

FLORIDA PRODUCT EVALUATION REPORT

PRODUCT:

Fabricated door panels for use on Fidelity Manufacturing generator enclosures. Door panels are used with various tested wall and roof panels to show the complete fabricated enclosure is acceptable and meets Florida Building Code requirements.

Several test panels were used for the tests. Reference 1 documents a single door panel tested to FBC requirements using an 80-fps missile. These panels consist of outer aluminum (5052-H32) sheathing, 0.125" thick, attached with 1" wide adhesive tape (VHB-CV62F) to an all-welded aluminum (6061-T6) frame. The frame consists of 2" x 2" x 1/8" aluminum tubes welded together. All aluminum welding uses MAXAL ER4043 weld filler. Doors are framed within a 6063-T5 custom extrusion, with stainless steel piano type hinges. Additional details are provided in the below referenced technical documents.

Reference 2 documents a double door panel tested to FBC requirements using a 50-fps missile. These panels consist of outer aluminum (5052-H32) sheathing, 0.080" thick, attached with 1" wide adhesive tape (VHB-CV62F) to an all-welded aluminum (6061-T6) frame. The frame consists of 2" x 2" x 1/8" aluminum tubes welded to top and bottom aluminum tubes. All aluminum welding uses MAXAL ER4043 weld filler. Doors are framed within 6063-T5 custom extrusion, with stainless steel piano type hinges.

Reference 3 documents a single door panel tested to FBC requirements using a 50-fps missile. These panels consist of outer aluminum (5052-H32) sheathing, 0.080" thick, attached with 1" wide adhesive tape (VHB-CV62F) to an all-welded aluminum (6061-T6) frame. The frame consists of 2" x 2" x 1/8" aluminum tubes welded together. All aluminum welding uses MAXAL ER4043 weld filler. Doors are framed with aluminum Z-trim extrusion, with stainless steel piano type hinges. Additional details are provided in the below referenced technical documents.

MANUFACTURER:

Fidelity Manufacturing (Main office and Fabrication facility)
1900 NE 25th Avenue
Ocala, Florida 34470

Note: Fidelity Manufacturing also may fabricate generator enclosures with associated door panels at another Fidelity located at:
1101 SW 37th Avenue
Ocala, Florida 34474

EVALUATION STATEMENT: The fabricated door panel (as described above and on attached technical documents) provides an overall structurally qualified door system for Fidelity fabricated generator enclosures. This evaluation uses both test results and engineering rational analysis to show the fabricated door

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panel meets the requirements of the Florida Building Code (2023, 8th Edition), Sections 1625/1626 with the limitations discussed below.

There are four test reports referenced below. These test reports show compliance with TAS-201, TAS-202, and TAS-203 as outlined in the Florida Building Code, 8th Edition (2023), Sections 1625/1626.

Test Report discussion:

Reference 1 (Single door tested to 80fps) documents testing to the following test protocols:

- TAS-201-94 (2020): Missile test passed all aspects of test requirements with missile at 80 feet/second
- TAS 203-94 (2020): Pressure test passed all cycles with test pressures of 65psf. Based on design press +/-50 psf.
- TAS 202-94 (2020): Pressure test passed at test pressures ranging from 37.5 psf to 75 psf. Based on design pressure of +/- 50 psf.

Reference 2 (double door evaluated to 50fps) documents testing to the following test protocols:

- TAS-201-94 (2020): Missile test passed all aspects of test requirements with missile at 50 feet/second
- TAS 203-94 (2020): Pressure test passed all cycles with test pressures ranging from 37.5 psf to 75 psf. Based on design press +/-50 psf.
- TAS 202-94 (2020): Pressure test passed at test pressures ranging from 37.5 psf to 75 psf. Based on design pressure of +/- 50 psf.
- Material used matches the above product description

Reference 3 (single door tested to 50fps) documents testing to the following test protocols:

- TAS-201-94 (2020): Missile test passed all aspects of test requirements with missile at 50 feet/second
- TAS 203-94 (2020): Pressure test passed all cycles with test pressures of 57.2 / 68.9 psf. Based on design pressures of +53/-44 psf and test pressure
- TAS 202-94 (2020): Pressure test passed at test pressures of +79.5psf / -66psf. Based on design pressure of +53psf /-44 psf
- Material used matches the above product description

All the test references include mounting and latching hardware that is not specifically listed. The following provides a list of the hardware:

- Hinge: Spencer Products, Part #HINGE72SS, Stainless Steel, 72-in. long x 3-in. width, 0.325-in. Diameter Pin

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- Center Case Assembly: Eberhard Manufacturing Co., Part #5645-50XU.
- inside Release Handle: Eberhard Manufacturing Co., Part #5644-6, Hot-Rolled Steel.
- Exterior Handle: Industrial Hardware Distributors, Inc., Part #5655-SSX, Stainless Steel
- Offset Lock Rod: Eberhard Manufacturing, Co., Part #5658-2X, Hot-Rolled Steel
- Weather-Stripping: Trim-Lock, Inc. 100 Series, Pebble Texture, 1/8-in. Edge Thickness, 0.375-in. Bulb Size, 9/16-in. leg length
- Spring: Industrial Hardware Distributors, Inc. Part #89U140341JJ

These various test reports document acceptance of the door segment to show compliance with the Florida Building Code. It should be noted that there is a slight variance in the details of fabrication between the various test reports. The difference primarily involves the door trim. Also, Reference 1 tests a single door to higher test missile speeds. This evaluation concludes all doors and door frames are acceptable. The door hardware has been evaluated along with the fabricated door panels. All hardware is considered acceptable by being part of successful tests.

In addition to the test reports, calculations have been performed to meet the requirements of the Miami Dade "Notice of Acceptance" (NOA). To meet NOA requirements, the testing and a standalone calculation were completed. The calculation (Reference 7) shows a design pressure of 42psf. This is compatible with the test performed in Reference 2. The testing in Reference 1 uses a higher design pressure and is therefore considered acceptable. Please note that this calculation references earlier editions of the Florida Building Code. This is considered acceptable since test protocols and relevant sections of the code have not changed from 7th to 8th edition.

This calculation is considered a rational approach that combines the overall framing of the walls, roof, and doors meet the Florida Building Code, 8th Edition (2023), Sections 1625/1626.

TECHNICAL DOCUMENTS:

1. Fidelity Manufacturing fabrication drawing (Installation Instructions) of door panel (copy attached)
2. Certificate of Independence, C. Glenn Pugh, dated 02/15/2024 (copy attached).

REFERENCES:

1. Report, NTS (223-0071), dated 10/05/2023, "Impact Testing- Single Door," by Moisture Intrusion Solutions, Inc.
2. Report, NTS (223-0071), dated 10/05/2023, "Impact Testing- Double Door," by Moisture Intrusion Solutions, Inc.

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3. Report FIDM031720-56 (R0), dated 03/10/2022, by ICC-NTA.
4. Report FIDM042516-14 (R0), dated 06/08/2016, by ICC-NTA.
5. Report FIDM031720-55, Door Frame, ASTM E0008 Test
6. Report FIDM031720-55, Door skin, ASTM E0008 Test
7. Calculation to Support Miami-Dade, Notice of Acceptance, Number 20-0630.01.
8. Florida Building Code (FBC), 8th Edition, 2023.

LIMITATIONS:

The various door panels are approved for use in High Velocity Hurricane Zones as specified in FBC, Sections 1625/1626.

General door panel limitations are shown on the provided Fidelity Manufacturing drawing. The panel width, length, member sizes, and general orientation are considered the maximum allowable fabrication limits.

The referenced reports and calculations assume a design wind pressure of (+/-) 42 psf. These reports use required test pressure modifications and cycle limits as required to meet TAS 202/203.

Evaluation Prepared by:



C. Glenn Pugh, PE
Signed: 02/29/2024
Florida PE #41451
Pugh Engineering Services, LLC
c.glennpugh@gmail.com

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Reference: Report FIDM031720-56(R0)

DRAWINGS PREPARED FOR:
NTA, INC.
DOOR IMPACT TESTING AND MIAMI-DADE NOA



1900 NE 25TH AVE, OCALA, FL 34470
PHONE (352) 414-4700 FAX (352) 414-4642

MATERIAL USED:
SHEATHING - 5052 ALUMINUM SHEET, .080" THICK, ATTACHED WITH 1" WIDE ADHESIVE TAPE (VHB-CV62F)
Z TRIM - 6063-T5 ALUMINUM EXTRUSION, 1-1/2" X 2-5/8" X 1-1/2" "Z" TRIM, .125" THICK, ATTACHED WITH #12 S.S. TEK SCREWS (MAX 12" O.C.)
FRAMING - 6061-T6 ALUMINUM EXTRUSION, .125" THICK, 2" X 2", 2" X 3"
WELDING - FILLER (MAXAL 4043), 1/4" FILLET WELD TYPICAL
STAINLESS STEEL PIANO HINGE WITH 1/8" PIN

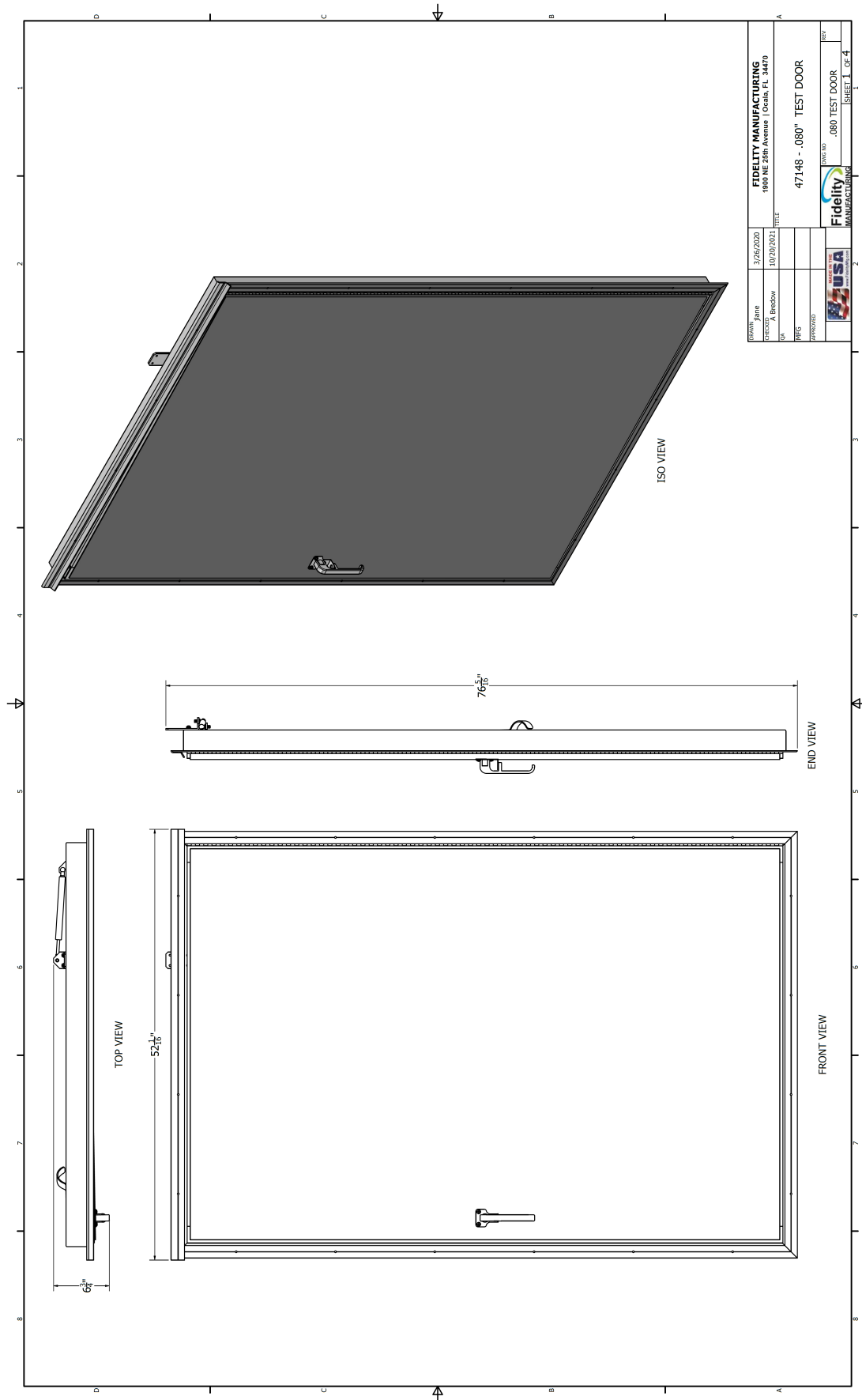
PRODUCT DESCRIPTION:
.080" 5052 SHEET ATTACHED TO 2" 6061-T6 STUDS WITH 1" WIDE ADHESIVE TAPE (FULL LENGTH OF STUD) . "Z" TRIM ATTACHED TO PIANO HINGE USING STAINLESS POP RIVETS. STUDS WELDED IN PLACE USING 1/4" FILLET WELD WITH MAXAL 4043 FILLER BOTH SIDES. DOOR FRAME ATTACHED TO "Z" FRAME USING STAINLESS POP RIVETS.

DRAWING PACKAGE	
SHEET NUMBER	SHEET TITLE
1	NOTES
2	ASSEMBLY VIEW
3	FRAME
4	Z-FRAME
5	SKIN

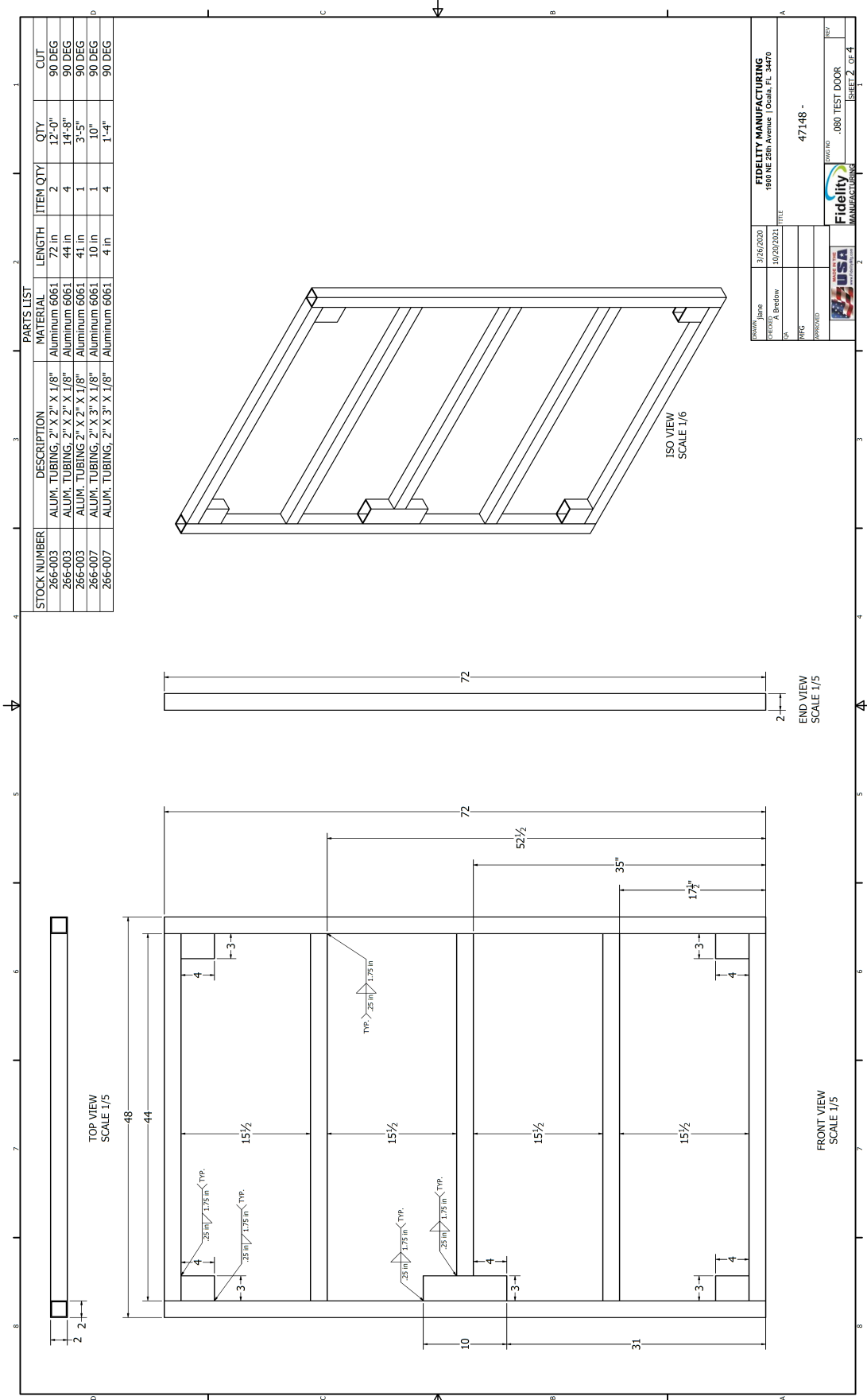
REVISIONS:

REVISION LEVEL	REVISION DESCRIPTION	SHEET OF CHANGE(S)	ENGINEER	DATE
00	INITIAL RELEASE		J.A.L.	3/25/2020
01	REVISE SHEATHING AND TAPE MATERIAL		OGP	2/28/2022
02				
03				
04				

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FRONT VIEW
SCALE 1/5

ISO VIEW
SCALE 1/5

.080"

71 1/8"

47 5/8"

PARTS LIST				ITEM QTY		AREA	
STOCK NUMBER	MATERIAL	THICKNESS	LENGTH	WIDTH			
265-050	Aluminum 5052-H32	.080 In	71 5/8 In	47 5/8 In	1		

DRAWN: Jane	DATE: 3/26/2020	FIDELITY MANUFACTURING	1800 NE 28th Avenue Ocala, FL 34470
CHECKED: A. Bredow	TITLE: 10/20/2021		
OK:			
NOTES:			
APPROVED:			
USA Fidelity USA		47148 -	.080 TEST DOOR
		SHEET 4 OF 4	

FLORIDA PRODUCT EVALUATION REPORT

Reference: Report, NTS (223-0071)
(Single, heavy-duty door)

DRAWINGS PREPARED FOR:				
MOISTURE INTRUSION SOLUTIONS, INC.				
DOOR IMPACT TESTING AND FLORIDA PRODUCT APPROVAL				
				
1900 NE 25TH AVE. OCALA, FL 34470 PHONE (352) 414-4700 FAX (352) 414-4642				
MATERIAL USED: SHEATHING - 5052 ALUMINUM SHEET, 1/8" THICK, ATTACHED WITH 1" WIDE ADHESIVE TAPE (VHB TAPE OR APPROVED EQUAL) Z TRIM - 6063-T5 ALUMINUM EXTRUSION, 1-1/2" X 2-5/8" X 1-1/2" "Z" TRIM, .125" THICK, ATTACHED WITH #12 S.S. TEK SCREWS (MAX 12" O.C.) FRAMING - 6061-T6 ALUMINUM EXTRUSION, .125" THICK, 2" X 2", 2" X 3" WELDING - FILLER (MAXAL 4043), 1/4" FILLET WELD TYPICAL STAINLESS STEEL PIANO HINGE WITH 1/8" PIN				
PRODUCT DESCRIPTION: 1/8" 5052 SHEET ATTACHED TO 2" 6061-T6 STUDS WITH 1" WIDE ADHESIVE TAPE (FULL LENGTH OF STUD) . "Z" TRIM ATTACHED TO PIANO HINGE USING STAINLESS POP RIVETS. STUDS WELDED IN PLACE USING 1/4" FILLET WELD WITH MAXAL 4043 FILLER BOTH SIDES. DOOR FRAME ATTACHED TO "Z" FRAME USING STAINLESS POP RIVETS.				
DRAWING PACKAGE				
SHEET NUMBER	SHEET TITLE	NOTES		
1	ASSEMBLY VIEW			
2	FRAME			
3	Z-FRAME			
4	SKIN			
5				
REVISIONS				
REVISION LEVEL	REVISION DESCRIPTION	SHEET OF CHANGE(S)	ENGINEER	DATE
00	INITIAL RELEASE		MIB	5/11/2023
01				
02				
03				
04				

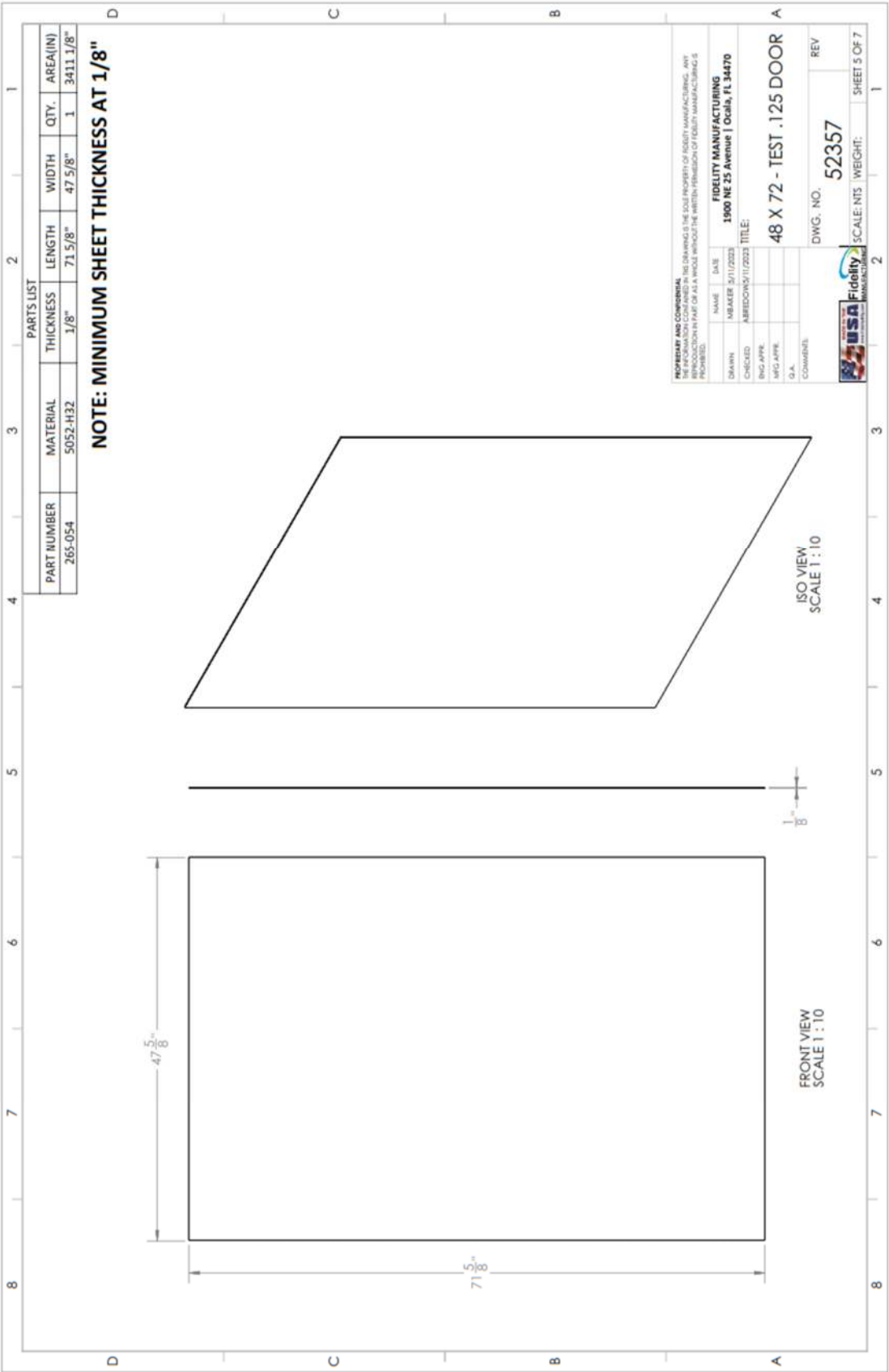
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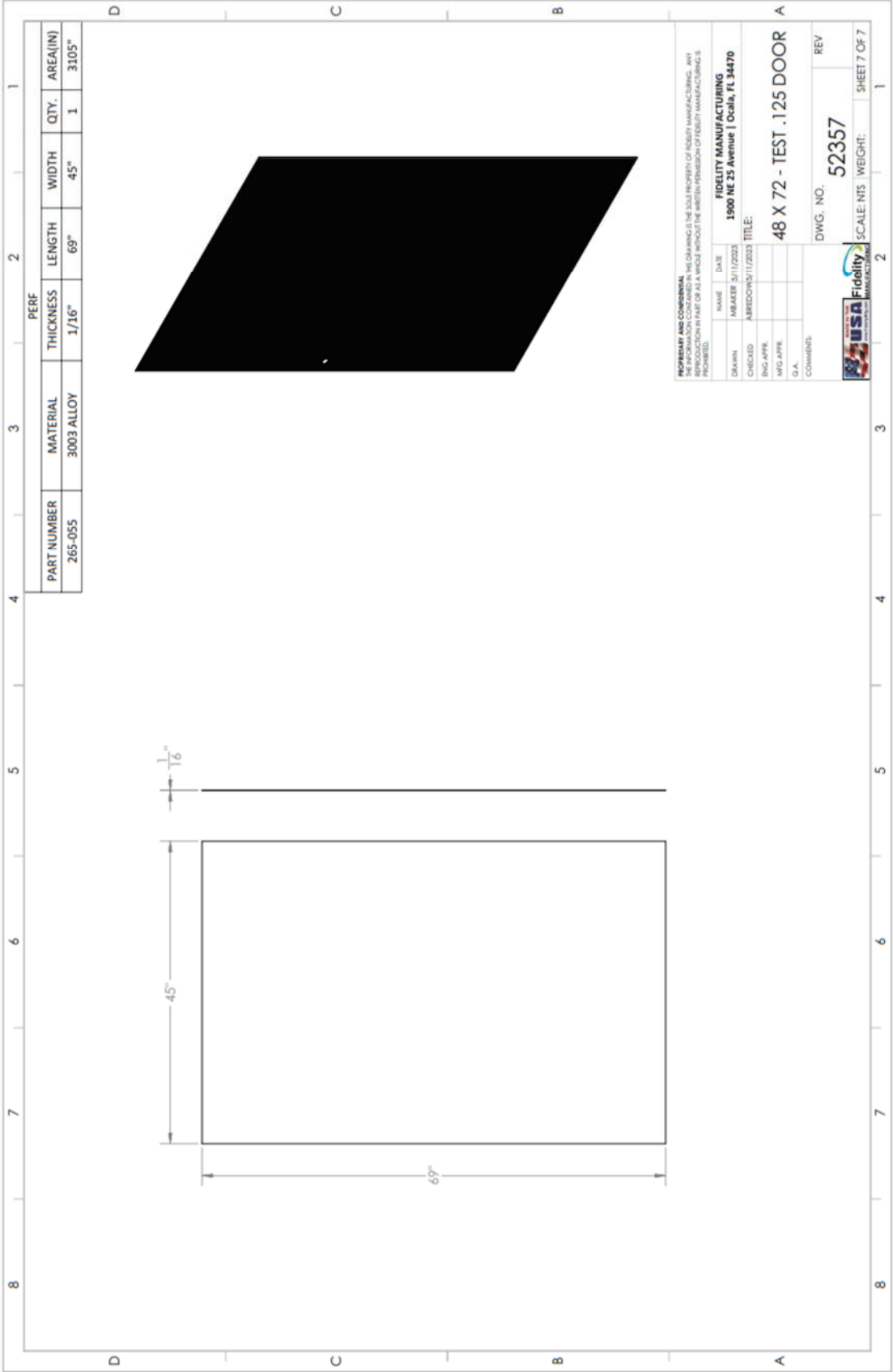


INSULATION

PART NUMBER	MATERIAL	THICKNESS	LENGTH	WIDTH	QTY.	AREA(IN)
506-005	A-GLASS FIBER	2"	44"	9 5/8"	2	847
506-005	A-GLASS FIBER	2"	38"	9 11/16"	2	736.25
506-005	A-GLASS FIBER	2"	44"	9 11/16"	2	852.5

DWG. NO. 52357
REV.
SCALE NTS WEIGHT:
SHEET 6 OF 7

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Reference: Report, NTS (223-0071)
(Double door)

DRAWINGS PREPARED FOR:	
MOISTURE INTRUSION SOLUTIONS, INC.	
DOOR IMPACT TESTING AND FLORIDA PRODUCT APPROVAL	



1900 NE 25TH AVE, OCALA, FL 34470
PHONE (352) 414-4700 FAX (352) 414-4642

MATERIAL USED:
SHEATHING - 5052 ALUMINUM SHEET, .080" THICK, ATTACHED WITH 1" WIDE ADHESIVE TAPE (VHB TAPE OR APPROVED EQUAL)
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STAINLESS STEEL PIANO HINGE WITH 1/8" PIN

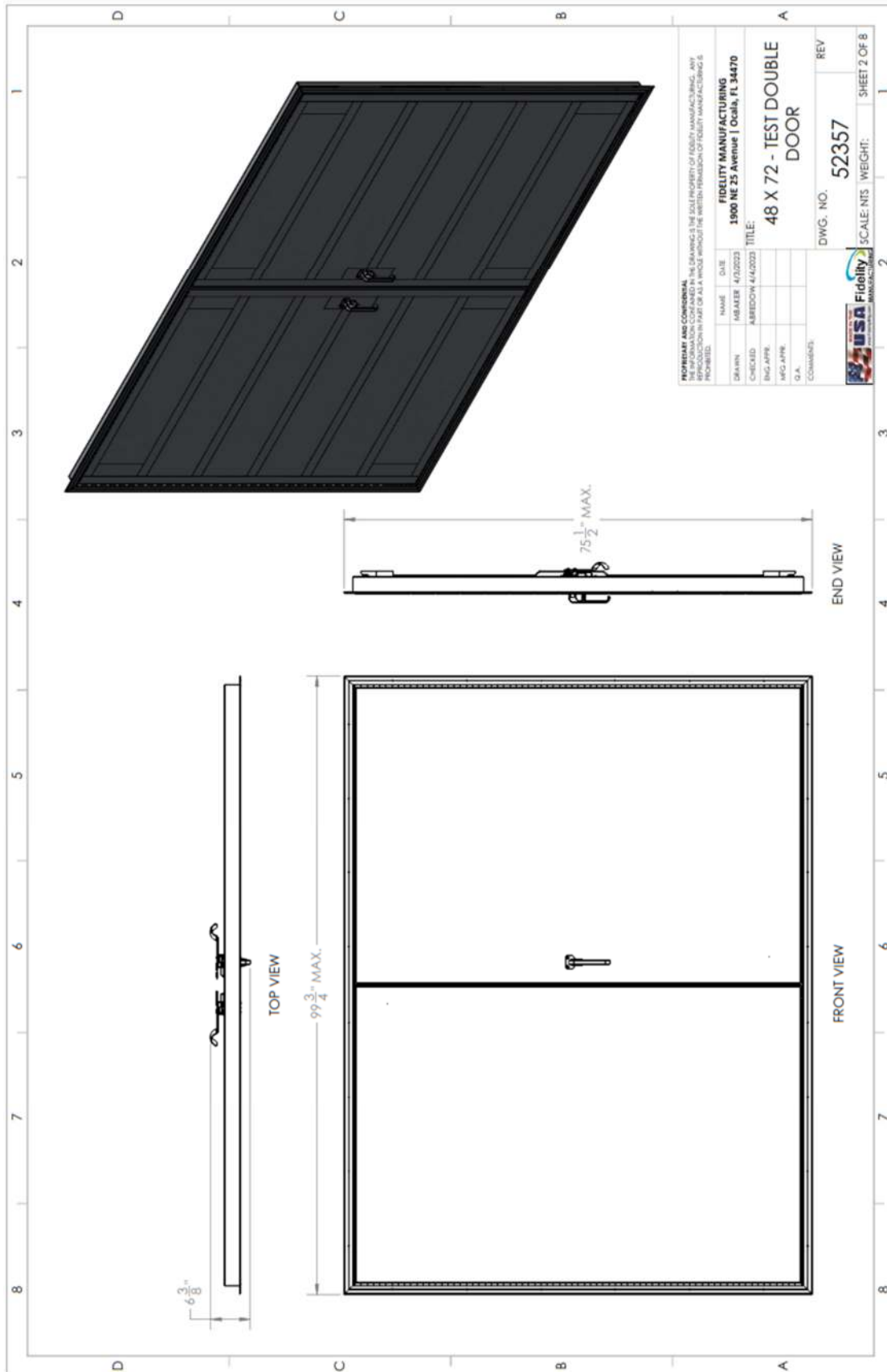
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SHEET NUMBER	SHEET TITLE
1	NOTES
2	ASSEMBLY VIEW
3	FRAME
4	Z-FRAME
5	SKIN
6	ANGLE

REVISIONS

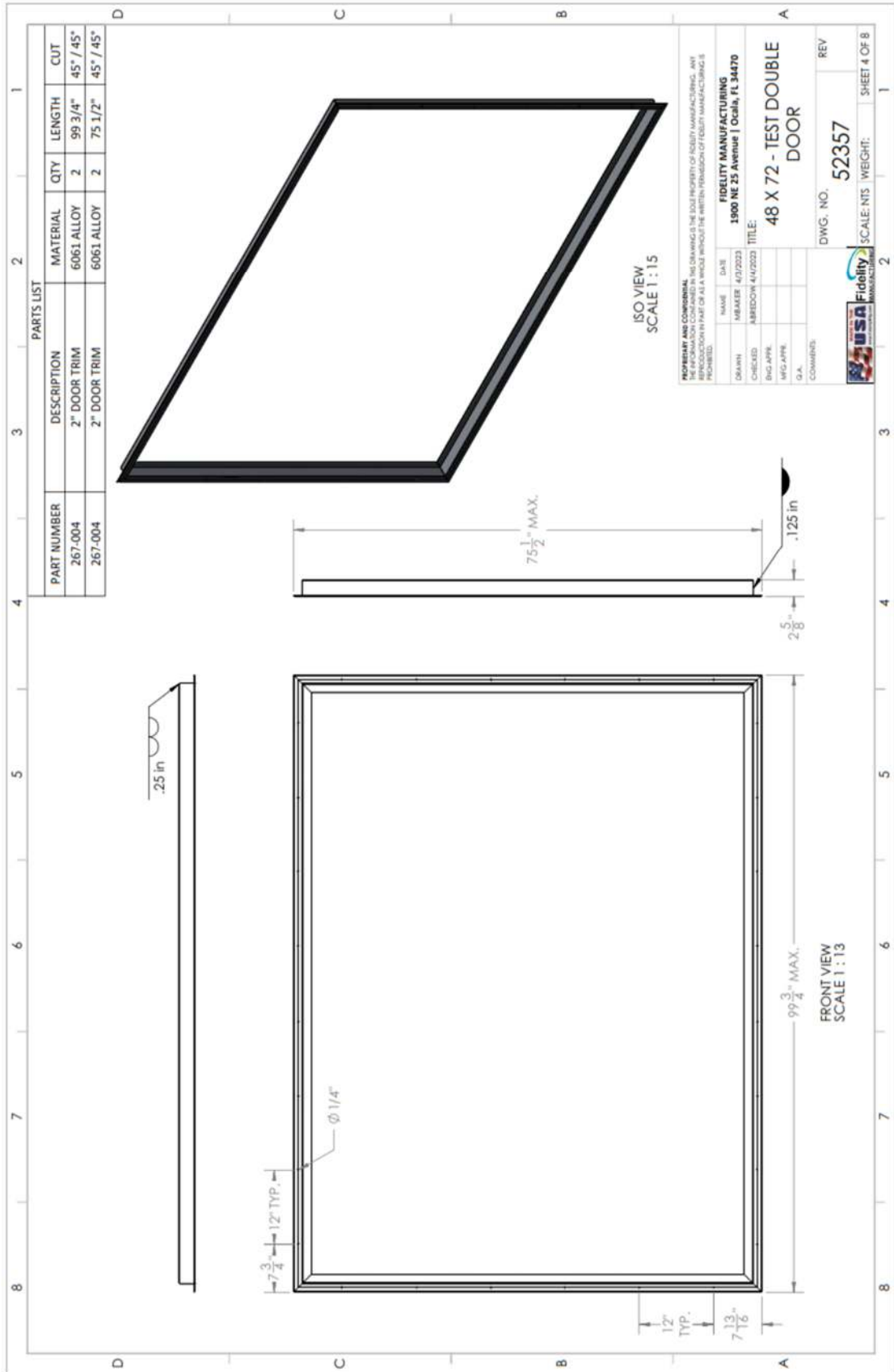
REVISION LEVEL	REVISION DESCRIPTION	SHEET OF CHANGE(S)	ENGINEER	DATE
00	INITIAL RELEASE		MIB	4/3/2023
01				
02				
03				
04				

FLORIDA PRODUCT EVALUATION REPORT

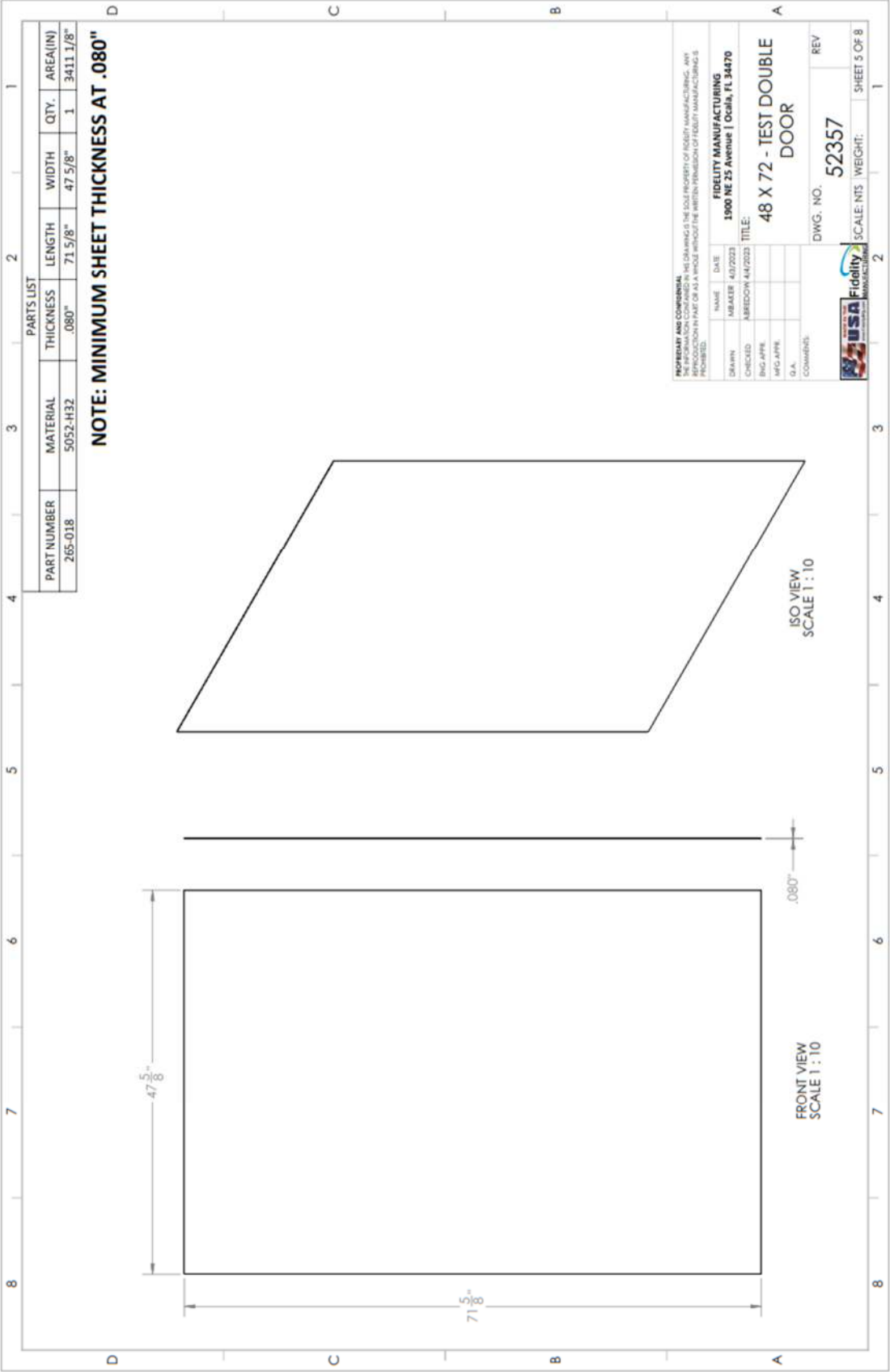


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QTY:2

8 7 6 5 4 3 2 1

D C B A

8 7 6 5 4 3 2 1

D C B A

PERF

PART NUMBER	MATERIAL	THICKNESS	LENGTH	WIDTH	QTY.	AREA(IN)
265-055	3003 ALLOY	1/16"	69"	45"	1	3105"

45"

1/16"

45"

69"

+

o

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NAME	DATE
IMBAKER	4/3/2023

FIDELITY MANUFACTURING
1900 NE 25 Avenue | Ocala, FL 34470

CHIEF	DESIGNED	TITLE
BIG APP	ABREDO	48 X 72 - TEST DOUBLE DOOR

48 X 72 - TEST DOUBLE DOOR

Q.A.	COMMENTS

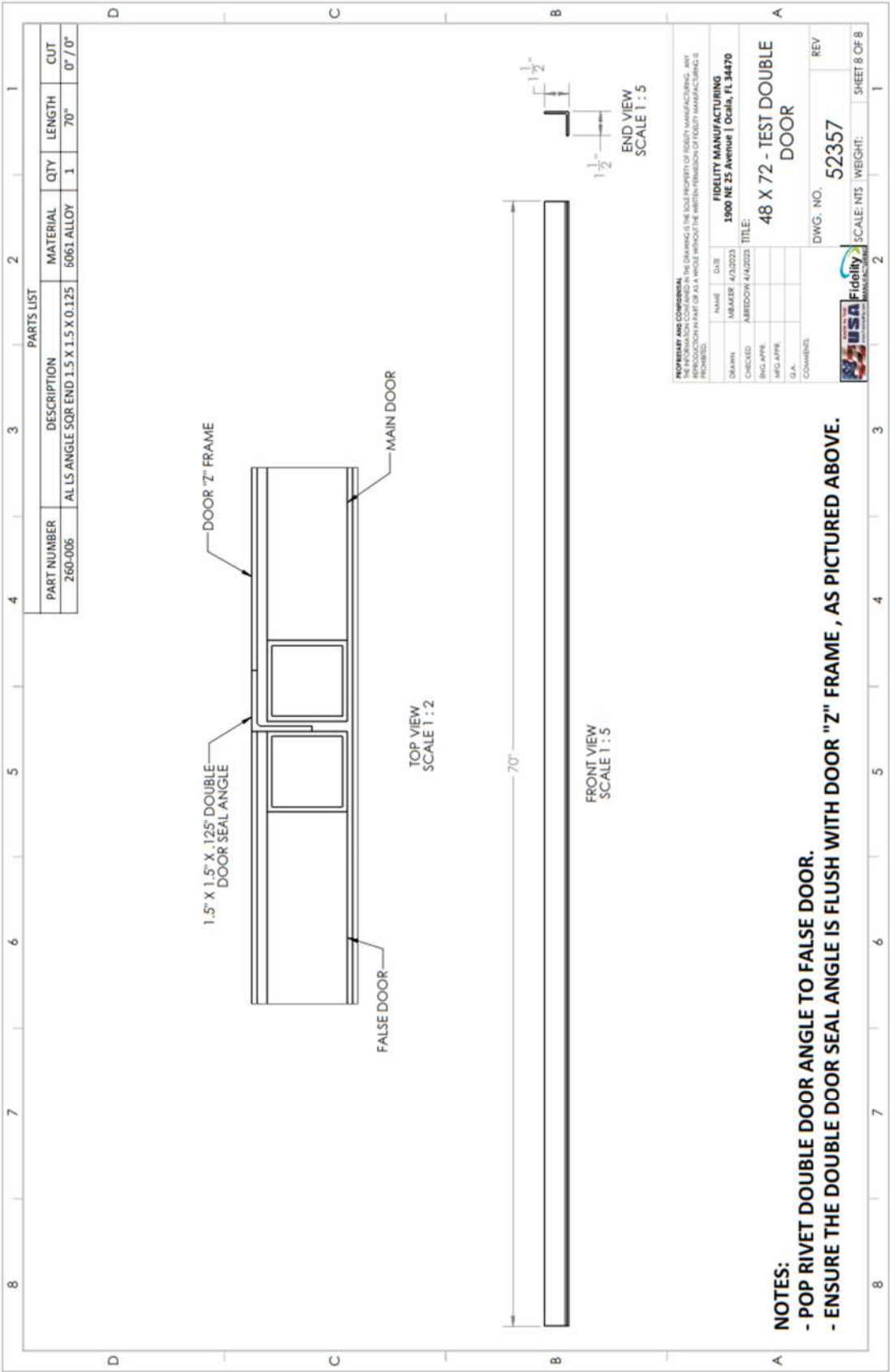
DWG. NO. 52357

REV

SCALE: NTS WEIGHT: SHEET 7 OF 8

USA Fidelity Manufacturing

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February 15, 2024

Florida Building Commission
1940 North Monroe Street
Tallahassee, FL 32399

Reference: Fidelity Manufacturing
1900 NE 25th Avenue
Ocala, FL 34470

To Whom it May Concern,

This letter is to provide a Certificate of Independence as outlined in Florida Administrative Code 61G20-3.009 and to affirm that I do not have any financial interest in Fidelity Manufacturing (Manufacturer). I also affirm that I do have any financial interest in any testing laboratory, or other agency involved with the approval of Fidelity Manufacturing products.

Please let me know if any additional information is needed.

Sincerely,



C. Glenn Pugh, PE
Signed, 02/15/2024

Florida PE 41451
Pugh Engineering Services, LLC
c.glennpugh@gmail.com