



**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)

**Bend Master, Inc.
1461 S.W. 12th Avenue (#D)
Pompano Beach, Florida 33069**

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. 02-036, titled "ASSA/Residential Bertha Accordion Shutter", sheets 1 through 10 of 10, prepared by Tilteco, Inc., dated February 14, 2002, bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

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

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

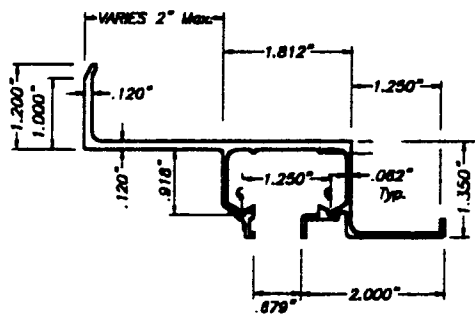
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

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

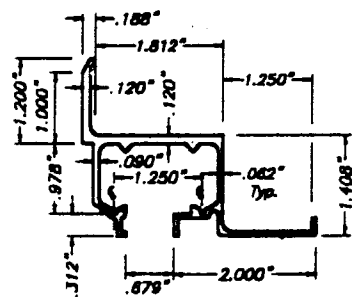
This NOA consists of this page 1 as well as approval document mentioned above.
The submitted documentation was reviewed by **Helmy A. Makar, P.E.**



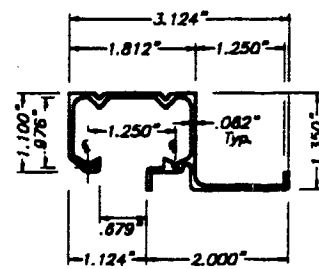
**NOA No 02-0313.07
Expiration Date: 04/19/2007
Approval Date: 04/19/2002
Page 1**



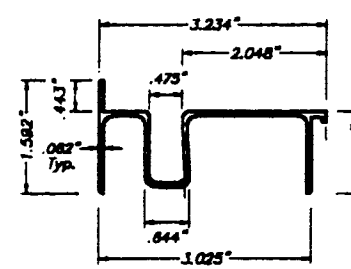
(A1) WALL HEADERS
(A1) WALL HEADERS (INVERTED USE)
SCALE: 3/8" = 1"



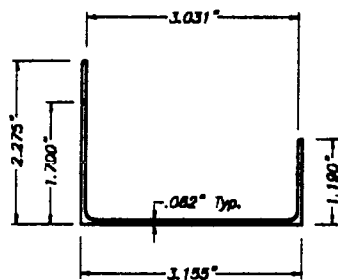
(A2) WALL HEADER
(A2) WALL HEADER (INVERTED USE)
SCALE: 3/8" = 1"



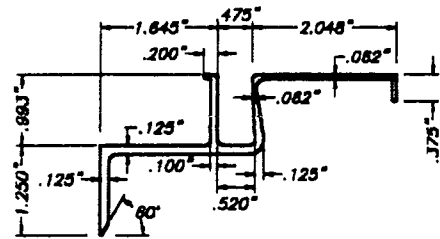
(B) CEILING HEADER
SCALE: 3/8" = 1"



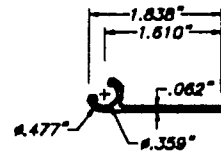
(C) SILL
SCALE: 3/8" = 1"



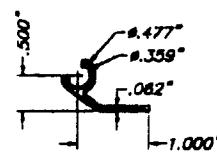
(D) SILL ADAPTER
SCALE: 3/8" = 1"



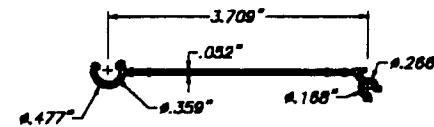
(E) BOTTOM BUILT-OUT
SCALE: 3/8" = 1"



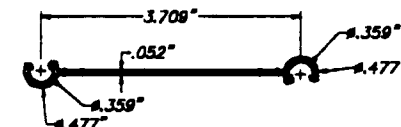
(F) FEMALE END SLAT
SCALE: 3/8" = 1"



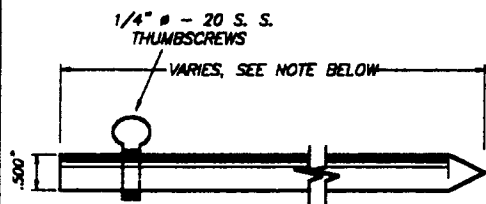
(F1) STARTER STRIP
SCALE: 3/8" = 1"



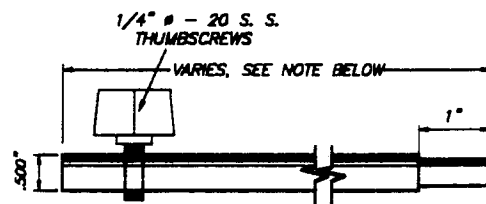
(G) RESIDENTIAL BLADE
SCALE: 3/8" = 1"



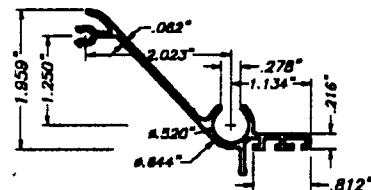
(G1) FEMALE RESIDENTIAL BLADE
SCALE: 3/8" = 1"



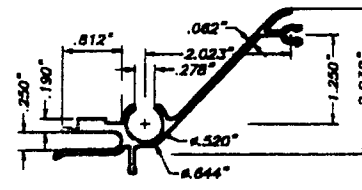
(H) LOCKING PIN
SCALE: 3/8" = 1"



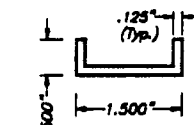
(H1) ALTERNATE LOCKING PIN
SCALE: 3/8" = 1"



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

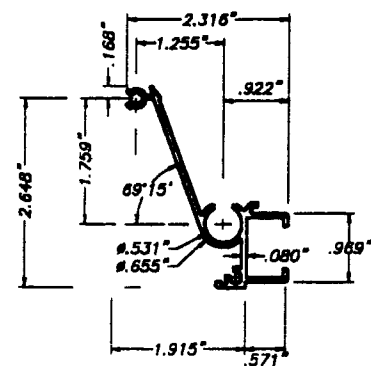


(J) FEMALE LOCK SLAT
SCALE: 3/8" = 1"

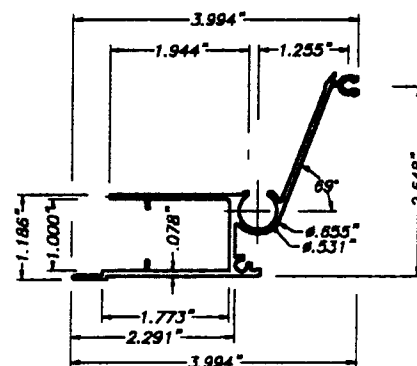


(K) LOCK CLIP
4" LONG
SCALE: 3/8" = 1"

8" Min. FOR UP TO 9'-0" SHUTTER BLADE LENGTHS,
12" Min. FOR SHUTTER BLADE LENGTHS GREATER THAN
9'-0" UP TO 12'-0".

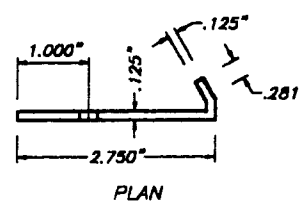


(L) MALE LOCK SLAT
SCALE: 3/8" = 1"

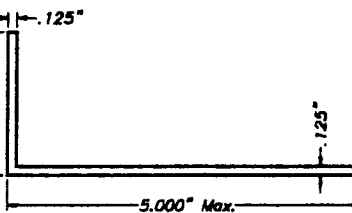
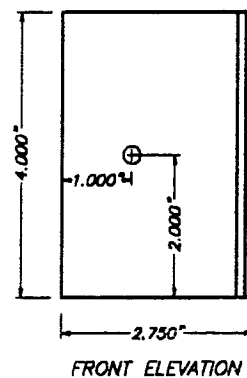


(M) FEMALE LOCK SLAT
SCALE: 3/8" = 1"

COMPONENTS



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



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

GENERAL NOTES:

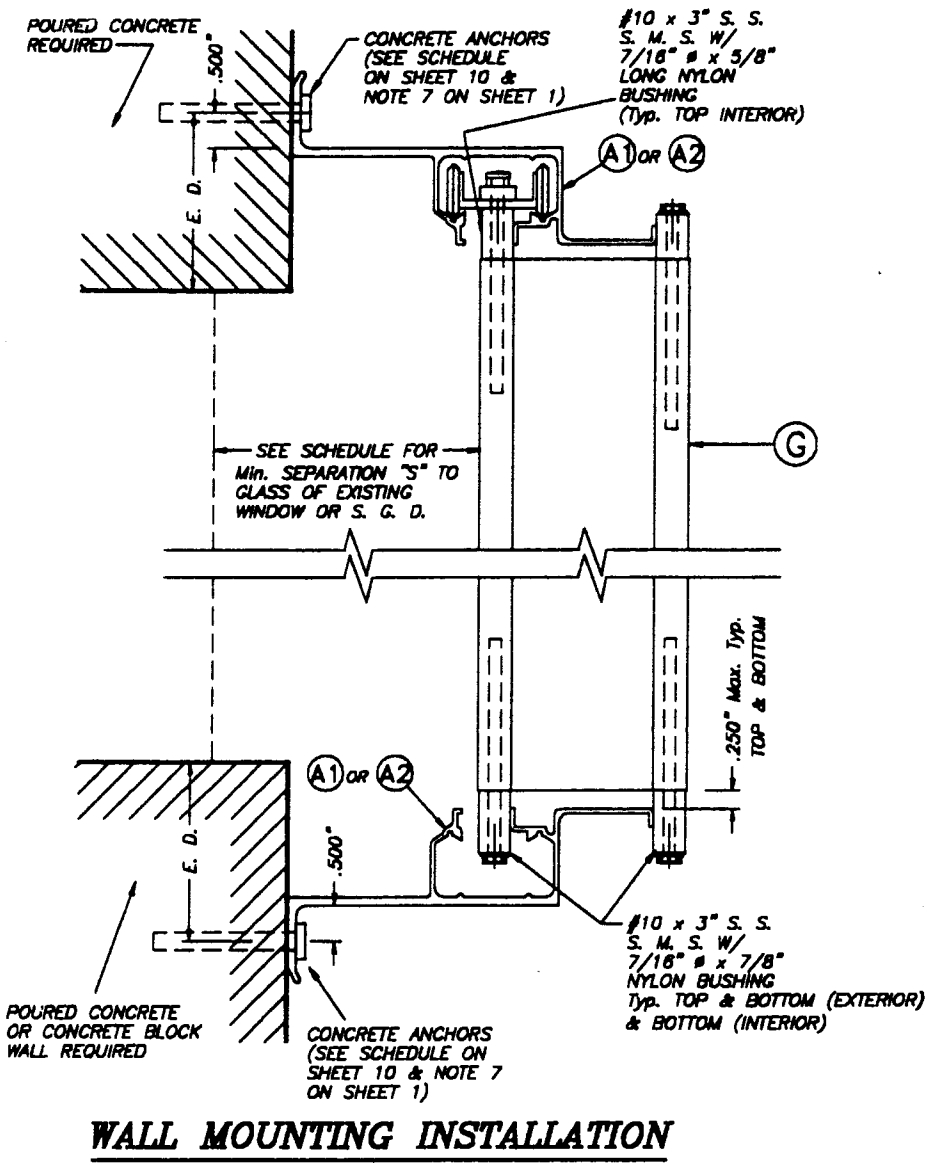
- ACCORDION SHUTTER'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED AS PER ATL REPORT # 0902.01-98.
- STAINLESS STEEL SHEET METAL SCREWS USED AT LOUVER PIN SHALL BE # 10 x 3", 410-HT MINIMUM SERIES W/ 133.0 ksi YIELD POINT & 180 ksi TENSILE STRENGTH. SCREWS SHALL BE COATED WITH XYLAM 5000 SERIES FLUOROPOLYMER COATINGS AS MANUFACTURED BY WHITFORD Co. BOX 507, WEST CHESTER PA. 19381.
- ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T8 ALLOY.
- ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 SERIES W/ 50 ksi YIELD POINT AND 90 ksi TENSILE STRENGTH.
- ALL ALUMINUM POP RIVETS TO BE 5052 ALUMINUM ALLOY WITH ALUMINUM MANDREL.
- BOLTS TO BE 2024-T4 ALUMINUM ALLOY GALVANIZED OR STAINLESS STEEL WITH 35 ksi MINIMUM YIELD POINT.
- ANCHORS TO WALL SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
 - (A) TO EXISTING POURED CONCRETE:
 - 1/4" # TAPCON ANCHORS, AS MANUFACTURED BY L.T.W. RAMSET OR ELCO INDUSTRIES, INC.
 - 1/4" # RAWL ZAMAC NAIL 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 NAIL 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, PRECAST CONCRETE PANELS, OR PAVERS 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 L.T.W. RAMSET OR ELCO INDUSTRIES, INC.
 - 1/4" # RAWL ZAMAC NAIL ANCHORS AS MANUFACTURED BY 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 NAIL 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.
- BLADE (G), AND THE KNUCKLES FOR CENTERMATES (L), (M), (I) & (J), & THE STARTERS (F) & (F1) ARE UNDER THE PATENT OF EASTERN METALS.
- 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.
- 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.
- SHUTTER'S MANUFACTURER STAMP SHALL BE PLACED ON THE EXPOSED SURFACE OF THE FEMALE LOCK SLAT (COMPONENT (M) OR (L)) ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS: BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS POMPANO BEACH, FL. MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

Approved as complying with the
Florida Building Code
Date: 04/19/2002
NOA#02-0313-01
Miami Dade Product Control
Division
By: *Walter A. Tillit Jr.*

MIAMI-DADE COUNTY

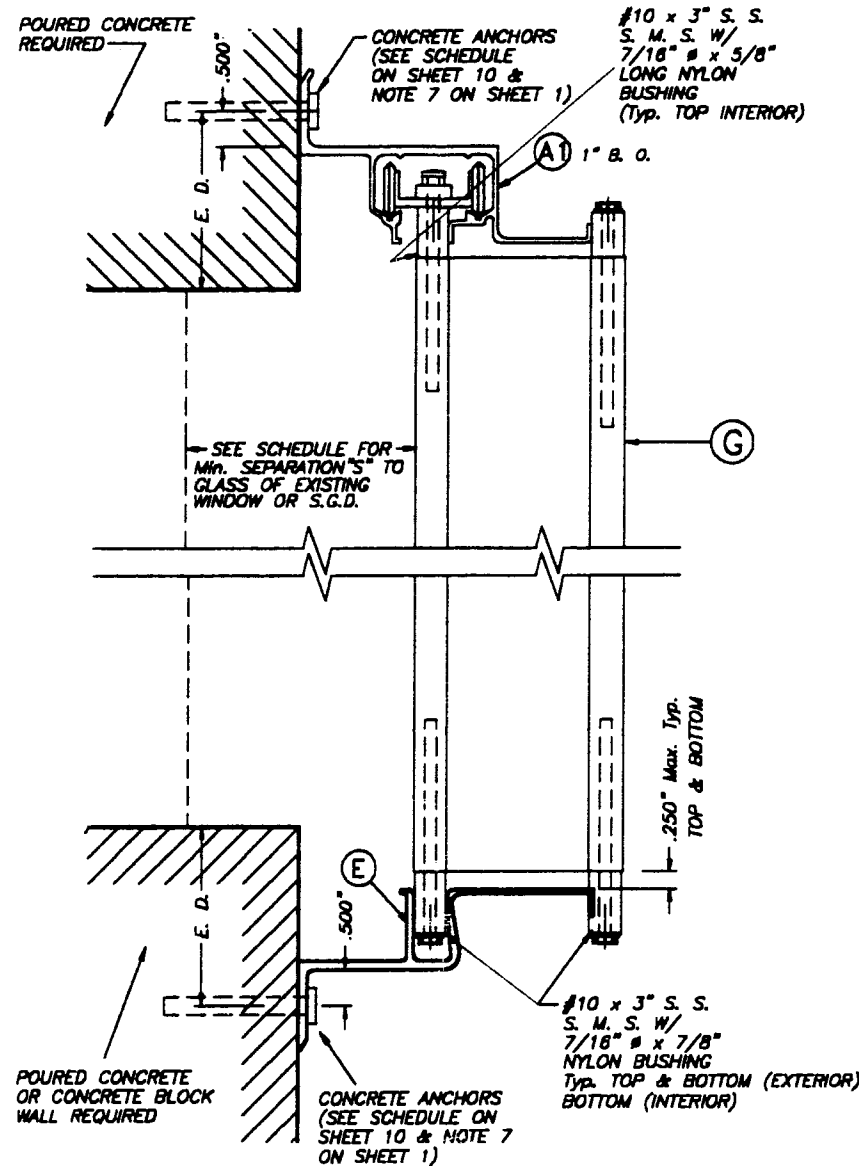
TILECO inc.
TILLIT TESTING & ENGINEERING COMPANY
6500 N.W. 39th St., Ste. 217, WIRIDIAN GARDENS, FLORIDA 33166
Phone: (305) 971-1530 Fax: (305) 971-1531
EB-0006719
WALTER A. TILLIT JR., P. E.
FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE	
BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259) 1461 S.W. 12 AVE. # D POMPANO BEACH, FL 33089		2/14/02 DATE	
		02-036 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No
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2	-	-	4
		SHEET 1 OF 10	



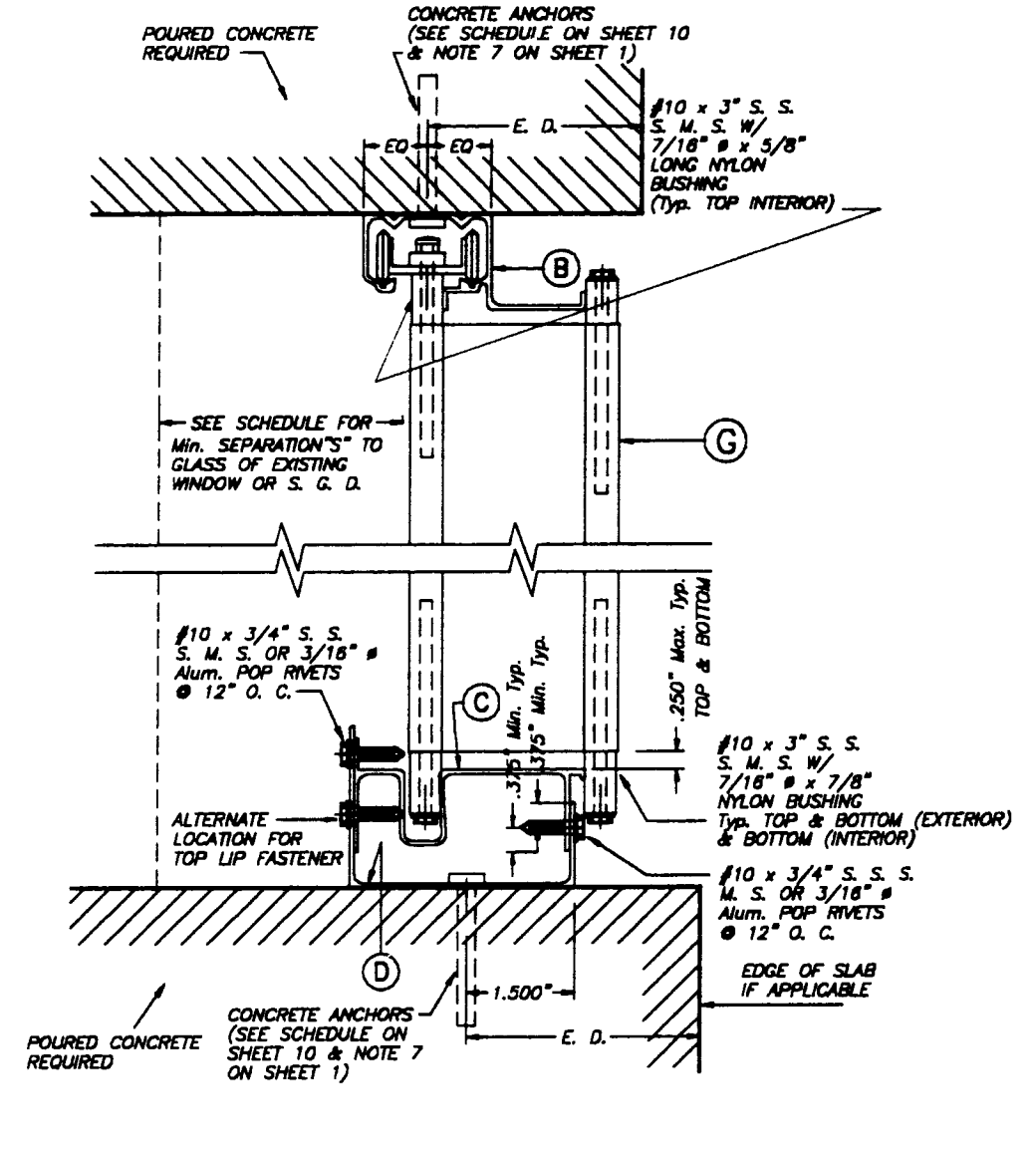
WALL MOUNTING INSTALLATION

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



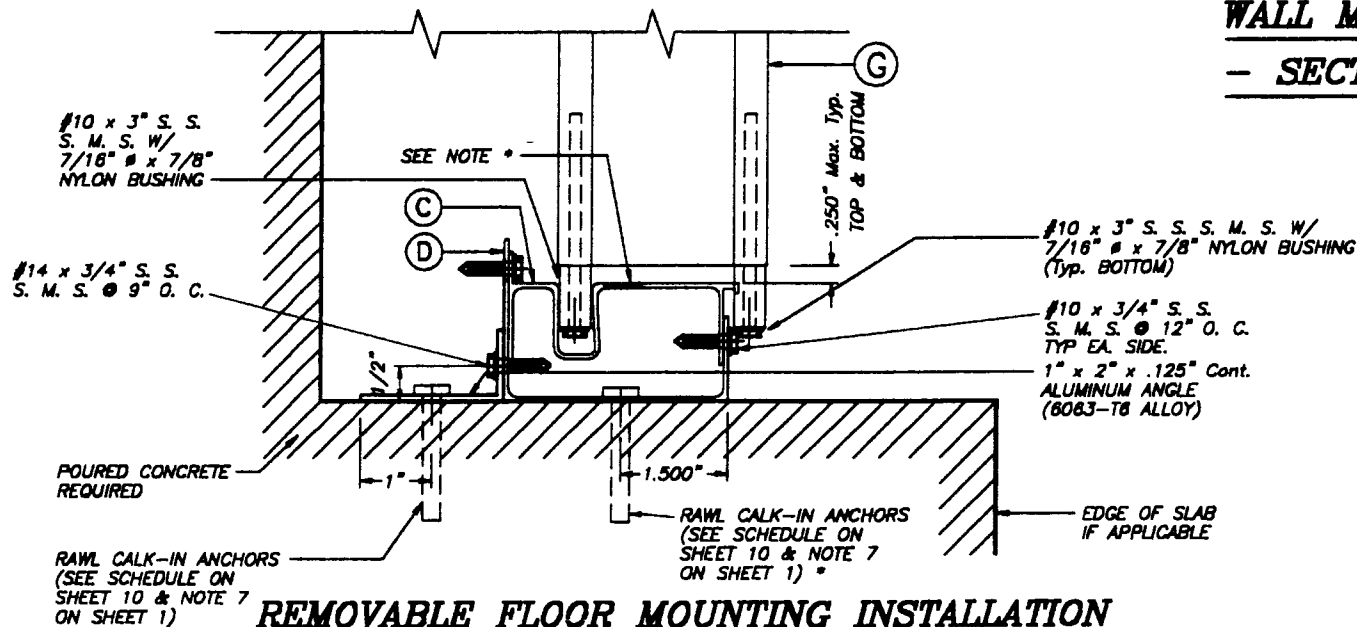
WALL MOUNTING INSTALLATION

- 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.

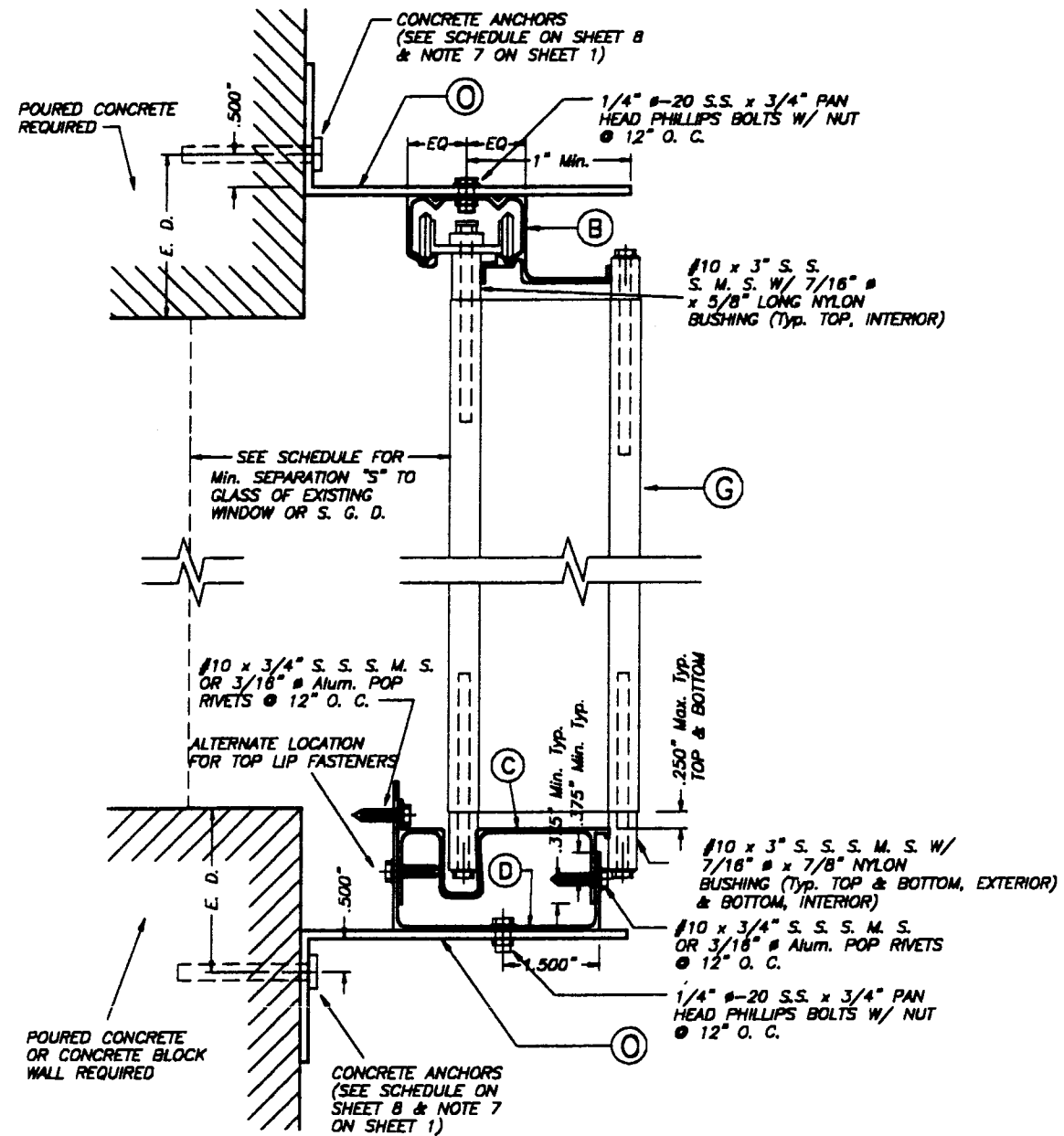
Approved as complying with the
Florida Building Code
Date 04/19/2002
NOA# 02-0313.07
Miami Dade Product Control
Division
By *Hebing A. Mader*

MIAMI-DADE COUNTY

Walter A. Tillit Jr.
2/14/02

TILECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6586 N.W. 36th St., Ste. 217, WYOMING GARDENS, FLORIDA 33166
Phone : (305) 971-1530 Fax : (305) 971-1531
EB-0008719
WALTER A. TILLIT JR., P. E.
FLORIDA Lic. # 44167

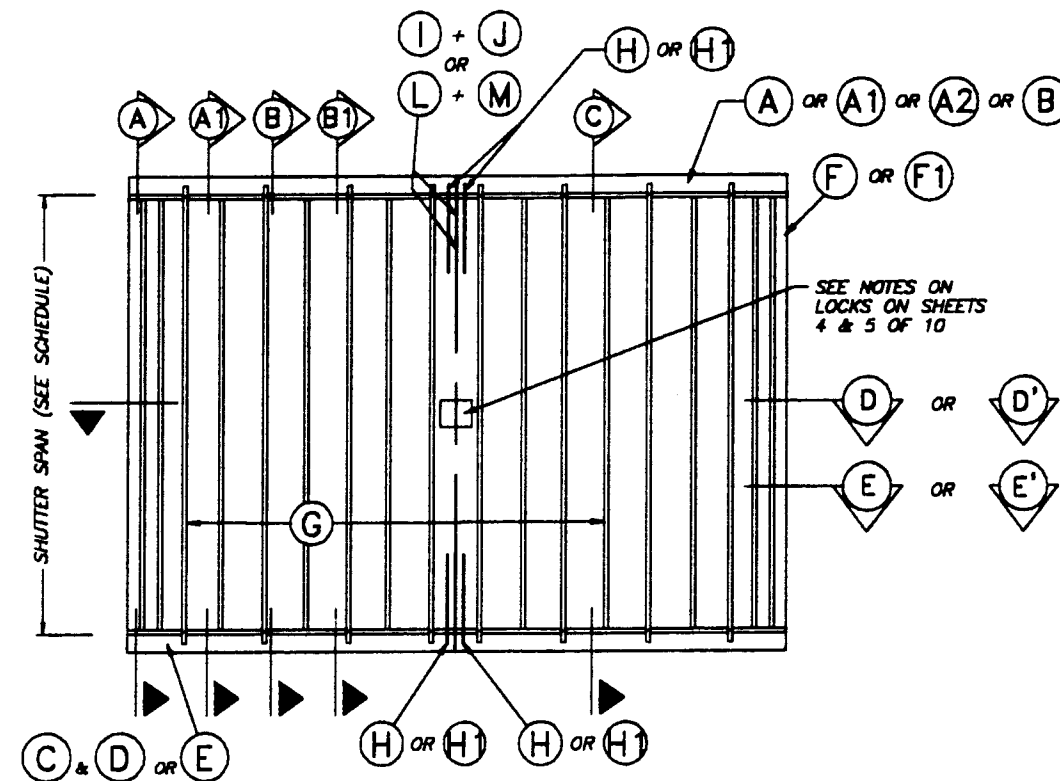
ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER			AS SHOWN SCALE		
BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259) 1481 S.W. 12 AVE. # D POMPANO BEACH, FL 33089			2/14/02 DATE		
			02-036 DRAWING No		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	-	-	2	-	-
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WALL MOUNTING INSTALLATION (BUILD-OUT)

SECTION C

SCALE : 3/8" = 1'



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

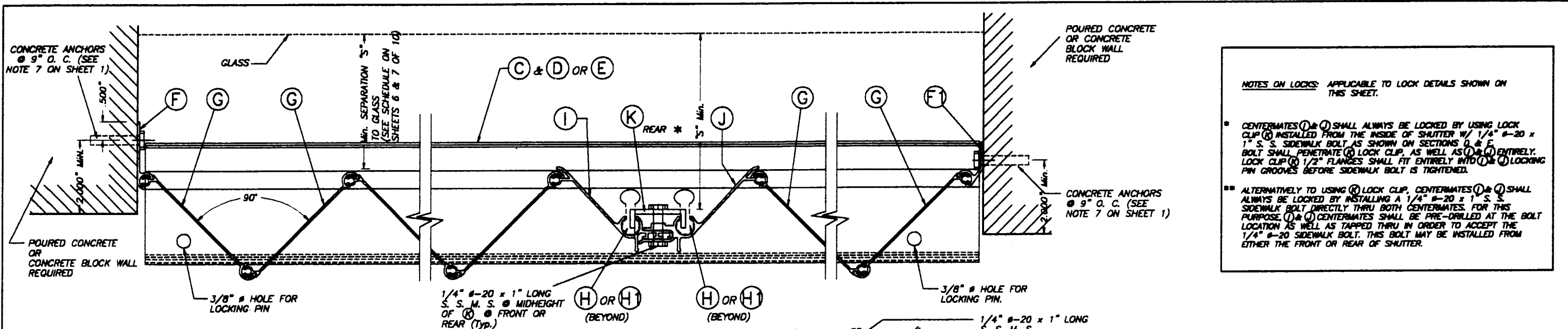
NOTE FOR COMBINATION OF SECTIONS :
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

Approved as complying with
Florida Building Code
Date 04/19/2002
NOA# 02-0313.01
Miami Dade Product Control
Division
By *Heung A. Makar*

MIAMI-DADE COUNTY

Walter A. Tillit Jr.

<p>TILTECO Inc. TILLIT TESTING & ENGINEERING COMPANY 8806 N.W. 36th St., Ste. 217, WINDY GARDENS, FLORIDA 33166 Phone : (305)871-1330 • Fax : (305)871-1331 EB-0008719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44187</p>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE																	
	BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259) 1481 S.W. 12 AVE. # D POMPANO BEACH, FL. 33069		2/14/02 DATE																	
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			SHEET 3 OF 10																	

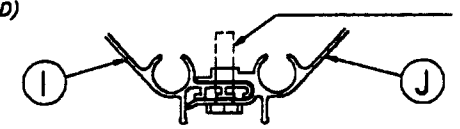


NOTES ON LOCKS: APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

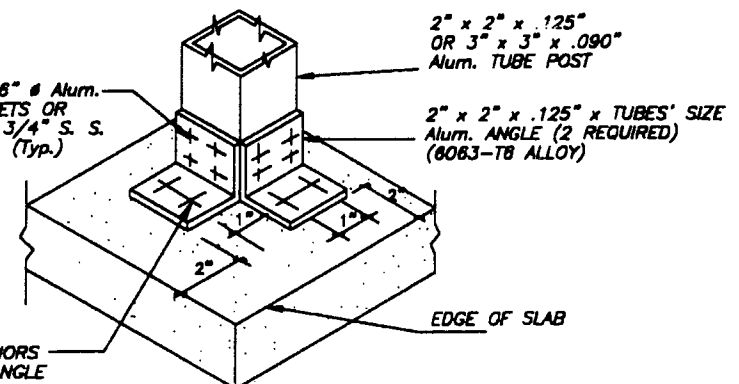
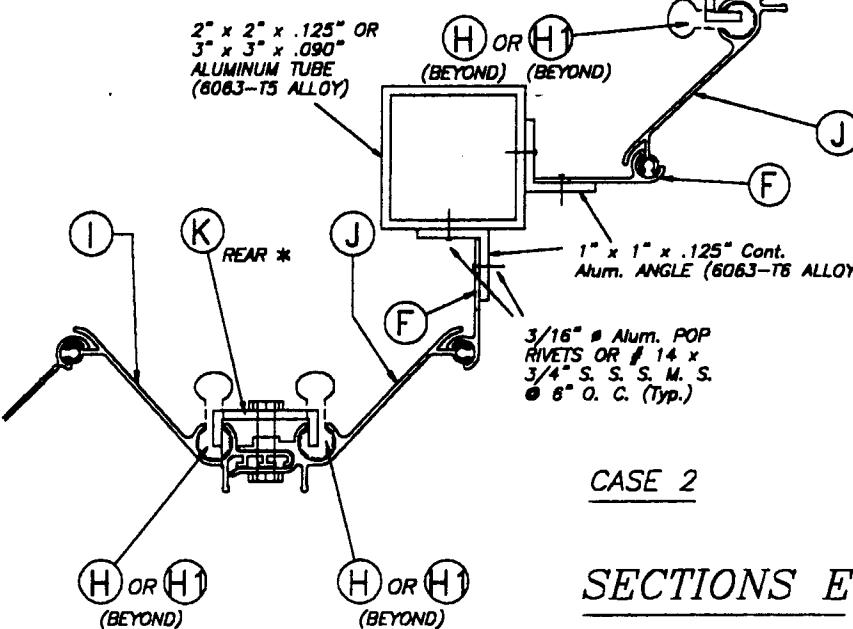
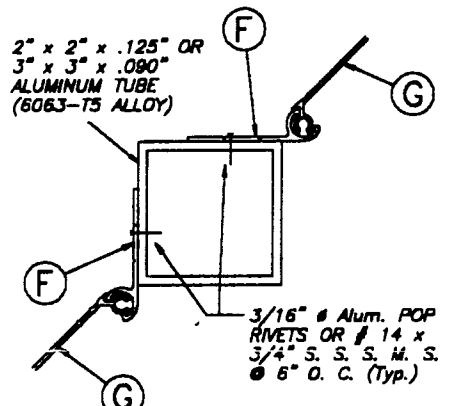
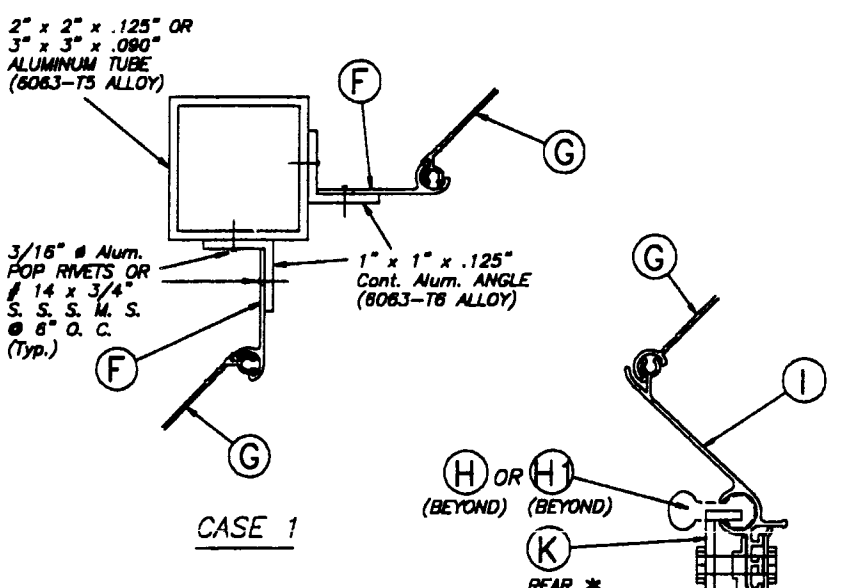
• CENTERMATES (I) & (J) SHALL ALWAYS BE LOCKED BY USING LOCK CLIP (K) INSTALLED FROM THE INSIDE OF SHUTTER W/ 1/4" #20 x 1" S. S. SIDEWALK BOLT AS SHOWN ON SECTIONS D & F. BOLT SHALL PENETRATE (K) LOCK CLIP, AS WELL AS (I) & (J) ENTIRELY. LOCK CLIP (K) 1/2" FLANGES SHALL FIT ENTIRELY INTO (I) & (J) LOCKING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



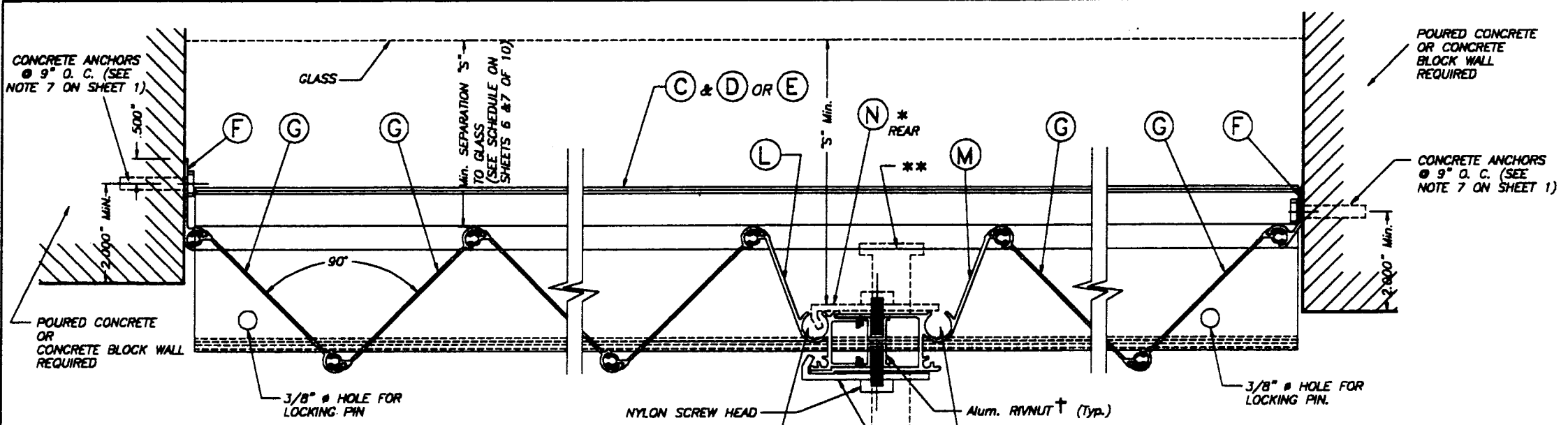
SECTION D' : ONE SIDED SHUTTER
END CONNECTION DETAIL

SCALE: 3/8" = 1"

Approved as complying with the Florida Building Code
Date 04/19/2002
NOA# 02-0313-07
Miami Dade Product Control
Division
By *Heung H. Mak*

MIAMI-DADE COUNTY

<p>TILLIT TESTING & ENGINEERING COMPANY 8608 N.W. 38th St., Ste. 217, WINDHAM GARDENS, FLORIDA 33169 Phone: (305) 871-1630 Fax: (305) 871-1531 EB-0008719 WALTER A. TILLIT JR., P. E. FLORIDA Lic. # 44187</p>		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE	
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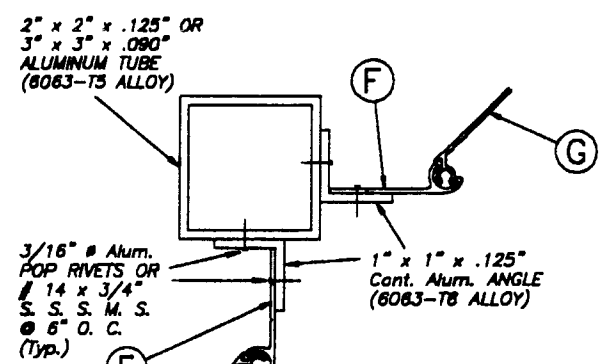
NOTES ON LOCKS : APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

* 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.

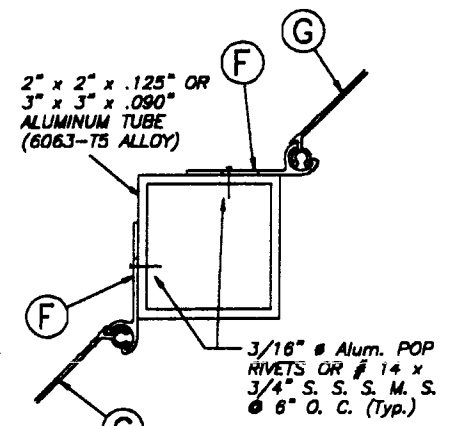
** FOR INSTALLATIONS AT ANY ELEVATION OF BUILDING AND IN ADDITION TO (N) LOCKERS, A REGULAR T LOCK MAY BE USED FOR SECURITY PURPOSES AT ANY DESIRED LOCATION OF CENTERMATE (INSIDE OR OUTSIDE). WHEN USED INSIDE, MINIMUM SEPARATION TO GLASS SHALL ALSO BE VERIFIED FROM THE TIP OF SUCH T LOCK OR FROM THE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

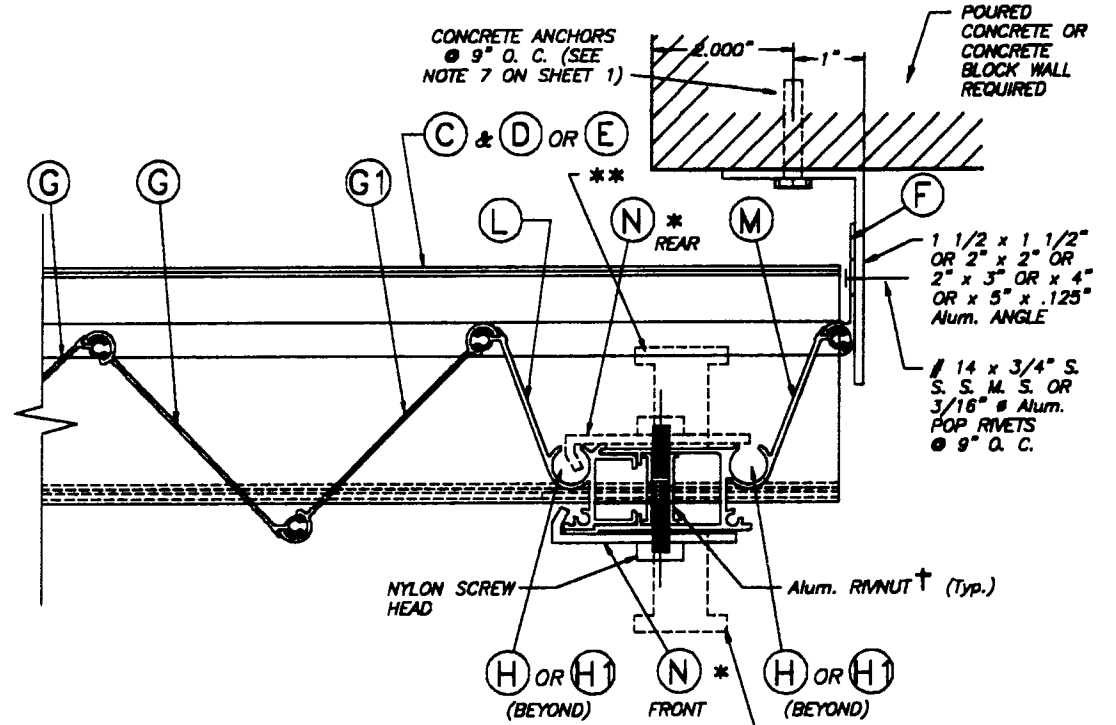
SECTION D
SCALE: 3/8" = 1"



CASE 1

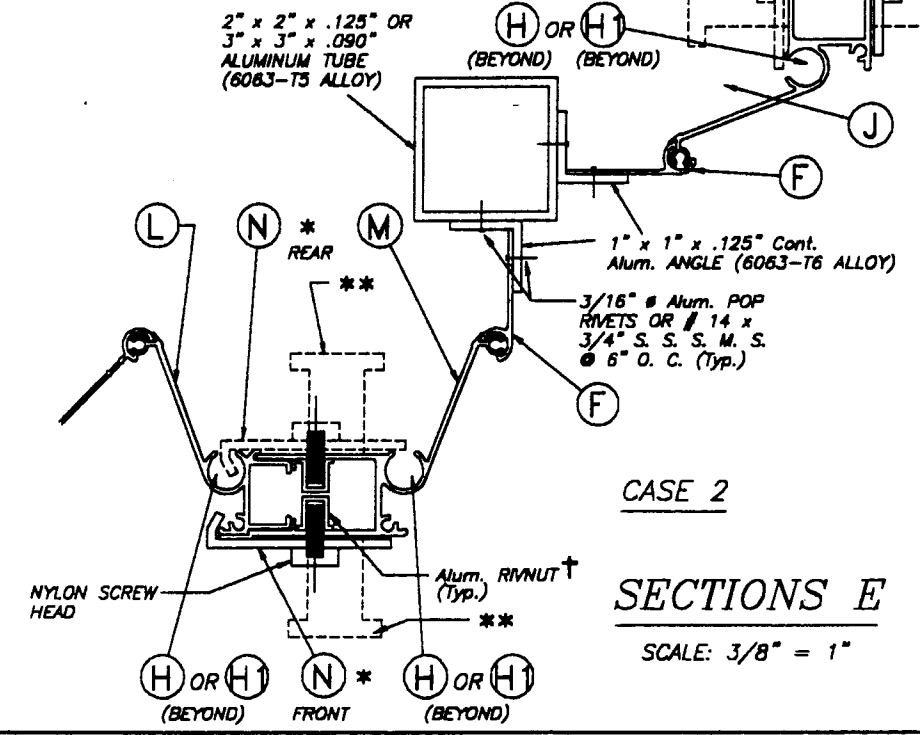


CASE 3



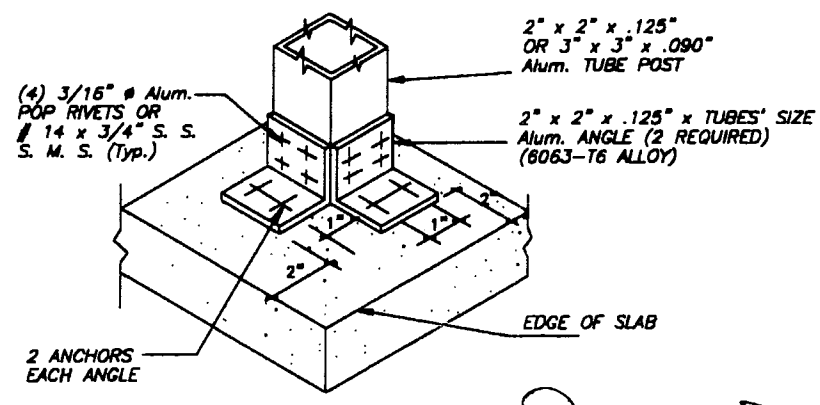
**ONE SIDED SHUTTER :
END CONNECTION DETAIL**
SCALE: 3/8" = 1"

Approved as complying with the Florida Building Code
Date: 04/19/2002
NOA#02-0213-07
Miami Dade Product Control Division
By: *Heather A. Miller*



CASE 2

SECTIONS E
SCALE: 3/8" = 1"



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

TILECO inc.
TILLIT TESTING & ENGINEERING COMPANY
6586 N.W. 30th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33169
Phone: (305)871-1530 Fax: (305)871-1531
EB-0008719
WALTER A. TILLIT JR., P. E.
FLORIDA Lic. # 44167

ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER						AS SHOWN SCALE
BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259)						2/14/02 DATE
1461 S.W. 12 AVE. # D POMPANO BEACH, FL 33069						02-036 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	SHEET 5 OF 10
1	-	-	2	-	-	
2	-	-	4	-	-	

MIAMI-DADE COUNTY

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 7-95 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'-8"	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 "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"

* 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

Walter A. Tillit Jr.

Approved as complying with the Florida Building Code
 Date 04/19/2002
 NOA# 02-0513-07
 Miami Dade Product Control Division
 By Heather A. Miller

MIAMI-DADE COUNTY

 TILIT TESTING & ENGINEERING COMPANY 8595 N.W. 36th St., Ste. 217, HIRSHHORN GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531 EB-0008719 WALTER A. TILLIT JR., P. E. FLORIDA Lic. # 44187	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE
	BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259) 1481 S.W. 12 AVE. # D POMPANO BEACH, FL 33069	2/14/02 DATE
	02-036 DRAWING No	
		SHEET 8 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 7-95 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'-8"	3 7/8"	3"
92.5	8'-5"	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"
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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'-9"	3 3/8"	3"
135.0	5'-8"	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.)	
		•	∞
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175.0	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"

• 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

Walter A. Tillit Jr.
Walter A. Tillit Jr.

Approved as complying with the Florida Building Code
Date: 04/19/2002
NOA# 02-0313.07
Miami Dade Product Control Division
By: *Heung A. Hester*

MIAMI-DADE COUNTY

 TILECO Inc. TILLIT TESTING & ENGINEERING COMPANY 6588 N.W. 30th St., Ste. 217, WIRHAM GARDENS, FLORIDA 33169 Phone: (305)871-1530 Fax: (305)871-1531 EB-0008719 WALTER A. TILLIT JR., P. E. FLORIDA Lic. # 44167	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259) 1481 S.W. 12 AVE. # D POMPANO BEACH, FL 33069	AS SHOWN SCALE 2/14/02 DATE 02-036 DRAWING No SHEET 7 OF 10																		
	<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>-</td> <td>-</td> <td>3</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	-	-	3	-	-	2	-	-	4	-	-	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE															
1	-	-	3	-	-															
2	-	-	4	-	-															

**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 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"	8"	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"	-	8"	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 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	-

ZAMAC NAILIN


TAPCON OR RAWL CALK-IN

ANCHOR SPACING LEGEND

Approved as complying with the
Florida Building Code
Date 04/19/2002
NOA# 02-0313-07
Miami Dade Product Control
Division
By Heather A. Miller

MIAMI-DADE COUNTY

Walter A. Tillit Jr.
2/14/02

 TILECO Inc. <small>TILLIT TESTING & ENGINEERING COMPANY 6886 N.W. 30th St., Ste. 217, WYOMING GARDENS, FLORIDA 33166 Phone: (305)871-1830 Fax: (305)871-1831 EB-0008719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44187</small>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE
	BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS <small>(ASSA # 259) 1481 S.W. 12 AVE. # D POMPANO BEACH, FL. 33069</small>	2/14/02 DATE
	02-036 DRAWING No	
		SHEET 8 OF 10

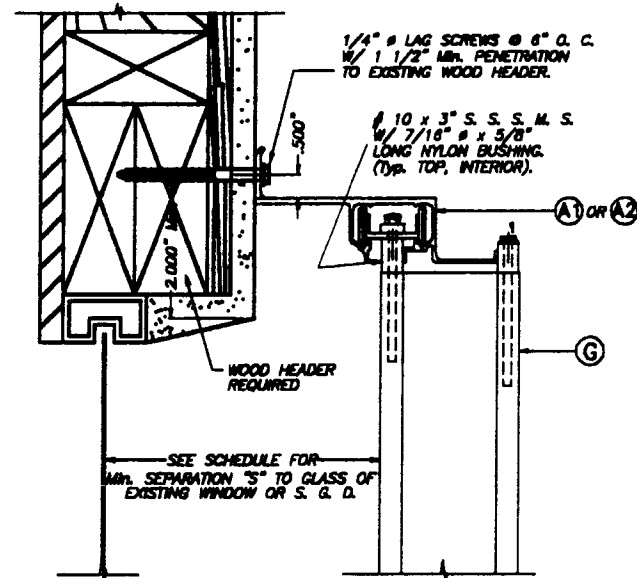
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

NOTES :

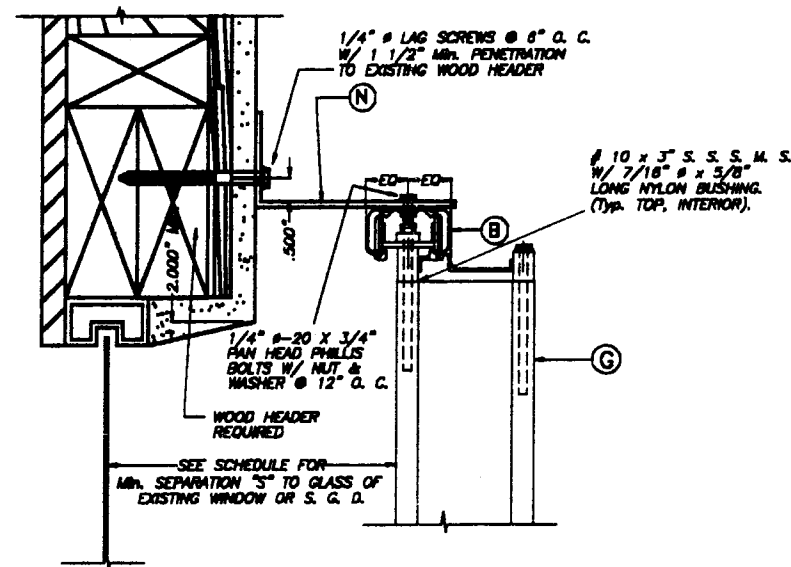
1. INSTALLATIONS ARE ONLY VALID FOR INSTALLATIONS WITH DESIGN WIND LOADS LESS OR EQUAL THAN 75 p.s.f. AND 9'-0" Max. SHUTTER SPAN.
2. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

NOTE FOR COMBINATION OF SECTIONS :

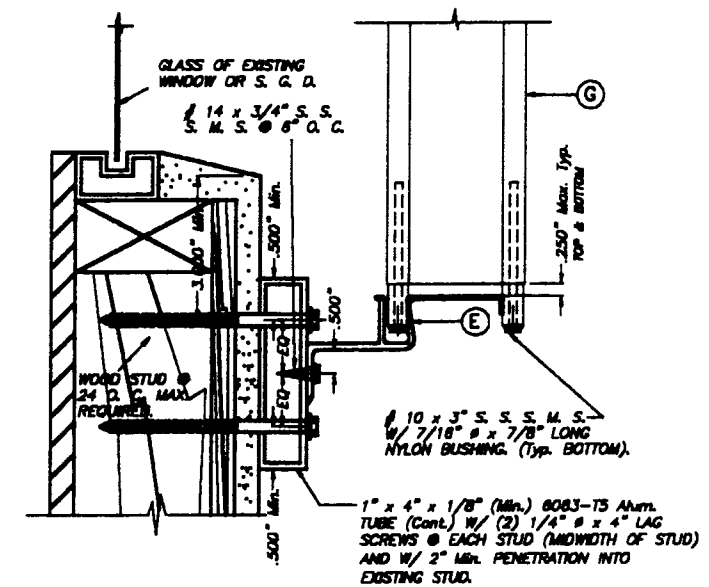
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3

WALL MOUNTING INSTALLATION - SECTIONS A

SCALE: 1/4" = 1"

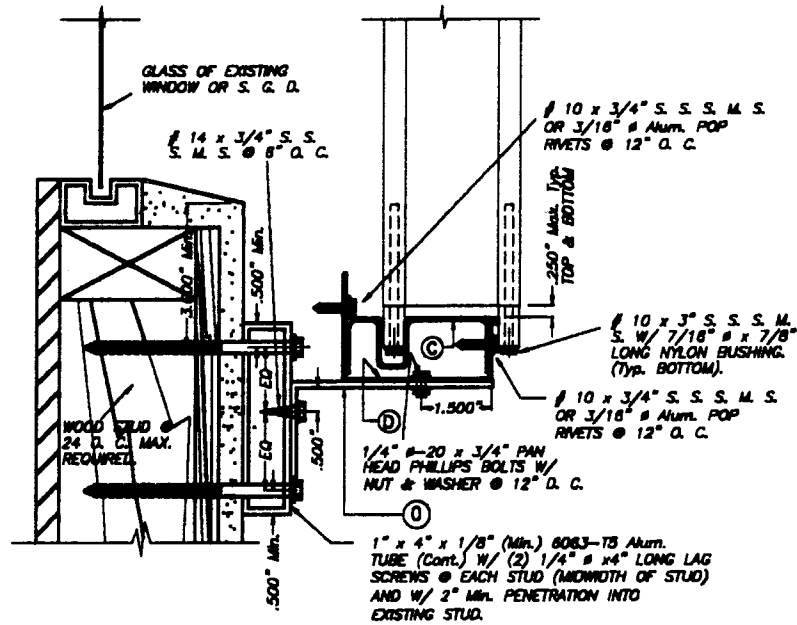
Approved as complying with the
Florida Building Code
Date 04/19/2002
NOA 02-0313-07
Miami Dade Product Control
Division
By *Walter A. Tillit Jr.*

MIAMI-DADE COUNTY

Walter A. Tillit Jr.

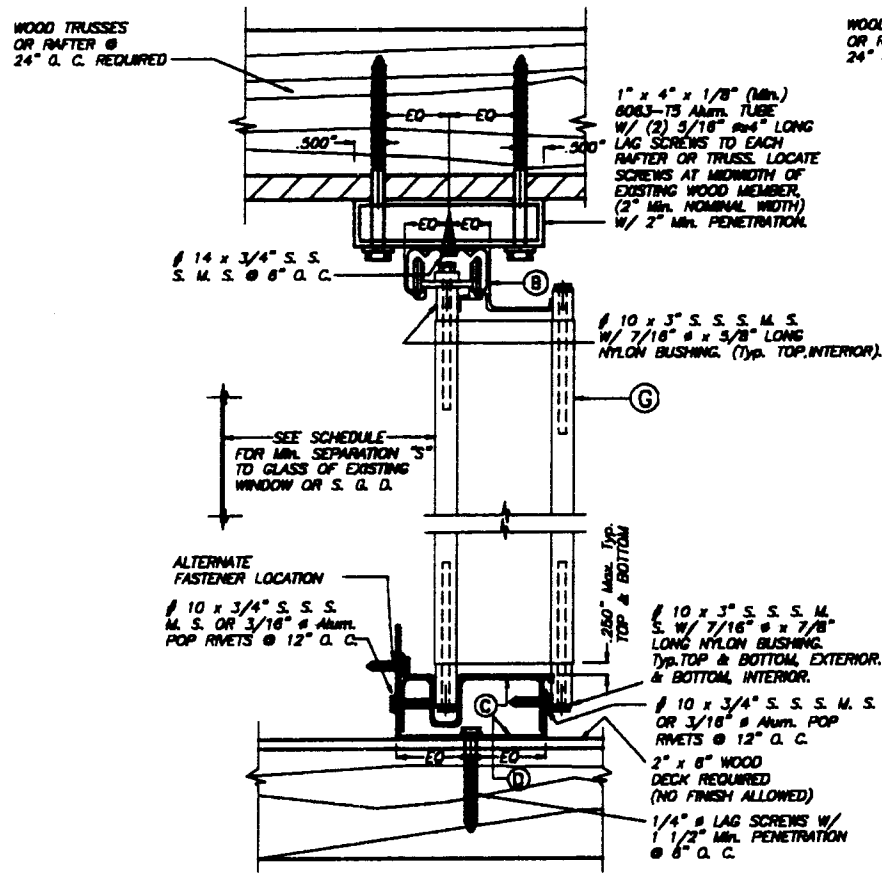
 TILTECO Inc. <small>TILLIT TESTING & ENGINEERING COMPANY 6596 N.W. 30th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531 EB-0008719 WALTER A. TILLIT JR., P. E. FLORIDA Lic. # 44167</small>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE
	BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS <small>(ASSA # 259) 1461 S.W. 12 AVE. # D POMPANO BEACH, FL 33069</small>	2/14/02 DATE
	<small>REV. No DESCRIPTION DATE REV. No DESCRIPTION DATE</small> 1 - - - 2 - - - 3 - - - 4 - - -	02-036 DRAWING No SHEET 9 OF 10

INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS



ALTERNATIVE 5

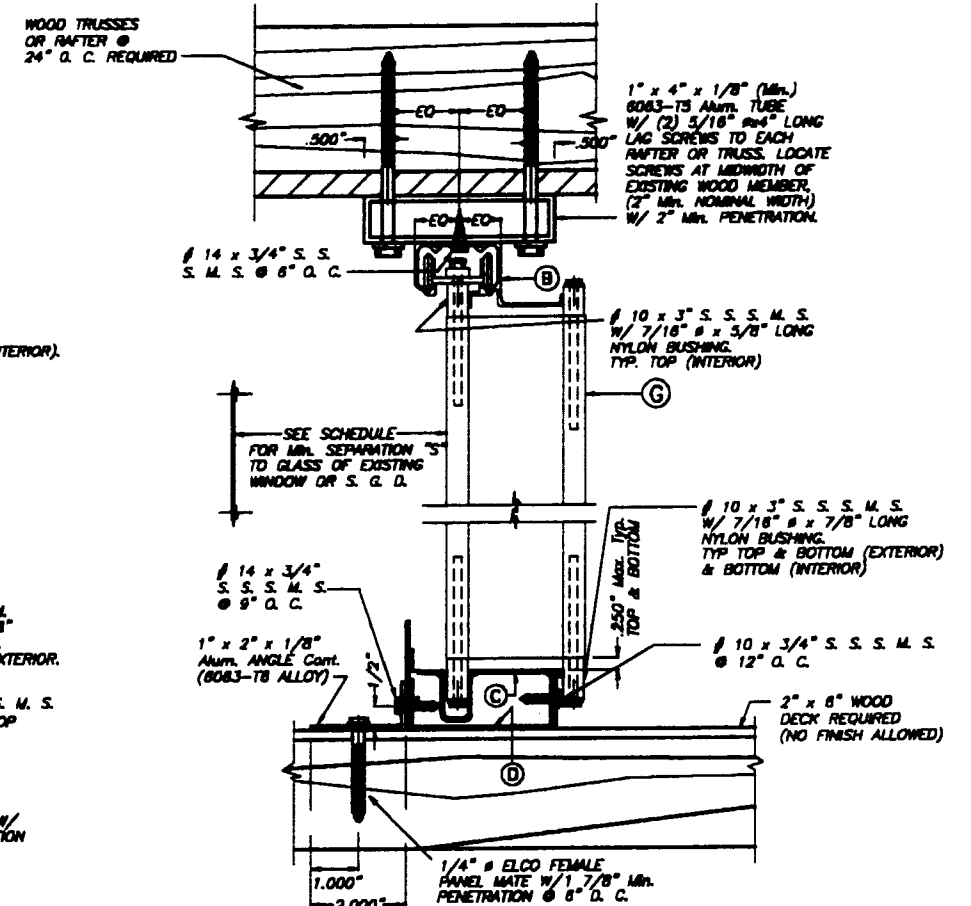
SCALE 1/4" = 1"



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 :

- 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.

Approved as complying with the Florida Building Code
Date 04/19/2002
NOA#02-0313-07
Miami Dade Product Control Division
By *Heung A. ...*

MIAMI-DADE COUNTY

David J.
2/19/02

<p>TILLIT TESTING & ENGINEERING COMPANY 8508 N.W. 36th St., Ste. 217, WINDY GARDENS, FLORIDA 33168 Phone : (305)871-1530 . Fax : (305)871-1531 EB-0008719 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</p>		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER			AS SHOWN SCALE
		BEND MASTER, INC. D/B/A APPLIGATE SHUTTERS (ASSA # 259) 1481 S.W. 12 AVE. # D POMPANO BEACH, FL 33069			2/14/02 DATE
					02-036 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	-	-	2	-	-
2	-	-	4	-	-
					SHEET 10 OF 10