MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

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

NOTICE OF ACCEPTANCE (NOA)

Roll-a-Way Security Shutters
10601 Oak Street N.E.
St. Petersburg, Florida 33716

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: Extruded Aluminum Roll-up Shutter

APPROVAL DOCUMENT: Drawing No. 98-43, titled "Roll-Up Shutter Details", prepared by Al-Farooq Corporation, dated 12/24/98, last revision #A dated 05/24/99, sheets 1 through 17 of 17 with no changes from NOA #99-1021.01. And drawing No. 3-01-007-D, titled "Roll-Up-Shutter," prepared by Roll-A-Way, dated 07/21/00, last revision #A dated 06/21/02, sheets 1 through 6 of 6, bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and 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.

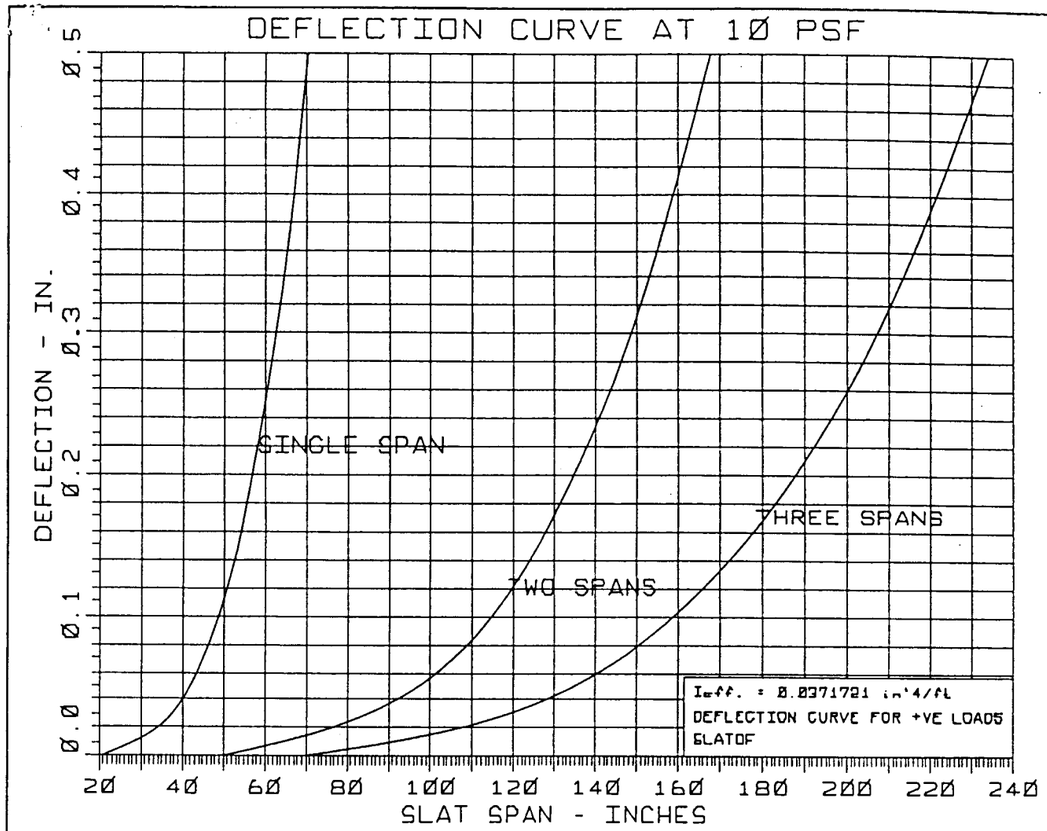
RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

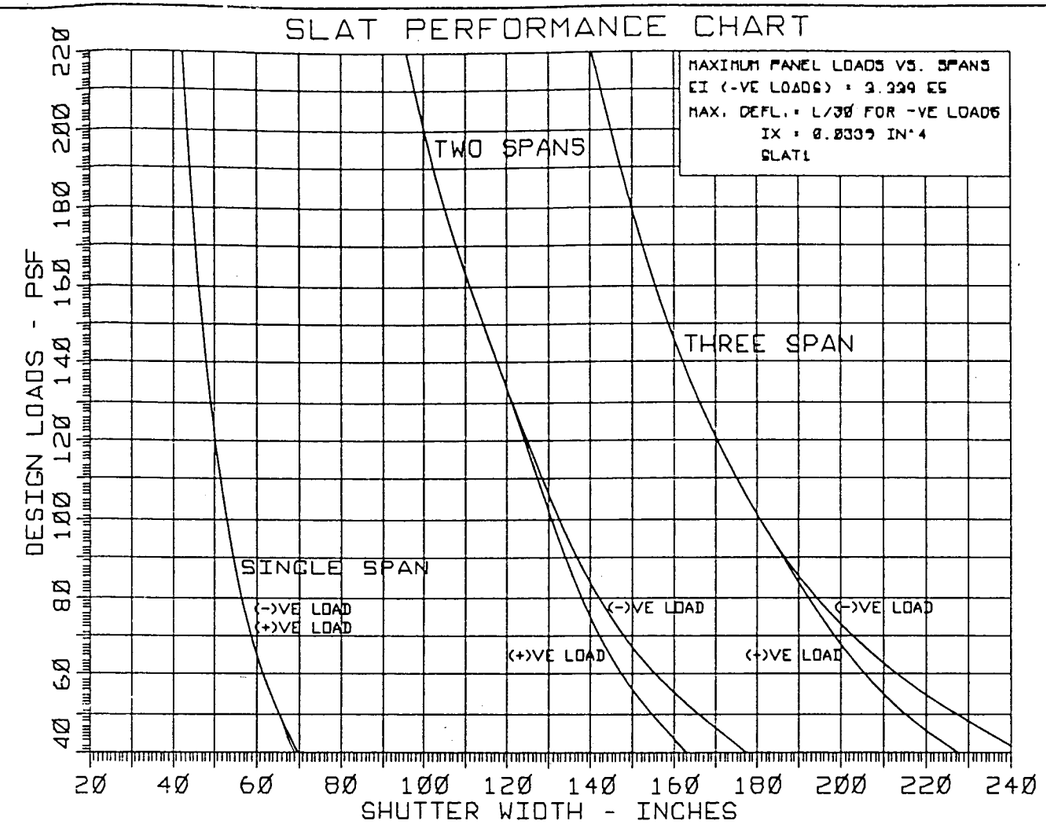
TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this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

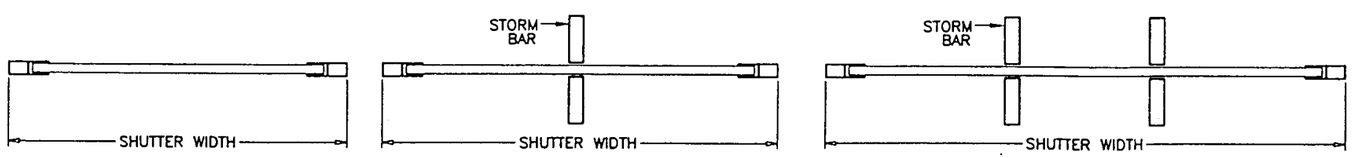
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

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 # 02-0417.02** and consists of this page 1 as well as approval document mentioned above.
The submitted documentation was reviewed by **Helmy A. Makar, P.E.**

PRODUCT CONTROL ACCEPTED







SINGLE SPANS — TWO SPANS — THREE SPANS

Guide to use charts and graphs

1. Calculate Design Wind Load requirements using ASCE 7-88 based on building height, exposure category, roof slope and tributary area.
2. From slat performance chart, select span condition as 1, 2 or 3 to determine the number of storm bars required to meet the design loads calculated above.
3. Based on slat, span and number of storm bars determine the deflection of the slat for 10 psf and determine the actual deflection for the Design Loads by proportion. Enter this deflection in step 2 of sheet 17.
4. From the shutter height and width dimensions determine the storm bar spacing and height.
5. Determine the deflection of the storm bar at 10 psf from the deflection chart and obtoin storm bar deflection by proportion to the design loads. Enter this deflection in step 4 of sheet 17.
6. Determine the deflection of the header at 10 psf from the deflection chart and obtain header deflection by proportion to the design loads. Enter this deflection in step 6 of sheet 17.
7. Complete form on sheet 17 and check the deflection requirements. If deflection exceeds the allowable deflection increase the size of storm bar and/or header to bring the overall deflection under the allowable limits.
8. Repeat the procedure items 2 to 7 for both positive and negative loads for any given shutters.

DESIGN LOADS SHALL BE CALCULATED AS PER REQUIREMENTS OF ASCE 7-88, BASED ON 110 MPH WIND VELOCITY.

PRODUCT MARKING

A LABEL SHALL BE AFFIXED ON UNIT AT RIGHT BOTTOM OF BOX WITH THE FOLLOWING STATEMENT:

'ROLL-A-WAY' STORM AND SECURITY SHUTTERS, ST. PETERSBURG, FL.
"DADE COUNTY PRODUCT CONTROL APPROVED"

GENERAL NOTES

1. THIS STRUCTURE IS DESIGNED AS PER THE SOUTH FLORIDA BUILDING CODE 1994 EDITION FOR DADE COUNTY. ALSO FOR WIND LOADS AS PER ASCE 7-88 USING CORRESPONDING LOADS.
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 NOTED.
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 LISTED, SPACED AS SHOWN ON DETAILS. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
6. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL OR ALUMINUM ALLOY 2024-T4 OR 7075-T6, OR PLATED STEEL.
7. SHUTTERS MAY BE MOTOR, TAPE PULLEY, OR GEAR DRIVEN.
8. DESIGN CRITERIA: FOR MULTIPLE SPANS THE COMBINED MAX DEFLECTION OF HEADER, STORM BARS AND SLATS ≤ L/30 OR 2". FOR MULLIONS MAX DEFLECTION ≤ L/180.
9. ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.

PRODUCT RENEWED
as complying with the Florida Buiding Code
Acceptance No. 02-0417.02
Expiration Date July 15, 2007
By
Miami Dade Product Control Division

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No. 02-1003.06
Expiration Date 07/15/2007
By
Miami Dade Product Control Division

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01 DATE July 15 1999
EXPIRATION DATE 07/15/2008 BY
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
ROLLUP\98-43RAY

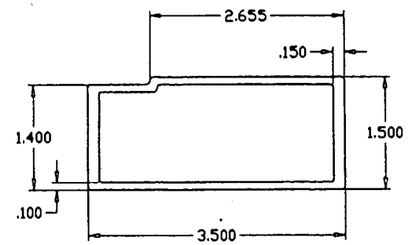
ROLL UP SHUTTER DETAILS

ROLL-A-WAY STORM AND SECURITY SHUTTERS
10597 OAK STREET N.E.
ST. PETERSBURG, FL. 33716
TEL. (800) 683-9505 FAX. (727) 579-9410

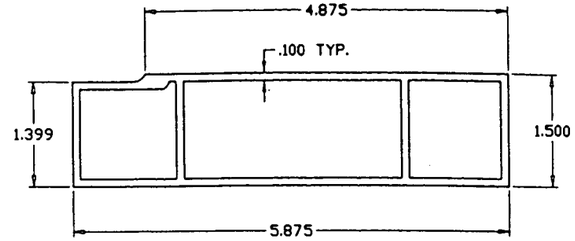
revisions:			
no	date	by	description
A	05.24.99		SHEETS 3 & 5 REV.

date: 12-24-98
scale: 1/2" = 1"
dr. by: HAMID
chk. by:

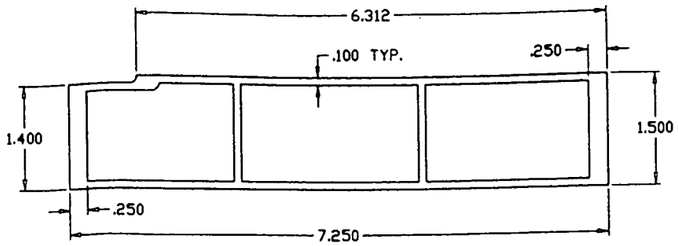
drawing no. 98-43



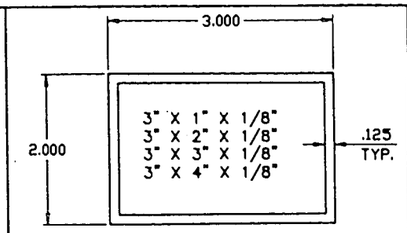
HEADER TUBE TYPE '1'
6063-T5



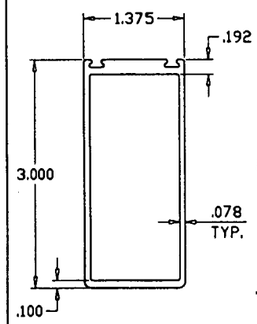
HEADER TUBE TYPE '2'
6063-T5



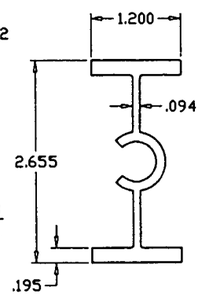
HEADER TUBE TYPE '3'
6063-T5



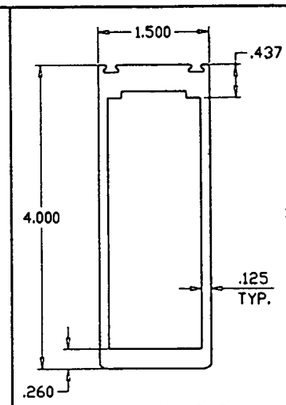
BUILT-OUT TUBES
6005-T5



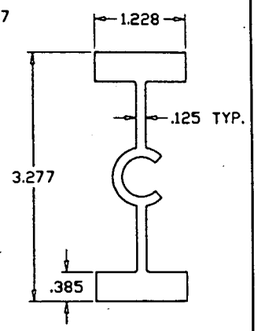
3" STORM BAR
6061-T6 OR 6005-T5



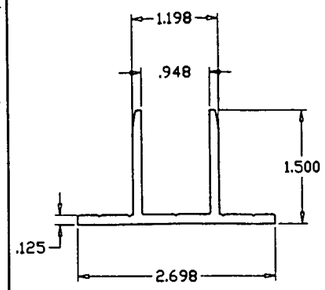
3" STORM BAR INSERT
6005-T5



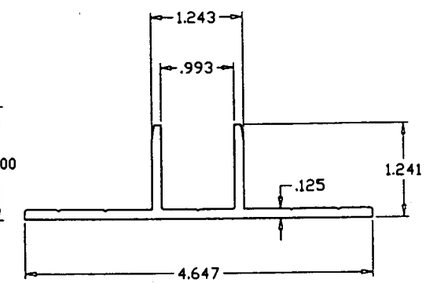
4" STORM BAR
6061-T6 OR 6005-T5



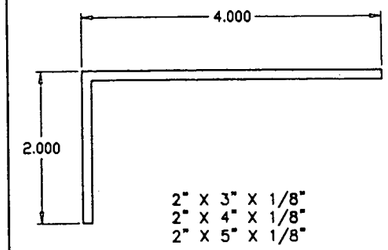
4" STORM BAR INSERT
6005-T5



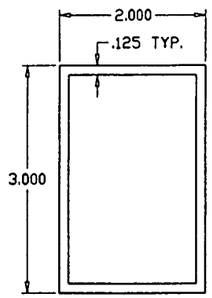
3" STORM BAR BRACKET
6061-T6 OR 6005-T5



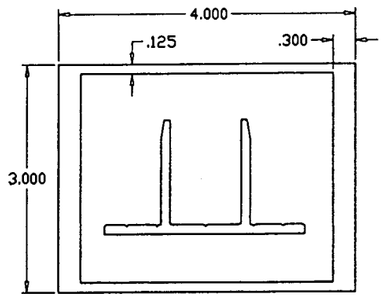
4" STORM BAR BRACKET
6061-T6 OR 6005-T5



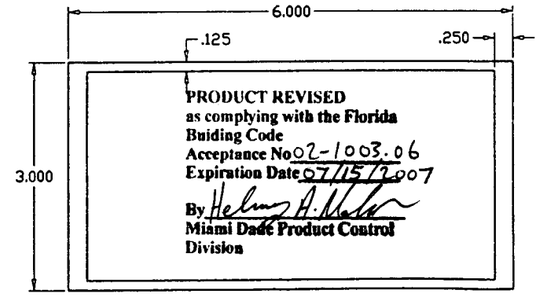
ALUMINUM ANGLES
6005-T5



2" X 3" MULLION
6005-T5

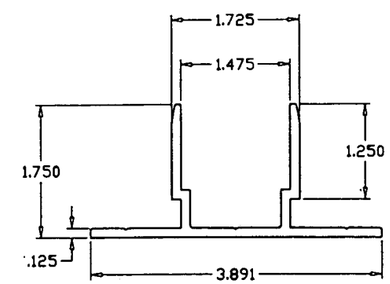


3" X 4" MULLION
6005-T5

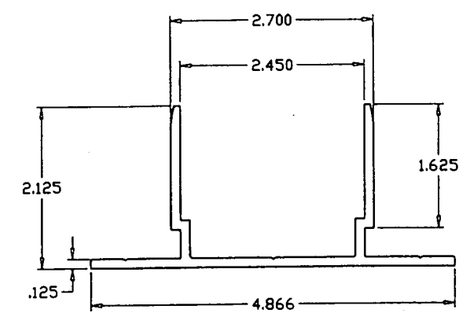


PRODUCT REVISED
as complying with the Florida
Buiding Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By
Miami Dade Product Control
Division

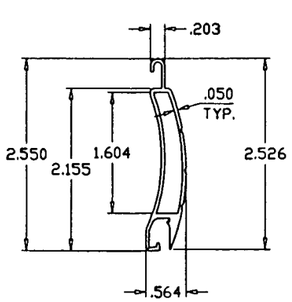
3" X 6" MULLION
6005-T5



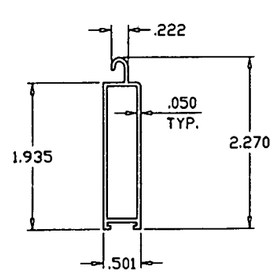
2" MULLION BRACKET
6061-T6 OR 6005-T5



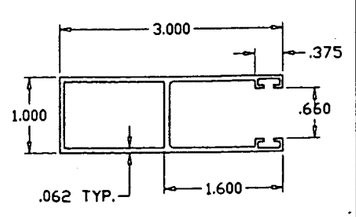
3" MULLION BRACKET
6061-T6 OR 6005-T5



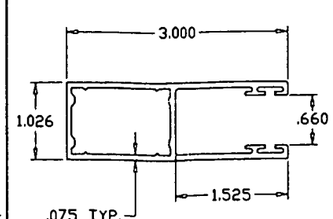
EXTRUDED ALUMINUM SLAT
6063-T6



EXTRUDED ALUM. BOTTOM SLAT
6063-T6



ALT. SIDE TRACK
6063-T6



ALT. SIDE TRACK
6063-T6

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557

MAY 25 1999

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
EXPIRATION DATE 07/15/2002
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

APPROVED AS COMPLYING WITH THE
SOUTH FLORIDA BUILDING CODE
DATE July 15 1999
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

PRODUCT RENEWED
as complying with the Florida
Buiding Code
Acceptance No 02-0417.02
Expiration Date July 15, 2007
By
Miami Dade Product Control
Division

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

ROLLUP\98-43RAY

ROLL UP SHUTTER DETAILS

ROLL-A-WAY STORM AND SECURITY SHUTTERS
10597 OAK STREET N.E.
ST. PETERSBURG, FL. 33716
TEL. (800) 683-9505 FAX. (727) 579-9410

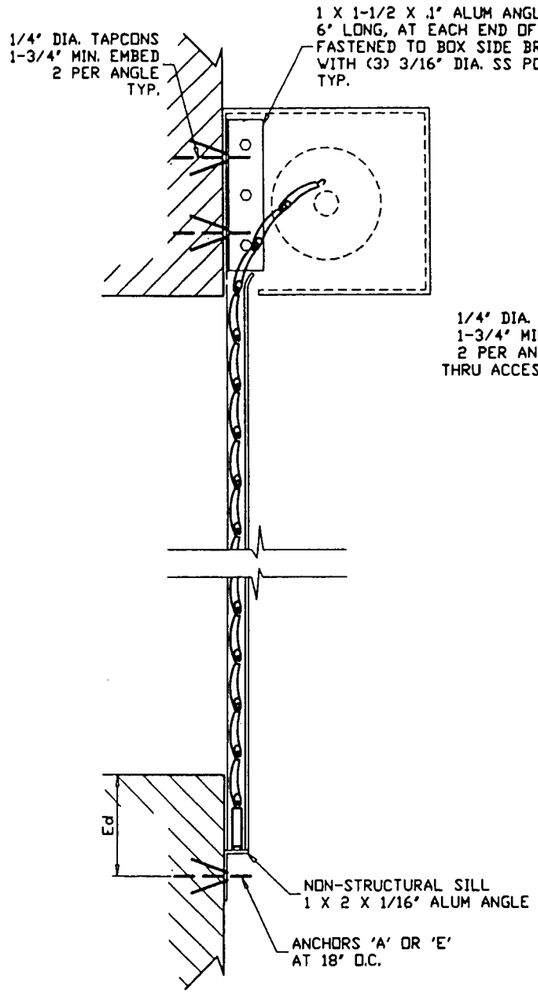
revisions:		
no	date	by	description

date: 12-24-98	scale: 1/2" = 1"	dr. by: HAMID	chk. by:

drawing no. 98-43

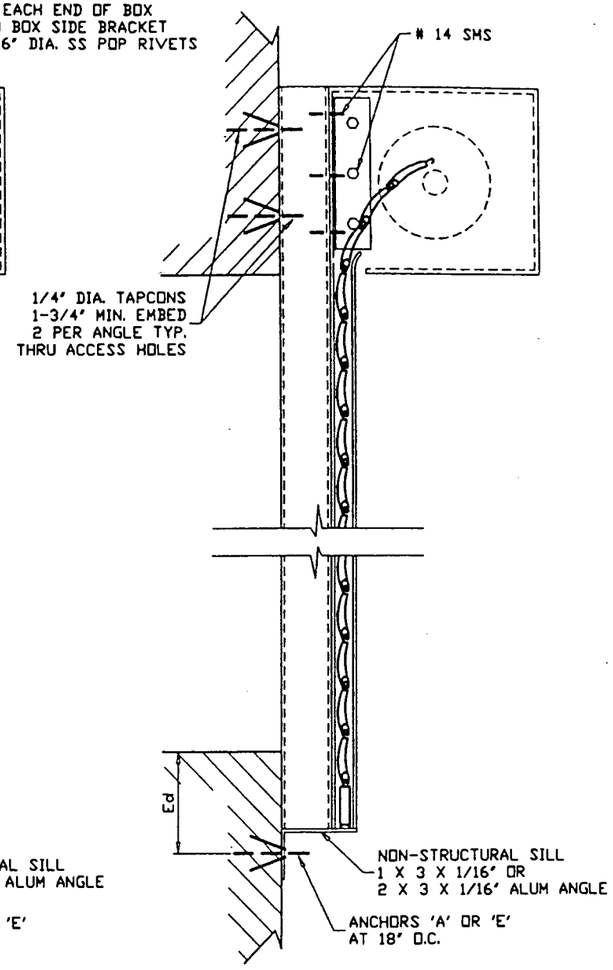
sheet 2 of 17

WALL MOUNTS



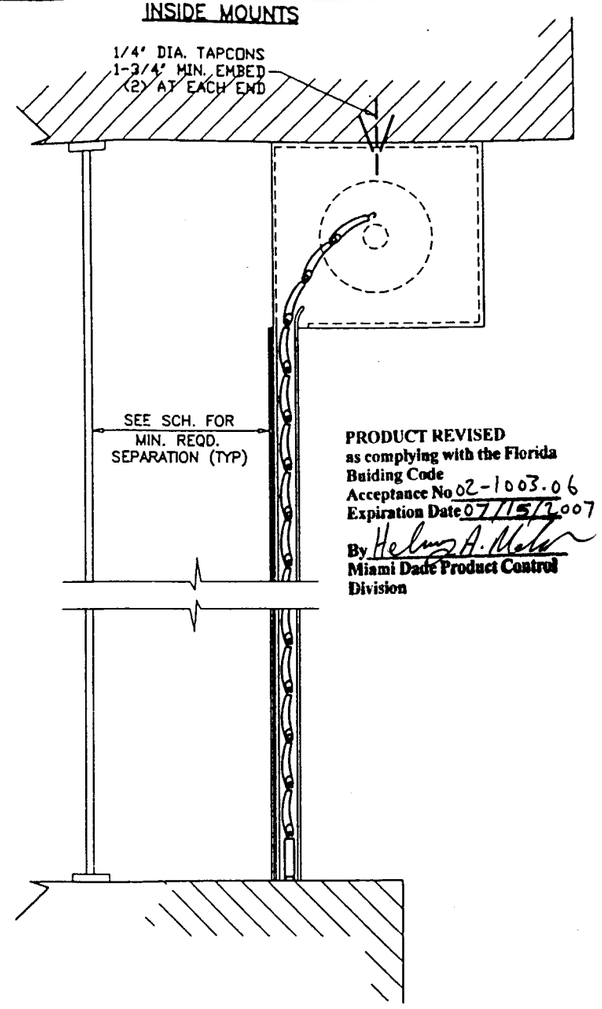
SECTION A-A

BUILT-OUT CONDITION

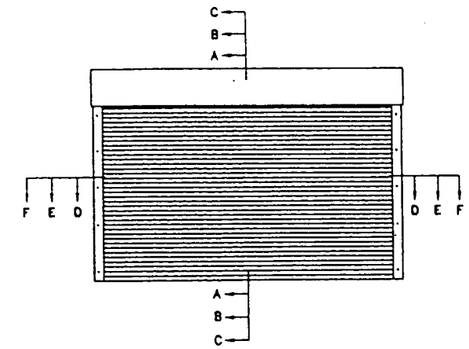


SECTION B-B

INSIDE MOUNTS



SECTION C-C



TYPICAL ELEVATION
SINGLE SPAN

PRODUCT REVISED
as complying with the Florida
Buiding Code
Acceptance No. 02-1003.06
Expiration Date 07/15/2007
By Helmy A. Mola
Miami Dade Product Control
Division

MINIMUM SEPARATION REQD. FROM GLASS	
FOR INSTALLATIONS ABOVE 30 FT. OF GRADE DUE TO WIND LOAD	FOR INSTALLATIONS UPTO 30 FT. OF GRADE DUE TO LARGE MISSILE IMPACT
OVERALL DEFLECTION + 1"	3-3/4"

FOR OVERALL DEFLECTION CALCULATION REFER TO SHEET 17 OF 17.
NOTE: NO PART OF SHUTTER SHALL BE UNDER 30' ABOVE GRADE TO WAIVE LARGE MISSILE IMPACT REQUIREMENT.

Ed = TYPICAL EDGE DISTANCE
CONC. & BLOCK = 12d (12 ANCHOR DIAMETERS)
WOOD = 5d
FOR LESSER EDGE DISTANCES SEE SHEET 8 OF 17.

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

TYPICAL SLAT ENGAGEMENT
INSIDE TRACK = 1-1/4" MIN.

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
EXPIRATION DATE 07/15/2002
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
DATE July 15 1999
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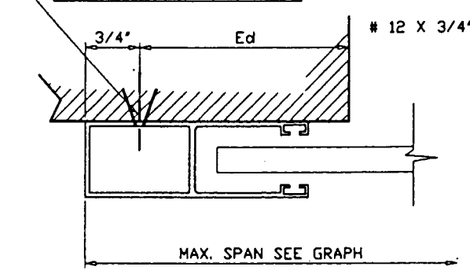
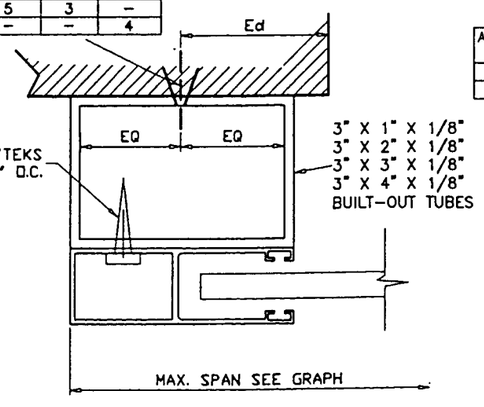
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

ANCHOR TYPE	CHART TO USE		
	CONC.	BLOCK	WOOD
A	3	1	–
E	–	–	2



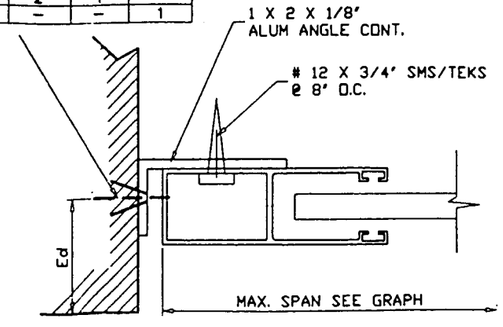
SECTION D-D

ANCHOR TYPE	CHART TO USE		
	CONC.	BLOCK	WOOD
A	5	3	–
E	–	–	4



SECTION E-E

ANCHOR TYPE	CHART TO USE		
	CONC.	BLOCK	WOOD
A	2	1	–
E	–	–	1



SECTION F-F

Engr: DR. HUMAYOUN FARGOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

PRODUCT RENEWED
as complying with the Florida
Buiding Code
Acceptance No. 03-0417.02
Expiration Date July 15, 2007
By
Miami Dade Product Control
Division

AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL (305) 264-8100 FAX. (305) 262-6978
ROLLUP\98-43RAY

ROLL UP SHUTTER DETAILS

ROLL-A-WAY STORM AND SECURITY SHUTTERS
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revisions:			
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date: 12-24-98
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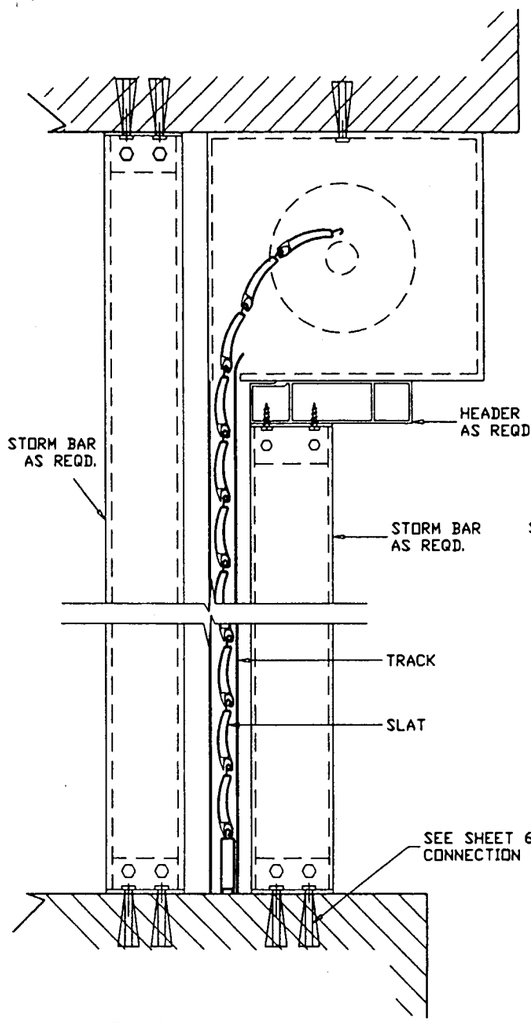
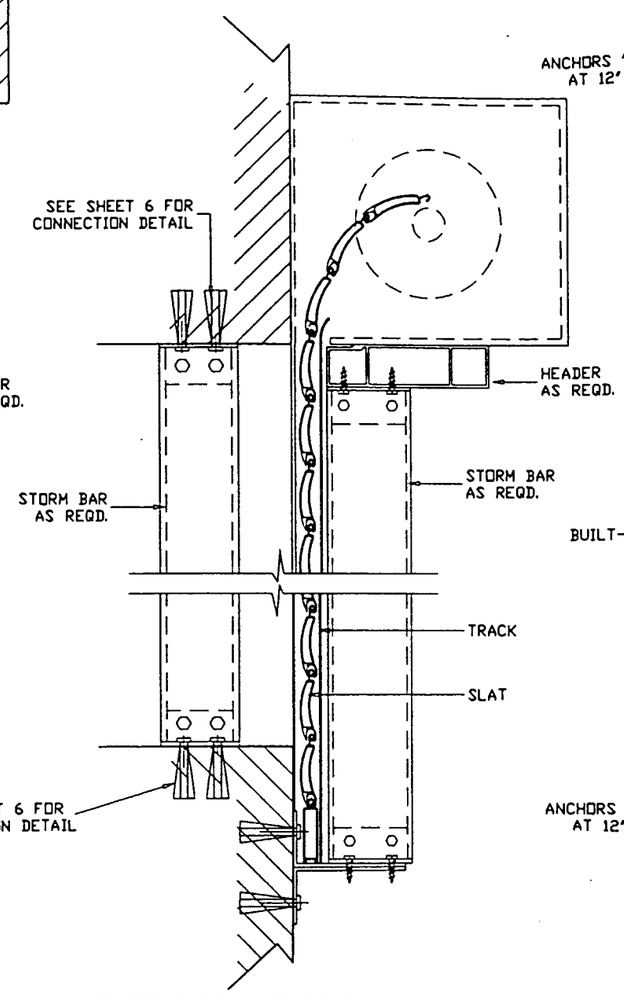
dr. by: HAMID
chk. by:

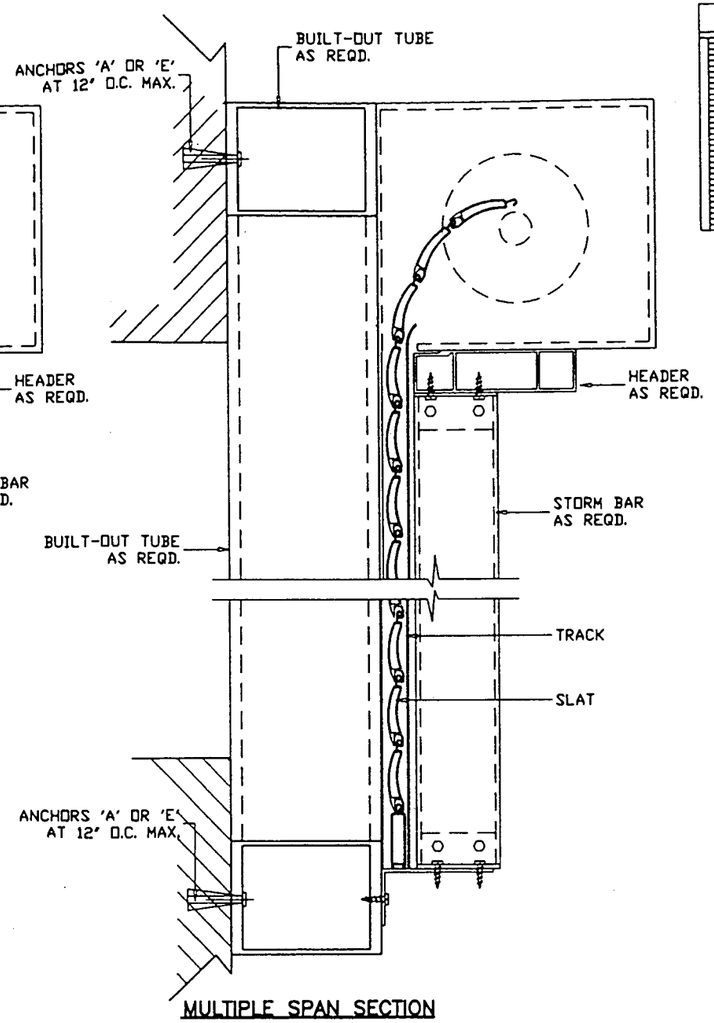
drawing no. 98-43



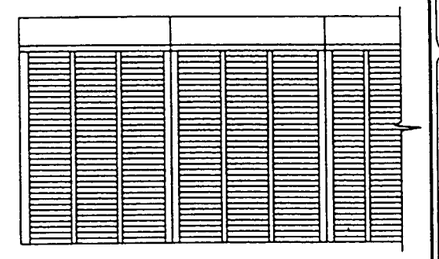
MULTIPLE SPAN SECTION
CEILING TO FLOOR MOUNTS



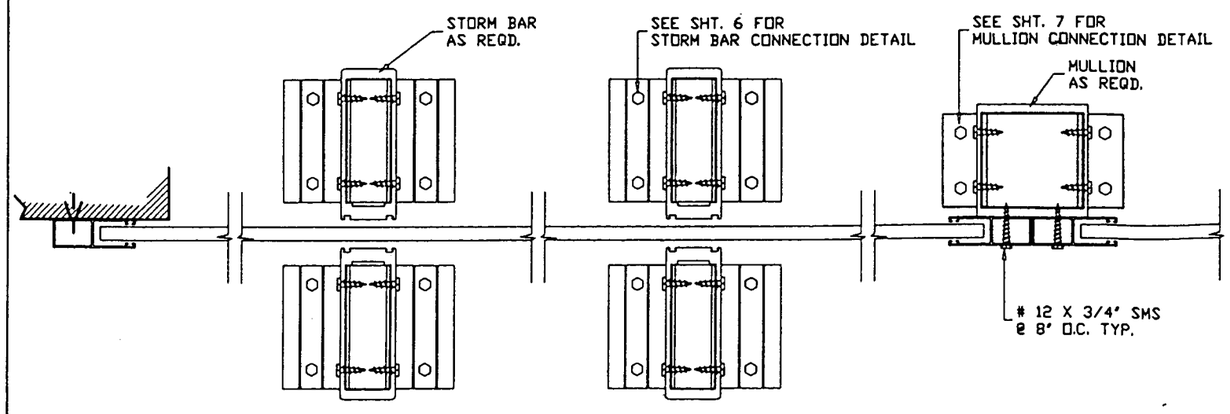
MULTIPLE SPAN SECTION
WALL MOUNTS



MULTIPLE SPAN SECTION
BUILT-OUT



TYPICAL ELEVATION
MULTIPLE SPAN



MULTIPLE SPAN PLAN
HEADER NOT SHOWN

PRODUCT REVISED
as complying with the Florida
Buiding Code
Acceptance No. 02-1003.06
Expiration Date 07/15/2007
By
Miami Dade Product Control
Division

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
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BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

APPROVED AS COMPLYING WITH THE
SOUTH FLORIDA BUILDING CODE
DATE July 15 19.99
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 20 1999

PRODUCT RENEWED
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Acceptance No. 02-0417.03
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AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
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TEL (305) 264-8100 FAX. (305) 262-6978

ROLLUP\98-43RAY

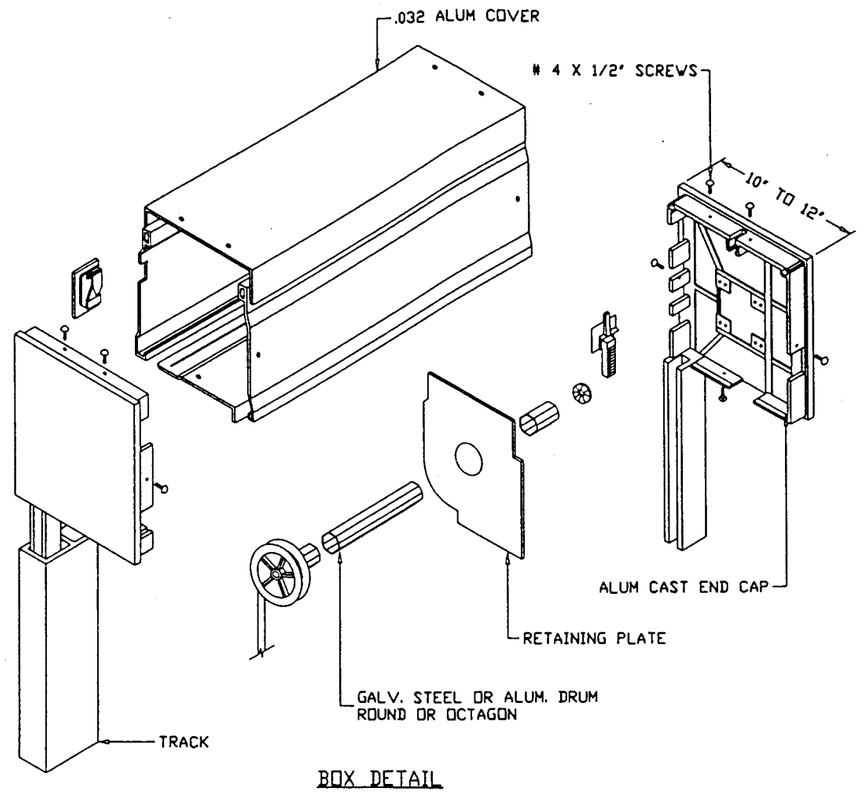
ROLL UP SHUTTER DETAILS

ROLL-A-WAY STORM AND SECURITY SHUTTERS
10597 OAK STREET N.E.
ST. PETERSBURG, FL. 33716
TEL (800) 683-9505 FAX. (727) 579-9410

revisions:			
no	date	by	description

date: 12-24-98
scale: -
dr. by: HAMID
chk. by:

drawing no.
98-43



BOX DETAIL

PRODUCT REVISED
as complying with the Florida Buiding Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helmy A. Meler
Miami Dade Product Control Division

PRODUCT REVISED
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PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

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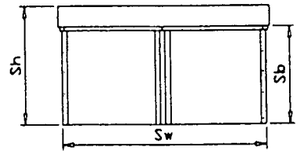
dr. by: HAWID
chk. by:

drawing no. 98-43

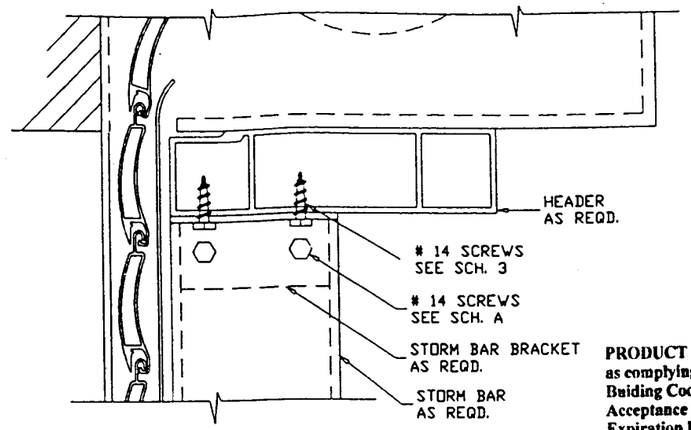
ALL DIMENSIONS SHOWN Sh, Sw, Sb ETC. ARE IN FEET.



FACTOR = 1.25 FOR 2 SPANS
= 1.10 FOR 3 SPANS
Sb = STORM BAR HEIGHT

LOAD ON STORM BAR ANCHOR = $P = \frac{Sw * Sb \times Pd \times FACTOR}{2 * (\# \text{ OF SPANS})}$

IF P > CAPACITY OF FASTENERS SHOWN, ANCHORAGE SYSTEM SHALL BE DESIGNED ON JOB TO JOB BASIS.



STORM BAR CONNECTION TO HEADER

SCHEDULE 3

STORM BAR CONNECTION		
STORM BAR BRACKET	# OF SCREWS EACH LEG	CONNECTION CAPACITY–lbs
3" BRACKET	1	1640
	2	3280
4" BRACKET	3	4920
	4	6560

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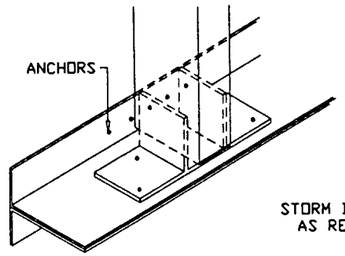
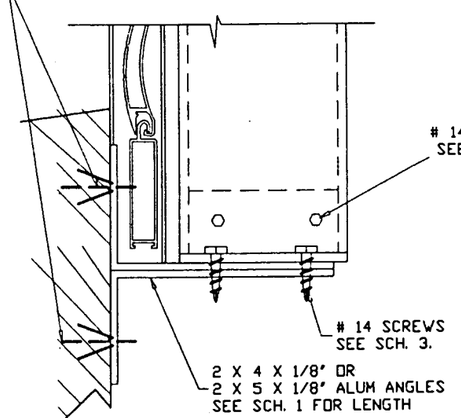
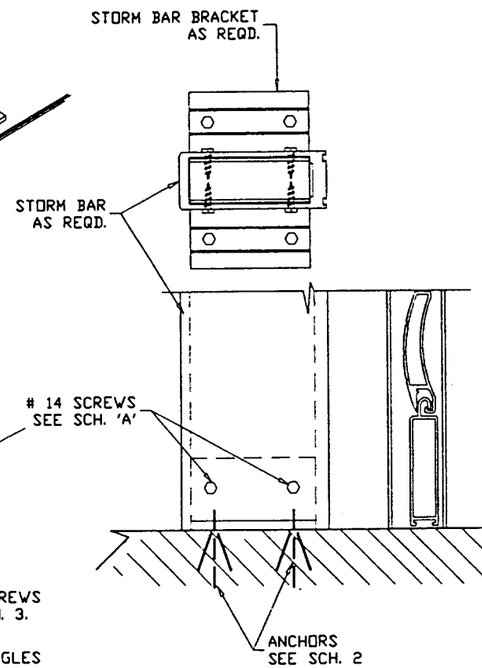
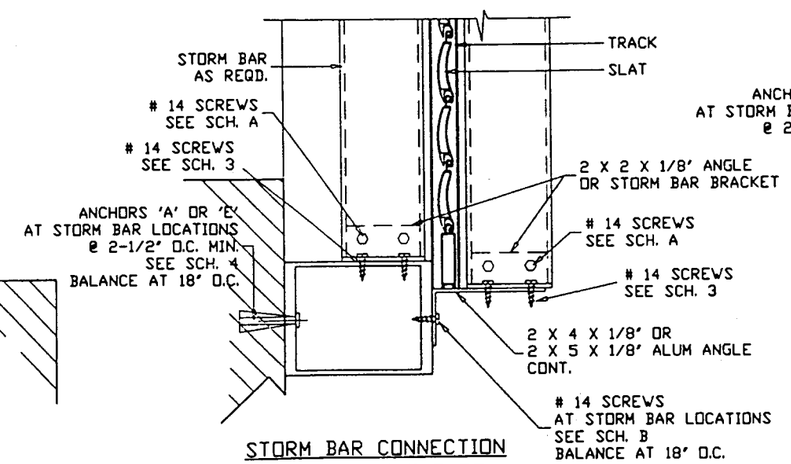




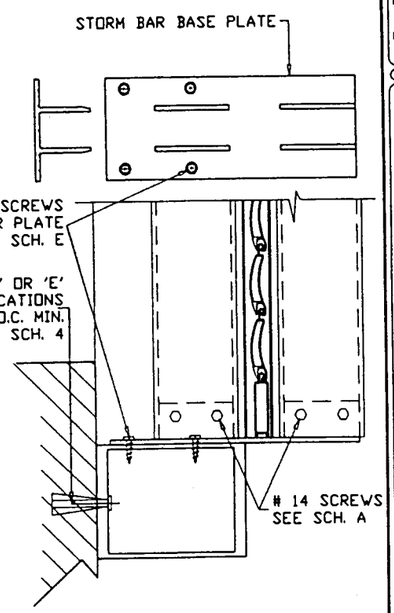
STORM BAR CONNECTION TO WALL (TOP & BOTTOM)



STORM BAR CONNECTION TO CEILING & FLOOR



STORM BAR CONNECTION TO BUILT-OUT TUBE



ALT. STORM BAR CONNECTION TO BUILT-OUT TUBE

SCHEDULE 1

STORM BAR CONNECTION TO WALL				
ALUM ANGLE LENGTH IN.	NO. OF ANCHORS PER CONNECTION	ANCHOR TYPE	BASE MATERIAL	CONNECTION CAPACITY–lbs
4	2	A	CONC.	485
		A	BLOCK	410
		E	WOOD	485
6	4	A	CONC.	728
		A	BLOCK	728
		E	WOOD	728
8	6	A	CONC.	971
		A	BLOCK	971
		E	WOOD	971
10	8	A	CONC.	1213
		A	BLOCK	1025
		E	WOOD	1213
12	10	A	CONC.	1456
		A	BLOCK	1230
		E	WOOD	1456

SCHEDULE 2

STORM BAR CONNECTION TO CEILING AND FLOOR			
ANCHOR PER SIDE	ANCHOR TYPE	BASE MATERIAL	CONNECTION CAPACITY–lbs
1	A	CONC.	1162
	A	BLOCK	704
	E	WOOD	616
2	A	CONC.	2324
	A	BLOCK	1408
	E	WOOD	1232
3	A	CONC.	3486
	A	BLOCK	2112
	E	WOOD	1848
4	A	CONC.	4648
	A	BLOCK	2816
	E	WOOD	2464
5	A	CONC.	5810
	A	BLOCK	3520
	E	WOOD	3080

SCHEDULE 4

TUBE CONNECTION TO WALL @ STORM BAR LOCATION			
NO. OF ANCHORS	ANCHOR TYPE	BASE MATERIAL	CONNECTION CAPACITY–lbs
2	A	CONC.	581
	A	BLOCK	352
	E	WOOD	308
3	A	CONC.	820
	A	BLOCK	528
	E	WOOD	462
4	A	CONC.	820
	A	BLOCK	704
	E	WOOD	616
5	A	CONC.	820
	A	BLOCK	820
	E	WOOD	770

SCHEDULE A

STORM BAR BRACKET CONNECTION			
STORM BAR BRACKET	# OF SCREWS EACH LEG	CONNECTION CAPACITY–lbs	SPACING BETWEEN SCREWS –IN.
3" BRACKET	2	1640	1.5
	3	1968	.75
4" BRACKET	2	1640	1.5
	3	1968	.75
	4	2981	.75

SCHEDULE B

ANGLE CONNECTION TO TUBE AT STORM BAR LOCATION	
# OF SCREWS	CONNECTION CAPACITY–lbs
2	495
3	742
4	820

SCHEDULE E

BASE PLATE ANCHORS CAPACITY	
NO. OF SCREWS PER PLATE	CONNECTION CAPACITY–lbs
4	3288

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

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ROLLUP\98-43RAY

ROLL UP SHUTTER DETAILS

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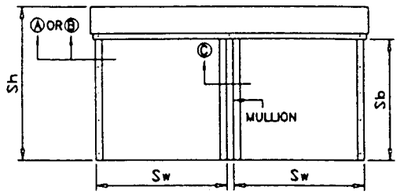
drawing no. 98-43



TOTAL LOAD ON CENTER MULLION

P = Sh X Sw X Pd = Lbs

TOTAL LOAD ON END MULLION

P = Sh X Sw/2 X Pd = Lbs

TOTAL LOAD ON HEADER

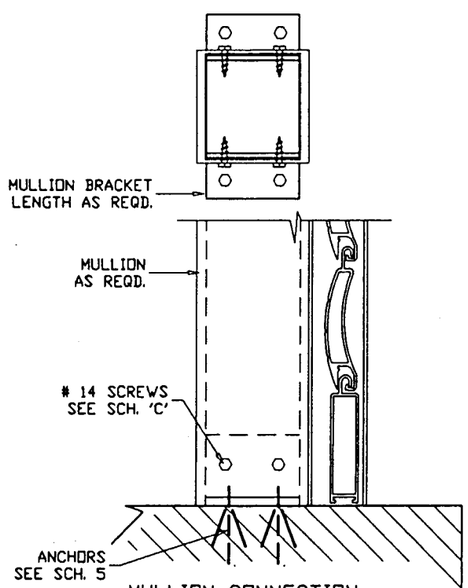
P = Sh/2 X Sw/2 X Pd = Lbs

LOAD AT ANCHOR

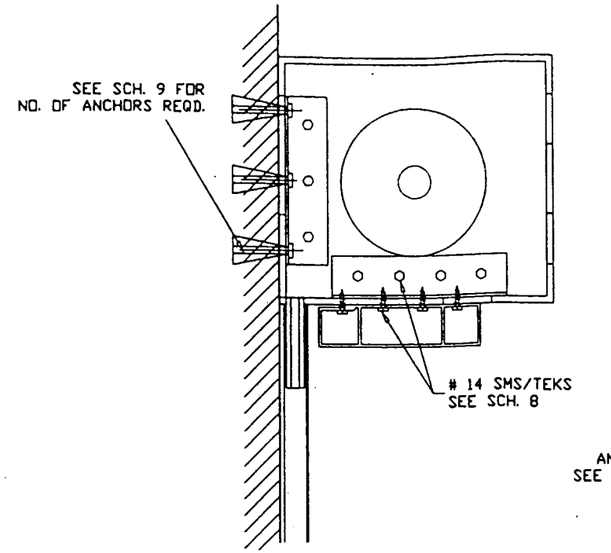
AT TOP = Pt = $\frac{P * Sb}{Sh}$ = Lbs

AT BOTTOM = Pb = P − Pt = Lbs

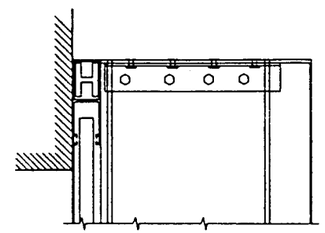
IF Pt OR Pb > ANCHOR CAPACITY OF FASTENER SHOWN ANCHORAGE SYSTEM SHALL BE DESIGNED ON JOB TO JOB BASIS.



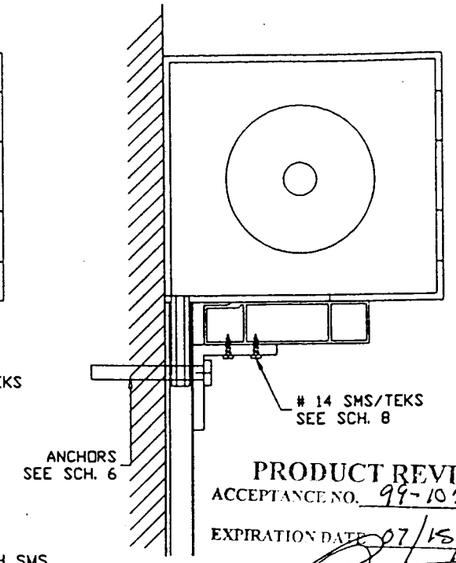
MULLION CONNECTION TO CEILING & FLOOR

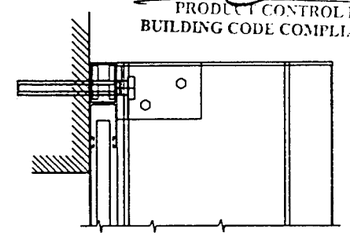


HEADER ATTACHED TO END CASTING WITH SMS
END CASTING ANCHORED TO BLDG. STRUCTURE



Ⓐ HEADER CONNECTION TO WALL WITHOUT END ANGLE
PLAN





Ⓑ HEADER CONNECTION TO WALL WITH END ANGLE
PLAN

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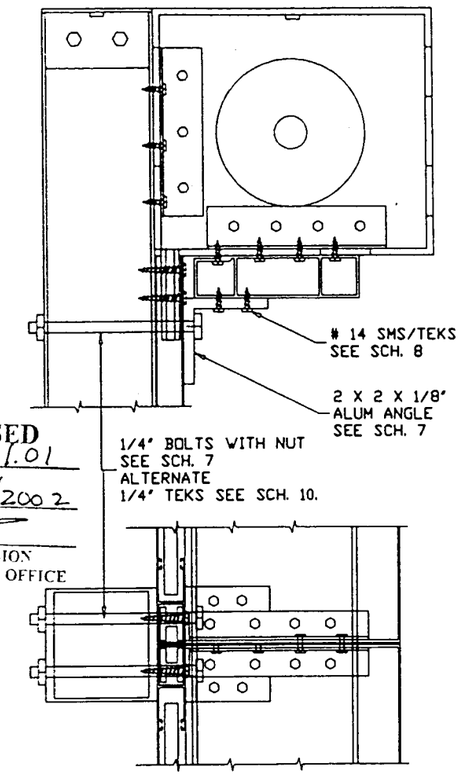

Ⓒ HEADER CONNECTION TO MULLION
PLAN

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Expiration Date 07/15/2007
By Helmy A. Mek
Miami Dade Product Control Division

SCHEDULE 5

MULLION CONNECTION TO CEILING AND FLOOR			
ANCHOR PER SIDE	ANCHOR TYPE	BASE MATERIAL	CONNECTION CAPACITY–lbs
1	A	CONC.	1162
	A	BLOCK	704
	E	WOOD	616
2	A	CONC.	2324
	A	BLOCK	1408
	E	WOOD	1232
4	A	CONC.	4648
	A	BLOCK	2816
	E	WOOD	2464

SCHEDULE C

MULLION BRACKET CONNECTION			
MULLION SIZE	# OF SCREWS EACH LEG	CONNECTION CAPACITY–lbs	SPACING BETWEEN SCREWS–IN.
2" X 3"	2	1766	1.75
	3	2315	1
3" X 4"	2	1766	1.75
	3	2315	1
	4	3450	1
	5	4099	.75
3" X 6"	2	2385	4
	3	3148	2
	4	3450	1.5
	5	4685	1
	6	5297	.75

SCHEDULE 9

HEADER/END CASTING CONNECTION TO WALL			
NO. OF ANCHORS	ANCHOR TYPE	BASE MATERIAL	CONNECTION CAPACITY–lbs
1	A	CONC.	561
	A	BLOCK	204
	E	WOOD	304
2	A	CONC.	1122
	A	BLOCK	408
	E	WOOD	608
4	A	CONC.	1683
	A	BLOCK	612
	E	WOOD	912

SCHEDULE 8

ANGLE CONNECTION TO HEADER		
NO. OF SCREWS	ANGLE LENGTH IN.	CONNECTION CAPACITY–lbs
2	3	1640
4	4	3280
6	6	4920
8	8	6560

SCHEDULE 6

HEADER CONNECTION TO WALL				
ALUM ANGLE LENGTH IN.	NO. OF ANCHORS PER CONNECTION	ANCHOR TYPE	BASE MATERIAL	CONNECTION CAPACITY–lbs
4	2	A	CONC.	842
		A	BLOCK	308
		E	WOOD	456
6	4	A	CONC.	1683
		A	BLOCK	615
		E	WOOD	912
9	6	A	CONC.	2525
		A	BLOCK	923
		E	WOOD	1368
11	8	A	CONC.	3366
		A	BLOCK	1230
		E	WOOD	1824

SCHEDULE 7

ANGLE CONNECTION TO MULLION		
NO. OF BOLTS	ANGLE LENGTH IN.	CONNECTION CAPACITY–lbs
2	3	1641
3	4	2187
4	6	3281
6	8	4375

SCHEDULE 10

ANGLE CONNECTION TO MULLION		
NO. OF TEKS	ANGLE LENGTH IN.	CONNECTION CAPACITY–lbs
2	3	1187
3	4	1781
4	6	2374
6	8	3561

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557

MAY 25 1999

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chk. by:

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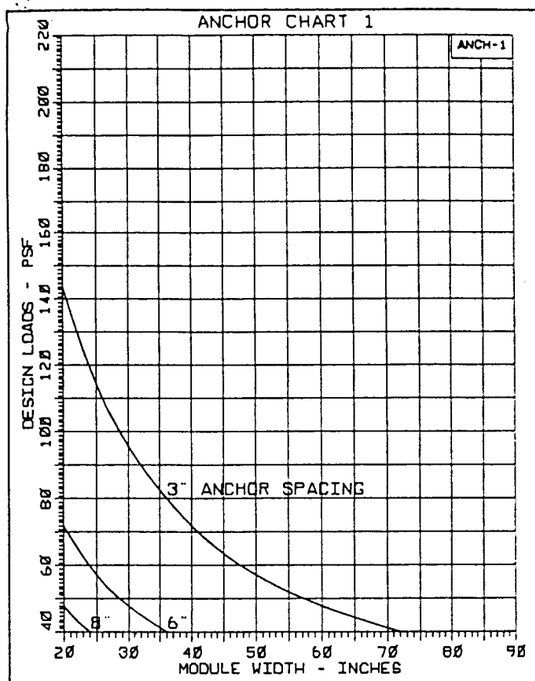
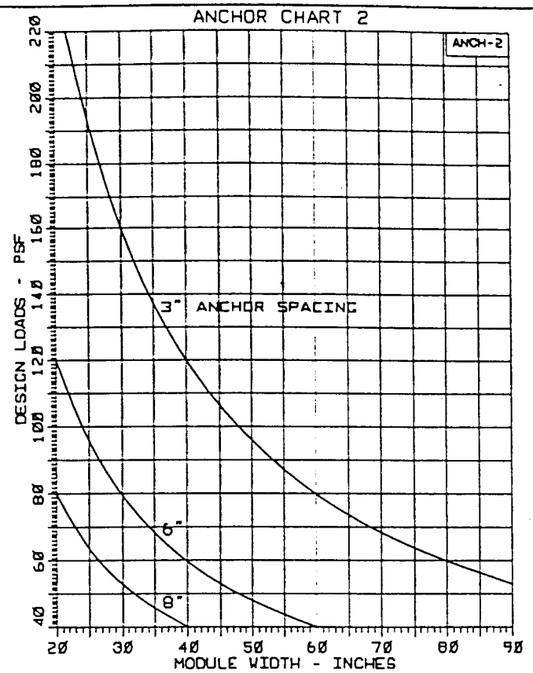
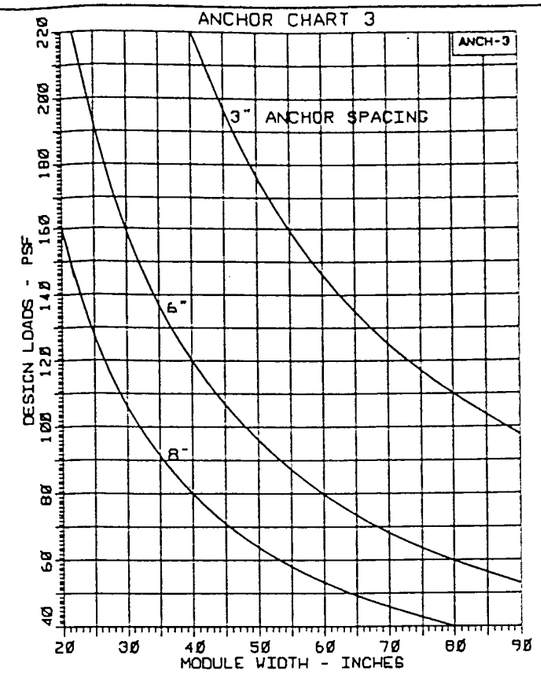
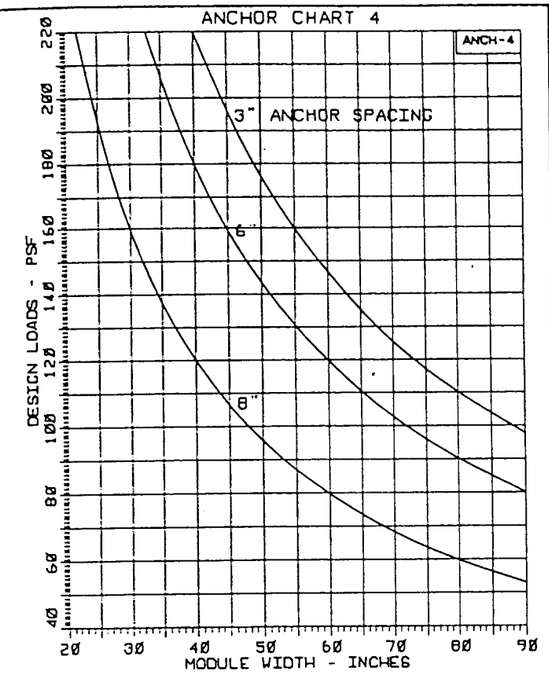
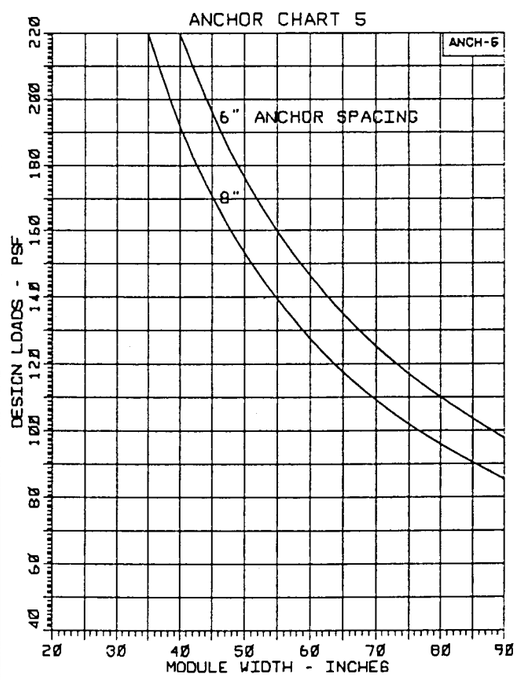
sheet 7 of 17

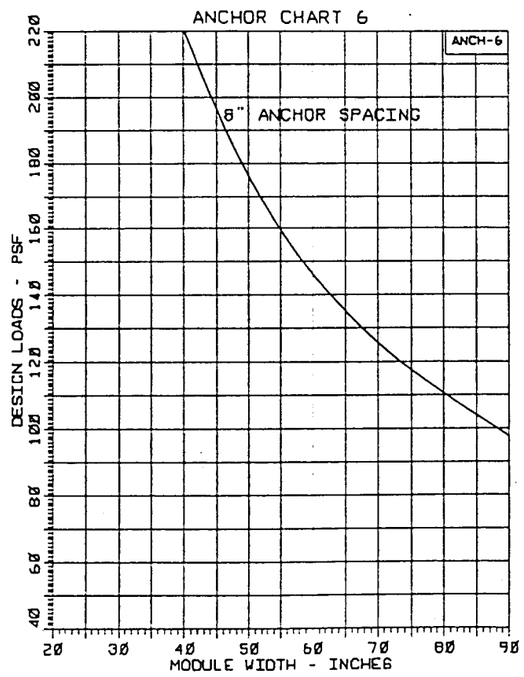












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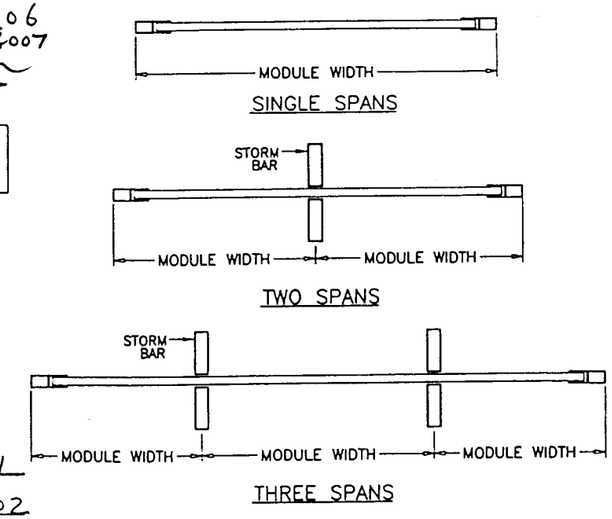
Miami Dade Product Control Division

USE CHARTS 1 THRU 6 TO VERIFY ANCHOR REQUIREMENTS AND STRESS LIMITATIONS OF LOAD/SPAN COMBINATIONS.

$$\text{MODULE WIDTH} = \frac{\text{SHUTTER WIDTH}}{\text{\# OF SPANS}}$$



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Engr: DR. HUMAYOUN FARCOQ
STRUCTURES
FLA. PE # 16557
MAY 22 1999

FASTENER SPACING IN MASONRY					
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 = 12" O.C. (FROM CHART) FOR 2" EDGE DIST. SPACING = 12 X .71 = 8.5 O.C.					

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

TYPICAL ANCHORS

ANCHOR (A) = 1/4" TAPCON 1-3/4" EMBEDMENT TO CONCRETE
1-1/4" EMBEDMENT TO BLOCK

ANCHOR (E) = #14 S.M.S./LAG SCREWS INTO WOOD. (S.G.= 0.47)
1-1/2" MIN. PENETRATION.

NOTE: ANCHORS, USE FULL EMBEDMENT IN CONCRETE BEYOND THE COVERING (STUCCO, TILES, ETC.)

AL-FAROOQ CORPORATION
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ROLLUP\98-43RAY

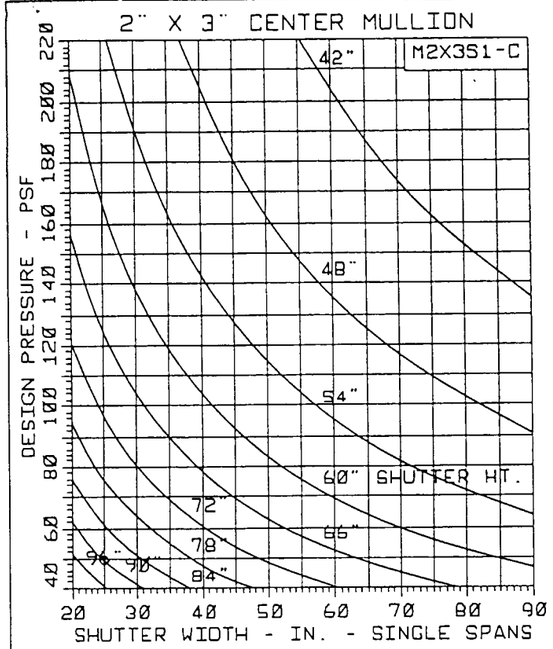
ROLL UP SHUTTER DETAILS

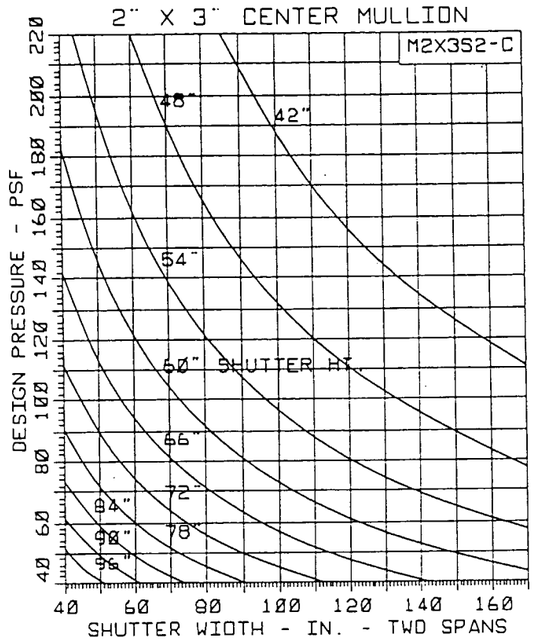
ROLL-A-WAY STORM AND SECURITY SHUTTERS
10597 OAK STREET N.E.
ST. PETERSBURG, FL. 33716
TEL. (800) 683-9505 FAX. (727) 579-9410

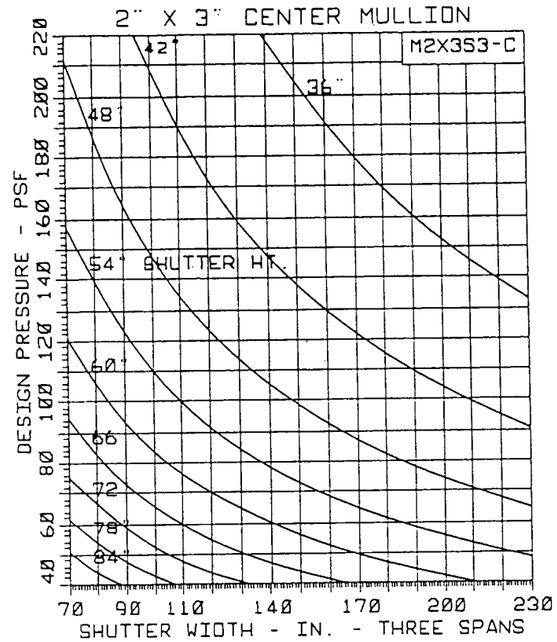
revisions:			
no	date	by	description

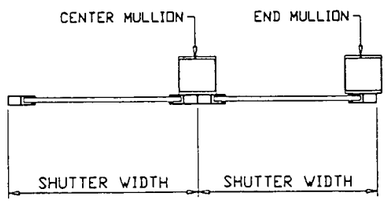
date: 12-24-98
scale: -
dr. by: HAMID
chk. by:

drawing no. 98-43









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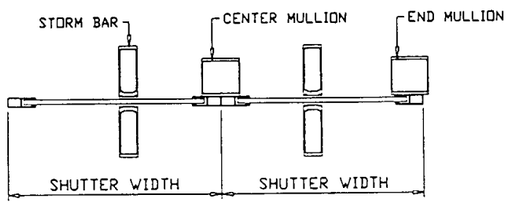

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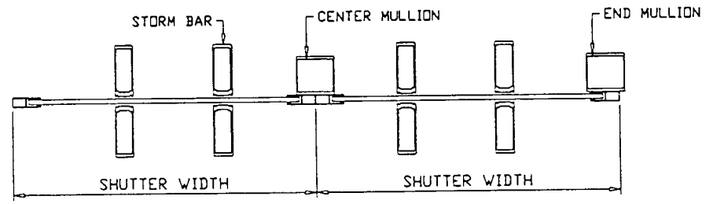

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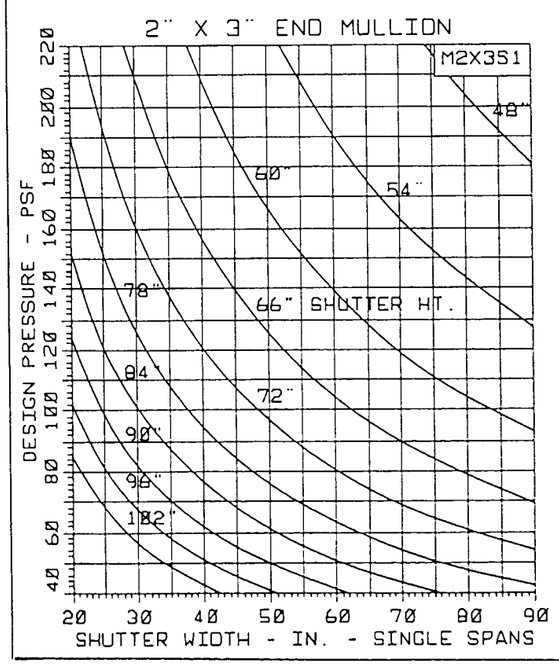

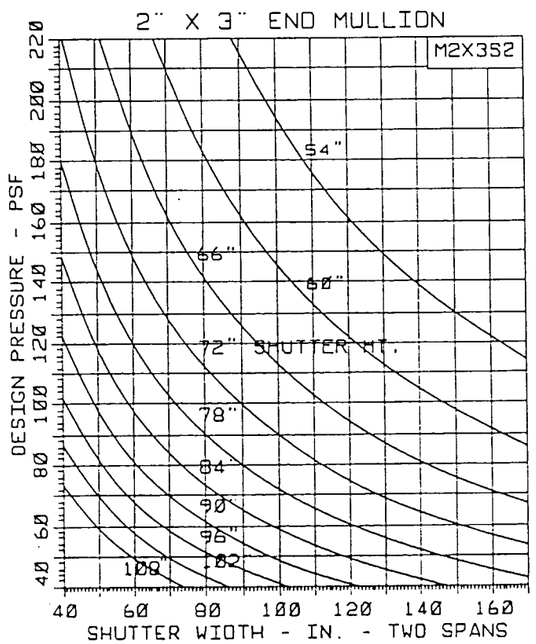

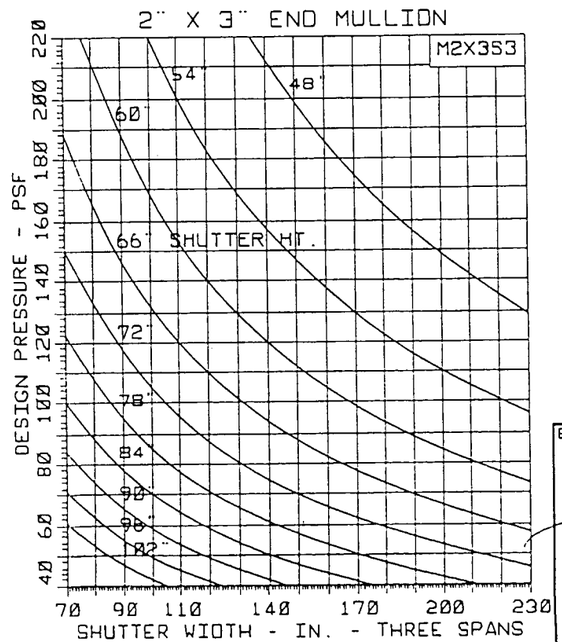

PRODUCT REVISED
as complying with the Florida Buiding Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helmy A. Hela
Miami Dade Product Control Division

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
EXPIRATION DATE 07/15/2002
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

APPROVED AS COMPLYING WITH THE
SOUTH FLORIDA BUILDING CODE
DATE July 15 19 99
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

PRODUCT RENEWED
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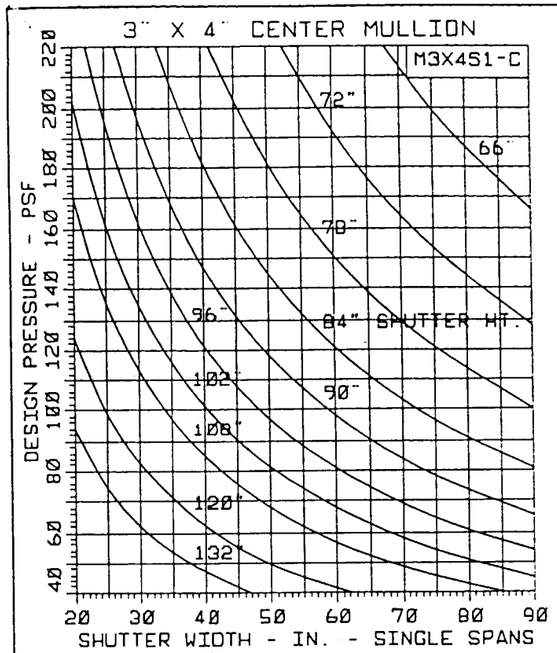

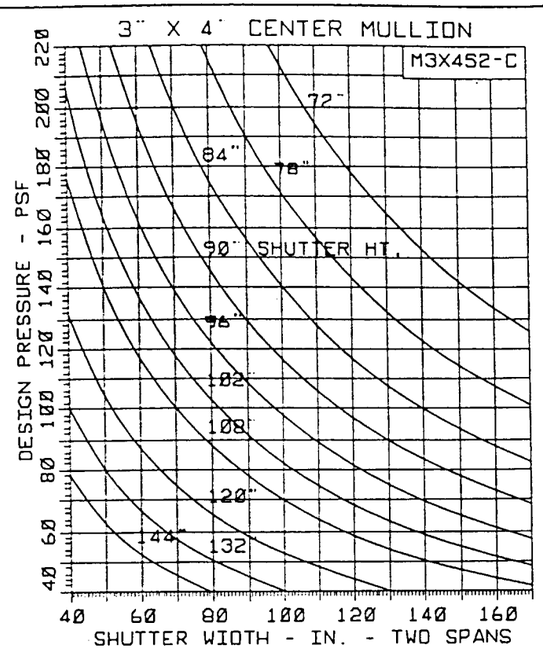

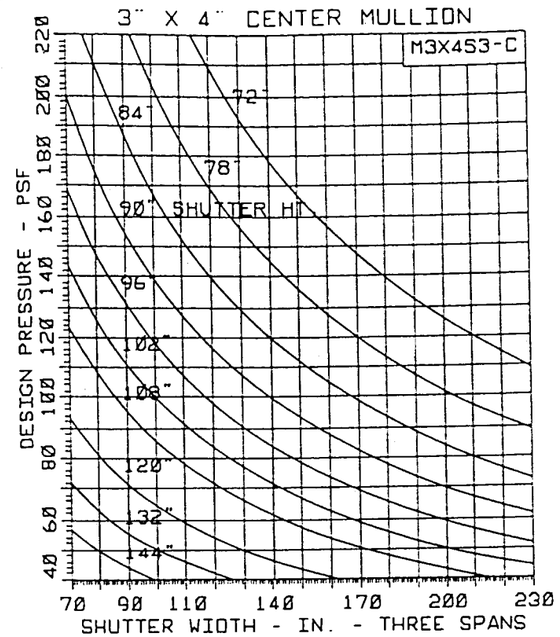

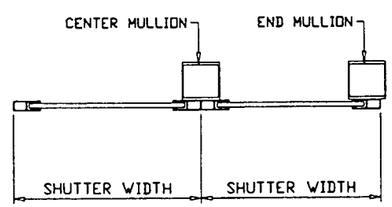

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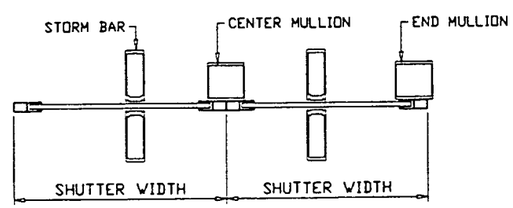

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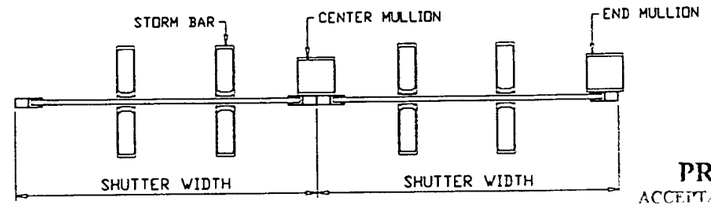

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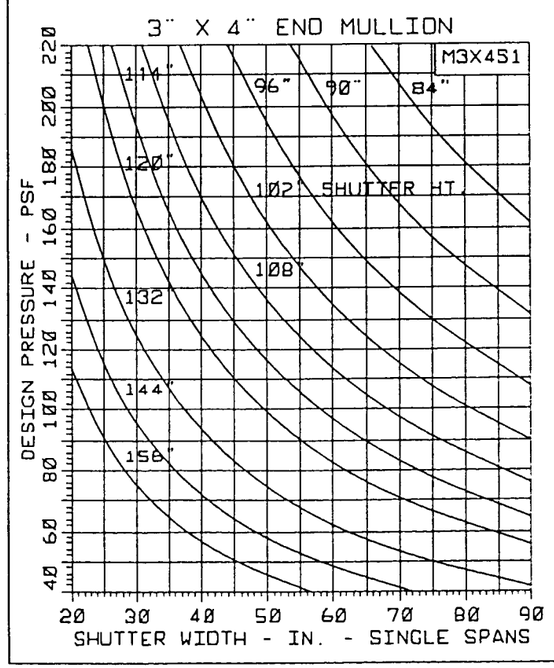

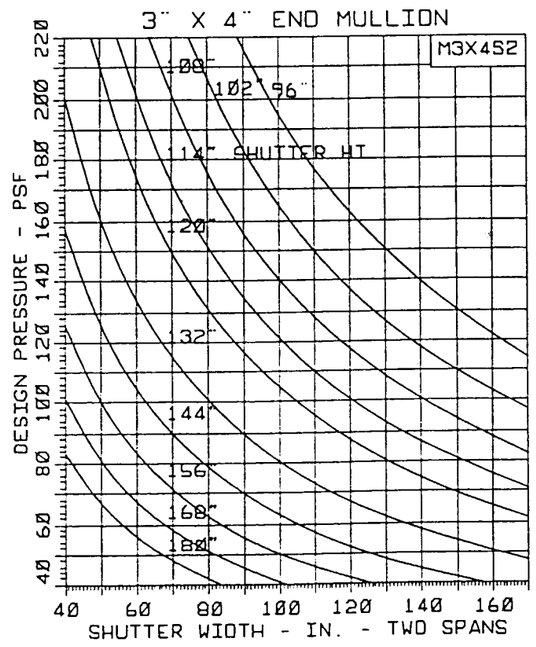

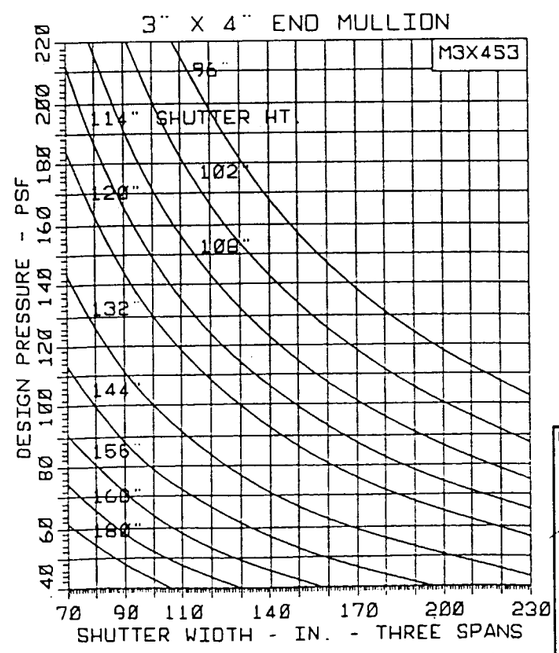

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Miami Dade Product Control Division

PRODUCT REVISED
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Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
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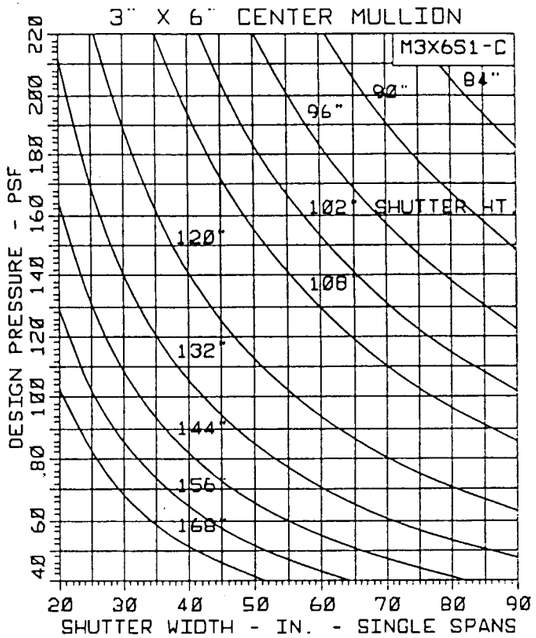

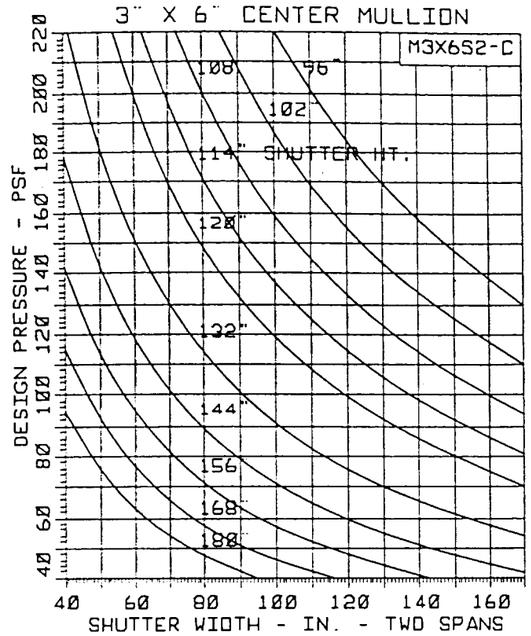

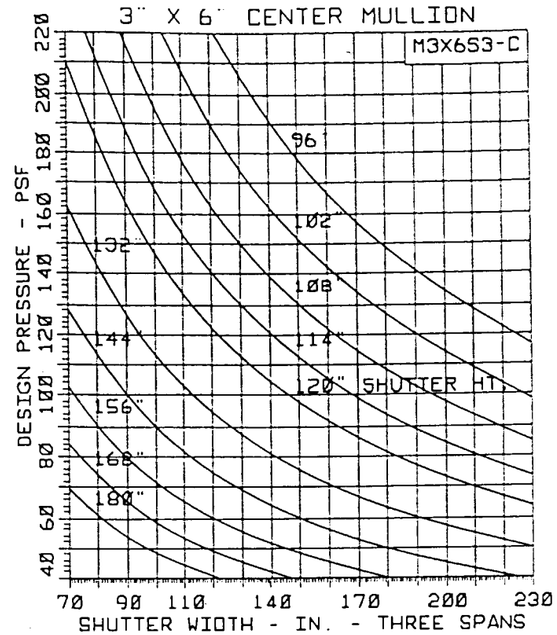

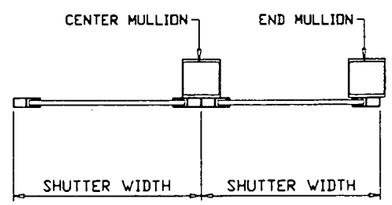

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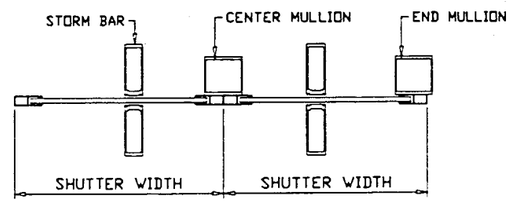

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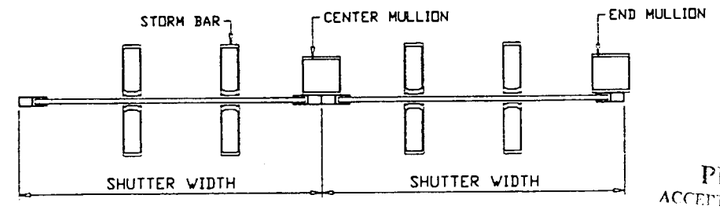

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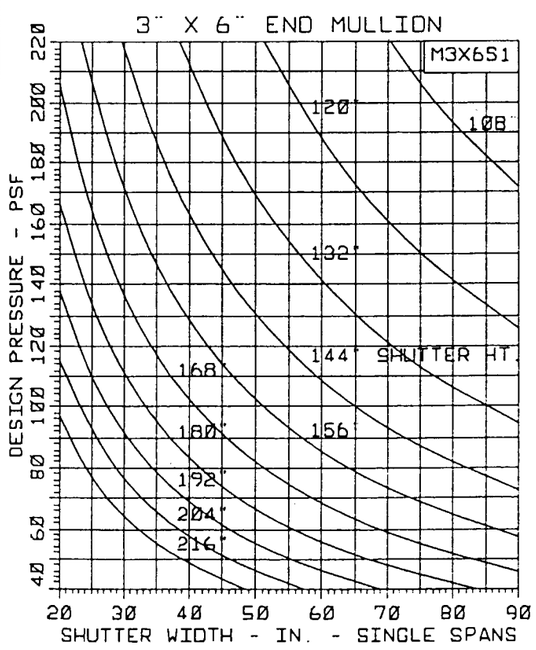

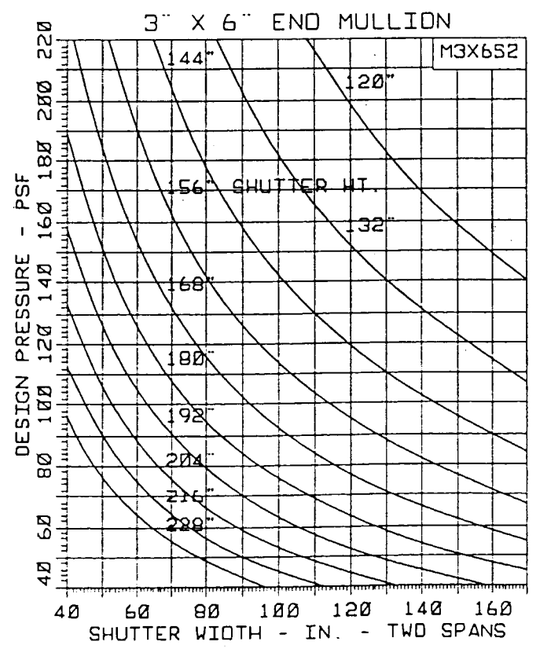

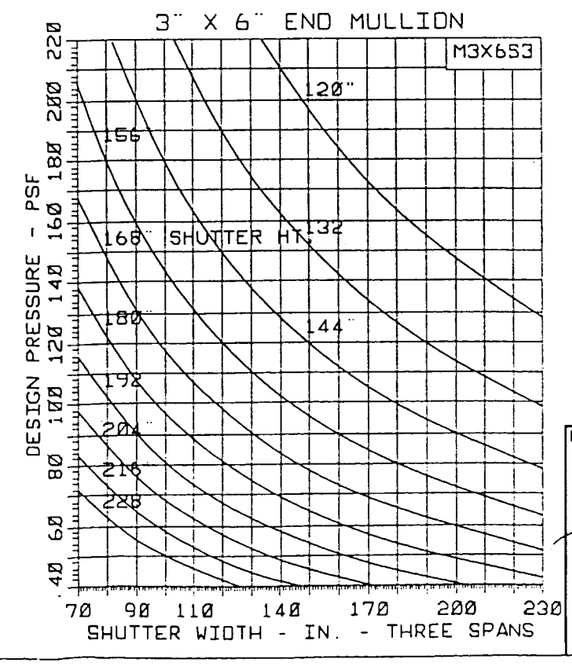

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ACCEPTANCE NO. 99-0311.04

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557

JAN 25 1999

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ROLLUP\98-43RAY

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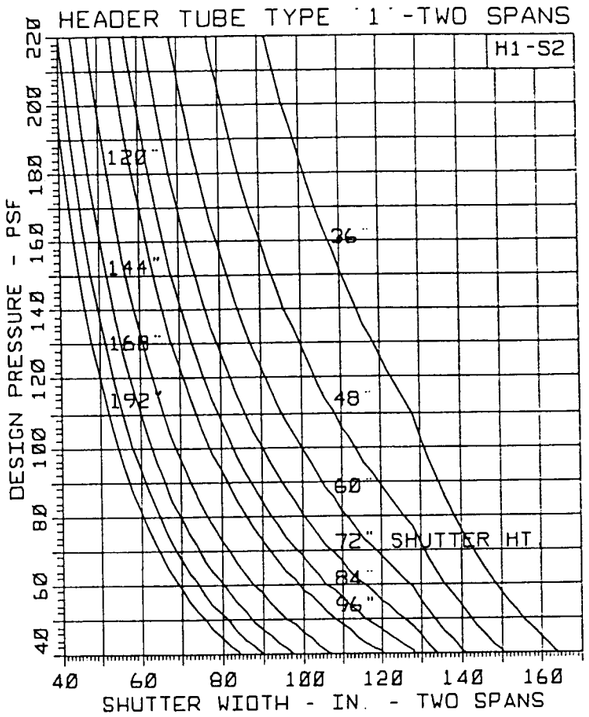

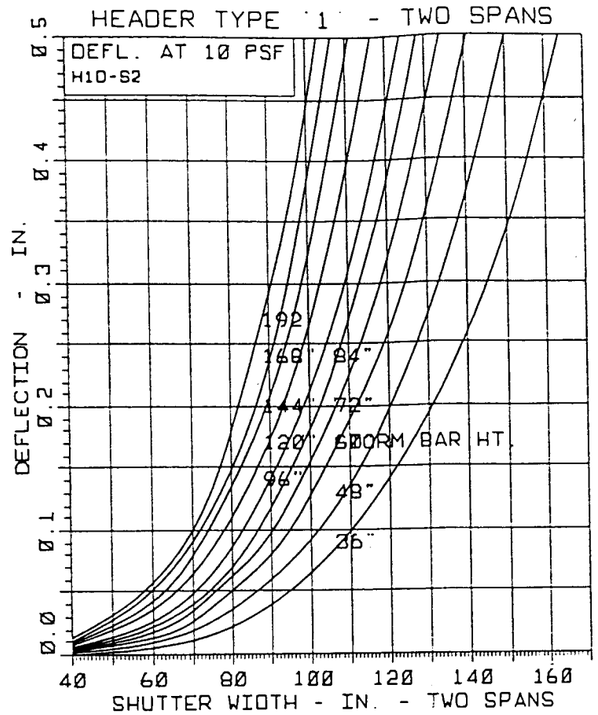

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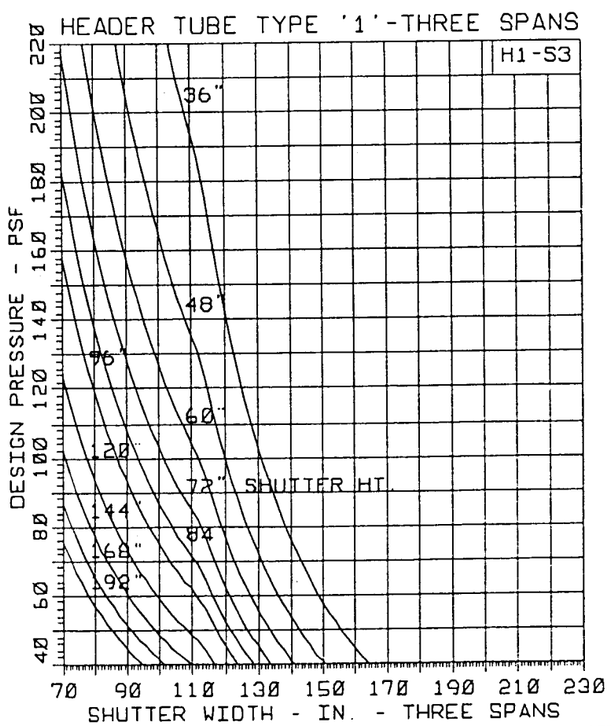

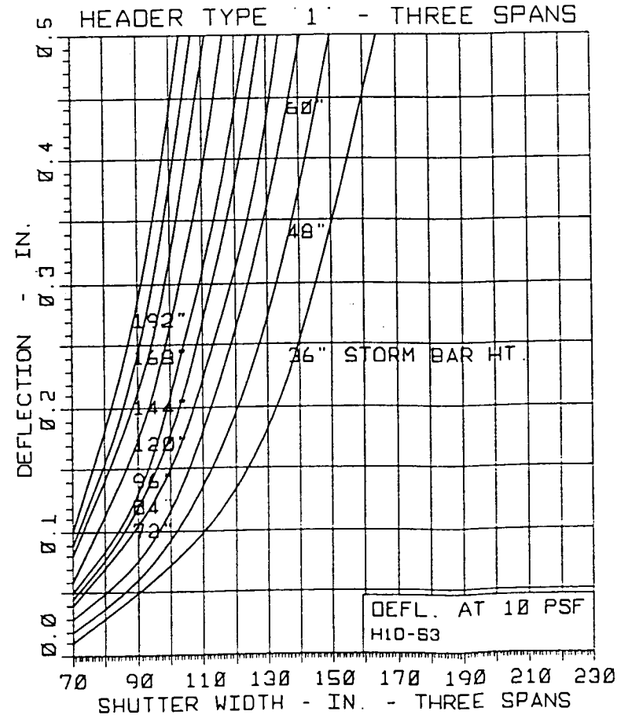

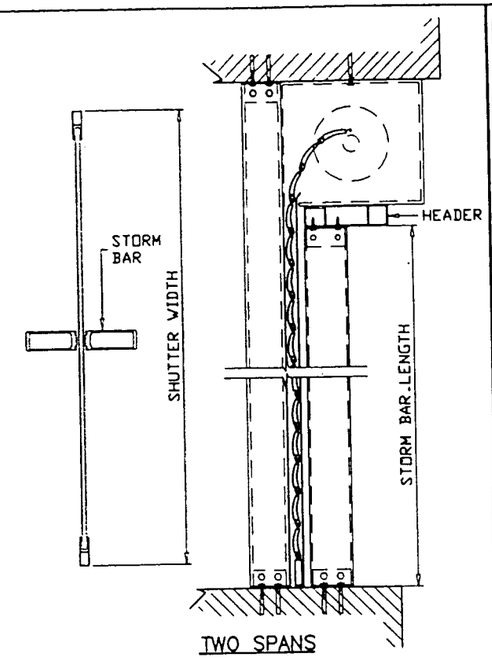

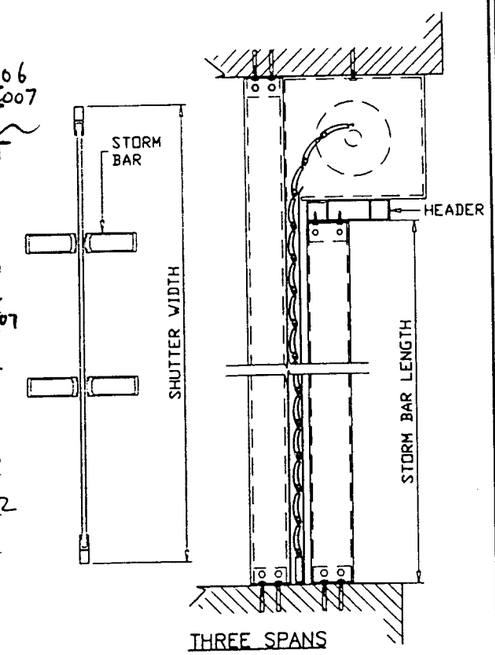

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STRUCTURES
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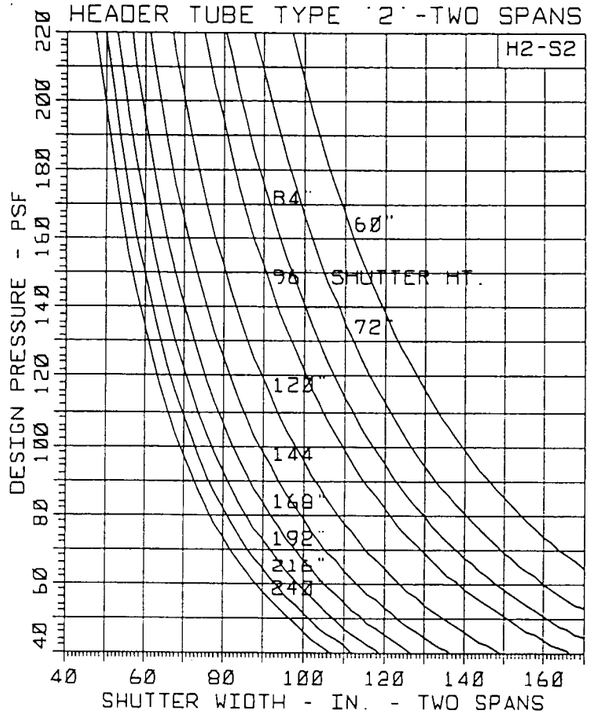

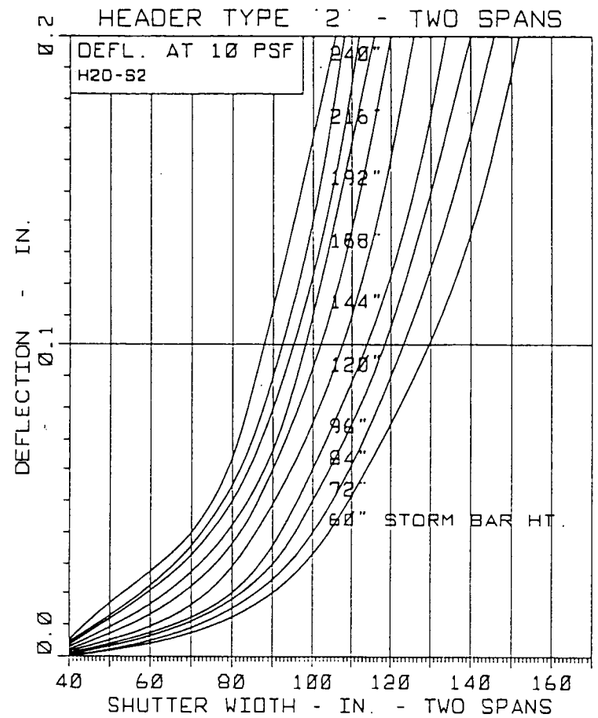

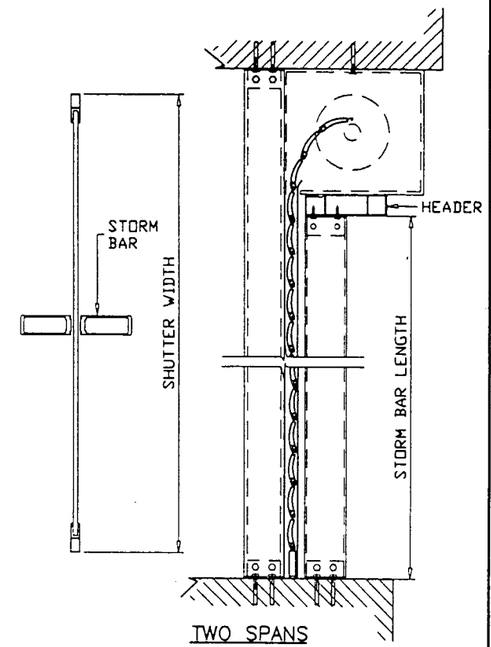

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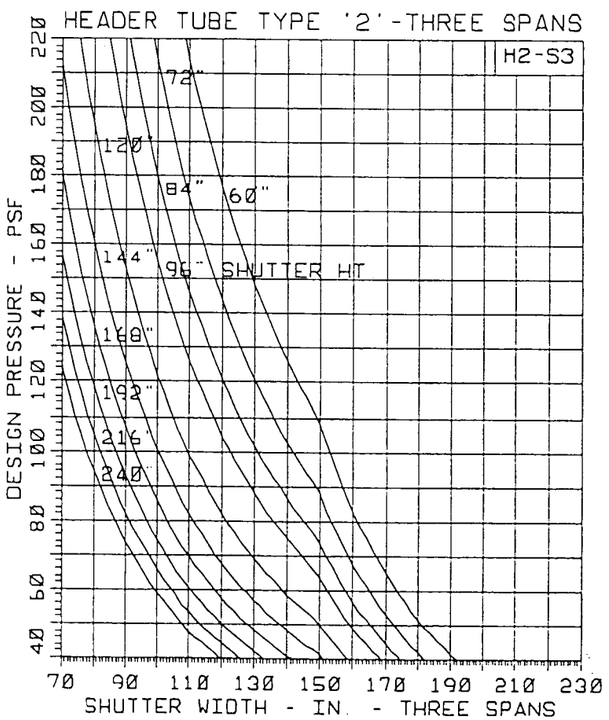

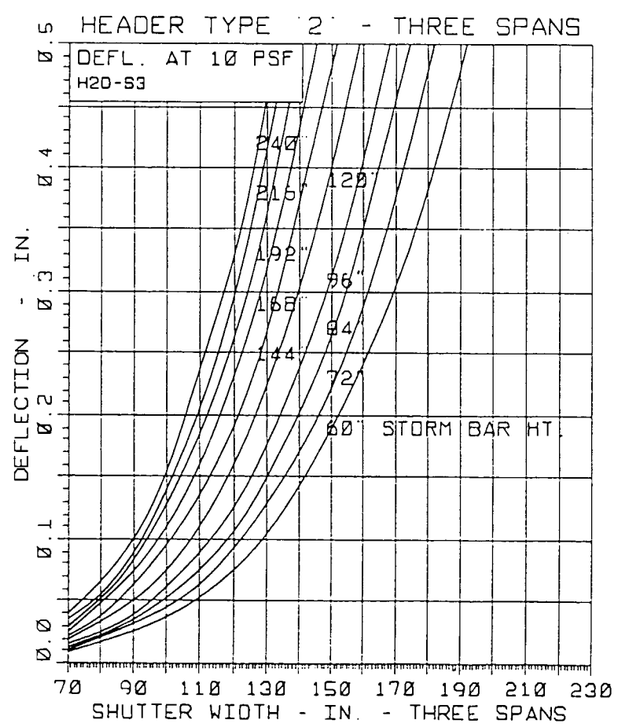

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Engr: DR. HUMAYGUN FAROOQ
STRUCTURES
FLA. PE # 16557
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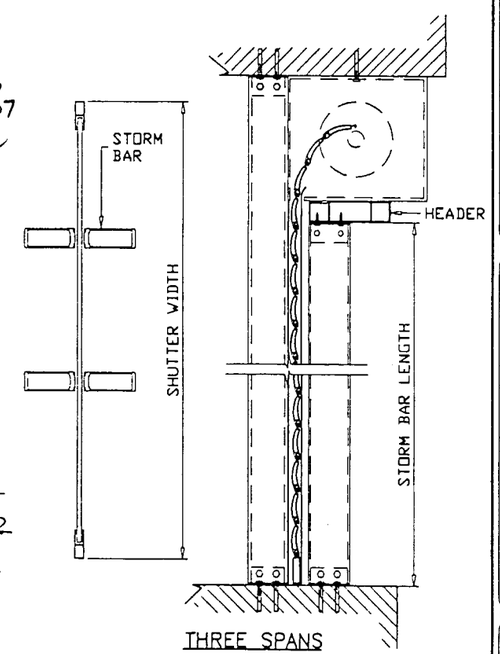

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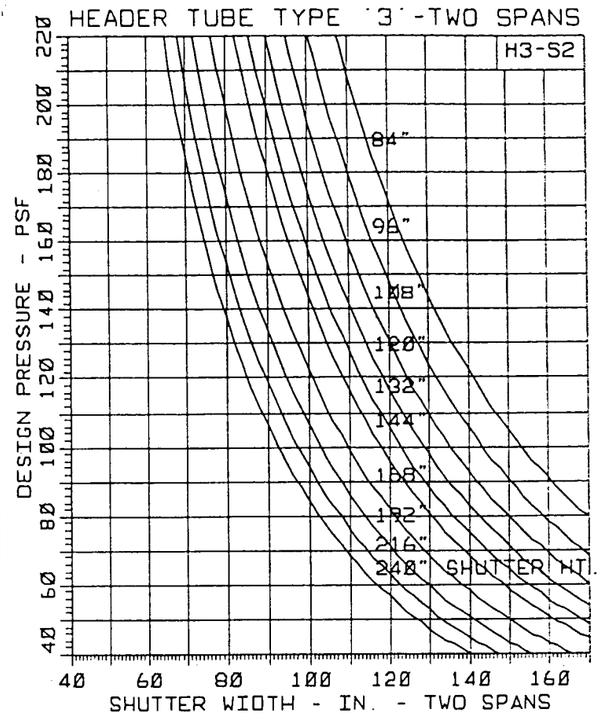

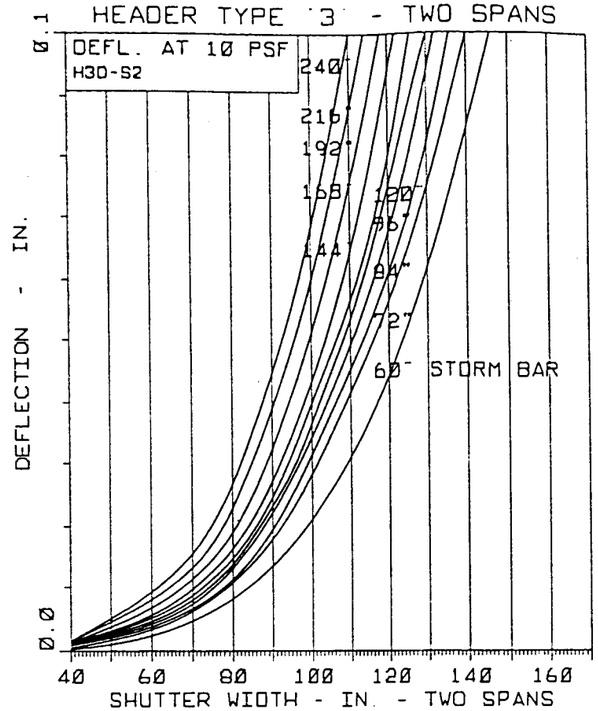

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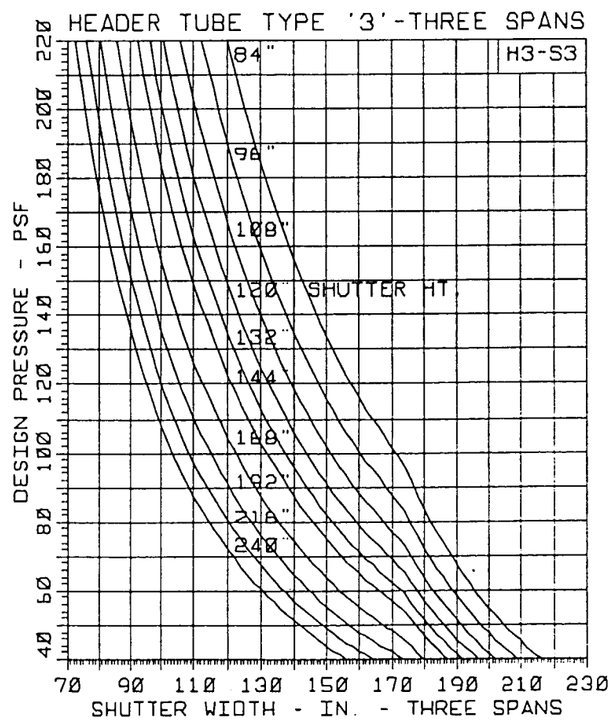
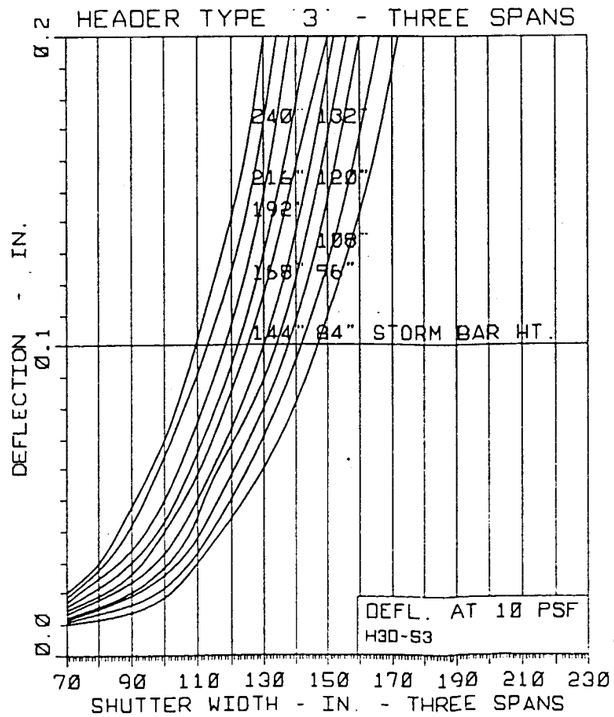
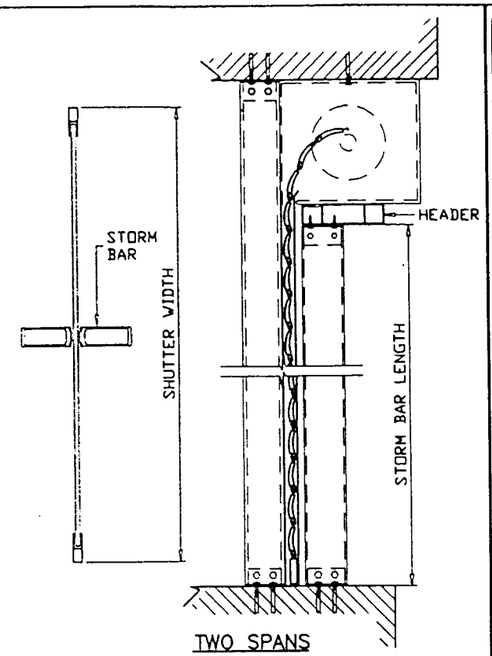
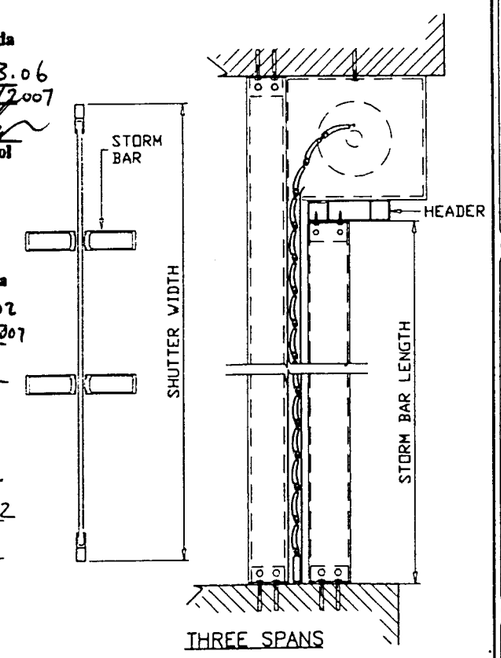








PRODUCT REVISED
as complying with the Florida Buiding Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helmy A. Melar
Miami Dade Product Control Division

PRODUCT RENEWED
as complying with the Florida Buiding Code
Acceptance No 02-0417.02
Expiration Date July 15, 2007
By
Miami Dade Product Control Division

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
EXPIRATION DATE 07/15/2002
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

APPROVED AS COMPLYING WITH THE
SOUTH FLORIDA BUILDING CODE
DATE July 15 1999
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

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

ROLLUP\98-43RAY

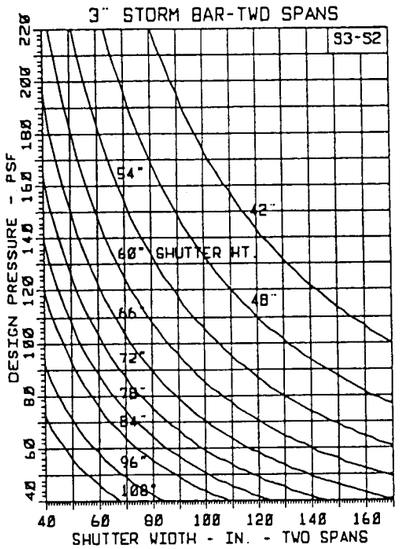
ROLL UP SHUTTER DETAILS

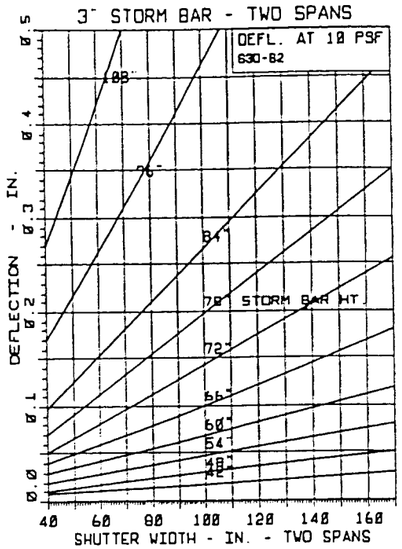
ROLL-A-WAY STORM AND SECURITY SHUTTERS
10597 OAK STREET N.E.
ST. PETERSBURG, FL. 33716
TEL. (800) 683-9505 FAX. (727) 579-9410

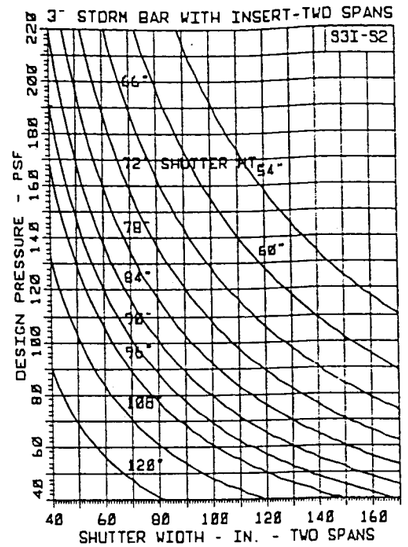
revisions:			
no	date	by	description

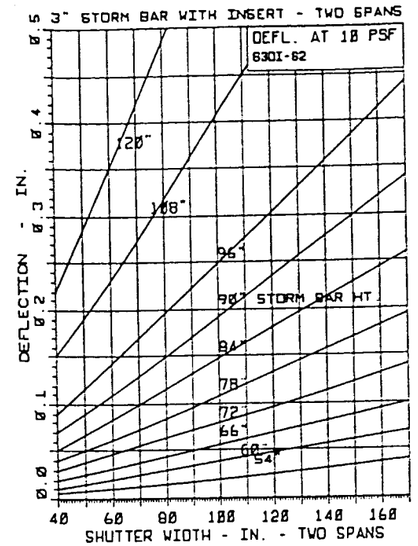
date: 12-24-98
scale: -
dr. by: HAMID
chk. by:

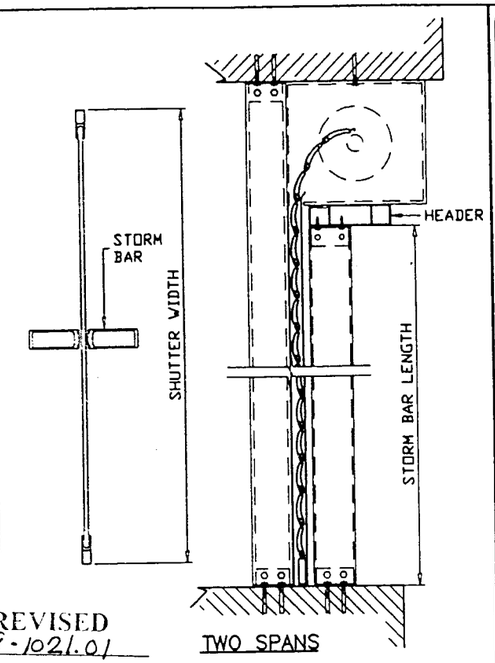
drawing no. 98-43







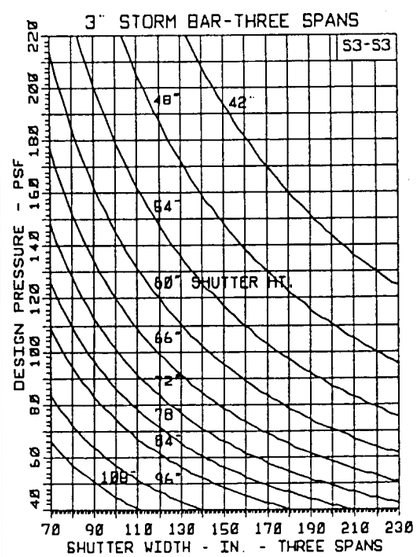


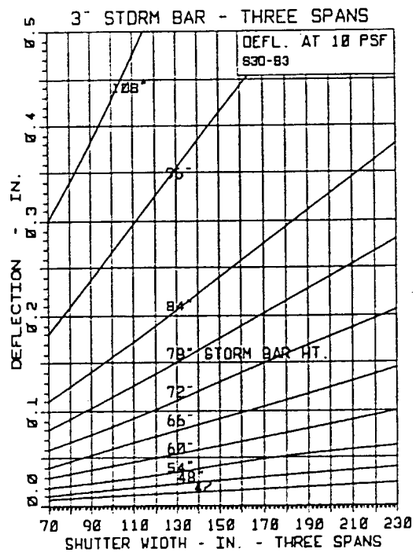


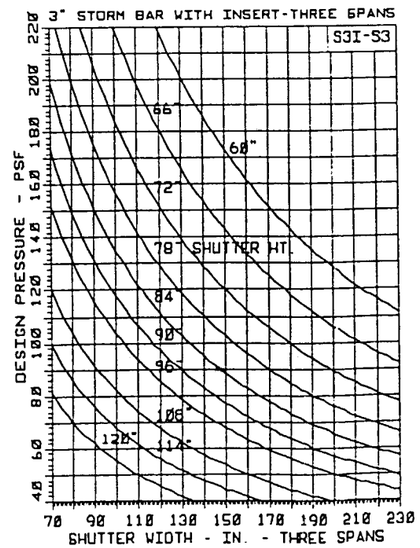
TWO SPANS

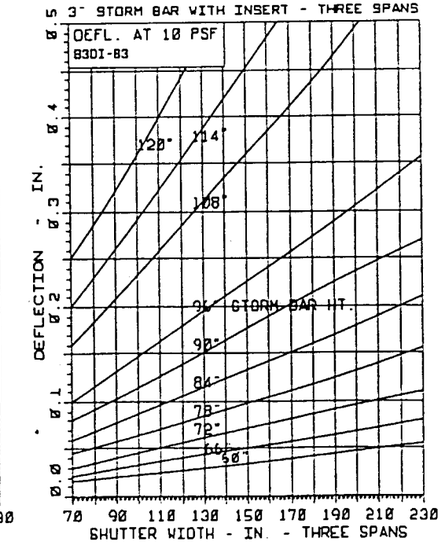
PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
EXPIRATION DATE 07/15/2002
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

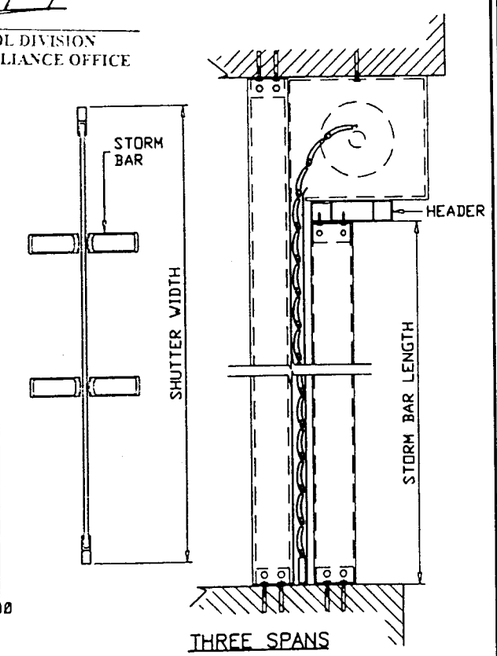
THE CURVES ON THESE GRAPHS SHOW STORM BAR LENGTHS
SEE SKETCH FOR REFERENCE











THREE SPANS

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Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helena A. Melo
Miami Dade Product Control Division

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

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as complying with the Florida Buiding Code
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Miami Dade Product Control Division

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DATE July 25 1999
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BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

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MIAMI, FLORIDA 33174
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ROLLUP\98-43RAY

ROLL UP SHUTTER DETAILS

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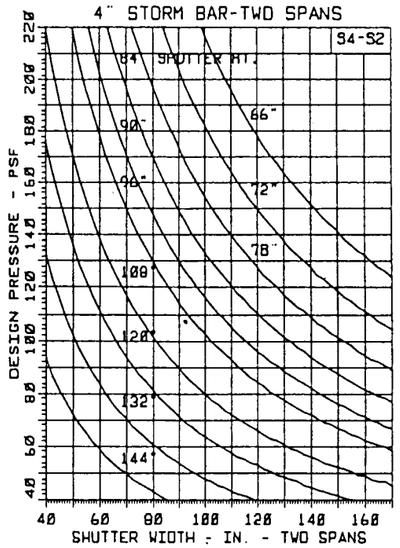
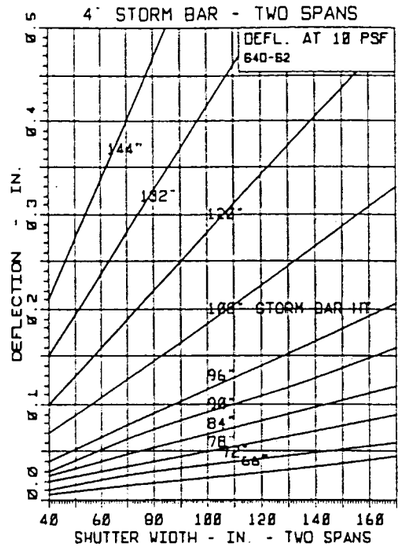
TEL. (800) 683-9505 FAX. (727) 579-9410

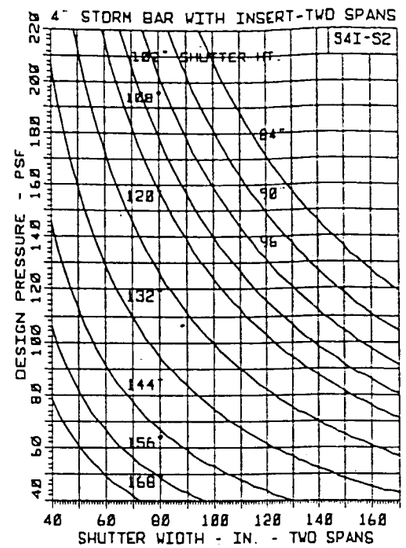
revisions:			
no	date	by	description

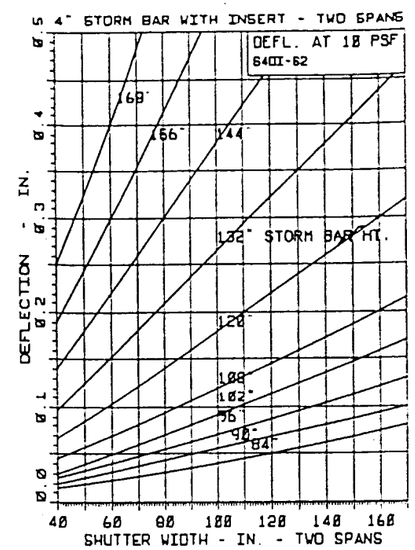
date: 12-24-98
scale: –
dr. by: HAMID
chk. by:

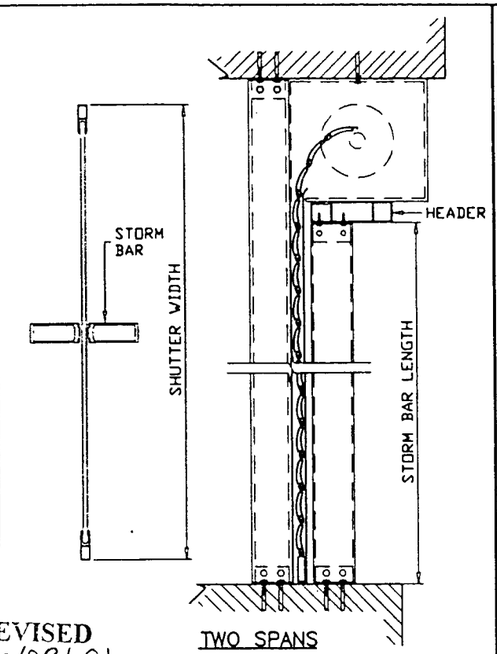
drawing no. 98-43











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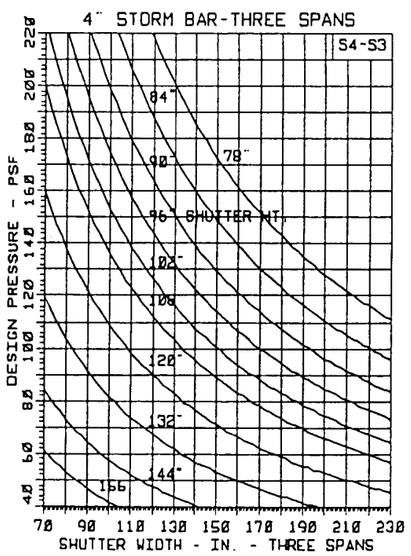

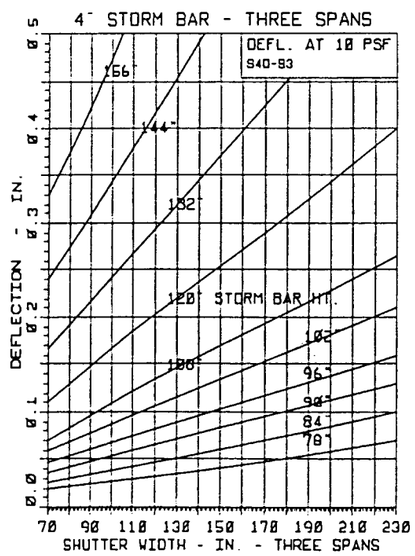

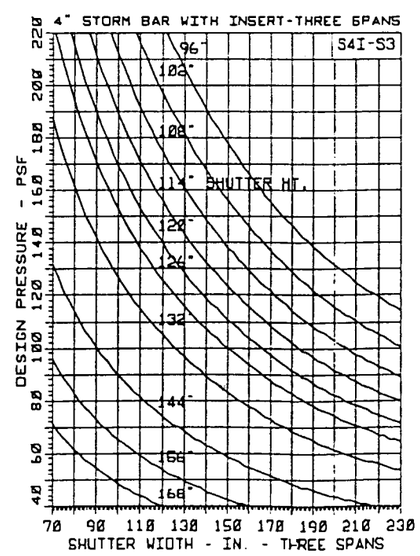

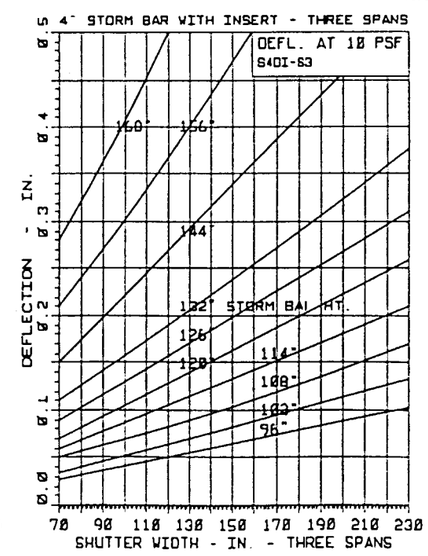

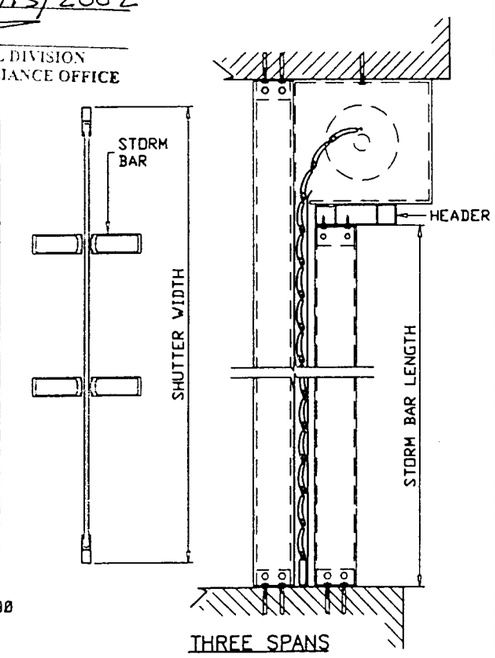

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Expiration Date 07/15/2007
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Miami Dade Product Control Division

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557

MAY 25 1999

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as complying with the Florida Buiding Code
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Expiration Date July 15, 2007
By
Miami Dade Product Control Division

APPROVED AS COMPLYING WITH THE SOUTH FLORIDA BUILDING CODE
DATE July 15 19 99
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE
ACCEPTANCE NO. 99-0311.04

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

ROLLUP\98-43RAY

ROLL UP SHUTTER DETAILS

ROLL-A-WAY STORM AND SECURITY SHUTTERS
10597 OAK STREET N.E.
ST. PETERSBURG, FL. 33716
TEL. (800) 683-9505 FAX. (727) 579-9410

revisions:			
no	date	by	description

date: 12-24-98
scale: -
dr. by: HAMID
chk. by:

drawing no. 98-43

ROLL SHUTTER OVERALL DEFLECTION CALCULATION SHEET

POSITIVE LOAD

ASCE 7-88: DESIGN LOAD = Pd = PSF
MULTIPLIER FACTOR = K = Pd/10 =

SHUTTER WIDTH = Sw = 1N.			
NO. OF STORM BARS USED = N =			
SPAN CONDITION = N+1 =			
SHUTTER HEIGHT = Sh = IN.			
BOX HEIGHT = BOXh = IN.			
STORM BAR HEIGHT = BL = SH-BOXh = IN.			
TRACK WIDTH = Tw = IN.			
	STEP		
SLAT	1	SLAT SPAN = Ls = (Sw − 2 * Tw)/(N + 1) FROM GRAPHS CHECK SLAT SPAN FOR DESIGN LOAD AND SPAN CONDITION TO MEET DEFLECTION < L/30 OR 2". AND STRESSES LESS THAN ALLOWABLE	
	2	FROM DEFLECTION GRAPH FOR 10 PSF READING FOR ABOVE SLAT SPAN = R1 DEFLECTION OF SLAT = D1 = K * R1	→
STORM BAR	3	FROM GRAPHS SELECT STORM BAR FOR ABOVE SHUTTER WIDTH, SHUTTER HEIGHT, DESIGN LOAD & SPAN CONDITION TO MEET DEFLECTION < L/30 OR 2". AND STRESSES LESS THAN ALLOWABLE TRY STORM BAR SIZE :	
	4	FROM DEFLECTION GRAPH FOR 10 PSF READING FOR ABOVE STORM BAR = R2 DEFLECTION OF STORM BAR = Db = K * R2 EFFECT ON SLATS = D2 = Db/2	→
HEADER (IF THERE IS NO HEADER SKIP STEPS 5 & 6.)	5	FROM GRAPHS SELECT HEADER SIZE FOR ABOVE SHUTTER WIDTH, SHUTTER HEIGHT, DESIGN LOAD & SPAN CONDITION TO MEET DEFLECTION < L/30 OR 2". AND STRESSES LESS THAN ALLOWABLE. TRY HEADER SIZE:	
	6	FROM DEFLECTION GRAPH FOR 10 PSF READING FOR ABOVE HEADER = R3 DEFLECTION OF HEADER = Dh = K * R3 EFFECT ON SLATS = D3 = Dh/4	→
	7	TOTAL DEFLECTION = D = D1+D2+D3 IN.	→
		Ls/30	→

NEGATIVE LOAD

ASCE 7-88: DESIGN LOAD = Pd = PSF
MULTIPLIER FACTOR = K = Pd/10 =

SHUTTER WIDTH = Sw = 1N.			
NO. OF STORM BARS USED = N =			
SPAN CONDITION = N+1 =			
SHUTTER HEIGHT = Sh = IN.			
BOX HEIGHT = BOXh = IN.			
STORM BAR HEIGHT = BL = SH-BOXh = IN.			
TRACK WIDTH = Tw = IN.			
	STEP		
SLAT	1	SLAT SPAN = Ls = (Sw − 2 * Tw)/(N + 1) FROM GRAPHS CHECK SLAT SPAN FOR DESIGN LOAD AND SPAN CONDITION TO MEET DEFLECTION < L/30 OR 2". AND STRESSES LESS THAN ALLOWABLE	
	2	FROM DEFLECTION GRAPH FOR 10 PSF READING FOR ABOVE SLAT SPAN = R1 DEFLECTION OF SLAT = D1 = K * R1	→
STORM BAR	3	FROM GRAPHS SELECT STORM BAR FOR ABOVE SHUTTER WIDTH, SHUTTER HEIGHT, DESIGN LOAD & SPAN CONDITION TO MEET DEFLECTION < L/30 OR 2". AND STRESSES LESS THAN ALLOWABLE TRY STORM BAR SIZE :	
	4	FROM DEFLECTION GRAPH FOR 10 PSF READING FOR ABOVE STORM BAR = R2 DEFLECTION OF STORM BAR = Db = K * R2 EFFECT ON SLATS = D2 = Db/2	→
HEADER	5	FROM GRAPHS SELECT HEADER SIZE FOR ABOVE SHUTTER WIDTH, SHUTTER HEIGHT, DESIGN LOAD & SPAN CONDITION TO MEET DEFLECTION < L/30 OR 2". AND STRESSES LESS THAN ALLOWABLE. TRY HEADER SIZE:	
	6	FROM DEFLECTION GRAPH FOR 10 PSF READING FOR ABOVE HEADER = R3 DEFLECTION OF HEADER = Dh = K * R3 EFFECT ON SLATS = D3 = Dh/4	→
	7	TOTAL DEFLECTION = D = D1+D2+D3 IN.	→
		Ls/30	→

NOTES:
1. IF FOR NEGATIVE LOAD D > Ls/30
   OR IF FOR POSITIVE LOAD D > Ls/30 OR 2".
   REPEAT ABOVE CALCULATIONS WITH LARGER STORM BARS AND OR LARGER HEADER.
2. DIFFERENT SIZE STORM BARS/HEADERS MAY BE USED FOR POSITIVE AND NEGATIVE LOADS.
3. USE ADDITIONAL CALCULATION SHEETS FOR DIFFERENT SHUTTERS ON THE SAME JOB.

PRODUCT REVISED
ACCEPTANCE NO. 99-1021.01
EXPIRATION DATE 07/15/2002
BY
PRODUCT CONTROL DIVISION
BUILDING CODE COMPLIANCE OFFICE

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Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helena A. Melo
Miami Dade Product Control Division

MINIMUM SEPARATION REQD. FROM GLASS	
FOR INSTALLATIONS ABOVE 30 FT. OF GRADE DUE TO WIND LOAD	FOR INSTALLATIONS UPTO 30 FT. OF GRADE DUE TO LARGE MISSILE IMPACT
OVERALL DEFLECTION + 1"	3-3/4"
NOTE: NO PART OF SHUTTER SHALL BE UNDER 30' ABOVE GRADE TO WAIVE LARGE MISSILE IMPACT REQUIREMENT.	

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
MAY 25 1999

PRODUCT RENEWED
as complying with the Florida Building Code
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DATE July 15 19 99
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ROLLUP\98-43RAY

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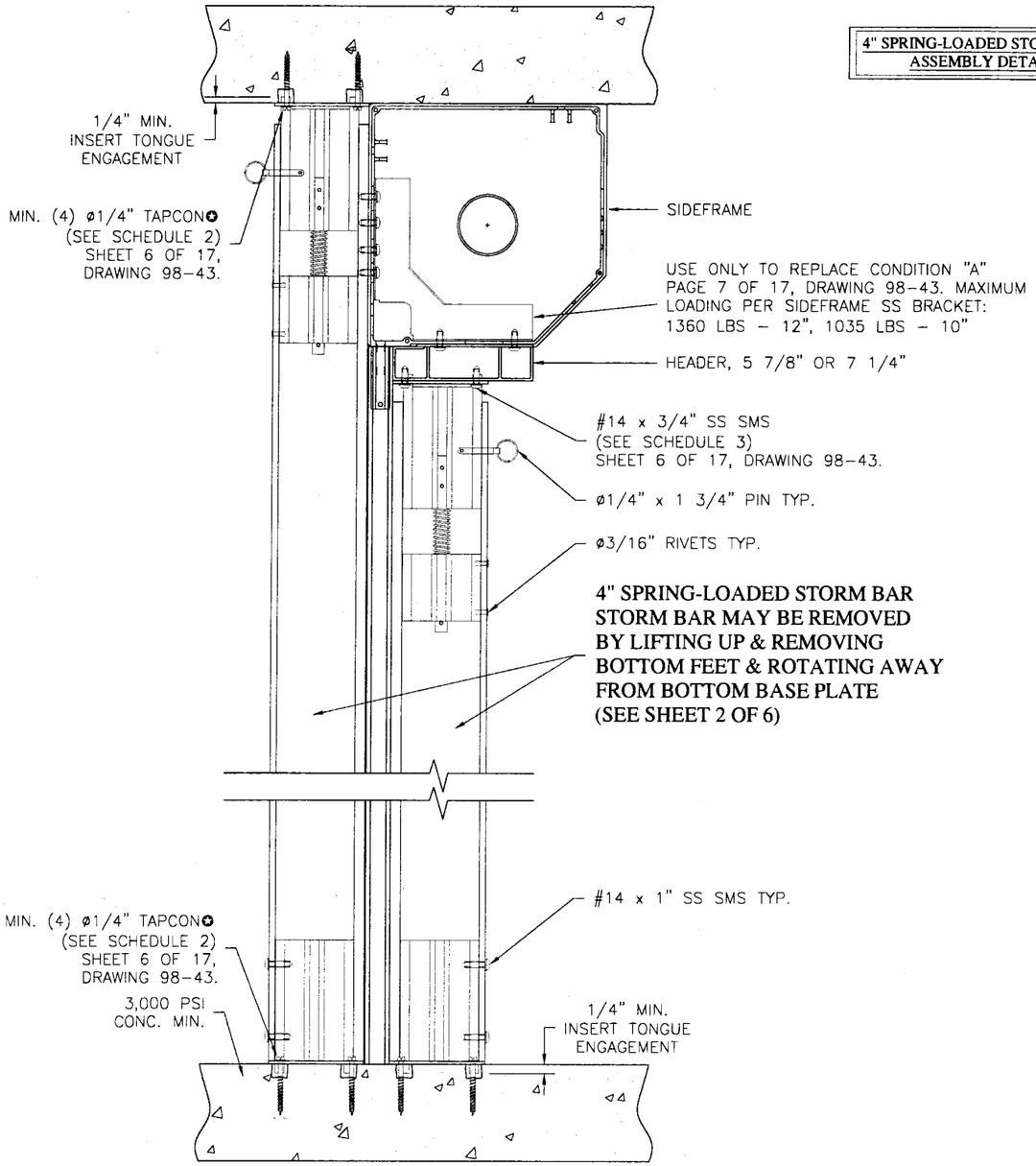
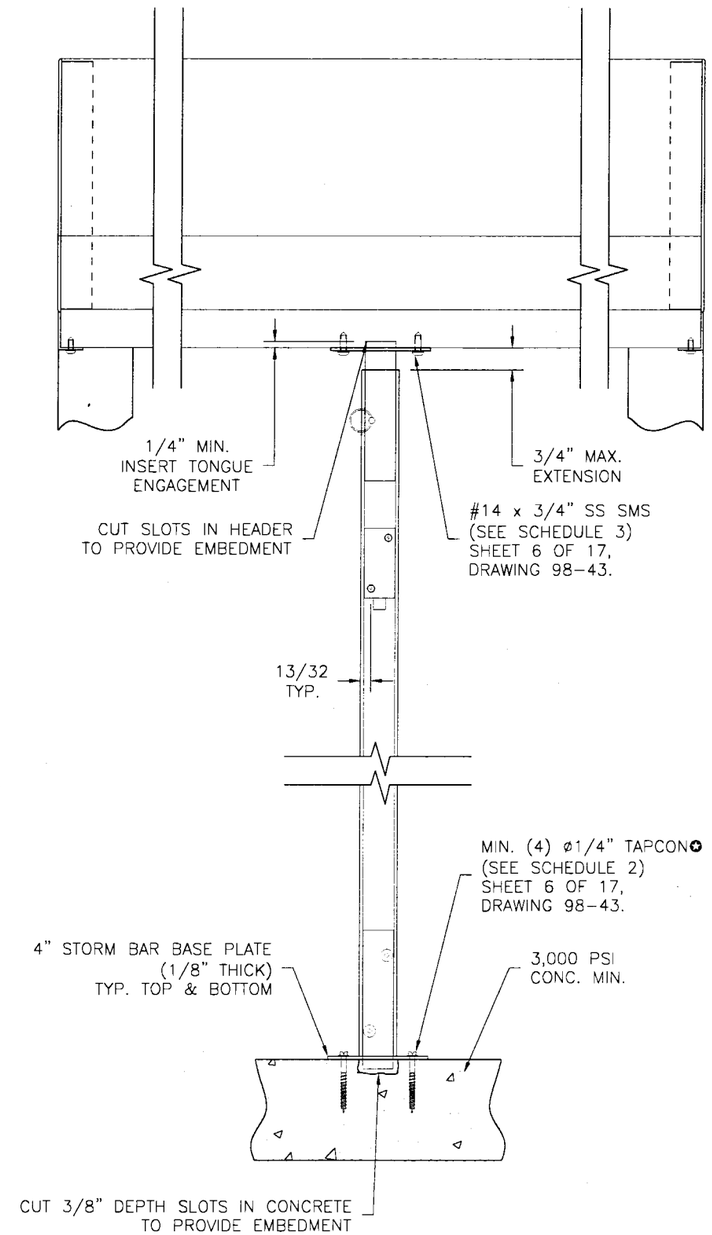
revisions:			
no	date	by	description

date: 12-24-98
scale: -
dr. by: HAMID
chk. by:

drawing no. 98-43

4" SPRING-LOADED STORM BAR ASSEMBLY DETAIL





NOTES:
1. SEE PAGE 15 & 16 / 17 OF DRAWING 98-43 FOR ALLOWABLE SPANS & DEFLECTIONS.
2. ADHESIVE WARNING LABELS SHALL BE PLACED ON THE BOTTOM SIDE OF HEADER WITHIN 6" OF STORM BAR.
3. THIS SPRING-LOADED STORM BAR CAN ONLY BE USED WITH DRAWING 98-43.

FASTENER SCHEDULE

SEE APPROVED DRAWING NO: 98-43 SHEET 6 OF 17 & APPROPRIATE FASTENER SCHEDULE

✪ (4) TAPCONS AS ANCHORS ARE LIMITED TO A SHEAR REACTION OF 2324#.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helmy A. Mela
Miami Dade Product Control Division

D.L. Fowler
Professional Engineer
Florida License No.
PE0050458
9/11/02

REVISION		
REV	DESCRIPTION	
A	(SHEET 1 OF 6) 6-21-02	
B		
C		
D		
E		

THIRD ANGLE PROJECTION

98-43
ADDENDUM

roll-a-way® STORM AND SECURITY SHUTTERS
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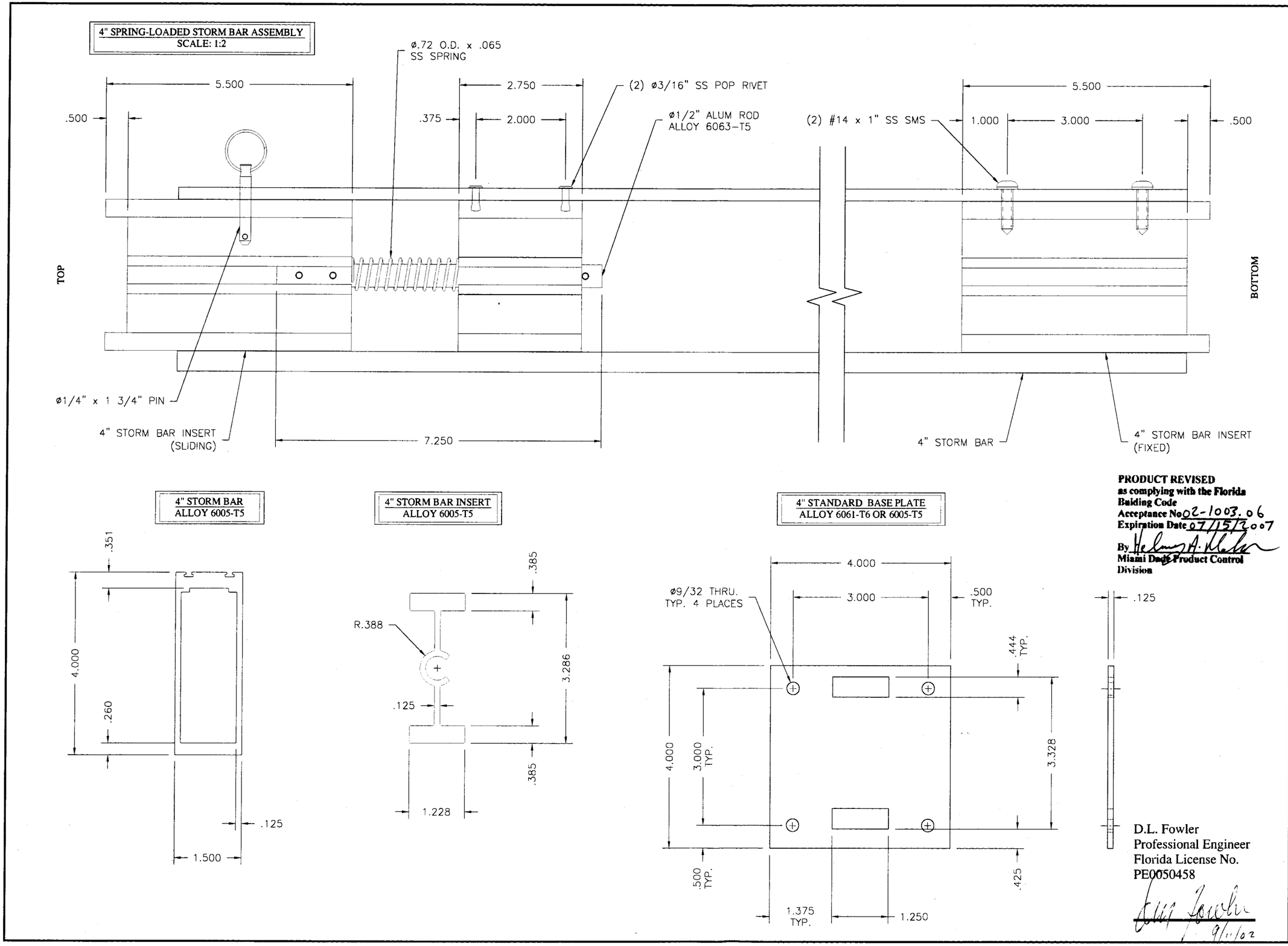
ST. PETERSBURG, FL 33716
COPYRIGHT © 1998 VALCO ENTERPRISES, LTD.

TITLE: ROLL-UP SHUTTER PRODUCT APPROVAL
3 & 4 INCH SPRING-LOADED STORM BARS

DRAWN: PMW	DATE: 7-21-00	REV: A
APPROVED: DF	DATE: 7-25-00	
EST. AREA:	EST. WT:	
SIZE: B	DRAWING NO: 3-01-007-D	SCALE: 2" = 1'-0"
FSCM NO:		SHEET 1 OF 6



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Acceptance No 02-1003.06
Expiration Date 07/15/2007
By [signature]
Miami Dade Product Control Division

D.L. Fowler
Professional Engineer
Florida License No.
PE0050458

[signature] 9/11/02

REV	DESCRIPTION
A	(SHEET 2 OF 6) 6-21-02
B	
C	
D	
E	

REVISION

THIRD ANGLE PROJECTION

98-43
ADDENDUM

Roll-a-way® STORM AND SECURITY SHUTTERS
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ST. PETERSBURG, FL 33716
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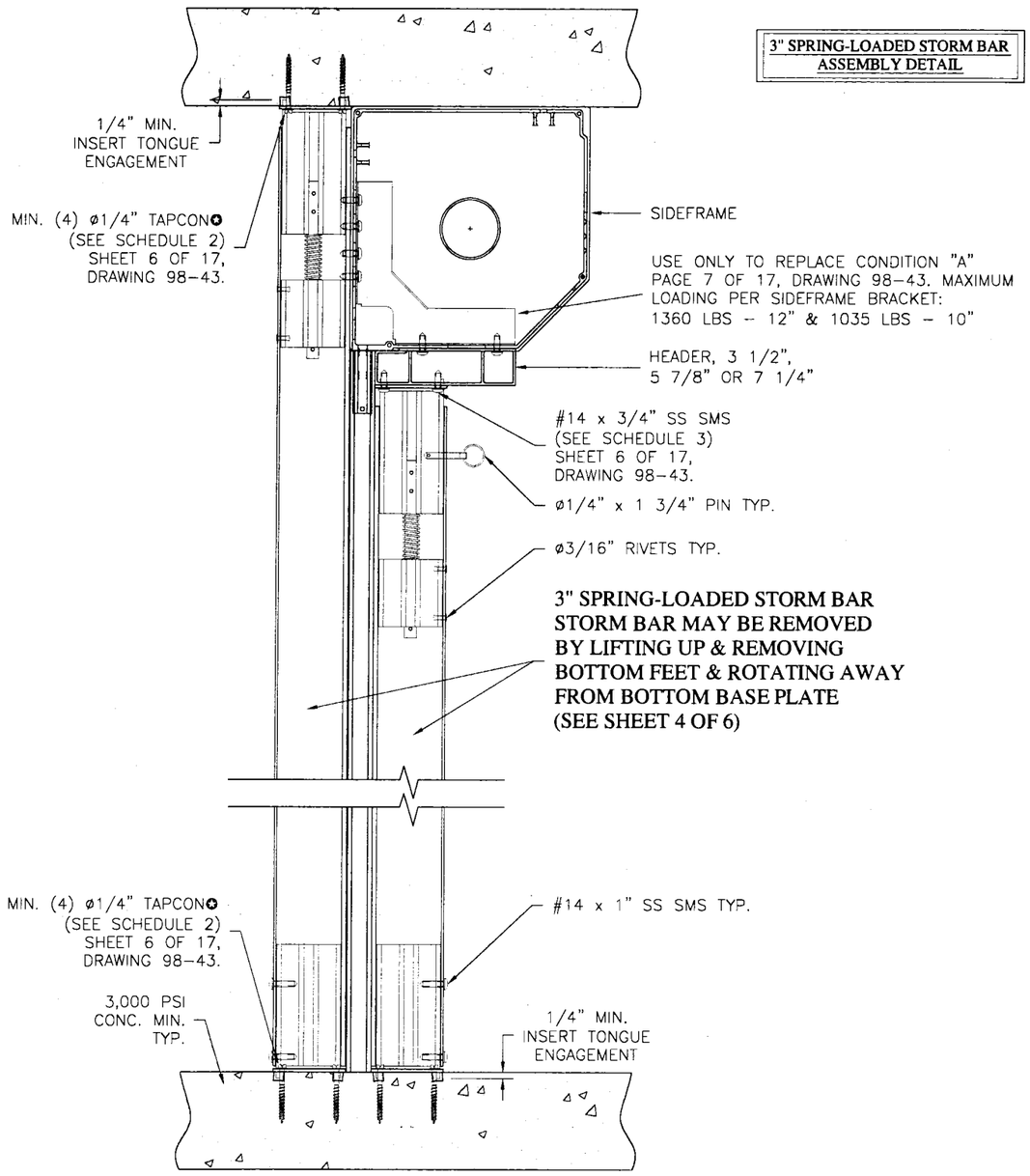
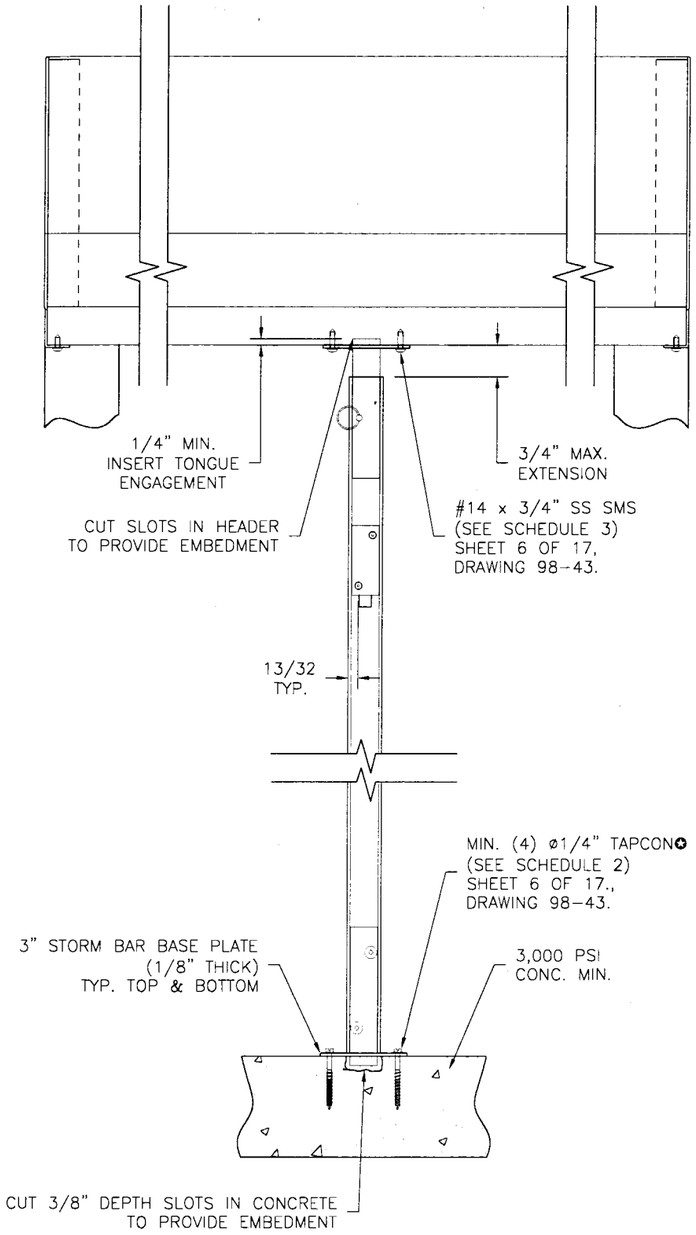
TITLE:
ROLL-UP SHUTTER
PRODUCT APPROVAL
3 & 4 INCH SPRING-LOADED STORM BARS

DRAWN: PHW	DATE: 7-21-00		
APPROVED: DF	DATE: 7-25-00		
EST. AREA:	EST. WT:		
SIZE: B	DRAWING NO: 3-01-007-D	REV: A	
FSCM NO:	SCALE: 1:2	SHEET 2 OF 6	

3" SPRING-LOADED STORM BAR ASSEMBLY DETAIL





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SEE APPROVED DRAWING NO: 98-43 SHEET 6 OF 17
APPROPRIATE FASTENER SCHEDULE

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D.L. Fowler
Professional Engineer
Florida License No.
PE0050458
[signature] 9/11/02

REV	DESCRIPTION
A	(SHEET 3 OF 6) 6-21-02
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REVISION

THIRD ANGLE PROJECTION

98-43
ADDENDUM

Roll-a-way® STORM AND SECURITY SHUTTERS
10601 OAK STREET N.E.
ST. PETERSBURG, FL 33716
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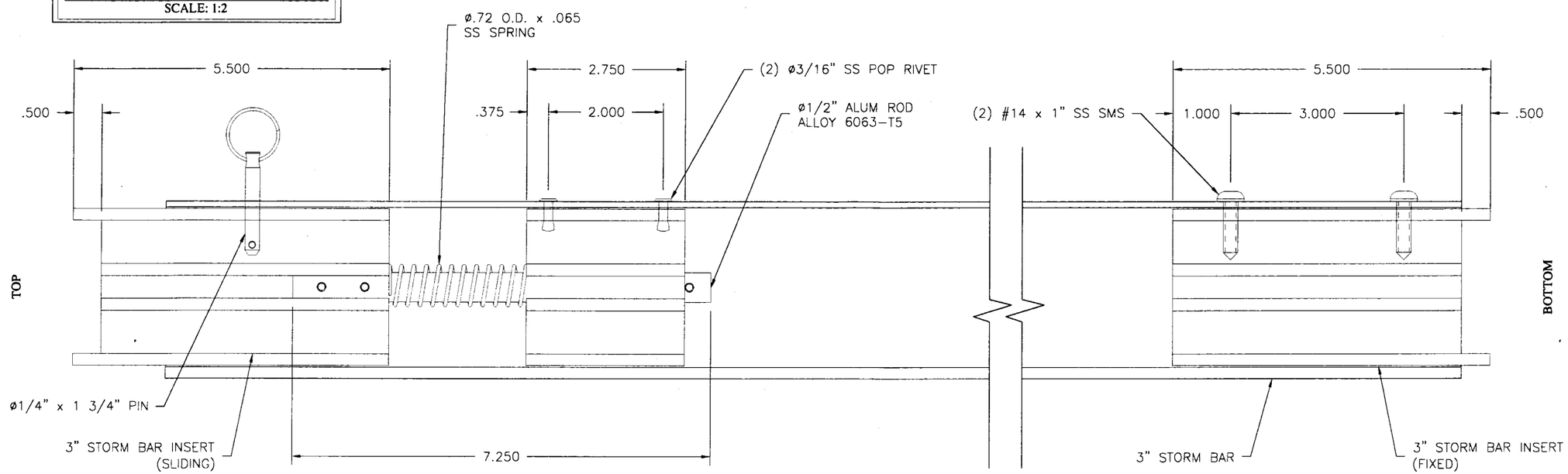
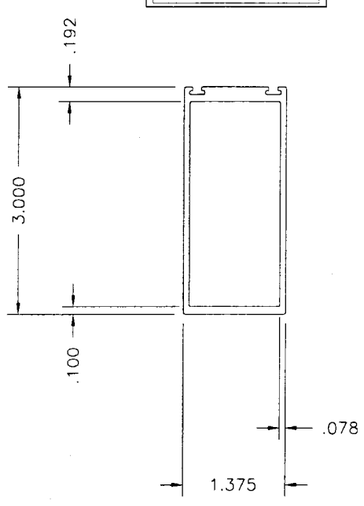
TITLE:
ROLL-UP SHUTTER
PRODUCT APPROVAL
3 & 4 INCH SPRING-LOADED STORM BARS

DRAWN: PMW	DATE: 7-21-00		
APPROVED: DF	DATE: 7-25-00		
EST. AREA:	EST. WT:		
SIZE: B	DRAWING NO: 3-01-007-D	REV: A	
FSCM NO:	SCALE: 2" = 1'-0"	SHEET 3 OF 6	

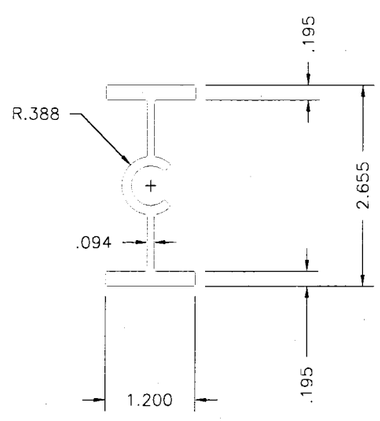
3" SPRING-LOADED STORM BAR ASSEMBLY
SCALE: 1:2



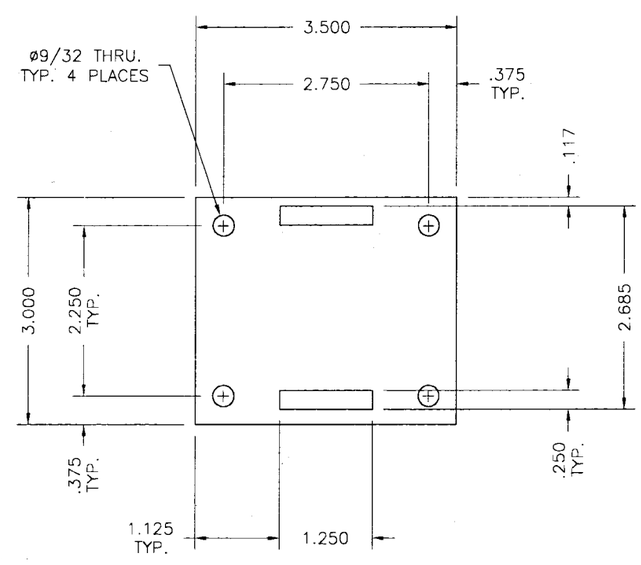
3" STORM BAR
ALLOY 6005-T5

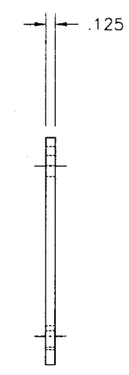


3" STORM BAR INSERT
ALLOY 6005-T5



3" STANDARD BASE PLATE
ALLOY 6061-T6





PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helmy A. Mola
Miami Dade Product Control Division

D.L. Fowler
Professional Engineer
Florida License No.
PE0050458

9/11/02

REVISION		
REV	DESCRIPTION	
A	(SHEET 4 OF 6) 6-21-02	
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THIRD ANGLE PROJECTION

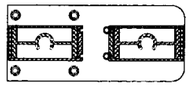
98-43
ADDENDUM

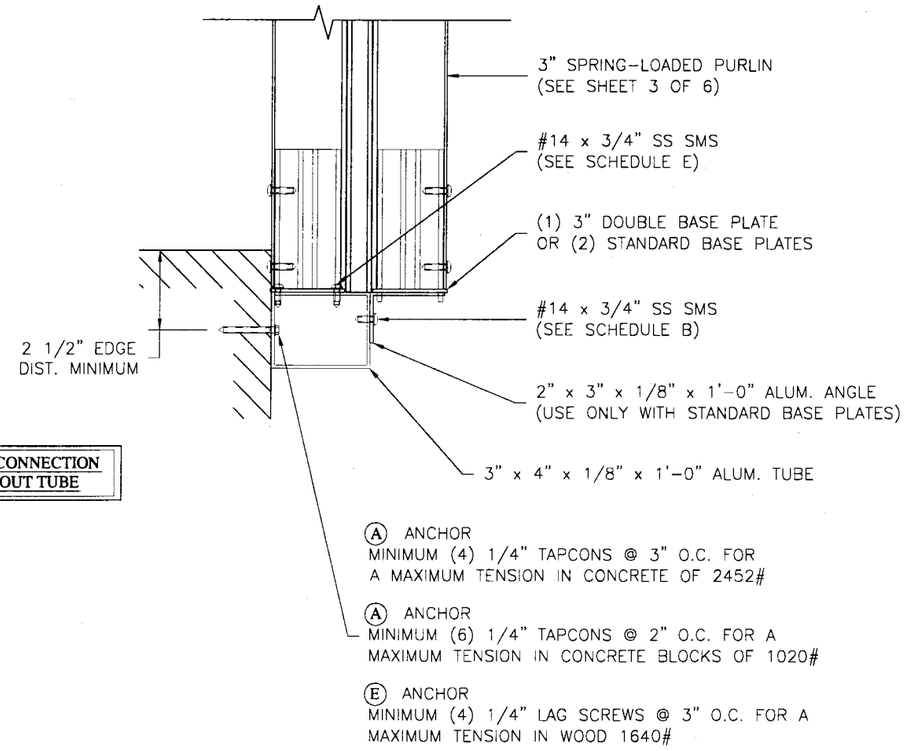
Roll-a-way STORM AND SECURITY SHUTTERS
10601 OAK STREET N.E.
ST. PETERSBURG, FL 33716
COPYRIGHT © 1998 VALCO ENTERPRISES, LTD.

TITLE: ROLL-UP SHUTTER PRODUCT APPROVAL
3 & 4 INCH SPRING-LOADED STORM BARS

DRAWN: PMV	DATE: 7-21-00	REV: A	
APPROVED: DF	DATE: 7-25-00		
EST. AREA:	EST. WT:		
SIZE: B	DRAWING NO: 3-01-007-D	SCALE: 1:2	SHEET 4 OF 6
FSCM NO:			

3" SPRING-LOADED STORM BAR TO BUILD-OUT TUBE





STORM BAR CONNECTION TO BUILD-OUT TUBE

FASTENER SCHEDULE

SEE APPROVED DRAWING #: 98-43 SHEET 6 OF 17
& APPROPRIATE FASTENER SCHEDULE

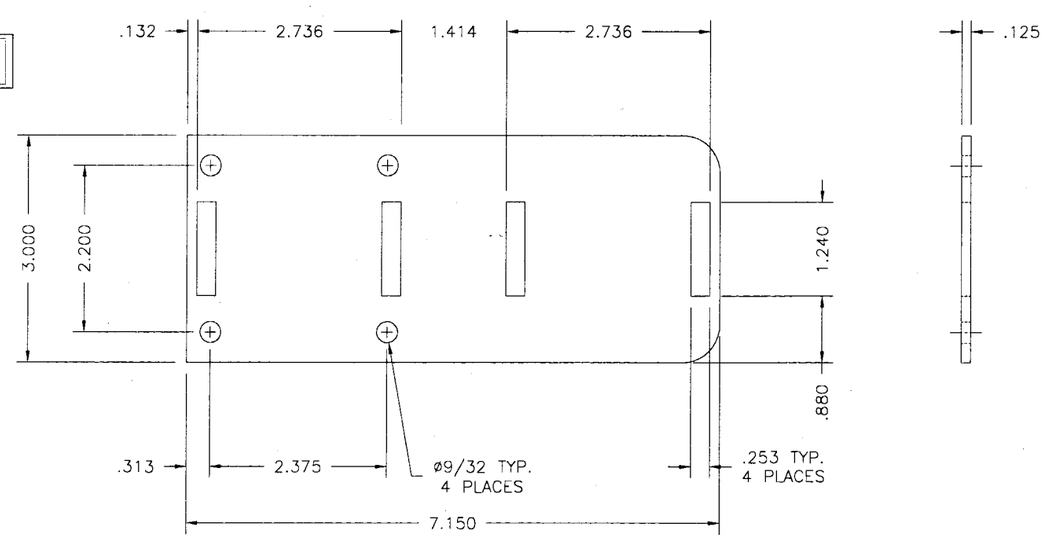
STORM BAR DESIGN CHARTS
SEE 3" & 4" STORM BAR
TWO & THREE SPAN
TABLES WITHOUT INSERTS
ON SHEETS 15 & 16 OF 17
DRAWING # 98-43

SLAT TOTAL LENGTH AND MAXIMUM WIND VELOCITY & PRESSURE AT WHICH REMOVABLE STORM BARS ARE TO BE INSTALLED.

SLAT LENGTH* (IN)	PRESSURE # / FT ^{2}	WIND VELOCITY (MPH)
40	879	258
50	401	174
60	212	127
70	123	96
80	77	76
90	51	62
100	35	51
110	25	43
120	19	38
130	14	33
140	11	29
150	9	26
160	7	23
170	5	19
180	5	19
190	4	17
200	3	15
210	3	15
220	2	12
230	2	12

* SLAT TOTAL LENGTH IS CONSIDERED THE SAME AS THE SHUTTER WIDTH.

3" DOUBLE BASE PLATE
ALLOY 6061-T6



PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No. 02-1003.06
Expiration Date 07/15/2007
By [signature]
Miami Dade Product Control Division

D.L. Fowler
Professional Engineer
Florida License No.
PE0050458
[signature]
9/11/02

REV	DESCRIPTION
A	(SHEET 5 OF 6) 6-21-02
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REVISION

THIRD ANGLE PROJECTION

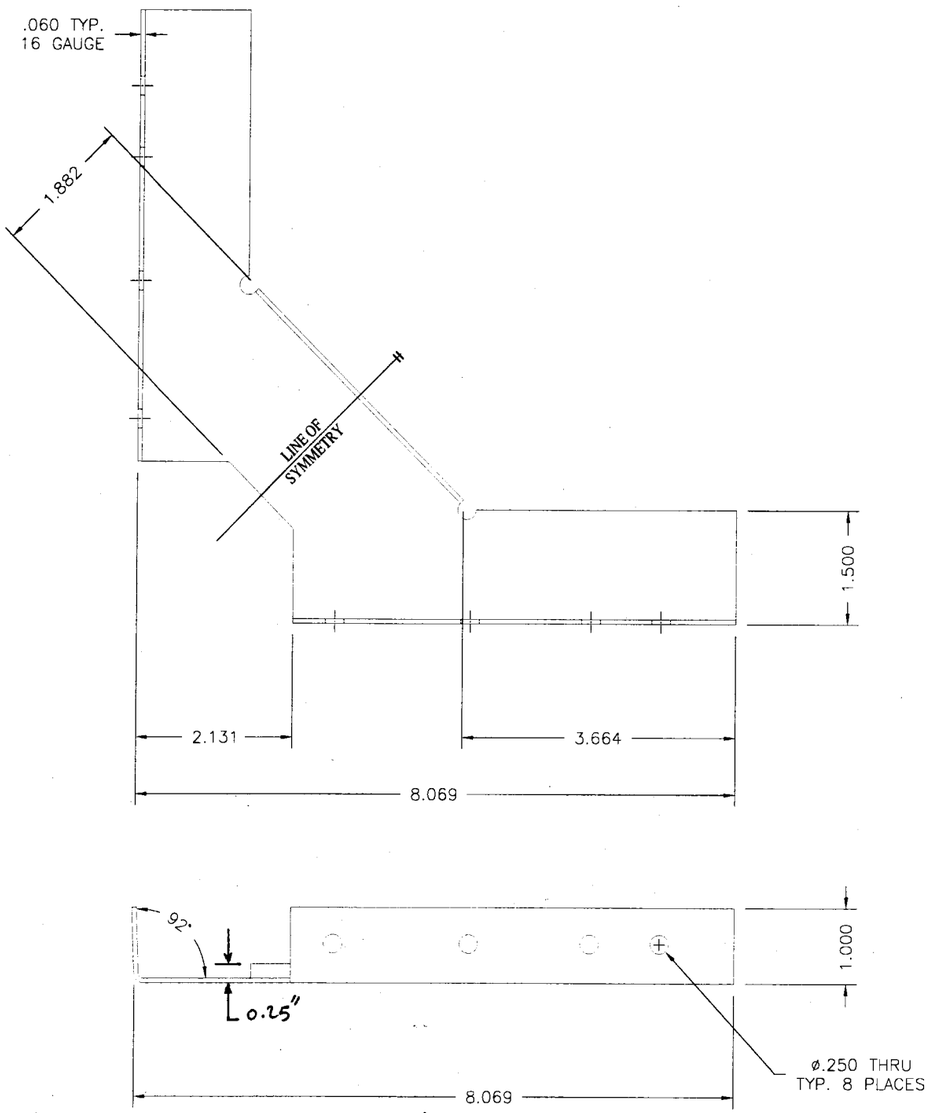
98-43
ADDENDUM

Roll-a-way® STORM AND SECURITY SHUTTERS
10601 OAK STREET N.E.
ST. PETERSBURG, FL 33716
COPYRIGHT © 1998 VALCO ENTERPRISES, LTD.

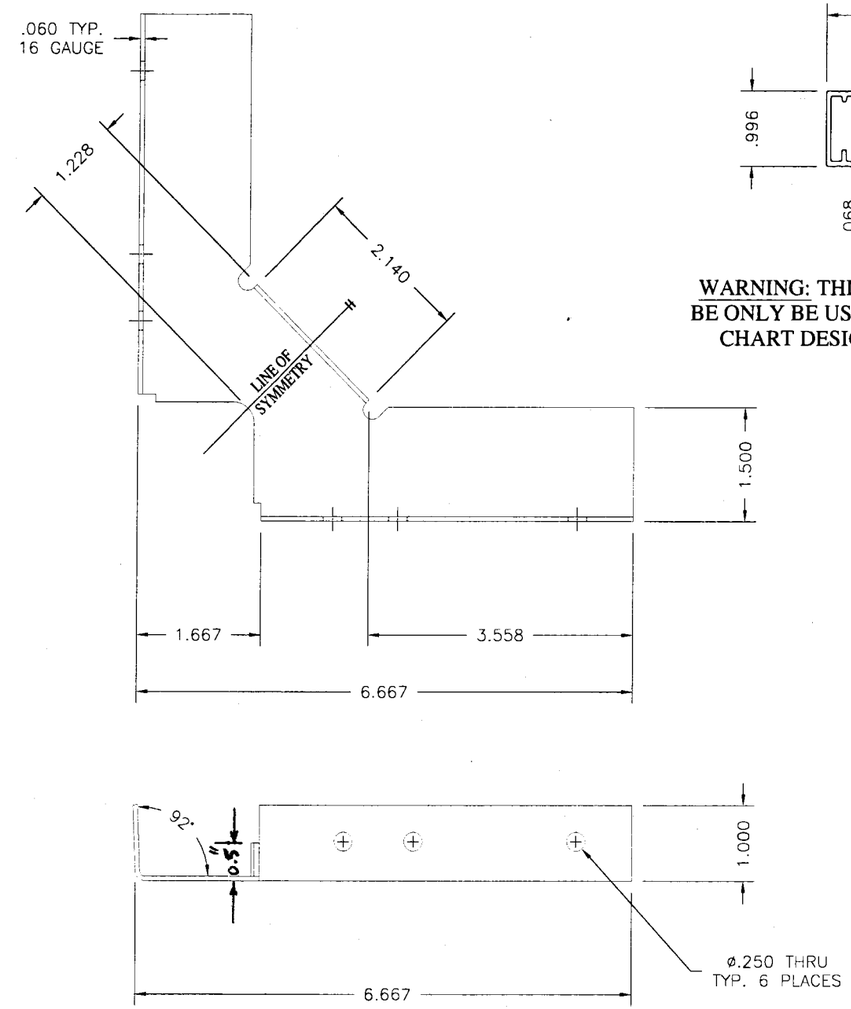
TITLE:
ROLL-UP SHUTTER
PRODUCT APPROVAL
3 & 4 INCH SPRING-LOADED STORM BARS

DRAWN: PMV DATE: 7-21-00
APPROVED: DF DATE: 7-25-00
EST. AREA: EST. WT:
SIZE: B DRAWING NO: 3-01-007-D REV: A
SCALE: 2" = 1'-0" / 1:2
FSCM NO: SHEET 5 OF 6

12" SIDEFRAME INTERNAL BRACKET
304 STAINLESS STEEL

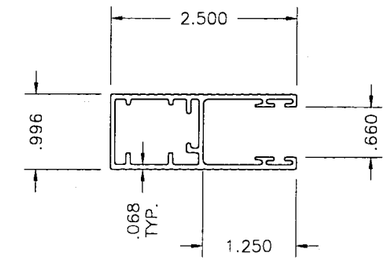


10" SIDEFRAME INTERNAL BRACKET
304 STAINLESS STEEL



90% LOADING

ALTERNATE TRACK
ALLOY 6063-T6



WARNING: THIS ALTERNATE TRACK MAY BE ONLY BE USED AT SLAT PERFORMANCE CHART DESIGN PRESSURES TIMES 0.9.

NOTES:
1. 12" & 10" SIDEFRAME BRACKETS ARE TO BE USED AS A REPLACEMENT OF THE EXISTING ANGLE REINFORCEMENTS.
2. WALL & HEADER FASTENERS SHALL BE PER FASTENER SCHEDULE, SEE SHEET 7 OF 17 DRAWING 98-43.
3. SS INTERNAL ANGLE RIVETS TO DIE CAST SIDEFRAME ARE NOT REQUIRED.

PRODUCT REVISED
as complying with the Florida Buiding Code
Acceptance No 02-1003.06
Expiration Date 07/15/2007
By Helena A. Molina
Miami Dade Product Control Division

D.L. Fowler
Professional Engineer
Florida License No.
PE0030458

9/11/02

REVISION		
REV	DESCRIPTION	
A	(SHEET 6 OF 6) 6-21-02	
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THIRD ANGLE PROJECTION

98-43
ADDENDUM

Roll-a-way®
STORM AND SECURITY SHUTTERS
10601 OAK STREET N.E.
ST. PETERSBURG, FL 33716
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TITLE:
ROLL-UP SHUTTER
PRODUCT APPROVAL
ALTERNATE MATERIALS

DRAWN: PAW	DATE: 7-21-00	REV: A	
APPROVED: DF	DATE: 7-25-00		
EST. AREA:	EST. WT:		
SIZE: B	DRAWING NO: 3-01-007-D	SCALE: 1:2	
FSCM NO:		SHEET 6 OF 6	