

# HDC

## ADMINISTRATIVE APPROVALS

March 10, 2021

1. 124 State Street (LUHD-276) - TBD
2. 65 (53-67) Bow Street (LUHD-281) - Recommended Approval
3. 105 Daniel Street (LUHD-283) - Recommended Approval
4. 93 High Street (LUHD-284) - Recommended Approval

**1. 124 State Street - Recommended Approval**

**Background:** The applicant is seeking approval for a new rear entry with canopy, window and door replacements, and add a pergola to the existing roof deck.

**Staff Comment:** TBD

**Stipulations:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



City of Portsmouth, NH

03/05/2021

# LUHD-276

## Historic District Commission Work Session or Administrative Approval Application

**Status:** Active

**Date Created:** Feb 12, 2021

### Applicant

Lisa DeStefano  
info@destefanomaugel.com  
22 Ladd St  
Portsmouth, NH 03801  
6034318701

### Location

124 STATE ST  
Portsmouth, NH 03801

### Owner:

LUDES GREG & LUDES LAURA  
PO BOX 822 NEW CASTLE, NH 03854

### Application Type

**Please select application type from the drop down menu below**

Administrative Approval

### Project Information

#### Brief Description of Proposed Work

Minor improvements to previously permitted including a new rear entry with canopy, window and door replacements to meet code requirements, and pergola at existing roof deck.

#### Description of Proposed Work (Planning Staff)

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### Project Representatives

#### Relationship to Project

Architect

**If you selected "Other", please state relationship to project.**

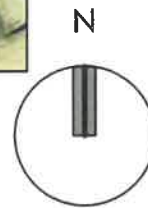
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STATE STREET IMAGERY



LOCUS MAP WITH SITE OUTLINE



COURT STREET IMAGERY



Ludes Residence  
 124 State Street  
 Portsmouth, NH 03801

CONTEXT AND LOCUS MAP

SHEET 1 OF 6  
 MARCH 3, 2021





EXISTING UTILITY LINES TO BE RELOCATED BY CONTRACTOR AND UTILITY COMPANY TO LEFT OR RIGHT SIDE OF THE STATE STREET ELEVATION

NEW WINDOWS AT EXISTING INFILLED WINDOW WELLS

WROUGHT IRON SECURITY BARS AT NEW WINDOWS, SEE SPECIFICATION SHEET



EXISTING STATE STREET ELEVATION 2  
N.T.S.

PROPOSED STATE STREET ELEVATION 1  
N.T.S.

Ludes Residence  
124 State Street  
Portsmouth, NH 03801

STATE STREET ELEVATIONS

SHEET **2** OF 6  
MARCH 3, 2021

202050  
**D|M|A**  
DESTEFANO  
MAUGEL  
ARCHITECTS



DOORS AND WINDOWS TO BE REPLACED

1  
4

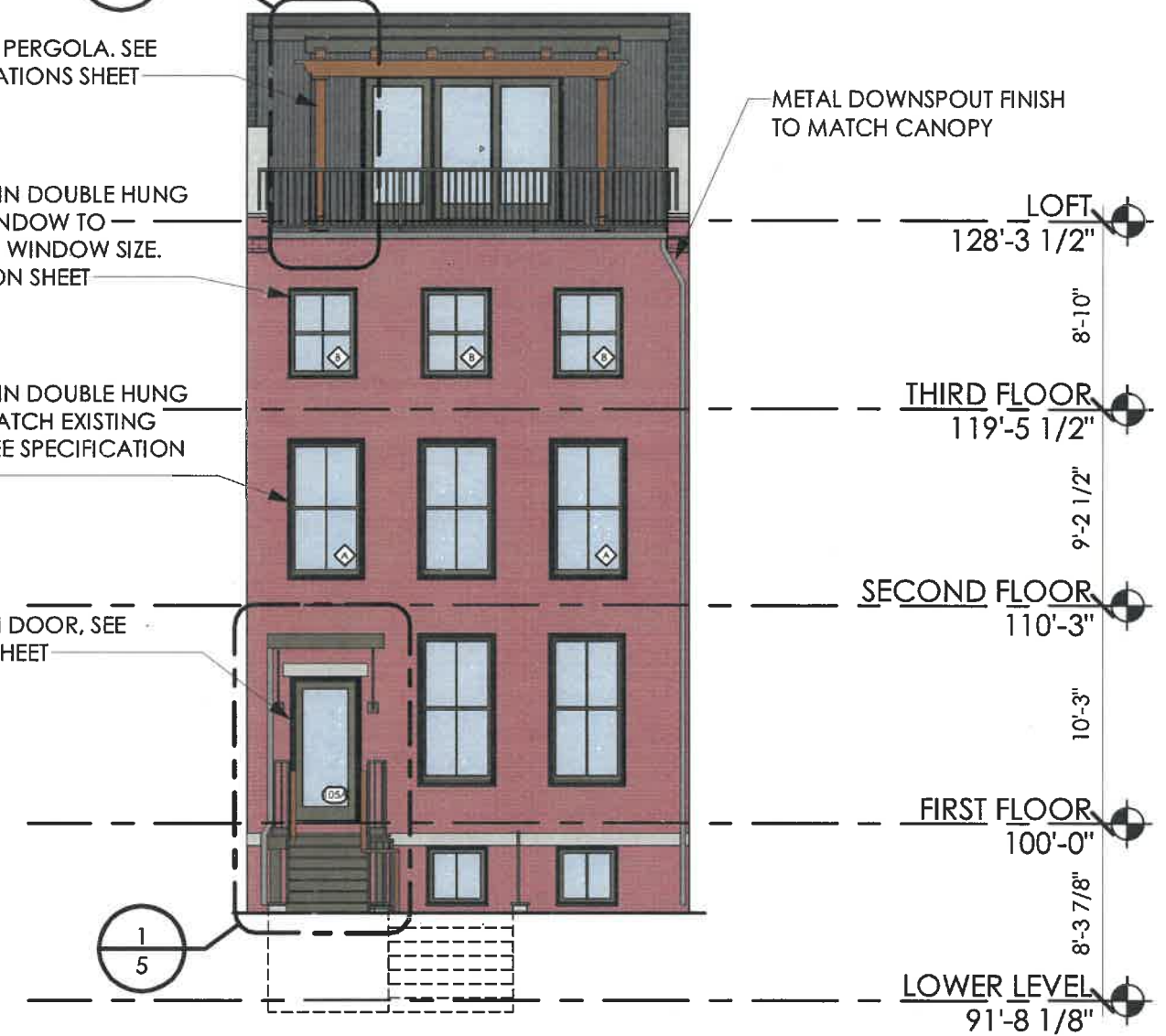
CUSTOM WOOD PERGOLA. SEE ENLARGED ELEVATIONS SHEET

GREEN MOUNTAIN DOUBLE HUNG EGRESS STYLE WINDOW TO MATCH EXISTING WINDOW SIZE. SEE SPECIFICATION SHEET

GREEN MOUNTAIN DOUBLE HUNG WINDOWS TO MATCH EXISTING WINDOW SIZE. SEE SPECIFICATION SHEET

MARVIN FRENCH DOOR, SEE SPECIFICATION SHEET

METAL DOWNSPOUT FINISH TO MATCH CANOPY



EXISTING COURT STREET ELEVATION

N.T.S.

2

PROPOSED COURT STREET ELEVATION

1/8" = 1'-0"

1

Ludes Residence

124 State Street  
Portsmouth, NH 03801

COURT STREET ELEVATIONS

1/8" = 1'-0"

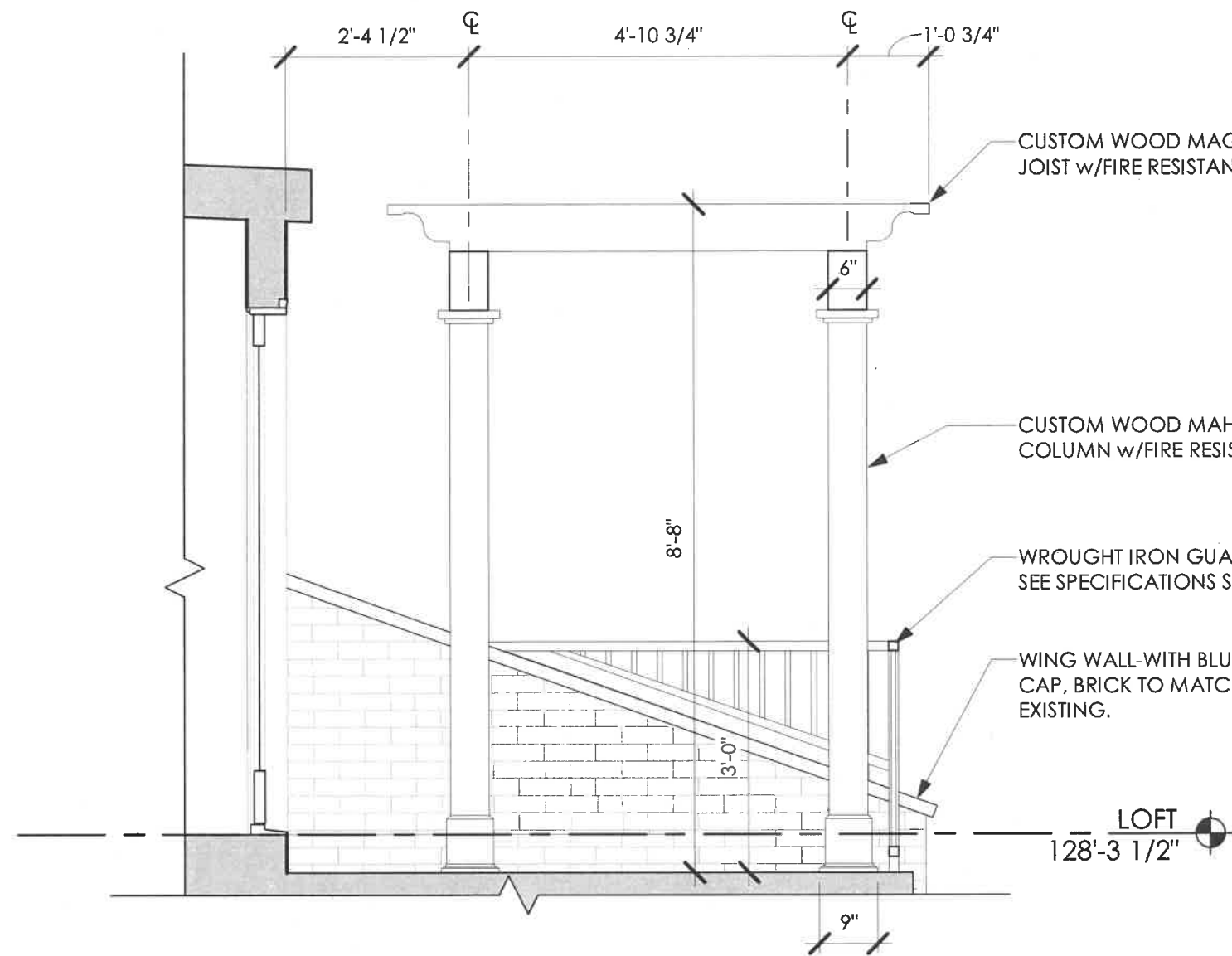
SHEET 3 OF 6

MARCH 3, 2021

202050



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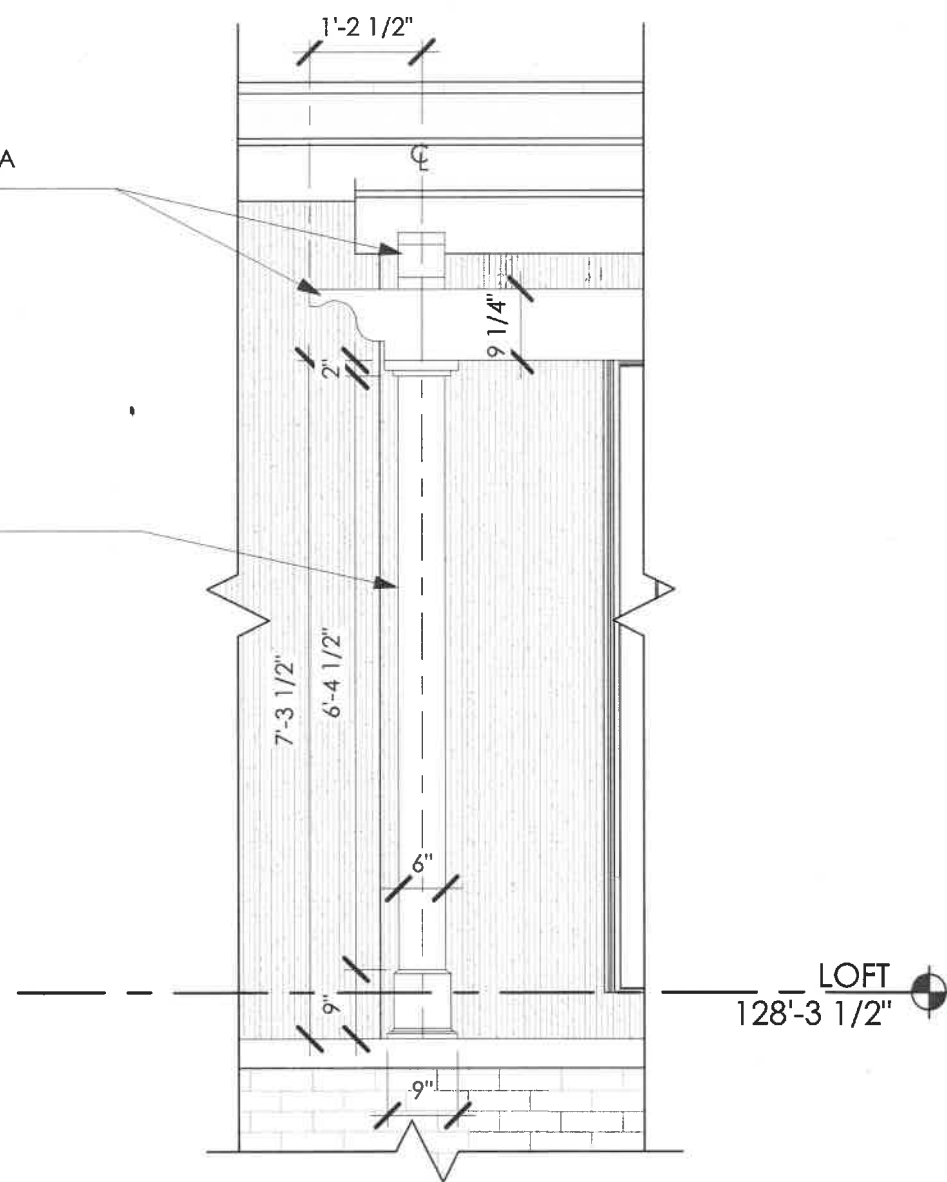
CUSTOM WOOD MAGOGANY PERGOLA  
JOIST w/FIRE RESISTANT COATING.

CUSTOM WOOD MAHOGANY TUSCAN  
COLUMN w/FIRE RESISTANT COATING.

WROUGHT IRON GUARD RAIL,  
SEE SPECIFICATIONS SHEET

WING WALL WITH BLUESTONE  
CAP, BRICK TO MATCH  
EXISTING.

LOFT  
128'-3 1/2"



LOFT  
128'-3 1/2"

BUILDING SECTION AT PROPOSED BALCONY

2

1/2" = 1'-0"

PROPOSE PERGOLA ELEVATION

1

1/2" = 1'-0"

Ludes Residence

124 State Street  
Portsmouth, NH 03801

PROPOSED SECTION AND ENLARGED ELEVATION

1/2" = 1'-0"

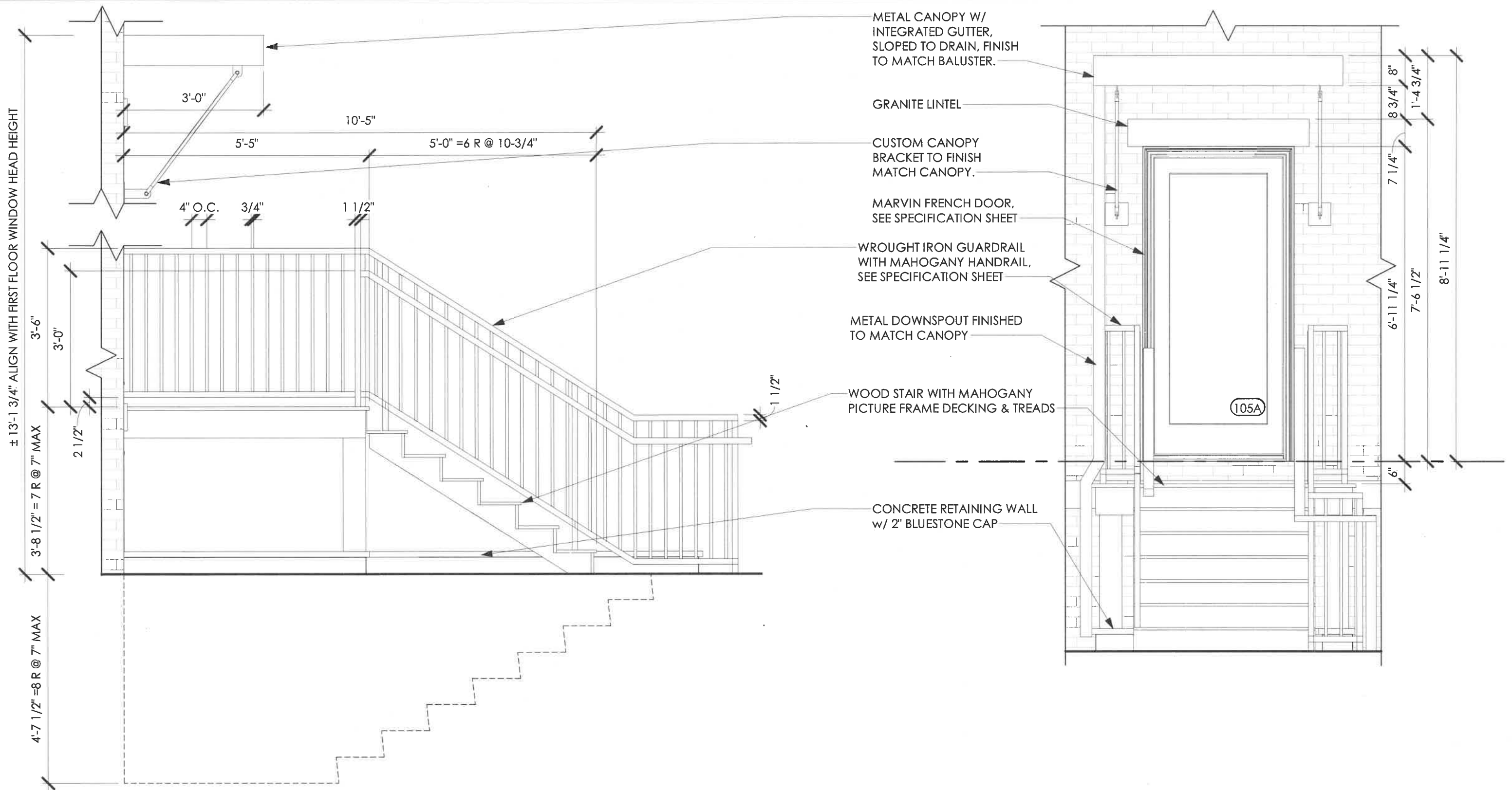
SHEET 4 OF 6

MARCH 3, 2021

202050



© 2021



PROPOSED GUARDRAIL & STAIR ELEVATION ②

1/2" = 1'-0"

PROPOSED SECTION AND ENLARGED ELEVATION

1/2" = 1'-0"

ENLARGED ELEVATION AT PROPOSED ENTRY ①

1/2" = 1'-0"

SHEET 5 OF 6

MARCH 3, 2021

Ludes Residence

124 State Street  
Portsmouth, NH 03801

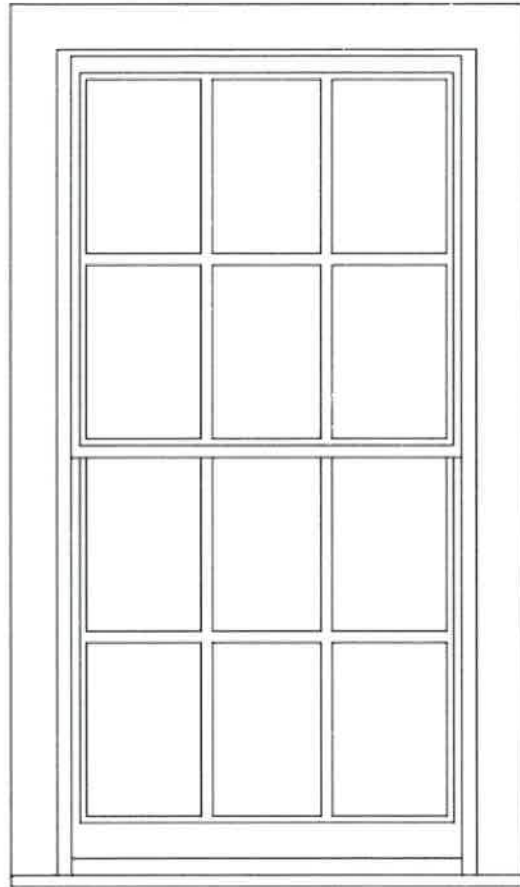
202050



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GREEN MOUNTAIN CLASSIC  
DOUBLE HUNG WINDOW  
WINDOW TYPE - A

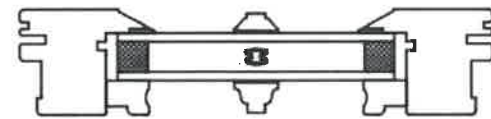


GREEN MOUNTAIN DOUBLE HUNG  
EGRESS STYLE WINDOW  
WINDOW TYPE - B



Green Mountain Window's DH Style Egress Window®

SDL STICKING WITH BLACK PUTTY SPACER  
BAR TO MATCH EXISTING MUNTIN  
THICKNESS. 5/8" SPACER USED AS EXAMPLE.  
CONTRACTOR TO VERIFY IN FEILD.

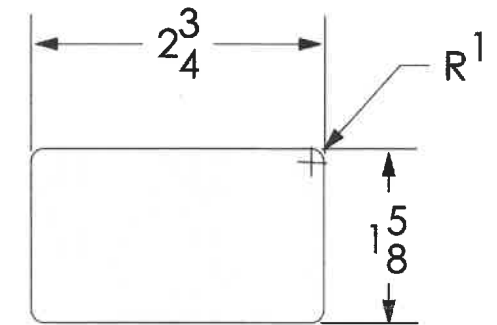


5/8" SDL  
with Spacer Bar

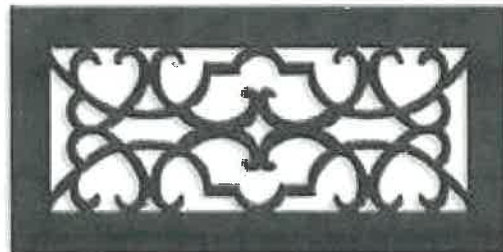
MARVIN SIGNATURE ULTIMATE  
SWINGING FRENCH DOOR  
DOOR TYPE - 105A



CUSTOM - MINIMALIST WROUGHT  
IRON GURDRAIL WITH INTEGRATED  
MAHOGANY HANDRAIL



CUSTOM WROUGHT IRON  
SECURITY BARS AT WINDOW WELLS



**2. 65 (53-67) Bow Street - Recommended Approval**

**Background:** The applicant is seeking approval to replace the roofing with asphalt shingles, replace (10) skylights, remove (2) skylights, and all associated flashing.

**Staff Comment:** Recommended Approval

**Stipulations:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



City of Portsmouth, NH

03/05/2021

# LUHD-281

Historic District Commission Work Session or Administrative Approval Application

**Status:** Active

**Date Created:** Feb 19, 2021

### Applicant

Ben Auger  
ben@augerbuildingcompany.com  
255 Portsmouth Avenue  
Greenland, NH 03840  
603-430-9004 ext. 202

### Location

65 BOW ST  
Portsmouth, NH 03801

### Owner:

RYE ATLANTIC PROPERTIES LLC  
PO BOX 300 RYE, NH 03870-0300

### Application Type

**Please select application type from the drop down menu below**

Administrative Approval

### Project Information

#### Brief Description of Proposed Work

Removal and replacement in-kind of asphalt shingles; removal and replacement of ten skylights; deletion of two skylights; reflashing of walls, chimney, and roof penetrations.

#### Description of Proposed Work (Planning Staff)

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### Acknowledgement

**I certify that the information given is true and correct to the best of my knowledge.**



**By checking this box, I agree that this is equivalent to a handwritten signature and is binding for all purposes related to this transaction**



### 53-67 Bow Street



**Property Information**

**Property ID** 0106-0055-0000  
**Location** 109-111 BOW ST  
**Owner** 109-111 BOW ST CONDOS MASTERCARD

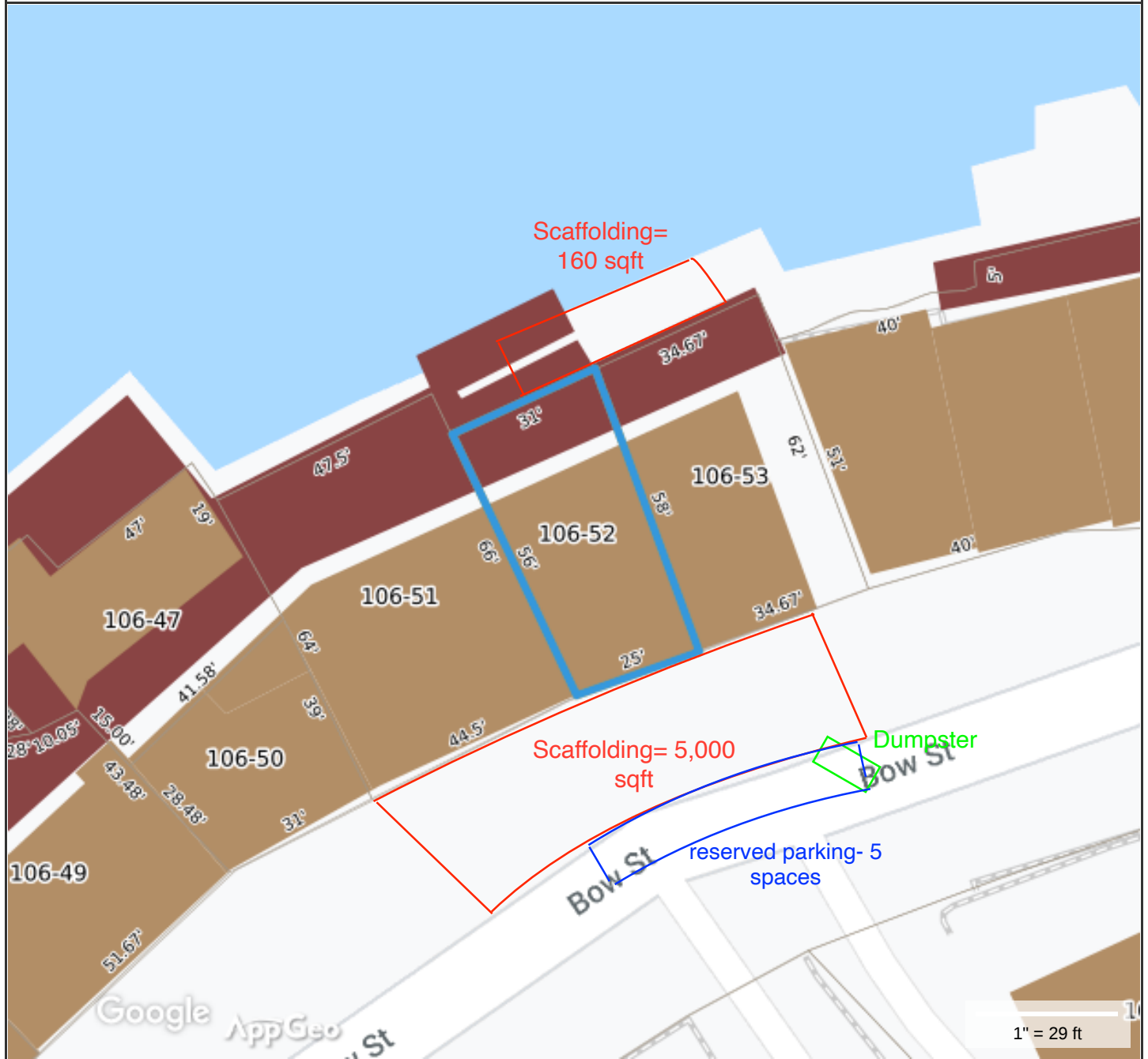


**MAP FOR REFERENCE ONLY  
NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019  
Data updated 7/17/2019

# 65 bow



**Property Information**

Property ID 0106-0052-0000  
 Location 65 BOW ST  
 Owner RYE ATLANTIC PROPERTIES LLC



**MAP FOR REFERENCE ONLY  
 NOT A LEGAL DOCUMENT**

City of Portsmouth, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2019  
 Data updated 7/17/2019

65 Bow St,  
Portsmouth, NH 03801

Tugboat Alley  
Gift shop

Old Ferry Landing  
Temporarily closed

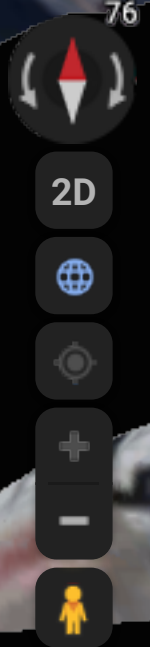
scaffolding

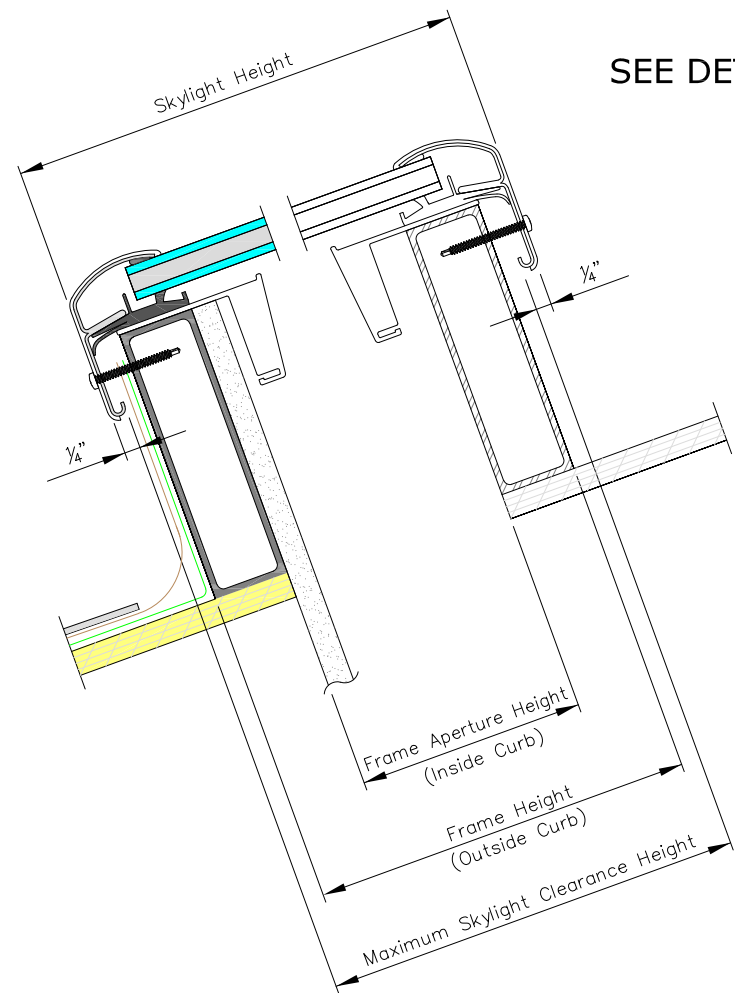
dumpster

reserved  
parking

Bow St

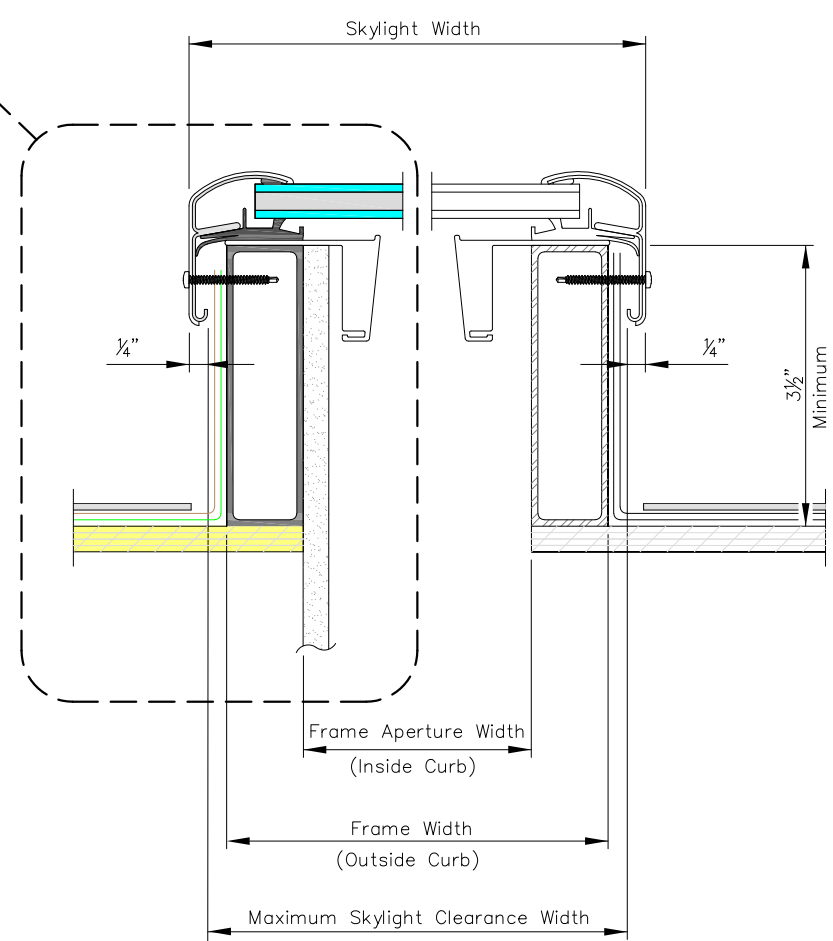
Google



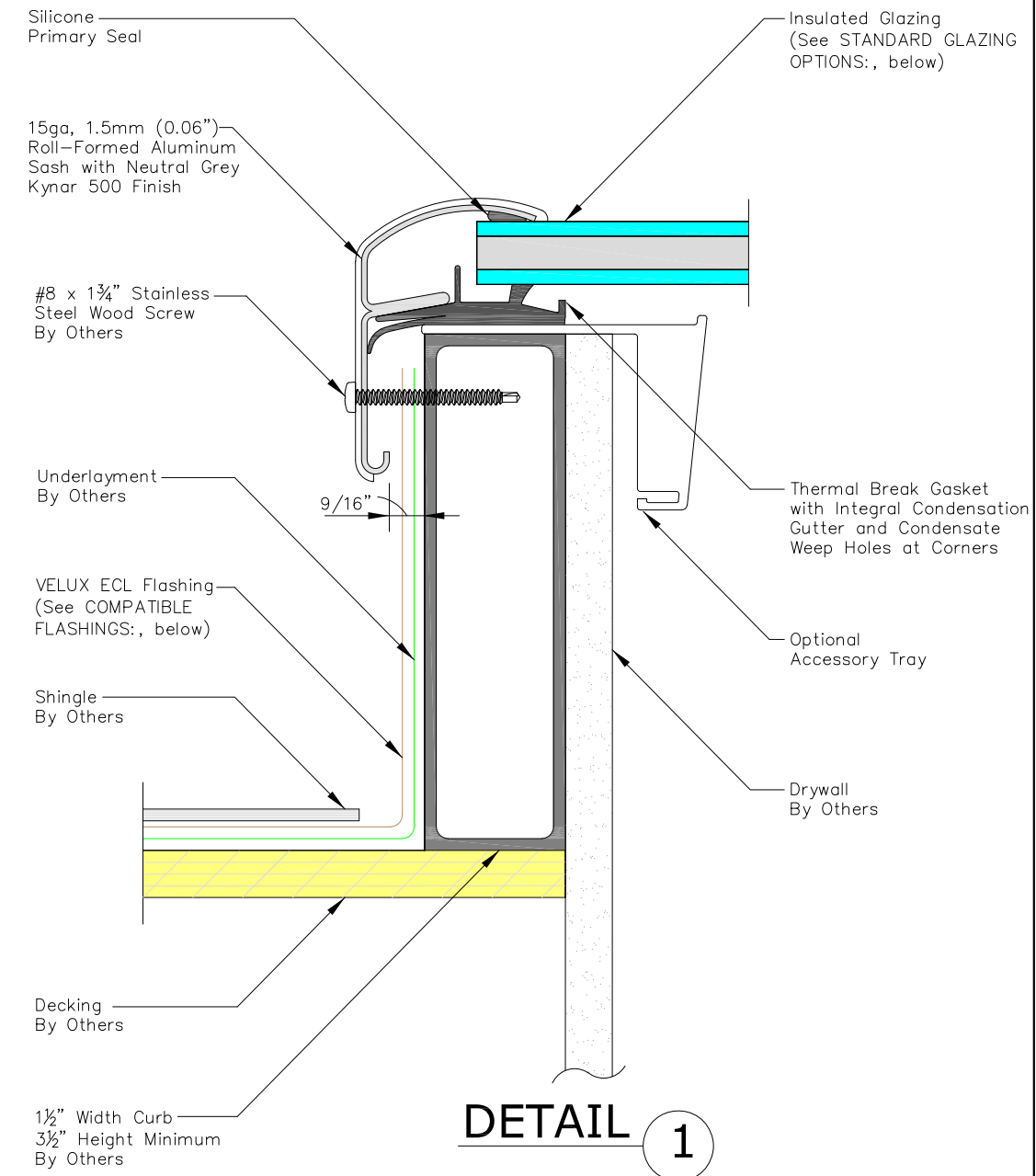


**VERTICAL CROSS SECTION**

SEE DETAIL 1



**HORIZONTAL CROSS SECTION**



**DETAIL 1**

**PRODUCT DIMENSIONS**

METRIC UNITS (MILLIMETERS)										IMPERIAL UNITS (INCHES)									
Size	Frame Width	Frame Aperture Width	Skylight Width	Maximum Skylight Clearance Width	Frame Height	Frame Aperture Height	Skylight Height	Maximum Skylight Clearance Height	Daylight Area (Sq. Meters)	Size	Frame Width	Frame Aperture Width	Skylight Width	Maximum Skylight Clearance Width	Frame Height	Frame Aperture Height	Skylight Height	Maximum Skylight Clearance Height	Daylight Area (Sq. Feet)
1430	445	368	485	473	851	775	892	879	0.28	1430	17 1/2	14 1/2	19 1/8	18 5/8	33 1/2	30 1/2	35 1/8	34 5/8	3.07
1446	445	368	485	473	1257	1181	1299	1286	0.43	1446	17 1/2	14 1/2	19 1/8	18 5/8	49 1/2	46 1/2	51 1/8	50 5/8	4.68
2222	648	572	689	676	648	572	689	676	0.33	2222	25 1/2	22 1/2	27 1/8	26 5/8	25 1/2	22 1/2	27 1/8	26 5/8	3.52
2230	648	572	689	676	851	775	892	879	0.44	2230	25 1/2	22 1/2	27 1/8	26 5/8	33 1/2	30 1/2	35 1/8	34 5/8	4.76
2234	648	572	689	676	953	876	994	981	0.50	2234	25 1/2	22 1/2	27 1/8	26 5/8	37 1/2	34 1/2	39 1/8	38 5/8	5.39
2246	648	572	689	676	1257	1181	1299	1286	0.68	2246	25 1/2	22 1/2	27 1/8	26 5/8	49 1/2	46 1/2	51 1/8	50 5/8	7.27
2270	648	572	689	676	1867	1790	1908	1895	1.02	2270	25 1/2	22 1/2	27 1/8	26 5/8	73 1/2	70 1/2	75 1/8	74 5/8	11.01
3030	851	775	892	879	851	775	892	879	0.60	3030	33 1/2	30 1/2	35 1/8	34 5/8	33 1/2	30 1/2	35 1/8	34 5/8	6.46
3046	851	775	892	879	1257	1181	1299	1286	0.92	3046	33 1/2	30 1/2	35 1/8	34 5/8	49 1/2	46 1/2	51 1/8	50 5/8	9.85
3055	851	775	892	879	1486	1410	1527	1514	1.09	3055	33 1/2	30 1/2	35 1/8	34 5/8	58 1/2	55 1/2	60 1/8	59 5/8	11.76
3434	952	876	994	981	952	876	994	981	0.77	3434	37 1/2	34 1/2	39 1/8	38 5/8	37 1/2	34 1/2	39 1/8	38 5/8	8.27
3446	952	876	994	981	1257	1181	1299	1286	1.03	3446	37 1/2	34 1/2	39 1/8	38 5/8	49 1/2	46 1/2	51 1/8	50 5/8	11.14
4622	1257	1181	1299	1286	648	572	689	676	0.68	4622	49 1/2	46 1/2	51 1/8	50 5/8	25 1/2	22 1/2	27 1/8	26 5/8	7.27
4646	1257	1181	1299	1286	1257	1181	1299	1286	1.39	4646	49 1/2	46 1/2	51 1/8	50 5/8	49 1/2	46 1/2	51 1/8	50 5/8	15.02
4672	1257	1181	1299	1286	1918	1842	1960	1947	2.18	4672	49 1/2	46 1/2	51 1/8	50 5/8	75 1/2	72 1/2	77 1/8	76 5/8	23.47

- STANDARD GLAZING OPTIONS:**
- Laminated LowE3 (04 and 14)
  - Tempered LowE3 (05 and 15)
  - Impact (06 and 16)
  - White Laminated (08)
- \*Tempered Exterior Pane used with all options

- COMPATIBLE FLASHINGS:**
- ECL Step flashing
  - ECW Tile flashing

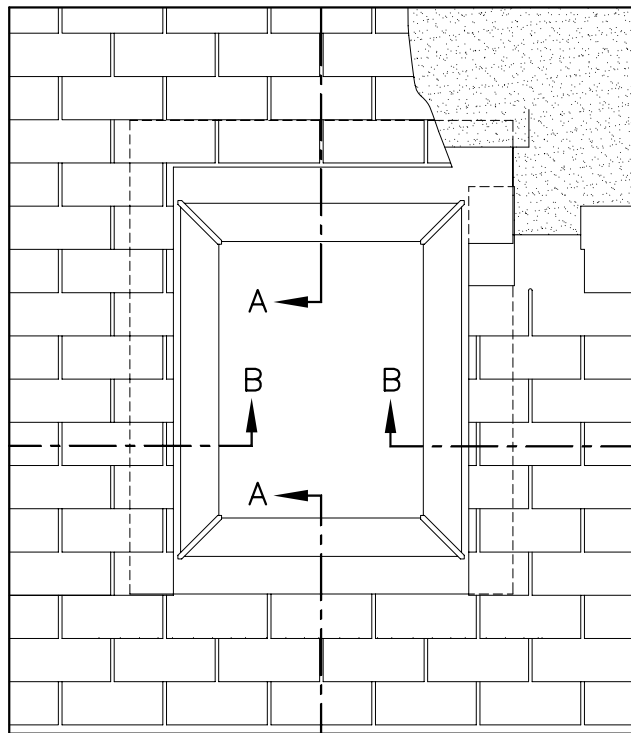


Sky-Global Product Management

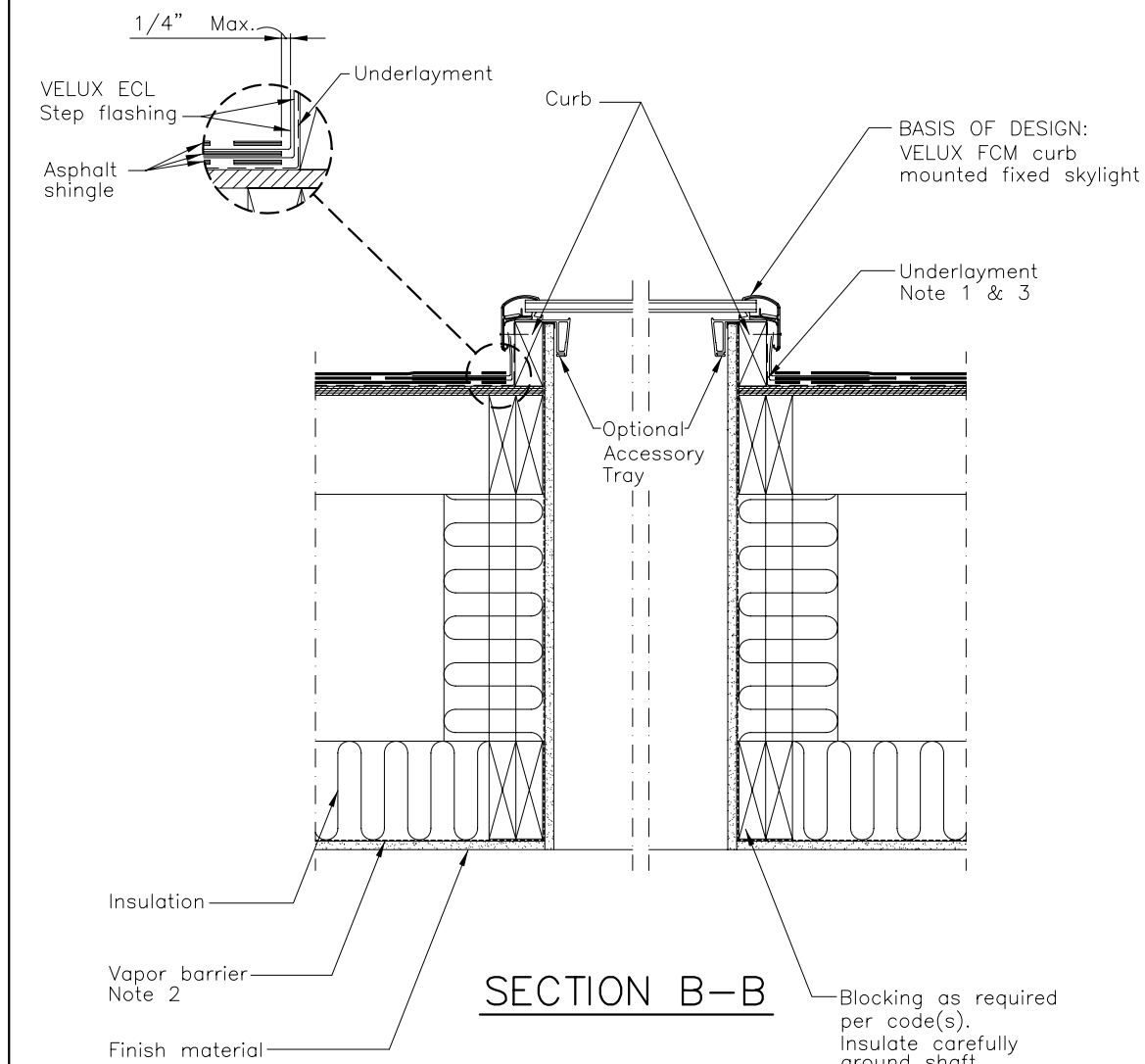
VELUX  
1418 Evans Pond Road  
Greenwood, SC 29649  
1-800-88-VELUX  
www.VELUXUSA.com

FCM - Fixed Curb Mounted Skylight

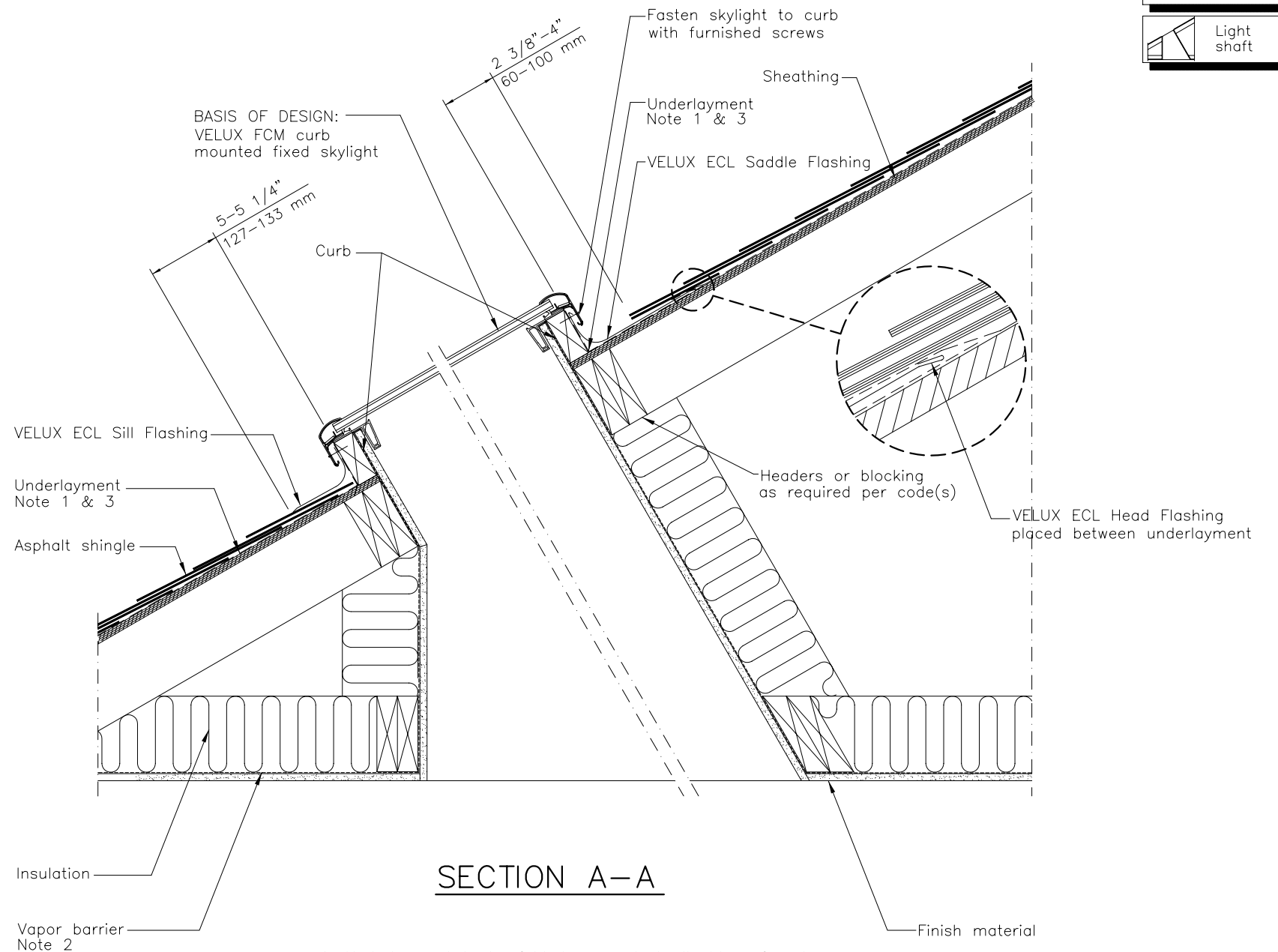
This drawing is an instrument of service and is provided for informational use only.



ELEVATION

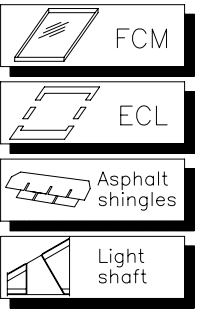


SECTION B-B



SECTION A-A

1. Underlayment to be folded up against all sides of curb.
2. Vapor barrier should be used to avoid moisture.
3. Wrap curb in underlayment. VELUX recommends use of VELUX type ZOZ 216 adhesive underlayment.



	VELUX 1418 Evans Pond Road Greenwood, SC 29649 1-800-88-VELUX www.VELUXUSA.com		Name	Date
	Sky-Product Management		Drawn by JDH Checked by WQ	Mar 10 Mar 10
FCM-Residential/Commercial Roof Section (Light Shaft and Asphalt Shingles)			Drawing No.  FCM-01-0310	

This drawing is an instrument of service and is provided for informational use only.





## Fixed Curb Mount (FCM) Unit Skylight - Guide Specification

For over 70 years, VELUX has been delivering energy efficient daylight to living spaces where people, live, work, and play. VELUX is the world leader in harnessing the benefits of the sun, providing energy efficient top lighting solutions, and recognized as one of the strongest brands in the global materials and home improvement industry.

VELUX FCM skylights are designed for commercial and residential flat and sloped roof applications. Daylighting provided through VELUX skylights improves the energy efficiency and visual comfort of these residential and commercial spaces. The VELUX FCM skylight is a category leader with a maintenance free frame, structural seal, and durable thermal pane options with performance levels meeting project specifications. The thermal pane glazing options carry a 20 year warranty against seal failure, and have a specially formulated LoE<sup>3</sup> – 366™ coating. This coating, specifically designed for skylight applications, provides a high visible light transmission while reducing solar heat gain and UV penetration.

VELUX test facilities ensure that new products comply with regulations and market demands for technical performance. VELUX testing ensures that our products are able to withstand the most difficult climatic conditions to which VELUX products are typically exposed to in the markets where they are sold. Our test procedures include load capacity, air and water tightness in a test chamber and a weather simulator, mechanical tests, impact test results, durability tests, U-factor and solar heat gain tests, burn brand resistance and visual inspection of the surface quality.

Contact **VELUX America Inc.**, Greenwood, SC 29648; [www.VELUXusa.com](http://www.VELUXusa.com); 800-888-3589, [specifications@veluxusa.com](mailto:specifications@veluxusa.com).

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## SECTION 08 62 00 –UNIT SKYLIGHTS

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Fixed curb mount unit skylight with formed curb counterflashing for mounting on prefabricated roof curbs, for flat, low-slope and steep-slope roofing applications.

#### 1.2 RELATED REQUIREMENTS

Specifier: If retaining optional "Related Sections" article, edit to include sections applicable to Project.

- A. Section 061053 "Miscellaneous Rough Carpentry" for site-built wood roof curbs for unit skylights.
- B. Division 07 roofing section for flashing and roofing terminations at unit skylight curbs.
- C. Section 077200 "Roof Accessories" for manufactured metal roof curbs for tubular unit skylights.
- D. Section 086300 "Metal-Framed Skylights" for aluminum-framed sloped glazing assemblies.

#### 1.3 REFERENCE STANDARDS

Specifier: If retaining optional "References" article, edit to include standards cited in edited Section.

- A. General: Applicable edition of references cited in this Section is current edition published on date of issue of Project specifications, unless otherwise required by building code in force.
- B. American Architectural Manufacturers Association ([www.aama.net](http://www.aama.net)), Window & Door Manufacturers Association ([www.wdma.com](http://www.wdma.com)), Canadian Standards Association ([www.csagroup.org/us/en/services](http://www.csagroup.org/us/en/services))
  - 1. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/ Specification for Windows, Doors, and Skylights (NAFS)
  - 2. CSA A440S1-09 – Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440
  - 3. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems
  - 4. AAMA 2603 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum and Panels
- C. ASTM International: [www.astm.org](http://www.astm.org):
  - 1. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
  - 2. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings
  - 3. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
  - 4. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
  - 5. ASTM E 408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques

6. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials
  7. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
- D. Code of Federal Regulations:
1. 29 CFR 1910.23 (e) (8) - Occupational Safety and Health Standards for Walking-Working Surfaces to Guard Floor and Wall Openings and Holes
- E. Illuminating Engineering Society of North America (IESNA): [www.ies.org](http://www.ies.org):
1. IESNA – The Lighting Handbook.
- F. National Fenestration Rating Council: [www.nfrccommunity.org](http://www.nfrccommunity.org):
1. NFRC 100 - Procedure for Determining Fenestration Product U-factors
  2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
- G. National Fire Protection Association: [www.nfpa.org](http://www.nfpa.org):
1. NFPA 70 - National Electrical Code

#### 1.4 COORDINATION

[Specifier: Retain option in paragraph below that corresponds to the type of curb used on Project.](#)

- A. Coordinate dimensions, locations, and details of skylight curbs [specified in Section 061053 "Miscellaneous Carpentry"] [specified in Section 077200 "Roof Accessories"] with unit skylight curb flashings. Verify requirements for roofing system terminations.
- B. Coordinate unit skylight interior termination locations with structural layout, ceiling grid layouts, and other ceiling-mounted items.

#### 1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site prior to delivery of unit skylight and installation of roof deck.

#### 1.6 ACTION SUBMITTALS

- A. Product Data: For unit skylights. Include standard construction details, product performance characteristics, and material descriptions, dimensions of individual components and profiles, and finishes.
  1. Include test reports of qualified independent testing agency or third party certificates verifying compliance with performance requirements.

Specifier: Retain "LEED Submittals" Paragraph when required for Project; this Paragraph stipulates documentation required from Contractor to support cited construction-phase credits.

Review design-phase credits available related to unit skylights, including contribution to IEQ Cr 6.1 Controllability of Systems, IEQ Cr 8.1. Daylighting, EA Cr 1 Energy Optimization, and ID Cr 1 Innovation in Design credits. Consult VELUX representative for detailed support data.

B. LEED Submittals:

1. Credit MR 4 Recycled Content: Documentation indicating the following:

- a. Percentages by weight of post-consumer and pre-consumer recycled content.
- b. Total weight of products provided.
- c. Include statement indicating costs for each product having recycled content.

C. Shop Drawings: For unit skylight work. Include plans, elevations, sections, details, and connections to supporting structure and other adjoining work.

1. Lighting photometric study indicating compliance with performance requirements in accordance with IESNA. Include layout, spacing criteria and foot-candle report.

1.7 INFORMATIONAL SUBMITTALS

Specifier: Retain paragraphs below when Project requirements include compliance with Federal Buy American provisions. VELUX Fixed Curb Mount skylights complies with requirement.

A. Buy American Act Certification: Submit documentation certifying that products comply with provisions of the Buy American Act 41 U.S.C 10a – 10d.

B. Florida State Product Approval Listing Number: Indicating that products comply with requirements of Florida State Building Code. [www.floridabuilding.org/pr/pr\\_app\\_srch.aspx](http://www.floridabuilding.org/pr/pr_app_srch.aspx)

C. Warranty: Sample of special warranty.

1.8 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data.

1.9 QUALITY ASSURANCE

Specifier: VELUX America, Inc. has been producing skylights in the US for over 30 years and in Europe for an additional 30 years prior to that. VELUX has a reputation among architects and contractors as the most reliably performing skylight in the world.

A. Manufacturer Qualifications: A qualified manufacturer listed in this Section with minimum 30 years' experience in the US manufacturing similar products in successful use on similar projects and able to provide unit skylights meeting requirements.

Specifier: Retain "Approval of Manufacturers and Comparable Products" Subparagraph if Owner will consider product substitutions.

1. Approval of Manufacturers and Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
  - a. Completed and signed Substitution Request form.
  - b. Product data, including photometric data and independent test data indicating compliance with requirements.
  - c. Sample product warranty.

#### 1.10 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of unit skylights that fail in materials or workmanship under normal use within specified warranty period.
  1. Failures include, but are not limited to, the following:
    - a. Deterioration of metals, metal finishes, dome, and other materials beyond normal weathering.
    - b. Breakage of glazing.
  2. Warranty Period:
    - a. Unit Skylight and Flashing Product Warranty: 10 years from date of purchase.
    - b. Unit Skylight and Flashing Installation "No Leak" Warranty: 10 years from date of purchase.
    - c. Hail Breakage Warranty for Skylight Glass: 10 years from the date of purchase on all insulated glass units using laminated glass.
    - d. Insulating Glass Seal Failure Warranty: 20 years from date of purchase.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide products of **VELUX America Inc.**, Greenwood, SC 29648; [www.VELUXusa.com](http://www.VELUXusa.com); (800) 878-3589, [specifications@veluxusa.com](mailto:specifications@veluxusa.com).

Specifier: Retain "Substitutions" Paragraph and select one of two options based upon Project requirements.

- B. Substitutions: [None allowed by Owner] [As permitted under Instructions to Bidders and Section 012500 "Substitution Procedures"].
- C. Source Limitations: Obtain unit skylights through single source from single manufacturer.

#### 2.2 Fixed Curb Mounted (FCM) Unit Skylights

- A. System Description: Fixed curb mounted unit skylight with a roll-formed aluminum frame counter-flashing joined by corner keys, an interior condensation drainage gasket, an insulated glass unit, structural sealant, mounting fasteners, flashing and accessories, as required to meet installation and performance requirements indicated. FCM skylights shall be suitable for installation on roof curbs ranging from 0 degrees up to 60 degrees from horizontal.

1. Basis of Design: **VELUX America, Inc, Model FCM Fixed Curb Mount Skylight.**

Specifier: **FCM** standard unit sizes are not available as a stocked product for all glazing options. Specify special width and height sizes by "make sizes" which are maximum skylight clearance dimensions. The minimum make size width is 18.75 inches (476 mm) and maximum make size width is 50.75 inches (12.9 cm). The minimum make size height is 18.75 inches (476 mm) and maximum make size height is 76.5 inches (19.4 cm). Make size dimensions are only available in ¼ inch (6 mm) increments (0, ¼, ½, ¾) for width and height.

- B. Aluminum Frame Counter-flashing: Maintenance-free, roll-formed aluminum, 15 gauge, 0.06 inch (1.5 mm) thick with neutral grey Kynar® 500 polyvinylidene fluoride resin finish. Counter-flashing frames joined with neutral grey corner keys constructed from injection molded Acrylonitrile Styrene Acrylate (ASA)-Luran.
  - 1. Unit Sizes: [1430], [1446], [2222], [2230], [2234], [2246], [2270], [3030], [3046], [3434], [3446], [4646], [special order] [as indicated on Drawings].
- C. Condensation Drainage Gasket: Factory applied black thermoplastic rubber gasket mounted around the entire interior aluminum frame assembly providing a thermal break weather seal and drainage for interior condensation.
- D. Insulated Glass Unit: Factory assembled with low emissivity exterior pane and clear interior pane separated by a stainless steel spacer sealing the space between panes with 95% argon gas.

Specifier: Retain 0.125 inch thick pane for FCM sizes less than 4646, and for FCM sizes 4646 and greater retain 0.16 inch thick pane. Retain "Neat® exterior coating" when specifying laminated interior pane.

- 1. Exterior Pane: [0.125 inch (3mm)] [0.16 inch (4mm)] thick tempered glass with [Neat® exterior coating and] interior surface coated with three layers of low emissivity silver (LoE<sup>3</sup>) coatings.

Specifier: Retain one of the three interior pane options below. VELUX product codes list the tempered interior pane as 05 glazing. Laminated panes are listed by VELUX as 04 with clear interlayer, 08 "White laminated" with white interlayer. VELUX offers two interior pane options for wind-borne debris regions. The wind-borne debris laminated interior pane with standard polyvinyl butyral interlayer is listed by VELUX as an impact 06 glazing for use in wind zone 3 regions requiring a class C missile level. VELUX lists the wind-borne debris pane with Sentryglasplus® interlayer as Miami-Dade 07 glazing which is certified for use in Miami-Dade portions of Florida. Laminated panes are typically required by building codes when any portion of the glass is higher than 12 feet above finished floor. VELUX laminated panes are marketed as "Clean, Quiet and Safe" glass.

- 2. Interior Pane:
  - a. Tempered, Clear 0.125 inch (3mm) tempered glass
  - b. Laminated, Two clear 0.090 inch (2.3 mm) heat-strengthened panes with a 0.030 inch (0.76 mm) [clear] [white] polyvinyl butyral interlayer sandwiched together.
  - c. Laminated for wind-borne debris regions, Two clear 0.090 inch (2.3 mm) heat-strengthened panes with a 0.090 inch (2.3 mm) clear [polyvinyl butyral] [Sentryglasplus®] interlayer sandwiched together.

- E. Structural Sealant: Factory applied silicone sealant, black color, bonding the glass pane to the aluminum frame and suitable for external exposure.

Specifier: FCM skylight sizes 1430, 1446, 2222, 2230, 2234, 2246 supplied with 12 mounting fasteners, and FCM skylights sizes 2270, 3030, 3046, 3434, 3446 and 4646 supplied with 14 mounting fasteners. FCM skylights using Miami-Dade 07 glazing in sizes larger than 2222 require 20 screws.

- F. Mounting Fasteners: #8 x 1.75 inch (44 mm) stainless steel, black zinc coated, self-drilling screws provided with skylight. [12] [14] [20] field installed screws secures skylight to site built curb as indicated in manufacturer's installation instructions.

### 2.3 Flashings

Specifier: Type ECL step flashing designed for use with roofing material less than 0.75 inch (19 mm) thick (typically asphalt shingles, cedar shingles and slate) and for use on roof slopes 10 degrees or greater and not more than 60 degrees. Type ECW high profile flashing designed for use with high profiled roofing materials (clay tile, concrete tile and cedar shakes) not greater than 4.75 inches (120 mm) in height, and for use on roof slopes 14 to 60 degrees. ECL or ECW flashing is required with skylight in order for VELUX 10 year "No Leak" warranty to be valid.

- A. Step Flashing: Roll formed aluminum, neutral grey finish, factory engineered and fabricated seams, consisting of head flashing, sill flashing, step flashing pieces and adhesive underlayment suitable for use with 4 inch (100 mm) and 6 inch (150 mm) curbs on roof pitches 10 to 60 degrees from horizontal.

1. Basis of Design: **VELUX America, Inc, ECL Step Flashing.**

2. Size: As required for skylight sizes indicated.

3. Material:

- a. Head flashing 23 gauge (0.57 mm) thick aluminum with polyester lacquer finish.
- b. Sill flashing 22 gauge (0.65 mm) thick aluminum with Kynar 500 finish.
- c. Step pieces 23 gauge (0.57 mm) thick aluminum with polyester lacquer finish.
- d. Adhesive underlayment: 9 inches (229 mm) wide x 21 feet (6.4 m) length x 0.03 inch (0.8 mm) thick, SBS modified bitumen with white polyethylene backing sheet.

- B. High Profile Flashing: Roll formed aluminum, neutral grey finish, factory engineered and fabricated seams, consisting of head flashing, sill flashing, side gutter pieces, counter flashing and adhesive underlayment suitable for use with 4 inch (100 mm) and 6 inch (150 mm) curbs on roof pitches 14 to 60 degrees from horizontal.

1. Basis of Design: **VELUX America, Inc, ECW High Profile Flashing.**

2. Size: As required for skylight sizes indicated.

3. Material:

- a. Head flashing 23 gauge (0.57 mm) thick aluminum with polyester lacquer finish.
- b. Sill flashing 22 gauge (0.65 mm) thick aluminum with Kynar 500 finish and 9 inch (229 mm) pleated apron.
- c. Side gutter pieces 23 gauge (0.57 mm) thick aluminum with polyester lacquer finish.
- d. Counter-flashing 23 gauge (0.57 mm) thick with 4 inch (100 mm) curb counter flashing, aluminum with polyester lacquer finish.

- e. Adhesive underlayment: 12 inches (305 mm) width x 21 feet (6.4 m) length x 0.03 inch (0.8 mm) thickness, SBS modified bitumen with white polyethylene backing sheet.

## 2.4 ACCESSORIES

Specifier: VELUX accessory tray (ZZZ 199) required for blind installation in FCM skylight. Accessory tray only available in VELUX standard FCM sizes and for FCM standard sizes mounted at a 90 degree rotation. VELUX recommends installing blinds with at least 10 degrees of pitch to ensure proper operation.

- A. Accessory Tray: Rigid white fiberglass frame, site assembled, mounts directly to site built curb for interior mounting of VELUX blinds. Provide for units in which blinds are indicated.

- 1. Basis of Design: **VELUX America, Inc, Accessory Tray Model ZZZ 199.**

Specifier: Retain only one of two options below based on project requirements. Venetian blind only available in white color.

- B. Blinds: [Field installed] [Factory installed]
  - 1. Manual operation with [blackout] [light filtering] [venetian] blind type with [white] [beige] [special] color as indicated on drawings. [Blind operation controlled by adjustable length telescopic rod.]
  - 2. Solar operation with [blackout] [light filtering] blind type with [white] [beige] [special] color as indicated on drawings. 24 volt dc blinds operated via 2.4 GHz radio frequency [basic wall mounted remote control provided with blind] [control pad provided separately].

## 2.5 PERFORMANCE REQUIREMENTS

- A. Unit Skylight Standard, FCM 4646 or smaller unit with tempered Lo-E 366 coated exterior glass pane and interior pane as follows:  
AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS-11 or previous):

Specifier: Retain first four Subparagraphs below and delete following four Subparagraphs for IBC 2012 and 2015 code requirements; verify requirements of authorities having jurisdiction. In paragraphs "Performance Grade" and "Design Pressure", select only interior glazing option meeting project requirements. Refer to specification section 2.2.D.2 for additional interior pane details and descriptions.

- 1. Performance Grade (Primary Designator):
  - a. [Laminated with 0.030 inch (0.76 mm) Interlayer: "SKG-PG120 Size Tested 1308 x 1308 mm (51 x 51 in.)".]
  - b. [Tempered: "SKG-PG100 Size Tested 1308 x 1308 mm (51 x 51 in.)".]
  - c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: "SKG-PG100 Size Tested 1308 x 1308 mm (51 x 51 in.)".]
- 2. Design Pressure (DP):
  - a. [Laminated with 0.030 inch (0.76 mm) Interlayer: DP = +250/-120 psf (+11.9/-5.75 kPa)]
  - b. [Tempered: DP = +100/-140 psf (+4.9/-6.7 kPa)]



- c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: DP = +100/-80 psf (+4.9/-3.83 kPa)]
- 3. Water Test Pressure: 15 psf (0.72 kPa) with no leakage at 5 gallons per minute spray rate.
- 4. Air Leakage Rate: 0.030 cfm/ft<sup>2</sup> maximum.

Specifier: Delete first four Subparagraphs above and retain first four Subparagraphs below for IBC 2009 and NBC code requirements, including CSA A440S1-09; verify requirements of authorities having jurisdiction. In paragraphs "Performance Class and Grade" and "Design Pressure", select only interior glazing option meeting project requirements. Refer to specification section 2.2.D.2 for additional interior pane details and descriptions.

- 5. Performance Class and Grade (Primary Designator)
    - a. [Laminated with 0.030 inch (0.76 mm) Interlayer: "Class CW-PG90 Size Tested 1308 x 1308 mm (51 x 51 in.)-SKG".]
    - b. [Tempered: "Class CW-PG100 Size Tested 1308 x 1308 mm (51 x 51 in.)-SKG".]
    - c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: "Class CW-PG60 Size Tested 1308 x 1308 mm (51 x 51 in.)-SKG".]
  - 6. Design Pressure (DP):
    - a. [Laminated with 0.030 inch (0.76 mm) Interlayer: DP = +175/-90 psf (+8.38/-4.3 kPa)]
    - b. [Tempered: DP = +100/-105 psf (+4.9/-5.03 kPa)]
    - c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: DP = +100/-60 psf (+4.9/-2.87 kPa)]
  - 7. Water Test Pressure: 15 psf (0.72 kPa) with no leakage at 5 gallons per minute spray rate.
  - 8. Canadian Air Infiltration/Exfiltration Rating: Fixed. (0.2 L/s/m<sup>2</sup> maximum)
- B. Unit Skylight Standard, 2270 size and smaller unit with tempered Lo-E 366 coated exterior glass pane and laminated interior pane with 0.030 inch (0.76 mm) interlayer.  
AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS-11 or previous):

Specifier: Retain first four Subparagraphs below and delete following four Subparagraphs for IBC 2012 and 2015 code requirements; verify requirements of authorities having jurisdiction.

- 1. Performance Grade (Primary Designator): "SKG-PG100 Size Tested 660 x 1854 mm (26 x 73 in.)".
- 2. Design Pressure (DP): +200/-100 psf (+9.58/-4.79 kPa).
- 3. Water Test Pressure: 15 psf (0.72 kPa) with no leakage at 5 gallons per minute spray rate.
- 4. Air Leakage Rate: 0.030 cfm/ft<sup>2</sup> maximum

Specifier: Delete first four Subparagraphs above and retain first four Subparagraphs below for IBC 2009 and NBC code requirements, including CSA A440S1-09; verify requirements of authorities having jurisdiction.

- 5. Performance Class and Grade (Primary Designator): "SKG-PG75 Size Tested 660 x 1854 mm (26 x 73 in.).
- 6. Design Pressure (DP): +150/-75 psf (+7.18/-3.59 kPa).

7. Water Test Pressure: 15 psf (0.72 kPa) with no leakage at 5 gallons per minute spray rate.
  8. Canadian Air Infiltration/Exfiltration Rating: Fixed (0.2 L/s/m<sup>2</sup> maximum).
- C. Daylighting: Provide daylighting photometric performance comparable to basis of design product at layout indicated, based upon daylighting profile of March 21, 9:00 am local time, at Project location by simulation in accordance with IESNA guidelines.
- D. Air Infiltration: Maximum air leakage through tested size of 0.030 cfm/sq. ft. (1.5 L/s/sq. m) of fixed area as determined according to ASTM E 283 at a static-air-pressure differential of 1.57 lbf/sq. ft. (75Pa.)
- E. Water Penetration under Static Pressure: No evidence of water penetration through unit when tested according to ASTM E 331 at a static-air-pressure differential of 15 lbf/sq. ft. (720 Pa).

Specifier: Retain one of the "Windborne Debris Resistance" Paragraphs if required by authorities having jurisdiction. Select FCM 0006 or 0007 glazing when retaining this Paragraph. FCM 0006 glazing is typically for use in windborne debris areas classified as Wind Zone 3 or less. FCM 0007 glazing meets Miami-Dade requirements and windborne debris areas classified as High Velocity Hurricane Zone or Wind Zone 4.

- F. Windborne-Debris Resistance:
1. [Wind Zone 3 or Less: Provide unit skylights capable of resisting impact from windborne debris, based on the pass/fail criteria as determined from testing glazed representative of those specified, according to ASTM E 1886 and ASTM E 1996. Missile Level C, Wind Zone 3 requirements, and +50/-50 psf cycle pressure minimum.]
  2. [Miami-Dade (High Velocity Hurricane Zone) or Less: Provide unit skylights capable of resisting impact from windborne debris, based on the pass/fail criteria as determined from testing glazed representative of those specified, according to TAS 201 and TAS 203: Florida Building Code HVHZ requirements, and +70/-70 psf cycle pressure minimum. ("Miami-Dade" protocols)]
- G. Fire Ratings for Roof Assemblies with Fire Classifications: Unit skylight tested in accordance with ASTM E 108 and listed as passing Burning Brand test with target classification of Class B.
- H. Energy Performance ratings for any size fixed curb mounted unit skylight with tempered Lo-E 366 coated exterior glass pane and interior pane as follows:

Specifier: Retain only interior pane option in the 3 paragraphs below that corresponds to the type of insulated glass pane used on Project.

1. Thermal Transmittance: NFRC 100 maximum U-factor:
  - a. [Clear Laminated with 0.030 inch (0.76 mm) Interlayer: 0.48 Btu/hr\*ft<sup>2</sup>\*deg F (2.73 W/m<sup>2</sup>\*deg C).]
  - b. [Tempered: 0.49 Btu/hr\*ft<sup>2</sup>\*deg F (2.78 W/m<sup>2</sup>\*deg C).]
  - c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: 0.46 Btu/hr\*ft<sup>2</sup>\*deg F (2.61 W/m<sup>2</sup>\*deg C).]
  - d. [Laminated with 0.090 inch (2.3 mm) Sentryglasplus® Interlayer: 0.46 Btu/hr\*ft<sup>2</sup>\*deg F (2.61 W/m<sup>2</sup>\*deg C).]

e. [White Laminated with 0.030 inch (0.76 mm) Interlayer: 0.48 Btu/hr\*ft<sup>2</sup>\*deg F (2.73 W/m<sup>2</sup>\*deg C).]

2. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum SHGC:

- a. [Clear Laminated with 0.030 inch (0.76 mm) Interlayer: 0.27]
- b. [Tempered: 0.27]
- c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: 0.27]
- d. [Laminated with 0.090 inch (2.3 mm) Sentryglasplus® Interlayer: 0.27]
- e. [White Laminated with 0.030 inch (0.76 mm) Interlayer: 0.26]

3. Visible Transmittance (Vt): NFRC 200 maximum Vt:

- a. [Clear Laminated with 0.030 inch (0.76 mm) Interlayer: 0.63]
- b. [Tempered: 0.64]
- c. [Laminated with 0.090 inch (2.3 mm) PVB Interlayer: 0.62]
- d. [Laminated with 0.090 inch (2.3 mm) Sentryglasplus® Interlayer: 0.63]
- e. [White Laminated with 0.030 inch (0.76 mm) Interlayer: 0.47]

I. Fall Protection Standard Compliance: 29 CFR 1910.23: Passed for all laminated fixed curb mount unit skylights.

## 2.6 MATERIALS

- A. Aluminum Sheet: Flat sheet complying with ASTM B 209/B 209M.
- B. Joint Sealants: As specified in Section 079200 "Joint Sealants."
- C. Mastic Sealants: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

## 2.7 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with unit skylight installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install unit skylights in accordance with manufacturer's written instructions and approved shop drawings. Coordinate installation of units with installation of substrates, air and vapor retarders, roof insulation, roofing membrane, and flashing as required to ensure that each element of the Work performs properly and that finished installation is weather tight.
  - 1. Anchor unit skylights securely to supporting substrates.
  - 2. Install unit skylights on curbs specified in another section with tops of curbs parallel to finished roof slope.
- B. Where metal surfaces of unit skylights will contact incompatible metal or corrosive substrates, including preservative-treated wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation recommended in writing by unit skylight manufacturer.
- C. For custom flashings, install unit skylight curb counter-flashing to produce weatherproof seal with curb and overlap with roofing system termination at top of curb.

### 3.3 FIELD QUALITY CONTROL

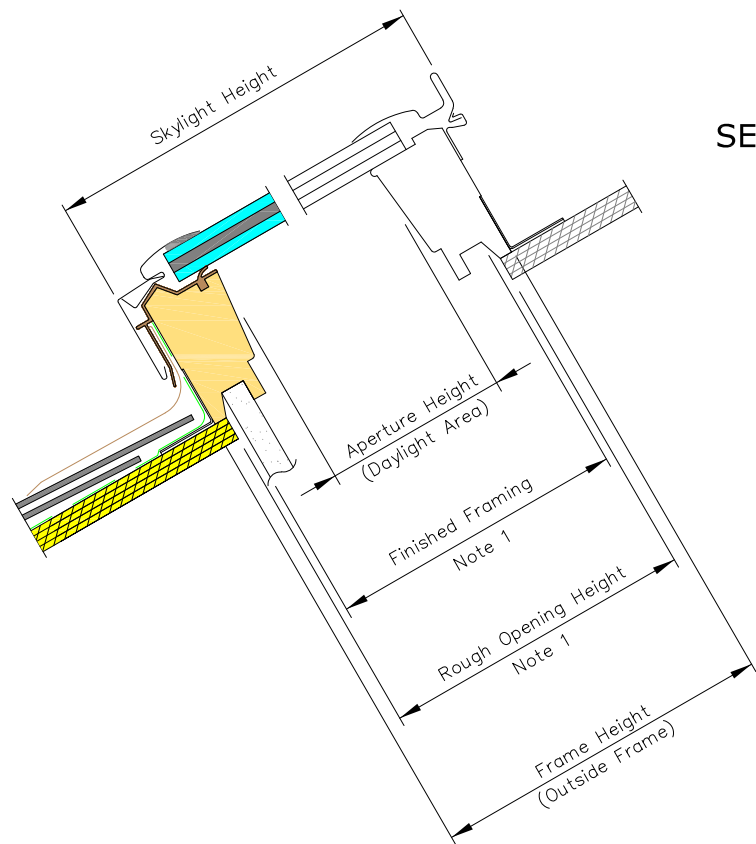
Specifier: Retain option in "Testing Agency" Paragraph below assigning responsibility for testing agency, if required.

- A. Testing Agency: [Owner will engage] [Engage] testing agency to perform tests and inspections.
  - 1. Test for water leaks according to AAMA 501.2 after installation and curing of sealants but prior to installation of interior finishes.
  - 2. Perform test for total area of each unit skylight.
- B. Work will be considered defective if it does not pass tests and inspections.
- C. Additional testing and inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- D. Prepare test and inspection reports.

### 3.4 CLEANING AND PROTECTION

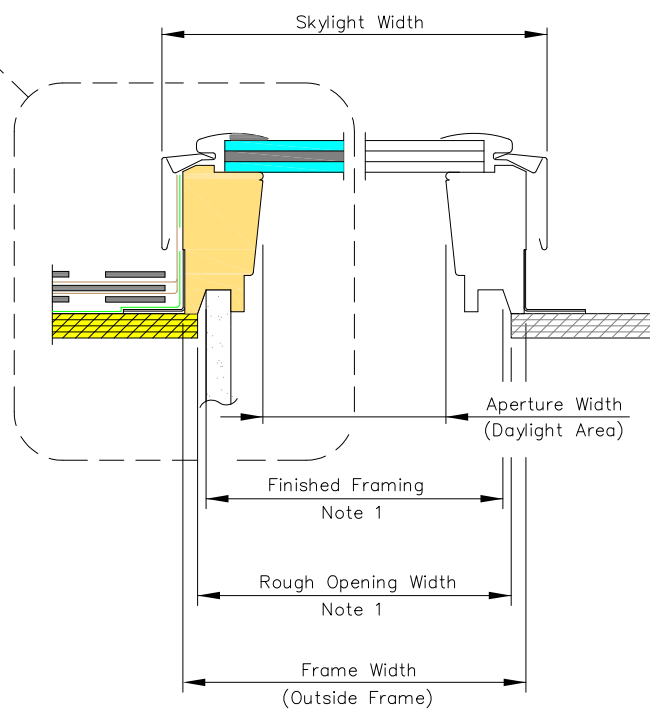
- A. Clean exposed unit skylight surfaces according to manufacturer's written instructions. Touch up damaged metal coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- B. Replace glazing that has been damaged during construction period.
- C. Protect unit skylight surfaces from contact with contaminating substances resulting from construction operations.

END OF SECTION

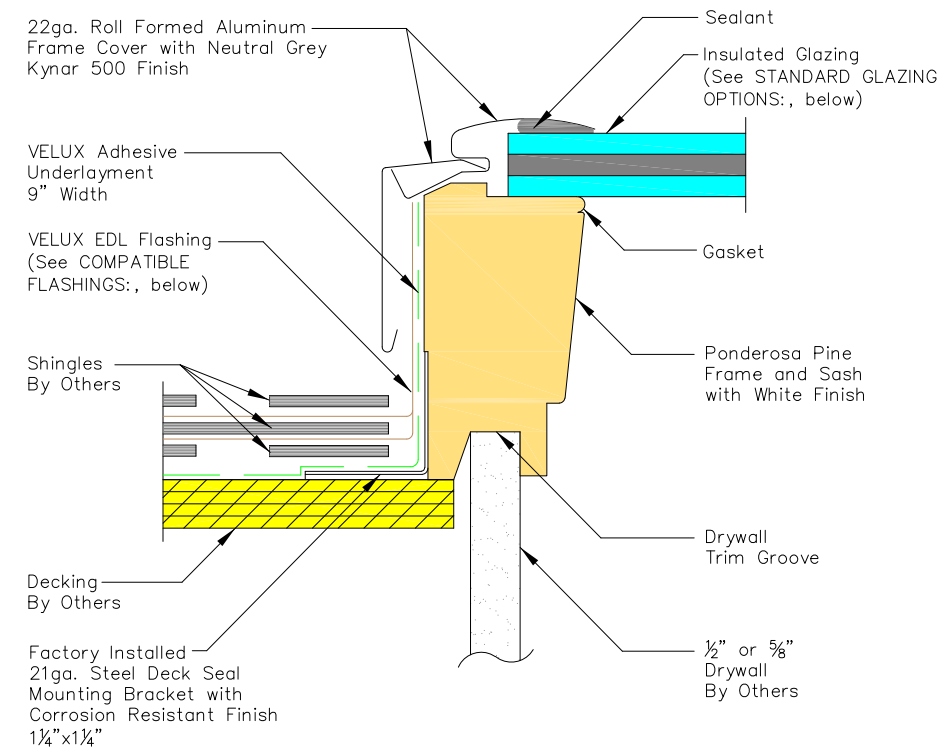


**VERTICAL CROSS SECTION**

SEE DETAIL 1



**HORIZONTAL CROSS SECTION**



**DETAIL 1**

**PRODUCT DIMENSIONS**

**METRIC UNITS (MILLIMETERS)**

Size	Rough Opening Width	Frame Width	Frame Aperture Width	Skylight Width	Rough Opening Height	Frame Height	Frame Aperture Height	Skylight Height	Daylight Area (Sq. Meters)
A06	368	387	303	409	1162	1175	1091	1200	.333
C01	533	546	462	568	682	695	611	720	.282
C04	533	546	462	568	962	975	891	1000	.412
C06	533	546	462	568	1162	1175	1091	1200	.504
C08	533	546	462	568	1382	1395	1311	1420	.606
C12	533	546	462	568	1784	1797	1713	1822	.792
D26*	572	590	506	612	582	599	511	620	.259
D06*	572	590	506	612	1162	1175	1091	1200	.552
M02	763	776	692	798	762	775	691	800	.486
M04	763	776	692	798	962	975	891	1000	.617
M06	763	776	692	798	1162	1175	1091	1200	.754
M08	763	776	692	798	1382	1395	1311	1420	.909
S01	1123	1136	1052	1158	682	695	611	720	.644
S06	1123	1136	1052	1158	1162	1175	1091	1200	1.148

**IMPERIAL UNITS (INCHES)**

Size	Rough Opening Width	Frame Width	Frame Aperture Width	Skylight Width	Rough Opening Height	Frame Height	Frame Aperture	Skylight Height	Daylight Area (Sq. Feet)
A06	14 1/2	15 1/4	11 15/16	16 1/8	45 3/4	46 1/4	42 15/16	47 1/4	3.56
C01	21	21 1/2	18 3/16	22 3/8	26 7/8	27 3/8	24 1/16	28 3/8	3.04
C04	21	21 1/2	18 3/16	22 3/8	37 7/8	38 3/8	35 1/16	39 3/8	4.43
C06	21	21 1/2	18 3/16	22 3/8	45 3/4	46 1/4	42 15/16	47 1/4	5.43
C08	21	21 1/2	18 3/16	22 3/8	54 7/16	54 15/16	51 5/8	55 15/16	6.52
C12	21	21 1/2	18 3/16	22 3/8	70 1/4	70 3/4	67 7/16	71 3/4	8.52
D26*	22 1/2	23 1/4	19 15/16	24 1/16	22 15/16	23 7/16	20 1/8	24 7/16	2.78
D06*	22 1/2	23 1/4	19 15/16	24 1/16	45 3/4	46 1/4	42 15/16	47 1/4	5.94
M02	30 1/16	30 9/16	27 1/4	31 7/16	30	30 1/2	27 3/16	31 1/2	5.15
M04	30 1/16	30 9/16	27 1/4	31 7/16	37 7/8	38 3/8	35 1/16	39 3/8	6.64
M06	30 1/16	30 9/16	27 1/4	31 7/16	45 3/4	46 1/4	42 15/16	47 1/4	8.13
M08	30 1/16	30 9/16	27 1/4	31 7/16	54 7/16	54 15/16	51 5/8	55 15/16	9.77
S01	44 1/4	44 3/4	41 7/16	45 9/16	26 7/8	27 3/8	24 1/16	28 3/8	6.92
S06	44 1/4	44 3/4	41 7/16	45 9/16	45 3/4	46 1/4	42 15/16	47 1/4	12.36

**STANDARD GLAZING OPTIONS:**

- Laminated LowE3 (04)
- Tempered LowE3 (05)
- Impact (06)
- Snowload (10)

\*Tempered Exterior Pane used with all options

**COMPATIBLE FLASHINGS:**

- EDL Step flashing
- EKL/EKX Combi flashing
- EDW Tile flashing
- EKW/EKX Combi tile flashing
- EDM Metal roof flashing
- ECB Counter flashing for curbs

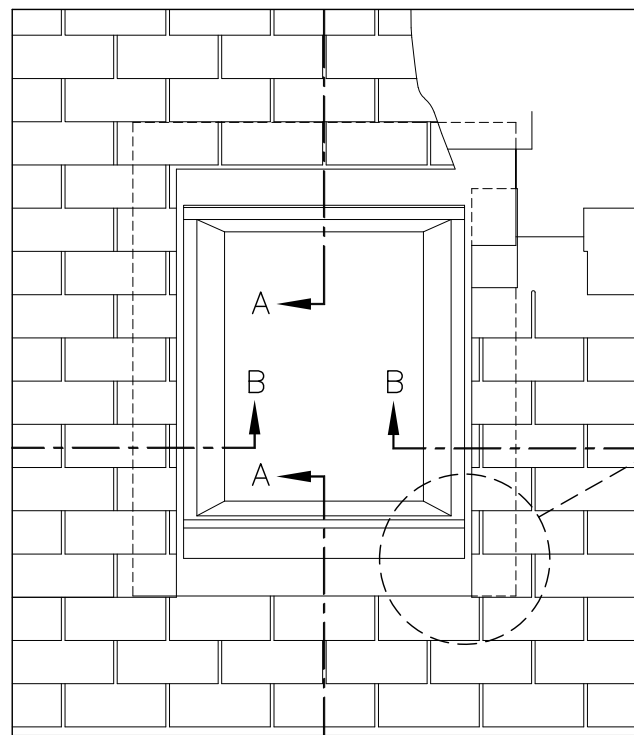
\* BUILDER SERIES SKYLIGHT

**NOTES:**  
1. The ROUGH OPENING and FINISHED FRAMING dimensions are based on perpendicular interior finish material on all four sides and these dimensions will vary depending on the roof construction, the thickness and the design of the interior finish material.

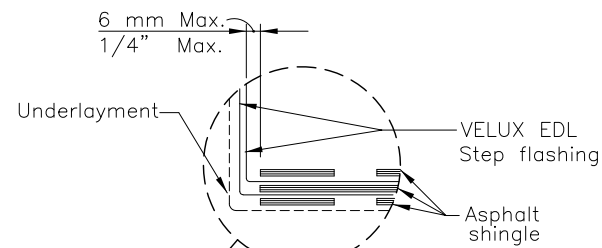
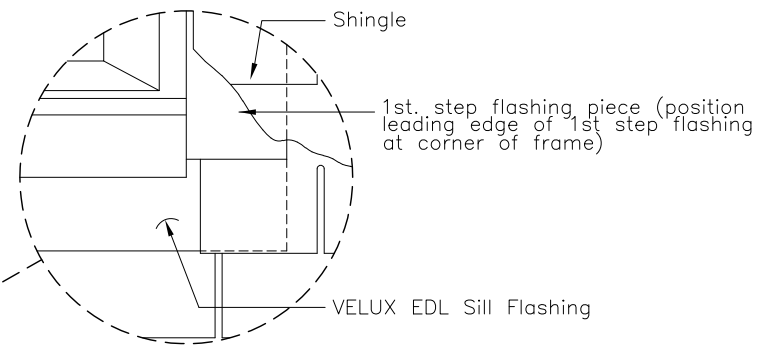


VELUX  
1418 Evans Pond Road  
Greenwood, SC 29649  
1-800-88-VELUX  
www.VELUXUSA.com

**FS - Fixed Skylight**



ELEVATION



BASIS OF DESIGN:  
VELUX FS  
Fixed skylight

Mounting bracket  
Attach to roof deck  
with nails furnished  
with skylight.

Sheathing

Tight joint  
between finish  
groove and  
finish material.

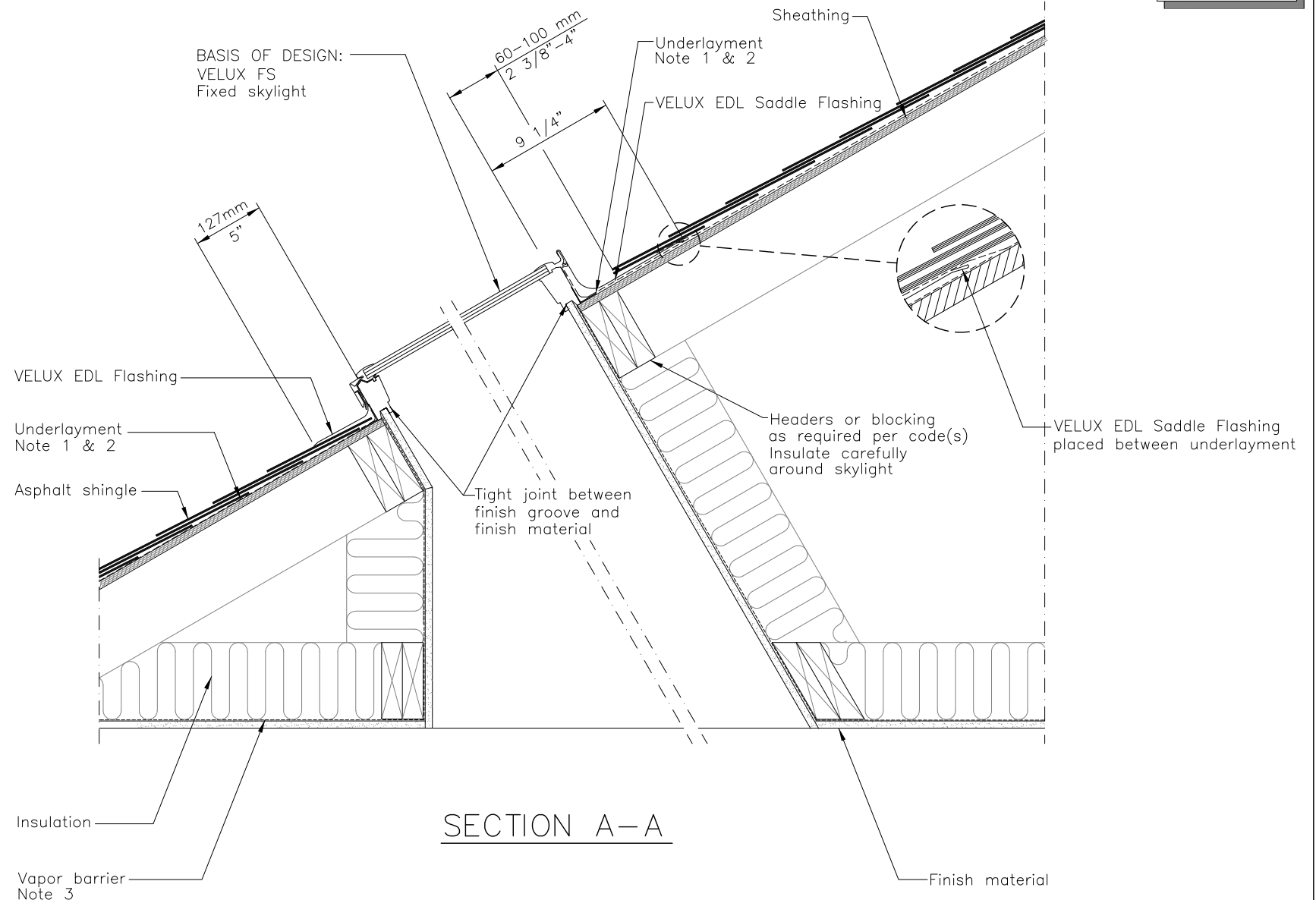
Insulation

Vapor barrier  
Note 3

Finish material

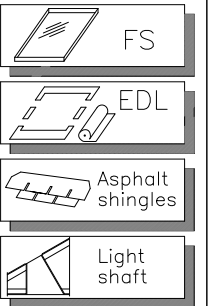
SECTION B-B

Blocking as required  
per code(s).  
Insulate carefully  
around shaft



SECTION A-A

1. Wrap frame in ZOZ 216 adhesive underlayment included with VELUX flashing.
2. Underlayment to be folded up against all sides of skylight.
3. Vapor barrier should be used to avoid moisture.



	VELUX 1418 Evans Pond Road Greenwood, SC 29649 1-800-88-VELUX www.VELUXUSA.com	Name JDH	Date July 2020
	Sky-Product Management	Checked by WQ	July 2020
FS-Residential/Commercial Roof Section (Light Shaft and Asphalt Shingles)		Drawing No. FS-01-0720	

This drawing is an instrument of service and is provided for informational use only.

**VELUX America Inc.**  
SPECIFICATION FOR MODEL FS  
"NO LEAK" FIXED SKYLIGHT

SECTION 08620  
UNIT SKYLIGHTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance and product component information for VELUX® FS fixed deck mount skylight.
- B. VELUX Skylight Adhesive Underlayment provided with flashing kits.
- C. Engineered flashings [EDL for shingle and thin roofing materials] [EDM for metal roofing materials like standing seam] [EDW for tile or thick roofing material] [EKL for stacking skylight side by side and over and under with thin roofing materials] [EKW for stacking skylights side by side and over and under with thick or high profile roofing materials]

1.02 REFERENCE STANDARDS

- A. ASTM E 283 – *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specific Pressure Differences Across the specimen.*
- B. ASTM E 330 – *Standard Test Method for Structural Performance of Exterior Windows, and Doors Skylights and Curtain Walls by Uniform Static Air Pressure Difference.*
- C. ASTM E 331 – *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.*
- D. ASTM E 1886 – *Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.*
- E. ASTM E 1996 – *Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.*
- F. National Fenestration Rating Council, NFRC 100, *Procedure for Determining Fenestration Product U-factors.*
- G. National Fenestration Rating Council, NFRC 200, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.*

- H. National Fenestration Rating Council, NFRC 300, *Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems*.
- I. Occupational Safety & Health Administration, OSHA Standards – 29 CFR 1910.23, *Guarding Floor Openings and Holes*.

### 1.03 SYSTEM DESCRIPTION

- A. Skylight: Fixed deck mounted skylight consisting of the following main integrated components – an interior condensation drainage gasket, pre-finished white wooden frame [Special order stain grade wooden frame available on request], exterior maintenance-free [aluminum] [copper] cladding/counter flashing, ASA corner keys, and an insulating thermal pane glass unit with two seals, warm edge spacer system, three coats of LoE<sup>3</sup> silver to increase visible light transmittance while reducing solar heat, and a continuous deck seal mounting system with durable foam seal.
- B. Configuration: Fixed unit, engineered deck seal mounting system with durable foam seal to seal the skylight to the roof deck. Pre-installed accessory mounting brackets.
- C. Condensation Control: Integral internal condensation collection system and drainage slots.
- D. Accessories available but sold separately.
  - a. Room darkening double pleated [solar powered] [manually operated] blinds.
  - b. Light filtering single pleated [solar powered] [manually operated] blinds.
  - c. Manually operated venetian blinds.
- E. Power supplies and electric controls are available but sold separately.
  - a. KLR 200 radio frequency remote control pad.
  - b. KLC 500 accessory power supply (controls up to five accessories).
  - c. KLI 110 wall mounted keypad



#### 1.04 PERFORMANCE REQUIREMENTS

- A. The FS deck mount skylight is independently tested in accordance with listed standards for compliance with the unit skylight provisions of the 2003, 2006 and 2009 IBC, IECC, and IRC as follows:
- a. AAMA/WDMA/CSA 101/I.S.2/A440-08 (NAFS – 08) and/or  
AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS – 11)
- Performance Grades must be greater than or equal to:
- i. Downward design pressure = 150 psf
  - ii. Uplift Design Pressure = 40 psf
- B. Air leakage: Maximum of 0.4 l/s/m<sup>2</sup> (0.08 CFM/ft<sup>2</sup>) of total unit area, measured at a pressure of 75 Pa (1.57 psf) in accordance with ASTM E 283, per the NAFS standards in (A).
- C. Water infiltration: No water penetration noted as measured in accordance with ASTM E 331 with a test pressure differential of 720 Pa (15.0 psf). Exceeds requirements of NAFS standards in (A).
- D. Thermal Performance: U-factor = 0.45 Btu/hr\*ft<sup>2</sup>\*F° or less, SHGC = 0.26 or less and [Vt = 0.52 or greater (clear)] or [Vt = 0.39 or greater (white)]. Tested and certified in accordance with NFRC 100 and 200 procedures. Applicable to aluminum and copper clad models. 2010 ENERGY STAR qualified in all U.S. zones. Applicable to aluminum and copper-clad models.
- E. FS skylights with impact glazing (06): Tested and certified in accordance with ASTM E 1886 and ASTM E 1996, Rated for Wind Zone 3, Missile Level C, Cycle Pressure +50 / -50.
- F. Limit member deflection to flexure limit of glass with full recovery of glazing materials.
- G. System accommodates, without damage to components or deterioration of seals, movement between frame and perimeter components.

## 1.05 SUBMITTALS

- A. Product Data: Manufacturer's installation details and product data sheets include:
  - a. Preparation details and installation instructions
  - b. Product Data sheets with storage and handling information
  - c. Architectural roof sectional drawings can be found at [www.VELUXusa.com](http://www.VELUXusa.com).
  - d. Code compliance information can be found within the specification, or by contacting VELUX at 800-888-3589 or by visiting [www.VELUXusa.com](http://www.VELUXusa.com)
- B. Architectural/Cross Sectional Drawings
  - a. Mounting details
  - b. Frame sizes
  - c. Flashing details
- C. Shop Drawings
  - a. Indicate material types, gauge, finishes, and installation details
- D. Maintenance Data: For unit skylights (unit skylight flashing system), (sunscreening accessories) to be included in maintenance manuals.
- E. Warranty: Sample of warranty or special warranty.

## 1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
  - a. Skylight manufacturer shall have a minimum of ten years experience in design and fabrication of deck mount glass skylights.
  - b. Skylights shall be manufactured to the highest standards of quality and craftsmanship in ISO 9001 and ISO 14001-certified facilities.
  - c. Flashings shall be engineered and manufactured to match up with the roofing material and skylight.

- d. Skylight installed with three layers of protection; deck seal mounting system, adhesive underlayment wrapped round the skylight frame and onto the roof deck, and engineered flashing, carries a "No Leak" installation warranty.
- B. Source Limitations: Obtain unit skylights, flashings, and accessories from a single source and from a single manufacturer.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency and marked for intended location and application.
- D. Unit Skylight Standard: Comply with AAMA/WDMA 101/I.S.2./NAFS, *North American Fenestration Standard Voluntary Performance specifications for Windows, Skylights and Glass Doors*, and all later editions, for minimum standards of performance, materials, components, accessories, and fabrication. Comply with more stringent requirements if indicated.
  - a. Provide third-party certified unit skylight with attached label.
- E. Thermal Performance – rated per applicable NFRC procedures.
  - a. Provide NFRC–certified unit skylight ratings on an attached label.
  - b. Qualify under ENERGY STAR® criteria in all 50 states and attach verifying label.

#### 1.07 COORDINATION

- A. Coordinate unit skylight installation requirements with roofing system.
- B. Coordinate size and locations of site built curbs with ECB flashing for actual unit skylight if the slope of the roof is less than 14 degrees.
- C. Pre-installation conference: conduct conference at (project site).

#### 1.08 WARRANTY

- A. Standard VELUX product warranty, as specified in VELUX Warranty, publication XUS 20194.
- B. 10-year "NO LEAK" installation warranty. (Ref. 1.06(d))

## 1.09 DELIVERY, HANDLING, STORAGE

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact.
- B. Store and protect products in accordance with manufacturer's recommendations.

## PART 2 PRODUCTS

### 2.01 MANUFACTURER

- A. Acceptable Manufacturer: VELUX America Inc., P.O. Box 5001, Greenwood, SC 29648; Toll Free Tel: 800-888-3589; Fax: 865-388-1329; Web: [www.VELUXusa.com](http://www.VELUXusa.com)
- B. Substitutions: Not permitted

### 2.02 MATERIALS

- A. Wood: Kiln-dried, laminated Ponderosa Pine and Eastern White Pine pre-finished white. Wood shall be Forest Stewardship Council (FSC) certified or have an FSC certified chain of custody certification.
- B. Maintenance free exterior cladding: [Roll formed 0.65 mm aluminum frame coverings,] [0.55 mm copper frame coverings,] prefinished, production engineered, and fabricated to fit exterior exposed surfaces (Alloy AA 3003 H12 and AA 3003 H16).
- C. Dual sealed Glazing
  - a. Dual sealed thermal pane with warm edge technology, 95% argon gas fill, and with three layers of LoE<sup>3</sup> silver that increases visible light over standard low-e coatings while lowering the solar heat gain. The following glazing options are available:
    - i. 04 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over a laminated heat strengthened interior pane with 0.030" interlayer.
    - ii. 05 – Tempered LoE<sup>3</sup> pane over tempered interior pane.
    - iii. 06 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over laminated heat strengthened interior pane with 0.090" interlayer.
    - iv. 08 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over a white laminated heat strengthened interior pane with 0.030" interlayer.
    - v. 10 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over a laminated tempered interior pane with 0.030" interlayer to achieve higher snow load ratings.

- D. Sunscreening Control Accessories
  - a. Manual control rods and extension poles available or manual operated sunscreening accessories.
  - b. Battery operated control rod for sunscreening accessories.
- E. Field Fasteners: 1-1/4 inch ring shank nails provided for attaching deck seal mounting flange to roof decking. Ring shank nails are double hot dipped zinc coated.
- F. Weather stripping: Factory applied neoprene and thermoplastic elastomeric weather stripping throughout entire frame, profiled to effect weather seal.
- G. Mounting System: Continuous corrosion resistant mounting system with a durable foam seal and rough opening alignment notches.

### 2.03 FLASHING OPTIONS

- A. Type EDL Flashing is a prefabricated step flashing system designed for use with roofing materials less than 1/2" thick and for slopes of 14 degrees to 85 degrees.
- B. Type EDW Flashing is a prefabricated gutter flashing system designed for use with roofing material greater than 3/4" thick, or high profile material, and for roof slopes of 14 degrees to 85 degrees. Sill flashing section consists of corrugated apron to allow form fit of high profile material.
- C. Type EDM Flashing is a prefabricated flashing system designed for use with metal roofing materials and for roof slopes of 14 degrees to 85 degrees. Sill flashing section consists of corrugated apron to allow form fit of roofing material profile.
- D. Type ECB Counter Flashing is a flashing systems designed for use on site-fabricated curbs with deck mounted skylights on low-pitched roof slopes of 0 degrees to 14 degrees. ECB counter flashing should be used with membrane roofing.
- E. Type EKL gang flashing system for use with roofing materials less than 5/16" thick and for slopes of 14 degrees to 85 degrees.
- F. Type EKW gang flashing system for use with roofing material greater than 3/4" thick, or high profile material, and for roof slopes of 14 degrees to 85 degrees. Sill flashing section consists of corrugated apron to allow form fit of high profile material.

## 2.04 FABRICATION

- A. Fabricate frame with slip mortise and tendon corners that are glued and nailed for strength and stability.
- B. Fabricate frame components with precision tolerances enabling installation and movement of sash and dynamic movement of perimeter weather stripping.
- C. Provide permanent external drainage channels to manage water flow and drain to the exterior. Provide internal drainage of glazing spaces to exterior through gasketing.
- D. All units factory glazed with hot melt silicone-based exterior seal.
- E. No site fabrication needed.
- F. Rough opening to be framed per manufacturer's listed dimensions.

## 2.05 FINISHES

- A. Exterior surfaces: Exposed exterior wood surfaces to be covered with roll formed maintenance-free [aluminum] [copper as a special made to order] cladding pieces. [Aluminum has a neutral gray, Kynar® 500 polyvinylidene fluoride resin finish.] [Copper is roll-formed, mill finish.]
- B. Maintenance-free flashing: Roll formed aluminum, neutral gray, baked on polyester polyamid primer and finish coats. Copper is roll-formed, mill finish.
- C. Interior surface: Exposed interior wood surfaces to be prefinished white with factory applied finish.]

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify rough opening dimension and squareness, proper orientation of skylight, proper roof pitch, and flashing.

### 3.02 INSTALLATION

- A. Install skylight in accordance with manufacturer's installation instructions and local code requirements.

- B. Use the alignment notches on the deck seal mounting system to align skylight flush with the rough opening, free of warp or twist; maintain dimensional tolerances.
- C. Attach and seal the skylight to roof sheathing by nailing through the predrilled holes in the deck seal mounting system. One fastener required in each predrilled hole.
- D. Apply one layer of VELUX skylight adhesive underlayment around the perimeter of the skylight frame.
- E. Install the manufacturer's engineered perimeter flashing in accordance with manufacturer's installation instruction to achieve a weather tight installation.
- F. Install sun screening products and electrical controls.
- G. Provide thermal isolation when components penetrate or disrupt building insulation. Pack fibrous insulation in rough opening to maintain continuity of thermal barriers.

### 3.03 CLEANING

- A. Clean exposed skylight according to manufacturer's written instructions. Touch up damage to metal coatings and finishes.
- B. Remove excess sealants, dirt, and other substances.
- C. Remove and replace glazing that has been broken, chipped, cracked, abraded or damaged during the construction process.
- D. During the construction process, protect the skylight surfaces from contact with contaminants.

### 3.04 FIELD QUALITY CONTROL

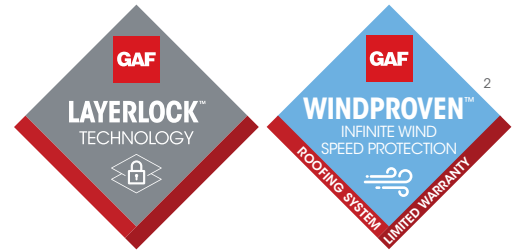
- A. Install skylight, adhesive skylight underlayment, and flashing in accordance with manufacturer's installation instructions.



## America's #1-selling shingle just got better!

The same shingle you know and love, now with LayerLock™ Technology which powers the industry's widest nailing area.





# Timberline® HDZ™ Shingles

## Benefits:

- **LayerLock™ Technology** — Proprietary technology mechanically fuses the common bond between overlapping shingle layers.
- **Up to 99.9% nailing accuracy** — The StrikeZone™ nailing area is so easy to hit that a roofer placed 999 out of 1,000 nails correctly in our test.<sup>1</sup>
- **WindProven™ Limited Wind Warranty** — When installed with the required combination of GAF Accessories, Timberline® HDZ™ Shingles are eligible for an industry first: a wind warranty with no maximum wind speed limitation.<sup>2</sup>
- Our legendary **Dura Grip™** sealant pairs with the smooth microgranule surface of the StrikeZone™ nailing area for fast tack. Then, an asphalt-to-asphalt monolithic bond cures for durability, strength, and exceptional wind uplift performance.
- **StainGuard® Algae Protection** — Helps protect the beauty of your roof against unsightly blue-green algae discoloration.<sup>3</sup>
- **High Performance** — Designed with Advanced Protection® Shingle Technology.
- **Seamless compatibility** — The new Timberline® HDZ™ Shingles are compatible with traditional Timberline HD® Shingles for the same look and feel homeowners and contractors rely on for beauty and endurance.<sup>4</sup>
- **Perfect Finishing Touch** — For the best look, use TimberTex® Premium Ridge Cap Shingles or TimberCrest™ Premium SBS-Modified Ridge Cap Shingles.

## Product details:

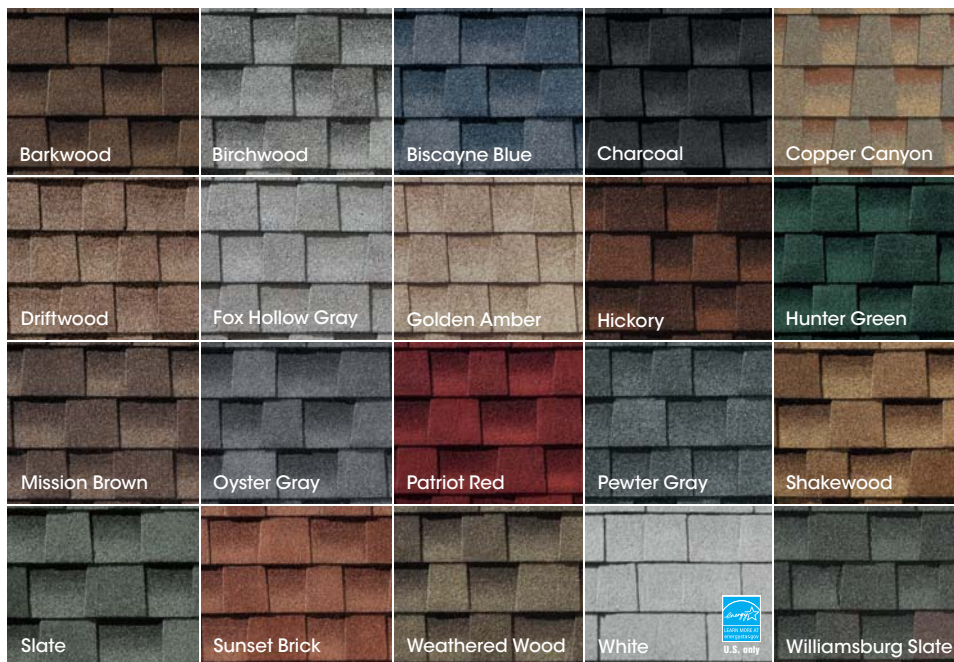
### Product/System Specifics

- Fiberglass asphalt construction
- Dimensions (approx.): 13 1/4" x 39 3/8" (337 x 1,000 mm)
- Exposure: 5 5/8" (143 mm)
- Bundles/Square: 3
- Pieces/Square: 64
- StainGuard® Algae Protection<sup>3</sup>
- Hip/Ridge: TimberTex®; TimberCrest™; Seal-A-Ridge®; Z®Ridge; Ridglass®
- Starter: Pro-Start®; QuickStart®; WeatherBlocker™

### Applicable Standards & Protocols:

- UL Listed to ANSI/UL 790 Class A
- State of Florida approved
- Classified by UL in accordance with ICC-ES AC438
- Meets ASTM D7158, Class H
- Meets ASTM D3161, Class F
- Meets ASTM D3018, Type 1
- Meets ASTM D3462<sup>5</sup>
- ICC-ES Evaluation Reports ESR-1475 and ESR-3267
- Meets Texas Department of Insurance Requirements
- ENERGY STAR® Certified (White Only) (U.S. Only); Rated by the CRRC; Can be used to comply with Title 24 cool roof requirements

## Colors & Availability:



<sup>1</sup> Results based on study conducted by Home Innovation Research Labs, an independent research lab, comparing installation of Timberline HD® Shingles to Timberline® HDZ™ Shingles on a 16-square roof deck using standard 4-nail nailing pattern under controlled laboratory conditions. Actual results may vary.

<sup>2</sup> 15-year WindProven™ limited wind warranty on Timberline® HDZ™ Shingles requires the use of GAF starter strips, roof deck protection, ridge cap shingles, and leak barrier or attic ventilation. See *GAF Roofing System Limited Warranty* for complete coverage and restrictions. Visit [gaf.com/LRS](http://gaf.com/LRS) for qualifying GAF products.

<sup>3</sup> StainGuard® algae protection is available only on shingles sold in packages bearing the StainGuard® logo. Products with StainGuard® algae protection are covered by a 10-year limited warranty against blue-green algae discoloration. See *GAF Shingle & Accessory Limited Warranty* for complete coverage and restrictions.

<sup>4</sup> To be mixed on one roof, Timberline® HDZ™ Shingles and Timberline HD® Shingles must have matching 6-digit codes found on the end of the bundle. When mixed, always use Timberline HD® installation instructions.

<sup>5</sup> Periodically tested by independent and internal labs to ensure compliance with ASTM D3462 at time of manufacture.

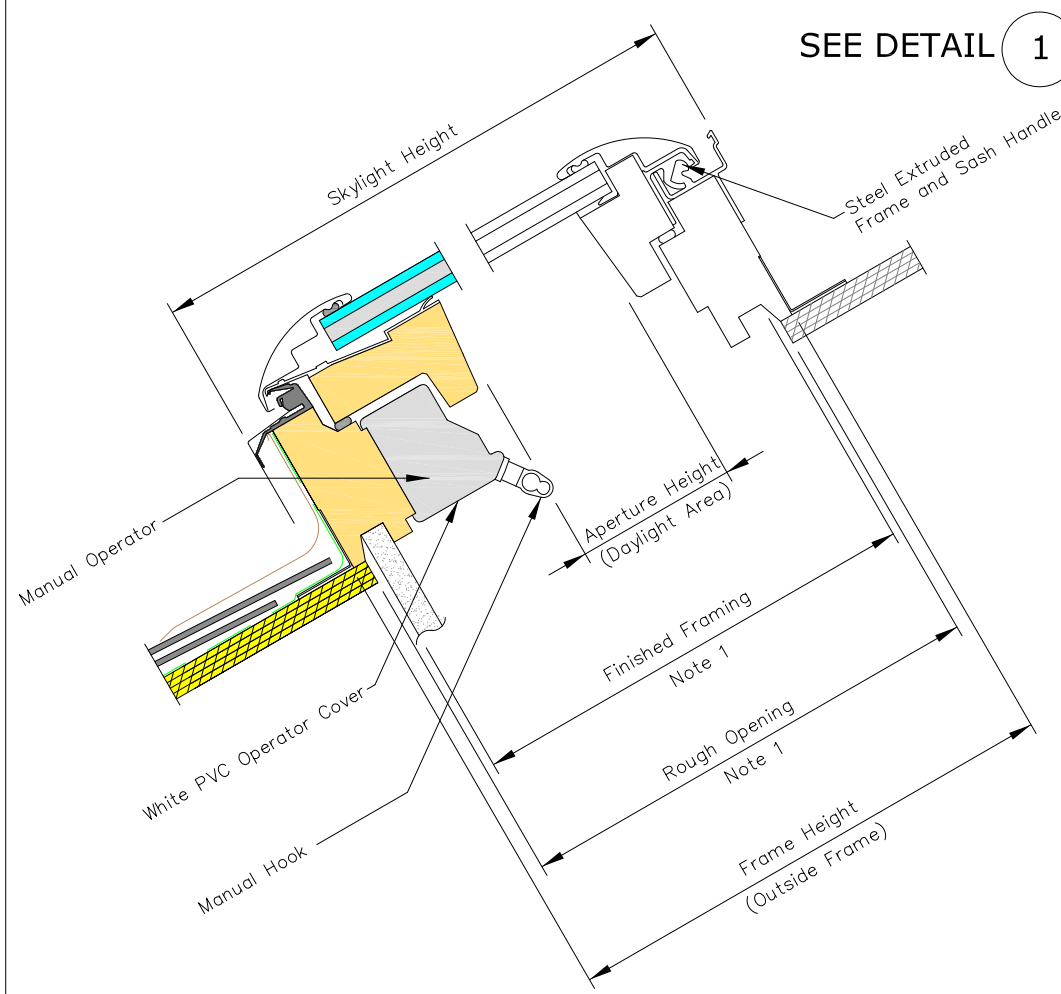
<sup>6</sup> Lifetime refers to the length of warranty coverage provided and means as long as the original individual owner(s) of a single-family detached residence [or eligible second owner(s)] owns the property where the qualifying GAF products are installed. For other owners/structures, Lifetime coverage is not applicable. Lifetime coverage on shingles requires use of GAF Lifetime shingles only. See *GAF Shingle & Accessory Limited Warranty* for complete coverage and restrictions. Lifetime coverage on shingles and accessories requires use of any GAF Lifetime Shingle and any 3 qualifying GAF accessories. See *GAF Roofing System Limited Warranty* for complete coverage and restrictions. Visit [gaf.com/LRS](http://gaf.com/LRS) for qualifying GAF products.

Note: It is difficult to reproduce the color clarity and actual color blends of these products. Before selecting your color, please ask to see several full-size shingles.

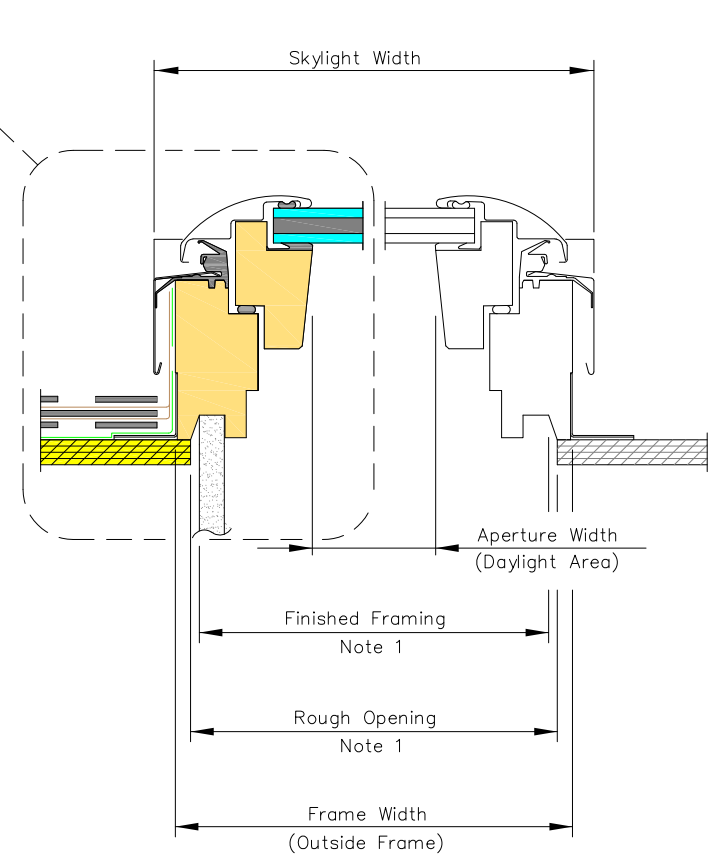


We protect what matters most™

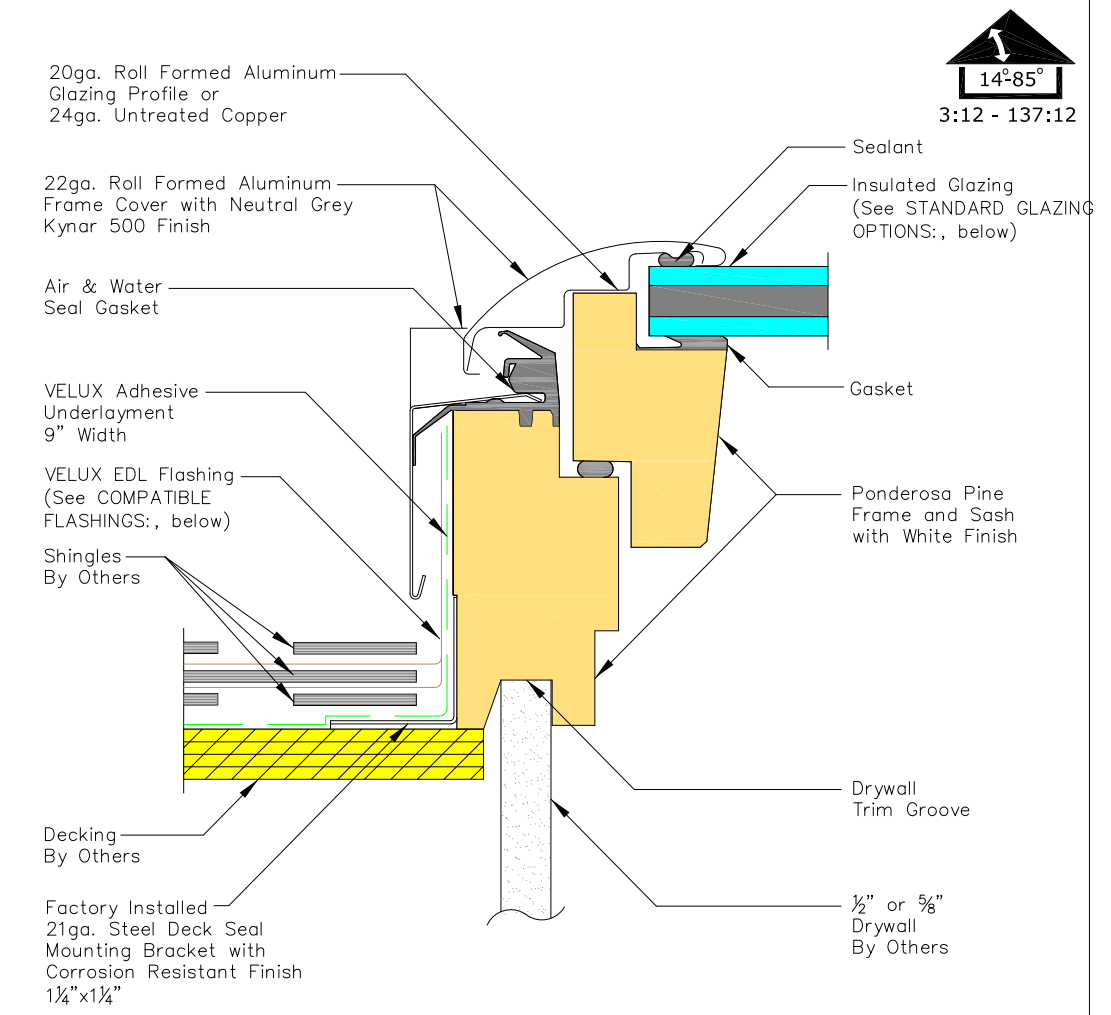




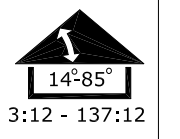
**VERTICAL CROSS SECTION**



**HORIZONTAL CROSS SECTION**



**DETAIL 1**



METRIC UNITS (MILLIMETERS)										IMPERIAL UNITS (INCHES)									
Size	Rough Opening Width	Frame Width	Frame Aperture Width	Skylight Width	Rough Opening Height	Frame Height	Frame Aperture Height	Skylight Height	Daylight Area (Sq. Meters)	Size	Rough Opening Width	Frame Width	Frame Aperture Width	Skylight Width	Rough Opening Height	Frame Height	Frame Aperture Height	Skylight Height	Daylight Area (Sq. Feet)
C01	533	546	407	566.7	682	695	519	720	.21	C01	21	21 1/2	16	22 5/16	26 7/8	27 3/8	20 7/16	28 3/8	2.27
C04	533	546	407	566.7	962	975	799	1000	.33	C04	21	21 1/2	16	22 5/16	37 7/8	38 3/8	31 7/16	39 3/8	3.50
C06	533	546	407	566.7	1162	1175	999	1200	.41	C06	21	21 1/2	16	22 5/16	45 3/4	46 1/4	39 5/16	47 1/4	4.38
C08	533	546	407	566.7	1382	1395	1219	1420	.50	C08	21	21 1/2	16	22 5/16	54 7/16	54 15/16	48	55 15/16	5.34
M02	763	776	637	796.7	762	775	599	763	.38	M02	30 1/16	30 9/16	25	31 3/8	30	30 1/2	23 9/16	30	4.11
M04	763	776	637	796.7	962	975	799	1000	.51	M04	30 1/16	30 9/16	25	31 3/8	37 7/8	38 3/8	31 7/16	39 3/8	5.48
M06	763	776	637	796.7	1162	1175	999	1200	.64	M06	30 1/16	30 9/16	25	31 3/8	45 3/4	46 1/4	39 5/16	47 1/4	6.86
M08	763	776	637	796.7	1382	1395	1219	1420	.78	M08	30 1/16	30 9/16	25	31 3/8	54 7/16	54 15/16	48	55 15/16	8.36
S01	1123	1136	997	1156.7	682	695	519	720	.52	S01	44 1/4	44 3/4	39 1/4	45 9/16	26 7/8	27 3/8	20 7/16	28 3/8	5.57
S06	1123	1136	997	1156.7	1162	1175	999	1200	1.0	S06	44 1/4	44 3/4	39 1/4	45 9/16	45 3/4	46 1/4	39 5/16	47 1/4	10.73

- STANDARD GLAZING OPTIONS:**
- Laminated LowE3 (04)
  - Tempered LowE3 (05)
  - Impact (06)
  - Snowload (10)
- \*Tempered Exterior Pane used with all options

- COMPATIBLE FLASHINGS:**
- EDL Step flashing
  - EKL/EKX Combi flashing
  - EDW Tile flashing
  - EKW/EKX Combi tile flashing
  - EDM Metal roof flashing
  - ECB Counter flashing for curbs

**NOTES:**

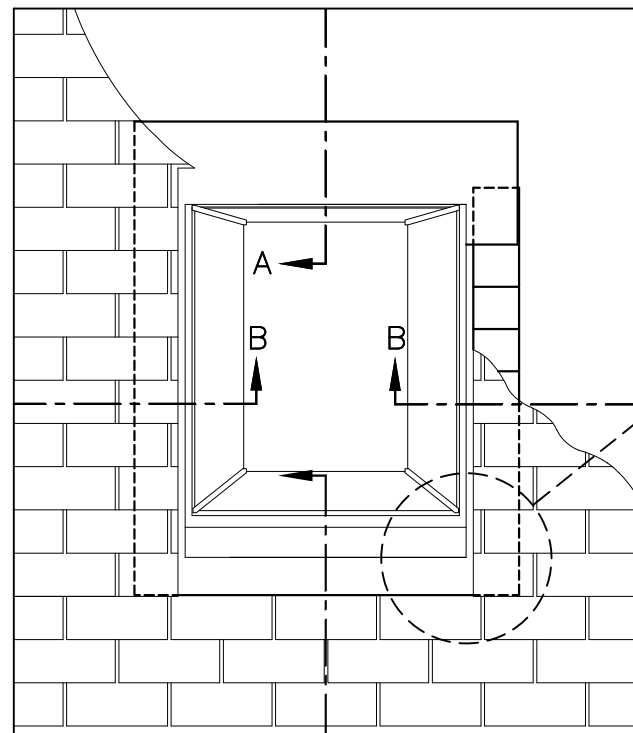
- The ROUGH OPENING and FINISHED FRAMING dimensions are based on perpendicular interior finish material on all four sides and these dimensions will vary depending on the roof construction, the thickness and the design of the interior finish material.
- Max sash opening is 11" by stainless steel chain.

Sky-Global Product Management

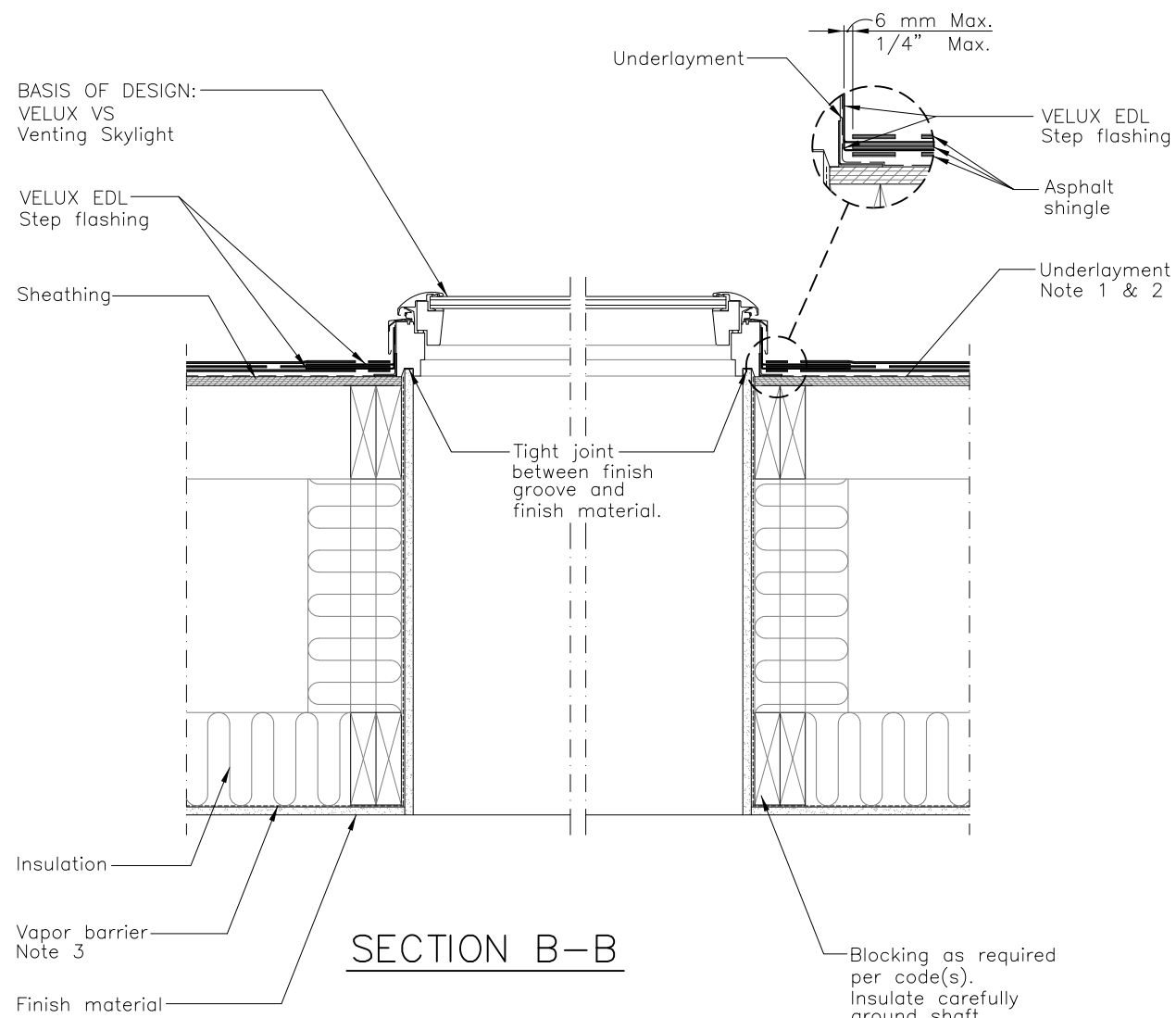
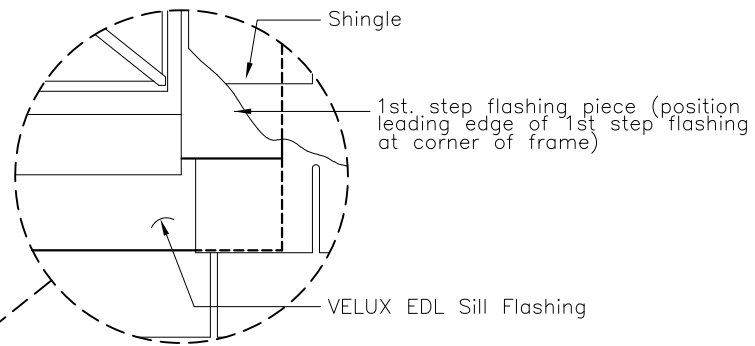
VELUX  
1418 Evans Pond Road  
Greenwood, SC 29649  
1-800-88-VELUX  
www.VELUXUSA.com

VS - Manual Venting Skylight

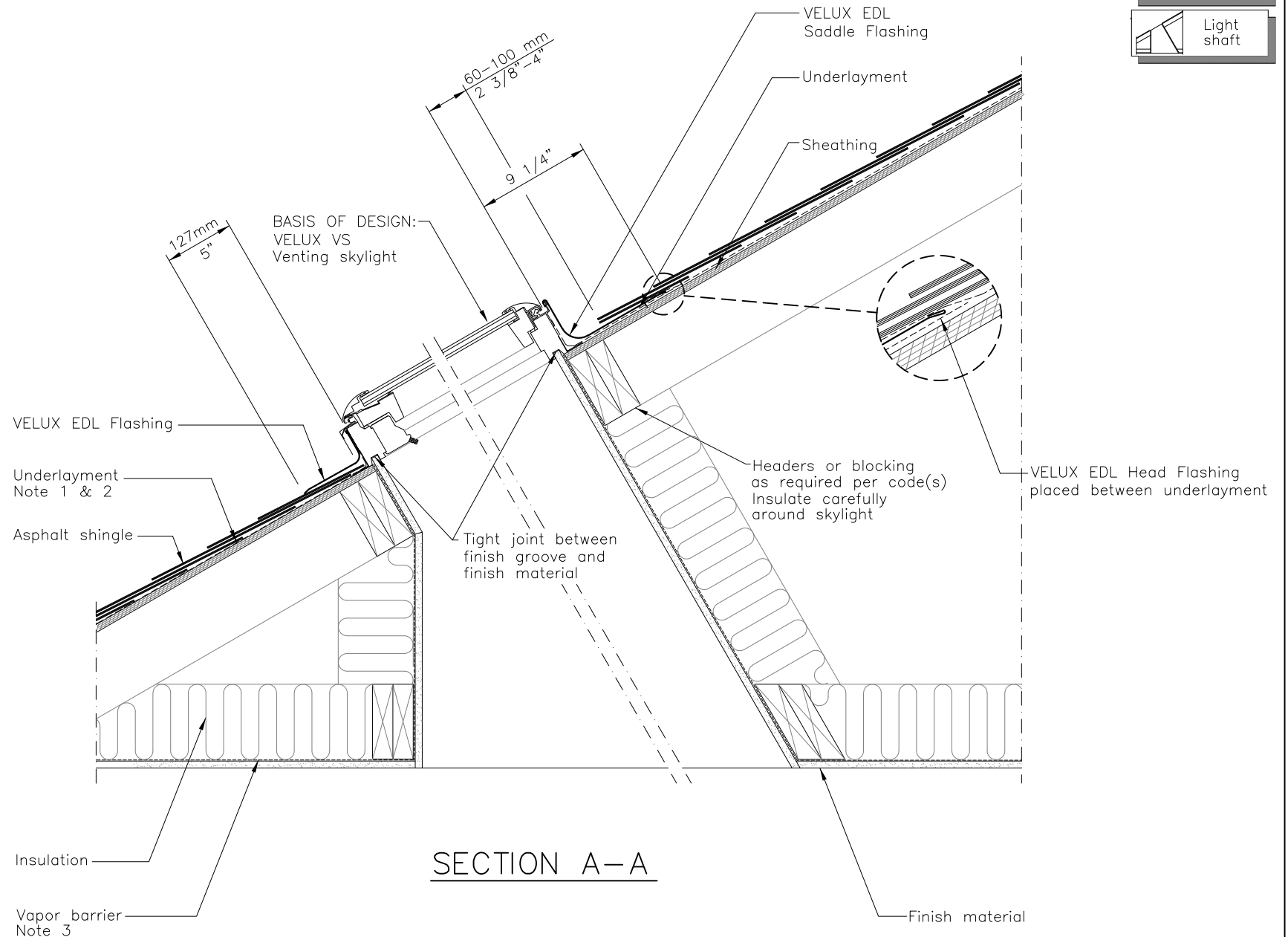
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ELEVATION



SECTION B-B



SECTION A-A

	VS
	EDL
	Asphalt shingles
	Light shaft

GENERAL NOTES

1. Wrap frame in ZOZ 216 adhesive underlayment included with VELUX flashing.
2. Underlayment to be folded up against all sides of skylight.
3. Vapor barrier should be used to avoid moisture.

 Sky-Product Management	VELUX 1418 Evans Pond Road Greenwood, SC 29649 1-800-88-VELUX www.VELUXUSA.com	<table border="1"> <tr> <td>Name</td> <td>Date</td> </tr> <tr> <td>JDH</td> <td>July 2020</td> </tr> <tr> <td>JL, WQ</td> <td>July 2020</td> </tr> </table>	Name	Date	JDH	July 2020	JL, WQ	July 2020
	Name	Date						
JDH	July 2020							
JL, WQ	July 2020							
VS-Residential/Commercial Roof Section (Light Shaft and Asphalt Shingles)		Drawing No.  VS-02-0720						

This drawing is an instrument of service and is provided for informational use only.

**VELUX America Inc.**  
SPECIFICATION FOR MODEL VS, VSS and VSE  
"NO LEAK" VENTILATING SKYLIGHT

SECTION 08620  
UNIT SKYLIGHTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance and product component information for VELUX top hinged [VS manual deck mount venting skylight] [VSE electric deck mount venting skylight] or [VSS solar deck mount venting skylight]
- B. VELUX Skylight Adhesive Underlayment provided with flashing kits.
- C. Engineered flashings [EDL for shingle and thin roofing materials][ EDM for metal roofing materials like standing seam] [EDW for tile or thick roofing material] [EKL for stacking skylight side by side and over and under with thin roofing materials] [EKW for stacking skylights side by side and over and under with thick roofing materials]

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- F. National Fenestration Rating Council, NFRC 100, *Procedure for Determining Fenestration Product U-factors.*

- G. National Fenestration Rating Council, NFRC 200, *Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*.
- H. National Fenestration Rating Council, NFRC 300, *Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems*.
- I. Occupational Safety & Health Administration, OSHA Standards – 29 CFR 1910.23, *Guarding Floor Openings and Holes*.
- J. Underwriters Laboratories Inc., UL 325, *Standard for Door, Drapery, Gate, Louver and Window Operators and Systems, Fifth Edition*.

### 1.03 SYSTEM DESCRIPTION

- A. Skylight: Top hinged ventilated deck mounted skylight that consists of the following integrated components – an interior condensation drainage gasket, [pre-finished white wooden frame and sash for all sizes] or [Stain grade wooden frame and sash for C06 and M06 sizes], a [manual] or [electric] or [solar] operator, exterior maintenance free [aluminum] or [copper] cladding/counter flashing, ASA corner keys, and an insulating thermal pane glass unit with two panes, warm edge spacer system, three coats of low e silver to increase visible light transmittance while reducing solar heat and a continuous deck seal mounting system with durable foam seal.
- B. Configuration: Outward opening, continuous top hinged, production-installed electric, solar or manual chain operator, engineered deck seal mounting system with durable foam seal to seal the skylight to the roof deck. Pre-installed accessory mounting brackets and pre-wired for VSE electric venting models.
- C. Operation: Sash is operated by either an [electric skylight operator for (VSE)] or [manual skylight operator for (VS)] or [solar skylight operator for (VSS)]
  - a. Electric operator (VSE) 2.4 GHz radio frequency remote control and a chain driven operator. Power requirements 40 watts, 60 Hz, and UL listed.
  - b. Manual skylight (VS) is operated by a manual, gear driven Truth operator.
  - c. Solar operator (VSS) 2.4 GHz radio frequency remote control and a chain driven operator is powered by a solar charged battery operator. Battery pack is a 9 cell Panasonic NiMH 10.8V, 2100 mAh.

- D. Condensation Control: Integral internal condensation collection system and drainage slots.
- E. Accessories available but sold separately
  - a. Room darkening double pleated solar powered blinds.
  - b. Light filtering single pleated solar powered blinds.
  - c. Venetian blinds available in manual operation only for VS
- F. Power supplies and electric controls are available but sold separately.
  - a. KLB 100 Battery backup for VSE
  - b. KLI 110 Wall mounted keypad
  - c. KLR 200 Radio frequency remote control pad
  - d. KLF 100 Home automation integration kit and signal repeater
  - e. ZMT 300 6-10' motorized rod
- G. Manual Controls are available but sold separately.
  - a. ZCT 300 6-10' telescopic rod
  - b. ZCT 100 3' extension to ZCT 300 or ZMT 300
  - c. ZZZ 201 Crank handle
  - d. ZZZ 203 Angle adaptor for chain operator

#### 1.04 PERFORMANCE REQUIREMENTS

- A. The VS, VSS and VSE deck mount skylights independently tested in accordance with listed standards for compliance with the unit skylight provisions of the 2006, 2009 and 2012 IBC, IECC, and IRC. Performance is dependent on skylight size and glazing type. The maximum values have been listed below.
- B.

- a. AAMA/WDMA/CSA 101/I.S.2/A440-08 (NAFS – 08) and/or AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS – 11) performance grades must be greater than or equal to the following listed in i and ii.
  - i. Downward design pressure = 175 psf
  - ii. Uplift Design Pressure = 50 psf
  
- C. Air leakage: Less than or equal to 0.7 l/s/m<sup>2</sup> (0.13 CFM/ft<sup>2</sup>) of total unit area, measured at a pressure of 75 Pa (1.57 psf) as measured in accordance with ASTM E 283, on test sizes listed per the NAFS in (A).
  
- D. Water infiltration: No water penetration noted as measured in accordance with ASTM E 331 with a test pressure differential of 720 Pa (15.0 psf). Exceeds requirements of NAFS standards in (A).
  
- E. Thermal Performance: No greater than U = 0.43 Btu/hr\*<sup>2</sup> \* F°, SHGC = 0.23 and Vt = 0.52 or greater (clear) or Vt = 0.39 (white). Tested and certified in accordance with NFRC 100 and 200 procedures. Meets ENERGY STAR® criteria for all zones.
  
- F. VS, VSS and VSE skylights with impact glazing (06): Tested and certified in accordance with ASTM E 1886 and ASTM E 1996, cycle pressure +/- 50, Missile level C, Wind Zone 3.
  
- G. Limit member deflection to flexure limit of glass with full recovery of glazing materials.
  
- H. System accommodates without damage to components or deterioration of seals, movement between sash and frame and perimeter framing.
  
- I. Weep drainage system designed to channel water entering joints, condensation, or migrating moisture occurring within system to exterior by means of Santoprene® gasket with integrated condensation gasket.
  
- J. Listed Florida product approval number

#### 1.05 SUBMITTALS

- A. Product Data: Manufacturer’s installation details and product data sheets included:
  - a. Preparation details and installation instructions

- b. Product Data sheets with storage and handling information
  - c. Architectural roof sectional drawings can be found at [www.VELUXusa.com](http://www.VELUXusa.com) .
  - d. Code compliance information can be found within these specifications, or by contacting VELUX at 800-888-3589, or by visiting [www.VELUXusa.com](http://www.VELUXusa.com).
- B. Architectural/Cross Sectional Drawings
- a. Mounting details
  - b. Frame sizes
  - c. Flashing details
- C. Shop Drawings
- a. Indicate material types, gauge, finishes, and installation details.
- D. Maintenance data: For unit skylights (unit skylight flashing system) (sunscreening accessories) to include in maintenance manuals.
- E. Warranty: Sample of warranty or special warranty.

## 1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
- a. Skylight manufacturer shall have a minimum of ten years experience in design and fabrication of deck mount glass skylights.
  - b. Skylights shall be manufactured to the highest standards of quality and craftsmanship in ISO 9001 and ISO 14001-certified facilities.
  - c. Flashings shall be engineered and manufactured for the roofing material and skylight.
  - d. Skylight installed with three layers of protection: Deck seal mounting system, adhesive underlayment wrapped round the skylight frame and onto the roof deck, and engineered flashings, carries a “No Leak” installation warranty.
- B. Source Limitations: Obtain unit skylights, flashings, and accessories from single source and from a single manufacturer.



- C. Electrical Components, Devices, and Accessories: Listed and Labeled as defined in NFPA 70, by a qualified testing agency and marked for intended location and application.
- D. Unit Skylight Standard: Comply with AAMA/WDMA 101/I.S.2./NAFS, *North American Fenestration Standard Voluntary Performance specifications for Windows, Skylights and Glass Doors*, and all later editions for minimum standards of performance, materials, components, accessories, and fabrication. Comply with more stringent requirements if indicated.
  - a. Provide WDMA Hallmark certified unit skylight with an attached label.
- E. Thermal Performance – rated per applicable NFRC procedures.
  - a. Provide NFRC certified unit skylight ratings on an attached label.
  - b. Qualify under Energy Star criteria in all 50 states and attach verifying label.

#### 1.07 COORDINATION

- A. Coordinate unit skylight flashing requirements with roofing system.
- B. Coordinate size and locations of site built curbs with ECB flashing for actual unit skylight if the slope of the roof is less than 14 degrees.
- C. Pre-installation conference: conduct conference at (project site).

#### 1.08 WARRANTY

- A. Standard VELUX warranty, as specified in VELUX Warranty, publication XUS 20194.
- B. 10-Year "No Leak" installation warranty, as specified in VELUX Warranty, publication XUS 20194.

#### 1.09 DELIVERY, HANDLING, STORAGE

- A. Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.
- B. Store and protect products in accordance with manufacturer's recommendations.

## PART 2 PRODUCTS

### 2.01 MANUFACTURER

- A. Acceptable Manufacturer: VELUX America Inc., P.O. Box 5001, Greenwood, SC 29648-5001; Toll Free Tel: 800-888-3589; Fax: 864-943-2631; Web: [www.VELUXusa.com](http://www.VELUXusa.com)
- B. Substitutions: Not permitted

### 2.02 MATERIALS

- A. Wood: Kiln-dried, laminated Ponderosa Pine pre-painted with two coats of white finish. Special order stain grade variant available upon request. Wood shall be Forest Stewardship Council (FSC) certified or have an FSC certified chain of custody certification.
- B. Maintenance free exterior cladding: Roll formed 0.65 mm aluminum frame coverings, 0.57 mm aluminum sash coverings, 0.55 mm copper frame coverings, 0.50 copper sash coverings prefinished, production engineered, and fabricated to fit exterior exposed surfaces.
- C. Dual sealed Glazing
  - a. Dual sealed thermal pane with warm edge technology, 95% argon gas, and with three layers of LoE<sup>3</sup> silver that increases visible light over standard low e coatings while lowering the solar heat gain. The following glazing options are available:
    - i. 04 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over a laminated heat strengthened interior pane with a (0.030”) vinyl interlayer.
    - ii. 05 – Tempered LoE<sup>3</sup> pane over tempered pane
    - iii. 06 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over laminated heat strengthened interior pane with a (0.090”) vinyl interlayer.
    - iv. 08 – Same as 04 but with a white vinyl interlayer.
    - v. 10 – Tempered LoE<sup>3</sup> pane with Neat coated exterior over a laminated tempered interior pane with a (0.030”) vinyl interlayer to achieve higher snow load ratings.

- D. Operators and Manual Operator Accessories
- a. Electric Motors: Standard on all electric venting skylights (VSE) 120 V, 40 watts, 60 Hz rating assembly that uses a robust chain driven system to open the skylight 11 inches. A 2.4 GHz radio frequency remote control pad is standard component with each VSE. Optional interface controls include the KLF/repeater sensor interface and the KLI 110 wall mounted keypad.
  - b. Solar operator (VSS) is powered by a solar charged battery operator. Battery pack is a 9 cell Panasonic NiMH 10.8V, 2100 mA.H. 60 Hz rating assembly that uses a robust chain driven system to open the skylight 11 inches. A 2.4 GHz radio frequency remote control pad is standard component with each VSS. Optional interface controls include the KLF/repeater sensor interface and the KLI 110 wall mounted keypad.
  - c. Manual control rods and extension poles available for manually operated venting skylights (VS).
  - d. Battery operated control rod.
  - e. In reach crank handles
- E. Fasteners: 1-1/4 inch ring shank nails provided for attaching deck seal mounting flange to roof decking. Ring shank nails are double hot dipped zinc coated.
- F. Weather stripping: Factory applied neoprene and thermoplastic elastomer weather stripping throughout entire frame and sash, profiled to effect weather seal.
- G. Screen: Aluminum screen profile, spring metal clip attachment, 0.28 mm glass fiber thread with PVC coating, charcoal in color.
- H. Mounting System: Continuous corrosion resistant steel mounting system with a durable foam seal and rough opening alignment notches.

### 2.03 FLASHING OPTIONS

- A. Type EDL Flashing is a prefabricated step flashing system designed for use with roofing materials less than 1/2" thick and for slopes of 14 degrees to 85 degrees.

- B. Type EDW Flashing is a prefabricated gutter flashing system designed for use with roofing material greater than 3/4" thick, or high profile material, and for roof slopes of 14 degrees to 85 degrees. Sill flashing section consists of corrugated apron to allow form fit of high profile material.
- C. Type EDM Flashing is a prefabricated flashing system designed for use with metal roofing materials and for roof slopes of 14 degrees to 85 degrees. Sill flashing section consists of corrugated apron to allow form fit of roofing material profile.
- D. Type EKL for stacking skylights side by side and over and under with thin roofing materials
- E. EKW for stacking skylights side by side and over and under with thick roofing materials
- F. Type ECB site-built curb counter flashing kit for sloped applications less than 14 degrees.

#### 2.04 FABRICATION

- A. Fabricate frame with slip mortise and tendon corners that are glued and nailed for strength and stability.
- B. Fabricate frame components with precision tolerances enabling installation and movement of sash and dynamic movement of perimeter weather stripping.
- C. Provide permanent external drainage channels to manage water flow and drain to the exterior. Provide internal drainage of glazing spaces to exterior through gasketing.
- D. Assemble insect screen of rolled aluminum rectangular sections. Sections are square cut and assembled using square corner keys. Fit mesh taut and secure with vinyl spline.
- E. All units factory glazed with hot melt silicone-based exterior seal.
- F. No site fabrication needed.
- G. Rough opening to be framed per manufacturer's listed dimensions.

#### 2.05 FINISHES

- A. Exterior surfaces: Exposed exterior wood surfaces to be covered with roll formed maintenance free [aluminum] [copper as a special order] cladding pieces. Aluminum has a neutral gray, Kynar® 500 polyvinylidene fluoride resin finish. Copper is roll-formed, mill finish.
- B. Maintenance-free flashing: Roll formed aluminum, neutral gray, baked on polyester polyamid primer and finish coats. Copper is roll formed, mill finish.
- C. Interior surface: All exposed interior wood surfaces to be finished white with a 10-year maintenance free finish.
- D. Screens: Frames – white aluminum, mesh – charcoal.
- E. Operator - concealed beneath white removable cover.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify rough opening dimensions and proper orientation of skylight.

### 3.02 INSTALLATION

- A. Install skylight in accordance with manufacturer's installation instructions.
- B. Use the alignment notches on the deck seal mounting system to align skylight flush with the rough opening, free of warp or twist; maintain dimensional tolerances.
- C. Attach and seal the skylight to roof sheathing by nailing through the predrilled holes in the deck seal mounting system.
- D. Apply one layer of adhesive underlayment around the perimeter of the skylight frame.
- E. Install the manufacturer's engineered perimeter flashing in accordance with manufacturer's installation instructions to achieve weather tight installation.
- F. Install sun screen products and electrical controls.
- G. Provide thermal isolation when components penetrate or disrupt building insulation. Pack fibrous insulation in rough opening to maintain continuity of thermal barriers.

### 3.03 Cleaning

- A. Clean exposed skylight according to manufacturer's written instructions. Touch up damage metal coatings and finishes.
- B. Remove excess sealants, dirt, and other substances.
- C. Remove and replace glazing that has been broken, chipped, cracked, abraded, or damaged during the construction process.
- D. During the construction process, protect the skylight surfaces from contact with contaminants.

### 3.04 Field Quality Control

- A. Install skylight in accordance with manufacturer's installation instructions.









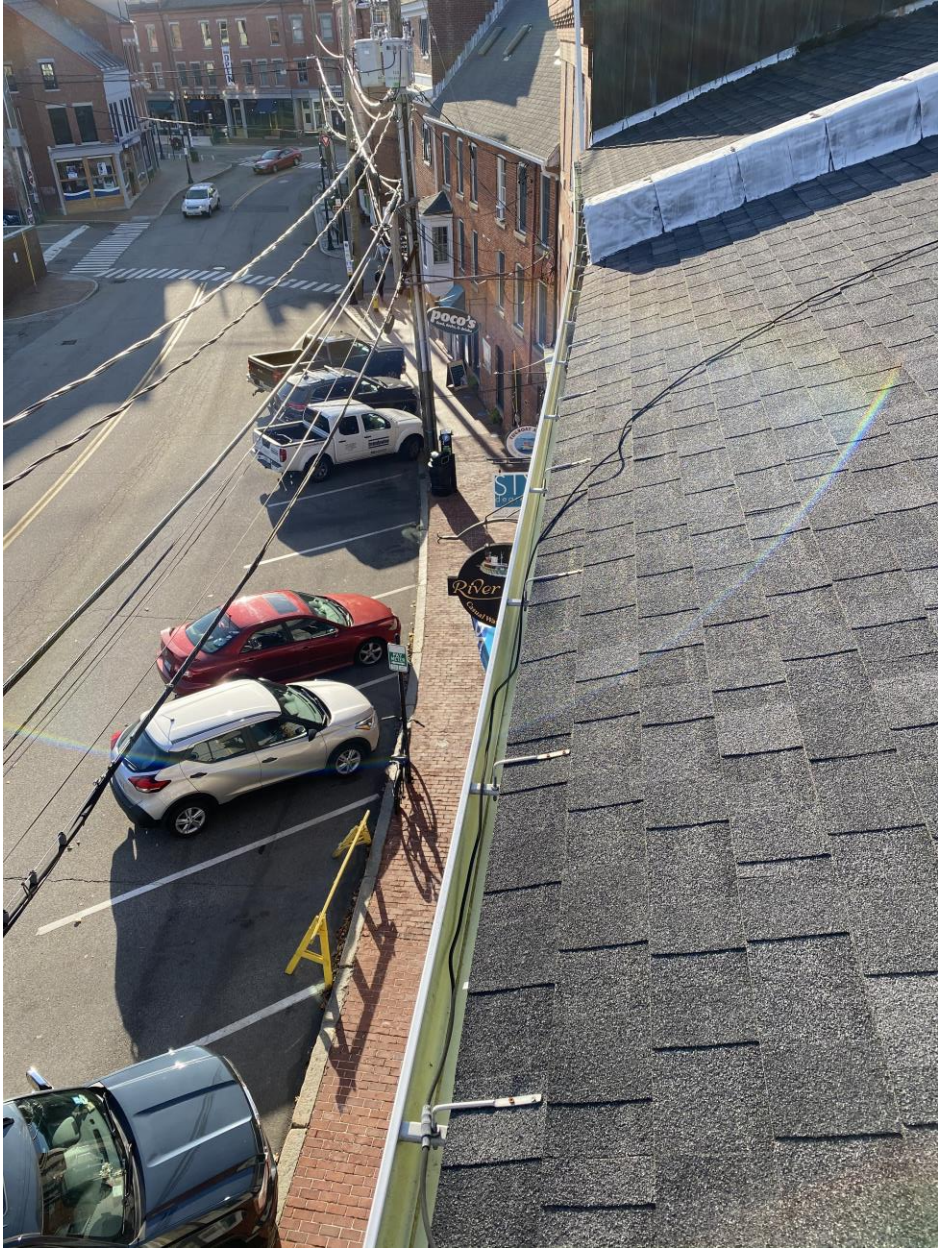












**3. 105 Daniel Street**

**- Recommended Approval**

**Background:** The applicant is seeking approval for the installation of a dryer vent on the second floor, venting out to an alley way.

**Staff Comment:** Recommended Approval

**Stipulations:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_





City of Portsmouth, NH

02/26/2021

## LUHD-283

### Historic District Commission Work Session or Administrative Approval Application

**Status:** Active**Date Created:** Feb 24, 2021**Applicant**

KAREN WIESE  
karenwiese777@gmail.com  
105 Daniel Street, Floor 2  
Floor 2  
Portsmouth, NH 03801  
207-636-0583

**Location**

105 DANIEL ST  
Portsmouth, NH

**Owner:**

WIESE KAREN P  
105 DANIEL ST FLR 2, null, PORTSMOUTH, NH  
03801

**Application Type**

**Please select application type from the drop down menu below**

Administrative Approval

**Project Information****Brief Description of Proposed Work**

Vent a dryer out the left side of the brick building on the second floor. It vents out into the alley between the building and the Daniel Street Tavern. The vent is 4" and will be painted red to match the brick.

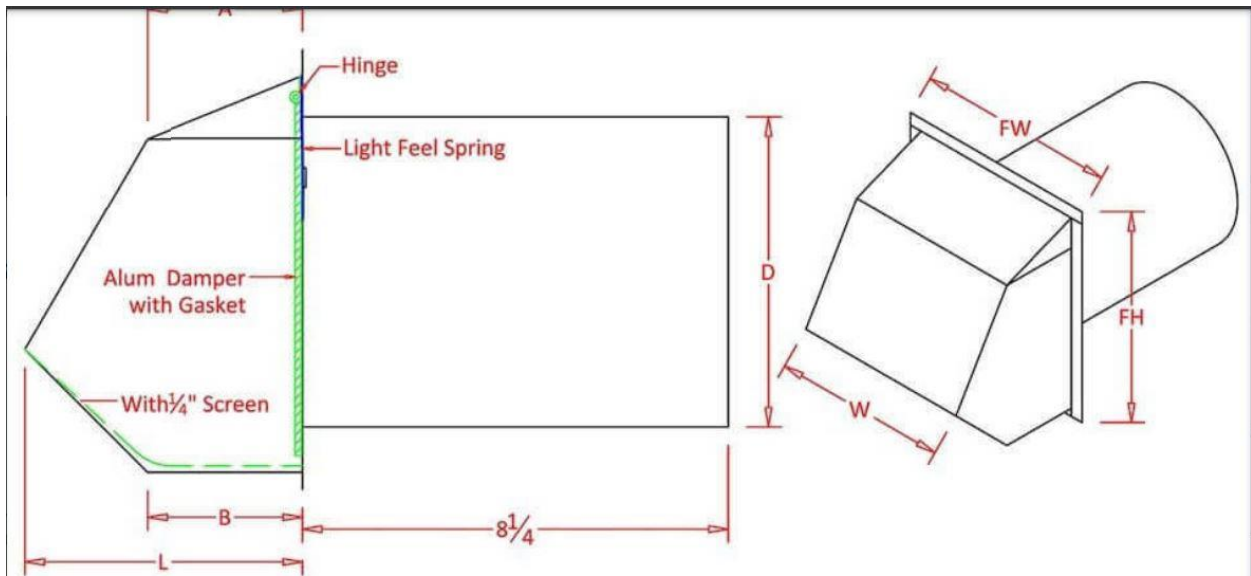
**Description of Proposed Work (Planning Staff)**

--

**Project Representatives****Relationship to Project**

Other

**If you selected "Other", please state relationship to project.**



ITEM #	D	A	B	L	W	FW	FH
WVEB3__	3	2 3/4	2 3/4	4 3/8	4 7/8	6	6 1/2
WVEB4__	4	2 3/4	2 3/4	4 1/8	4 7/8	6	6 1/2
WVEB5__	5	3	3	5 3/8	6 7/8	8	8 1/2
WVEB6__	6	3	3	5 3/8	6 7/8	8	8 1/2
WVEB7__	7	3	4 7/16	6 11/16	8 7/8	10	10 1/2
WVEB8__	8	3	4 7/16	6 11/16	8 7/8	10	10 1/2
WVEB10__	10	2 7/8	4 3/16	6 11/16	11 7/8	13	12 1/2







**4. 93 High Street**

**- Recommended Approval**

**Background:** The applicant is seeking approval to have (25) windows restored on Units: 1-4 and to replace aluminum storm-windows with new aluminum storm windows.

**Staff Comment:** Recommended Approval

**Stipulations:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



City of Portsmouth, NH

03/05/2021

## LUHD-284

### Historic District Commission Work Session or Administrative Approval Application

**Status:** Active**Date Created:** Mar 04, 2021

#### Applicant

Debbie Mae Kershaw  
srebrokers@gmail.com  
96 Coakley Road  
Portsmouth, NH 03801  
6034311443

#### Location

93 HIGH ST Unit 1  
Unit 1  
Portsmouth, NH 03801

#### Owner:

SMITH RICHARD A & D/B/A CUZIN RICHARD  
ENTERTAINMENT  
93 HIGH ST #1 PORTSMOUTH, NH 03801

#### Application Type

**Please select application type from the drop down menu below**

Administrative Approval

#### Project Information

##### Brief Description of Proposed Work

Will be "Restoring" (not replacing) 25 double hung Windows and replacing existing aluminum storm windows with triple track aluminum combination storm windows recommended by Luka and supplied by Coastal Industries (see attached, these are available in a variety of colors). All Restoration work will be performed by Luka Windows, method of removal and installation would be using ladders working both inside and out. Luka is Lead certified and fully Insured.

93 High Street, Portsmouth, NH [Map 0118/0023/ 001-004](#)

- 93 High Street is a two Story 1820 Condo Conversion building with 5 Individually Owned Units located in the building sitting directly on the corner of High St & Hanover.
- The plan is to RESTORE the original double hung windows and replace the existing aluminum storm windows with new aluminum storm windows. The units Included in this project are:

Unit #1 – Owned by Richard R. Smith- Map 0118/0023/001 – Zone CD4-L2

1<sup>st</sup> Floor Unit – Total - 13 double hung windows and storms. Age of windows & storms unknown

93 High Street, Portsmouth , NH  
Window Restoration & Storm Window Project

Zoned: CD4—L2— Map 0118 / 0023 / 001 also 002, 003 & 004



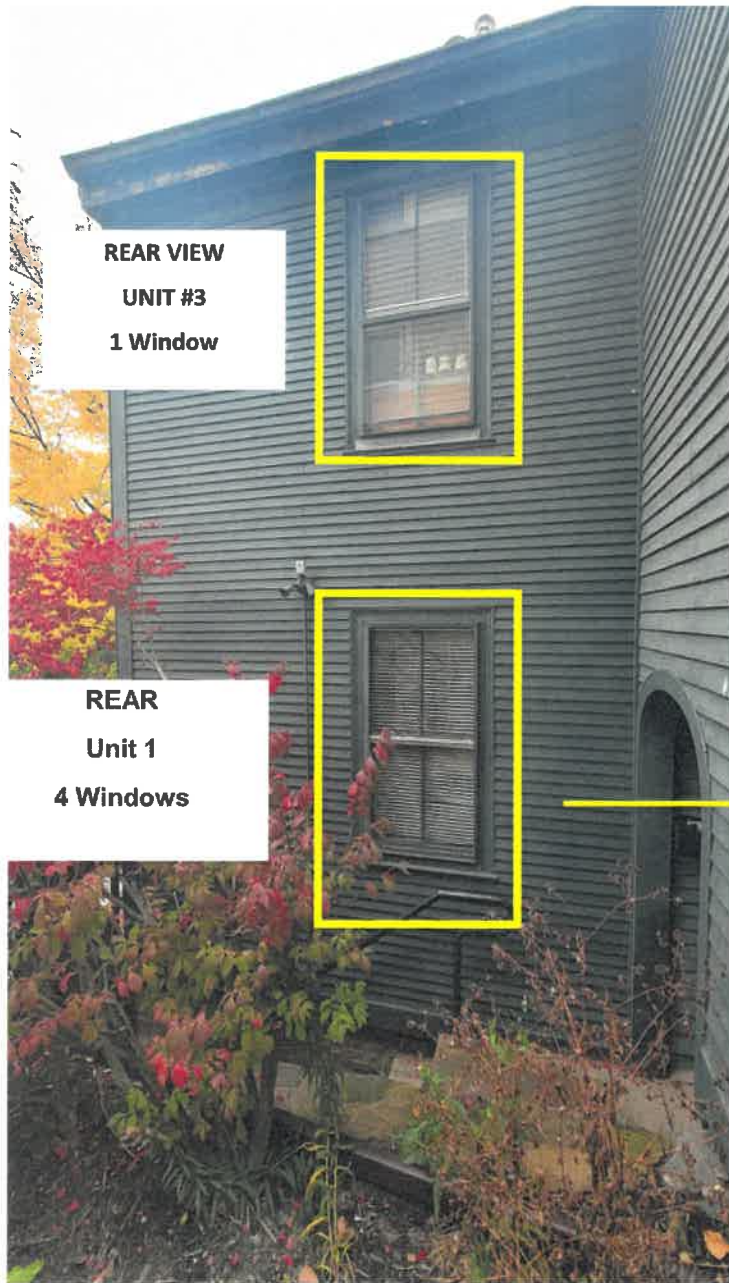
- **Unit #2 – Owned by Tammy Jordan – Map 0118/0023/002 Zone CD4-L2**
- 2nd & 3<sup>rd</sup> floor
- located on the NW side of the building (with the spiral staircase)
- Total 4 double hung windows– 2 shown on front
- Age of windows & storms unknown.

- **Unit #3 – Owned by John & Britt Santa Maria -**
- Map 0118/0023/003 – Zone CD4-L2
- 2<sup>nd</sup> & 3<sup>rd</sup> floor
- located on the NE side of the building (Hanover Street side)
- Total 7 double hung windows .3 windows shown on front
- Age of windows & storms unknown

**93 HIGH STREET—FRONT VIEW**

Unit #1 – Owned by Richard R. Smith- Map 0118/0023/001 – ZoneCD4-L2  
1<sup>st</sup> Floor Unit – with 13 double hung windows (4 shown on front) . Age of windows & storms unknown





93 High Street Rear Side NO

93 High Street, Portsmouth , NH  
Window Restoration & Storm Window Progrect



93 HIGH STREET  
SIDE VIEW OFF HIGH



93 HIGH STREET  
SIDE VIEW HANOVER SIDE





*Coastal*  
*Industries Inc.*  
MANUFACTURERS OF WINDOWS, DOORS & SCREENS

**THE PACER**  
TRIPLE-TRACK  
COMBINATION  
STORM WINDOW



One of the finest aluminum storm windows on today's market, the Pacer has been around for 50 years and is still going strong! The Pacer will make your home more energy efficient.

**AVAILABLE IN  
MANY COLORS**

**UNEXCELLED  
BEAUTY  
AND STYLING**

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- Automatic tamper-proof locks
- Top or bottom ventilation
- Multi-positioning of all inserts
- Effortless removal of inserts allows for easy cleaning
- Sturdy reinforced construction
- Fully extruded 6063 heat tempered aluminum
- Concealed metal-to-metal interlocks
- Stainless steel screws and springs
- Adjustable bottom expander
- Wool pile weather-stripped
- Fiberglass insect screening 18 x 14 mesh
- Marine glazing
- Individually tested and inspected

(Specifications subject to change without notice.)

## COLORS, COLORS, COLORS, COLORS

Don't miss out on COLOR! We also offer Powder-Coating on all Aluminum Storm products!  
A few common colors are:



3009 Brick Red



7045 Grey



6002 Forest Green



8022 Black



6020 Green



1014 Yellow



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