MIAMI-DADE COUNTY
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
www.miamidade.gov

NOTICE OF ACCEPTANCE (NOA)

Briscoe Shutters, Inc.
2841 Shoreview Drive
Naples, Florida 34112

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: Aluminum Colonial Shutter

APPROVAL DOCUMENT: Drawing No. 13-0579, titled " Colonial Shutter System and Bahama over Colonial Shutter System ", sheets 1 through 11 of 11, prepared by Michael Trapasso, P.E., dated October 13, 2009, signed and sealed by Michael Trapasso, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and the expiration 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 the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

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

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

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

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.
This NOA **revises NOA # 07-0713.05** and consists of this page 1, evidence submitted pages E-1 & E-2 as well as approval document mentioned above.
The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**

MIAMI-DADE COUNTY APPROVED

Helmy A. Makar
11/18/2009

NOA No. 09-0122.08
Expiration Date: 11/28/2012
Approval Date: 11/18/2009

Briscoe Shutters, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 02-0722.04

A. DRAWINGS

1. Drawing No. 13-0579 titled " Colonial Shutter Master Plan ", sheets 1 through 11 of 11, dated May 10, 2002, prepared by Arthur C. Quinnell, P.E, signed and sealed by Arthur C. Quinnell, P.E.

B. TESTS

1. Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of colonial shutters w/ four leaf assembly, prepared by Hurricane Test laboratory, Report No. 0288-0214.02, dated February 19-20, 2002, signed and sealed by Vinu J. Abraham, P.E.

2. Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of Double Bahama over Colonial Shutters w/ four leaf assembly, prepared by Hurricane Test laboratory, Report No. 0288-1218.01, dated December 13-14, 2001, signed and sealed by Vinu J. Abraham, P.E.

C. CALCULATIONS

1. Anchor analysis prepared by Briscoe shutter, Inc., signed and sealed by Arthur C. Quinnell, P.E.

D. MATERIAL CERTIFICATIONS

1. Mill Certified Inspection Report with chemical composition and mechanical properties for aluminum alloy 6063-T52.

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #07-0713.05

A. DRAWINGS

1. None.

B. TEST

1. None.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

1. By Miami-Dade County Building Code Compliance Office.

E. MATERIAL CERTIFICATION

1. None.

Helmy A. Makar, P.E., M.S.
Senior Product Control Examiner
NOA No. 09-0122.08
Expiration Date: 11/28/2012
Approval Date: 11/18/2009

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

3. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 13-0579, titled " Colonial Shutter System and Bahama over Colonial Shutter System ", sheets 1 through 11 of 11, prepared by Michael Trapasso, P.E., dated October 13, 2009, signed and sealed by Michael Trapasso, P.E.*

B. TESTS

1. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of colonial shutters w/ four leaf assembly, prepared by Hurricane Test laboratory, Specimen #1B, Report No. 0288-0611.07, dated May 05, 2008, signed and sealed by Vinu J. Abraham, P.E.*
2. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of colonial shutters w/ four leaf assembly, prepared by Hurricane Test laboratory, Specimen #4, Report No. 0288-0314.08, dated May 05, 2008, signed and sealed by Vinu J. Abraham, P.E.*
3. *Test report on Uniform Static Air Pressure Test of Bahama shutter System and Bahama over Colonial Shutter System, prepared by Hurricane Test laboratory, LLC Report No. 0288-0611-07, specimen #1, dated May 05, 2008, signed and sealed by Vinu J. Abraham, P.E.*

C. CALCULATIONS

1. *Anchor analysis prepared by Briscoe shutter, Inc., signed and sealed by Michael Trapasso, P.E.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *Mill Certified Inspection Report with chemical composition and mechanical properties for aluminum alloy 6063-T52.*

Helmy A. Makar, P.E., M.S.
Senior Product Control Examiner
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COLONIAL SHUTTER SYSTEM and BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
+ 77 psf & -77 psf

Glass Separation Sheet 9

Patent No: US 6,996,934 B2
US 7,131,480 B2

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10/13/09
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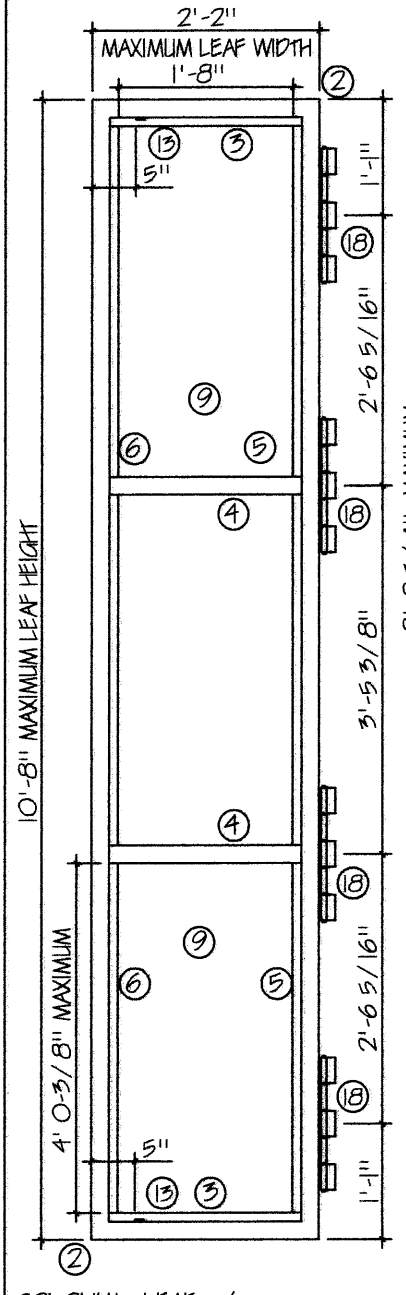
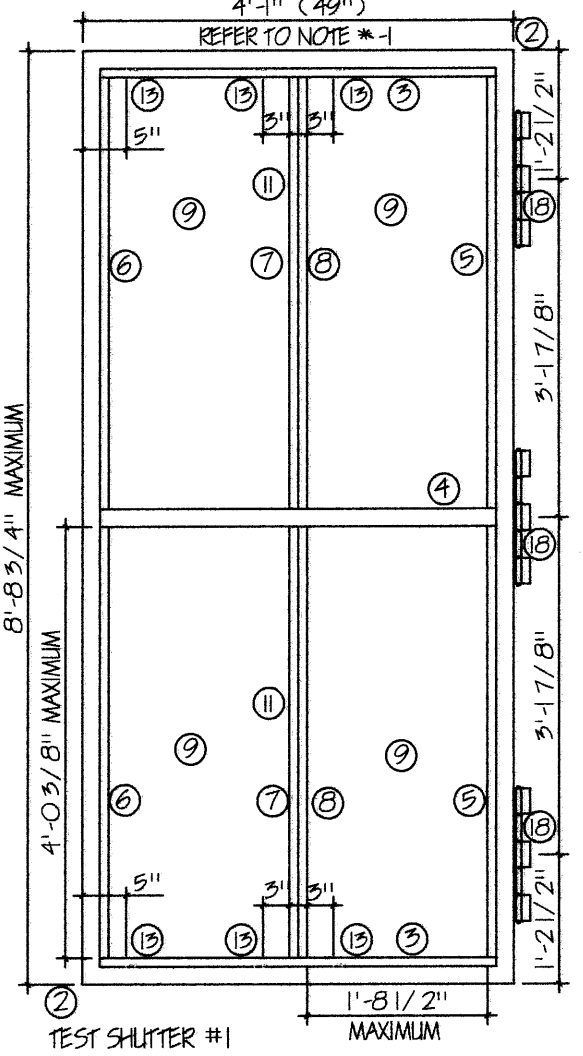
DRAWING NO.	SHEET NO.
13-0579	1 of 11

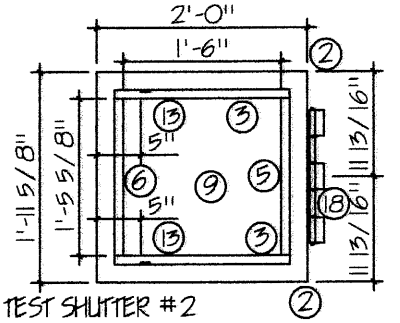


COLONIAL LEAF w/
TWO HORIZONTAL MULLIONS
TEST SHUTTER SIZE (4 LEAF SYSTEM):
7' 7-3/8" (w) x 11'-1" (h) = 84.4 sq. ft.
DESIGN PRESSURE: + 77 psf & -77 psf

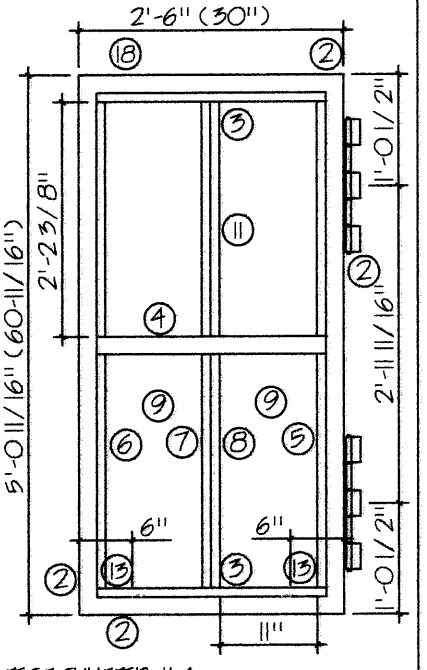


TEST SHUTTER #1
BUILD OUT FRAME
8' 6-1/2" x 9' 0-3/4" (h) = 77.41 sq ft
DESIGN PRESSURE: + 79.2 psf & -90.2 psf
ONE COLONIAL & ONE BAHAMA SHUTTER: #1
EACH LEAF - 4'-0" (w) x 8' 8-3/4" (h)
REFER TO NOTE * 1

TEST SHUTTER #1A & 1B
BUILD OUT FRAME: EACH @ 4' 4-1/16" x 9' 0-3/4"
DESIGN PRESSURE: + 79.2 psf & -90.2 psf
BAHAMA SHUTTER LEAF #1A & COLONIAL SHUTTER #1B
EACH @ 4'-1" (w) x 8' 8-3/4" (h)
REFER TO NOTE #1



TEST SHUTTER #2
DESIGN PRESSURE: + 84.7 psf & - 113.3 psf
BUILD OUT FRAME
2' -4" (w) x 2' 3-5/8" (h) = 5.37 sq ft
COLONIAL LEAF:
2'-0" (w) x 1' 11-5/8" (h)
REFER TO NOTE *-1



TEST SHUTTER #4
DESIGN PRESSURE: + 82.5 & -108.9 psf
BUILD OUT FRAME:
2' 8-1/2" (w) x 5' 4-11/16"(h) =
14.60 sq ft
COLONIAL LEAF:
2'-6" (w) x 5' 0-11/16" (h)
REFER TO NOTE *-1

NOTE: *-1
ANY COMBINATION OF WIDTH x HEIGHT NOT TO EXCEED 35.64 Sq Ft PER LEAF IS ALLOWABLE WITHIN THE DESIGN PRESSURES, REFER TO TEST DATE ON SHEET 1 of 11 & CHARTS ON SHEET 9 of 11

COLONIAL SHUTTER SYSTEM and BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
+ 77 psf & -77 psf

Glass Separation Sheet 9

Patent No: US 6,996,934 B2
US 7,131,480 B2

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NAPLES, FLORIDA 34105

DATE: 10/13/09

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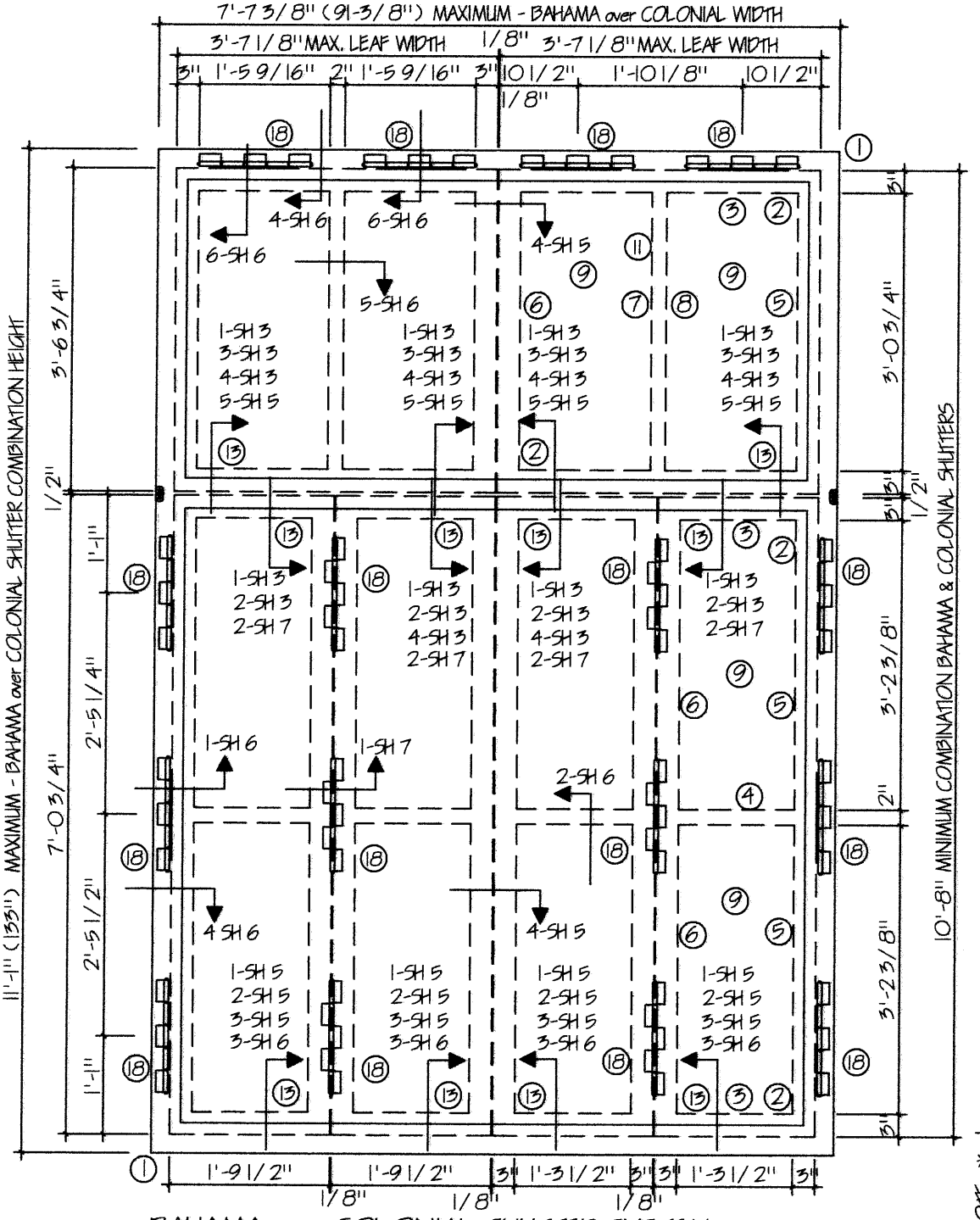
DRAWING NO.	SHEET NO.
13-0579	2 of 11



BAHAMA over COLONIAL SHUTTER SYSTEM
DESIGN PRESSURE: + 77 psf & -77 psf

NOTE: * -1
ANY COMBINATION OF WIDTH x HEIGHT NOT TO EXCEED 35.64 Sq Ft. PER LEAF IS ALLOWABLE WITHIN THE DESIGN PRESSURES, REFER TO TEST DATA ON SHEET 1 of 11 & CHARTS ON SHEET 9 of 11

FASTENER CALCULATIONS: (FASTENER SCHEDULE SHEETS 10 & 11)
WIDTH x HEIGHT x DESIGN PRESSURE x SAFETY FACTOR OF 4 / FASTENER STRENGTH - TOTAL NUMBER OF FASTENERS

COLONIAL SHUTTER SYSTEM and BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
+ 77 psf & -77 psf

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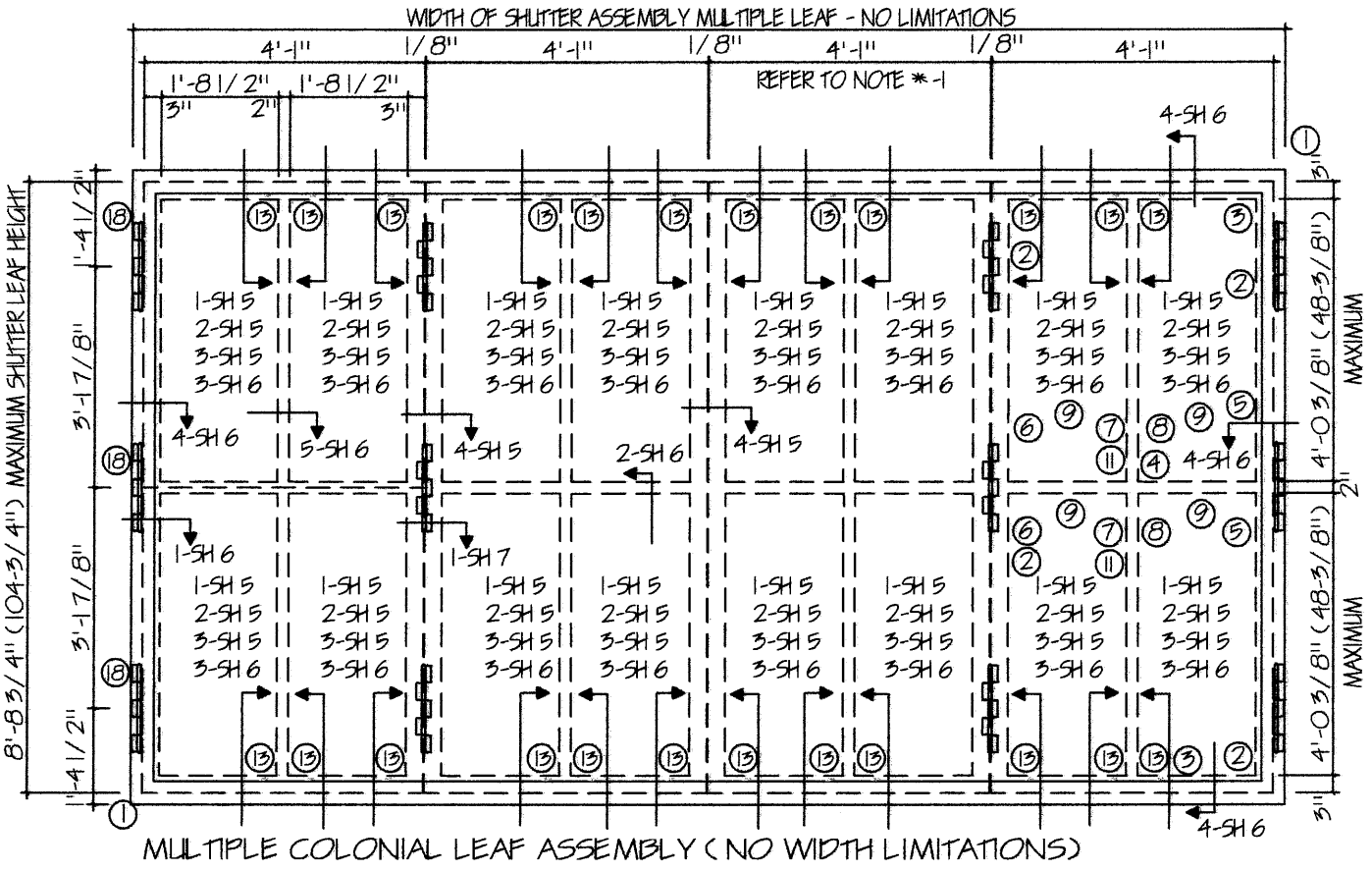
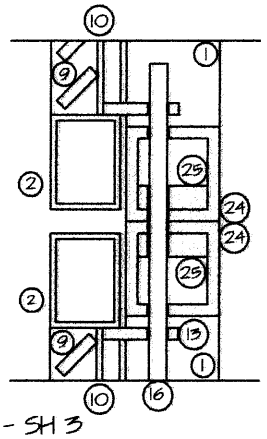
DRAWING NO.	SHEET NO.
13-0579	3 of 11

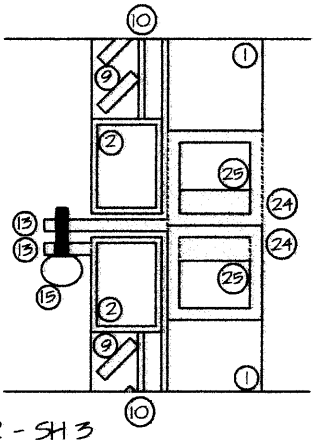


MULTIPLE COLONIAL LEAF ASSEMBLY (NO WIDTH LIMITATIONS)

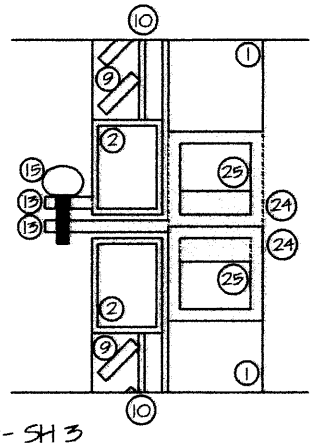
NOTE: *-1
ANY COMBINATION OF WIDTH x HEIGHT NOT TO EXCEED 35.64 Sq Ft PER LEAF IS ALLOWABLE WITHIN THE DESIGN PRESSURES, REFER TO TEST DATE ON SHEET 1 of 11 & CHARTS ON SHEET 9 of 11



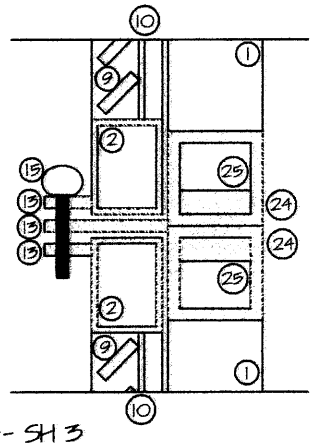
1 - SH 3
SECTION @ INSIDE CLOSURE ROD @ HORIZONTAL MULLION BAHAMA over COLONIAL



2 - SH 3
SECTION @ OUTSIDE CLOSURE HORIZONTAL MULLION BAHAMA over COLONIAL



3- SH 3
SECTION @ OUTSIDE CLOSURE HORIZONTAL MULLION BAHAMA over COLONIAL



4- SH 3
SECTION @ OUTSIDE CLOSURE HORIZONTAL MULLION BAHAMA over COLONIAL

FASTENER CALCULATIONS: (FASTENER SCHEDULE SHEETS 10 & 11)
WIDTH x HEIGHT x DESIGN PRESSURE x SAFETY FACTOR OF 4 / FASTENER STRENGTH - TOTAL NUMBER OF FASTENERS

COLONIAL SHUTTER SYSTEM and
BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
+77 psf & -77 psf

Glass Separation Sheet 9

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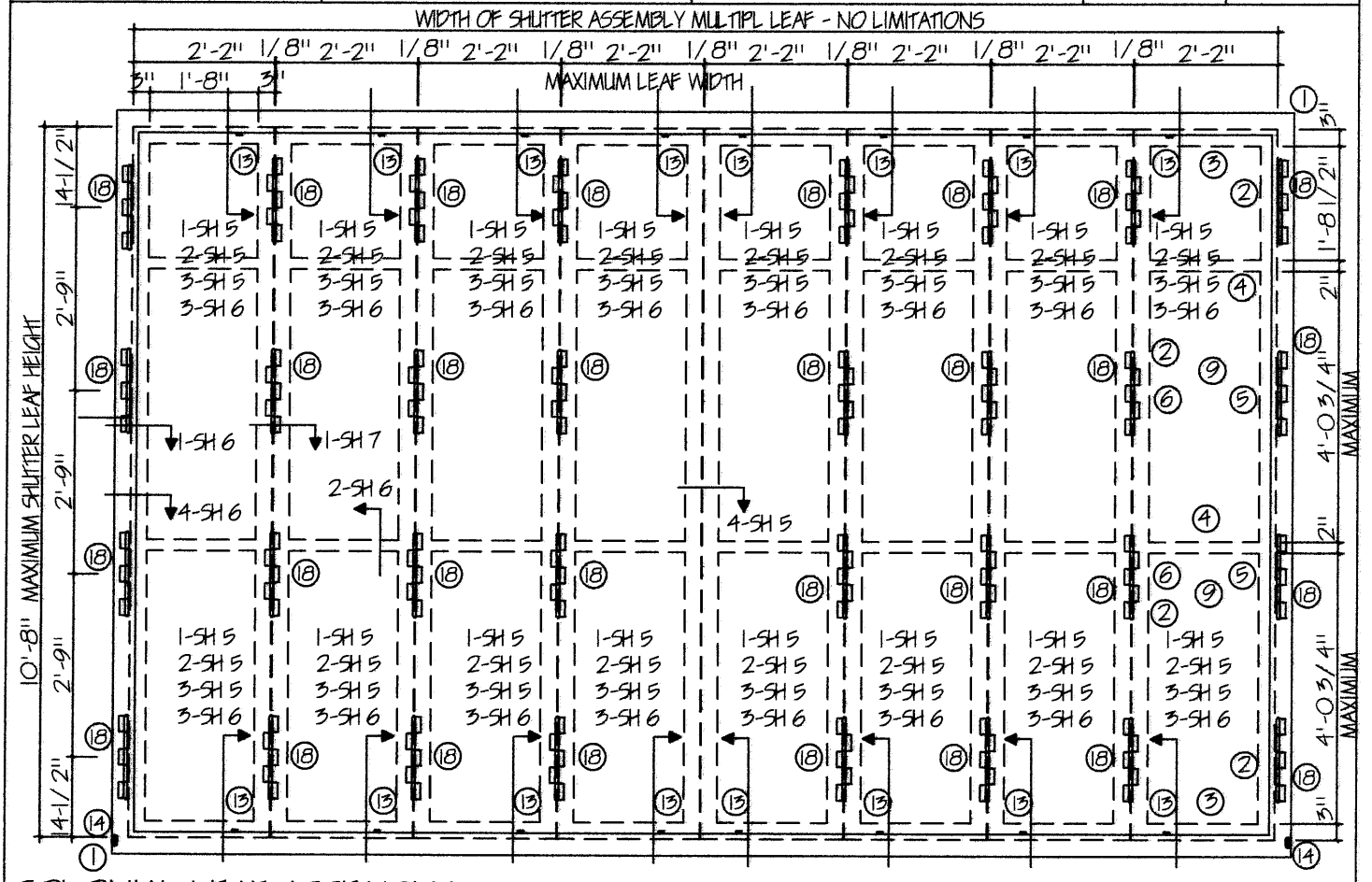
DRAWING NO. 13-0579
SHEET NO. 4 of 11



COLONIAL LEAF ASSEMBLY

FASTENER CALCULATIONS:

WIDTH x HEIGHT x DESIGN PRESSURE x SAFETY FACTOR OF 4 / FASTENER STRENGTH - TOTAL NUMBER OF FASTENERS

SHUTTER LEAF TOLERANCES:

BAHAMA over COLONIAL SHUTTER ASSEMBLY

MAXIMUM WIDTH 7' 7-3/8" (91-3/8")

MAXIMUM HEIGHT 11'-1" (133")

BAHAMA SHUTTER LEAF

MAXIMUM LEAF WIDTH: 3' 7-1/8" (43-1/8")

MAXIMUM LEAF HEIGHT: BAHAMA HEIGHT PLUS COLONIAL LEAF HEIGHT = 10'-8" (128")

COLONIAL SHUTTER LEAF

MAXIMUM LEAF WIDTH: 1' 9-1/2" (21-1/2")

MAXIMUM LEAF HEIGHT: COLONIAL HEIGHT PLUS BAHAMA LEAF HEIGHT = 10'-8" (128")

BAHAMA SHUTTER ASSEMBLY

*-1 BAHAMA LEAF WIDTH 4'-1" (49") REFER TO NOTE *-1

*-1 MAXIMUM BAHAMA LEAF HEIGHT 8' 8-3/4" (104-3/4")

WIDTH OF SHUTTER ASSEMBLY MULTIPLE LEAF - NO LIMITATIONS

COLONIAL SHUTTER ASSEMBLY

COLONIAL SHUTTER SINGLE LEAF

MAXIMUM COLONIAL LEAF WIDTH 2'-2" (26")

MAXIMUM COLONIAL LEAF HEIGHT 10'-8" (128")

WIDTH OF SHUTTER ASSEMBLY MULTIPLE LEAF - NO LIMITATIONS

COLONIAL SHUTTER SINGLE LEAF

*-1 COLONIAL WIDTH 4'-1" (49") REFER TO NOTE *-1

*-1 MAXIMUM COLONIAL LEAF HEIGHT 8' 8-3/4" (104-3/4")

WIDTH OF SHUTTER ASSEMBLY MULTIPLE LEAF - NO LIMITATIONS

NOTE: *-1

ANY COMBINATION OF WIDTH x HEIGHT NOT TO EXCEED 35.64 Sq Ft PER LEAF IS ALLOWABLE WITHIN THE DESIGN PRESSURES, REFER TO TEST DATA ON SHEET 1 of 11 & CHARTS ON SHEET 9 of 11

COLONIAL SHUTTER SYSTEM and BAHAMA over COLONIAL SHUTTER SYSTEM

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Bahama Over Colonial Shutter
+ 77 psf & -77 psf

Glass Separation Sheet 9

Patent No: US 6,996,934 B2
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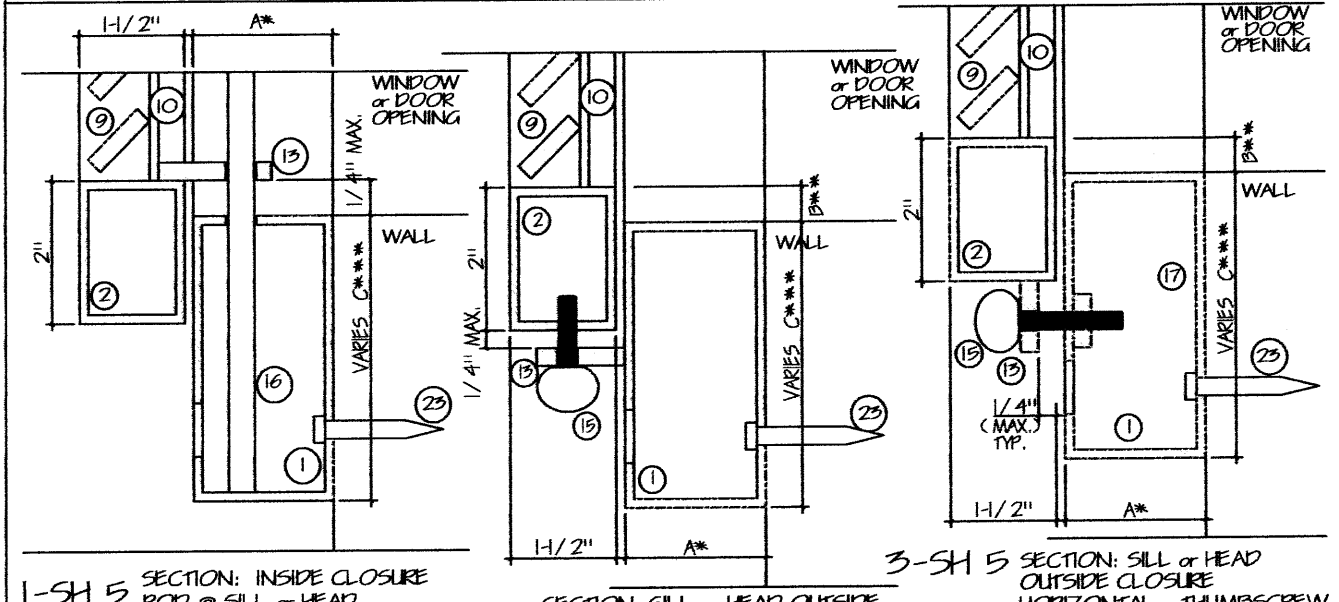
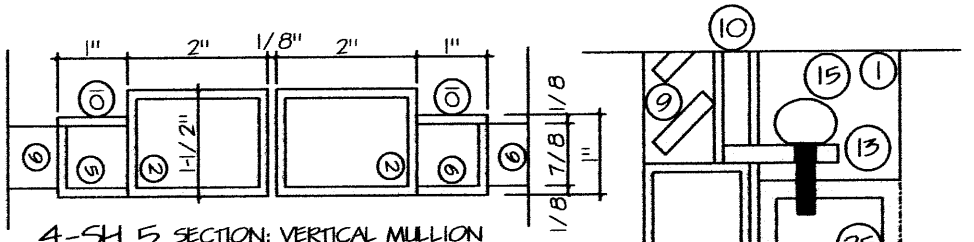
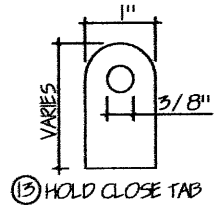
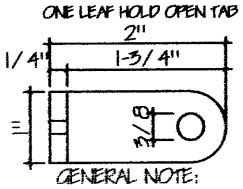
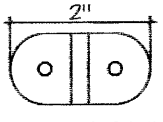
DRAWING NO.	SHEET NO.
13-0579	5 of 11

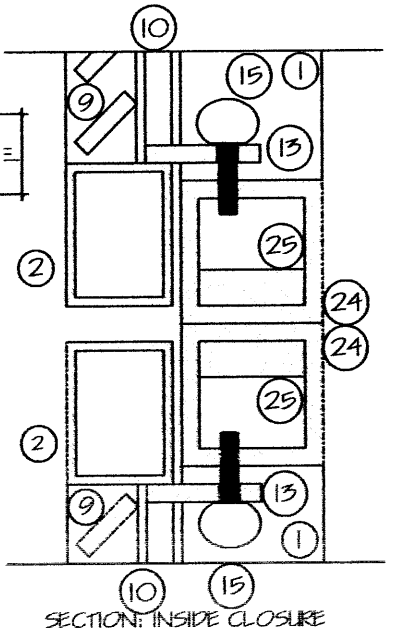












HINGE ASSEMBLY:
1 COLONIAL SHUTTER, 10'-8" (128") (h)
HINGES - 4 SETS OF HINGES AT THE SIDE PER SHUTTER,
(3 LEAFS AT THE BUILD OUT FRAME &
2 LEAFS AT THE SHUTTER, WITH 3 SCREWS PER LEAF)
2 COLONIAL SHUTTER, 8' 8-5/4" (104-5/4") (h)
HINGES - 3 SETS OF HINGES AT THE SIDES PER SHUTTER,
(3 LEAFS AT THE BUILD OUT FRAME &
2 LEAFS AT THE SHUTTER, WITH 3 SCREWS PER LEAFS
3 COLONIAL SHUTTER, 5' 0-11/16" (60-11/16") (h)
HINGES - 2 SETS OF HINGES AT THE SIDE PER SHUTTER,
(3 LEAFS AT THE BUILD OUT FRAME &
2 LEAFS AT THE SHUTTER, WITH 3 SCREWS PER LEAF)
4 COLONIAL SHUTTER, 1' 11-5/8" (23-5/8") (h)
HINGES - 1 SET OF HINGES AT THE SIDE PER SHUTTER,
(3 LEAFS AT THE BUILD OUT FRAME &
2 LEAFS AT THE SHUTTER, WITH 3 SCREWS PER LEAF

GENERAL NOTE:

A* DEPTH OF BUILD OUT FRAME (1) = SEE "MINIMUM GLASS SEPARATION SHEETS ~~1 & 2~~ 9

B** DIMENSION VARIES: SLAT SPACING TO ACCOMMODATE FULL SLAT (1/4" x 1" FLAT BAR @ 45 DEGREE) IN SLAT WELD GUIDES (5) & (6)

C*** WIDTH VARIES MINIMUM 3"

FASTENER CALCULATIONS: (FASTENER SCHEDULE SHEETS 10 & 11)
WIDTH x HEIGHT x DESIGN PRESSURE x SAFETY FACTOR OF 4 / FASTENER STRENGTH - TOTAL NUMBER OF FASTENERS

COLONIAL SHUTTER SYSTEM and
BAHAMA over COLONIAL SHUTTER SYSTEM

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Patent No: US 6,996,934 B2
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MICHAEL TRAPASSO
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10/13/09

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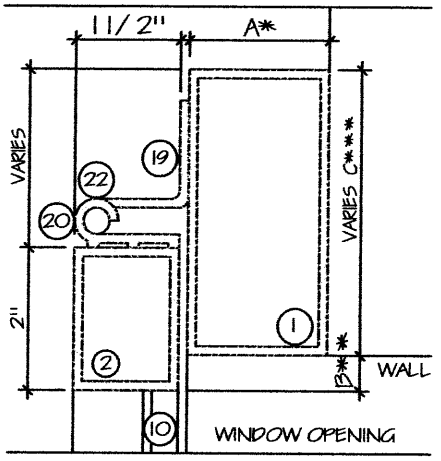
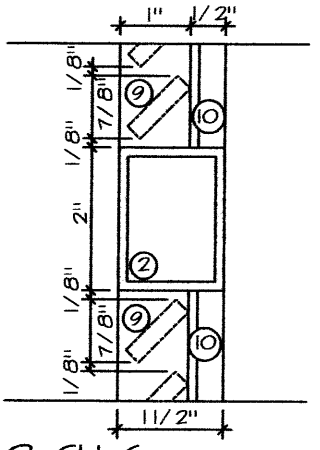
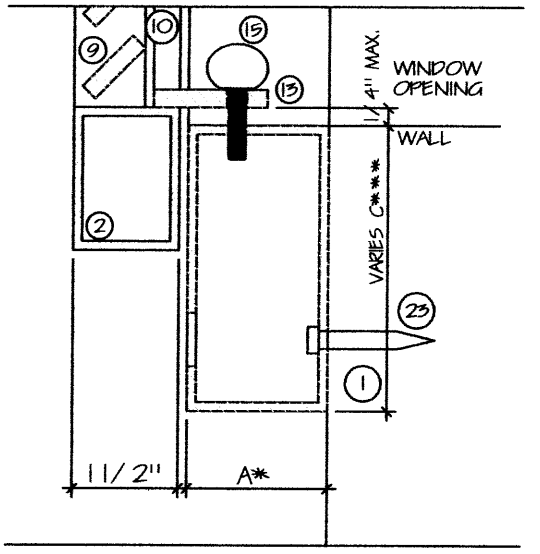
DRAWING NO. 13-0579
SHEET NO. 6 of 11



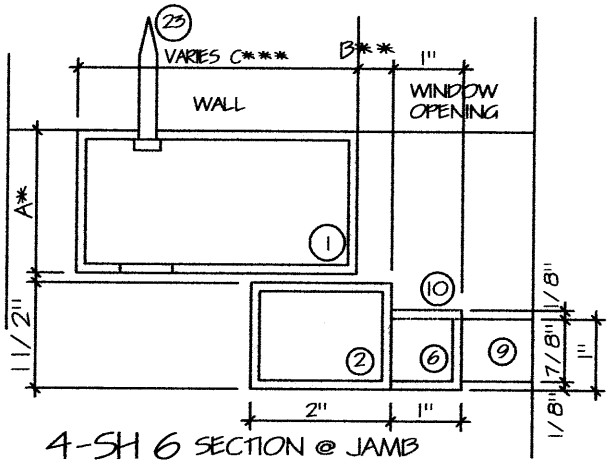
1-SH 6 SECTION @ HINGE HEAD or JAMB



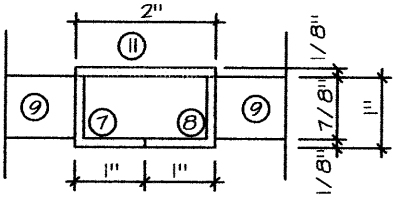
2-SH 6 SECTION @ HORIZONTAL MULLION FRAME



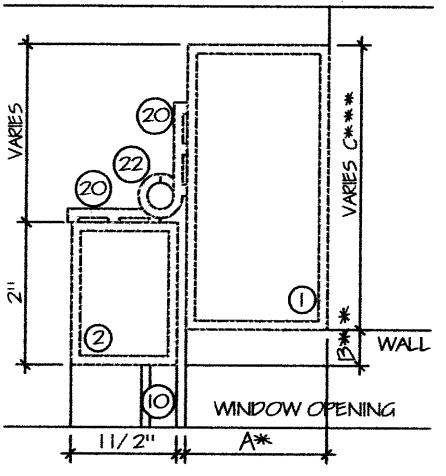
3-SH 6 SECTION @ SILL or HEAD INSIDE CLOSURE THUMBSCREW



4-SH 6 SECTION @ JAMB



5-SH 6 SECTION @ VERTICAL CENTER MULLION



6-SH 6 SECTION @ HINGE HEAD or JAMB

GENERAL NOTE:

A** DEPTH OF BUILD OUT FRAME (1) - SEE "MINIMUM GLASS SEPARATION" SHEET 9 ~~8~~

B** DIMENSION VARIES; SLAT SPACING TO ACCOMMODATE FULL SLAT (1/4 x 1 FLAT BAR @ 45 DEGREE) IN SLAT WELD GUIDES (5) & (6)

C*** WIDTH VARIES MINIMUM 3"

FASTENER CALCULATIONS: (FASTENER SCHEDULE SHEETS 10 & 11)

WIDTH x HEIGHT x DESIGN PRESSURE x SAFETY FACTOR OF 4 / FASTENER STRENGTH = TOTAL NUMBER OF FASTENERS

COLONIAL SHUTTER SYSTEM and BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
+ 77 psf & -77 psf

Glass Separation Sheet 9

Patent No: US 6,996,934 B2
US 7,131,480 B2

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PROFESSIONAL ENGINEER #62482

10/13/09

3609 COTTAGE CLUB LANE
NAPLES, FLORIDA 34105

DATE: 10/13/09

REVISION:
PRODUCT REVISED
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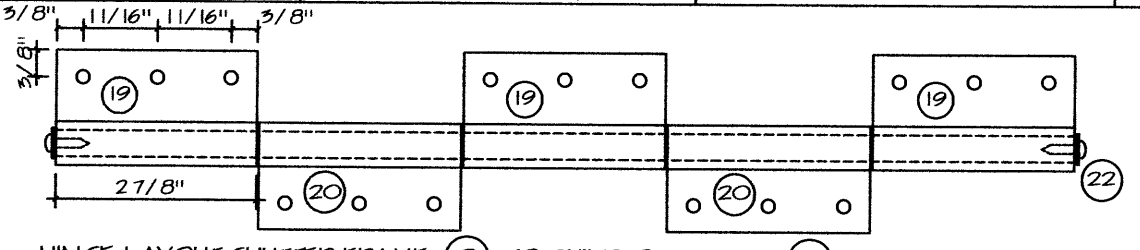
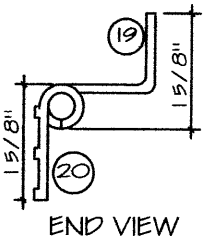
Expiration Date 11/28/2012
By Miami Dade Product Control Division

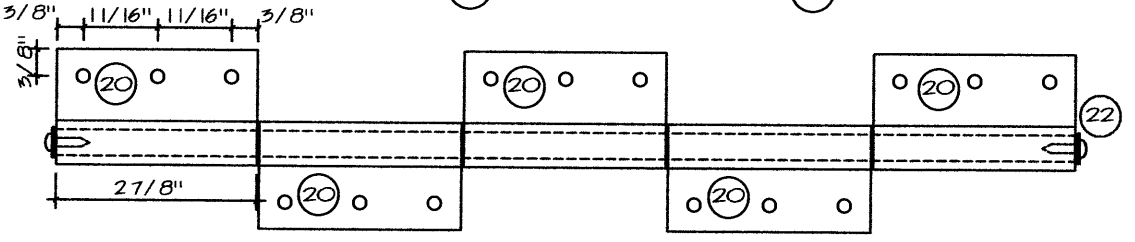
DRAWING NO.	SHEET NO.
13-0579	7 of 11



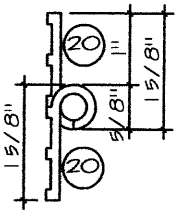
HINGE LAYOUT SHUTTER FRAME (2) TO BUILD OUT FRAME (1)



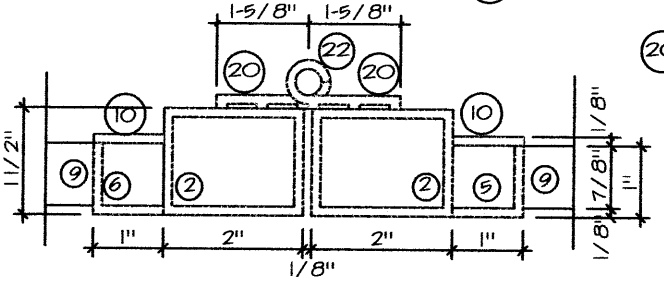
END VIEW



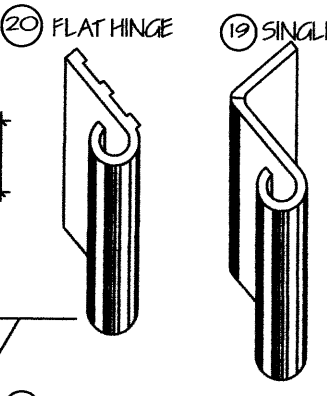
HINGE LAYOUT SHUTTER FRAME (2) TO SHUTTER FRAME (2)

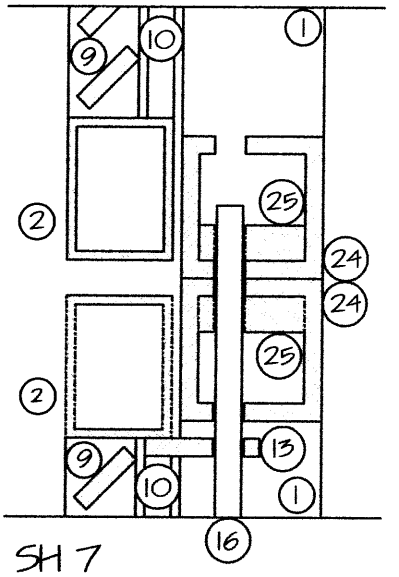


END VIEW

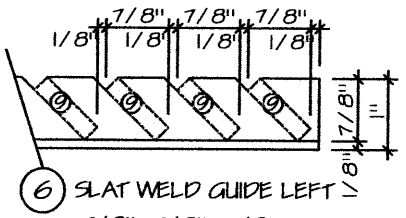


1-SH 7 SECTION: HINGE @ VERTICAL JAMBS

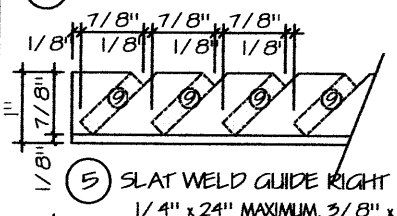




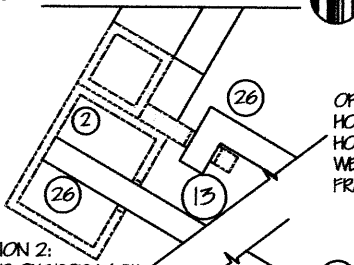
2 - SH 7
SECTION @ INSIDE CLOSURE ROD @ HORIZONTAL MULLION BAHAMA over COLONIAL

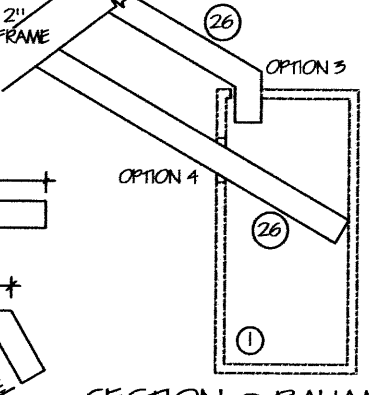


(6) SLAT WELD GUIDE LEFT

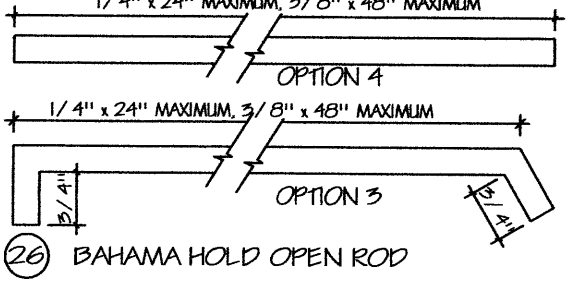


(5) SLAT WELD GUIDE RIGHT





SECTION @ BAHAMA HOLD OPEN ROD



(26) BAHAMA HOLD OPEN ROD

COLONIAL SHUTTER SYSTEM and
BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
+ 77 psf & -77 psf

Glass Separation Sheet 9

Patent No: US 6,996,934 B2
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MICHAEL TRAPASSO
PROFESSIONAL ENGINEER #62482

10/13/09

3609 COTTAGE CLUB LANE
NAPLES, FLORIDA 34105

DATE: 10/13/09
REVISION:
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 09-0122.08
Expiration Date 11/28/2012
By Helen A. Miller
Miami Dade Product Control
Division

DRAWING NO. 13-0579
SHEET NO. 8 of 11

DESCRIPTION OF MATERIAL

Item#	DESCRIPTION OF MATERIAL	SIZE	TYPE	MATERIAL GRADE
1	BUILD OUT FRAME	A* x C*** x 1/8"	TUBE	ALUMINUM 6063-T52
2	SHUTTER FRAME	1 1/2" x 2" x 1/8"	TUBE	ALUMINUM 6063-T52
3	SPACER	1" x 1" x 1/8"	TUBE	ALUMINUM 6063-T52
4	HORIZONTAL MULLION	1 1/2" x 2" x 1/8"	TUBE	ALUMINUM 6063-T52
5	SLAT WELD GUIDE RIGHT	1" x 1" x 1/8"	ANGLE	ALUMINUM 6063-T52
6	SLAT WELD GUIDE LEFT	1" x 1" x 1/8"	ANGLE	ALUMINUM 6063-T52
7	VERTICAL MULLION RIGHT	1" x 1" x 1/8"	ANGLE	ALUMINUM 6063-T52
8	VERTICAL MULLION LEFT	1" x 1" x 1/8"	ANGLE	ALUMINUM 6063-T52
9	SLATS	1/4" x 1"	FLAT BAR	ALUMINUM 6063-T52
10	JAMB WELD GUIDE COVER	1" x 1/8"	FLAT BAR	ALUMINUM 6063-T52
11	VERTICAL MULLION BACK COVER	1/8" x 2"	FLAT BAR	ALUMINUM 6063-T52
12				
13	HOLD CLOSE TAB	1/4" x 1" x Varies	FLAT BAR	ALUMINUM 6063-T52
14	HOLD OPEN TAB	1/4" x 1" x Varies	FLAT BAR	ALUMINUM 6063-T52
15-15*	SHUTTER CLOSURE THUMBSCREW	1/4" x 1" or *1 1/2"	THUMBSCREW	STAINLESS STEEL
16	INSIDE CLOSURE ROD | 3/8" x VARIES PER SHUTTER		ROD	ALUMINUM 6063-T52
17				
18	HINGE ASSEMBLY			
19	SINGLE HINGE	3/16" x 2-7/8" x 1-5/8"		ALUMINUM 6061-T6
20	FLAT HINGE	3/16" x 2-7/8" x 1-5/8"		ALUMINUM 6061-T6
21	HINGE SCREWS	#10 x 1" 3 AT EACH HINGE LEAF		HEX SELF-DRILLING
22	HINGE PIN	3/8 DIAMETER	ROD	ALUMINUM 6063-T52
23	BUILD OUT FRAME FASTENERS			
	CONCRETE BLOCK HOLLOW	1/4 x 2-1/4 MIN EMBED 1 1/4"	TAPCON	ELCO IND. OR EQUAL
	CONCRETE BLOCK; CONC. FILL	1/4 x 2-1/4 MIN EMBED 1 1/4	TAPCON	ELCO IND. OR EQUAL
	WOOD FRAMING	1/4" x 3 1/4"	LAG BOLT	ZINC HEX HEAD
	WOOD FRAMING	5/16" x 2"	LAG BOLT	ZINC HEX HEAD
	METAL FRAMING	12-24 x 2 1/4"	TEK SCREW	TEK SELF-DRILLING
24	HORIZONTAL MULLION	2" x 2" x 1/4"	TUBE	ALUMINUM 6061-T6
25	HORIZONTAL MULLION STIFFENER	1/2" x 1-1/2"	FLAT BAR	ALUMINUM 6061-T6
26	HOLD OUT ROD | 1/4 x 24" MAXIMUM, 3/8" X 48" MAXIMUM		ROD	ALUMINUM 6063-T52

ASSEMBLY METHOD:

SHUTTER FRAME

1A SHUTTER FRAME CORNER CONSTRUCTION, AT EACH PANEL CORNER, THE ADJOINING STILE / RAIL ENDS ARE MITER CUT, BUTTED AND WELDED TOGETHER USING TWO (2) 1/4" x 2-13/16" FILET WELDS - ONE PER FACE, EACH FACE WELD IS GROUND DOWN SMOOTH

1B INTERMEDIATE RAIL END CONSTRUCTION, AT EACH INTERMEDIATE RAIL END, THE RAIL IS SQUARE CUT, BUTTED AND WELDED TO THE ADJACENT PANEL FRAME MEMBER USING TWO (2) 1/4" x 2" FILET WELDS - ONE PER FACE, EACH FACE WELD IS GROUND SMOOTH

1C SLAT WELD GUIDES WELDED TO THE SHUTTER FRAME JAMBS ON THE INSIDE AT 6" O/C, TOP AND BOTTOM

1D VERTICAL MULLION WELD GUIDE: ONE RIGHT WELD GUIDE AND ONE LEFT WELD GUIDE WELDED TOGETHER ON THE INSIDE AT 6" O/C, THIS MEMBER IS WELDED TO THE HEAD, MULLIONS, AND SILL

1E SLANTED SLAT CONSTRUCTION, ALL SLATS ARE SQUARE CUT AND WELDED AT EACH END TO THE ADJACENT PANEL STILE MEMBER USING ONE (1) 1/4" x 1" FILET WELD

BUILD OUT FRAME

2A BUILD OUT FRAME CONSTRUCTION, AT EACH CORNER THE ADJOINING STILE / RAIL ENDS ARE MITER CUT, BUTTED AND WELDED TOGETHER USING TWO (2) 1/4" x 4-1/4" (1 x 3) OR TWO (2) 1/4" x 5 11/16" (1 x 4) FILER WELDS - ONE PER FACE. EACH FACE WELD IS GROUND DOWN SMOOTH

COLONIAL SHUTTER SYSTEM and BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & -113.3 psf
Bahama Over Colonial Shutter
+ 77 psf & -77 psf

Glass Separation Sheet 9

Patent No: US 6,996,934 B2
US 7,131,480 B2

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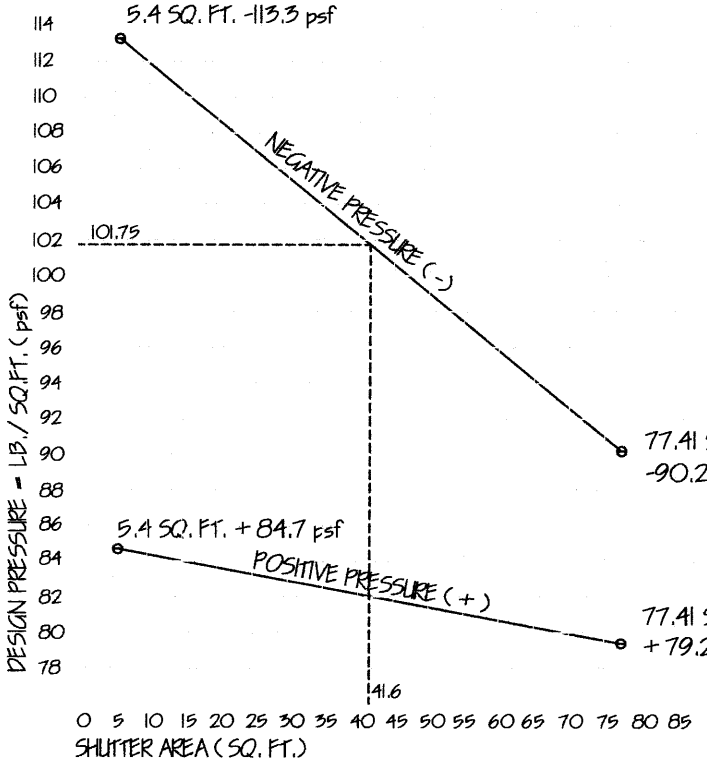
REVISION:

DRAWING NO. 13-0579
SHEET NO. 9 of 11



DESIGN PRESSURE CHART FOR FASTENER LOAD CALCULATIONS
BAHAMA & COLONIAL SHUTTER SYSTEMS

EXAMPLE
A 41.6 sq. ft. shutter has a negative 101.75 psf design pressure.

41.6 sq. ft.. x 101.75 psf
=4,232.8 lb. design load.

PRODUCT REVISED
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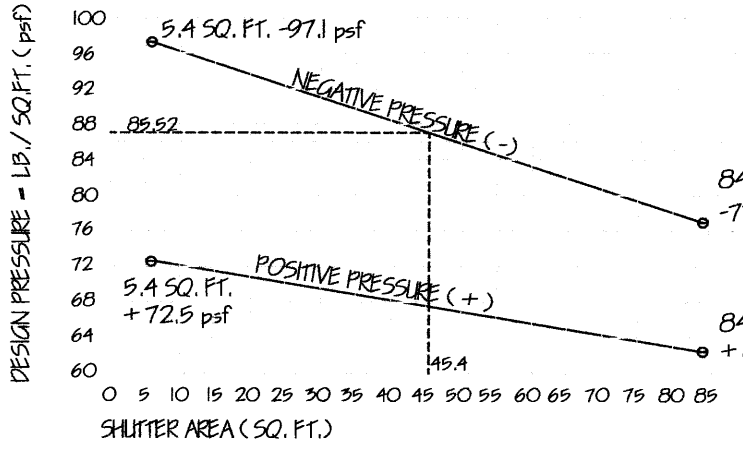
NOTE; * -1
ANY COMBINATION OF WIDTH x HEIGHT NOT TO EXCEED 35.64 sq ft PER LEAF IS ALLOWABLE WITHIN THE DESIGN PRESSURES, REFER TO TEST DATA ON SHEET 1 of 11 & CHARTS ON SHEET 9 of 11

* WIDTH (DEPTH) OF THE BUILD OUT FRAME CALCULATION: DISTANCE FORM FACE OF BUILDING TO GLASS MINUS (-) MINIMUM GLASS SEPARATION

MINIMUM GLASS SEPARATION: BACK OF SLAT TO GLASS

SHUTTER SIZE	MAX. SQ. FT.	TYPE OF SHUTTER	SEPARATION
24" x 23.625" TO 30" x 60.6875"	3.94 sq ft TO 12.64 sq ft	COLONIAL	2-1/4"
30.1" x 60.7 TO 49" x 104.75" & 26" x 128"	12.7 sq ft TO 35.64 sq ft & 21.11 sq ft	COLONIAL	2-3/4"
ALL SIZES	84.4 sq ft	BAHAMA over COLONIAL	3-1/4"



DESIGN PRESSURE CHART FOR FASTENER LOAD CALCULATIONS
BAHAMA over COLONIAL SHUTTER SYSTEM

EXAMPLE
A 45.4 sq. ft. shutter has a negative 85.2 psf design pressure.

45.4 sq. ft.. x 85.2 psf
=3,868.08 lb. design load.

FASTENER CALCULATIONS: (FASTENER SCHEDULE SHEETS 10 & 11)
WIDTH x HEIGHT x DESIGN PRESSURE x SAFETY FACTOR OF 4 / FASTENER STRENGTH = TOTAL NUMBER OF FASTENERS

COLONIAL SHUTTER SYSTEM and
BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+ 84.7 psf & - 113.3 psf
Bahama Over Colonial Shutter
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Glass Separation Sheet 9

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DRAWING NO. 13-0579
SHEET NO. 10 of 11

Fastener Schedule

Wind Velocity 150 mph, Importance Factor 1.00, Exposure "C", Building Height 35'
3/16" Fastener, 1-1/4" Minimum Embedment — Width of Shutter No Maximum

Maximum Height of Shutters 10'-8"	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	2	3	3	4	5	5	6	7	7	8	8	9	9	9	10
3	3	4	5	6	7	8	9	10	10	11	12	13	13	14	15
4	3	5	6	7	9	10	11	12	13	15	16	17	18	18	19
5	4	6	7	9	10	12	13	15	16	18	19	20	22	23	24
6	5	7	9	10	12	14	17	17	19	21	22	24	25	27	28
7	5	8	10	12	14	16	18	20	22	23	25	27	29	31	32
8	6	9	11	13	17	18	20	22	24	26	28	30	32	34	36
9	7	10	12	15	17	20	22	24	27	29	31	34	36	38	40
10	7	10	13	16	19	22	24	27	29	32	34	37	39	42	44
11	8	11	15	18	21	23	26	29	32	35	37	40	43	45	48

Wind Velocity 150 mph, Importance Factor 1.00, Exposure "C", Building Height 35'
1/4" Fasteners, 1-1/4" Minimum Embedment — Width of Shutter No Maximum

Maximum Height of Shutters 10'-8"	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	2	2	3	4	4	5	5	6	6	7	7	7	8	8	9
3	2	3	4	5	6	7	8	8	9	10	10	11	12	12	13
4	3	4	5	6	8	9	10	11	12	13	14	14	15	16	17
5	4	5	6	8	9	10	12	13	14	15	16	18	19	20	21
6	4	6	8	9	11	12	14	15	16	18	19	21	22	23	25
7	5	7	9	10	12	14	15	17	19	20	22	23	25	27	28
8	5	8	10	12	14	15	17	19	21	23	25	26	28	30	31
9	6	8	11	13	15	17	19	21	23	25	27	29	31	33	35
10	6	9	12	14	16	19	21	23	25	28	30	32	34	36	38
11	7	10	13	15	18	20	23	25	28	30	32	35	37	39	41

COLONIAL SHUTTER SYSTEM and
BAHAMA over COLONIAL SHUTTER SYSTEM

Maximum Design Pressures
Colonial Shutter
+84.7 psf & -113.3 psf
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DRAWING NO. 13-0579
SHEET NO. 11 of 11

Fastener Schedule

Wind Velocity 179.6 mph, Importance Factor 1.00, Exposure "C", Building Height 35'
3/16" Fastener, 1-1/4" Minimum Embedment — Width of Shutter No Maximum

Maximum Height of Shutters 10'-8"	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	3	4	5	6	7	8	9	10	11	12	13	13	14	15	16
3	4	6	7	9	11	12	14	15	16	17	19	20	21	22	23
4	5	7	10	12	14	15	17	19	21	23	25	26	28	29	31
5	6	9	12	14	16	19	21	23	25	28	30	32	34	36	38
6	7	11	14	16	19	22	25	27	30	32	35	37	40	42	45
7	8	12	15	19	22	25	28	31	34	37	40	43	46	48	51
8	9	14	17	21	25	28	32	35	38	42	45	48	51	54	58
9	10	15	19	23	27	31	35	39	42	46	50	53	57	60	64
10	11	16	21	25	30	34	38	42	46	50	54	58	62	66	70
11	12	17	23	28	32	37	42	46	50	55	59	63	68	72	76

Wind Velocity 179.6 mph, Importance Factor 1.00, Exposure "C", Building Height 35'
1/4" Fasteners, 1-1/4" Minimum Embedment — Width of Shutter No Maximum

Maximum Height of Shutters 10'-8"	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2	3	4	5	6	7	7	8	9	10	10	11	12	12	13	13
3	4	5	7	8	9	10	12	13	14	15	16	17	18	19	20
4	5	7	8	10	12	13	15	17	18	20	21	23	24	25	26
5	6	8	10	12	14	16	18	20	22	24	26	28	30	31	33
6	7	9	12	14	17	19	21	24	26	28	30	32	35	37	39
7	7	10	13	16	19	22	24	27	30	32	35	37	40	42	44
8	8	12	15	18	21	24	27	30	33	36	39	42	44	47	50
9	9	13	17	20	24	27	30	34	37	40	43	46	49	52	55
10	10	14	18	22	26	30	33	37	40	44	47	50	54	57	60
11	10	15	20	24	28	32	36	40	44	47	51	55	58	62	65