



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/building

Harmon, Inc.

**1933 West New Hampshire Street
Orlando, FL 32804**

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section to be used in Miami-Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/ or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Series "HI 7000" Pressure Plate Glazed, Aluminum Curtain Wall System – L.M.I.

APPROVAL DOCUMENT: Drawing No. **HI7000LM**, titled "Harmon HI 7000 Large Missile – Preglazed & Unitized Pressure Plate Glazing, Aluminum Curtainwall System", sheets 01 through 41 of 41, dated 06/28/04, with revision #8 dated 02/25/21, prepared by manufacturer, signed and sealed by Ethan A. Charpentier, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo,

1965 Stanhome Way, Orlando, FL 32804, model/series, and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/ or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

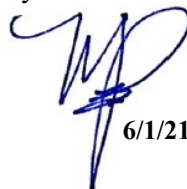
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises NOA No. 19-0409.06** and consists of this page 1 and evidence pages E-1, E-2, E-3 and E-4, as well as approval document mentioned above.

The submitted documentation was reviewed by **Manuel Perez, P.E.**




6/1/21

NOA No. 21-0405.14
Expiration Date: September 02, 2024
Approval Date: June 10, 2021
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

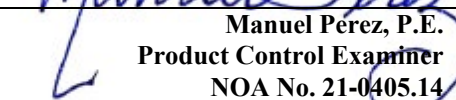
1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 04-0217.11)
2. Drawing No. **HI7000LM**, titled "Harmon HI 7000 Large Missile Preglazed & Unitized Pressure Plate Glazing, Aluminum Curtainwall System", sheets 01 through 41 of 41, dated 06/28/04, with revision #7 dated 03/05/19, prepared by manufacturer, signed and sealed by Ethan A. Charpentier, P.E.
(Submitted under NOA No. 19-0409.06)

B. TESTS

1. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Large Missile Impact Test per FBC, TAS 201-94
5) Small Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum unitized window wall system, prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0509-06**, dated 08/15/08, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 08-1015.03)
2. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Small Missile Impact Test per FBC, TAS 201-94
5) Large Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specimens 10, 11, 12 & 13), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0107-03**, various dates, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 04-0217.11)
3. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
2) Small Missile Impact Test per FBC, TAS 201-94
3) Large Missile Impact Test per FBC, TAS 201-94
4) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specimen 1), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0511-03**, dated 5/06-08/03, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 04-0217.11)


Manuel Pérez, P.E.
Product Control Examiner
NOA No. 21-0405.14
Expiration Date: September 02, 2024
Approval Date: June 10, 2021

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED


1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

B. TESTS (CONTINUED)

4. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Small Missile Impact Test per FBC, TAS 201-94
5) Large Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specimen 1), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0711-03**, dated 07/7-16/03, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 04-0217.11)
5. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
2) Large Missile Impact Test per FBC, TAS 201-94
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specimen W1), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0627-03**, dated 06/23/03, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 04-0217.11)
6. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
2) Small Missile Impact Test per FBC, TAS 201-94
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specs. 2, 3 & 4), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1122-02**, dated 11/15-18/02, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 04-0217.11)
7. Test reports on: 1) Large Missile Impact Test per FBC, TAS 201-94
2) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specs. 1 & 2), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1125-03**, dated 11/24-26/03, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA No. 04-0217.11)

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC 5th Edition (2014)**, prepared by Larson Engineering, Inc., dated 06/25/08, 11/20/08 and, revised and updated on 07/16/16, signed and sealed by Ethan A. Charpentier, P.E.
(Submitted partly under NOA No. 08-1015.03)
2. Glazing complies with **ASTM E1300-04**


Manuel Perez, P.E.
Product Control Examiner
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER).

E. MATERIAL CERTIFICATIONS

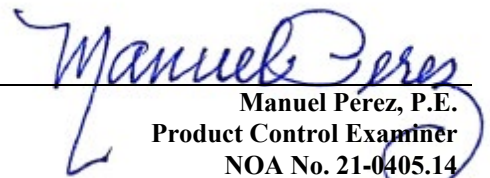
1. Notice of Acceptance No. **17-0808.02** issued to **Kuraray America, Inc.** for their "**SentryGlas® (Clear and White) Glass Interlayers**" dated 12/28/17, expiring on 07/04/23.
2. Notice of Acceptance No. **18-0301.05** issued to **Eastman Chemical Company (MA)** for their "**Saflex HP Clear or Color Glass Interlayers**" dated 05/10/18, expiring on 04/14/23.
3. Notice of Acceptance No. **17-0712.05** issued to **Eastman Chemical Company (MA)** for their "**Saflex Clear and Color Glass Interlayers**" dated 09/07/17, expiring on 05/21/21.

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 6th Edition (2017)**, dated March 25, 2019, signed and sealed by Ethan A. Charpentier, P.E.
(Submitted under NOA# 19-0409.06)
2. Statement letter of no financial interest, dated July 18, 2016, signed and sealed by Ethan A. Charpentier, P.E.
(Submitted under NOA# 16-0726.06)
3. Laboratory compliance letter for Test Report no. **HTL-0319-0509-06**, issued by Hurricane Test Laboratory, Inc., dated 08/09/06, signed and sealed by Vinu J. Abraham, P.E.
(Submitted under NOA# 08-1015.03)

G. OTHER

1. Notice of Acceptance No. **16-0726.06**, issued to Harmon, Inc. for their Series "HI 7000" Pressure Plate Glazed, Aluminum Curtain Wall System – L.M.I., approved on 02/23/17 and expiring on 09/02/19.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 21-0405.14
Expiration Date: September 02, 2024
Approval Date: June 10, 2021

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **HI7000LM**, titled “Harmon HI 7000 Large Missile Preglazed & Unitized Pressure Plate Glazing, Aluminum Curtainwall System”, sheets 01 through 41 of 41, dated 06/28/04, with revision #8 dated 02/25/20, prepared by manufacturer, signed and sealed by Ethan A. Charpentier, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS


1. Notice of Acceptance No. **18-0725.11** issued to **Kuraray America, Inc.** for their “**Kuraray SentryGlas® Xtra™ (SGX™) Clear Glass Interlayer**” dated 05/23/19, expiring on 05/23/24..
2. Notice of Acceptance No. **20-0622.02** issued to **Eastman Chemical Company (MA)** for their “**Saflex HP Clear or Color Glass Interlayers**” dated 08/06/20, expiring on 04/14/23.
3. Notice of Acceptance No. **20-0622.01** issued to **Eastman Chemical Company (MA)** for their “**Saflex PVB Clear and Color Glass Interlayers**” dated 08/06/20, expiring on 05/21/21.

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 7th Edition (2020)**, dated May 17, 2021, signed and sealed by Ethan A. Charpentier, P.E.
2. Statement letter of no financial interest, dated May 17, 2021, signed and sealed by Ethan A. Charpentier, P.E.

G. OTHERS


1. Notice of Acceptance No. **19-0409.06**, issued to Harmon, Inc. for their Series “HI 7000” Pressure Plate Glazed, Aluminum Curtain Wall System – L.M.I., approved on 06/06/19 and expiring on 09/02/24.


Manuel Pérez, P.E.
Product Control Examiner
NOA No. 21-0405.14
Expiration Date: September 02, 2024
Approval Date: June 10, 2021

HARMON HI 7000 LARGE MISSILE PREGLAZED & UNITIZED PRESSURE PLATE GLAZING, ALUMINUM CURTAINWALL SYSTEM

THIS NOA INCLUDES WINDOW WALL, STOREFRONT & PUNCH OPENING SINGLE LITE APPLICATIONS
AS WELL AS OPTION 2-SIDED STRUCTURAL SILICONE GLAZING DESIGN

DESIGN PARAMETERS

THIS PRODUCT HAS BEEN DESIGNED & TESTED IN ACCORDANCE WITH THE CURRENT FLORIDA 2020
BUILDING CODE 7th EDITION REQUIREMENTS INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ) 

TAS-201 - LARGE & SMALL MISSILE IMPACT

TAS-202 - AIR LEAKAGE, WATER PENETRATION & STRUCTURAL PERFORMANCE
(WATER @ 20 psf, STRUCTURAL @ +110/-130 psf & +79.2/-148.9 psf)

TAS-203 - CYCLING

ASTM STANDARDS (MIAMI)

E283 - AIR LEAKAGE

E330 - STRUCTURAL PERFORMANCE

E331 - WATER PENETRATION

E1886 LEVEL "D" - IMPACT BY "MISSILE" & CYCLIC PRESSURES

E1996 - IMPACT BY WINDBORNE DEBRIS

 AAMA - TIR - A9-14

SYSTEM DIMENSIONS

2 1/2" X 8" (MONOLITHIC GLASS)

2 1/2" X 8 3/4" (INSULATED GLASS)

FINISH

ON A PER JOB BASIS (EXPOSED AREAS)

CLEAR ANODIZED (NON-EXPOSED AREAS)

MILL FINISH (NON-EXPOSED AREAS) SETTING CHAIRS, ANCHORS, ETC.

ALUMINUM IN CONTACT WITH DISSIMILAR MATERIALS SHALL BE PROTECTED
AS SPECIFIED IN SECTION 2003.8.4 OF THE FLORIDA BUILDING CODE

ALUMINUM ALLOY

6063-T5 6063-T6 6005-T5 6105-T5

SEE ALSO ALUMINUM MATERIAL LIST ON SHT 2

STEEL

ALL CLIP ANGLES OR REINFORCING STEEL SHALL BE PER ASTM-36 OR 50 KSI WHERE NOTED (PRIME PAINTED) 

WELDING

CURRENT ASTM STANDARDS E70 - XX ELECTRODES UNLESS OTHERWISE NOTED

GLASS

SEE SHEET 7.

GASKETS

SILICONE OR EPDM --- SEE GASKET CHART ON SHEET 2

SEALANTS

STRUCTURAL SILICONE - DOW CORNING 983 (TWO PART) / RE-GLAZING - DOW CORNING 995

FRAME ASSEMBLY SEALS - DOW CORNING 795 OR DOW CORNING 791

PERIMETER WEATHER SEAL, BACKER ROD AND DOW CORNING 795

ANCHORAGE

FASTENERS TO BE CORROSION RESISTANT AS DETAILED HEREIN AND CONFORM TO F.B.C.

SEE ASSEMBLY SCREW CHART ON SHEET 2

SYSTEM SELECTION

CURTAINWALL

TWIN SPAN - SHEET 5

STACK C.W. - SHEET 6 & 24

CORNERS - SHEET 24

WINDOW WALL / STOREFRONT / PUNCH OPENING


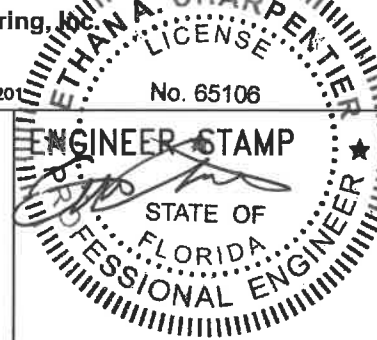








SINGLE SPAN - SHEET 4

CORNERS - SHEET 24

2-SIDED SILICONE OPTIONS SEE PAGE 15

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5	ELEVATION - TWIN SPAN CURTAINWALL
6	ELEVATION - TWIN SPAN w/ STACK HORIZONTAL CURTAINWALL
7	GLASS SCHEDULE - LARGE MISSILE
8	PART DRAWINGS
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12	MULLION APPLICATION CHARTS TWIN SPAN WITH STACK RAIL CURTAINWALL
13	ANCHOR APPLICATIONS
14	DETAILS OF TYPICAL HEADS, SILLS, & INTERMEDIATE HORIZONTALS
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17	DETAIL OF 90 DEGREE OUTSIDE CORNER (BOX)
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25	HORIZONTAL DETAILS WITH MONOLITHIC ADAPTORS AND INS. SILL
26	HORIZONTAL DETAILS WITH BACK PANS
27	3 3/8" STACK HORIZONTAL DETAIL WITH SECTION CUT
28	3 3/8" STACK HORIZONTAL DETAIL WITH SECTION CUT
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30	VERTICAL DETAILS BACK PAN AND MONOLITHIC ADAPTORS
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32	90° CORNER MULLION DETAILS (DART)
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35	WINDLOAD ANCHOR DETAIL WITH SECTION CUT
36	OUTSIDE 90° CORNER DEADLOAD ANCHOR DETAIL
37	OUTSIDE 90° CORNER WINDLOAD ANCHOR DETAIL
38	OUTSIDE 90° CORNER @ SILL DETAIL
39	OUTSIDE 90° CORNER @ STACK DETAIL WITH SECTION CUT
40	VERTICAL JAMB AT SILL ANCHOR DETAIL
41	VERTICAL SILL ANCHOR AT MULLION, STIFFENER & REINFORCEMENT

 Larson Engineering, Inc. 3524 Labore Road White Bear Lake, MN 55110 (P) 651.481.9120 (F) 651.481.9201	 Ethan A. Charpentier No. 65106 STATE OF FLORIDA PROFESSIONAL ENGINEER	 Harmon HI 7000 LARGE MISSILE COVER SHEET															
DADE CO. STAMP	ENGINEER STAMP	DATE: 06/28/04  6/17/16															
PRODUCT REVISED as complying with the Florida Building Code NOA-No. 21-0405.14 Expiration Date: 09/02/2024 By: <i>Manuel Perez</i> Miami-Dade Product Control	REVISIONS	<table><tr><td>1</td><td>11/18/08</td><td> 03/05/19</td></tr><tr><td>2</td><td>3/10/09</td><td> 02/25/21</td></tr><tr><td>3</td><td>3/16/09</td><td></td></tr><tr><td>4</td><td>5/22/12</td><td></td></tr><tr><td>5</td><td>10/03/14</td><td></td></tr></table>	1	11/18/08	 03/05/19	2	3/10/09	 02/25/21	3	3/16/09		4	5/22/12		5	10/03/14	
1	11/18/08	 03/05/19															
2	3/10/09	 02/25/21															
3	3/16/09																
4	5/22/12																
5	10/03/14																
	LIMITED TO STRUCTURAL DESIGN Florida Firm No. F-02000005175 Certificate of Authorization #9803 Ethan A. Charpentier Registration No. 65106	DWG. NO. HI7000LM SHEET 01 OF 41															

FRAME ASSEMBLY FASTENER LIST					GASKET CHART					ALUMINUM MATERIAL LIST					
										DESCRIPTION	PART #	ALLOY	TYP. THK.	REMARKS	REV
(A)	PRESSURE PLATE BOLT FOR INSULATED GLASS SYSTEM	#14 X 1" HWH S.S. "A" POINT XYLAN COATED	2 1/2" FROM END AND 9" ON CENTER			PART # 770301	85 DUR. SILICONE	INTERIOR FIXED GASKET FOR 5/8" & 1 3/8" THICK GLASS (1/4" THICK SEAL)		1 FEMALE VERTICAL MULLION	306001	6063-T6	.110		
(B)	TYPICAL HORIZONTAL FRAME ASSEMBLY SCREW	#12 X 1 1/2" HWH "A" POINT GRADE 5 XYLAN COATED	(4) REQUIRED PER JOINT			PART # 750301	70 DUR. SILICONE	VERTICAL WHISKER GASKET		2 MALE VERTICAL MULLION	306002	6063-T6	.110		
(C)	NON-TYPICAL HORIZONTAL ASSEMBLY SCREW TO BYPASS STEEL	#12 X 1 1/2" PFH "A" POINT GRADE 5 XYLAN COATED	(4) REQUIRED PER JOINT			PART # 720301	70 DUR. EPDM	EXTERIOR SLIDE IN VERTICAL PRESSURE PLATE		3 INTERMEDIATE HORIZONTAL	306101	6063-T5	.100		
(D)	ANCHOR STEEL FIXING PLATE INTO HORIZONTAL	#17-14 X 1" TYPE A8 304 STAINLESS	(1) REQUIRED PER PLATE			PART # 730301	70 DUR. EPDM	EXTERIOR WEDGE		4 JAMB - MONOLITHIC GLASS	306004	6063-T6	.110		
(E)	TEMPORARY ANCHOR FOR CORNER END CAPS	#10 X 1 1/4" TEK SCREW	(1) REQUIRED PER END CAP			PART # 790301	70 DUR. EPDM	THERMAL BREAK FOR PRESSURE PLATE		5 HEAD & SILL - MONOLITHIC GLASS	306103	6063-T5	.110		
(F)	PRESSURE PLATE BOLT FOR MONOLITHIC GLASS SYSTEM	#14 X 3/4" HWH S.S. "A" POINT XYLAN COATED	2 1/2" FROM END AND 9" ON CENTER			PART # 770302	85 DUR. SILICONE	INTERIOR FIXED GASKET FOR 9/16" & 1 5/16" THICK GLASS (5/16" THICK SEAL)		6 JAMB - INSULATED GLASS	306003	6063-T6	.110		
(G)	ALLEN HEAD SCREW FOR ANCHOR USED w/ STACK HORIZONTAL	1/4-20 ALLEN HEAD BOLT GRADE 5	LOCATED AT TOP & BOTTOM OF ANCHOR			PART # 790303	90 DUR. EPDM	ALL PERIMETERS		7 HEAD & SILL - INSULATED GLASS	306102	6063-T5	.110		
(H)	GLASS ADAPTOR FOR MONOLITHIC GLASS SYSTEM	#12 X 1 1/4" PFH DRIL-FLEX	9" ON CENTER							8 JAMB COVER	300203	6063-T5	.100		
(J)	ANCHOR FOR SILL	1/2" X 3 1/2" HWH GRADE 5 BOLT WITH WASHER AND NUT	(1) REQUIRED PER MULLION			PART # 790302	90 DUR. EPDM	PERIMETER THERMAL BREAK		9 HEAD & SILL EXTERIOR COVER	300202	6063-T5	.100		
(K)	ANCHOR FOR ANCHOR STRAP	3/8" X 3 3/4" PFH POWER BOLT WITH 3 1/2" MIN. EMBEDMENT	(2) REQUIRED PER MULLION			PART # 780301	70 DUR. SILICONE	ZONE DAM FOR MONOLITHIC GLASS 2 1/2" LONG		10 HEAD & SILL INTERIOR FILLER	306401	6063-T5	.080		
(L)	POCKET FILLER FOR STEEL BACK PAN	#12 X 2 1/2" PFH DRIL-FLEX	9" ON CENTER			PART # 780302	70 DUR. SILICONE	ZONE DAM FOR INSULATED GLASS 2 1/2" LONG		11 HORIZONTAL COVER	300201	6063-T5	.100		
(M)	STEEL REINFORCEMENT TO MULLION	3/8"-16 X 1" HWH GRADE 5 BOLT XYLAN COATED	(2) REQUIRED PER MULLION			PART # 700303	90 DUR. SILICONE	5" LONG SETTING BLOCK. (TEAR IN HALF FOR MONOLITHIC GLASS)		12 VERTICAL COVER	300236	6063-T5	.060		
(N)	STEEL CHANNEL STIFFENER ATTACHED TO STEEL BACK PAN	#12 X 1 1/2" HWH SELF TAPPING XYLAN COATED	9" ON CENTER			PART # 740301	70 DUR. EPDM	AT BUTT JOINT FOR MONOLITHIC GLASS		13 VERTICAL PRESSURE PLATE	300701	6105-T5	.100		
(P)	STEEL REINFORCING INTO CORNET MULLION	3/8"-16 RIVET NUT	(2) REQUIRED PER MULLION			PART # 740302	70 DUR. EPDM	AT BUTT JOINT FOR INSULATED GLASS		14 PERIMETER ADAPTOR - MONOLITHIC GLASS	300305	6105-T5	.080		
(Q)	STEEL ANGLE ATTACHED TO FRAME AND TO STEEL BACK PAN	1/4" STEEL POP RIVET	9" ON CENTER							15 PERIMETER ADAPTOR - INSULATED GLASS	300304	6105-T5	.080		
(R)	STEEL BACK PAN INTO STEEL ANGLE	#12 X 3/4" HWH SELF TAPPING	9" ON CENTER							16 HORIZONTAL ADAPTOR - MONOLITHIC GLASS	300303	6105-T5	.080		
(S)	ANCHOR FOR STEEL ANGLES	3/8" X 3 3/4" HWH POWER BOLT WITH 3 1/2" MIN. EMBEDMENT	(2) REQUIRED PER CLIP							17 HORIZONTAL ADAPTOR - INSULATED GLASS	300302	6105-T5	.080		
(T)	FOR INTERMEDIATE ANCHOR TO MULLION	3/8" X 1 1/4" HWH GRADE 5 BOLT WITH WASHER AND NUT	(4) REQUIRED PER CLIP							18 VERTICAL ADAPTOR - MONOLITHIC GLASS	300308	6105-T5	.093		
(U)	JACK BOLT FOR HOOK ANCHOR	3/8" X 2 1/2" HWH GRADE 5 BOLT WITH NUT	(1) REQUIRED PER CLIP							19 VERTICAL ADAPTOR - INSULATED GLASS	300301	6105-T5	.093		
						PART # 780304	70 DUR. SILICONE	END PLUG BOTTOM OF MALE MULL. AT STACK 2 1/2" LONG		20 ANTI-BUCKLING CLIP (EXTERIOR SIDE)	300306	6105-T5	.060	4" LONG 30" O.C. MAX.	
						PART # 780305	70 DUR. SILICONE	END PLUG BOTTOM OF JAMB MULL. AT STACK 2 1/2" LONG		21 ANTI-BUCKLING CLIP (INTERIOR SIDE)	300310	6105-T5	.060	4" LONG 30" O.C. MAX.	
										22 STRAP ANCHOR FEMALE	930102	6105-T5	.177	SEE DET. 1-4 SHT. 19	
										23 STRAP ANCHOR MALE	930106	6105-T5	.187	SEE DET. 1-4 SHT. 19	
										24 SLIDING ANCHOR FEMALE	930105	6105-T5	.250	SEE DET. 5-8 SHT. 20	
										25 SLIDING ANCHOR MALE	930104	6105-T5	.435	SEE DET. 5-8 SHT. 20	
										26 "STACK" SPLICE PLATE	930107	6005-T5	.187	SEE DET. 1 SHT. 18	
										27 SERRATED PLATE	930110	6005-T5	.191	SEE DET. 3 & 4 SHT. 21	
										28 "KNUCKLE" ANCHOR	930109	6005-T5	.250	SEE DET. 3 & 4 SHT. 21	
										29 HOOK ANCHOR	930108	6005-T5	.250	SEE DET. 3 & 4 SHT. 21	
										30 FLOOR EDGE PLATE	930111	6005-T5	.685	SEE DET. 3 & 4 SHT. 21	
										31 ANTI-WALK ANGLE		6105-T5	.125	SEE DET. 3 & 4 SHT. 21	
										32 MONOLITHIC ADAPTOR	300312	6063-T5	.060	SEE DET. 1,2&4 SHT. 25	
										33 VERTICAL COVER	300216	6063-T5	.060	SEE DET. 12&13 SHT. 30	
										34 90° CORNER COVER	300218	6063-T5	.055	SEE DET. 16&17 SHT. 32	
										35 90° CORNER PRESSURE PLATE	300702	6063-T6	.100	SEE DET. 16&17 SHT. 32	
										36 90° CORNER FEMALE MULLION	306005	6063-T6	.125	SEE DET. 16&17 SHT. 32	
										37 90° CORNER MALE MULLION	306006	6063-T6	.125	SEE DET. 16&17 SHT. 32	
										38 STACK HORIZONTAL SILL	306181	6063-T6	.125	SEE DET. 8 SHT. 27	
										39 STACK HORIZONTAL HEAD	306191	6063-T6	.110	SEE DET. 8 SHT. 27	
										40 STACK COVER	300217	6063-T5	.100	SEE DET. 8 SHT. 27	
										41 STACK SPLICE SLEEVE	306801	6063-T6	.125	SEE DET. 8 SHT. 27	
										42 MULLION SPLICE SLEEVE	306802	6063-T6	.100	SEE DET. 8 SHT. 27	
										43 POCKET FILLER	300313	6063-T5	.060	SEE DET. 5-7 SHT. 26	
										44 OPTIONAL CORNER COVER	300321	6063-T5	.100	SEE DET. 22A SHT. 36	

Larson Engineering
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DADE CO. STAMP

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NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
STATE OF FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

MATERIAL LIST

DATE: 06/28/04 6 6/17/16
1 11/18/08 7 03/05/19
2 3/10/09 8 02/25/21
3 3/16/09
4 5/22/12
5 10/03/14

DWG. NO. HI7000LM

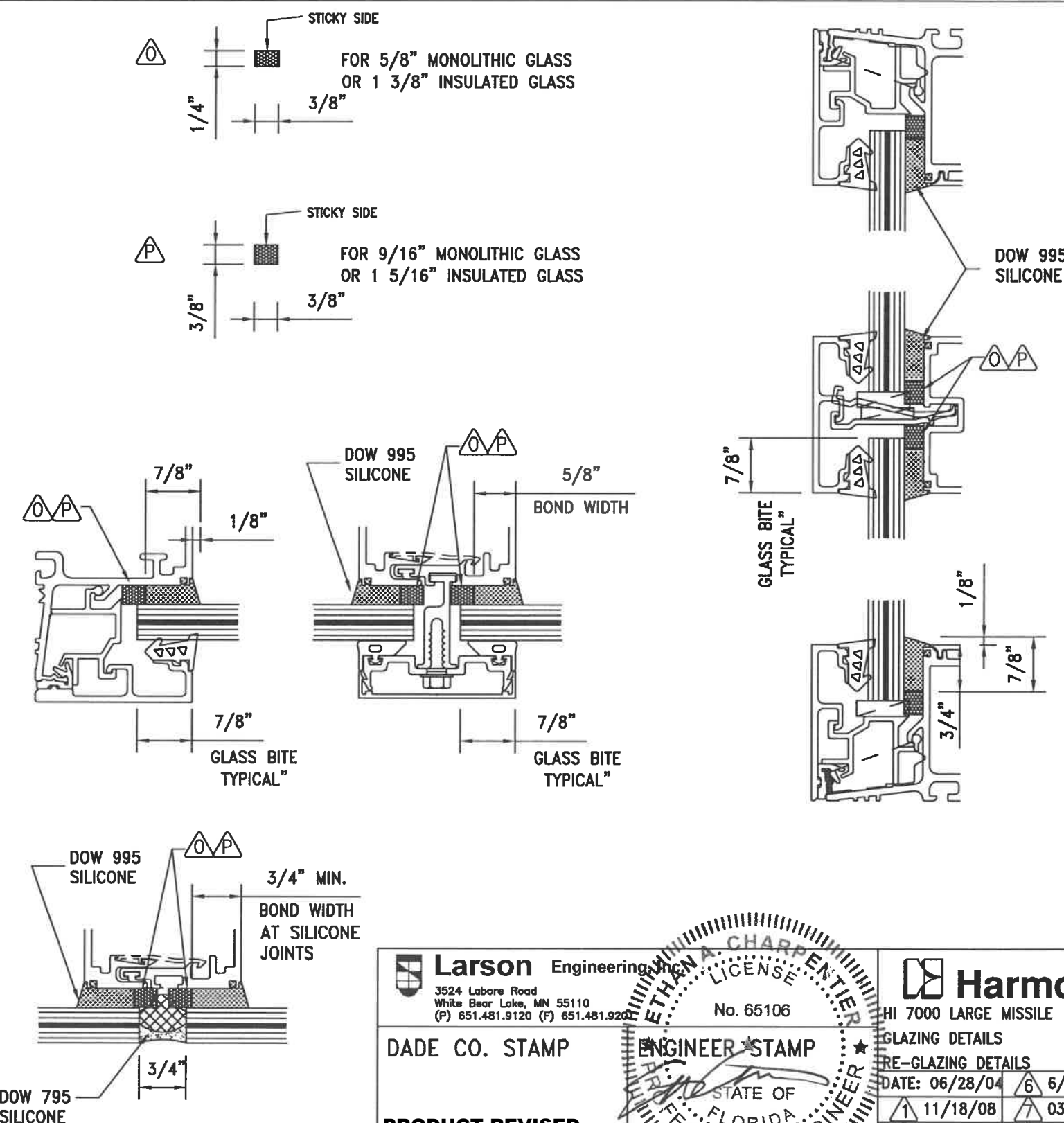
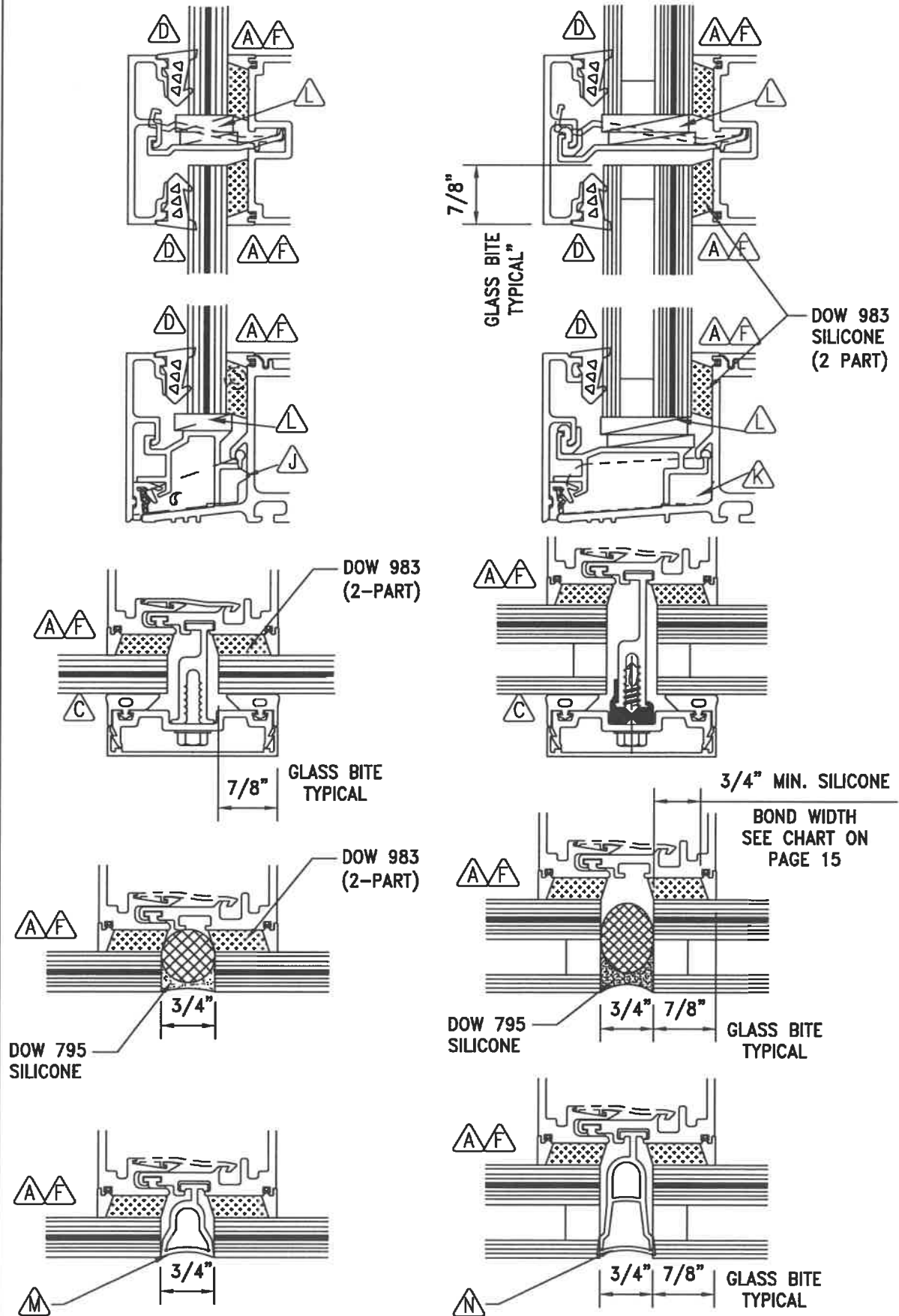
SHEET 02 OF 41

GLAZING DETAILS

RE-GLAZING DETAILS

LAMINATED GLASS DETAILS

INSULATED LAMINATED GLASS DETAILS



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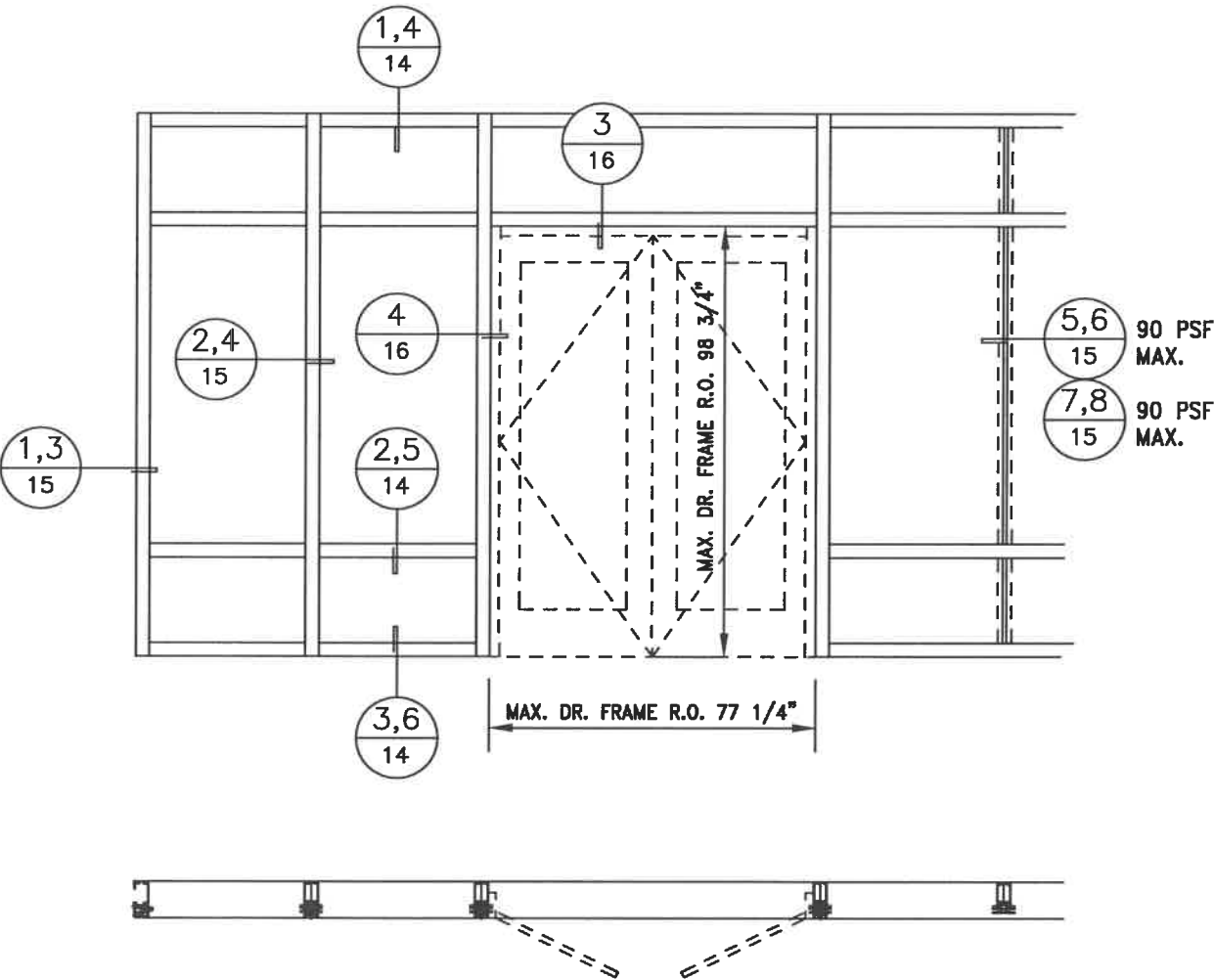
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GLAZING DETAILS
RE-GLAZING DETAILS
DATE: 06/28/04
1 11/18/08
2 3/10/09
3 3/16/09
4 5/22/12
5 10/03/14
6 6/17/16
7 03/05/19
8 02/25/21
DWG. NO. HI7000LM
SHEET 03 OF 41

STOREFRONT, WINDOW WALL & PUNCHED OPENING



SYSTEM APPLICATION GUIDELINES:

- 1 SELECT GLASS FROM CHARTS ON SHEET 7. NOTE THE GLASS THICKNESS AND 4-SIDE CAPTURED VERSUS CAPTURED/SSG OPTIONS.
- 2 SELECT MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 10 FOR SINGLE SPAN APPLICATION. APPLICATION BASED ON WIND LOAD, MODULE "B", AND SPAN "L". REFER TO GENERAL NOTES AND GUIDELINES REGARDING SPAN LIMITATIONS AND COMBINATIONS.
- 3 SELECT ANCHOR APPLICATIONS FROM SHEET 13. MAKE SELECTION BASED ON PERIMETER CONDITION AND END REACTIONS. NOTE MAXIMUM TESTED END REACTIONS FOR PROPER APPLICATION.
- 4 SELECT APPROPRIATE DETAILS FROM ELEVATION AT LEFT, BASED ON GLASS APPLICATION AND MULLION REINFORCING REQUIREMENTS. FOR SPECIFIC ANCHOR DETAILS, SEE DETAILS REFERENCED ON ANCHOR APPLICATION SHEET 13.
- 5 SELECT JAMB MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 23.
6. LOWEST VALUE OF ALL TABLES SHALL APPLY FOR THE ENTIRE ASSEMBLY.

GENERAL NOTES:

- DOOR AREA TESTED IS 90 PSF.
- SILICONE VERTICAL JOINTS AND GASKET JOINTS ARE TESTED TO 90 PSF
- DOORS AND DOOR FRAMES ARE NOT PART OF THIS SUBMISSION. ANY DOOR USED MUST MEET DADE COUNTY NOA.

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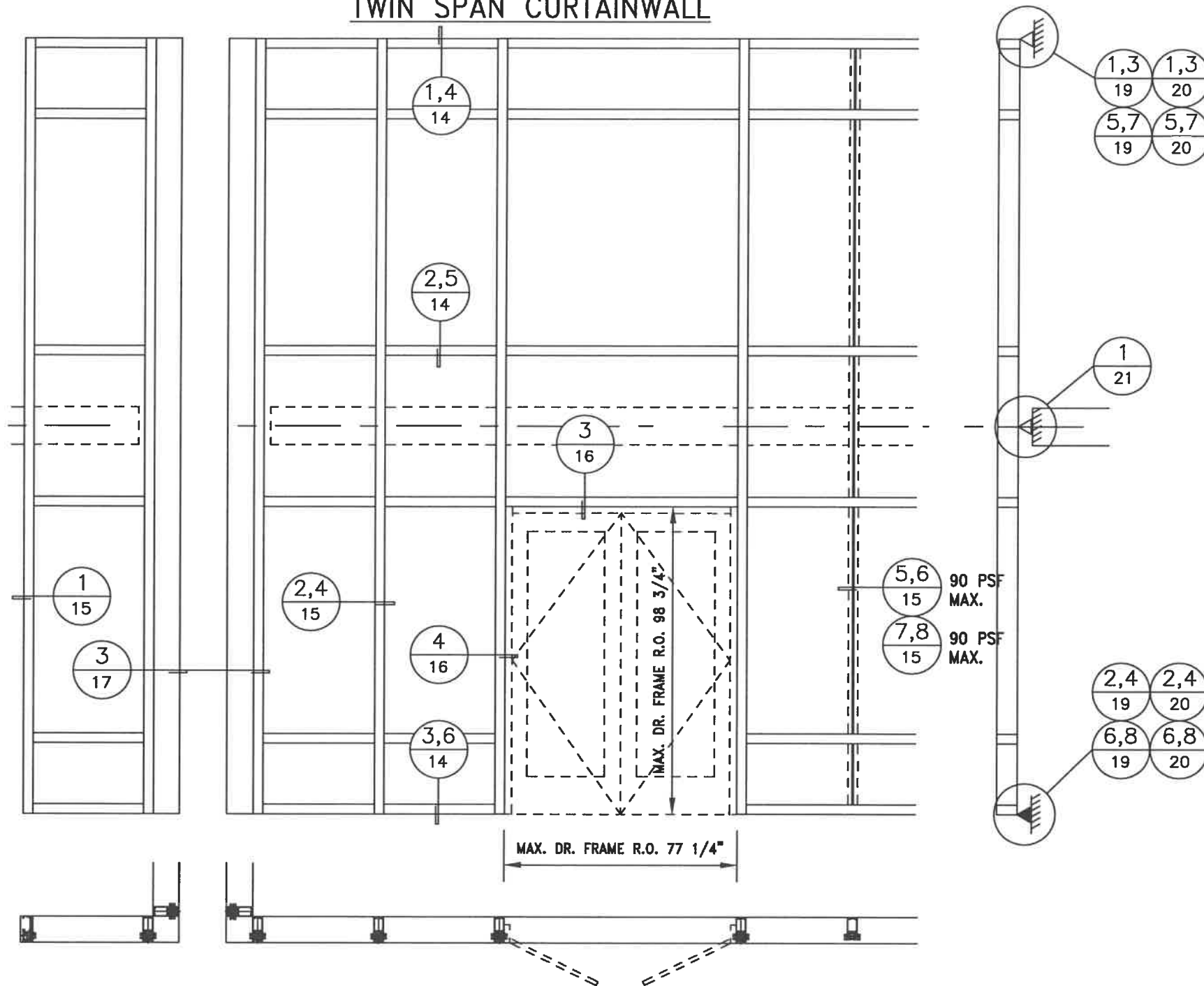
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MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE	
SINGLE SPAN APPLICATION	
JAMBS	
DATE: 06/28/04	6 6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	
DWG. NO. HI7000LM	
SHEET 04 OF 41	

TWIN SPAN CURTAINWALL



SYSTEM APPLICATION GUIDELINES:

- 1 SELECT GLASS FROM CHARTS ON SHEET 7. NOTE THE GLASS THICKNESS AND 4-SIDE CAPTURED VERSES CAPTURED/SSG OPTIONS.
- 2 SELECT MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 11 FOR TWIN SPAN APPLICATION. APPLICATION BASED ON WIND LOAD, MODULE "B", AND SPAN "L". REFER TO GENERAL NOTES AND GUIDELINES REGARDING SPAN LIMITATIONS AND COMBINATIONS.
- 3 SELECT ANCHOR APPLICATIONS FROM SHEET 13. MAKE SELECTION BASED ON PERIMETER CONDITION AND END REACTIONS. NOTE MAXIMUM TESTED END REACTIONS FOR PROPER APPLICATION.
- 4 SELECT APPROPRIATE DETAILS FROM ELEVATION AT LEFT, BASED ON GLASS APPLICATION AND MULLION REINFORCING REQUIREMENTS. FOR SPECIFIC ANCHOR DETAILS, SEE DETAILS REFERENCED ON ANCHOR APPLICATION SHEET 13.
- 5 SELECT JAMB MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 23.
6. LOWEST VALUE OF ALL TABLES SHALL APPLY FOR THE ENTIRE ASSEMBLY.

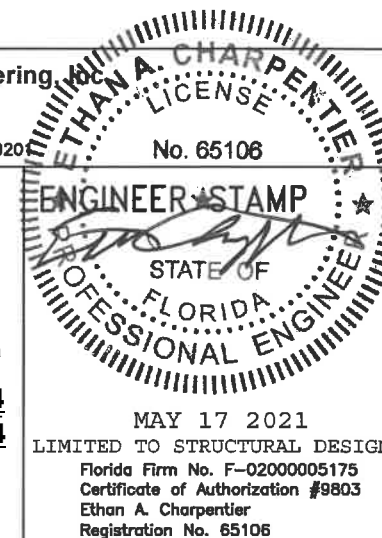
GENERAL NOTES:

- DOOR AREA TESTED IS 90 PSF.
- SILICONE VERTICAL JOINTS AND GASKET JOINTS ARE TESTED TO 90 PSF
- DOORS AND DOOR FRAMES ARE NOT PART OF THIS SUBMISSION. ANY DOOR USED MUST MEET DADE COUNTY NOA.

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Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control



Harmon

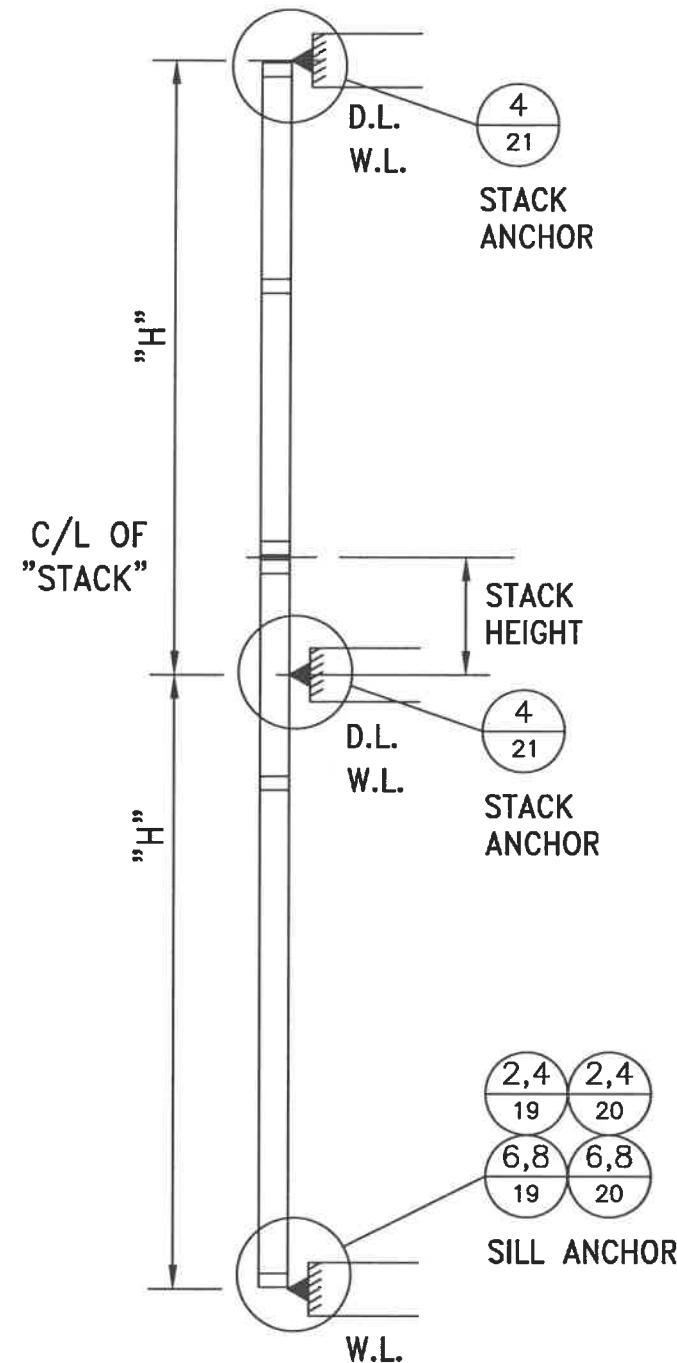
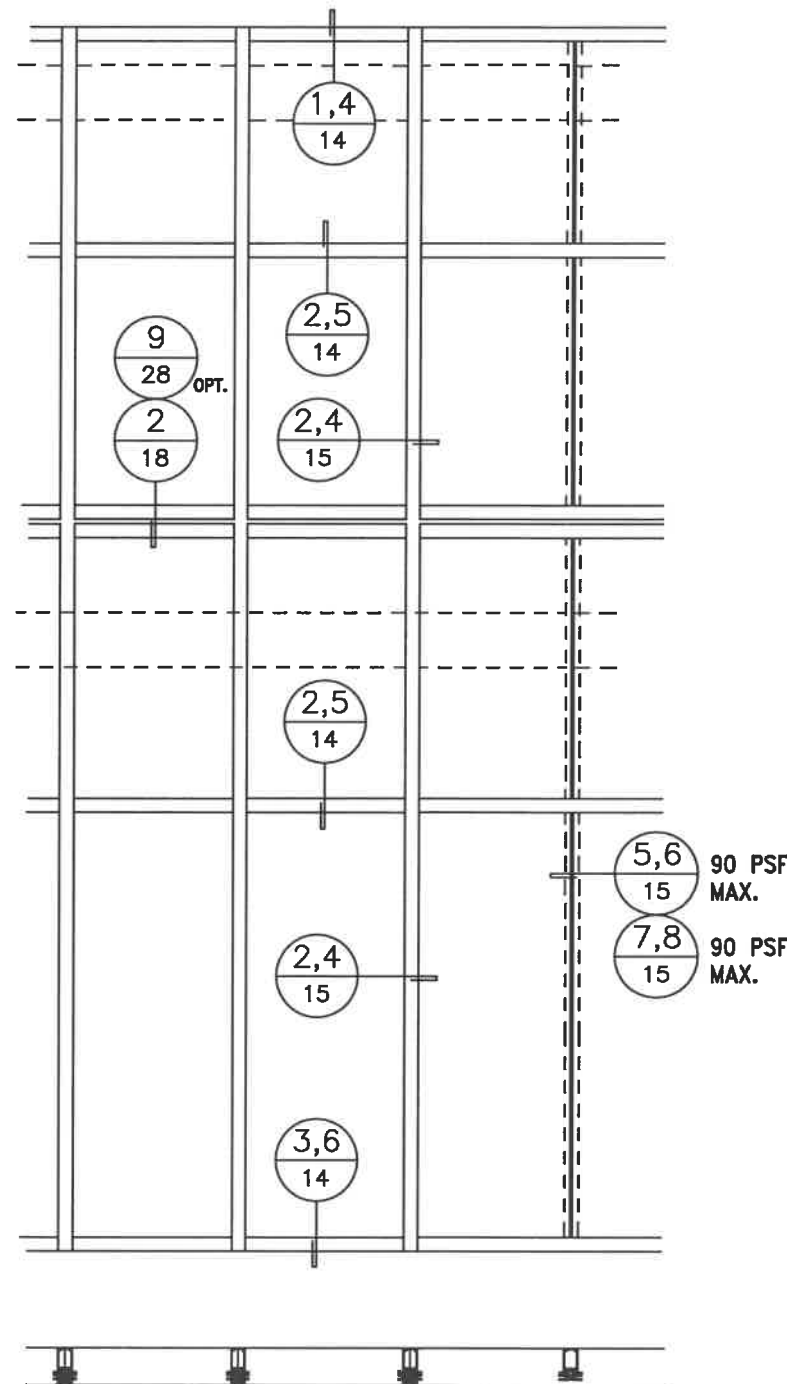
HI 7000 LARGE MISSILE
TWIN SPAN APPLICATION

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 05 OF 41

STACK CURTAINWALL



SYSTEM APPLICATION GUIDELINES:

- 1 SELECT GLASS FROM CHARTS ON SHEET 7. NOTE THE GLASS THICKNESS AND 4-SIDE CAPTURED VERSES CAPTURED/SSG OPTIONS.
- 2 SELECT MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 12 FOR TWIN SPAN w/ STACK HORIZONTAL APPLICATION. APPLICATION BASED ON WIND LOAD, MODULE "B", AND SPAN "L". REFER TO GENERAL NOTES AND GUIDELINES REGARDING SPAN LIMITATIONS AND COMBINATIONS.
- 3 SELECT ANCHOR APPLICATIONS FROM SHEET 13. MAKE SELECTION BASED ON PERIMETER CONDITION AND END REACTIONS. NOTE MAXIMUM TESTED END REACTIONS FOR PROPER APPLICATION.
- 4 SELECT APPROPRIATE DETAILS FROM ELEVATION AT LEFT, BASED ON GLASS APPLICATION AND MULLION REINFORCING REQUIREMENTS. FOR SPECIFIC ANCHOR DETAILS, SEE DETAILS REFERENCED ON ANCHOR APPLICATION SHEET 13.
- 5 SELECT JAMB MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 23.
6. LOWEST VALUE OF ALL TABLES SHALL APPLY FOR THE ENTIRE ASSEMBLY.

GENERAL NOTES:

- SILICONE VERTICAL JOINTS AND GASKET JOINTS ARE TESTED TO 90 PSF
- SEE SHEET 24 FOR OPTIONAL STACK AND CORNER APPLICATION GUIDELINES

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Miami-Dade Product Control

ETHAN A. CHARPENTIER
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LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

TWIN SPAN APPLICATION

w/ STACK HORIZONTAL

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
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5 10/03/14	

DWG. NO. HI7000LM

SHEET 06 OF 41

<p>306001 1 FEMALE MULLION</p>	<p>306002 2 MALE MULLION</p>	<p>306004 4 MONOLITHIC JAMB</p>	<p>306003 6 INSULATED JAMB</p>	<p>300305 14 MONO-PERIM.ADAPT.</p>	<p>300304 15 INS- PERIM. ADAPT.</p>	<p>306101 3 INTERMEDIATE HORIZONTAL</p>
				<p>300310 21 ANTI-BUCKLING CLIP</p>	<p>300306 20 ANTI-BUCKLING CLIP</p>	<p>306401 10 HEAD/SILL COVER</p>
<p>300701 13 PRESSURE BAR</p>	<p>300202 9 HD/SILL COVER</p>	<p>300201 11 HORIZ. COVER</p>	<p>930104 25 SLIDING ANCHOR MALE</p>	<p>930105 24 SLIDING ANCHOR FEMALE</p>		<p>306102 7 INSULATED HEAD/SILL</p>
<p>300236 12 VERTICAL COVER</p>	<p>300308 18 MONO-VERT. ADAPT.</p>	<p>300303 16 MONO-HORIZ.ADAPT.</p>				<p>306103 5 MONO- HEAD/SILL</p>
<p>300203 8 JAMB COVER</p>	<p>300301 19 INS.-VERT. ADAPT.</p>	<p>300302 17 INS.-HORIZ.ADAPT.</p>				
<p>930106 23 STRAP ANCHOR MALE</p>		<p>930102 22 STRAP ANCHOR FEMALE</p>		<p>NOTES: FOR STACK AND CORNER COMPONENT PART DRAWINGS SEE PAGE 09</p>		

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Miami-Dade Product Control

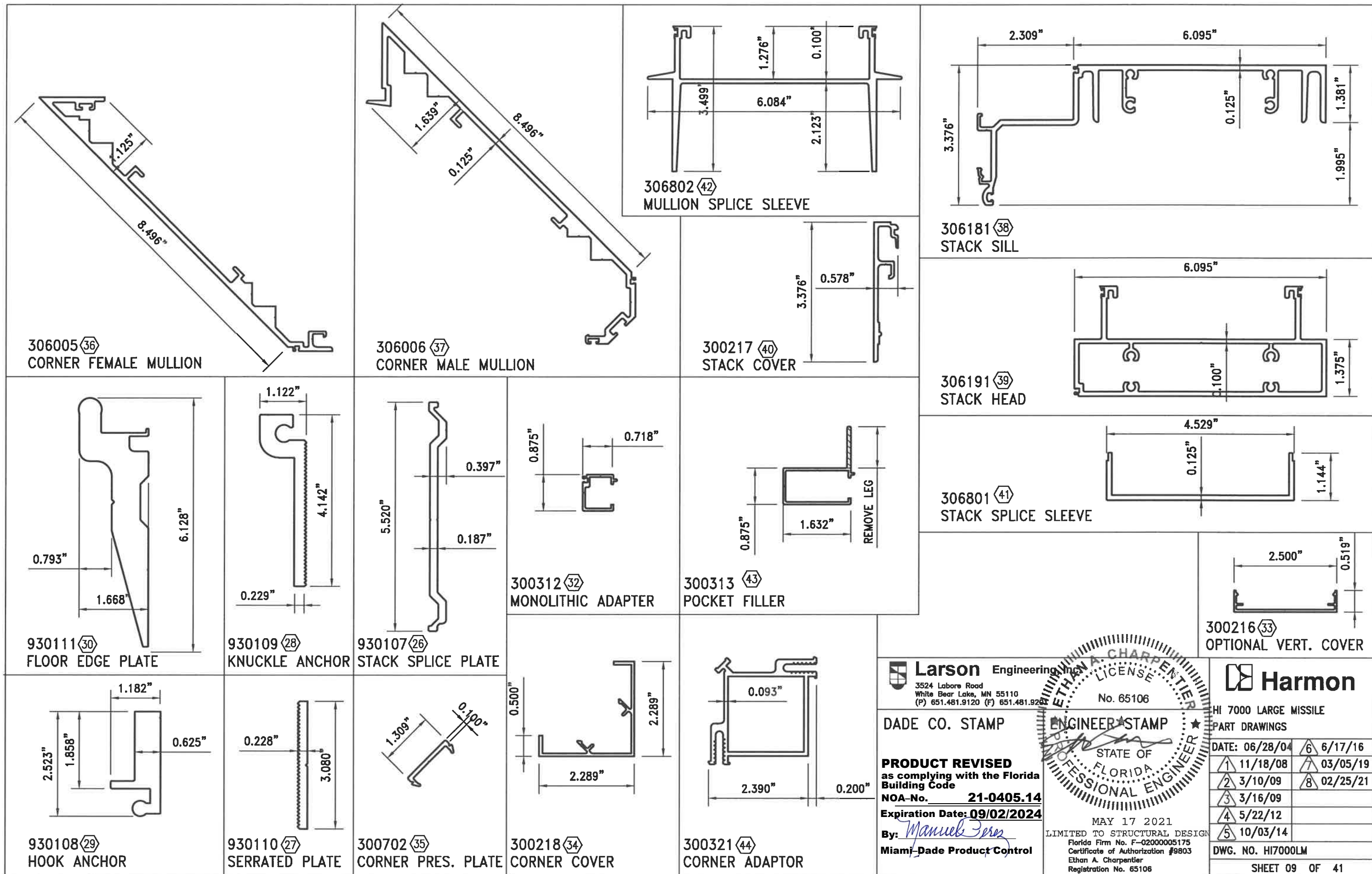
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MAY 17 2021
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HI 7000 LARGE MISSILE
PART DRAWINGS

DATE: 06/28/04	6 6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM
SHEET 08 OF 41



SINGLE SPAN APPLICATION

REINFORCING
OPTIONS



REINFORCING
OPTIONS



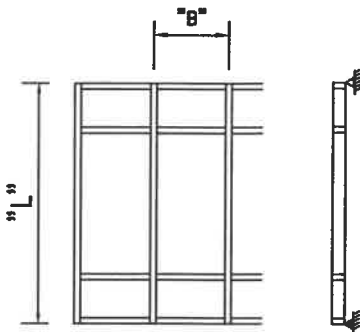
		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	"B"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	3'-0"	10'-4" 933	13'-9" 1243	16'-6" 1490	17'-7" 1587	18'-3" 1645	19'-6" 1758	20'-8" 1862
	4'-0"	8'-11" 1077	11'-11" 1435	14'-4" 1721	15'-6" 1863	16'-8" 2002	18'-2" 2181	19'-2" 2310
	5'-0"	8'-0" 1204	10'-8" 1605	12'-9" 1924	13'-10" 2083	14'-10" 2238	17'-0" 2554	18'-2" 2731
	6'-0"	7'-3" 1319	9'-9" 1758	11'-8" 2107	12'-8" 2282	13'-7" 2451	15'-6" 2798	17'-4" 3131
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	3'-0"	9'-7" 1007	12'-9" 1343	15'-3" 1610	16'-7" 1743	17'-6" 1847	18'-9" 1973	19'-10" 2090
	4'-0"	8'-3" 1163	11'-0" 1550	13'-3" 1859	14'-4" 2013	15'-5" 2162	17'-5" 2448	18'-6" 2593
	5'-0"	7'-5" 1301	9'-10" 1733	11'-10" 2078	12'-10" 2250	13'-9" 2417	15'-9" 2759	17'-6" 3065
	6'-0"	6'-9" 1425	9'-0" 1899	10'-10" 2276	11'-8" 2465	12'-7" 2648	14'-4" 3022	16'-1" 3391
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	3'-0"	8'-11" 1077	11'-11" 1435	14'-4" 1721	15'-6" 1863	16'-8" 2002	18'-2" 2181	19'-2" 2310
	4'-0"	7'-9" 1244	10'-4" 1657	12'-4" 1987	13'-5" 2152	14'-5" 2311	16'-5" 2638	17'-10" 2866
	5'-0"	6'-11" 1390	9'-3" 1853	11'-1" 2221	12'-0" 2405	12'-10" 2584	14'-8" 2949	16'-6" 3309
	6'-0"	6'-4" 1523	8'-5" 2030	10'-1" 2433	10'-11" 2635	11'-9" 2830	13'-5" 3231	15'-1" 3625
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	3'-0"	8'-5" 1142	11'-3" 1522	13'-6" 1825	14'-7" 1976	15'-8" 2123	17'-7" 2382	18'-8" 2523
	4'-0"	7'-3" 1319	9'-9" 1758	11'-8" 2107	12'-8" 2282	13'-7" 2451	15'-6" 2798	17'-4" 3131
	5'-0"	6'-6" 1475	8'-8" 1965	10'-5" 2356	11'-4" 2551	12'-2" 2741	13'-10" 3128	15'-7" 3510
	6'-0"	5'-11" 1615	7'-11" 2153	9'-6" 2581	10'-4" 2795	11'-1" 3002	12'-8" 3426	14'-2" 3845

		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	"B"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"
UP TO MAXIMUM 100 PSF POS. OR NEG. LOAD	3'-0"	8'-0" 1204	10'-8" 1605	12'-9" 1924	13'-10" 2083	14'-10" 2238	17'-0" 2554	18'-2" 2731
	4'-0"	6'-11" 1390	9'-3" 1853	11'-1" 2221	12'-0" 2405	12'-10" 2584	14'-8" 2949	16'-6" 3309
	5'-0"	6'-2" 1554	8'-3" 2072	9'-11" 2483	10'-9" 2689	11'-6" 2889	13'-2" 3297	14'-9" 3700
	6'-0"	5'-8" 1703	7'-6" 2269	9'-0" 2720	9'-9" 2946	10'-6" 3164	12'-0" 3612	13'-6" 4053
UP TO MAXIMUM 110 PSF POS. OR NEG. LOAD	3'-0"	7'-7" 1263	10'-2" 1683	12'-2" 2018	13'-2" 2185	14'-2" 2347	16'-2" 2679	17'-9" 2933
	4'-0"	6'-7" 1458	8'-9" 1943	10'-7" 2330	11'-5" 2523	12'-3" 2710	14'-0" 3093	15'-9" 3471
	5'-0"	5'-11" 1630	7'-10" 2173	9'-5" 2605	10'-3" 2821	11'-0" 3030	12'-6" 3458	14'-1" 3881
	6'-0"	5'-4" 1786	7'-2" 2380	8'-7" 2853	9'-4" 3090	10'-0" 3319	11'-5" 3788	12'-10" 4251
UP TO MAXIMUM 110 PSF POS. OR 120 PSF NEG. LOAD	3'-0"	7'-3" 1319	9'-9" 1758	11'-8" 2107	12'-8" 2282	13'-7" 2451	15'-6" 2798	17'-4" 3131
	4'-0"	6'-4" 1523	8'-5" 2030	10'-1" 2433	10'-11" 2635	11'-9" 2830	13'-5" 3231	15'-1" 3625
	5'-0"	5'-8" 1703	7'-6" 2269	9'-0" 2720	9'-9" 2946	10'-6" 3164	12'-0" 3612	13'-6" 4053
	6'-0"	5'-2" 1865	6'-10" 2486	8'-3" 2980	8'-11" 3227	9'-7" 3466	10'-11" 3956	12'-3" 4440
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3'-0"	7'-0" 1373	9'-4" 1830	11'-2" 2193	12'-2" 2375	13'-0" 2551	14'-11" 2912	16'-9" 3268
	4'-0"	6'-1" 1585	8'-1" 2113	9'-8" 2533	10'-6" 2743	11'-3" 2946	12'-11" 3362	14'-6" 3773
	5'-0"	5'-5" 1772	7'-3" 2362	8'-8" 2831	9'-5" 3066	10'-1" 3294	11'-6" 3759	12'-11" 4219
	6'-0"	4'-11" 1941	6'-7" 2587	7'-11" 3102	8'-7" 3359	9'-2" 3608	10'-6" 4118	11'-6" 4515

GENERAL NOTES:

- "L" = MAXIMUM MULLION SPAN
- "B" = C/L TO C/L SPACING
- $B = \frac{W1 + W2}{2}$
- FOR SINGLE SPAN MAXIMUM DEFL. = L/180 or 1"
- (WHEN STEEL RIENF. IS USED, LENGTH OF STEEL IS LENGTH OF MULLION MINUS 12")
- SPANS ARE LIMITED BY MAXIMUM TESTED END REACTIONS
- R= REACTION (REFER TO PAGE 13 FOR BUILDING CONDITION TYPES AND PAGES 19, 20, 21, 23 FOR REACTION DETAIL OPTIONS)

SINGLE SPAN



REINFORCING OPTIONS

<div>1</div> <div>COMBINED Ix = 12.941 in⁴</div> <div>NO REINFORCING</div> <div></div>	<div>2</div> <div>COMBINED Ix = 22.993 in⁴</div> <div>1/4" x 5 1/2" STL BAR</div> <div></div>	<div>3</div> <div>COMBINED Ix = 33.045 in⁴</div> <div>(2) 1/4" x 5 1/2" STL BARS</div> <div></div>	
<div>4</div> <div>COMBINED Ix = 38.751 in⁴</div> <div>C5x9</div> <div></div>	<div>5</div> <div>COMBINED Ix = 44.714 in⁴</div> <div>C5x6.7 w/ 1/4" x 5 1/2" STL BAR</div> <div></div>	<div>6</div> <div>COMBINED Ix = 58.254 in⁴</div> <div>1 1/2" x 5" STL BAR</div> <div></div>	<div>7</div> <div>COMBINED Ix = 73.538 in⁴</div> <div>2" x 5" STL BAR</div> <div></div>

Larson Engineering
3524 Labors Road
White Bear Lake, MN 55110
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DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

Ethan A. Charpentier
No. 65106
ENGINEER'S STAMP
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE
MULLION APPLICATIONS
LOAD TABLES SINGLE SPAN
DATE: 06/28/04 6/17/11
1 11/18/08 03/05/11
2 3/10/09 02/25/11
3 3/16/09
4 5/22/12
5 10/03/14
DWG. NO. HI7000LM
SHEET 10 OF 41

TWIN SPAN APPLICATION

REINFORCING OPTIONS	1	2	3	4	5	6	7
Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 7
"B"	"L/R"	"L/R"	"L/R"	"L/R"	"L/R"	"L/R"	"L/R"
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	3' 0"	12'-8"	14'-7"	14'-7"	14'-7"	14'-7"	14'-7"
RE	872	1006	1006	1006	1006	1006	1006
RM	2781	3209	3209	3209	3209	3209	3209
4' 0"	10'-11"	13'-6"	14'-7"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1007	1238	1342	1342	1342	1342	1342
RM	3211	3946	4278	4278	4278	4278	4278
5' 0"	9'-10"	12'-1"	14'-5"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1126	1384	1658	1677	1677	1677	1677
RM	3590	4411	5288	5348	5348	5348	5348
6' 0"	8'-11"	11'-0"	13'-2"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1233	1516	1817	2012	2012	2012	2012
RM	3932	4832	5793	6417	6417	6417	6417
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	3' 0"	11'-9"	14'-5"	14'-7"	14'-7"	14'-7"	14'-7"
RE	942	1158	1174	1174	1174	1174	1174
RM	3003	3691	3744	3744	3744	3744	3744
4' 0"	10'-2"	12'-6"	14'-7"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1088	1337	1565	1565	1565	1565	1565
RM	3468	4262	4991	4991	4991	4991	4991
5' 0"	9'-1"	11'-2"	13'-4"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1216	1494	1791	1957	1957	1957	1957
RM	3877	4765	5712	6239	6239	6239	6239
6' 0"	8'-3"	10'-2"	12'-2"	13'-10"	14'-2"	14'-7"	14'-7"
RE	1332	1637	1962	2229	2283	2348	2348
RM	4247	5219	6257	7106	7278	7487	7487
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	3' 0"	10'-11"	13'-6"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1007	1238	1342	1342	1342	1342	1342
RM	3211	3946	4278	4278	4278	4278	4278
4' 0"	9'-6"	11'-8"	14'-0"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1163	1429	1713	1789	1789	1789	1789
RM	3707	4556	5462	5704	5704	5704	5704
5' 0"	8'-6"	10'-5"	12'-6"	14'-3"	14'-7"	14'-7"	14'-7"
RE	1300	1597	1915	2175	2228	2236	2236
RM	4145	5094	6106	6935	7103	7130	7130
6' 0"	7'-9"	9'-6"	11'-5"	13'-0"	13'-3"	14'-7"	14'-7"
RE	1424	1750	2098	2382	2440	2683	2683
RM	4540	5580	6689	7597	7781	8556	8556
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	3' 0"	10'-4"	12'-8"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1068	1313	1509	1509	1509	1509	1509
RM	3405	4185	4813	4813	4813	4813	4813
4' 0"	8'-11"	11'-0"	13'-2"	14'-7"	14'-7"	14'-7"	14'-7"
RE	1233	1516	1817	2012	2012	2012	2012
RM	3932	4832	5793	6417	6417	6417	6417
5' 0"	8'-0"	9'-10"	11'-9"	13'-5"	13'-9"	14'-7"	14'-7"
RE	1379	1694	2031	2307	2363	2515	2515
RM	4396	5402	6477	7356	7534	8021	8021
6' 0"	7'-3"	9'-0"	10'-9"	12'-3"	12'-6"	14'-7"	14'-7"
RE	1510	1856	2225	2527	2588	3018	3018
RM	4816	5918	7095	8058	8253	9625	9625

REINFORCING OPTIONS	1	2	3	4	5	6	7
Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 7
"B"	"L/R"	"L/R"	"L/R"	"L/R"	"L/R"	"L/R"	"L/R"
UP TO MAXIMUM 100 PSF POS. OR NEG. LOAD	3' 0"	9'-10"	12'-1"	14'-5"	14'-7"	14'-7"	14'-7"
RE	1126	1384	1658	1677	1677	1677	1677
RM	3590	4411	5288	5348	5348	5348	5348
4' 0"	8'-6"	10'-5"	12'-6"	14'-3"	14'-7"	14'-7"	14'-7"
RE	1300	1597	1915	2175	2228	2236	2236
RM	4145	5094	6106	6935	7103	7130	7130
5' 0"	7'-7"	9'-4"	11'-2"	12'-8"	13'-0"	14'-7"	14'-7"
RE	1453	1786	2141	2432	2490	2795	2795
RM	4634	5695	6827	7754	7941	8912	8912
6' 0"	6'-11"	8'-6"	10'-2"	11'-7"	11'-11"	14'-3"	14'-7"
RE	1592	1956	2345	2664	2728	3266	3354
RM	5076	6238	7478	8494	8699	10414	10695
UP TO MAXIMUM 110 PSF POS. OR NEG. LOAD	3' 0"	9'-4"	11'-6"	13'-9"	14'-7"	14'-7"	14'-7"
RE	1181	1451	1739	1845	1845	1845	1845
RM	3765	4626	5546	5882	5882	5882	5882
4' 0"	8'-1"	9'-11"	11'-11"	13'-7"	13'-11"	14'-7"	14'-7"
RE	1363	1675	2008	2281	2336	2460	2460
RM	4347	5342	6404	7274	7449	7843	7843
5' 0"	7'-3"	8'-11"	10'-8"	12'-1"	12'-5"	14'-7"	14'-7"
RE	1524	1873	2245	2550	2612	3074	3074
RM	4860	5973	7160	8132	8329	9804	9804
6' 0"	6'-7"	8'-1"	9'-9"	11'-1"	11'-4"	13'-7"	14'-5"
RE	1670	2052	2460	2794	2861	3425	3634
RM	5324	6543	7843	8908	9124	10922	11587
UP TO MAXIMUM 110 PSF POS. OR 120 PSF NEG. LOAD	3' 0"	8'-11"	11'-0"	13'-2"	14'-7"	14'-7"	14'-7"
RE	1233	1516	1817	2012	2012	2012	2012
RM	3932	4832	5793	6417	6417	6417	6417
4' 0"	7'-9"	9'-6"	11'-5"	13'-0"	13'-3"	14'-7"	14'-7"
RE	1424	1750	2098	2382	2440	2683	2683
RM	4540	5580	6689	7597	7781	8556	8556
5' 0"	6'-11"	8'-6"	10'-2"	11'-7"	11'-11"	14'-3"	14'-7"
RE	1592	1956	2345	2664	2728	3266	3354
RM	5076	6238	7478	8494	8699	10414	10695
6' 0"	6'-4"	7'-9"	9'-4"	10'-7"	10'-10"	13'-0"	13'-2"
RE	1744	2143	2569	2918	2988	3577	3634
RM	5561	6834	8192	9304	9529	11408	11587
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-7"	10'-7"	12'-8"	14'-5"	14'-7"	14'-7"
RE	1284	1577	1891	2148	2180	2180	2180
RM	4093	5029	6029	6848	6952	6952	6952
4' 0"	7'-5"	9'-2"	11'-0"	12'-6"	12'-9"	14'-7"	14'-7"
RE	1482	1821	2183	2480	2540	2907	2907
RM	4726	5807	6962	7907	8098	9269	9269
5' 0"	6'-8"	8'-2"	9'-10"	11'-2"	11'-5"	13'-8"	14'-7"
RE	1657	2036	2441	2772	2839	3399	3633
RM	5283	6493	7784	8840	9054	10839	11586
6' 0"	6'-1"	7'-5"	8'-11"	10'-2"	10'-5"	12'-2"	12'-2"
RE	1815	2231	2674	3037	3110	3634	3634
RM	5788	7113	8527	9684	9918	11587	11587

GENERAL NOTES:

- "H" = MULLION LENGTH
- "L" = SPAN BETWEEN ANCHORS
- "B" = C/L TO C/L SPACING
- $B = \frac{W1 + W2}{2}$
- FOR TWIN SPAN MAXIMUM DEFL. = $L/180$ OR 1"
- (WHEN STEEL RIENF. IS USED, LENGTH OF STEEL IS LENGTH OF MULLION MINUS 12")
- SPANS ARE LIMITED BY MAXIMUM TESTED END REACTIONS
- RE= REACTION AT HEAD AND SILL (SEE PAGE 13)
- RM= REACTION AT MIDPOINT ANCHOR (SEE PAGE 13)

REINFORCING OPTIONS

1 COMBINED Ix = 12.941 in ⁴ NO REINFORCING	2 COMBINED Ix = 22.993 in ⁴ 1/4" x 5 1/2" STL BAR	3 COMBINED Ix = 33.045 in ⁴ (2) 1/4" x 5 1/2" STL BARS
4 COMBINED Ix = 38.751 in ⁴ C5x9	5 COMBINED Ix = 44.714 in ⁴ C5x6.7 w/ 1/4" x 5 1/2" STL BAR	6 COMBINED Ix = 58.254 in ⁴ 1 1/2" x 5" STL BAR
	7 COMBINED Ix = 73.538 in ⁴ 2" x 5" STL BAR	

TWIN SPAN

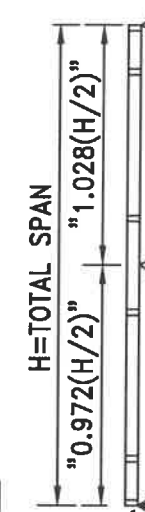
NO "TOTAL SPAN" SHALL BE
GREATER THAN 28'-4 3/4" (TESTED)

TESTED LENGTHS ARE 165 3/4" (LOWER)
AND 175" (UPPER).
TOTAL LENGTH OF MULLION = (H)

$$(H) = \left(\frac{\text{CHART "L"}}{1.028} \right)^2$$

THESE LENGTHS
ARE BASED ON
THE TESTED
"TWIN-SPAN"
LENGTH RATIOS.

CENTER ANCHOR
IS PERMITTED TO
BE LOCATED @
H/2 +/- 2.8% (H/2)



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DADE CO. STAMP

PRODUCT REVISED
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Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

Harmon
HI 7000 LARGE MISSILE
MULLION APPLICATIONS
LOAD TABLES
DATE: 06/28/04
1 11/18/08
2 3/10/09
3 3/16/09
4 5/22/12
5 10/03/14
DWG. NO. HI7000LM
SHEET 11 OF 41

Harmon
HI 7000 LARGE MISSILE
MULLION APPLICATIONS
LOAD TABLES
DATE: 06/28/04
1 11/18/08
2 3/10/09
3 3/16/09
4 5/22/12
5 10/03/14
DWG. NO. HI7000LM
SHEET 11 OF 41

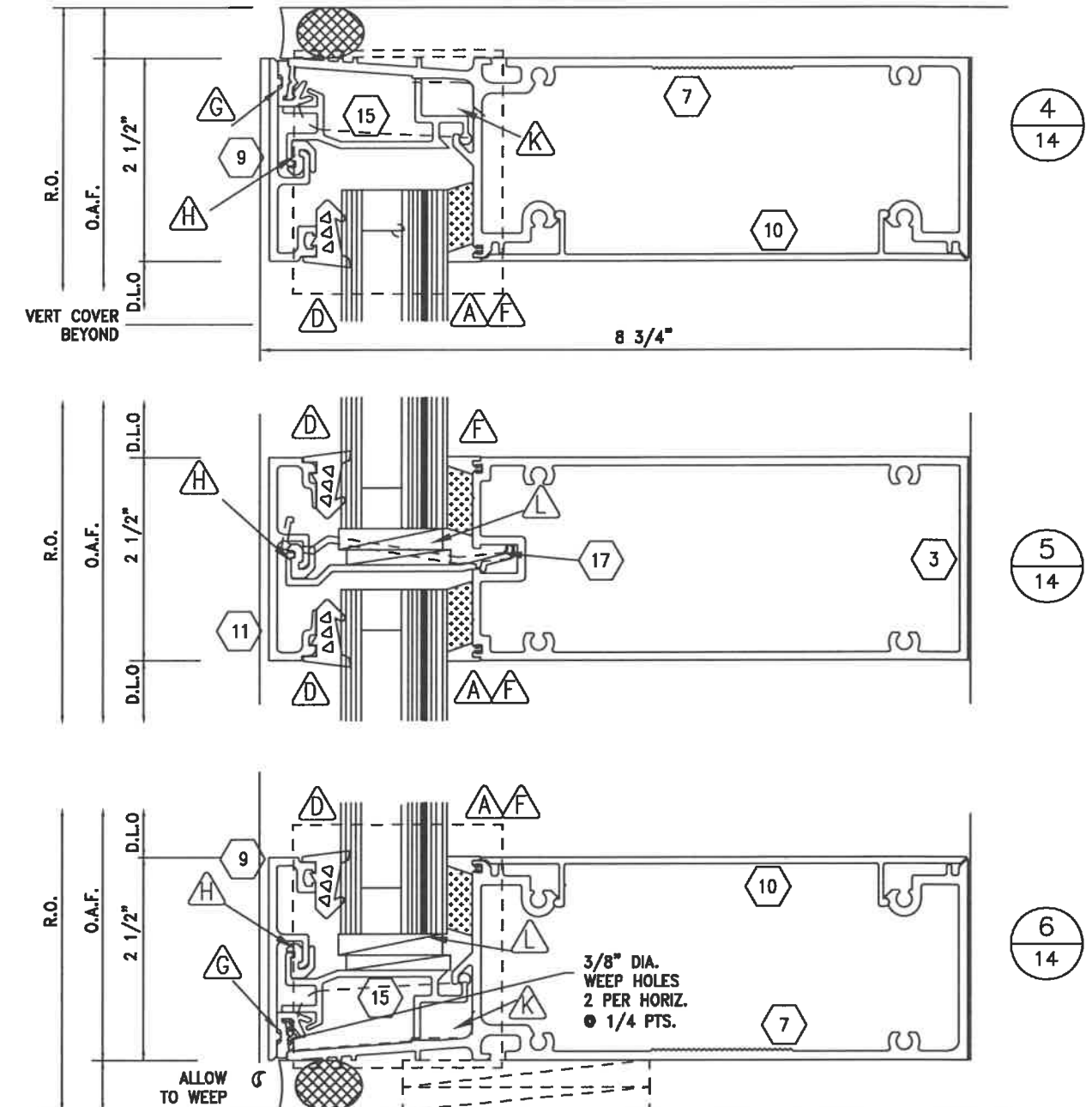
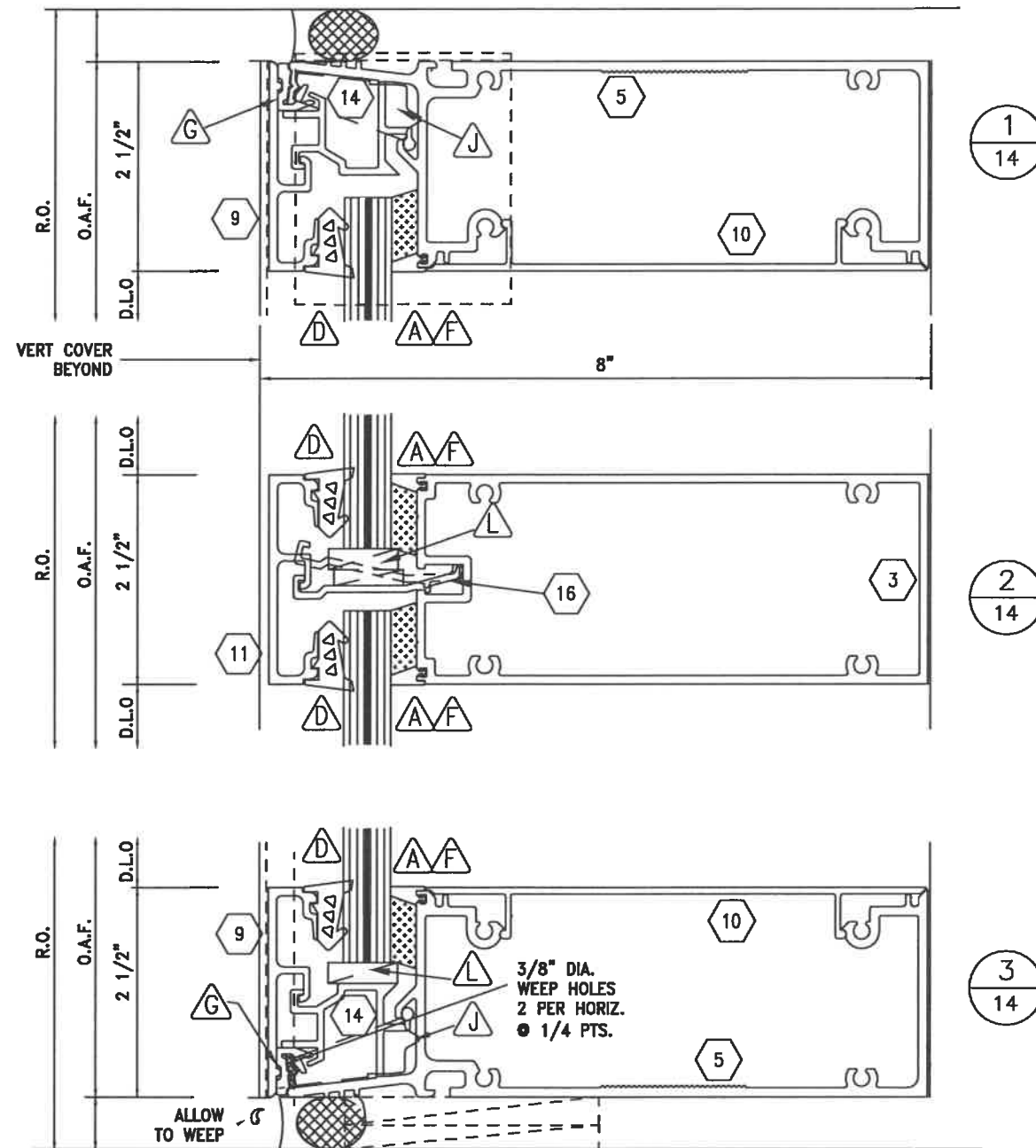
TWIN SPAN w/ STACK RAIL APPLICATION

REINFORCING
OPTIONS



		Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	"B"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	3' 0"	12'-5"	16'-5"	17'-11"	18'-8"	19'-4"	20'-8"	21'-11"
	RE	931	1224	1340	1394	1445	1544	1636
	RM	2635	3464	3793	3947	4090	4370	4629
	D	497	653	715	744	771	823	872
	4' 0"	10'-9"	14'-4"	16'-8"	17'-3"	17'-3"	17'-3"	17'-3"
	RE	1075	1433	1663	1716	1716	1716	1716
	RM	3043	4056	4706	4857	4857	4857	4857
	D	573	764	887	915	915	915	915
	5' 0"	9'-8"	12'-10"	13'-9"	13'-9"	13'-9"	13'-9"	13'-9"
	RE	1202	1602	1716	1716	1716	1716	1716
	RM	3402	4534	4857	4857	4857	4857	4857
	D	641	854	915	915	915	915	915
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	3' 0"	11'-6"	15'-4"	17'-3"	17'-11"	18'-7"	19'-11"	21'-1"
	RE	1006	1340	1504	1565	1622	1733	1836
	RM	2846	3794	4257	4430	4592	4906	5197
	D	460	613	688	716	742	792	839
	4' 0"	10'-0"	13'-4"	16'-0"	16'-8"	17'-3"	17'-3"	17'-3"
	RE	1161	1548	1855	1942	2002	2002	2002
	RM	3286	4380	5251	5497	5666	5666	5666
	D	531	708	848	888	915	915	915
	5' 0"	8'-11"	11'-11"	13'-9"	13'-9"	13'-9"	13'-9"	13'-9"
	RE	1298	1730	2002	2002	2002	2002	2002
	RM	3674	4897	5666	5666	5666	5666	5666
	D	594	791	915	915	915	915	915
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	3' 0"	10'-9"	14'-4"	16'-8"	17'-4"	18'-0"	19'-3"	20'-5"
	RE	1075	1433	1663	1730	1793	1916	2029
	RM	3043	4056	4706	4897	5075	5422	5744
	D	430	573	665	692	717	766	812
	4' 0"	9'-4"	12'-5"	14'-11"	16'-2"	16'-9"	17'-3"	17'-3"
	RE	1241	1655	1983	2147	2225	2288	2288
	RM	3513	4683	5614	6076	6297	6475	6475
	D	497	662	793	859	890	915	915
	5' 0"	8'-4"	11'-2"	13'-4"	13'-9"	13'-9"	13'-9"	13'-9"
	RE	1388	1850	2217	2288	2288	2288	2288
	RM	3928	5236	6276	6475	6475	6475	6475
	D	555	740	887	915	915	915	915
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	3' 0"	10'-2"	13'-7"	16'-2"	16'-10"	17'-6"	18'-8"	19'-9"
	RE	1140	1520	1816	1890	1959	2093	2217
	RM	3227	4302	5140	5349	5544	5923	6274
	D	406	541	646	672	697	744	788
	4' 0"	8'-9"	11'-9"	14'-1"	15'-3"	16'-3"	17'-3"	17'-3"
	RE	1317	1755	2104	2278	2430	2574	2574
	RM	3726	4967	5954	6448	6879	7285	7285
	D	468	624	748	810	864	915	915
	5' 0"	7'-10"	10'-6"	12'-7"	13'-8"	13'-9"	13'-9"	13'-9"
	RE	1472	1962	2352	2547	2574	2574	2574
	RM	4166	5553	6657	7209	7285	7285	7285
	D	524	698	836	906	915	915	915
UP TO MAXIMUM 100 PSF POS. OR NEG. LOAD	3' 0"	9'-8"	12'-10"	15'-5"	16'-5"	17'-0"	18'-2"	19'-3"
	RE	1202	1602	1920	2045	2120	2265	2399
	RM	3402	4534	5436	5789	6000	6410	6790
	D	385	513	615	655	678	725	768
	4' 0"	8'-4"	11'-2"	13'-4"	14'-5"	15'-6"	16'-11"	17'-3"
	RE	1388	1850	2217	2401	2579	2810	2860
	RM	3928	5236	6276	6797	7301	7953	8094
	D	444	592	710	768	825	899	915
	5' 0"	7'-5"	9'-11"	11'-11"	12'-11"	13'-9"	13'-9"	13'-9"
	RE	1552	2068	2479	2685	2860	2860	2860
	RM	4391	5853	7017	7599	8094	8094	8094
	D	497	662	793	859	915	915	915
UP TO MAXIMUM 110 PSF POS. OR NEG. LOAD	3' 0"	9'-2"	12'-3"	14'-8"	15'-11"	16'-7"	17'-9"	18'-10"
	RE	1261	1680	2014	2181	2277	2432	2577
	RM	3568	4755	5701	6173	6444	6885	7293
	D	367	489	586	635	662	708	750
	4' 0"	7'-11"	10'-7"	12'-9"	13'-9"	14'-10"	16'-6"	17'-3"
	RE	1456	1940	2326	2518	2705	3018	3145
	RM	4120	5491	6583	7128	7657	8543	8904
	D	424	565	677	733	787	878	915
	5' 0"	7'-1"	9'-6"	11'-4"	12'-4"	13'-3"	13'-9"	13'-9"
	RE	1627	2169	2600	2816	3024	3145	3145
	RM	4606	6139	7360	7970	8561	8904	8904
	D	474	631	756	819	880	915	915
UP TO MAXIMUM 110 PSF POS. OR 120 PSF NEG. LOAD	3' 0"	8'-9"	11'-9"	14'-1"	15'-3"	16'-3"	17'-5"	18'-5"
	RE	1317	1755	2104	2278	2430	2596	2750
	RM	3726	4967	5954	6448	6879	7349	7785
	D	351	468	561	608	648	692	734
	4' 0"	7'-7"	10'-2"	12'-2"	13'-2"	14'-2"	16'-2"	17'-2"
	RE	1520	2026	2429	2630	2825	3221	3413
	RM	4303	5735	6875	7445	7998	9119	9660
	D	406	541	648	702	754	859	910
	5' 0"	6'-10"	9'-1"	10'-11"	11'-10"	12'-8"	13'-9"	13'-9"
	RE	1700	2265	2716	2941	3159	3431	3431
	RM	4811	6412	7687	8324	8942	9713	9713
	D	453	604	724	784	842	915	915
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-5"	11'-3"	13'-6"	14'-8"	15'-9"	17'-0"	18'-1"
	RE	1370	1826	2190	2371	2547	2757	2920
	RM	3879	5170	6197	6711	7209	7804	8267
	D	338	450	539	584	627	679	719
	4' 0"	7'-4"	9'-9"	11'-8"	12'-8"	13'-7"	15'-7"	16'-9"
	RE	1582	2109	2528	2738	2941	3357	3624
	RM	4478	5969	7156	7749	8324	9501	10257
	D	390	519	622	674	724	826	892
	5' 0"	6'-6"	8'-9"	10'-6"	11'-4"	12'-2"	13'-9"	13'-9"
	RE	1769	2358	2827	3061	3288	3717	3717
	RM	5007	6674	8001	8664	9307	10522	10522
	D	436	581	696	754	809	915	915
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-5"	11'-3"	13'-6"	14'-8"	15'-9"	17'-0"	18'-1"
	RE	1370	1826	2190	2371	2547	2757	2920
	RM	3879	5170	6197	6711	7209	7804	8267
	D	338	450	539	584	627	679	719
	4' 0"	7'-4"	9'-9"	11'-8"	12'-8"	13'-7"	15'-7"	16'-9"
	RE	1582	2109	2528	2738	2941	3357	3624
	RM	4478	5969	7156	7749	8324	9501	10257
	D	390	519	622	674	724	826	892
	5' 0"	6'-6"	8'-9"	10'-6"	11'-4"	12'-2"	13'-9"	13'-9"
	RE	1769	2358	2827	3061	3288	3717	3717
	RM	5007	6674	8001	8664	9307	10522	10522
	D	436	581	696	754	809	915	915
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-5"	11'-3"	13'-6"	14'-8"	15'-9"	17'-0"	18'-1"
	RE	1370	1826	2190	2371	2547	2757	2920
	RM	3879	5170	6197	6711	7209	7804	8267
	D	338	450	539	584	627	679	719
	4' 0"	7'-4"	9'-9"	11'-8"	12'-8"	13'-7"	15'-7"	16'-9"
	RE	1582	2109	2528	2738	2941	3357	3624
	RM	4478	5969	7156	7749	8324	9501	10257
	D	390	519	622	674	724	826	892
	5' 0"	6'-6"	8'-9"	10'-6"	11'-4"	12'-2"	13'-9"	13'-9"
	RE	1769	2358	2827	3061	3288	3717	3717
	RM	5007	6674	8001	8664	9307	10522	10522
	D	436	581	696	754	809	915	915
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-5"	11'-3"	13'-6"	14'-8"	15'-9"	17'-0"	18'-1"
	RE	1370	1826	2190	2371	2547	2757	2920
	RM	3879	5170	6197	6711	7209	7804	8267
	D	338	450	539	584	627	679	719
	4' 0"	7'-4"	9'-9"	11'-8"	12'-8"	13'-7"	15'-7"	16'-9"
	RE	1582	2109	2528	2738	2941	3357	3624
	RM	4478	5969	7156	7749	8324	9501	10257
	D	390	519	622	674	724	826	892
	5' 0"	6'-6"	8'-9"	10'-6"	11'-4"	12'-2"	13'-9"	13'-9"
	RE	1769	2358	2827	3061	3288	3717	3717
	RM	5007	6674	8001	8664	9307	10522	10522
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UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-5"	11'-3"	13'-6"	14'-8"	15'-9"	17'-0"	18'-1"
	RE	1370	1826	2190	2371	2547	2757	2920
	RM	3879	5170	6197	6711	7209	7804	8267
	D	338	450	539	584	627	679	719
	4' 0"	7'-4"	9'-9"	11'-8"	12'-8"	13'-7"	15'-7"	16'-9"
	RE	1582	2109	2528	2738	2941	3357	3624
	RM	4478	5969	7156	7749	8324	9501	10257
	D	390	519	622	674	724	826	892
	5' 0"	6'-6"	8'-9"	10'-6"	11'-4"	12'-2"	13'-9"	13'-9"
	RE	1769	2358	2827	3061	3288	3717	3717
	RM	5007	6674	8001	8664	9307	10522	10522
	D	436	581	696	754	809	915	915
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3' 0"	8'-5"	11'-3"	13'-6"	14'-8"	15'-9"	17'-0"	18'-1"
	RE	1370	1826	2190	2371	2547	2757	2920</

ANCHOR TYPE SUBSTRATE	STRAP ANCHOR	THRU-FRAME ANCHOR	STEEL ANGLES IN VERTICAL	ALUMIMUN LUGS IN VERTICAL	TWIN SPAN MID-SPAN ANCHOR	TWIN-SPAN w/ STACK HORIZ. INTER. ANCHOR	JAMB ANCHOR
WOOD							 MAXIMUM END REACTION (1) STRAP-5" LONG = 1870# SEE DETAIL 1/22
CONC.							
STEEL							
METAL STUD							
	MAXIMUM END REACTION (2) STRAPS-8" LONG = 2,715# SEE SHEET 19 FOR DETAILS	MAXIMUM END REACTION = 1,345# SEE SHEET 19 FOR DETAILS	MAXIMUM END REACTION (2) ANGLES = 4,520# TYP. ANGLES w/ (2) FASTENERS REIN. ANGLES w/ (1) FASTENER SEE SHEET 20 FOR DETAILS	MAXIMUM END REACTION = 2,715# (PER TEST ELEV. 12) SEE SHEET 20 FOR DETAILS	MAXIMUM WL REACTION = 8,890# SEE SHEET 21 FOR DETAILS	MAXIMUM WL REACTION 13 1/2" LONG = 10,500# 8" LONG = 5,890# SEE SHEET 21 FOR DETAILS	
GENERAL NOTES: - SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, BASED ON MOCKUP CALCULATIONS COMPLYING WITH CURRENT FBC - ACTUAL LENGTH AND NUMBER & SIZE OF HOLES TO BE DETERMINED BY PROJECT SPECIFIC PERIMETER CONDITIONS AND TYPES OF FASTENERS USED.			CORNER ANCHORS - SILL / HEAD REACTION= 				



GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 13
- FOR PART IDENTIFICATION REFER TO SHEET 2

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

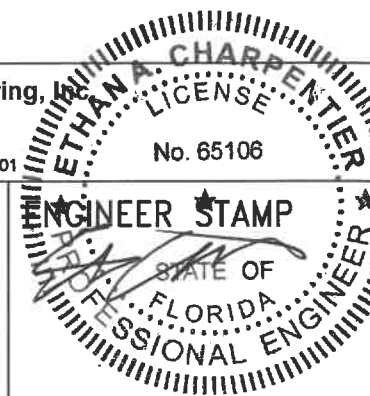
Larson Engineering
3524 Labore Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**

Expiration Date: **09/02/2024**

By: *Manuel Perez*
Miami-Dade Product Control



MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

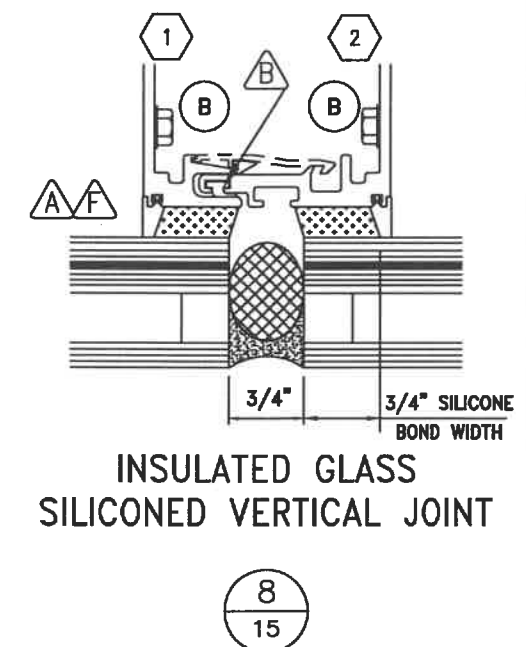
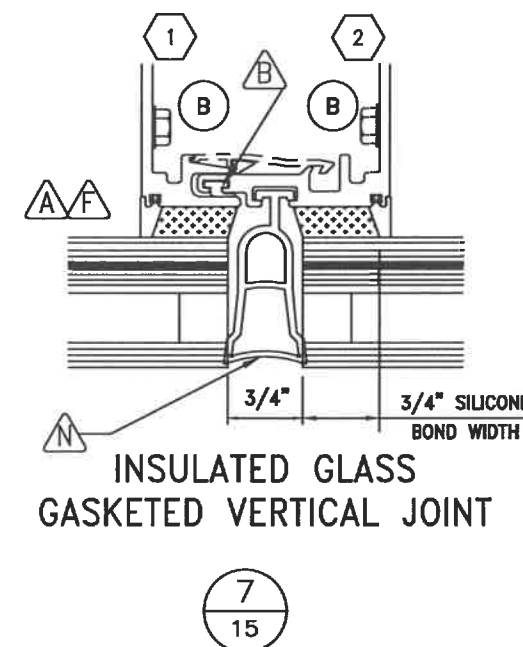
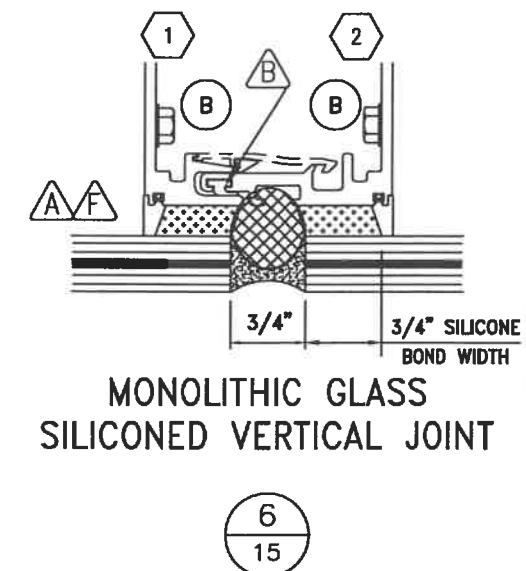
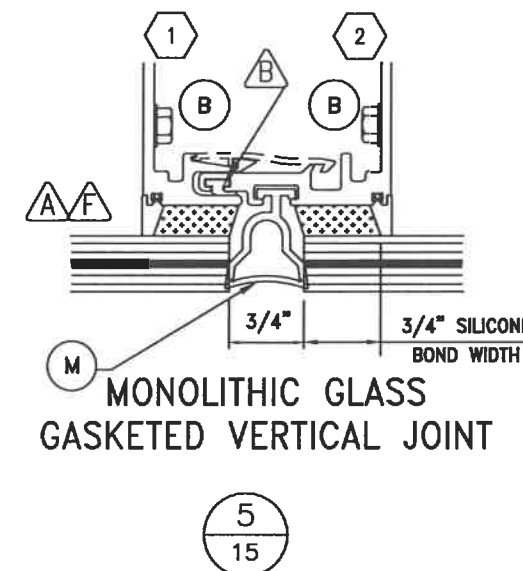
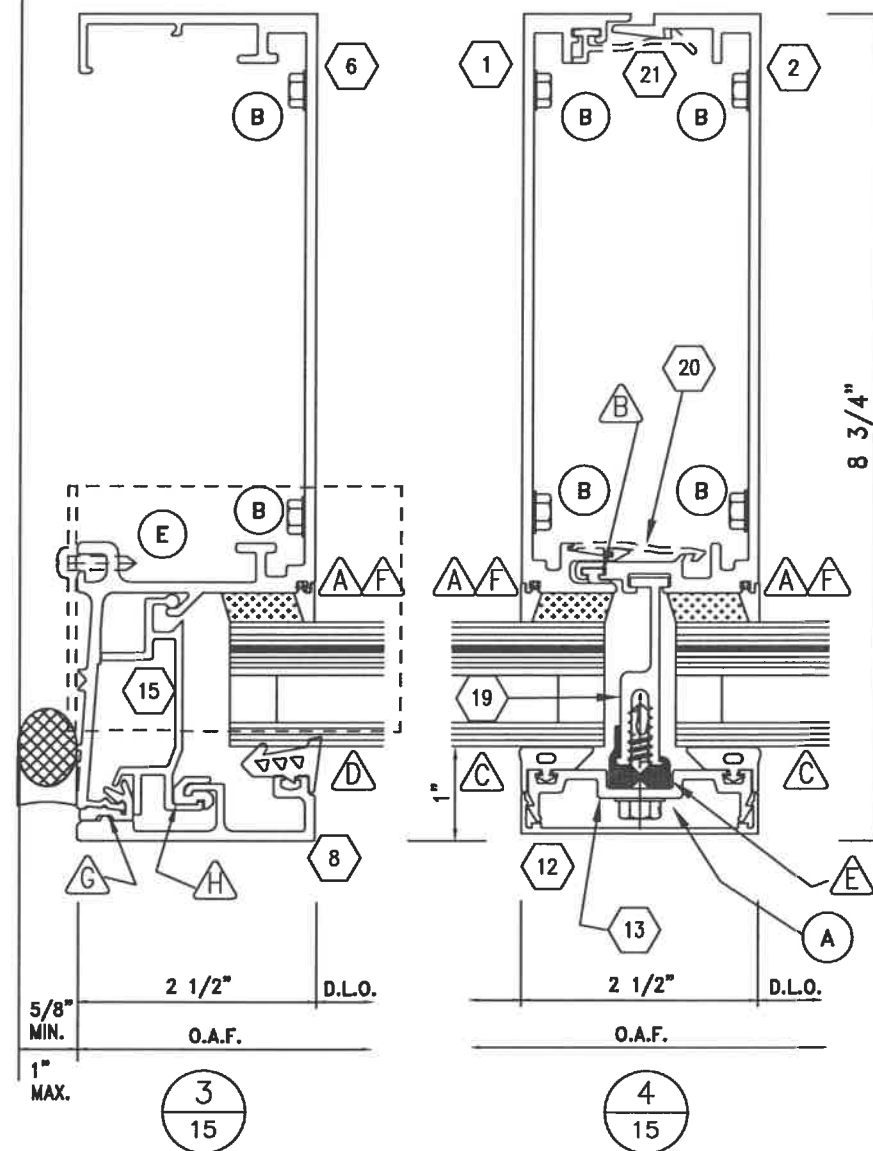
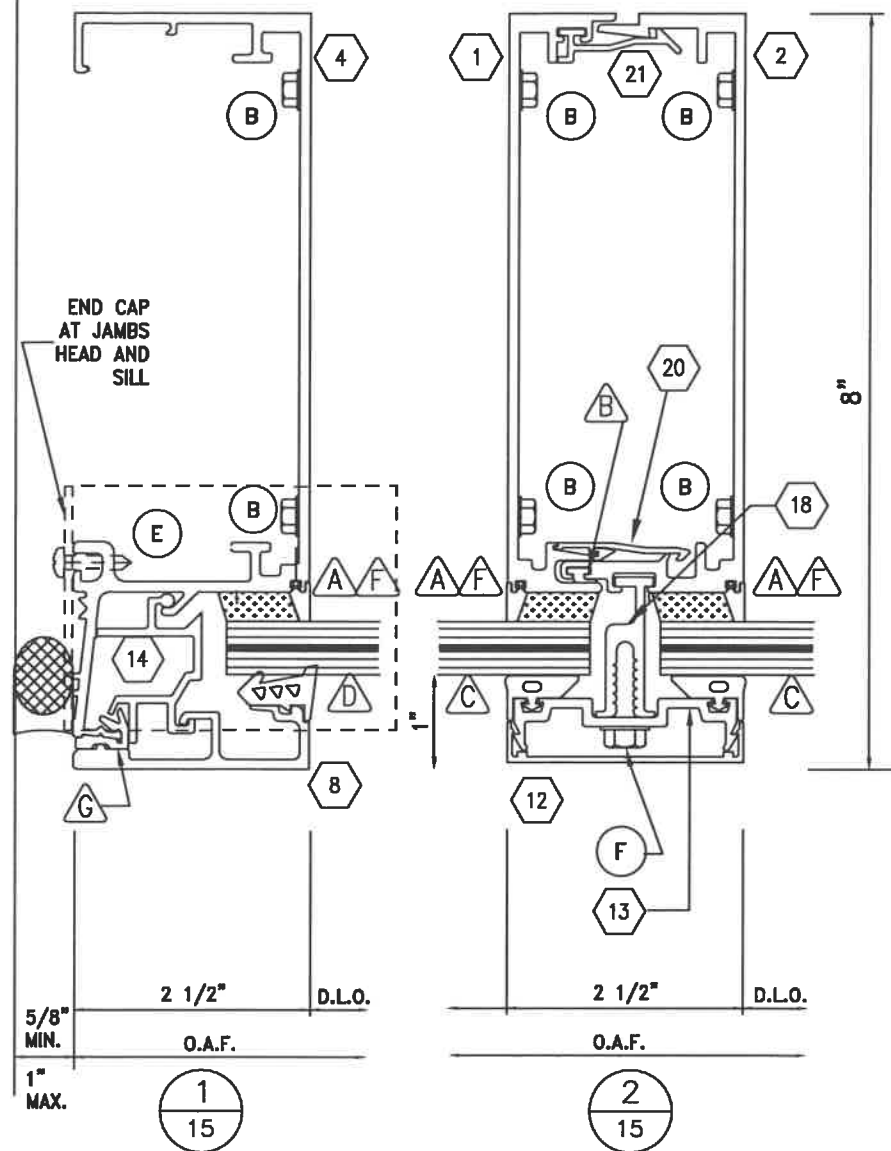
Harmon

HI 7000 LARGE MISSILE
HORIZONTAL DETAILS

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 14 OF 41



SILICONE OR GASKET GLASS JOINT DESIGN:

SILICONE OF GASKET GLASS JOINT DESIGN TESTED TO 90 PSF.

DETERMINE THE DESIGNED WINDLOAD AND THE SMALLEST LEG OF THE LARGEST LITE OF GLASS FOR THE PROJECT.

FOLLOW THE CHART FOR THE 3/4\"/>

IF YOUR SIZE AND WINDLOAD ARE NOT APPROVED, CONSULT THE ARCHITECT OR ENGINEER OF OPTIONS.

3/4\"/>

	Smallest leg of largest lite of glass								
Windload	24"	30"	36"	42"	48"	54"	60"	66"	72"
20 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK
30 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK
40 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK
50 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK
60 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK
70 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	Not Apvd	Not Apvd
80 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	Not Apvd	Not Apvd	Not Apvd
90 PSF	3/4" OK	3/4" OK	3/4" OK	3/4" OK	3/4" OK	Not Apvd	Not Apvd	Not Apvd	Not Apvd

GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 13
- FOR PART IDENTIFICATION REFER TO SHEET 2
- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
ENGINEER STAMP
STATE OF FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

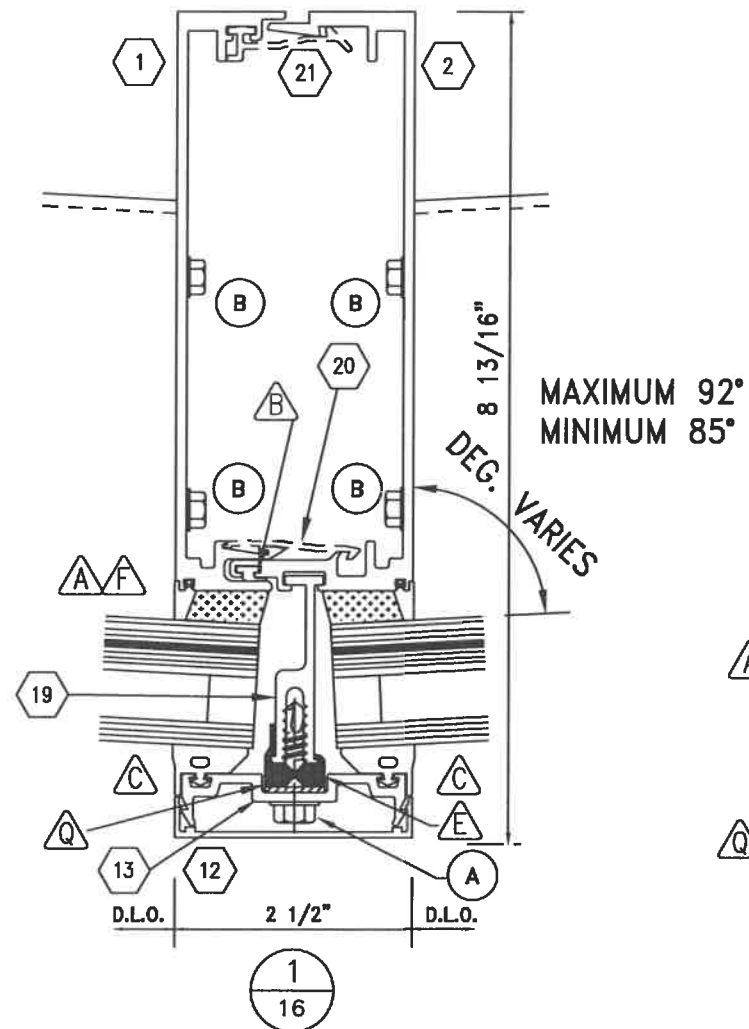
HI 7000 LARGE MISSILE
VERTICAL DETAILS

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

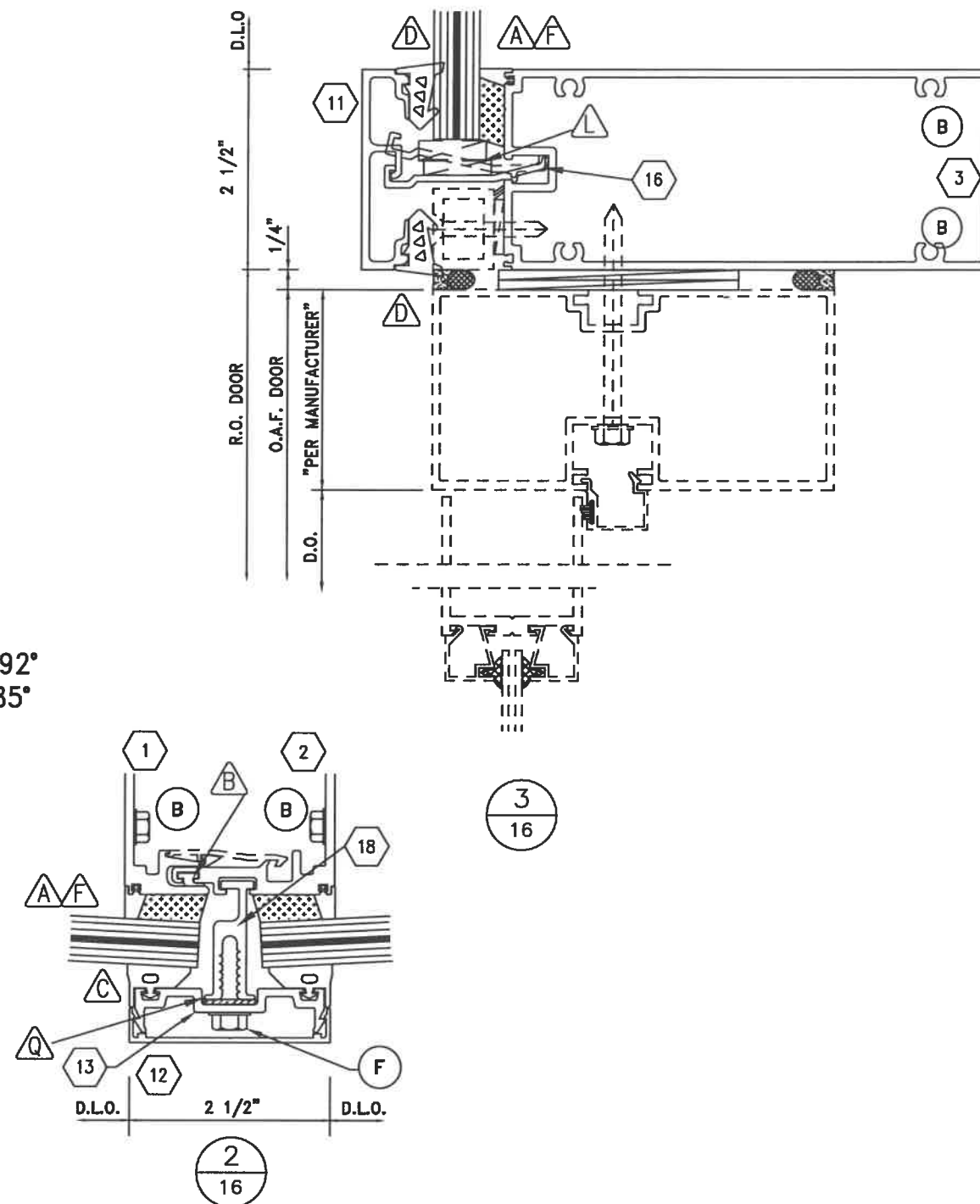
DWG. NO. HI7000LM

SHEET 15 OF 41

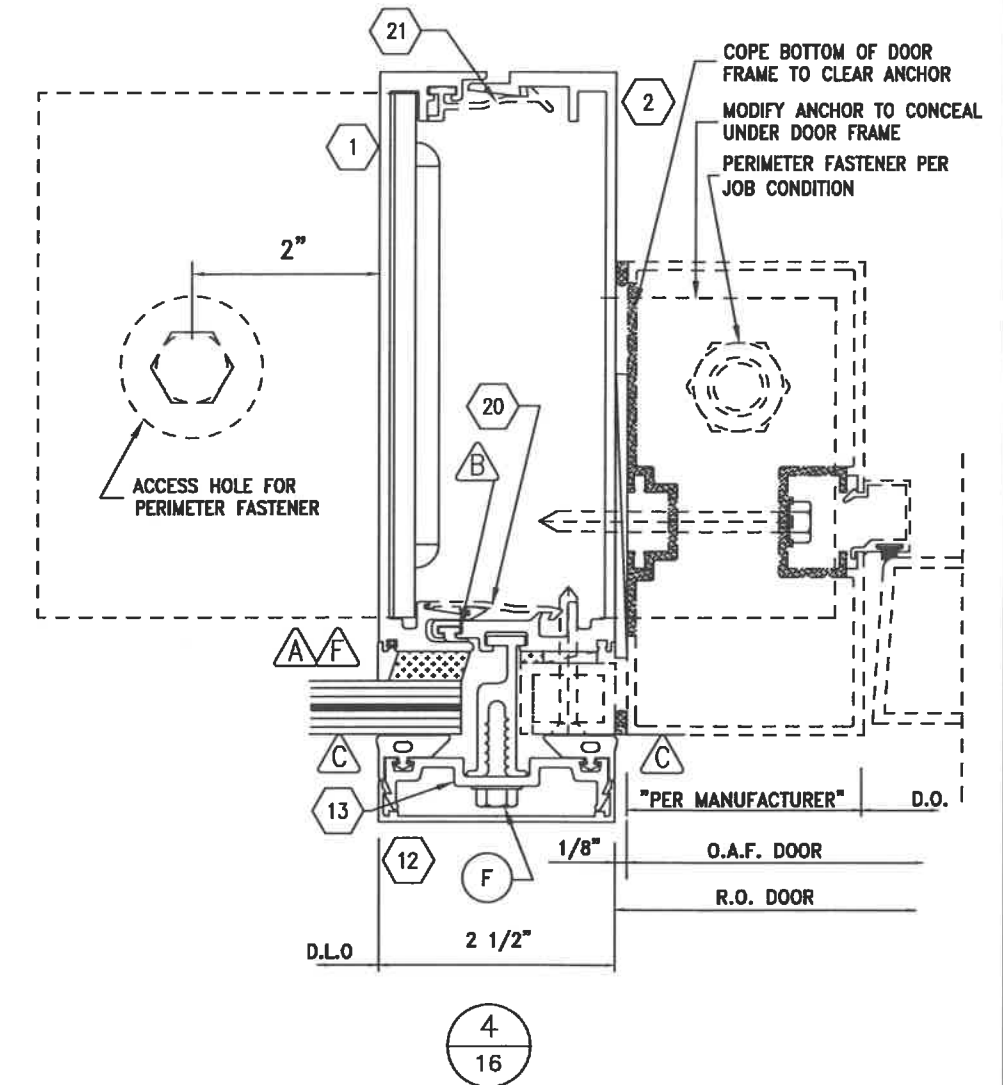
MAX. 90 P S F WITH THE SHORT HORIZ.



SEGMENTED MULLION INSULATED GLASS



SEGMENTED MULLION MONOLITHIC GLASS



GENERAL NOTES:



- FOR ANCHOR DETAILS REFER TO SHEET 13
- FOR PART IDENTIFICATION REFER TO SHEET 2

FASTENERS

 GASKETS


ALUMINUM EXTRUSIONS

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

	Larson	Engineering, Inc.
	3524 Labore Road White Bear Lake, MN 55110 (P) 651.481.9120 (F) 651.481.9200	
DADE CO. STAMP		
PRODUCT REVISED as complying with the Florida Building Code NOA-No. 21-0405.14 Expiration Date: 09/02/2024		MAY 17 2021 LIMITED TO STRUCTURAL DESIGN Florida Firm No. F-02000005175 Certificate of Authorization #9803
By: <u>Manuel Perez</u> Miami-Dade Product Control		

 **Harmon**

HI 7000 LARGE MISSILE

SEGMENTED MULLION &

DOOR DETAILS

DATE: 06/28/04	6 6/17/16
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1	11/18/08	7	03/05/19
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2	3/10/09	8	02/25/21
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2	2/15/09	
3	3/16/09	

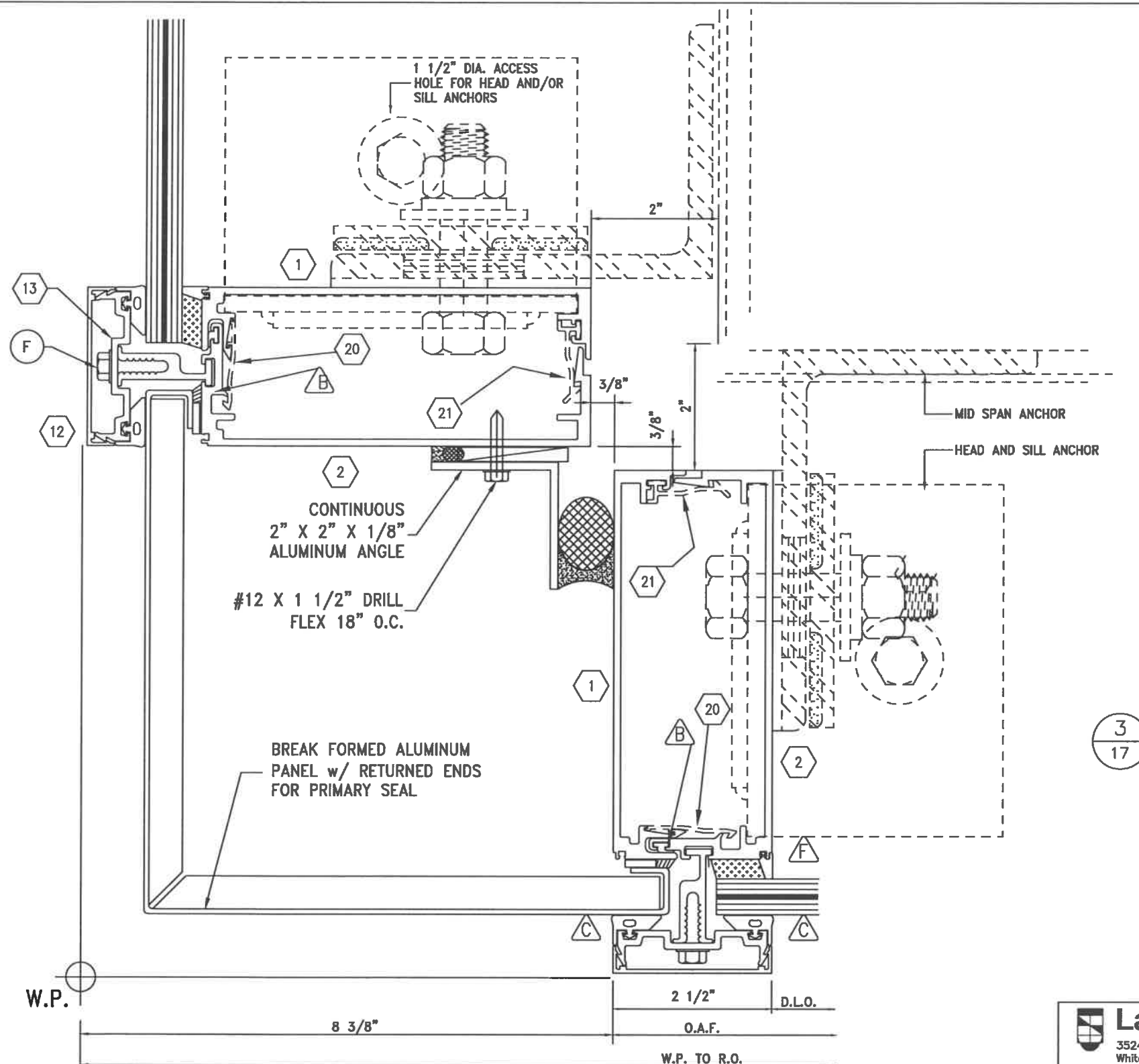
3	5/10/09	
4	5/22/12	

4	5/22/12
5	10/03/14

5	10/03/14
BMS - 10 - 10/03/14	

DWG. NO. H17000LM

SHEET 16 OF 41



GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**

By: *Manuel Perez*
Miami-Dade Product Control

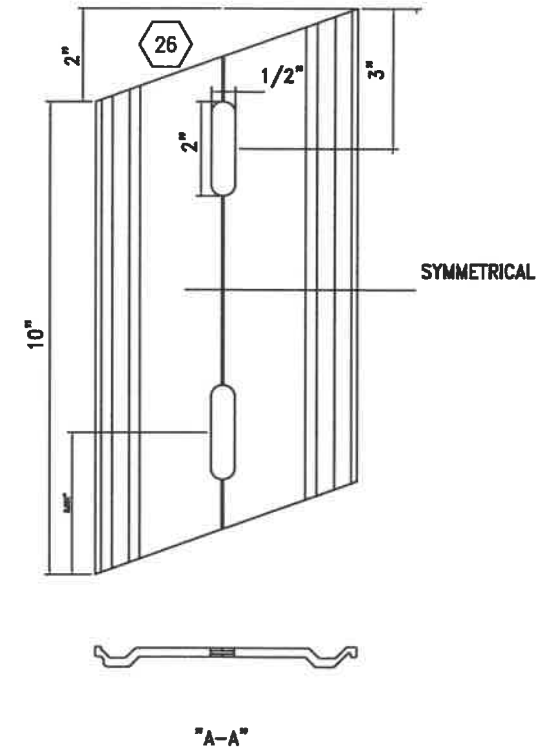
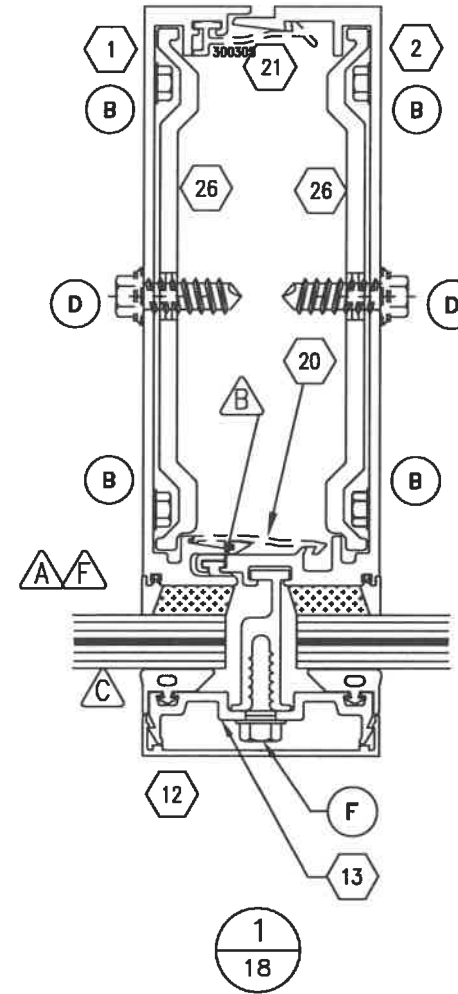
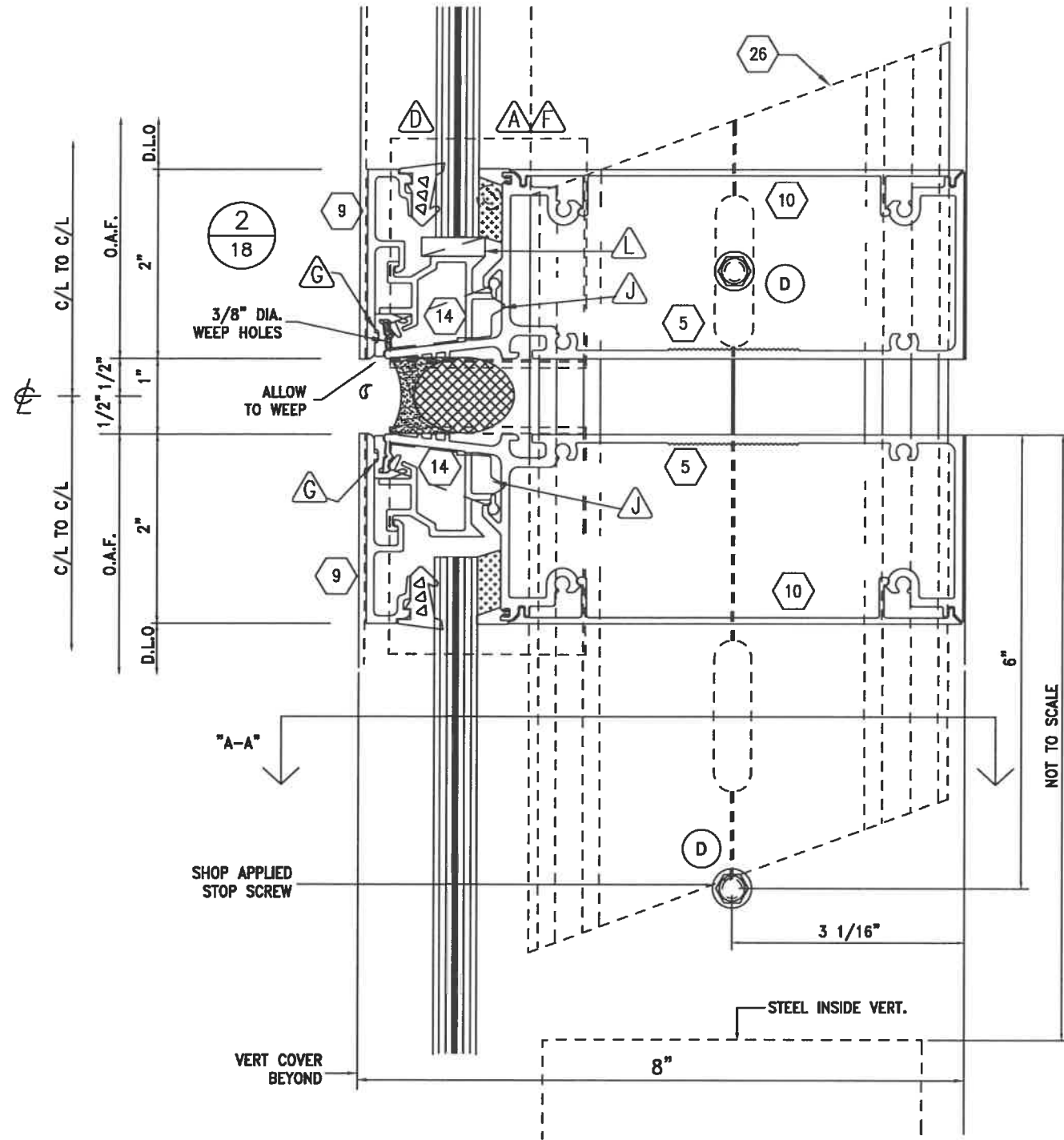
ETHAN A. CHARPENTIER
LICENSE
No. 65106
STATE OF FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021

HI 7000 LARGE MISSILE
90° OUTSIDE CORNER DETAIL

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 17 OF 41



GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

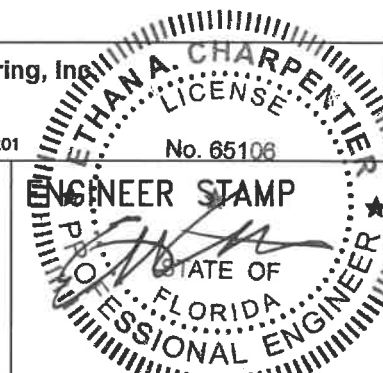
— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- GASKETS
- ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control



MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

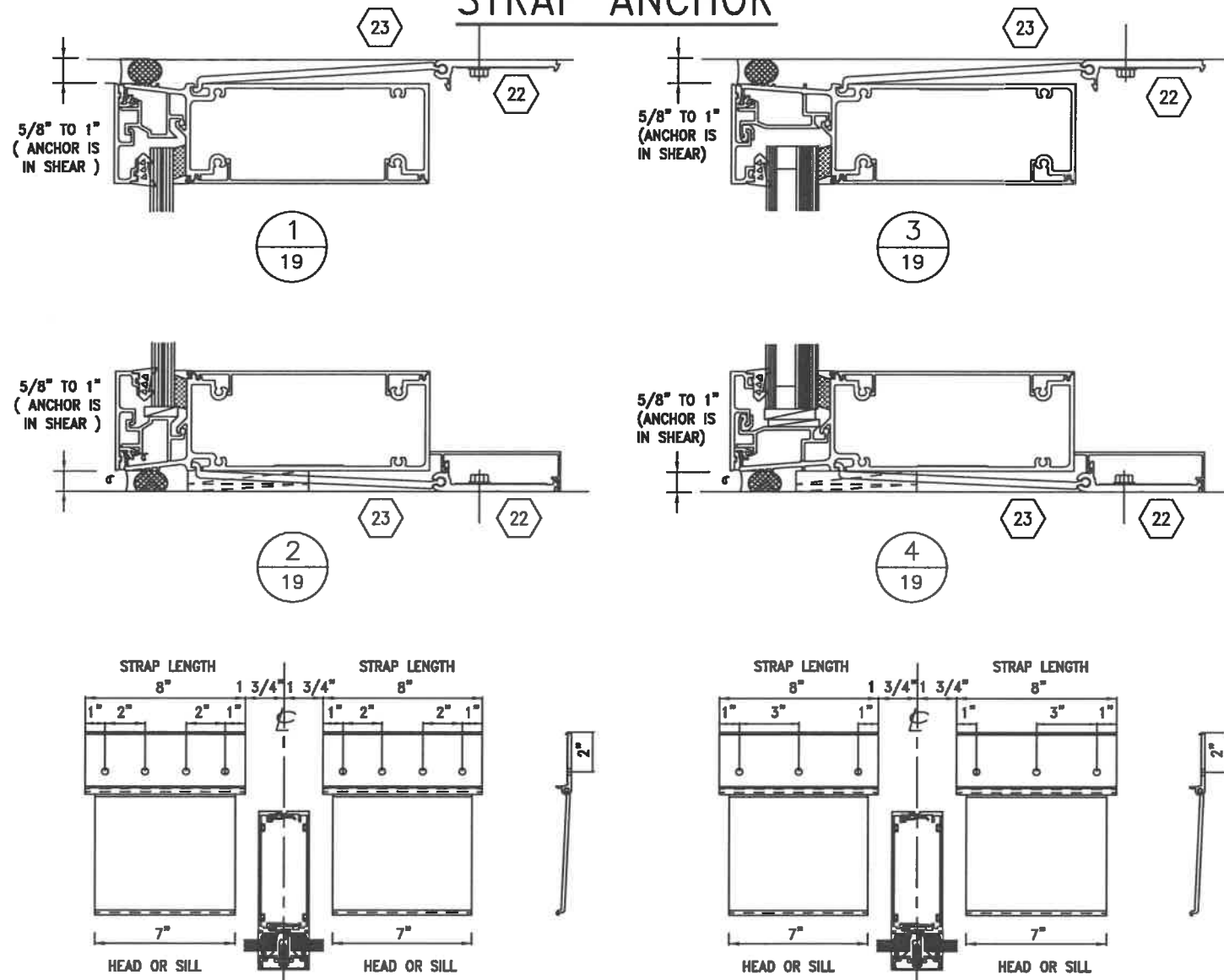
7000 LARGE MISSILE
BULLION SPLICE DETAIL

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. H17000LM

SHEET 18 OF 41

STRAP ANCHOR



TESTED CONDITIONS SHOWN ABOVE.

- (2) 8" STRAPS TESTED TO 2715# END REACTION
- (1) 8" STRAP TESTED TO 1,345# END REACTION
- ANCHORS MAY BE MADE LONGER TO ACCOMMODATE FASTENERS BASED ON PERIMETER CONDITIONS.
- A MINIMUM OF TWO (2) FASTENERS SHALL ALWAYS BE USED.

ANCHOR FASTENER REQUIREMENTS

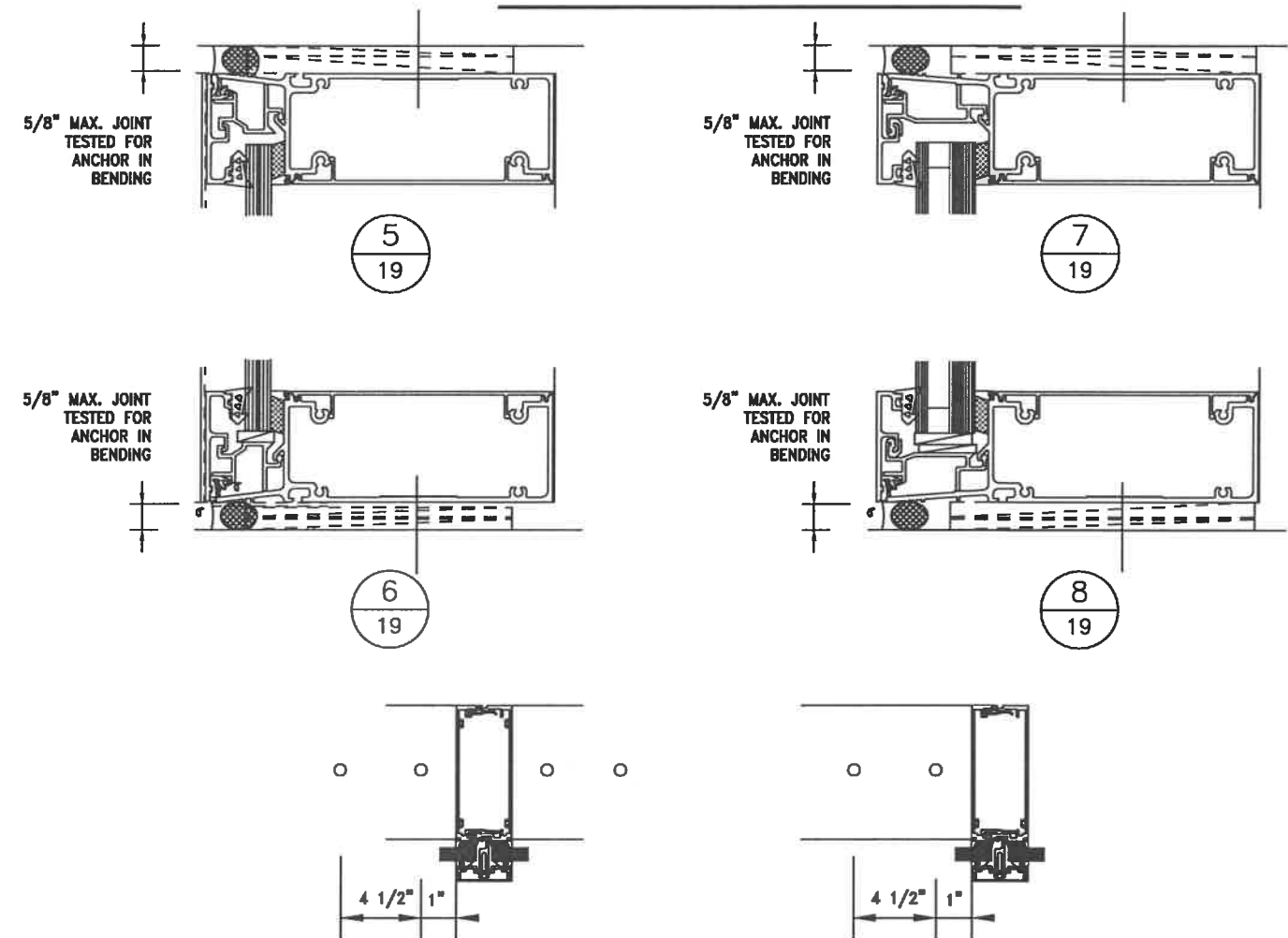
SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	1,305 #	3/8"x3 1/2" LAG BOLT	3	3"	1 1/2"
CONCRETE	2910 #	3/8" DIA POWERS	2	3"	4 1/2"
STEEL	2,715 #	#14 DRIL-FLEX	3	N/A	1"
METAL STUD	2,230 #	#14 DRIL-FLEX	4	N/A	1"

GENERAL NOTES:

- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, BASED ON MOCKUP CALCULATIONS COMPLYING WITH CURRENT FBC
- ACTUAL LENGTH AND NUMBER & SIZE OF HOLES TO BE DETERMINED BY PROJECT SPECIFIC PERIMETER CONDITIONS AND TYPES OF FASTENERS USED.
- CONCRETE STRENGTH MUST BE A MINIMUM OF $F_c=4,500$ PSI
- ALL WOOD AND SHEET METAL SCREWS SHALL BE CARBON STEEL GRADE 5

- ALL SELF DRILLING SCREWS SHALL BE ELCO "DRIL-FLEX" WITH STALGUARD COATING.
- ALL CONCRETE ANCHORS TO BE POWERS "WEDGE BOLTS".

THRU-FRAME ANCHOR



TESTED CONDITIONS SHOWN ABOVE.

- (4) FASTENERS, (2) EITHER SIDE @ INTERMEDIATE VERTICAL TESTED TO 1,345# END REACTION
- (1) FASTENER ON SAME SIDE @ JAMBS TESTED TO 1185# END REACTION
- FASTENER SPACING AND QUANTITY MAY CHANGE BASED ON PERIMETER CONDITIONS.
- A MINIMUM OF TWO (2) FASTENERS SHALL ALWAYS BE USED (EXCEPT AT JAMBS).

ANCHOR FASTENER REQUIREMENTS

SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	1,345 #	3/8" DIA LAG BOLT	4	3"	1 1/2"
CONCRETE	1,345 #	3/8" DIA.	4	3"	2 11/16"
STEEL	1,345 #	3/8" DIA	4	N/A	1"
METAL STUD	1,345 #	1/4" DIA DRIL-FLEX	4	N/A	1"

Larson Engineering, Inc.
3524 Labore Road
White Bear Lake, MN 55110
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DADE CO. STAMP

PRODUCT REVISED
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NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**

By: *Manuel Perez*
Miami-Dade Product Control

Ethan A. Charpentier
No. 65106
Professional Engineer
STATE OF FLORIDA
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE
ANCHOR APPLICATIONS

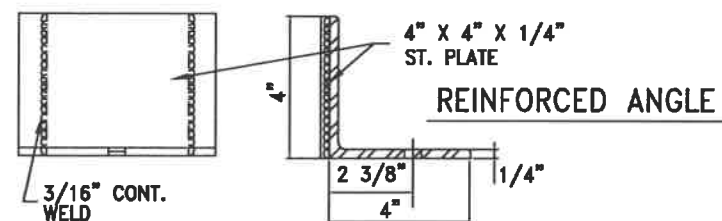
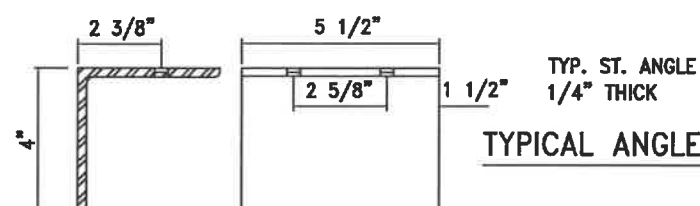
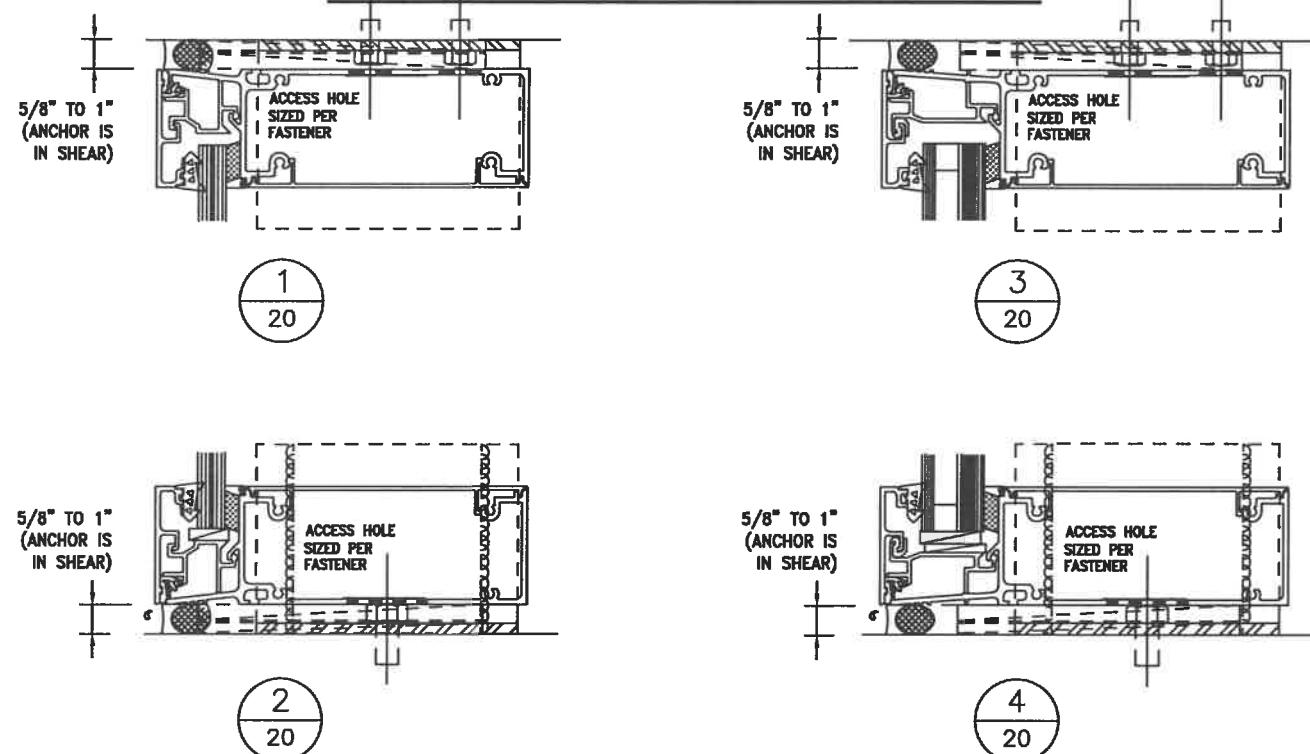
STRAP & THRU-FRAME

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 19 OF 41

STEEL ANGLES IN VERTICALS



- TESTED CONDITIONS SHOWN ABOVE
- TYPICAL ANCHOR USED w/ (2) FASTENERS
 - REINFORCED ANGLE USED w/ (1) FASTENER. REINFORCING PLATE ADDED TO PREVENT TWIST IMPOSED BY ONLY (1) FASTENER
 - ANCHORS OCCUR ON EACH SIDE OF VERTICAL, (1) @ JAMB

ANCHOR FASTENER REQUIREMENTS FOR TYP. ANGLE

SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	1,175 #	3/8" DIA LAG	4	3"	1 1/2"
CONCRETE	N/A	N/A	N/A	N/A	N/A
STEEL	4,520 #	3/8" DIA	4	N/A	1"
METAL STUD	860 #	#14 DRIL-FLEX	4	N/A	1"

ANCHOR FASTENER REQUIREMENTS FOR REIN. ANGLE

SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	575 #	3/8" DIA LAG	2	3"	1 1/2"
CONCRETE	4,520 #	5/8" DIA	2	4"	4 13/16"
STEEL	3,470 #	3/8" DIA	2	N/A	1"
METAL STUD	595 #	#14 DRIL-FLEX	2	N/A	1"

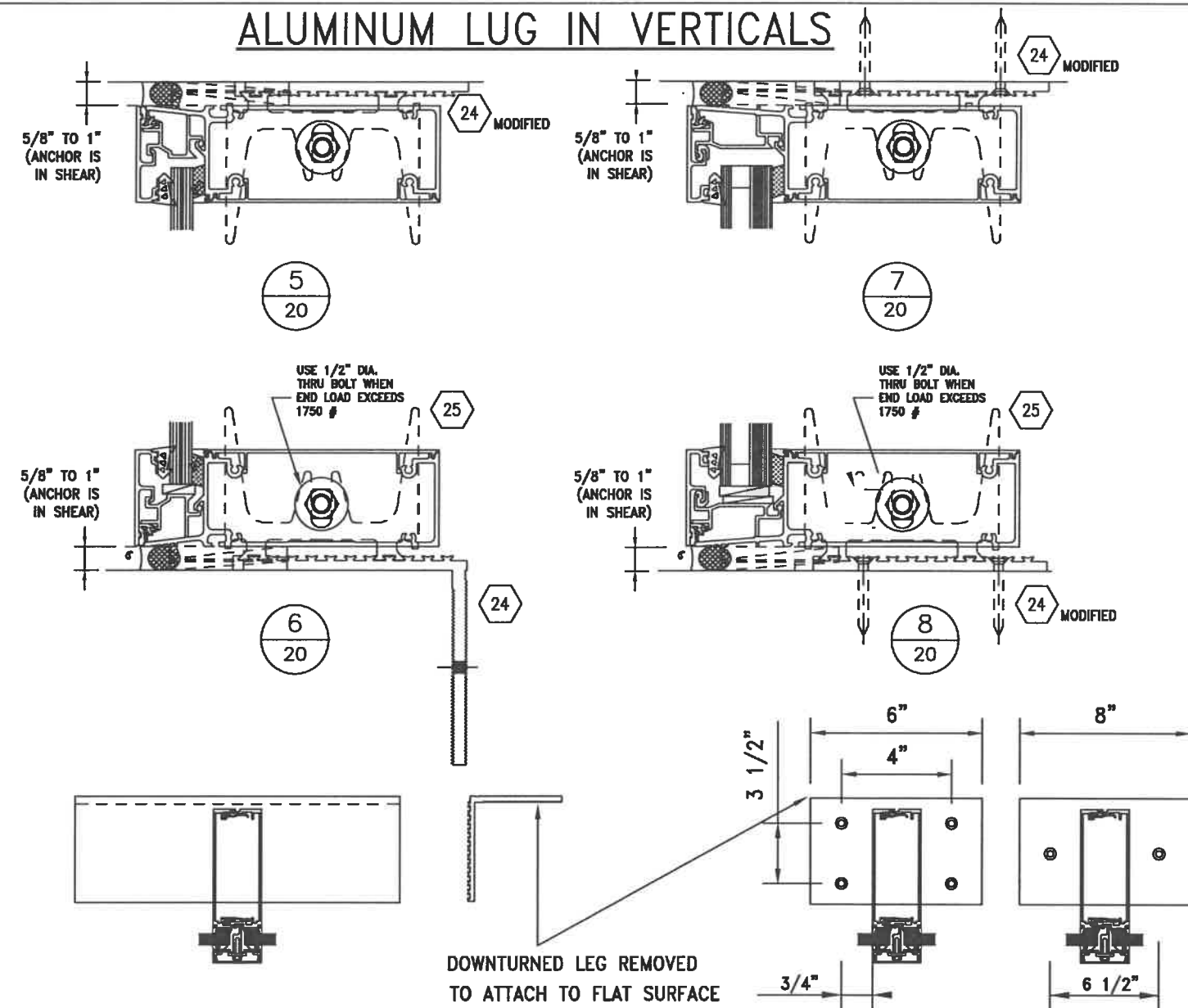
6 ** STEEL ANGLE AND BACKER PLATE MUST BE 50 KSI MINIMUM
 6 REINFORCED ANGLE INTO CONCRETE **

GENERAL NOTES:

- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, BASED ON MOCKUP CALCULATIONS COMPLYING WITH CURRENT FBC
- ACTUAL LENGTH AND NUMBER & SIZE OF HOLES TO BE DETERMINED BY PROJECT SPECIFIC PERIMETER CONDITIONS AND TYPES OF FASTENERS USED.
- CONCRETE STRENGTH MUST BE A MINIMUM OF $F_c=4,500$ PSI
- ALL WOOD AND SHEET METAL SCREWS SHALL BE CARBON STEEL GRADE 5

- ALL SELF DRILLING SCREWS SHALL BE ELCO "DRIL-FLEX" WITH STALGUARD COATING.
- ALL CONCRETE ANCHORS TO BE POWERS "WEDGE BOLTS".

ALUMINUM LUG IN VERTICALS



- TESTED CONDITIONS SHOWN ABOVE
- LUG ANCHOR NOT TESTED AT A HEAD CONDITION
 - WHEN TYPICAL ANCHOR IS USED QUANTITY AND SPACING OF FASTENERS IN DOWN-TURNED LEG TO BE DETERMINED BY PERIMETER CONDITIONS.
 - MODIFIED ANCHOR USE w/ (4) FASTENERS IN TOP LEG AS SHOWN

ANCHOR FASTENER REQUIREMENTS

SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	1,110 #	3/8" DIA LAG	4	3"	1 1/2"
CONCRETE	2,715 #	1/2" DIA	2	4 1/8"	3 1/8"
STEEL	2,715 #	#14 DRIL-FLEX	4	N/A	1"
METAL STUD	1,350 #	#14 DRIL-FLEX	4	N/A	1"

Larson Engineering
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 White Bear Lake, MN 55110
 (P) 651.481.9120 (F) 651.481.9204

DADE CO. STAMP

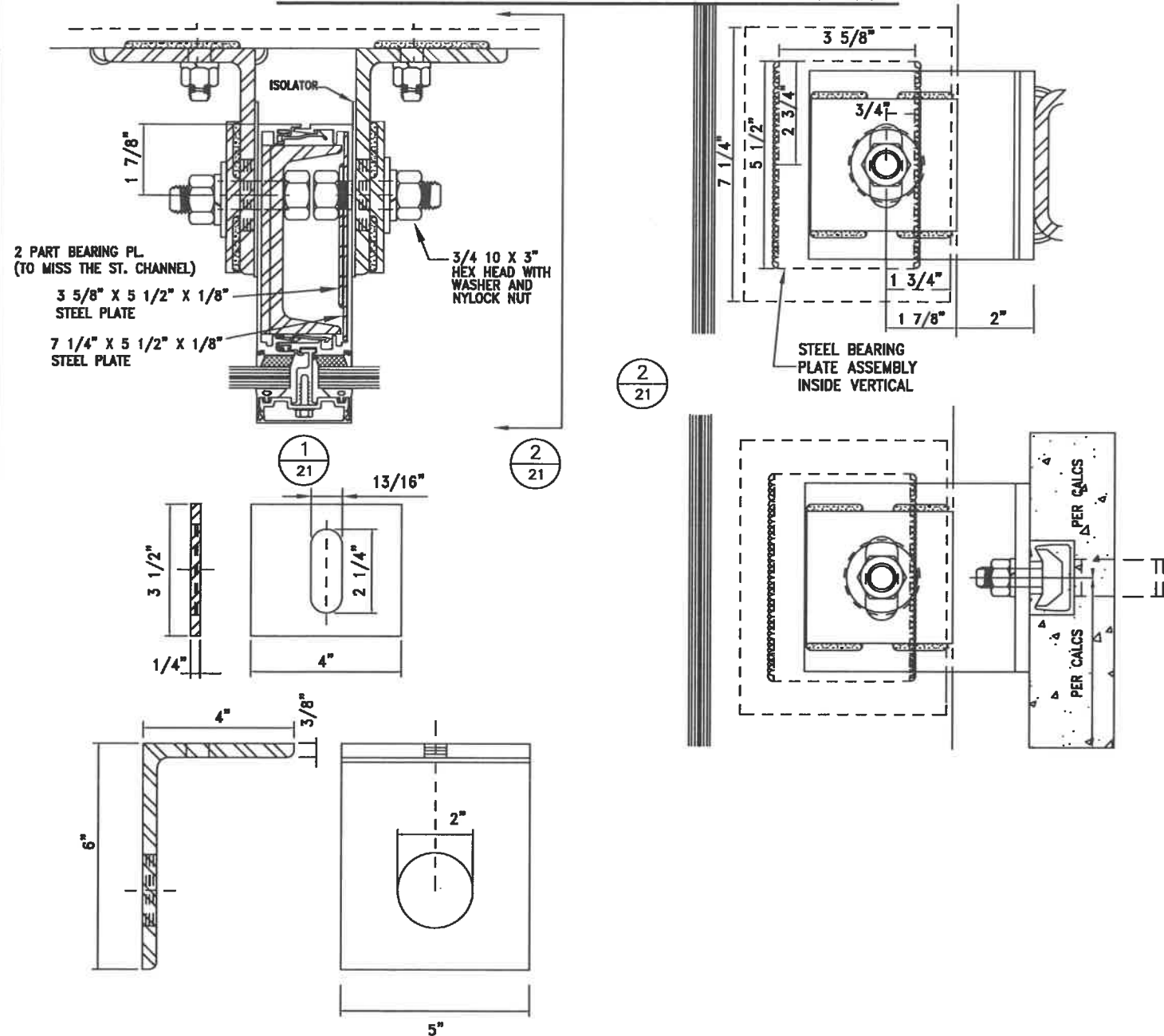
PRODUCT REVISED
 as complying with the Florida Building Code
 NOA-No. **21-0405.14**
 Expiration Date: **09/02/2024**
 By: *Manuel Perez*
 Miami-Dade Product Control

Ethan A. Charpentier
 LICENSE
 No. 65106
 ENGINEER-STAR
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 MAY 17 2021
 LIMITED TO STRUCTURAL DESIGN
 Florida Firm No. F-0200005175
 Certificate of Authorization #9803
 Ethan A. Charpentier
 Registration No. 65106

Harmon
 HI 7000 LARGE MISSILE
 ANCHOR APPLICATIONS

DATE	DATE
06/28/04	6/17/16
11/18/08	03/05/19
3/10/09	02/25/21
3/16/09	
5/22/12	
10/03/14	
DWG. NO. HI7000LM	
SHEET 20 OF 41	

TWIN SPAN MIDPOINT ANCHOR



TESTED CONDITION SHOWN ABOVE.

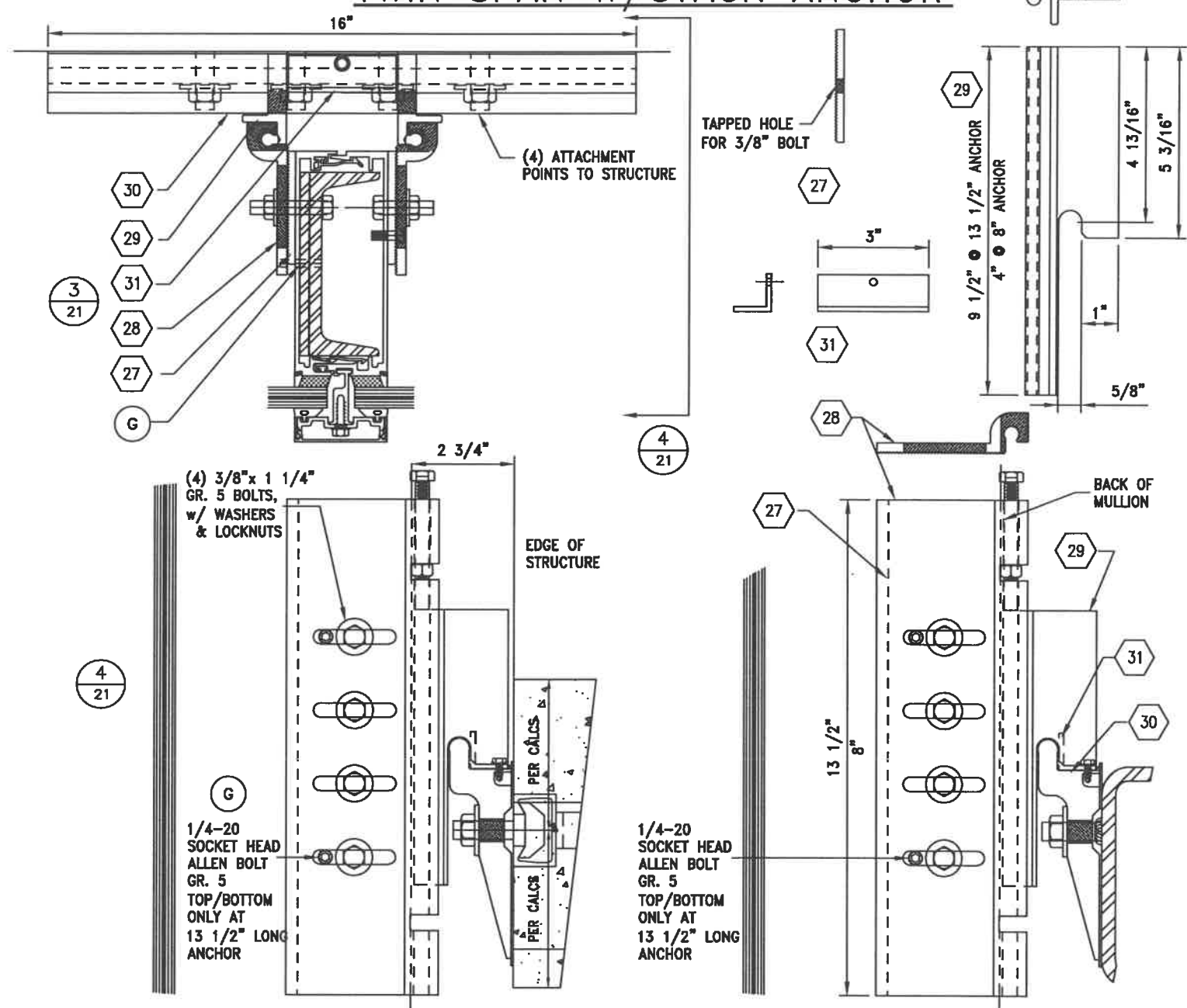
- ANCHOR ACCOMODATED 8,890 # WL REACTION
- ANCHORS MAY BE MADE LONGER TO ACCOMMODATE MORE FASTENERS BASED ON PERIMETER CONDITIONS.
- WELD SIZES TO BE DETERMINED ON A PER JOB BASIS.

GENERAL NOTES:


- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, BASED ON MOCKUP CALCULATIONS COMPLYING WITH CURRENT FBC
- ACTUAL LENGTH AND NUMBER & SIZE OF HOLES TO BE DETERMINED BY PROJECT SPECIFIC PERIMETER CONDITIONS AND TYPES OF FASTENERS USED.
- CONCRETE STRENGTH MUST BE A MINIMUM OF $F_c=4,500$ PSI
- ALL WOOD AND SHEET METAL SCREWS SHALL BE CARBON STEEL GRADE 5

- ALL SELF DRILLING SCREWS SHALL BE ELCO "DRIL-FLEX" WITH STALGUARD COATING.
- ALL CONCRETE ANCHORS TO BE POWERS "WEDGE BOLTS".

TWIN SPAN W/STACK ANCHOR



TESTED CONDITION SHOWN ABOVE.

- ANCHOR ACCOMODATED 10,500# WL REACTION, 1,000# DL REACTION FOR 13 1/2" LONG ANCHOR
- ANCHORS MAY BE MADE LONGER TO ACCOMADATE MORE FASTENERS BASED ON PERIMETER CONDITIONS.
- 8" ANCHOR ACCOMODATED 10,500# WL REACTION,
WHEN USED AS WINDLOAD ONLY
- 8" ANCHOR ACCOMODATED 4,400# WL
WITH 1,000# DEADLOAD APPLIED
- 

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3524 Labore Road
White Bear Lake, MN 55110
- ANA. CHARPENT
LICENSE

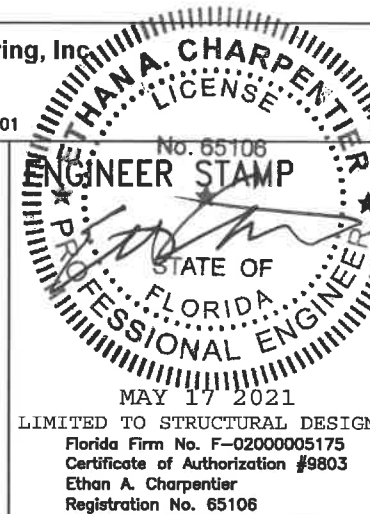


Larson Engineering, Inc.
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White Bear Lake, MN 55110
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By: Manuel Perez
Miami-Dade Product Control



Harmon

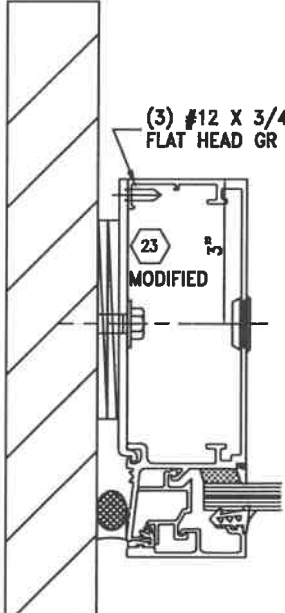
HI 7000 LARGE MISSILE ANCHOR APPLICATIONS

EDGE OF SLAB		
DATE: 06/28/04	6	6/17/16
1 11/18/08	7	03/05/19
2 3/10/09	8	02/25/21
3 3/16/09		
4 5/22/12		
5 10/03/14		

DWG. NO. H17000LM

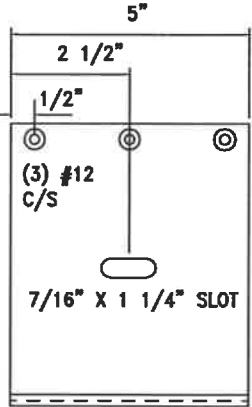
SHEET 21 OF 41

JAMB ANCHOR



1
22

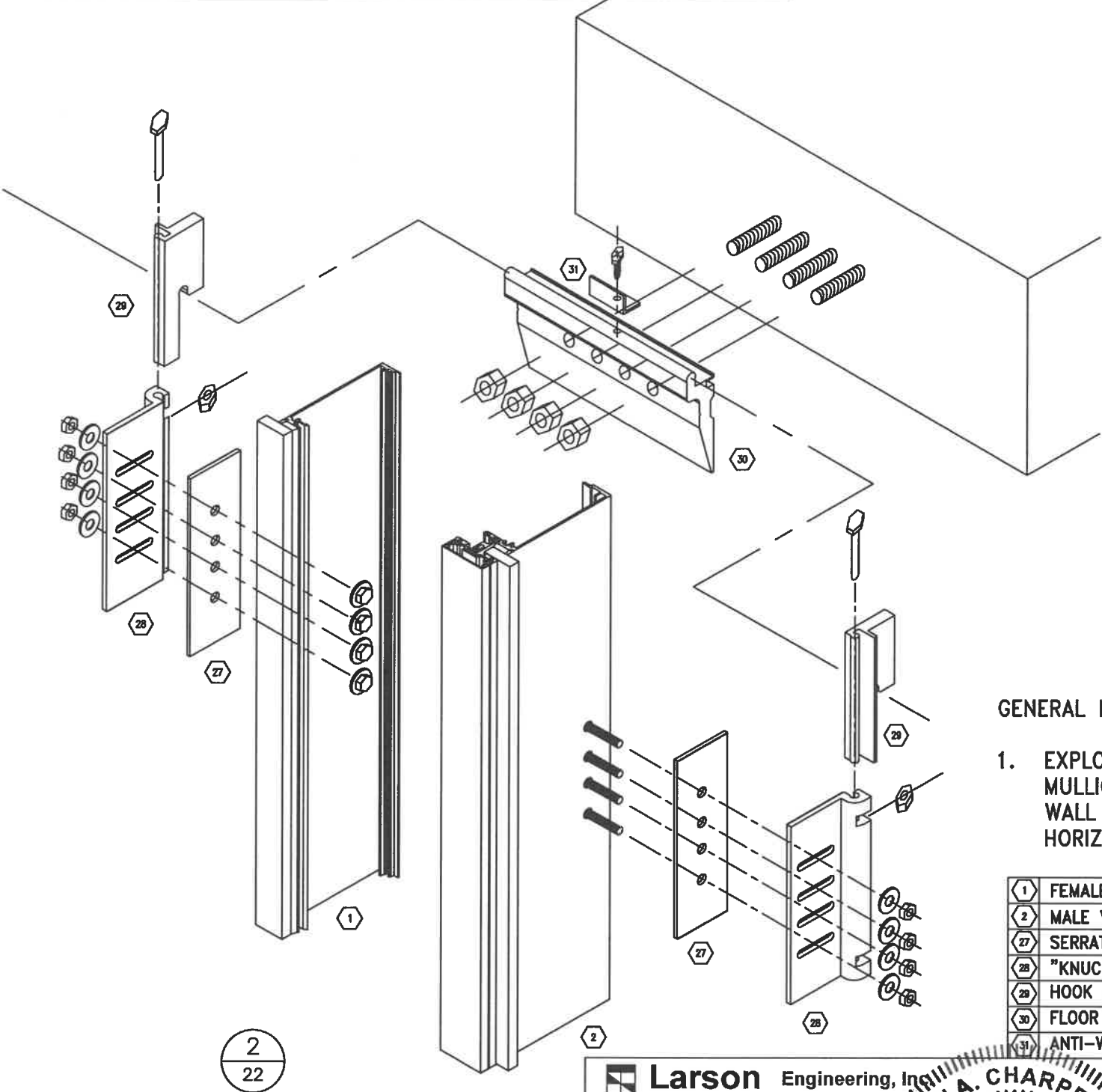
MODIFIED STRAP
END REMOVED TO FLUSH
OUT w/ BACK OF JAMB



TESTED CONDITIONS SHOWN ABOVE.
- (1) 5" MODIFIED STRAP TESTED TO 1870# END REACTION
- ANCHORS MAY BE MADE LONGER TO ACCOMMODATE
MORE FASTENERS BASED ON JOB SPECIFIC PERIMETER
CONDITIONS.

GENERAL NOTES:
- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM,
BASED ON MOCKUP CALCULATIONS COMPLYING WITH CURRENT FBC
- ACTUAL LENGTH AND NUMBER & SIZE OF HOLES TO BE
DETERMINED BY PROJECT SPECIFIC PERIMETER
CONDITIONS AND TYPES OF FASTENERS USED.
- CONCRETE STRENGTH MUST BE A MINIMUM OF $F_c=4,500$ PSI
- ALL WOOD AND SHEET METAL SCREWS SHALL BE CARBON STEEL
GRADE 5

EXPLODED VIEW OF TYP. CURTAIN WALL ANCHOR



GENERAL NOTES:
1. EXPLODED VIEW OF TYPICAL
MULLION ANCHOR FOR CURTAIN
WALL APPLICATION WITH STACK
HORIZONTAL

1	FEMALE VERTICAL MULLION	306001
2	MALE VERTICAL MULLION	306002
27	SERRATED PLATE	930110
28	"KNUCKLE" ANCHOR	930109
29	HOOK ANCHOR	930108
30	FLOOR EDGE PLATE	930111
31	ANTI-WALK ANGLE	.

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Miami-Dade Product Control

ETHAN A. CHARPENTIER
No. 65106
ENGINEER STAMP
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
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Ethan A. Charpentier
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Harmon

HI 7000 LARGE MISSILE
ANCHOR APPLICATIONS

EXPLODED VIEW	DATE: 06/28/04	6/17/16
1	11/18/08	03/05/19
2	3/10/09	02/25/21
3	3/16/09	
4	5/22/12	
5	10/03/14	

DWG. NO. HI7000LM

JAMB MULLIONS SINGLE SPAN

REINFORCING
OPTIONS

		Case 8	Case 9	Case 10	Case 11
	"B"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	3'-0"	13'-7"	16'-5"	18'-3"	20'-1"
		656	793	879	967
	4'-0"	11'-10"	15'-4"	17'-0"	18'-9"
		751	972	1077	1185
	5'-0"	10'-8"	14'-3"	16'-2"	17'-9"
		836	1118	1264	1391
	6'-0"	9'-9"	13'-1"	15'-5"	17'-0"
		912	1220	1442	1587
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	3'-0"	12'-7"	15'-10"	17'-6"	19'-3"
		708	890	987	1086
	4'-0"	11'-0"	14'-8"	16'-4"	18'-0"
		811	1085	1209	1331
	5'-0"	9'-10"	13'-2"	15'-6"	17'-1"
		902	1207	1419	1561
	6'-0"	9'-0"	12'-1"	14'-10"	16'-4"
		985	1318	1618	1781
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	3'-0"	11'-9"	15'-3"	16'-11"	18'-8"
		757	984	1091	1200
	4'-0"	10'-3"	13'-9"	15'-10"	17'-5"
		867	1160	1337	1471
	5'-0"	9'-3"	12'-4"	15'-0"	16'-6"
		965	1291	1568	1726
	6'-0"	8'-5"	11'-4"	13'-11"	15'-10"
		1053	1409	1732	1969
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	3'-0"	11'-1"	14'-10"	16'-5"	18'-1"
		803	1074	1191	1311
	4'-0"	9'-8"	12'-11"	15'-4"	16'-11"
		920	1230	1460	1607
	5'-0"	8'-8"	11'-8"	14'-4"	16'-0"
		1023	1369	1683	1885
	6'-0"	7'-11"	10'-8"	13'-1"	15'-4"
		1117	1494	1837	2150
UP TO MAXIMUM 100 PSF POS. OR NEG. LOAD	3'-0"	10'-6"	14'-1"	16'-0"	17'-8"
		847	1133	1289	1419
	4'-0"	9'-2"	12'-3"	15'-0"	16'-6"
		970	1297	1580	1739
	5'-0"	8'-3"	11'-0"	13'-7"	15'-7"
		1079	1443	1774	2040
	6'-0"	7'-6"	10'-1"	12'-5"	14'-11"
		1177	1575	1936	2327
UP TO MAXIMUM 110 PSF POS. OR NEG. LOAD	3'-0"	10'-0"	13'-5"	15'-8"	17'-3"
		888	1188	1385	1524
	4'-0"	8'-9"	11'-8"	14'-5"	16'-1"
		1017	1360	1672	1868
	5'-0"	7'-10"	10'-6"	12'-11"	15'-3"
		1131	1513	1860	2191
	6'-0"	7'-2"	9'-8"	11'-10"	13'-9"
		1235	1652	2031	2355
UP TO MAXIMUM 110 PSF POS. OR 120 PSF NEG. LOAD	3'-0"	9'-7"	12'-10"	15'-4"	16'-10"
		927	1241	1478	1626
	4'-0"	8'-4"	11'-2"	13'-9"	15'-9"
		1062	1421	1746	1993
	5'-0"	7'-6"	10'-1"	12'-5"	14'-11"
		1181	1581	1943	2339
	6'-0"	6'-11"	9'-3"	11'-4"	12'-7"
		1290	1726	2121	2355
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3'-0"	9'-3"	12'-4"	15'-0"	16'-6"
		965	1291	1569	1727
	4'-0"	8'-0"	10'-9"	13'-3"	15'-5"
		1105	1479	1818	2117
	5'-0"	7'-3"	9'-8"	11'-11"	13'-10"
		1230	1645	2022	2355
	6'-0"	6'-7"	8'-10"	10'-11"	11'-8"
		1342	1796	2208	2355

JAMB MULLIONS TWIN SPAN


REINFORCING
OPTIONS

		Case 8	Case 9	Case 10	Case 11
	"B"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	3'-0"	14'-7"	14'-7"	14'-7"	14'-7"
		RE 538	538	538	538
	4'-0"	13'-7"	14'-7"	14'-7"	14'-7"
		RE 658	706	706	706
	5'-0"	12'-3"	14'-7"	14'-7"	14'-7"
		RE 732	874	874	874
	6'-0"	11'-2"	14'-7"	14'-7"	14'-7"
		RE 799	1041	1041	1041
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	3'-0"	14'-5"	14'-7"	14'-7"	14'-7"
		RE 620	628	628	628
	4'-0"	12'-7"	14'-7"	14'-7"	14'-7"
		RE 710	824	824	824
	5'-0"	11'-4"	14'-7"	14'-7"	14'-7"
		RE 790	1019	1019	1019
	6'-0"	10'-4"	13'-11"	14'-7"	14'-7"
		RE 863	1154	1215	1215
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	3'-0"	13'-6"	14'-7"	14'-7"	14'-7"
		RE 663	718	718	718
	4'-0"	11'-9"	14'-7"	14'-7"	14'-7"
		RE 759	941	941	941
	5'-0"	10'-7"	14'-2"	14'-7"	14'-7"
		RE 845	1130	1185	1185
	6'-0"	9'-8"	13'-0"	14'-7"	14'-7"
		RE 922	1234	1388	1388
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	3'-0"	12'-9"	14'-7"	14'-7"	14'-7"
		RE 703	807	807	807
	4'-0"	11'-1"	14'-7"	14'-7"	14'-7"
		RE 805	1059	1059	1059
	5'-0"	10'-0"	13'-4"	14'-7"	14'-7"
		RE 896	1198	1310	1310
	6'-0"	9'-2"	12'-3"	14'-7"	14'-7"
		RE 978	1308	1562	1562
UP TO MAXIMUM 100 PSF POS. OR NEG. LOAD	3'-0"	12'-7"	14'-7"	14'-7"	14'-7"
		RE 703	807	807	807
	4'-0"	11'-1"	14'-7"	14'-7"	14'-7"
		RE 805	1059	1059	1059
	5'-0"	10'-0"	13'-4"	14'-7"	14'-7"
		RE 896	1198	1310	1310
	6'-0"	9'-2"	12'-3"	14'-7"	14'-7"
		RE 978	1308	1562	1562
UP TO MAXIMUM 110 PSF POS. OR NEG. LOAD	3'-0"	12'-5"	14'-7"	14'-7"	14'-7"
		RE 703	807	807	807
	4'-0"	11'-1"	14'-7"	14'-7"	14'-7"
		RE 805	1059	1059	1059
	5'-0"	10'-0"	13'-4"	14'-7"	14'-7"
		RE 896	1198	1310	1310
	6'-0"	9'-2"	12'-3"	14'-7"	14'-7"
		RE 978	1308	1562	1562
UP TO MAXIMUM 110 PSF POS. OR 130 PSF NEG. LOAD	3'-0"	12'-3"	14'-7"	14'-7"	14'-7"
		RE 703	807	807	807
	4'-0"	11'-1"	14'-7"	14'-7"	14'-7"
		RE 805	1059	1059	1059
	5'-0"	10'-0"	13'-4"	14'-7"	14'-7"
		RE 896	1198	1310	1310
	6'-0"	9'-2"	12'-3"	14'-7"	14'-7"
		RE 978	1308	1562	1562

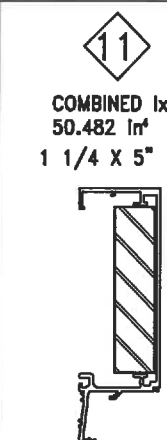
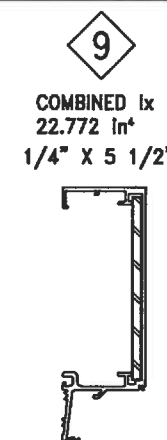
REINFORCING
OPTIONS

		Case 8	Case 9	Case 10	Case 11
	"B"	"L"/"R"	"L"/"R"	"L"/"R"	"L"/"R"
UP TO MAXIMUM 100 PSF POS. OR NEG. LOAD	3'-0"	12'-1"	14'-7"	14'-7"	14'-7"
		RE 741	897	897	897
	4'-0"	10'-8"	14'-1"	14'-7"	14'-7"
		RE 849	1136	1176	1176
	5'-0"	9'-6"	12'-8"	14'-7"	14'-7"
		RE 944	1263	1456	1456
	6'-0"	8'-8"	11'-7"	14'-3"	14'-7"
		RE 1031	1379	1695	1735
UP TO MAXIMUM 110 PSF POS. OR NEG. LOAD	3'-0"	11'-6"	14'-7"	14'-7"	14'-7"
		RE 777	987	987	987
	4'-0"	10'-0"	13'-5"	14'-7"	14'-7"
		RE 890	1191	1294	1294
	5'-0"	9'-0"	12'-1"	14'-7"	14'-7"
		RE 990	1325	1601	1601
	6'-0"	8'-3"	11'-1"	13'-7"	14'-7"
		RE 1081	1446	1778	1778
UP TO MAXIMUM 120 PSF POS. OR NEG. LOAD	3'-0"	11'-0"	14'-7"	14'-7"	14'-7"
		RE 812	1076	1076	1076
	4'-0"	9'-7"	12'-10"	14'-7"	14'-7"
		RE 930	1244	1412	1412
	5'-0"	8'-8"	11'-7"	14'-3"	14'-7"
		RE 1034	1384	1701	1747
	6'-0"	7'-11"	10'-7"	13'-0"	14'-7"
		RE 1129	1511	1857	1857
UP TO MAXIMUM 130 PSF POS. OR NEG. LOAD	3'-0"	10'-7"	14'-2"	14'-7"	14'-7"
		RE 845	1130	1166	1166
	4'-0"	9'-3"	12'-4"	14'-7"	14'-7"
		RE 968	1295	1529	1529
	5'-0"	8'-4"	11'-1"	13'-8"	14'-7"
		RE 1077	1440	1770	1770
	6'-0"	7'-7"	10'-2"	13'-0"	14'-7"
		RE 1175	1572	1902	1902

GENERAL NOTES:

- JAMB MULLION SPAN TABLES ARE BASED ON MONOLITHIC PART 306004. THIS TABLE IS CONSERVATIVE FOR INSULATED PART 306003.
- SPANS ARE BASED ON 5/8" JOINT DIMENSION AND 95 1/4" MAXIMUM DLO HEIGHT.
- "L" = MAXIMUM MULLION SPAN
- "B" = C/L TO C/L SPACING
- "B" = $\frac{W1 + W2}{2}$ 
- FOR SINGLE SPAN MAXIMUM DEFL. = L/180 or 1"
- (WHEN STEEL RIENF. IS USED, LENGTH OF STEEL IS LENGTH OF SPAN MINUS 12")
- SPANS ARE LIMITED BY MAXIMUM TESTED END REACTIONS
- R= REACTION (REFER TO PAGE 13 FOR BUILDING CONDITION TYPES AND PAGES 19, 20, 21, 23 FOR REACTION DETAIL OPTIONS)

REINFORCING OPTIONS

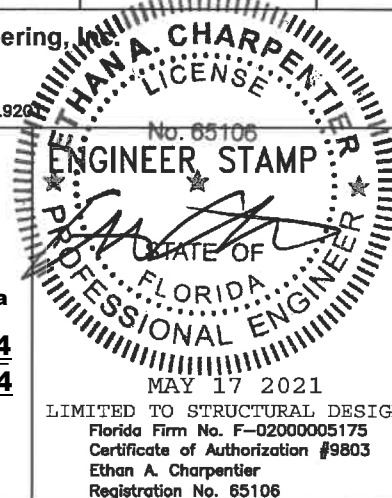


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DADE CO. STAMP

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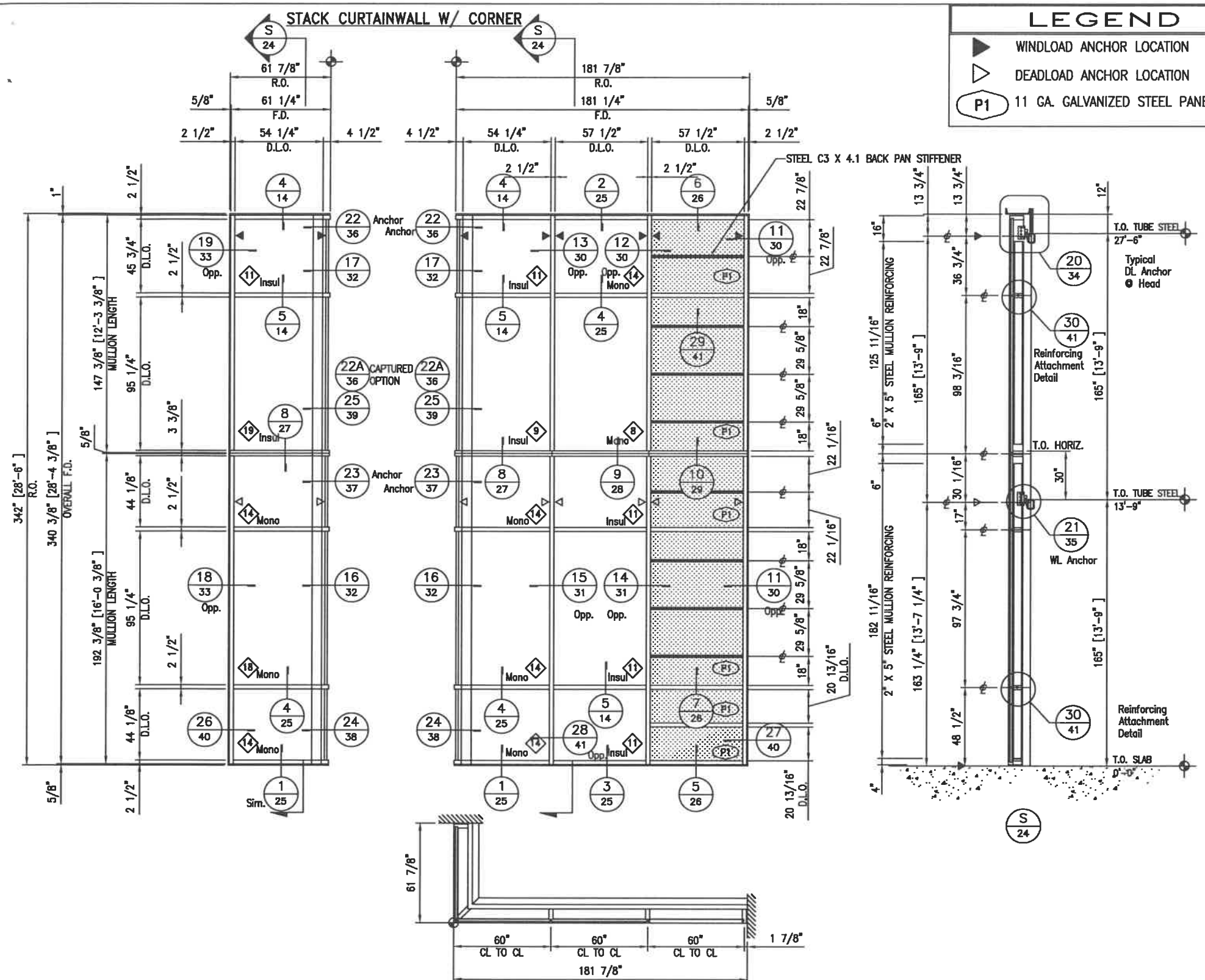


Harmon
HI 7000 LARGE MISSILE
ANCHOR APPLICATIONS

JAMBS	DATE	DATE
1	06/28/04	6/17/16
2	11/18/08	03/05/19
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4	3/16/09	
5	5/22/12	
6	10/03/14	

DWG. NO. HI7000LM

SHEET 23 OF 41



LEGEND

WINDLOAD ANCHOR LOCATION

DEADLOAD ANCHOR LOCATION

P1 11 GA. GALVANIZED STEEL PANEL

HI-7000 OPTIONS

SYSTEM APPLICATION GUIDELINES:

- 1 SELECT GLASS FROM CHARTS ON SHEET 7. NOTE THE GLASS THICKNESS AND 4-SIDE CAPTURED VERSUS CAPTURED/SSG OPTIONS.
- 2 SELECT MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 12 FOR TWIN SPAN w/ STACK HORIZONTAL APPLICATION. APPLICATION BASED ON WIND LOAD, MODULE "B", AND SPAN "L". REFER TO GENERAL NOTES AND GUIDELINES REGARDING SPAN LIMITATIONS AND COMBINATIONS.
- 3 SELECT ANCHOR APPLICATIONS FROM SHEET 13. MAKE SELECTION BASED ON PERIMETER CONDITION AND END REACTIONS. NOTE MAXIMUM TESTED END REACTIONS FOR PROPER APPLICATION.
- 4 SELECT APPROPRIATE DETAILS FROM ELEVATION AT LEFT, BASED ON GLASS APPLICATION AND MULLION REINFORCING REQUIREMENTS. FOR SPECIFIC ANCHOR DETAILS, SEE DETAILS REFERENCED ON ANCHOR APPLICATION SHEET 13.

CORNER APPLICATION

13'-9" SPAN (MAX.) ANCHOR TO ANCHOR
5'-0" MODULE (MAX.)

SEE SHEET 32 FOR DETAILS
SEE DETAIL 22A ON SHEET 36 FOR CAPTURED OPTION.

STACK APPLICATION

57 1/2" DLO MAXIMUM.
MAXIMUM TESTED SHEAR
IN STACK HORIZONTAL= 3,695 #

SEE SHEET 27 FOR DETAILS

GENERAL NOTES:

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PROFESSIONAL ENGINEER

STATE OF FLORIDA

May 17 2021

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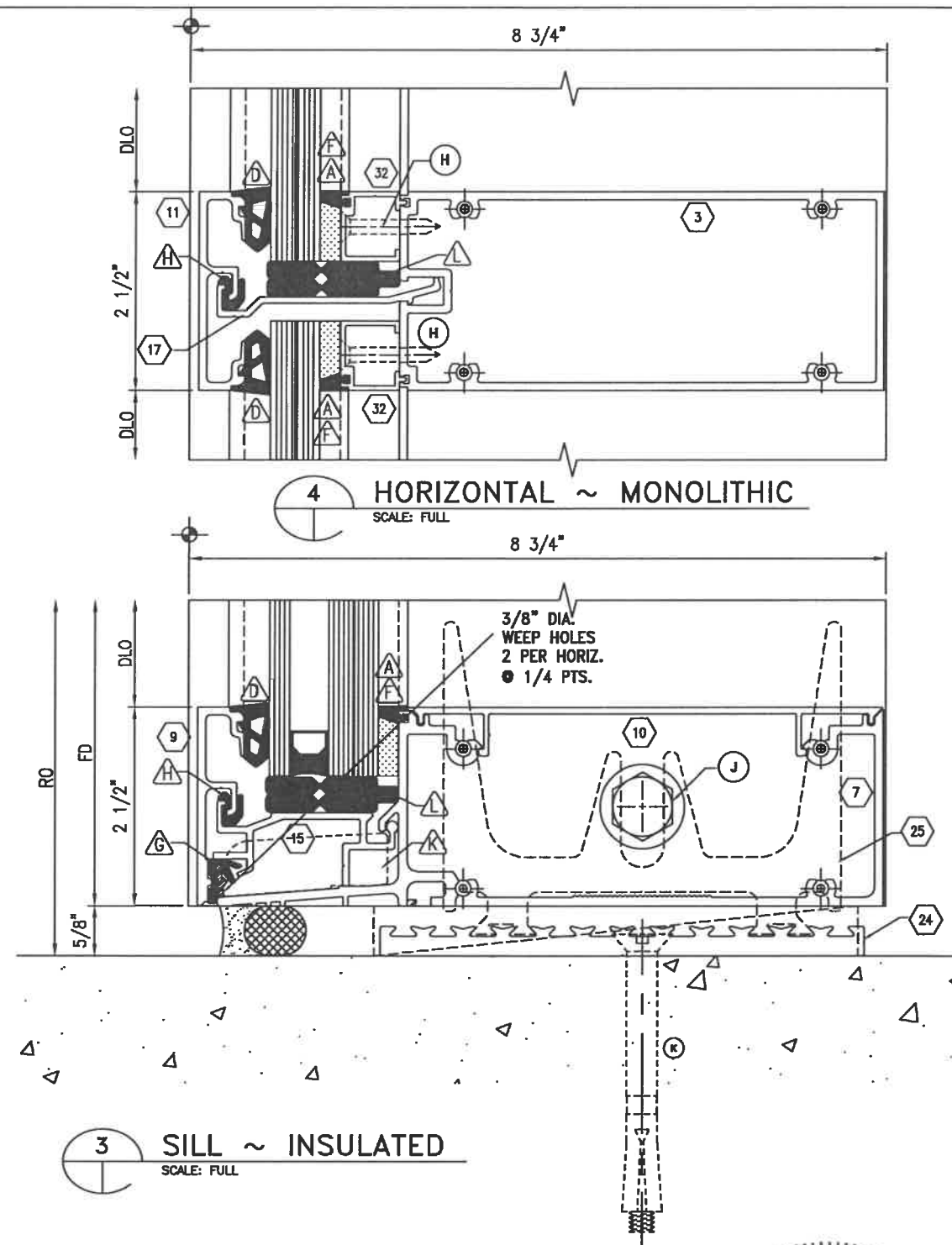
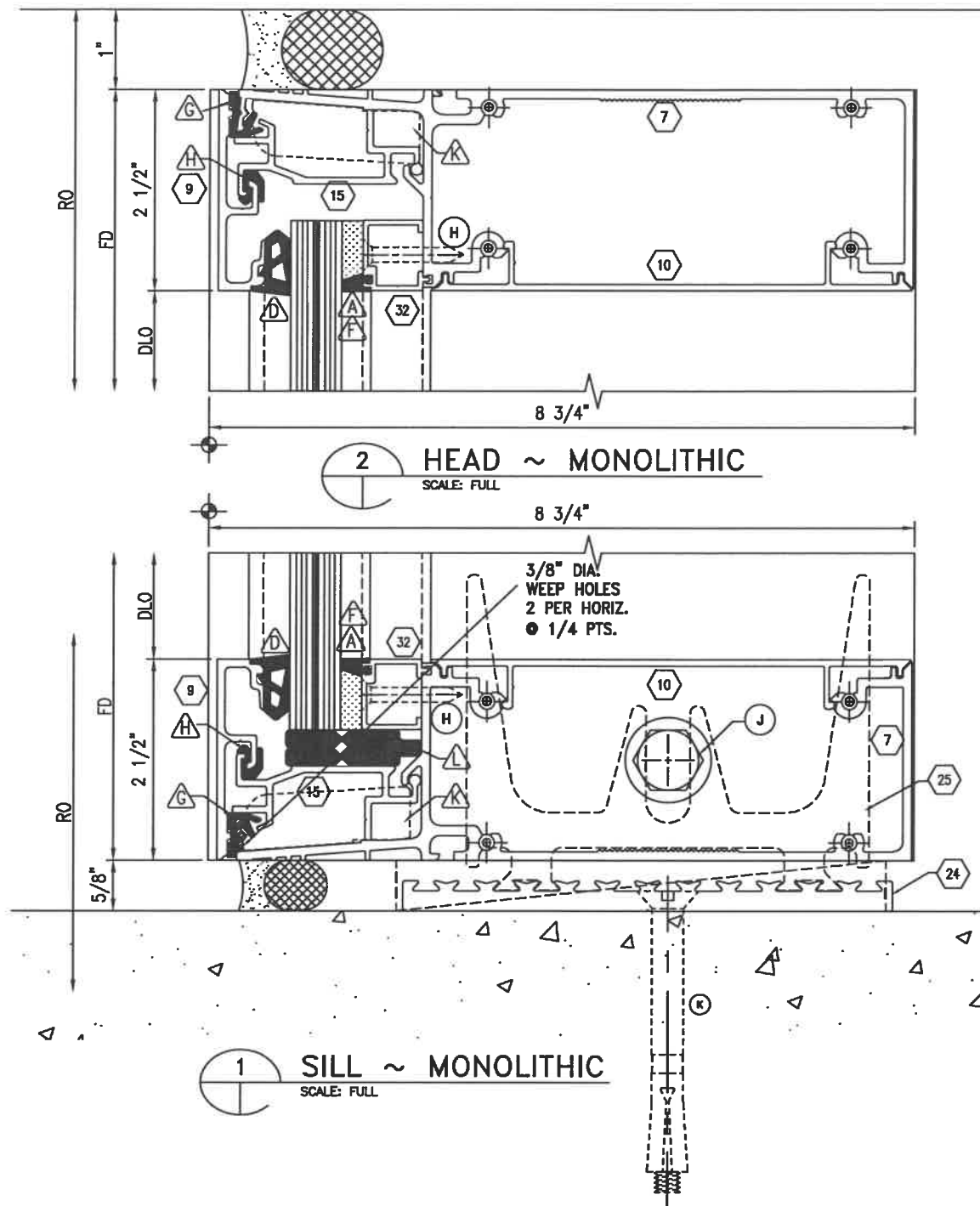
TWIN SPAN APPLICATION
w/ STACK HORIZONTAL

DATE: 06/28/04 6/17/16

1 11/18/08 2 03/05/19
3 3/10/09 4 02/25/21
5 3/16/09
6 5/22/12
7 10/03/14

DWG. NO. HI7000LM

SHEET 24 OF 41



GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 20
- FOR PART IDENTIFICATION REFER TO SHEET 2

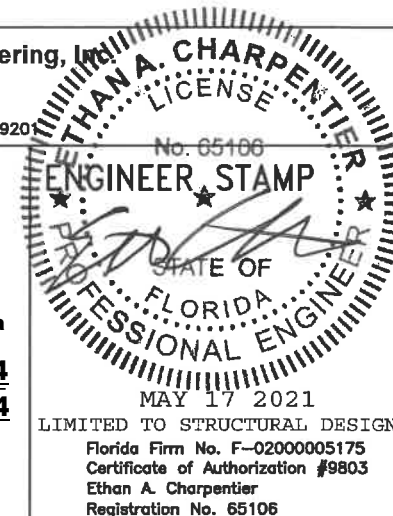
- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

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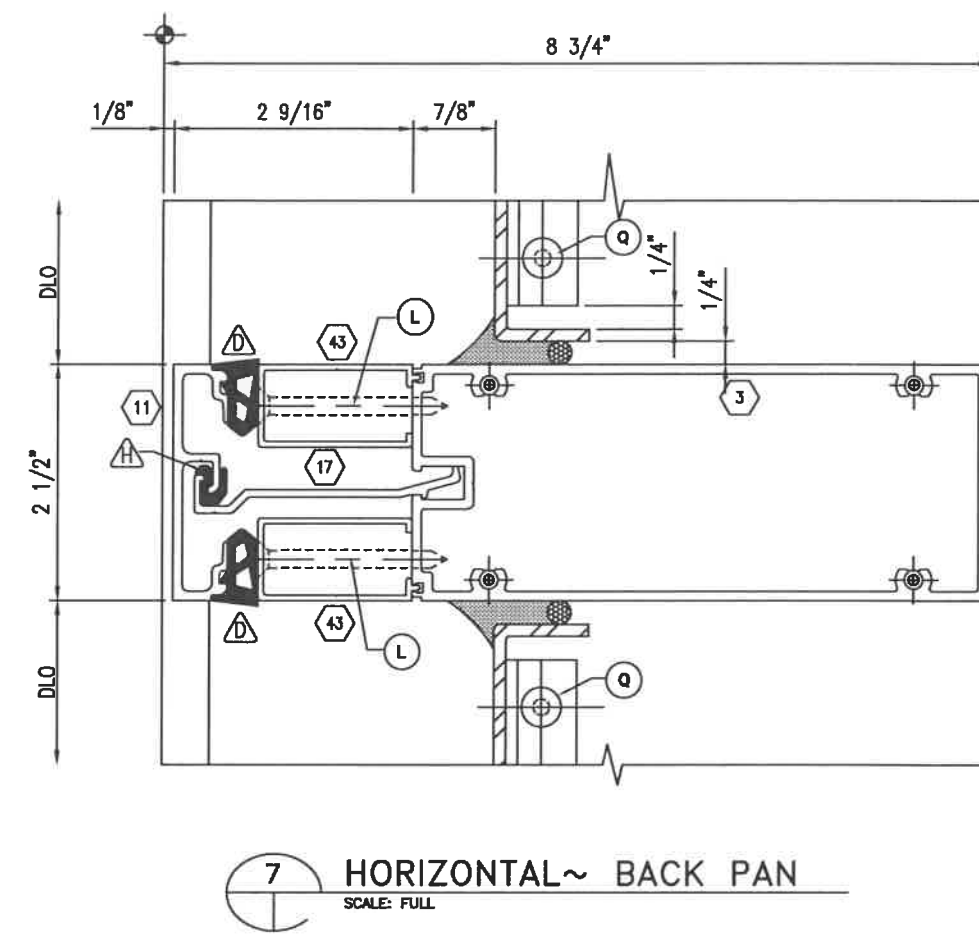
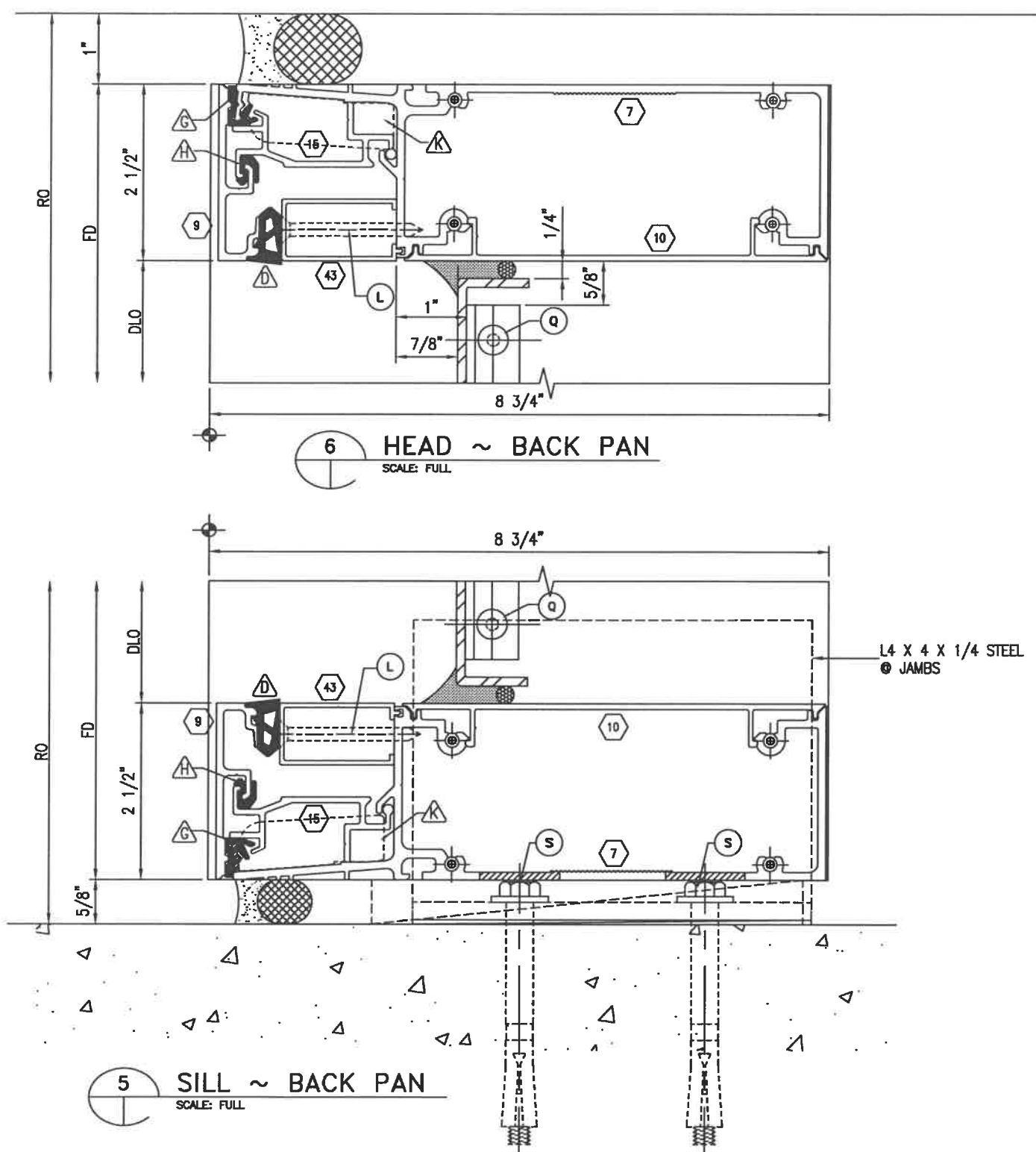
Harmon

HI 7000 LARGE MISSILE
HORIZONTAL DETAILS

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 25 OF 41



GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 20
- FOR PART IDENTIFICATION REFER TO SHEET 2

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

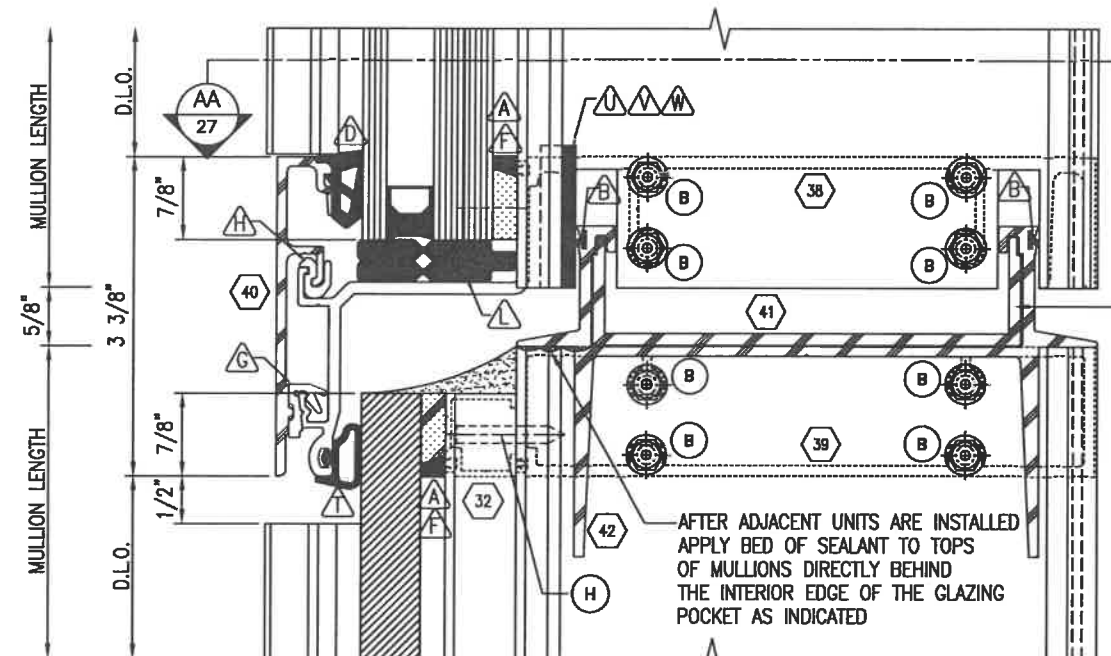
Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

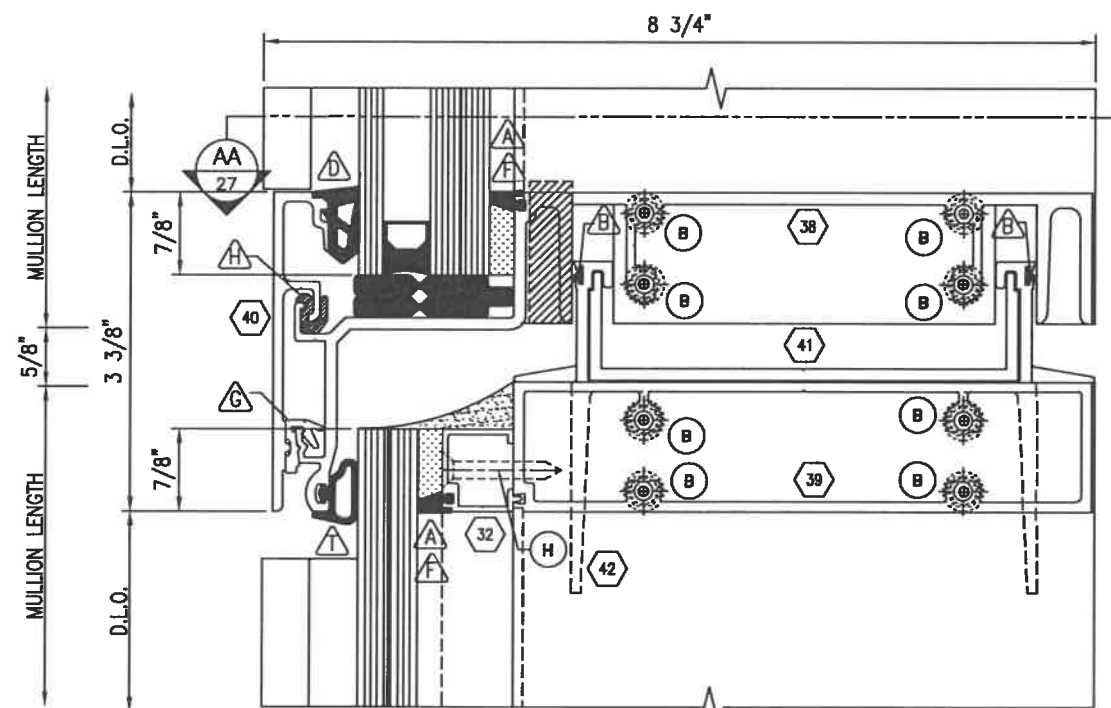
PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
MAY 17 2021
STATE OF FLORIDA
PROFESSIONAL ENGINEER
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

DATE: 06/28/04		6/17/16	
1	11/18/08	7	03/05/19
2	3/10/09	8	02/25/21
3	3/16/09		
4	5/22/12		
5	10/03/14		
DWG. NO. HI7000LM			
SHEET 26 OF 41			



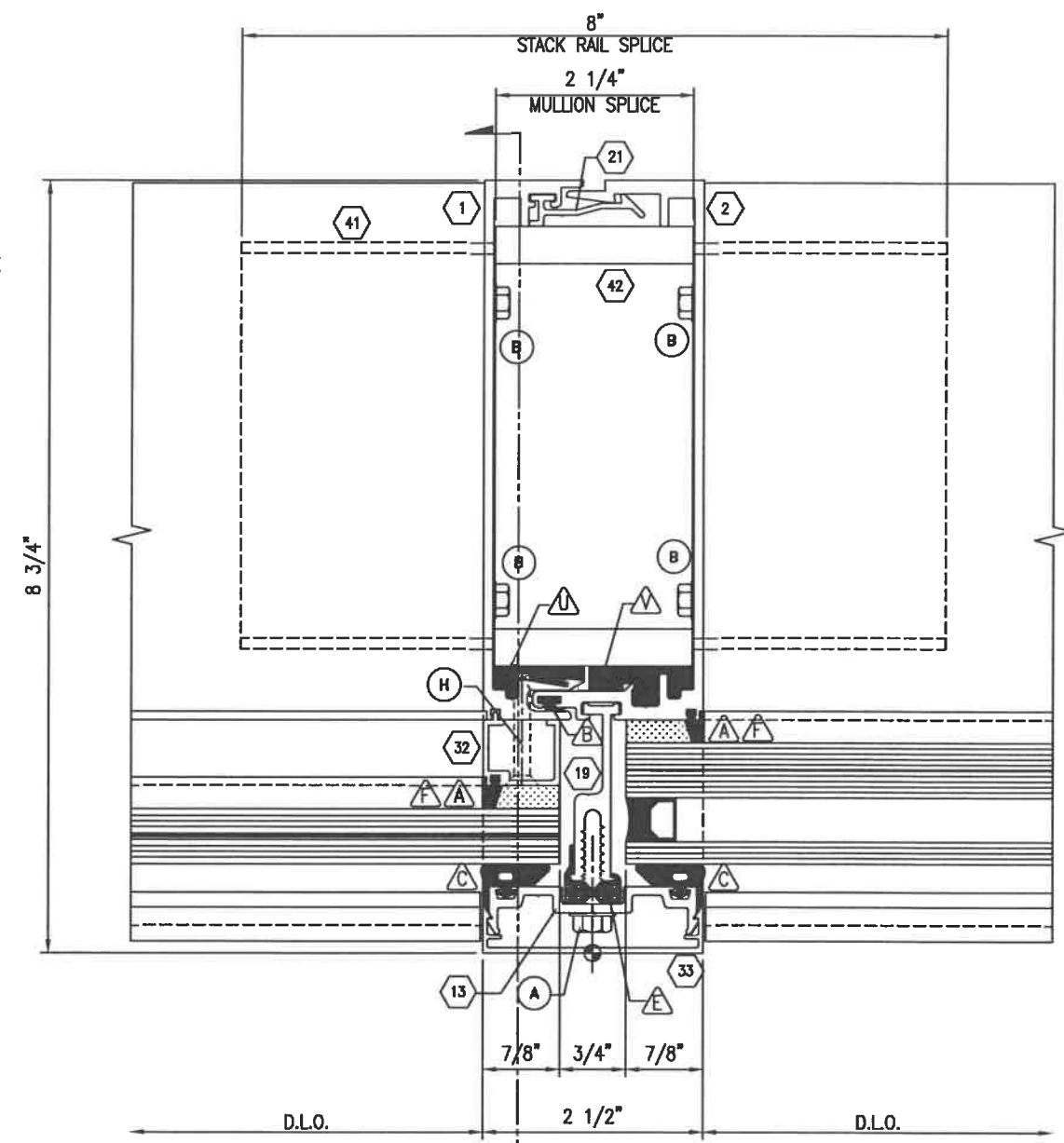
BB SECTION THROUGH STACK
SCALE: FULL



8 STACK HORIZONTAL
SCALE: FULL

MAXIMUM DLO WIDTH=57 1/2"
MAXIMUM SHEAR AT STACK=3,695#

8" LONG STACK RAIL SPLICE
SLID INTO THE STACK RAIL ON FEMALE SIDE
OF UNIT AND TAPED INTO PLACE FOR SHIPPING.
SLIDE OVER TO CENTERLINE OF MULLION @ TIME
OF FRAME ASSEMBLY



AA MULLION @ STACK
SCALE: FULL

BB 27

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9200

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
ENGINEER STAMP
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

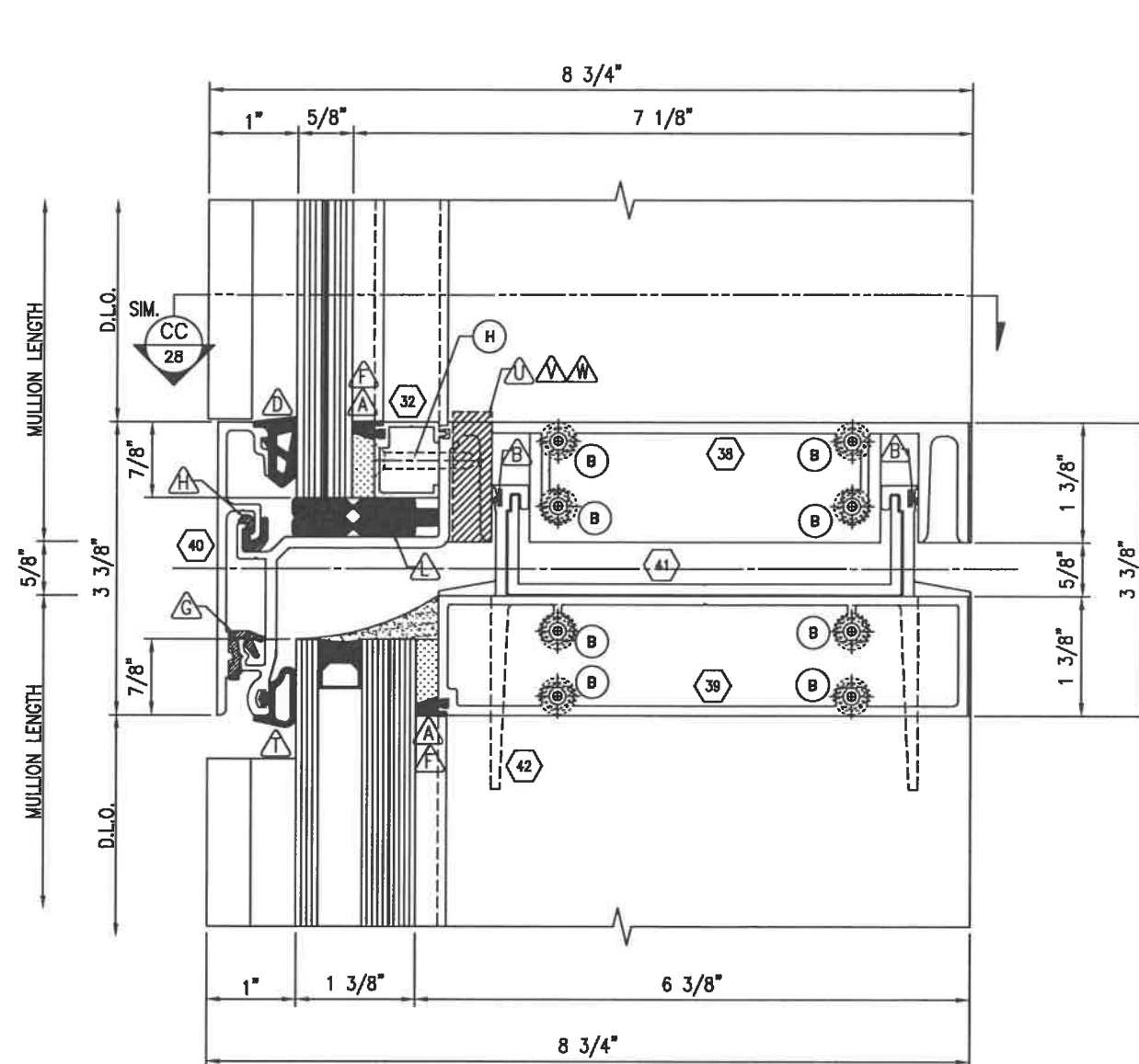
Harmon

HI 7000 LARGE MISSILE
STACK HORIZONTAL DETAIL

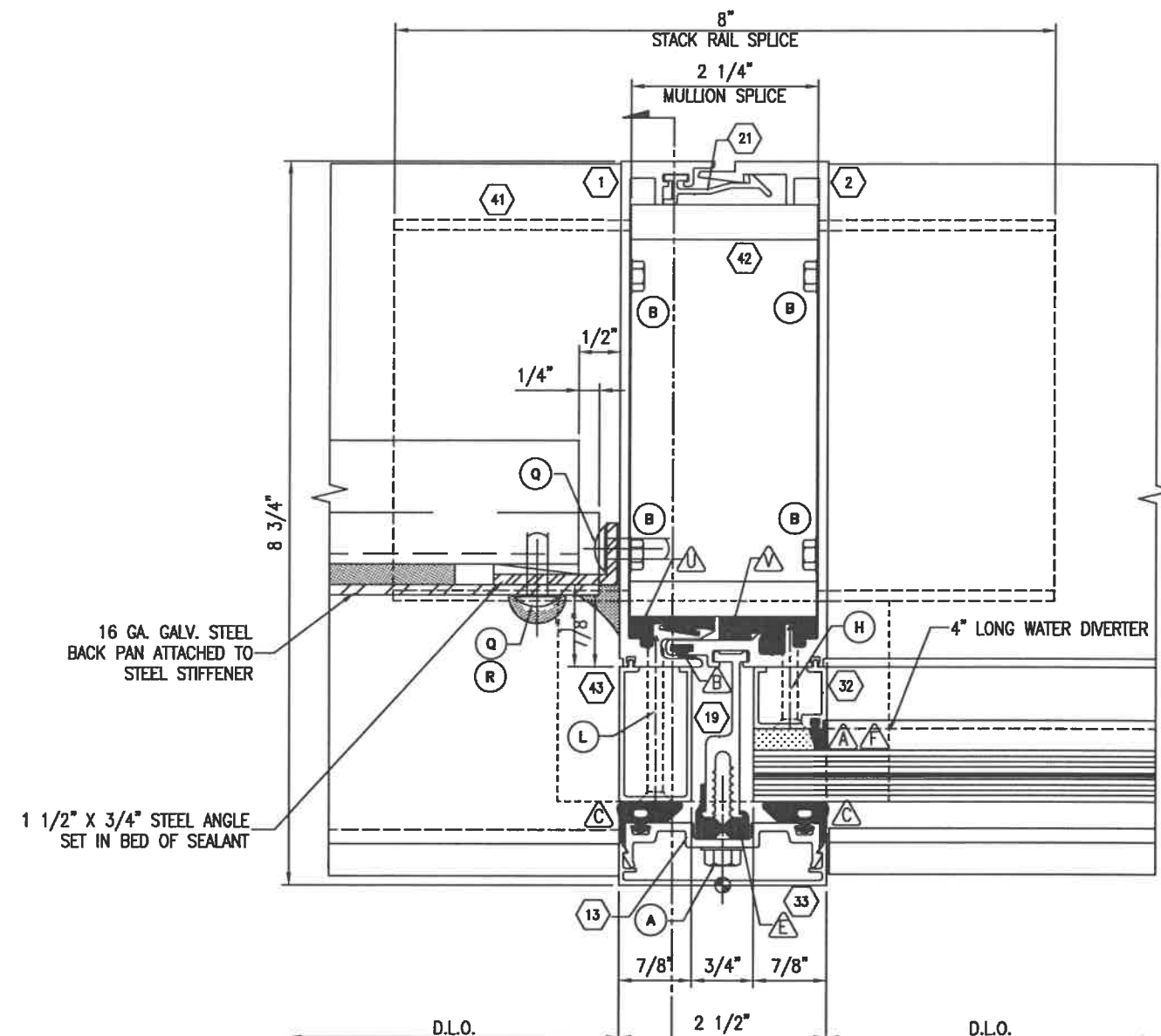
SECTION CUTS	
DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 27 OF 41



9 STACK HORIZONTAL
SCALE: FULL
MAXIMUM DLO WIDTH=57 1/2"
MAXIMUM SHEAR AT STACK=3,695#



CC MULLION @ STACK
SCALE: FULL

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**

Expiration Date: **09/02/2024**

By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
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ENGINEER STAMP
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-0200005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

STACK HORIZONTAL DETAIL

SECTION CUT

DATE: 06/28/04 6 6/17/16

1 11/18/08 7 03/05/19

2 3/10/09 8 02/25/21

3 3/16/09

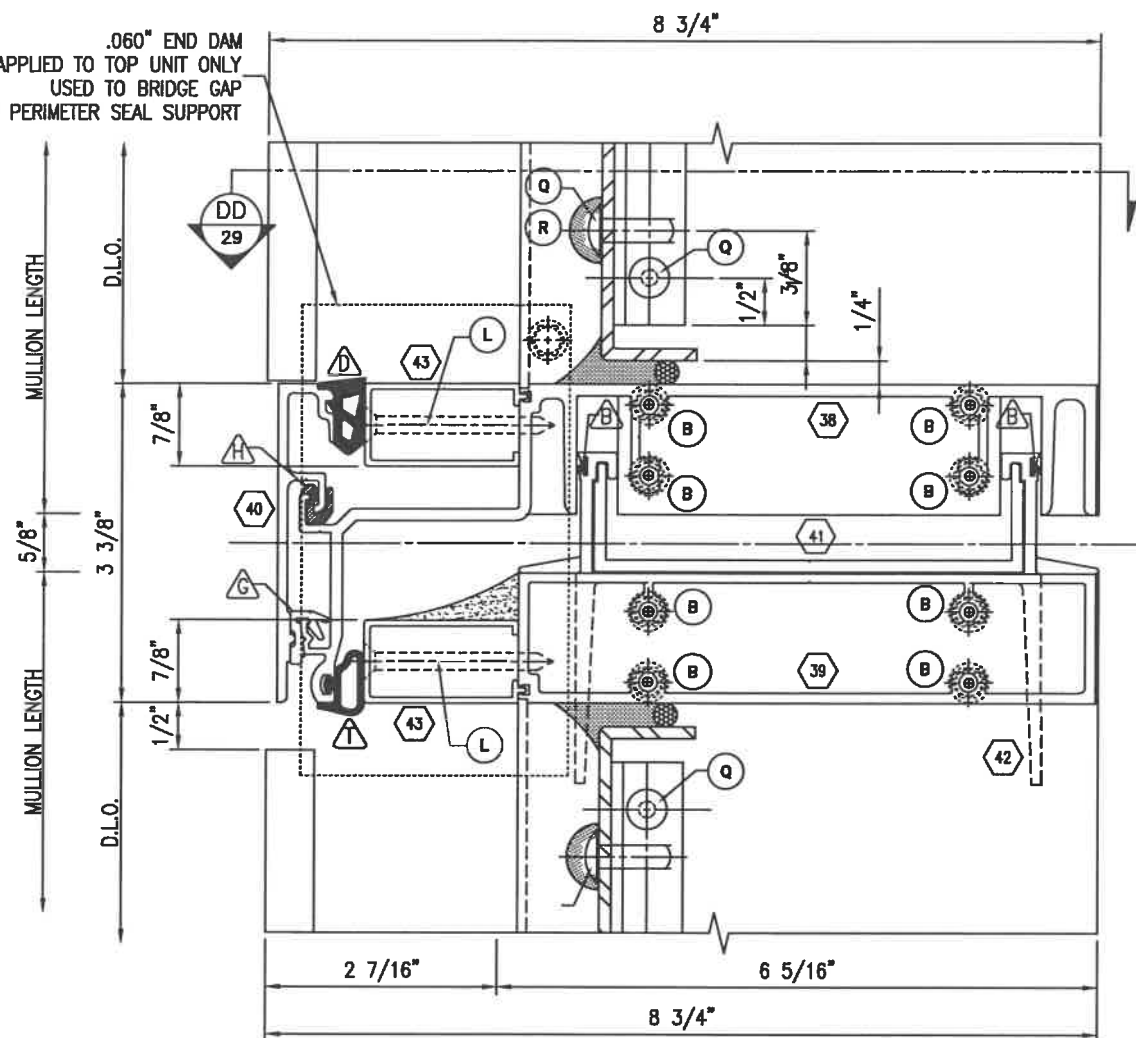
4 5/22/12

5 10/03/14

DWG. NO. HI7000LM

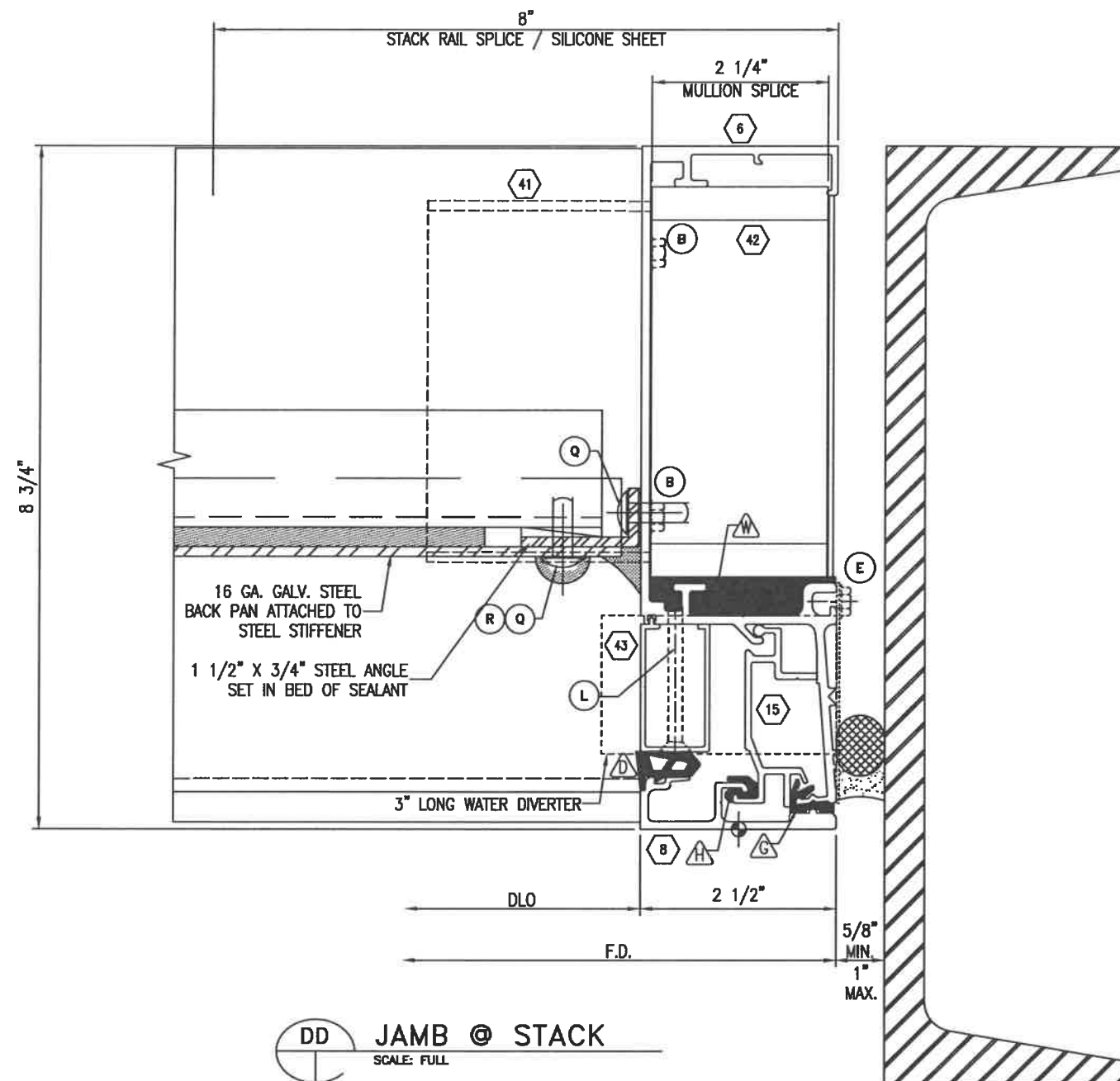
SHEET 28 OF 41

.060" END DAM
SHOP APPLIED TO TOP UNIT ONLY
USED TO BRIDGE GAP
FOR PERIMETER SEAL SUPPORT



10 STACK HORIZONTAL ~ BACK PAN
SCALE: FULL

MAXIMUM DLO WIDTH=57 1/2"
MAXIMUM SHEAR AT STACK=3,695#



DD JAMB @ STACK
SCALE: FULL

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
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Building Code
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Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65108
ENGINEER STAMP
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

STACK HORIZONTAL DETAIL

& SECTION CUT

DATE: 06/28/04 6 6/17/16

1 11/18/08 7 03/05/19

2 3/10/09 8 02/25/21

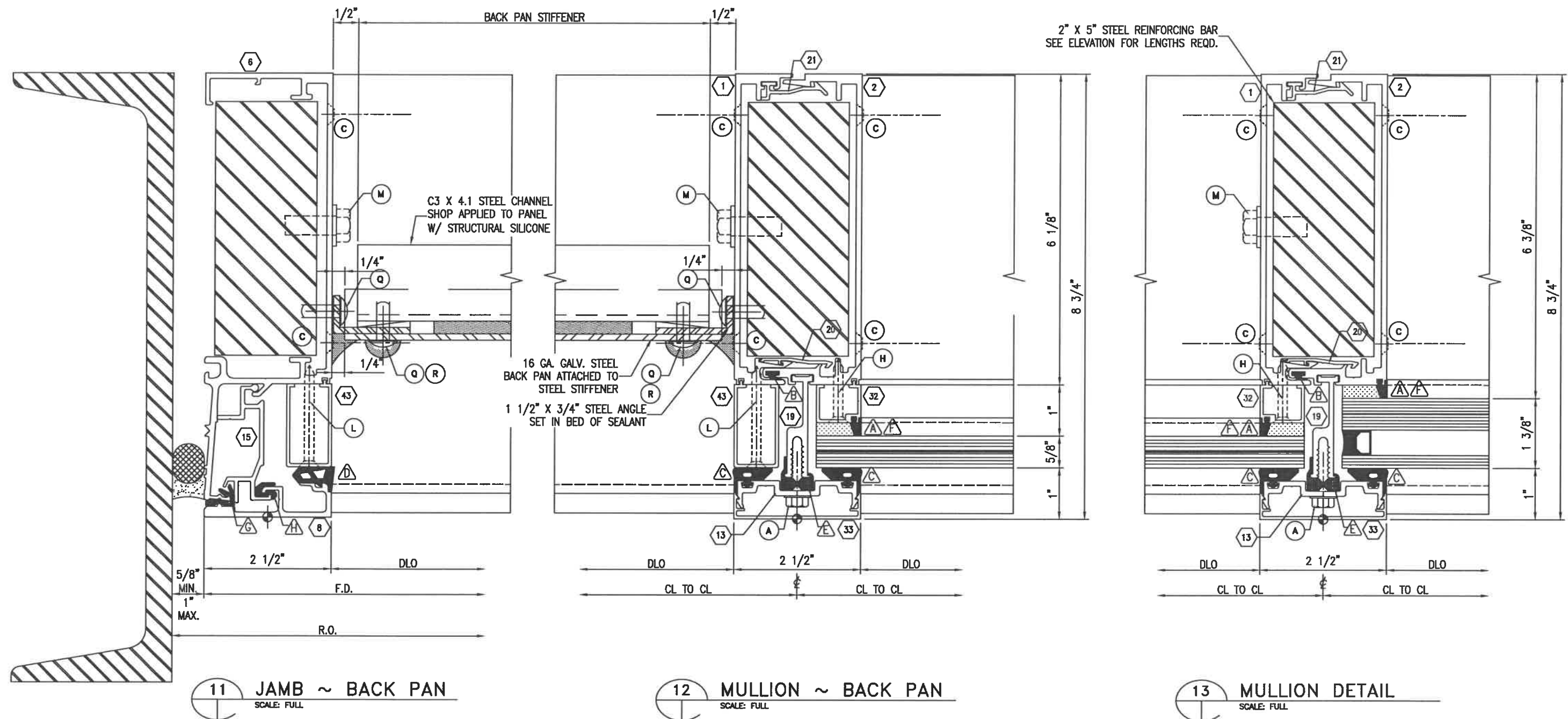
3 3/16/09

4 5/22/12

5 10/03/14

DWG. NO. HI7000LM

SHEET 29 OF 41



GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

Larson Engineering Inc.
3524 Labors Road
White Bear Lake, MN 55110
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Expiration Date: **09/02/2024**

By: *Manuel Perez*
Miami-Dade Product Control

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LICENSE
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STATE OF FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

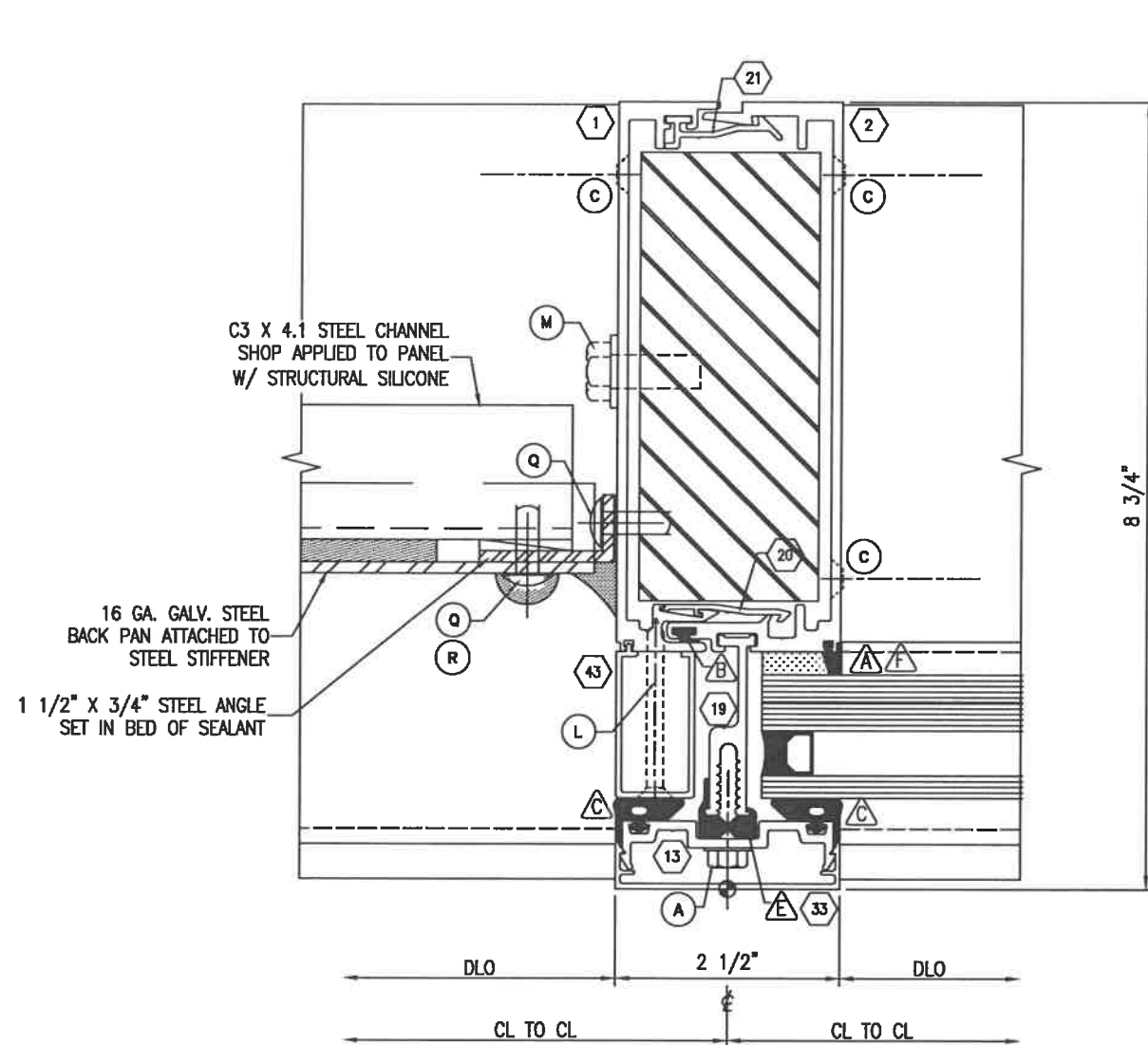
Harmon

HI 7000 LARGE MISSILE
VERTICAL DETAILS

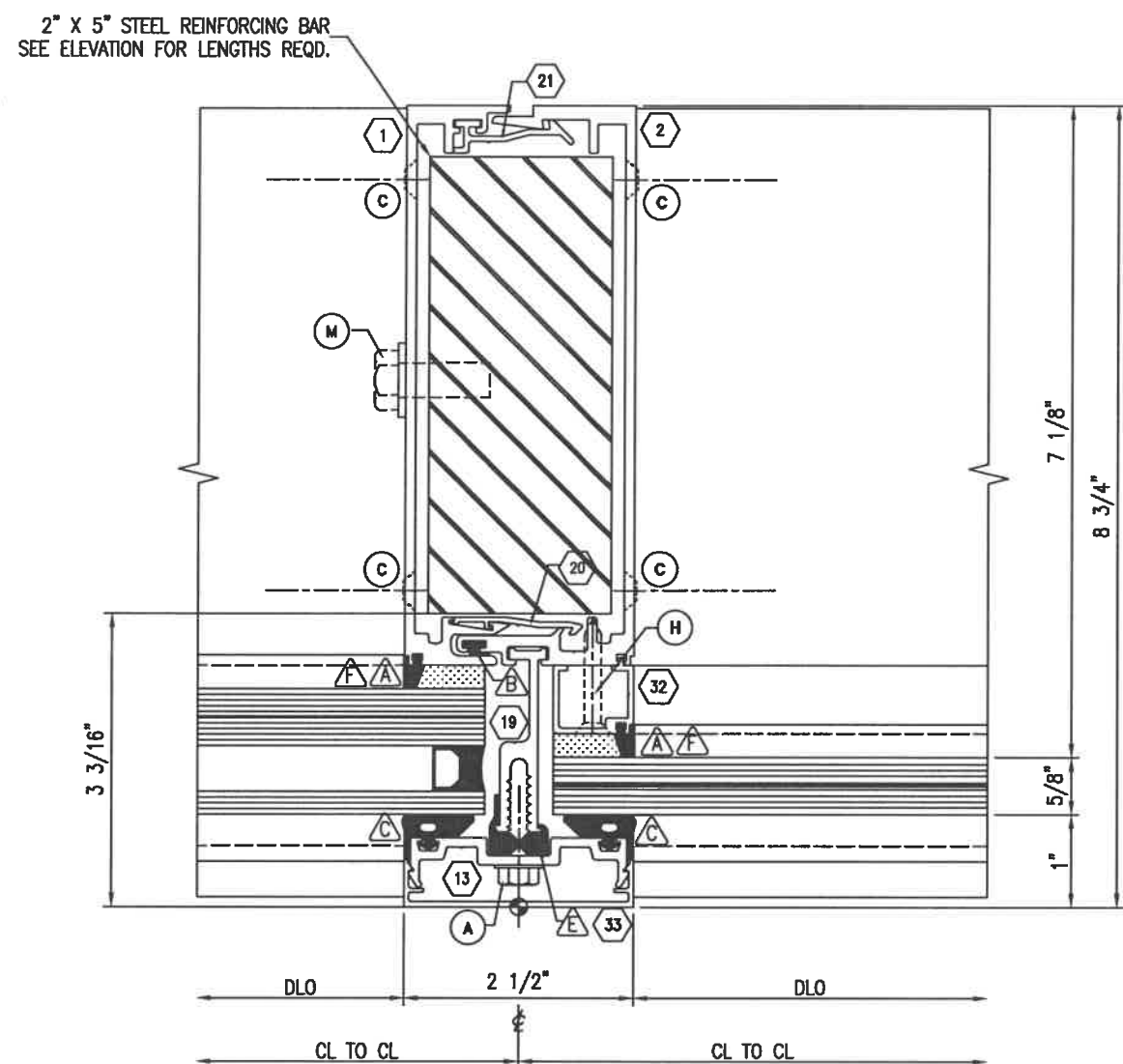
DATE: 06/28/04	6/17/16
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2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 30 OF 41



14 MULLION ~ BACK PAN
SCALE: FULL



15 MULLION DETAIL
SCALE: FULL

GENERAL NOTES:

– FOR PART IDENTIFICATION REFER TO SHEET 2

– FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- GASKETS
- ALUMINUM EXTRUSIONS

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3524 Labors Road
White Bear Lake, MN 55110
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Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
STATE OF FLORIDA
PROFESSIONAL ENGINEER

MAY 17 2021

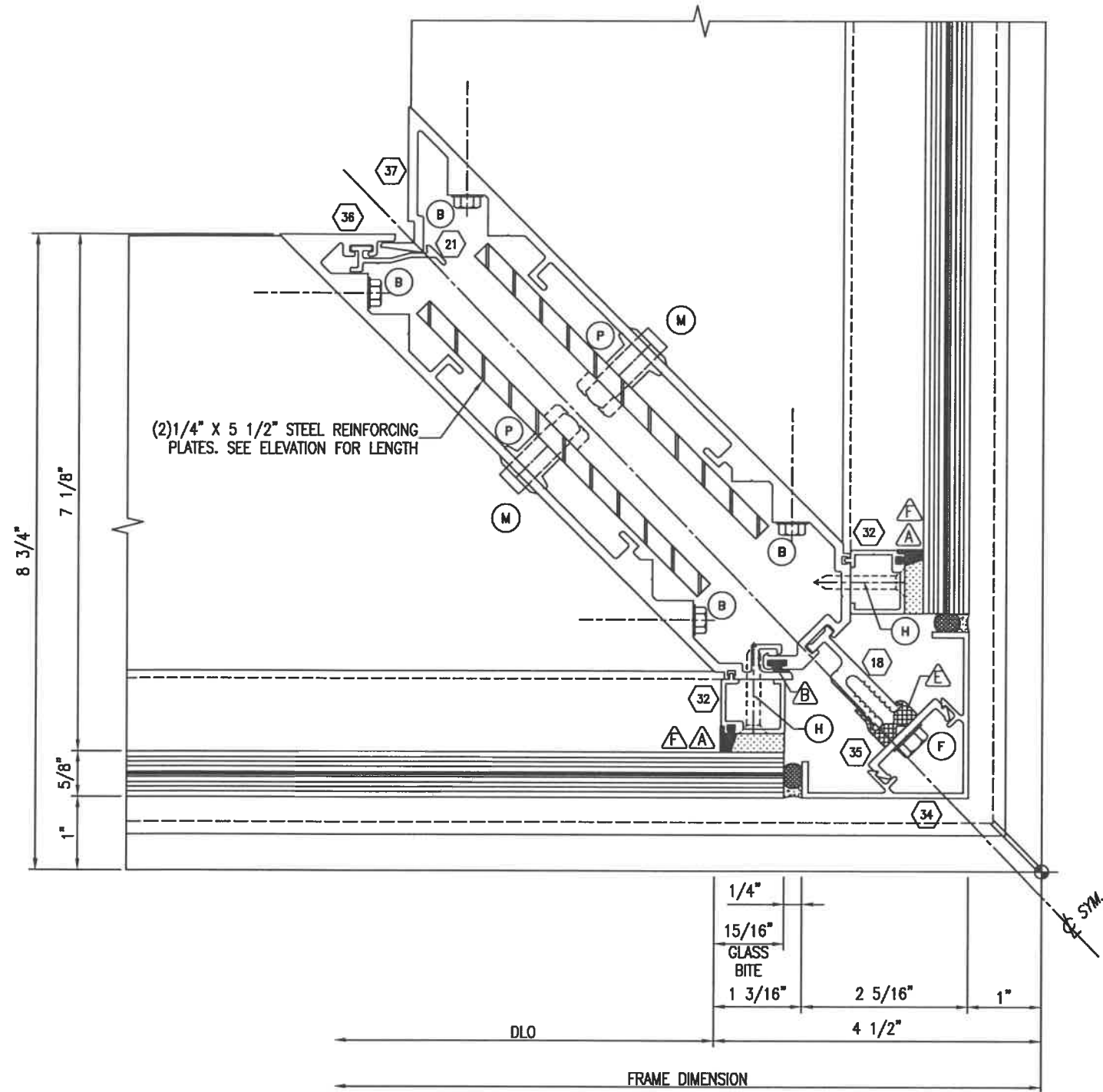
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

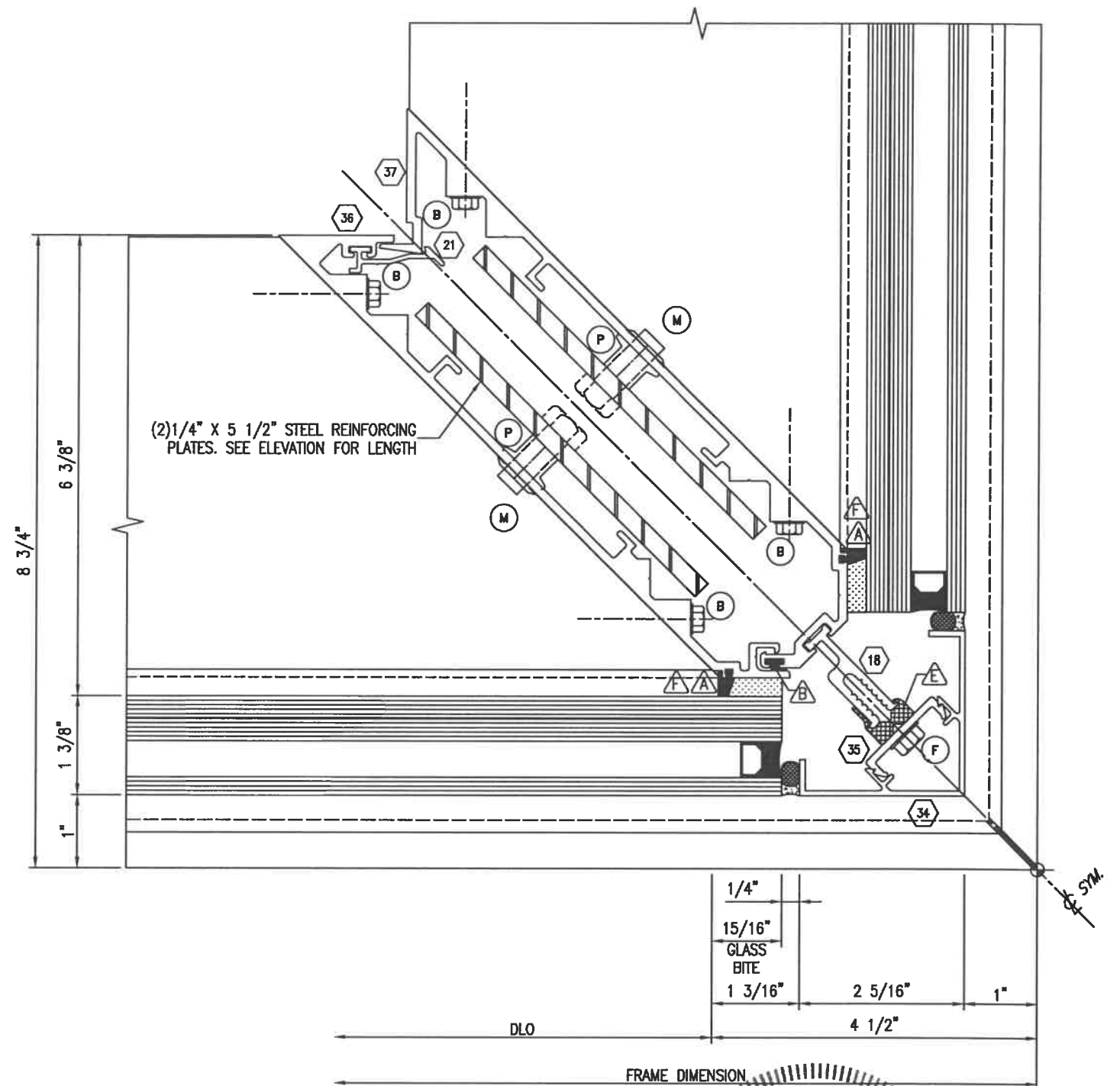
HI 7000 LARGE MISSILE
VERTICAL DETAILS

DATE: 06/28/04	6 6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM



16 OUTSIDE CORNER
SCALE: FULL



17 OUTSIDE CORNER
SCALE: FULL

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

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○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

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White Bear Lake, MN 55110
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DADE CO. STAMP

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NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**

By: *Manuel Fern*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
ENGINEER*STAMP
STATE OF FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

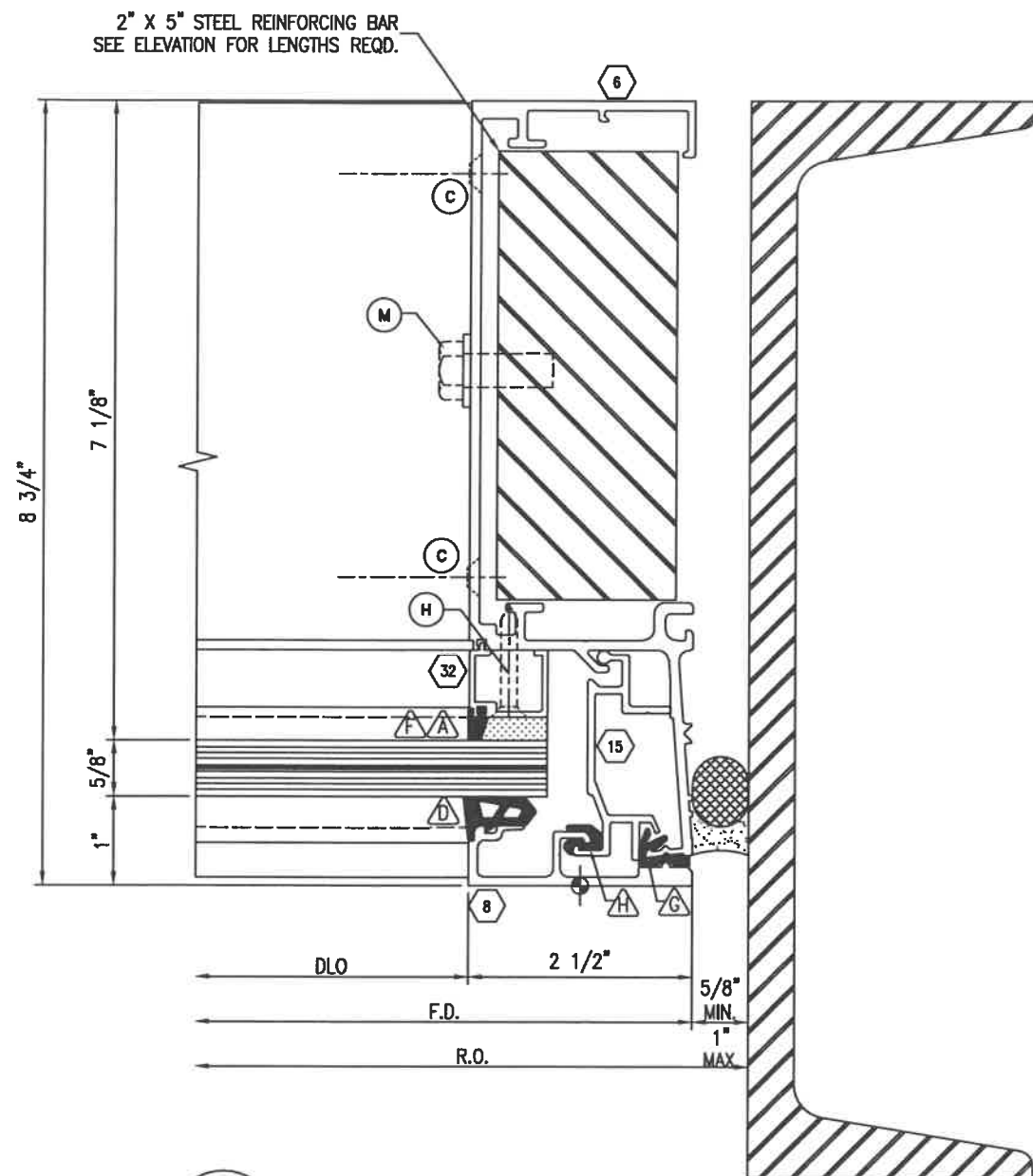
Harmon

HI 7000 LARGE MISSILE
CORNER DETAILS

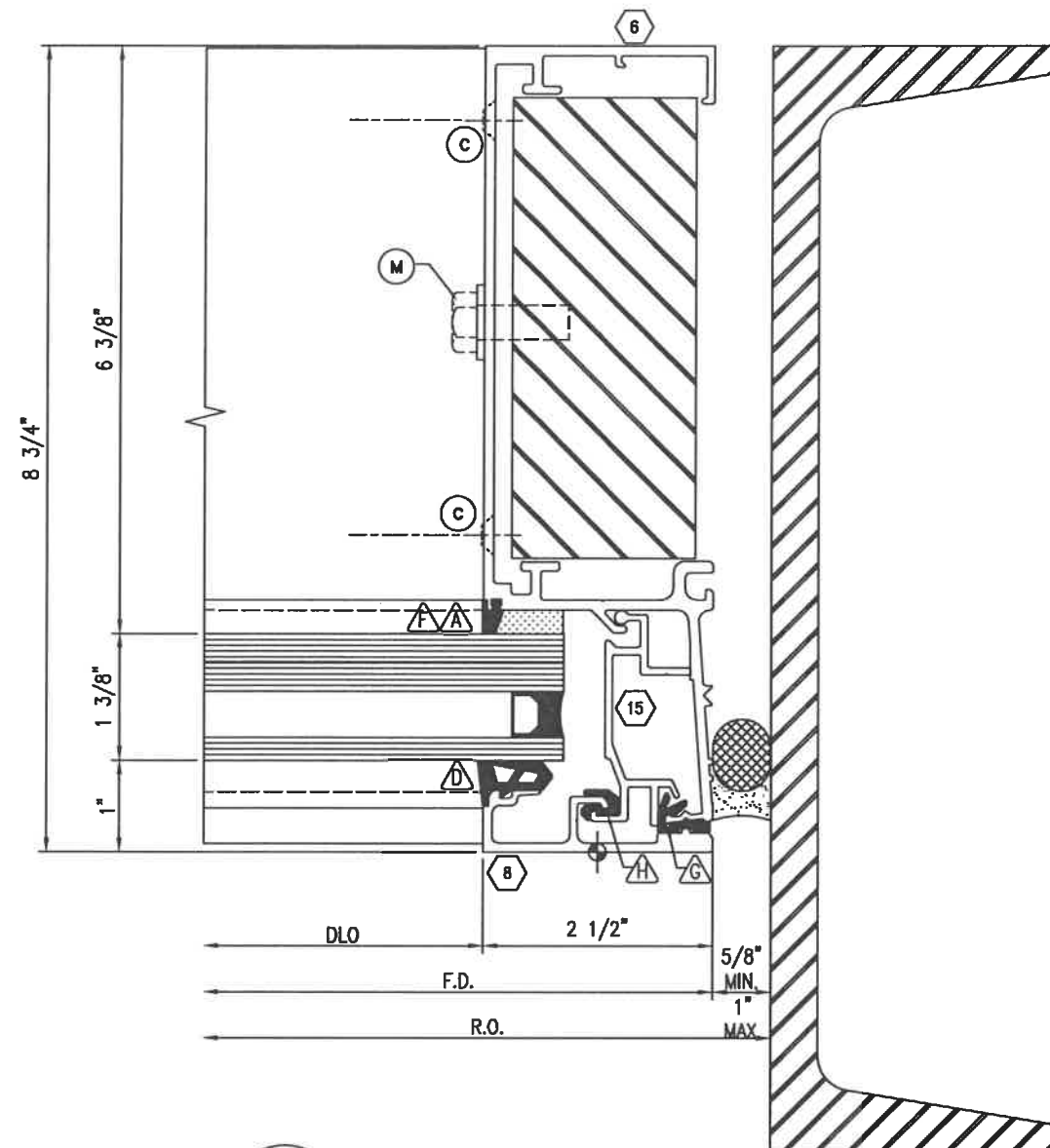
DATE: 06/28/04	6/17/16
1 11/18/08	3 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 32 OF 41



18 JAMB ~ MONOLITHIC
SCALE: FULL



19 JAMB ~ INSULATED
SCALE: FULL

GENERAL NOTES:

– FOR PART IDENTIFICATION REFER TO SHEET 2

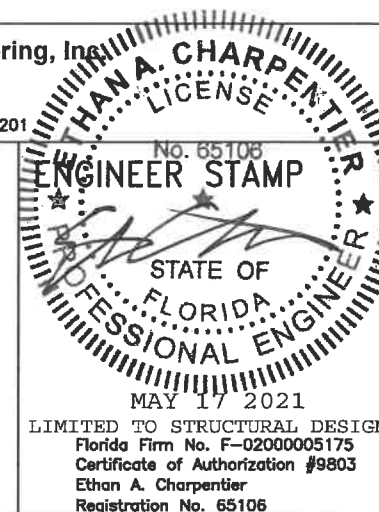
- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

– FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

Larson Engineering, Inc.
3524 Labore Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

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PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control



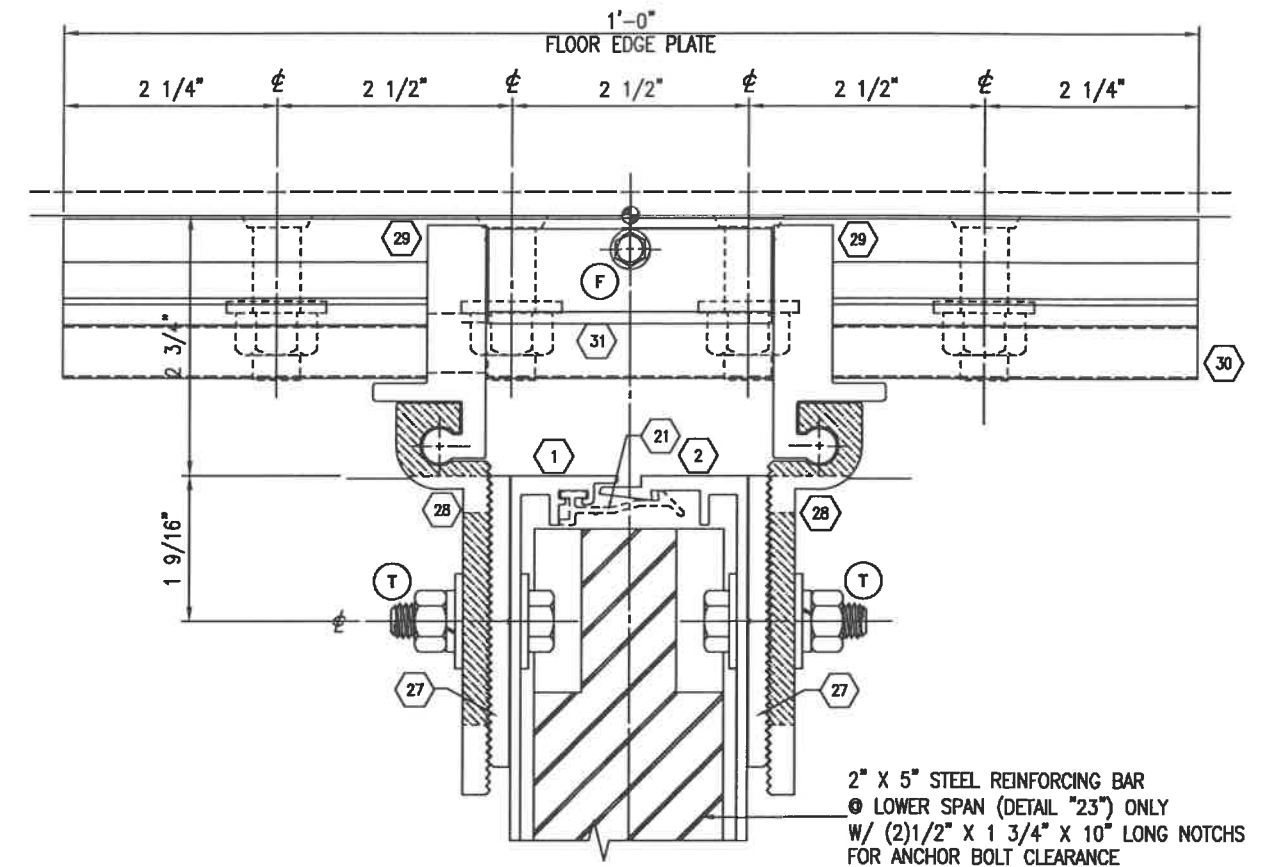
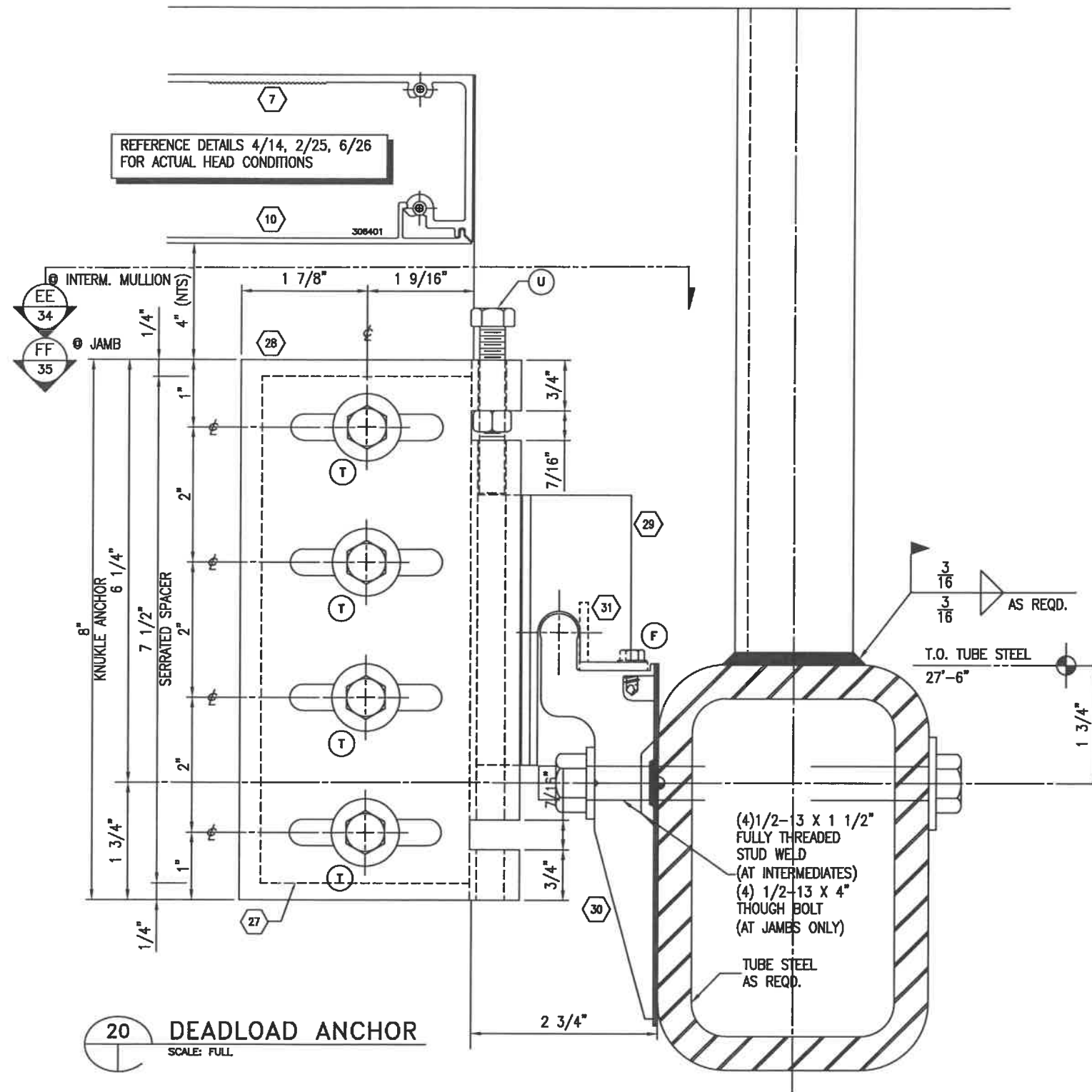
Harmon

HI 7000 LARGE MISSILE
VERTICAL DETAILS

DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 33 OF 41



EE SECTION DETAIL @ MULLION
SCALE: FULL

GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

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Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**

By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 14 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

ANCHOR DETAILS AND
INTERMEDIATE ANCHOR SECTION

DATE: 06/28/04 6/17/16

1 11/18/08 7 03/05/19

2 3/10/09 8 02/25/21

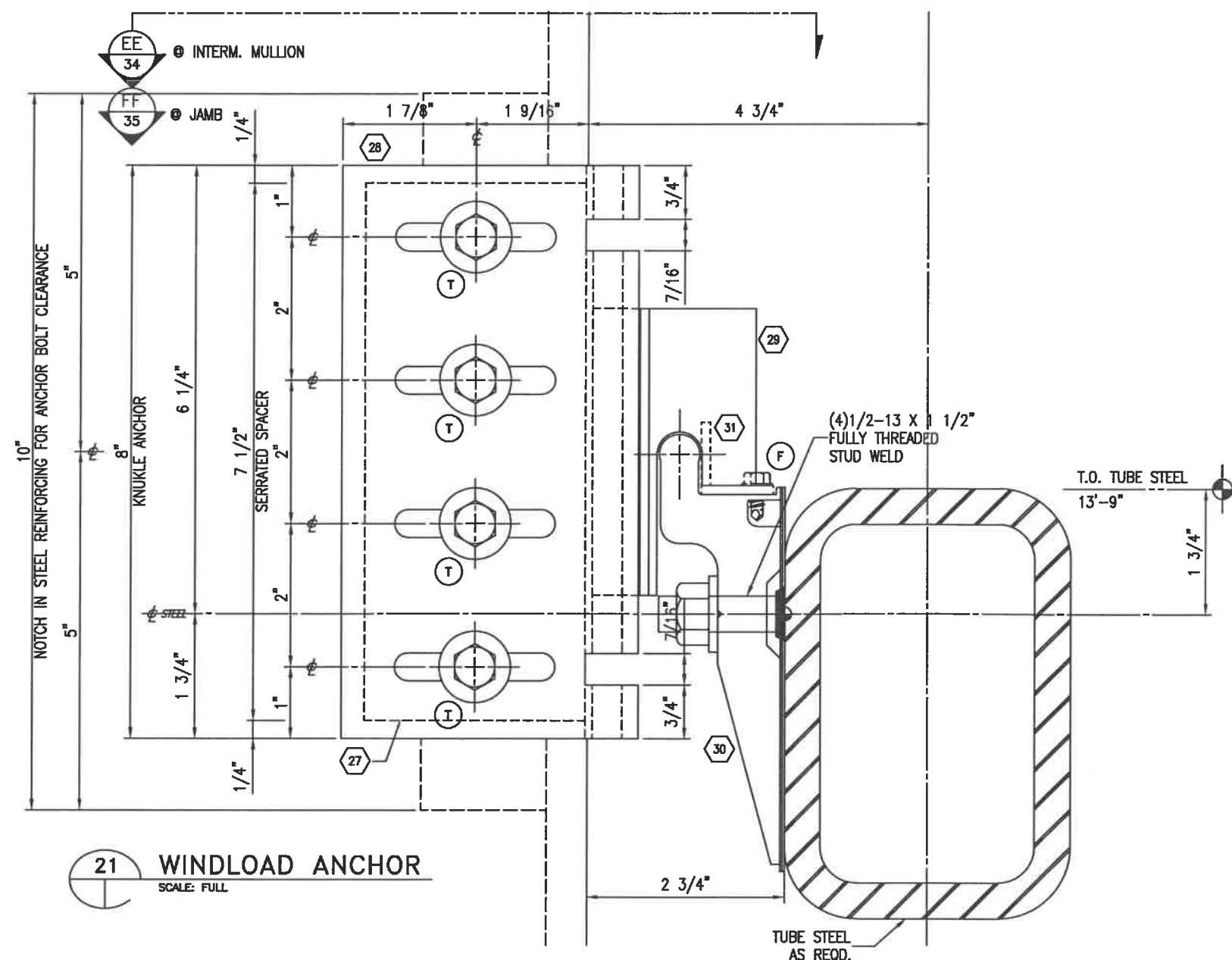
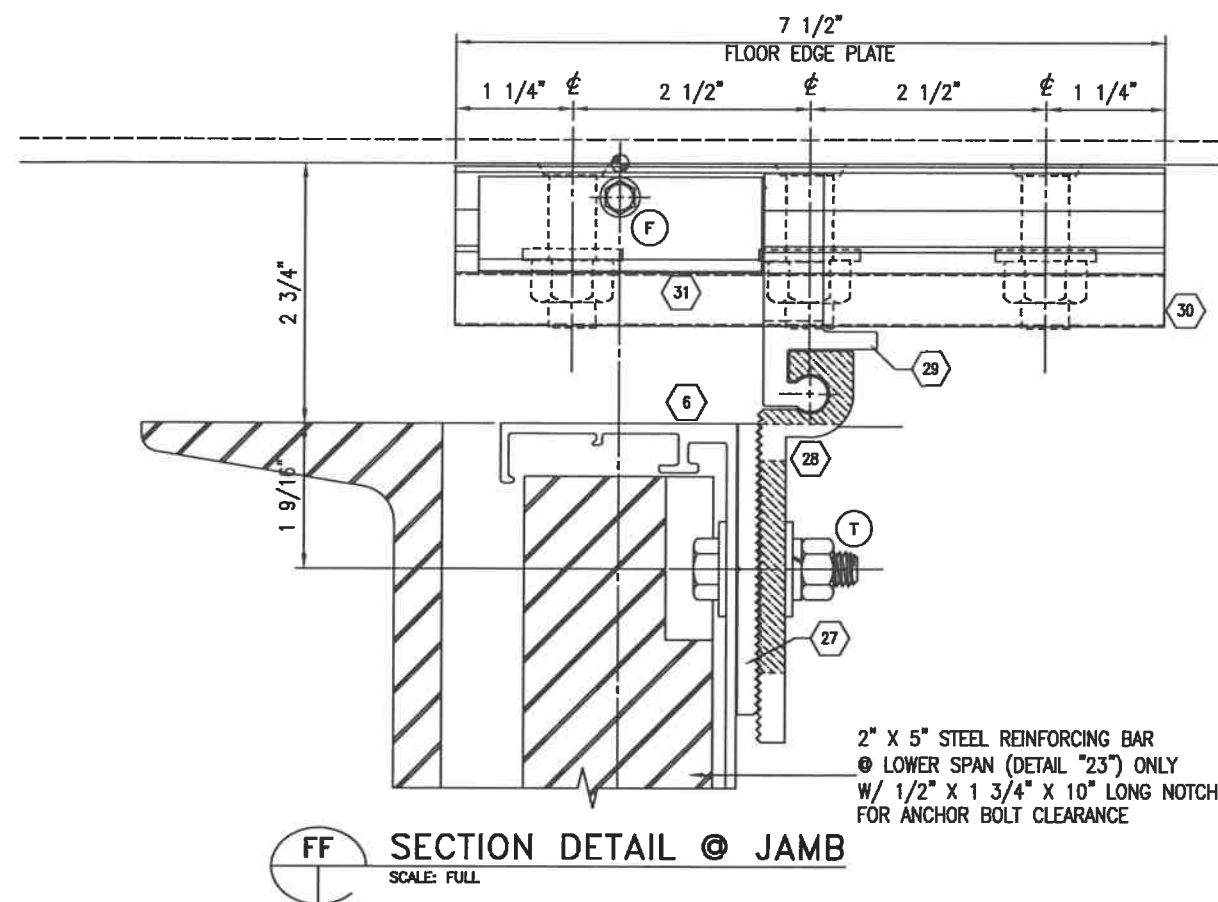
3 3/16/09

4 5/22/12

5 10/03/14

DWG. NO. HI7000LM

SHEET 34 OF 41



GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labore Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

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PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSE
No. 65106
ENGINEER STAMP
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

ANCHOR DETAIL AND
JAMB ANCHOR SECTION CUT

DATE: 06/28/04 6/17/16

1 11/18/08 7 03/05/19

2 3/10/09 8 02/25/21

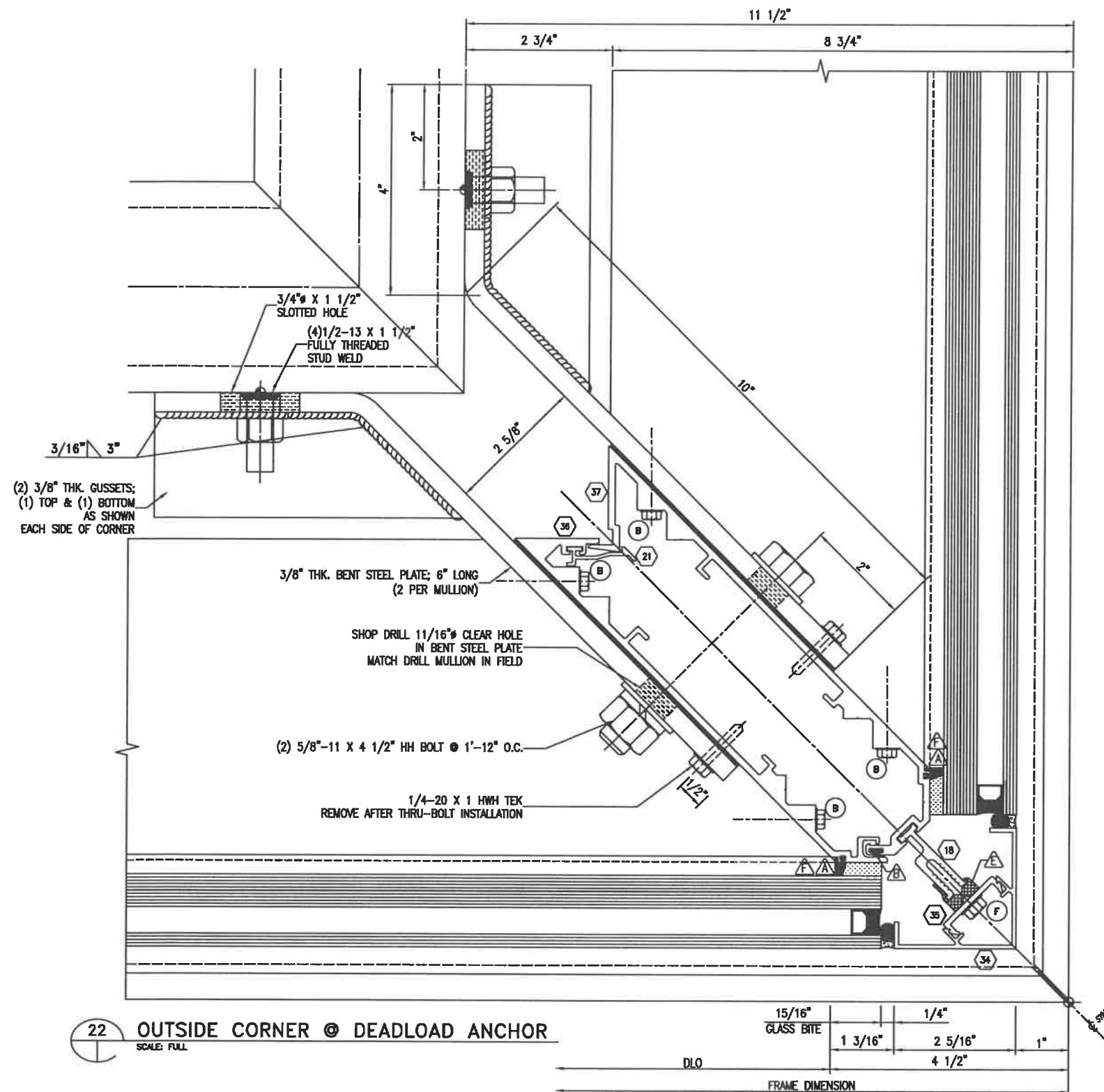
3 3/16/09

4 5/22/12

5 10/03/14

DWG. NO. HI7000LM

SHEET 35 OF 41



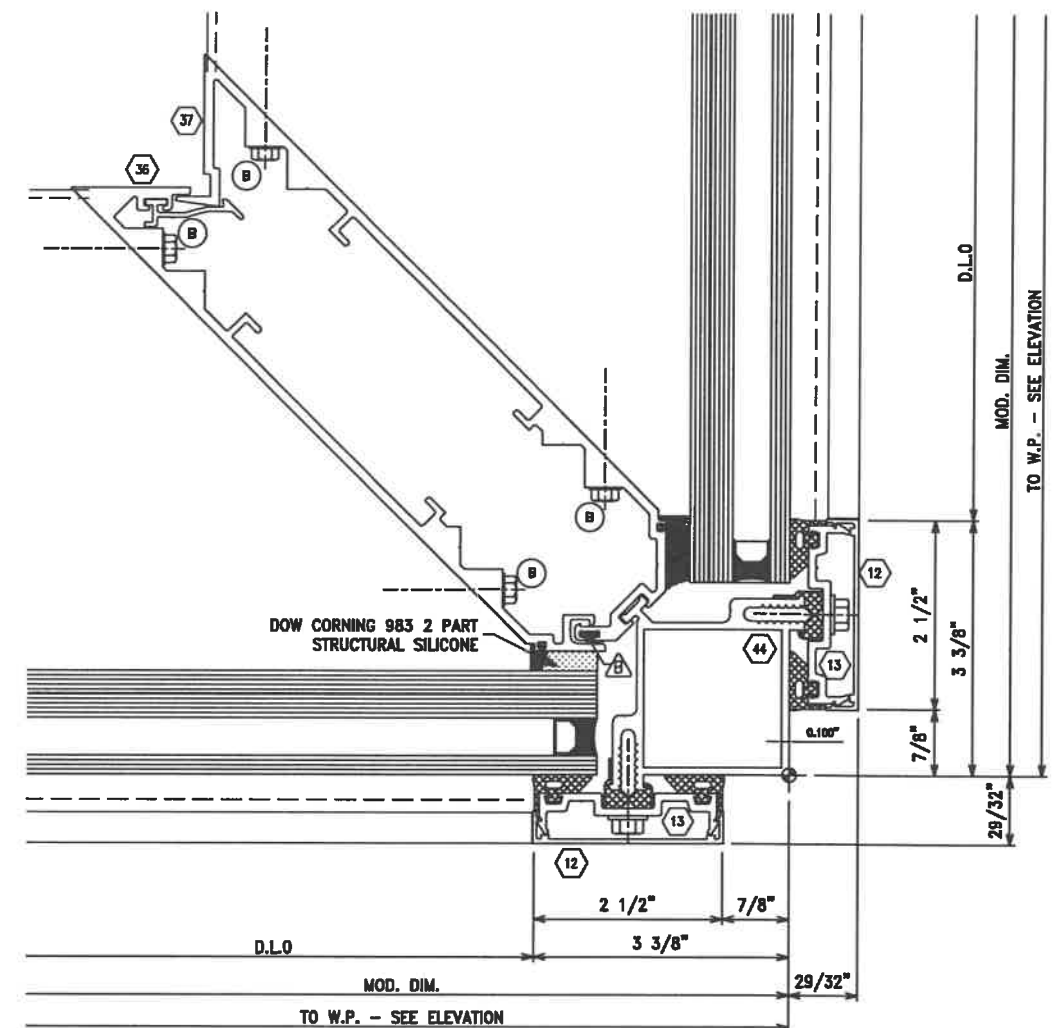
22 OUTSIDE CORNER @ DEADLOAD ANCHOR
SCALE: FULL

GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- GASKETS
- ALUMINUM EXTRUSIONS



22A OPTIONAL CAPTURED CORNER COVER
SCALE: FULL

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3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9204

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PRODUCT REVISED
as complying with the Florida
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Expiration Date: **09/02/2024**
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Miami-Dade Product Control

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STATE OF
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MAY 17 2021
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Florida Firm No. F-0200005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

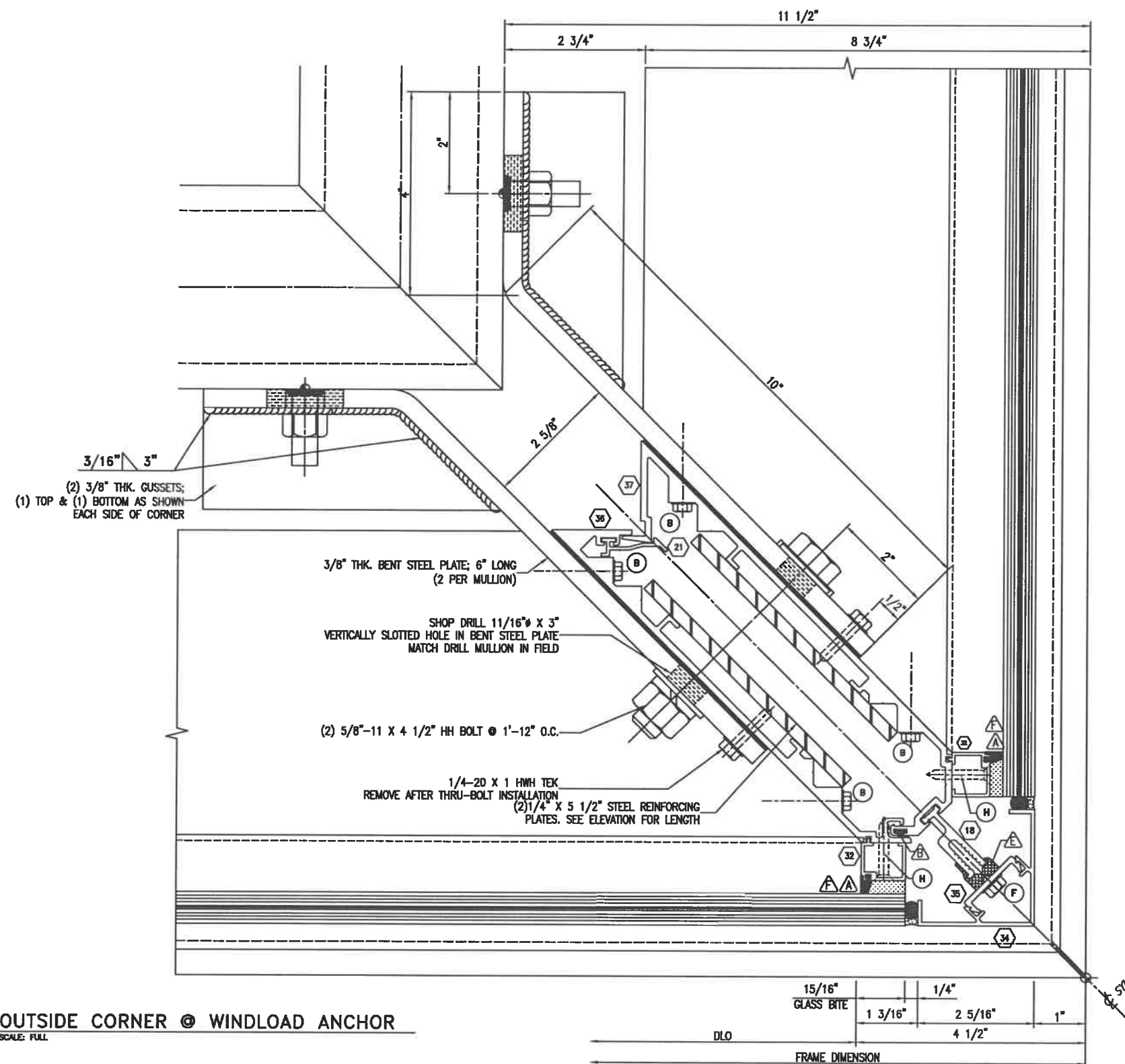
Harmon

HI 7000 LARGE MISSILE
CORNER ANCHOR DETAIL
OPTIONAL CORNER COVER

DATE: 06/28/04 6/17/16
 1 11/18/08 03/05/19
 2 3/10/09 8 02/25/21
 3 3/16/09
 4 5/22/12
 5 10/03/14

DWG. NO. HI7000LM

SHEET 36 OF 41



GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

- FOR GLAZING DETAILS, GLASS BITE & GASKET
CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- △ GASKETS
- ◻ ALUMINUM EXTRUSIONS

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Miami-Dade Product Control



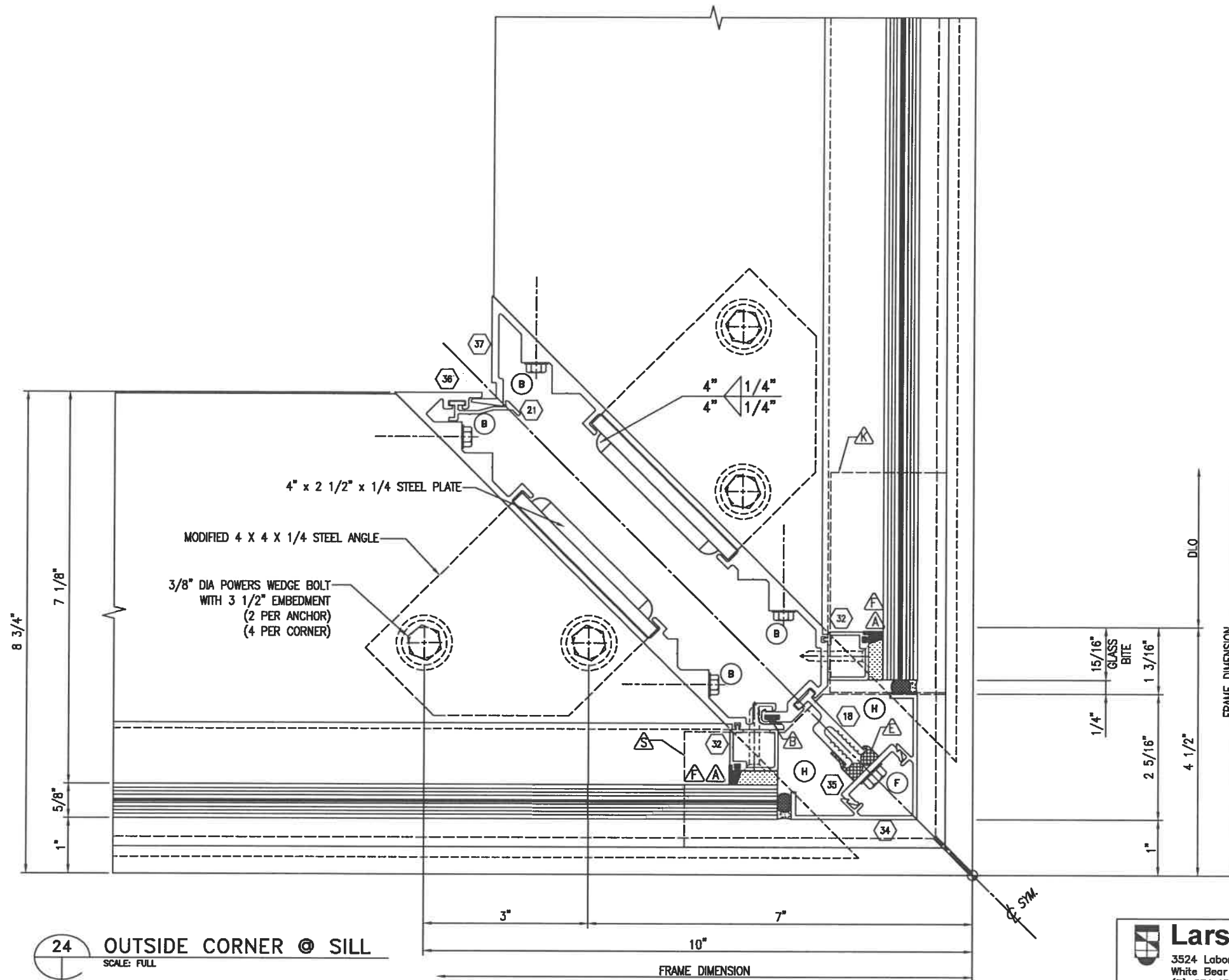
Harmon

HI 7000 LARGE MISSILE
CORNER ANCHOR DETAIL

DATE: 06/28/04	6 6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 37 OF 41



24 OUTSIDE CORNER @ SILL
SCALE: FULL

GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

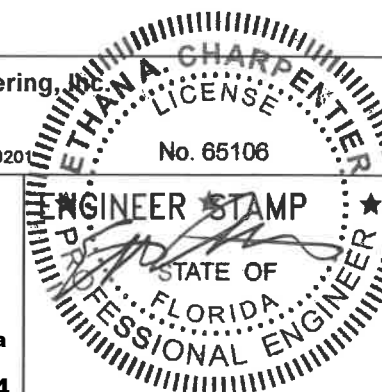
- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- GASKETS
- ALUMINUM EXTRUSIONS

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3524 Labors Road
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Florida Firm No. F-02000005175
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Registration No. 65106

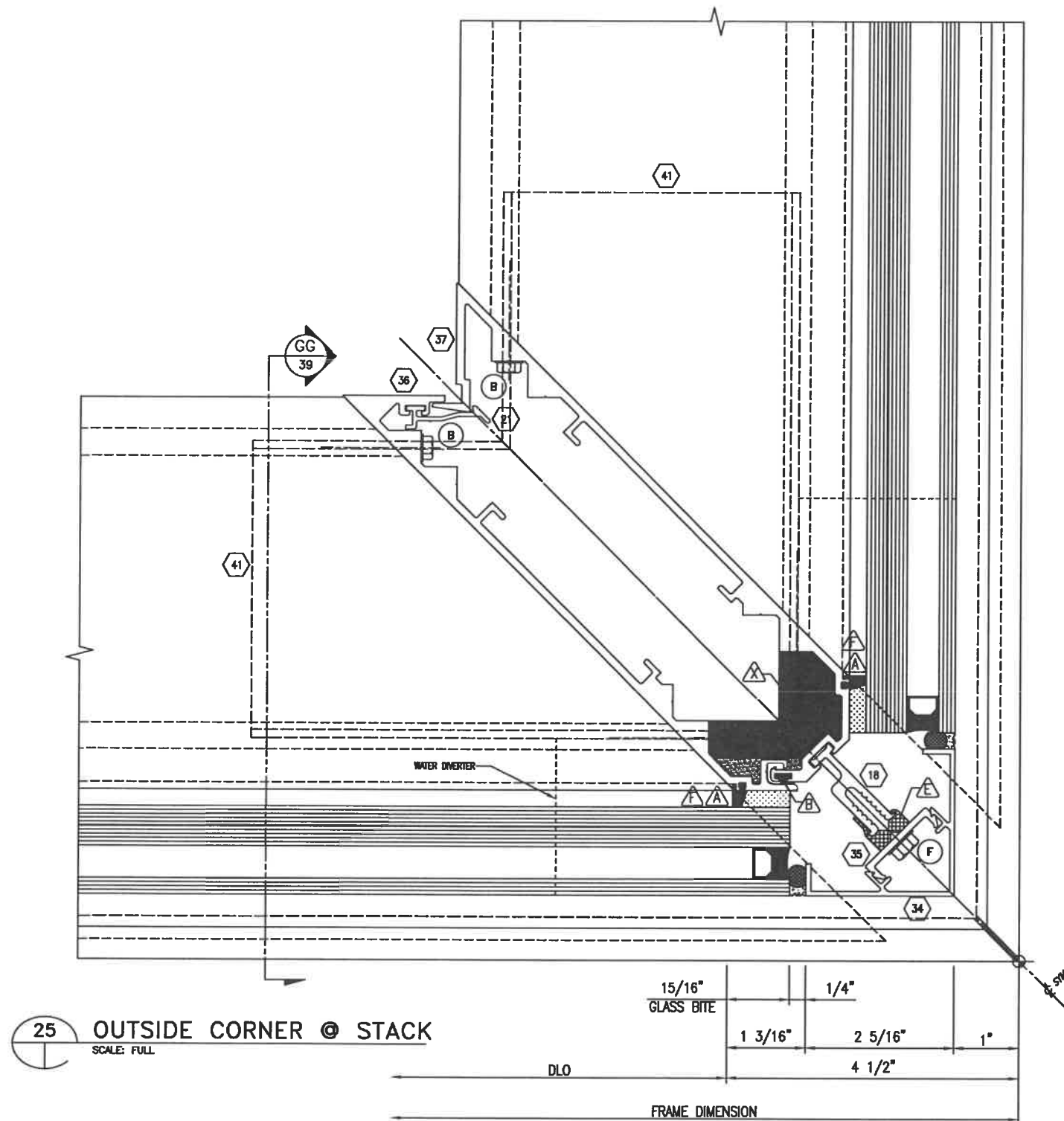
Harmon

HI 7000 LARGE MISSILE
CORNER ANCHOR DETAIL

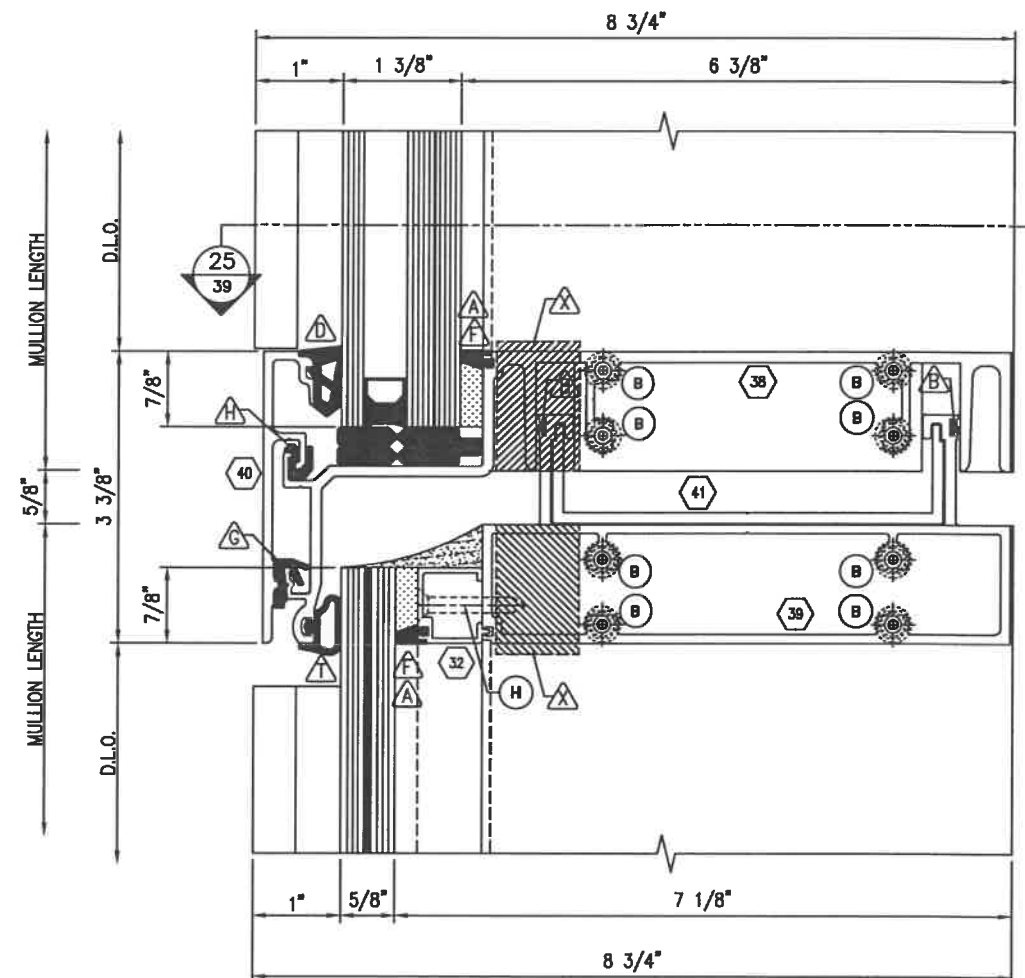
DATE: 06/28/04	6/17/16
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2 3/10/09	8 02/25/21
3 3/16/09	
4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

SHEET 38 OF 41



25 OUTSIDE CORNER @ STACK
SCALE: FULL



GG STACK HORIZONTAL @ CORNER
SCALE: FULL

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- △ GASKETS
- ◻ ALUMINUM EXTRUSIONS

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3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9121

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Miami-Dade Product Control

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MAY 17 2021
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Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

Harmon

HI 7000 LARGE MISSILE

CORNER ANCHOR AND
SECTION CUT AT STACK HORIZ.

DATE: 06/28/04 6 6/17/16

1 11/18/08 7 03/05/19

2 3/10/09 8 02/25/21

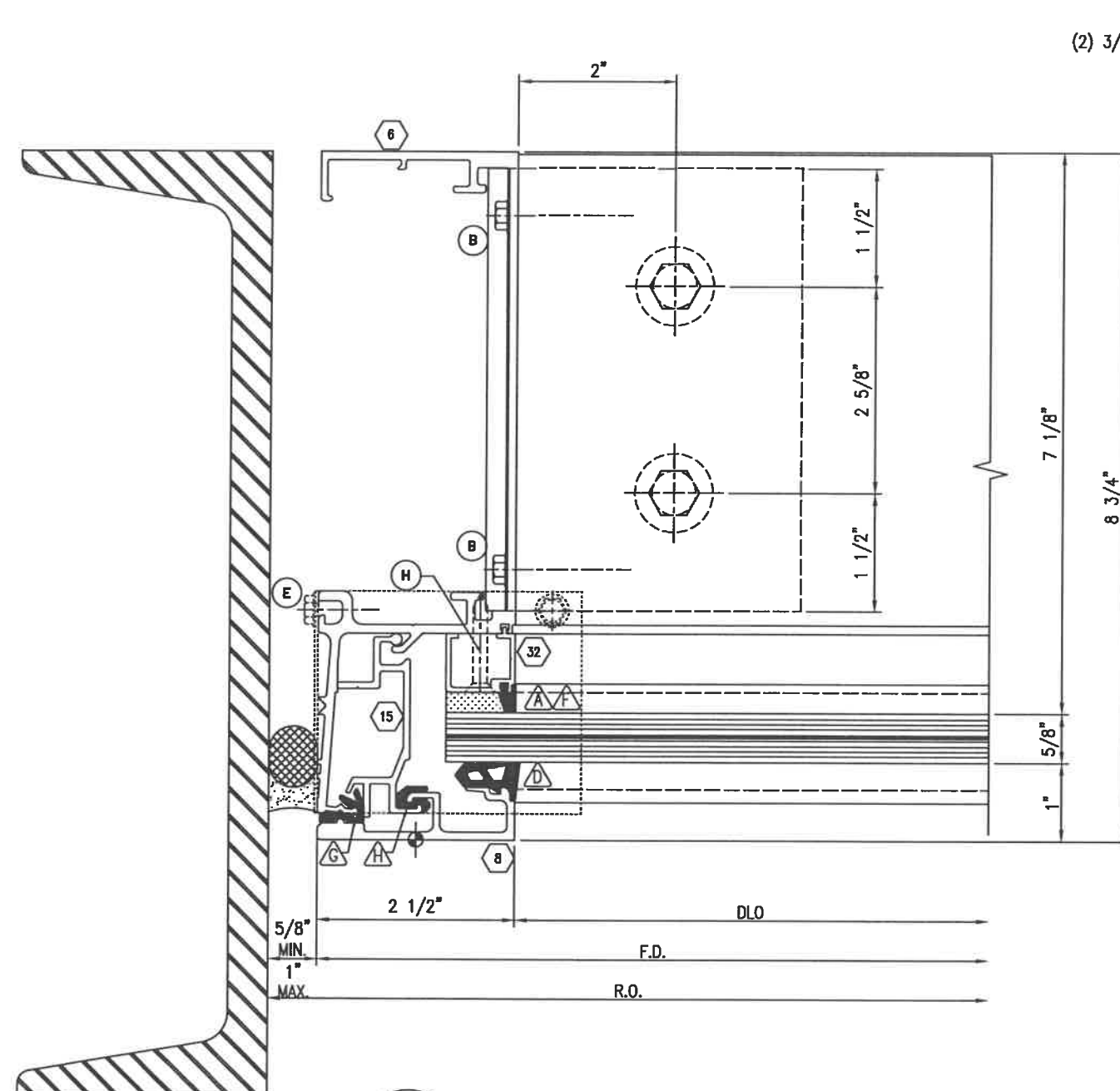
3 3/16/09

4 5/22/12

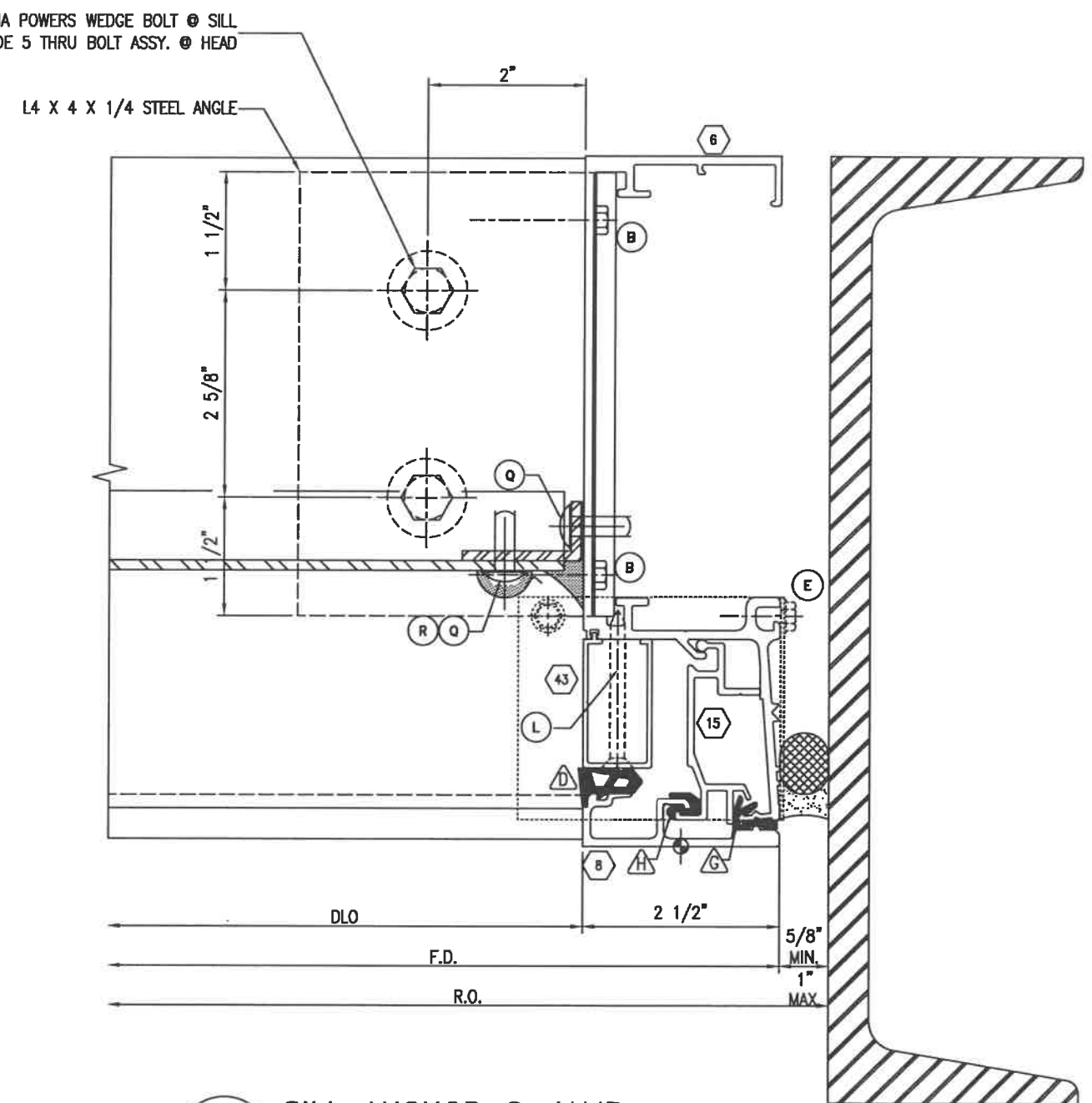
5 10/03/14

DWG. NO. HI7000LM

SHEET 39 OF 41



26 SILL ANCHOR @ JAMB
SCALE: FULL



27 SILL ANCHOR @ JAMB
SCALE: FULL

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

○ FASTENERS

△ GASKETS

⬡ ALUMINUM EXTRUSIONS

Larson Engineering
3524 Labors Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9200

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. **21-0405.14**
Expiration Date: **09/02/2024**
By: *Manuel Perez*
Miami-Dade Product Control

ETHAN A. CHARPENTIER
LICENSED PROFESSIONAL ENGINEER
No. 65106
STATE OF FLORIDA
MAY 17 2021
LIMITED TO STRUCTURAL DESIGN
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

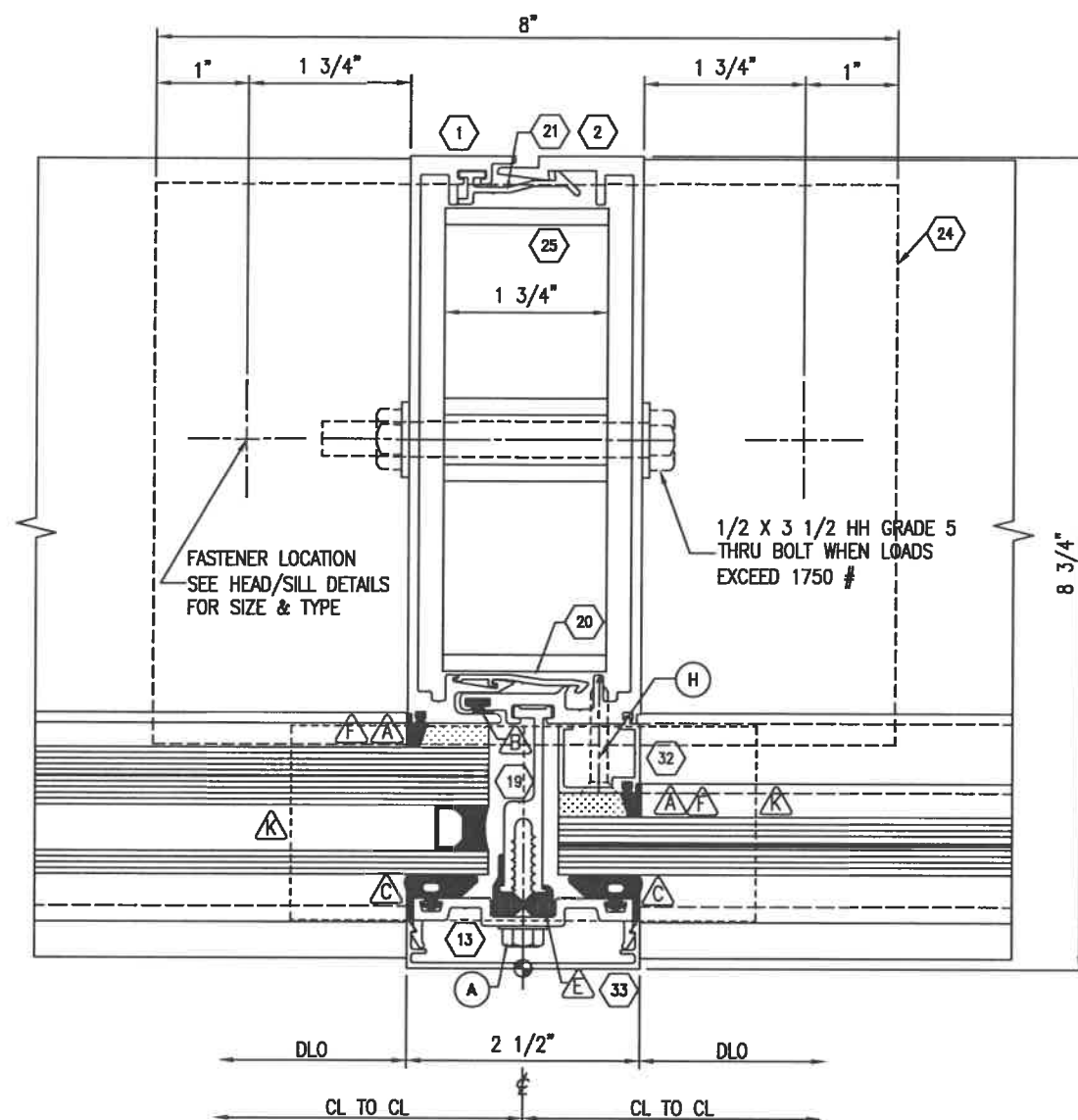
Harmon

HI 7000 LARGE MISSILE
VERTICAL DETAILS

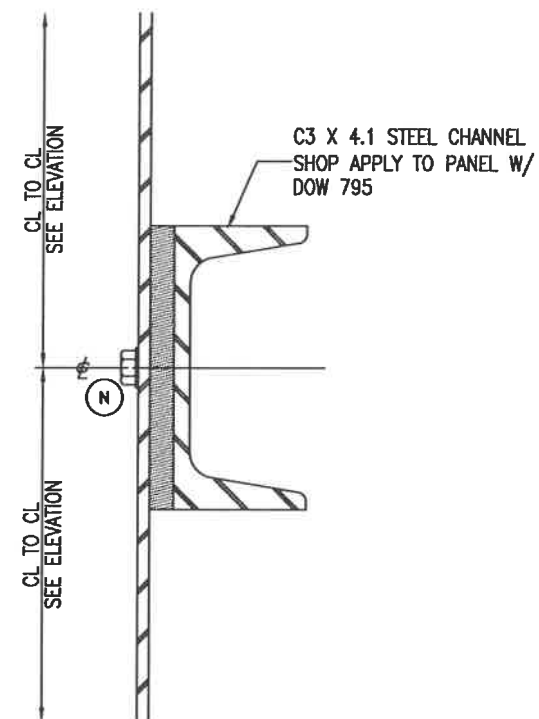
DATE: 06/28/04	6/17/16
1 11/18/08	7 03/05/19
2 3/10/09	8 02/25/21
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4 5/22/12	
5 10/03/14	

DWG. NO. HI7000LM

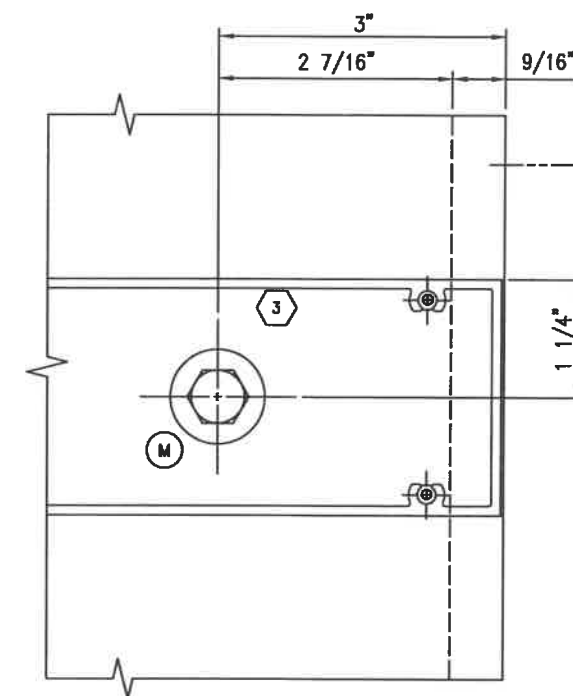
SHEET 40 OF 41



28 SILL ANCHOR @ MULLION
SCALE: FULL



29 BACK-PAN STIFFENER
SCALE: FULL



30 REINF. ATTACHMENT
SCALE: FULL

GENERAL NOTES:

— FOR PART IDENTIFICATION REFER TO SHEET 2

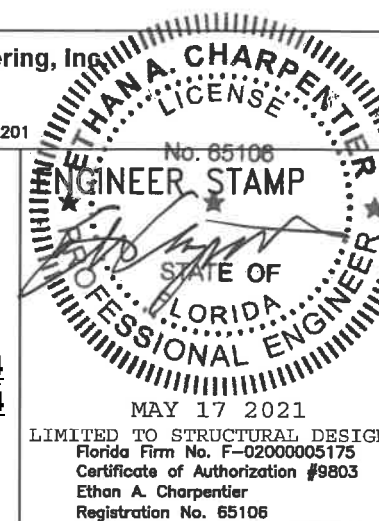
— FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

- FASTENERS
- GASKETS
- ALUMINUM EXTRUSIONS

Larson Engineering, Inc.
3524 Labore Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
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Expiration Date: **09/02/2024**
By: *Manuel Fern*
Miami-Dade Product Control



Harmon

HI 7000 LARGE MISSILE
SILL ANCHOR DETAIL, STIFFENER
DETAIL & REINF. ATTACHMENT

DATE: 06/28/04 6/17/16
1 11/18/08 7 03/05/19
2 3/10/09 8 02/25/21
3 3/16/09
4 5/22/12
5 10/03/14

DWG. NO. HI7000LM

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