



**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)

**Willard Shutter Company Incorporated
4420 N.W. 35th Court
Miami, Florida 33142**

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: ASSA / Residential Bertha Accordion Shutter

APPROVAL DOCUMENT: Drawing No. **02-549**, titled "ASSA / Residential Bertha Accordion Shutter", sheets 1 through 10 of 10, prepared by Tilteco, Inc., dated November 19, 2002, last revision #1 dated November 19, 2002 bearing the Miami-Dade County Product Control Renewal stamp with the Notice of Acceptance number and 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.

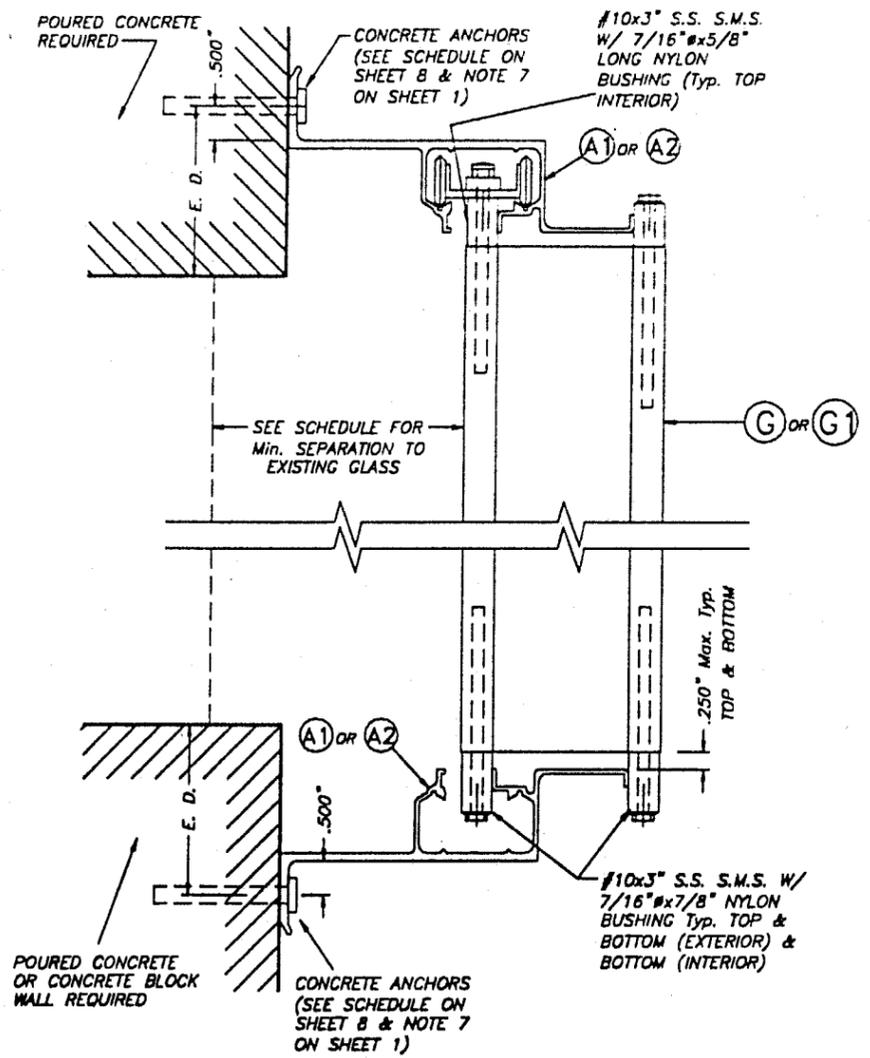
INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **renews NOA # 03-0106.15** and consists of this page 1 as well as approval document mentioned above. The submitted documentation was reviewed by **Helmy A. Makar, P.E.**



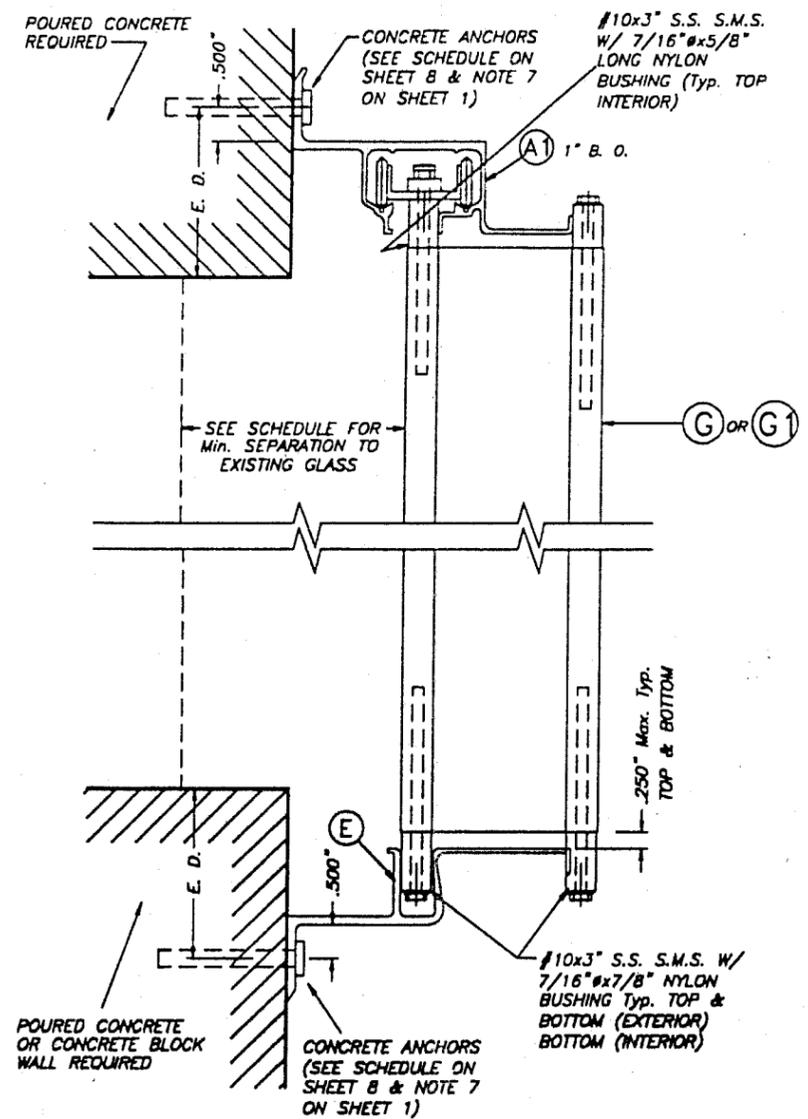
Helmy A. Makar
08/07/03

**NOA No 03-0703.01
Expiration Date: 08/17/2008
Approval Date: 08/07/2003
Page 1**



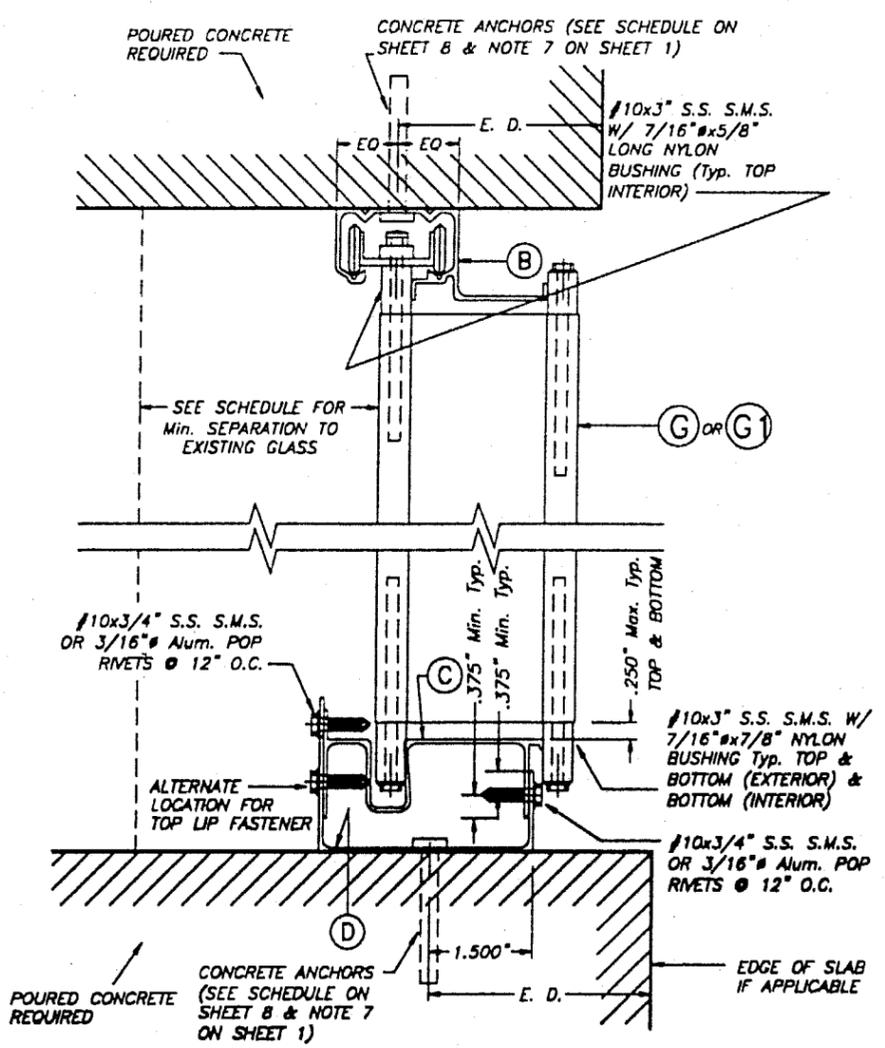
WALL MOUNTING INSTALLATION

- SECTION A SCALE: 3/8" = 1"



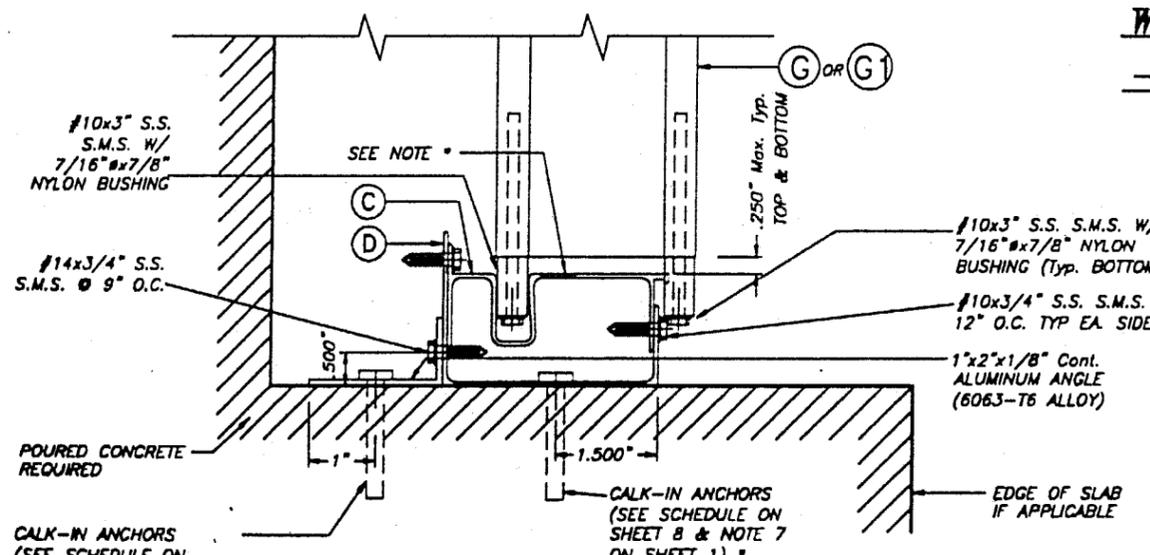
WALL MOUNTING INSTALLATION

- SECTION A1 SCALE: 3/8" = 1"



CEILING & FLOOR MOUNT. INSTALLAT.

- SECTION B SCALE: 3/8" = 1"



REMOVABLE FLOOR MOUNTING INSTALLATION

- SECTION B1 SCALE: 3/8" = 1"

* ALTERNATIVELY TO 1" x 2" Alum. ANGLE W/ ANCHOR, DRILL HOLE AT (D). COVER HOLE WITH NYLON CAPS.

E. D. = EDGE DISTANCE (SEE SCHEDULE ON SHEET B OF 10)

NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

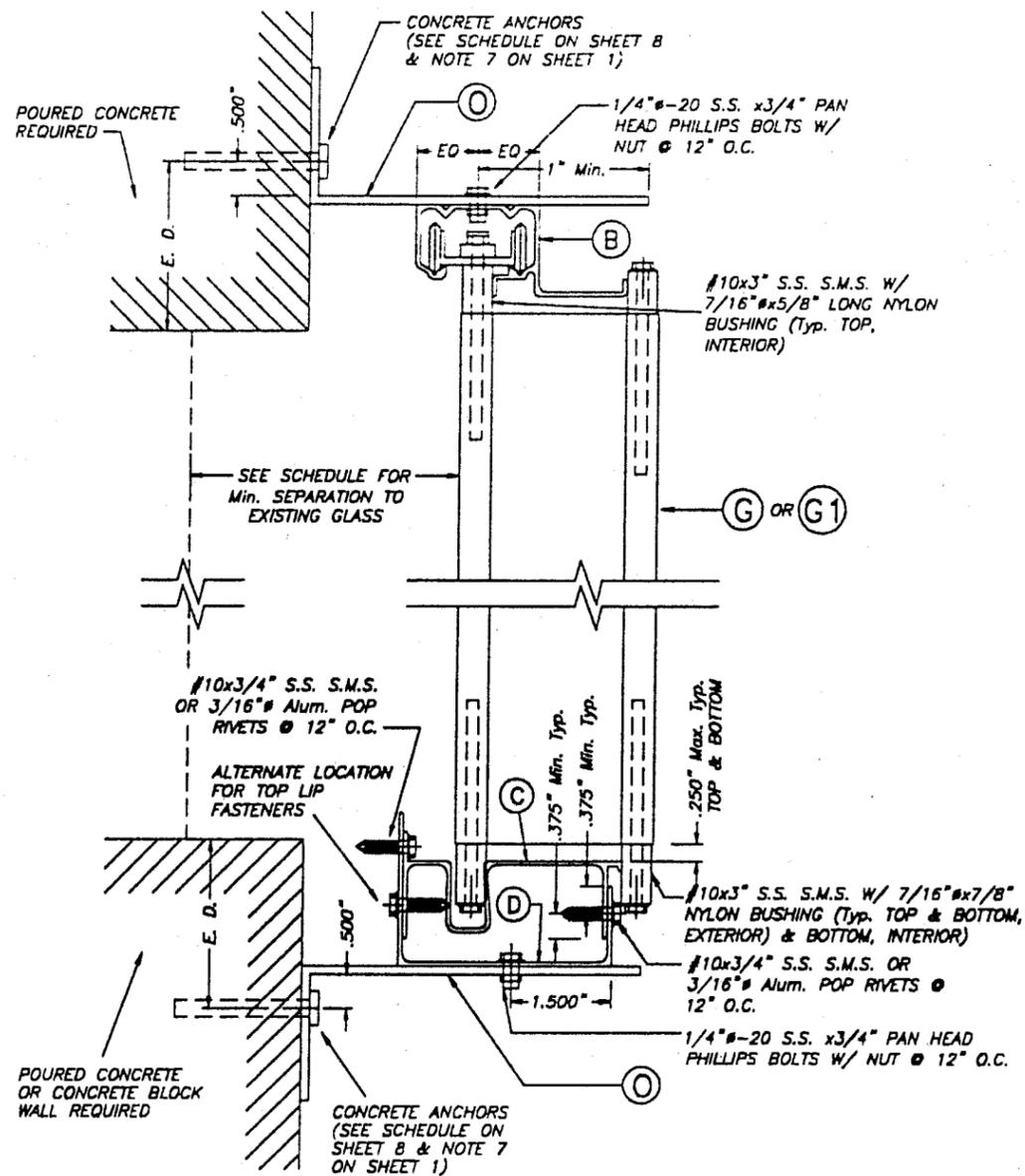
PRODUCT RENEWED as complying with the Florida Building Code Acceptance No 03-0703.01 Expiration Date 08/17/2008
By *Helmut A. Mahr*
Miami Dade Product Control Division

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 03-0106.15 Expiration Date 08/17/2003
By *Helmut A. Mahr*
Miami Dade Product Control Division

F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

TILTECO inc.
TILLIT TESTING & ENGINEERING COMPANY
4585 N.W. 36th St. Ste 217, VIRIDIAN GARDENS, FLORIDA 33148
Phone : (305)871-1530 Fax : (305)871-1531
EB-0006719
WALTER A. TILLIT Jr., P. E.
FLORIDA Lic. # 44167

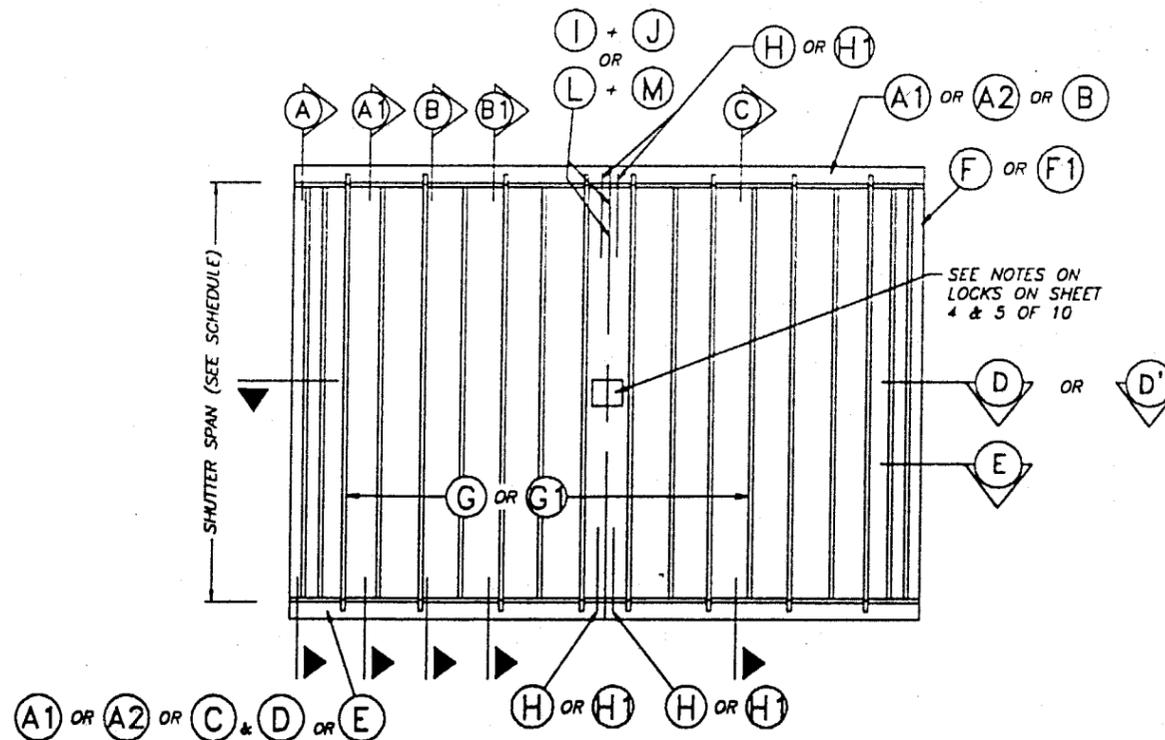
ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER						AS SHOWN SCALE
WILLARD SHUTTER COMPANY INCORPORATED (ASSA # 180) 4420 N.W. 35th COURT MIAMI, FLORIDA 33142						11/19/02 DATE
						02-549 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	SHEET 2 OF 10
1	OLD 00-185	11/18/02	2			
2			4			



WALL MOUNTING INSTALLATION (BUILD-OUT)

- SECTION C

SCALE : 3/8" = 1'



TYPICAL ELEVATION N. T. S.

E. D. = EDGE DISTANCE
(SEE SCHEDULE ON SHEET 8 OF 10)

NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

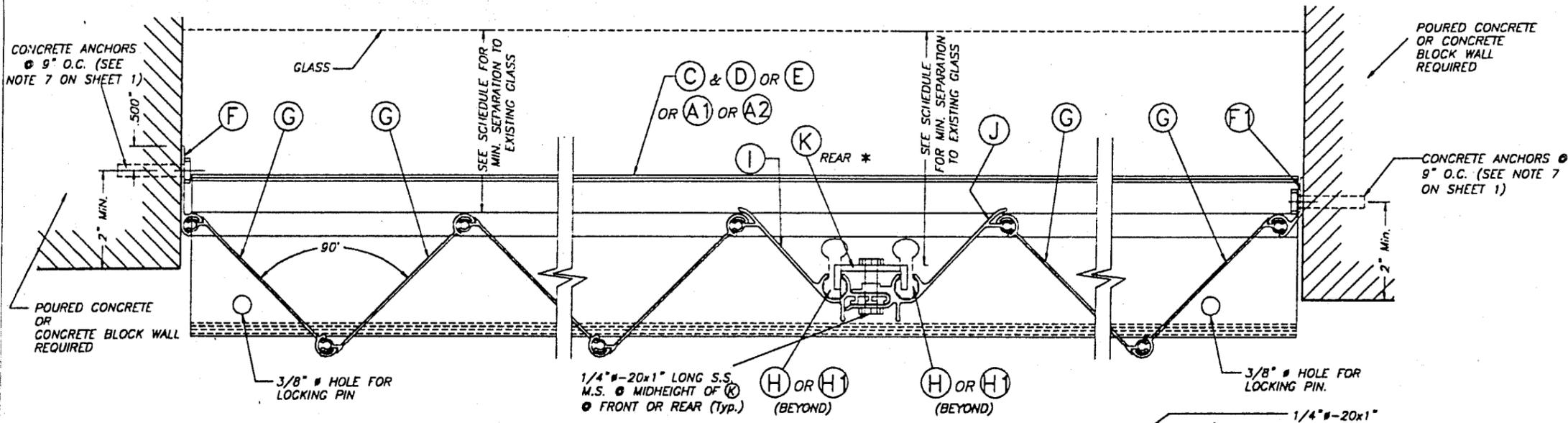
PRODUCT RENEWED
as complying with the Florida Building Code
Acceptance No 03-0703.01
Expiration Date 08/17/2008
By *Helmut A. Melzer*
Miami Dade Product Control Division

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 03-0106.15
Expiration Date 08/17/2003
By *Helmut A. Melzer*
Miami Dade Product Control Division

Handwritten signature and date: 11/19/02

F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

<p>TILLIT TESTING & ENGINEERING COMPANY 6585 N.W. 30th St., Ste. 217, HIRSHAN GARDENS, FLORIDA 33146 Phone : (305)871-1530 Fax : (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</p>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE																		
	WILLARD SHUTTER COMPANY INCORPORATED (ASSA # 180) 4420 N.W. 35th COURT MIAMI, FLORIDA 33142		11/19/02 DATE																		
	<table border="1"> <thead> <tr> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 00-185</td> <td>11/18/02</td> <td>2</td> <td>-</td> <td>-</td> </tr> <tr> <td>2</td> <td>-</td> <td>-</td> <td>4</td> <td>-</td> <td>-</td> </tr> </tbody> </table>		REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 00-185	11/18/02	2	-	-	2	-	-	4	-	-	02-549 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE																
1	OLD 00-185	11/18/02	2	-	-																
2	-	-	4	-	-																
				SHEET 3 OF 10																	

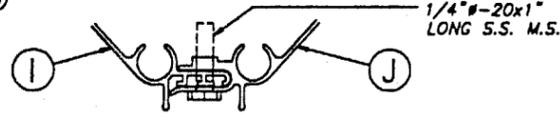


NOTES ON LOCKS: APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

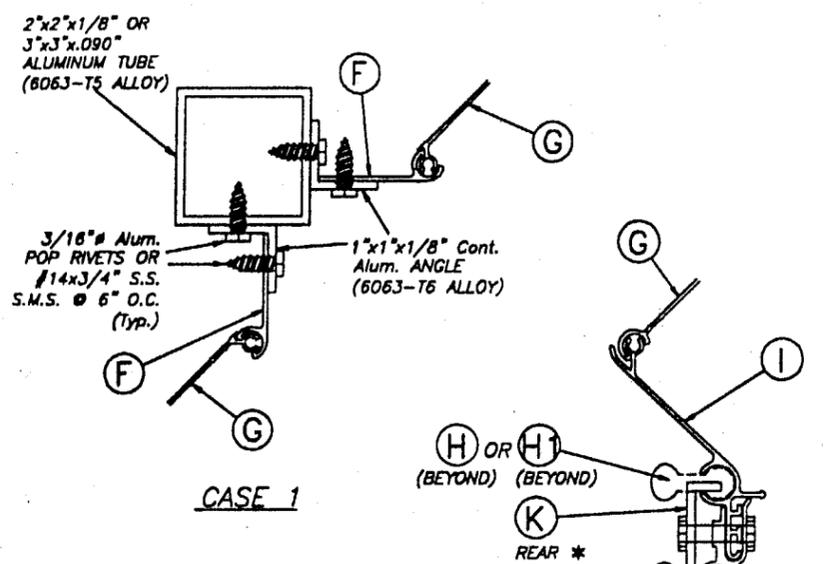
* CENTERMATES (I) & (J) SHALL ALWAYS BE LOCKED BY USING LOCK CLIP (K) INSTALLED FROM THE INSIDE OF SHUTTER W/ 1/4" #20 x 1" S.S. SIDEWALK BOLT AS SHOWN ON SECTIONS D & F. BOLT SHALL PENETRATE (I) LOCK CLIP, AS WELL AS (J) ENTIRELY. LOCK CLIP (K) 1/2" FLANGES SHALL FIT ENTIRELY INTO (I) & (J) LOCKING PIN GROOVES BEFORE SIDEWALK BOLT IS TIGHTENED.

** ALTERNATIVELY TO USING (K) LOCK CLIP, CENTERMATES (I) & (J) SHALL ALWAYS BE LOCKED BY INSTALLING A 1/4" #20 x 1" S.S. SIDEWALK BOLT DIRECTLY THRU BOTH CENTERMATES. FOR THIS PURPOSE, (I) & (J) CENTERMATES SHALL BE PRE-DRILLED AT THE BOLT LOCATION AS WELL AS TAPPED THRU IN ORDER TO ACCEPT THE 1/4" #20 SIDEWALK BOLT. THIS BOLT MAY BE INSTALLED FROM EITHER THE FRONT OR REAR OF SHUTTER.

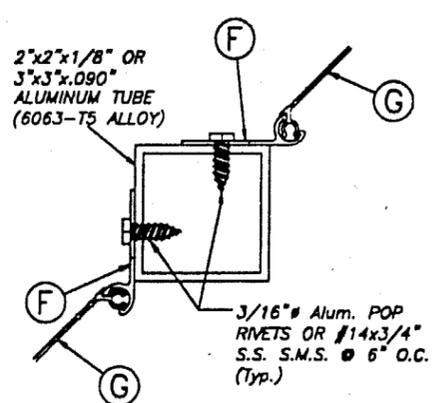
SECTION D
SCALE: 3/8" = 1"



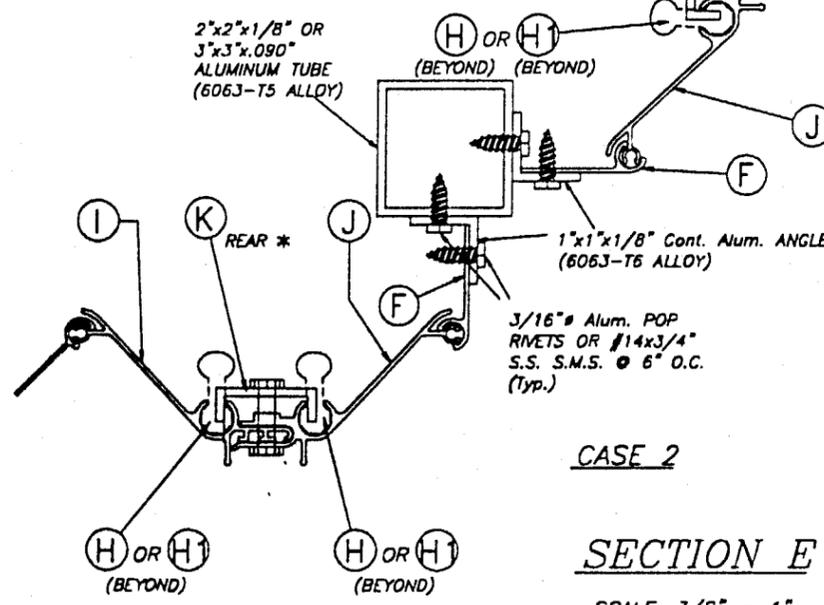
SECTIONS D, D' & E W/O (K) **
SCALE: 3/8" = 1"



CASE 1

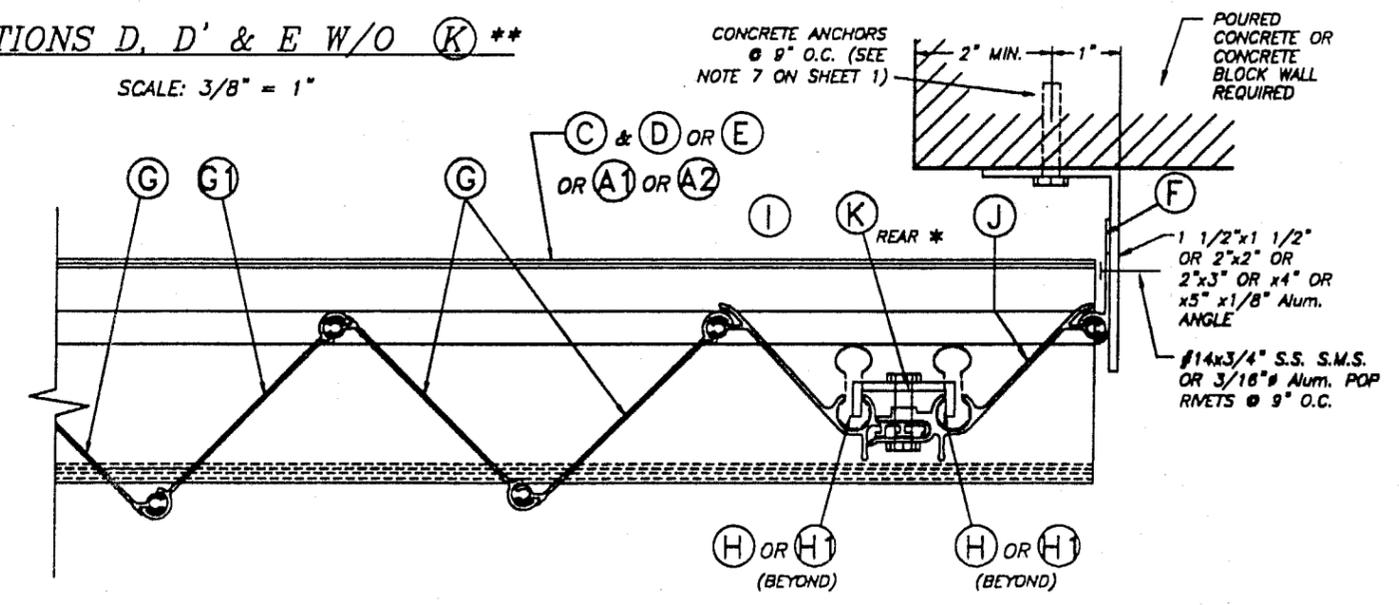


CASE 3

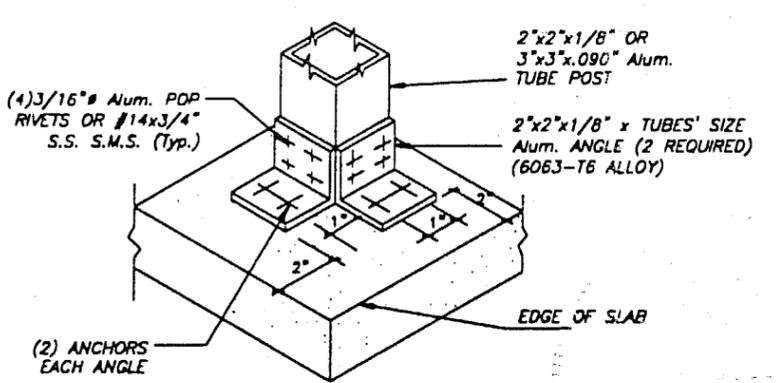


CASE 2

SECTION E
SCALE: 3/8" = 1"



**SECTION D' : ONE SIDED SHUTTER
END CONNECTION DETAIL**
SCALE: 3/8" = 1"



**ISOMETRIC
(CORNER POST) & BOTTOM SLABS**
(Typ. AT TOP)

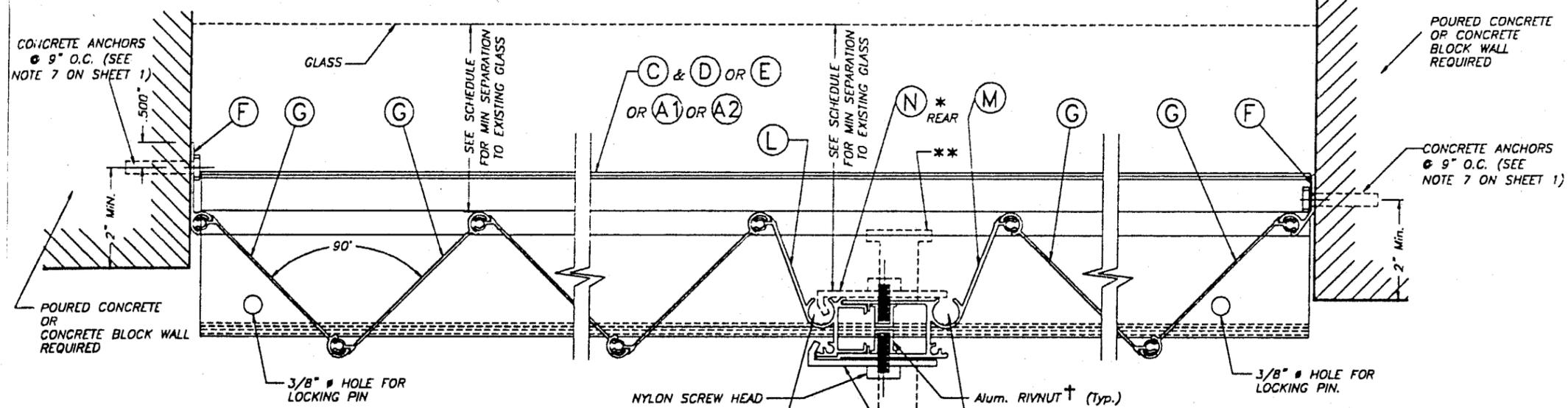
PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 03-0703.01
Expiration Date 08/17/2008
By *Helmut A. Miller*
Miami Dade Product Control
Division

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 03-0106.15
Expiration Date 08/17/2003

By *Helmut A. Miller*
Miami Dade Product Control
Division

F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE
		WILLARD SHUTTER COMPANY INCORPORATED (ASSA # 180) 4420 N.W. 35th COURT MIAMI, FLORIDA 33142		11/19/02 DATE
TILIT TESTING & ENGINEERING COMPANY 8585 N.E. 34th St., Ste. 317, WICKHAM CARRIAGE, FLORIDA 33146 Phone: (305) 871-1530, Fax: (305) 871-1531 EB-0006719 WALTER A. TILIT Jr., P. E. FLORIDA Lic. # 44167		REV. NO. DESCRIPTION DATE 1 OLD 00-185 11/18/02 2 - - - - -		02-549 DRAWING No
				SHEET 4 OF 10

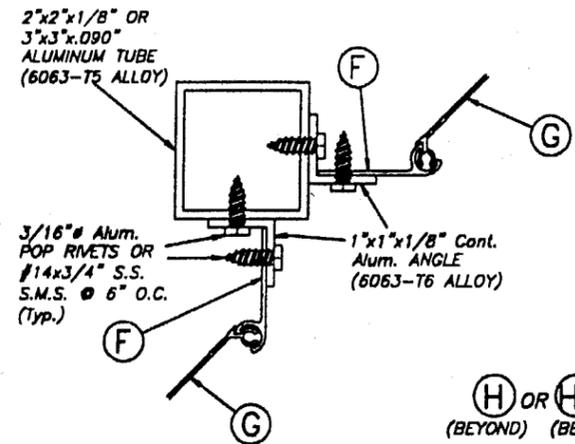


NOTES ON LOCKS : APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

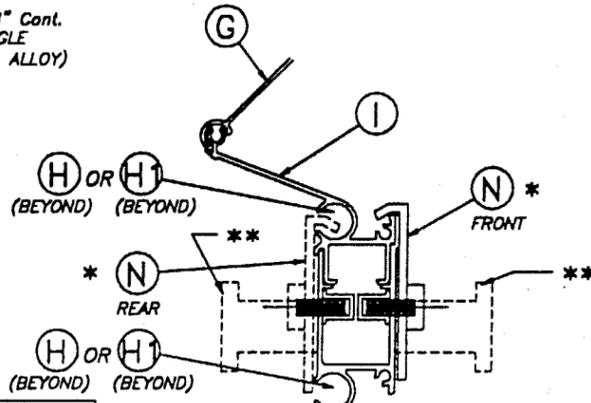
* LOCKER (N) SHALL ALWAYS BE USED FOR ANY SPAN AND INSTALLATIONS AT ANY ELEVATION. LOCKER (N) MAY BE USED AS AN INSIDE OR OUTSIDE LOCKER IF ATTACHED TO (L) & (M) W/ 1/4" #20 x 1" LONG S. S. THREADED BOLT W/ 1/4" #20 x 5/8" INTERNALLY THREADED ALUMINUM RIVNUT. SEE INSTALLATION DETAIL ON THIS SHEET.

** FOR INSTALLATIONS AT ANY ELEVATION OF BUILDING AND IN ADDITION TO (N) LOCKERS, A REGULAR T LOCK MAY BE USED FOR SECURITY PURPOSES AT ANY DESIRED LOCATION OF CENTERMATE (INSIDE OR OUTSIDE). WHEN USED INSIDE, MINIMUM SEPARATION TO GLASS SHALL ALSO BE VERIFIED FROM THE TIP OF SUCH T LOCK OR FROM THE OTHER SHUTTER COMPONENTS SHOWN ON SECTION D (WHICHEVER IS MORE CRITICAL).

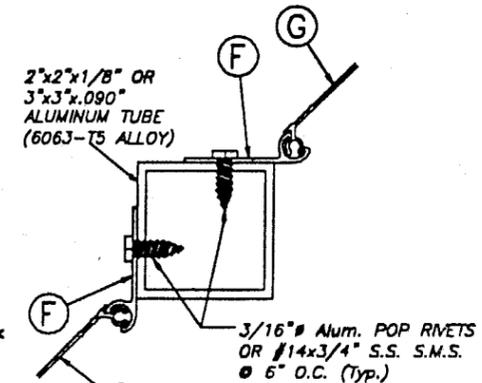
† : SERIES 9444 ALUMINUM (2024-T3 ALLOY) LARGE FLANGE THIN SHEET NUTSERT, PART # 0820, AS MANUFACTURED BY AVDEL CHERRY TEXTORN, PARSIPPENY, NEW JERSEY 07054 OR EQUAL.



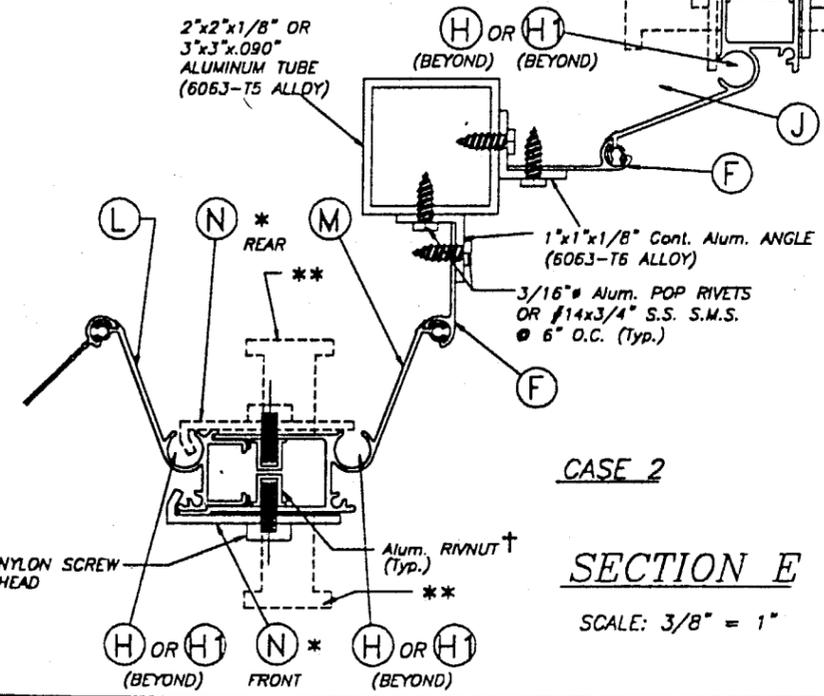
CASE 1



CASE 2



CASE 3

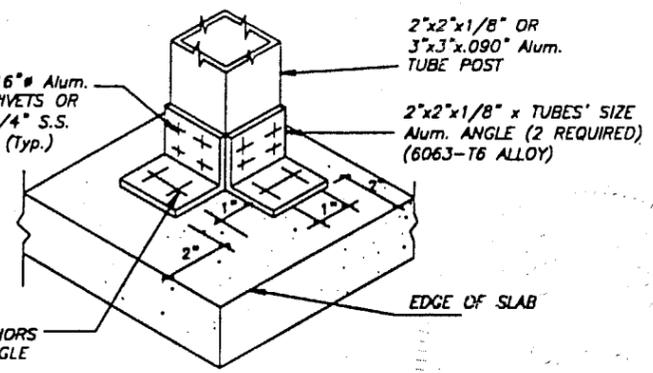


SECTION E

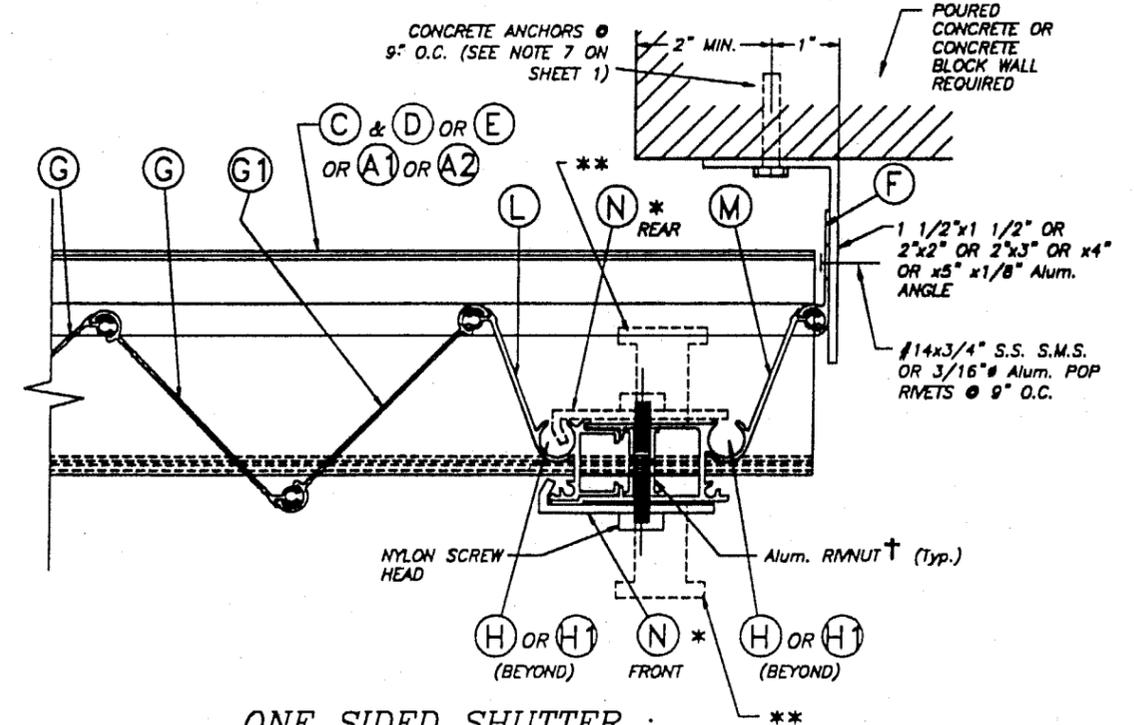
SCALE: 3/8" = 1"

SECTION D

SCALE: 3/8" = 1"



ISOMETRIC (CORNER POST) & BOTTOM SLABS (Typ. AT TOP)



ONE SIDED SHUTTER: END CONNECTION DETAIL

SCALE: 3/8" = 1"

PRODUCT RENEWED
 as complying with the Florida Building Code
 Acceptance No 03-0703.01
 Expiration Date 08/17/2008

By *Helmut A. Moller*
 Miami Dade Product Control Division

PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No 03-0106.15
 Expiration Date 08/17/2003

By *Helmut A. Moller*
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F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

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TILLIT TESTING & ENGINEERING COMPANY 6395 N.W. 36th St. Ste. 217, WINGHAM GARDENS, FLORIDA 33188 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167		REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	OLD 00-185	11/18/04	2				
2							
02-549 DRAWING No							
SHEET 5 OF 10							

Ty 19/02

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM SPAN "L" SCHEDULE.

(VALID FOR SECTIONS A, A1 & C ON SHEET 2 & 3 OF 10).

NOTE: DESIGN PRESSURE RATING CORRESPONDS ONLY TO NEGATIVE PRESSURE (SUCTION) LOADS, IN ACCORDANCE WITH ASCE 7-98 CRITERIA FOR A GIVEN OPENING. IF NEGATIVE PRESSURE VALUES COMPLY WITH THE REQUIRED PRESSURE FOR THE OPENING, THE POSITIVE PRESSURE WILL AUTOMATICALLY QUALIFY AND NEED NOT TO BE CHECKED.

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)	
		*	**
40.0	12'-1"	3 7/8"	3"
42.5	11'-11"	3 7/8"	3"
45.0	11'-9"	3 7/8"	3"
47.5	11'-7"	3 7/8"	3"
50.0	11'-5"	3 7/8"	3"
52.5	11'-1"	3 7/8"	3"
55.0	10'-10"	3 7/8"	3"
57.5	10'-7"	3 7/8"	3"
60.0	10'-5"	3 7/8"	3"
62.5	10'-2"	3 7/8"	3"
65.0	10'-0"	3 7/8"	3"
67.5	9'-10"	3 7/8"	3"
70.0	9'-7"	3 7/8"	3"
72.5	9'-5"	3 7/8"	3"
75.0	9'-4"	3 7/8"	3"
77.5	9'-2"	3 7/8"	3"
80.0	9'-0"	3 7/8"	3"
82.5	8'-9"	3 7/8"	3"

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)	
		*	**
85.0	8'-6"	3 7/8"	3"
87.5	8'-3"	3 7/8"	3"
90.0	8'-0"	3 3/8"	3"
92.5	7'-8"	3 3/8"	3"
95.0	7'-7"	3 3/8"	3"
97.5	7'-5"	3 3/8"	3"
100.0	7'-2"	3 3/8"	3"
102.5	7'-0"	3 3/8"	3"
105.0	6'-10"	3 3/8"	3"
107.5	6'-8"	3 3/8"	3"
110.0	6'-7"	3 3/8"	3"
112.5	6'-5"	3 3/8"	3"
115.0	6'-3"	3 3/8"	3"
117.5	6'-2"	3 3/8"	3"
120.0	6'-0"	3 3/8"	3"
122.5	5'-11"	3 3/8"	3"
125.0	5'-9"	3 3/8"	3"
127.5	5'-8"	3 3/8"	3"
130.0	5'-6"	3 3/8"	3"
132.5	5'-5"	3 3/8"	3"
135.0	5'-4"	3 3/8"	3"
137.5	5'-3"	3 3/8"	3"

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)	
		*	**
140.0	5'-2"	3 3/8"	3"
142.5	5'-1"	3 3/8"	3"
145.0	5'-0"	3 3/8"	3"
147.5	4'-11"	3 3/8"	3"
150.0	4'-10"	3 3/8"	3"
152.5	4'-9"	3 3/8"	3"
155.0	4'-8"	3 3/8"	3"
157.5	4'-7"	3 3/8"	3"
160.0	4'-6"	3 3/8"	3"
162.5	4'-5"	3 3/8"	3"
165.0	4'-4"	3 3/8"	3"
167.5	4'-4"	3 3/8"	3"
170.0	4'-3"	3 3/8"	3"
172.5	4'-2"	3 3/8"	3"
175.0	4'-1"	3 3/8"	3"
177.5	4'-1"	3 3/8"	3"
180.0	4'-0"	3 3/8"	3"

TABLE 1:

MINIMUM SEPARATION BETWEEN GLASS AND SHUTTER FOR A GIVEN SHUTTER SPAN "L" FOR SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ABOVE GRADE OF A GIVEN BUILDING. 30'-0" ELEVATION SHALL BE MEASURED AT BOTTOM OF SHUTTER SEPARATION TO BE MEASURED AS INDICATED ON SECTION D, SHEET 4 OF 10.

SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION
LESS OR EQUAL THAN 8'-0"	3 3/8"
>8'-0" TO 12'-0"	3 7/8"

* FOR SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ELEVATION OF BUILDING. SEE TABLE 1 FOR MINIMUM SEPARATION TO GLASS FOR SPANS SHORTER THAN THE MAXIMUM ALLOWED SHOWN ON SCHEDULE.
 ** FOR SHUTTERS INSTALLED ABOVE 30'-0" ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER

Handwritten signature and date: 11/19/02

PRODUCT RENEWED
 as complying with the Florida Building Code
 Building Code Acceptance No. 03-0703.01
 Expiration Date 08/17/2008
 By *Helmut A. Mahr*
 Miami Dade Product Control Division

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 TILLIT TESTING & ENGINEERING COMPANY 6585 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																	
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REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE														
1	OLD 00-185	11/18/02	2																
2			4																

SHEET 6 OF 10

MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM SPAN "L" SCHEDULE.

(VALID FOR SECTION B & B1 ON SHEET 2 OF 10).

NOTE: DESIGN PRESSURE RATING CORRESPONDS ONLY TO NEGATIVE PRESSURE (SUCTION) LOADS, IN ACCORDANCE WITH ASCE 7-98 CRITERIA FOR A GIVEN OPENING. IF NEGATIVE PRESSURE VALUES COMPLY WITH THE REQUIRED PRESSURE FOR THE OPENING, THE POSITIVE PRESSURE WILL AUTOMATICALLY QUALIFY AND NEED NOT TO BE CHECKED.

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)	
		"	"
40.0	12'-0"	3 7/8"	3"
42.5	11'-11"	3 7/8"	3"
45.0	11'-9"	3 7/8"	3"
47.5	11'-7"	3 7/8"	3"
50.0	11'-5"	3 7/8"	3"
52.5	11'-3"	3 7/8"	3"
55.0	11'-1"	3 7/8"	3"
57.5	10'-10"	3 7/8"	3"
60.0	10'-7"	3 7/8"	3"
62.5	10'-4"	3 7/8"	3"
65.0	10'-2"	3 7/8"	3"
67.5	10'-0"	3 7/8"	3"
70.0	9'-10"	3 7/8"	3"
72.5	9'-8"	3 7/8"	3"
75.0	9'-6"	3 7/8"	3"
77.5	9'-4"	3 7/8"	3"
80.0	9'-2"	3 7/8"	3"
82.5	9'-0"	3 7/8"	3"

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)	
		"	"
85.0	8'-11"	3 7/8"	3"
87.5	8'-9"	3 7/8"	3"
90.0	8'-5"	3 7/8"	3"
92.5	8'-3"	3 7/8"	3"
95.0	8'-1"	3 7/8"	3"
97.5	7'-10"	3 3/8"	3"
100.0	7'-8"	3 3/8"	3"
102.5	7'-6"	3 3/8"	3"
105.0	7'-3"	3 3/8"	3"
107.5	7'-1"	3 3/8"	3"
110.0	6'-11"	3 3/8"	3"
112.5	6'-10"	3 3/8"	3"
115.0	6'-8"	3 3/8"	3"
117.5	6'-6"	3 3/8"	3"
120.0	6'-5"	3 3/8"	3"
122.5	6'-3"	3 3/8"	3"
125.0	6'-1"	3 3/8"	3"
127.5	6'-0"	3 3/8"	3"
130.0	5'-11"	3 3/8"	3"
132.5	5'-8"	3 3/8"	3"
135.0	5'-6"	3 3/8"	3"
137.5	5'-7"	3 3/8"	3"

MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION TO GLASS (in.)	
		"	"
140.0	5'-6"	3 3/8"	3"
142.5	5'-4"	3 3/8"	3"
145.0	5'-3"	3 3/8"	3"
147.5	5'-2"	3 3/8"	3"
150.0	5'-1"	3 3/8"	3"
152.5	5'-0"	3 3/8"	3"
155.0	4'-11"	3 3/8"	3"
157.5	4'-10"	3 3/8"	3"
160.0	4'-8"	3 3/8"	3"
162.5	4'-8"	3 3/8"	3"
165.0	4'-8"	3 3/8"	3"
167.5	4'-7"	3 3/8"	3"
170.0	4'-6"	3 3/8"	3"
172.5	4'-5"	3 3/8"	3"
175.0	4'-4"	3 3/8"	3"
177.5	4'-4"	3 3/8"	3"
180.0	4'-3"	3 3/8"	3"

TABLE 1:

MINIMUM SEPARATION BETWEEN GLASS AND SHUTTER FOR A GIVEN SHUTTER SPAN "L" FOR SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ABOVE GRADE OF A GIVEN BUILDING. 30'-0" ELEVATION SHALL BE MEASURED AT BOTTOM OF SHUTTER SEPARATION TO BE MEASURED AS INDICATED ON SECTION D, SHEET 4 OF 10.

SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION
LESS OR EQUAL THAN 6'-0"	3 3/8"
>6'-0" TO 12'-0"	3 7/8"

* FOR SHUTTERS INSTALLED WITHIN THE FIRST 30'-0" ELEVATION OF BUILDING. SEE TABLE 1 FOR MINIMUM SEPARATION TO GLASS FOR SPANS SHORTER THAN THE MAXIMUM ALLOWED SHOWN ON SCHEDULE.
 ** FOR SHUTTERS INSTALLED ABOVE 30'-0" ELEVATION OF BUILDING, MEASURED AT BOTTOM OF SHUTTER.

PRODUCT RENEWED
 as complying with the Florida Building Code
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 Expiration Date 08/17/2008
 By *Helmut A. Mahler*
 Miami Dade Product Control Division

PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No. 03-0106.15
 Expiration Date 08/17/2003
 By *Helmut A. Mahler*
 Miami Dade Product Control Division

Handwritten signature and date 12/1/10

 TILLIT TESTING & ENGINEERING COMPANY 6585 N.W. 36th St., Ste. 217, WINDY GARDENS, FLORIDA 33144 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																		
	WILLARD SHUTTER COMPANY INCORPORATED (ASSA # 180) 4420 N.W. 35th COURT MIAMI, FLORIDA 33142	11/19/02 DATE	02-549 DRAWING No																	
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F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

**MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND
CORRESPONDING MAXIMUM ANCHOR SPACING (in.) SCHEDULE. +**

MAXIMUM DESIGN LOAD "W" (p.s.f.)	SECTIONS A, A', C			SECTIONS A, A', C			SECTIONS B, & B'		
	WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (TO CONCRETE)			WALL MOUNTING INSTALLATION AT BOTTOM (TO MASONRY)			CEILING & FLOOR MOUNTING INSTALLATION AT TOP OR BOTTOM (TO CONCRETE)		
	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3	NOTE 1	NOTE 2	NOTE 3
FROM 40.0 TO 62.5	9"	9"	9"	9"	8"	6 1/2"	9"	7"	5 1/2"
	9"	9"	9"	9"	5 1/2"	4 1/2"	9"	9"	9"
FROM 62.6 TO 75.0	9"	9"	8"	9"	6 1/2"	6"	9"	6"	5"
	9"	9"	9"	8"	4 1/2"	4"	9"	9"	8"
FROM 75.1 TO 92.5	9"	7"	7"	9"	5 1/2"	5 1/2"	8"	5"	-
	9"	9"	9"	6 1/2"	4"	4"	9"	7 1/2"	7 1/2"
FROM 92.6 TO 120.0	9"	7"	-	7"	5 1/2"	-	6"	5"	-
	9"	9"	-	5"	4"	-	9"	7 1/2"	-
FROM 120.1 TO 180.0	7"	7"	-	5 1/2"	5 1/2"	-	5"	5"	-
	9"	9"	-	4"	4"	-	7 1/2"	7 1/2"	-

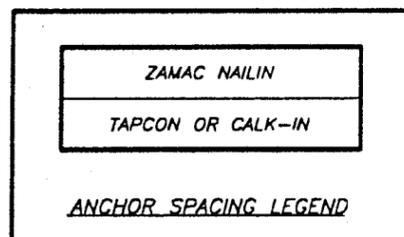
ANCHOR SPACING LEGEND

- (1) Max. ANCHOR SPCG. VALID FOR SPANS OF 5'-0" OR LESS.
- (2) Max. ANCHOR SPCG. VALID FOR SPANS GREATER THAN 5'-0" TO 8'-6".
- (3) Max. ANCHOR SPCG. VALID FOR SPANS GREATER THAN 8'-6" TO Max. ALLOWED.

NOTES ON ANCHOR SPACING SCHEDULE

+ SEE SHEET 9 & 10 OF 10 FOR ANCHOR TYPE & SPACING FOR INSTALLATIONS INTO WOOD FRAME BUILDINGS. MAXIMUM ANCHOR SPACINGS ARE VALID FOR 3 1/2" EDGE DISTANCE. FOR E. D. LESS THAN 3 1/2", REDUCE ANCHOR SPACING BY MULTIPLYING SPACINGS SHOWN ON SCHEDULE BY THE FOLLOWING FACTORS. (Min. E. D. FOR CALK-IN IS 2 1/2"). THIS OPERATION SHALL ONLY BE PERFORMED WHEN REQUIRED SPACING RESULTS INTO A MINIMUM OF 3" O.C.

ACTUAL E. D. = EDGE DISTANCE	FACTOR	
	TAPCON / ZAMAC NAILIN	CALK-IN
3"	.86	.75
2 1/2"	.71	.50
2"	.50	-



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Expiration Date 08/17/2003
By *Helmut A. Meier*
Miami Dade Product Control Division

F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

 TILECO Inc. <small>TILLIT TESTING & ENGINEERING COMPANY 8585 N.W. 36th St. Ste. 217, WINDY GARDENS, FLORIDA 33148 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</small>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																		
	WILLARD SHUTTER COMPANY INCORPORATED <small>(ASSA # 180) 4420 N.W. 35th COURT MIAMI, FLORIDA 33142</small>	11/19/02 DATE	02-549 DRAWING No																	
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12/19/02

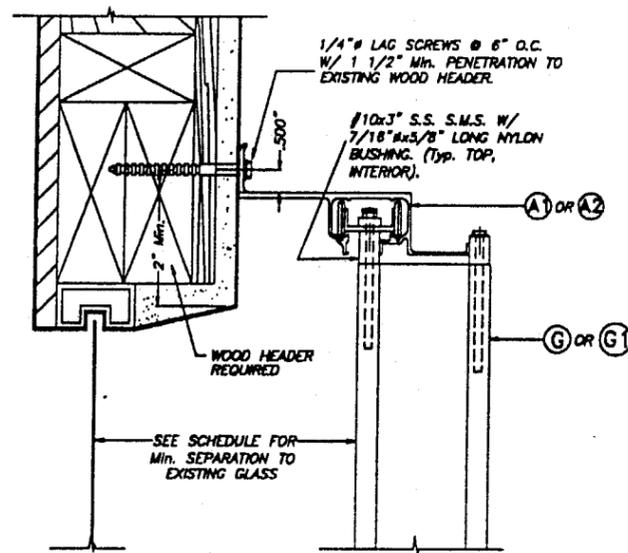
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

NOTES:

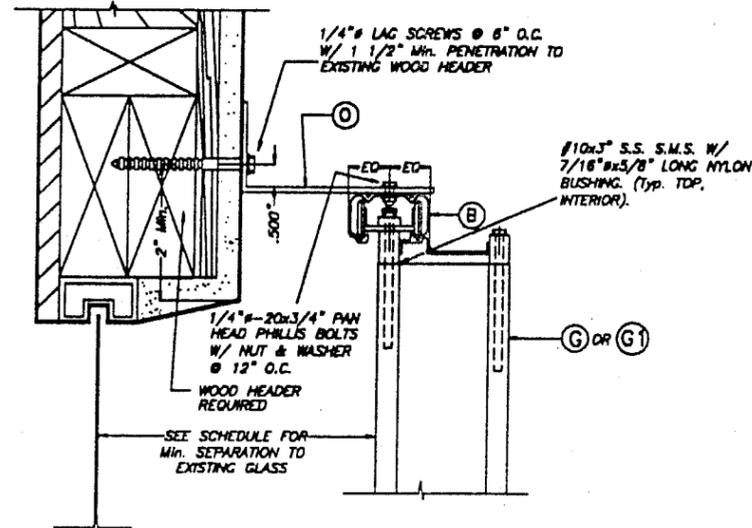
1. INSTALLATIONS ARE ONLY VALID FOR INSTALLATIONS WITH DESIGN WIND LOADS LESS OR EQUAL THAN 75 p.s.f. AND 9'-0" Max. SHUTTER SPAN.
2. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

NOTE FOR COMBINATION OF SECTIONS:

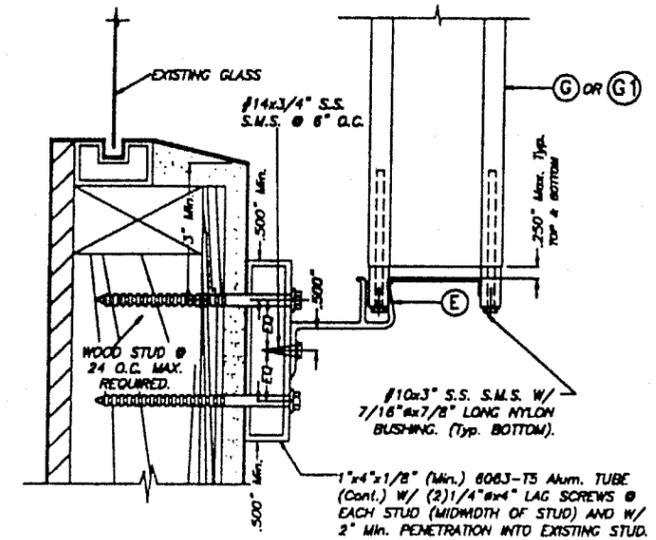
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3

WALL MOUNTING INSTALLATION - SECTION A

SCALE: 1/4" = 1"

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Miami Dade Product Control
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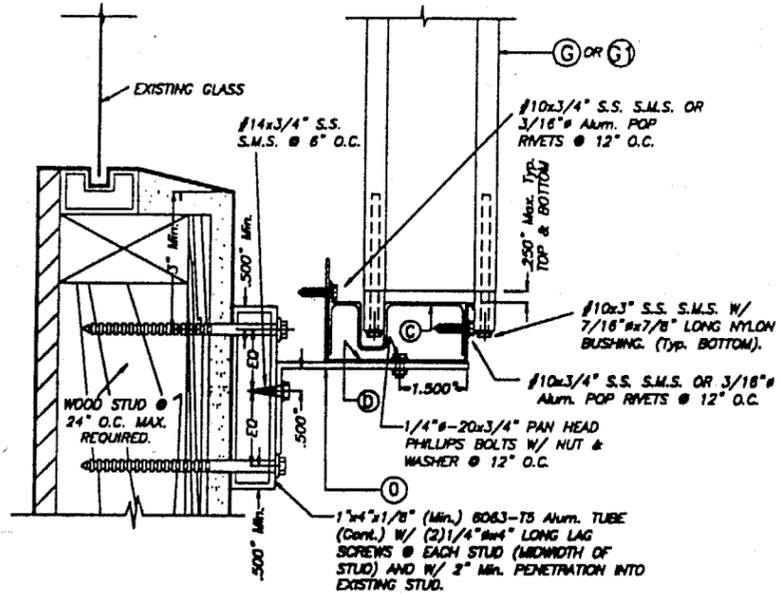
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F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

 TILTECO INC. <small>TILLIT TESTING & ENGINEERING COMPANY 8585 N.W. 36th St., Ste. 217, WINDHAM GARDENS, FLORIDA 33148 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</small>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																		
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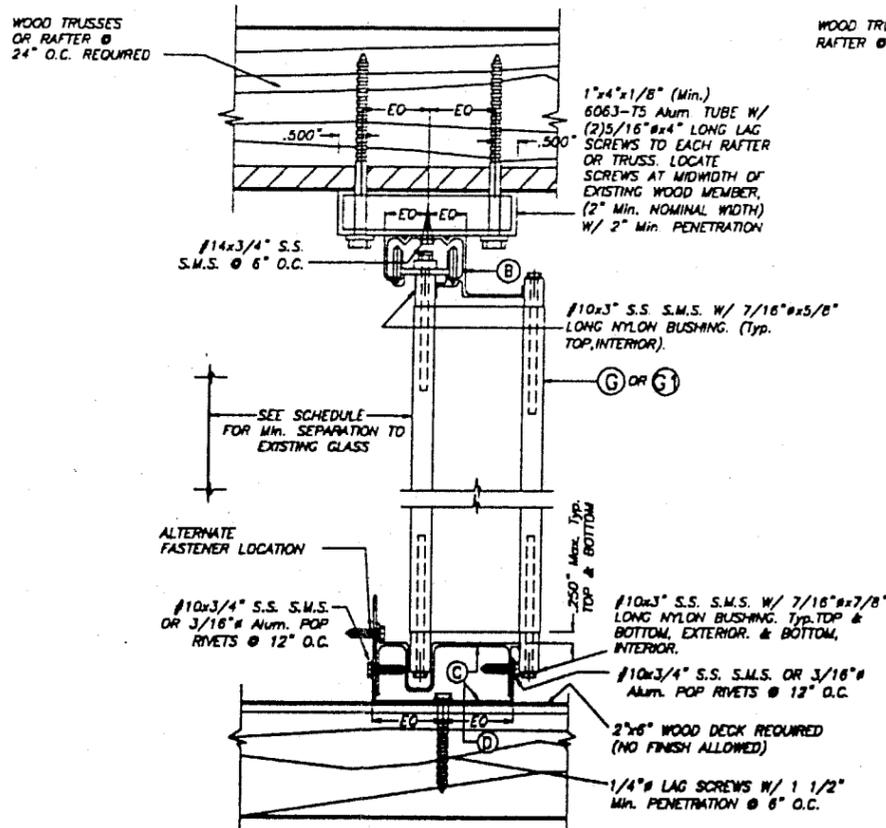
W.A. Tillit Jr.

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS



ALTERNATIVE 5

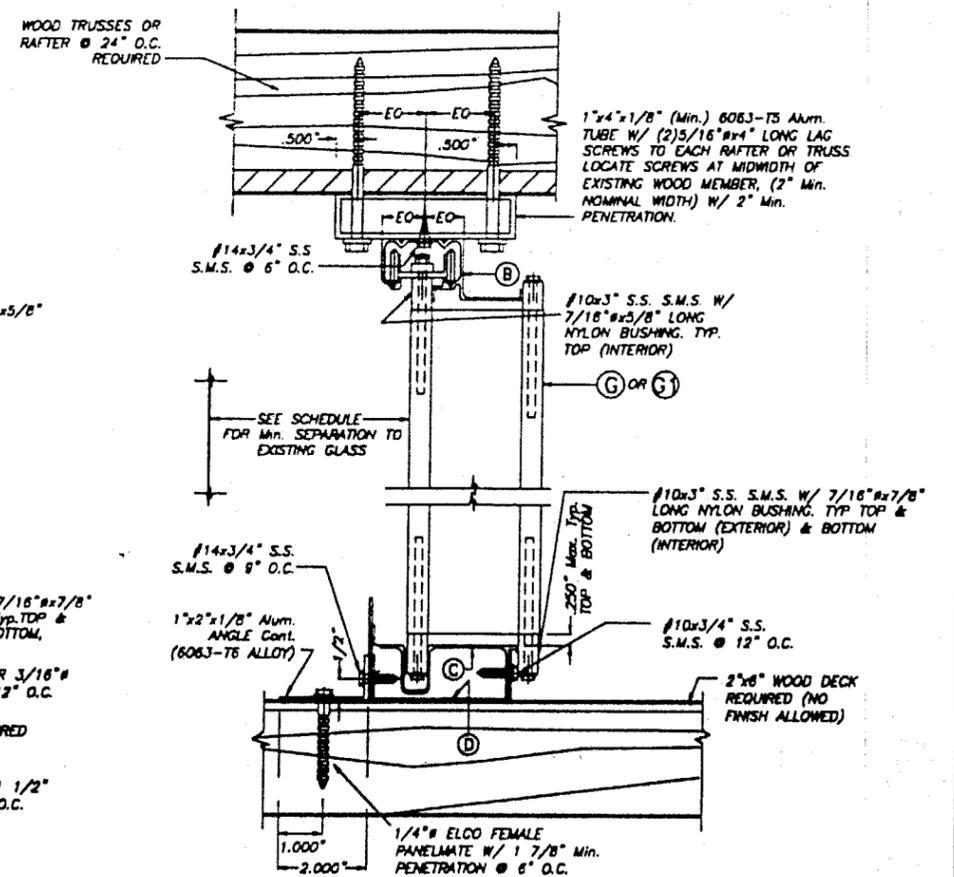
SCALE: 1/4" = 1"



CEILING & FLOOR MOUNTING INSTALLATION

SECTION B

SCALE: 1/4" = 1"



CEILING & FLOOR MOUNTING INSTALLATION

SECTION B1

SCALE: 1/4" = 1"

NOTE :

WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

NOTES :

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By *Helmut A. Weber* Miami Dade Product Control Division
By *Helmut A. Weber* Miami Dade Product Control Division

F.B.C.(H.V.H.Z.)/MIAMI-DADE COUNTY

<p>TILLIT TESTING & ENGINEERING COMPANY 4515 N.W. 36th St. Ste. 217, WINGARD GARDENS, FLORIDA 33149 Phone: (305)871-1530 Fax: (305)871-1531 EB-0006719 WALTER A. TILLIT JR., P. E. FLORIDA Lic. # 44167</p>		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE		
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SHEET 10 OF 10