



**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.buildingcodeonline.com

NOTICE OF ACCEPTANCE (NOA)

**R. C. Aluminum Shutters, Inc.
2805 N.W. 75th Avenue
Miami, Florida 33122**

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: "AS-500 Advanced " Aluminum Accordion Shutter

APPROVAL DOCUMENT: Drawing No. 06-02, titled "AS-500 Advanced Alum Accordion Shutter", sheets 1 through 7 of 7, prepared by Al-Farooq Corporation, dated March 06, 2006, last revision #A dated May 24, 2006, signed and sealed by Humayoun Farooq, P.E., bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and 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 consists of this page 1, evidence submitted pages E-1 & E-2 and approval document mentioned above.

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

Helmy A. Makar
06/29/2006

NOA No 06-0407.09

Expiration Date: 06/29/2011

Approval Date: 06/29/2006

Page 1



R. C. Aluminum Shutters, Inc.

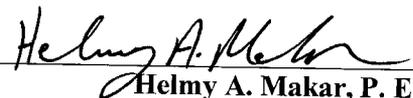
NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 06-02, titled "AS-500 Advanced Alum Accordion Shutter", sheets 1 through 7 of 7, prepared by Al-Farooq Corporation, dated March 06, 2006, last revision #A dated May 24, 2006, signed and sealed by Humayoun Farooq, P.E.*

B. TESTS

1. *Test report on Large Missile Impact Test and Uniform Static Air Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-05-1489, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
2. *Test report on Large Missile Impact Test and Uniform Static Air Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-05-1491, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
3. *Test report on Uniform Static Air Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-05-1487, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
4. *Test report on Uniform Static Air Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-05-1492, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
5. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-05-1487A, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
6. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-05-1490, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
7. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-06-2064, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*
8. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test "Aluminum Accordion Shutter", prepared by Hurricane Engineering & Testing, Inc., Report # HETI-06-2080, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*



**Helmy A. Makar, P. E.
Product Control Examiner**

NOA No 06-0407.09

Expiration Date: 06/29/2011

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Homeshield Stormguard, LLC.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

C. CALCULATIONS

1. *Comparative analysis and anchor calculations dated March 31, 2006, 86 pages, prepared by Al-Farooq Corporation, signed and sealed by Humayoun Farooq, P.E.*
2. *Anchor calculations dated May 31, 2006, 8 pages, prepared by Al-Farooq Corporation, signed and sealed by Humayoun Farooq, P.E.*

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. *Tensile Test Report prepared by Hurricane Engineering & Testing, Inc., Report # HETI-06-T518, dated January 13, 2006, signed and sealed by Ivonne Ghia, P.E.*



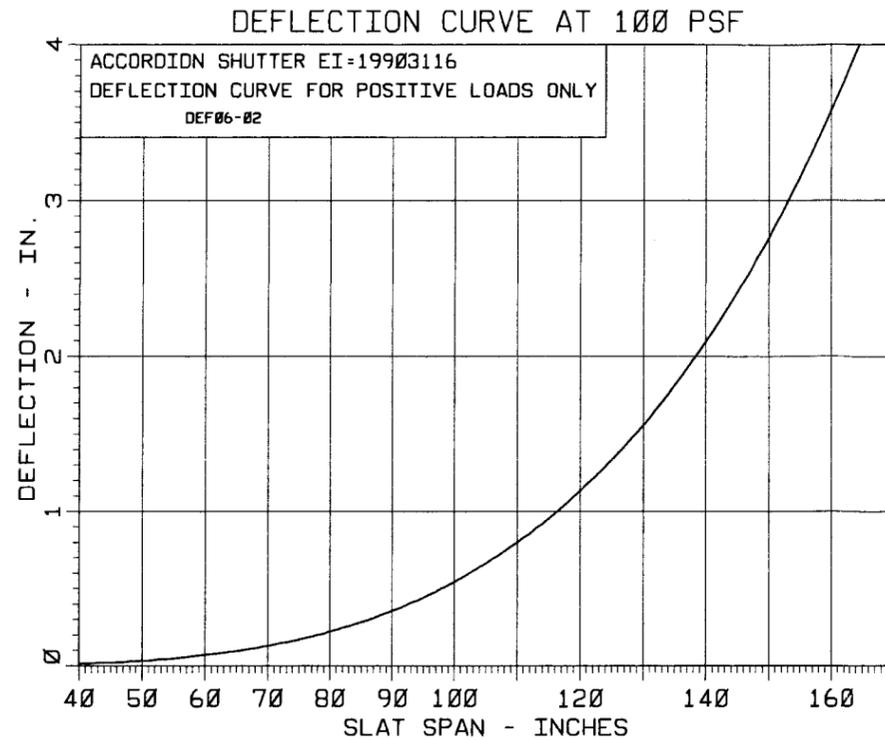
Helmy A. Makar, P. E.

Product Control Examiner

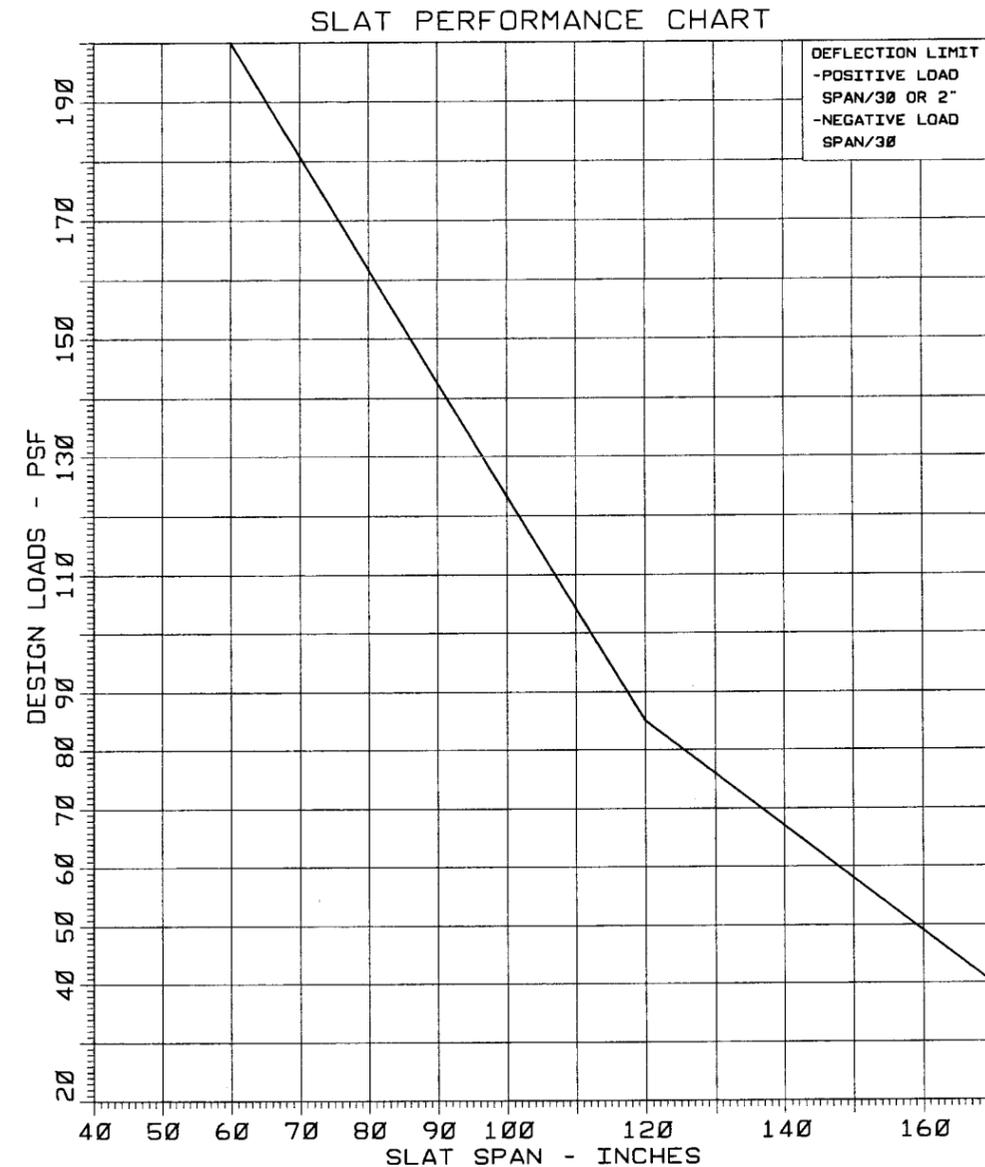
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MINIMUM SEPARATION FROM GLASS			
SEPARATION REQD. DUE TO WIND LOAD		SEPARATION REQD. DUE TO LARGE MISSILE IMPACT	
SHUTTER SPAN = H =	IN.	FOR SLAT SPANS UPTO	
DESIGN LOAD = Pd =	PSF	SEPARATION	
FACTOR = K = Pd/100 =	IN.	96"	2-1/2"
READING FROM SPAN D. CURVE = D =	IN.	120"	3"
DEFLECTION AT Pd = K*D =	IN.	170"	3-5/8"
MIN. SEPARATION REQD. = K*D+1" =			
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.			



USE SLAT PERFORMANCE CHART TO VERIFY SLAT CAPACITY FOR THE REQUIRED DESIGN LOAD FOR THE PARTICULAR LOCATION.

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

GENERAL NOTES

1. THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2004 EDITION (REV. 2005) 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.

PRODUCT MARKING

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

R.C. ALUMINUM SHUTTERS INC., MIAMI, FL.
'MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED'

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

JUN 09 2006

Approved as complying with the
Florida Building Code
Date: 06/29/2006
NOA# 06-0407.09
Miami Dade Product Control
Division
By: *Helmy A. Moham*

afc

AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
ACCORDION/06-02RC

AS-500 ADVANCED ALUM ACCORDION SHUTTER

R.C. ALUMINUM SHUTTERS, INC.
2805 N.W. 75 TH AVE.
MIAMI, FL. 33122
TEL. (305) 592-1515 FAX. (305) 592-2184

no	date	description	REV. PER BCCO COMMENTS
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date: 03-06-06

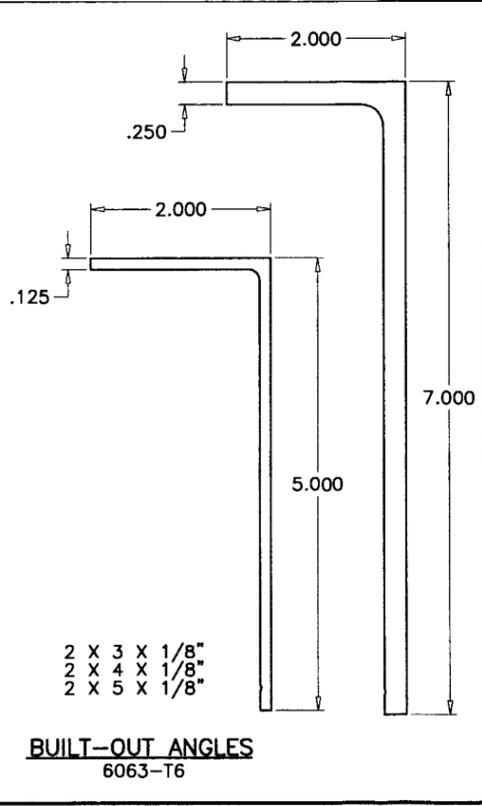
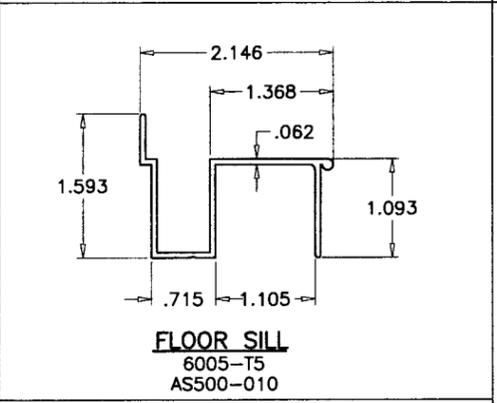
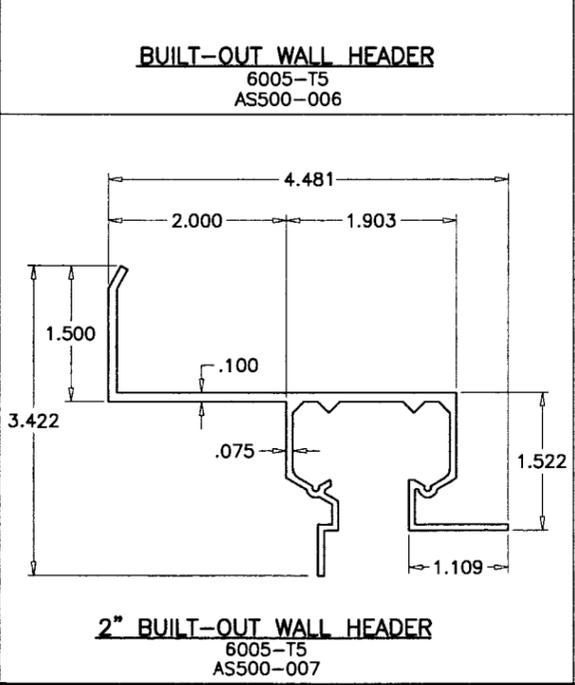
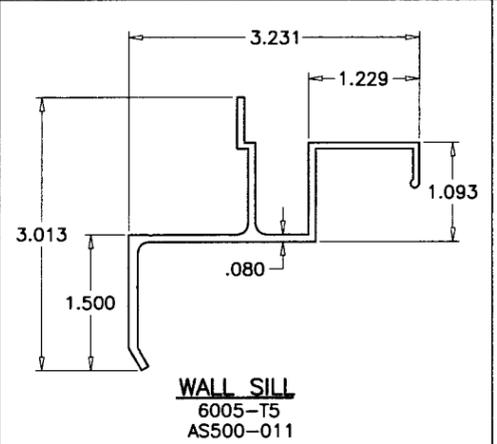
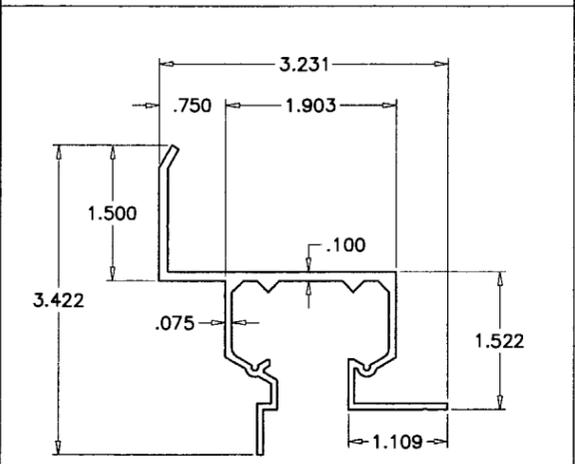
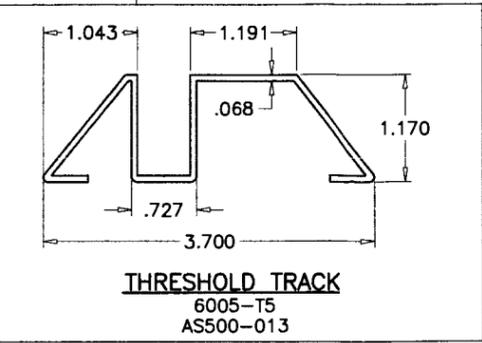
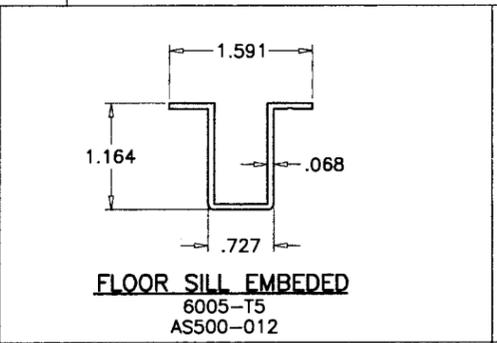
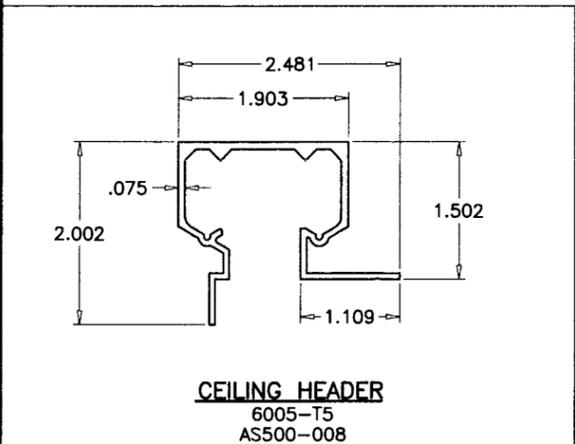
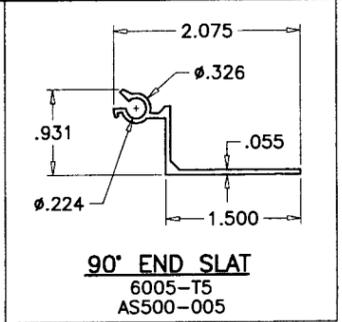
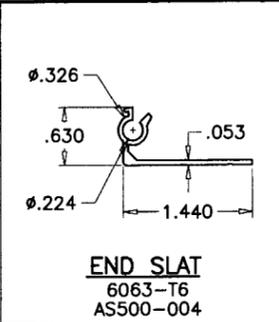
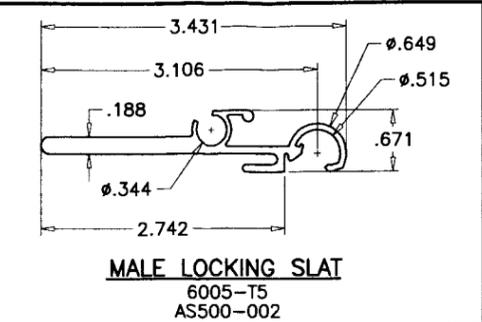
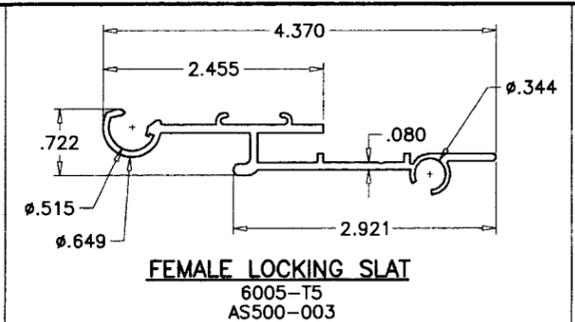
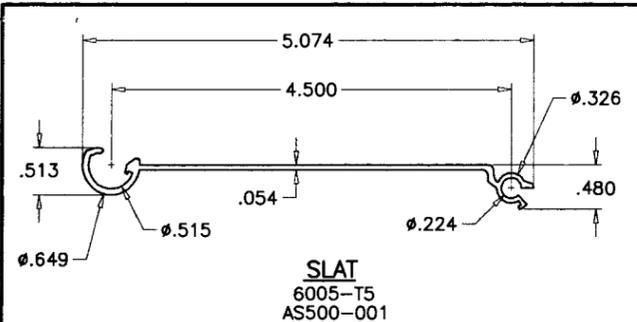
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dr. by: HAMID

chk. by:

drawing no.
06-02

sheet 1 of 7



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 Miami Code Product Control
 Division: *Helmy A. Matar*

Engr. DR. HUMAYOUN FAROOQ
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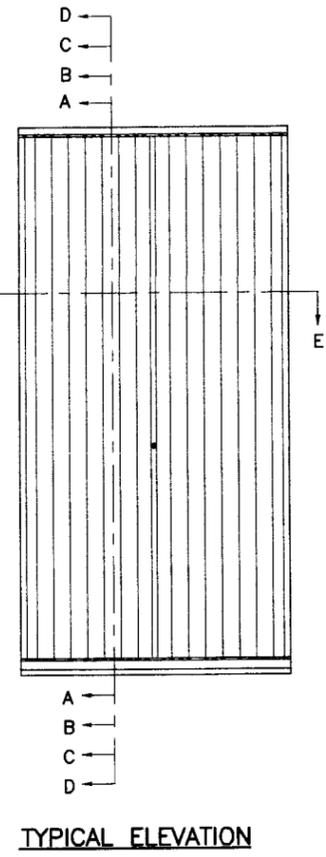
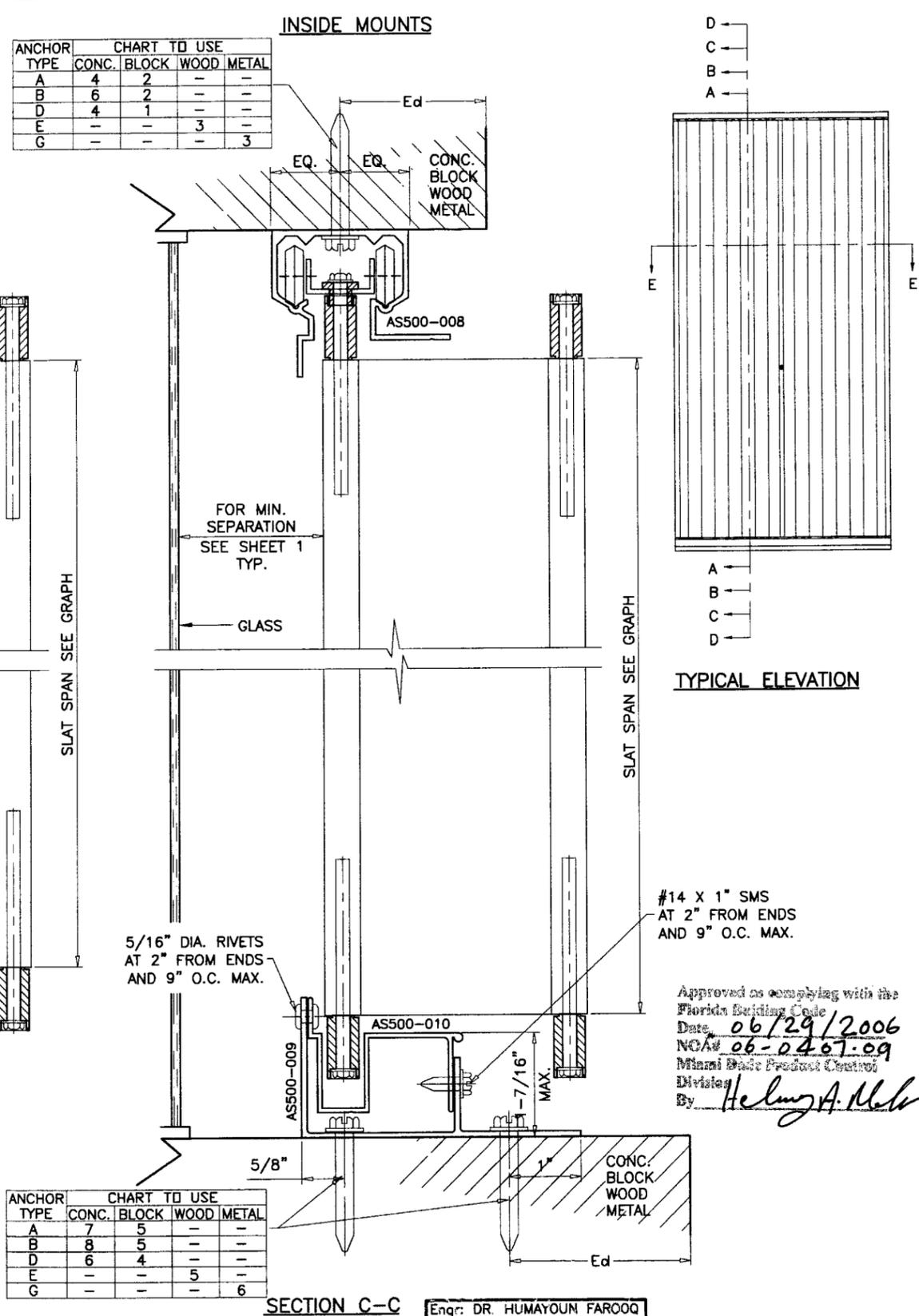
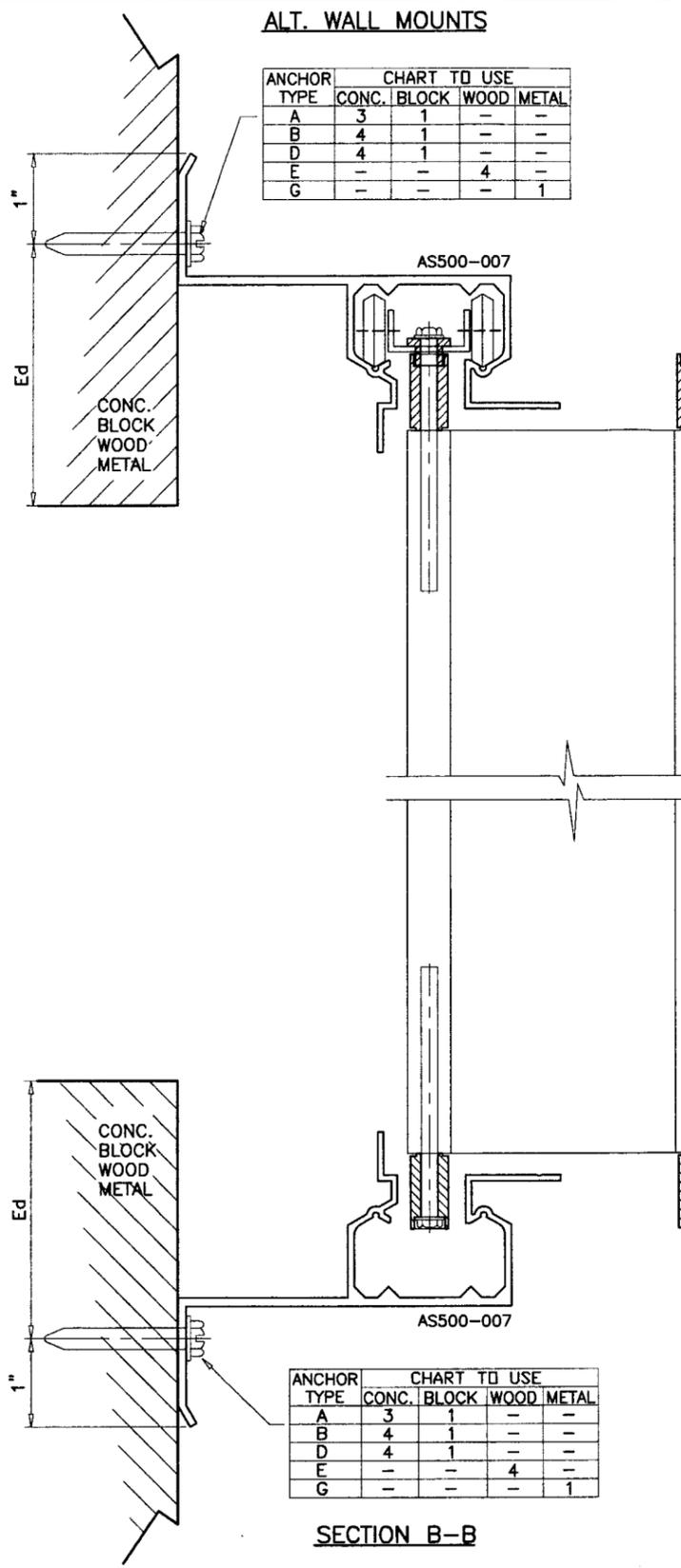
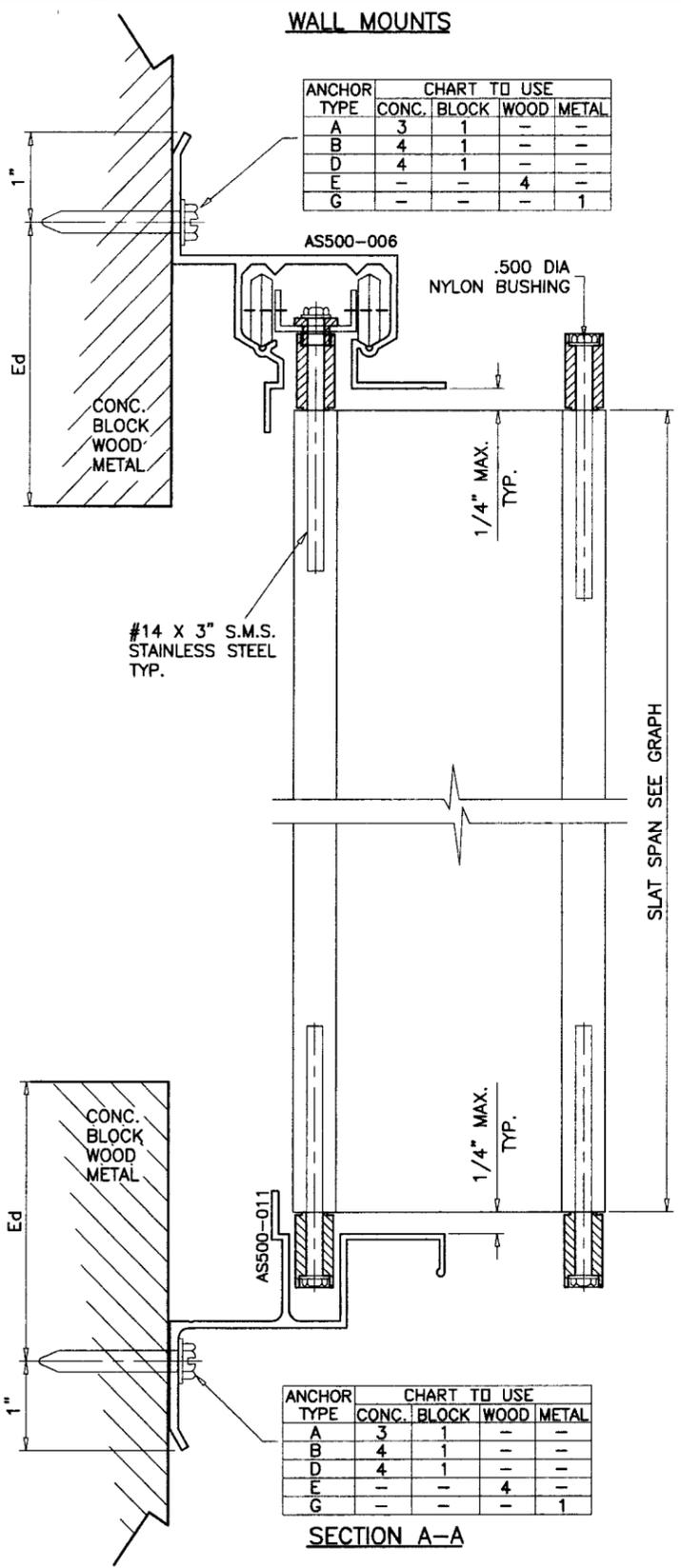
AL-FAROOQ CORPORATION
 ENGINEERS, PLANNERS & PRODUCT DESIGN
 1235 SW 87 AVE
 MIAMI, FLORIDA 33174
 TEL. (305) 264-8100 FAX. (305) 262-6978
 ACCORDION/06-02RC

AS-500 ADVANCED ALUM ACCORDION SHUTTER
R.C. ALUMINUM SHUTTERS, INC.
 2805 N.W. 75 TH AVE.
 MIAMI, FL. 33122
 TEL. (305) 592-1515 FAX. (305) 592-2184

no	date	description	REV. PER	BCCD	COMMENTS
A	05.24.06				

date: 03-06-06
 scale: 1/2" = 1"
 dr. by: HAMID
 chk. by:

drawing no. **06-02**
 sheet 2 of 7



SECTION A-A

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

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

SECTION B-B

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

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

SECTION C-C

ANCHOR TYPE	CHART TO USE		
	CONC.	BLOCK	WOOD METAL
A	7	5	-
B	8	5	-
D	6	4	-
E	-	-	5
G	-	-	6

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

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

HEADER AND SILL DETAILS CAN BE USED IN ANY COMBINATIONS.

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

JUN 09 2006

afc

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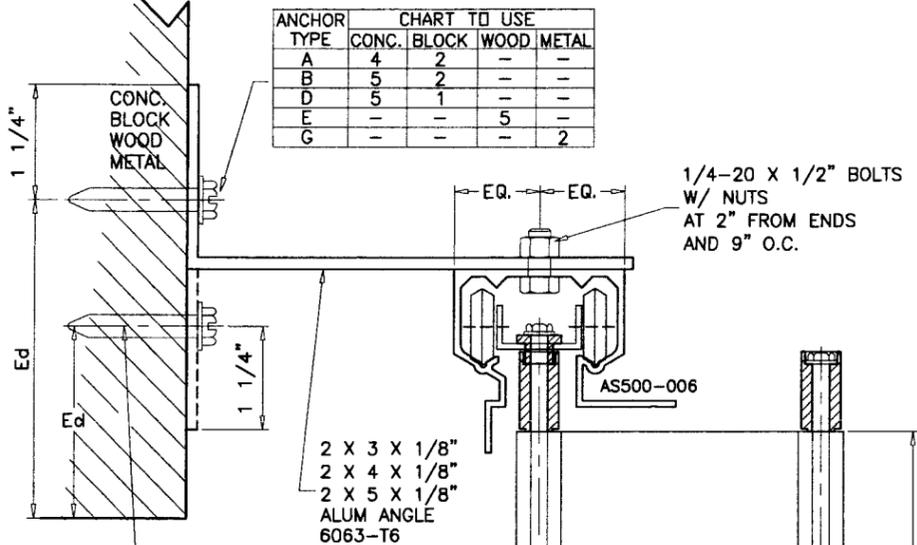
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sheet 3 of 7

BUILT-OUT CONDITION



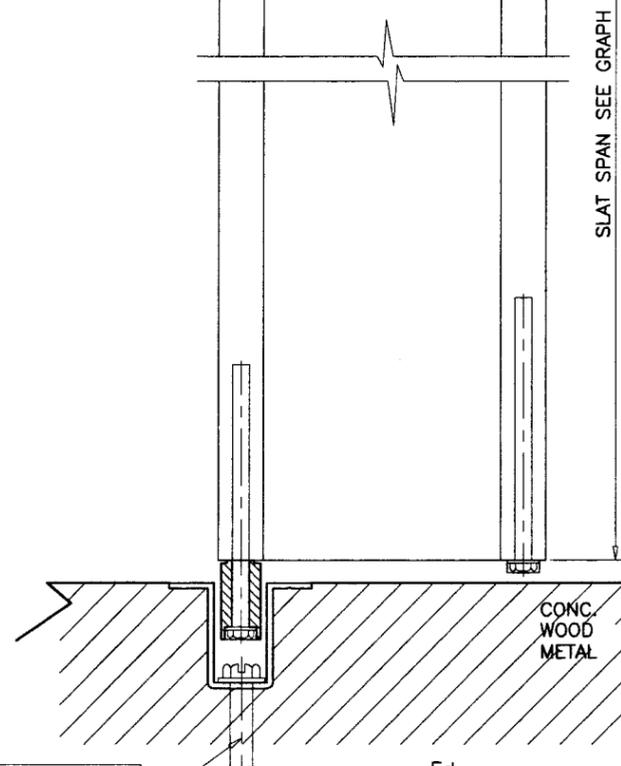
ANCHOR TYPE	CHART TO USE			
	CONC.	BLOCK	WOOD	METAL
A	4	2	-	-
B	5	2	-	-
D	5	1	-	-
E	-	-	5	-
G	-	-	-	2

1/4-20 X 1/2" BOLTS W/ NUTS AT 2" FROM ENDS AND 9" O.C.

AS500-006

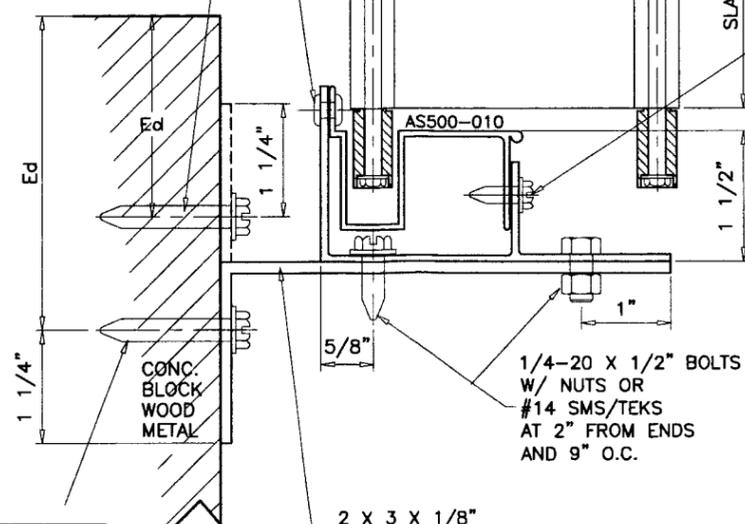
2 X 3 X 1/8"
2 X 4 X 1/8"
2 X 5 X 1/8"
ALUM ANGLE 6063-T6

ANCHOR TYPE	CHART TO USE			
	CONC.	BLOCK	WOOD	METAL
A	6	3	-	-
B	7	3	-	-
D	7	2	-	-
E	-	-	6	-
G	-	-	-	3



ANCHOR TYPE	CHART TO USE			
	CONC.	BLOCK	WOOD	METAL
A	5	2	-	-
B	6	2	-	-
D	6	2	-	-
E	-	-	6	-
G	-	-	-	3

5/16" DIA. RIVETS AT 2" FROM ENDS AND 9" O.C. MAX.



#14 X 1" SMS AT 2" FROM ENDS AND 9" O.C. MAX.

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

1/4-20 X 1/2" BOLTS W/ NUTS OR #14 SMS/TEKS AT 2" FROM ENDS AND 9" O.C.

2 X 3 X 1/8"
2 X 4 X 1/8"
2 X 5 X 1/8"
ALUM ANGLE 6063-T6

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

ANCHOR TYPE	CHART TO USE			
	CONC.	BLOCK	WOOD	METAL
A	8	8	-	-
B	8	7	-	-
D	7	6	-	-
E	-	-	6	-
G	-	-	-	8

Eng: DR. HUMAYOUN FAROOQ
STRUCTURES
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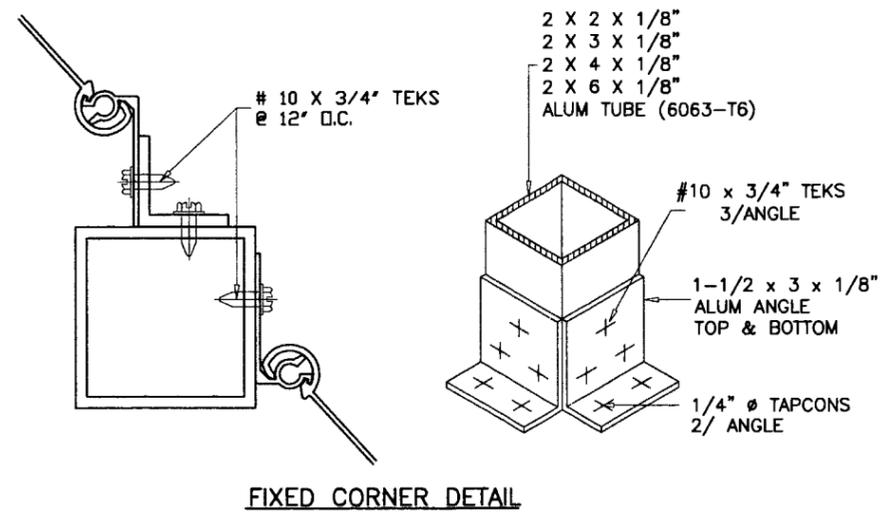
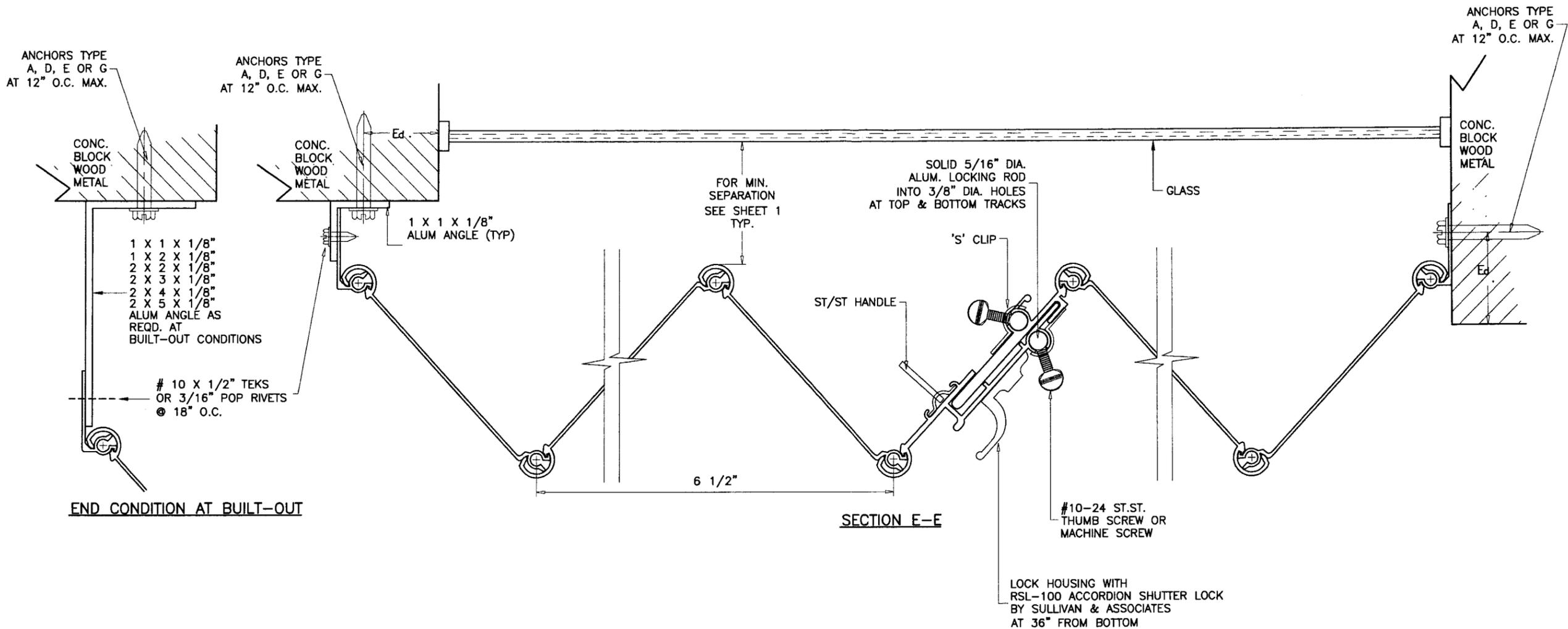
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revisions:	no	date	by	description
	A	05.24.06		REV. PER BCCO COMMENTS

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drawing no. 06-02
sheet 4 of 7

afC
ACCORDION/06-02RC



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 Miami Code Product Control
 Division
 By: *Helmy A. Helmy*

Engr: DR. HUMAYOUN FAROOQ
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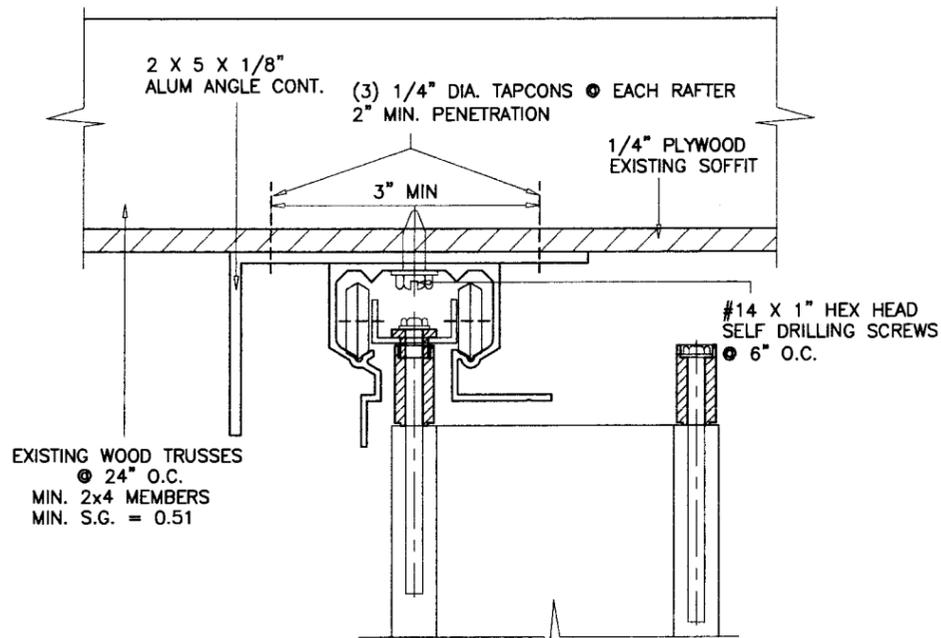
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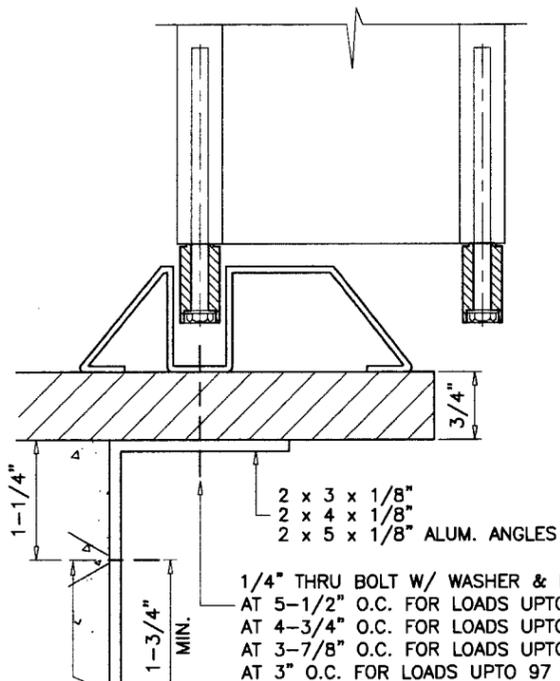
drawing no. 06-02

sheet 5 of 7



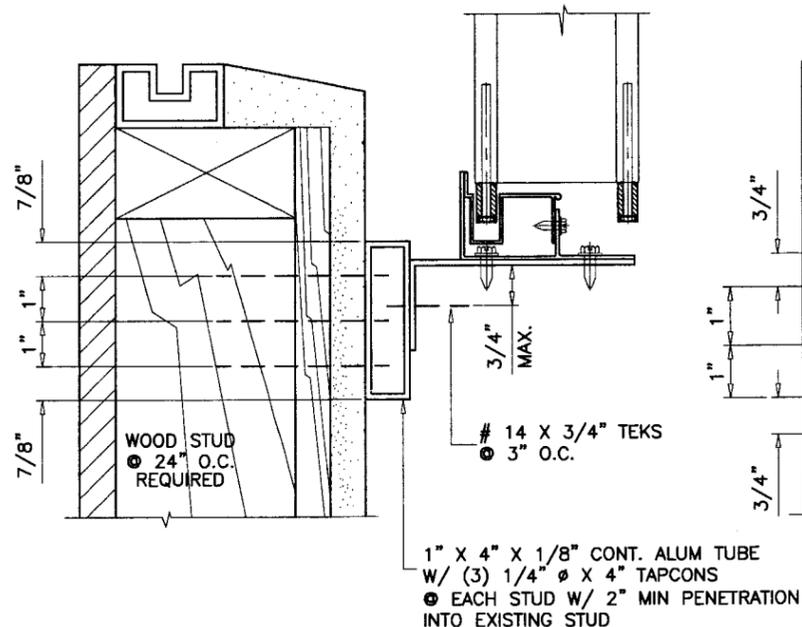
HEADER CONNECTION TO WOOD TRUSSES

FOR SHUTTER HEIGHT OF 84" MAX. DESIGN LOAD = 92 PSF
 FOR SHUTTER HEIGHT OF 96" MAX. DESIGN LOAD = 80 PSF
 FOR SHUTTER HEIGHT OF 108" MAX. DESIGN LOAD = 71 PSF

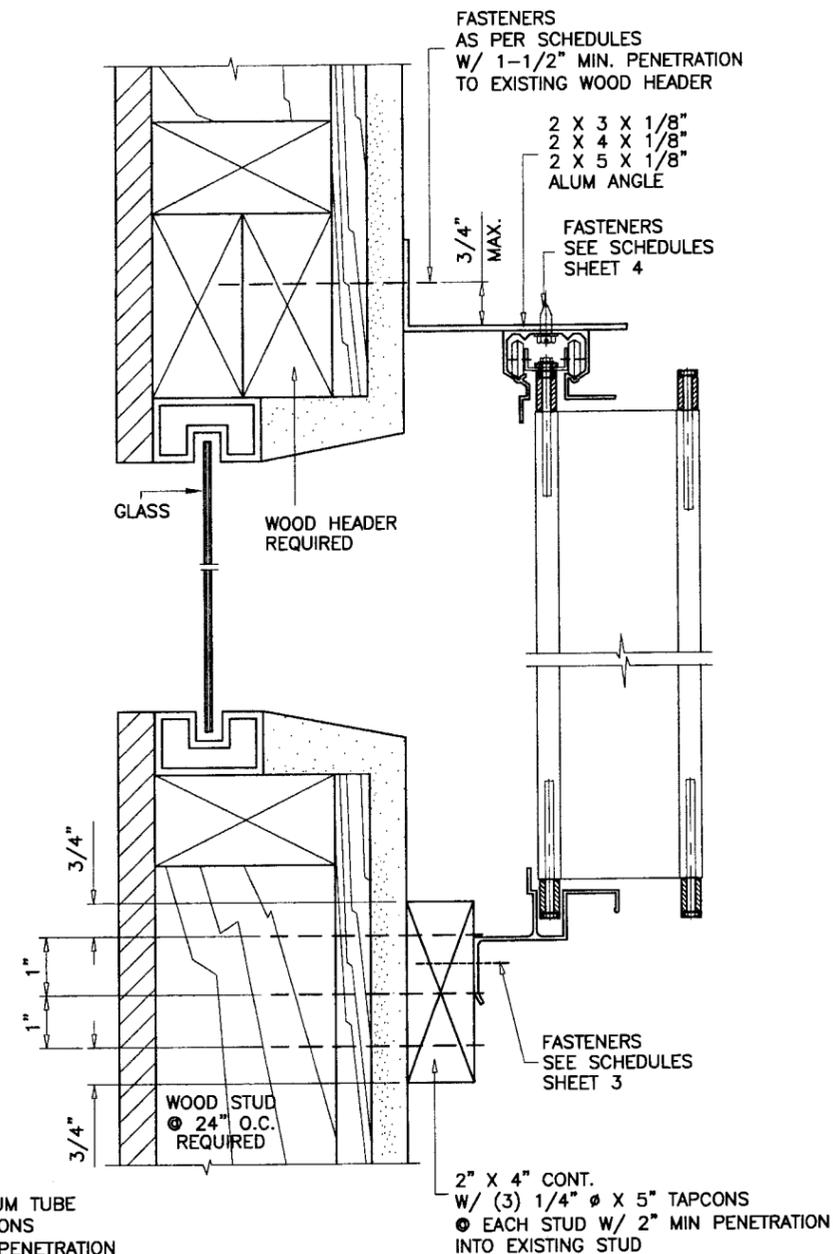


COUNTER TOP CONDITION
 (PASS THRU WINDOW)
 MAX SHUTTER HEIGHT = 6 FT.

ANCHOR TYPE	ANCHOR SPACING INCHES								
	UPTO 52 PSF		UPTO 60 PSF		UPTO 75 PSF		UPTO 97 PSF		
	CONC	BLK	WOOD	METAL	CONC	BLK	WOOD	METAL	
A	6.0	3.0	-	-	5.2	-	-	4.1	3.2
B	7.2	-	-	-	6.2	-	-	5.0	3.9
D	-	-	-	-	-	-	-	-	-
E	-	-	9.0	-	-	9.0	-	9.0	7.3
G	-	-	6.6	-	-	5.7	-	4.6	3.5



FOR SHUTTER HEIGHT OF 84" MAX. DESIGN LOAD = 100 PSF
 FOR SHUTTER HEIGHT OF 96" MAX. DESIGN LOAD = 87 PSF
 FOR SHUTTER HEIGHT OF 108" MAX. DESIGN LOAD = 77 PSF
 FOR SHUTTER HEIGHT OF 120" MAX. DESIGN LOAD = 70 PSF



FOR SHUTTER HEIGHT OF 84" MAX. DESIGN LOAD = 98 PSF
 FOR SHUTTER HEIGHT OF 96" MAX. DESIGN LOAD = 86 PSF
 FOR SHUTTER HEIGHT OF 108" MAX. DESIGN LOAD = 76 PSF
 FOR SHUTTER HEIGHT OF 120" MAX. DESIGN LOAD = 69 PSF

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

ABOVE DETAILS SHOWS CONNECTION OF 2X4 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 THRU 4.

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

JUN 09 2006

Approved in compliance with the Florida Building Code
 Date: 06/29/2006
 NOA# 06-0407.09
 Miami Code Product Control
 Division:
 By: Helmy A. Matar

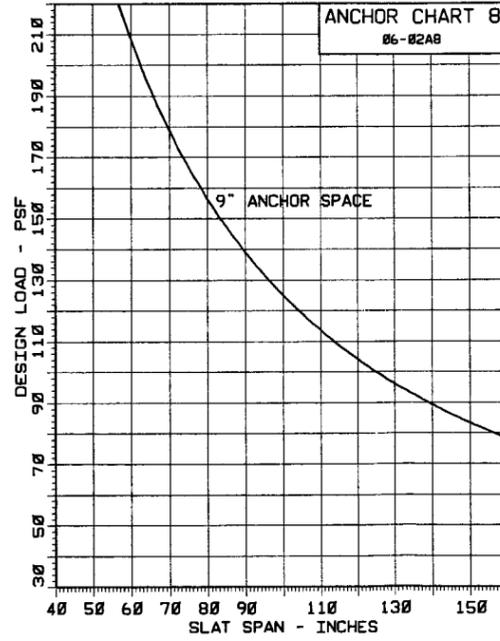
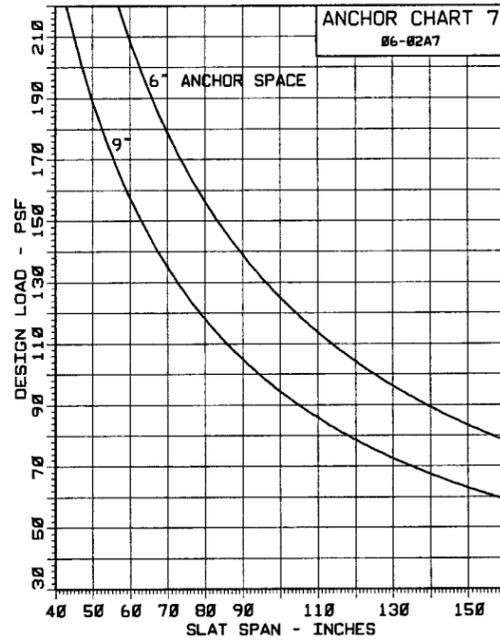
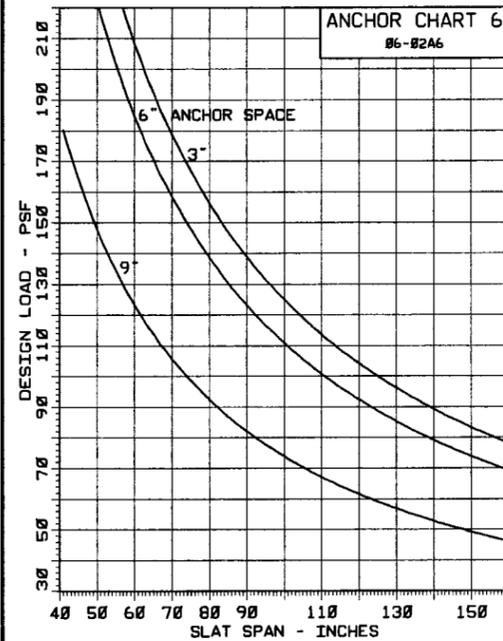
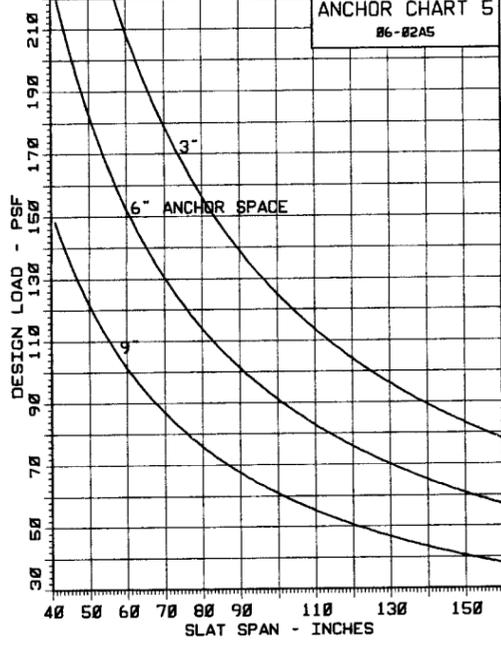
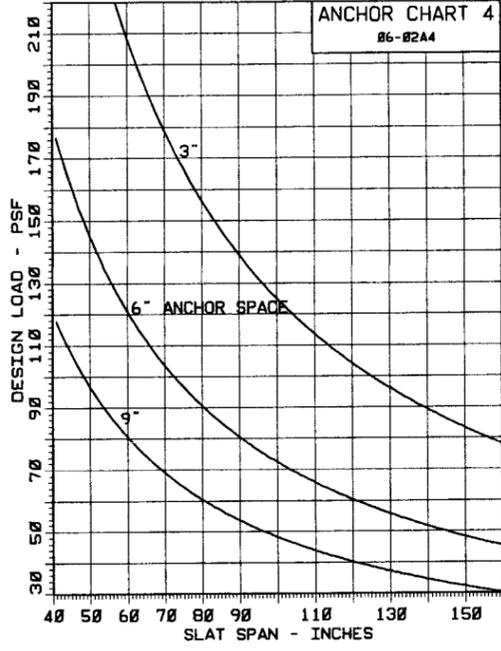
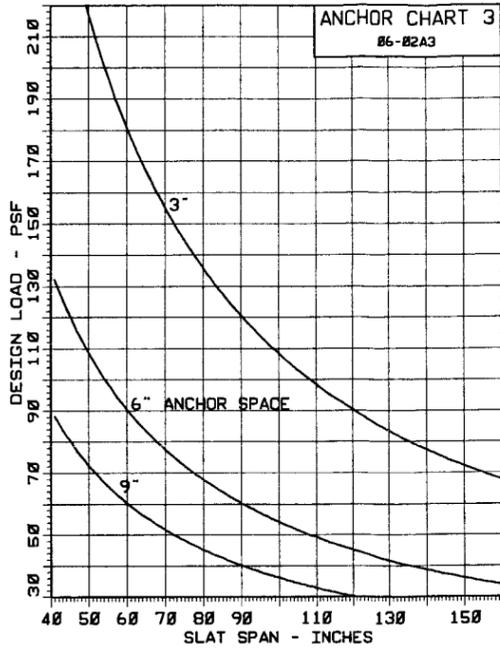
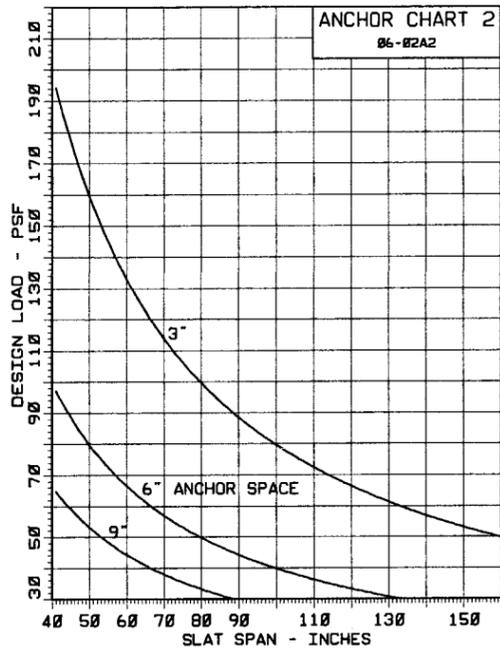
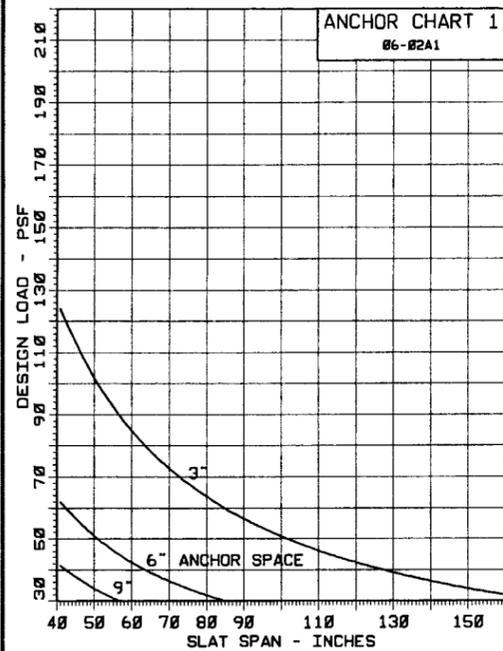
AL-FAROOQ CORPORATION
 ENGINEERS, PLANNERS & PRODUCT DESIGN
 1235 SW 87 AVE
 MIAMI, FLORIDA 33174
 TEL. (305) 264-8100 FAX. (305) 262-6978
 ACCORDION/06-02RC

AS-500 ADVANCED ALUM ACCORDION SHUTTER
R.C. ALUMINUM SHUTTERS, INC.
 2805 N.W. 75 TH AVE.
 MIAMI, FL. 33122
 TEL. (305) 592-1515 FAX. (305) 592-2184

no	date	by	description
A	05.24.06		REV. PER BCCO COMMENTS

date: 03-06-06
 scale: 1/2" = 1"
 dr. by: HAMID
 chk. by:

drawing no. 06-02
 sheet 6 of 7



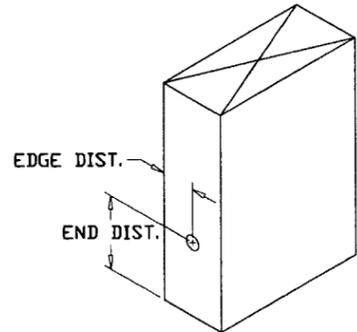
FASTENER SPACING IN MASONRY/CONCRETE

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 8 TO VERIFY ANCHOR REQUIREMENTS AND STRESS LIMITATIONS OF LOAD/SPAN COMBINATIONS FOR HEADER AND SILL.

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STRUCTURES
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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. TAPCONS
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.)

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