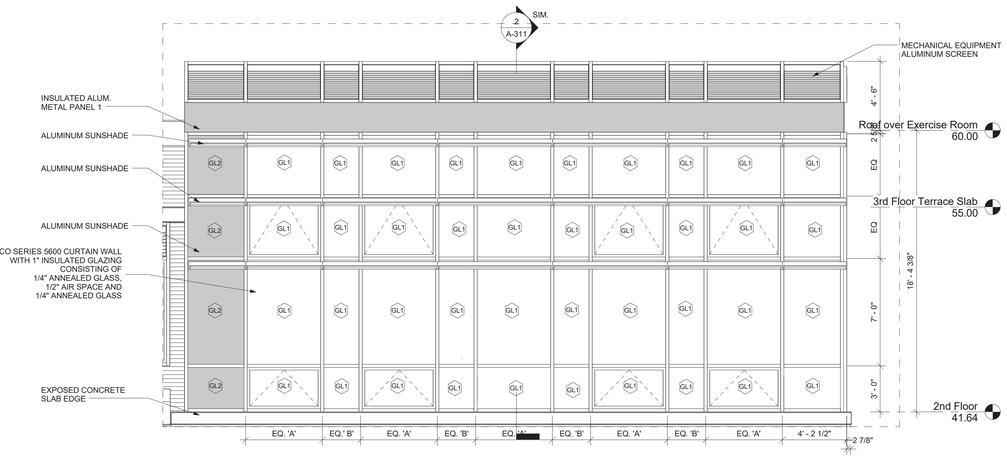
3 Ammenities Storefront 3
1/4" = 1'-0"



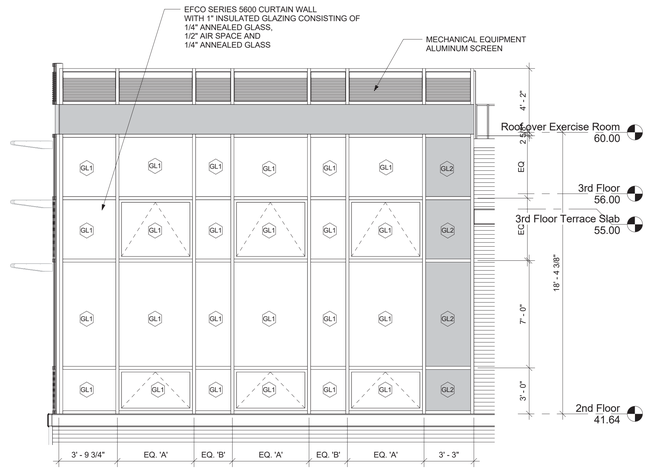
9 Ameneties Storefront 4
1/4" = 1'-0"

GLAZING TYPES

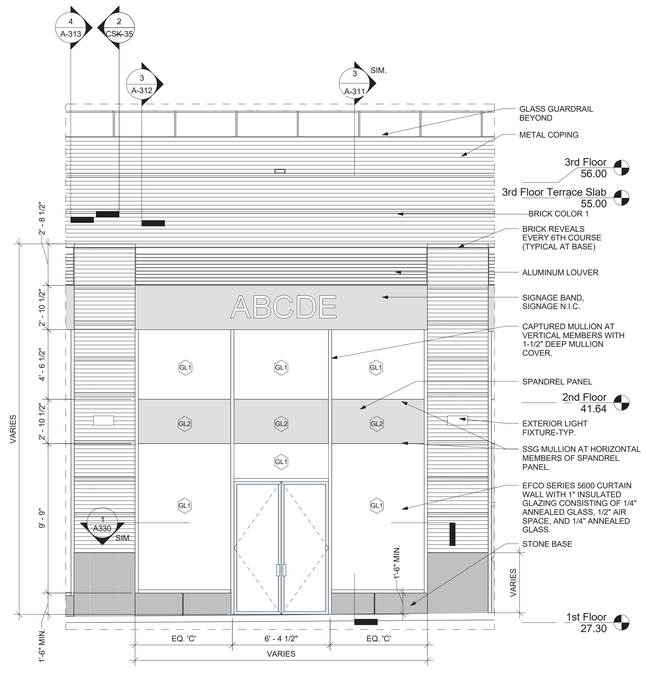
SEE DWG. A-603



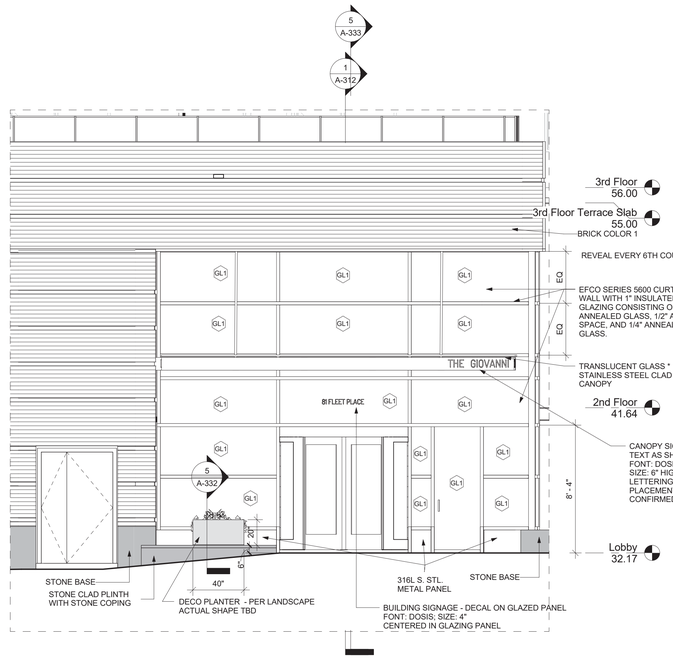
4 Partial South Elevation at Fitness Center Storefront
1/4" = 1'-0"



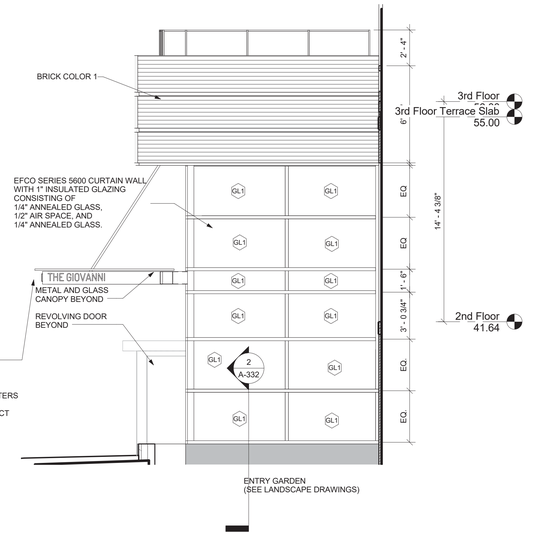
5 Partial East Elevation at Fitness Center Storefront
1/4" = 1'-0"



6 Partial Elevation at Typical Retail Storefront
1/4" = 1'-0"



7 Partial West Elevation at Residential Lobby Storefront
1/4" = 1'-0"



8 Partial South Elevation at Residential Lobby Storefront
1/4" = 1'-0"

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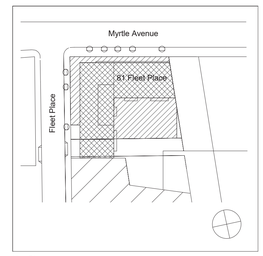
AS BUILT	7/20/15

3	BULLETIN #25	6/12/15
2	BULLETIN #23	11/26/14
1	BULLETIN #9	11/18/13
	FOR CONSTRUCTION	12/20/12
	100% SUBMISSION	11/16/12

Revisions



Key Plan

Building Elevations at Retail and Residential Storefronts

Date	December 20, 2012
Scale	1/4" = 1'-0"
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT
WILLIAM STEIN
014686
STATE OF NEW YORK

Sheet No.
___ of ___
A-206.00

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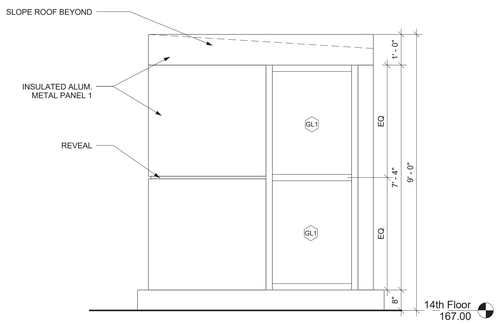
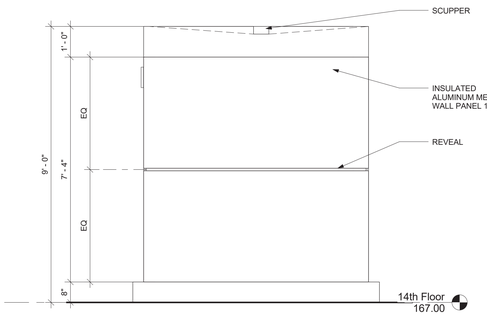


1 Elevation 1 at Circular Stair Bulkhead
1/2" = 1'-0"



2 Elevation 2 at Circular Stair Bulkhead
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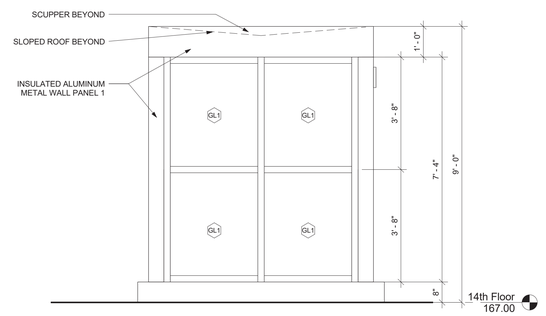

3 Elevation 3 at Circular Stair Bulkhead
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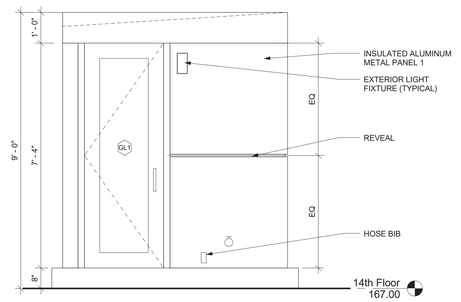
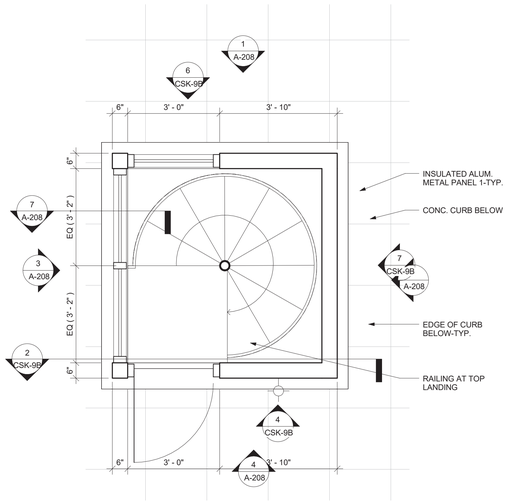
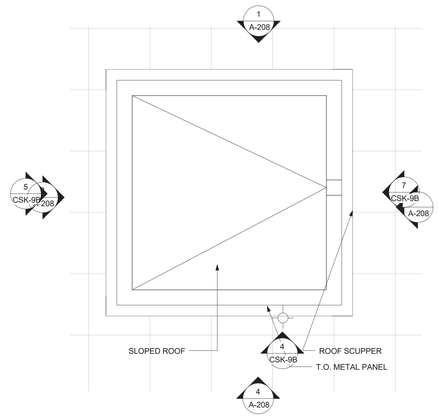


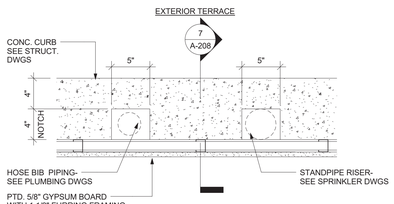
4 Elevation 4 at Circular Stair Bulkhead
1/2" = 1'-0"



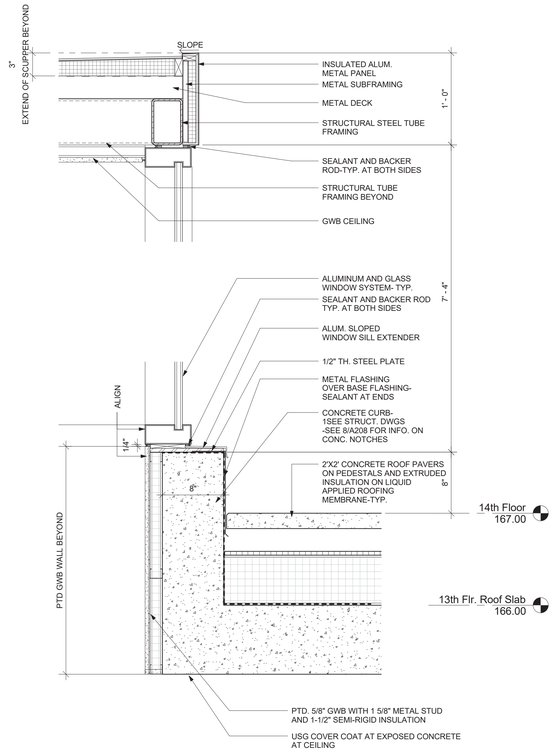
5 Enlarged Plan- Circular Stair Bulkhead
1/2" = 1'-0"



6 Circular Bulkhead Roof
1/2" = 1'-0"



8 Plan Detail-Stair BulkHead Curb
1 1/2" = 1'-0"



7 Wall Section-Circular Stair Bulkhead
1 1/2" = 1'-0"

GLAZING TYPES

SEE DWG. A-603

1 [redacted]
Brooklyn, NY 11201

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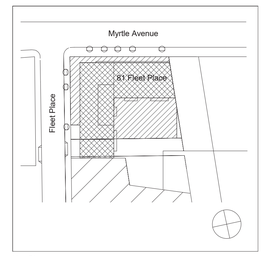
New York, NY 10024
tel 212-874-0214

FOR CONSTRUCTION	12/20/12
100% SUBMISSION	11/16/12

Revisions



Key Plan

Stair Bulkheads Elevations & Details

Date	December 20, 2012
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1126
Seal	

REGISTERED ARCHITECT WILLIAM STEIN 014686-1 STATE OF NEW YORK

Sheet No.
___ of ___
A-208.00

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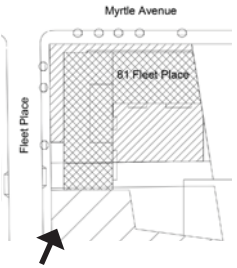
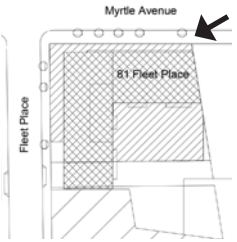


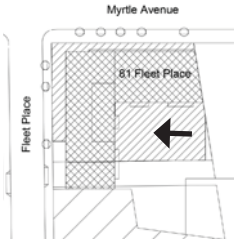
South and West Elevations, and Builing Entry on Fleet Place

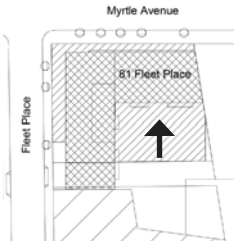
North and West Elevations: Myrtle Avenue and Fleet Place



East and North and Elevations

Interior Courtyard - East Elevation

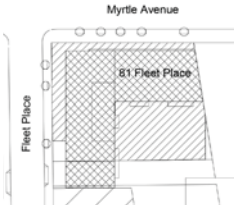




Interior Courtyard - North Elevation [stitched panorama]

South Elevation looking East at Amenities

South Elevation looking West at Amenities



Installed PTAC units in a residential apartment

A□□a□□ □ra□□□□□a

□r□□ □	Bertini, Maurizio <MaurizioB@dep.nyc.gov>
□□□□□	Friday, August 02, 2013 10:25 AM
□□□	Ira Mitchneck
□□□	Maria Rosenfeld (Maria.Rosenfeld@ragny.com); Avi Bortnick
□□□□□□□	RE: 81 Fleet Place - OER #Project #12EH-N539

Ira
The proposed change is acceptable. Please keep this email for your records and include it in the Installation Report.
Do not hesitate to contact me if you have any questions.
Sincerely,

Maurizio Marezio Bertini, Ph.D. | **Section Chief** | **Office of Environmental Remediation**
Tel 212.788.3922| Fax 212.788.2466 | mbertini@dep.nyc.gov

From: Ira Mitchneck [mailto:imitchneck@dattner.com]
Sent: Tuesday, July 30, 2013 5:28 PM
To: Bertini, Maurizio
Cc: Maria Rosenfeld (Maria.Rosenfeld@ragny.com); Avi Bortnick
Subject: 81 Fleet Place - OER #Project #12EH-N539

Attached are the following documents:

1 - Letter dated 7/30/13 signed Dattner Architects/ William Stein regarding substitution of EFCO Series 3903 for Series 890-I
2- Product Literature for EFCO Series 3903
3- OITC Test Report for EFCO Series 3903

Please review the enclosed letter, product and test data for the proposed substitution of the Series 3903 window in lieu of the previously submitted Series 890-I for OER #Project #12EH-N539.

□ra□M□□□□□□□□A□A
Senior Associate
□
□a□□□rArchitects
1385 Broadway, 15th Floor
New York, New York 10018
tel 212 247 2660
dir 212 589 7048
www.dattner.com

June 20 2016

NYC Office of Environmental Remediation
100 Gold Street, 2nd Floor
New York, New York 10038

Attn.: Maurizio Marezio Bertini, PhD
Section Chief

Re: 180 Myrtle Avenue, Brooklyn, New York
E-124: Block 2061, Lot 1 Brooklyn CD2
OER #Project #14EH-N161K/NYC VCP Project #14CVCP215K/DEP#08DEPTECH214k

Dear Mr. Bertini:

All windows at 180 Myrtle Avenue have been installed per previously filed letters to OER.

On the ground floor retail spaces and ground floor lobby, the installed glazing is the Reynaers Aluminum Systems Series CW50 curtain wall[1]. It is comprised of ¼" tempered glass, ½" air space and 5/16" tempered glass. (Please see attaches As Built Plans and Elevations, sheets A-200 through A-206.) The CW50 system achieves an acoustical rating of OITC 30 (see attached test report), and exceeds the E-124 project requirement of OITC 23 for non-residential portions of the building.

At apartment stair bulkheads and 2nd floor residential amenity spaces, the installed system is the Kawneer Series 1600 System 1[2], with ¼" clear laminated glass, a ½" airspace, and ¼" clear laminated glass. (Please see attaches As Built Plans and Elevations, sheets A-200 through A-404.) The Kawneer Series System 1 achieves an acoustical rating of OITC 30 (see attached test report), thus exceeding the project requirements.

At non-residential amenity sections, the glazing in the Kawneer Series 1600 System 1 has ¼" tempered glass, ½" argon-filled space, and ¼" tempered glass. (Please see attaches As Built Plans and Elevations, sheets A-200 through A-404.) This argon-filled version of the Kawneer Series 1600 System 1 achieves an acoustical test rating of OITC 26 (see attached test report), and exceeds the E-124 project requirement of OITC 23 for non-residential portions of the building.

---

[1] The Reynaers Aluminum Systems Series CW50 curtain wall product information was submitted to the OER on April 26, 2016 as a substitution for the originally-submitted EFCO Series 5600. The substitution was approved by the OER on April 27, 2016.
[2] The Kawneer Series 1600 System product information was submitted to the OER on March 9, 2015 as a substitution for the originally submitted EFCO Series 5600 curtain wall system. The substitution was approved by the OER on March 30, 2015.

June 20, 2016

On residential floors 2 – 15, windows are Peerless Products Series G-261[3], with 1-3/16" glazing units, comprised of ¼" annealed glass, 3/4" air space and 3/16" annealed glass. (Please see attaches As Built Plans and Elevations, sheets A-200 through A-205.) The Peerless Products Series G-261 achieves OITC 28 in a test laboratory (see attached test report). The window reduction requirement of OITC 28dBA for residential areas is thus met.

Alternate means of ventilation components have been installed. Alternate Means of Ventilation in every residential room is provided by PTAC units manufactured by AIRXCEL Inc. - Suburban Manufacturing Company (Product line: Dynaline – DL3 Series – Direct Vent Gas-Fired PTAC).Fresh air will be introduced into the common residential and amenity spaces via ducted air, which is connected to Daikin and Greenheck air handling units which have louvers taking in air from outside the building fascia. Outside air is provided to Commercial Spaces via louvers installed on the Myrtle Avenue Façade. Outside air is provided to the Lobby via unit HP-1-2 and to the Mailroom via unit HP-1-1 (fresh air intake is ducted from dedicated storefront louvers). 2nd floor lounge and Gym are served by units RTU-1 and RTU-2 respectively, located on the 3rd floor roof. All residential corridors are served by ducted air from dedicated unit CV-1, located on the main roof.

The list of specified and approved Alternate Means of Ventilation Equipment is as follows:
HP 1-2: DAIKIN FXMQ48PVJU specified and approved
HP 1-1: DAIKIN FBQ24PVJU specified (Daikin FXMQ24PAVJU approved)
CV-1: GREENHECK RV-35 specified (Greenheck IGX-109-H12 approved)
RTU-1: DAIKIN APPLIED MPS004B specified and approved
RTU-2: DAIKIN APPLIED MPS007B specified and approved

PTACs: IslandAIRE was basis of design.
Approved: AIRXCEL DYNALINE DL3 Series – direct vent gas-fired PTACs
DL3-1622F, DL3-1220, DL3-0912

180 Myrtle Avenue is a 15-story building mixed use building with two cellar levels, rising 194.17 feet above base plane, located in Brooklyn, New York. The cellar level and 1st floor contains mechanical/utility rooms, storage and parking space. There are 228 residential units, as well as a common lounges and exercise facility on the 2nd Floor.

Please find enclosed signed and stamped "AS BUILT" plans and elevations and photographs of each façade of the building showing installed windows (color coded to indicate window types) and alternate .

[3] The Peerless Products Series G-261 product information was submitted to the OER on December 8, 2014 as a substitution for the originally-submitted EFCO Series 3093 window. The substitution was approved by the OER on December 17, 2014.

June 20, 2016

means of ventilation. We have also included photos of apartment interiors to show windows and PTAC units.

Please also see a photo of the partial West façade showing that all scaffolding and hoistway has been removed and the building is fully enclosed. Please also see photographs from inside of the building showing complete window and PTAC installation.

Thank you for your assistance.

Sincerely yours,

William Stein FAIA
Principal

Encl: Photographs of each façade of the building as of June 16, 2016
Photographs of representative residential units (interior) as of June 16, 2016
Signed and stamped "AS BUILT" plans and elevations
Mechanical Plans showing the Alternate Means of Ventilation
Acoustical Test Reports for Installed Windows
PTAC Product Submittals

June 20, 2016

INSTALLATION REPORT CERTIFICATION

I, William Stein FAIA, am currently a registered architect licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the 180 Myrtle Avenue Site (NYC Block 2061 and Lot 1).

I certify that the Site description presented in this Installation Report is identical to the Site description and associated amendments presented in the Notice to Proceed issued by DEP/OER to the NYC DOB on March 4, 2014.

I certify that the OER-approved Remedial Action Plan dated January 29, 2014 was implemented and that all requirements in that document have been complied with.

I certify that the remedial activities were observed by qualified professionals under my supervision and that the remediation requirements set forth in the Remedial Action Plan have been achieved.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

William Stein

Name

014686-1

NYS P.E./R.A. License Number

Signature

P.E./R.A. Stamp

June 20, 2016

180 Myrtle - Façade and Interior Photographs

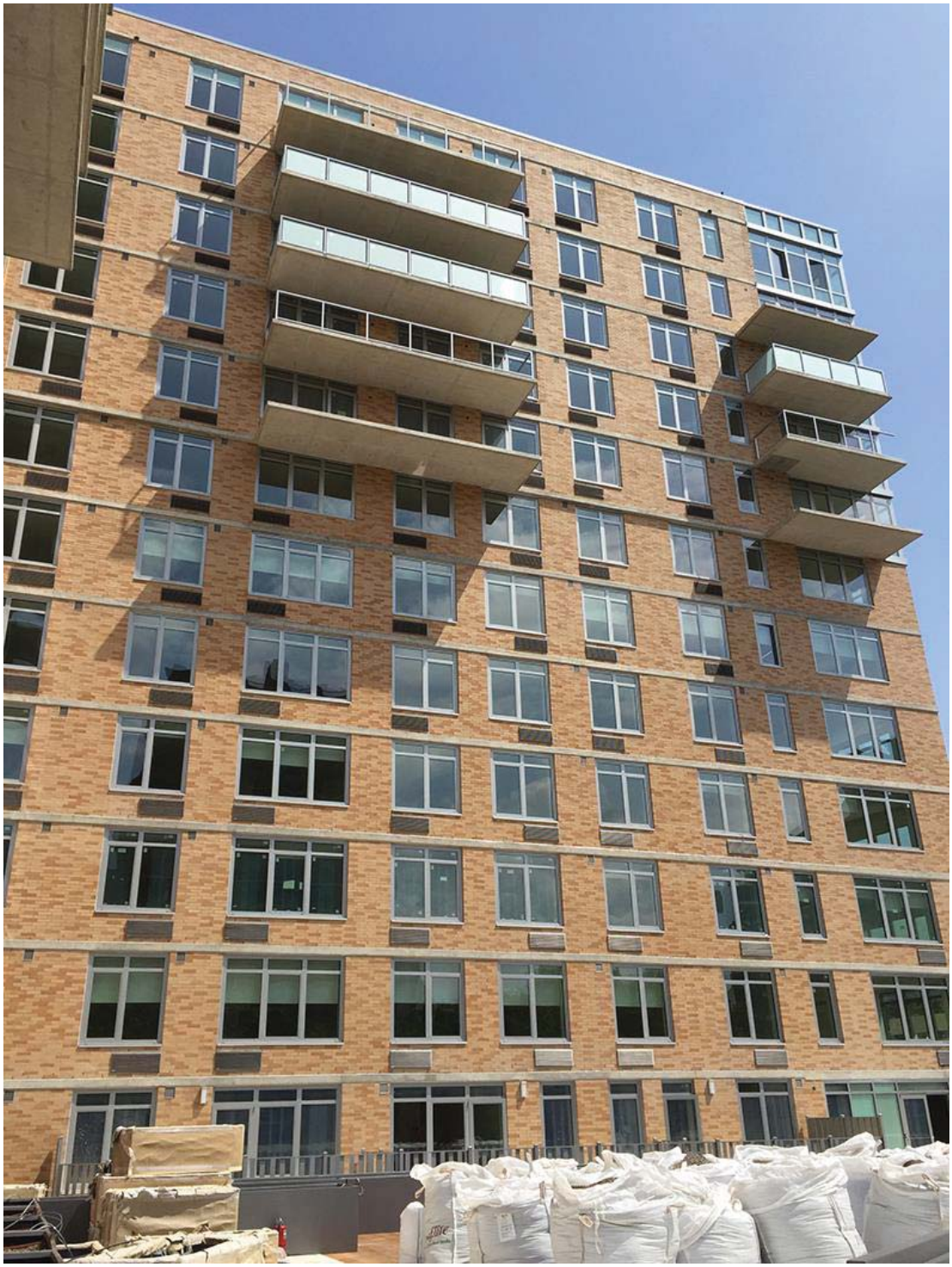
Courtyard – lower

Courtyard – upper

June 20, 2016

Courtyard East

June 20, 2016



Courtyard South

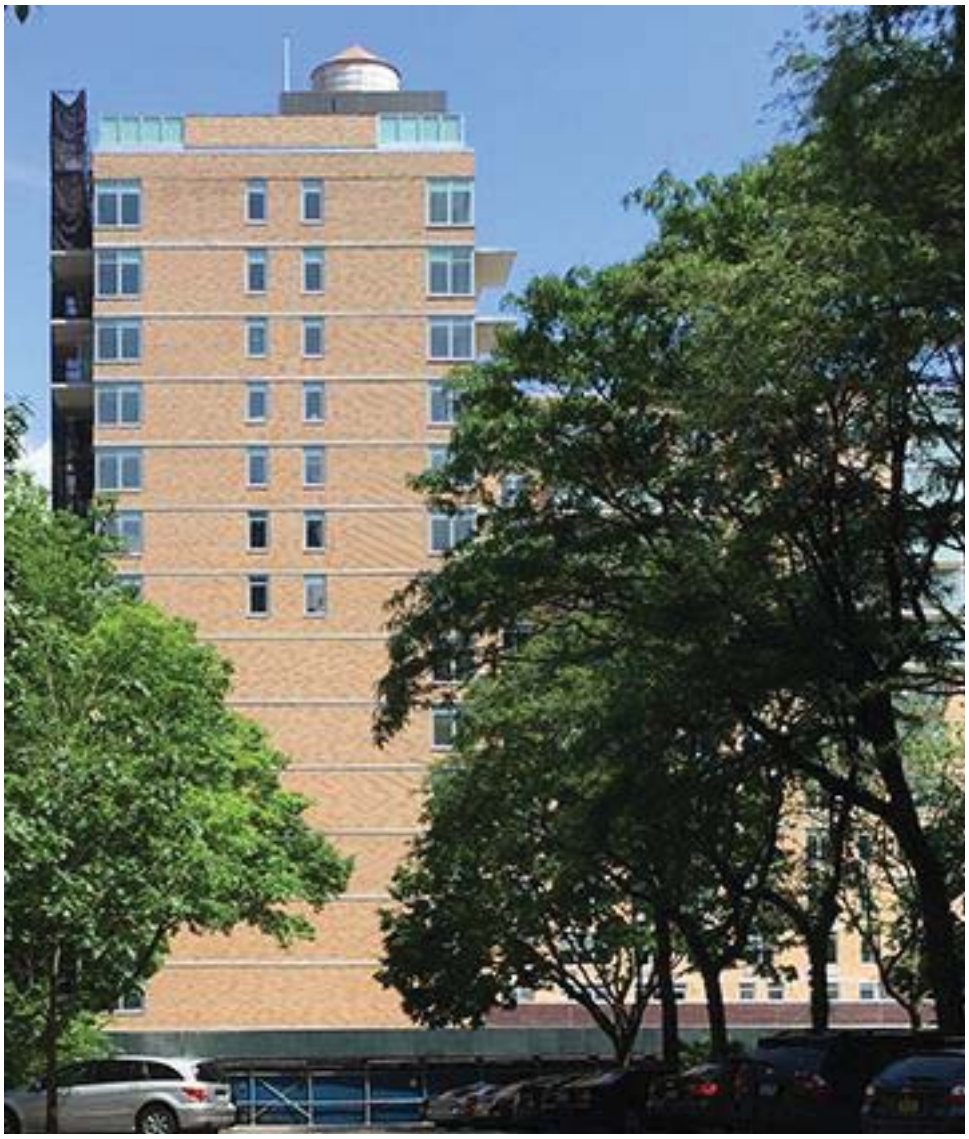
June 20, 2016

Northeast

June 20, 2016

Northwest

June 20, 2016



South

June 20, 2016

West

June 20, 2016

Interior of Apartment 2C showing PTAC and apartment window

June 20, 2016

Interior of Apartment 3A showing PTAC and Apartment Window

June 20, 2016

Interior of Apartment 9E showing PTAC and Apartment Window

June 20, 2016

Interior of Apartment 11C showing PTACs and Apartment Windows

June 20, 2016

Interior of Apartment 14F showing PTAC and Apartment Windows

June 20, 2016

Interior of Apartment 14P showing PTAC and Apartment Window

June 20, 2016

Interior of Apartment 15P showing PTAC and Apartment Window

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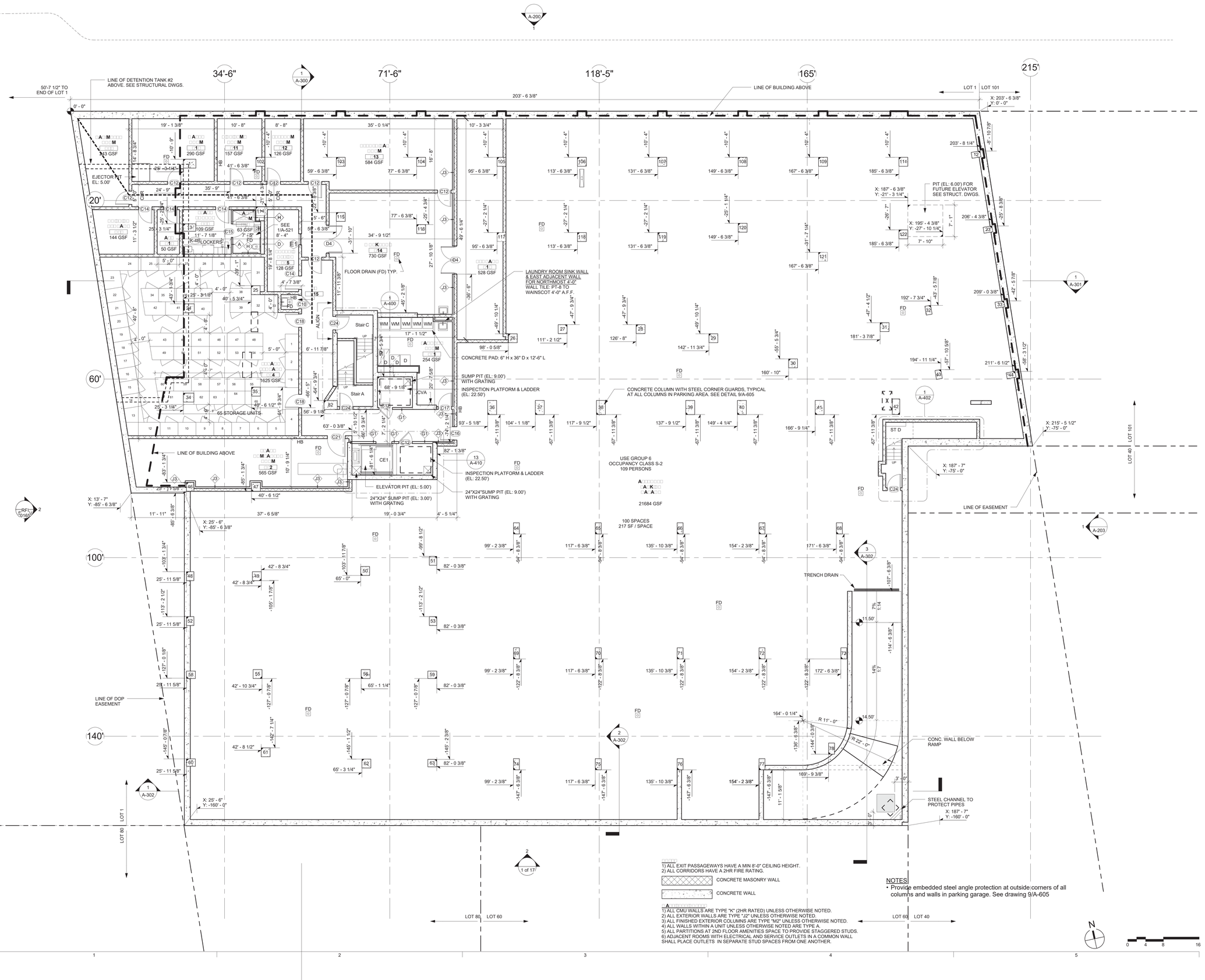

180 Myrtle Avenue

Brooklyn, NY 11201

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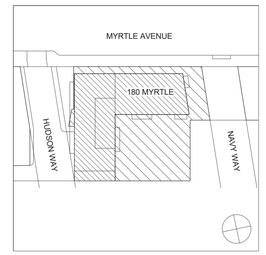
Lighting Consultant
Harvey Marshall Berling Associates
173 West 81st Street, Suite 2
New York, NY 10024

DOB #320592747-01

AS BUILT **06-16-16**

DOB PAA #1	06-03-16
Bulletin #19	11-20-15
Bulletin #14	07-16-15
Bulletin #8	10-17-14
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Cellar Floor Plan

Date	04-30-14
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Sheet No.:	30 of 105

REGISTERED ARCHITECT WILLIAM STEIN 014668-1 STATE OF NEW YORK

Seal

A-100.01

180 Myrtle Avenue

Brooklyn, NY 11201

MYRTLE AVENUE

SITE NOTE:

SEE CIVIL AND LANDSCAPE DRAWINGS FOR EASEMENT DESIGN AND DETAILS.

SEE CIVIL DRAWINGS FOR SIDEWALK DESIGN AND DETAILS.

EXISTING TREE TO REMAIN

RETAIL ENTRANCE TYP.

SPEED BUMP

BUILDING SIGN SEE A-215

TRENCH DRAIN

STOP SIGN

50'-7 1/2" TO END OF LOT 1

SIAMESE CONNECTION (SC) TYP.

HOSE BIB (HB) TYP.

(5) 2" GAS VENTS

SIAMESE CONNECTION (SC) TYP.

FRESH AIR INTAKE (FAI) TYP.

LOT 1 LOT 101

TRENCH DRAIN LINE OF CANOPY ABOVE

2'-6" X 2'-6" ACCESS HATCH TO DETENTION TANK #2 (TYP)

DETENTION TANK #2 BELOW. SEE STRUCTURAL DWGS.

RESIDENTIAL ENTRANCE

81 FLEET PLACE

FRONT DESK

SHELVING (TYP) N.I.C.

MAILBOX AREA

ELEVATOR LOBBY

Stair A

PE1 PE2 PE3 CE1

1181 GSF (SEE A-550)

425 GSF

457 GSF

133 GSF

1643 GSF 114 spaces

71 GSF

73 GSF

61 GSF

90 SF

65 SF

10261 GSF

USE GROUP 6 OCCUPANCY CLASS M 339 PERSONS

2 WATER CLOSETS (1 MALE, 1 FEMALE)
2 LAVATORIES (1 MALE, 1 FEMALE)

34" HIGH FLOOR-MOUNTED RAILINGS

T.O.S. 25.58'

T.O.S. 25.08'

USE GROUP 4 OCCUPANCY CLASS B 5 PERSONS
473 GSF

RETAIL AND AMBULATORY CARE FACILITY - 6 1/2'

106 GSF

COMMUNITY FACILITY

USE GROUP 6 OCCUPANCY CLASS S-2 52 PERSONS
10857 GSF

33 SPACES
10 RESERVOIR SPACES
331 SF / SPACE

15'-1" CLEAR

10'-0" CLEAR

CONCRETE COLUMN WITH STEEL CORNER GUARDS, TYPICAL AT ALL COLUMNS IN PARKING AREA. SEE DETAIL 9/A-605

PAINTED LINES ON CON. SLAB

FLOOR DRAIN (FD) TYP.

34" HIGH WALL-MOUNTED RAILING

BICYCLE RACK DERO ULTRA SPACE SAVER (TYP)

LOADING BERTH

PARKING ENTRANCE

ROOF PENTHOUSE ABOVE

LINE OF EASEMENT

LOT 80 LOT 60 LOT 40 LOT 101

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

A
1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.
4) ALL WALLS WITHIN A UNIT UNLESS OTHERWISE NOTED ARE TYPE A.
5) ALL PARTITIONS AT 2ND FLOOR AMENITIES SPACE TO PROVIDE STAGGERED STUDS.
6) ADJACENT ROOMS WITH ELECTRICAL AND SERVICE OUTLETS IN A COMMON WALL SHALL PLACE OUTLETS IN SEPARATE STUD SPACES FROM ONE ANOTHER.

NOTE:
- Provide embedded steel angle protection at outside corners of all columns and walls in parking garage. See drawing 9/A-605
- Provide structural support for grating at required elevation.
- Provide architectural louvers as req'd. by HVAC drawings.
- All dimensions taken from face of track.

0 4 8 16

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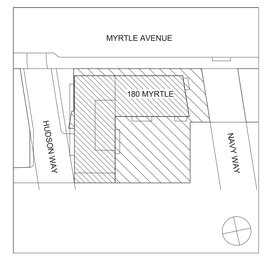
DOB #320592747-01

AS BUILT 06-16-16

DOB PAA #1	06-03-16
Bulletin #12	05-12-15
Bulletin #8	10-17-14
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Plotted: 6/16/2016 12:27:44 PM

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Sheet No.:	
31 of 105	

Seal: REGISTERED ARCHITECT WILLIAM STEMEN 014088 STATE OF NEW YORK

Floor 1 Plan

A-101.01

180 Myrtle Avenue

Brooklyn, NY 11201

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AS BUILT	**06-16-16**
-	
Bulletin #12	05-12-15
Bulletin #10	03-26-15
Bulletin #8	10-17-14
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
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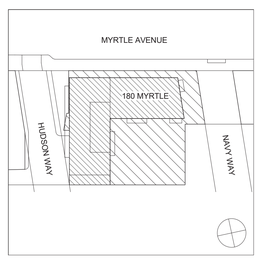
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Floor 2 Plan

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Seal	
Sheet No.:	

REGISTERED ARCHITECT WILLIAM STEWART 014668-1 STATE OF NEW YORK

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A-102.01

TERRACE ENCLOSURE CALCULATIONS: FLOOR 2

Unit 2A Terrace:
Total Perimeter of Terrace: (36'-5" + 6'-11")2 = 86'-8"
Enclosed per ZR 12-10: 36'-5" + 6'-11" = 43'-4"
Open per ZR 12-10: 36'-5" + 6'-11" = 43'-4"
43'-4" / 86'-8" = 50% Enclosed (Complies)

Unit 2C Terrace:
Total Perimeter of Terrace: (26'-3" + 6'-11")2 = 66'-4"
Enclosed per ZR 12-10: 26'-3" + 6'-11" = 33'-2"
Open per ZR 12-10: 26'-3" + 6'-11" = 33'-2"
33'-2" / 66'-4" = 50% Enclosed (Complies)

Unit 2D Terrace:
Total Perimeter of Terrace: (18'-11" + 6'-11")2 = 51'-8"
Enclosed per ZR 12-10: 18'-11"
Open per ZR 12-10: 18'-11" + (6'-11")2 = 32'-9"
28'-22" / 51'-8" = 37% Enclosed (Complies)

Unit 2E Terrace:
Total Perimeter of Terrace: (36'-5" + 6'-11")2 = 86'-8"
Enclosed per ZR 12-10: 36'-5" + 6'-11" = 43'-4"
Open per ZR 12-10: 36'-5" + 6'-11" = 43'-4"
43'-4" / 86'-8" = 50% Enclosed (Complies)

Unit 2F Terrace:
Total Perimeter of Terrace: 6'-11" + 29'-9" + 8'-11" + 7'-10" + 2'-0" + 21'-11" + 7'-10" + 2'-0" + 21'-11" = 38'-8"
Enclosed per ZR 12-10: 6'-11" + 7'-10" + 2'-0" + 21'-11" = 38'-8"
Open per ZR 12-10: 29'-9" + 8'-11" = 38'-8"
38'-8" / 77'-4" = 50% Enclosed (Complies)

Exercise Room Terrace:
Total Perimeter of Terrace: (10'-3" + 8'-11")2 = 38'-4"
Enclosed per ZR 12-10: 10'-3" + 8'-11" = 19'-2"
Open per ZR 12-10: 10'-3" + 8'-11" = 19'-2"
19'-2" / 38'-4" = 50% Enclosed (Complies)

Unit 2G Terrace:
Total Perimeter of Terrace: (15'-9" + 10'-0")2 = 51'-6"
Enclosed per ZR 12-10: 15'-9" + 10'-0" = 25'-9"
Open per ZR 12-10: 15'-9" + 10'-0" = 25'-9"
25'-9" / 51'-6" = 50% Enclosed (Complies)

Unit 2H Terrace:
Total Perimeter of Terrace: (25'-2" + 10'-0")2 = 70'-4"
Enclosed per ZR 12-10: 25'-2"
Open per ZR 12-10: 25'-2" + (10'-0")2 = 45'-2"
25'-2" / 70'-4" = 37% Enclosed (Complies)

Unit 2J Terrace:
Total Perimeter of Terrace: 8'-6" + 4'-0" + 16'-2" + 10'-0" + 22'-0" = 60'-8"
Enclosed per ZR 12-10: 22'-0" + 4'-0" = 26'-0"
Open per ZR 12-10: 8'-6" + 16'-2" + 10'-0" = 34'-8"
26'-0" / 60'-8" = 43% Enclosed (Complies)

Unit 2L Terrace:
Total Perimeter of Terrace: 2'-10" + 4'-0" + 15'-11" + 6'-0" + 18'-0" = 46'-9"
Enclosed per ZR 12-10: 18'-0" + 4'-0" = 22'-0"
Open per ZR 12-10: 2'-10" + 15'-11" + 6'-0" = 24'-9"
22'-0" / 45'-9" = 46% Enclosed (Complies)

Unit 2M Terrace:
Total Perimeter of Terrace: (24'-9" + 6'-0")2 = 61'-6"
Enclosed per ZR 12-10: 24'-9" + 6'-0" = 30'-9"
Open per ZR 12-10: 24'-9" + 6'-0" = 30'-9"
30'-9" / 61'-6" = 50% Enclosed (Complies)

Unit 2N Terrace:
Total Perimeter of Terrace: (32'-9" + 6'-0")2 = 77'-6"
Enclosed per ZR 12-10: 32'-9" + 6'-0" = 38'-9"
Open per ZR 12-10: 32'-9" + 6'-0" = 38'-9"
38'-9" / 77'-6" = 50% Enclosed (Complies)

EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL
CONCRETE WALL

1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "12" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.
4) ALL WALLS WITHIN A UNIT UNLESS OTHERWISE NOTED ARE TYPE A.
5) ALL PARTITIONS AT 2ND FLOOR AMENITIES SPACE TO PROVIDE STAGGERED STUDS.
6) ADJACENT ROOMS WITH ELECTRICAL AND SERVICE OUTLETS IN A COMMON WALL SHALL PLACE OUTLETS IN SEPARATE STUD SPACES FROM ONE ANOTHER.

GENERAL NOTES
- ALL DIMENSIONS TAKEN FROM FACE OF FINISH.
- HINGE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENING TO BE 4" FROM ADJACENT WALL.
- STRIKE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENINGS TO BE 18" MINIMUM FROM ADJACENT WALL ON PULL SIDE OF ANY DOOR.
- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
- MINIMUM DEPTH OF ALL CLOSETS TO BE 24" MEASURES FINISH TO FINISH EXCEPT WHERE CLOSET IS ADJACENT TO A LAUNDRY CLOSET WHERE LAUNDRY DIMENSION WILL GOVERN.
- MINIMUM DEPTH OF LAUNDRY CLOSET IS TO BE 2' - 6" MEASURED FINISH TO FINISH AND MINIMUM WIDTH IS TO BE 2' - 6" MEASURED FINISH TO FINISH. SEE 6/A-330
- LENGTH OF RETURN WALL AT KITCHENS IS TO BE 2' - 3" MAX AT REFRIGERATOR SIDE.
- SEE A-400 FOR TYPICAL STAIR, CORE, TRASH ROOM, AND ELEVATOR LOBBY DIMENSIONS.
- PIPE CHASE BETWEEN APARTMENTS (WALL TYPE 'D') TO SHARE THE CENTERLINE OF APARTMENT DEMISING PARTITION UNLESS OTHERWISE NOTED.
- TRASH CHUTE TO BE MOUNTED EACH FLOOR, TYPE AND MOUNT BY MASON INDUSTRIES. SEE 10/A-605
- ALL APARTMENT INTERIOR WALLS ARE TYPE A UNLESS OTHERWISE NOTED.
- SEE DIVISION 9 SPECIFICATIONS FOR GWB AND TBB LOCATIONS
- "HOLD" DIMENSIONS ARE FROM FINISH TO FINISH.

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Plotted: 6/16/2016 12:26:17 PM

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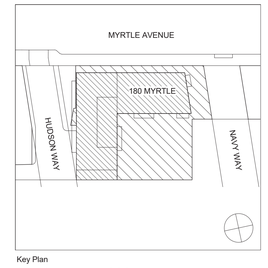
DOB #320592747-01

AS BUILT **06-16-16**

Bulletin #12	05-12-15
Bulletin #10	03-26-15
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Floors 3-4 Plan

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
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DOB PAA #1	06-03-16
Bulletin #12	05-12-15
Bulletin #10	03-26-15
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Bulletin #4 - Progress Set	08-01-14
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100% Construction Documents	04-30-14
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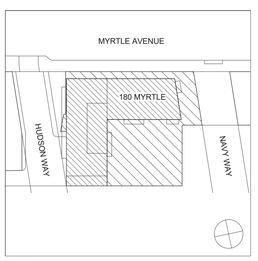

Key Plan

Floors 5-12 Plan

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
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NOTE:
OMIT ELEC. METER DOORS
AT 5TH, 8TH, AND 10TH FLOORS

EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

NOTES:
1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

CONCRETE MASONRY WALL

CONCRETE WALL

NOTES:
1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.
4) ALL WALLS WITHIN A UNIT UNLESS OTHERWISE NOTED ARE TYPE A.
5) ALL PARTITIONS AT 2ND FLOOR AMENITIES SPACE TO PROVIDE STAGGERED STUDS.
6) ADJACENT ROOMS WITH ELECTRICAL AND SERVICE OUTLETS IN A COMMON WALL SHALL PLACE OUTLETS IN SEPARATE STUD SPACES FROM ONE ANOTHER.

GENERAL NOTES
- ALL DIMENSIONS TAKEN FROM FACE OF FINISH.
- HINGE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENING TO BE 4" FROM ADJACENT WALL.
- STRIKE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENINGS TO BE 18" MINIMUM FROM ADJACENT WALL ON PULL SIDE OF ANY DOOR.
- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
- MINIMUM DEPTH OF ALL CLOSETS TO BE 24" MEASURES FINISH TO FINISH EXCEPT WHERE CLOSET IS ADJACENT TO A LAUNDRY CLOSET WHERE LAUNDRY DIMENSION WILL GOVERN.
- MINIMUM DEPTH OF LAUNDRY CLOSET IS TO BE 2' - 6" MEASURED FINISH TO FINISH AND MINIMUM WIDTH IS TO BE 2' - 6" MEASURED FINISH TO FINISH. SEE 6/A-330
- LENGTH OF RETURN WALL AT KITCHENS IS TO BE 2' - 3" MAX AT REFRIGERATOR SIDE.
- SEE A-400 FOR TYPICAL STAIR, CORE, TRASH ROOM, AND ELEVATOR LOBBY DIMENSIONS.
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- TRASH CHUTE TO BE MOUNTED EACH FLOOR, TYPE AND MOUNT BY MASON INDUSTRIES. SEE 10/A-605
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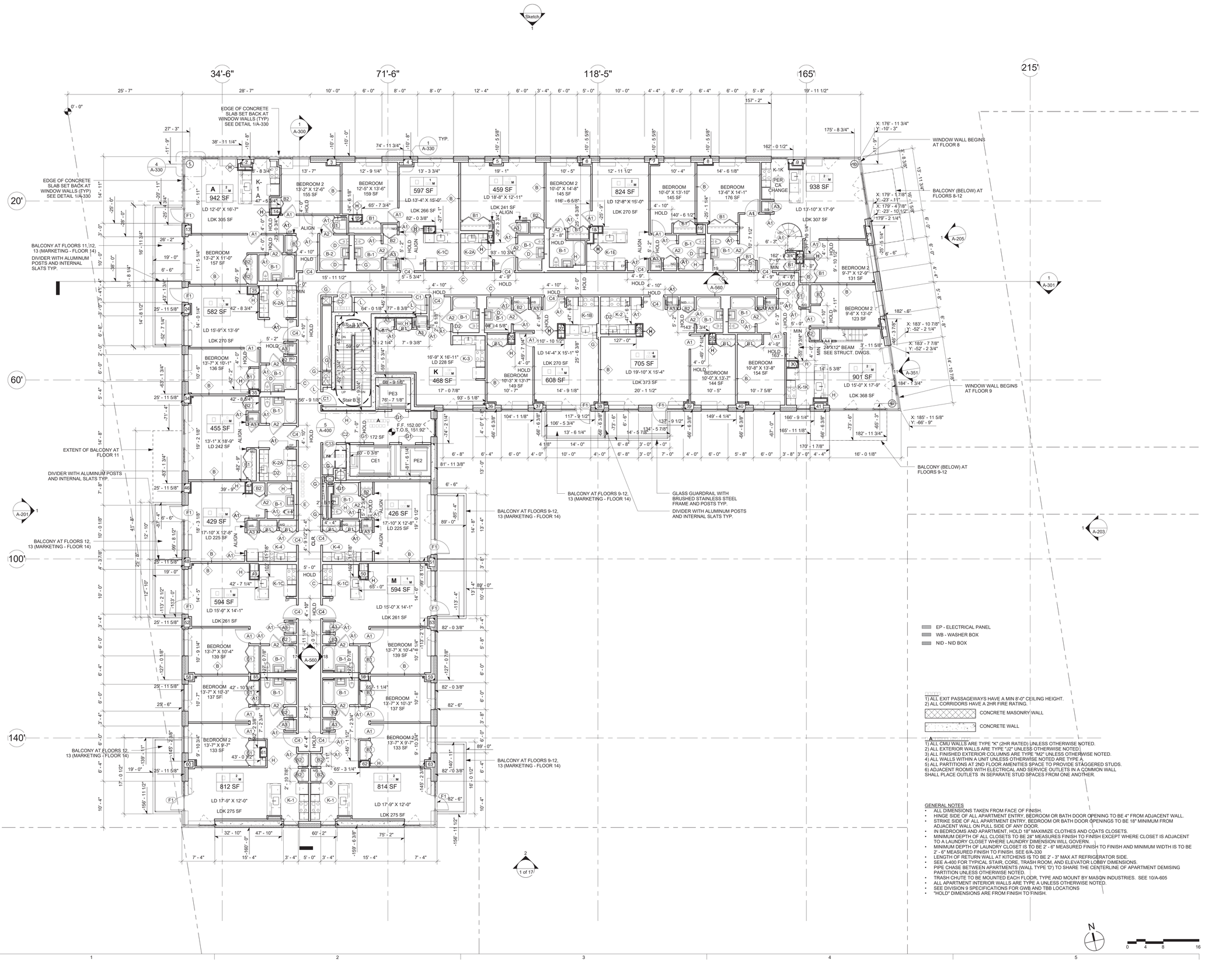
- SEE DIVISION 9 SPECIFICATIONS FOR GWB AND TBB LOCATIONS
- "HOLD" DIMENSIONS ARE FROM FINISH TO FINISH.

Floors 8-12 - Partial Plan
1/8" = 1'-0"



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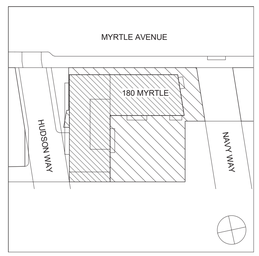
DOB #320592747-01

AS BUILT **06-16-16**

DOB PAA #1	06-03-16
Bulletin #12	05-12-15
Bulletin #10	03-26-15
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Floor 13 Plan (Marketing - Floor 14)

Date	05-12-15
Scale	As indicated
Drawn By	Author
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Project No.	1334
Seal	
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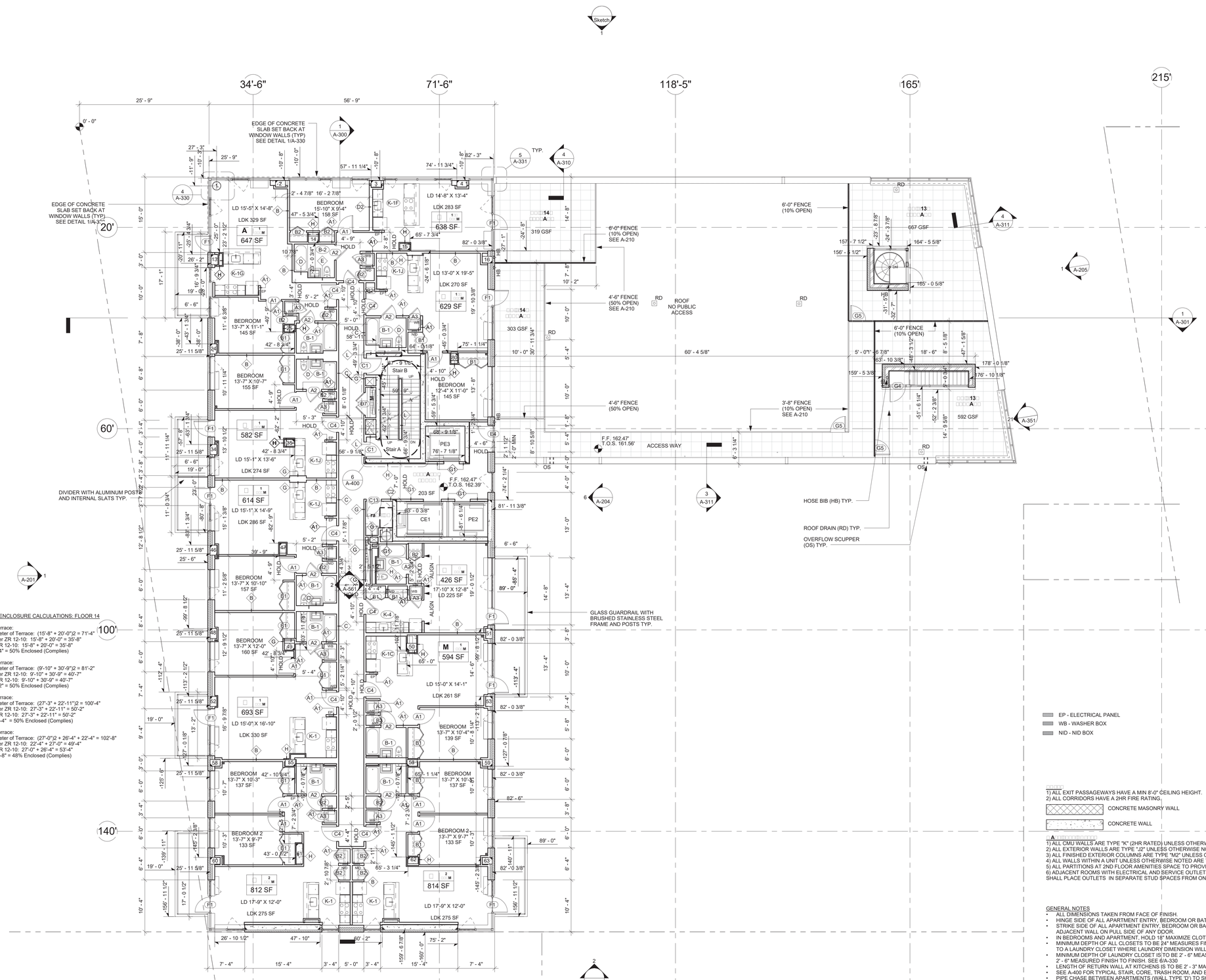
REGISTERED ARCHITECT WILLIAM STEWART 014668-1 STATE OF NEW YORK



TERRACE ENCLOSURE CALCULATIONS: FLOOR 14

Unit 14B Terrace:
Total Perimeter of Terrace: (15'-8" + 20'-0")2 = 71'-4"
Enclosed per ZR 12-10: 15'-8" + 20'-0" = 35'-8"
Open per ZR 12-10: 15'-8" + 20'-0" = 35'-8"
35'-8" / 71'-4" = 50% Enclosed (Complies)

Unit 14C Terrace:
Total Perimeter of Terrace: (9'-10" + 30'-9")2 = 81'-2"
Enclosed per ZR 12-10: 9'-10" + 30'-9" = 40'-7"
Open per ZR 12-10: 9'-10" + 30'-9" = 40'-7"
40'-7" / 81'-2" = 50% Enclosed (Complies)

Unit 13F Terrace:
Total Perimeter of Terrace: (27'-3" + 22'-11")2 = 100'-4"
Enclosed per ZR 12-10: 27'-3" + 22'-11" = 50'-2"
Open per ZR 12-10: 27'-3" + 22'-11" = 50'-2"
50'-2" / 100'-4" = 50% Enclosed (Complies)

Unit 13G Terrace:
Total Perimeter of Terrace: (27'-0"2 + 26'-4" + 22'-4" = 102'-8"
Enclosed per ZR 12-10: 22'-4" + 27'-0" = 49'-4"
Open per ZR 12-10: 27'-0" + 26'-4" = 53'-4"
49'-4" / 102'-8" = 48% Enclosed (Complies)

NOTES
1) ALL EXIT PASSAGEWAYS HAVE A MIN 8'-0" CEILING HEIGHT.
2) ALL CORRIDORS HAVE A 2HR FIRE RATING.

A
1) ALL CMU WALLS ARE TYPE "K" (2HR RATED) UNLESS OTHERWISE NOTED.
2) ALL EXTERIOR WALLS ARE TYPE "J2" UNLESS OTHERWISE NOTED.
3) ALL FINISHED EXTERIOR COLUMNS ARE TYPE "M2" UNLESS OTHERWISE NOTED.
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5) ALL PARTITIONS AT 2ND FLOOR AMENITIES SPACE TO PROVIDE STAGGERED STUDS.
6) ADJACENT ROOMS WITH ELECTRICAL AND SERVICE OUTLETS IN A COMMON WALL SHALL PLACE OUTLETS IN SEPARATE STUD SPACES FROM ONE ANOTHER.

GENERAL NOTES
- ALL DIMENSIONS TAKEN FROM FACE OF FINISH.
- HINGE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENING TO BE 4" FROM ADJACENT WALL.
- STRIKE SIDE OF ALL APARTMENT ENTRY, BEDROOM OR BATH DOOR OPENINGS TO BE 18" MINIMUM FROM ADJACENT WALL ON PULL SIDE OF ANY DOOR.
- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
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Bulletin #12	05-12-15
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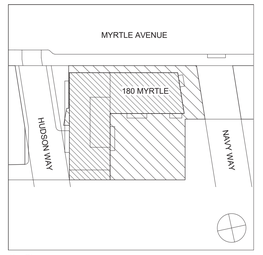

Key Plan

Floor 14 Plan (Marketing - Floor 15)

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
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Sheet No.:	
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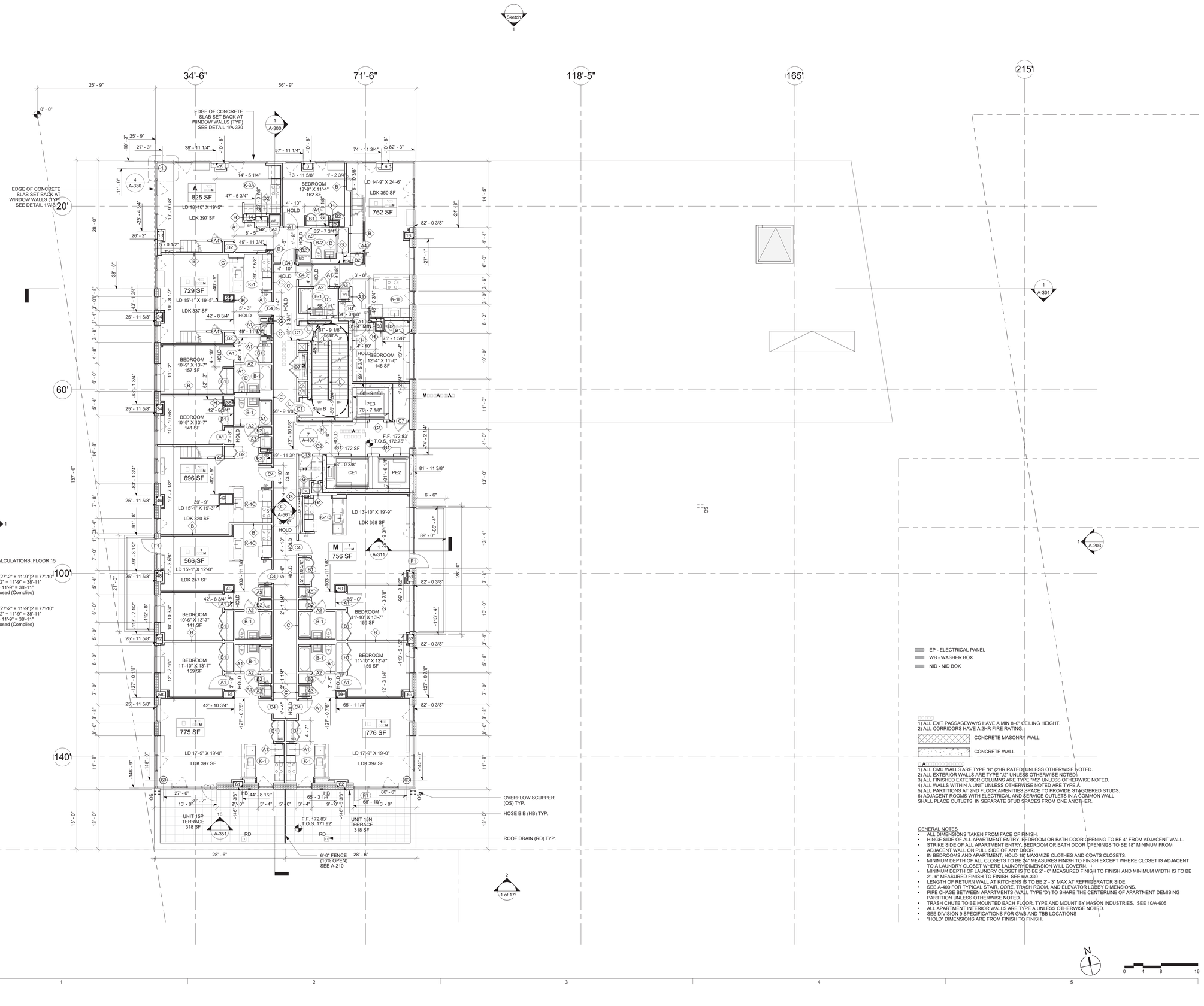
REGISTERED ARCHITECT WILLIAM STEINER 014668-1 STATE OF NEW YORK



TERRACE ENCLOSURE CALCULATIONS: FLOOR 15

Unit 15N Terrace:
Total Perimeter of Terrace: (27'-2" + 11'-9")2 = 77'-10"
Enclosed per ZR 12-10: 27'-2" + 11'-9" = 38'-11"
Open per ZR 12-10: 27'-2" + 11'-9" = 38'-11"
38'-11" / 77'-10" = 50% Enclosed (Complies)

Unit 15P Terrace:
Total Perimeter of Terrace: (27'-2" + 11'-9")2 = 77'-10"
Enclosed per ZR 12-10: 27'-2" + 11'-9" = 38'-11"
Open per ZR 12-10: 27'-2" + 11'-9" = 38'-11"
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EP - ELECTRICAL PANEL
WB - WASHER BOX
NID - NID BOX

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CONCRETE MASONRY WALL

CONCRETE WALL

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- IN BEDROOMS AND APARTMENT, HOLD 18" MAXIMIZE CLOTHES AND COATS CLOSETS.
- MINIMUM DEPTH OF ALL CLOSETS TO BE 24" MEASURES FINISH TO FINISH EXCEPT WHERE CLOSET IS ADJACENT TO A LAUNDRY CLOSET WHERE LAUNDRY DIMENSION WILL GOVERN.
- MINIMUM DEPTH OF LAUNDRY CLOSET IS TO BE 2' - 6" MEASURED FINISH TO FINISH AND MINIMUM WIDTH IS TO BE 2' - 6" MEASURED FINISH TO FINISH. SEE 6/A-330
- LENGTH OF RETURN WALL AT KITCHENS IS TO BE 2' - 3" MAX AT REFRIGERATOR SIDE.
- SEE A-400 FOR TYPICAL STAIR, CORE, TRASH ROOM, AND ELEVATOR LOBBY DIMENSIONS.
- PIPE CHASE BETWEEN APARTMENTS (WALL TYPE 'D') TO SHARE THE CENTERLINE OF APARTMENT DEMISING PARTITION UNLESS OTHERWISE NOTED.
- TRASH CHUTE TO BE MOUNTED EACH FLOOR, TYPE AND MOUNT BY MASON INDUSTRIES. SEE 10/A-605
- ALL APARTMENT INTERIOR WALLS ARE TYPE A UNLESS OTHERWISE NOTED.
- SEE DIVISION 9 SPECIFICATIONS FOR GWB AND TBB LOCATIONS
- "HOLD" DIMENSIONS ARE FROM FINISH TO FINISH.

0 4 8 16

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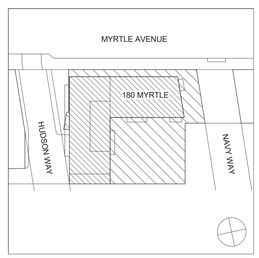
DOB #320592747-01

AS BUILT	**06-16-16**

Bulletin #12	05-12-15
Bulletin #10	03-26-15
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Floor 15 Plan (Marketing - Floor 16)

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Sheet No.:	37 of 105

REGISTERED ARCHITECT WILLIAM STEINER 024668 STATE OF NEW YORK

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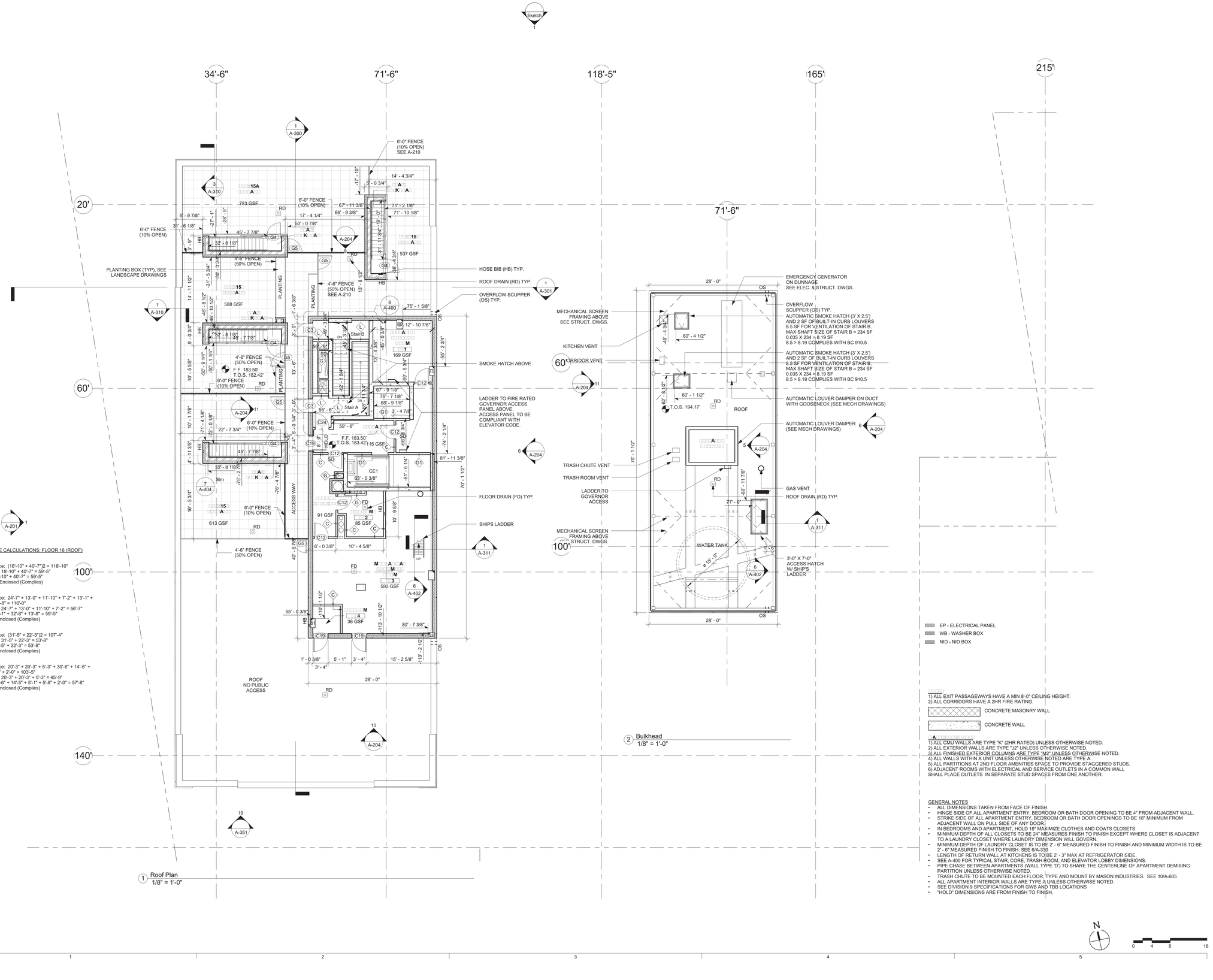

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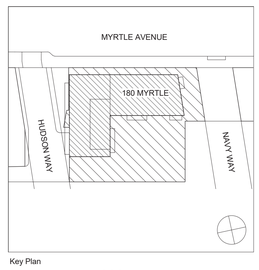
DOB #320592747-01

AS BUILT	**06-16-16**
ISSUED TO DOB	06/03/2016

Revisions



Key Plan

Roof and Bulkhead Plans

Date	Oct 22 2014
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Seal	REGISTERED ARCHITECT WILLIAM STERN 014088 STATE OF NEW YORK
Sheet No.:	A-108.01
38 of 107	

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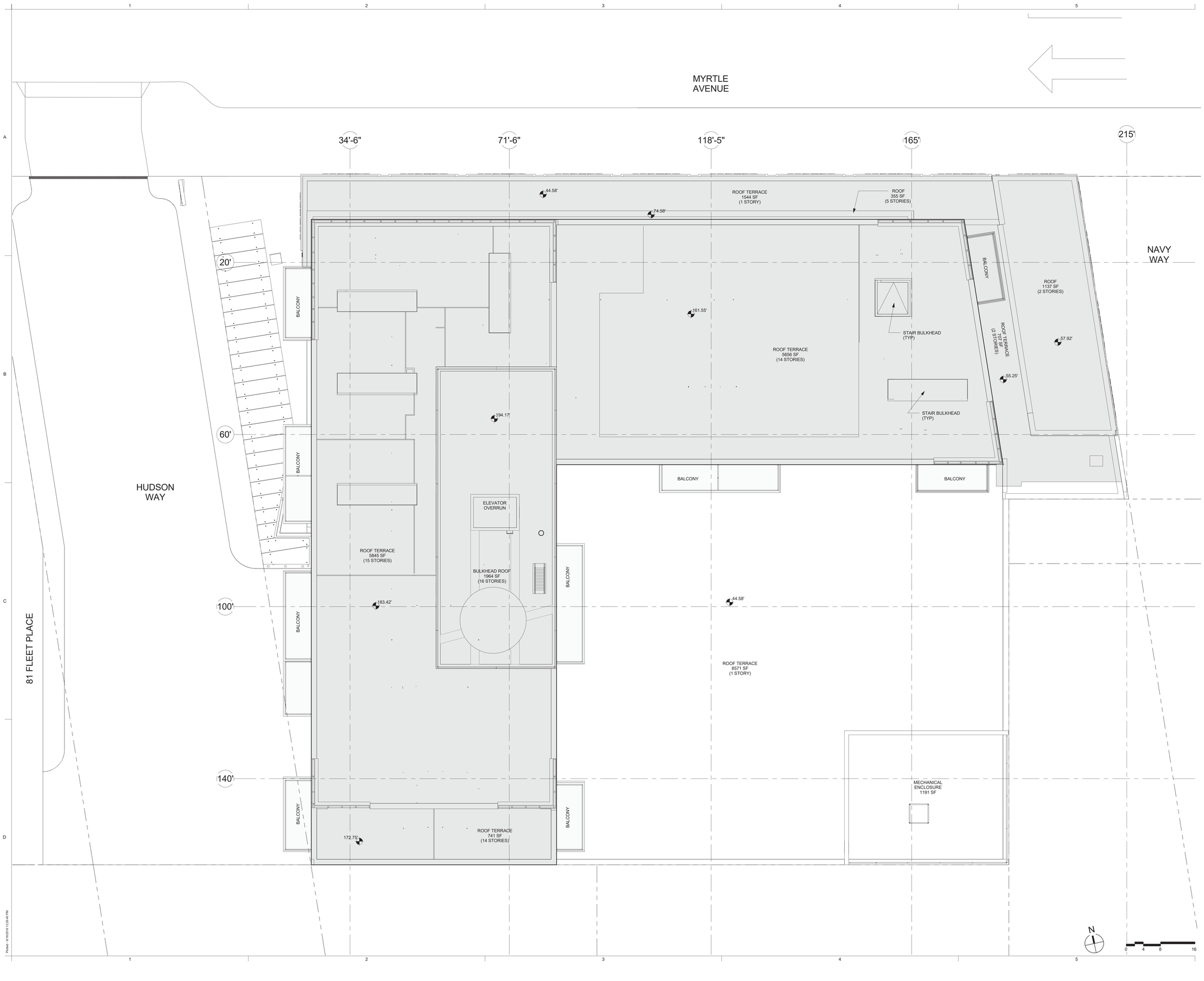

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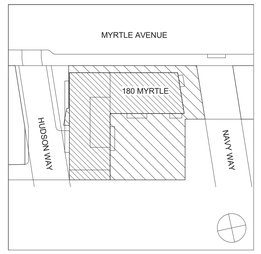
DOB #320592747-01

AS BUILT	**06-16-16**

Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Building Roof Plan

Date	04-30-14
Scale	1/8" = 1'-0"
Drawn By	Author
Checked By	Checker
Project No.	1334
Sheet No.:	
39 of 105	A-109.00

Seal

REGISTERED ARCHITECT WILLIAM STEIMLE 031468 STATE OF NEW YORK

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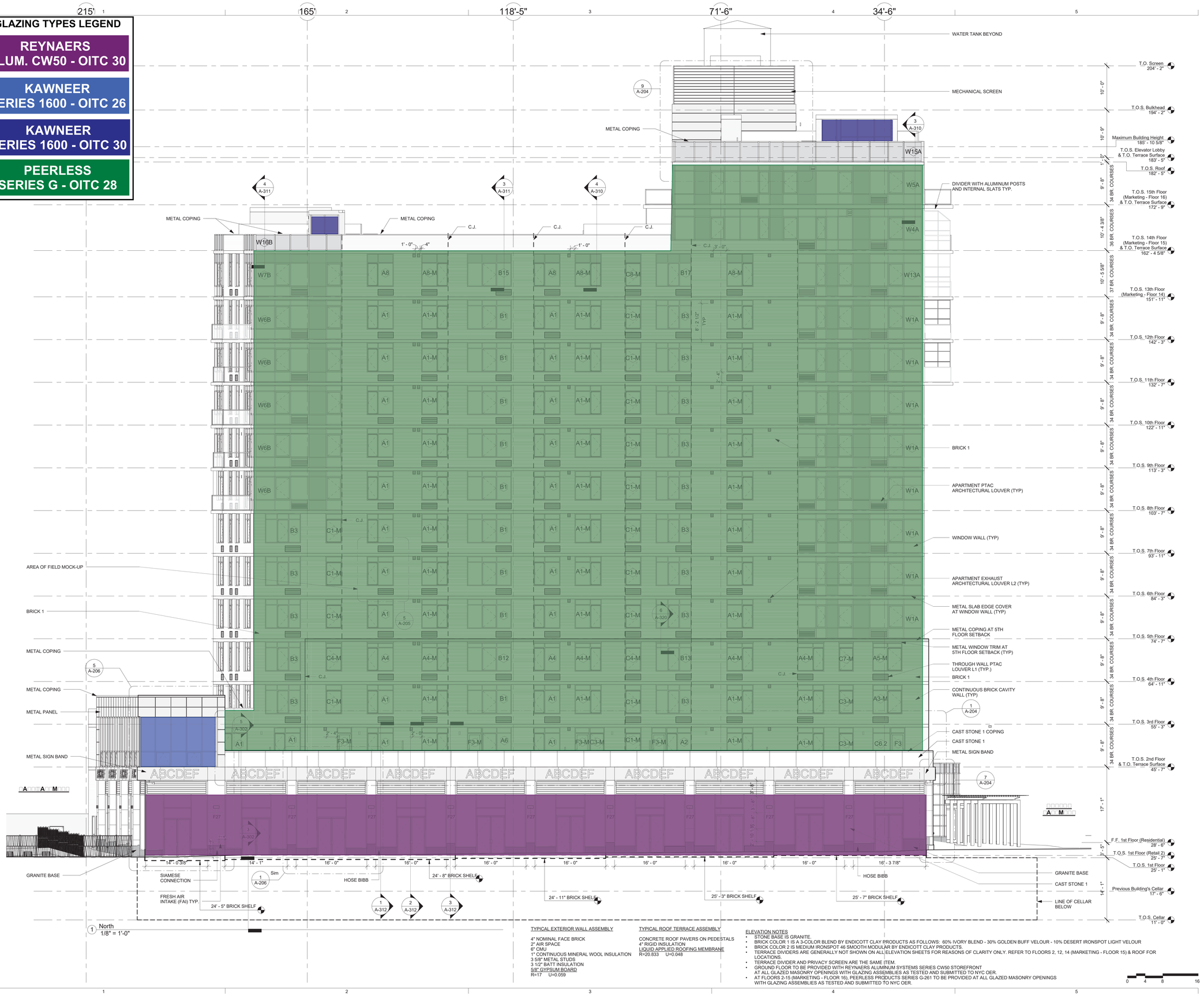
GLAZING TYPES LEGEND

REYNAERS ALUM. CW50 - OITC 30

KAWNEER SERIES 1600 - OITC 26

KAWNEER SERIES 1600 - OITC 30

PEERLESS SERIES G - OITC 28



1 North
1/8" = 1'-0"

TYPICAL EXTERIOR WALL ASSEMBLY

4" NOMINAL FACE BRICK
2" AIR SPACE
6" CMU
1" CONTINUOUS MINERAL WOOL INSULATION
3 5/8" METAL STUDS
3 1/2" BATT INSULATION
5/8" GYPSUM BOARD
R=17 U=0.059

TYPICAL ROOF TERRACE ASSEMBLY

CONCRETE ROOF PAVERS ON PEDESTALS
4" RIGID INSULATION
LIQUID APPLIED ROOFING MEMBRANE
R=20.833 U=0.048

ELEVATION NOTES

- STONE BASE IS GRANITE.
- BRICK COLOR 1 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS: 60% IVORY BLEND - 30% GOLDEN BUFF VELOUR - 10% DESERT IRONSPOT LIGHT VELOUR
- BRICK COLOR 2 IS MEDIUM IRONSPOT 46 SMOOTH MODULAR BY ENDICOTT CLAY PRODUCTS.
- TERRACE DIVIDERS ARE GENERALLY NOT SHOWN ON ALL ELEVATION SHEETS FOR REASONS OF CLARITY ONLY. REFER TO FLOORS 2, 12, 14 (MARKETING - FLOOR 15) & ROOF FOR LOCATIONS.
- TERRACE DIVIDER AND PRIVACY SCREEN ARE THE SAME ITEM.
- GROUND FLOOR TO BE PROVIDED WITH REYNAERS ALUMINUM SYSTEMS SERIES CW50 STOREFRONT AT ALL GLAZED MASONRY OPENINGS WITH GLAZING ASSEMBLIES AS TESTED AND SUBMITTED TO NYC OER.
- AT FLOORS 2-15 (MARKETING - FLOOR 16), PEERLESS PRODUCTS SERIES G-261 TO BE PROVIDED AT ALL GLAZED MASONRY OPENINGS WITH GLAZING ASSEMBLIES AS TESTED AND SUBMITTED TO NYC OER.

0 4 8 16

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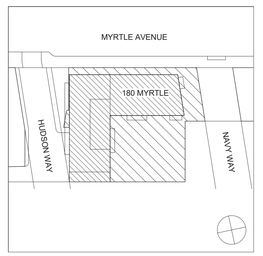
DOB #320592747-01

AS BUILT	**06-16-16**

DOB PAA #1	06-03-16
Bulletin #12	05-12-15
Bulletin #8	10-17-14
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Building Elevation - North

Date	05-12-15
Scale	As indicated
Drawn By	JP
Checked By	Checker
Project No.	1334
Seal	

REGISTERED ARCHITECT WILLIAM STEWART 014688 STATE OF NEW YORK

Sheet No.:
50 of 105

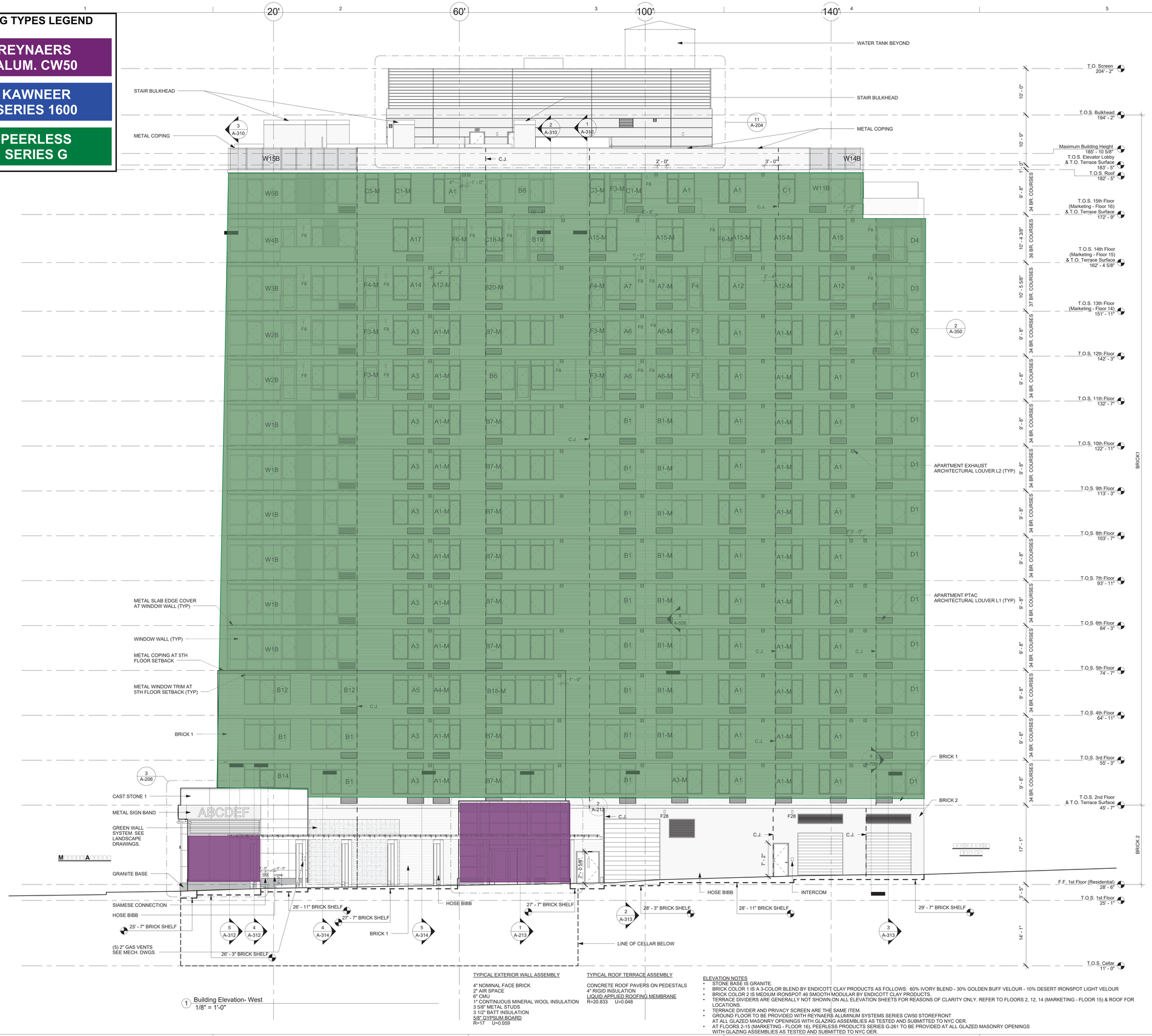
A-200.01

GLAZING TYPES LEGEND

REYNAERS ALUM. CW50

KAWNEER SERIES 1600

PEERLESS SERIES G



1 Building Elevation- West
1/8" = 1'-0"

TYPICAL EXTERIOR WALL ASSEMBLY

4" NOMINAL FACE BRICK
2" AIR SPACE
6" CMU
1" CONTINUOUS MINERAL WOOL INSULATION
3 5/8" METAL STUDS
3 1/2" BATT INSULATION
5/8" GYPSUM BOARD
R=17 U=0.059

TYPICAL ROOF TERRACE ASSEMBLY

CONCRETE ROOF PAVERS ON PEDESTALS
4" RIGID INSULATION
LIQUID APPLIED ROOFING MEMBRANE
R=20.833 U=0.048

ELEVATION NOTES

- STONE BASE IS GRANITE.
- BRICK COLOR 1 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS: 60% IVORY BLEND - 30% GOLDEN BUFF VELOUR - 10% DESERT IRONSPOT LIGHT VELOUR
- BRICK COLOR 2 IS MEDIUM IRONSPOT 46 SMOOTH MODULAR BY ENDICOTT CLAY PRODUCTS.
- TERRACE DIVIDERS ARE GENERALLY NOT SHOWN ON ALL ELEVATION SHEETS FOR REASONS OF CLARITY ONLY. REFER TO FLOORS 2, 12, 14 (MARKETING - FLOOR 15) & ROOF FOR LOCATIONS.
- TERRACE DIVIDER AND PRIVACY SCREEN ARE THE SAME ITEM.
- GROUND FLOOR TO BE PROVIDED WITH REYNAERS ALUMINUM SYSTEMS SERIES CW50 STOREFRONT AT ALL GLAZED MASONRY OPENINGS WITH GLAZING ASSEMBLIES AS TESTED AND SUBMITTED TO NYC OER.
- AT FLOORS 2-15 (MARKETING - FLOOR 16), PEERLESS PRODUCTS SERIES G-261 TO BE PROVIDED AT ALL GLAZED MASONRY OPENINGS WITH GLAZING ASSEMBLIES AS TESTED AND SUBMITTED TO NYC OER.

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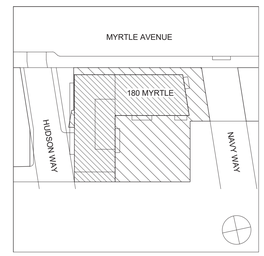
DOB #320592747-01

AS BUILT	**06-16-16**

Bulletin #12	05-12-15
Bulletin #8	10-17-14
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Building Elevation- West

Date	05-12-15
Scale	As indicated
Drawn By	JP
Checked By	Checker
Project No.	1334
Seal	

REGISTERED ARCHITECT WILLIAM STUMM 014688 STATE OF NEW YORK

Sheet No.:

51 of 105

A-201.00

GLAZING TYPES LEGEND

REYNAERS ALUM. CW50 - OITC 30

KAWNEER SERIES 1600 - OITC 26

KAWNEER SERIES 1600 - OITC 30

PEERLESS SERIES G - OITC 28

1 Building Elevation- South
1/8" = 1'-0"

TYPICAL EXTERIOR WALL ASSEMBLY

4" NOMINAL FACE BRICK
2" AIR SPACE
6" CMU
1" CONTINUOUS MINERAL WOOL INSULATION
3 5/8" METAL STUDS
3 1/2" BATT INSULATION
5/8" GYPSUM BOARD
R=17 U=0.059

TYPICAL ROOF TERRACE ASSEMBLY

CONCRETE ROOF PAVERS ON PEDESTALS
4" RIGID INSULATION
LIQUID APPLIED ROOFING MEMBRANE
R=20.833 U=0.048

ELEVATION NOTES

- STONE BASE IS GRANITE.
- BRICK COLOR 1 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS: 60% IVORY BLEND - 30% GOLDEN BUFF VELOUR - 10% DESERT IRONSPOT LIGHT VELOUR
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AS BUILT	**06-16-16**

Bulletin #12	05-12-15
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
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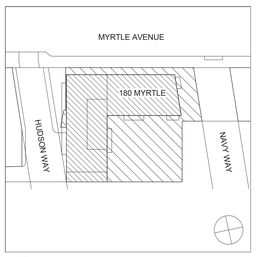
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Building Elevation- South

Date	05-12-15
Scale	As indicated
Drawn By	JP
Checked By	Checker
Project No.	1334
Sheet No.:	A-202.00
52 of 105	

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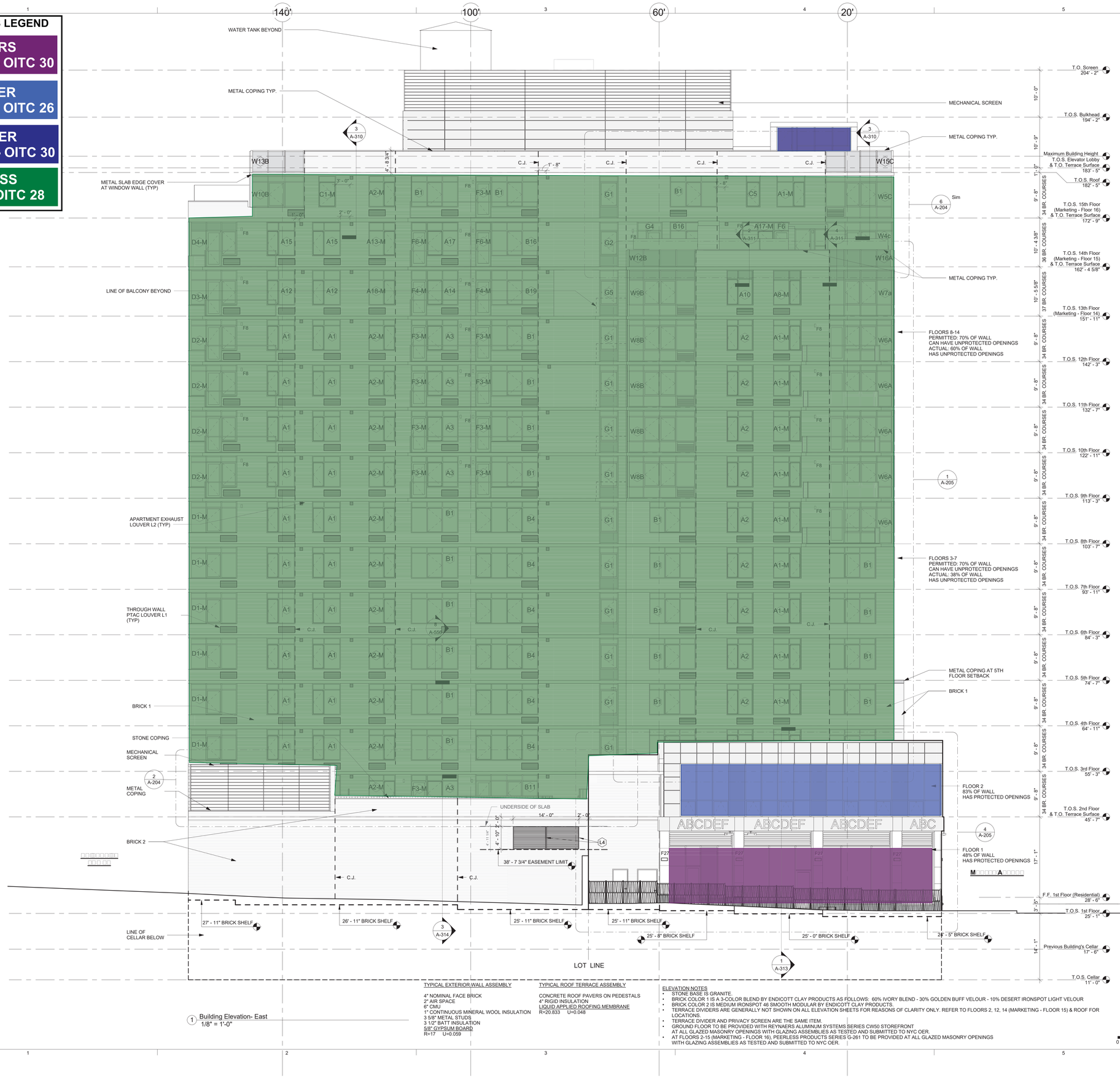
GLAZING TYPES LEGEND

- **REYNAERS ALUM. CW50 - OITC 30**
- **KAWNEER SERIES 1600 - OITC 26**
- **KAWNEER SERIES 1600 - OITC 30**
- **PEERLESS SERIES G - OITC 28**



1 Building Elevation- East
1/8" = 1'-0"

TYPICAL EXTERIOR WALL ASSEMBLY

4" NOMINAL FACE BRICK
2" AIR SPACE
6" CMU
1" CONTINUOUS MINERAL WOOL INSULATION
3 5/8" METAL STUDS
3 1/2" BATT INSULATION
5/8" GYPSUM BOARD
R=17 U=0.059

TYPICAL ROOF TERRACE ASSEMBLY

CONCRETE ROOF PAVERS ON PEDESTALS
4" RIGID INSULATION
LIQUID APPLIED ROOFING MEMBRANE
R=20.833 U=0.048

ELEVATION NOTES

- STONE BASE IS GRANITE.
- BRICK COLOR 1 IS A 3-COLOR BLEND BY ENDICOTT CLAY PRODUCTS AS FOLLOWS: 60% IVORY BLEND - 30% GOLDEN BUFF VELOUR - 10% DESERT IRONSPOT LIGHT VELOUR
- BRICK COLOR 2 IS MEDIUM IRONSPOT 46 SMOOTH MODULAR BY ENDICOTT CLAY PRODUCTS.
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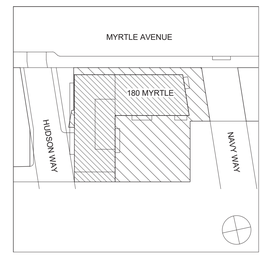
173 West 81st Street, Suite 2
New York, NY 10024

DOB #320592747-01

AS BUILT	**06-16-16**

Bulletin #12	05-12-15
Bulletin #5	08-27-14
Bulletin #4 - Progress Set	08-01-14
Bulletin #2	05-29-14
100% Construction Documents	04-30-14
Revised 95% Construction Documents	04-15-14
95% Construction Documents	02-28-14
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

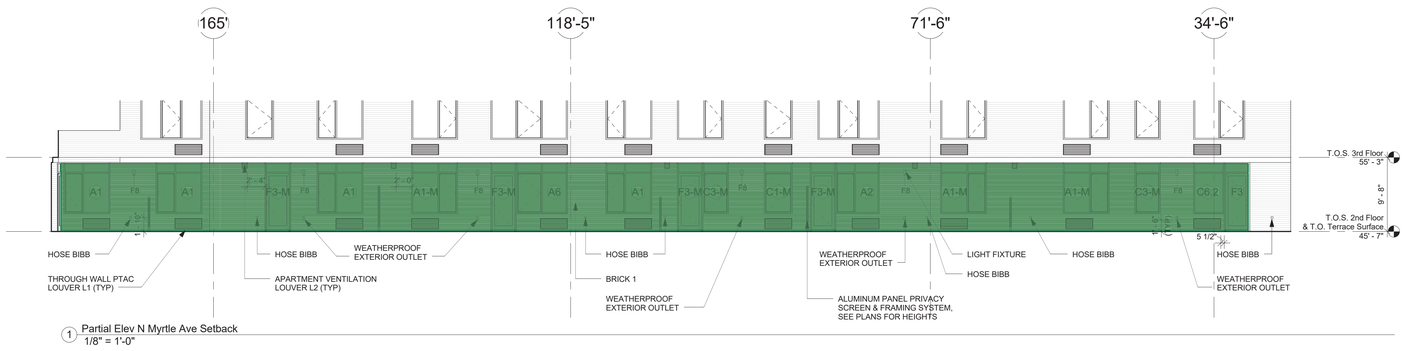
Building Elevation- East

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Seal	

REGISTERED ARCHITECT WILLIAM STUMPF 014688 STATE OF NEW YORK

Sheet No.:
53 of 105

A-203.00



1 Partial Elev N Myrtle Ave Setback
1/8" = 1'-0"

GLAZING TYPES LEGEND

REYNAERS ALUM. CW50 - OITC 30

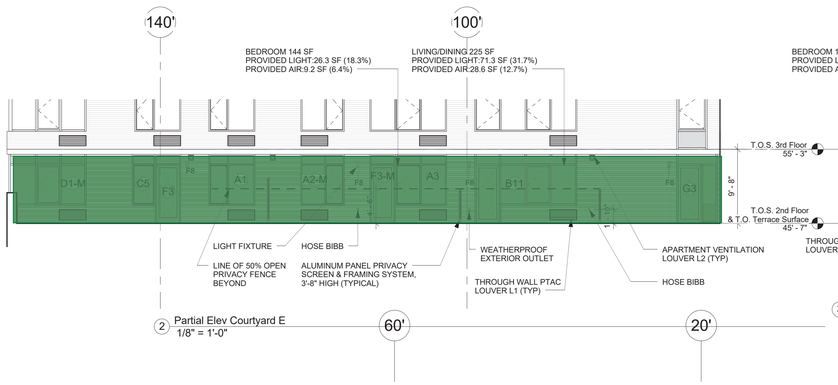
KAWNEER SERIES 1600 - OITC 26

KAWNEER SERIES 1600 - OITC 30

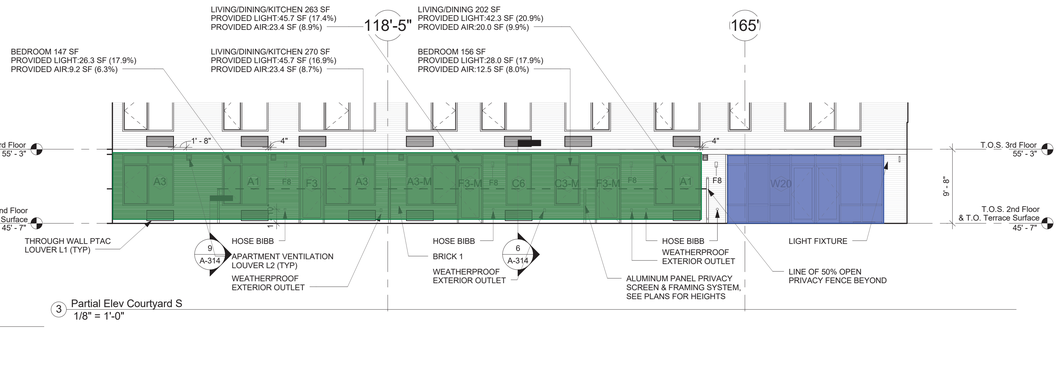
PEERLESS SERIES G - OITC 28

NOTE:

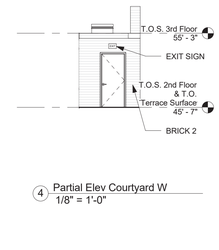
LIGHT AND AIR CALCULATIONS REVISED TO ACCOUNT FOR 4'-6" HIGH 50% OPEN PRIVACY FENCE.
SEE SHEET A-352 FOR ENTIRETY OF LIGHT AND AIR CALCULATIONS.



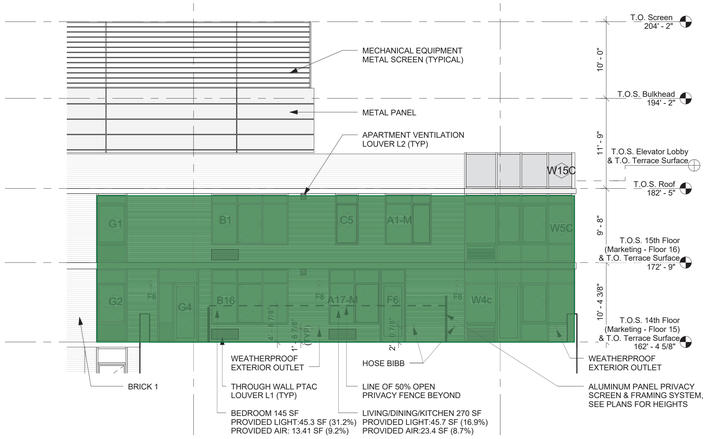
2 Partial Elev Courtyard E
1/8" = 1'-0"



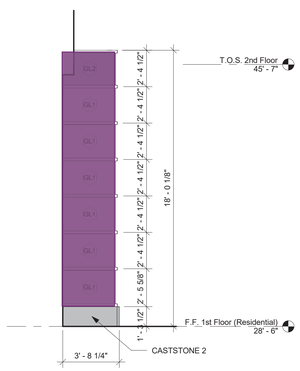
3 Partial Elev Courtyard S
1/8" = 1'-0"



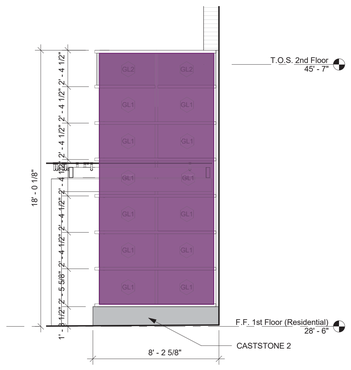
4 Partial Elev Courtyard W
1/8" = 1'-0"



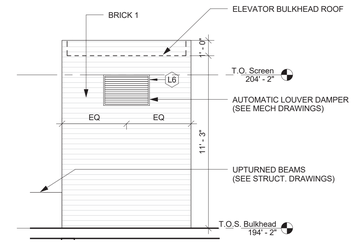
6 Partial Elev Setback E
1/8" = 1'-0"



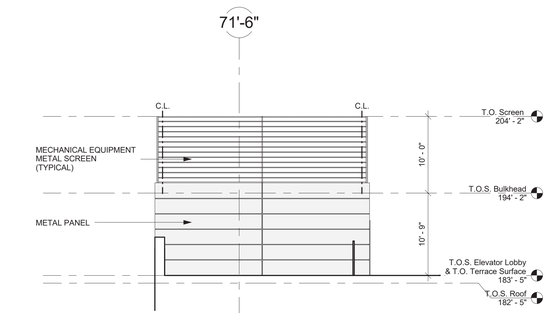
7 Partial Elev Res Entry N
1/4" = 1'-0"



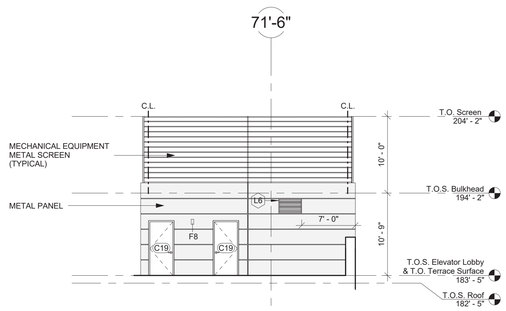
8 Partial Elev Res Entry S
1/4" = 1'-0"



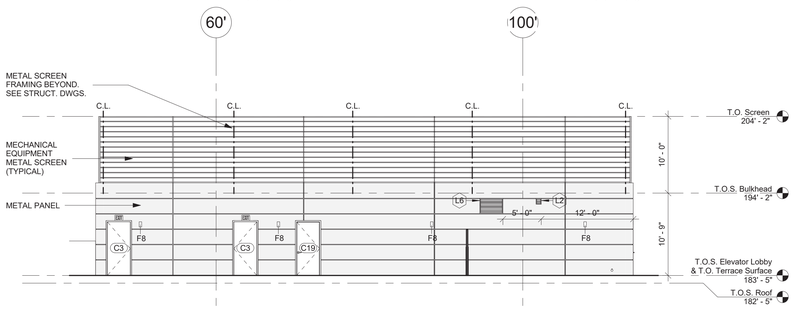
5 East Elevator Bulkhead
1/4" = 1'-0"



9 Partial Elev Bulkhead N
1/8" = 1'-0"



10 Partial Elev Bulkhead S
1/8" = 1'-0"



11 Partial Elev Bulkhead W
1/8" = 1'-0"

180 Myrtle Avenue

Brooklyn, NY 11201

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New York, NY 10019

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New York, NY 10018
tel 2122472660
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Structural Engineers
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New York, NY 10001

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Site Civil Engineer
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102 Madison Avenue, 11th Floor
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Livingston, NJ 07039

Landscape Architect
Weintraub Diaz Landscape Architects
19 New Street
Nyack, NY 10960

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DOB #320592747-01

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-	
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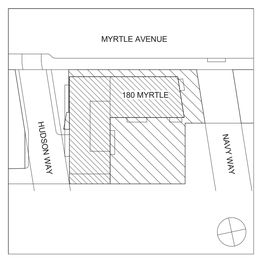

Key Plan

Partial Elevations

Date	04-30-14
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Seal	
Sheet No.:	
54 of 105	A-204.00

REGISTERED ARCHITECT WILLIAM STEINER 014668 STATE OF NEW YORK

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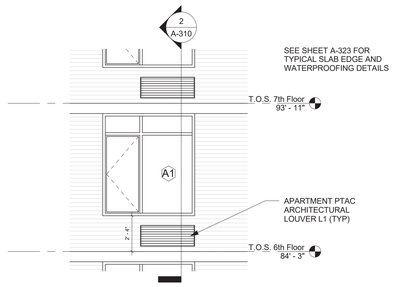
GLAZING TYPES LEGEND

REYNAERS
ALUM. CW50 - OITC 30

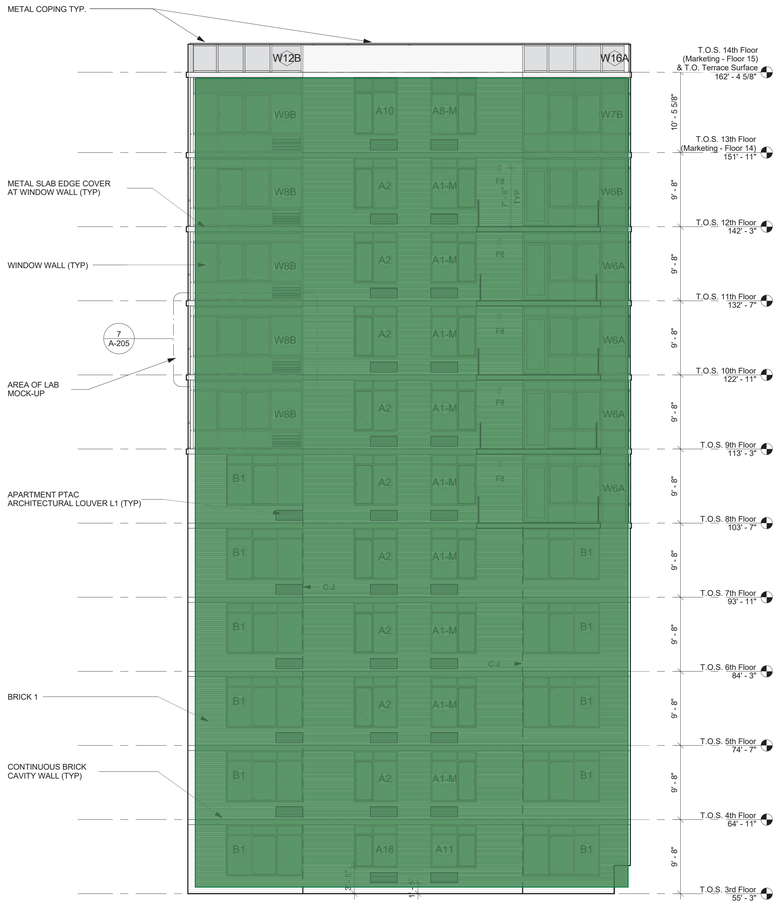
KAWNEER
SERIES 1600 - OITC 26

KAWNEER
SERIES 1600 - OITC 30

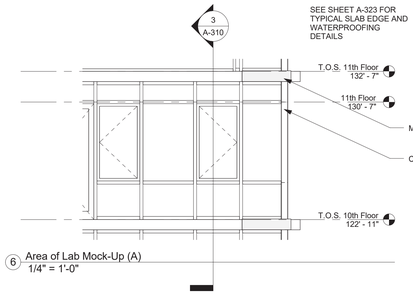
PEERLESS
SERIES G - OITC 28



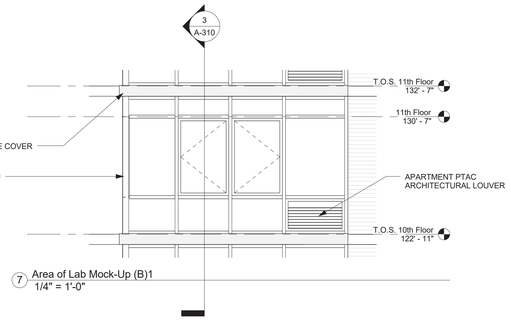
5 Area of Field Mock-Up
1/4" = 1'-0"



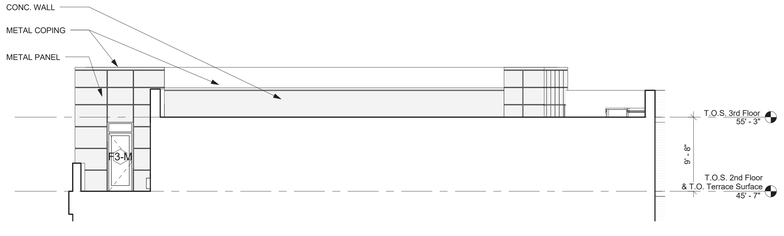
1 Partial Elev E
1/8" = 1'-0"



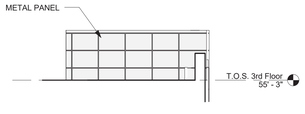
6 Area of Lab Mock-Up (A)
1/4" = 1'-0"



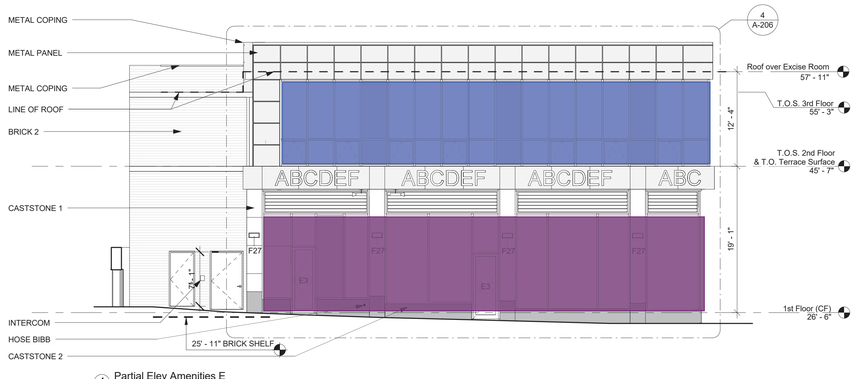
7 Area of Lab Mock-Up (B)1
1/4" = 1'-0"



2 Partial Elev Amenities W
1/8" = 1'-0"



3 Partial Elev Amenities S
1/8" = 1'-0"



4 Partial Elev Amenities E
1/8" = 1'-0"

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DOB #320592747-01

AS BUILT **06-16-16**

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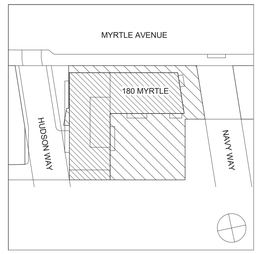

Key Plan

Partial Elevations

Date	05-12-15
Scale	As indicated
Drawn By	Author
Checked By	Checker
Project No.	1334
Seal	

REGISTERED ARCHITECT WILLIAM STEMEN 014088 STATE OF NEW YORK

Sheet No.:
55 of 105

A-205.00

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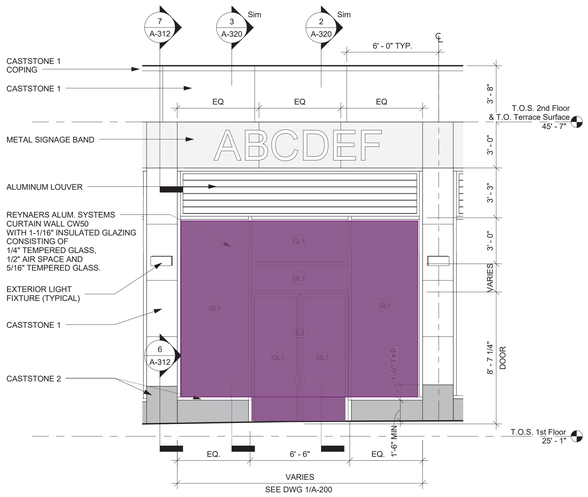


1 Partial Elevation at Typical Retail Storefront
1/4" = 1'-0"

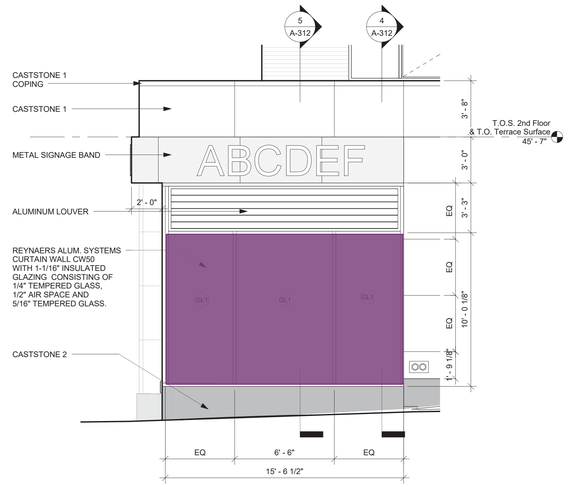
GLAZING TYPES LEGEND

REYNAERS ALUM. CW50 - OITC 30

KAWNEER SERIES 1600 - OITC 26

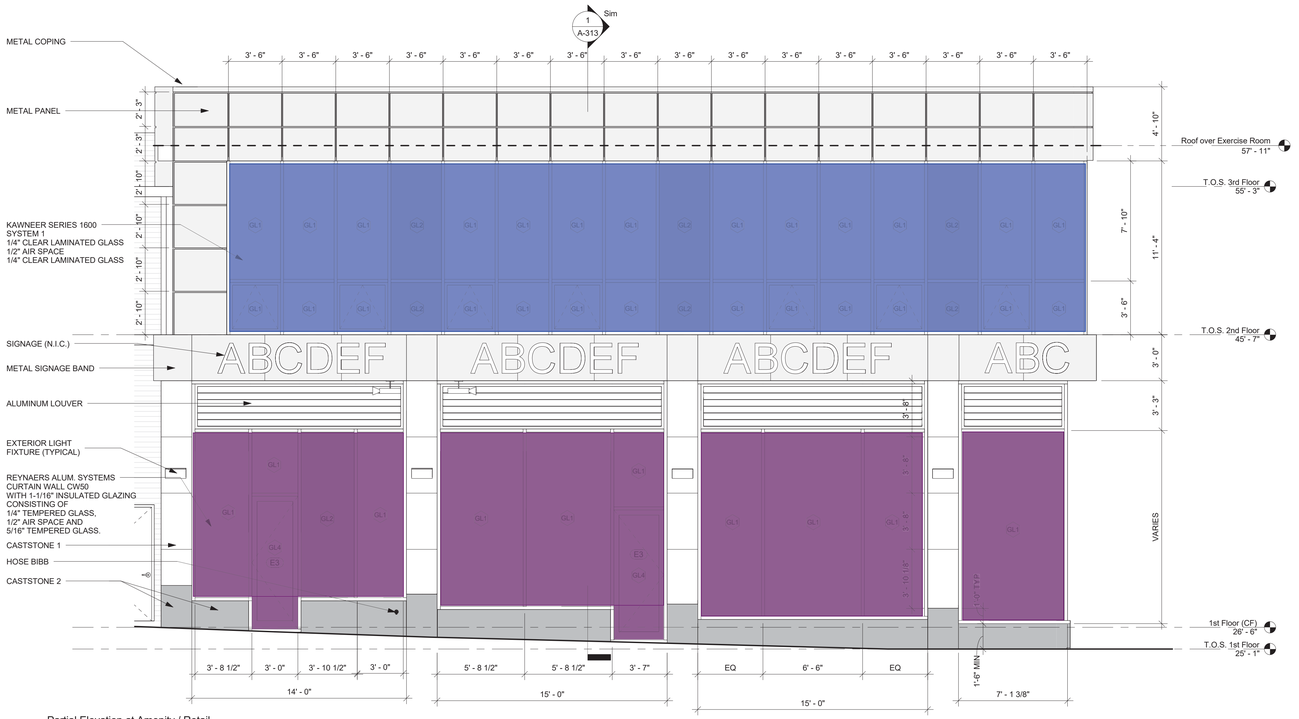
KAWNEER SERIES 1600 - OITC 30

PEERLESS SERIES G - OITC 28

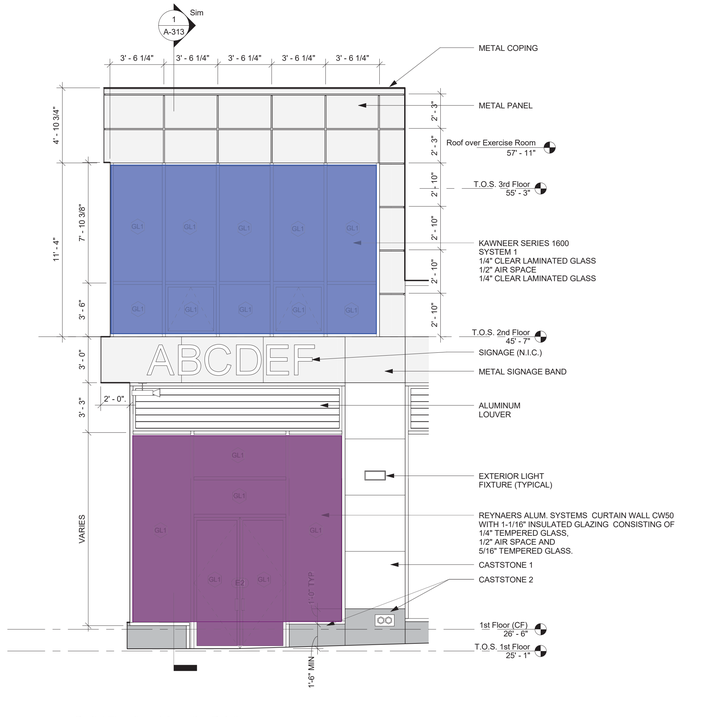


2 Partial Elevation at Retail Storefront North
1/4" = 1'-0"

3 Partial Elevation at Retail Storefront West
1/4" = 1'-0"



4 Partial Elevation at Amenity / Retail Storefront East
1/4" = 1'-0"



5 Partial Elevation at Amenity / Retail Storefront North
1/4" = 1'-0"

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Brooklyn, NY 11201

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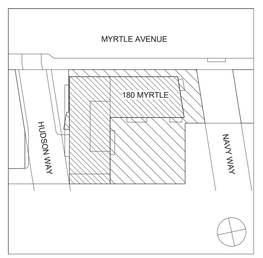
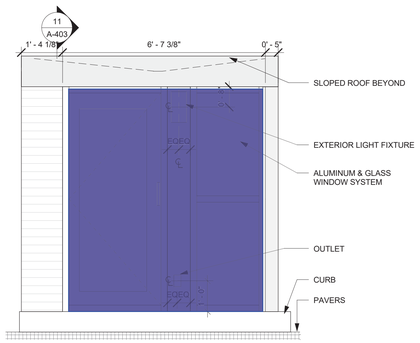


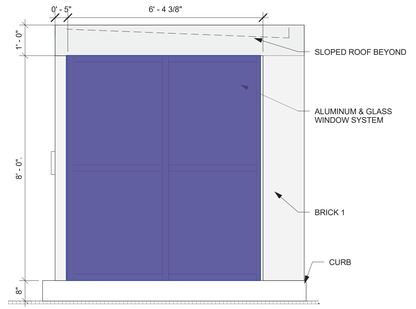
Key Plan

Building Elevations at Retail Storefronts

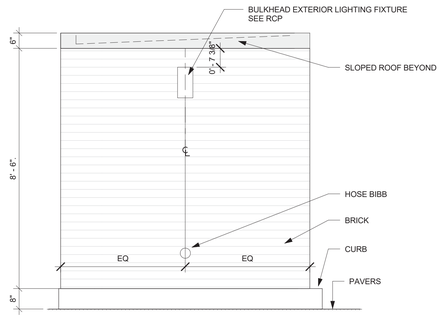
Date	05-12-15
Scale	1/4" = 1'-0"
Drawn By	JP
Checked By	Checker
Project No.	1334
Seal	REGISTERED ARCHITECT WILLIAM STEINER 014668-1 STATE OF NEW YORK
Sheet No.:	
56 of 105	A-206.00



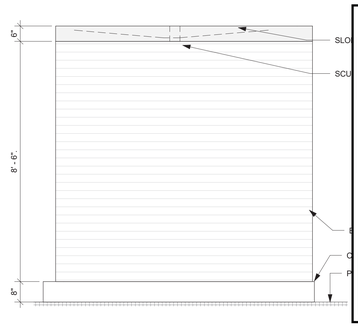
1 Stair Bulkhead Elevation 1
1/2" = 1'-0"



2 Stair Bulkhead Elevation 2
1/2" = 1'-0"



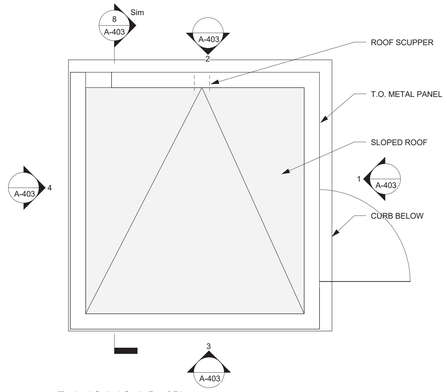
3 Stair Bulkhead Elevation 3
1/2" = 1'-0"



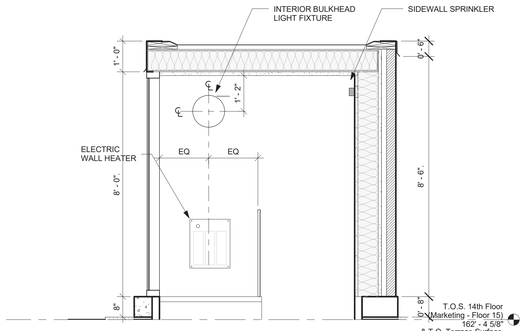
4 Stair Bulkhead Elevation 4
1/2" = 1'-0"

GLAZING TYPES LEGEND

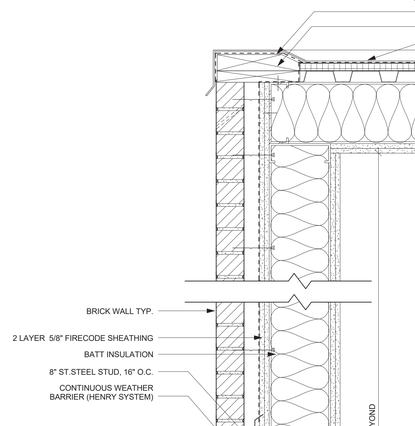
- REYNAERS ALUM. CW50 - OITC 30
- KAWNEER SERIES 1600 - OITC 26
- KAWNEER SERIES 1600 - OITC 30
- PEERLESS SERIES G - OITC 28



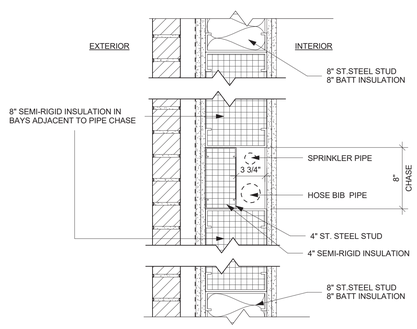
7 Typical Spiral Stair Roof Plan
1/2" = 1'-0"



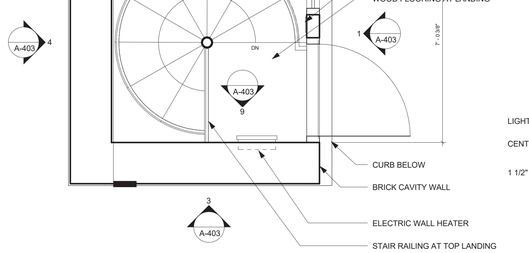
9 Spiral Stair Bulkhead - Interior Elevation
1/2" = 1'-0"



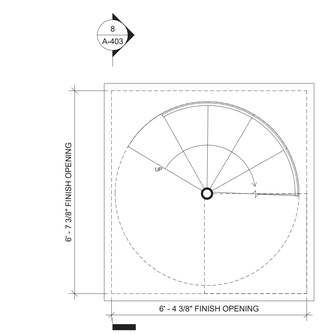
11 Stair Bulkhead Wall Section w/ Brick
1 1/2" = 1'-0"



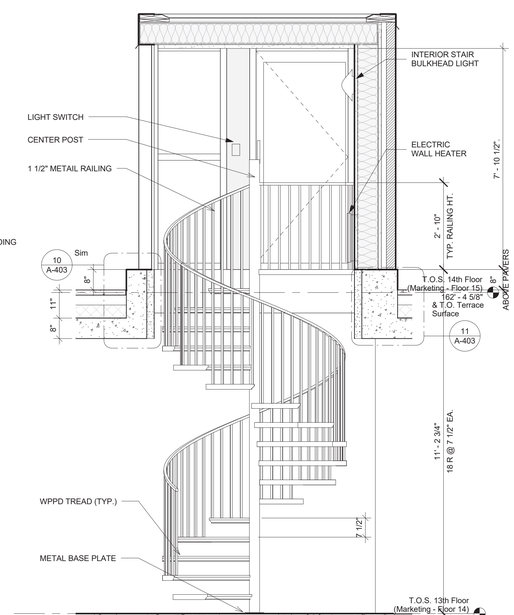
13 Stair Bulkhead Plan Detail @ Pipe Chase
1 1/2" = 1'-0"



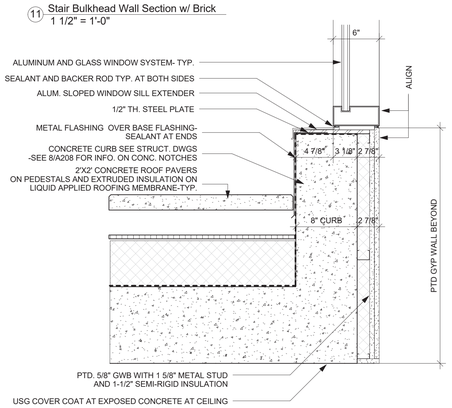
6 Typical Spiral Stair at Roof Terrace
1/2" = 1'-0"



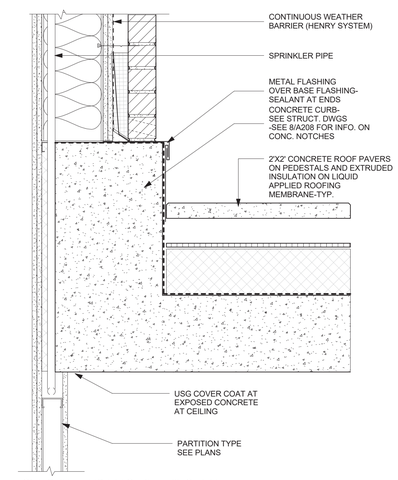
5 Spiral Stair Bulkhead Plan at Apartment (Lower Level) - Typ.
1/2" = 1'-0"



8 Typical Spiral Stair Section
1/2" = 1'-0"



10 Stair Bulkhead Wall Base Section at Storefront
1 1/2" = 1'-0"



12 Stair Bulkhead (Brick) Section with Sprinkler Pipe
1 1/2" = 1'-0"

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DOB #320592747-01

AS BUILT	06-16-16

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Bulletin #4 - Progress Set	08-01-14
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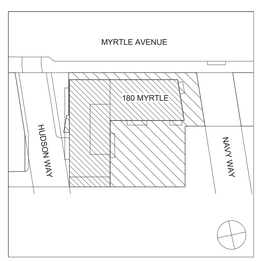
90% Construction Documents	01-24-14
Pricing Set	12-20-13



Key Plan

Apartment Circular Stair Details

Date	04-30-14
Scale	As indicated
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Checked By	Checker
Project No.	1334
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	83 of 105

Seal: REGISTERED ARCHITECT WILLIAM STEINER 014668-1 STATE OF NEW YORK

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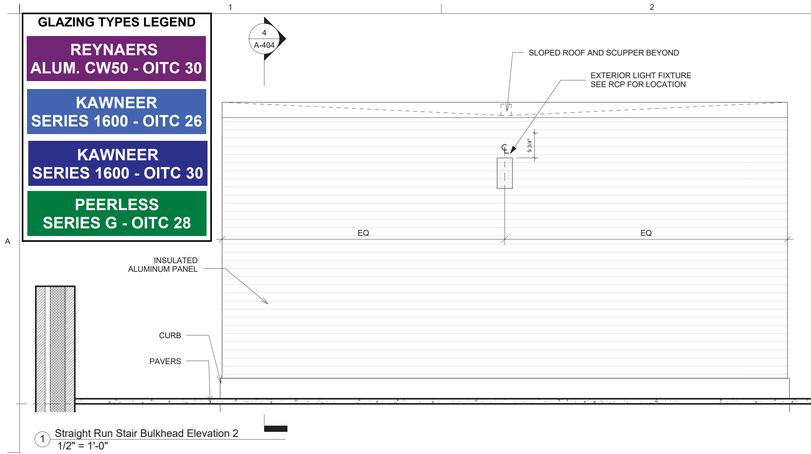
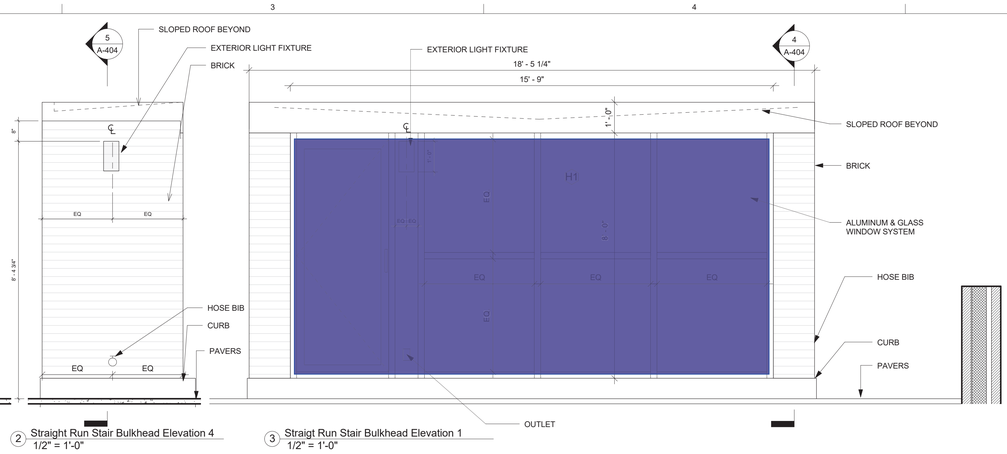
GLAZING TYPES LEGEND

- REYNAERS ALUM. CW50 - OITC 30
- KAWNEER SERIES 1600 - OITC 26
- KAWNEER SERIES 1600 - OITC 30
- PEERLESS SERIES G - OITC 28

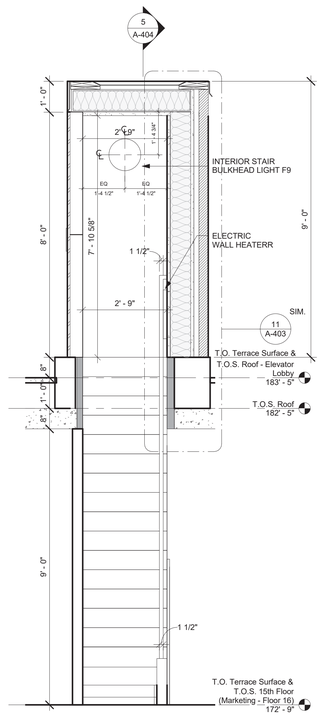


1 Straight Run Stair Bulkhead Elevation 2
1/2" = 1'-0"

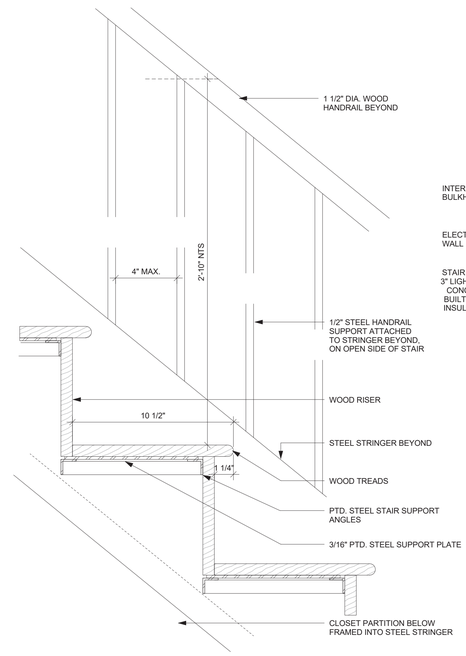


2 Straight Run Stair Bulkhead Elevation 4
1/2" = 1'-0"

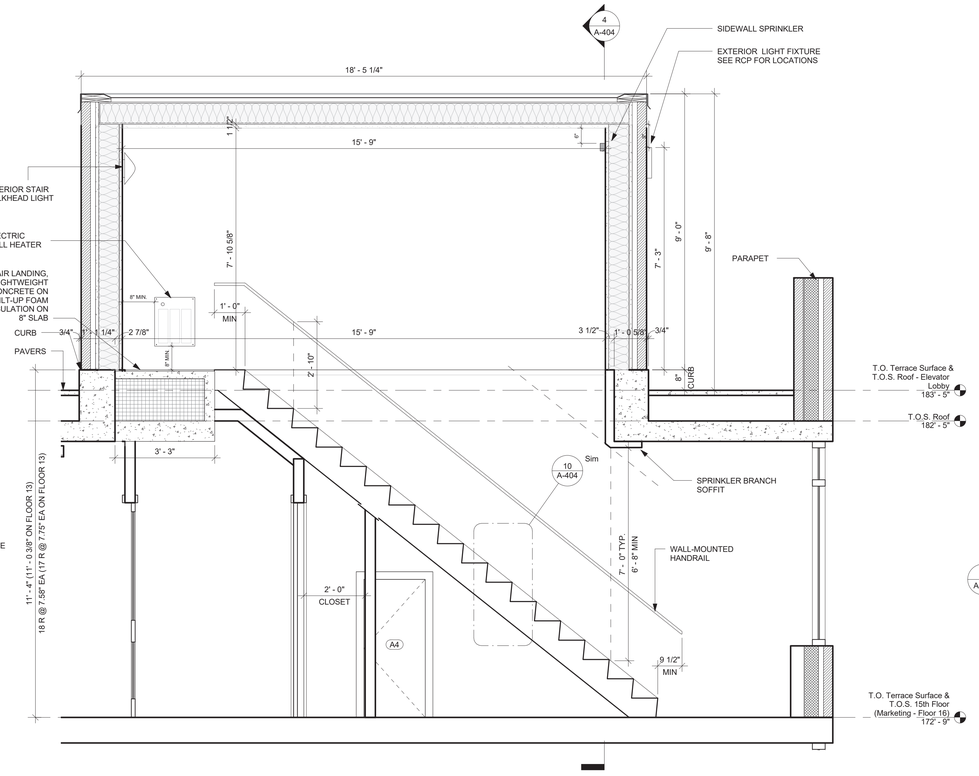
3 Straigt Run Stair Bulkhead Elevation 1
1/2" = 1'-0"



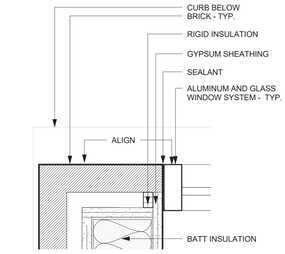
4 Corss Section through Straight Run Stair
1/2" = 1'-0"



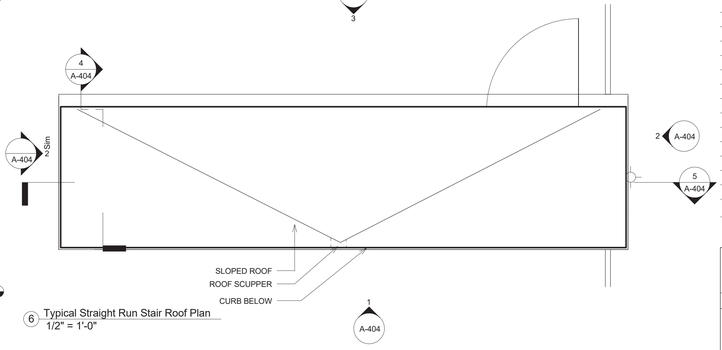
10 Apartment Stair Detail
3" = 1'-0"



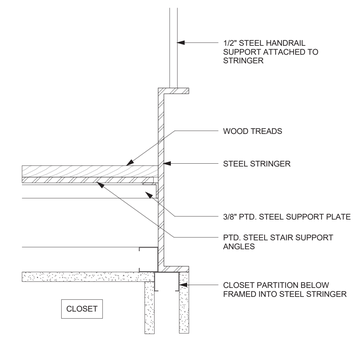
5 Section through Apartment Straight Stair - Typical
1/2" = 1'-0"



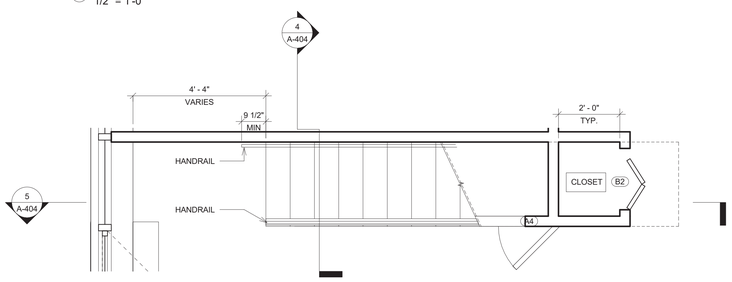
11 Typical Masonry - Storefront Detail
1 1/2" = 1'-0"



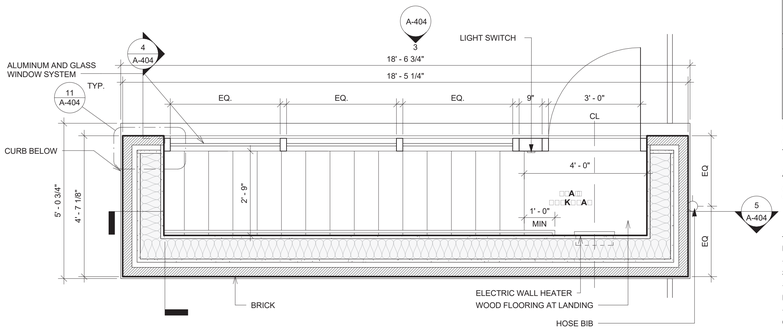
6 Typical Straight Run Stair Roof Plan
1/2" = 1'-0"



9 Apartment Stair Framing Detail
3" = 1'-0"



8 Typical Straight Run Stair at Apartment
1/2" = 1'-0"



7 Typical Straight Run Stair at Roof Terrace
1/2" = 1'-0"

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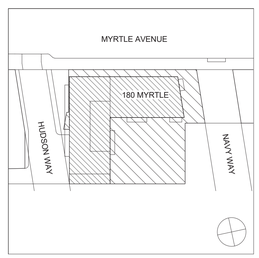

Key Plan

Apartment Staight Run Stair Details

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HVAC LEGEND

LEGEND	DESCRIPTION
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHC	ABOVE HUNG CEILING
AP	ACCESS PANEL
BDD	BACKDRAFT DAMPER
BR	BOTTOM REGISTER
BTU	BRITISH THERMAL UNIT
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CR	CEILING REGISTER
CV	CORRIDOR VENTILATION
CW	COLD WATER
EH	ELECTRIC HEATER
ESP	EXTERNAL STATIC PRESSURE
EV	EXHAUST VENTILATION
FA	FACE AREA
FC	FLEXIBLE CONNECITION
FCU	FAN COIL UNIT
FD/AD	FIRE DAMPER W/ ACCESS DOOR COMBINATION
FSD/AD	FIRE SMOKE DAMPER W/ ACCESS DOOR
GC	GENERAL CONTRACTOR
GEF	GENERAL EXHAUST FAN
GPM	GALLONS PER MINUTE
GSF	GENERAL SUPPLY FAN
GV	GARAGE VENTILATION
GX	GENERAL EXHAUST
H	HEIGHT
H&V	HEATING AND VENTILATING
HC	HEATING COIL
HP	HORSEPOWER
HP-1	HEAT PUMP UNIT
HW	HOT WATER
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
L	LENGTH
MBH	1000 BTUH
MD	MOTORIZED DAMPER
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OAI	OUTSIDE AIR INTAKE
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
SA	SUPPLY AIR
SP.HD	SPRINKLER HEAD
SP	STATIC PRESSURE
TOS	TOP OF SLAB
TR	TOP REGISTER
TV	TOILET VENTILATION
TEF	TOILET EXHAUST FAN
W	WIDTH
WMS	WIRE MESH SCREEN
VD	VOLUME DAMPER
UOS	UNDERSIDE OF SLAB

HVAC SYMBOL LIST

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

HVAC DRAWING LIST

NO.	DESCRIPTION
M-001	HVAC SYMBOLS & NOTES
M-002	HVAC SCHEDULES SHEET # 1
M-003	HVAC SCHEDULES SHEET # 2
M-100	HVAC CELLAR FLOOR PLAN
M-102	HVAC FIRST FLOOR PLAN
M-103	HVAC 2ND FLOOR PLAN
M-104	HVAC 3RD-4TH FLOOR PLAN
M-105	HVAC 5TH-12TH FLOOR PLAN
M-109	HVAC FLOOR 13 (MARKETING - FLOOR 14)
M-110	HVAC FLOOR 14 (MARKETING - FLOOR 15)
M-111	HVAC FLOOR 15 (MARKETING - FLOOR 16)
M-200	HVAC VENTILATION RISER DIAGRAM
M-400	HVAC DETAILS

DESIGNATION SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
SX 1	SMOKE PURGE EXHAUST RISER	GEF 1	GENERAL EXHAUST FAN
TE 1	TOILET EXHAUST RISER	S 1	HOT WATER SUPPLY RISER
		R 1	HOT WATER RETURN RISER
		HP 2-1	HEAT PUMP DESIGNATION
		GSF 1	GENERAL SUPPLY FAN

HEATING PIPE INSULATION SCHEDULE

PIPE SIZE	MIN. THICKNESS
UP TO 1-1/2"	1-1/2"
2" AND LARGER	2"

BASED ON INSULATION HAVING A CONDUCTIVITY (K) NOT EXCEEDING 0.27 BTU PER INCH/H ·FT2 °F.

REGISTER SCHEDULE (RETURN-EXHAUST AIR DUCTED)

CFM RANGE	REGISTER SIZE
UP TO 100	6x6
105-150	8x8 (10x6)
185-235	10x10 (16x6)
240-350	12x12 (24x6)
355-485	14x14 (24x8)
490-645	16x16 (32x8)
650-825	18x18 (32x10)
830-1,025	20x20 (34x12)
1,030-1,255	22x22 (40x12)
1,260-1,500	24x24 (48x12)

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

CEILING DIFFUSER SCHEDULE

CFM RANGE	DIFFUSER SIZE
0-100	6x6
105-225	9x9
230-400	12x12
405-625	15x15
630-900	18x18
905-1200	24x24

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

GENERAL HVAC NOTES:

1. NATURALLY VENTILATED SPACES SHALL BE PERMANENTLY OPEN TO AND WITHIN 25 FT OF OPERABLE WALL OR ROOF OPENINGS TO THE OUTDOORS, THE OPENABLE AREA OF WHICH IS A MINIMUM OF 4% OF THE NET OCCUPIABLE FLOOR AREA. WHERE OPENINGS ARE COVERED WITH LOUVERS OR OTHERWISE OBSTRUCTED, OPENABLE AREA SHALL BE BASED ON THE FREE UNOBSTRUCTED AREA THROUGH THE OPENING. WHERE INTERIOR SPACES WITHOUT DIRECT OPENINGS TO THE OUTDOORS ARE VENTILATED THROUGH ADJOINING ROOMS, THE OPENING BETWEEN ROOMS SHALL BE PERMANENTLY UNOBSTRUCTED AND HAVE A FREE AREA OF NOT LESS THAN 8% OF THE AREA OF THE INTERIOR ROOM NOR LESS THAN 25 SQ.FT.
2. REQUIRED OPERABLE OPENINGS SHALL BE READILY ACCESSIBLE TO BUILDING OCCUPANTS WHENEVER THE SPACE IS OCCUPIED.
3. EXHAUST DUCTS THAT ARE TO BE SEALED IN ACCORDANCE WITH SMACNA SEAL CLASS A.2.
4. MECHANICAL VENTILATION SYSTEMS SHALL INCLUDE CONTROLS, MANUAL OR AUTOMATIC, THAT ENABLES THE FAN SYSTEM TO OPERATE WHENEVER THE SPACES SERVED ARE OCCUPIED. THE SYSTEM SHALL BE DESIGNED TO MAINTAIN THE MINIMUM OUTDOOR AIRFLOW AS REQUIRED BY SYSTEM DESIGN.
5. ALL AIRSTREAM SURFACES IN EQUIPMENT AND DUCTS IN THE HEATING, VENTILATING, AND AIR-CONDITIONING SYSTEM SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS.
6. OUTDOOR AIR INTAKES, INCLUDING DOORS AND WINDOWS THAT ARE REQUIRED AS PART OF A NATURAL VENTILATION SYSTEM, SHALL BE LOCATED SUCH THAT THE SHORTEST DISTANCE FROM THE INTAKE TO ANY SPECIFIC POTENTIAL OUTDOOR CONTAMINANT SOURCE SHALL BE EQUAL TO OR GREATER THAN THE SEPARATION DISTANCE NOTED ON PLANS OR SPECIFICATIONS.
7. OUTDOOR AIR INTAKES THAT ARE PART OF THE MECHANICAL VENTILATION SYSTEM SHALL BE DESIGNED TO MANAGE RAIN ENTRAINMENT IN ACCORDANCE THE SPECIFICATIONS.
8. AIR HANDLING AND DISTRIBUTION EQUIPMENT MOUNTED OUTDOORS SHALL BE DESIGNED TO PREVENT RAIN INTRUSION INTO THE AIRSTREAM WHEN TESTED AT DESIGN AIRFLOW AND WITH NO AIRFLOW.
9. WHERE CLIMATE DICTATES, OUTDOOR AIR INTAKES THAT ARE PART OF THE MECHANICAL VENTILATION SYSTEM SHALL BE DESIGNED TO MANAGE MELTED SNOW BLOWN OR DRAWN INTO THE SYSTEM BY PROVIDING SUITABLE ACCESS DOORS TO PERMIT CLEANING SHALL BE PROVIDED OR OUTDOOR AIR DUCTWORK (OR PLENUMS) SHALL PITCH TO DRAINS DESIGNED IN ACCORDANCE WITH THE DRIP PAN REQUIREMENTS.
10. OUTDOOR AIR INTAKES SHALL INCLUDE A SCREENING DEVICE DESIGNED TO PREVENT PENETRATION BY A 1/2 IN. DIAMETER PROBE. THE SCREENING DEVICE MATERIAL SHALL BE CORROSION RESISTANT. THE SCREENING DEVICE SHALL BE LOCATED, OR OTHER MEASURES SHALL BE TAKEN, TO PREVENT BIRD NESTING WITHIN THE OUTDOOR AIR INTAKE.
11. THE DISCHARGE FROM NON-COMBUSTION EQUIPMENT THAT CAPTURES THE CONTAMINANTS GENERATED BY THE EQUIPMENT SHALL BE DUCTED DIRECTLY TO THE OUTDOORS.
12. FUEL-BURNING APPLIANCES, BOTH VENTED AND UN-VENTED, SHALL BE PROVIDED WITH SUFFICIENT AIR FOR COMBUSTION AND ADEQUATE REMOVAL OF COMBUSTION PRODUCTS, IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS. PRODUCTS OF COMBUSTION FROM VENTED APPLIANCES SHALL BE VENTED DIRECTLY OUTDOORS.
13. DRAIN PANS, INCLUDING THEIR OUTLETS AND SEALS, SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS.
14. VENTILATION EQUIPMENT SHALL BE INSTALLED WITH SUFFICIENT WORKING SPACE FOR INSPECTION AND ROUTINE MAINTENANCE (E.G., FILTER REPLACEMENT AND FAN BELT ADJUSTMENT AND REPLACEMENT).
15. ACCESS DOORS, PANELS, OR OTHER MEANS SHALL BE PROVIDED AND SIZED TO ALLOW CONVENIENT AND UNOBSTRUCTED ACCESS SUFFICIENT TO INSPECT, MAINTAIN, AND CALIBRATE ALL VENTILATION SYSTEM COMPONENTS FOR WHICH ROUTINE INSPECTION, MAINTENANCE, OR CALIBRATION IS NECESSARY. VENTILATION SYSTEM COMPONENTS COMPRISE, FOR EXAMPLE, AIR-HANDLING UNITS, FAN-COIL UNITS, WATER-SOURCE HEAT PUMPS, OTHER TERMINAL UNITS, CONTROLLERS, AND SENSORS.
16. ACCESS DOORS, PANELS, OR OTHER MEANS SHALL BE PROVIDED IN VENTILATION EQUIPMENT, DUCTWORK, AND PLENUMS, LOCATED AND SIZED TO ALLOW CONVENIENT AND UNOBSTRUCTED ACCESS FOR INSPECTION, CLEANING, AND ROUTINE MAINTENANCE AS PER SPECIFICATIONS.
17. AIR SHALL BE CLASSIFIED, AND ITS RECIRCULATION SHALL BE LIMITED IN ACCORDANCE WITH THE SPECIFICATIONS.
18. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
19. MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF PIPES DUCTS, SUSPENDED EQUIPMENT, ETC. THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
20. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND EQUIPMENT A MINIMUM OF 6 INCHES ON EACH SIDE.
21. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT.
22. ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
23. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET WITH "P" TRAP, AND PIPES TO NEAREST DRAIN. SEE DETAIL DRAWINGS FOR CONDENSATE TRAP DETAILS.
24. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
25. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
26. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATION AND MAXIMUM ADJUSTABLE STOPS.
27. ALL FANS SHALL NOT BE ON TIMERS FOR KITCHEN TOILET EXHAUST SYSTEMS.
28. RESIDENTIAL APARTMENT EXHAUST. DUCTWORK SHALL BE RIGID SHEET METAL MINIMUM GAUGE NUMBER 26.
29. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR TO ENSURE APARTMENT AIR LEAKAGE SHALL BE NO MORE THAN 0.30 CFM PER SQUARE FOOT OF ENCLOSURE, AS TESTED BY OWNER'S REPRESENTATIVE.
30. DUCT LEAKAGE AS TESTED BY OWNERS REPRESENTATIVE, SHALL BE NO MORE THAN 5 CFM PER FLOOR PER SHAFT, INCLUSIVE OF DUCT FROM ROOF CURB TO GRILLE.

GENERAL SEALING NOTES:

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

NEW YORK ENERGY CODE NOTES:

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

BUILDING DEPARTMENT NOTES:

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

GENERAL EQUIPMENT NOTES:

1. TYPICAL FIRE DAMPERS SHALL BE RUSKIN TYPE B BSA # 272-7-SA, OR EQUAL APPROVED FOR USE IN NEW YORK CITY.
2. FIRE DAMPERS TO BE USED WITH WALL REGISTERS SHOULD BE UL CLASSIFIED, 1 1/2 HR RATING. SIMILAR TO ARLAN MODEL UL10RD WITH BSA NO. 291-80-SA.
3. LOUVERS SHALL BE SIMILAR TO GREENHECK MODEL EDJ-401, 930 FPM FREE AREA VELOCITY, WATER PENETRATION STARTING POINT, ±50% FREE AREA. COORDINATE WITH GENERAL CONTRACTOR. LOUVERS SHALL RESTRICT WIND-DRIVEN RAIN PENETRATION TO LESS THAN 2.36 OZ/FT2*H WHEN SUBJECTED TO A SIMULATED RAINFALL OF 3 IN. PER HOUR AND A 29 MPH WIND VELOCITY AT THE DESIGN OUTDOOR AIR INTAKE RATE WITH THE AIR VELOCITY CALCULATED BASED ON THE LOUVER FACE AREA. LOUVER PERFORMANCE CORRESPONDS TO CLASS A (99 EFFECTIVENESS) WHEN RATED ACCORDING TO AMCA 511-99 AND TESTED PER AMCA 500-L-99.
4. PROVIDE PRESSURE DIFFERENTIAL SENSOR ON LINT TRAP FOR DRYER EXHAUST SYSTEM.
5. CONTRACTOR SHALL MANAGE THE WATER THAT PENETRATES OUTDOOR AIR INTAKE OPENING BY PROVIDING A DRAINAGE AREA AND/OR MOISTURE REMOVAL DEVICES.
6. ALL MOTORS LARGER THAN 1HP SHALL BE NEMA PREMIUM EFFECIENCY.
7. ALL THERMOSTATS SHALL BE ENERGY STAR QUALIFIED.

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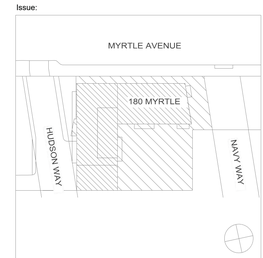
DOB #320592747-01

08-27-14	BULLETIN #5
05-05-14	100% REVISED CONSTRUCTION DOCUMENTS
04-15-14	95% REVISED CONSTRUCTION DOCUMENTS
01-24-14	90% CONSTRUCTION DOCUMENTS
12-20-13	PRICING SET
11-26-13	ISSUE FOR DOB
11-13-13	PROGRESS SET
11-04-13	SCHEMATIC DESIGN
10-10-13	SCHEMATIC DESIGN
Revisions	

Issue:



Key Plan

HVAC SYMBOLS & NOTES

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-001.00

B- BOILER SCHEDULE — BASIS OF DESIGN: ARECO

BOILER NO.	LOCATION	SERVICE	OPER. PRESS. (PSIG)	DESIGN PRESS. RATING (PSIG)	FLUE OUTLET SIZE (IN.)	OPER. WEIGHT (LBS.)	EFF. AT RATED LOAD (%)	OUTPUT (MBH)	HOT WATER DATA				GAS BURNER DATA				MANUFACTURER & MODEL NO.	REMARKS
									MAX. GPM	PRESS. DROP (FT.)	TEMP. (°F) ENT.	TEMP. (°F) LVG.	FUEL TYPE	HEAT CONTENT BTU/ CUFT	FIRING AT RATED LOAD (SCFH)	GAS INLET PRESS. (IN. W.G.)		
B-1	ROOF	HEATING & DHW	45	120	8	2580	92	2883	350	-	110	180	NAT. GAS	1,000	2,000	3.5"	AERCO BMK-3/0LN GWB	MEA# 104-98-E
B-2	ROOF	HEATING & DHW	46	121	8	2581	92	2884	350	-	110	180	NAT. GAS	1,000	2,000	3.5"	AERCO BMK-3/0LN GWB	MEA# 104-98-E

NOTES:
1. BOILERS SHALL BE ON INERTIA CONCRETE PAD, 6" LARGER THAN BOILER FOOTPRINT WITH 1" DEFLECTION VIBRATION ISOLATORS.
2. BOILERS SHALL DERATE MODULATING ACCORDING TO DEMAND.
3. PROVIDE PROGRAMMABLE/RESETTABLE LEAD/LAG CONTROL SYSTEM BY BOILER MANUFACTURERS SELECTION.
4. BOILER CONTROL SHALL HAVE LOW FIRE RATES TO MINIMIZE THE ON AND OFF CYCLING OF THE LEAD BOILER.
5. MINIMUM GAS PRESSURE REQUIRED IS 4.0" W.C. CONTRACTOR TO COORDINATE WITH PLUMBING ON GAS PRESSURE AVAILABLE.
6. EACH BOILER SHALL BE ABLE TO PROVIDE HOT WATER FOR DOMESTIC WATER SYSTEM, AND HOT WATER HEATING SYSTEM.
7. BOILER FLUE SHALL BE STAINLESS STEEL FOR CATEGORY IV APPLIANCE AND UL 1738 STANDARD.
8. PRESSURE SETTING OF RELIEF VALVES SHALL BE COORDINATED WITH MANUFACTURER'S RECOMMENDATION.
9. BOILER SYSTEMS SHALL BE DESIGNED FOR SEALED COMBUSTION AND DIRECT VENTING.
10. CONTRACTOR SHALL PROVIDE ACID NEUTRALIZING KIT FROM BOILER MANUFACTURER. PIPE ALL DRAINS AS PER LOCAL CODES AND COORDINATE WITH PLUMBER.
11. CONTRACTOR MUST BE PROVIDE A LETTER FROM THE MANUFACTURER CERTIFYING THE DESIGN IF VENTING OR COMBUSTION AIR DESIGN IS NOT SPECIFICALLY DETAILED IN THE BOILER MANUFACTURERS PRINTED INSTRUCTIONS. LETTER FROM BOILER MANUFACTURE APPROVAL OF "ENGINEERED SYSTEM" MUST BE ON-SITE.
12. SECONDARY LOW WATER CUT OFF (LWCO) MUST BE PROVIDED ON ALL HW BOILERS 350,000 BTU/HR AND GREATER, WHICH ARE LOCATED ABOVE THE LOWEST FLOOR.
13. ANY SIDE WALL VENTING FOR BOILERS/HOT WATER HEATERS ABOVE 300,000 BTU SHALL BE SPECIFFICALLY APPROVED BY THE COMMISIONER'S OFFICE. THE VENT LOCATION MUST MEET ALL APPLICABLE BUILDING CODES FOR SETBACK DISTANCE, CLEARANCE TO OTHER STRUCTURES, ETC., BUT THIS MEETING OF CODE DOES NOT ALLEVIATE THE POSSIBILITY OF VIOLATIONS BEING WRITTEN IN THE FUTURE DUE TO COMPLAINTS ASSOCIATED WITH EXHAUST GASSES.
14. SEALED COMBUSTION INTAKE SHALL BE AT LEAST 4FT BELOW OR TO THE SIDE OF THE EXHAUST VENT OPENING.
15. SEISMICALLY RATED SPRING MOUNTS WITH A MINIMUM STATIC DEFECTION OF 1" ARE REQUIRED, NO MATTER IF THE RESIDENCE ARE LOCATED ABOVE OR BELOW THE BOILERS.
16. PIPING TO BE SEISMICALLY BRACED TO THE BUILDING STRUCTURE. ISOLATION HANGERS SHALL ALSO BE INSTALLED IN ADDITION TO THE BRACING TO ATTENAUTE STRUCTURE BORNE ENERGY.
17. THE CONTRACTOR SHALL HIRE A PROFESSIONAL TRAINED BY THE BOILER CONTROL MANUFACTURER TO PROGRAM THE BOILER/PUMP CONTROLS AND PROVIDE TRAINING TO THE OWNER.

P- PUMP SCHEDULE — BASIS OF DESIGN: BELL & GOSSET

UNIT DESIG.	LOCATION	SERVICE (SYSTEM)	MANUF.	MODEL NO.	PUMP TYPE	TOTAL HEAD (FT.)	IMPELLER DIAM. (IN.)	FLIUD TEMP. (°F)	GPM	RPM	NSHP (REQ.)	WEIGHT (LBS.)	MOTOR DATA		
													HP	BHP	VOLT/PH
P-1	BOILER ROOM	HEATING SYSTEM	BELL & GOSSET	80 2.5X2.5X9.5	INLINE	85	9.5	160	150	1725	6.9	285	7.5	4.90	208/3
P-2	BOILER ROOM	HEATING SYSTEM	BELL & GOSSET	80 2.5X2.5X9.5	INLINE	85	9.5	160	150	1725	6.9	285	7.5	4.90	208/3
P-3	BOILER ROOM	DOMESTIC HOT WATER	BELL & GOSSET	80 2X2X7	INLINE	45	7	110-160	95	1750	8.7	185	3	1.91	208/3
P-3	BOILER ROOM	DOMESTIC HOT WATER	BELL & GOSSET	80 2X2X7	INLINE	45	7	110-160	95	1750	8.7	185	3	1.91	208/3

1. PROVIDE PIPE HANGERS SIZED FOR THE WEIGHT OF PUMP, PIPE, AND FITTINGS.
2. PROVIDE PIPE STOOLS WITH VIBRATION ISOLATING PADS TO BE INSTALLED UNDER EACH LEG IF REQUIRED FOR PROPER INSTALLATION.
3. PROVIDE SUCTION GUIDE ARMSTRONG MODEL SG AND ARMSTRONG TRIPLE DUTY VALVES MODEL FTV FOR INLINE PUMPS.
4. ALL PUMPS SHALL BE NEMA PREMIUM EFFICIENCY MOTORS. P-1&P-2 SHALL HAVE VFD CONTROLLED MOTORS.
5. VFD CONTROLLED OFF PRESSURE DIFFERENENTIAL BETWEEN MAIN PUMP SUPPLY HEADER AND RETURN HEADER WITHIN BOILER ROOM

CV- ROOFTOP AIR CONDITIONING UNITS — BASIS OF DESIGN: AS SHOWN

UNIT DESIGN.	LOCATION	AREA SERVED	TOTAL CFM	MIN OUTDOOR AIR	ESP	MANUF.	MODEL/ SIZE MEA#	COOLING			FURNACE					AIR FILTER EFF	WEIGHT (LBS.)	UNIT ELECTRICAL DATA		REMARKS
								TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	EER	HEAT MBH INPUT	HEAT MBH OUTPUT	GAS HEAT CONTROL	LAT	TEMP RISE			208/3 PHASE MOP	208/3 PHASE MCA	
~~CV-1~~	~~BULKHEAD ROOF~~	~~CORRIDOR~~	~~1390~~	~~1309~~	~~1.25~~	~~GREENHESK~~	~~RV-35~~				~~150~~	~~120~~	~~4:1~~	~~74.1~~	~~74.1~~	~~MERV-13~~	~~1386~~	~~13~~	~~6.8~~	
RTU-1	3RD FLOOR ROOF	LAUNGE	1600	350	0.75	DAIKIN APPLIED	MPS004B	50070	39013	11.4	100	80	4:1	123	63	MERV-13	585	35	23	
RTU-2	3RD FLOOR ROOF	EXERCISE RM	2400	575	1.0	DAIKIN APPLIED	MPS007B	83949	62533	11.2	150	120	4:1	123	63	MERV-13	1017	60	42	

NOTES:
1. UNIT SHALL BE ON ROOF CURB PROVIDE BY MANUFACTURER FOR SIDE UNIT DUCT DISCHARGE.
2. PROVIDE DUCT MOUNTED THERMOSTAT. THERMOSTATS SHALL BE INTEGRATED INTO UNIT CONTROLS.
3. MINIMUM GAS PRESSURE IS 5" W.C. PROVIDE UNIT GAS REGULATOR IF GAS PRESSURE EXCEEDS 13" W.C. COORDINATE WITH PLUMBING CONTRACTOR.
4. FAN MOTOR SHALL BE NEMA PREMIUM EFFICIENCY MOTORS

ACCU- SCHEDULE OF OUTDOOR CONDENSING UNIT (HEAT PUMPS) — BASIS OF DESIGN: DAIKIN

UNIT NO.	SERVING	LOCATION	MODEL NO.	CONDENSING SECTION									ELECTRICAL DATA						SEER	EER	WT (LBS.)	REMARKS	DIMENSIONS WXHXD (IN.)
				COOLING DATA					HEATING DATA				CONDENSING UNIT				FAN						
				TOTAL CAPACITY (BTU/HR)	EAT DB (°F)	EAT WB (°F)	CFM	COOLING INPUT POWER KW	TOTAL CAPACITY (BTU/HR)	EAT DB (°F)	HEATING INPUT POWER KW	COP/ HSPF	VOLTS/ PH	RLA	MCA	MOCP	VOLTS/ PH	KW					
CU-C-1	HP-C-1	CELLAR	RZQ24PVJU9	24000	95	75	1835	2.12	27000	47	2.12	10.5	208/3	10.3	1.8	15	208/3		16.5	--	150		
~~CU-C-2~~	~~HP-C-2~~	~~CELLAR~~	~~RZQ24PVJU9~~	~~24000~~	~~95~~	~~75~~	~~1835~~	~~2.12~~	~~27000~~	~~47~~	~~2.12~~	~~10.5~~	~~208/3~~	~~10.3~~	~~1.8~~	~~15~~	~~208/3~~		~~16.5~~	~~--~~	~~150~~		
CU-1-1	HP-1-1, HP-1-2, HP1-3	1ST FLOOR ROOF	RXYQ72PPBTJ	69,000	95	75	6700	5.0	72,000	70	5.94	4.2	208/3	4.8+14	36.1	40	208/3		25.1	--	730		51-3/16x30-1/8x66-1/8
CU-R-1	HP-R-1, HP-R-2	BULK HEAD ROOF	RXYMQ48PVJU	48000	95	75	3740	4.73	47500	70	4.26	2.6	208/1	23.3	27	30	208/1		15.1	--	283		

NOTES:
1. ALL OUTDOOR UNIT SHALL HAVE LOW AMBIENT TEMPERATURE OPTION AND R-410A REFRIGERANT.
2. PROVIDE AS NEED REFRIGERANT KITS FOR LONG DISTANCE INSTALLATION AS RECOMMENDED BY THE MANUFACTURER.
3. PROVIDE INDIVIDUAL ELECTRICAL CONNECTIONS TO EACH MODULE.
4. PROVIDE CENTRAL CONTROL MODULE UNIT TO CONNECT TO EACH INDIVIDUAL ROOM THERMOSTAT.

HP- SCHEDULE OF OUTDOOR CONDENSING UNIT (HEAT PUMPS) — BASIS OF DESIGN: DAIKIN

UNIT NO.	SERVING	LOCATION	MODEL NO.	GENERAL	EVAPORATOR FAN				COOLING DATA				HEATING DATA				ELECTRCIAL			REMARKS
				TOTAL AIR QUANTITY (CFM)	MIN OUTDOOR AIR	EXTERNAL S.P. (IN. W.G.)	FAN TYPE	MOTOR KW	TOTAL CAPACITY (BTU)	EAT DB (°F)	EAT WB (°F)	COOLING INPUT KW	TOTAL CAPACITY (BTU)	EAT DB (°F)	EAT WB (°F)	POWER INPUT KW	VOLT / PHASE	MCA	MAX FUSE	
HP-C-1	STAFF LAUNGE	BATH ROOM	FBQ24PVJU	618	100	0.8	- -	- -	24000	80	67	- -	27000	70	60	- -	208/1	1.8	15	
HP-C-2	TRASH RM	TRASH RM	FAQ24PVJU	470	0	--	- -	- -	24000	80	67	- -	27000	70	60	- -	208/1	0.6	15	
HP-1-1	MAIL ROOM	MAILROOM	FBQ24PVJU	565	85	0.8	- -	- -	24000	80	67	- -	27000	70	60	- -	208/1	1.8	15	A
HP-1-2	LOBBY	PACKAGE RM	FXMQ48PVJU	1377	210	0.8	- -	- -	48000	80	67	- -	54000	70	60	- -	208/1	3.4	15	A
HP-1-3	GARAGE OFFICE	GARAGE OFFICE	FXMQ12PVJU	370	0	--	- -	- -	12000	80	67	- -	13500	70	60	- -	208/1	0.6	15	
HP-R-1	ELEV- MC RM	ELEV- MC RM	FAQ24PVJU	470	0	--	- -	- -	24000	80	67	- -	27000	70	60	- -	208/1	0.6	15	
HP-R-2	ELEV- MC RM	ELEV- MC RM	FAQ24PVJU	470	0	--	- -	- -	24000	80	67	- -	27000	70	60	- -	208/1	0.6	15	

NOTES:
1. PROVIDE SPRING AND DOUBLE DEFLECTING NEOPRENE HANGERS FOR VIBRATION ISOLATION ON OVERHEAD SUPPORTED UNITS
2. EACH UNIT SHALL BE PROVIDED WITH AN OUTDOOR AIR EXTENSION MODULE TO CONNECT SUPPLIED OUTDOOR AIR DUCT.
3. ALL DUCTED UNITS SHALL BE THE HIGH STATIC CONCEALED TYPE.

ET- EXPANSION TANK SCHEDULE — BASIS OF DESIGN:AMTROL

UNIT DESIG.	MANUF.	MODEL NO.	SYSTEM SERVED	TYPE	TANK VOLUME (GAL.)	ACCEPT. VOLUME (GAL.)	SIZE DIA. (IN.)	SIZE LENGTH (IN.)	MAX OPER. TEMP. (°F)	INITIAL FILL PRESS. (PSIG)	MAX. OPER. PRESS. (PSIG)	ASME WORK PRESS. (PSIG)
ET-1	AMTROL	AX-260V	HEATING	DIAPHRAGM	159	56	30	64.75	190	35	60	125

HX- HEAT EXCHANGER SCHEDULE — BASIS OF DESIGN: PLATE CONCEPTS, INC.

UNIT DESIG.	LOCATION	MANUFACTURER AND MODEL	SYSTEM SERVED	TYPE	HOT SIDE			COLD SIDE			BTU/HR TOTAL EXCHANGED	DESIGN PRESS. (PSI)	WEIGHT (LBS)	UNIT DIMENSIONS W X H X L (INCHES)	NO. PASSES	REMARKS
					GPM	EWT (°F)	LWT (°F)	GPM	EWT (°F)	LWT (°F)						
HX-1	BOILER ROOM	PLATE CONCEPTS, INC. MBC1503-120DW	DHW	PLATE/FRAME	110	150	100	55	40	140	2,735,600	150	116	23.88 X 9.38 X 20.5	SINGLE	ACTIVE
HX-2	BOILER ROOM	PLATE CONCEPTS, INC. MBC1503-120DW	DHW	PLATE/FRAME	110	150	100	55	40	140	2,735,600	150	116	23.88 X 9.38 X 20.5	SINGLE	STANDBY

NOTES:
1.CONNECTIONS ARE STUDDED PORTS (OR NPT) PREPARED FOR FLANGED PIPING. VENTS, DRAINS, RELIEF VALVE AND INSTRUMENT CONNECTIONS TO BE INSTALLED IN CONTRACTOR.
2.COORDINATE WITH PLUMBING CONTRACTOR FOR ALL DOMESTIC WATER CONNECTIONS AND INTERLOCKED CONTROLS.

PTAC- PACKAGED TERMINAL GAS FIRED AIR CONDITIONING UNIT — BASIS OF DESIGN:ILSANDAIRE - GS SERIES

UNIT DESIG.	LOCATION	MODEL	COOLING DATA				HEATING			GENERAL				ELECTRICAL				REMARKS
			TOTAL CAP. (MBH)	EAT DB (°F)	EAT WB (°F)	EER	TOTAL CAP. (MBH)	EAT DB (°F)	LAT (°F)	INPUT MBH	EFF. (%)	CFM (LO)	CFM (HI)	REFRIGERANT TYPE	VOLTS/ PHASE	AMPS (CLG)	WATTS (HTG)	WATTS (CLG)	
PTAC-A	SEE PLANS	EZ09	9.3	80	67	11.2	13.2	70	99.9	12	0.85	240	340	410A	208/1	8	--	--	MEA# 358-93-EII
PTAC-B	SEE PLANS	EZ12	12.0	80	67	10.7	13.1	70	99.9	15.4	0.85	240	340	410A	208/1	8	--	--	MEA# 358-93-EII
PTAC-C	SEE PLANS	EZ16	16.2	80	67	9.8	16.8	70	99.9	19.8	0.85	240	340	410A	208/1	8	--	--	MEA# 358-93-EII

Plotted:

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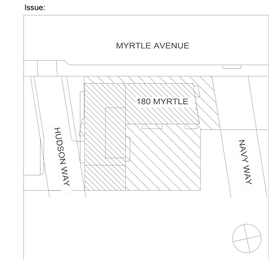

Key Plan

HVAC SCHEDULES SHEET # 1

Date	09/05/13
Scale	1/8" = 1'-0"
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Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-002.00

EF- EXHAUST FAN KVF- KITCHEN VENTILATION FAN
LEF- LAUNDRY EXHAUST FAN SXF - SMOKE EXHAUST FAN
GSF- GENERAL SUPPLY FAN TVF - TOILET VENTILATION FAN
GEF- GENERAL EXHAUST FAN

FAN SCHEDULE BASIS OF DESIGN: AS NOTED

FAN NO.	LOCATION	AREA OR SYSTEM SERVED	CFM	TOTAL PRESS. (IN.WG)	MODEL NO.	FAN RPM	FAN BHP	FAN TYPE	DRIVE	CLASS	DISCHARGE	MOTOR DATA				VIBRATION ISOLATION		EMERG. POWER (YES OR NO)	SONES	DIMENSIONS (INCHES)			WT	REMARKS
												HP	VOLT/PH	NO. OF CYC.	MOTOR WINDING (SINGLE/	SPEC. MTG. TYPE	MIN. STATC DEFL.			L	W	H		
EF-A	SEE PLANS	BATHROOM	20 / 80	0.28	FV-08VKS3	1106	8.7 WATTS	CEILING MOUNTED	DIRECT		--	8.7 W	120 / 1	60				NO	0.3	13	13	7.25	--	PANASONIC FAN
EF-B	SEE PLANS	KITCHEN	35 / 100	0.28	FV-13VKS3	912	7.3 WATTS	CEILING MOUNTED	DIRECT		--	7.3 W	120 / 1	60				NO	0.3	13	13	7.25	--	PANASONIC FAN
EF-C	SEE PLANS	BATH / KITCHEN	120	0.20	FV-10NLF1	1590	36 WATTS	HORIZONTAL	DIRECT		--	36 W	120 / 1	60				NO	0.3	13	13	17.25	--	PANASONIC FAN
GEF-C-1	CELLAR	SEE PLAN	19,000	1.45	QEI-27-I-100	1398	-	HORIZONTAL	BELT		--	10	208 / 3	60				NO	-	47	35	40	--	GREENHECK FAN
GEF-C-2	CELLAR	SEE PLAN	15,000	1.45	QEI-24-I-75	1466	-	HORIZONTAL	BELT			7.5	208 / 3	60				NO	-	45	33	37		GREENHECK FAN
GEF-C-3	CELLAR	SEE PLAN	1,550	0.85	BSQ-120-7	1725		MOUNTED	BELT			3 / 4	460 / 3	60	1					23	19	19		GREENHECK FAN
TEF-C-4	CELLAR	SEE PLAN	150	0.45	BSQ-70-4	1343		MOUNTED	BELT			1 / 4	115 / 1	60	1					23	15	15		GREENHECK FAN
GEF-1-1	1ST FLOOR	SEE PLAN	17,600	1	QEI-24-I-100	1612		HORIZONTAL	BELT			10	208 / 3	60						40	33	37		GREENHECK FAN
GEF-1-2	1ST FLOOR	SEE PLAN	575	0.65	SQ-90-VG	1725		MOUNTED	BELT			1 / 6	115 / 1	60	1					18	15	15		GREENHECK FAN
TEF-1-1	1ST FLOOR	SEE PLAN	300	0.65	SQ-80-VG	1725		MOUNTED	BELT			1 / 6	115 / 1	60	1					18	15	15		GREENHECK FAN
REF-R-1	BULKHEAD ROOF	SEE PLAN	1,300	1.45	SWB-113-5	1649		CENTRIFUGAL				1 / 2	115 / 1	60	1					34.4	24	32		GREENHECK FAN
GEF-R-2	BULKHEAD ROOF	SEE PLAN	400	0.35	G-080-VG	1716		CENTRIFUGAL	DIRECT			1 / 6	115 / 1	60	1					34.4	24	32		GREENHECK FAN

1. PROVIDE FANS WITH ACOUSTIC SOUND ATTENUATING ROOF CURB WITH SPRING ISOLATORS SEE VIBRATION ISOLATION SPECIFICATIONS AND DETAIL DWG, DISCONNECT SWITCH, GRAVITY DAMPER, THERMAL OVERLOAD PROTECTION,
2. PROVIDE WITH DISCONNECT SWITCH, VIBRATION ISOLATORS, THERMAL OVERLOAD PROTECTION, AND SPARE DRY CONTACT FOR INTERLOCKING.
3. COORDINATE WITH ARCH./G.C. ACCESS DOORS FOR SERVICING ALL FANS.
4. ALL DIRECT DRIVE FANS SHALL BE FURNISHED WITH VARI-GREEN MOTOR CONTROL.
5. FANS SHALL NOT BE OPERATED VIA TIME CLOCKS.
6. PROVIDE THERMAL OVERLOAD DISCONNECT SWITCH, AND ACCESSORIES FOR CEILING MOUNTING.
7. PROVIDE VARI-GREEN MOTOR ON SIDEWALL PROPELLER FAN. ADJUST FAN DIAMETER TO ALLOW THE USE OF MOTOR.
8. ALL ROOF FANS ON THE MAIN ROOF SHALL BE HIGH WIND RATED.
9. ALL MOTORS 1HP AND LARGER SHALL BE LISTED AS NEMA PREMIUM EFFICIENCY, EXCEPTION ON SMOKE CONTROL APPLICATIONS.
10. FAN SPEED SHALL BE EASILY FIELD ADJUSTABLE.
11. REFER TO DETAILS, FAN SHALL BE WALL MOUNTED W/ SUPPORT FRAMING BY OTHERS.
12. INTERLOCK FAN W/ SMOKE DETECTOR. PROVIDE MANUAL SHUT-OFF NEAR THE ELEVATOR CONTROL PANEL PROVIDE FAN WITH ACTUATED DAMPER, OSHA GUARD, WALL HOUSING, FAN FLUSH WITH INTERIOR FACE OF SHAFT AND REVERSED MODE FOR EXHAUST APPLICATION.
13. FAN SHALL BE INTERLOCKED WITH WALL-MOUNTED THERMOSTAT AND INTAKE DAMPER.

HV- HEATING AND VENTILATING UNIT SCHEDULE BASIS OF DESIGN:

UNIT N0	LOCATION	SERVING	MODEL NO	MIN OA CFM	TOTAL AIR CFM	ESP	AIR DATA		HW COIL DATA			FAN RPW	FAN HP	POWER			FILTERS	ELECTRIC DATA			WT LBS	REMARKS
							EAT	LAT	MODEL	HTG OUTPUT	GPM			VOLTS	PHASE	CY		MCA	MO	FLA		
HV-C-1	CELLAR		LFC-45-FC-10	1550	1550	0.85	0	60	HW12CO2H10-15X42.13	110	11.8	1725	1	208	3	60	MERV 8			4.6	406	
HV-C-2	CELLAR		LFC-45-FC-10	1625	1625	0.85	0	60	HW12CO2H10-15X42.13	120	12.1		1	208	3	60	MERV 8			4.6	406	
HV-C-3	CELLAR		LFC-15-FC-5	400	400	400	0	60	HW12C02S10-7.5X31	40	5.0		0.50	208	3	60	MERV 8					
HV-C-4	CELLAR		LFC-15-FC-5	600	600	600	0	60	HW12C02S10-7.5X31	40	5.0		0.25	208	3	60	MERV 8			2.4	214	

1. PROVIDE HV WITH ACOUSTIC SOUND ATTENUATING ROOF CURB WITH SPRING ISOLATORS SEE VIBRATION ISOLATION SPECIFICATIONS AND DETAIL DWG, DISCONNECT SWITCH, GRAVITY DAMPER, THERMAL OVERLOAD PROTECTION,
2. PROVIDE WITH DISCONNECT SWITCH, VIBRATION ISOLATORS, THERMAL OVERLOAD PROTECTION, AND SPARE DRY CONTACT FOR INTERLOCKING.
3. COORDINATE WITH ARCH./G.C. ACCESS DOORS FOR SERVICING ALL FANS.
4. HV SHALL NOT BE OPERATED V/A TIME CLOCKS.
5. PROVIDE THERMAL OVERLOAD DISCONNECT SWITCH, AND ACCESSORIES FOR CEILING MOUNTING.
6. REFER TO DETAILS, FAN SHALL BE WALL MOUNTED W/ SUPPORT FRAMING BY OTHERS.
7. HV SHALL BE INTERLOCKED WITH WALL-MOUNTED THERMOSTAT AND INTAKE DAMPER.
8. HV UNIT SHALL BE PROVIDED WITH FREEZE PROTECTION SYSTEM COMPRISED OF HOT WATER CIRCULATOR AND CONTROL SYSTEM

EH- ELECTRIC HEATER SCHEDULE BASIS OF DESIGN: QMARK

TAG NO.	LOCATION	MANUFACTURER	MODEL NO.	TYPE	CAP. (MBH)	CFM	ELECTRIC DATA			DIMENSION			REMARKS
							V/P	KW	MAX FUSE	W (IN)	D (IN)	H (IN)	
EH-A	SEE PLANS	QMARK	LFK-151	RECESSED WALL HEATER	4,712	100	115/1	1.5	15	14.625	3.875	19.125	
EH-B	SEE PLANS	QMARK	CU93503201BF1B2CMO	CABINET UNIT HEATER	10,239	250	208/1	3.0	15	35	9.75	26.5	
EH-C	SEE PLANS	QMARK	GFR1500	WALL HEATER	4712	45	120/1	1.5	15	16.875	4.375	7.75	
EH-D	SEE PLANS	QMARK	GFR1500	WALL HEATER	2356	45	120/1	0.75	15	16.875	4.375	7.75	
EBB	SEE PLANS	QMARK	CDB750	BASE BOARD	2560	--	208/1	1.0	15	36	3	9	

1. ALL UNIT SHALL BE PROVIDED WITH BUILT IN THERMOSTAT.
2. ALL FAN ASSISTED UNIT SHALL BE PROVIDE WITH THERMAL PROTECTION
3. ALL UNIT SHALL BE PROVIDE DIS-CONNECT SWITCH

CUH- CABINET UNIT HEATER BASIS OF DESIGN: STERLING

UNIT DESIGN.	LOCATION	MODEL	TYPE	FAN DATA							HOT WATER DATA						REMARKS
				CFM	EAT (°F)	LAT (°F)	RPM	MOTOR HP	AMPS (FLA)	VOLT/PH	CAP (MBH)	EWT (°F)	GPM	CONN. SIZE	LWT (°F)	ROWS	WATER PD (FT.)	
~~CUH-A~~	~~SEE PLANS~~	~~RC-1280-12~~	~~RECESSED~~	~~1230~~	~~60~~	~~102~~	~~1050~~	~~1/6~~	~~2.8~~	~~115/1~~	~~75.0~~	~~160~~	~~10~~	~~1 1/2" Ø~~	~~160~~	~~1~~	~~6.38~~	
UH-A	SEE PLANS	HS-48	UNIT HEAT	630	60	103	900	1/20	2.8	115/1	34.8	160	10	1 ½" Ø	160	1	1.2	

1. ~~ALL UNIT SHALL BE PROVIDED WITH BUILT IN THERMOSTAT.~~

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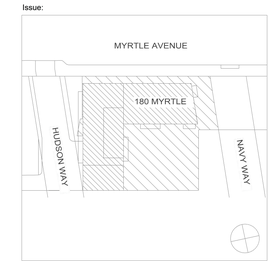

Key Plan

HVAC SCHEDULES SHEET # 2

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
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Seal

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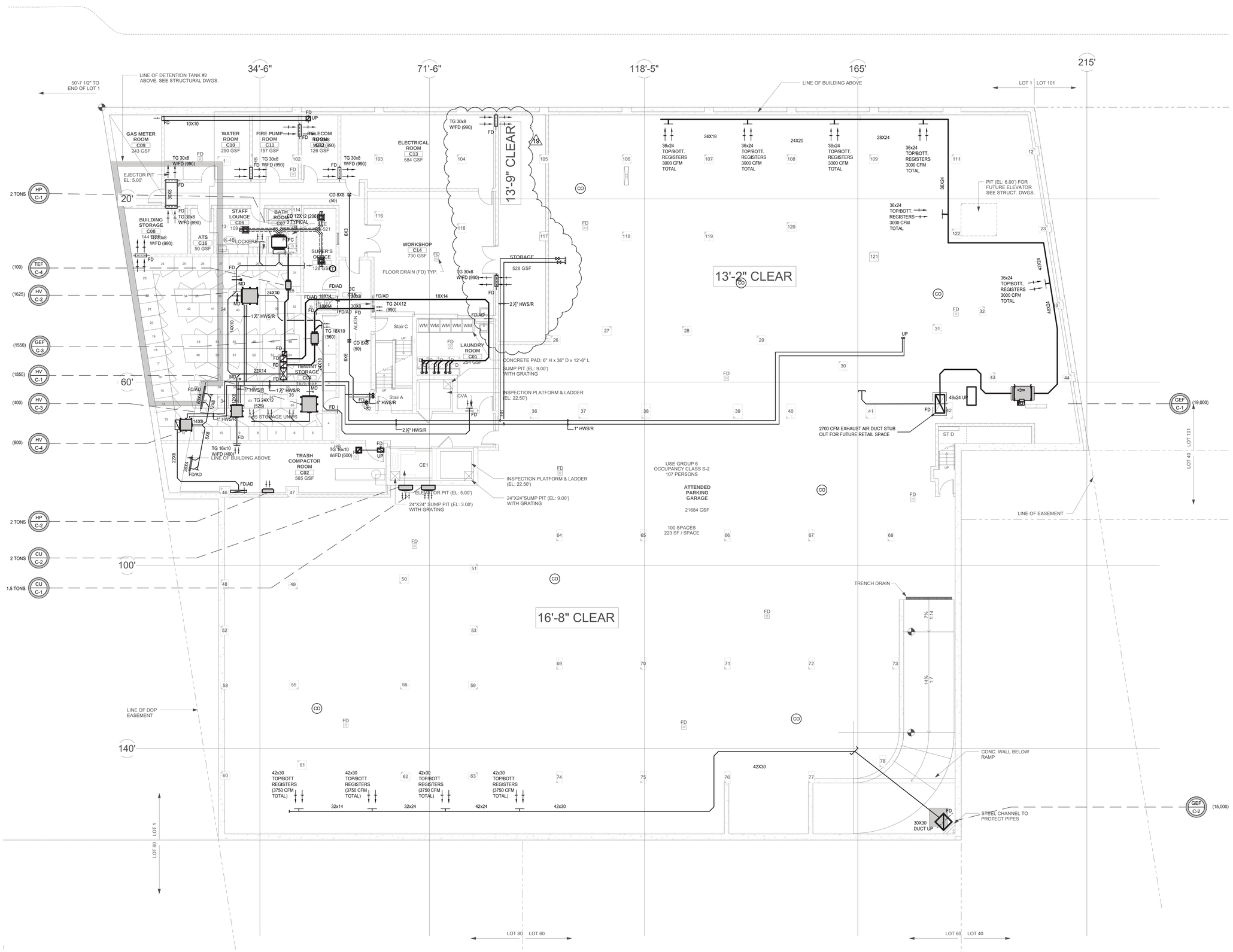

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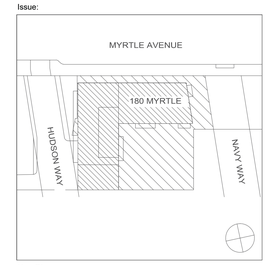

Key Plan

HVAC
Cellar Floor Plan

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
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Project No.	1345
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Plotted:

MYRTLE AVENUE

SITE NOTE:

SEE CIVIL AND LANDSCAPE DRAWINGS FOR EASEMENT DESIGN AND DETAILS.

SEE CIVIL DRAWINGS FOR SIDEWALK DESIGN AND DETAILS.

EXISTING TREE TO REMAIN
PROPOSED TREE
RETAIL ENTRANCE TYP.
SIAMESE CONNECTION (SC) TYP.
HOSE BIB (HB) TYP.
(5) 2" GAS VENTS
LOUVER 12X12 GROSS AREA FOR NATURAL VENTILATION
ELECTRICAL VAULTS (BELOW)
CONTINUOUS LOUVER BAND SEE ARCH ELEVATIONS
FRESH AIR INTAKE (FAI) TYP.
LOT 1 LOT 101
LOADING SIGN SEE A-215
STOP SIGN
50'-7 1/2" TO END OF LOT 1
TRENCH DRAIN
LINE OF CANOPY ABOVE
FAI LOUVER 10.0 SQ FT NET FREE AREA (3,975 CFM)
2'-6" X 2'-6" ACCESS HATCH TO DETENTION TANK #2 (TYP)
DETENTION TANK #2 BELOW. SEE STRUCTURAL DWGS.
UH-A (61.5 MBH)
COMMERCIAL
10317 GSF
USE GROUP 6
OCCUPANCY CLASS M
339 PERSONS
8.3% 1:12 UP
34" HIGH FLOOR-MOUNTED RAILINGS
PROVIDE END CAP
FIRE RATED ENCLOSURE
ELEVATOR SHAFT LOUVER 3.5 SQ FT NET FREE AREA
COMMERCIAL KITCHEN EXHAUST
KE 1 22X22
HP 1-1 (2 TON)
HWR 1 4" HWS/R WITH 2" INSUL
CV 1 8X8
HP 1-2 (4 TON)
RE 1
HP 1-3 (1 TON)
TEF 1-1 (300)
GEF 1-1 (17,600)
GEF C-2 (15,000)
GEF 1-2 (575)
1.5 KW EH A
COMMUNITY FACILITY
UH 25 MBH
USE GROUP 3
OCCUPANCY CLASS B
34 PERSONS
499 GSF
F.F. 26.50'
F.F. 26.92'
F.F. 27.33'
STORAGE 109 120 SF
T.O.S. 28.17'
ST-D
LOBBY 101 478 SF
SERVICE LOBBY
478 GSF
PACKAGE ROOM 104 148 GSF
LOADING BERTH 103 486 GSF
WASH ROOM 106
GARAGE OFFICE 107 78 SF
ST-B
ST-C
PE1
PE2
PE3
Stair A
81 SF
CE1
SERVICE CORRIDOR 111 75 SF
BICYCLE PARKING 165 1710 GSF 114 spaces
ATTENDED PARKING GARAGE
10939 GSF
33 SPACES
10 RESERVOIR SPACES
331 SF / SPACE
USE GROUP 6
OCCUPANCY CLASS S-2
52 PERSONS
PAINTED LINES ON CON. SLAB
CONCRETE COLUMN WITH STEEL CORNER GUARDS TYPICAL AT ALL COLUMNS IN PARKING AREA. SEE DETAIL 9/A-605
BR AND TR 48X18, (1700) EACH
24X18
40X18
40X24
48X30
40X30
FLOOR DRAIN (FD) TYP.
6" Ø B-VENT FOR THE FUTURE RETAIL SPACE
EXHAUST LOUVER 33.5 SQ FT NET FREE AREA (33,000 CFM) 36"(H) MAX
LINE OF EASEMENT
FAI LOUVER 2.0 SQ FT NET FREE AREA (450 CFM)
FAI LOUVER 27 SQ FT NET FREE AREA (16,000 CFM MAX.)
BICYCLE RACK (TYP)
SHELVING (TYP) N.I.C.
TRENCH DRAIN
PARKING ENTRANCE
RESIDENTIAL ENTRANCE
3/4 " (2) SLOT, 4'-0" LD W/ PLENUM ML-38, 8" INLET (115 EA), TYP.
SEE A-550
FRONT DESK
CUH 50 MBH
T.O.S. 28.17'
T.O.S. 30.17'
34" HIGH WALL-MOUNTED RAILING
ROOF PENTHOUSE ABOVE
PLENUM CONNECTED TO PENT HOUSE LOUVER WITH FD/AD
30X30 DUCT DN
LOT 80 LOT 60
LOT 60 LOT 40
LOT 1
LOT 101
LOT 40

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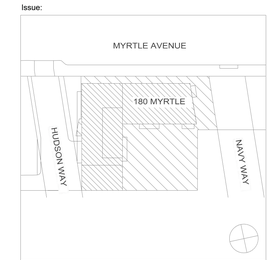

Key Plan

HVAC
1st Floor Plan

Date	09/05/13
Scale	1/8" = 1'-0"
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Seal

Sheet No.:

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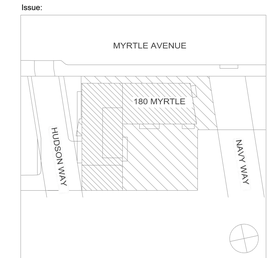

Key Plan

HVAC
2nd Floor Plan

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DOB #320592747-01

08-27-14	BULLETIN #5	⚠
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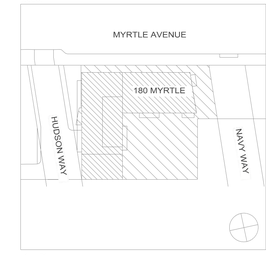
11-26-13	ISSUE FOR DOB	
11-13-13	PROGRESS SET	
11-04-13	SCHEMATIC DESIGN	
10-10-13	SCHEMATIC DESIGN	

Revisions

Issue:



Key Plan

HVAC
3rd-4th Floor Plan

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-103.00

Plotted:

EDGE OF 5TH FLOOR SLAB ONLY (SEE 6/A-320), EDGE OF SLAB AT FLOORS 6-12 SIMILAR TO FLOOR 13

EDGE OF 5TH FLOOR SLAB ONLY (SEE 6/A-320), EDGE OF SLAB AT FLOORS 6-12 SIMILAR TO FLOOR 13

A — 2 BDRM — 976 SF — LD 12'-0" X 16'-7" — LDK 305 SF
BEDROOM 2 — 13'-2" X 11'-6" — 150 SF
BEDROOM — 12'-5" X 13'-4" — 159 SF
C — 1 BDRM — 621 SF — LD 13'-4" X 15'-0" — LDK 266 SF
D — 0 BDRM — 472 SF — LD 18'-8" X 12'-11" — LD 240 SF ALIGN
BEDROOM 2 — 10'-0" X 14'-8" — 145 SF
E — 2 BDRM — 845 SF — LD 12'-8" X 15'-0" — LDK 270 SF
BEDROOM — 10'-0" X 13'-7" — 145 SF
BEDROOM — 11'-3" X 14'-1" — 176 SF
F — 2 BDRM — 931 SF — LD 13'-1" X 15'-11" — LDK 300 SF
BEDROOM — 13'-2" X 11'-5" — 157 SF
V — 1 BDRM — 594 SF — LD 15'-9" X 13'-3" — LDK 266 SF
BEDROOM — 13'-7" X 10'-1" — 138 SF
T — 0+ BDRM — 472 SF — 13'-1" X 18'-9" — LD 242 SF
S — 0 BDRM — 443 SF — 17'-10" X 12'-8" — LD 225 SF
R — 1 BDRM — 614 SF — LD 15'-0" X 14'-1" — LDK 261 SF
O — 0 BDRM — 445 SF — LD 18'-8" X 12'-11" — LDK 238 SF
P — 0 BDRM — 536 SF — LD 22'-6" X 12'-10" — LDK 240 SF
Telecom
Elec. Meter
Stair A
ELEVATOR LOBBY F.F. 74.66'
PE3
CE1
PE2
CORRIDOR
TR 12X4 W/FD (100)
TR 6X4 W/FD (50)
K — 1 BDRM — 481 SF — 16'-9" X 16'-11" — LD 220 SF
BEDROOM — 10'-3" X 14'-3" — 149 SF
J — 1 BDRM — 627 SF — LD 14'-4" X 15'-1" — LDK 270 SF
H — JR 4 BDRM — 725 SF — LD 19'-10" X 15'-4" — LDK 373 SF
BEDROOM — 10'-0" X 13'-7" — 144 SF
BEDROOM — 10'-8" X 13'-8" — 154 SF
G — 2 BDRM — 923 SF — LD 15'-3" X 14'-5" — LDK 265 SF
BEDROOM 2 — 10'-9" X 12'-3" — 142 SF
BEDROOM 2 — 12'-9" X 11'-5" — 141 SF
L — 0 BDRM — 438 SF — 17'-10" X 12'-8" — LD 225 SF
M — 1 BDRM — 614 SF — LD 15'-0" X 14'-1" — LDK 261 SF
BEDROOM — 13'-7" X 10'-4" — 139 SF
BEDROOM — 13'-7" X 10'-0" — 133 SF
N — 1 BDRM — 688 SF — LD 21'-7" X 13'-2" — LDK 346 SF
BEDROOM — 13'-7" X 10'-3" — 137 SF
BEDROOM 2 — 13'-7" X 9'-7" — 133 SF
P — 2 BDRM — 830 SF — LD 17'-9" X 12'-0" — LDK 275 SF
N — 2 BDRM — 830 SF — LD 17'-9" X 12'-0" — LDK 275 SF

COMMERCIAL KITCHEN EXHAUST — KE 1 — 22X22
10X8 — CV 1
HWR 1 — 4" HWS/R WITH 2" INSUL
12X12 — RE 1

PTAC A, B, C

NOTE:
OMIT ELEC. METER DOORS AT 5TH, 8TH, AND 10TH FLOORS

2 Floors 8-12 - Partial Plan
1/8" = 1'-0"

P - ELECTRICAL PANEL
W - WASHER BOX
ND - NICH BOX

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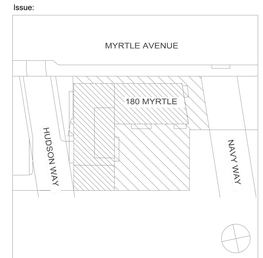
Revisions

Issue:



Key Plan

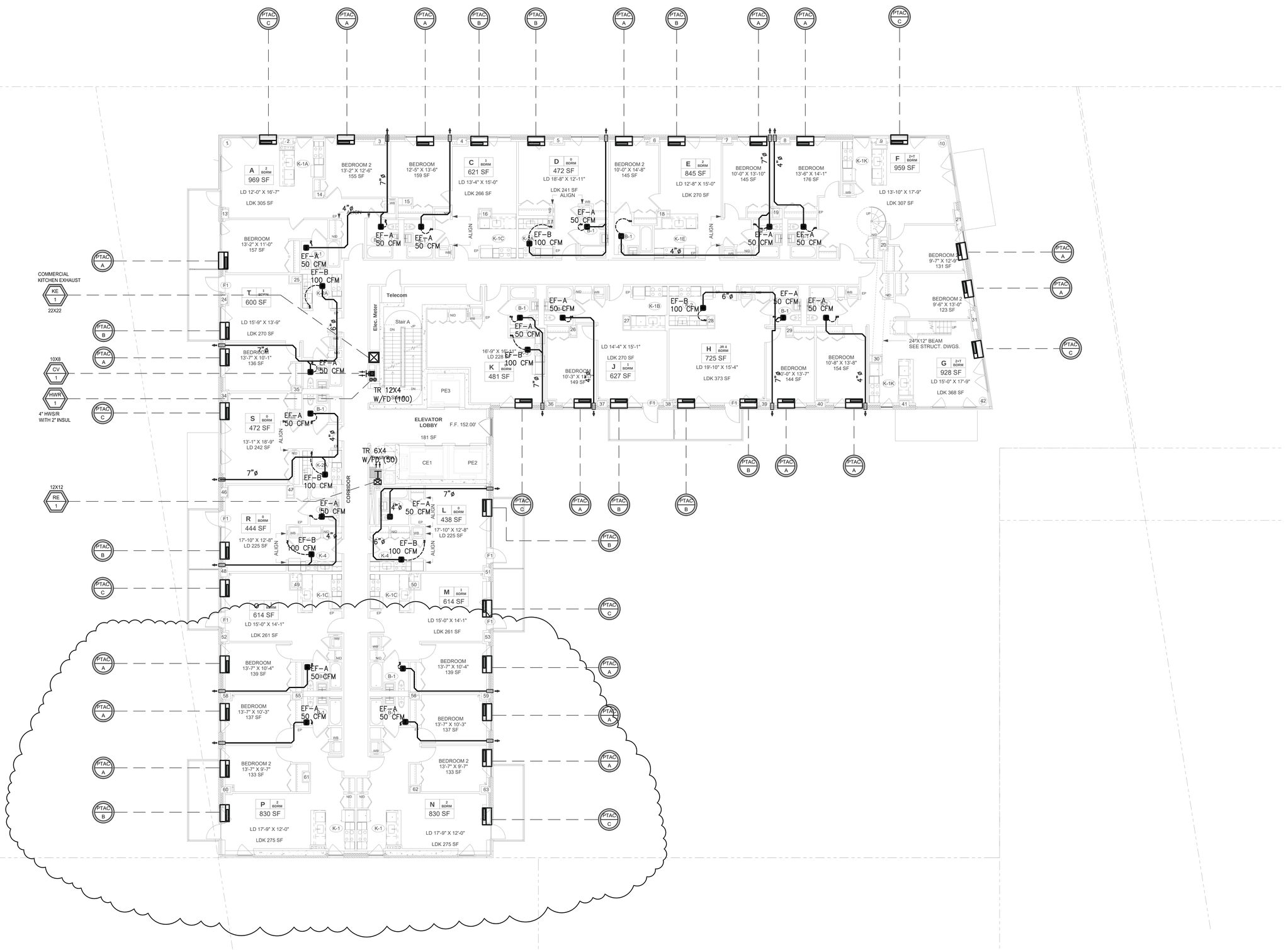
HVAC
5th-12th Floor Plan

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-104.00



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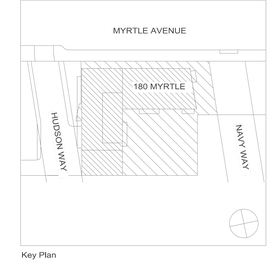


Key Plan

HVAC
13th Floor Plan
(Marketing - Floor 14)

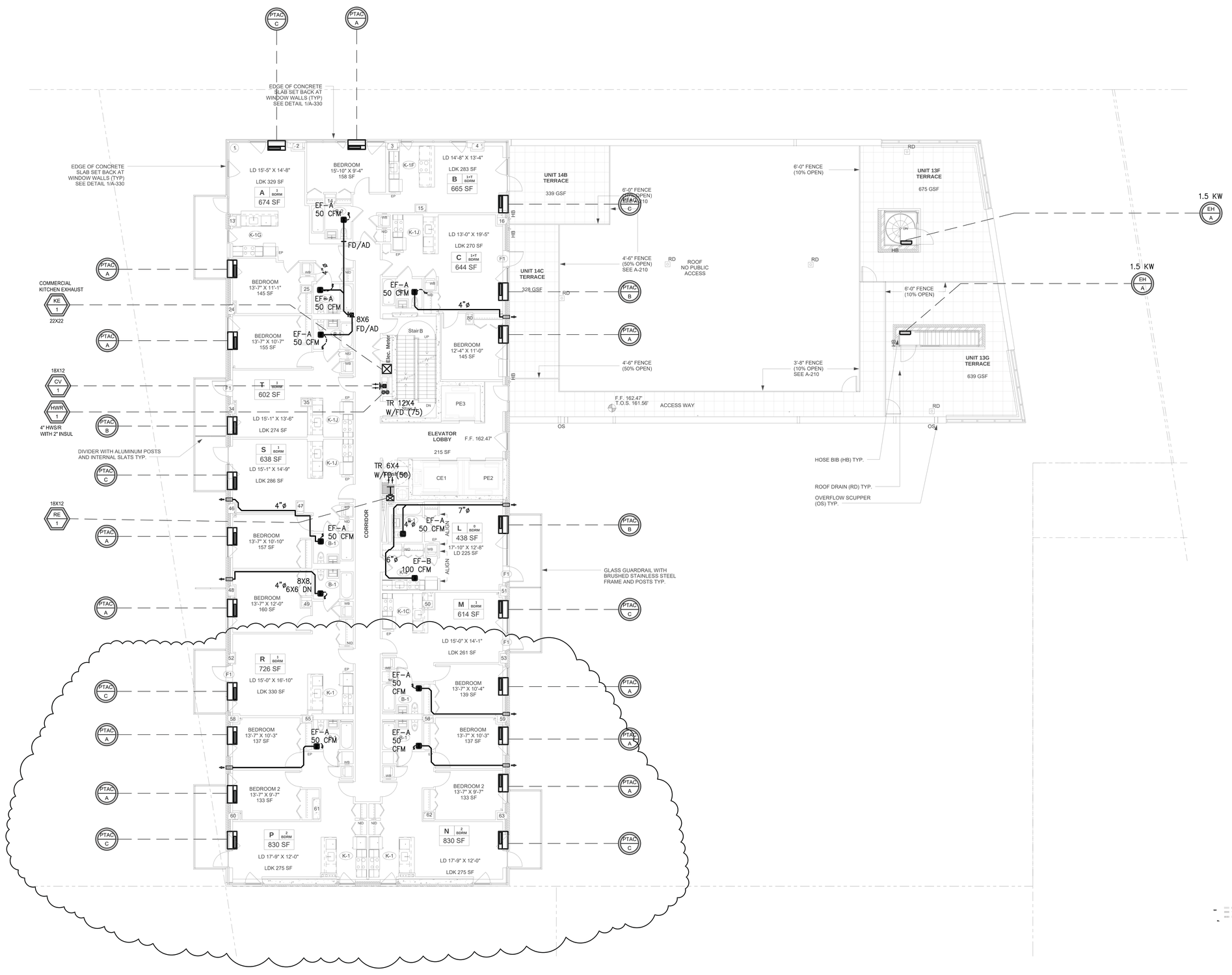
Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-106.00

Plotted: -



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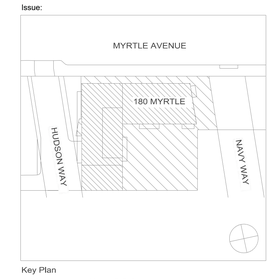


Key Plan

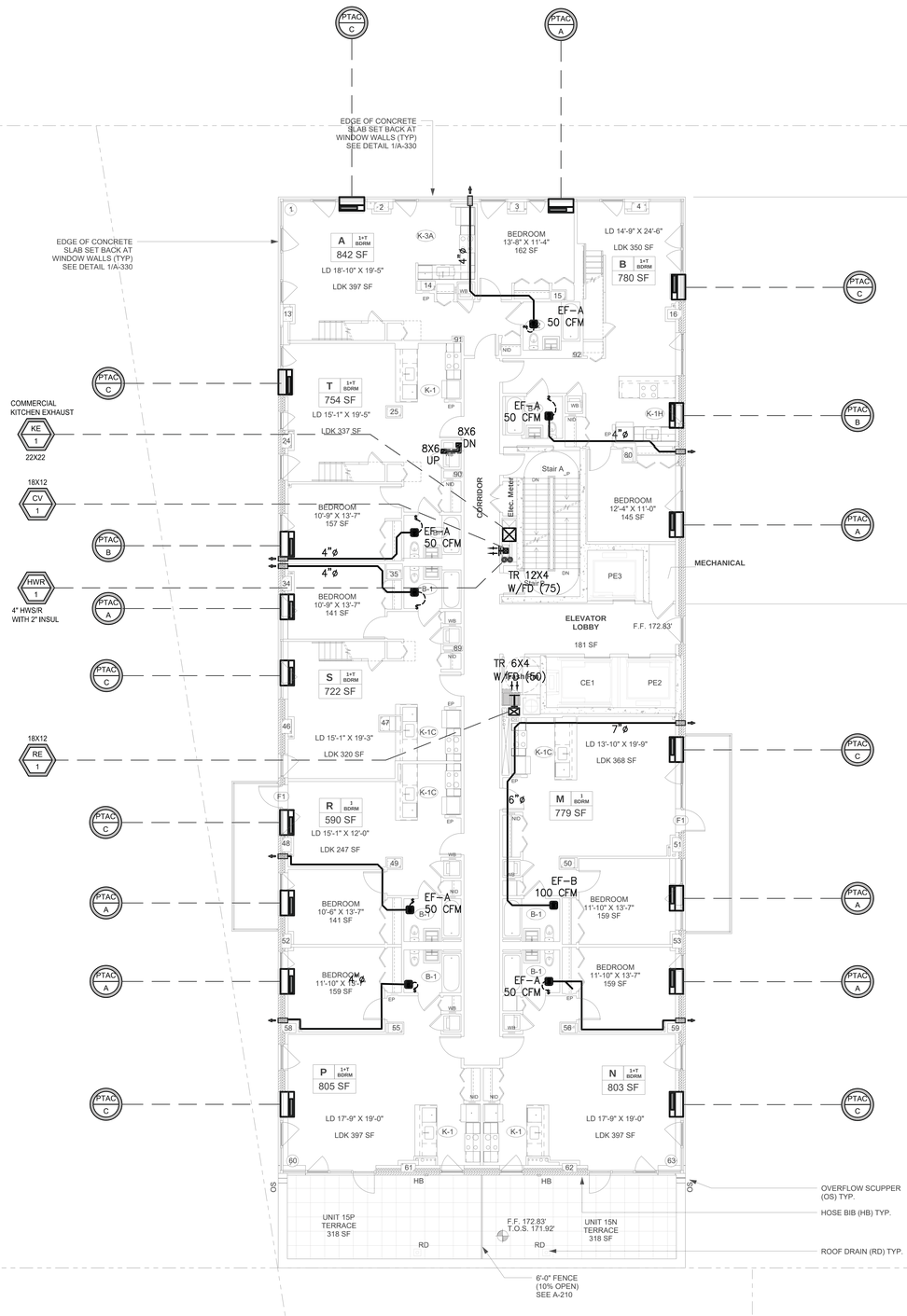
HVAC
14th Floor Plan
(Marketing - Floor 15)

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-107.00



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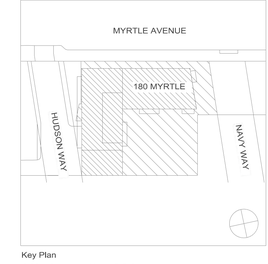


Key Plan

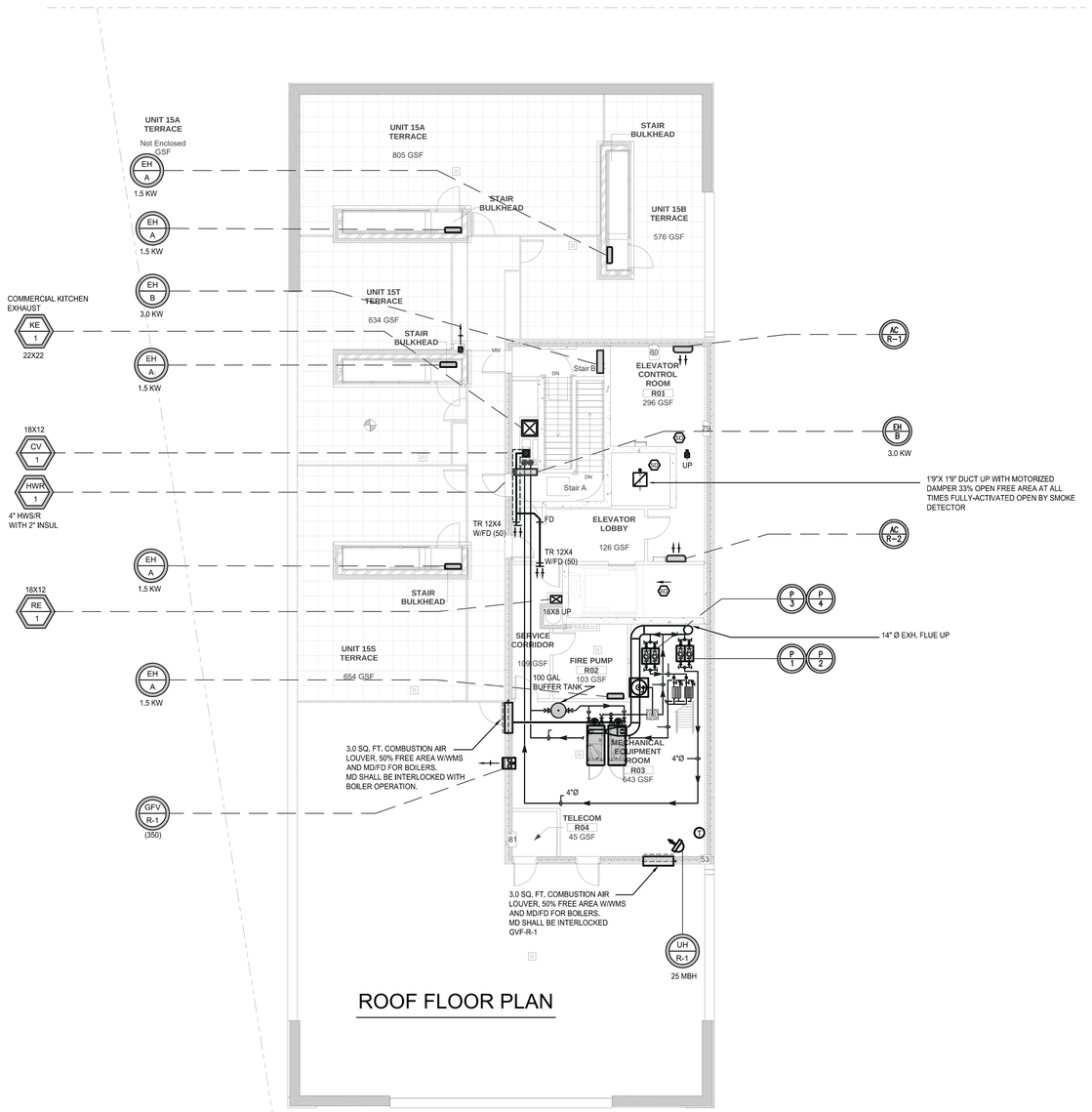
HVAC
15th Floor Plan
(Marketing - Floor 16)

Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

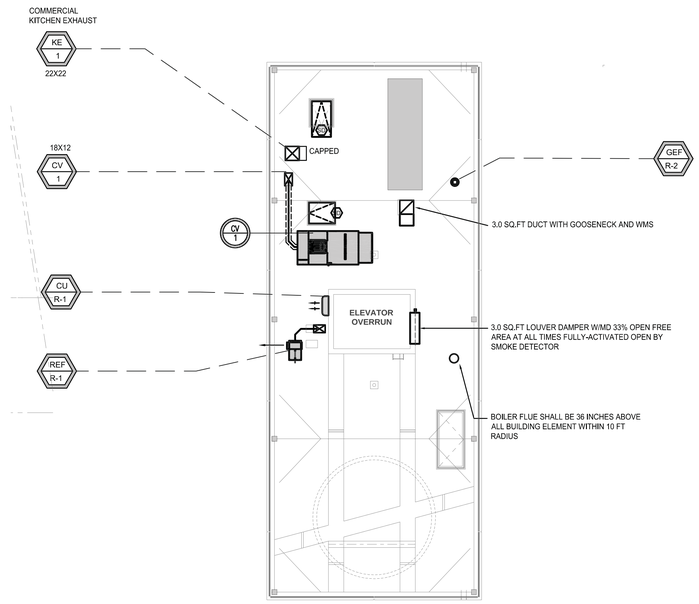
Seal

Sheet No.:

M-108.00



ROOF FLOOR PLAN



BULKHEAD FLOOR PLAN

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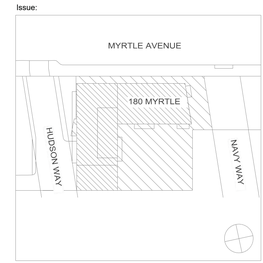


Key Plan

HVAC
Roof and Bulkhead Floor Plans

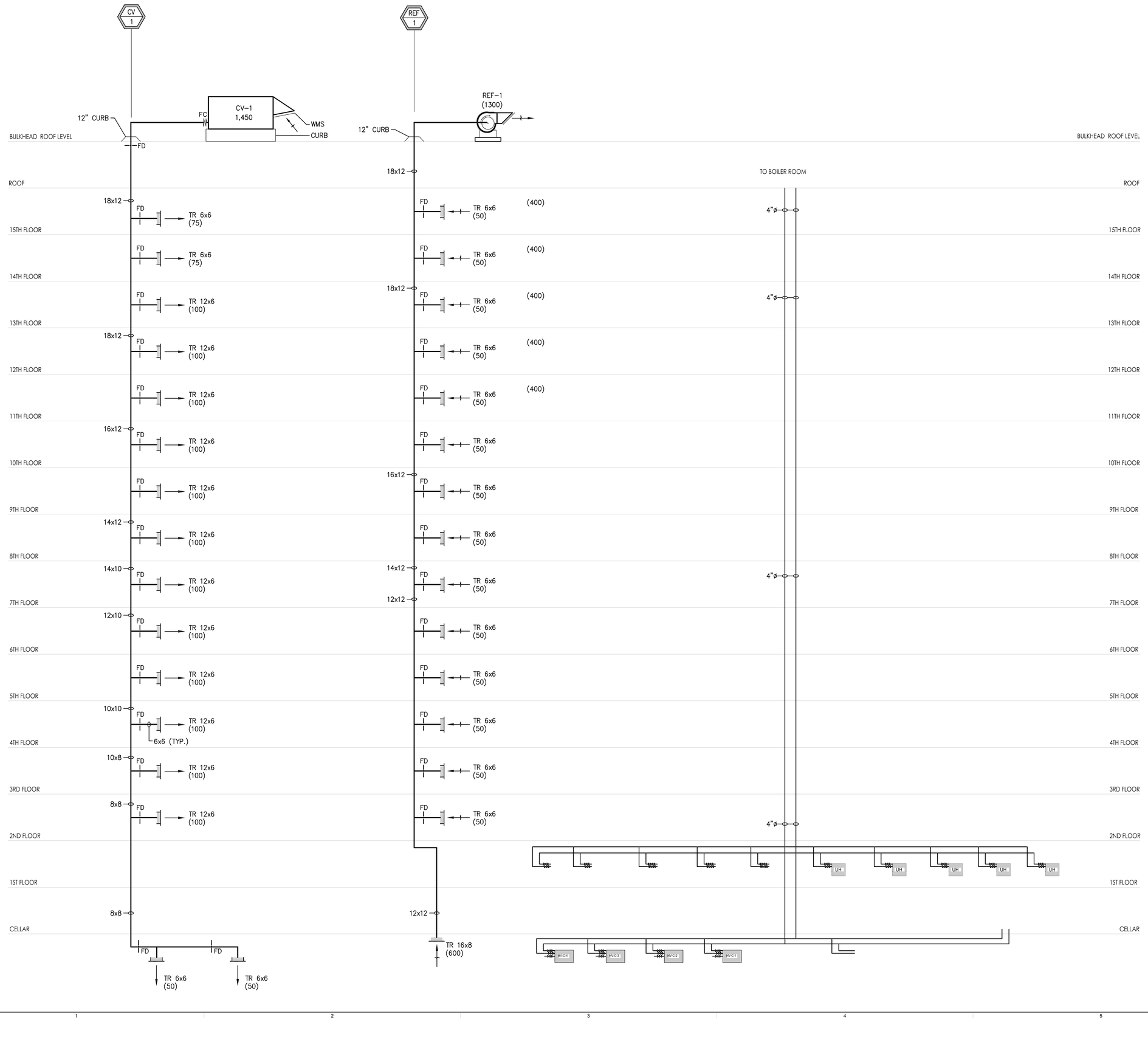
Date	09/05/13
Scale	1/8" = 1'-0"
Drawn By	- - -
Checked By	- - -
Project No.	1345

Seal

Sheet No.:

M-109.00

Plotted:



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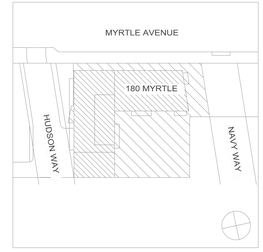


Key Plan

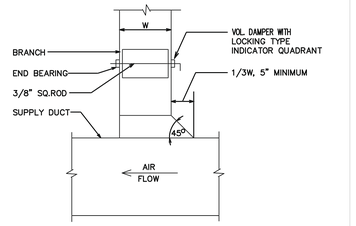
HVAC
AIR RISER DIAGRAM
SHEET # 1

Date	09/05/13
Scale	NTS
Drawn By	- - -
Checked By	- - -
Project No.	1345

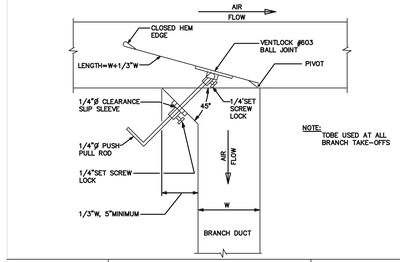
Seal

Sheet No.:

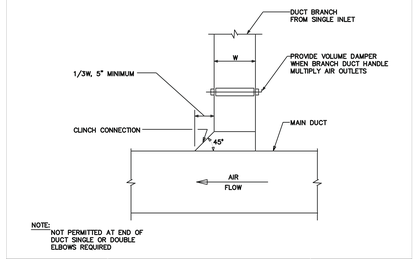
M-200.00



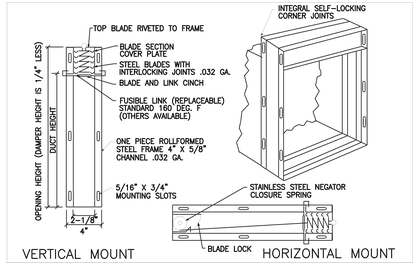
RECTANGULAR SUPPLY DUCT TAP TO SINGLE AIR OUTLET | 1



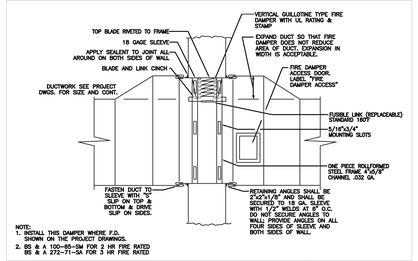
RECTANGULAR SUPPLY DUCT WITH CLINCH COLLAR | 2



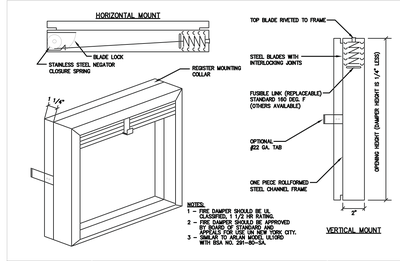
RECTANGULAR RETURN/ EXHAUST DUCT TAP | 3



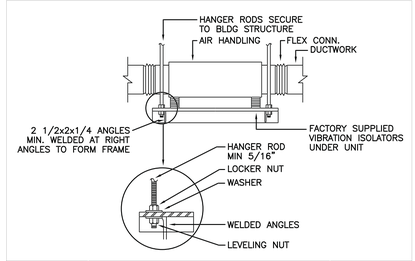
FIRE DAMPER | 4



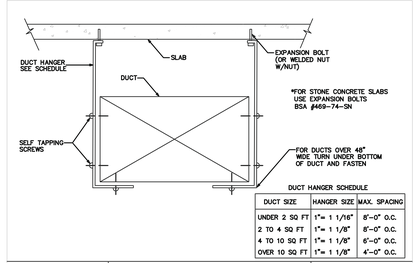
SECTION THRU FIRE DAMPER AT FIRE RATED WALL | 6



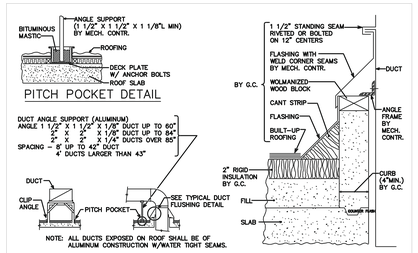
FIRE DAMPER DETAIL W/ REGISTER MOUNTING FLANGE | 7



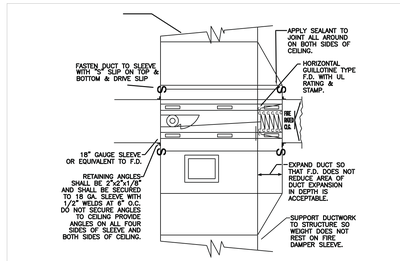
CEILING HUNG AIR HANDLING UNIT MOUNTING DETAIL (IN-LINE) | 8



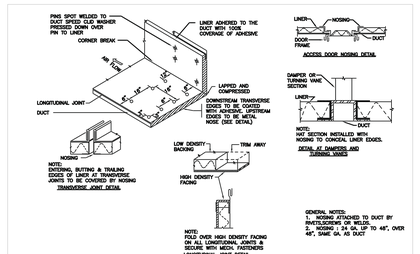
DUCT HANGING DETAIL | 9



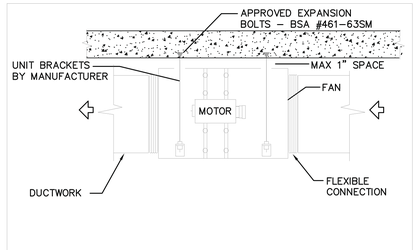
DUCTS EXPOSED ON ROOF AND DUCT FLASHING | 11



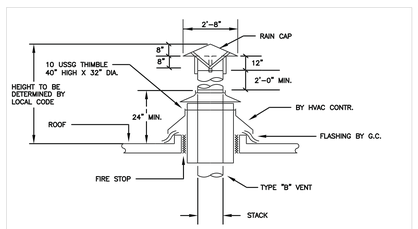
SECTION THRU FIRE DAMPER AT FIRE RATED CEILING/SLAB



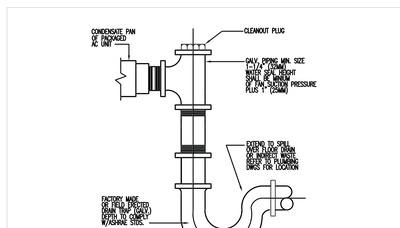
SOUND LINING INSTALLATION DETAILS | 16



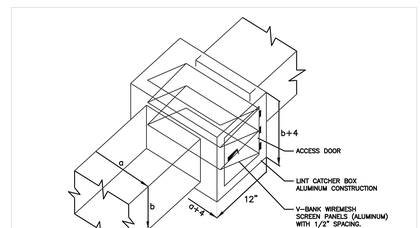
FAN HANGING DETAIL | 20



GAS FURNACE VENT STACK DETAIL | 5



COOLING COIL DRAIN TRAP DETAIL | 10



PENDING

DRY LINT TRAP DETAIL | 15

180 Myrtle Avenue

Brooklyn, NY 11201

Red Apple 180 Myrtle Avenue Development LLC
823 11th Avenue
New York, NY 10019

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GACE Consulting Engineers
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New York, NY 10001

Mechanical/Electrical/Plumbing Engineers
Ettinger Engineering Associates
505 8th Avenue
New York, NY 10018

Site Civil Engineer
Philip Habib & Associates
102 Madison Avenue, 11th Floor
New York, NY 10016

Geotechnical and Environmental Engineer
Langan Engineering & Environmental Services
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001

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Weintraub Diaz Landscape Architects
19 New Street
Nyack, NY 10960

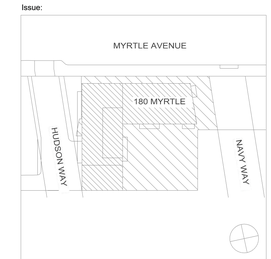
Lighting Consultant
Harvey Marshall Berling Associates
173 West 81st Street, Suite 2
New York, NY 10024

DOB #320592747-01

08-27-14	BULLETIN #5
05-05-14	100% REVISED CONSTRUCTION DOCUMENTS
04-15-14	95% REVISED CONSTRUCTION DOCUMENTS
01-24-14	90% CONSTRUCTION DOCUMENTS
12-20-13	PRICING SET
11-26-13	ISSUE FOR DOB
11-13-13	PROGRESS SET
11-04-13	SCHEMATIC DESIGN
10-10-13	SCHEMATIC DESIGN

Revisions

Issue:



Key Plan

HVAC DETAILS SHEET # 1

Date	09/05/13
Scale	NTS
Drawn By	- - -
Checked By	- - -
Project No.	1345
Sheet No.:	M-400.00

Seal

Plotted:

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ASTM E 90 SOUND TRANSMISSION LOSS TEST REPORT

Rendered to:

REYNAERS ALUMINIUM SYSTEMS, LTD.

SERIES/MODEL: CW50

TYPE: Two-Lite Curtain Wall System

Summary of Test Results			
Data File No.	**Glazing Option (Nominal Dimensions)**	**STC**	**OITC**
E4498.01A	1" IG (1/4" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F	34	27
E4498.01B	1" IG (1/4" annealed, 1/2" air space, 1/4" annealed)	31	25
E4498.01C	1-1/16" IG (5/16" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F	36	31
E4498.01D	1-1/16" IG (1/4" annealed exterior, 1/2" air space, 5/16" annealed interior)	35	30
E4498.01E	1-3/8" IG (3/8" annealed exterior, 3/4" air space, 1/4" laminated interior), Glass temperature 75°F	40	33
E4498.01F	1-3/8" IG (1/4" annealed exterior, 13/16" air space, 5/16" annealed interior)	37	31
E4498.01G	1-3/4" IG (5/16" annealed exterior, 15/16" air space, 1/2" laminated interior), Glass temperature 75°F	41	35

Reference should be made to Architectural Testing, Inc. Report No. E4498.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

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ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

REYNAERS ALUMINIUM SYSTEMS, LTD.
Fairfield
Enniscorthy, Co. Wexford
IRELAND

Report No:	E4498.01-113-11
Test Dates:	01/22/15
And:	01/23/15
Report Date:	01/28/15

Test Sample Identification:

Series/Model: CW50

Type: Two-Lite Curtain Wall System

Overall Size: 78-3/4" by 82"

Glazing (Nominal Dimensions):

Option A: 1" IG (1/4" Laminated Exterior, 1/2" Air Space, 1/4" Annealed Interior), Glass Temperature 75°F

Option B: 1" IG (1/4" Annealed, 1/2" Air Space, 1/4" Annealed)

Option C: 1-1/16" IG (5/16" Laminated Exterior, 1/2" Air Space, 1/4" Annealed Interior), Glass Temperature 75°F

Option D: 1-1/16" IG (1/4" annealed exterior, 1/2" air space, 5/16" annealed interior)

Option E: 1-3/8" IG (3/8" Annealed Exterior, 3/4" Air Space, 1/4" Laminated Interior), Glass Temperature 75°F

Option F: 1-3/8" IG (1/4" Annealed Exterior, 13/16" Air Space, 5/16" Annealed Interior)

Option G: 1-3/4" IG (5/16" Annealed Exterior, 15/16" Air Space, 1/2" Laminated Interior), Glass Temperature 75°F

Project Scope: Architectural Testing, Inc. was contracted by Reynaers Aluminum Systems, Ltd. to conduct sound transmission loss tests on a Series/Model CW50, two-lite curtain wall system. A summary of the results is listed in the Test Results section, and the complete test data is included as Appendix B of this report. The samples were provided by the client.

Test Methods: The acoustical tests were conducted in accordance with the following:

ASTM E 90-09, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*.
ASTM E 413-10, *Classification for Rating Sound Insulation*.
ASTM E 1332-10a, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation*.
ASTM E 2235-04 (Reapproved 2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*.

Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM E 90. The microphones were calibrated before conducting sound transmission loss tests. The test equipment and test chamber descriptions are listed in Appendix A.

Sample Installation: Sound transmission loss tests were initially performed on a filler wall that was designed to test curtain wall specimens. The filler wall achieved an STC rating of 69.

The specimen plug was removed from the filler wall assembly. The curtain wall system was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the test specimen to the test opening on both sides. The interior side of the curtain wall frame, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing.

Test Procedure: The sound transmission loss tests were performed in accordance with the ASTM E 90 test method using a single direction of measurement. The sound transmission loss test consisted of the following measurements: One background noise sound pressure level and five sound absorption measurements were conducted at each of the five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms, at each of the five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.

Sample Descriptions:

Frame Construction:

	Frame
Size	78-3/4" by 82"
Thickness	5"
Corners	Butted
Fasteners	Screws
Seal Method	Sealant
Material	Aluminum
Thermal Break Material	N/A
Reinforcement	N/A
Daylight Opening Size X2	36-7/16" by 78-1/2"

Glazing Option A:

Measured Overall Insulation Glass Unit Thickness	0.999"
Spacer Type	Aluminum

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.110", 0.030", 0.110"	0.529"	0.220"
Muntin Pattern	N/A	N/A	N/A
Material	Laminated	Air*	Annealed
Laminate Material	PVB*	N/A	N/A

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

** - Stated per Client/Manufacturer, N/A-Non Applicable*

Sample Descriptions: (Continued)

Glazing Option B:

Measured Overall Insulation Glass Unit Thickness	0.961"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.223"	0.515"	0.223"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Annealed
Laminate Material	N/A	N/A	N/A

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

Glazing Option C:

Measured Overall Insulation Glass Unit Thickness	1.091"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.123", 0.041", 0.183"	0.520"	0.224"
Muntin Pattern	N/A	N/A	N/A
Material	Laminated	Air*	Annealed
Laminate Material	PVB*	N/A	N/A

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

** - Stated per Client/Manufacturer, N/A-Non Applicable*

Sample Descriptions: (Continued)

Glazing Option D:

Measured Overall Insulation Glass Unit Thickness	1.066"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.223"	0.535"	0.308"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Annealed
Laminate Material	N/A	N/A	N/A

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

Glazing Option E:

Measured Overall Insulation Glass Unit Thickness	1.354"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.387"	0.727"	0.105", 0.030", 0.105"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Laminated
Laminate Material	N/A	N/A	PVB*

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

** - Stated per Client/Manufacturer, N/A-Non Applicable*

Sample Descriptions: (Continued)

Glazing Option F:

Measured Overall Insulation Glass Unit Thickness	1.344"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.221"	0.815"	0.308"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Annealed
Laminate Material	N/A	N/A	N/A

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

Glazing Option G:

Measured Overall Insulation Glass Unit Thickness	1.745"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.308"	0.955"	0.221", 0.040", 0.221"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Laminated
Laminate Material	N/A	N/A	PVB*

Glazing Method	Exterior pressure glazed
Glazing Material	Flexible wedge gasket
Glazing Bead Material	Aluminum pressure plates with compression gasket

** - Stated per Client/Manufacturer, N/A-Non Applicable*

Sample Descriptions: (Continued)

Components:

TYPE	QUANTITY	LOCATION
Weatherstrip		
No weatherstrip		
Hardware		
No hardware		
Drainage		
No drainage		

Sample Weights:

Glazing Option	Weight (lbs)
A	316
B	308
C	368
D	360
E	396
F	356
G	490

Comments: The client did not supply report drawings on the Series/Model CW50, two-lite curtain wall system. The curtain wall system was disassembled, and the components will be retained by Architectural Testing for four years. Photographs of the test specimen are included in Appendix C.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the sound transmission loss test results on the Series/Model CW50, two-lite curtain wall system is listed below.

Summary of Test Results			
Data File No.	**Glazing Option (Nominal Dimensions)**	**STC**	**OITC**
E4498.01A	1" IG (1/4" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F	34	27
E4498.01B	1" IG (1/4" annealed, 1/2" air space, 1/4" annealed)	31	25
E4498.01C	1-1/16" IG (5/16" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F	36	31
E4498.01D	1-1/16" IG (1/4" annealed exterior, 1/2" air space, 5/16" annealed interior)	35	30
E4498.01E	1-3/8" IG (3/8" annealed exterior, 3/4" air space, 1/4" laminated interior), Glass temperature 75°F	40	33
E4498.01F	1-3/8" IG (1/4" annealed exterior, 13/16" air space, 5/16" annealed interior)	37	31
E4498.01G	1-3/4" IG (5/16" annealed exterior, 15/16" air space, 1/2" laminated interior), Glass temperature 75°F	41	35

The complete test results are listed in Appendix B. Flanking limit tests and reference specimen tests are available upon request.

Architectural Testing will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Architectural Testing for the entire test record retention period. The test record retention period ends four years after the test date.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing.

For ARCHITECTURAL TESTING, INC:

Daniel P. Platts
Digitally Signed by: Daniel P. Platts

Daniel P. Platts
Senior Technician - Acoustical Testing

Todd D. Kister
Digitally Signed by: Todd D. Kister

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

DPP:jmcs

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (14)
- Appendix-C: Photographs (1)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	01/28/15	N/A	Original Report Issue

This report produced from controlled document template ATI 00272, revised 04/09/12.

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E4498.01 -113-11

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	Data Acquisition card	65127	04/14 *
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64902	12/14
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64903	12/14
Source Room Microphone	PCB Electronics	378B20	Microphone and Preamplifier	65103	05/14
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64905	12/14
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64906	12/14
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	11/14
Receive Room Environmental Indicator	Vaisala	HMW92	Temperature Humidity Sensor	64286	06/14
Source Room Environmental Indicator	Vaisala	HMW60Y	Temperature and Humidity Sensor	Y002653	06/14
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	65105	04/14

**- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.*

Test Chamber:

	Volume	Description
Receive Room	234 m^3 (8291.3 ft^3)	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor
Source Room	206.6 m^3 (7296.3 ft^3)	Stationary diffusers only Temperature and humidity controlled

	Maximum Size	Description
TL Test Opening	4.27 m (14 ft) wide by 3.05 m (10 ft) high	Vibration break between source and receive rooms

N/A-Non Applicable

Architectural Testing

Appendix B

Complete Test Results

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ACCREDITED TL-144

AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15
Data File No.	E4498.01A
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1" IG (1/4" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F

Specimen Area	4.17 m²	Receive Temp.	23.7 °C		Source Temp.	22.8 °C
Technician	Daniel P. Platts	Receive Humidity	48%		Source Humidity	47%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	39.9	4.9	106	84	22.5	1.89	-
100	39.6	5.4	108	78	29.8	1.88	-
125	42.0	4.6	107	84	22.6	1.38	0
160	41.3	4.6	106	80	25.4	0.55	0
200	34.0	4.8	107	89	17.6	0.54	6
250	34.1	4.9	107	86	20.4	0.85	7
315	31.0	5.4	103	78	23.8	0.79	6
400	26.2	5.7	101	71	28.8	0.31	4
500	23.5	6.1	102	68	31.7	0.28	2
630	20.6	6.0	103	68	33.6	0.32	1
800	18.1	5.9	102	65	35.5	0.50	0
1000	14.9	6.1	101	60	38.9	0.66	0
1250	13.4	6.6	99	55	42.4	0.41	0
1600	9.6	7.0	103	59	40.8	0.56	0
2000	6.5	7.4	101	60	37.8	0.36	0
2500	5.8	8.3	99	60	36.4	0.44	2
3150	5.5	9.8	100	54	41.7	0.48	0
4000	6.2	11.9	99	46	47.7	0.36	0
5000	6.3	15.0	97	38	53.2	0.41	-

STC Rating	**34**	*(Sound Transmission Class)*
Deficiencies	28	*(Sum of Deficiencies)*
OITC Rating	**27**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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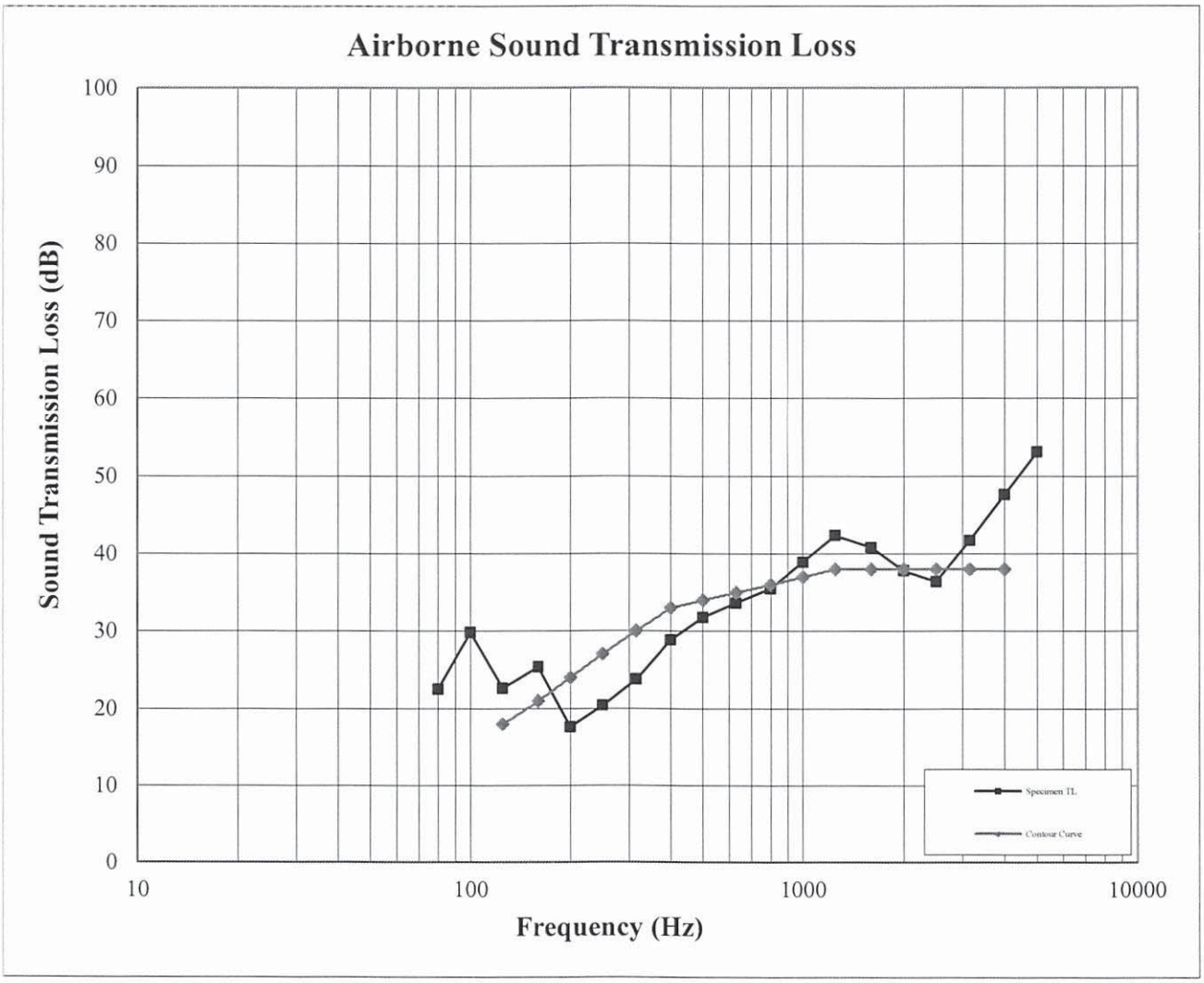
AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15					
Data File No.	E4498.01A					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1" IG (1/4" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F					
Specimen Area	4.17 m²	Receive Temp.	23.7 °C		Source Temp.	22.8 °C
Technician	Daniel P. Platts	Receive Humidity	48%		Source Humidity	47%



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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15
Data File No.	E4498.01B
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1" IG (1/4" annealed, 1/2" air space, 1/4" annealed)

Specimen Area	4.17 m²	Receive Temp.	23.6 °C	Source Temp.	23.1 °C
Technician	Daniel P. Platts	Receive Humidity	47%	Source Humidity	47%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	38.2	5.3	106	85	21.8	1.41	-
100	35.2	5.8	107	78	28.4	1.91	-
125	36.7	5.1	106	86	19.7	1.13	0
160	41.1	4.4	106	81	24.6	0.69	0
200	41.2	4.5	107	92	14.0	0.72	7
250	33.8	5.0	107	87	19.0	0.90	5
315	26.1	5.5	103	80	22.1	0.70	5
400	23.4	5.7	101	72	27.5	0.37	3
500	19.8	5.9	101	70	29.9	0.30	1
630	17.6	5.9	103	70	31.3	0.28	1
800	15.6	5.9	102	67	33.4	0.43	0
1000	12.9	6.0	101	63	36.1	0.51	0
1250	10.4	6.6	99	58	38.8	0.37	0
1600	8.9	7.1	102	62	37.6	0.46	0
2000	6.9	7.4	100	64	33.4	0.46	2
2500	5.7	8.2	99	64	31.9	0.35	3
3150	5.2	9.9	99	59	36.4	0.35	0
4000	5.8	11.9	98	54	40.4	0.36	0
5000	6.3	15.2	97	44	47.5	0.36	-

STC Rating	**31**	*(Sound Transmission Class)*
Deficiencies	27	*(Sum of Deficiencies)*
OITC Rating	**25**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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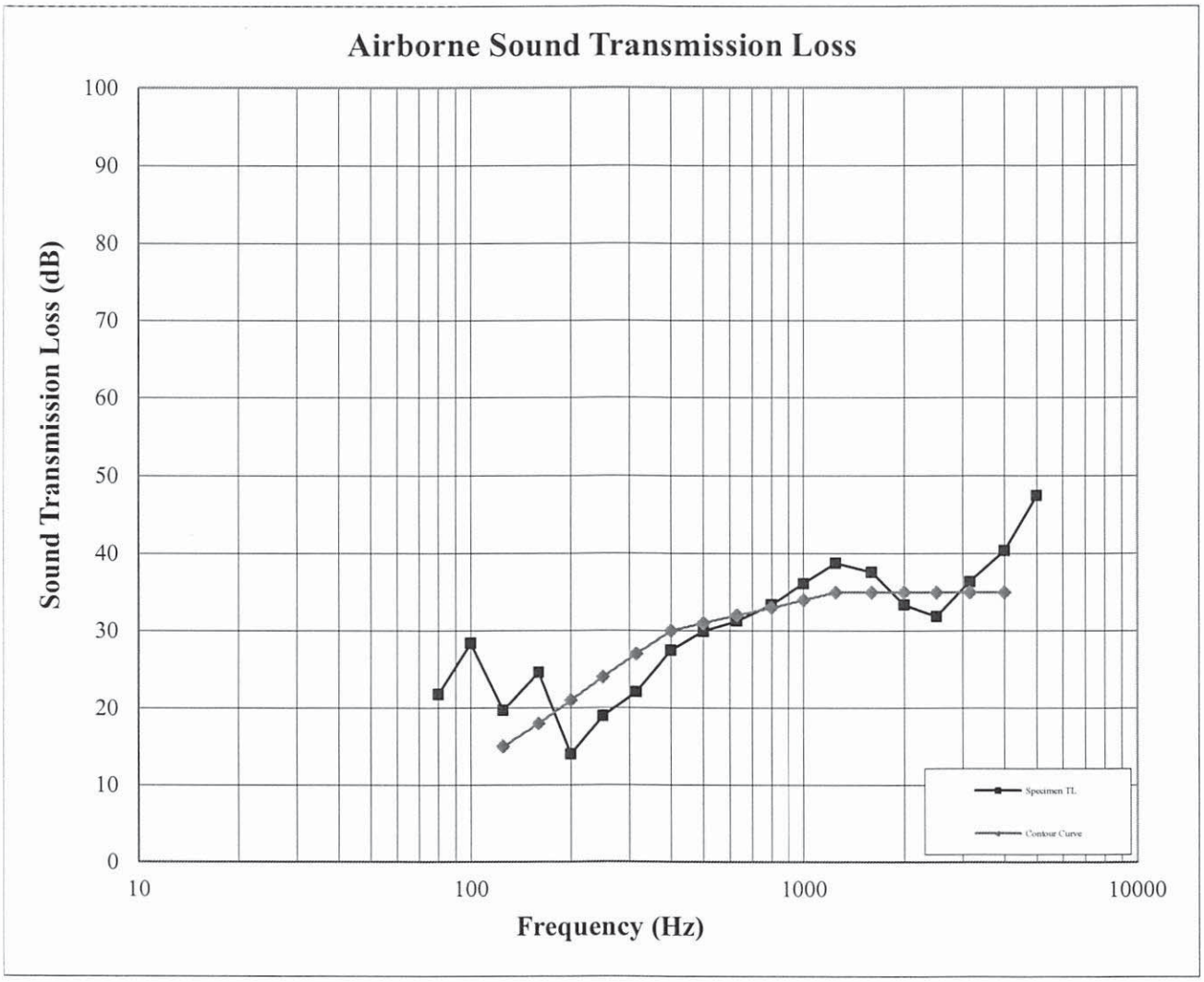
AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15					
Data File No.	E4498.01B					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1" IG (1/4" annealed, 1/2" air space, 1/4" annealed)					
Specimen Area	4.17 m²	Receive Temp.	23.6 °C		Source Temp.	23.1 °C
Technician	Daniel P. Platts	Receive Humidity	47%		Source Humidity	47%



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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15
Data File No.	E4498.01C
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1-1/16" IG (5/16" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F

Specimen Area	4.17 m²	Receive Temp.	23.9 °C	Source Temp.	23.9 °C
Technician	Daniel P. Platts	Receive Humidity	47%	Source Humidity	46%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	39.3	5.1	107	83	23.6	1.72	-
100	36.0	5.3	107	79	27.9	1.97	-
125	37.4	4.6	107	83	23.0	1.01	0
160	42.1	4.8	106	78	27.6	0.44	0
200	40.2	4.7	107	82	24.1	0.64	2
250	35.5	5.1	107	79	27.2	0.72	2
315	26.5	5.5	103	74	27.4	0.78	5
400	23.1	5.7	101	68	31.3	0.46	4
500	19.6	6.0	101	64	35.4	0.39	1
630	18.7	5.9	102	65	35.8	0.32	1
800	16.4	6.1	102	64	36.6	0.46	1
1000	13.5	6.1	101	60	39.2	0.41	0
1250	10.4	6.7	99	56	40.4	0.29	0
1600	8.6	7.0	102	62	38.0	0.53	2
2000	6.0	7.4	100	62	36.2	0.46	4
2500	5.3	8.3	99	57	38.5	0.31	2
3150	5.1	9.8	99	53	43.1	0.41	0
4000	5.6	11.8	99	47	47.3	0.32	0
5000	6.0	14.7	97	37	54.6	0.36	-

STC Rating	**36**	*(Sound Transmission Class)*
Deficiencies	24	*(Sum of Deficiencies)*
OITC Rating	**31**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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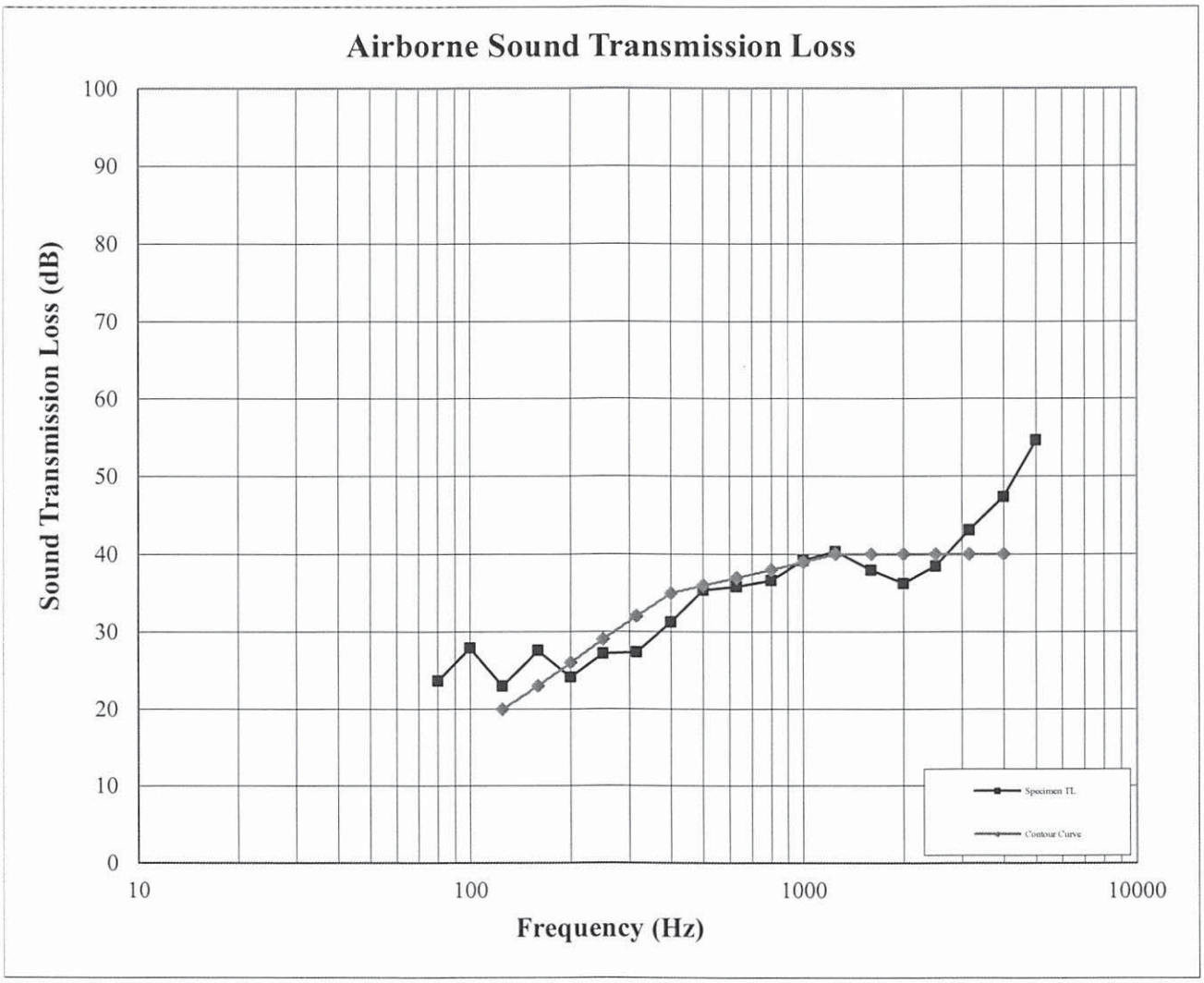
AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15					
Data File No.	E4498.01C					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1-1/16" IG (5/16" laminated exterior, 1/2" air space, 1/4" annealed interior), Glass temperature 75°F					
Specimen Area	4.17 m²	Receive Temp.	23.9 °C		Source Temp.	23.9 °C
Technician	Daniel P. Platts	Receive Humidity	47%		Source Humidity	46%



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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15
Data File No.	E4498.01D
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1-1/16" IG (1/4" annealed exterior, 1/2" air space, 5/16" annealed interior)

Specimen Area	4.17 m²	Receive Temp.	23.9 °C	Source Temp.	23.9 °C
Technician	Daniel P. Platts	Receive Humidity	47%	Source Humidity	46%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	41.6	5.3	107	84	22.7	1.48	-
100	38.4	4.9	107	79	28.3	2.25	-
125	39.5	5.0	106	82	22.9	1.15	0
160	42.2	4.5	106	79	26.5	0.63	0
200	39.5	4.8	107	83	23.2	0.66	2
250	34.8	5.0	107	82	24.0	0.61	4
315	27.3	5.3	103	75	26.9	0.70	4
400	23.8	5.7	101	70	29.7	0.54	4
500	19.8	6.0	102	66	33.9	0.28	1
630	17.4	5.8	103	67	34.0	0.39	2
800	15.6	5.9	102	65	36.0	0.47	1
1000	12.3	6.0	101	61	37.9	0.42	0
1250	9.4	6.6	99	60	37.2	0.42	2
1600	7.3	7.0	102	63	36.8	0.61	2
2000	5.2	7.3	100	65	32.9	0.31	6
2500	4.8	8.3	99	61	35.4	0.45	4
3150	4.7	9.9	99	56	39.8	0.35	0
4000	5.4	12.1	98	50	43.4	0.31	0
5000	5.9	15.4	97	40	50.6	0.39	-

STC Rating	**35**	*(Sound Transmission Class)*
Deficiencies	32	*(Sum of Deficiencies)*
OITC Rating	**30**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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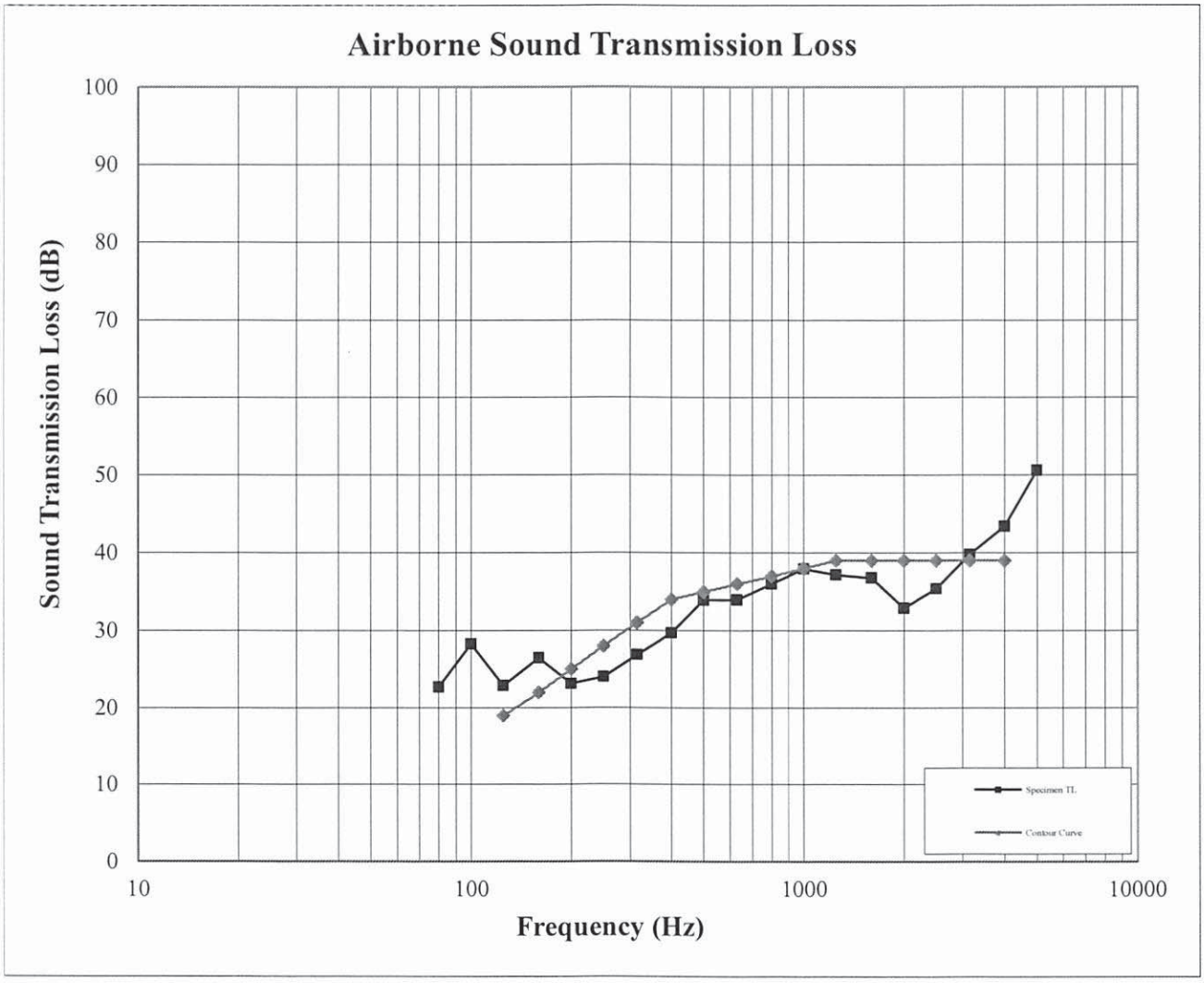
AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/22/15					
Data File No.	E4498.01D					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1-1/16" IG (1/4" annealed exterior, 1/2" air space, 5/16" annealed interior)					
Specimen Area	4.17 m²	Receive Temp.	23.9 °C		Source Temp.	23.9 °C
Technician	Daniel P. Platts	Receive Humidity	47%		Source Humidity	46%



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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/23/15
Data File No.	E4498.01E
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1-3/8" IG (3/8" annealed exterior, 3/4" air space, 1/4" laminated interior), Glass temperature 75°F

Specimen Area	4.17 m²	Receive Temp.	23.3 °C	Source Temp.	23.1 °C
Technician	Daniel P. Platts	Receive Humidity	48%	Source Humidity	46%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	36.5	5.4	106	84	22.6	1.76	-
100	35.1	5.1	107	80	28.0	1.58	-
125	35.0	4.4	107	84	22.8	1.32	1
160	35.4	4.7	107	76	30.5	1.48	0
200	29.0	4.7	108	79	29.0	0.69	1
250	29.1	4.9	108	77	30.7	1.00	2
315	21.9	5.2	104	69	33.5	0.63	2
400	19.7	5.7	102	65	35.6	0.79	3
500	17.3	5.9	102	62	38.6	0.46	1
630	16.8	5.8	103	64	38.1	0.27	3
800	15.4	6.0	103	65	36.4	0.28	6
1000	16.1	6.1	101	60	39.8	0.40	3
1250	15.7	6.8	99	56	41.1	0.30	3
1600	10.8	7.2	103	59	41.5	0.21	2
2000	10.6	7.4	101	57	41.5	0.16	3
2500	9.3	8.4	99	54	42.4	0.37	2
3150	9.5	9.8	100	49	47.4	0.21	0
4000	8.8	11.9	99	44	50.4	0.24	0
5000	8.8	14.7	97	39	52.5	0.17	-

STC Rating	**40**	*(Sound Transmission Class)*
Deficiencies	32	*(Sum of Deficiencies)*
OITC Rating	**33**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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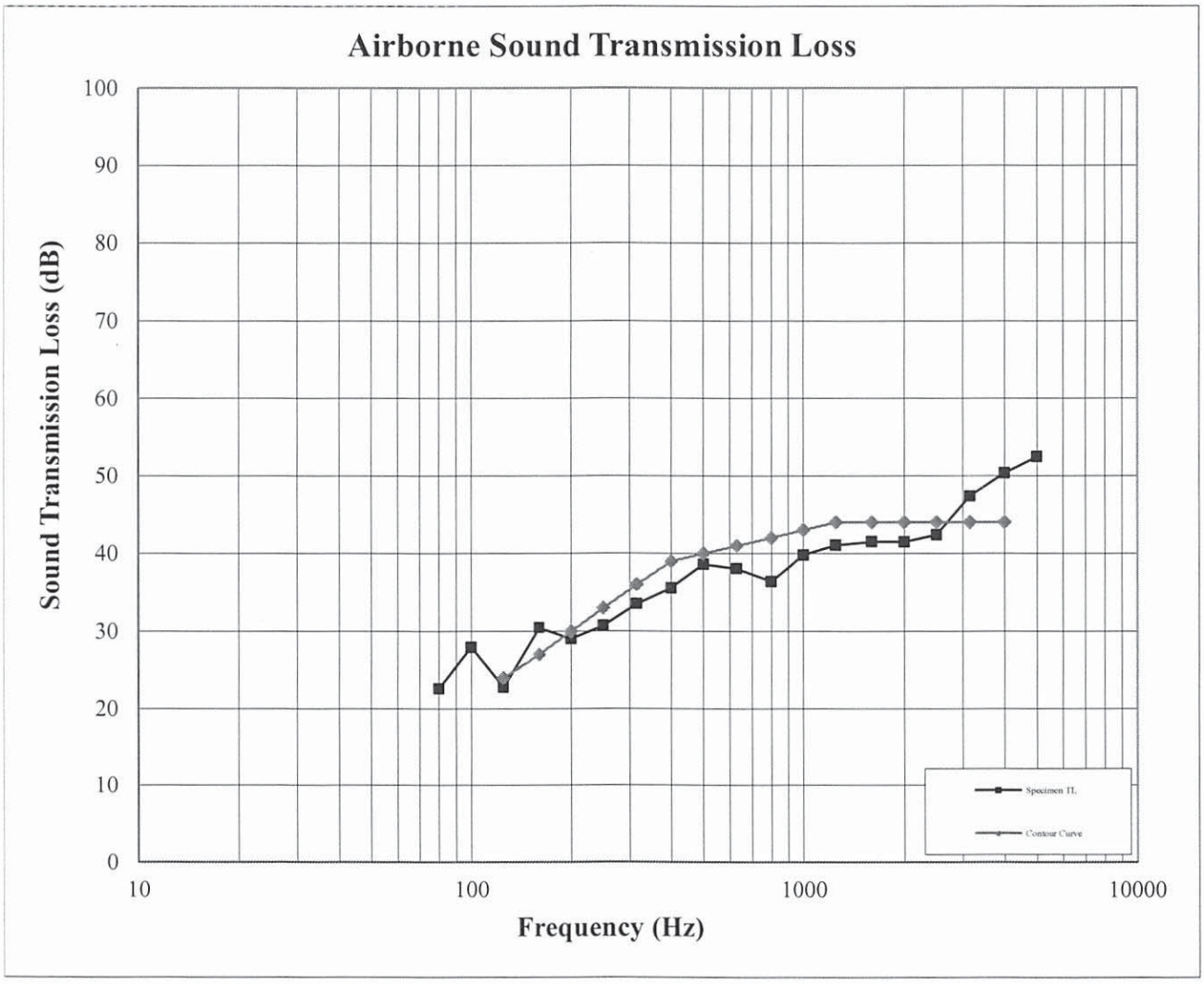
AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/23/15					
Data File No.	E4498.01E					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1-3/8" IG (3/8" annealed exterior, 3/4" air space, 1/4" laminated interior), Glass temperature 75°F					
Specimen Area	4.17 m²	Receive Temp.	23.3 °C		Source Temp.	23.1 °C
Technician	Daniel P. Platts	Receive Humidity	48%		Source Humidity	46%



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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/23/15
Data File No.	E4498.01F
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1-3/8" IG (1/4" annealed exterior, 13/16" air space, 5/16" annealed interior)

Specimen Area	4.17 m²	Receive Temp.	23.3 °C		Source Temp.	22.2 °C
Technician	Daniel P. Platts	Receive Humidity	50%		Source Humidity	49%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	36.8	4.8	107	85	22.4	1.50	-
100	34.0	4.8	109	83	25.9	1.86	-
125	35.3	4.6	107	86	20.5	1.43	1
160	38.8	4.5	106	78	27.8	1.02	0
200	28.9	4.4	107	79	28.4	0.79	0
250	28.8	5.0	107	80	26.7	1.01	3
315	19.4	5.1	103	74	28.9	0.56	4
400	16.7	5.8	102	68	31.7	0.61	4
500	13.2	5.8	102	64	36.5	0.51	0
630	12.1	5.8	103	65	36.3	0.33	2
800	10.2	6.0	103	63	37.9	0.28	1
1000	9.5	6.0	101	59	40.6	0.45	0
1250	9.0	6.8	99	58	38.6	0.34	2
1600	4.2	7.2	103	63	37.6	0.22	3
2000	3.7	7.4	101	65	33.7	0.24	7
2500	4.1	8.2	99	60	36.2	0.35	5
3150	4.5	9.8	100	55	41.3	0.25	0
4000	5.3	12.0	99	50	44.6	0.18	0
5000	6.0	14.7	97	44	47.1	0.32	-

STC Rating	**37**	*(Sound Transmission Class)*
Deficiencies	32	*(Sum of Deficiencies)*
OITC Rating	**31**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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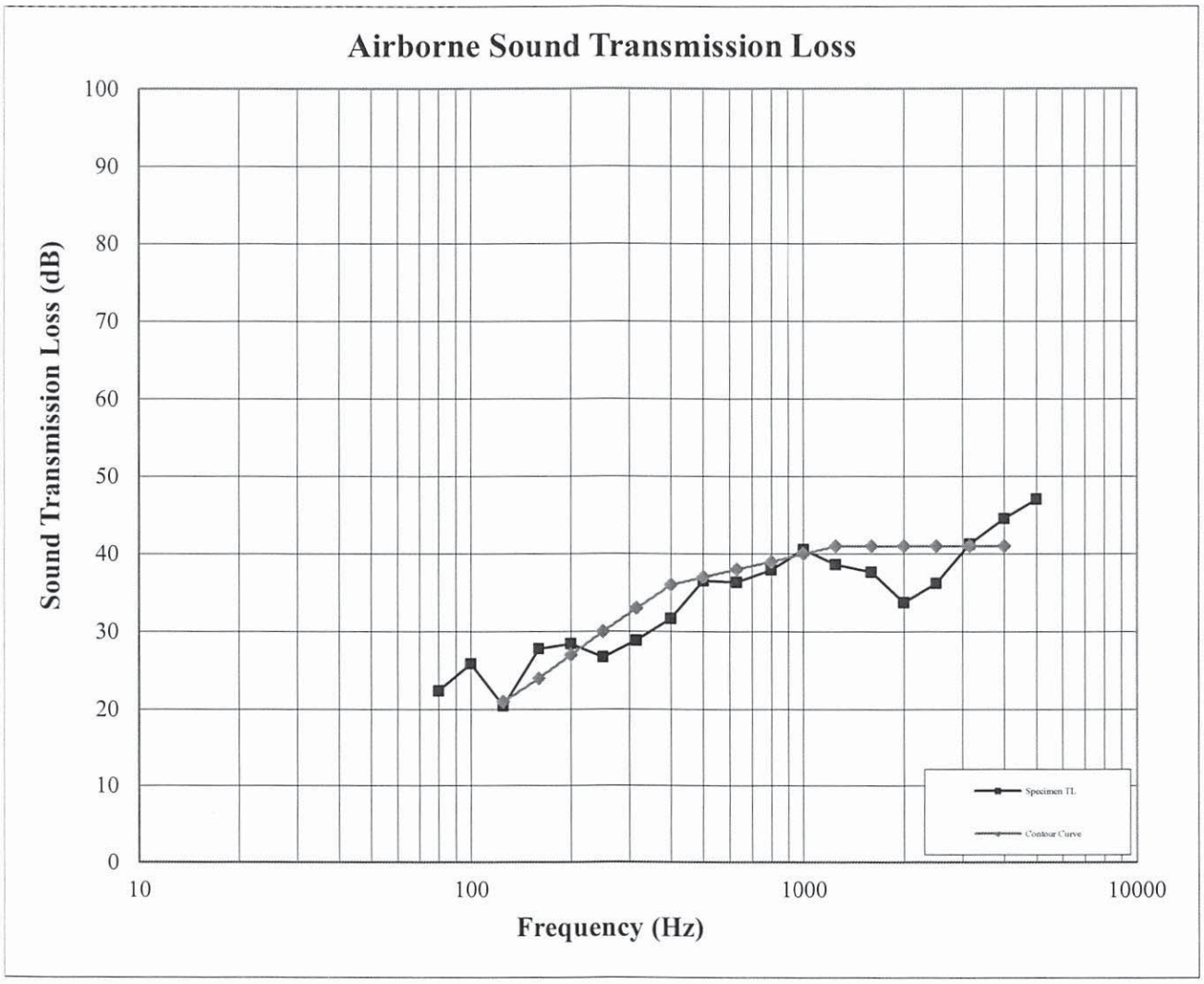
AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/23/15					
Data File No.	E4498.01F					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1-3/8" IG (1/4" annealed exterior, 13/16" air space, 5/16" annealed interior)					
Specimen Area	4.17 m²	Receive Temp.	23.3 °C		Source Temp.	22.2 °C
Technician	Daniel P. Platts	Receive Humidity	50%		Source Humidity	49%



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AIRBORNE SOUND TRANSMISSION LOSS

ASTM E 90

Test Date	01/23/15
Data File No.	E4498.01F
Client	Reynaers Aluminium Systems, Ltd.
Description	Series/Model: CW50, two-lite curtain wall system with 1-3/4" IG (5/16" annealed exterior, 15/16" air space, 1/2" laminated interior), Glass temperature 75°F

Specimen Area	4.17 m²	Receive Temp.	23.3 °C		Source Temp.	22.3 °C
Technician	Daniel P. Platts	Receive Humidity	51%		Source Humidity	51%

Freq (Hz)	Background SPL (dB)	Absorption (m²)	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	36.9	5.1	107	85	21.6	1.75	-
100	35.1	5.0	107	82	25.2	1.61	-
125	37.0	4.7	107	80	26.7	1.77	0
160	38.0	4.2	106	70	36.6	1.13	0
200	29.3	4.3	108	73	35.3	0.59	0
250	27.5	4.9	108	72	35.3	0.68	0
315	19.1	5.2	104	63	39.4	0.55	0
400	16.8	5.6	102	62	38.5	0.57	1
500	15.7	5.9	102	60	40.6	0.28	0
630	12.7	5.8	103	63	38.6	0.31	3
800	11.3	6.0	103	63	38.0	0.34	5
1000	10.0	6.0	101	59	40.4	0.35	4
1250	7.1	6.8	99	59	38.2	0.31	7
1600	7.9	7.1	103	62	37.9	0.34	7
2000	4.3	7.4	101	56	42.0	0.18	3
2500	4.1	8.1	99	51	45.2	0.30	0
3150	4.6	9.6	100	45	51.3	0.16	0
4000	5.4	11.8	99	41	53.2	0.14	0
5000	6.0	14.8	97	33	58.8	0.26	-

STC Rating	**41**	*(Sound Transmission Class)*
Deficiencies	30	*(Sum of Deficiencies)*
OITC Rating	**35**	*(Outdoor-Indoor Transmission Class)*

Notes:

1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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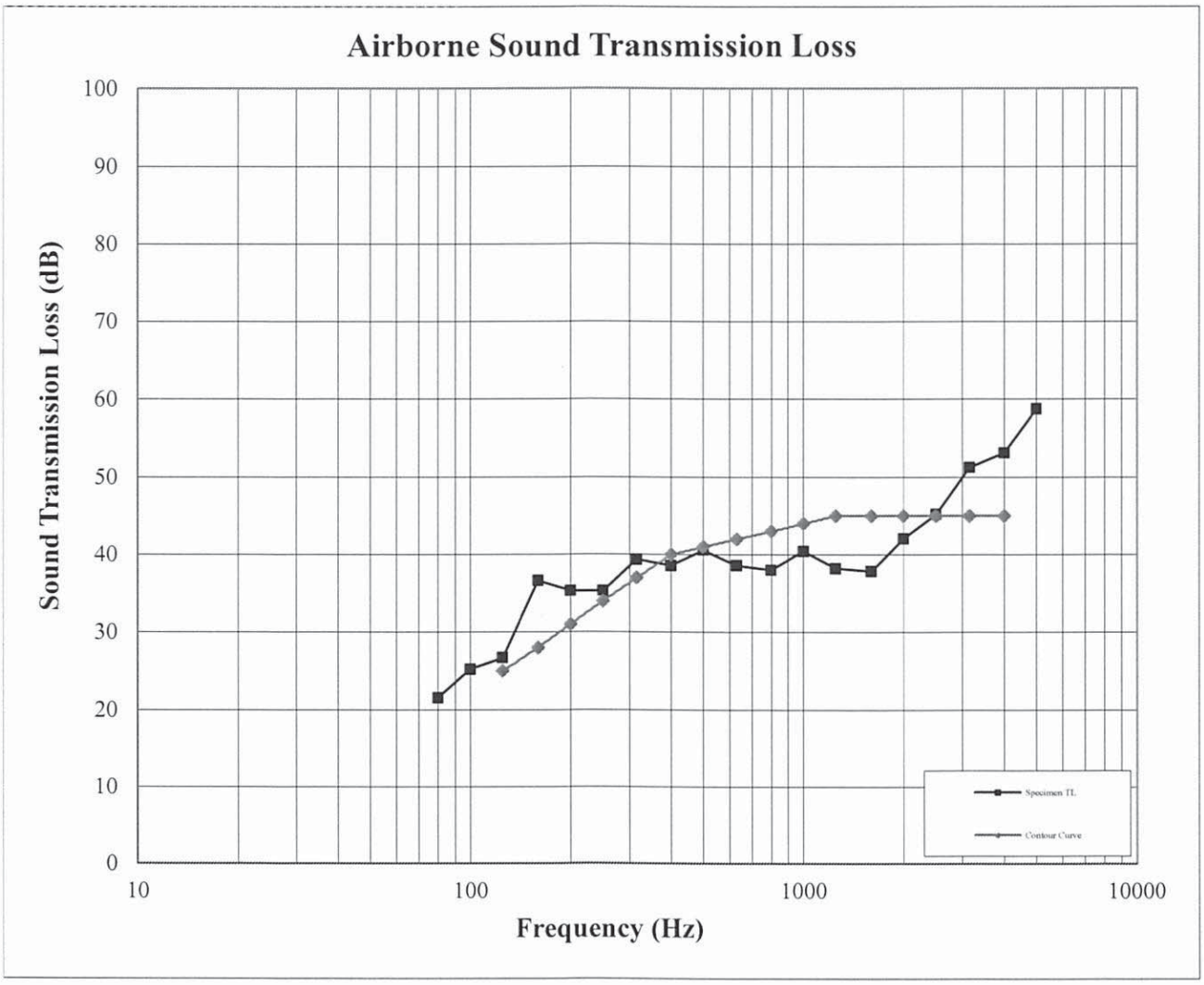
AIRBORNE SOUND TRANSMISSION LOSS

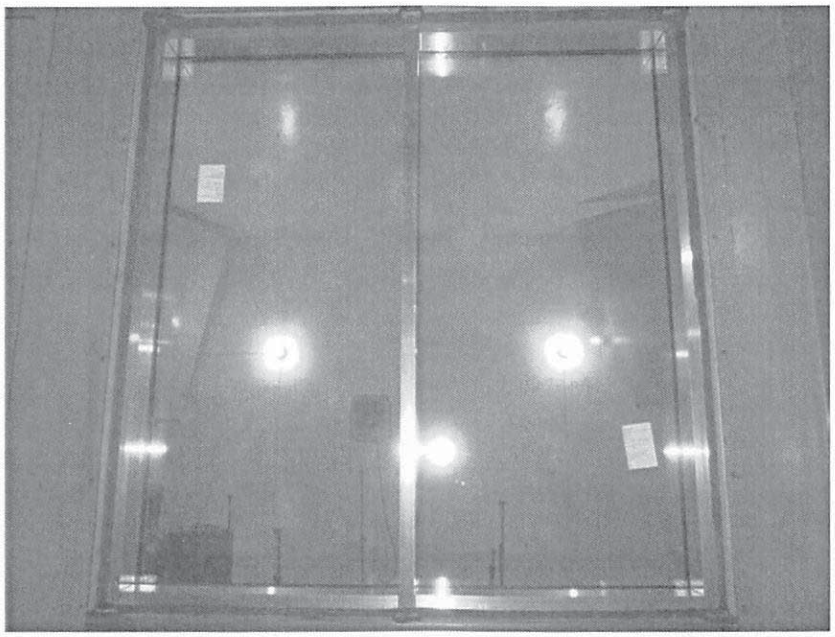
ASTM E 90

Test Date	01/23/15					
Data File No.	E4498.01F					
Client	Reynaers Aluminium Systems, Ltd.					
Description	Series/Model: CW50, two-lite curtain wall system with 1-3/4" IG (5/16" annealed exterior, 15/16" air space, 1/2" laminated interior), Glass temperature 75°F					
Specimen Area	4.17 m²	Receive Temp.	23.3 °C		Source Temp.	22.3 °C
Technician	Daniel P. Platts	Receive Humidity	51%		Source Humidity	51%

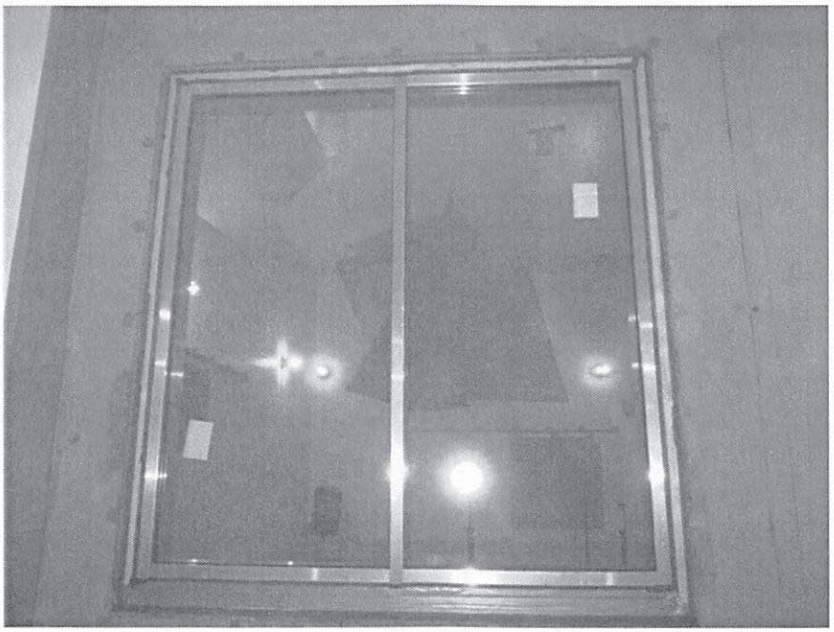


Appendix C

Photographs



Receive Room View of Installed Specimen



Source Room View of Installed Specimen

KAWNEER
AN ALCOA COMPANY

TEST REPORT TRANSMITTAL

Date Generated:	2/9/2015
Project Name:	180 Myrtle Avenue
Project Location:	Brooklyn NY
Company:	JOSLOFF INDUSTRIES LLC
Requested By:	Ian Josloff

Attached, please find Kawneer's standard test reports for project submittals. These reports have been witnessed and prepared by an independent testing agency and adhere to industry guidelines and recommendations. These tests are performed for customers, general contractors, architects, specifiers and building owners to compare performance characteristics of various products by all manufacturers.

These test reports are generic in nature. The configurations and size of the tested specimens are dictated by industry standards and may not reflect the exact building requirements or conditions for the particular project.

By providing a copy of this or these test reports, Kawneer Company, Inc. does not imply or guarantee that this or these products will achieve the same performance levels as recorded in this or these test reports when installed in a building or project. These performance levels were achieved in a laboratory setting under optimum conditions and are not representative of project conditions and may not be repeatable in the field. If field testing is required, it is encouraged that it be done as early as possible and is conducted per AAMA 502-08, or AAMA 503-08. Please reference Note below from these AAMA documents when performing field tests.

Note:
The default pressures used for water penetration resistance tests conducted in the field are not the same as the laboratory test pressure to allow for field conditions and test methods that vary from the laboratory test conditions and test methods. These conditions are primarily related to the ambient environmental conditions and the installation. The product performance is based on laboratory testing performed under controlled laboratory conditions. The temperature, wind, and barometric pressure conditions during a field test will typically vary from the standard laboratory conditions. The field installations also influence the product performance. Products tested in the laboratory are typically installed near - perfect for plumb, level, and square within a precision opening. Field test specimens, although installed within acceptable industry tolerances, are rarely perfectly plumb, level and square. Shipping, handling, acts of subsequent trades, aging and other environmental conditions all may have an adverse effect upon the performance of the installed specimen. A 1/3 reduction of the test pressure for field testing is specified as a reasonable adjustment for the differences between a laboratory test environment and a field test environment.

Kawneer Company, Inc.

Andy Nag

Director Front End

Architectural Testing

AAMA 1801 SOUND TRANSMISSION LOSS TEST REPORT

Rendered to:

KAWNEER COMPANY, INC.

SERIES/MODEL: 1600 System 1

TYPE: Curtain Wall System with Two Glazing Options

Summary of Test Results				
ATI Data File No.	**Glazing Option**	**Air Infiltration**	**STC**	**OITC**
63088.01A	1" IG (1/4" Tempered, 1/2" Argon, 1/4" Tempered)	Pass	31	26
63088.01B	1" IG (1/4" Laminated, 1/2" Air Space, 1/4" Laminated) Glass Temperature was 74.0°F	Pass	37	30

Reference should be made to ATI Report No. 63088.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

130 Derry Court
York, PA 17402-9405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Architectural Testing

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

KAWNEER COMPANY, INC.
555 Guthridge Court
Norcross, Georgia 30092

Report No: 63088.01-113-11
Test Date: 03/28/06
Report Date: 04/03/06

Test Sample Identification:

Series/Model: 1600 System 1

Type: Curtain Wall System

Performance Class: Architectural

Overall Size: 78-3/4" by 78-3/4"

Glazing Option A: 1" IG (1/4" Tempered, 1/2" Argon, 1/4" Tempered)

Glazing Option B: 1" IG (1/4" Laminated, 1/2" Air Space, 1/4" Laminated)

Project Scope: Architectural Testing, Inc. (ATI) was contracted by Kawneer Company, Inc. to conduct air leakage and sound transmission loss tests on a Series/Model 1600 System 1, curtain wall system. A summary of the results is listed in the Test Results section and the complete test data is included as Appendix B of this report.

Test Methods: The acoustical test was conducted in accordance with the following:

AAMA 1801-97, *Acoustical Rating of Windows, Doors, and Glazed Wall Sections.*

ASTM E 1425-91 (Re-approved 1999), *Standard Practice for Determining the Acoustical Performance of Exterior Windows and Doors.*

ASTM E 90-04, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.*

ASTM E 413-04, *Classification for Rating Sound Insulation.*

ASTM E 1332-90 (Re-approved 2003), *Standard Classification for Determination of Outdoor-Indoor Transmission Class.*

130 Derry Court
York, PA 17402-9405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Test Methods: (Continued)

ASTM E 283-04, *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.*

AAMA 501.1-05, *Methods of Tests for Exterior Walls.*

ASTM E 2235-04, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods.*

Test Equipment: The equipment used to conduct this test meets the requirements of ASTM E 90. The microphones were calibrated before conducting the sound transmission loss test. The test equipment and test chamber descriptions are listed in Appendix A.

Sample Installation:

Sound transmission loss tests were initially performed on a filler wall that was designed to test 40" by 86" and 80" by 86" specimens. The filler wall achieved an STC rating of 64.

The 80" by 84" plug was removed from the filler wall assembly. The curtain wall system was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the test specimen to the test opening on both sides. The interior side of the curtain wall frame, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing.

Test Procedure:

Air Leakage Test - A negative pressure of 6.24 psf was applied inside the chamber that was placed around the interior side of the curtain wall system. The total air leakage and extraneous air leakage measurements were used to calculate the specimen air leakage. Barometric pressure corrections were applied to the air leakage calculations.

Sound Transmission Loss Test - The sound transmission loss test consisted of the following measurements: One background noise sound pressure level and five sound absorption measurements were conducted at each of the five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms at each of the five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.

Sample Descriptions:

Frame Construction:

		Frame
Size		78-3/4" by 78-3/4"
Thickness		7-1/2"
CORNERS		Butted
	Fasteners	Screws
	Seal Method	None
MATERIAL		Aluminum
	Thermal Break Material	None
	Reinforcement	N/A
Daylight Opening Size		36-5/8" by 73-3/4"

Glazing Option A:

Measured Overall Insulation Glass Unit Thickness	0.968"
Spacer Type	Azon Warm-Light Poured and Debridged Spacer (A2)

	Exterior Sheet	Gap	Interior Sheet
MEASURED THICKNESS	0.220"	0.528"	0.220"
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Tempered	Argon*	Tempered
LAMINATE MATERIAL	N/A	N/A	N/A

GLAZING METHOD	Exterior pressure glazed
GLAZING MATERIAL	Pressure plate / Flexible wedge gasket
GLAZING BEAD MATERIAL	Aluminum

Sample Descriptions: (Continued)

Glazing Option B:

Measured Overall Insulation Glass Unit Thickness	1.07"
Spacer Type	Aluminum

	Exterior Sheet	**Gap**	**Interior Sheet**
MEASURED THICKNESS	0.120"- 0.040"- 0.120"	0.510"	0.120"- 0.040"- 0.120"
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Laminated	Air*	Laminated
LAMINATE MATERIAL	PVB	N/A	PVB

GLAZING METHOD	Exterior pressure glazed
GLAZING MATERIAL	Pressure plate / Flexible wedge gasket
GLAZING BEAD MATERIAL	Aluminum

Components:

	TYPE	**QUANTITY**	**LOCATION**
WEATHERSTRIP			
	No weatherstrip		
HARDWARE			
	No hardware		
DRAINAGE			
	0.50" Diameter weephole	8	Two per horizontal trim cap

**- Stated per Client/Manufacturer N/A-Non Applicable*

Comments: The weight of the test sample with glazing Option A was 342 lbs. The weight of the test sample with glazing Option B was 378 lbs. The design drawings (included in Appendix C) supplied by the client, accurately describe the Series/Model 1600 System 1, two-lite curtain wall system. The dimensions on the drawings that are circled and/or checked were verified against the test specimen. The curtain wall system was disassembled, and the components will be retained by ATI for four years. Photographs of the test specimen are included in Appendix D.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the sound transmission loss test results on the Series/Model 1600 System 1, curtain wall system is listed below.

ATI Data File No.	Glazing Option	** Air Infiltration	STC	OITC
63088.01A	1" IG (1/4" Tempered, 1/2" Argon, 1/4" Tempered	Pass	31	26
63088.01B	1" IG (1/4" Laminated, 1/2" Air Space, 1/4" Laminated) Glass Temperature was 74.0°F	Pass	37	30

***The maximum allowable air leakage rate, according to AAMA 501.1-05, is 0.06 cfm/ft² when the test pressure is 6.24 psf, for exterior wall systems.*

The complete test results are listed in Appendix B. Flanking limit tests and reference specimen tests are available upon request.

This report is prepared for the convenience of our customer and endeavors to provide accurate and timely project information. It contains a summary of observations made by a qualified representative of Architectural Testing, Inc. The results of this report apply only to the specimens that were tested. The statements made herein do not constitute approval, disapproval, certification or acceptance of performance or materials.

A copy of this report will be retained by ATI for a period of four years from the original test date. This report is the exclusive property of the client so named herein. This report shall not be reproduced, except in full, without written approval by Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC:

Digitally Signed by: Kurt A. Golden

Kurt A. Golden
Technician - Acoustical Testing

Digitally Signed by: Todd D. Kister

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

KAG:lm

Attachments (pages):
- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (6)
- Appendix-C: Drawings (3)
- Appendix-D: Photographs (1)

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NVLAP LAB CODE 200361

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Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	04/03/06	N/A	Original test report

Architectural Testing

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	Y002929
Receive Room Microphone	ACO Pacific	7047	1/2", pressure type, condenser microphone	Y002818
Source Room Microphone	ACO Pacific	7047	1/2", pressure type, condenser microphone	Y002820
Receive Room Preamp	ACO Pacific	4012	1/2" preamplifier	Y002752
Source Room Preamp	ACO Pacific	4012	1/2" preamplifier	Y002185
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002816
Noise Source	Delta Electronics	SNG-1	Two, non-coherelated "Pink" noise signals	Y002181
Equalizer	Rane	RPE228	Programmable EQ	Y002180
Power Amplifiers	Renkus-Heinz	P2000	2 - Amplifiers	Y002179 Y001779
Receive Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y001784 Y001785
Source Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y002649 Y002650
Lab Pack	ATI		Air leakage apparatus	Y000370

Test Chamber:

	Volume	Description
Receiving Room	8291.3 ft^3 (234 m^3)	Rotating vane and stationary diffusers. Temperature and humidity controlled. Isolation pads under the floor.
Source Room	7296.3 ft^3 (206.6 m^3)	Stationary diffusers only. Temperature and humidity controlled.

	Maximum Size	Description
TL Test Opening	14 ft wide by 10 ft high	Vibration break between source and receive rooms.

Architectural Testing

Appendix B

Complete Test Results

Architectural Testing

SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing

ATI No.	63088.01A	**Date**	03/28/06
Client	Kawneer Company, Inc.		
Specimen	Series/Model 1600 System 1, curtain wall with 1" IG (1/4" Tempered, 1/2" Argon, 1/4" Tempered)		
Specimen Area	43.07 Sq Ft		
Filler Area	96.93 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	72.4	72.5	71.4	72.5	72.3	72.2
RH %	63.6	63.4	63.5	63.6	62.1	63.5

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
80	38.2	55.2	84.4	62.1	30.3	23	1.74	0	5.5
100	38.2	56.9	88.1	60.6	36.5	27	2.97	0	6.7
125	40.2	51.2	91.8	66.6	43.7	24	2.50	0	15.8
160	44.5	54.6	95.1	68.4	46.3	26	1.89	0	17.1
200	43.7	56.0	98.7	81.7	50.3	16	0.84	5	31.0
250	37.3	57.3	99.9	79.2	50.7	19	1.07	5	27.7
315	36.5	58.5	96.5	73.6	55.7	22	0.94	5	30.6
400	35.0	62.0	96.1	66.5	59.7	28	0.55	2	28.2
500	31.1	62.8	99.9	68.4	59.6	30	0.44	1	26.3
630	24.4	61.8	102.8	70.8	63.2	30	0.30	2	29.2
800	25.0	62.2	102.2	67.4	65.9	33	0.36	0	29.2
1000	23.3	61.4	101.7	64.8	66.6	35	0.31	0	27.7
1250	23.2	67.7	105.8	66.2	74.1	38	0.29	0	32.8
1600	19.3	70.3	112.0	73.7	75.9	36	0.34	0	36.2
2000	13.9	78.6	108.1	73.6	75.6	32	0.19	3	40.2
2500	7.2	89.0	106.5	72.9	74.5	31	0.25	4	40.5
3150	7.3	107.7	107.2	69.2	76.5	34	0.31	1	38.9
4000	7.1	130.3	106.0	63.3	79.2	38	0.26	0	37.8
5000	7.5	172.4	104.6	53.7	80.2	45	0.58	0	31.9

STC Rating =	**31**	*(Sound Transmission Class)*
Deficiencies =	**28**	*(Number of deficiencies versus contour curve)*
OITC Rating =	**26**	*(Outdoor/Indoor Transmission Class)*

Note: *The acoustical chambers are qualified for measurements down to 80 hertz. Data reported below 80 hertz is for reference only.*

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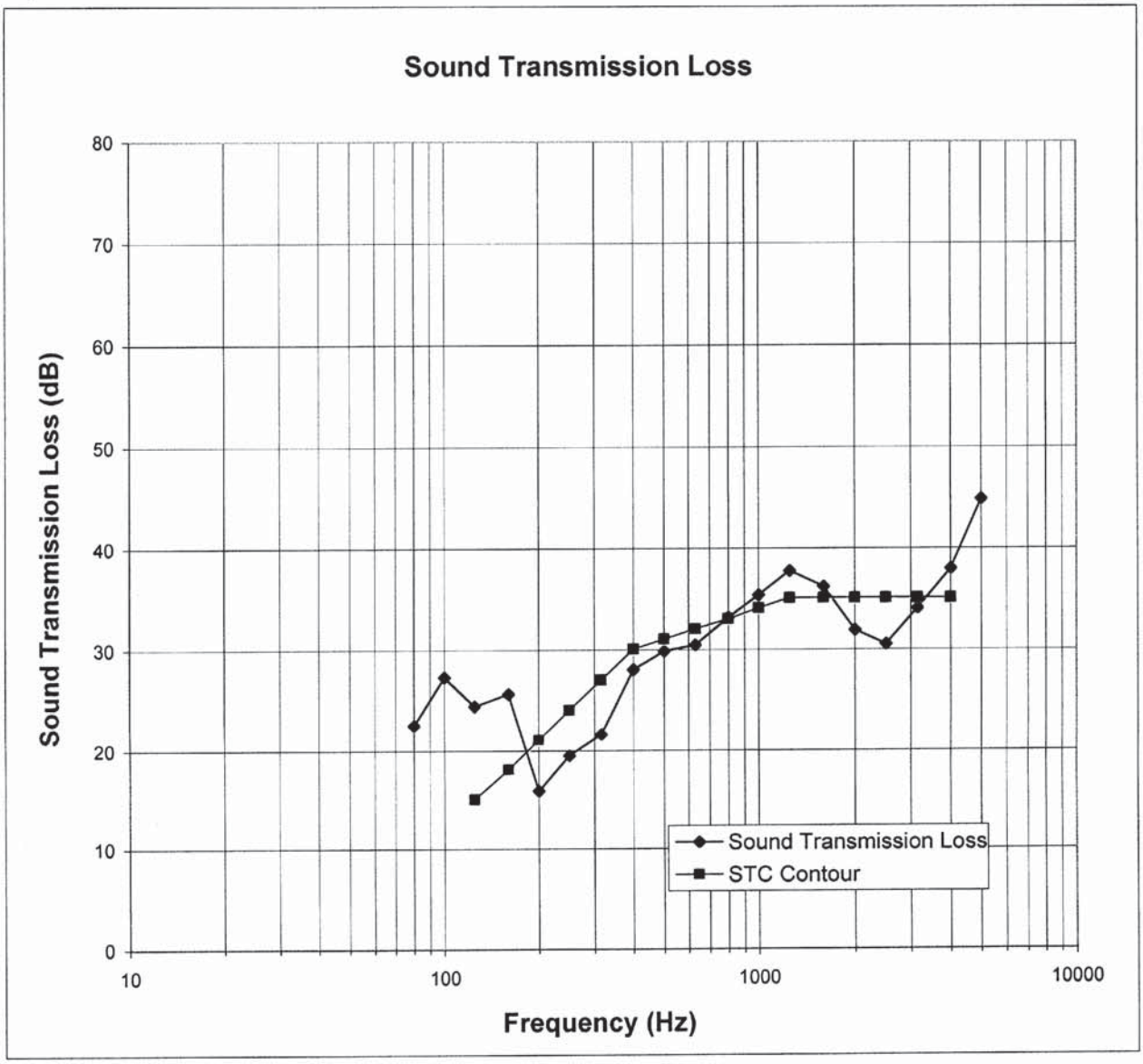
Architectural Testing

Architectural Testing

ATI No.	63088.01A	**Date**	03/28/06
Client	Kawneer Company, Inc.		
Specimen	Series/Model 1600 System 1, curtain wall with 1" IG (1/4" Tempered, 1/2" Argon, 1/4" Tempered)		
Specimen Area	43.07 Sq Ft		
Filler Area	96.93 Sq Ft		
Operator	Kurt A. Golden		



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AAMA 1801 Data Sheets

Architectural Testing

ATI Job Number :	63088.01-113-11
Client Name :	Kawneer Company, Inc.
Test Date :	3/28/2006
Tests Performed by:	Kurt Golden
Specimen Type :	Curtain Wall
Series/Model Number :	1600 System 1
Sample Size :	78-3/4" by 78-3/4"
Glazing:	1" IG (1/4" tempered, 1/2" argon, 1/4" tempered)

Architectural Testing

Air Leakage per ASTM test method ASTM E283

Total Air flow (ft^3/min) :	16.0		
Extraneous Leakage (ft3/min) :	14		
Temperature (^oF) at Specimen:	73		
Barometric Pressure at Specimen (in mbar):	1020	(Inches of Hg) :	30.12
Specimen Area in square feet :	43.07		
Density of air at reference standard conditions (lb/ft^3)	0.075		

Total air flow w/ air density correction (ft3/min)	Extraneous leakage with air density correction (ft3/min)	Air leakage through the specimen with air density correction (ft3/min)	Rate of air leakage per unit area (ft3/min)/sq.ft.
15.993	13.994	1.999	0.05

Architectural Testing

SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing

ATI No.	63088.01B	**Date**	03/28/06
Client	Kawneer Company, Inc.		
Specimen	Series/Model 1600 System 1, curtain wall with 1" IG (1/4" Laminated, 1/2" Air Space, 1/4" Laminated) Glass temp 74°F		
Specimen Area	43.07 Sq Ft		
Filler Area	96.93 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.6	73.9	74.7	74.4	72.3	74.4
RH %	60.1	61.5	63.4	60.8	62.1	61.5

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
80	37.8	51.7	84.5	61.4	30.3	24	2.11	0	4.5
100	37.5	57.7	87.6	61.5	36.5	26	2.32	0	8.2
125	39.5	58.5	91.1	65.7	43.7	24	1.94	0	16.1
160	38.7	50.5	94.1	70.3	46.3	23	2.03	1	19.7
200	37.7	54.4	97.9	74.7	50.3	22	1.21	5	24.6
250	34.9	57.9	98.9	74.9	50.7	23	0.87	7	24.4
315	33.5	59.1	95.7	65.6	55.7	29	0.73	4	23.5
400	30.5	60.0	95.2	62.5	59.7	31	0.72	5	24.9
500	30.0	59.9	99.1	63.4	59.6	34	0.50	3	21.9
630	23.1	63.4	101.8	65.3	63.2	35	0.47	3	24.8
800	23.2	62.2	101.4	61.7	65.9	38	0.35	1	24.3
1000	22.1	62.1	101.1	59.4	66.6	40	0.47	0	23.0
1250	21.5	65.6	105.3	62.2	74.1	41	0.28	0	29.3
1600	17.8	71.2	111.7	68.1	75.9	41	0.26	0	31.0
2000	13.8	77.0	107.6	65.0	75.6	40	0.24	1	32.0
2500	7.8	88.7	106.2	60.8	74.5	42	0.29	0	28.7
3150	8.2	107.2	107.1	55.7	76.5	47	0.23	0	25.6
4000	7.4	131.8	105.8	51.0	79.2	50	0.29	0	25.8
5000	7.7	173.3	104.4	44.3	80.2	54	0.62	0	22.6

STC Rating =	**37**	*(Sound Transmission Class)*
Deficiencies =	**30**	*(Number of deficiencies versus contour curve)*
OITC Rating =	**30**	*(Outdoor/Indoor Transmission Class)*

Note: *The acoustical chambers are qualified for measurements down to 80 hertz. Data reported below 80 hertz is for reference only.*

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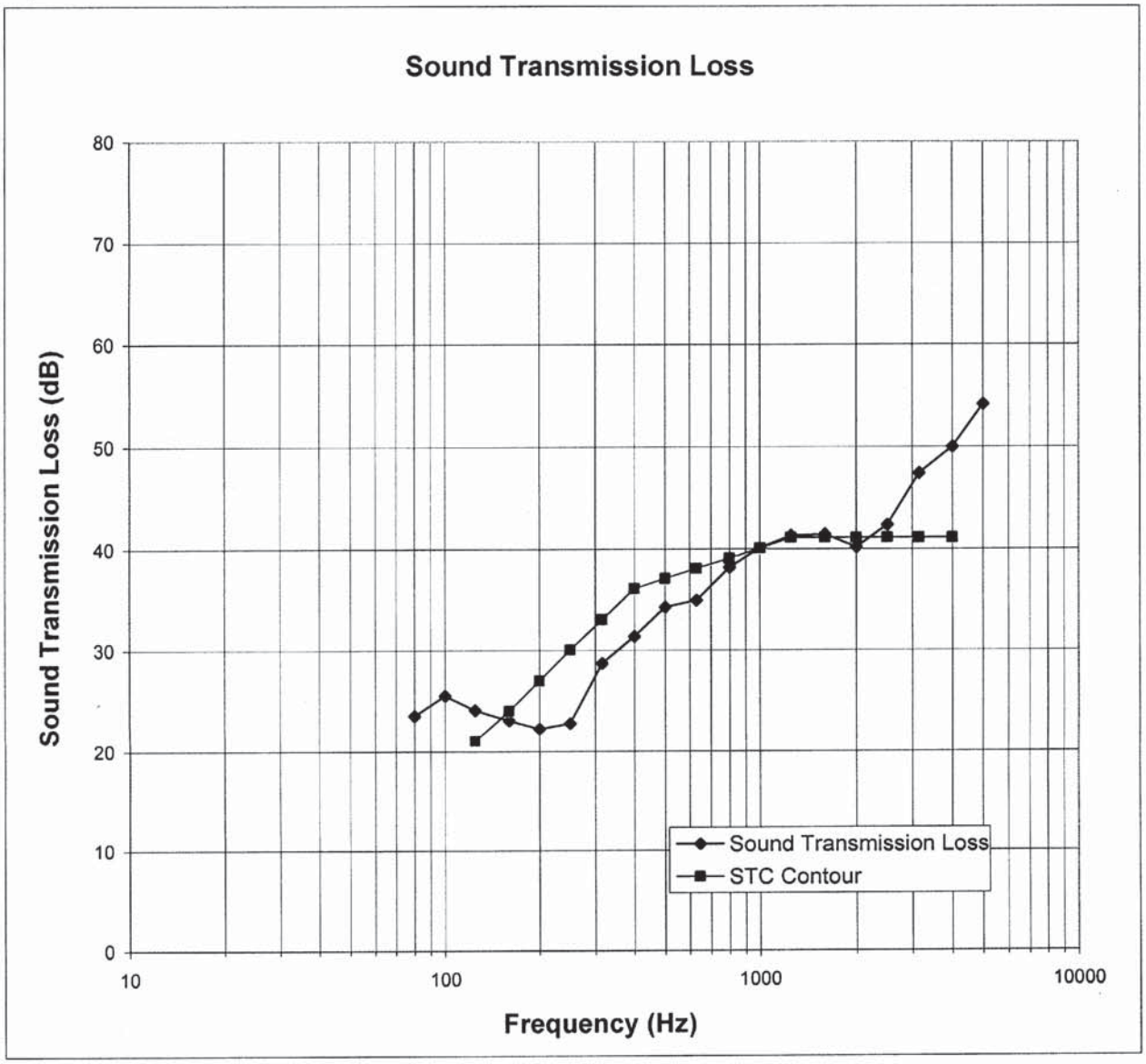
Architectural Testing

Architectural Testing

ATI No.	63088.01B	**Date**	03/28/06
Client	Kawneer Company, Inc.		
Specimen	Series/Model 1600 System 1, curtain wall with 1" IG (1/4" Laminated, 1/2" Air Space, 1/4" Laminated) Glass temp 74°F		
Specimen Area	43.07 Sq Ft		
Filler Area	96.93 Sq Ft		
Operator	Kurt A. Golden		



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AAMA 1801 Data Sheets

Architectural Testing

ATI Job Number :	63088.01-113-11
Client Name :	Kawneer Company, Inc.
Test Date :	3/28/2006
Tests Performed by:	Kurt Golden
Specimen Type :	Curtain Wall
Series/Model Number :	1600 System 1
Sample Size :	78-3/4" by 78-3/4"
Glazing:	1" IG (1/4" laminated, 1/2" air space, 1/4" laminated)

Architectural Testing

Air Leakage per ASTM test method ASTM E283

Total Air flow (ft^3/min) :	15.0		
Extraneous Leakage (ft3/min) :	13		
Temperature (^oF) at Specimen:	73		
Barometric Pressure at Specimen (in mbar):	1020	(Inches of Hg) :	30.12
Specimen Area in square feet :	43.07		
Density of air at reference standard conditions (lb/ft^3)	0.075		

Total air flow w/ air density correction (ft3/min)	Extraneous leakage with air density correction (ft3/min)	Air leakage through the specimen with air density correction (ft3/min)	Rate of air leakage per unit area (ft3/min)/sq.ft.
14.993	12.994	1.999	0.05

MID AMERICA TESTING LABORATORY, INC.

10525 SIGNAL HILL DRIVE • CATAWISSA, MISSOURI 63015
(314) 257-4722 • FAX (314) 257-5425

DATE OF REPORT:	August 31, 2000
LOCATION OF TEST:	Kawneer Company Inc.
DATES OF TESTING:	August 9 and August 18, 2000
SYSTEM NAME:	Series 1600 System 1 and 2 Curtain Wall
PROJECT NUMBER:	20111F
CLIENT:	Kawneer Company, Inc.

The following were present for all or portions of the erection and testing.

Mr. Richard Blaschke	Kawneer Company, Inc.
Mr. Richard Pahmiyer	Kawneer Company, Inc.
Mr. Bill Roden	Kawneer Company, Inc.
Mr. Wayne Whitmyer	Kawneer Company, Inc.
Mr. Greg McKenna	Kawneer Company, Inc.
Mr. Richard Braunstein	Kawneer Company, Inc.
Mr. Gene Keeton	Mid America Testing Laboratory

UNIT DESCRIPTION

The Kawneer Series 1600 System 1 / System 2, 2 1/2" X 7 1/2" curtain wall system measured a nominal 21'-9" wide X 27'-4" high. The system structure is comprised of captured and structurally glazed tubular vertical mullions and captured exterior glazed horizontal mullions.

The horizontal mullions were attached to the vertical mullions with a shear block connection. The shear blocks were attached to the verticals with two (2) #12 sheet metal screws. The horizontals were attached to the shear blocks with two (2) #12 sheet metal screws. The vertical to horizontal joinery was sealed with silicone sealant.

The mock-up was glazed with eight (8) lites of 1" insulated 1/4"-1/4" clear tempered units and twelve (12) lites of 1/4" clear tempered spandrel glass. All of the glass lites were outside glazed, of which one (1) intermediate vertical was structurally glazed.

All glazing was set on 85 durometer setting blocks located at quarter points. Each glass lite had a 65 durometer side block installed at the mid height. A 60 durometer EPDM preset gasket was used at the interior and exterior. Each gasket corner intersection was sealed with silicone sealant.

A pressure plate was applied with a 1/4" EPDM separator and fastened at 9" on center vertically and horizontally with 1/4" sheet metal screws.

Each daylight opening was compartmentalized to control water infiltration. At each horizontal to vertical intersection, a joint plug was sealed into place, with silicone sealant, to divert water to the horizontal weep locations. Each horizontal was weeped 4" from each end with 5/16" diameter holes. Each horizontal cover was also weeped at 2" from each end with a 5/16" diameter hole.

The system anchorage consisted of steel plate anchors welded to the chamber structure and through bolted to the curtain wall system with two (2) 1/2" bolts and lock nuts.

Any item not specifically mentioned in this unit description can be referenced in the mock-up drawings T162-930 sheets 1 through 17, dated 8-9-00.

FORMAL TESTING

1. **PRELOAD** +20.0 PSF static pressure (50% of the positive design load for 10 seconds).

   ALLOWED: No failure of the system

   RESULTS: No failure of the system

   The above result constitutes an acceptable performance.

2. **STATIC AIR INFILTRATION** (ASTM E 283) at 1.57 PSF (25 MPH wind and .3" H_20).

   ALLOWED: .06 CFM per square foot of fixed specimen or 35.7 CFM gross leakage.

RESULTS: Less than .06 CFM per square foot of fixed specimen.

The above results constitute an acceptable performance.

3. **STATIC AIR INFILTRATION** (ASTM E 283) at 6.24 PSF (50 MPH wind and 1.2" H_20).

ALLOWED: .06 CFM per square foot of fixed specimen or 35.7 CFM gross leakage.

RESULTS: Less than .06 CFM per square foot of fixed specimen.

The above results constitute an acceptable performance.

4. **STATIC WATER INFILTRATION** (ASTM E 331) at 15 PSF (77.5 MPH wind and 2.88" H_20) with a water spray rate of five (5) gallons per hour per square foot minimum for fifteen (15) minutes.

ALLOWED: No uncontrolled water leakage shall be allowed.

RESULTS: No uncontrolled water leakage was noted to the room side.

The above result constitutes an acceptable performance.

5. **DYNAMIC WATER INFILTRATION** (AAMA 501) 100 MPH slip stream velocity at the prop creating an equivalent pressure at the wall of 15 PSF. Water was applied at a rate of five (5) gallons per hour per square foot for fifteen (15) minutes.

ALLOWED: No uncontrolled water leakage shall be allowed.

RESULTS: No uncontrolled water leakage was noted to the room side.

The above result constitutes an acceptable performance.

6. **STRUCTURAL DESIGN LOAD** (ASTM E 330) Held for ten (10) seconds duration for both 50% and 100% loads.

+20.0 PSF (50% Positive Design Load)
+40.0 PSF (100% Positive Design Load)
-20.0 PSF (50% Negative Design Load)
-40.0 PSF (100% Negative Design Load)

ALLOWED: Deflection of framing members shall not exceed L/175 or .75" of the clear span or shall there be any failure of the system.

RESULTS: No member exceeded the allowable deflection or was there any failure of the system.

The above results constitute an acceptable performance.

7. **SEISMIC RACKING LATERAL** (AAMA 501.4) Three (3) complete cycles at design displacement with each cycle consisting of 1.32" horizontal movement to the left, return to zero (0), 1.32" horizontal movement to the right, return to zero (0).

ALLOWED: There shall be no failure of the system including anchors, frames, glass, and panels. Gaskets or seals may not fail.

RESULTS: There was no failure of the system including anchors, frames, glass, and panels. Gaskets and seals did not fail.

The above results constitute an acceptable performance.

8. **STATIC AIR INFILTRATION** (ASTM E 283) at 1.57 PSF (25 MPH wind and .3" H_20).

ALLOWED: .06 CFM per square foot of fixed specimen or 35.7 CFM gross leakage.

RESULTS: Less than .06 CFM per square foot of fixed specimen.

The above results constitute an acceptable performance.

9. **STATIC AIR INFILTRATION** (ASTM E 283) at 6.24 PSF (50 MPH wind and 1.2" H_20).

ALLOWED: .06 CFM per square foot of fixed specimen or 35.7 CFM gross leakage.

RESULTS: Less than .06 CFM per square foot of fixed specimen.

The above results constitute an acceptable performance.

10. **STATIC WATER INFILTRATION** (ASTM E 331) at 15 PSF (77.5 MPH wind and 2.88" H_20) with a water spray rate of five (5) gallons per hour per square foot minimum for fifteen (15) minutes.

ALLOWED: No uncontrolled water leakage shall be allowed.

RESULTS: No uncontrolled water leakage was noted to the room side.

The above result constitutes an acceptable performance.

11. **DYNAMIC WATER INFILTRATION** (AAMA 501) 100 MPH slip stream velocity at the prop creating an equivalent pressure at the wall of 15 PSF. Water was applied at a rate of five (5) gallons per hour per square foot for fifteen (15) minutes.

ALLOWED: No uncontrolled water leakage shall be allowed.

RESULTS: No uncontrolled water leakage was noted to the room side.

The above result constitutes an acceptable performance.

12. **STRUCTURAL PROOF LOAD** (ASTM E 330) Held for ten (10) seconds duration for both 75% and 150% loads. Readings were recorded at 150% loads only.

+30.0 PSF (75% Positive Design Load)
+60.0 PSF (150% Positive Design Load)
-30.0 PSF (75% Negative Design Load)
-60.0 PSF (150% Negative Design Load)

ALLOWED: Permanent set of framing members shall not exceed .2% of the clear span or shall there be any failure of the system.

RESULTS: No member exceeded the allowable permanent set criteria or was there any failure of the system.

The above results constitute an acceptable performance.

13. **SEISMIC RACKING LATERAL** (AAMA 501.4) Three (3) complete cycles at 150% of the design displacement with each cycle consisting of 1.98" horizontal movement to the left, return to zero (0), 1.98" horizontal movement to the right, return to zero (0).

ALLOWED: Sealant may tear, metal may yield, and glass may crack, but no components may fall from the test specimen.

RESULTS: Three (3) lites of glass cracked however no glass or any other components fell from the test specimen.

The above results constitute an acceptable performance.

SUMMARY:

The Kawneer 1600 System 1 / System 2 curtain wall mock-up as installed at Kawneer Company, Inc. has met or exceeded the test parameters to which it was subjected.

This report or any portions thereof may not be reproduced by anyone or forwarded to anyone without the written consent of Mid America Testing Laboratory. Participants referenced in this test report are welcome to a copy of this report if so desired by the laboratory's client.

Should you have any question regarding the test results or the mock-up in general please feel free to contact the laboratory.

Respectfully Submitted,

Mid America Testing Laboratory

Gene Keeton
Manager Technical Services

GK: ljk
20111F

Architectural Testing

NFRC U-FACTOR, SHGC / VT, CONDENSATION RESISTANCE COMPUTER SIMULATION REPORT

Rendered to:
KAWNEER COMPANY, INC.

SERIES/MODEL: 1600 System 1

Report No.: 84605.02-116-45
Original Report Date: 07/18/08

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Architectural Testing

NFRC U-FACTOR, SHGC / VT, CONDENSATION RESISTANCE
COMPUTER SIMULATION REPORT

Rendered to:
KAWNEER COMPANY, INC.
555 Guthridge Court
Norcross, Georgia 30092

Report No.:	84605.02-116-45
Simulation Date:	07/17/08
Original Report Date:	07/18/08

Project Summary: Architectural Testing, Inc. (ATI) was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed below.

**NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

Standards:

NFRC 100-2004:	*Procedure for Determining Fenestration Product U-Factors*
NFRC 200-2004:	*Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*
NFRC 500-2004:	*Procedure for Determining Fenestration Product Condensation*

Software:

Frame and Edge Modeling:	THERM 5.2.14
Center-of-Glass Modeling:	WINDOW 5.2.17
Total Product Calculations:	WINDOW 5.2.17
Spectral Data Library:	16.1

Simulation Specimen Description:

Series/Model:	1600 System 1
Type:	Glazed Wall System (site-built)
Frame Material:	Aluminum thermally broken-All members
Sash Material:	NA
Standard Size:	2000mm x 2000mm

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Technical Interpretations:

None

Modeling Assumptions:

1) To prevent air infiltration, tape was applied to all interior crack locations.

Specialty Products Table:

The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 5.2. The method gives overall product SHGC and VT indexed on center of glass properties.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.0156	0.019	0.0222
SHGC1	0.9126	0.8111	0.7158
VT0	0	0	0
VT1	0.897	0.792	0.6935

SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)

VT = VT0 + VTc (VT1 - VT0)

Validation Matrix:

The following products are part of a validation matrix. Only one is required for validation

Product Line	*Report Number*
None	-

Spacer Option Description

	Sealant		
Spacer Type	*Primary*	*Secondary*	*Desiccant*
Standard Aluminum Spacer (A1-D)	Butyl Rubber	Butyl Rubber	Yes

Grid Option Description

Grid Size	*Grid Type*	*Grid Pattern*
None	-	-

Reinforcement Option Description

Location	*Material*
None	-

Gas Filling Technique Description

Fill Type	*Method*
48.5% Argon	Single Probe
62.5% Argon	Single Probe
65.0% Argon	Single Probe
67% Argon	Single Probe
73.8% Argon	Single Probe
74.6% Argon	Single Probe
76% Argon	Single Probe
83% Argon	Single Probe
85.7% Argon	Single Probe
86% Argon	Single Probe
88.6% Argon	Single Probe
90.6% Krypton	Unspecified
84.5% Xenon	Dual Probe
94.6% Xenon	Unspecified

Edge-of-Glass Construction

Interior Condition	EPDM Gasket
Exterior Condition	EPDM Gasket

Finish

Interior Condition	Painted Aluminum
Exterior Condition	Painted Aluminum

Architectural Testing

NFRC 100/200/500 Summary Sheet
Kawneer Company, Inc.
1600 System 1

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e	Tint	Spacer	Grid Type
1*	1/4" Clear / 1/4" Clear, COG U-Factor = 0.4800, COG Temperature = 43.7 °F											
	0.225	0.500	0.225					OT		CL	A1-D	N
	U-Factor: 0.61			SHGC (N): 0.64					VT (N): 0.71			CR: 41
2*	1/4" Clear / 1/4" Clear, COG U-Factor = 0.4600, COG Temperature = 44.8 °F											
	0.225	0.500	0.225					ARG48.5		CL	A1-D	N
	U-Factor: 0.60			SHGC (N): 0.65					VT (N): 0.71			CR: 41
3	1/4" LOF Activ / 1/4" Clear, COG U-Factor = 0.4400, COG Temperature = 45.8 °F											
	0.222	0.500	0.225					XEN84.5		CL	A1-D	N
	U-Factor: 0.58			SHGC (N): 0.63					VT (N): 0.66			CR: 43
4	1/4" AFG P630 / 1/4" Clear, COG U-Factor = 0.4200, COG Temperature = 46.8 °F											
	0.222	0.500	0.225					ARG76		GY	A1-D	N
	U-Factor: 0.56			SHGC (N): 0.25					VT (N): 0.21			CR: 43
5	1/4" AFG GP120 / 1/4" Clear, COG U-Factor = 0.4000, COG Temperature = 47.9 °F											
	0.220	0.500	0.225					ARG85.7	0.566(#2)	GY	A1-D	N
	U-Factor: 0.55			SHGC (N): 0.25					VT (N): 0.18			CR: 44
6	1/4" AFG B720 / 1/4" Clear, COG U-Factor = 0.3800, COG Temperature = 48.9 °F											
	0.226	0.500	0.225					ARG83	0.471(#2)	AZ	A1-D	N
	U-Factor: 0.53			SHGC (N): 0.17					VT (N): 0.14			CR: 45
7	1/4" AFG GP108 / 1/4" Clear, COG U-Factor = 0.3600, COG Temperature = 50.0 °F											
	0.220	0.500	0.225					ARG88.6	0.395(#2)	GY	A1-D	N
	U-Factor: 0.51			SHGC (N): 0.14					VT (N): 0.06			CR: 46
8	1/4" GVB Sunergy / 1/4" Clear, COG U-Factor = 0.3400, COG Temperature = 51.0 °F											
	0.230	0.500	0.225					ARG73.8	0.298(#2)	LE	A1-D	N
	U-Factor: 0.50			SHGC (N): 0.47					VT (N): 0.54			CR: 46
9	1/4" PPG Sungate 500 / 1/4" Clear, COG U-Factor = 0.3200, COG Temperature = 52.0 °F											
	0.223	0.500	0.225					ARG65	0.215(#2)	LE	A1-D	N
	U-Factor: 0.48			SHGC (N): 0.57					VT (N): 0.66			CR: 47
10	1/4" LOF Solar E / 1/4" Clear, COG U-Factor = 0.3000, COG Temperature = 53.1 °F											
	0.233	0.500	0.225					ARG74.6	0.166(#2)	LE	A1-D	N
	U-Factor: 0.47			SHGC (N): 0.41					VT (N): 0.48			CR: 48
11	1/4" PPG Sungate 100 / 1/4" Clear, COG U-Factor = 0.2800, COG Temperature = 54.1 °F											
	0.223	0.500	0.225					ARG67	0.096(#2)	LE	A1-D	N
	U-Factor: 0.45			SHGC (N): 0.48					VT (N): 0.65			CR: 49

* Please note that these options cannot be certified per NFRC 100/200/500-2004

Mc Gowan Builders, Inc
180 Myrtle Av, Brooklyn, NY 11201
Submittal #: 085000-018-001NEW
Date 2/10/15
Reviewed By: SE

NFRC 100/200/500 Summary Sheet
Kawneer Company, Inc.
1600 System 1

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e	Tint	Spacer	Grid Type
12	1/4" Solarban 60 / 1/4" Clear, COG U-Factor = 0.2600, COG Temperature = 55.2 °F											
	0.223	0.500	0.225					ARG62.5	0.035(#2)	LE	A1-D	N
	U-Factor: 0.43			SHGC (N): 0.35					VT (N): 0.63			CR: 50
13	1/4" Solarban 60 / 1/4" Solarban 60, COG U-Factor = 0.2400, COG Temperature = 56.3 °F											
	0.223	0.500	0.223					ARG86	0.035(#2) / 0.035(#3)	LE	A1-D	N
	U-Factor: 0.42			SHGC (N): 0.33					VT (N): 0.56			CR: 51
14*	1/4" Solarban 70XL-Strph / 1/4" Solarban 70XL-Strph, COG U-Factor = 0.2200, COG Temperature = 57.3 °F											
	0.223	0.500	0.223					KRY90.6	0.018(#2) / 0.018(#3)	LE	A1-D	N
	U-Factor: 0.40			SHGC (N): 0.24					VT (N): 0.47			CR: 53
15*	1/4" Solarban 70XL-Strph / 1/4" Solarban 70XL-Strph, COG U-Factor = 0.2000, COG Temperature = 58.4 °F											
	0.223	0.500	0.223					XEN94.6	0.018(#2) / 0.018(#3)	LE	A1-D	N
	U-Factor: 0.38			SHGC (N): 0.24					VT (N): 0.47			CR: 52

* Please note that these options cannot be certified per NFRC 100/200/500-2004

This simulation method does not include procedures to determine the Condensation Resistance due to either air movement through the specimen or solar radiation effects. As a consequence, the Condensation Resistance results obtained do not reflect performance which may be expected from field installations because they do not account for solar radiation, air leakage effects, and the thermal bridge effects that may occur due to the specific design and construction of the fenestration system opening. Therefore, it should be recognized that the Condensation Resistance results obtained from this simulation method are for controlled laboratory conditions and should only be used for fenestration product comparisons and as input to condensation resistance performance analyses, which also include solar, air leakage and thermal bridge effects.

Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes.

Detailed drawings, simulation data disks, and a copy of this report will be retained by ATI for a period of four years. The above results are the exclusive property of the client so named herein and are applicable to the sample simulated. ATI is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through actual test results. This report does not constitute an opinion or endorsement by this laboratory. This report may not be reproduced except in full without the approval of ATI.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

Jason A. Mitzel

Digitally Signed by: Jason A. Mitzel

Jason A. Mitzel
Simulation Technician

REVIEWED BY:

Michael J. Thoman

Digitally Signed by: Michael J. Thoman

Michael J. Thoman
Director - Simulations and Thermal Testing
Simulator In Responsible Charge

JAM : kmm
84605.02-116-45

Attachments (pages):

Appendix A: Drawings and Bills of Material (3)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
.02 R0	7/18/2008	All	Original Report Issue

Architectural Testing

AAMA 507-07 THERMAL PERFORMANCE REPORT

Rendered to:

KAWNEER COMPANY INC.

SERIES/MODEL: 1600 System 1
TYPE: Glazed Wall System

Report No: 84605.01-116-45
Report Date: 07/18/08

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Architectural Testing

AAMA 507-07 THERMAL PERFORMANCE REPORT

Rendered to:

KAWNEER COMPANY INC.
555 Guthridge Court
Norcross, Georgia 30092

Report No: 84605.01-116-45
Report Date: 07/18/08

Project Summary:

Architectural Testing, Inc. (ATI) was contracted by Kawneer Company Inc. to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the 1600 System 1 Glazed Wall System. The thermal performance ratings were determined in accordance with AAMA 507-07, *Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings.*

Reference Documents:

AAMA 507-07, *Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings*

NFRC 100-2004, *Procedure for Determining Fenestration Product U-Factors*

NFRC 200-2004, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*

NFRC Technical Interpretation TI-2003-12, *Curtain Wall Simulation*

Simulation Specimen Description:

Series/Model:	1600 System 1
Type:	Glazed Wall System
Frame Material:	Aluminum Thermally Broken Framing System
Specimen Size:	2000mm wide by 2000mm high (78-3/4" by 78-3/4")
Configuration:	Two vision lites separated by one intermediate vertical
Drawing Reference:	Kawneer Drawing T162-928 Sheets 1-3, dated 11/22/05

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
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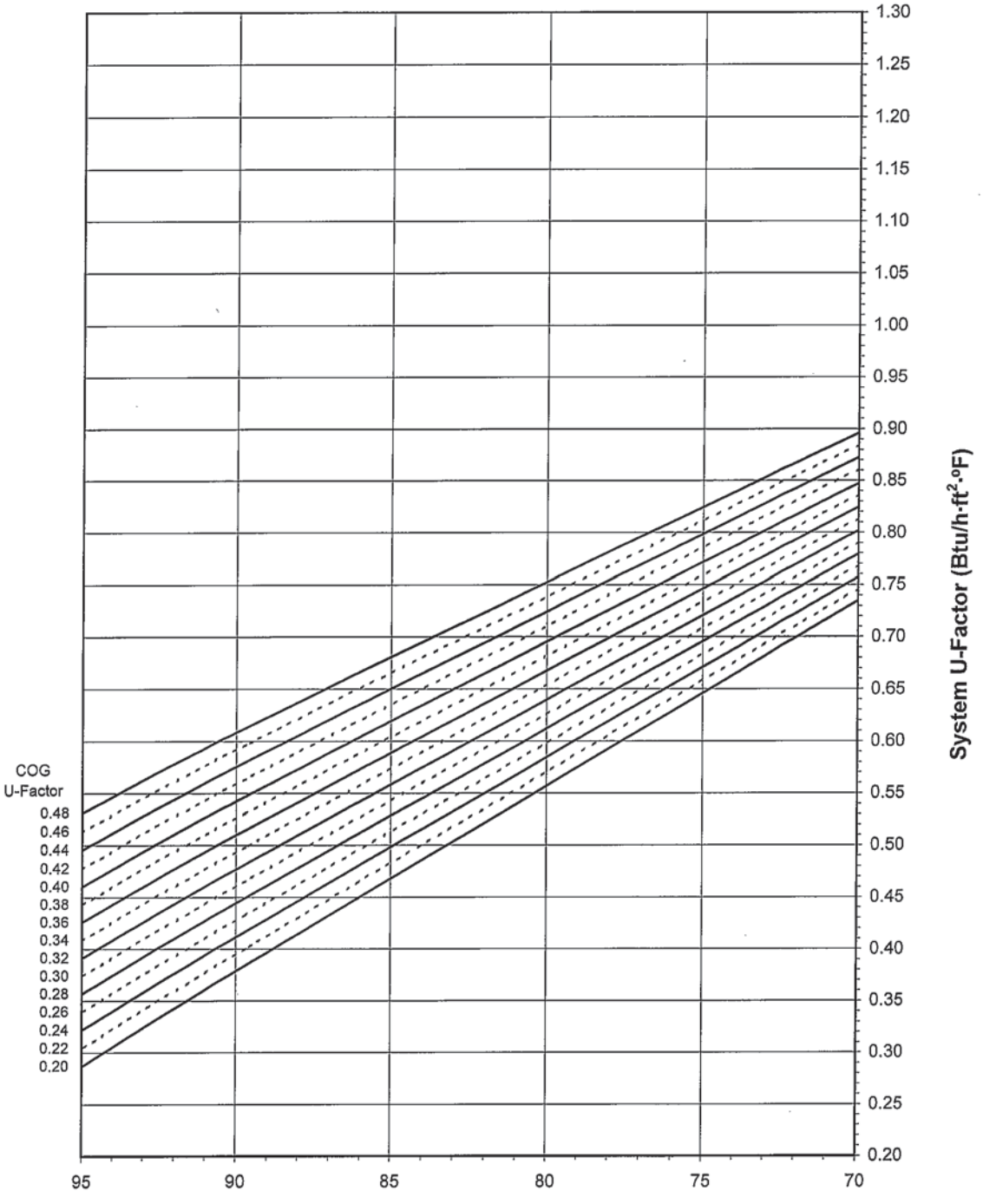
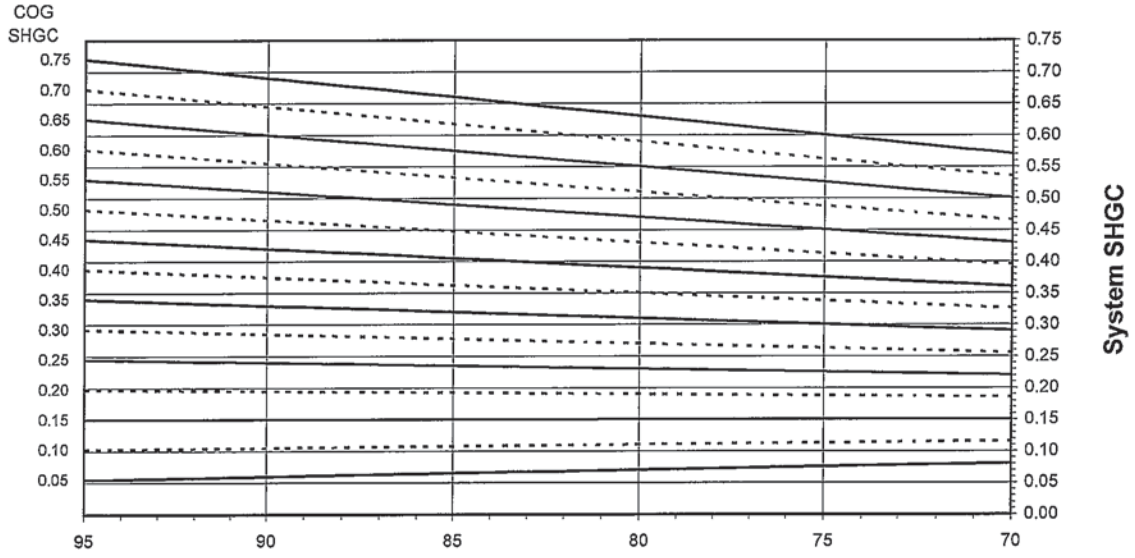
Kawneer Company Inc.
1600 System 1 - Glazed Wall System

System U-Factor vs. Percentage of Vision Area



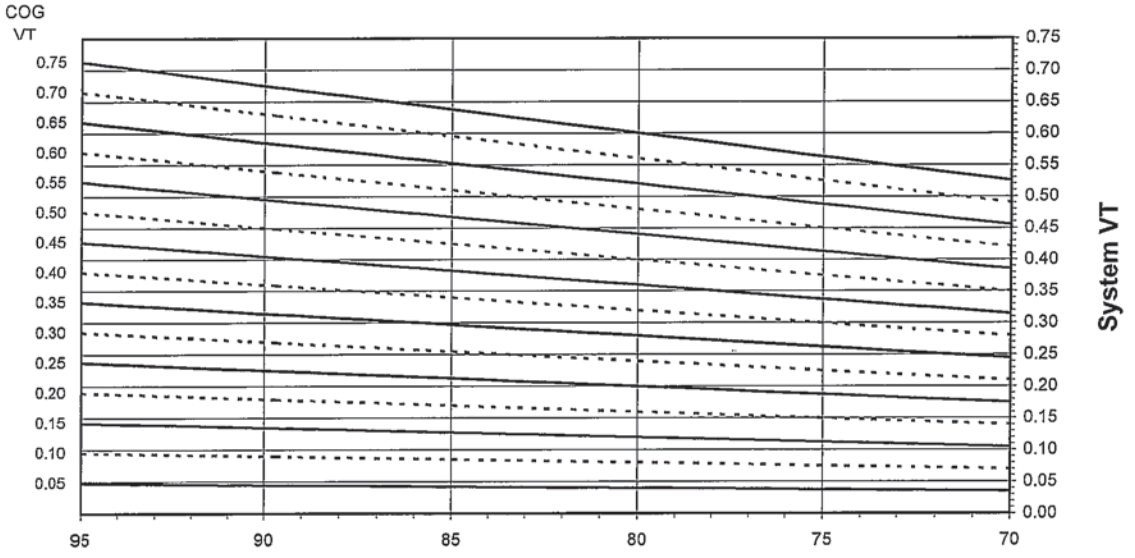
Kawneer Company Inc.
1600 System 1 - Glazed Wall System

System SHGC vs. Percentage of Vision Area



Vision Area / Total Area (%)

System VT vs. Percentage of Vision Area



Vision Area / Total Area (%)

Kawneer Company Inc.
1600 System 1 - Glazed Wall System

Size Specific U-Factor Matrix*

Glazing Option	Center of Glass U-Factor	Overall U-Factor
1	0.48	0.61
2	0.46	0.60
3	0.44	0.58
4	0.42	0.56
5	0.40	0.55
6	0.38	0.53
7	0.36	0.51
8	0.34	0.50
9	0.32	0.48
10	0.30	0.47
11	0.28	0.45
12	0.26	0.43
13	0.24	0.42
14	0.22	0.40
15	0.20	0.38

Size Specific SHGC Matrix*

Center of Glass SHGC	Overall SHGC
0.75	0.69
0.70	0.64
0.65	0.60
0.60	0.55
0.55	0.51
0.50	0.46
0.45	0.42
0.40	0.37
0.35	0.33
0.30	0.28
0.25	0.24
0.20	0.20
0.15	0.15
0.10	0.11
0.05	0.06

Size Specific VT Matrix*

Center of Glass VT	Overall VT
0.75	0.67
0.70	0.63
0.65	0.58
0.60	0.54
0.55	0.49
0.50	0.45
0.45	0.40
0.40	0.36
0.35	0.31
0.30	0.27
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04

*Size Specific U-Factor, SHGC, and VT Matrices are based on the standard Glazed Wall System specimen size of 2000mm wide by 2000mm high (78-3/4" by 78-3/4"). This represents 89.7% Vision Area / Total Area.

Architectural Testing

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							70% Vision Area	*NFRC 100-2004*	*95% Vision Area*
							25.69" by 25.69"	*78.74" by 78.74"*	*164.17" by 164.17"*
1	0.48	43.7	Head	1.3837	1.8330	0.4581	0.8961	0.6128	0.5311
			Vertical	2.7674	1.9254	0.4549			
			Sill	1.3837	1.8329	0.4581			
2	0.46	44.8	Head	1.3837	1.8322	0.4442	0.8843	0.5965	0.5132
			Vertical	2.7674	1.9246	0.4412			
			Sill	1.3837	1.8320	0.4443			
3	0.44	45.8	Head	1.3837	1.8314	0.4305	0.8726	0.5802	0.4954
			Vertical	2.7674	1.9239	0.4274			
			Sill	1.3837	1.8312	0.4305			
4	0.42	46.8	Head	1.3837	1.8306	0.4169	0.8610	0.5640	0.4777
			Vertical	2.7674	1.9233	0.4139			
			Sill	1.3837	1.8304	0.4169			
5	0.40	47.9	Head	1.3837	1.8300	0.4033	0.8477	0.5472	0.4601
			Vertical	2.7674	1.9143	0.4002			
			Sill	1.3837	1.8298	0.4033			
6	0.38	48.9	Head	1.3837	1.8294	0.3898	0.8362	0.5309	0.4430
			Vertical	2.7674	1.9138	0.3868			
			Sill	1.3837	1.8293	0.3899			
7	0.36	50.0	Head	1.3837	1.8289	0.3763	0.8247	0.5146	0.4259
			Vertical	2.7674	1.9134	0.3733			
			Sill	1.3837	1.8288	0.3764			
8	0.34	51.0	Head	1.3837	1.8285	0.3631	0.8133	0.4983	0.4086
			Vertical	2.7674	1.9131	0.3601			
			Sill	1.3837	1.8284	0.3631			
9	0.32	52.0	Head	1.3837	1.8282	0.3497	0.8019	0.4819	0.3914
			Vertical	2.7674	1.9129	0.3468			
			Sill	1.3837	1.8279	0.3498			
10	0.30	53.1	Head	1.3837	1.8279	0.3366	0.7907	0.4657	0.3741
			Vertical	2.7674	1.9128	0.3337			
			Sill	1.3837	1.8278	0.3367			
11	0.28	54.1	Head	1.3837	1.8277	0.3234	0.7794	0.4493	0.3566
			Vertical	2.7674	1.9127	0.3205			
			Sill	1.3837	1.8276	0.3234			
12	0.26	55.2	Head	1.3837	1.8276	0.3102	0.7682	0.4329	0.3391
			Vertical	2.7674	1.9127	0.3074			
			Sill	1.3837	1.8276	0.3102			
13	0.24	56.3	Head	1.3837	1.8276	0.2971	0.7571	0.4167	0.3218
			Vertical	2.7674	1.9127	0.2944			
			Sill	1.3837	1.8275	0.2972			
14	0.22	57.3	Head	1.3837	1.8274	0.2842	0.7460	0.4003	0.3043
			Vertical	2.7674	1.9127	0.2815			
			Sill	1.3837	1.8274	0.2842			
15	0.20	58.4	Head	1.3837	1.8275	0.2711	0.7349	0.3840	0.2868
			Vertical	2.7674	1.9129	0.2684			
			Sill	1.3837	1.8275	0.2712			

Detailed drawings, simulation data disks, and a copy of this report will be retained by ATI for a period of four years. The above results are the exclusive property of the client so named herein and are applicable to the sample simulated. This report does not constitute an opinion or endorsement by this laboratory. This report may not be reproduced except in full without the approval of ATI.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

Jason A. Mitzel

Digitally Signed by: Jason A. Mitzel

Jason Mitzel
Simulation Technician

REVIEWED BY:

Michael J. Thoman

Digitally Signed by: Michael J. Thoman

Michael J. Thoman
Director - Simulations and Thermal Testing
Simulator In Responsible Charge

JAM:ksl
84605.01-116-45

Attachments (pages):

Appendix A: Drawings and Bills of Material (3)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
.01 R0	7/18/2008	All	Original Report Issue

841
95438-42

AAMA 1503-98 THERMAL PERFORMANCE TEST REPORT

Rendered to:

KAWNEER COMPANY, INC.

SERIES/MODEL: 1600 System 1
TYPE: Thermally Broken Aluminum
Two-Lite Curtain Wall System

Report No: 01-37422.08
Report Date: 06/11/01

Architectural Testing

AAMA 1503-98 THERMAL PERFORMANCE TEST REPORT

Rendered to:

KAWNEER COMPANY, INC.
Technology Park/Atlanta
555 Guthridge Court
Norcross, Georgia 30092-3503

Report No: 01-37422.08
Test Date: 05/05/00
Report Date: 06/11/01

Test Sample Identification:

Series/Model: 1600 System 1

Type: Thermally Broken Aluminum Two-Lite Curtain Wall System

Test Procedure: The condensation resistance factor (CRF) and thermal transmittance (U) were determined in accordance with AAMA 1503-98, *Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections*.

1. Average warm side ambient temperature	70.0 F
2. Average cold side ambient temperature	0.0 F
3. 15 mph dynamic wind applied to test specimen exterior.	
4. 0.0" ±0.04" static pressure drop across specimen.	

Test Results Summary:

1. Condensation resistance factor - Frame (CRF_f)	66
Condensation resistance factor - Glass (CRF_g)	60
2. Thermal transmittance due to conduction (U_c)	0.66
(U-factors expressed in Btu/hr·ft^2·F)	

130 Derry Court
York, PA 17402-9405
phone: 717.764.7700
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Test Sample Description:

Construction:

	Frame
Size	80.00" x 80.00" Nominal Depth: 6.5"
CORNERS	Coped
Fasteners	Screws
Sealant	Corners
MATERIAL	AT (Exterior trim covers)
Color Exterior	Gray
Finish Exterior	Anodized
Color Interior	Gray
Finish Interior	Anodized
GLAZING METHOD	Interior Pocket [Daylight opening (2): 35.88" x 74.50"]

Glazing: (Sheet #1 is Exterior Sheet)

	Sheet #1	Gap #1	Sheet #2
THICKNESS	0.226"	0.540"	0.224"
COATING EMISSIVITY	NA	NA	NA
COATING SURFACE	NA	NA	NA
SPACER/SEALANT	NA	A1	NA
MATERIAL	Tempered	Air*	Tempered

Gas Filling Technique*: NA

** - Stated per Client/Manufacturer NA-Non Applicable See Appendix A for Description Codes*

Test Sample Description: (Continued)

Components:

Type	Quantity	Location
WEATHERSTRIP		
Flexible glazing gasket	1 Row	Interior and exterior perimeter of each lite
HARDWARE		
No hardware		
DRAINAGE		
0.38" diameter weep hole	6	Sill
0.38" diameter weep hole	6	Sill trim cover

Condensation Resistance Factor:

1. Environmental systems started at 1700 hr., 05/04/00.

2. System was determined to be stable between 0357 and 0557 hr., 05/05/00.

The following information, condensed from the test data, was used to determine the condensation resistance factor:

T_h	= Warm side ambient air temperature	70.0	F
T_c	= Cold side ambient air temperature	0.0	F
FT_p	= Average of pre-specified frame temperatures (14)	46.5	F
FT_r	= Average of roving thermocouples (4)	40.0	F
W	= $(FT_p - FT_r) / [FT_p - (T_c + 10)] \times 0.40$	0.072	
FT	= $FT_p(1-W) + W(FT_r)$ = Frame Temperature	46.1	F
GT	= Glass Temperature	42.3	F
CRF_g	= Condensation resistance factor - Glass $CRF_g = (GT - T_c) / (T_h - T_c) \times 100$	60	
CRF_f	= Condensation resistance factor - Frame $CRF_f = (FT - T_c) / (T_h - T_c) \times 100$	66	

Condensation Resistance Factor: (Continued)

The CRF number was determined to be 61. When reviewing this test data, it should be noted that the glass temperature (GT) was colder than the frame temperature (FT) therefore controlling the CRF number. Attached to this report is a copy of the "CRF Data Sheet" and the "Thermocouple Location Diagram" indicating average surface temperatures.

Thermal Transmittance:

Nominal sample area			44.44	ft^2
Total measured input to calorimeter			2210.2	Btu/hr
Calorimeter correction			154.1	Btu/hr
Net specimen heat loss			2056.1	Btu/hr
T_h	=	Average warm side ambient temperature	70.0	F
T_c	=	Average cold side ambient temperature	0.0	F
P	=	Static pressure difference across test specimen	0.0	psf
		15 mph dynamic perpendicular wind at exterior		
U_c	=	Thermal Transmittance	0.66	$Btu/hr \cdot ft^2 \cdot F$

Glazing Deflection:

	Interior Left Glazing	Interior Right Glazing
Glazing thickness at edge	0.99"	0.99"
Center glazing thickness upon receipt of specimen in laboratory (after stabilization)	0.97"	1.02"
Center glazing thickness at laboratory ambient conditions on day of testing	0.97"	1.02"
Center glazing thickness at test conditions	0.94"	0.97"

The test sample was inspected for the formation of frost or condensation which may influence the surface temperature measurements. Any observed condensation/frost is indicated on the attached drawing.

A calibration of the York, Pennsylvania, ATI "thermal test chamber" was conducted in January 2000.

Detailed drawings, representative samples of the test specimen and a copy of this report will be retained by ATI for a period of four years. This report is the exclusive property of the client so named herein and is applicable to the sample tested. This report may not be reproduced, except in full, without the approval of the laboratory. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory.

For ARCHITECTURAL TESTING, INC.

Timothy M. Sindlinger
Technician

Michael J. Thoman
Director - Simulation/Thermal Testing

TMS:tms/tjp/nlb
01-37422.08

ITS Intertek Testing Services
ETL SEMKO

REPORT NO: 3010691-1
CLIENT NO: 10525
DATE: November 22, 2001

DESCRIPTION: **Testing of a Curtain Wall Vision Area**

CLIENT: **Kawneer Company Canada Ltd.**
1051 Ellesmere Road
Scarborough, Ontario
M1P 2X1

ATTENTION: Mr. Jim Watson

Introduction

This report covers condensation resistance testing carried out on a curtain wall section submitted November 2, 2001 for performance evaluation. Testing was performed in accordance with **CSA-A440-00.**

Description

Designation: 1600 Series Curtain Wall Vision Area.

Type: Thermally broken aluminum curtain wall vision area with one fixed lite.

Supplier: Kawneer Company Canada Limited.

Frame: The curtain wall section consisted of extruded aluminum main framing members 63.5 mm (2-1/2") wide by 133 mm (5-1/4") deep with extruded aluminum pressure plates and snap on trim caps on the exterior. Aluminum brackets (shear blocks) supported the corners. The shear blocks were fastened to the vertical members using two #8 x 44.5 mm (1-3/4") long pan head screws through the side of each member, and to each end of the horizontal members using two #10 by 19 mm (3/4") long flat head screws.

contd.....

Intertek Testing Services NA Ltd.
3210 American Drive, Mississauga, Ontario Canada L4V 1B3
Telephone 905-678-7820 Fax 905-678-7131

Warnock Hersey

CLIENT: **Kawneer Company Canada Ltd.** REPORT NO: 3010691-1
DATE: November 22, 2001 - 2 of 5- CLIENT NO: 10525

Description (contd)

Frame: (contd)

Sealant was applied to the front (exterior) face of the shear blocks at the vertical frame members prior to fitting of the horizontals, and extended along the top and bottom of the blocks toward the interior for approximately 19 mm (3/4"). The ends of the horizontal members were sealed to the verticals on the exterior. Neoprene corner plugs were installed at the ends of each horizontal member between the end of the nosing and the nosing of the adjacent vertical member. The corner plugs were liberally sealed to adjacent members. A thermal break gasket measuring 6.4 mm (1/4") thick was installed into the screw port kerf of all members. Rigid Styrofoam blocking was sealed to the perimeter edge between the underside of the pressure plates and the glazing nose on the framing. The assembled unit was installed into an aluminum test buck using twelve screws per main frame member. The frame was sealed to the buck with sealant sandwiched between the buck members and main frame members.

Overall Size: 2159 mm wide by 2159 mm high
(85" by 85")

Glazing Method: Laid in glazed from the exterior on a 8 mm (5/16") thick EPDM gasket with the corners of the gasket sealed for approximately 76 mm (3") from the corners to the adjacent frame members (including in the gasket retaining track) and glazing gasket. The glazing was retained on the exterior with extruded aluminum pressure plates fitted with an 8 mm (5/16") thick EPDM gasket. The ends of the pressure plates and their gaskets were sealed to the adjacent pressure plates and corresponding gaskets. The pressure plates were retained by ¼-20 x 15.9 mm (5/8") long hex head machine screws on approximate 152 mm (6") centers. The pressure plates were complete with snap on extruded aluminum trim caps.

Glazing: Factory sealed glazing units having two sheets of 6 mm (1/4") glass, and a 12.7 mm (1/2") air space and a aluminum spacer.

Igmac Identification: Igmac 028925 Clearex Toronto 1991

contd.....

CLIENT: **Kawneer Company Canada Ltd.** REPORT NO: 3010691-1
DATE: November 22, 2001 - 3 of 5- CLIENT NO: 10525

Description (contd)

Weep Holes: Two slots measuring 25.4 mm (1") wide by 7.9 mm (5/16") high in each horizontal pressure plate drained the each glazing cavity to the corresponding trim cap. The slots were located 152 mm (6") on center from each end of the pressure plates. Two holes measuring 11 mm (7/16") in diameter drained each horizontal trim cap to the exterior. These slots were located 102 mm (4") on center from the ends of the caps.

Drawings:

Cross Section: Kawneer Drawing No. T162-TU2 Page 1 of 3.

Member Details: Kawneer Drawing No. T162-TU2 Page 2 of 3 and Page 3 of 3.

contd...

Testing

Condensation Resistance Test Tested: November 7-14, 2001

The test was performed using Intertek Testing Services NA Ltd's ENSIC test facility which was patterned on the equipment used by the National Research Council's Division of Building Research. A description of the ENSIC facility is attached in Appendix I.

The curtain wall section was installed in an opening in the expanded polystyrene insulation which lines the specimen carrier frame. The edges of the window were sealed to the polystyrene using tape and/or spray in place foam to preclude air leakage at the perimeter. Following instrumentation, the chambers were closed and sealed at the perimeter to each side of the specimen carrier frame. The baffle, 8' by 8' in size, was positioned in front of the interior side of the casement window. The interior side air temperature was maintained at room temperature. Data was collected every 10 minutes to verify the specimen had come to equilibrium with the air temperature.

The calculation of the condensation resistance rating is shown in Appendix II of this report.

Under the equilibrium conditions of –30.0°C (-22.0°F) exterior and 20.0°C (68.0°F) interior air temperatures, the temperature distribution on the interior surface is shown on drawing number 3010691-1-1 attached.

With the lowest average frame temperature (T_f) of 3.7°C (38.8°F), and the lowest averaged glass temperature (T_g) of -2.9°C (26.8°F), and using the method for the temperature index (I), the frame index (I_f) and glass index (I_g) were calculated to be:

$$I_f = 68$$

$$I_g = 54$$

The curtain wall section achieved a temperature index rating I of 54*.

* Based on the lowest temperature index obtained.

contd.....

CLIENT: **Kawneer Company Canada Ltd.** REPORT NO: 3010691-1
DATE: November 22, 2001 - 5 of 5- CLIENT NO: 10525

Conclusions The curtain wall section described herein achieved a Temperature Index of I = 54 when tested to **CSA-A440-00.**

Tested by: Michael MacDonald and Mustafa Swalah
Reported by: Michael MacDonald

Respectfully submitted,

Intertek Testing Services NA Ltd.

Michael MacDonald
Physical Testing Services

Reviewed by:

Vern Jones
Manager
Physical Testing Laboratory

MGM/MS:mgm
2cc Client
encl.

Architectural Testing

AAMA 1503-98 THERMAL PERFORMANCE TEST REPORT

(Revised)

Rendered to:

KAWNEER COMPANY, INC.

SERIES/MODEL: 1600 System 1

TYPE: Glazed Wall Systems (Site-built)

Summary of Results	
Thermal Transmittance (U-Factor)	0.43
Condensation Resistance Factor - Frame (CRFf)	71
Condensation Resistance Factor - Glass (CRFg)	71
Glazing Description:	1/4" PPG Solarban 60 (e=0.035, #2) Tempered, 0.54" Gap, Azon Warm-Light Poured & Debridged Spacer (A2), 90% Argon Filled*, 1/4" Clear Tempered

Reference should be made to ATI Report No. 62929.02-116-46 for complete test specimen description and data.

130 Derry Court
York, PA 17406-8405
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Architectural Testing

AAMA 1503-98 THERMAL PERFORMANCE TEST REPORT

(Revised)

Rendered to:

KAWNEER COMPANY, INC.
555 Guthridge Court
Norcross, Georgia 30092

Report No:	62929.02-116-46
Test Date:	03/18/06
Report Date:	04/12/06
Revised Report Date:	02/28/07

Test Sample Identification:

Series/Model: 1600 System 1

Type: Glazed Wall Systems (Site-built)

Test Procedure: The condensation resistance factor (CRF) and thermal transmittance (U) were determined in accordance with AAMA 1503-98, *Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections*

1. Average warm side ambient temperature	69.80 F
2. Average cold side ambient temperature	-0.40 F
3. 15 mph dynamic wind applied to test specimen exterior.	
4. 0.0" $\pm$0.04" static pressure drop across specimen.	

Test Results Summary:

1. Condensation resistance factor - Frame (CRF_f)	71
Condensation resistance factor - Glass (CRF_g)	71
2. Thermal transmittance due to conduction (U_c)	0.43
(U-factors expressed in Btu/hr-ft^2-F)	

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Test Sample Description:

CONSTRUCTION	**Frame**
Size(in.)	78-3/4" x 78-3/4"
Daylight Opening (in.) x 2	36-5/8" x 73-3/4" (x2)
CORNERS	Butted
Fasteners	Screws
Sealant	No
MATERIAL	AT (0.25)
Color Exterior	Gray
Finish Exterior	Anodized
Color Interior	Gray
Finish Interior	Anodized
GLAZING METHOD	Exterior Pressure Plate

Glazing Information

Layer 1	1/4" PPG Solarban 60 (e=0.035, #2) Tempered
Gap 1	0.54" Gap, Azon Warm-Light Poured & Debridged Spacer (A2), 90% Argon Filled*
Layer 2	1/4" Clear Tempered
Gas Fill Method	Single-Probe Timed*

**Stated per Client/Manufacturer*
NA Non-Applicable
See Description Table Abbreviations

Test Sample Description: (Continued)

COMPONENTS		
Type	**Quantity**	**Location**
WEATHERSTRIP		
EPDM wedge gasket	1 row	Exterior glazing perimeter
EPDM compression gasket	1 row	Interior glazing perimeter
HARDWARE		
Aluminum trim caps	7	Three vertical, and four horizontal
1.25" x 0.88" wood blocking	4	Head, sill, and jambs
DRAINAGE		
(0.50") weephole	8	Two per horizontal trim cap

Test Duration:

1. The environmental systems were started at 8:13 hrs., 03/17/06

2. The thermal performance test results were derived from 06:15 hrs., 03/18/06 to 08:15 hrs., 03/18/06.

Condensation Resistance Factor (CRF):

The following information, condensed from the test data, was used to determine the condensation resistance factor:

T_h	=	Warm side ambient air temperature	69.80 F
T_c	=	Cold side ambient air temperature	-0.40 F
FT_p	=	Average of pre-specified frame temperatures (14)	49.68 F
FT_r	=	Average of roving thermocouples (4)	44.73 F
W	=	$(FT_p - FT_r) / [FT_p - (T_c + 10)] \times 0.40$	0.049
FT	=	$FT_p(1-W) + W(FT_r)$ = Frame Temperature	49.44 F
GT	=	Glass Temperature	49.66 F
CRF_g	=	Condensation resistance factor – Glass	71
		$CRF_g = (GT - T_c) / (T_h - T_c) \times 100$	
CRF_f	=	Condensation resistance factor – Frame	71
		$CRF_f = (FT - T_c) / (T_h - T_c) \times 100$	

The CRF number was determined to be 71 (on the size as reported). When reviewing this test data, it should be noted that the frame temperature (FT) was colder than the glass temperature (GT) therefore controlling the CRF number. Refer to the 'CRF Report' page and the 'Thermocouple Location Diagram' page of this report.

Thermal Transmittance (U_c):

T_h = Average warm side ambient temperature	69.80	F
T_c = Average cold side ambient temperature	-0.40	F
P = Static pressure difference across test specimen	0.00	psf
15 mph dynamic perpendicular wind at exterior		
Nominal sample area	43.07	ft^2
Total measured input to calorimeter	1326.62	Btu/hr
Calorimeter correction	24.15	Btu/hr
Net specimen heat loss	1302.47	Btu/hr
U_c = Thermal Transmittance	0.43	Btu/hr-ft^2-F

Glazing Deflection (in.):

	Left Glazing*	Right Glazing*
Actual Gap Width	0.53	0.54
Effective gap width upon receipt of specimen in laboratory (after stabilization)	0.55	0.52
Effective gap width at laboratory ambient conditions on day of testing	0.55	0.52
Effective gap width at test conditions	0.43	0.39

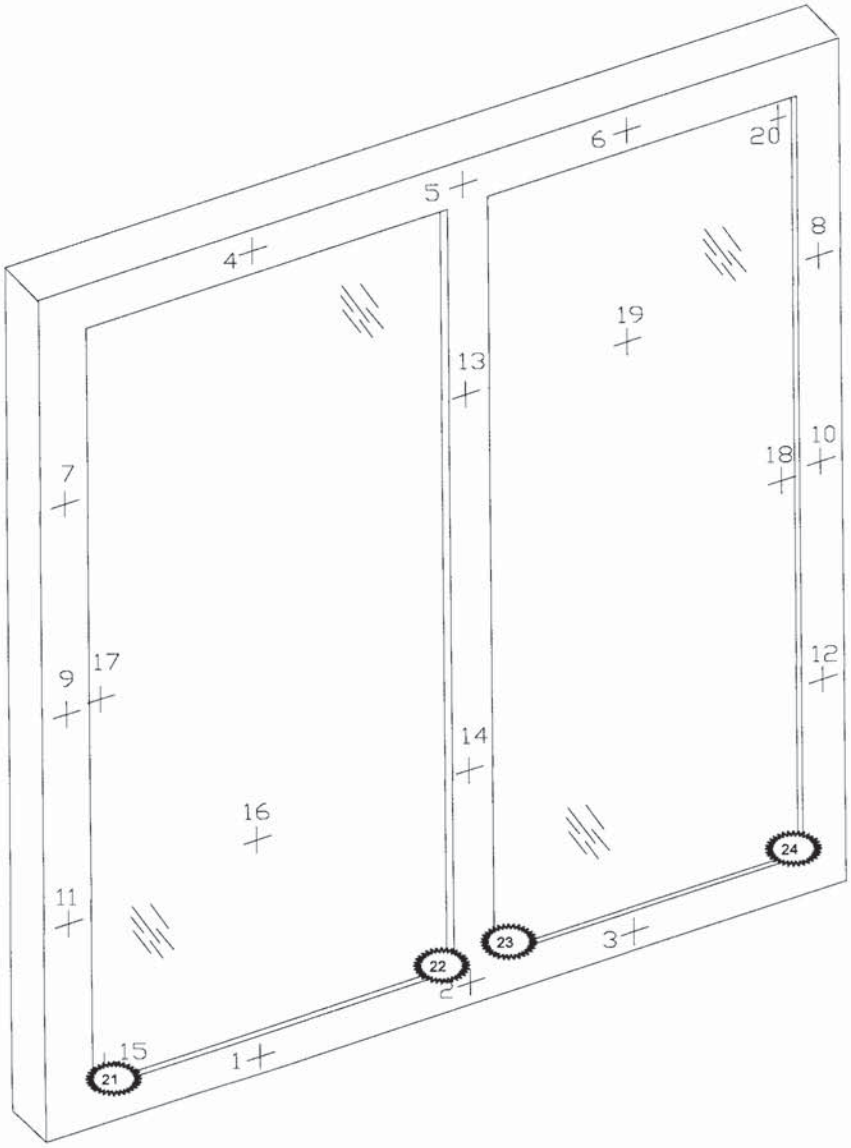
The test sample was inspected for the formation of frost or condensation which may influence the surface temperature measurements. Any observed condensation/frost is indicated on the 'Thermocouple Location Diagram.'

A calibration of the ATI 'thermal test chamber' in York, Pennsylvania was conducted in May 2004.

CRF Report

Time:	06:15	06:45	07:15	07:45	08:15	AVERAGE
Pre-specified Thermocouples - Frame						
1	46.65	46.63	46.68	46.60	46.59	46.63
2	46.85	46.82	46.84	46.81	46.81	46.83
3	46.80	46.76	46.80	46.90	46.81	46.81
4	52.33	52.30	52.32	52.35	52.37	52.33
5	52.56	52.57	52.54	52.54	52.58	52.56
6	52.72	52.68	52.71	52.72	52.69	52.70
7	50.56	50.59	50.63	50.67	50.61	50.61
8	51.18	51.15	51.15	51.10	51.17	51.15
9	48.93	48.98	49.02	48.99	48.95	48.97
10	49.30	49.28	49.24	49.26	49.29	49.27
11	46.69	46.69	46.67	46.67	46.72	46.69
12	46.26	46.27	46.24	46.26	46.23	46.25
13	54.20	54.20	54.19	54.19	54.17	54.19
14	50.59	50.53	50.59	50.56	50.58	50.57
FTP	49.69	49.68	49.69	49.69	49.68	49.68
Pre-specified Thermocouples - Glass						
15	40.16	40.11	40.11	40.09	40.14	40.12
16	56.68	56.65	56.66	56.67	56.72	56.68
17	47.55	47.56	47.55	47.57	47.56	47.56
18	48.20	48.16	48.11	48.09	48.18	48.15
19	58.59	58.58	58.59	58.57	58.57	58.58
20	46.94	46.87	46.85	46.82	46.89	46.87
GT	49.69	49.66	49.64	49.64	49.68	49.66
Cold Point (Roving) Thermocouples						
21	44.00	44.00	44.00	44.00	44.00	44.00
22	44.40	44.40	44.40	44.40	44.40	44.40
23	45.10	45.10	45.10	45.10	45.10	45.10
24	45.40	45.40	45.40	45.40	45.40	45.40
FT_R	44.73	44.73	44.73	44.73	44.73	44.73
W	0.05	0.05	0.05	0.05	0.05	0.049
FT	49.44	49.43	49.44	49.44	49.44	49.44
Warm Side - Room Ambient Air Temperature						
	69.81	69.79	69.78	69.78	69.83	69.80
Cold Side - Room Ambient Air Temperature						
	-0.43	-0.38	-0.35	-0.40	-0.42	-0.40
CRF_f	71.00	70.99	71.00	71.02	70.97	71
CRF_g	71.35	71.31	71.29	71.30	71.31	71

Thermocouple Location Diagram



Cold Point Locations

21. 44.00
22. 44.40
23. 45.10
24. 45.40

Detailed drawings, representative samples of the test specimen and a copy of this report will be retained by ATI for a period of four years. This report is the exclusive property of the client so named herein and relates only to the fenestration product tested. This report may not be reproduced, except in full, without the approval of the laboratory. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory.

For ARCHITECTURAL TESTING, INC.

Shon W. Einsig
Digitally Signed by: Shon W. Einsig

Shon W. Einsig
Senior Technician

Michael J. Thoman
Digitally Signed by: Michael J. Thoman

Michael J. Thoman
Director - Simulations and Thermal
Individual-In-Responsible-Charge

SWE:kmm
62929.02-116-46

Attachments:
Table, Drawings and Bill of Materials, (11)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
.02R0	04/12/06	All	Original Report Issue. Work requested by Greg McKenna of Kawneer Company, Inc..
.02R1	10/13/06	All	Revised calculation error in report
.02R2	2/28/2007	Cover	Corrected Glazing Description

Description Table Abbreviations

CODE	Frame / Sash Types
AI	Aluminum w/ Vinyl Inserts (Caps)
AL	Aluminum
AP	Aluminum w/ Thermal Breaks - Partial
AS	Aluminum w/ Steel Reinforcement
AT	Aluminum w/ Thermal Breaks - All Members
AV	Aluminum / Vinyl Composite
AW	Aluminum-clad Wood
FG	Fiberglass
PA	ABS Plastic w/ All Members Reinforced
PC	ABS Plastic-clad Aluminum
PF	ABS Plastic w/ Foam-filled Insulation
PH	ABS Plastic w/ Horizontal Members Reinforced
PI	ABS Plastic w/ Reinforcement - Interlock
PL	ABS Plastic
PP	ABS Plastic w/ Reinforcement - Partial
PV	ABS Plastic w/ Vertical Members Reinforced
PW	ABS Plastic-clad Wood
ST	Steel
VA	Vinyl w/ All Members Reinforced
VC	Vinyl-clad Aluminum
VF	Vinyl w/ Foam-filled Insulation
VH	Vinyl w/ Horizontal Members Reinforced
VI	Vinyl w/ Reinforcement - Interlock
VP	Vinyl w/ Reinforcement - Partial
VV	Vinyl w/ Vertical Members Reinforced
VW	Vinyl-clad Wood
VY	Vinyl
WA	Aluminum / Wood composite
WD	Wood
WV	Vinyl / Wood composite
WF	Fiberglass/Wood Combination
WC	Composite/Wood Composite (Shaped vinyl/wood composite members)
CW	Vinyl/Wood Composite Material

DOOR DETAILS	
CODE	Door Type
EM	Embossed
FL	Flush
LF	Full Lite
LH	1/2 - Lite
LQ	1/4 - Lite
LT	3/4 - Lite
RP	Raised Panel
CODE	Skin
AL	Aluminum
FG	Fiberglass
GS	Galvanized Steel
ST	Steel
WD	Wood
CODE	Panel
FG	Fiberglass
PL	Plastic
WP	Wood - Plywood
WS	Wood - Solid
CODE	Sub-Structure
GS	Galvanized Steel
PL	Plastic
ST	Steel
WD	Wood
CODE	Core Fill
CH	Cellular - Honeycomb
EP	Expanded Polystyrene
PI	Polyisocyanurate
PU	Polyurethane
WP	Wood - Plywood
WS	Wood - Solid
XP	Extruded Polystyrene

CODE	Spacer Types (See sealant)
A1	Aluminum
A2	Aluminum (Thermally-broken)
A3	Aluminum-reinforced Polymer
A4	Aluminum / Wood
A5	Aluminum-reinforced Butyl
A6	Aluminum / Foam / Aluminum
A7	Aluminum U-shaped
A8	Aluminum-Butyl (Corrugated)
ER	EPDM Reinforced Butyl
FG	Fiberglass
GL	Glass
OF	Organic Foam
PU	Polyurethane Foam
SU	Stainless Steel, U-shaped
CU	Coated Steel, U-shaped
S2	Steel (Thermally-broken)
S3	Steel / Foam / Steel
S5	Steel-reinforced Butyl
S6	Steel U-channel w/ Thermal Cap
SS	Stainless Steel
CS	Coated Steel
TP	Thermo-plastic
V1	Vinyl U-shaped
WD	Wood
ZF	Silicone Foam
ZS	Silicone / Steel

CODE	Spacer Sealant
D	Dual Seal Spacer System
S	Single Seal Spacer System

CODE	Gap Fill Codes
AIR	Air
AR3	Argon / Krypton / Air
ARG	Argon/Air
CO2	Carbon Dioxide
KRY	Krypton/Air

CODE	Grid Description
N	No Muntins
G	Grids between glass
S	Simulated Divided Lites
T	True Muntins

CODE	Grid Size Codes
	Blank for no grids
0.75	Grids < 1"
1.5	Grids >= 1"

CODE	Tint Codes
AZ	Azurlite
BL	Blue
BZ	Bronze
CL	Clear
EV	Evergreen
GD	Gold
GR	Green
GY	Gray

CODE	Thermal Breaks
FO	Foam
UR	Urethane
VY	Vinyl
FB	Fiberglass
RN	Reinforced Nylon
AB	ABS
NE	Neoprene
AI	Air

Architectural Testing

CAN/CSA A440-00 THERMAL PERFORMANCE TEST REPORT

Rendered to:

KAWNEER COMPANY INC.

SERIES/MODEL: 1600 System 1

TYPE: Glazed Wall Systems

Summary of Results	
Temperature Index of Frame (I_f)	62.6
Temperature Index of Glass (I_g)	60.2
Glazing Description:	6mm PPG Solarban 60 (e=0.035, #2) Tempered, 14mm Gap, Azon Warm-Light Poured & Debridged Spacer (A2), 90% Argon Filled*, 6mm Clear Tempered

Reference should be made to ATI Report No. 62929.03-116-46 for complete test specimen description and data.

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Architectural Testing

CAN/CSA A440-00 THERMAL PERFORMANCE TEST REPORT

Rendered to:

KAWNEER COMPANY INC.
555 Guthridge Court
Norcross, Georgia 30092

Report No:	62929.03-116-46
Test Date:	03/17/06
Report Date:	03/27/06

Test Sample Identification:

Series/Model: 1600 System 1

Type: Glazed Wall Systems

Test Procedure: The test specimen was evaluated for Condensation Resistance in accordance with CAN/CSA A440-00, "*Windows*", Appendix A and Temperature Index, Clause 11.12.

1. Average warm side ambient temperature	20.00 °C
2. Average cold side ambient temperature	-30.00 °C
3. 15 mph dynamic wind applied to test specimen exterior.	
4. 0.0" ±0.04" static pressure drop across specimen.	

Test Results Summary:

1. Temperature Index of Frame (I_f)	62.6
2. Temperature Index of Glass (I_g)	60.2
3. Temperature Index (I)	60.2

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York, PA 17402-9405
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Test Sample Description:

CONSTRUCTION	Frame
Size (mm)	2000 x 2000
Daylight Opening (mm	930 x 1873 (x2)
CORNERS	Butted
Fasteners	Screws
Sealant	No
MATERIAL	AT (6mm)
Color Exterior	Gray
Finish Exterior	Anodized
Color Interior	Gray
Finish Interior	Anodized
GLAZING METHOD	Exterior Pressure Plate

Glazing Information

Layer 1	6mm PPG Solarban 60 (e=0.035, #2) Tempered
Gap 1	14mm Gap, Azon Warm-Light Poured & Debridged Spacer (A2), 90% Argon Filled*
Layer 2	6mm Clear Tempered
Gas Fill Method	Single-Probe Timed*

**Stated per Client/Manufacturer*
NA Non-Applicable
See Description Table Abbreviations

Test Sample Description: (Continued)

COMPONENTS		
Type	**Quantity**	**Location**
WEATHERSTRIP		
EPDM wedge gasket	1 row	Exterior glazing perimeter
EPDM compression gasket	1 row	Interior glazing perimeter
HARDWARE		
Aluminum trim caps	7	Three vertical, and four horizontal
32mm x 22mm wood blocking	4	Head, sill, and jambs
DRAINAGE		
(13mm) weephole	8	Two per horizontal trim cap

Test Duration:

1. The environmental systems were started at 16:10 hrs., 03/16/06

2. The thermal performance test results were derived from 06:00 hrs., 03/17/06 to 08:00 hrs., 03/17/06.

Condensation Resistance Factor (CRF):

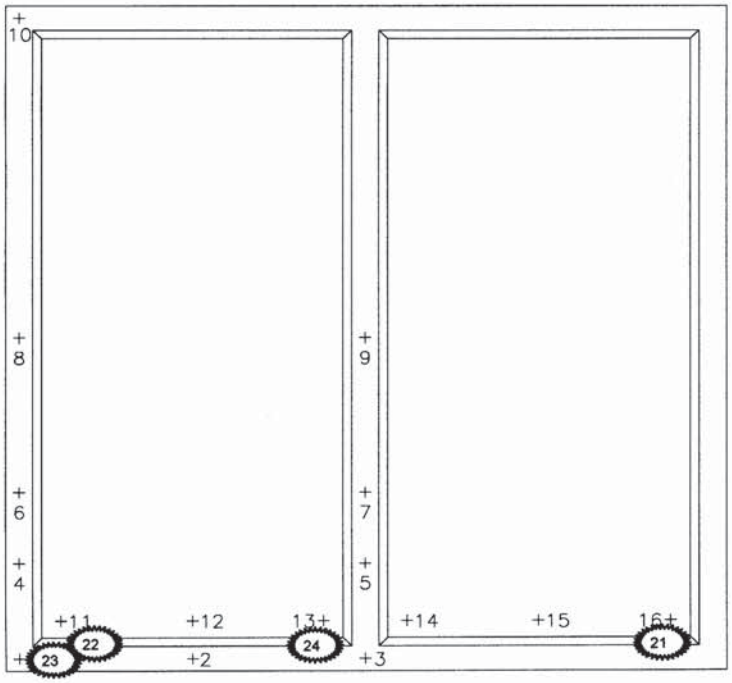
The following information, condensed from the test data, was used to determine the temperature (I) index:

T_h	=	Warm side ambient air temperature	20.0 °C
T_c	=	Cold side ambient air temperature	-30.0 °C
T_f	=	Lowest averaged frame temperature	1.3 °C
T_g	=	Lowest averaged glazing temperature	0.1 °C
T	=	Lower of T_f and T_g	0.1 °C
I_f	=	Temperature Index of Frame	62.6
I_g	=	Temperature Index of Glass	60.2
I	=	Temperature Index	

$$I = \left[\frac{T - T_c}{T_h - T_c}\right] \times 100 = 60.2$$

Architectural Testing

Thermocouple Location Diagram



Individual Temperature Measurements

Thermocouple #	Warm Side (°C)	Cold Side (°C)
1	2.48	-25.34
2	3.70	-28.45
3	3.66	-26.26
4	2.99	-25.56
5	4.88	-26.24
6	3.39	-25.90
7	6.39	-26.20
8	5.52	-25.09
9	8.56	-26.54
10	6.82	-23.88
11	1.06	-27.98
12	2.33	-28.42
13	1.42	-27.88
14	0.88	-28.09
15	2.78	-28.73
16	0.09	-28.74

Cold Point Locations

21	21.	1.31 °C
22	22.	2.09 °C
23	23.	2.48 °C
24	24.	2.63 °C

Glazing Deflection (mm):

	Left Glazing*	Right Glazing*
Actual Gap Width	13mm	14mm
Effective gap width upon receipt of specimen in laboratory (after stabilization)	14mm	13mm
Effective gap width at laboratory ambient conditions on day of testing	14mm	13mm
Effective gap width at test conditions	11mm	10mm

The test sample was inspected for the formation of frost or condensation which may influence the surface temperature measurements. Any observed condensation/frost is indicated on the 'Thermocouple Location Diagram.'

A calibration of the ATI 'thermal test chamber' in York, Pennsylvania was conducted in May 2004.

Detailed drawings, representative samples of the test specimen and a copy of this report will be retained by ATI for a period of four years. This report is the exclusive property of the client so named herein and relates only to the fenestration product tested. This report may not be reproduced, except in full, without the approval of the laboratory. Results obtained are tested values and do not constitute an opinion or endorsement by this laboratory.

For ARCHITECTURAL TESTING, INC.

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Shon W. Einsig
Senior Technician

Michael J. Thoman
Digitally Signed by: Michael J. Thoman

Michael J. Thoman
Director - Simulations and Thermal
Individual-In-Responsible-Charge

SWE:kmm
62929.03-116-46

Attachments:
Table, Drawings and Bill of Materials, (4)

Architectural Testing

Revision Log

Rev. #	Date	Page(s)	Revision(s)
.03R0	03/27/06	All	Original Report Issue. Work requested by Greg McKenna of Kawneer Company Inc..

Description Table Abbreviations

CODE	Frame / Sash Types
AI	Aluminum w/ Vinyl Inserts (Caps)
AL	Aluminum
AP	Aluminum w/ Thermal Breaks - Partial
AS	Aluminum w/ Steel Reinforcement
AT	Aluminum w/ Thermal Breaks - All Members
AV	Aluminum / Vinyl Composite
AW	Aluminum-clad Wood
FG	Fiberglass
PA	ABS Plastic w/ All Members Reinforced
PC	ABS Plastic-clad Aluminum
PF	ABS Plastic w/ Foam-filled Insulation
PH	ABS Plastic w/ Horizontal Members Reinforced
PI	ABS Plastic w/ Reinforcement - Interlock
PL	ABS Plastic
PP	ABS Plastic w/ Reinforcement - Partial
PV	ABS Plastic w/ Vertical Members Reinforced
PW	ABS Plastic-clad Wood
ST	Steel
VA	Vinyl w/ All Members Reinforced
VC	Vinyl-clad Aluminum
VF	Vinyl w/ Foam-filled Insulation
VH	Vinyl w/ Horizontal Members Reinforced
VI	Vinyl w/ Reinforcement - Interlock
VP	Vinyl w/ Reinforcement - Partial
VV	Vinyl w/ Vertical Members Reinforced
VW	Vinyl-clad Wood
VY	Vinyl
WA	Aluminum / Wood composite
WD	Wood
WV	Vinyl / Wood composite
WF	Fiberglass/Wood Combination
WC	Composite/Wood Composite (Shaped vinyl/wood composite members)
CW	Vinyl/Wood Composite Material

DOOR DETAILS	
CODE	Door Type
EM	Embossed
FL	Flush
LF	Full Lite
LH	1/2 - Lite
LQ	1/4 - Lite
LT	3/4 - Lite
RP	Raised Panel
CODE	Skin
AL	Aluminum
FG	Fiberglass
GS	Galvanized Steel
ST	Steel
WD	Wood
CODE	Panel
FG	Fiberglass
PL	Plastic
WP	Wood - Plywood
WS	Wood - Solid
CODE	Sub-Structure
GS	Galvanized Steel
PL	Plastic
ST	Steel
WD	Wood
CODE	Core Fill
CH	Cellular - Honeycomb
EP	Expanded Polystyrene
PI	Polyisocyanurate
PU	Polyurethane
WP	Wood - Plywood
WS	Wood - Solid
XP	Extruded Polystyrene

CODE	Spacer Types (See sealant)
A1	Aluminum
A2	Aluminum (Thermally-broken)
A3	Aluminum-reinforced Polymer
A4	Aluminum / Wood
A5	Aluminum-reinforced Butyl
A6	Aluminum / Foam / Aluminum
A7	Aluminum U-shaped
A8	Aluminum-Butyl (Corrugated)
ER	EPDM Reinforced Butyl
FG	Fiberglass
GL	Glass
OF	Organic Foam
PU	Polyurethane Foam
SU	Stainless Steel, U-shaped
CU	Coated Steel, U-shaped
S2	Steel (Thermally-broken)
S3	Steel / Foam / Steel
S5	Steel-reinforced Butyl
S6	Steel U-channel w/ Thermal Cap
SS	Stainless Steel
CS	Coated Steel
TP	Thermo-plastic
VI	Vinyl U-shaped
WD	Wood
ZF	Silicone Foam
ZS	Silicone / Steel

CODE	Spacer Sealant
D	Dual Seal Spacer System
S	Single Seal Spacer System

CODE	Gap Fill Codes
AIR	Air
AR3	Argon / Krypton / Air
ARG	Argon/Air
CO2	Carbon Dioxide
KRY	Krypton/Air

CODE	Grid Description
N	No Muntins
G	Grids between glass
S	Simulated Divided Lites
T	True Muntins

CODE	Grid Size Codes
	Blank for no grids
0.75	Grids < 1"
1.5	Grids >= 1"

CODE	Tint Codes
AZ	Azurlite
BL	Blue
BZ	Bronze
CL	Clear
EV	Evergreen
GD	Gold
GR	Green
GY	Gray

CODE	Thermal Breaks
FO	Foam
UR	Urethane
VY	Vinyl
FB	Fiberglass
RN	Reinforced Nylon
AB	ABS
NE	Neoprene
AI	Air

QUALITY TESTING INC.
3310 Hill Avenue, Everett, WA 98201
Phone: (425) 259-6799
FAX: (425) 259-4936
email: info@qtitest.com

AAMA 507-07 REPORT

C2009-299$_{E0A0}$

REPORT TO: Kawneer Company, Inc.
555 Guthridge Court
Norcross, GA 30092

PRODUCT: SERIES 1600 SYSTEM 1 CURTAIN WALL

Quality and Performance
We Test Windows .....And a Whole Lot More

REPORT TO:	Kawneer Company, Inc. 555 Guthridge Court Norcross, GA 30092
REPORT DATE:	05/18/2009
REFERENCE METHODS:	AAMA 507-07, Standard Practice for Determining the Thermal Characteristics of Fenestration Systems Installed in Commercial Buildings. NFRC 100, Procedure for Determining Fenestration Product U-Factors (2004) NFRC 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficients at Normal Incidence (2004)
SIMULATION PROGRAMS:	Center of Glass: Windows 5.2.17 2-D Heat Transfer: THERM 5.2.14

MODEL/TYPE:	Series 1600, System 1 Curtain Wall
CONFIGURATION:	OO
SIMULATION SIZE:	2000mm x 2000mm (78.75" x 78.75")
FRAME TYPE AND FINISH:	Painted aluminum extrusions with fiberglass pressure cap.
THERMAL BREAK TYPE:	Dense EPDM thermal separator and fiberglass pressure cap.
IG GLASS PARAMETERS:	All glass is a nominal 1" OA with 2 panes of 6mm glass and a nominal .500" gap.
GLAZING METHOD:	All glass is set against an EPDM gasket on the interior side and retained with a pulltruded fiberglass pressure cap and EPDM gasket on the exterior side.
SPACERS:	A1-D- Mill finish aluminum with PIB/silicone sealants.

CONCLUSIONS

Detailed assembly drawings, cross-sectional drawings, and a bill of materials as supplied by the client were used as the basis for performing the simulations. Copies are attached to this report. The results were secured by using the designated methods and NFRC approved simulation programs as required by, and in full compliance with, the NFRC 100 procedure. This report does not constitute certification of this product. The results in this report apply to the sample as shown in the attached drawings, using the components and construction methods described herein. Quality Testing, Inc. does not warrant the accuracy of the computer programs used to obtain the results.

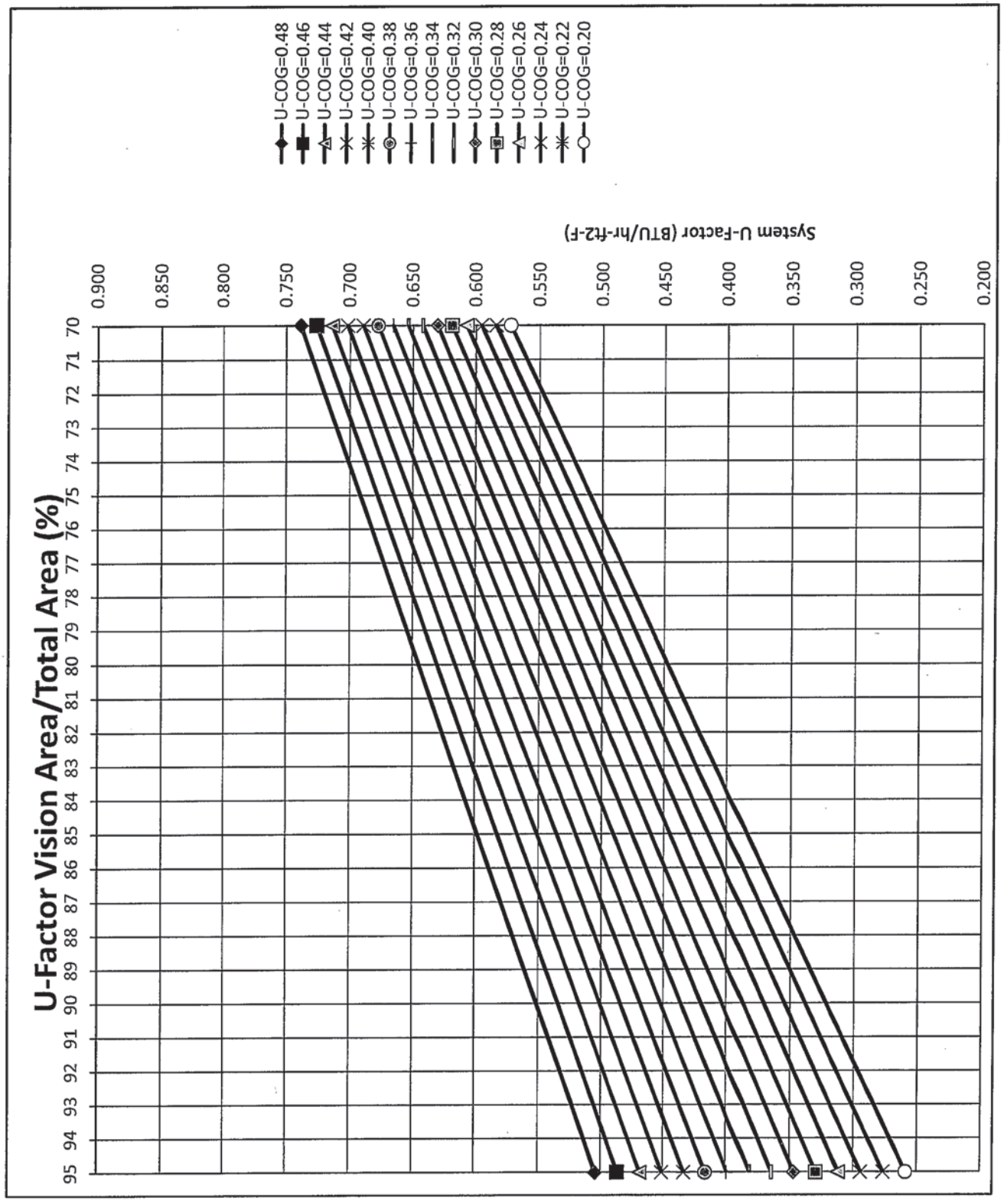
This report is the joint property of Quality Testing, Inc. and the client to whom it is issued. Permission to reproduce this report by anyone other than Quality Testing, Inc. and the Client must be granted in writing by both of the above parties. This report may not be reproduced except in its entirety.

Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes.

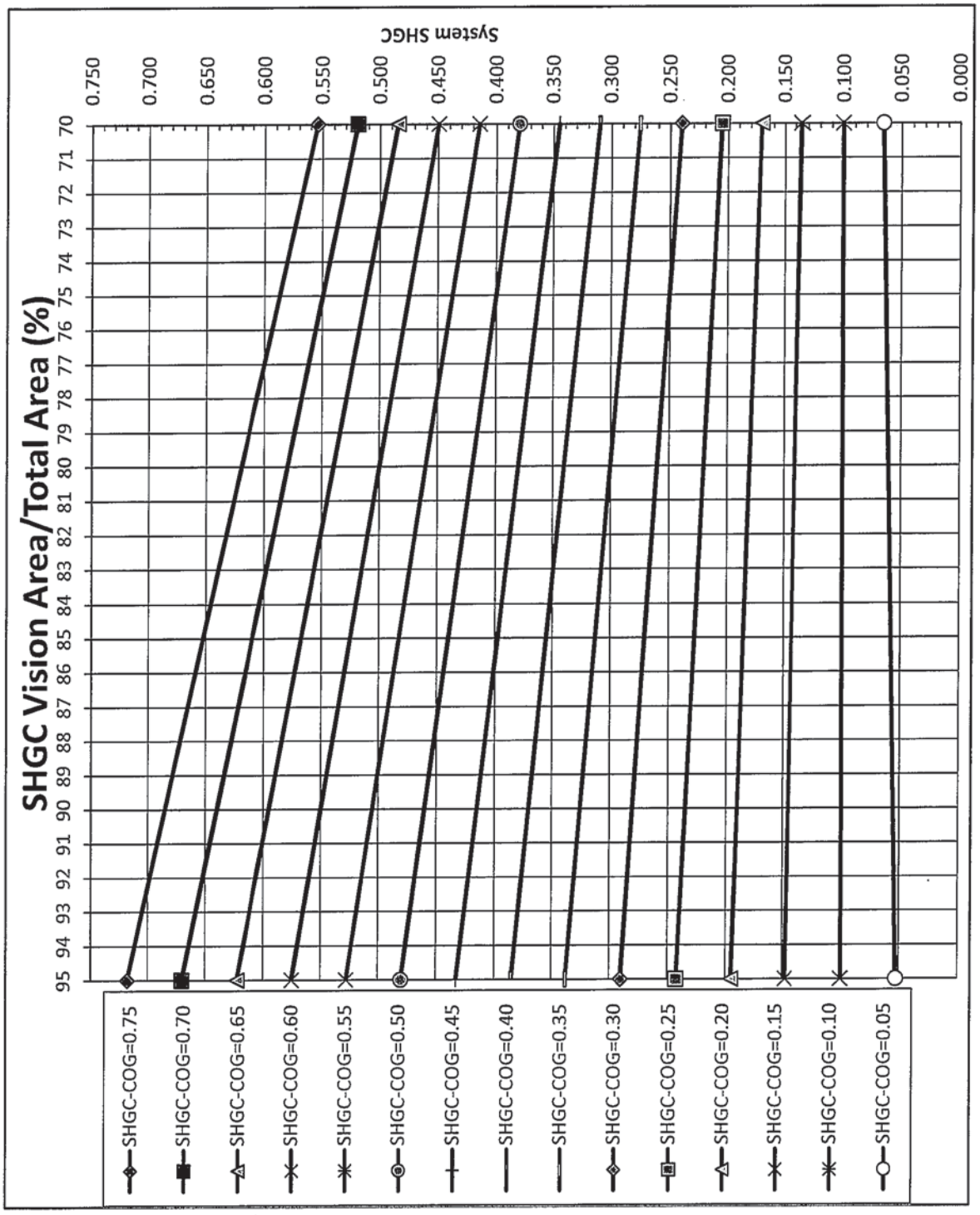
The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.

Randal J. Van Voorst
President
Simulator in Responsible Charge

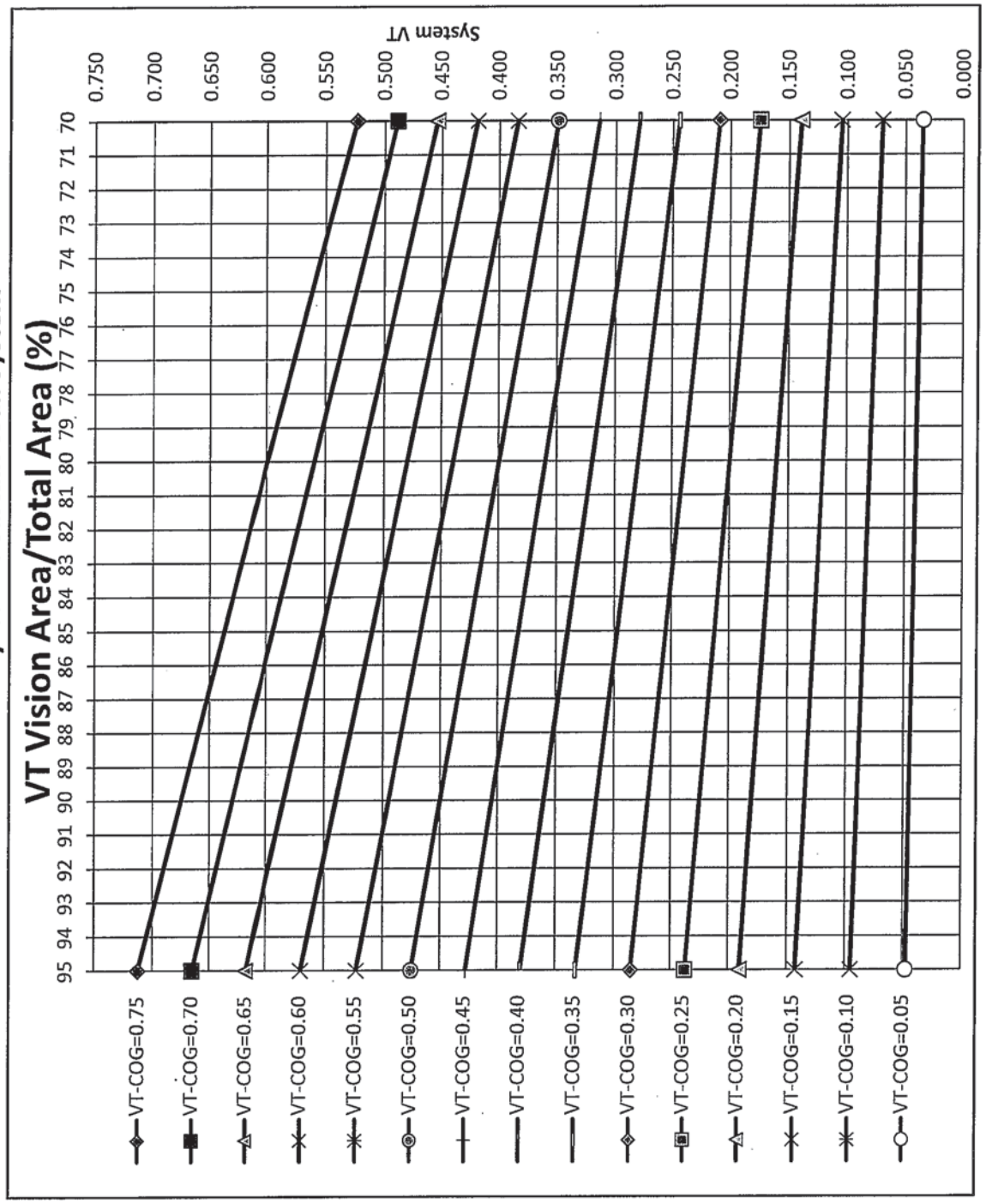
Kawneer Company, Inc.
Series 1600 System 1 Curtain Wall System



Kawneer Company, Inc.
Series 1600 System 1 Curtain Wall System



Kawneer Company, Inc.
Series 1600 System 1 Curtain Wall System



Option No.	COG	TOTAL PRODUCT U-FACTOR				COG	TOTAL PRODUCT SHGC				COG	TOTAL PRODUCT VT			
	COG U-Factor	70% Vision Area	NFRC Size	95% Vision Area		COG SHGC	70% Vision Area	NFRC Size	95% Vision Area		COG VT	70% Vision Area	NFRC Size	95% Vision Area	
1	0.48	0.74	0.56	0.50		0.75	0.55	0.68	0.72		0.75	0.52	0.67	0.71	
2	0.46	0.73	0.54	0.49		0.70	0.52	0.64	0.67		0.70	0.49	0.63	0.67	
3	0.44	0.71	0.52	0.47		0.65	0.48	0.59	0.62		0.65	0.45	0.58	0.62	
4	0.42	0.70	0.51	0.45		0.60	0.45	0.55	0.58		0.60	0.42	0.54	0.57	
5	0.40	0.69	0.49	0.43		0.55	0.41	0.50	0.53		0.55	0.38	0.49	0.52	
6	0.38	0.68	0.48	0.42		0.50	0.38	0.46	0.48		0.50	0.35	0.45	0.48	
7	0.36	0.67	0.46	0.40		0.45	0.34	0.41	0.43		0.45	0.31	0.40	0.43	
8	0.34	0.65	0.44	0.38		0.40	0.31	0.37	0.39		0.40	0.28	0.36	0.38	
9	0.32	0.64	0.43	0.36		0.35	0.28	0.32	0.34		0.35	0.24	0.31	0.33	
10	0.30	0.63	0.41	0.35		0.30	0.24	0.28	0.29		0.30	0.21	0.27	0.29	
11	0.28	0.62	0.39	0.33		0.25	0.21	0.23	0.24		0.25	0.17	0.22	0.24	
12	0.26	0.61	0.38	0.31		0.20	0.17	0.19	0.20		0.20	0.14	0.18	0.19	
13	0.24	0.60	0.36	0.29		0.15	0.14	0.15	0.15		0.15	0.10	0.13	0.14	
14	0.22	0.58	0.34	0.28		0.10	0.10	0.10	0.10		0.10	0.07	0.09	0.10	
15	0.20	0.57	0.33	0.26		0.05	0.07	0.06	0.05		0.05	0.03	0.04	0.05	

REVISION SUMMARY

Revision No.	Date	Page No.	Description/Example
E0A0	05/18/2009	ALL	Original Report

QUALITY TESTING INC.
3310 Hill Avenue, Everett, WA 98201
Phone: (425) 259-6799
FAX: (425) 259-4936
email: info@qtitest.com

AAMA 1503 TEST REPORT

T2009-292$_{E0A0}$

REPORT TO: KAWNEER COMPANY, INC.
555 GUTHRIDGE COURT
NORCROSS, GA 30092

ORIGINAL REPORT NUMBER: T2009-292
ORIGINAL REPORT DATE: 05/11/2009

PRODUCT: SERIES 1600 SYSTEM 1 CURTAIN WALL.

Quality and Performance
We Test Windows.....and a Whole Lot More

REPORT TO:	KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092
TEST DATE:	05/11/2009
TEST METHODS:	AAMA 1503: Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections. ASTM E283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
NOTE:	The test methods described in this report were conducted in full compliance with AAMA AND ASTM requirements.

DESCRIPTION OF SAMPLE TESTED

U-Factor (Us) =	0.58
CRF =	60
MODIFICATIONS:	None.
MODEL/TYPE:	Series 1600 System 1 Curtain Wall.
CONFIGURATION:	OO
FRAME SIZE:	2000 mm (78.75") wide by 2000 mm (78.75") high.
FRAME DEPTH:	192 mm (7.562").
LEFT DAYLIGHT OPENING:	895 mm (35.25") wide by 1867 mm (73.50") high.
RIGHT DAYLIGHT OPENING:	895 mm (35.25") wide by 1867 mm (73.50") high.
PROJECTING HEIGHT OF THE FRAME :	LEFT HEAD: 64 mm (2.50") LEFT JAMB: 64 mm (2.50") LEFT SILL: 64 mm (2.50") MULLION: 64 mm (2.50") RIGHT HEAD: 64 mm (2.50") RIGHT JAMB: 64 mm (2.50") RIGHT SILL: 64 mm (2.50")
FRAME TYPE/FINISH:	Painted solid aluminum framing members with a fiberglass pressure cap. Dense EPDM thermal separator and fiberglass pressure cap utilized with all framing members.
JOINT CONSTRUCTION:	All main frame corners were butt joined and screw-connected.

GLAZING COMPONENTS:	
OVERALL:	25 mm (1.00") nominal.
GLASS THICKNESS:	Two panes of 6.0 mm nominal heat strengthened.
SPACER TYPE/SIZE:	14 mm (0.56") nominal aluminum. (A1-D)
SEALANT TYPE:	PIB / Silicone.
COATINGS USED:	None; clear glass.
AIR SPACE CONTENT:	Air assumed.
GAS FILL METHOD:	Not applicable.
NOTE:	Emissivity and gas-fill/method and percentage supplied by the manufacturer and not verified by Quality Testing, Inc.
GLAZING SYSTEM:	All glass was set on blocks, bedded against a preset glazing gasket on the interior side of the glazing pocket and retained with a fiberglass pressure plate and glazing gaskets on the exterior.
WEATHERSTRIP:	None.
INTEGRAL VENTILATING SYSTEMS/DEVICES:	None.
INTERNAL GRIDS:	None.
OPERATING HARDWARE:	Not applicable.
REINFORCEMENT:	Not applicable.
WEEP SLOTS:	None.
WEEP COVERS:	None.

TEST CHAMBER:	# 1.
SIZE OF METERING BOX:	97" wide by 96" high by 45" deep with a full width baffle at 8" from the mask wall face.
CALIBRATION:	The last full calibration was performed in August, 2008.
NOTE:	The estimated uncertainty of the equipment used to perform this test has yet to be determined.

TEST RESULTS

	SI		IP
Qs = Heat flow through the test sample	507.97	(WATTS)	1733.69 (BTU/hr)
As = Area of sample	4.00	(M2)	43.07 (Ft2)
th = Temperature of warm side air	20.72	(C)	69.30 (F)
tc = Temperature of cold side air	-18.04	(C)	- 0.47 (F)
FT = Weighted frame temperature	11.54	(C)	52.76 (BTU/hr)
FTp = Average temperature of frame	11.71	(C)	53.08 (F)
FTr = Average temperature of coldest area	8.76	(C)	47.77 (F)
W = A weighting factor to ratio FTp and FT	0.06		0.06
GT = Average temperature of glazing	5.08	(C)	41.14 (F)
"Us" = Thermal Transmittance	3.28	($W/(m^2.\ k)$	0.58 ($BTU/hr/ft^2/F^0$)
CRFf =	76		
CRFg =	60		

FORMULAE

$$U = q/A(th - tc)$$

$$W = \frac{FTp - FTr}{FTp - (tc + 10)} \times 0.40$$

Where: tc = temperature of cold side air
10 = arbitrary temperature adjustment
0.40 = arbitrary weighting factor

$$FT = FTp\ (1 - W) + WFTr$$

$$CRFg = \frac{GT - tc}{th - tc} \times 100$$

$$CRFf = \frac{FT - tc}{th - tc} \times 100$$

Where: 100 = A multiplier to make CRF a whole number.

NFRC 400 & ASTM E283 AIR LEAKAGE TEST RESULTS

Modifications made For Air Infiltration: None

Modifications made For Operating force: None

OPERATING FORCE:

NAFS1(as referenced in NFRC 400): North American Fenestration Standard December,2000.

LOAD POINT: = Not applicable

Ambient Air Temp.	=	13.3	C	56.0	F

		SI Units (newton)		IP Units (Pounds-force)	
Opening Breakaway	= N/A	0.0	N	0	lbf
Closing Breakaway	= N/A	0.0	N	0	lbf
Opening in Motion	= N/A	0.0	N	0	lbf
Closing in Motion	= N/A	0.0	N	0	lbf

Note: for products with rotary operators Torque (T) is measured and then converted to Force (F) by dividing by the center to center length of the lever(L) F= T/L.

AIR INFILTRATION: at 75 pa (1.57 psf)
ASTM E283 :

Relative Humidity = 50 %

Ambient Air Temp. =	13.3	C	56.0	F		
Barometric Pressure=	101.6	Kpa	30.0	In-HG		

	RATE(SI)		RATE(IP)		Test value ,if less than .01 enter <0.01	
Specimen Area =					43.07	ft2
Total Air Leakage =	7.3	L/s	15.4	CFM	15.419	CFM
Extraneous Air Leakage=	7.2	L/s	15.3	CFM	15.280	CFM
Net Specimen Air Leakage=	<0.1	L/s	0.1	CFM	0.14	CFM
Specimen air leakage rate=	0.1	L/s*m2	0.1	CFM/ft2		

GLAZING DEFLECTION & TEST RESULTS

Glazing deflection measurements were taken according to AAMA 1503 requirements. The effective gap width at the center of glass is a measured comparison to the overall glazing width at the edge of glass, less the standard thickness of all glazing panes. The results reported below were measured at the conclusion of the test and were performed at the test steady state temperature conditions with the calibrated perpendicular wind load on the exterior surface of the sample.

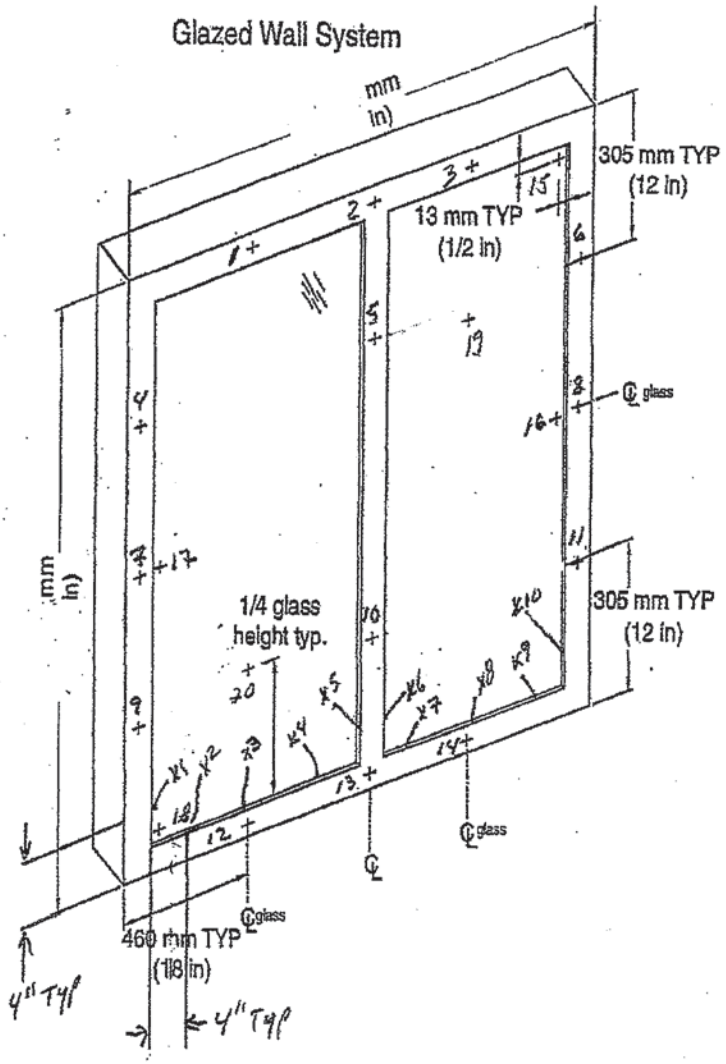
GLAZING DEFLECTION
- LEFT LITE: - 0.06"
- RIGHT LITE: - 0.08"

EFFECTIVE CENTER GAP WIDTH
- LEFT LITE: 0.50"
- RIGHT LITE: 0.48"

NOTE: The test sample was sealed on the interior and all exterior weeps were sealed during the thermal test per AAMA 1503 requirements.

ADDITIONAL OBSERVATIONS: No moisture was observed.

THERMOCOUPLE PLACEMENT



The duration of the test conformed to AAMA 1503. After thermal stability conditions described in section 9.3.8 had been reached, the test was continued for four consecutive half-hour test periods produced results in which the specified conditions in section 9.3.8.1 through section 9.3.8.3 continued to be met. The results in this report were calculated from the full two hour steady state averages of 24 five-minute readings. For the duration of the test the weather-side wind was applied perpendicularly to the sample. All conversions and rounding are in accordance with the AAMA rounding and conversion policies. The precision and bias of the test method have yet to be determined. This report is the joint property of Quality Testing and the Client. Permission to reproduce this report by anyone other than Quality Testing and the Client must be granted in writing by both of the above parties. This report may not be reproduced except in its entirety. The results in this report are tested values and are applicable to the sample tested only, using the components and construction methods described therein.

Randal J. Van Voorst
Person In Responsible Charge

Ray Faust
Person Performing Test

REVISION SUMMARY

Revision No.	Date	Page No.	Description/Example
E0A0	05/11/2009	N/A	ORIGINAL REPORT

DRAWINGS

WESTERN ELECTRO - ACOUSTIC LABORATORY
A division of Veneklasen Associates, Inc.

TESTING • CALIBRATION • RESEARCH

25132 Rye Canyon Loop Santa Clarita, California 91355 Tel: (661) 775-3741 Fax: (661) 775-3742 www.weal.com

SOUND TRANSMISSION LOSS TEST REPORT NO. TL14-224

CLIENT: **Peerless Products Inc.**
2403 S. Main St.
Ft. Scott, Kansas 66701
TEST DATE: 20 May 2014

11 June 2014

INTRODUCTION

The test was performed in accordance with ASTM E 90-09, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions* and ASTM E2235-04$^{\varepsilon 1}$, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*. Copies of the test standard are available at www.astm.org. The test chamber source and receiving room volumes are 204 and 148.4 cubic meters respectively. Western Electro-Acoustic Laboratory is accredited by the United States Department of Commerce, National Institute of Standards and Technology under the National Voluntary Accreditation Program (NVLAP) Lab Code 100256-0 for this test procedure. This test report relates only to the item(s) tested. This report must not be used to claim product certification, approval, or endorsement by WEAL, NVLAP, NIST or any agency of the federal government.

DESCRIPTION OF TEST SPECIMEN

The test specimen was a Peerless Products G261 Dry Glaze aluminum casement window assembly. The specimen was installed by sliding it completely into the test chamber opening and capturing it with screws on both sides. The specimen was sealed into the test chamber opening with a heavy duct seal putty around the entire perimeter on both sides. The glazing consisted of a 30 mm (1-3/16 inch) dual glazed unit which was 6 mm (1/4 inch) monolithic exterior glass, 19 mm (3/4 inch) air space with a stainless steel warm edge spacer, and 5 mm (3/16 inch) monolithic interior glass. The unit was dry glazed into the sash frame with push-in foam gaskets on the stops and an aluminum snap in bead with a bulb gasket. The weather stripping used was a foam filled bulb gasket on the entire interior perimeter of the sash. A sanoprene leaf seal was used around the full perimeter at the midpoint of the frame. The sash was held in a closed position with a locking handle located on the jamb. The window had a multi-point lock system. The net outside frame dimensions of the window assembly were 577 mm (22-3/4 inches) wide by 1.48 m (58-1/4 inches) high by 82.6 mm (3-1/4 inches) deep. The overall weight of the assembly was 33.1 kg (73 lbs.) for a calculated surface density of 38.7 kg/m^2 (7.93 lbs./ft^2). The frame had a 22 mm (7/8 inch) thermal break. The two weep slots were normal with covers. The operable portion of the assembly was opened and closed five times immediately prior to the test.

RESULTS OF THE MEASUREMENTS

One-third octave band sound transmission loss values are plotted and tabulated on the attached sheet. ASTM minimum volume requirements are met at 80 Hz and above. Flagged values are lower limits of transmission loss. Actual transmission loss will be equal to or greater than the flagged value. The energy through the filler wall was within 6 dB of the energy through the composite wall in those frequency bands. The calculated STC rating is accurate because none of the values used to calculate the STC are flagged. The Outdoor-Indoor Transmission Class rating determined in accordance with ASTM E 1332-10a was OITC-28. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-35.

Approved:

Gary E. Mange
Laboratory Director

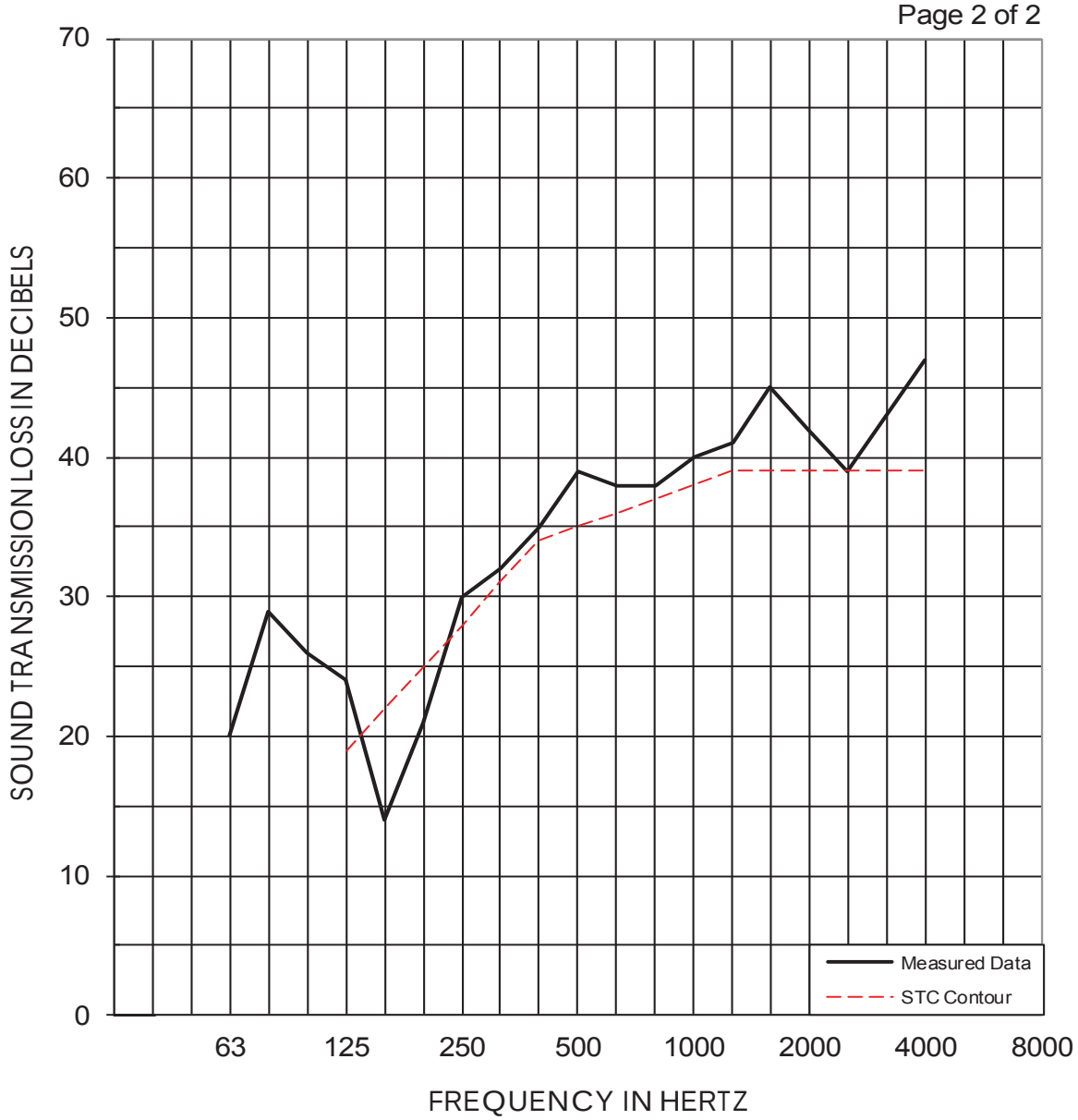
Respectfully submitted,
Western Electro-Acoustic Laboratory

Raul Martinez
Acoustical Test Technician

NVLAP LAB CODE 100256-0

WESTERN ELECTRO-ACOUSTIC LABORATORY

Report No. TL14-224



1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	20*	29*	26	24	14	21	30	32	35	39
95% Confidence in dB	1.42	1.92	2.07	1.47	0.89	0.76	0.80	0.52	0.36	0.38
deficiencies					(8)	(4)				
1/3 OCT BAND CNTR FREQ	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
TL in dB	38	38	40	41	45	42	39	43	47	0
95% Confidence in dB	0.29	0.44	0.38	0.39	0.36	0.56	0.55	0.31	0.32	0.50
deficiencies							(0)			

EWR	OITC
38	28

* Minimum estimate of transmission loss. Measurement limited by filler wall. Actual TL will be equal or greater than value reported.

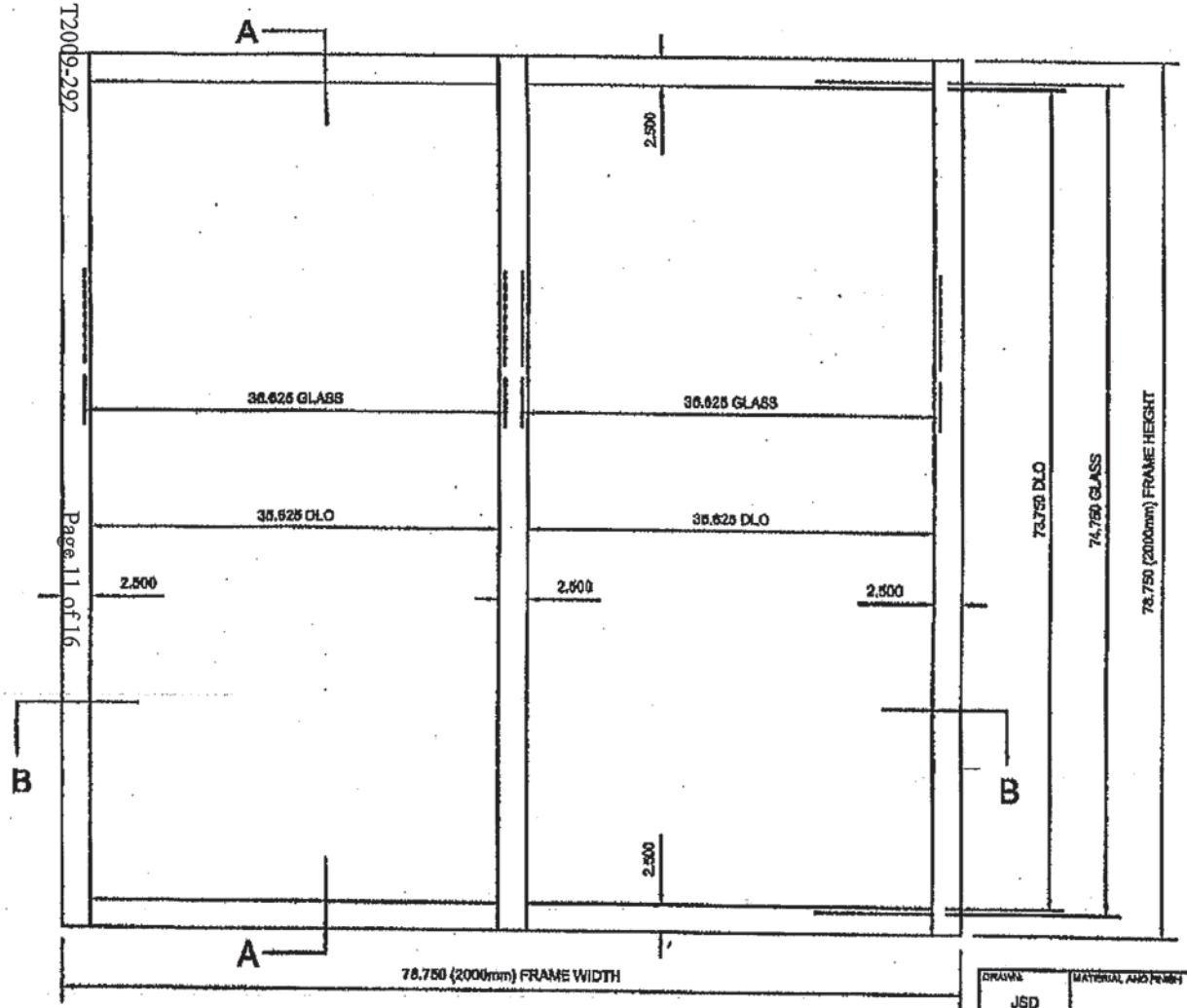
Test Date: 20 May 2014
Specimen Area: 9.2 sq.ft.
Temperature: 73.2 deg. F
Relative Humidity: 38 %

STC
35
(12)

NVLAP LAB CODE 100256-0

Mc Gowan Builders, Inc
180 Myrtle Av, Brooklyn, NY 11201
Submittal #:080000-003-001NEW
Date 10/29/14
Reviewed By: EM

T2009-292



T162-928 01 OF 03 | A

UNIT TO SHIP FABRICATED ASSEMBLED AND GLAZED.
REF. INSTALLATION INSTRUCTIONS 162970.

QUALITY TESTING INC.
NFRC Simulation Drawing
APR 09 2009
Report No: C2-08-7-315
Report By:

95549-66	A	ADDED ACOUSTICAL TESTING	10/27/08
95549-65		ESTABLISHED	12/02/08
E.C. NO.	REV.	DESCRIPTION	DATE

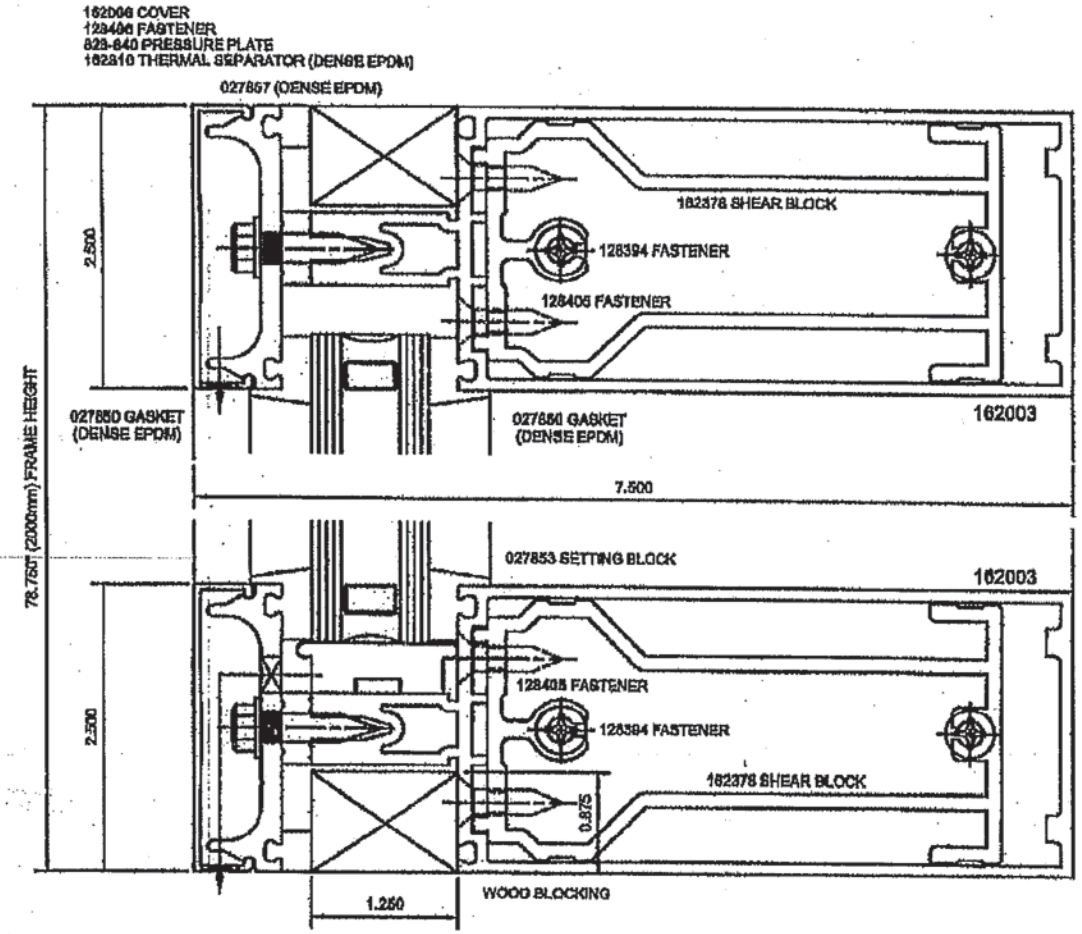
DRAWN: JSD	MATERIAL AND FINISH
DATE: 11/22/08	
CHECK: GBM	
APPR: GBM	
SCALE: AS SHOWN	Kawneer An Alcoa Company — Product Engineering & Development
DRAWING DESC.	1600 SYSTEM 1 THERMAL AND ACOUSTICAL TEST 2008
FILE NAME	T162-928 01 OF 03

SCALE: (.1) (1.2" = 12") (DIMLFAC = 10)

QTI VERIFIED DRAWING
FILE I2009-227/292
DATE 4-22-09
TECH RA

E040

T2009-292



SECTION A-A

T162-928 02 OF 03	A

QTI VERIFIED DRAWING
FILE T2009-227/292
DATE 4-22-09
TECH RC

QUALITY TESTING INC.
NFRC Simulation Drawing

APR 09 2009

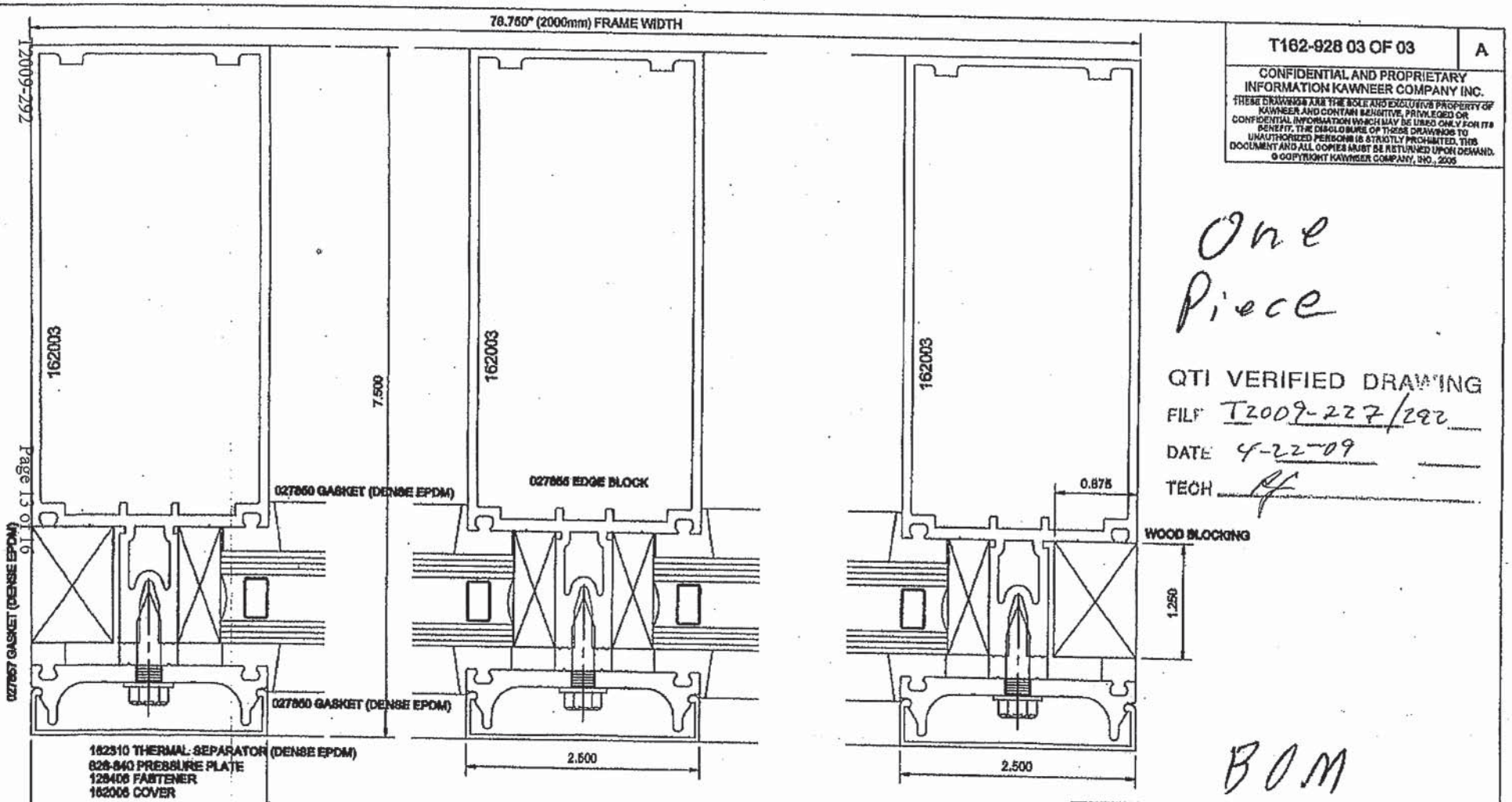
Report No: C2009-214
Report By: RJW

BOM

DRAWN: JSD	MATERIAL AND FINISH		
DATE: 11/22/05			
CHECK: GBM	Kawneer An Alcoa Company		
APPR: GBM			
SCALE: AS SHOWN	Product Engineering & Development		

E.C. NO.	REV.	DESCRIPTION	DATE
95549-66	A	ADDED ACOUSTICAL TESTING	10/27/06
95549-65		ESTABLISHED	12/02/05
DRAWING DESC.	1600 SYSTEM 1 THERMAL AND ACOUSTICAL TEST 2006		
FILE NAME	T162-928 02 OF 03		

E0A0



T162-928 03 OF 03	A

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One Piece

QTI VERIFIED DRAWING
FILE T2009-227/292
DATE 4-22-09
TECH

BOM

DRAWN: JSD	MATERIAL AND FINISH	95549-66	A	ADDED ACOUSTICAL TESTING	10/27/06
DATE: 11/22/05		95549-65		ESTABLISHED	12/02/05
CHECK: GBM		P.O. NO.	REV.	DESCRIPTION	DATE
APPVD: GBM	An Alcoa Company	DRAWING DESC.	1600 SYSTEM 1 THERMAL AND ACOUSTICAL TEST 2006		
SCALE: AS SHOWN	Product Engineering & Development	FILE NAME	T162-928 03 OF 03		

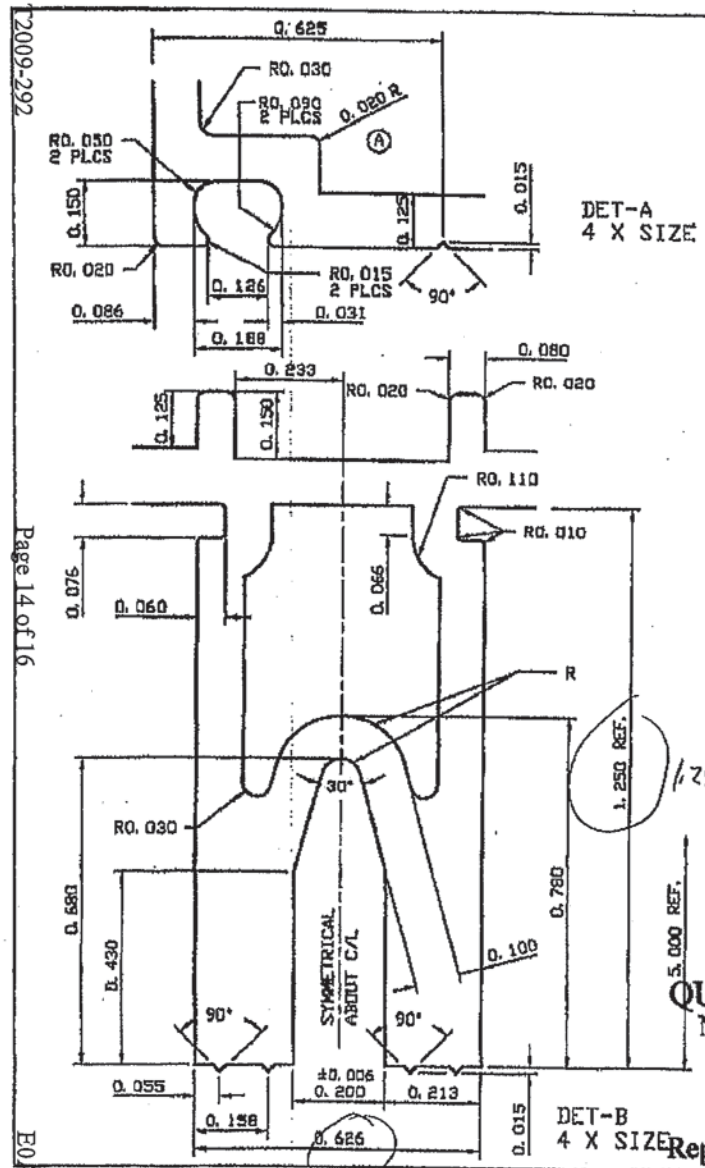
SECTION B-B

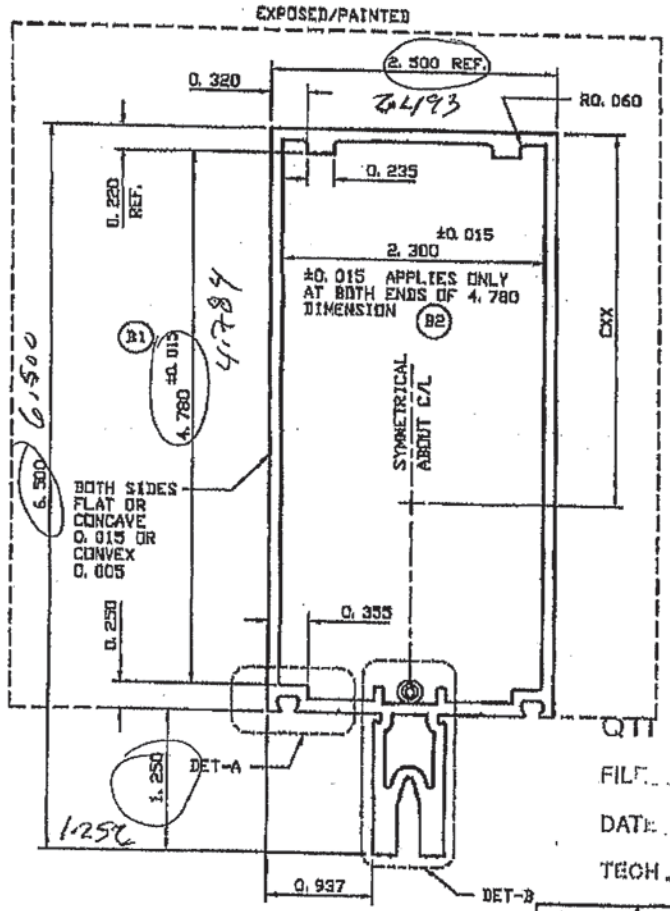
QUALITY TESTING INC.
NFRC Simulation Drawing

APR 09 2009

Report No: C2009-214
Report By:

E0A0





ACTUAL SIZE

162-003	C

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STANDARD EXTRUSION TOLERANCES TO APPLY UNLESS OTHERWISE NOTED. (SEE KAWNEER PROCEDURE E.CE.47)

DENOTES LOCATION OF IDENTIFICATION MARK - SEE T-8013

☐ RIDGE TYPE
☒ GROOVE TYPE

O/S. PER.	=	20.141
PNT. PER.	=	13.000
AREA	=	2.097
MASS	=	2.454
Ixx	=	10.135
Cxx	=	3.348
Sxx	=	3.087
Iyy	=	1.807
Cyy	=	1.230
Syy	=	1.445
TYP. WALL	=	0.100
TYP. RADII	=	N/A

QTI VERIFIED DRAWING
FILE T2009-227/292
DATE 4-22-09
TECH

QUALITY TESTING INC.
NFRC Simulation Drawing
APR 09 2009
Report No: T2009-227
Report By:

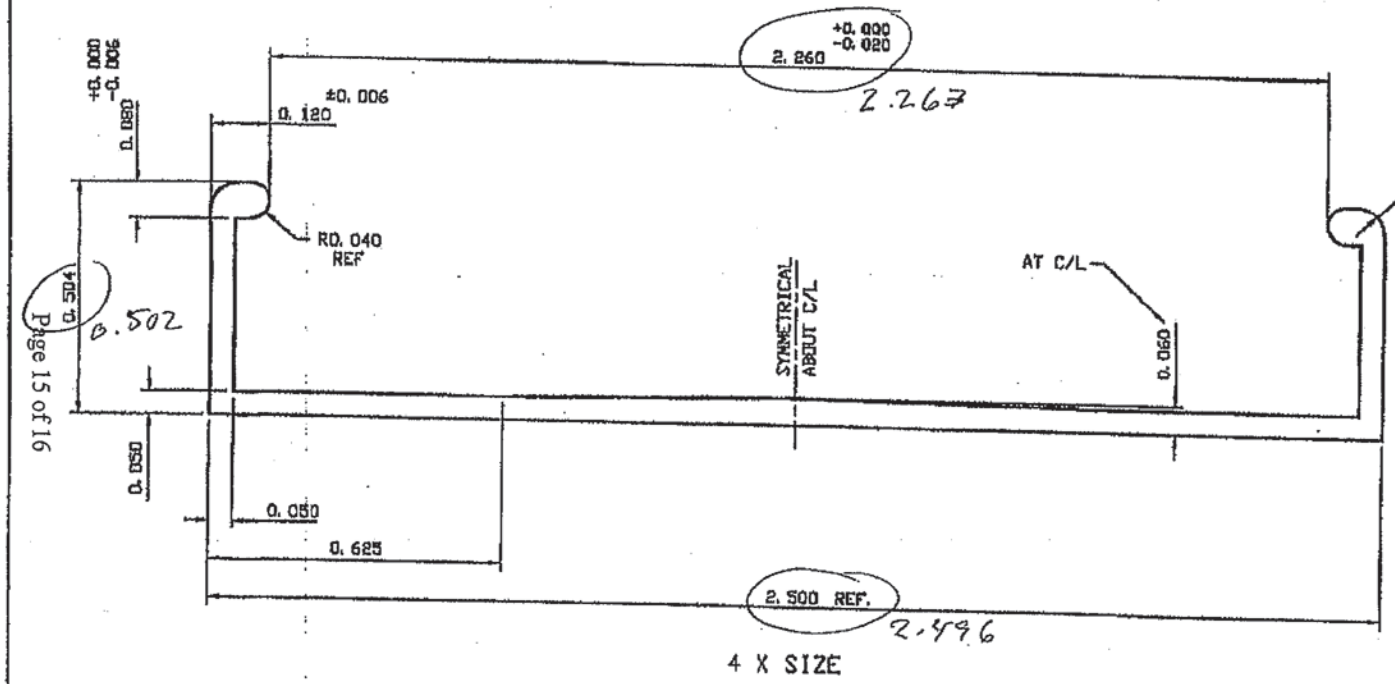
DRAWN	MATL AND FINISH
WEW	6063-T6 EXTRUDED ALUMINUM
DATE 09/21/93	
CHK WJL	
APPRD. F.G.	Kawneer PRODUCT ENGINEERING

C.C. NO.	REV.	DESCRIPTION	DATE
95449-54	C	REVISED ALLOY TO T6	03/25/02
95449-48	B	B1 = ±0.015 VAR ±0.010 B2 = ADDED TOLERANCE NOTE	11/02/00
95449-01	A	DIMENSION 0.080 R CORRECTED FROM R0.080 GEOMETRY WAS CORRECT	12/17/93
95449		ESTABLISHED	09/21/93

PART DESCRIPTION
LIGHT 7-1/2" SYSTEM
VERTICAL/HORIZONTAL
1' FRAMING

162-003

T2009-292



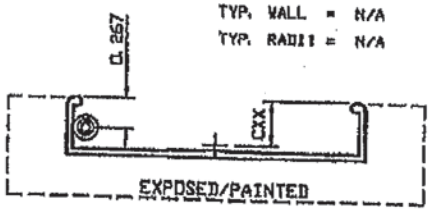
162-006	C

STANDARD EXTRUSION TOLERANCES TO APPLY UNLESS OTHERWISE NOTED. (SEE KAWNEER PROCEDURE 2.05.5)

SOURCE LOCATION OF IDENTIFICATION MARK - SEE T-2013.

☒ RIDGE TYPE
☐ GROOVE TYPE

D/S. PER.	=	7.076
PNT. PER.	=	3.500
AREA	=	0.185
MASS	=	0.218
Ixx	=	0.004
Cxx	=	0.356
Sxx	=	0.010
Iyy	=	0.145
Cyy	=	1.850
Syy	=	0.116
TYP. WALL	=	N/A
TYP. RADII	=	N/A



ACTUAL SIZE

QUALITY TESTING INC.
NFRC Simulation Drawing

APR 09 2009

Report No: C2009-214
Report By: BJW

QTI VERIFIED DRAWING
FILE T2009-227/292
DATE 4-22-09
TECH RF

95449-38	C	FACE WALL WAS 0.060 TYPICAL	08/12/99
95449-21	B	ADDED 0.006 TOL'S AT "NUBS"	03/29/96
95449-05	A	FRONT WALL CHANGED TO 0.060 TYP	07/15/94
95449		ESTABLISHED WAS 985-789	09/21/93
E.C. NO.	REV.	DESCRIPTION	DATE

SCALE AS NOTED

DRAWN WEW	MATL AND FINISH 6063-T5 EXTRUDED ALUMINUM
DATE 09/21/93	
CHK WJL	Kawneer PRODUCT ENGINEERING
APPRD. F.G.	

PART DESCRIPTION
EXTERIOR COVER
3/4" PROJECTION

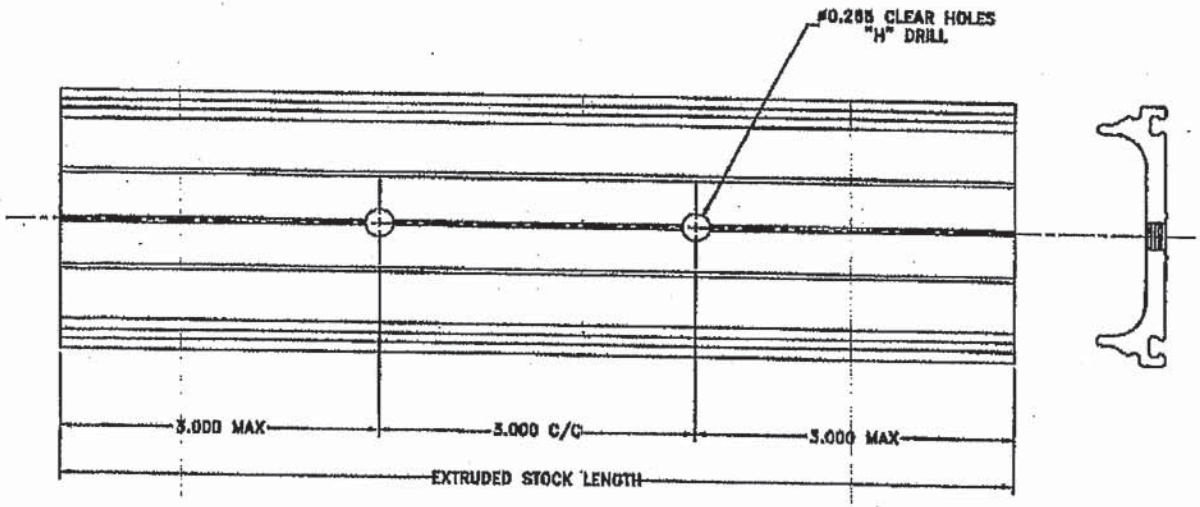
162-006

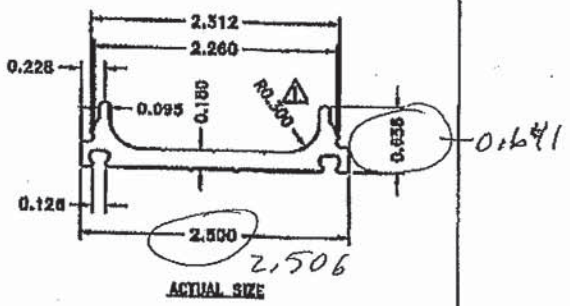
E0A0

T2009-292

E0A0

828-840





QUALITY TESTING INC.
NFRC Simulation Drawing

APR 09 2009

Report No: C2009-214

Report By:

QTI VERIFIED DRAWING
FILE: T2009-227/292
DATE: 4-22-09
TECH:

PROJECT			-	-
DRAWN BY C.D. 3D	MATERIAL FIBERGLASS		⚠ REVISED	JAN 09/09
DATE NOV 05/08		E.C. NO.	RELEASED	NOV 05/08
CHK	KAWNEER	REV.	DESCRIPTION	DATE
APPRD		PART DESCRIPTION: FIBERGLASS PRESSURE PLATE 1600 SYSTEM 1		PART NUMBER: 828-840 N/A

QUALITY TESTING INC.
3310 Hill Avenue, Everett, WA 98201
Phone: (425) 259-6799
FAX: (425) 259-4936
email: info@qtitest.com

AAMA 1503 TEST REPORT

T2009-369$_{E0A0}$

REPORT TO: KAWNEER COMPANY, INC.
555 GUTHRIDGE COURT
NORCROSS, GA 30092

ORIGINAL REPORT NUMBER: T2009-369
ORIGINAL REPORT DATE: 06/22/2009

PRODUCT: KAWNEER 1600 SYSTEM 1 CURTAIN WALL WITH HP GLASS, ARGON, AND THERMALLY IMPROVED SPACER.

Quality and Performance
We Test Windows.....and a Whole Lot More

REPORT TO:	KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092
TEST DATE:	06/22/2009
TEST METHODS:	AAMA 1503: Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections. ASTM E283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
NOTE:	The test methods described in this report were conducted in full compliance with AAMA AND ASTM requirements.

DESCRIPTION OF SAMPLE TESTED

U-Factor (Us) =	0.37
CRF F =	77
CRF G =	74
MODIFICATIONS:	None.
MODEL/TYPE:	Kawneer 1600 System 1 Curtain Wall with HP Glass, Argon, and Thermally Improved Spacer.
CONFIGURATION:	OO
FRAME SIZE:	2000 mm (78.75") wide by 2000 mm (78.75") high.
FRAME DEPTH:	191 mm (7.50").
LEFT DAYLIGHT OPENING:	899 mm (35.375") wide by 1864 mm (73.375") high.
RIGHT DAYLIGHT OPENING:	899 mm (35.375") wide by 1864 mm (73.375") high.
PROJECTING HEIGHT OF THE FRAME :	LEFT HEAD: 64 mm (2.50") LEFT JAMB: 64 mm (2.50") LEFT SILL: 64 mm (2.50") MULLION: 64 mm (2.50") RIGHT HEAD: 64 mm (2.50") RIGHT JAMB: 64 mm (2.50") RIGHT SILL: 64 mm (2.50")

FRAME TYPE/FINISH:	Painted solid aluminum framing members with a dense EPDM thermal separator and fiberglass pressure cap.
JOINT CONSTRUCTION:	All main frame corners were butt joined, sealed and screw-connected.
GLAZING COMPONENTS:	
OVERALL:	25 mm (1.00") nominal.
GLASS THICKNESS:	Two panes of 6.0 mm nominal tempered.
SPACER TYPE/SIZE:	13 mm (0.50") nominal thermally improved aluminum.
SEALANT TYPE:	PIB / Silicone.
COATINGS USED:	Low E (e = 0.035) on surfaces 2.
AIR SPACE CONTENT:	Argon = 90 % fill assumed.
GAS FILL METHOD:	Evacuated chamber or two probe with sensor.
NOTE:	Emissivity and gas-fill/method and percentage supplied by the manufacturer and not verified by Quality Testing, Inc.
GLAZING SYSTEM:	All glass was set on blocks, bedded against a preset glazing gasket on the interior side of the glazing pocket and retained with a pultruded fiberglass pressure plate and glazing gaskets on the exterior.
WEATHERSTRIP:	None.
INTEGRAL VENTILATING SYSTEMS/DEVICES:	None.
INTERNAL GRIDS:	None.
OPERATING HARDWARE:	Not applicable.
REINFORCEMENT:	Not applicable.
WEEP SLOTS:	
SIZE:	Approximately 0.312" diameter holes.
LOCATION:	Through the bottom leg of each horizontal exterior cover, at approximately 2.00" from each end. Eight weeps total.
WEEP COVERS:	None.

TEST CHAMBER:	# 1.
SIZE OF METERING BOX:	97" wide by 96" high by 45" deep with a full width baffle at 8" from the mask wall face.
CALIBRATION:	The last full calibration was performed in August, 2008.
NOTE:	The estimated uncertainty of the equipment used to perform this test has yet to be determined.

TEST RESULTS

	SI		IP
Qs = Heat flow through the test sample	331.62	(WATTS)	1131.82 (BTU/hr)
As = Area of sample	4.00	(M2)	43.07 (Ft2)
th = Temperature of warm side air	20.88	(C)	69.58 (F)
tc = Temperature of cold side air	-18.10	(C)	- 0.59 (F)
FT = Weighted frame temperature	12.00	(C)	53.61 (BTU/hr)
FTp = Average temperature of frame	12.15	(C)	53.86 (F)
FTr = Average temperature of coldest area	9.45	(C)	49.01 (F)
W = A weighting factor to ratio FTp and FT	0.05		0.05
GT = Average temperature of glazing	10.67	(C)	51.21 (F)
"Us" = Thermal Transmittance	2.13	($W/(m^2. k)$	0.37 ($BTU/hr/ft^2/F^0$)
CRFf =	77		
CRFg =	74		

FORMULAE

$$U = q/A(th - tc)$$

$$W = \frac{FTp - FTr}{FTp - (tc + 10)} \times 0.40$$

Where: tc = temperature of cold side air
10 = arbitrary temperature adjustment
0.40 = arbitrary weighting factor

$$FT = FTp\,(1 - W) + WFTr$$

$$CRFg = \frac{GT - tc}{th - tc} \times 100$$

$$CRFf = \frac{FT - tc}{th - tc} \times 100$$

Where: 100 = A multiplier to make CRF a whole number.

NFRC 400 & ASTM E283 AIR LEAKAGE TEST RESULTS

Modifications made For Air Infiltration: None

Modifications made For Operating force: None

OPERATING FORCE:

NAFS1(as referenced in NFRC 400): North American Fenestration Standard December,2000.

LOAD POINT: = Not applicable

Ambient Air Temp.	=	18.3	C	65.0	F

	SI Units (newton)		IP Units (Pounds-force)	
Opening Breakaway = N/A	0.0	N	0	lbf
Closing Breakaway = N/A	0.0	N	0	lbf
Opening in Motion = N/A	0.0	N	0	lbf
Closing in Motion = N/A	0.0	N	0	lbf

Note: for products with rotary operators Torque (T) is measured and then converted to Force (F) by dividing by the center to center length of the lever(L) F= T/L.

AIR INFILTRATION: at 75 pa (1.57 psf)
ASTM E283 :

Relative Humidity = 54 %

Ambient Air Temp. =	18.3	C	65.0	F
Barometric Pressure=	101.9	Kpa	30.1	In-HG

	RATE(SI)		RATE(IP)		Test value ,if less than .01 enter <0.01	
Specimen Area =					43.07	ft2
Total Air Leakage =	6.6	L/s	13.9	CFM	13.896	CFM
Extraneous Air Leakage=	6.5	L/s	13.8	CFM	13.759	CFM
Net Specimen Air Leakage=	<0.1	L/s	0.1	CFM	0.14	CFM
Specimen air leakage rate=	0.1	L/s*m2	0.1	CFM/ft2		

GLAZING DEFLECTION & TEST RESULTS

Glazing deflection measurements were taken according to AAMA 1503 requirements. The effective gap width at the center of glass is a measured comparison to the overall glazing width at the edge of glass, less the standard thickness of all glazing panes. The results reported below were measured at the conclusion of the test and were performed at the test steady state temperature conditions with the calibrated perpendicular wind load on the exterior surface of the sample.

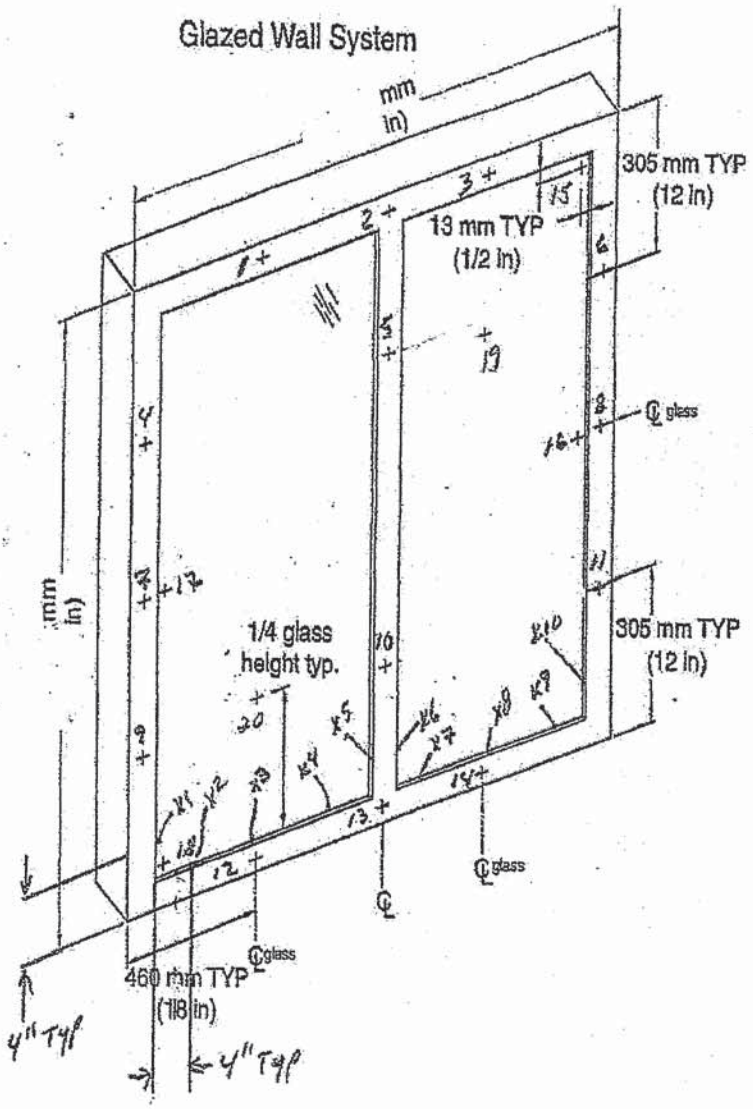
GLAZING DEFLECTION
- LEFT LITE: - 0.02
- RIGHT LITE: - 0.04"

EFFECTIVE CENTER GAP WIDTH
- LEFT LITE: 0.50"
- RIGHT LITE: 0.48"

NOTE: The test sample was sealed on the interior and all exterior weeps were sealed during the thermal test per AAMA 1503 requirements.

ADDITIONAL OBSERVATIONS: No moisture was observed.

THERMOCOUPLE PLACEMENT



The duration of the test conformed to AAMA 1503. After thermal stability conditions described in section 9.3.8 had been reached, the test was continued for four consecutive half-hour test periods produced results in which the specified conditions in section 9.3.8.1 through section 9.3.8.3 continued to be met. The results in this report were calculated from the full two hour steady state averages of 24 five-minute readings. For the duration of the test the weather-side wind was applied perpendicularly to the sample. All conversions and rounding are in accordance with the AAMA rounding and conversion policies. The precision and bias of the test method have yet to be determined. This report is the joint property of Quality Testing and the Client. Permission to reproduce this report by anyone other than Quality Testing and the Client must be granted in writing by both of the above parties. This report may not be reproduced except in its entirety. The results in this report are tested values and are applicable to the sample tested only, using the components and construction methods described therein.

Randal J. Van Voorst
Person In Responsible Charge

Ray Faust
Person Performing Test

REVISION SUMMARY

Revision No.	Date	Page No.	Description/Example
E0A0	06/22/2009	N/A	ORIGINAL REPORT

DRAWINGS

WESTERN ELECTRO - ACOUSTIC LABORATORY
A division of Veneklasen Associates, Inc.

TESTING • CALIBRATION • RESEARCH

25132 Rye Canyon Loop Santa Clarita, California 91355 Tel: (661) 775-3741 Fax: (661) 775-3742 www.weal.com

SOUND TRANSMISSION LOSS TEST REPORT NO. TL14-224

CLIENT: **Peerless Products Inc.**
2403 S. Main St.
Ft. Scott, Kansas 66701
TEST DATE: 20 May 2014

11 June 2014

INTRODUCTION

The test was performed in accordance with ASTM E 90-09, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions* and ASTM E2235-04$^{\varepsilon 1}$, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*. Copies of the test standard are available at www.astm.org. The test chamber source and receiving room volumes are 204 and 148.4 cubic meters respectively. Western Electro-Acoustic Laboratory is accredited by the United States Department of Commerce, National Institute of Standards and Technology under the National Voluntary Accreditation Program (NVLAP) Lab Code 100256-0 for this test procedure. This test report relates only to the item(s) tested. This report must not be used to claim product certification, approval, or endorsement by WEAL, NVLAP, NIST or any agency of the federal government.

DESCRIPTION OF TEST SPECIMEN

The test specimen was a Peerless Products G261 Dry Glaze aluminum casement window assembly. The specimen was installed by sliding it completely into the test chamber opening and capturing it with screws on both sides. The specimen was sealed into the test chamber opening with a heavy duct seal putty around the entire perimeter on both sides. The glazing consisted of a 30 mm (1-3/16 inch) dual glazed unit which was 6 mm (1/4 inch) monolithic exterior glass, 19 mm (3/4 inch) air space with a stainless steel warm edge spacer, and 5 mm (3/16 inch) monolithic interior glass. The unit was dry glazed into the sash frame with push-in foam gaskets on the stops and an aluminum snap in bead with a bulb gasket. The weather stripping used was a foam filled bulb gasket on the entire interior perimeter of the sash. A sanoprene leaf seal was used around the full perimeter at the midpoint of the frame. The sash was held in a closed position with a locking handle located on the jamb. The window had a multi-point lock system. The net outside frame dimensions of the window assembly were 577 mm (22-3/4 inches) wide by 1.48 m (58-1/4 inches) high by 82.6 mm (3-1/4 inches) deep. The overall weight of the assembly was 33.1 kg (73 lbs.) for a calculated surface density of 38.7 kg/m^2 (7.93 lbs./ft^2). The frame had a 22 mm (7/8 inch) thermal break. The two weep slots were normal with covers. The operable portion of the assembly was opened and closed five times immediately prior to the test.

RESULTS OF THE MEASUREMENTS

One-third octave band sound transmission loss values are plotted and tabulated on the attached sheet. ASTM minimum volume requirements are met at 80 Hz and above. Flagged values are lower limits of transmission loss. Actual transmission loss will be equal to or greater than the flagged value. The energy through the filler wall was within 6 dB of the energy through the composite wall in those frequency bands. The calculated STC rating is accurate because none of the values used to calculate the STC are flagged. The Outdoor-Indoor Transmission Class rating determined in accordance with ASTM E 1332-10a was OITC-28. The Sound Transmission Class rating determined in accordance with ASTM E 413-10 was STC-35.

Approved:

Gary E. Mange
Laboratory Director

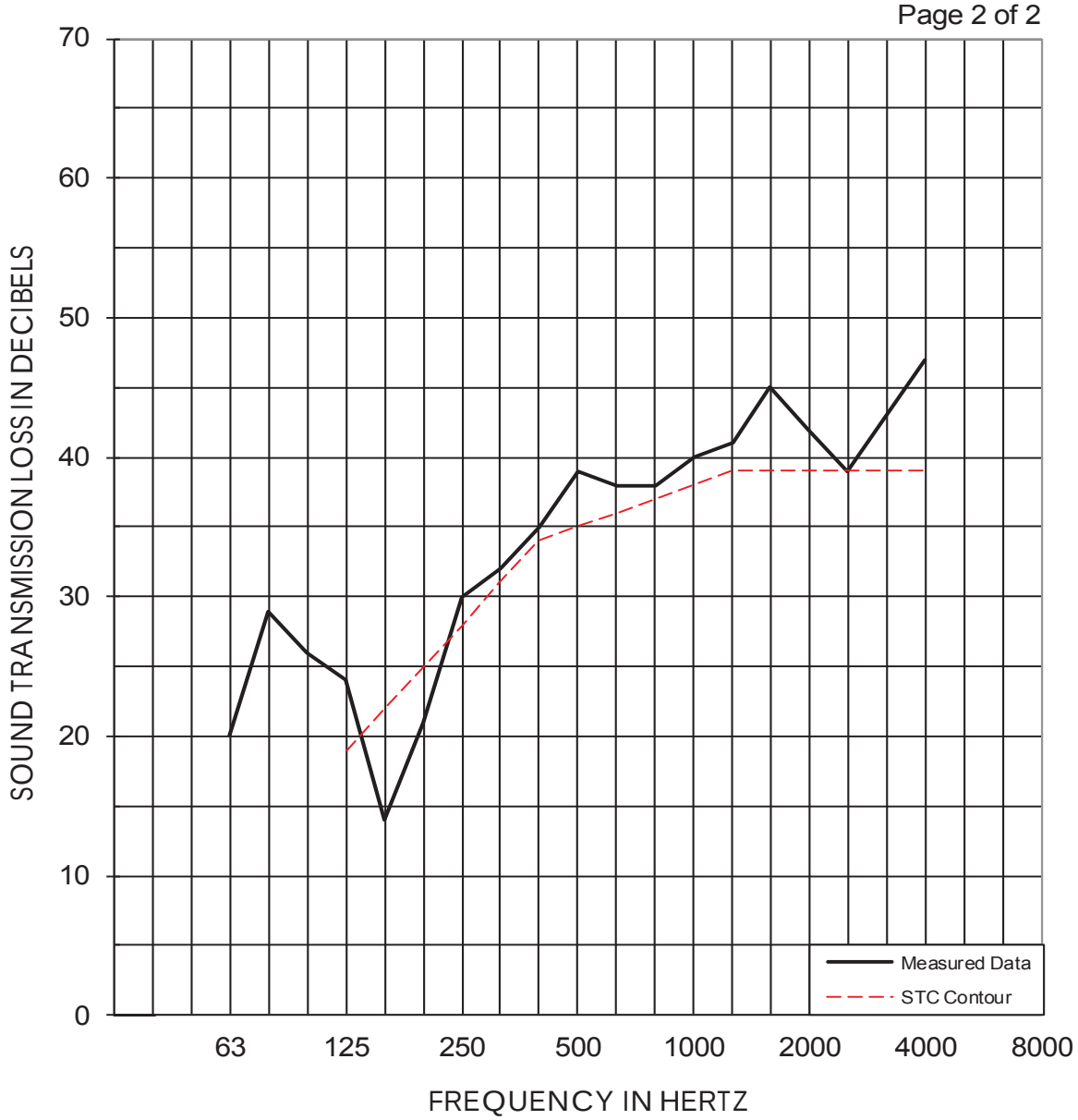
Respectfully submitted,
Western Electro-Acoustic Laboratory

Raul Martinez
Acoustical Test Technician

NVLAP LAB CODE 100256-0

WESTERN ELECTRO-ACOUSTIC LABORATORY

Report No. TL14-224



1/3 OCT BAND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	20*	29*	26	24	14	21	30	32	35	39
95% Confidence in dB	1.42	1.92	2.07	1.47	0.89	0.76	0.80	0.52	0.36	0.38
deficiencies					(8)	(4)				
1/3 OCT BAND CNTR FREQ	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
TL in dB	38	38	40	41	45	42	39	43	47	0
95% Confidence in dB	0.29	0.44	0.38	0.39	0.36	0.56	0.55	0.31	0.32	0.50
deficiencies							(0)			

EWR	OITC
38	28

* Minimum estimate of transmission loss. Measurement limited by filler wall. Actual TL will be equal or greater than value reported.

Test Date: 20 May 2014
Specimen Area: 9.2 sq.ft.
Temperature: 73.2 deg. F
Relative Humidity: 38 %

STC
35
(12)

NVLAP LAB CODE 100256-0

Mc Gowan Builders, Inc
180 Myrtle Av, Brooklyn, NY 11201
Submittal #:080000-003-001NEW
Date 10/29/14
Reviewed By: EM

DattnerArchitects

TRANSMITTAL

TO	Emmet Friel	**DATE**	April 14, 2015
COMPANY	Mc Gowan Builders, Inc.	**PHONE**	201-865-4666
ADDRESS	160 E. Union Avenue, East Rutherford, NJ 07073		
FROM	James Dreger		
CC			
PROJECT	180 Myrtle Avenue		
PROJECT NO.	1334		

VIA ☒ Email ☐ Hand Deliver ☐ Mail ☐ Messenger ☐ Pick Up ☐ Overnight

QUANTITY	DESCRIPTION
	1334-Subm_230500-030-031_150414-PTAC- Response

REMARKS

-AS PER ENGINEER'S COMMENTS
-PROVIDE SAMPLE FOR ARCHITECT AND OWNER APPROVAL
-GC TO COORDINATE SLEEVES WITH WALL DEPTH AS REQUIRED
-PROVIDE BASE PANEL
-SEE SPECIFICATIONS SECTION 238113
-ALL EXTERIOR METAL TO BE COLOR: VALSPAR SL9A9174 FLUROPON CLASSIC CHAMPAGNE METALLIC W/ 390X316 CLEAR COAT

JOB NO.	SPEC. SECT	FILE NO.	SUBM. NO.
1334	230500		030-031

APPROVED ☐ APPROVED AS NOTED ☒

REVISE AND RESUBMIT ☐ DO NOT RESUBMIT ☐

REVIEW FOR INFO ONLY ☐

IF CHECKED ABOVE, FABRICATION MAY BE UNDERTAKEN. DOES NOT AUTHORIZE CHANGES IN CONTRACT SUM UNLESS STATED IN CHANGE ORDER.

IF CHECKED BELOW, FABRICATION MAY NOT BE UNDERTAKEN. RESUBMIT CORRECTED COPIES FOR FINAL ACTION. CORRECTIONS SHALL BE LIMITED TO ITEMS CORRECTED BY ARCHITECT UNLESS INDICATED OR CIRCLED BY THE CONTRACTOR.

RESUBMIT CONFORMED TO CORRECTIONS ☐ REJECTED ☐

SUBMIT SPECIFIED ITEM ☐

THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND PERFORMING THE WORK IN A SAFE AND SATISFACTORY MANNER.

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

DATTNER ARCHITECTS

DATE: 2014-04-14 BY: JBD

Mc Gowan Builders, Inc.

160 East Union Ave
East Rutherford, NJ 07073

Phone: 201-865-4666

SUBMITTAL NO. 230500-030
PACKAGE NO: 230500

TITLE: PTAC Grill
PROJECT: 180 Myrtle Avenue

REQUIRED START: 10/30/2014
REQUIRED FINISH: 11/7/2014

DRAWING:
STATUS: DIS
BIC: LM

DAYS HELD: 0
DAYS ELAPSED: 63
DAYS OVERDUE: 56

RECEIVED FROM		SENT TO		RETURNED BY		FORWARDED TO	
LM	DK	EE	FK	IM	IM	LM	DK

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Sepias	Prints	Drawing Date	Held	Elapsed
001	PTAC Grill	10/31/2014	10/31/2014	1/2/2015	1/2/2015	DIS	0	0		0	63
	Please find attached returned PTAC Grill drawings from the design team for you to revise and resubmit. DISAPPROVED.										

☐ APPROVED
☒ APPROVED AS NOTED
☐ MAKE CORRECTIONS NOTED
☐ REVISE & RESUBMIT
☐ REJECTED
☐ SUBMIT SPECIFIED ITEM

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be conformed and correlated at the jobsite; fabrication processes and techniques of construction; coordination of his work with that of all other trades, and the satisfactory performance of his work.

AK
3/24/15

Ettinger Engineering Associates
505 Eighth Avenue, 24th Floor
New York, NY 10018
(212) 244-2410

UNIT TO SET DAMPER TO MINIMUM OUTSIDE AIR REQUIRED FOR "E" DESIGNATION WITH DAMPER IN CLOSED POSITION.
CONTRACTOR TO GAIN APPROVAL FROM THE OWNER FOR DELETION OF MOTORIZED DAMPER OPTION AND RESOLVE COST DEDUCT.

Inc
lyn, NY 11201
030-001DIS

Primavera ®

Reviewed By: SE

DattnerArchitects

TRANSMITTAL

TO	Emmet Friel	**DATE**	December 30, 2014
COMPANY	Mc Gowan Builders, Inc.	**PHONE**	201-865-4666
ADDRESS	160 E. Union Avenue, East Rutherford, NJ 07073		
FROM	James Dreger		
CC			
PROJECT	180 Myrtle Avenue		
PROJECT NO.	1334		

VIA ☒ Email ☐ Hand Deliver ☐ Mail ☐ Messenger ☐ Pick Up ☐ Overnight

QUANTITY	DESCRIPTION
	1334-Subm_230500-030-031_141230-PTAC- Response

REMARKS

-AS PER ENGINEER'S COMMENTS
-PROVIDE SAMPLE FOR ARCHITECT AND OWNER APPROVAL
-GC TO COORDINATE SLEEVES WITH WALL DEPTH AS REQUIRED
-ALL EXTERIOR METAL TO BE COLOR PPG CHAMPAGNE METALLIC UC# 70178XL
-PROVIDE BASE PANEL

JOB NO.	SPEC. SECT.	FILE NO.	SUBM. NO.
1334	230500		030-031

APPROVED ☐	APPROVED AS NOTED ☐
REVISE AND RESUBMIT ☒	DO NOT RESUBMIT ☐
REVIEW FOR INFO ONLY ☐	

IF CHECKED ABOVE, FABRICATION MAY BE UNDERTAKEN. DOES NOT AUTHORIZE CHANGES IN CONTRACT SUM UNLESS STATED IN CHANGE ORDER.

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RESUBMIT CONFORMED TO CORRECTIONS ☐	REJECTED ☐
SUBMIT SPECIFIED ITEM ☐	NOT REVIEWED ☐

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CORRECTIONS OR COMMENTS MADE ON SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

DattnerArchitects

DATE: 2014-12-30 BY: JBD

1385 Broadway, 15th Floor | New York, New York 10018 | tel 212 247 2660 | www.dattner.com

Mc Gowan Builders, Inc
180 Myrtle Av, Brooklyn, NY 11201
Submittal #: 230500-030-001DIS
Date 1/2/15
Reviewed By: SE

Mc Gowan Builders, Inc.

160 East Union Ave
East Rutherford, NJ 07073

Phone: 201-865-4666

SUBMITTAL NO. 230500-030
PACKAGE NO: 230500

TITLE: PTAC Grill
PROJECT: 180 Myrtle Avenue

REQUIRED START: 10/30/2014
REQUIRED FINISH: 11/7/2014

DRAWING:
STATUS: NEW
BIC: IM

DAYS HELD: 0
DAYS ELAPSED: 0
DAYS OVERDUE: -7

RECEIVED FROM		SENT TO		RETURNED BY		FORWARDED TO	
LM	DK	EE	FK	IM	IM	LM	DK

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Sepias	Prints	Drawing Date	Held	Elapsed
001	PTAC Grill	10/31/2014	10/31/2014			NEW	0	0		0	0
	Please find attached for your review and approval PTAC Grill drawing										

PROVIDE SOUND DATA FOR UNITS. PROVIDE CUT SHEET SHOWING MOTORIZED DAMPER FOR FRESH AIR INTAKE.

_____ APPROVED
_____ APPROVED AS NOTED
_____ MAKE CORRECTION NOTED
_X_ REVISED & RESUBMIT
_____ REJECTED
_____ SUBMIT SPECIFIED ITEMS

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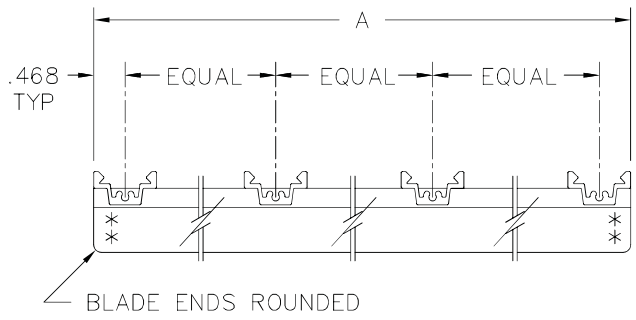
ETTINGER ENGINEERING ASSOCIATES
505 EIGHTH AVENUE 24TH FLOOR
NEW YORK, NY 10018
(212) 244-2410

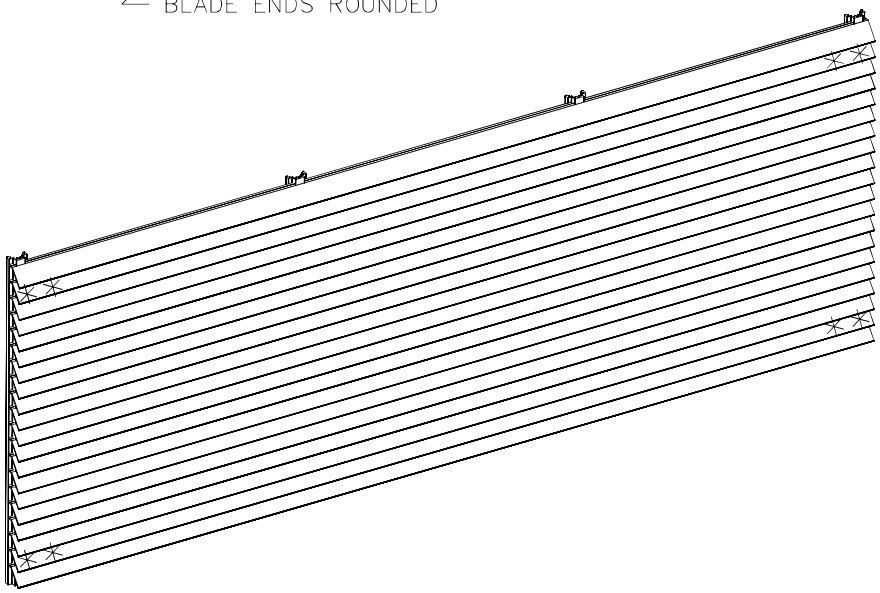
DATE 11/12/2014 BY DP

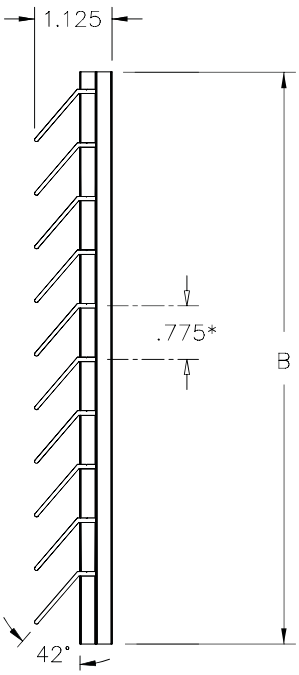
RELIABLE PRODUCTS

1300 ENTERPRISE ROAD
P.O. BOX 580
GENEVA, ALABAMA 36340-0580
PH 1-800-239-4621 FAX 1-800-508-1469

AEL - 42







EXTRUDED ALUMINUM; 6063-T5; CLEAR

ANODIZED OR ~~Baked Enamel~~

42° ARCHITECTURAL DECORATIVE LOUVER FACE AND END VIEWS FOR ILLUSTRATION PURPOSES ONLY

A= 42"

B= 16"

A AS REQUIRED, NOT TO EXCEED 190"
B AS REQUIRED, NOT TO EXCEED 84"
BRACE BAR AS REQUIRED, NOT TO EXCEED 16"

OPTIONS:
FRAMES OF CHOICE, SEE FRAME SUBMITTAL SHEET
* 1" BLADE SPACING
** EXTERIOR MOUNTING HOLES AS REQUIRED

JOB: _____

ARCHITECT: _____

ENGINEER: _____

CONTRACTOR: _____

LOCATION: _____

SUBMITTED BY: _____

AEL LOUVERS

AR90115D
REV. (D) 11/30/01

Mc Gowan Builders, Inc.

160 East Union Ave
East Rutherford, NJ 07073

Phone: 201-865-4666

SUBMITTAL NO. 230500-031
PACKAGE NO: 230500

TITLE: PTAC Data Sheets
PROJECT: 180 Myrtle Avenue
DRAWING:
STATUS: DIS
BIC: LM

REQUIRED START: 10/31/2014
REQUIRED FINISH: 11/7/2014
DAYS HELD: 0
DAYS ELAPSED: 63
DAYS OVERDUE: 56

RECEIVED FROM		SENT TO		RETURNED BY		FORWARDED TO	
LM	DK	EE	FK	IM	IM	LM	DK

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Sepias	Prints	Drawing Date	Held	Elapsed
001	PTAC Data Sheets	10/31/2014	10/31/2014	1/2/2015	1/2/2015	DIS	0	0		0	63
	Please find attached returned PTAC Data Sheets from the design team to be revised and resubmitted. DISAPPROVED.										

☐ APPROVED
☒ APPROVED AS NOTED
☐ MAKE CORRECTIONS NOTED
☐ REVISE & RESUBMIT
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AK
3/24/15

Ettinger Engineering Associates
505 Eighth Avenue, 24th Floor
New York, NY 10018
(212) 244-2410

UNIT TO SET DAMPER TO MINIMUM OUTSIDE AIR REQUIRED FOR "E" DESIGNATION WITH DAMPER IN CLOSED POSITION.
CONTRACTOR TO GAIN APPROVAL FROM THE OWNER FOR DELETION OF MOTORIZED DAMPER OPTION AND RESOLVE COST DEDUCT.

, NY 11201
-001DIS

Primavera ®

Date 1/2/15
Reviewed By: SE

DattnerArchitects

TRANSMITTAL

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FROM	James Dreger		
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VIA ☒ Email ☐ Hand Deliver ☐ Mail ☐ Messenger ☐ Pick Up ☐ Overnight

QUANTITY	DESCRIPTION
	1334-Subm_230500-030-031_141230-PTAC- Response

REMARKS

-AS PER ENGINEER'S COMMENTS
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JOB NO.	SPEC. SECT.	FILE NO.	SUBM. NO.
1334	230500		030-031

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Mc Gowan Builders, Inc
180 Myrtle Av, Brooklyn, NY 11201
Submittal #: 230500-031-001DIS
Date 1/2/15
Reviewed By: SE

Mc Gowan Builders, Inc.

160 East Union Ave
East Rutherford, NJ 07073

Phone: 201-865-4666

SUBMITTAL NO. 230500-031
PACKAGE NO: 230500

TITLE: PTAC Data Sheets
PROJECT: 180 Myrtle Avenue

REQUIRED START: 10/31/2014
REQUIRED FINISH: 11/7/2014

DRAWING:
STATUS: NEW
BIC: IM

DAYS HELD: 0
DAYS ELAPSED: 0
DAYS OVERDUE: -7

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001	PTAC Data Sheets	10/31/2014	10/31/2014			NEW	0	0		0	0
	Please find attached for your review and approval PTAC Data Sheets										

PROVIDE CUT SHEET SHOWING MOTORIZED DAMPER FOR FRESH AIR INTAKE

_____ APPROVED

_____ APPROVED AS NOTED

_____ MAKE CORRECTION NOTED

_X_ REVISED & RESUBMIT

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ETTINGER ENGINEERING ASSOCIATES
505 EIGHTH AVENUE 24TH FLOOR
NEW YORK, NY 10018
(212) 244-2410

DATE 11/12/2014 BY DP

Mechanical Services
292 Fifth Avenue
NY, NY 10001
Phone
212-714-3555
Fax
212-613-2252

180 MYRTLE AVENUE

DL3 DYNALINE PACKAGED TERMINAL AIR CONDITIONER WITH GAS HEAT MECHANICAL SPECIFICATIONS

PRODUCTS

2.02 INCREMENTAL HEATING AND COOLING:

A. General:

1. The supplier will provide packaged terminal gas heating/electric air conditioning of the sizes and capacities shown on the schedule and listed in the specifications. Each unit shall consist of a chassis, wall case/sleeve, outside grille and room cabinet. Units shall be UL listed and C.S.A. design certified. Units shall comply with International Fuel Gas Code and NYS Energy Conservation Code for Packaged Terminal Units. Units shall be Suburban Manufacturing Company DYNALINE models, or equivalents. The units shall be located as shown on the drawings.

2. Unit steady state efficiency shall be rated at 80-82% nominal and the EER of the air conditioner shall equal to or greater than those prescribed by the NYS Energy Conservation Code.

3. Units shall be designed to operate on 208/230 volts, 60 Hz, single phase power.

4. Unit dimensions shall not exceed 42” wide and 16” high without optional air discharge package in place, not more than 23-13/32” from face of room cabinet to face of architectural exterior grille.

B. Chassis:

1. Unit chassis shall be a standard product of the manufacturer and shall be packed to prevent damages when reasonable care is exercised during shipment. Warnings on packaging shall alert handlers to the hazards of improper handling or stacking.

2. Chassis shall slide into a standard-size wall case and, after installation and testing, be ready to operate. Each chassis shall consist of the following system and components:

a) Refrigeration system constructed to isolate the hermetically sealed rotary-type compressor from external vibration. The system shall include copper/aluminum condenser and evaporator coils with capillary refrigerant control.

b) Air flow system consists of a two-speed room air motor (for Hi & Low A/C and Hi & Low Heat speeds) and a fan cycle function to permit continuous indoor fan operation. A separate condenser fan operates in the A/C cycle only. The condenser fan not operating in the heating mode, eliminates the potential for exhaust gases to be drawn back and freezing in the chassis compartment. The room air system incorporates a Tangential Blower Wheel for reduced noise and increased efficiency. Centrifugal type squirrel cage fans are not acceptable.

Mechanical Services
292 Fifth Avenue
NY, NY 10001
Phone
212-714-3555
Fax
212-613-2252

c) Condenser coils, with not less than 13 fins per inch, and evaporator coils, with not less than 11 fins per inch. Coils shall be constructed of copper/aluminum and fins shall be bonded to tubes to prevent electrolytic action.

d) Indoor and outdoor airflow which match the coil capacity for efficient transfer of heat. Design of the unit shall prevent water blow-off on the indoor evaporator coil. Indoor supply air grille, constructed of extruded aluminum, shall discharge air at 52 degrees off vertical pattern.

e) Electrostatic return air filter, constructed of washable media that installs and removes without tools.

f) Factory-installed, negative pressure, gas fired heat exchanger with electronic controlled, pilotless ignition system. Gas ignition shall occur by energizing of a ceramic hot surface, which lights the burner on each thermostatically controlled heating cycle. Heat exchanger shall be located in indoor air stream so as not to be visible or accessible through indoor supply air grille. Positive pressure combustion systems will not be acceptable.

g) Microprocessor based digital touch pad type control system located on the front top of the unit, including digital heating/cooling thermostat, and digital keypad type control for heating, cooling and manual fan operation. Digital readout of room ambient and setpoint temperatures. Module to incorporate self-diagnostic function to test each component for proper operation, and must display numeric code to indicate individual faults. General fault indication or pushbutton type controls are not acceptable.

h) Positive closing fresh air damper, located within the chassis to provide 70 cfm of outside air. An accessible manual control shall operate the damper.

i) Factory built-in, installed and wired carbon monoxide detectors with a manual reset cutout relay to stop operation of the unit if CO is detected.

C. Wall Case:

1. Wall case shall be constructed of 18-gauge galvanized and shall have a protective baked-on enamel finish. Base pan shall be 18-gauge galvanized.

2. Cases shall be installed through exterior walls where shown on the plans and shall be level from side to side and slope 1/4” from front to rear to ensure proper operation of condensate system.

3. Case shall be secured to the wall at both sides as shown in installation instructions. In no instance shall fasteners be used through the base pan so as to protect the water integrity of the base pan.

D. Outside Grilles: Architectural style grille of one-piece extruded anodized aluminum in baked enamel finish. Color to be selected by architect. If special exterior grilles are to be supplied by others, they must be submitted to the PTAC manufacturer for feasibility, air flow characteristics, and possible UL approved where necessary.

Mechanical Services
292 Fifth Avenue
NY, NY 10001
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E. Each unit shall be equipped with a removable, wrap-around room cabinet constructed of 18-gauge steel with a protective baked-on enamel finish similar to the wall case. Edges shall be rounded for safety and appearance.

F. Units shall be designed to operate at the gas inlet supply pressure, minimum 5" W.C., maximum 7" W.C. Built-in gas regulator factory set for 3.5 W.C.

G. Gas-fired PTAC units shall be UL Listed and C.G.A. design certified.

H. Units shall be installed in full accordance with the manufacturer's recommendations. The manufacturer shall not be liable for unit failure resulting from improper installation, which invalidates the warranty.

I. There shall be a limited one-year warranty on the entire unit, and a limited five-year parts warranty on the compressor and heat exchanger.

J. Optional Accessories (available at additional cost):

a. Provide a non-load bearing decorative base panel to conceal gas and electrical connections. Base panel shall be finished in a powder baked enamel to match the room cabinet. Standard panel to be 4-inches in height with a fixed 5-inch return. Panel secures to room cabinet by means of tinnerman clips. Special heights and 7-3/4" return are also available.

-PROVIDE BASE PANEL

Specifications

DL3 SERIES

Dynaline™

General Data	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Rated heating input (BTU/h)	20,000	18,000	12,000	12,000
Rated heating output (BTU/h)	16,000	14,580	9,840	9,840
Steady state efficiency	80%	81%	82%	82%
Rated Cooling Capacity (BTU/H)	15,000	11,500	9,500	7,600
Sensible/Latent Cooling	65/35	65/35	69/31	65/35
EER	9.6	10.40	11.20	11.60
Rated Air Flow: Fan only (CFM) Hi cool/low cool (CFM) Hi heat/low heat (CFM)	340 400/330 420/340	300 390/300 410/300	260 300/250 320/260	260 300/250 320/260
Weight (Lbs)	185	180	180	180
Cabinet color	Champagne Beige			

Minimum Installation Clearances	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Outside:				
Rear to nearest obstruction	3 feet			
Top, sides to nearest obstruction	0			
Centerline vent to window	9 inches			
Inside:				
Front to nearest obstruction	12 inches*			
Side to nearest obstruction	1 inch			
Bottom to floor (for return air)	0			
Cabinet top to ceiling	12 inches			

Electrical Data	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Volts/Phase/Cycle	208/230-1-60			
Minimum wire size (Copper)	#14 AWG			
Protection-Fused	2 Pole -15 amp			
Protection-Circuit (HACR type)	Dual - 15 amp			
Unit Plug: Amps NEMA Rating	15 amp 6-15 P			
Receptacle: Type Amps NEMA Rating	Tandem 15 amp 6-15 R			
Total amps cooling/heating	6.3 / 1.2	5.1 / 1.0	3.8 / 1.0	3.3 / 1.0
Total watts cooling/heating	1380 / 260	1125 / 150	855 / 150	675 / 150

Compressor	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Type	Hermetic rotary			
Refrigerant type (HCFC)	R410A			
Refrigerant charge	35 oz.	32 oz.	26 oz.	28 oz.
Rated load amps	6.4	5.1	3.9	2.9
Locked rotor amps	29	25	22	15
Rated capacity (BTU/h)	12,100	10,300	8,050	6,600
Compressor lock-out relay	(Normally Closed 24V) 5VA enrush - 4V constant			

Specifications subject to change without notice.

Condenser Fan	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Fan blade diameter	12 inches			
Number of blades	4			
Pitch	25 Degrees			
Condenser Fan Motor RPM	1500			
Full load amps	.5			

Condenser Coil	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Type	Copper / Aluminum			
Coil area	364 square inches			
Rows	3	3	3	3
Fins per inch	13	13	12	12

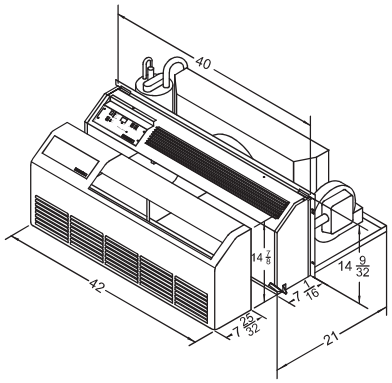
Evaporator Coil	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Type	Copper / Aluminum			
Coil area	260 in^2 / 234 in^2			
Rows	3			
Fins per inch	11	11	15	15
Refrigerant metering	Capillary			

Room Air Fan Motor	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Speed	2			
RPM high / low	1500 / 1250	1520 / 1400	1260 / 1130	1260 / 1130
Full load amps	.7	.5	.3	.3
Minimum wire size (60° Copper)	#18 AWG			

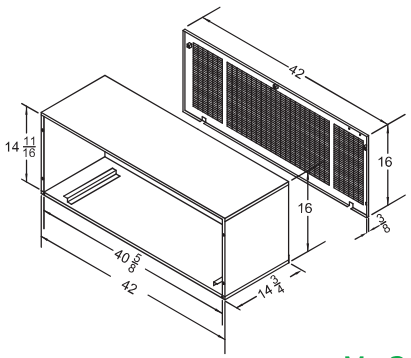
Gas Controls and Additional Data	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Gas (specify)	Natural or LP			
Burners	1			
Ignition system: Solid - state	Hot surface			
High limit (fixed)	220°			
Blocked Flue Switch	205°	200°	200°	200°
Gas connection size	$^3/_8$ inch IPS			
Gas connection	(LH) front or rear			

Blower / Evaporator	DL3-1622F	DL3-1220	DL3-0912	DL3-0712
Wheel diameter	4.53 inches	4.53 inches	4.375 inches	4.375 inches
Wheel width	26 inches			
Air vent - manual	70 CFM			
Required filter (1 each)	8 $^1/_4$" x 30 $^3/_4$"	6" x 30 $^3/_4$"	6" x 30 $^3/_4$"	6" x 30 $^3/_4$"
Filter type	Electrostatic / washable media			

Unit Dimensions



Rear opening of wall case centered at 13 $^1/_8$" H x $^1/_8$" W.



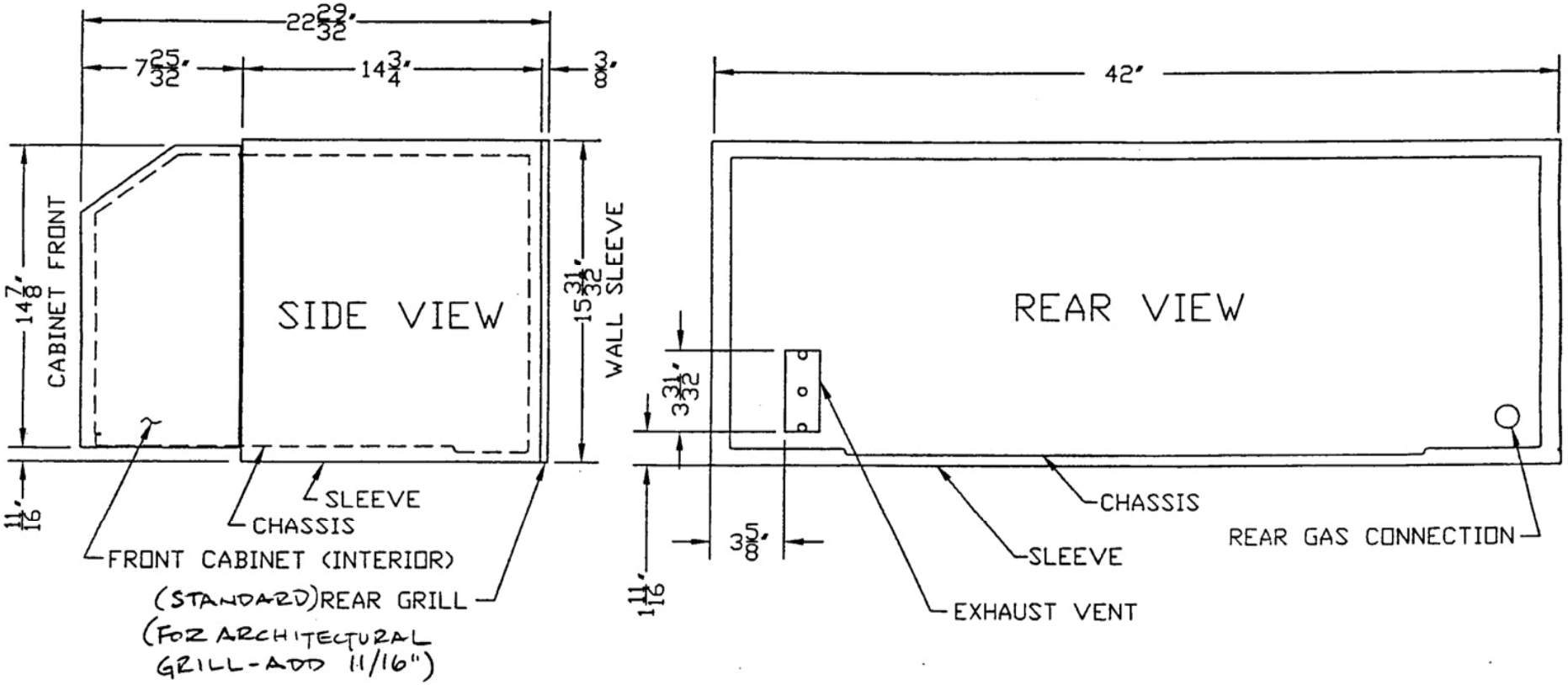
-GC TO COORDINATE SLEEVES WITH WALL DEPTH AS REQUIRED

AIRXCEL Suburban Division

676 Broadway Street
Dayton, Tennessee 37321
Phone: 423-775-2131 • Fax 423-775-7015
www.SuburbanManufacturing.com

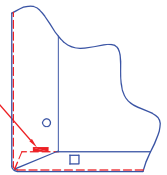
Suburban

DL3

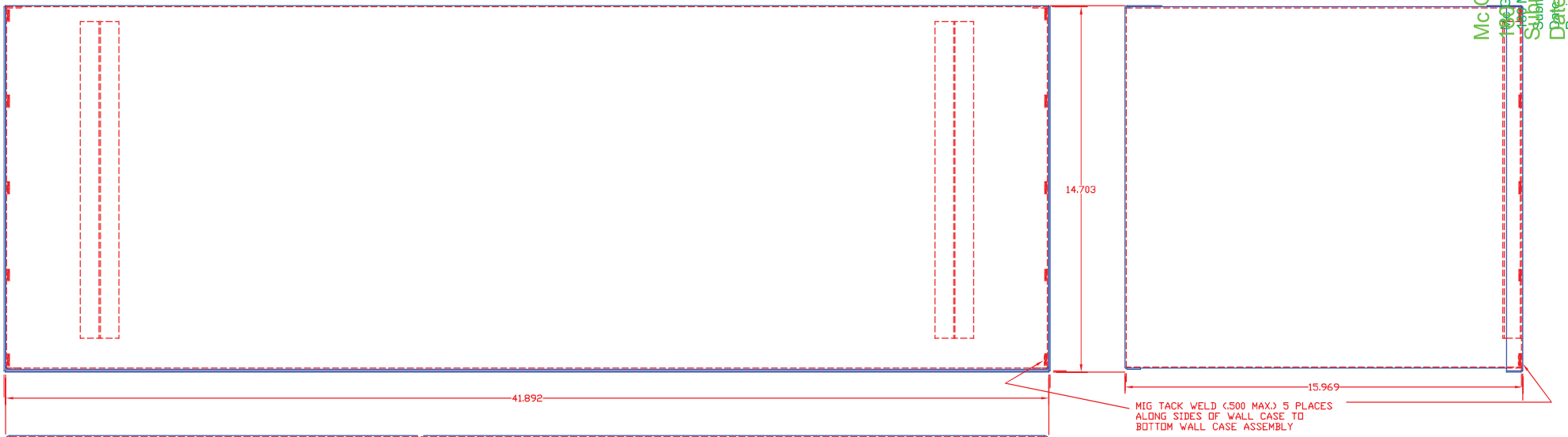


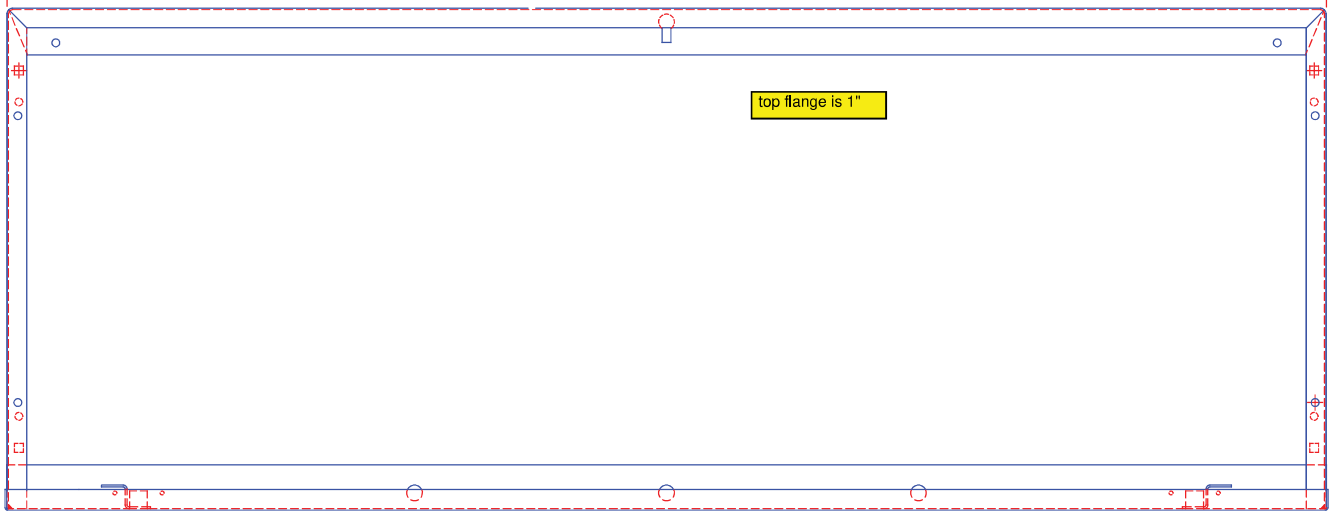
UNIT OVERALL DIMENSIONS

ITEM	PART NO.	DESCRIPTION	QTY.
1	D-102071	WRAP, WALL SLEEVE	1
2	CX-102251	BOTTOM, WALL CASE ASSY	1



MIG TACK MELD (.500) MAX. ON INSIDE ALONG TOP REAR AND SIDE REAR FLANGES (EACH END)





-GC TO COORDINATE SLEEVES WITH WALL DEPTH AS REQUIRED

REV	DATE	BY	DESCRIPTION	ECR#
/	12/13/06	JW	INITIAL RELEASE	WN-309

SUBURBAN MANUFACTURING CO.
DAYTON, TENN.

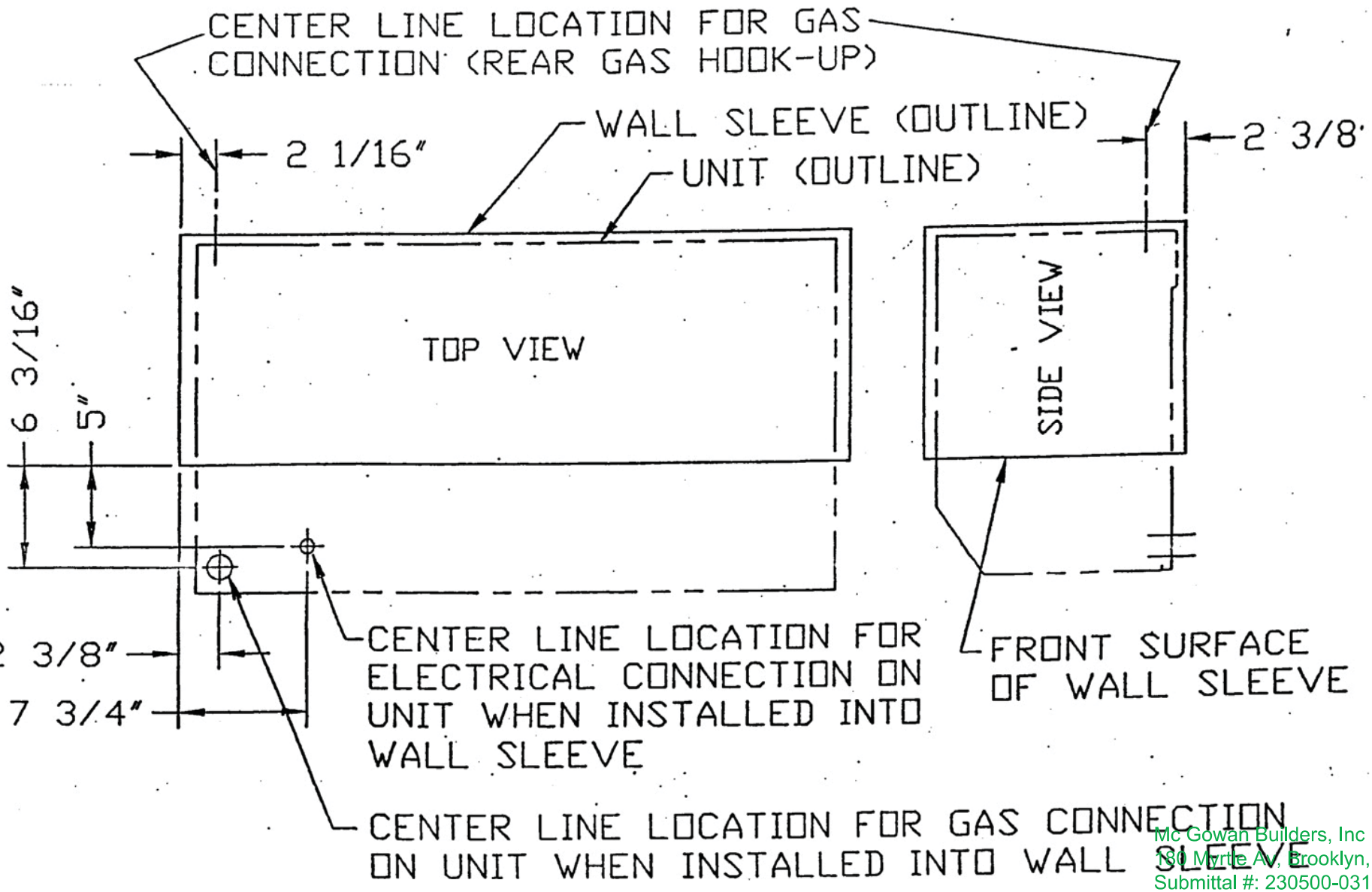
PART DESCRIPTION: WALL CASE ASSEMBLY

UNIT DESCRIPTION: 14 3/4" SLEEVE

DO NOT SCALE DRAWING

TOLERANCES UNLESS OTHERWISE SPECIFIED		DATE: 12/13/06	NO. REQ'D. 1
DECIMAL ±.031	SHEAR RADIUS: METAL GAUGE - I.R.	DRAWN BY: JW	SCALE: 1 = 2
HOLE DIA ±.002	060 - .203 .031 094 - .344 .046 064 - .274 .032 093 - .125 .125 126 - .188 .157 188 - .250 .250	CHECKED BY: JW	PART NO. DX-102252
ANGULAR ± 2°			
BREAKS 90°			

DL3



DattnerArchitects

130 West 57th Street
New York, New York 10019
www.dattner.com

tel 212 247 2660
fax 212 245 7132

December 16, 2009

New York City Office of Environmental Remediation
E-Designation Program
253 Broadway, 14th Floor
New York, NY 10007

Attn: Dan Cole, Bureau Chief

Re: **Window/wall Installation Report – Noise "E" Designation**
180 Myrtle Avenue, Brooklyn, New York
Tax Block 2061, Lot 1
E-Designation Tracking #08 DEPTECH 214K

Dear Mr. Cole:

With regard to the above referenced project with E-Designation Tracking # 08 DEPTECH 214K, we hereby confirm that the materials installed on the project meet the required dBA window/wall sound attenuation. Specifically, the window/wall attenuation was achieved through a 1" insulated windows composed of 5/16" laminated glass, 7/16" air space, and 1/4" laminated glass with an outdoor-indoor transmission (OITC) rating of 32 dBA.

The insulating glass unit is manufactured by Oldcastle Glass at all 1st floor areas and 2nd floor residential common areas and by Tri-State Building Materials within residential units and public corridors. Framing for the Oldcastle glass is by Kawneer. Receipts and photos of the glass units are included with this submittal. Also, testing for the Oldcastle glass is included, which is the same specification as the Tri-State glass but was not previously submitted.

This report certifies that the requirements pertaining to the window/wall component of the Noise "E" designation at the site have been fulfilled per the commitment in the Notice to Proceed (NTP) letters dated April 11, 2008 and January 16, 2009 from the NYC Department of Environmental Protection (NYC DEP). The alternate means of ventilation component of the Noise "E" will be addressed in a separate letter.

If you have any comments or questions, please do not hesitate to contact us.

Sincerely yours,

William Stein FAIA
Principal

REGISTERED ARCHITECT
WILLIAM STEIN
014686-1
STATE OF NEW YORK

Appendix C
Special Downtown Brooklyn District

Matter underlined is new, to be added;
Matter ~~struck out~~ to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution

Article X: Special Purpose Districts
Chapter 1 – Special Downtown Brooklyn District

* * *

101-10
SPECIAL USE REGULATIONS

101-11
Special Ground Floor Use Regulations

Map 2 (Ground Floor Retail Frontage), in Appendix E of this Chapter, specifies locations where the special ground floor #use# regulations of this Section apply.

#Uses# within #stories# that have a floor level within five feet of #curb level#, and within 50 feet of the #street line#, shall be limited to #commercial uses# listed in Use Groups 5, 6A, 6C, 6D, 7A, 7B, 8A, 8B, 8D, 9, 10, 11, 12A, 12B and 12C, where such #uses# are permitted by the underlying district. In addition, libraries, museums and non-commercial art galleries shall be permitted. In addition, all non-residential #uses# permitted by the underlying district shall be permitted for buildings fronting on Myrtle Avenue between Ashland Place and Fleet Place. A #building's street# frontage shall be allocated exclusively to such #uses#, except for Type 2 lobby space, entryways or entrances to subway stations provided in accordance with the provisions of Section 37-33 (Maximum Width of Certain Uses). However, loading berths serving any permitted #use# in the #building# may occupy up to 40 feet of such #street# frontage provided such #street# frontage is not subject to curb cut restrictions as shown on Map 5 (Curb Cut Restrictions) in Appendix E of this Chapter.

The regulations of this Section are modified as follows:

(a) Fulton Mall Subdistrict

For #buildings# in the Fulton Mall Subdistrict, Use Group 6A shall not include post offices, dry cleaning, laundry, or shoe and hat repair establishments. Use Group 6C shall

not include automobile supply establishments, electrolysis studios, frozen food lockers, loan offices or locksmiths. Use Group 8A shall not include billiard parlors, pool halls, bowling alleys or model car hobby centers. Use Group 9 shall be prohibited except for typewriter stores. Use Group 10 shall not include depositories for office records, microfilm or computer tapes. Use Groups 6D, 7A, 7B, 8B, 8D, 11, 12A and 12C shall be prohibited. Furthermore, no bank or off track betting establishment shall occupy more than 30 feet of frontage at the ground floor of any #building# along the #street line# of Fulton Street. Any establishment that fronts on the #street line# of Fulton Street for a distance greater than 15 feet shall provide an entrance on Fulton Street.

(b) Atlantic Avenue Subdistrict

Automotive service stations are not permitted. No bank, loan office, business or professional office or individual #use# in Use Group 9 shall occupy more than 50 feet of linear frontage on Atlantic Avenue. Moving and storage uses in Use Group 7 are permitted on the ground floor of a #building# only if such #use# is located at least 50 feet from the front wall of the #building# in which the #use# is located. Any #buildings developed# after June 28, 2004, or portions of #buildings enlarged# on the ground floor level after June 28, 2004, on a #zoning lot# of 3,500 square feet or more shall have a minimum of 50 percent of the ground #floor area# of the #building# devoted to permitted #commercial uses# in Use Groups 6, 7 or 9, except that this requirement shall not apply to any #development# occupied entirely by #community facility use#.

In any #building# within the Atlantic Avenue Subdistrict, the provisions of Section 32-421 (Limitation on floors occupied by non-residential uses) restricting the location of non-#residential uses# listed in Use Groups 6, 7, 8, 9 or 14 to below the level of the first #story# ceiling in any #building# occupied on one of its upper stories by #residential# or #community facility uses#, shall not apply. In lieu thereof, such non-#residential uses# shall not be located above the level of the second #story# ceiling.

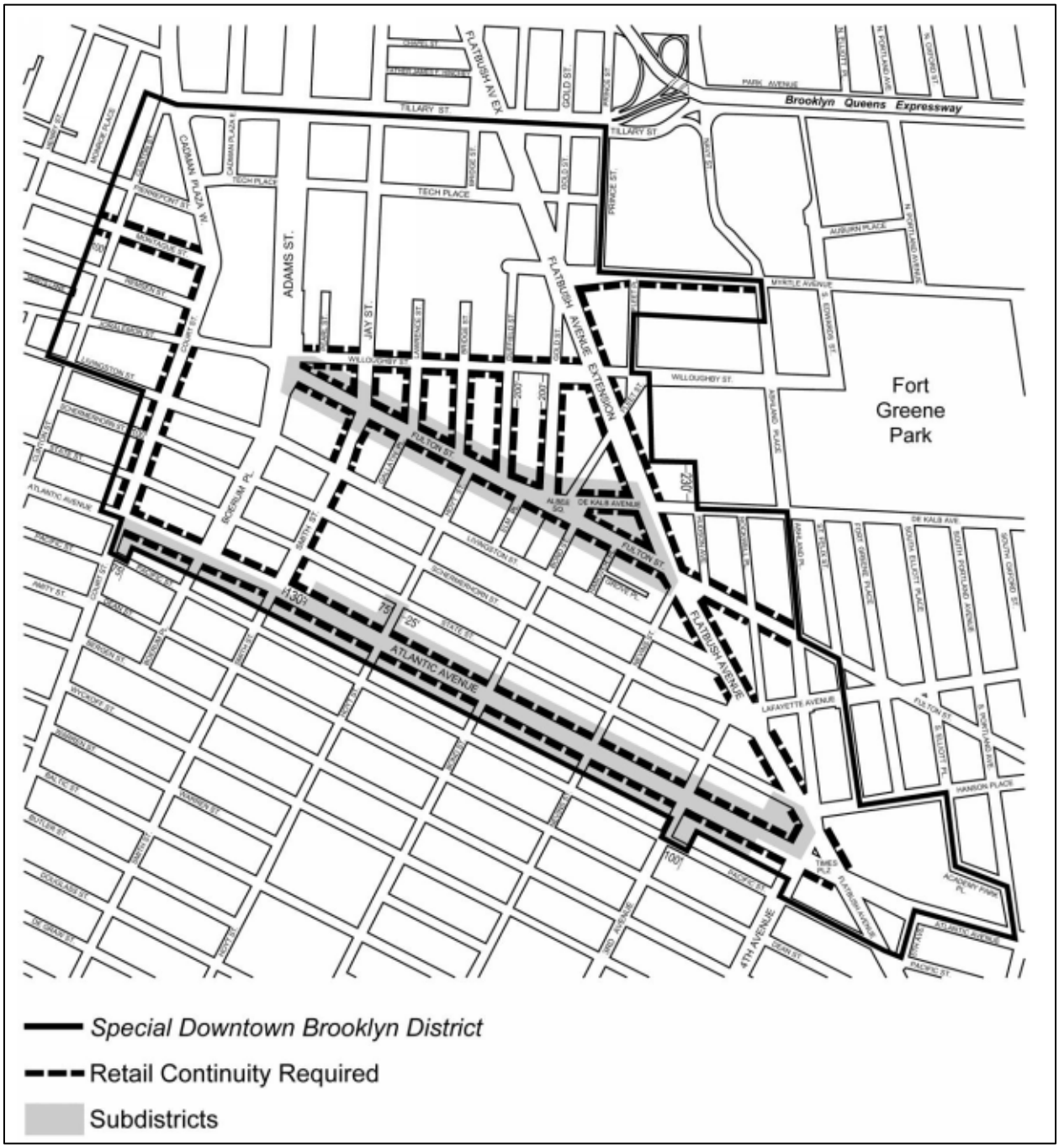
* * *

Appendix E

Special Downtown Brooklyn Maps

Map 2. Ground Floor Retail Frontage

[EXISTING MAP]



[PROPOSED MAP]