



**BUILDING CODE COMPLIANCE OFFICE**  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908

**CONTRACTOR LICENSING SECTION**  
(305) 375-2527 FAX (305) 375-2558

**CONTRACTOR ENFORCEMENT DIVISION**  
(305) 375-2966 FAX (305) 375-2908

**PRODUCT CONTROL DIVISION**  
(305) 375-2902 FAX (305) 372-6339

**PRODUCT CONTROL NOTICE OF ACCEPTANCE**

**Metal Shield Corporation**  
**2139 University Dr., Ste #302**  
**Coral Springs ,FL 33071**

Your application for Notice of Acceptance (NOA) of:

**ASSA/Residential Accordion Shutter**

under Chapter 8 of the Code of Miami-Dade County governing the use of Alternate Materials and Types of Construction, and completely described herein, has been recommended for acceptance by the Miami-Dade County Building Code Compliance Office (BCCO) under the conditions specified herein.

This NOA shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at any time from a jobsite or manufacturer's plant for quality control testing. If this product or material fails to perform in the approved manner, BCCO may revoke, modify, or suspend the use of such product or material immediately. BCCO reserves the right to revoke this approval, if it is determined by BCCO that this product or material fails to meet the requirements of the South Florida Building Code.

The expense of such testing will be incurred by the manufacturer.

Raul Rodriguez  
Chief Product Control Division

**ACCEPTANCE NO.: 00-0621.02**  
**EXPIRES: 08/17/2003**

**THIS IS THE COVERSHEET, SEE ADDITIONAL PAGES FOR SPECIFIC AND GENERAL**  
**CONDITIONS**  
**BUILDING CODE & PRODUCT REVIEW COMMITTEE**

This application for Product Approval has been reviewed by the BCCO and approved by the Building Code and Product Review Committee to be used in Miami-Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.  
Director  
Miami-Dade County  
Building Code Compliance Office

**APPROVED: 08/17/2000**

**Metal Shield**

ACCEPTANCE No. : 00-0621.02

APPROVED : AUG 17 2000

EXPIRES : AUG 17 2003

**NOTICE OF ACCEPTANCE: SPECIFIC CONDITIONS**

**1. SCOPE**

This approves an Aluminum Extruded "Residential Bertha" Accordion Shutter, as described in Section 2 of this Notice of Acceptance, designed to comply with the South Florida Building Code, 1994 Edition for Miami-Dade County, for the locations where the pressure requirements, as determined by SFBC Chapter 23, do not exceed the Design Pressure Rating values indicated in the approved drawings.

**2. PRODUCT DESCRIPTION**

This Aluminum Extruded "Residential Bertha" Accordion Shutter and its components shall be constructed in strict compliance with the following documents: Drawing No. 00-221, titled "ASSA / Residential Bertha Accordion Shutter", prepared by Tilteco Inc., dated June 9, 2000, sheets 1 through 10 of 10, 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. These documents shall hereinafter be referred to as the approved drawings.

**3. LIMITATIONS**

All permanent set components, included but not limited to embedded anchor bolts, threaded cones, metal shields, headers and sills, must be protected against corrosion, contamination and damage at all times.

**4. INSTALLATION**

This Aluminum Extruded "Residential Bertha" Accordion Shutter and its components shall be installed in strict compliance with the approved drawings.

**5. 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".

**6. BUILDING PERMIT REQUIREMENTS**

**6.1** Application for building permit shall be accompanied by copies of the following:

**6.1.1** This Notice of Acceptance.

**6.1.2** Duplicate copies of the approved drawings, as identified in Section 2 of this Notice of Acceptance, clearly marked to show the components selected for the proposed installation.

**6.1.3** Any other documents required by the Building Official or the South Florida Building Code (SFBC) in order to properly evaluate the installation of this system.



Helmy A. Makar, P.E.- Product Control Examiner  
Product Control Division

**Metal Shield**

ACCEPTANCE No. : 00-0621.02

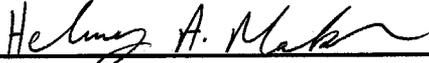
APPROVED : AUG 17 2000

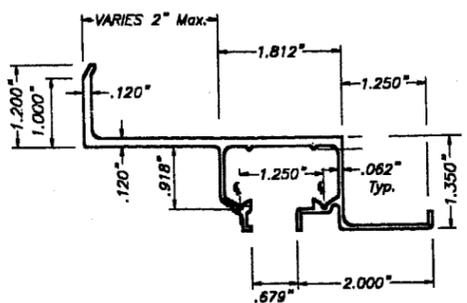
EXPIRES : AUG 17 2003

**NOTICE OF ACCEPTANCE: STANDARD CONDITIONS**

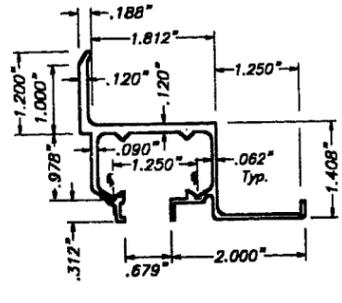
1. Renewal of this Acceptance (approval) shall be considered after a renewal application has been filed and the original submitted documents, including test-supporting data, engineering documents, are no older than eight (8) years.
2. Any and all approved products shall be permanently labeled with the manufacturer's name, city, state, and the following statement: "Miami-Dade County Product Control Approved", or as specifically stated in the specific conditions of this Acceptance.
3. Renewals of Acceptance will not be considered if:
  - a. There has been a change in the South Florida Building Code affecting the evaluation of this product and the product is not in compliance with the code changes.
  - b. The product is no longer the same product (identical) as the one originally approved.
  - c. If the Acceptance holder has not complied with all the requirements of this acceptance, including the correct installation of the product.
  - d. The engineer, who originally prepared, signed and sealed the required documentation initially submitted, is no longer practicing the engineering profession.
4. Any revision or change in the materials, use, and/or manufacture of the product or process shall automatically be cause for termination of this Acceptance, unless prior written approval has been requested (through the filing of a revision application with appropriate fee) and granted by this office.
5. Any of the following shall also be grounds for removal of this Acceptance:
  - a. Unsatisfactory performance of this product or process.
  - b. Misuse of this Acceptance as an endorsement of any product, for sales, advertising or any other purposes.
6. The Notice of Acceptance 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 Notice of Acceptance is displayed, then it shall be done in its entirety.
7. A copy of this Acceptance as well as approved drawings and other documents, where it applies, shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at all time. The engineer needs not reseal the copies.
8. Failure to comply with any section of this Acceptance shall be cause for termination and removal of Acceptance.
9. This Notice of Acceptance consists of pages 1, 2 and this last page 3.

**END OF THIS ACCEPTANCE**

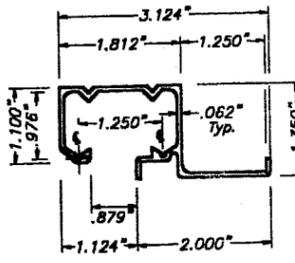
  
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Helmy A. Makar, P.E.- Product Control Examiner  
Product Control Division



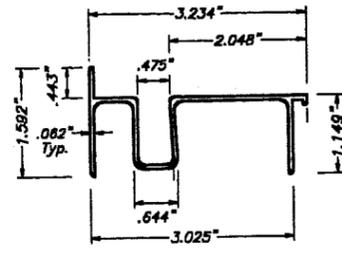
**(A1) WALL HEADERS**  
**(A1) WALL HEADERS (INVERTED USE)**  
 SCALE: 3/8" = 1"



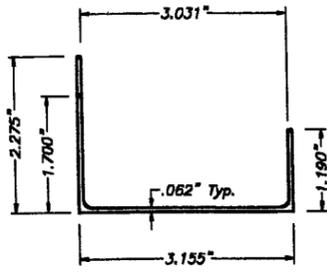
**(A2) WALL HEADER**  
**(A2) WALL HEADER (INVERTED USE)**  
 SCALE: 3/8" = 1"



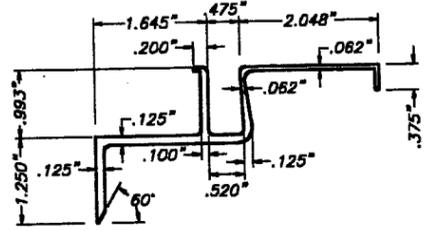
**(B) CEILING HEADER**  
 SCALE: 3/8" = 1"



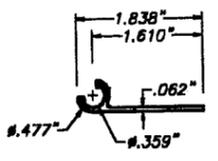
**(C) SILL**  
 SCALE: 3/8" = 1"



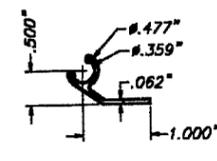
**(D) SILL ADAPTER**  
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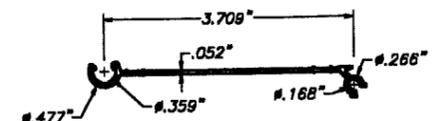
**(E) BOTTOM BUILT-OUT**  
 SCALE: 3/8" = 1"



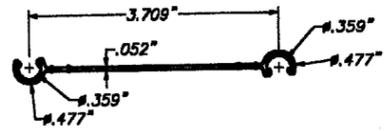
**(F) FEMALE END SLAT**  
 SCALE: 3/8" = 1"



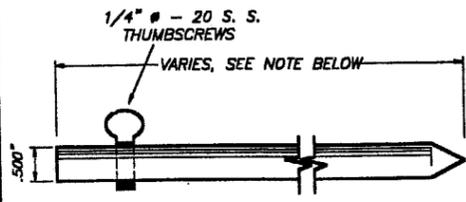
**(F1) STARTER STRIP**  
 SCALE: 3/8" = 1"



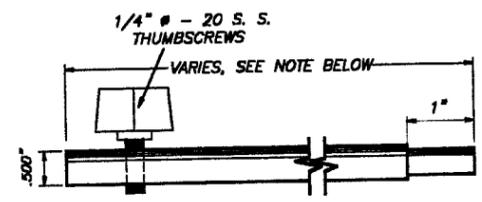
**(G) RESIDENTIAL BLADE**  
 SCALE: 3/8" = 1"



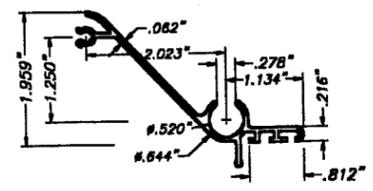
**(G1) FEMALE RESIDENTIAL BLADE**  
 SCALE: 3/8" = 1"



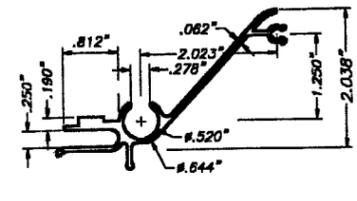
**(H) LOCKING PIN**  
 SCALE: 3/8" = 1"



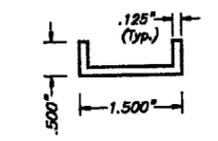
**(H1) ALTERNATE LOCKING PIN**  
 SCALE: 3/8" = 1"



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

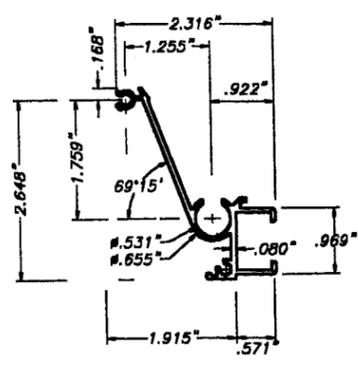


**(J) FEMALE LOCK SLAT**  
 SCALE: 3/8" = 1"

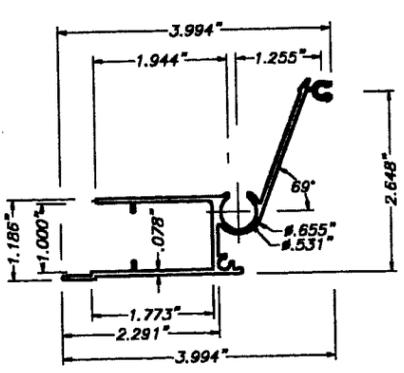


**(K) LOCK CLIP**  
 4" LONG  
 SCALE: 3/8" = 1"

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

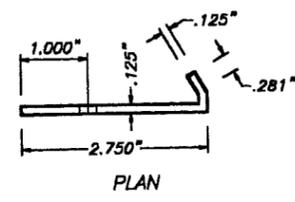


**(L) MALE LOCK SLAT**  
 SCALE: 3/8" = 1"

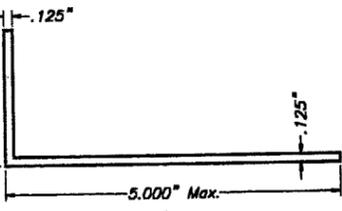
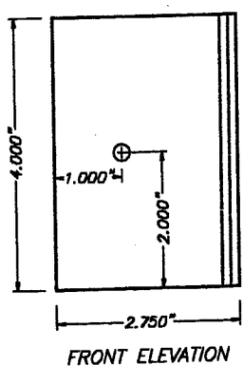


**(M) FEMALE LOCK SLAT**  
 SCALE: 3/8" = 1"

**COMPONENTS**



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



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

**GENERAL NOTES:**

- ACCORDION SHUTTER HAS BEEN DESIGNED IN ACCORDANCE WITH THE DADE COUNTY, 1994 EDITION OF THE SOUTH FLORIDA BUILDING CODE. DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 6 OF ASCE 7-88, WITH 110 m.p.h. BASIC WIND SPEED. ACCORDION SHUTTER'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTIONS 2315 & 2314 RESPECTIVELY OF THE ABOVE MENTIONED CODE. 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/ 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.
- ALL ALUMINUM EXTRUSIONS SHALL BE 6063-T6 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 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, 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 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 RECOMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
- BLADE (G), AND THE KNUCKLES FOR CENTERMATES (I), (J), (L) & (M), & 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 (I) OR (J)). ONE LABEL SHALL BE PLACED FOR EVERY OPENING, LABEL SHALL READ AS FOLLOWS:  
 METAL SHIELD  
 HIALEAH, FL.  
 MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

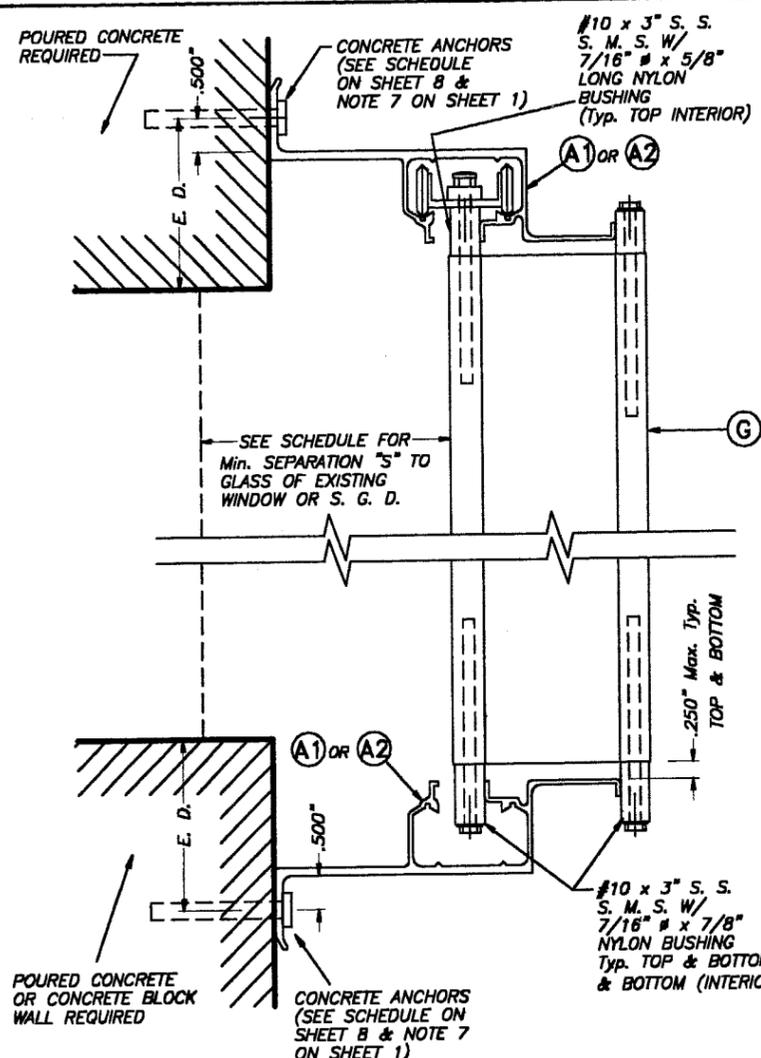
APPROVED AS COMPLYING WITH THE  
 SOUTH FLORIDA BUILDING CODE  
 DATE 08/17/2000  
 BY *Heung H. Hui*  
 PRODUCT CONTROL DIVISION  
 BUILDING CODE COMPLIANCE OFFICE  
 ACCEPTANCE NO. 00-0621-02

MIAMI-DADE COUNTY

 <b>TILTECO INC.</b> TILLIT TESTING & ENGINEERING COMPANY 8585 N.W. 36th St., Ste. 217, WINDY GARDENS, FLORIDA 33168 Phone: (305)871-1830 Fax: (305)871-1531 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE
		<b>METAL SHIELD</b> (ASSA # 187) 7981 W. 25TH CT. HIALEAH, FL. 33016		6/9/00 DATE
				00 - 221 DRAWING No
				SHEET 1 OF 10

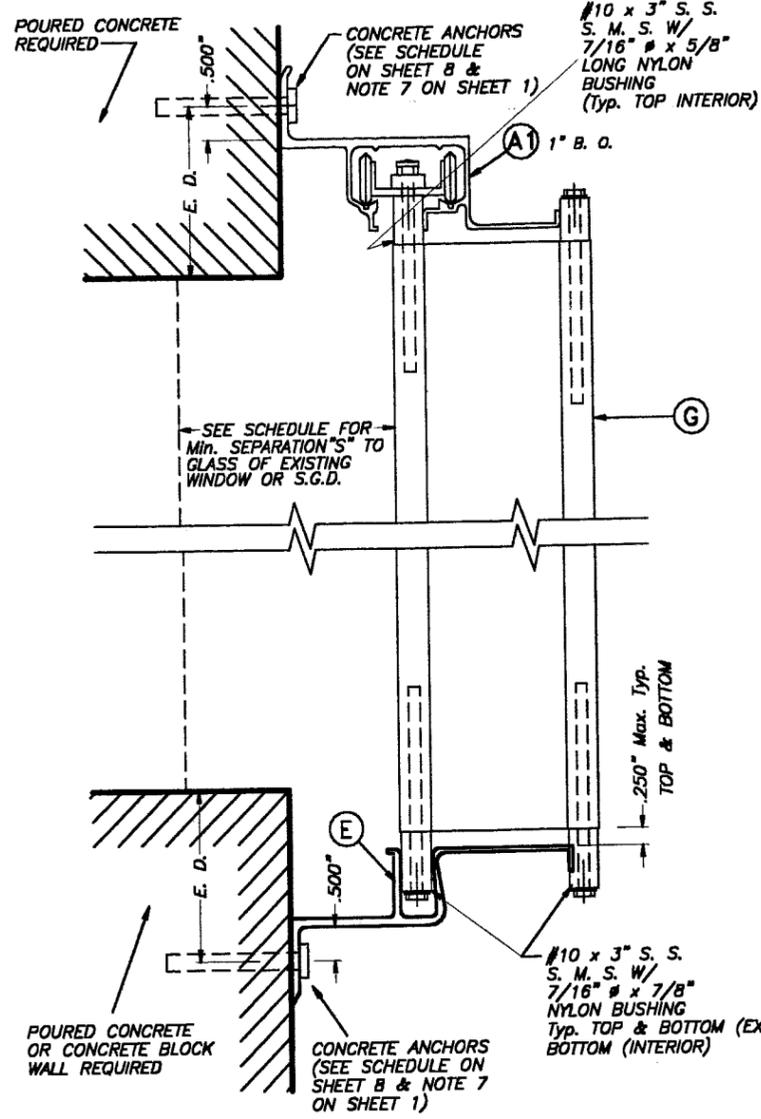
*David S. B.*  
 6/13/00

00-0621-02



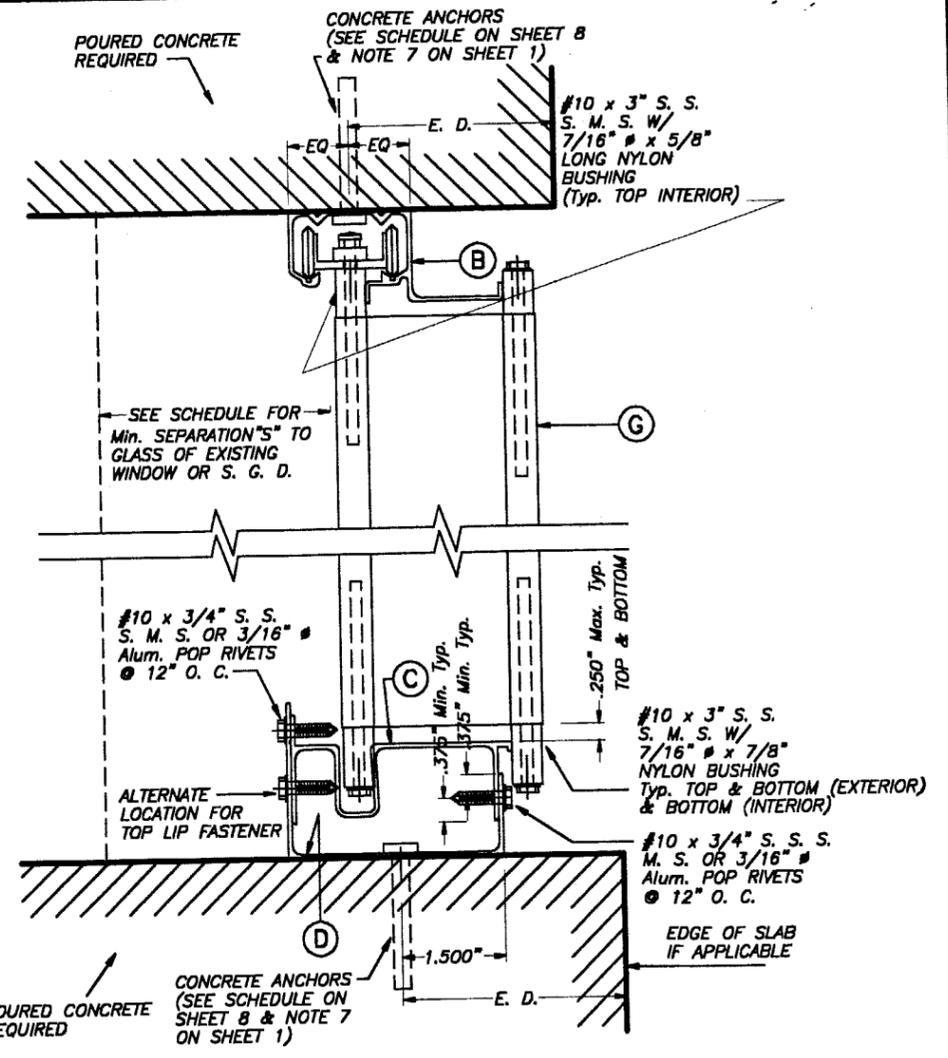
**WALL MOUNTING INSTALLATION**

SECTION A SCALE : 3/8" = 1"



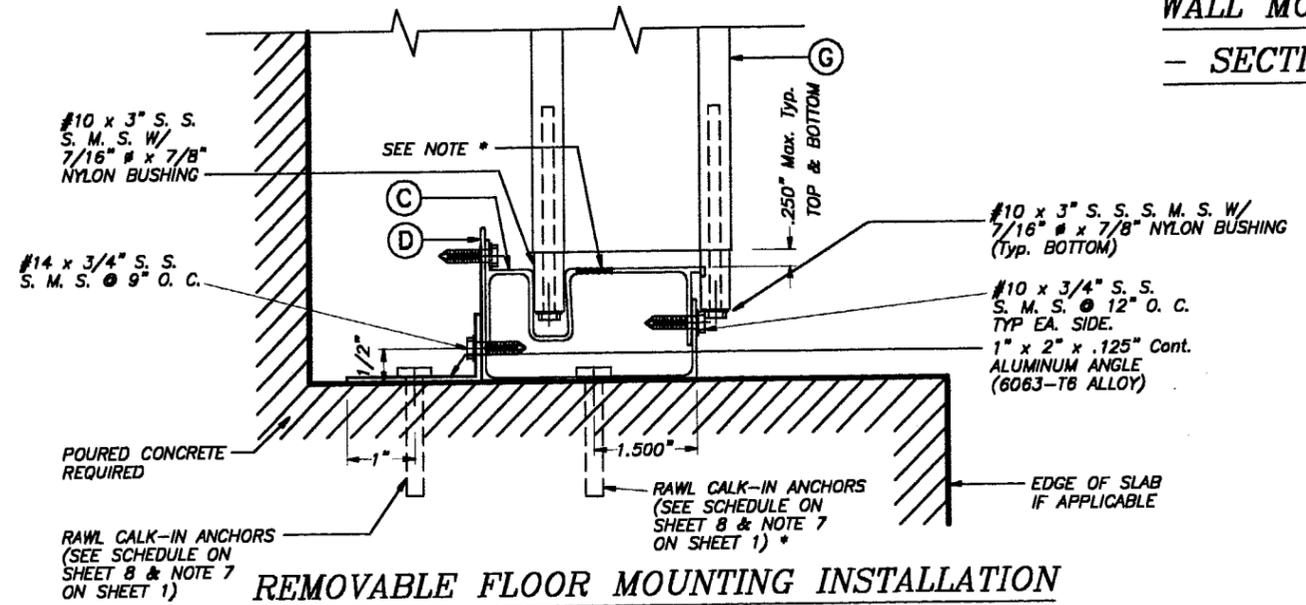
**WALL MOUNTING INSTALLATION**

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.

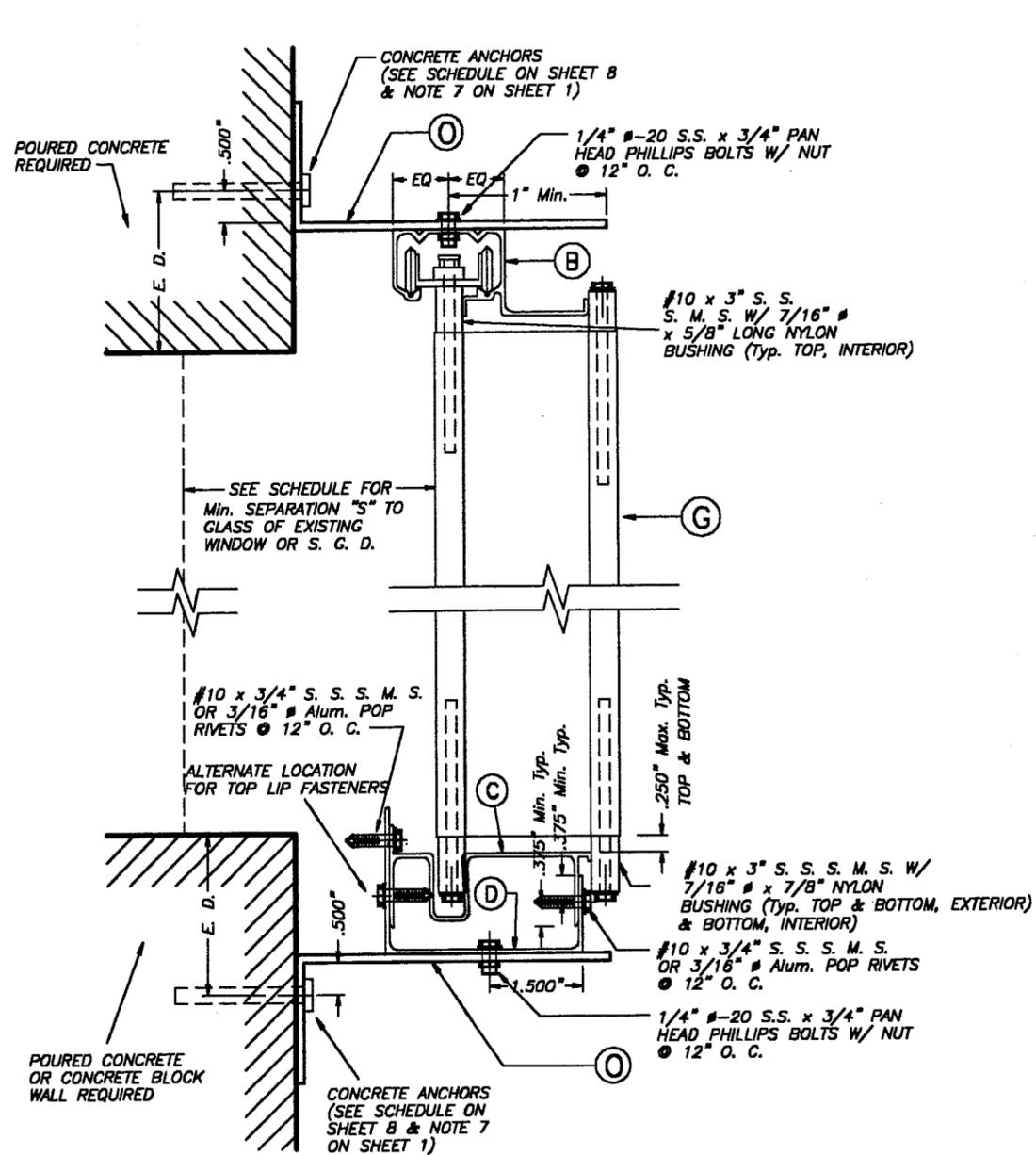
APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE DATE 08/17/2000 BY *Heather A. Markin* PRODUCT CONTROL DIVISION BUILDING CODE COMPLIANCE OFFICE ACCEPTANCE NO. 00-0621-02

MIAMI-DADE COUNTY

*David*  
6/13/00

**TILECO Inc.**  
TILLIT TESTING & ENGINEERING COMPANY  
6590 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33186  
Phone : (305)871-1530 Fax : (305)871-1531  
WALTER A. TILLIT Jr., P. E.  
FLORIDA Lic. # 44167

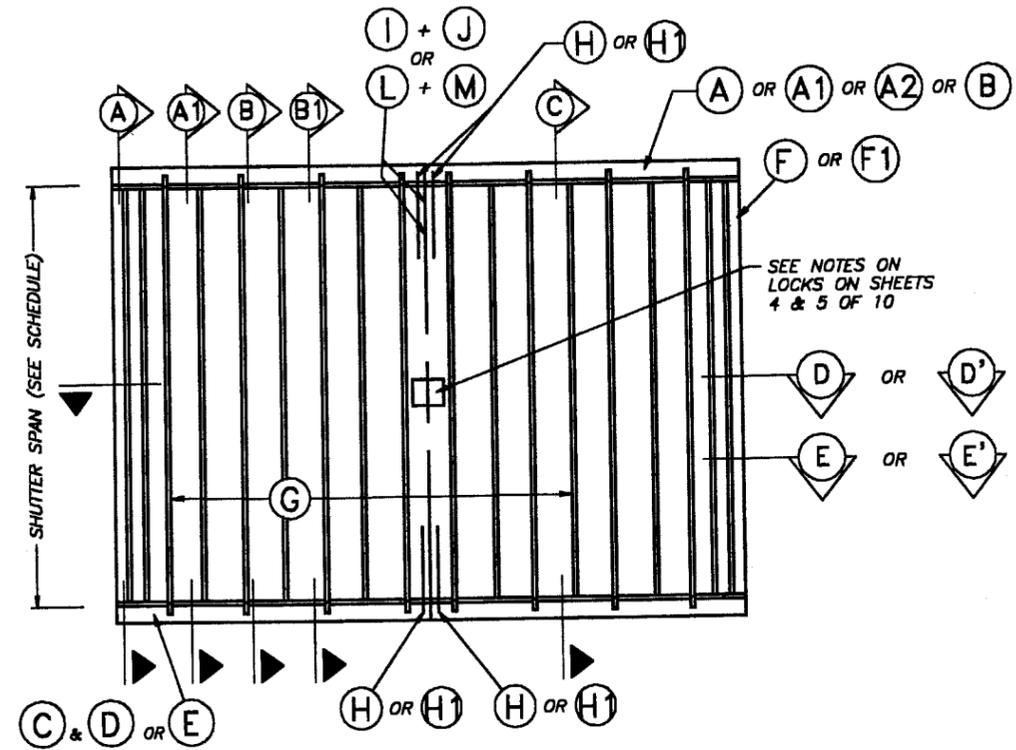
ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER						AS SHOWN SCALE
METAL SHIELD (ASSA # 187)						6/9/00 DATE
7981 W. 25TH CT. HIALEAH, FL. 33016						00 - 221 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	SHEET 2 OF 10
1	-	-	3	-	-	
2	-	-	4	-	-	



**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)

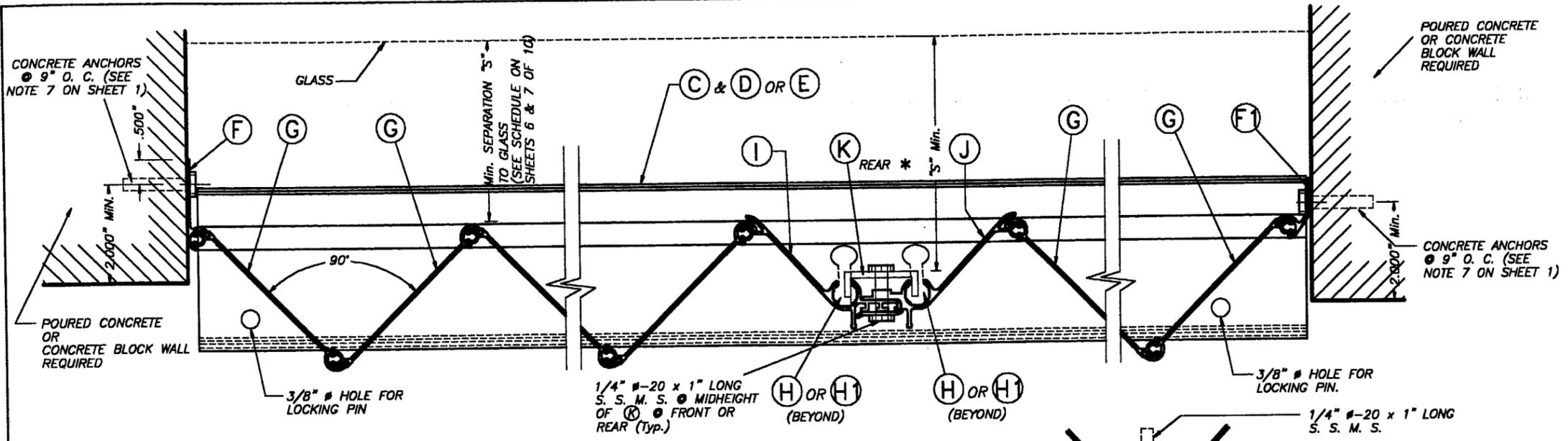
NOTE FOR COMBINATION OF SECTIONS :  
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
DATE 08/17/2000  
BY *Helmut A. Mahr*  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0621.02

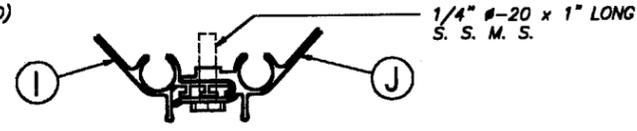
MIAMI-DADE COUNTY

*David J.*  
6/13/00

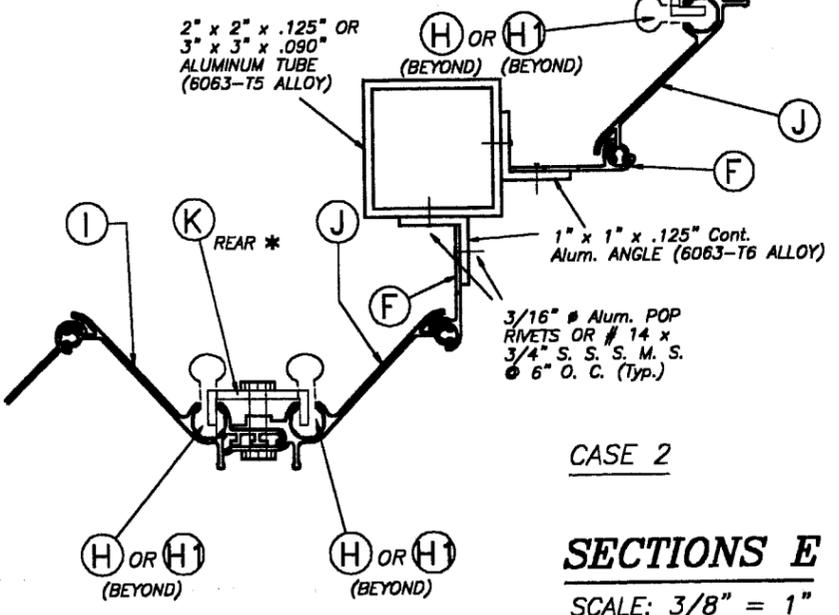
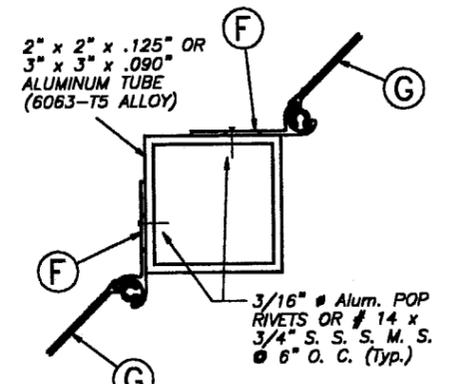
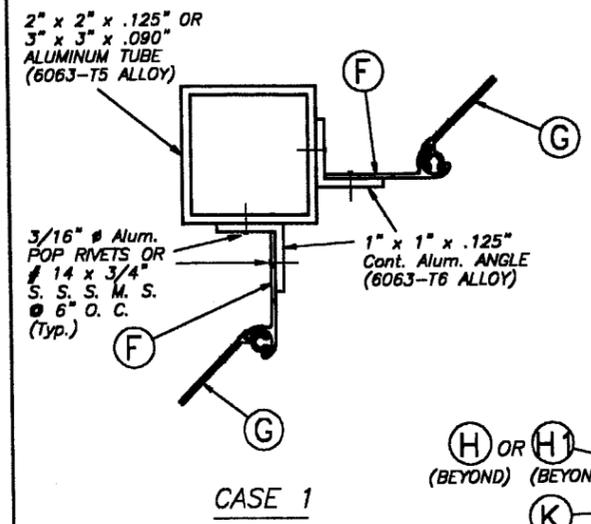
<p><b>TILECO Inc.</b> TILLIT TESTING &amp; ENGINEERING COMPANY 6595 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33186 Phone : (305)871-1530 Fax : (305)871-1531 WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44187</p>	ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER		AS SHOWN SCALE																		
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2	-	-	4	-	-																
				SHEET 3 OF 10																	



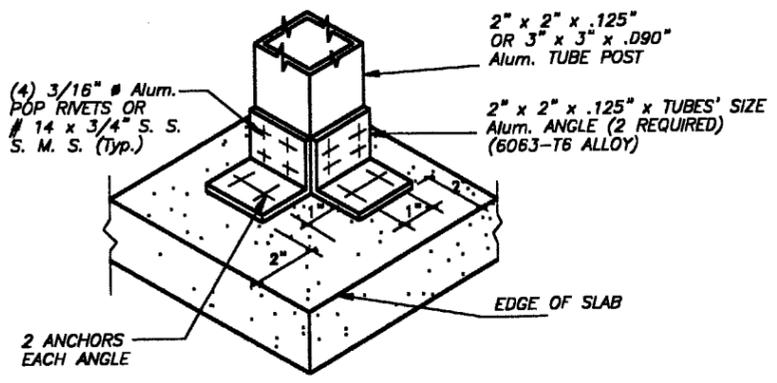
**SECTION D**  
SCALE: 3/8" = 1"



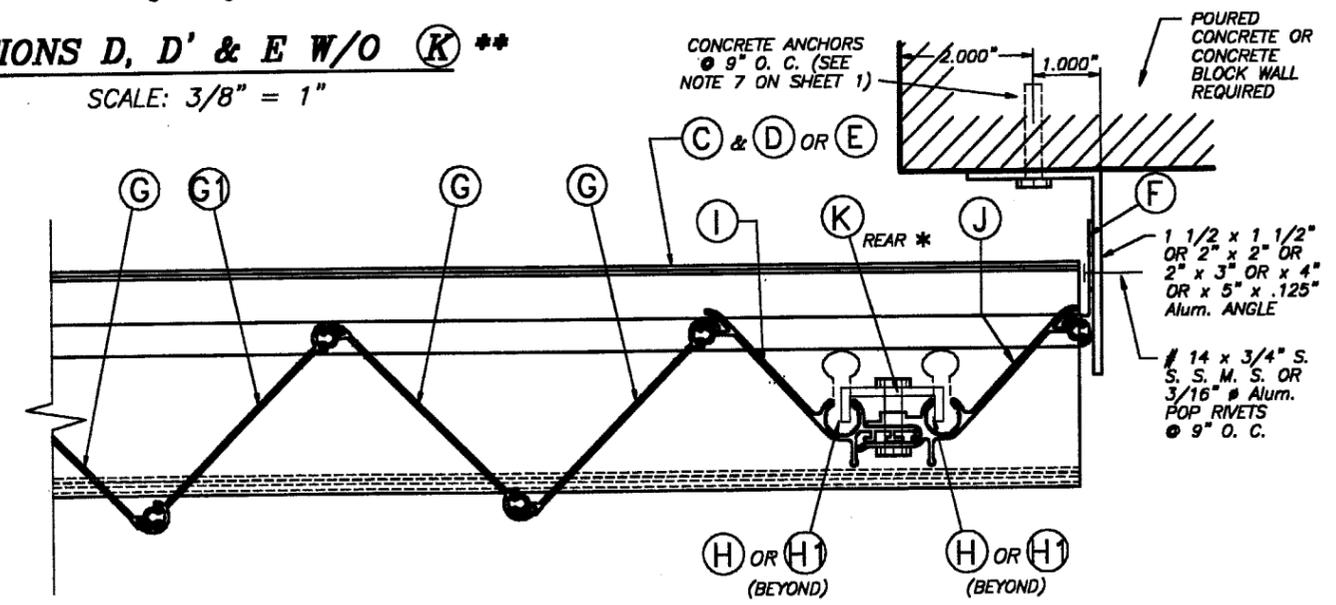
**SECTIONS D, D' & E W/O (K) \*\***  
SCALE: 3/8" = 1"



**SECTIONS E**  
SCALE: 3/8" = 1"



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



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

**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 & E. 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.

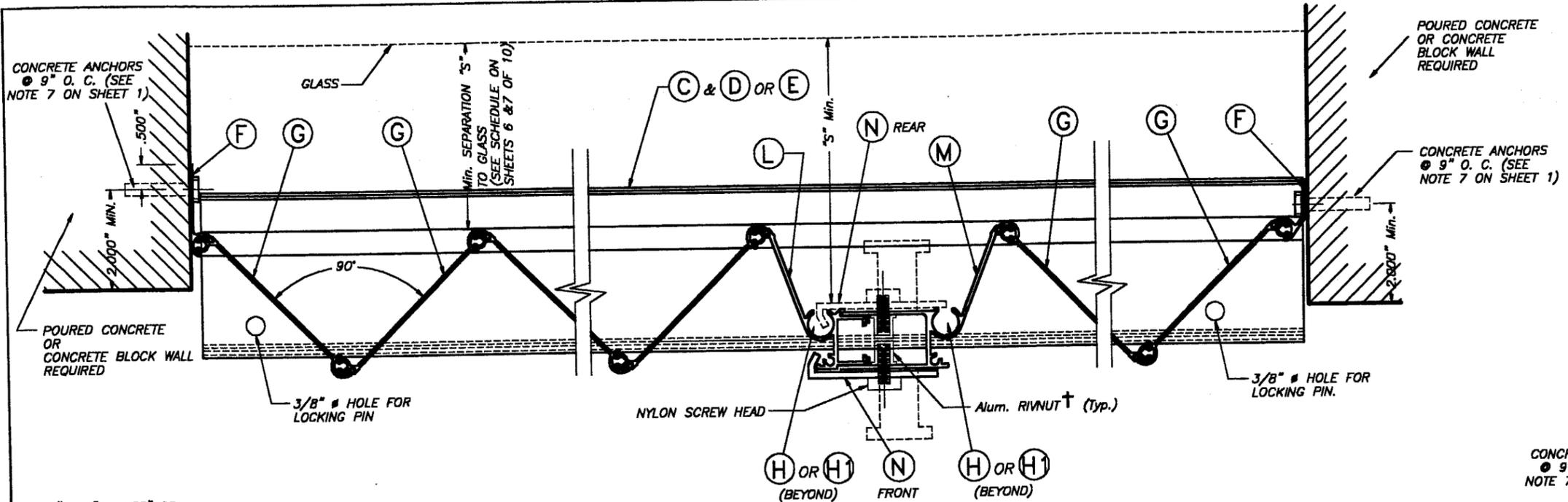
\*\* ALTERNATIVELY TO USING (K) LOCK CLIP, CENTERMATES (I) & (J) SHALL ALWAYS BE LOCKED BY INSTALLING A 1/4" #20 x 1" S. S. SIDEWALK BOLT DIRECTLY THRU BOTH CENTERMATES. FOR THIS PURPOSE, (I) & (J) CENTERMATES SHALL BE PRE-DRILLED AT THE BOLT LOCATION AS WELL AS TAPPED THRU IN ORDER TO ACCEPT THE 1/4"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

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
DATE: 08/17/2000  
BY: *Walter A. Tillit Jr.*  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0621.02

MIAMI-DADE COUNTY

**TILECO INC.**  
TILLIT TESTING & ENGINEERING COMPANY  
6595 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	
<b>METAL SHIELD</b> (ASSA # 187) 7981 W. 25TH CT. HALEAH, FL. 33016				6/9/00 DATE	
				00 - 221 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	-	-	2	-	-
2	-	-	4	-	-



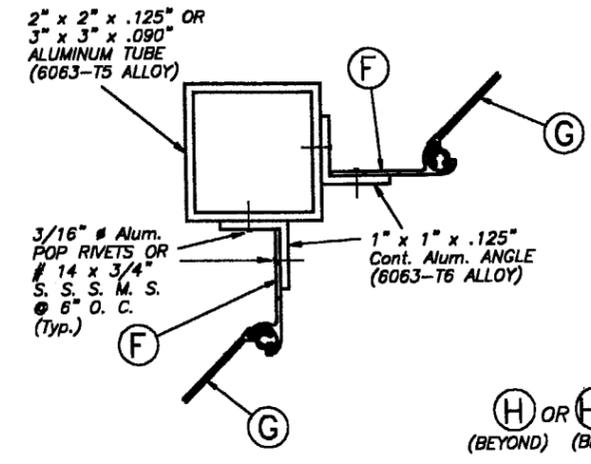
**NOTES ON LOCKS :** APPLICABLE TO LOCK DETAILS SHOWN ON THIS SHEET.

\* 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.

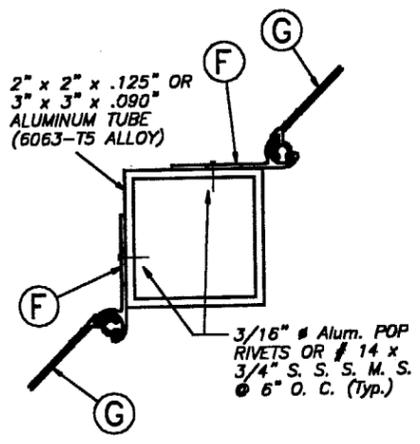
\*\* FOR INSTALLATIONS AT ANY ELEVATION OF BUILDING AND IN ADDITION TO (N) LOCKERS, A REGULAR T LOCK MAY BE USED FOR SECURITY PURPOSES AT ANY DESIRED LOCATION OF CENTERMATE (INSIDE OR OUTSIDE). WHEN USED INSIDE, MINIMUM SEPARATION TO GLASS SHALL ALSO BE VERIFIED FROM THE TIP OF SUCH T LOCK OR FROM THE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

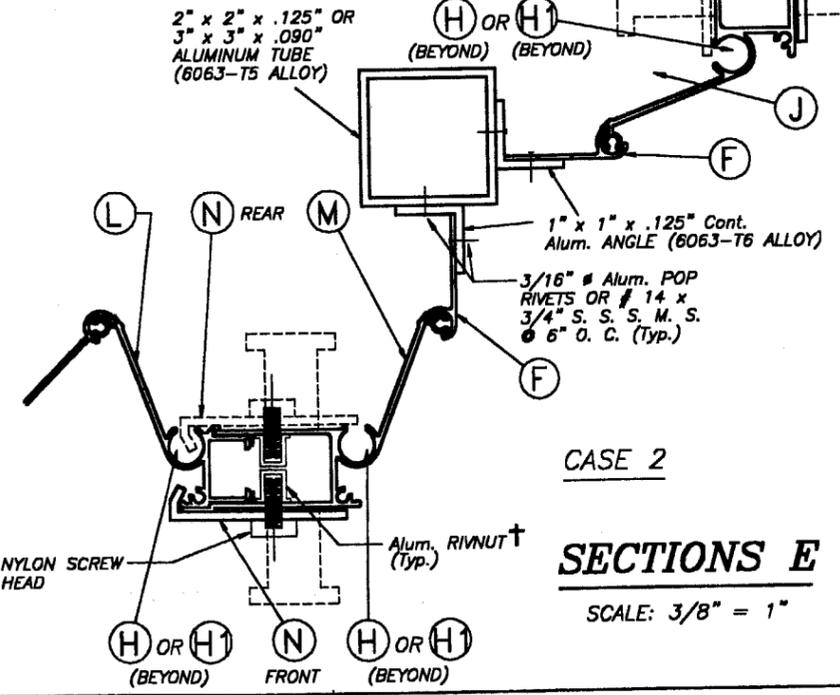
**SECTION D**  
SCALE: 3/8" = 1"



CASE 1

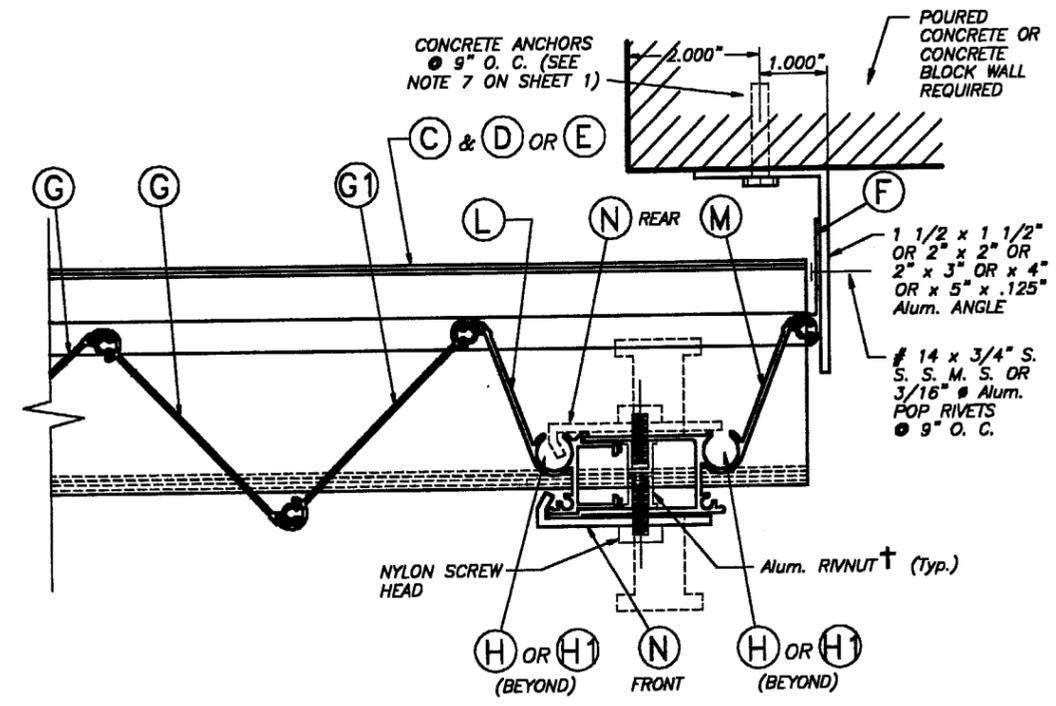


CASE 3

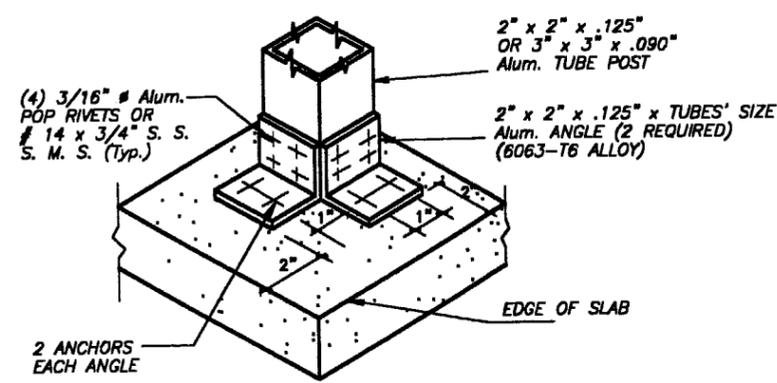


CASE 2

**SECTIONS E**  
SCALE: 3/8" = 1"



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



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

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
DATE 08/17/2000  
BY *Heung H. Mak*  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0621.02

MIAMI-DADE COUNTY

<p>TILLIT TESTING &amp; ENGINEERING COMPANY 8595 N.W. 36th St., Ste. 217, WIRGMA GARDENS, FLORIDA 33166 Phone : (305)871-1530 . Fax : (305)871-1531</p> <p>WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167</p>		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER			AS SHOWN SCALE
		<p><b>METAL SHIELD</b> (ASSA # 187) 7981 W. 25TH CT. HALEAH, FL 33016</p>			6/9/00 DATE
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	-	-	3	-	-
2	-	-	4	-	-
					00 - 221 DRAWING No
					SHEET 5 OF 10

6/13/00

**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"

\* 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.*  
6/13/00

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
 DATE 08/17/2000  
 BY Helmut A. Mohr  
 PRODUCT CONTROL DIVISION  
 BUILDING CODE COMPLIANCE OFFICE  
 ACCEPTANCE NO. 00-0621-02

MIAMI-DADE COUNTY

 TILLIT TESTING & ENGINEERING COMPANY 6585 N.W. 36th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33188 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
		METAL SHIELD (ASSA # 187) 7981 W. 25TH CT. HIALEAH, FL. 33016	6/9/00 DATE
		00 - 221 DRAWING No	SHEET 6 OF 10
REV. No	DESCRIPTION	DATE	REV. No
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"
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"
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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"
137.5	5'-7"	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'-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"
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155.0	4'-11"	3 3/8"	3"
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162.5	4'-8"	3 3/8"	3"
165.0	4'-8"	3 3/8"	3"
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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 "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

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
 DATE 08/17/2000  
 BY *Walter A. Tillit Jr.*  
 PRODUCT CONTROL DIVISION  
 BUILDING CODE COMPLIANCE OFFICE  
 ACCEPTANCE NO. 00-0621-02

MIAMI-DADE COUNTY

*Walter A. Tillit Jr.*  
 8/18/00

 TILTECO Inc. TILLIT TESTING & ENGINEERING COMPANY 6095 N.W. 36th St., Ste. 217, WIRGMA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER	AS SHOWN SCALE
		METAL SHIELD (ASSA # 187) 7981 W. 25TH CT. HIALEAH, FL 33016	6/9/00 DATE
WALTER A. TILLIT Jr., P. E. FLORIDA Lic. # 44167		00 - 221 DRAWING No	SHEET 7 OF 10

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 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"	6 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"	-	8"	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	-

ZAMAC NAILIN

TAPCON OR RAWL CALK-IN

**ANCHOR SPACING LEGEND**

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
DATE 08/17/2000  
BY Heidi A. Walker  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0621.02

MIAMI-DADE COUNTY

*Walter A. Tillit Jr.*  
6/13/00

 <b>TILECO inc.</b> <small>TILLIT TESTING &amp; ENGINEERING COMPANY 6590 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33166 Phone: (305)871-1530 Fax: (305)871-1531</small> <b>WALTER A. TILLIT Jr., P. E.</b> <small>FLORIDA Lic. # 44167</small>		ASSA / RESIDENTIAL BERTHA ACCORDION SHUTTER  <b>METAL SHIELD</b> <small>(ASSA # 187) 7981 W. 25TH CT. HIALEAH, FL 33016</small>	AS SHOWN SCALE  6/9/00 DATE  00 - 221 DRAWING No																
		<table border="1" style="width: 100%; font-size: small;"> <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	-
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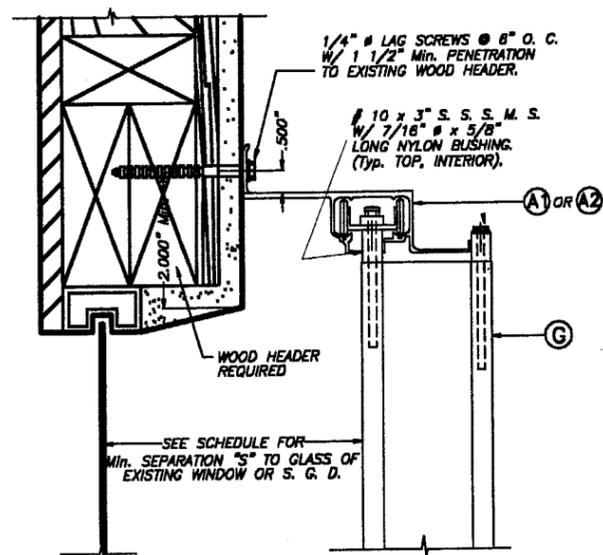
# INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS

**NOTES :**

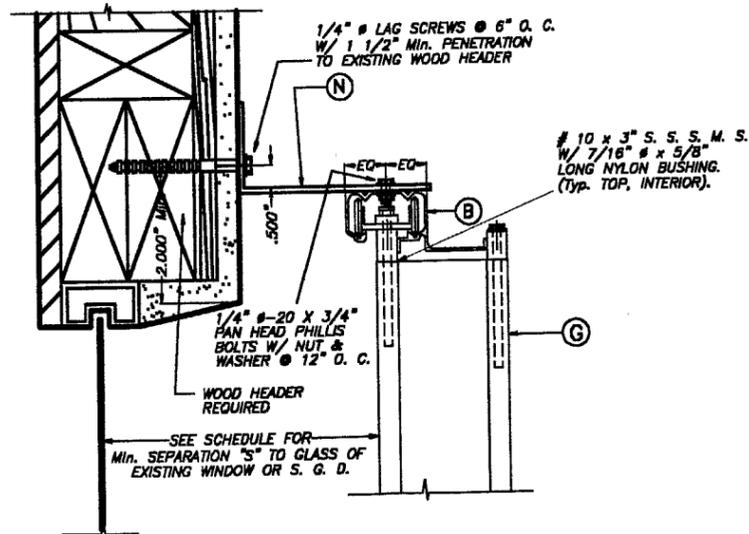
1. INSTALLATIONS ARE ONLY VALID FOR INSTALLATIONS WITH DESIGN WIND LOADS LESS OR EQUAL THAN 75 p.s.f. AND 9'-0" Max. SHUTTER SPAN.
2. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

**NOTE FOR COMBINATION OF SECTIONS :**

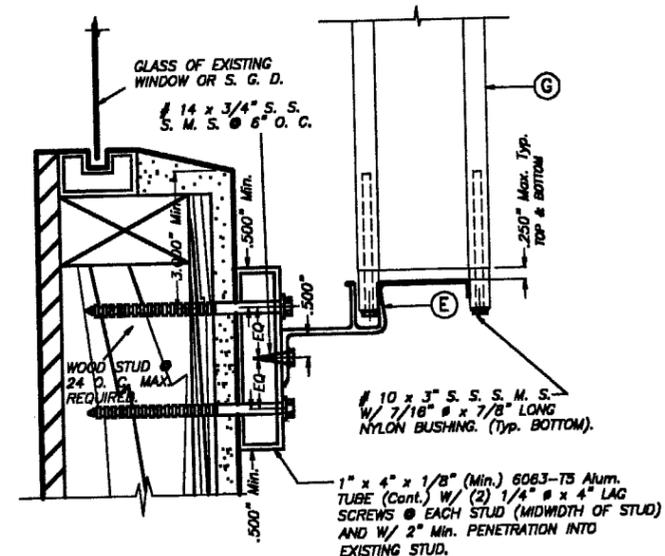
WALL/FLOOR/CEILING MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.



**ALTERNATIVE 1**



**ALTERNATIVE 2**



**ALTERNATIVE 3**

**WALL MOUNTING INSTALLATION - SECTIONS A**

SCALE: 1/4" = 1"

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE  
DATE 08/17/2000  
BY *Helmut A. Mader*  
PRODUCT CONTROL DIVISION  
BUILDING CODE COMPLIANCE OFFICE  
ACCEPTANCE NO. 00-0621.02

MIAMI-DADE COUNTY

*David...*  
6/13/00

 <b>TILECO Inc.</b> TILLIT TESTING & ENGINEERING COMPANY 6295 N.W. 38th St., Ste. 217, VIRGINIA GARDENS, FLORIDA 33169 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		
	<b>METAL SHIELD</b> (ASSA # 187) 7981 W. 25TH CT. HIALEAH, FL. 33016		6/9/00 DATE		
	00 - 221 DRAWING No		SHEET 9 OF 10		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	-	-	2	-	-
2	-	-	4	-	-

