William Grose Center Landmarks Preservation

Environmental Works
COMMUNITY DESIGN CENTER

Fire Station 6: Existing Conditions, Proposals, and Request for Guidance

The William Grose Center, originally City of Seattle's Fire Station 6, was built in 1931-32 and designated a City Landmark on June 28, 2005. The City of Seattle transferred the building to the Africatown Community Land Trust in 2022, and it is currently operated as a community and youth center.

The building was renovated in 1986, windows were replaced in 1999, and the roof was replaced in 2001. While these interventions were made prior to the Landmark designation, the Architects made sensitive decisions that were respectful of the character of the original construction. Those design choices included:

- Preserving the distinctive appearance of the **concrete parapets.**
- Mimicking the multi-pane appearance of the original **steel-sash windows.**
- Reproducing the original wooden **apparatus bay doors** with steel replicas.
- Preserving the distinctive **'lightning bolt' window** above the apparatus bay doors.

The Landmarks designation of 2005 states that:

"The features of the Landmark to be preserved, include:

- *The exterior of the building*
- *The site"*

The renovation work planned for 2024 offers us the opportunity to continue making decisions that respect the important features of this building. These decisions may be contrary to the requirements of the 2018 Seattle Energy Code, so we are requesting guidance from the Landmarks Board.

Concrete Parapets: Fire Station 6 (FS6) was designed by architect George Stewart, and is one of Seattle's only remaining Art Deco / Moderne fire stations. The primary distinctive feature is the pattern of strong geometric reveals cast into the smooth structural concrete walls and parapets. These reveals extend to the top of the parapets to create either a chevron detail or a zig-zag profile which is clearly visible against the sky. (See photo page 5)

Windows: The original single-pane steel-sash windows were replaced with modern aluminum windows in 1999. Steel sash windows feature multiple lites divided by narrow muntins. This technology cannot support contemporary insulated glazing units; new aluminum windows with thermal breaks must have thicker frames. The renovation architects chose to mimic the narrow muntins by etching a similar pattern onto float glass, alternating clear and translucent areas to suit the need for privacy of the firefighters occupying the building. Some of the original windows in the handball court were high above the floor, and the 1931 design included an elaborate and complicated mechanism for opening these windows from floor level. This mechanism was not preserved, and the high windows were changed from operable to fixed. (See comparison of 1931, 1999, and proposed new windows, page 13.)

Apparatus Bay Doors: Prior to 1986 the original wooden apparatus bay doors had been replaced with sectional overhead garage doors. The 1986 architect chose to reproduce the original doors with steel facsimiles including multi-pane glazing. The original steel strap hinges were replaced with continuous piano hinges, but otherwise the new doors are a convincing copy of the 1931 originals. (See photo page 16.)

Lightning Bolt Transom: The distinctive Art Deco zig-zag transom windows above the apparatus bay feature a "lightning bolt" exterior grille. The original steel sash with single-pane glazing remains, and the original steel decorative grille was replaced in 1986 with one made from anodized aluminum. (See photo page 17.)

Energy Code Compliance: SDCI's review of the current permit application has identified four conditions that require compliance with the Seattle Energy Code (SEC). In each of these, existing conditions make compliance difficult:

1. Roof Insulation (Concrete Parapets)
2. Vertical Fenestration (Windows in Handball Court)
3. Exterior Swinging Doors (Apparatus Bay Doors)
4. Vertical Fenestration ("Lightning Bolt" Transom Windows)

Accessibility: A concrete ramp was added to the west side of the building during Phase 1 of the renovation, but this ramp was built incorrectly. In Phase 2 we will demolish the ramp and replace it with a shallower concrete walkway, which will provide an accessible route of egress from the lower floor to the public right-of-way. We are proposing to provide a steel handrail along the length of the walk and the perimeter of the upper landing. In keeping with the building's origin as a fire station this handrail will be painted gloss red to match other existing metal items.

Power door operators are required to provide accessibility at two exterior doors. These will require blue ADA door buttons at the exterior of the building adjacent to the doors.

Rooftop Mechanical Equipment: Equipment installed in 1986 will be replaced. The new equipment will not change the visibility of mechanical equipment from across the street (See diagram page 21).

Scope of Work

Project Site Plan

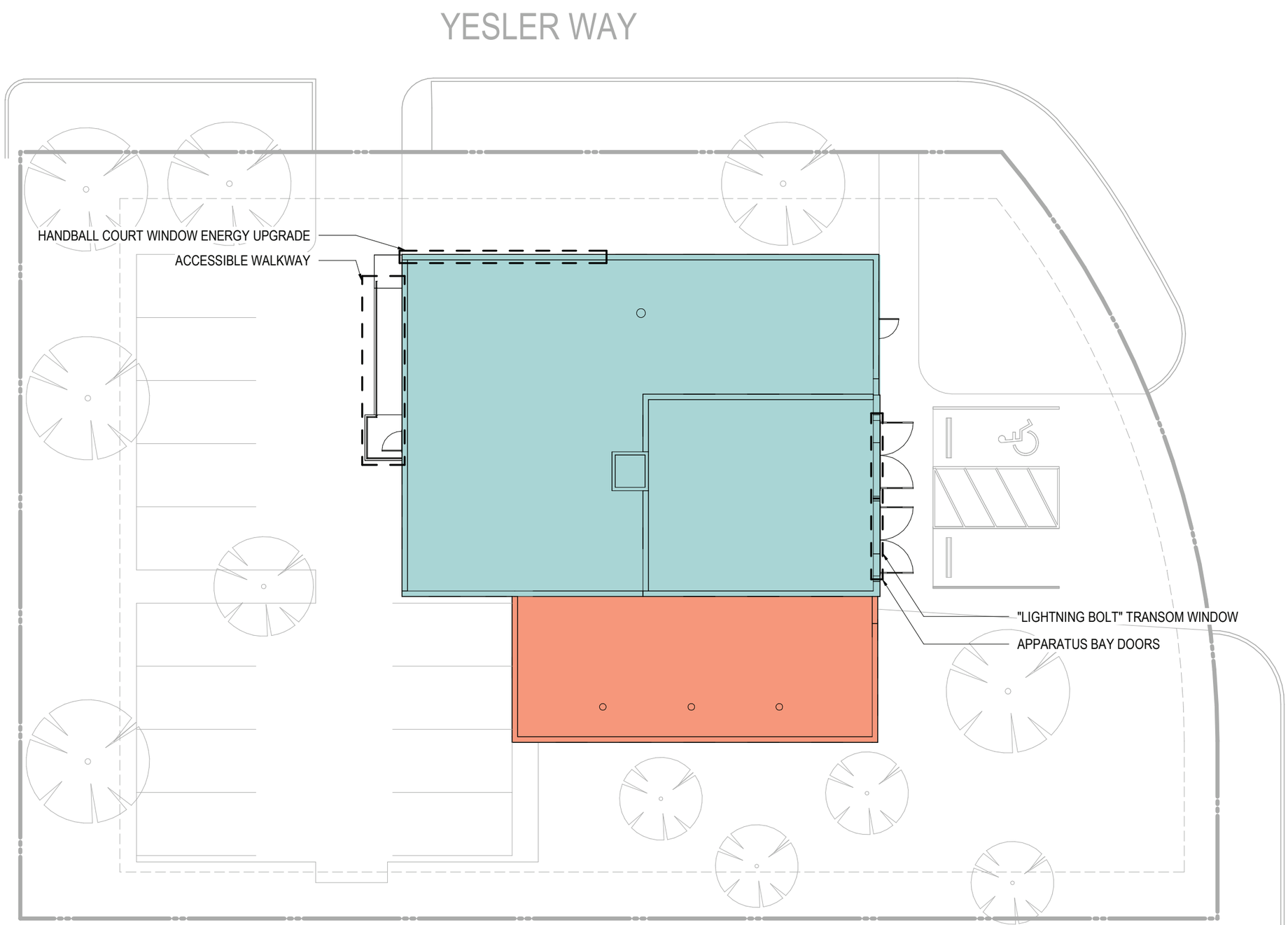


figure 1:

- ORIGINAL 1931 BUILDING
- 1986 ADDITION

ROOF INSULATION UPGRADE - ALL AREAS

Environmental Works
COMMUNITY DESIGN CENTER

Scope of Work

Project Floor Plan

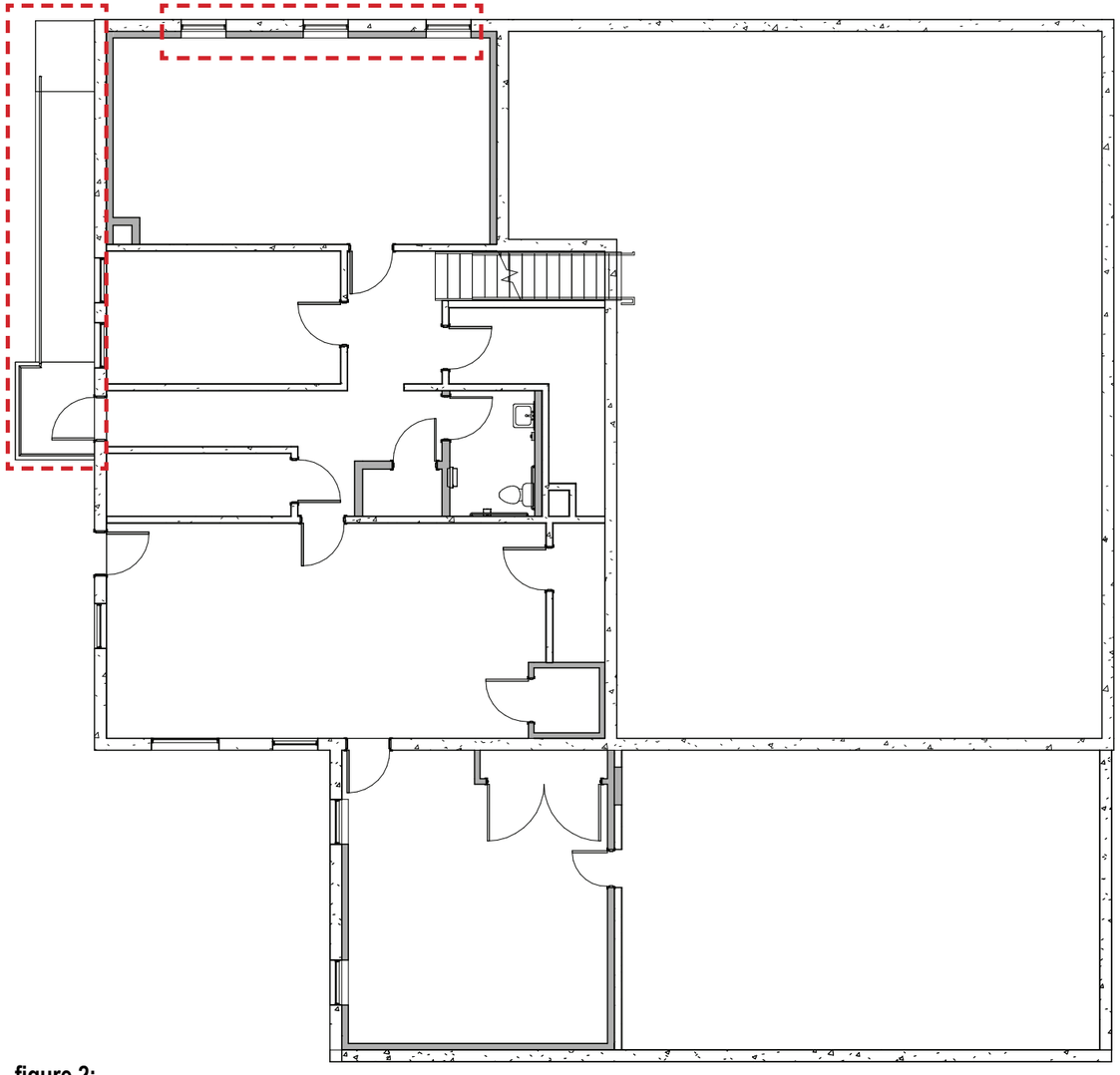


figure 2:
Basement plan showing areas of work

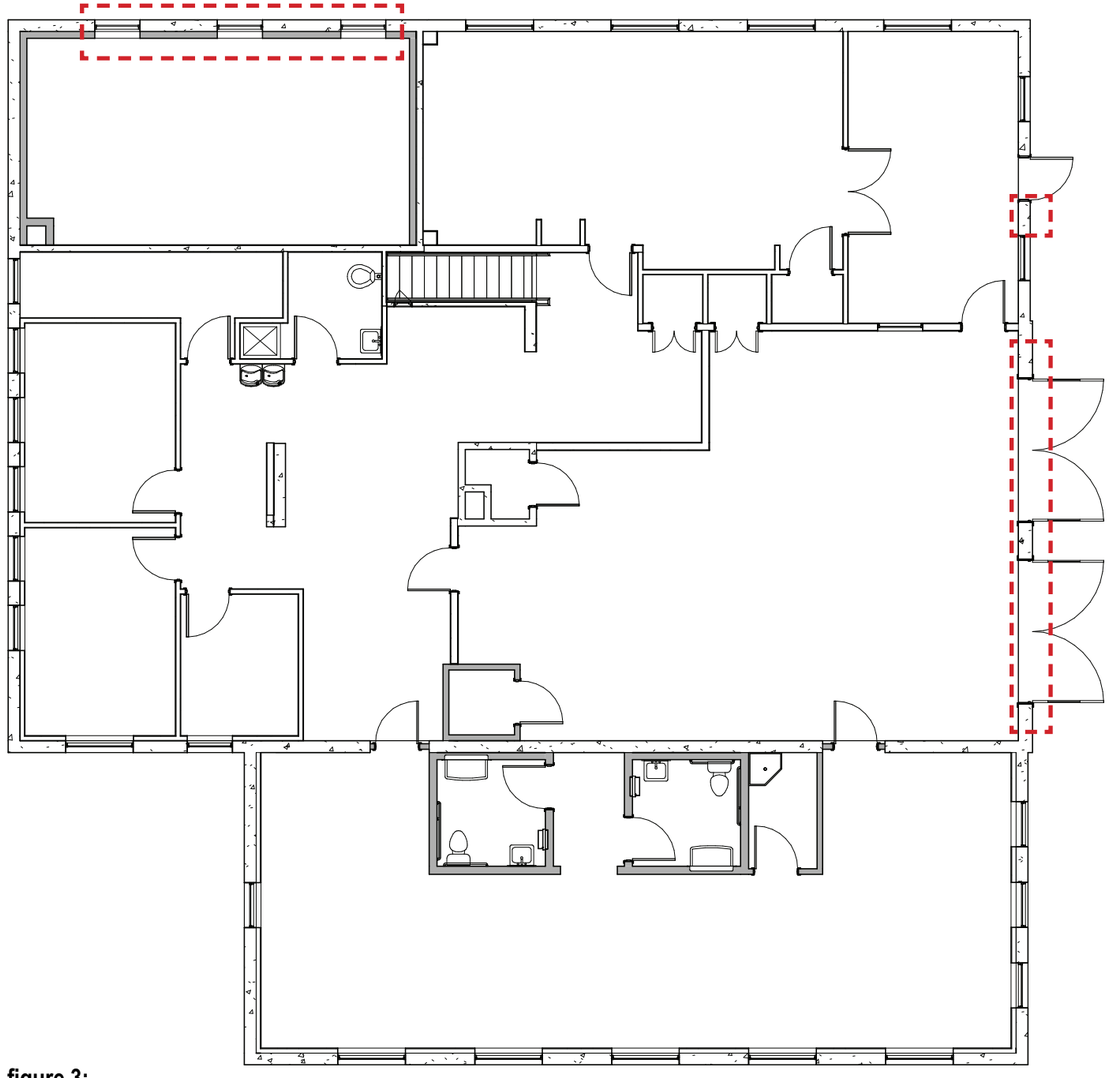


figure 3:
First floor plan showing areas of work

Roof Insulation at Concrete Parapets

Roof Insulation (Concrete Parapets)

The top of the parapet includes chamfers, bevels, and reveals that are integral part of the Art Deco vocabulary. Best practice for waterproofing would require covering the entire parapet top with sheet metal, which would destroy the defining character of this component. The 2001 roof replacement included a clever flashing detail which, though technically imperfect, preserved the appearance of the parapet. (see photos page 6)

The 2018 Seattle Energy Code requires R-38 rigid insulation above the structural concrete roof. Using the best insulation for this application (polyisocyanurate rigid boards, R-6.7 per inch), of sufficient thickness and taper to provide positive drainage, would be taller than the historic parapets. We are proposing two optional solutions:

figure 4:
Image of Art Deco profile at parapet.

Original Parapet Condition

- Option 1a: Modify the 2001 flashing detail to accommodate thicker insulation with flashing that would be visible from the ground but would not cover the distinctive parapet profile (figure 4). We are able to install R-14 insulation (3 inches thick) on the interior ceiling, which still requires 8.3 inches above the roof to meet code.
- Option 1b: Partially cover the clerestory windows in order to provide the required minimum insulation while preserving the current appearance of the parapets. This would provide R-17 insulation above the roof. Code would require R-21 below the roof (3 1/2”), which will be visible through the clerestory windows. We would recreate the existing flashing.
- Option 1c (Preferred): Provide less than the required minimum insulation to preserve the current appearance of both the parapets and the windows. This would provide R-17 insulation above the roof and R-14 insulation below the roof, for a total of R-31 as opposed to the code minumum of R-38. We would recreate the existing flashing. As this option does not comply with the Seattle Energy Code, it will require the support of the Landmarks Board.

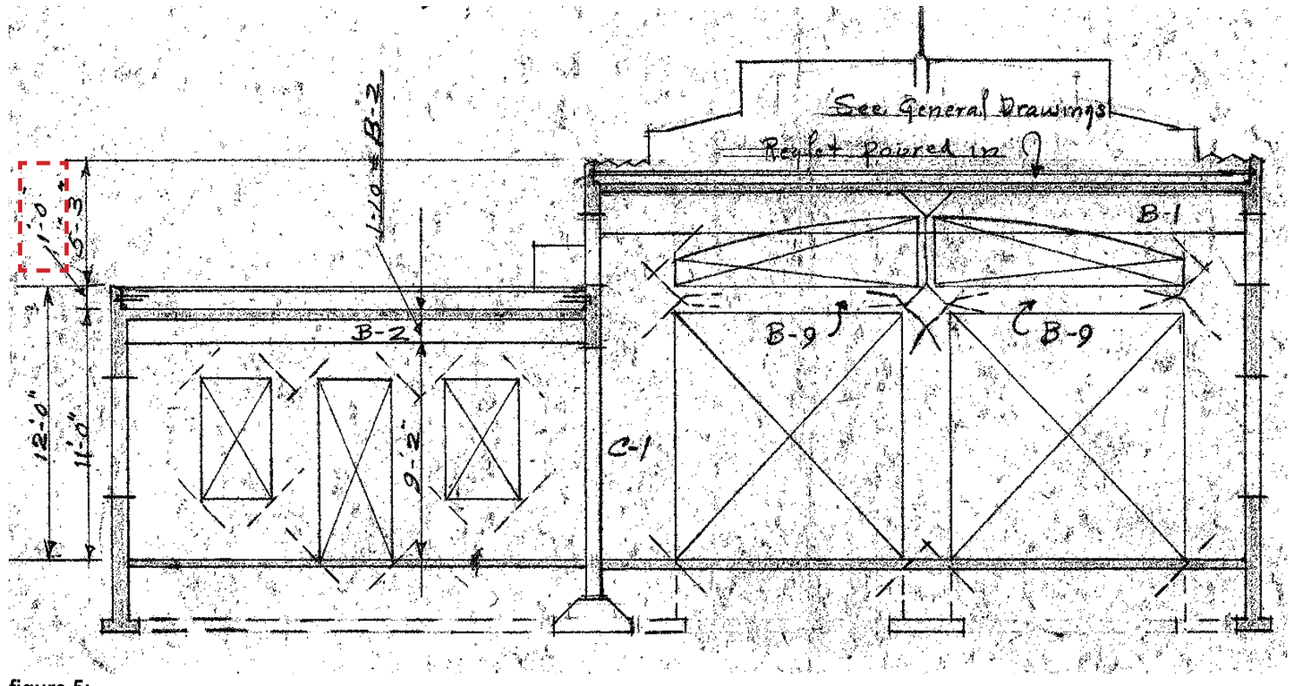


figure 5:
Original 1931 section showing parapet (1’-0” high).

Roof Insulation at Concrete Parapets

Current Condition - 2001 Re-Roof

figure 6:
Core taken from current roof shows 4.5” of insulation.

figure 7:
Ponding on current roof from insufficient slope. Existing flashing detail preserves appearance of parapet.

Roof Insulation at Concrete Parapets

Proposed Parapet Details

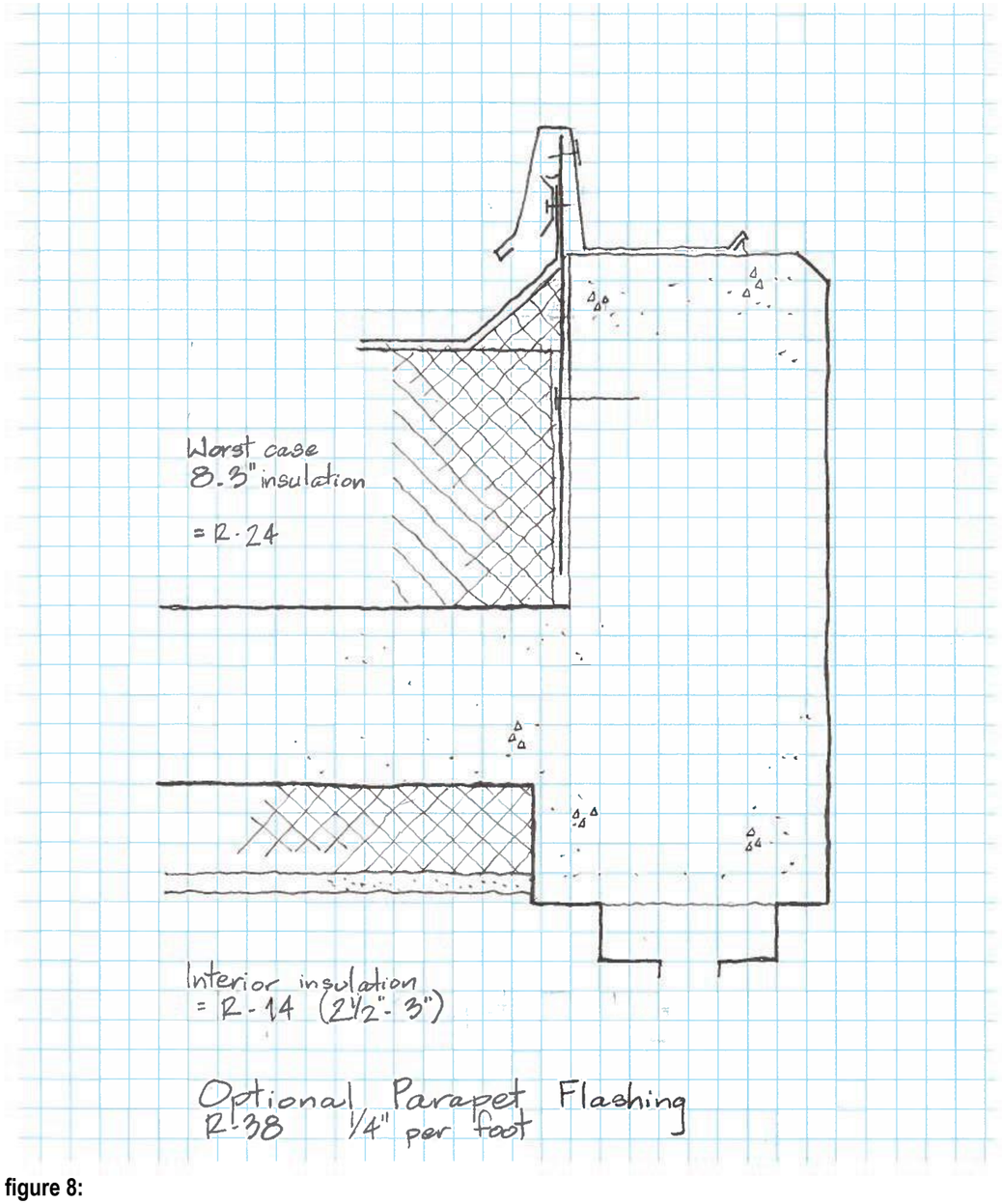


figure 8:
Option 1a Modified Parapet Flashing

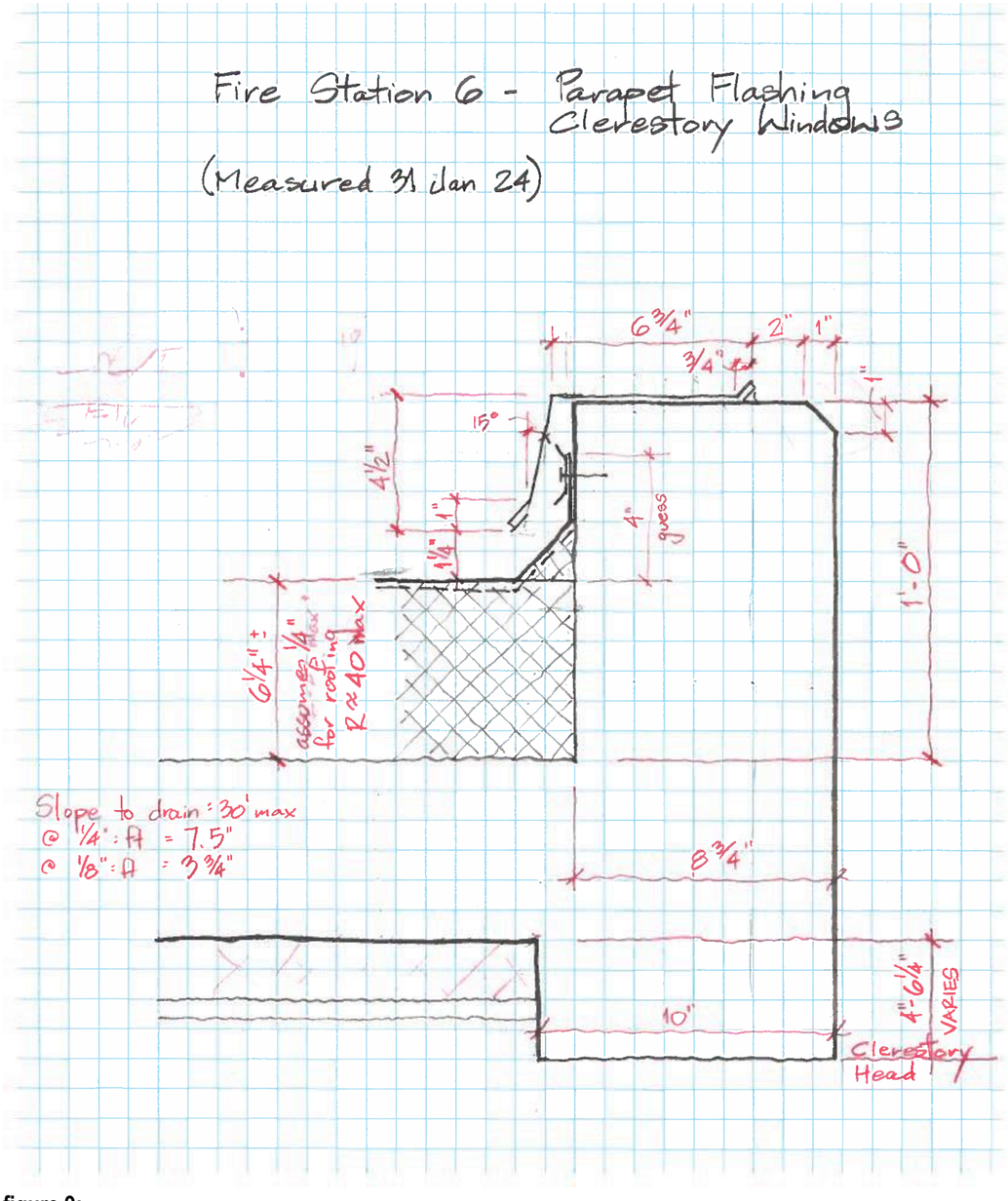
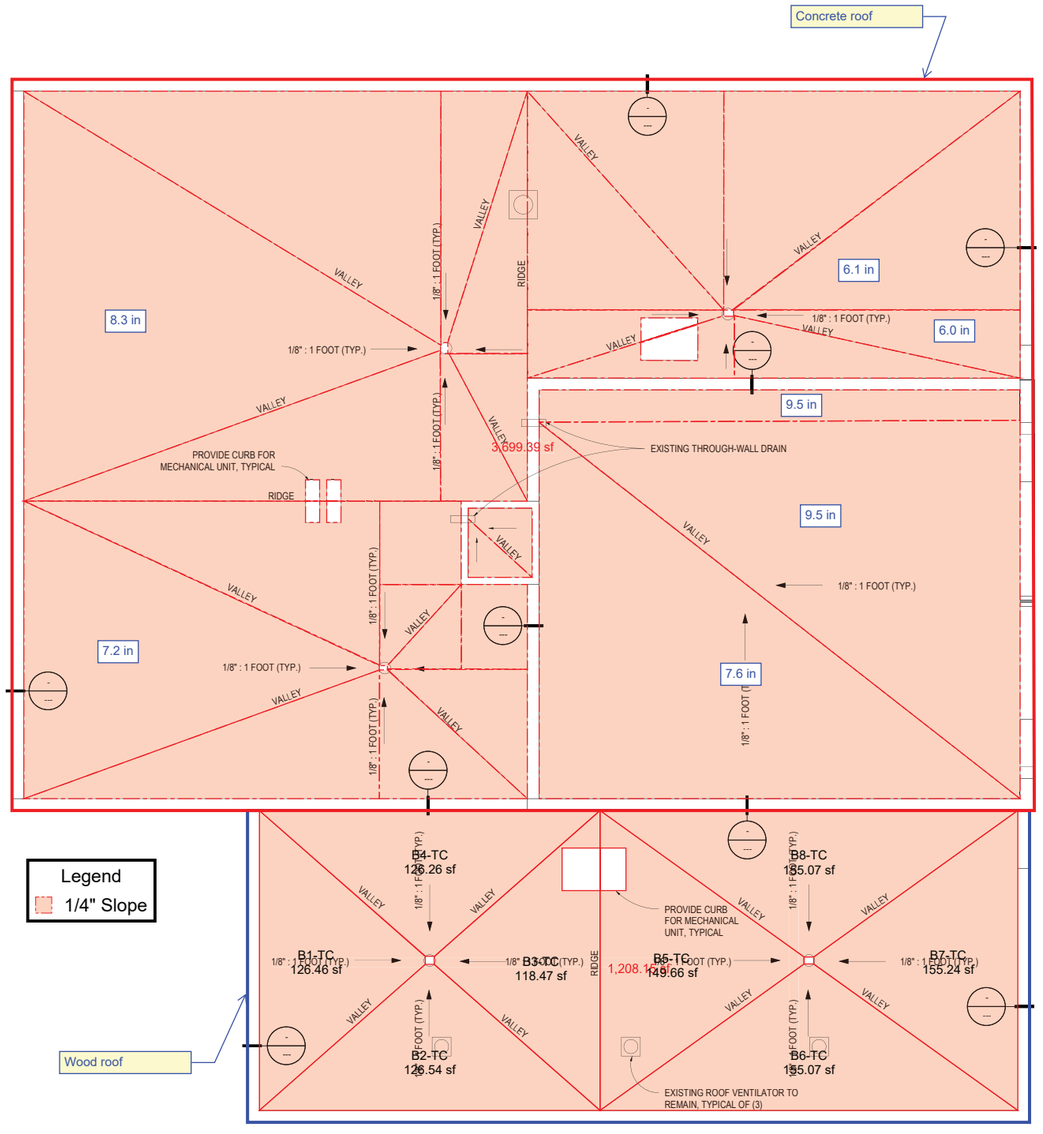


figure 9:
Option 1b and Option 1c, Existing Parapet Flashing

Roof Insulation at Concrete Parapets

Taper Plan for Option 1a



Entire Roof:

- The maximum insulation height using a taper of 0.25”/ft everywhere is ~9.5 inches. See updated tapered roof slope diagram that assumes 0.25”/ft everywhere and indicates the tapered sections and respective heights that are 6” and above.
- Using a 0.25”/ft taper, the average tapered R-value bumps up to R-24. Therefore, for the concrete roof to achieve a prescriptive code minimum of R-38, a minimum of R-14 would need to be placed below deck.

Roof Insulation at Concrete Parapets

Taper Plan for Option 1b or Option 1c

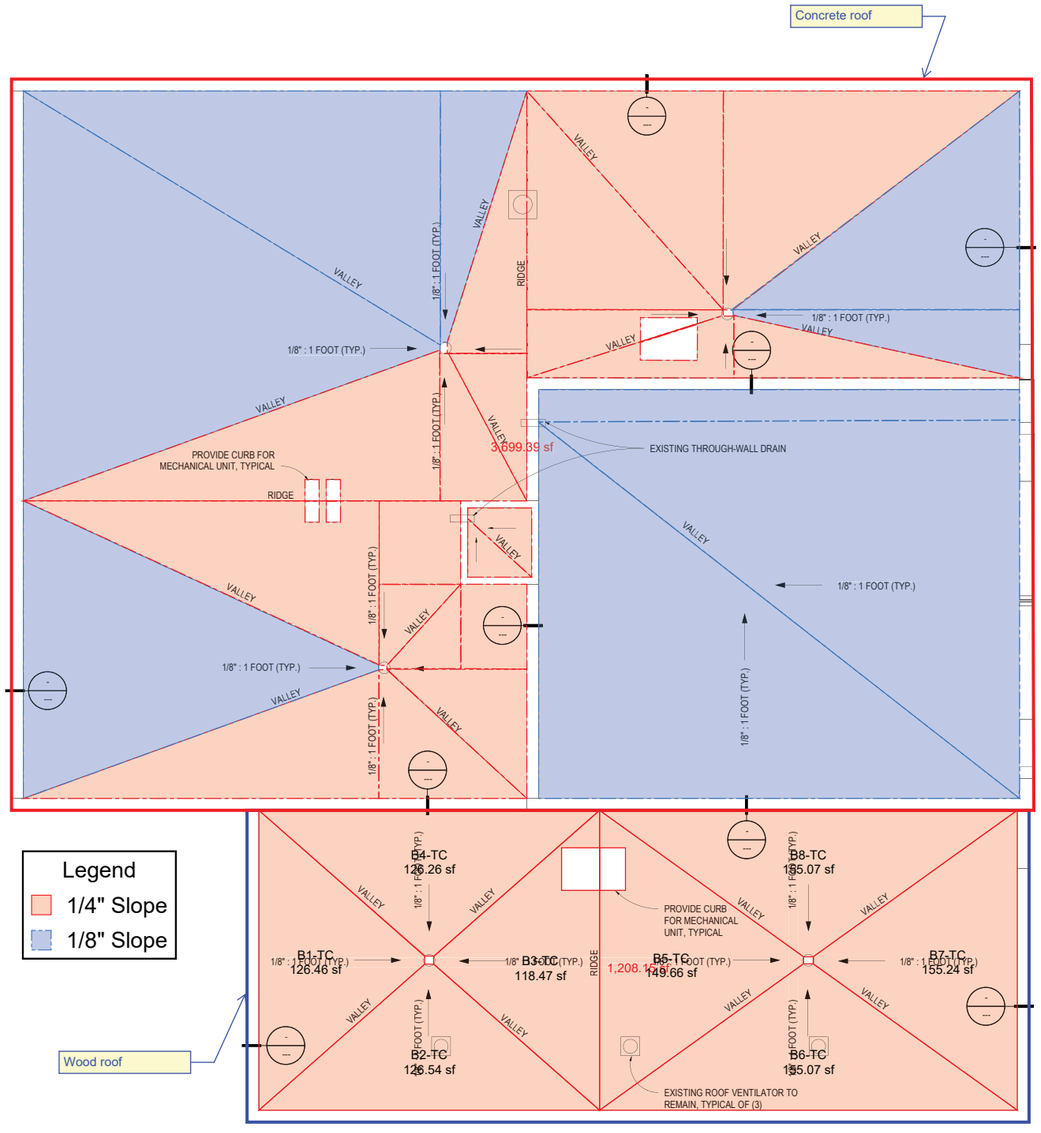


figure 10:
Insulation taper plan from engineer

Concrete Roof Deck (1931):

- The maximum insulation height for multiple tapered insulation sections exceeds 6” if a slope of 0.25”/ft is used for all sections
- To get the maximum insulation height of these taller sections under 6”, I reduced the slope to 0.125”/ft for just those sections, see the attached pdf.
- Using a mix of 0.25 in/ft and 0.125 in/ft slopes as necessary, the overall tapered insulation calculation yields the following:
  - Average tapered R-value- 17.1
  - Max height- 5.4 in
- For the concrete roof to achieve a prescriptive code minimum of R-38, a minimum of R-21 needs to be placed below deck.

Wood Roof (1986):

- The maximum insulation height for all tapered insulation sections remains below 6” if a slope of 0.25”/ft is used for all sections. This is with an additional 1” of continuous polyiso insulation below the tapered insulation.
- The overall tapered insulation calculation yields the following:
  - Average tapered R-value- 16.5
  - Max height- 5.6 in
- The 1” of continuous polyiso insulation adds an additional R-6 to the roof assembly.
- For the wood roof to achieve a prescriptive code minimum of R-38, a minimum of R-16 of cavity insulation needs to be placed within the framing.

Windows at Handball Court

Original Fenestration

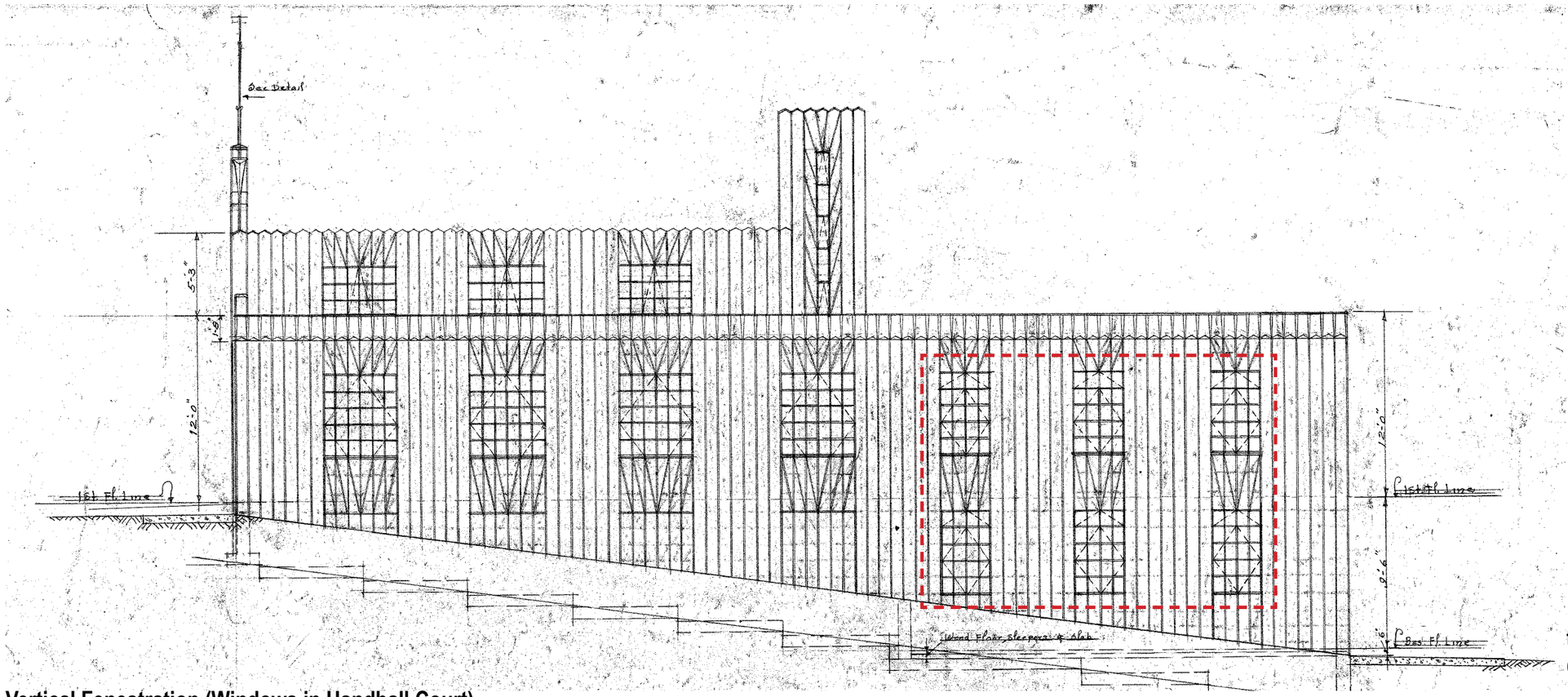


figure 11:
Original North elevation, 1931

Vertical Fenestration (Windows in Handball Court)

The existing handball court will be changed from unconditioned space to a space with heating and cooling, which triggers SDCI's requirement to replace the 1999 windows (U=0.65) with modern windows meeting the 2018 requirement (U = 0.30). We are proposing to use new aluminum windows manufactured by Wausau. These windows use a beveled exterior glazing stop which is specifically designed to mimic the appearance of older windows whose glass was installed with a beveled bead of glazing putty. The new aluminum profiles are comparable to the 1999 window profiles, though they are wider than the 1931 steel sash profiles.

We are proposing three alternative installations using the Wausau windows, and we are requesting guidance from the Landmarks Board. (See figure 18, figure 19, and figure 20 for a comparison of the 1931, 1999, and proposed glazing profiles)

- Option 2a: Duplicate the 1999 decision to etch the glazing to mimic the 1931 muntins.
- Option 2b: Use Wausau's "simulated divided lites", a surface-applied aluminum shape which mimics the dimensions, proportion, and appearance of the 1931 multi-pane windows.
- Option 2c: Use uninterrupted panels of glazing with neither simulated divisions nor etched divisions.

Note also that the 1999 windows did not match the operation of the original windows; we are proposing to match the 1999 scheme of fixed windows high in the wall, with operable windows where they can be reached from the interior floor level. Also, as fitting the original purpose of the handball court, these six windows were equipped with interior metal protective screens, which we are proposing to preserve.

Windows at Handball Court

Current Fenestration

figure 12:
Existing 1999 aluminum window with etched “panes.”

figure 13:
Current condition at handball court, viewed from E. Yesler Way.

figure 17:
Wausau simulated divided lites

figure 16:
Wausau simulated divided lites

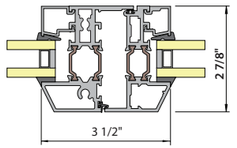
figure 15:
close up of Wausau frame and glazing

WAUSAU
WINDOW AND WALL SYSTEMS

INVENT™ RETRO -XLT PROJECTED WINDOWS and SIMULATED HUNG WINDOWS

INvent Retro: Setback beveled exterior face to replicate putty-glazed existing window profiles - optional ogee or cove profiled rebates

- 2-7/8", 3-7/8" and 4-7/8" frame depth; 18mm and 24mm XLT polyamide thermal barriers
- AAMA AW-100 Architectural Performance Class
- Optional equal sightlines at vents and fixed lites
- Grid muntins or true divided lite
- Optional decorative cove glazing beads
- Optional multi-lock hardware for improved accessibility
- Innovative French casement for Juliet balconies, terraces or ground floor use



2250i-XLT
INvent Retro

2250i-XLT Series
INvent Retro
French casement with
cove glazing beads

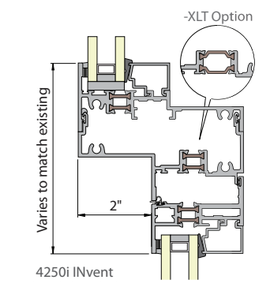
Test results may vary

Allowable Air	Water	NFRC U-Factor	CRF_f	STC
0.10 cfm/sqft at 6.24 psf	15 psf	0.22 to 0.65 BTU/hr.sqft.°F	46 to 67	31 to 42

figure 14:
manufacturer's cutsheet

Simulated Hung Windows: Projected windows with 2" offset glass planes replicate existing single- or double- hung sash - with the ease of operation, durability and low air infiltration of compression seals

- 4-1/2" or 4-7/8" frame depth with 15mm or 24mm polyamide thermal barrier
- AAMA AW-100 Architectural Performance Class
- Fixed, project-out awning, casement, or project-in hopper
- Flush vent construction reduces collection of dust and debris
- 1/8" wall thickness at hardware connections
- Uses architecturally flat 6 mm glass without balance weight limits



4250i INvent
simulated double-hung

4250i-XLT Series INvent
simulated double-hung
window with
glazed-in grids

Windows at Handball Court

Proposed Window Elevation

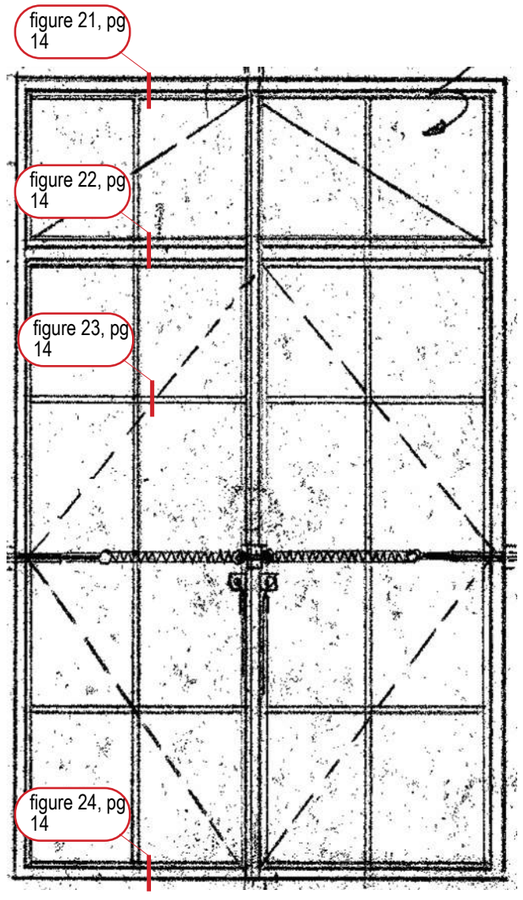


figure 18:
Original Steel Sash Window (1931)

1" = 1'-0"

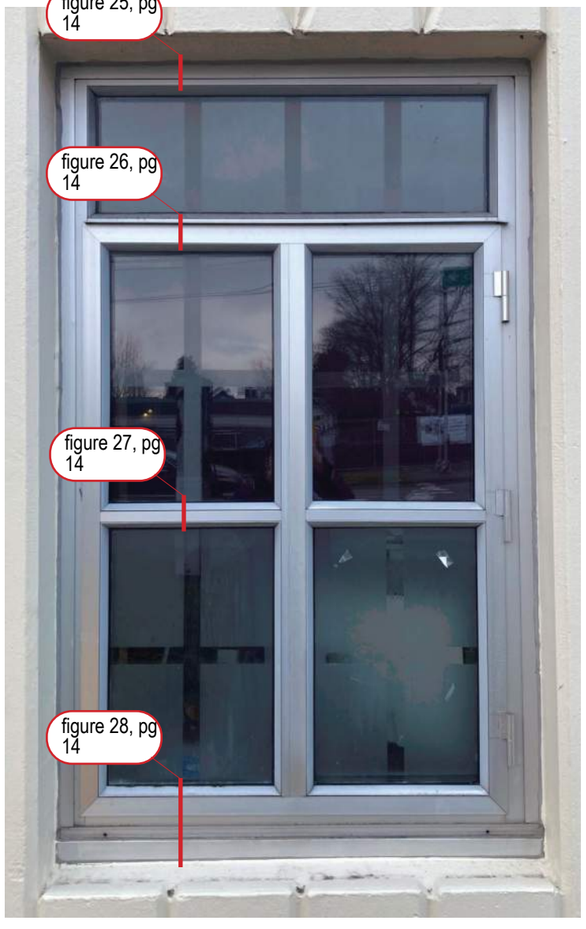


figure 19:
Existing Aluminum Window (1999)

N.T.S

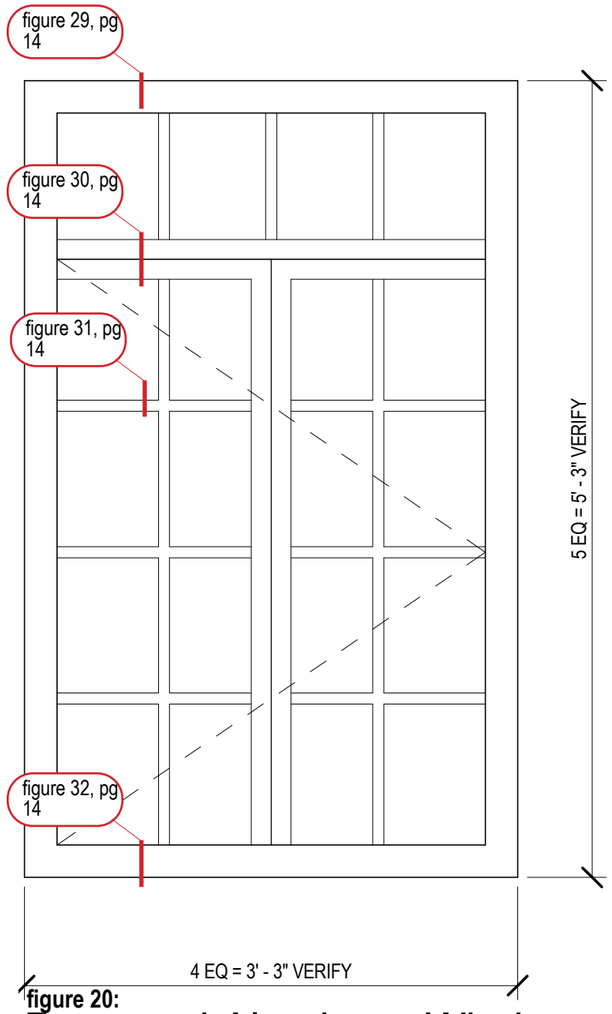


figure 20:
Proposed Aluminum Window

1" = 1'-0"

Windows at Handball Court

Proposed Window Details

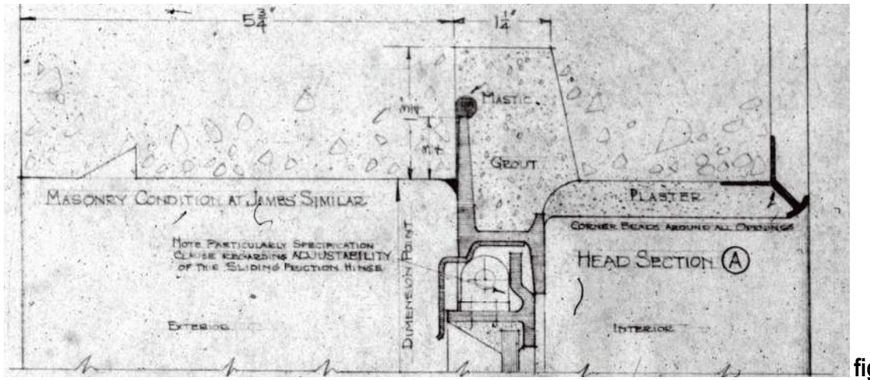


figure 21: 1931 Head

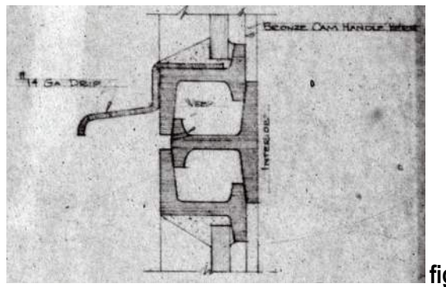


figure 22: 1931 Glazing Stop

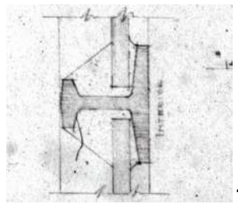


figure 23: 1931 Muntin

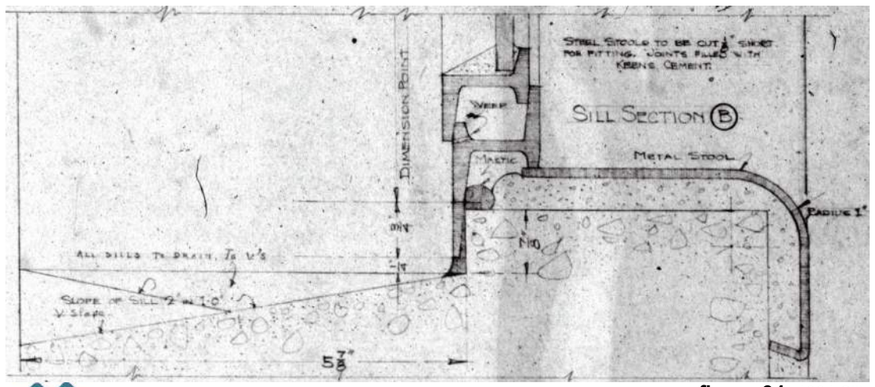


figure 24: 1931 Sill

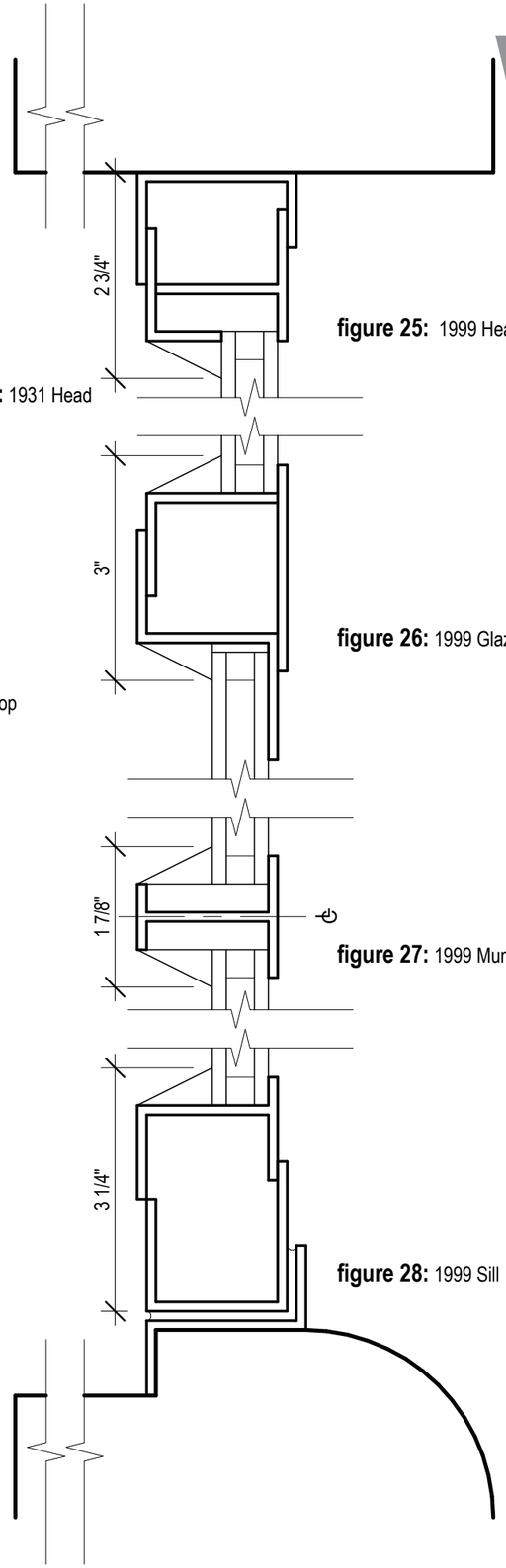


figure 25: 1999 Head

figure 26: 1999 Glazing Stop

figure 27: 1999 Muntin

figure 28: 1999 Sill

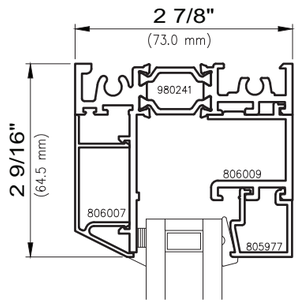


figure 29: Proposed Head

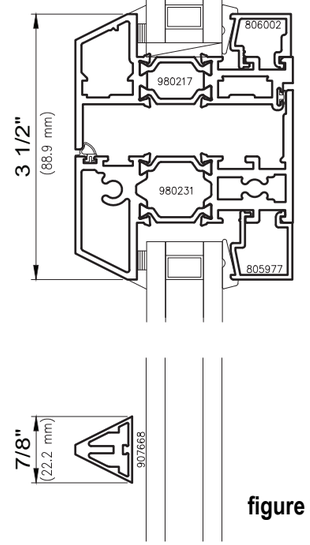


figure 30: Proposed Glazing Stop

figure 31: Proposed Muntin

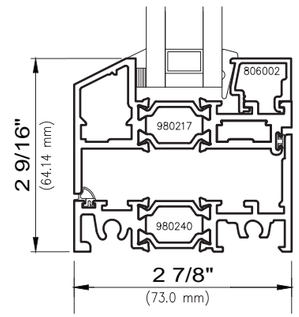
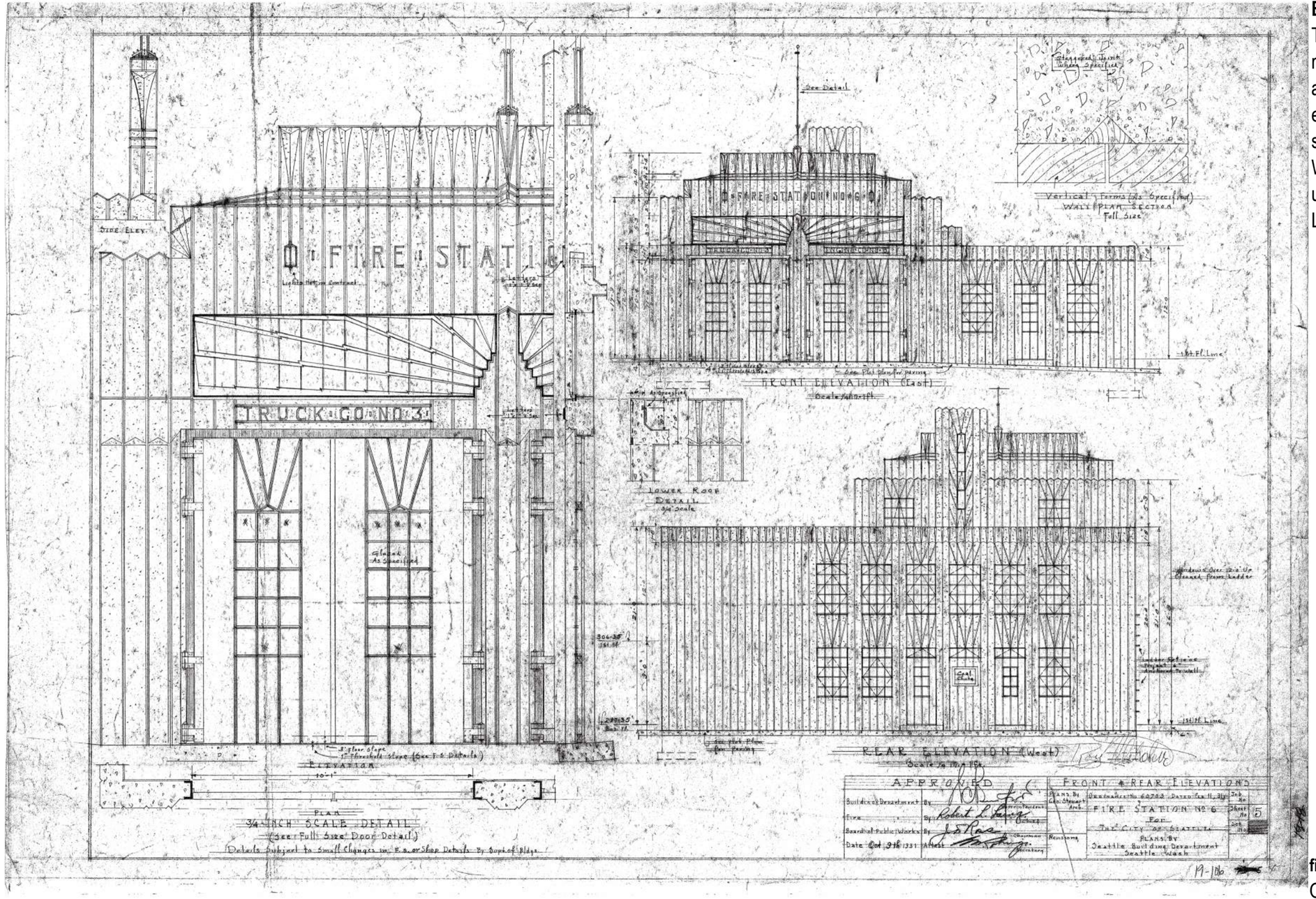


figure 32: Proposed Sill

Apparatus Bay Doors

Original 1931 Drawings



Exterior Swinging Doors (Apparatus Bay Doors)

The 2018 Seattle Energy Code (Prescriptive Path) requires opaque doors with a U-value of 0.37, and glazed openings with a U-Value of 0.30. The existing apparatus bay doors are uninsulated, with single-pane glass.

We are proposing to preserve these doors unaltered, which will require the support of the Landmarks Board.

figure 33:
Original East and West elevations, 1931

Apparatus Bay Doors

Current Condition

figure 34:
Current condition of apparatus bay doors, 1986 replica of original

"Lightning Bolt" Transom Windows

Intent to preserve

figure 35:
Original 1931 steel sash windows with 1986 replica “lightning bolt” grill

Vertical Fenestration (“Lightning Bolt” Transom Windows)
The dramatic windows above the apparatus doors on the front elevation are the only remaining original steel sash windows. Rather than replacing these with modern windows to meet the Seattle Energy Code, we are proposing to preserve these windows unaltered; this will require the support of the Landmarks Board.

Accessible Routes

Replacement of existing non-original ramp & addition of door operator

8310-853
Hard Wired Wall Mount, Logo, 4 ¾" x 4 ¾"

- Hardwired low voltage actuator with stainless steel touch plate in 4 ¾" (121mm) square
- Engraved blue filled handicap symbol conforms to most accessibility codes
- Designed to mount in a flush or surface mount box (sold separately) in/on a vertical surface near the controlled door
- Optional mounting in single gang electrical box (by others) or double gang box (4" x 4" by others) or on an 8310-866 bollard post
- Heavy industrial grade components provide vandal resistant mounting and weather resistant switch standard

figure 36:
Proposed accessible walkway with steel handrail painted to match existing steel components

figure 37:
Existing steel components painted red

Accessible Routes

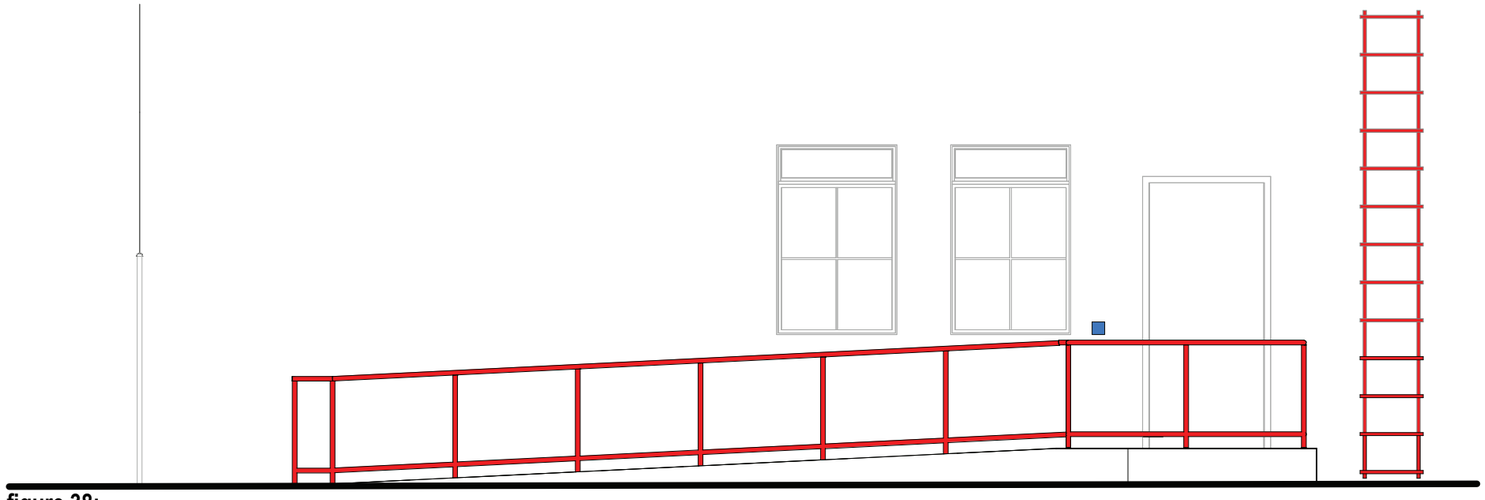


figure 38:
Proposed accessible walkway elevation and addtion of door operator at back (West) entrance

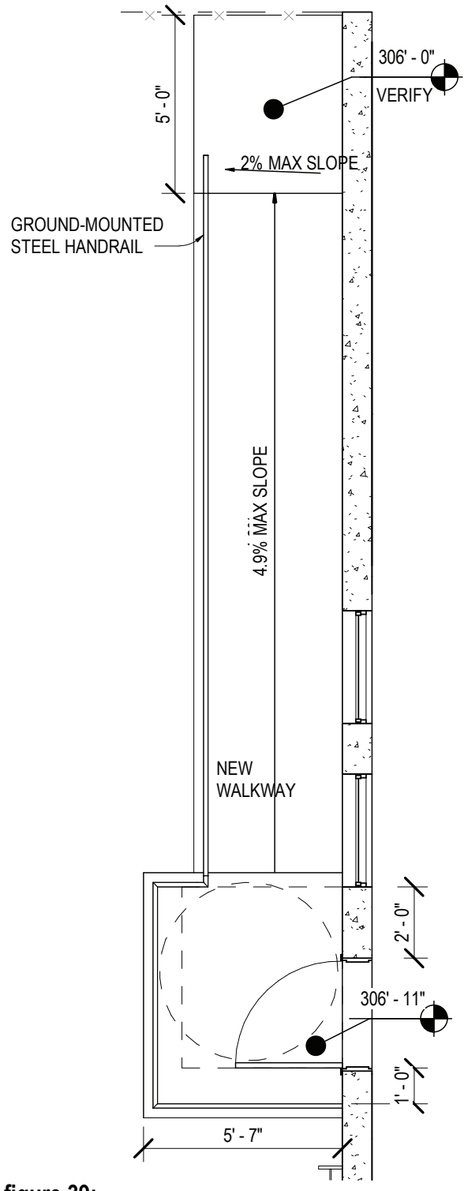


figure 39:
Proposed accessible walkway plan

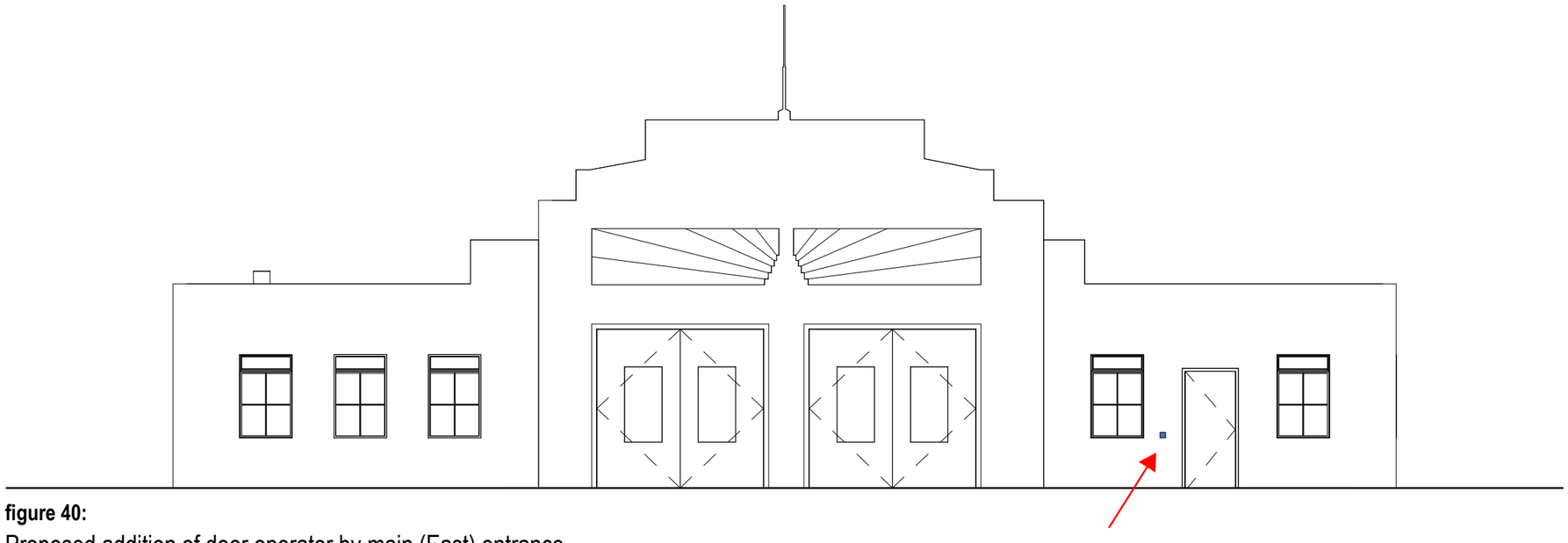


figure 40:
Proposed addition of door operator by main (East) entrance

ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	MAKE	MODEL	LOCATION	DESCRIPTION / SERVES	OUTDOOR CFM	EXHAUST CFM	ESP "W.C.	MTR HP	CFM/ WATT	ENTHALPY EFFECTIVENESS	MIN. EFF.	V/PH	FLA	MCA	MOP	HEIGHT (in.)	WIDTH (in.)	DEPTH (in.)	WEIGHT (lbs)	NOTES
ERV-1	RENEWAIR	EV450RT	SOUTH ROOFTOP	ROOFTOP ENERGY RECOVERY VENTILATOR	200	200	0.5	0.5	200/87	81%	70%	120/1	7.2	9	15	30	45	31	246	1,2,3
ERV-2	RENEWAIR	HE1XINV	BASEMENT	INDOOR VERTICAL ENERGY RECOVERY VENTILATOR	860	860	0.5	0.75(2)	860/1,270	68%	70%	230/1	4.5	10.1	15	49	35	22	272	1,2,3
ERV-3	RENEWAIR	EV450RT	NORTH ROOFTOP	ROOFTOP ENERGY RECOVERY VENTILATOR	300	300	0.5	0.5	300/258	81%	70%	120/1	7.2	9	15	30	45	31	246	1,2,3

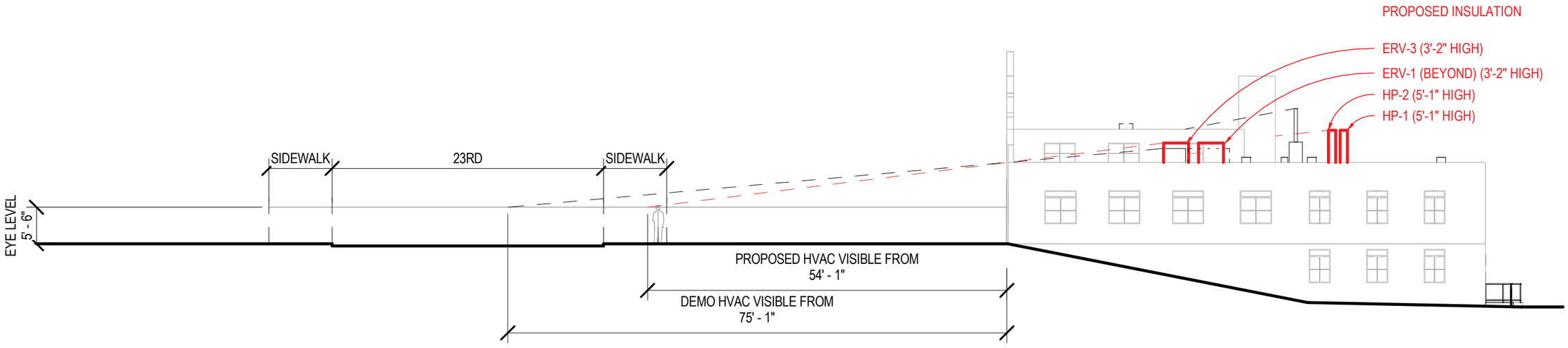
NOTES:
1. PROVIDE COMPLETE WITH MERV 13 2" FILTER.
2. PROVIDE WITH ECONOMIZER BY-PASS FUNCTION.
3. PROVIDE TIME CLOCK CONTROL AND INTERLOCK WITH HP-1 AND HP-2; ERV UNITS TO OPERATE WHEN BUILDING IS OCCUPIED.

SPLIT SYSTEM SCHEDULE

MARK	DESCRIPTION/SERVES	MAKE/MODEL	AIRFLOW (CFM)	NOMINAL TONS	COOLING CAPACITY						HEATING CAPACITY						PIPING			ELECTRICAL				PHYSICAL					
					RATED TOTAL MBH	SENS. MBH	DESIGN TOTAL MBH	DB/WB °F	EER NON-DUCTED/DUCTED	SEER NON-DUCTED/DUCTED	RATED TOTAL MBH	SENS. MBH	DESIGN TOTAL MBH	DB/WB °F	HEATING COP NON-DUCTED/DUCTED	HSPF NON-DUCTED/DUCTED	GAS (in.)	LIQUID (in.)	H/L (in.)	VOLT/PH	RLA	MCA	MOP	HEIGHT (in.)	WIDTH (in.)	DEPTH (in.)	WEIGHT (lbs)	SOUND (dBA)	NOTES
HP-1	VRV-IVS HEAT PUMP/ SERVES FC-1 THROUGH FC-12	DAIKIN/ RXTQ60TAVJUA	3,741	5	57.5	--	45	95/75	9.80/9.20	18/16	57.5	--	31	47/43	4.3/3.7	10.3/10.5	3/4	3/8	3/4	208-230/1	23.2	29.1	35	53	36	13	225	57	1,2
HP-2	VRV-IVS HEAT PUMP/ SERVES FC-1 THROUGH FC-12	DAIKIN/ RXTQ60TAVJUA	3,741	5	57.5	--	44	95/75	9.80/9.20	18/16	57.5	--	30	47/43	4.3/3.7	10.3/10.5	3/4	3/8	3/4	208-230/1	23.2	29.1	35	53	36	13	225	57	1,2

NOTES:
1. PARALLEL HP-1 AND HP-2.
2. PROVIDE FACILITY SHOP DRAWINGS FOR ALL REFRIGERANT PIPING.

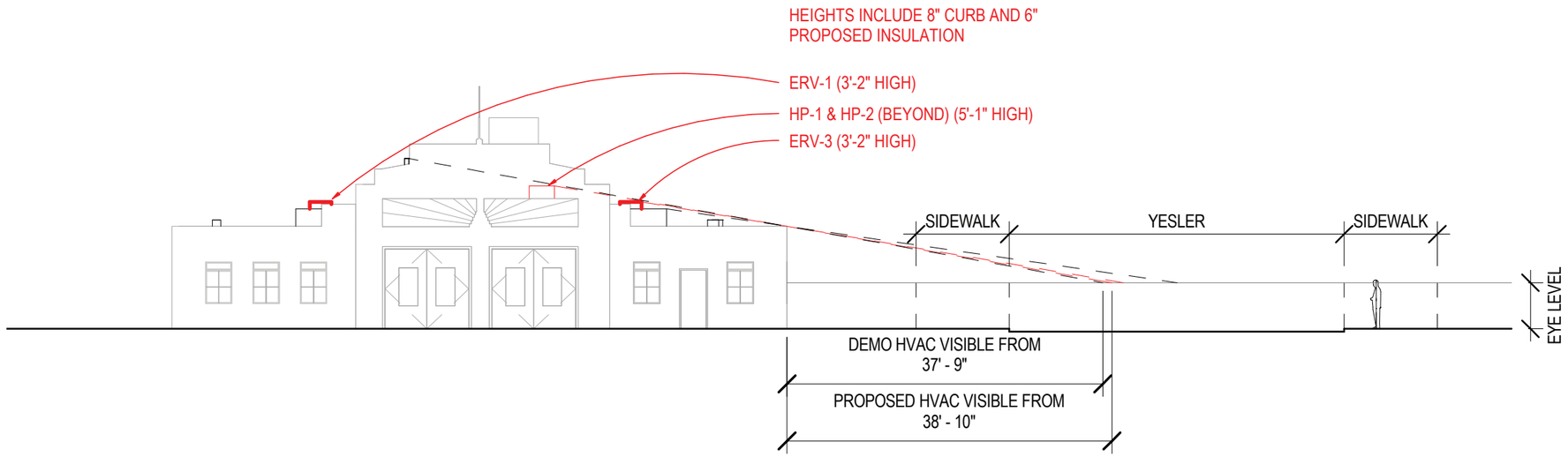
HVAC SCHEDULES



HVAC VISIBILITY DIAGRAM - ACROSS 23RD AVENUE SOUTH

1/16" = 1'-0"

Rooftop Mechanical Equipment



HVAC VISIBILITY DIAGRAM - ACROSS YESLER

1/16" = 1'-0"

Rooftop Mechanical Equipment

ROOF DEMOLITION PLAN KEYNOTES

1. DEMOLISH EXISTING MECHANICAL EQUIPMENT. PATCH CONCRETE PENETRATIONS AS REQUIRED.
2. DEMOLISH EXISTING ELECTRICAL CONDUIT, SLEEPERS, DISCONNECTS. PROTECT EXISTING LIGHTING
3. DEMOLISH EXISTING ROOF MEMBRANE, ROOF INSULATION, AND PERIMETER FLASHING
4. PROTECT EXISTING PLUMBING VENTS, TYPICAL (NOT SHOWN)
5. PROTECT EXISTING FALL ARREST STANCHIONS, TYPICAL
6. SALVAGE EXISTING DISH ANTENNAS
7. DEMOLISH EXISTING RADIO ANTENNA
8. DEMOLISH EXISTING ROOF DRAIN
9. SALVAGE EXISTING SHEET METAL COPING / DUPLICATE AT NEW ROOF
10. EXISTING ROOF FAN OR VENTILATOR TO REMAIN
11. DEMOLISH AND REPLACE EXISTING EXPANSION JOINT/CURB

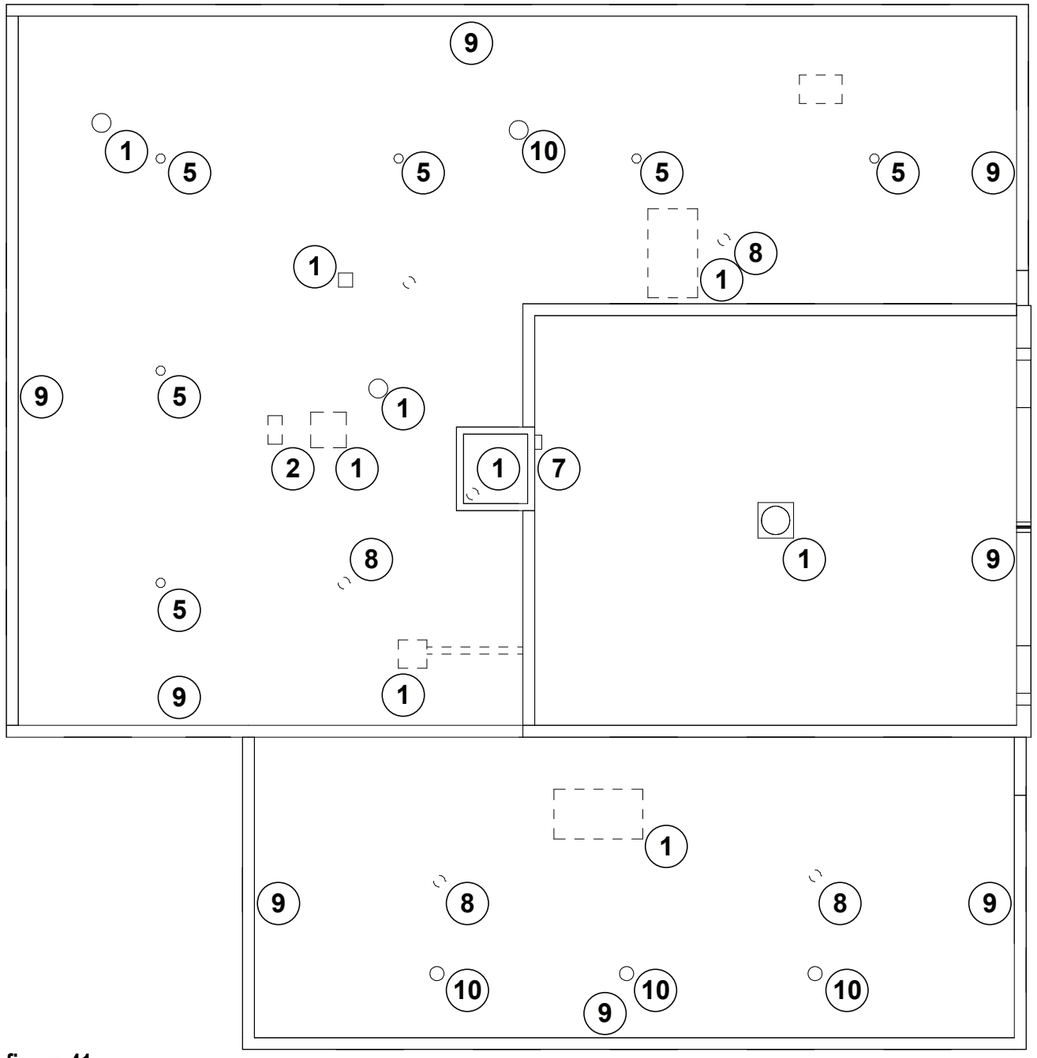


figure 41:
Roof demolition plan

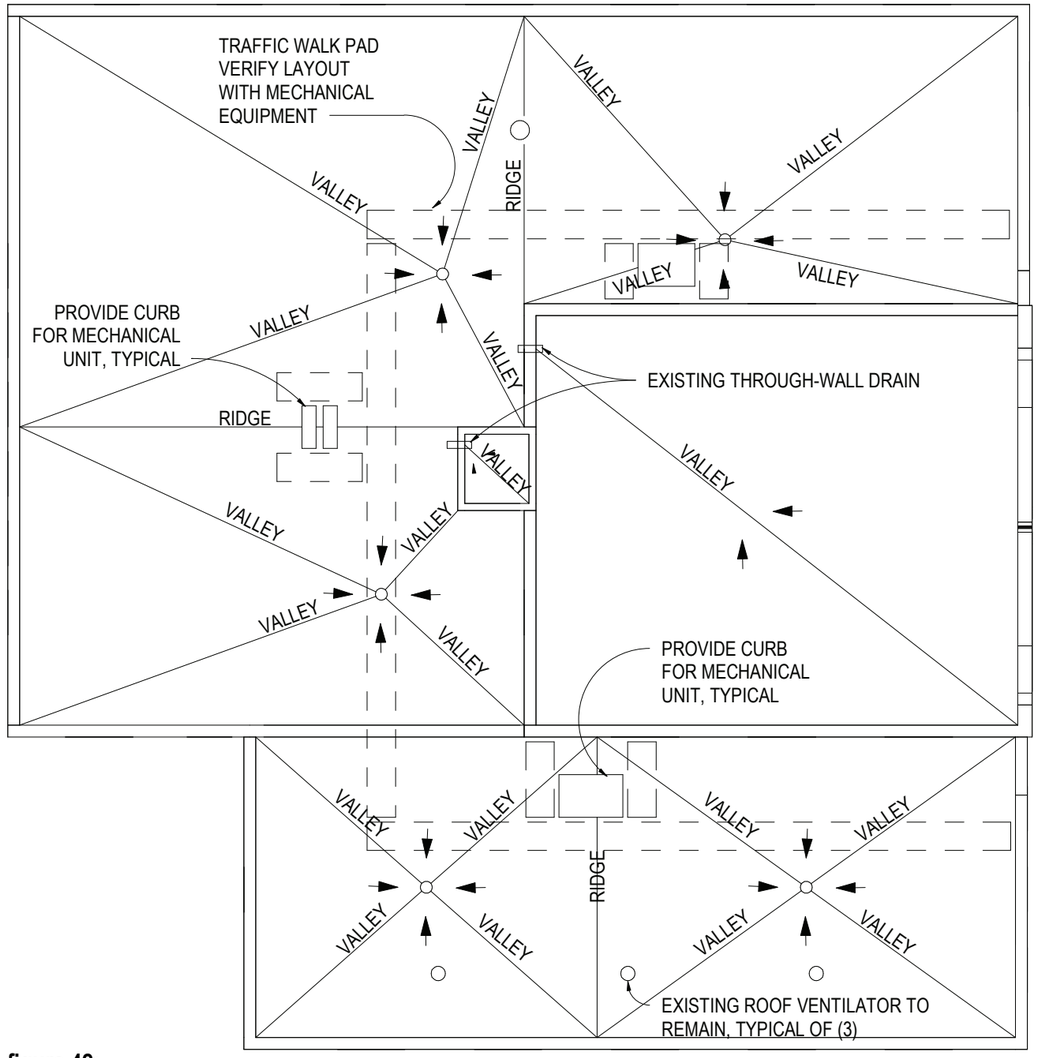


figure 42:
Proposed roof plan

Rooftop Mechanical Equipment

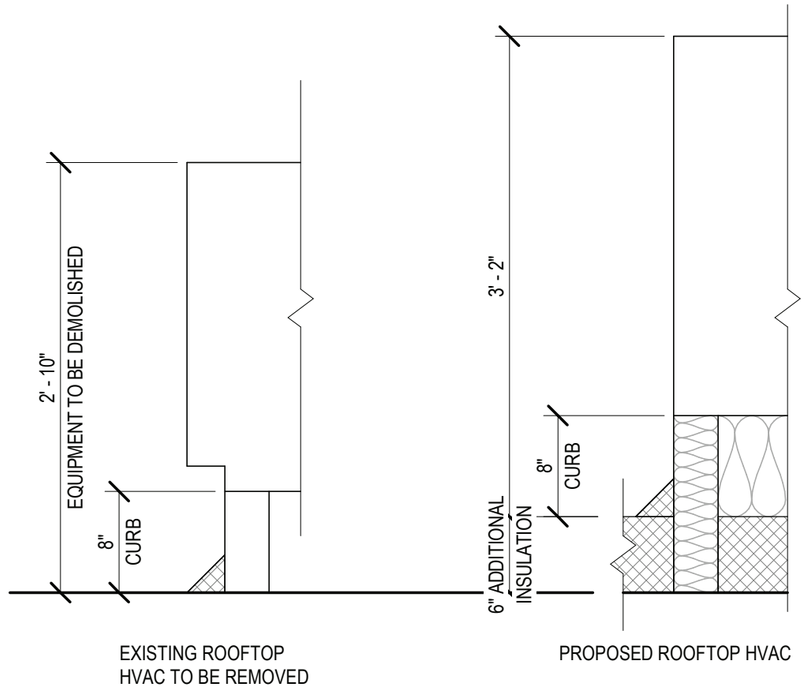
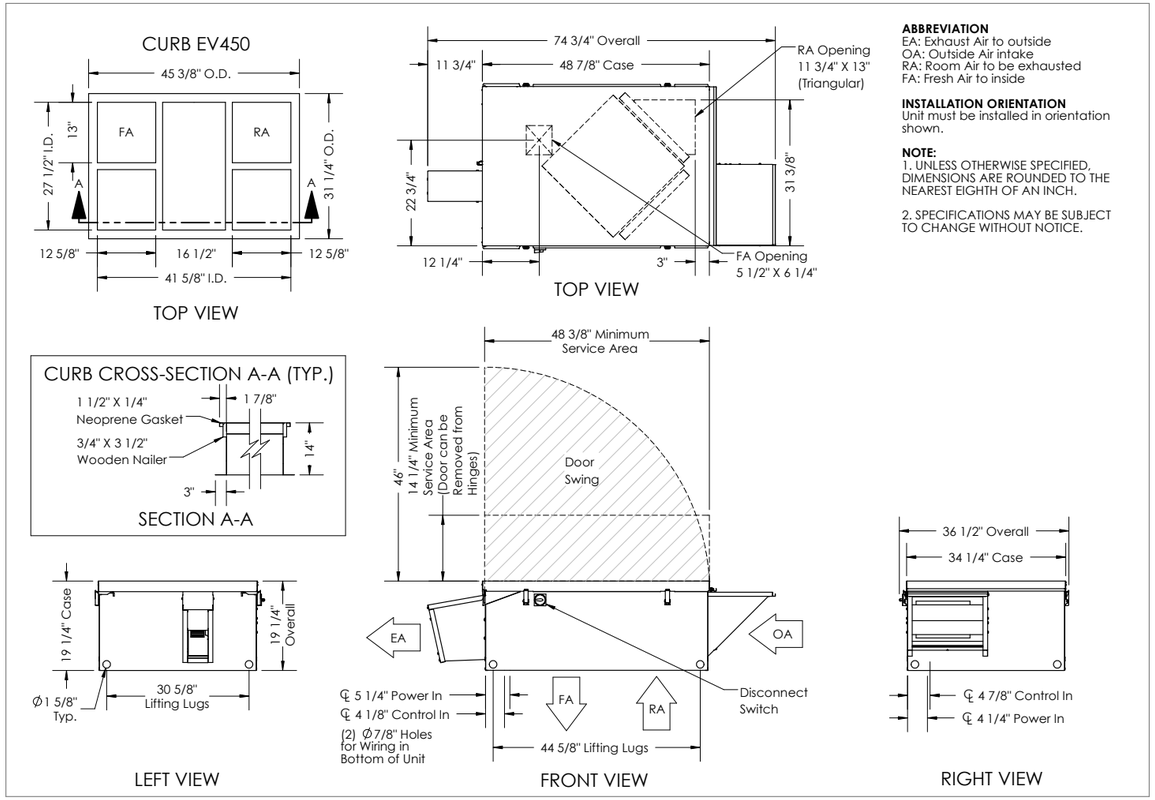


figure 43:
Existing and proposed rooftop HVAC vertical placement



Model: EV450RT
Drawing Type: Unit Dimension
Version: JUL17

RenewAire
Energy Recovery Ventilation

Date: 3/27/2023
Project Number: O-122387
Project Name: William Grose Center
Unit Tag: ERV-1
Model: EV450JRT--S11E----GNT---L
Qty: 1

Intertek

ERV-1
ERV-3

Specifications

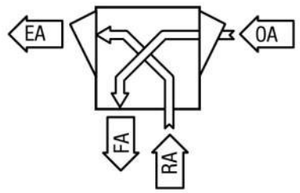
Ventilation Type:	Static plate, heat and humidity transfer
Typical Airflow Range:	240-500 CFM
AHRI 1060 Certified Core:	One L85-G5
OA Filters:	Total Qty. 1, MERV 8: 14" x 20" x 2"
RA Filters:	Total Qty. 1, MERV 8: 14" x 20" x 2"
Unit Weight:	184-243 lbs. (varies by option)

EV450RT shown

Configuration

Unit Tag	ERV-1
Model	[EV450] EV450
Core Type	[J] G5
Installation Location	[RT] Outdoor Unit
Wall	[S] Single (Standard)
Electrical Service	[11] 120V / 1 Phase / 60 HZ
EA/FA Fan Motor	[E] Variable Speed / ECM - Direct Drive Motors
Unit Control	[G] Terminal Strip For EC Motors
Disconnect	[N] Non Fused (Standard)
Control Option	[T] Transformer with Isolation Relay (Standard)
Filter Monitor	[-] None
Paint	[-] None
Safety Listing	[L] Listed

Airflow Orientation



Unit Accessories and Service Parts

No accessories for this unit

AHRI CERTIFIED®
www.ahridirectory.org
Air-to-Air ERV
AHRI Standard 1060
Energy Recovery COMPONENT is certified. Actual performance in packaged equipment may vary.

	SUMMER			WINTER		
	Outdoor Air	**Return Air**	**Fresh Air**	**Outdoor Air**	**Return Air**	**Fresh Air**
Standard Flow Rate **SCFM**	206*	200	200	206*	200	200
Actual Flow Rate **ACFM**	217*	207	207	192*	204	201
Dry Bulb **°F**	85.3	75.0	77.0	25.2	70.0	61.4
Wet Bulb **°F**	65.2	62.5	62.8	20.5	51.4	45.9
Enthalpy (H) **BTU/lb**	30.2	28.3	28.5	7.4	21.1	18.1
Moisture Ratio (MR) **grains/lb**	62.2	65.7	64.0	9.1	27.5	21.8
Fresh Air - External Static Pressure **in w.g.**		0.50			0.50	
Exhaust Air - External Static Pressure **in w.g.**		0.50			0.50	
Sensible effectiveness **%**		80.9			80.9	
Total effectiveness **%**		75.7			78.3	
Load savings ratio **%**		75.7			78.3	
Moisture removed **grains/lb**		-1.8			-12.6	
	Sen	**Lat**	**Tot**	**Sen**	**Lat**	**Tot**
Original load **BTUH [Tons]**	2225 [0.2]	457 [0.0]	2681 [0.2]	9677	2604	12280
Load with RenewAire **BTUH [Tons]**	425 [0.0]	237 [0.0]	662 [0.1]	1849	817	2667
Total energy saved **BTUH [Tons]**	1800 [0.1]	220 [0.0]	2019 [0.2]	7827	1786	9614

*Note: OA Flow Rate values are gross airflow, all others are net airflow.
Note: For full certified ERV performance, please see AHRI 1060 Report.
Note: Sensible cooling design conditions were used for the summer performance results.

Submittal Data Sheet
5.0 Ton VRV-IVS Heat Pump
RXTQ60TAVJUA

FEATURES

- Variable Refrigerant Temperature (VRT) technology allows VRV IV S series to deliver improved efficiencies and year round comfort
- Improved efficiencies with SEER values up to 18.0 and HSPF values up to 10.0
- Engineered with highly reliable Daikin Swing compressors
- All inverter compressors to increase efficiency and avoid starting current rush
- Can provide heating down to -4°F
- Added safety with optional auto changeover to auxiliary heat
- Easier installation with over 60% weight reduction compared to VRV III S

BENEFITS

- Single-phase technology enables installation in light commercial and residential applications
- Broader diversity with up to 9 indoor units connectivity
- Space saving compact design
- Design flexibility with long piping lengths up to 984ft total and 49ft vertical separation between indoor units
- Designed with reduced MOP to optimize installation costs
- Backed by best in class 10-years Parts Limited Warranty and 10-years Replacement Compressor Limited Warranty*

R-410A INVERTER

Submittal Data Sheet
5.0 Ton VRV-IVS Heat Pump
RXTQ60TAVJUA

HP-1
HP-2

PERFORMANCE

Outdoor Unit Model No.	RXTQ60TAVJUA	Outdoor Unit Name:	5.0 Ton VRV-IVS Heat Pump
Type:	Heat Pump		
Rated Cooling Conditions:	Indoor (°F DB/DB): 80 / 67 Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): 70 / 60 Ambient (°F DB/WB): 47 / 43
Rated Piping Length(ft):		Rated Height Difference (ft):	
Rated Cooling Capacity (Btu/hr):	57,500	Rated Heating Capacity (Btu/hr):	57,000
Cooling Input Power (kW):	5.82	Heating Input Power (kW):	4.18
EER (Non-Ducted/Ducted):	9.80 / 9.20	EER2 (Non-Ducted/Ducted):	
SEER (Non-Ducted/Ducted):	18.00 / 16.00	SEER2 (Non-Ducted/Ducted):	
HSPF (Non-Ducted/Ducted):	10.3 / 10.5	HSPF2 (Non-Ducted/Ducted):	
Heating COP (Non-Ducted/Ducted):	4.3 / 3.7		
Max/Min Cooling Capacity (Btu/hr):	-	Max/Min Heating Capacity (Btu/hr):	-

OUTDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	208-230 / 60 / 1	Compressor Stage:	Inverter
Power Supply Connections:		Capacity Control Range (%):	14 - 100
Min. Circuit Amps MCA (A):	29.1	Airflow Rate (H) (CFM):	3741
Max Overcurrent Protection (MOP) (A):	35	Gas Pipe Connection (inch):	3/4
Max Starting Current MSC(A):		Liquid Pipe Connection (inch):	3/8
Rated Load Amps RLA(A):	23.2	Sound Pressure (H) (dBA):	57
Dimensions (HxWxD) (in):	52-15/16 x 35-7/16 x 12-5/8	Sound Power Level (dBA):	74
Net Weight (lb):	225		

Daikin North America LLC, 19001 Kermier Rd, Waller, TX 77484
Daikin City Generated Submittal Data
www.daikinac.com www.daikincomfort.com

(Daikin's products are subject to continuous improvements. Daikin reserves the right to modify product design, specifications and information in this data sheet without notice and without incurring any obligations)
Submittal Date: 2/23/2023 1:59:07 PM

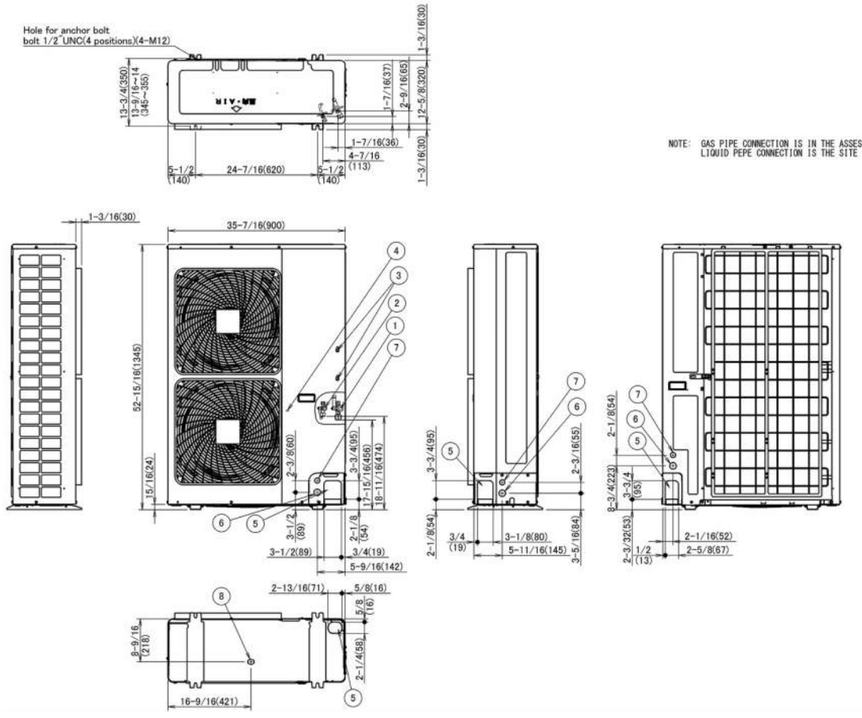
Submittal Data Sheet
5.0 Ton VRV-IVS Heat Pump
RXTQ60TAVJUA

HP-1
HP-2
(cont'd)

SYSTEM DETAILS

Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	23 - 122
Holding Refrigerant Charge (lbs):	7.9	Heating Operation Range (°F WB):	-4 - 60
Additional Charge (lb/ft):		Max. Pipe Length (Vertical) (ft):	98
Pre-charge Piping (Length) (ft):	25	Cooling Range w/Baffle (°F DB):	-
Max. Pipe Length (Total) (ft):	984	Heating Range w/Baffle (°F WB):	-
Max Height Separation (Ind to Ind ft):			

DIMENSIONAL DRAWING



Unit:in.(mm)

NOTE: GAS PIPE CONNECTION IS IN THE ASSESSOTY SET.
LIQUID PEPE CONNECTION IS THE SITE PROVEDES.

NVENT CADDY PYRAMID EQUIPMENT SUPPORT KIT, 4 POST BASE

CERTIFICATIONS

FEATURES

- Kit includes post-base assemblies, frame and equipment-support clamps
- Assembles and adjusts to size and height in minutes by one person with one tool
- Innovative crossbar and equipment-support clamps enable quick assembly
- Integral foam pad provides gentle interface for all roof types
- Hot-dip galvanized and UV stabilized for long lasting performance
- Assembled support can be lifted as one unit and easily relocated

SPECIFICATIONS

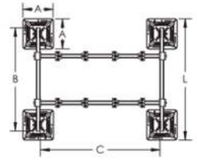
Catalog Number	Material	Finish	Temperature	Height(H)	Length(L)	Post Base(A)	Square Tube(B)	Cross Bar Assembly(C)	Width(W)	Surface Area	Unit Weight	Ultimate Static Load(F)
PEK4B	Steel, Polypropylene, Polyethylene	Hot-Dip Galvanized	-30 to 130 °F	12" – 18"	49 1/2"	12" x 4 pc	42" x 2 pc	48 1/2" x 2 pc	62 1/2"	575 in²	79 lb	1,120 lb

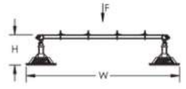
ADDITIONAL PRODUCT DETAILS

Equipment Support

Static load must be stable and uniformly distributed across frame.

DIAGRAMS





WARNING

nVent products shall be installed and used only as indicated in nVent's product instruction sheets and training materials. Instruction sheets are available at www.nvent.com and from your nVent customer service representative. Improper installation, misuse, misapplication or other failure to completely follow nVent's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death and/or void your warranty.

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