



**BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908**

NOTICE OF ACCEPTANCE (NOA)

**EFCO Corporation
P.O. Box 609
1000 County Road
Monett MO 65708**

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) 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 Division (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. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division 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 High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Series "810-I" Aluminum Casement Window

APPROVAL DOCUMENT: Drawing No. 1081, titled "Series 810-I Small & Large Missile Impact Casement Window", Sheets 1 through 5 of 5, dated 2/27/02, prepared by W.W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren W. Schaefer, P.E., bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state 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 consists of this page 1 as well as approval document mentioned above.

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



**NOA No 02-0410.05
Expiration Date: November 7, 2007
Approval Date: November 7, 2002
Page 1**

EFCO Corporation

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

(For File ONLY. Not part of NOA)

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No **1081**, titled "Series 810-I Small & Large Missile Impact Casement Window", Sheets 1 through 5 of 5, dated 2/27/02, prepared by W.W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren W. Schaefer, P.E.

B. TESTS

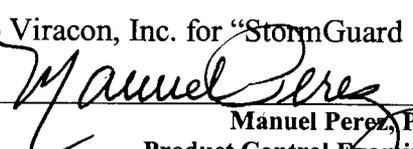
1. Test reports on 1) Uniform Static Air Pressure Test, Loading per SFBCPA 202-94
2) Large Missile Impact Test per SFBC, PA 201-94
3) Cyclic Wind Pressure Loading per SFBC, PA 203-94
along with marked-up drawings and installation diagram of an aluminum casement window (spec.#7), prepared by Hurricane Test Laboratory, Test Report No. **0046-1116-01**, dated 11/26/01, signed and sealed by Vinu J. Abraham, P.E.
2. Test reports on 1) Air Infiltration Test, per SFBC, PA 202-94
2) Uniform Static Air Pressure Test, Loading per SFBC, PA 202-94
3) Water Resistance Test, per SFBC, PA 202-94
4) Large Missile Impact Test per SFBC, PA 201-94
5) Cyclic Wind Pressure Loading per SFBC, PA 203-94
6) Forced Entry Test, per SFBC 3603.2 (b) and PA 202-94
along with marked-up drawings and installation diagram of an aluminum casement window (spec. #1,2,3,4,5,7) prepared by Hurricane Test Laboratory, Test Report No. **0046-0101-02**, dated 12/26/01, signed and sealed by Vinu J. Abraham, P.E.

C. CALCULATIONS

1. Anchor Calculations and structural analysis, prepared by W.W. Schaefer Engineering & Consulting, P.A., dated 3/4/02, signed and sealed by Warren W. Schaefer, P.E.

D. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **98-0728.05** issued to Solutia, Inc. for "Saflex IIIIG PVB Polyvinyl butryal interlayer" dated 8/27/98, expiring on 5/21/01.
2. Notice of Acceptance No. **98-0608.03** issued to E.I. DuPont DeNemours for "Sentry Glass Plus" dated 1/14/99, expiring on 1/14/02.
3. Notice of Acceptance No. **00-0524.06** issued to Nebula Glass International, Inc. for "Glasslam Safety-Plus Laminated Glass" dated 9/21/00, expiring on 9/9/03.
4. Notice of Acceptance No. **99-1227.02** issued to Solutia, Inc. for "Saflex HP" dated 4/14/00, expiring on 4/14/03.
5. Notice of Acceptance No. **00-0509.06** issued to Viracon, Inc. for "StormGuard (laminated)" dated 1/25/01, expiring on 4/14/03.


Manuel Perez, P.E.
Product Control Examiner
NOA No 02-0410.05

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(For File ONLY. Not part of NOA)

6. Test report No.ATI-01-42376.01 , prepared by Architectural Testing, Inc., dated 08/29/02, issued to EFCO Corporation, for their Insul-Bar Thermal Barrier plastic per ASTM E-D635-98 “Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position” and ASTM D2843-99 “Standard Test Method for the Density of Smoke from the Burning Decomposition of Plastics”, signed and sealed by Allen N. Reeves, P.E.
7. Test report No.SGS-170336 , prepared by SGS U.S. Testing Company Inc., dated 08/21/02, issued to Architectural Testing Inc. for EFCO Corporation’s Insul-Bar Thermal Barrier plastic per ASTM D2843-99 “Standard Test Method for the Density of Smoke from the Burning Decomposition of Plastics”, signed and sealed by Piyush Shah.
8. Test report No.ATI-01-42376.02 , prepared by Architectural Testing, Inc., dated 10/01/02, issued to EFCO Corporation, for their Insul-Bar Thermal Barrier plastic per ASTM E-D1929-96 “Standard Test Method for Determining Ignition Temperature of Plastics”, signed and sealed by Allen N. Reeves, P.E.

E. STATEMENTS

1. Statement letter of conformance, dated 3/12/02, signed and sealed by Warren Schaefer, P.E.
2. Statement letter of no financial interest, dated 3/13/02, signed and sealed by Warren Schaefer, P.E.
3. Laboratory compliance letter for Test Report no. HTL01085 issued by Hurricane Test Laboratory, dated 3/15/02, signed and sealed by Vinu J. Abraham, P.E.

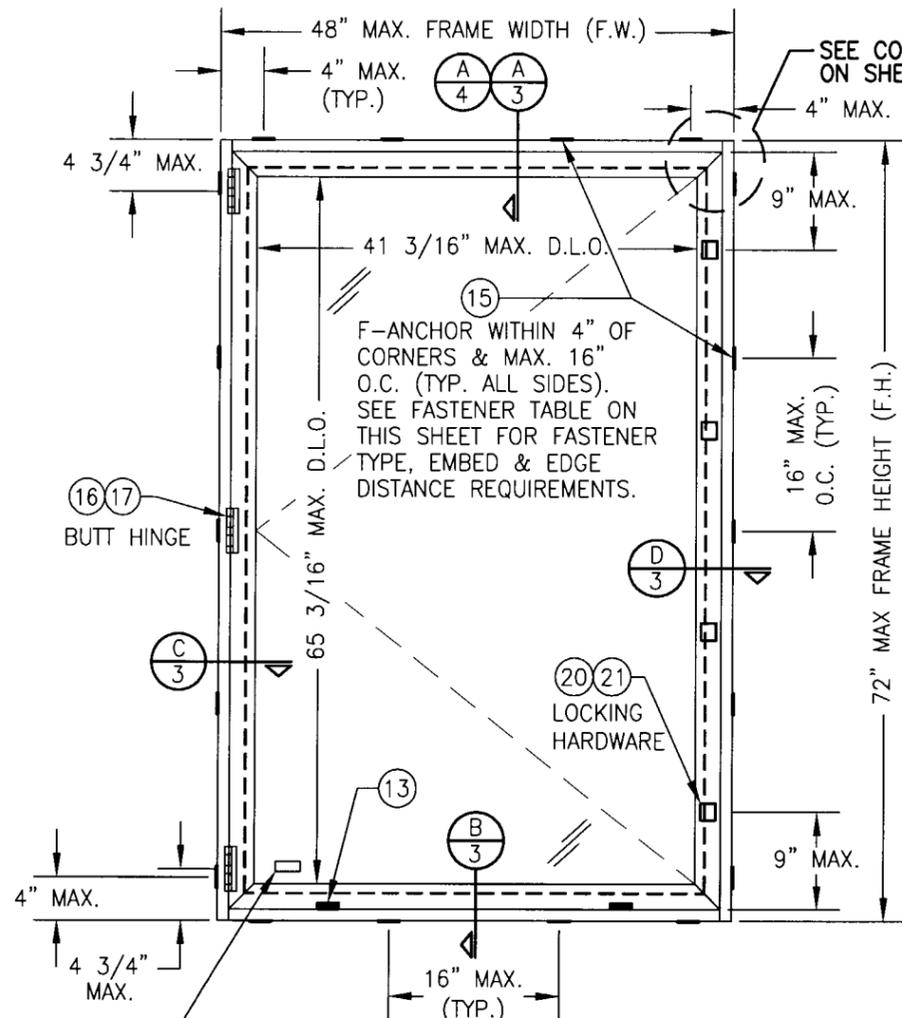
F. OTHER

1. Letter from San Martin Associates, Inc.

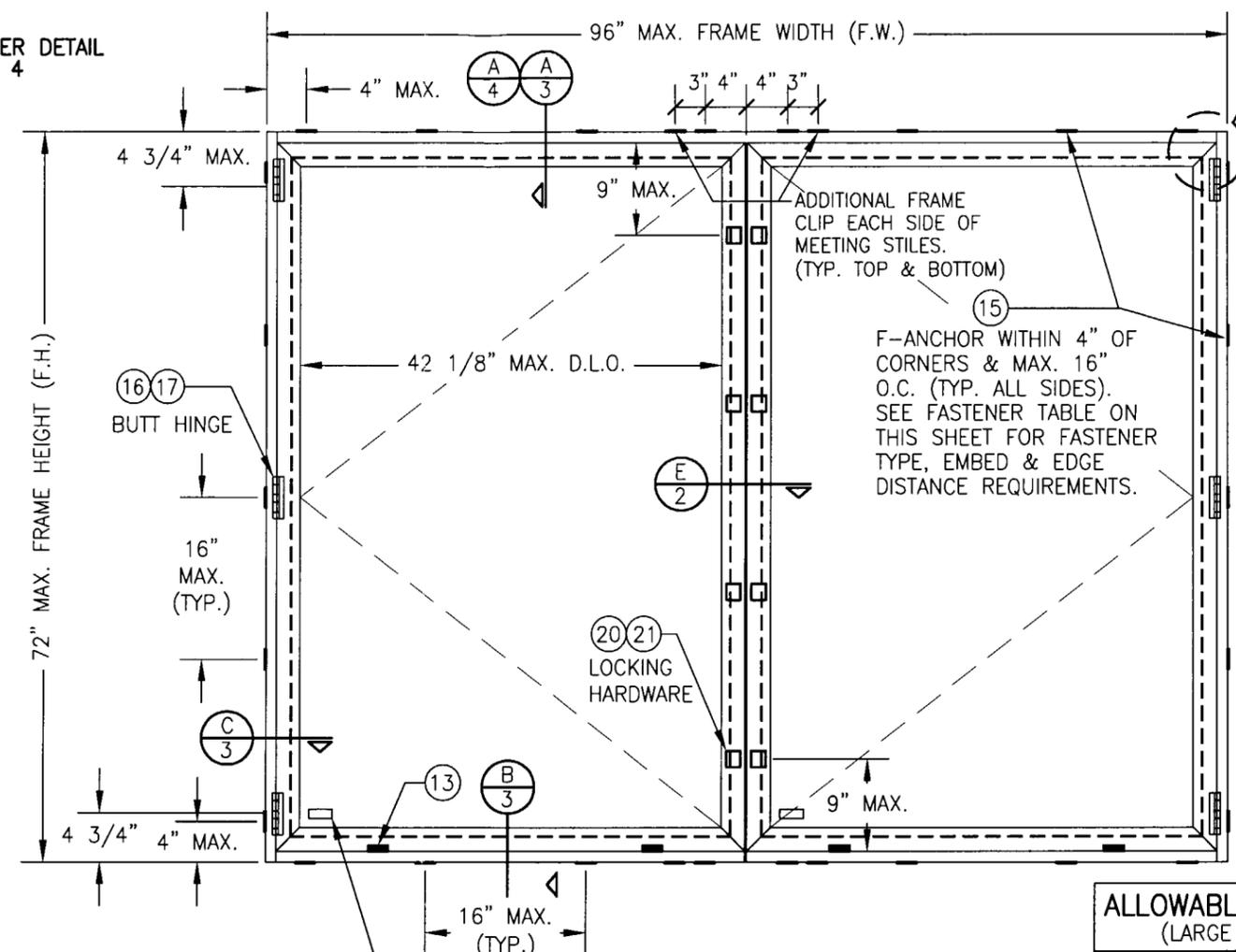

Manuel Perez, P.E.
Product Control Examiner
NOA No 02-0416.05

Expiration Date: November 7, 2007

Approval Date: November 7, 2002



**EXTERIOR ELEVATION
SINGLE OPERABLE CASEMENT WINDOW**
SCALE: 3/4"=1'-0"



**EXTERIOR ELEVATION
DOUBLE OPERABLE CASEMENT WINDOW**
SCALE: 3/4"=1'-0"

GENERAL NOTES

1. THESE WINDOW SYSTEMS HAVE BEEN TESTED, ANALYZED AND APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN LOAD" TABLE.
2. BUCKING, OPENINGS & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
3. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & MAY NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS.
4. THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR WATER, AIR, IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH DADE COUNTY PROTOCOLS PA 201, 202 & 203 FOR SMALL & LARGE MISSILE IMPACT WINDOWS.
5. THESE WINDOW SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH FLORIDA BUILDING CODE (FBC)
6. ALL ANCHORS SHALL BE INSTALLED AS SPECIFIED ON THESE DRAWINGS. SPECIFIED EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
7. THERE SHALL BE NO LIMIT TO THE NUMBER OF HORIZONTAL PANELS USED FOR ANY JOB PROVIDING ALL RESTRICTIONS ARE MET PER THE ELEVATIONS.
8. ALL SUBSTRATE SHALL HAVE THE FOLLOWING MINIMUM REQUIREMENTS.
 - a) ALL CONCRETE SUBSTRATE SHALL BE MIN. 3000 PSI.
 - b) ALL WOOD SUBSTRATE SHALL BE MIN. G = 0.55 DENSITY.
 - c) ALL METAL STUD SUBSTRATE SHALL BE MIN. 18 GA. Fy = 33 ksi.
 - d) ALL STRUCTURAL STEEL SUBSTRATE SHALL BE MIN. 12 GA. Fy = 36 ksi.
9. WHEN GLAZED FOR SMALL MISSILE IMPACT THESE WINDOWS MAY NOT BE INSTALLED AT ELEVATIONS BELOW 30 FT. ABOVE GRADE WITHOUT AN APPROVED SHUTTER.

ONE OF THE FOLLOWING LABELS SHALL BE PLACED AT THE INNER BOTTOM RIGHT CORNER OF THE WINDOW TO DISTINGUISH BETWEEN SMALL & LARGE MISSILE GLASS:

EFCO CORPORATION, MONETT MISSOURI
MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED
SMALL MISSILE IMPACT UNIT

EFCO CORPORATION, MONETT MISSOURI
MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED
LARGE MISSILE IMPACT UNIT

HINGE QUANTITY TABLE

WINDOW HEIGHT	QUANTITY REQUIRED
GREATER THAN 43"	3
43" AND SMALLER	2

CLIP FASTENER REQUIREMENTS TABLE

OPENING TYPE (SUBSTRATE)	CLIP TO OPENING FASTENER TYPE	NO. FASTENERS PER CLIP INTO SUBSTRATE	MINIMUM EMBEDMENT	MINIMUM EDGE DIST.
WOOD	NO. 12 SMS SCREW	2	1 1/4"	1"
MIN. 18 GA. STUD	NO. 12 TEK SCREW	2	FULL	1/2"
MIN. 12 GA. STRUCTURAL STEEL	NO. 12 TEK SCREW	2	FULL	1/2"
CMU/CONCRETE	(1) 1/4" CONCRETE SCREW	2	1 1/4"	2"

(1) CONCRETE SCREWS SHALL BE ITW RAMSET/RED HEAD TAPCONS, HILTI KWIK-CON II OR POWERS RAWL TAPPER (HARDENED STEEL OR S.S.).

**ALLOWABLE DESIGN LOAD
(LARGE MISSILE IMPACT)**

POSITIVE	NEGATIVE
90 PSF	100 PSF

APPLICABLE TO GLASS TYPES A, B & C (SEE SHEET 5)

**ALLOWABLE DESIGN LOAD
(SMALL MISSILE IMPACT)**

POSITIVE	NEGATIVE
90 PSF	100 PSF

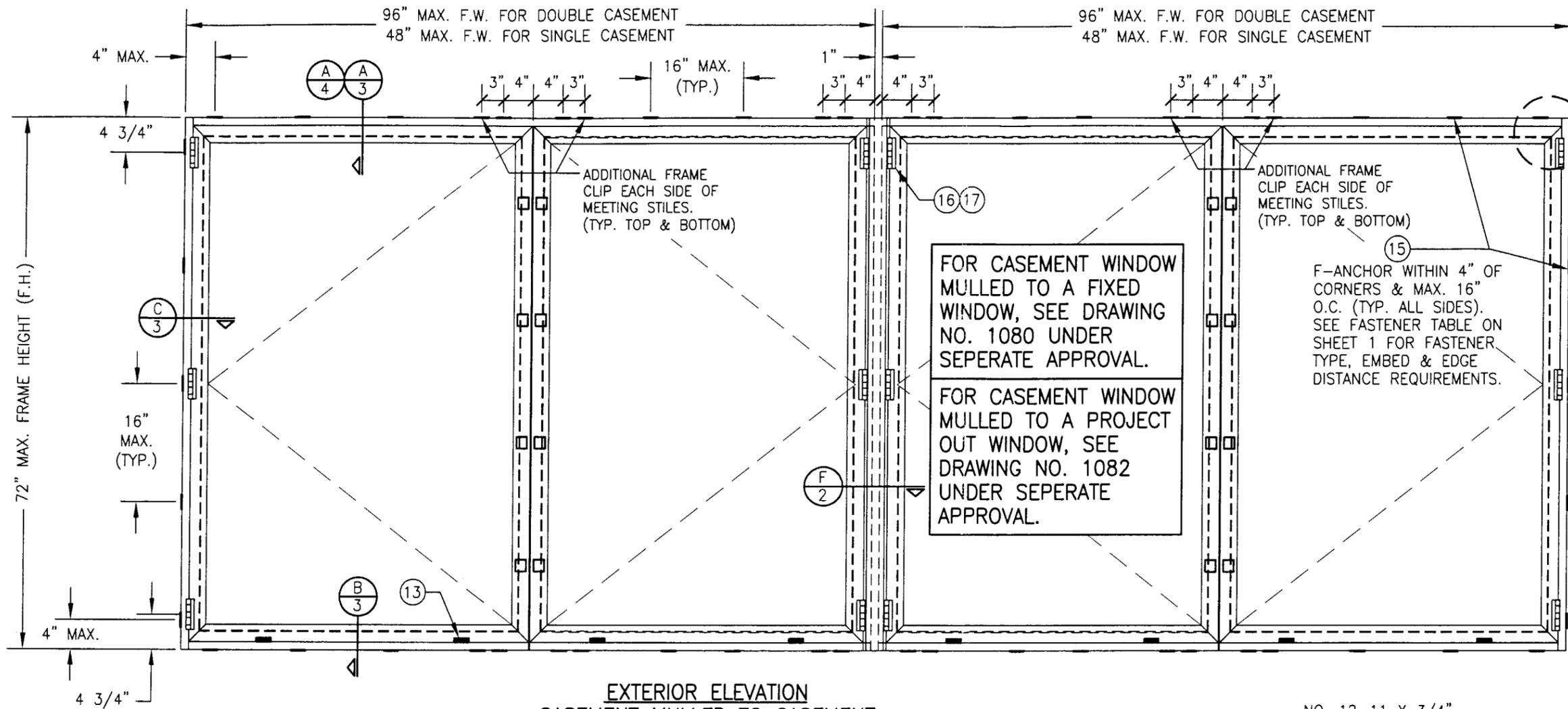
APPLICABLE TO GLASS TYPE D (SEE SHEET 5)

LOCK/KEEPER QUANTITY TABLE

WINDOW HEIGHT	QUANTITY REQUIRED
55 1/2" TO 72"	4
38 3/4" TO 55 3/8"	3
SMALLER THAN 38 3/4"	2

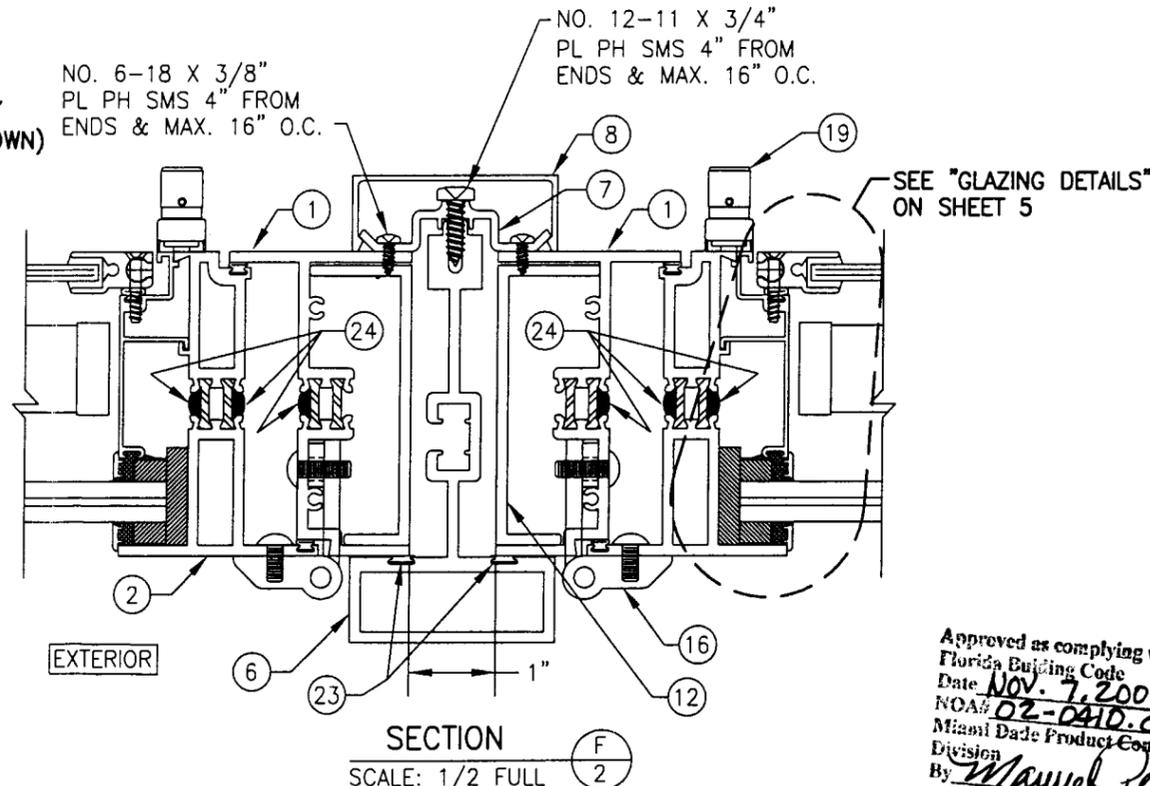
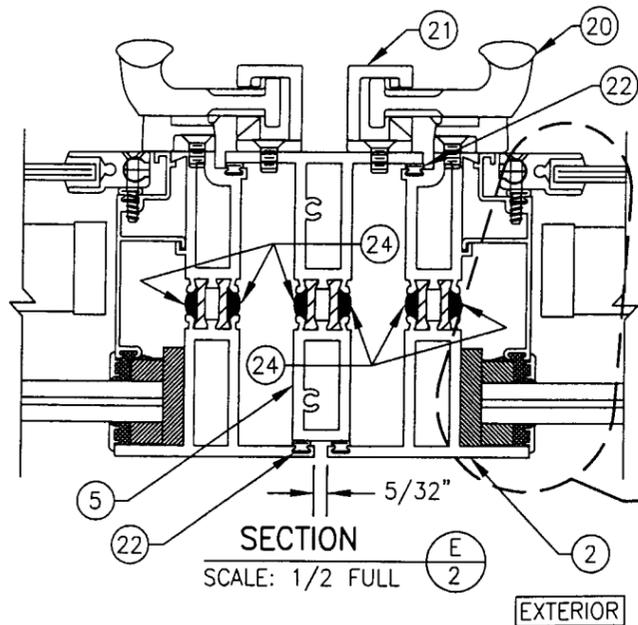
Approved as complying with the Florida Building Code
Date Nov. 7, 2002
NOA# 02-0410.05
Miami Dade Product Control
Division
By Manuel Perez

DRAWN BY: J.C.F.	CHECKED BY: W.W.S.
PLOT: 1-16	DATE: 02/27/02
DATE	BY
REVISION DESCRIPTION	NO.
DRAWING TITLE SERIES 810-1 SMALL & LARGE MISSILE IMPACT CASEMENT WINDOW	
MANUFACTURER EFCO CORPORATION 1000 COUNTY ROAD, P.O. BOX 609 MONETT, MO 65708-0609 800-221-4169	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 600 SANDTREE DRIVE, SUITE 203B PALM BEACH GARDENS, FL 33403 PHONE: 561-775-4902 FAX: 561-775-4903	
CERTIFICATION JUL 17 2002	WARREN W. SCHAEFER, P.E. P.E. NO. 44135
DRAWING NO. 1081	REV.
SHEET NO. 1	OF 5



**EXTERIOR ELEVATION
CASEMENT MULLED TO CASEMENT
(TYP. FOR DOUBLE & SINGLE CASEMENTS)**

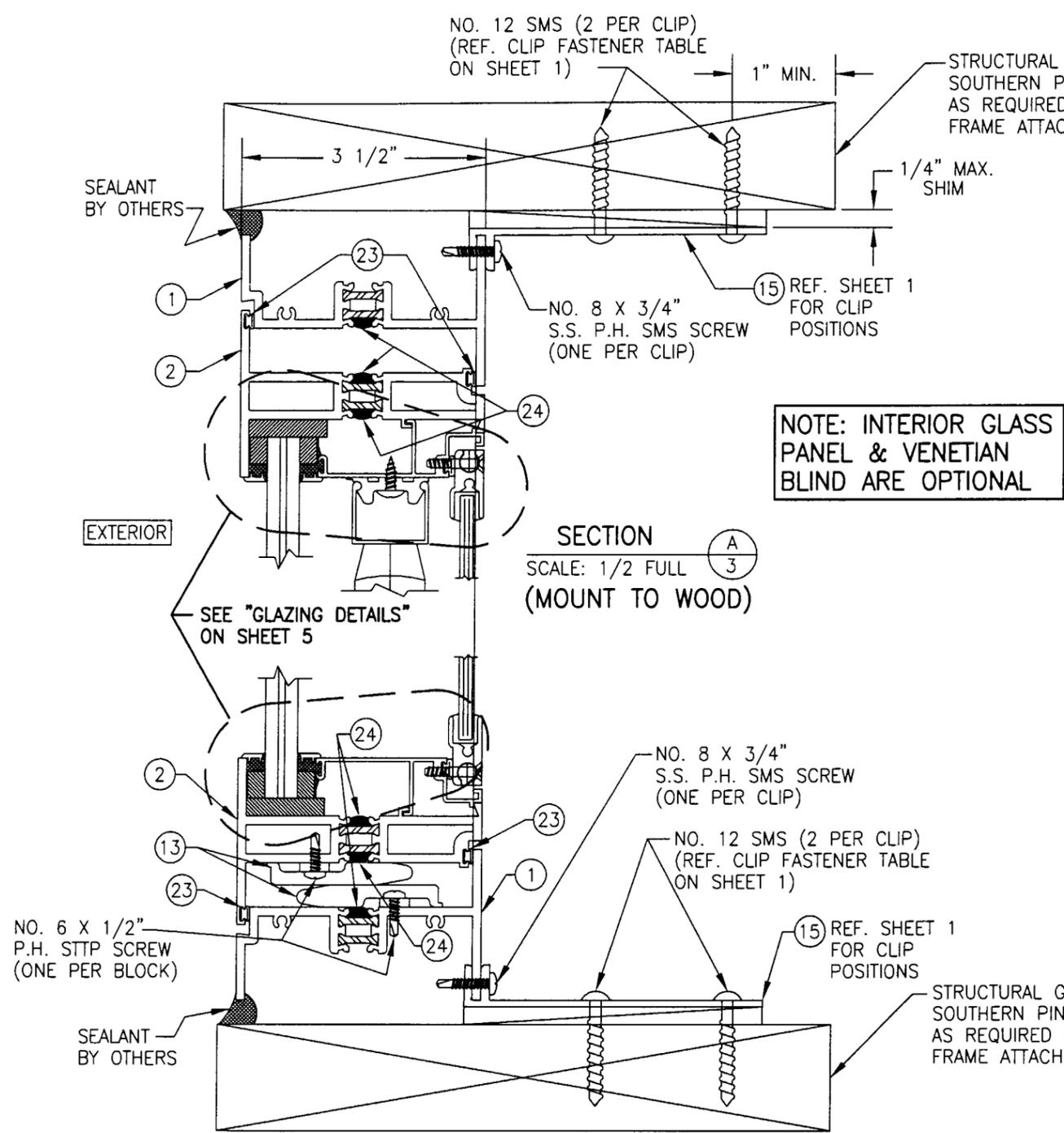
SCALE: 3/4"=1'-0"
MORE THAN 2 WINDOWS MAY BE STACKED HORIZONTALLY
(SEE OTHER ELEVATIONS ON SHEET 1 FOR DETAIL NOT SHOWN)



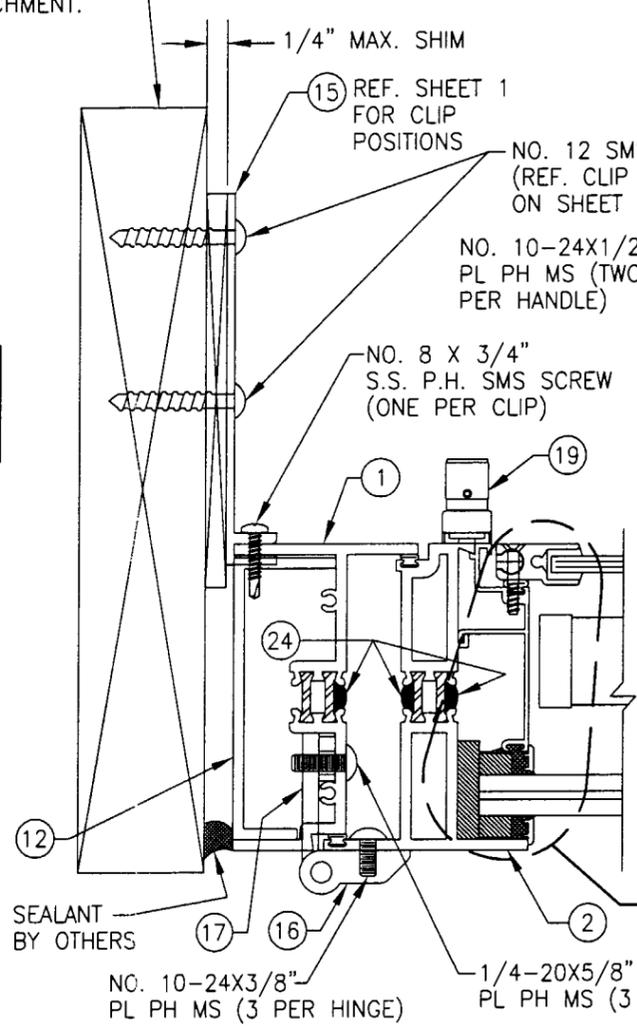
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NOA# 02-0410.05
Miami Dade Product Control Division
By *Manuel J...*

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PLOT: 1-16	DATE: 02/27/02
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE SERIES 810-1 SMALL & LARGE MISSILE IMPACT CASEMENT WINDOW	
MANUFACTURER EFCO CORPORATION 1000 COUNTY ROAD, P.O. BOX 609 MONETT, MO 65708-0609 800-221-4169	
CONSULTANT W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 600 SANDTREE DRIVE, SUITE 203B PALM BEACH GARDENS, FL 33403 PHONE: 561-775-4902 FAX: 561-775-4903	
CERTIFICATION JUL 17 2002	WARREN W. SCHAEFER, P.E. P.E. NO. 44135
DRAWING NO. 1081	REV.
SHEET NO. 2 OF 5	

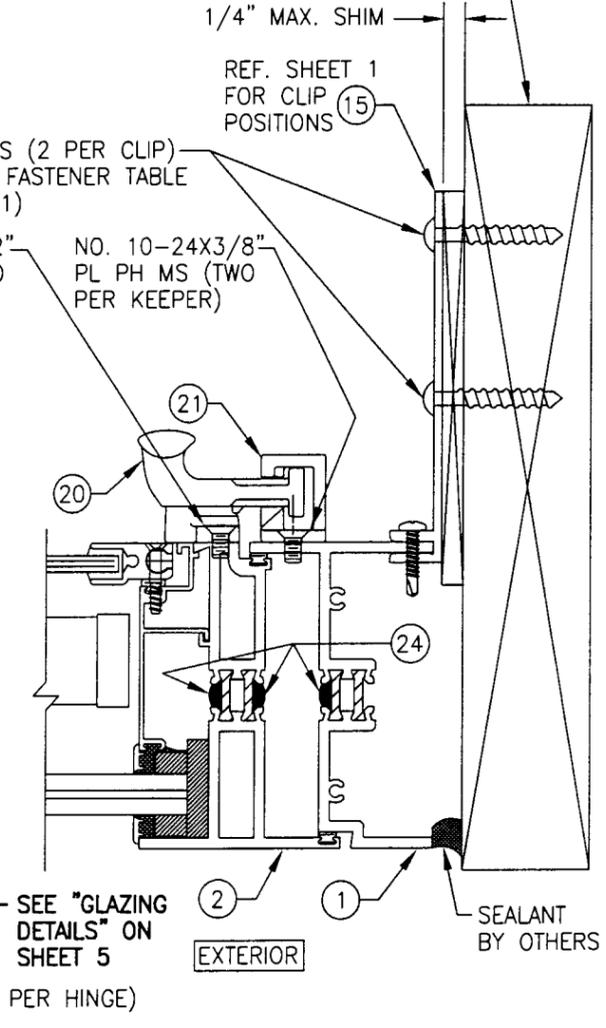
DRAWN BY:	CHECKED BY:
J.C.F.	W.W.S.
PLGT:	DATE:
1=2	02/27/02
DATE	
BY	
REVISION DESCRIPTION	
NO.	



SECTION **A**
SCALE: 1/2 FULL
(MOUNT TO WOOD)



SECTION **B**
SCALE: 1/2 FULL
(MOUNT TO WOOD)



SECTION **C**
SCALE: 1/2 FULL
(MOUNT TO WOOD)

NOTE: INTERIOR GLASS PANEL & VENETIAN BLIND ARE OPTIONAL

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Date Nov. 7, 2002
NOA# 02-0410.05
Miami Dade Product Control Division
By Manuel Perez

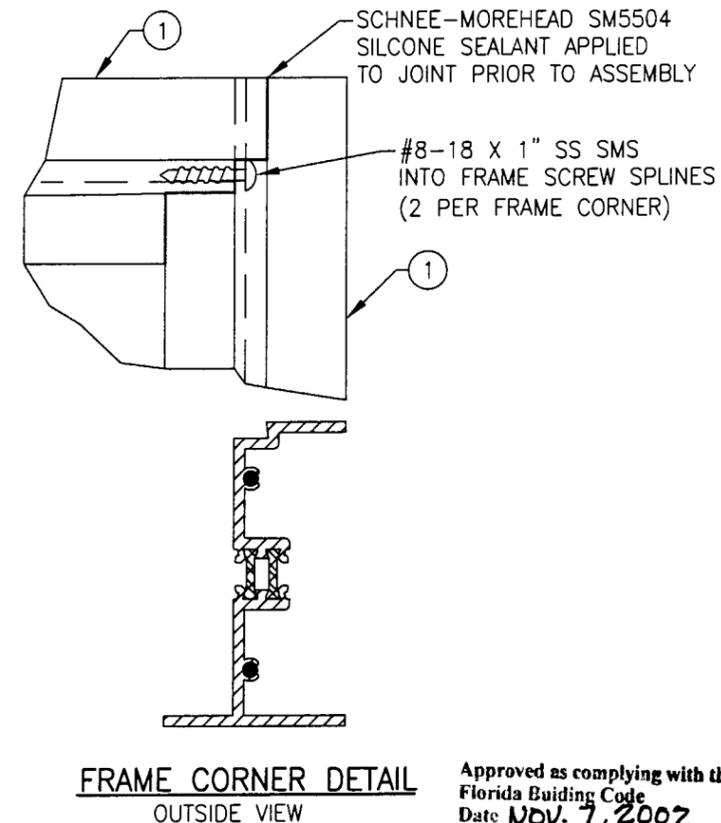
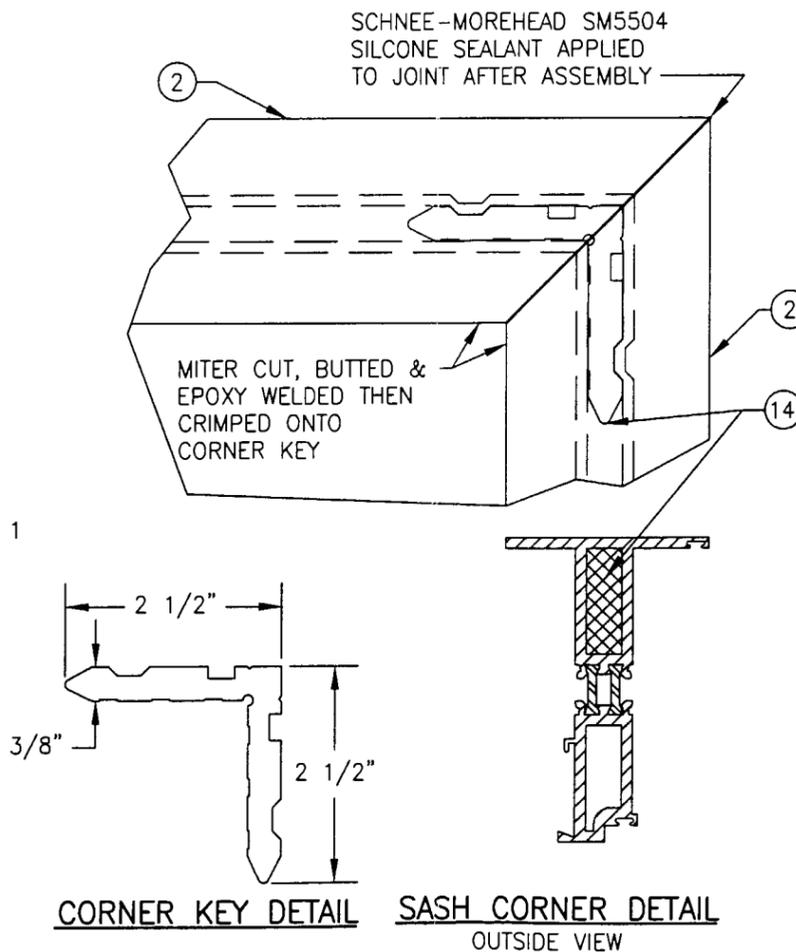
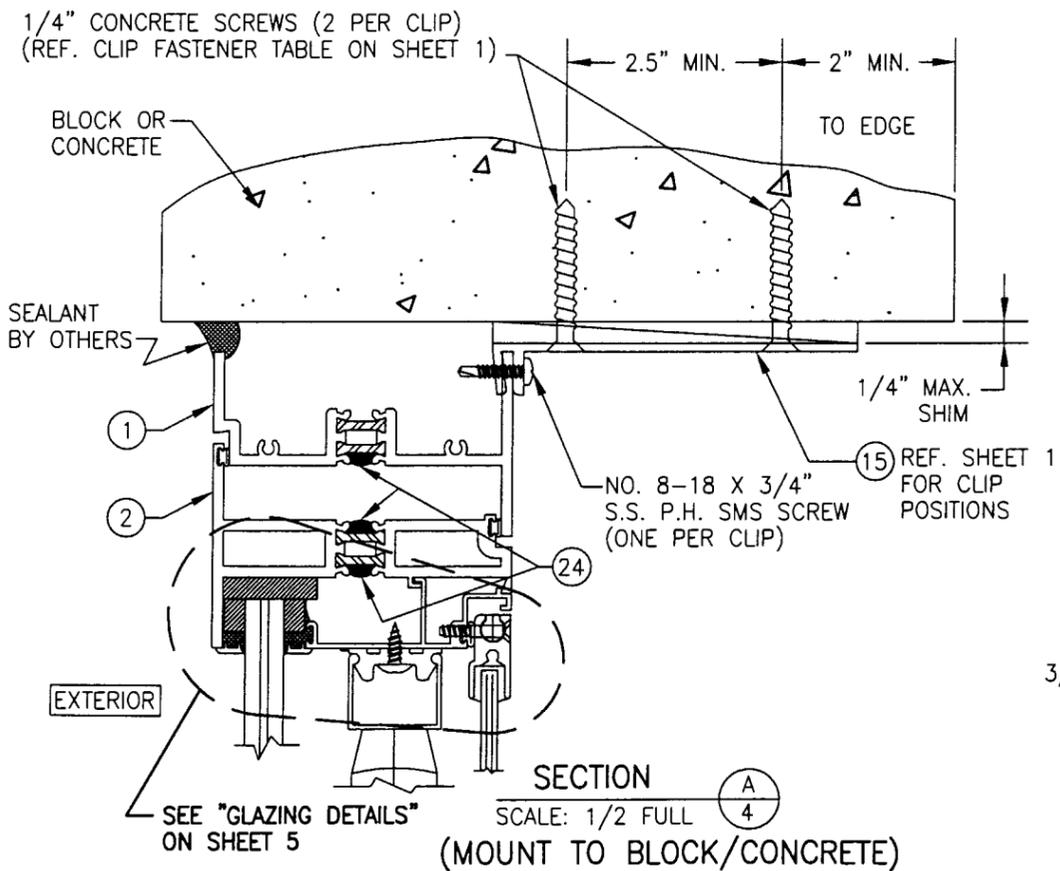
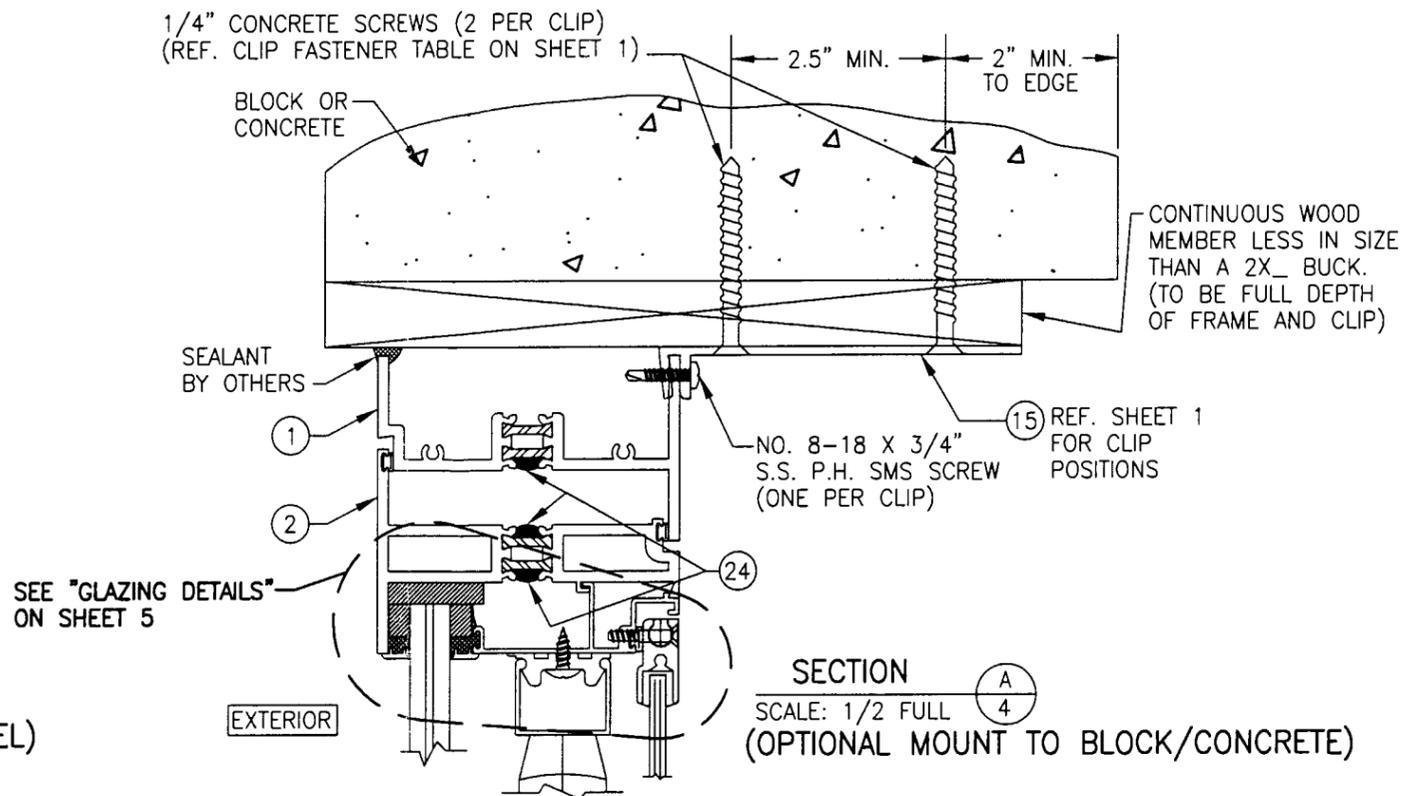
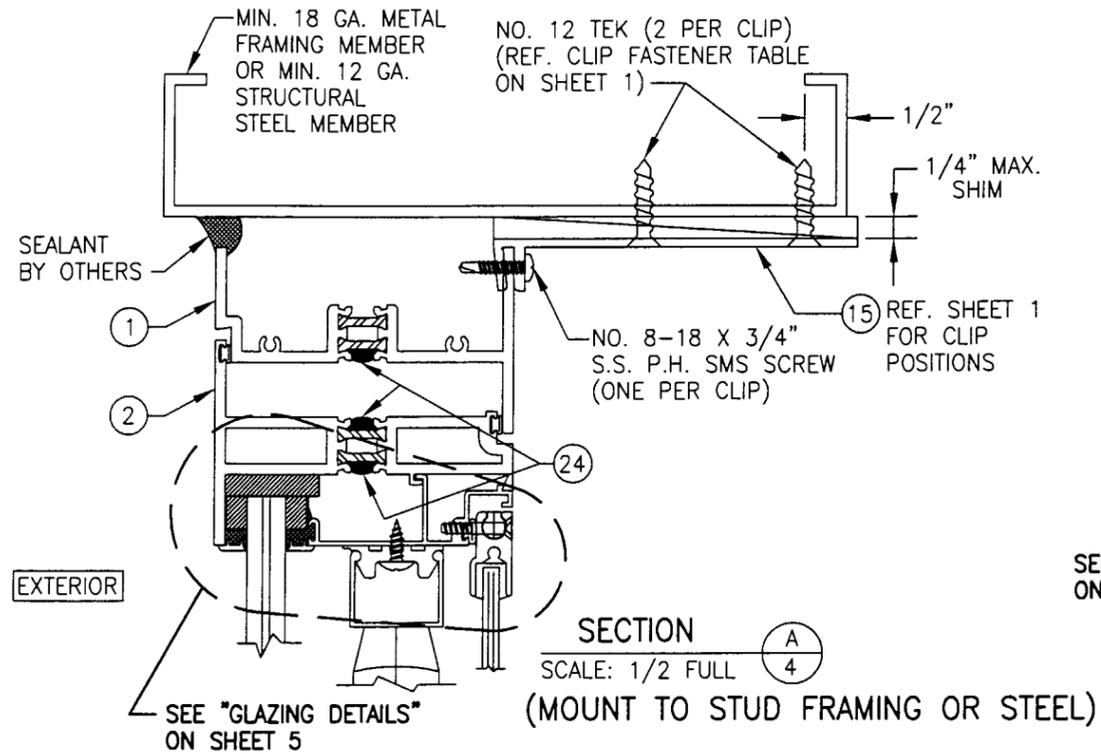
DRAWING TITLE
SERIES 810-I SMALL & LARGE MISSILE IMPACT CASEMENT WINDOW

CONSULTANTS
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.
600 SANDTREE DRIVE, SUITE 203B
PALM BEACH GARDENS, FL 33403
PHONE: 561-775-4902 FAX: 561-775-4903

MANUFACTURER
EFCO CORPORATION
1000 COUNTY ROAD, P.O. BOX 609
MONETT, MO 65708-0609
800-221-4169

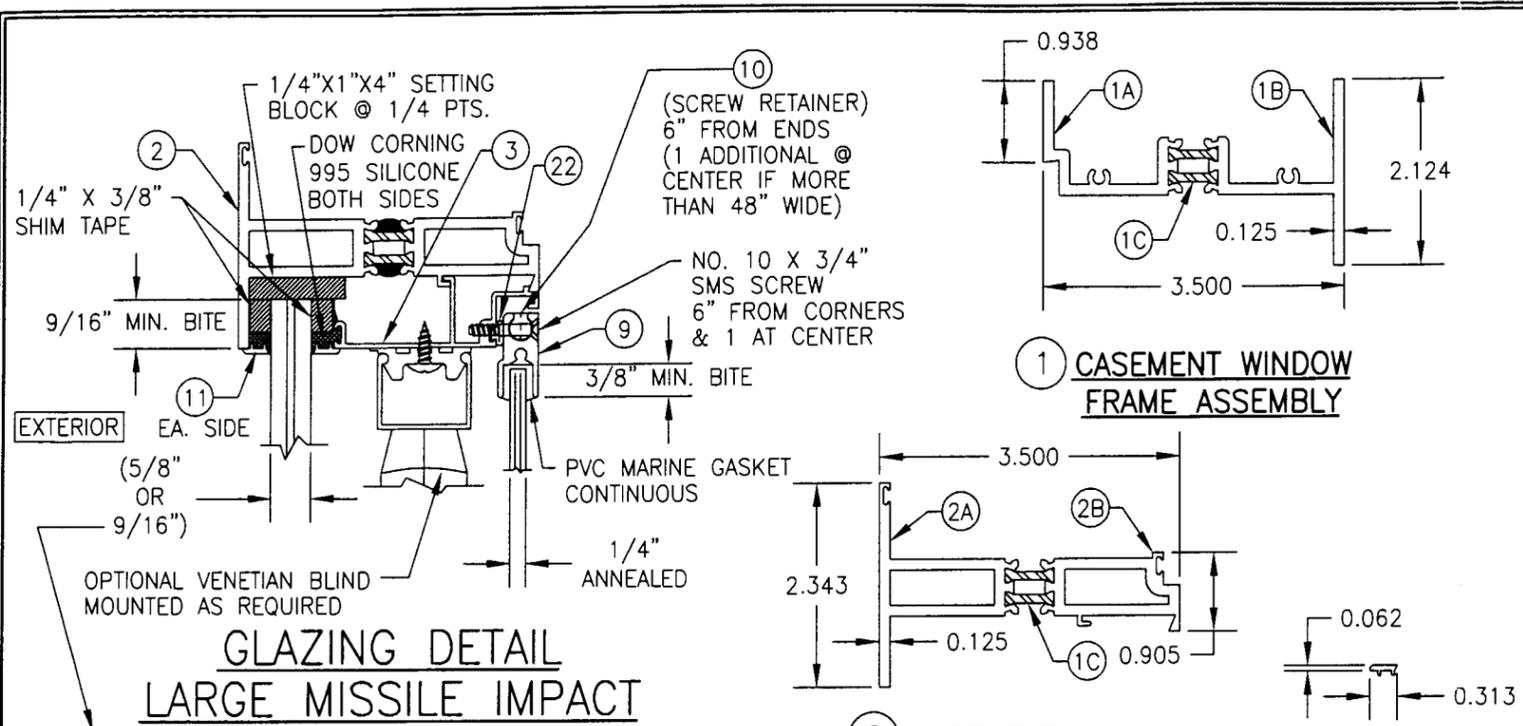
CERTIFICATION
July 17, 2002
WARREN W. SCHAEFER, P.E.
P.E. NO. 44125

DRAWING NO. 1081
SHEET NO. 3 OF 5

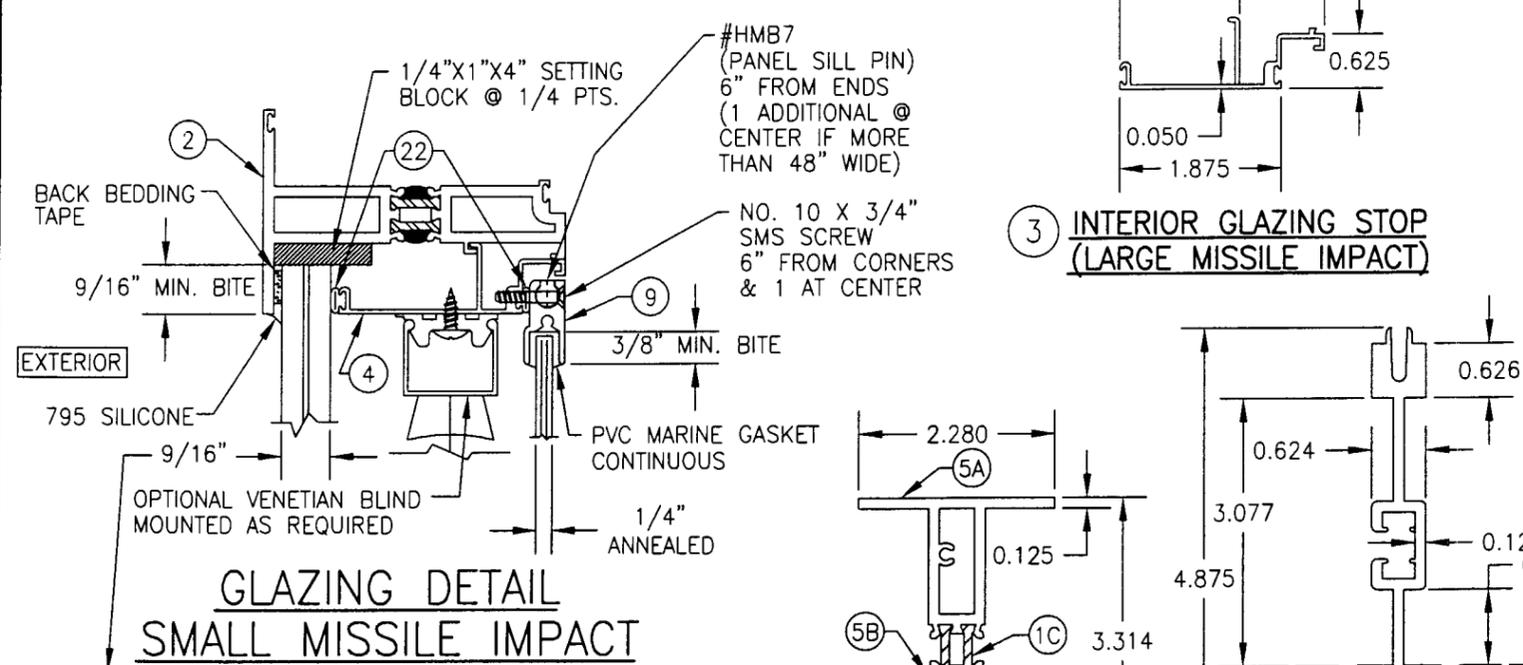


Approved as complying with the Florida Building Code
 Date Nov. 7, 2002
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 Miami Dade Product Control Division
 By Mauro Perez

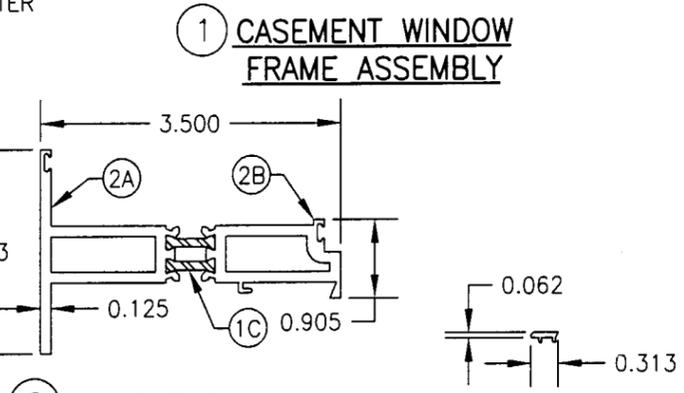
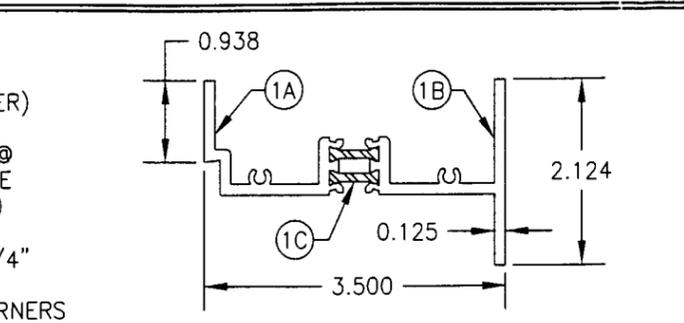
DRAWN BY: J.C.F.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 02/27/02	
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE: SERIES 810-I SMALL & LARGE MISSILE IMPACT CASEMENT WINDOW			
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.		MANUFACTURER: EFCO CORPORATION	
600 SANDTREE DRIVE, SUITE 203B PALM BEACH GARDENS, FL 33403 PHONE: 561-775-4902 FAX: 561-775-4903		1000 COUNTY ROAD, P.O. BOX 609 MONETT, MO 65708-0609 800-221-4169	
CERTIFICATION	JUL 17 2002	WARREN W. SCHAEFER, P.E.	P.E. NO. 44135
DRAWING NO.	1081	REV.	
SHEET NO.	4	OF	5



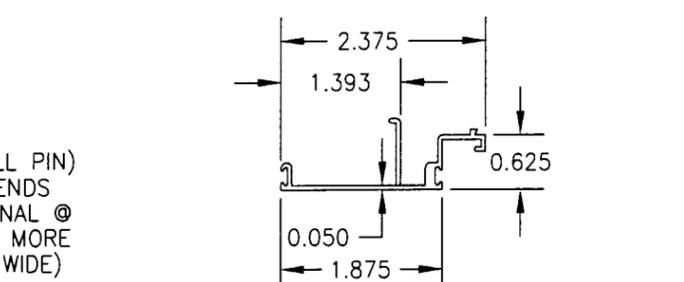
GLASS "A": 5/8" VIRACON STORM GUARD: (1/4" AN./0.10" SOLUTIA SAFLEX HP/ 1/4" AN.)
 GLASS "B": 5/8" NEBULA GLASSLAM SAFETY-PLUS: (1/4" AN./0.060" RESIN/0.010" PET/0.060" RESIN/ 1/4" AN.)
 GLASS "C": 9/16" SECURITY IMPACT GLASS SAF-GLAS: (1/4" HT. ST./0.015" SIG ADHESIVE/0.070" POLYCARB./0.015" SIG ADHESIVE/ 1/4" HT. ST.)



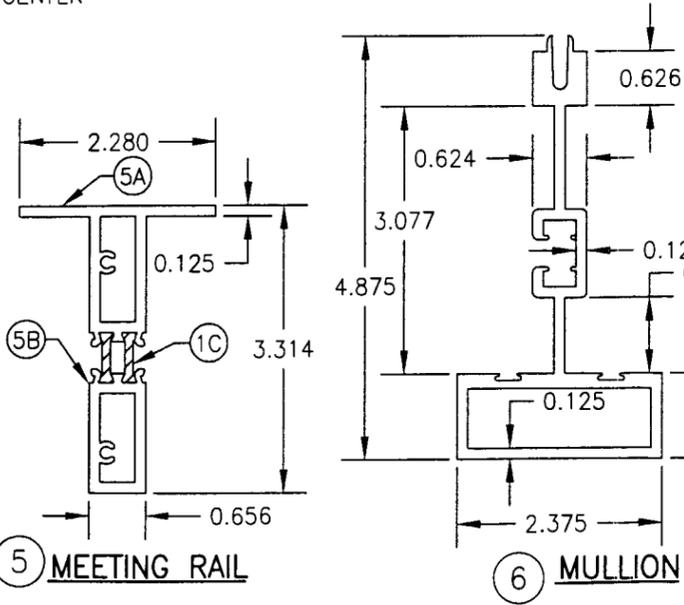
GLASS "D": 9/16" SOLUTIA SAFLEX III: (1/4" HT. ST./0.060" SAFLEX III PVB/ 1/4" HT. ST.)
 WHEN GLAZED FOR SMALL MISSILE IMPACT, THE WINDOWS MAY NOT BE INSTALLED AT SILL ELEVATIONS LESS THAN 30 FT. ABOVE GRADE.



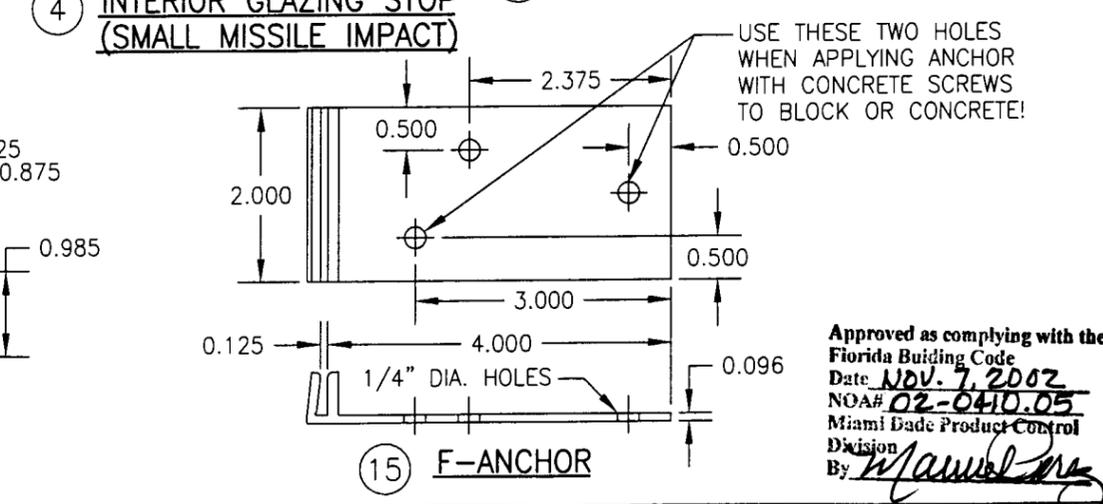
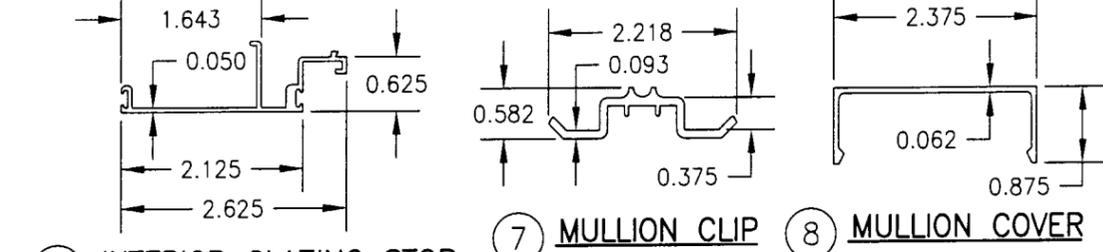
11 GLAZING CAP



4 INTERIOR GLAZING STOP (SMALL MISSILE IMPACT)



ITEM #	PART	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS			
1A	8019	FRAME EXTERIOR MEMBER	EFCO; 6063-T6 ALUMINUM
1B	8020	FRAME INTERIOR MEMBER	EFCO; 6063-T6 ALUMINUM
1C	LAA3	INSULBAR STRUT	ENSINGER PLASTICS
2A	8504	SASH EXTERIOR MEMBER	EFCO; 6063-T6 ALUMINUM
2B	8503	SASH INTERIOR MEMBER	EFCO; 6063-T6 ALUMINUM
3	EJ51	INT. GLAZING STOP (LG. MISSILE IMPACT)	EFCO; 6063-T6 ALUMINUM
4	2097	INT. GLAZING STOP (SM. MISSILE IMPACT)	EFCO; 6063-T6 ALUMINUM
5A	8258	MEETING RAIL INTERIOR MEMBER	EFCO; 6063-T6 ALUMINUM
5B	8261	MEETING RAIL EXTERIOR MEMBER	EFCO; 6063-T6 ALUMINUM
6	1303	MULLION	EFCO; 6063-T6 ALUMINUM
7	EG78	MULLION CLIP	EFCO; 6063-T6 ALUMINUM
8	EG79	MULLION COVER	EFCO; 6063-T6 ALUMINUM
9	ER65	INTERNAL PANEL FRAME (OPTIONAL)	EFCO; 6063-T6 ALUMINUM
10	HMB7	INTERNAL PANEL SCREW RETAINER	EFCO; 6063-T6 ALUMINUM
11	LB00	GLAZING CAP	EFCO; RIGID VINYL
12	8888	HINGE SUPPORT	EFCO; 6063-T6 ALUMINUM
13	HB47	LIFT BLOCK	EFCO; NYLON
14	2878	CORNER KEY	EFCO; 6063-T6 ALUMINUM
15	1880	F-ANCHOR	EFCO; 6063-T6 ALUMINUM
HARDWARE			
16	2933	HINGE (SASH SIDE)	EFCO; 6063-T6 ALUMINUM
17	2935	HINGE (FRAME SIDE)	EFCO; 6063-T6 ALUMINUM
18	HA15	HINGE SHIM	EFCO; 6063-T6 ALUMINUM
19	5005/5006	VENETIAN BLIND TILT KNOB (OPTIONAL)	EFCO; 6063-T6 ALUMINUM
20	HU41/HU42	CAM HANDLE	BRONZE CRAFT (MANGANESE ALLOY)
21	HK10	CAM HANDLE KEEPER	BRONZE CRAFT (MANGANESE ALLOY)
SEALS & SEALANTS			
22	WVB4	CONT. VINYL BULB SEAL	65 DUROMETER
23	WA04	CONT. VINYL BULB SEAL	73 DUROMETER
24	-	INSULBAR SEALANT (CONTINUOUS)	COLOR DOW 795



Approved as complying with the Florida Building Code
 Date NOV. 7, 2002
 NOA# 02-0410.05
 Miami Dade Product Control
 Division
 By Manuel

DRAWN BY: J.C.F.	CHECKED BY: W.W.S.
PLOT: 1=2	DATE: 02/27/02
DATE	
BY	
REVISION DESCRIPTION	
NO.	
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MANUFACTURER EFCO CORPORATION 1000 COUNTY ROAD, P.O. BOX 609 MONETT, MO 65708-0609 800-221-4169	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 600 SANDTREE DRIVE, SUITE 203B PALM BEACH GARDENS, FL 33403 PHONE: 561-775-4902 FAX: 561-775-4903	
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DRAWING NO. 1081	REV.
SHEET NO. 5	OF 5