

HISTORIC AND DESIGN REVIEW COMMISSION

March 05, 2025

HDRC CASE NO: 2025-039
ADDRESS: 120 CALLAGHAN AVE
LEGAL DESCRIPTION: NCB 719 BLK 1 LOT N 1-2 OF 5
ZONING: RM-4, H
CITY COUNCIL DIST.: 1
DISTRICT: Lavaca Historic District
APPLICANT: Daniel Cruz/Design Coop
OWNER: Cory Neal/NEAL CORY MORGAN
TYPE OF WORK: Construction of a 2-story, single-family residential structure
APPLICATION RECEIVED: February 14, 2025
60-DAY REVIEW: April 14, 2025
CASE MANAGER: Edward Hall

REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to construct a 2-story, single-family historic structure on the vacant lot at 120 Callaghan. This lot is located within the Lavaca Historic District.

APPLICABLE CITATIONS:

Historic Design Guidelines, Chapter 4, Guidelines for New Construction

1. Building and Entrance Orientation

A. FAÇADE ORIENTATION

- i. Setbacks*—Align front facades of new buildings with front facades of adjacent buildings where a consistent setback has been established along the street frontage. Use the median setback of buildings along the street frontage where a variety of setbacks exist. Refer to UDC Article 3, Division 2. Base Zoning Districts for applicable setback requirements.
- ii. Orientation*—Orient the front façade of new buildings to be consistent with the predominant orientation of historic buildings along the street frontage.

B. ENTRANCES

- i. Orientation*—Orient primary building entrances, porches, and landings to be consistent with those historically found along the street frontage. Typically, historic building entrances are oriented towards the primary street.

2. Building Massing and Form

A. SCALE AND MASS

- i. Similar height and scale*—Design new construction so that its height and overall scale are consistent with nearby historic buildings. In residential districts, the height and scale of new construction should not exceed that of the majority of historic buildings by more than one-story. In commercial districts, building height shall conform to the established pattern. If there is no more than a 50% variation in the scale of buildings on the adjacent block faces, then the height of the new building shall not exceed the tallest building on the adjacent block face by more than 10%.
- ii. Transitions*—Utilize step-downs in building height, wall-plane offsets, and other variations in building massing to provide a visual transition when the height of new construction exceeds that of adjacent historic buildings by more than one-half story.
- iii. Foundation and floor heights*—Align foundation and floor-to-floor heights (including porches and balconies) within one foot of floor-to-floor heights on adjacent historic structures.

B. ROOF FORM

- i. Similar roof forms*—Incorporate roof forms—pitch, overhangs, and orientation—that are consistent with those predominantly found on the block. Roof forms on residential building types are typically sloped, while roof forms on nonresidential building types are more typically flat and screened by an ornamental parapet wall.
- ii. Façade configuration*—The primary façade of new commercial buildings should be in keeping with established

patterns. Maintaining horizontal elements within adjacent cap, middle, and base precedents will establish a consistent street wall through the alignment of horizontal parts. Avoid blank walls, particularly on elevations visible from the street. No new façade should exceed 40 linear feet without being penetrated by windows, entryways, or other defined bays.

D. LOT COVERAGE

i. Building to lot ratio—New construction should be consistent with adjacent historic buildings in terms of the building to lot ratio. Limit the building footprint for new construction to no more than 50 percent of the total lot area, unless adjacent historic buildings establish a precedent with a greater building to lot ratio.

3. Materials and Textures

A. NEW MATERIALS

i. Complementary materials—Use materials that complement the type, color, and texture of materials traditionally found in the district. Materials should not be so dissimilar as to distract from the historic interpretation of the district. For example, corrugated metal siding would not be appropriate for a new structure in a district comprised of homes with wood siding.

ii. Alternative use of traditional materials—Consider using traditional materials, such as wood siding, in a new way to provide visual interest in new construction while still ensuring compatibility.

iii. Roof materials—Select roof materials that are similar in terms of form, color, and texture to traditionally used in the district.

iv. Metal roofs—Construct new metal roofs in a similar fashion as historic metal roofs. Refer to the Guidelines for Alterations and Maintenance section for additional specifications regarding metal roofs.

v. Imitation or synthetic materials—Do not use vinyl siding, plastic, or corrugated metal sheeting. Contemporary materials not traditionally used in the district, such as brick or simulated stone veneer and Hardie Board or other fiberboard siding, may be appropriate for new construction in some locations as long as new materials are visually similar to the traditional material in dimension, finish, and texture. EIFS is not recommended as a substitute for actual stucco.

4. Architectural Details

A. GENERAL

i. Historic context—Design new buildings to reflect their time while respecting the historic context. While new construction should not attempt to mirror or replicate historic features, new structures should not be so dissimilar as to distract from or diminish the historic interpretation of the district.

ii. Architectural details—Incorporate architectural details that are in keeping with the predominant architectural style along the block face or within the district when one exists. Details should be simple in design and should complement, but not visually compete with, the character of the adjacent historic structures or other historic structures within the district.

Architectural details that are more ornate or elaborate than those found within the district are inappropriate.

iii. Contemporary interpretations—Consider integrating contemporary interpretations of traditional designs and details for new construction. Use of contemporary window moldings and door surroundings, for example, can provide visual interest while helping to convey the fact that the structure is new. Modern materials should be implemented in a way that does not distract from the historic structure.

5. Garages and Outbuildings

A. DESIGN AND CHARACTER

i. Massing and form—Design new garages and outbuildings to be visually subordinate to the principal historic structure in terms of their height, massing, and form.

ii. Building size—New outbuildings should be no larger in plan than 40 percent of the principal historic structure footprint.

iii. Character—Relate new garages and outbuildings to the period of construction of the principal building on the lot through the use of complementary materials and simplified architectural details.

iv. Windows and doors—Design window and door openings to be similar to those found on historic garages or outbuildings in the district or on the principle historic structure in terms of their spacing and proportions.

v. Garage doors—Incorporate garage doors with similar proportions and materials as those traditionally found in the district.

B. SETBACKS AND ORIENTATION

i. Orientation—Match the predominant garage orientation found along the block. Do not introduce front-loaded garages or garages attached to the primary structure on blocks where rear or alley loaded garages were historically used.

ii. Setbacks—Follow historic setback pattern of similar structures along the streetscape or district for new garages and outbuildings. Historic garages and outbuildings are most typically located at the rear of the lot, behind the principal building. In some instances, historic setbacks are not consistent with UDC requirements and a variance may be required.

6. Mechanical Equipment and Roof Appurtenances

A. LOCATION AND SITING

i. *Visibility*—Do not locate utility boxes, air conditioners, rooftop mechanical equipment, skylights, satellite dishes, and other roof appurtenances on primary facades, front-facing roof slopes, in front yards, or in other locations that are clearly visible from the public right-of-way.

ii. *Service Areas*—Locate service areas towards the rear of the site to minimize visibility from the public right-of-way.

B. SCREENING

i. *Building-mounted equipment*—Paint devices mounted on secondary facades and other exposed hardware, frames, and piping to match the color scheme of the primary structure or screen them with landscaping.

ii. *Freestanding equipment*—Screen service areas, air conditioning units, and other mechanical equipment from public view using a fence, hedge, or other enclosure.

iii. *Roof-mounted equipment*—Screen and set back devices mounted on the roof to avoid view from public right-of-way.

Historic Design Guidelines, Chapter 5, Guidelines for Site Elements

B. NEW FENCES AND WALLS

i. *Design*—New fences and walls should appear similar to those used historically within the district in terms of their scale, transparency, and character. Design of fence should respond to the design and materials of the house or main structure.

ii. *Location*—Avoid installing a fence or wall in a location where one did not historically exist, particularly within the front yard. The appropriateness of a front yard fence or wall is dependent on conditions within a specific historic district.

New front yard fences or wall should not be introduced within historic districts that have not historically had them.

iii. *Height*—Limit the height of new fences and walls within the front yard to a maximum of four feet. The appropriateness of a front yard fence is dependent on conditions within a specific historic district. New front yard fences should not be introduced within historic districts that have not historically had them. If a taller fence or wall existed historically, additional height may be considered. The height of a new retaining wall should not exceed the height of the slope it retains.

iv. *Prohibited materials*—Do not use exposed concrete masonry units (CMU), Keystone or similar interlocking retaining wall systems, concrete block, vinyl fencing, or chain link fencing.

v. *Appropriate materials*—Construct new fences or walls of materials similar to fence materials historically used in the district. Select materials that are similar in scale, texture, color, and form as those historically used in the district, and that are compatible with the main structure. Screening incompatible uses—Review alternative fence heights and materials for appropriateness where residential properties are adjacent to commercial or other potentially incompatible uses.

3. Landscape Design

A. PLANTINGS

i. *Historic Gardens*—Maintain front yard gardens when appropriate within a specific historic district.

ii. *Historic Lawns*—Do not fully remove and replace traditional lawn areas with impervious hardscape. Limit the removal of lawn areas to mulched planting beds or pervious hardscapes in locations where they would historically be

- found, such as along fences, walkways, or drives. Low-growing plantings should be used in historic lawn areas; invasive or large-scale species should be avoided. Historic lawn areas should never be reduced by more than 50%.
- iii. *Native xeric plant materials*—Select native and/or xeric plants that thrive in local conditions and reduce watering usage. See UDC Appendix E: San Antonio Recommended Plant List—All Suited to Xeriscape Planting Methods, for a list of appropriate materials and planting methods. Select plant materials with a similar character, growth habit, and light requirements as those being replaced.
 - iv. *Plant palettes*—If a varied plant palette is used, incorporate species of taller heights, such informal elements should be restrained to small areas of the front yard or to the rear or side yard so as not to obstruct views of or otherwise distract from the historic structure.
 - v. *Maintenance*—Maintain existing landscape features. Do not introduce landscape elements that will obscure the historic structure or are located as to retain moisture on walls or foundations (e.g., dense foundation plantings or vines) or as to cause damage.

B. ROCKS OR HARDSCAPE

- i. *Impervious surfaces* —Do not introduce large pavers, asphalt, or other impervious surfaces where they were not historically located.
- ii. *Pervious and semi-pervious surfaces*—New pervious hardscapes should be limited to areas that are not highly visible, and should not be used as wholesale replacement for plantings. If used, small plantings should be incorporated into the design.
- iii. *Rock mulch and gravel* - Do not use rock mulch or gravel as a wholesale replacement for lawn area. If used, plantings should be incorporated into the design.

D. TREES

- i. *Preservation*—Preserve and protect from damage existing mature trees and heritage trees. See UDC Section 35-523 (Tree Preservation) for specific requirements.
- ii. *New Trees* – Select new trees based on site conditions. Avoid planting new trees in locations that could potentially cause damage to a historic structure or other historic elements. Species selection and planting procedure should be done in accordance with guidance from the City Arborist.

5. Sidewalks, Walkways, Driveways, and Curbing

A. SIDEWALKS AND WALKWAYS

- i. *Maintenance*—Repair minor cracking, settling, or jamming along sidewalks to prevent uneven surfaces. Retain and repair historic sidewalk and walkway paving materials—often brick or concrete—in place.
- ii. *Replacement materials*—Replace those portions of sidewalks or walkways that are deteriorated beyond repair. Every effort should be made to match existing sidewalk color and material.
- iii. *Width and alignment*—Follow the historic alignment, configuration, and width of sidewalks and walkways. Alter the historic width or alignment only where absolutely necessary to accommodate the preservation of a significant tree.
- iv. *Stamped concrete*—Preserve stamped street names, business insignias, or other historic elements of sidewalks and walkways when replacement is necessary.
- v. *ADA compliance*—Limit removal of historic sidewalk materials to the immediate intersection when ramps are added to address ADA requirements.

B. DRIVEWAYS

- i. *Driveway configuration*—Retain and repair in place historic driveway configurations, such as ribbon drives. Incorporate a similar driveway configuration—materials, width, and design—to that historically found on the site. Historic driveways are typically no wider than 10 feet. Pervious paving surfaces may be considered where replacement is necessary to increase stormwater infiltration.
- ii. *Curb cuts and ramps*—Maintain the width and configuration of original curb cuts when replacing historic driveways. Avoid introducing new curb cuts where not historically found.

7. Off-Street Parking

A. LOCATION

- i. Preferred location*—Place parking areas for non-residential and mixed-use structures at the rear of the site, behind primary structures to hide them from the public right-of-way. On corner lots, place parking areas behind the primary structure and set them back as far as possible from the side streets. Parking areas to the side of the primary structure are acceptable when location behind the structure is not feasible. See UDC Section 35-310 for district-specific standards.
- ii. Front*—Do not add off-street parking areas within the front yard setback as to not disrupt the continuity of the streetscape.
- iii. Access*—Design off-street parking areas to be accessed from alleys or secondary streets rather than from principal streets whenever possible.

B. DESIGN

- i. Screening*—Screen off-street parking areas with a landscape buffer, wall, or ornamental fence two to four feet high—or a combination of these methods. Landscape buffers are preferred due to their ability to absorb carbon dioxide. See UDC Section 35-510 for buffer requirements.
- ii. Materials*—Use permeable parking surfaces when possible to reduce run-off and flooding. See UDC Section 35-526(j) for specific standards.
- iii. Parking structures*—Design new parking structures to be similar in scale, materials, and rhythm of the surrounding historic district when new parking structures are necessary.

Standard Specifications for Windows in Additions and New Construction

Consistent with the Historic Design Guidelines, the following recommendations are made for windows to be used in new construction:

- **GENERAL:** Windows used in new construction should be similar in appearance to those commonly found within the district in terms of size, profile, and configuration. While no material is expressly prohibited by the Historic Design Guidelines, a high quality wood or aluminum-clad wood window product often meets the Guidelines with the stipulations listed below.
- **SIZE:** Windows should feature traditional dimensions and proportions as found within the district.
- **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. All windows should be supplied in a block frame and exclude nailing fins which limit the ability to sufficiently recess the windows.
- **TRIM:** Window trim must feature traditional dimensions and architecturally appropriate casing and sloped sill detail.
- **GLAZING:** 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 true, exterior muntins.
- **COLOR:** Wood windows should feature a painted finish. If a clad or non-wood product is approved, white or metallic manufacturer's color is not allowed and color selection must be presented to staff.

FINDINGS:

- a. The applicant is requesting a Certificate of Appropriateness for approval to construct a 2-story, single-family historic structure on the vacant lot at 120 Callaghan. This lot is located within the Lavaca Historic District.
- b. **CONTEXT & DEVELOPMENT PATTERN** – The applicant has proposed new construction at 120 Callaghan Avenue, a lot currently void of structures. This block of Callaghan features thirteen (13) historic, residential structures, three of which feature two (2) stories in height. Per BCAD, this lot features an overall depth of 80' and an overall width of 50' for a total size of 4,000 square feet.
- c. **PREVIOUS STRUCTURE / DEMOLITION** – The historic structure that originally existed at 120 Callaghan was subject to modifications that led to its loss of architectural significance. The Historic and Design Review Commission approved its demolition on August 21, 2024, with stipulations that any proposed new construction that exceeded the previously approved design (July 15, 2020), be reviewed and approved by the Commission.

- d. **SETBACKS & ORIENTATION** – According to the Guidelines for New Construction, the front facades of new buildings are to align with front facades of adjacent buildings where a consistent setback has been established along the street frontage. Additionally, the orientation of new construction should be consistent with the historic examples found on the block. The applicant has proposed for the new construction to be oriented towards Callaghan; however, the applicant has not provided information regarding the structure's setback. Staff finds that a setback that is greater than both of the adjacent, historic structure should be proposed. Additionally, staff finds that a setback diagram should be produced showing the proposed setback in relationship to all existing, historic setbacks.
- e. **ENTRANCES** – The applicant has proposed for the new construction at to feature a front facing entrance door. This is consistent with the Guidelines for New Construction, and consistent with historic examples found within the district.
- f. **SCALE & MASS** – Per the Guidelines for New Construction 2.A.i., a height and massing similar to historic structures in the vicinity of the proposed new construction should be used. In residential districts, the height and scale of new construction should not exceed that of the majority of historic buildings by more than one-story. The applicant has proposed for the new construction to feature two (2) stories and approximately twenty-nine (29) feet in height. Per the Guidelines, a 2-story structure would be consistent with the Guidelines; however, staff finds that a street elevation should be provided to show the proposed new construction's massing and height in relationship to the adjacent, historic structures.
- g. **FOUNDATION & FLOOR HEIGHTS** – According to the Guidelines for New Construction 2.a.iii., foundation and floor heights should be aligned within one (1) foot of neighboring structure's foundation and floor heights. Historic structures on this block feature foundation heights ranging from approximately two (2) to three (3) feet in height. Staff finds that a foundation height of at least one (1) foot should be incorporated into the design.
- h. **ROOF FORM** – The applicant has proposed for the new construction to feature both front, rear, and side facing gabled roofs. Generally, staff finds the proposed primary roof forms to be appropriate; however, staff finds that a porch roof and porch roof massing that is representative of those found historically within the district should be incorporated into the design at the second level balcony. Typically, front porches found within the district are not uncovered.
- i. **LOT COVERAGE** – The applicant has not provided a building to lot ratio. Per BCAD records, this lot features 4,000 square feet in size. The Guidelines for New Construction 2.D.i. notes that new construction should be consistent with adjacent historic buildings in terms of the building to lot ratio. Footprints of new construction should be limited to no more than fifty (50) percent of the total lot area, unless adjacent historic buildings establish a precedent with a greater building to lot ratio. The applicant has noted a footprint of 1,720 square feet; forty-three (43) percent of the lot's area.
- j. **MATERIALS** – The applicant has proposed materials that include vertically oriented wood siding, stucco, a standing seam metal roof, metal guardrails and wood awnings. This block predominantly features horizontally oriented wood siding; however, stucco and plaster are found historically throughout the Lavaca Historic District. Generally, staff finds the proposed vertically oriented wood siding and stucco to be appropriate; however, staff finds that the wood siding should be dimensioned and profiled to represent historic siding within the district. Staff finds that if metal railing are proposed, they should be proportioned and profiled to relate to those found historically within the district. The proposed standing seam metal roof should feature smooth panels that are 18 to 21 inches wide with a standard galvalume finish, seams that are 1 to 2 inches in height, and a low profile ridge cap or ridge sleeve. Stucco facades should feature traditional finishes.
- k. **WINDOW MATERIALS** – The applicant has proposed Pella aluminum clad wood windows in various divided lite profiles. Generally, staff finds the proposed aluminum clad wood windows to be appropriate; however, staff finds that all windows should adhere to the adopted standards for windows in new construction.
- l. **FENESTRATION PROFILE** – The applicant has proposed window opening sizes that are representative of those found historically within the district; however, staff finds that all grouped windows should be separated by a mullion of six (6) inches in width, as found on the adjacent historic structures. Additionally, staff finds that additional fenestration should be added to both side facades as both feature expanses of unseparated walls that are atypical for residential construction within the district.
- m. **PORCH DESIGN (Ground Level)** – The applicant has proposed a recessed, ground level porch at the primary entrance. The porch features a rounded entrance, typically found on Mediterranean Style houses. Arched porch entry ways are not found on Folk Victorian structures; the predominant style on this block. Staff finds that the proposed arched porch entry at the ground level should be revised to be representative of those found historically within the district and on this block, and to be consistent with the Guidelines, which notes to

incorporate architectural details that are in keeping with the predominant architectural style along with block or within the district.

- n. PORCH DESIGN (Second Level) – As noted in finding h, staff finds that a porch roof and porch roof massing that is representative of those found historically within the district should be incorporated into the design at the second level balcony. Typically, front porches found within the district are not uncovered.
- o. GARAGE – The applicant has proposed for the new construction to feature a street facing, front loading garage. Parking that is located within the footprint of the primary residential structure is not found historically within the district. Staff recommends the front-loading garage be eliminated from the design and that the applicant proposes a parking design that is consistent with those found within the district; typically within the side or rear yard.
- p. ARCHITECTURAL DETAILS – As noted in the above findings, staff finds that the second level balcony should feature a porch roof, that fenestration should be added to both side facades, that the front entrance should feature a square profile and that the front-loading garage should be eliminated.
- q. DRIVEWAY – The applicant has proposed to shift the existing curb cut and driveway to the west to accommodate vehicular access to the proposed front-loading garage. Staff does not find modifying the existing driveway location to accommodate vehicular access to a front-loading garage to be appropriate, as this is not found historically within the district. Staff finds that the driveway should be maintained in its current location, and that parking should be located in the adjacent side yard.
- r. WALKWAY – The lot currently features a solid walkway leading from the previous structure's front porch with the sidewalk at the right of way. The applicant has proposed for the new walkway to feature concrete pavers. Staff finds that a poured concrete walkway that is consistent with the Guidelines for Site Elements should be installed. The walkway should be centered on the front door.
- s. FENCING – The applicant has noted the installation of a front yard fence to feature four (4) feet in height to feature a pedestrian entry gate and a sliding driveway gate at the property line. A fencing detail should be developed and submitted for review and approval. Fencing should be consistent with the Guidelines.
- t. LANDSCAPING – The applicant has not provided information regarding landscaping nor a landscaping material palette. Staff finds that a detailed landscaping plan should be submitted to the Commission for review and approval.
- u. MECHANICAL EQUIPMENT – The applicant has proposed to locate mechanical equipment at the rear of the site, screened by fencing. Staff finds the proposed location to be appropriate and consistent with the Guidelines.

RECOMMENDATION:

Staff does not recommend approval at this time, based on findings a through u. Staff recommends the applicant address the following items prior to receiving a recommendation for approval.

- i. That a setback that is greater than both of the adjacent, historic structure should be proposed, as noted in finding d. Additionally, staff recommends that a setback diagram should be produced showing the proposed setback in relationship to all existing, historic setbacks.
- ii. That a street elevation be provided to show the proposed new construction's massing and height in relationship to the adjacent, historic structures, as noted in finding f.
- iii. That a foundation height of at least one (1) foot be incorporated into the design, as noted in finding g.
- iv. That a porch roof and porch roof massing that is representative of those found historically within the district be incorporated into the design at the second level balcony, as noted in findings h and n.
- v. That the wood siding be dimensioned and profiled to represent historic siding within the district. Staff recommends that if metal railing are proposed, they should be proportioned and profiled to relate to those found historically within the district. The proposed standing seam metal roof should feature smooth panels that are 18 to 21 inches wide with a standard galvalume finish, seams that are 1 to 2 inches in height, and a low-profile ridge cap or ridge sleeve. Additionally, stucco facades are to feature traditional, smooth finishes.
- vi. That all windows should adhere to the adopted standards for windows in new construction, as noted in finding k.
- vii. That all grouped windows should be separated by a mullion of six (6) inches in width, as found on the adjacent historic structures. Additionally, staff recommends that additional fenestration be added to both side facades as both feature expanses of unseparated walls that are atypical for residential construction within the district.
- viii. That the proposed arched porch entry at the ground level should be revised to be representative of those found historically within the district and on this block, and to be consistent with the Guidelines, which notes to

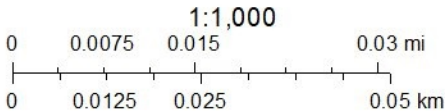
incorporate architectural details that are in keeping with the predominant architectural style along with block or within the district.

- ix. That the proposed arched porch entry at the ground level be revised to be representative of those found historically within the district and on this block, and to be consistent with the Guidelines, which notes to incorporate architectural details that are in keeping with the predominant architectural style along with block or within the district.
- x. That the front-loading garage be eliminated from the design and that the applicant proposes a parking design that is consistent with those found within the district; typically within the side or rear yard, as noted in finding o.
- xi. That the proposed relocated driveway be eliminated and that the applicant maintains the existing driveway location.
- xii. That a poured concrete walkway that is consistent with the Guidelines for Site Elements be installed, as noted in finding r. The walkway should be centered on the front door.
- xiii. That the proposed front yard fence not exceed four (4) feet, and that a design that is consistent with the Guidelines be submitted for review and approval, as noted in finding s.
- xiv. That a detailed landscaping plan be developed and submitted to the Commission for review and approval, as noted in finding t.

City of San Antonio One Stop



February 28, 2025





AREA
OF REQUEST



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1817 S Presa
San Antonio, TX 78210

120
Callaghan Ave
San Antonio, Texas 70210

DRAWN: KK
CHECKED: DC
APPROVED:
DATE: 2/13/2025

SHEET No.
PHOTOS

HDRC

1

PHOTO: 120 CALLAGHAN AVE
SCALE: N.T.S.



AREA
OF REQUEST



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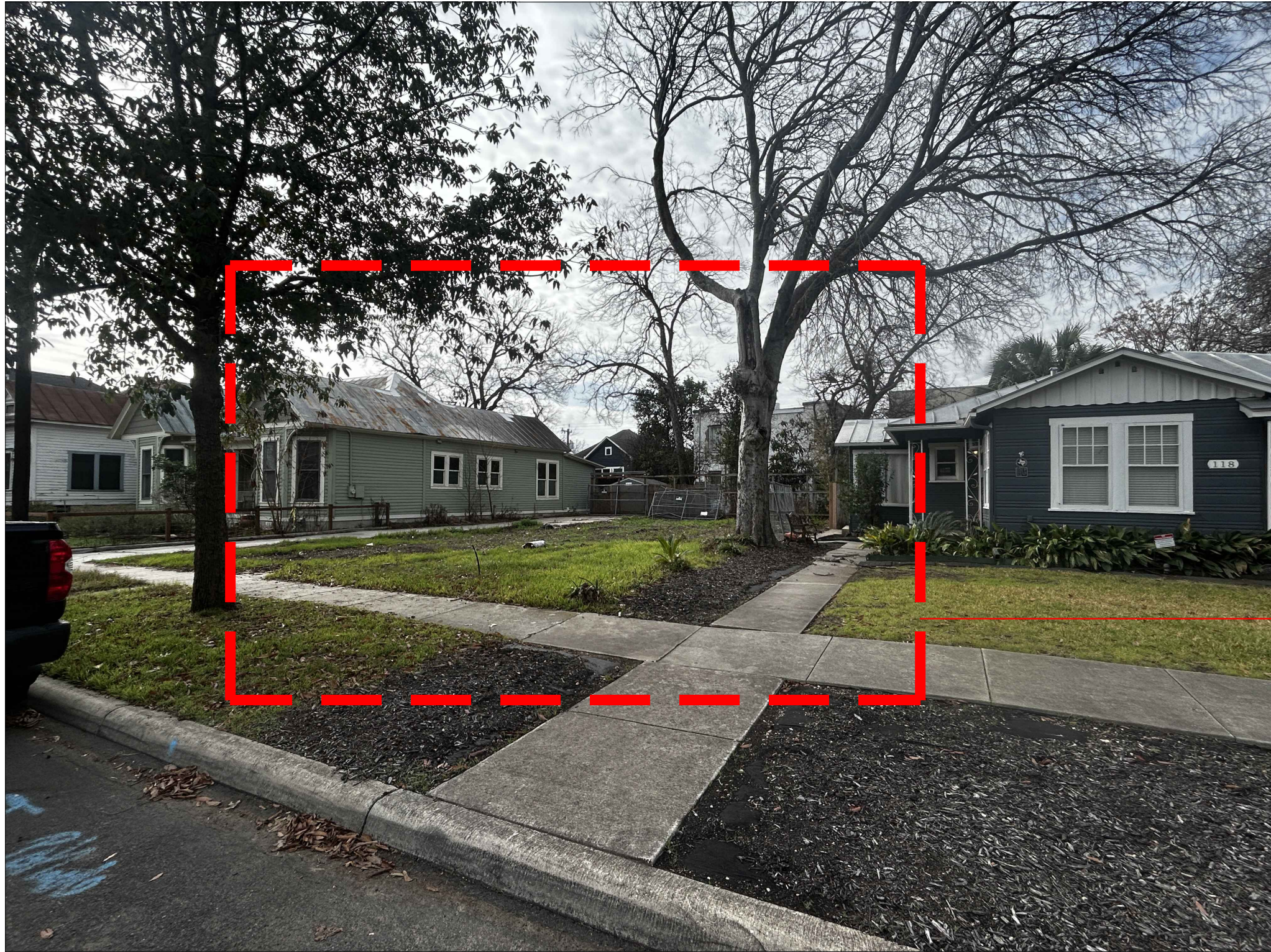
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SHEET No.
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PHOTO: 120 CALLAGHAN AVE
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PHOTO: 120 CALLAGHAN AVE
SCALE: N.T.S.









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San Antonio, TX 78210

HISTORIC SET
120
Callaghan Avenue
San Antonio, Texas 78210

DATE:	ISSUED:

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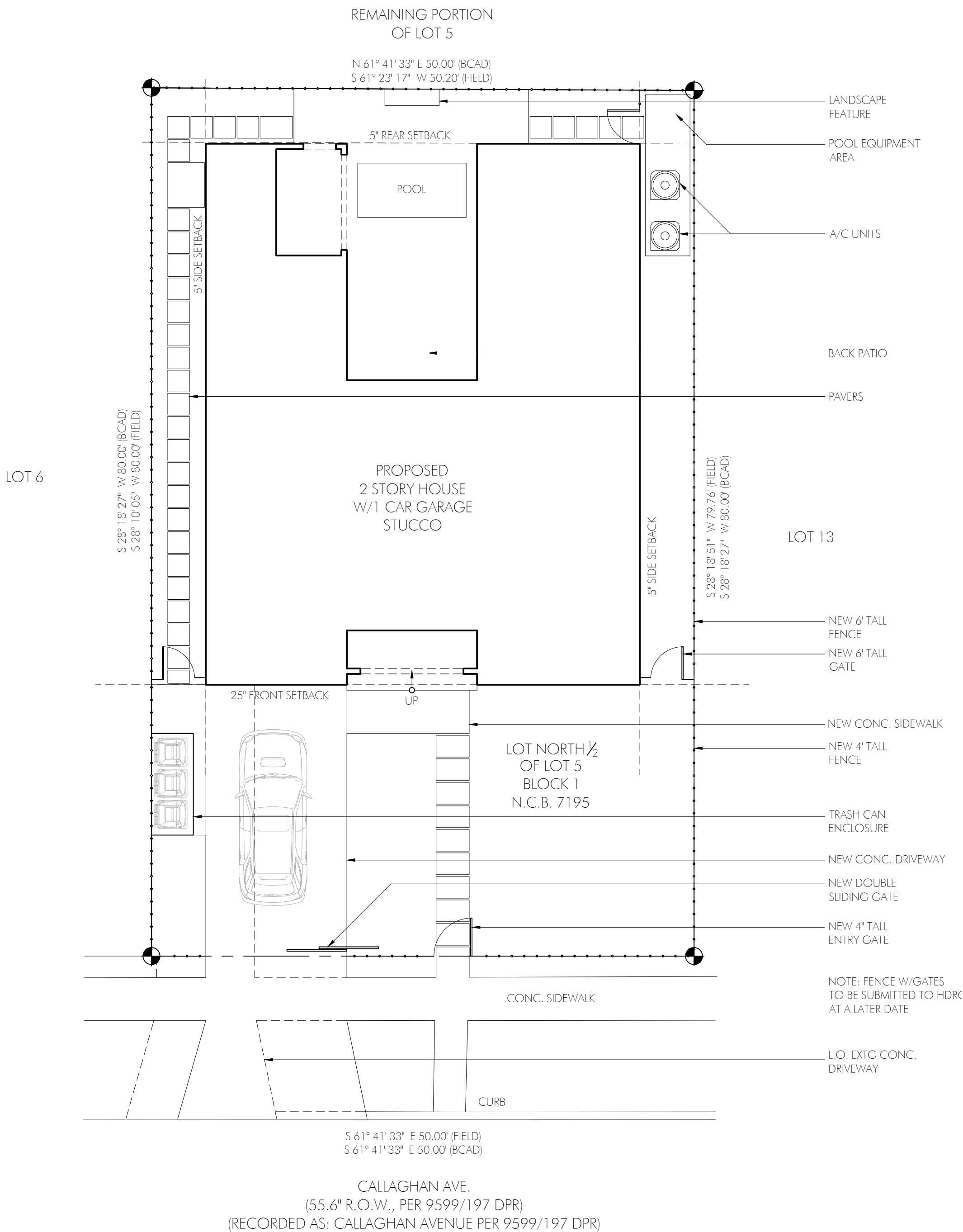
CHECKED: DC

APPROVED:

DATE: FEBRUARY 13, 2025

SHEET No.
SITE PLAN

A0.1



1 SITE PLAN: PROPOSED

SCALE: 1/8" = 1'-0"





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1817 S Presa
San Antonio, TX 78210

HISTORIC SET 120 Callaghan Avenue San Antonio, Texas 78210

DATE:	ISSUED:

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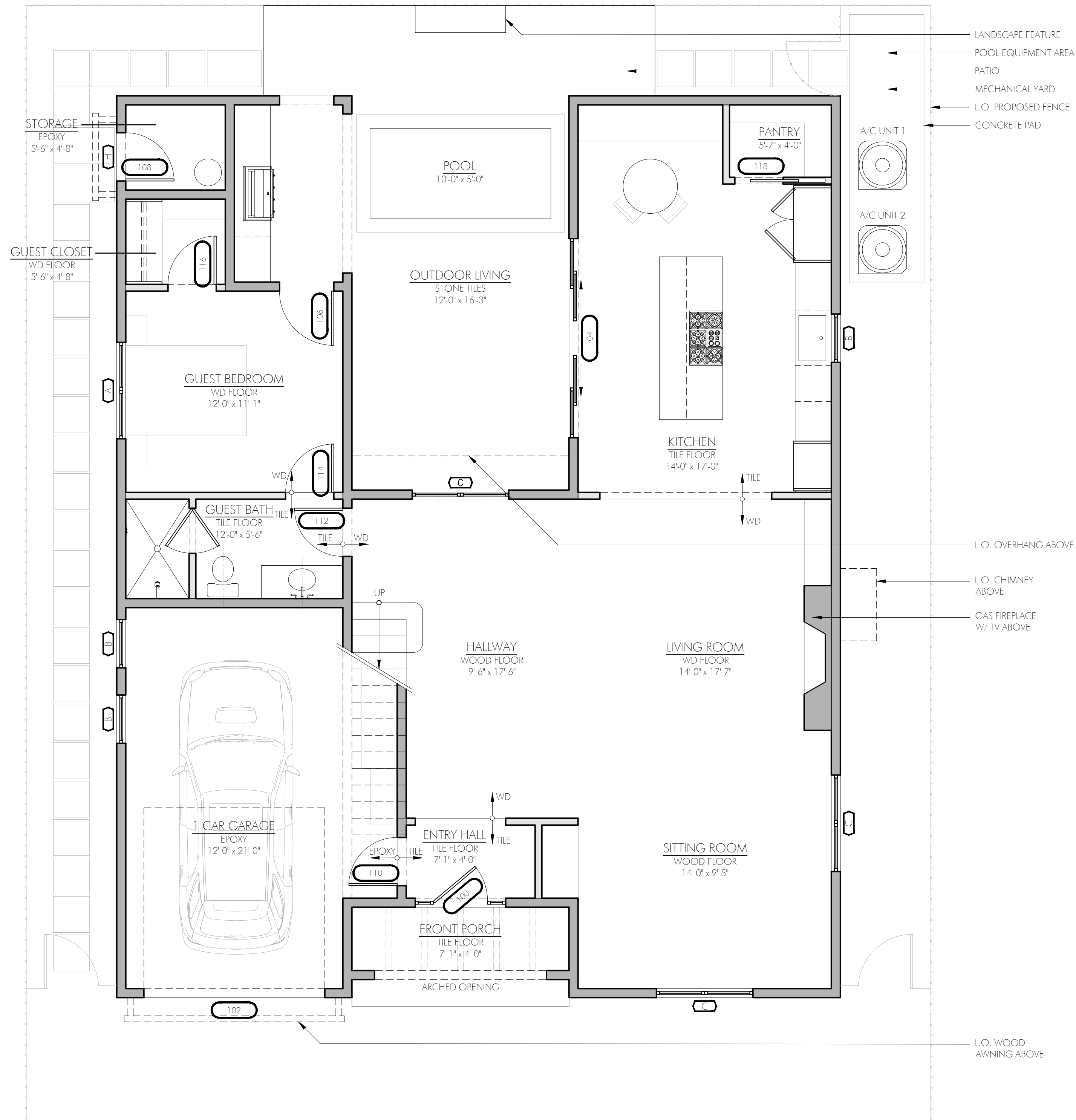
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APPROVED:

DATE: FEBRUARY 13, 2025

SHEET No.
FLOOR PLAN

A1.0



1 FLOOR PLAN: 1ST FLOOR
SCALE: 1/4" = 1'-0"

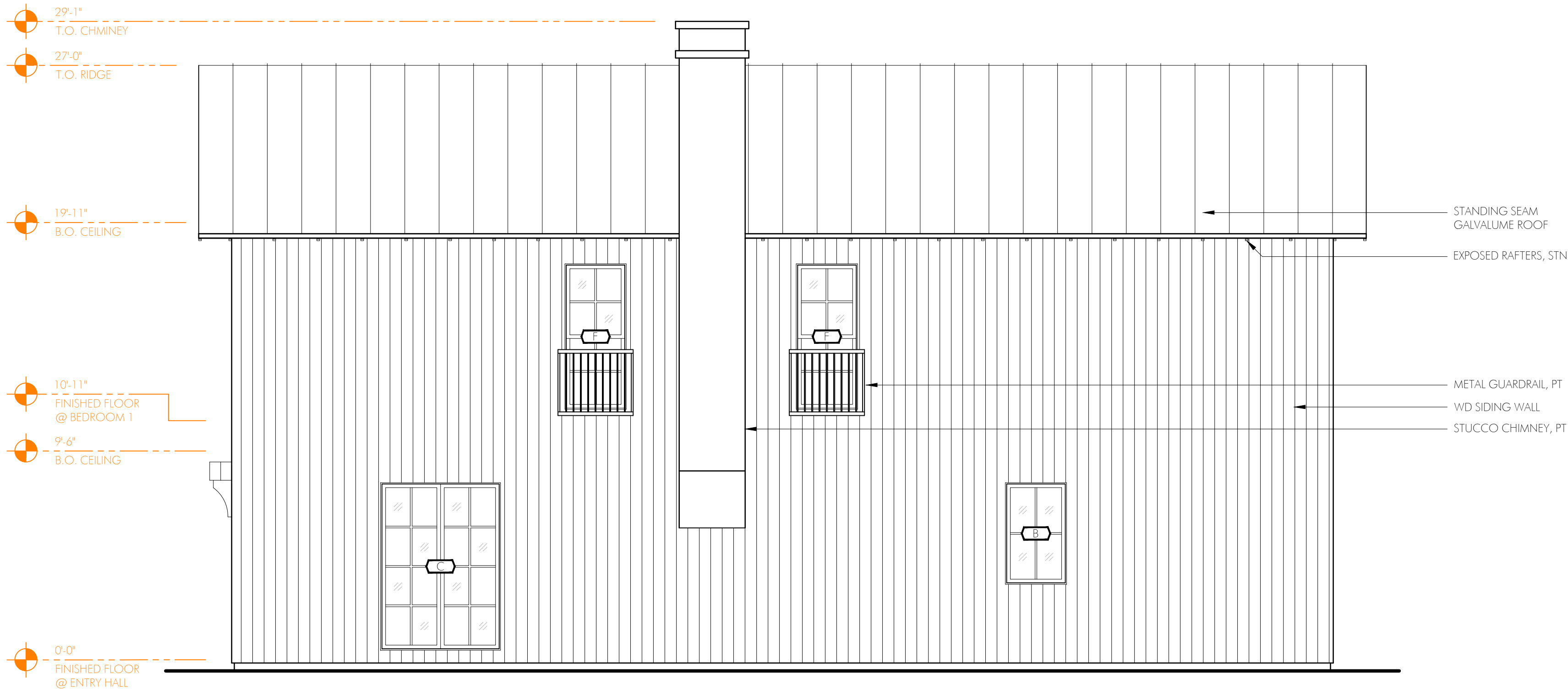


2 FLOOR PLAN: 2ND
SCALE: 1/4" = 1'-0"





1 ELEVATION: LOOKING SOUTH
SCALE: 1/4" = 1'-0"



2 ELEVATION: LOOKING EAST
SCALE: 1/4" = 1'-0"



210.883.5529
info@designcoopsa.com

1817 S Presa
San Antonio, TX 78210

HISTORIC SET
120
Callaghan Avenue
San Antonio, Texas 78210

DATE:	ISSUED:

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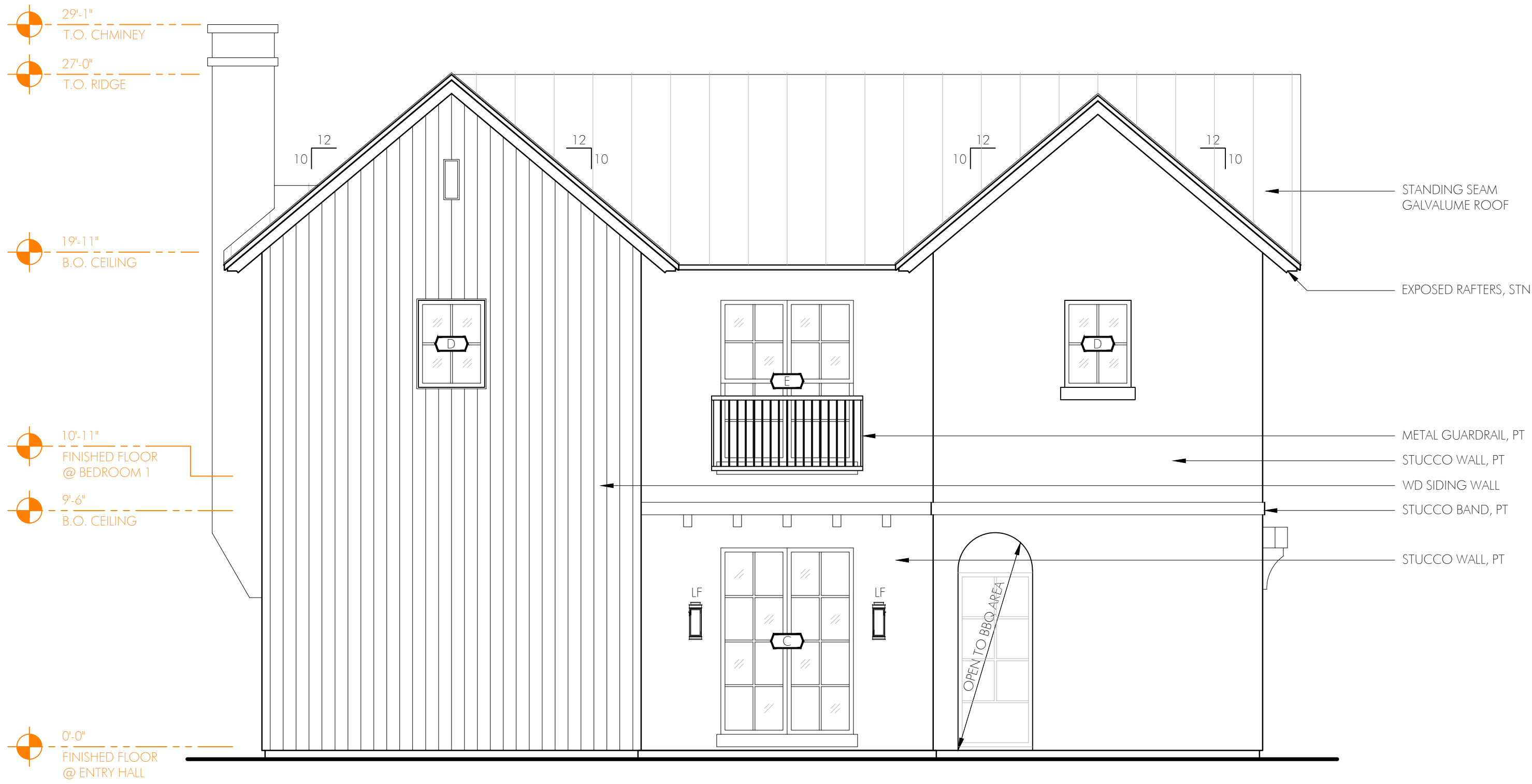
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APPROVED:

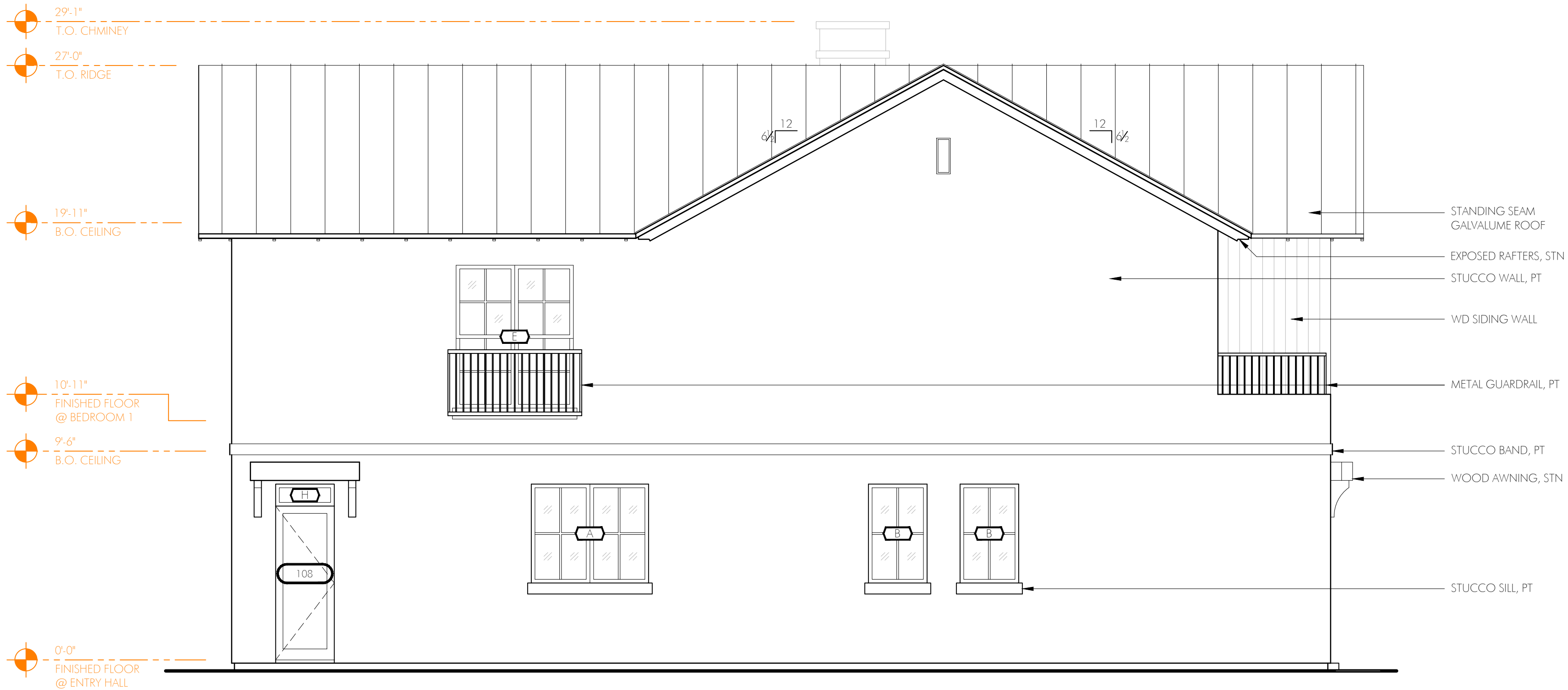
DATE: FEBRUARY 13, 2025

SHEET No.
EXTERIOR ELEVATIONS

A2.0



1 ELEVATION: LOOKING NORTH
SCALE: 1/4" = 1'-0"



2 ELEVATION: LOOKING WEST
SCALE: 1/4" = 1'-0"



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DRAWN: KK


CHECKED: DC

APPROVED:

DATE: FEBRUARY 13, 2025

SHEET No.
EXTERIOR ELEVATIONS

A2.1



Product Specs

Accoya | Smooth | Coastline

STANDARD SIZES

1×6, 1×8, 1-1/2×6, 1-1/2×8, 2×6, 2×8

LENGTHS

8' -16' random, 5% or less 6' -8'

DURABILITY

Class 1

FIRE RATING

SFM 12-7A-1

WARRANTY

Accoya Warranty Certificate

SPECIES GUIDE

Accoya Species Guide

ALWAYS
PIN
N
E
R
I
N
G



ACCOYA®
SPECIES GUIDE



GENERAL

KEY FEATURES

Accoya is sustainably grown Radiata Pine modified through acetylation, which enables it to resist rot, remain dimensionally stable, and last for decades. Accoya comes with a 50-year above ground warranty. All Accoya is FSC and Gold Cradle-to-Cradle certified.

REGION

Sourced in New Zealand and processed in Arnhem, Netherlands.

WARRANTY

50-year above ground; 25-year below ground or in contact with freshwater; useful life expectancy of 70 years.

CERTIFICATIONS

FSC; C2C Gold

APPLICATIONS/USES

Exterior cladding, Interior paneling, decking, ceilings & soffits, exterior roofing, fencing.

PRODUCT SPECIFICATIONS

DURABILITY

Class 1

JANKA HARDNESS

Side: ~922 lbf; End grain: ~1484 lbf

FLAME SPREAD

Class C

MOISTURE CONTENT

3-5%

FINISHES

Unfinished, Prefinished, Nylon Brushed, SSB, Burn & Brush, Barnwood, Colorado Barnwood, Saguaro, Rough Sawn

NOMINAL SIZES

3/4 x 6/8"

4/4 x 6/8/10"

6/4 x 6/8"

8/4 x 6/8/10"

ROUGH NET SIZES

Full nominal dimension

BLANK NET SIZES

N/A

LENGTHS

8'-16' random; 5% or less 6'-8'



Product Selection Guide

Size and Performance Data	LS-DH-2
Features and Options	LS-DH-3
Combination Assemblies	LS-DH-4
Glazing Performance	
Vent Units.....	LS-DH-6
Fixed Units	LS-DH-8
Grille Types	LS-DH-11
Size Tables	
Double-Hung with GBG's and SDL's.....	LS-DH-12
Fixed and Transoms with GBG's and SDL's.....	LS-DH-13
Replacement Sizes with Grilles-Between-the-Glass	LS-DH-14
Special Sizes and Dimensions.....	LS-DH-17
Design Data	
Vent Units.....	LS-DH-18
Fixed and Transoms	LS-DH-19
Replacement Double-Hung Venting	LS-DH-20
Replacement Fixed and Transoms	LS-DH-22
Detailed Product Description	LS-DH-23
Unit Sections	LS-DH-24

Document Navigation Tips:

Items listed in the table of contents above are active links that will take you to the corresponding page.

Supporting documents for this product:

Test Reports:

https://media.pella.com/professional/adm/CertificationReports/Test_Reports_LS-Dual.pdf

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

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

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

https://media.pella.com/professional/adm/Clad-Wood-LS/PellaLifestyleSrs-DH_DPD.rtf

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

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

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

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

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

https://media.pella.com/professional/adm/RevitFiles/LS-Revit/Window-Double-Hung-Pella-Lifestyle_Series.zip

Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Clad-Wood-LS/PellaSKP_LifestyleSeries_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

Bay/Bow Details:

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



Lifestyle Series Double-Hung

Size and Performance Data

		Dual-Pane
Sizes		
Standard double-hung vent/fixed sizes		●
Transom sizes		●
Egress sizes		●
Special sizes available		●
Performance ₁		
Meets or Exceeds AAMA / WDMA Ratings		H-LC25-LC50 Hallmark Certified
Air Infiltration (cfm/ft ² of frame @ 1.57 psf wind pressure) ₂		0.11
Water Resistance		7.5 psf
Design Pressure		25–50 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		40/40

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 (HGP)		
Pella Lifestyle Series	37" x 59"	11/16"	2.5mm	2.5mm	—	27	23
Double-Hung	37" x 59"	11/16"	5mm	3mm	—	31	27

(—) = 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.

Rev.03/10/18/24

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LS-DH-2



Lifestyle Series Double-Hung

Features and Options

Standard	Options / Upgrades
Glazing	
Glazing Type	
Dual-Pane Insulating Glass	—
Insulated Glass Options/Low-E Types	
Advanced Low-E	SunDefense™ Low-E
	SunDefense+ Low-E
	AdvancedComfort Low-E
	NaturalSun Low-E
	NaturalSun+ Low-E
Additional Glass Options	
Annealed Glass	STC Glazing Options
	Tempered Glass
	Obscure Glass ₁
Gas Fill/High Altitude	
Argon	High altitude (Air-filled only)
Exterior	
EnduraClad® protective finish	—
Cladding Colors	
12 Standard colors ₁	—
Interior₁	
Unfinished wood	Factory primed
	Factory prefinished paint ₁
	Factory prefinished stain ₁
Wood Types	
Pine	—
Hardware	
Finishes	
Champagne, Matte Black, White or Brown	Oil Rubbed Bronze, Satin Nickel
Sash Locks/Sash Lifts	
Cam-action lock	Sash lifts ₂
Tilt-Wash Cleaning	
Tilt to interior on both sashes	—
Grilles	
Grilles-Between-the-Glass	
—	Traditional, Prairie, Top Row, Cross, Custom - Equally Divided
Simulated Divided Light with Optional Spacer₃	
—	Traditional, Prairie, Top Row, Cross, Custom - Equally Divided
Screens	
—	Full-Size InView™ screens, Hidden Screen ₁

(—) = Not Available

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

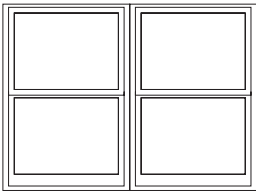
(2) Sold separately for Pella® Lifestyle Series double-hung windows.

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

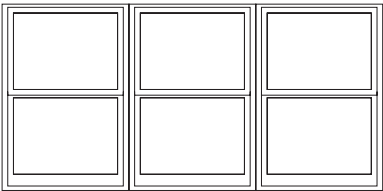


Combination Assemblies

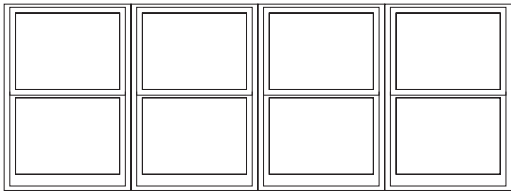
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullioned together by a direct or reinforcing mullion. Pella window combinations are available in an endless variety of arrangements. Refer to Combinations section for requirements and limitations. Contact your local Pella sales representative for more information.



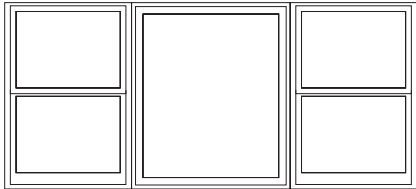
Two-Wide



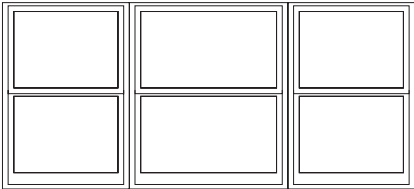
Three-Wide Equal



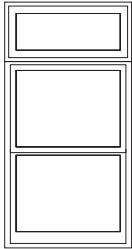
Four-Wide Equal



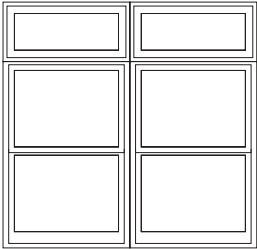
Center Fixed with Flankers



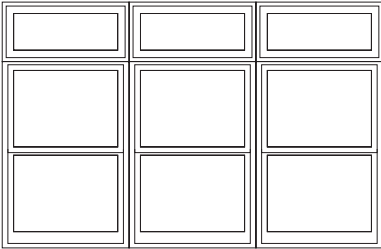
Three-Wide Unequal



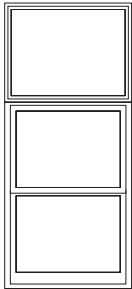
Transom over
Single



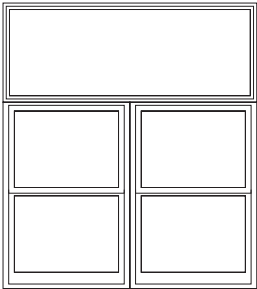
Two-Wide Transoms over
Two-Wide



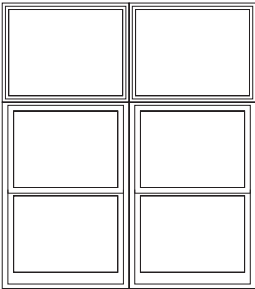
Three-Wide Transoms over
Three-Wide



Clad Frame over
Single



Single Clad Frame over
Two-Wide



Two Wide Clad Frame over
Two-Wide



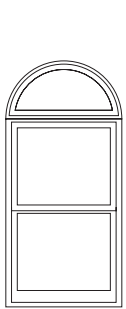
Lifestyle Series Double-Hung

Combination Assemblies

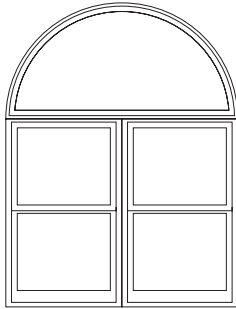
Combinations are a great way to create visual interest in any project. A combination is an assembly formed by two or more separate windows or doors whose frames are mullioned together by a direct or reinforcing mullion.

Pella window combinations are available in an endless variety of arrangements. Refer to Combinations Section for requirements, and limitations.

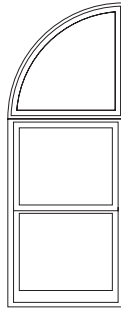
Contact your local Pella sales representative for more information.



Half Circle over
Single



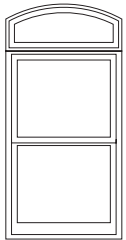
Half Circle over
Two-Wide



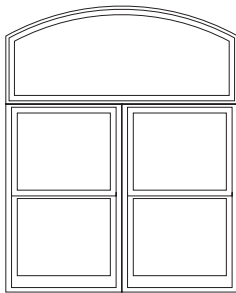
Left Quarter Circle
over Single



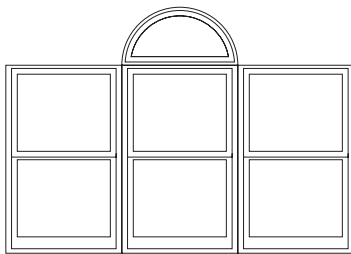
Right Quarter Circle
over Single



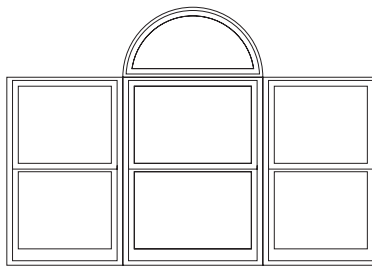
Arch Head over
Single



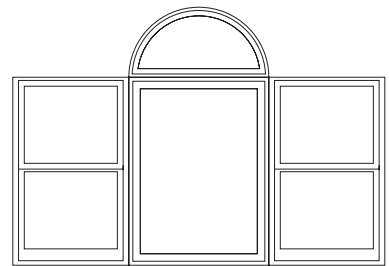
Arch Head over
Two-Wide



Half Circle centered on
Three-Wide Equal



Half Circle over
Three-Wide Unequal



Half Circle over
Center Fixed with Flankers



Lifestyle Series Double-Hung

Glazing Performance - Total Unit

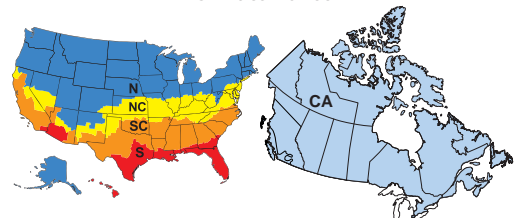
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Dual-Pane Vent										N	NC	SC	S	CA	
11/16"	Advanced LowE IG	PEL-N-35-00514-00001	2.5	2.5	argon	0.30	0.30	0.56	56						
	with grilles-between-the-glass	PEL-N-35-00515-00001				0.30	0.27	0.50	56						
	with Simulated Divided Light	PEL-N-35-00516-00001				0.30	0.27	0.50	56						
11/16"	Advanced LowE IG	PEL-N-35-00517-00001	3	3	argon	0.30	0.30	0.56	55						
	with grilles-between-the-glass	PEL-N-35-00518-00001				0.30	0.27	0.50	55						
	with Simulated Divided Light	PEL-N-35-00519-00001				0.30	0.27	0.50	55						
11/16"	SunDefense™ Low-E IG	PEL-N-35-00550-00001	2.5	2.5	argon	0.29	0.22	0.52	56				S		
	with grilles-between-the-glass	PEL-N-35-00551-00001				0.29	0.20	0.47	56				S		
	with Simulated Divided Light	PEL-N-35-00552-00001				0.29	0.20	0.47	56				S		
11/16"	SunDefense Low-E IG	PEL-N-35-00553-00001	3	3	argon	0.29	0.22	0.52	55				S		
	with grilles-between-the-glass	PEL-N-35-00554-00001				0.29	0.20	0.46	55				S		
	with Simulated Divided Light	PEL-N-35-00555-00001				0.29	0.20	0.46	55				S		
11/16"	SunDefense+ Low-E IG	PEL-N-35-00568-00001	2.5	2.5	argon	0.25	0.22	0.51	45		NC	SC	S		
	with grilles-between-the-glass	PEL-N-35-00569-00001				0.25	0.20	0.46	45		NC	SC	S		
	with Simulated Divided Light	PEL-N-35-00570-00001				0.25	0.20	0.46	45		NC	SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-35-00571-00001	3	3	argon	0.25	0.22	0.51	44		NC	SC	S		
	with grilles-between-the-glass	PEL-N-35-00572-00001				0.25	0.20	0.45	44		NC	SC	S		
	with Simulated Divided Light	PEL-N-35-00573-00001				0.25	0.20	0.45	44		NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00532-00001	2.5	2.5	argon	0.26	0.29	0.55	45						
	with grilles-between-the-glass	PEL-N-35-00533-00001				0.26	0.27	0.49	45						
	with Simulated Divided Light	PEL-N-35-00534-00001				0.26	0.27	0.49	45						
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00535-00001	3	3	argon	0.26	0.29	0.55	44						
	with grilles-between-the-glass	PEL-N-35-00536-00001				0.26	0.26	0.49	44						
	with Simulated Divided Light	PEL-N-35-00537-00001				0.26	0.26	0.49	44						
11/16"	NaturalSun LowE IG	PEL-N-35-00478-00001	2.5	2.5	argon	0.30	0.56	0.64	55					34	CA
	with grilles-between-the-glass	PEL-N-35-00479-00001				0.30	0.50	0.57	55						
	with Simulated Divided Light	PEL-N-35-00480-00001				0.30	0.50	0.57	55						
11/16"	NaturalSun LowE IG	PEL-N-35-00481-00001	3	3	argon	0.30	0.55	0.63	54					34	CA
	with grilles-between-the-glass	PEL-N-35-00482-00001				0.30	0.49	0.57	54						
	with Simulated Divided Light	PEL-N-35-00483-00001				0.30	0.49	0.57	54						
11/16"	NaturalSun+ LowE IG	PEL-N-35-00496-00001	2.5	2.5	argon	0.26	0.51	0.63	44	N				35	CA
	with grilles-between-the-glass	PEL-N-35-00497-00001				0.26	0.46	0.56	44	N					
	with Simulated Divided Light	PEL-N-35-00498-00001				0.26	0.46	0.56	44	N					
11/16"	NaturalSun+ LowE IG	PEL-N-35-00499-00001	3	3	argon	0.26	0.50	0.62	43	N				35	CA
	with grilles-between-the-glass	PEL-N-35-00500-00001				0.26	0.45	0.55	43	N					
	with Simulated Divided Light	PEL-N-35-00501-00001				0.26	0.45	0.55	43	N					

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 based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2023 (version 7) criteria.

(2) The values shown are based on Canada's updated ENERGY STAR® 2020 initiative. Visit www.energystar.gov for Energy Star guidelines.

Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

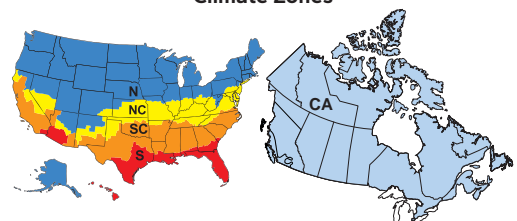
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
										Dual-Pane Vent – High Altitude Glazing					
11/16"	Advanced LowE IG	PEL-N-35-00523-00001	2.5	2.5	air	0.33	0.30	0.57	52						
	with grilles-between-the-glass	PEL-N-35-00524-00001				0.33	0.27	0.50	52						
	with Simulated Divided Light	PEL-N-35-00525-00001				0.33	0.27	0.50	52						
11/16"	Advanced LowE IG	PEL-N-35-00526-00001	3	3	air	0.33	0.30	0.56	52						
	with grilles-between-the-glass	PEL-N-35-00527-00001				0.33	0.27	0.50	52						
	with Simulated Divided Light	PEL-N-35-00528-00001				0.33	0.27	0.50	52						
11/16"	SunDefense™ Low-E IG	PEL-N-35-00559-00001	2.5	2.5	air	0.33	0.22	0.52	53						
	with grilles-between-the-glass	PEL-N-35-00560-00001				0.33	0.20	0.47	53						
	with Simulated Divided Light	PEL-N-35-00561-00001				0.33	0.20	0.47	53						
11/16"	SunDefense Low-E IG	PEL-N-35-00562-00001	3	3	air	0.33	0.23	0.52	52						
	with grilles-between-the-glass	PEL-N-35-00563-00001				0.33	0.20	0.46	52						
	with Simulated Divided Light	PEL-N-35-00564-00001				0.33	0.20	0.46	52						
11/16"	SunDefense+ Low-E IG	PEL-N-35-00577-00001	2.5	2.5	air	0.28	0.22	0.51	42				SC	S	
	with grilles-between-the-glass	PEL-N-35-00578-00001				0.28	0.20	0.46	42				SC	S	
	with Simulated Divided Light	PEL-N-35-00579-00001				0.28	0.20	0.46	42				SC	S	
11/16"	SunDefense+ Low-E IG	PEL-N-35-00580-00001	3	3	air	0.28	0.22	0.51	41				SC	S	
	with grilles-between-the-glass	PEL-N-35-00581-00001				0.28	0.20	0.45	41				SC	S	
	with Simulated Divided Light	PEL-N-35-00582-00001				0.28	0.20	0.45	41				SC	S	
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00541-00001	2.5	2.5	air	0.28	0.30	0.55	41						
	with grilles-between-the-glass	PEL-N-35-00542-00001				0.28	0.27	0.49	41						
	with Simulated Divided Light	PEL-N-35-00543-00001				0.28	0.27	0.49	41						
11/16"	AdvancedComfort Low-E IG	PEL-N-35-00544-00001	3	3	air	0.28	0.29	0.55	40						
	with grilles-between-the-glass	PEL-N-35-00545-00001				0.28	0.26	0.49	40						
	with Simulated Divided Light	PEL-N-35-00546-00001				0.28	0.26	0.49	40						
11/16"	NaturalSun LowE IG	PEL-N-35-00487-00001	2.5	2.5	air	0.34	0.56	0.64	52						
	with grilles-between-the-glass	PEL-N-35-00488-00001				0.34	0.50	0.57	52						
	with Simulated Divided Light	PEL-N-35-00489-00001				0.34	0.50	0.57	52						
11/16"	NaturalSun LowE IG	PEL-N-35-00490-00001	3	3	air	0.34	0.55	0.63	51						
	with grilles-between-the-glass	PEL-N-35-00491-00001				0.34	0.49	0.57	51						
	with Simulated Divided Light	PEL-N-35-00492-00001				0.34	0.49	0.57	51						
11/16"	NaturalSun+ LowE IG	PEL-N-35-00505-00001	2.5	2.5	air	0.28	0.51	0.63	41						
	with grilles-between-the-glass	PEL-N-35-00506-00001				0.28	0.46	0.56	41						
	with Simulated Divided Light	PEL-N-35-00507-00001				0.28	0.46	0.56	41						
11/16"	NaturalSun+ LowE IG	PEL-N-35-00508-00001	3	3	air	0.29	0.50	0.62	40						
	with grilles-between-the-glass	PEL-N-35-00509-00001				0.29	0.45	0.62	40						
	with Simulated Divided Light	PEL-N-35-00510-00001				0.29	0.45	0.55	40						

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 based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2023 (version 7) criteria.

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Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

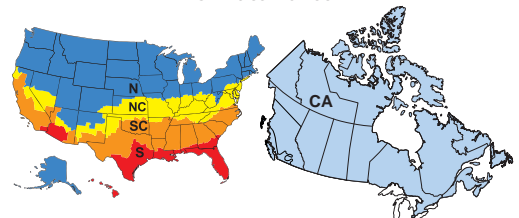
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.			Canada ₂		
										Zone			ER	Zone	
Dual-Pane Fixed										N	NC	SC	S	CA	
11/16"	Advanced LowE IG	PEL-N-229-00861-00001	2.5	2.5	argon	0.27	0.31	0.58	58						
	with grilles-between-the-glass	PEL-N-229-00862-00001				0.27	0.28	0.52	58						
	with Simulated Divided Light	PEL-N-229-00863-00001				0.28	0.28	0.52	58						
11/16"	Advanced LowE IG	PEL-N-229-00949-00001	3	3	argon	0.27	0.31	0.58	57						
	with grilles-between-the-glass	PEL-N-229-00950-00001				0.27	0.28	0.51	57						
	with Simulated Divided Light	PEL-N-229-00951-00001				0.28	0.28	0.51	57						
11/16"	Advanced LowE IG	PEL-N-229-00965-00001	4	4	argon	0.28	0.30	0.57	55						
	with grilles-between-the-glass	PEL-N-229-00966-00001				0.29	0.28	0.51	55						
	with Simulated Divided Light	PEL-N-229-00967-00001				0.29	0.28	0.51	55						
11/16"	SunDefense™ Low-E IG	PEL-N-229-01045-00001	2.5	2.5	argon	0.27	0.23	0.54	58			SC	S		
	with grilles-between-the-glass	PEL-N-229-01046-00001				0.27	0.21	0.48	58			SC	S		
	with Simulated Divided Light	PEL-N-229-01047-00001				0.28	0.21	0.48	58			SC	S		
11/16"	SunDefense Low-E IG	PEL-N-229-01053-00001	3	3	argon	0.27	0.23	0.53	57			SC	S		
	with grilles-between-the-glass	PEL-N-229-01054-00001				0.27	0.21	0.48	57			SC	S		
	with Simulated Divided Light	PEL-N-229-01055-00001				0.28	0.21	0.48	57			SC	S		
11/16"	SunDefense Low-E IG	PEL-N-229-01061-00001	4	4	argon	0.28	0.23	0.53	55			SC	S		
	with grilles-between-the-glass	PEL-N-229-01062-00001				0.29	0.21	0.47	55				S		
	with Simulated Divided Light	PEL-N-229-01063-00001				0.29	0.21	0.47	55				S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01493-00001	2.5	2.5	argon	0.23	0.22	0.53	46		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01494-00001				0.23	0.20	0.47	46		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01495-00001				0.24	0.20	0.47	46		NC	SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01501-00001	3	3	argon	0.23	0.22	0.52	45		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01502-00001				0.23	0.20	0.47	45		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01503-00001				0.24	0.20	0.47	45		NC	SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01509-00001	4	4	argon	0.24	0.22	0.52	43		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01510-00001				0.25	0.20	0.46	43		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01511-00001				0.25	0.20	0.46	43		NC	SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-229-00997-00001	2.5	2.5	argon	0.23	0.30	0.57	46		NC				
	with grilles-between-the-glass	PEL-N-229-00998-00001				0.23	0.27	0.51	46		NC				
	with Simulated Divided Light	PEL-N-229-00999-00001				0.24	0.27	0.51	46		NC				
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01005-00001	3	3	argon	0.23	0.30	0.56	45		NC				
	with grilles-between-the-glass	PEL-N-229-01006-00001				0.23	0.27	0.50	45		NC				
	with Simulated Divided Light	PEL-N-229-01007-00001				0.24	0.27	0.50	45		NC				
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01013-00001	4	4	argon	0.24	0.30	0.55	43		NC				
	with grilles-between-the-glass	PEL-N-229-01014-00001				0.25	0.27	0.50	43		NC				
	with Simulated Divided Light	PEL-N-229-01015-00001				0.25	0.27	0.50	43		NC				

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

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Climate Zones





Lifestyle Series Double-Hung

Glazing Performance - Total Unit

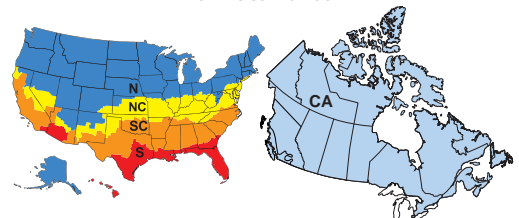
Glazing Thickness	Type of Glazing	NFRC Certified Product #	Glass (mm)		Gap Fill	Performance Values ₁				Shaded Areas Meet ENERGY STAR® Performance Criteria in Zones Shown					
			Ext.	Int.		U-Factor	SHGC	VLT	CR	U. S.				Canada ₂	
										Zone				ER	Zone
Dual-Pane Fixed (continued)										N	NC	SC	S	CA	
11/16"	NaturalSun LowE IG	PEL-N-229-00901-00001	2.5	2.5	argon	0.28	0.58	0.66	57					38	CA
	with grilles-between-the-glass	PEL-N-229-00902-00001				0.28	0.52	0.59	57					35	CA
	with Simulated Divided Light	PEL-N-229-00903-00001				0.29	0.52	0.59	57					34	CA
11/16"	NaturalSun LowE IG	PEL-N-229-00909-00001	3	3	argon	0.28	0.57	0.65	56					38	CA
	with grilles-between-the-glass	PEL-N-229-00910-00001				0.28	0.51	0.58	56					34	CA
	with Simulated Divided Light	PEL-N-229-00911-00001				0.29	0.51	0.58	56						
11/16"	NaturalSun LowE IG	PEL-N-229-00917-00001	4	4	argon	0.29	0.55	0.65	55					35	CA
	with grilles-between-the-glass	PEL-N-229-00918-00001				0.30	0.50	0.58	55						
	with Simulated Divided Light	PEL-N-229-00919-00001				0.30	0.50	0.58	55						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01445-00001	2.5	2.5	argon	0.24	0.53	0.64	45	N				41	CA
	with grilles-between-the-glass	PEL-N-229-01446-00001				0.24	0.47	0.58	45	N				37	CA
	with Simulated Divided Light	PEL-N-229-01447-00001				0.25	0.47	0.58	45	N				36	CA
11/16"	NaturalSun+ LowE IG	PEL-N-229-01453-00001	3	3	argon	0.24	0.52	0.64	44	N				40	CA
	with grilles-between-the-glass	PEL-N-229-01454-00001				0.24	0.46	0.57	44	N				37	CA
	with Simulated Divided Light	PEL-N-229-01455-00001				0.25	0.46	0.57	44	N				35	CA
11/16"	NaturalSun+ LowE IG	PEL-N-229-01461-00001	4	4	argon	0.25	0.50	0.63	42	N				38	CA
	with grilles-between-the-glass	PEL-N-229-01462-00001				0.26	0.45	0.56	42	N					
	with Simulated Divided Light	PEL-N-229-01463-00001				0.26	0.45	0.56	42	N					

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Climate Zones





Lifestyle Series Double-Hung

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
										N	NC	SC	S		
Dual-Pane Fixed – High Altitude Glazing											N	NC	SC	S	CA
11/16"	Advanced LowE IG	PEL-N-229-00857-00001	2.5	2.5	air	0.31	0.31	0.58	54						
	with grilles-between-the-glass	PEL-N-229-00858-00001				0.31	0.28	0.52	54						
	with Simulated Divided Light	PEL-N-229-00859-00001				0.32	0.28	0.52	54						
11/16"	Advanced LowE IG	PEL-N-229-00945-00001	3	3	air	0.31	0.31	0.58	53						
	with grilles-between-the-glass	PEL-N-229-00946-00001				0.31	0.28	0.51	53						
	with Simulated Divided Light	PEL-N-229-00947-00001				0.32	0.28	0.51	53						
11/16"	Advanced LowE IG	PEL-N-229-00961-00001	4	4	air	0.33	0.31	0.57	51						
	with grilles-between-the-glass	PEL-N-229-00962-00001				0.34	0.28	0.51	51						
	with Simulated Divided Light	PEL-N-229-00963-00001				0.34	0.28	0.51	51						
11/16"	SunDefense™ Low-E IG	PEL-N-229-01041-00001	2.5	2.5	air	0.31	0.23	0.54	55				S		
	with grilles-between-the-glass	PEL-N-229-01042-00001				0.31	0.21	0.48	55				S		
	with Simulated Divided Light	PEL-N-229-01043-00001				0.28	0.21	0.48	53			SC	S		
11/16"	SunDefense Low-E IG	PEL-N-229-01049-00001	3	3	air	0.31	0.23	0.53	54				S		
	with grilles-between-the-glass	PEL-N-229-01050-00001				0.31	0.21	0.48	54				S		
	with Simulated Divided Light	PEL-N-229-01051-00001				0.32	0.21	0.48	54				S		
11/16"	SunDefense Low-E IG	PEL-N-229-01057-00001	4	4	air	0.32	0.23	0.53	52				S		
	with grilles-between-the-glass	PEL-N-229-01058-00001				0.34	0.21	0.47	52						
	with Simulated Divided Light	PEL-N-229-01059-00001				0.34	0.21	0.47	52						
11/16"	SunDefense+ Low-E IG	PEL-N-229-01489-00001	2.5	2.5	air	0.25	0.23	0.53	42		NC	SC	S		
	with grilles-between-the-glass	PEL-N-229-01490-00001				0.25	0.21	0.47	42		NC	SC	S		
	with Simulated Divided Light	PEL-N-229-01491-00001				0.26	0.21	0.47	42			SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01497-00001	3	3	air	0.26	0.23	0.52	41			SC	S		
	with grilles-between-the-glass	PEL-N-229-01498-00001				0.26	0.21	0.47	41			SC	S		
	with Simulated Divided Light	PEL-N-229-01499-00001				0.27	0.21	0.47	41			SC	S		
11/16"	SunDefense+ Low-E IG	PEL-N-229-01505-00001	4	4	air	0.27	0.23	0.52	39			SC	S		
	with grilles-between-the-glass	PEL-N-229-01506-00001				0.28	0.21	0.46	39			SC	S		
	with Simulated Divided Light	PEL-N-229-01507-00001				0.28	0.21	0.46	39			SC	S		
11/16"	AdvancedComfort Low-E IG	PEL-N-229-00993-00001	2.5	2.5	air	0.26	0.30	0.57	42						
	with grilles-between-the-glass	PEL-N-229-00994-00001				0.26	0.27	0.51	42						
	with Simulated Divided Light	PEL-N-229-00995-00001				0.26	0.27	0.51	42						
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01001-00001	3	3	air	0.26	0.30	0.56	41						
	with grilles-between-the-glass	PEL-N-229-01002-00001				0.26	0.27	0.50	41						
	with Simulated Divided Light	PEL-N-229-01003-00001				0.27	0.27	0.50	41						
11/16"	AdvancedComfort Low-E IG	PEL-N-229-01009-00001	4	4	air	0.27	0.30	0.55	39						
	with grilles-between-the-glass	PEL-N-229-01010-00001				0.28	0.27	0.50	39						
	with Simulated Divided Light	PEL-N-229-01011-00001				0.28	0.27	0.50	39						
11/16"	NaturalSun LowE IG	PEL-N-229-00897-00001	2.5	2.5	air	0.32	0.57	0.66	54						
	with grilles-between-the-glass	PEL-N-229-00898-00001				0.32	0.52	0.59	54						
	with Simulated Divided Light	PEL-N-229-00899-00001				0.33	0.52	0.59	54						
11/16"	NaturalSun LowE IG	PEL-N-229-00905-00001	3	3	air	0.32	0.56	0.65	53						
	with grilles-between-the-glass	PEL-N-229-00906-00001				0.32	0.51	0.58	53						
	with Simulated Divided Light	PEL-N-229-00907-00001				0.33	0.51	0.58	53						
11/16"	NaturalSun LowE IG	PEL-N-229-00913-00001	4	4	air	0.34	0.55	0.65	51						
	with grilles-between-the-glass	PEL-N-229-00914-00001				0.35	0.49	0.58	51						
	with Simulated Divided Light	PEL-N-229-00915-00001				0.35	0.49	0.58	51						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01441-00001	2.5	2.5	air	0.26	0.52	0.64	41	N				37	CA
	with grilles-between-the-glass	PEL-N-229-01442-00001				0.26	0.47	0.58	41	N				35	CA
	with Simulated Divided Light	PEL-N-229-01443-00001				0.27	0.47	0.58	41						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01449-00001	3	3	air	0.27	0.51	0.64	40					36	CA
	with grilles-between-the-glass	PEL-N-229-01450-00001				0.27	0.46	0.57	40						
	with Simulated Divided Light	PEL-N-229-01451-00001				0.28	0.46	0.57	40						
11/16"	NaturalSun+ LowE IG	PEL-N-229-01457-00001	4	4	air	0.28	0.50	0.63	38					34	CA
	with grilles-between-the-glass	PEL-N-229-01458-00001				0.29	0.45	0.56	38						
	with Simulated Divided Light	PEL-N-229-01459-00001				0.29	0.45	0.56	38						

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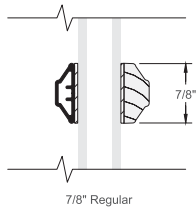
R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
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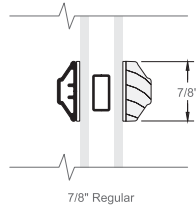
Grilles

Grille Profiles

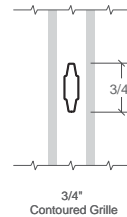
Simulated-Divided-Light
Grilles



Simulated-Divided-Light
Grilles with optional spacer

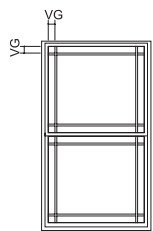


Grilles-Between-the-Glass

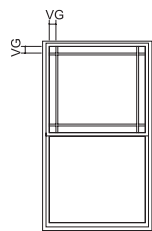


Grille Patterns

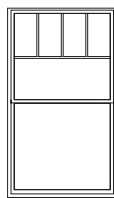
Grilles-Between-the-Glass and Simulated-Divided-Light Grilles



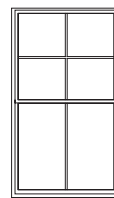
9-Lite Prairie



9-Lite Prairie
Top Sash Only



Top Row



Cross

9-Lite Prairie

- Standard corner lite dimension for Prairie patterns = 2-1/2" VG.
- Available in transoms \geq 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.

VG = Visible Glass

(1) Grilles are available in traditional patterns only.

Lite dimensions noted can vary.

















































































For size and pattern availability contact your local Pella sales representative.



Lifestyle Series Double-Hung

Size Tables - Double-Hung with GBG's and SDL's₁

Vent Units

	(552) (533)	(654) (635)	(755) (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"
(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 E ₁	 3757 E	 4157 E	 4557 E	 4857 E
(1 517) (1 499)	 2159	 2559	 2959	 3359 E ₁	 3759 E	 4159 E	 4559 E	 4859 E
(1 670) (1 651)	 2165	 2565	 2965 E ₁	 3365 E	 3765 E	 4165 E	 4565 E	 4865 E
(1 822) (1 803)	 2171	 2571	 2971 E	 3371 E	 3771 E	 4171 E	 4571 E	 4871 E
(1 975) (1 956)	 2177	 2577 E ₁	 2977 E	 3377 E	 3777 E	 4177 E	 4577 E	 4877 E
(2 153) (2 134)	 2184	 2584 E	 2984 E	 3384 E	 3784 E	 4184 E	 4584 E	 4884 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.

Not to scale.

(1) Simulated divided lights are available in traditional patterns only.

Traditional grille patterns shown.





















Grille patterns shown will align with grilles-between-the-glass on companion units.



































Lifestyle Series Double-Hung

Size Tables - Fixed and Transoms with GBG's and SDL's

Transoms

		(552) (533)	(654) (635)	(755) (737)	(857) (838)	(959) (940)	(1 060) (1 041)
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"
Frame		1' 9"	2' 1"	2' 5"	2' 9"	3' 1"	3' 5"
(374) (356)	1' 2"	 2114	 2514	 2914	 3314	 3714	 4114
	1' 5"	 2117	 2517	 2917	 3317	 3717	 4117
	1' 9"	 2121					
	2' 1"	 2125	 2525	 2925	 3325	 3725	 4125
	2' 5"			 2929			

Fixed Units

		(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)			(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)
Opening		3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"	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"	Frame		3' 5"	3' 11"	4' 5"	4' 11"
(908) (889)	2' 11 3/4"	 4135	 4735	 5335	 5935	(1 517) (1 499)	4' 11 3/4"	 4159	 4759	 5359	 5959
	3' 5 3/4"	 4141	 4741	 5341	 5941		5' 5"	 4165	 4765	 5365	 5965
	3' 11 3/4"	 4147	 4747	 5347	 5947		5' 11 3/4"	 4171	 4771	 5371	 5971
	4' 5 3/4"	 4153	 4753	 5353	 5953						
	4' 9 3/4"	 4157	 4757	 5357	 5957						






















Not to scale.
Traditional grille patterns shown.
Grille patterns shown will align with grilles-between-the-glass on companion units.



Lifestyle Series Double-Hung

Size Tables - Replacement Sizes with Grilles-Between-the-Glass

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)							
2' 1 3/4"							
2' 1"							
2' 1 3/4"							
2' 1"							
2' 1 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
2' 1"	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
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
2' 1"							

Vent Units

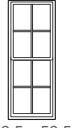
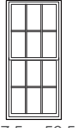
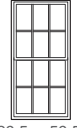
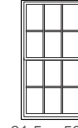
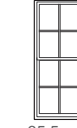


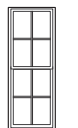
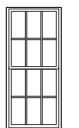
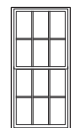
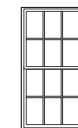



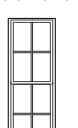
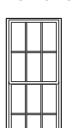
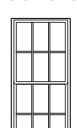
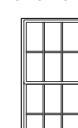



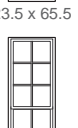
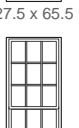
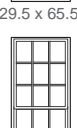

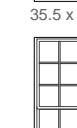


(921) (902)	3' 0 1/4"	3' 2 1/4"	3' 4 1/4"	3' 6 1/4"	3' 8 1/4"	3' 10 1/4"	3' 12 1/4"
(972) (953)	3' 2 1/4"	3' 4 1/4"	3' 6 1/4"	3' 8 1/4"	3' 10 1/4"	3' 12 1/4"	3' 14 1/4"
(1 073) (1 054)	3' 4 1/4"	3' 6 1/4"	3' 8 1/4"	3' 10 1/4"	3' 12 1/4"	3' 14 1/4"	3' 16 1/4"
(1 175) (1 156)	3' 6 1/4"	3' 8 1/4"	3' 10 1/4"	3' 12 1/4"	3' 14 1/4"	3' 16 1/4"	3' 18 1/4"
(1 226) (1 206)	3' 8 1/4"	3' 10 1/4"	3' 12 1/4"	3' 14 1/4"	3' 16 1/4"	3' 18 1/4"	3' 20 1/4"
(1 327) (1 308)	3' 10 1/4"	3' 12 1/4"	3' 14 1/4"	3' 16 1/4"	3' 18 1/4"	3' 20 1/4"	3' 22 1/4"
(1 378) (1 359)	3' 12 1/4"	3' 14 1/4"	3' 16 1/4"	3' 18 1/4"	3' 20 1/4"	3' 22 1/4"	3' 24 1/4"
(1 473) (1 461)	3' 14 1/4"	3' 16 1/4"	3' 18 1/4"	3' 20 1/4"	3' 22 1/4"	3' 24 1/4"	3' 26 1/4"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
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4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
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4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
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4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
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4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
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4' 10 1/4"	4' 9 1/2"	4' 8 1/2"	4' 7 1/2"	4' 6 1/2"	4' 5 1/2"	4' 4 1/2"	4' 3 1/2"
4' 10 1/4"</							



Lifestyle Series Double-Hung

Size Tables - Replacement Double-Hung with Grilles-Between-the-Glass

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"
(1 530) (1 511)	5' 0 1/4"	 23.5 x 59.5	 27.5 x 59.5	 29.5 x 59.5	 31.5 x 59.5 E ₁	 35.5 x 59.5 E	 39.5 x 59.5 E	 41.5 x 59.5 E
	4' 11 1/2"							
	5' 2 1/4"	 23.5 x 61.5	 27.5 x 61.5	 29.5 x 61.5 E ₁	 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
	5' 1 1/2"							
(1 581) (1 562)	5' 6 1/4"	 23.5 x 65.5	 27.5 x 65.5	 29.5 x 65.5 E ₁	 31.5 x 65.5 E	 35.5 x 65.5 E	 39.5 x 65.5 E	 41.5 x 65.5 E
	5' 5 1/2"							
(1 683) (1 664)	6' 0 1/4"	 23.5 x 71.5	 27.5 x 71.5 E ₁	 29.5 x 71.5 E	 31.5 x 71.5 E	 35.5 x 71.5 E	 39.5 x 71.5 E	 41.5 x 71.5 E
	5' 11 1/2"							
(1 835) (1 816)								

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.

















































Not to scale.

Traditional grille patterns shown.



Lifestyle Series Double-Hung

Size Tables - Replacement Fixed with Grilles-Between-the-Glass

	(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)		(1 060) (1 041)	(1 213) (1 194)	(1 365) (1 346)	(1 517) (1 499)	
Opening	3' 5 3/4"	3' 11 3/4"	4' 5 3/4"	4' 11 3/4"		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"		Frame	3' 5"	3' 11"	4' 5"	4' 11"
(921) (902)	 41 x 35.5	 47 x 35.5	 53 x 35.5	 59 x 35.5	(1 530) (1 511)	 41 x 59.5	 47 x 59.5	 53 x 59.5	 59 x 59.5	
(972) (953)	 41 x 37.5	 47 x 37.5	 53 x 37.5	 59 x 37.5	(1 581) (1 562)	 41 x 61.5	 47 x 61.5	 53 x 61.5	 59 x 61.5	
(1 073) (1 054)	 41 x 41.5	 47 x 41.5	 53 x 41.5	 59 x 41.5	(1 683) (1 664)	 41 x 65.5	 47 x 65.5	 53 x 65.5	 59 x 65.5	
(1 175) (1 156)	 41 x 45.5	 47 x 45.5	 53 x 45.5	 59 x 45.5	(1 835) (1 816)	 41 x 71.5	 47 x 71.5	 53 x 71.5	 59 x 71.5	
(1 226) (1 206)	 41 x 47.5	 47 x 47.5	 53 x 47.5	 59 x 47.5						
(1 327) (1 308)	 41 x 51.5	 47 x 51.5	 53 x 51.5	 59 x 51.5						
(1 378) (1 359)	 41 x 53.5	 47 x 53.5	 53 x 53.5	 59 x 53.5						
(1 473) (1 461)	 41 x 57.5	 47 x 57.5	 53 x 57.5	 59 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.

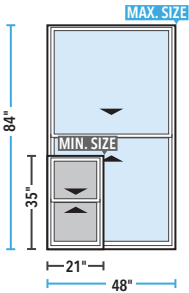
See Design Data pages in this section for clear opening dimensions.

Not to scale.
Traditional grille patterns shown.



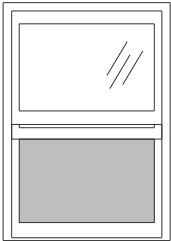
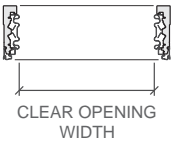
Special Size Frame Dimensions*

	Minimum	Maximum
Vent	1' 9" W x 2' 11" H (21" x 35") (533 x 889)	4' 0" W x 7' 0" H (48" x 84") (1 219 x 2 134)
Fixed	1' 9" W x 1' 2" H (21" x 14") (533 x 356)	4' 11" W x 6' 1" H (59" x 73") (1 499 x 1 854)



Miscellaneous Formulas (Equal Sash Only)

	Vent Units
Visible Glass	Width = Frame – 5" Height ₁ = (Frame – 6.3125") ÷ 2
Actual Glass	Width = Frame – 4" Height ₁ = (Frame – 4.3125") ÷ 2
Clear Opening Height:	(Frame Height ÷ 2) - 3.25"
Clear Opening Width:	Frame Width - 3.1875"



Shaded portion shows vent area.

Miscellaneous Formulas (Fixed Units Only)

	Fixed and transom units
Visible Glass	Width = Frame – 4.9375" Height = Frame – 4.9375"
Actual Glass	Width = Frame – 4" Height = Frame – 4"

* Available within size range shown. Keep frame dimensions to the nearest 1/4" increment. Frame height cannot exceed frame width on special size dual-pane vent units.
(1) Per Sash.
To convert areas to square meters (m²), multiply square feet by 0.0929.



Lifestyle Series Double-Hung

Design Data - Vent Units

New Construction Vent								
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	
2135		17-13/16	14-1/4	1.8	3.2	2.5	3	LC50
2141		17-13/16	17-1/4	2.1	3.9	2.5	3	LC50
2147		17-13/16	20-1/4	2.5	4.5	2.5	3	LC50
2153		17-13/16	23-1/4	2.9	5.2	2.5	3	LC50
2157		17-13/16	25-1/4	3.1	5.6	2.5	3	LC40/LC50
2159		17-13/16	26-1/4	3.2	5.9	2.5	3	LC40/LC50
2165		17-13/16	29-1/4	3.6	6.5	2.5	3	LC40/LC50
2171		17-13/16	32-1/4	4.0	7.2	2.5	3	LC30/LC50
2177		17-13/16	35-1/4	4.3	7.8	2.5	3	LC30
2184		17-13/16	38-3/4	4.8	8.6	2.5	3	LC25
2535		21-13/16	14-1/4	2.2	4.0	2.5	3	LC50
2541		21-13/16	17-1/4	2.6	4.8	2.5	3	LC50
2547		21-13/16	20-1/4	3.1	5.7	2.5	3	LC50
2553		21-13/16	23-1/4	3.5	6.5	2.5	3	LC50
2557		21-13/16	25-1/4	3.8	7.0	2.5	3	LC40/LC50
2559		21-13/16	26-1/4	4.0	7.3	2.5	3	LC40/LC50
2565		21-13/16	29-1/4	4.4	8.2	2.5	3	LC40/LC50
2571		21-13/16	32-1/4	4.9	9.0	2.5	3	LC30/LC50
2577	E1	21-13/16	35-1/4	5.3	9.8	2.5	3	LC30
2584	E	21-13/16	38-3/4	5.9	10.8	2.5	3	LC25
2935		25-13/16	14-1/4	2.6	4.8	2.5	3	LC50
2941		25-13/16	17-1/4	3.1	5.8	2.5	3	LC50
2947		25-13/16	20-1/4	3.6	6.8	2.5	3	LC50
2953		25-13/16	23-1/4	4.2	7.8	2.5	3	LC50
2957		25-13/16	25-1/4	4.5	8.4	2.5	3	LC40/LC50
2959		25-13/16	26-1/4	4.7	8.8	2.5	3	LC40/LC50
2965	E1	25-13/16	29-1/4	5.2	9.8	2.5	3	LC40/LC50
2971	E	25-13/16	32-1/4	5.8	10.8	2.5	3	LC30/LC50
2977	E	25-13/16	35-1/4	6.3	11.7	2.5	3	LC30
2984	E	25-13/16	38-3/4	6.9	12.9	2.5	3	LC25
3335		29-13/16	14-1/4	3.0	5.6	2.5	3	LC50
3341		29-13/16	17-1/4	3.6	6.7	2.5	3	LC50
3347		29-13/16	20-1/4	4.2	7.9	2.5	3	LC50
3353		29-13/16	23-1/4	4.8	9.1	2.5	3	LC40/LC50
3357	E1	29-13/16	25-1/4	5.2	9.9	2.5	3	LC40/LC50
3359	E1	29-13/16	26-1/4	5.4	10.2	2.5	3	LC40/LC50
3365	E	29-13/16	29-1/4	6.1	11.4	2.5	3	LC35/LC50
3371	E	29-13/16	32-1/4	6.7	12.6	2.5	3	LC30/LC50
3377	E	29-13/16	35-1/4	7.3	13.7	2.5	3	LC30
3384	E	29-13/16	38-3/4	8.0	15.1	2.5	3	LC25
3735		33-13/16	14-1/4	3.3	6.4	2.5	3	LC35/LC50
3741		33-13/16	17-1/4	4.1	7.7	2.5	3	LC35/LC50
3747		33-13/16	20-1/4	4.8	9.0	2.5	3	LC35/LC50
3753		33-13/16	23-1/4	5.5	10.4	2.5	3	LC35/LC50
3757	E	33-13/16	25-1/4	5.9	11.3	2.5	3	LC35/LC50
3759	E	33-13/16	26-1/4	6.2	11.7	2.5	3	LC35/LC50
3765	E	33-13/16	29-1/4	6.9	13.0	2.5	3	LC35/LC50
3771	E	33-13/16	32-1/4	7.6	14.4	2.5	3	LC30/LC50
3777	E	33-13/16	35-1/4	8.3	15.7	2.5	3	LC30
3784	E	33-13/16	38-3/4	9.1	17.3	2.5	3	LC25

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.

Continued on Next Page

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, indicates Design Pressure performance with DP Enhancement Kit installed.
To convert area to square meters (m²), multiply square feet by 0.0929.



Lifestyle Series Double-Hung

New Construction Vent

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	
4135		37-13/16	14-1/4	3.7	6.5	2.5	3	LC30
4141		37-13/16	17-1/4	4.5	7.9	2.5	3	LC30
4147		37-13/16	20-1/4	5.3	9.2	2.5	3	LC30
4153		37-13/16	23-1/4	6.1	11.7	2.5	3	LC30
4157	E	37-13/16	25-1/4	6.6	12.7	2.5	3	LC30
4159	E	37-13/16	26-1/4	6.9	13.2	2.5	3	LC30
4165	E	37-13/16	29-1/4	7.7	14.7	2.5	3	LC30
4171	E	37-13/16	32-1/4	8.5	16.2	2.5	3	LC30
4177	E	37-13/16	35-1/4	9.2	17.6	2.5	3	LC30
4184	E	37-13/16	38-3/4	10.2	19.4	2.5	3	LC25
4535		41-13/16	14-1/4	4.1	8.0	2.5	3	LC30
4541		41-13/16	17-1/4	5.0	9.6	2.5	3	LC30
4547		41-13/16	20-1/4	5.9	11.3	2.5	3	LC30
4553		41-13/16	23-1/4	6.8	13.0	2.5	3	LC30
4557	E	41-13/16	25-1/4	7.3	14.1	2.5	3	LC30
4559	E	41-13/16	26-1/4	7.6	14.6	2.5	3	LC30
4565	E	41-13/16	29-1/4	8.5	16.3	2.5	3	LC30
4571	E	41-13/16	32-1/4	9.4	18.0	2.5	3	LC30
4577	E	41-13/16	35-1/4	10.2	19.6	2.5	3	LC30
4584	E	41-13/16	38-3/4	11.3	21.6	3.0	3	LC25
4835		44-13/16	14-1/4	4.4	8.6	2.5	3	LC25
4841		44-13/16	17-1/4	5.4	10.4	2.5	3	LC25
4847		44-13/16	20-1/4	6.3	12.1	2.5	3	LC25
4853		44-13/16	23-1/4	7.2	13.9	2.5	3	LC25
4857	E	44-13/16	25-1/4	7.9	15.1	2.5	3	LC25
4859	E	44-13/16	26-1/4	8.2	15.7	2.5	3	LC25
4865	E	44-13/16	29-1/4	9.1	17.5	2.5	3	LC25
4871	E	44-13/16	32-1/4	10.0	19.3	2.5	3	LC25
4877	E	44-13/16	35-1/4	11.0	21.1	2.5	3	LC25
4884	E	44-13/16	38-3/4	12.1	23.2	2.5	3	LC25

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. Second number, where shown, indicates Design Pressure performance with DP Enhancement Kit installed.
To convert area to square meters (m²), multiply square feet by 0.0929.



Lifestyle Series Double-Hung

Design Data - Fixed and Transoms

New Construction Fixed

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
4135	7.5	3	3	LC50
4141	9.0	3	3	LC50
4147	10.5	3	3	LC50
4153	12.0	3	3	LC50
4157	13.0	3	3	LC50
4159	13.6	3	3	LC50
4165	15.1	3	3	LC50
4171	16.6	3	3	LC45/LC50
4735	8.8	3	3	LC50
4741	10.5	3	3	LC50
4747	12.3	3	3	LC50
4753	14.1	3	3	LC50
4757	15.2	3	3	LC50
4759	15.8	3	3	LC45/LC50
4765	17.6	3	3	LC45/LC50
4771	19.3	4	4	LC50
5335	10.0	3	3	LC50
5341	12.0	3	3	LC50
5347	14.1	3	3	LC50
5353	16.1	3	4	LC45/LC50
5357	17.4	3	4	LC45/LC50
5359	18.1	4	4	LC50
5365	20.1	4	4	LC50
5371	22.1	4	4	LC50
5935	11.3	3	3	LC50
5941	13.6	3	3	LC50
5947	15.8	3	3	LC45/LC50
5953	18.1	4	4	LC50
5957	19.6	4	4	LC50
5959	20.3	4	4	LC50
5965	22.6	4	4	LC50
5971	24.8	4	4	LC45/LC50

New Construction Fixed Transom

Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ¹
		Annealed	Tempered	
2114	1.0	3	3	LC50
2117	1.3	3	3	LC50
2121	1.8	3	3	LC50
2125	2.2	3	3	LC50
2514	1.3	3	3	LC50
2517	1.7	3	3	LC50
2525	2.8	3	3	LC50
2914	1.5	3	3	LC50
2917	2.0	3	3	LC50
2925	3.4	3	3	LC50
2929	4.0	3	3	LC50
3314	1.8	3	3	LC50
3317	2.4	3	3	LC50
3325	3.9	3	3	LC50
3714	2.0	3	3	LC50
3717	2.7	3	3	LC50
3725	4.5	3	3	LC50
4114	2.3	3	3	LC50
4117	3.0	3	3	LC50
4125	5.0	3	3	LC50

(1) Maximum performance when glazed with the appropriate glass thickness. Second number, where shown, requires tempered glass.
To convert areas to square meters (m²), multiply square feet by 0.0929.



Lifestyle Series Double-Hung

Design Data - Replacement Double-Hung

Replacement Vent

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	
23.5 x 35.5		20-5/16	14-1/2	2.0	3.7	2.5	3	LC50
23.5 x 37.5		20-5/16	15-1/2	2.1	4.0	2.5	3	LC50
23.5 x 41.5		20-5/16	17-1/2	2.4	4.5	2.5	3	LC50
23.5 x 45.5		20-5/16	19-1/2	2.7	5.0	2.5	3	LC50
23.5 x 47.5		20-5/16	20-1/2	2.8	5.3	2.5	3	LC50
23.5 x 51.5		20-5/16	22-1/2	3.1	5.8	2.5	3	LC50
23.5 x 53.5		20-5/16	23-1/2	3.3	6.1	2.5	3	LC40/LC50
23.5 x 57.5		20-5/16	25-1/2	3.5	6.6	2.5	3	LC40/LC50
23.5 x 59.5		20-5/16	26-1/2	3.7	6.8	2.5	3	LC40/LC50
23.5 x 61.5		20-5/16	27-1/2	3.8	7.1	2.5	3	LC40/LC50
23.5 x 65.5		20-5/16	29-1/2	4.1	7.6	2.5	3	LC30/LC50
23.5 x 71.5		20-5/16	32-1/2	4.5	8.4	2.5	3	LC30/LC50
27.5 x 35.5		24-5/16	14-1/2	2.4	4.6	2.5	3	LC50
27.5 x 37.5		24-5/16	15-1/2	2.6	4.9	2.5	3	LC50
27.5 x 41.5		24-5/16	17-1/2	2.9	5.5	2.5	3	LC50
27.5 x 45.5		24-5/16	19-1/2	3.2	6.1	2.5	3	LC50
27.5 x 47.5		24-5/16	20-1/2	3.4	6.4	2.5	3	LC50
27.5 x 51.5		24-5/16	22-1/2	3.7	7.1	2.5	3	LC50
27.5 x 53.5		24-5/16	23-1/2	3.9	7.4	2.5	3	LC40/LC50
27.5 x 57.5		24-5/16	25-1/2	4.3	8.0	2.5	3	LC40/LC50
27.5 x 59.5		24-5/16	26-1/2	4.4	8.3	2.5	3	LC40/LC50
27.5 x 61.5		24-5/16	27-1/2	4.6	8.6	2.5	3	LC40/LC50
27.5 x 65.5		24-5/16	29-1/2	4.9	9.2	2.5	3	LC30/LC50
27.5 x 71.5	E1	24-5/16	32-1/2	5.4	10.2	2.5	3	LC30/LC50
29.5 x 35.5		26-5/16	14-1/2	2.6	5.0	2.5	3	LC50
29.5 x 37.5		26-5/16	15-1/2	2.8	5.3	2.5	3	LC50
29.5 x 41.5		26-5/16	17-1/2	3.1	6.0	2.5	3	LC50
29.5 x 45.5		26-5/16	19-1/2	3.5	6.7	2.5	3	LC50
29.5 x 47.5		26-5/16	20-1/2	3.7	7.0	2.5	3	LC40/LC50
29.5 x 51.5		26-5/16	22-1/2	4.1	7.7	2.5	3	LC40/LC50
29.5 x 53.5		26-5/16	23-1/2	4.2	8.0	2.5	3	LC40/LC50
29.5 x 57.5		26-5/16	25-1/2	4.6	8.7	2.5	3	LC40/LC50
29.5 x 59.5		26-5/16	26-1/2	4.8	9.0	2.5	3	LC35/LC50
29.5 x 61.5	E1	26-5/16	27-1/2	5.0	9.4	2.5	3	LC35/LC50
29.5 x 65.5	E1	26-5/16	29-1/2	5.3	10.1	2.5	3	LC30/LC50
29.5 x 71.5	E	26-5/16	32-1/2	5.9	11.1	2.5	3	LC30/LC50

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. Second number, where shown, indicates Design Pressure performance with DP Enhancement Kit installed.



Lifestyle Series Double-Hung

Design Data - Replacement Double-Hung

Replacement Vent								
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	
31.5 x 35.5		28-5/16	14-1/2	2.8	5.4	2.5	3	LC50
31.5 x 37.5		28-5/16	15-1/2	3.0	5.7	2.5	3	LC50
31.5 x 41.5		28-5/16	17-1/2	3.4	6.5	2.5	3	LC50
31.5 x 45.5		28-5/16	19-1/2	3.8	7.2	2.5	3	LC50
31.5 x 47.5		28-5/16	20-1/2	4.0	7.6	2.5	3	LC40/LC50
31.5 x 51.5		28-5/16	22-1/2	4.4	8.3	2.5	3	LC40/LC50
31.5 x 53.5		28-5/16	23-1/2	4.6	8.7	2.5	3	LC40/LC50
31.5 x 57.5	E1	28-5/16	25-1/2	5.0	9.4	2.5	3	LC40/LC50
31.5 x 59.5	E1	28-5/16	26-1/2	5.2	9.8	2.5	3	LC35/LC50
31.5 x 61.5	E1	28-5/16	27-1/2	5.4	10.2	2.5	3	LC35/LC50
31.5 x 65.5	E	28-5/16	29-1/2	5.8	10.9	2.5	3	LC30/LC50
31.5 x 71.5	E	28-5/16	32-1/2	6.3	12.0	2.5	3	LC30/LC50
35.5 x 35.5		32-5/16	14-1/2	3.2	6.2	2.5	3	LC35/LC50
35.5 x 37.5		32-5/16	15-1/2	3.4	6.6	2.5	3	LC35/LC50
35.5 x 41.5		32-5/16	17-1/2	3.9	7.5	2.5	3	LC35/LC50
35.5 x 45.5		32-5/16	19-1/2	4.3	8.3	2.5	3	LC35/LC50
35.5 x 47.5		32-5/16	20-1/2	4.6	8.7	2.5	3	LC35/LC50
35.5 x 51.5		32-5/16	22-1/2	5.0	9.6	2.5	3	LC35/LC50
35.5 x 53.5		32-5/16	23-1/2	5.2	10.0	2.5	3	LC35/LC50
35.5 x 57.5	E1	32-5/16	25-1/2	5.7	10.8	2.5	3	LC35/LC50
35.5 x 59.5	E	32-5/16	26-1/2	5.9	11.3	2.5	3	LC35/LC50
35.5 x 61.5	E	32-5/16	27-1/2	6.1	11.7	2.5	3	LC35/LC50
35.5 x 65.5	E	32-5/16	29-1/2	6.6	12.5	2.5	3	LC30/LC50
35.5 x 71.5	E	32-5/16	32-1/2	7.2	13.8	2.5	3	LC30/LC50
39.5 x 35.5		36-5/16	14-1/2	3.6	7.0	2.5	3	LC30
39.5 x 37.5		36-5/16	15-1/2	3.9	7.5	2.5	3	LC30
39.5 x 41.5		36-5/16	17-1/2	4.4	8.4	2.5	3	LC30
39.5 x 45.5		36-5/16	19-1/2	4.9	9.4	2.5	3	LC30
39.5 x 47.5		36-5/16	20-1/2	5.1	9.9	2.5	3	LC30
39.5 x 51.5		36-5/16	22-1/2	5.6	10.8	2.5	3	LC30
39.5 x 53.5		36-5/16	23-1/2	5.9	11.3	2.5	3	LC30
39.5 x 57.5	E	36-5/16	25-1/2	6.4	12.3	2.5	3	LC30
39.5 x 59.5	E	36-5/16	26-1/2	6.6	12.7	2.5	3	LC30
39.5 x 61.5	E	36-5/16	27-1/2	6.9	13.2	2.5	3	LC30
39.5 x 65.5	E	36-5/16	29-1/2	7.4	14.2	2.5	3	LC30
39.5 x 71.5	E	36-5/16	32-1/2	8.1	15.6	2.5	3	LC30
41.5 x 35.5		38-5/16	14-1/2	3.6	7.4	2.5	3	LC30
41.5 x 37.5		38-5/16	15-1/2	3.9	7.9	2.5	3	LC30
41.5 x 41.5		38-5/16	17-1/2	4.4	8.9	2.5	3	LC30
41.5 x 45.5		38-5/16	19-1/2	4.9	9.9	2.5	3	LC30
41.5 x 47.5		38-5/16	20-1/2	5.1	10.4	2.5	3	LC30
41.5 x 51.5		38-5/16	22-1/2	5.6	11.5	2.5	3	LC30
41.5 x 53.5		38-5/16	23-1/2	5.9	12.0	2.5	3	LC30
41.5 x 57.5	E	38-5/16	25-1/2	6.4	13.0	2.5	3	LC30
41.5 x 59.5	E	38-5/16	26-1/2	6.6	13.5	2.5	3	LC30
41.5 x 61.5	E	38-5/16	27-1/2	6.9	14.0	2.5	3	LC30
41.5 x 65.5	E	38-5/16	29-1/2	7.4	15.0	2.5	3	LC30
41.5 x 71.5	E	38-5/16	32-1/2	8.1	16.5	2.5	3	LC30

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. Second number, where shown, indicates Design Pressure performance with DP Enhancement Kit installed.



Lifestyle Series Double-Hung

Design Data - Replacement Fixed and Transoms

Replacement Fixed				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾
		Annealed	Tempered	
41 x 35.5	7.7	3	3	LC50
41 x 37.5	8.2	3	3	LC50
41 x 41.5	9.2	3	3	LC50
41 x 45.5	10.2	3	3	LC50
41 x 47.5	10.7	3	3	LC50
41 x 51.5	11.7	3	3	LC50
41 x 53.5	12.2	3	3	LC50
41 x 57.5	13.2	3	3	LC50
41 x 59.5	13.7	3	3	LC50
41 x 61.5	14.2	3	3	LC50
41 x 65.5	15.2	3	3	LC50
41 x 71.5	16.7	3	3	LC45/LC50
47 x 35.5	8.9	3	3	LC50
47 x 37.5	9.5	3	3	LC50
47 x 41.5	10.7	3	3	LC50
47 x 45.5	11.9	3	3	LC50
47 x 47.5	12.4	3	3	LC50
47 x 51.5	13.6	3	3	LC50
47 x 53.5	14.2	3	3	LC50
47 x 57.5	15.4	3	3	LC50
47 x 59.5	15.9	3	3	LC45/LC50
47 x 61.5	16.5	3	3	LC45/LC50
47 x 65.5	17.7	3	3	LC40/LC50
47 x 71.5	19.5	4	4	LC50
53 x 35.5	10.2	3	3	LC50
53 x 37.5	10.9	3	3	LC50
53 x 41.5	12.2	3	3	LC50
53 x 45.5	13.5	3	3	LC50
53 x 47.5	14.2	3	3	LC50
53 x 51.5	15.6	3	3	LC50
53 x 53.5	16.2	3	4	LC45/LC50
53 x 57.5	17.6	3	4	LC40/LC50
53 x 59.5	18.2	4	4	LC50
53 x 61.5	18.9	4	4	LC50
53 x 65.5	20.2	4	4	LC50
53 x 71.5	22.2	4	4	LC50
59 x 35.5	11.5	3	3	LC50
59 x 37.5	12.2	3	3	LC50
59 x 41.5	13.7	3	3	LC50
59 x 45.5	15.2	3	3	LC50
59 x 47.5	16.0	3	3	LC45/LC50
59 x 51.5	17.5	3	4	LC45/LC50
59 x 53.5	18.2	4	4	LC50
59 x 57.5	19.7	4	4	LC50
59 x 59.5	20.5	4	4	LC50
59 x 61.5	21.2	4	4	LC50
59 x 65.5	22.8	4	4	LC50
59 x 71.5	25.0	4	4	LC45/LC50

Replacement Fixed Transom				
Unit	Visible Glass Ft ²	Standard Glass Thickness (mm)		Performance Class & Grade ⁽¹⁾
		Annealed	Tempered	
23.5 x 14	1.2	3	3	LC50
23.5 x 17	1.6	3	3	LC50
23.5 x 25	2.6	3	3	LC50
27.5 x 14	1.4	3	3	LC50
27.5 x 17	1.9	3	3	LC50
27.5 x 25	3.1	3	3	LC50
29.5 x 14	1.5	3	3	LC50
29.5 x 17	2.1	3	3	LC50
29.5 x 25	3.4	3	3	LC50
31.5 x 14	1.7	3	3	LC50
31.5 x 17	2.2	3	3	LC50
31.5 x 25	3.7	3	3	LC50
35.5 x 14	1.9	3	3	LC50
35.5 x 17	2.6	3	3	LC50
35.5 x 25	4.3	3	3	LC50
39.5 x 14	2.2	3	3	LC50
39.5 x 17	2.9	3	3	LC50
39.5 x 25	4.8	3	3	LC50
41.5 x 14	2.3	3	3	LC50
41.5 x 17	3.1	3	3	LC50
41.5 x 25	5.1	3	3	LC50

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

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



Detailed Product Description

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.
- Exterior surfaces are clad with aluminum.
- Components are assembled with screws, staples and concealed corner locks.
- Overall frame depth is 5" (127 mm) for a wall depth of 3-11/16" (94mm).
- Jamb liner shall be [Gray, high-impact polyvinyl chloride] [Black, chlorinated polyvinyl chloride] backed by continuous hard-tempered aluminum springs.
- Optional factory applied jamb extensions are available.
- Optional factory installed fold-out installation fins with flexible fin corners.
- Optional factory-applied EnduraClad® exterior trim.
- Optional factory-installed Pella Steady Set Installation System.

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.
- Exterior surfaces are clad with aluminum, lap-jointed and sealed.
- Corners mortised and tenoned, glued and secured with metal fasteners.
- Sash thickness is 1-5/8" (41 mm).
- Sashes tilt for easy cleaning.

Weatherstripping

- Foam with 3 mm skin at head and bottom rail. Thermal-plastic elastomer bulb with slip-coating set into upper sash for tight contact at check rail.
- Secondary polyvinyl chloride leaf-type weatherstrip on bottom sash at sill.
- Jamb liner to seal against sides of sash.

Glazing System

- Quality float glass complying with ASTM C 1036.
- High altitude glazing available.
- Silicone groove-glazed 11/16" [obscure] dual-seal insulating glass [[annealed] [tempered]] [[Advanced] [SunDefense™] [SunDefense+] [AdvancedComfort] [NaturalSun] [NaturalSun+] Low-E [with argon]].

Exterior

- Exterior aluminum surfaces are finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
- Color is [White] [Tan] [Putty] [Brown] [Poplar White] [Portobello] [Hartford Green] [Morning Sky Gray] [Brick Red] [Black].

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [White] [Linen] [Bright White] [stain₁]].

Hardware

- Galvanized block-and-tackle balances are connected to sash with a polyester cord and concealed within the frame.
- Factory installed self-aligning surface-mounted sash lock. Two sash locks on units with frame width 33-1/4" and greater.
- Optional Sash lift furnished for field installation. Two lifts on units with frame width 33-1/4" and greater.
- Finish is [baked enamel [Champagne] [White] [Brown] [Matte Black]] [Satin Brass] [Satin Nickel].
- Champagne locks are standard on unfinished units; White locks are standard on factory prefinished white units.

Optional Products

Grilles

- Simulated-Divided-Light [with optional spacer]
 - 7/8" Grilles permanently bonded to the interior and exterior of glass.
 - Patterns are [Traditional] [Prairie] [Cross] [Top Row] [Custom – Equally Divided].
 - Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [White] [Linen White] [Bright White] [stain₁]]. Exterior grilles to match the exterior cladding color.
 - Available only on units glazed with Low-E insulated glass with argon.
– 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] [Top Row] [Custom – Equally Divided].
 - Interior color is [White] [Ivory] [Tan₃] [Brickstone] [Black] [Putty₃] [Brown₃] [Harvest] [Cordovan].
 - Exterior color [matched to the exterior cladding color] [White]₄.

Screens

- InView™ screens
 - Full-size Vinyl-coated 18/18 mesh fiberglass screen cloth complying with the performance requirements of SMA 1201, set in aluminum frame fitted to outside of window, supplied complete with all necessary hardware.
 - Screen frame finish is baked enamel, color to match window cladding.
- Hidden screens₅
 - Vinyl-coated 18/18 mesh fiberglass screen cloth, set in aluminum channels hidden within the sash, supplied complete with all necessary hardware.
 - Finish color [White] [Black] [Brown] [Fossil] [Iron Ore].

Hardware

- Optional factory applied limited opening device available for vent units in steel, nominal 3-3/4" opening.
- Optional window opening control device available for field installation. 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 on units glazed with Low-E insulated glass with argon, and obscure insulated glass.

(3) Tan, brown and putty Interior GBG colors are available only with matching interior and exterior colors.

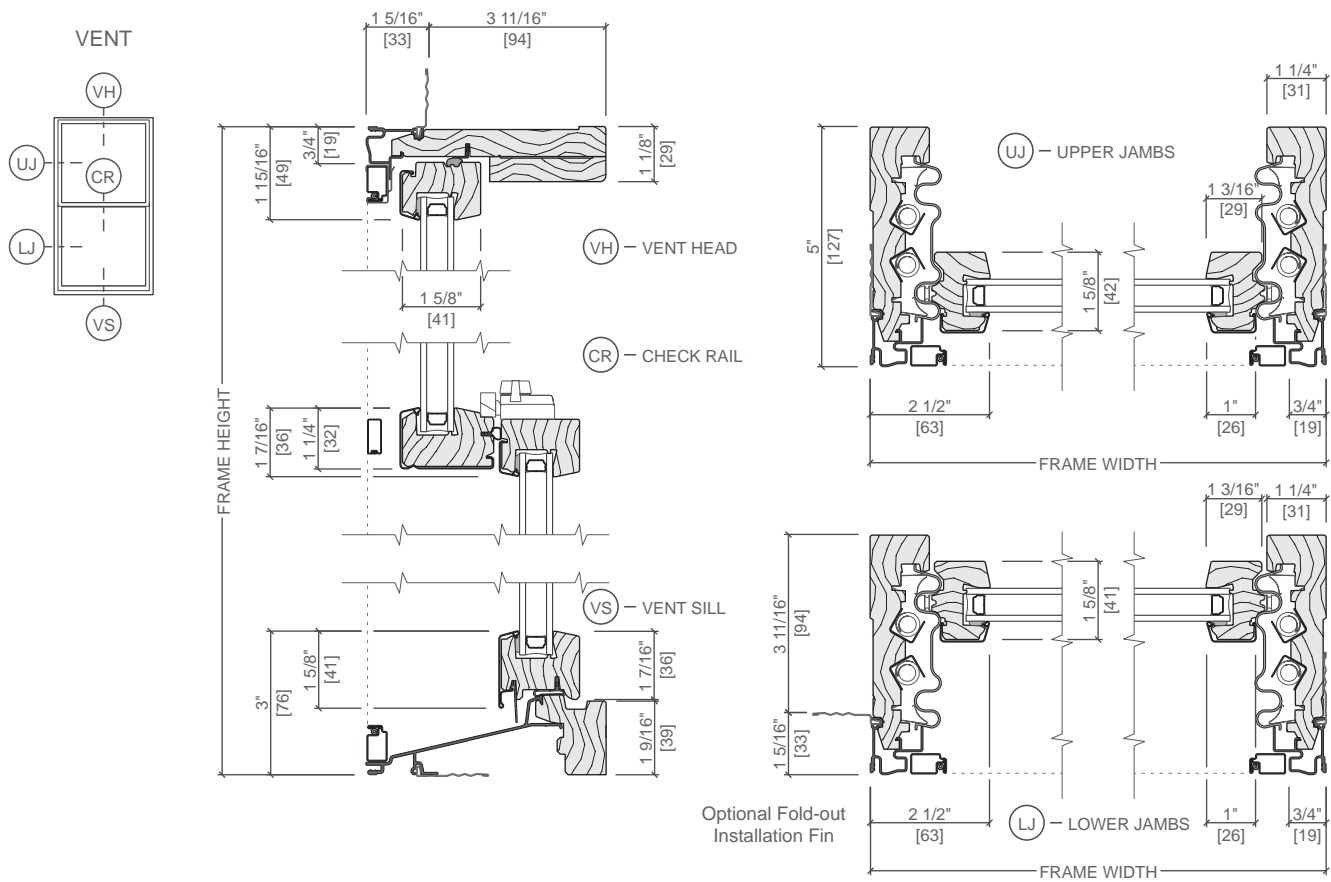
(4) Appearance of exterior grille color will vary depending on Low-E coating on glass.

(5) Not compatible with Limited Opening Hardware.



Lifestyle Series Double-Hung

Unit Sections

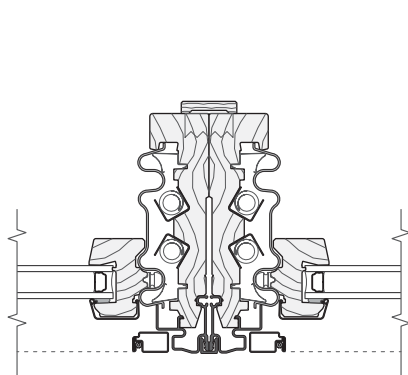
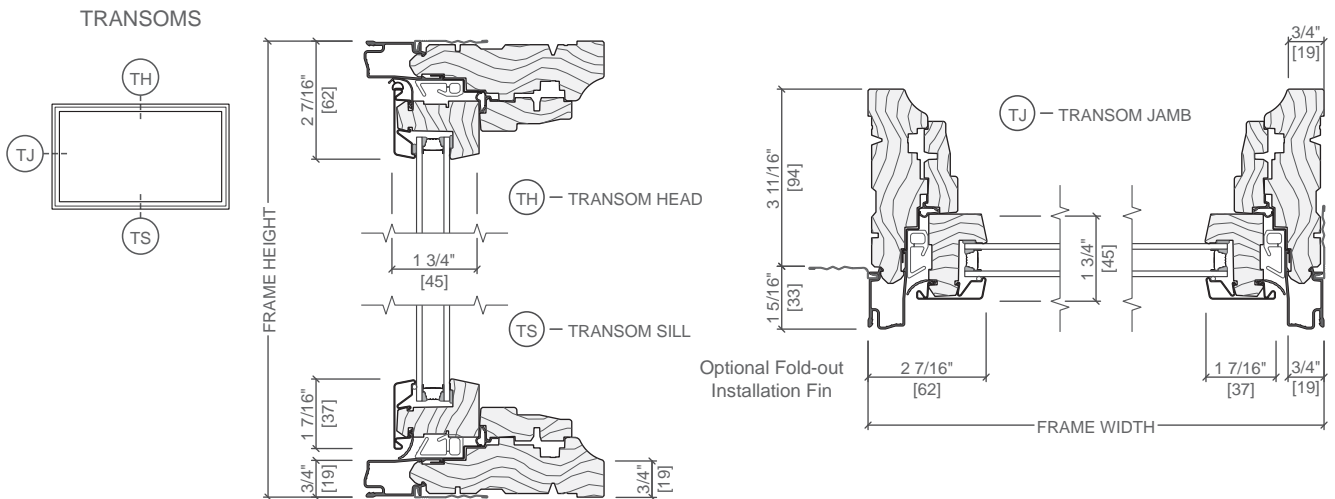
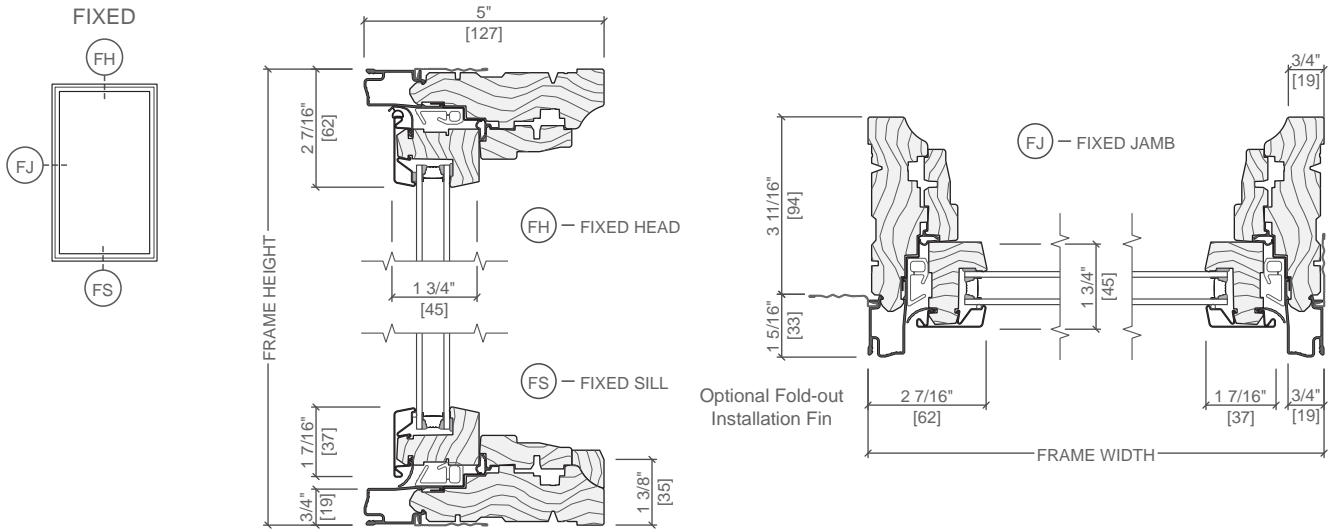


Scale 3" = 1' 0"
All dimensions are approximate.

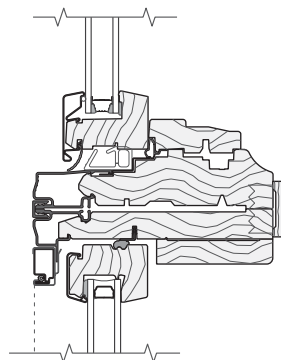


Lifestyle Series Double-Hung

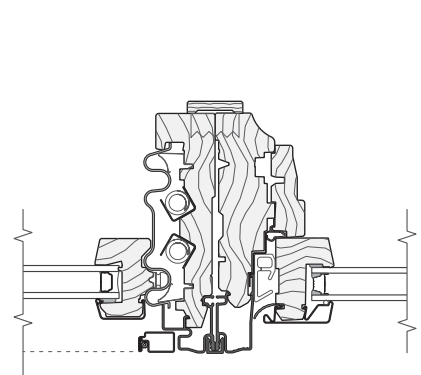
Unit Sections



VERTICAL JOINING MULLION
VENT / VENT



HORIZONTAL JOINING MULLION
TRANSOM / VENT



VERTICAL JOINING MULLION
VENT / FIXED

Scale 3" = 1' 0"

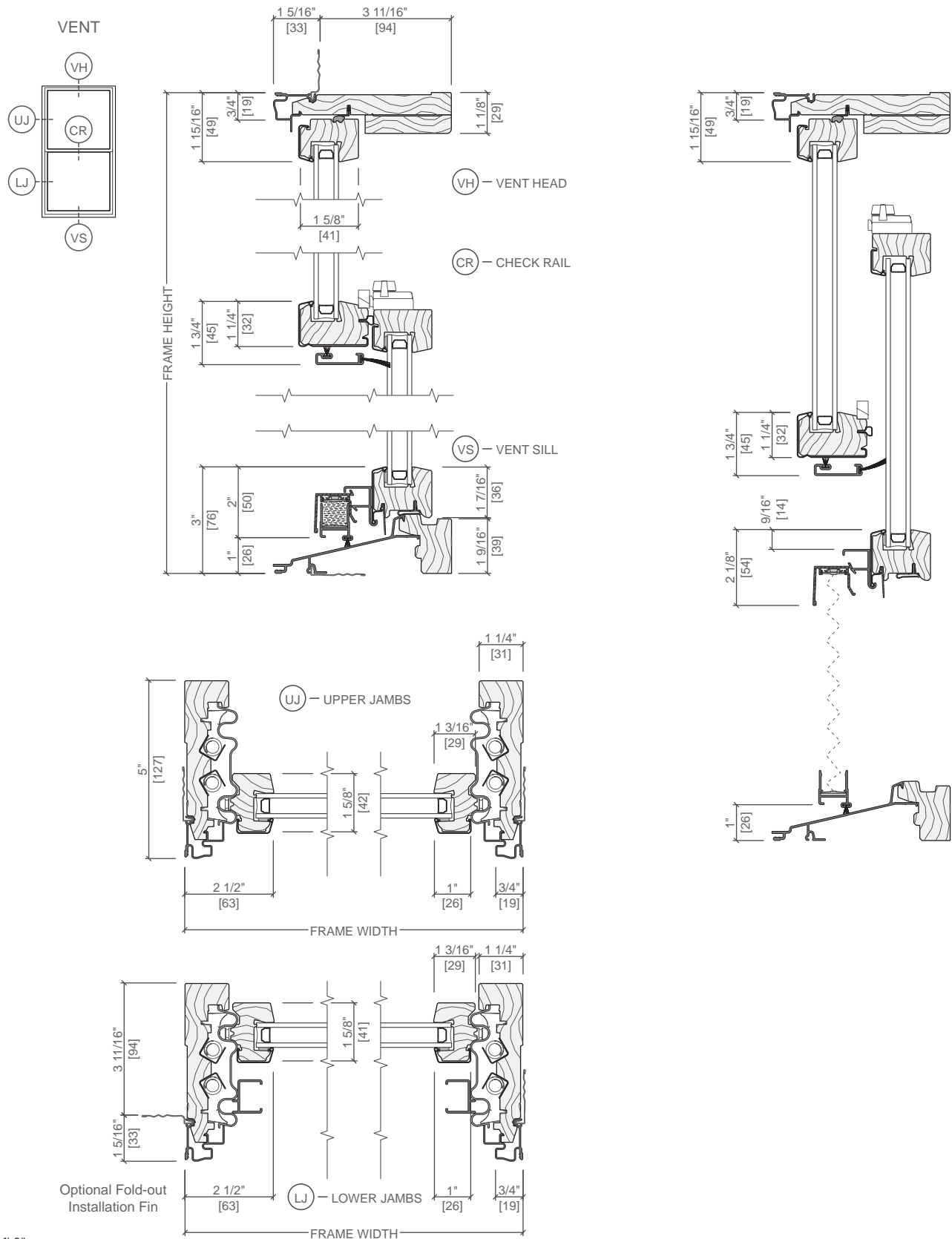
All dimensions are approximate.

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



Lifestyle Series Double-Hung

Unit Sections



Scale 3" = 1' 0"

All dimensions are approximate.



Fixed Sash In Frame – General Information

Supporting Documents	W-FW-2
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Product Selection Guide

Sound Transmission Class and Outdoor-Indoor Transmission Class	W-FW-3
Size and Performance Data	W-FW-3
Features and Options	W-FW-4
Mitered Corner Sizes and Dimensions	W-FW-5

Glazing Performance	W-FW-6
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Grille Types	W-FW-12
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Typical Grille Patterns

Curved Shapes	W-FW-13
Arch Heads	W-FW-14

Interior Glazed – Curved Shapes	W-FW-15
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Interior Glazed – Angled Shapes	W-FW-16
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Exterior Glazed Size and Glazing Options	W-FW-17
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Impact-Resistant Glass	W-FW-18
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Design Data - Design Pressure Performance

Clad Curved	W-FW-19
Advanced Clad Curved	W-FW-20

Detailed Product Descriptions

Interior Glazed	W-FW-21
Exterior Glazed	W-FW-22

Unit Sections

Curved Interior Glazed	W-FW-23
Curved Interior Glazed - Impact-Resistant	W-FW-24
Rectangular and Angled Interior Glazed	W-FW-25
Rectangular Interior Glazed - Impact-Resistant	W-FW-26
Rectangular Exterior Glazed	W-FW-27
Mitered Corner	W-FW-28

Document Navigation Tips:

Items listed in the table of contents above are active links that will take you to the corresponding page.

The Pella logo on each page is a link back to this table of contents.

Bookmarks are also included in this PDF document and are available as an additional navigation option.

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.



Supporting Links

Supporting documents for this product:

Test Reports:

https://media.pella.com/professional/adm/CertificationReports/Test_Reports_FFDS.pdf

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

https://media.pella.com/professional/adm/Wood-CSI_Specs/08553.rtf

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

https://media.pella.com/professional/adm/Wood-CSI_Specs/08554.rtf

Impact-Resistant Rectangular CSI Specs (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Wood-CSI_Specs/08553-HIG.rtf

Impact-Resistant Curved Shapes CSI Specs (readable using Microsoft Word or other text editing application):

https://media.pella.com/professional/adm/Wood-CSI_Specs/08554-HIG.rtf

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

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

Interior Glazed (Rectangular and Shapes) Detailed Product Description (readable using Microsoft Word or other text editing application):

<https://media.pella.com/professional/adm/Clad-Wood/FFDS-INTGL.rtf>

Exterior Glazed (Rectangular Only) Detailed Product Description (readable using Microsoft Word or other text editing application):

<https://media.pella.com/professional/adm/Clad-Wood/FFDS-EXTGL.rtf>

CAD cross sections (interior and exterior glazed, rectangular and curved shapes) (requires appropriate CAD software to read and use):

https://media.pella.com/professional/adm/Clad-Wood/PellaClad-FxdFrm-Details_D.dwg

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

https://media.pella.com/professional/adm/Clad-Wood/PR-MiterCorner-Detail_D.dwg

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

<https://media.pella.com/professional/adm/RevitFiles/Window-Fixed-Pella-Clad-Rectangular.zip>

Curved Shapes Revit - 3D & BIM (requires appropriate software to read and use):

<https://media.pella.com/professional/adm/RevitFiles/Window-Fixed-Pella-Clad-Shapes.zip>

Rectangular Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Clad-Wood/PellaSKP_Fixed_DirectSet-Rectangular.zip

Curved Shapes Sketchup (requires appropriate software to read and use):

https://media.pella.com/professional/adm/Clad-Wood/PellaSKP_Fixed_DirectSet-shapes.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 Casement, Complete Product Information:

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

Casement Shapes, Complete Product Information:

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

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Clad-Wood Fixed Frame Direct Set Windows

Size and Performance Data

	Shapes Other Curved	Rectangular / Angled Shapes
Sizes		
Custom shapes and sizes made to order	●	●
Interior Glazed Unit Performance^{1, 2}		
Meets or exceeds AAMA/WDMA ratings – Fin Installation	F-CW40 – F-AW50 Hallmark Certified	F-CW40 – F-AW50 Hallmark Certified
Meets or exceeds AAMA/WDMA ratings - Clip or Screw-through-frame Installation	F - CW60 – AW90 Hallmark Certified	F-CW60 – F-AW90 Hallmark Certified
Air Infiltration (cfm/ft ² of frame @ 6.24 psf wind pressure)	0.05	0.05
Water Resistance	9.2 - 15.05 psf	9.2 - 15.05 psf
Products with Impact-Resistant Glass	Up to F - CW90 Hallmark Certified	UP TO F-CW90 Hallmark Certified

Sound Transmission Class /Outdoor-Indoor Transmission Class

Product	Frame Size Tested ³	Glazing System				STC Rating	OITC Rating
		Overall Glazing Thickness	Exterior Glass Thickness	Center Glass Thickness	Interior Glass Thickness		
Rectangular and Angled Shaped Clad Window	47" x 59"	Fixed Double-Pane Glazing					
		13/16"	3mm	—	3mm	27	22
		13/16"	4mm	—	4mm	28	24
		13/16"	5mm	—	3mm	31	26
		1"	4mm	—	6mm	34	28
		1"	6mm	—	6mm	31	26
		Fixed Impact-Resistant Laminated Glazing					
		1"	11.7mm PVB	—	5mm	36	32
		1"	11.7mm SGP	—	5mm	35	31
		1-1/4"	13.6mm SGP	—	6mm	37	31
		1"	4mm	—	7mm PVB	34	29
		1-1/4"	6mm	—	12mm PVB	38	34
		Fixed Triple-Pane Glazing					
		1-1/4"	5mm	5mm	5mm	31	26

(—) = 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) AAMA/WDMA AW performance class attainable with EnduraClad Plus finish. Contact Pella Representative for details.

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

Not all sizes are Hallmark Certified.



Clad-Wood Fixed Frame Direct Set Windows

Features and Options

	Curved Shapes	Rectangular / Angled Shapes
Glazing		
Glazing Type		
Dual-Pane Insulating Glass	S	S
Triple-Pane Insulating Glass	O	O
Clad panel with hardboard core ¹	—	O
Insulated Glass Options / Low-E Types		
Advanced Low-E	S	S
SunDefense™ Low-E	O	O
SunDefense+ Low-E	O	O
AdvancedComfort Low-E	O	O
NaturalSun Low-E	O	O
NaturalSun+ Low-E	O	O
Clear (no Low-E coating)	O	O
Additional Glass Options		
Annealed Glass	S	S
Tempered Glass	O	O
Obscure Glass ²	O	O
Tinted Glass (Bronze, Gray and Green)	O	O
Spandrel Glass	O	O
Non-Impact Laminated Dual-Pane Insulating Glass	O	O
Impact-Resistant Laminated Dual-Pane Insulating Glass	O	O
Gas Fill/High Altitude		
Argon	S	S
High altitude	O	O
Exterior		
EnduraClad® aluminum-clad exterior	S	S
EnduraClad Plus aluminum-clad exterior	O	O
Cladding Colors		
Standard colors ²	S	S
Feature Colors, Custom colors ¹	O	O
Interior Finish		
Factory primed interior	O	O
Factory prefinished paint ¹	O	O
Factory prefinished stain ¹	O	O
Wood Types		
Pine	S	S
Mahogany	O	O
Douglas Fir	O	O
Grilles		
Integral Light Technology® Grilles		
Traditional	O	O ⁴
Sunburst	O	—
Custom	O	—
Simulated Divided Light Grilles		
Traditional, Prairie, Cross, Top Row	O ³	O
Sunburst, Starburst	O	—
Grilles-Between-the-Glass		
Traditional, Prairie, Cross, Top Row	O ³	O
Sunburst	O	—

S = Standard; O = Optional; (—) = Not Available

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

(2) Pella Lifestyle Series is limited to color options within that product offering. Contact your local Pella sales representative for current color options

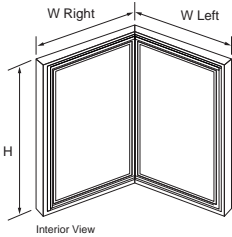
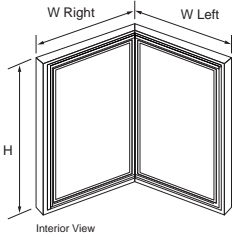
(3) In select shapes. Cross and Top Row not available in curved units.

(4) Only available in Contemporary rectangular and angle shape units with square grille profile.



Clad-Wood Fixed Frame Direct Set Windows

Mitered Corner Sizes and Dimensions

Mitered Corner	Minimum	Maximum	Restrictions
Fixed Frame Direct Set			
	W Left	12"	4' 0"
	W Right	12"	4' 0"
	Height	12"	6' 1"
Max Frame area of each side cannot be > 54.5 sq ft. Max Glass Area of each side cannot be > 48 sq ft. See Fixed Frame Direct Set product section for features and options			
Fixed Sash in Frame (Casement)			
	W Left	12"	4' 0"
	W Right	12"	4' 0"
	Height	12"	6' 1"
Max Frame area of each side cannot be > 54.5 sq ft. Max Glass Area of each side cannot be > 48 sq ft.			

See Casement sections for standard sizes and performance information, corner unit casements included here for comparison purposes.



Clad-Wood Fixed Frame Direct Set Windows

Glazing Performance - Total Units

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
										Rectangular And Curved Shapes					
13/16"	Clear IG	PEL-N-18-04004-00001	3	3	Air	0.47	0.69	0.72	43						
	with grilles-between-the-glass	PEL-N-18-04005-00001				0.47	0.62	0.65	43						
	with integral grilles	PEL-N-18-04006-00001				0.47	0.62	0.65	43						
13/16"	Clear IG	PEL-N-18-04008-00001	4	4	Air	0.47	0.67	0.72	42						
	with grilles-between-the-glass	PEL-N-18-04009-00001				0.47	0.61	0.65	42						
	with integral grilles	PEL-N-18-04010-00001				0.47	0.61	0.65	42						
13/16"	Clear IG	PEL-N-18-04020-00001	5	5	Air	0.47	0.66	0.71	42						
	with grilles-between-the-glass	PEL-N-18-04021-00001				0.47	0.60	0.64	42						
	with integral grilles	PEL-N-18-04022-00001				0.47	0.60	0.64	42						
13/16"	Advanced Low-E IG	PEL-N-18-04208-00001	3	3	Argon	0.28	0.32	0.62	57						
	with grilles-between-the-glass	PEL-N-18-04209-00001				0.28	0.29	0.55	57						
	with integral grilles	PEL-N-18-04210-00001				0.29	0.29	0.55	57						
13/16"	Advanced Low-E IG	PEL-N-18-04216-00001	4	4	Argon	0.28	0.32	0.61	57						
	with grilles-between-the-glass	PEL-N-18-04217-00001				0.28	0.29	0.55	57						
	with integral grilles	PEL-N-18-04218-00001				0.28	0.29	0.55	57						
13/16"	Advanced Low-E IG	PEL-N-18-04240-00001	5	5	Argon	0.27	0.32	0.60	56						
	with grilles-between-the-glass	PEL-N-18-04241-00001				0.27	0.29	0.54	56						
	with integral grilles	PEL-N-18-04242-00001				0.28	0.29	0.54	56						
13/16"	SunDefense™ Low-E IG	PEL-N-18-04376-00001	3	3	Argon	0.28	0.24	0.57	57						
	with grilles-between-the-glass	PEL-N-18-04377-00001				0.28	0.22	0.51	57			SC	S		
	with integral grilles	PEL-N-18-04378-00001				0.28	0.22	0.51	57			SC	S		
13/16"	SunDefense™ Low-E IG	PEL-N-18-04384-00001	4	4	Argon	0.27	0.24	0.57	57						
	with grilles-between-the-glass	PEL-N-18-04385-00001				0.27	0.22	0.51	57			SC	S		
	with integral grilles	PEL-N-18-04386-00001				0.28	0.22	0.51	57			SC	S		
13/16"	SunDefense™ Low-E IG	PEL-N-18-04408-00001	5	5	Argon	0.27	0.24	0.56	56						
	with grilles-between-the-glass	PEL-N-18-04409-00001				0.27	0.22	0.50	56			SC	S		
	with integral grilles	PEL-N-18-04410-00001				0.28	0.22	0.50	56			SC	S		
13/16"	SunDefense+ Low-E IG	PEL-N-18-04424-00001	3	3	Argon	0.23	0.24	0.56	46		NC				
	with grilles-between-the-glass	PEL-N-18-04425-00001				0.23	0.21	0.50	46		NC	SC	S		
	with integral grilles	PEL-N-18-04426-00001				0.24	0.21	0.50	46		NC	SC	S		
13/16"	SunDefense+ Low-E IG	PEL-N-18-04432-00001	4	4	Argon	0.23	0.24	0.55	45		NC				
	with grilles-between-the-glass	PEL-N-18-04433-00001				0.23	0.22	0.50	45		NC	SC	S		
	with integral grilles	PEL-N-18-04434-00001				0.23	0.22	0.50	45		NC	SC	S		
13/16"	SunDefense+ Low-E IG	PEL-N-18-04456-00001	5	5	Argon	0.23	0.24	0.55	44		NC				
	with grilles-between-the-glass	PEL-N-18-04457-00001				0.23	0.22	0.49	44		NC	SC	S		
	with integral grilles	PEL-N-18-04458-00001				0.23	0.22	0.49	44		NC	SC	S		
13/16"	AdvancedComfort Low-E IG	PEL-N-18-04328-00001	3	3	Argon	0.23	0.32	0.60	45		NC				
	with grilles-between-the-glass	PEL-N-18-04329-00001				0.23	0.29	0.54	45		NC				
	with integral grilles	PEL-N-18-04330-00001				0.24	0.29	0.54	45		NC				
13/16"	AdvancedComfort Low-E IG	PEL-N-18-04336-00001	4	4	Argon	0.23	0.31	0.59	45		NC				
	with grilles-between-the-glass	PEL-N-18-04337-00001				0.23	0.29	0.53	45		NC				
	with integral grilles	PEL-N-18-04338-00001				0.24	0.29	0.53	45		NC				
13/16"	AdvancedComfort Low-E IG	PEL-N-18-04360-00001	5	5	Argon	0.23	0.31	0.59	44		NC				
	with grilles-between-the-glass	PEL-N-18-04361-00001				0.23	0.28	0.53	44		NC				
	with integral grilles	PEL-N-18-04362-00001				0.24	0.28	0.53	44		NC				

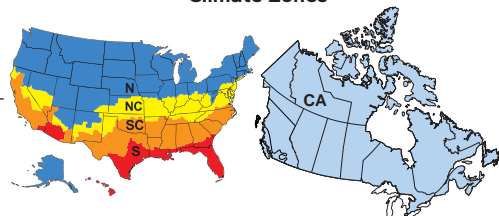
R-Value = 1/U-Factor
 SHGC = Solar Heat Gain Coefficient
 VLT % = Visible Light Transmission
 CR = Condensation Resistance
 ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2023 (Version 7) 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.

Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

Glazing Performance - Total Units

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
Rectangular And Curved Shapes										N	NC	SC	S		CA
13/16"	NaturalSun Low-E IG	PEL-N-18-04112-00001	3	3	Argon	0.29	0.61	0.70	57					39	CA
	with grilles-between-the-glass	PEL-N-18-04113-00001				0.29	0.55	0.63	57					35	CA
	with integral grilles	PEL-N-18-04114-00001				0.30	0.55	0.63	57					34	CA
13/16"	NaturalSun Low-E IG	PEL-N-18-04120-00001	4	4	Argon	0.29	0.59	0.69	56					38	CA
	with grilles-between-the-glass	PEL-N-18-04121-00001				0.29	0.54	0.62	56					35	CA
	with integral grilles	PEL-N-18-04122-00001				0.30	0.54	0.62	56					34	CA
13/16"	NaturalSun Low-E IG	PEL-N-18-04144-00001	5	5	Argon	0.28	0.58	0.69	55					38	CA
	with grilles-between-the-glass	PEL-N-18-04145-00001				0.28	0.53	0.62	55					36	CA
	with integral grilles	PEL-N-18-04146-00001				0.30	0.53	0.62	55						
13/16"	NaturalSun+ Low-E IG	PEL-N-18-04160-00001	3	3	Argon	0.24	0.55	0.68	45	N				42	CA
	with grilles-between-the-glass	PEL-N-18-04161-00001				0.24	0.50	0.61	45	N				39	CA
	with integral grilles	PEL-N-18-04162-00001				0.25	0.50	0.61	45	N				38	CA
13/16"	NaturalSun+ Low-E IG	PEL-N-18-04168-00001	4	4	Argon	0.24	0.54	0.68	44	N				41	CA
	with grilles-between-the-glass	PEL-N-18-04169-00001				0.24	0.48	0.61	44	N				38	CA
	with integral grilles	PEL-N-18-04170-00001				0.24	0.48	0.61	44	N				38	CA
13/16"	NaturalSun+ Low-E IG	PEL-N-18-04192-00001	5	5	Argon	0.24	0.53	0.67	43	N				41	CA
	with grilles-between-the-glass	PEL-N-18-04193-00001				0.24	0.48	0.60	43	N				38	CA
	with integral grilles	PEL-N-18-04194-00001				0.24	0.48	0.60	43	N				38	CA
1"	Advanced Low-E IG	PEL-N-18-04248-00001	6	6	Argon	0.28	0.31	0.59	56						
	with grilles-between-the-glass	PEL-N-18-04249-00001				0.28	0.29	0.53	56						
	with integral grilles	PEL-N-18-04250-00001				0.28	0.29	0.53	56						
1"	SunDefense™ Low-E IG	PEL-N-18-04416-00001	6	6	Argon	0.27	0.24	0.55	56						
	with grilles-between-the-glass	PEL-N-18-04417-00001				0.27	0.22	0.50	56			SC	S		
	with integral grilles	PEL-N-18-04418-00001				0.28	0.22	0.50	56			SC	S		
1"	SunDefense+ Low-E IG	PEL-N-18-04464-00001	6	6	Argon	0.23	0.23	0.54	45		NC	SC	S		
	with grilles-between-the-glass	PEL-N-18-04465-00001				0.23	0.21	0.48	45		NC	SC	S		
	with integral grilles	PEL-N-18-04466-00001				0.23	0.21	0.48	45		NC	SC	S		
1"	AdvancedComfort Low-E IG	PEL-N-18-04368-00001	6	6	Argon	0.23	0.31	0.58	44		NC				
	with grilles-between-the-glass	PEL-N-18-04369-00001				0.23	0.28	0.52	44		NC				
	with integral grilles	PEL-N-18-04370-00001				0.24	0.28	0.52	44		NC				
1"	NaturalSun Low-E IG	PEL-N-18-04152-00001	6	6	Argon	0.29	0.57	0.68	55					37	CA
	with grilles-between-the-glass	PEL-N-18-04153-00001				0.29	0.51	0.61	55						
	with integral grilles	PEL-N-18-04154-00001				0.30	0.51	0.61	55						
1"	NaturalSun+ Low-E IG	PEL-N-18-04200-00001	6	6	Argon	0.24	0.51	0.66	43	N				39	CA
	with grilles-between-the-glass	PEL-N-18-04201-00001				0.24	0.46	0.59	43	N				37	CA
	with integral grilles	PEL-N-18-04202-00001				0.24	0.46	0.59	43	N				37	CA

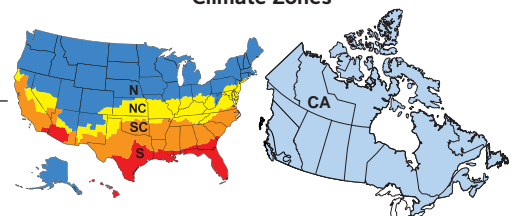
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Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

Glazing Performance - Total Units

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
Rectangular And Curved Shapes With Tinted Glazing										N	NC	SC	S	CA	
13/16"	Bronze Advanced Low-E IG	PEL-N-18-04256-00001	5	3	Argon	0.27	0.29	0.40	58						
	with grilles-between-the-glass	PEL-N-18-04257-00001				0.27	0.26	0.36	58						
	with integral grilles	PEL-N-18-04258-00001				0.29	0.26	0.36	58						
13/16"	Gray Advanced Low-E IG	PEL-N-18-04280-00001	5	3	Argon	0.27	0.26	0.34	58						
	with grilles-between-the-glass	PEL-N-18-04281-00001				0.27	0.24	0.31	58						
	with integral grilles	PEL-N-18-04282-00001				0.29	0.24	0.31	58						
13/16"	Green Advanced Low-E IG	PEL-N-18-04304-00001	5	3	Argon	0.27	0.33	0.54	58						
	with grilles-between-the-glass	PEL-N-18-04305-00001				0.27	0.30	0.49	58						
	with integral grilles	PEL-N-18-04306-00001				0.29	0.30	0.49	58						
13/16"	Reflective Bronze IG	PEL-N-18-04028-00001	5	5	Air	0.47	0.30	0.18	42						
	with grilles-between-the-glass	PEL-N-18-04029-00001				0.47	0.27	0.16	42						
	with integral grilles	PEL-N-18-04030-00001				0.47	0.27	0.16	42						
1"	Bronze Advanced Low-E IG	PEL-N-18-04272-00001	6	6	Argon	0.28	0.27	0.35	56						
	with grilles-between-the-glass	PEL-N-18-04273-00001				0.28	0.24	0.32	56						
	with integral grilles	PEL-N-18-04274-00001				0.29	0.24	0.32	56						
1"	Gray Advanced Low-E IG	PEL-N-18-04296-00001	6	6	Argon	0.28	0.24	0.30	56						
	with grilles-between-the-glass	PEL-N-18-04297-00001				0.28	0.22	0.27	56			SC	S		
	with integral grilles	PEL-N-18-04298-00001				0.29	0.22	0.27	56				S		
1"	Green Advanced Low-E IG	PEL-N-18-04320-00001	6	6	Argon	0.28	0.31	0.52	56						
	with grilles-between-the-glass	PEL-N-18-04321-00001				0.28	0.28	0.46	56						
	with integral grilles	PEL-N-18-04322-00001				0.29	0.28	0.46	56						
1"	Reflective Bronze IG	PEL-N-18-04036-00001	6	6	Air	0.46	0.27	0.16	42						
	with grilles-between-the-glass	PEL-N-18-04037-00001				0.46	0.25	0.15	42						
	with integral grilles	PEL-N-18-04038-00001				0.47	0.25	0.15	42						
1"	Reflective Gray IG	PEL-N-18-04048-00001	6	6	Argon	0.44	0.24	0.13	44						
	with grilles-between-the-glass	PEL-N-18-04049-00001				0.44	0.22	0.12	44						
	with integral grilles	PEL-N-18-04050-00001				0.45	0.22	0.12	44						

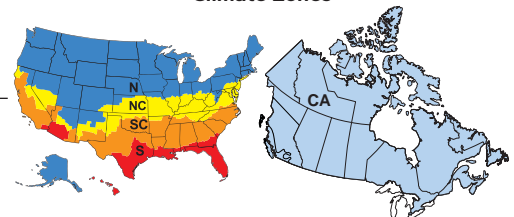
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Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

Glazing Performance - Total Units

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
Rectangular And Curved Shapes - High Altitude Glazing										N	NC	SC	S	CA	
13/16"	Advanced Low-E IG	PEL-N-18-04204-00001	3	3	Air	0.32	0.33	0.62	54						
	with grilles-between-the-glass	PEL-N-18-04205-00001				0.32	0.30	0.55	54						
	with integral grilles	PEL-N-18-04206-00001				0.33	0.30	0.55	54						
13/16"	Advanced Low-E IG	PEL-N-18-04212-00001	4	4	Air	0.32	0.32	0.61	53						
	with grilles-between-the-glass	PEL-N-18-04213-00001				0.32	0.29	0.55	53						
	with integral grilles	PEL-N-18-04214-00001				0.32	0.29	0.55	53						
13/16"	Advanced Low-E IG	PEL-N-18-04236-00001	5	5	Air	0.32	0.32	0.60	52						
	with grilles-between-the-glass	PEL-N-18-04237-00001				0.32	0.29	0.54	52						
	with integral grilles	PEL-N-18-04238-00001				0.32	0.29	0.54	52						
13/16"	SunDefense Low-E IG	PEL-N-18-04372-00001	3	3	Air	0.32	0.24	0.57	54						
	with grilles-between-the-glass	PEL-N-18-04373-00001				0.32	0.22	0.51	54				S		
	with integral grilles	PEL-N-18-04374-00001				0.32	0.22	0.51	54				S		
13/16"	SunDefense Low-E IG	PEL-N-18-04380-00001	4	4	Air	0.31	0.25	0.57	54						
	with grilles-between-the-glass	PEL-N-18-04381-00001				0.31	0.22	0.51	54				S		
	with integral grilles	PEL-N-18-04382-00001				0.32	0.22	0.51	54				S		
13/16"	SunDefense Low-E IG	PEL-N-18-04404-00001	5	5	Air	0.31	0.25	0.56	53						
	with grilles-between-the-glass	PEL-N-18-04405-00001				0.31	0.22	0.50	53				S		
	with integral grilles	PEL-N-18-04406-00001				0.32	0.22	0.50	53				S		
13/16"	SunDefense+ Low-E IG	PEL-N-18-04420-00001	3	3	Air	0.26	0.24	0.56	42						
	with grilles-between-the-glass	PEL-N-18-04421-00001				0.26	0.22	0.50	42			SC	S		
	with integral grilles	PEL-N-18-04422-00001				0.26	0.22	0.50	42			SC	S		
13/16"	SunDefense+ Low-E IG	PEL-N-18-04428-00001	4	4	Air	0.25	0.24	0.55	42		NC				
	with grilles-between-the-glass	PEL-N-18-04429-00001				0.25	0.22	0.50	42		NC	SC	S		
	with integral grilles	PEL-N-18-04430-00001				0.26	0.22	0.50	42			SC	S		
13/16"	SunDefense+ Low-E IG	PEL-N-18-04452-00001	5	5	Air	0.26	0.24	0.55	41						
	with grilles-between-the-glass	PEL-N-18-04453-00001				0.26	0.22	0.49	41			SC	S		
	with integral grilles	PEL-N-18-04454-00001				0.26	0.22	0.49	41			SC	S		
13/16"	AdvancedComfort Low-E IG	PEL-N-18-04324-00001	3	3	Air	0.26	0.32	0.60	42						
	with grilles-between-the-glass	PEL-N-18-04325-00001				0.26	0.29	0.54	42						
	with integral grilles	PEL-N-18-04326-00001				0.27	0.29	0.54	42						
13/16"	AdvancedComfort Low-E IG	PEL-N-18-04332-00001	4	4	Air	0.26	0.32	0.59	42						
	with grilles-between-the-glass	PEL-N-18-04333-00001				0.26	0.29	0.53	42						
	with integral grilles	PEL-N-18-04334-00001				0.26	0.29	0.53	42						
13/16"	AdvancedComfort Low-E IG	PEL-N-18-04356-00001	5	5	Air	0.26	0.31	0.59	40						
	with grilles-between-the-glass	PEL-N-18-04357-00001				0.26	0.28	0.53	40						
	with integral grilles	PEL-N-18-04358-00001				0.27	0.28	0.53	40						

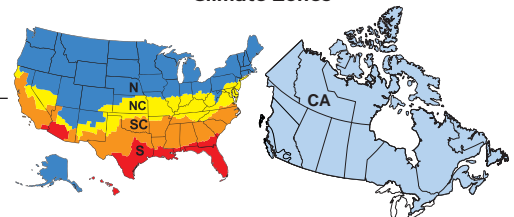
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Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

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
										Rectangular And Curved Shapes - High Altitude Glazing					
13/16"	NaturalSun Low-E IG	PEL-N-18-04108-00001	3	3	Air	0.33	0.60	0.70	53					34	CA
	with grilles-between-the-glass	PEL-N-18-04109-00001				0.33	0.55	0.63	53						
	with integral grilles	PEL-N-18-04110-00001				0.34	0.55	0.63	53						
13/16"	NaturalSun Low-E IG	PEL-N-18-04116-00001	4	4	Air	0.32	0.59	0.69	53					34	CA
	with grilles-between-the-glass	PEL-N-18-04117-00001				0.32	0.54	0.62	53						
	with integral grilles	PEL-N-18-04118-00001				0.33	0.54	0.62	53						
13/16"	NaturalSun Low-E IG	PEL-N-18-04140-00001	5	5	Air	0.33	0.58	0.69	52						
	with grilles-between-the-glass	PEL-N-18-04141-00001				0.33	0.53	0.62	52						
	with integral grilles	PEL-N-18-04142-00001				0.34	0.53	0.62	52						
13/16"	NaturalSun+ Low-E IG	PEL-N-18-04156-00001	3	3	Air	0.27	0.55	0.68	41					38	CA
	with grilles-between-the-glass	PEL-N-18-04157-00001				0.27	0.50	0.61	41					35	CA
	with integral grilles	PEL-N-18-04158-00001				0.27	0.50	0.61	41					35	CA
13/16"	NaturalSun+ Low-E IG	PEL-N-18-04164-00001	4	4	Air	0.26	0.53	0.68	41	N				38	CA
	with grilles-between-the-glass	PEL-N-18-04165-00001				0.26	0.48	0.61	41	N				35	CA
	with integral grilles	PEL-N-18-04166-00001				0.27	0.48	0.61	41					34	CA
13/16"	NaturalSun+ Low-E IG	PEL-N-18-04188-00001	5	5	Air	0.27	0.52	0.67	40					36	CA
	with grilles-between-the-glass	PEL-N-18-04189-00001				0.27	0.47	0.60	40						
	with integral grilles	PEL-N-18-04190-00001				0.27	0.47	0.60	40						
1"	Clear IG	PEL-N-18-04024-00001	6	6	Air	0.46	0.64	0.70	42						
	with grilles-between-the-glass	PEL-N-18-04025-00001				0.46	0.58	0.63	42						
	with integral grilles	PEL-N-18-04026-00001				0.47	0.58	0.63	42						
1"	Advanced Low-E IG	PEL-N-18-04244-00001	6	6	Air	0.32	0.32	0.59	53						
	with grilles-between-the-glass	PEL-N-18-04245-00001				0.32	0.29	0.53	53						
	with integral grilles	PEL-N-18-04246-00001				0.32	0.29	0.53	53						
1"	SunDefense™ Low-E IG	PEL-N-18-04412-00001	6	6	Air	0.31	0.24	0.55	53						
	with grilles-between-the-glass	PEL-N-18-04413-00001				0.31	0.22	0.50	53				S		
	with integral grilles	PEL-N-18-04414-00001				0.32	0.22	0.50	53				S		
1"	SunDefense+ Low-E IG	PEL-N-18-04460-00001	6	6	Air	0.25	0.24	0.54	41		NC				
	with grilles-between-the-glass	PEL-N-18-04461-00001				0.25	0.22	0.48	41		NC	SC	S		
	with integral grilles	PEL-N-18-04462-00001				0.26	0.22	0.48	41			SC	S		
1"	AdvancedComfort Low-E IG	PEL-N-18-04364-00001	6	6	Air	0.26	0.31	0.58	41						
	with grilles-between-the-glass	PEL-N-18-04365-00001				0.26	0.28	0.52	41						
	with integral grilles	PEL-N-18-04366-00001				0.26	0.28	0.52	41						
1"	NaturalSun Low-E IG	PEL-N-18-04148-00001	6	6	Air	0.33	0.57	0.68	52						
	with grilles-between-the-glass	PEL-N-18-04149-00001				0.33	0.51	0.61	52						
	with integral grilles	PEL-N-18-04150-00001				0.33	0.51	0.61	52						
1"	NaturalSun+ Low-E IG	PEL-N-18-04196-00001	6	6	Air	0.26	0.51	0.66	41	N				37	CA
	with grilles-between-the-glass	PEL-N-18-04197-00001				0.26	0.46	0.59	41	N				34	CA
	with integral grilles	PEL-N-18-04198-00001				0.27	0.46	0.59	41						

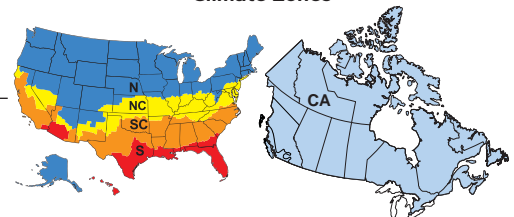
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Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

Glazing Performance - Total Units

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.	Mid.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ²	
											Zone				ER	Zone
											Interior Glazed With Triple-Pane Glazing					
1-1/8"	Decorative Glass (3)	PEL-N-18-04620-00001	3	3	3	Air	0.34	0.62	0.66	55						
1-1/8"	Advanced Low-E IG	PEL-N-18-04661-00001	3	3	3	Argon	0.18	0.29	0.54	69	N	NC			34	CA
	with grilles-between-the-glass	PEL-N-18-04662-00001					0.18	0.27	0.49	69	N	NC			33	CA
	with integral grilles	PEL-N-18-04663-00001					0.18	0.27	0.49	69	N	NC			33	CA
1-1/4"	Advanced Low-E IG	PEL-N-18-04673-00001	4	4	4	Argon	0.18	0.29	0.53	68	N	NC			34	CA
	with grilles-between-the-glass	PEL-N-18-04674-00001					0.18	0.26	0.48	68	N	NC			32	CA
	with integral grilles	PEL-N-18-04675-00001					0.18	0.26	0.48	68	N	NC			32	CA
1-3/8"	Advanced Low-E IG	PEL-N-18-04685-00001	5	5	5	Argon	0.18	0.29	0.53	68	N	NC			34	CA
	with grilles-between-the-glass	PEL-N-18-04686-00001					0.18	0.26	0.47	68	N	NC			32	CA
	with integral grilles	PEL-N-18-04687-00001					0.18	0.26	0.47	68	N	NC			32	CA
1-1/8"	SunDefense™ Low-E IG	PEL-N-18-04697-00001	3	3	3	Argon	0.18	0.22	0.50	69	N	NC	SC	S	30	CA
	with grilles-between-the-glass	PEL-N-18-04698-00001					0.18	0.20	0.45	69	N	NC	SC	S	29	CA
	with integral grilles	PEL-N-18-04699-00001					0.18	0.20	0.45	69	N	NC	SC	S	29	CA
1-1/4"	SunDefense™ Low-E IG	PEL-N-18-04709-00001	4	4	4	Argon	0.18	0.22	0.50	68	N	NC	SC	S	30	CA
	with grilles-between-the-glass	PEL-N-18-04710-00001					0.18	0.20	0.45	68	N	NC	SC	S	29	CA
	with integral grilles	PEL-N-18-04711-00001					0.18	0.20	0.45	68	N	NC	SC	S	29	CA
1-3/8"	SunDefense™ Low-E IG	PEL-N-18-04721-00001	5	5	5	Argon	0.18	0.22	0.49	68	N	NC	SC	S	30	CA
	with grilles-between-the-glass	PEL-N-18-04722-00001					0.18	0.20	0.44	68	N	NC	SC	S	29	CA
	with integral grilles	PEL-N-18-04723-00001					0.18	0.20	0.44	68	N	NC	SC	S	29	CA
1-1/8"	NaturalSun Low-E IG	PEL-N-18-04625-00001	3	3	3	Argon	0.18	0.49	0.61	68	N				46	CA
	with grilles-between-the-glass	PEL-N-18-04626-00001					0.19	0.45	0.55	68	N				42	CA
	with integral grilles	PEL-N-18-04627-00001					0.19	0.45	0.55	68	N				42	CA
1-1/4"	NaturalSun Low-E IG	PEL-N-18-04637-00001	4	4	4	Argon	0.18	0.48	0.61	68	N				45	CA
	with grilles-between-the-glass	PEL-N-18-04638-00001					0.19	0.43	0.55	68	N				41	CA
	with integral grilles	PEL-N-18-04639-00001					0.19	0.43	0.55	68	N				41	CA
1-3/8"	NaturalSun Low-E IG	PEL-N-18-04649-00001	5	5	5	Argon	0.18	0.47	0.60	67	N				45	CA
	with grilles-between-the-glass	PEL-N-18-04650-00001					0.18	0.43	0.54	67	N				42	CA
	with integral grilles	PEL-N-18-04651-00001					0.19	0.43	0.54	67	N				41	CA

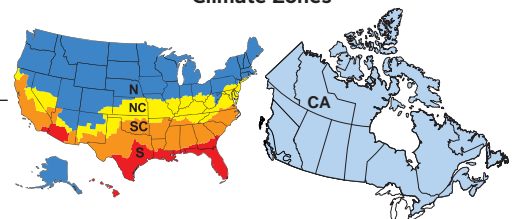
R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
VLT % = Visible Light Transmission
CR = Condensation Resistance
ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2023 (Version 7) 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.

Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

Glazing Performance - Total Units

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.	Mid.	Int.		U-Factor	SHGC	VLT %	CR	U. S.				Canada ₂	
											Zone				ER	Zone
Interior Glazed Triple-Pane High Altitude Glazing											N	NC	SC	S		CA
1-1/8"	Advanced Low-E IG	PEL-N-18-04657-00001	3	3	3	Air	0.22	0.30	0.54	65	N	NC				
	with grilles-between-the-glass	PEL-N-18-04658-00001					0.22	0.27	0.49	65	N	NC				
	with integral grilles	PEL-N-18-04659-00001					0.22	0.27	0.49	65	N	NC				
1-1/4"	Advanced Low-E IG	PEL-N-18-04669-00001	4	4	4	Air	0.21	0.29	0.53	65	N	NC			30	CA
	with grilles-between-the-glass	PEL-N-18-04670-00001					0.22	0.26	0.48	65	N	NC				
	with integral grilles	PEL-N-18-04671-00001					0.22	0.26	0.48	65	N	NC				
1-3/8"	Advanced Low-E IG	PEL-N-18-04681-00001	5	5	5	Air	0.21	0.29	0.53	65	N	NC			30	CA
	with grilles-between-the-glass	PEL-N-18-04682-00001					0.22	0.26	0.47	65	N	NC				
	with integral grilles	PEL-N-18-04683-00001					0.22	0.26	0.47	65	N	NC				
1-1/8"	SunDefense Low-E IG	PEL-N-18-04693-00001	3	3	3	Air	0.21	0.22	0.50	65	N	NC	SC	S	26	CA
	with grilles-between-the-glass	PEL-N-18-04694-00001					0.22	0.20	0.45	65	N	NC	SC	S		
	with integral grilles	PEL-N-18-04695-00001					0.22	0.20	0.45	65	N	NC	SC	S		
1-1/4"	SunDefense Low-E IG	PEL-N-18-04705-00001	4	4	4	Air	0.21	0.22	0.50	65	N	NC	SC	S	26	CA
	with grilles-between-the-glass	PEL-N-18-04706-00001					0.22	0.20	0.45	65	N	NC	SC	S		
	with integral grilles	PEL-N-18-04707-00001					0.22	0.20	0.45	65	N	NC	SC	S		
1-3/8"	SunDefense Low-E IG	PEL-N-18-04717-00001	5	5	5	Air	0.21	0.22	0.49	65	N	NC	SC	S	26	CA
	with grilles-between-the-glass	PEL-N-18-04718-00001					0.22	0.20	0.44	65	N	NC	SC	S		
	with integral grilles	PEL-N-18-04719-00001					0.22	0.20	0.44	65	N	NC	SC	S		
1-1/8"	NaturalSun Low-E IG	PEL-N-18-04621-00001	3	3	3	Air	0.22	0.49	0.61	65	N				41	CA
	with grilles-between-the-glass	PEL-N-18-04622-00001					0.22	0.45	0.55	65	N				38	CA
	with integral grilles	PEL-N-18-04623-00001					0.22	0.45	0.55	65	N				38	CA
1-1/4"	NaturalSun Low-E IG	PEL-N-18-04633-00001	4	4	4	Air	0.22	0.48	0.61	65	N				40	CA
	with grilles-between-the-glass	PEL-N-18-04634-00001					0.22	0.43	0.55	65	N				37	CA
	with integral grilles	PEL-N-18-04635-00001					0.22	0.43	0.55	65	N				37	CA
1-3/8"	NaturalSun Low-E IG	PEL-N-18-04645-00001	5	5	5	Air	0.22	0.47	0.60	64	N				40	CA
	with grilles-between-the-glass	PEL-N-18-04646-00001					0.22	0.43	0.54	64	N				37	CA
	with integral grilles	PEL-N-18-04647-00001					0.22	0.43	0.54	64	N				37	CA

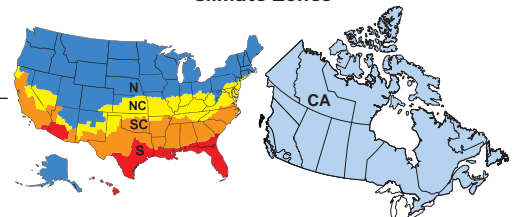
R-Value = 1/U-Factor
SHGC = Solar Heat Gain Coefficient
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ER = Canadian Energy Rating

(1) Glazing performance values are calculated based on NFRC 100, NFRC 200 and NFRC 500. ENERGY STAR® values are updated to 2023 (Version 7) criteria.

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

Climate Zones





Clad-Wood Fixed Frame Direct Set Windows

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
										Interior Glazed Laminated Impact-Resistant Glass					
										N	NC	SC	S	CA	
1"	PVB clear laminated IG	PEL-N-18-04060-00001	12	5	air	0.46	0.56	0.68	43						
	with grilles-between-the-glass	PEL-N-18-04061-00001				0.47	0.51	0.61	43						
	with integral grilles	PEL-N-18-04062-00001				0.47	0.51	0.61	43						
1"	PVB Advanced Low-E IG	PEL-N-18-04596-00001	12	5	argon	0.27	0.31	0.57	56						
	with grilles-between-the-glass	PEL-N-18-04597-00001				0.29	0.28	0.51	56						
	with integral grilles	PEL-N-18-04598-00001				0.28	0.28	0.51	56						
1"	PVB SunDefense™ Low-E IG	PEL-N-18-04608-00001	12	5	argon	0.27	0.24	0.53	57						
	with grilles-between-the-glass	PEL-N-18-04609-00001				0.28	0.22	0.48	57			SC	S		
	with integral grilles	PEL-N-18-04610-00001				0.28	0.22	0.48	57			SC	S		
1"	SGP clear laminated IG	PEL-N-18-04064-00001	12	5	air	0.46	0.57	0.69	43						
	with grilles-between-the-glass	PEL-N-18-04065-00001				0.47	0.51	0.62	43						
	with integral grilles	PEL-N-18-04066-00001				0.47	0.51	0.62	43						
1"	SGP Advanced Low-E IG	PEL-N-18-04600-00001	12	5	argon	0.27	0.31	0.58	57						
	with grilles-between-the-glass	PEL-N-18-04601-00001				0.28	0.28	0.52	57						
	with integral grilles	PEL-N-18-04602-00001				0.28	0.28	0.52	57						
1"	SGP SunDefense™ Low-E IG	PEL-N-18-04612-00001	12	5	argon	0.27	0.25	0.54	57						
	with grilles-between-the-glass	PEL-N-18-04613-00001				0.28	0.22	0.49	57			SC	S		
	with integral grilles	PEL-N-18-04614-00001				0.28	0.22	0.49	57			SC	S		
1-1/4"	SGP clear laminated IG	PEL-N-18-04068-00001	14	6	air	0.44	0.54	0.67	45						
	with grilles-between-the-glass	PEL-N-18-04069-00001				0.44	0.49	0.60	45						
	with integral grilles	PEL-N-18-04070-00001				0.44	0.49	0.60	45						
1-1/4"	SGP Advanced Low-E IG	PEL-N-18-04604-00001	14	6	argon	0.26	0.30	0.57	58						
	with grilles-between-the-glass	PEL-N-18-04605-00001				0.26	0.27	0.51	58						
	with integral grilles	PEL-N-18-04606-00001				0.27	0.27	0.51	58						
1-1/4"	SGP SunDefense Low-E IG	PEL-N-18-04616-00001	14	6	argon	0.26	0.24	0.53	58						
	with grilles-between-the-glass	PEL-N-18-04617-00001				0.26	0.22	0.47	58			SC	S		
	with integral grilles	PEL-N-18-04618-00001				0.26	0.22	0.47	58			SC	S		
Interior Glazed Laminated Impact-Resistant Glass With Tinted Glazing															
1"	Bronze PVB laminated IG	PEL-N-18-04072-00001	12	5	air	0.46	0.38	0.28	43						
1"	Gray PVB laminated IG	PEL-N-18-04084-00001	12	5	air	0.46	0.43	0.35	43						
1"	Green PVB laminated IG	PEL-N-18-04096-00001	12	5	air	0.46	0.51	0.56	43						
1"	Bronze SGP laminated IG	PEL-N-18-04076-00001	12	5	air	0.46	0.39	0.28	43						
1"	Gray SGP laminated IG	PEL-N-18-04088-00001	12	5	air	0.46	0.43	0.35	43						
1"	Green SGP laminated IG	PEL-N-18-04100-00001	12	5	air	0.46	0.51	0.56	43						
1-1/4"	Bronze SGP laminated IG	PEL-N-18-04080-00001	14	6	air	0.44	0.37	0.27	45						
1-1/4"	Gray SGP laminated IG	PEL-N-18-04092-00001	14	6	air	0.44	0.41	0.34	45						
1-1/4"	Green SGP laminated IG	PEL-N-18-04104-00001	14	6	air	0.44	0.49	0.54	45						

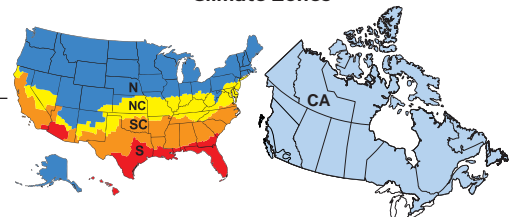
R-Value = 1/U-Factor
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Climate Zones



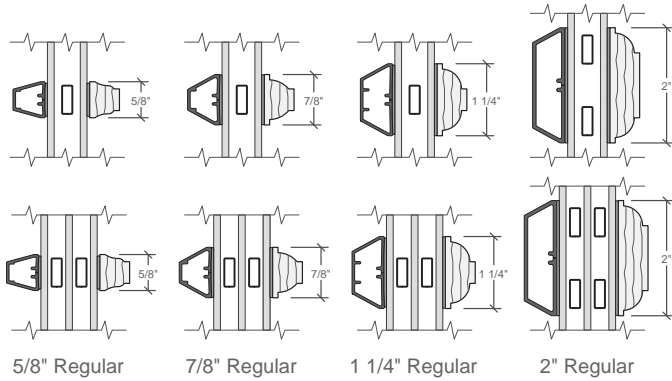


Clad-Wood Fixed Frame Direct Set Windows

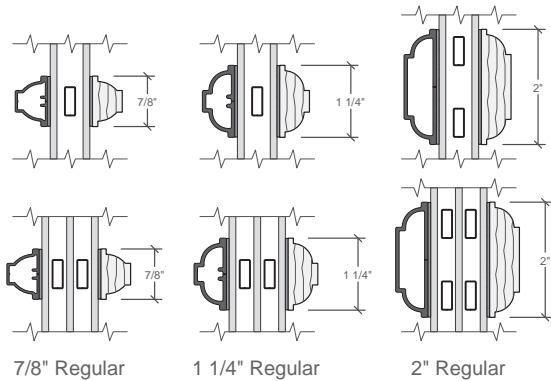
Grille Profiles

Traditional Style Collection - Integral Light Technology[®]

Putty Glaze and Ogee Grilles
Clad Exterior - Wood Interior

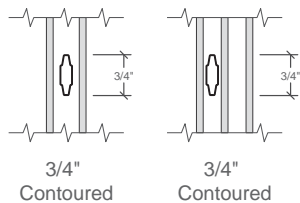


Ogee Grilles
Clad Exterior - Wood Interior



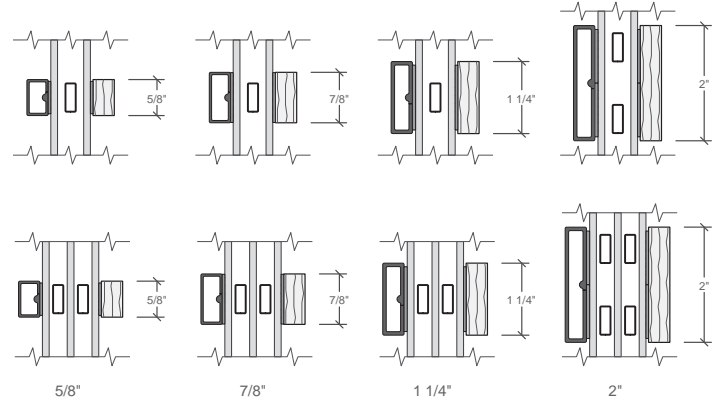
(Ogee ILT Grilles are available for Rectangle and Radius Shapes,
Putty Glaze ILT grilles are available for rectangle only.)

Grilles-Between-the-Glass



Contemporary Style Collection - Integral Light Technology[®]

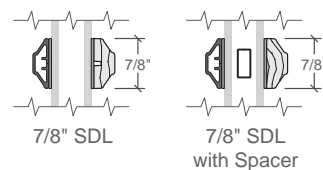
Square Grilles
Clad Exterior - Wood Interior



(Square ILT Grilles are available for Contemporary Style Rectangular and
Angle Shapes only)

Simulated-Divided-Light-Grilles

Simulated Divided Light



(1) Available in Pine, Mahogany, or Douglas Fir to match complete unit.

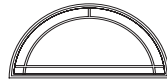
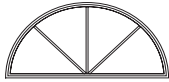


Clad-Wood Fixed Frame Direct Set Windows

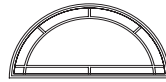
Grille Patterns - Curved Shapes

Below are examples of typical combination assemblies showing grille alignment of half circles and quarter circles over casements, hung, hinged and sliding doors. For specific information contact your local Pella sales representative.

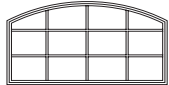
Typical Grille Patterns



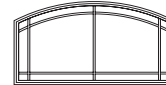
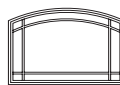
FW \leq 71"



FW > 71"



SHORT SIDE 8"

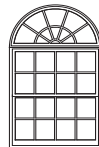


FW > 47"

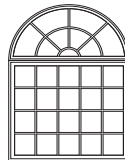
Half and Quarter Circle



Casement



Double-Hung



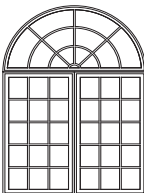
Large Fixed



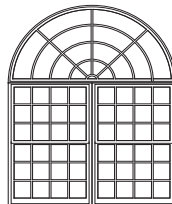
Casement



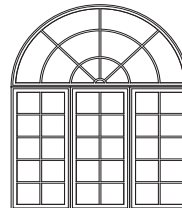
Double-Hung



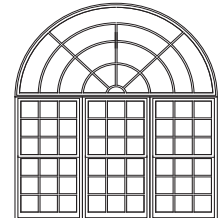
2-Wide
Casement



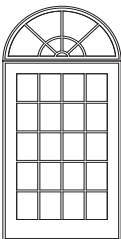
2-Wide
Double-Hung



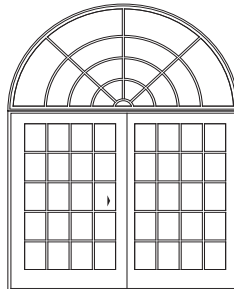
3-Wide
Casement



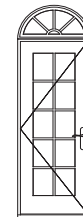
3-Wide
Double-Hung



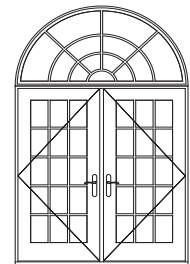
Fixed Door



Sliding Patio Door



Hinged Door



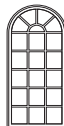
2-Panel Hinged Door

Elliptical



Elliptical

Springline



Springline

Full Circle



Circle

Ovals



4-Lite
Traditional



5-Lite
with Rays



9-Lite
with Sunburst



17-Lite
with Sunburst

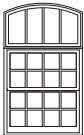
Not all pattern scenarios are shown above. Actual pattern may differ depending on size, shape and grille spacing. See Pella sales representative for actual patterns.



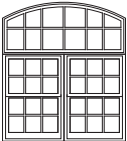
Grille Patterns - Arch Head Curved Shapes

Below are examples of typical combination assemblies showing grille alignment of arch heads over casements, hung, and hinged doors. For specific information contact your local Pella sales representative.

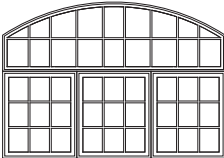
Full Arch Heads



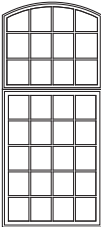
Double-Hung



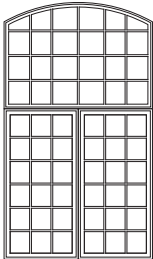
2-Wide
Double-Hung



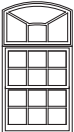
3-Wide
Double-Hung



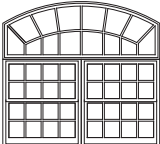
Large Fixed



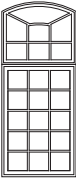
2-Wide
Large Fixed



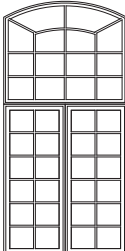
Double-Hung



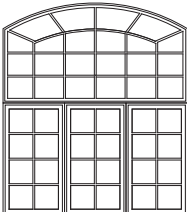
2-Wide
Double-Hung



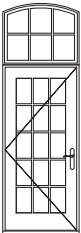
Fixed



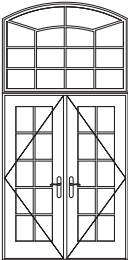
2-Wide Fixed



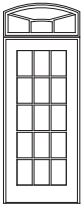
3-Wide Fixed



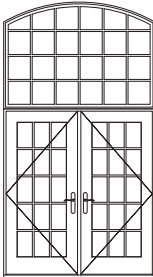
Single Panel
Hinged Door



2-Panel
Hinged Door



Fixed Panel



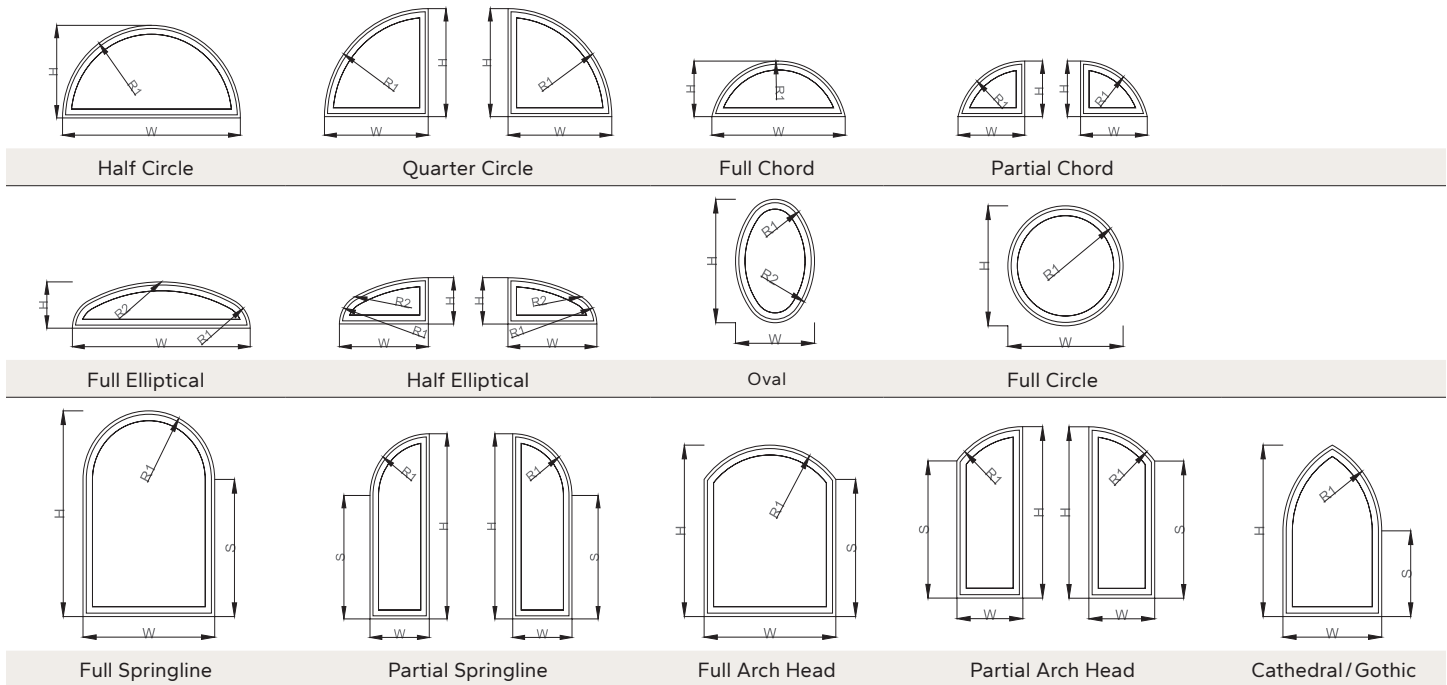
2-Panel
Hinged Door

Not all pattern scenarios are shown above. Actual pattern may differ depending on size, shape and grille spacing. See Pella sales representative for actual patterns.



Clad-Wood Fixed Frame Direct Set Windows

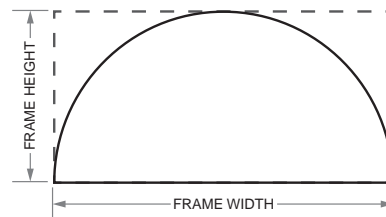
Interior Glazed Curved Shape Sizes and Dimensions



Description	Frame Radius		Width		Height				Min. Unit Frame Angle	Max. Unit Frame Angle	Max. Sq. Ft.
	Min.	Max.	Min.	Max.	Min.	Max.	Min. S	Other			
Half Circle	12"	60"	24"	120"	24"	120"	—	—	—	—	48
Quarter Circle	12"	85"	12"	85"	12"	85"	—	—	—	—	48
Full Springline	12"	54"	24"	108"	$R + 4.25"$	120"	4.25"	—	—	—	48
Partial Springline	12"	96"	12"	85"	$FW + 4.25"$	120"	4.25"	—	40°	90°	48
Full Chord	12"	500"	24"	120"	10.5"	$(W \div 2) - 1"$	—	$> 0.24 W$	40°	$< 90°$	48
Partial Chord ₂	12"	500"	9"	120"	10.5"	85.125"	—	$> 0.48 W$	40°	$< 90°$	48
Full Elliptical ₁	R1 = 12" R2 = 12"	R1 = 150" R2 = 500"	32.5"	120"	$R1 + 1.25"$	$< (W \div 2)$	—	—	—	—	48
Partial Elliptical ₁	R1 = 12" R2 = 12"	R1 = 150" R2 = 500"	14"	120"	$R1 + 1.25"$	60"	—	—	40°	90°	48
Full Arch Head	12"	500"	9"	120"	9"	120"	4.25"	—	90°	160°	48
Partial Arch Head	12"	500"	9"	120"	9"	120"	4.25"	—	40°	160°	48
Gothic Springline	12"	500"	9"	108"	14	120"	4.25"	—	40°	—	48
Full Circle ₃	12"	36"	24"	72"	—	—	—	—	—	—	—
Oval ₃	Standard sizes only. 24" W x 36" H, 30" W x 48" H or 36" W x 60" H										

Miscellaneous Formulas

Glass Dimension	Formula
Visible Glass	Width = Frame – 3-1/4" Height = Frame – 3-1/4"
Actual Glass	Width = Frame – 2" Height = Frame – 2"



For all shapes, calculate the area as if it were a rectangle.

(—) = Not applicable

(1) Minor radius must begin at the baseline of the frame.

(2) Project shape to full chord, using full chord width (W), calculate minimum height restrictions using full chord parameters.

(3) Tempered glass is required for any units where glass dimensions exceed 48"

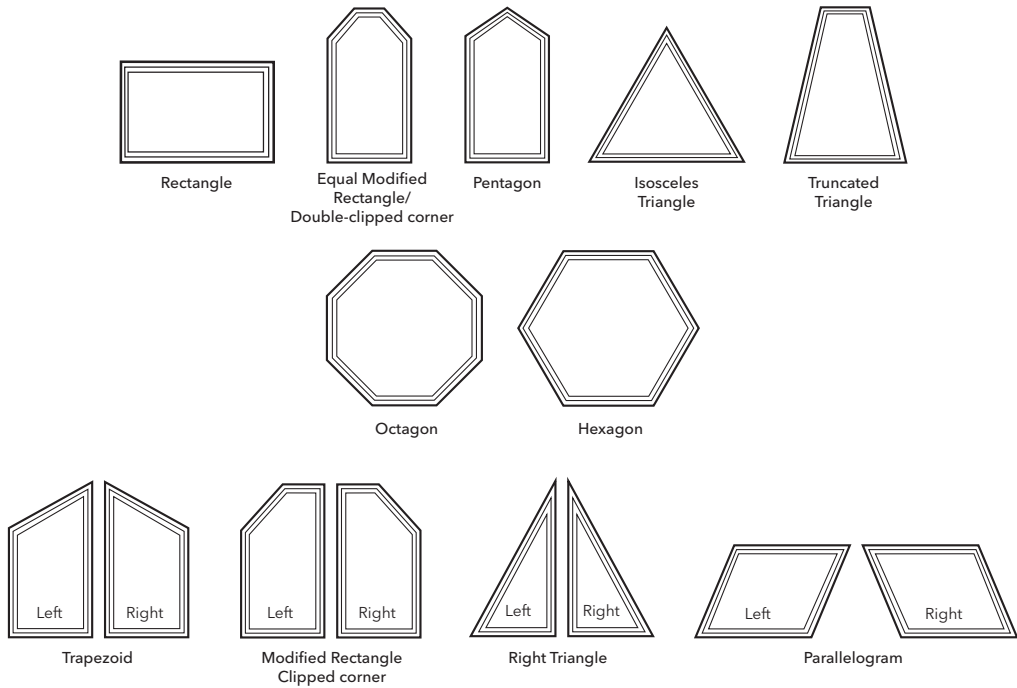
To convert areas to square meters (m²), multiply square feet by 0.0929.



Clad-Wood Fixed Frame Direct Set Windows

Interior Glazed Angled Shape Sizes and Dimensions

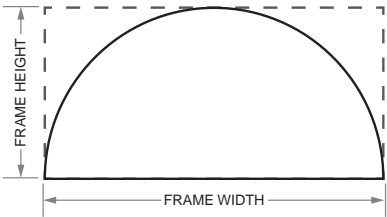
Pella angled and rectangular fixed frame direct set windows are available in custom shapes shown below. These windows may be installed in any orientation. For specifications, size limitations, and details on these units, contact your local Pella sales representative.



Glazing Type	Frame Dimension		Panel Dimension	
	Minimum Size	Maximum Size ¹	Minimum Size	Maximum Size
Glass	8" x 8" (203 x 203)	12' 0" ₂ or 76 ft ² (3 658) or (7.06 m ²)	—	—
Clad Panel (Available In Rectangular Units Only)	8" x 8" (203 x 203)	4' 2" x 8' 2" (1 270 x 2 489)	6" x 6" (152 x 152)	48" x 96" (1 219 x 2 438)

Miscellaneous Formulas for Rectangular Units

Glass Dimension	Formula
Visible Glass	Visible Glass Width = Frame Width – 3-1/4" Visible Glass Height = Frame Height – 3-1/4"
Actual Glass	Actual Glass Width = Frame Width – 2" Actual Glass Height = Frame Height – 2"



For all shapes, calculate the area as if it were a rectangle.

(–) = Not applicable

- Keep frame dimension to the nearest 1/8".
- See Performance Grade chart for size limitations.
- Glass width to height ratio maximums: annealed glass 1 to 5, tempered glass 1 to 10.

(1) For all shapes, calculate the area of the unit as if it were rectangular.

(2) Maximum dimension in one direction with frame area as specified (subject to glass availability).

Corner angles for all shapes are minimum 20° and maximum 160°.

144" slope for triangles and parallelograms.

Not all sizes are Hallmark Certified.



Clad-Wood Fixed Frame Direct Set Windows

Exterior Glazed Rectangular Shape Sizes and Dimensions

Consult with your local Pella sales representative for current availability, limitations may apply.

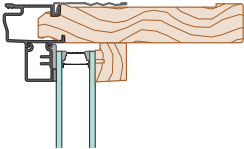
Exterior glazed windows are available as rectangles only.

Glazing Type	Frame Dimension		Panel Dimension	
	Minimum Size	Maximum Size ₁	Minimum Size	Maximum Size
Glass	8" x 8" (203 x 203)	8' 0" ₁ or 38.0 ft ² (2 438) (3.53 m ²)	—	—
Clad Panel	8" x 8" (203 x 203)	4' 2-3/8" x 8' 2-3/8" (1 280 x 2 499)	5-5/8" x 5-5/8" (143 x 143)	48" x 96" (1 219 x 2 438)

Miscellaneous Formulas

Glass Dimension	Formula
Visible Glass	Visible Glass Width = Frame Width – 3-1/4"
	Visible Glass Height = Frame Height – 3-1/4"
Actual Glass	Actual Glass Width = Frame Width – 2"
	Actual Glass Height = Frame Height – 2"

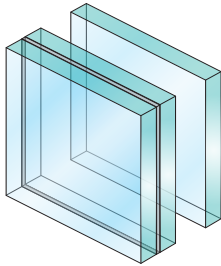
Designed for applications where exterior reglazing is necessary due to inaccessibility from the interior. Is not intended for initial field glazing.

Glazing Options	Standard	Special	Custom ₂
	Clear or Advanced Low-E Insulated Glass with Argon or Natural Sun	Bronze, Gray, Green, Obscure Advanced Comfort, Sun Defense	Spandrel

(–) = Not applicable
(1) In one direction with frame area as specified (subject to glass availability).
(2) Consult your Pella representative for parameters and availability of custom glazings.



Double-Pane Laminated Insulating Glass



	SGP IG	PVB IG
Maximum Performance Grade ₁		
Max sizes: 55x55, 39x79, 79x39	—	60
Max sizes: 35x73, 73x35	90	—
Larger Sizes	60	—
Certification ₁		
Hallmark	411-H-670	411-H-670
FPAS ₂	FL20349	FL20349
TDI ₂	WIN-478	WIN-478

The use of fixed frame direct set windows is limited by product performance rating, design pressure load chart, installation method and glass thickness or type. Always consult local building code and Florida FPAS for performance and installation requirements.

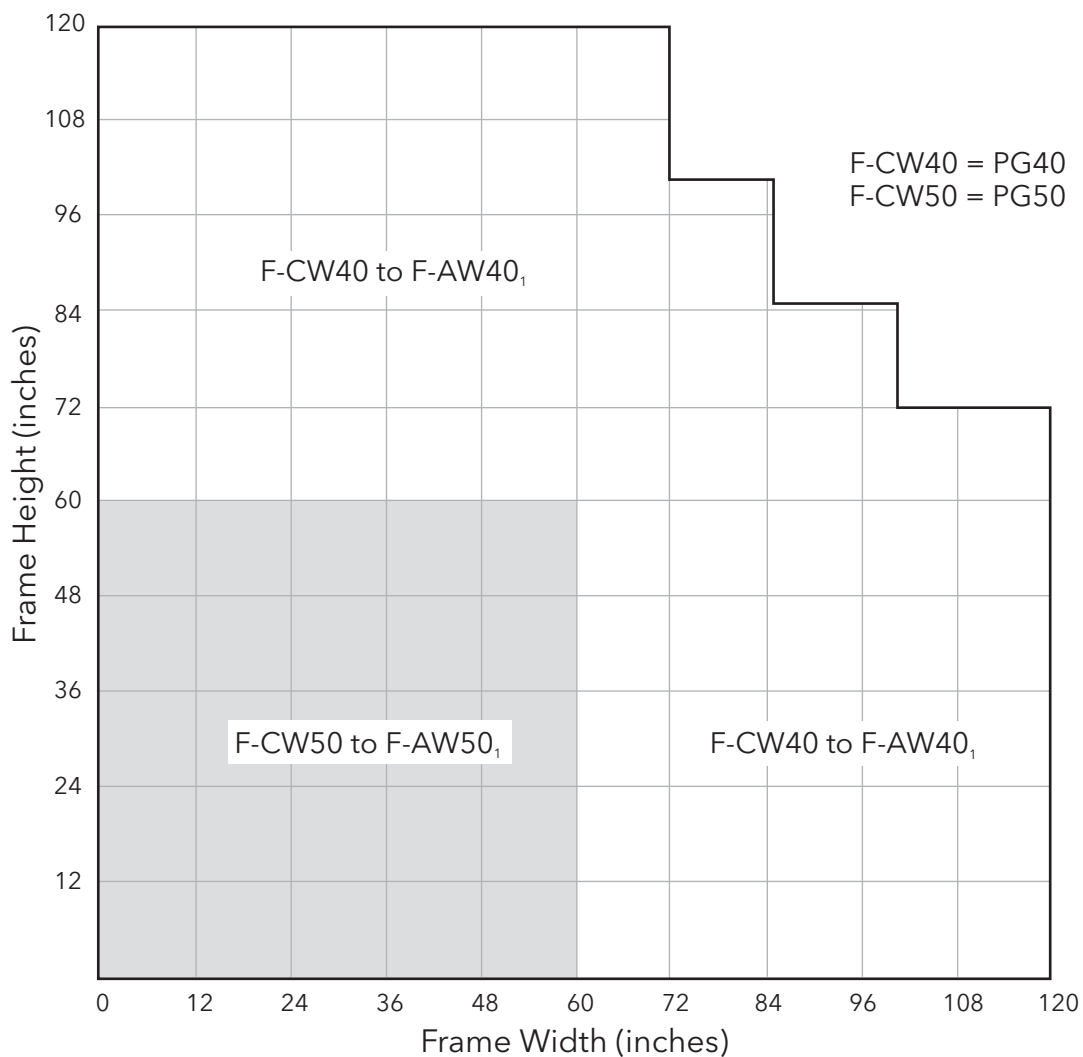
(—) Not Applicable
(1) Maximum design pressure limited by unit testing or ASTM E 1300-04(H) and ASTM E 1300-04(D)
All interior glazed units with Impact glazing are certified for wind zone 4, large missile rating D.
(2) Some size exclusions apply.



Clad-Wood Fixed Frame Direct Set Windows

Interior Glazed Standard Fin-Installed Performance

- The use of fixed frame direct set windows is limited by product performance rating, design pressure load chart, installation method, mullion strength and glass thickness or type. See mullion limitation and glass charts in the Combinations section at PellaADM.com.
- Fixed Frames are available up to a maximum frame area of 76 ft² (7.06 m²). Angled and Curved frames are measured as a rectangle.
- **IMPORTANT:** Glass must meet requirements of the glass charts and comply with the load chart. This chart below shows the maximum performance class and grade of the frame only when glazed with the appropriate glass thickness.



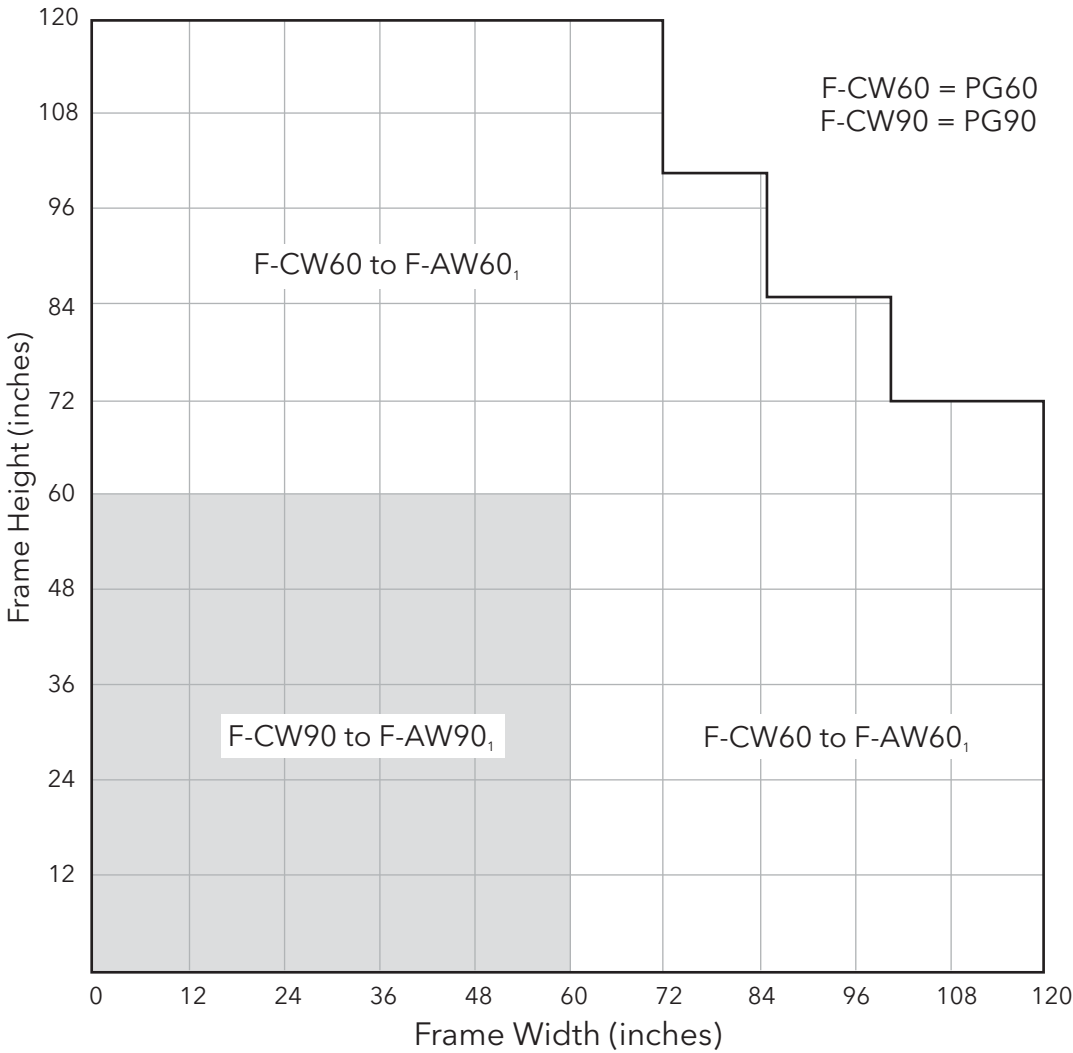
(1) AAMA / WDMA F-AW rating can be obtained with the EnduraClad Plus protective finish with 70% fluoropolymer resin in a multi-step finish system.



Clad-Wood Fixed Frame Direct Set Windows

Interior Glazed Standard Clip or Screw-Through Frame Install Advanced Performance

- The use of fixed frame direct set windows is limited by product performance rating, design pressure load chart, installation method, mullion strength and glass thickness or type. See mullion limitation and glass charts in the Combinations section at PellaADM.com.
- Fixed Frames are available up to a maximum frame area of 76 ft² (7.06 m²). Angled and Curved frames are measured as a rectangle.
- **IMPORTANT:** Glass must meet requirements of the glass charts and comply with the load chart. This chart below shows the maximum performance class and grade of the frame only when glazed with the appropriate glass thickness.



(1) AAMA / WDMA F-AW rating can be obtained with the EnduraClad Plus protective finish with 70% fluoropolymer resin in a multi-step finish.
AW rating is not applicable to impact product.



Clad-Wood Fixed Frame Direct Set Windows

Interior Glazed Detailed Product Description

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 extruded aluminum.
- Components are assembled with screws, staples, and concealed corner locks.
- Curved glass stops are segmented.
- Curved head assembly shall be mitered at end where joined to non- curved frame members, screwed and sealed.
- Curved head assembly consists of solid wood core blocks bonded to stabilized wood fiber with water-resistant glue. Two sheets are laminated with veneers at interior.
- Overall frame depth is 5" (127mm) for a wall depth of 3-11/16" (94mm).
- Optional factory-applied jamb extensions available.
- Optional factory-applied EnduraClad® exterior trim.
- Optional factory-installed Pella Steady Set Installation System (rectangle only).

Glazing System ¹

- Quality float glass complying with ASTM C 1036.
- Custom and high altitude glazing available.
- Urethane-glazed [13/16"] [1"] dual-seal insulating glass [[annealed] [tempered]] [[clear] [Advanced] [SunDefense™] [SunDefense+] [AdvancedComfort] [NaturalSun] [NaturalSun+] Low-E [with argon]] [[bronze] [gray] [green] [obscure] Advanced Low-E with argon].
– or –
- Urethane-glazed [1-1/8"] [1-1/4"] [1-3/8"] triple-seal insulating glass [[annealed] [tempered]] [[Advanced] [SunDefense™] [NaturalSun] Low-E [with Argon]].
– or –
- Impact-Resistant
 - Urethane-glazed 1" dual-seal impact-resistant insulating glass¹ [1" [SGP] [PVB]] [1-1/4" SGP]. [[tempered] [annealed]] Laminated exterior light is [[Advanced Low-E with Argon] [SunDefense Low-E] [clear] [bronze] [gray] [green]]. Clear tempered interior light.

Exterior

- Extruded aluminum clad exteriors shall be finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
 - Color is [standard] [feature] [custom]₂
– or –
- Extruded 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] [feature] [custom]₂

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [paint] [stain]₂].

Optional Products

Grilles ⁵

- Integral Light Technology® grilles – Traditional Style Collection
 - Interior grilles are [5/8" putty profile] [7/8" [ogee] [putty] profile] [1-1/4" [ogee] [putty] profile] [2" [ogee] [putty] profile (traditional pattern only)] that are solid [pine] [mahogany] [douglas fir]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint]₂ [stain]₂ to match interior finish]. Curved grilles may have visible finger joints.
 - Exterior grilles are [5/8" putty profile] [7/8" [ogee] [putty] profile] [1-1/4" [ogee] [putty] profile] [2" [ogee] [putty] profile (traditional pattern only)] that are extruded aluminum, color matched to exterior cladding.
 - 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.
 - Grille pattern is [Traditional] [Prairie] [Top Row] [Cross] [Sunburst] [Starburst].
– or –
- Integral Light Technology® grilles – Contemporary Style Collection (rectangular and angled shapes only)
 - Interior grilles are [5/8"] [7/8"] [1-1/4"] [2"] square profile that are solid [pine] [mahogany] [douglas fir]. Interior surfaces are [unfinished, ready for site finishing] [factory primed] [pine: factory prefinished [paint]₂ [stain]₂ to match interior finish].
 - Exterior grilles are [5/8"] [7/8"] [1-1/4"] [2"] square profile that are extruded aluminum, color matched to exterior cladding.
 - 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.
 - Grille pattern is [Traditional] [Prairie] [Top Row] [Cross] [Starburst].
– or –
- Simulated-Divided-Light grilles [with optional spacer]
 - Interior grilles are 7/8" regular profile that are solid pine. Curved grilles may have visible finger joints. Interior surfaces are [unfinished, ready for site finishing] [factory prefinished [paint] [stain]₂ to match interior finish].
 - Exterior grilles are 7/8" regular profile extruded aluminum, color matched to exterior cladding.
 - Grilles permanently bonded to the interior and exterior of glass with VHB acrylic adhesive tape and are aligned with the optional spacer between the panes of insulating glass.
 - Grille Pattern is [Traditional] [Prairie] [Top Row] [Cross] [Sunburst] [Starburst]
 - Available only on units glazed with Low-E insulated glass with Argon.
– or –
- Grilles-Between-the-Glass ³
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Interior color is [White] [Black] [Tan₄] [Brown₄] [Putty₄] [Ivory] [Brickstone] [Harvest] [Cordovan].
 - Exterior color₆ is [standard] [feature]₂.
 - Grille pattern is [Traditional] [Prairie] [Cross] [Top Row] [Sunburst].

(1) Insulating glass with Argon is Low-E coated (except high altitude). All other insulating glass (including high altitude Low-E) is Air-filled.

(2) Contact your local Pella sales representative for current color options.

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

(4) Tan, Brown and Putty GBG colors are available in single-tone only (Brown/Brown, Tan/Tan or Putty/Putty), other interior/exterior color restrictions may apply.

(5) Certain grille types and patterns may have restrictions depending on unit size and shape, contact your local Pella sales representative for details.

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



Clad-Wood Fixed Frame Direct Set Windows

Exterior Glazed Detailed Product Description

Consult with your local Pella sales representative for current availability, limitations may apply.

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.

Glazing System¹

- Quality float glass complying with ASTM C 1036.
- Custom and high altitude glazing available.
- Urethane-glazed clear single-light with removable aluminum stops.
 - or –
- Urethane-glazed dual-seal insulating glass [[annealed] [tempered]] [[[clear] [Advanced] [SunDefense™] [AdvancedComfort] [NaturalSun] Low-E [with Argon]] [[bronze] [gray] [green] Advanced Low-E with Argon] with removable aluminum stops.

Exterior

- Aluminum clad exteriors shall be finished with EnduraClad® protective finish, in a multi-step, baked-on finish.
 - Color is [standard] [feature] [custom]₂.
 - or –
- 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] [feature] [custom]₂.

Interior

- [Unfinished, ready for site finishing] [factory primed with one coat acrylic latex] [factory prefinished [paint] [stain]₂].

Optional Products

Grilles

- Grilles-Between-the-Glass
 - Insulating glass contains 3/4" contoured aluminum grilles permanently installed between two panes of glass.
 - Patterns are [Traditional] [Prairie] [Cross] [Top Row] [Custom – Equally Divided].
 - Interior color is [White] [Black] [Tan₃] [Brown₃] [Putty₃] [Ivory] [Brickstone] [Harvest] [Cordovan].
 - Exterior color₄ is [standard₂].

(1) Insulating glass with Argon is Low-E coated (except high altitude). All other insulating glass (including high altitude Low-E) is Air-filled.

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

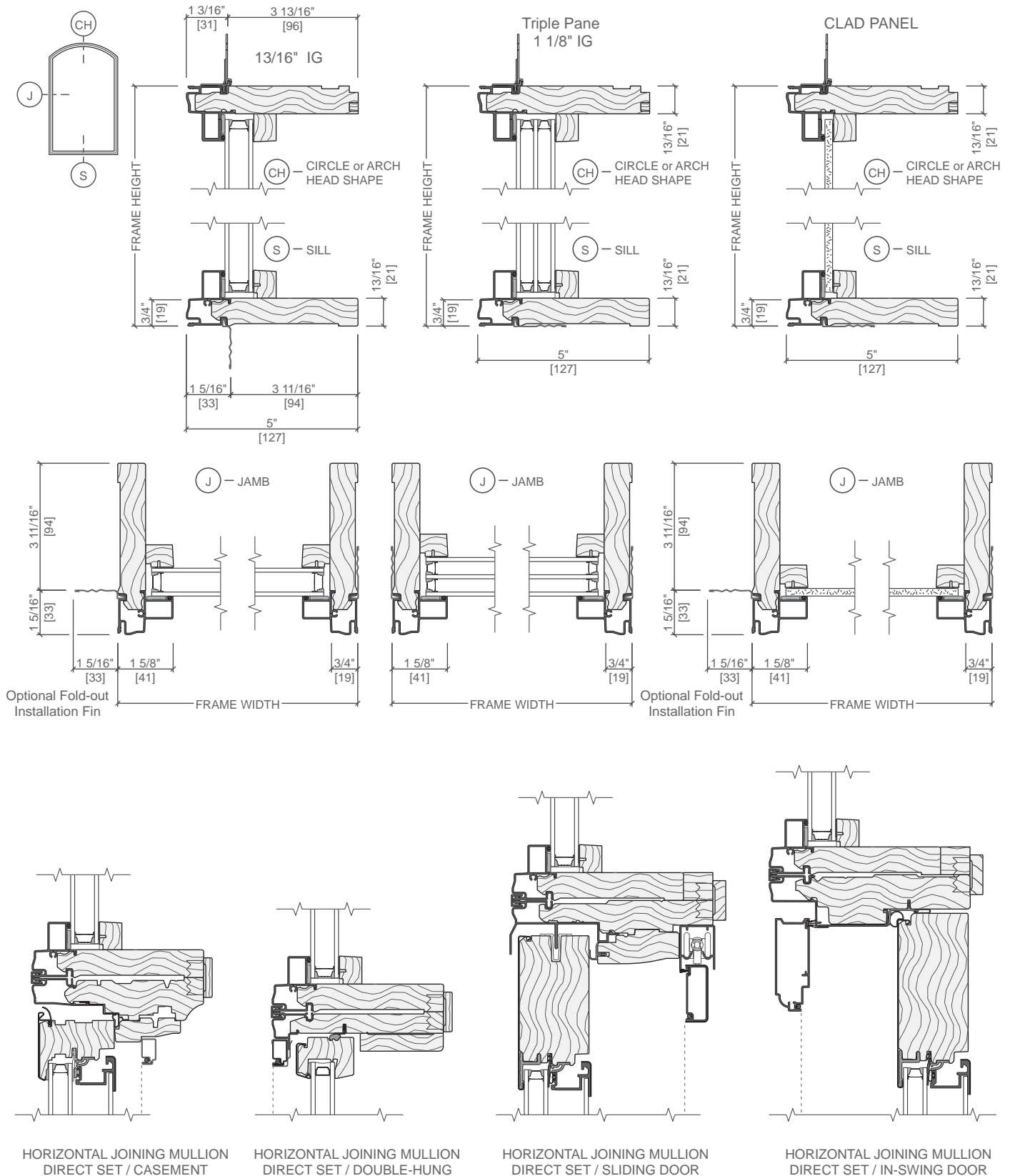
(3) Tan, Brown and Putty GBG colors are available in single-tone only (Brown/Brown, Tan/Tan or Putty/Putty) (Putty mono), other interior/exterior color restrictions may apply.

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



Clad-Wood Fixed Frame Direct Set Windows

Unit Sections - Interior Glazed Curved Shapes



Scale 3" = 1' 0"

All dimensions are approximate.

Rev. 08/13/21

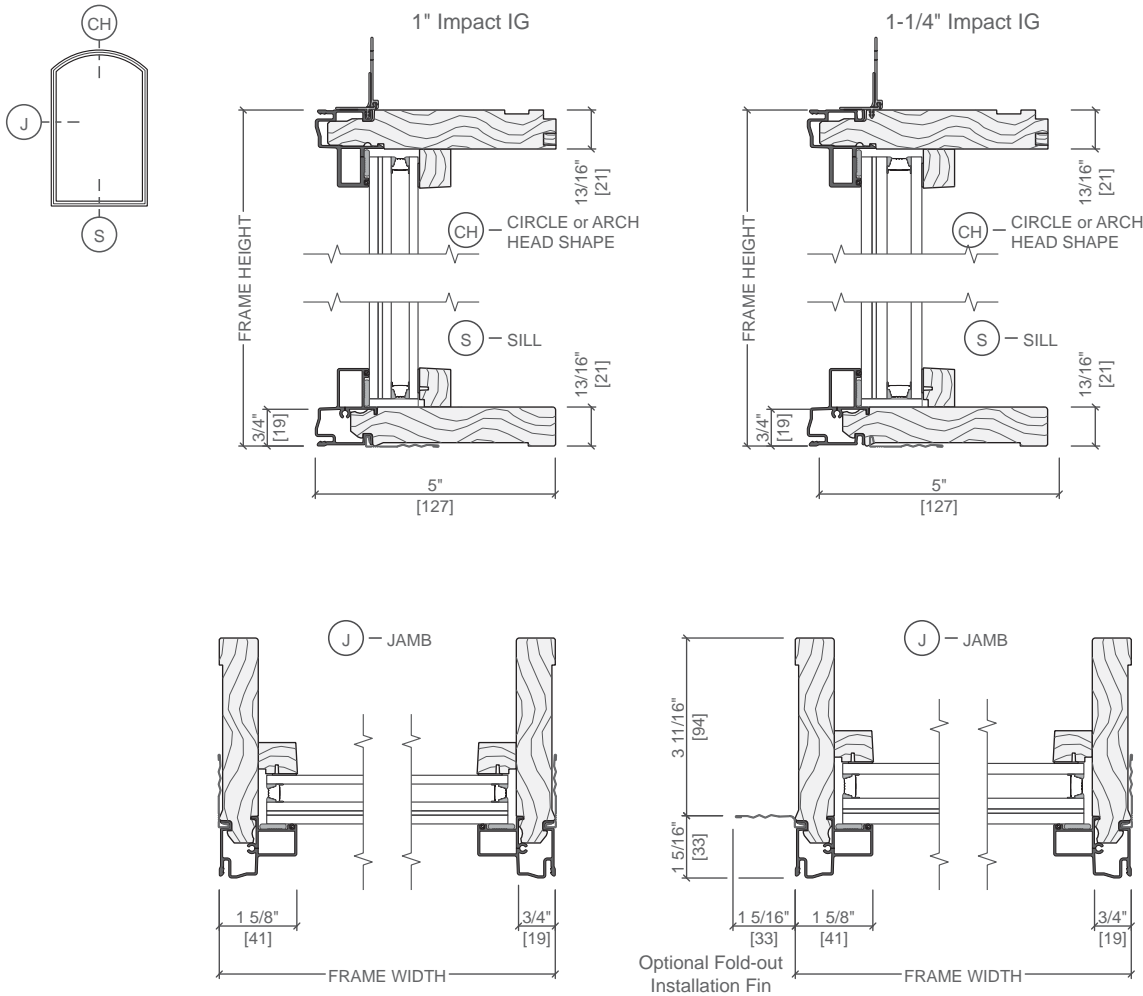
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W-FW-25



Clad-Wood Fixed Frame Direct Set Windows

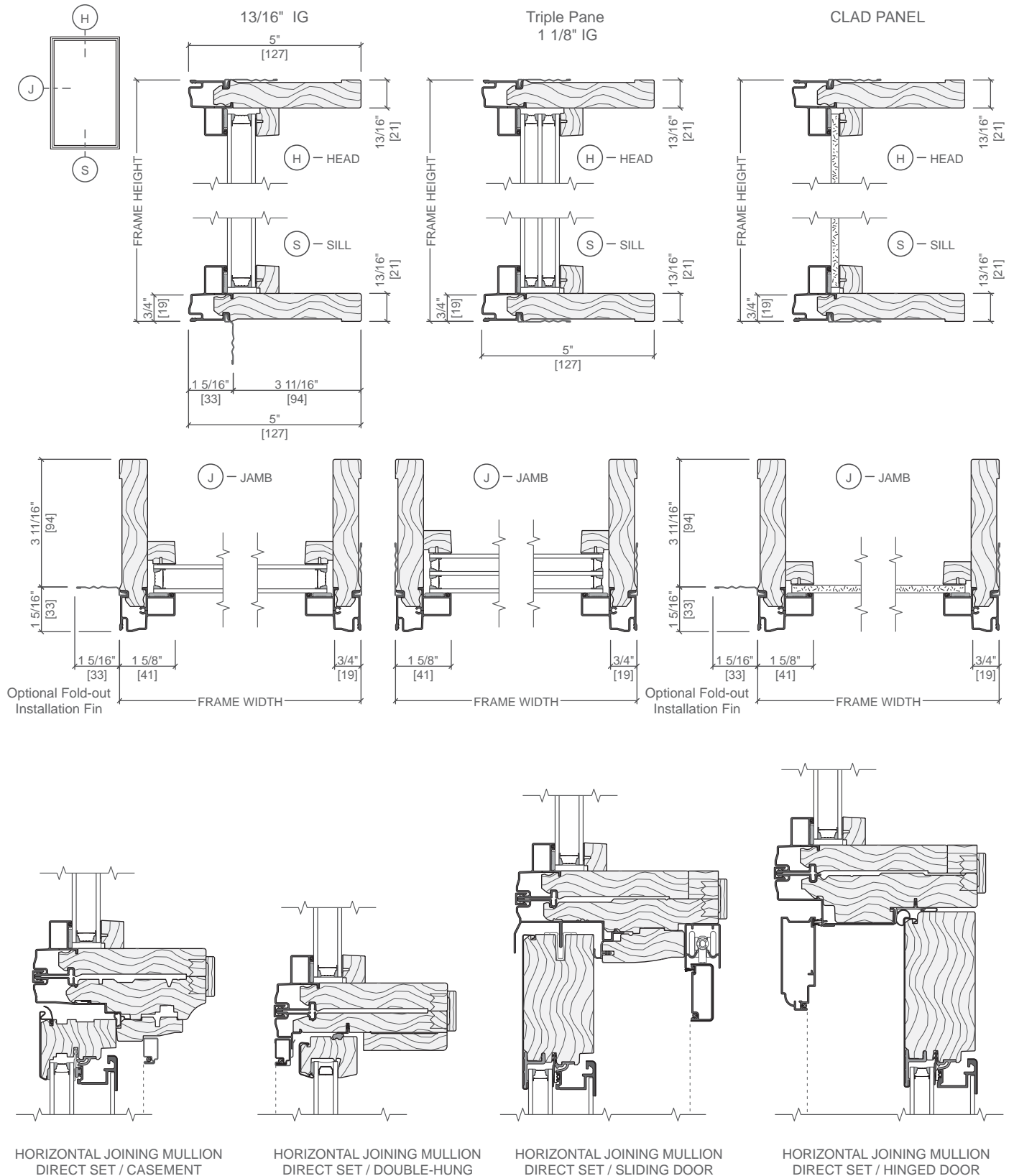
Unit Sections - Interior Glazed Curved Shapes w/Impact-Resistant Glass





Clad-Wood Fixed Frame Direct Set Windows

Unit Sections - Interior Glazed Rectangular and Angled Shapes



Scale 3" = 1' 0"

All dimensions are approximate.

See www.PellaADM.com for mullion limitations and reinforcing requirements.

Rev. 08/30/21

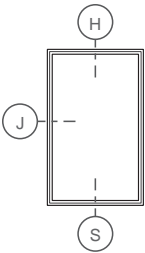
Pella 2024 Architectural Design Manual | Division 08 – Openings | Windows and Doors | www.Pella.com

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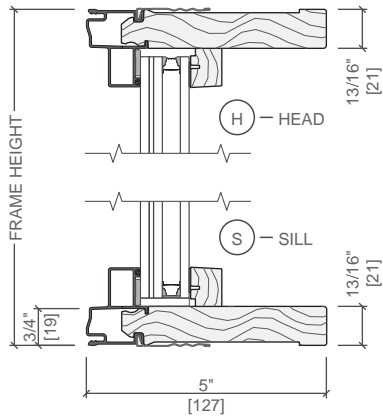


Clad-Wood Fixed Frame Direct Set Windows

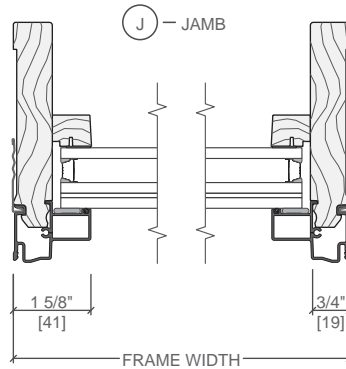
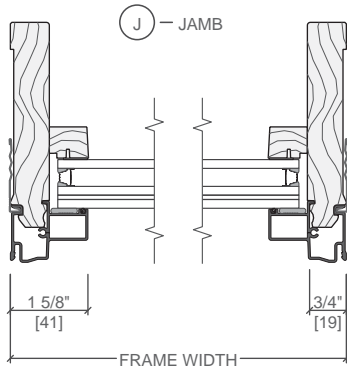
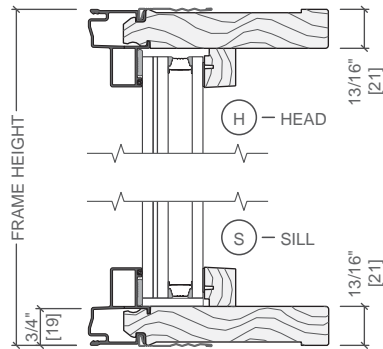
Unit Sections - Interior Glazed Rectangular and Angled Shapes w/Impact-Resistant Glass



1" Impact IG



1-1/4" Impact IG



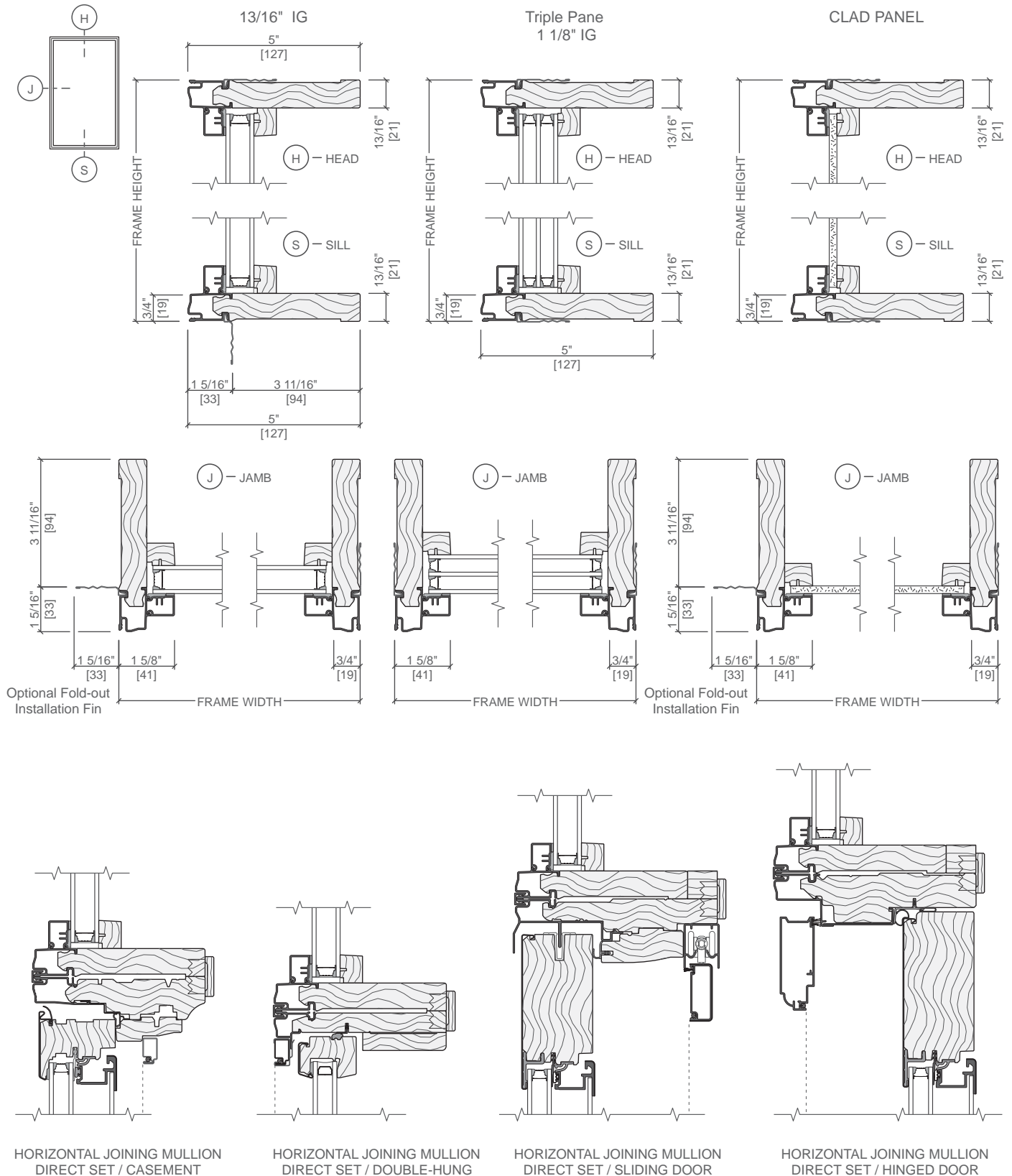
Scale 3" = 1' 0"
All dimensions are approximate.



Clad-Wood Fixed Frame Direct Set Windows

Unit Sections - Exterior Glazed Rectangular

Consult with your local Pella sales representative for current availability, limitations may apply.



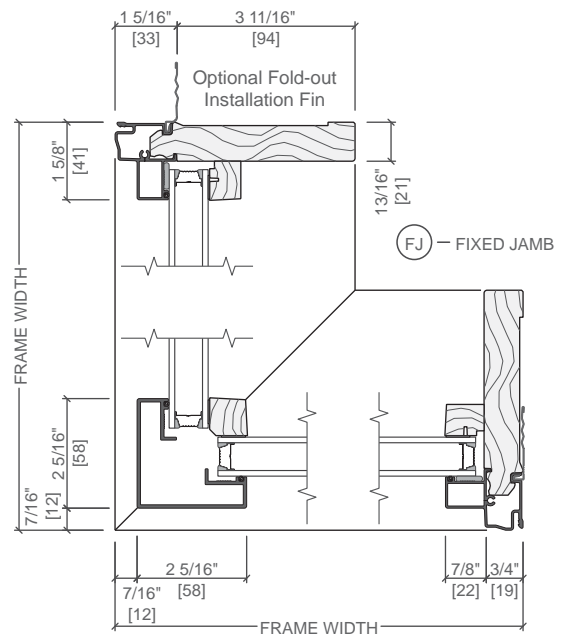
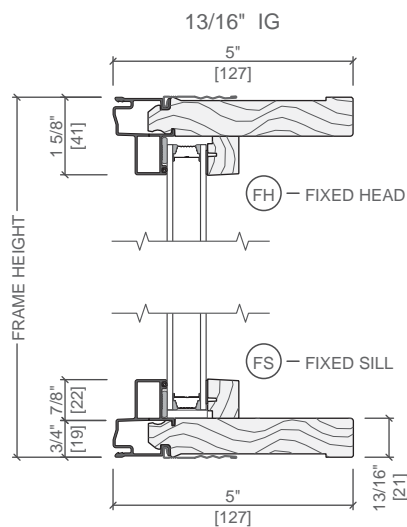
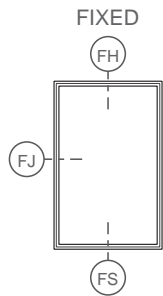
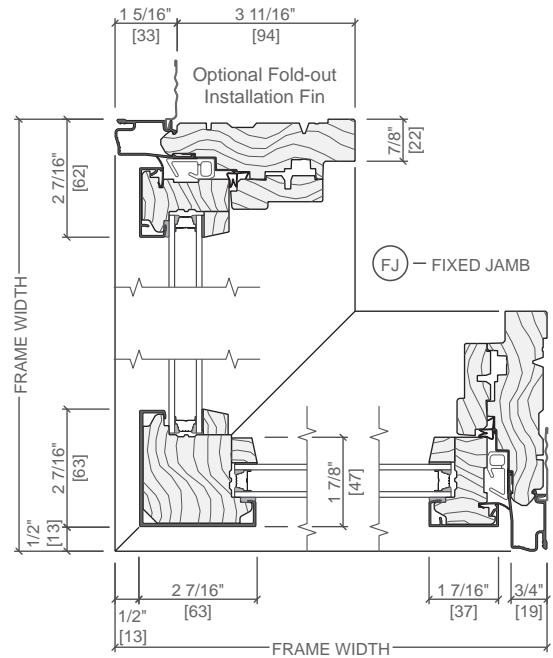
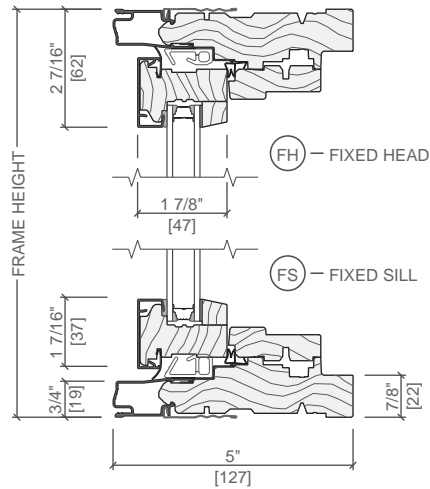
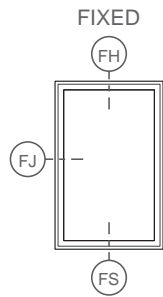
Scale 3" = 1' 0"

All dimensions are approximate.



Clad-Wood Fixed Frame Direct Set Windows

Unit Sections - Mitered Corner



Reserve Contemporary fixed casement mitered corner shown for comparison purposes. See Casement section or contact your local Pella sales representative for product details

Scale 3" = 1' 0"

All dimensions are approximate.