

# HISTORIC AND DESIGN REVIEW COMMISSION

May 17, 2023

**HDRC CASE NO:** 2023-156  
**ADDRESS:** 114 DEWBERRY ST  
**LEGAL DESCRIPTION:** NCB 6461 (MISTLETOE ADDITION SUBDIVISION), BLOCK 1 LOT 57  
**ZONING:** R-4, H  
**CITY COUNCIL DIST.:** 1  
**DISTRICT:** River Road Historic District  
**APPLICANT:** Jim Tafoya/BRIO BUILDERS  
**OWNER:** DANIEL & STEPHANIE PINA/PINA DANIEL & STEPHANIE  
**TYPE OF WORK:** New construction  
**APPLICATION RECEIVED:** April 13, 2023  
**60-DAY REVIEW:** Not applicable due to City Council Emergency Orders  
**CASE MANAGER:** Jessica Anderson

## REQUEST:

The applicant requests a Certificate of Appropriateness for approval to construct a two-story residential structure on the vacant lot at 114 Dewberry.

## 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 non-residential building types are more typically flat and screened by an ornamental parapet wall.

### C. RELATIONSHIP OF SOLIDS TO VOIDS

- i. *Window and door openings*—Incorporate window and door openings with a similar proportion of wall to window space as typical with nearby historic facades. Windows, doors, porches, entryways, dormers, bays, and pediments shall be considered similar if they are no larger than 25% in size and vary no more than 10% in height to width ratio from adjacent historic facades.
- 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.

#### B. REUSE OF HISTORIC MATERIALS

- i. *Salvaged materials*—Incorporate salvaged historic materials where possible within the context of the overall design of the new structure.

### 4. Architectural Details

#### A. GENERAL

- ii. *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.
- iii. *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.
- iv. *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

*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.

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

- ii. *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.
- iii. *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.
- iv. *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.

## 7. Designing for Energy Efficiency

### A. BUILDING DESIGN

- i. *Energy efficiency*—Design additions and new construction to maximize energy efficiency.
- ii. *Materials*—Utilize green building materials, such as recycled, locally-sourced, and low maintenance materials whenever possible.
- iii. *Building elements*—Incorporate building features that allow for natural environmental control – such as operable windows for cross ventilation.
- iv. *Roof slopes*—Orient roof slopes to maximize solar access for the installation of future solar collectors where compatible with typical roof slopes and orientations found in the surrounding historic district.

### B. SITE DESIGN

- i. *Building orientation*—Orient new buildings and additions with consideration for solar and wind exposure in all seasons to the extent possible within the context of the surrounding district.
- ii. *Solar access*—Avoid or minimize the impact of new construction on solar access for adjoining properties.

### C. SOLAR COLLECTORS

- i. *Location*—Locate solar collectors on side or rear roof pitch of the primary historic structure to the maximum extent feasible to minimize visibility from the public right-of-way while maximizing solar access. Alternatively, locate solar collectors on a garage or outbuilding or consider a ground-mount system where solar access to the primary structure is limited.
- ii. *Mounting (sloped roof surfaces)*—Mount solar collectors flush with the surface of a sloped roof. Select collectors that are similar in color to the roof surface to reduce visibility.
- iii. *Mounting (flat roof surfaces)*—Mount solar collectors flush with the surface of a flat roof to the maximum extent feasible. Where solar access limitations preclude a flush mount, locate panels towards the rear of the roof where visibility from the public right-of-way will be minimized.

## Standard Specifications for Windows in Additions and New Construction

- GENERAL: New windows on additions should relate to the windows of the primary historic structure in terms of materiality and overall appearance. 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. Whole window systems should match the size of historic windows on property unless otherwise approved.
- 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.
- TRIM: Window trim must feature traditional dimensions and architecturally appropriate casing and sloped sill detail. Window track components such as jamb liners must be painted to match the window trim or concealed by a wood window screen set within the opening.
- GLAZING: Windows should feature clear glass. Low-e or reflective coatings are not recommended for replacements. The glazing should not feature faux divided lights with an interior grille. If approved to match a historic window configuration, the window should feature real exterior muntins.
- COLOR: Wood windows should feature a painted finished. If a clad product is approved, white or metallic manufacturer's color is not allowed, and color selection must be presented to staff.
- INSTALLATION: Wood windows should be supplied in a block frame and exclude nailing fins. Window opening sizes should not be altered to accommodate stock sizes prior to approval.
- FINAL APPROVAL: If the proposed window does not meet the aforementioned stipulations, then the applicant must submit updated window specifications to staff for review, prior to purchase and installation. For more assistance, the applicant may request the window supplier to coordinate with staff directly for verification.

## FINDINGS:

- a. The applicant is requesting conceptual approval to construct a two-story residential structure on the vacant lot at 114 Dewberry.
- b. DESIGN REVIEW COMMITTEE: The applicant met with the Design Review Committee (DRC) on Tuesday, July 26, 2022. Commissioners noted that the proposed structure was massive compared to neighboring homes and suggested the applicant review Historic Design Guidelines regarding massing in historic districts. Commissioners expressed concern about the form of the front porch; the foundation height; the fenestration pattern, with particular attention to wall spans that lack fenestration; and the attached garage, noting the proposed structure did not conform to patterns found elsewhere in the neighborhood. Commissioners suggested the applicant provide more context for the block, including photos of properties on both sides of the proposed structure as well as to the rear of the proposed structure. Finally, commissioners suggested the applicant attend another DRC meeting once plans are revised. Notes from the DRC meeting are included in the attached exhibits.
- c. CONTEXT & DEVELOPMENT PATTERN: This lot is currently void of any structures. This block currently lacks any street-facing buildings. However, staff finds that new construction on this block should follow the development pattern of the rest of the historic district.
- 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 a setback of approximately 14 feet from the property line. Though there are no other street-facing structures on this block, the rest of the River Road historic district features setbacks roughly 11 to 20 feet from the right-of-way. Staff finds that the proposed setback for this new construction features a setback that is equal to or greater than those found historically on the block, and thus conforms to guidelines. A greater setback would be most appropriate for a two-story structure.
- e. ENTRANCES – According the Guidelines for New Construction 1.B.i. primary building entrances should be orientated towards the primary street. The proposed entrance orientation is appropriate and consistent with the

Guidelines; however, staff finds that the proposed entrance massing and detailing is not consistent with the Guidelines. Entrance massing should feature traditional forms and details, as found historically 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. Though there are no other street-facing structures on the block, as noted in finding b, River Road predominately features one-story and one-and-a-half-story residences, with a handful of examples of two full stories. The applicant has proposed a massing and scale that is not consistent with the massing and scale of historic residential structures found within the River Road historic district, specifically with regard to architectural form. Staff finds that massing and scale that is consistent with the Guidelines for New Construction should be incorporated into the design. A two-story structure may be appropriate provided architectural forms are consistent with the Guidelines and historic two-story structures found within the district.
- 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. Though there are no other street-facing structures on this block, as noted in finding b, the foundation of proposed new construction should align with other structures in the historic district. Nearby historic structures on this block feature foundation heights of between one and three feet. The applicant has proposed a foundation on grade. Staff finds the proposed foundation height should be increased to at least one foot in height.
- h. **ROOF FORM:** The applicant has proposed a complex roof form comprised of front-gabled roofs and shed roofs. This is not consistent with the Guidelines for New Construction, as the Guidelines note that roof forms for new construction should be comparable with those found historically within the district. While the front-gabled roof forms are appropriate, staff finds a different treatment should be proposed in place of the shed roof found on the primary elevation.
- i. **ROOF (MATERIALS):** The applicant has proposed to install a standing-seam metal roof with smooth panels and 2" seams. Standing-seam metal roofs should feature panels that are 18 to 21 inches wide, seams that are 1 to 2 inches high, a crimped ridge seam, and a standard galvalume finish. Panels should be smooth without striation or corrugation. Ridges are to feature a double-munch or crimped ridge configuration; no vented ridge caps or end caps are allowed. Staff finds the proposed metal roof conforms to guidelines.
- j. **LOT COVERAGE:** Per the Guidelines, the building footprint for new construction should be no more than fifty (50) percent of the size of the total lot area. The proposed residence has a footprint of 2,484 square feet, which includes the garage and porches. The lot is 6,011 square feet, so the proposed house footprint is 41% of the lot size. Staff finds the lot coverage consistent with the Guidelines.
- k. **MATERIALS:** The applicant has proposed a structure clad in stucco and wood siding with wood posts on the front porch. The applicant did not submit specs for windows, doors, or garage doors. Houses in the River Road historic district are predominately stucco- or wood-clad. Staff finds the use of stucco and wood cladding to be generally appropriate.
- l. **WINDOW MATERIALS:** The applicant did not submit window specs for conceptual approval. Staff finds that a wood or aluminum-clad wood window that is consistent with the staff's standards for windows in new construction should be installed.
- m. **FENESTRATION PROFILE:** The applicant has proposed fenestration profiles that feature both window profiles and locations that are inconsistent with the Guidelines and historic fenestration profiles found throughout the district. Staff finds that the proposed fenestration profiles should be amended to be consistent with the Guidelines. Additionally, staff finds that additional fenestration should be added throughout, specifically in locations void of fenestration. Windows should feature traditional sizes and a one-over-one profile. Contemporarily sized windows and fixed windows should be eliminated from the proposed new construction.
- n. **ARCHITECTURAL DETAILS:** Generally, staff finds the proposed architectural details to be inconsistent with the Guidelines for New Construction. Staff finds that the proposed massing and form, roof form, porch/entrance configuration, materials, and fenestration profiles should be revised to be consistent with the Guidelines and historic examples found throughout the district.
- o. **ARCHITECTURAL DETAILS (PORCHES):** Historic structures within the River Road historic district feature front porches that are a prominent architectural feature of the structure. Historically, porches feature their own massing and roof form. The applicant has proposed an entrance and front porch that are not within the context

of a traditionally-sized porch. Staff finds that the proposed entrance element and front porch should be amended to feature traditional porch massing.

- p. **ARCHITECTURAL DETAILS (GARAGES):** The applicant has proposed for the structure to feature one street-facing garage door on the front of the new construction and a garage door facing the back yard. Attached garages located on the front façade of houses is not found historically within the district and is inconsistent with the Guidelines. Staff finds that the proposed garage should be eliminated and that parking should be located elsewhere on the site.
- q. **LANDSCAPING:** The applicant has not provided a formal landscaping plan as part of conceptual approval; however, through renderings, the applicant has noted that the majority of the yard will feature grass, which is consistent with the Guidelines. Staff finds that a detailed landscaping plan should be submitted for final approval that is consistent with the Guidelines for Site Elements.
- r. **DRIVEWAYS:** The applicant has proposed one driveway that is 10' wide, flaring to 12' at the apron. Staff finds the proposed driveway configuration to be appropriate and consistent with the Guidelines.
- s. **MECHANICAL EQUIPMENT:** The applicant has not noted the location of mechanical equipment at this time. All mechanical equipment should be screened from view from the right of way, per the Guidelines.
- t. **FENCING:** The applicant includes fencing on the site plan submitted to staff, but does not provide materials, dimension, or other design details. Fencing details must be submitted to staff and are not included in this review.
- u. **ARCHAEOLOGY:** The project area is within a River Improvement Overlay District, San Antonio Downtown and River Walk Historic District National Register of Historic Places District, and is a designated Local Historic Landmark. Furthermore, the property is traversed by the Navarro Acequia, a previously recorded archaeological site. Therefore, an archaeological investigation is required if excavations are necessary for the project. The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology, as applicable.

**RECOMMENDATION:**

Staff recommends conceptual approval based on findings a through t. Staff recommends that the applicant address to the following recommendations prior to pursuing final approval for new construction:

- i. That the applicant incorporates entrance massing and elements that are consistent with the Guidelines and historic examples found throughout the district, as noted in finding e.
- ii. That the applicant incorporates proposed massing and scale consistent with the Guidelines for New Construction, in particular, incorporating an overall building width or arrangement of bays that is compatible with surround historic structures, as noted in finding f.
- iii. That the applicant incorporates a foundation height that is consistent with the Guidelines, as noted in finding g.
- iv. That in place of the shed roof form on the primary elevation, the applicant incorporate a roof form that is consistent with the Guidelines and historic examples found throughout the district, as noted in finding h.
- v. That, as noted in finding i, the standing-seam metal roofs features panels that are 18 to 21 inches wide, seams that are 1 to 2 inches high, a crimped ridge seam, and a standard galvalume finish. Panels should be smooth without striation or corrugation. Ridges are to feature a double-munch or crimped ridge configuration; no vented ridge caps or end caps are allowed.
- vi. That a wood or aluminum clad wood window that is consistent with the staff's standards for windows in new construction be installed, as noted in the applicable citations and in finding k.
- vii. That the applicant amends the proposed fenestration profile and incorporate additional window openings throughout the proposed new construction, as noted in finding m. Proposed windows should feature a one over one profile.
- viii. That the proposed entrance element and front porch be amended to feature traditional porch massing, as noted in finding o.
- ix. That the proposed front-loading garage be eliminated and that parking should be located elsewhere on site, as noted in finding p.
- x. That a front walkway constructed of materials consistent with other walkways in the district be installed, as noted in finding p.
- xi. That a detailed landscaping plan be submitted for review that adheres to the Guidelines for Site Elements, as noted in finding q.
- xii. That all mechanical equipment be screened from view from the public right of way, as noted in finding s.
- xiii. That fencing details be submitted to staff; fencing is not included in this review.
- xiv. ARCHAEOLOGY – An archaeological investigation is required if excavations are necessary near the rear of the property. Impacts to the Upper Labor Acequia shall be avoided. The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology, as applicable.

A foundation inspection is to be scheduled with OHP staff to ensure that foundation setbacks and heights are consistent with the approved design. The inspection is to occur after the installation of form work and prior to the installation of foundation materials.

An inspection must be scheduled with OHP staff prior to the start of work on the standing-seam metal roof to verify that the roofing material matches the approved specifications.




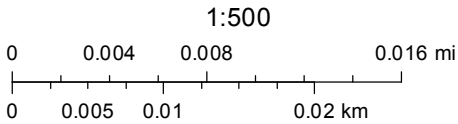
# City of San Antonio One Stop



July 13, 2022

- CoSA Addresses
- Community Service Centers
- Pre-K Sites
- CoSA Parcels
- BCAD Parcels

 CoSA City Limit Boundary







RENDERINGS  
FOR ILLUSTRATION ONLY

CONTACT INFORMATION:

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OFFICE: (210) 988-2777  
OWNER: JIM TAFOYA (210) 585-0242  
PROJECT DESIGNER: ANDREA LONGROIA (210) 618-6581

HOME OWNER NAMES: Daniel & Stepanie Pina  
ADDRESS: 114 Dewberry

Layout Page Table	
Label	Title
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A-7	WINDOW/DOOR SCHEDULE
A-8	EXTERIOR FINISHES
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PROJECT INFORMATION

APPLICABLE CODES:	
BUILDING:	2021 INTERNATIONAL BUILDING CODE
STRUCTURAL:	2021 INTERNATIONAL RESIDENTIAL CODE
PLUMBING:	2021 INTERNATIONAL PLUMBING CODE
MECHANICAL:	2021 INTERNATIONAL MECHANICAL CODE
ELECTRICAL:	2021 INTERNATIONAL ELECTRICAL CODE
FIRE/LIFE SAFETY:	2021 INTERNATIONAL FIRE CODE
ACCESSIBILITY:	TEXAS ACCESSIBILITY CODE
ENERGY:	2021 INTERNATIONAL ENERGY CONSERVATION CODE w/ 2021 SUPPLEMENT

SITE INFO:			
NO. OF UNITS:	1	BLOCK:	1
TYPE OF CONSTRUCTION:	RESIDENTIAL	LOT:	57
BUILDING HEIGHT IN STORIES:	2	PARCEL KEY:	NA
TOTAL SQ. FT:	2306 SQFT	ZONING:	R
NCB:	6461		

SHEET: T-1

SCALE:

DATE: 05.02.23

REVISION TABLE

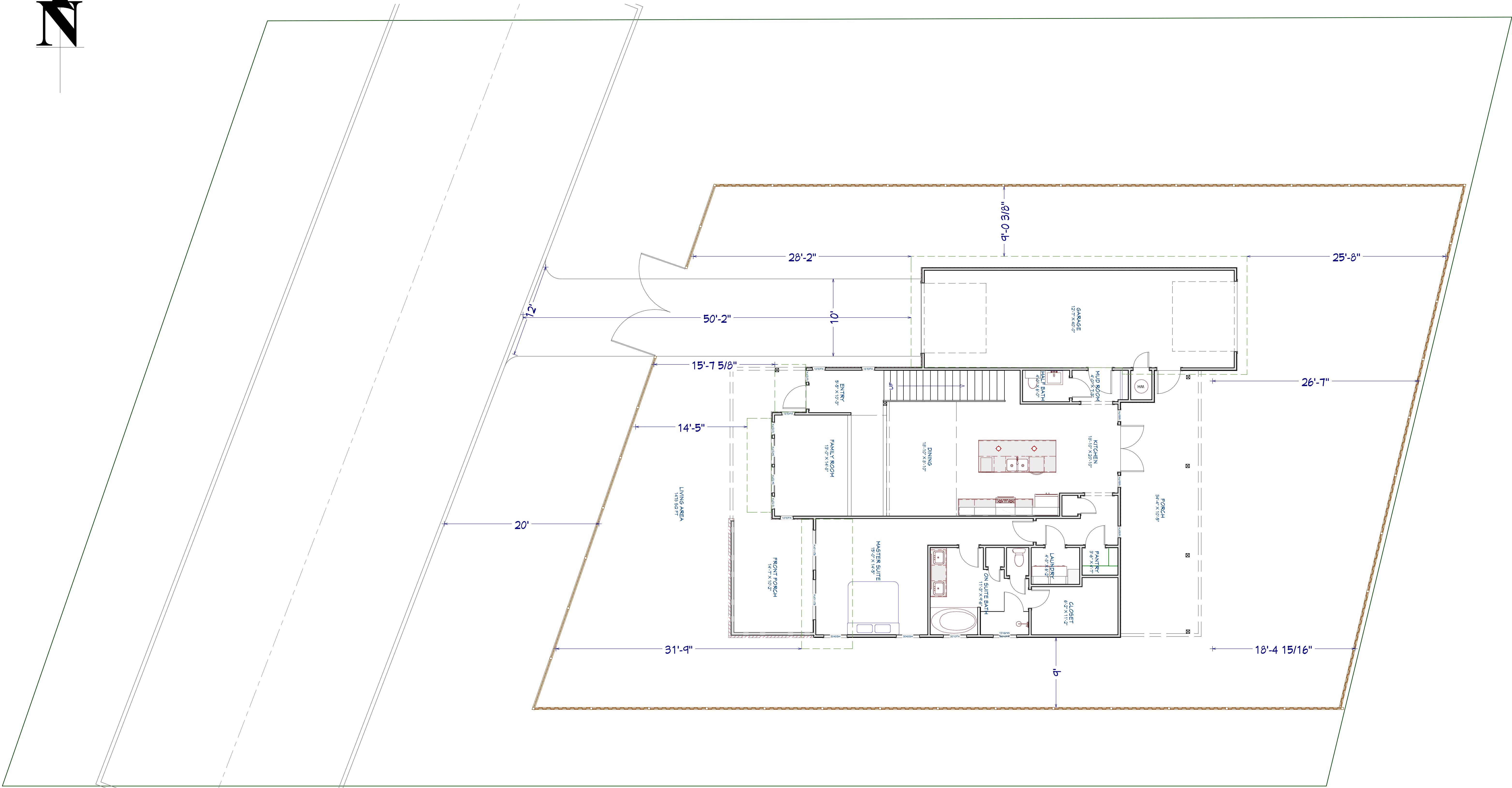
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PROJECT NAME: TITLE PAGE

SHEET TITLE: 114 Dewberry

DRAWINGS PROVIDED BY: ANDREA LONGROIA

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ANDREA LONGORIA

114 Dewberry

## SITE PLAN

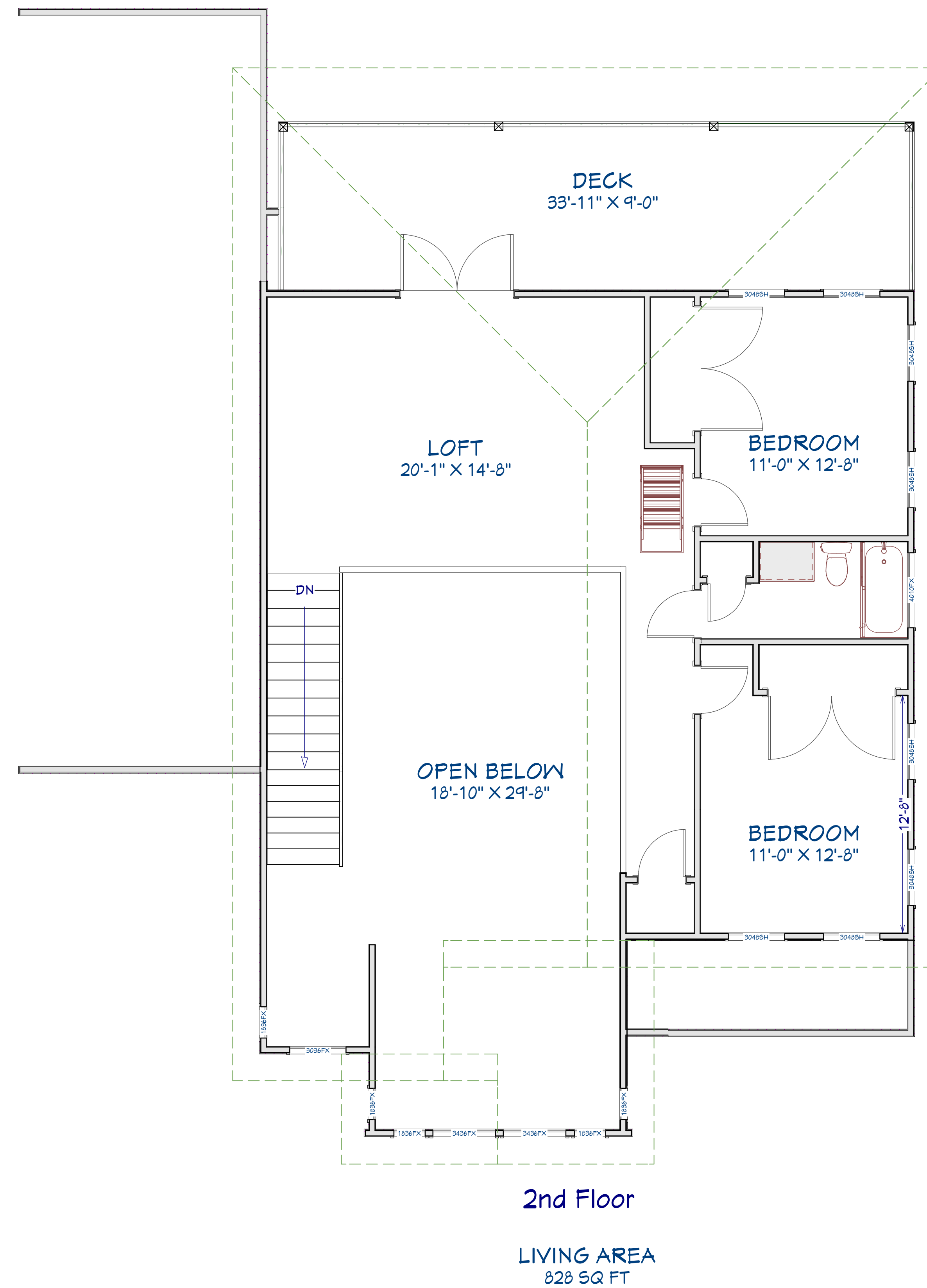
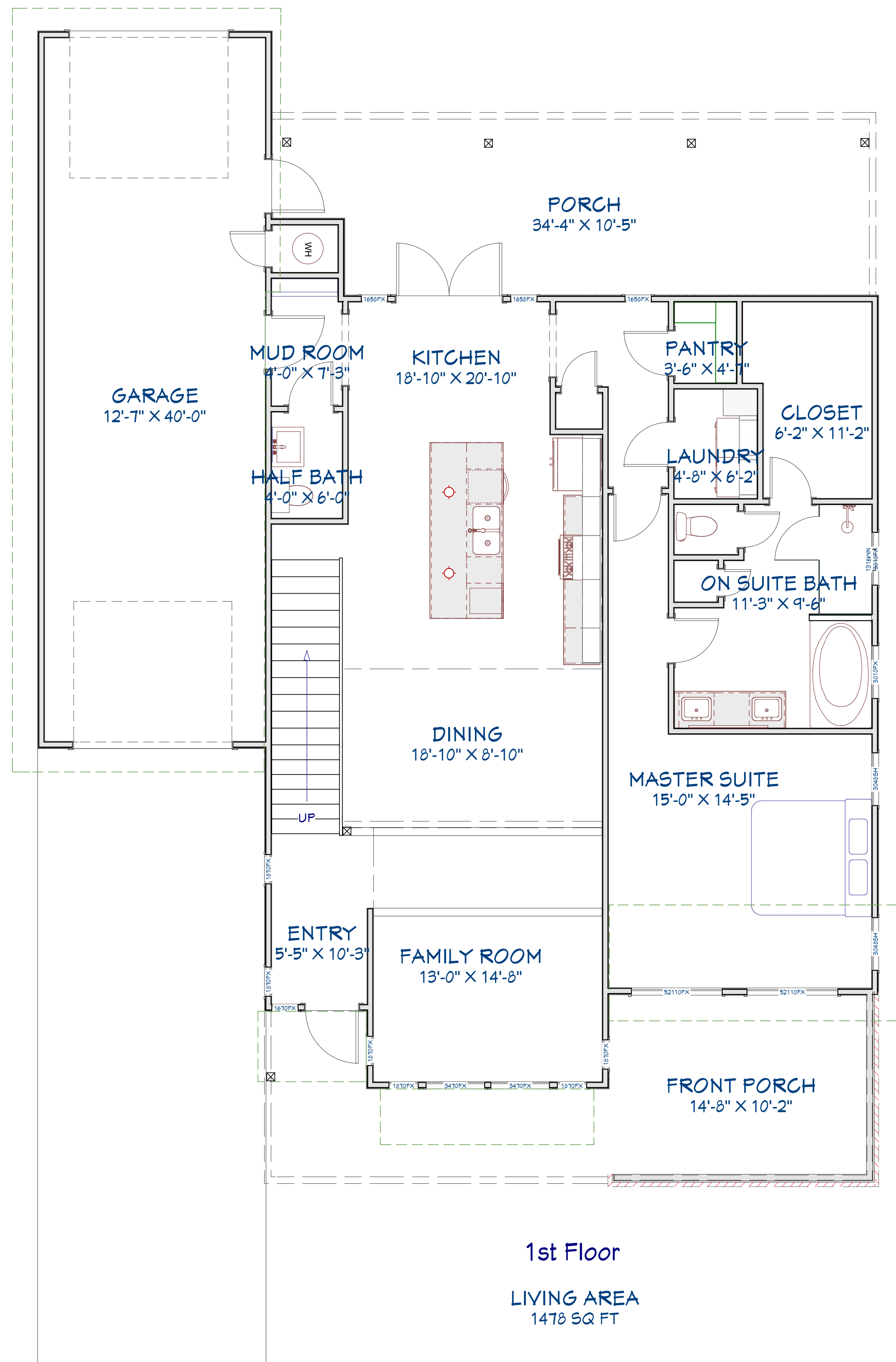
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**RENDERINGS**  
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PROJECT NAME:

LAYOUT

SHEET TITLE:

114 Dewberry

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**ANDREA LONGORIA**

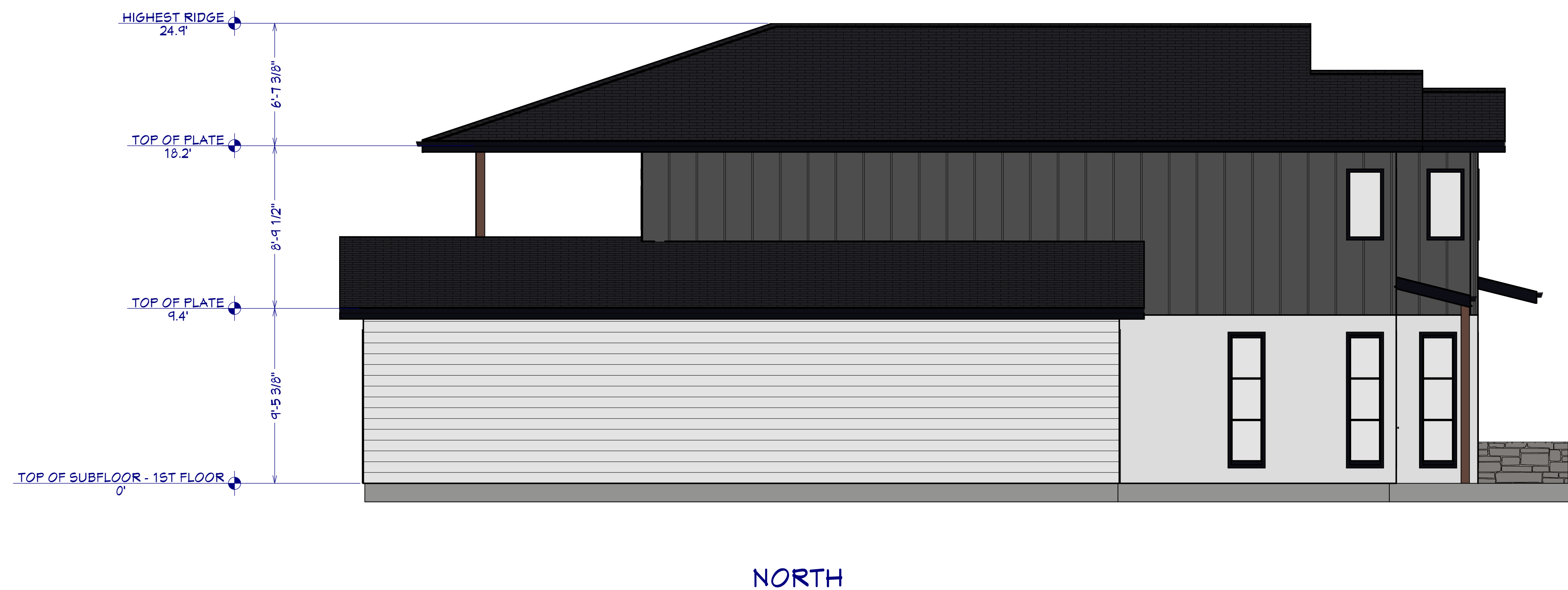
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ELEVATION PLAN

SHEET TITLE:

114 Dewberry

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ANDREA LONGORIA

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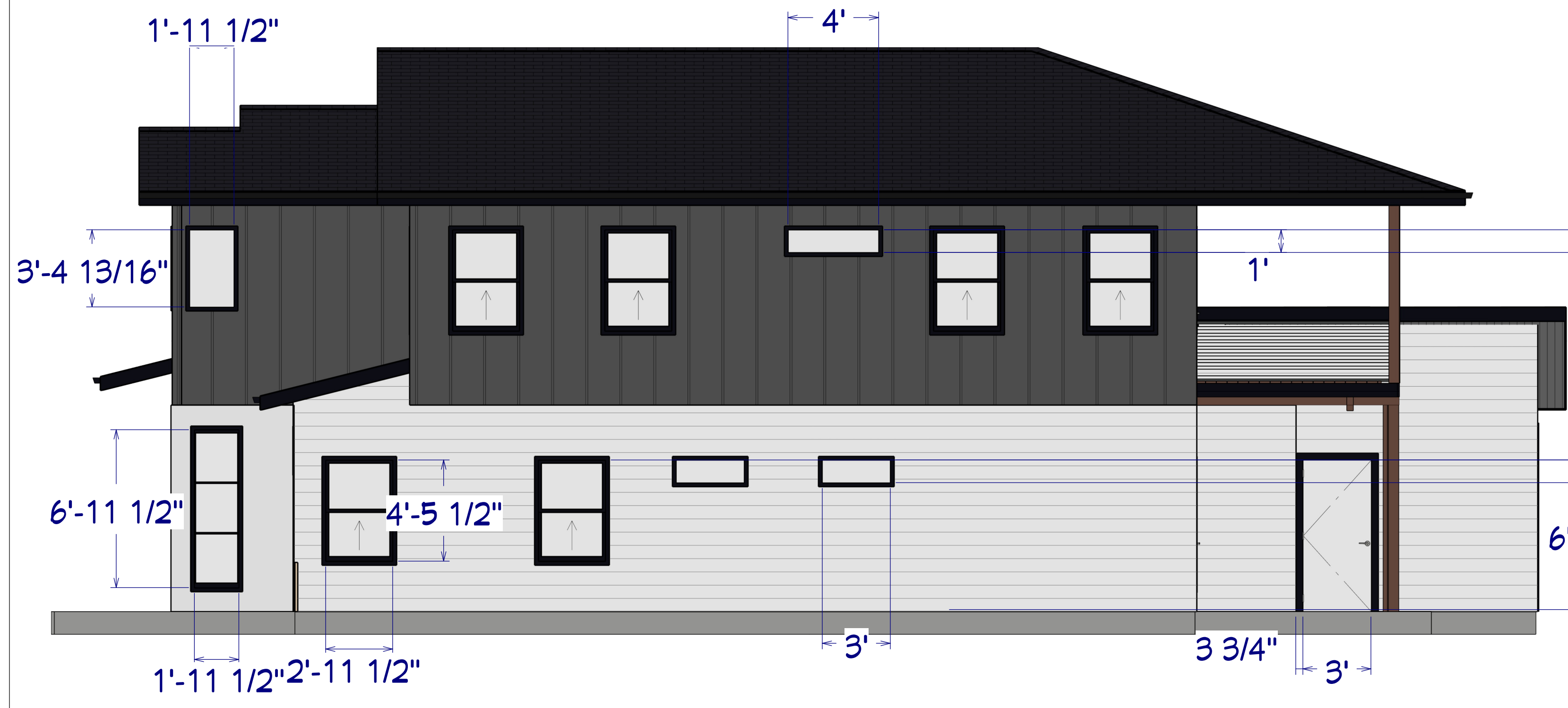
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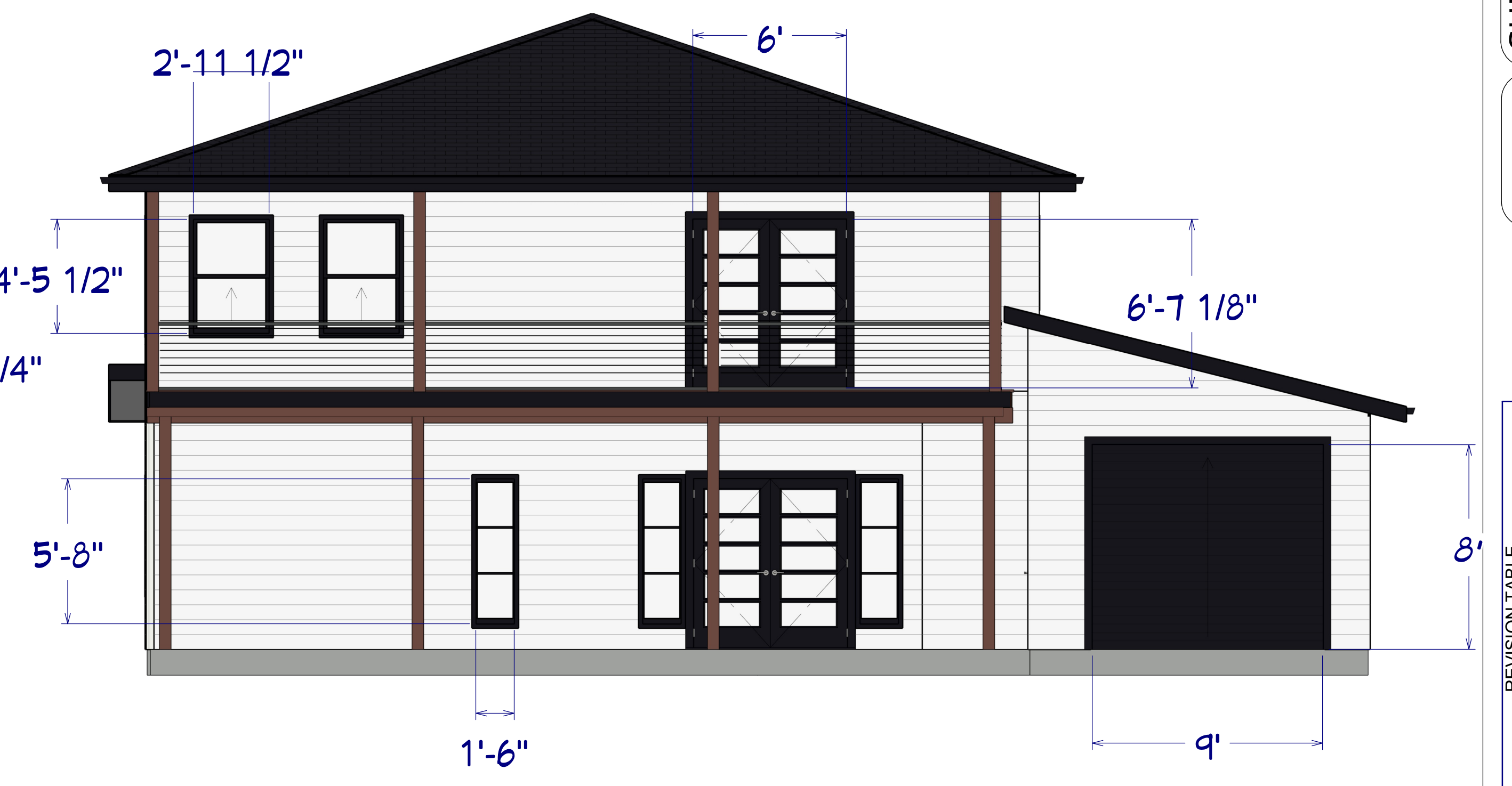
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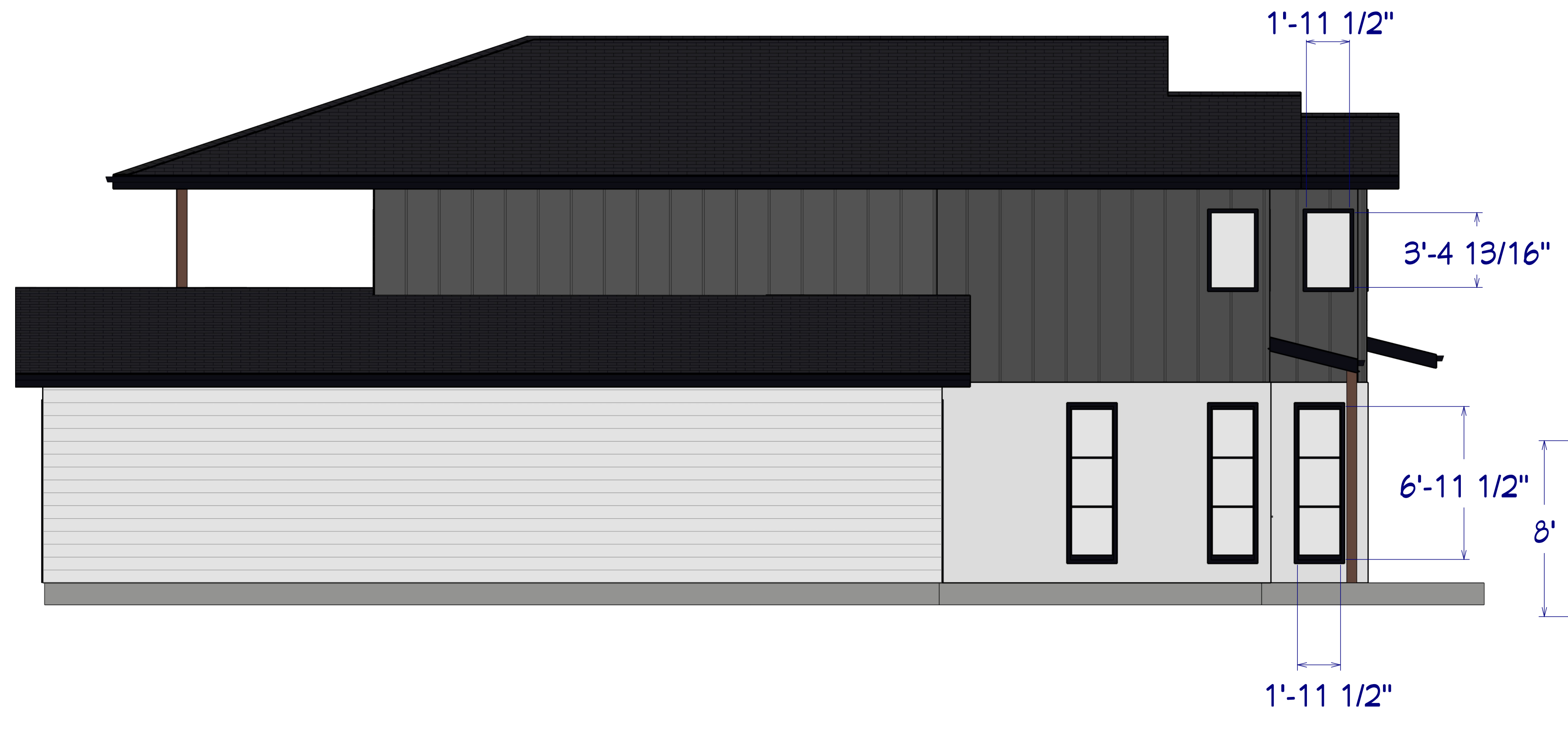




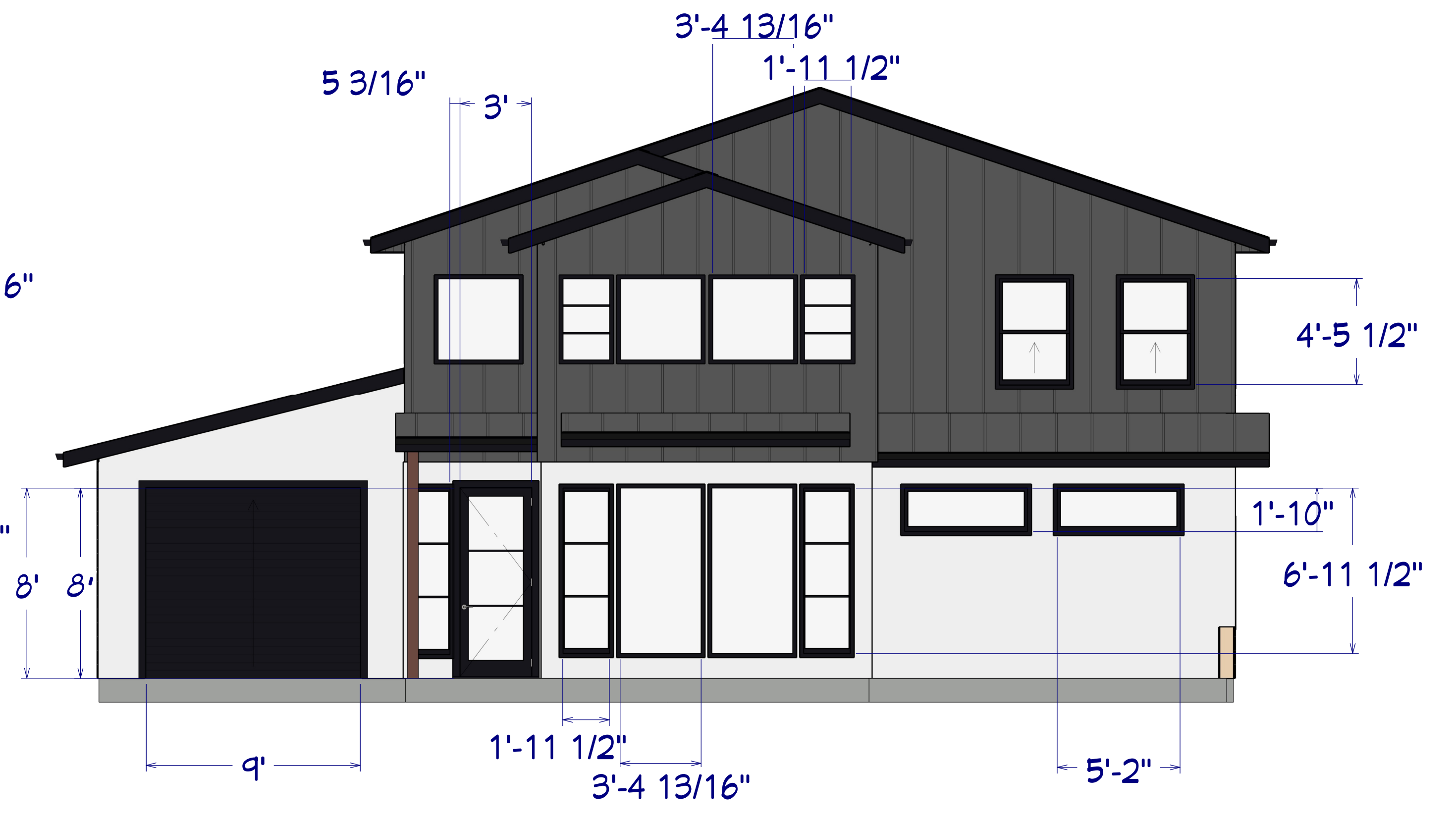
South



East



North



West

SHEET: A-5

SCALE:

DATE: 05.02.23

REVISION TABLE	
NUMBER	DATE

PROJECT NAME:

WINDOW/DOOR ELEVATION

SHEET TITLE:

114 Dewberry

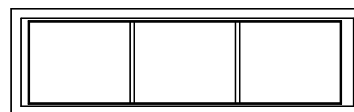
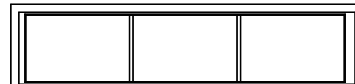
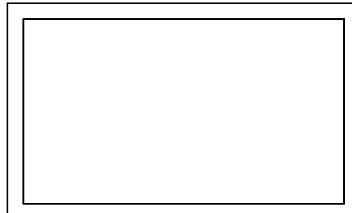
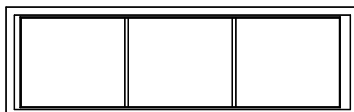
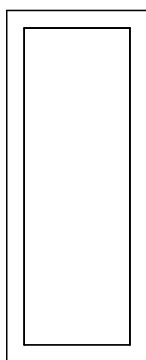
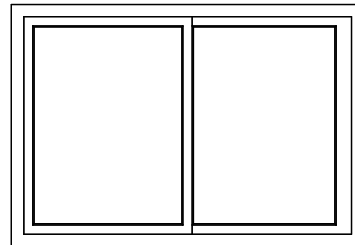
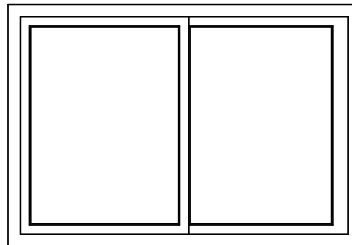
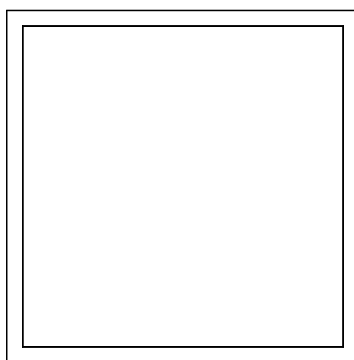
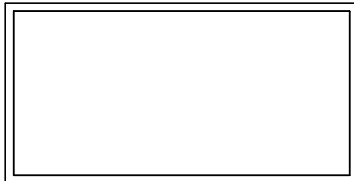
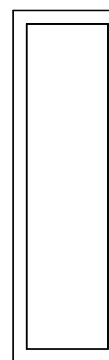
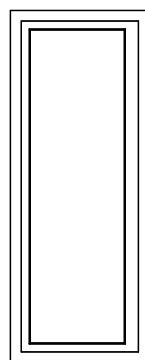
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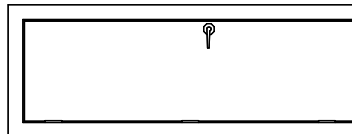
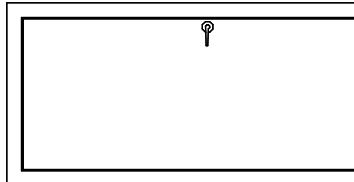
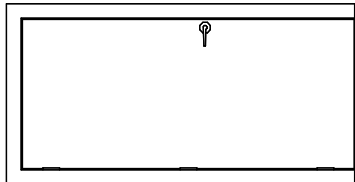
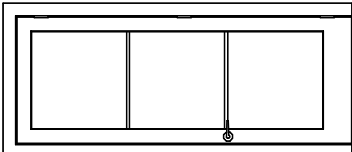
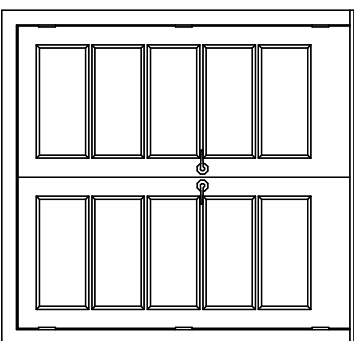
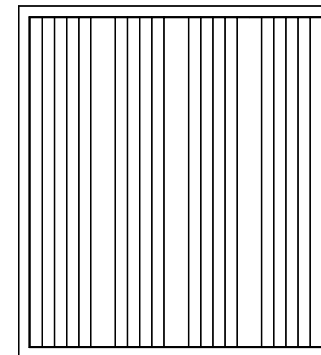
ANDREA LONGORIA

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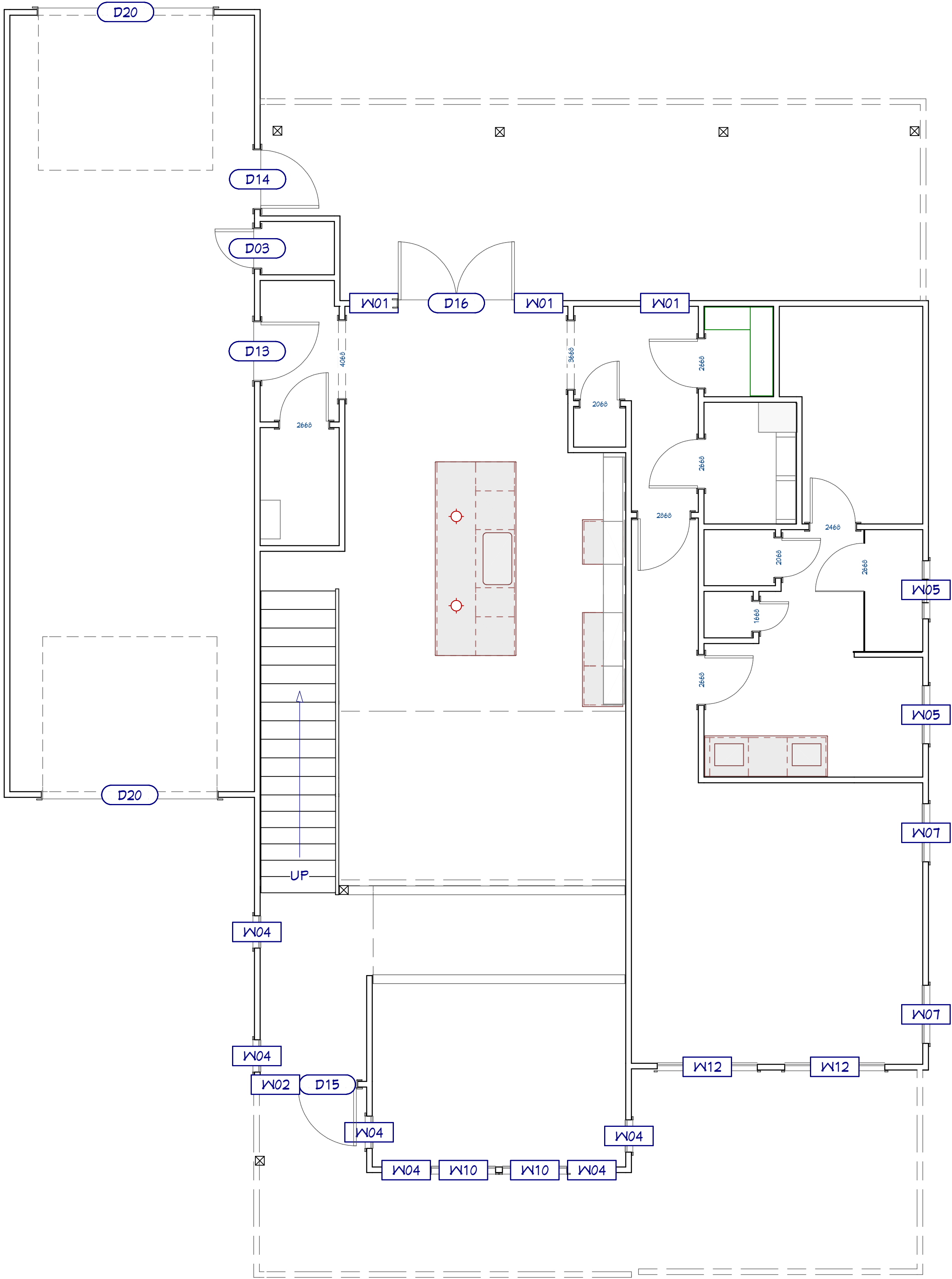
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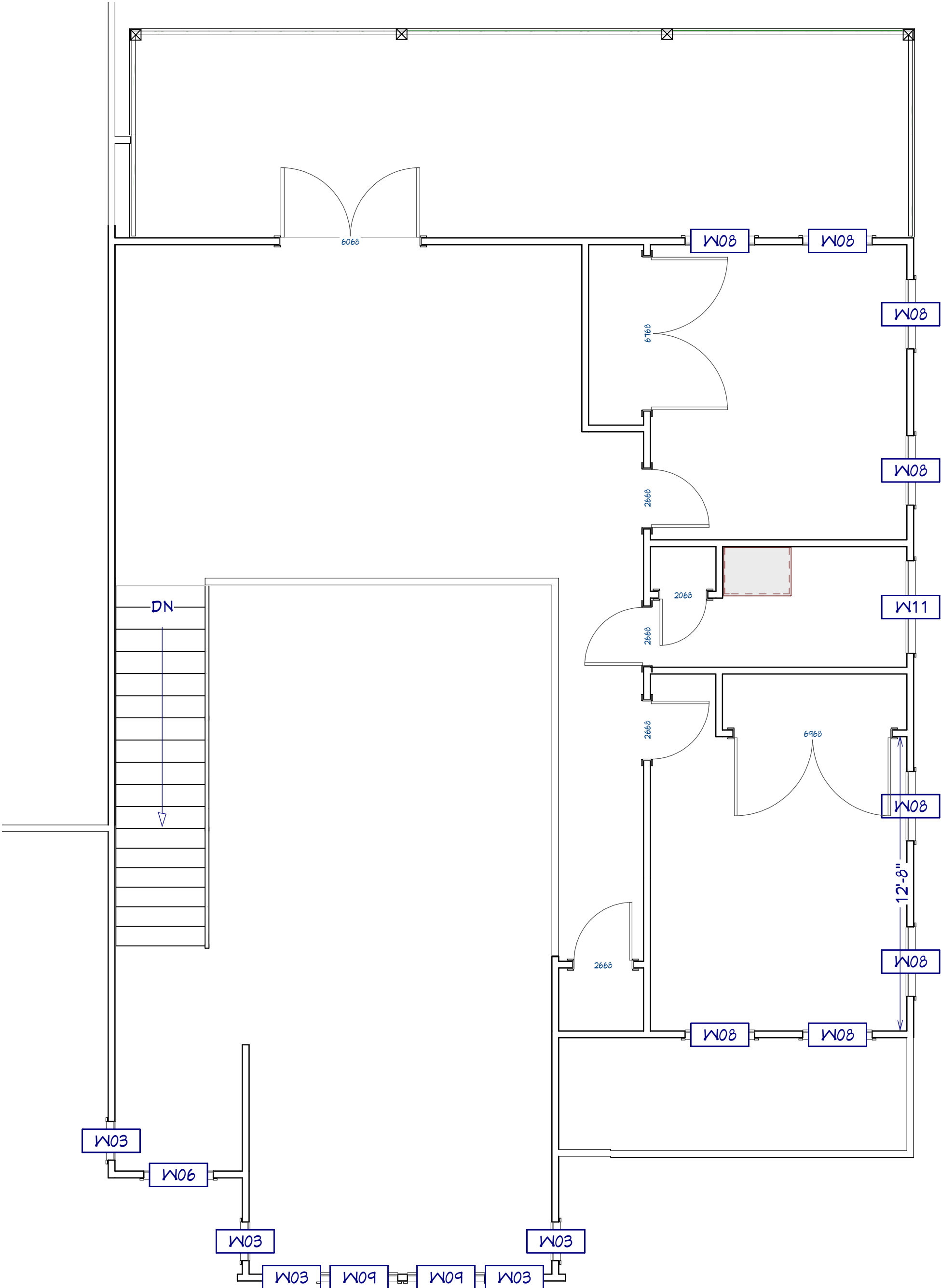
WINDOW SCHEDULE												
3D EXTERIOR ELEVATION			NUMBER	LABEL	QTY	FLOOR SIZE	R/O	DESCRIPTION				
	W01	1653FX	3	1	1653FX	1'9"X6'9"		FIXED GLASS				
	W02	1670FX	1	1	1670FX	1'9"X8'5"		FIXED GLASS				
	W03	2035FX	5	2	2035FX	24 1/2"X41 13/16"		FIXED GLASS				
	W04	2070FX	6	1	2070FX	24 1/2"X84 1/2"		FIXED GLASS				
	W05	3010FX	2	1	3010FX	37"X13"		FIXED GLASS				
	W06	3046SH	2	1	3046SH	36 1/2"X54 1/2"		SINGLE HUNG				
	W07	3046SH	8	2	3046SH	36 1/2"X54 1/2"		SINGLE HUNG				
	W08	3535FX	3	2	3535FX	41 13/16"X41 13/16"		FIXED GLASS				
	W09	3570FX	2	1	3570FX	41 13/16"X84 1/2"		FIXED GLASS				
	W10	4010FX	1	2	4010FX	49"X13"		FIXED GLASS				
	W11	52110FX	2	1	52110FX	63"X23"		FIXED GLASS				

DOOR SCHEDULE													
3D EXTERIOR ELEVATION	NUMBER	LABEL	QTY	FLOOR SIZE	R/O	DESCRIPTION							
	D03	2068	1	1	2068 R EX	28"x83"	EXT. HINGED-SLAB						
	D13	3068	1	1	3068 L EX	38"x83"	EXT. HINGED-SLAB						
	D14	3068	1	1	3068 R EX	38"x83"	EXT. HINGED-SLAB						
	D15	3080	1	1	3080 L EX	38"x99"	EXT. HINGED-GLASS PANEL						
	D16	6068	1	1	6068 L/R EX	74"x83"	EXT. DOUBLE HINGED-DOOR F04						
	D20	9080	2	1	9080	110"x99"	GARAGE-MODERN STEEL - GROOVED						

REVISION TABLE		DESCRIPTION	
NUMBER	DATE	REVISED BY	



1st Floor



2nd Floor

WINDOW SCHEDULE							
NUMBER	LABEL	QTY	FLOOR	SIZE	R/O	DESCRIPTION	HEADER
W01	1658FX	3	1	1658FX	19"X69"	FIXED GLASS	2X6X22" (2)
W02	1670FX	1	1	1670FX	19"X85"	FIXED GLASS	2X6X22" (2)
W03	1836FX	5	2	1836FX	21"X43"	FIXED GLASS	2X6X24" (2)
W04	1870FX	6	1	1870FX	21"X85"	FIXED GLASS	2X6X24" (2)
W05	3010FX	2	1	3010FX	37"X13"	FIXED GLASS	2X6X40" (2)
W06	3036FX	1	2	3036FX	37"X43"	FIXED GLASS	2X6X40" (2)
W07	3048SH	2	1	3048SH	37"X57"	SINGLE HUNG	2X6X40" (2)
W08	3048SH	8	2	3048SH	37"X57"	SINGLE HUNG	2X6X40" (2)
W09	3436FX	2	2	3436FX	41"X43"	FIXED GLASS	2X6X44" (2)
W10	3470FX	2	1	3470FX	41"X85"	FIXED GLASS	2X6X44" (2)
W11	4010FX	1	2	4010FX	49"X13"	FIXED GLASS	2X8X52" (2)
W12	52110FX	2	1	52110FX	63"X23"	FIXED GLASS	2X8X66" (2)

DOOR SCHEDULE							
NUMBER	LABEL	QTY	FLOOR	SIZE	R/O	DESCRIPTION	HEADER
D03	2068	1	1	2068 R EX	26"X83"	EXT. HINGED-SLAB	2X6X29" (2)
D13	3068	1	1	3068 L EX	38"X83"	EXT. HINGED-SLAB	2X6X41" (2)
D14	3068	1	1	3068 R EX	38"X83"	EXT. HINGED-SLAB	2X6X41" (2)
D15	3080	1	1	3080 L EX	38"X99"	EXT. HINGED-GLASS PANEL	2X6X41" (2)
D16	6068	1	1	6068 L/R EX	74"X83"	EXT. DOUBLE HINGED-DOOR F04	2X10X17" (2)
D20	9080	2	1	9080	110"X99"	GARAGE-MODERN STEEL - GROOVED	2X12X116" (2)

SHEET TITLE:

114 Dewberry

DRAWINGS PROVIDED BY:

ANDREA LONGORIA

PROJECT NAME:

WINDOW/DOOR SCHEDULE

REVISION TABLE

NUMBER	DATE	REVISD BY	DESCRIPTION

DATE:

05.02.23

SCALE:

1/4

SHEET:

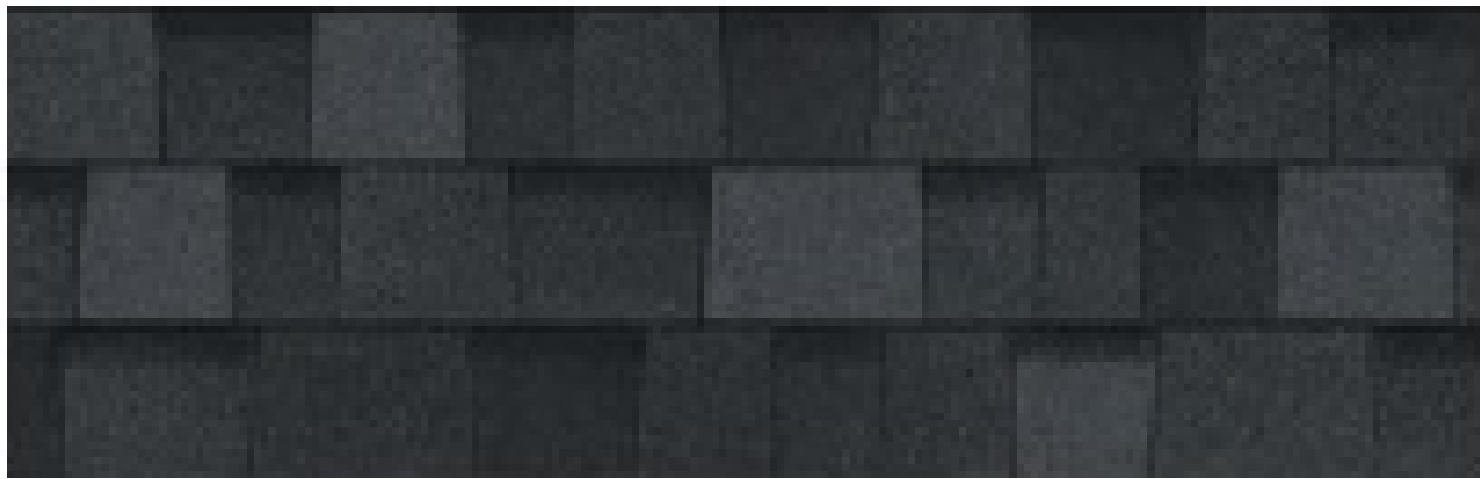
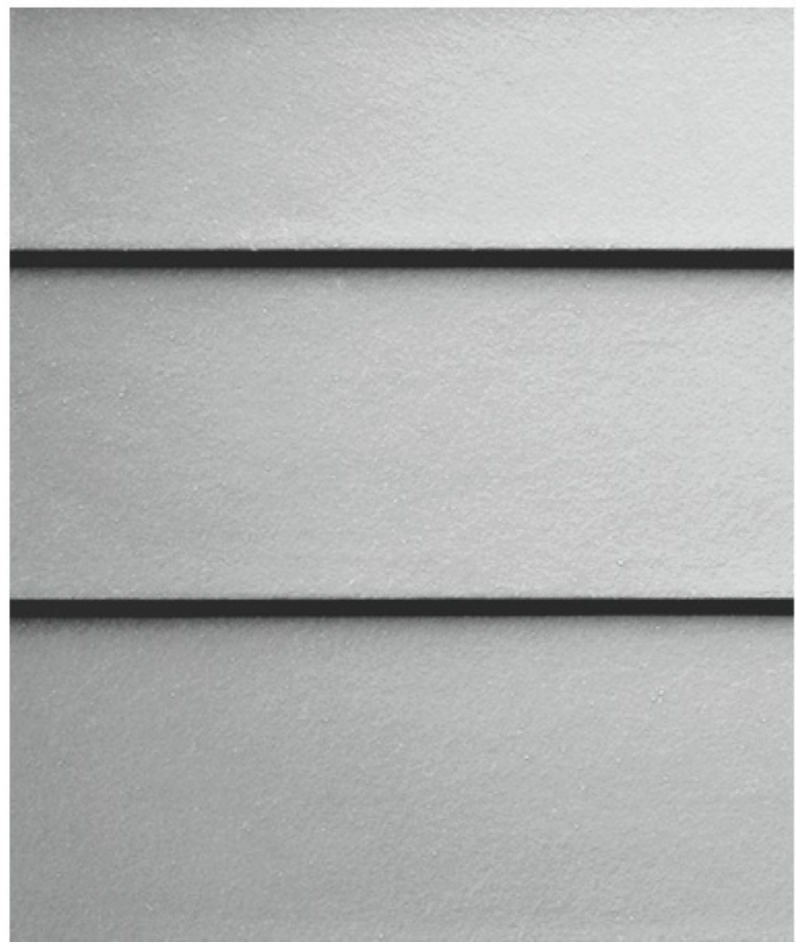
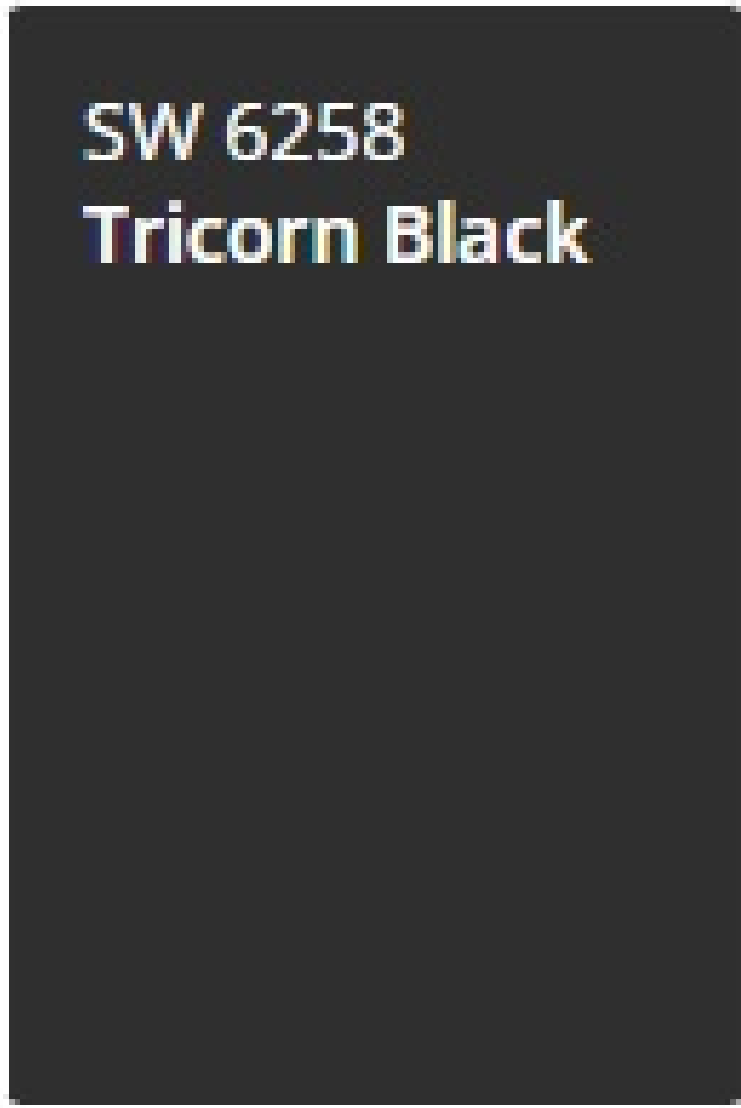
A-7

DATE:

05.02.23



EXTERIOR SCHEDULE	
①	STUCCO-GYPSUM
②	MAX RIB 9" ON CENTER-PEPPERCORN
③	VERTICAL SIDING 9" ON CENTER
④	DURATION SHINGLES-ONIX BLACK
⑤	TRIM-TRICORN BLACK
⑥	JAMES HARDIE-GYPSUM



Onyx Black<sup>1</sup>

Max-Rib

SHEET: A-8

SCALE:

DATE: 05.02.23

REVISION TABLE	
NUMBER	DESCRIPTION

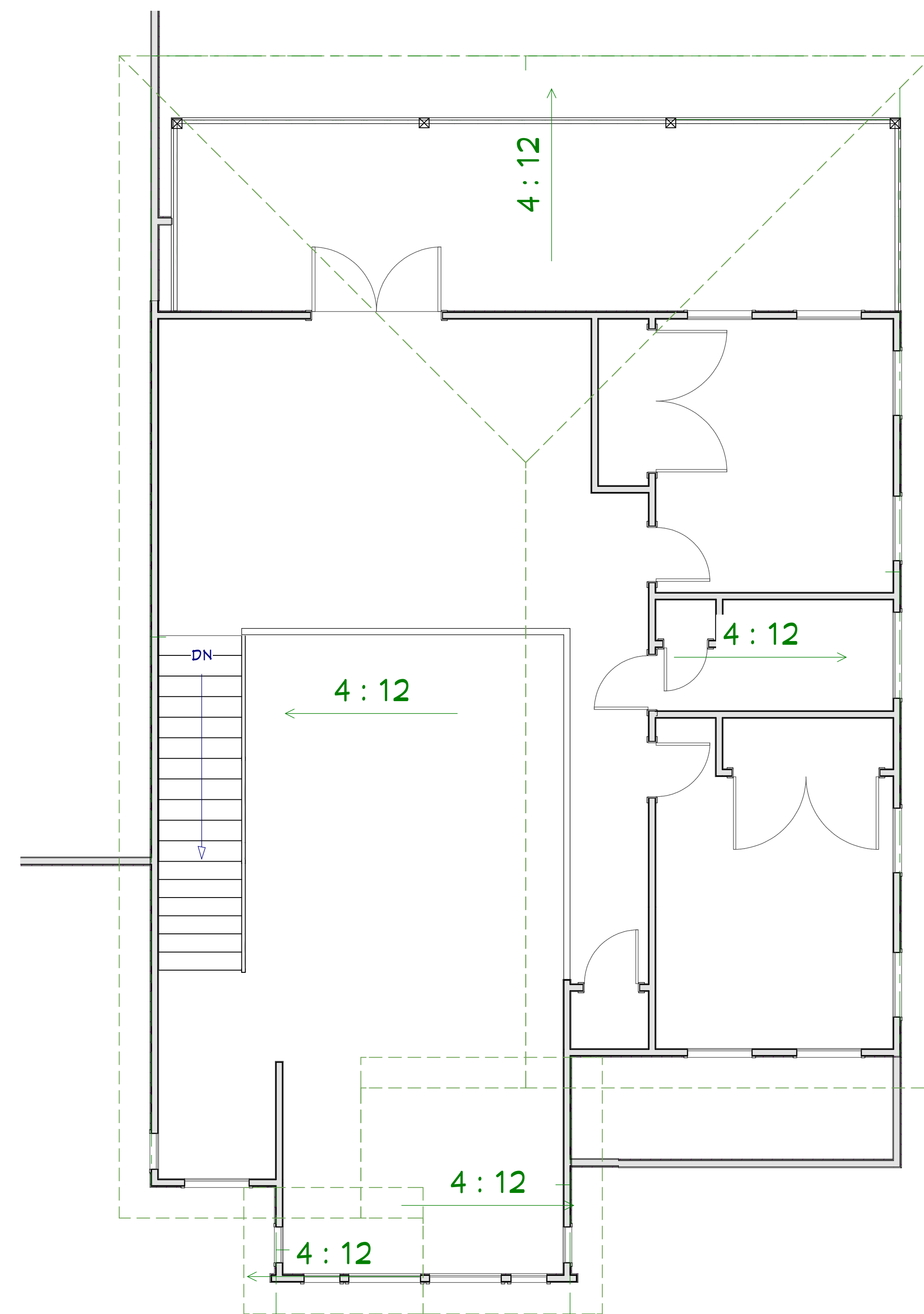
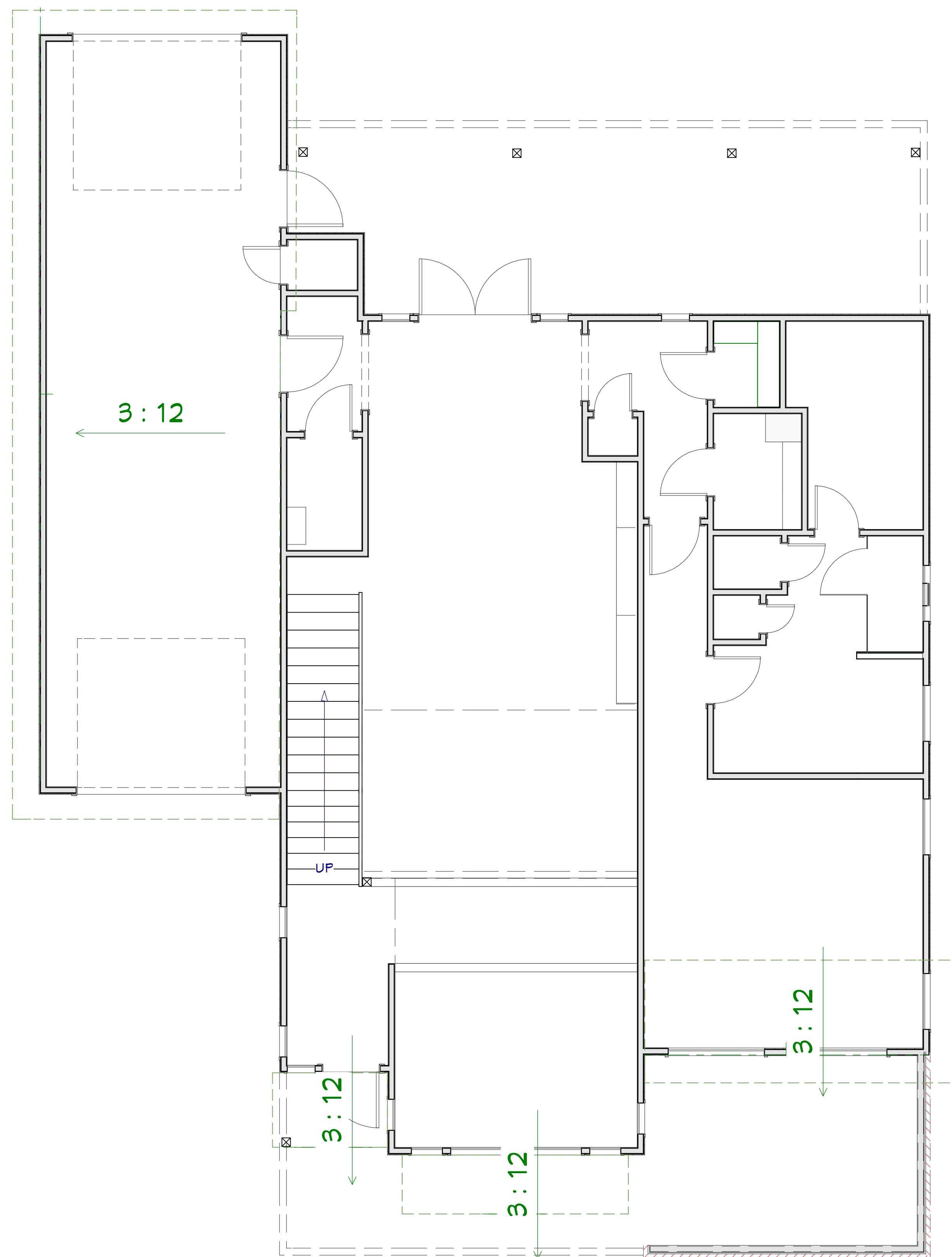
PROJECT NAME: EXTERIOR FINISHES

SHEET TITLE: 114 Dewberry

DRAWINGS PROVIDED BY: ANDREA LONGORIA

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BRIO

[illegible]



# 400 SERIES PRODUCT PERFORMANCE



## PERFORMANCE STANDARDS

The Window and Door Manufacturers Association (WDMA), the American Architectural Manufacturers Association (AAMA) and the Canadian Standards Association (CSA) jointly release the North American Fenestration Standard/Specification for Windows, Doors and Skylights (NAFS-11) where “-11” refers to the most recent publication year of 2011. NAFS is also referred to as AAMA/WDMA/CSA 101/I.S.2/A440, which is how the International Code Council (ICC) lists this standard in the 2012, 2015 and 2018 International Residential Code (IRC) and International Building Code (IBC) as the means to indicate the window, door or skylights design pressure rating used to determine compliance to the jobsite design pressure requirements.

A product only achieves a “Performance Grade” or “PG” rating when it complies with all of the NAFS performance requirements such as ease of operation, air infiltration resistance, resistance to water penetration and resistance to forced entry, etc. A “Design Pressure Rating” or “DP” rating only depicts the design and structural load performance.

### Performance Classes

The NAFS Standard/Specification defines requirements for four performance classes. Performance classes are designated R, LC, CW and AW. This classification system provides for several levels of performance. Product selection is always based on the performance and building code requirements of the particular project.

### Elements of Performance Grade (PG) Designations

In order to qualify for a given performance grade (PG), test specimens need to pass all required performance tests for the following, in addition to all required auxiliary (durability) and applicable material/component tests (not shown here) for the applicable product type and desired performance class:

- (a) Operating force (if applicable):** Maximum operating force varies by product type and performance class.
- (b) Air leakage resistance:** Tested in accordance with ASTM E283 at a test pressure of 1.57 psf. Allowable air infiltration for R, LC and CW class designations is 0.3 cubic feet per minute per square foot of frame (cfm/ft<sup>2</sup>).
- (c) Water penetration resistance:** Tested in accordance with ASTM E547 with the specified test pressure applied per NAFS-11. Test consists of four cycles. Each cycle consists of five minutes with pressure applied and one minute with the pressure released, during which the water spray is continuously applied. Water spray shall be uniformly applied at a constant rate of 5 U.S. gal/ft<sup>2</sup> · hr.
- (d) Uniform load deflection test:** Tested in accordance with ASTM E330 for both positive and negative pressure (pressure defined by NAFS-11) with the load maintained for a period of 10 seconds. The test specimen shall be evaluated for deflection during each load for permanent damage after each load and for any effects on the normal operation of the specimen. *Starting with the 2008 version of NAFS, design pressure (DP) will only represent the “uniform load deflection test.”*
- (e) Uniform load structural test:** Tested in accordance with ASTM E330 for both positive and negative pressure (pressure defined by NAFS-11) with the load maintained for a period of 10 seconds. After loads are removed, there shall be no permanent deformation in excess of 0.4% of its span and no damage to the unit, which would make it inoperable.
- (f) Forced-entry resistance (if applicable):** Tested in accordance with ASTM F588 (windows), F476 (swinging doors) and F842 (sliding doors) at a performance level 10 rating.

### Performance Grades (PG) and Corresponding Test Pressures (psf)

Performance Class/ Performance Grade		Air Infiltration Test Pressure		Maximum Allowable Air Infiltration/ Exfiltration Rate		Water Penetration Resistance Test Pressure		Design Pressure		Structural Test Pressure	
R	LC	Pa	psf	L/s-m <sup>2</sup>	cfm/ft <sup>2</sup>	Pa	psf	Pa	psf	Pa	psf
15	-	75	1.57	1.5	0.30	140	2.92	720	15.04	1080	22.56
20	-	75	1.57	1.5	0.30	150	3.13	960	20.05	1440	30.08
25	25	75	1.57	1.5	0.30	180	3.76	1200	25.06	1800	37.59
30	30	75	1.57	1.5	0.30	220	4.59	1440	30.08	2160	45.11
35	35	75	1.57	1.5	0.30	260	5.43	1680	35.09	2520	52.63
40	40	75	1.57	1.5	0.30	290	6.06	1920	40.10	2880	60.15
45	45	75	1.57	1.5	0.30	330	6.89	2160	45.11	3240	67.67
50	50	75	1.57	1.5	0.30	360	7.52	2400	50.13	3600	75.19
55	55	75	1.57	1.5	0.30	400	8.35	2640	55.14	3960	82.71
60	60	75	1.57	1.5	0.30	440	9.19	2880	60.15	4320	90.23
65	65	75	1.57	1.5	0.30	470	9.82	3120	65.16	4680	97.74
70	70	75	1.57	1.5	0.30	510	10.65	3360	70.18	5040	105.26
75	75	75	1.57	1.5	0.30	540	11.28	3600	75.19	5400	112.78
80	80	75	1.57	1.5	0.30	580	12.11	3840	80.20	5760	120.30
85	85	75	1.57	1.5	0.30	580	12.11	4080	85.21	6120	127.82
90	90	75	1.57	1.5	0.30	580	12.11	4320	90.23	6480	135.34
95	95	75	1.57	1.5	0.30	580	12.11	4560	95.24	6840	142.86
100	100	75	1.57	1.5	0.30	580	12.11	4800	100.25	7200	150.38

## HALLMARK CERTIFICATION

The Window and Door Manufacturers Association (WDMA)-sponsored Hallmark Certification Program provides manufacturers with certification to the AAMA/WDMA/CSA 101/I.S.2/A440-11 Standard and is designed to provide builders, architects, specifiers and consumers with an easily recognizable means of identifying products that have been manufactured and tested in accordance with NAFS (AAMA/WDMA/CSA 101/I.S.2/A440) industry standards and other applicable performance standards. Conformance is determined by periodic in-plant inspections by a third-party administrator. Inspections include auditing licensee quality control procedures and processes, and a review to confirm products are manufactured in accordance with the appropriate performance standards. Periodic testing of representative product constructions and components by an independent testing laboratory is also required. When all of the program requirements are met, the licensee is authorized to use the WDMA Hallmark registered logo on their certification label as a means of identifying products and their performance ratings.

Products successfully obtaining Hallmark Certification will be labeled with a three-part code, which includes performance class, performance grade and size tested. In addition to this mandatory requirement, you are allowed to list the design pressure on a separate line.

	Andersen Corporation 400 SERIES CASEMENT WINDOW Manufacturer stipulates certification as indicated below.
STANDARD	RATING
AAMA/WDMA/CSA 101/I.S.2/A440-11	Class LC <sup>(1)</sup> - PG50 <sup>(2)</sup> - Size Tested 56 x 71.8 in. <sup>(3)</sup> DP+50/-50 <sup>(4)</sup>
AAMA/WDMA/CSA 101/I.S.2/A440-08	Class LC <sup>(1)</sup> - PG50 <sup>(2)</sup> - Size Tested 56 x 71.8 in. <sup>(3)</sup> DP+50/-50 <sup>(4)</sup>

- (1) - Performance Class
- (2) - Performance Grade
- (3) - Size Tested
- (4) - Design Pressure

In the example above, the performance class is LC, the performance grade (PG) is 50 pounds per square foot (psf) and the size tested is 56" x 71.8". What this means to the specifier is, based on the performance grade chart, the laboratory-tested air infiltration was less than 0.3 cfm/ft<sup>2</sup> (test pressure is always 1.57 psf and the allowable airflow is 0.3 cfm/ft<sup>2</sup>), the product tested successfully resisted a laboratory water penetration test at a test pressure of 7.5 psf, the product tested successfully withstood a laboratory positive test pressure of 75 psf and a laboratory negative test pressure of 75 psf, and the product tested passed the laboratory requirements for operational force and forced-entry resistance. Based on this test, all products of the same design that are smaller than the tested size can be labeled with this product performance rating.

## IMPORTANT

Building codes prescribe design pressure based on a variety of criteria (i.e., windspeed zone, building height, building type, jobsite exposure, etc.). Design pressures derived from Performance Grade (PG) test requirements should be used to determine compliance to building code required design pressures. Structural test pressures, which are tested at 1.5 times the design pressure, should not be used for determining design pressure code compliance. In the example above, a PG 50 performance grade rating, which passes a 50 psf design pressure, should be used for determining code compliance, not the structural test pressure of 75 psf.

If you need further details about how Andersen® products perform to this standard, contact your Andersen supplier.

If you need further information about the AAMA/WDMA/CSA 101/I.S.2/A440-11 standard or the Hallmark Certification Program, please contact: WDMA, 330 N. Wabash Avenue, Suite 2000, Chicago, IL 60611. Phone: 312-321-6802 Website: [wdma.com](http://wdma.com)

Where designated, Andersen products are tested, certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.

# 400 SERIES PRODUCT PERFORMANCE



## Performance Grade and Air Infiltration Ratings — 400 Series Windows

For current performance information, please visit [andersenwindows.com](http://andersenwindows.com).

Andersen® Product	AAMA/WDMA/CSA 101/LS2/A440 Performance Grade (PG)	+/- Corresponding Design Pressure (DP)	Air Infiltration CFM/FT²
<b>Casement Windows</b>			
Single Stationary (CXW16)	Class LC-PG50 Size Tested 35" x 71"	50/50	< 0.2
Single Venting (CXW16-155, CX16-155)	Class LC-PG40 Size Tested 35" x 71"	40/40	< 0.2
Single Venting (CXW15)	Class LC-PG45 Size Tested 71" x 60"	45/45	< 0.2
Single Venting (CW16 and smaller)	Class LC-PG50 Size Tested 60" x 71"	50/50	< 0.2
Single Venting (CXW145 and smaller)	Class LC-PG50 Size Tested 71" x 52" *	50/50	< 0.2
Single Venting (CX15 and smaller)	Class LC-PG50 Size Tested 62" x 59" *	50/50	< 0.2
Twin Stationary (CXW245, CX25, CW26 and smaller)	Class LC-PG50 Size Tested 56" x 71" *	50/50	< 0.2
Twin Venting (CXW25)	Class LC-PG45 Size Tested 71" x 60"	45/45	< 0.2
Twin Venting (CXW245 and smaller)	Class LC-PG50 Size Tested 71" x 52"	50/50	< 0.2
Twin Venting (CX25 and smaller)	Class LC-PG50 Size Tested 62" x 59"	50/50	< 0.2
Twin Venting (CW26 and smaller)	Class LC-PG50 Size Tested 60" x 71"	50/50	< 0.2
Triple Venting (CW35 and smaller)	Class LC-PG40 Size Tested 84" x 60"	40/40	< 0.2
Triple Venting (C35 and smaller)	Class LC-PG50 Size Tested 71" x 60"	50/50	< 0.2
Casement/Awning Picture Windows (P5060 and smaller)	Class LC-PG70 Size Tested 59" x 71"	70/70	< 0.2
Casement/Awning Transom Windows (CTR32410 and smaller)	Class LC-PG70 Size Tested 84" x 12"	70/70	< 0.2
<b>Casement Windows, PG Upgrade</b>			
Single Stationary (tempered glass, CXW16)	Class LC-PG70 Size Tested 35" x 71"	70/70	< 0.2
Single Venting (CXW145 and smaller)	Class LC-PG70 Size Tested 35" x 52"	70/70	< 0.2
Single Venting (CX16 and smaller)	Class LC-PG70 Size Tested 31" x 71"	70/70	< 0.2
Twin Venting (CW26 and smaller)	Class LC-PG70 Size Tested 56" x 71"	70/70	< 0.2
Triple Venting (C35 and smaller)	Class LC-PG70 Size Tested 71" x 59"	70/70	< 0.2
<b>Complementary Casement Windows</b>			
Casement Venting	Class LC-PG50 Size Tested 35" x 84"	50/50	< 0.2
Casement Stationary	Class LC-PG60 Size Tested 120" x 78"	60/60	< 0.2
French Casement Venting	Class LC-PG30 Size Tested 56" x 72"	30/30	< 0.2
<b>Awning Windows</b>			
Single Stationary (AXW61)	Class LC-PG50 Size Tested 35" x 71"	50/50	< 0.2
Single Venting (AXW51 and smaller)	Class LC-PG35 Size Tested 59" x 35"	35/35	< 0.2
Single Venting (AX61 and smaller)	Class LC-PG35 Size Tested 72" x 31"	35/35	< 0.2
Twin Venting (AXW231 and smaller)	Class LC-PG35 Size Tested 71" x 36"	35/35	< 0.2
Triple Venting (AX3251 and smaller)	Class LC-PG35 Size Tested 84" x 31"	35/35	< 0.2
Triple Venting (A313 and smaller)	Class LC-PG35 Size Tested 35" x 71"	35/35	< 0.2
Picture Venting (PA4060 and smaller)	Class LC-PG35 Size Tested 48" x 71"	35/35	< 0.2
<b>Awning Windows, PG Upgrade</b>			
Single Stationary (tempered glass, AXW61)	Class LC-PG70 Size Tested 35" x 71"	70/70	< 0.2
Single, Twin and Triple Venting (AX3251 and smaller)	Class LC-PG60 Size Tested 84" x 31"	60/60	< 0.2
Triple Venting (A313 and smaller)	Class LC-PG60 Size Tested 35" x 71"	60/60	< 0.2

- \*"Performance Grade (PG)" ratings may vary from tested performance rating for larger or smaller units of a particular type. continued on next page
- \*This data is accurate as of May 2021. Due to ongoing product changes, updated test results or new industry standards, this data may change over time.
- \*Where designated, Andersen products are certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.
- \*Contact your Andersen supplier for more information.
- \*Window size tested is an integral twin or triple window, and qualifies the window listed under the same test.



# 400 SERIES PRODUCT PERFORMANCE



## Performance Grade and Air Infiltration Ratings — 400 Series Windows *(continued)*

For current performance information, please visit [andersenwindows.com](http://andersenwindows.com).

Andersen® Product	AAMA/WDMA/CSA 101/LS2/A440 Performance Grade (PG)	+/- Corresponding Design Pressure (DP)	Air Infiltration CFM/FT²
<b>Woodwright® Full-Frame Windows</b>			
<b>Double-Hung</b> (3862 and smaller)	Class LC-PG30 Size Tested 45" x 76"	30/30	< 0.2
<b>Double-Hung</b> (cottage sash, 3862 and smaller)	Class R-20 Size Tested 45" x 76"	20/20	< 0.2
<b>Arch Double-Hung</b> (3862 and smaller)	Class LC-PG30 Size Tested 45" x 76"	30/30	< 0.2
<b>Springline™ Single-Hung</b> (3872 and smaller)	Class LC-PG30 Size Tested 45" x 86"	30/30	< 0.2
<b>Picture</b> (5662 and smaller)	Class LC-PG65 Size Tested 67" x 76"	65/65	< 0.2
<b>Transom</b> (6231 and smaller)	Class LC-PG70 Size Tested 75" x 39"	70/70	< 0.2
<b>Woodwright Full-Frame Windows, PG Upgrade</b>			
<b>Double-Hung</b> (3052 and smaller)	Class LC-PG50 Size Tested 37" x 64"	50/50	< 0.2
<b>Arch Double-Hung</b> (3054)	Class LC-PG50 Size Tested 37" x 64"	50/50	< 0.2
<b>Springline Single-Hung</b> (3057)	Class LC-PG50 Size Tested 37" x 67"	50/50	< 0.2
<b>Woodwright Insert Windows</b>			
<b>Double-Hung</b> (3862 and smaller)	Class R-PG25 Size Tested 45" x 77"	25/25	< 0.2
<b>Double-Hung</b> (cottage sash, 3862 and smaller)	Class R-PG20 Size Tested 45" x 68"	20/20	< 0.2
<b>Picture</b> (5662 and smaller)	Class LC-PG30 Size Tested 68" x 78"	30/30	< 0.2
<b>Transom</b> (6878 and smaller)	Class LC-PG30 Size Tested 68" x 78"	30/35	< 0.2
<b>Tilt-Wash Full-Frame Windows</b>			
<b>Double-Hung</b> (3862 and smaller)	Class LC-PG40 Size Tested 45" x 76"	40/40	< 0.2
<b>Double-Hung</b> (cottage sash, 3856 and smaller)	Class LC-PG40 Size Tested 45" x 68"	40/40	< 0.2
<b>Double-Hung**</b> (3876 and smaller)	Class LC-PG30 Size Tested 45" x 92"	30/35	< 0.2
<b>Picture</b> (5662 and smaller)	Class LC-PG50 Size Tested 67" x 76"	50/65	< 0.2
<b>Transom</b> (6231 and smaller)	Class LC-PG50 Size Tested 75" x 39"	50/50	< 0.2
<b>Tilt-Wash Windows, PG Upgrade</b>			
<b>Double-Hung</b>	Class LC-PG50 Size Tested 45" x 76"	50/50	< 0.2
<b>Tilt-Wash Insert Windows</b>			
<b>Double-Hung</b> (double lock)	Class R-PG20 Size Tested 45" x 92"	20/20	< 0.2
<b>Double-Hung</b> (single lock)	Class R-PG20 Size Tested 35" x 92"	20/20	< 0.2
<b>Double-Hung</b>	Class LC-PG30 Size Tested 45" x 76"	30/30	< 0.2
<b>Gliding Windows</b> (G65 and smaller)	Class LC-PG30 Size Tested 71" x 59"	30/30	< 0.2
<b>Specialty Windows</b>			
<b>Arch</b> (AFFW6080 and smaller)	Class LC-PG50 Size Tested 71" x 105"	50/50	< 0.2
<b>Flexiframe®</b> (12050 and smaller)	Class LC-PG50 Size Tested 144" x 60"	50/50	< 0.2
<b>Springline</b> (SP802 and smaller)	Class LC-PG50 Size Tested 96" x 72"	50/50	< 0.2
<b>Specialty Windows, PG Upgrade</b>			
<b>Arch</b> (tempered glass, AFFW6080 and smaller)	Class LC-PG70 Size Tested 71" x 105"	70/70	< 0.2
<b>Flexiframe</b> (tempered glass, 12050 and smaller)	Class LC-PG70 Size Tested 144" x 60"	70/70	< 0.2
<b>Springline</b> (tempered glass, SP802 and smaller)	Class LC-PG70 Size Tested 96" x 72"	70/70	< 0.2
<b>Complementary Specialty Windows</b> (direct-set, fixed)	Class LC-PG50 Size Tested 125" x 84"	50/50	< 0.2

\* "Performance Grade (PG)" ratings may vary from tested performance rating for larger or smaller units of a particular type.

\* This data is accurate as of May 2021. Due to ongoing product changes, updated test results or new industry standards, this data may change over time.

\* Where designated, Andersen products are certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.

\* Contact your Andersen supplier for more information.

\*\* Window heights equal to or greater than 7'-4 9/16" (2250) and 7'-8 7/8" (2359) have interior and exterior brackets. Interior brackets, located on each side of the meeting rail, must be flipped up for proper product performance.

## Performance Grade and Air Infiltration Ratings – 400 Series Patio Doors

For current performance information, please visit [andersenwindows.com](https://andersenwindows.com).

Andersen® Product	AAMA/WDMA/CSA 101/1.S.2/A440 Performance Grade (PG)	+/- Corresponding Design Pressure (DP)	Air Infiltration CFM/FT <sup>2</sup>
<b>Frenchwood® Gliding Patio Doors</b>			
Single Stationary	Class LC-PG40 Size Tested 50" x 95"	40/40	< 0.2
Two-Panel	Class LC-PG40 Size Tested 95" x 95"	40/40	< 0.2
Four-Panel (8')	Class LC-PG35 Size Tested 189" x 95"	35/35	< 0.2
Four-Panel (6'-11", 6'-8")	Class LC-PG25 Size Tested 189" x 82"	25/25	< 0.2
<b>Frenchwood Hinged Inswing Patio Doors</b>			
Single Active	Class LC-PG40 Size Tested 107" x 95"	40/40	< 0.2
Two-Panel	Class LC-PG40 Size Tested 71" x 95"	40/40	< 0.2
Three-Panel	Class LC-PG40 Size Tested 107" x 95"	40/40	< 0.2
Frenchwood Patio Door Sidelights	Class LC-PG40 Size Tested 18" x 95"	40/40	< 0.2
Frenchwood Patio Door Transoms	Class LC-PG40 Size Tested 71" x 21"	40/40	< 0.2
<b>Complementary Springline™ and Arch Hinged Inswing Patio Doors</b>			
Single Stationary	Class LC-PG45 Size Tested 37" x 95"	45/45	< 0.2
Single Active†	Class LC-PG45 Size Tested 37" x 95"	45/45	< 0.2
Two-Panel Stationary	Class LC-PG45 Size Tested 75" x 95"	45/45	< 0.2
Two-Panel Active†	Class LC-PG45 Size Tested 75" x 95"	45/45	< 0.2
<b>Complementary Springline and Arch Hinged Outswing Patio Doors</b>			
Single Stationary	Class LC-PG45 Size Tested 37" x 95"	45/45	< 0.2
Single Active†	Class LC-PG45 Size Tested 37" x 95"	45/45	< 0.2
Two-Panel Stationary	Class LC-PG45 Size Tested 75" x 95"	45/45	< 0.2
Two-Panel Active†	Class LC-PG45 Size Tested 75" x 95"	45/45	< 0.2

\*Performance Grade (PG) ratings may vary from tested performance rating for larger or smaller units of a particular type.

†This data is accurate as of May 2021. Due to ongoing product changes, updated test results or new industry standards, this data may change over time.

• Where designated, Andersen products are certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.

• Contact your Andersen supplier for more information.

†Tested with standard multi-point hardware.

# 400 SERIES PRODUCT PERFORMANCE



## Sound Transmission Ratings for 400 Series Windows and Patio Doors

For current performance information, please visit [andersenwindows.com](https://andersenwindows.com).

Andersen® Product	Test Size	Sound Transmission Class (STC)	Outdoor/Indoor Transmission Class (OITC)
<b>Casement Windows</b>	36" x 72"	26	22
<b>Awning Windows</b>	30" x 60"	26	21
<b>Casement/Awning Picture Windows</b>	60" x 72"	29	25
<b>Woodwright® Double-Hung Windows</b>			
Double-Hung Full-Frame	46" x 77"	28	23
Picture Full-Frame	48" x 48"	28	23
Transom Full-Frame	40" x 46"	28	22
Double-Hung Insert	20" x 60"	26	21
Picture Insert	53" x 78"	30	26
Transom Insert	53" x 78"	30	26
<b>Tilt-Wash Double-Hung Windows</b>			
Double-Hung Full-Frame	46" x 78"	29	24
Picture Full-Frame	68" x 77"	30	25
Transom Full-Frame	-	-	-
Double-Hung Insert	32" x 76"	27	24
Picture Insert	-	-	-
Transom Insert	-	-	-
<b>Gliding Windows</b>	72" x 60"	26	22
<b>Specialty Windows</b>	72" x 60"	30	25
<b>Complementary Specialty Windows</b>	72" x 60"	30	25
<b>Frenchwood® Gliding Patio Doors</b>			
Single Stationary	50" x 80"	31	26
Two-Panel	72" x 80"	31	26
Four-Panel	-	-	-
<b>Frenchwood Hinged Inswing Patio Doors</b>			
Single Active	36" x 80"	30	26
Two-Panel	72" x 80"	30	26
Three-Panel	-	-	-
<b>Frenchwood Patio Door Sidelights &amp; Transoms</b>			
Sidelight	18" x 82"	32	26
Transom	72" x 22"	29	25
<b>Complementary Springline™ &amp; Arch Hinged Inswing Patio Doors</b>			
Single Active	38" x 90"	30	25
Two-Panel	75" x 90"	30	25
<b>Complementary Springline &amp; Arch Hinged Outswing Patio Doors</b>			
Single-Panel	38" x 90"	31	25
Two-Panel	75" x 90"	31	25

- \* "Sound Transmission Class (STC)" and "Outdoor/Indoor Transmission Class (OITC)" ratings are for individual units based on independent tests and represent entire unit.
- \* This data is accurate as of May 2021. Due to ongoing product changes, updated test results or new industry standards, this data may change over time.
- \* Contact your Andersen supplier for more information.



## PERFORMANCE STANDARDS

The Window and Door Manufacturers Association (WDMA), the American Architectural Manufacturers Association (AAMA) and the Canadian Standards Association (CSA) jointly release the North American Fenestration Standard/Specification for Windows, Doors and Skylights (NAFS-11) where “-11” refers to the most recent publication year of 2011. NAFS is also referred to as AAMA/WDMA/CSA 101/I.S.2/A440, which is how the International Code Council (ICC) lists this standard in the 2012, 2015 and 2018 International Residential Code (IRC) and International Building Code (IBC) as the means to indicate the window, door or skylights design pressure rating used to determine compliance to the job site design pressure requirements.

A product only achieves a “Performance Grade” or “PG” rating when it complies with all of the NAFS performance requirements such as ease of operation, air infiltration resistance, resistance to water penetration and resistance to forced entry, etc. A “Design Pressure Rating” or “DP” rating only depicts the design and structural load performance.

## Performance Classes

The NAFS Standard/Specification defines requirements for four performance classes. Performance classes are designated R, LC, CW and AW. This classification system provides for several levels of performance. Product selection is always based on the performance and building code requirements of the particular project.

## Elements of Performance Grade (PG) Designations

In order to qualify for a given performance grade (PG), test specimens need to pass all required performance tests for the following, in addition to all required auxiliary (durability) and applicable material/component tests (not shown here) for the applicable product type and desired performance class:

**(a) Operating force (if applicable):** Maximum operating force varies by product type and performance class.

**(b) Air leakage resistance:** Tested in accordance with ASTM E283 at a test pressure of 1.57 psf. Allowable air infiltration for R, LC and CW class designations is 0.3 cubic feet per minute per square foot of frame (cfm/ft²).

**(c) Water penetration resistance:** Tested in accordance with ASTM E547 with the specified test pressure applied per NAFS-11. Test consists of four cycles. Each cycle consists of five minutes with pressure applied and one minute with the pressure released, during which the water spray is continuously applied. Water spray shall be uniformly applied at a constant rate of 5 U.S. gal/ft² · hr.

**(d) Uniform load deflection test:** Tested in accordance with ASTM E330 for both positive and negative pressure (pressure defined by NAFS-11) with the load maintained for a period of 10 seconds. The test specimen shall be evaluated for deflection during each load for permanent damage after each load and for any effects on the normal operation of the specimen. *Starting with the 2008 version of NAFS, design pressure (DP) will only represent the “uniform load deflection test.”*

**(e) Uniform load structural test:** Tested in accordance with ASTM E330 for both positive and negative pressure (pressure defined by NAFS-11) with the load maintained for a period of 10 seconds. After loads are removed, there shall be no permanent deformation in excess of 0.4% of its span and no damage to the unit, which would make it inoperable.

**(f) Forced-entry resistance (if applicable):** Tested in accordance with ASTM F588 (windows), F476 (swinging doors) and F842 (sliding doors) at a performance level 10 rating.

## Performance Grades (PG) and Corresponding Test Pressures (psf)

Performance Class/ Performance Grade		Air Infiltration Test Pressure		Maximum Allowable Air Infiltration/ Exfiltration Rate		Water Penetration Resistance Test Pressure		Design Pressure		Structural Test Pressure	
R	LC	Pa	psf	L/s·m²	cfm/ft²	Pa	psf	Pa	psf	Pa	psf
15	-	75	1.57	1.5	0.30	140	2.92	720	15.04	1080	22.56
20	-	75	1.57	1.5	0.30	150	3.13	960	20.05	1440	30.08
25	25	75	1.57	1.5	0.30	180	3.76	1200	25.06	1800	37.59
30	30	75	1.57	1.5	0.30	220	4.59	1440	30.08	2160	45.11
35	35	75	1.57	1.5	0.30	260	5.43	1680	35.09	2520	52.63
40	40	75	1.57	1.5	0.30	290	6.06	1920	40.10	2880	60.15
45	45	75	1.57	1.5	0.30	330	6.89	2160	45.11	3240	67.67
50	50	75	1.57	1.5	0.30	360	7.52	2400	50.13	3600	75.19
55	55	75	1.57	1.5	0.30	400	8.35	2640	55.14	3960	82.71
60	60	75	1.57	1.5	0.30	440	9.19	2880	60.15	4320	90.23
65	65	75	1.57	1.5	0.30	470	9.82	3120	65.16	4680	97.74
70	70	75	1.57	1.5	0.30	510	10.65	3360	70.18	5040	105.26
75	75	75	1.57	1.5	0.30	540	11.28	3600	75.19	5400	112.78
80	80	75	1.57	1.5	0.30	580	12.11	3840	80.20	5760	120.30
85	85	75	1.57	1.5	0.30	580	12.11	4080	85.21	6120	127.82
90	90	75	1.57	1.5	0.30	580	12.11	4320	90.23	6480	135.34
95	95	75	1.57	1.5	0.30	580	12.11	4560	95.24	6840	142.86
100	100	75	1.57	1.5	0.30	580	12.11	4800	100.25	7200	150.38

## HALLMARK CERTIFICATION

The Window and Door Manufacturers Association (WDMA)-sponsored Hallmark Certification Program provides manufacturers with certification to the AAMA/WDMA/CSA 101/I.S.2/A440-11 Standard and is designed to provide builders, architects, specifiers and consumers with an easily recognizable means of identifying products that have been manufactured and tested in accordance with NAFS (AAMA/WDMA/CSA 101/I.S.2/A440) industry standards and other applicable performance standards. Conformance is determined by periodic in-plant inspections by a third-party administrator. Inspections include auditing licensee quality control procedures and processes, and a review to confirm products are manufactured in accordance with the appropriate performance standards. Periodic testing of representative product constructions and components by an independent testing laboratory is also required. When all of the program requirements are met, the licensee is authorized to use the WDMA Hallmark registered logo on their certification label as a means of identifying products and their performance ratings.

Products successfully obtaining Hallmark Certification will be labeled with a three-part code, which includes performance class, performance grade and size tested. In addition to this mandatory requirement, you are allowed to list the design pressure on a separate line.

	Andersen Corporation 100 SERIES CASEMENT WINDOW Manufacturer stipulates certification as indicated below.	
	STANDARD	RATING
	AAMA/WDMA/CSA 101/I.S.2/A440-11	Class LC <sup>(1)</sup> - PG40 <sup>(2)</sup> - Size Tested 71.5 x 71.5 in. <sup>(3)</sup> DP+40/-45 <sup>(4)</sup>
	AAMA/WDMA/CSA 101/I.S.2/A440-08	Class LC <sup>(1)</sup> - PG40 <sup>(2)</sup> - Size Tested 71.5 x 71.5 in. <sup>(3)</sup> DP+40/-45 <sup>(4)</sup>

(1) - Performance Class

(2) - Performance Grade

(3) - Size Tested

(4) - Design Pressure

In the example above, the performance class is LC, the performance grade (PG) is 40 pounds per square foot (psf) and the size tested is 71.5" x 71.5". What this means to the specifier is, based on the performance grade chart, the laboratory-tested air infiltration was less than 0.3 cfm/ft² (test pressure is always 1.57 psf and the allowable airflow is 0.3 cfm/ft²), the product tested successfully resisted a laboratory water penetration test at a test pressure of 6.0 psf, the product tested successfully withstood a laboratory positive test pressure of 60 psf and a laboratory negative test pressure of 67 psf, and the product tested passed the laboratory requirements for operational force and forced-entry resistance. Based on this test, all products of the same design that are smaller than the tested size can be labeled with this product performance rating.

## IMPORTANT

Building codes prescribe design pressure based on a variety of criteria (i.e., windspeed zone, building height, building type, job site exposure, etc.). Design pressures derived from Performance Grade (PG) test requirements should be used to determine compliance to building code required design pressures. Structural test pressures, which are tested at 1.5 times the design pressure, should **not** be used for determining design pressure code compliance. In the example above, a PG 40 performance grade rating, which passes a 40 psf design pressure, should be used for determining code compliance, not the structural test pressure of 60 psf.

If you need further details about how Andersen® products perform to this standard, contact your Andersen supplier.

If you need further information about the AAMA/WDMA/CSA 101/I.S.2/A440-11 standard or the Hallmark Certification Program, please contact: WDMA, 2001 K Street NW, 3rd Floor North, Washington, D.C. 20006. Phone: 202-367-1157 Website: [wdma.com](http://wdma.com)

Where designated, Andersen products are tested, certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.



# 100 SERIES PRODUCT PERFORMANCE



## Performance Grade and Air Infiltration Ratings — 100 Series Windows and Patio Doors *(Does not include windows with flush fin frame. See chart below.)*

For current performance information, please visit [andersenwindows.com](https://andersenwindows.com).

Andersen® Product	AAMA/WDMA/CSA 101/1.S.2/A440 Performance Grade (PG)	+/- Corresponding Design Pressure (DP)	Air Infiltration CFM/FT <sup>2</sup>
<b>Casement Windows</b>			
Single and Twin <i>(venting/stationary)</i>	Class LC-PG40 Size Tested 71.5" x 71.5"	40/45	< 0.2
Single and Twin, PG Upgrade <i>(venting/stationary)</i>	Class LC-PG50 Size Tested 71.5" x 71.5"	50/50†	< 0.2
Picture With Flanking Casements	Class LC-PG40 Size Tested 143.5" x 71.5"	40/40	< 0.2
Picture With Flanking Casements, PG Upgrade	Class LC-PG50 Size Tested 143.5" x 65.5"	50/50†	< 0.2
<b>Awning Windows</b>			
Single and Twin <i>(venting/stationary)</i>	Class LC-PG40 Size Tested 47.5" x 95.5"	40/45	< 0.2
Single and Twin, PG Upgrade <i>(venting/stationary)</i>	Class LC-PG50 Size Tested 47.5" x 95.5"	50/50†	< 0.2
Picture Over Awning	Class LC-PG40 Size Tested 47.5" x 95.5"	40/45	< 0.2
Picture Over Awning, PG Upgrade	Class LC-PG50 Size Tested 47.5" x 95.5"	50/50†	< 0.2
<b>Single-Hung Windows</b>			
Arch Single-Hung	Class LC-PG30 Size Tested 41.5" x 95.0"	30/30	< 0.2
Arch Single-Hung, PG Upgrade	Class LC-PG50 Size Tested 41.5" x 83.0"	50/50†	< 0.2
Single-Hung	Class LC-PG30 Size Tested 47.5" x 89.5"	30/30	< 0.2
Single-Hung, PG Upgrade	Class LC-PG50 Size Tested 47.5" x 77.5"	50/50†	< 0.2
Twin and Triple Single-Hung	Class LC-PG30 Size Tested 143.5" x 71.5"	30/30	< 0.2
Twin and Triple Single-Hung, PG Upgrade	Class LC-PG50 Size Tested 143.5" x 65.5"	50/50†	< 0.2
Transom Over Single-Hung	Class LC-PG30 Size Tested 47.5" x 95.5"	30/30	< 0.2
Transom Over Single-Hung, PG Upgrade	Class LC-PG50 Size Tested 47.5" x 95.5"	50/50†	< 0.2
Picture With Flanking Single-Hungs	Class LC-PG30 Size Tested 143.5" x 71.5"	30/30	< 0.2
Picture With Flanking Single-Hungs, PG Upgrade	Class LC-PG50 Size Tested 143.5" x 59.5"	50/50†	< 0.2
<b>Gliding Windows</b>			
Gliding – Active-Stationary or Stationary-Active	Class LC-PG30 Size Tested 71.5" x 71.5"	30/30	< 0.2
Gliding, PG Upgrade <i>(active-stationary or stationary-active)</i>	Class LC-PG50 Size Tested 71.5" x 59.5"	50/50†	< 0.2
Picture over Gliding <i>(active-stationary or stationary-active)</i>	Class LC-PG30 Size Tested 59.5" x 83.5"	30/30	< 0.2
Gliding – Active-Stationary-Active	Class LC-PG30 Size Tested 143.5" x 71.5"	30/30	< 0.2
Gliding, PG Upgrade <i>(active-stationary or stationary-active)</i>	Class LC-PG50 Size Tested 101.5" x 59.5"	50/50†	< 0.2
Picture over Gliding <i>(active-stationary or stationary-active)</i>	Class LC-PG30 Size Tested 107.5" x 83.5"	30/30	< 0.2
<b>Picture, Transom &amp; Specialty Windows</b>			
Picture, Transom, Specialty Windows	Class LC-PG40 Size Tested 95.5" x 84.3"	40/40	< 0.2
Picture, Transom, Specialty Windows, PG Upgrade	Class LC-PG50 Size Tested 95.5" x 71.5"	50/50†	< 0.2
Gliding Patio Doors	Class LC-PG30 Size Tested 95.3" x 95.5"	30/30	< 0.2
Patio Door Sidelights	Class LC-PG30 Size Tested 47.3" x 95.3"	30/30	< 0.2
Patio Door Transoms	Class LC-PG30 Size Tested 95.3" x 23.3"	30/30	< 0.2

• "Performance Grade (PG)" ratings may vary from tested performance rating for larger or smaller units of a particular type.  
 • This data is accurate as of April 2023. Due to ongoing product changes, updated test results, or new industry standards, this data may change over time.  
 • Where designated, Andersen products are certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.  
 • PG upgrades are not available for windows with insert or flush fin frames.  
 • Contact your Andersen supplier for more information.  
 †Available for select sizes. Contact your Andersen supplier.

## Performance Grade and Air Infiltration Ratings — 100 Series Windows with Flush Fin Frame

For current performance information, please visit [andersenwindows.com](https://andersenwindows.com).

Andersen® Product	AAMA/WDMA/CSA 101/1.S.2/A440 Performance Grade (PG)	+/- Corresponding Design Pressure (DP)	Air Infiltration CFM/FT <sup>2</sup>
<b>Casement Windows</b>			
Single and Twin <i>(venting/stationary)</i>	Class LC-PG40 Size Tested 71.5" x 71.5"	40/45	< 0.2
<b>Awning Windows</b>			
Single and Twin <i>(venting/stationary)</i>	Class LC-PG40 Size Tested 47.5" x 95.5"	40/45	< 0.2
Picture Over Awning	Class LC-PG40 Size Tested 47.5" x 95.5"	40/45	< 0.2
<b>Single-Hung Windows</b>			
Single-Hung	Class LC-PG30 Size Tested 47.5" x 89.5"	30/30	< 0.2
Twin and Triple Single-Hung	Class LC-PG30 Size Tested 143.5" x 71.5"	30/30	< 0.2
<b>Gliding Windows</b>			
Gliding – Active-Stationary or Stationary-Active	Class LC-PG30 Size Tested 71.5" x 71.5"	30/30	< 0.2
Gliding – Active-Stationary-Active	Class LC-PG30 Size Tested 143.5" x 71.5"	30/30	< 0.2
Picture, Transom & Specialty Windows	Class LC-PG40 Size Tested 95.5" x 84.3"	40/40	< 0.2

• "Performance Grade (PG)" ratings may vary from tested performance rating for larger or smaller units of a particular type.  
 • This data is accurate as of April 2023. Due to ongoing product changes, updated test results, or new industry standards, this data may change over time.  
 • Where designated, Andersen products are certified and labeled to the requirements of the Hallmark Certification Program. Actual performance may vary based on variations in manufacturing, shipping, installation, environmental conditions and conditions of use.  
 • Contact your Andersen supplier for more information.