

SERIES 4110A IMPACT RESISTANT
HORIZONTAL ROLLER WINDOW

FLORIDA PRODUCT APPROVAL #23359

1) THIS PRODUCT HAS BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ).

2) SHUTTERS ARE NOT REQUIRED WHEN USED IN WIND-BORNE DEBRIS REGIONS.

3) MASONRY ANCHORS MAY BE USED INTO WOOD AS PER TABLE 2. ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED 1X INSTALLATIONS. 1X WOOD BUCKS ARE OPTIONAL IF UNIT IS INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 2X ARE 1-1/2" THICK OR GREATER. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

4) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO. USE ANCHORS OF SUFFICIENT LENGTH. INSTALLATION ANCHORS SHOULD BE SEALED. OVERALL SEALING/FLASHING STRATEGY FOR WATER RESISTANCE OF INSTALLATION SHALL BE DONE BY OTHERS AND IS BEYOND THE SCOPE OF THESE INSTRUCTIONS.

5) SHIMS ARE REQUIRED AT EACH FLANGE ANCHOR LOCATION WHERE THE PRODUCT IS NOT FLUSH TO THE SUBSTRATE. USE SHIMS CAPABLE OF TRANSFERRING APPLIED LOADS. WOOD BUCKS, BY OTHERS, MUST BE SUFFICIENTLY ANCHORED TO RESIST LOADS IMPOSED ON THEM BY THE WINDOW.

6) THE ANCHORAGE METHODS SHOWN HAVE BEEN DESIGNED TO RESIST THE WIND LOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. THE 33-1/3% STRESS INCREASE HAS NOT BEEN USED IN THE DESIGN OF THIS PRODUCT. THE 1.6 LOAD DURATION FACTOR WAS USED FOR THE EVALUATION OF ANCHORS INTO WOOD. ANCHORS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE FOR CORROSION RESISTANCE.

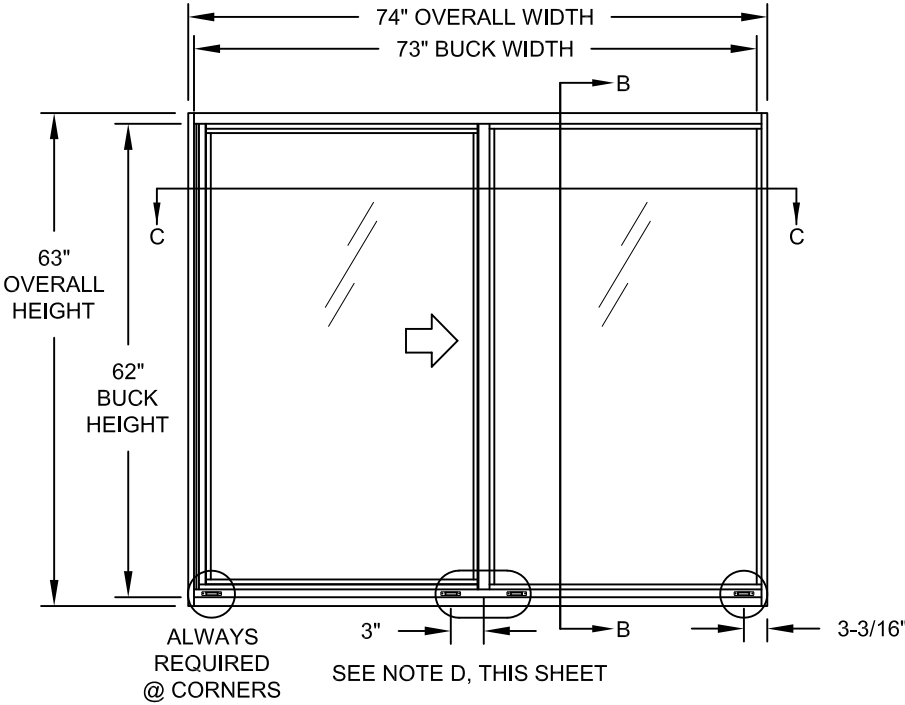
USER INSTRUCTIONS:

- 1) DETERMINE THE SITE SPECIFIC, WINDOW OPENING'S DESIGN PRESSURE REQUIREMENT USING WINDLOAD STANDARD ASCE 7.
- 2) KNOWING YOUR WINDOW CONFIGURATION (OX, XO, XOX), SIZE AND GLASS TYPE, DETERMINE YOUR WINDOW'S DESIGN PRESSURE REQUIREMENT FOR THE WINDOW OPENING USING TABLE 2. IT MUST EQUAL OR EXCEED THE DESIGN PRESSURE REQUIREMENT FOR THE WINDOW OPENING OBTAINED IN STEP 1.
- 3) DETERMINE THE MOST SUITABLE ANCHOR GROUP FROM TABLE1 ACCORDING TO THE INSTALLATION CONDITIONS.
- 4) DETERMINE THE ANCHOR QUANTITY FROM SHEET 2. VERIFY THAT THE ANCHOR/SUBSTRATE WILL MEET REQUIREMENTS FOR YOUR OPENING'S CONDITION FROM TABLE 1, AND THAT ALL MIN. REQUIREMENTS FROM THIS SHEET SET ARE MET.
- 5) INSTALL AS PER SHEET 3.

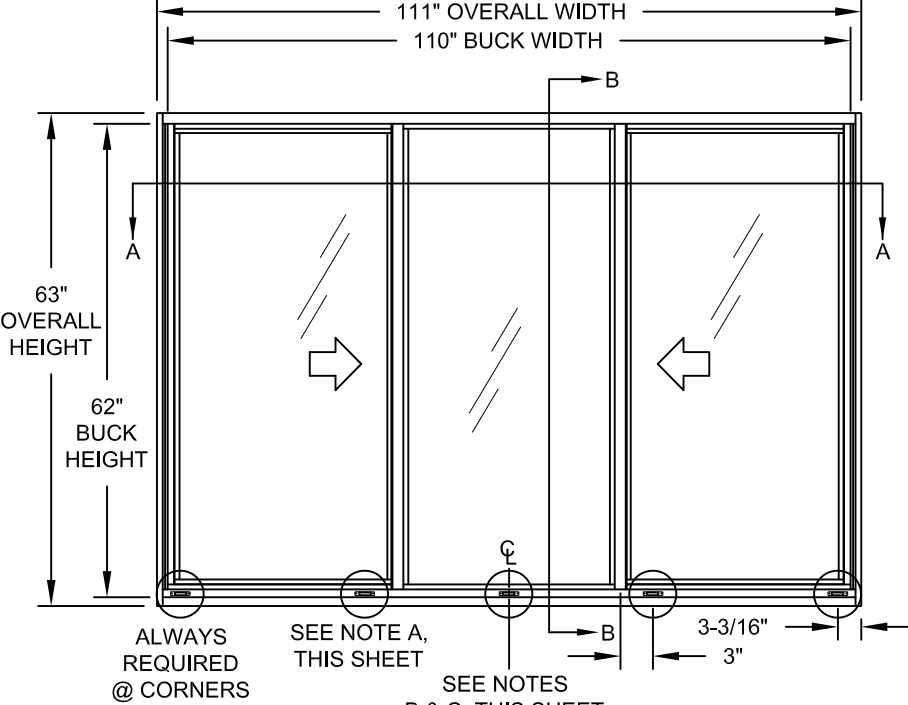
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WEEPHOLE NOTES:

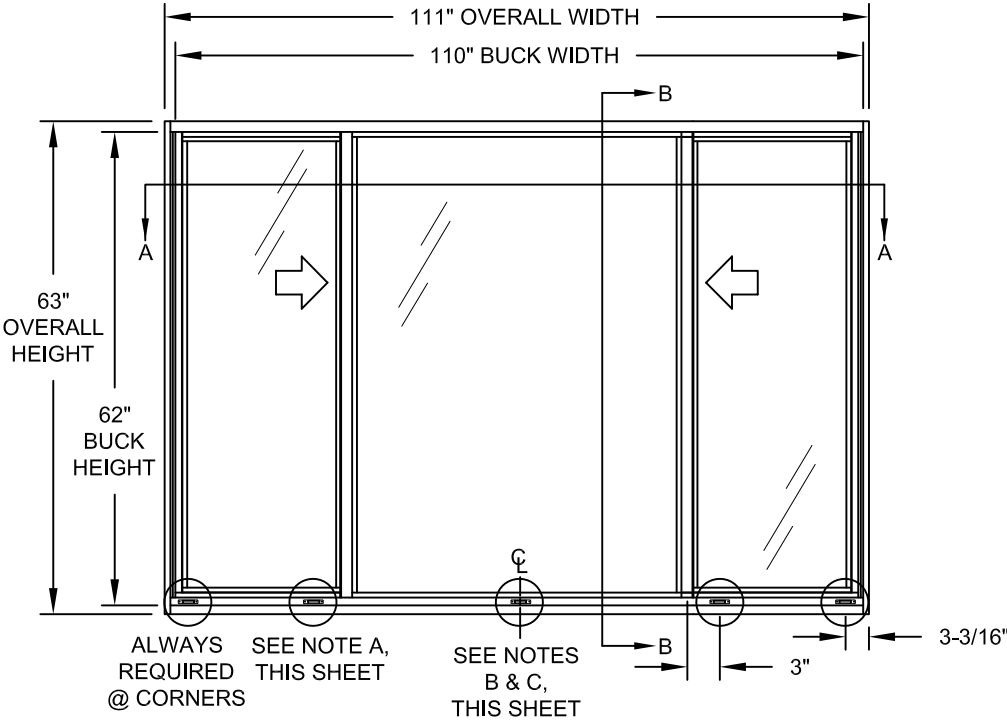
- A. REQUIRED IF WINDOW WIDTH IS OVER 67".
- B. REQUIRED IF WINDOW WIDTH IS OVER 45" AND UP TO 67".
- C. REQUIRED IF WINDOW WIDTH IS OVER 89".
- D. REQUIRED IF WINDOW WIDTH IS OVER 45".



TYP. XO ELEVATION (OX SIM.)



TYP. XOX (1/3-1/3-1/3) ELEVATION



TYP. XOX (1/4-1/2-1/4) ELEVATION

DESIGN PRESSURE RATING	IMPACT RATING
VARIES, SEE SHEET 4	RATED FOR LARGE & SMALL MISSILE IMPACT RESISTANCE

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Impact Resistant
Windows & Doors

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3780 W. 104TH STREET
HIALEAH, FL 33018

ALUMINUM HR WINDOW (LM)

NOTES, ELEVATION

HR4110A

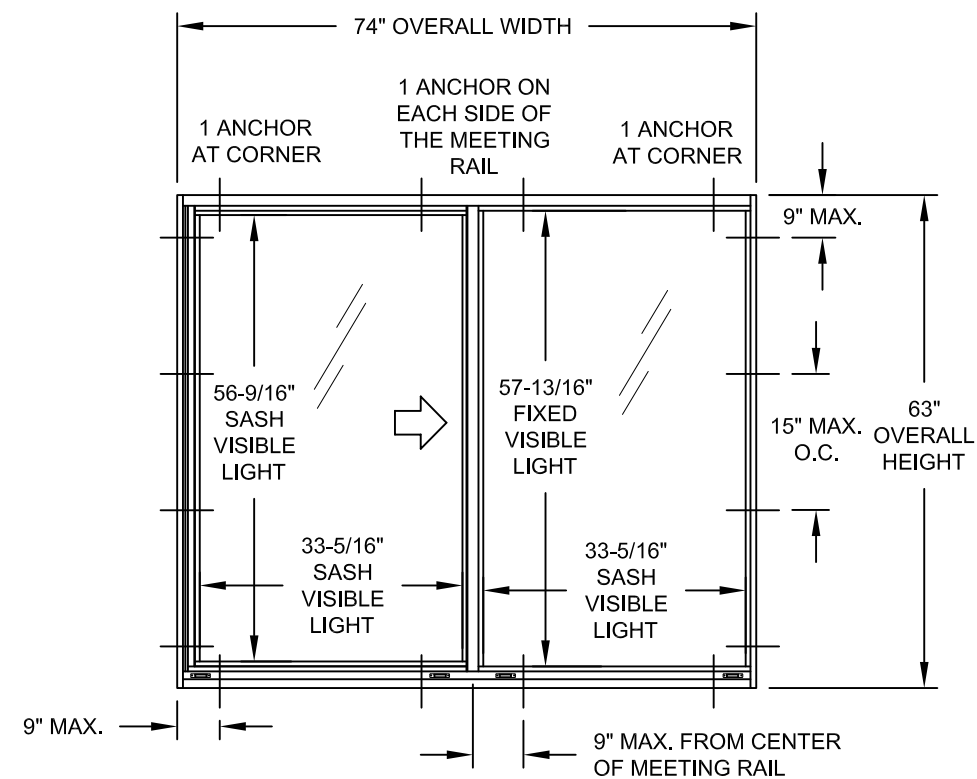
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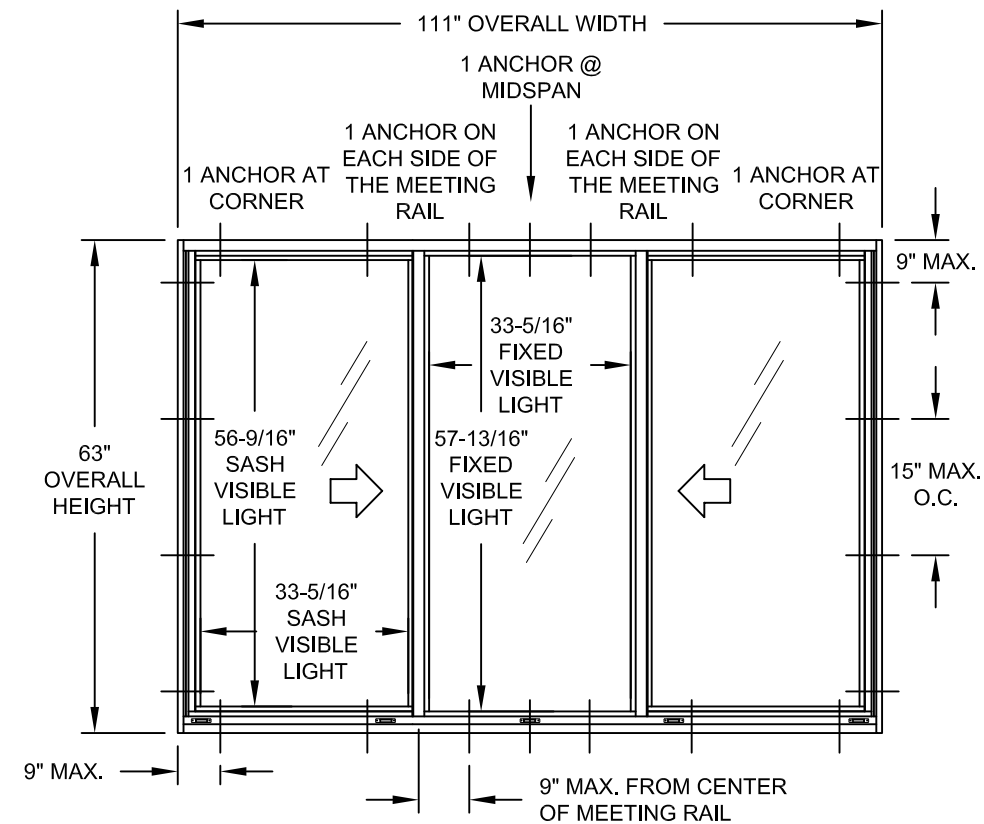
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Rev.#	Date	Rev.
E	01/03/24	CORRECTED DIM. SCALE - JR



TYP. XO ANCHORAGE (OX SIM.)
 & MAX. VISIBLE LIGHT OPENING

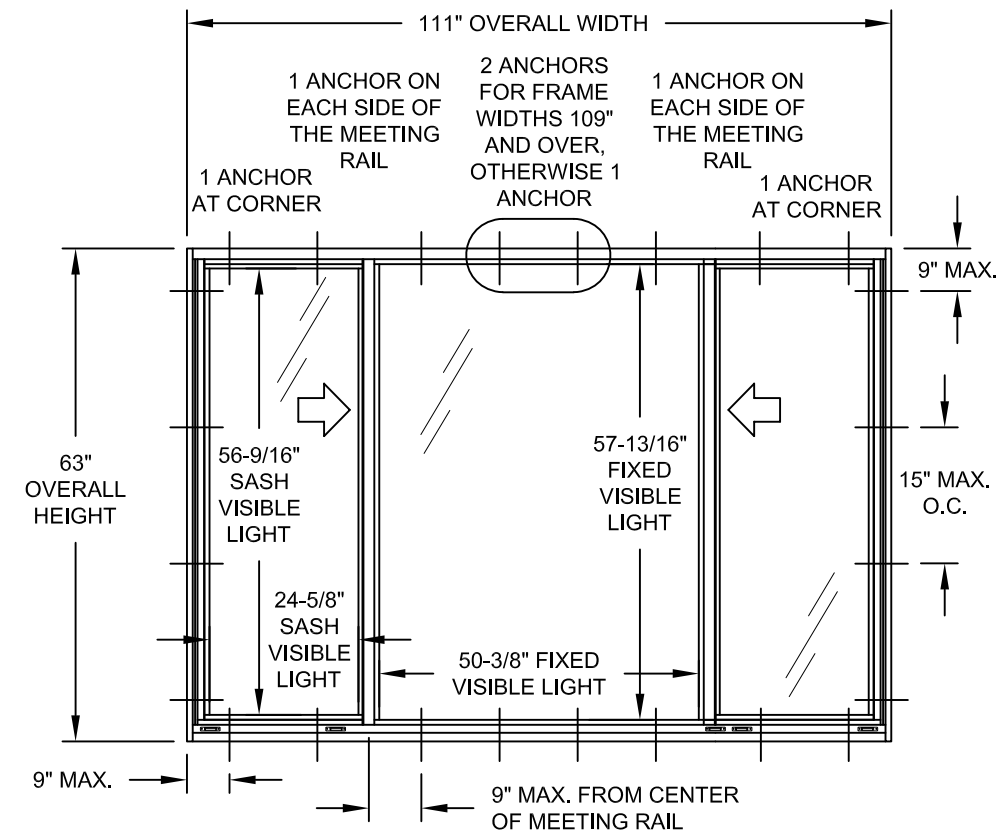


TYP. XOX (1/3-1/3-1/3) ANCHORAGE
& MAX. VISIBLE LIGHT OPENING

TABLE 1:

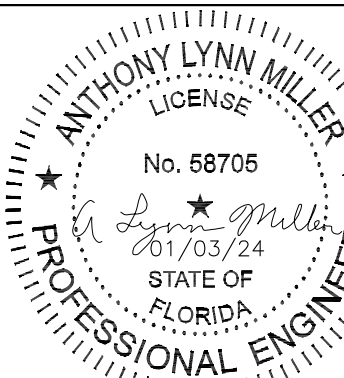
Anchor Type	Frame Member	Substrate	Min. Edge Distance	Min. O.C. Distance	Min. Embedment or Metal Thickness
#12, Steel SMS (Gr. 5 or 410 SS, (min. of 3 threads beyond metal substrate)	All	Southern Pine (SG = 0.55)	9/16"	7/8"	1-3/8"
		6063-T5 Aluminum	3/8"	9/16"	0.060"
		A36 Steel	3/8"	9/16"	0.050"
		Gr. 33 Steel Stud	3/8"	9/16"	0.045" (20 Ga)
1/4" DeWalt UltraCon+	Jamb	Hollow Block, (ASTM C90)	1-3/8"	6"	1-1/4"
	Jamb	Filled Block, (ASTM C90)	1"	6"	1-3/4"
	All	Concrete (min. 2.85 ksi)	1-1/4"	4"	1"
	All	Southern Pine (SG = 0.55)	1"	1"	1-3/8"
1/4" 410 SS Elco CreteFlex®	Jamb	Hollow or Filled Block, (ASTM C90)	1-3/4"	6"	1-1/4"
	All	Concrete (min. 3.35 ksi)	2-1/2"	4"	1-3/4"

IF THE FRAME CONTAINS A FACTORY COUNTERSINK, ONLY USE FLATHEAD ANCHORS AT THAT LOCATION.

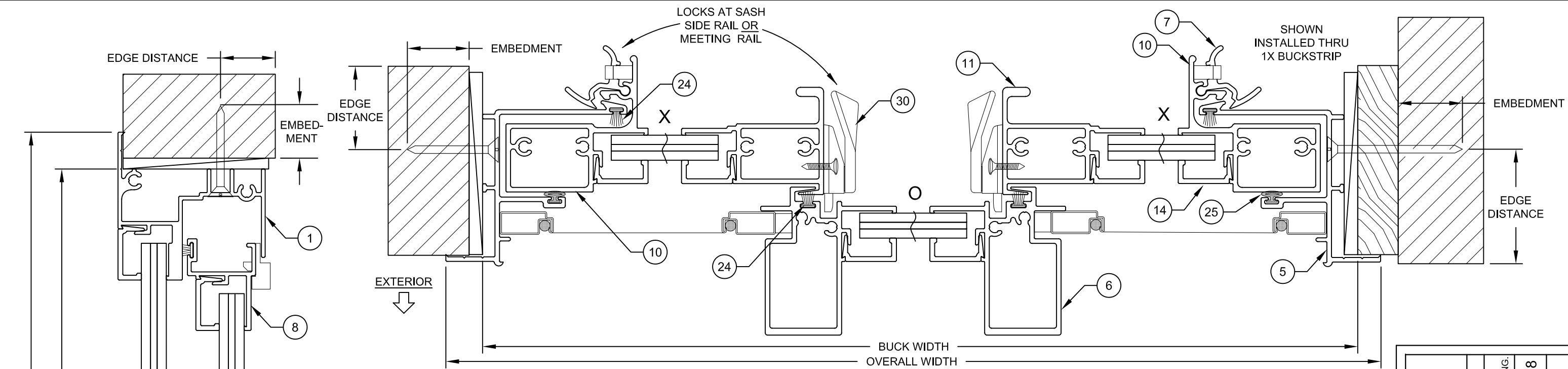


TYP. XOX (1/4-1/2-1/4) ANCHORAGE
& MAX. VISIBLE LIGHT OPENING

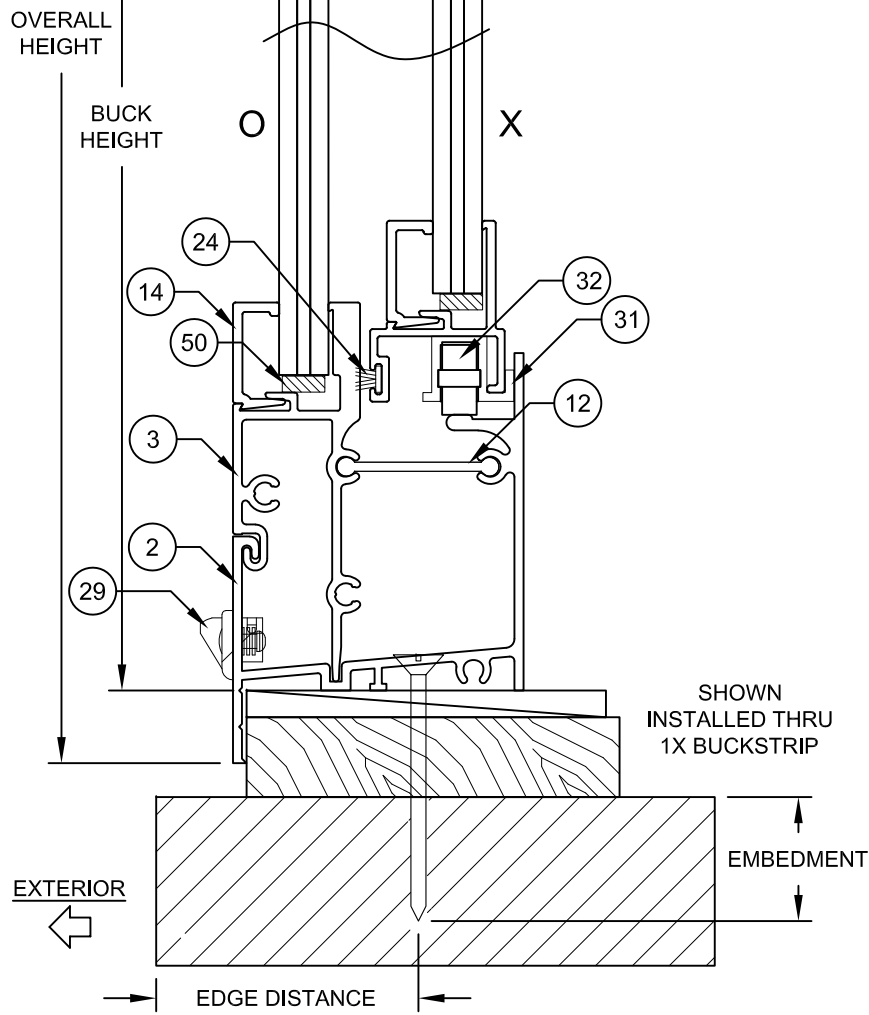
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	ALUMINUM HR WINDOW (LM)		Date	02/28/18		
	ANCHOR SPACING		By	A MORLESIN		
	HR4110A	Sheet	2 OF 6	DWG No.	HR4110FLPA	
	Series	Desc.				



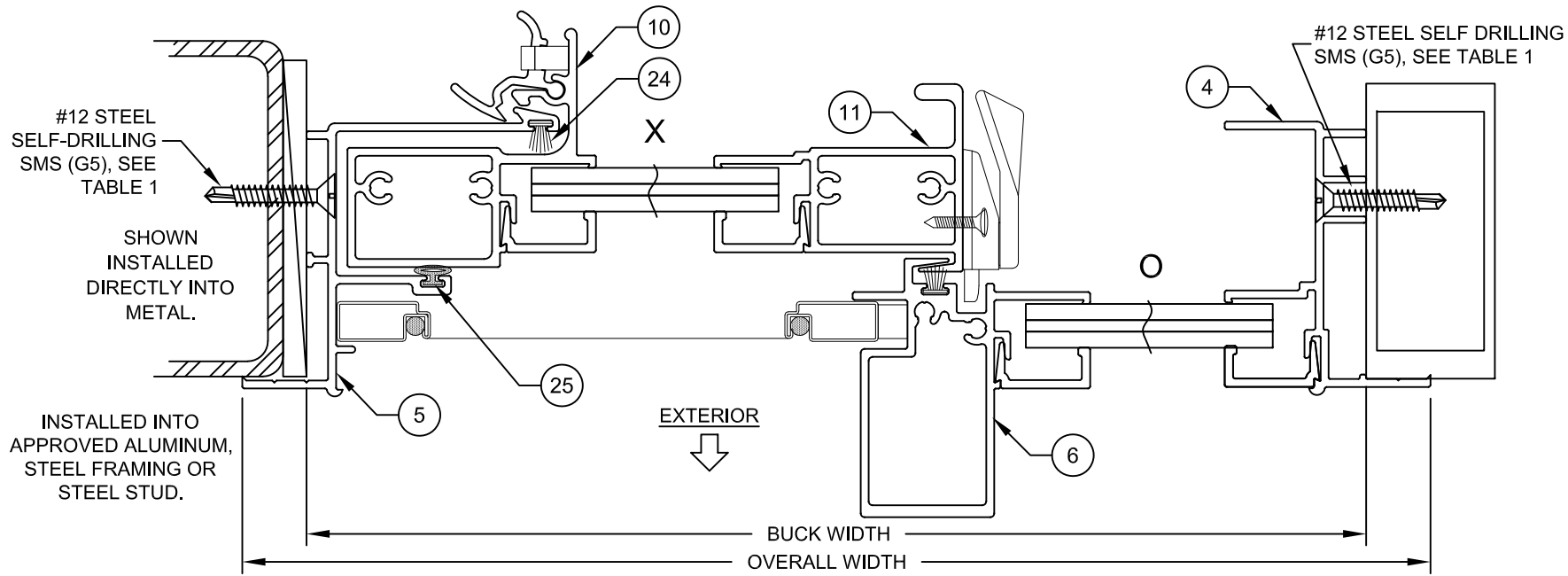
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HORIZONTAL SECTION A-A



VERTICAL SECTION B-B



HORIZONTAL SECTION C-C

MULLION SECTION

APPROVED MULLION, MAY BE VERTICAL OR HORIZONTAL.

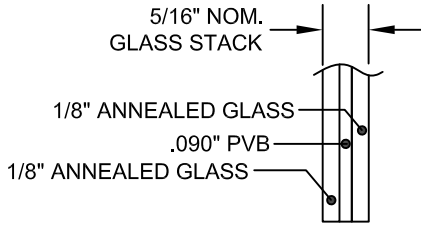
- NOTES:
- 1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS LISTED IN TABLE 1. FOLLOW EMBEDMENT AND EDGE DISTANCE LIMITS. ANY INSTALLATION OPTION SHOWN MAY BE USED ON ANY SIDE OF THE WINDOW.
 - 2) MASONRY ANCHORS MAY BE USED INTO WOOD AS PER TABLE 1. ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED 1X INSTALLATIONS. 1X WOOD BUCKS ARE OPTIONAL IF UNIT IS INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 2X ARE 1-1/2" THICK OR GREATER. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.
 - 3) SEE SHEET 2 & TABLE 1 FOR SPACING REQUIREMENTS.
 - 4) MAX. SHIM THICKNESS TO BE 1/4".
 - 5) GLASS SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY DIFFER TO MEET DESIGN REQUIREMENTS.

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CROSS SECTION		CROSS SECTION		CROSS SECTION	
HR4110A		HR4110A		HR4110A	
3 OF 6		3 OF 6		3 OF 6	
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HR4110FLPA		HR4110FLPA		HR4110FLPA	

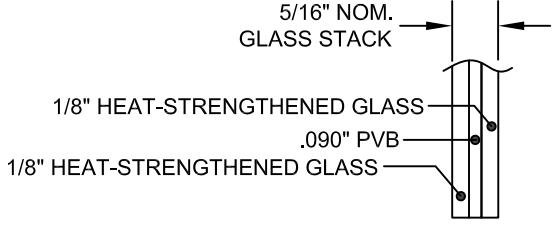
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TABLE 2:

DESIGN PRESSURE (psf)		Config.	Overall Height							
			38-3/8"		43-1/2"		50-5/8"		63"	
			Glass Type 1	Glass Type 2	Glass Type 1	Glass Type 2	Glass Type 1	Glass Type 2	Glass Type 1	Glass Type 2
Overall Width	26-1/2"	XO or OX	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	37"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	45"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	49"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	53-1/8"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	61"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	66"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	74"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55.0/-63.2	+55/-65
	53-1/8"	XOX (1/3 - 1/3 - 1/3)	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	61"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	74"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	85"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	97"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	111"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55.0/-63.2	+55/-65
	53-1/8"	XOX (1/4 - 1/2 - 1/4)	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65
	74"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-64.8	+55/-65
	85"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-57.9	+55/-65
	97"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+53.5/-53.5	+55/-65
	109"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+50.4/-50.4	+55/-65
	111"		+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+55/-65	+50/-50	+55/-65



5/16" LAMI. GLAZING
GLASS TYPE 1



5/16" LAMI. GLAZING
GLASS TYPE 2

TABLE 3:

Laminated Glass Types	
1	1/8" Annealed, 0.090" PVB, 1/8" Annealed
2	1/8" Heat-strengthened, 0.090" PVB, 1/8" Heat-strengthened

INTERLAYER MAY BE SAFLEX PVB OR TROSIFOL PVB

NOTES:

1) FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT DIMENSION SHOWN ON THE TABLE.

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ALUMINUM HR WINDOW (LM)

DESIGN PRESSURE

HR4110A

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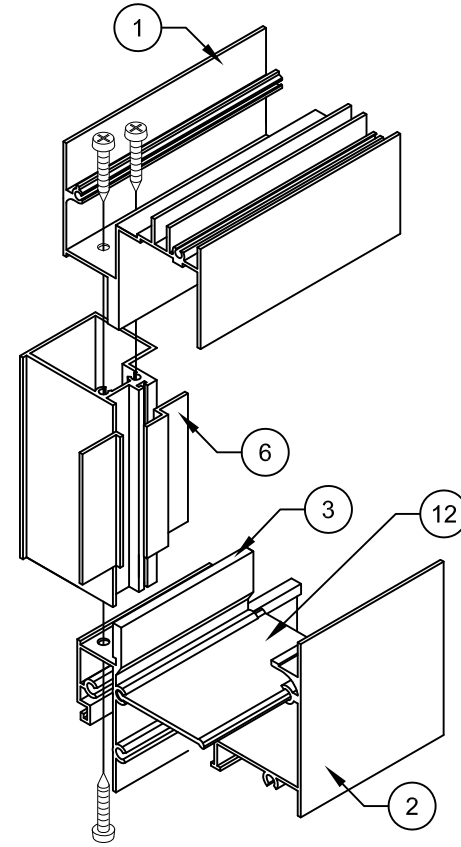
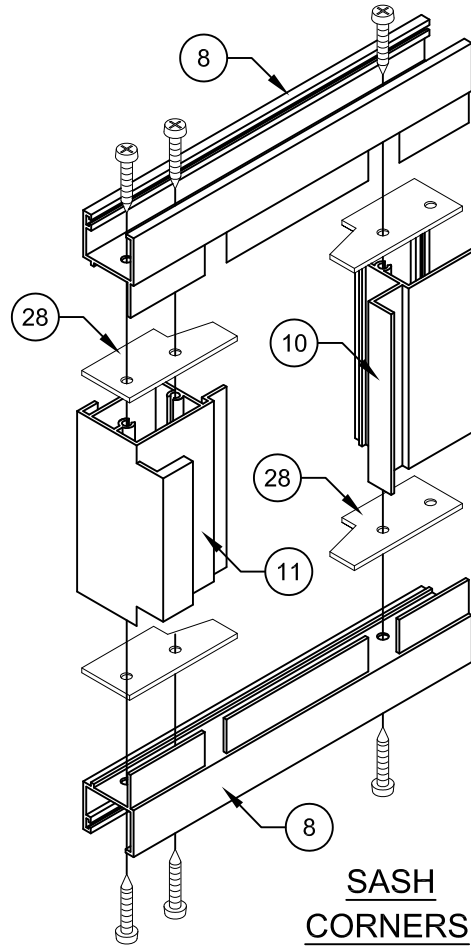
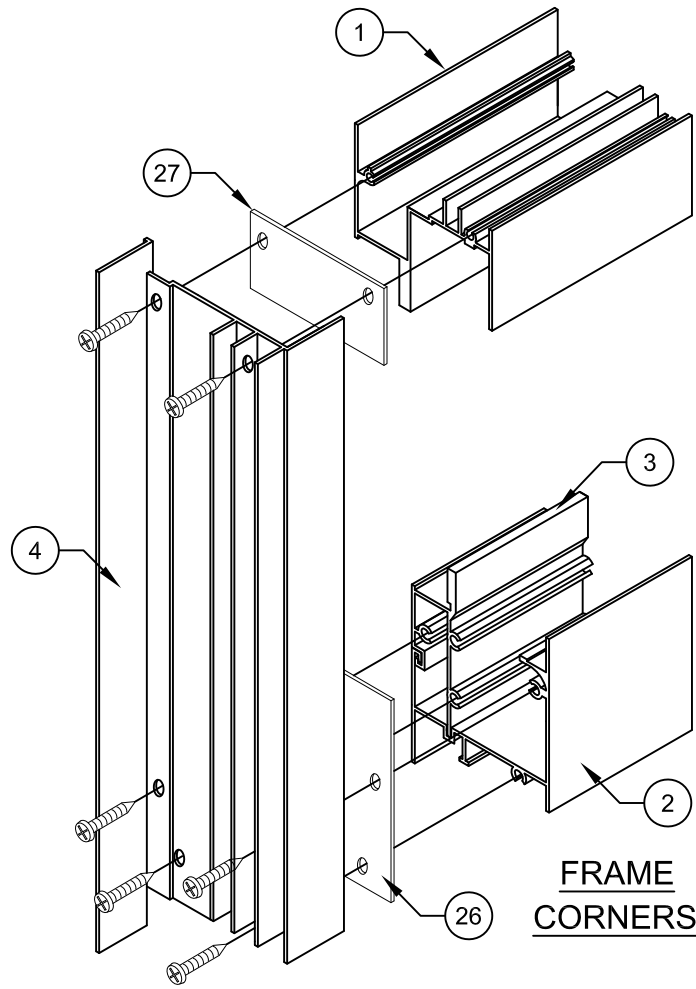
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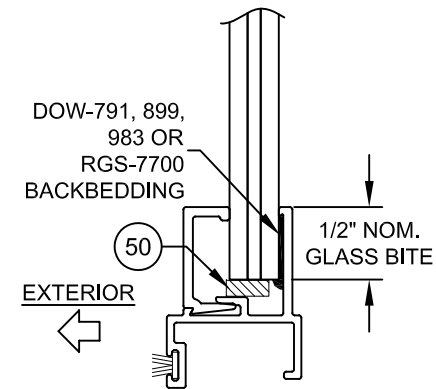
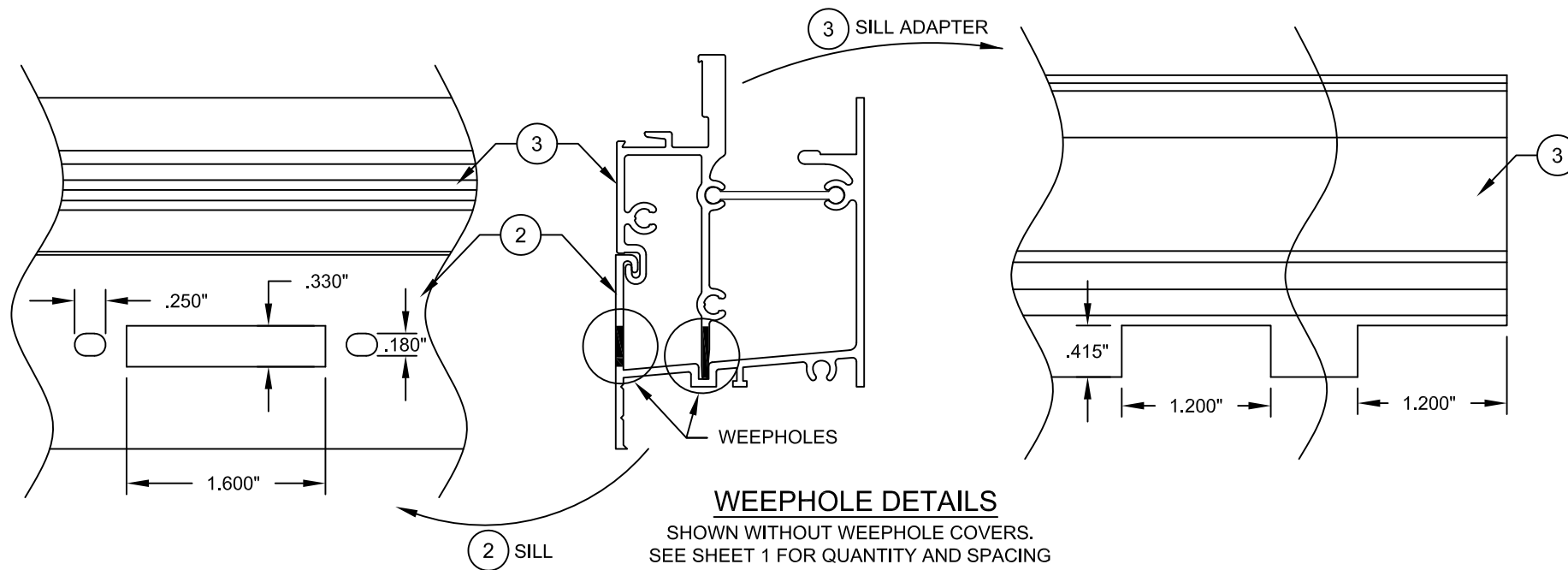
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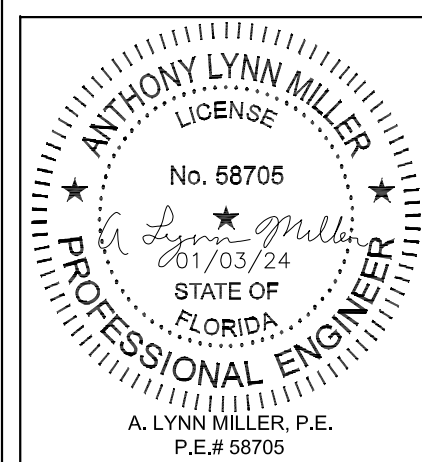
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ASSEMBLY DETAILS



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ASSEMBLY & WEEPHOLE INFO	HR4110A	DWG No.	5 OF 6	Sheet	HR4110FLPA

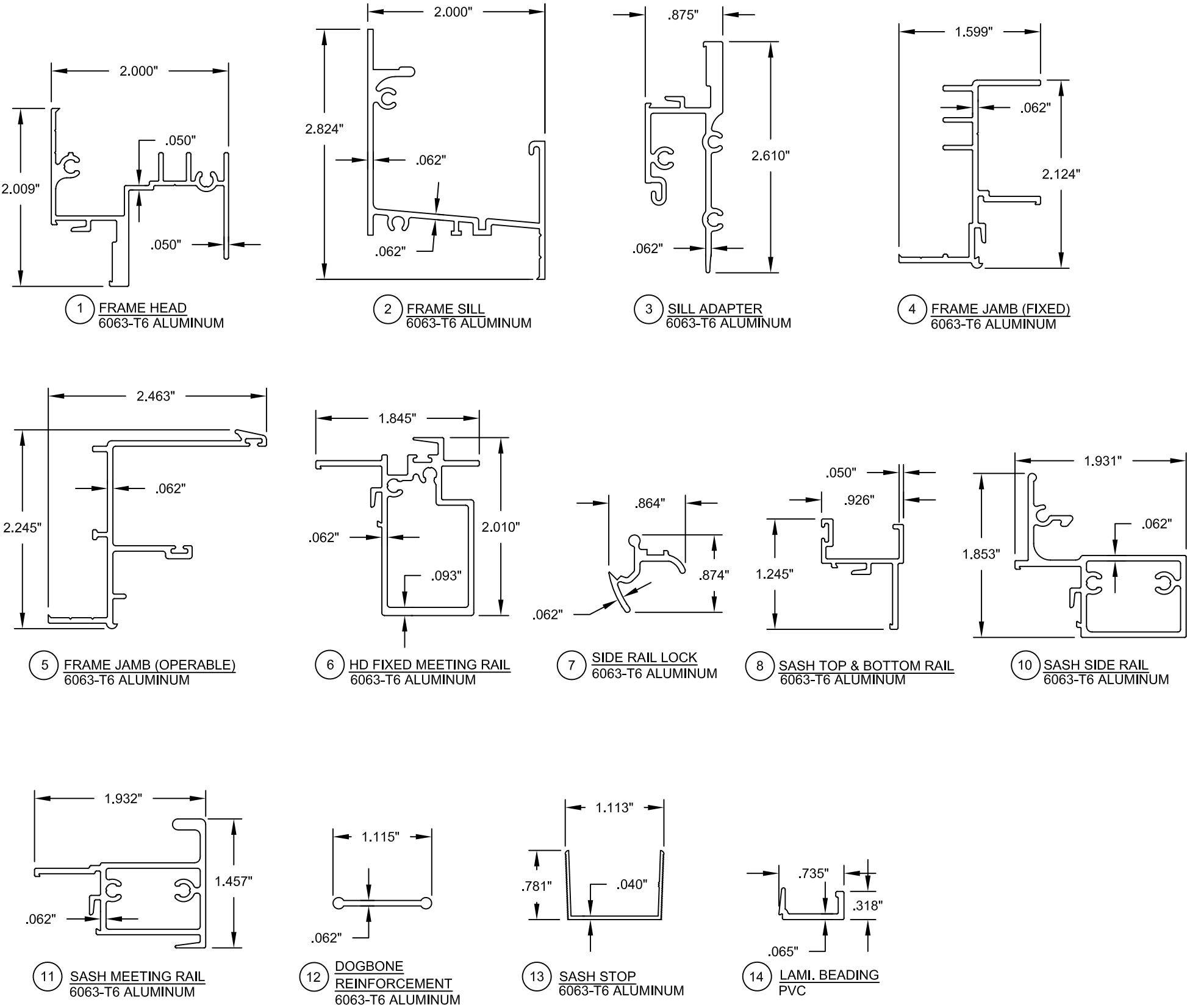


Rev.	01/03/24	E
Date	01/03/24	
Rev.	01/03/24	E

CORRECTED DIM. SCALE - JR

TABLE 4:

Item	Description
1	Frame Head
2	Frame Sill
3	Sill Adapter
4	Frame Jamb (Fixed)
5	Frame Jamb (Operable)
6	Heavy Duty Fixed Meeting Rail
7	Side Rail Lock
8	Sash Top & Bottom Rail
10	Sash Side Rail
11	Sash Meeting Rail
12	Dogbone Reinforcement
13	Sash Stop
23	.190" X .200" Q-Ion Wstp. (Frame)
24	.187" X .230" Fin Wstp.
25	Bulb Vinyl Wstp. (Sash)
26	Frame Sill Gasket, Polyethelyne, opt.
27	Frame Head Gasket, Polyethelyne, opt.
28	Sash Gasket, Polyethelyne, opt.
29	Weephole Cover
30	Sweep Latch
31	Roller Housing & Guide
32	Roller
33	Frame/Sash Corner Sealant, opt.
50	Setting Block 3/32" X 1/4" X 1"
70	Kommerling Kodispace 4SG TPS



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By		A MORLESIN		HR4110FLPA	
Sheet		6 OF 6		DWC	
Series		HR4110A		Desc.	
BOM / EXTRUSIONS		6 OF 6		DWC	
Title		ALUMINUM HR WINDOW (LM)		Date	

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