



MIAMI-DADE COUNTY
BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

www.miamidade.gov

NOTICE OF ACCEPTANCE (NOA)

Southern Metal Products, LLC
450 West McNab Road
Ft. Lauderdale, Florida 33309

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: "Wronofold A.I.R." Aluminum Accordion Shutter

APPROVAL DOCUMENT: Drawing No. 94-46, titled "Accordion Shutter Details", sheets 1 through 7 of 7, prepared by Al-Farooq Corporation, dated June 10, 1994, last revision #L dated May 28, 2008, signed and sealed by Humayoun Farooq, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and the expiration date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

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

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

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

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

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

This NOA **revises & renews** NOA # **05-1013.03** and consists of this page 1, evidence submitted pages E-1, E-2, E-3, & E-4 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
 06/26/2008

NOA No. 08-0213.07
Expiration Date: 07/23/2013
Approval Date: 06/26/2008

Southern Metal Products, LLC

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #98-0616.05

A. DRAWINGS

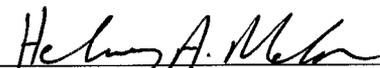
1. *Drawing prepared by Al-Farooq Corporation, titled "Accordion Shutter Details," Drawing No. 94-46, dated June 10, 1994, last revised June 15, 1998, sheets 1 through 4 of 4, signed and sealed by Dr. Humayoun Farooq, P.E. on June 15, 1998.*

B. TESTS

1. *Test report on Uniform Static Air Pressure Test of std. accordion shutter (111" blade), prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-132, dated June 6, 1994, signed and sealed by Arshad Viqar, P.E.*
2. *Test report on Uniform Static Air Pressure Test of std. accordion shutter (111" blade), prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-354, dated October 27, 1994, signed and sealed by Hector M. Medina, P.E.*
3. *Test report on Uniform Static Air Pressure Test of std. accordion shutter (84", 150", 118" and 111" blade), prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-387, dated December 6, 1994, signed and sealed by Hector M. Medina, P.E.*
4. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of std. accordion shutter (96" blade) 3 specimens, prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-133, dated June 6, 1994, signed and sealed by Arshad Viqar, P.E.*
5. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of std. accordion shutter, prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-177 (96" blade), dated July 7, 1994, signed and sealed by Arshad Viqar, P.E.*
6. *Test report on Large Missile Impact Test of std. accordion shutter, prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-290 (111" blade), dated September 9, 1994, signed and sealed by Hector M. Medina, P.E.*
7. *Test report on Large Missile Impact Test of std. accordion shutter (96" blade) 3 specimens, prepared by Hurricane Engineering & Testing, Inc., Report No. HETI-94-369, dated November 10, 1994, signed and sealed by Hector M. Medina, P.E.*

C. CALCULATIONS

1. *Comparative analysis and anchor calculations prepared by Al-Farooq Corporation, signed and sealed by Humayoun Farooq, P.E., on January 10, 1995.*



Helmy A. Makar, P.E., M.S.
Product Control Examiner
NOA No. 08-0213.07
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

D. MATERIAL CERTIFICATIONS

1. *Mill Certified Test Report No. 0042, extended by Benada Aluminum of Florida, dated May 25, 1994 with mechanical properties and chemical composition of aluminum alloy 6063-T6.*
2. *Tensile and Chemical Test Report No. 70-02-94-219 prepared by ATEC Associates, Inc. dated June 15, 1994.*
3. *Tensile Test Report No. HETI-94-T58 prepared by Hurricane Engineering & Testing, Inc. dated January 31, 1995, signed and sealed by Hector M. Medina, P.E.*

E. STATEMENTS

1. *Letter issued by the All Broward Hurricane Panel, Inc., dated June 10, 1998, signed by Mr. LeRoy Peterson, informing Mr. Raul Rodriguez that they purchased the Miami-Dade Product Approvals for the Wrono Enterprises Corporation's products. Additionally, they are requesting to replace the Wrono Enterprises Corporation's name with All Broward Hurricane Panel, Inc.*
2. *Copy of the United States Bankruptcy Court, Southern District of Florida, Case No. 98-20840-BKC-PGH, Chapter 7, in reference to Wrono Enterprise Corporation.*

F. OTHER

1. *This approval revises NOA No. 97-0623.04, which was issued on July 23, 1997.*

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #00-0424.08

A. DRAWINGS

1. *Drawing No. 94-46, prepared by Al-Farooq Corporation, titled "Accordion Shutter Details", dated June 10, 1994, last revision #E dated March 27, 2000, sheets 1 through 4 of 4, signed and sealed by Humayoun Farooq, P.E. on April 4, 2000.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

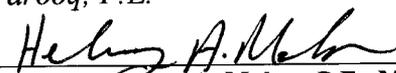
D. MATERIAL CERTIFICATIONS

1. *None.*

3. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #02-0904.05

A. DRAWINGS

1. *Drawing No. 94-46, titled "Accordion Shutter Details", sheets 1 through 4 of 4, prepared by Al-Farooq Corporation, dated June 10, 1994, last revision #G dated July 12, 2002, signed and sealed by Humayoun Farooq, P.E.*



Helmy A. Makar, P.E., M.S.
Product Control Examiner
NOA No. 08-0213.07
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*

4. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #03-0612.03

A. DRAWINGS

1. *None.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *None.*

D. MATERIAL CERTIFICATIONS

1. *None.*

5. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 03-0716.03

A. DRAWINGS

1. *Drawing No. 94-46, titled "Accordion Shutter Details", sheets 1 through 6 of 6, prepared by Al-Farooq Corporation, dated June 10, 1994, last revision #J dated January 23, 2004, signed and sealed by Humayoun Farooq, P.E.*

B. TESTS

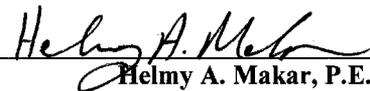
1. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of an accordion shutter, prepared by Construction Testing Corporation, Report No. 03-012, dated May 31, 2003, signed and sealed by Yamil G. Kuri, P.E.*

C. CALCULATIONS

1. *Anchor calculations, sheets A-1 through A-24, AP-1 through AP-18, and C-1 through C-22, prepared by Al-Farooq Corporation, dated June 3, 2003, signed and sealed by Humayoun Farooq, P.E., on June 10, 2003.*

D. QUALITY ASSURANCE

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



Helmy A. Makar, P.E., M.S.
Product Control Examiner
NOA No. 08-0213.07
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

E. MATERIAL CERTIFICATIONS

1. *None.*

6. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 05-1013.03

A. DRAWINGS

1. *Drawing No. 05-409, titled " Air Accordion Shutter ", sheets 1 through 5 of 5, prepared by Thornton-Tomasetti Group, dated October 10, 2005, last revision #1 dated August 17, 2006, signed and sealed by J. W. Knezevich, P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Comparative analysis and anchor calculations, pages 1 through 80 of 80, prepared by Thornton-Tomasetti Group, dated September 21, 2005, signed and sealed by J. W. Knezevich, P.E.*

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. *None.*

7. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 94-46, titled " Accordion Shutter Details ", sheets 1 through 7 of 7, prepared by Al-Farooq Corporation, dated June 10, 1994, last revision #L dated May 28, 2008, signed and sealed by Humayoun Farooq, P.E., on May 30, 2008.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Comparative analysis and anchor calculations, pages A-1 through A-31, AP-1 through AP-11, C-1 through C-21, prepared by Al-Farooq Corporation, dated May 28, 2008, signed and sealed by Humayoun Farooq, P.E., on May 30, 2008.*

D. QUALITY ASSURANCE

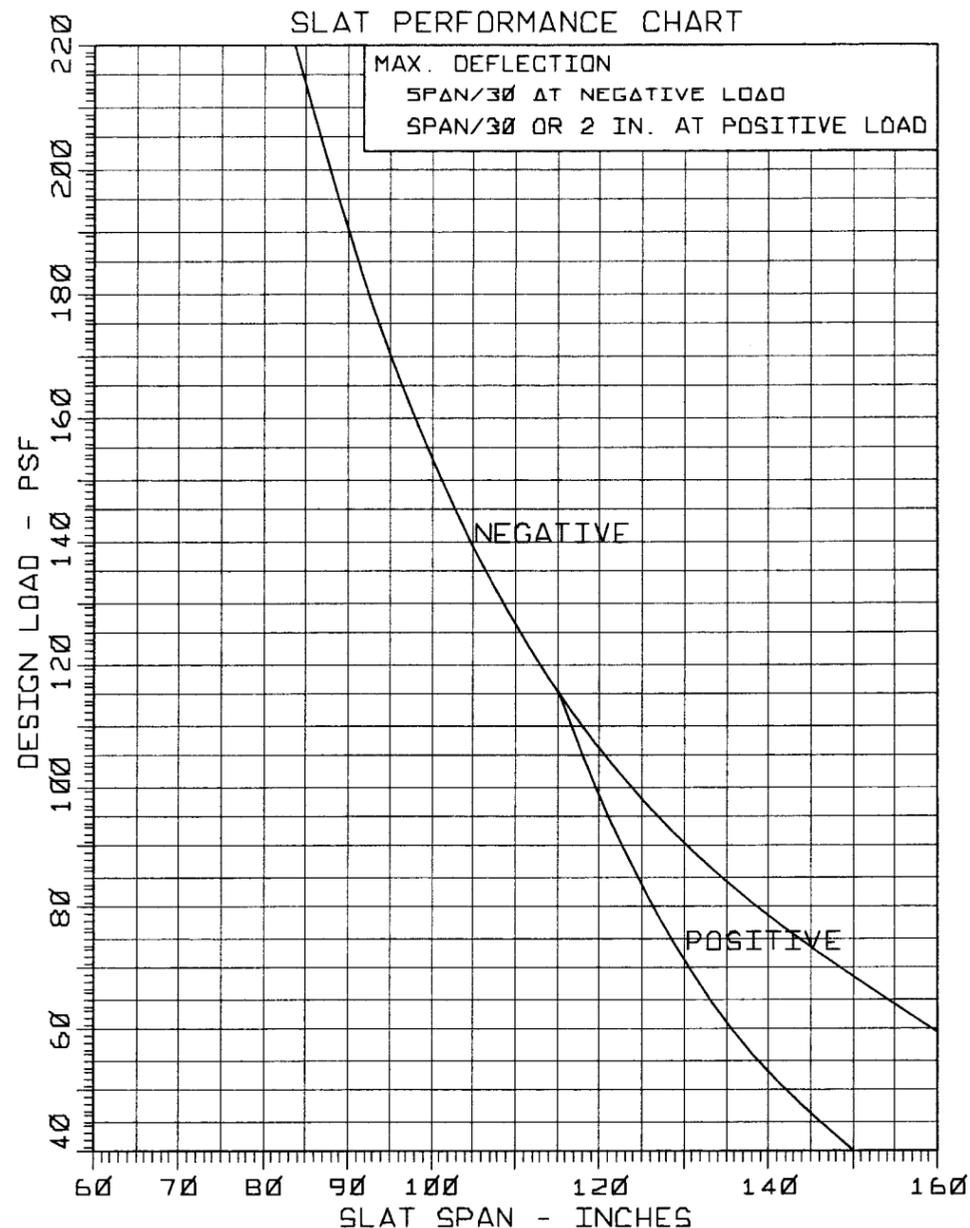
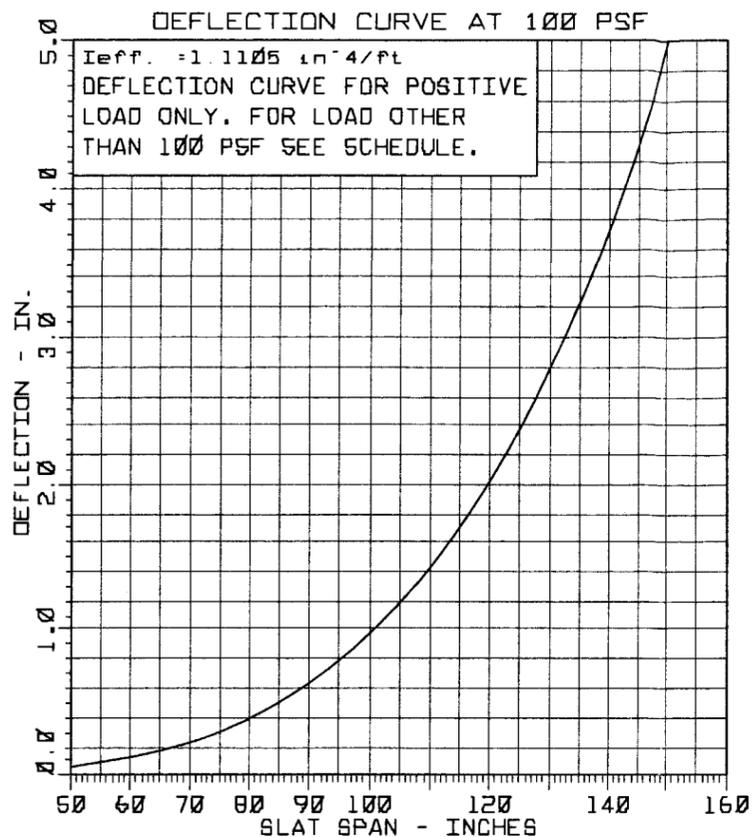
1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *None.*



Helmy A. Makar, P.E., M.S.
Product Control Examiner
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MINIMUM SEPARATION FROM GLASS			
SEPARATION REQD. DUE TO WIND LOAD		SEPARATION REQD. DUE TO LARGE MISSILE IMPACT	
SHUTTER SPAN = H =	IN.	FOR SLAT SPANS UPTO	SEPARATION
DESIGN LOAD = Pd =	PSF	-	-
FACTOR = K = Pd/100 =	IN.	120"	2-1/2"
READING FROM SPAN D. CURVE = D =	IN.	150"	3-1/4"
DEFLECTION AT Pd = K*D =	IN.		
MIN. SEPARATION REQD. = K*D+1" =	IN.		

FOR INSTALLATIONS UPTO 30' OF GRADE USE MAXIMUM OF WIND LOAD OR IMPACT LOAD REQUIREMENTS SHOWN ABOVE
FOR INSTALLATIONS ABOVE 30' OF GRADE IGNORE LARGE MISSILE IMPACT REQUIREMENT.
NOTE: NO PART OF SHUTTER SHALL BE UNDER 30' ABOVE GRADE TO WAIVE LARGE MISSILE IMPACT REQUIREMENT.

GENERAL NOTES

1. THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2004 EDITION INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).
2. DESIGN CRITERIA FOR ALUMINUM, MINIMUM MECHANICAL PROPERTIES, AND SAFETY FACTORS ARE IN ACCORDANCE WITH THE "ALUMINUM CONSTRUCTION MANUAL" LATEST EDITION.
3. ALUMINUM ALLOYS: ALL EXTRUSIONS SHALL BE ALLOY AS SHOWN.
4. STEEL SURFACES TO BE PLACED IN CONTACT WITH ALUMINUM SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER IN ACCORDANCE WITH FEDERAL SPEC. NO. TTP-645, OR BE GALVANIZED.
5. ANCHORS SHALL BE AS SHOWN ON DETAILS. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
6. ALL BOLTS SHALL BE STAINLESS STEEL, ALUMINUM ALLOY 2024-T4 OR 7075-T6, OR PLATED STEEL. WING NUTS TO BE OF ZINC ALLOY.
7. DESIGN CRITERIA FOR SLATS: MAX DEFLECTION \leq THE LESSER OF L/30 OR 2".
8. ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
9. A LOAD DURATION INCREASE IN ALLOWABLE STRESS IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.

USE SLAT PERFORMANCE CHART TO VERIFY SLAT CAPACITY FOR THE REQUIRED DESIGN LOAD FOR THE PARTICULAR LOCATION. USE SPAN DEFLECTION CHART TO CALCULATE SEPARATION FROM GLASS.

DESIGN LOADS SHALL BE CALCULATED AS PER REQUIREMENTS OF ASCE 7-02.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 08-0213.07
Expiration Date 07/23/2013
By *Helmy A. Alkhatib*
Miami Dade Product Control Division

PRODUCT MARKING

A PERMANENT LABEL SHALL BE AFFIXED ON LOCKING MEMBER ON UNIT ABOVE THE LOCK WITH THE FOLLOWING STATEMENT.

Southern Metal Products, LLC
dba-All Broward Hurricane Panel
Ft. Lauderdale, Florida
Miami-Dade County Product Control Approved

Engr. DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

H MAY 30 2008

a f c

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
1235 S.W. 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
ACCORDION 94-46ABH

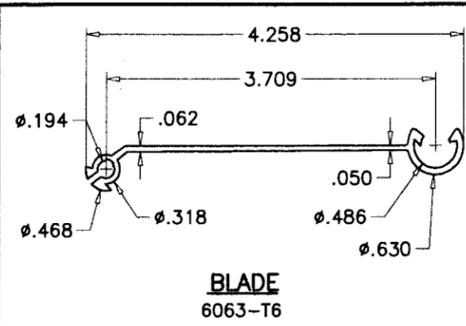
ACCORDION SHUTTER DETAILS

Southern Metal Products, LLC
dba-All Broward Hurricane Panel
450 West McNab Road
Ft. Lauderdale, FL 33309
TEL 1-800-432-1803 FAX. 954-973-3928

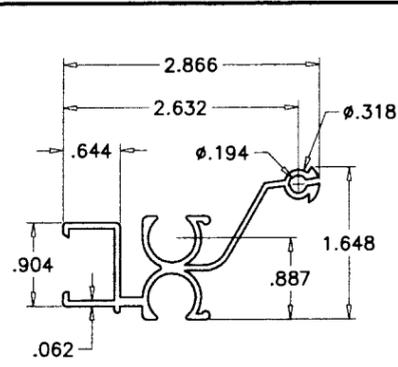
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H	06.02.03		UPDATED FOR FBC, CO. NAME REV.
I	11.13.03		REV. PER BCCO COMMENTS
J	01.23.04		REV. PER BCCO COMMENTS
K	11.14.07		UPDATED FOR 2004 FBC
L	05.28.08		REV. PER BCCO COMMENTS

date: 06-10-94
scale: 1/2" = 1"
dr. by: HAMID
chk. by:

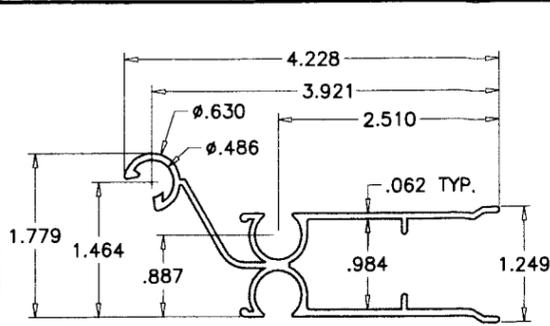
drawing no.
94-46
sheet 1 of 7



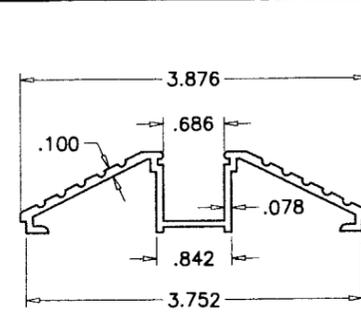
BLADE
6063-T6



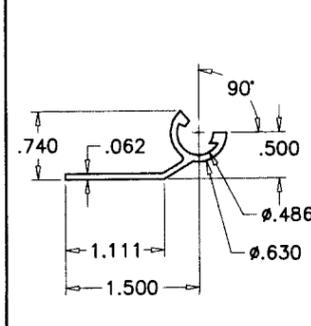
MALE LOCKING SLAT
6063-T6



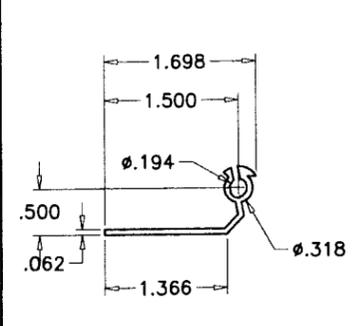
FEMALE LOCKING SLAT
6063-T6



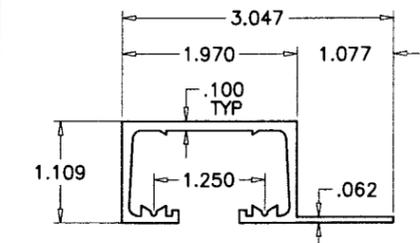
THRESHOLD TRACK
6063-T6



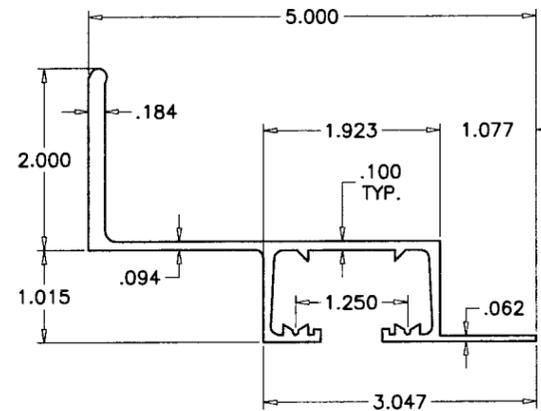
FEMALE END SLAT
6063-T6



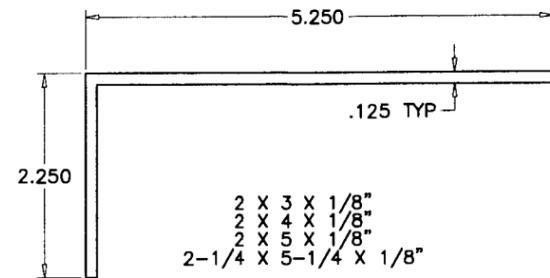
MALE END SLAT
6063-T6



CEILING MOUNT HEADER
6063-T6

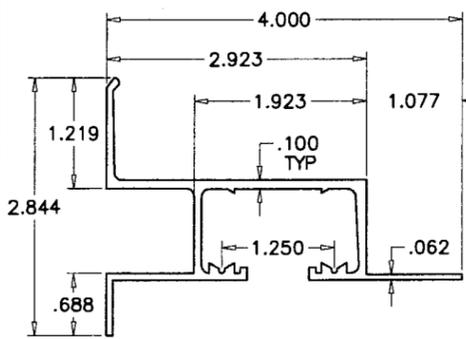


ALT. WALL MOUNT HEADER/SILL
6063-T5

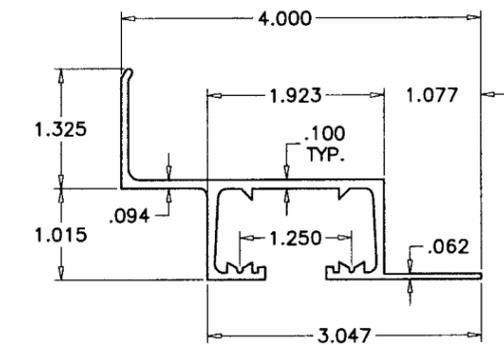


BUILT-OUT ANGLES
6063-T6

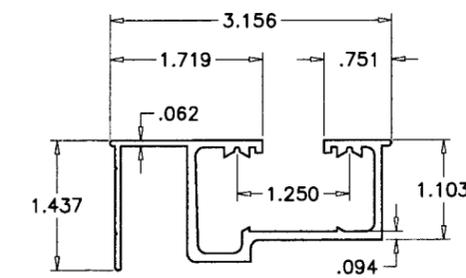
2 X 3 X 1/8"
2 X 4 X 1/8"
2 X 5 X 1/8"
2-1/4 X 5-1/4 X 1/8"



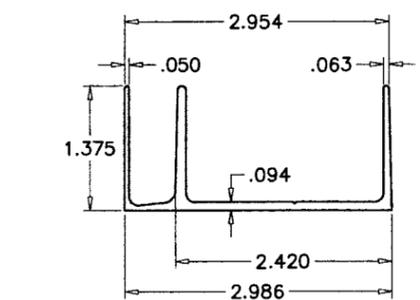
WALL MOUNT HEADER/SILL
6063-T6



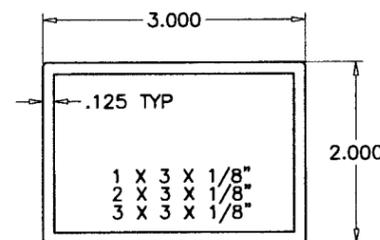
ALT. WALL MOUNT HEADER/SILL
6063-T5



ADJ. HEADER/SILL
6063-T6



TRACK ADAPTER
6063-T6



SPACER TUBE
6063-T6

1 X 3 X 1/8"
2 X 3 X 1/8"
3 X 3 X 1/8"

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

MAY 20 2008

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 08-0213.07
Expiration Date 07/23/2013
By *Helmy A. Makhadmeh*
Miami Dade Product Control
Division



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
1235 S.W. 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
ACCORDION 94-46ABH

ACCORDION SHUTTER DETAILS

Southern Metal Products, LLC
dba - All Broward Hurricane Panel
450 West McNab Road
Ft. Lauderdale, Fl. 33309
TEL. 1-800-432-1803 FAX. 954-973-3928

no	date	by	description
H	06.02.03		UPDATED FOR FBC, CO. NAME REV.
I	11.13.03		REV. PER BCCO COMMENTS
J	01.23.04		REV. PER BCCO COMMENTS
K	11.14.07		UPDATED FOR 2004 FBC
L	05.28.08		NO CHANGE THIS SHEET

date: 06-10-94	scale: 1/2" = 1"
dr. by: HAMID	chk. by:

drawing no.
94-46
sheet 2 of 7

revisions:

no	date	description	CO. NAME	REV.	ANCHORS	REV.
H	06.02.03					
I	11.13.03					
J	01.23.04					
K	11.14.07					
L	05.28.08					

date:	06-10-94
scale:	1/2" = 1"
dr. by:	HAMID
chk. by:	

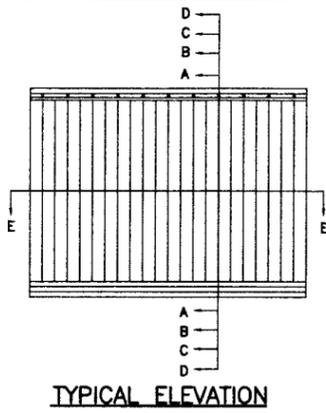


CHART TO USE

ANCHOR	CONC.	BLOCK	WOOD	METAL
A	3	1	-	-
B	4	1	-	-
D	4	1	-	-
E	-	-	3	-
G	-	-	-	2

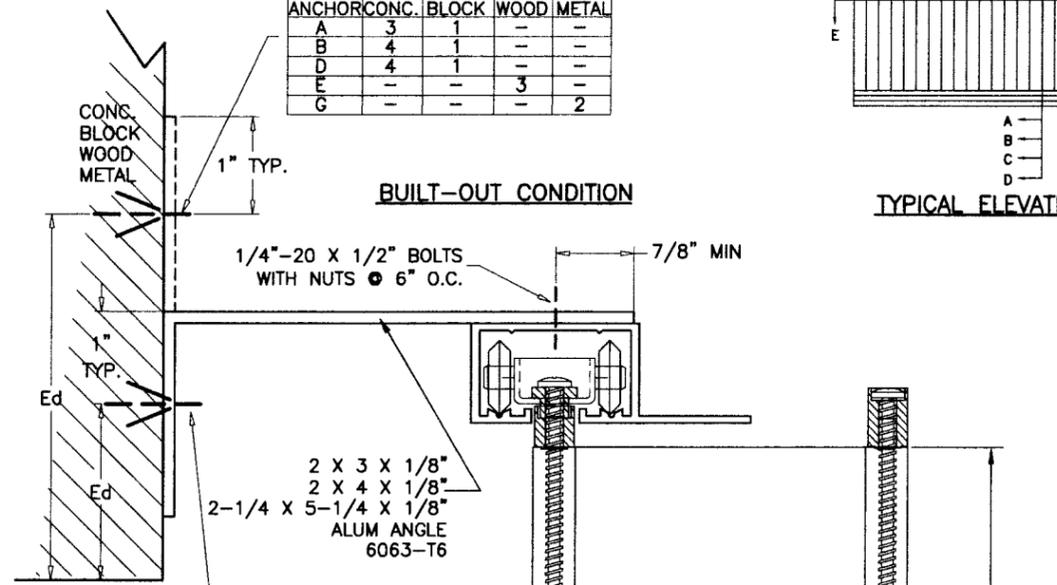
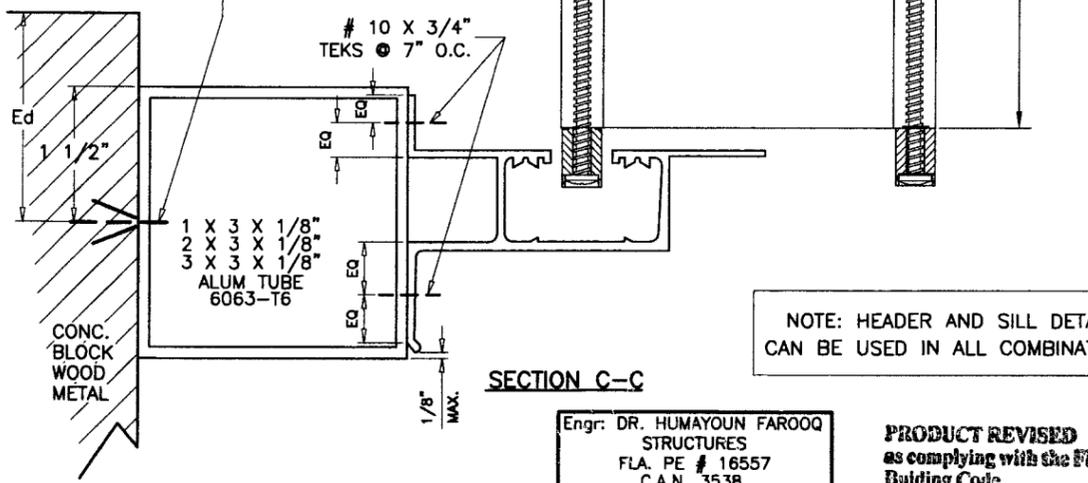


CHART TO USE

ANCHOR	CONC.	BLOCK	WOOD	METAL
A	6	4	-	-
B	7	4	-	-
D	7	3	-	-
E	-	-	7	-
G	-	-	-	5

CHART TO USE

ANCHOR	CONC.	BLOCK	WOOD	METAL
A	6	3	-	-
B	6	3	-	-
D	6	2	-	-
E	-	-	6	-
G	-	-	-	3



NOTE: HEADER AND SILL DETAIL CAN BE USED IN ALL COMBINATIONS.

Engr: DR. HUMAYOUN FAROOQ
 STRUCTURES
 FLA. PE # 16557
 C.A.N. 3538

PRODUCT REVISED as complying with the Florida Building Code
 Acceptance No. 08-0213.07
 Expiration Date 07/23/2013
 By: *Helmy A. Maher*
 Miami Dade Product Control Division

CHART TO USE

ANCHOR	CONC.	BLOCK	WOOD	METAL
A	7	5	-	-
B	7	5	-	-
D	7	5	-	-
E	-	-	7	-
G	-	-	-	5

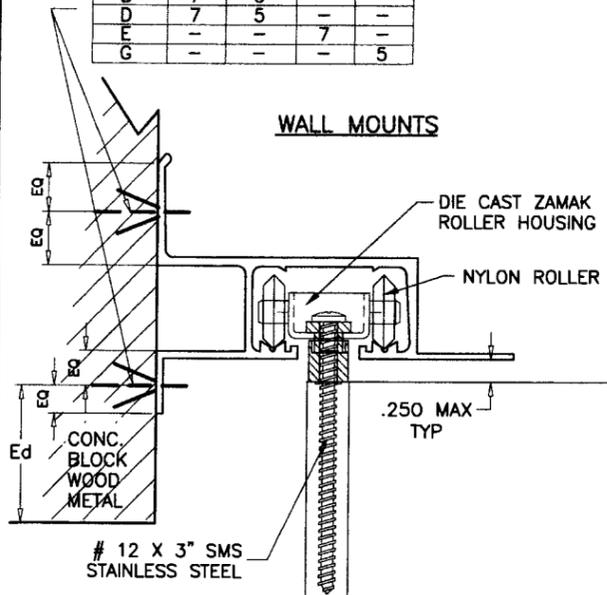
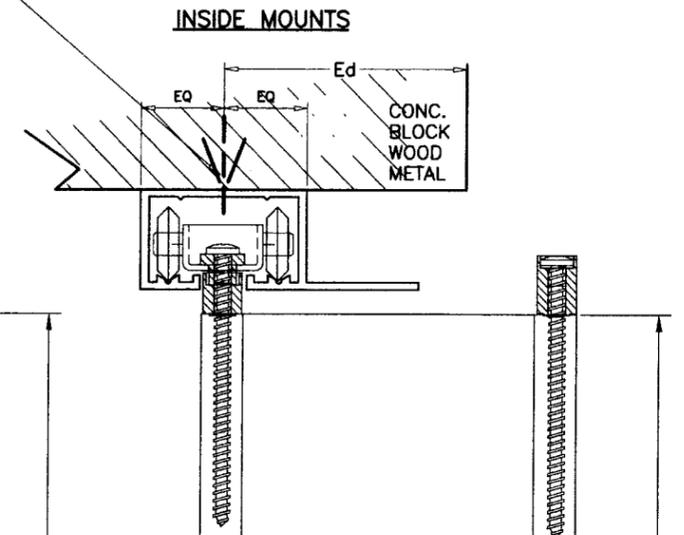


CHART TO USE

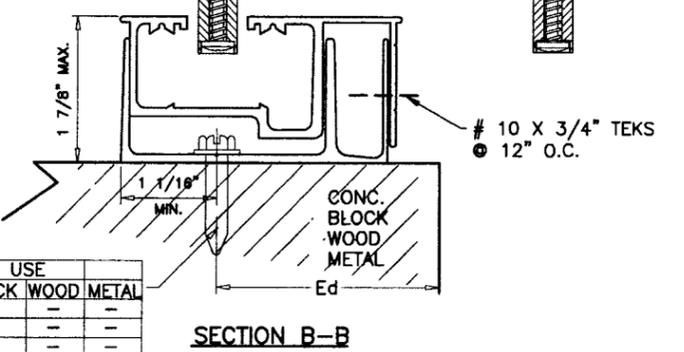
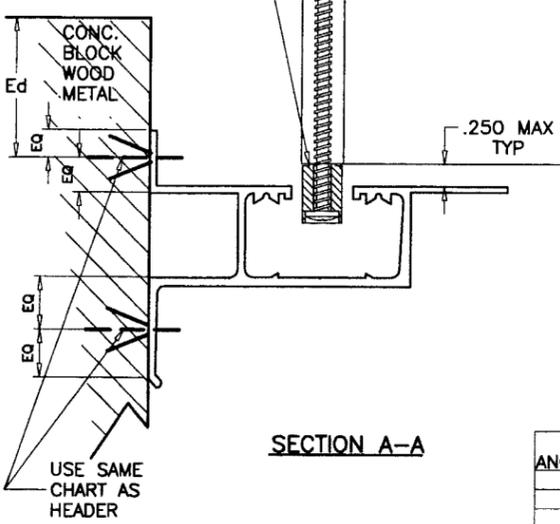
ANCHOR	CONC.	BLOCK	WOOD	METAL
A	4	2	-	-
B	5	2	-	-
D	4	2	-	-
E	-	-	3	-
G	-	-	-	2



MAX. SPAN SEE GRAPH

CHART TO USE

ANCHOR	CONC.	BLOCK	WOOD	METAL
A	4	2	-	-
B	5	2	-	-
D	4	2	-	-
E	-	-	3	-
G	-	-	-	2



FOR GENERAL NOTES AND EXTRUSION DETAILS SEE SHEET 1 & 2.
 FOR WOOD INSTALLATIONS SEE SHEET 5 OF 7.
 FOR ANCHOR CHARTS SEE SHEET 6 OF 7.

Ed = TYPICAL EDGE DISTANCE
 CONC. & BLOCK = 12d (12 ANCHOR DIAMETERS)
 WOOD = 5d
 FOR LESSER EDGE DISTANCES SEE SHEET 6 OF 7.

ANCHORS: EMBEDMENT & EDGE DISTANCES SHOWN ARE BEYOND THE WALL & FLOOR COVERING (STUCCO, TILES, ETC.)

CHART TO USE			
ANCHOR	CONC.	BLOCK	WOOD METAL
A	4	2	-
B	5	2	-
D	4	1	-
E	-	-	3
G	-	-	2

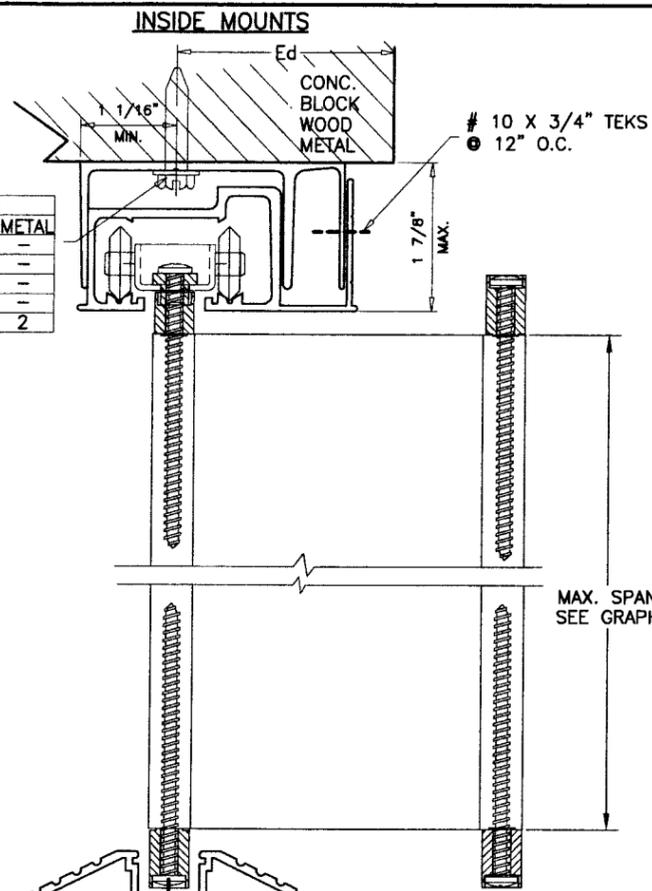


CHART TO USE			
ANCHOR	CONC.	BLOCK	WOOD METAL
A	2	1	-
B	3	1	-
D	3	1	-
E	-	-	3
G	-	-	1

ALT. WALL MOUNTS
SILL SIMILAR

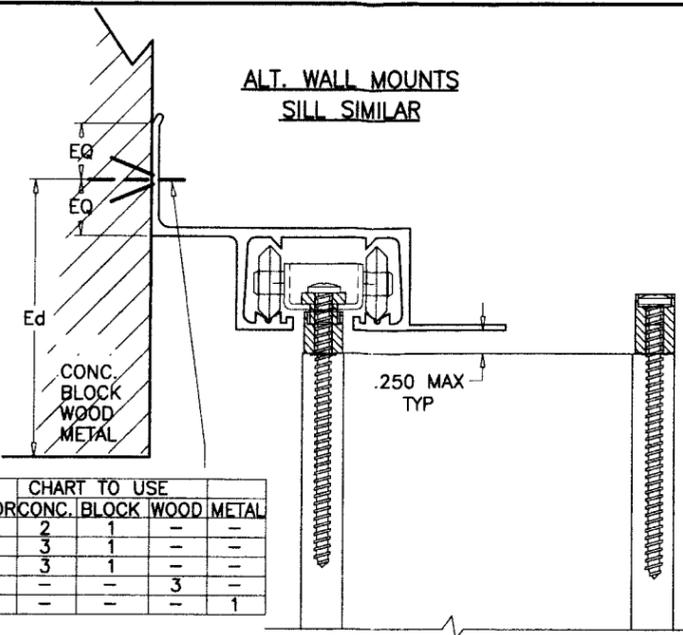


CHART TO USE			
ANCHOR	CONC.	BLOCK	WOOD METAL
A	3	1	-
B	4	1	-
D	4	1	-
E	-	-	3
G	-	-	2

ALT. WALL MOUNTS
SILL SIMILAR

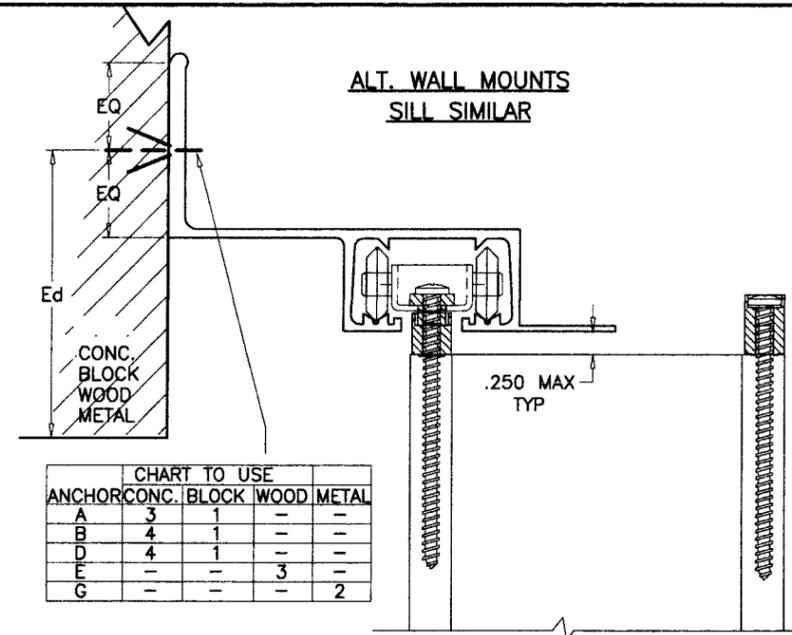
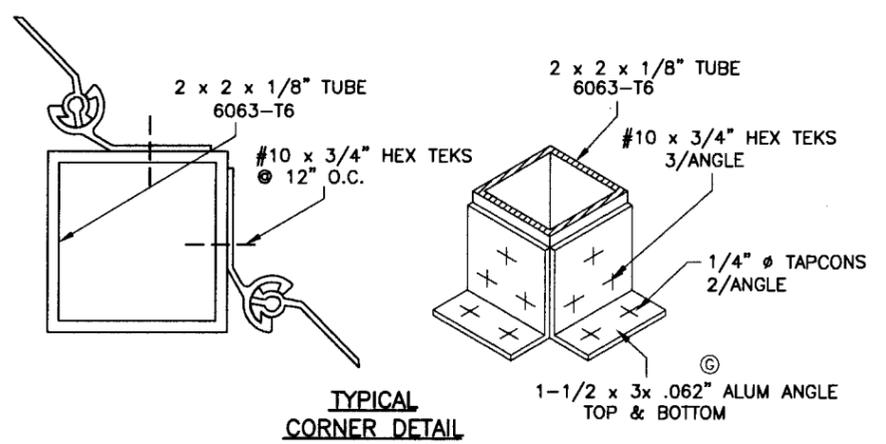
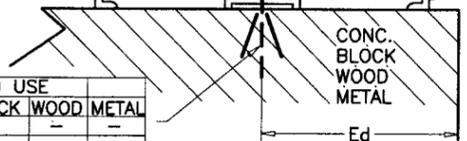
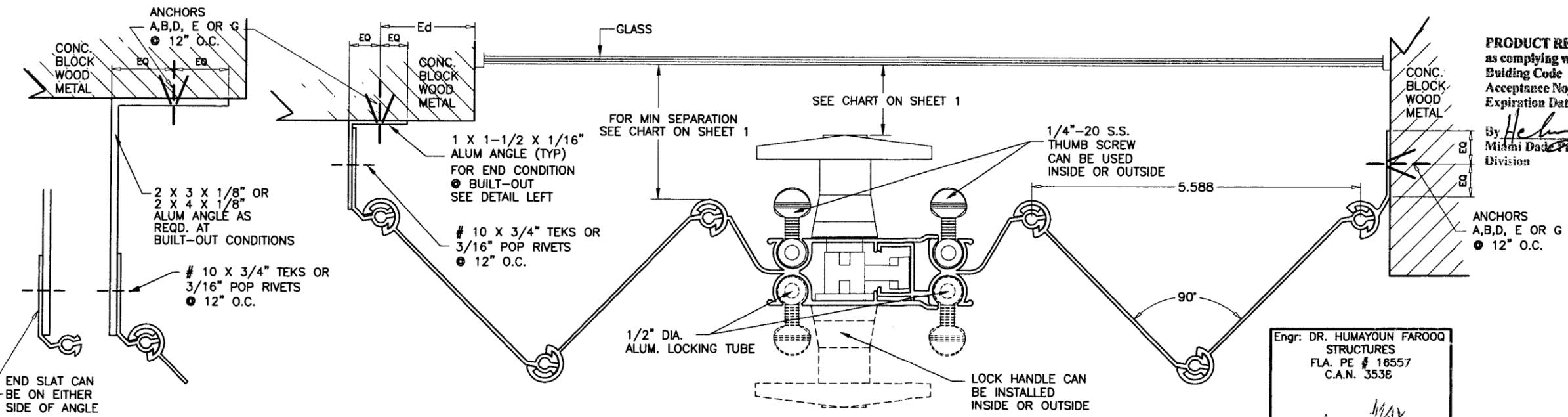


CHART TO USE			
ANCHOR	CONC.	BLOCK	WOOD METAL
A	6	5	-
B	6	4	-
D	5	3	-
E	-	-	5
G	-	-	5

SECTION D-D



TYPICAL
CORNER DETAIL



SECTION E-E

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 08-0213.07
Expiration Date 07/23/2013

By *Helmy A. Helmy*
Miami Dade Product Control
Division

Engr: DR. HUMAYOON FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 353E

MAY 30 2008

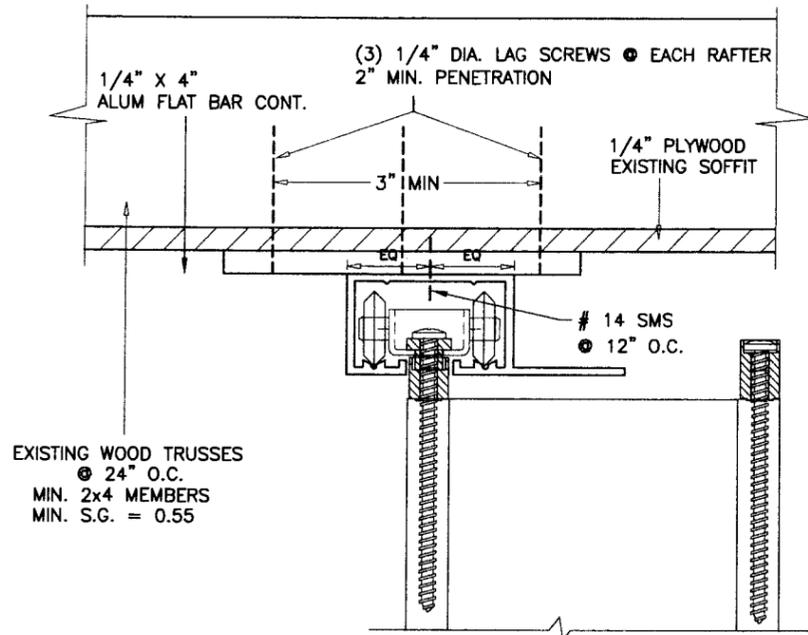
afc
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
1235 S.W. 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
ACCORDION 94-46ABH

ACCORDION SHUTTER DETAILS
Southern Metal Products, LLC
dba - All Broward Hurricane Panel
450 West McNab Road
Ft. Lauderdale, FL 33309
TEL. 1-800-432-1803 FAX. 954-973-3928

no	date	description
H	06.02.03	CO. NAME REV., ANCHORS REV.
J	11.13.03	REV. PER BCCO COMMENTS
I	01.23.04	REV. PER BCCO COMMENTS
K	11.14.07	UPDATED FOR 2004 FBC
L	05.28.08	NO CHANGE THIS SHEET

date:	08-10-94
scale:	1/2" = 1"
dr. by:	HAMID
chk. by:	

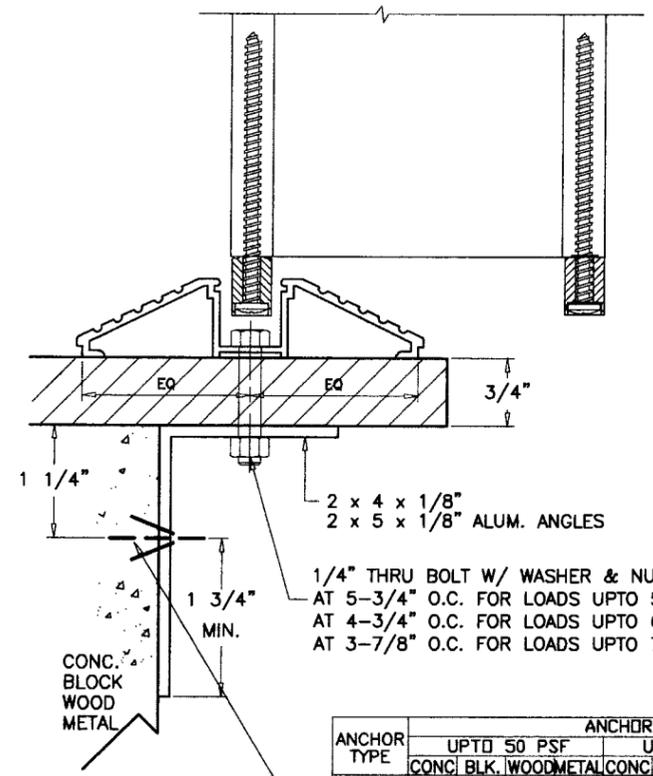
drawing no.
94-46
sheet 4 of 7



EXISTING WOOD TRUSSES
 @ 24" O.C.
 MIN. 2x4 MEMBERS
 MIN. S.G. = 0.55

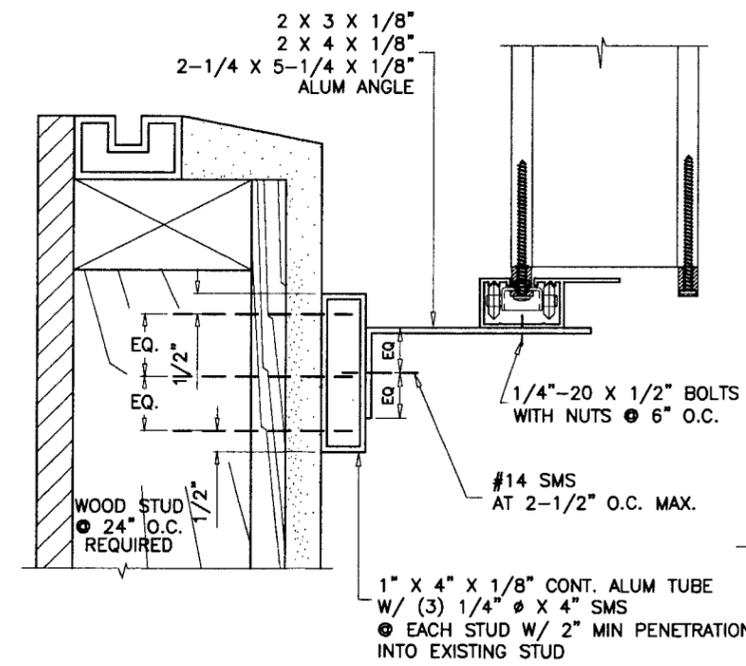
HEADER CONNECTION TO WOOD TRUSSES

FOR SHUTTER HEIGHT OF 72" MAX. DESIGN LOAD = 102 PSF
 FOR SHUTTER HEIGHT OF 84" MAX. DESIGN LOAD = 87 PSF
 FOR SHUTTER HEIGHT OF 96" MAX. DESIGN LOAD = 76 PSF
 FOR SHUTTER HEIGHT OF 108" MAX. DESIGN LOAD = 68 PSF



COUNTER TOP CONDITION
 (PASS THRU WINDOW)
 MAX SHUTTER HEIGHT = 6 FT.

ANCHOR TYPE	ANCHOR SPACING INCHES								
	UPTO 50 PSF			UPTO 60 PSF			UPTO 73 PSF		
	CONC	BLK	WOODMETAL	CONC	BLK	WOODMETAL	CONC	BLK	WOODMETAL
A	6	5.3	-	6	4.4	-	6	3.6	-
B	6	5.2	-	6	4.3	-	6	3.6	-
E	-	-	6	-	-	6	-	-	6
G	-	-	-	6	-	-	6	-	5

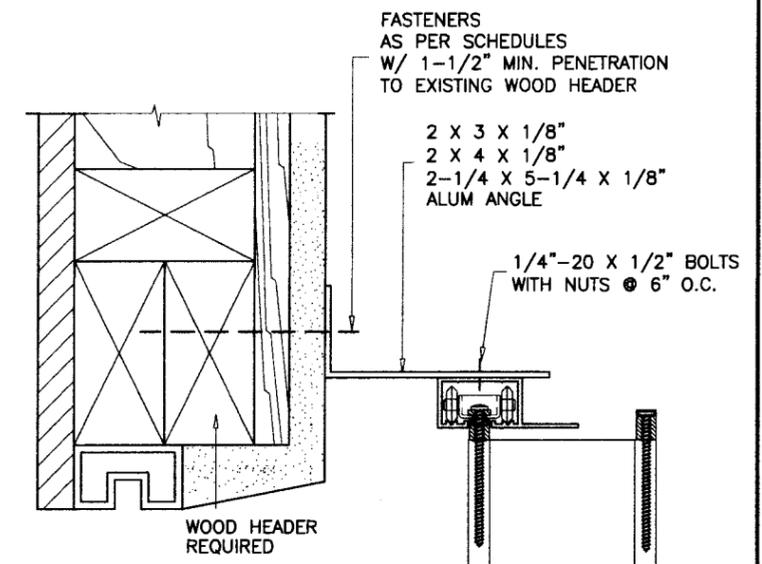


FOR SHUTTER HEIGHT OF 84" MAX. DESIGN LOAD = 108 PSF
 FOR SHUTTER HEIGHT OF 96" MAX. DESIGN LOAD = 94 PSF
 FOR SHUTTER HEIGHT OF 108" MAX. DESIGN LOAD = 84 PSF
 FOR SHUTTER HEIGHT OF 120" MAX. DESIGN LOAD = 75 PSF

INSTALLATION DETAIL ON EXISTING WOOD STUDS SCALE: 1/4"=1"

ABOVE DETAILS SHOWS CONNECTION OF 2X6 BUCK & 1X4 ALUM TUBE TO WOOD STUDS TO PROVIDE A CONTINUOUS SURFACE FOR SHUTTER INSTALLATION.

FOR INSTALLATION DETAILS OF HEADER/SILL TO CONTINUOUS WOOD MEMBERS SEE SHEETS 3 AND 4.



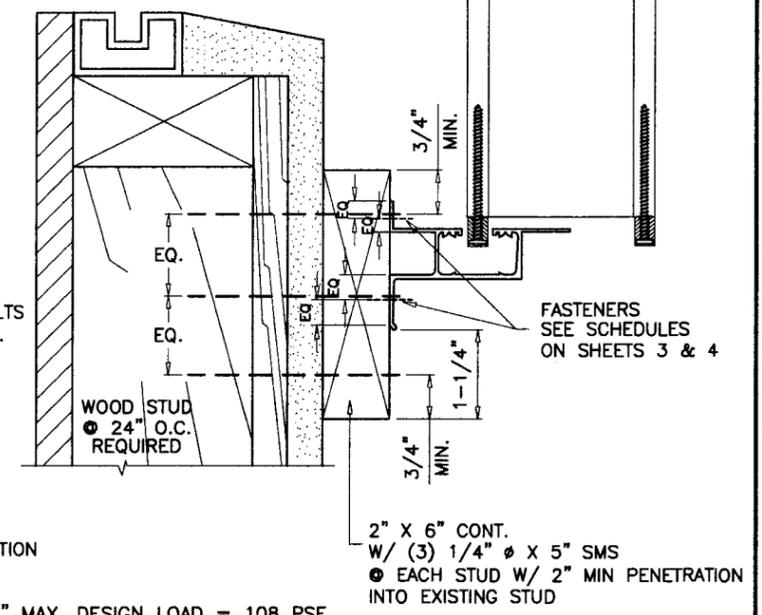
FASTENERS AS PER SCHEDULES
 W/ 1-1/2" MIN. PENETRATION TO EXISTING WOOD HEADER

2 X 3 X 1/8"
 2 X 4 X 1/8"
 2-1/4 X 5-1/4 X 1/8" ALUM ANGLE

1/4"-20 X 1/2" BOLTS WITH NUTS @ 6" O.C.

WOOD HEADER REQUIRED

ANGLE CAN BE INSTALLED WITH ANGLE LEG IN UPWARD OR DOWNWARD DIRECTIONS TYP. AT HEAD & SILL



FASTENERS SEE SCHEDULES ON SHEETS 3 & 4

2" X 6" CONT. W/ (3) 1/4" @ X 5" SMS @ EACH STUD W/ 2" MIN PENETRATION INTO EXISTING STUD

Engr: DR. HUMAYOUN FAROOQ
 STRUCTURES
 FLA. PE # 16557
 C.A.N. 3538

PRODUCT REVISED as complying with the Florida Building Code
 Acceptance No 08-0213.07
 Expiration Date 07/23/2013
 By: Helmy A. Moham
 Miami Dade Product Control Division

MAY 30 2008

afc
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 1235 S.W. 87 AVE
 MIAMI, FLORIDA 33174
 TEL. (305) 264-8100 FAX. (305) 262-6978
 ACCORDION 94-46ABH

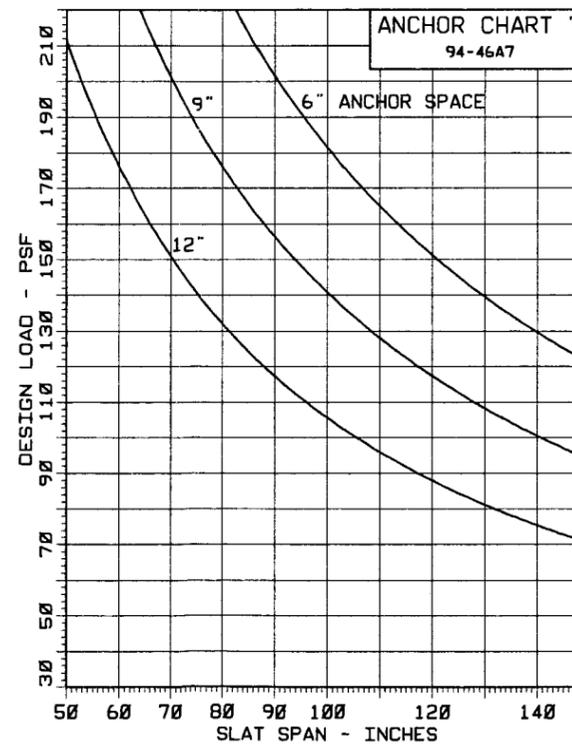
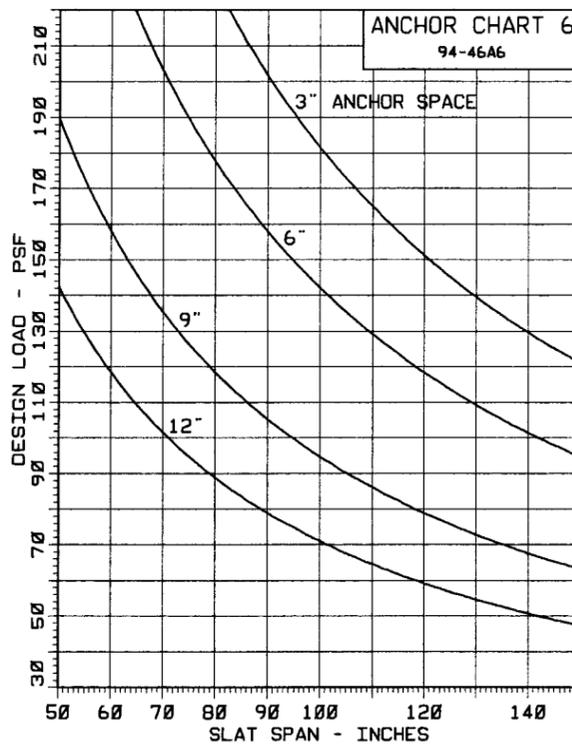
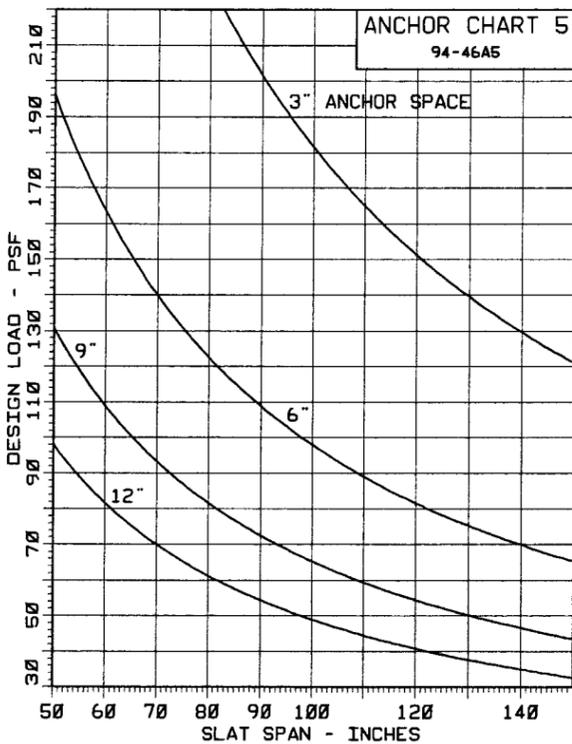
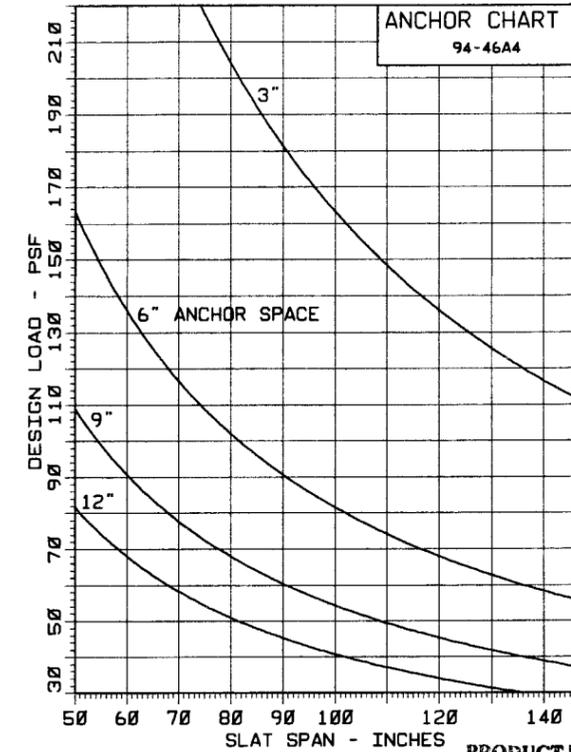
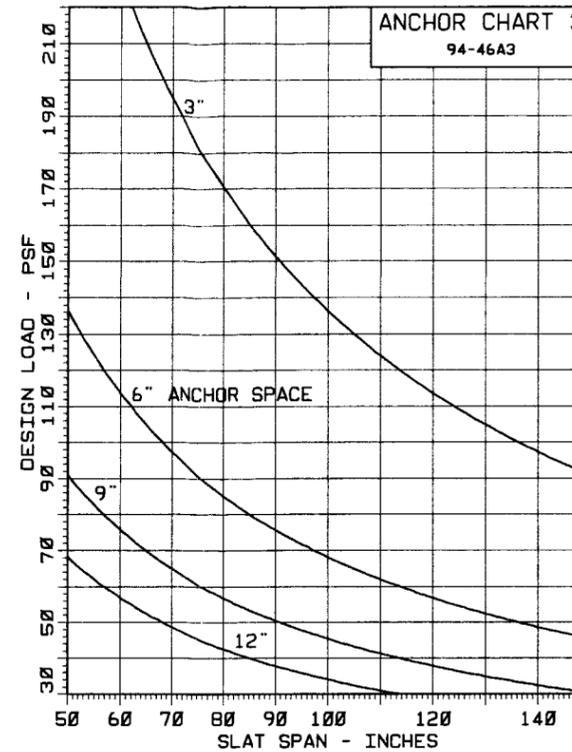
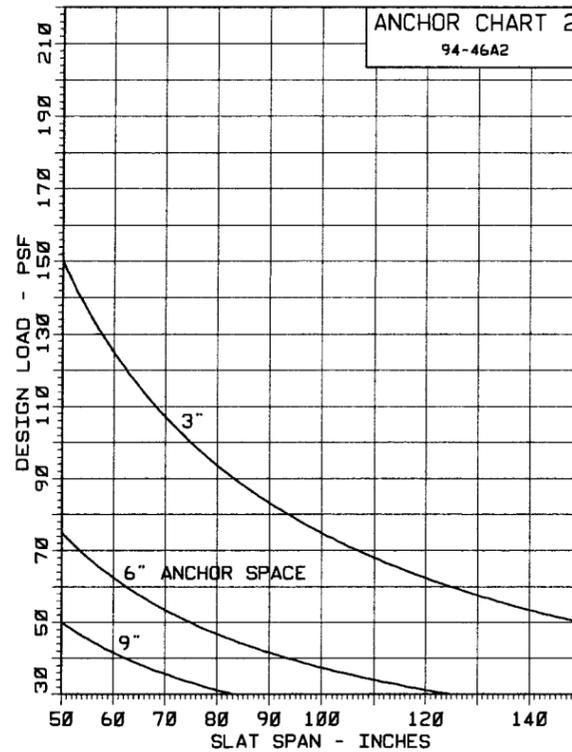
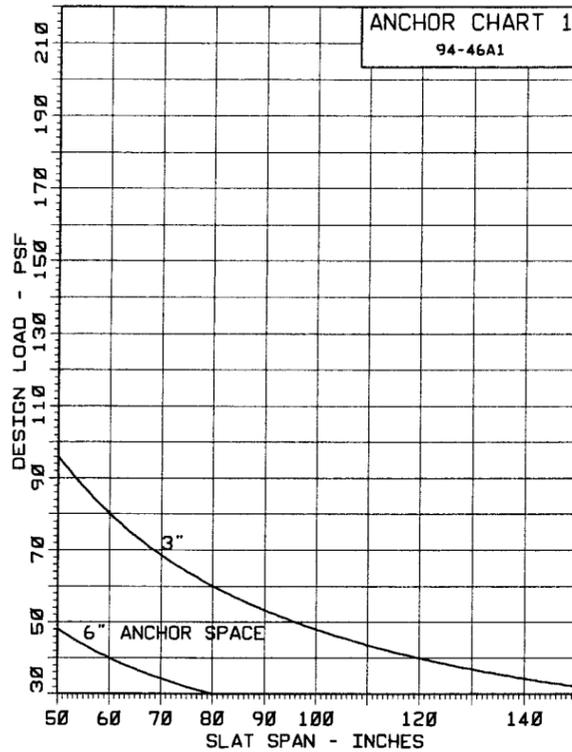
ACCORDION SHUTTER DETAILS
 Southern Metal Products, LLC
 dba-All Broward Hurricane Panel
 450 West McNab Road
 Ft. Lauderdale, FL. 33309
 TEL. 1-800-432-1803 FAX. 954-973-3928

revisions:

no	date	description	CO. NAME REV.	ANCHORS REV.
H	06.02.03			
I	11.13.03			
J	01.23.04			
K	11.14.07			
L	05.28.08			

date: 06-10-94
 scale: 1/2" = 1"
 dr. by: HAMID
 chk. by:

drawing no.
94-46
 sheet 5 of 7



PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No. 08-0213.07
 Expiration Date 01/23/12 013
 By *Heaven P. Miller*
 Miami Deck Product Control
 Division

TYPICAL ANCHORS:

- ANCHOR (A) = 1/4" DIA. TAPCONS (BY ELCO)
 1-3/4" EMBEDMENT INTO 3000 PSI CONC.
 1-1/4" EMBEDMENT INTO C-90 BLOCK
- ANCHOR (B) = 1/4" DIA. KWIKCON II (BY HILTI)
 1-3/4" EMBEDMENT INTO 3000 PSI CONC.
 1-1/4" EMBEDMENT INTO C-90 BLOCK
- ANCHOR (D) = 1/4" RAWL CALK-IN
 TOTAL ANCHOR BODY INTO 3000 PSI CONC.
 OR C-90 BLOCK
- ANCHOR (E) = 1/4" DIA. LAG SCREWS
 1-1/2" MIN PENETRATION INTO WOOD(S.G.=0.55)
- ANCHOR (G) = 1/4" DIA. KWIK-FLEX SELF DRILLING SCREWS
 INTO METAL STRUCTURES
 (STEEL OR ALUMINUM 1/8" MIN. THICK.)

NOTE: ANCHORS EMBEDMENT SHOWN IS BEYOND WALL & FLOOR COVERINGS (STUCCO, TILES, ETC.)

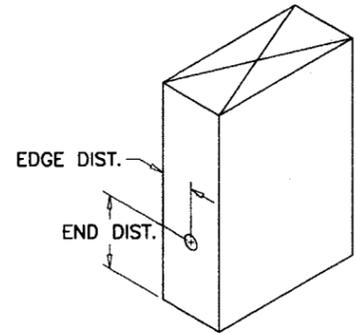
FASTENER SPACING IN MASONRY/CONCRETE

CHARTS ARE BASED ON TYPICAL EDGE DISTANCE = 12d.
 FOR LESSER EDGE DISTANCE DECREASE SPACING BY
 MULTIPLYING WITH THE FACTOR BELOW

EDGE DIST.	12d=3"	10d=2-1/2"	8d=2"	6d=1-1/2"	5d=1-1/4"
FACTOR	1.00	0.86	0.71	0.57	0.50

EXAMPLE: FOR 3" EDGE DIST. SPACING = 9" O.C. (FROM CHART)
 FOR 2" EDGE DIST. SPACING = 9 X .71 = 6.4 O.C.

TYPICAL EDGE DISTANCE IN WOOD = 3/4"
 TYPICAL END DISTANCE IN WOOD = 1"
 NO REDUCTION FACTOR IS REQUIRED



USE CHARTS 1 THRU 7 TO VERIFY ANCHOR REQUIREMENTS AND STRESS LIMITATIONS OF LOAD/SPAN COMBINATIONS FOR HEADER AND SILL.

Engr: DR. HUMAYOUN FAROOQ
 STRUCTURES
 FLA. PE # 16557
 C.A.N. 3538

H MAY 30 2008

af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
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revisions:

no	date	description	CO. NAME	REV.	ANCHORS	REV.
H	06.02.03					
I	11.13.03					
J	01.23.04	NO CHANGE THIS SHEET				
K	11.14.07	UPDATED FOR 2004 FBC				
L	05.28.08	REV. PER BCCO COMMENTS				

date: 06-10-94
 scale: 1/2" = 1"
 dr. by: HAMID
 chk. by:

drawing no.
94-46
 sheet 6 of 7

DESIGN LOAD CAPACITY - PSF 2" X 2" X 1/8" ALUM TUBE						
SHUTTER HEIGHT	SPAN TUBE LENGTHS					
	54"	60"	66"	72"	78"	84"
48"	89.7	65.4	49.2	37.9	29.8	23.8
54"	79.8	58.2	43.7	33.7	26.5	21.2
60"	71.8	52.3	39.3	30.3	23.8	-
66"	65.3	47.6	35.7	27.5	21.7	-
72"	59.8	43.6	32.8	25.2	-	-
78"	55.2	40.3	30.2	23.3	-	-
84"	51.3	37.4	28.1	21.6	-	-
90"	47.9	34.9	26.2	20.2	-	-
96"	44.9	32.7	24.6	-	-	-
102"	42.2	30.8	23.1	-	-	-
108"	39.9	29.1	21.8	-	-	-
114"	37.8	27.5	20.7	-	-	-
120"	35.9	26.2	-	-	-	-

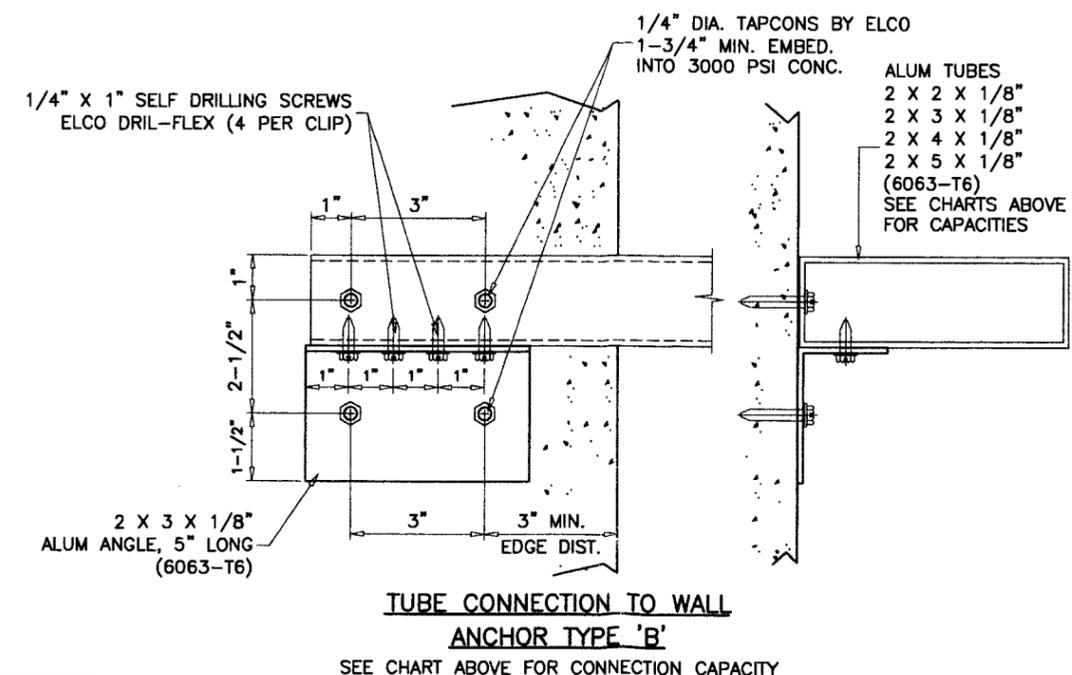
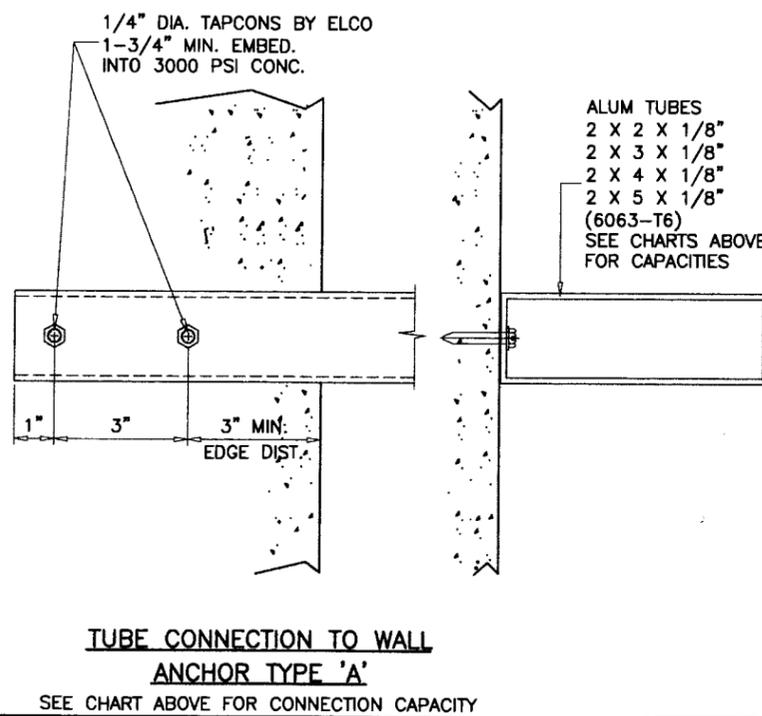
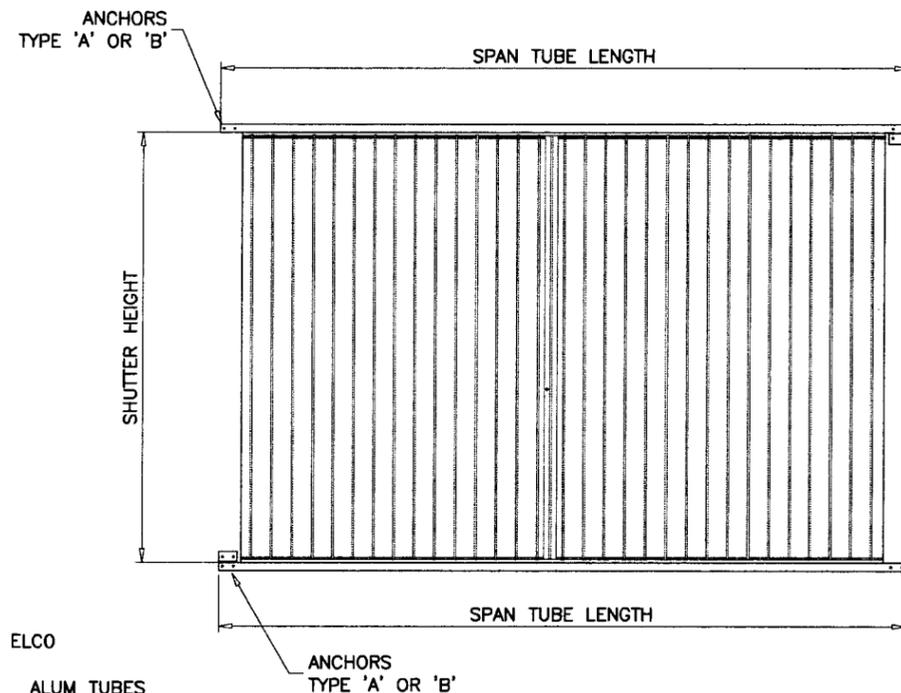
DESIGN LOAD CAPACITY - PSF 2" X 3" X 1/8" ALUM TUBE							
SHUTTER HEIGHT	SPAN TUBE LENGTHS						
	54"	60"	66"	72"	78"	84"	90"
48"	100.0	100.0	100.0	100.0	79.1	63.4	51.5
54"	100.0	100.0	100.0	89.4	70.3	56.3	45.8
60"	100.0	100.0	100.0	80.5	63.3	50.7	41.2
66"	100.0	100.0	95.0	73.2	57.6	46.1	37.5
72"	100.0	100.0	87.1	67.1	52.8	42.2	34.3
78"	100.0	100.0	80.4	61.9	48.7	39.0	31.7
84"	100.0	99.4	74.6	57.5	45.2	36.2	29.4
90"	100.0	92.7	69.7	53.7	42.2	33.8	27.5
96"	100.0	86.9	65.3	50.3	39.6	31.7	25.8
102"	100.0	81.8	61.5	47.3	37.2	29.8	24.2
108"	100.0	77.3	58.1	44.7	35.2	28.2	22.9
114"	100.0	73.2	55.0	42.4	33.3	26.7	21.7
120"	95.4	69.5	52.3	40.2	31.7	25.3	20.6

DESIGN LOAD CAPACITY - PSF 2" X 4" X 1/8" ALUM TUBE							
SHUTTER HEIGHT	SPAN TUBE LENGTHS						
	54"	60"	66"	72"	78"	84"	90"
48"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
54"	100.0	100.0	100.0	100.0	100.0	100.0	92.9
60"	100.0	100.0	100.0	100.0	100.0	100.0	83.6
66"	100.0	100.0	100.0	100.0	100.0	93.5	76.0
72"	100.0	100.0	100.0	100.0	100.0	85.7	69.7
78"	100.0	100.0	100.0	100.0	98.8	79.1	64.3
84"	100.0	100.0	100.0	100.0	91.7	73.5	59.7
90"	100.0	100.0	100.0	100.0	85.6	68.6	55.7
96"	100.0	100.0	100.0	100.0	80.3	64.3	52.3
102"	100.0	100.0	100.0	96.1	75.5	60.5	49.2
108"	100.0	100.0	100.0	90.7	71.4	57.1	46.4
114"	100.0	100.0	100.0	85.9	67.6	54.1	44.0
120"	100.0	100.0	98.4	81.6	64.2	51.4	41.8

DESIGN LOAD CAPACITY - PSF 2" X 5" X 1/8" ALUM TUBE							
SHUTTER HEIGHT	SPAN TUBE LENGTHS						
	54"	60"	66"	72"	78"	84"	90"
48"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
54"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
60"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
66"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
72"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
78"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
90"	100.0	100.0	100.0	100.0	100.0	100.0	96.0
96"	100.0	100.0	100.0	100.0	100.0	100.0	90.0
102"	100.0	100.0	100.0	100.0	100.0	97.9	84.7
108"	100.0	100.0	100.0	100.0	100.0	92.5	80.0
114"	100.0	100.0	100.0	100.0	100.0	87.6	75.8
120"	100.0	100.0	100.0	100.0	97.2	83.2	72.0

DESIGN LOAD CAPACITY - PSF ANCHOR TYPE 'A'							
SHUTTER HEIGHT	SPAN TUBE LENGTHS						
	54"	60"	66"	72"	78"	84"	90"
48"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
54"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
60"	100.0	100.0	100.0	100.0	100.0	99.7	93.0
66"	100.0	100.0	100.0	100.0	97.6	90.6	84.6
72"	100.0	100.0	100.0	96.9	89.4	83.0	77.5
78"	100.0	100.0	97.6	89.4	82.6	76.7	71.5
84"	100.0	99.7	90.6	83.0	76.7	71.2	66.4
90"	100.0	93.0	84.6	77.5	71.5	66.4	62.0
96"	96.9	87.2	79.3	72.7	67.1	62.3	58.1
102"	91.2	82.1	74.6	68.4	63.1	58.6	54.7
108"	86.1	77.5	70.5	64.6	59.6	55.4	51.7
114"	81.6	73.4	66.8	61.2	56.5	52.5	49.0
120"	77.5	69.8	63.4	58.1	53.7	49.8	46.5

DESIGN LOAD CAPACITY - PSF ANCHOR TYPE 'B'							
SHUTTER HEIGHT	SPAN TUBE LENGTHS						
	54"	60"	66"	72"	78"	84"	90"
48"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
54"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
60"	100.0	100.0	100.0	100.0	100.0	100.0	100.0
66"	100.0	100.0	100.0	100.0	100.0	100.0	96.5
72"	100.0	100.0	100.0	100.0	100.0	94.8	88.4
78"	100.0	100.0	100.0	100.0	94.2	87.5	81.6
84"	100.0	100.0	100.0	94.8	87.5	81.2	75.8
90"	100.0	100.0	96.5	88.4	81.6	75.8	70.8
96"	100.0	99.5	90.5	82.9	76.5	71.1	66.3
102"	100.0	93.6	85.1	78.0	72.0	66.9	62.4
108"	98.3	88.4	80.4	73.7	68.0	63.2	59.0
114"	93.1	83.8	76.2	69.8	64.5	59.8	55.9
120"	88.4	79.6	72.4	66.3	61.2	56.9	53.1



NOTE:
THE DESIGN PRESSURE OF THE SHUTTER IS THE SMALLER ALLOWABLE PRESSURE OF THE ALUMINUM TUBE AND THE ANCHOR TYPE.

Engr. DR. HUMAYOON FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

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no	date	description
H	06.02.03	SHEET ADDED
J	11.13.03	REV. PER BCCO COMMENTS
K	01.23.04	NO CHANGE THIS SHEET
L	11.14.07	NO CHANGE THIS SHEET
L	05.28.08	NO CHANGE THIS SHEET

date: 06-10-94
scale: 1/4" = 1"
dr. by: HAMID
chk. by:

drawing no.
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