



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

**MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1 603
MIAMI, FLORIDA 33130-1 563
(305) 375-2901 FAX (305) 375-2908**

NOTICE OF ACCEPTANCE (NOA)

**Arso Enterprises d/b/a Sol-A-Trol Aluminum Products
4101 N.W. 132nd Street
Miami, FL 33054**

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 540 Aluminum Single/Double Hung Window with Louvers

APPROVAL DOCUMENT: Drawing No. 2, titled "Series 540 Single/Double Hung Window with Louvers", sheets 1 through 10 of 10, prepared by manufacturer, signed and sealed by Ballard Argus, P.E., dated 2/21/03, 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 Division.

MISSILE IMPACT RATING: None

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 revises NOA # 01-1016.04 and, consists of this page 1 as well as approval document mentioned above. The submitted documentation was reviewed by **Jaime Eisen, P.E.**



**NOA No 02-1112.05
Expiration Date: March 20, 2008
Approval Date: March 20, 2003
Page 1**

Arso Enterprises d/b/a Sol-A-Trol Aluminum Products

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

(For File ONLY. Not part of NOA)

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No. 2, titled "Series 540 Single/Double Hung Window with Louvers", sheets 1 through 10 of 10, prepared by manufacturer, signed and sealed by Ballard Argus, P.E., dated 2/21/03.

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 20294
 - 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
 - 6) Forced Entry Test, per FBC 2411 3.2.1 and TAS 202-94along with marked-up drawings and installation diagram of a aluminum single/double hung window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL 01065**, dated 8/7/01, signed and sealed by Luis Antonio Figueredo, P.E.

B. CALCULATIONS

1. Anchor Calculations, dated 11/8/02, prepared, signed and sealed by Ballard Argus, P.E.

MATERIAL CERTIFICATIONS

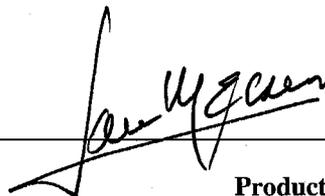
1. None.

D. STATEMENTS

1. Statement letter of no financial interest, dated 11/8/02, signed by Ballard Argus, P.E.

F. OTHER

1. Letter from consultant stating that the product is in compliance with the Florida Building Code (FBC).



Jaime Eisen, P.E.
Product Control Examiner
NOA No 02-1112.05
Expiration Date: March 20, 2008
Approval Date: March 20, 2003

Series 540 Aluminum Single Hung/Double Hung Window with Louvers
Product Approval Submittal Drawings

General Notes:

- Product Approval drawings are based on the following Test Report:
 - Test Report No. FTL-3059, No Reinforcement, 1/4" Tempered Glass with .320" minimum bite, 2 3/4" Sill --- with screen and aluminum louvers.
 - Test Report No. FTL-3059, No Reinforcement, 1/4" Tempered Glass with .320" minimum bite, 4" Sill --- with screen and aluminum louvers.
- Drawings provide anchor information for 4000 psi Structural Concrete/CBS construction only.
- Window Minimum Hardware Requirements:
 - Four (4) spring and pulley balances, with I.D. BSI --- locate two (2) at each frame jamb.
 - Two (2) surface mounted metallic cam locks, with I.D. BC 49 --- locate at bottom vent top rail, 9 1/2" from each end.
 - Two (2) surface mounted keepers, with I.D. BC 39 locate at top vent bottom rail, 9 1/2" from each end.
 - Four (4) plastic vent guides, with no I.D. marks --- locate one (1) at each end of each vent top rail.
 - Four (4) steel balance clips, with I.D. marks --- locate two (2) at each frame jamb, 90 1/2" and 92" from bottom.
 - Two (2) surface mounted lever type cam locks, operating louvers, with I.D. Solatrol --- locate at left frame jamb, 16" and 58" from bottom.
 - Fifty-four (54) aluminum pivot hinges, with no I.D. marks --- locate one (1) at each end of each louver.
 - Four (4) aluminum slide bar assemblies, 3/4" x 47" long, with no I.D. marks --- locate one (1) at each frame jamb.
- Weatherstripping Requirements:
 - Single row vinyl bulb --- locate at the frame sill on the exterior.
 - Single row, wool pile with integral plastic fin --- locate at the top vent bottom rail and on the interior and exterior of the frame head, and at each vent jamb rail.
 - One (1) strip of pile weatherstrip, 1 3/8" long, --- locate at each end of the top vent bottom rail and at the bottom vent top rail.
 - One (1) vinyl flap --- locate at the bottom vent bottom rail, at the interior sill flange, and at the top of each louver.
 - One (1) adhesive backed closed cell foam pad, 1" x 1 1/2" x 1/2" high --- locate at each lower frame corner.
 - One (1) adhesive backed closed cell foam pad, 5/8" x 44 7/8" x 1/4" high --- locate at the interior of the bottom vent bottom rail.
 - One (1) adhesive backed closed cell foam pad, 5/8" x 1" x 1/4" high --- locate at the left end of the bottom vent bottom rail.
- No weepholes provided.
- All structural framing members are to be Aluminum Alloy 6063-T5 x .078" typical wall thickness.

Notes for Anchors into Structural Concrete/CBS Construction:

- Typical Concrete Anchor Type is 1/4" Dia. Tapcon with the following embedment depths:
 - For 4000 psi structural concrete --- use 1 3/4" embedment depth.
 - For Hollow Concrete Block --- use 1 1/4" embedment depth.
- Minimum Concrete Anchor quantities are depicted as solid lines located around the perimeter of each test unit elevation, drawn perpendicular to the frame.
- Maximum shim space between the window frame and the concrete/wood buck substrate = 1/4".
- Minimum 1/4" Dia. Tapcon Edge Distance from edge of Concrete/Block = 2 1/2" (10 Dia.).
- Minimum Spacing between adjacent 1/4" Dia. Tapcon Anchors = 3" (12 Dia.).

Maximum Anchor Spacing Requirements:

- Head and Sill Frame Anchors:

Test Report No. FTL-3059:
Locate anchors 6" maximum from frame ends and 12" o.c. maximum, per test mock-up.
- Jamb Frame Anchors:

Test Report No. FTL-3059:
Locate anchors 6" maximum from frame ends and 13 3/4" o.c. maximum, per test mock-up.
- Meeting Rail Anchors:

Test Report No. FTL-3059:
Locate one (1) jamb anchor/anchor group 3" above the meeting rail C.L. and one (1) jamb anchor/anchor group 3" below the meeting rail C.L.
- Above anchor spacing are maximums --- spacing between adjacent anchors must be not less than 3" o.c.
- Elevations are scaled views of the "Test Size" Units the Test Report listed above.
- Locate Head, Sill, Jamb, and Meeting Rail Anchors for other size units per notes 1, 2, 3, and 4 --- also, refer to "Comparative Analysis" tables for minimum anchor quantities required for window frame sizes listed.

Miami-Dade County requires shutters for non-impact resistant systems.

BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324



2/21/03

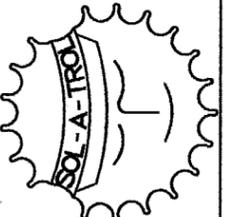
FLORIDA No. 35686, CIVIL

DADE COUNTY SEAL:

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 02-1112.05
Expiration Date 03/20/08

By: 
Miami-Dade Product Control
Division

SOL-A-TROL
aluminum products
4101 N.W. 132nd Street
Miami, Florida 33054
Phone: (305) 681-2020
Fax: (305) 681-2035

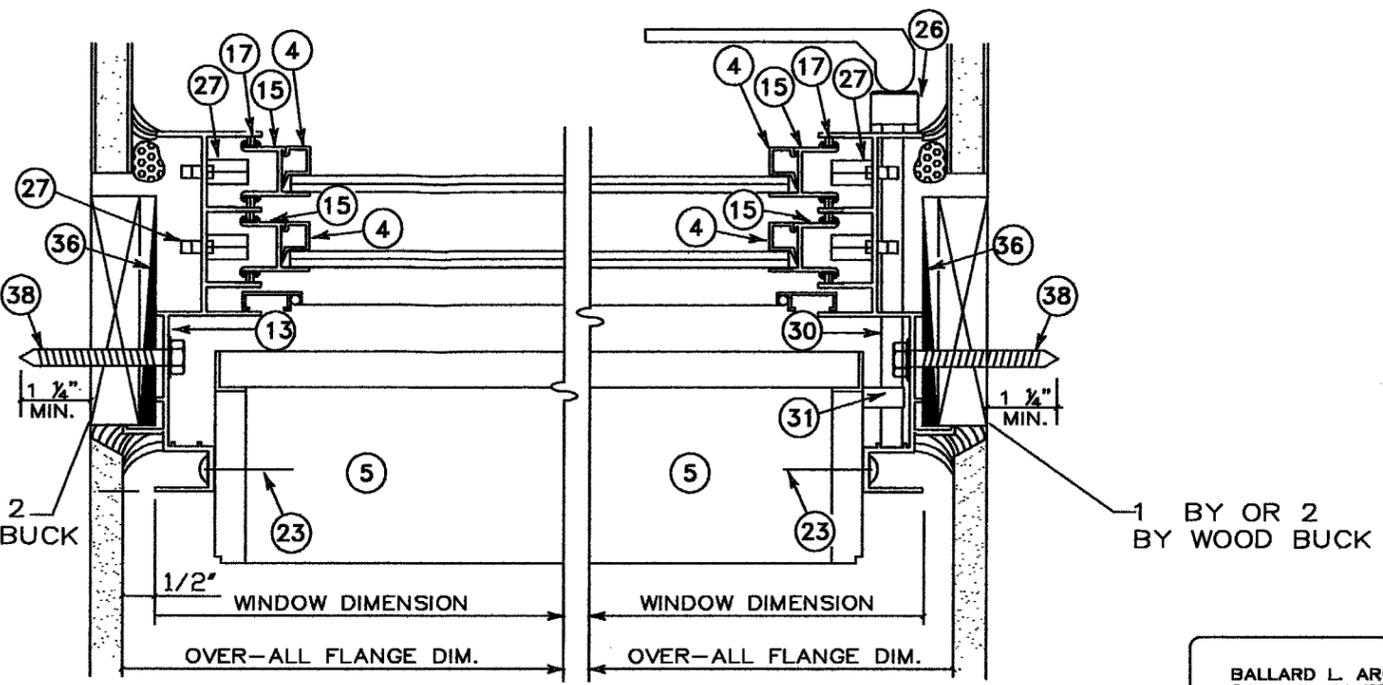
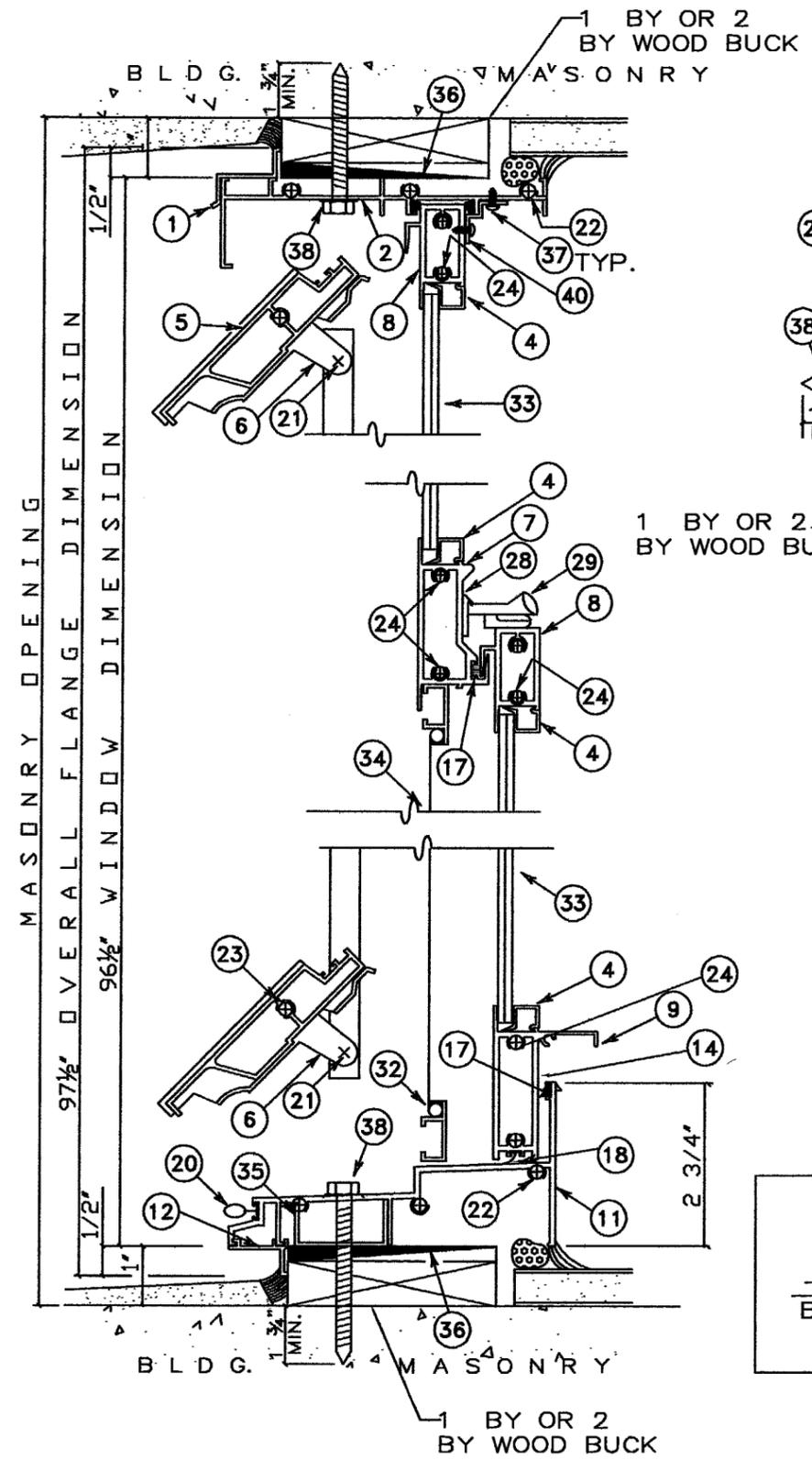


SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

DWG SET # 2 - NON-IMPACT

Sheet #
1 OF 10

WOOD BUCKS MUST BE ENGINEERED TO CARRY ALL LOADS IMPOSED BY THE WINDOW, AND AS REVIEWED AND APPROVED BY THE BUILDING OFFICIAL.



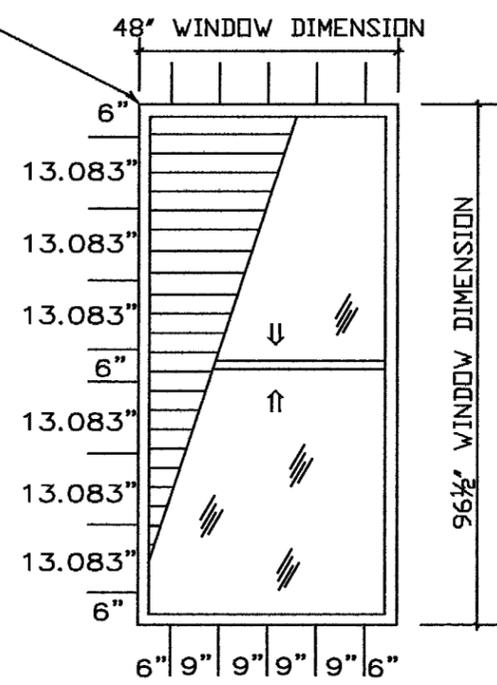
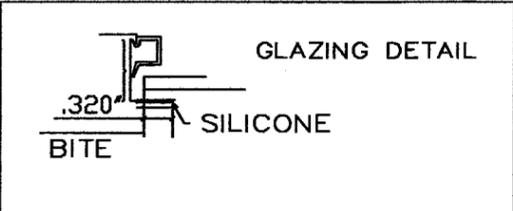
1 BY OR 2 BY WOOD BUCK

1 BY OR 2 BY WOOD BUCK

CORNER SEALANT (TYP)

FASTENER SPACING
AS SHOWN ON ELEVATION FOR MAXIMUM SIZE, SEE CHART ON PAGE 9 FOR SMALLER WINDOW SIZES

NOTE:
ELEVATIONS SHOW "WINDOW DIMENSION" AS DEFINED ON DETAIL. TEST REPORTS SHOW OVERALL FLANGE DIMENSION.



BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324

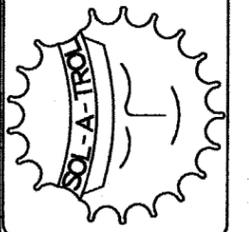
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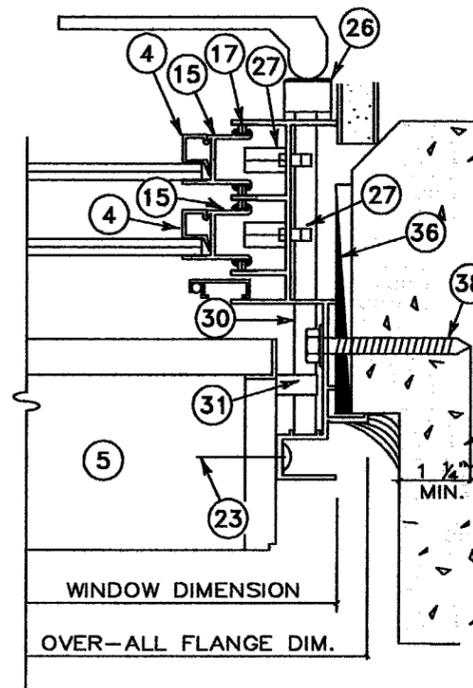
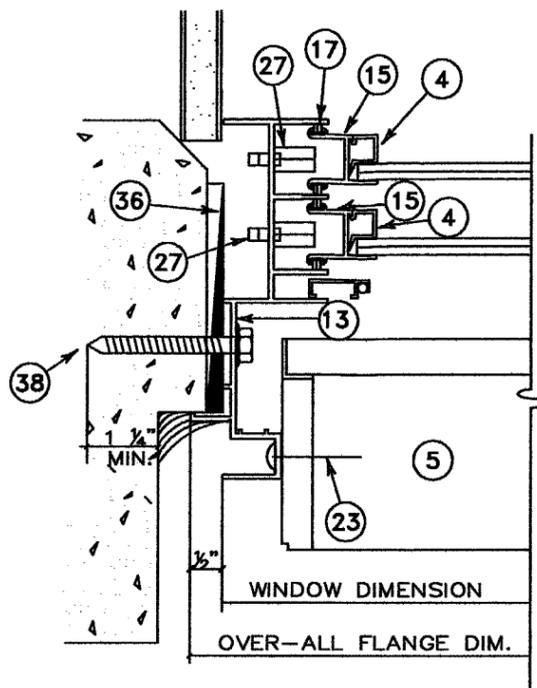
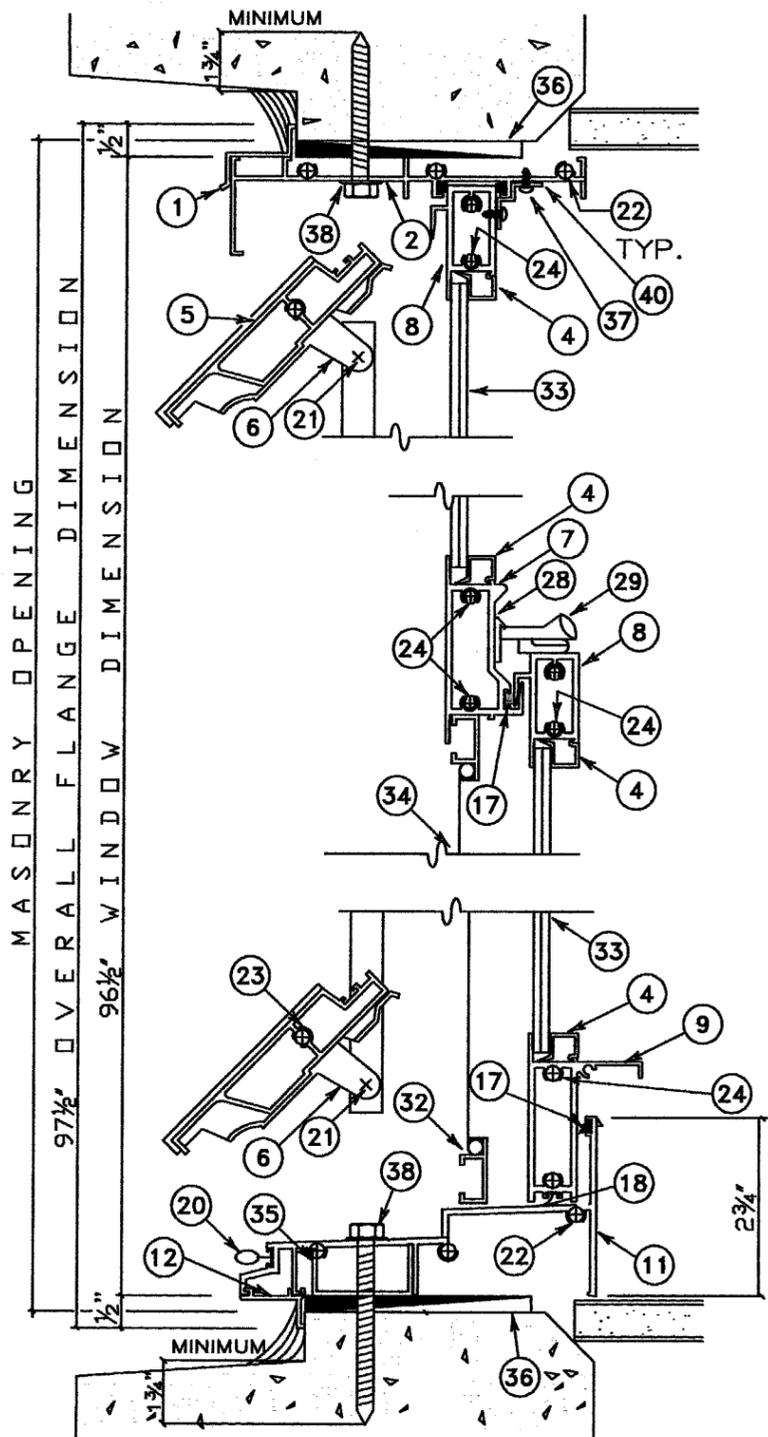
By *[Signature]*
Miami-Dade Product Control
Division

SOL-A-TROL
aluminum products
4101 N.W. 132nd Street
Miami, Florida 33054
Phone: (305) 681-2020
Fax: (305) 681-2035



SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

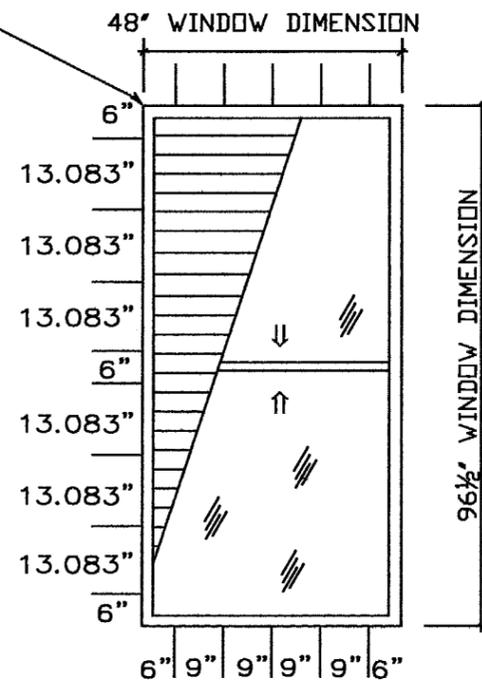
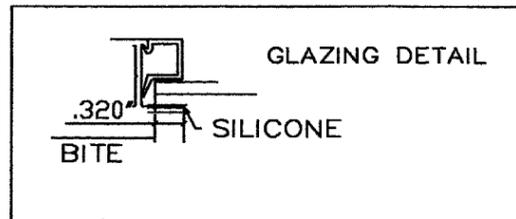
DWG SET # 2 - NON-IMPACT



CORNER SEALANT (TYP)

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BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324
[Signature]
2/21/03
FLORIDA No. 35686, CIVIL

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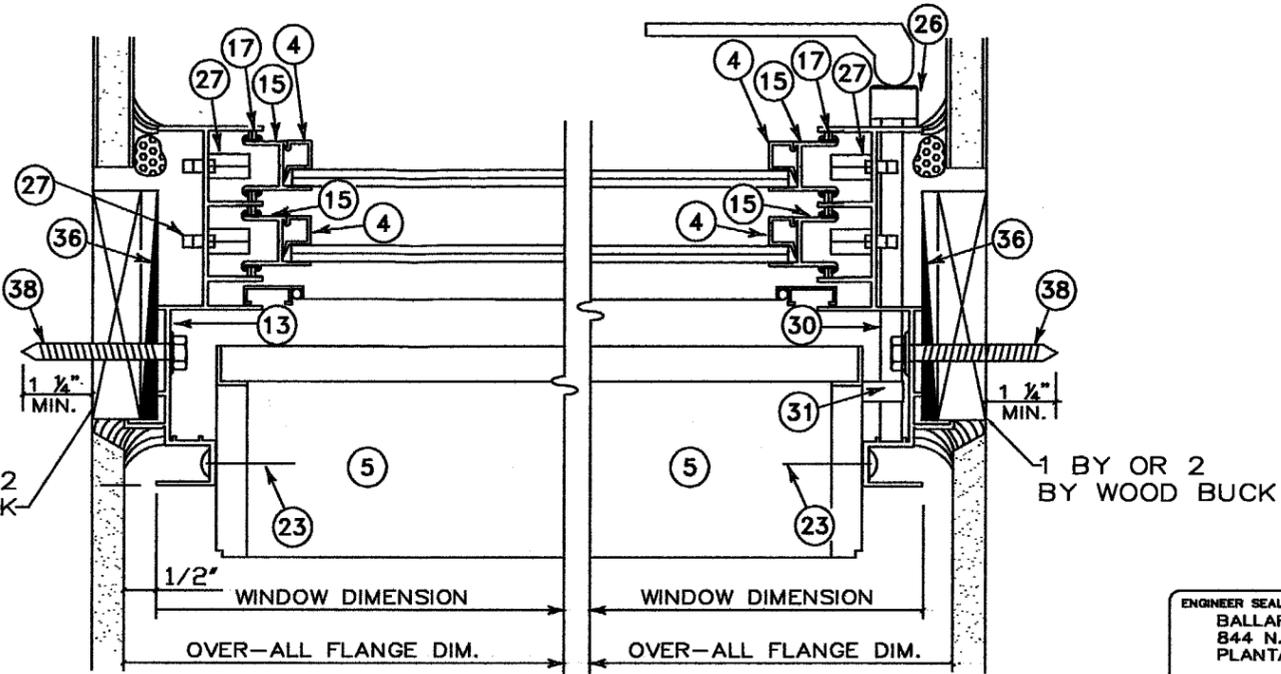
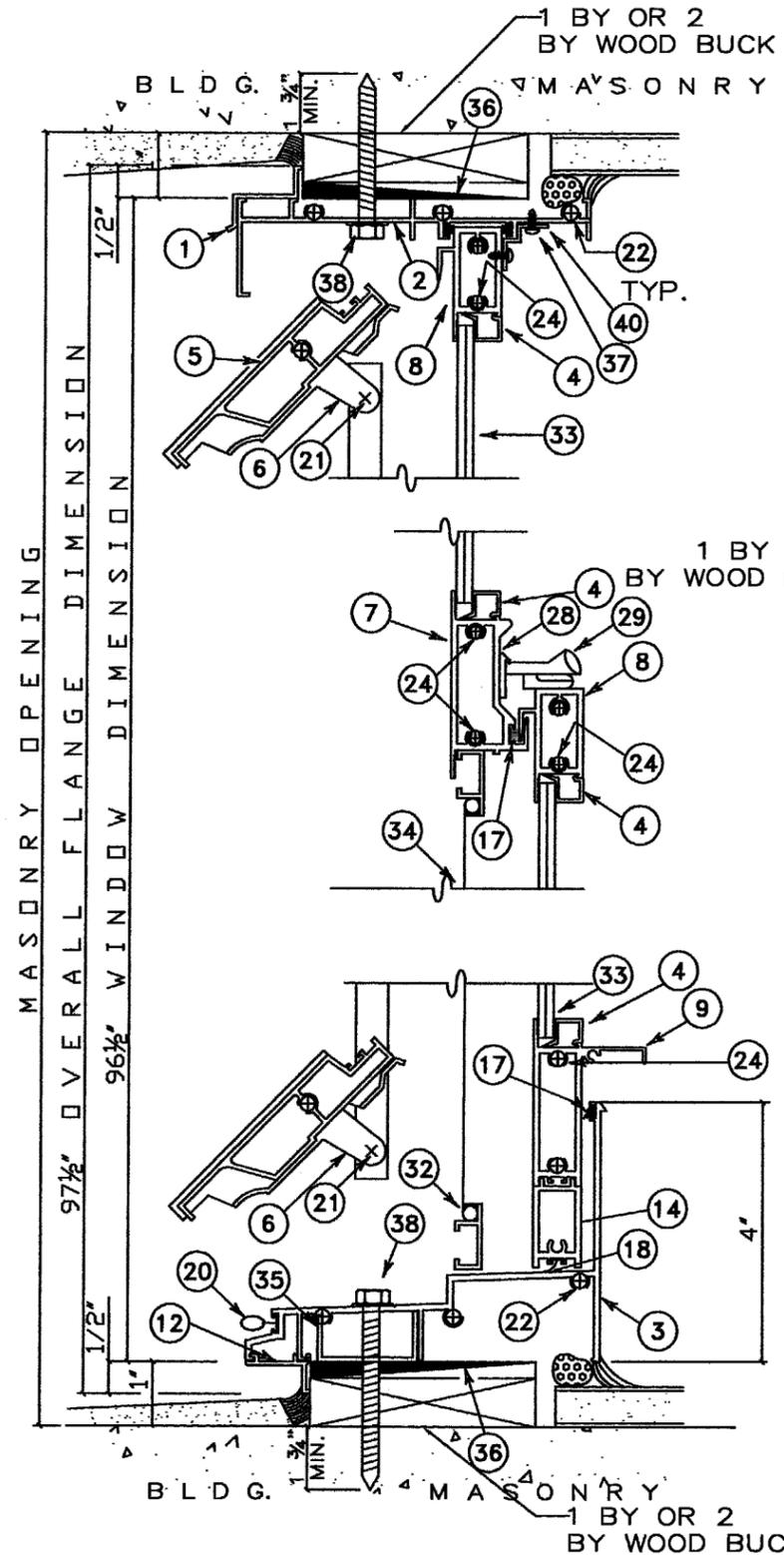
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APPROVAL DRAWINGS

Sheet #
3 OF 10

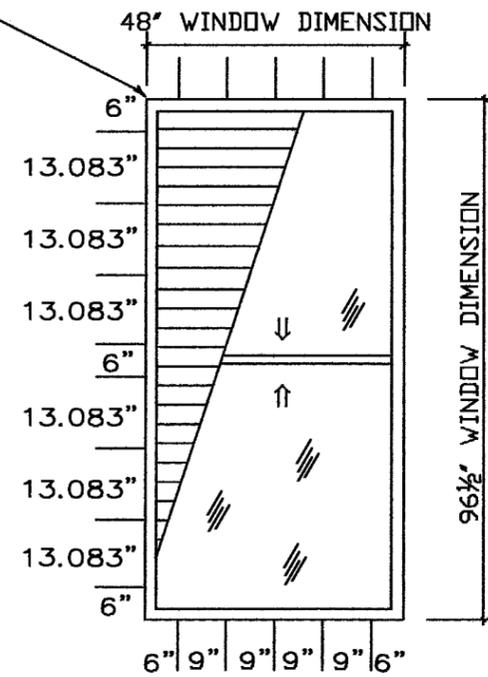
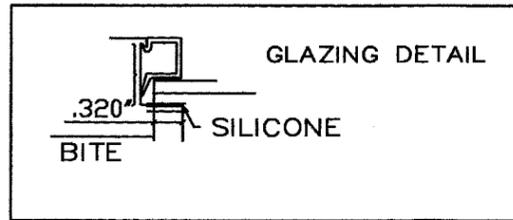
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BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324

[Signature]

2/21/03
FLORIDA No. 35888, CIVIL

DADE COUNTY SEAL:

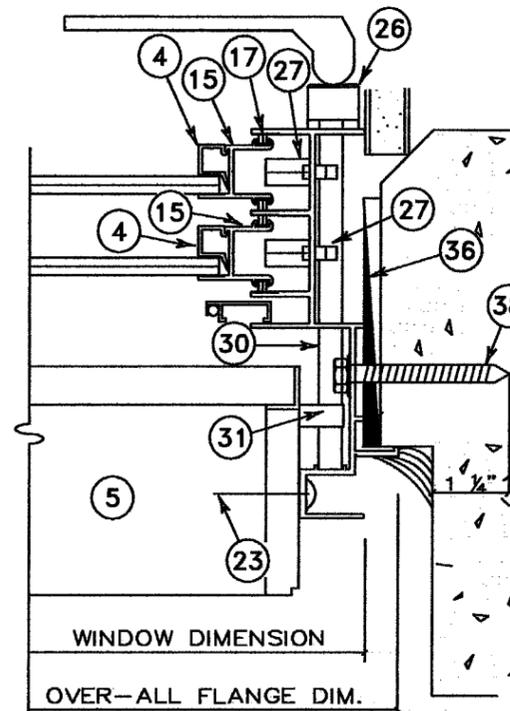
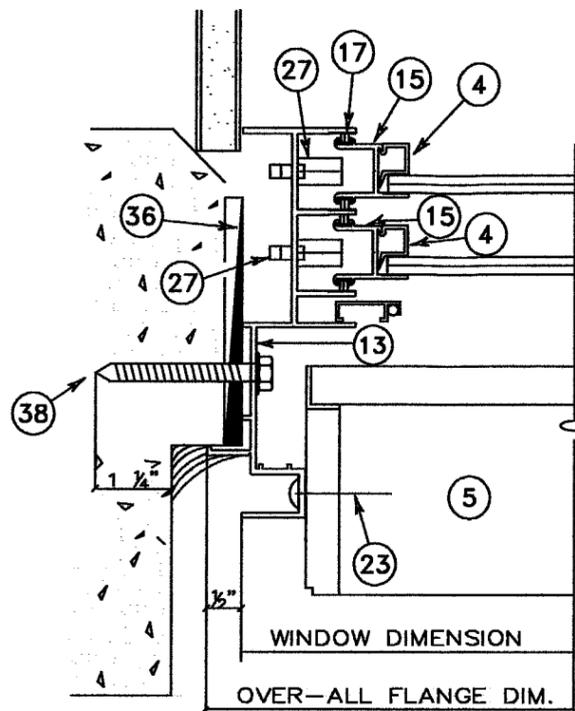
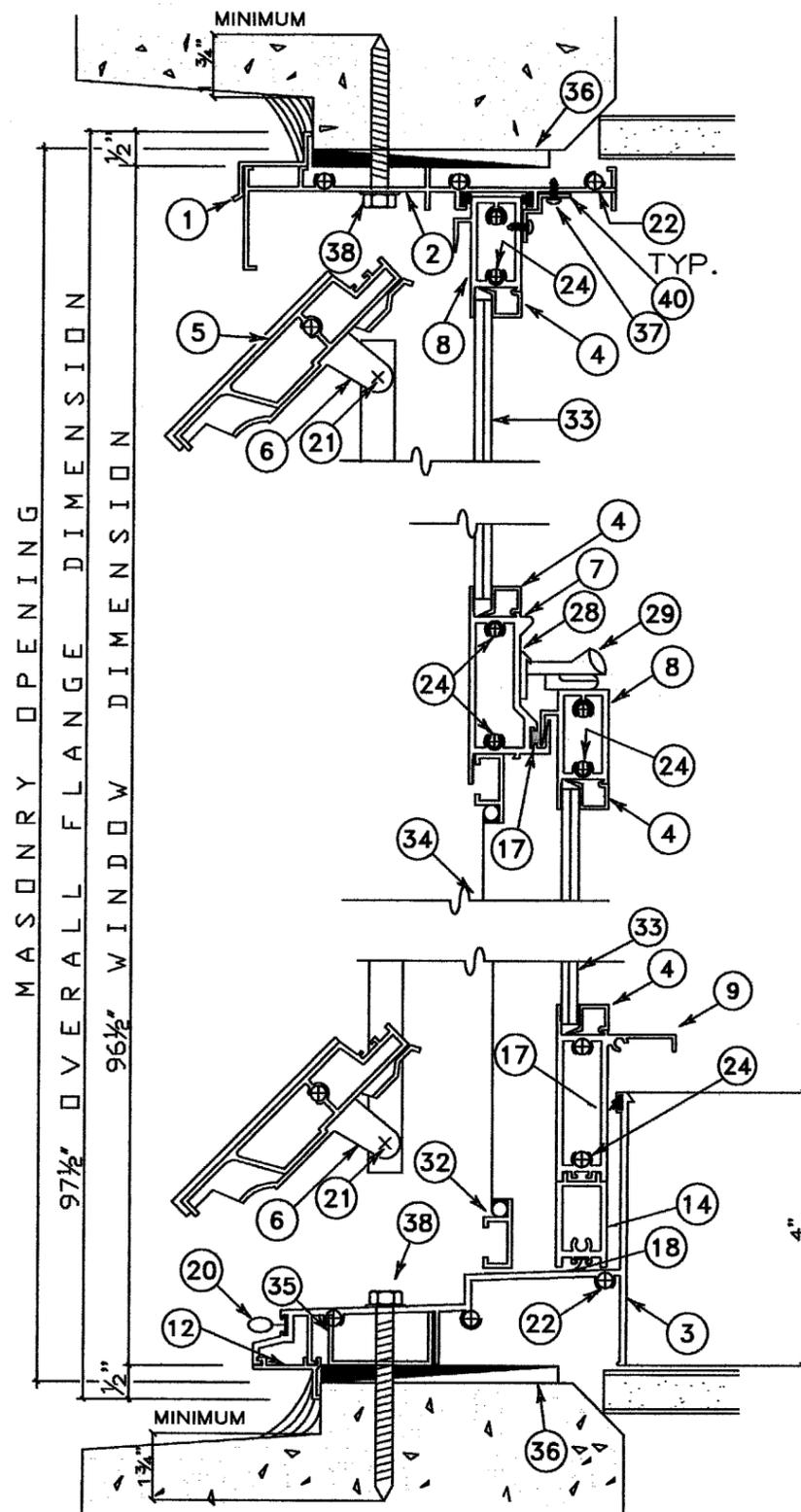
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SERIES 540
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APPROVAL DRAWINGS

Sheet #
4 OF 10



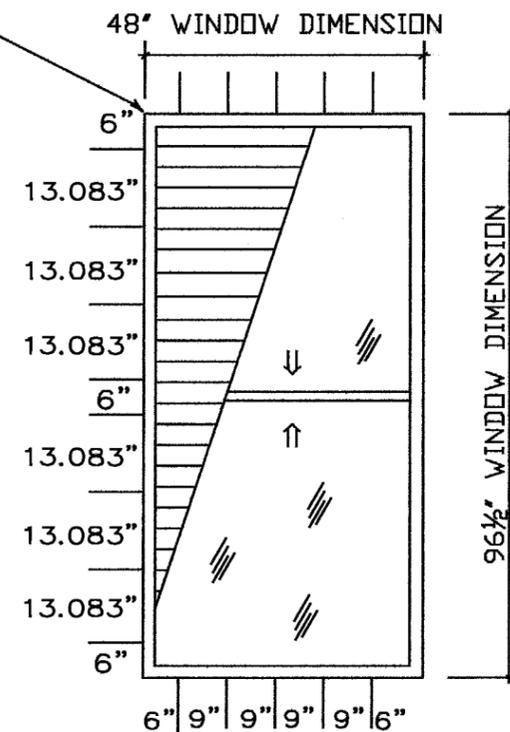
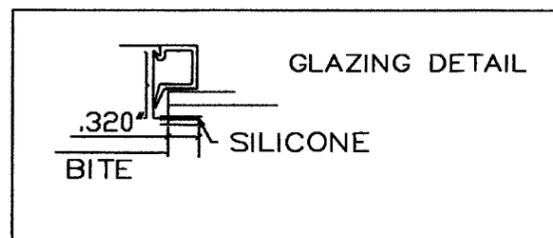
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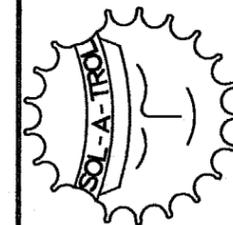


DWG SET # 2 - NON-IMPACT

ENGINEER SEAL:
 BALLARD L. ARGUS, P.E.
 844 N.W. 91 TERRACE
 PLANTATION, FL 33324
 2/21/03
 FLORIDA No. 35686, CIVIL

DADE COUNTY SEAL:
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 Miami Dade Product Control
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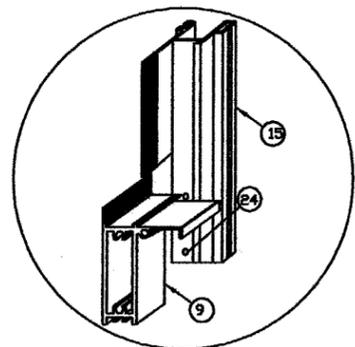
SOLE-A-TROL
 aluminum products
 4101 N.W. 132nd Street
 Miami, Florida 33054
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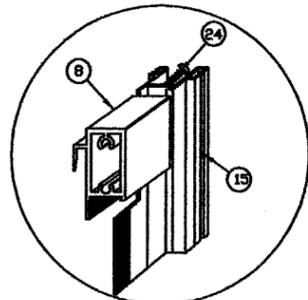
SERIES 540
 SINGLE/DOUBLE HUNG
 WINDOW WITH LOUVERS
 DADE COUNTY PRODUCT
 APPROVAL DRAWINGS

Sheet #
 5 OF 10

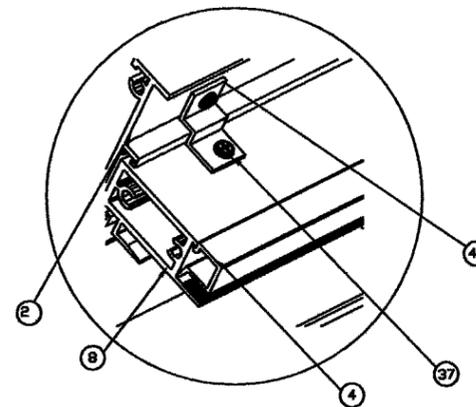
3D DETAIL



VENT BOTTOM RAIL TO STILE CONNECTION



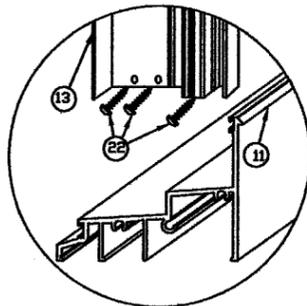
VENT MEETING RAIL TO STILE CONNECTION DETAIL



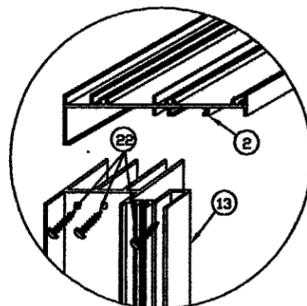
TOP VENT FIX CLIP

NOTE: MEETING RAIL IS NOT FIXED TO FRAME IN EITHER SINGLE OR DOUBLE HUNG CONFIGURATIONS

3D DETAIL



FRAME SILL TO JAMB CONNECT. DET.



FRAME HEAD TO JAMB CONNECT. DET.

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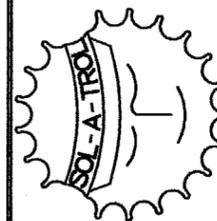
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SERIES 540
SINGLE/DOUBLE HUNG
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APPROVAL DRAWINGS

DWG SET # 2 - NON-IMPACT

Sheet #
6 OF 10

2. Impact/Cyclic Load Test Results Not Used, and, PA-202 Comparative Analysis Summary Table Values Shown in Table						
Table Values based on Test Report Number		FTL-3059	with	2.750	Inch Sill Height	
Miami-Dade County Test Protocols:			Dp allowable, for Substrate and Anchor Type Indicated			
PA-201 Missile Impact Test	Not Used		4000 psi Concrete at Head and Sill		Required Anchor	
PA-202 Static Load Test	Dp per C.A. Table		1/4" Dia Tapcon x 1 3/4" Pen		Quantities	
PA-203 Cyclic Load Test	Not Used		Hollow Concrete Block at Jamb		using Single Anchors	
Window Frame Size		Number of	1/4" Dia Tapcon x 1 1/4" Pen		at Each Location	
Width (in)	Height (in)	Louvers in Unit	+ Pos Dp (psf)	- Neg Dp (psf)	Head/Sill Anchors	Jamb Anchors
24	23	6	75.3	-384.2	2	4
24	33 1/2	9	75.3	-285.1	2	4
24	44	12	75.3	-217.1	2	4
24	54 1/2	15	75.3	-280.0	2	6
24	65	18	75.3	-280.0	2	6
24	75 1/2	21	75.3	-253.0	2	8
24	86	24	75.3	-222.1	2	8
24	96 1/2	27	75.3	-198.0	2	8
29	23	6	75.3	-336.7	3	4
29	33 1/2	9	75.3	-236.0	3	4
29	44	12	75.3	-179.7	3	4
29	54 1/2	15	75.3	-174.1	3	6
29	65	18	75.3	-146.0	3	6
29	75 1/2	21	75.3	-125.7	3	8
29	86	24	75.3	-110.3	3	8
29	96 1/2	27	75.3	-98.3	3	8
34	23	6	75.3	-277.1	3	4
34	33 1/2	9	75.3	-201.3	3	4
34	44	12	75.0	-163.2	3	4
34	54 1/2	15	75.3	-134.5	3	6
34	65	18	75.3	-112.8	3	6
34	75 1/2	21	75.3	-97.1	3	8
34	86	24	75.3	-85.2	3	8
34	96 1/2	27	75.3	-76.0	3	8
39	23	6	75.3	-235.5	4	4
39	33 1/2	9	75.3	-175.5	4	4
39	44	12	75.3	-133.6	4	4
39	54 1/2	15	75.3	-130.2	4	6
39	65	18	75.3	-121.8	4	6
39	75 1/2	21	75.3	-118.5	4	8
39	86	24	75.3	-104.2	4	8
39	96 1/2	27	75.3	-92.8	4	8
44	23	6	75.3	-204.7	4	4
44	33 1/2	9	75.3	-150.9	4	4
44	44	12	75.3	-118.4	4	4
44	54 1/2	15	75.3	-108.8	4	6
44	65	18	75.3	-99.8	4	6
44	75 1/2	21	75.3	-94.9	4	8
44	86	24	75.3	-87.9	4	8
44	96 1/2	27	75.3	-78.3	4	8
49	23	6	75.3	-181.0	5	4
49	33 1/2	9	75.3	-132.3	5	4
49	44	12	75.3	-106.3	5	4
49	54 1/2	15	75.3	-93.4	5	6
49	65	18	75.3	-84.6	5	6
49	75 1/2	21	75.3	-79.2	5	8
49	86	24	75.3	-76.1	5	8
49	96 1/2	27	75.0	-75.0	5	8
49	97 1/2	Test Size for C.A.	74.7	-74.7	5	8

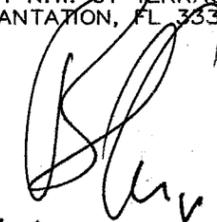
SERIES 540
WITH NON-IMPACT
RESISTANT LOUVERS
AND STANDARD SILL

IMPACT/ CYCLIC LOAD TEST
PERFORMANCE IS NOT INCLUDED
IN SUMMARY TABLE

DWG SET # 2 - NON-IMPACT

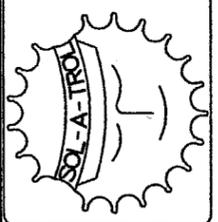
Notes to Impact Test, Cyclic Load Test, and Comparative Analysis Summary Table:

1. Locate Head and Sill Single Anchors at 6 inches max from frame ends and 12 inches O.C. maximum, per test mock-up.
2. Locate Jamb Single Anchors at 6 inches max from frame ends and 13.75 inches O.C. maximum, per test mock-up.
3. Locate one (1) Jamb Anchor at 3 inches maximum above the meeting rail Center Line.
Locate one (1) Jamb Anchor at 3 inches maximum below the meeting rail Center Line.
4. Above anchor spacings are maximums -- Reduce anchor spacing from frame ends, if required to maintain 3" minimum spacing between adjacent anchors.

BALLARD L. ARGUS, P.E.
844 N.W. 81 TERRACE
PLANTATION, FL 33324

2/21/03
FLORIDA No. 35686, CIVIL

DADE COUNTY SEAL
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 02-1112.05
Expiration Date 03/30/08
By 
Miami-Dade Product Control
Division

SOLA-TROL aluminum products
4101 N.W. 132nd Street
Miami, Florida 33054
Phone: (305) 681-2020
Fax: (305) 681-2035



SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

2. Impact/Cyclic Load Test Results Not Used, and, PA-202 Comparative Analysis Summary Table Values Shown in Table						
Table Values based on Test Report Number		FTL-3059	with		4,000	Inch Sill Height
Miami-Dade County Test Protocols:			Dp allowable, for Substrate and Anchor Type Indicated			
PA-201 Missile Impact Test	Not Used	4000 psi Concrete at Head and Sill	Required Anchor Quantities using Single Anchors at Each Location			
PA-202 Static Load Test	Dp per C.A. Table	1/4" Dia Tapcon x 1 3/4" Pen				
PA-203 Cyclic Load Test	Not Used	Hollow Concrete Block at Jamb				
Window Frame Size		Number of Louvers in Unit	1/4" Dia Tapcon x 1 1/4" Pen		Head/Sill Anchors	Jamb Anchors
Width (in)	Height (in)		+ Pos Dp (psf)	- Neg Dp (psf)		
24	23	6	106.7	-384.2	2	4
24	33 1/2	9	106.7	-285.1	2	4
24	44	12	106.7	-217.1	2	4
24	54 1/2	15	106.7	-280.0	2	6
24	65	18	106.7	-280.0	2	6
24	75 1/2	21	106.7	-253.0	2	8
24	86	24	106.7	-222.1	2	8
24	96 1/2	27	106.7	-198.0	2	8
29	23	6	106.7	-336.7	3	4
29	33 1/2	9	106.7	-236.0	3	4
29	44	12	106.7	-179.7	3	4
29	54 1/2	15	106.7	-174.1	3	6
29	65	18	106.7	-146.0	3	6
29	75 1/2	21	106.7	-125.7	3	8
29	86	24	106.7	-110.3	3	8
29	96 1/2	27	98.3	-98.3	3	8
34	23	6	106.7	-277.1	3	4
34	33 1/2	9	106.7	-201.3	3	4
34	44	12	106.7	-153.2	3	4
34	54 1/2	15	106.7	-134.5	3	6
34	65	18	106.7	-112.8	3	6
34	75 1/2	21	97.1	-97.0	3	8
34	86	24	85.2	-85.2	3	8
34	96 1/2	27	76.0	-76.0	3	8
39	23	6	106.7	-235.5	4	4
39	33 1/2	9	106.7	-175.5	4	4
39	44	12	106.7	-133.6	4	4
39	54 1/2	15	106.7	-130.2	4	6
39	65	18	106.7	-121.8	4	6
39	75 1/2	21	106.7	-118.5	4	8
39	86	24	104.2	-104.2	4	8
39	96 1/2	27	92.8	-92.8	4	8
44	23	6	106.7	-204.7	4	4
44	33 1/2	9	106.7	-150.9	4	4
44	44	12	106.7	-118.4	4	4
44	54 1/2	15	106.7	-108.8	4	6
44	65	18	99.8	-99.8	4	6
44	75 1/2	21	94.9	-94.9	4	8
44	86	24	87.9	-87.9	4	8
44	96 1/2	27	78.3	-78.3	4	8
49	23	6	106.7	-181.0	5	4
49	33 1/2	9	106.7	-132.3	5	4
49	44	12	106.3	-106.9	5	4
49	54 1/2	15	93.4	-93.4	5	6
49	65	18	84.6	-84.6	5	6
49	75 1/2	21	79.2	-79.2	5	8
49	86	24	76.1	-76.1	5	8
49	96 1/2	27	75.0	-75.0	5	8
49	97 1/2	Test Size for C.A.	75.0	-75.0	5	8

SERIES 540
WITH NON-IMPACT
RESISTANT LOUVERS
AND 'HWR' SILL

IMPACT/ CYCLIC LOAD TEST
PERFORMANCE IS NOT INCLUDED
IN SUMMARY TABLE

DWG SET # 2 - NON-IMPACT

BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
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[Signature]

2/21/03
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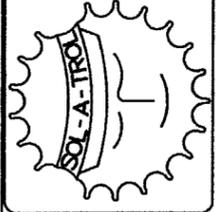
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- Notes to Impact Test, Cyclic Load Test, and Comparative Analysis Summary Table:
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