



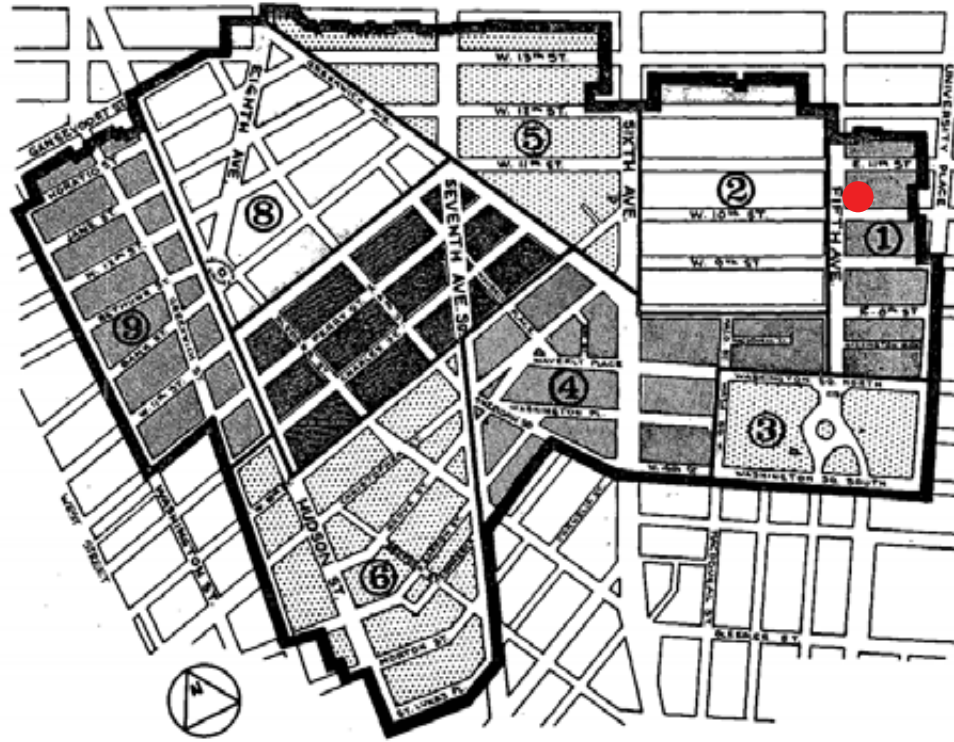
New York University
Rubin Hall Renovation
35 Fifth Avenue, New York NY 10003

Landmarks Preservation Commission
Community Board 2 Presentation

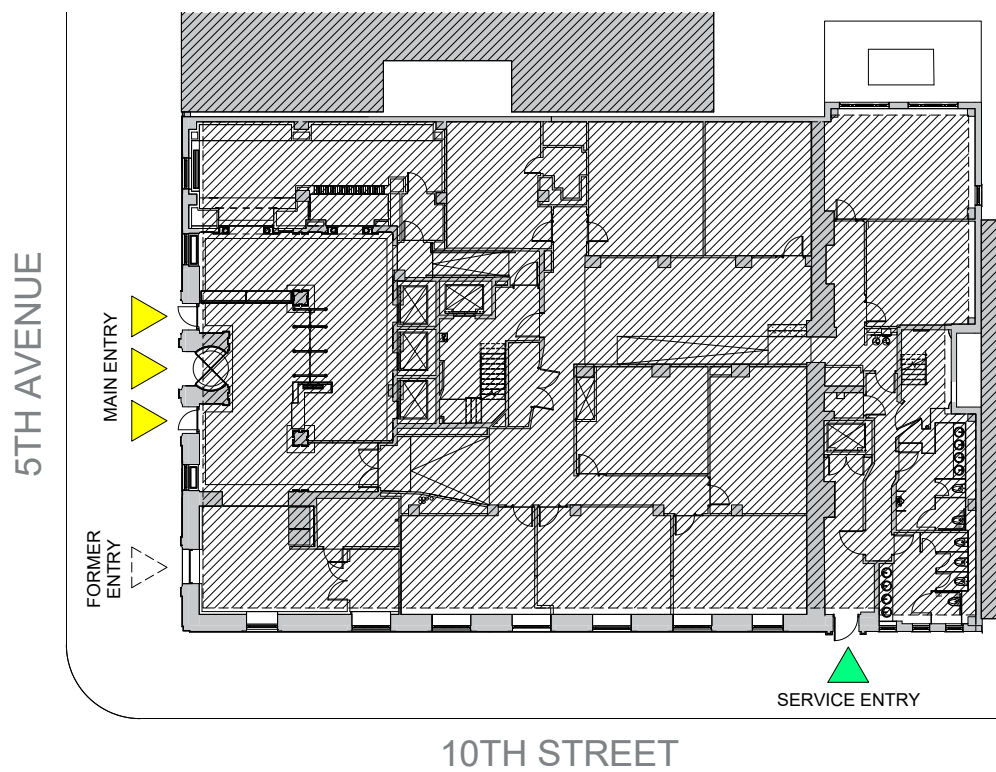
13 January 2022

PROJECT LOCATION

GREENWICH VILLAGE
HISTORIC DISTRICT



RUBIN HALL
SITE PLAN



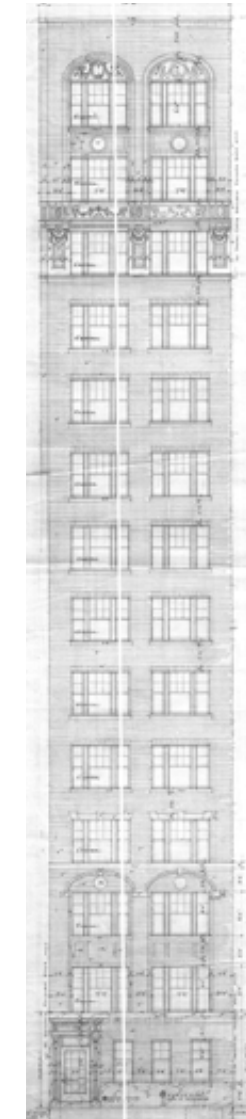
BUILDING HISTORY

CHRONOLOGY

- 1872 GROSVENOR APARTMENTS CONSTRUCTED AT 5TH & 10TH, 6 STORY HOTEL DESIGNED BY DETLEF LIENAU
- 1922 1ST EAST 10TH STREET ADDITION DESIGNED BY SCHWARTZ AND GROSS
- 1925 NEW GROSVENOR HOTEL CONSTRUCTED AT 5TH & 10TH, DESIGNED BY SCHWARTZ AND GROSS, ANNEXED 1ST EAST 10TH
- 1936 BAR ADDED TO LOBBY, WINDOW REPLACED BY DOOR AT THE SOUTH END OF WEST FACADE
- 1964 NYU PURCHASED BUILDING
- 1968 WINDOWS REPLACED
- 1969 LANDMARK STATUS AS PART OF THE GREENWICH VILLAGE HISTORIC DISTRICT
- 1970 2ND FLOOR RENOVATION FROM APARTMENTS TO STUDENT SPACES
- 2015 1ST FLOOR CAFETERIA CONVERTED TO CLASSROOMS



1872



1922
1st East 10th



1926
35 5th Ave

BUILDING HISTORY



35 5th Ave (1926)



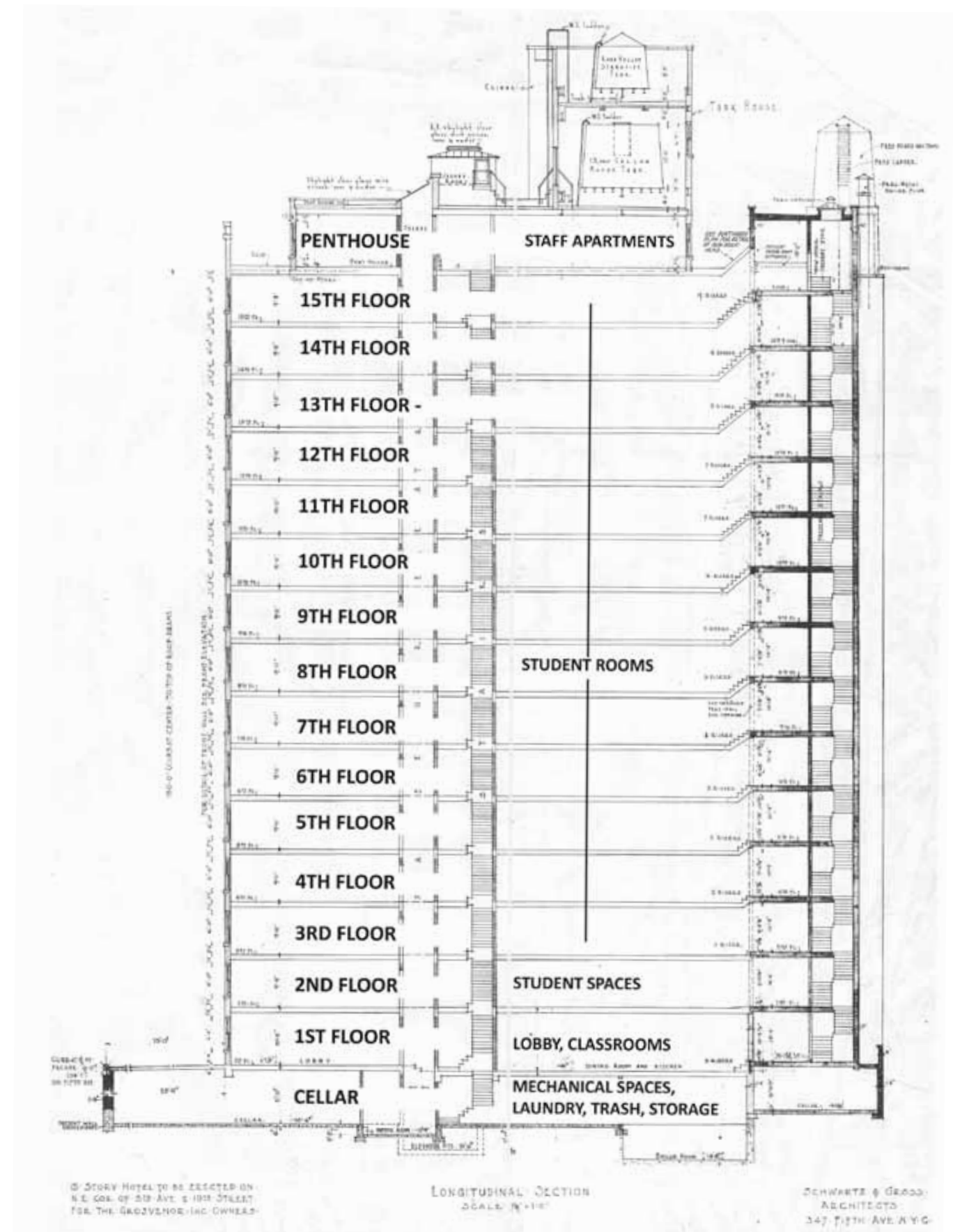
35 5th Ave (Present)

PROJECT INTRODUCTION

GOALS:

1. REHABILITATE AND PRESERVE HISTORIC FABRIC
2. REINSTATE HISTORIC WINDOW CONFIGURATION
3. SIGNIFICANTLY IMPROVE ENERGY EFFICIENCY IN ACCORDANCE WITH LOCAL LAW 97
4. CREATE A HIGH PERFORMANCE, ENERPHIT (PASSIVE HOUSE) CERTIFIED BUILDING IN CURRENT AND FUTURE RENOVATIONS
5. INSTALL AN ALL-ELECTRIC, FOSSIL-FUEL FREE HVAC SYSTEM
6. INCREASE LIFE SAFETY AND RESILIENCE BY ADDING AN EMERGENCY GENERATOR

2023 ANTICIPATED RENOVATION COMPLETION



PROPOSED WORK

SCOPE:

- REPLACE WINDOWS
 - REINSTATE THE ORIGINAL WINDOW CONFIGURATION AND FINISH COLOR
- REPLACE AND ADD EQUIPMENT TO THE ROOF
- INSTALL EMERGENCY GENERATOR INSIDE THE EXISTING TANK HOUSE
 - INFILL WINDOWS ON TANK HOUSE
 - ADD LOUVERED OPENING AT TANK HOUSE

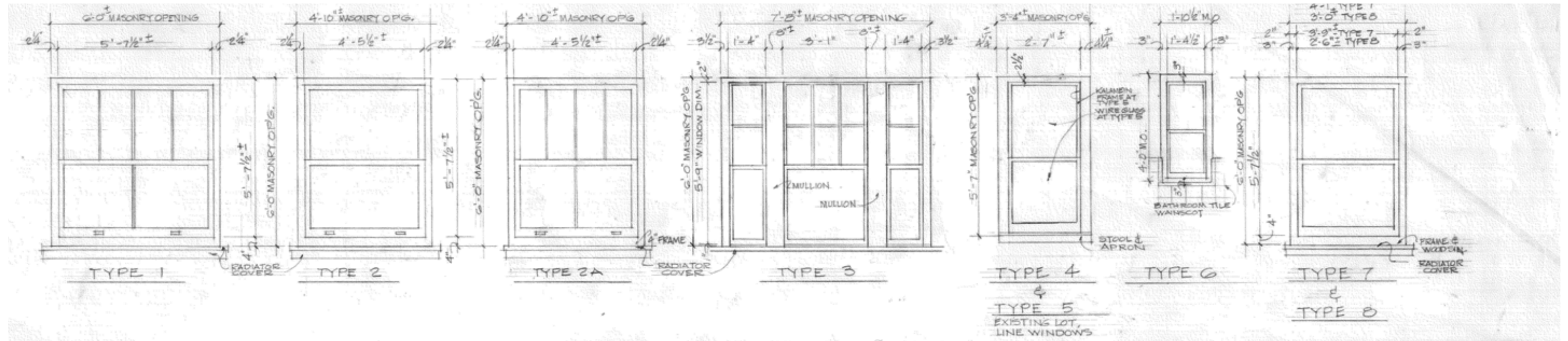


WINDOWS

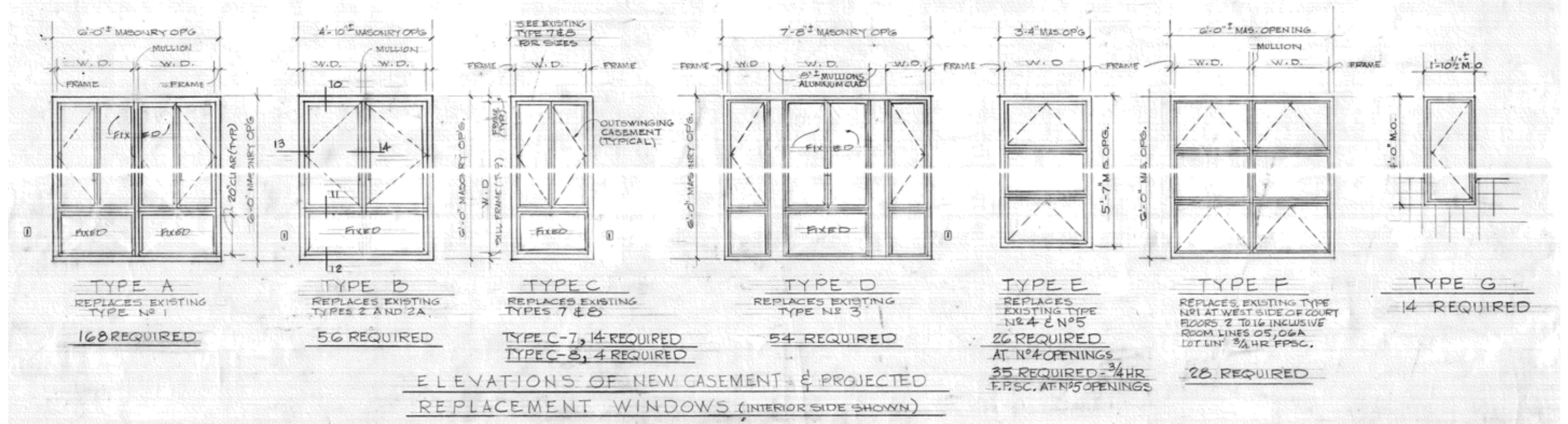
ORIGINAL HISTORIC WINDOWS (1926)



1968 WINDOW REPLACEMENT DOCUMENTATION

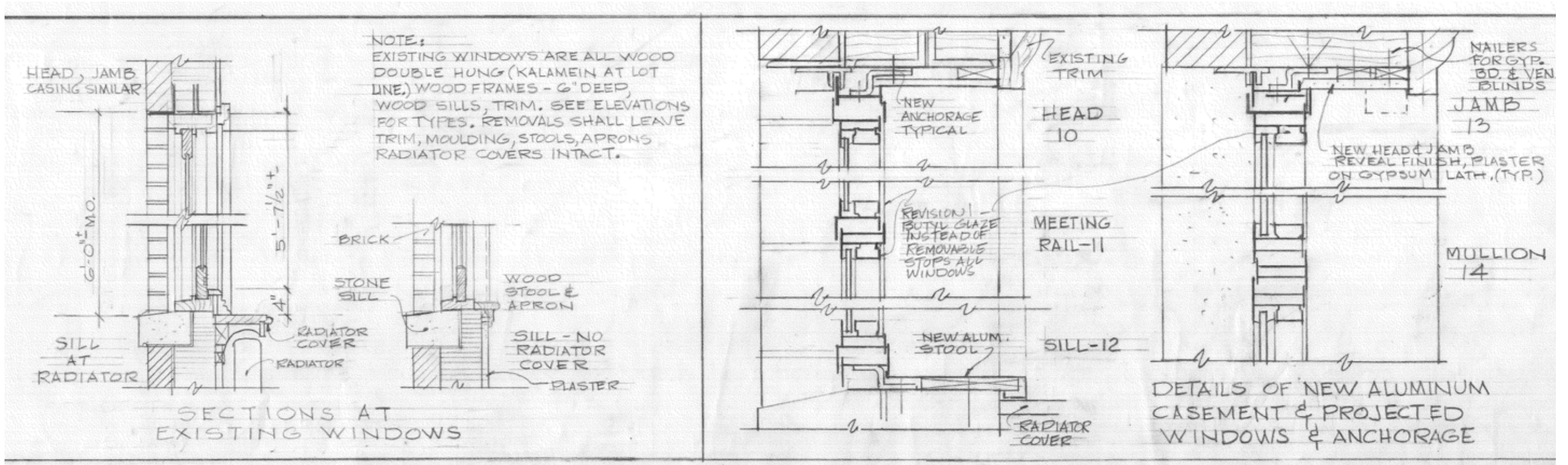


ELEVATIONS OF EXISTING WINDOW TYPES (INTERIOR SIDE)

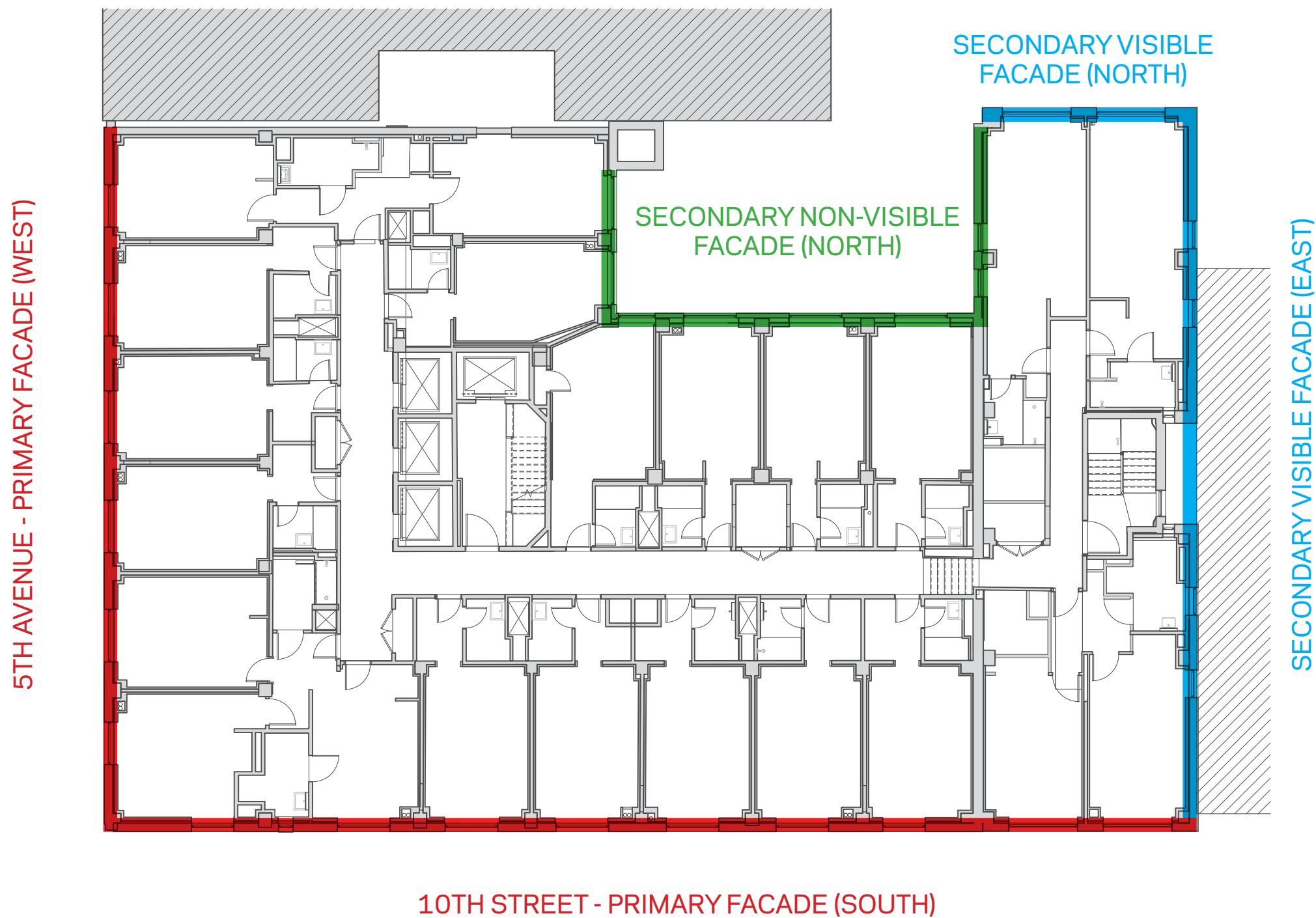


ELEVATIONS OF NEW CASEMENT & PROJECTED REPLACEMENT WINDOWS (INTERIOR SIDE SHOWN)

1968 WINDOW REPLACEMENT DOCUMENTATION

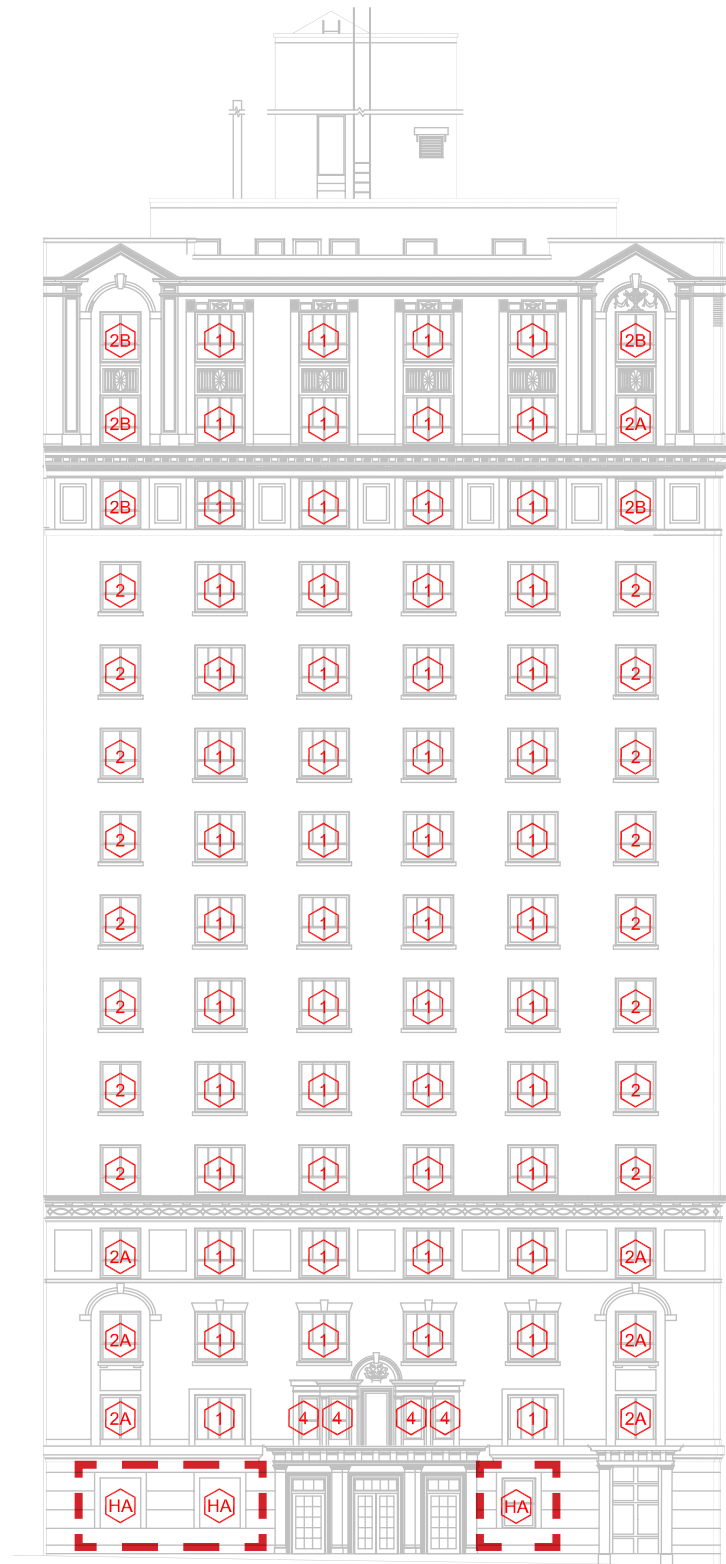


FACADE KEY PLAN



ASSIGNING HISTORIC WINDOW TYPES FOR REPLACEMENT

- PROPOSED REPLACEMENT WINDOW TYPES ON PRIMARY FACADES ASSIGNED ACCORDING TO ARCHIVAL DOCUMENTATION



FIFTH AVENUE (WEST) ELEVATION

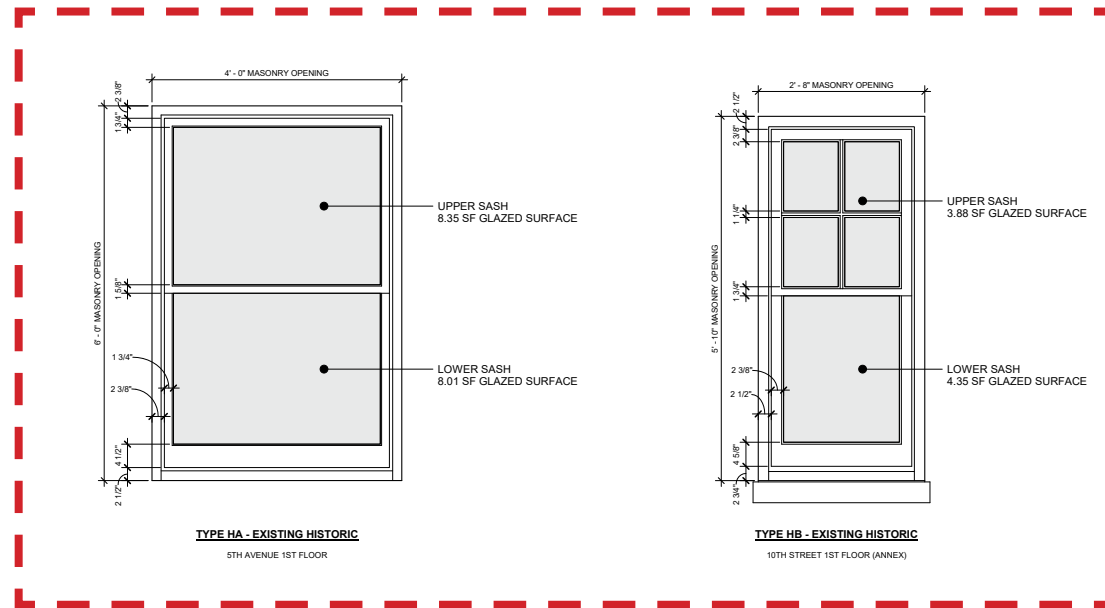


EAST 10TH STREET (SOUTH) ELEVATION

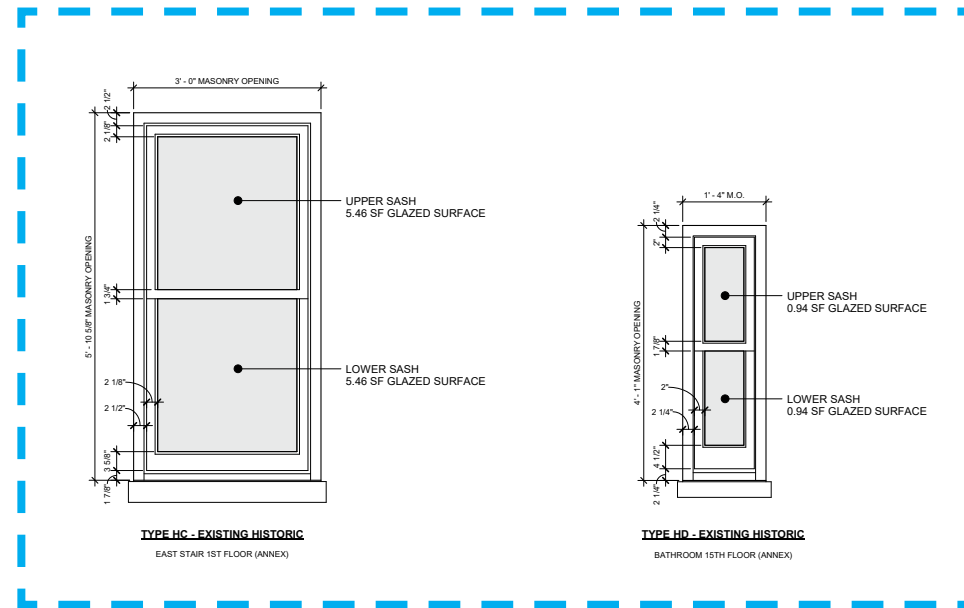
WINDOW REPLACEMENT STRATEGY

- EXISTING HISTORIC WINDOWS TO BE REPLACED WITH NEW WINDOWS BASED ON SURVEY
- EXISTING NON-HISTORIC WINDOWS TO BE REPLACED WITH NEW WINDOWS BASED ON ARCHIVAL DOCUMENTATION

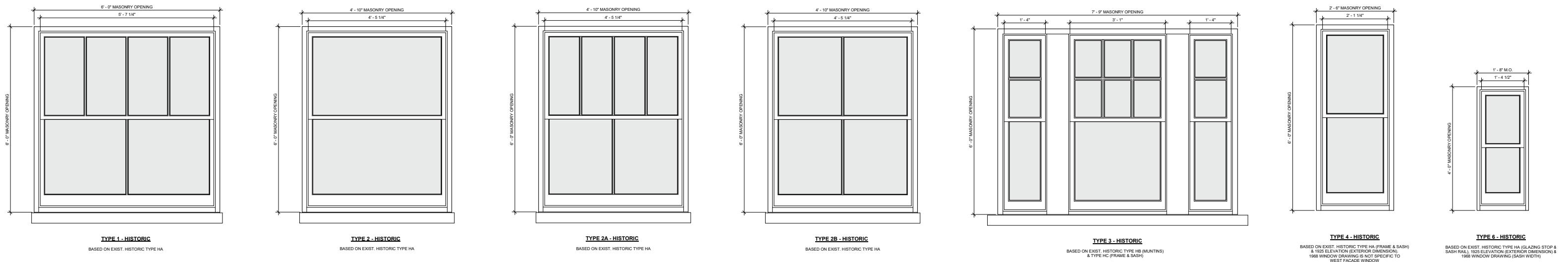
EXISTING HISTORIC WINDOWS ON PRIMARY FACADES



EXISTING HISTORIC WINDOWS ON SECONDARY FACADES



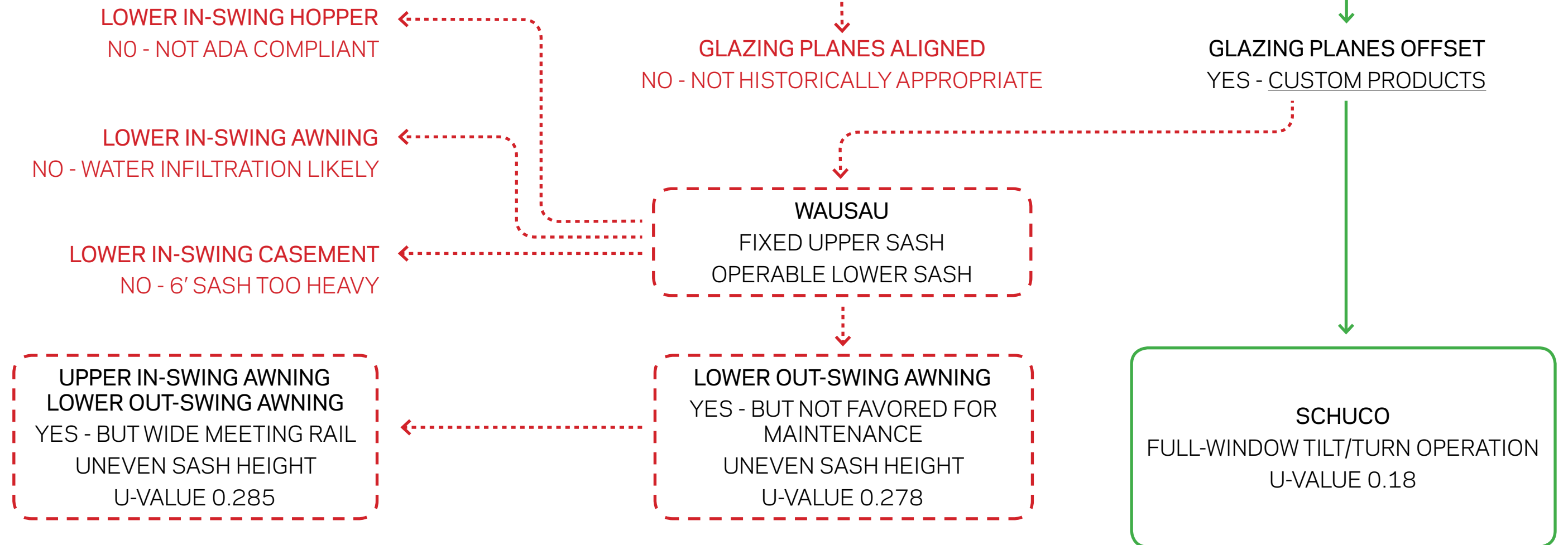
HISTORIC (NON-EXISTING) WINDOW TYPES BASED ON ARCHIVAL DOCUMENTATION



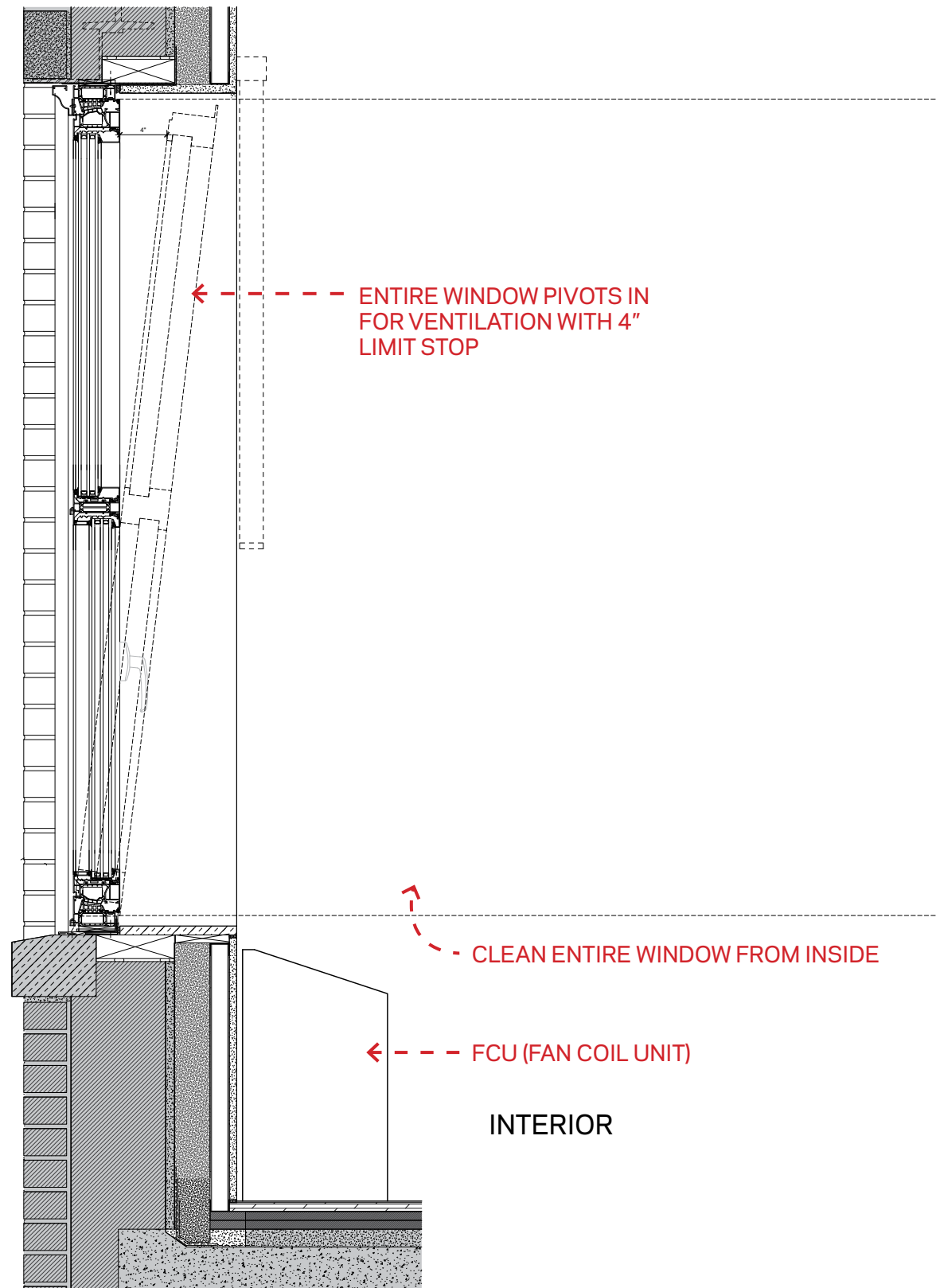
WINDOW DESIGN CRITERIA SUMMARY OF FINDINGS

MULTIPLE DESIGN CRITERIA LIMIT PRODUCT CHOICE:

- TWO MANUFACTURERS ARE ABLE TO PROVIDE CUSTOM ALUMINUM SIMULATED DOUBLE HUNG WINDOWS WITH OFFSET GLAZING THAT MEET NYU PERFORMANCE CRITERIA: WAUSAU AND SCHUCO
- DUE TO THE SIZE AND WEIGHT OF THE WINDOWS, A FIXED UPPER AND IN-SWING HOPPER (WAUSAU) IS NOT POSSIBLE BECAUSE IT DOES NOT MEET ADA ACCESSIBILITY REQUIREMENTS



PROPOSED REPLACEMENT WINDOWS - SCHUCO



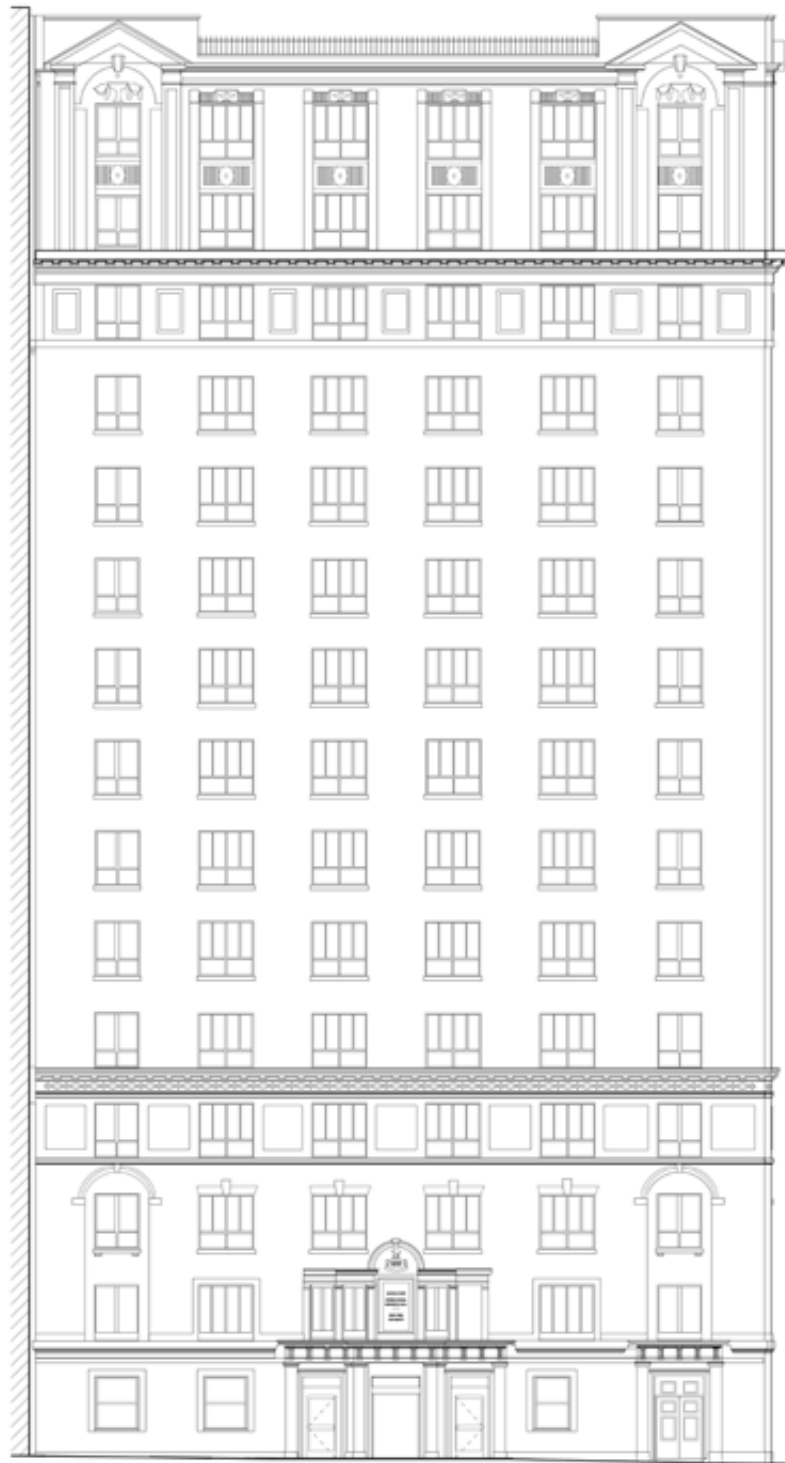
HISTORICAL APPROPRIATENESS:

- EXCEPT FOR OPERATION, ORIGINAL AESTHETIC OF THE WINDOWS WILL BE REINSTATED FOR THE FIRST TIME SINCE 1968
- NARROW MEETING RAIL, GLAZING REDUCTION FOR EXISTING HISTORIC WINDOWS IS MINIMIZED
- GLAZING PLANE IS OFFSET
- ORNAMENTAL ALUMINUM BRICK MOLD ADDS HISTORIC DETAILING

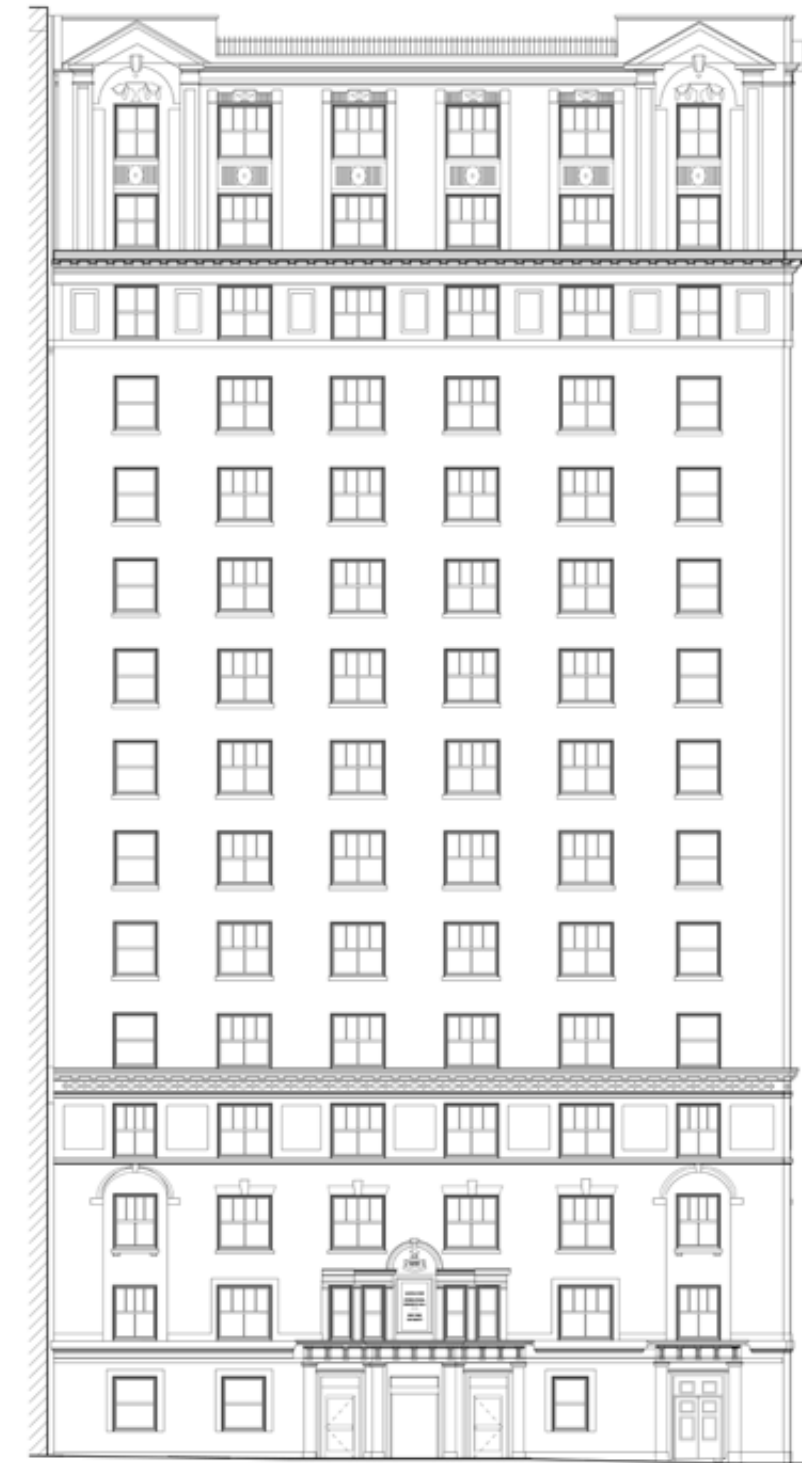
MAINTENANCE AND OPERATION:

- FULL WINDOW TILTS IN AS HOPPER FOR VENTILATION WITH 4" LIMIT STOP AND TURNS IN AS CASEMENT FOR MAINTENANCE, ALLOWING FULL ACCESS TO WINDOW FOR CLEANING
- ADA BEDROOMS WILL OPEN AS CASEMENT-ONLY FOR VENTILATION AND MAINTENANCE, ALLOWING FOR ADA COMPLIANT HANDLE OPERATION (ONLY OPTION DUE TO WEIGHT OF WINDOW)
- HIGHEST PERFORMANCE OF ALL OPTIONS, CONTRIBUTES TO LOCAL LAW 97 COMPLIANCE

BUILDING ELEVATIONS EXISTING AND PROPOSED - WEST FACADE (PRIMARY)

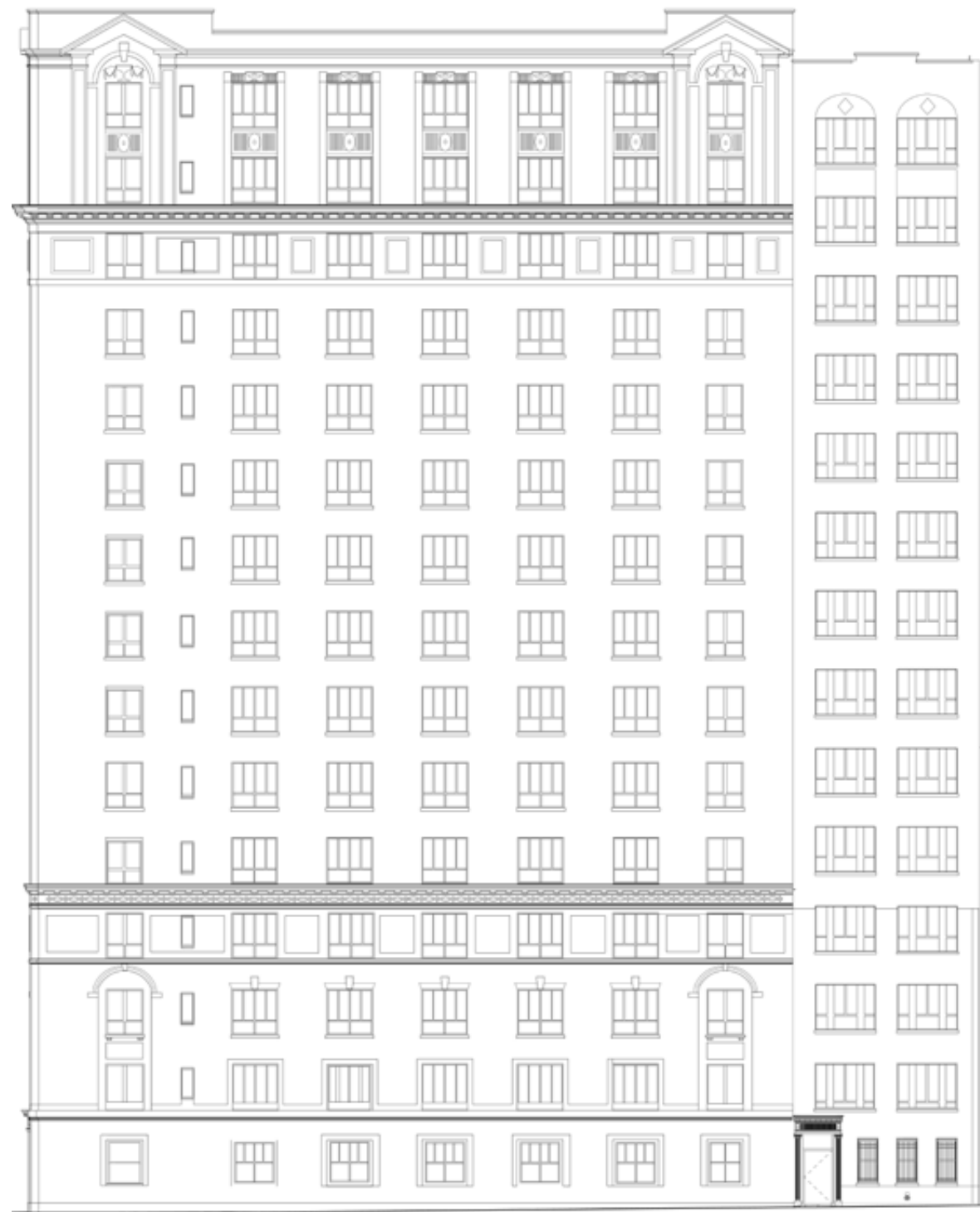


EXISTING NON-HISTORIC WINDOWS

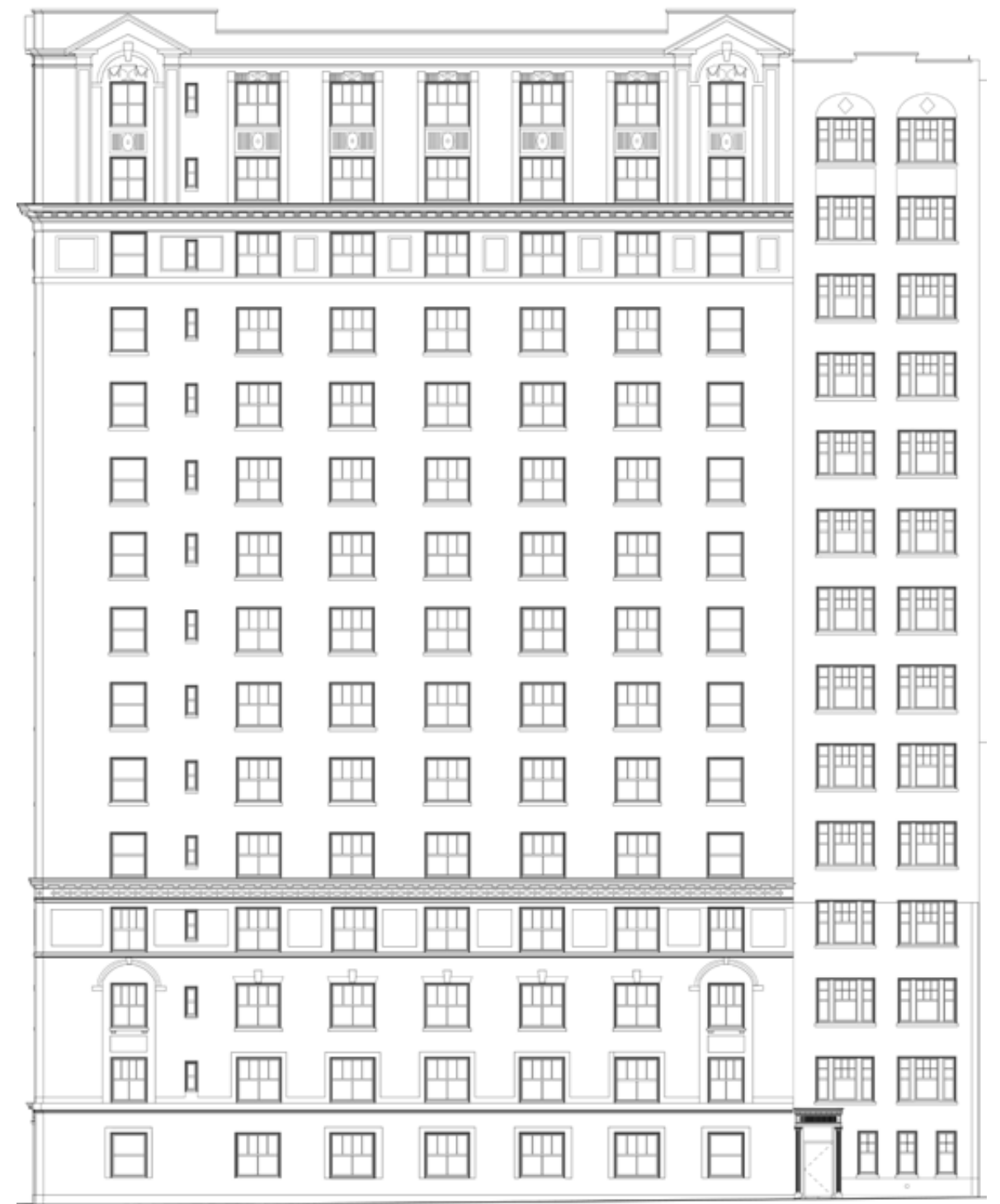


REINSTATED HISTORIC WINDOW CONFIGURATION

BUILDING ELEVATIONS EXISTING AND PROPOSED - SOUTH FACADE (PRIMARY)

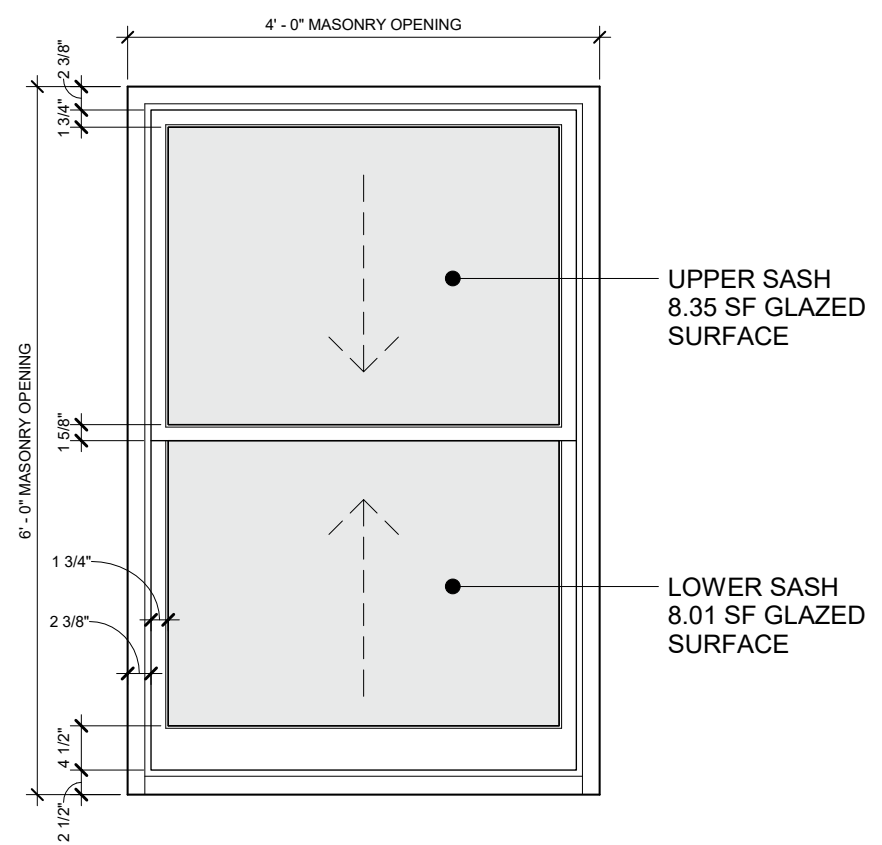


EXISTING NON-HISTORIC WINDOWS



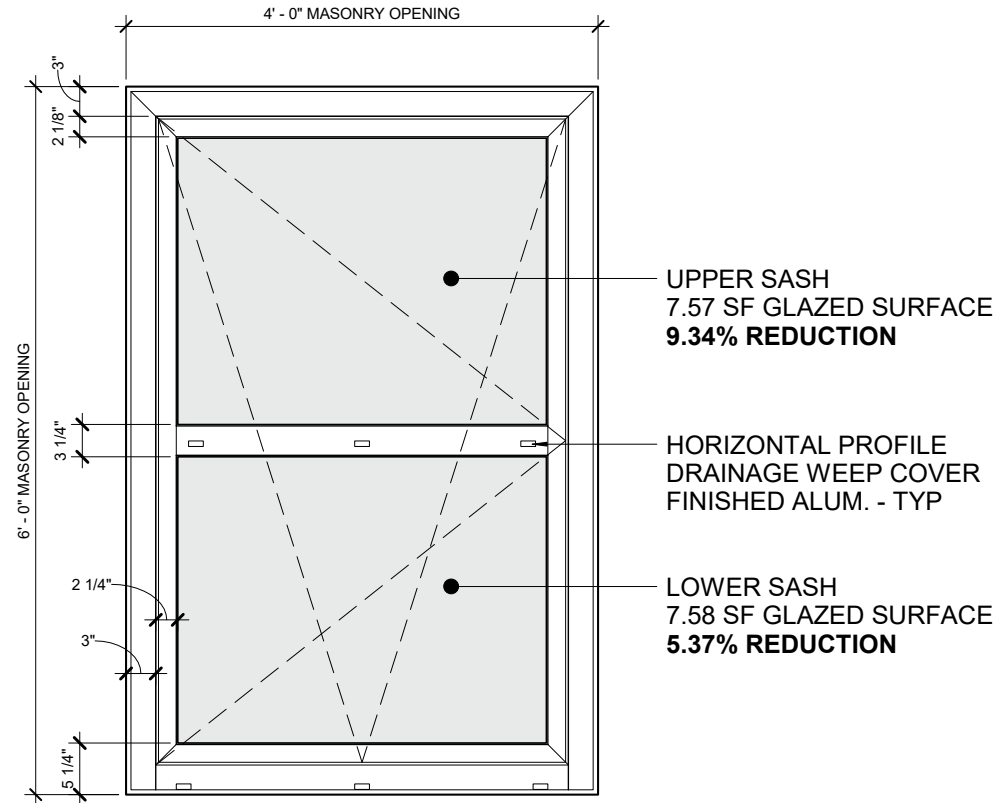
REINSTATED HISTORIC WINDOW CONFIGURATION

PRIMARY FACADES: HISTORIC WINDOW TYPE HA HIGH-PERFORMANCE REPLACEMENT



EXISTING HISTORIC

5TH AVENUE 1ST FLOOR



PROPOSED

5TH AVENUE 1ST FLOOR
SCHUCO AWS 90.SI TILT/TURN



EXISTING WINDOW PHOTOS

PRIMARY FACADES: HISTORIC WINDOW TYPE HA HIGH-PERFORMANCE REPLACEMENT - RENDERED VIEW

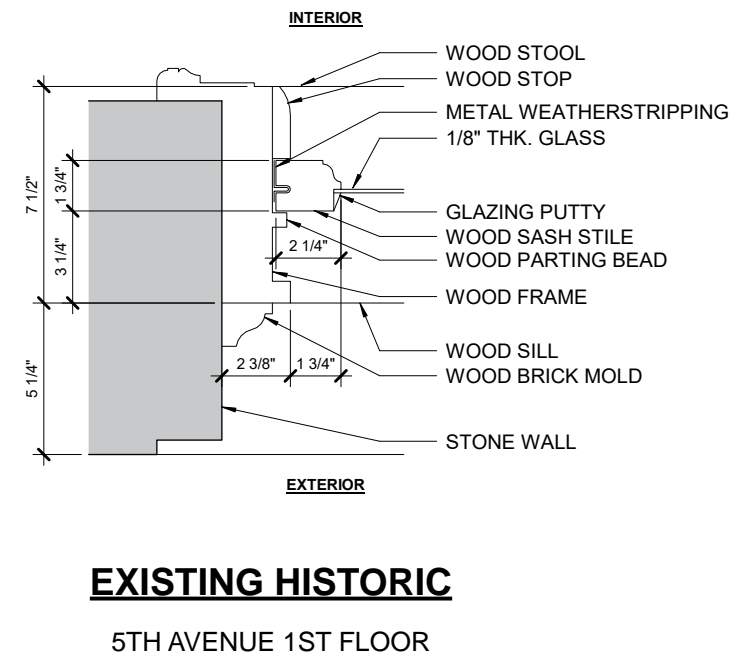
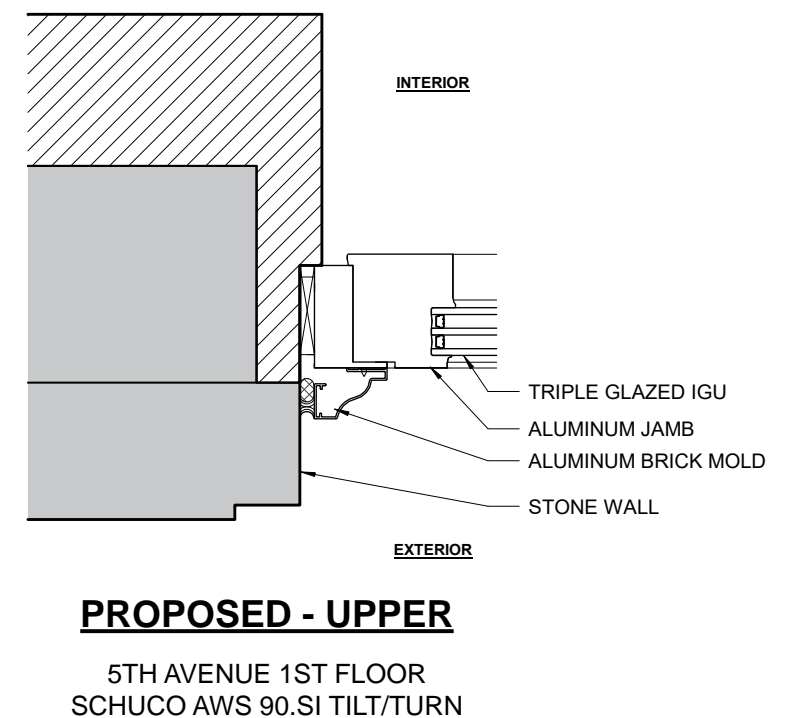
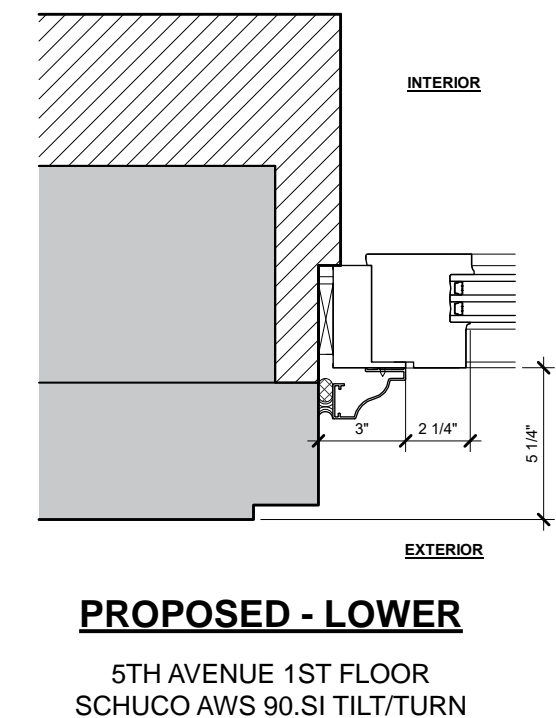
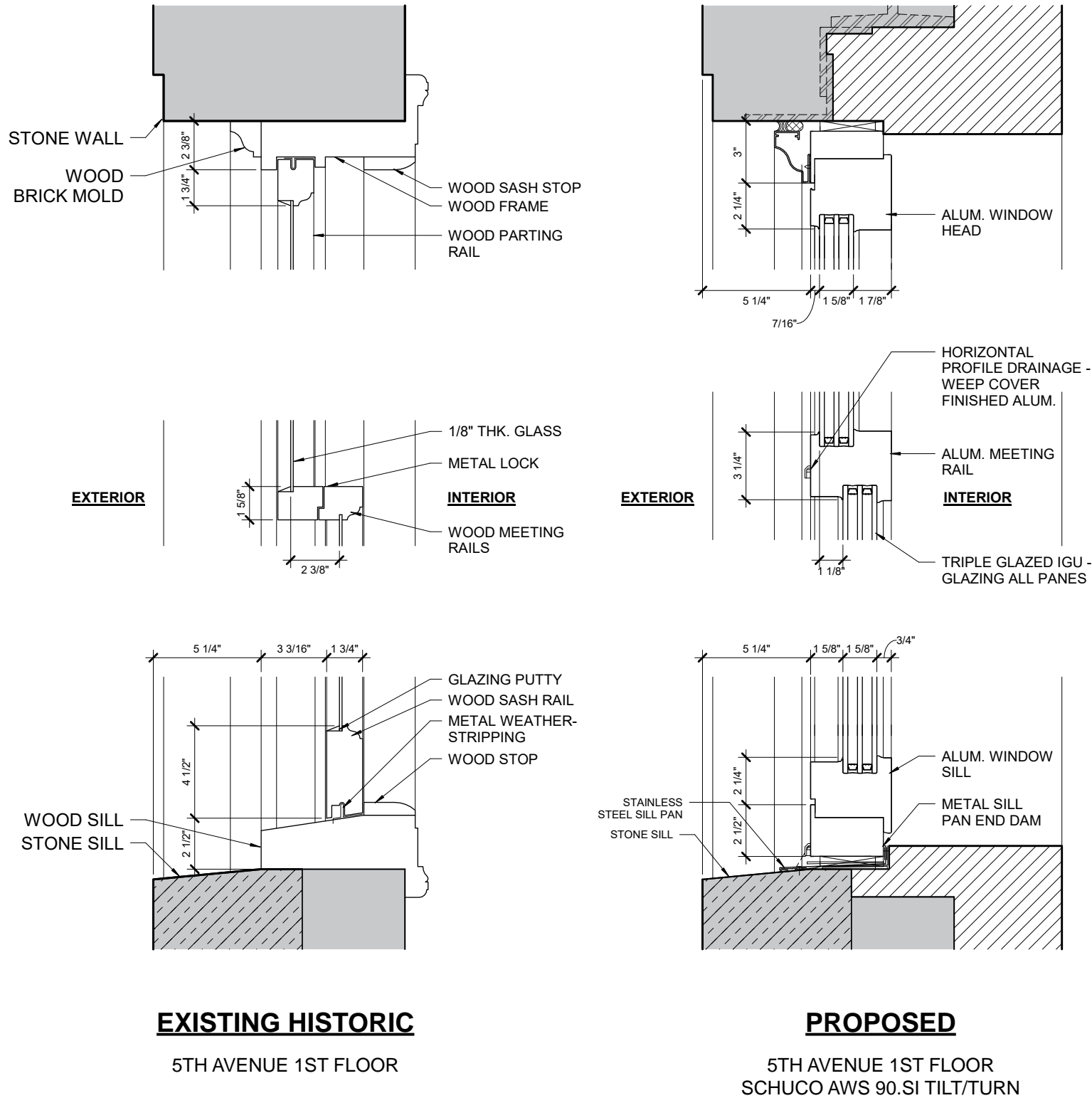


EXISTING TYPE HA WINDOWS

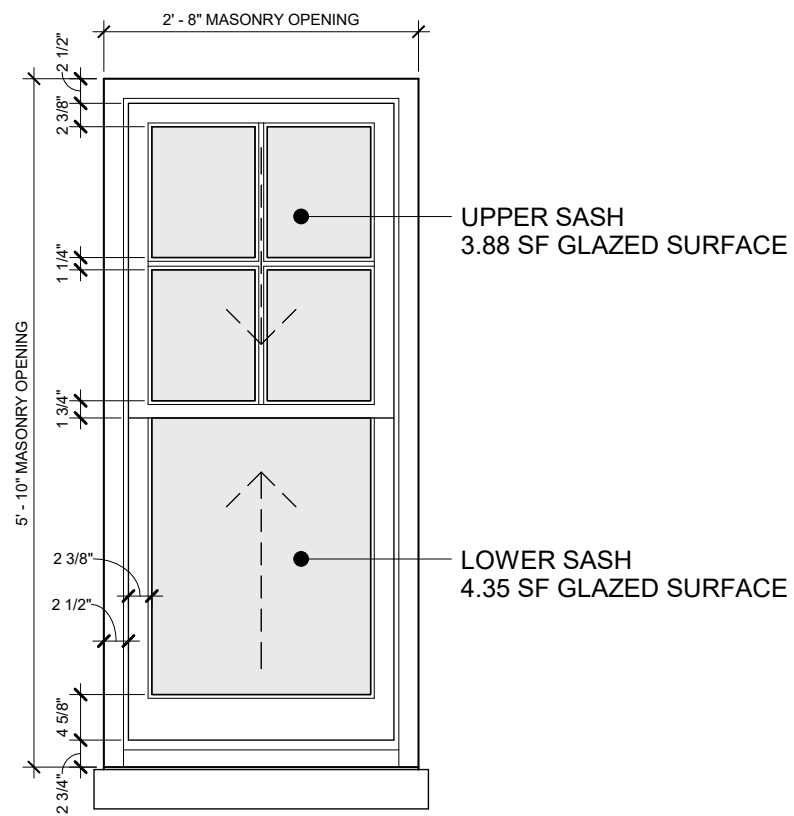


PROPOSED HIGH-PERFORMANCE REPLACEMENT WINDOWS

PRIMARY FACADES: HISTORIC WINDOW TYPE HA-1 HIGH-PERFORMANCE REPLACEMENT

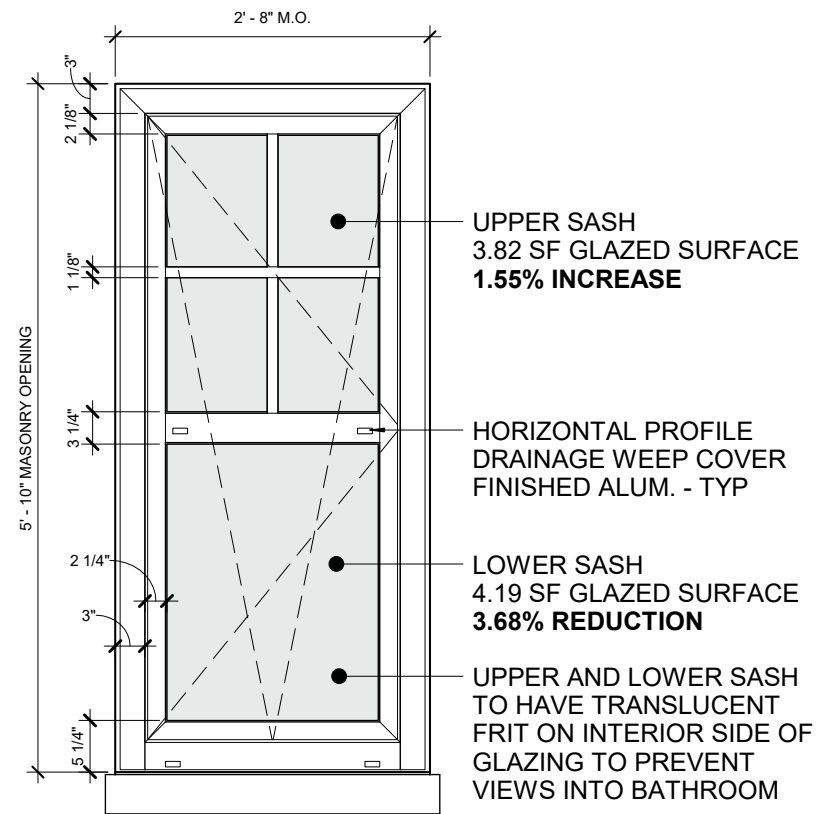


PRIMARY FACADES: HISTORIC WINDOW TYPE HB HIGH-PERFORMANCE REPLACEMENT



EXISTING HISTORIC

10TH STREET 1ST FLOOR (ANNEX)



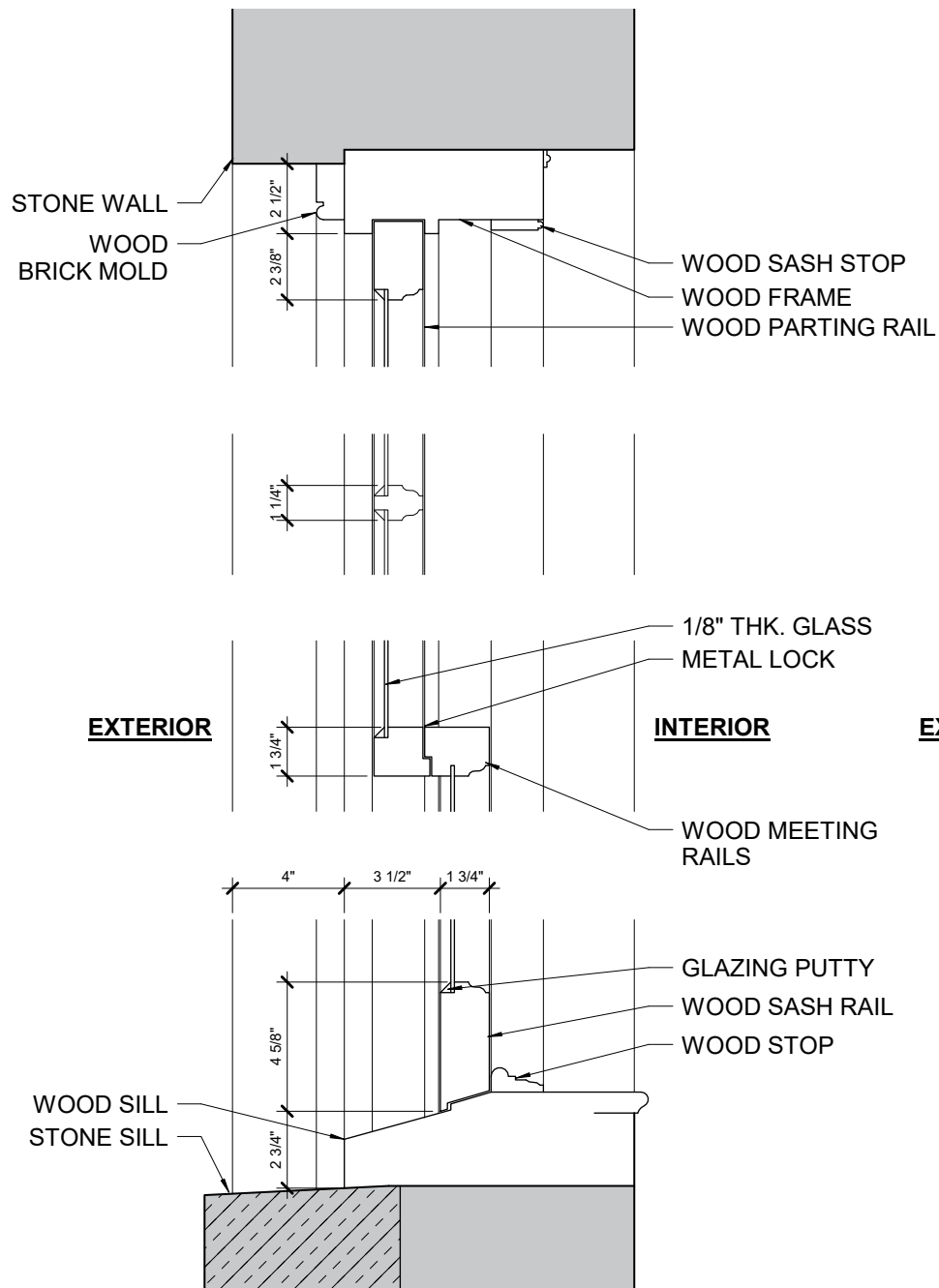
PROPOSED

10TH STREET 1ST FLOOR (ANNEX)
SCHUCO AWS 90.SI TILT/TURN



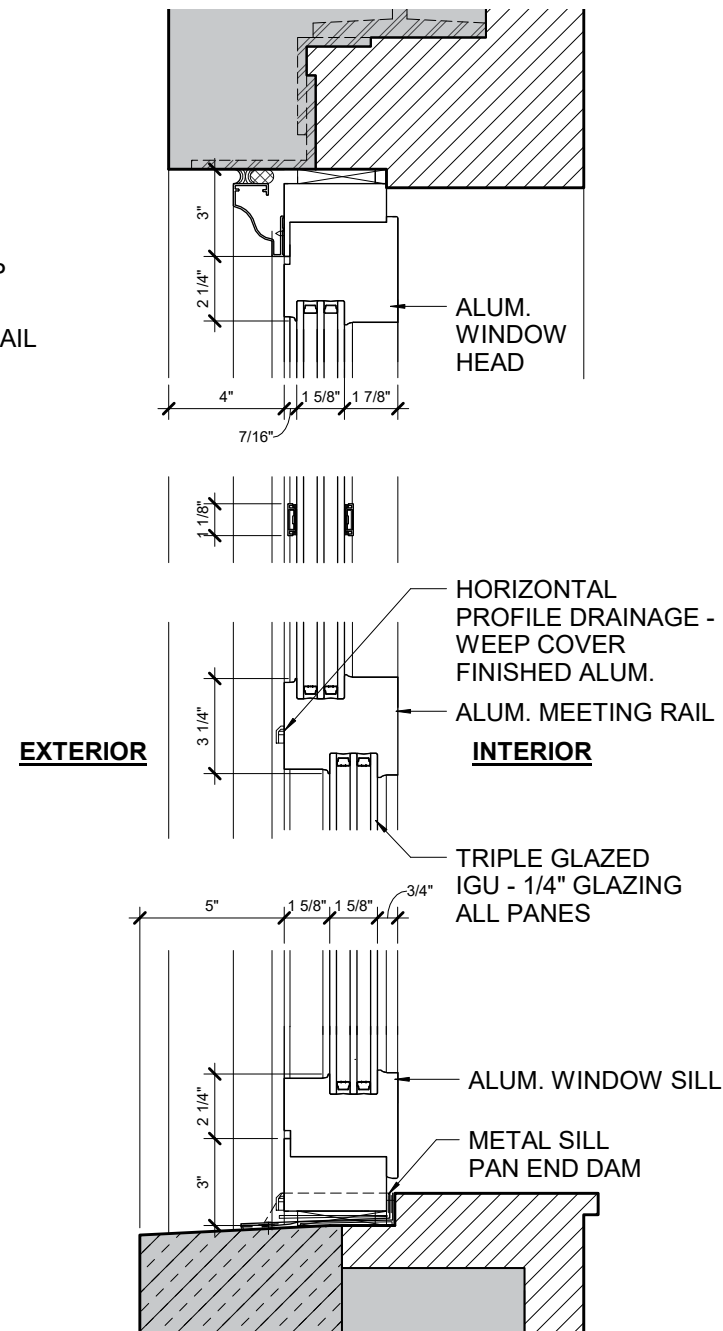
EXISTING WINDOW PHOTOS

PRIMARY FACADES: HISTORIC WINDOW TYPE HB HIGH-PERFORMANCE REPLACEMENT



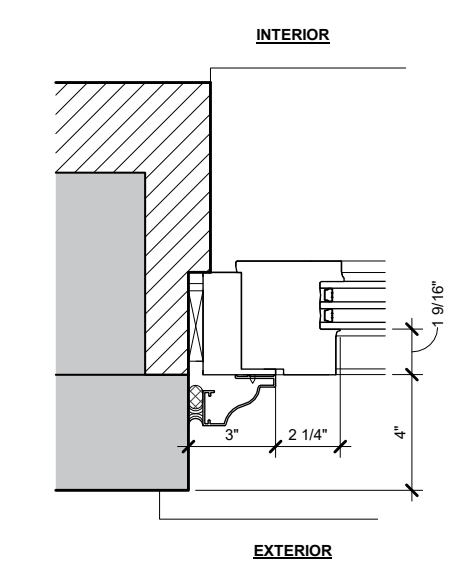
EXISTING HISTORIC

10TH STREET 1ST FLOOR (ANNEX)



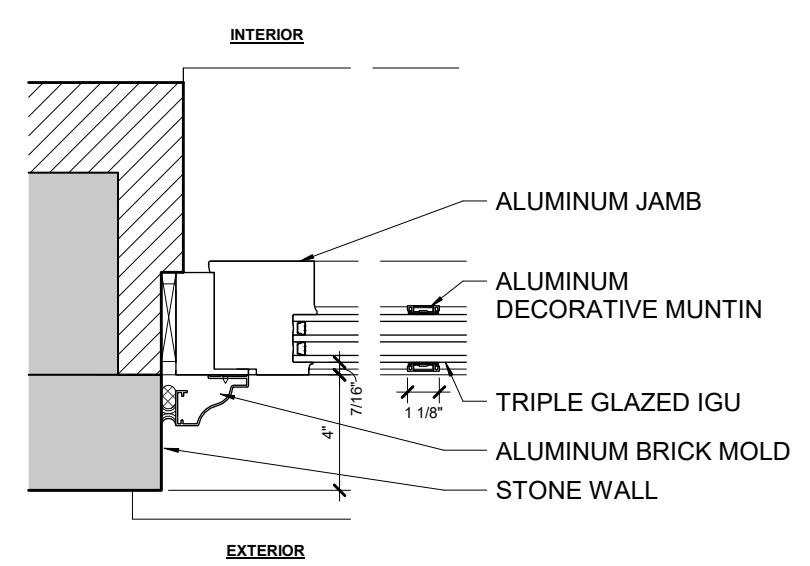
PROPOSED

10TH STREET 1ST FLOOR (ANNEX)
SCHUCO AWS 90.SI TILT/TURN



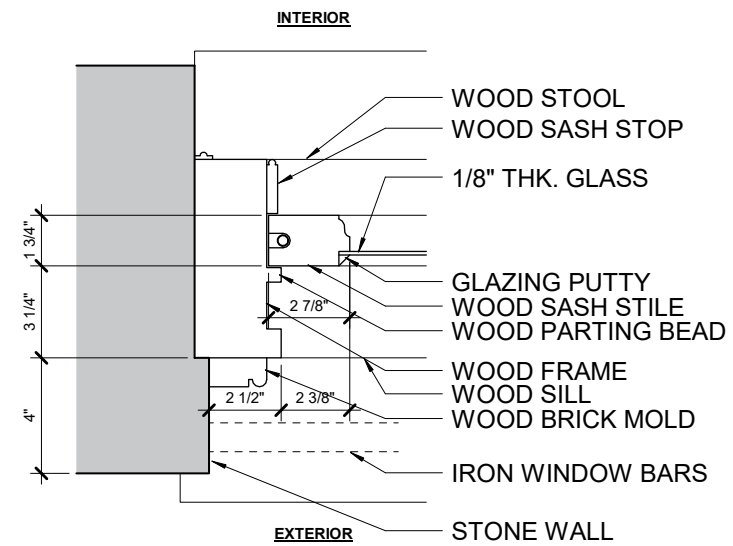
PROPOSED - LOWER

10TH STREET 1ST FLOOR (ANNEX)
SCHUCO AWS 90.SI TILT/TURN



PROPOSED - UPPER

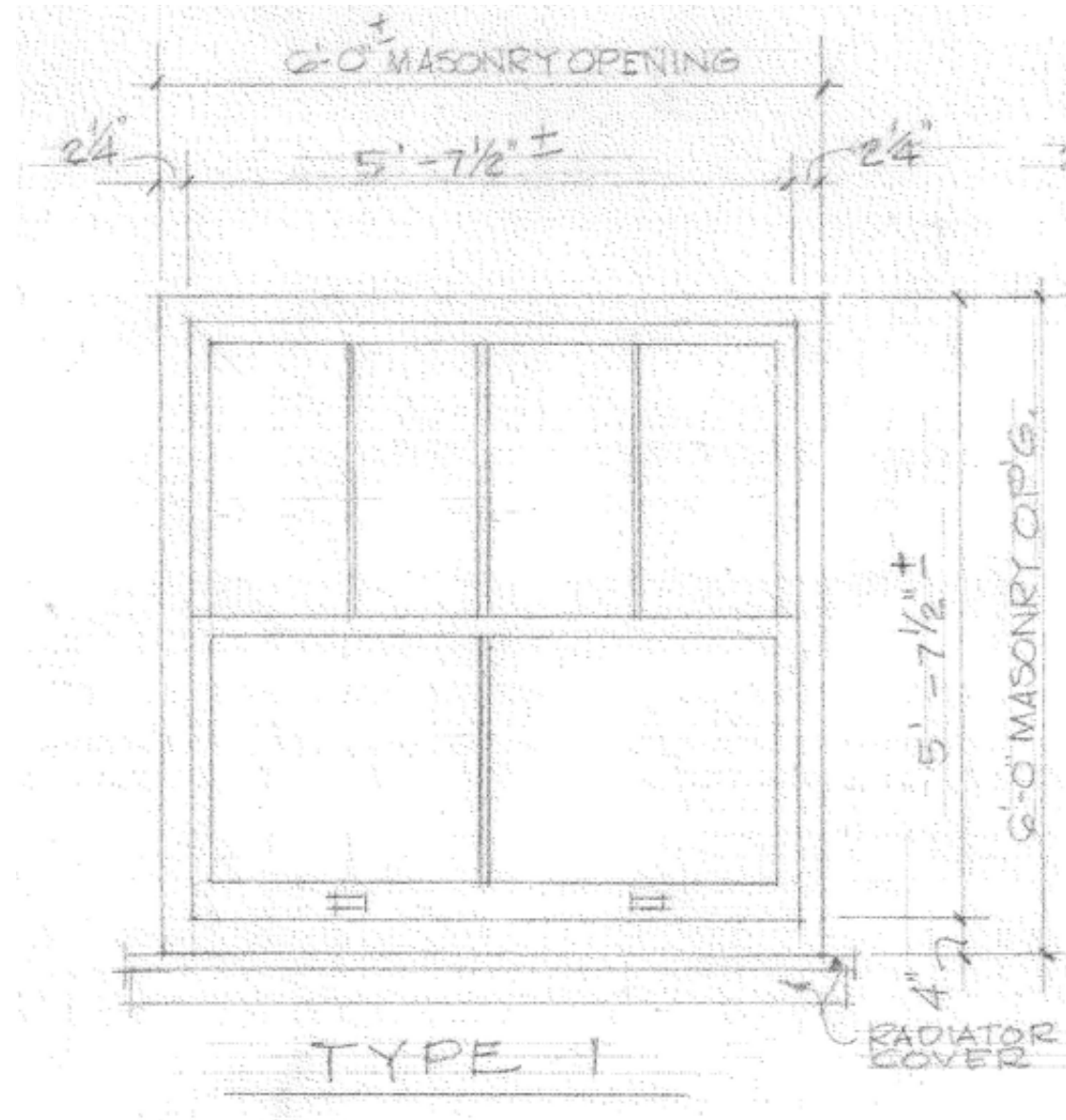
10TH STREET 1ST FLOOR (ANNEX)
SCHUCO AWS 90.SI TILT/TURN



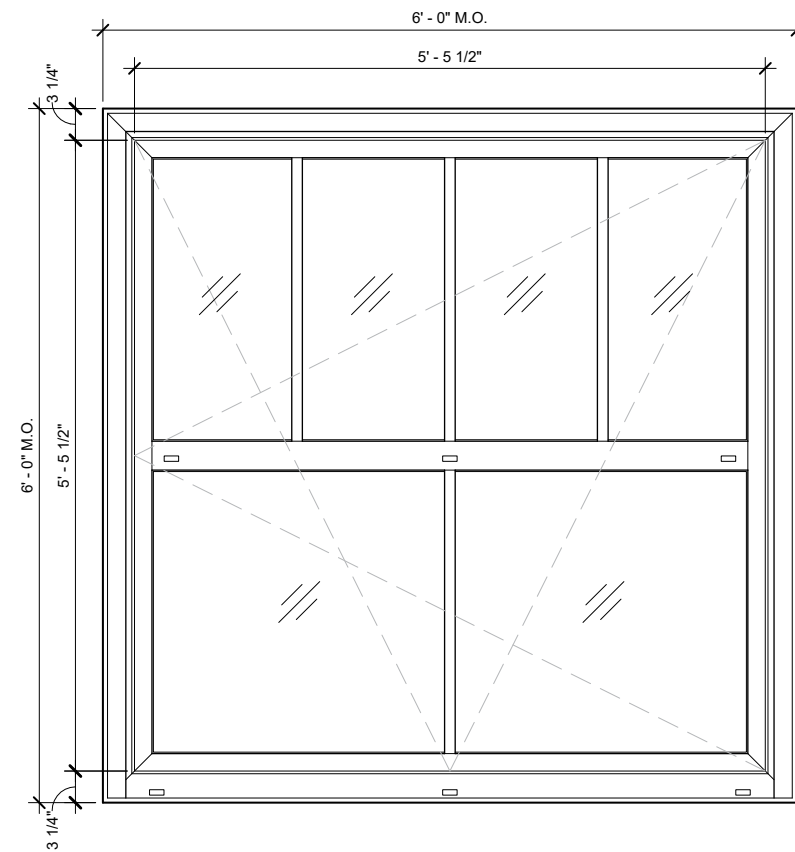
EXISTING HISTORIC

10TH STREET 1ST FLOOR (ANNEX)

PROPOSED HIGH-PERFORMANCE WINDOWS FOR NON-EXTANT HISTORIC TYPES



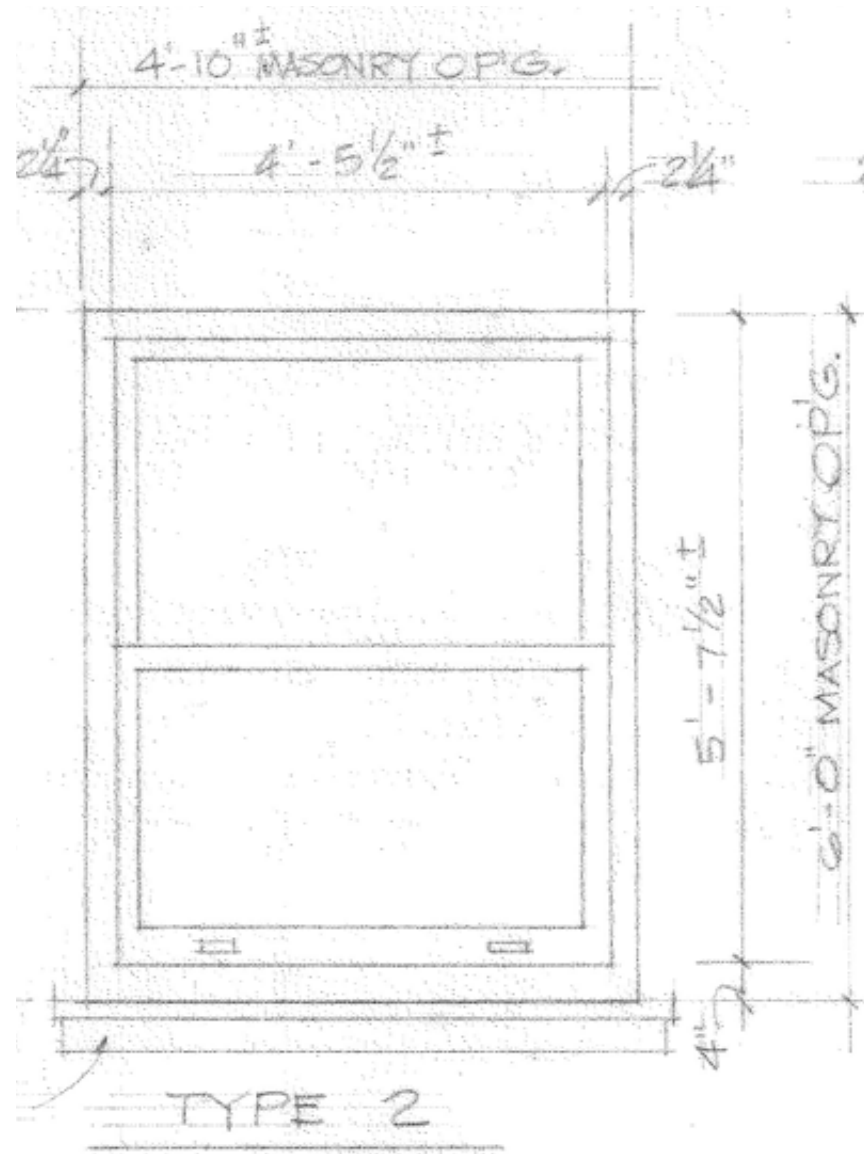
1968 HISTORIC WINDOW DOCUMENTATION
(SHOWN FROM INTERIOR)



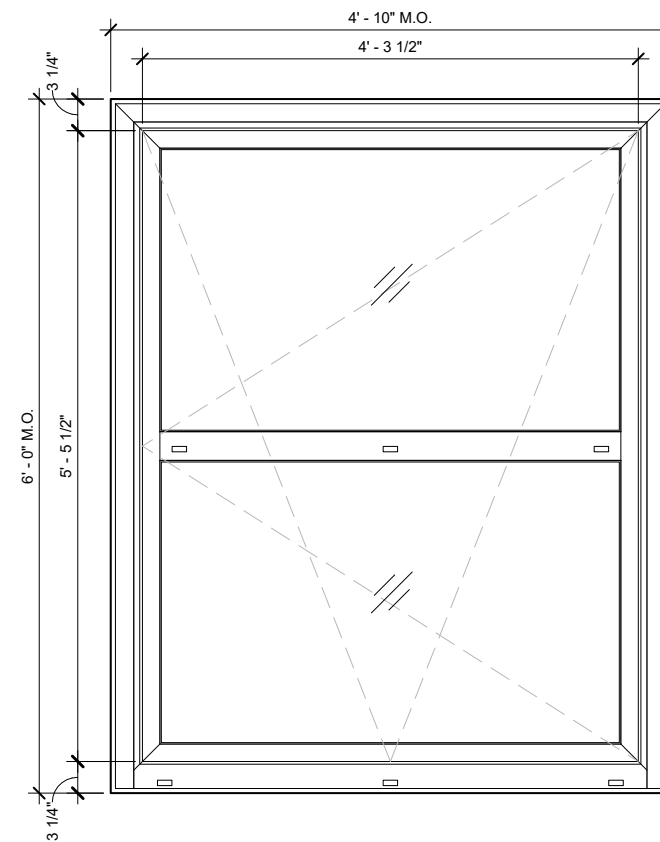
OPERATION TYPES A & B
4/2 (FOUR-OVER-TWO) WINDOW
PRIMARY OPERATION (A - TILT / TURN) SHOWN

PROPOSED CORRESPONDING WINDOW ELEVATION
(SHOWN FROM EXTERIOR)

PROPOSED HIGH-PERFORMANCE WINDOWS FOR NON-EXTANT HISTORIC TYPES



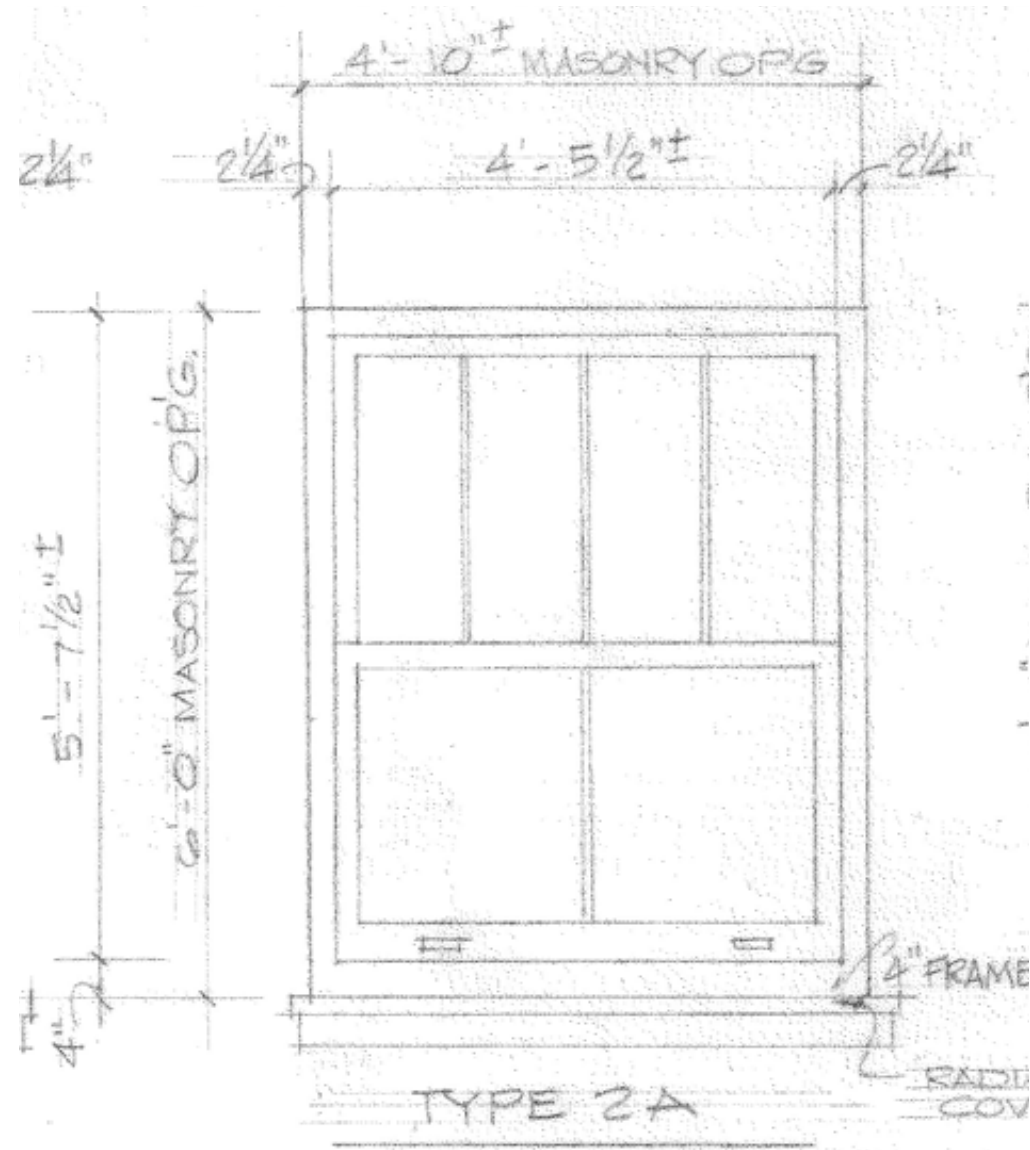
1968 HISTORIC WINDOW DOCUMENTATION
(SHOWN FROM INTERIOR)



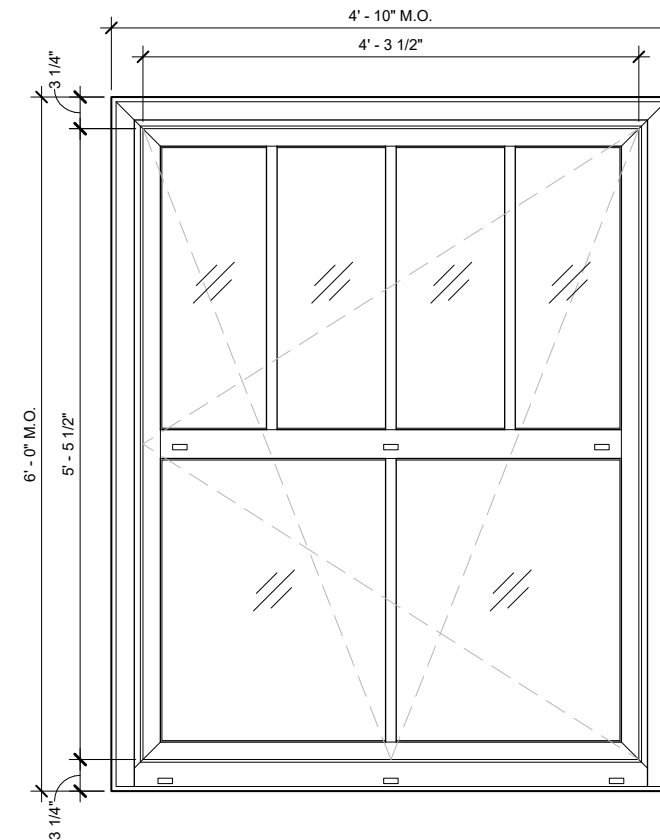
OPERATION TYPES A & B
1/1 (ONE-OVER-ONE) WINDOW
PRIMARY OPERATION (A - TILT / TURN) SHOWN

PROPOSED CORRESPONDING WINDOW ELEVATION
(SHOWN FROM EXTERIOR)

PROPOSED HIGH-PERFORMANCE WINDOWS FOR NON-EXTANT HISTORIC TYPES



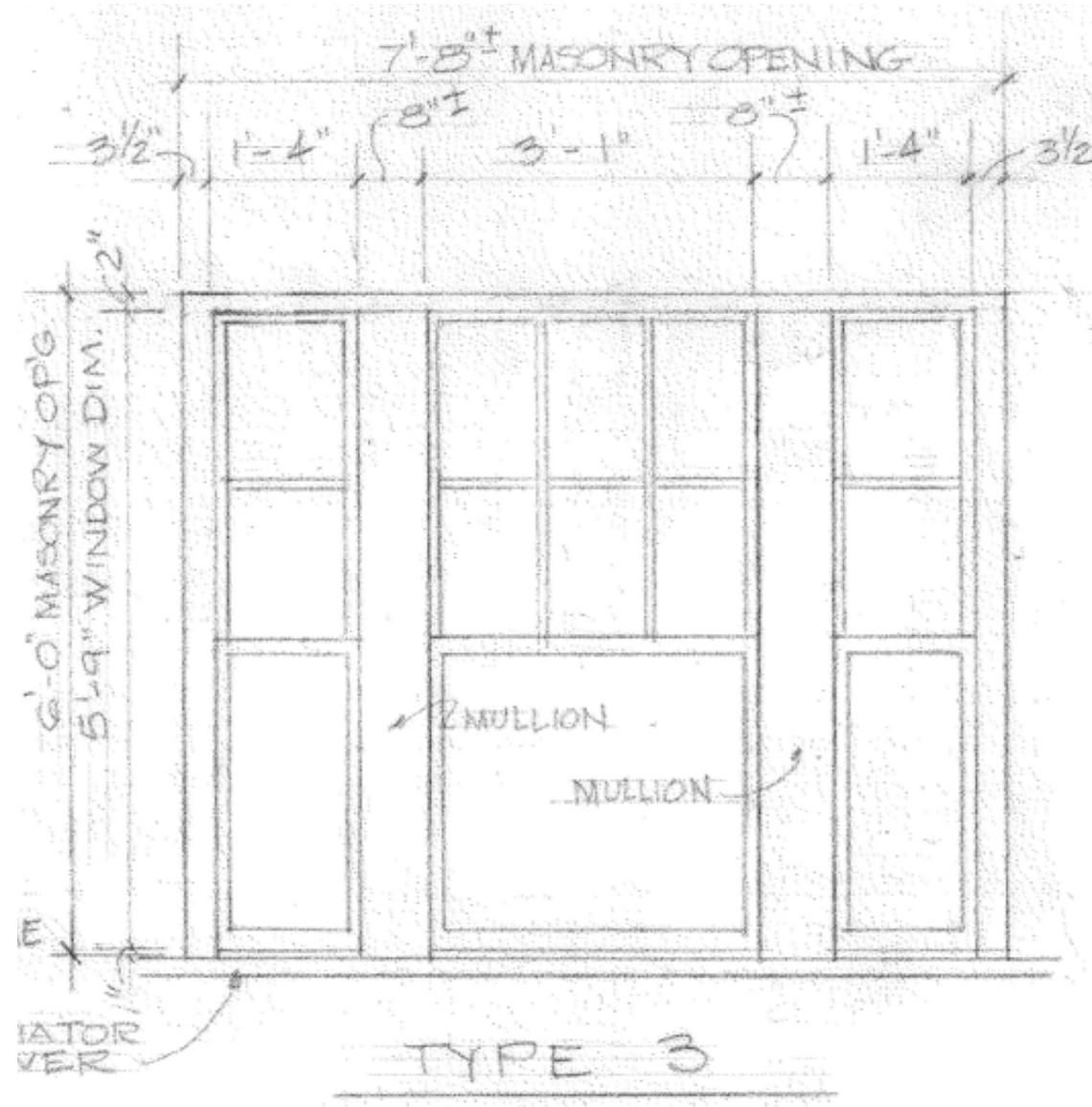
1968 HISTORIC WINDOW DOCUMENTATION
(SHOWN FROM INTERIOR)



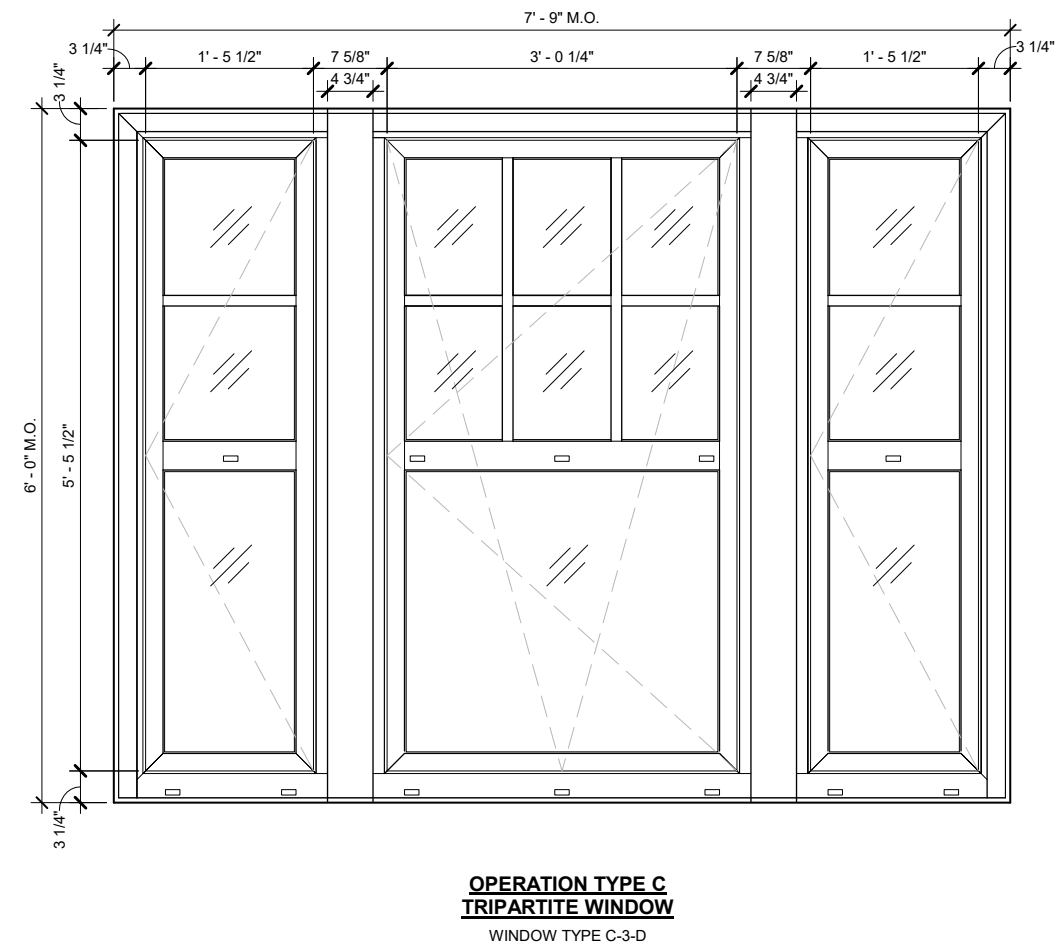
OPERATION TYPES A & B
4/2 (FOUR-OVER-TWO) WINDOW
PRIMARY OPERATION (A - TILT / TURN) SHOWN

PROPOSED CORRESPONDING WINDOW ELEVATION
(SHOWN FROM EXTERIOR)

PROPOSED HIGH-PERFORMANCE WINDOWS FOR NON-EXTANT HISTORIC TYPES

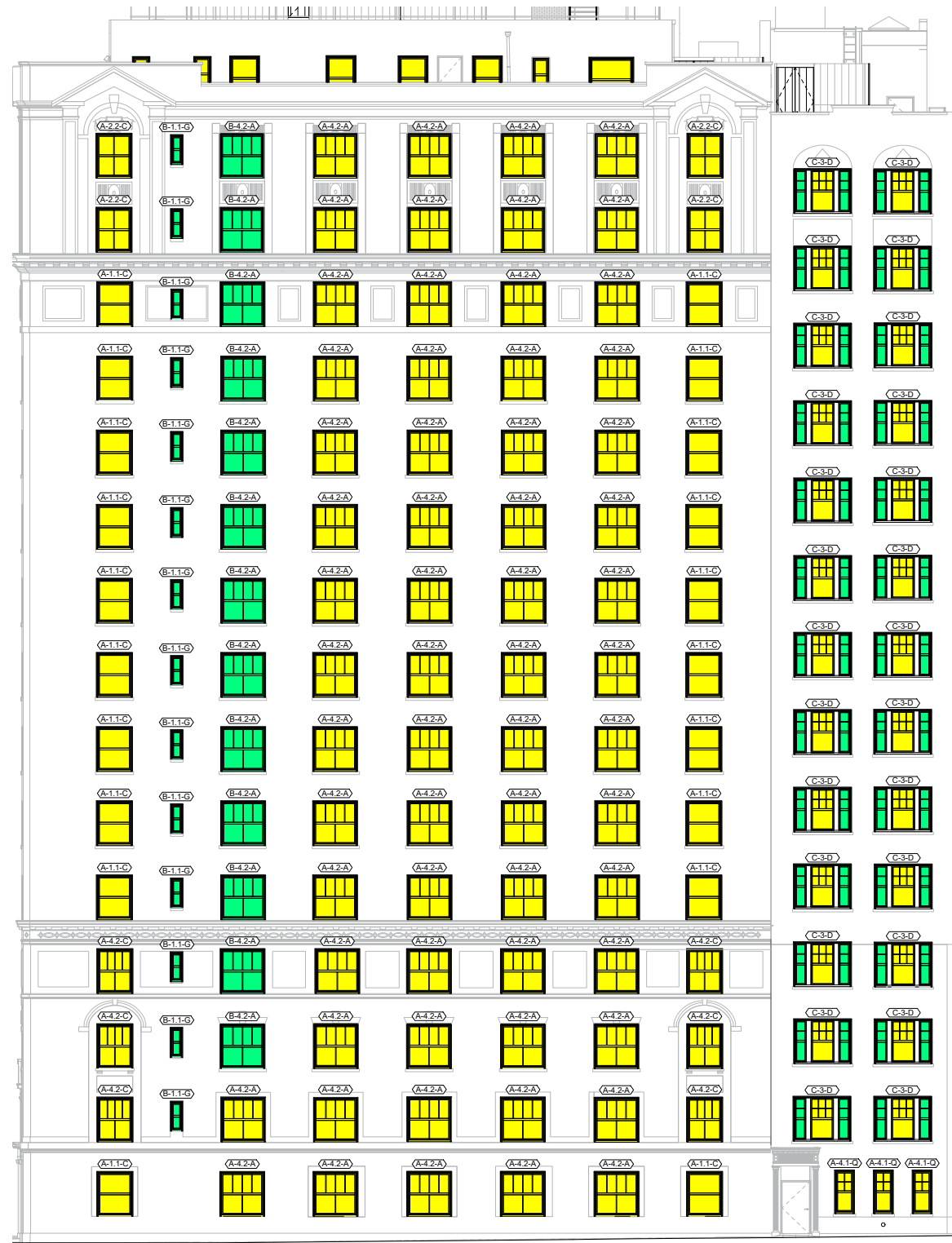
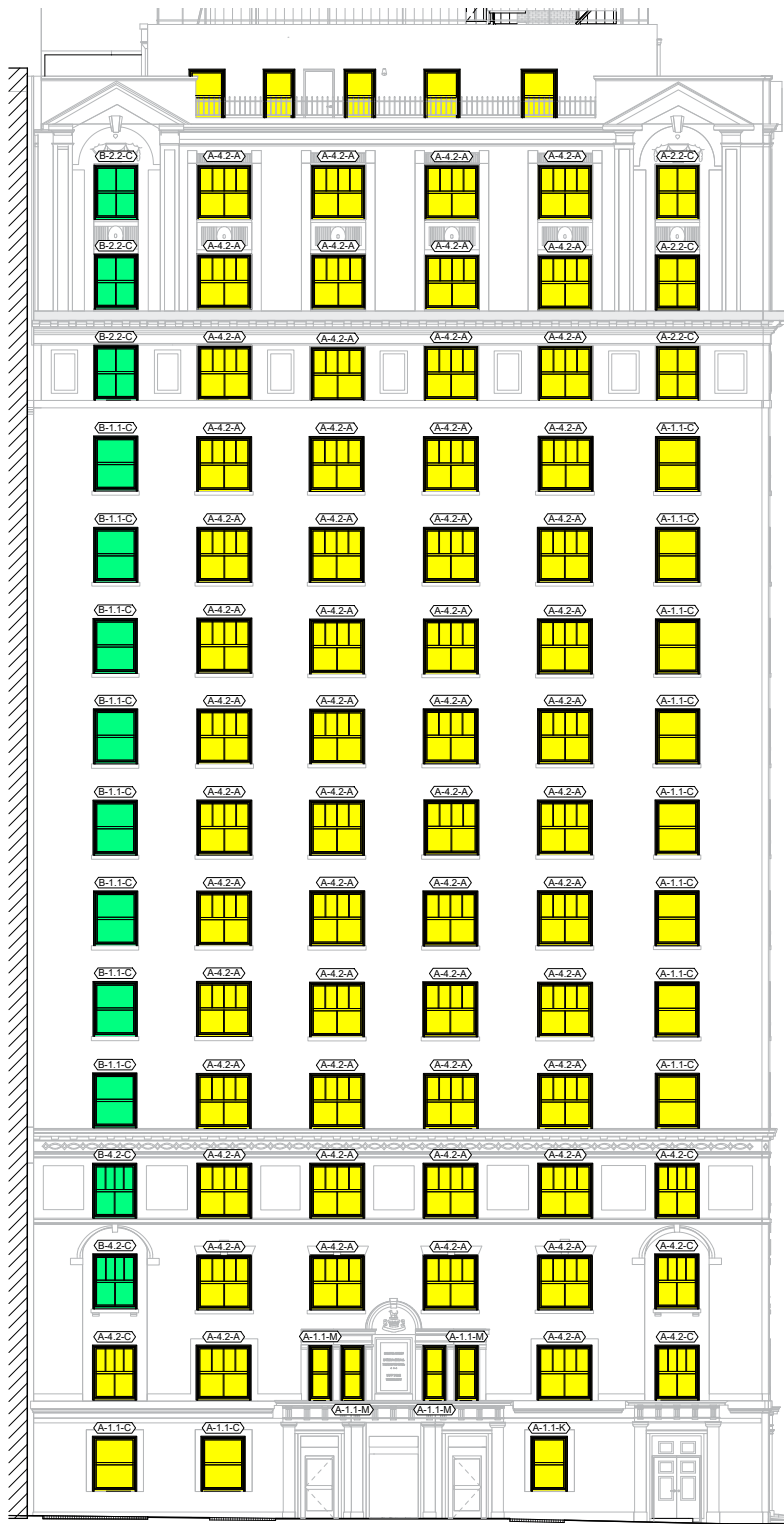


1968 HISTORIC WINDOW DOCUMENTATION
(SHOWN FROM INTERIOR)



PROPOSED CORRESPONDING WINDOW ELEVATION
(SHOWN FROM EXTERIOR)

WINDOW OPERATON KEYED ELEVATIONS



- A - TILT/TURN WINDOW**
 - TILT FOR VENTILATION
 - CASEMENT FOR MAINTENANCE

- B - CASEMENT-ONLY WINDOW**
 - ADA BEDROOMS
 - NARROW WINDOW LOCATIONS

- C - TRIPARTITE WINDOW**
 - CENTER - TILT/TURN
 - SIDES - CASEMENT (MAINT. ONLY)

- D - FIXED WINDOW (NOT VISIBLE)**
 - EXTREMELY NARROW WINDOWS
 - SELECT PENTHOUSE LOCATIONS

PROPOSED WINDOW FINISH

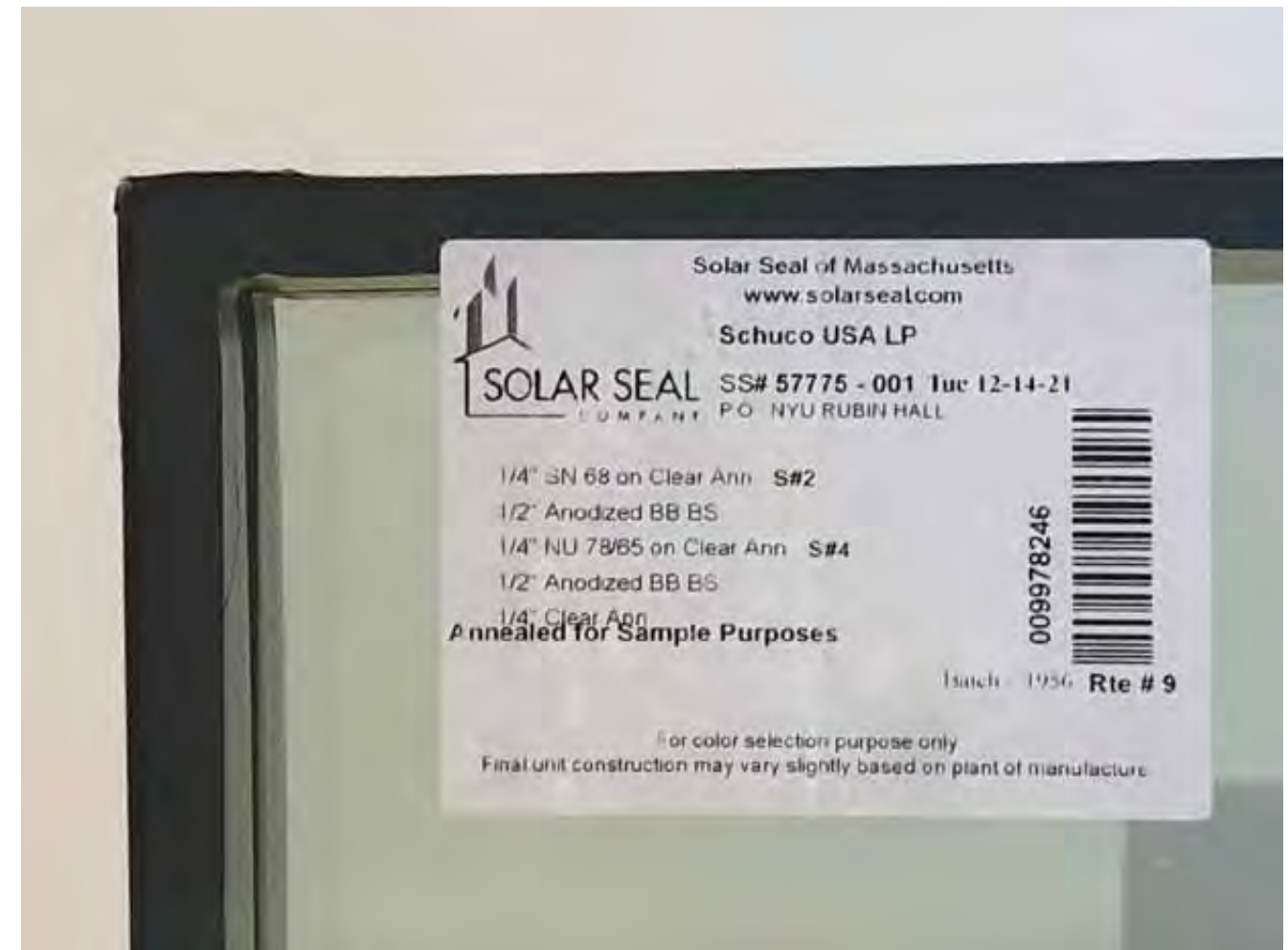


Clay Beige
OC-11

WINDOW GLAZING



Make-up Name	Make-up Icon	Glass 1 & Coating	Glass 2 & Coating	Visible Light				Solar Energy			Thermal Properties	
				Transmittance	Reflectance		Color Rendering Index (R _a)	Transmittance	Reflectance	Solar Heat Gain Coefficient (SHGC)	U-Value	
					Visible (τ _v %)	p _v % out					p _v % in	Solar (τ _s %)
SN68 #2 with Neutral 78/65 #4 with Krypton		SunGuard® SN 68 (North America) on Guardian Clear Glass (North America)	SunGuard® Neutral 78/65 (North America) on Guardian Clear Glass (North America)	59.7	13.6	15.9	93.9	27.8	34.1	0.330	0.117	0.093



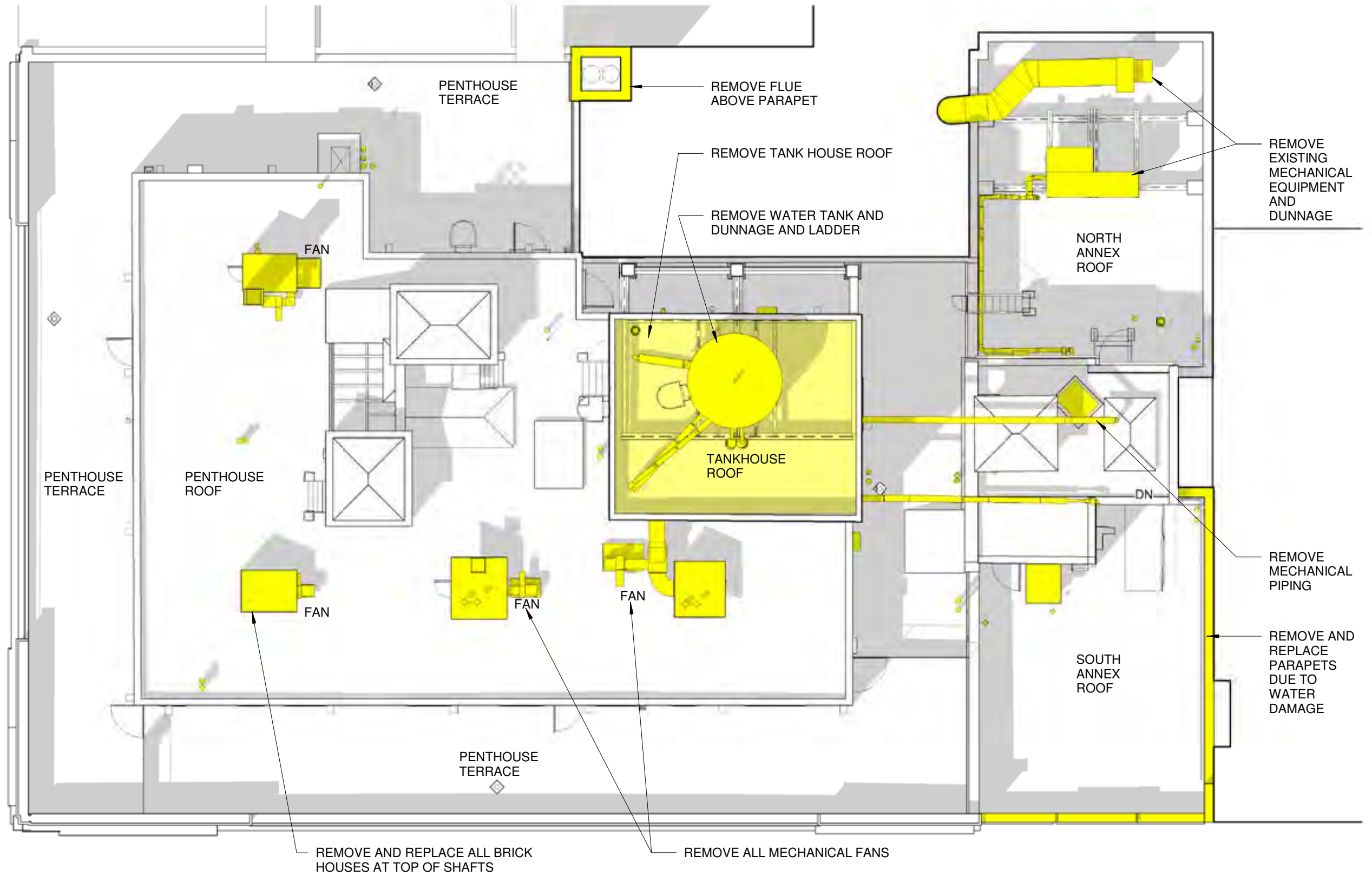
WINDOW - SIMILAR SCHUCO TILT/TURN WINDOW IN HISTORIC DISTRICT



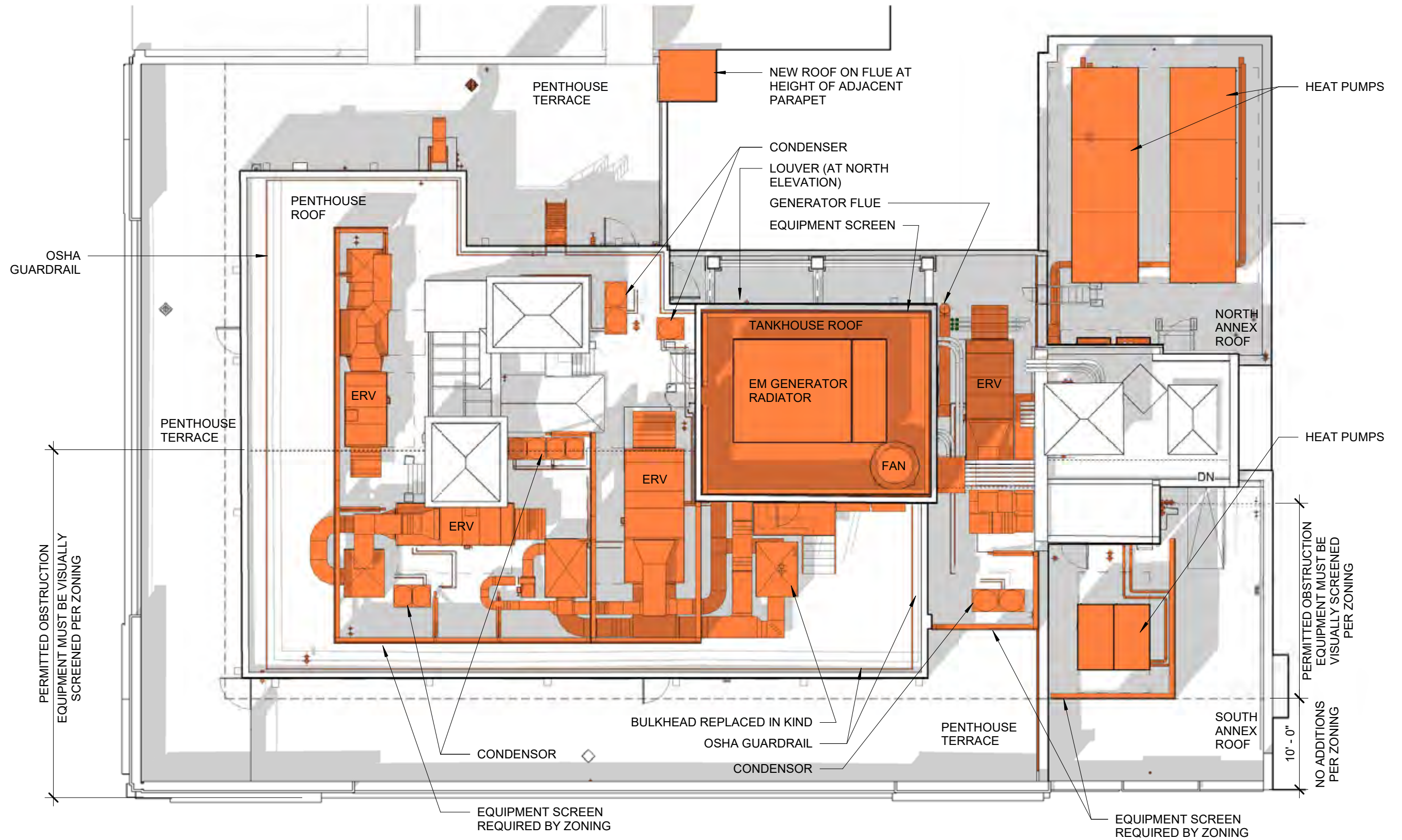
11 GREENE STREET, SOHO NY
SCHUCO TILT-TURN WINDOWS (NOT OFFSET GLAZING)

ROOFTOP MECHANICAL, ELECTRICAL & PLUMBING EQUIPMENT

ROOFTOP - EXISTING EQUIPMENT



ROOFTOP - PROPOSED EQUIPMENT



BUILDING SIGHTLINES SECTIONS - VIEW TO NORTH



BUILDING SIGHTLINES SECTIONS - VIEW TO WEST



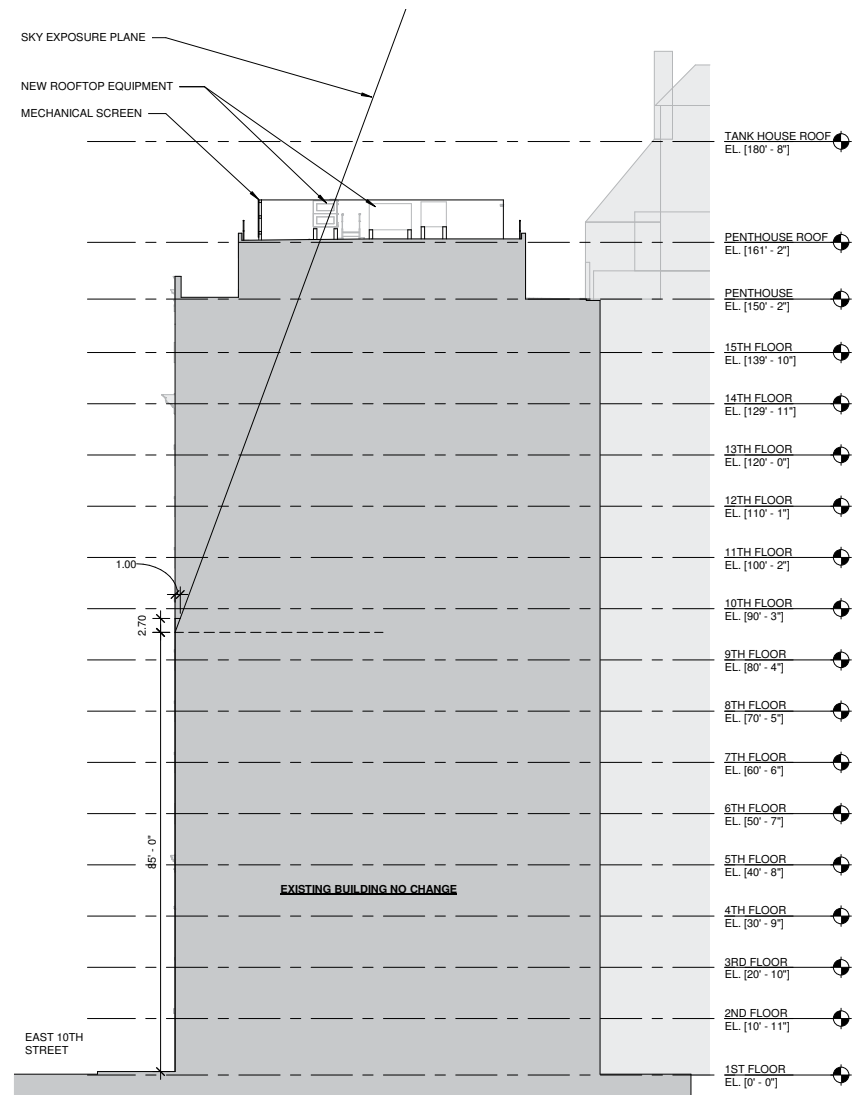
ROOFTOP MECHANICAL SCREEN MATERIALS

ZONING DESIGNATION: R10 (CORNER LOT), R7-2 (ANNEX LOT)

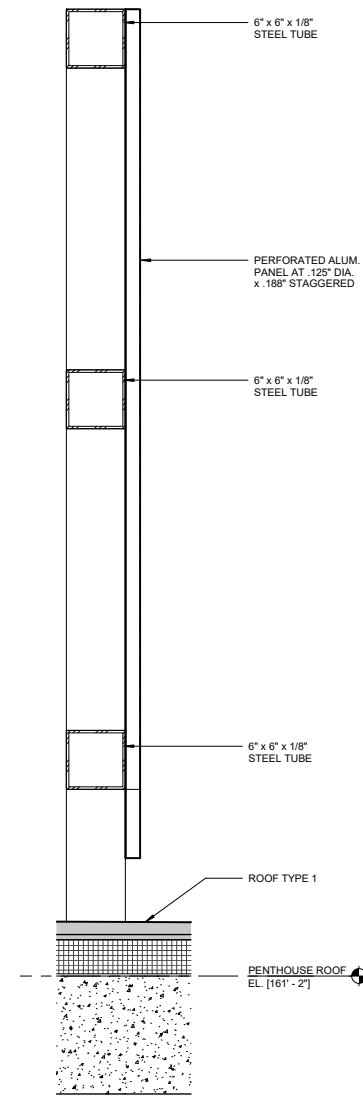
MECHANICAL SCREENING REQUIREMENT (23-51 PERMITTED OBSTRUCTIONS)

MECHANICAL EQUIPMENT IS PERMITTED TO OBSTRUCT THE SKY EXPOSURE PLANE PROVIDED THAT:

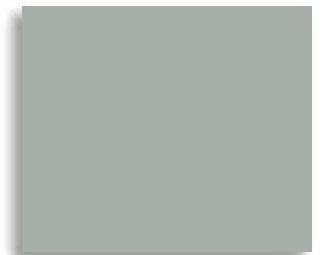
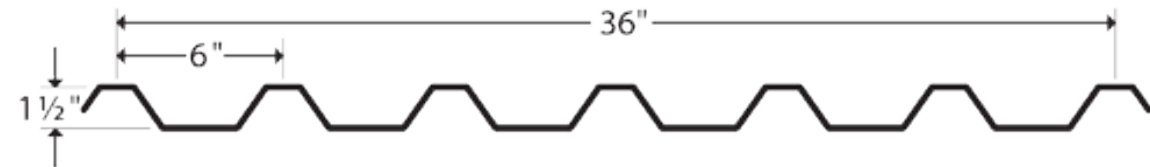
- THE EQUIPMENT BE NOT LESS THAN 10 FEET FROM THE STREET WALL
- THE EQUIPMENT BE SCREENED



ZONING DIAGRAM SHOWING SKY EXPOSURE PLANE



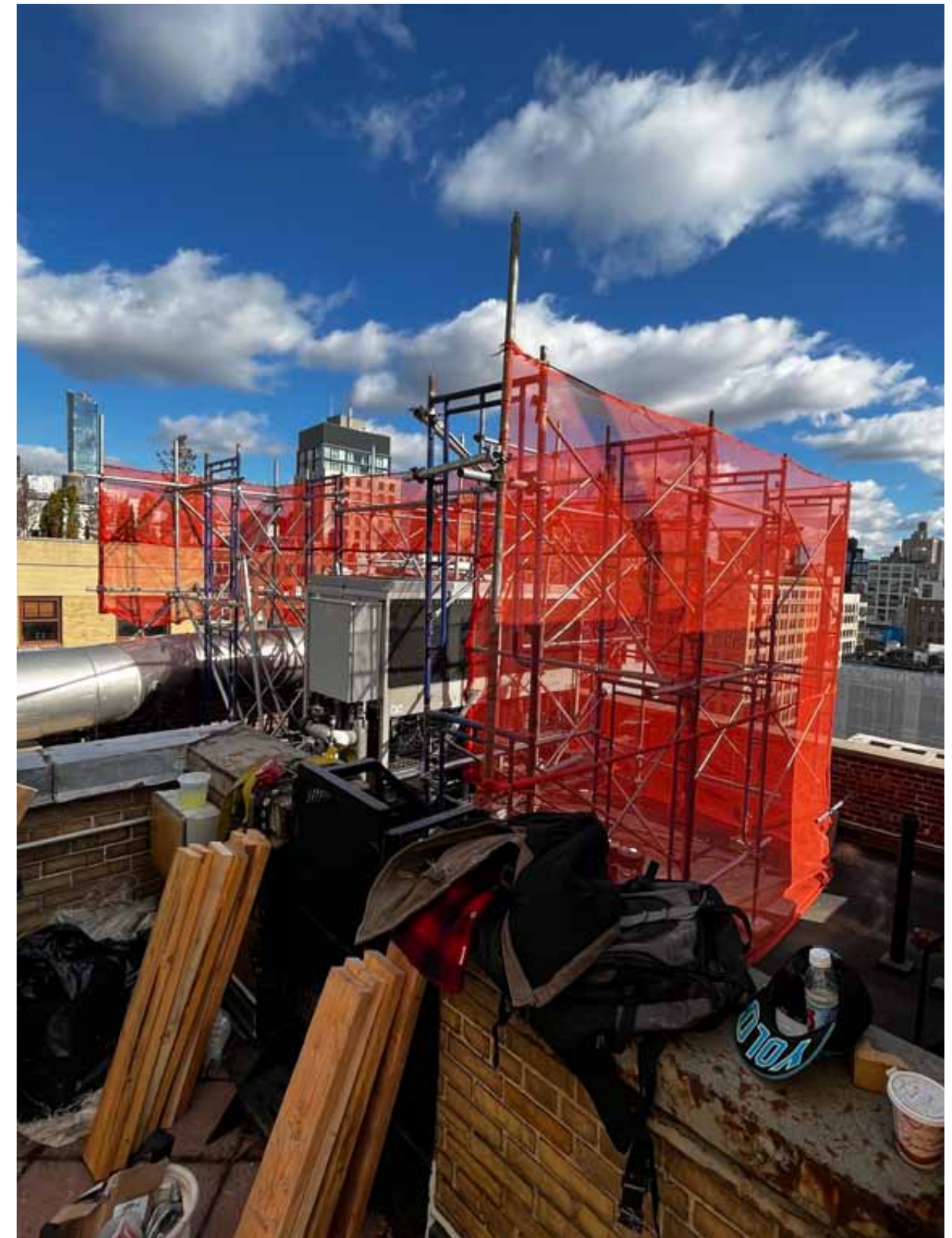
Hendrick BWK360



Titanium (35)

PERFORATED METAL SCREEN MATERIAL & COLOR

ROOFTOP MOCKUP CONSTRUCTION



BUILDING SIGHTLINES - SITE PLAN



BUILDING SIGHTLINES KEYED TO SITE PLAN



RENDERED VIEW



6TH AVENUE & W 10TH ST



W 10TH ST BETWEEN 5TH & 6TH AVE

BUILDING SIGHTLINES KEYED TO SITE PLAN



RENDERED VIEW



W 10TH STREET NEAR 5TH AVENUE



W 9TH STREET & 5TH AVENUE



RENDERED VIEW

BUILDING SIGHTLINES KEYED TO SITE PLAN



RENDERED VIEW



E 10TH ST BETWEEN 6TH & UNIVERSITY PL



E 10TH ST & UNIVERSITY PL



RENDERED VIEW

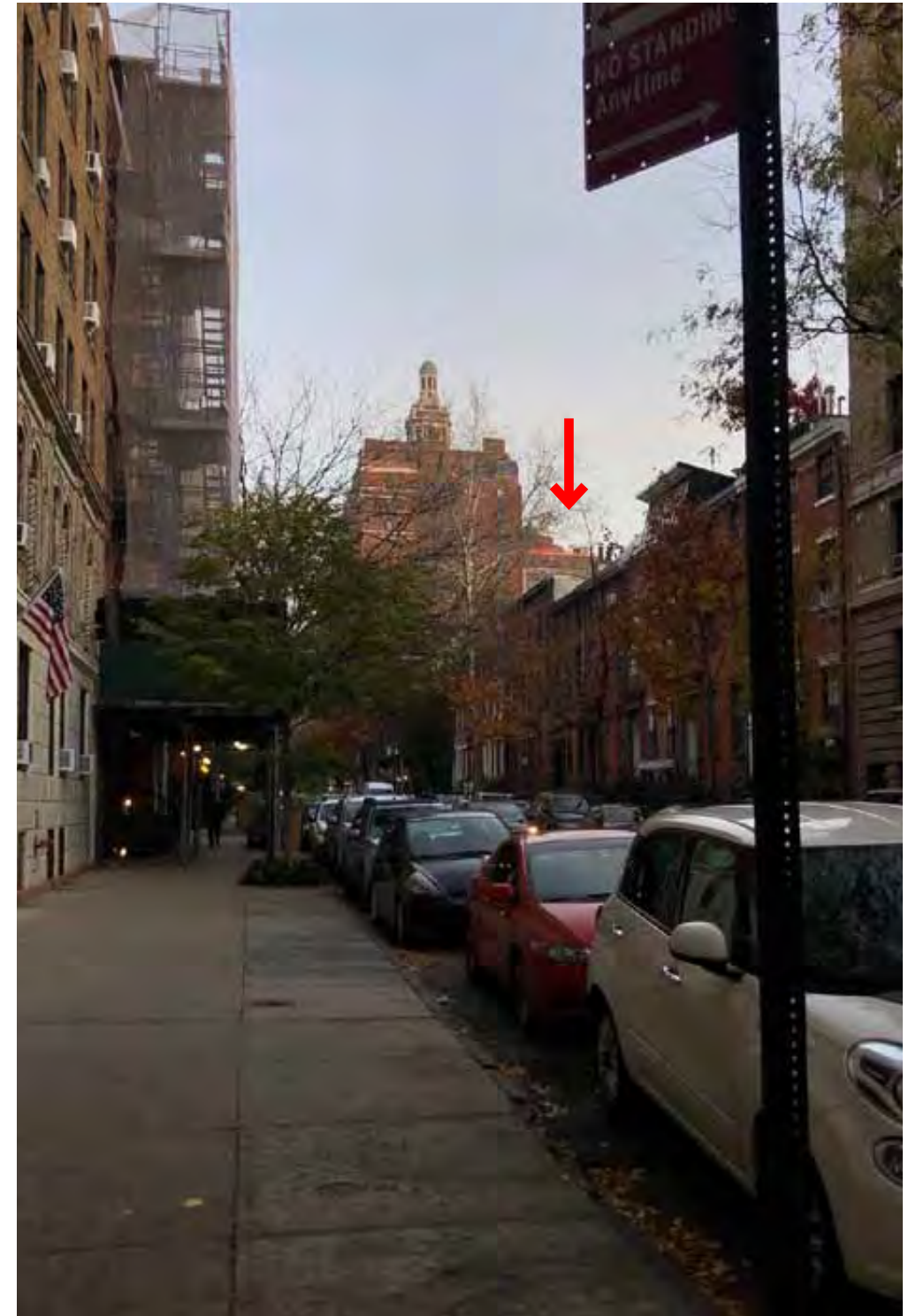
BUILDING SIGHTLINES KEYED TO SITE PLAN



E 10TH ST NEAR BROADWAY



E 11TH ST NEAR UNIVERSITY PL

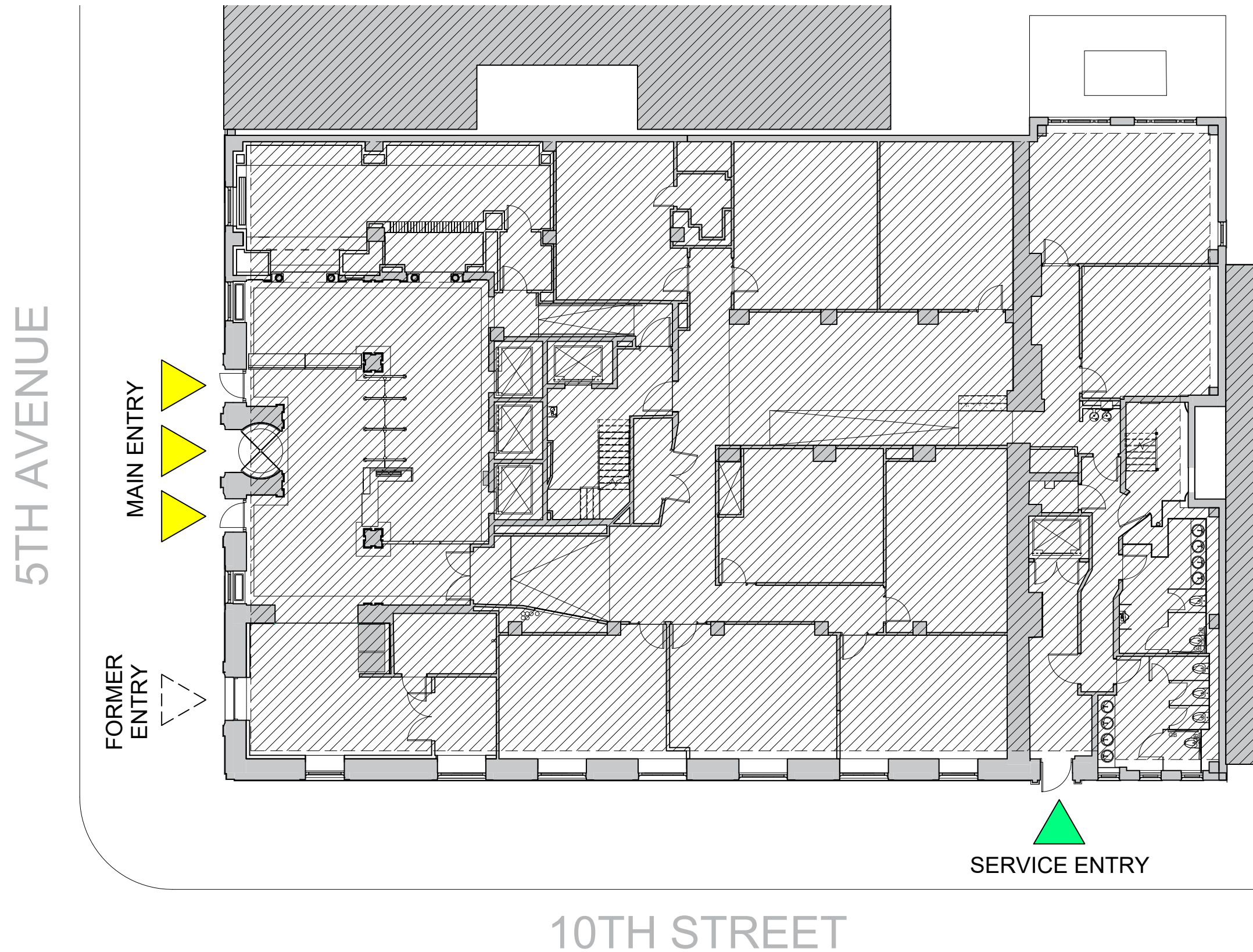


W 11TH ST NEAR 6TH AVE

Q & A

APPENDIX

BUILDING SITE PLAN



WATER TANK REMOVAL



AERIAL VIEW OF ROOF - VIEW TO NORTHEAST



EXISTING WOOD WATER TANK



VIEW FROM WEST 10TH ST AND 6TH AVE



VIEW FROM EAST 11TH ST AND UNIVERSITY PL

BRICK FLUE REMOVAL



AERIAL VIEW OF ROOF - VIEW TO NORTHEAST



VIEW FROM WEST 10TH ST AND 6TH AVE



VIEW FROM EAST 11TH ST AND UNIVERSITY PL

ADDITION OF VENTILATION FOR EMERGENCY GENERATOR AT TANK HOUSE



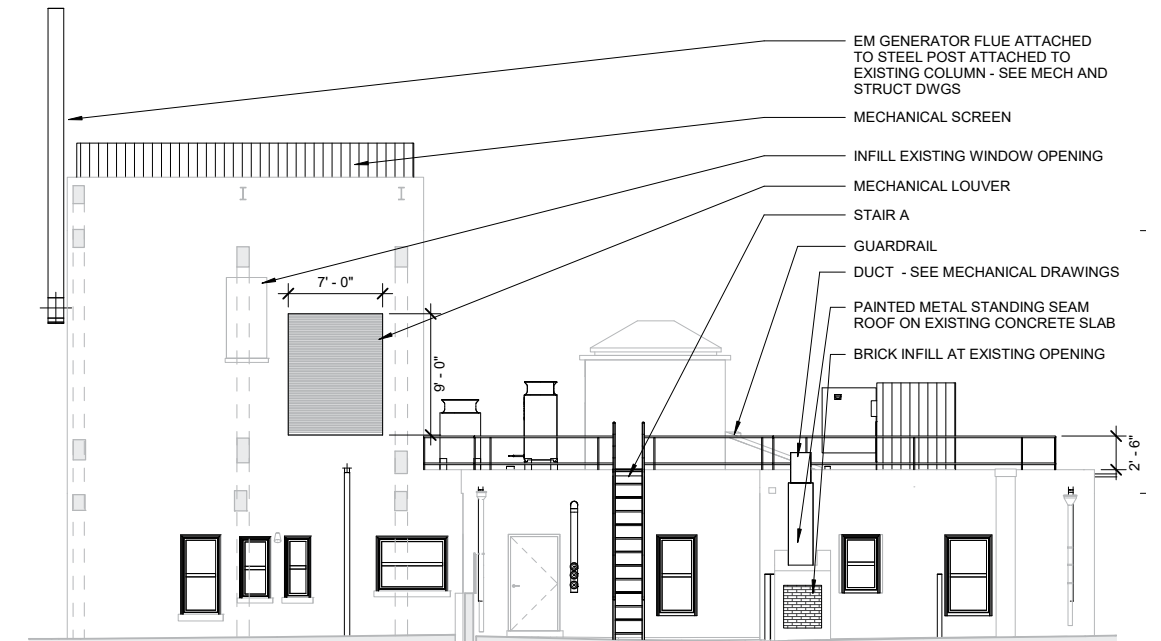
AERIAL VIEW OF TANK HOUSE



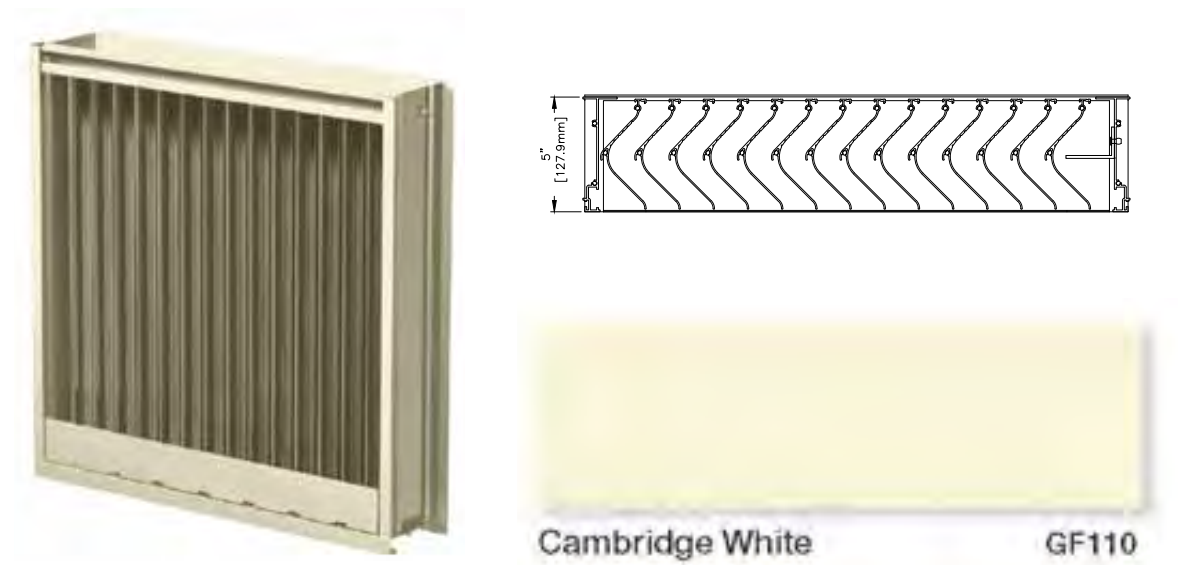
VIEW FROM EAST 11TH ST AND UNIVERSITY PL



NORTH ELEVATION OF TANK HOUSE

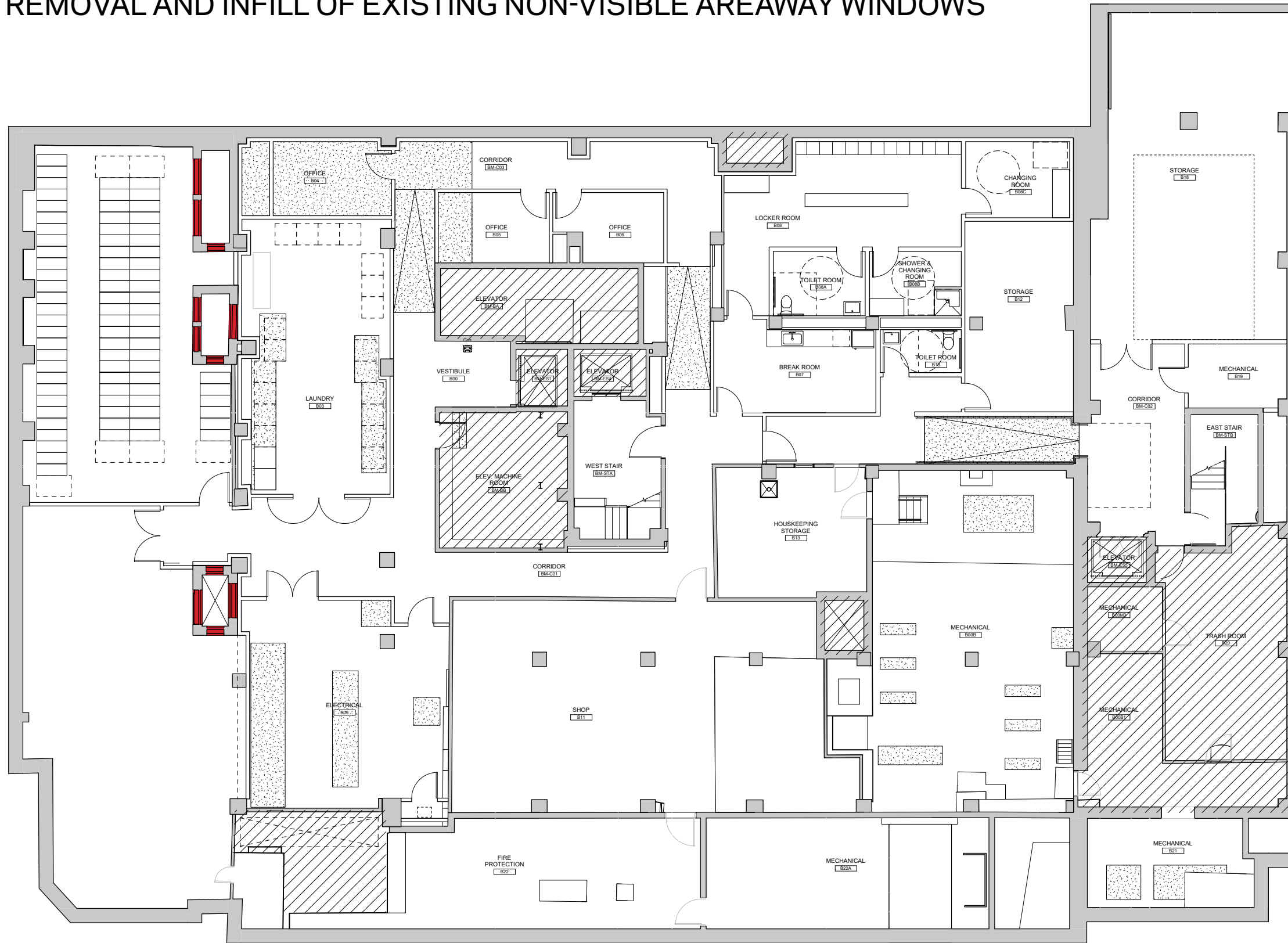


NORTH ELEVATION OF TANK HOUSE



LOUVER IMAGE AND FINISH COLOR

REMOVAL AND INFILL OF EXISTING NON-VISIBLE AREAWAY WINDOWS

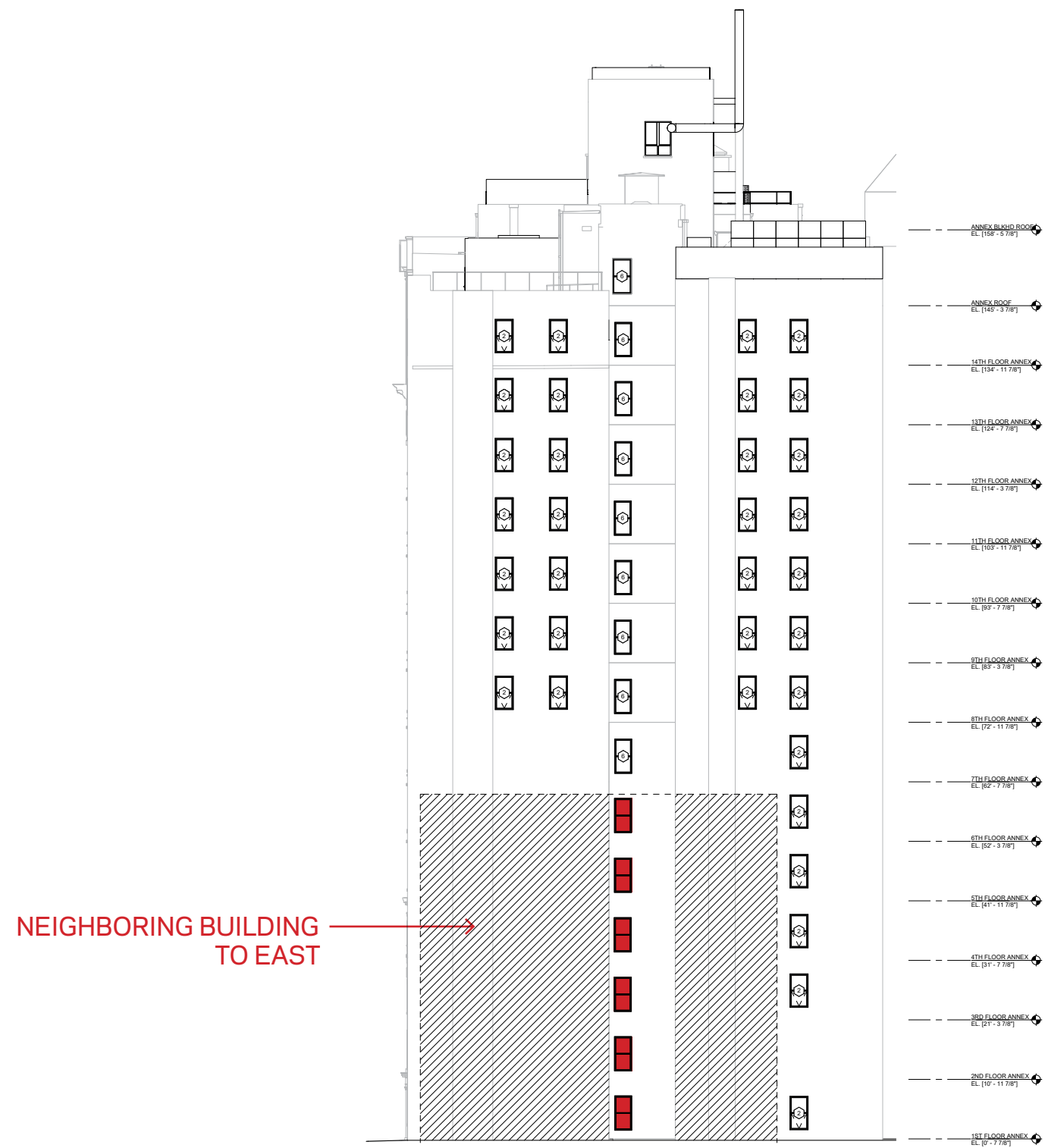


PROPOSED PLAN

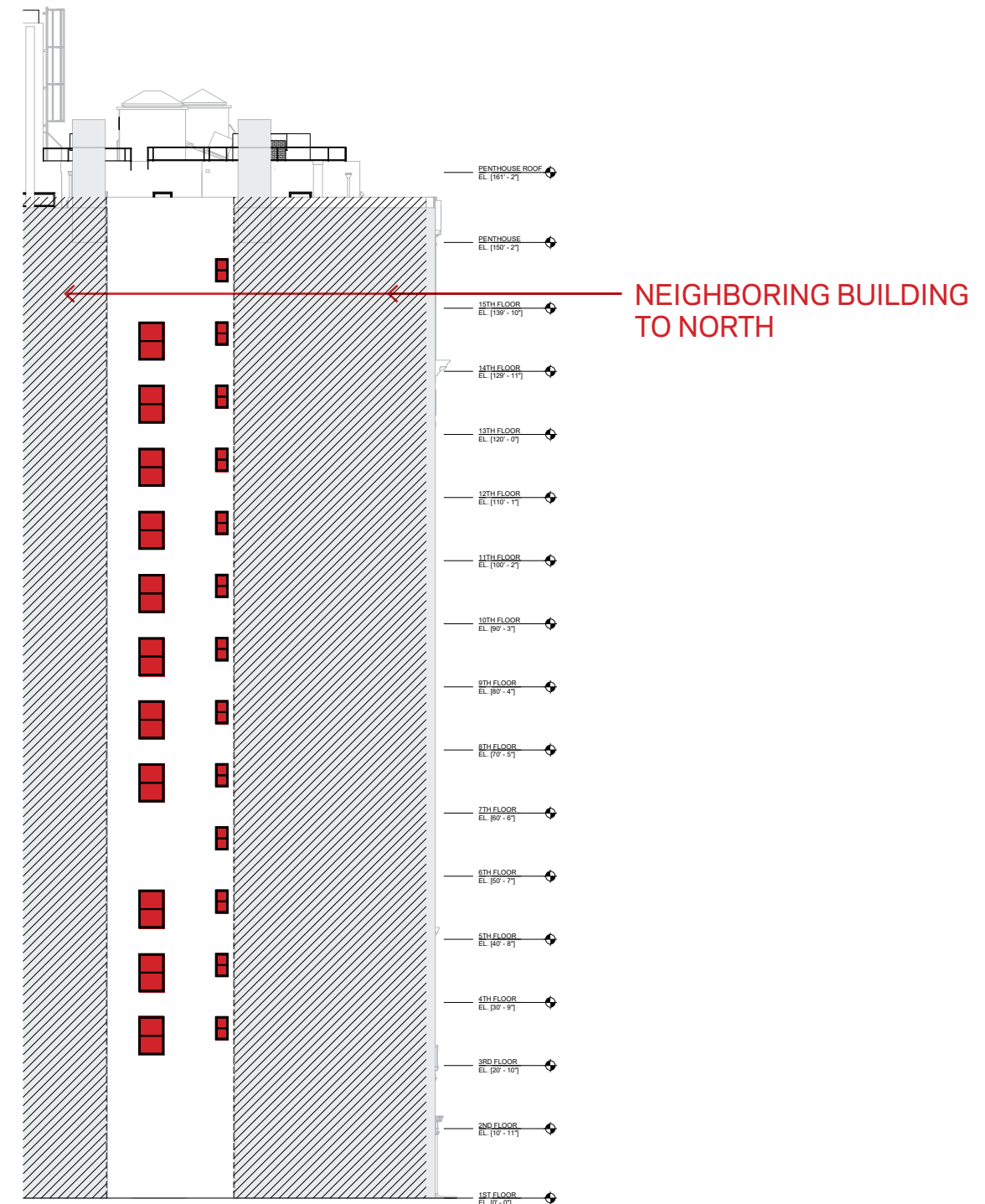


EXISTING CONDITIONS

REMOVAL AND INFILL OF EXISTING NON-VISIBLE STAIR, BATHROOM AND DORM WINDOWS



EAST ELEVATION
(STAIRWELL WINDOWS)



NORTH ELEVATION
(BATHROOM & DORM WINDOWS)

WINDOW DESIGN CRITERIA FOR OPERATION, APPEARANCE AND PERFORMANCE

PERFORMANCE:

- CONTRIBUTE TO LOCAL LAW 97 COMPLIANCE
 - AIR INFILTRATION
 - 1.0 ACH REQUIREMENT
 - EXCLUDES DOUBLE HUNG WINDOWS
 - THERMAL PERFORMANCE
 - TRIPLE GLAZING
 - U-VALUE 0.18
 - ENERPHIT COMFORT CRITERIA IF POSSIBLE
- MATERIAL/DURABILITY
 - ALUMINUM WINDOWS (AW60 MINIMUM RATING)

HISTORICAL APPROPRIATENESS:

- OPERATION
 - DOUBLE HUNG *OR*
 - SIMULATED DOUBLE HUNG (FIXED UPPER, IN-SWING LOWER PREFERRED)
- CONFIGURATION
 - MATCH HISTORIC WINDOWS
- DETAILS
 - CLOSELY MATCH HISTORIC
- GLAZING AREA
 - NOT TO EXCEED 6% REDUCTION *OR*
 - SOME LENIENCY FOR HIGH PERFORMANCE WINDOWS
- CONSISTENCY
 - IF HIGH PERFORMANCE, MUST REPLACE ALL WINDOWS FOR CONSISTENT APPEARANCE

MAINTENANCE & OPERATION:

- SIZE - 6' X 6' TYPICAL WINDOW (INCREASED WEIGHT ON WINDOW HARDWARE)
- CAN BE CLEANED FROM INSIDE
- MINIMAL RAIN WATER INFILTRATION WHEN OPEN
- INSECT SCREENS REMOVABLE FOR CLEANING

ACCESSIBILITY:

- HANDLE MUST MEET ADA CRITERIA FOR OPERABILITY (SHAPE, FORCE REQUIRED TO TURN)
- HANDLE MUST BE LOCATED WITHIN ACCESSIBLE REACH RANGE

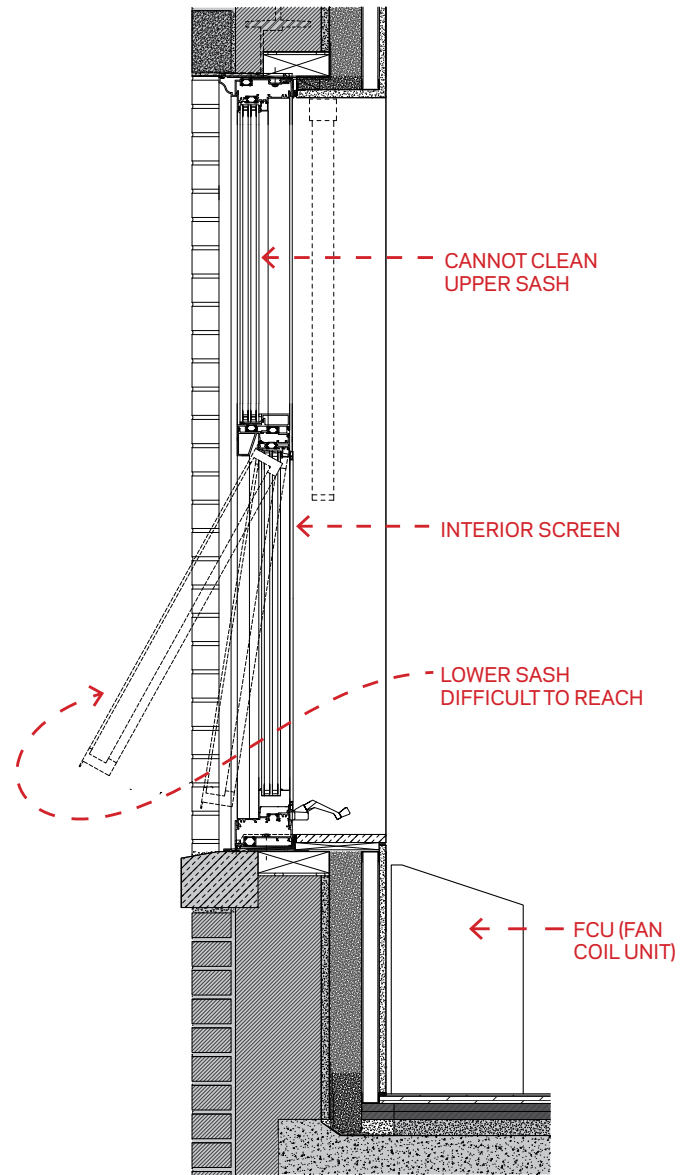
RED TEXT - REGULATORY COMPLIANCE OR PHYSICAL CONSTRAINT

WINDOW DESIGN CRITERIA SUMMARY OF FINDINGS

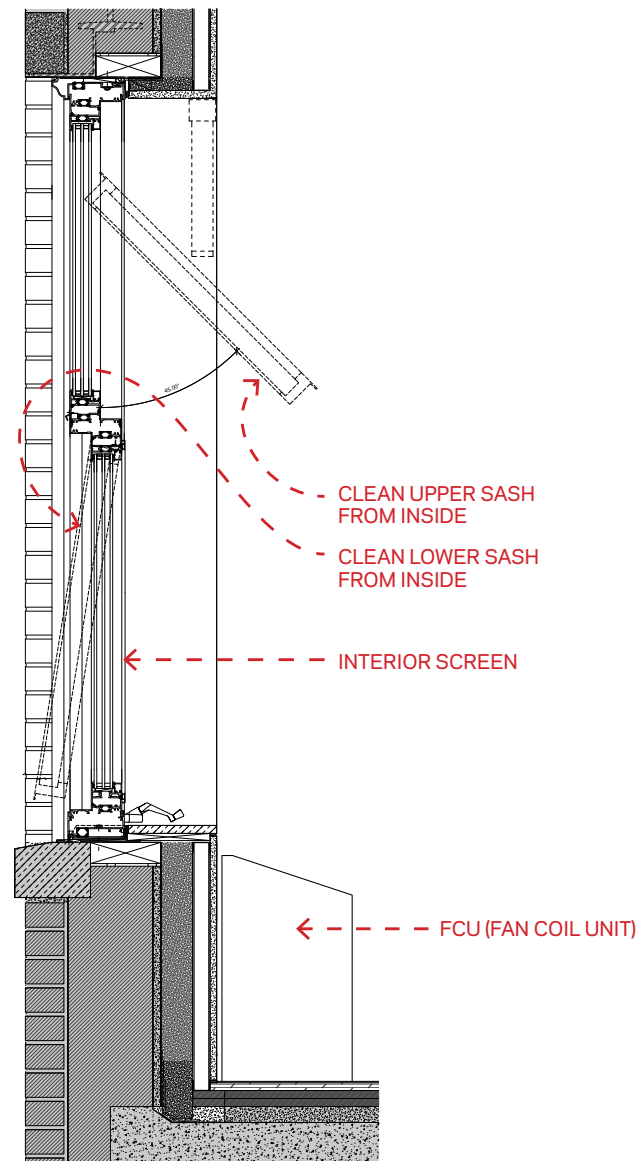
- TWO MANUFACTURERS ARE ABLE TO PROVIDE ALUMINUM SIMULATED DOUBLE HUNG WINDOWS WITH OFFSET GLAZING THAT MEET NYU PERFORMANCE CRITERIA: WAUSAU AND SCHUCO (BOTH PRODUCTS ARE CUSTOM)
- DUE TO THE SIZE AND WEIGHT OF THE WINDOWS, A FIXED UPPER AND IN-SWING HOPPER (SOURCED FROM WAUSAU) IS NOT POSSIBLE BECAUSE IT DOES NOT MEET ADA ACCESSIBILITY REQUIREMENTS

	Wausau - Option 1a <i>(Woolworth - Customized)</i>	Wausau - Option 1b <i>(Woolworth - Customized)</i>	Schuco - Option 2 <i>(AWS-90.SI - Customized)</i>
Operation	Simulated Double Hung Fixed upper, out-swing awning lower	Simulated Double Hung Out-swing awning lower for ventilation, in-swing awning upper for maintenance	Simulated Double Hung Full-window in-swing hopper for ventilation, full-window in-swing casement for maintenance
Cleanability from Interior	Not cleanable from interior	Fully cleanable from interior	Fully cleanable from interior
Sash/Glazing planes closely match historic	Sash and glazing are offset	Sash and glazing are offset	Glazing is offset, sash is not
Details closely match historic	<ul style="list-style-type: none"> ▪ Head, sill and jamb details approximate original ▪ Meeting rail is slim, but offset from center to accommodate hardware ▪ Brick molds and muntins will approximate original 	<ul style="list-style-type: none"> ▪ Head, sill and jamb details approximate original ▪ Meeting rail is wide to accommodate upper sash operability, and offset from center to accommodate hardware ▪ Brick molds and muntins will approximate original 	<ul style="list-style-type: none"> ▪ Head, sill and jamb details differ from original ▪ Meeting rail is slim ▪ Brick molds and muntins will approximate original
Glazing area diminution 6% nominal maximum	Yes - or close (see elevations)	No - Over 6% (see elevations)	Yes - or close (see elevations)
Passive House level U-value (Triple Glazing) & Airtightness	No U-value 0.278	No U-value 0.285	Yes U-value 0.18
Meets EnerPHit comfort criteria	No - requires perimeter heat source	No - requires perimeter heat source	Yes
NYU Priority	Does not meet NYU criteria	NYU 2nd Choice	NYU 1st Choice

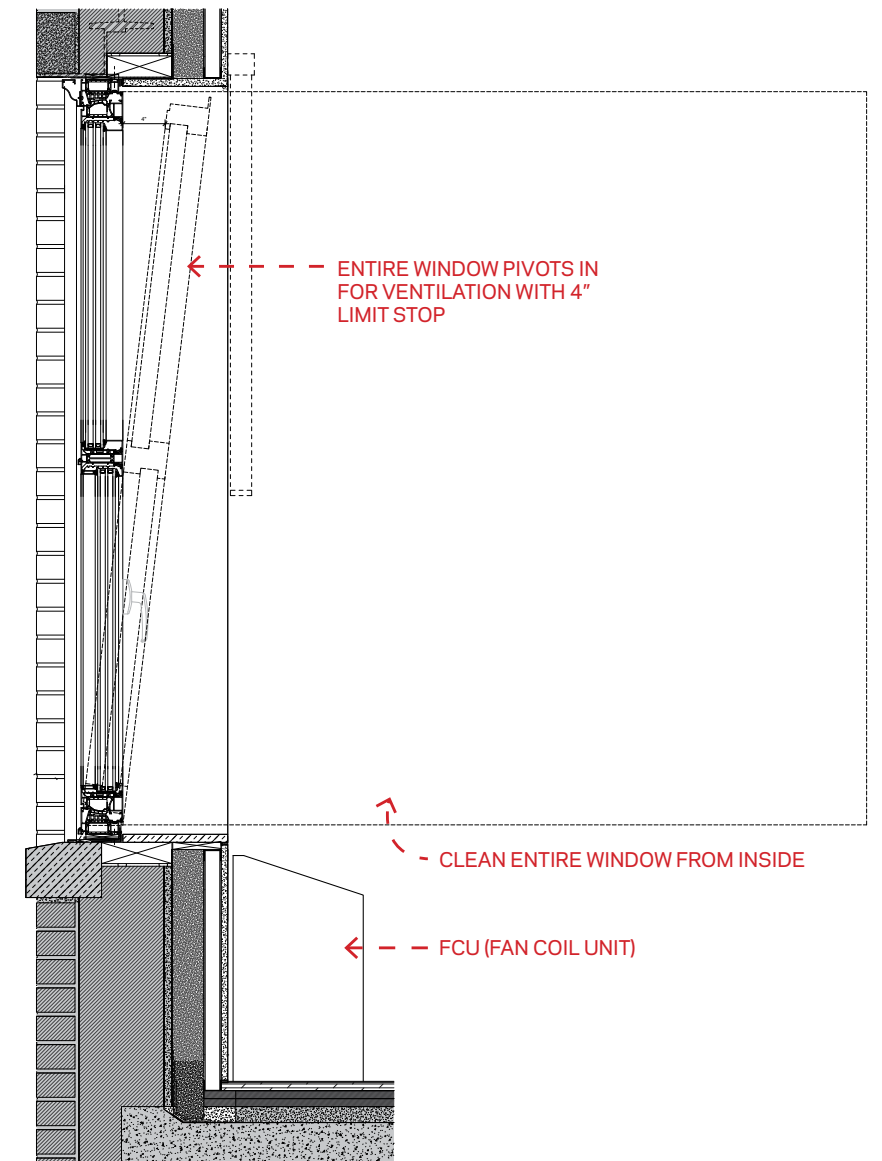
HIGH PERFORMANCE REPLACEMENT WINDOW OPTION STUDIES



OPTION 1A - WAUSAU
OUT-SWING AWNING LOWER
U-VALUE 0.278

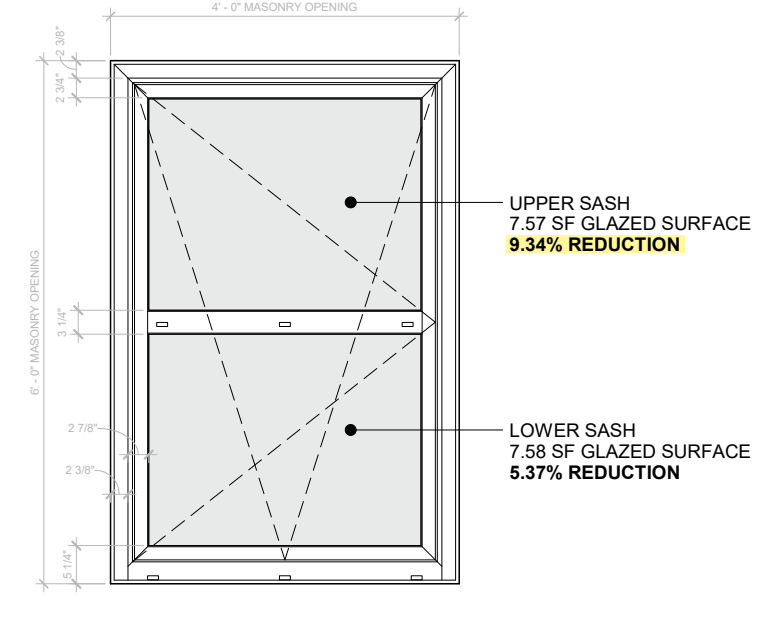
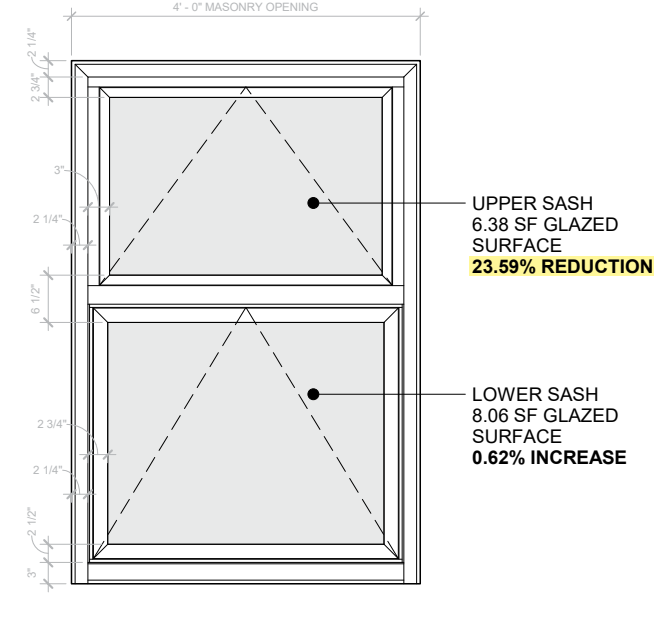
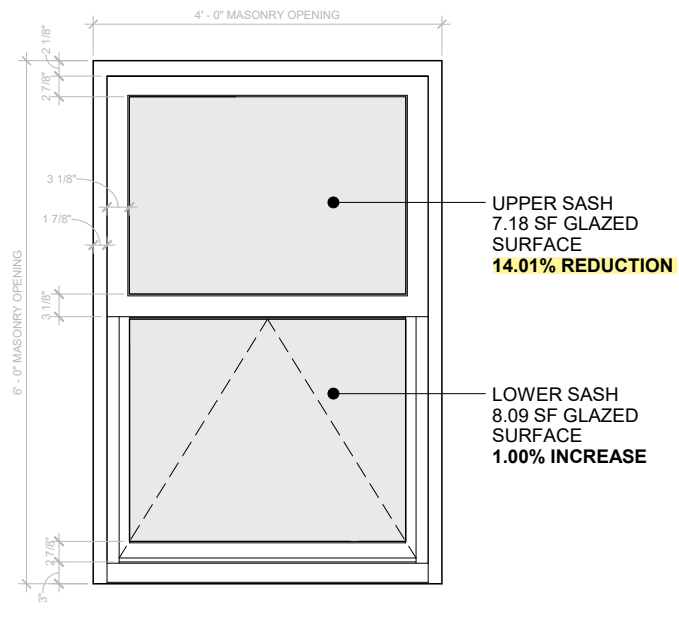
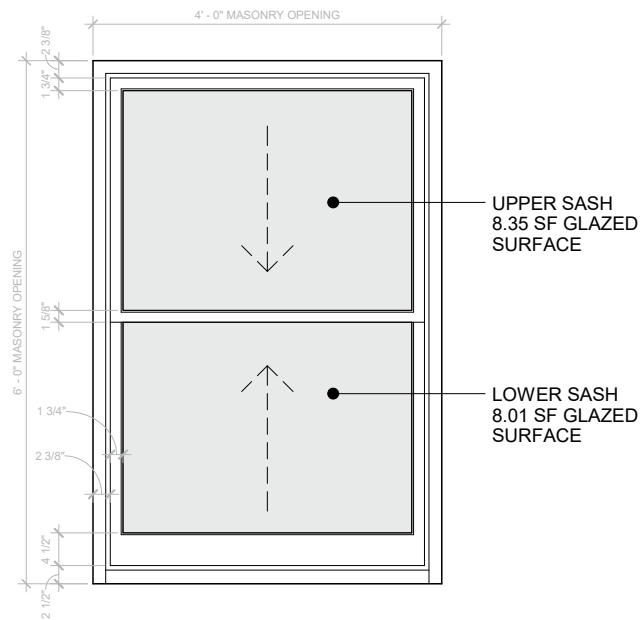
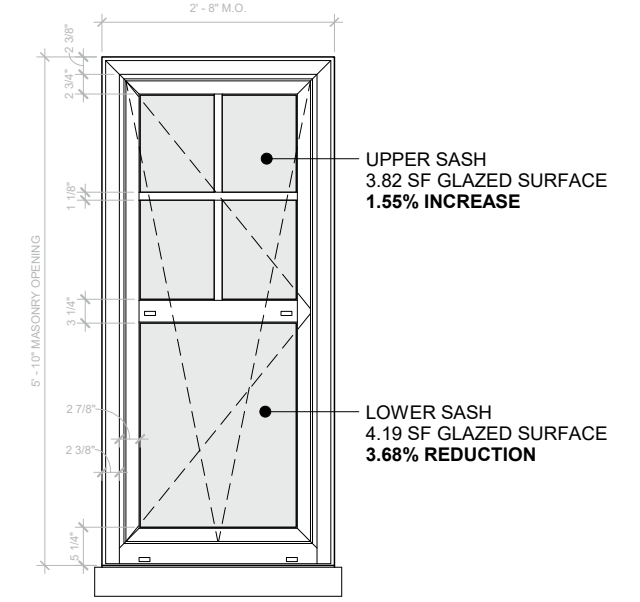
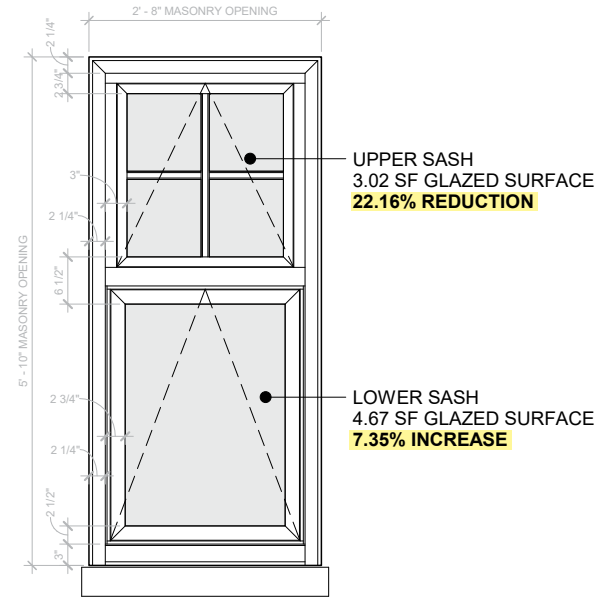
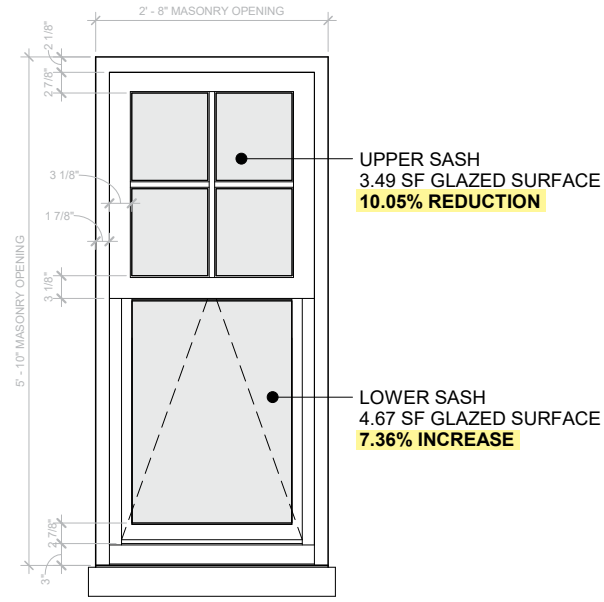
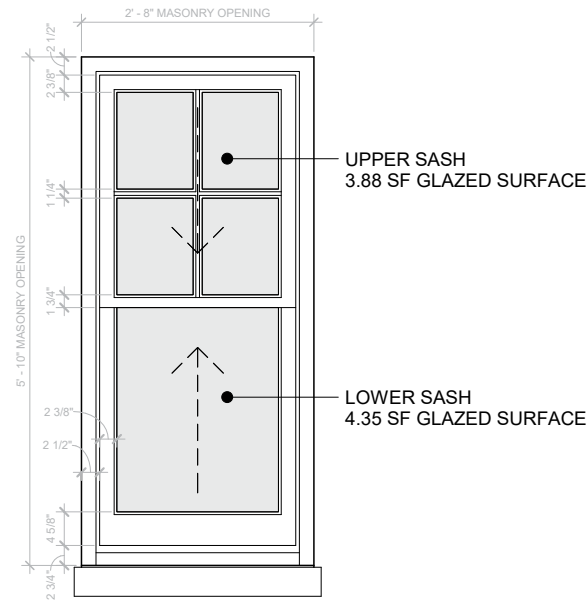


OPTION 1B - WAUSAU
IN-SWING AWNING UPPER
OUT-SWING AWNING LOWER
U-VALUE 0.285



OPTION 2 - SCHUCO
WHOLE-WINDOW TILT/TURN
U-VALUE 0.18

COMPARING EXISTING HISTORIC WINDOWS WITH HIGH-PERFORMANCE REPLACEMENT OPTIONS



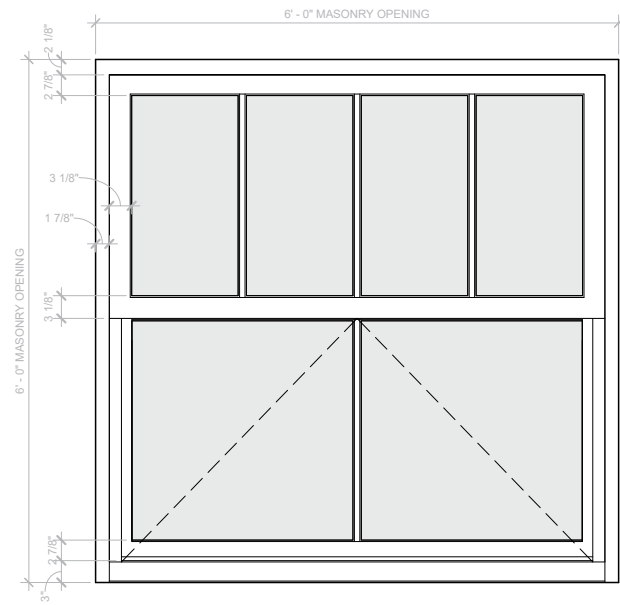
EXISTING HISTORIC WINDOWS
TYPE HB (UPPER) & HA (LOWER)
DOUBLE HUNG

REPLACEMENT WINDOWS
OPTION 1A - WAUSAU
LOWER OUT-SWING AWNING

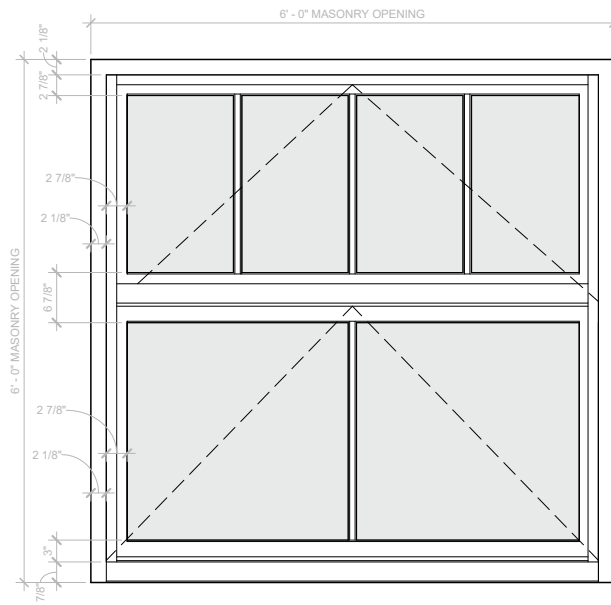
REPLACEMENT WINDOWS
OPTION 1B - WAUSAU
LOWER OUT-SWING AWNING (VENT.)
UPPER IN-SWING AWNING (MAINT.)

REPLACEMENT WINDOWS
OPTION 2 - SCHUCO
FULL WINDOW IN-SWING HOPPER (VENT.)
FULL WINDOW IN-SWING CASEMENT (MAINT.)

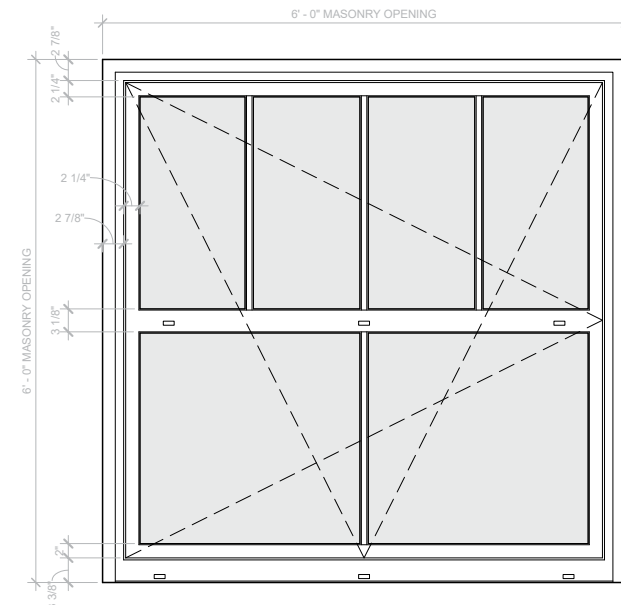
COMPARING PROPOSED HIGH-PERFORMANCE WINDOWS AT NON-HISTORIC LOCATIONS



TYPE 1 WINDOW - OPTION 1A - WAUSAU
LOWER OUT-SWING AWNING OPERATION

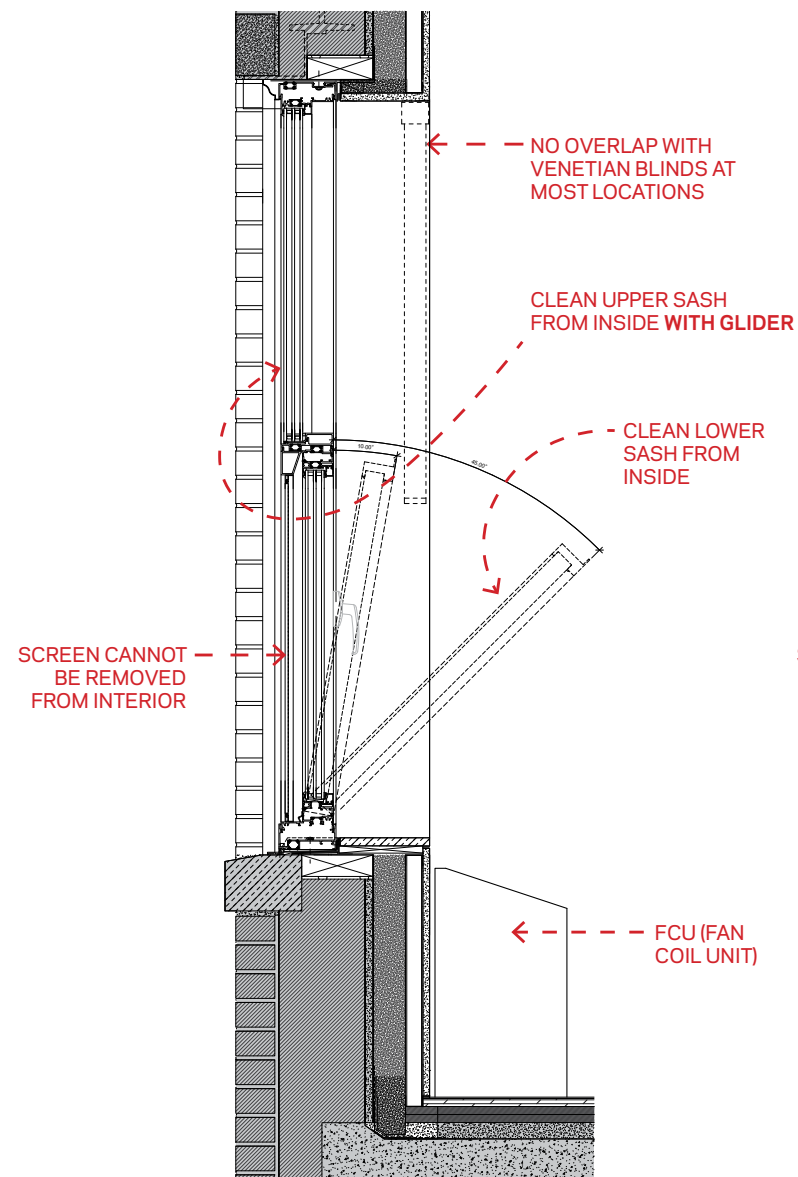


TYPE 1 WINDOW - OPTION 1B - WAUSAU
LOWER OUT-SWING AWNING (VENTILATION)
UPPER IN-SWING AWNING (MAINTENANCE)



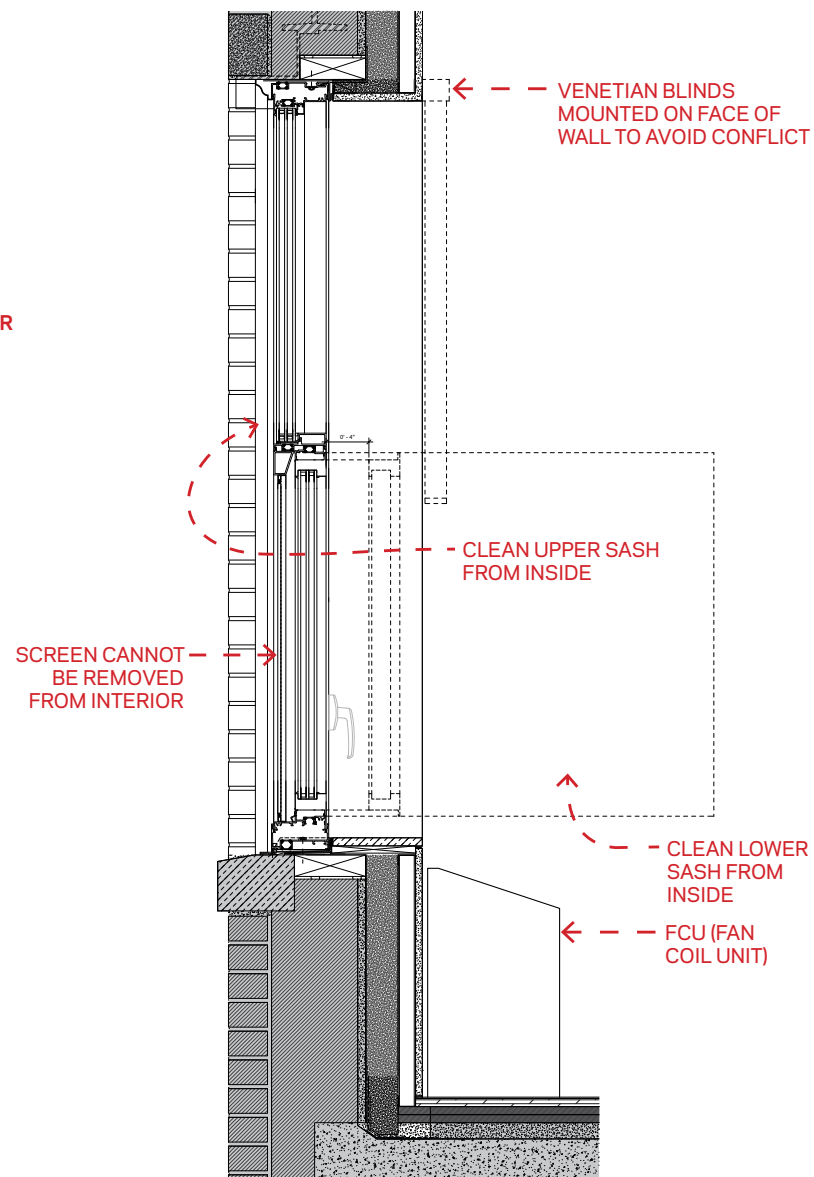
TYPE 1 WINDOW - OPTION 2 - SCHUCO
FULL WINDOW IN-SWING HOPPER (VENTILATION)
FULL WINDOW IN-SWING CASEMENT (MAINTENANCE)

WINDOW STUDIES - WAUSAU - OPTION 1A STUDY



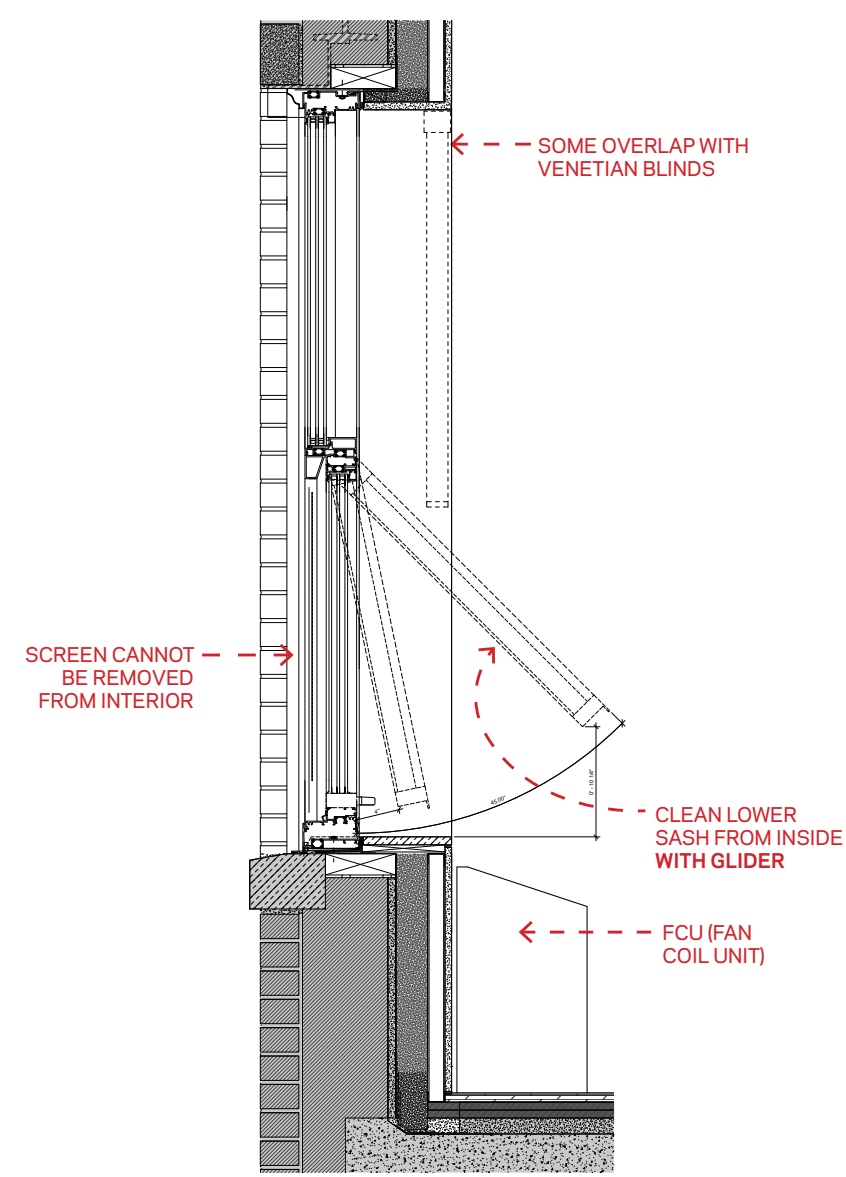
HOPPER LOWER

- ✗ NOT ADA COMPLIANT DUE TO WEIGHT OF SASH AND LOCATION OF HANDLES



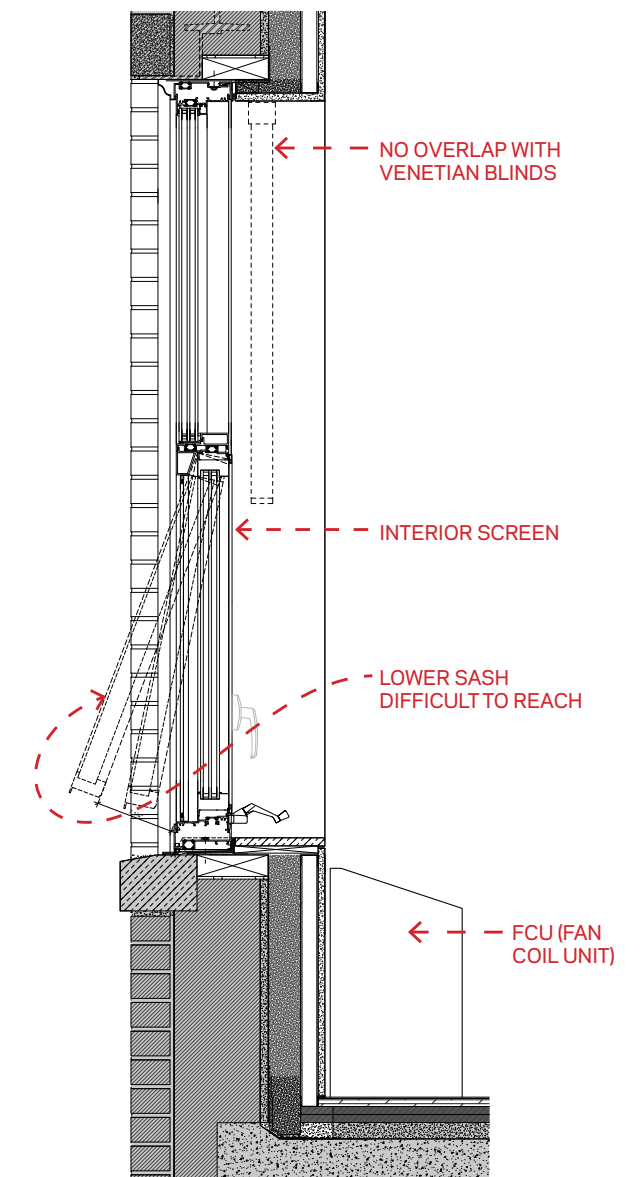
CASEMENT LOWER

- ✗ NOT ACHIEVABLE DUE TO WEIGHT AND SASH GEOMETRY



IN-SWING AWNING LOWER

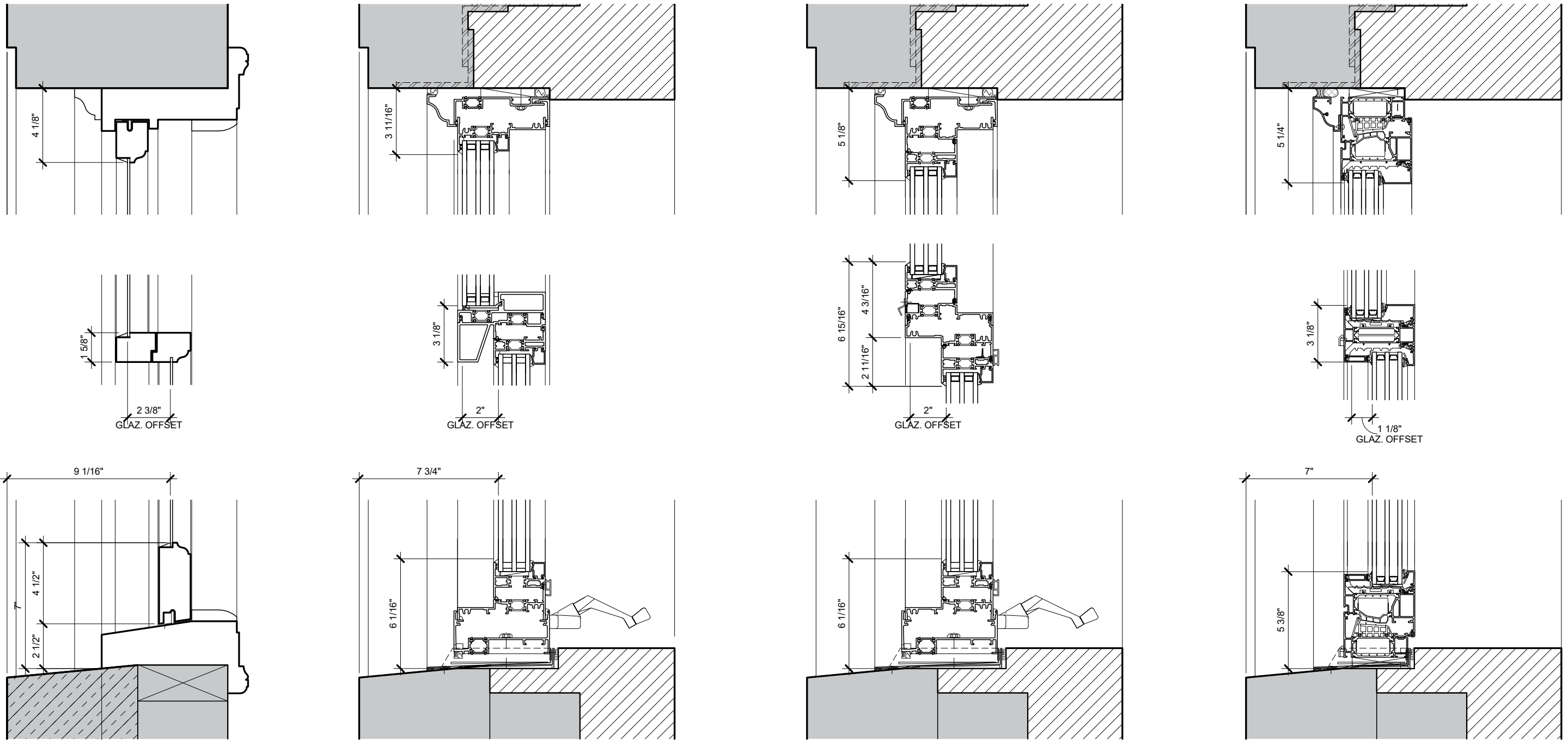
- ✗ LOWER SASH CLEANABLE BUT DIFFICULT TO REACH
- ✗ UPPER SASH NOT CLEANABLE
- ✗ WATER INFILTRATION LIKELY
- ✗ SCREEN NOT ACCESSIBLE FROM INTERIOR



OUT-SWING AWNING LOWER

- ✗ LOWER SASH CLEANABLE BUT DIFFICULT TO REACH
- ✗ UPPER SASH NOT CLEANABLE
- ✓ NO WATER INFILTRATION
- ✓ INTERIOR INSECT SCREEN

COMPARING EXISTING HISTORIC WINDOWS WITH PROPOSED HIGH-PERFORMANCE REPLACEMENT



TYPE HA WINDOW
EXISTING HISTORIC
DOUBLE HUNG

TYPE HA WINDOW
OPTION 1A - WAUSAU
LOWER OUT-SWING AWNING

TYPE HA WINDOW
OPTION 1B - WAUSAU
LOWER OUT-SWING AWNING (VENTILATION)
UPPER IN-SWING AWNING (MAINTENANCE)

TYPE HA WINDOW
OPTION 2 - SCHUCO
FULL WINDOW IN-SWING HOPPER (VENTILATION)
FULL WINDOW IN-SWING CASEMENT (MAINT.)