



**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)

**Miami Dade Aluminum Supply, Inc.
1615 West 31st Place
Hialeah, Florida 33012**

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 Aluminum Accordion Shutter

APPROVAL DOCUMENT: Drawing No. 99-22, titled " ASSA/Residential Bertha Accordion Shutter ", sheets 1 through 10 of 10, prepared by Tilteco, Inc., dated January 29, 1999, 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 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.

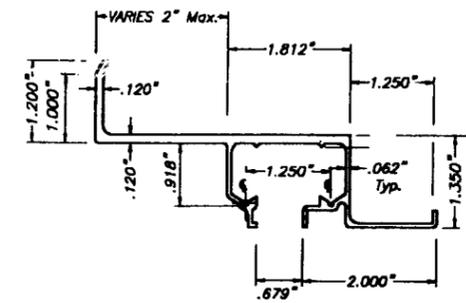
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

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.

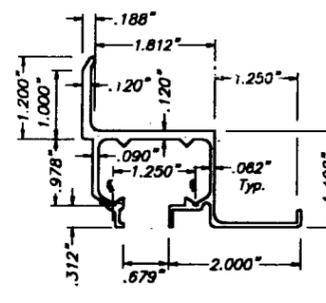
This NOA **renews NOA # 99-0212.02** and consists of this page 1 as well as approval document mentioned above. The submitted documentation was reviewed by **Helmy A. Makar, P.E.**



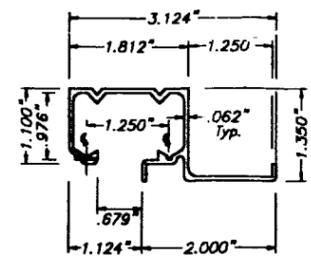
**NOA No 02-0404.01
Expiration Date: 04/13/2007
Approval Date: 04/30/2002
Page 1**



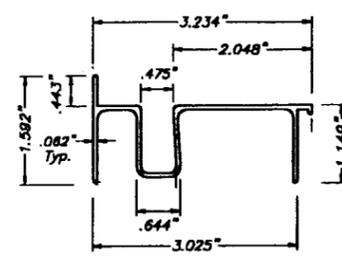
(A1) WALL HEADERS
(A1) WALL HEADERS (INVERTED USE)
 SCALE: 3/8" = 1"



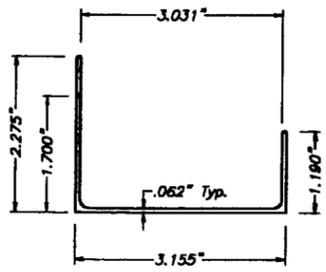
(A2) WALL HEADER
(A2) WALL HEADER (INVERTED USE)
 SCALE: 3/8" = 1"



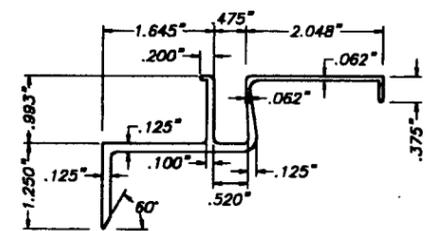
(B) CEILING HEADER
 SCALE: 3/8" = 1"



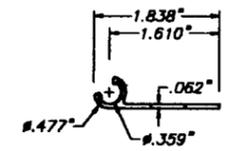
(C) SILL
 SCALE: 3/8" = 1"



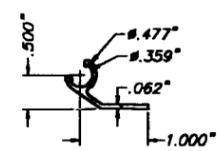
(D) SILL ADAPTER
 SCALE: 3/8" = 1"



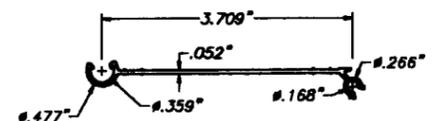
(E) BOTTOM BUILT-OUT
 SCALE: 3/8" = 1"



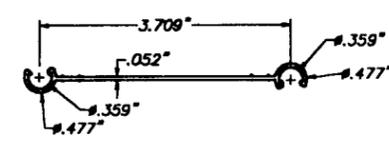
(F) FEMALE END SLAT
 SCALE: 3/8" = 1"



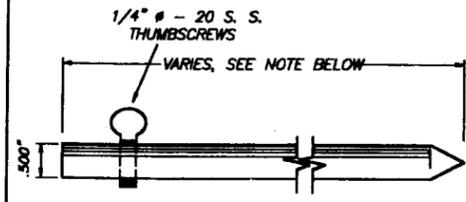
(F1) STARTER STRIP
 SCALE: 3/8" = 1"



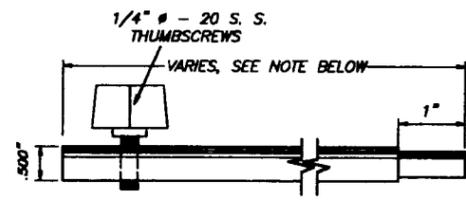
(G) RESIDENTIAL BLADE
 SCALE: 3/8" = 1"



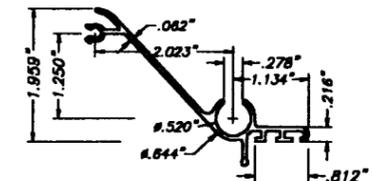
(G1) FEMALE RESIDENTIAL BLADE
 SCALE: 3/8" = 1"



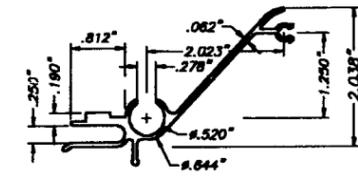
(H) LOCKING PIN
 SCALE: 3/8" = 1"



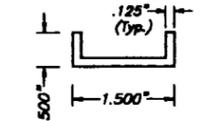
(H1) ALTERNATE LOCKING PIN
 SCALE: 3/8" = 1"



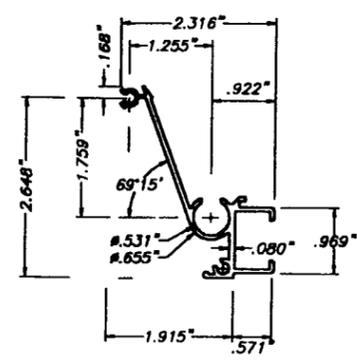
(I) MALE LOCK SLAT
 SCALE: 3/8" = 1"



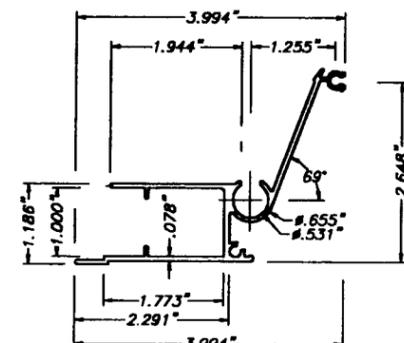
(J) FEMALE LOCK SLAT
 SCALE: 3/8" = 1"



(K) LOCK CLIP
 4" LONG
 SCALE: 3/8" = 1"

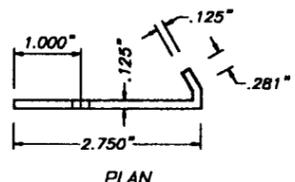


(L) MALE LOCK SLAT
 SCALE: 3/8" = 1"

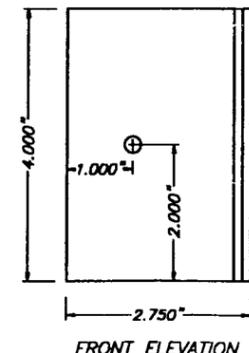


(M) FEMALE LOCK SLAT
 SCALE: 3/8" = 1"

COMPONENTS



(N) LOCKER
 SCALE: 3/8" = 1"



(O) ALUMINUM ANGLE
 SCALE: 3/8" = 1"

GENERAL NOTES:

1. ACCORDION SHUTTER'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED AS PER ATL REPORT # 0902.01-98.
2. STAINLESS STEEL SHEET METAL SCREWS USED AT LOUVER PIN SHALL BE # 10 x 3", 410-HT MINIMUM SERIES W/ 135.0 ksi YIELD POINT & 180 ksi TENSILE STRENGTH. SCREWS SHALL BE COATED WITH XYLAN 5000 SERIES FLUOROPOLYMER COATINGS AS MANUFACTURED BY WHITFORD Co, BOX 507, WEST CHESTER PA. 19381.
3. ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 ALLOY.
4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES W/ 50 ksi YIELD POINT AND 90 ksi TENSILE STRENGTH.
5. ALL ALUMINUM POP RIVETS TO BE 5052 ALUMINUM ALLOY WITH ALUMINUM MANDREL.
6. BOLTS TO BE 2024-T4 ALUMINUM ALLOY GALVANIZED OR STAINLESS STEEL WITH 35 ksi MINIMUM YIELD POINT.
7. ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
 - (A) TO EXISTING POURED CONCRETE:
 - 1/4" # TAPCON ANCHORS, AS MANUFACTURED BY I.T.W. RAMSET OR ELCO INDUSTRIES, INC.
 - 1/4" # RAWL ZAMAC NAILIN ANCHORS, AS MANUFACTURED BY THE RAWL PLUG COMPANY, INC.
 - 1/4" # x 7/8" RAWL CALK-IN AS MANUFACTURED BY THE RAWL PLUG COMPANY.
 - NOTES:
 - A.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO POURED CONCRETE IS 1 3/4". MINIMUM EMBEDMENT OF RAWL ZAMAC NAILIN IS 1 3/8".
 - A.2) 1/4" # x 7/8" RAWL CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE POURED CONCRETE. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" # -20 SCREWS USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST.
 - A.3) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE AS INDICATED ON NOTES A.1 & A.2 ABOVE.
 - (B) TO EXISTING CONCRETE BLOCK WALL:
 - 1/4" # TAPCON ANCHORS AS MANUFACTURED BY I.T.W. RAMSET OR ELCO INDUSTRIES, INC.
 - 1/4" # RAWL ZAMAC NAILIN ANCHORS AS MANUFACTURED THE RAWL PLUG COMPANY, INC.
 - 1/4" # x 7/8" RAWL CALK-IN AS MANUFACTURED BY THE RAWL PLUG COMPANY, INC.
 - NOTES:
 - B.1) MINIMUM EMBEDMENT OF TAPCON ANCHORS, AND RAWL ZAMAC NAILIN ANCHORS INTO THE CONCRETE BLOCK UNIT SHALL BE 1 1/4".
 - B.2) 1/4" # x 7/8" RAWL CALK-IN ANCHORS SHALL BE ENTIRELY EMBEDDED INTO THE CONCRETE BLOCK UNIT. NO EMBEDMENT INTO STUCCO SHALL BE PERMITTED. 1/4" # -20 SCREWS USED SHALL BE 1 1/2" LONG MINIMUM SHOULD STUCCO EXIST.
 - B.3) IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE 1 1/4" MINIMUM FOR ANCHORS MENTIONED IN B.1.), & 7/8" FOR ANCHORS MENTIONED IN B.2.).
 - (C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
8. BLADE (G), AND THE KNUCKLES FOR CENTERMATES (L), (J), (I) & (M), & THE STARTERS (F) & (F1) ARE UNDER THE PATENT OF EASTERN METALS.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE.
10. EACH UNIT MUST BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH A WARNING NOTE INSTRUCTING THE TENANT OR HOME OWNER THAT ALL LOCKING PINS, AS WELL AS BOTH LOCKERS MUST BE PROPERLY INSTALLED & BOLTED DURING PERIODS OF HURRICANE WARNING.
11. SHUTTER'S MANUFACTURER STAMP SHALL BE PLACED ON THE EXPOSED SURFACE OF THE FEMALE LOCK SLAT (COMPONENT (L) OR (M)). ONE LABEL SHALL BE PLACED FOR EVERY OPENING, LABEL SHALL READ AS FOLLOWS: MIAMI DADE ALUMINUM SUPPLY INC. HIALEAH, FL. DADE COUNTY PRODUCT CONTROL APPROVED.

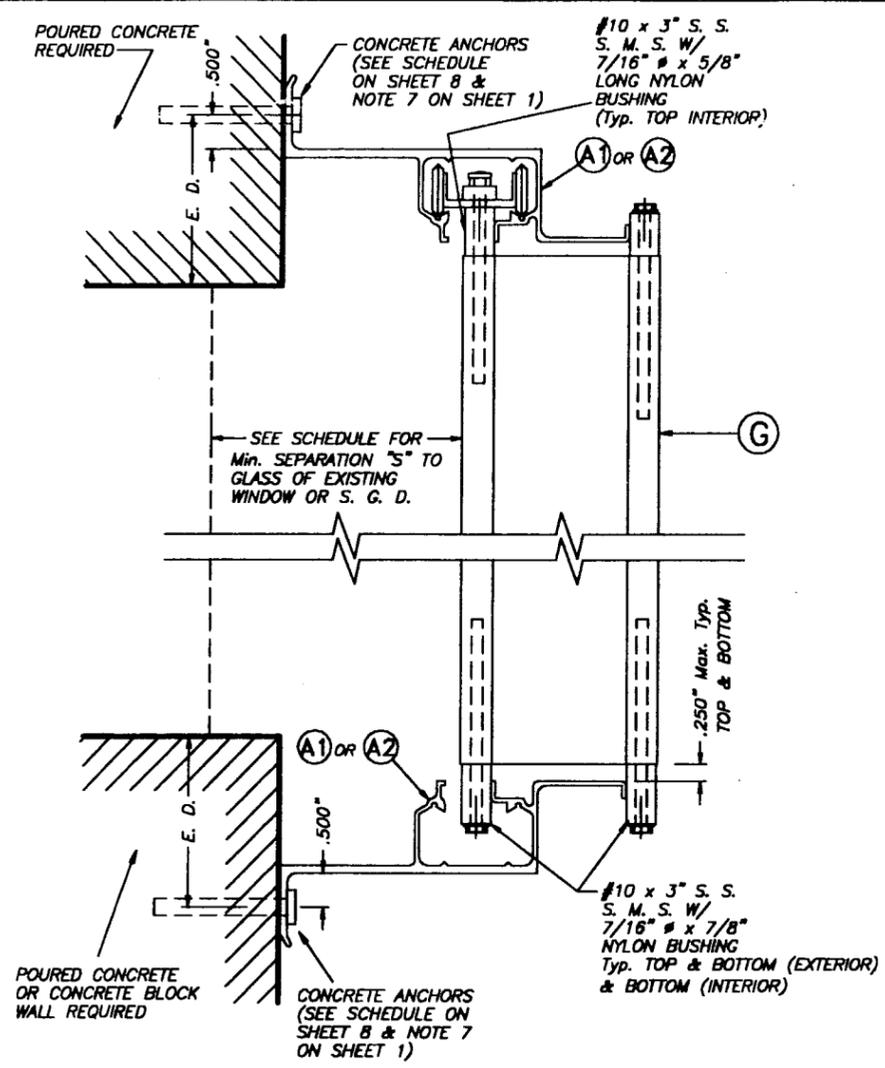
APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
 DATE APRIL 13 1999
 BY Helmy H. Mator
 PRODUCT CONTROL DIVISION
 BUILDING CODE COMPLIANCE OFFICE
 ACCEPTANCE NO. 99-0212-02

PRODUCT RENEWED
 as complying with the Florida Building Code
 Acceptance No. 02-0404.01
 Expiration Date 04/13/2007
 By Helmy H. Mator
 Miami Dade Product Control Division
 4/29/99

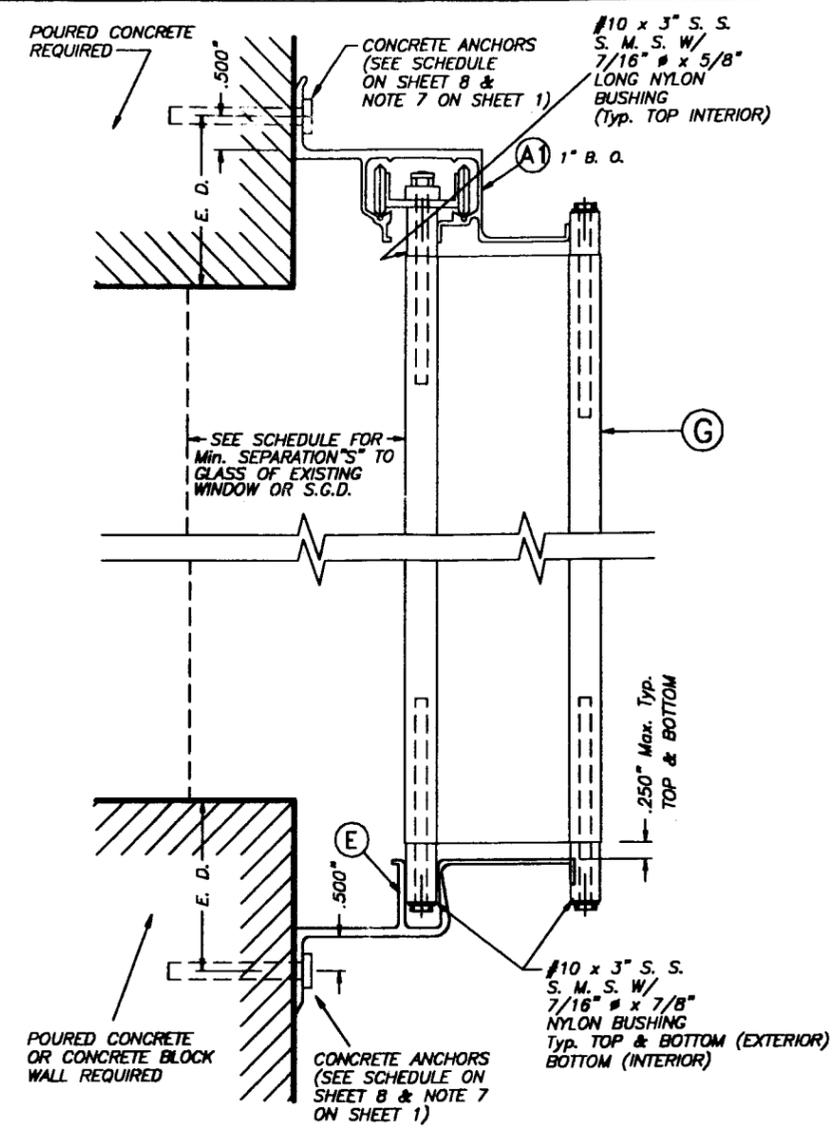
DADE COUNTY

TILTECO INC.
 TILLIT TESTING & ENGINEERING COMPANY
 6550 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166
 Phone: (305)871-1530 Fax: (305)871-1531
 WALTER A. TILLIT Jr., P. E.
 FLORIDA Lic. # 44167

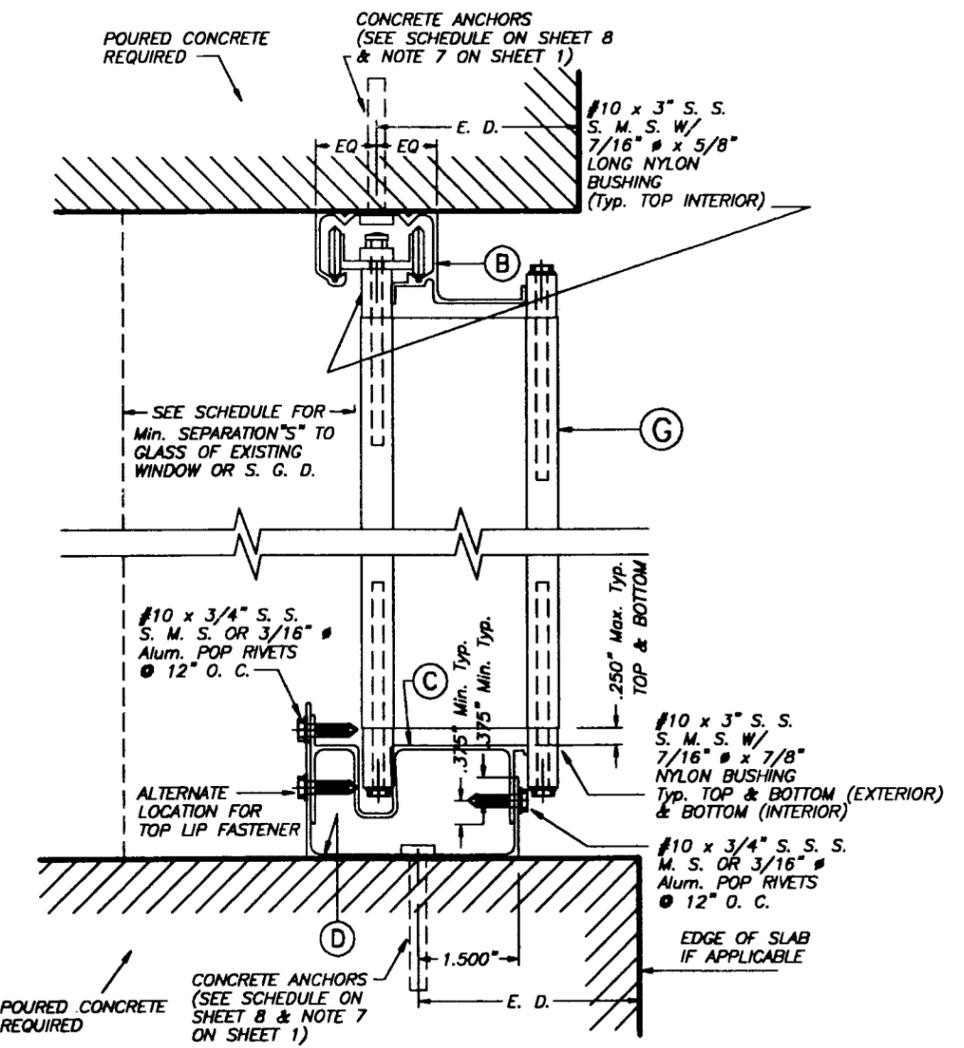
ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE	
MIAMI DADE ALUMINUM SUPPLY INC.		MEMBERSHIP: #117	
1615 WEST 31 PLACE		HALEAH, FLORIDA 33012	
DATE 4/29/99		DATE 1/29/99	
DRAWING No 99-22		DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No
1			3
2			4



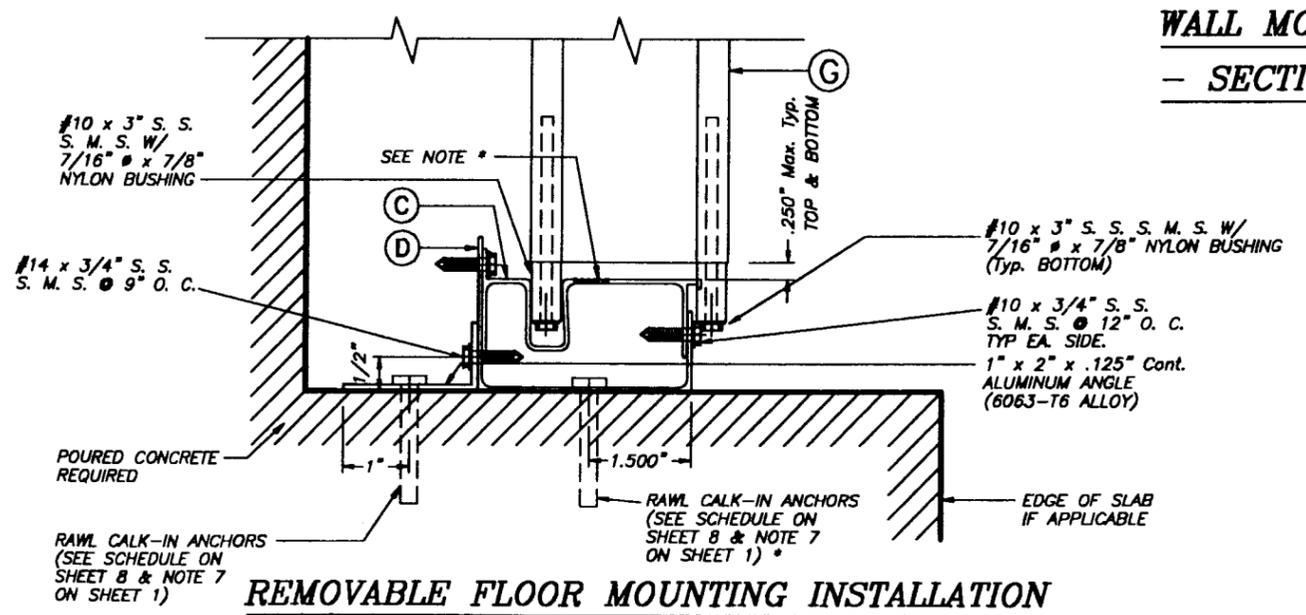
WALL MOUNTING INSTALLATION
 - SECTION A SCALE: 3/8" = 1"



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 (C) TO INSTALL RAWL CALK-IN AT (D). COVER HOLE WITH NYLON CAPS.

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.

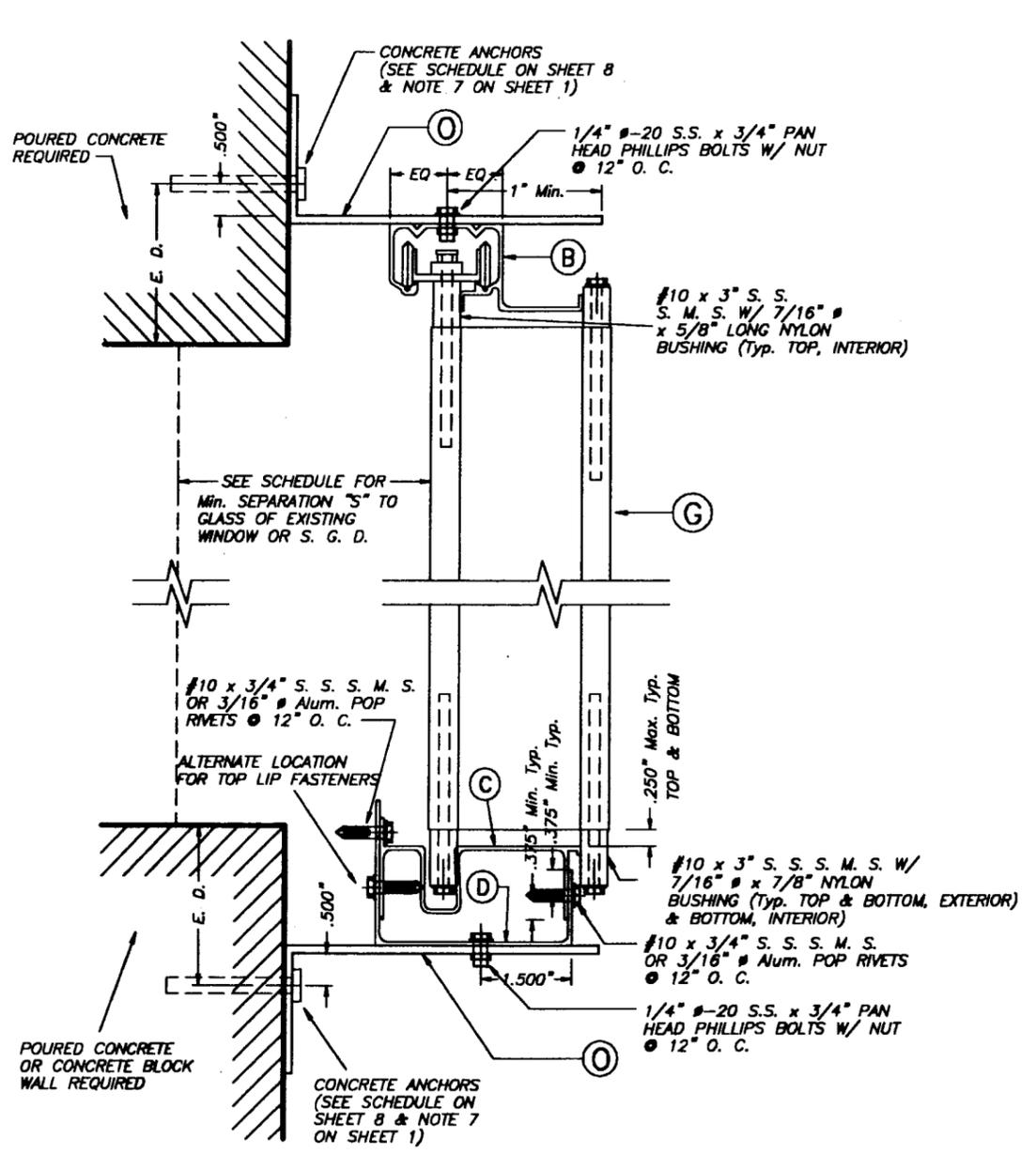
APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
 DATE APRIL 13 1999
 BY Helms A. Moler
 PRODUCT CONTROL DIVISION
 BUILDING CODE COMPLIANCE OFFICE
 ACCEPTANCE NO. 99-0212-02

PRODUCT RENEWED as complying with the Florida Building Code
 Acceptance No. 02-0404-01
 Expiration Date 04/13/2007
 By Helms A. Moler
 Miami Dade Product Control Division
 1/29/99

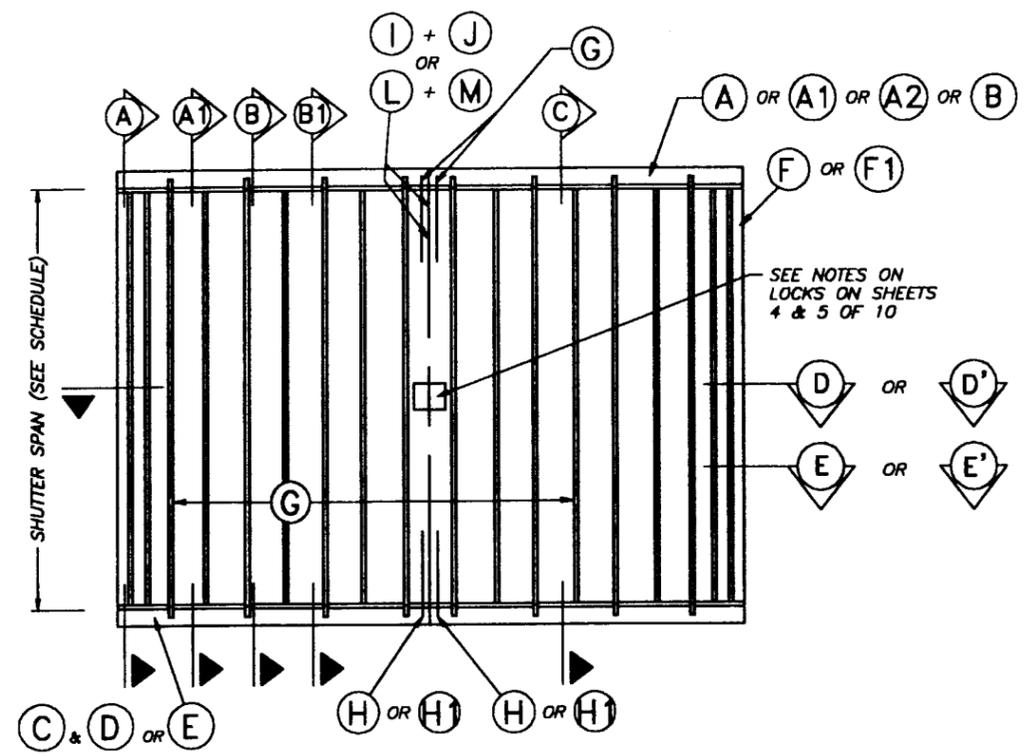
DADE COUNTY

TILECO inc.
 TILIT TESTING & ENGINEERING COMPANY
 6590 N.W. 34th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166
 Phone: (305)871-1530 Fax: (305)871-1531
 WALTER A. TILIT, Jr., P. E.
 FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER			AS SHOWN SCALE		
MIAMI DADE ALUMINUM SUPPLY INC. MEMBERSHIP: #117 1615 WEST 31 PLACE HALEAH, FLORIDA 33012			1/29/99 DATE		
99 - 22 DRAWING No			SHEET 2 OF 10		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1			3		
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)

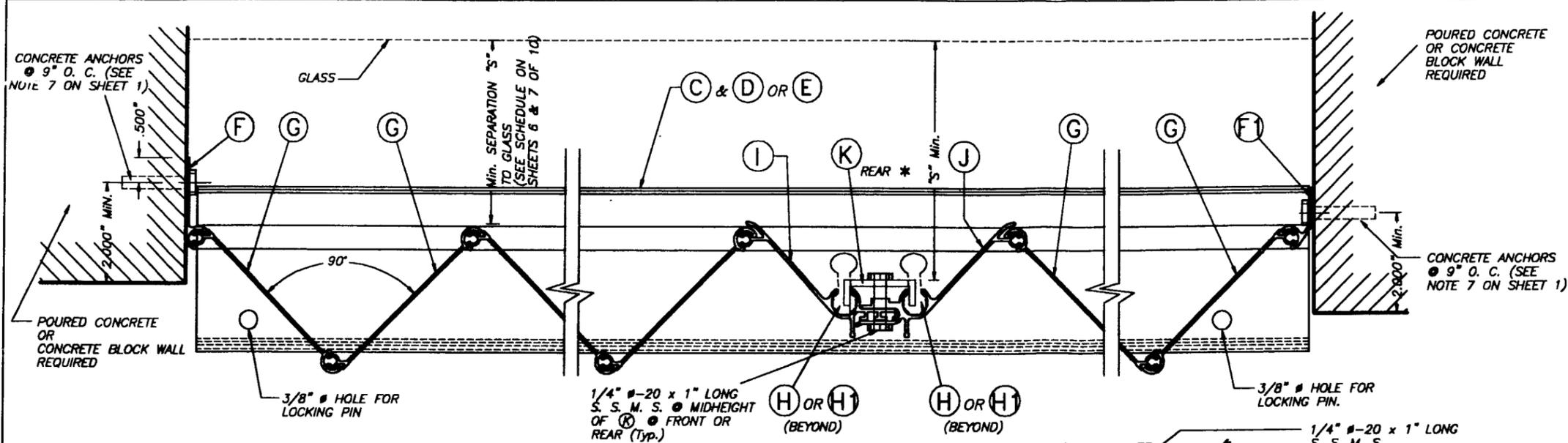
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 WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

PRODUCT RENEWED
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 Building Code
 Acceptance No. 02-0404-01
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 By *Helmy A. Moler*
 Miami Dade Product Control
 Division

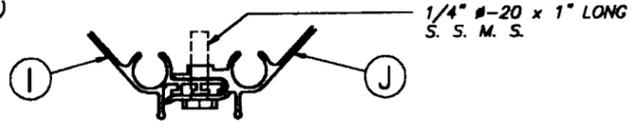
APPROVED AS COMPLYING WITH THE
 SOUTH FLORIDA BUILDING CODE
 DATE APRIL 13 1999
 BY *Helmy A. Moler*
 PRODUCT CONTROL DIVISION
 BUILDING CODE COMPLIANCE OFFICE
 ACCEPTANCE NO. 99-0212-02

David B.
 1/29/99
 DADE COUNTY

 TILTECO INC. <small>TILLIT TESTING & ENGINEERING COMPANY</small> <small>6285 N.W. 30th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33169</small> <small>Phone: (305)871-1530 Fax: (305)871-1531</small> <small>WALTER A. TILLIT Jr., P. E.</small> <small>FLORIDA Lic. # 44167</small>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																	
	MIAMI DADE ALUMINUM SUPPLY INC. <small>MEMBERSHIP: #117</small> <small>1615 WEST 31 PLACE</small> <small>HALEAH, FLORIDA 33012</small>	1/29/99 DATE																	
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE														
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2	-	-	4	-	-														



SECTION D
SCALE: 3/8" = 1"

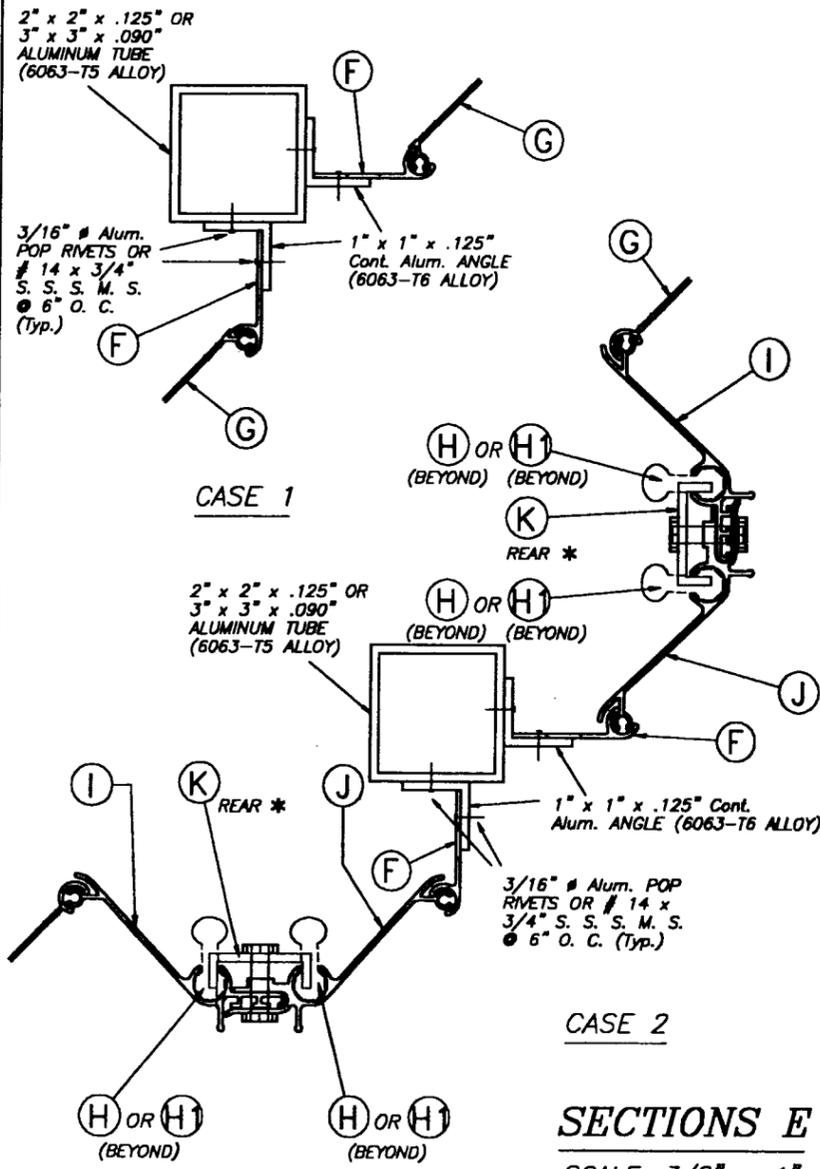


SECTIONS D, D' & E W/O K
SCALE: 3/8" = 1"

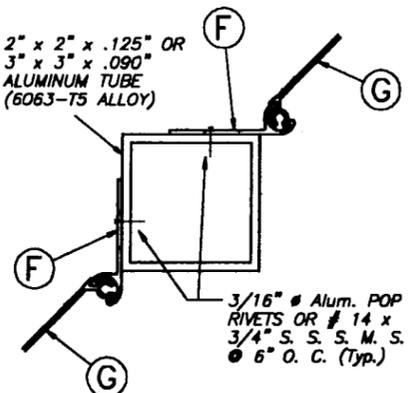
NOTES ON LOCKS: APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

* CENTERMATES (1) & (2) 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 & E. BOLT SHALL PENETRATE (K) LOCK CLIP, AS WELL AS (1) & (2) ENTIRELY. LOCK CLIP (K) 1/2" FLANGES SHALL FIT ENTIRELY INTO (1) & (2) LOCKING PIN GROOVES BEFORE SIDEWALK BOLT IS TIGHTENED.

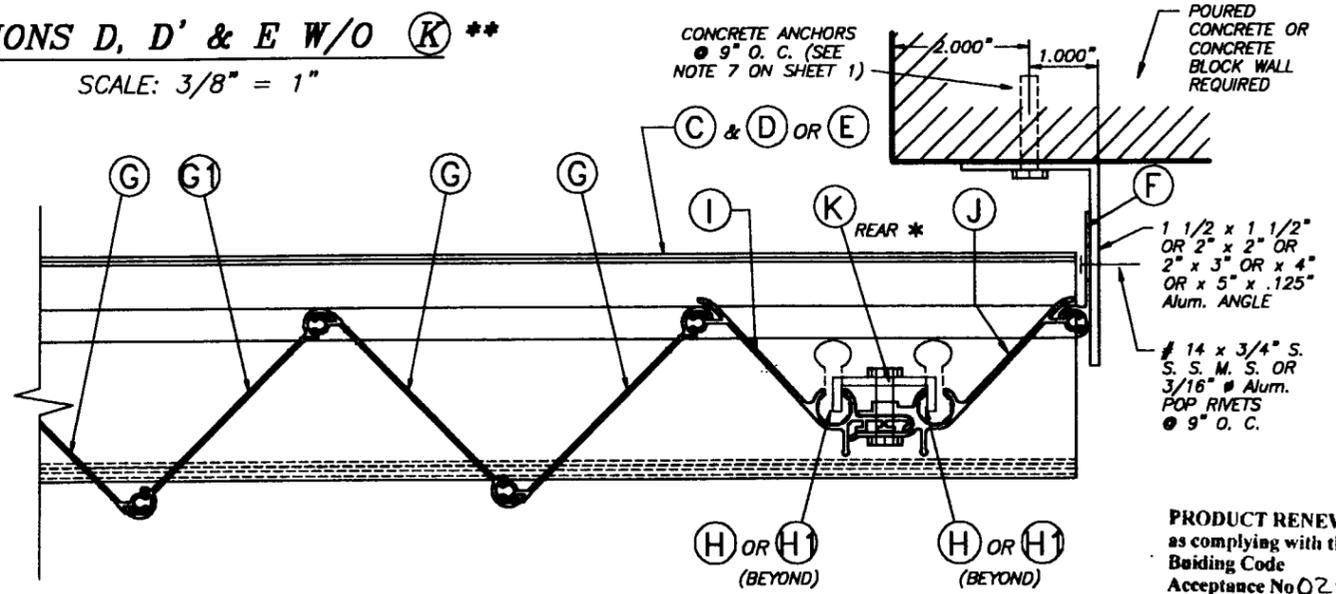
** ALTERNATIVELY TO USING (K) LOCK CLIP, CENTERMATES (1) & (2) SHALL ALWAYS BE LOCKED BY INSTALLING A 1/4" #20 x 1" S.S. SIDEWALK BOLT DIRECTLY THRU BOTH CENTERMATES. FOR THIS PURPOSE, (1) & (2) CENTERMATES SHALL BE PRE-DRILLED AT THE BOLT LOCATION AS WELL AS TAPPED THRU IN ORDER TO ACCEPT THE 1/4" #20 SIDEWALK BOLT. THIS BOLT MAY BE INSTALLED FROM EITHER THE FRONT OR REAR OF SHUTTER.



SECTIONS E
SCALE: 3/8" = 1"



CASE 3

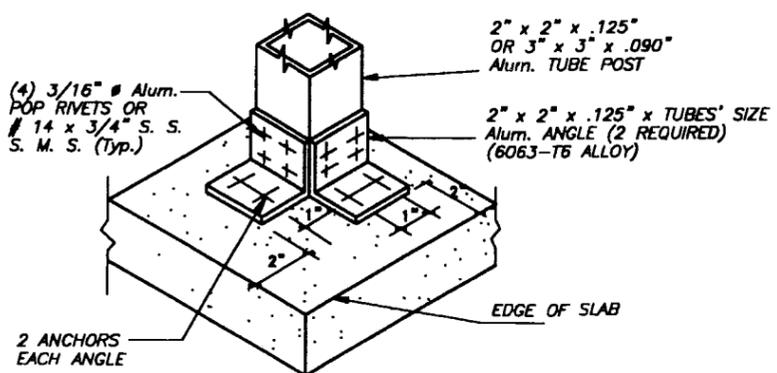


SECTION D' : ONE SIDED SHUTTER
END CONNECTION DETAIL

SCALE: 3/8" = 1"

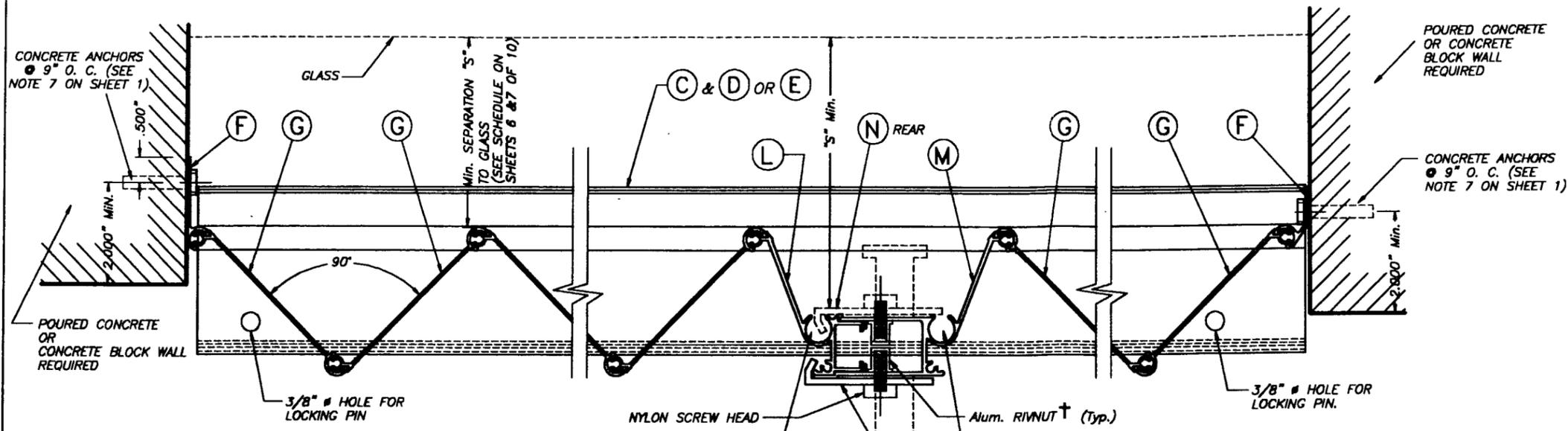
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PRODUCT RENEWED as complying with the Florida Building Code
Acceptance No 02-0404-01
Expiration Date 04/13/2007
By Helmy A. Mator
Miami Dade Product Control Division



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

 TILECO INC. TILLIT TESTING & ENGINEERING COMPANY 6385 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE
		MIAMI DADE ALUMINUM SUPPLY INC. MEMBERSHIP: #117 1615 WEST 31 PLACE HIALEAH, FLORIDA 33012	1/29/99 DATE
		99 - 22 DRAWING No	
		SHEET 4 OF 10	



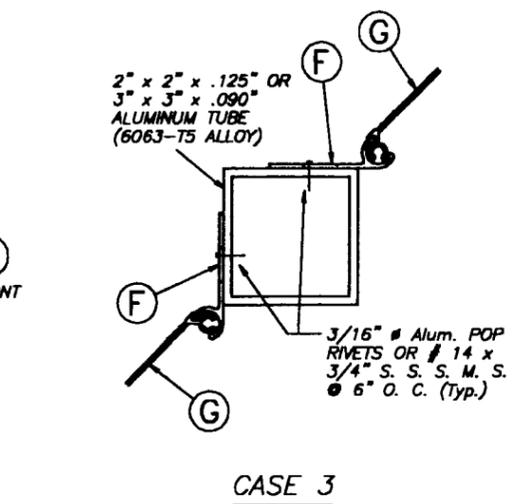
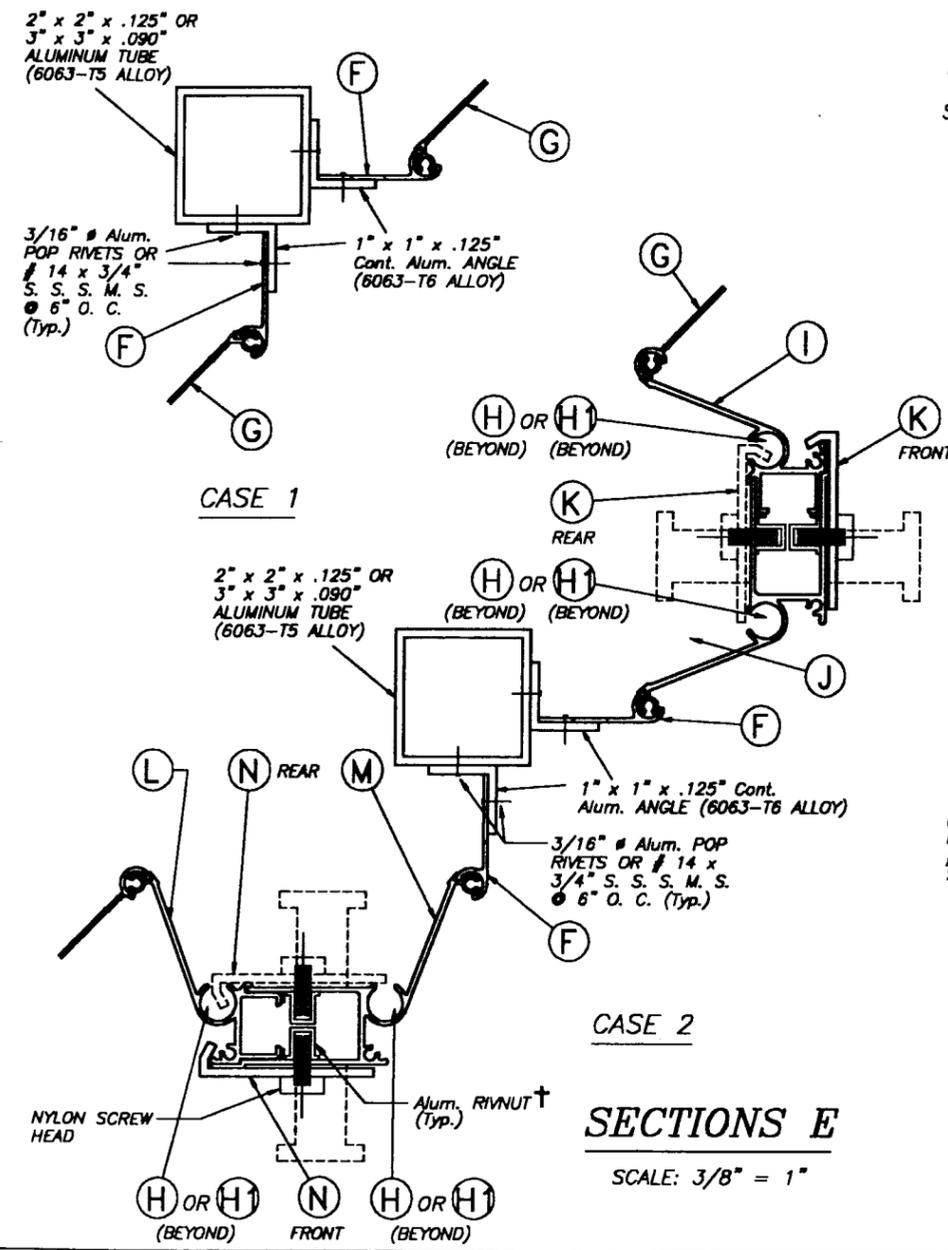
NOTES ON LOCKS : APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

* 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.

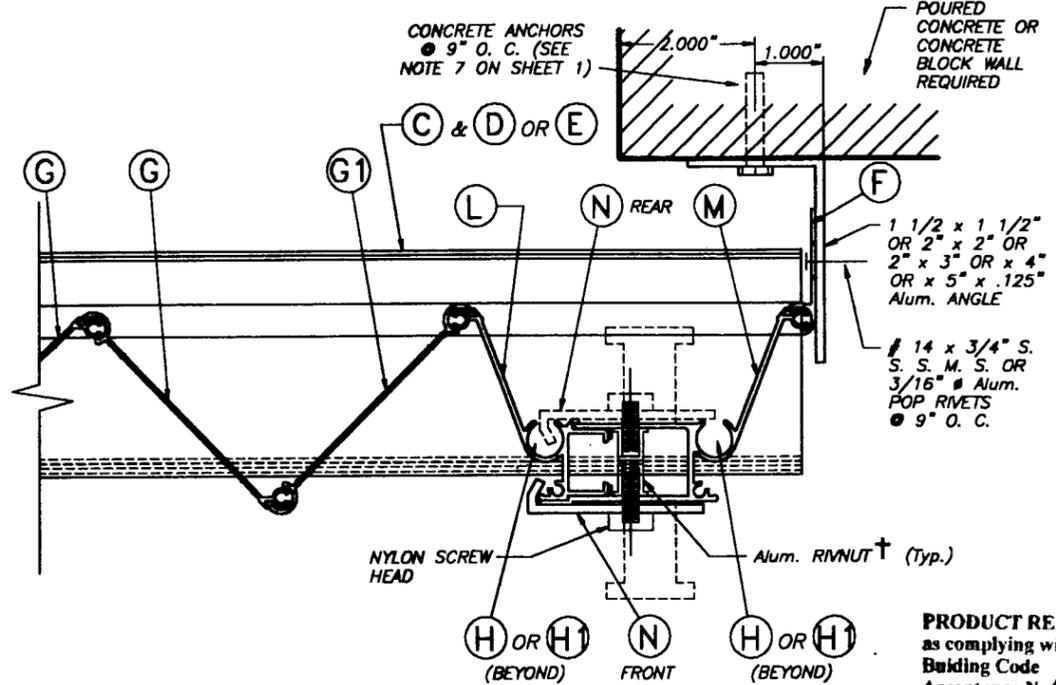
** FOR INSTALLATIONS AT ANY ELEVATION OF BUILDING AND IN ADDITION TO (N) LOCKERS, A REGULAR T LOCK MAY BE USED FOR SECURITY PURPOSES AT ANY DESIRED LOCATION OF CENTERMATE (INSIDE OR OUTSIDE). WHEN USED INSIDE, MINIMUM SEPARATION TO GLASS SHALL ALSO BE VERIFIED FROM THE TIP OF SUCH T LOCK OR FROM THE 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, PARSIPPANY, NEW JERSEY 07054 OR EQUAL.

SECTION D
SCALE: 3/8" = 1"



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



ONE SIDED SHUTTER : END CONNECTION DETAIL
SCALE: 3/8" = 1"

PRODUCT RENEWED as complying with the Florida Building Code Acceptance No. 02-0404-01 Expiration Date: 04/13/2007
By *Helmut A. Mader*
Miami Dade Product Control Division

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
DATE: APRIL 13, 1999
BY: *Helmut A. Mader*
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0212-02
DADE COUNTY

TILECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6505 N.W. 36th St., Ste. 217, WIRSWORTH GARDENS, FLORIDA 33168
Phone: (305)871-1530 Fax: (305)871-1531
WALTER A. TILLIT Jr., P. E.
FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER			AS SHOWN SCALE		
MIAMI DADE ALUMINUM SUPPLY INC.			1/29/99 DATE		
MEMBERSHIP: #117			99 - 22 DRAWING No		
1615 WEST 31 PLACE			SHEET 5 OF 10		
HIALEAH, FLORIDA 33012					
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	-	-	3	-	-
2	-	-	4	-	-

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

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

NOTE: DESIGN PRESSURE RATING CORRESPONDS ONLY TO NEGATIVE PRESSURE (SUCTION) LOADS, IN ACCORDANCE WITH ASCE 7-88 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 "S" 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 "S" 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'-9"	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 "S" 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 "S" 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 "S" TO BE MEASURED AS INDICATED ON SECTION D, SHEET 4 OF 10.

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

PRODUCT RENEWED
as complying with the Florida Building Code
Acceptance No. 02-0404.01
Expiration Date 04/13/2007
By Helmy A. Mela
Miami Dade Product Control Division

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
DATE APRIL 13 1999
BY Helmy A. Mela
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0212-02

Davies
1/29/99

* 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

DADE COUNTY

 TILECO INC. TILLIT TESTING & ENGINEERING COMPANY 6595 N.W. 30th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																		
	MIAMI DADE ALUMINUM SUPPLY INC. MEMBERSHIP: #117 1615 WEST 31 PLACE HIALEAH, FLORIDA 33012	1/29/99 DATE	99 - 22 DRAWING No																	
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	-	-	3	-	-															
2	-	-	4	-	-															

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 7-88 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 "S" 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 "S" 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"
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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"
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MAXIMUM DESIGN LOAD "W" (p.s.f.)	MAXIMUM SHUTTER SPAN "L" (ft.)	MINIMUM SEPARATION "S" TO GLASS (in.)	
		*	**
140.0	5'-6"	3 3/8"	3"
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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'-9"	3 3/8"	3"
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177.5	4'-4"	3 3/8"	3"
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TABLE 1:

MINIMUM SEPARATION "S" 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 "S" TO BE MEASURED AS INDICATED ON SECTION D, SHEET 4 OF 10.

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

PRODUCT RENEWED
as complying with the Florida Building Code
Acceptance No. 02-0410101
Expiration Date 07/13/2007
By Helmy A. Maki
Miami Dade Product Control Division

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
DATE APRIL 13 1999
BY Helmy A. Maki
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0212-02

[Signature]
1/29/99

DADE COUNTY

* 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

TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6385 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166
Phone: (305)871-1530 Fax: (305)871-1531
WALTER A. TILLIT Jr., P. E.
FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER				AS SHOWN SCALE
MIAMI DADE ALUMINUM SUPPLY INC. MEMBERSHIP: #117 1615 WEST 31 PLACE HIALEAH, FLORIDA 33012				1/29/99 DATE
				99 - 22 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION
1	-	-	3	
2	-	-	4	
				SHEET 7 OF 10

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

MAXIMUM DESIGN LOAD "W" (p.s.f.)	SECTIONS A, A1, C			SECTIONS A, A1, C			SECTIONS B, & B1		
	WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (TO CONCRETE)			WALL MOUNTING INSTALLATION AT TOP OR BOTTOM (TO MASONRY & CONCRETE)			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	12"	11"	9"	12"	8"	6 1/2"	12"	7"	5 1/2"
	12"	12"	12"	9 1/2"	5 1/2"	4 1/2"	12"	11"	9"
FROM 62.6 TO 75.0	12"	9"	8"	11 1/2"	8 1/2"	6"	10"	6"	5"
	12"	12"	11 1/2"	8"	4 1/2"	4"	12"	9"	8"
FROM 75.1 TO 92.5	12"	7"	7"	9"	5 1/2"	5 1/2"	8"	5"	-
	12"	10"	10"	6 1/2"	4"	4"	12"	7 1/2"	7 1/2"
FROM 92.6 TO 120.0	9 1/2"	7"	-	7"	5 1/2"	-	6"	5"	-
	12"	10"	-	5"	4"	-	9 1/2"	7 1/2"	-
FROM 120.1 TO 180.0	7"	7"	-	5 1/2"	5 1/2"	-	5"	5"	-
	10"	10"	-	4"	4"	-	7 1/2"	7 1/2"	-

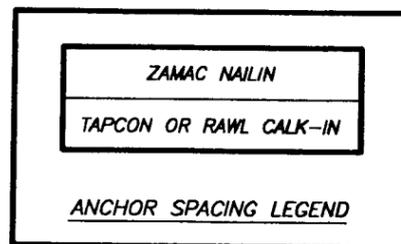
ANCHOR SPACING LEGEND

- (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 SHEETS 9 & 10 OF 10 FOR ANCHORS 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 RAWL CALK-IN IS 2 1/2").

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



PRODUCT RENEWED
as complying with the Florida Building Code
Acceptance No. 02-0464-01
Expiration Date: 04/13/2007
By *Helmy A. Mela*
Miami Dade Product Control Division

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
DATE APRIL 13 1999
BY *Helmy A. Mela*
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0212-02

David B.
4/29/99

DADE COUNTY

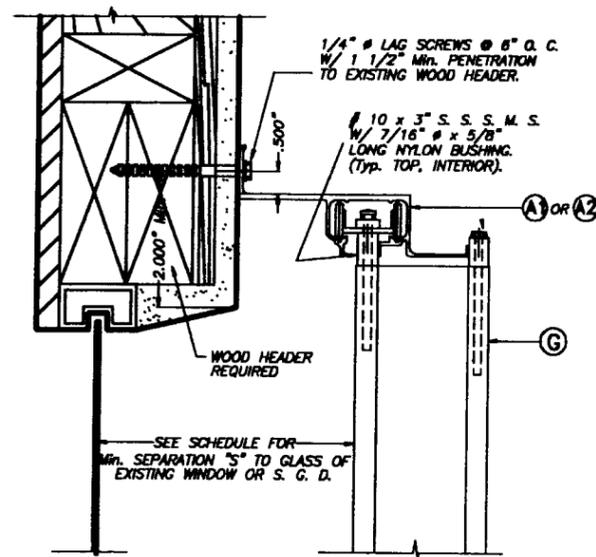
 TILTECO Inc. <small>TILLIT TESTING & ENGINEERING COMPANY 6590 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)971-1530 Fax: (305)971-1531</small> WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE
	MIAMI DADE ALUMINUM SUPPLY INC. <small>MEMBERSHIP: #117 1615 WEST 31 PLACE HIALEAH, FLORIDA 33012</small>	1/29/99 DATE
REV. No. DESCRIPTION DATE	REV. No. DESCRIPTION DATE	SHEET 8 OF 10
1 - - - 3	2 - - - 4	

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

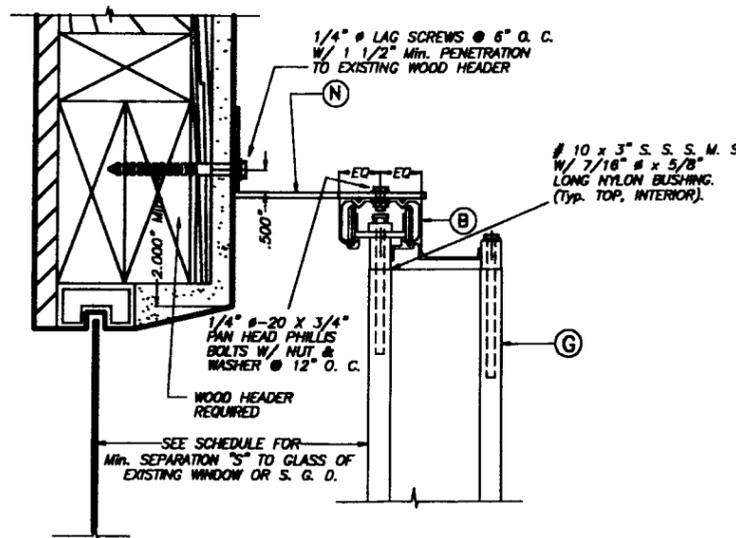
NOTES :

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

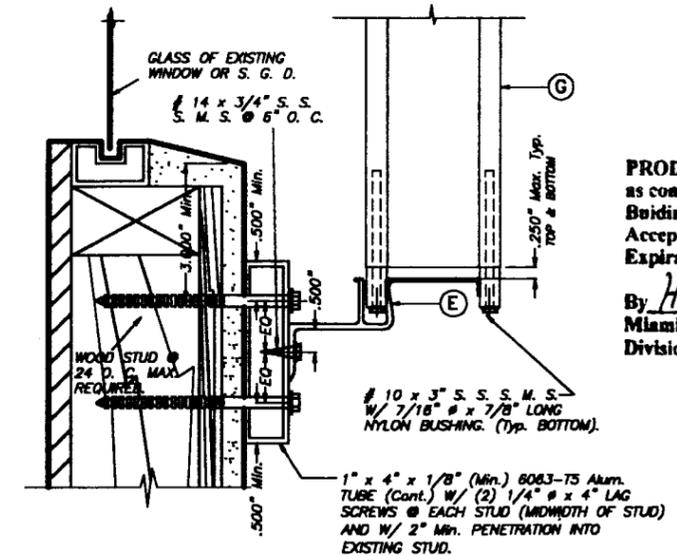
NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No. 02-0404-01
Expiration Date 04/13/2007
By *Helmy A. Matar*
Miami Dade Product Control
Division

WALL MOUNTING INSTALLATION - SECTIONS A

SCALE: 1/4" = 1"

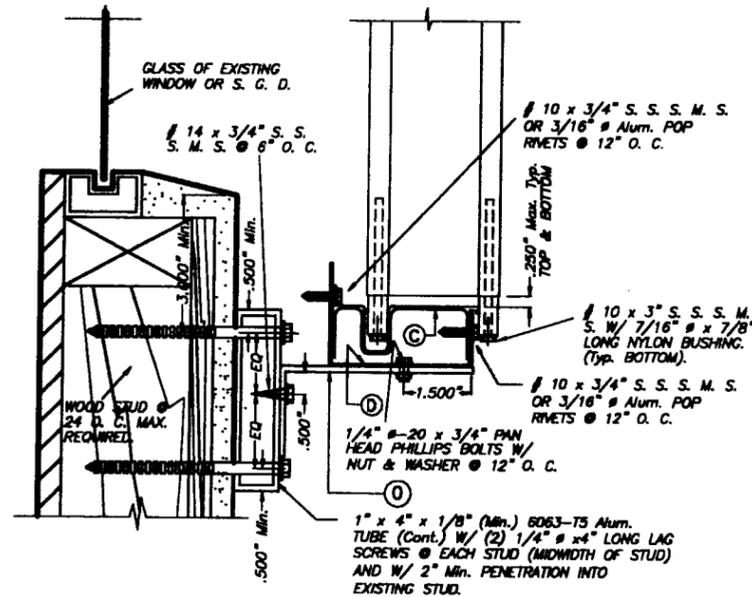
APPROVED AS COMPLYING WITH THE
SOUTH FLORIDA BUILDING CODE
DATE APRIL 13 1999
BY *Helmy A. Matar*
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0212-02

David B.
1/29/99

DADE COUNTY

 TILECO INC. <small>TILLIT TESTING & ENGINEERING COMPANY 6585 N.W. 36th St., Ste. 317, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531</small> WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE																	
	MIAMI DADE ALUMINUM SUPPLY INC. <small>MEMBERSHIP: #117 1615 WEST 31 PLACE HIALEAH, FLORIDA 33012</small>	1/29/99 DATE																	
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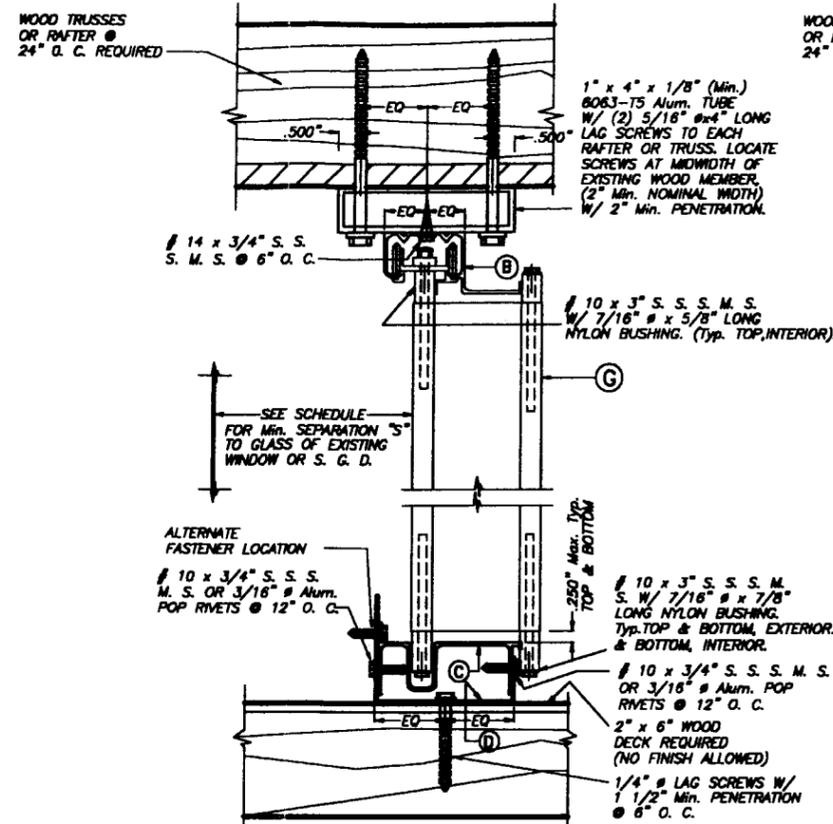
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS



ALTERNATIVE 4

WALL MOUNTING INSTALLATION - SECTION A

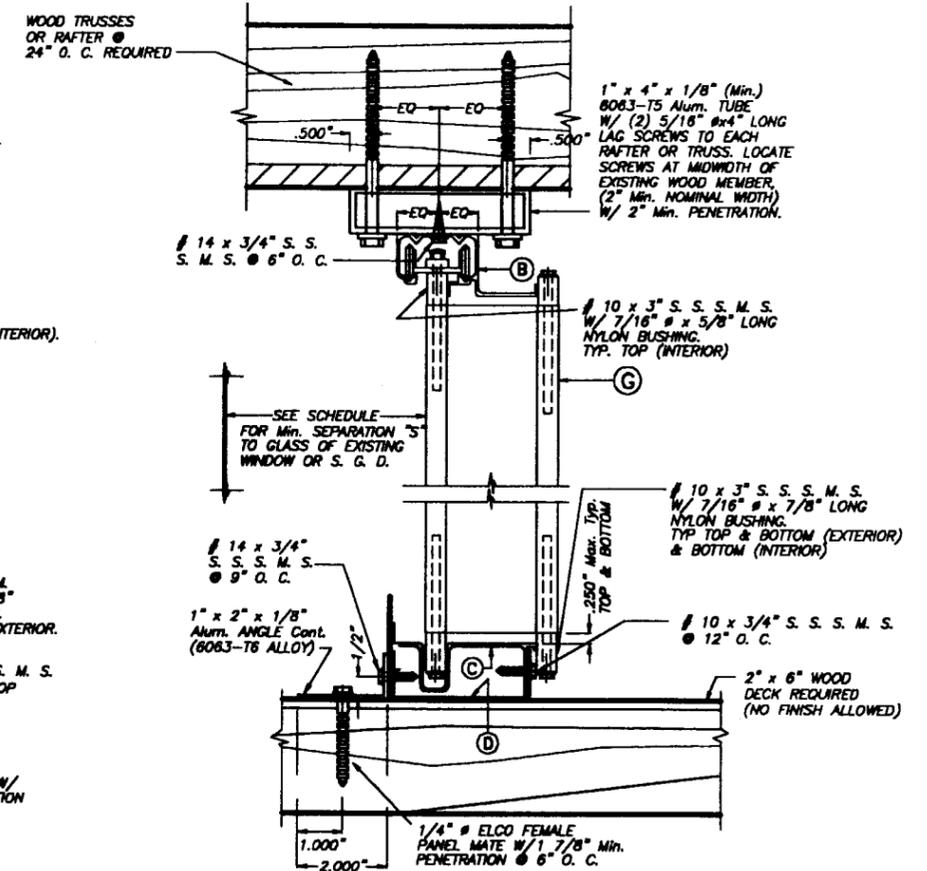
SCALE: 1/4" = 1"



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 :

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

PRODUCT RENEWED as complying with the Florida Building Code
 Acceptance No. 02-0404-01
 Expiration Date 04/13/2007
 By *Helmy A. Makar*
 Miami Dade Product Control Division

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
 DATE APRIL 13 1999
 BY *Helmy A. Makar*
 PRODUCT CONTROL DIVISION
 BUILDING CODE COMPLIANCE OFFICE
 ACCEPTANCE NO. 99-0212-02

[Signature]
 1/29/99

DADE COUNTY

TILECO INC.
 TILLIT TESTING & ENGINEERING COMPANY
 6585 N.W. 36th St., Ste. 217, WINGHAM GARDENS, FLORIDA 33168
 Phone: (305)871-1530 Fax: (305)871-1531
 WALTER A. TILLIT Jr., P. E.
 FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE	
MIAMI DADE ALUMINUM SUPPLY INC. MEMBERSHIP: #117 1615 WEST 31 PLACE HIALEAH, FLORIDA 33012		1/29/99 DATE	
		99 - 22 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No
1	-	-	3
2	-	-	4
		SHEET 10 OF 10	