



DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY
AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION

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/pera

NOTICE OF ACCEPTANCE (NOA)

Harmon, Inc.
911 Meridian Way
West Chester, OH 45069

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 PERA - 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. PERA 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 5000" Pressure Plate Glazed, Aluminum Window Wall System – S.M.I.

APPROVAL DOCUMENT: Drawing No. **HI5000SM**, titled "Harmon HI 5000 Small Missile – Preglazed and Unitized Pressure Plate Glazed, Aluminum Window Wall System", sheets 1 through 14 of 14, dated 06/28/04, with revision #5 dated 05/22/12, 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: Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and 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# 08-1015.02 and consists of this page 1 and evidence pages E-1, E-2 and E-3, as well as approval document mentioned above.

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



MP
8/30/12

NOA No. 12-0727.05
Expiration Date: August 26, 2014
Approval Date: September 06, 2012
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No. **HI5000SM**, titled "Harmon HI 5000 Small Missile - Preglazed & Unitized Pressure Plate Glazed, Aluminum Window Wall System", sheets 1 through 14 of 14, dated 06/28/04, with revision #5 dated 05/22/12, prepared by manufacturer, signed and sealed by Ethan A. Charpentier, P.E.

B. TESTS (*All submitted under previous NOA#04-0217.09*)

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
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-0319-1102-02**, dated 11/06/02, signed and sealed by Vinu J. Abraham, P.E.
2. 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 (specimen 2), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1211-02**, dated 12/10/02, signed and sealed by Vinu J. Abraham, P.E.
3. 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 3), prepared by Hurricane Test Laboratory, Inc., Test Reports No. **HTL-0319-1102-02**, and No. **HTL-0319-1211-02** dated 11/07-12/11/02, signed and sealed by Vinu J. Abraham, P.E.
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) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specimen 4), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1102-02**, dated 10/29/02, signed and sealed by Vinu J. Abraham, P.E.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 12-0727.05

Expiration Date: August 26, 2014
Approval Date: September 06, 2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS (CONTINUED) (All submitted under previous NOA#04-0217.09)

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 5), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1102-02**, dated 11/7-8/02, signed and sealed by Vinu J. Abraham, P.E.
6. 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 6), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1211-02**, dated 12/16/02, signed and sealed by Vinu J. Abraham, P.E.
7. 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) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum window wall system (specimen 7), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0107-03**, dated 1/8/03-2/13/03, signed and sealed by Vinu J. Abraham, P.E.
8. 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 (specimen 8), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1102-02**, dated 11/11-12/02, signed and sealed by Vinu J. Abraham, P.E.
9. 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 (specimen 9), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-1102-02**, dated 11/12-13/02, signed and sealed by Vinu J. Abraham, P.E.
10. 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 2), prepared by Hurricane Test Laboratory, Inc., Test Report **HTL-0319-0906-03**, dated 09/9-10/03, signed and sealed by Vinu J. Abraham, P.E.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 12-0727.05

Expiration Date: August 26, 2014
Approval Date: September 06, 2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS (CONTINUED) (All submitted under previous NOA#04-0217.09)

11. 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) 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-0319-0724-03**, dated 07/21-23/03, signed and sealed by Vinu J. Abraham, P.E.
12. 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 1), prepared by Hurricane Test Laboratory, Inc., Test Report No. **HTL-0319-0906-03**, dated 09/4-8/03, signed and sealed by Vinu J. Abraham, P.E.

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with FBC-2004 and 2007, prepared by Larson Engineering, Inc., dated 06/25/08 and 11/20/08, signed and sealed by Ethan A. Charpentier, P.E.
(Submitted under previous NOA# 08-1015.02)
2. Glazing complies with ASTM E1300-04

D. QUALITY ASSURANCE

1. Miami-Dade Department of Permitting, Environment, and Regulatory Affairs (PERA)

E. MATERIAL CERTIFICATIONS

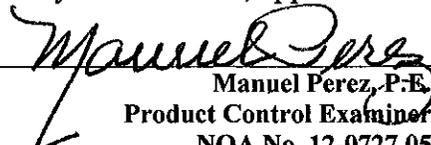
1. Notice of Acceptance No. **11-0325.05** issued to **Solutia, Inc.** for their "Saflex and Vanceva clear and color interlayers" dated 05/05/11, expiring on 05/21/16

F. STATEMENTS

1. Statement letter of conformance, complying with FBC-2010, dated July 13, 2012, signed and sealed by Ethan A. Charpentier, P.E.
2. Statement letter of no financial interest, dated November 20, 2008, signed and sealed by Ethan A. Charpentier, P.E. *(Submitted under previous NOA# 08-1015.02)*

G. OTHER

1. Notice of Acceptance No. **08-1015.02**, issued to Harmon, Inc. for their Series "HI 5000" Pressure Plate Glazed Aluminum Window Wall System – S.M.I., approved on 10/28/09 and expiring on 08/26/14.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 12-0727.05
Expiration Date: August 26, 2014
Approval Date: September 06, 2012

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\001_HI5000_sm.dwg - dhoerner - 6/12/2012 8:24 AM

HARMON HI 5000 SMALL MISSILE

PREGLAZED AND UNITIZED PRESSURE PLATE GLAZED ALUMINUM WINDOW WALL SYSTEM. THIS NOW INCLUDES STOREFRONT AND PUNCH OPENING SINGLE LITE APPLICATIONS AS WELL AS OPTION FOR TWO-SIDED STRUCTURAL SILICONE GLAZED DESIGN

DESIGN PARAMETERS

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

- TAS-201 - SMALL MISSILE IMPACT
- TAS-202 - AIR LEAKAGE, WATER PENETRATION & STRUCTURAL PERFORMANCE
(WATER @ 20 psf, STRUCTURAL @ +90/-90 psf)
- TAS-203 - CYCLING

ASTM STANDARDS

- E283 - AIR LEAKAGE
- E330 - STRUCTURAL PERFORMANCE
- E331 - WATER PENETRATION
- E1886 LEVEL "D" - IMPACT BY "MISSILE" & CYCLIC PRESSURES
- E1996 - IMPACT BY WINDBORNE DEBRIS
- AAMA - TIR - A9-91

SYSTEM DIMENSIONS

- 2 1/2" X 6" (MONOLITHIC GLASS)
- 2 1/2" X 6 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 (PRIME PAINTED)

WELDING

CURRENT ASTM STANDARDS E70 - XX ELECTRODES UNLESS OTHERWISE NOTED

GLASS

SEE SHEET 5

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

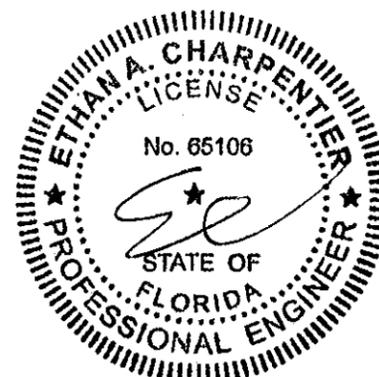
INDEX OF DRAWINGS

PAGE	DESCRIPTION
1	COVER SHEET
2	MATERIAL LISTS
3	GLAZING DETAILS - RE-GLAZING DETAILS
4	ELEVATION-SIMPLE SPAN (WINDOWWALL/STOREFRONT/PUNCH OPENING)
5	GLASS SCHEDULE - LARGE MISSILE
6	PART DRAWINGS
7	MULLION APPLICATION CHART - ANCHOR REVIEW
8	DETAILS OF TYPICAL HEADS, SILLS & INTERMEDIATE HORIZONTALS
9	DETAILS OF TYPICAL VERTICALS
10	DETAILS OF DOOR AND SEGMENTED VERTICAL
11	DETAIL OF 90 DEGREE OUTSIDE CORNER AND JAMB SPAN TABLE
12	STRAP ANCHOR & THRU-FRAME ANCHOR
13	ANGLES IN VERTICAL ANCHOR & ALUMINUM LUG IN VERTICAL ANCHOR
14	JAMB ANCHORS

SYSTEM SELECTION

WINDOW WALL / STOREFRONT / PUNCH OPENING
SINGLE SPAN - SHEET 4

2-SIDED SILICONE OPTIONS SEE PAGE 9



JUL 13 2012

Larson Engineering, Inc.
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
Acceptance No. 12-0727.05
Expiration Date Aug. 26, 2014
By *Manuel Perez*
Miami Dade Product Control

ENGINEER STAMP

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



HI 5000 SMALL MISSILE
COVER SHEET

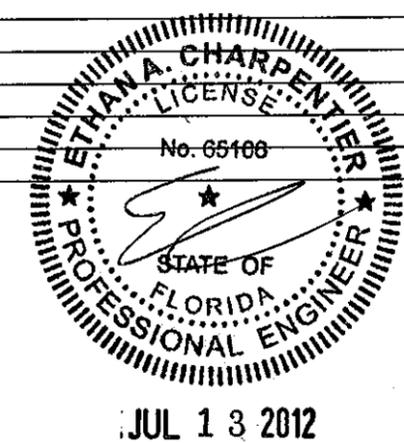
DATE: 06/28/04	4 9/2/09
2 3/25/09	6 05/22/12
3 08/04/09	

DWG. NO. HI5000SM

SHEET 01 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\002_HI5000_sm.dwg - dfoermer - 6/12/2012 7:47 AM

FRAME ASSEMBLY FASTENER LIST				GASKET LIST				ALUMINUM MATERIAL LIST						
								DESCRIPTION	PART #	ALLOY	TYPICAL THICK.	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	(A)		PART # 770301	85 DUR. SILICONE	INTERIOR FIXED GASKET FOR 5/8" & 1 3/8" THICK GLASS (1/4" THICK SEAL)	1	FEMALE VERTICAL MULLION	304001	6063-T6	.110	
(B)	TYPICAL HORIZONTAL FRAME ASSEMBLY SCREW	#12 X 1 1/2" HWH GRADE 5 "A" POINT XYLAN COATED	(4) REQUIRED PER JOINT	(B)		PART # 750301	70 DUR. SILICONE	VERTICAL WHISKER GASKET	2	MALE VERTICAL MULLION	304002	6063-T6	.110	
(C)	NON-TYPICAL HORIZONTAL ASSEMBLY SCREW TO BYPASS STEEL	#12 X 1 1/2" PFH GRADE 5 "A" POINT XYLAN COATED	(4) REQUIRED PER JOINT	(C)		PART # 720301	70 DUR. EPDM	EXTERIOR SLIDE IN VERTICAL PRESSURE PLATE	3	INTERMEDIATE HORIZONTAL	304101	6063-T5	.100	
(D)	ANCHOR STEEL FIXING PLATE INTO HORIZONTAL	#17-14 X 1" TYPE AB 304 STAINLESS	(1) REQUIRED PER PLATE	(D)		PART # 730301	70 DUR. EPDM	EXTERIOR WEDGE	4	JAMB - MONOLITHIC GLASS	304004	6063-T6	.110	
(E)	TEMPORARY ANCHOR FOR CORNER END CAPS	#10 X 1 1/4" TEK SCREW	(1) REQUIRED PER END CAP	(E)		PART # 790301	70 DUR. EPDM	THERMAL BREAK FOR PRESSURE PLATE	5	HEAD & SILL - MONOLITHIC GLASS	304103	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	(F)		PART # 770302	85 DUR. SILICONE	INTERIOR FIXED GASKET FOR 9/16" & 1 5/16" THICK GLASS (5/16" THICK SEAL)	6	JAMB - INSULATED GLASS	304003	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	(G)		PART # 790303	90 DUR. EPDM	ALL PERIMETERS	7	HEAD & SILL - INSULATED GLASS	304102	6063-T5	.110	
				(H)		PART # 790302	90 DUR. EPDM	PERIMETER THERMAL BREAK	8	JAMB COVER	300203	6063-T5	.100	
				(J)		PART # 780301	70 DUR. SILICONE	ZONE DAM FOR MONOLITHIC GLASS 2 1/2" LONG	9	HEAD & SILL EXTERIOR COVER	300202	6063-T5	.100	
				(K)		PART # 780302	70 DUR. SILICONE	ZONE DAM FOR INSULATED GLASS 2 1/2" LONG	10	HEAD & SILL INTERIOR FILLER	304401	6063-T5	.080	
				(L)		PART # 700303	90 DUR. SILICONE	5" LONG SETTING BLOCK. (TEAR IN HALF FOR MONOLITHIC GLASS)	11	HORIZONTAL COVER	300201	6063-T5	.100	
				(M)		PART # 740301	70 DUR. EPDM	AT BUTT JOINT FOR MONOLITHIC GLASS	12	VERTICAL COVER	300236	6063-T5	.060	
				(N)		PART # 740302	70 DUR. EPDM	AT BUTT JOINT FOR INSULATED GLASS	13	VERTICAL PRESSURE PLATE	300701	6105-T5	.100	
				(O)			HARD. SHORE A	INTERIOR FIXED TAPE FOR 5/8" & 1 3/8" THICK GLASS (1/4" THICK SEAL)	14	PERIMETER ADAPTOR - MONOLITHIC GLASS	300305	6105-T5	.080	
				(P)			HARD. SHORE A	INTERIOR FIXED TAPE FOR 9/16" & 1 5/16" THICK GLASS (5/16" THICK SEAL)	15	PERIMETER ADAPTOR - INSULATED GLASS	300304	6105-T5	.080	
				(Q)			HARD. SHORE A	SPACER TAPE FOR SEGMENTED MULLION	16	PERIMETER ADAPTOR - MONOLITHIC GLASS	300303	6105-T5	.080	
									17	HORIZONTAL ADAPTOR - MONOLITHIC GLASS	300303	6105-T5	.080	
									18	HORIZONTAL ADAPTOR - INSULATED GLASS	300302	6105-T5	.080	
									19	VERTICAL ADAPTOR - MONOLITHIC GLASS	300308	6105-T5	.093	
									20	VERTICAL ADAPTOR - INSULATED GLASS	300301	6105-T5	.093	
									21	ANTI-BUCKLING CLIP (EXTERIOR SIDE)	300306	6105-T5	.060	4" LONG 30" O.C. MAX.
									22	ANTI-BUCKLING CLIP (INTERIOR SIDE)	300310	6105-T5	.060	4" LONG 30" O.C. MAX.
									23	STRAP ANCHOR FEMALE (KEEPER)	930102	6105-T5	.177	SEE DET. 1-4 SHT. 12
									24	STRAP ANCHOR MALE	930106	6105-T5	.187	SEE DET. 1-4 SHT. 12
									25	SLIDING ANCHOR FEMALE	930105	6105-T5	.250	SEE DET. 5-8 SHT. 13
									26	SLIDING ANCHOR MALE	930103	6105-T5	.435	SEE DET. 5-8 SHT. 13



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

Harmon
 HI 5000 SMALL MISSILE MATERIAL LISTS
 DATE: 06/28/04 ⁴ 9/2/09
² 3/25/09 ⁵ 05/12/12
³ 08/04/09
 DWG. NO. HI5000SM
 SHEET 02 OF 14

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

DADE CO. STAMP

PRODUCT REVISED as complying with the Florida Building Code
 Acceptance No 12-0727.05
 Expiration Date Aug. 26, 2014
 By *Mmanuel Ponce*
 Miami Dade Product Control

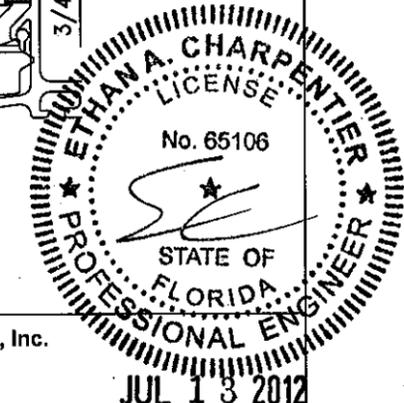
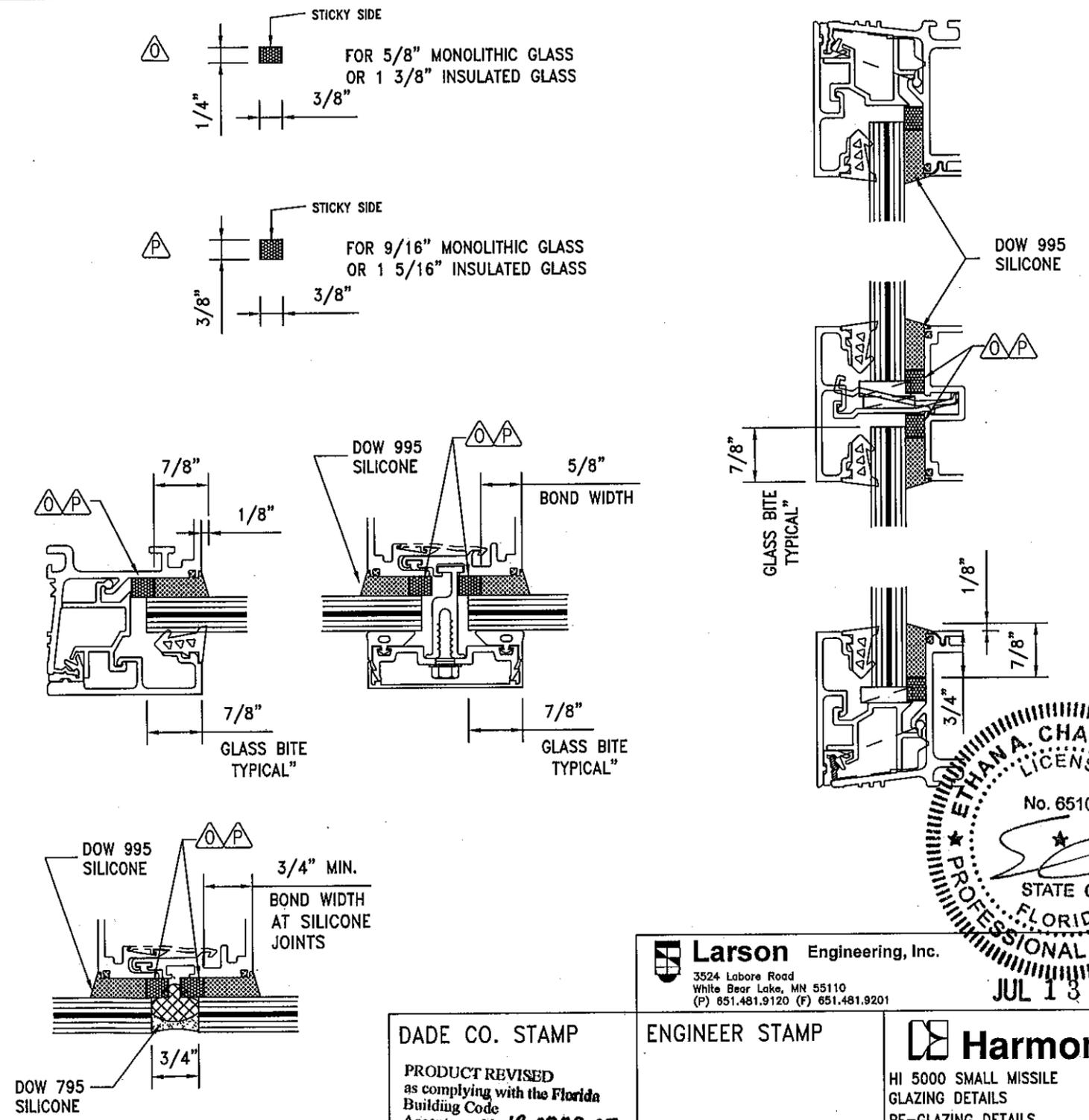
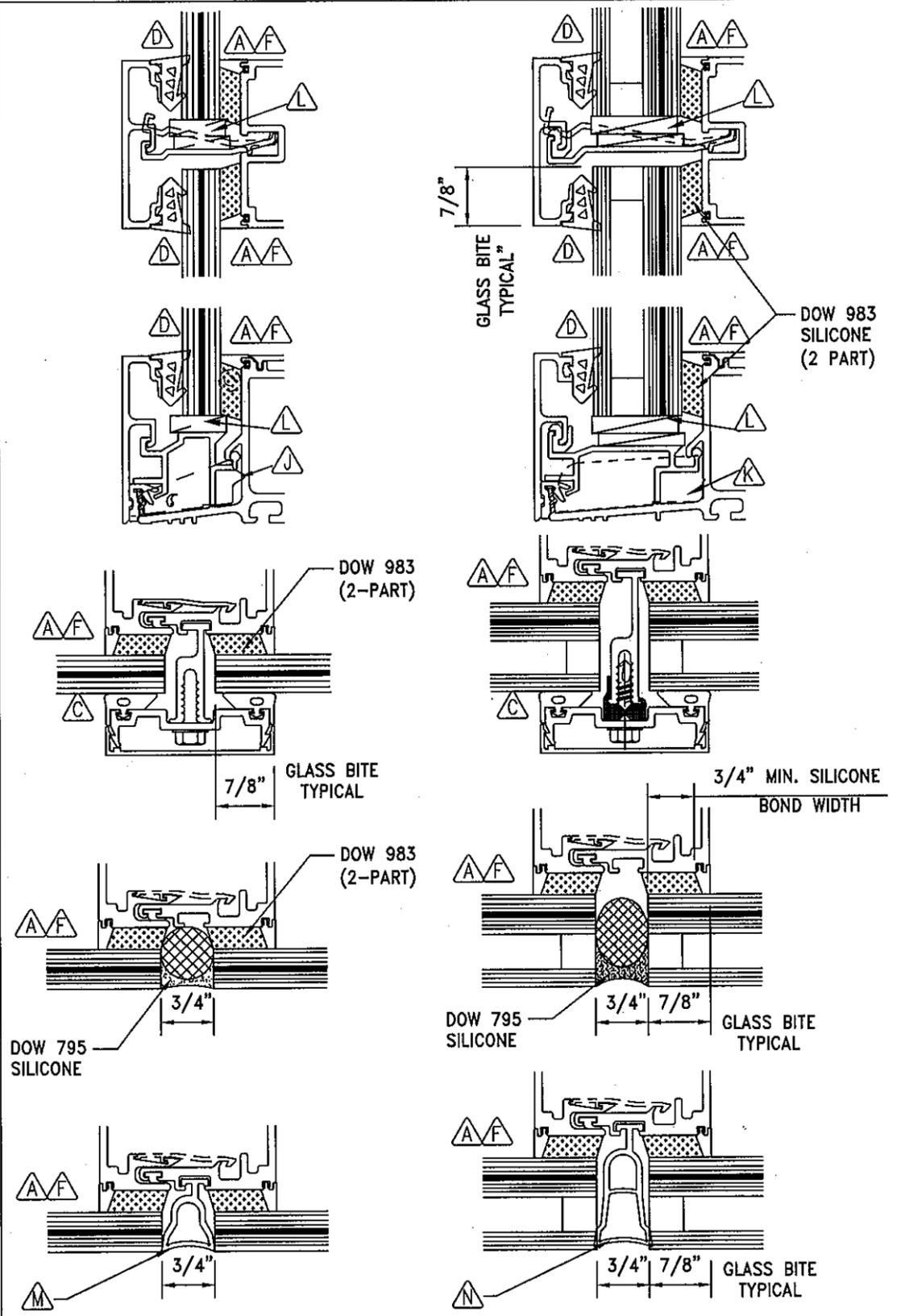
T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\003_HI5000_sm.dwg - dfoerner - 6/12/2012 7:47 AM

GLAZING DETAILS

LAMINATED GLASS DETAILS

INSULATED LAMINATED GLASS DETAILS

RE-GLAZING DETAILS



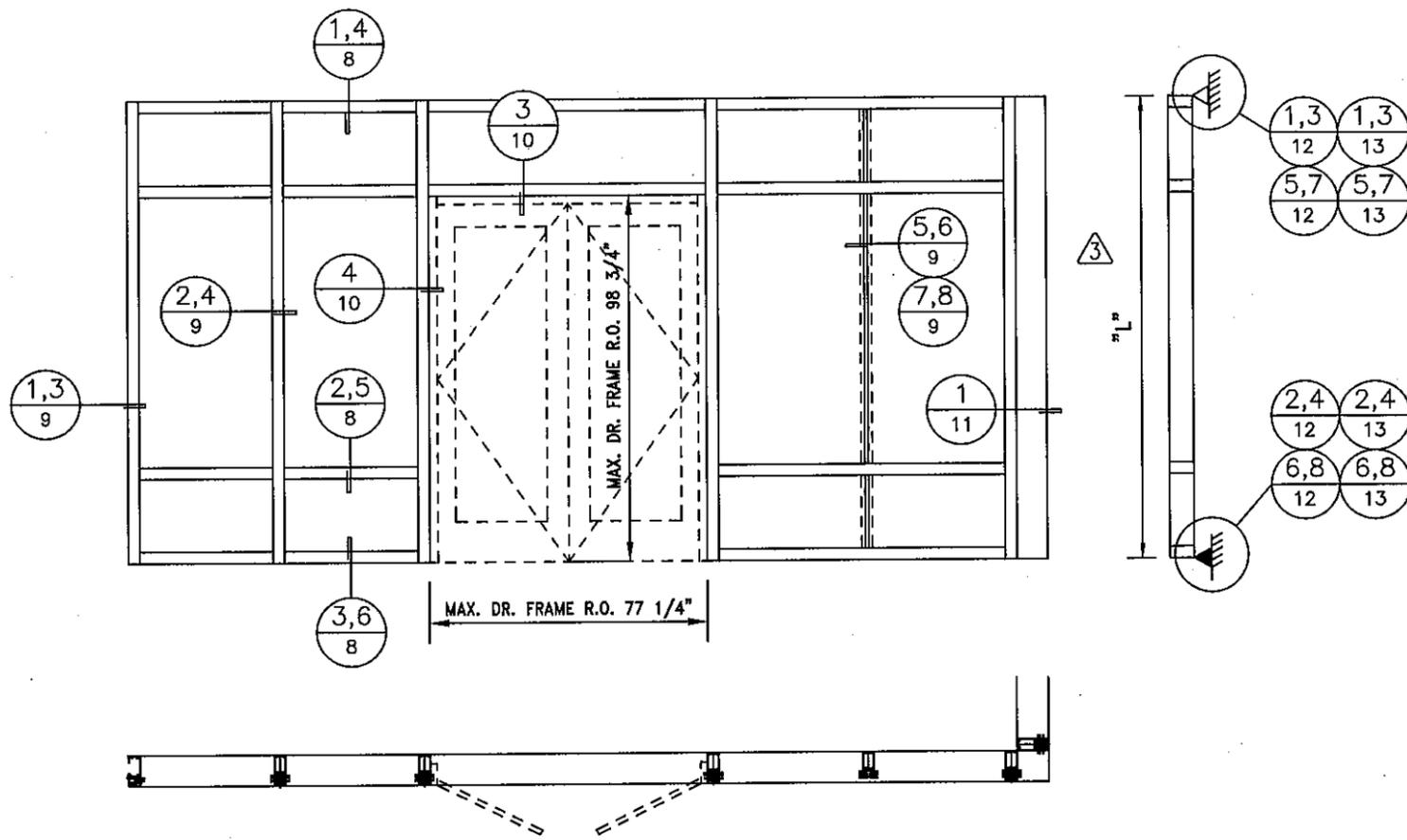
Larson Engineering, Inc.
 3524 Labore Road
 White Bear Lake, MN 55110
 (P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP
 PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No *12-0727.05*
 Expiration Date *Aug. 20, 2014*
 By *Manuel Perez*
 Miami Dade Product Control

ENGINEER STAMP
 Florida Firm No. F-02000005175
 Certificate of Authorization #9803
 Ethan A. Charpentier
 Registration No. 65106

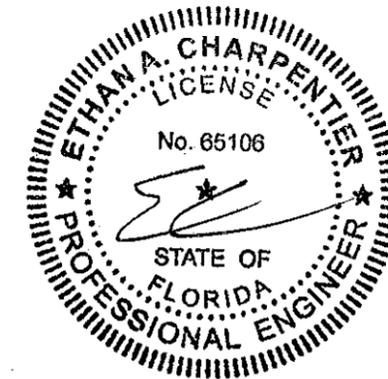
Harmon
 HI 5000 SMALL MISSILE
 GLAZING DETAILS
 RE-GLAZING DETAILS
 DATE: 06/28/04 4 9/2/09
 2 3/25/09 5 05/22/12
 3 08/04/09
 DWG. NO. HI5000SM
 SHEET 03 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\004_HI5000_sm.dwg - cfoermer - 6/12/2012 7:47 AM



SYSTEM APPLICATION GUIDELINES:

- 1 SELECT GLASS FROM CHARTS ON SHEET 5. NOTE THE GLASS THICKNESS AND 4-SIDE CAPTURED VERSUS CAPTURED/SSG OPTIONS.
- 2 SELECT MULLION & REINFORCING AS REQUIRED FROM CHARTS ON SHEET 7 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 7. 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 7.
- 5 SELECT JAMB MULLION AND AND REINFORCING OPTION AS REQUIRED FROM CHARTS ON SHEET 11 OF 14.
- 6 THE LOWEST VALUE OF ALL TABLES SHALL APPLY FOR THE ENTIRE ASSEMBLY.



JUL 13 2012

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

GENERAL NOTES:

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

DADE CO. STAMP

PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No. 12-0727.05
 Expiration Date Aug. 26, 2014
 By *Manuel Perez*
 Miami Dade Product Control

ENGINEER STAMP

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



HI 5000 SMALL MISSILE
 SINGLE SPAN APPLICATIONS

DATE: 06/28/04	4 9/2/09
2 3/25/09	5 05/22/12
3 08/04/09	

DWG. NO. HI5000SM

SHEET 04 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\005_HI5000_sm.dwg - dfoerner - 6/12/2012 7:47 AM

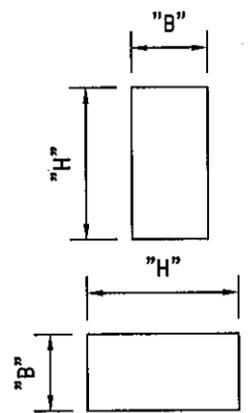
HI 5000 Glass Load Capacity			Monolithic Glass Types		Insulated Glass Types	
DLO "B"	DLO "H"	SF	Type 8	Type 9		
30"	54"	11.25 SF	+/-90 PSF	+/-90 PSF		
36"	54"	13.5 SF	+/-90 PSF	+/-90 PSF		
42"	54"	15.75 SF	+/-90 PSF	+/-90 PSF		
48"	54"	18 SF	+/-90 PSF	+/-90 PSF		
54"	54"	20.25 SF	+/-90 PSF	+/-90 PSF		
60"	54"	22.5 SF	+/-90 PSF	+/-90 PSF		
66"	54"	24.75 SF	+/-90 PSF	+/-90 PSF		
72"	54"	27 SF	+/-90 PSF	+/-90 PSF		
36"	60"	15 SF	+/-90 PSF	+/-90 PSF		
42"	60"	17.5 SF	+/-90 PSF	+/-90 PSF		
48"	60"	20 SF	+/-90 PSF	+/-90 PSF		
54"	60"	22.5 SF	+/-90 PSF	+/-90 PSF		
60"	60"	25 SF	+/-90 PSF	+/-90 PSF		
66"	60"	27.5 SF	+/-90 PSF	+/-90 PSF		
72"	60"	30 SF	+/-90 PSF	+/-90 PSF		
36"	66"	16.5 SF	+/-90 PSF	+/-90 PSF		
42"	66"	19.25 SF	+/-90 PSF	+/-90 PSF		
48"	66"	22 SF	+/-90 PSF	+/-90 PSF		
54"	66"	24.75 SF	+/-90 PSF	+/-90 PSF		
60"	66"	27.5 SF	+/-90 PSF	+/-90 PSF		
66"	66"	30.25 SF	+/-90 PSF	+/-90 PSF		
72"	66"	33 SF	+/-90 PSF	+/-90 PSF		
36"	72"	18 SF	+/-90 PSF	+/-90 PSF		
42"	72"	21 SF	+/-90 PSF	+/-90 PSF		
48"	72"	24 SF	+/-90 PSF	+/-90 PSF		
54"	72"	27 SF	+/-90 PSF	+/-90 PSF		
60"	72"	30 SF	+/-90 PSF	+/-90 PSF		
66"	72"	33 SF	+/-90 PSF	+/-90 PSF		
72"	72"	36 SF	+/-90 PSF	+/-90 PSF		
36"	78"	19.5 SF	+/-90 PSF	+/-90 PSF		
42"	78"	22.75 SF	+/-90 PSF	+/-90 PSF		
48"	78"	26 SF	+/-90 PSF	+/-90 PSF		
54"	78"	29.25 SF	+/-90 PSF	+/-90 PSF		
60"	78"	32.5 SF	+/-90 PSF	+/-90 PSF		
66"	78"	35.75 SF	+/-90 PSF	+/-90 PSF		
72"	78"	39 SF	N/A	N/A		
36"	84"	21 SF	+/-90 PSF	+/-90 PSF		
42"	84"	24.5 SF	+/-90 PSF	+/-90 PSF		
48"	84"	28 SF	+/-90 PSF	+/-90 PSF		
54"	84"	31.5 SF	+/-90 PSF	+/-90 PSF		
60"	84"	35 SF	+/-90 PSF	+/-90 PSF		
66"	84"	38.5 SF	N/A	N/A		
72"	84"	42 SF	N/A	N/A		
36"	90"	22.5 SF	+/-90 PSF	+/-90 PSF		
42"	90"	26.25 SF	+/-90 PSF	+/-90 PSF		
48"	90"	30 SF	+/-90 PSF	+/-90 PSF		
54"	90"	33.75 SF	+/-90 PSF	+/-90 PSF		
60"	90"	37.5 SF	+/-90 PSF	+/-90 PSF		
66"	90"	41.25 SF	N/A	N/A		
72"	90"	45 SF	N/A	N/A		
36"	96"	24 SF	+/-90 PSF	+/-90 PSF		
42"	96"	28 SF	+/-90 PSF	+/-90 PSF		
48"	96"	32 SF	+/-90 PSF	+/-90 PSF		
54"	96"	36 SF	+/-90 PSF	+/-90 PSF		
60"	96"	40 SF	N/A	N/A		
66"	96"	44 SF	N/A	N/A		
36"	102"	25.5 SF	+/-90 PSF	+/-90 PSF		
42"	102"	29.75 SF	+/-90 PSF	+/-90 PSF		
48"	102"	34 SF	+/-90 PSF	+/-90 PSF		
54"	102"	38.25 SF	N/A	N/A		
60"	102"	42.5 SF	N/A	N/A		
36"	108"	27 SF	+/-90 PSF	+/-90 PSF		
42"	108"	31.5 SF	+/-90 PSF	+/-90 PSF		
48"	108"	36 SF	+/-90 PSF	+/-90 PSF		
54"	108"	40.5 SF	N/A	N/A		
60"	108"	45 SF	N/A	N/A		
30"	114"	23.75 SF	+/-90 PSF	+/-90 PSF		
36"	114"	28.5 SF	+/-90 PSF	+/-90 PSF		
43"	114"	34.04 SF	+/-90 PSF	+/-90 PSF		
48"	114"	38 SF	+/-90 PSF	+/-90 PSF		
54"	114"	42.75 SF	N/A	N/A		
24"	120"	20 SF	+/-90 PSF	+/-90 PSF		
30"	120"	25 SF	+/-90 PSF	+/-90 PSF		
36"	120"	30 SF	+/-90 PSF	+/-90 PSF		
42"	120"	35 SF	+/-90 PSF	+/-90 PSF		
48"	120"	40 SF	N/A	N/A		
54"	120"	45 SF	N/A	N/A		
24"	132"	22 SF	+/-90 PSF	+/-90 PSF		
30"	132"	27.5 SF	+/-90 PSF	+/-90 PSF		
36"	132"	33 SF	+/-90 PSF	+/-90 PSF		
24"	143"	23.83 SF	+/-90 PSF	+/-90 PSF		
30"	143"	29.79 SF	+/-90 PSF	+/-90 PSF		
36"	143"	35.75 SF	+/-90 PSF	+/-90 PSF		

MONOLITHIC GLASS - SMALL MISSILE		
8	9/16" (.060) SAFLEX HS / HS	TEST PRESSURE: +/-90 PSF DLO SF <= 38.03 SF
		1/4" HS  .060 SOLUTIA SAFLEX PVB 1/4" HS
INSULATED GLASS - SMALL MISSILE		
9	1 5/16" (.060) SAFLEX IG HS / HS - TEMP	TEST PRESSURE: +/-90 PSF DLO SF <= 38.03 SF
		1/4" HS 1/4" HS AIR SPACE 1/4" TEMPERED  .060 SAFLEX PVB

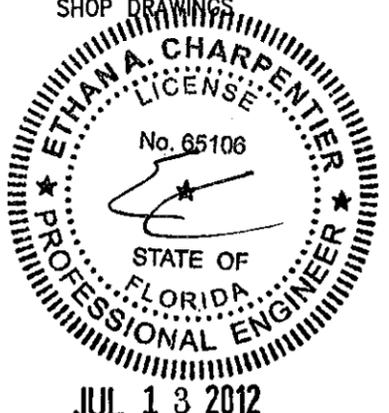
NOTES:

ALL GLASS SIZES MUST MEET ASTM E1300-04 WITH THE SQUARE FOOT LESS THAN OR EQUAL TO THE TESTED SQUARE FOOT SIZES AT THE TESTED PRESSURES.

GLASS FORMULA FOR ALL GLASS = DLO+1 3/4" HORIZONTALLY AND VERTICALLY



DIM. "B" AND "H" REFER TO DLO ON SHOP DRAWINGS



Larson Engineering, Inc.
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
Acceptance No 12-0727-05
Expiration Date Aug 26, 2014
By *Manuel Perez*
Miami Dade Product Control

ENGINEER STAMP

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

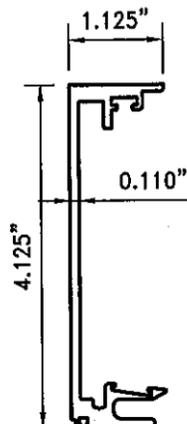
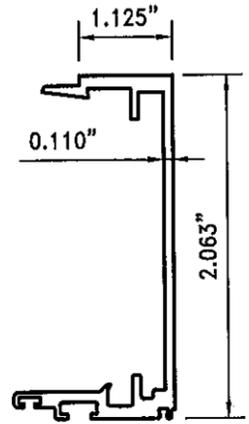
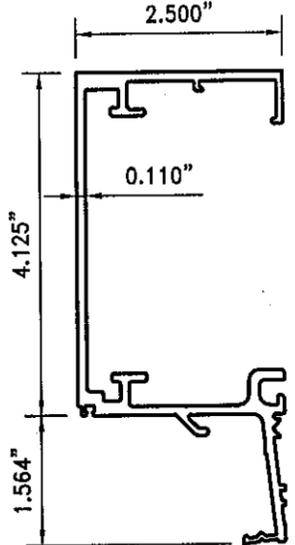
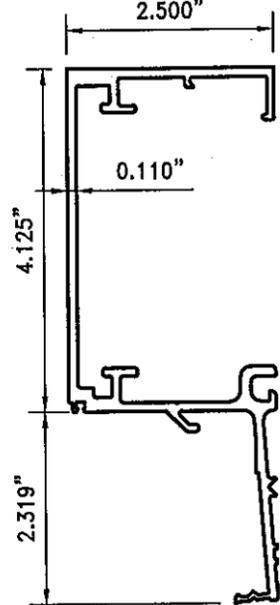
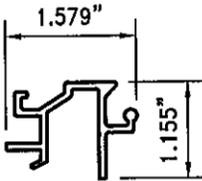
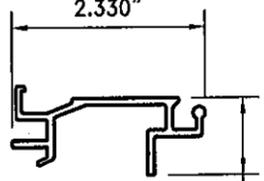
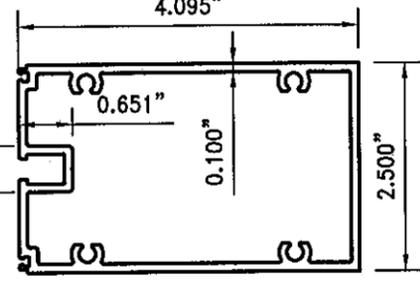
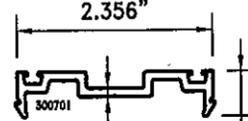
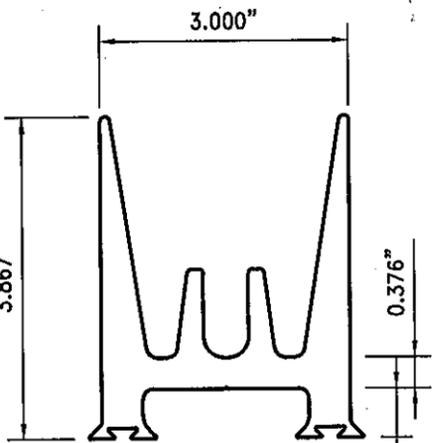
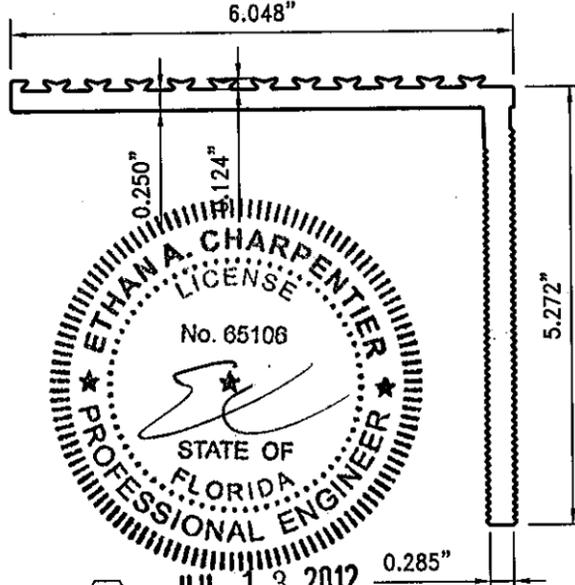
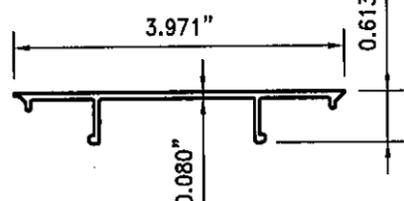
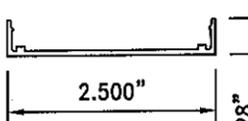
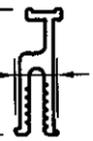
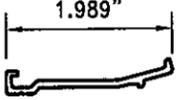
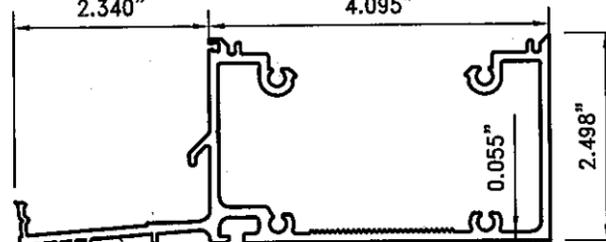
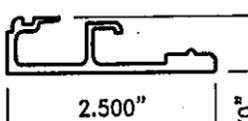
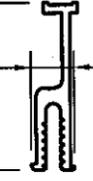
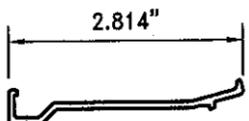
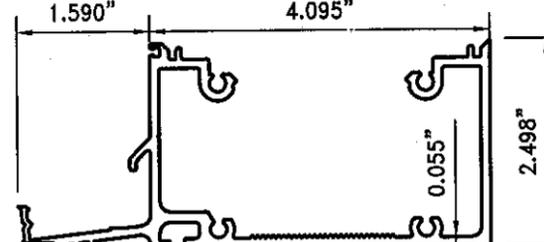
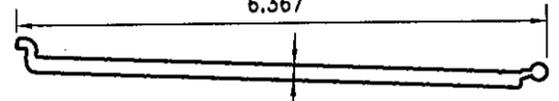
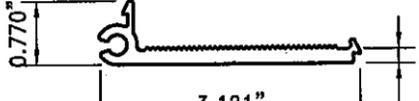
Harmon

HI 5000 SMALL MISSILE
GLASS APPLICATIONS
LARGE MISSILE

DATE: 06/28/04	4 9/2/09
2 3/25/09	5 05/22/12
3 08/04/09	

DWG. NO. HI5000SM
SHEET 05 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\006_HI5000_sm.dwg - dfoerner - 6/12/2012 7:47 AM

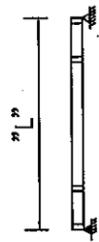
 <p>304001 ¹ FEMALE MULLION</p>	 <p>304002 ² MALE MULLION</p>	 <p>304004 ⁴ MONOLITHIC JAMB</p>	 <p>304003 ⁶ INSULATED JAMB</p>	 <p>300305 ¹⁴ MONO-PERIM.ADAPT.</p>	 <p>300304 ¹⁵ INS-PERIM. ADAPT.</p>	 <p>304101 ³ INTERMEDIATE HORIZONTAL</p>					
 <p>300701 ¹³ PERSSURE BAR</p>	 <p>300202 ⁹ HD/SILL COVER</p>	 <p>300201 ¹¹ HORIZ. COVER</p>	 <p>930103 ²⁵ SLIDING ANCHOR MALE</p>			 <p>930105 ²⁴ SLIDING ANCHOR FEMALE</p>	 <p>304401 ¹⁰ HEAD/SILL COVER</p>				
 <p>300236 ¹² VERTICAL COVER</p>	 <p>300308 ¹⁸ MONO-VERT. ADAPT.</p>	 <p>300303 ¹⁶ MONO-HORIZ.ADAPT.</p>					 <p>304102 ⁷ INSULATED HEAD/SILL</p>				
 <p>300203 ⁸ JAMB COVER</p>	 <p>300301 ¹⁹ INS.-VERT. ADAPT.</p>	 <p>300302 ¹⁷ INS.-HORIZ.ADAPT.</p>					 <p>304103 ⁵ MONO- HEAD/SILL</p>				
 <p>930106 ²³ STRAP ANCHOR MALE</p>		 <p>930102 ²² STRAP ANCHOR FEMALE</p>	<div style="display: flex; justify-content: space-between;"> <div data-bbox="1647 1501 2284 1854"> <p>DADE CO. STAMP</p> <p>PRODUCT REVISED as complying with the Florida Building Code Acceptance No 12-0727-05 Expiration Date Aug 26, 2014 By <i>Manuel Perez</i> Miami/Dade Product Control</p> </div> <div data-bbox="2284 1501 2626 1854"> <p>ENGINEER STAMP</p> <p>Florida Firm No. F-0200005175 Certificate of Authorization #8803 Ethan A. Charpentier Registration No. 65106</p> </div> <div data-bbox="2626 1501 2952 1854"> <p>Harmon</p> <p>HI 5000 SMALL MISSILE PART DRAWINGS</p> <table border="1"> <tr> <td>DATE: 06/28/04</td> <td>4 9/2/09</td> </tr> <tr> <td>2 3/25/09</td> <td>5 05/22/12</td> </tr> <tr> <td>3 08/04/09</td> <td></td> </tr> </table> <p>DWG. NO. HI5000SM</p> <p>SHEET 06 OF 14</p> </div> </div>			DATE: 06/28/04	4 9/2/09	2 3/25/09	5 05/22/12	3 08/04/09	
DATE: 06/28/04	4 9/2/09										
2 3/25/09	5 05/22/12										
3 08/04/09											

CASE 1 COMBINED Ix = 5.022 In ⁴ NO REINFORCING 	CASE 2 COMBINED Ix = 7.612 In ⁴ 	CASE 3 COMBINED Ix = 9.836 In ⁴ 	CASE 4 COMBINED Ix = 12.43 In ⁴ C3x4.1 w/ 1/4" x 3 1/2" STL BAR 	CASE 5 COMBINED Ix = 15.02 In ⁴ C3x4.1 w/ (2) 1/4" x 3 1/2" STL BARS
--	--	--	---	--

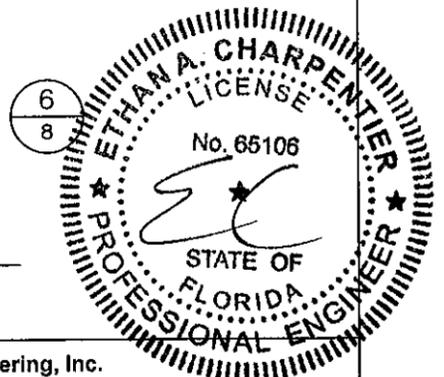
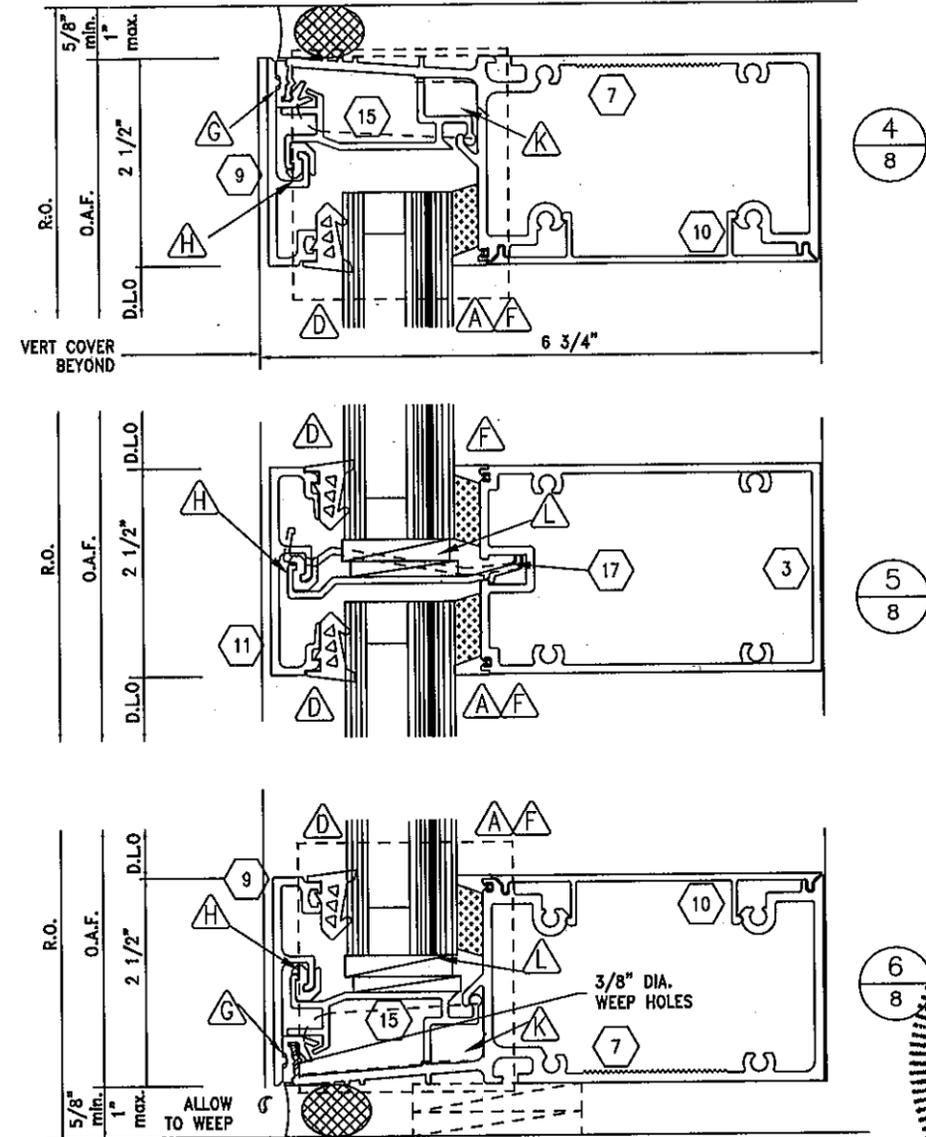
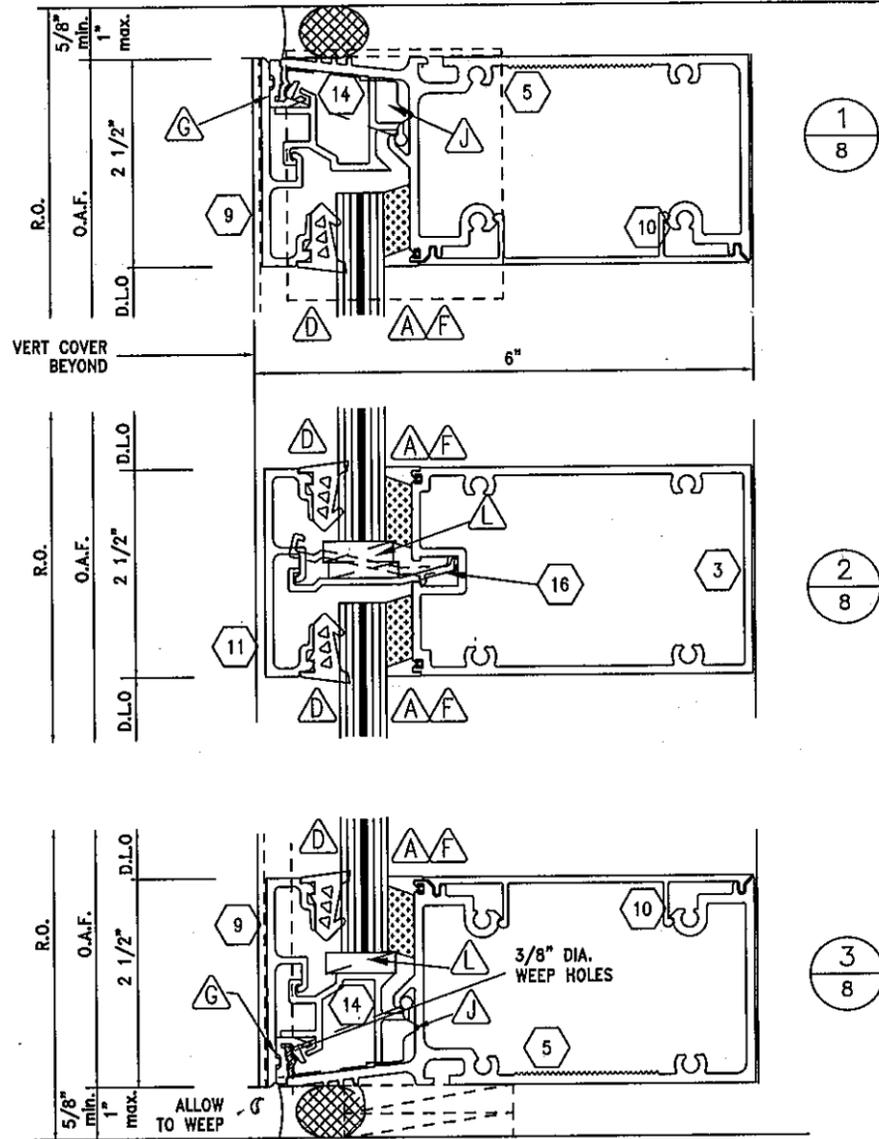
	Case 1		Case 2		Case 3		Case 4		Case 5		
	"B"	"L"/"R"									
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	3'-0"	8'-6"	10'-5"	11'-9"	12'-8"	13'-6"	766	944	1061	1147	1221
	4'-0"	7'-4"	9'-0"	10'-3"	11'-6"	12'-3"	885	1089	1238	1389	1479
	5'-0"	6'-7"	8'-1"	9'-2"	10'-4"	11'-4"	989	1218	1384	1556	1710
	6'-0"	6'-0"	7'-4"	8'-5"	9'-5"	10'-4"	1084	1334	1516	1704	1874
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	3'-0"	7'-10"	9'-8"	11'-0"	12'-1"	12'-10"	828	1019	1158	1271	1354
	4'-0"	6'-9"	8'-4"	9'-8"	10'-8"	11'-8"	956	1177	1337	1503	1640
	5'-0"	6'-1"	7'-6"	8'-6"	9'-7"	10'-6"	1069	1315	1495	1681	1847
	6'-0"	5'-6"	6'-10"	7'-9"	8'-9"	9'-7"	1171	1441	1638	1841	2024
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	3'-0"	7'-4"	9'-0"	10'-3"	11'-6"	12'-3"	885	1089	1238	1389	1479
	4'-0"	6'-4"	7'-10"	8'-11"	10'-0"	11'-0"	1022	1258	1430	1607	1766
	5'-0"	5'-8"	7'-0"	7'-11"	8'-11"	9'-10"	1142	1406	1598	1797	1975
	6'-0"	5'-2"	6'-4"	7'-3"	8'-2"	9'-0"	1251	1540	1751	1988	2163
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	3'-0"	6'-11"	8'-6"	9'-8"	10'-11"	11'-10"	939	1155	1313	1476	1600
	4'-0"	6'-0"	7'-4"	8'-5"	9'-5"	10'-4"	1084	1334	1516	1704	1874
	5'-0"	5'-4"	6'-7"	7'-6"	8'-5"	9'-3"	1212	1492	1695	1906	2095
	6'-0"	4'-10"	6'-0"	6'-10"	7'-8"	8'-5"	1327	1634	1857	2087	2295

GENERAL NOTES:

- "L" = MAXIMUM MULLION SPAN (LENGTH)
- "W" = C/L TO C/L SPACING
- "B" = $\frac{W1 + W2}{2}$ (TRIBUTARY AREA)
- "R" = REACTION (LBS.)
- FOR SINGLE SPAN MAXIMUM DEFL. = L/180 or 1"
- (WHEN STEEL REINF. IS USED, LENGTH OF STEEL IS LENGTH OF SPAN MINUS 12")
- SPANS ARE LIMITED BY MAXIMUM TESTED END REACTIONS



ANCHOR TYPE SUBSTRATE	STRAP ANCHOR	THRU-FRAME ANCHOR	STEEL ANGLES IN VERTICAL	ALUMINUM LUG IN VERTICAL	JAMB ANCHOR
WOOD					
CONC.					
STEEL					
STUD					
	MAXIMUM END REACTION (2) STRAPS-5" LONG = 1880# (2) STRAPS-11" LONG = 2176# SEE SHEET 12 FOR DETAILS	MAXIMUM END REACTION = 732# IN CONCRETE = 1880# IN STEEL SEE SHEET 12 FOR DETAILS	MAXIMUM END REACTION (2) ANGLES = 2335# IN STEEL = 1915# IN CONCRETE REIN. ANGLES w/ (1) FAST. SEE SHEET 13 FOR DETAILS	MAXIMUM END REACTION = 1555# SEE SHEET 13 FOR DETAILS	MAXIMUM END REACTION (1) STRAP-25" LONG w/ (2) 5" KEEPERS = 1225# IN CONC. = 850# IN METAL STUDS SEE DETAIL 2/14
	INSTRUCTIONS: FIND THE MULLION SPAN ("L") AND MODULE ("B") ON THE CHART. USE THE REACTION INDICATED TO FIND THE PROPER ANCHOR ATTACHMENT METHOD.			DADE CO. STAMP PRODUCT REVISED as complying with the Florida Building Code Acceptance No. 12-0727-05 Expiration Date Aug. 26, 2014 By <i>Manuel Serez</i> Miami Dade Product Control	ENGINEER STAMP
				Harmon HI 5000 SMALL MISSILE MULLION APPLICATIONS ANCHOR REVIEW DATE: 06/28/04 4 9/2/09 2 3/25/09 5 05/22/12 3 08/04/09 DWG. NO. HI5000SM SHEET 07 OF 14	



GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 7
- FOR PART IDENTIFICATION REFER TO SHEET 2

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

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

DADE CO. STAMP

PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No *12-0727.05*
 Expiration Date *Aug. 26, 2014*
 By *Manuel Lopez*
 Miami Dade Product Control

ENGINEER STAMP

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

JUL 13 2012

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



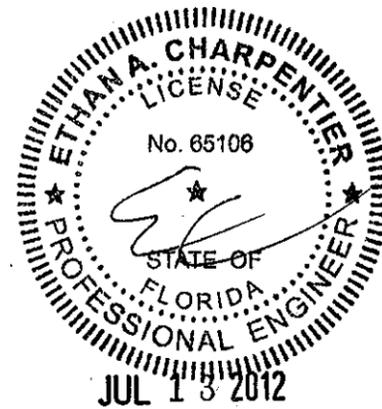
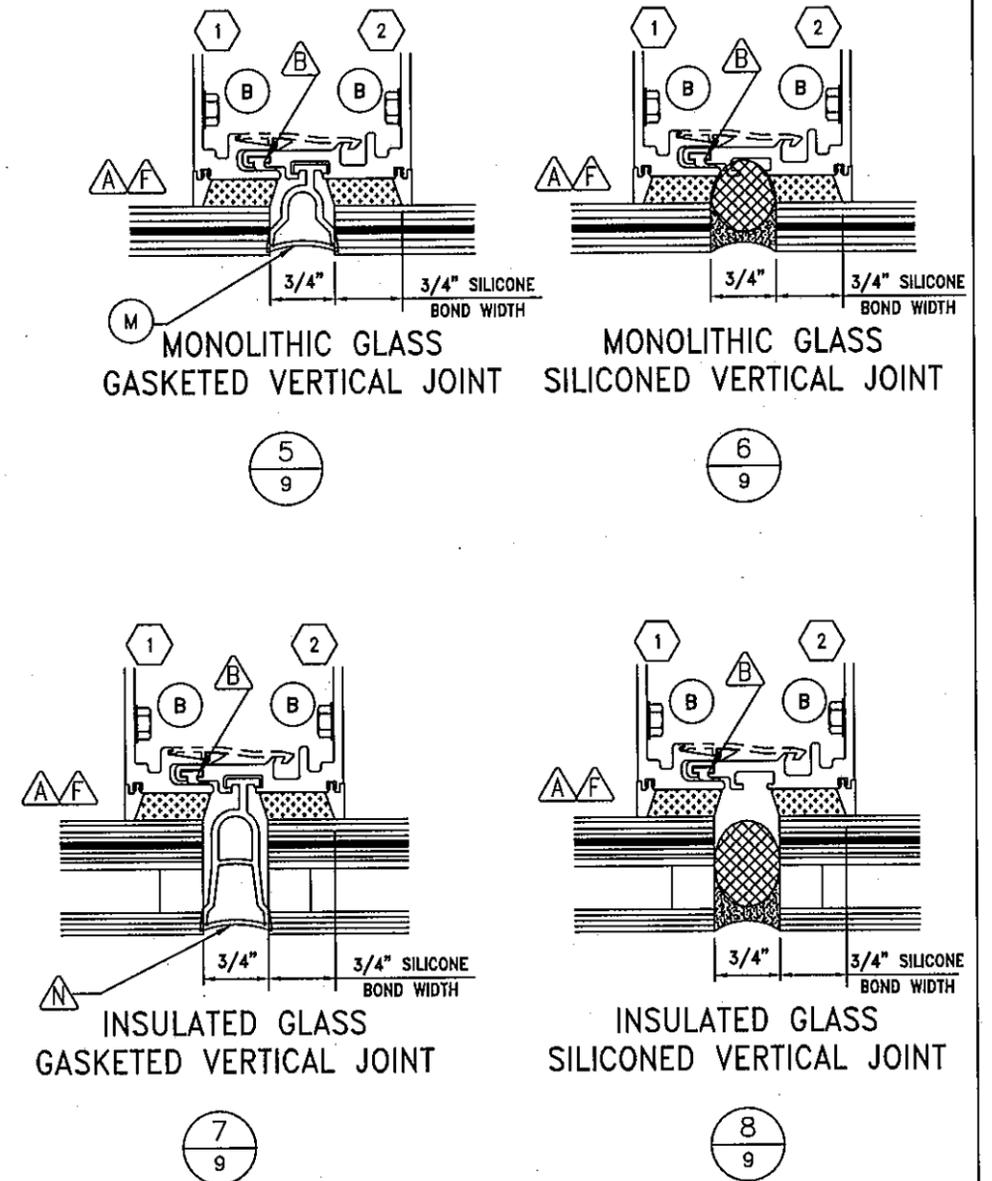
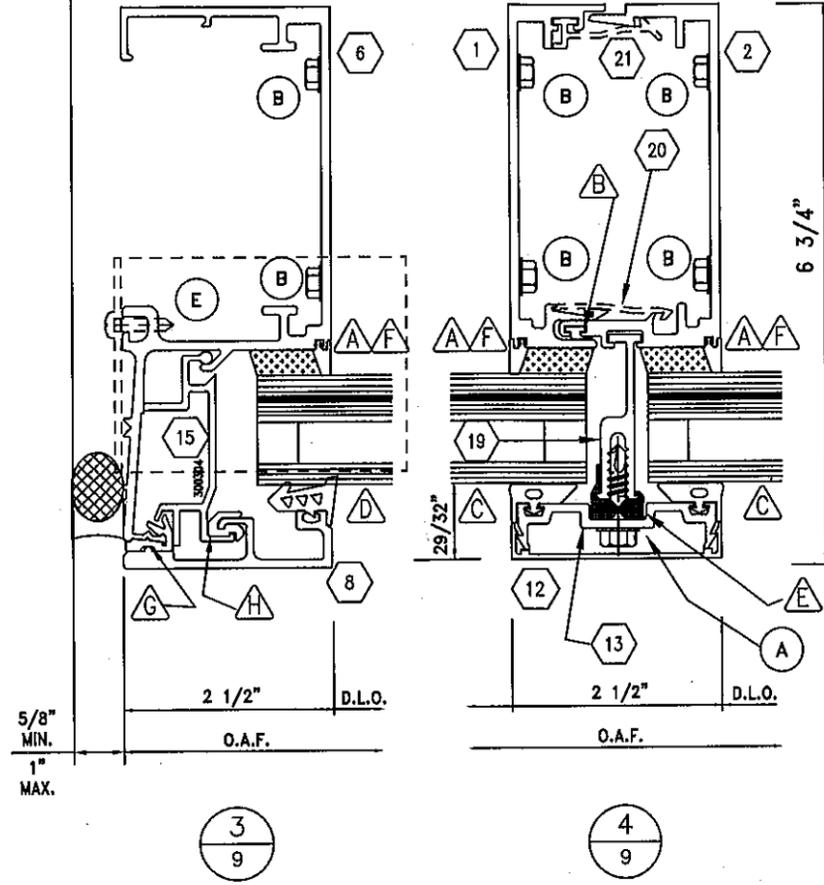
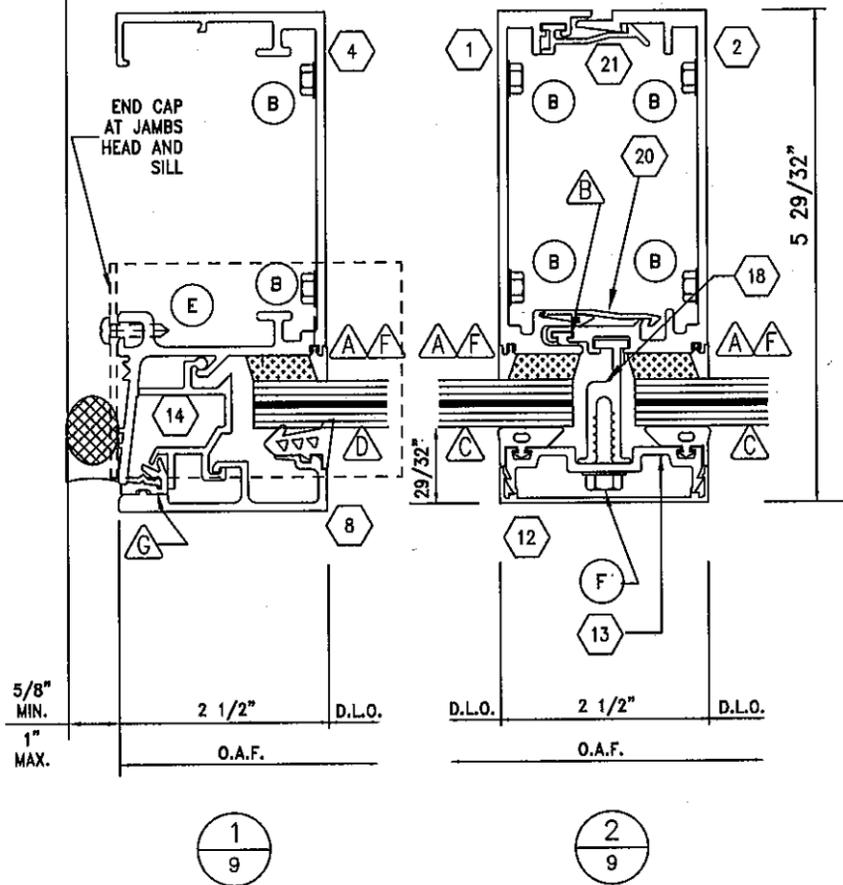
HI 5000 SMALL MISSILE
 HORIZONTAL DETAILS

DATE: 06/28/04	4 9/2/09
2 3/25/09	5 05/22/12
3 08/04/09	

DWG. NO. HI5000SM

SHEET 08 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\009_HI5000_sm.dwg - dfoerner - 6/12/2012 7:47 AM



GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 7
- FOR PART IDENTIFICATION REFER TO SHEET 2

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

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

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0727.05
Expiration Date Aug. 26, 2014
By Manuel Suez
Miami Dade Product Control

ENGINEER STAMP

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

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

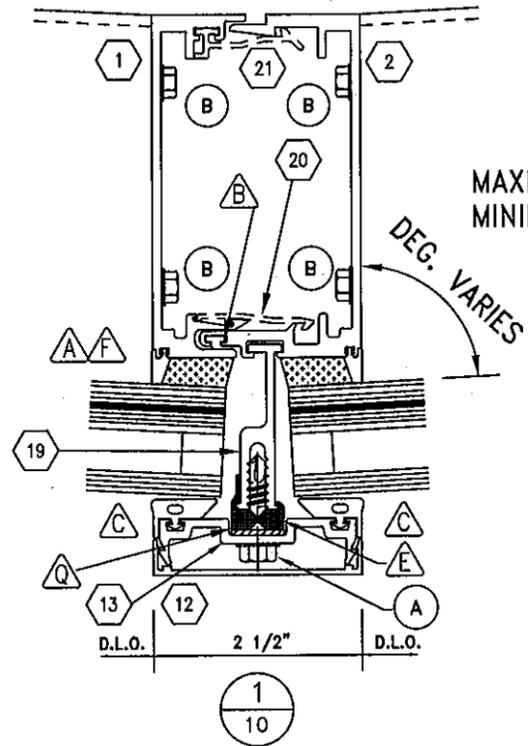


HI 5000 SMALL MISSILE
VERTICAL DETAILS

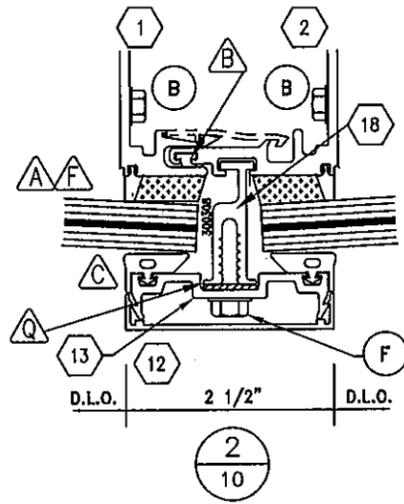
DATE: 06/28/04	4 9/2/09
2 3/25/09	5 05/22/12
3 08/04/09	

DWG. NO. HI5000SM

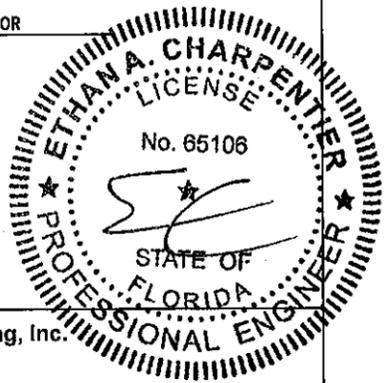
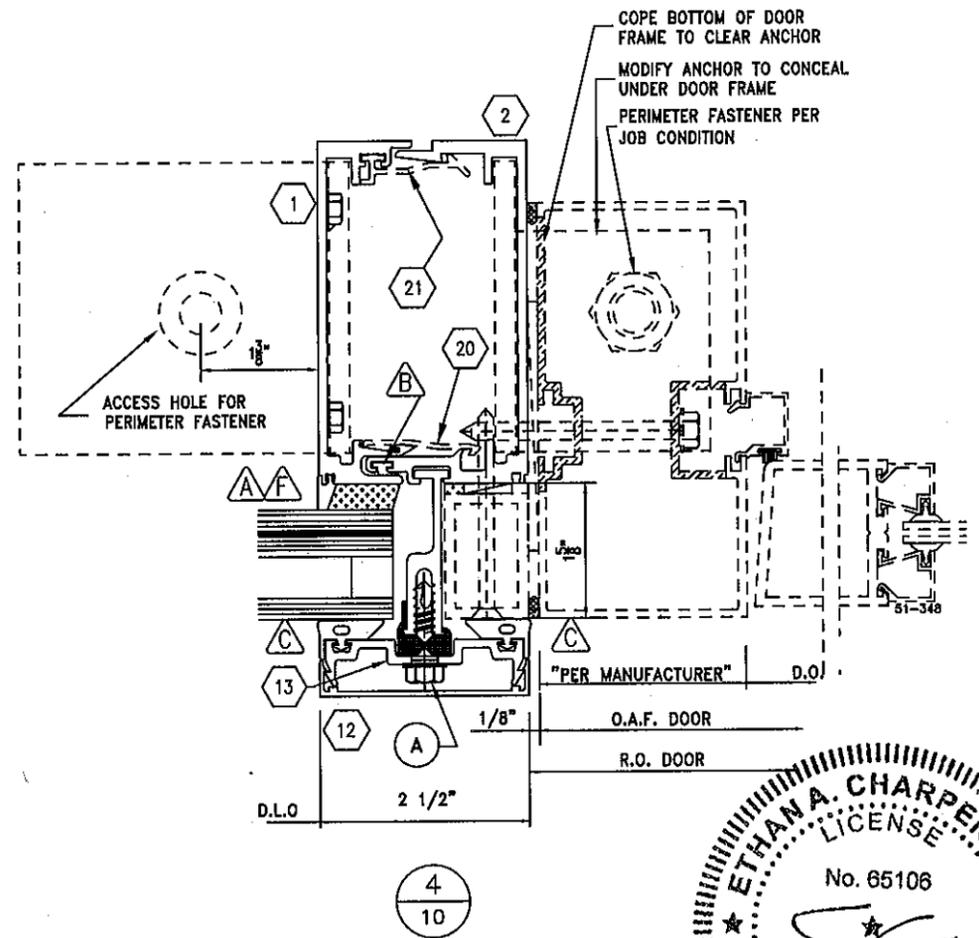
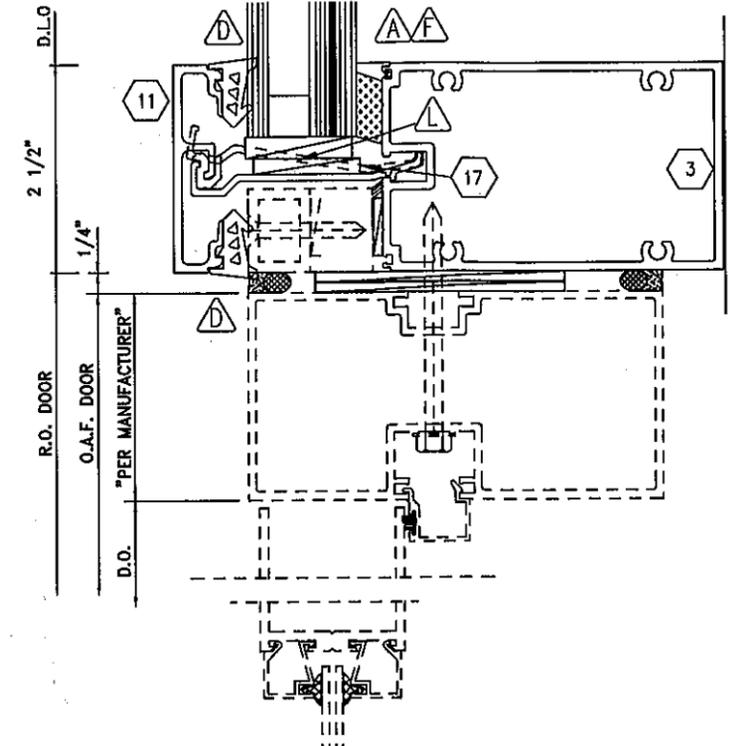
SHEET 09 OF 14



SEGMENTED MULLION INSULATED GLASS



SEGMENTED MULLION MONOLITHIC GLASS



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

GENERAL NOTES:

- FOR ANCHOR DETAILS REFER TO SHEET 7
- FOR PART IDENTIFICATION REFER TO SHEET 2

- FASTENERS
- △ GASKETS
- ⬡ ALUMINUM EXTRUSIONS

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

DADE CO. STAMP
 PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No. 12-0727.05
 Expiration Date Aug. 26, 2014.
 By *Manuel Perez*
 Miami/Dade Product Control

ENGINEER STAMP
 Florida Firm No. F-02000005175
 Certificate of Authorization #9803
 Ethan A. Charpentier
 Registration No. 65106

Harmon
 HI 5000 SMALL MISSILE
 SEGMENTED MULLION &
 DOOR DETAILS

DATE: 06/28/04	4 9/2/09
2 3/25/09	5 05/22/12
3 08/04/09	
DWG. NO. HI5000SM	
SHEET 10 OF 14	

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\011_HI5000_sm.dwg - dtoerner - 6/12/2012 7:47 AM

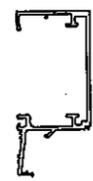
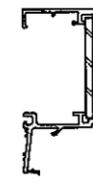
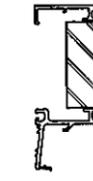
JAMB SPAN TABLE

REINFORCING OPTIONS		6	7	8	9
	"B"	Case 6 "L"/"R"	Case 7 "L"/"R"	Case 8 "L"/"R"	Case 9 "L"/"R"
UP TO MAXIMUM 60 PSF POS. OR NEG. LOAD	1'-6"	10'-1" 489	12'-3" 592	13'-6" 651	14'-6" 698
	2'-0"	8'-10" 560	10'-8" 678	12'-1" 764	13'-6" 856
	2'-6"	7'-11" 623	9'-7" 755	10'-10" 850	12'-6" 979
	3'-0"	7'-3" 680	8'-10" 824	9'-11" 928	11'-5" 1069
UP TO MAXIMUM 70 PSF POS. OR NEG. LOAD	1'-6"	9'-4" 528	11'-4" 640	12'-9" 721	13'-11" 784
	2'-0"	8'-2" 605	9'-11" 733	11'-2" 825	12'-10" 950
	2'-6"	7'-4" 673	8'-11" 815	10'-0" 918	11'-7" 1057
	3'-0"	6'-9" 735	8'-2" 890	9'-2" 1002	10'-7" 1154
UP TO MAXIMUM 80 PSF POS. OR NEG. LOAD	1'-6"	8'-9" 565	10'-7" 684	11'-11" 770	13'-5" 866
	2'-0"	7'-8" 647	9'-3" 783	10'-5" 882	12'-0" 1016
	2'-6"	6'-10" 719	8'-4" 871	9'-5" 982	10'-10" 1130
	3'-0"	6'-3" 785	7'-7" 951	8'-7" 1072	9'-4" 1160
UP TO MAXIMUM 90 PSF POS. OR NEG. LOAD	1'-6"	8'-3" 599	10'-0" 725	11'-3" 817	13'-0" 941
	2'-0"	7'-2" 686	8'-9" 831	9'-10" 936	11'-4" 1078
	2'-6"	6'-6" 763	7'-10" 924	8'-10" 1041	9'-10" 1160
	3'-0"	5'-11" 833	7'-2" 1009	8'-1" 1137	8'-3" 1160

JAMB SPAN TABLE GENERAL NOTES:

- JAMB MULLION SPAN TABLES ARE BASED ON MONOLITHIC PART 304004. THIS TABLE IS CONSERVATIVE FOR INSULATED PART 304003.
- SPANS ARE BASED ON 5/8" JOINT DIMENSION AND 95 1/4" MAXIMUM DLO HEIGHT.
- "L" = MAXIMUM MULLION SPAN
- "W" = C/L TO C/L SPACING
- "B" = $\frac{W}{2}$ (TRIBUTARY AREA)
- 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 (LBS.) (REFER TO PAGE 7 FOR BUILDING CONDITION TYPES AND PAGES 12, 13 & 14 FOR REACTION DETAIL OPTIONS)

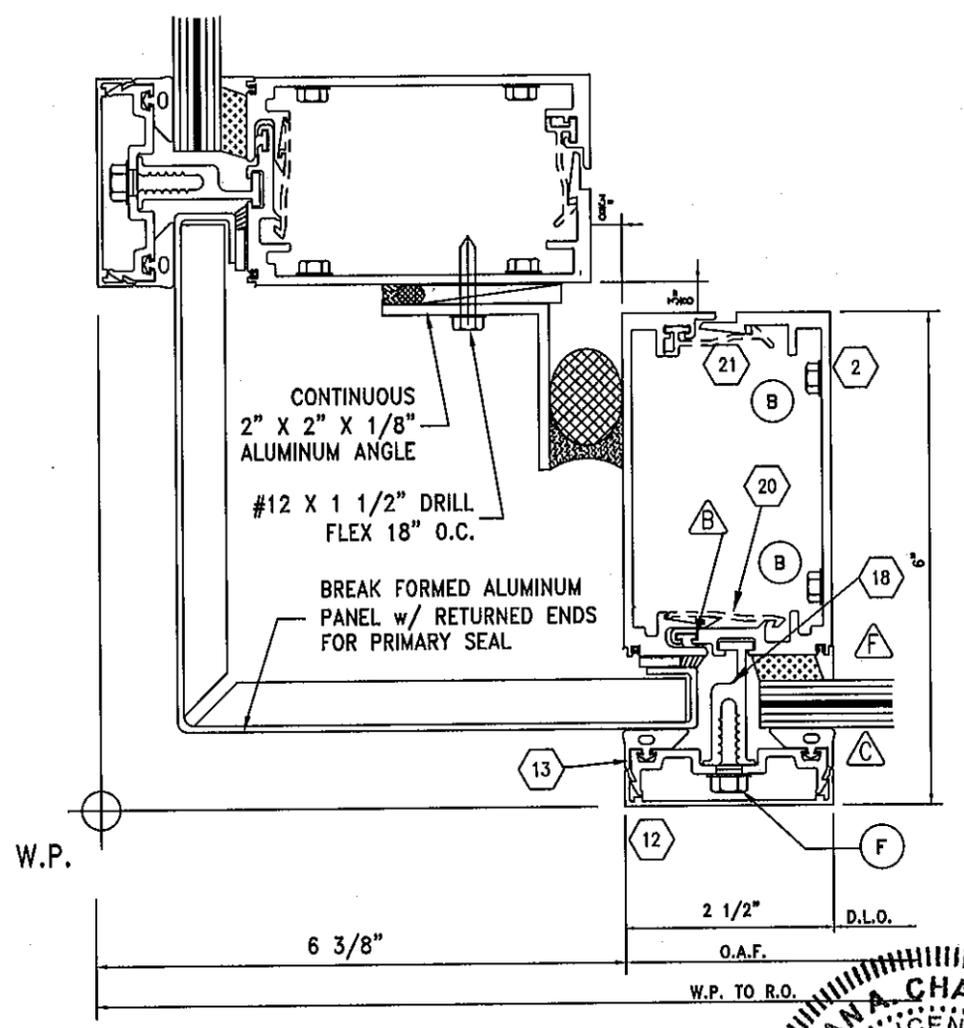
REINFORCING OPTIONS

6	7	8	9
COMBINED I _x = 5.522 in ⁴	COMBINED I _x = 8.142 in ⁴ 1/4" X 3 1/2"	COMBINED I _x = 10.337 in ⁴ C3x4.1	COMBINED I _x = 13.678 in ⁴ 1 1/4 X 3"
			

GENERAL NOTES:

- FOR PART IDENTIFICATION REFER TO SHEET 2

-  FASTENERS
-  GASKETS
-  ALUMINUM EXTRUSIONS

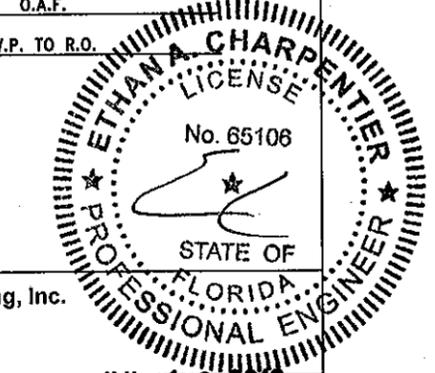


- FOR GLAZING DETAILS, GLASS BITE & GASKET CONFIGURATIONS SEE SHEET 3.

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

DADE CO. STAMP
PRODUCT REVISED as complying with the Florida Building Code
Acceptance No 12-0727.05
Expiration Date July 26, 2014
By *Manuel Perez*
Miami Dade Product Control

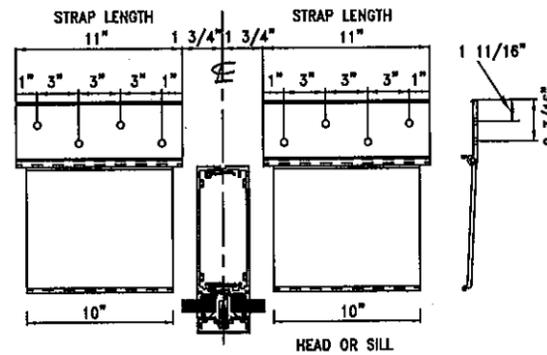
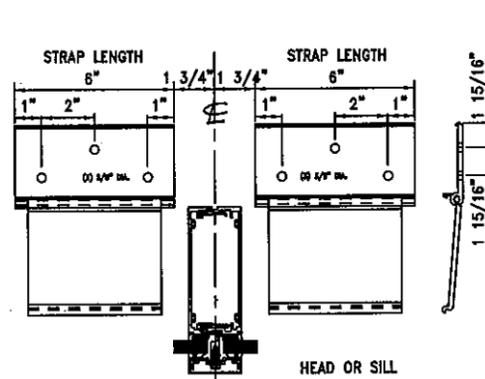
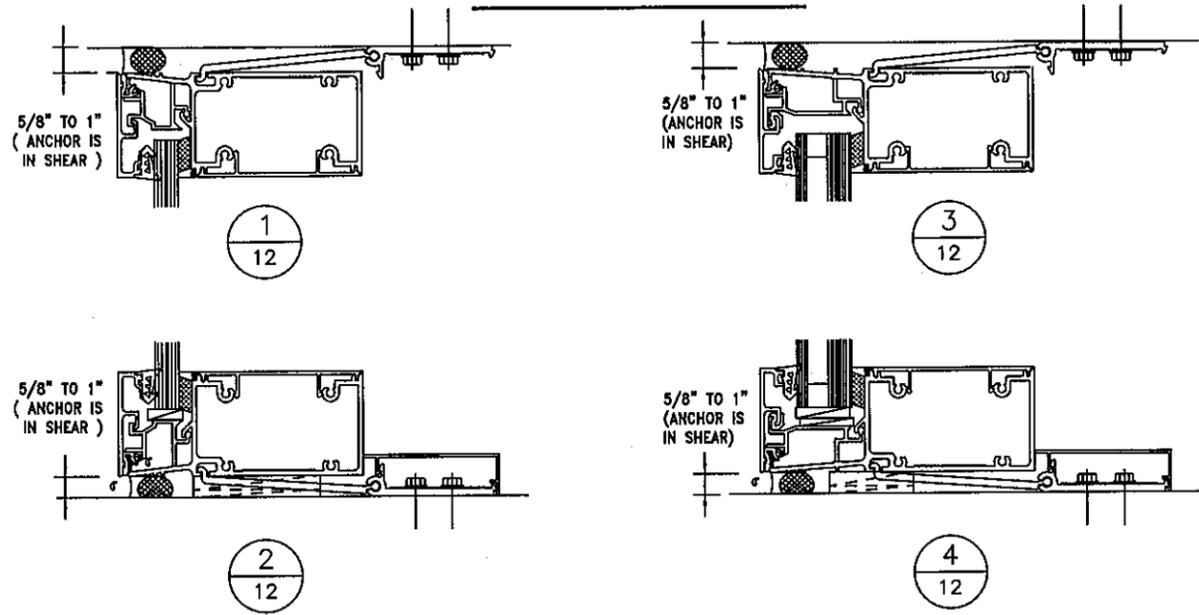
ENGINEER STAMP
Florida Firm No. F-02000005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106



Harmon
JUL 13 2012
HI 5000 SMALL MISSILE
90° OUTSIDE CORNER DETAIL
DATE: 06/28/04 4 9/2/09
2 3/25/09 5 05/22/12
3 08/04/09
DWG. NO. HI5000SM
SHEET 11 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\012_HI5000_sm.dwg - dfoerner - 6/12/2012 7:47 AM

STRAP ANCHOR



TESTED CONDITIONS SHOWN ABOVE.

- (2) 5" STRAPS TESTED TO 1880# END REACTION
- (2) 11" STRAPS TESTED TO 2176# END REACTION
- STRAP ANCHORS MAY BE MADE LONGER TO ACCOMMODATE FASTENERS BASED ON JOB SPECIFIC PERIMETER CONDITIONS.
- FASTENER LENGTH VARIES WITH SHIM AND BLOCKING THICKNESS

ANCHOR FASTENER REQUIREMENTS

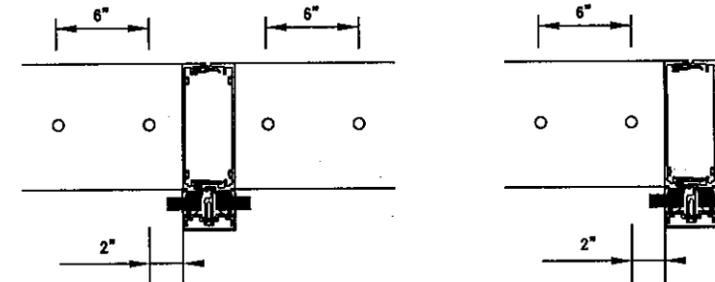
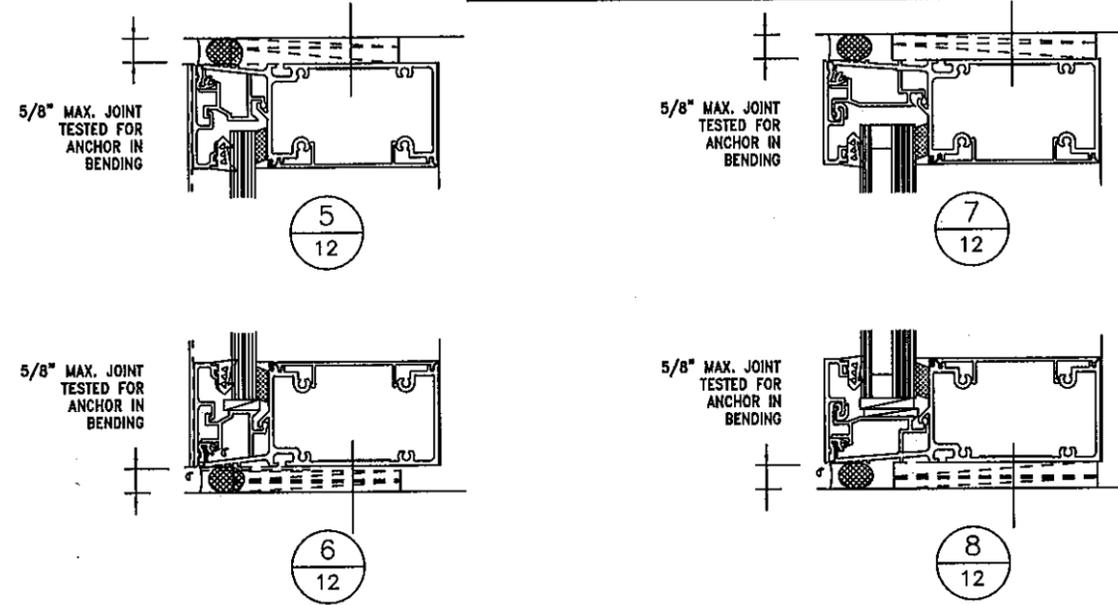
SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	1,880 #	3/8"x3 1/2" LAG BOLT	3	3"	1 1/2"
CONCRETE	1720 #	1/4" HILTI KWIK-CON II	2	1 3/4"	1 1/2"
STEEL	1,880 #	#14 DRILL FLEX	3	N/A	1"
METAL STUD	2230 #	#14 DRILL FLEX	4	N/A	1"

GENERAL NOTES:

- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, Δ 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 FASTENERS SHALL BE ELCO "DRIL-FLEX" WITH STALGUARD COATING.
- ALL CONCRETE ANCHORS SHALL BE POWERS "WEDGE BOLTS".

THRU-FRAME ANCHOR



TESTED CONDITIONS SHOWN ABOVE.

- (2) FASTENERS EACH SIDE @ INTER. VERTICAL
- (2) FASTENERS ON SAME SIDE @ JAMBS
- FASTENER SPACING AND QUANTITY MAY CHANGE BASED ON JOB SPECIFIC PERIMETER CONDITIONS.
- FASTENER LENGTH VARIES WTH SHIM AND BLOCKING THICKNESS

ANCHOR FASTENER REQUIREMENTS

SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	1700 #	3/8" LAG SCREW	2	3"	1 1/2"
CONCRETE	732 #	1/2" DIA.	2	3"	4"
STEEL	1,880 #	3/8" DIA	2	N/A	1"
METAL STUD	1880 #	1/4" DUA DRIL-FLEX	2	N/A	1"

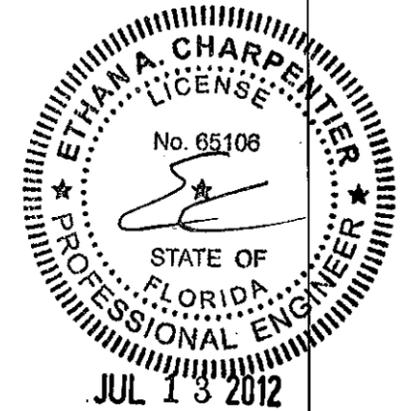
Larson Engineering, Inc.
3524 Labore Road
White Bear Lake, MN 55110
(P) 651.481.9120 (F) 651.481.9201

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0727.05
Expiration Date Aug 26, 2014
By *Mameel Sme*
Miami/Dade Product Control

ENGINEER STAMP

Florida Firm No. F-0200005175
Certificate of Authorization #9803
Ethan A. Charpentier
Registration No. 65106

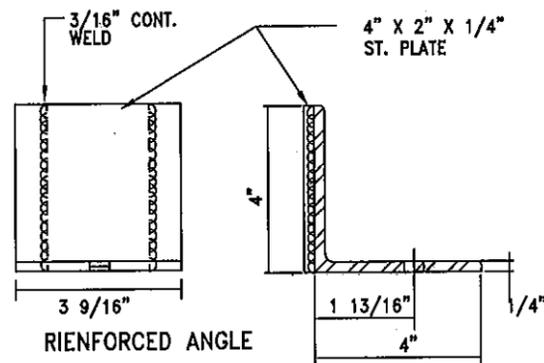
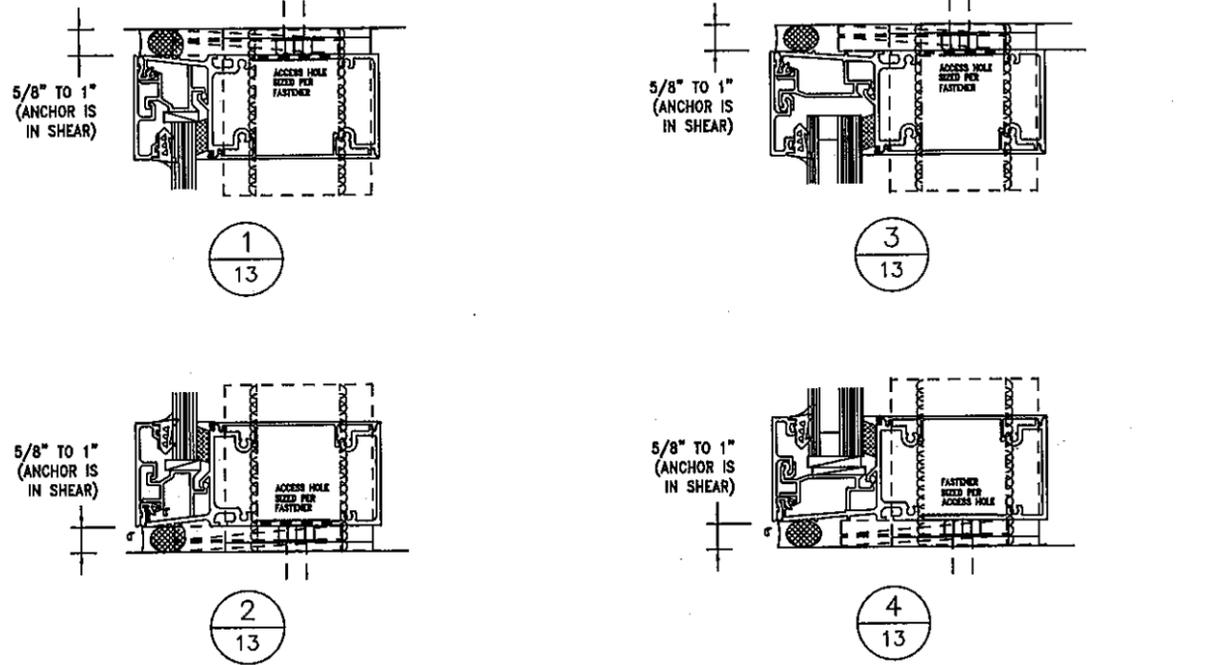


Harmon

HI 5000 SMALL MISSILE
ANCHOR APPLICATIONS
STRAP & THRU-FRAME
DATE: 06/28/04 Δ 9/2/09
 Δ 3/25/09 Δ 05/22/12
 Δ 08/04/09
DWG. NO. HI5000SM
SHEET 12 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\013_HI5000_sm.dwg - dfoermer - 6/12/2012 7:48 AM

STEEL ANGLES IN VERTICALS



ANCHOR FASTENER REQUIREMENTS					
SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	865 #	3/8" DIA x 3 1/2"	2	3"	1 1/2"
CONCRETE	1,915 #	3/8" DIA	2	2 1/2"	3 3/4"
STEEL	2,335 #	3/8" DIA	2	N/A	1"
METAL STUD	371 #	1/4" DIA DRIL-FLEX	2	N/A	1"

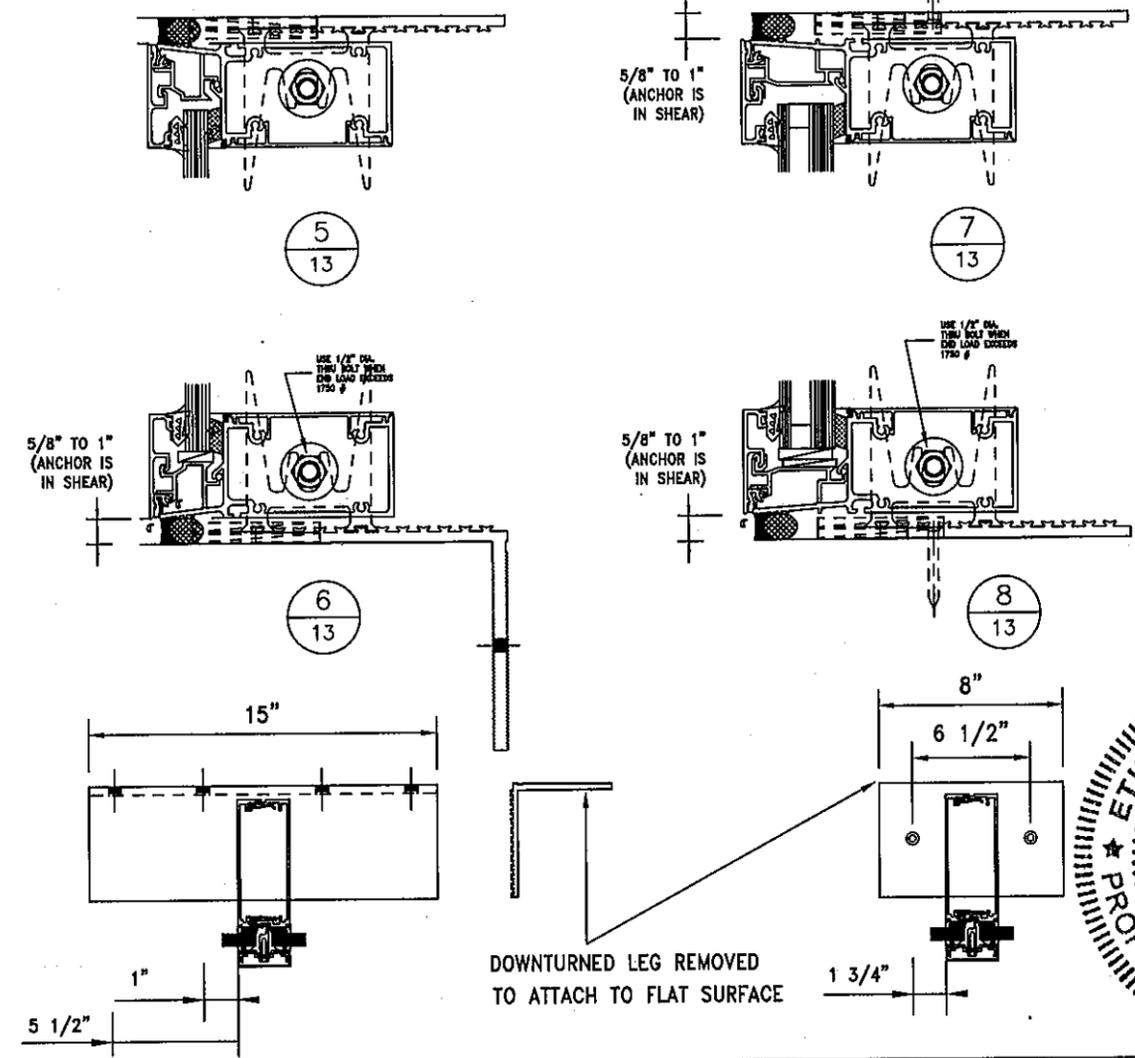
TESTED CONDITIONS SHOWN ABOVE
 - (2) ANGLES TESTED TO 1915# END REACTION
 - REINFORCED ANGLE USED w/ (1) FASTENER. REINFORCING PLATE ADDED TO PREVENT TWIST IMPOSED BY ONLY (1) FASTENER

GENERAL NOTES:

- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, Δ 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 FASTENERS SHALL BE ELCO "DRIL-FLEX" WITH STALGUARD COATING.
- ALL CONCRETE ANCHORS SHALL BE POWERS "WEDGE BOLTS".

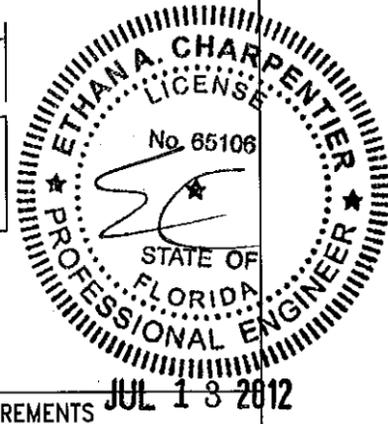
ALUMINUM LUG IN VERTICALS



TESTED CONDITIONS SHOWN ABOVE
 - LUG TESTED TO 1769# END REACTION
 - TYPICAL ANCHOR USED w/ (4) FASTENERS IN DOWNTURNED LEG AS SHOWN
 - MODIFIED ANCHOR USE w/ (2) FASTENERS IN TOP LEG AS SHOWN

ANCHOR FASTENER REQUIREMENTS					
SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.
WOOD	875 #	3/8" DIA LAG BOLT	2	3"	1 1/2"
CONCRETE	1,769 #	1/2" DIA.	2	3"	3 15/16"
STEEL	1,555 #	1/2" DIA	2	N/A	1"
METAL STUD	560 #	1/4" DIA DRIL-FLEX	2	N/A	1"

Larson Engineering, Inc.
 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
 Acceptance No. 12-0727-05
 Expiration Date Aug. 26, 2014
 By *Manuel Perez*
 Miami Dade Product Control

ENGINEER STAMP

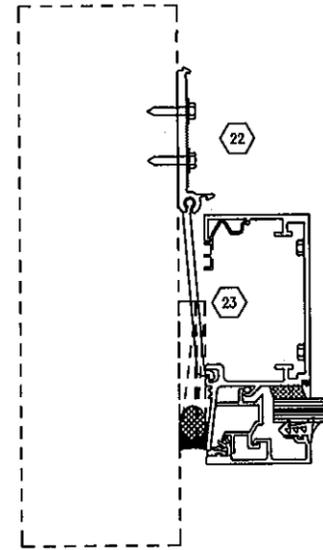
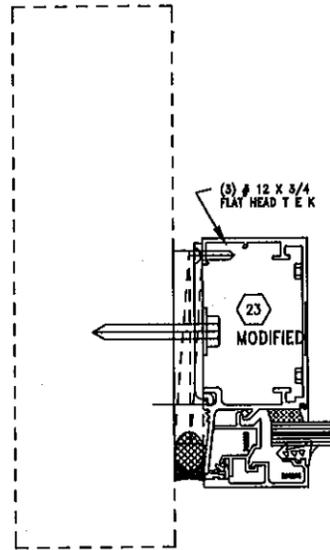
Florida Firm No. F-02000005175
 Certificate of Authorization #9803
 Ethan A. Charpentier
 Registration No. 65106

Harmon

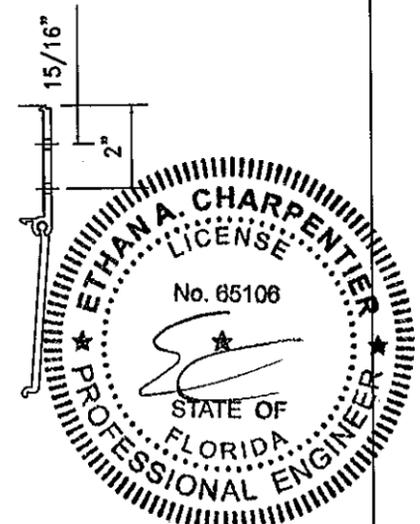
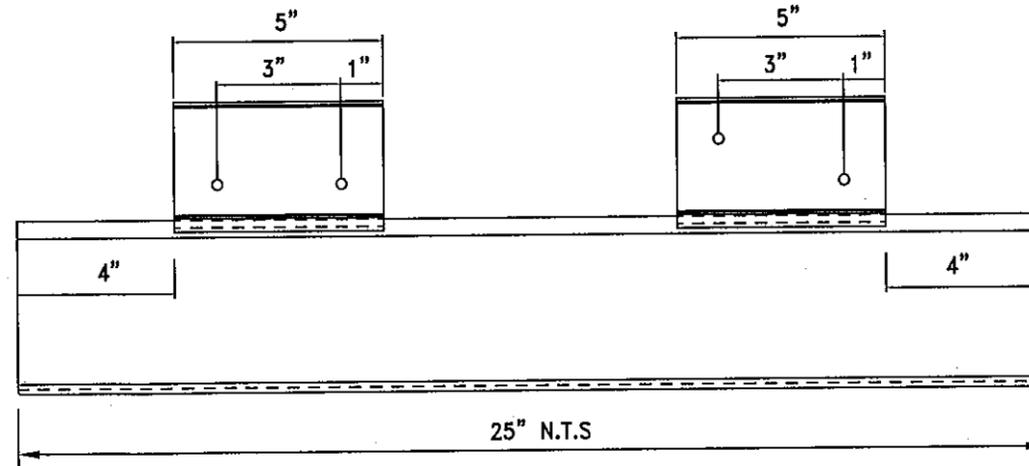
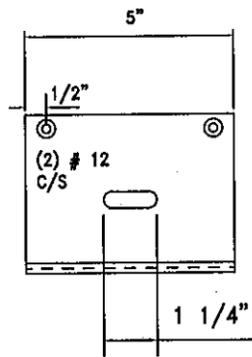
HI 5000 SMALL MISSILE ANCHOR APPLICATIONS STRAP & THRU-FRAME
 DATE: 06/28/04 / 9/2/09
 Δ 3/25/09 Δ 05/22/12
 Δ 08/04/09
 DWG. NO. HI5000SM
 SHEET 13 OF 14

T:\HI system\01 - HI-NOA Doc (Current)\NOA_Revisions 5-25-12\HI5000 SMI 2010 FBC\014_HI5000_sm.dwg - dfoerner - 6/12/2012 7:48 AM

JAMB ANCHOR



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



TESTED CONDITIONS SHOWN ABOVE.

- (1) 25" STRAP w/ (2) 5" KEEPERS TESTED TO 1225# END REACTION ATTACHED TO CONCRETE; 850# ATTACHED TO STUDS
- (1) 5" MODIFIED STRAP TESTED TO 765# END REACTION
- ANCHORS MAY BE MADE LONGER TO ACCOMMODATE MORE FASTENERS BASED ON JOB SPECIFIC PERIMETER CONDITIONS.

ANCHOR FASTENER REQUIREMENTS						
SUBSTRATE	REACTION	FASTENER TYPE	QTY.	MIN. EMBED.	MIN. EDGE DIST.	
WOOD	1225 #	3/8"x3 1/2" LAG BOLT	4	3"	1 1/2"	
CONCRETE	1225 #	1/4" HILTI KWIK-CON II	4	1 3/4"	1 1/2"	
STEEL	1225 #	1/4" DIA DRILL FLEX	4	N/A	1"	
METAL STUD	850#	1/4" DIA DRILL FLEX	4	N/A	1"	

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

GENERAL NOTES:

- SIZES OF ANCHOR COMPONENTS LISTED ABOVE ARE A MINIMUM, Δ 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 FASTENERS SHALL BE ELCO "DRIL-FLEX" WITH STALGUARD COATING.
- ALL CONCRETE ANCHORS SHALL BE POWERS "WEDGE BOLTS".

DADE CO. STAMP

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 12-0727.05
Expiration Date Aug. 26, 2014
By *Manuel Perez*
Miami Dade Product Control

ENGINEER STAMP

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

Harmon

HI 5000 SMALL MISSILE
ANCHOR APPLICATIONS
JAMBS
DATE: 06/28/04 Δ 9/2/09
 Δ 3/25/09 Δ 05/22/12
 Δ 08/04/09
DWG. NO. HI5000SM
SHEET 14 OF 14