

HISTORIC AND DESIGN REVIEW COMMISSION

February 16, 2022

HDRC CASE NO: 2022-024
ADDRESS: 319 CARLETON
LEGAL DESCRIPTION: NCB 3086 BLK 2 LOT S 45 FT OF B & N 5 FT OF C
ZONING: R-4
CITY COUNCIL DIST.: 1
DISTRICT: Monte Vista Historic District
APPLICANT: Matthew Carson/Pella South Texas, LLC
OWNER: Kimberly Tseng
TYPE OF WORK: Window replacement
APPLICATION RECEIVED: January 05, 2022
60-DAY REVIEW: Not applicable due to City Council Emergency Orders
CASE MANAGER: Katie Totman

REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to replace 16 double hung wood windows with Pella Reserve Traditional wood windows on the primary structure.

APPLICABLE CITATIONS:

Historic Design Guidelines, Chapter 2, Exterior Maintenance and Alterations

1. Materials: Woodwork

A. MAINTENANCE (PRESERVATION)

- i. *Inspections*—Conduct semi-annual inspections of all exterior wood elements to verify condition and determine maintenance needs.
- ii. *Cleaning*—Clean exterior surfaces annually with mild household cleaners and water. Avoid using high pressure power washing and any abrasive cleaning or stripping methods that can damage the historic wood siding and detailing.
- iii. *Paint preparation*—Remove peeling, flaking, or failing paint surfaces from historic woodwork using the gentlest means possible to protect the integrity of the historic wood surface. Acceptable methods for paint removal include scraping and sanding, thermal removal, and when necessary, mild chemical strippers. Sand blasting and water blasting should never be used to remove paint from any surface. Sand only to the next sound level of paint, not all the way to the wood, and address any moisture and deterioration issues before repainting.
- iv. *Repainting*—Paint once the surface is clean and dry using a paint type that will adhere to the surface properly. See *General Paint Type Recommendations* in Preservation Brief #10 listed under Additional Resources for more information.
- v. *Repair*—Repair deteriorated areas or refasten loose elements with an exterior wood filler, epoxy, or glue.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. *Façade materials*—Avoid removing materials that are in good condition or that can be repaired in place. Consider exposing original wood siding if it is currently covered with vinyl or aluminum siding, stucco, or other materials that have not achieved historic significance.
- ii. *Materials*—Use in-kind materials when possible or materials similar in size, scale, and character when exterior woodwork is beyond repair. Ensure replacement siding is installed to match the original pattern, including exposures. Do not introduce modern materials that can accelerate and hide deterioration of historic materials. Hardiboard and other cementitious materials are not recommended.
- iii. *Replacement elements*—Replace wood elements in-kind as a replacement for existing wood siding, matching in profile, dimensions, material, and finish, when beyond repair.

6. Architectural Features: Doors, Windows, and Screens

A. MAINTENANCE (PRESERVATION)

- i. *Openings*—Preserve existing window and door openings. Avoid enlarging or diminishing to fit stock sizes or air conditioning units. Avoid filling in historic door or window openings. Avoid creating new primary entrances or window openings on the primary façade or where visible from the public right-of-way.
- ii. *Doors*—Preserve historic doors including hardware, fanlights, sidelights, pilasters, and entablatures.
- iii. *Windows*—Preserve historic windows. When glass is broken, the color and clarity of replacement glass should match the original historic glass.
- iv. *Screens and shutters*—Preserve historic window screens and shutters.
- v. *Storm windows*—Install full-view storm windows on the interior of windows for improved energy efficiency. Storm window may be installed on the exterior so long as the visual impact is minimal and original architectural details are not obscured.

B. ALTERATIONS (REHABILITATION, RESTORATION, AND RECONSTRUCTION)

- i. *Doors*—Replace doors, hardware, fanlight, sidelights, pilasters, and entablatures in-kind when possible and when deteriorated beyond repair. When in-kind replacement is not feasible, ensure features match the size, material, and profile of the historic element.
- ii. *New entrances*—Ensure that new entrances, when necessary to comply with other regulations, are compatible in size, scale, shape, proportion, material, and massing with historic entrances.
- iii. *Glazed area*—Avoid installing interior floors or suspended ceilings that block the glazed area of historic windows.
- iv. *Window design*—Install new windows to match the historic or existing windows in terms of size, type, configuration, material, form, appearance, and detail when original windows are deteriorated beyond repair.
- v. *Muntins*—Use the exterior muntin pattern, profile, and size appropriate for the historic building when replacement windows are necessary. Do not use internal muntins sandwiched between layers of glass.
- vi. *Replacement glass*—Use clear glass when replacement glass is necessary. Do not use tinted glass, reflective glass, opaque glass, and other non-traditional glass types unless it was used historically. When established by the architectural style of the building, patterned, leaded, or colored glass can be used.
- vii. *Non-historic windows*—Replace non-historic incompatible windows with windows that are typical of the architectural style of the building.
- viii. *Security bars*—Install security bars only on the interior of windows and doors.
- ix. *Screens*—Utilize wood screen window frames matching in profile, size, and design of those historically found when the existing screens are deteriorated beyond repair. Ensure that the tint of replacement screens closely matches the original screens or those used historically.
- x. *Shutters*—Incorporate shutters only where they existed historically and where appropriate to the architectural style of the house. Shutters should match the height and width of the opening and be mounted to be operational or appear to be operational. Do not mount shutters directly onto any historic wall material.

Standard Specifications for Original Wood Window Replacement

- **SCOPE OF REPAIR:** When individual elements such as sills, muntins, rails, sashes, or glazing has deteriorated, every effort should be made to repair or reconstruct that individual element prior to consideration of wholesale replacement. For instance, applicant should replace individual sashes within the window system in lieu of full replacement with a new window unit.
- **MISSING OR PREVIOUSLY REPLACED WINDOWS:** Where original windows are found to be missing or previously replaced with a nonconforming window product by a previous owner, an alternative material to wood may be considered when the proposed replacement product is more consistent with the Historic Design Guidelines in terms of overall appearance. Such determination shall be made on a case-by-case basis by OHP and/or the HDRC. Whole window systems should match the size of historic windows on property unless otherwise approved.
- **MATERIAL:** If full window replacement is approved, the new windows must feature primed and painted wood exterior finish. Clad, composition, or non-wood options are not allowed unless explicitly approved by the

commission.

- **SASH:** Meeting rails must be no taller than 1.25". Stiles must be no wider than 2.25". Top and bottom sashes must be equal in size unless otherwise approved.
- **DEPTH:** There should be a minimum of 2" in depth between the front face of the window trim and the front face of the top window sash. This must be accomplished by recessing the window sufficiently within the opening or with the installation of additional window trim to add thickness.
- **TRIM:** Original trim details and sills should be retained or repaired in kind. If approved, new window trim must feature traditional dimensions and architecturally appropriate casing and sloped sill detail. Window track components such as jamb liners must be painted to match the window trim or concealed by a wood window screen set within the opening.
- **GLAZING:** Replacement windows should feature clear glass. Low-e or reflective coatings are not recommended for replacements. The glazing should not feature faux divided lights with an interior grille. If approved to match a historic window configuration, the window should feature real exterior muntins.
- **COLOR:** Replacement windows should feature a painted finish. If a clad product is approved, white or metallic manufacturer's color is not allowed, and color selection must be presented to staff.
- **INSTALLATION:** Replacement windows should be supplied in a block frame and exclude nailing fins. Window opening sizes should not be altered to accommodate stock sizes prior to approval.
- **FINAL APPROVAL:** If the proposed window does not meet the aforementioned stipulations, then the applicant must submit updated window specifications to staff for review, prior to purchase and installation. For more assistance, the applicant may request the window supplier to coordinate with staff directly for verification.

FINDINGS:

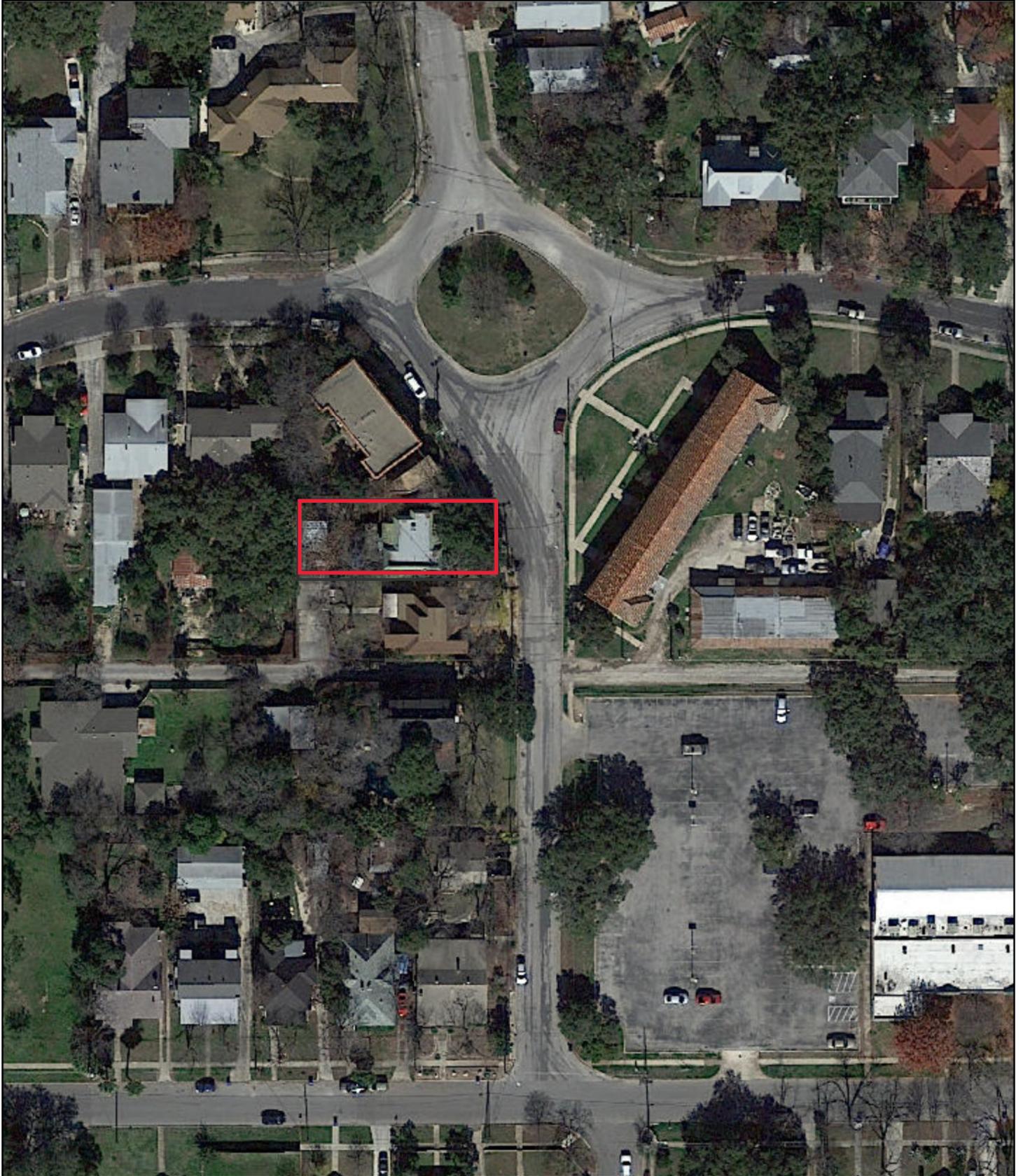
- a. The primary structure located at 319 Carleton is a single-story brick house, built ca. 1931. It features brick veneer siding, wood windows, tile roof, and a front facing chimney.
- b. **DRC SITE VISIT** – The DRC met with the applicant on site on February 8, 2022. Members of the committee observed the possibility that the existing wood windows could be relatively newer replacements, possibly from the 1950s or 1960s. Several of the ganged windows exhibit a gap between the header and the brick and the committee members commented on the general condition of the wood.
- c. **WINDOW REPLACEMENT: EXISTING CONDITION** – Based on the submitted documentation and the DRC site visit, staff observed evidence of paint stripping and flaking, deteriorated glazing, sills sinking into the frame, wood rot primarily on the trim and sills, and several sash with failed joints. Additionally, staff observed the gaps between the headers and the top of the brick opening. This coupled with the overall visual condition of the wood suggested to staff that the current wood windows could possibly be replacements.
- d. **PROPOSED REPLACEMENT WINDOW PRODUCT** – The applicant has proposed to install Pella Reserve Traditional fully wood windows with a one over one configuration. Generally, staff finds that this product meets the standard window stipulations and match closely to the existing wood windows in overall appearance.

RECOMMENDATION:

Staff recommends approval of the window replacement based on findings b through d with the following stipulations:

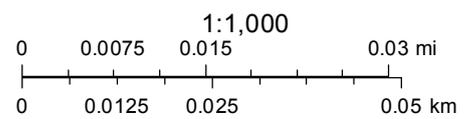
- i. That a framing plan be submitted to OHP staff for review prior to the issuance of the COA. The framing plan should illustrate how the openings will be restored and how the new windows installed.

City of San Antonio One Stop



February 10, 2022

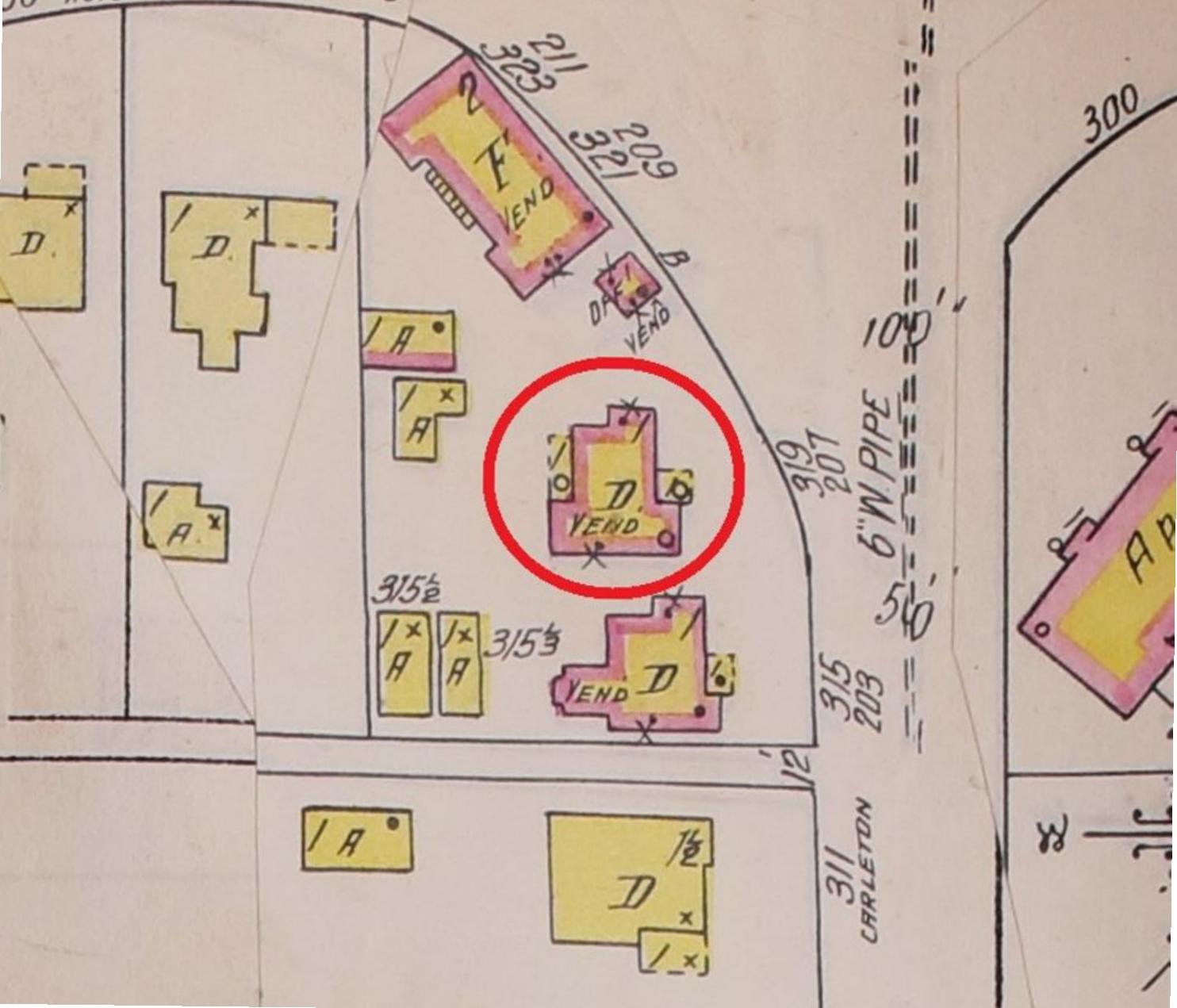
— User drawn lines



1931 Sanborn Map

E
36 NUISANCE 240 AV

T.H.



BEDROOM 1
EAST SIDE

LIVING
EAST SIDE



2



LIVING
NORTH SIDE

KITCHEN
NORTH SIDE





LIVING
NORTH SIDE

KITCHEN
NORTH SIDE

KITCHEN
WEST SIDE

4

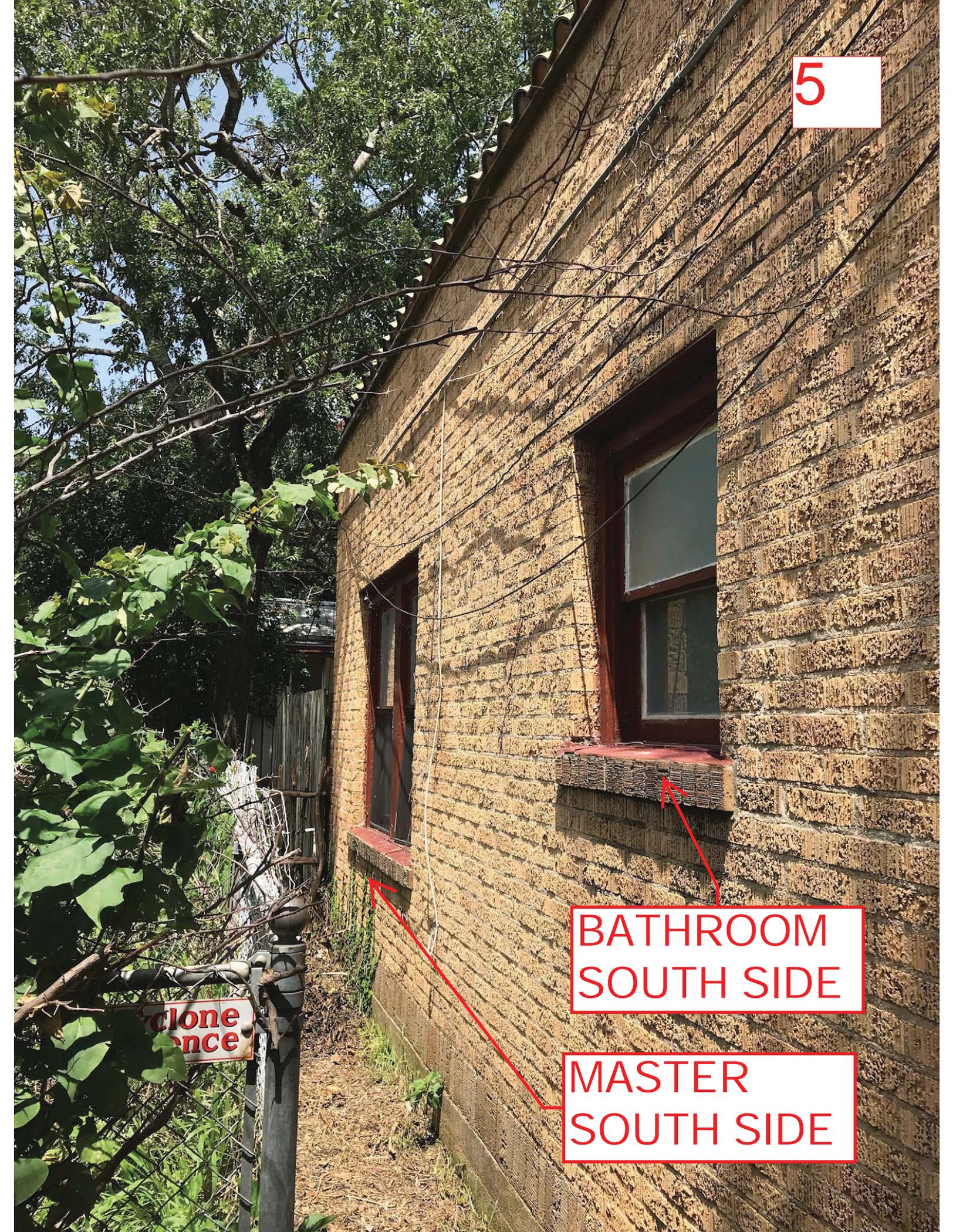
MASTER
WEST SIDE

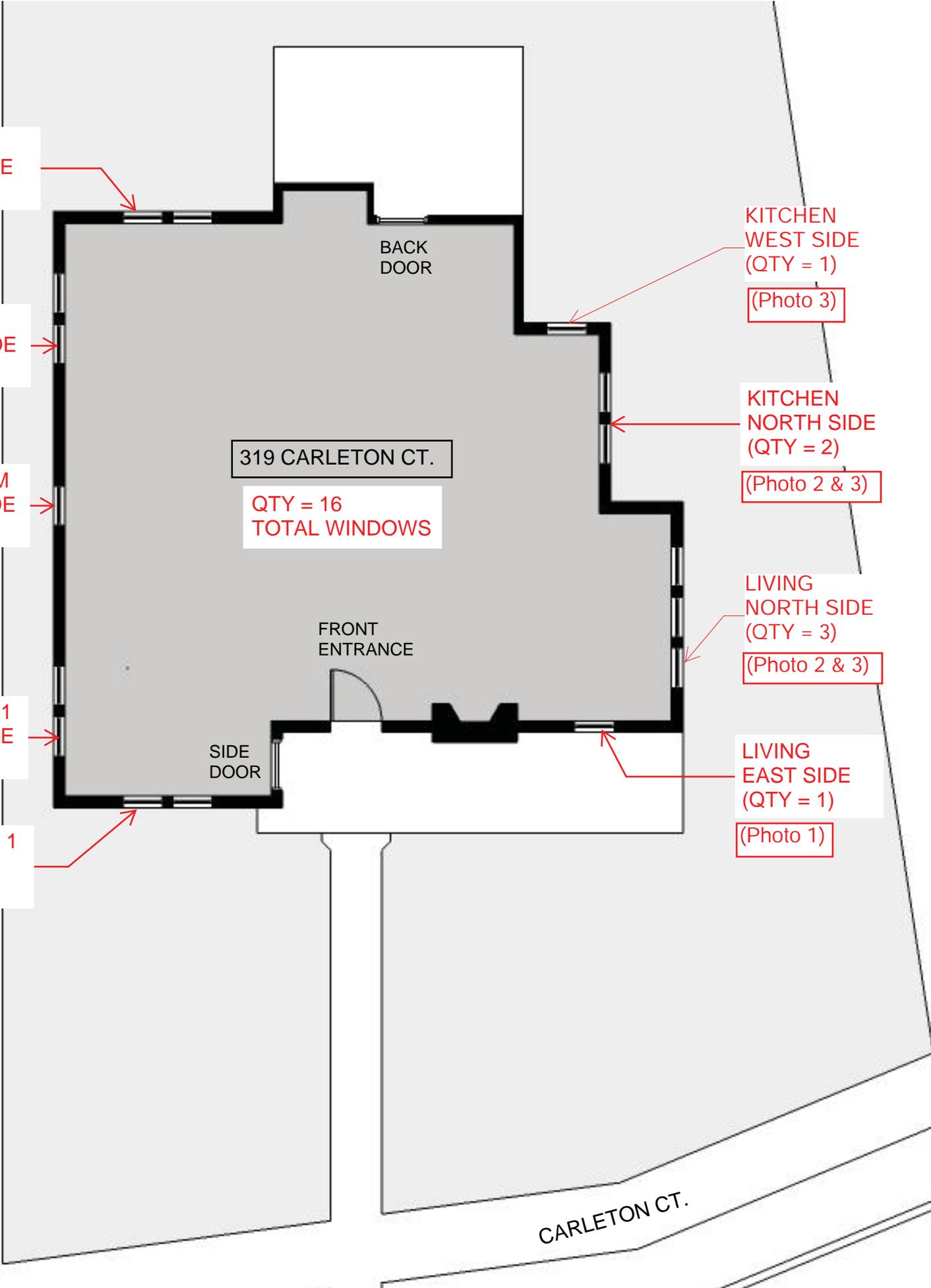
5

BATHROOM
SOUTH SIDE

MASTER
SOUTH SIDE

clone
ence





MASTER WEST SIDE (QTY = 2) (Photo 4)

KITCHEN WEST SIDE (QTY = 1) (Photo 3)

MASTER SOUTH SIDE (QTY = 2) (Photo 5)

KITCHEN NORTH SIDE (QTY = 2) (Photo 2 & 3)

BATHROOM SOUTH SIDE (QTY = 1) (Photo 5)

319 CARLETON CT. QTY = 16 TOTAL WINDOWS

LIVING NORTH SIDE (QTY = 3) (Photo 2 & 3)

BEDROOM 1 SOUTH SIDE (QTY = 2)

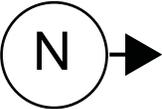
FRONT ENTRANCE

LIVING EAST SIDE (QTY = 1) (Photo 1)

BEDROOM 1 EAST SIDE (QTY = 2) (Photo 1)

SIDE DOOR

BACK DOOR



CARLETON CT.

WINDOW REPLACEMENT - WINDOW SCHEDULE

LOCATION INFORMATION	
Address:	319 Carleton Court San Antonio, TX 78212
Neighborhood:	Monte Vista
Year Built:	1930

LOCATIONS

ROOM	WALL	QTY	DESCRIPTION	ROUGH DIMENSIONS	INTERIOR IMAGE	EXTERIOR IMAGE
LIVING	North	3	single hung, separated by 2 plinths	30" x 57" (per unit), 7" x 57" (plinth)		
LIVING	East	1	single hung	30" x 57"		
KITCHEN	North	2	single hung, separated by 1 plinth	30" x 57" (per unit), 7" x 57" (plinth)	(similar to BEDROOM - MASTER)	

WINDOW REPLACEMENT - WINDOW SCHEDULE

LOCATION INFORMATION	
Address:	319 Carleton Court San Antonio, TX 78212
Neighborhood:	Monte Vista
Year Built:	1930

KITCHEN	West	1	single hung		(similar to LIVING ROOM - East)	
BEDROOM - FRONT	East	2	single hung, separated by 1 plinth	30" x 57" (per unit), 7" x 57" (plinth)	(similar to BEDROOM - MASTER)	
BEDROOM - FRONT	South	2	single hung, separated by 1 plinth	30" x 57" (per unit), 7" x 57" (plinth)	(similar to BEDROOM - MASTER)	

WINDOW REPLACEMENT - WINDOW SCHEDULE

LOCATION INFORMATION	
Address:	319 Carleton Court San Antonio, TX 78212
Neighborhood:	Monte Vista
Year Built:	1930

BATHROOM	South	1	single hung	30" x 33"			
BEDROOM - MASTER	South	2	single hung, separated by 1 plinth	30" x 57" (per unit), 7" x 57" (plinth)			
BEDROOM - MASTER	West	2	single hung, separated by 1 plinth	30" x 57" (per unit), 7" x 57" (plinth)			
TOTAL QTY =		16					

Staff Pictures from Site Visit

February 8, 2022 with the DRC





secured by





















5200
LANCASTER
GPS Energy
G00035610

Window repair estimates provided
by the applicant



August 5, 2021

WINDOW RESTORATION PROPOSAL

Proposal For: Kim Tseng & Adam Martin – [REDACTED]
Project Address: 319 Carleton Court, San Antonio, TX 78212
Number of windows: 16

Scope of Work – Window Restoration –

** Note: Restoration is an art, not a science. Although this is our general process, we may have to make adjustments as needed*

1. Window sash removal
2. Seal openings (plywood or coroplast, other options available)
3. Inspect jambs
4. Sill/jamb legs repaired on-site TBD
5. Sill and jamb prep, prime/paint, stain on-site
6. Sash cord replaced onsite
7. Transport sashes to shop in Austin, TX
8. Remove all paint/glazing from sashes
9. Rebuild/replace sashes TBD
10. Prep inner stop for paint, paint in shop,
11. Parting bead to be replaced
12. Slot sashes for weather strip
13. Apply borate based preservative to all bare wood
14. Replace glass with new 1/8" clear double strength flat glass (Historic replica "Restover" wavy glass available for an additional fee)
15. Glaze sashes – Sarco putty Type M
16. Prime and paint sashes- Single color for interior and exterior (need color code from customer)
17. Glazing lines will be hand painted to create seal – paint will touch glass to protect glazing
18. Hardware – TBD (see hardware options on next page)
19. Reinstall restored sashes using new sash cord "Sampson Spot Cord"
20. Install inner stop, parting bead
21. Install Accurate Concealed Interlocking Weather Stripping at bottom sash and meeting rail of top sash
22. Adjust for function and lubricate tracks and pulleys

Note:

- Only lower sashes will function.
- Unless hardware is high quality/specialized, better and more efficient to replace.
- Replacement of sash cord is dependent on accessing weight chambers. If there are no weight chamber doors in place this may require a change order.
- Excludes any repairs or replacement of interior or exterior trim

Note: An additional fee of \$225 per window can be added for dual functionality.

See window schedule on next page for pricing.

WINDOW PRICE SCHEDULE

Window No.	Location	W X H	Panes	Notes	Price
1	Living - North	30" x 57"	1 over 1		\$3,100
2	Living - North	30" x 57"	1 over 1		\$3,100
3	Living - North	30" x 57"	1 over 1		\$3,100
4	Living - East	30" x 57"	1 over 1		\$3,100
5	Kitchen - North	30" x 57"	1 over 1		\$3,100
6	Kitchen - North	30" x 57"	1 over 1		\$3,100
7	Kitchen - West	30" x 57" VIF	1 over 1		\$3,100
8	Bdrm Front - East	30" x 57"	1 over 1		\$3,100
9	Bdrm Front - East	30" x 57"	1 over 1		\$3,100
10	Bdrm Front - South	30" x 57"	1 over 1		\$3,100
11	Bdrm Front - South	30" x 57"	1 over 1		\$3,100
12	Bathroom - South	30" x 33"	1 over 1		\$2,750
13	Master - South	30" x 57"	1 over 1		\$3,100
14	Master - South	30" x 57"	1 over 1		\$3,100
15	Master - West	30" x 57"	1 over 1		\$3,100
16	Master - West	30" x 57"	1 over 1		\$3,100

Total restoration price for 16 windows: \$49,250*

Travel estimate (see breakdown below): \$7,584

Estimated cost for restoration and travel totals: \$56,834

*NOTE- if customer requests the job to be broken up into smaller groups of windows, then a Management and Mobilization Fee of \$500 per group will apply. (A minimum of 5 windows per phase required.)

Hardware Options and Estimations:

RRR believes that unless hardware is specialized and high quality, it is often more efficient and beautiful to replace sash locks and pulls. RRR will supply client with new hardware options to match existing and charge upon approval. New hardware is approx. \$15-25/ window depending on selection.

Travel Budget:

If customer resides outside of Austin, TX, travel expenses will apply. Red River Restorations will charge:

- IRS \$/mile rate (current rate is \$0.56/mile)
- \$60/ employee/ hour of travel time
- If we assess that employee(s) staying the night is more efficient we will charge \$61 per diem/ employee, and \$140/night/employee for hotel

Travel Estimate:

- **Round Trip Mileage:** 157 miles, Travel Time Round Trip: 3 hours
- **Extraction & Jamb Prep:** 4 EMPLOYEES, 4 DAYS / 3 NIGHTS and 2 VEHICLES (2 trips) - \$3,792
- **Installation:** 4 EMPLOYEES, 4 DAYS / 3 NIGHTS and 2 VEHICLES (2 trips) - \$3,792
- **Travel Budget Estimate:** \$7,584

Payment Schedule:

10% at signing to get in queue

70% at job start

20% upon job completion

Any extra costs such as travel, hardware or change orders will be billed at time of service

Images of windows provided by client:



Terms:

- Unforeseen Repairs: Sight unseen necessary repairs surrounding the window sash and sills will be undertaken only at an extra cost and with the owner's approval.
- Glass: price includes full replacement of glass in all sashes with 1/8" clear double strength flat glass
- Hardware: excludes restoration of hardware.
- Replacement of sash cords is dependent on accessing weight chambers. For windows without weight chambers additional fees may apply or alternative solutions may be necessary to allow windows to function.
- Work Area: Please remove furniture, shutters, blinds, drapes and all other items from the work area around each window (4' perimeter). If not removed, Red River Restorations craftsman will remove for an extra cost of \$250. Presence of furniture, etc. in the work area indicates owner approval of the extra charge.
- Any alterations or deviations from above specifications involving extra costs will be executed only upon written agreement.
- Travel budget is based on current government reimbursement rates. Rates are estimates and will be adjusted based on the rate allotted at time of service.
- Door and Window Trim: As stated in the exclusion notes, interior and exterior trim, brickmould restoration trim replacement or painting are not part of the scope.
- Payments are due 10 days from the date of invoice. Red River Restorations reserves the right to cease work if payment is not received according to the terms of the invoice.
- Client agrees to pay interest at the rate of 2% monthly on amounts outstanding 40 days after invoice date, except where and to the extent such percentage is prohibited by applicable law. Interest is payable monthly on any past due payment due under this agreement. Client agrees to pay any costs of collection, including attorney's fees.

Project Timeline and Dates

Red River Restorations will make every effort to provide rough time frames for start date and completion. As your project comes next on the list, you will be notified of proposed start dates and a rough prediction of install. These dates often change due to a variety of factors. Unless specified otherwise, Red River Restorations will not guarantee a start or completion date.

All changes shall be made in writing.
We will honor this estimate for 10 days.

ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature_____ Date_____

Paint color code & sheen: _____

Elizondo Woodworks, LLC

Luis Elizondo
310 Shannon Lee
San Antonio, Texas 78216
210-777-5934
luiselizondo58@gmail.com

EIN: 86-1418027

NOTE:

Invoices due upon receipt.
Estimates good for 30 days.
There is a 2% add'l fee for credit card transactions.
50% Down required for all new projects.
Items not specifically expressed not included.

29-Aug-21

Specializing in Wood Doors and Windows
Archicentural Restoration and Renovation

Bill To: Adam Martin and Kim Tseng
319 Carleton Court
San Antonio, Texas 78212

REFERENCE:

Window Restoration - Sashes

ESTIMATE

Description:

Cost Each Quantity Extension

● Remove upper/lower sashes, and stops (interior and exterior), remove exterior casing.	\$75.00	16	\$1,200.00
● Strip finish on all painted surfaces (interior and exterior) to perform necessary repairs and to yield adequate substrate for proper paint adhesion. Sand old finish to avoid "shadow thru" on new finish. Hardware for old finish.	\$600.00	16	\$9,600.00
● Remove all glazing putty from sashes, using precaution not to break glass. Glass broken during restoration replaced at owner's expense.	\$75.00	16	\$1,200.00
● Make necessary minor repairs to both upper/lower sashes. Re-glue loose joints, re-align disjointed members, fill minor cosmetic flaws with filler or dutchman repair.	\$400.00	16	\$6,400.00
● Sashes in condition found to be beyond reasonable repair will be replaced at owner's expense (credit applied for omittance of repair).	\$150.00	16	\$2,400.00
● Make necessary minor repair to window frame, casing, stops, stool, and sill. Minor repairs include epoxy consolidation of deteriorated parts, filling and dutchman type repair of broken, gouged or missing parts. Owner will be notified, if repairs are beyond scope, in advance of additional cost. Work beyond scope additional cost. Work beyond scope may include any repair requiring the removal of frame.	\$290.00	16	\$4,640.00
● Prime and paint (2 coats) window frame, sashes, and all associated trim, interior and exterior. (Same color interior/exterior). Hardware removed or masked to prevent from being painted.	\$375.00	16	\$6,000.00
● Re-install glass in sashes after primed and painted. Apply glazing compound.	\$85.00	16	\$1,360.00
● Re-install sashes in frames with all associated trim. Sashes hung with new sash cord, using existing hardware (pulleys and locks).	\$165.00	16	\$2,640.00
● Provide plywood closure during repair process.	\$20.00	16	\$320.00
TOTALS	\$2,235.00	16	\$35,760.00



Product Selection Guide

- Size and Performance DataW-HG-2
- Features and OptionsW-HG-3
- Combination Assemblies.....W-HG-4
- Glazing Performance.....W-HG-6

Grille Types

- Grille ProfilesW-HG-10
- Grille Patterns.....W-HG-11

Size Tables for Double- and Single-Hung.....W-HG-12

- Cottage Sash UnitsW-HG-14
- Replacement Units.....W-HG-15

Design Data

- Miscellaneous FormulasW-HG-19
- Double- and Single-Hung.....W-HG-20
- Replacement Units.....W-HG-25

Detailed Product Descriptions.....W-HG-30

Unit Sections

- Wood Collection.....W-HG-32
- Double-, and Single-Hung CladW-HG-33
- Single- and Double-Hung Wood.....W-HG-39

Supporting documents for this product:

Test Reports:

https://media.pella.com/professional/adm/CertificationReports/Test_Reports_AS-Clad.pdf

CSI Specs (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Wood-CSI_Specs/08552-R.rtf

AIA Masterspec (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Wood-CSI_Specs/Masterspec/085200_fl.doc

Detailed Product Description (readable using Microsoft Word or other text editing application):

<https://media.pella.com/professional/adm/Clad-Wood/PR-DoubleHung-C.rtf>

Size Tables (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood/ASCDHEV_D.dwg

CAD cross sections (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood/ASRM5DH3_D.dwg

3D & BIM (requires appropriate software to read and use):

https://media.pella.com/professional/adm/RevitFiles/PR-Revit/Window-Double_Hung-Pella-Reserve-Traditional.zip

Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Clad-Wood/PellaSKP_PellaReserve_Traditional_Double-Hung.zip

Combination Recommendations:

https://media.pella.com/professional/adm/Clad-Wood/D_Combinations.pdf

Installation Details:

https://media.pella.com/professional/adm/Clad-Wood/F_InstallationDetails.pdf

Impact-Resistant Double-Hung, Complete Product Information:

https://media.pella.com/professional/adm/Clad-Wood/Pella-ImpactResistant_DoubleHung.pdf

The information published in this document is believed to be accurate at the time of publication. However, because we are constantly working to improve our products, specifications are subject to change without notice. Consult your local Pella representative for up-to-date product information.

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Pella® Reserve™ Traditional Hung Window

Size and Performance Data

Air/Water/Structural Performance ¹	
Meets or Exceeds AAMA/WDMA Ratings	H-CW30 - CW50 Hallmark Certified
Air Infiltration (cfm/ft ² of frame @ 1.57 psf wind pressure) ²	0.11
Water Resistance	4.6 - 7.5 psf
Design Pressure	30 - 50 psf

Other Performance Criteria	
Forced Entry Resistance Level (Minimum Security Grade) ³	10
Operating Force (lb) Initiate Motion / Maintain Motion (of Hallmark tested size and glazing) ⁴	40/45

Sound Transmission Class / Outdoor-Indoor Transmission Class

Product	Frame Size Tested ⁵	Glazing System				STC Rating	OITC Rating
		Overall Glazing Thickness	Exterior Glass Thickness	Interior Glass Thickness	Third Pane Thickness		
Reserve Clad Double-Hung Window	WITH INTEGRAL GRILLES						
	45" x 65"	11/16"	2.5mm	2.5mm	–	29	26
	45" x 65"	11/16"	3mm	5mm	–	34	30
	45" x 65"	11/16"	3mm	6mm Laminated	–	35	30
	WITH REMOVABLE OR NO GRILLES						
	45" x 65"	11/16"	2.5mm	2.5mm	–	28	24
	45" x 65"	11/16"	3mm	5mm	–	32	28
	45" x 65"	11/16"	3mm	6mm Laminated	–	33	28

(-) = Not Available

(1) Maximum performance for single unit when glazed with the appropriate glass thickness. See Design Data pages in this section for specific product performance class and grade values.

(2) Published performance data for air infiltration is determined by testing a minimum of four (4) products of NFRC model size. Testing is conducted in accordance with ASTM E283. Air infiltration ratings for products will differ by size. The performance data does not apply to combination assemblies unless noted. Actual product performance may vary for a number of reasons including installation and product care.

(3) The higher the level, the greater the product's ability to resist forced entry.

(4) Glazing configurations may result in higher operational forces

(5) ASTM E 1425 defines standard sizes for acoustical testing. Ratings achieved at that size are representative of all sizes of the same configuration.



Pella® Reserve™ Traditional Hung Window

Features and Options

Standard	Options / Upgrades
Glazing	
Glazing Type	
Dual-Pane Insulating Glass	–
Insulated Glass Options/Low-E Types	
	SunDefense™ Low-E
	AdvancedComfort Low-E
Advanced Low-E	NaturalSun Low-E
	Clear (no Low-E coating)
Additional Glass Options	
	Tempered Glass
	Obscure Glass ¹
Annealed Glass	Low-E Tinted Glass (Bronze, Gray and Green)
	Non-Impact Laminated Dual-Pane Insulating Glass
Gas Fill/High Altitude	
Argon	High altitude
Exterior	
Exterior Sash Profile	
Ogee	Putty Glaze
Exterior Finish	
EnduraClad® aluminum-clad exterior	EnduraClad Plus protective finish, Factory Primed Pine wood exterior, Unfinished Mahogany wood exterior
Cladding Colors	
27 Standard colors ¹	Custom Colors ¹
Interior	
	Factory primed
Unfinished wood	Factory prefinished paint ¹
	Factory prefinished stain ¹
Wood Types	
Pine	Mahogany, Douglas Fir
Hardware	
Hardware Types	
	Simulated lock
Sash lifts, Cam-action lock	Air conditioner lock
	Historical spoon-style lock (surface mounted)
Hardware Finishes	
Champagne, White, Brown or Matte Black	Bright Brass, Satin Nickel, Oil-Rubbed Bronze, Antique Brass, Distressed Bronze, Distressed Nickel ⁴
Tilt-Wash Cleaning	
Tilt to interior on both sashes	–
Grilles	
Integral Light Technology® Grilles	
–	Traditional, Prairie, Top Row, Cross, New England, Victorian, Diamond, Custom
Roomside Removable Grilles	
–	Traditional, Prairie, Custom
Grilles-Between-the-Glass	
–	Traditional, Prairie, Top Row ¹ , Cross, Custom-Equally Divided
Screens	
–	Integrated Rolscreen® - retractable screen, InView™ screens, Vivid View® screens, in standard roll-form or premium extruded aluminum frame

(–) = Not Available

(1) Contact your local Pella sales representative for current designs and color options.

(2) Only available for Pella Reserve products with triple glazing. Not available with high altitude glazing.

(3) Available with Low-E argon-insulated glass only.

(4) Antique Brass, Distressed Nickel, Distressed Bronze finishes available for Historical spoon-style lock only.



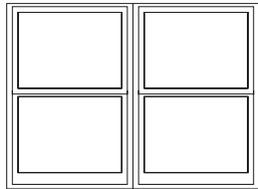
Pella® Reserve™ Traditional Hung Window

Combination Assemblies - Rectangular Units

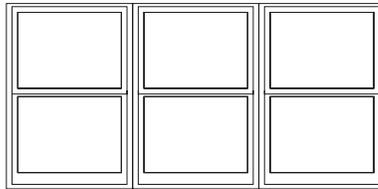
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullered together by a combination or reinforcing mullion.

Pella window combinations are available in an endless variety of arrangements. Below are available factory-assembled combinations. Some units can be fixed or vent depending on availability. Refer to Combinations Section for typical combinations requirements, and limitations related to mulling various combinations.

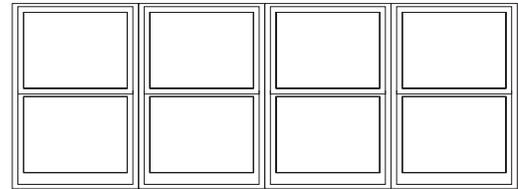
Contact your local Pella sales representative for more information.



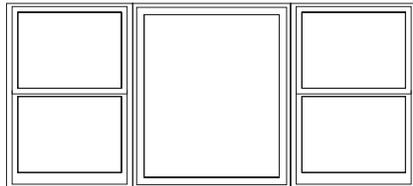
Two-Wide



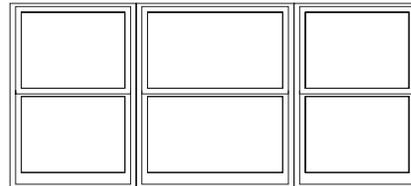
Three-Wide Equal



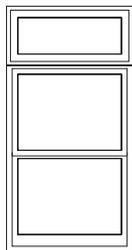
Four-Wide Equal



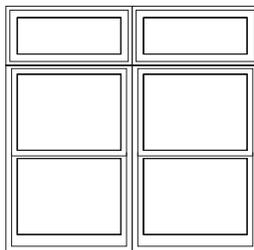
Center Fixed with Flankers



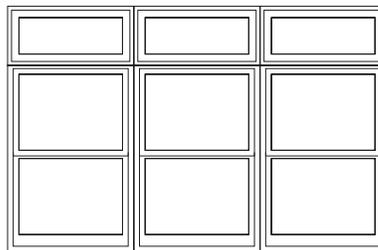
Three-Wide Unequal



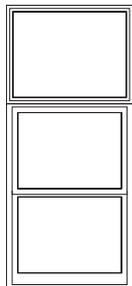
Transom over Single



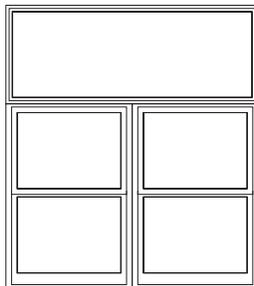
Two-Wide Transoms over Two-Wide



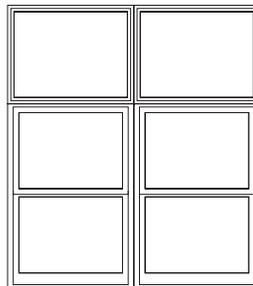
Three-Wide Transoms over Three-Wide



Clad Frame over Single



Single Clad Frame over Two-Wide



Two Wide Clad Frame over Two-Wide

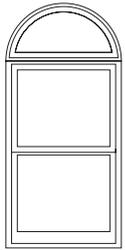


Combination Assemblies - Arch Top Units

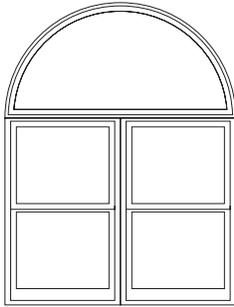
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Pella window combinations are available in an endless variety of arrangements. Below are available factory-assembled combinations. Some units can be fixed or vent depending on availability. Refer to Combinations Section for typical combinations requirements, and limitations related to mulling various combinations.

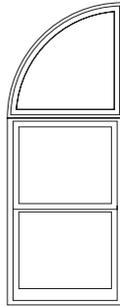
Contact your local Pella sales representative for more information.



Half Circle over Single



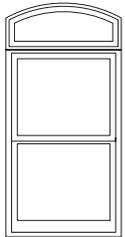
Half Circle over Two-Wide



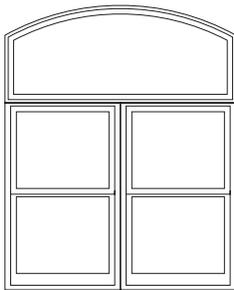
Left Quarter Circle over Single



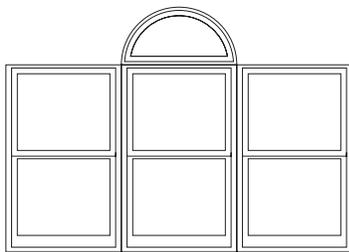
Right Quarter Circle over Single



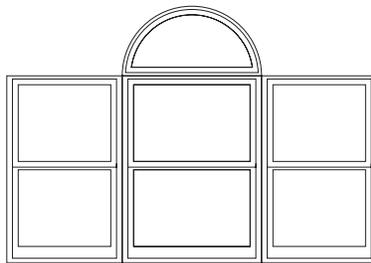
Arch Head over Single



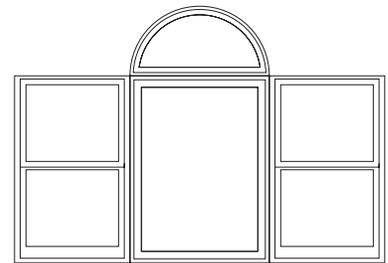
Arch Head over Two-Wide



Half Circle centered on Three-Wide Equal



Half Circle over Three-Wide Unequal



Half Circle over Center Fixed with Flankers



Pella® Reserve™ Traditional Hung Window

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.		Canada ²			
										Zone			ER	Zone	
Vent Dual-Pane Glazing - Aluminum-Clad Exterior										N	NC	SC	S	CA	
11/16"	Clear IG	PEL-N-232-00217-00001	2.5	2.5	Air	0.46	0.59	0.62	44						
	with grilles-between-the-glass	PEL-N-232-00218-00001				0.46	0.53	0.55	44						
	with integral grilles	PEL-N-232-00219-00001				0.46	0.53	0.55	44						
11/16"	Clear IG	PEL-N-232-00221-00001	3	3	Air	0.46	0.58	0.61	44						
	with grilles-between-the-glass	PEL-N-232-00222-00001				0.46	0.52	0.54	44						
	with integral grilles	PEL-N-232-00223-00001				0.46	0.52	0.54	44						
11/16"	Advanced Low-E IG	PEL-N-232-00253-00001	2.5	2.5	Argon	0.29	0.28	0.53	60		NC				
	with grilles-between-the-glass	PEL-N-232-00254-00001				0.29	0.25	0.47	60		NC	SC	S		
	with integral grilles	PEL-N-232-00255-00001				0.29	0.25	0.47	60		NC	SC	S		
11/16"	Advanced Low-E IG	PEL-N-232-00257-00001	3	3	Argon	0.29	0.28	0.52	59		NC				
	with grilles-between-the-glass	PEL-N-232-00258-00001				0.29	0.25	0.46	59		NC	SC	S		
	with integral grilles	PEL-N-232-00259-00001				0.29	0.25	0.46	59		NC	SC	S		
11/16"	SunDefense™ Low-E IG	PEL-N-232-00301-00001	2.5	2.5	Argon	0.28	0.21	0.49	60		NC	SC	S		
	with grilles-between-the-glass	PEL-N-232-00302-00001				0.28	0.19	0.43	60		NC	SC	S		
	with integral grilles	PEL-N-232-00303-00001				0.29	0.19	0.43	60		NC	SC	S		
11/16"	SunDefense™ Low-E IG	PEL-N-232-00305-00001	3	3	Argon	0.28	0.21	0.48	60		NC	SC	S		
	with grilles-between-the-glass	PEL-N-232-00306-00001				0.28	0.19	0.43	60		NC	SC	S		
	with integral grilles	PEL-N-232-00307-00001				0.29	0.19	0.43	60		NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-232-00277-00001	2.5	2.5	Argon	0.25	0.27	0.51	49	N	NC				
	with grilles-between-the-glass	PEL-N-232-00278-00001				0.25	0.25	0.46	49	N	NC	SC	S		
	with integral grilles	PEL-N-232-00279-00001				0.26	0.25	0.46	49	N	NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-232-00281-00001	3	3	Argon	0.25	0.27	0.51	48	N	NC				
	with grilles-between-the-glass	PEL-N-232-00282-00001				0.25	0.25	0.45	48	N	NC	SC	S		
	with integral grilles	PEL-N-232-00283-00001				0.26	0.25	0.45	48	N	NC	SC	S		
11/16"	NaturalSun Low-E IG	PEL-N-232-00229-00001	2.5	2.5	Argon	0.30	0.52	0.60	60	N					
	with grilles-between-the-glass	PEL-N-232-00230-00001				0.30	0.47	0.53	60	N					
	with integral grilles	PEL-N-232-00231-00001				0.30	0.47	0.53	60	N					
11/16"	NaturalSun Low-E IG	PEL-N-232-00233-00001	3	3	Argon	0.30	0.51	0.59	59	N					
	with grilles-between-the-glass	PEL-N-232-00234-00001				0.30	0.46	0.52	59	N					
	with integral grilles	PEL-N-232-00235-00001				0.30	0.46	0.52	59	N					
Tinted Glazing										N	NC	SC	S	CA	
11/16"	Bronze Advanced Low-E IG	PEL-N-232-00325-00001	5	3	Argon	0.29	0.25	0.34	48		NC	SC	S		
	with grilles-between-the-glass	PEL-N-232-00326-00001				0.31	0.22	0.30	48				S		
	with integral grilles	PEL-N-232-00327-00001				0.30	0.22	0.30	48		NC	SC	S		
11/16"	Gray Advanced Low-E IG	PEL-N-232-00333-00001	5	3	Argon	0.29	0.23	0.29	58		NC	SC	S		
	with grilles-between-the-glass	PEL-N-232-00334-00001				0.31	0.21	0.26	58				S		
	with integral grilles	PEL-N-232-00335-00001				0.30	0.21	0.26	58		NC	SC	S		
11/16"	Green Advanced Low-E IG	PEL-N-232-00341-00001	5	3	Argon	0.29	0.28	0.46	58		NC				
	with grilles-between-the-glass	PEL-N-232-00342-00001				0.31	0.25	0.25	58				S		
	with integral grilles	PEL-N-232-00343-00001				0.30	0.25	0.41	58		NC	SC	S		

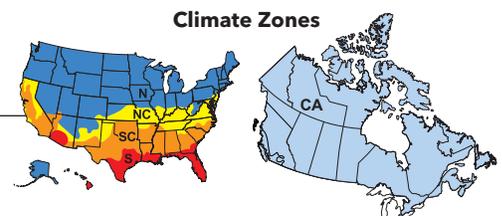
R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
 CR = Condensation Resistance
 ER = Canadian Energy Rating

(1) Glazing performance values are calculated for Pine using NFRC 100, NFRC 200 and NFRC 500. Thermal performance of other wood species may vary. ENERGY STAR® values are updated to 2016 (Version 6) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

See the Product Performance section for more detailed information or visit www.energystar.gov for Energy Star guidelines.

Non Rectangular Unit thermal values will vary slightly.





Pella® Reserve™ Traditional Hung Window

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.		Canada ²			
										Zone			ER	Zone	
Vent Dual-Pane High Altitude Glazing - Aluminum-Clad Exterior										N	NC	SC	S	CA	
11/16"	Advanced Low-E IG	PEL-N-232-00265-00001	2.5	2.5	Air	0.32	0.28	0.53	56						
	with grilles-between-the-glass	PEL-N-232-00265-00001				0.32	0.25	0.47	56				S		
	with integral grilles	PEL-N-232-00267-00001				0.33	0.25	0.47	56				S		
11/16"	Advanced Low-E IG	PEL-N-232-00269-00001	3	3	Air	0.32	0.28	0.52	55						
	with grilles-between-the-glass	PEL-N-232-00270-00001				0.32	0.25	0.46	55				S		
	with integral grilles	PEL-N-232-00271-00001				0.33	0.25	0.46	55				S		
11/16"	SunDefense Low-E IG	PEL-N-232-00313-00001	2.5	2.5	Air	0.32	0.21	0.49	57				S		
	with grilles-between-the-glass	PEL-N-232-00314-00001				0.32	0.19	0.43	57				S		
	with integral grilles	PEL-N-232-00315-00001				0.33	0.19	0.43	57				S		
11/16"	SunDefense Low-E IG	PEL-N-232-00317-00001	3	3	Air	0.32	0.21	0.48	56				S		
	with grilles-between-the-glass	PEL-N-232-00318-00001				0.32	0.19	0.43	56				S		
	with integral grilles	PEL-N-232-00319-00001				0.33	0.19	0.43	56				S		
11/16"	AdvancedComfort Low-E IG	PEL-N-232-00289-00001	2.5	2.5	Air	0.27	0.28	0.51	45	N	NC				
	with grilles-between-the-glass	PEL-N-232-00290-00001				0.27	0.25	0.46	45	N	NC	SC	S		
	with integral grilles	PEL-N-232-00291-00001				0.28	0.25	0.46	45		NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-232-00293-00001	3	3	Air	0.28	0.27	0.51	44		NC				
	with grilles-between-the-glass	PEL-N-232-00294-00001				0.28	0.25	0.45	44		NC	SC	S		
	with integral grilles	PEL-N-232-00295-00001				0.28	0.25	0.45	44		NC	SC	S		
11/16"	NaturalSun Low-E IG	PEL-N-232-00241-00001	2.5	2.5	Air	0.33	0.52	0.60	56						
	with grilles-between-the-glass	PEL-N-232-00242-00001				0.33	0.47	0.53	56						
	with integral grilles	PEL-N-232-00243-00001				0.34	0.47	0.53	56						
11/16"	NaturalSun Low-E IG	PEL-N-232-00245-00001	3	3	Air	0.33	0.51	0.59	55						
	with grilles-between-the-glass	PEL-N-232-00246-00001				0.33	0.46	0.52	55						
	with integral grilles	PEL-N-232-00247-00001				0.34	0.46	0.52	55						

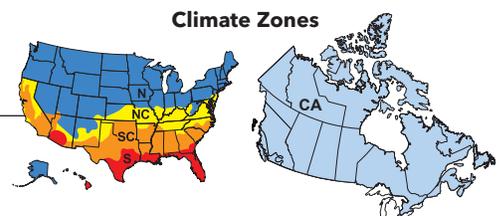
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Non Rectangular Unit thermal values will vary slightly.





Pella® Reserve™ Traditional Hung Window

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ²	
										Zone				ER	Zone
Vent Dual-Pane Glazing - Wood Exterior										N	NC	SC	S		CA
11/16"	Clear IG	PEL-N-234-00217-00001	2.5	2.5	Air	0.45	0.60	0.62	45						
	with grilles-between-the-glass	PEL-N-234-00218-00001				0.45	0.54	0.56	45						
	with integral grilles	PEL-N-234-00219-00001				0.45	0.54	0.56	45						
11/16"	Clear IG	PEL-N-234-00221-00001	3	3	Air	0.45	0.59	0.62	44						
	with grilles-between-the-glass	PEL-N-234-00222-00001				0.45	0.53	0.55	44						
	with integral grilles	PEL-N-234-00223-00001				0.46	0.53	0.55	44						
11/16"	Advanced Low-E IG	PEL-N-234-00253-00001	2.5	2.5	Argon	0.28	0.28	0.53	60		NC				
	with grilles-between-the-glass	PEL-N-234-00254-00001				0.28	0.25	0.47	60		NC	SC	S		
	with integral grilles	PEL-N-234-00255-00001				0.29	0.25	0.47	60		NC	SC	S		
11/16"	Advanced Low-E IG	PEL-N-234-00257-00001	3	3	Argon	0.28	0.28	0.53	59		NC				
	with grilles-between-the-glass	PEL-N-234-00258-00001				0.28	0.25	0.47	59		NC	SC	S		
	with integral grilles	PEL-N-234-00259-00001				0.29	0.25	0.47	59		NC	SC	S		
11/16"	SunDefense™ Low-E IG	PEL-N-234-00301-00001	2.5	2.5	Argon	0.28	0.21	0.49	60		NC	SC	S		
	with grilles-between-the-glass	PEL-N-234-00302-00001				0.28	0.19	0.44	60		NC	SC	S		
	with integral grilles	PEL-N-234-00303-00001				0.28	0.19	0.44	60		NC	SC	S		
11/16"	SunDefense™ Low-E IG	PEL-N-234-00305-00001	3	3	Argon	0.28	0.21	0.49	59		NC	SC	S		
	with grilles-between-the-glass	PEL-N-234-00306-00001				0.28	0.19	0.43	59		NC	SC	S		
	with integral grilles	PEL-N-234-00307-00001				0.28	0.19	0.43	59		NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-234-00277-00001	2.5	2.5	Argon	0.24	0.28	0.52	49	N	NC				
	with grilles-between-the-glass	PEL-N-234-00278-00001				0.24	0.25	0.46	49	N	NC	SC	S		
	with integral grilles	PEL-N-234-00279-00001				0.25	0.25	0.46	49	N	NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-234-00281-00001	3	3	Argon	0.24	0.28	0.51	48	N	NC				
	with grilles-between-the-glass	PEL-N-234-00282-00001				0.24	0.25	0.46	48	N	NC	SC	S		
	with integral grilles	PEL-N-234-00283-00001				0.25	0.25	0.46	48	N	NC	SC	S		
11/16"	NaturalSun Low-E IG	PEL-N-234-00229-00001	2.5	2.5	Argon	0.29	0.53	0.60	59	N				34	CA
	with grilles-between-the-glass	PEL-N-234-00230-00001				0.29	0.47	0.53	59	N					
	with integral grilles	PEL-N-234-00231-00001				0.30	0.47	0.53	59	N					
11/16"	NaturalSun Low-E IG	PEL-N-234-00233-00001	3	3	Argon	0.29	0.52	0.59	58	N					
	with grilles-between-the-glass	PEL-N-234-00234-00001				0.29	0.46	0.53	58	N					
	with integral grilles	PEL-N-234-00235-00001				0.30	0.46	0.53	58	N					
Tinted Glazing															
11/16"	Bronze Advanced Low-E IG	PEL-N-234-00325-00001	5	3	Argon	0.29	0.25	0.34	58		NC	SC	S		
	with grilles-between-the-glass	PEL-N-234-00326-00001				0.30	0.23	0.30	58		NC	SC	S		
	with integral grilles	PEL-N-234-00327-00001				0.30	0.23	0.30	58		NC	SC	S		
11/16"	Gray Advanced Low-E IG	PEL-N-234-00333-00001	5	3	Argon	0.29	0.23	0.29	58		NC	SC	S		
	with grilles-between-the-glass	PEL-N-234-00334-00001				0.30	0.21	0.26	58		NC	SC	S		
	with integral grilles	PEL-N-234-00335-00001				0.30	0.21	0.26	58		NC	SC	S		
11/16"	Green Advanced Low-E IG	PEL-N-234-00341-00001	5	3	Argon	0.29	0.28	0.46	58		NC				
	with grilles-between-the-glass	PEL-N-234-00342-00001				0.30	0.25	0.41	58		NC	SC	S		
	with integral grilles	PEL-N-234-00343-00001				0.30	0.25	0.41	58		NC	SC	S		

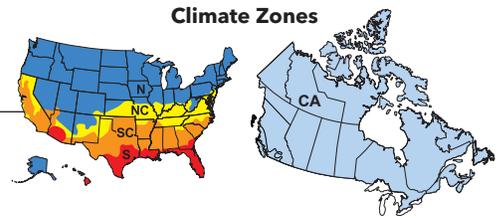
R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
 CR = Condensation Resistance
 ER = Canadian Energy Rating

(1) Glazing performance values are calculated for Pine using NFRC 100, NFRC 200 and NFRC 500. Thermal performance of other wood species may vary. ENERGY STAR® values are updated to 2016 (Version 6) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

See the Product Performance section for more detailed information or visit www.energystar.gov for Energy Star guidelines.

Non Rectangular Unit thermal values will vary slightly.





Pella® Reserve™ Traditional Hung Window

Glazing Performance - Total Unit

Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ¹				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ²	
										Zone				ER	Zone
Vent Dual-Pane High Altitude Glazing - Wood Exterior										N	NC	SC	S	CA	
11/16"	Advanced Low-E IG	PEL-N-234-00265-00001	2.5	2.5	Air	0.31	0.28	0.53	56						
	with grilles-between-the-glass	PEL-N-234-00266-00001				0.31	0.26	0.47	56						
	with integral grilles	PEL-N-234-00267-00001				0.32	0.26	0.47	56						
11/16"	Advanced Low-E IG	PEL-N-234-00269-00001	3	3	Air	0.32	0.28	0.53	55						
	with grilles-between-the-glass	PEL-N-234-00270-00001				0.32	0.26	0.47	55						
	with integral grilles	PEL-N-234-00271-00001				0.33	0.26	0.47	55						
11/16"	SunDefense Low-E IG	PEL-N-234-00313-00001	2.5	2.5	Air	0.31	0.21	0.49	56				S		
	with grilles-between-the-glass	PEL-N-234-00314-00001				0.31	0.19	0.44	56				S		
	with integral grilles	PEL-N-234-00315-00001				0.32	0.19	0.44	56				S		
11/16"	SunDefense Low-E IG	PEL-N-234-00317-00001	3	3	Air	0.31	0.21	0.49	55				S		
	with grilles-between-the-glass	PEL-N-234-00318-00001				0.31	0.19	0.43	55				S		
	with integral grilles	PEL-N-234-00319-00001				0.32	0.19	0.43	55				S		
11/16"	AdvancedComfort Low-E IG	PEL-N-234-00289-00001	2.5	2.5	Air	0.27	0.28	0.52	45	N	NC				
	with grilles-between-the-glass	PEL-N-234-00290-00001				0.27	0.25	0.46	45	N	NC	SC	S		
	with integral grilles	PEL-N-234-00291-00001				0.27	0.25	0.46	45	N	NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-234-00293-00001	3	3	Air	0.27	0.28	0.51	44	N	NC				
	with grilles-between-the-glass	PEL-N-234-00294-00001				0.27	0.25	0.46	44	N	NC	SC	S		
	with integral grilles	PEL-N-234-00295-00001				0.28	0.25	0.46	44		NC	SC	S		
11/16"	NaturalSun Low-E IG	PEL-N-234-00241-00001	2.5	2.5	Air	0.32	0.53	0.60	56						
	with grilles-between-the-glass	PEL-N-234-00242-00001				0.32	0.47	0.53	56						
	with integral grilles	PEL-N-234-00243-00001				0.33	0.47	0.53	56						
11/16"	NaturalSun Low-E IG	PEL-N-234-00245-00001	3	3	Air	0.32	0.52	0.59	55						
	with grilles-between-the-glass	PEL-N-234-00246-00001				0.32	0.46	0.53	55						
	with integral grilles	PEL-N-234-00247-00001				0.33	0.46	0.53	55						

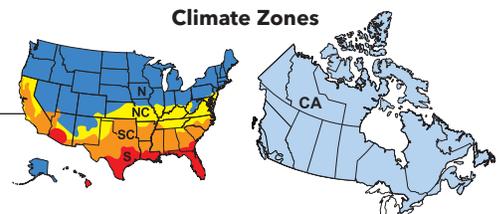
R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
 CR = Condensation Resistance
 ER = Canadian Energy Rating

(1) Glazing performance values are calculated for Pine using NFRC 100, NFRC 200 and NFRC 500. Thermal performance of other wood species may vary. ENERGY STAR® values are updated to 2016 (Version 6) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative.

See the Product Performance section for more detailed information or visit www.energystar.gov for Energy Star guidelines.

Non Rectangular Unit thermal values will vary slightly.

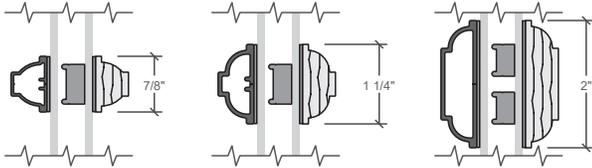




Integral Light Technology® Grilles

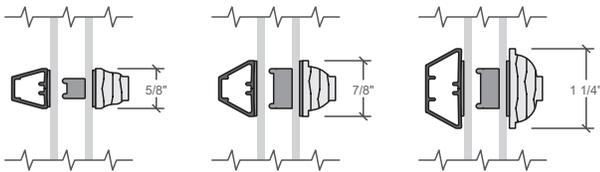
Ogee Grilles

Clad Exterior - Wood Interior



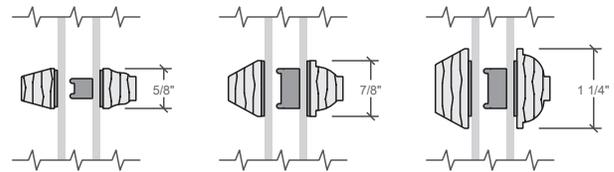
Putty Glaze and Ogee Grilles

Clad Exterior - Wood Interior

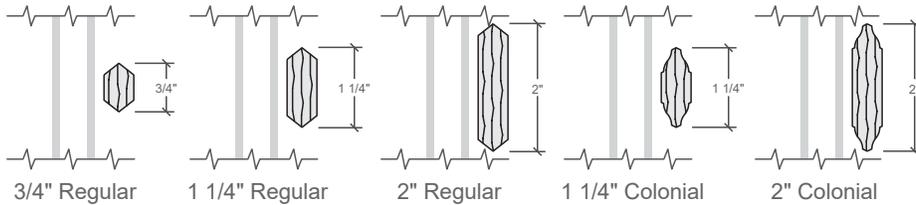


Putty Glaze and Ogee Grilles

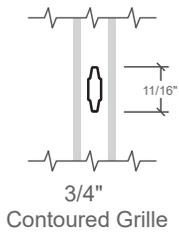
Wood Exterior - Wood Interior



Roomside Removable Grilles



Grilles-Between-the-Glass

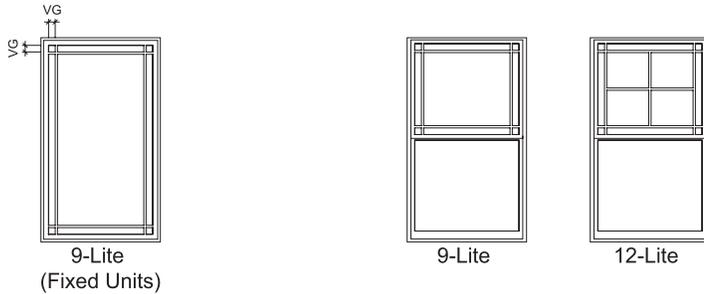


Interior wood ILT grilles available in Pine, Mahogany or Douglas Fir to match complete unit.
Exterior wood ILT grilles available in Pine or Mahogany to match complete unit.



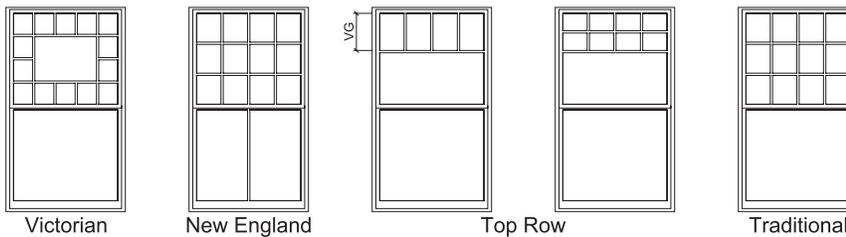
Integral light technology® Grilles and Roomside Removable Grilles

Prairie Lite Patterns



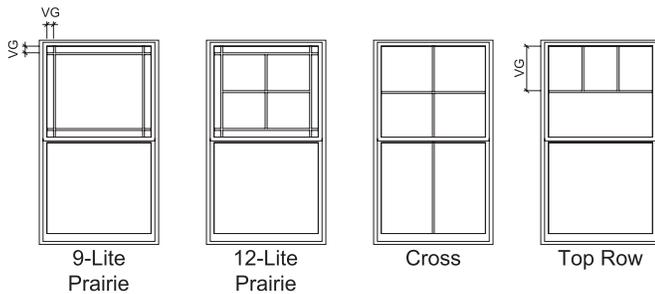
Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
 Available in transoms ≥ 1'3" height and width.
 Available in all standard and special sizes.

Other Available Patterns



VG = Visible Glass
 Lite dimensions noted can vary.
 For size and pattern availability contact your local Pella sales representative.

Grilles-Between-the-Glass

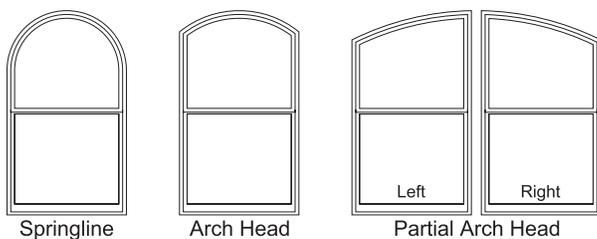


- Prairie**
- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
 - Available in transoms ≥ 1'3" height and width.
- Cross**
- Minimum DH frame height 35".
 - Horizontal bar will be at 1/2" of the VG height of the top sash.
- Top Row**
- Minimum DH frame height 35".
 - Horizontal bar will be at 1/2" of the VG height of the top sash.

For traditional patterns, see size tables.

Custom shapes

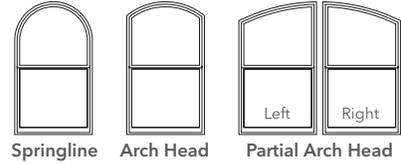
Pella Reserve single-hung windows are available in custom shapes shown below, and additional shapes per drawing. For specifications, size limitations, and details on these units, contact your local Pella sales representative.





Pella® Reserve™ Traditional Hung Window

Size Tables - Equal Sash



Pella Reserve single-hung windows are available in shapes shown above, and additional custom shapes per drawing. For specifications, size limitations, and details on these units, contact your local Pella sales representative.

Opening Dimensions

Clad Exterior Units:

Dimensions shown in standard size tables are rough opening dimensions.

Wood Exterior Units:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

Frame	Rough		Masonry	
	Width	Height	Width	Height
Brickmould				
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolcreens meet egress requirements.

Fixed Transoms

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"	3' 9 3/4"	4' 0 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
1' 2"	2114	2514	2914	3314	3714	4114	4514	4814
1' 5"	2117	2517	2917	3317	3717	4117	4517	4817
2' 1"	2125	2525	2925	3325	3725	4125	4525	4825

Vent Units

(908) (889)	2135	2535	2935	3335	3735	4135	4535	4835
(1 060) (1 041)	2141	2541	2941	3341	3741	4141	4541	4841
(1 213) (1 194)	2147	2547	2947	3347	3747	4147	4547	4847
(1 365) (1 346)	2153	2553	2953	3353	3753	4153	4553	4853
(1 467) (1 448)	2157	2557	2957	3357	3757	4157	4557	4857
(1 518) (1 499)	2159	2559	2959	3359	3759	4159	4559	4859
(1 670) (1 651)	2165	2565	2965	3365	3765	4165	4565	4865
(1 822) (1 803)	2171	2571	2971	3371	3771	4171	4571	4871
(1 975) (1 956)	2177	2577	2977	3377	3777	4177	4577	4877
(2 133) (2 134)	2184	2584	2984	3384	3784	4184	4584	4884

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



Pella® Reserve™ Traditional Hung Window

Size Tables - Fixed

Fixed Units

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 518) (1 499)
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "
Frame	3' 5"	3' 11"	4' 5"	4' 11"
(908) (889)	 4135	 4735	 5335	 5935
(1 060) (1 041)	 4141	 4741	 5341	 5941
(1 213) (1 194)	 4147	 4747	 5347	 5947
(1 365) (1 346)	 4153	 4753	 5353	 5953
(1 467) (1 448)	 4157	 4757	 5357	 5957
(1 518) (1 499)	 4159	 4759	 5359	 5959
(1 670) (1 651)	 4165	 4765	 5365	 5965
(1 822) (1 803)	 4171	 4771	 5371	 5971

Opening Dimensions

Clad Exterior Units:

Dimensions shown in standard size tables are rough opening dimensions.

Wood Exterior Units:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

Frame	Rough		Masonry	
	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.

Grille patterns will align with companion hung window with equal sash split.

5-lite high grille patterns may be ordered in 5'5" fixed units to match cottage sash vent units.

Grilles are equally-divided on fixed units with odd-number lites high.



Pella® Reserve™ Traditional Hung Window

Size Tables - Cottage Sash

VENT UNITS

	(552) (533)	(654) (635)	(756) (737)	(857) (838)	(959) (940)	(1 060) (1 041)	(1 162) (1 143)	(1 238) (1 219)
Opening	1' 9 3/4"	2' 1 3/4"	2' 5 3/4"	2' 9 3/4"	3' 1 3/4"	3' 5 3/4"	3' 9 3/4"	4' 0 3/4"
Frame	1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"	3' 9"	4' 0"
(1 060) (1 041)	VG2141	VG2541	VG2941	VG3341	VG3741	VG4141	VG4541	VG4841
(1 213) (1 194)	VG2147	VG2547	VG2947	VG3347	VG3747	VG4147	VG4547	VG4847
(1 365) (1 346)	VG2153	VG2553	VG2953	VG3353	VG3753	VG4153	VG4553	VG4853
(1 467) (1 448)	VG2157	VG2557	VG2957	VG3357	VG3757	VG4157	VG4557	VG4857
(1 518) (1 499)	VG2159	VG2559	VG2959	VG3359	VG3759	VG4159	VG4559	VG4859
(1 670) (1 651)	VG2165	VG2565	VG2965	VG3365	VG3765	VG4165	VG4565	VG4865
(1 822) (1 803)	VG2171	VG2571	VG2971	VG3371	VG3771	VG4171	VG4571	VG4871
(1 822) (1 803)	VG2177	VG2577	VG2977	VG3377	VG3777	VG4177	VG4577	VG4877

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Opening Dimensions

Clad Exterior Units:

Dimensions shown in standard size tables are rough opening dimensions.

Wood Exterior Units:

Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

Frame	Rough		Masonry	
	Width	Height	Width	Height
STD	+ 3/4"	+ 1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+ 1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.

Cottage units have unequal sash split. Sash glass ratio is 40% upper sash to 60% Lower sash.

Vent variable units have unequal sash split. Sash glass ratio is determined by checkrail heights. See unit sections for dimension requirements.



Pella® Reserve™ Traditional Hung Window

Size Tables - Replacement Equal Sash Sizes

Transoms

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(375) (356) 1' 2 3/4"	23.5 x 14	27.5 x 14	29.5 x 14	31.5 x 14	35.5 x 14	39.5 x 14	41.5 x 14
(451) (432) 1' 5 3/4"	23.5 x 17	27.5 x 17	29.5 x 17	31.5 x 17	35.5 x 17	39.5 x 17	41.5 x 17
(654) (635) 2' 1 3/4"	23.5 x 25	27.5 x 25	29.5 x 25	31.5 x 25	35.5 x 25	39.5 x 25	41.5 x 25

Vent Units

(921) (902) 3' 0 1/4"	23.5 x 35.5	27.5 x 35.5	29.5 x 35.5	31.5 x 35.5	35.5 x 35.5	39.5 x 35.5	41.5 x 35.5
(972) (953) 3' 2 1/4"	23.5 x 37.5	27.5 x 37.5	29.5 x 37.5	31.5 x 37.5	35.5 x 37.5	39.5 x 37.5	41.5 x 37.5
(1 073) (1 054) 3' 6 1/4"	23.5 x 41.5	27.5 x 41.5	29.5 x 41.5	31.5 x 41.5	35.5 x 41.5	39.5 x 41.5	41.5 x 41.5
(1 175) (1 156) 3' 10 1/4"	23.5 x 45.5	27.5 x 45.5	29.5 x 45.5	31.5 x 45.5	35.5 x 45.5	39.5 x 45.5	41.5 x 45.5
(1 226) (1 206) 4' 0 1/4"	23.5 x 47.5	27.5 x 47.5	29.5 x 47.5	31.5 x 47.5	35.5 x 47.5	39.5 x 47.5	41.5 x 47.5
(1 327) (1 308) 4' 4 1/4"	23.5 x 51.5	27.5 x 51.5	29.5 x 51.5	31.5 x 51.5	35.5 x 51.5	39.5 x 51.5	41.5 x 51.5
(1 378) (1 359) 4' 6 1/4"	23.5 x 53.5	27.5 x 53.5	29.5 x 53.5	31.5 x 53.5	35.5 x 53.5	39.5 x 53.5	41.5 x 53.5
(1 473) (1 461) 4' 10 1/4"	23.5 x 57.5	27.5 x 57.5	29.5 x 57.5	31.5 x 57.5	35.5 x 57.5	39.5 x 57.5	41.5 x 57.5

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

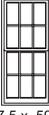
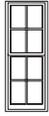
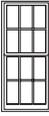
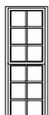
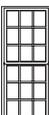
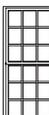
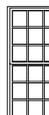
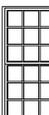
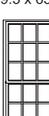
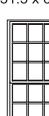
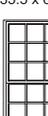
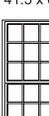
Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



Pella® Reserve™ Traditional Hung Window

Size Tables - Replacement Sizes

Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 530) (1 511)	 23.5 x 59.5	 27.5 x 59.5	 29.5 x 59.5	 31.5 x 59.5	 35.5 x 59.5 E ₁	 39.5 x 59.5 E	 41.5 x 59.5 E
(1 581) (1 562)	 23.5 x 61.5	 27.5 x 61.5	 29.5 x 61.5	 31.5 x 61.5 E ₁	 35.5 x 61.5 E	 39.5 x 61.5 E	 41.5 x 61.5 E
(1 683) (1 664)	 23.5 x 65.5	 27.5 x 65.5	 29.5 x 65.5	 31.5 x 65.5 E ₁	 35.5 x 65.5 E	 39.5 x 65.5 E	 41.5 x 65.5 E
(1 835) (1 816)	 23.5 x 71.5	 27.5 x 71.5 E ₁	 29.5 x 71.5 E ₁	 31.5 x 71.5 E	 35.5 x 71.5 E	 39.5 x 71.5 E	 41.5 x 71.5 E

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolcreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



Pella® Reserve™ Traditional Hung Window

Size Tables - Replacement Cottage Sash Sizes

Cottage Vent Units

	(616) (597)	(718) (699)	(762) (749)	(819) (800)	(921) (902)	(1 022) (1 003)	(1 073) (1 054)
Opening	2' 0 1/4"	2' 4 1/4"	2' 6 1/4"	2' 8 1/4"	3' 0 1/4"	3' 4 1/4"	3' 6 1/4"
Frame	1' 11 1/2"	2' 3 1/2"	2' 5 1/2"	2' 7 1/2"	2' 11 1/2"	3' 3 1/2"	3' 5 1/2"
(1 073) (1 054) 3' 6 1/4" 3' 5 1/2"	 23.5 x 41.5	 27.5 x 41.5	 29.5 x 41.5	 31.5 x 41.5	 35.5 x 41.5	 39.5 x 41.5	 41.5 x 41.5
(1 175) (1 156) 3' 10 1/4" 3' 9 1/2"	 23.5 x 45.5	 27.5 x 45.5	 29.5 x 45.5	 31.5 x 45.5	 35.5 x 45.5	 39.5 x 45.5	 41.5 x 45.5
(1 226) (1 206) 4' 0 1/4" 3' 11 1/2"	 23.5 x 47.5	 27.5 x 47.5	 29.5 x 47.5	 31.5 x 47.5	 35.5 x 47.5	 39.5 x 47.5	 41.5 x 47.5
(1 327) (1 308) 4' 4 1/4" 4' 3 1/2"	 23.5 x 51.5	 27.5 x 51.5	 29.5 x 51.5	 31.5 x 51.5	 35.5 x 51.5	 39.5 x 51.5	 41.5 x 51.5
(1 378) (1 359) 4' 6 1/4" 4' 5 1/2"	 23.5 x 53.5	 27.5 x 53.5	 29.5 x 53.5	 31.5 x 53.5	 35.5 x 53.5	 39.5 x 53.5	 41.5 x 53.5
(1 473) (1 461) 4' 10 1/4" 4' 9 1/2"	 23.5 x 57.5	 27.5 x 57.5	 29.5 x 57.5	 31.5 x 57.5	 35.5 x 57.5	 39.5 x 57.5	 41.5 x 57.5
(1 530) (1 511) 5' 0 1/4" 4' 11 1/2"	 23.5 x 59.5	 27.5 x 59.5	 29.5 x 59.5	 31.5 x 59.5	 35.5 x 59.5	 39.5 x 59.5	 41.5 x 59.5
(1 581) (1 561.5) 5' 2 1/4" 5' 1 1/2"	 23.5 x 61.5	 27.5 x 61.5	 29.5 x 61.5	 31.5 x 61.5	 35.5 x 61.5	 39.5 x 61.5	 41.5 x 61.5
(1 683) (1 664) 5' 6 1/4" 5' 5 1/2"	 23.5 x 65.5	 27.5 x 65.5	 29.5 x 65.5	 31.5 x 65.5	 35.5 x 65.5	 39.5 x 65.5	 41.5 x 65.5
(1 835) (1 816) 6' 0 1/4" 5' 11 1/2"	 23.5 x 71.5	 27.5 x 71.5	 29.5 x 71.5	 31.5 x 71.5	 35.5 x 71.5	 39.5 x 71.5	 41.5 x 71.5

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

See Design Data pages in this section for clear opening dimensions.

Clear opening (egress) information does not take into consideration the addition of a Rolscreen (or any other accessory) to the product. You should consult your local building code to ensure products with Rolscreens meet egress requirements.

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



Pella® Reserve™ Traditional Hung Window

Size Tables - Replacement Fixed Sizes

Fixed Units	(1 060)	(1 213)	(1 365)	(1 518)	(1 060)	(1 213)	(1 365)	(1 518)	
	(1 041)	(1 194)	(1 346)	(1 499)	(1 041)	(1 194)	(1 346)	(1 499)	
Opening	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "	3' 5 ³ / ₄ "	3' 11 ³ / ₄ "	4' 5 ³ / ₄ "	4' 11 ³ / ₄ "	
Frame	3' 5"	3' 11"	4' 5"	4' 11"	3' 5"	3' 11"	4' 5"	4' 11"	
(921) (902)	3' 0 ¹ / ₄ "	2' 11 ¹ / ₂ "	41 x 35.5	47 x 35.5	53 x 35.5	59 x 35.5	(1 530) (1 511)	5' 0 ¹ / ₄ "	4' 11 ¹ / ₂ "
(972) (953)	3' 2 ¹ / ₄ "	3' 1 ¹ / ₂ "	41 x 37.5	47 x 37.5	53 x 37.5	59 x 37.5	(1 581) (1 562)	5' 2 ¹ / ₄ "	5' 1 ¹ / ₂ "
(1 073) (1 054)	3' 6 ¹ / ₄ "	3' 5 ¹ / ₂ "	41 x 41.5	47 x 41.5	53 x 41.5	59 x 41.5	(1 683) (1 664)	5' 6 ¹ / ₄ "	5' 5 ¹ / ₂ "
(1 175) (1 156)	3' 10 ¹ / ₄ "	3' 9 ¹ / ₂ "	41 X 45.5	47 X 45.5	53 X 45.5	59 X 45.5	(1 835) (1 816)	6' 0 ¹ / ₄ "	5' 11 ¹ / ₂ "
(1 226) (1 206)	4' 0 ¹ / ₄ "	3' 11 ¹ / ₂ "	41 X 47.5	47 X 47.5	53 X 47.5	59 X 47.5			
(1 327) (1 308)	4' 4 ¹ / ₄ "	4' 3 ¹ / ₂ "	41 x 51.5	47 x 51.5	53 x 51.5	59 x 51.5			
(1 378) (1 359)	4' 6 ¹ / ₄ "	4' 5 ¹ / ₂ "	41 x 53.5	47 x 53.5	53 x 53.5	59 x 53.5			
(1 473) (1 461)	4' 10 ¹ / ₄ "	4' 9 ¹ / ₂ "	41 x 57.5	47 x 57.5	53 x 57.5	59 x 57.5			

Not to scale.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.



Special Size Frame Dimensions*

Sash configuration	Vent-Equal	Cottage	Fixed
Sash Glass Ratio Top % : Bottom %	50 : 50	40 : 60	NA
Shortest Unit Frame Size	24-3/8" (619)	40-1/4" (1 022)	17" (432)
Tallest Unit Frame Size	96" (2 438)	81" (2 057)	71" (1 803)
Unit Frame Width Range	14" to 48" (356 to 1 219)	14" to 48" (356 to 1 219)	17" to 59" (432 to 1 499)

Opening Dimensions

Clad Exterior Units:

Dimensions shown in standard size tables are rough opening dimensions.

Wood Exterior Units:

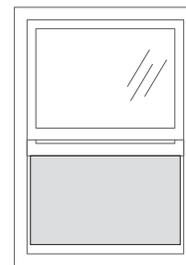
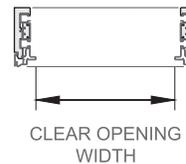
Use frame dimension plus dimensions below. This dimension includes the use of standard 1-1/8" wood subsill.

Frame	Rough		Masonry	
	Width	Height	Width	Height
STD	+ 3/4"	+1-7/8"	+ 3-1/8"	+ 3-1/8"
3-1/2"	+ 3/4"	+1-7/8"	+ 6-3/8"	+ 4-3/4"

For clad and wood units with impact-resistant glass, see the product installation instructions or refer to local building code requirements.

Equal Sash Only

	Vent Units	Fixed and Transom Units
Visible Glass	Width = Frame - 5.647" Height = (Frame - 8.681") ÷ 2	Width = Frame - 5.75" Height = Frame - 5.75"
Actual Glass	Width = Frame - 4.375" Height = (Frame - 5.983") ÷ 2	Width = Frame - 4.375" Height = Frame - 4.375"
Clear Opening*	COW = Frame Width - 3.4375" COH = (Frame Height ÷ 2) - 4.4375"	
Vent Area Ft²	(COW x COH) ÷ 144	



Shaded portion shows vent area.

Traditional grille patterns shown. Refer to Grille Types section for additional patterns and profiles.

* Some units with custom glazing may have limited travel. Integrated Rolscreen® is only available on sizes greater than or equal to 34" tall and 21" wide and less than or equal to 84" tall and 48" wide.

See your local Pella sales representative for specific size information.



Pella® Reserve™ Traditional Hung Window

Design Data

Vent Equal Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
2135		17-5/16	13-1/16	1.6	2.8	2.5	3	CW50	CW45
2141		17-5/16	16-1/16	1.9	3.4	2.5	3	CW50	CW45
2147		17-5/16	19-1/16	2.3	4.1	2.5	3	CW50	CW45
2153		17-5/16	22-1/16	2.7	4.7	2.5	3	CW50	CW45
2157		17-5/16	24-1/16	2.9	5.2	2.5	3	CW50	CW45
2159		17-5/16	25-1/16	3.0	5.4	2.5	3	CW50	CW45
2165		17-5/16	28-1/16	3.4	6.0	2.5	3	CW50	CW45
2171		17-5/16	31-1/16	3.7	6.6	2.5	3	CW50	CW45
2177		17-5/16	34-1/16	4.1	7.3	2.5	3	CW50	CW45
2184		17-5/16	37-9/16	4.5	8.0	2.5	3	CW40	CW40
2535		21-5/16	13-1/16	1.9	3.5	2.5	3	CW50	CW45
2541		21-5/16	16-1/16	2.4	4.3	2.5	3	CW50	CW45
2547		21-5/16	19-1/16	2.8	5.1	2.5	3	CW50	CW45
2553		21-5/16	22-1/16	3.3	6.0	2.5	3	CW50	CW45
2557		21-5/16	24-1/16	3.6	6.5	2.5	3	CW50	CW45
2559		21-5/16	25-1/16	3.7	6.8	2.5	3	CW50	CW45
2565		21-5/16	28-1/16	4.2	7.6	2.5	3	CW50	CW45
2571		21-5/16	31-1/16	4.6	8.4	2.5	3	CW50	CW45
2577	E ₁	21-5/16	34-1/16	5.0	9.2	2.5	3	CW50	CW45
2584	E ₁	21-5/16	37-9/16	5.6	10.1	2.5	3	CW40	CW40
2935		25-5/16	13-1/16	2.3	4.3	2.5	3	CW50	CW45
2941		25-5/16	16-1/16	2.8	5.2	2.5	3	CW50	CW45
2947		25-5/16	19-1/16	3.4	6.2	2.5	3	CW50	CW45
2953		25-5/16	22-1/16	3.9	7.2	2.5	3	CW50	CW45
2957		25-5/16	24-1/16	4.2	7.8	2.5	3	CW50	CW45
2959		25-5/16	25-1/16	4.4	8.2	2.5	3	CW50	CW45
2965		25-5/16	28-1/16	4.9	9.1	2.5	3	CW50	CW45
2971	E ₁	25-5/16	31-1/16	5.5	10.1	2.5	3	CW50	CW45
2977	E	25-5/16	34-1/16	6.0	11.1	2.5	3	CW50	CW45
2984	E	25-5/16	37-9/16	6.6	12.2	2.5	3	CW40	CW40
3335		29-5/16	13-1/16	2.7	5.0	2.5	3	CW50	CW45
3341		29-5/16	16-1/16	3.3	6.1	2.5	3	CW50	CW45
3347		29-5/16	19-1/16	3.9	7.3	2.5	3	CW50	CW45
3353		29-5/16	22-1/16	4.5	8.4	2.5	3	CW50	CW45
3357		29-5/16	24-1/16	4.9	9.2	2.5	3	CW50	CW45
3359	E ₁	29-5/16	25-1/16	5.1	9.6	2.5	3	CW50	CW45
3365	E	29-5/16	28-1/16	5.7	10.7	2.5	3	CW50	CW45
3371	E	29-5/16	31-1/16	6.3	11.8	2.5	3	CW50	CW45
3377	E	29-5/16	34-1/16	6.9	13.0	2.5	3	CW50	CW45
3384	E	29-5/16	37-9/16	7.7	14.3	2.5	3	CW40	CW40

Continued on next page

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum design pressure when glazed with appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data

Vent Equal Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
3735		33-5/16	13-1/16	3.0	5.7	2.5	3	CW50	CW45
3741		33-5/16	16-1/16	3.7	7.0	2.5	3	CW50	CW45
3747		33-5/16	19-1/16	4.4	8.3	2.5	3	CW50	CW45
3753		33-5/16	22-1/16	5.1	9.6	2.5	3	CW50	CW45
3757	E ₁	33-5/16	24-1/16	5.6	10.5	2.5	3	CW50	CW45
3759	E	33-5/16	25-1/16	5.8	11.0	2.5	3	CW50	CW45
3765	E	33-5/16	28-1/16	6.5	12.3	2.5	3	CW50	CW45
3771	E	33-5/16	31-1/16	7.2	13.6	2.5	3	CW50	CW45
3777	E	33-5/16	34-1/16	7.9	14.9	2.5	3	CW50	CW45
3784	E	33-5/16	37-9/16	8.7	16.4	2.5	3	CW40	CW40
4135		37-5/16	13-1/16	3.4	6.5	2.5	3	CW50	CW45
4141		37-5/16	16-1/16	4.2	7.9	2.5	3	CW50	CW45
4147		37-5/16	19-1/16	4.9	9.4	2.5	3	CW50	CW45
4153		37-5/16	22-1/16	5.7	10.9	2.5	3	CW50	CW45
4157	E	37-5/16	24-1/16	6.2	11.9	2.5	3	CW50	CW45
4159	E	37-5/16	25-1/16	6.5	12.4	2.5	3	CW50	CW45
4165	E	37-5/16	28-1/16	7.3	13.8	2.5	3	CW50	CW45
4171	E	37-5/16	31-1/16	8.1	15.3	2.5	3	CW50	CW45
4177	E	37-5/16	34-1/16	8.8	16.8	2.5	3	CW45	CW45
4184	E	37-5/16	37-9/16	9.7	18.5	2.5	3	CW40	CW40
4535		41-5/16	13-1/16	3.7	7.2	2.5	3	CW50	CW45
4541		41-5/16	16-1/16	4.6	8.8	2.5	3	CW50	CW45
4547		41-5/16	19-1/16	5.5	10.5	2.5	3	CW50	CW45
4553		41-5/16	22-1/16	6.3	12.1	2.5	3	CW50	CW45
4557	E	41-5/16	24-1/16	6.9	13.2	2.5	3	CW50	CW45
4559	E	41-5/16	25-1/16	7.2	13.7	2.5	3	CW50	CW45
4565	E	41-5/16	28-1/16	8.1	15.4	2.5	3	CW50	CW45
4571	E	41-5/16	31-1/16	8.9	17.0	2.5	3	CW45	CW45
4577	E	41-5/16	34-1/16	9.8	18.7	2.5	3	CW45	CW45
4584	E	41-5/16	37-9/16	10.8	20.6	3	3	CW40	CW40
4835		44-5/16	13-1/16	4.0	7.7	2.5	3	CW50	CW45
4841		44-5/16	16-1/16	4.9	9.5	2.5	3	CW50	CW45
4847		44-5/16	19-1/16	5.9	11.3	2.5	3	CW50	CW45
4853		44-5/16	22-1/16	6.8	13.0	2.5	3	CW50	CW45
4857	E	44-5/16	24-1/16	7.4	14.2	2.5	3	CW50	CW45
4859	E	44-5/16	25-1/16	7.7	14.8	2.5	3	CW50	CW45
4865	E	44-5/16	28-1/16	8.6	16.6	2.5	3	CW45	CW45
4871	E	44-5/16	31-1/16	9.6	18.3	2.5	3	CW45	CW45
4877	E	44-5/16	34-1/16	10.5	20.1	3	3	CW45	CW45
4884	E	44-5/16	37-9/16	11.6	22.2	3	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data

Fixed				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
4135	7.2	2.5	3	CW50
4141	8.6	2.5	3	CW50
4147	10.1	3	3	CW50
4153	11.6	3	3	CW50
4157	12.5	3	3	CW50
4165	14.5	3	3	CW50
4171	16.0	3	3	CW45/CW50
4735	8.4	2.5	3	CW50
4741	10.1	3	3	CW50
4747	11.8	3	3	CW50
4753	13.5	3	3	CW50
4757	14.7	3	3	CW50
4759	15.3	3	3	CW50
4765	17.0	3	3	CW45/CW50
4771	18.7	4	4	CW50
5335	9.6	2.5	3	CW45/CW50
5341	11.6	3	3	CW50
5347	13.5	3	3	CW50
5353	15.5	3	4	CW45/CW50
5357	16.8	3	4	CW45/CW50
5359	17.5	3	4	CW40/CW50
5365	19.4	4	4	CW50
5371	21.4	4	4	CW50
5935	10.8	3	3	CW50
5941	13.0	3	3	CW50
5953	17.5	3	4	CW40/CW50
5957	19.0	4	4	CW50
5959	19.7	4	4	CW50
5965	21.9	4	4	CW50
5971	24.1	4	4	CW45/CW50

Transoms				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
2114	0.9	2.5	3	CW50
2514	1.1	2.5	3	CW50
2914	1.3	2.5	3	CW50
3314	1.6	2.5	3	CW50
3714	1.8	2.5	3	CW50
4114	2.0	2.5	3	CW50
4514	2.2	2.5	3	CW50
4814	2.4	2.5	3	CW50
2117	1.2	2.5	3	CW50
2517	1.5	2.5	3	CW50
2917	1.8	2.5	3	CW50
3317	2.1	2.5	3	CW50
3717	2.4	2.5	3	CW50
4117	2.8	2.5	3	CW50
4517	3.1	2.5	3	CW50
4817	3.3	2.5	3	CW50
2125	2.0	2.5	3	CW50
2525	2.6	2.5	3	CW50
2925	3.1	2.5	3	CW50
3325	3.6	2.5	3	CW50
3725	4.2	2.5	3	CW50
4125	4.7	2.5	3	CW50
4525	5.2	2.5	3	CW50
4825	5.6	2.5	3	CW50

(1) Maximum design pressure when glazed with the appropriate glass thickness. Second number, where shown, requires tempered glass.



Pella® Reserve™ Traditional Hung Window

Design Data

Cottage Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width	Height			Annealed	Tempered	Clad	Wood
VG2141		17-5/16	12-11/16	1.5	3.4	2.5	3	CW50	CW45
VG2147		17-5/16	15-1/16	1.8	4.1	2.5	3	CW50	CW45
VG2153		17-5/16	17-7/16	2.1	4.7	2.5	3	CW50	CW45
VG2157		17-5/16	19-1/16	2.3	5.2	2.5	3	CW50	CW45
VG2159		17-5/16	19-7/8	2.4	5.4	2.5	3	CW50	CW45
VG2165		17-5/16	22-1/4	2.7	6.0	2.5	3	CW50	CW45
VG2171		17-5/16	24-11/16	3.0	6.6	2.5	3	CW40	CW40
VG2541		21-5/16	12-11/16	1.9	4.3	2.5	3	CW50	CW45
VG2547		21-5/16	15-1/16	2.2	5.1	2.5	3	CW50	CW45
VG2553		21-5/16	17-7/16	2.6	6.0	2.5	3	CW50	CW45
VG2557		21-5/16	19-1/16	2.8	6.5	2.5	3	CW50	CW45
VG2559		21-5/16	19-7/8	2.9	6.8	2.5	3	CW50	CW45
VG2565		21-5/16	22-1/4	3.3	7.6	2.5	3	CW50	CW45
VG2571		21-5/16	24-11/16	3.7	8.4	2.5	3	CW40	CW40
VG2941		25-5/16	12-11/16	2.2	5.2	2.5	3	CW50	CW45
VG2947		25-5/16	15-1/16	2.7	6.2	2.5	3	CW50	CW45
VG2953		25-5/16	17-7/16	3.1	7.2	2.5	3	CW50	CW45
VG2957		25-5/16	19-1/16	3.4	7.8	2.5	3	CW50	CW45
VG2959		25-5/16	19-7/8	3.5	8.2	2.5	3	CW50	CW45
VG2965		25-5/16	22-1/4	3.9	9.1	2.5	3	CW50	CW45
VG2971		25-5/16	24-11/16	4.3	10.1	2.5	3	CW40	CW40
VG3341		29-5/16	12-11/16	2.6	6.1	2.5	3	CW50	CW45
VG3347		29-5/16	15-1/16	3.1	7.3	2.5	3	CW50	CW45
VG3353		29-5/16	17-7/16	3.6	8.4	2.5	3	CW50	CW45
VG3357		29-5/16	19-1/16	3.9	9.2	2.5	3	CW50	CW45
VG3359		29-5/16	19-7/8	4.1	9.6	2.5	3	CW50	CW45
VG3365		29-5/16	22-1/4	4.5	10.7	2.5	3	CW50	CW45
VG3371	E1	29-5/16	24-11/16	5.0	11.8	2.5	3	CW40	CW40

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Egress Notes:

Check all applicable local codes for emergency egress requirements.

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data

Cottage Sash for Single- and Double-Hung

Unit	Egress	Clear Opening (Inches)		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width	Height			Annealed	Tempered	Clad	Wood
VG3741		33-5/16	12-11/16	2.9	7.0	2.5	3	CW50	CW45
VG3747		33-5/16	15-1/16	3.5	8.3	2.5	3	CW50	CW45
VG3753		33-5/16	17-7/16	4.0	9.6	2.5	3	CW50	CW45
VG3757		33-5/16	19-1/16	4.4	10.5	2.5	3	CW50	CW45
VG3759		33-5/16	19-7/8	4.6	11.0	2.5	3	CW50	CW45
VG3765		33-5/16	22-1/4	5.2	12.3	2.5	3	CW50	CW45
VG3771	E	33-5/16	24-11/16	5.7	13.6	2.5	3	CW40	CW40
VG4141		37-5/16	12-11/16	3.3	7.9	2.5	3	CW50	CW45
VG4147		37-5/16	15-1/16	3.9	9.4	2.5	3	CW50	CW45
VG4153		37-5/16	17-7/16	4.5	10.9	2.5	3	CW50	CW45
VG4157		37-5/16	19-1/16	4.9	11.9	2.5	3	CW50	CW45
VG4159		37-5/16	19-7/8	5.2	12.4	2.5	3	CW50	CW45
VG4165		37-5/16	22-1/4	5.8	13.8	2.5	3	CW45	CW45
VG4171	E	37-5/16	24-11/16	6.4	15.3	2.5	3	CW40	CW40
VG4541		41-5/16	12-11/16	3.6	8.8	2.5	3	CW50	CW45
VG4547		41-5/16	15-1/16	4.3	10.5	2.5	3	CW50	CW45
VG4553		41-5/16	17-7/16	5.0	12.1	2.5	3	CW50	CW45
VG4557		41-5/16	19-1/16	5.5	13.2	2.5	3	CW45	CW45
VG4559		41-5/16	19-7/8	5.7	13.8	2.5	3	CW45	CW45
VG4565		41-5/16	22-1/4	6.4	15.4	2.5	3	CW45	CW45
VG4571	E	41-5/16	24-11/16	7.1	17.0	3	3	CW40	CW40
VG4841		44-5/16	12-11/16	3.9	9.5	2.5	3	CW50	CW45
VG4847		44-5/16	15-1/16	4.6	11.3	2.5	3	CW50	CW45
VG4853		44-5/16	17-7/16	5.4	13.0	2.5	3	CW45	CW45
VG4857		44-5/16	19-1/16	5.9	14.2	2.5	3	CW45	CW45
VG4859		44-5/16	19-7/8	6.1	14.8	2.5	3	CW45	CW45
VG4865		44-5/16	22-1/4	6.9	16.6	3	3	CW40	CW40
VG4871	E	44-5/16	24-11/16	7.6	18.3	3	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data - Replacement Sizes

Replacement Equal Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
23.5x35.5		19-13/16	13-5/16	1.8	3.3	2.5	3	CW50	CW45
23.5x37.5		19-13/16	14-5/16	2.0	3.6	2.5	3	CW50	CW45
23.5x41.5		19-13/16	16-5/16	2.2	4.1	2.5	3	CW50	CW45
23.5x45.5		19-13/16	18-5/16	2.5	4.6	2.5	3	CW50	CW45
23.5x47.5		19-13/16	19-5/16	2.7	4.8	2.5	3	CW50	CW45
23.5x51.5		19-13/16	21-5/16	2.9	5.3	2.5	3	CW50	CW45
23.5x53.5		19-13/16	22-5/16	3.1	5.6	2.5	3	CW50	CW45
23.5x57.5		19-13/16	24-5/16	3.3	6.1	2.5	3	CW50	CW45
23.5x59.5		19-13/16	25-5/16	3.5	6.3	2.5	3	CW50	CW45
23.5x61.5		19-13/16	26-5/16	3.6	6.5	2.5	3	CW50	CW45
23.5x65.5		19-13/16	28-5/16	3.9	7.0	2.5	3	CW50	CW45
23.5x71.5		19-13/16	31-5/16	4.3	7.8	2.5	3	CW50	CW45
27.5x35.5		23-13/16	13-5/16	2.2	4.1	2.5	3	CW50	CW45
27.5x37.5		23-13/16	14-5/16	2.4	4.4	2.5	3	CW50	CW45
27.5x41.5		23-13/16	16-5/16	2.7	5.0	2.5	3	CW50	CW45
27.5x45.5		23-13/16	18-5/16	3.0	5.6	2.5	3	CW50	CW45
27.5x47.5		23-13/16	19-5/16	3.2	5.9	2.5	3	CW50	CW45
27.5x51.5		23-13/16	21-5/16	3.5	6.5	2.5	3	CW50	CW45
27.5x53.5		23-13/16	22-5/16	3.7	6.8	2.5	3	CW50	CW45
27.5x57.5		23-13/16	24-5/16	4.0	7.4	2.5	3	CW50	CW45
27.5x59.5		23-13/16	25-5/16	4.2	7.7	2.5	3	CW50	CW45
27.5x61.5		23-13/16	26-5/16	4.4	8.0	2.5	3	CW50	CW45
27.5x65.5		23-13/16	28-5/16	4.7	8.6	2.5	3	CW50	CW45
27.5x71.5	E1	23-13/16	31-5/16	5.2	9.5	2.5	3	CW50	CW45
29.5x35.5		25-13/16	13-5/16	2.4	4.4	2.5	3	CW50	CW45
29.5x37.5		25-13/16	14-5/16	2.6	4.8	2.5	3	CW50	CW45
29.5x41.5		25-13/16	16-5/16	2.9	5.4	2.5	3	CW50	CW45
29.5x45.5		25-13/16	18-5/16	3.3	6.1	2.5	3	CW50	CW45
29.5x47.5		25-13/16	19-5/16	3.5	6.4	2.5	3	CW50	CW45
29.5x51.5		25-13/16	21-5/16	3.8	7.1	2.5	3	CW50	CW45
29.5x53.5		25-13/16	22-5/16	4.0	7.4	2.5	3	CW50	CW45
29.5x57.5		25-13/16	24-5/16	4.4	8.1	2.5	3	CW50	CW45
29.5x59.5		25-13/16	25-5/16	4.5	8.4	2.5	3	CW50	CW45
29.5x61.5		25-13/16	26-5/16	4.7	8.7	2.5	3	CW50	CW45
29.5x65.5	E1	25-13/16	28-5/16	5.1	9.4	2.5	3	CW50	CW45
29.5x71.5	E1	25-13/16	31-5/16	5.6	10.4	2.5	3	CW50	CW45

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Egress Notes:

Check all applicable local codes for emergency egress requirements.

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data - Replacement Sizes

Replacement Equal Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
31.5x35.5		27-13/16	13-5/16	2.6	4.8	2.5	3	CW50	CW45
31.5x37.5		27-13/16	14-5/16	2.8	5.2	2.5	3	CW50	CW45
31.5x41.5		27-13/16	16-5/16	3.2	5.9	2.5	3	CW50	CW45
31.5x45.5		27-13/16	18-5/16	3.5	6.6	2.5	3	CW50	CW45
31.5x47.5		27-13/16	19-5/16	3.7	7.0	2.5	3	CW50	CW45
31.5x51.5		27-13/16	21-5/16	4.1	7.7	2.5	3	CW50	CW45
31.5x53.5		27-13/16	22-5/16	4.3	8.0	2.5	3	CW50	CW45
31.5x57.5		27-13/16	24-5/16	4.7	8.8	2.5	3	CW50	CW45
31.5x59.5		27-13/16	25-5/16	4.9	9.1	2.5	3	CW50	CW45
31.5x61.5	E ₁	27-13/16	26-5/16	5.1	9.5	2.5	3	CW50	CW45
31.5x65.5	E ₁	27-13/16	28-5/16	5.5	10.2	2.5	3	CW50	CW45
31.5x71.5	E	27-13/16	31-5/16	6.0	11.3	2.5	3	CW50	CW45
35.5x35.5		31-13/16	13-5/16	2.9	5.6	2.5	3	CW50	CW45
35.5x37.5		31-13/16	14-5/16	3.2	6.0	2.5	3	CW50	CW45
35.5x41.5		31-13/16	16-5/16	3.6	6.8	2.5	3	CW50	CW45
35.5x45.5		31-13/16	18-5/16	4.0	7.6	2.5	3	CW50	CW45
35.5x47.5		31-13/16	19-5/16	4.3	8.0	2.5	3	CW50	CW45
35.5x51.5		31-13/16	21-5/16	4.7	8.9	2.5	3	CW50	CW45
35.5x53.5		31-13/16	22-5/16	4.9	9.3	2.5	3	CW50	CW45
35.5x57.5	E ₁	31-13/16	24-5/16	5.4	10.1	2.5	3	CW50	CW45
35.5x59.5	E ₁	31-13/16	25-5/16	5.6	10.5	2.5	3	CW50	CW45
35.5x61.5	E	31-13/16	26-5/16	5.8	10.9	2.5	3	CW50	CW45
35.5x65.5	E	31-13/16	28-5/16	6.3	11.8	2.5	3	CW50	CW45
35.5x71.5	E	31-13/16	31-5/16	6.9	13.0	2.5	3	CW50	CW45
39.5x35.5		35-13/16	13-5/16	3.3	6.3	2.5	3	CW50	CW45
39.5x37.5		35-13/16	14-5/16	3.6	6.8	2.5	3	CW50	CW45
39.5x41.5		35-13/16	16-5/16	4.1	7.7	2.5	3	CW50	CW45
39.5x45.5		35-13/16	18-5/16	4.6	8.7	2.5	3	CW50	CW45
39.5x47.5		35-13/16	19-5/16	4.8	9.1	2.5	3	CW50	CW45
39.5x51.5		35-13/16	21-5/16	5.3	10.1	2.5	3	CW50	CW45
39.5x53.5		35-13/16	22-5/16	5.5	10.5	2.5	3	CW50	CW45
39.5x57.5	E	35-13/16	24-5/16	6.0	11.5	2.5	3	CW50	CW45
39.5x59.5	E	35-13/16	25-5/16	6.3	11.9	2.5	3	CW50	CW45
39.5x61.5	E	35-13/16	26-5/16	6.5	12.4	2.5	3	CW50	CW45
39.5x65.5	E	35-13/16	28-5/16	7.0	13.4	2.5	3	CW50	CW45
39.5x71.5	E	35-13/16	31-5/16	7.8	14.8	2.5	3	CW50	CW45
41.5x35.5		37-13/16	13-5/16	3.5	6.7	2.5	3	CW50	CW45
41.5x37.5		37-13/16	14-5/16	3.8	7.2	2.5	3	CW50	CW45
41.5x41.5		37-13/16	16-5/16	4.3	8.2	2.5	3	CW50	CW45
41.5x45.5		37-13/16	18-5/16	4.8	9.2	2.5	3	CW50	CW45
41.5x47.5		37-13/16	19-5/16	5.1	9.7	2.5	3	CW50	CW45
41.5x51.5		37-13/16	21-5/16	5.6	10.7	2.5	3	CW50	CW45
41.5x53.5		37-13/16	22-5/16	5.9	11.2	2.5	3	CW50	CW45
41.5x57.5	E	37-13/16	24-5/16	6.4	12.2	2.5	3	CW50	CW45
41.5x59.5	E	37-13/16	25-5/16	6.6	12.7	2.5	3	CW50	CW45
41.5x61.5	E	37-13/16	26-5/16	6.9	13.1	2.5	3	CW50	CW45
41.5x65.5	E	37-13/16	28-5/16	7.4	14.1	2.5	3	CW50	CW45
41.5x71.5	E	37-13/16	31-5/16	8.2	15.6	2.5	3	CW50	CW45

Egress Notes:
 Check all applicable local codes for emergency egress requirements.
 E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
 E₁ = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data - Replacement Sizes

Replacement Fixed				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
41x35.5	7.3	2.5	3	CW50
41x37.5	7.8	2.5	3	CW50
41x41.5	8.8	2.5	3	CW50
41x45.5	9.7	2.5	3	CW45/CW50
41x47.5	10.2	3.0	3	CW50
41x51.5	11.2	3.0	3	CW50
41x53.5	11.7	3.0	3	CW50
41x57.5	12.7	3.0	3	CW50
41x59.5	13.2	3.0	3	CW50
41x61.5	13.6	3.0	3	CW50
41x65.5	14.6	3.0	3	CW50
41x71.5	16.1	3.0	3	CW45/CW50
47x35.5	8.5	2.5	3	CW50
47x37.5	9.1	2.5	3	CW50
47x41.5	10.2	3.0	3	CW50
47x45.5	11.4	3.0	3	CW50
47x47.5	12.0	3.0	3	CW50
47x51.5	13.1	3.0	3	CW50
47x53.5	13.7	3.0	3	CW50
47x57.5	14.8	3.0	3	CW50
47x59.5	15.4	3.0	3	CW45/CW50
47x61.5	16.0	3.0	3	CW45/CW50
47x65.5	17.1	3.0	3	CW45/CW50
47x71.5	18.8	4.0	4	CW50
53x35.5	9.8	2.5	3	CW45/CW50
53x37.5	10.4	3.0	3	CW50
53x41.5	11.7	3.0	3	CW50
53x45.5	13.0	3.0	3	CW50
53x47.5	13.7	3.0	3	CW50
53x51.5	15.0	3.0	4	CW50
53x53.5	15.7	3.0	4	CW45/CW50
53x57.5	17.0	3.0	4	CW45/CW50
53x59.5	17.6	4.0	4	CW50
53x61.5	18.3	4.0	4	CW50
53x65.5	19.6	4.0	4	CW50
53x71.5	21.6	4.0	4	CW50
59x35.5	11.0	3.0	3	CW50
59x37.5	11.7	3.0	3	CW50
59x41.5	13.2	3.0	3	CW50
59x45.5	14.7	3.0	3	CW50
59x47.5	15.4	3.0	3	CW45/CW50
59x51.5	16.9	3.0	4	CW45/CW50
59x53.5	17.7	4.0	4	CW50
59x57.5	19.1	4.0	4	CW50
59x59.5	19.9	4.0	4	CW50
59x61.5	20.6	4.0	4	CW50
59x65.5	22.1	4.0	4	CW50
59x71.5	24.3	4.0	4	CW45/CW50

Replacement Transoms				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
23.5x14	1.0	2.5	3	CW50
23.5x17	1.4	2.5	3	CW50
23.5x25	2.4	2.5	3	CW50
27.5x14	1.2	2.5	3	CW50
27.5x17	1.7	2.5	3	CW50
27.5x25	2.9	2.5	3	CW50
29.5x14	1.4	2.5	3	CW50
29.5x17	1.9	2.5	3	CW50
29.5x25	3.2	2.5	3	CW50
31.5x14	1.5	2.5	3	CW50
31.5x17	2.0	2.5	3	CW50
31.5x25	3.4	2.5	3	CW50
35.5x14	1.7	2.5	3	CW50
35.5x17	2.3	2.5	3	CW50
35.5x25	4.0	2.5	3	CW50
39.5x14	1.9	2.5	3	CW50
39.5x17	2.6	2.5	3	CW50
39.5x25	4.5	2.5	3	CW50
41.5x14	2.0	2.5	3	CW50
41.5x17	2.8	2.5	3	CW50
41.5x25	4.8	2.5	3	CW50

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, requires tempered glass.



Pella® Reserve™ Traditional Hung Window

Design Data

Replacement Cottage Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
VG23.5x41.5		19-13/16	12-7/8	1.8	4.1	2.5	3	CW50	CW45
VG23.5x45.5		19-13/16	14-1/2	2.0	4.6	2.5	3	CW50	CW45
VG23.5x47.5		19-13/16	15-1/4	2.1	4.8	2.5	3	CW50	CW45
VG23.5x51.5		19-13/16	16-7/8	2.3	5.3	2.5	3	CW50	CW45
VG23.5x53.5		19-13/16	17-11/16	2.4	5.6	2.5	3	CW50	CW45
VG23.5x57.5		19-13/16	19-1/4	2.7	6.1	2.5	3	CW50	CW45
VG23.5x59.5		19-13/16	19-15/16	2.8	6.3	2.5	3	CW50	CW45
VG23.5x61.5		19-13/16	20-7/8	2.9	6.5	2.5	3	CW50	CW45
VG23.5x65.5		19-13/16	22-1/2	3.1	7.0	2.5	3	CW50	CW45
VG23.5x71.5		19-13/16	24-7/8	3.4	7.8	2.5	3	CW40	CW40
VG27.5x41.5		23-13/16	12-7/8	2.1	5.0	2.5	3	CW50	CW45
VG27.5x45.5		23-13/16	14-1/2	2.4	5.6	2.5	3	CW50	CW45
VG27.5x47.5		23-13/16	15-1/4	2.5	5.9	2.5	3	CW50	CW45
VG27.5x51.5		23-13/16	16-7/8	2.8	6.5	2.5	3	CW50	CW45
VG27.5x53.5		23-13/16	17-11/16	2.9	6.8	2.5	3	CW50	CW45
VG27.5x57.5		23-13/16	19-1/4	3.2	7.4	2.5	3	CW50	CW45
VG27.5x59.5		23-13/16	19-15/16	3.3	7.7	2.5	3	CW50	CW45
VG27.5x61.5		23-13/16	20-7/8	3.5	8.0	2.5	3	CW50	CW45
VG27.5x65.5		23-13/16	22-1/2	3.7	8.6	2.5	3	CW50	CW45
VG27.5x71.5		23-13/16	24-7/8	4.1	9.5	2.5	3	CW40	CW40
VG29.5x41.5		25-13/16	12-7/8	2.3	5.4	2.5	3	CW50	CW45
VG29.5x45.5		25-13/16	14-1/2	2.6	6.1	2.5	3	CW50	CW45
VG29.5x47.5		25-13/16	15-1/4	2.7	6.4	2.5	3	CW50	CW45
VG29.5x51.5		25-13/16	16-7/8	3.0	7.1	2.5	3	CW50	CW45
VG29.5x53.5		25-13/16	17-11/16	3.2	7.4	2.5	3	CW50	CW45
VG29.5x57.5		25-13/16	19-1/4	3.5	8.1	2.5	3	CW50	CW45
VG29.5x59.5		25-13/16	19-15/16	3.6	8.4	2.5	3	CW50	CW45
VG29.5x61.5		25-13/16	20-7/8	3.7	8.7	2.5	3	CW50	CW45
VG29.5x65.5		25-13/16	22-1/2	4.0	9.4	2.5	3	CW50	CW45
VG29.5x71.5		25-13/16	24-7/8	4.5	10.4	2.5	3	CW40	CW40
VG31.5x41.5		27-13/16	12-7/8	2.5	5.9	2.5	3	CW50	CW45
VG31.5x45.5		27-13/16	14-1/2	2.8	6.6	2.5	3	CW50	CW45
VG31.5x47.5		27-13/16	15-1/4	3.0	7.0	2.5	3	CW50	CW45
VG31.5x51.5		27-13/16	16-7/8	3.3	7.7	2.5	3	CW50	CW45
VG31.5x53.5		27-13/16	17-11/16	3.4	8.0	2.5	3	CW50	CW45
VG31.5x57.5		27-13/16	19-1/4	3.7	8.8	2.5	3	CW50	CW45
VG31.5x59.5		27-13/16	19-15/16	3.9	9.1	2.5	3	CW50	CW45
VG31.5x61.5		27-13/16	20-7/8	4.0	9.5	2.5	3	CW50	CW45
VG31.5x65.5		27-13/16	22-1/2	4.3	10.2	2.5	3	CW50	CW45
VG31.5x71.5		27-13/16	24-7/8	4.8	11.3	2.5	3	CW40	CW40

Continued on next page

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Pella® Reserve™ Traditional Hung Window

Design Data

Replacement Cottage Sash for Single- and Double-Hung									
Unit	Egress	Clear Opening		Vent Area Ft ²	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹	
		Width (Inches)	Height (Inches)			Annealed	Tempered	Clad	Wood
VG35.5x41.5		31-13/16	12-7/8	2.8	6.8	2.5	3	CW50	CW45
VG35.5x45.5		31-13/16	14-1/2	3.2	7.6	2.5	3	CW50	CW45
VG35.5x47.5		31-13/16	15-1/4	3.4	8.0	2.5	3	CW50	CW45
VG35.5x51.5		31-13/16	16-7/8	3.7	8.9	2.5	3	CW50	CW45
VG35.5x53.5		31-13/16	17-11/16	3.9	9.3	2.5	3	CW50	CW45
VG35.5x57.5		31-13/16	19-1/4	4.3	10.1	2.5	3	CW50	CW45
VG35.5x59.5		31-13/16	19-15/16	4.4	10.5	2.5	3	CW50	CW45
VG35.5x61.5		31-13/16	20-7/8	4.6	11.0	2.5	3	CW50	CW45
VG35.5x65.5		31-13/16	22-1/2	5.0	11.8	2.5	3	CW50	CW45
VG35.5x71.5	E1	31-13/16	24-7/8	5.5	13.0	2.5	3	CW40	CW40
VG39.5x41.5		35-13/16	12-7/8	3.2	7.7	2.5	3	CW50	CW45
VG39.5x45.5		35-13/16	14-1/2	3.6	8.7	2.5	3	CW50	CW45
VG39.5x47.5		35-13/16	15-1/4	3.8	9.1	2.5	3	CW50	CW45
VG39.5x51.5		35-13/16	16-7/8	4.2	10.1	2.5	3	CW50	CW45
VG39.5x53.5		35-13/16	17-11/16	4.4	10.5	2.5	3	CW50	CW45
VG39.5x57.5		35-13/16	19-1/4	4.8	11.5	2.5	3	CW50	CW45
VG39.5x59.5		35-13/16	19-15/16	5.0	11.9	2.5	3	CW50	CW45
VG39.5x61.5		35-13/16	20-7/8	5.2	12.4	2.5	3	CW45	CW45
VG39.5x65.5		35-13/16	22-1/2	5.6	13.4	2.5	3	CW45	CW45
VG39.5x71.5	E	35-13/16	24-7/8	6.2	14.8	2.5	3	CW40	CW40
VG41.5x41.5		37-13/16	12-7/8	3.4	8.2	2.5	3	CW50	CW45
VG41.5x45.5		37-13/16	14-1/2	3.8	9.2	2.5	3	CW50	CW45
VG41.5x47.5		37-13/16	15-1/4	4.0	9.7	2.5	3	CW50	CW45
VG41.5x51.5		37-13/16	16-7/8	4.4	10.7	2.5	3	CW50	CW45
VG41.5x53.5		37-13/16	17-11/16	4.6	11.2	2.5	3	CW50	CW45
VG41.5x57.5		37-13/16	19-1/4	5.1	12.2	2.5	3	CW50	CW45
VG41.5x59.5		37-13/16	19-15/16	5.3	12.7	2.5	3	CW50	CW45
VG41.5x61.5		37-13/16	20-7/8	5.5	13.2	2.5	3	CW45	CW45
VG41.5x65.5		37-13/16	22-1/2	5.9	14.1	2.5	3	CW45	CW45
VG41.5x71.5	E	37-13/16	24-7/8	6.5	15.6	2.5	3	CW40	CW40

Egress Notes:

Check all applicable local codes for emergency egress requirements.

E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².

E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².

(1) Maximum performance when glazed with the appropriate glass thickness.

To convert area to square meters (m²), multiply square feet by 0.0929.



Frame

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [clear pine] [mahogany] [douglas fir].
- Exterior surfaces are clad with aluminum.
- Components are assembled with screws, staples and concealed corner locks.
- Overall frame depth is 5" (127mm) for a wall depth of 3-11/16" (94mm).
- Optional factory applied jamb extensions available between 3-13/16" (97mm) and 9-3/16" (233mm).
- Vinyl jamb liner with wood / clad inserts.
- Optional factory installed fold-out installation fins with flexible fin corners.
- Optional factory-applied EnduraClad® exterior trim.

Sash

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [clear pine] [mahogany] [douglas fir]. Any curved member may have visible finger-jointed surfaces.
- Exterior surfaces are clad with extruded aluminum butt-jointed at all corners of the sash with through-stile construction and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-7/8" (47mm).
- Double-Hung: Upper sash has surface-mounted wash locks for easy tilt-in cleaning] [Single-Hung: Fixed upper sash has surface-mounted wash locks] [Arch Head units have no wash locks].
- Lower sash has concealed wash locks in lower check rail allowing sash to tilt in for easy cleaning.
- Simulated-Hung units have non-operable upper and lower sashes.
- Sash exterior profile is [ogee] [putty glaze], interior profile is ogee.

Weatherstripping

- Water-stop santoprene-wrapped foam at head and sill.
- Thermoplastic elastomer bulb with slip-coating set into lower sash for tight contact at check rail.
- Vinyl-wrapped foam inserted into jamb liner to seal against sides of sash.

Glazing System

- Quality float glass complying with ASTM C 1036.
- Custom and high altitude glazing available.
- Silicone-glazed dual-pane 13/16" dual-seal insulating glass [[annealed] [tempered]], [[clear] [[Advanced Low-E] [SunDefense™ Low-E] [NaturalSun Low-E] [AdvancedComfort Low-E] with argon]] [[bronze] [gray] [green] Advanced Low-E [with Argon]] [obscure] [Reflective Bronze].
- or -
- Silicone-glazed dual-pane 13/16" dual-seal [[annealed] [tempered]] non-impact laminated glass [[clear] [[Advanced Low-E] [SunDefense Low-E] with Argon]] [[bronze] [gray] [green] Advanced Low-E [with argon]].

Exterior

- Aluminum-clad exteriors shall be finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
 - Color is [standard] [custom]₁.
- Aluminum-clad exteriors shall be finished with EnduraClad Plus protective finish with 70% fluoropolymer resin in a multi-step, baked-on finish.
 - Color is [standard] [custom]₁.

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [pine: factory prefinished [paint] [stain]₁].

(1) Contact your local Pella sales representative for current designs and color options.
 (2) Available in clear or Low-E insulating glass only.
 (3) Tan, Brown and Putty Interior GBG colors are available in single-tone (Brown/Brown, Tan/Tan or Putty/Putty). Other interior colors are also available with Tan or Brown exterior.
 (4) Appearance of exterior grille color will vary depending on Low-E coating on glass.
 (5) Full screens are available on units ≤ 96" height.
 (6) Integrated Rolscreen only available on sizes ≥ 34" tall and 21" wide, and ≤ 84" tall and 48" wide.
 (7) Vivid View screen is not available when frame height is > 84" or when both frame width and frame height are > 48".

Hardware

- Galvanized block-and-tackle balances are connected to self-locking balance shoes which are connected to the sashes using zinc die cast terminals and concealed within the frame.
- Sash lock is [standard (cam-action)] [historic spoon-style] [air-conditioner lock] [simulated lock (Single-piece lock ties upper and lower sash together. When removed lower sash becomes operable)]. Two sash locks on units with frame width 37" and greater.
- Optional sash lift furnished for field installation. Two lifts on units with frame width 37" and greater.
- Hardware finish is [baked enamel [Champagne] [White] [Brown] [Matte Black]] [Bright Brass] [Satin Nickel] [Oil-rubbed Bronze] [Antique Brass] [Distressed Bronze] [Distressed Nickel].

Optional Products

Sash

- Exterior sash lugs
 - Optional factory applied accessory. Exterior finish is [Standard₁] [Custom₁].

Grilles

- Integral Light Technology® grilles
 - Interior grilles are [5/8"] [7/8"] [1-1/4"] [2"] ogee profile that are solid [pine] [mahogany] [douglas fir]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint] [stain]₁].
 - Exterior grilles are [5/8" putty glaze profile] [7/8" [putty glaze] [ogee] profile] [1-1/4" [putty glaze] [ogee] profile] [2" ogee profile] that are extruded aluminum.
 - Patterns are [Traditional] [Prairie] [Top Row] [New England] [Victorian].
 - Insulating glass contains non-glare spacer between the panes of glass.
 - Grilles are adhered to both sides of the insulating glass with VHB acrylic adhesive tape and aligned with the non-glare spacer.
- or -
- Grilles-Between-the-Glass₂
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [9-Lite Prairie] [Cross] [Top Row]
 - Interior color is [White] [Tan₃] [Brown₃] [Putty₃] [Black] [Morning Sky Gray] [Ivory] [Sand Dune] [Harvest] [Cordovan] [Brickstone].
 - Exterior color₄ is [standard]₁.
- or -
- Roomside Removable grilles
 - [[3/4"] [1-1/4"] [2"] traditional] [[1-1/4"] [2"] colonial] profile, with [Traditional] [Prairie] patterns that are removable solid pine wood bars steel-pinned at joints and fitted to sash with steel clips and tacks.
 - Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint] [stain]₁].
 - Exterior [unfinished, ready for site finishing] [factory primed] [finish color matched to exterior cladding₄].
- or -

Screens

- Integrated Rolscreen® (for rectangular units only)₆
 - Retractable screen integrated into [lower sash] [both upper and lower sash]. Screen rollers are fixed and concealed within the frame, screen is held to the sash by magnets which release when the bottom sash is tilted for cleaning, and when the upper sash is opened past 18".
 - InView Screen cloth, black vinyl-coated 18/18 mesh fiberglass screen cloth complying with ASTM D 3656 and the performance requirements of SMA 1201.
- or -
- InView™ screens
 - [Half-Size] [Full-Size₄] black vinyl-coated 18/18 mesh fiberglass screen cloth complying with the performance requirements of SMA 1201, set in a [standard roll-form] [premium extruded] aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Screen frame finish is [standard screen: baked enamel] [premium extruded: [baked enamel] [anodized]], color to match window cladding.
- or -
- Vivid View® screens₇
 - [Half-Size] [Full-Size] PVDF 21 / 17 mesh, minimum 78 percent light transmissive screen, set in a [standard roll-form] [premium extruded] aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Screen frame finish is [standard screen: baked enamel] [premium extruded: [baked enamel] [anodized]], color to match window cladding.

Hardware

- Optional factory applied limited opening device available for vent units in stainless steel; nominal 3-3/4" opening. Limiting device concealed from view.
- Optional factory applied window opening control device. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

Sensors

- Optional factory installed integrated security sensors available in vent units.



Frame

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [clear pine] [mahogany] (standard rectangular windows only). Any curved member may have visible finger-jointed surfaces.
- Exterior surfaces are [pine] [mahogany].
- Overall frame depth is 4-3/8" (111mm) for a wall depth of 4-3/16" (106mm).
- Vinyl Jamb liner includes wood / clad inserts.
- Optional factory applied jamb extensions available between 4-5/16" (110mm) and 9-3/16" (233mm).

Sash

- Select softwood, immersion treated with Pella's EnduraGuard® wood protection formula in accordance with WDMA I.S.-4. The EnduraGuard formula includes three active ingredients for protection against the effects of moisture, decay, stains from mold and mildew. Plus, an additional ingredient adds protection against termite damage.
- Interior exposed surfaces are [clear pine] [mahogany] (standard rectangular windows only). Any curved member may have visible finger-jointed surfaces.
- Exterior surfaces are [pine] [mahogany].
- Sash exterior profile is putty glaze, interior profile is ogee.
- Corners [mortised and tenoned on rectangular units] [mitered on arch head units], glued and secured with metal fasteners.
- Sash thickness is 1-7/8" (47mm).
- [Double-Hung: Upper sash has surface-mounted wash locks] [Single-Hung: Fixed upper sash has surface-mounted wash locks] [Arch Head units have no wash locks].
- Lower sash has concealed wash locks in lower check rail.
- Sashes tilt in for easy cleaning.
- Simulated-Hung units have non-operable upper and lower sashes.

Weatherstripping

- Water-stop santoprene-wrapped foam at head and sill. Thermoplastic elastomer bulb with slip-coating set into lower sash for tight contact at check rail.
- Vinyl-wrapped foam inserted into jamb liner to seal against sides of sash.

Glazing System

- Quality float glass complying with ASTM C 1036.
- Custom and high altitude glazing available.
- Silicone-glazed 11/16" dual-seal insulating glass [[annealed] [tempered]] [[clear] [Advanced Low-E] [SunDefense™ Low-E] [Advanced Comfort] [NaturalSun Low-E] with argon]] [[bronze] [gray] [green] Advanced Low-E with argon].

Exterior

- [Pine: factory primed with one coat acrylic latex] [Mahogany: [factory primed with one coat acrylic latex] [Unfinished, ready for site finishing]].

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [pine: factory prefinished [paint] [stain]₁].

Hardware

- Galvanized block-and-tackle balances are connected to self-locking balance shoes which are connected to the sashes using zinc die cast terminals and concealed within the frame.
- Sash lock is [standard (cam-action)] [historic spoon-style] [air-conditioner lock] [simulated lock (Single-piece lock ties upper and lower sash together. When removed lower sash becomes operable)]. Two sash locks on units with frame width 37" and greater.
- Optional sash lift furnished for field installation. Two lifts on units with frame width 37" and greater.
- Hardware finish is [baked enamel [Champagne] [White] [Brown] [Matte Black]] [bright brass] [satin nickel] [oil-rubbed bronze] [antique brass] [distressed bronze] [distressed nickel].

Optional Products

Grilles

- Integral Light Technology® grilles
 - Interior grilles are solid [5/8"] [7/8"] [1-1/4"] ogee profile that are solid [pine] [mahogany]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint] [stain]₁].
 - Exterior grilles are solid [5/8"] [7/8"] [1-1/4"] putty glaze profile that are [pine] [mahogany]. Exterior surfaces are water repellent, preservative-treated in accordance with WDMA I.S.-4, and are [unfinished, ready for site finishing] [factory primed].
 - Patterns are [Traditional] [Prairie] [Top Row] [New England] [Victorian].
 - Insulating glass contains non-glare spacer between the panes of glass.
 - Grilles are adhered to both sides of the insulating glass with VHB acrylic adhesive tape and aligned with the non-glare spacer
- or -

Grilles-Between-the-Glass₂

- Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
- Patterns are [Traditional] [9-Lite Prairie] [Cross] [Top Row]
- Interior color is [White] [Tan₃] [Brown₃] [Putty₃] [Black] [Morning Sky Gray] [Ivory] [Sand Dune] [Harvest] [Cordovan] [Brickstone].
- Exterior colors is [standard]₁.
- or -

Roomside Removable grilles

- [[3/4"] [1-1/4"] [2"] regular] [[1-1/4"] [2"] colonial] profile, with [Traditional] [Prairie] patterns that are removable solid pine wood bars steel-pinned at joints and fitted to sash with steel clips and tacks.
- Interior [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint] [stain]₁].
- Exterior [unfinished, ready for site finishing] [factory primed].

Screens

- InView™ Screens
 - [Half-Size] [Full-Size₄] black vinyl-coated 18/18 mesh fiberglass screen cloth complying with the performance requirements of SMA 1201, set in a [standard roll-form aluminum frame with 3/4" wide rails and stiles] [premium extruded aluminum frame with 1" wide rails and stiles] fitted to outside of window, supplied complete with all necessary hardware.
 - Full screen spreader bar placed on units > 37" width or > 65" height.
 - Insect screen frame finish is baked enamel.
- or -

Vivid View® Screens₆

- [Half-Size] [Full-Size] PVDF 21/17 mesh, minimum 78 percent light transmissive screen, set in a [standard roll-form aluminum frame with 3/4" wide rails and stiles] [premium extruded aluminum frame with 1" wide rails and stiles] fitted to outside of window, supplied complete with all necessary hardware.
- Full screen spreader bar placed on units > 37" width or > 65" height.
- Insect screen frame finish is baked enamel.

Hardware

- Optional factory applied limited opening device available for vent units in stainless steel; nominal 3-3/4" opening. Limiting device concealed from view.
- Optional factory applied window opening control device. Device allows window to open less than 4" with normal operation, with a release mechanism that allows the sash to open completely. Complies with ASTM F2090-10.

Sensors

- Optional factory installed integrated security sensors available in vent units.

(1) Contact your local Pella sales representative for current designs and color options.

(2) Available in clear or Low-E insulating glass with argon, and obscure insulated glass.

(3) Tan, Brown and Putty Interior GBG colors are available in single-tone (Brown/Brown, Tan/Tan or Putty/Putty). Other interior colors are also available with Tan or Brown exterior.

(4) Full screens are available on units ≤ 96" height.

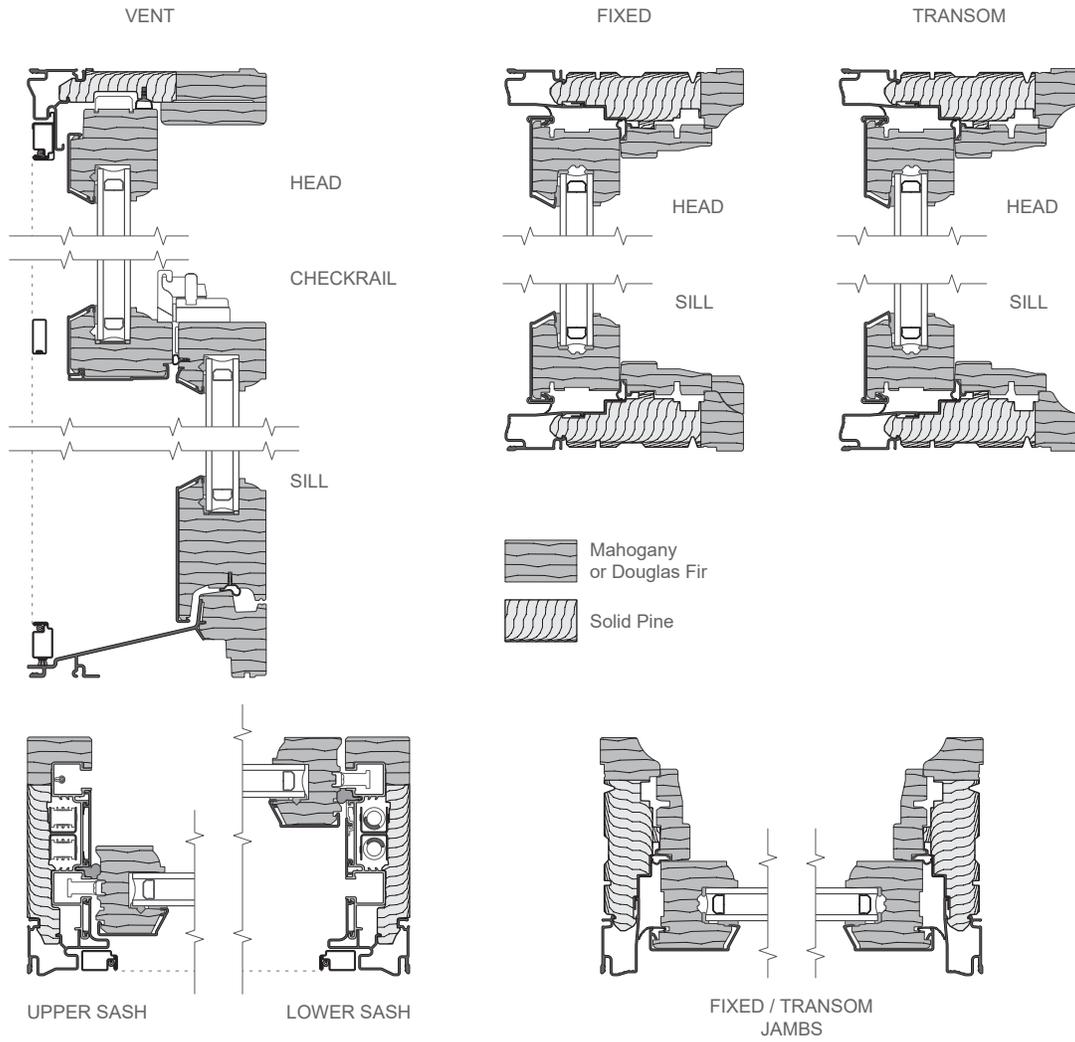
(5) Appearance of exterior grille color will vary depending on Low-E coating on glass.

(6) Vivid View screen is not available when frame height is > 84" or when both frame width and frame height are > 48".



Pella® Reserve™ Traditional Hung Window

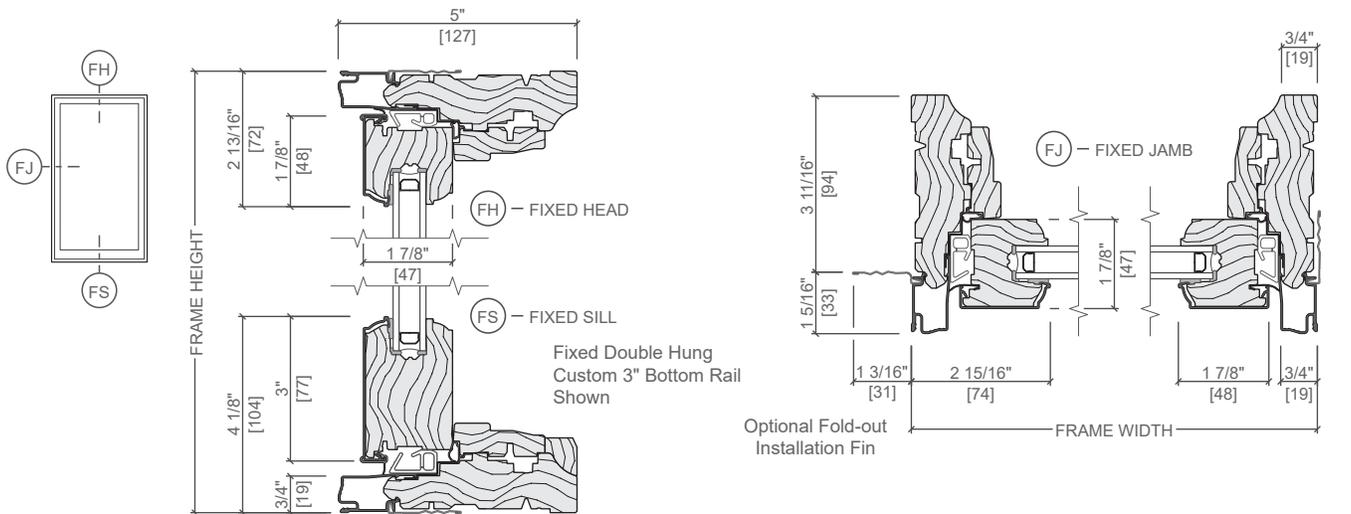
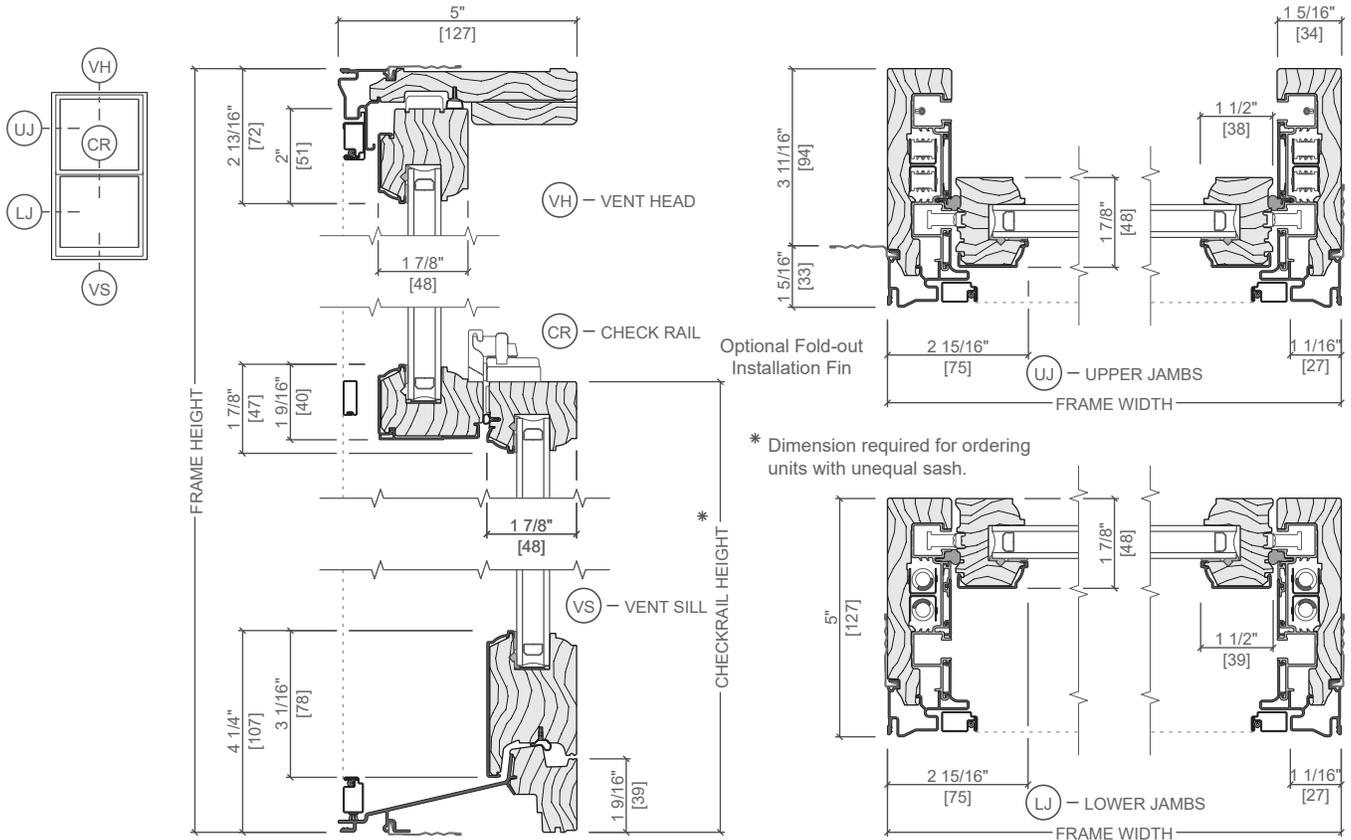
Unit Sections - Wood Collection





Pella® Reserve™ Traditional Hung Window

Unit Sections - Aluminum-Clad Ogee Exterior Glazing Profile



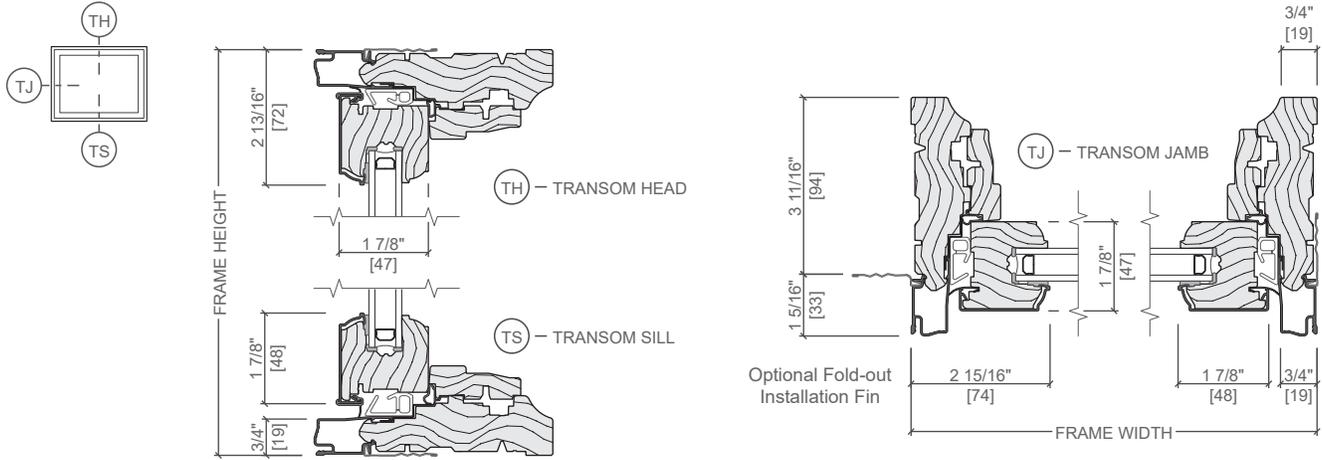
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All dimensions are approximate.

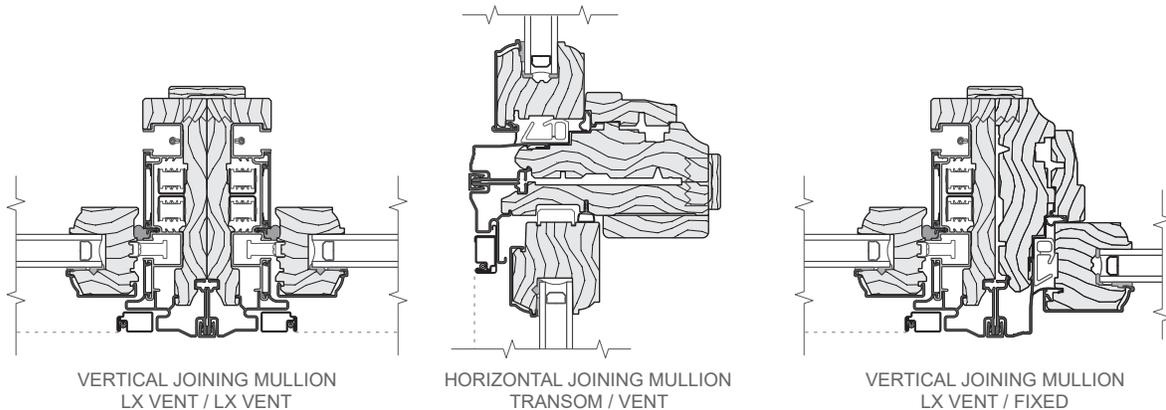


Pella® Reserve™ Traditional Hung Window

Unit Sections - Aluminum-Clad Ogee Exterior Glazing Profile



Typical Joining Mullions



Scale 3" = 1' 0"

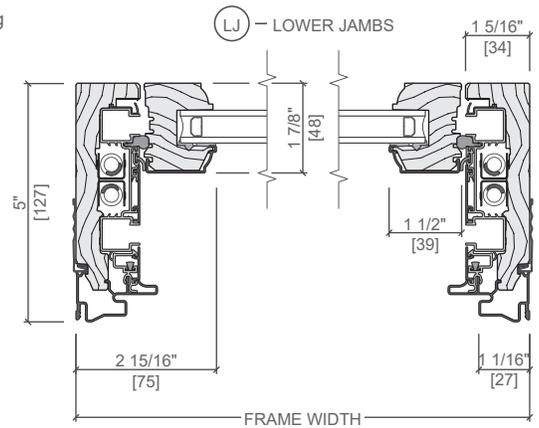
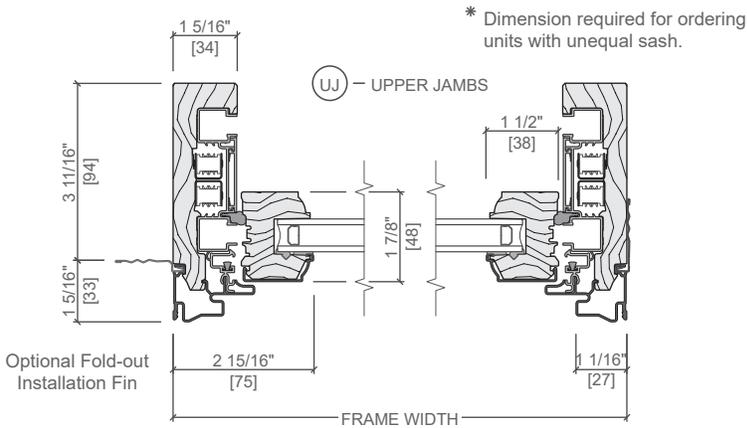
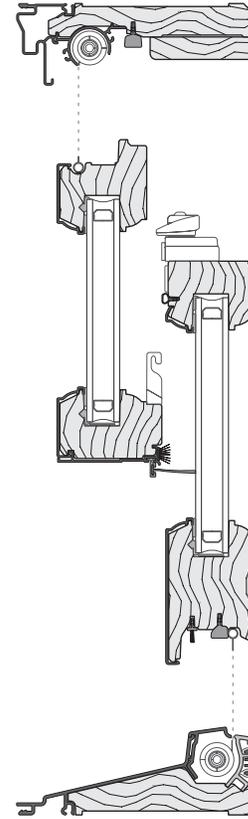
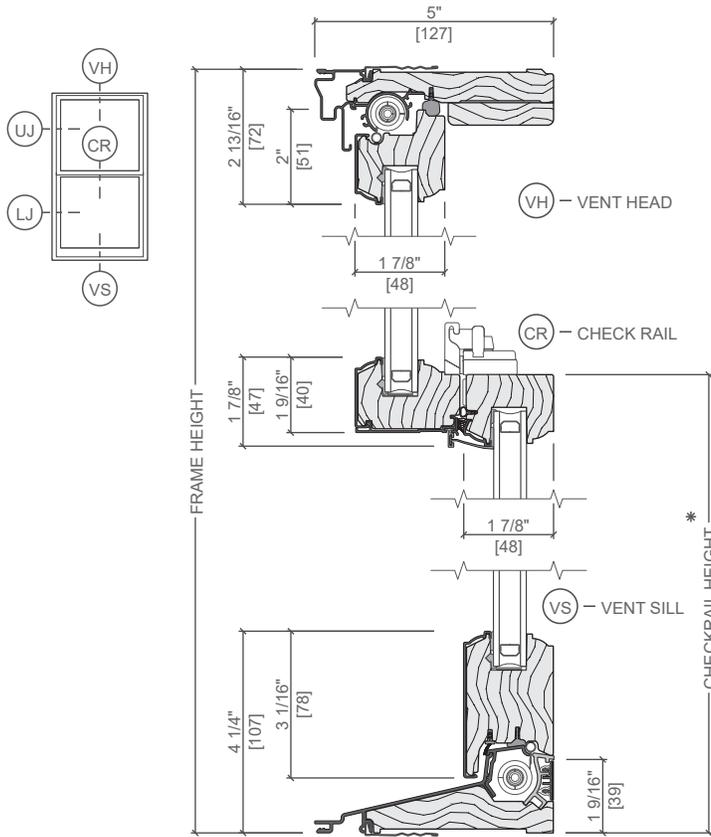
All dimensions are approximate.

See www.Pella.com for mullion limitation and reinforcing requirements.



Pella® Reserve™ Traditional Hung Window

Unit Sections - Aluminum-Clad Ogee Exterior Glazing Profile with Integrated Rolscreen®

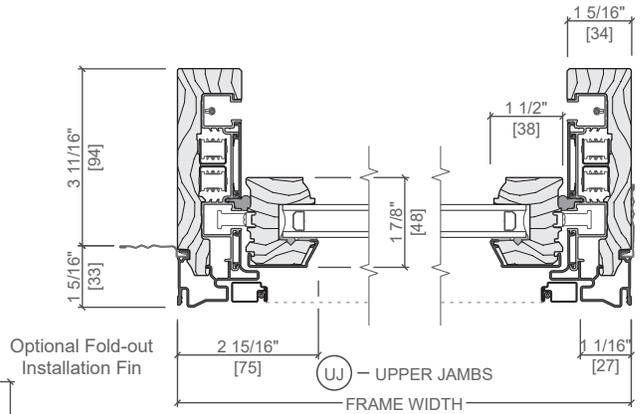
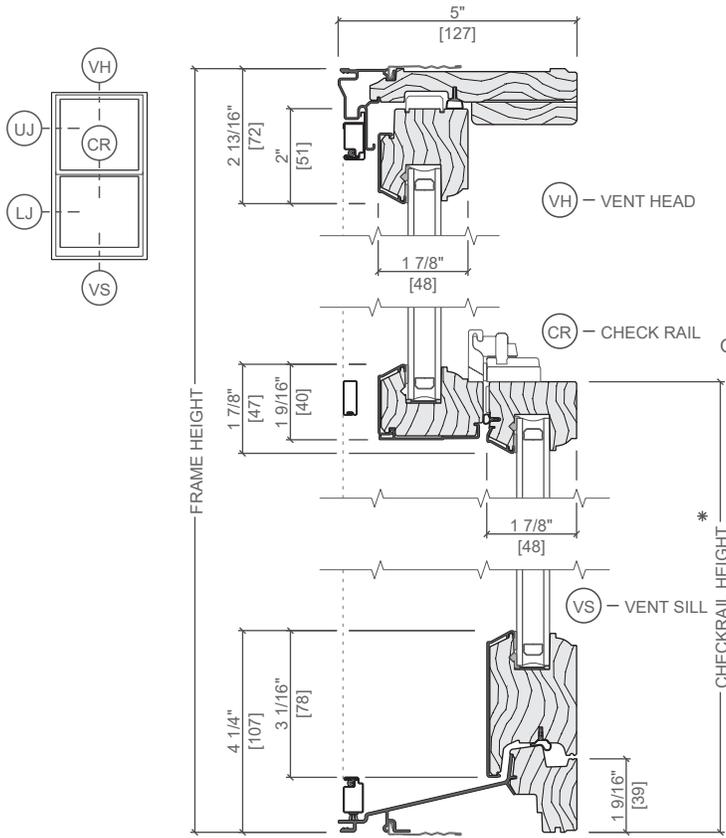


Scale 3" = 1' 0"
All dimensions are approximate.

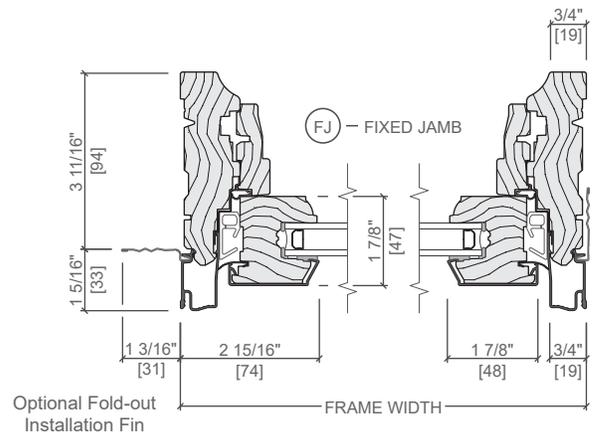
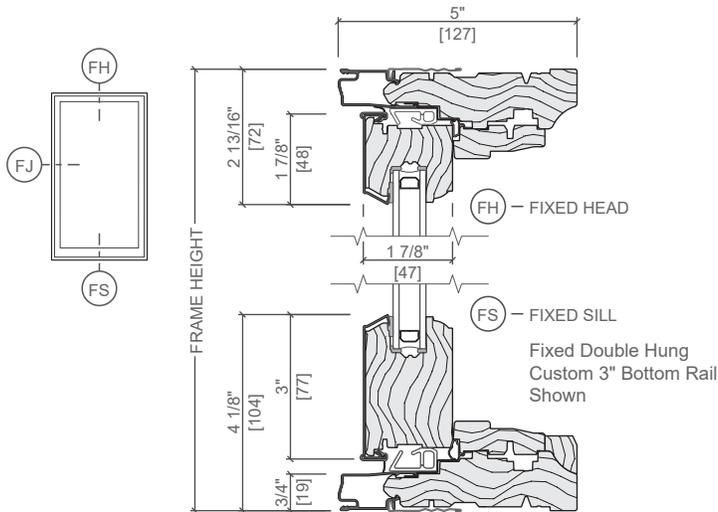
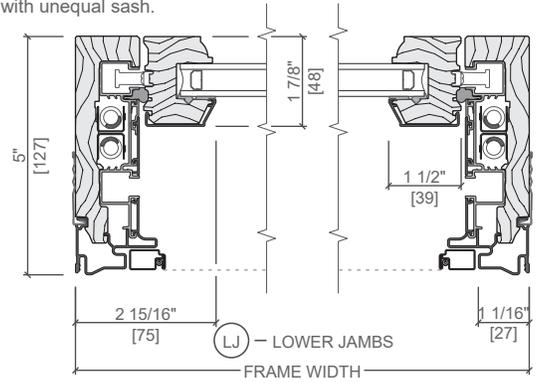


Pella® Reserve™ Traditional Hung Window

Unit Sections - Aluminum-Clad Putty Glaze Exterior Profile



* Dimension required for ordering units with unequal sash.



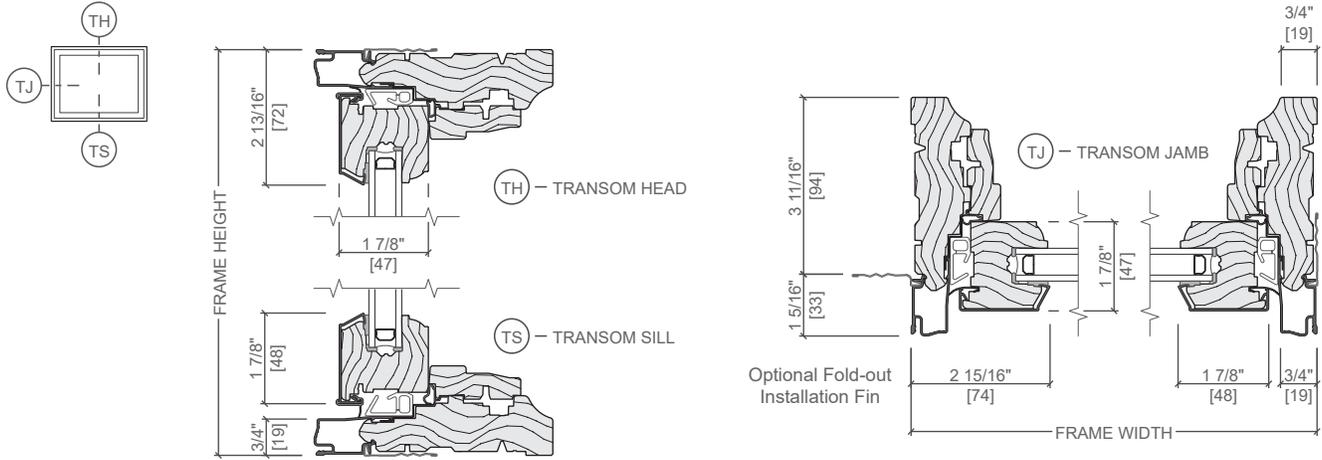
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All dimensions are approximate.

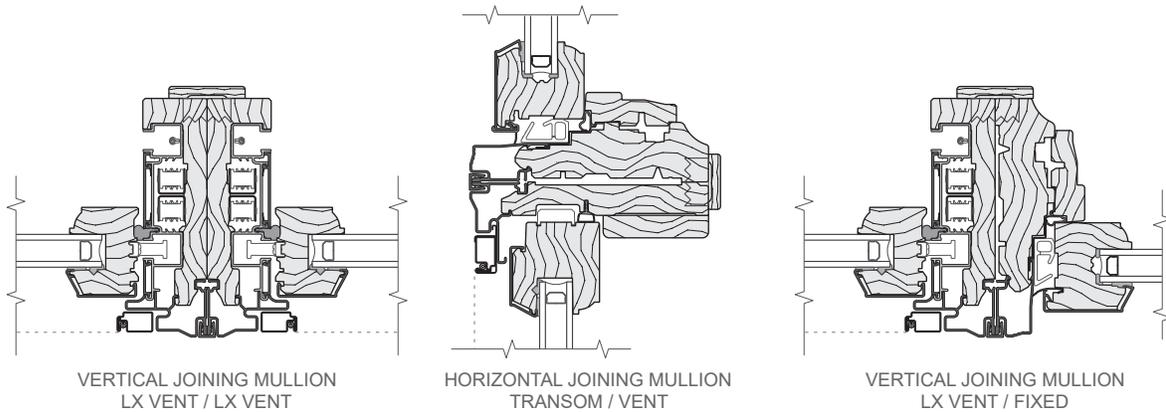


Pella® Reserve™ Traditional Hung Window

Unit Sections - Aluminum-Clad Putty Glaze Exterior Profile



Typical Joining Mullions



Scale 3" = 1' 0"

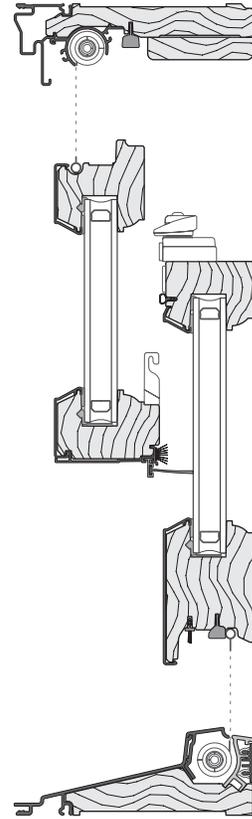
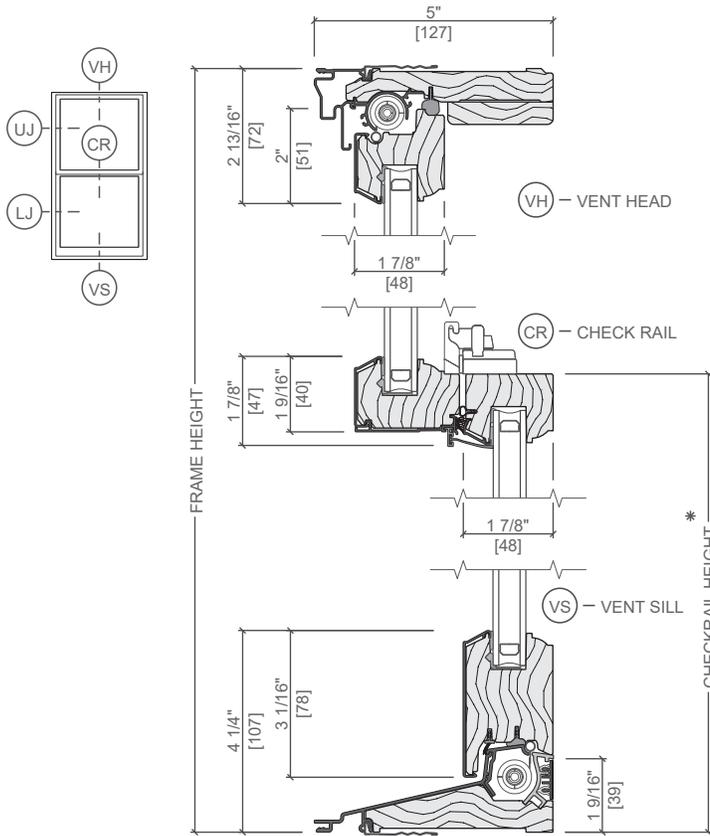
All dimensions are approximate.

See www.Pella.com for mullion limitation and reinforcing requirements.

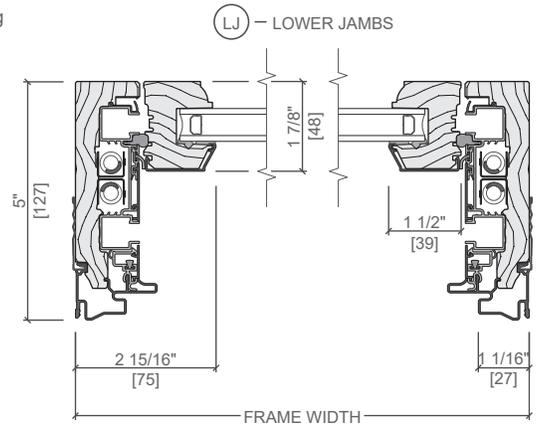
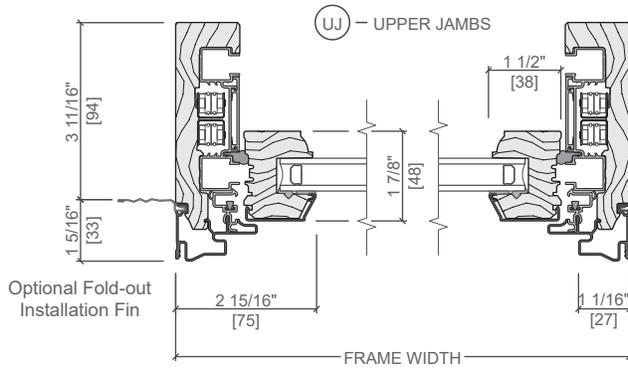


Pella® Reserve™ Traditional Hung Window

Unit Sections - Aluminum-Clad Putty Glaze Exterior Profile with Integrated Rolscreen®



* Dimension required for ordering units with unequal sash.



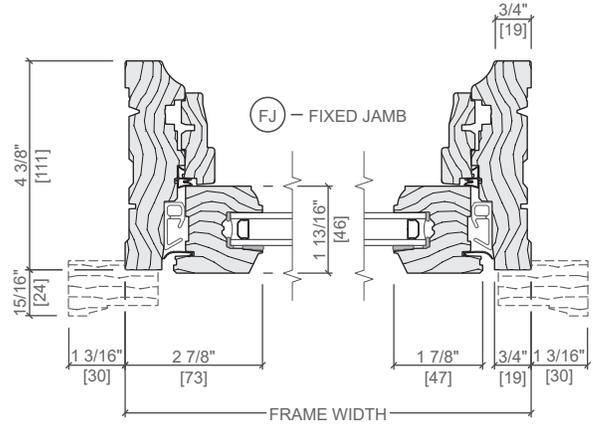
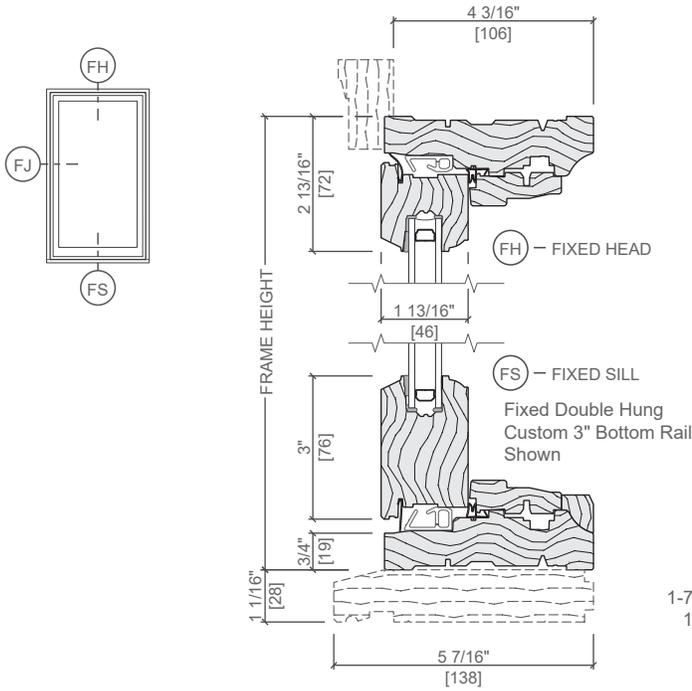
Scale 3" = 1' 0"

All dimensions are approximate.

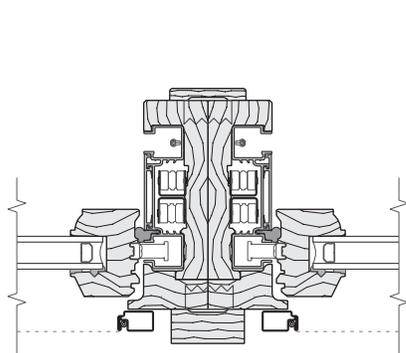
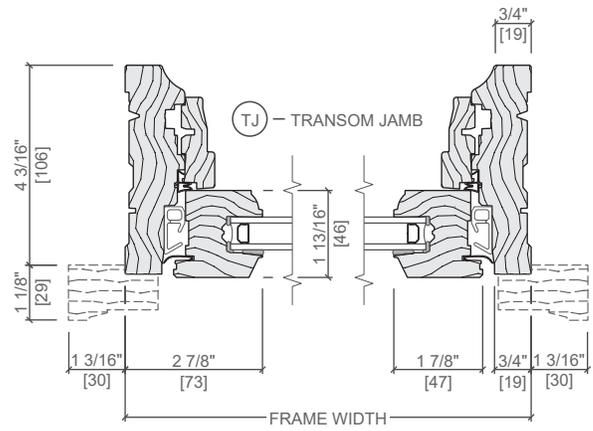
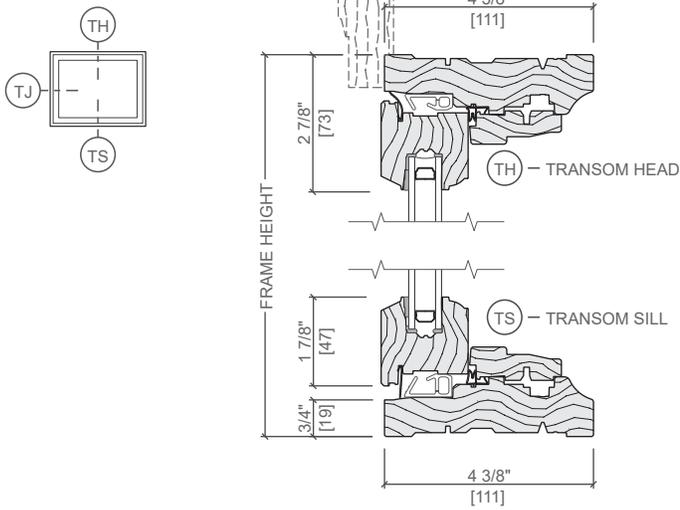


Pella® Reserve™ Traditional Hung Window

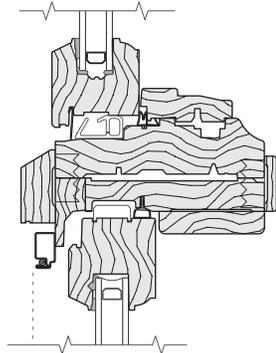
Unit Sections - Wood Exterior Putty Glaze Exterior Profile



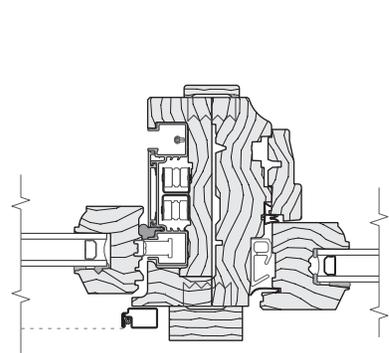
1-78" Brickmould #3443
1-1/8" Subsill #3544
Shown



VERTICAL JOINING MULLION
LX VENT / LX VENT



HORIZONTAL JOINING MULLION
TRANSOM / VENT



VERTICAL JOINING MULLION
LX VENT / FIXED

Scale 3" = 1' 0"

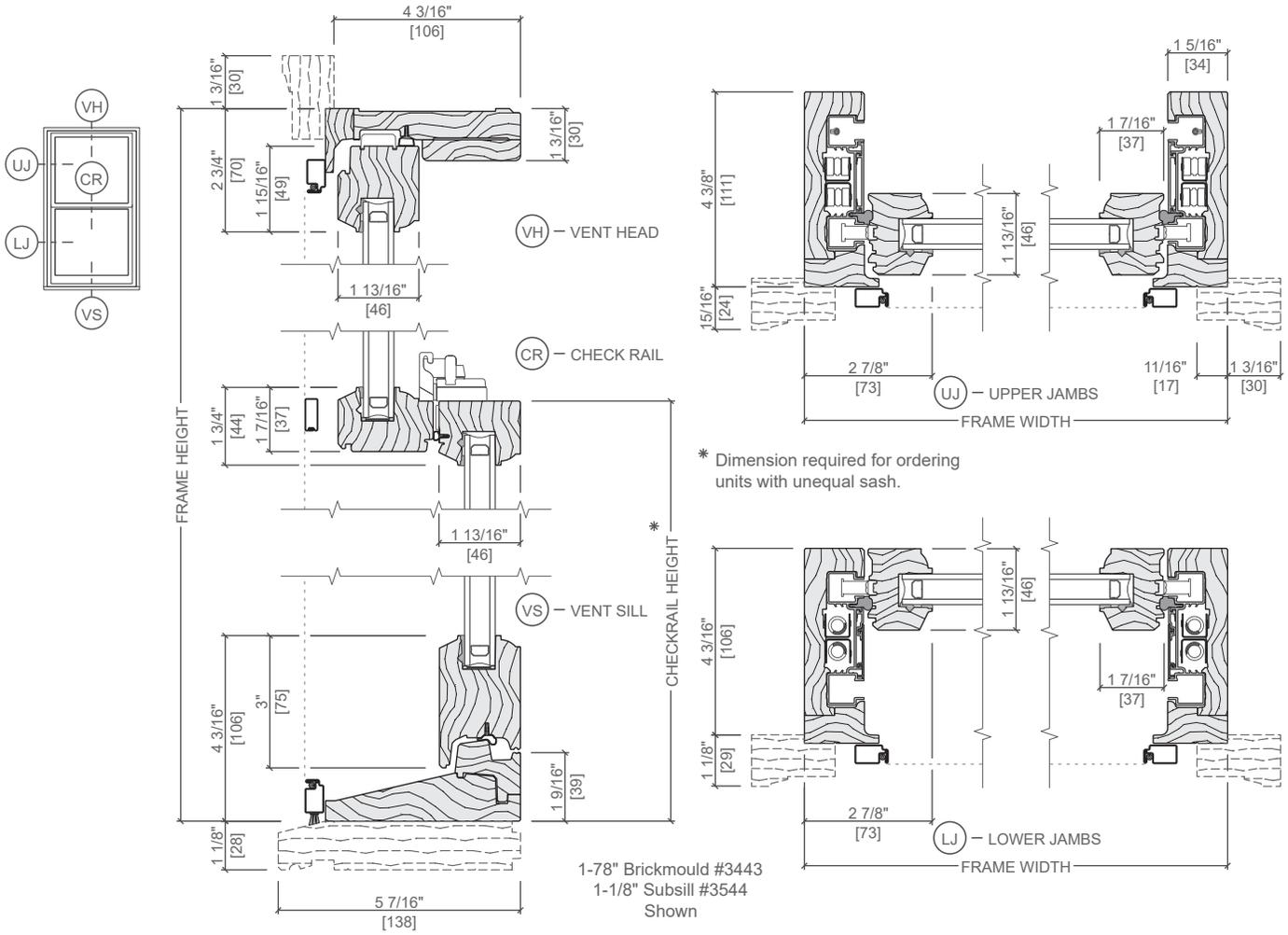
All dimensions are approximate.

See www.Pella.com for mullion limitation and reinforcing requirements.

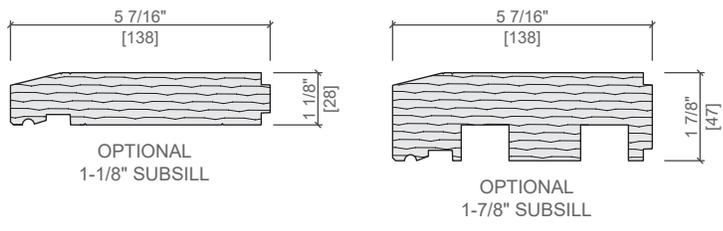
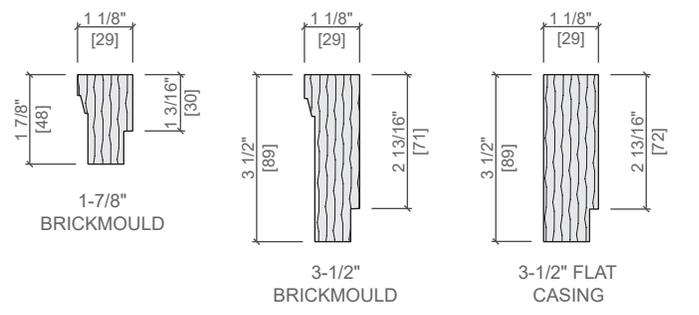


Pella® Reserve™ Traditional Hung Window

Unit Sections - Wood Exterior Putty Glaze Exterior Profile



* Dimension required for ordering units with unequal sash.



Scale 3" = 1' 0"
All dimensions are approximate.

Pella Corporation
102 Main Street
Pella, Iowa 50219
Toll Free (800) 54-PELLA
Phone (641) 621-1000
Website www.pella.com

OCTOBER 2018

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, contained in the *CSI Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all "Specifier Notes" when editing this section.

Section numbers are from *MasterFormat 2011 update*.

SECTION 08 52 10

[FACTORY-PRIMED] [UNFINISHED] WOOD DOUBLE-HUNG WINDOWS

Specifier Notes: This section covers Pella® Architect Series® SE and LX factory-primed and unfinished wood double-hung windows. Consult your local Pella representative for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. [Factory-primed] [Unfinished Mahogany] wood double-hung windows.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section. Verify section numbers and titles.

- A. Section 07270 (07 27 00) - Air Barriers: Water-resistant barrier.
- B. Section 07920 (07 92 00) - Joint Sealants: Sealants and caulking.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 502 - Voluntary Specification for Field Testing of Windows and Sliding Doors.
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM B 117 - Operating Salt Spray (Fog) Apparatus.
 - 2. ASTM C 1036 - Flat Glass.
 - 3. ASTM C 1048 - Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
 - 4. ASTM D 1149 - Rubber Deterioration – Surface Ozone Cracking in a Chamber.
 - 5. ASTM D 2803 - Filiform Corrosion Resistance of Organic Coatings on Metal.
 - 6. ASTM D 3656 - Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns.
 - 7. ASTM D 4060 - Abrasion Resistance of Organic Coatings by the Taber Abraser.
 - 8. ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen.
 - 9. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
 - 10. ASTM E 547 - Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
 - 11. ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 - 12. ASTM G 85 - Modified Salt Spray (Fog) Testing.
- C. Screen Manufacturers Association (SMA):
 - 1. SMA 1201 - Specifications for Insect Screens for Windows, Sliding Doors and Swinging Doors.
- D. Window and Door Manufacturers Association (WDMA):
 - 1. AAMA/WDMA/CSA 101/I.S.2/A440 – North American Fenestration Standard/Specification for windows, doors and skylights
 - 2. WDMA I.S.4 - Industry Specification for Preservative Treatment for Millwork.

1.4 PERFORMANCE REQUIREMENTS

Specifier Notes: Performance ratings for Pella windows vary by product and size. Current performance information is found in the Pella Architectural Design Manual at www.pellaadm.com on the Design Data pages of each product section. Consult your local Pella representative for more information.

- A. Windows shall be Hallmark certified to a rating of H-CW-PG[____] specifications in accordance with ANSI/AAMA/WDMA 101/I.S.2/A440-08 or ANSI/AAMA/WDMA 101/I.S.2/A440-11.
- B. Window Unit Air Leakage, ASTM E 283, 1.57 psf (25 mph): 0.3 cfm per square foot of frame or less.
- C. Window Unit Water Penetration: No water penetration through window unit when tested in accordance with ASTM E 547, under static pressure of [4.5 psf (42 mph)] [7.5 psf (52 mph)] after 4 cycles of 5 minutes each, with water being applied at a rate of 5 gallons per hour per square foot.

1.5 SUBMITTALS

- A. Comply with Division 1 requirements.
- B. Product Data: Submit manufacturer's product data, including installation instructions.

Specifier Notes: Delete the following sentence if shop drawings are not required.

- C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections and locations, anchorage methods and locations, hardware locations, and installation details.

Specifier Notes: Delete the following sentence if samples are not required.

- D. Samples: Submit full-size or partial full-size sample of window illustrating glazing system, quality of construction, and color of finish.

Specifier Notes: In accordance with the manufacturer's limited warranty, stainable exterior wood windows and doors must be finished upon receipt and before installation. Stainable exterior wood windows and doors must be refinished annually, thereafter. Variations in wood grain, color, texture, and natural characteristics are not covered under the limited warranty.

- E. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

Specifier Notes: Edit the following paragraph as required for inclusion of field testing.

- A. Mockup:
 1. Provide sample installation for field testing window performance requirements and to determine acceptability of window installation methods.
 2. Approved mockup shall represent minimum quality required for the Work.

Specifier Notes: Edit the following sentence as required for inclusion of the mockup.

3. Approved mockup shall [not] remain in place within the Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site undamaged in manufacturer's or sales branch's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name. Include installation instructions.
- B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities.
- C. Handling: Protect materials and finish during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Pella Corporation, 102 Main Street, Pella, Iowa 50219. Toll Free (800) 54-PELLA. Phone (641) 621-1000. Website www.pella.com.

2.2 WOOD DOUBLE-HUNG WINDOWS

Specifier Notes: Specify Pella® Architect Series® factory-primed (pine or mahogany) and/or unfinished (mahogany only) wood double-hung windows.

- A. [Factory-Primed] [Unfinished mahogany] Wood Double-Hung Windows: Architect Series factory-assembled wood double-hung windows. Sash shall tilt to interior without removal for cleaning.
- B. Frame:
1. Select wood, water-repellent, preservative-treated with EnduraGuard® in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides and an insecticide applied to the frame.
 2. Exposed Surfaces: [Pine] [Mahogany] with no visible fastener holes.
 3. Exterior Finish: [Factory-Primed] [Unfinished mahogany].
 4. Overall Frame Depth: 4-3/8 inches (111 mm).
- C. Sash:
1. Select wood, water-repellent, preservative-treated with EnduraGuard in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides and an insecticide applied to the sash.
 2. Exposed Surfaces: [Pine] [Mahogany] with no visible fastener holes.
 3. Exterior Finish: [Factory-Primed] [Unfinished mahogany].
 4. Corners: Mortised and tenoned, glued and secured with metal fasteners.
 5. Operable sash tilt to interior for cleaning or removal.
 6. Sash Thickness: 1-3/4 inches (44 mm).
- D. Weather Stripping:
1. Water-stop santoprene wrapped foam at head and sill.
 2. Thermal-plastic elastomer bulb with slip coating set into lower sash for tight contact at checkrail.
 3. Vinyl-wrapped foam inserted into jambliner or jambliner components to seal to sides of sash.

2.3 GLAZING

Specifier Notes: Tempered glass is optional, delete if not required.

- A. Glazing:
1. Float Glass: ASTM C 1036, Quality 1.
 - a. Tempered Glass: ASTM C 1048.

Specifier Notes: Specify glazing type. Custom and high-altitude glazing is also available. Consult your local Pella representative for more information.

2. Type: Silicone-glazed 5/8-inch dual-seal, [annealed] [tempered], insulating glass, [clear] [multi-layer Low-E coated with argon] [bronze air-filled multi-layer, Low-E coated] [gray air-filled multi-

layer, Low-E coated] [green air-filled multi-layer, Low-E coated].

Specifier Notes: Delete Integral Light Technology® glazing and grilles if not required. Consult your local Pella representative for more information.

3. Integral Light Technology Glazing and Grilles:
 - a. Insulating glass contains non-glare spacer between the panes of glass.
 - b. Grid: Adhered to glass on double pane and a metal spacer on triple pane.

Specifier Notes: Specify size of room side grilles. Interior factory-applied finish is available at extra cost. Factory finished with paint or stain is available for pine interiors only. Consult your local Pella representative for stain color options.

- c. Room Side Grilles: [5/8"] [7/8"] [1-1/4"] [2"] ogee profile that are solid [pine] [mahogany].
- d. Exterior Grilles: [5/8" putty profile] [7/8" [putty] [ogee] profile] [1-1/4" [putty] [ogee] profile] [2" ogee profile] that are solid [pine] [mahogany]. Exterior surfaces are water repellent, preservative-treated in accordance with WDMA I.S.-4. Dimension to match room side grilles.
- e. Bars shall be adhered to both sides of insulating glass with VHB acrylic adhesive tape and aligned with non-glare grid.
- f. Finish: Exterior surfaces are [Factory-primed Pine] [Mahogany] water-repellent, preservative-treated; interior surfaces [unfinished, ready for site finishing] .] [Factory-primed.] [factory finished with 1 prime coat and 1 top coat of [White] [Linen White] [Bright White] [Artisan Greige] acrylic latex] [Factory finished stain Color: _____].

2.4 OPTIONS

Specifier Notes: The following paragraphs specify optional products sold separately. Specify required options. Consult your local Pella representative for more information.

Specifier Notes: If insect screens are required, specify **one** of the following **two** types. If insect screens are not specified, delete ASTM D 3656 and SMA 1201 from Article 1.3 References in this section.

- A. Insect Screens: Standard [full] [half].
 1. Compliance: ASTM D 3656 and SMA 1201.
 2. Screen Cloth: Vinyl-coated fiberglass, 18/16 mesh.
 3. Set in aluminum frame fitted to inside of window.
 4. Complete with necessary hardware.
 5. Screen Frame Finish: Baked enamel Color: _____ .
- B. Insect Screens: Vivid View [full] [half].
 1. Compliance: ASTM D 3656 and SMA 1201.
 2. Screen Cloth: Vinyl-coated fiberglass, 21/17 mesh, with minimum 78 percent light transmissivity.
 3. Set in aluminum frame fitted to inside of window.
 4. Complete with necessary hardware.
 5. Screen Frame Finish: Baked enamel Color: _____ .

Specifier Notes: Interior removable grilles are available for Architect Series® units without integral grilles. Specify profile and finish. Factory-applied finish is available at extra cost. Factory finished with acrylic latex paint is available for pine interiors only. Consult your local Pella representative for stain color options.

- C. Interior Removable Grilles (for windows without integral grilles):
 1. Profile: [3/4 inch] [1-1/4-inch Colonial].
 2. Removable, solid pine wood bars, steel-pinned at joints and fitted to sash with steel clips and tacks.

3. Interior Finish: [Unfinished, ready for site finishing.] [Factory-primed] [Interior factory finished with 1 prime coat and 1 top coat of [White] [Linen White] [Bright White] [Artisan Greige] acrylic latex] [Factory finished stain. Color: _____].

Specifier Notes: Contact your local Pella representative for the current exterior color options. Tan and Brown Interior GBG colors are available in single-tone (Brown/Brown or Tan/Tan). Other interior colors are also available with tan or brown exterior.

- D. Grilles-Between-the-Glass:
 1. Profile: 3/4 inch.
 2. Contoured aluminum grilles installed between 2 panes of the sealed insulating glass.
 3. Interior Grille Color: [White] [Tan] [Brown] [Putty] [Morning Sky Gray] [Sand Dune] [Ivory] [Brickstone] [Harvest] [Cordovan].
 4. Exterior color: _____

2.5 HARDWARE

- A. Balances:
 1. Block-and-tackle balances.
 2. Balances are attached to frame and connected to sash with polyester cord.

Specifier Notes: Specify the following paragraph for Architect Series® LX only.

- B. Locking System:

Specifier Notes: Specify the following two sentences describing the sash locks.

1. [Self-aligning sash lock factory-installed.] [Spoon-shaped sash lock.]
2. One installed on units with frame width less than 37 inches, 2 locks installed on units with frame width of 37 inches or greater.

Specifier Notes: Sash lifts are optional. Delete if not required.

- C. Sash Lifts:
 1. Sash lift furnished for field installation.
 2. One sash lift on units with frame width less than 37 inches, 2 sash lifts on units with frame width of 37 inches or greater.

Specifier Notes: Baked enamel, champagne is standard for all units. Specify finish.

- D. Lock and Sash Lift Finish: [Baked enamel, [Champagne] [White] [Brown] [Matte Black]] [Bright brass] [Oil-rubbed bronze] [Satin nickel].

Specifier Notes: Limited opening devices are optional on vent units. Delete if not required.

- E. Limited Opening Device: Factory applied in stainless steel device concealed from view. Nominal 3-3/4" opening..

2.6 TOLERANCES

- A. Windows shall accommodate the following opening tolerances:
 - 1. Vertical Dimensions Between High and Low Points: Plus 1/4 inch, minus 0 inch.
 - 2. Width Dimensions: Plus 1/4 inch, minus 0 inch.
 - 3. Building Columns or Masonry Openings: Plus or minus 1/4 inch from plumb.

2.7 FINISH

Specifier Notes: Specify interior finish. Windows are normally furnished with interior unfinished, ready for site finishing. Factory-applied finish is available at extra cost. Factory finished with paint or stain is available for pine interiors only. Consult your local Pella representative for stain color options.

- A. Interior Finish: [Unfinished, ready for site finishing] [Factory-primed with 1 coat acrylic latex] [Factory finished with 1 prime coat and 1 top coat of [White] [Linen White] [Bright White] [Artisan Greige] acrylic latex] [Factory finished stain. Color: _____].

2.8 INSTALLATION ACCESSORIES

- A. Flashing/Sealant Tape: Pella SmartFlash.
 - 1. Aluminum-foil-backed butyl window and door flashing tape.
 - 2. Maximum Total Thickness: 0.013 inch.
 - 3. UV resistant.
 - 4. Verify sealant compatibility with sealant manufacturer.
- B. Interior Insulating-Foam Sealant: Low-expansion, low-pressure polyurethane insulating window and door foam sealant.
- C. Exterior Perimeter Sealant: "Pella Window and Door Installation Sealant" or equivalent high quality, multi-purpose sealant as specified in the joints sealant section.

2.9 SOURCE QUALITY CONTROL

- A. Factory Testing: Factory test individual standard operable windows for air infiltration in accordance with ASTM E 283, to ensure compliance with this specification.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive windows. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Install windows in accordance with manufacturer's instructions and approved shop drawings.
- B. Install windows to be weather-tight and freely operating.
- C. Maintain alignment with adjacent work.
- D. Secure assembly to framed openings, plumb and square, without distortion.

- E. Integrate window system installation with exterior weather-resistant barrier using flashing/sealant tape. Apply and integrate flashing/sealant tape with weather-resistant barrier using watershed principles in accordance with window manufacturer's instructions.
- F. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using [backer rod and sealant] [insulating-foam sealant].
- G. Seal window to exterior wall cladding with sealant and related backing materials at perimeter of assembly.
- H. Leave windows closed and locked.

3.3 FIELD QUALITY CONTROL

Specifier Notes: Field testing is optional. Delete Field Quality Control if field testing is not required. If Field Quality Control is deleted, delete AAMA 502 and ASTM E1105 from Article 1.3 References in this section.

- A. Field Testing: Field water testing shall be conducted in accordance with ASTM E1105 Test Procedure B. The test pressure shall be based on the maximum positive components and cladding design pressure. Utilizing the AAMA 502 field test reduction, the water test pressure is 10% of the maximum positive design pressure.

3.4 CLEANING

- A. Clean window frames and glass in accordance with Division 1 requirements.
- B. Do not use harsh cleaning materials or methods that would damage finish.
- C. Remove labels and visible markings.

3.5 PROTECTION

- A. Protect installed windows to ensure that, except for normal weathering, windows will be without damage or deterioration at time of substantial completion.

END OF SECTION



Order Verification

Branch Number: 77500
 Window Store Name: Pella Window and Door Showroom of San Antonio
 Sales Rep Name: Rogers, Ron

O.V.

Order Number: 775X70168
 Quote Number: 14583410
 Customer Event #: 18167378
 Quote Name: WOOD EXTERIOR OPTION
 Project Name: Kimberly Tseng

Quote Information

Customer Name: Kimberly Tseng	Order Verifier Name: Sanchez, Isaac
Customer Address: 319 Carleton Ct San Antonio, TX 78212-3003	Verification Date/Time: 10/6/2021 3:00 PM
Customer Phone: (504) 3776748	Ready to Book Date:
Customer Number: 1010256436	House Built before 1978: No
	Customer Account: 1006432901

Install At Information

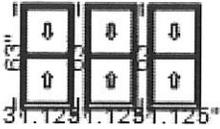
Lot #	Owner Name: Kimberly Tseng	(2 cs.) OF OSI WHITE
Address: 319 Carleton Ct	Owner Phone:	(2 CANS) OF OSI FOAM
San Antonio, TX 78212-3003		(1 CAN) OF OSI CLEANER
County: Bexar		(1 ROLL) OF PELLA TAPE (150#)
	* LEAD INSTALL *	(4 pcs.) 1" X 4" X 96" (PRIMED CEDAR)
		(4 pcs.) 2" X 6" X 144" (TREATED LUMBER)
		(4 pcs.) 1" X 8" X 144" (PRIMED CEDAR)

Customer Notes: WOOD EXTERIOR PRIMED READY FOR PAINT
 INTERIOR: BRIGHT WHITE
 HARDWARE :MATTE BLACK
 CUSTOM MULLS ON 2 AND 3 WIDE UNITS TO MATCH EXISTING
 CITY OF SAN ANTONIO PERMIT INCLUDED

Outside View	Line #	Quote Qty	PO Qty	Description
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10 1 1

Pella® Reserve, Traditional, 3-Wide Double Hung, 107.375 X 63



Location: LIVING

Rough Opening: 31.875" X 64.875"

Frame Size: 107.375" X 63"

Final Wall Depth:

Frame Perimeter (inches): 341

Assembly Type: Branch Finished

1: Traditional, 31.12563 Double Hung, Equal

Frame Size: 31 1/8 X 63

General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"

Exterior Color / Finish: Primed, Primed Aluminum

Interior Color / Finish: Bright White Paint Interior

Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs

Glass: Insulated Dual Low-E SunDefense™ Low-E Insulating Glass Argon Non High Altitude

Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor

Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™

Performance Information: U-Factor 0.28, SHGC 0.21, VLT 0.49, CPD PEL-N-234-00301-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, Year Rated 08|11, Egress Meets Typical for ground floor 5.0 sqft (E1) (United States Only)

Grille: No Grille,

Vertical Mull 1: AlignedWith, 7"

2: Traditional, 31.12563 Double Hung, Equal

Frame Size: 31 1/8 X 63

General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"

Exterior Color / Finish: Primed, Primed Aluminum

Interior Color / Finish: Bright White Paint Interior

Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs

Glass: Insulated Dual Low-E SunDefense™ Low-E Insulating Glass Argon Non High Altitude

Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor

Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™

Performance Information: U-Factor 0.28, SHGC 0.21, VLT 0.49, CPD PEL-N-234-00301-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, Year Rated 08|11, Egress Meets Typical for ground floor 5.0 sqft (E1) (United States Only)

Grille: No Grille,

Vertical Mull 2: AlignedWith, 7"

3: Traditional, 31.12563 Double Hung, Equal

Frame Size: 31 1/8 X 63

General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"

Exterior Color / Finish: Primed, Primed Aluminum

Interior Color / Finish: Bright White Paint Interior

Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs

Glass: Insulated Dual Low-E SunDefense™ Low-E Insulating Glass Argon Non High Altitude

Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor

Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™

Performance Information: U-Factor 0.28, SHGC 0.21, VLT 0.49, CPD PEL-N-234-00301-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, Year Rated 08|11, Egress Meets Typical for ground floor 5.0 sqft (E1) (United States Only)

Grille: No Grille,

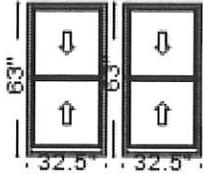
Wrapping Information: Wood Brickmould, 1 7/8", Branch Supplied, 1 1/8" Wood Subsill, Branch Supplied, No Exterior Trim, 5 3/16", 5 3/8", Standard Four Sided Jamb Extension, Applied By Branch, Pella Recommended Clearance, Perimeter Length = 341".

(3) - M.S. - 29 1/2" x 58 1/2"
J.D. - 5"

*** *MATERIALS001 - Installation Materials - Windows Qty 1
*** *MATERIALS003 - Sealant - OSI Quad Max - QTY 1 Qty 3

***	WDP-W-INSTALL - Wood Window Install - Full	Qty	2
	Frame		
***	W-INSTALL-OVERSIZE - Oversize/Large Unit	Qty	1

Outside View	Line #	Quote Qty	PO Qty	Description
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15 5 5 Pella® Reserve, Traditional, 2-Wide Double Hung, 72 X 63

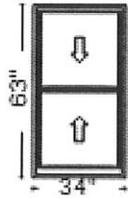
Location: MSTR, BED1, KIT,
 Rough Opening: 33.25" X 64.875"
 Frame Size: 72" X 63"
 Final Wall Depth:
 Frame Perimeter (inches): 270
 Assembly Type: Branch Finished

1: Traditional, 32.563 Double Hung, Equal
 Frame Size: 32 1/2 X 63
 General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"
 Exterior Color / Finish: Primed, Primed Aluminum
 Interior Color / Finish: Bright White Paint Interior
 Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs
 Glass: Insulated Dual Low-E SunDefense™ Low-E Insulating Glass Argon Non High Altitude
 Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor
 Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™
 Performance Information: U-Factor 0.28, SHGC 0.21, VLT 0.49, CPD PEL-N-234-00301-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, Year Rated 08|11, Egress Meets Typical for ground floor 5.0 sqft (E1) (United States Only)
 Grille: No Grille,
 Vertical Mull 1: AlignedWith, 7"
 2: Traditional, 32.563 Double Hung, Equal
 Frame Size: 32 1/2 X 63
 General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"
 Exterior Color / Finish: Primed, Primed Aluminum
 Interior Color / Finish: Bright White Paint Interior
 Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs
 Glass: Insulated Dual Low-E SunDefense™ Low-E Insulating Glass Argon Non High Altitude
 Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor
 Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™
 Performance Information: U-Factor 0.28, SHGC 0.21, VLT 0.49, CPD PEL-N-234-00301-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, Year Rated 08|11, Egress Meets Typical for ground floor 5.0 sqft (E1) (United States Only)
 Grille: No Grille,
 Wrapping Information: Wood Brickmould, 1 7/8", Branch Supplied, 1 1/8" Wood Subsill, Branch Supplied, No Exterior Trim, 5 3/16", 5 3/8", Standard Four Sided Jamb Extension, Factory Applied, Pella Recommended Clearance, Perimeter Length = 270".

M.S. - 29 1/2" x 58 1/2"
 J.D. - 5"

***	*MATERIALS003 - Sealant - OSI Quad Max - QTY 1	Qty	3
***	WDP-W-INSTALL - Wood Window Install - Full	Qty	1
	Frame		
***	W-INSTALL-OVERSIZE - Oversize/Large Unit	Qty	1
***	*MATERIALS001 - Installation Materials - Windows	Qty	1

Outside View	Line #	Quote Qty	PO Qty	Description
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20 **2** **2**

Pella® Reserve, Traditional, Double Hung, 34 X 63

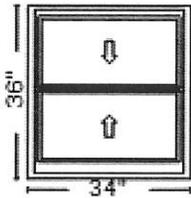
Location: LIVING, KITCHEN
 Rough Opening: 34.75" X 64.875"
 Frame Size: 34" X 63"
 Final Wall Depth:
 Frame Perimeter (inches): 194
 Assembly Type: Branch Finished

1: Traditional, 3463 Double Hung, Equal
Frame Size: 34 X 63
General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"
Exterior Color / Finish: Primed, Primed Aluminum
Interior Color / Finish: Bright White Paint Interior
Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs
Glass: Insulated Dual Low-E SunDefense™ Low-E Insulating Glass Argon Non High Altitude
Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor
Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™
Performance Information: U-Factor 0.28, SHGC 0.21, VLT 0.49, CPD PEL-N-234-00301-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, TDI WIN-2038, Year Rated 08|11, Clear Opening Width 30.625, Clear Opening Height 27.062, Clear Opening Area 5.755373, Egress Meets Typical 5.7 sqft (E) (United States Only)
Grille: No Grille,
Wrapping Information: Wood Brickmould, 1 7/8", Factory Applied, 1 1/8" Wood Subsill, Factory Applied, No Exterior Trim, 5 3/16", 5 3/8", Standard Four Sided Jamb Extension, Factory Applied, Pella Recommended Clearance, Perimeter Length = 194".

M.S. - 29 1/2" x 58 1/2"
 J.D. - 5"

- *** WDP-W-INSTALL - Wood Window Install - Full Qty 1
 Frame
- *** *MATERIALS001 - Installation Materials - Windows Qty 1
- *** *MATERIALS003 - Sealant - OSI Quad Max - QTY 1 Qty 3

Outside View	Line #	Quote Qty	PO Qty	Description
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25 **1** **1**

Pella® Reserve, Traditional, Double Hung, 34 X 36

Location: BATHROOM
 Rough Opening: 34.75" X 37.875"
 Frame Size: 34" X 36"
 Final Wall Depth:
 Frame Perimeter (inches): 140
 Assembly Type: Branch Finished

1: Traditional, 3436 Double Hung, Equal
Frame Size: 34 X 36
General Information: Standard, Luxury, Wood, Pine, 4 3/8", 4 3/16"
Exterior Color / Finish: Primed, Primed Aluminum
Interior Color / Finish: Bright White Paint Interior
Sash / Panel: Putty Glaze, Ogee, Standard, No Sash Lugs
Glass: Insulated Dual Obscure Frosted Air Filled Non High Altitude
Hardware Options: Spoon-Style Lock, Matte Black, No Window Opening Control Device, No Limited Opening Hardware, Order Sash Lift, No Integrated Sensor
Screen: Full Screen, Standard EnduraClad, Brick Red, Premium, InView™
Performance Information: U-Factor 0.45, SHGC 0.59, VLT 0.62, CPD PEL-N-234-00221-00001, Performance Class CW, PG 45, Calculated Positive DP Rating 45, Calculated Negative DP Rating 45, TDI WIN-2038, Year Rated 08|11, Clear Opening Width 30.625, Clear Opening Height 13.562, Clear Opening Area 2.884279, Egress Does not meet typical United States egress, but may comply with local code requirements
Grille: No Grille,
Wrapping Information: Wood Brickmould, 1 7/8", Factory Applied, 1 1/8" Wood Subsill, Factory Applied, No Exterior Trim, 5 3/16", 5 3/8", Standard Four Sided Jamb Extension, Factory Applied, Pella Recommended Clearance, Perimeter Length = 140".

M.S. - 29 1/2" x 33 1/2"
 J.D. - 5"

- *** *MATERIALS001 - Installation Materials - Windows Qty 1

*** WDP-W-INSTALL - Wood Window Install - Full Qty 1
 Frame
 *** *MATERIALS003 - Sealant - OSI Quad Max - QTY 1 Qty 3

Line #	Quote Qty	PO Qty	Description
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30 1 0 Promo-MIL - Military Discount

Location:
 Rough Opening:
 Frame Size:
 Final Wall Depth:
 Frame Perimeter (inches):
 Assembly Type: Branch Catalog

Outside View	Line #	Quote Qty	PO Qty	Description
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35 32 32 Wood Products 3 1/2 Craftsman 2, Length: 96, Bright White. Wood Type: Pine



Location: INTERIOR
 Rough Opening:
 Frame Size: 0" X 0"
 Final Wall Depth:
 Frame Perimeter (inches):
 Assembly Type: Pella Assembled

1: Accessory
 Frame Size: 1 X 1
 General Information: Pine, 3 1/2 Craftsman 2
 Interior Color / Finish: Bright White Paint Interior
 Wrapping Information: Perimeter Length = 0".

Outside View	Line #	Quote Qty	PO Qty	Description
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40 ~~32~~ ~~32~~ 27/32" Solid Jamb Extension, Length: 96, Bright White. Wood Type: Pine



Location: INTERIOR
 Rough Opening:
 Frame Size: 0" X 0"
 Final Wall Depth:
 Frame Perimeter (inches):
 Assembly Type: Pella Assembled

12

1: Accessory
 Frame Size: 1 X 1
 General Information: Pine, 27/32" Solid Jamb Extension
 Interior Color / Finish: Bright White Paint Interior
 Wrapping Information: Perimeter Length = 0".

Line #	Quote Qty	PO Qty	Description
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45	8	0	EXTRA002 - Window Install - Extra Labor
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Location: CUSTOM MULLS/ BM
Rough Opening:
Frame Size:
Final Wall Depth:
Frame Perimeter (inches):
Assembly Type: Branch Catalog

Line #	Quote Qty	PO Qty	Description
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50	1	0	SAPERMIT - City of San Antonio Permit
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Location:
Rough Opening:
Frame Size:
Final Wall Depth:
Frame Perimeter (inches):
Assembly Type: Branch Catalog