Engineering Evaluation Report # GW9994G-3PLY-061925-I

Prepared by:
A. Lynn Miller, P.E.
1070 Technology Dr.
N. Venice, FL 34275
(941) 480-1600
Registration Number: #29296

Manufacturer:
WinDoor LLC
104 Triple Diamond Blvd
N Venice, FL 34275

Product Description:
Series GW9994G Impact-resistant, Aluminum Window System, 3-Ply Glazing, (LM & SM), FL #15709

Compliance:
The product mentioned above has been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61 G20-3.005 method 1(d). The product listed herein complies with the requirements of the current Florida Building Code.

This product has been evaluated and is in compliance with the current Florida Building Code, including the "High Velocity Hurricane Zone" (HVHZ).

Supporting Technical Documentation:
1. Approval document: drawing number 9994.2-FPA, signed and sealed by A. Lynn Miller, P.E.

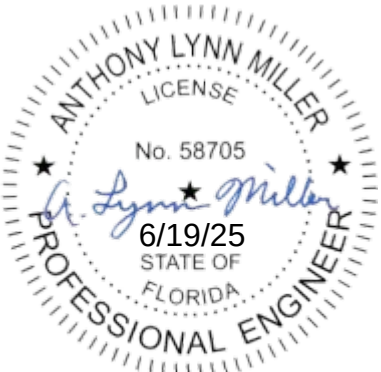
2. Test Report Nos. FTL 21-1127, signed and sealed by Idalmis Ortega, P.E.
   Fenestration Testing Laboratories; N. Venice, FL 34275.
   AAMA/WDMA/CSA 101/IS2/A440, 2017
   ASTM E1886-13a/19
   ASTM E1996-17/20

   Test Report Nos. QAI 22-1068, signed and sealed by Idalmis Ortega, P.E; QAI, N. Venice, FL 34275
   Testing Standards: TAS 201-94, TAS 202-94 & TAS 203-94

3. Calculations, signed and sealed by A. Lynn Miller, P.E., dated 8/11/21.

4. Miami-Dade RER Product Control Section NOA's; SentryGlas Interlayer by Kuraray America, Inc.

Limitations and Conditions of Use:
- Units must be glazed per ASTM E1300-09, refer to the approval document for glazing details.
- This product is rated to be used in the HVHZ.
- This product is impact-resistant and does not require impact protection in wind-borne debris regions.
- Frame material to be extruded aluminum.
- Units must be installed in accordance with approval document, 9994.2-FPA.



A. LYNN MILLER, P.E.
P.E.# 58705

SERIES GW9964G IMPACT RESISTANT, STRAIGHT, OUTSIDE & INSIDE CORNER WINDOW SYSTEM, 7/8" TRIPLE GLAZED

FLORIDA PRODUCT APPROVAL #7705

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

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

3) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED 'IN' INSTALLATIONS. 'IN' WOOD BUCKS ARE OPTIONAL IF UNIT IS INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 'ON' ARE 1-1/2" THICK OR GREATER. 'IN' AND 'ON' 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. 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 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 WINDOW.

6) THE ANCHORAGE METHODS SHOWN HAVE BEEN ASSUMED TO RESIST THE WIND LOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. THE 33.1(1) 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 CORE INTO CONTACT WITH OTHER DISSIMILAR METALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE FOR CORROSION RESISTANCE.

TABLE 1:

Anchor Type	Substrate	Min. Edge Distance	Max. O.C. Distance	Min. Embedment or Metal Thickness
#12 Steel SMS, SS	Southern Pine (SG = 0.55)	3/8"	8"	1-3/4"
	6063-T6 Aluminum	3/8"	8"	0.093"
	ASE Steel	3/8"	8"	0.059"
	Steel Stud, Gr. 33	3/8"	8"	0.057" - 18 Ga.
#14 Steel SMS, CA	Southern Pine (SG = 0.55)	5/8"	8"	1-3/4"
	6063-T6 Aluminum	3/8"	8"	0.093"
	ASE Steel	3/8"	8"	0.059"
	Steel Stud, Gr. 33	3/8"	8"	0.057" - 18 Ga.
#14 410 Stainless Steel SMS, DS	Southern Pine (SG = 0.55)	5/8"	8"	1-3/4"
	6063-T6 Aluminum	3/8"	8"	0.093"
	ASE Steel	3/8"	8"	0.059"
	Steel Stud, Gr. 33	3/8"	8"	0.057" - 18 Ga.
3/4" Concrete Anchors	Concrete (min. 3,000 psi)	2-1/2"	8"	1-3/4"
3/8" Expansion Anchors	Concrete (min. 2,500 psi)	1-3/4"	8"	1-3/4"

1) ANCHOR MUST EXTEND A MINIMUM OF 3 THREADS BEYOND ANY METAL SUBSTRATE.
2) ANY HEAD TYPE ALLOWABLE.

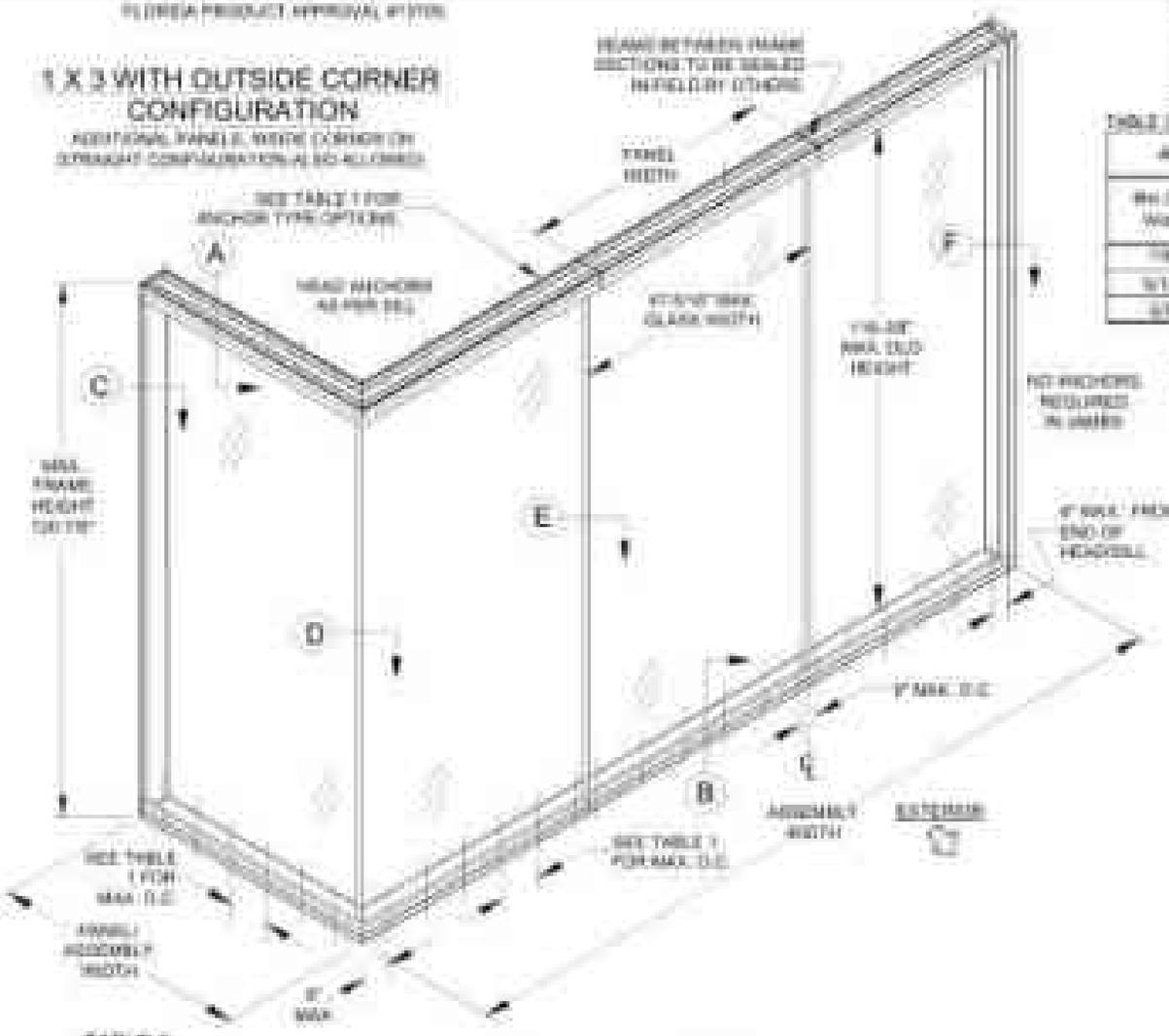
TABLE 2:

Glass Type	Description (Listed from Exterior to Interior)
1	1/4" HS - 0.090" SG - 1/4" HS - 0.060" SG - 1/4" HS
2	1/4" HS - 0.090" SG - 1/4" HS - 0.060" EVA - 0.060" SentryGlas - 0.060" EVA - 1/4" HS

HS = HEAT STRENGTHENED
SG = SENTRYGLAS INTERLAYER BY KURARAY AMERICA, INC.
EVA = EVA INTERLAYER

1 X 3 WITH OUTSIDE CORNER CONFIGURATION

ADDITIONAL PANELS, INSIDE CORNER OR STRAIGHT CONFIGURATION ALSO ACCOMMODATED



IMPACT RATING
RATED FOR LARGE & SMALL MISSILE IMPACT RESISTANCE

TABLE 3

Jamb Joint Gap Requirements		
Min Gap Width	Max Gap Width	Custom Movement Capability*
1/8"	1"	25%
5/16"	11/16"	50%
3/8"	1"	100%

*NOTE: ANY COMPATIBLE SEALANT MAY BE USED PROVIDED THESE GAP WIDTHS ARE FOLLOWED.

TABLE 4:

Frame Height (in)	Positive Design Pressure (psf): Glass Width (in)																			
	47 1/2		61		73		85		97		109		121		133		145		157	
	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing	Rect	Sing
49	60.0	60.0	43.0	45.0	32.0	32.0	24.0	25.0	18.0	20.0	14.0	16.0	11.0	13.0	9.0	10.0	7.0	8.0	5.0	6.0
54	60.0	60.0	54.0	60.0	40.0	44.0	30.0	33.0	23.0	26.0	18.0	20.0	14.0	16.0	11.0	12.0	9.0	10.0	7.0	8.0
60	60.0	60.0	60.0	60.0	47.0	52.0	36.0	40.0	28.0	31.0	22.0	24.0	17.0	19.0	13.0	15.0	10.0	12.0	8.0	9.0
66	60.0	60.0	60.0	60.0	54.0	60.0	42.0	46.0	32.0	36.0	25.0	28.0	20.0	22.0	15.0	17.0	12.0	13.0	9.0	10.0
72	60.0	60.0	60.0	60.0	60.0	60.0	48.0	52.0	36.0	41.0	28.0	32.0	22.0	25.0	17.0	19.0	13.0	15.0	10.0	11.0
78	60.0	60.0	60.0	60.0	60.0	60.0	54.0	59.0	41.0	46.0	32.0	36.0	25.0	28.0	19.0	21.0	15.0	16.0	11.0	12.0
84	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	46.0	52.0	36.0	40.0	28.0	31.0	21.0	24.0	16.0	18.0	12.0	14.0
90	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	51.0	57.0	40.0	44.0	31.0	34.0	24.0	26.0	18.0	20.0	13.0	15.0
96	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	56.0	60.0	44.0	48.0	34.0	37.0	26.0	28.0	19.0	21.0	14.0	16.0
102	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	48.0	52.0	37.0	40.0	28.0	30.0	20.0	22.0	15.0	17.0
108	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	52.0	56.0	40.0	43.0	30.0	32.0	22.0	24.0	16.0	18.0
114	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	56.0	60.0	43.0	46.0	32.0	34.0	24.0	26.0	17.0	19.0
120 (ST)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	46.0	49.0	34.0	36.0	25.0	27.0	18.0	20.0

NOTES:
1) FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE DIMENSION.

DRAWING INDEX	
ADD TABLE # / AM	6-19-25
ELEVATION NOTES & ANCHORS	
WINDOW SYSTEM 7/8" LAMINATED GLAZED	2854.2-FRM
1 OF 2	
DRAWING	

ANTHONY LYNN MILLER
LICENSE
No. 58730
6/18/25
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
FL# 58730

NOTES

1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS LISTED IN TABLE 1, FOLLOW EMBEDMENT, EDGE DISTANCE AND SUBSTRATE REQUIREMENTS PER TABLE 1, SHEET 1. ANY INSTALLATION OPTION SHOWN MAY BE USED ON ANY FRAME MEMBER.

2) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED IN 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) JAMBS MAY BE EITHER PART #1, PART #2 OR A COMBINATION OF BOTH, AS SHOWN. VERTICAL GAPS TO BE FIELD GLAZED WITH PART #3.

4) ALL JOINT SEALANTS MUST BE COMPATIBLE WITH ALL ADJACENT MATERIALS.

DETAIL A

DETAIL B

DETAIL C

DETAIL D

DETAIL E

DETAIL F

GLASS TYPE 2

GLASS TYPE 1

90° CORNER DETAIL W/ BEVELED GLASS (ALTERNATE)

135° CORNER DETAIL

180° CORNER DETAIL W/ BEVELED GLASS (ALTERNATE)

ANTHONY LYNN MILLER
LICENSE
No. 38726
6/16/25
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
FLA # 38726

WINDOOR

RELOCATE ITEM 7 - AW

6/16/25

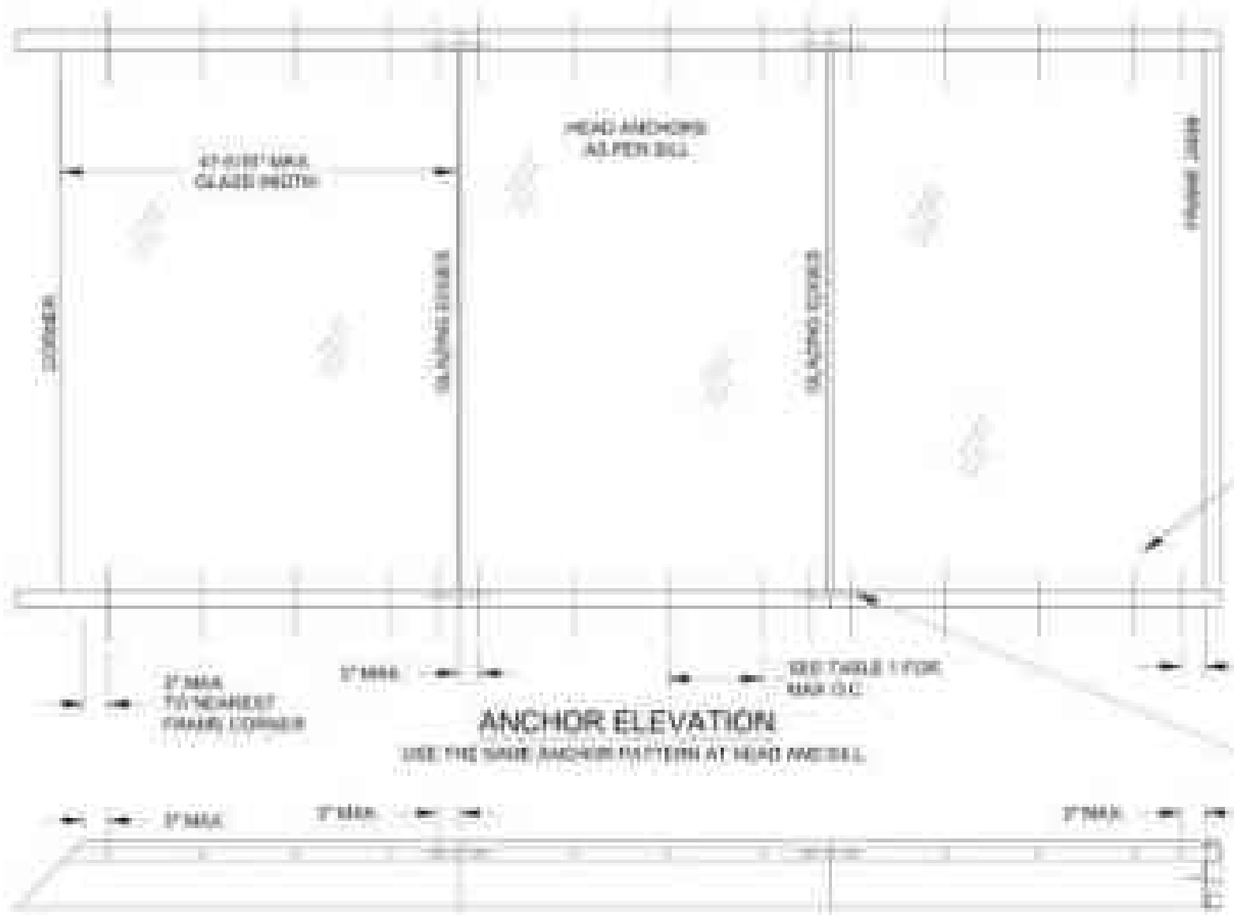
WINDOW SYSTEM 700 FLUSH GLAZED

SECTION DETAILS

DRAWING

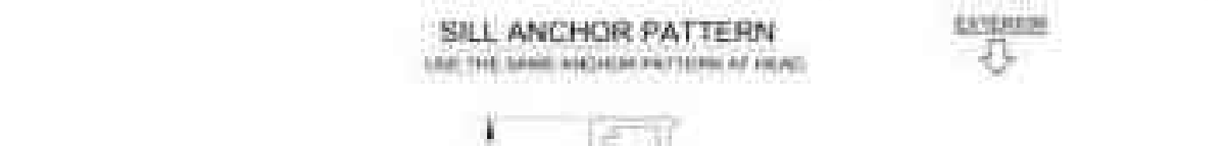
2 OF 2

3954.2-FRM



ANCHOR ELEVATION

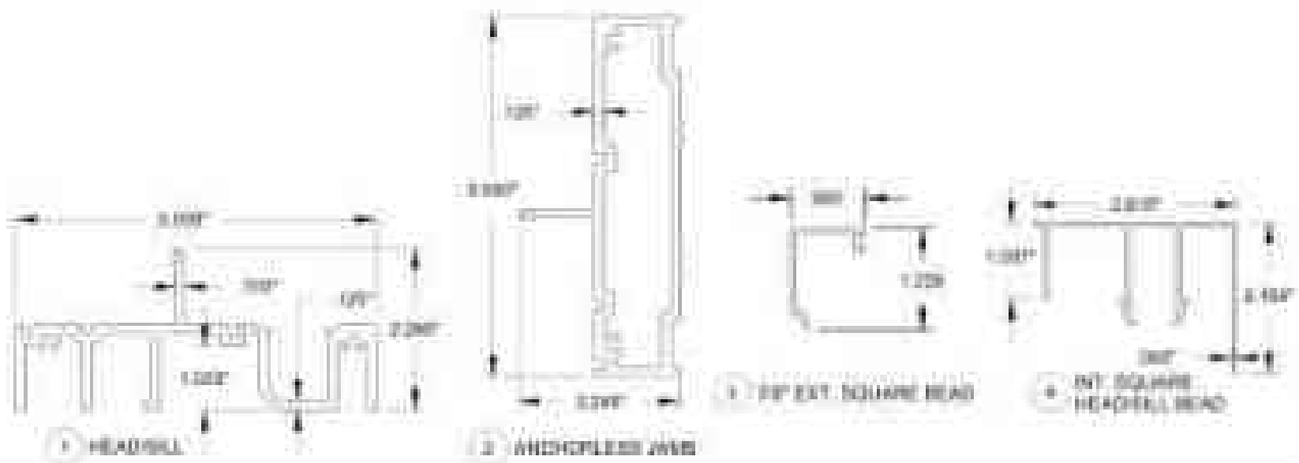
USE THE SAME ANCHOR PATTERN AT HEAD AND SILL



SILL ANCHOR PATTERN

USE THE SAME ANCHOR PATTERN AT HEAD

EXTERIOR



1 HEAD/SILL

2 ANCHORLESS JAMB

3 2/8" EXT. SQUARE BEAD

4 INT. SQUARE HEAD/SILL BEAD



5 INT. SQUARE JAMB BEAD



6 2/8" SL FLAT BAR



7 OPT. 7/8" GLAZING CORNER GUARD



8 INSTALLATION CLIP



9 ANCHOR CHANNEL COUPLING

Table 1

Item	Part #	Description	Mat.
1	23045	Head/Sill	6063-T6
2	23048	Anchorless Jamb	6063-T6
3	21612	7/8" Ext. Square Beading	6063-T6
4	23068	Int. Square Head/Sill Beading	6063-T6
5	21013	Interior Square Jamb Beading	6063-T6
6	23064	7/8" Glazing Corner Guard	6063-T6
7	23075	Installation Clip	6063-T6
8	23074	3/8" x 9" Aluminum Bar	6063-T6
9	23067	Anchor Channel Coupling	6063-T6
10		#8 x 3/4" Panhead Ph. SMS	SS
11	23076	90 Degree Corner Key	PVC
12	23071	135 Degree Corner Key	PVC
20	21091	Beading Bulb Weatherstrip	Vinyl
21	23083	Glazing Leg Weatherstrip	Vinyl
30		Setting Block, 1" x 1/8" x 4", Durs. = 80	Neoprene
31	Backbedding	9000-7700, Dow 791 or 983	Silicone
32	Joint Sealants	Any Compatible Sealant with Movement Capability per Table 3	Silicone

NO CHANGES THIS SHEET

REVISIONS

DESCRIPTION	DATE	BY
INSTALL DETAIL BOM EDIT	2/24/2025	MB
ADDED 7/8" FLAT GLAZING CORNER GUARD	3/25/2025	MB
ADDED 2/8" FLAT BAR	6/16/2025	MB

WINDOOR

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6/16/25
STATE OF TENNESSEE
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A. LYNN MILLER, P.E.