



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 NOA # 08-0213.07** and consists of this page 1, evidence submitted pages E-1, E-2, E-3, E-4 & E-5 as well as approval document mentioned above.

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



Helmy A. Makar
 10/23/2008

NOA No. 08-0814.05
Expiration Date: 07/23/2013
Approval Date: 10/23/2008

Southern Metal Products, LLC

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #98-0616.05

A. DRAWINGS

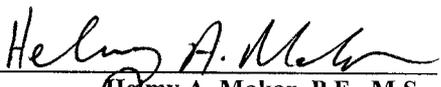
1. *Drawing prepared by Al-Farooq Corporation, titled "Accordion Shutter Details," Drawing No. 94-46, dated June 10, 1994, last revised June 15, 1998, sheets 1 through 4 of 4, signed and sealed by Dr. Humayoun Farooq, P.E. on June 15, 1998.*

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.*



Jeremy A. Makar, P.E., M.S.

Product Control Examiner

NOA No. 08-0814.05

Expiration Date: 07/23/2013

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Southern Metal Products, LLC

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. 08-0814.05
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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

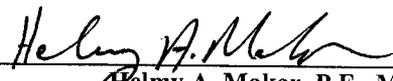
1. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test of an accordion shutter, prepared by Construction Testing Corporation, Report No. 03-012, dated May 31, 2003, signed and sealed by Yamil G. Kuri, P.E.*

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
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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. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 08-0213.07

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

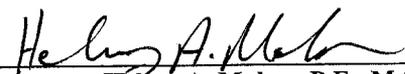
1. *Comparative analysis and anchor calculations, pages A-1 through A-31, AP-1 through AP-11, C-1 through C-21, prepared by Al-Farooq Corporation, dated May 28, 2008, signed and sealed by Humayoun Farooq, P.E., on May 30, 2008.*

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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Southern Metal Products, LLC

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

8. 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.*

B. TESTS

1. *None.*

C. CALCULATIONS

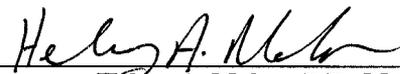
1. *None.*

D. QUALITY ASSURANCE

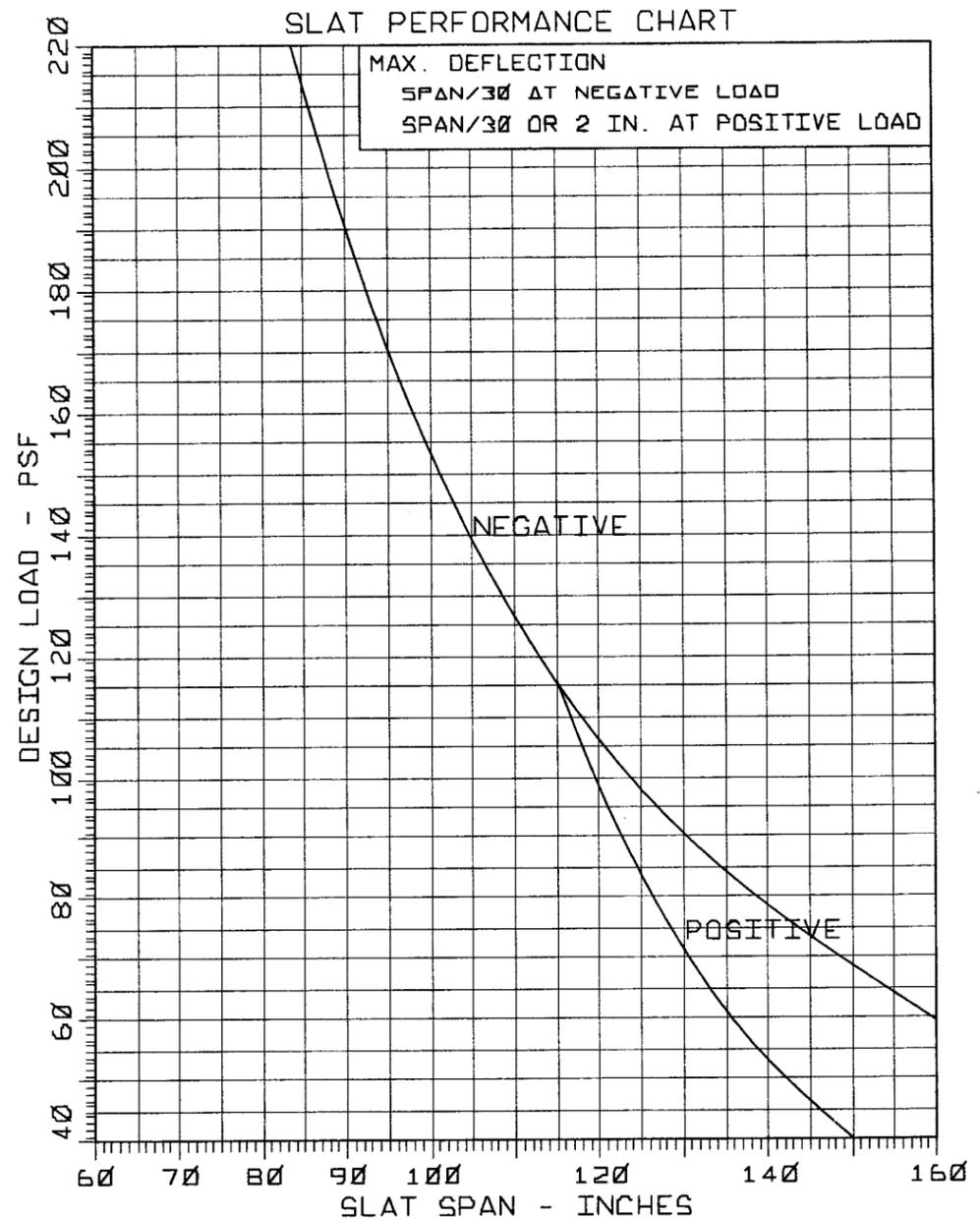
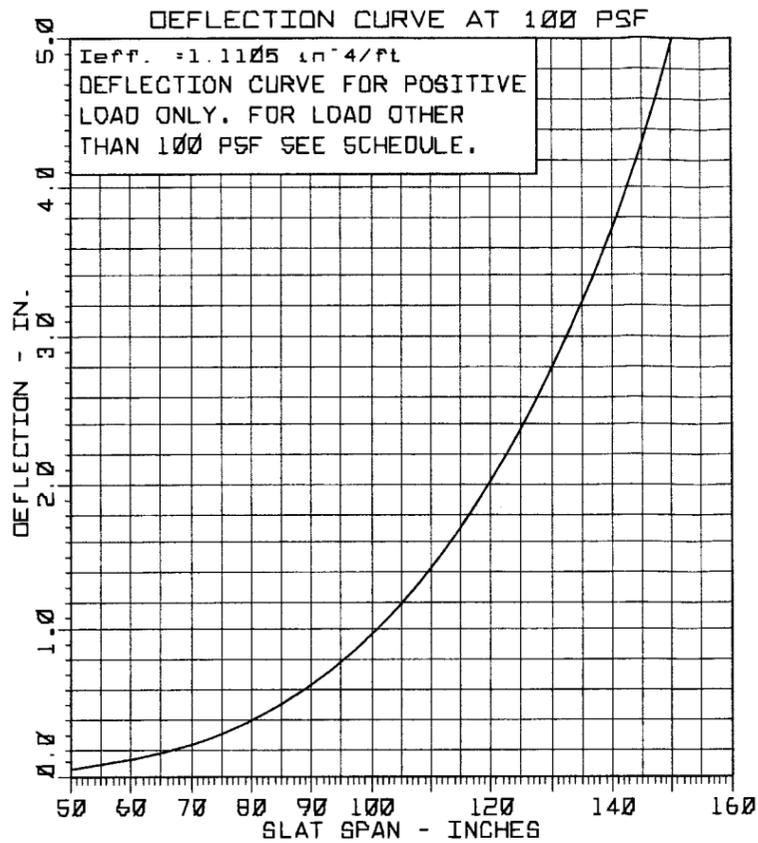
1. *By Miami-Dade County Building Code Compliance Office.*

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.		
READING FROM SPAN D. CURVE = D =	IN.		
DEFLECTION AT Pd = K*D =	IN.	120"	2-1/2"
MIN. SEPARATION REQD. = K*D+1" =	IN.	150"	3-1/4"

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

- THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2004/2007 EDITION INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).
- DESIGN CRITERIA FOR ALUMINUM, MINIMUM MECHANICAL PROPERTIES, AND SAFETY FACTORS ARE IN ACCORDANCE WITH THE "ALUMINUM CONSTRUCTION MANUAL" LATEST EDITION.
- ALUMINUM ALLOYS: ALL EXTRUSIONS SHALL BE ALLOY AS SHOWN
- 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.
- ANCHORS SHALL BE AS SHOWN ON DETAILS. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
- ALL BOLTS SHALL BE STAINLESS STEEL, ALUMINUM ALLOY 2024-T4 OR 7075-T6, OR PLATED STEEL. WING NUTS TO BE OF ZINC ALLOY.
- DESIGN CRITERIA FOR SLATS: MAX DEFLECTION \leq THE LESSER OF L/30 OR 2".
- ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
- 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 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

[Signature]
JUL 31 2008

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 08-0814.05
Expiration Date 07/23/2013

By *[Signature]*
Miami Dade Product Control Division

afcc

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

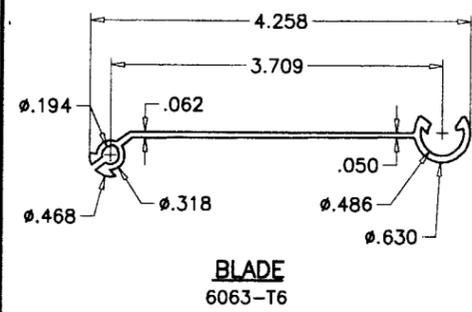
Southern Metal Products, LLC
dba-All Broward Hurricane Panel
450 West McNab Road
Ft. Lauderdale, Fl. 33309
TEL. 1-800-432-1803 FAX. 954-973-3928

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		REV. PER BCCO COMMENTS

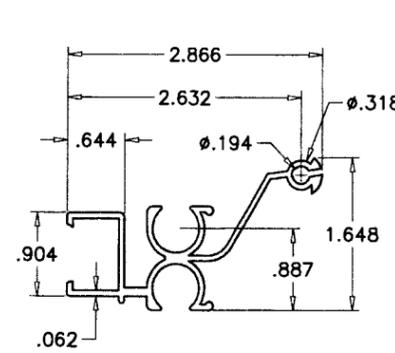
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dr. by: HAMID
chk. by:

drawing no.
94-46

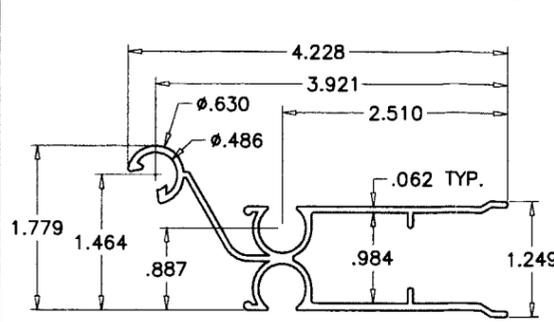
sheet 1 of 7



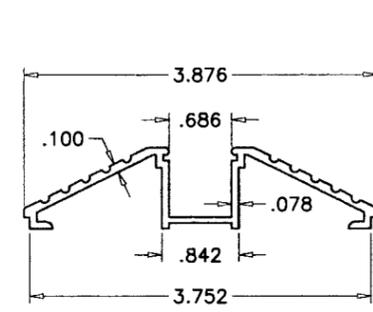
BLADE
6063-T6



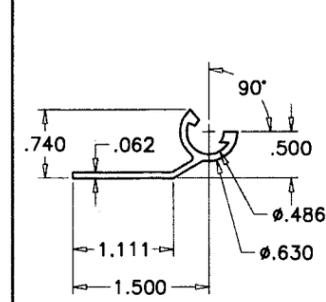
MALE LOCKING SLAT
6063-T6



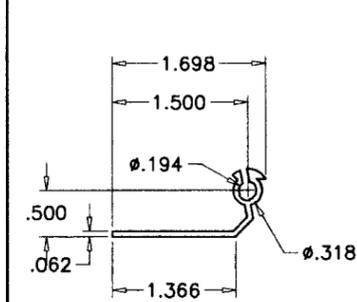
FEMALE LOCKING SLAT
6063-T6



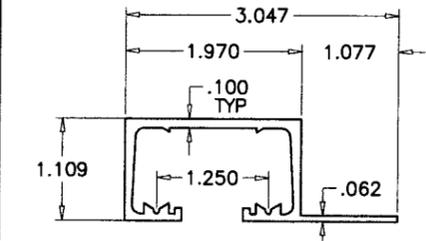
THRESHOLD TRACK
6063-T6



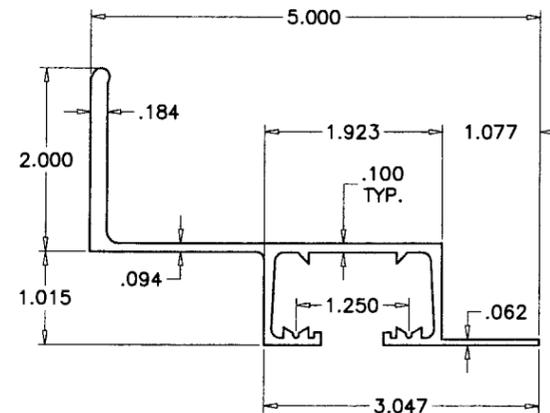
FEMALE END SLAT
6063-T6



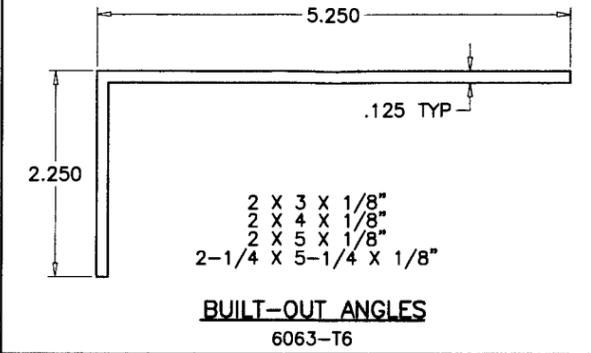
MALE END SLAT
6063-T6



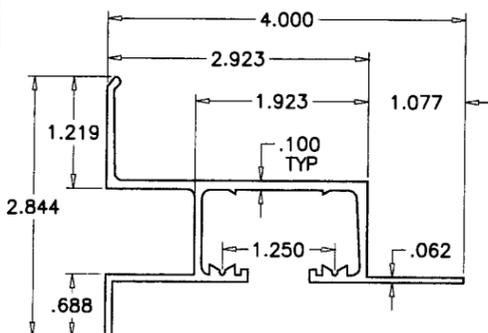
CEILING MOUNT HEADER
6063-T6



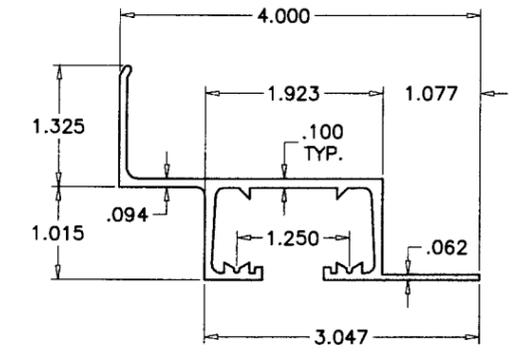
ALT. WALL MOUNT HEADER/SILL
6063-T5



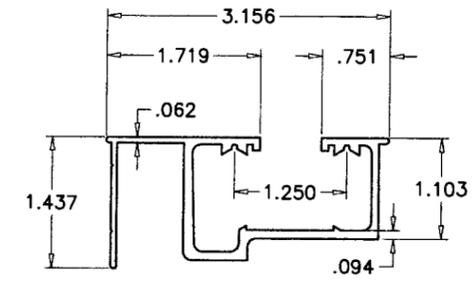
BUILT-OUT ANGLES
6063-T6



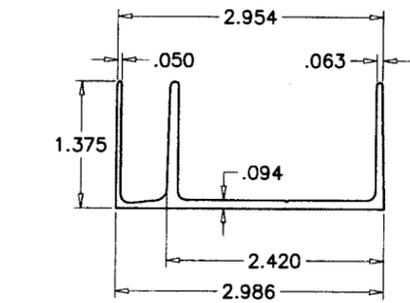
WALL MOUNT HEADER/SILL
6063-T6



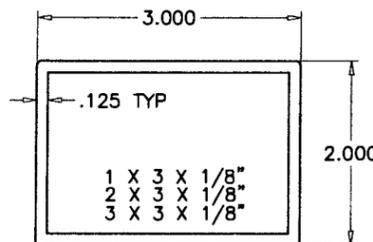
ALT. WALL MOUNT HEADER/SILL
6063-T5



ADJ. HEADER/SILL
6063-T6



TRACK ADAPTER
6063-T6



SPACER TUBE
6063-T6

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

[Signature]

JUL 31 2008

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 08-0814.05
Expiration Date 07/23/2013

By *[Signature]*
Miami Dade Product Control
Division

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	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

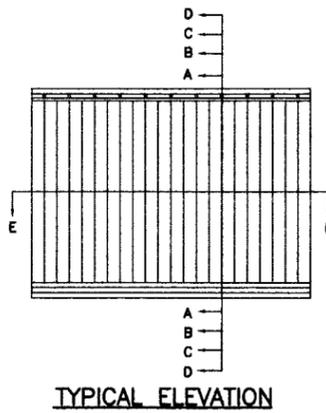
date: 06-10-94
scale: 1/2" = 1"
dr. by: HAMID
chk. by:

drawing no.
94-46
sheet 2 of 7

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

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



WALL MOUNTS

INSIDE MOUNTS

BUILT-OUT CONDITION

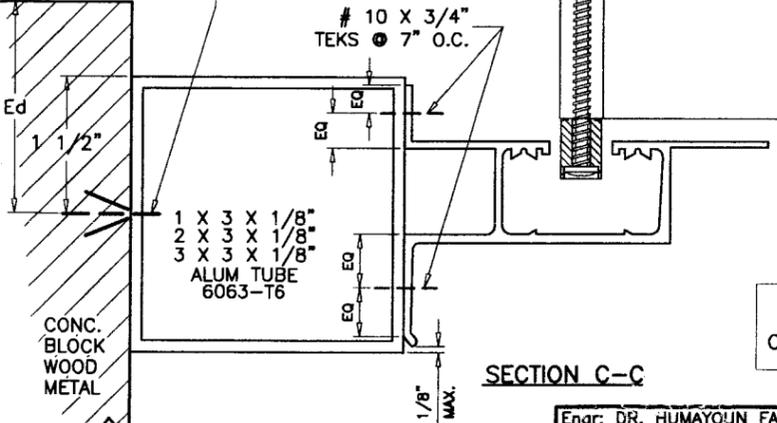
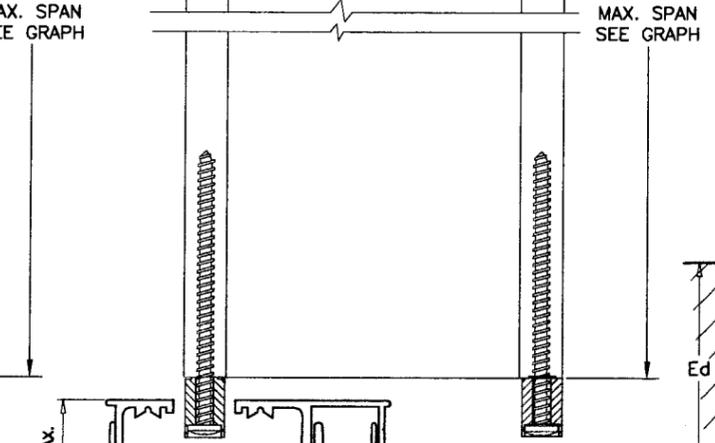
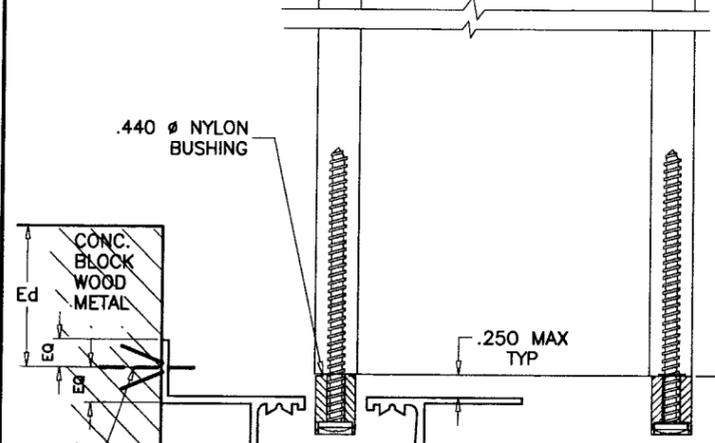
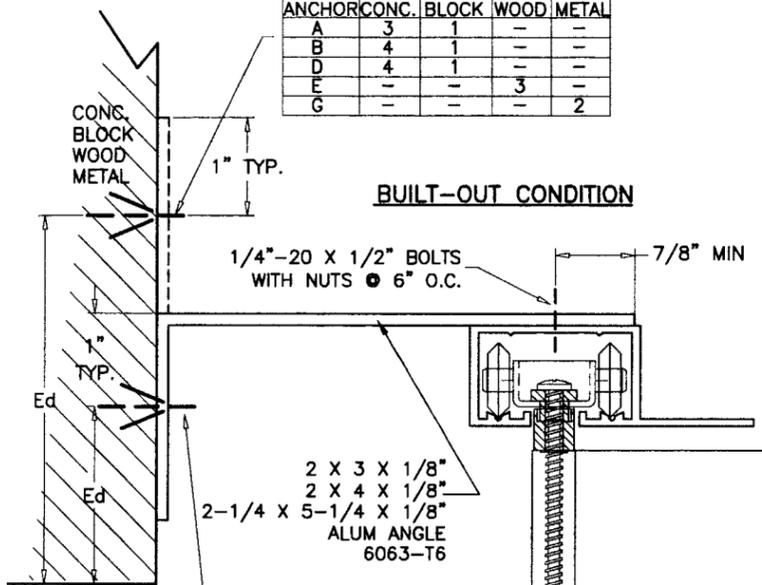
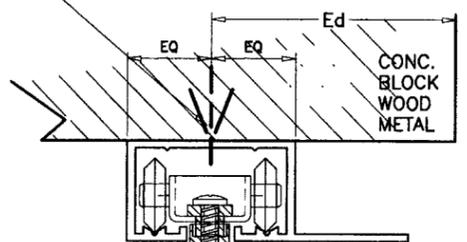
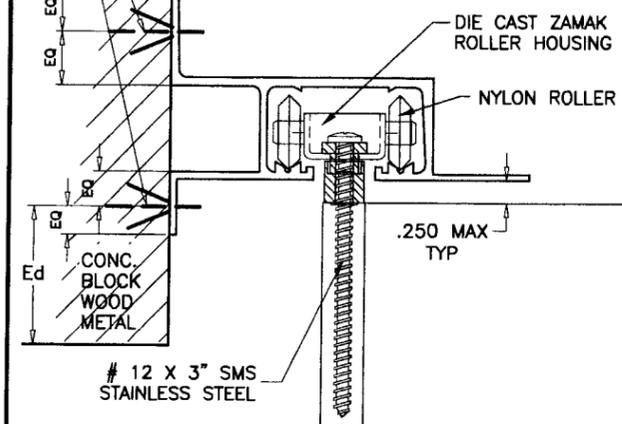


CHART TO USE			
ANCHOR	CONC.	BLOCK	WOOD METAL
A	4	2	-
B	5	2	-
D	4	2	-
E	-	-	3
G	-	-	2

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.)

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 08-0814.05
Expiration Date 07/23/2013

JUL 31 2008

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

af 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

revisions:	no	date	description	by
	H	06.02.03	CO. NAME REV., ANCHORS 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 3 of 7

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

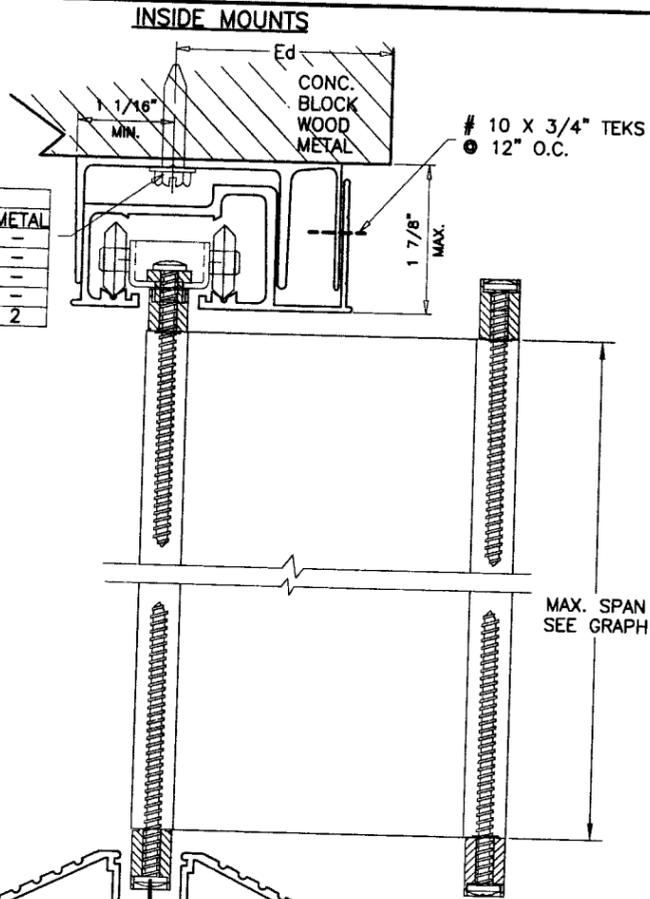


CHART TO USE				
ANCHOR	CONC.	BLOCK	WOOD	METAL
A	2	1	-	-
B	3	1	-	-
D	3	1	-	-
E	-	-	3	-
G	-	-	-	1

ALT. WALL MOUNTS
SILL SIMILAR

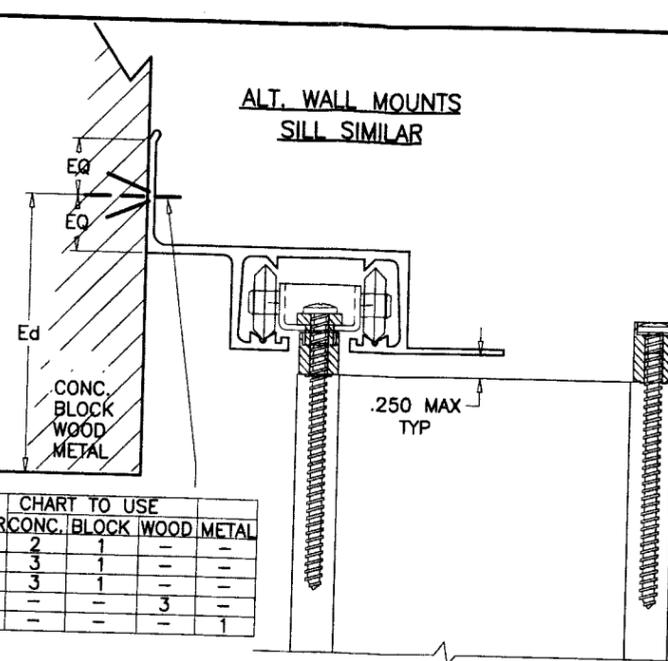


CHART TO USE				
ANCHOR	CONC.	BLOCK	WOOD	METAL
A	3	1	-	-
B	4	1	-	-
D	4	1	-	-
E	-	-	3	-
G	-	-	-	2

ALT. WALL MOUNTS
SILL SIMILAR

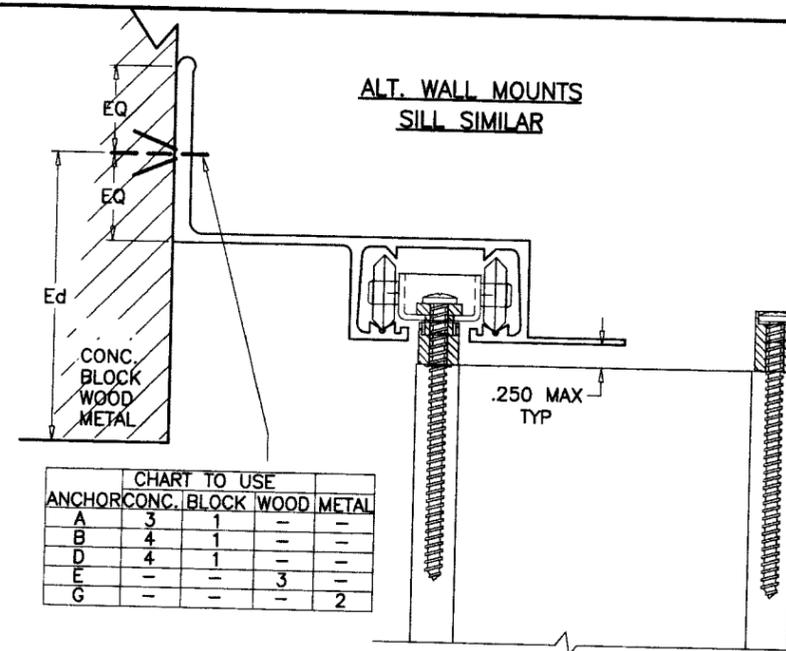
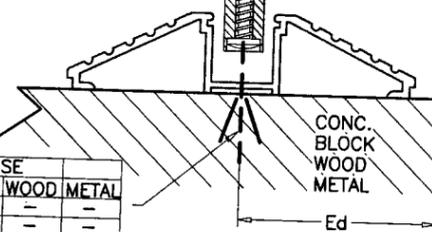
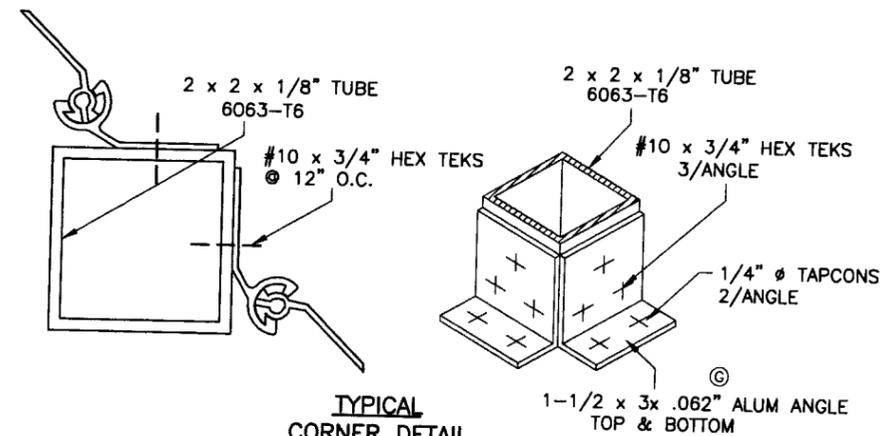


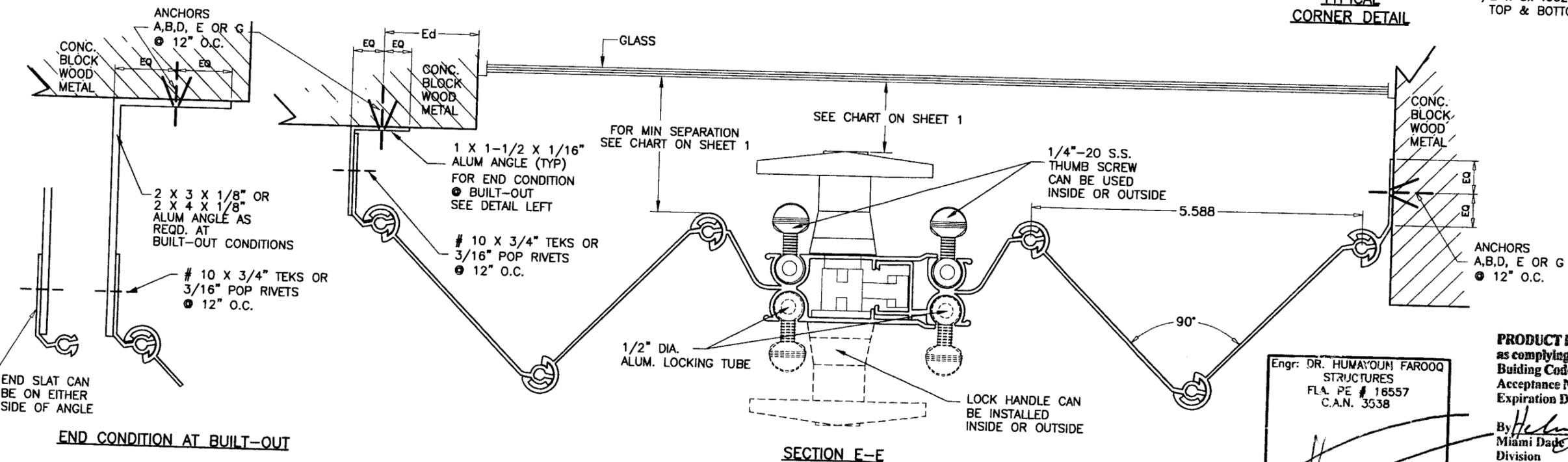
CHART TO USE				
ANCHOR	CONC.	BLOCK	WOOD	METAL
A	6	5	-	-
B	6	4	-	-
D	5	3	-	-
E	-	-	5	-
G	-	-	-	5



SECTION D-D



TYPICAL
CORNER DETAIL



SECTION E-E

END CONDITION AT BUILT-OUT

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

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 08-0814-09
Expiration Date 07/23/2013

By *Heba A. El-Mechaieq*
Miami Door Product Control
Division

JUL 31 2008

af c
AL-FAROOQ CORPORATION
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1235 S.W. 87 AVE
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ACCORDION 94-46ABH

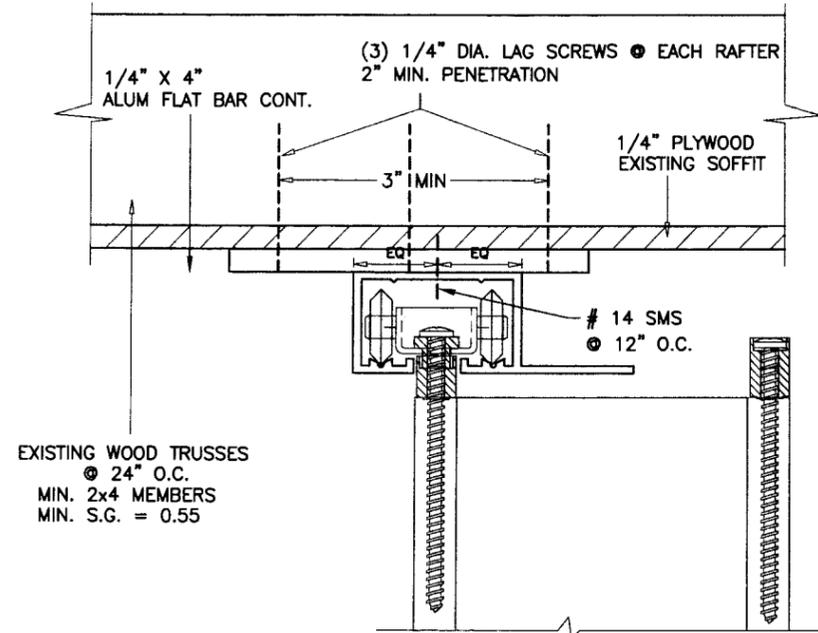
ACCORDION SHUTTER DETAILS
Southern Metal Products, LLC
dba - All Broward Hurricane Panel
450 West McNab Road
Ft. Lauderdale, Fl. 33309
TEL 1-800-432-1803 FAX. 954-973-3928

no	date	description	by
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J	01.23.04	REV. PER BCCO COMMENTS	
K	11.14.07	UPDATED FOR 2004 FBC	
L	05.28.08	NO CHANGE THIS SHEET	

revisions:
no date description by
H 06.02.03 CO. NAME REV., ANCHORS 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:

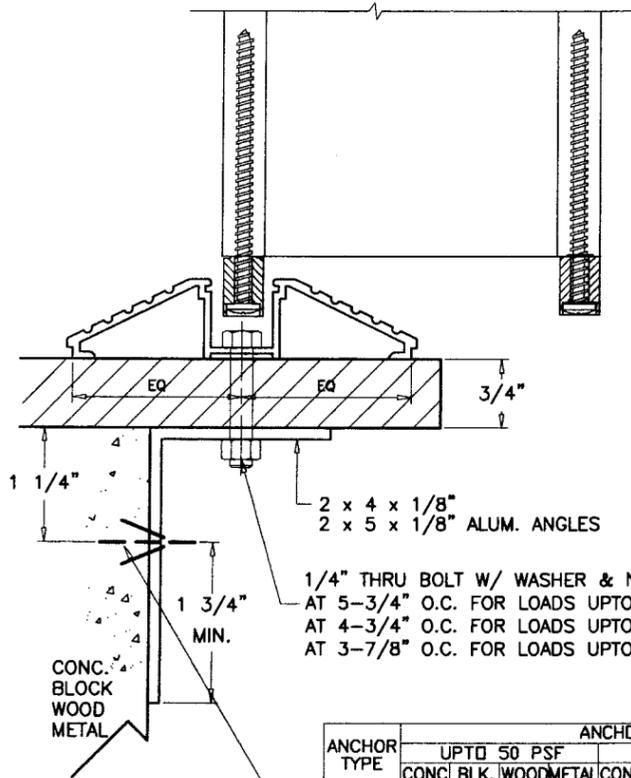
drawing no.
94-46
sheet 4 of 7



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

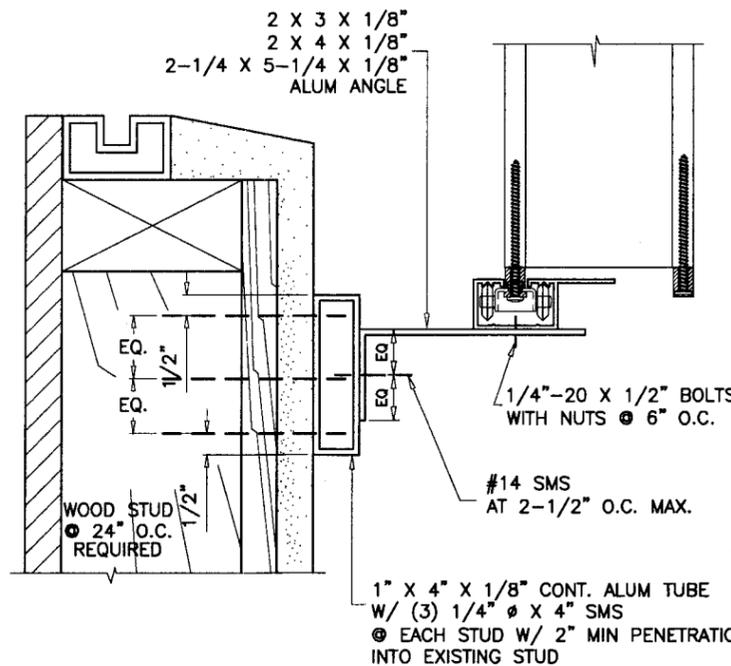
HEADER CONNECTION TO WOOD TRUSSES

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

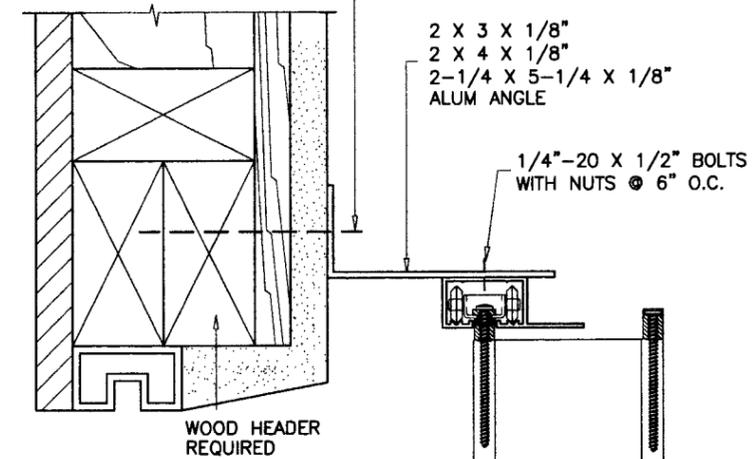


FOR SHUTTER HEIGHT OF 84" MAX. DESIGN LOAD = 108 PSF
 FOR SHUTTER HEIGHT OF 96" MAX. DESIGN LOAD = 94 PSF
 FOR SHUTTER HEIGHT OF 108" MAX. DESIGN LOAD = 84 PSF
 FOR SHUTTER HEIGHT OF 120" MAX. DESIGN LOAD = 75 PSF

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.



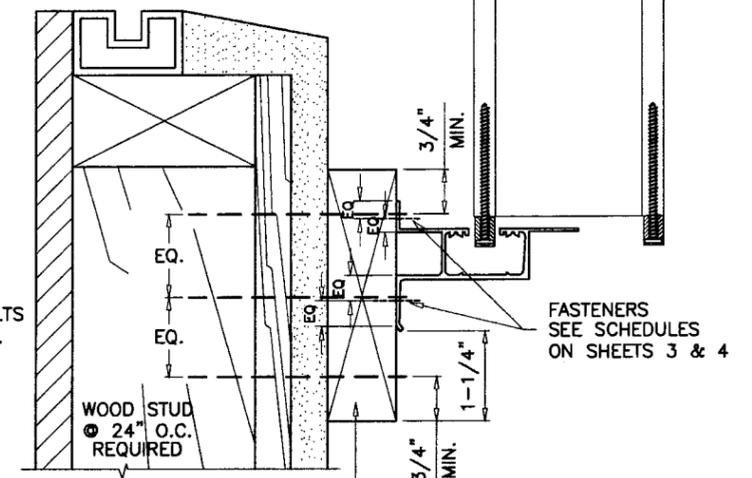
FASTENERS
 AS PER SCHEDULES
 W/ 1-1/2" MIN. PENETRATION
 TO EXISTING WOOD HEADER

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

WOOD STUD
 @ 24" O.C.
 REQUIRED

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. 08-0814.05
 Expiration Date 07/23/2013

By *Helmy Adnan*
 Miami Dade Product Control
 Division

JUL 31 2008

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

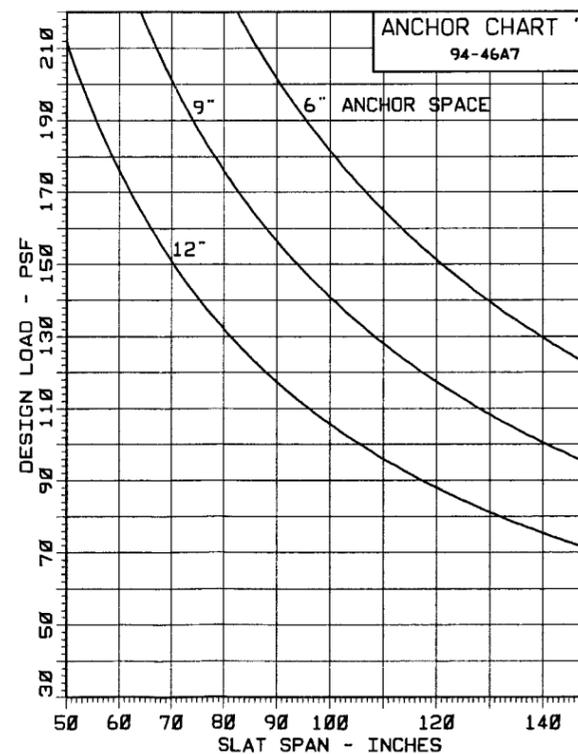
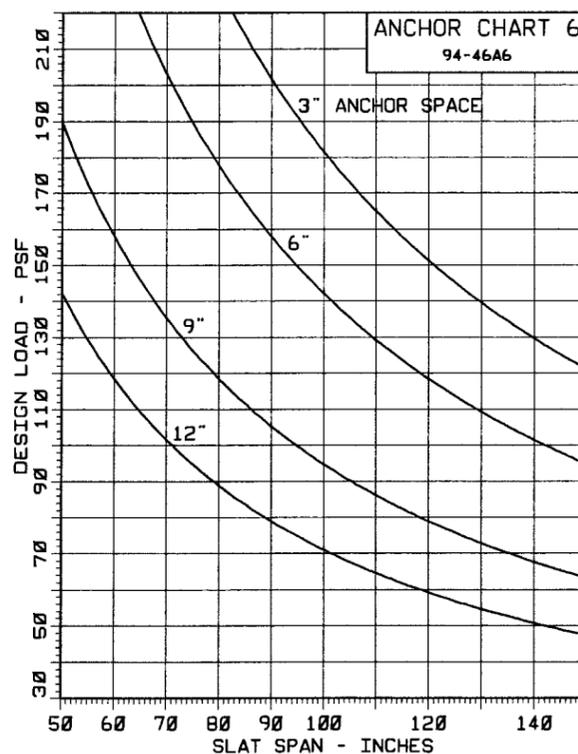
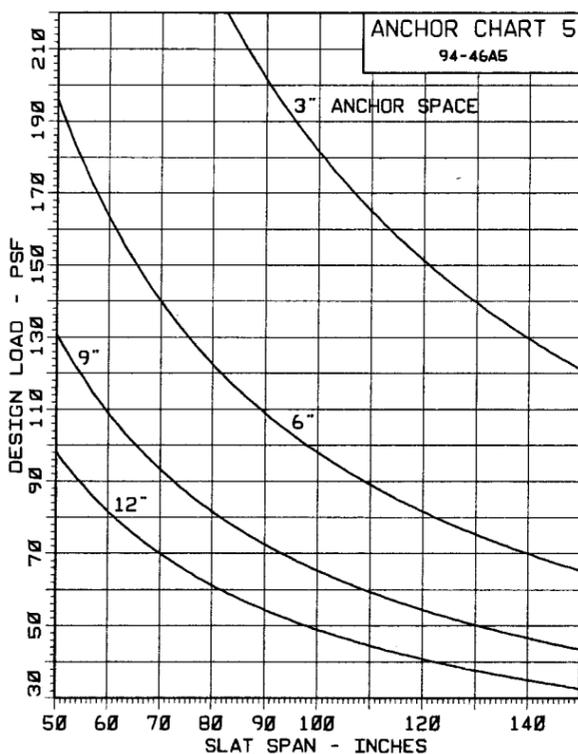
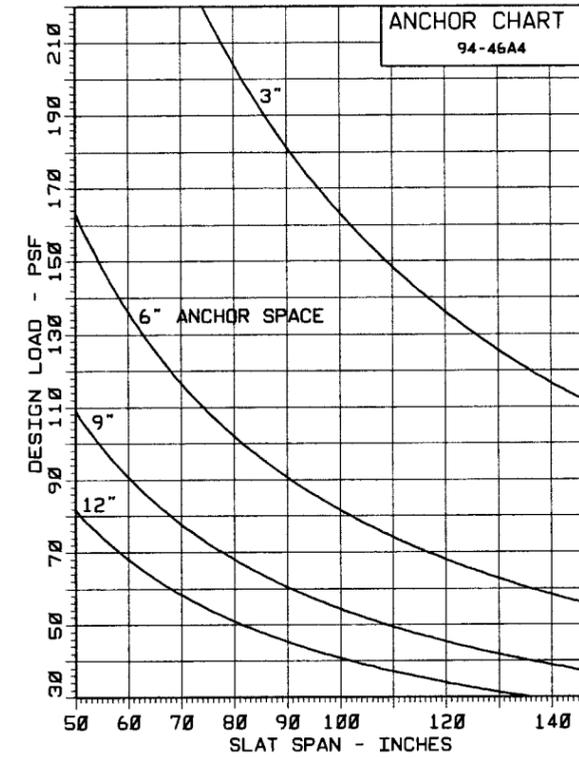
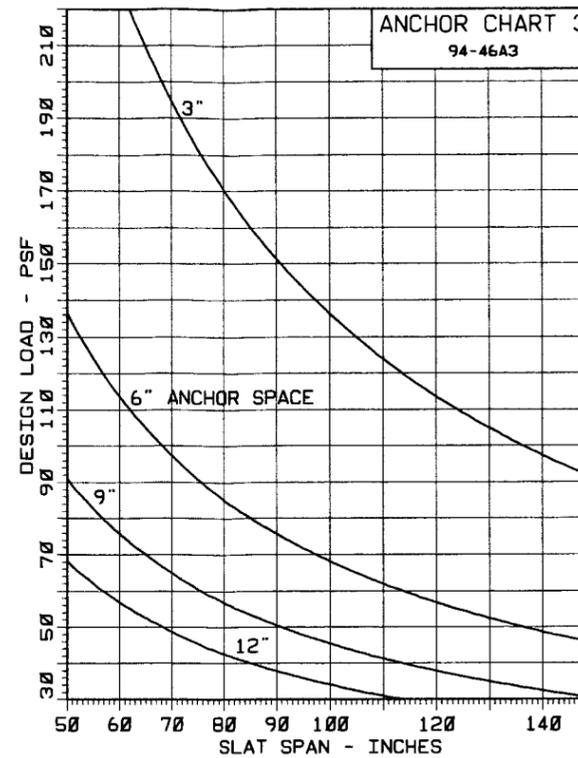
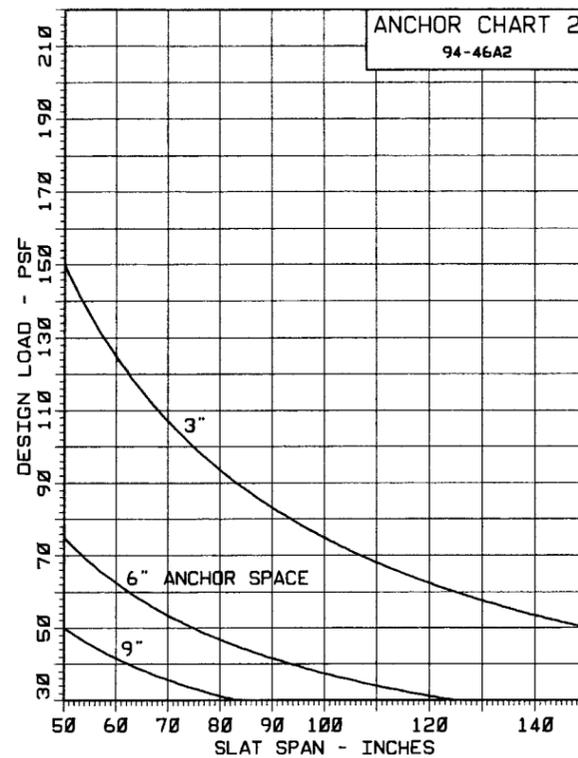
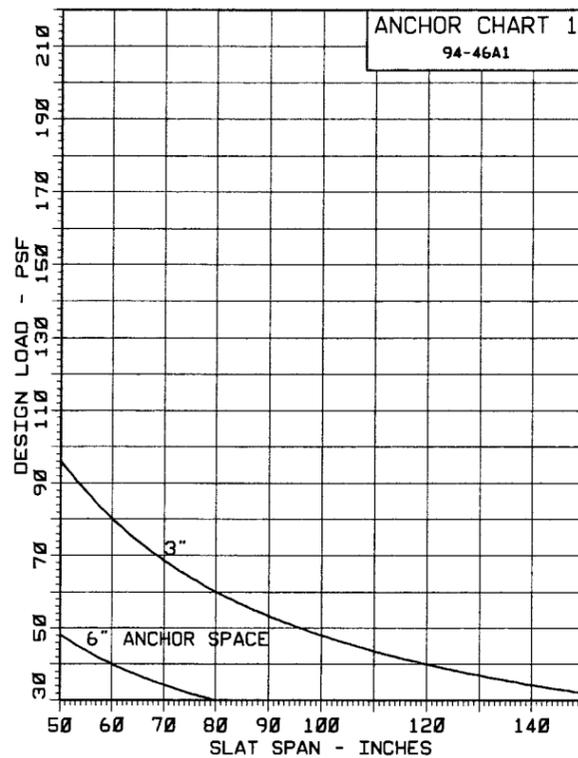
ACCORDION SHUTTER DETAILS
 Southern Metal Products, LLC
 dba - All Broward Hurricane Panel
 450 West McNab Road
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 TEL. 1-800-432-1803 FAX. 954-973-3928

revisions:

no	date	description	CO. NAME	REV. ANCHORS	REV. PER BCCO	REV. PER BCCO	REV. PER BCCO
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



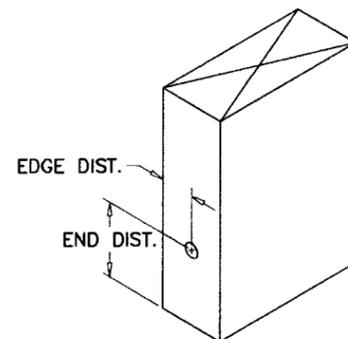
FASTENER SPACING IN MASONRY/CONCRETE

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

[Signature]

JUL 31 2008

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No. 08-0814.05
Expiration Date 07/23/2013

By *[Signature]*
Miami Dade 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.)

afc
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ACCORDION SHUTTER DETAILS
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revisions:

no	date	description	by	CO. NAME REV., ANCHORS REV.	REV. PER BCCO COMMENTS	NO CHANGE THIS SHEET	UPDATED FOR 2004 FBC	REV. PER BCCO COMMENTS
H	05.02.03							
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 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"	90"
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	-	-	-	-	

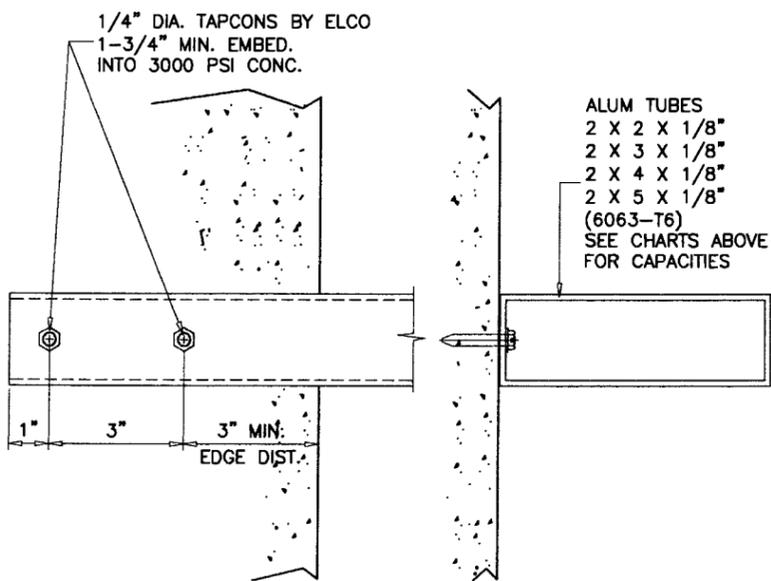
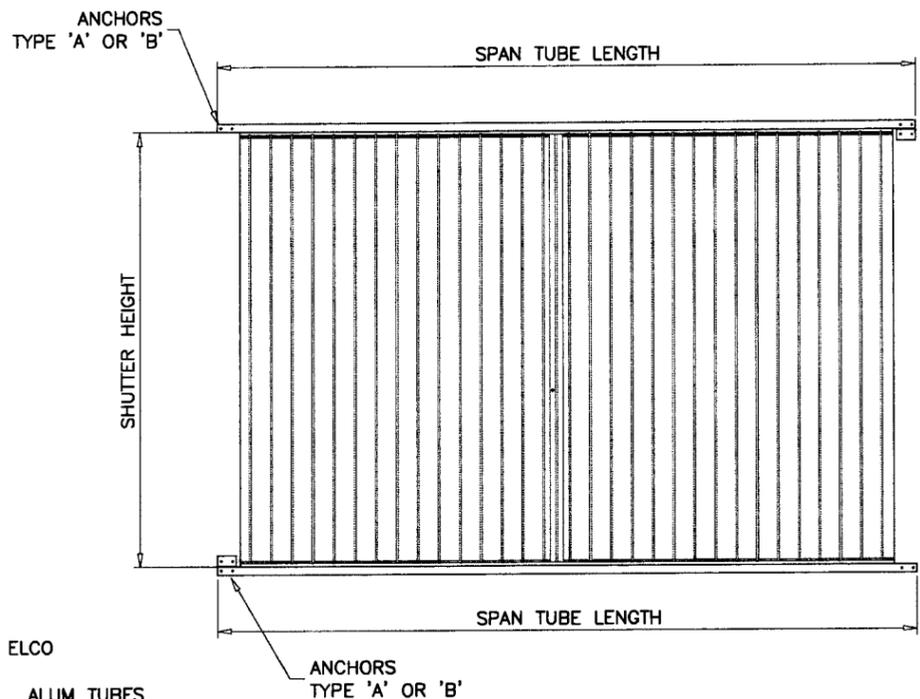
DESIGN LOAD CAPACITY - PSF 2" X 3" X 1/8" ALUM TUBE							
SHUTTER HEIGHT	SPAN TUBE LENGTHS						
	54"	60"	66"	72"	78"	84"	90"
48"	100.0	100.0	100.0	100.0	79.1	63.4	51.5
54"	100.0	100.0	100.0	89.4	70.3	56.3	45.8
60"	100.0	100.0	100.0	80.5	63.3	50.7	41.2
66"	100.0	100.0	95.0	73.2	57.6	46.1	37.5
72"	100.0	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

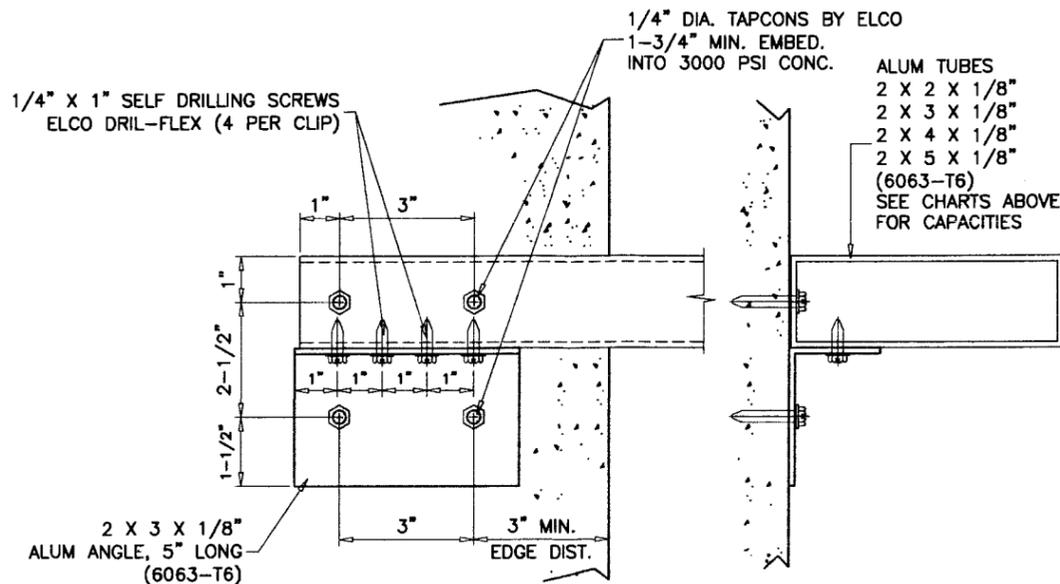
DESIGN LOAD CAPACITY - PSF 2" X 5" X 1/8" ALUM TUBE								
SHUTTER HEIGHT	SPAN TUBE LENGTHS							
	54"	60"	66"	72"	78"	84"	90"	96"
48"	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
54"	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
60"	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
66"	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
72"	100.0	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	100.0
84"	100.0	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	100.0	96.0
96"	100.0	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	100.0	97.9	84.7
108"	100.0	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	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



**TUBE CONNECTION TO WALL
ANCHOR TYPE 'A'**
SEE CHART ABOVE FOR CONNECTION CAPACITY



**TUBE CONNECTION TO WALL
ANCHOR TYPE 'B'**
SEE CHART ABOVE FOR CONNECTION CAPACITY

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

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

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 08-0814-05
Expiration Date 07/23/2013
By *Helmy A. M...*
Miami Dade Product Control
Division

JUL 31 2008

af 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

no	date	description
H	06.02.03	SHEET ADDED
I	11.13.03	REV. PER BCCO COMMENTS
J	01.23.04	NO CHANGE THIS SHEET
K	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.
94-46
sheet 7 of 7