



**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)**

**Roller Star Corporation  
6351 NW 28<sup>th</sup> Way, Suite C  
Fort Lauderdale, FL 33309**

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Extruded Aluminum Roll-up Shutter**

**APPROVAL DOCUMENT:** Drawing No. 02-435R1, titled "RE1500 Extruded Aluminum Roll Shutters", prepared by EngCo, Inc. dated 06/27/02, with no revisions, sheets 1 through 15 of 15, 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 as well as approval document mentioned above.

The submitted documentation was reviewed by **Candido F. Font, P.E.**



**NOA No 02-1021.03  
Expiration Date: April 10,2008  
Approval Date: April 10,2003  
Page 1**

**Roller Star Corporation**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

(For File ONLY. Not part of NOA)

**A. DRAWINGS**

1. Drawing No. 02-435R1 prepared by EngCo, Inc on 06/27/02 sheets 1 through 15 of 15, titled "RE1500 Extruded Aluminum Roll Shutters" signed and sealed by Pedro De Figueiredo, PE.

**B. TESTS**

1. Test report on Uniform Static Air Pressure test per TAS 202-94, Large Missile Impacts test, per TAS 201-94 and Cyclic Wind Loading test per TAS 203-94 of RE1500 Female Slat & Intermediate slat, prepared by Construction Testing Corporation, report No. 02-016, dated 06/28/02 and prepared by Construction Testing Corporation sheets 1 through 8 of 8, signed and sealed by Y. Kuri, PE.

**C. CALCULATIONS**

1. Calculations and design for Slat, Track Anchorage, Track Assembly Screws, Header, Mullion Strom Bars and Analysis of test results, prepared by Engco, Inc, On 06/27/02 signed and sealed by P. De Figueiredo PE.
2. Addendum to calculations prepared by Engco, Inc on 09/12/0, signed and sealed by P. De Figueiredo, PE.

**D. MATERIAL CERTIFICATIONS**

**E. STATEMENTS**

1. Code compliance letter issued by Engco, Inc. on 09/12/02, signed and sealed by P. De Figueiredo, PE.
2. No interest letter issued by Roller Star on 10/15/02 and signed by D. Ceccofiglio.



**Candido F. Font, P. E.**  
**Senior Product Control Examiner**  
**NOA No 02-1021.03**  
**Expiration Date: April 10, 2008**  
**Approval Date: April 10, 2003**

# ROLL SHUTTER RE 1500

Manufacturer:  
**Roller Star**

6351 NW 28th WAY  
FT. LAUDERDALE,  
FLORIDA - 33309  
Tel.: (954) 972-4772

## GENERAL NOTES:

1- DEFINITION: THIS PRODUCT IS A ROLLING TYPE SHUTTER, DESIGNED, CONSTRUCTED AND ERECTED TO EASILY ENCLOSE AN AREA, PROVIDING PROTECTION FROM HURRICANE FORCE WINDS WITHIN THE ALLOWABLE DESIGNED PRESSURES AND LIMITATIONS STATED IN THIS APPROVAL.

2- CODE: FLORIDA BUILDING CODE 2001. THIS PRODUCT HAS BEEN TESTED UNDER MIAMI-DADE PA 201, 202 AND 203. THE DESIGN APPLIES TO WIND-BORNE DEBRIS REGIONS (INCLUDING BROWARD AND DADE COUNTIES) IN ACCORDANCE WITH FLORIDA BUILDING CODE 2001.

3- POSTING: A PERMANENT LEGIBLE DECAL SHALL BE PLACED AT A READILY VISIBLE LOCATION STATING THE FOLLOWING:

'RE 1500 SERIES ROLL SHUTTER  
ROLLER STAR - FT. LAUDERDALE - FLORIDA  
DADE COUNTY PRODUCT CONTROL APPROVED'

4- LOADS: THE DESIGNED LOAD MUST BE CALCULATED, AS PER ASCE 7-98 (SECTION 1606, FLORIDA BUILDING CODE) BY A PROFESSIONAL ARCHITECT OR ENGINEER FOR EACH SPECIFIC PROJECT. THE CALCULATED DESIGNED PRESSURE MUST NOT EXCEED THE ALLOWABLE PRESSURES FOR EACH SHUTTER COMPONENT TO BE USED.

5- MATERIAL: ALL ALUMINUM STRUCTURE AND COMPONENTS SHALL BE DESIGNED AS PER CHAPTER 20 OF THE FBC. EXTRUDED SHAPES SHALL BE MADE OF 6063-T5 ALLOYS OR AS NOTED.

6- FASTENERS: ASSEMBLY SCREWS AND ANCHORS SHALL BE AS SPECIFIED IN THE CURRENT SET OF DRAWINGS. INSTALLATION AND LOADS AS PER THIS APPROVAL.

7- USE: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, ARCHITECT OR ENGINEER OF RECORD TO VERIFY THE FOLLOWING:

7.1- THE STABILITY OF THE STRUCTURE WHERE THE SHUTTER IS TO BE ATTACHED INSURING PROPER ANCHORAGE.

7.2- THE SITE SPECIFIC PROJECT CRITERIA, SUCH AS BUT NOT LIMITED TO, WIND LOADS, LOCAL CODE REQUIREMENTS, DESIGNED PRESSURES ETC.

7.3- THAT THIS APPROVAL IS ADEQUATE TO THE SPECIFIC PROJECT.

## INDEX:

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Product:  
**RE1500**

EXTRUDED ALUMINUM  
ROLL SHUTTERS

Engineering:  
**EngCo Inc.**

CA 8116  
6971 W. Sunrise Blvd. 104  
Plantation, FL 33313  
Tel.: (954) 585-0304

FEB 10 2003


Engineer Seal  
Pedro De Figueredo  
PE 52609

Date: 6/27/02  
Scale: 1:1  
Design by: PPMF

Dade County NOA:

Drawing Number  
02-435R1

Sheet  
1 of 15

Approved as complying with the  
Florida Building Code  
Date: 04/10/03  
NOA# 02-1021-03  
Miami Dade Product Control  
Division  
By: 

# SHUTTER COMPONENTS

Manufacturer:  
**Roller Star**  
 6351 NW 28th WAY  
 FT. LAUDERDALE,  
 FLORIDA - 33309  
 Tel.: (954) 972-4772

Product:  
**RE1500**  
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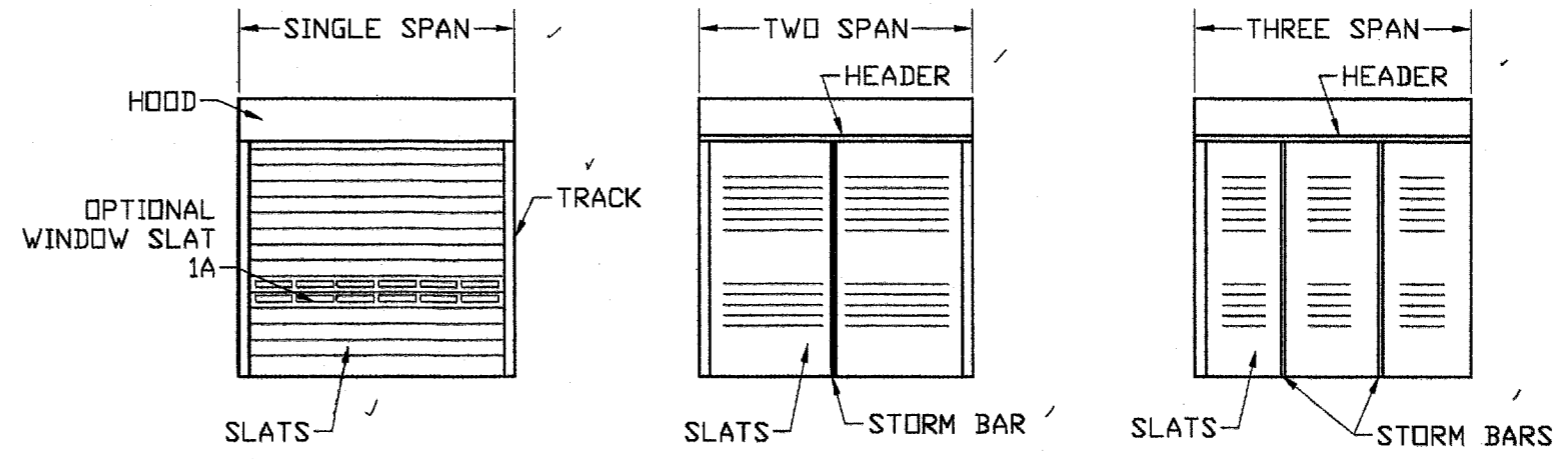
FEB 10 2003  
 Engineer Seal  
 Pedro De Figueiredo  
 PE 52609

Date: 6/27/02  
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 Design by: PPMF

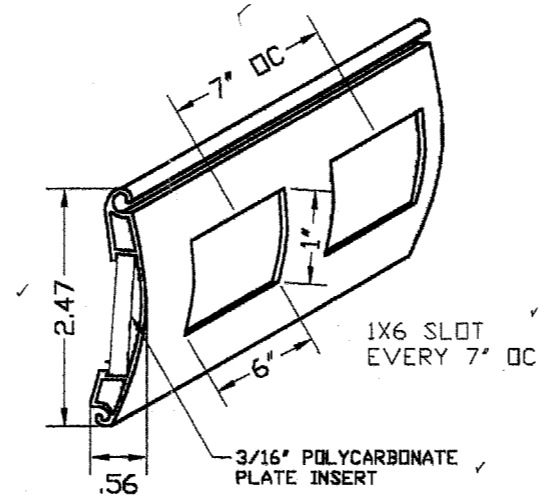
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 02-435R1

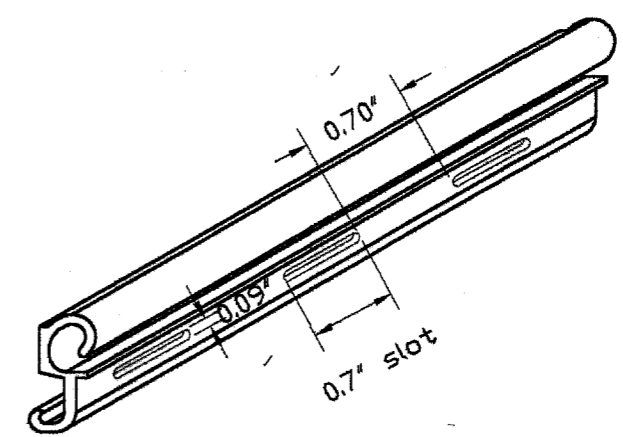
Sheet  
 2 of 15



BASIC CONFIGURATIONS

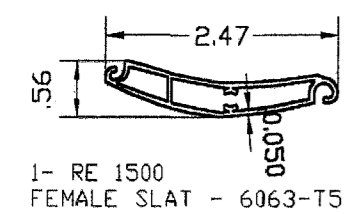


RE 1500VP WINDOW VIEW SLATS  
 .05 EXTRUDED ALUMINUM  
 6063-T5 Alloy  
 NOTE: MAXIMUM 2 SLATS PER DOOR

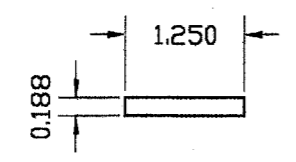


RE 1500 SLAT - SLOT CONFIGURATION  
 ALL INTERMEDIATE SLATS WITH SLOTS

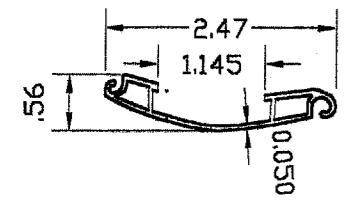
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 NOA# 02-1621.03  
 Miami Dade Product Control  
 Division  
 By: [Signature]



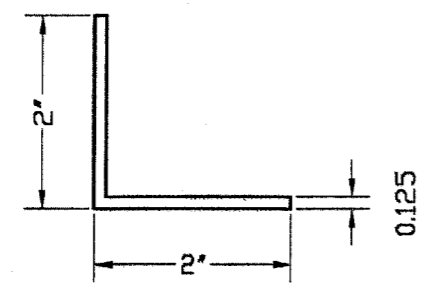
1- RE 1500  
 FEMALE SLAT - 6063-T5



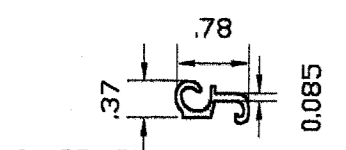
6- 3/16 X 1 1/4"  
 POLYCARBONATE SHEET



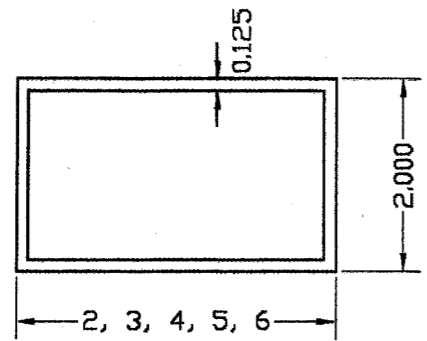
1A- RE 1500VP  
 WINDOW VIEW SLATS - 6063-T5



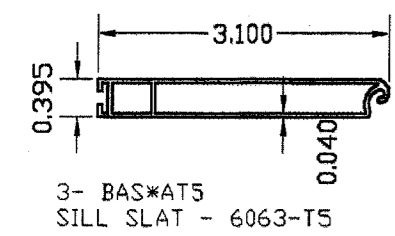
7- 1/8"-2X2 ALUMINUM ANGLE  
 7a- 3/16"-2X2 ALUMINUM ANGLE  
 7b- 1/4"-2X2 ALUMINUM ANGLE  
 6063-T5 OR 6063-T6



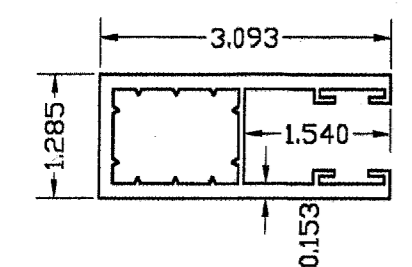
2- RE 1500  
 INTERMEDIATE SLAT - 6063-T5



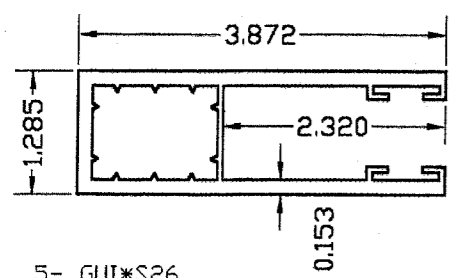
8- 1/8- 2X2, 8A- 1/8- 2X3  
 8B- 1/8- 2X4, 8C- 1/8- 2X5  
 8D- 1/8- 2X6  
 ALUMINUM TUBES - 6063-T6  
 (TO BE USED AS STORM BAR,  
 HEADER, MULLIONS AND BUILT-OUT)  
 \* 1/8-2X6 TUBE IS NOT USED AS STORM BAR



3- BAS\*AT5  
 SILL SLAT - 6063-T5



4- GUI\*S24  
 GUIDE RAIL - 6063-T5



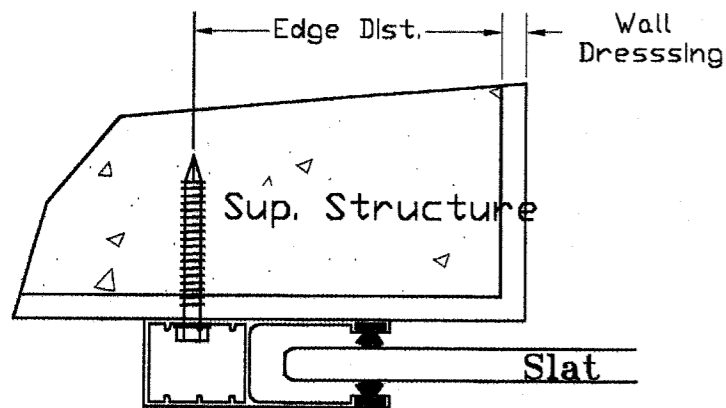
5- GUI\*S26  
 GUIDE RAIL - 6063-T5

# GUIDE RAILS MOUNTING OPTIONS

Manufacturer:  
**Roller Star**

6351 NW 28th WAY  
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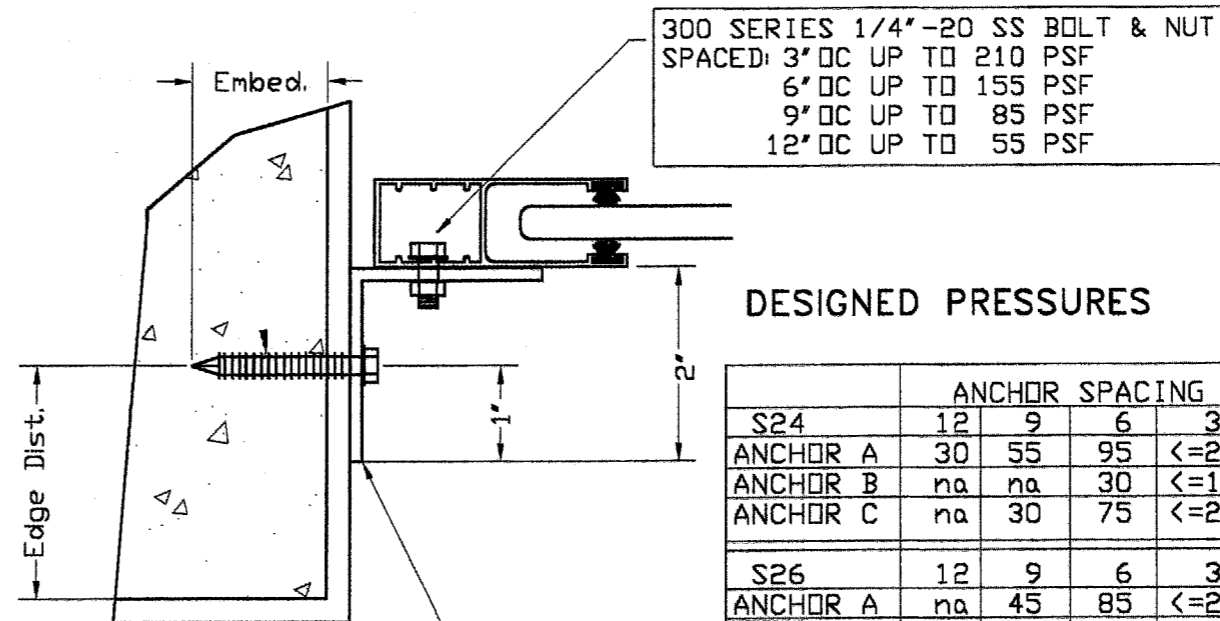
## MOUNT: WALL



### DESIGNED PRESSURES

	ANCHOR SPACING			
	12	9	6	3
S24	12	9	6	3
ANCHOR A	45	65	145	<=210
ANCHOR B	na	na	30	<=115
ANCHOR C	45	75	145	<=210
S26	12	9	6	3
ANCHOR A	45	55	95	<=210
ANCHOR B	na	na	30	<= 85
ANCHOR C	30	55	105	<=210

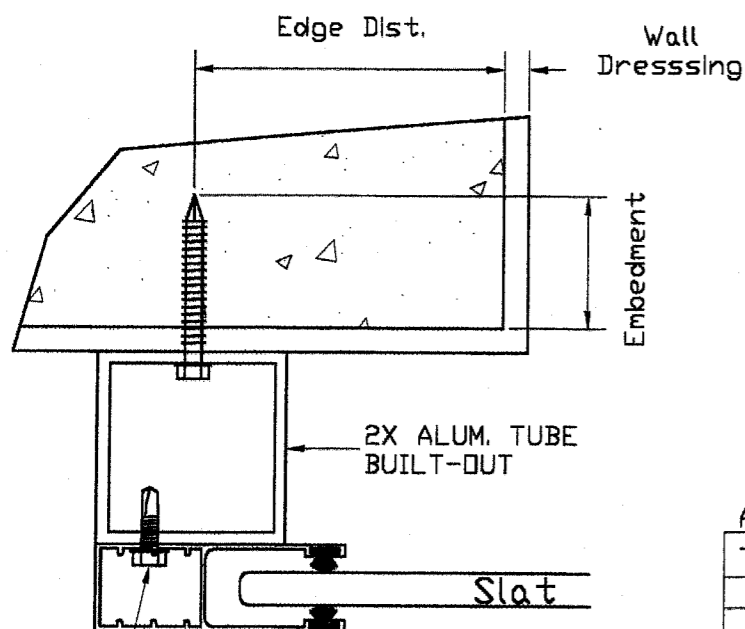
## MOUNT: INSET



### DESIGNED PRESSURES

	ANCHOR SPACING			
	12	9	6	3
S24	12	9	6	3
ANCHOR A	30	55	95	<=210
ANCHOR B	na	na	30	<=105
ANCHOR C	na	30	75	<=210
S26	12	9	6	3
ANCHOR A	na	45	85	<=210
ANCHOR B	na	na	30	<= 85
ANCHOR C	na	30	65	<=210

## MOUNT: BUILT-OUT



### DESIGNED PRESSURES

	ANCHOR SPACING			
	12	9	6	3
S24	12	9	6	3
ANCHOR A	65	95	<=210	-
ANCHOR B	na	30	55	<=155
ANCHOR C	65	105	<=210	-
S26	12	9	6	3
ANCHOR A	45	65	135	<=210
ANCHOR B	na	na	30	<=115
ANCHOR C	45	75	145	<=210

### ANCHOR SCHEDULE

Type	Description	Embedment	Substrate	Manufacturer
A	1/4" Tapcon	1 3/4"	3000 psi Concrete	Elco
B	1/4" Tapcon	1 1/4"	Hollow Block	Elco
C	#14 SS Wood Screws	2"	Wood (SG= .55)	Elco

EDGE DISTANCE = 3"

### CONT. 2X2 ALUM. ANGLE DESIGN PRESSURE

Shape	S24 Track		S26 Track	
	6063-T5	6063-T6	6063-T5	6063-T6
1/8 -2x2	41	75	27	55
3/16-2x2	135	210	100	210
1/4 -2x2	210	-	210	-

Note: values controlled by the span vs pressure tables on sheet 3.

### ANCHORAGE NOTES:

- ANCHOR SPACING IS CONTROLLED BY THE SPAN VS PRESSURE TABLES ON SHEET 3.
- na - NOT AVAILABLE

3- SPACINGS ARE BASED ON THE MAXIMUM TRACK END REACTION FUNCTION OF TABLES 3.1 & 3.2 ON SHEET 3.

#14X1 SELF DRILLING SCREWS  
SPACED: 3" OC UP TO 210 PSF  
6" OC UP TO 155 PSF  
9" OC UP TO 85 PSF  
12" OC UP TO 55 PSF

Product:  
**RE1500**

EXTRUDED ALUMINUM  
ROLL SHUTTERS

Engineering:  
**EngCo Inc.**

CA 8116  
6971 W. Sunrise Blvd. 104  
Plantation, FL. 33313  
Tel.: (954) 585-0304

FEB 10 2003

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Pedro De Figueiredo  
PE 52609

Date: 6/27/02  
Scale: NA  
Design by: PPMF

Dade County NOA:

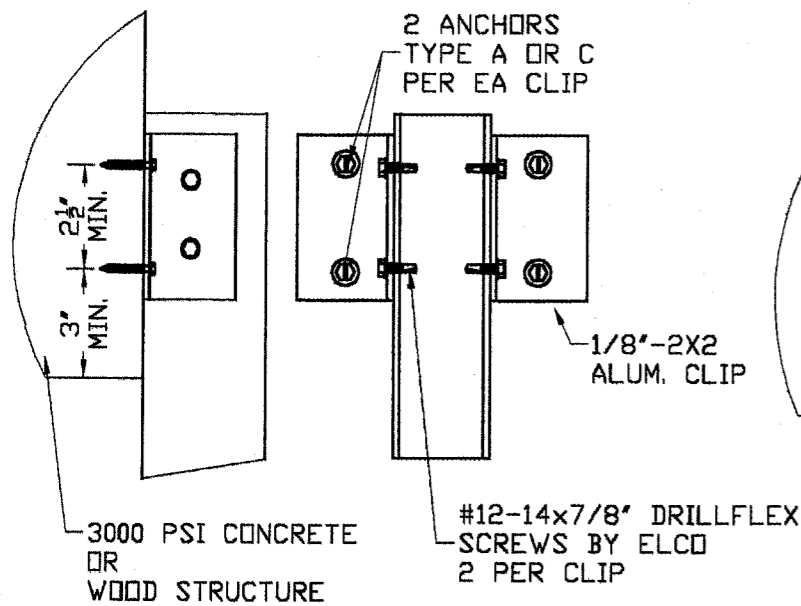
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Miami Dade Product Control  
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By: [Signature]

Drawing Number  
02-435R1

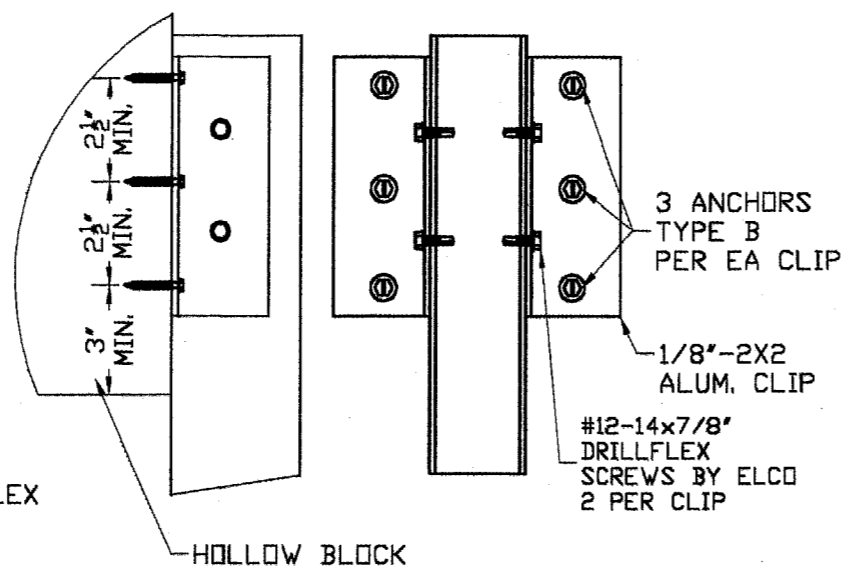
Sheet  
4 of 15

# STORM BAR ANCHORAGE

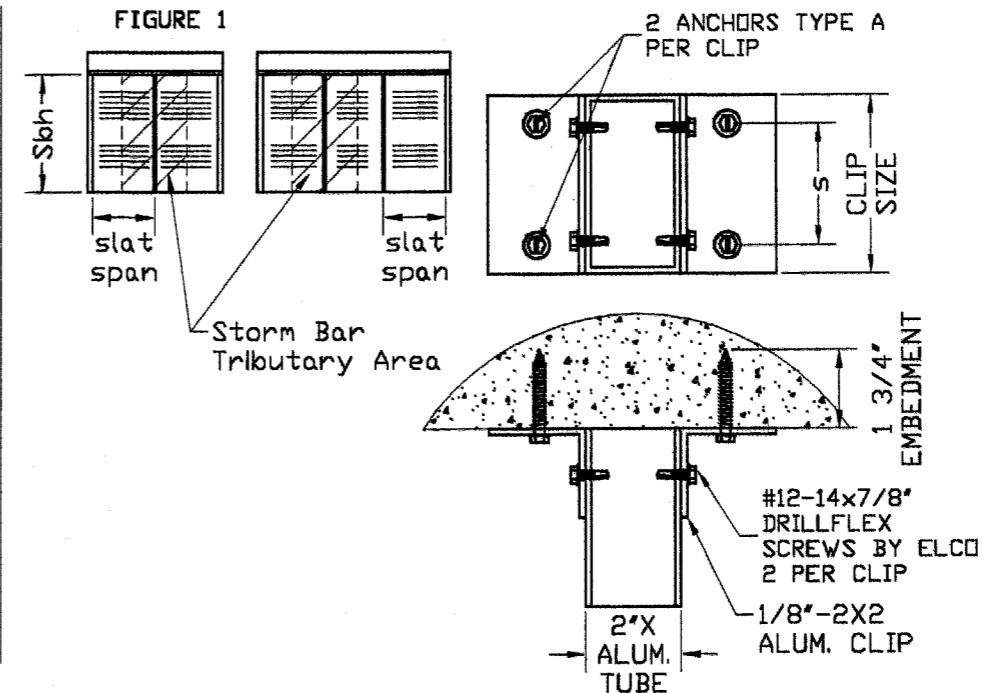
## WALL MOUNTED STORM BARS ANCHORED TO CONCRETE OR WOOD



## WALL MOUNTED STORM BARS ANCHORED TO HOLLOW BLOCK WALL



## FLOOR/CEILING MOUNTED STORM BARS ANCHORED TO CONCRETE SLAB



GENERAL NOTE:  
ALL ANCHORAGE IS CONTROLLED BY THE MAXIMUM STORM BAR HEIGHT SELECTION TABLES ON SHEETS 5 AND 6

### ANCHOR SCHEDULE

Type	Description	Embed.	Substruct	Manufacturer
A	1/4" Tapcon	1 3/4"	Concrete	Elco
B	1/4" Tapcon	1 1/4"	Hollow Block	Elco
C	#14 SS Wood Screws	2"	Wood (SG=, 55)	Elco

EDGE DISTANCE = 3"

TABLE 1  
ALLOWABLE DESIGNED PRESSURES (PSF)

AREA	2 SPAN-CLIP SIZE				3 SPAN-CLIP SIZE			
	2	3	4	5	2	3	4	5
10	79	123	184	204	90	139	209	232
15	53	82	122	136	60	93	139	154
20	39	61	92	102	45	70	104	116
30	26	41	61	68	30	46	70	77
35	23	35	52	58	26	40	60	66
40	20	31	46	51	22	35	52	58
s	1.5	2.0	3.0	4.0	1.5	2.0	3.0	4.0

NOTES:  
1- USE 2 ANCHORS PER CLIP  
2- AREA: SEE FIGURE 1 TO CALCULATE AREA  
3- USE ANCHOR TYPE A.

## STORM BARS MOUNTED ON BUILT-OUT ALUM. TUBE AND SHUTTER HEADER

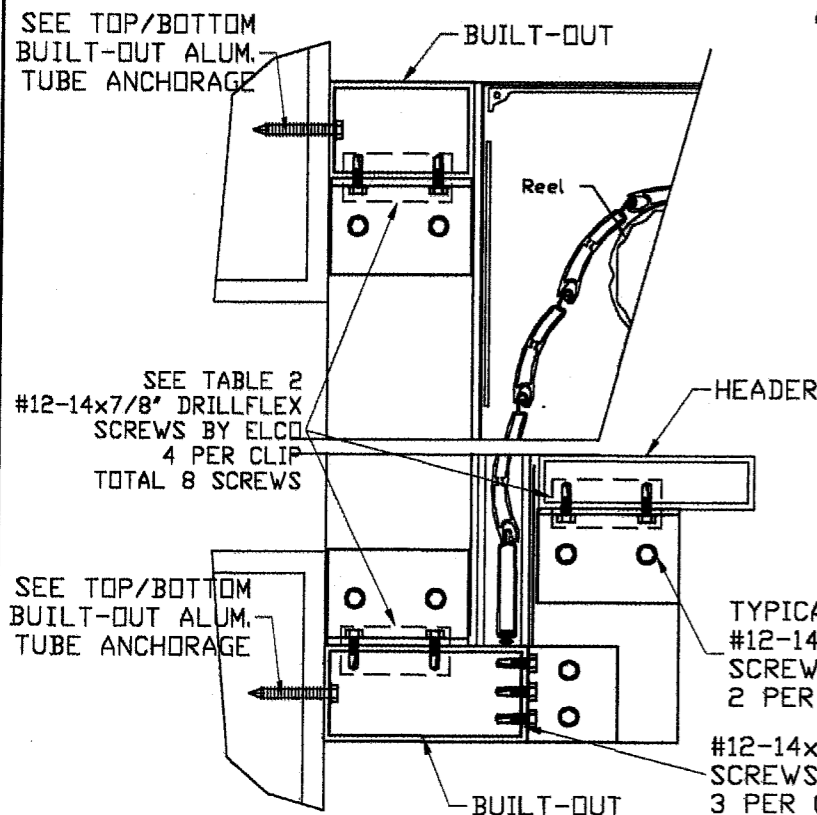
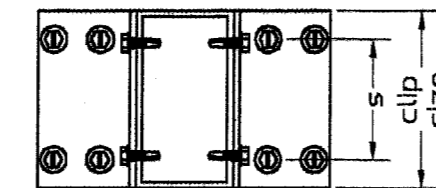


TABLE 2  
ALLOWABLE DESIGNED PRESSURES (Psf)

Clip Size	Pd Psf	(s)
2"	≤ 75	1.5'
3"	≤ 210	2.5'
4"	≤ 210	3.0'
5"	≤ 210	4.0'

Pd Allowable designed pressure

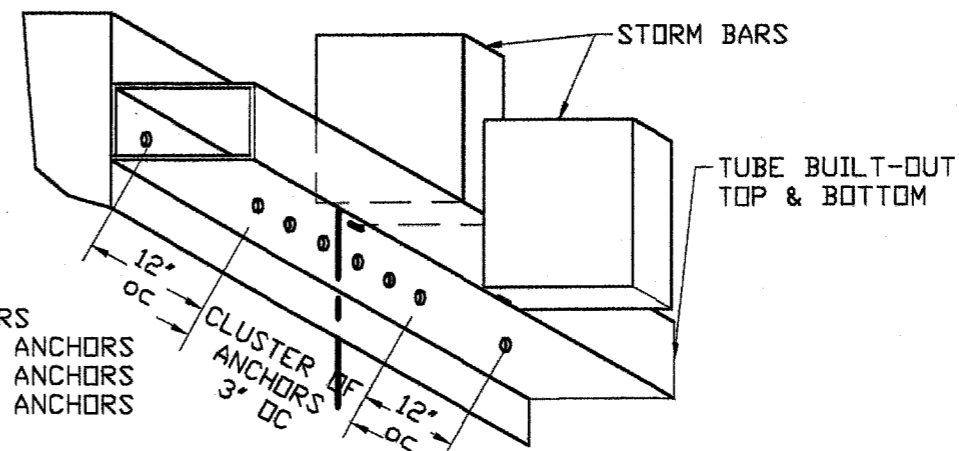


TYPICAL 1/8-2X2 ALUMINUM CLIP

TYPICAL #12-14x7/8" DRILLFLEX SCREWS BY ELCO 2 PER CLIP

#12-14x7/8" DRILLFLEX SCREWS BY ELCO 3 PER CLIP - TOTAL 6 SCREWS

## TOP/BOTTOM BUILT-OUT ALUMINUM TUBE ANCHORAGE



CLUSTER OF ANCHORS  
TYPE A- MIN. OF 3 ANCHORS  
TYPE B- MIN. OF 6 ANCHORS  
TYPE C- MIN. OF 3 ANCHORS

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Sheet  
7 of 15

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*[Signature]*  
 FEB 10 2003  
 Engineer Seal  
 Pedro De Figueiredo  
 PE 52609

Date: 6/27/02  
 Scale: NA  
 Design by: PPMF

Dade County NOA:  
 Approved as complying with the  
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 Date: 04/10/03  
 NOA#: 02-102103  
 Miami Dade Product Control  
 Division  
 By: *[Signature]*

Drawing Number  
**02-435R1**

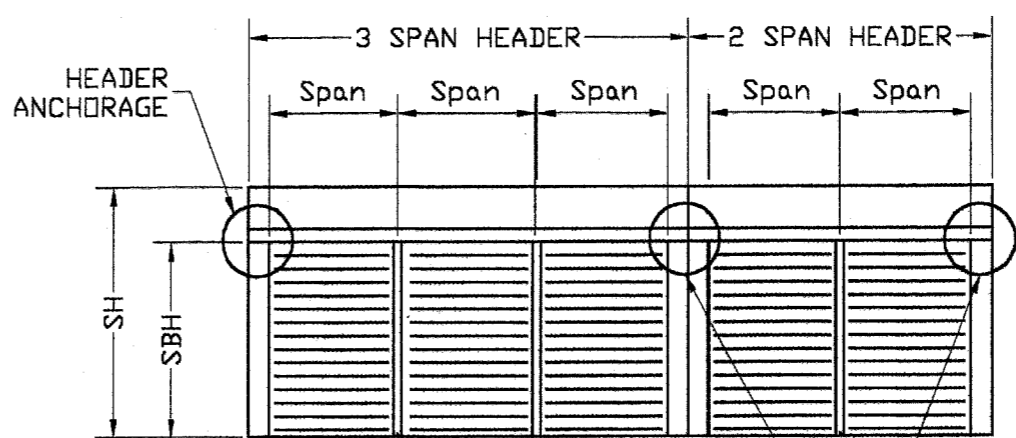
Sheet  
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**ANCHOR SCHEDULE**

Type	Description	Embed.	Substract	Manufacturer
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C	#14 SS Wood Screws	2"	Wood (SG= .55)	Elco

EDGE DISTANCE = 3"

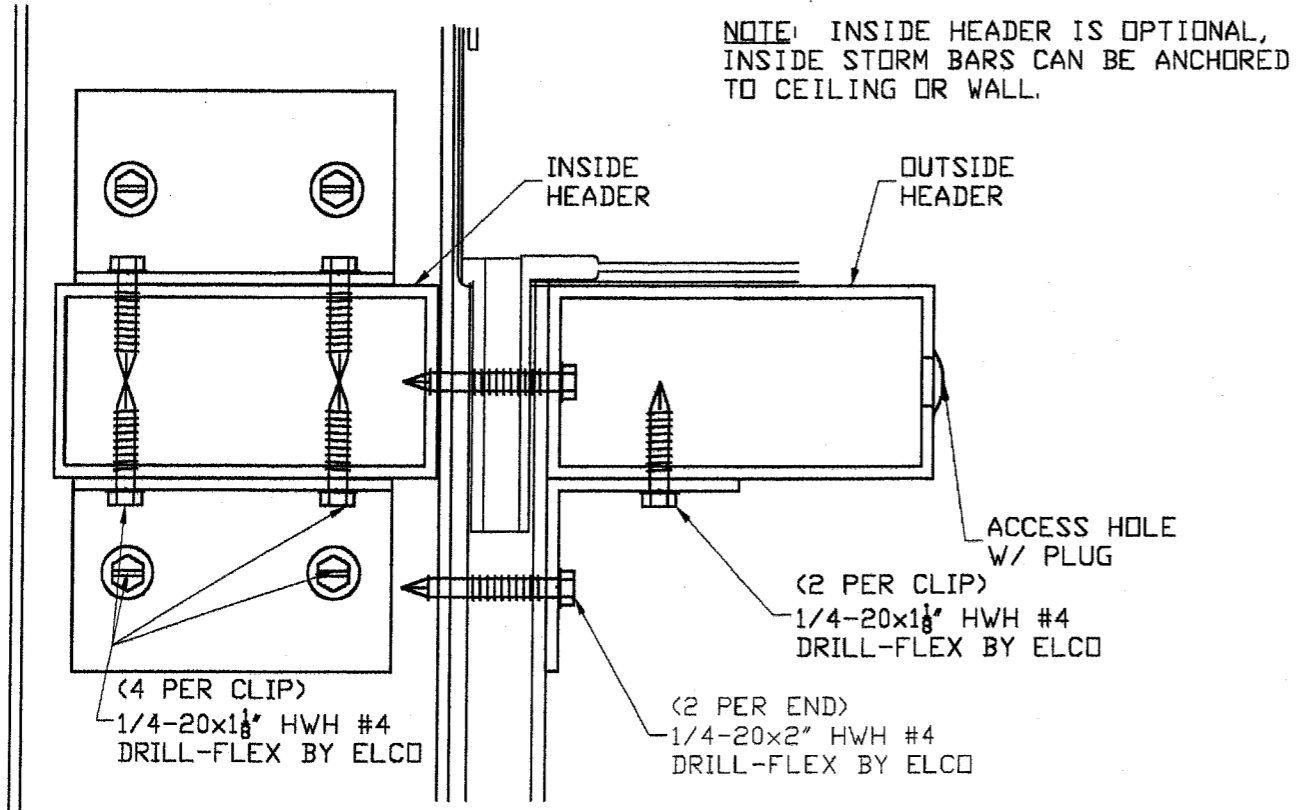
**ANCHORAGE NOTE:** HEADER ANCHORAGE IS CONTROLLED BY THE MAXIMUM ALLOWABLE STORM BARS HEIGHT TABLES ON SHEETS 5 AND 6



SH - SHUTTER HEIGHT  
 SBH - STORM BAR HEIGHT

HEADER ANCHORAGE

**HEADER ANCHORAGE INTO MULLION TUBE**



**NOTE:** INSIDE HEADER IS OPTIONAL, INSIDE STORM BARS CAN BE ANCHORED TO CEILING OR WALL.

(4 PER CLIP)  
 1/4-20x1 1/8" HWH #4  
 DRILL-FLEX BY ELCO

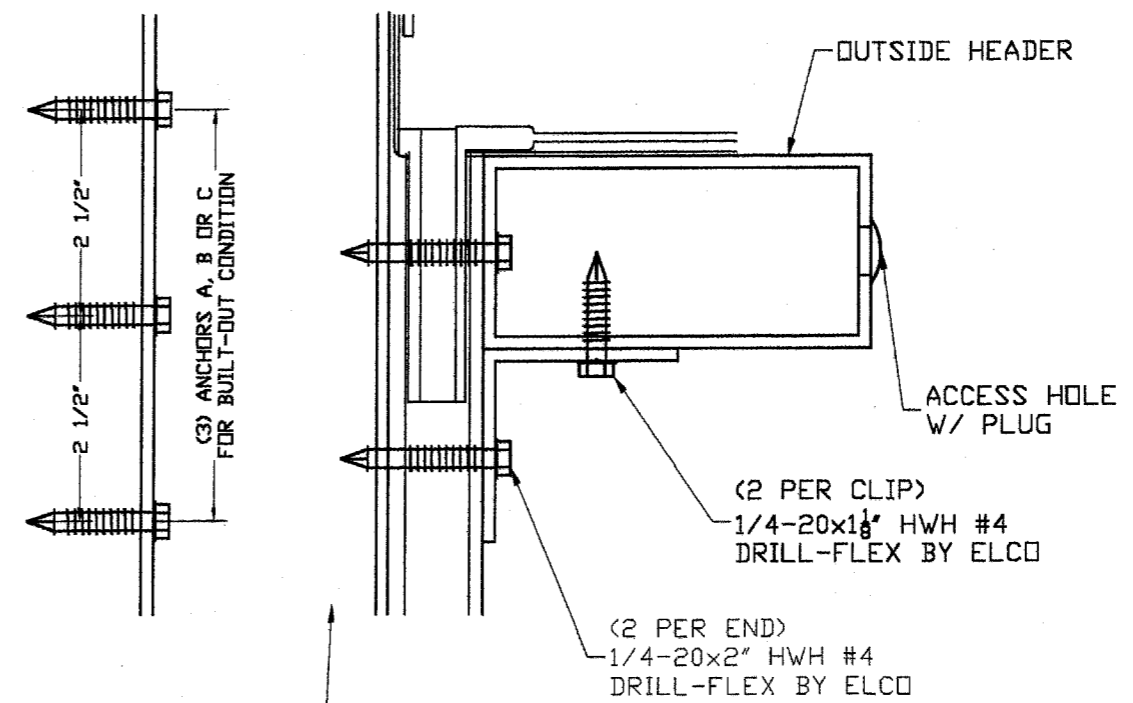
(2 PER CLIP)  
 1/4-20x1 1/8" HWH #4  
 DRILL-FLEX BY ELCO

(2 PER END)  
 1/4-20x2" HWH #4  
 DRILL-FLEX BY ELCO

ACCESS HOLE W/ PLUG

1/8" ALUM. TUBE MULLION  
 SEE MULLION DESIGN SHEETS  
 FOR DETAILS.

**HEADER ANCHORAGE INTO BUILT-OUT ALUM. TUBE**



2 1/2"

2 1/2"

(3) ANCHORS A, B OR C FOR BUILT-OUT CONDITION

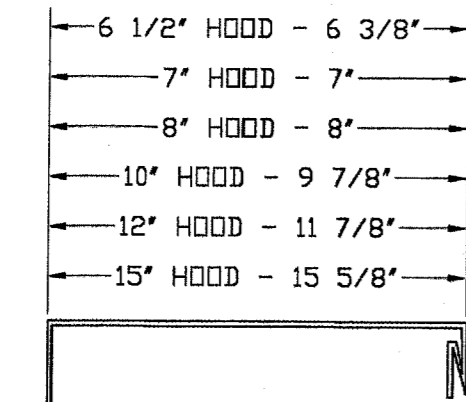
(2 PER CLIP)  
 1/4-20x1 1/8" HWH #4  
 DRILL-FLEX BY ELCO

(2 PER END)  
 1/4-20x2" HWH #4  
 DRILL-FLEX BY ELCO

ACCESS HOLE W/ PLUG

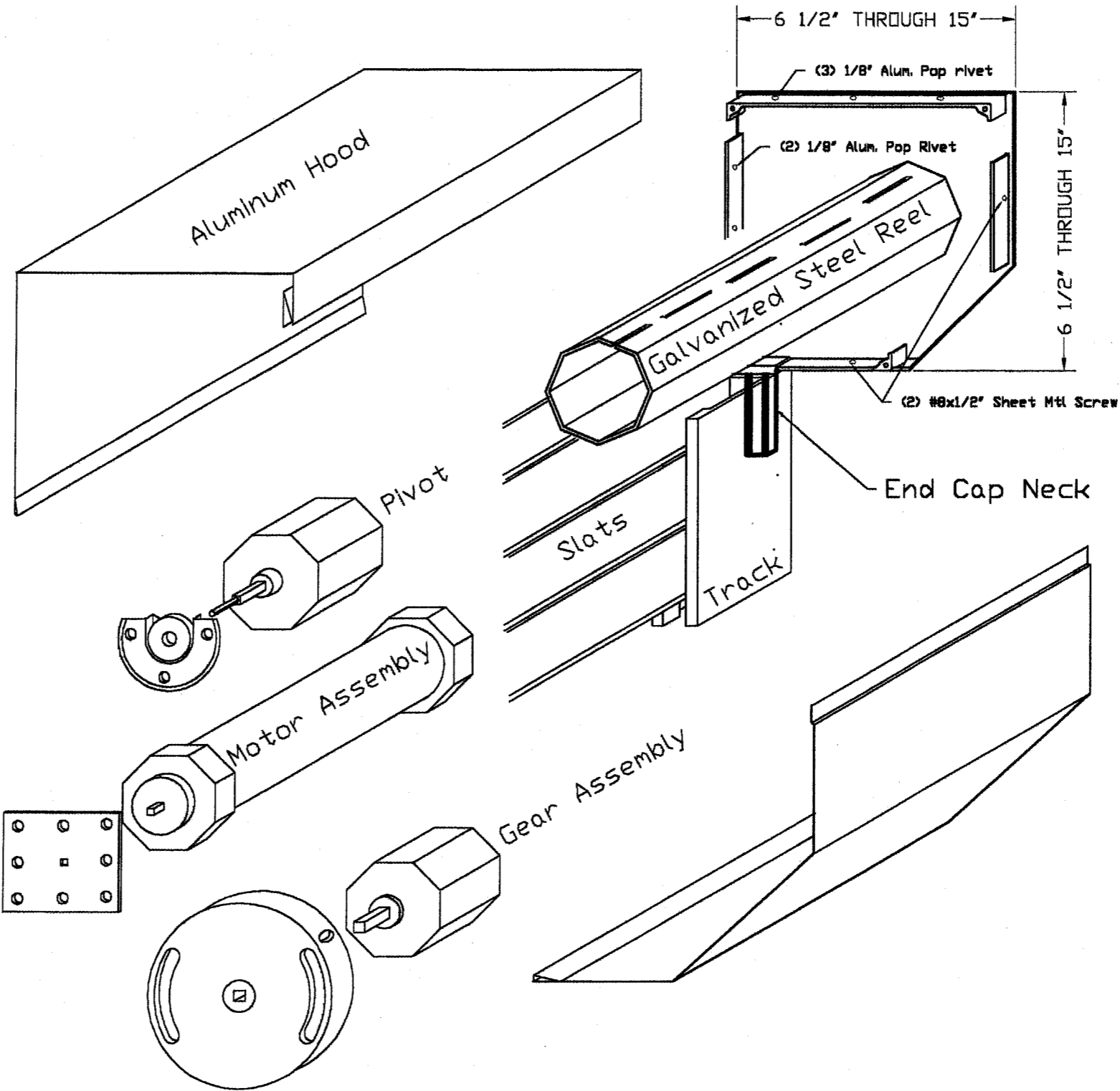
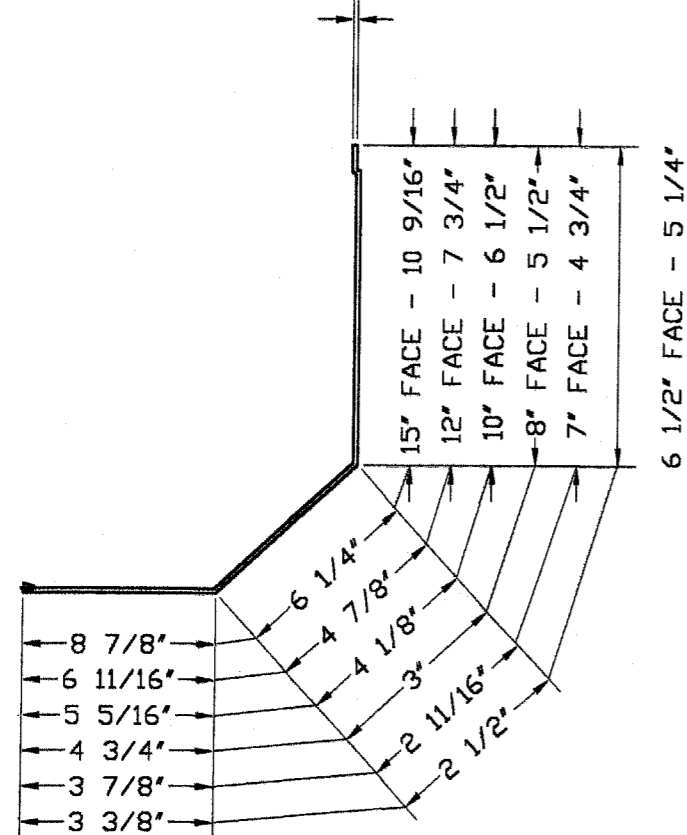
1/8" ALUM. TUBE BUILT-OUT

# HOOD ASSEMBLY



THICKNESS  
 .032 - 6 1/2", 7"  
 .04 - 8", 10", 12"  
 .05 - 15 3/4"

THICKNESS  
 .032 - 6 1/2", 7"  
 .04 - 8", 10", 12"  
 .05 - 15 3/4"



Manufacturer:  
**Roller Star**  
 6351 NW 28th WAY  
 FT. LAUDERDALE,  
 FLORIDA - 33309  
 Tel.: (954) 972-4772

Product:  
**RE1500**  
 EXTRUDED ALUMINUM  
 ROLL SHUTTERS

Engineering:  
**EngCo Inc.**  
 CA 8116  
 6971 W. Sunrise Blvd. 104  
 Plantation, Fl. 33313  
 Tel.: (954) 585-0304

FEB 10 2003  
 Engineer Seal  
 Pedro De Figueiredo  
 PE 52609

Date: 6/27/02  
 Scale: NA  
 Design by: PPMF

Dade County NOA:

Approved as complying with  
 Florida Building Code  
 Date: 04/10/03  
 NOA# 02-102703  
 Miami Dade Product Control  
 Division  
 By:

Drawing Number  
 02-435R1

Sheet  
 13 of 15

# SLATS DEFLECTION TABLES

TABLE 14.1  
SLAT DEFLECTION FOR 2 SPAN SHUTTERS

Pd	SHUTTER SPAN							
	84	78	72	66	60	54	48	40
30	1.18	0.88	0.64	0.45	0.31	0.20	0.13	0.06
45	1.77	1.32	0.96	0.67	0.46	0.30	0.19	0.09
55	na	1.61	1.17	0.82	0.56	0.37	0.23	0.11
65	na	1.90	1.38	0.97	0.67	0.44	0.27	0.13
75	na	na	1.59	1.12	0.77	0.50	0.31	0.15
85	na	na	1.80	1.27	0.87	0.57	0.36	0.17
95	na	na	na	1.42	0.97	0.64	0.40	0.19
105	na	na	na	1.57	1.08	0.71	0.44	0.21
115	na	na	na	1.72	1.18	0.77	0.48	0.23
125	na	na	na	1.87	1.28	0.84	0.52	0.25
135	na	na	na	na	1.38	0.91	0.57	0.27
145	na	na	na	na	1.48	0.97	0.61	0.29
155	na	na	na	na	1.59	1.04	0.65	0.31
165	na	na	na	na	1.69	1.11	0.69	0.33
175	na	na	na	na	1.79	1.18	0.73	0.35
185	na	na	na	na	1.89	1.24	0.78	0.37
195	na	na	na	na	2.00	1.31	0.82	0.39
210	na	na	na	na	na	1.41	0.88	0.42

Deflections are indicated in inches

TABLE 14.2  
SLAT DEFLECTION FOR 3 SPAN SHUTTERS

Pd	SHUTTER SPAN							
	84	78	72	66	60	54	48	40
30	1.51	1.12	0.81	0.57	0.39	0.26	0.16	0.08
45	na	1.68	1.22	0.86	0.59	0.39	0.24	0.12
55	na	na	1.49	1.05	0.72	0.47	0.29	0.14
65	na	na	1.76	1.24	0.85	0.56	0.35	0.17
75	na	na	na	1.44	0.98	0.64	0.40	0.19
85	na	na	na	1.63	1.11	0.73	0.46	0.22
95	na	na	na	1.82	1.24	0.81	0.51	0.25
105	na	na	na	na	1.37	0.90	0.56	0.27
115	na	na	na	na	1.50	0.99	0.62	0.30
125	na	na	na	na	1.63	1.07	0.67	0.32
135	na	na	na	na	1.76	1.16	0.72	0.35
145	na	na	na	na	1.90	1.24	0.78	0.37
155	na	na	na	na	na	1.33	0.83	0.40
165	na	na	na	na	na	1.42	0.88	0.43
175	na	na	na	na	na	1.50	0.94	0.45
185	na	na	na	na	na	1.59	0.99	0.48
195	na	na	na	na	na	1.67	1.04	0.50
210	na	na	na	na	na	na	1.12	0.54

## GUI\*S24 GUIDE RAILS

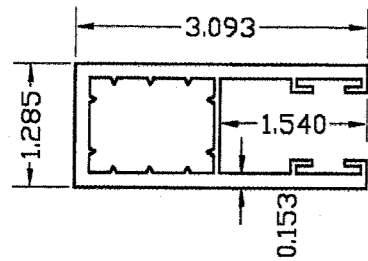


TABLE 14.3  
SLAT DEFLECTION FOR 2 SPAN SHUTTERS

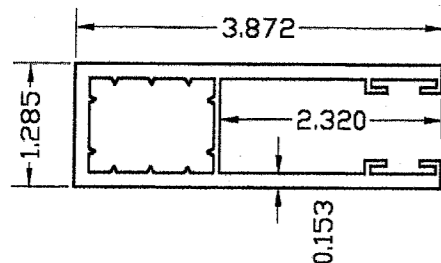
Pd	SHUTTER SPAN							
	84	78	72	66	60	54	48	40
30	1.34	0.99	0.72	0.51	0.35	0.23	0.14	0.07
45	na	1.49	1.08	0.76	0.52	0.34	0.21	0.10
55	na	1.82	1.32	0.93	0.64	0.42	0.26	0.13
65	na	na	1.56	1.10	0.75	0.49	0.31	0.15
75	na	na	1.80	1.27	0.87	0.57	0.36	0.17
85	na	na	na	1.44	0.99	0.65	0.40	0.19
95	na	na	na	1.61	1.10	0.72	0.45	0.22
105	na	na	na	1.78	1.22	0.80	0.50	0.24
115	na	na	na	1.95	1.33	0.87	0.55	0.26
125	na	na	na	na	1.45	0.95	0.59	0.29
135	na	na	na	na	1.57	1.03	0.64	0.31
145	na	na	na	na	1.68	1.10	0.69	0.33
155	na	na	na	na	1.80	1.18	0.74	0.35
165	na	na	na	na	1.91	1.26	0.78	0.38
175	na	na	na	na	na	1.33	0.83	0.40
185	na	na	na	na	na	1.41	0.88	0.42
195	na	na	na	na	na	1.48	0.93	0.45
210	na	na	na	na	na	1.60	1.00	0.48

Deflections are indicated in inches

TABLE 14.4  
SLAT DEFLECTION FOR 3 SPAN SHUTTERS

Pd	SHUTTER SPAN							
	84	78	72	66	60	54	48	40
30	1.71	1.27	0.92	0.65	0.44	0.29	0.18	0.09
45	na	1.90	1.38	0.98	0.67	0.44	0.27	0.13
55	na	na	1.69	1.19	0.81	0.53	0.33	0.16
65	na	na	1.99	1.41	0.96	0.63	0.39	0.19
75	na	na	na	1.63	1.11	0.73	0.45	0.22
85	na	na	na	1.84	1.26	0.83	0.52	0.25
95	na	na	na	na	1.41	0.92	0.58	0.28
105	na	na	na	na	1.55	1.02	0.64	0.31
115	na	na	na	na	1.70	1.12	0.70	0.34
125	na	na	na	na	1.85	1.21	0.76	0.37
135	na	na	na	na	2.00	1.31	0.82	0.39
145	na	na	na	na	na	1.41	0.88	0.42
155	na	na	na	na	na	1.51	0.94	0.45
165	na	na	na	na	na	1.60	1.00	0.48
175	na	na	na	na	na	1.70	1.06	0.51
185	na	na	na	na	na	1.80	1.12	0.54
195	na	na	na	na	na	na	1.18	0.57
210	na	na	na	na	na	na	1.27	0.61

## GUI\*S26 GUIDE RAILS



Manufacturer:  
**Roller Star**  
6351 NW 28th WAY  
FT. LAUDERDALE,  
FLORIDA - 33309  
Tel.: (954) 972-4772

Product:  
**RE1500**  
EXTRUDED ALUMINUM  
ROLL SHUTTERS

Engineering:  
**EngCo Inc.**

CA 8116  
6971 W. Sunrise Blvd. 104  
Plantation, Fl. 33313  
Tel.: (954) 585-0304

*[Signature]*  
FEB 10 2003

Engineer Seal  
Pedro De Figueiredo  
PE 52609

Date: 6/27/02  
Scale: NA  
Design by: PPMF

Dade County NOA:

Approved as complying with the  
Florida Building Code  
Date: 04/10/03  
NOA#: 02-1021-03  
Miami Dade Product Control  
Division  
By: *[Signature]*

Drawing Number  
02-435R1

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# MULTIPLE SPAN SHUTTER SLAT TOTAL DEFLECTION

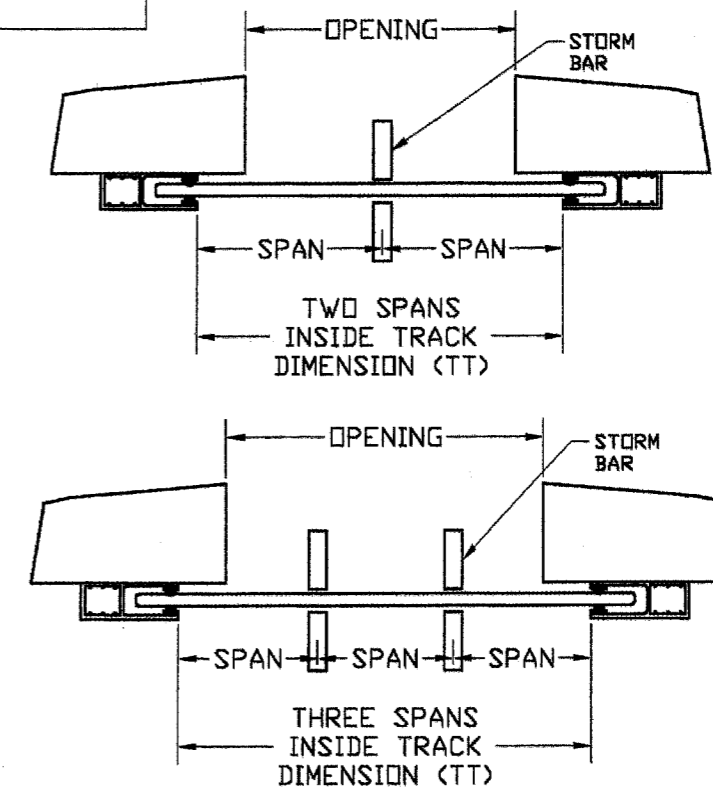
**Manufacturer:**  
**Roller Star**  
 6351 NW 28th WAY  
 FT. LAUDERDALE,  
 FLORIDA - 33309  
 Tel.: (954) 972-4772

## POSITIVE LOAD

UNIT #	(1) Pd	(2) TT	(3) # SPANS	(4) Span	(5) SLAT DEF (A)	(6) STORM BARS			(7) HEADER		(8) TOTAL DEF. (D) D=A+B/2+C/4	(9) Allowable D<=Span/30 or 2'	(10) GS GS=D+1
						TYPE	SPAN	DEF. (B)	TYPE	DEF. (C)			
1													
2													
3													
4													
5													
6													

## NEGATIVE LOAD

UNIT #	(1) Pd	(2) TT	(3) # SPANS	(4) Span	(5) SLAT DEF (A)	(6) STORM BARS			(7) HEADER		(8) TOTAL DEF. (D) D=A+B/2+C/4	(9) Allowable D<=Span/30
						TYPE	SPAN	DEF. (B)	TYPE	DEF. (C)		
1												
2												
3												
4												
5												
6												



**PROCEDURE:**  
 STEP 1: PROVIDE PROJECT DESIGNED PRESSURE IN PSF AS PER ITEM 4 SHEET 1 OF 15. BASED ON ASCE 7-98 ✓  
 STEP 2: PROVIDE TRACK TO TRACK SHUTTER DIMENSION IN INCHES. ✓  
 STEP 3: PROVIDE NUMBER OF SPANS: 2 FOR ONE SET OF STORM BARS 3 FOR TWO SETS. ✓  
 STEP 4: CALCULATE THE SPAN SIZE DIVIDING TT/# OF SPANS. THIS VALUE MUST BE LESS OR EQUAL THE CORRESPONDING VALUE OF TABLE 3.1 OR 3.2 ON SHEET 3 OF 15. ✓  
 STEP 5: CALCULATED SLAT DEFLECTION IN INCHES AS PER TABLES ON SHEET 14 OF 15 ✓  
 STEP 6: SELECT APPROPRIATE STORM BAR TYPE AND CORRESPONDING DEFLECTION ON SHEETS 5 OR 6 OF 15. ✓  
 STEP 7: (IF APPLICABLE) SELECT APPROPRIATE HEADER TYPE AND CORRESPONDING DEFLECTION ON SHEETS 8 OR 9 OF 15. ✓  
 STEP 8: CALCULATE TOTAL DEFLECTION ✓  
 STEP 9: CALCULATE AND COMPARE MAXIMUM ALLOWABLE DEFLECTION. IF TOTAL DEFLECTION EXCEEDS THE ALLOWABLE TRY TO UPGRADE THE STORM BAR UNTIL DESIGN IS ACCEPTABLE. ✓  
 STEP 10: CALCULATE THE SLAT TO GLASS SEPARATION (POSITIVE ONLY). COMPARE WITH GLASS SEPARATION TABLE. ✓  
**NOTES:** A- USE ADDITIONAL SHEETS IF PROJECT HAVE MORE THAN 6 SHUTTERS. ✓  
 B- THE MAXIMUM ALLOWABLE DEFLECTION MUST COMPLY WITH SECTION 1612.1 OF THE FBC 2001. ✓

(GS) GLASS SEPARATION:		
LARGE IMPACT	SPAN	WIND LOAD ONLY
3'	SPAN > 52"	3'
2 3/4"	40" < SPAN <= 52"	2 3/4"
2 3/8"	SPAN <= 40"	2 3/8"

GLASS SEPARATION FOR LARGE MISSILE IMPACT IS APPLICABLE FOR INSTALLATION UP TO 30 FT. OF GRADE DUE TO LARGE MISSILE IMPACT. WIND LOAD GLASS SEPARATION APPLIES TO INSTALLATION ABOVE 30 FT. OF GRADE.

**Product:**  
**RE1500**

EXTRUDED ALUMINUM  
 ROLL SHUTTERS

**Engineering:**  
**EngCo Inc.**

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Engineer Seal  
 Pedro De Figueiredo  
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