

RIOT GLASS, INC.

MIAMI-DADE TEST REPORT

SCOPE OF WORK

TAS 201, TAS 202, AND TAS 203 TESTING ON AP-25 SURFACE MOUNT, PROTECTIVE SYSTEM

REPORT NUMBER

L4170.01-303-18

TEST DATE(S)

01/22/21 – 02/27/21

ISSUE DATE

03/05/21

RECORD RETENTION END DATE

02/27/31

MIAMI-DADE COUNTY NOTIFICATION NO.

ATI LA21001

LABORATORY CERTIFICATION NO.

20-0831.07

PAGES

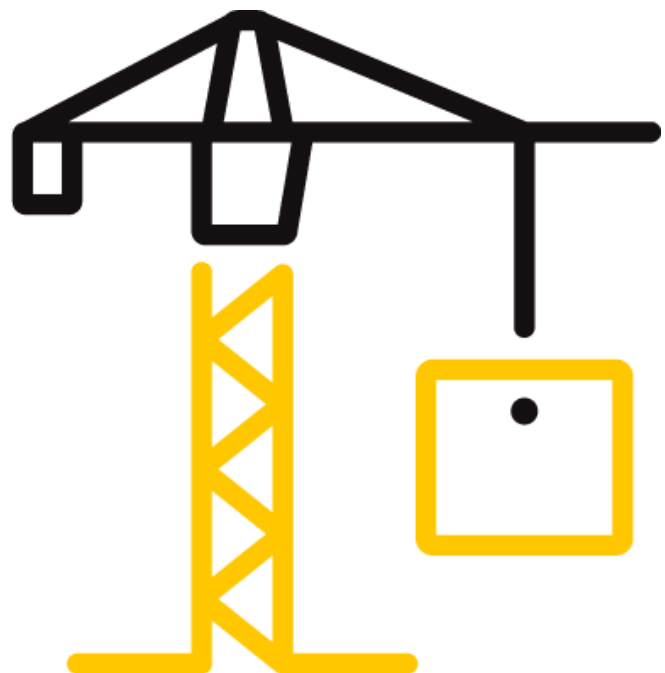
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DOCUMENT CONTROL NUMBER

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RT-R-AMER-Test-2816

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TEST REPORT FOR RIOT GLASS, INC.

Report No.: L4170.01-303-18

Date: 03/04/21

REPORT ISSUED TO

RIOT GLASS, INC.

17941 Brookshire Lane

Huntington Beach, California 92647

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Riot Glass, Inc. to perform TAS 201, TAS 202, and TAS 203 testing in accordance with Miami-Dade County requirements on their AP-25 Surface Mount, Protective System. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at the Intertek B&C test facility in Lake Forest, California. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

The specimen(s) tested met the performance requirements set forth in the protocols.

Product Type: Protective System

Series/Model: AP-25 Surface Mount

SPEC.	TEST PROTOCOL	DESIGN PRESSURE
1	TAS 202	+40 / -40 psf
1	TAS 201/203 (Large Missile)	+40 / -40 psf

For INTERTEK B&C:

COMPLETED BY: Aaron Baker
TITLE: Technician Team Lead
SIGNATURE:
DATE: 03/05/21

REVIEWED BY: Tyler Westerling, P.E.
TITLE: Operations Manager
SIGNATURE:
DATE: 03/05/21

jsh:ab

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

TAS 201-94, *Impact Test Procedures*

TAS 203-94, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading*

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of ten years from the test completion date.

Then specimen was installed into a Spruce-Pine-Fir wood test buck. The rough opening allowed for a 1/4" shim space. The exterior perimeter of the door was sealed with sealant. Installation of the tested product was performed by the client.

LOCATION	ANCHOR DESCRIPTION	ANCHOR LOCATION
Through head and sill	2" lag screw	Through head per installation instructions.

SECTION 5

EQUIPMENT

Cannon: Constructed from steel piping utilizing compressed air to propel the missile

Missile: 2x4 Southern Pine

Timing Device: Electronic beam type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers

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SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Brad Campbell	Riot Glass, Inc.
Aaron Baker	Intertek B&C
Jarod Hardman	Intertek B&C

SECTION 7

TEST SPECIMEN DESCRIPTION

Product Type: Protective System

Series/Model: AP-25 Surface Mount

Product Size(s):

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
5.8 m ² (62.5 ft ²)				
Storefront Size	1876	73-7/8	3096	121-7/8
Panel Size	1829	72	3048	120

Frame Construction:

FRAME MEMBER	MATERIAL	DESCRIPTION
Head and sill	Aluminum	Base extrusion, Part No. OPG1578, see attached Drawings Section 12.
Head and Sill	Aluminum	Cover cap, Part No. OPG5001, press fit onto base extrusion, see attached Drawings Section 12.
Jambs	Aluminum	Base extrusion, Part No. OPG1510, see attached Drawings Section 12.
Head, sill, and jambs	Aluminum	Pressure bar, Part No. OPG1979, secured to base extrusion with part nos. OPG1986IP/OPG2057HS, see attached Drawings Section 12.

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Frame Construction: (Continued)

FRAME MEMBER	MATERIAL	DESCRIPTION
Head, sill, and jambs	Aluminum	Glass stop, Part No. OPG1989, press fit into base extrusion, see attached Drawings Section 12.
Head, sill, and jambs	Aluminum	Cap, Part No. OPG1912, press fit over pressure bar, see attached Drawings Section 12.
	JOINERY TYPE	DETAIL
All Corners	Flush	Secured at corners with four #12 x 12 FHSMS fasteners and corner angle, see attached Drawings Section 12.

Note 1: Base curtain wall assembly consisted of non-impact rated system to confirm performance and compliance of tested AP-25 system for protection.

Protective System Construction:

FRAMR MEMBER	PART #	MATERIAL	DESCRIPTION
Wedge	A-09902	Aluminum	Secured to face of AP-25 system with supplied self-tapping tamper resistant screws 6" on center and 2" from end spacing, see attached Drawings Section 12.
Cap	A-09005	Aluminum	0.040" extrusion, press fit over wedge, see attached Drawings Section 12.
	JOINERY TYPE	DETAIL	
All Corners	Flush	Dry fit corners	

Reinforcement: No reinforcement was utilized.

Weatherstripping: No weatherstripping was utilized.

Glazing: No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.

GLASS TYPE	GLAZING	GLAZING METHOD
Monolithic	1/4" Clear Tempered	Exterior set, dry fit with pressure bar and gasket (Part No. OPG1985), see attached Drawings Section 12.

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PROTECTIVE SYSTEM	GLAZING	GLAZING METHOD
Armorplast 25 (AP-25)	1/4" Clear Polycarbonate	Dry fit with wedge and cover cap.

LOCATION	QUANTITY	DAYLIGHT OPENING		GLASS BITE
		millimeters	inches	
Fixed light	1	1762 x 2981	69-3/8 x 117-3/8	1-5/16"

Drainage: *No drainage was utilized.*

Hardware: *No hardware was utilized.*

Screen Construction: *No screen was utilized.*

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SECTION 8

TEST RESULTS

Protocol TAS 201-94, Large Missile Impact Procedures

Test Date(s): 01/22/21 through 02/27/21

The temperature during testing was 21°C (70°F). The results are tabulated as follows:

Test Specimen #1

IMPACT #	MISSILE WEIGHT (lbs.)	MISSILE LENGTH (in.)	MISSILE VELOCITY (ft./sec.)
1	9.5	96	50.0
2	9.5	96	50.0

Note 2: See Sketch #1 for impact locations.

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Date(s): 01/22/21 through 02/27/21

The temperature during testing was 21°C (70°F). The results are tabulated as follows:

Test Specimen #1: Cyclic Test Spectrum and Average Cycle Time per TAS 203

DESIGN PRESSURE	STAGE			
	1	2	3	4
+40.0 / -40.0 psf				
POSITIVE PRESSURE RANGE (psf)	8.0 – 20.0	0 – 24.0	20.0 – 32.0	12.0 – 40.0
AVERAGE CYCLE TIME (sec.)	4.57	4.97	4.35	4.23
NUMBER OF CYCLES	3500	300	600	100
	5	6	7	8
NEGATIVE PRESSURE RANGE (psf)	12.0 – 40.0	20.0 – 32.0	0 – 24.0	8.0 – 20.0
AVERAGE CYCLE TIME (sec.)	4.72	4.69	4.52	4.56
NUMBER OF CYCLES	50	1050	50	3350

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SECTION 9

CONCLUSIONS

The large missiles impacted each intended target. Each impact location was carefully inspected. No signs of penetration, rupture, or opening after the large missile impact test were observed; as such, each test specimen satisfies the large missile requirements of TAS 201. Upon completion of testing, specimens tested for TAS 201-94 met the requirements of Section 1626 of the Florida Building Code, Building.

AND

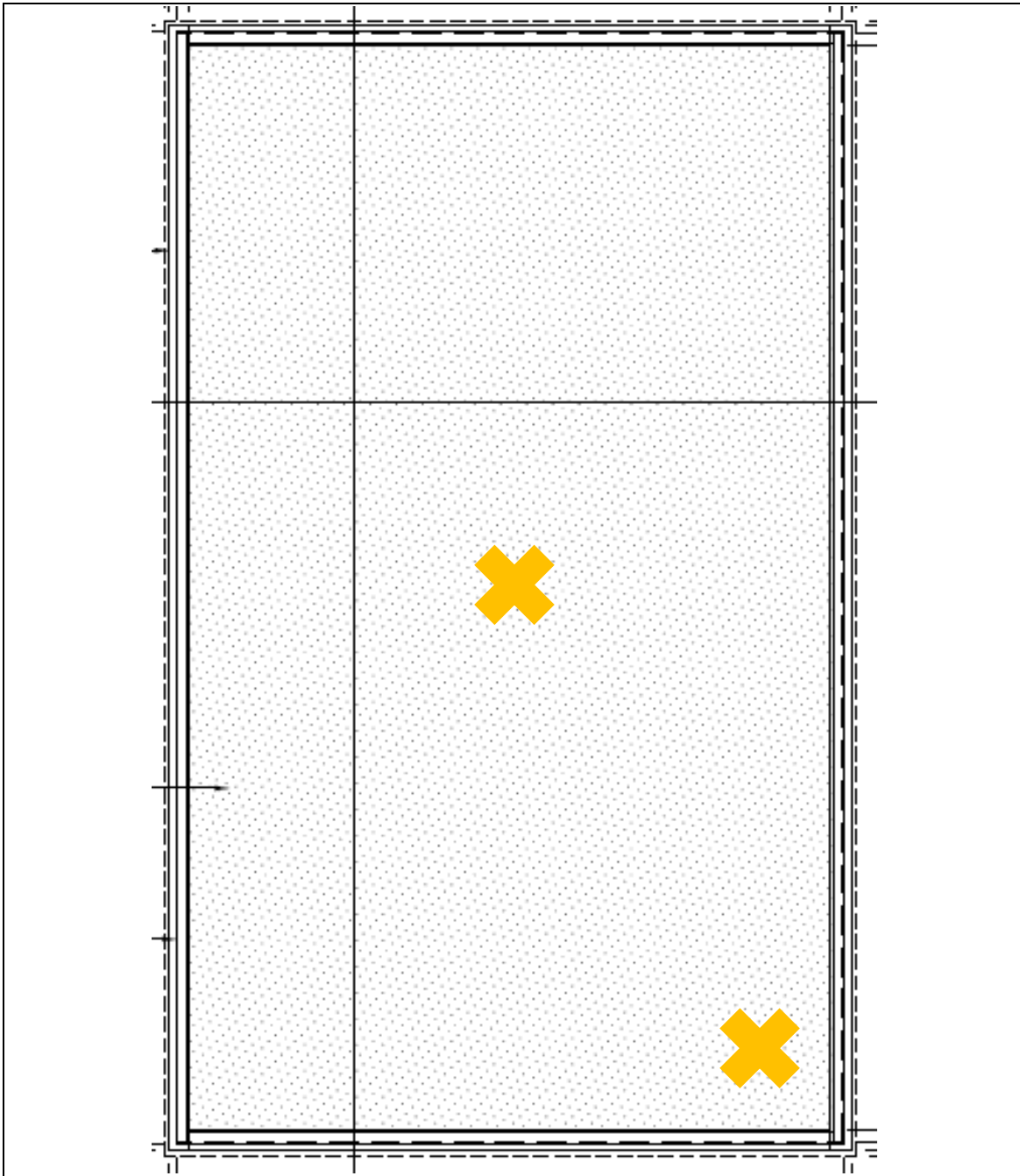
No signs of failure were observed in any area of the test specimens during the cyclic load test; as such, the test specimens satisfy the cyclic load requirements of TAS 203. Upon completion of testing, specimens tested for TAS 203-94 met the requirements of Section 1626 of the Florida Building Code, Building.

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SECTION 10
SKETCH(ES)



Sketch No. 1
TAS 201 Impact Locations

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SECTION 11

PHOTOGRAPHS



Photo No. 1
Test specimen from exterior



Photo No. 2
Detail photo of corner of AP-25 Installed



Total Quality. Assured.

25800 Commercentre Drive
Lake Forest, California 92630

Telephone: 949-460-9600
Facsimile: 717-764-4129
www.intertek.com/building

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SECTION 12
DRAWINGS

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



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Verified by:



RIOT GLASS, INC.

17941 BROOKSHIRE LANE

HUNTINGTON BEACH, CA 92647

(800) 580 - 2303

HURRICANE TESTING SPECIMENS

SYSTEM(S)	
RIOT GLASS AP25 FULL FRAME, 1 1/8" TALL x 1 3/16" WIDE	
RIOT GLASS AP25 SURFACE MOUNT, 1 3/16" TALL x 1/2" WIDE	
SYSTEM CAN BE BACK GLAZED OR OVER GLAZED ONTO EXISTING WINDOWS FOR FORCED ENTRY PREVENTION, HURRICANE AND OTHER WINDSTORM PROTECTION.	
FINISH(ES)	
FRAME FINISH	ALUMINUM AVAILABE FINISHES: <ul style="list-style-type: none"> • MILL FINISH • CLEAR ANODIZED • BRONZE ANODIZED • CUSTOM POWDER COAT OR PAINT

GLAZING SCHEDULE	
RIOT GLASS™ ARMORPLAST™ 25 (AP25) 1/2" ACCESS DENIAL PANEL	
MAX PANEL SIZE: 72" x 120"	
ALL AP25 PANELS ARE AR1 COATED (80 MICRON THICK UV AND ABRASION RESISTANT ON ONE SIDE) UNLESS OTHERWISE NOTED.	
AR1 COATING IS ON THE SIDE EXPOSED TO ANY WEATHER OR ABRASION. THE UNEXPOSED SIDE IS NOT COATED.	
DRAWING INDEX	
0.00	COVER SHEET & INDEX
0.01	PARTS LIST
2.01	STOREFRONT FRAMING ELEVATION
2.02	CURTAINWALL FRAMING ELEVATION (FULL FRAME)

DRAWING INDEX (CONT.)	
5.01	STOREFRONT HEAD AND SILL DETAILS (FULL FRAME)
5.02	CURTAINWALL HEAD AND SILL DETAILS (FULL FRAME)
6.01	STOREFRONT JAMB DETAILS (FULL FRAME)
6.02	CURTAINWALL JAMB DETAILS (FULL FRAME)

ARCHITECT OF RECORD'S APPROVAL

STRUCTURAL ENGINEER OF RECORD'S APPROVAL

STRUCTURAL ENGINEER'S APPROVAL

GENERAL CONTRACTOR'S APPROVAL

REVISIONS	BY
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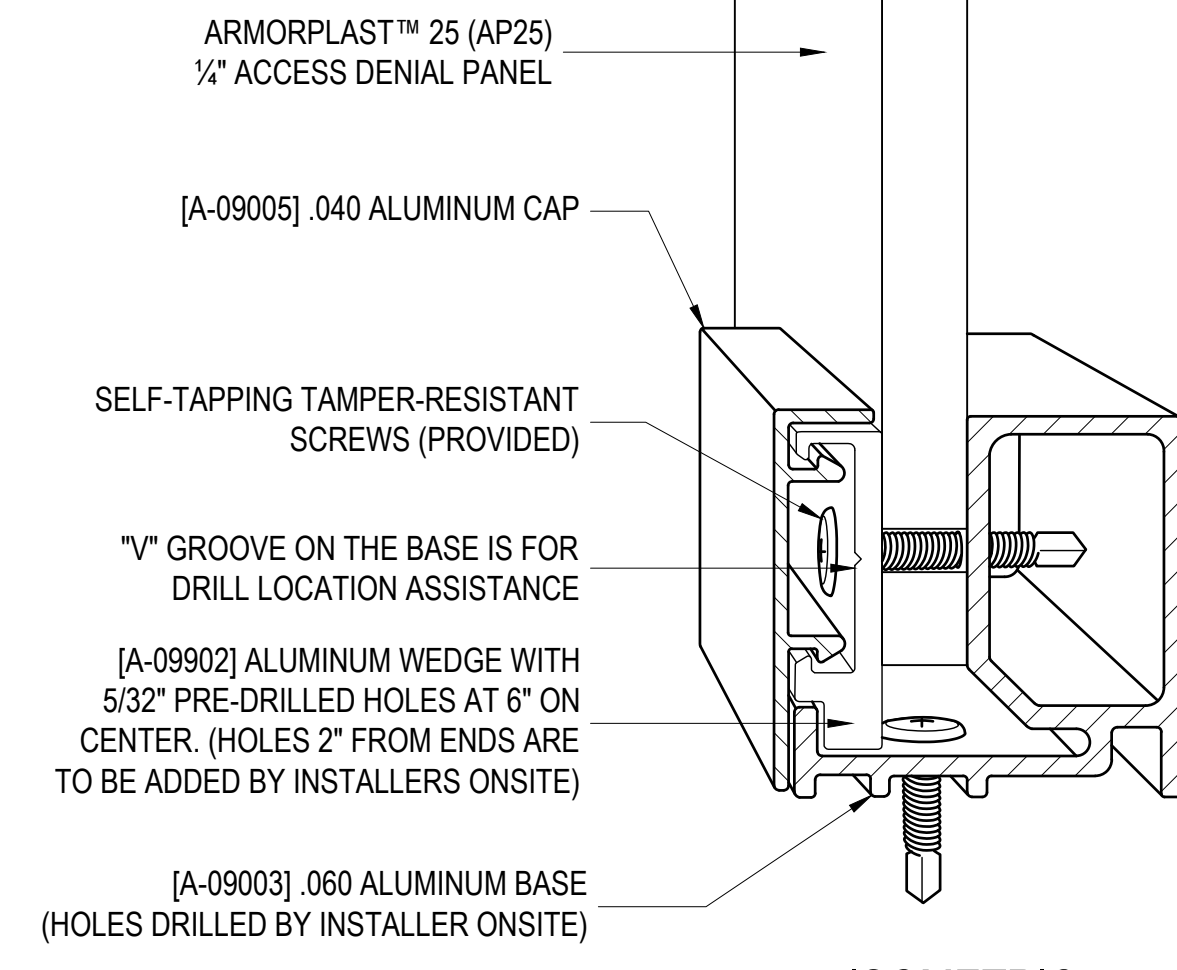
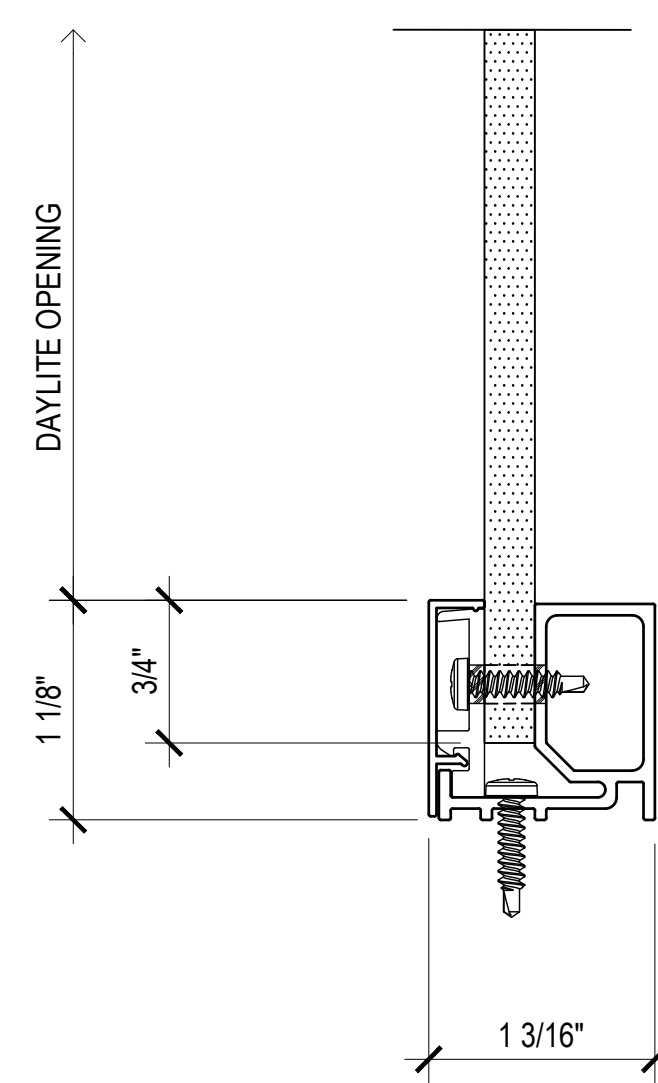
RIOT GLASS FRAMING DETAILS
AVAILABLE IN USA & CANADA

FULL FRAME SURFACE MOUNT

DATE 1/15/2021
SCALE N/A
DRAWN TGM
JOB N/A
SHEET

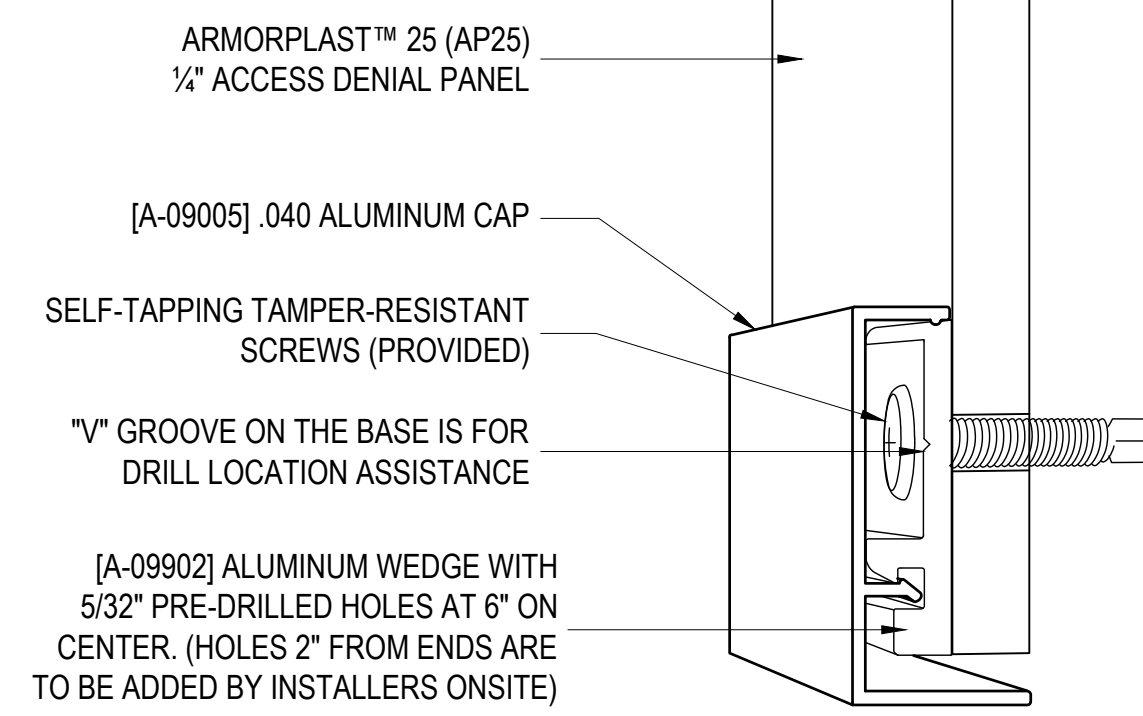
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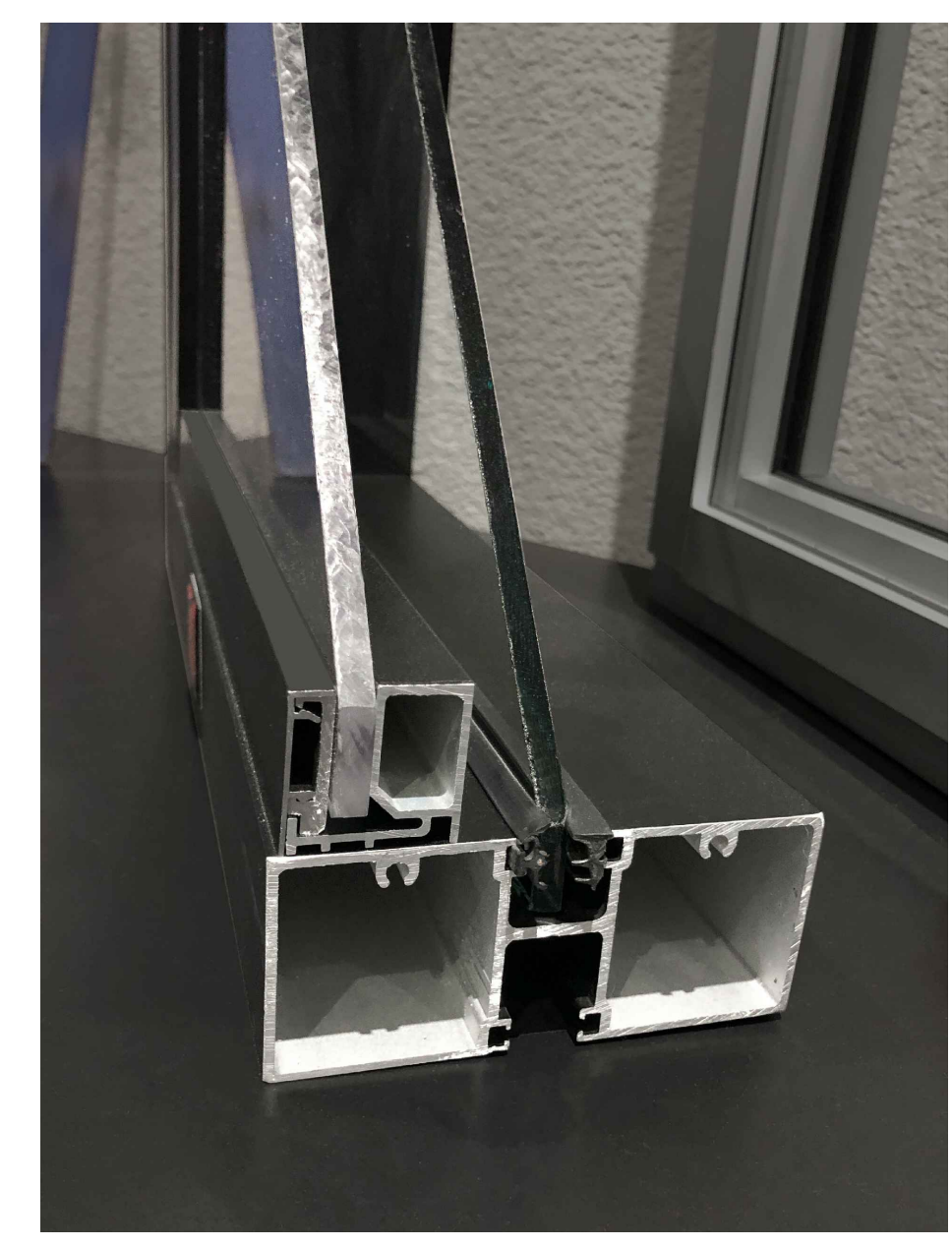
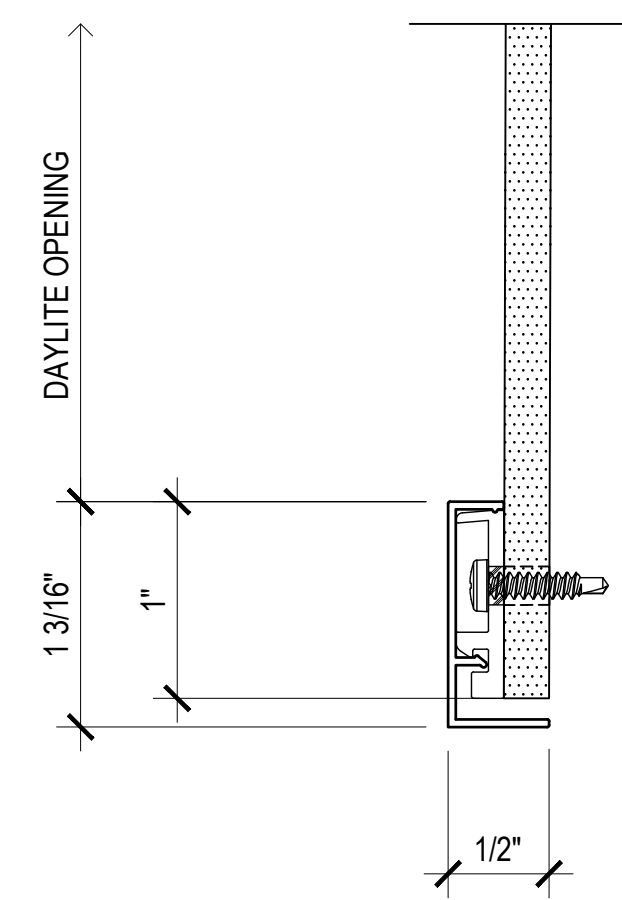
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FULL FRAME

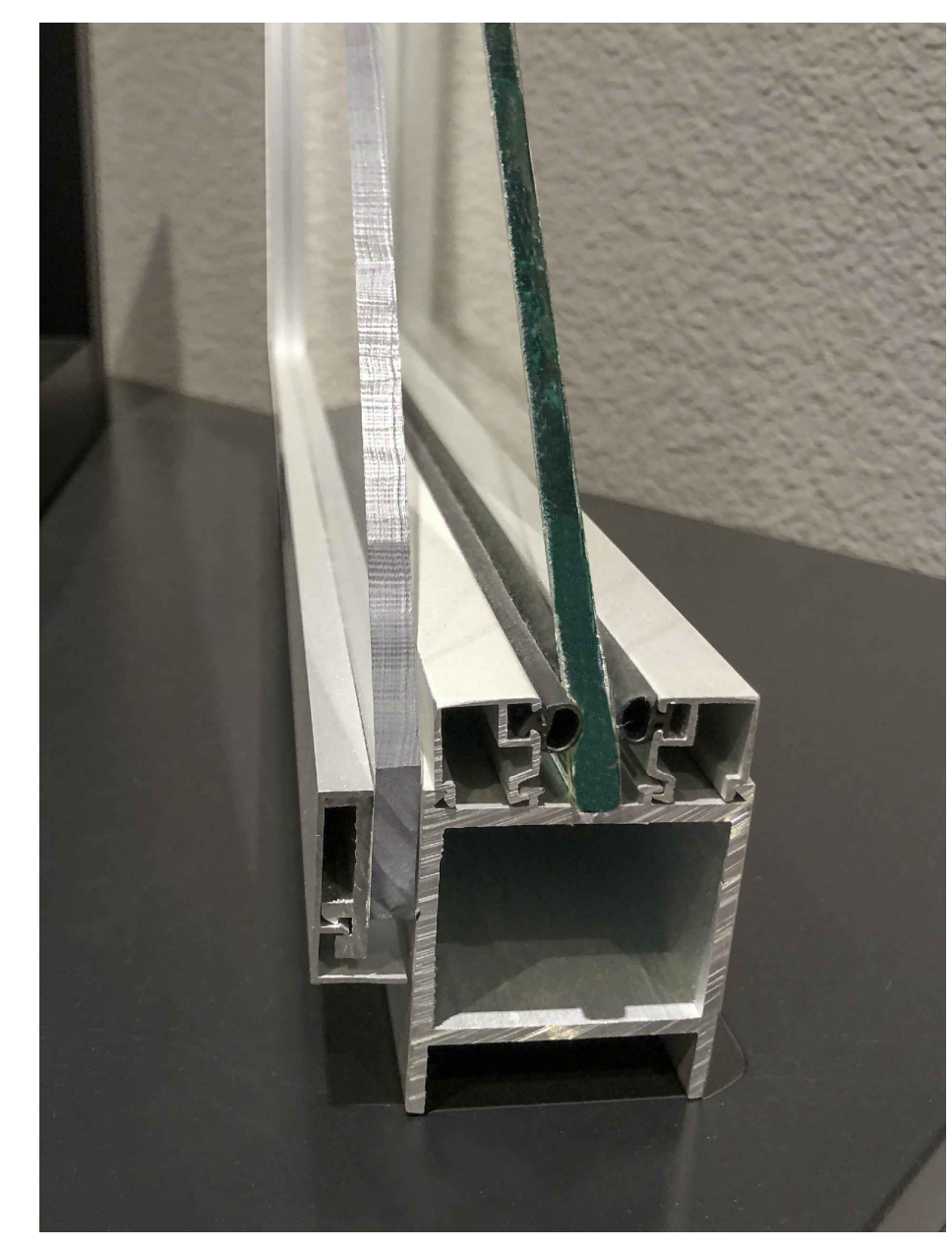
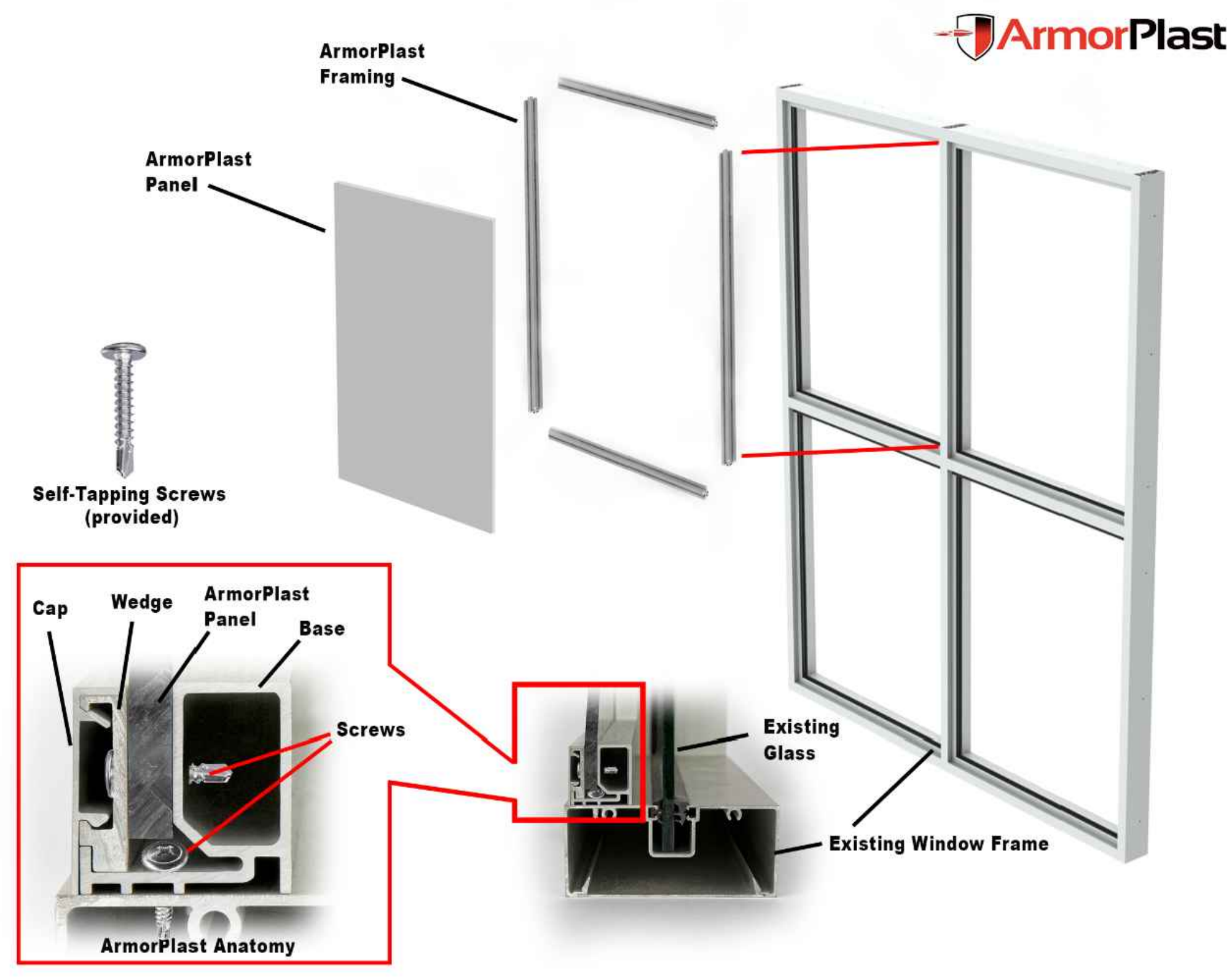


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SURFACE MOUNT



FULL FRAME



SURFACE MOUNT

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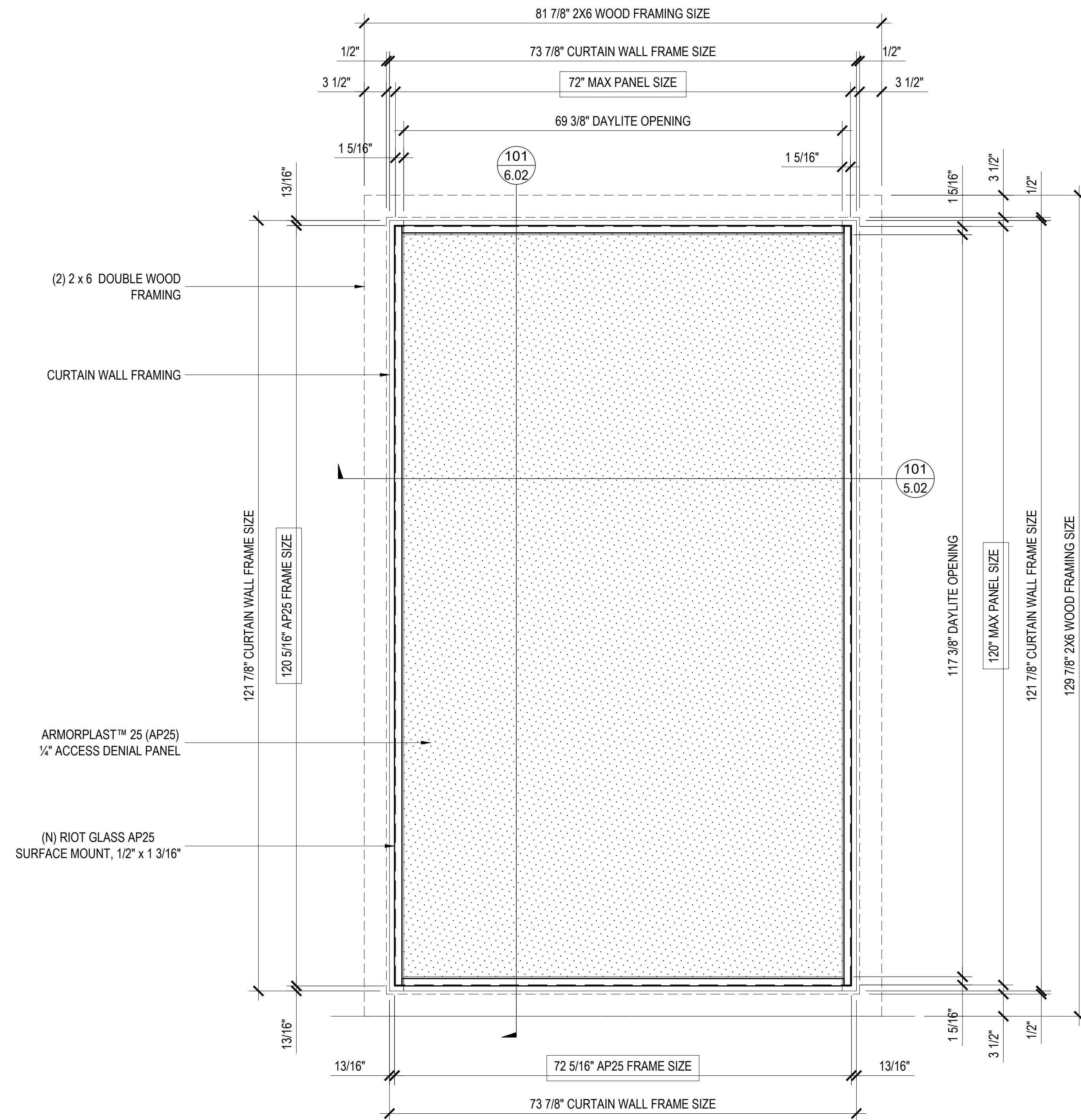
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FULL FRAME
SURFACE MOUNT

DATE	1/15/2021
SCALE	N/A
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JOB	N/A
SHEET	



B 2 THUS	(E) CURTAIN WALL FRAMING
	RIOT GLASS AP25 SURFACE MOUNT, 1/2" x 1 3/16"
	ARMORPLAST™ 25 (AP25) 1/4" ACCESS DENIAL PANEL
	FINISH TO BE DETERMINED

ARCHITECT OF RECORD'S APPROVAL

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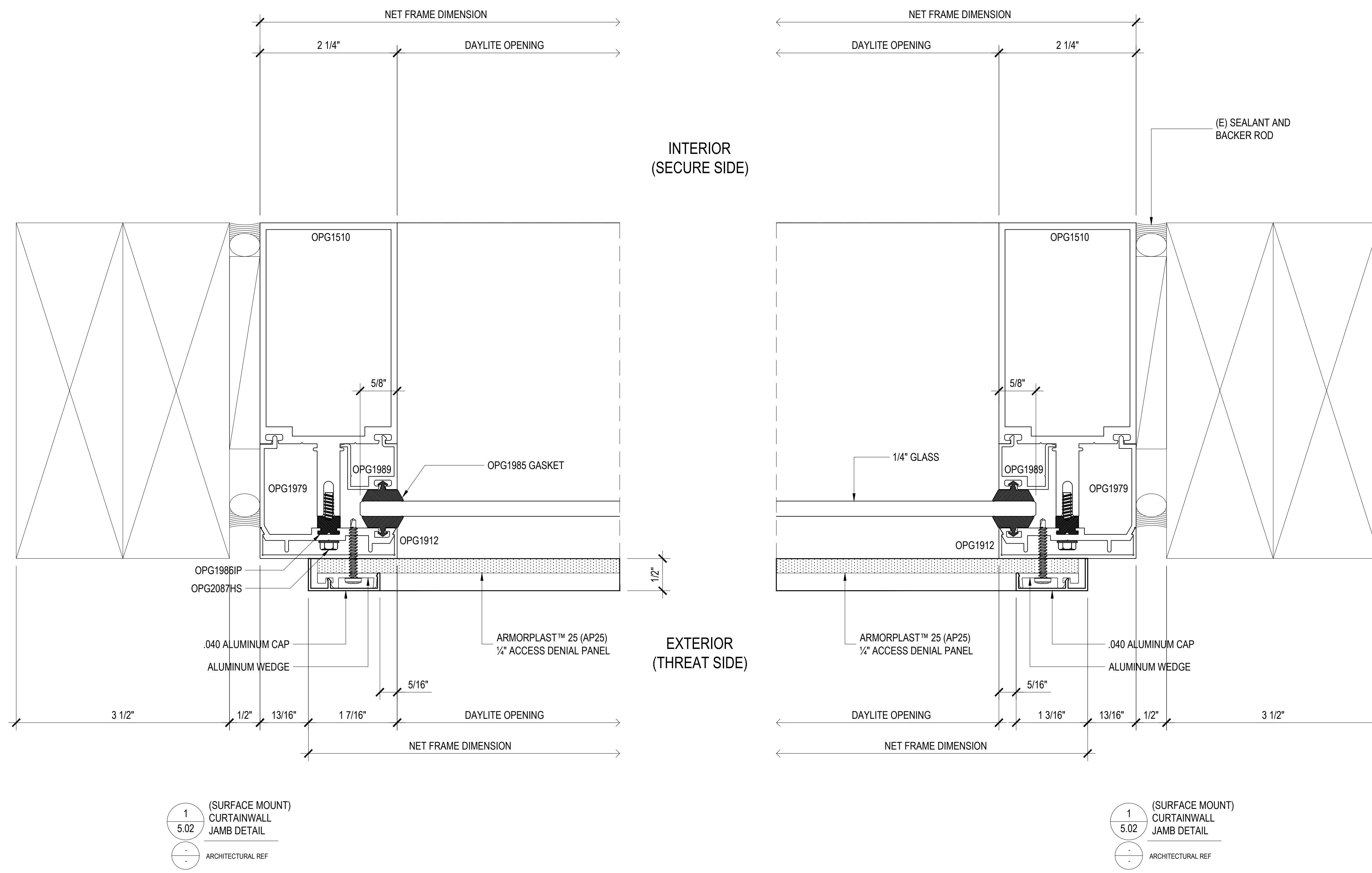
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CURTAIN WALL
ELEVATION
AP-25 SURFACE
MOUNT

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1 (SURFACE MOUNT)
5.02 CURTAINWALL
JAMB DETAIL
- ARCHITECTURAL REF

1 (SURFACE MOUNT)
5.02 CURTAINWALL
JAMB DETAIL
- ARCHITECTURAL REF

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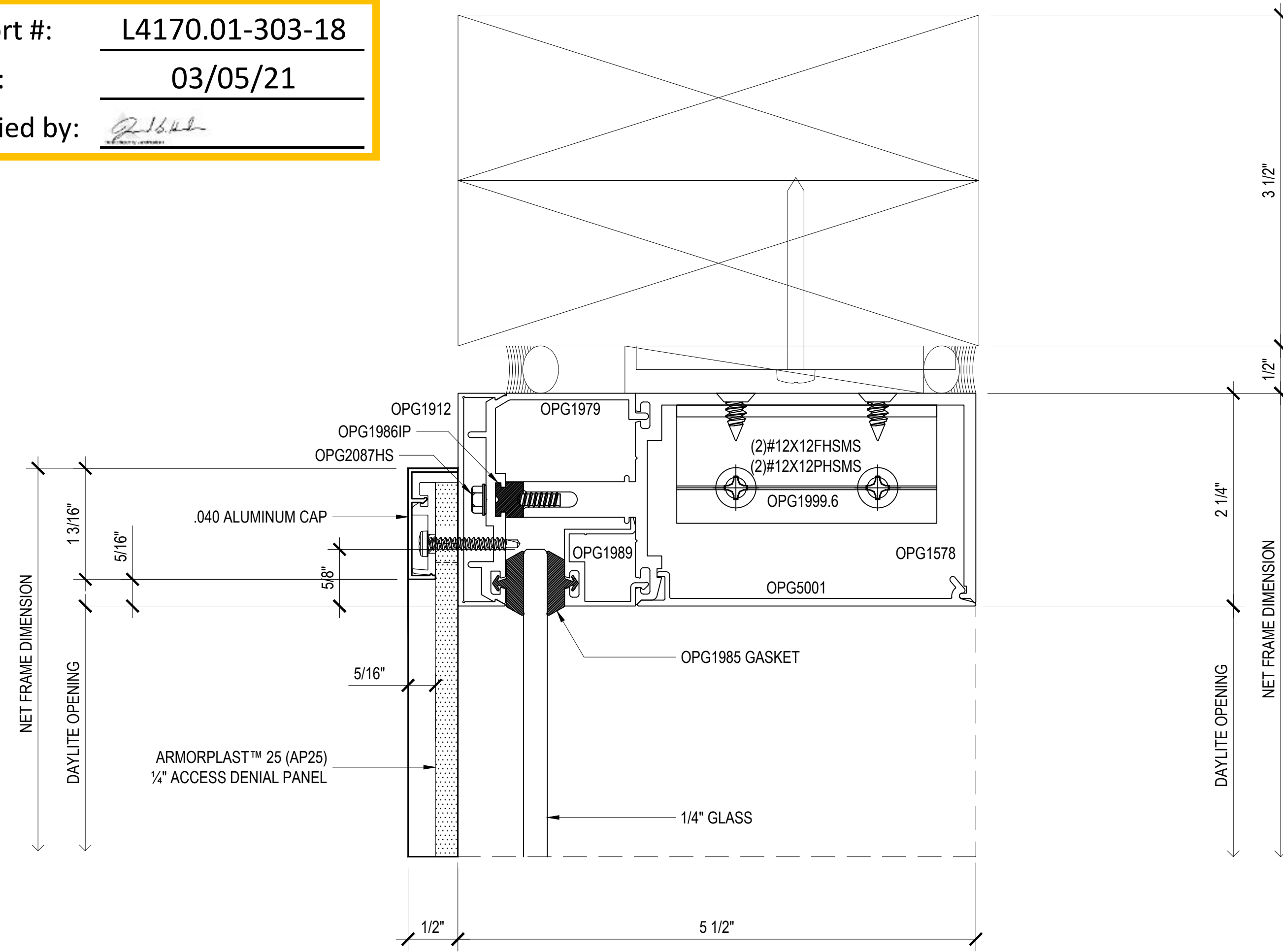
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CURTAIN WALL
DETAILS
AP-25 SURFACE
MOUNT

DATE	1/15/2021
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JOB	N/A
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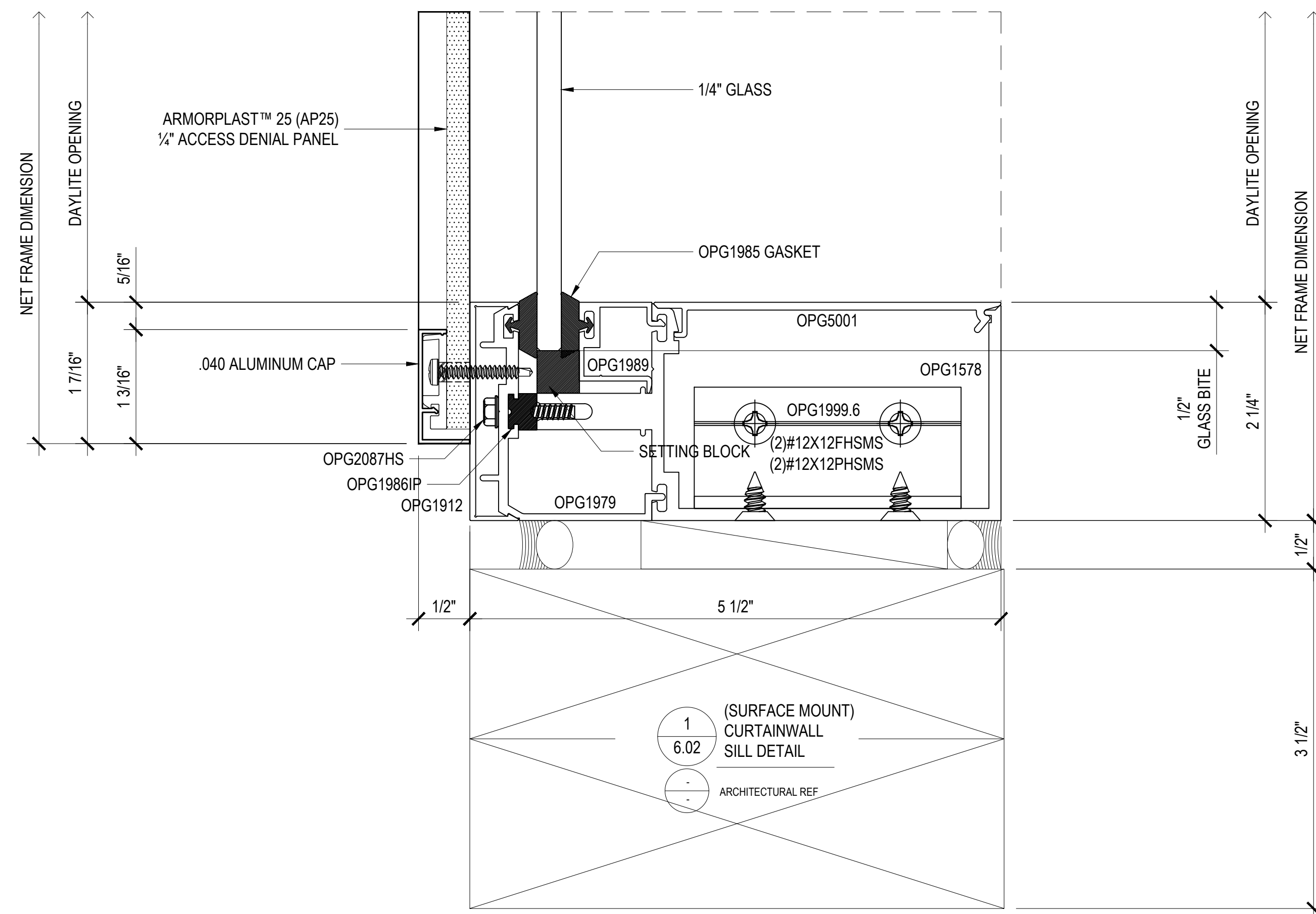
AP-25 SURFACE MOUNT SYSTEM WITH SERIES OPG1500 THERMAL CURTAIN WALL SYSTEM



EXTERIOR
(THREAT SIDE)

1
6.02
ARCHITECTURAL REF

INTERIOR
(SECURE SIDE)



1
6.02
ARCHITECTURAL REF

AP-25 SURFACE MOUNT SYSTEM WITH SERIES OPG1500 THERMAL CURTAIN WALL SYSTEM

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CURTAIN WALL
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AP-25 SURFACE
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DATE: 1/15/2021
SCALE: 1" = 0' = 1" - 0"
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JOB: N/A
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SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	03/04/21	N/A	Original Report Issue