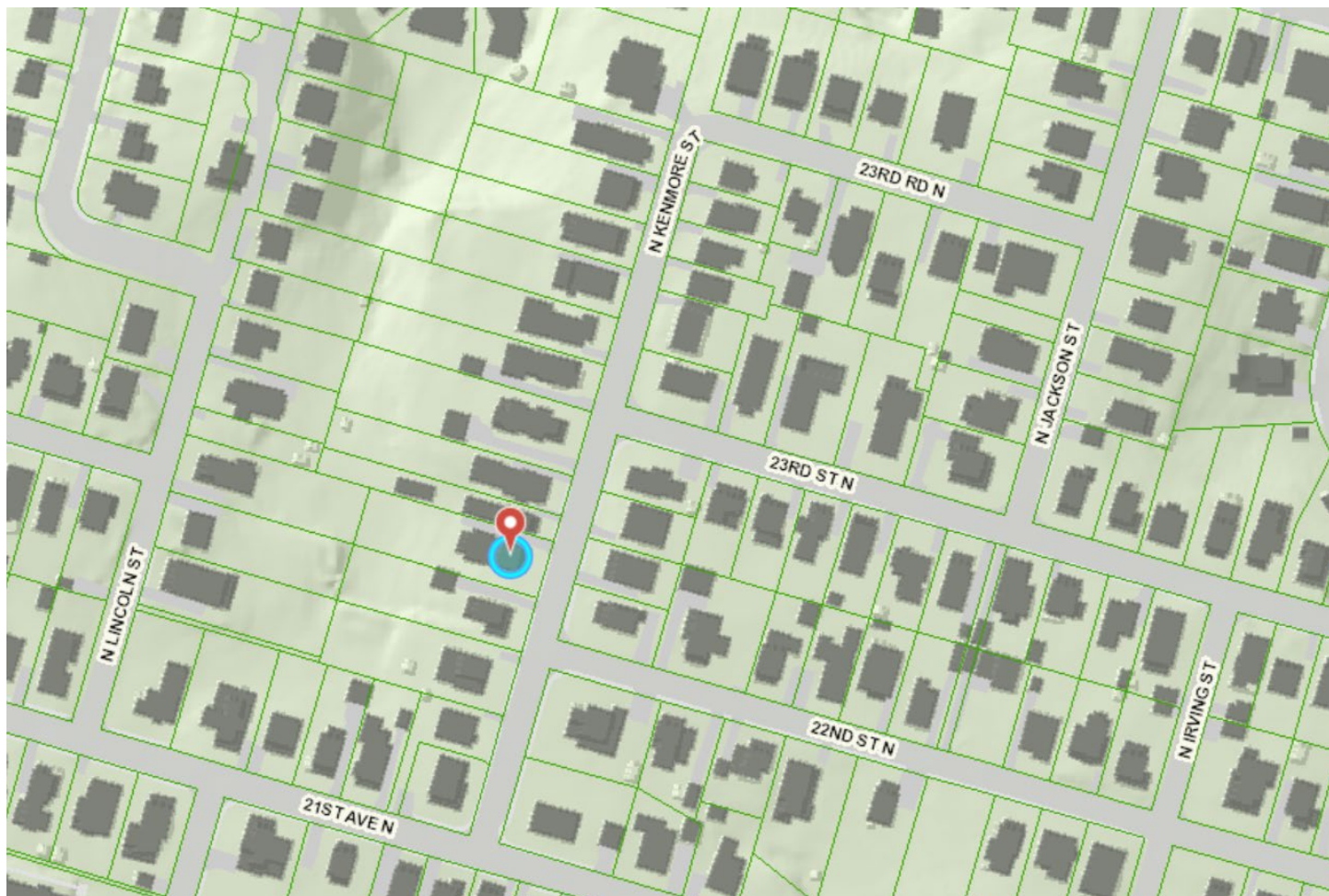


Historical Affairs and Landmark Review Board

Arlington County, Virginia



HALRB meeting April 20, 2022, Case 22-02

2204 N. Kenmore St.: Request to replace 14 wood windows with new wood windows.







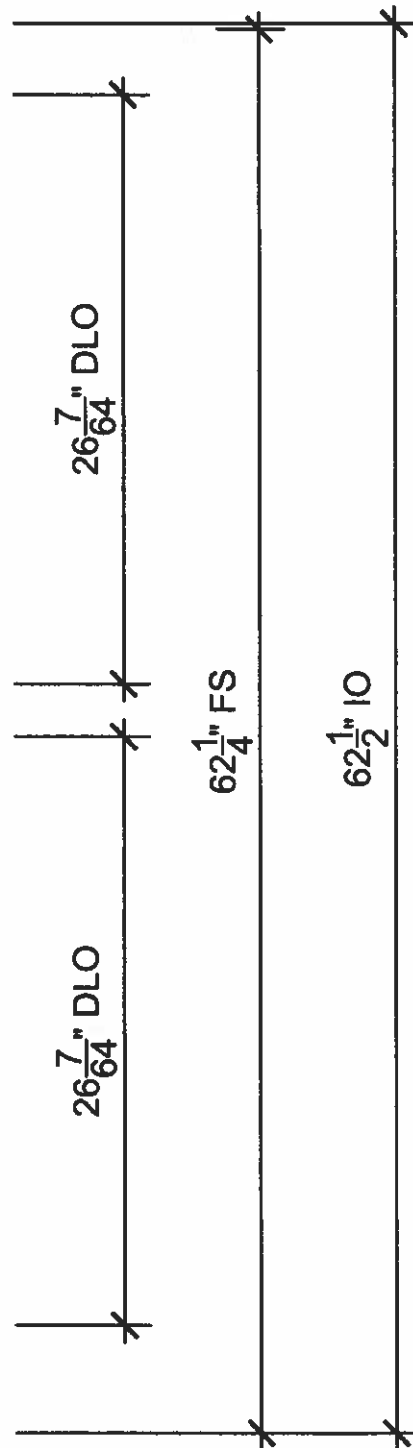
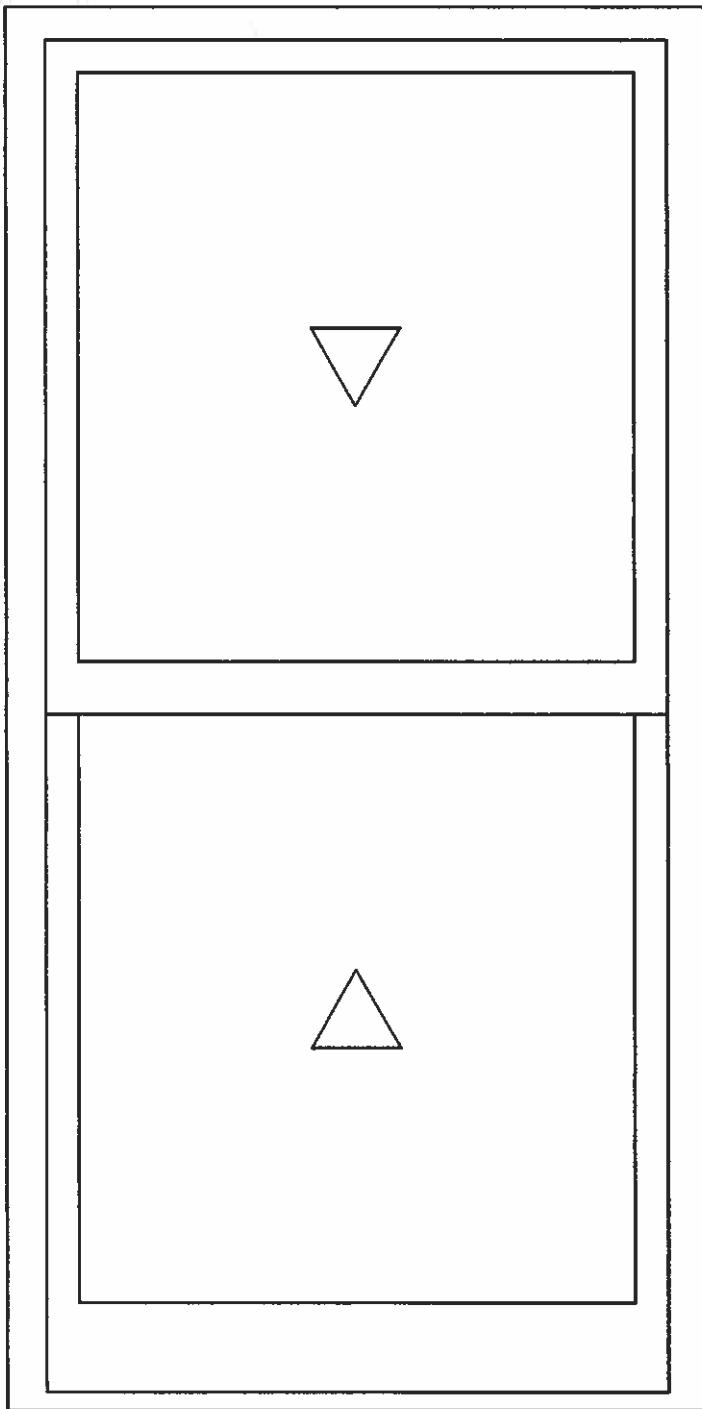
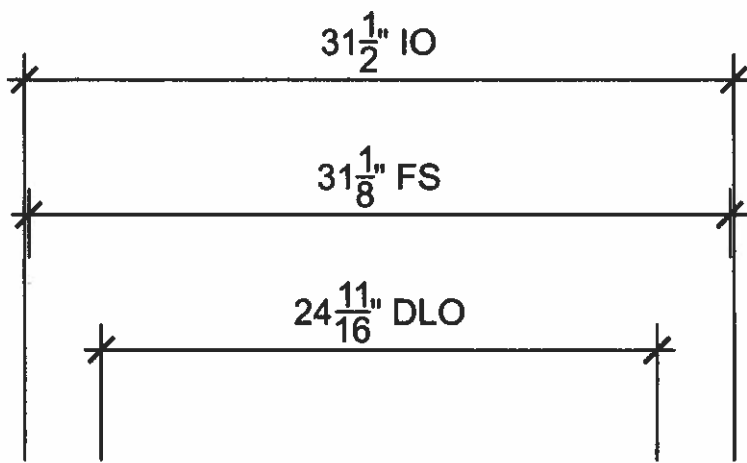




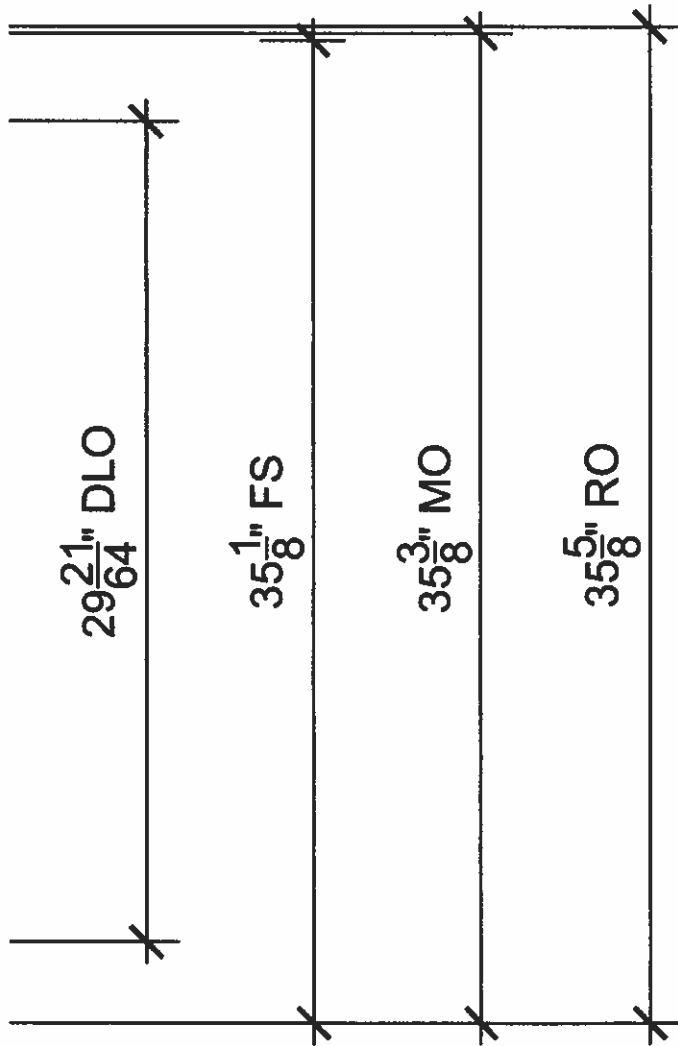
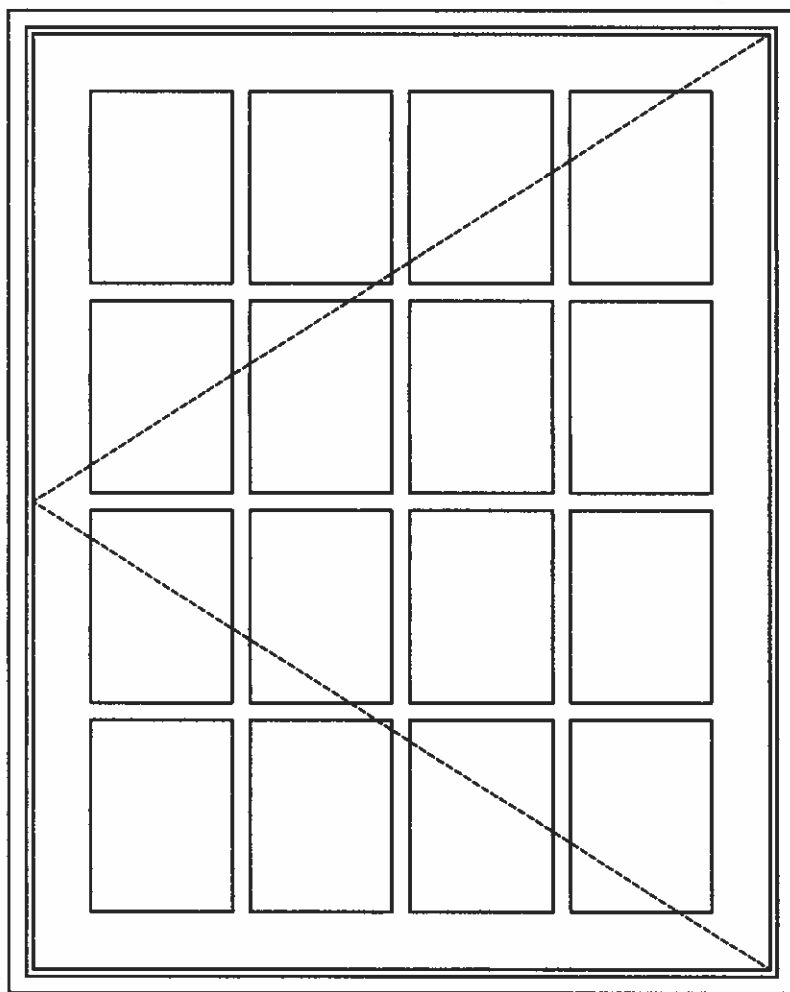
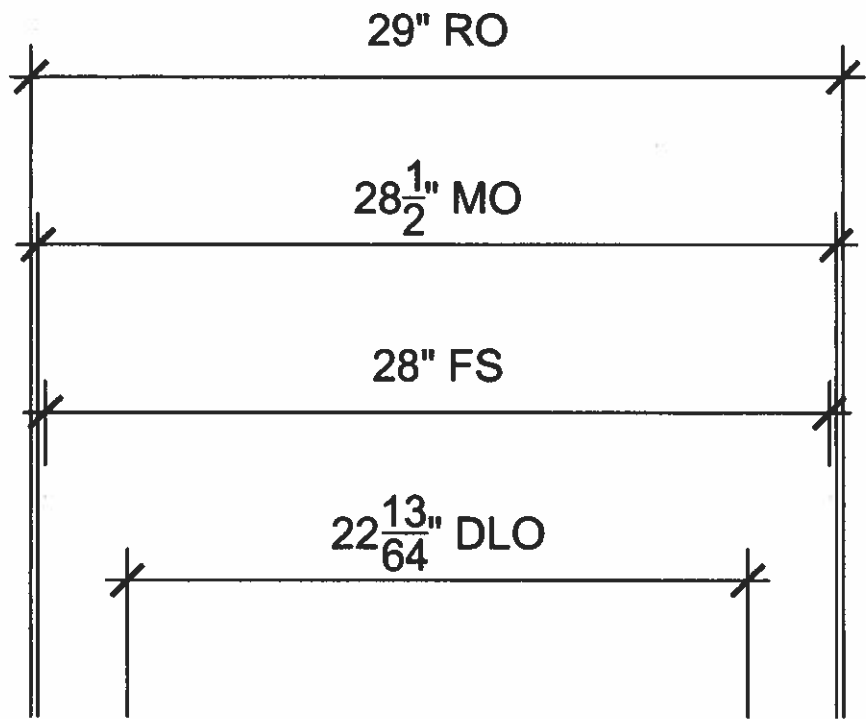




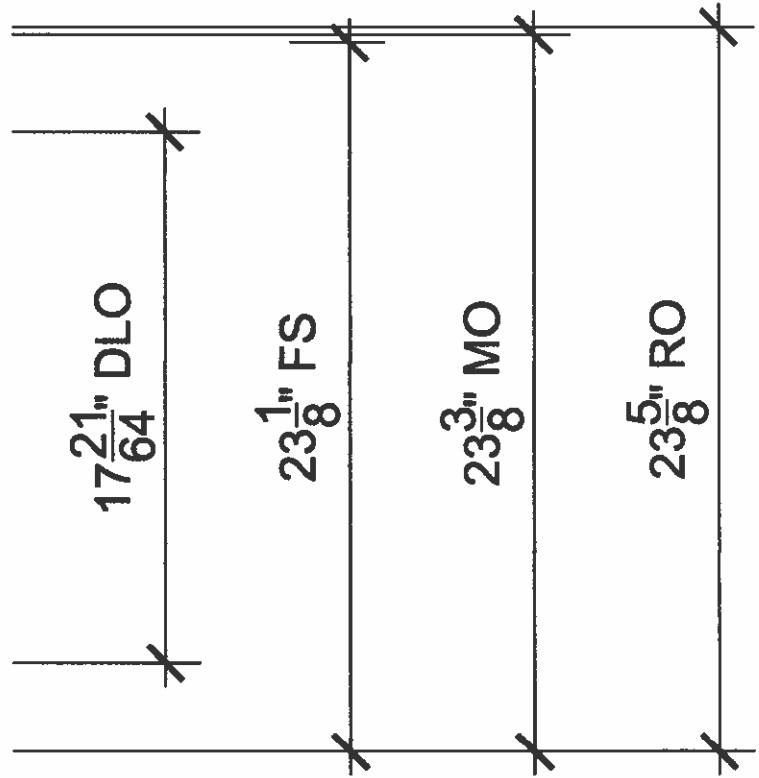
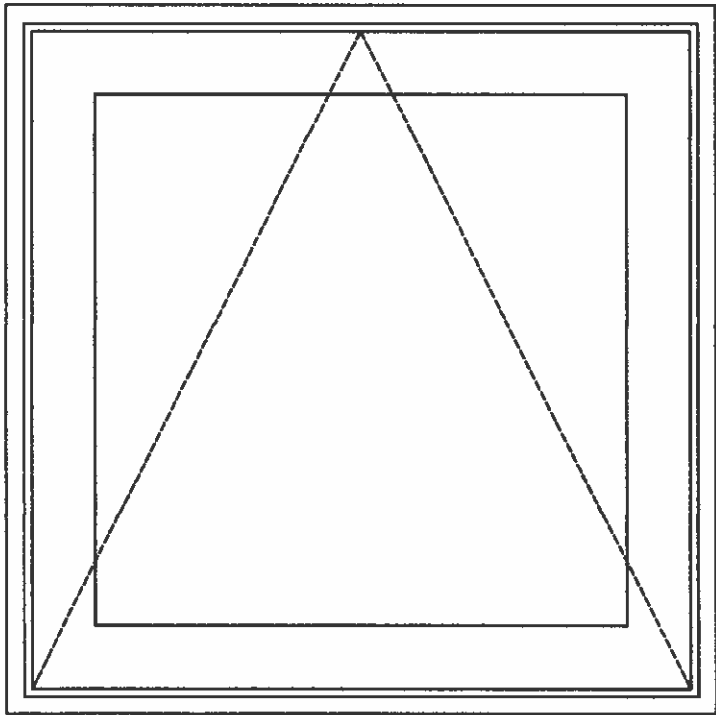
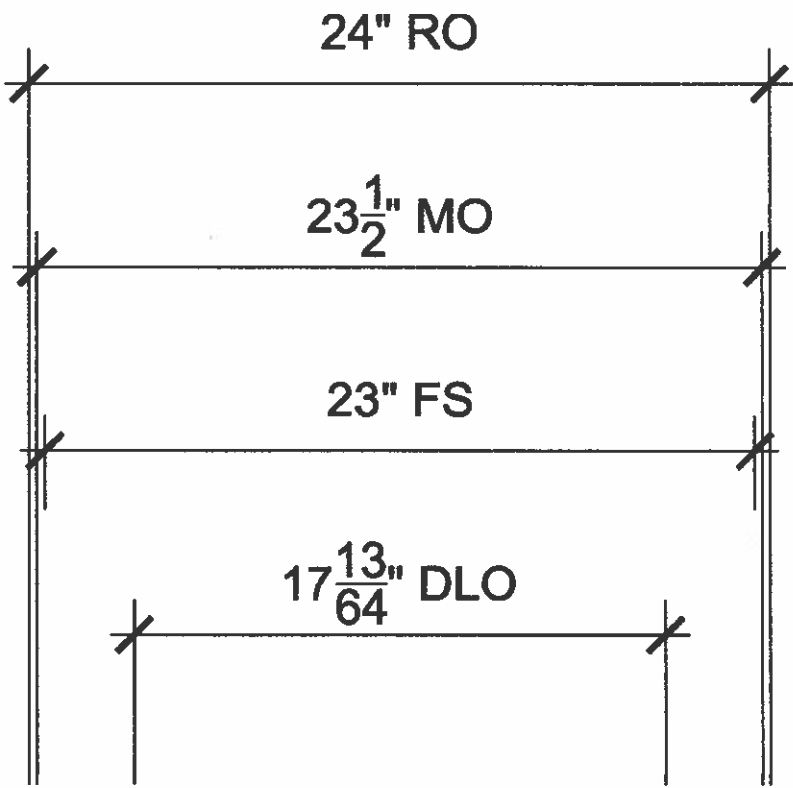




PIANO R.



3TH.FL.SIDE



3 TH.FL.FRONT

- Please see Figures 1-9 which show various photos of some of the windows on our existing home.
 - As part of CoA 15-17 (2015): DRC and HALRB previously approved 2 new “in-kind” windows on the historical portion of the house. One of the windows (bottom right in Figures 2 and 3) is basically an in-kind replacement (new) of the sister window (existing) to its left. We have included close up pictures to provide the Board with a clear understanding of just how similar these windows will be “in situ”.



Figure 1 - Main House



Figure 2 - Side view #1



Figure 3 - Side view #2



Figure 4 - Replacement Double Hung on Historical portion



Figure 5 -Existing Double Hung on Historical portion



Figure 6 - Side View B1



Figure 7 - Existing Double Hung



Figure 8 - Replacement Double Hung



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GREENE RESIDENCE
2204 North Kenmore Street
Arlington, VA 22201
Renovation & Addition

Issue: Date:
DRC-HALRB

PHOTOGRAPHS

PH

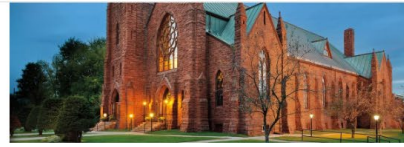
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Figure 9 - CoA 15-17 photos



HISTORIC MUSIC HALL RENOVATION

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ST PAUL HISTORIC RENOVATION



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EXPLORE HISTORIC DESIGN WINDOWS

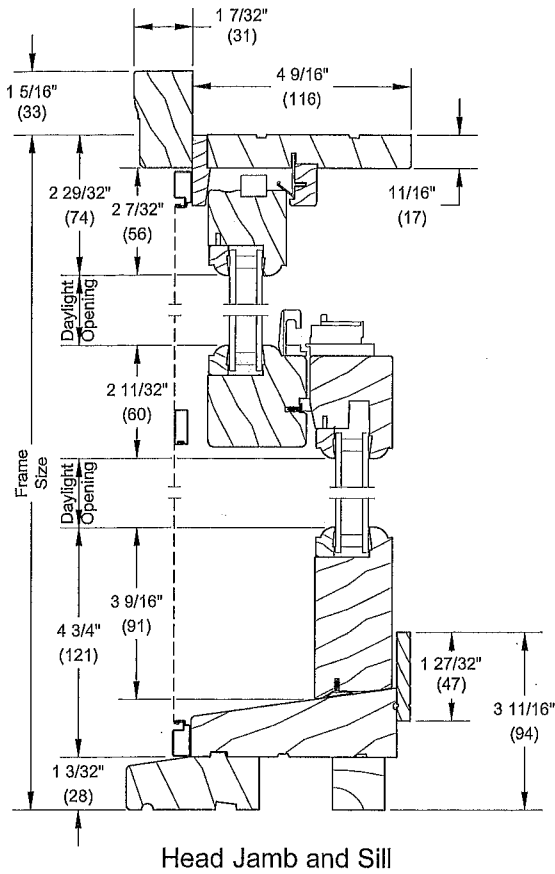
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<p>SIGNATURE</p>  <p>Ultimate Wood Double Hung</p>	<p>SIGNATURE</p>  <p>Ultimate Wood Double Hung Insert</p>	<p>SIGNATURE</p>  <p>Ultimate Wood Double Hung Magnum</p>	<p>SIGNATURE</p>  <p>Ultimate Wood Single Hung</p>

Wood Ultimate Double Hung

Section Details: Operating

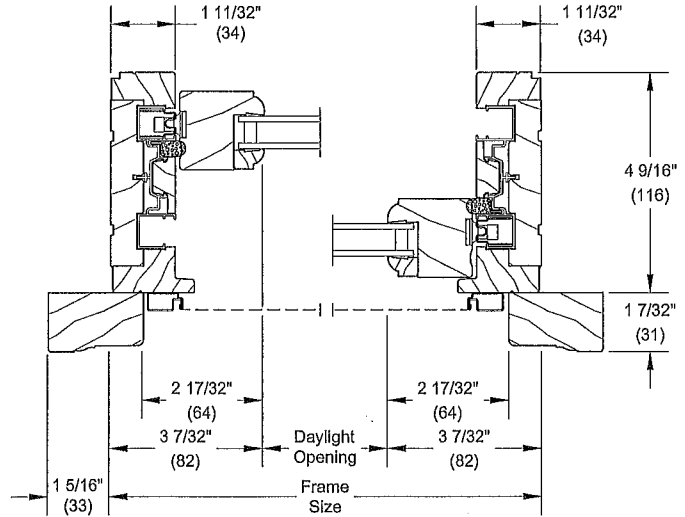
Scale: 3" = 1' 0"

Double Hung

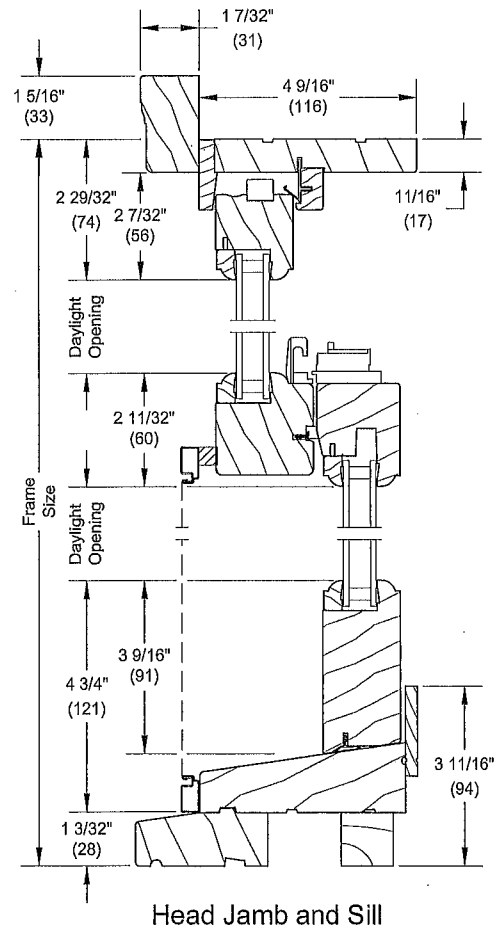


Lower Sash

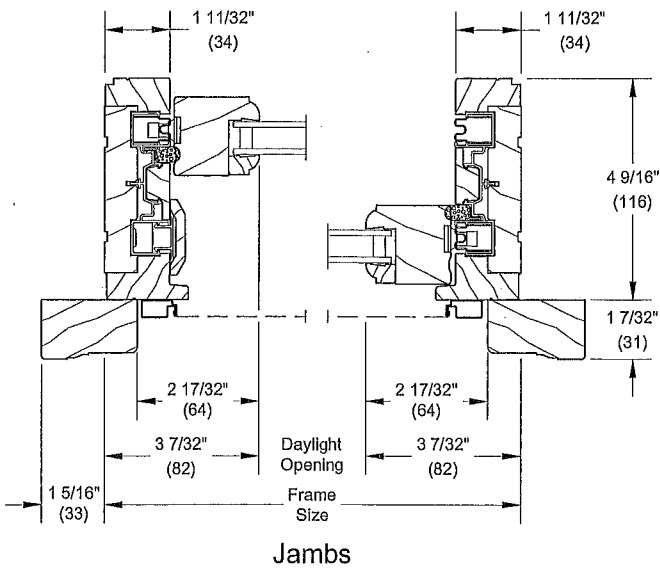
Upper Sash



Jambs



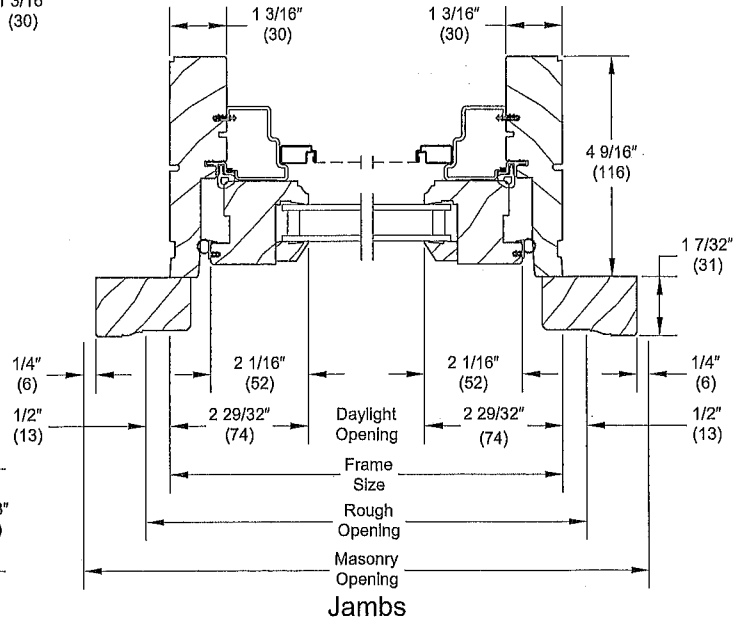
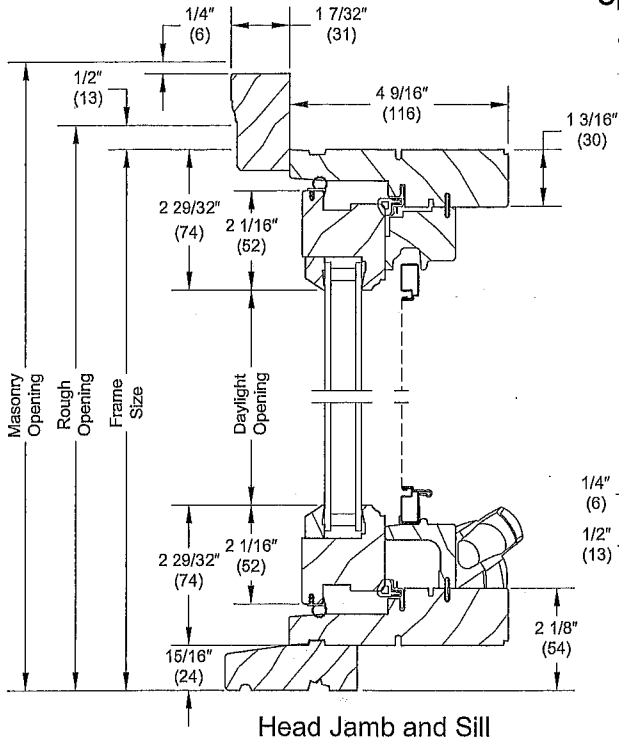
Single Hung



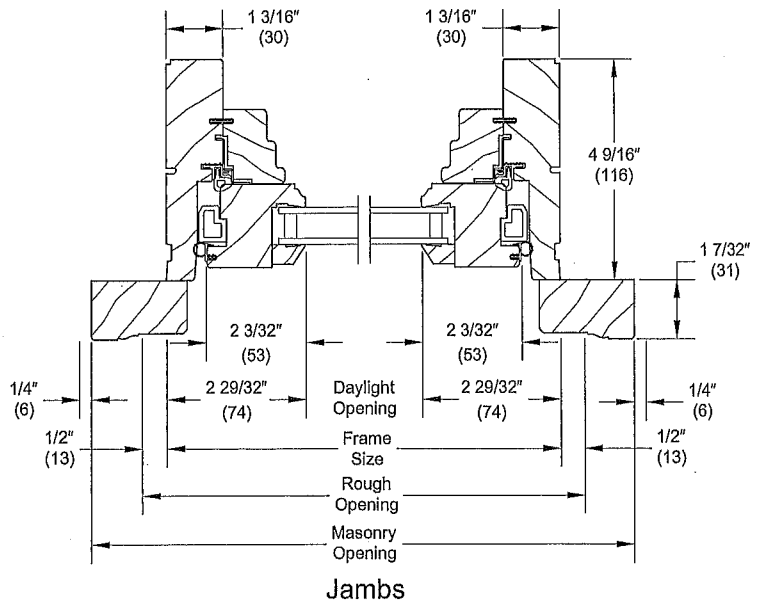
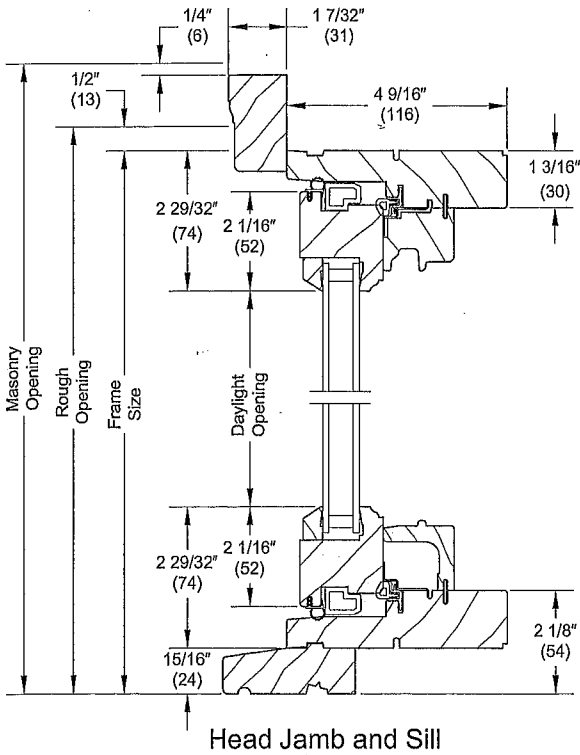
Section Details: Operating and Stationary / Picture - 3/4" IG

Scale: 3" = 1' 0"

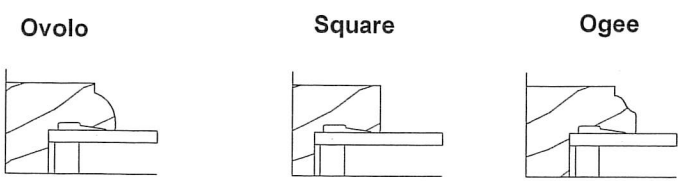
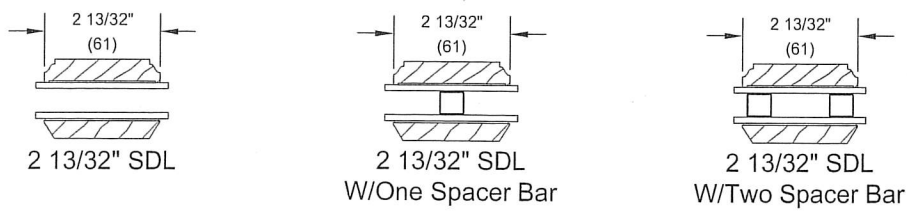
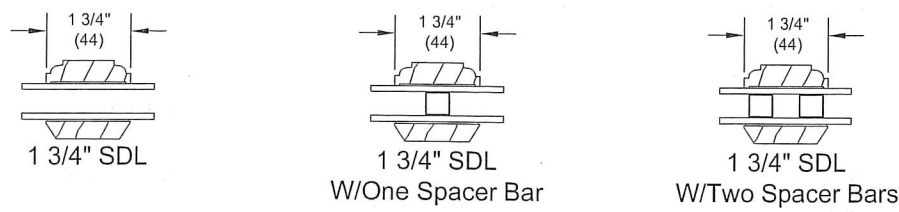
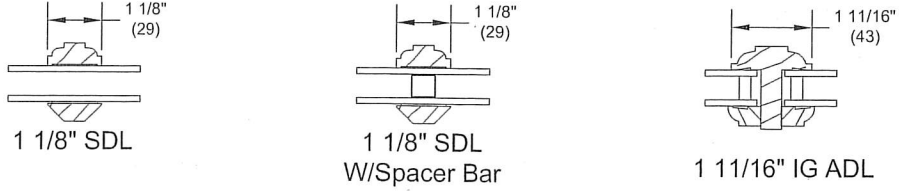
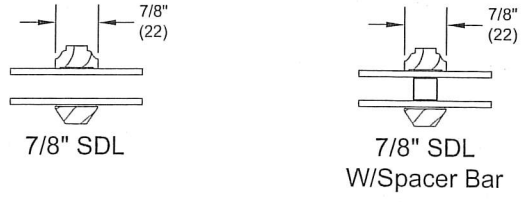
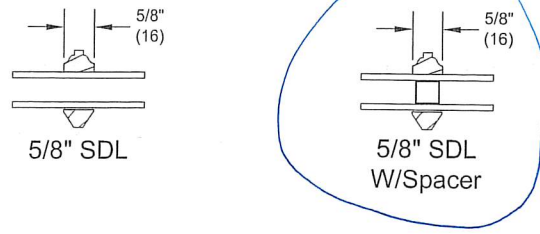
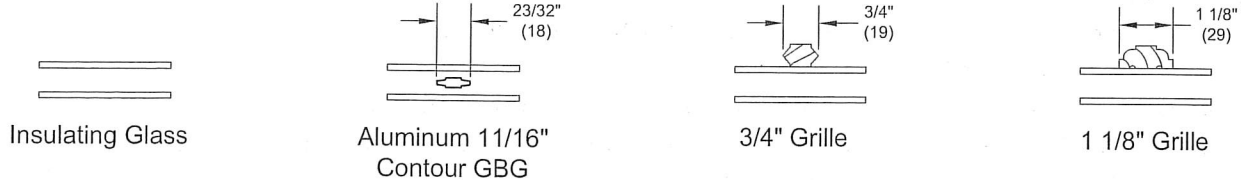
Operating



Stationary



Standard Insulating Glass Divided Lite Options



Executive Summary:

2204 N. Kenmore St., CoA 22-02 – David and Maria Greene

HALRB Board members,

Thanks again for your time and consideration with this project. After last meeting's discussion, we felt compelled to put together a summary of considerations in bullet point format:

Key reasons/considerations for replacement:

- Overall condition/Moisture issues/Restoration complexity and cost
 - Upon review of the photos from the original staff report of significant water/condensation/ice, it should be quite apparent that the windows have deteriorated, are deteriorating and will continue to do so.
 - Many articles/experts point to moisture being the primary cause of window deterioration. As several board members pointed out, even the 8-10 week restoration option will not solve the moisture issue because of the single pane glass. As even the restoration expert suggests, you would still have to add the storm windows which significantly adds to the cost and actually limits the ability to see the windows in situ.
 - An on-site repair will not fix the long-term deterioration, energy efficiency, health and cost challenges and should not be an option to consider or discuss.
 - Per summary of Mozer Works (one of the few restorers left in the area) discussion:
 - They would most likely have to take out each of the 14 windows to do offsite restoration. Mozer confirmed that the cost is equivalent to the cost of a new high end window. They also highly recommended storm windows (significant additional cost) even with the full restoration to maximize energy efficiency.
 - It takes 4-5 hours/window just to remove them and then the restoration process takes 8-10 weeks.
 - During the 8-10 week period, we would need plywood or plexiglass to cover window openings to keep out weather in a limited manner and avoid anyone falling out of the windows. Just having heavy plastic would create a safety hazard with someone potentially falling through.
 - For those 2.5 months, we are still attempting to LIVE in the house. The three bedrooms for our kids would have the covered window openings.
 - Please watch the 15 minute video to understand the complexity of the restoration process. <http://windowrestoration.us/>
- Energy efficiency:
 - You can achieve better long term energy efficiency, reduce the overall carbon footprint and maintain the same visual from the street with in-kind replacement windows.
 - Restoration retains the single pane window which is the major cause for significant loss of heat and the devastating moisture damage.
 - Mozer confirms that the only way to come close to the energy efficiency of a double paneled replacement window is to have a storm window installed in addition to the restored window which essentially covers up the original window and significantly adds to the cost.

- Health/Safety:
 - Mold/mildew and extremely low temperatures in the three bedrooms where children sleep can cause sickness and other health problems.
 - The temperature in the front room on the 1st floor and the front bedroom on the 2nd floor loses a significant amount of heat on extremely cold nights such that they are 5 -10 degrees colder than any other room.
 - Flies, stinkbugs, ladybugs infestations are 100% solved with the installation of in-kind replacement windows.
 - The 2 smaller dormer windows do not have any safety mechanisms to prevent them from opening all the way but are above a dormer bench with the possibility of someone falling out – a new replacement window will have the built in mechanisms to limit how far the window opens.
 - Many of the existing windows have a top sash that simply will not open limiting the ability to promote circulation/fresh air.
- Technical/Guideline considerations:
 - Per staff report, they cannot ascertain, even upon close examination, whether these windows actually date to the period of significance. There are no distinctive architectural features to confirm this and certainly no significant qualities from street view to suggest to a passerby whether they are or not.
 - There is no section and no language within the Maywood Guidelines which “requires” historic windows be repaired rather than replaced; it merely suggests they “should” be. The encouragement is understandable but there is no requirement. See snippet below.

Windows

Most Maywood houses have a single type and size of window for major openings, with smaller windows used as accents in gables, attics, and staircases. Repair or replacement of windows with different materials, a different design and/or a different size, requires a Certificate of Appropriateness. Vinyl or aluminum (or vinyl- or aluminum-clad) windows are inappropriate to Maywood. See the Secretary of the Interior’s Brief: [09: The Repair of Historic Wooden Windows](#)

Original windows should be repaired and restored.

- With the many references to the SOI standards themselves, we want to make sure the Board does not miss the guiding theme on the SOI website (see snippet below) which supports applying the standards in a “reasonable” manner taking into consideration economic and technical feasibility.

The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

- We also thought it important to highlight the introduction section of Maywood’s Guidelines (most recently amended by the ACB in 2020) which provides an important context/lens through which Maywood residents/HALRB/HPP staff are encouraged to consider when weighing individual CoAs/projects on their own merits

4

6. Deteriorated historic features should be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature should match the old in design, color, texture, and, where possible, materials. Replacement of missing features should be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, should be undertaken using the gentlest means possible. Treatments that cause damage to historic materials should not be used.
8. Archeological resources should be protected and preserved in place. If such resources must be disturbed, mitigation measures should be undertaken.
9. New additions, exterior alterations, or related new construction should not destroy historic materials, features, and spatial relationships that characterize the property.

The Maywood Guidelines are not intended to dictate architectural style or to require particular architectural features. Rather, they identify a range of design options which will encourage preservation and new development compatible with the existing character of the Maywood Historic District. In the design review process, economic feasibility, durability, design integrity and harmony of proposed improvements are all important concerns.

There is an important point to remember when using the guidelines: every house is unique. Even houses that look identical at first glance have details or characteristics that set them apart from others. This means that what is appropriate for one building may not be appropriate for another. Each building must be looked at on an individual basis both by the property owner and by the review board.

These guidelines were developed with the recognition that buildings are not static, but continue to evolve over time. These guidelines are not intended to prohibit changes, but rather to ensure that such changes are respectful of and compatible with the existing historic fabric and character of the neighborhood.

WOOD AWNING / WOOD AWNING PUSH OUT

MO (mm)	1 - 7 5/8 (498)	1 - 9 5/8 (549)	1 - 11 5/8 (600)	2 - 3 5/8 (702)	2 - 5 5/8 (752)	2 - 7 5/8 (803)	2 - 9 5/8 (854)	2 - 11 5/8 (905)	3 - 3 5/8 (1006)
RO (mm)	1 - 5 (431)	1 - 7 (482)	1 - 9 (533)	2 - 1 (635)	2 - 3 (685)	2 - 5 (736)	2 - 7 (787)	2 - 9 (838)	3 - 1 (939)
FS (mm)	1 - 4 (406)	1 - 6 (457)	1 - 8 (508)	2 - 0 (609)	2 - 2 (660)	2 - 4 (711)	2 - 6 (762)	2 - 8 (812)	3 - 0 (914)
DLO (mm)	0 - 11 19/64 (287)	1 - 1 19/64 (338)	1 - 3 19/64 (388)	1 - 7 19/64 (490)	1 - 9 19/64 (541)	1 - 11 19/64 (592)	2 - 1 19/64 (642)	2 - 3 19/64 (693)	2 - 7 19/64 (795)














































1 - 3 7/8 (403)									
1 - 2 9/16 (370)	UAWAWNPO 1614	UAWAWNPO 1814	UAWAWNPO 2014	UAWAWNPO 2414	UAWAWNPO 2614	UAWAWNPO 2814	UAWAWNPO 3014	UAWAWNPO 3214	UAWAWNPO 3614
1 - 2 1/16 (357)									
0 - 7 15/16 (186)									
1 - 5 7/8 (454)									
1 - 4 9/16 (421)	UAWAWNPO 1616	UAWAWNPO 1816	UAWAWNPO 2016	UAWAWNPO 2416	UAWAWNPO 2616	UAWAWNPO 2816	UAWAWNPO 3016	UAWAWNPO 3216	UAWAWNPO 3616
1 - 4 1/16 (408)									
0 - 9 15/16 (237)									
1 - 7 7/8 (605)									
1 - 6 9/16 (471)	UAWAWNPO 1618	UAWAWNPO 1818	UAWAWNPO 2018	UAWAWNPO 2418	UAWAWNPO 2618	UAWAWNPO 2818	UAWAWNPO 3018	UAWAWNPO 3218	UAWAWNPO 3618
1 - 6 1/16 (458)									
0 - 11 15/16 (287)									
1 - 9 7/8 (556)									
1 - 8 9/16 (522)	UAWAWNPO 1620	UAWAWNPO 1820	UAWAWNPO 2020	UAWAWNPO 2420	UAWAWNPO 2620	UAWAWNPO 2820	UAWAWNPO 3020	UAWAWNPO 3220	UAWAWNPO 3620
1 - 8 1/16 (510)									
1 - 1 15/16 (338)									
1 - 9 7/8 (657)									
2 - 9/16 (624)	UAWAWNPO 1624	UAWAWNPO 1824	UAWAWNPO 2024	UAWAWNPO 2424	UAWAWNPO 2624	UAWAWNPO 2824	UAWAWNPO 3024	UAWAWNPO 3224	UAWAWNPO 3624
2 - 1/16 (611)									
1 - 5 15/16 (440)									
2 - 5 7/8 (759)									
2 - 4 9/16 (725)	UAWAWNPO 1628	UAWAWNPO 1828	UAWAWNPO 2028	UAWAWNPO 2428	UAWAWNPO 2628	UAWAWNPO 2828	UAWAWNPO 3028	UAWAWNPO 3228	UAWAWNPO 3628
2 - 4 1/16 (713)									
1 - 9 15/16 (541)									
2 - 9 7/8 (860)									
2 - 8 9/16 (827)	UAWAWNPO 1632	UAWAWNPO 1832	UAWAWNPO 2032	UAWAWNPO 2432	UAWAWNPO 2632	UAWAWNPO 2832	UAWAWNPO 3032	UAWAWNPO 3232	UAWAWNPO 3632
2 - 8 1/16 (814)									
2 - 1 15/16 (643)									
3 - 1 7/8 (962)									
3 - 9/16 (929)	UAWAWNPO 1636	UAWAWNPO 1836	UAWAWNPO 2036	UAWAWNPO 2436	UAWAWNPO 2636	UAWAWNPO 2836	UAWAWNPO 3036	UAWAWNPO 3236	UAWAWNPO 3636
3 - 1/16 (916)									
2 - 5 15/16 (745)									
3 - 5 7/8 (1064)									
3 - 4 9/16 (1030)	UAWAWNPO 1640	UAWAWNPO 1840	UAWAWNPO 2040	UAWAWNPO 2440	UAWAWNPO 2640	UAWAWNPO 2840	UAWAWNPO 3040	UAWAWNPO 3240	UAWAWNPO 3640
3 - 4 1/16 (1018)									
2 - 9 15/16 (846)									
3 - 9 7/8 (1165)									
3 - 8 9/16 (1132)	UAWAWNPO 1644	UAWAWNPO 1844	UAWAWNPO 2044	UAWAWNPO 2444	UAWAWNPO 2644	UAWAWNPO 2844	UAWAWNPO 3044	UAWAWNPO 3244	UAWAWNPO 3644
3 - 8 1/16 (1119)									
3 - 1 15/16 (948)									
4 - 1 7/8 (1267)									
4 - 9/16 (1233)	UAWAWNPO 1648	UAWAWNPO 1848	UAWAWNPO 2048	UAWAWNPO 2448	UAWAWNPO 2648	UAWAWNPO 2848	UAWAWNPO 3048	UAWAWNPO 3248	UAWAWNPO 3648
4 - 1/16 (1221)									
3 - 5 15/16 (1049)									

Ultimate Wood Awning: UAWAWN
 Ultimate Wood Awning Push Out: UAWAWNPO

Details and Elevations not to scale.
 • Ultimate Wood Awning Push Out not available in frame size heights greater than 48 1/16".
 • For units with a tall bottom rail, reduce the DLO height by 1 1/2".

WOOD AWNING / WOOD AWNING PUSH OUT

MO (mm)	1 - 7 5/8 (498)	1 - 9 5/8 (549)	1 - 11 5/8 (600)	2 - 3 5/8 (702)	2 - 5 5/8 (752)	2 - 7 5/8 (803)	2 - 9 5/8 (854)	2 - 11 5/8 (905)	3 - 3 5/8 (1006)
RO (mm)	1 - 5 (431)	1 - 7 (482)	1 - 9 (533)	2 - 1 (635)	2 - 3 (685)	2 - 5 (736)	2 - 7 (787)	2 - 9 (838)	3 - 1 (939)
FS (mm)	1 - 4 (406)	1 - 6 (457)	1 - 8 (508)	2 - 0 (609)	2 - 2 (660)	2 - 4 (711)	2 - 6 (762)	2 - 8 (812)	3 - 0 (914)
DLO (mm)	0 - 11 19/64 (287)	1 - 1 19/64 (338)	1-3 19/64 (388)	1 - 7 19/64 (490)	1 - 9 19/64 (541)	1 - 11 19/64 (592)	2 - 1 19/64 (642)	2 - 3 19/64 (693)	2 - 7 19/64 (795)

4 - 9 7/8 (1419) 4 - 6 9/16 (1386) 4 - 6 1/16 (1373) 3 - 11 15/16 (1202)									
UWAWN 1654	UWAWN 1854	UWAWN 2054	UWAWN 2454	UWAWN 2654	UWAWN 2854	UWAWN 3054	UWAWN 3254	UWAWN 3654	
4 - 9 7/8 (1470) 4 - 8 9/16 (1437) 4 - 8 1/16 (1424) 4 - 1 15/16 (1263)									
UWAWN 1656	UWAWN 1856	UWAWN 2056	UWAWN 2456	UWAWN 2656	UWAWN 2856	UWAWN 3056	UWAWN 3256	UWAWN 3656	
5 - 1 7/8 (1572) 5 - 9/16 (1538) 5 - 1/16 (1526) 4 - 5 15/16 (1354)									
UWAWN 1660	UWAWN 1860	UWAWN 2060	UWAWN 2460	UWAWN 2660	UWAWN 2860	UWAWN 3060	UWAWN 3260	UWAWN 3660	
5 - 5 7/8 (1673) 5 - 4 9/16 (1640) 5 - 4 1/16 (1627) 4 - 9 15/16 (1456)									
UWAWN 1664	UWAWN 1864	UWAWN 2064	UWAWN 2464	UWAWN 2664	UWAWN 2864	UWAWN 3064	UWAWN 3264	UWAWN 3664	
6 - 1 7/8 (1876) 6 - 9/16 (1843) 6 - 1/16 (1830) 5 - 5 15/16 (1659)									
UWAWN 1672 T	UWAWN 1872 T	UWAWN 2072 T	UWAWN 2472 T	UWAWN 2672 T	UWAWN 2872 T	UWAWN 3072 T	UWAWN 3272 T	UWAWN 3672 T	

Details and Elevations not to scale.

- Ultimate Wood Awning Push Out not available in frame size heights greater than 48 1/16".
- For units with a tall bottom rail, reduce the DLO height by 1 1/2".
- T For safety and/or code requirements, Marvin recommends tempered glass in all units with a frame size height of 72 1/16" or larger and units with a frame size of 25.2 ft² and larger.

Please consult your local Marvin representative for more information.

For further details and drawings visit the 'Tools and Documents' section at Marvin.com.

WOOD AWNING / WOOD AWNING PUSH OUT

MO (mm)	3 - 7 5/8 (1108)	4 - 3 5/8 (1311)	4 - 11 5/8 (1514)	5 - 3 5/8 (1616)	5 - 7 5/8 (1718)	6 - 3 5/8 (1921)
RS (mm)	3 - 5 (1041)	4 - 1 (1245)	4 - 9 (1448)	5 - 1 (1549)	5 - 5 (1651)	6 - 1 (1854)
FS (mm)	3 - 4 (1016)	4 - 0 (1219)	4 - 8 (1422)	5 - 0 (1524)	5 - 4 (1626)	6 - 0 (1829)
DLO (mm)	2 - 11 19/64 (896)	3 - 7 19/64 (1100)	4 - 3 19/64 (1303)	4 - 7 19/64 (1404)	4 - 11 19/64 (1506)	5 - 7 19/64 (1709)

4 - 7 7/8 (1419) 4 - 6 9/16 (1386) 4 - 6 1/16 (1373) 3 - 11 15/16 (1202)						
UAWAWN 4054	UAWAWN 4854	UAWAWN 5654	UAWAWN 6054	UAWAWN 6454	UAWAWN 7254 T	
4 - 9 7/8 (1470) 4 - 8 9/16 (1437) 4 - 8 1/16 (1424) 4 - 1 15/16 (1283)						
UAWAWN 4056	UAWAWN 4856	UAWAWN 5656	UAWAWN 6056	UAWAWN 6456	UAWAWN 7256 T	
5 - 1 7/8 (1572) 5 - 9/16 (1538) 5 - 1/16 (1526) 4 - 5 15/16 (1384)						
UAWAWN 4060	UAWAWN 4860	UAWAWN 5660	UAWAWN 6060	UAWAWN 6460 T	UAWAWN 7260 T	
5 - 5 7/8 (1673) 5 - 4 9/16 (1640) 5 - 4 1/16 (1627) 4 - 9 15/16 (1456)						
UAWAWN 4064	UAWAWN 4864	UAWAWN 5664	UAWAWN 6064 T	UAWAWN 6464 T	UAWAWN 7264 T	
6 - 1 7/8 (1876) 6 - 9/16 (1843) 6 - 1/16 (1830) 5 - 5 15/16 (1659)						
UAWAWN 4072 T	UAWAWN 4872 T	UAWAWN 5672 T	UAWAWN 6072 T	UAWAWN 6472 T	UAWAWN 7272 T	

WOOD DOUBLE HUNG

MO (mm)	2-0 1/2 (622)	2-4 1/2 (724)	2-8 1/2 (826)	2-10 1/2 (876)	3-0 1/2 (927)	3-2 1/2 (978)	3-4 1/2 (1029)	3-8 1/2 (1130)	4-0 1/2 (1232)
RO (mm)	1-10 3/8 (568)	2-2 3/8 (670)	2-6 3/8 (772)	2-8 3/8 (822)	2-10 3/8 (873)	3-0 3/8 (924)	3-2 3/8 (975)	3-6 3/8 (1076)	3-10 3/8 (1178)
FS (mm)	1-9 3/8 (543)	2-1 3/8 (645)	2-5 3/8 (746)	2-7 3/8 (797)	2-9 3/8 (848)	2-11 3/8 (899)	3-1 3/8 (949)	3-5 3/8 (1051)	3-9 3/8 (1153)
DLO (mm)	1-2 15/16 (379)	1-6 15/16 (481)	1-10 15/16 (583)	2-0 15/16 (633)	2-2 15/16 (684)	2-4 15/16 (735)	2-6 15/16 (786)	2-10 15/16 (887)	3-2 15/16 (989)
2-10 9/16 (878) 2-9 1/2 (851) 2-9 (838) 0-1 15/16 (278)	 UWDH1612	 UWDH2012	 UWDH2412	 UWDH2612	 UWDH2812	 UWDH3012	 UWDH3212	 UWDH3612	 UWDH4012
3-2 9/16 (880) 3-1 1/2 (953) 3-1 (940) 1-0 15/16 (329)	 UWDH1614	 UWDH2014	 UWDH2414	 UWDH2614	 UWDH2814	 UWDH3014	 UWDH3214	 UWDH3614	 UWDH4014
3-6 9/16 (1081) 3-5 1/2 (1054) 3-5 (1041) 1-2 15/16 (379)	 UWDH1616	 UWDH2016	 UWDH2416	 UWDH2616	 UWDH2816	 UWDH3016	 UWDH3216	 UWDH3616	 UWDH4016
3-10 9/16 (1183) 3-9 1/2 (1156) 3-9 (1143) 1-4 15/16 (430)	 UWDH1618	 UWDH2018	 UWDH2418	 UWDH2618	 UWDH2818	 UWDH3018	 UWDH3218	 UWDH3618	 UWDH4018
4-2 9/16 (1284) 4-1 1/2 (1257) 4-1 (1245) 1-6 15/16 (481)	 UWDH1620	 UWDH2020	 UWDH2420	 UWDH2620	 UWDH2820	 UWDH3020	 UWDH3220	 UWDH3620	 UWDH4020
4-6 9/16 (1386) 4-5 1/2 (1359) 4-5 (1346) 1-8 15/16 (632)	 UWDH1622	 UWDH2022	 UWDH2422	 UWDH2622	 UWDH2822	 UWDH3022	 UWDH3222	 UWDH3622	 UWDH4022
4-10 9/16 (1488) 4-9 1/2 (1461) 4-9 (1448) 1-10 15/16 (583)	 UWDH1624	 UWDH2024	 UWDH2424	 UWDH2624	 UWDH2824	 UWDH3024	 UWDH3224	 UWDH3624	 UWDH4024
5-2 9/16 (1589) 5-1 1/2 (1562) 5-1 (1549) 2-0 15/16 (633)	 UWDH1626	 UWDH2026	 UWDH2426	 UWDH2626	 UWDH2826	 UWDH3026	 UWDH3226	 UWDH3626 E	 UWDH4026 E
5-6 9/16 (1691) 5-5 1/2 (1664) 5-5 (1651) 2-2 15/16 (684)	 UWDH1628	 UWDH2028	 UWDH2428	 UWDH2628	 UWDH2828	 UWDH3028 E	 UWDH3228 E	 UWDH3628 E	 UWDH4028 E

MULTIPLE ASSEMBLY CONVERSIONS

ROUGH OPENING		MASONRY OPENING WITH BMC	
Width	Height	Width	Height
Add all frame sizes plus 1" (25)	Add frame sizes plus 1/2" (13)	Add all frame sizes plus 3 1/8" (79)	Add frame sizes plus 1 9/16" (39)

Details and Elevations not to scale.




E These windows meet national Egress codes for fire evacuation. Local codes may differ.

* For more Cottage Style sizes than the sample shown, please contact your Marvin representative. Ultimate Double Hung cottage call number formula is figured in fifths. Top sash is 2/5 and bottom is 3/5.

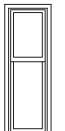








1. Standard call number; 2024
2. Add the two glass heights; 24" + 24" = 48"
3. Divide 48" by 2/5; 19-13/64"
4. Round to the nearest standard glass height; 20"
5. Subtract from total glass height; 48" - 20" = 28" The call number for the above example is: 2020/28. The top sash will be a 2020 and the bottom sash will be a 2028

Ultimate Wood Double Hung: UWDH

WOOD DOUBLE HUNG

MO (mm)	2-0 1/2 (622)	2-4 1/2 (724)	2-8 1/2 (826)	2-10 1/2 (876)	3-0 1/2 (927)	3-2 1/2 (978)	3-4 1/2 (1029)	3-8 1/2 (1130)	4-0 1/2 (1232)
RO (mm)	1-10 3/8 (568)	2-2 3/8 (670)	2-6 3/8 (772)	2-8 3/8 (822)	2-10 3/8 (873)	3-0 3/8 (924)	3-2 3/8 (975)	3-6 3/8 (1076)	3-10 3/8 (1178)
FS (mm)	1-9 3/8 (543)	2-1 3/8 (645)	2-5 3/8 (746)	2-7 3/8 (797)	2-9 3/8 (848)	2-11 3/8 (899)	3-1 3/8 (949)	3-5 3/8 (1051)	3-9 3/8 (1153)
DLO (mm)	1-2 15/16 (379)	1-6 15/16 (481)	1-10 15/16 (583)	2-0 15/16 (633)	2-2 15/16 (684)	2-4 15/16 (735)	2-6 15/16 (786)	2-10 15/16 (887)	3-2 15/16 (989)
5-10 9/16 (1792) 5-9 1/2 (1765) 5-9 (1753) 2-4 15/16 (735)	 UWDH1630	 UWDH2030	 UWDH2430	 UWDH2630	 UWDH2830 E	 UWDH3030 E	 UWDH3230 E	 UWDH3630 E	 UWDH4030 E
6-2 9/16 (1894) 6-1 1/2 (1867) 6-1 (1854) 2-6 15/16 (786)	 UWDH1632	 UWDH2032	 UWDH2432	 UWDH2632 E	 UWDH2832 E	 UWDH3032 E	 UWDH3232 E	 UWDH3632 E	 UWDH4032 E
6-6 9/16 (1996) 6-5 1/2 (1969) 6-5 (1956) 2-8 15/16 (837)	 UWDH1634	 UWDH2034	 UWDH2434 E	 UWDH2634 E	 UWDH2834 E	 UWDH3034 E	 UWDH3234 E	 UWDH3634 E	 UWDH4034 E
6-10 9/16 (2097) 6-9 1/2 (2070) 6-9 (2057) 2-10 15/16 (887)	 UWDH1636	 UWDH2036	 UWDH2436 E	 UWDH2636 E	 UWDH2836 E	 UWDH3036 E	 UWDH3236 E	 UWDH3636 E	 UWDH4036 E
7-6 9/16 (2300) 7-5 1/2 (2273) 7-5 (2261) 3-2 15/16 (989)	 UWDH1640	 UWDH2040	 UWDH2440 E	 UWDH2640 E	 UWDH2840 E	 UWDH3040 E	 UWDH3240 E	 UWDH3640 E	 UWDH4040 E
7-10 9/16 (2402) 7-9 1/2 (2375) 7-9 (2362) 3-4 15/16 (1040)	 UWDH1642	 UWDH2042	 UWDH2442 E	 UWDH2642 E	 UWDH2842 E	 UWDH3042 E	 UWDH3242 E	 UWDH3642 E	 UWDH4042 E

COTTAGE STYLE*

MO (mm)	2-0 1/2 (622)	2-4 1/2 (724)	2-8 1/2 (826)	2-10 1/2 (876)	3-0 1/2 (927)	3-2 1/2 (978)	3-4 1/2 (1029)	3-8 1/2 (1130)	4-0 1/2 (1232)
RO (mm)	1-10 3/8 (568)	2-2 3/8 (670)	2-6 3/8 (772)	2-8 3/8 (822)	2-10 3/8 (873)	3-0 3/8 (924)	3-2 3/8 (975)	3-6 3/8 (1076)	3-10 3/8 (1178)
FS (mm)	1-9 3/8 (543)	2-1 3/8 (645)	2-5 3/8 (746)	2-7 3/8 (797)	2-9 3/8 (848)	2-11 3/8 (899)	3-1 3/8 (949)	3-5 3/8 (1051)	3-9 3/8 (1153)
DLO (mm)	1-2 15/16 (379)	1-6 15/16 (481)	1-10 15/16 (583)	2-0 15/16 (633)	2-2 15/16 (684)	2-4 15/16 (735)	2-6 15/16 (786)	2-10 15/16 (887)	3-2 15/16 (989)
5-10 9/16 (1792) 5-9 1/2 (1765) 5-9 (1753) 1-10 15/16 (583) / 2-10 15/16 (887)	 UWDH1624/36	 UWDH2024/36	 UWDH2424/36	 UWDH2624/36	 UWDH2824/36	 UWDH3024/36	 UWDH3224/36	 UWDH3624/36	 UWDH4024/36

Please consult your local Marvin representative for more information.
For further details and drawings visit the 'Tools and Documents' section at Marvin.com.