

GENERAL NOTES:

- ROLL-UP SHUTTER SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR CODE COMPLIANCE IN ACCORDANCE WITH THE 2007 EDITION OF THE FLORIDA BUILDING CODE. THIS ROLL-UP SHUTTER SHALL NOT BE INSTALLED AT HIGH WIND COAST HURRICANE ZONES (MIAMI-DADE COUNTY / BROWARD COUNTIES). REQUIRED WIND LOADS SHALL BE DETERMINED AS PER SECTION 1809 OF THE ABOVE MENTIONED CODE. FOR A BASIC WIND SPEED AS W/ ASSE 7-05 STANDARD. IN ORDER TO VERIFY THAT COMPONENTS AND ANCHORS ON THIS P.E.D. AS TESTED WERE NOT OVER STRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. HOWEVER, A DURATION FACTOR CD=1.60 WAS USED FOR VERIFICATION OF FASTENERS IN WOOD.
 - ROLL-UP SHUTTER'S Adequacy for IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1809.1.2 OF THE ABOVE MENTIONED CODE AS PER 716-201, 209 & 203 PROTOCOLS PER FEMTATION TESTING LAB REPORTS # 4195, 4196, 4197, 4198, 4199, 4200, 4202, 4203, 4204, 4205, 4206, 4208, 4211, 4212, 4214, 4215, 4217, 4219, 4221, 4223, 4224, 4226, 4227, 4228, 4229, 4230, 4232, 4233, 4234, 4235, 4236, 4238 & 4239.
 - ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 W/ 50 KSI MIN. YIELD STRENGTH AND 90 KSI MIN. TENSILE STRENGTH. ALL TEK SCREWS SHALL BE AS MANUFACTURED BY THE BUILDER, INC.
 - BOLTS TO BE ALUMINUM ASSOCIATION 2024-T4 ALLOY & TEMPER, ASTM A-307 GALVANIZED STEEL OR AISI 304 SERIES STAINLESS STEEL WITH 35 KSI MINIMUM YIELD STRENGTH.
 - STORM BARS AT FLOOR AND CEILING MOUNTING INSTALLATIONS MAY BE REMOVABLE AT NON HURRICANE CONDITIONS. HOWEVER, EACH STORM BAR SHALL BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH A WARNING NOTE INSTRUCTING THE TENANT OR OWNER THAT STORM BARS MUST BE INSTALLED WITH CORRESPONDING HURRICANE DURING PERIODS OF HURRICANE WARNING AND THAT ROLL UP SHUTTERS WILL NOT OFFER HURRICANE PROTECTION UNLESS ALL STORM BARS ARE INSTALLED AS DIRECTED.
 - REMOVABLE STORM BARS SHALL BE STORED IN A CONSPICUOUS PLACE WITH EASY AND IMMEDIATE ACCESS SO THAT THEY CAN BE REACHED AND INSTALLED ANY TIME (HURRICANE CONDITIONS OR NOT). SLATS ARE ROLLED DOWN THE EFFECT OF THE SLATS ROLLED DOWN WITHOUT STORM BARS IS: THOSE SLATS WILL SLIP OUT OF TRACK DUE TO THE DEFLECTION CAUSED BY WIND FORCES. WHEN REMOVING STORM BARS, ONE STORM BAR SHALL ALWAYS BE LEFT INSTALLED (SHALL NOT BE REMOVED). THIS CONDITION IS ONLY REQUIRED FOR HEADER SPANS EQUAL OR GREATER THAN 12'-0".
 - ANCHORS TO WALL FOR SIDE BAITS & BOX CONNECTION SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
 - (A) TO EXISTING POURED CONCRETE (Min. f_c=3192 psi).
 - (B) TO EXISTING CONCRETE BLOCK WALL: ASTM C-90
 - (C) TO EXISTING WOOD FRAME BUILDING: SOUTHERN PINE #2 W/ G = 0.55 MIN.
- NOTES:
- MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO POURED CONCRETE IS 1 3/4". NO EMBEDMENT INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED EMBEDMENT.
 - IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, OR PAVERS BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. ANCHORAGE SHALL BE AS INDICATED ON NOTES A.1 ABOVE.
 - TO EXISTING CONCRETE BLOCK WALL: ASTM C-90
 - TO EXISTING WOOD FRAME BUILDING: SOUTHERN PINE #2 W/ G = 0.55 MIN.
- NOTES:
- MINIMUM EMBEDMENT OF TAPCON ANCHORS INTO CONCRETE BLOCK UNIT SHALL BE 1 1/4".
 - IN CASE THAT PRECAST STONE OR PRECAST CONCRETE PANELS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SUCH PANELS. MINIMUM EMBEDMENT SHALL BE AS INDICATED ON NOTE B.1 ABOVE.
 - TO EXISTING WOOD FRAME BUILDING: SOUTHERN PINE #2 W/ G = 0.55 MIN.
- NOTES:
- MINIMUM THREADED PENETRATION OF LAG SCREWS AND TAPCON ANCHORS INTO THE WOOD FRAME UNIT SHALL BE 1 1/2". NO THREADED PENETRATION INTO STUCCO SHALL BE CONSIDERED AS PART OF THE REQUIRED THREADED PENETRATION.
 - MINIMUM EDGE DISTANCE OF LAG SCREWS AND TAPCON ANCHORS INTO WOOD SHALL BE 2".
 - IN CASE THAT PRECAST STONE, PRECAST CONCRETE OR BRICK PANELS, VENEER OR PAVERS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN SUBSTRATE BEHIND SUCH PANELS. MINIMUM THREADED PENETRATION SHALL BE AS INDICATED ON NOTE C.1 ABOVE.
 - ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.
 - ANCHORS REQUIRED FOR STORM BAR, HEADER & LULLION CONNECTIONS SHALL BE AS SPECIFIED ON APPLICABLE SECTIONS SHOWN ON SHEETS 6, 7, 8, 9, 10, 11, 12, 13 & 14 OF 19 RESPECTIVELY. POWER BOLT & CALK-IN ANCHORS TO BE MANUFACTURED BY POWERS FASTENERS, INC., KIMK BOLT 12 MANUFACTURED BY HILTI INC., & TAPCON ANCHORS MANUFACTURED BY L.W. BUILDER INC.

ANCHOR

1/4" TAPCON	SPACING	EDGE DISTANCE	MINIMUM EMBEDMENT
-1/4" CALK-IN	2 1/2"	3"	CONCRETE BLOCK
-3/8" CALK-IN	3 3/4"	4 1/2"	1 1/4" (ASTM C-90)
-3/8" POWER BOLT	3 3/4"	4 1/2"	-
-1/2" KIMK BOLT 12	6"	4 3/8"	1 1/4" (ASTM C-90)
-1/2" KIMK BOLT 12	9 3/4"	6"	-

10. PROTECTIVE FLAME RETARDANT 186, IS A POLYPROPYLENE MANUFACTURED BY POLY HI SOLIDUR, INC. USED AT SPRING LOADED SYSTEM FOR REMOVABLE STORM BARS & THE FOLLOWING SPECIFICATIONS:

DESIGNATION	PROPERTIES	VALUE
ASTM D-792	DENSITY	59.51 lbs/ft ³ (AVERAGE)
ASTM D-638	YIELD POINT	3200 psi (AVERAGE)
ASTM D-638	TENSILE BREAK	6000 psi (AVERAGE)
ASTM D-790	ELONGATION AT BREAK	145000 psi (AVERAGE)
ASTM D-4020	FLEXURAL MODULUS	0.15 ft-lbs/in ² (AVERAGE)
UL 94	IZOD IMPACT	15 ft-lbs/in ² (AVERAGE)
ASTM E-84	BURN RATING	15 ft-lbs/in ² (AVERAGE)
ASTM E-84	FLAME SPREAD INDEX	375 ft (AVERAGE)
ASTM E-84	SMOKE DEVELOPMENT INDEX	375 ft (AVERAGE)

11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. THIS SHUTTER SHALL NOT BE ATTACHED TO CONCRETE, BLOCK OR WOOD FRAME BUILDINGS STRICTLY FOLLOWING DETAILS INDICATED ON THIS DRAWING.

12. THE INSTALLATION CONTRACTOR IS TO SEAL/CALK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION. CALK AND SEAL SHUTTER TRACKS ALL AROUND FULL LENGTH.

13. ROLL-UP MECHANISM NOT PART OF THIS APPROVAL, BUT SHALL BE CERTIFIED BY AN INDEPENDENT TESTING AGENCY.

14. ROLL-UP SHUTTER INSTALLATION SHALL COMPLY WITH SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

15. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY ON THIS PRODUCT, BASED ON THIS P.E.D. PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

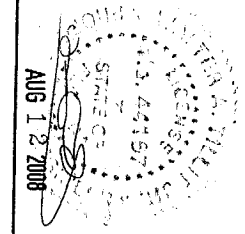
(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D.

(e) ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.

(f) THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

16. ROLL-UP MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT ROLL-UP SHUTTER IN ACCORDANCE WITH SECTION 1714.8.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1714.8.2 OF THE FLORIDA BUILDING CODE.

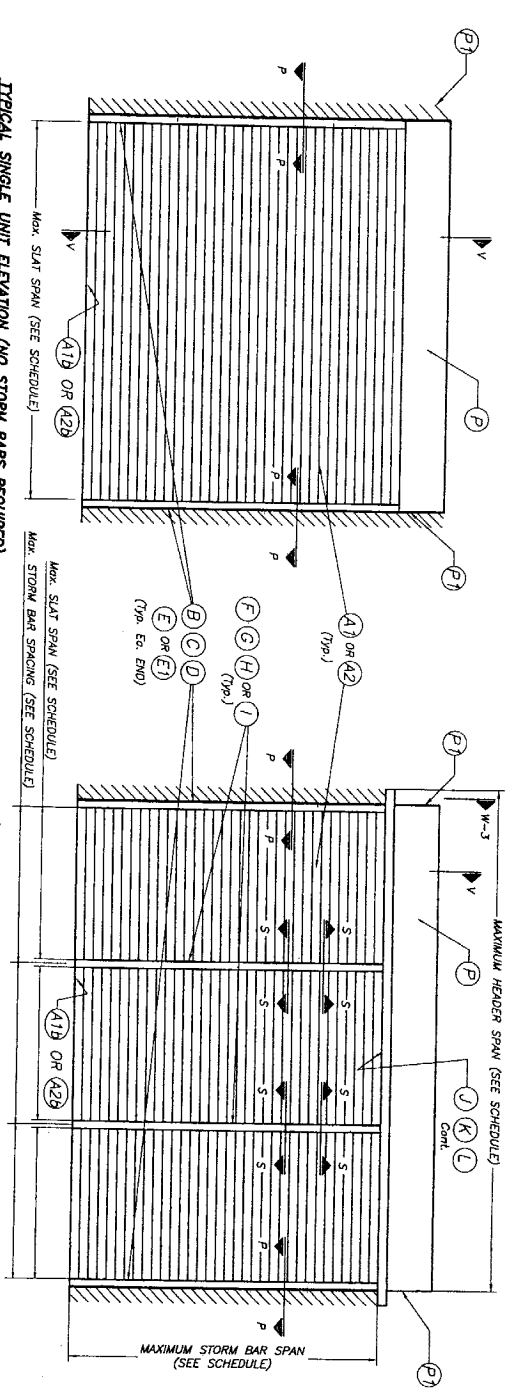


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 60mm & 40mm ROLL-UP SHUTTER

ROLLER STAR CORPORATION
 1400 SW 6th COURT BUILDING 100
 MIAMI, FLORIDA 33135
 Phone: 800-762-7029

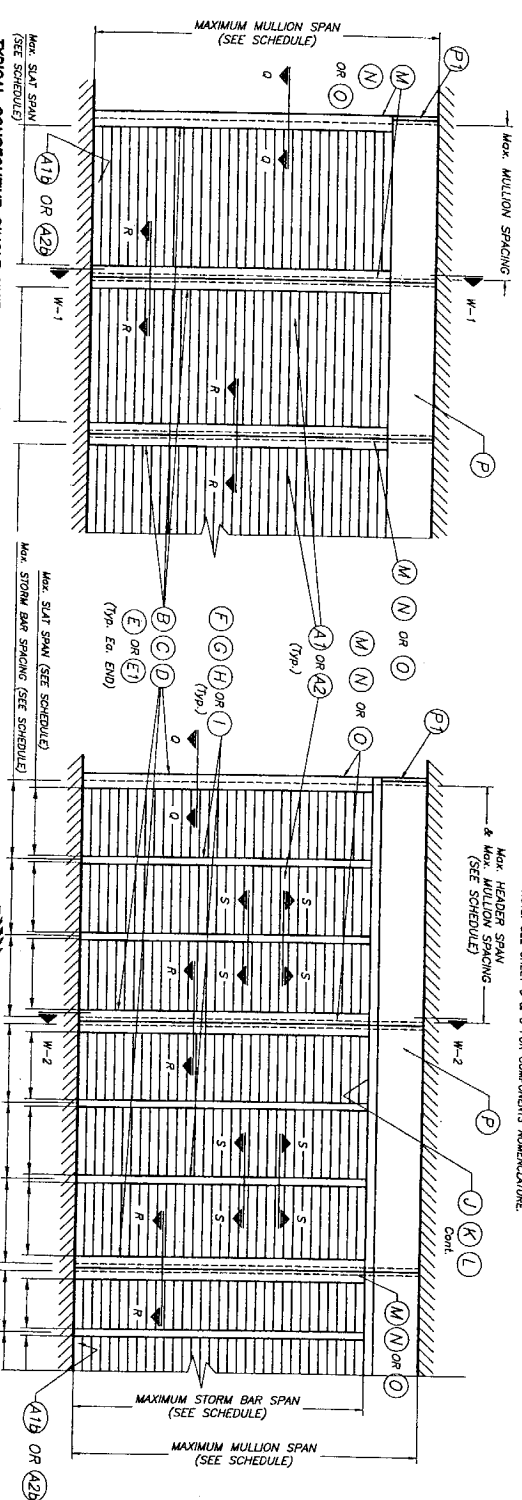
REV. NO.	DESCRIPTION	DATE	BY	CHK.	DATE
1	QLD 03-138	7/21/08			

08-130
 DRAWING NO.
 SHEET 1 OF 19



TYPICAL SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)
NOTE: SEE SHEET 3 & 5 FOR COMPONENTS NOMENCLATURE.

TYPICAL MULTIPLE UNIT ELEVATION (STORM BARS REQUIRED)
NOTE: SEE SHEET 3 & 5 FOR COMPONENTS NOMENCLATURE.



TYPICAL CONSECUTIVE SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)
NOTE: SEE SHEET 3 & 5 FOR COMPONENTS NOMENCLATURE.

TYPICAL CONSECUTIVE MULTIPLE UNIT ELEVATION (STORM BARS REQUIRED)
NOTE: SEE SHEET 3 & 5 FOR COMPONENTS NOMENCLATURE.

NOTE: SEE SECTIONS ON SHEETS 8 THRU 14.

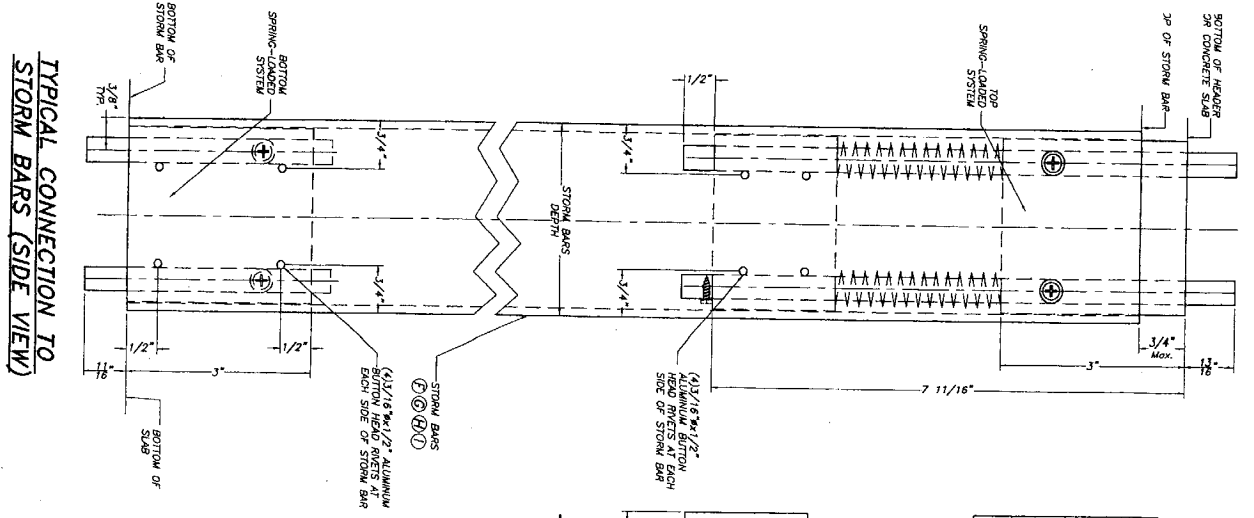


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60mm & 40mm ROLL-UP SHUTTER
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FOUNDRY BEACH, FL 33069
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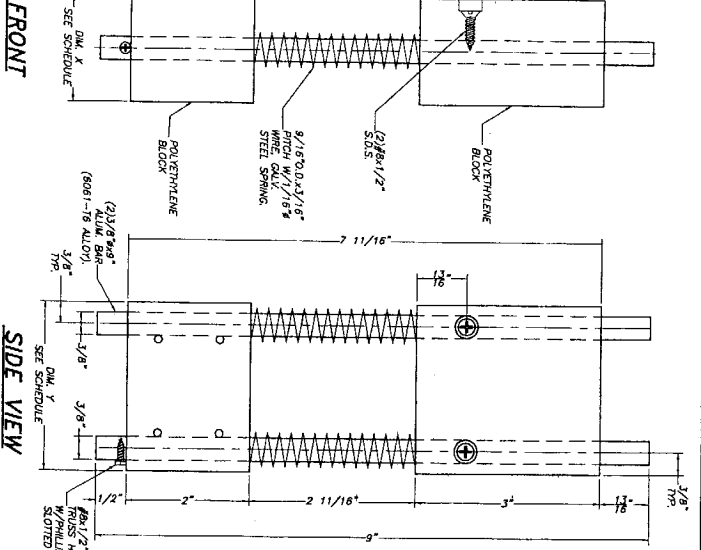
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2			2		

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SHEET 2 OF 19

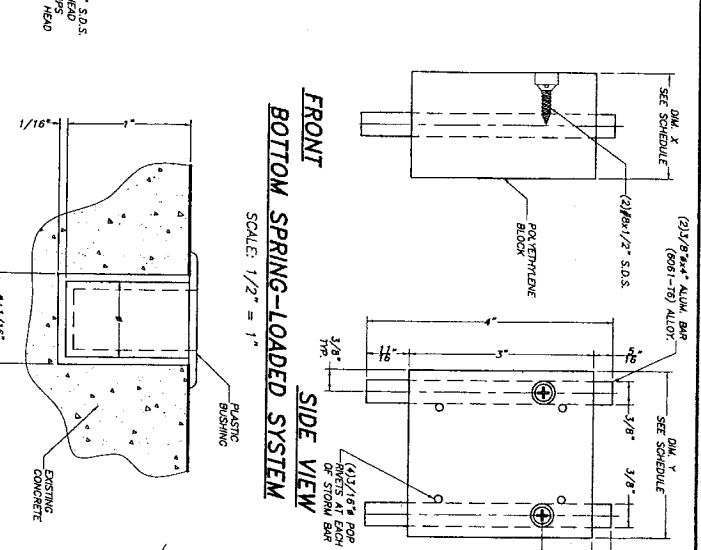
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TYPICAL CONNECTION TO STORM BARS (SIDE VIEW)
SCALE: 1/2" = 1"



FRONT TOP SPRING-LOADED SYSTEM
SCALE: 1/2" = 1"

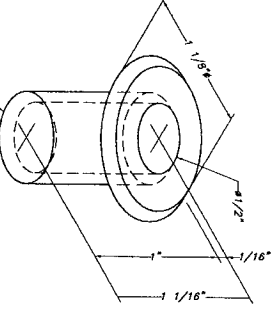


FRONT BOTTOM SPRING-LOADED SYSTEM
SCALE: 1/2" = 1"

ENGAGEMENT HOLE DETAIL (IN CONCRETE) FOR REMOVABLE SPRING-LOADED STORM BARS
SCALE: 1" = 1"

- NOTES:
- (1) ENGAGEMENT HOLE DRILLED IN CONCRETE SHALL BE 5/8" x 1" DEEP, W/1/16" Max. TOLERANCE IN BOTH DIAMETER & DEPTH.
 - (2) ENGAGEMENT HOLE DRILLED IN CONCRETE SHALL BE PERMANENTLY PROTECTED BY FITTING PLASTIC BUSHING (SEE DETAIL 1) INTO HOLE. IT SHALL BE THE RESPONSIBILITY OF SHUTTER'S OWNER TO PERMANENTLY KEEP BUSHING FREE OF DUST & MOLD BY REMOVING IT FROM ENGAGEMENT HOLE CLEANING IT AND REPOSITIONING IT INTO HOLE AS INDICATED ON ABOVE DETAIL.

PLASTIC BUSHING: DETAIL 1 (ISOMETRIC)
SCALE: 1" = 1"



X Y DIMENSIONS FOR A GIVEN TYPE OF STORM BAR			
STORM BAR TYPE	X(D)	Y(D)	
(F)	1 19/32"	1 19/32"	
(G)	1 23/32"	2 23/32"	
(H)	1 23/32"	3 23/32"	
(I)	1 15/32"	3 15/32"	

TYPICAL SPRING-LOADED SYSTEM FOR REMOVABLE STORM BARS AS ALTERNATE TO THE USE OF CAK-IN ANCHORS



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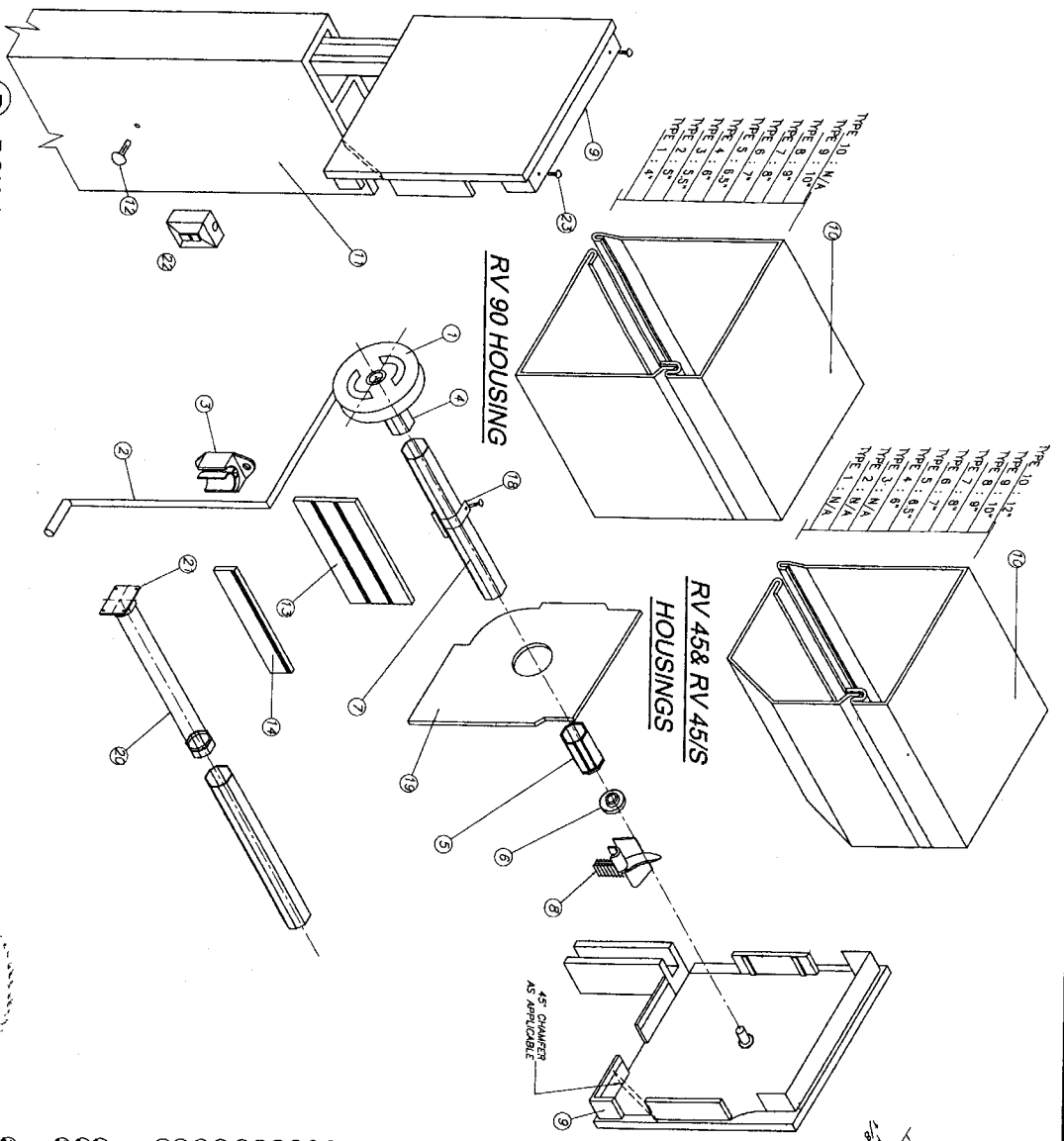
REV.	NO.	DESCRIPTION	DATE	BY	DATE
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60mm & 40mm ROLL-UP SHUTTER
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DATE: 07/21/08
OB-190
DRAWING NO.
SHEET 4 OF 19

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P BOX COMPONENTS AND ASSEMBLY DETAIL

(SEE NOTE 13 ON SHEET 1)

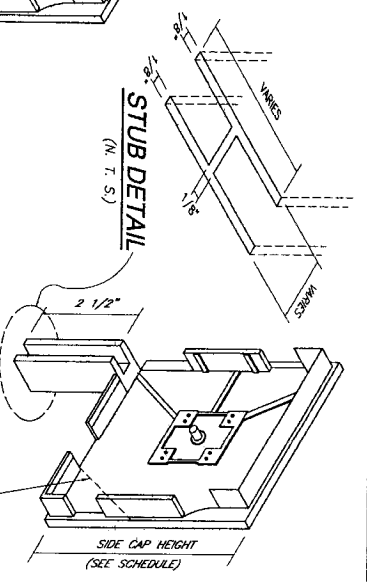


COMPONENTS FOR GEAR OPERATED SYSTEM

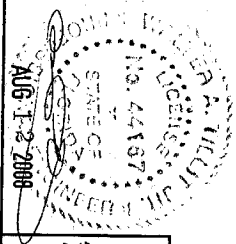
- 1 - GEAR
 - 2 - UNIVERSAL & CRANK
 - 3 - CRANK HOLDER (OPTIONAL)
 - 4 - GEAR INSERT (GEAR TO AXLE CONNECTOR)
 - 5 - IDLER INSERT
 - 6 - BALL BEARING
 - 7 - OCTAGONAL AXLE
 - 8 - ENTRY GUIDES
 - 9 - SIDE/END CAP *
 - 10 - HOUSING (FRONT & BOTTOM), 0.040" THICK
 - 11 - SIDE RAIL
 - 12 - PLUG-BUTTONS
 - 13 - ALUMINUM SLATS
 - 14 - BOTTOM SLAT
 - 15 - PLASTIC STOPS (OPTIONAL)
 - 16 - SIDE LOCKS (OPTIONAL)
 - 17 - STAPLES (OPTIONAL)
 - 18 - SPRING LOCK HANGER
 - 19 - SAFETY PLATES
- ADDITIONAL COMPONENTS FOR MOTORIZED OPERATED SYSTEM**
- 20 - TUBULAR MOTOR
 - 21 - MOTOR BRACKET
 - 22 - SWITCH
- FASTENERS**
- 23 - #8 STAINLESS STEEL SCREWS (6 RECD. EA. SIDE CAP) : 2 @ TOP, 2 @ REAR, 1 @ BOTTOM & 1 @ FRONT

* SHALL BE CAPABLE TO SUSTAIN SLATS HEIGHT AND ASSURE LIFTING MECHANISM (SEE NOTE 13/1)

STUB DETAIL
(N. T. S.)

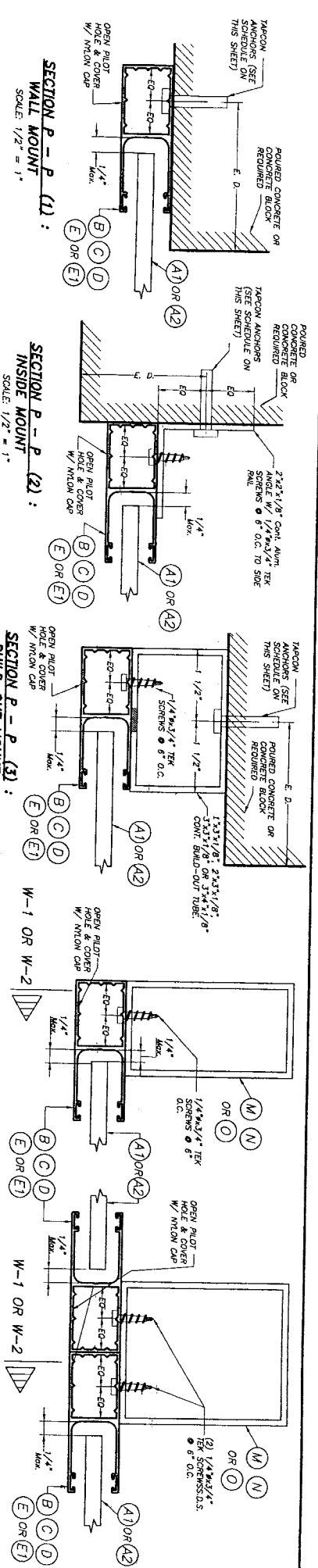


P1 SIDE CAPS:
(SEE NOTE 11 ON SHEET 1)



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1	QAD CS-138	7/21/08	1		
<p>ROLLER STAR CORPORATION 1480 SW 8th COURT BUILDING 1400 POINCIANA BEACH, FL 33069 Phone: 800-762-7009</p>			<p>DRAWN BY: M.C.V./A. DATE: 08-19-08 DRAWING NO: 08-190 SHEET 5 OF 19</p>		

F.B.C./ (N.H.V.H.Z.)



SIDE RAIL ANCHOR SCHEDULE
MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR SPACING (in.) * FOR SIDE RAILS (B), (C), (D), (E) & (F) CONNECTION TO POURED CONCRETE OR MASONRY WALL
 (USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOADS)

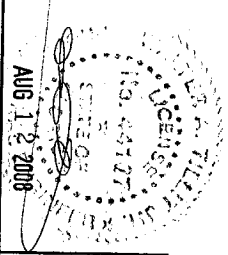
MAXIMUM DESIGN LOAD "W" (p.s.f.)	SIDE RAIL (B)		SIDE RAIL (C)		SIDE RAIL (D)		SIDE RAIL (E)		SIDE RAIL (F)	
	WALL MOUNT	INSIDE MOUNT	WALL MOUNT	INSIDE MOUNT	WALL MOUNT	INSIDE MOUNT	WALL MOUNT	INSIDE MOUNT	WALL MOUNT	INSIDE MOUNT
45 OR LESS	9"	4"	9"	4"	9"	4"	9"	4"	9"	4"
>45 TO 60	9"	6"	9"	6"	9"	6"	9"	6"	9"	6"
>60 TO 100	9"	8 1/2"	9"	8 1/2"	9"	8 1/2"	9"	8 1/2"	9"	8 1/2"
>100 TO 160	9"	10"	9"	10"	9"	10"	9"	10"	9"	10"

SUBSTRATE LEGEND

- POURED CONCRETE
- POURED CONCRETE OR MASONRY

* MAXIMUM ANCHOR SPACING (in.) AT SIDE RAILS VERSUS EDGE DISTANCE = E.D.

MAXIMUM ANCHOR SPACINGS ARE VALID FOR EDGE DISTANCE: FOR E. D. LESS THAN 3" SHOW ANCHOR SPACING BY MULTIPLYING SPACING (IN ORDER) FOR THIS OPERATION TO BE MADE REDUCED SPACING OBTAINED USING FACTORS SHALL NOT BE LESS THAN 3".	ACTUAL E. D.	FACTOR
	1 1/2"	0.33

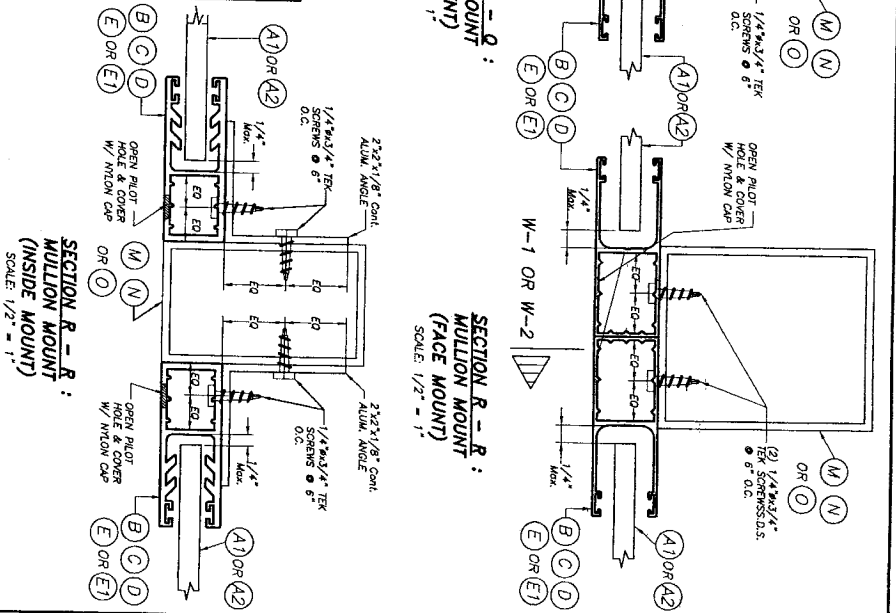


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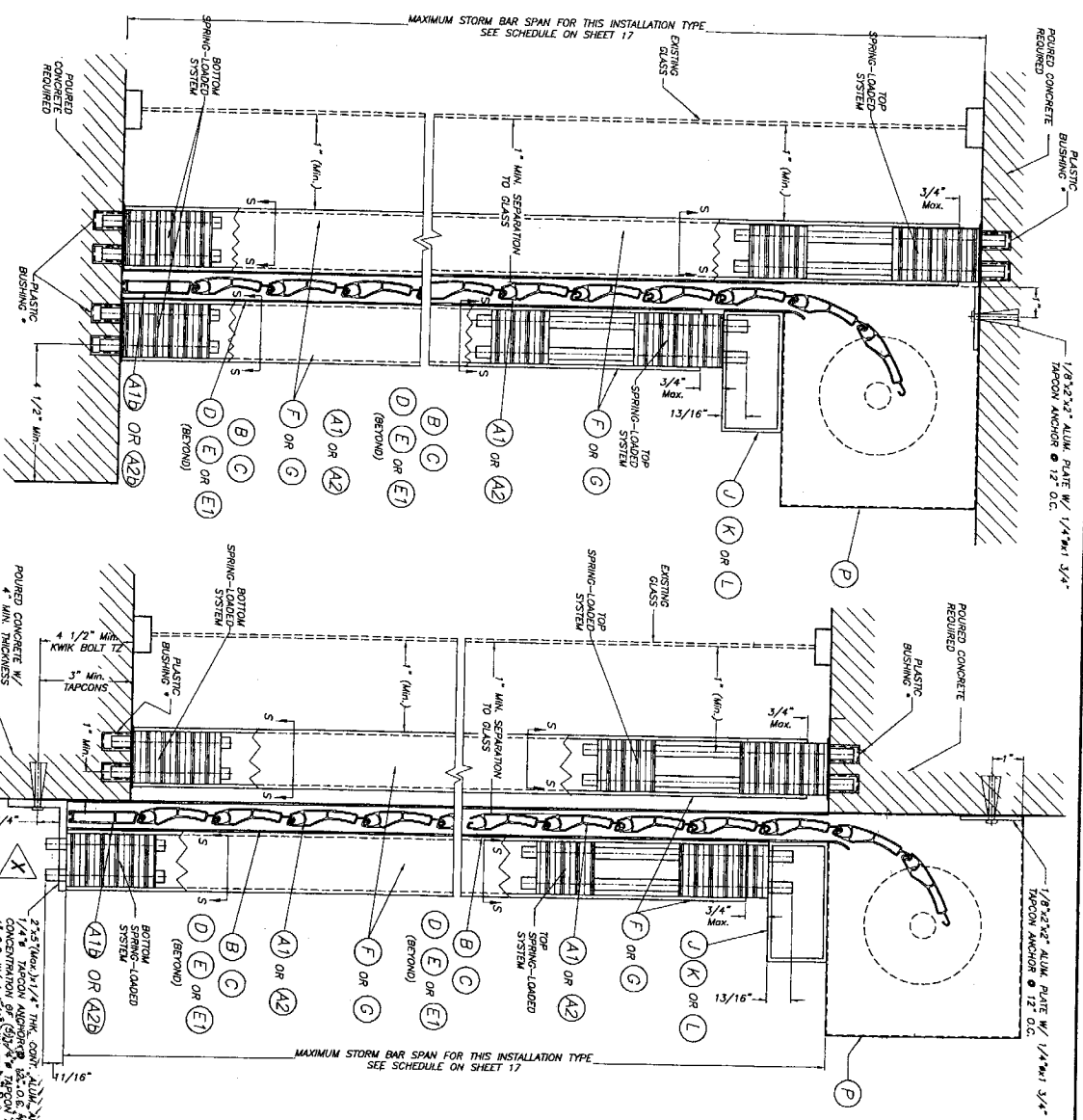
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 PALM BEACH, FL 33409
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ROLLER STAR CORPORATION
 60mm & 40mm ROLL-UP SHUTTER
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DATE: 07/21/08
 DRAWN BY: M.C.V./A.
 DATE: 08-190
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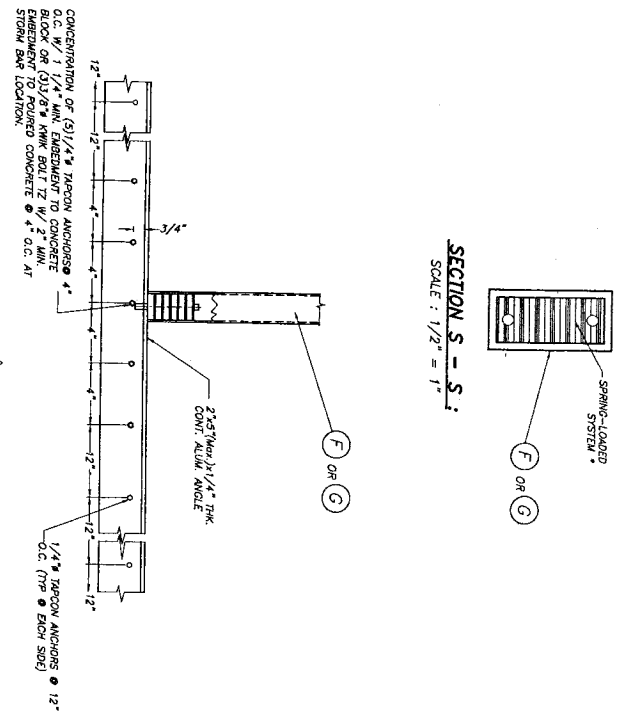
**CEILING & FLOOR MOUNTING INSTALLATION W/
REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***
SCALE: 1/4" = 1"

**WALL MOUNTING INSTALLATION W/
REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***
SCALE: 1/4" = 1"

* SEE SHEET 4 OF 19 FOR SPECS & DETAILS

AUG 1 2008

SECTION S - S:
SCALE: 1/2" = 1"



ELEVATION / X
SCALE: 1/8" = 1"

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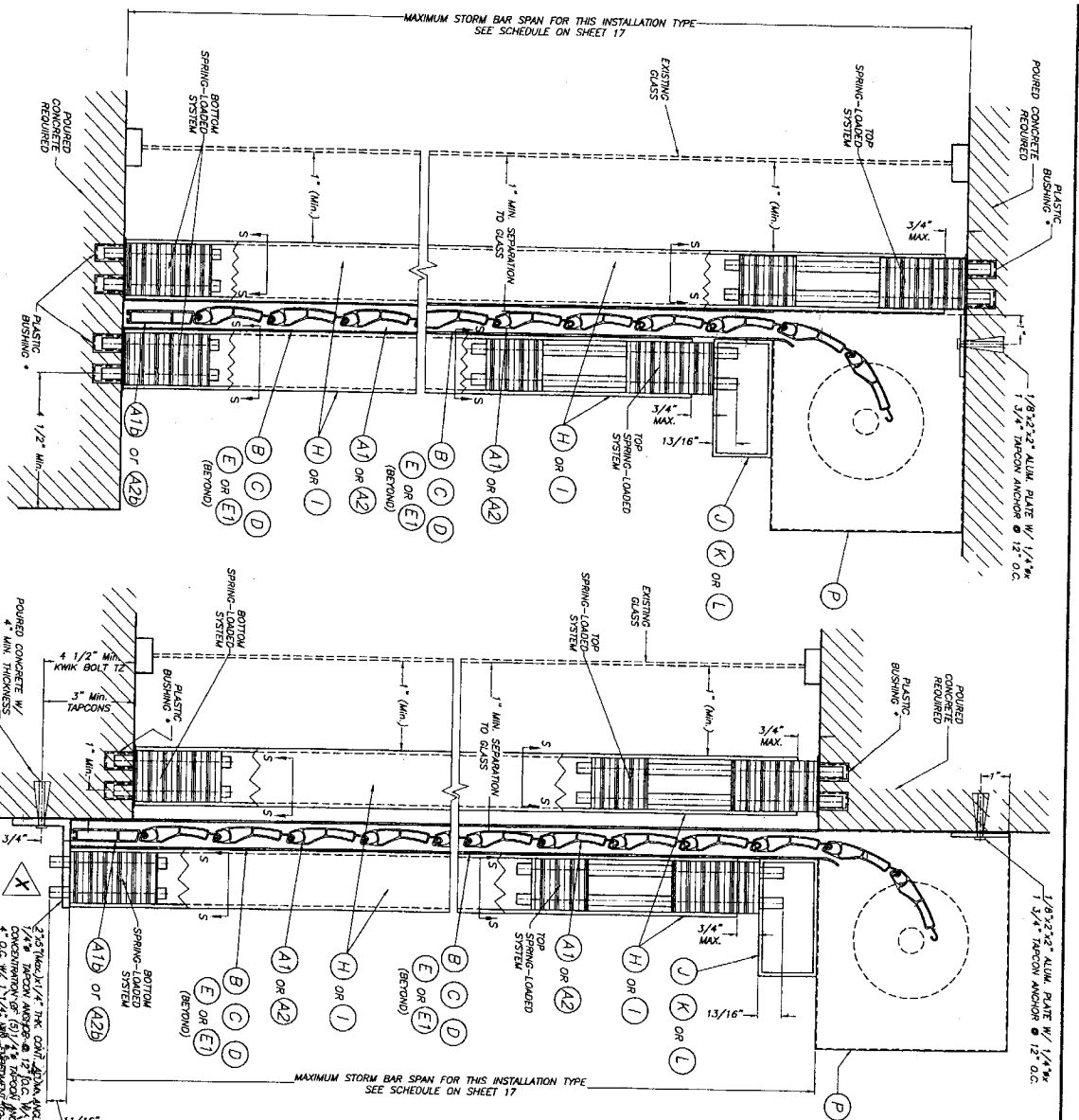
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ROLLER STAR CORPORATION
60mm & 40mm ROLL-UP SHUTTER
DRAWN BY: M.C.V./A.
DATE: 07/21/08

REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	QUO OR-136	7/21/08	1		

08-190
DRAWING NO
SHEET 8 OF 19



**CEILING & FLOOR MOUNTING INSTALLATION W/
REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***

SCALE: 1/4" = 1'

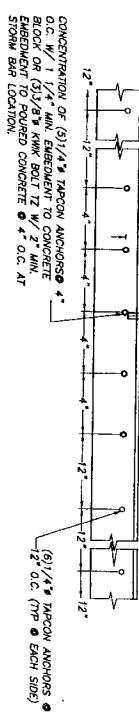
* SEE SHEET 4 OF 19 FOR SPECS.
& DETAILS

SECTIONS V - V (3)

**WALL MOUNTING INSTALLATION W/
REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***

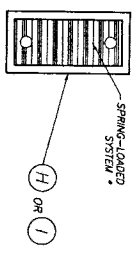
SCALE: 1/4" = 1'

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ELEVATION X
SCALE: 1/8" = 1'

**SECTION S - S:
SINGLE STORM BAR**
SCALE: 1/2" = 1'



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ROLLER STAR CORPORATION

60mm & 40mm ROLL-UP SHUTTER

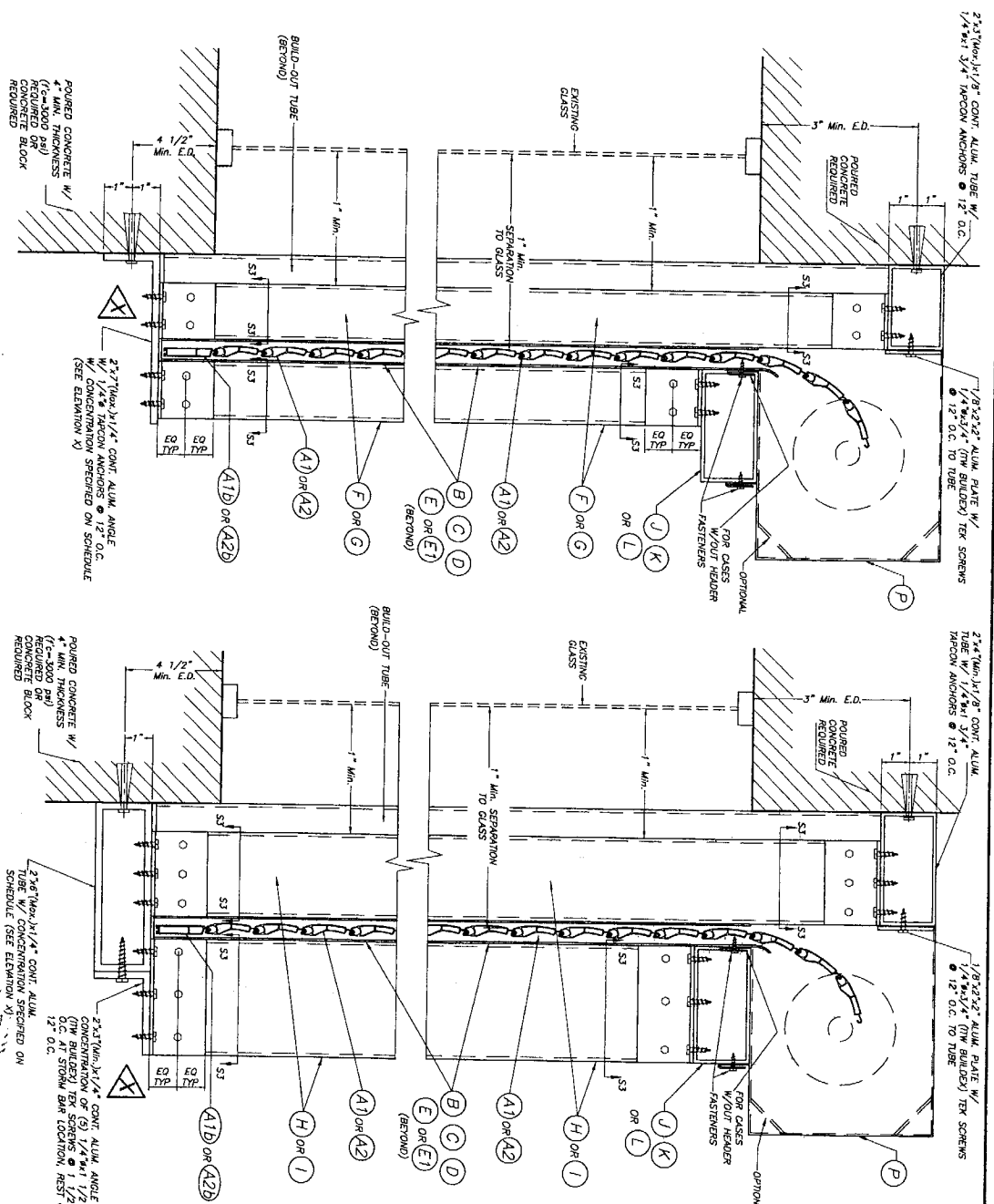
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REV.	NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
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08-130
DRAWING NO.

SHEET 10 OF 19

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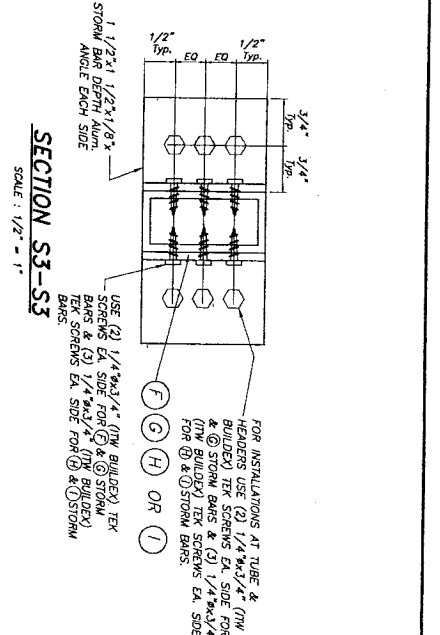
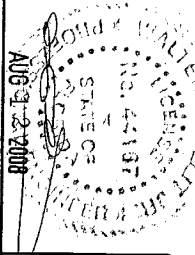


FIXED STORM BAR CONNECTION AT BUILD-OUT
INSTALLATIONS W/ SHEET METAL SCREWS OR MACHINE SCREWS

NOTE: SINGLE SPAN SECTIONS AND DETAILS STORM BAR & HEADERS.

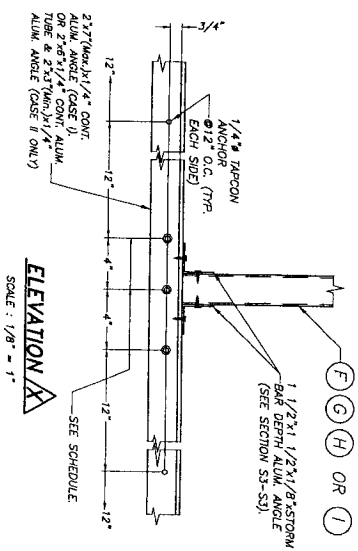
SCALE: 1/4" = 1'
SECTION V - V (3)

CASE II



ANCHORS & STORM BARS SCHEDULE FOR ELEVATION A

CASES	SUBSTRATE	ANCHOR TYPE	STORM BAR TYPE
CASE 1	BLOCK	(2) 3/8" POWER BOLT	(F) (G)
	CONCRETE	(1) 3/8" ANK BOLT TZ	
CASE 2	BLOCK	(2) 3/8" POWER BOLT	(H) (I)
	CONCRETE	(1) 3/8" ANK BOLT TZ	



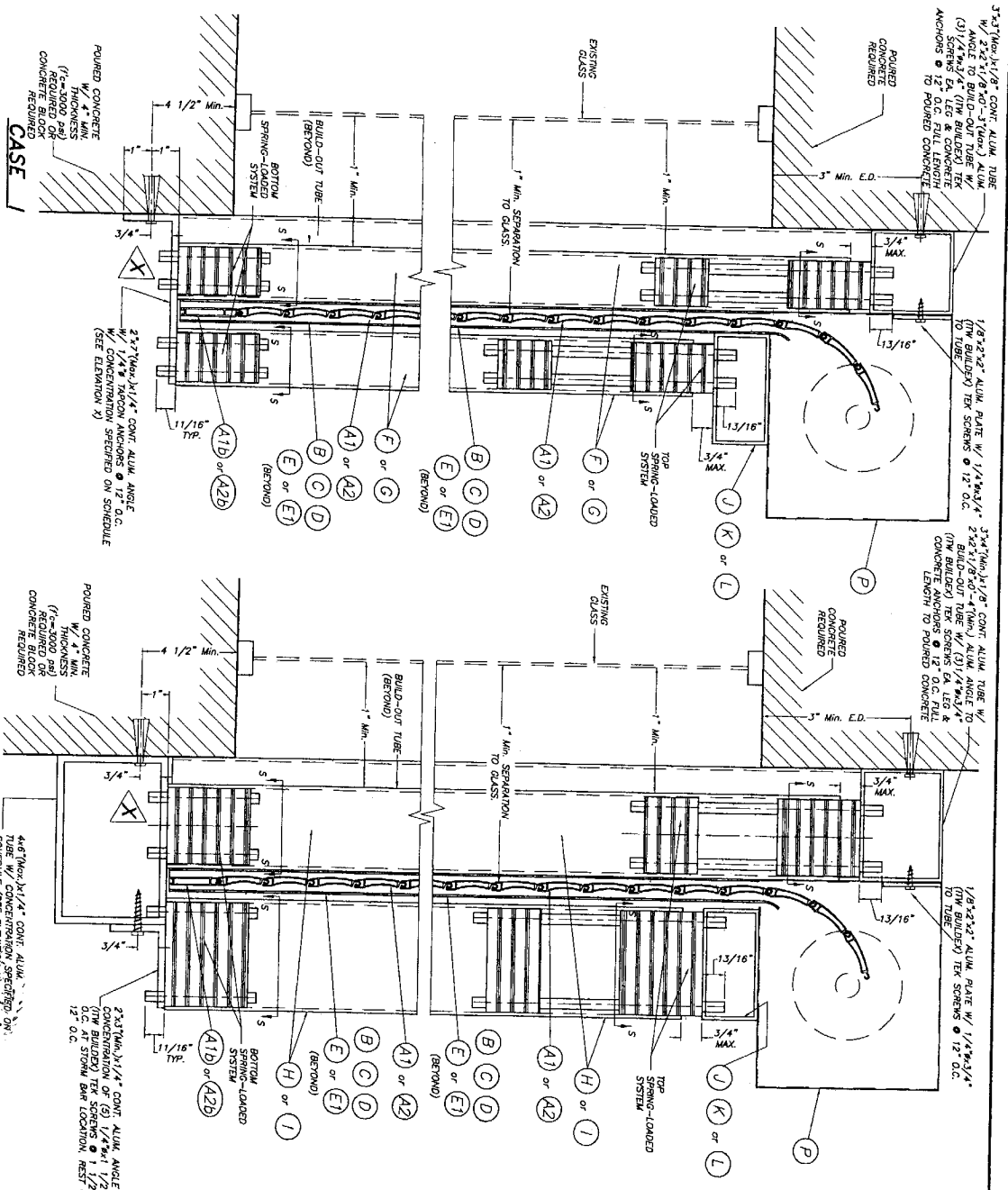
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 1460 SW 6th COURT BUILDING 1400
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 PHONE: 800-782-7009

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 POMPANO BEACH, FL 33069
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REV.	NO.	DESCRIPTION	DATE	BY	CHECKED	DATE
1	01	Q12 Q3-136	7/21/08			

DRAWN BY: M.C.V.A.A.
 DATE: 07/21/08
 DRAWING NO: 08-190
 SHEET 11 OF 19

F.B.C./N.H.V.H.Z.)



**REMOVABLE STORM BAR CONNECTION AT BUILD-OUT
INSTALLATIONS W/SPRING-LOADED SYSTEM ***

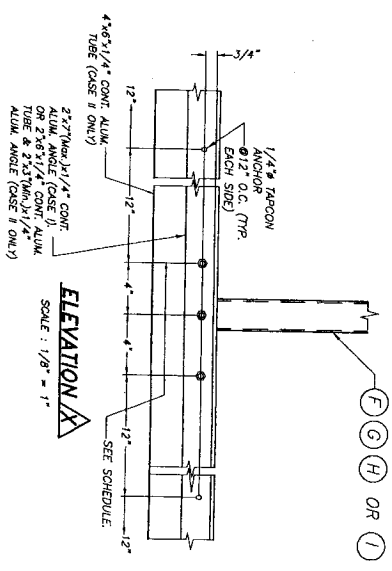
SCALE: 1/4" = 1"

SECTIONS V - V (3)

* SEE SHEET 4 OF 19 FOR SPECS & DETAILS.

AUG - 1 - 2008

SECTION S - S:
SCALE: 1/2" = 1"



ANCHORS & STORM BARS SCHEDULE FOR ELEVATION.

CASES	SUBSTRATE	ANCHOR TYPE	STORM BAR TYPE
CASE 1	BLOCK	(3) 3/8" POWER BOLT	(F) (G)
	CONCRETE	(1) 3/8" KMK BOLT TZ	
CASE 2	BLOCK	(3) 3/8" POWER BOLT	(H) (I)
	CONCRETE	(1) 3/8" KMK BOLT TZ	

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ROLLER STAR CORPORATION
60mm & 40mm ROLL-UP SHUTTER
DRAWN BY: M.C.V./A.
DATE: 07/21/08

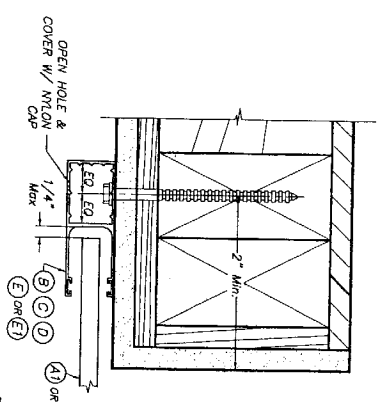
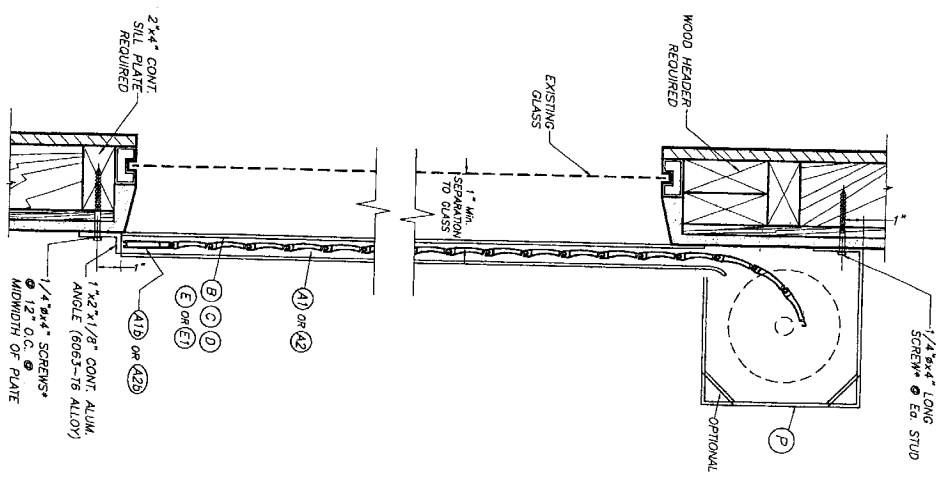
WALTER A. TILITUP, P.E.
FLORIDA LIC # 44187

SHEET 12 OF 19

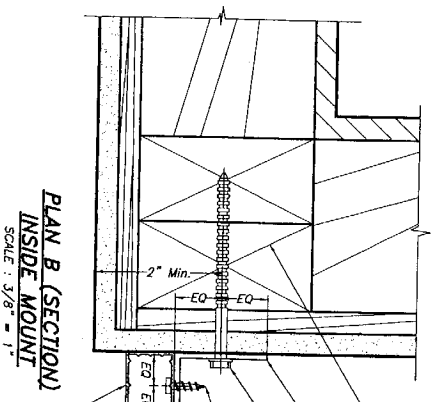
F.B.C./N.H.V.H.Z.)

**WALL MOUNTING INSTALLATION
SINGLE SPAN CONDITION**

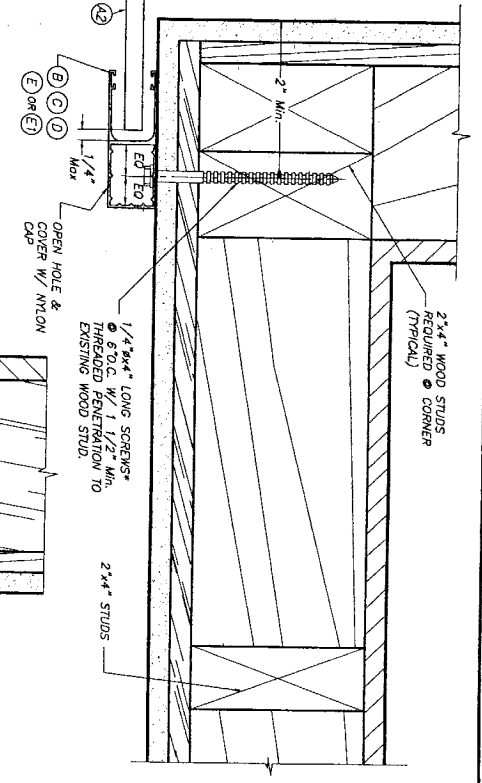
N. I. S.



**PLAN A (SECTION)
WALL MOUNT**
SCALE: 3/8" = 1"



**PLAN B (SECTION)
INSIDE MOUNT**
SCALE: 3/8" = 1"



**PLAN C (SECTION)
BUILD-OUT**
SCALE: 3/8" = 1"

- NOTES:**
1. INSTALLATIONS ARE ONLY VALID FOR BUILDINGS WITH DESIGN LOADS UP TO 90.0 psf.
 2. FOR NEW FRAME CONSTRUCTION, WOOD MEMBER TO BE SOUTHERN PINE No. 2 W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.
 3. MINIMUM PENETRATION OF SCREWS INTO WOOD MEMBER TO BE 1 1/2"
 4. * SCREWS = LAG SCREWS OR TAPCONS.



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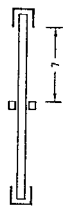
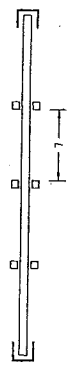
REV. NO.	DESCRIPTION	DATE	BY	CHK.	DATE
1	012-05-13E	7/21/08			
2					

DRAWN BY: M.C.K./A.A.
DATE: 07/21/08
08-190
DRAWING NO.
SHEET 14 OF 19

F.B.C./N.H.V.H.Z.)

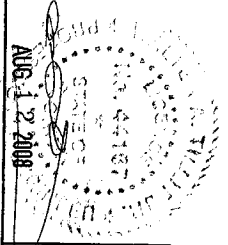
**SLAT PERFORMANCE CHART: MAXIMUM NEGATIVE DESIGN PRESSURE RATING
"W" (P.s.f.) AND CORRESPONDING MAXIMUM SLAT SPAN "L" FOR TYPE 1 & 2 SLAT**
(USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)

SLAT TYPE	(A1) W/ SIDE RAIL (B)	(A1) W/ SIDE RAIL (C)	(A1) W/ SIDE RAIL (D)	(A2) W/ SIDE RAIL (E)	(A2) W/ SIDE RAIL (E1)
MAXIMUM DESIGN LOAD "W" (P.s.f.)					
25.0	8'-4"	7'-4"	7'-0"	5'-6"	5'-0"
30.0	7'-11"	6'-9"	6'-7"	5'-3"	4'-9"
35.0	7'-7"	6'-6"	6'-4"	5'-0"	4'-6"
40.0	7'-3"	6'-3"	6'-1"	4'-10"	4'-4"
45.0	7'-1"	6'-0"	5'-11"	4'-8"	4'-2"
50.0	6'-10"	5'-10"	5'-8"	4'-7"	4'-1"
55.0	6'-8"	5'-8"	5'-7"	4'-5"	4'-0"
60.0	6'-6"	5'-7"	5'-5"	4'-4"	3'-10"
65.0	6'-4"	5'-5"	5'-4"	4'-3"	3'-9"
70.0	6'-3"	5'-4"	5'-2"	4'-2"	3'-8"
75.0	6'-1"	5'-3"	5'-1"	4'-1"	3'-8"
80.0	6'-0"	5'-3"	5'-0"	4'-0"	3'-7"
85.0	5'-10"	5'-0"	5'-0"	3'-11"	3'-6"
90.0	5'-8"	4'-11"	4'-11"	3'-10"	3'-5"
95.0	5'-6"	4'-10"	4'-8"	3'-9"	3'-5"
100.0	5'-4"	4'-8"	4'-8"	3'-9"	3'-4"
105.0	5'-3"	4'-7"	4'-7"	3'-8"	3'-4"
110.0	5'-1"	4'-7"	4'-7"	3'-8"	3'-3"
115.0	5'-0"	4'-6"	4'-6"	3'-7"	3'-3"
120.0	4'-11"	4'-5"	4'-5"	3'-6"	3'-2"
125.0	4'-10"	4'-5"	4'-5"	3'-5"	3'-2"
130.0	4'-8"	4'-4"	4'-4"	3'-4"	3'-1"
135.0	4'-7"	4'-4"	4'-4"	3'-4"	3'-1"
140.0	4'-6"	4'-3"	4'-3"	3'-3"	3'-0"
145.0	4'-5"	4'-3"	4'-3"	3'-2"	3'-0"
150.0	4'-5"	4'-2"	4'-2"	3'-2"	3'-0"
155.0	4'-4"	4'-2"	4'-2"	3'-1"	3'-0"
160.0	4'-3"	4'-1"	4'-1"	3'-0"	2'-11"



SPAN DEFINITION

* MINIMUM SEPARATION TO GLASS FOR SINGLE AND MULTIPLE UNITS SHALL BE MEASURED FROM BACK OF SLAT TO GLASS AND SHALL BE 1".



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MIRAGE, FLORIDA 32051
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e-mail: tilteco@tda.com
FLORIDA Lic # 44167

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
1480 SW 6th COURT BUILDING 1400
MIAMI, FLORIDA 33135
Phone: 800-742-7009

REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	Q/C 08-136	1/23/08	2		

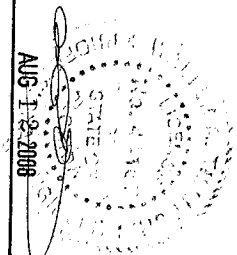
DRAWN BY: MCV/VA
DATE: 07/21/08
DRAWING NO: 08-190
SHEET 15 OF 19

F.B.C. / (N.H.V.H.Z.)

STORM BAR LOADING CHART
MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM SPAN "L"
FOR A GIVEN TYPE OF STORM BAR AND STORM BAR SPACING.
 (USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)
MAX. SPAN FOR STORM BARS W/ REGULAR CONCRETE ANCHORS

MAXIMUM DESIGN LOAD (p.s.f.)	TYPE ① STORM BAR 2" x 2" x 1/4"					TYPE ② STORM BAR 2" x 3" x 1/8"					TYPE ③ STORM BAR 2" x 4" x 1/8"					TYPE ④ STORM BAR 2" x 4" x 1/4"				
	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 6.5'	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 6.5'	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 6.5'	≤ 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 6.5'
45 OR LESS	7'-5"	6'-11"	6'-4"	5'-10"	5'-7"	8'-0"	7'-4"	6'-7"	6'-0"	5'-9"	9'-11"	8'-11"	8'-0"	7'-4"	6'-11"	7'-0"	6'-11"	6'-11"	6'-11"	6'-11"
50	7'-3"	6'-9"	6'-0"	5'-6"	5'-4"	8'-0"	6'-11"	6'-3"	5'-8"	5'-5"	9'-8"	8'-6"	8'-5"	7'-3"	6'-11"	7'-0"	6'-11"	6'-11"	6'-11"	6'-11"
55	7'-0"	6'-5"	5'-9"	5'-3"	5'-2"	7'-8"	6'-8"	6'-1"	5'-5"	5'-5"	9'-4"	8'-4"	8'-4"	7'-3"	6'-11"	6'-8"	6'-11"	6'-11"	6'-11"	6'-11"
60	6'-11"	6'-2"	5'-6"	5'-0"	5'-0"	7'-4"	6'-4"	5'-8"	5'-2"	5'-2"	9'-4"	8'-4"	8'-4"	7'-3"	6'-11"	6'-8"	6'-11"	6'-11"	6'-11"	6'-11"
65	6'-9"	5'-11"	5'-4"	4'-10"	4'-8"	7'-1"	6'-2"	5'-5"	5'-0"	5'-0"	8'-7"	7'-5"	7'-5"	6'-4"	6'-11"	6'-8"	6'-11"	6'-11"	6'-11"	6'-11"
70	6'-7"	5'-8"	5'-1"	4'-8"	4'-6"	6'-9"	5'-11"	5'-3"	4'-10"	4'-10"	8'-3"	7'-2"	7'-2"	6'-5"	6'-11"	6'-5"	6'-11"	6'-11"	6'-11"	6'-11"
75	6'-4"	5'-6"	4'-11"	4'-6"	4'-6"	6'-4"	5'-11"	5'-1"	4'-8"	4'-8"	8'-0"	6'-11"	6'-2"	5'-8"	6'-11"	6'-5"	6'-11"	6'-11"	6'-11"	6'-11"
80	6'-2"	5'-4"	4'-9"	4'-3"	4'-3"	6'-2"	5'-6"	4'-11"	4'-6"	4'-6"	7'-9"	6'-9"	6'-0"	5'-6"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
85	6'-0"	5'-2"	4'-8"	4'-2"	4'-2"	6'-0"	5'-2"	4'-8"	4'-4"	4'-4"	7'-6"	6'-6"	5'-10"	5'-4"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
90	5'-10"	5'-0"	4'-6"	4'-0"	4'-1"	6'-0"	5'-2"	4'-8"	4'-4"	4'-4"	7'-4"	6'-4"	5'-10"	5'-2"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
95	5'-8"	4'-11"	4'-5"	4'-0"	4'-1"	5'-10"	5'-1"	4'-6"	4'-1"	4'-1"	7'-1"	6'-2"	5'-6"	5'-0"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
100	5'-6"	4'-9"	4'-3"	3'-11"	4'-0"	5'-8"	4'-11"	4'-5"	4'-0"	4'-0"	7'-1"	6'-2"	5'-6"	5'-0"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
105	5'-5"	4'-8"	4'-2"	3'-10"	4'-0"	5'-7"	4'-10"	4'-4"	4'-4"	4'-4"	6'-9"	5'-10"	5'-3"	4'-9"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
110	5'-3"	4'-7"	4'-1"	3'-10"	4'-0"	5'-5"	4'-8"	4'-2"	4'-4"	4'-4"	6'-7"	5'-9"	5'-3"	4'-9"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
115	5'-2"	4'-5"	4'-0"	3'-11"	4'-0"	5'-4"	4'-7"	4'-1"	4'-1"	4'-1"	6'-6"	5'-7"	5'-0"	4'-11"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
120	5'-0"	4'-4"	3'-11"	3'-10"	4'-0"	5'-2"	4'-6"	4'-1"	4'-0"	4'-0"	6'-6"	5'-6"	5'-0"	4'-11"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
125	4'-11"	4'-3"	3'-10"	3'-9"	4'-0"	5'-1"	4'-5"	4'-1"	3'-11"	4'-0"	6'-4"	5'-6"	5'-0"	4'-11"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
130	4'-10"	4'-2"	3'-9"	3'-8"	4'-0"	5'-0"	4'-4"	4'-1"	3'-10"	4'-0"	6'-2"	5'-4"	4'-10"	4'-10"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
135	4'-9"	4'-1"	3'-8"	3'-7"	4'-0"	4'-11"	4'-3"	3'-9"	3'-9"	4'-0"	6'-0"	5'-3"	4'-9"	4'-9"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
140	4'-8"	4'-0"	3'-7"	3'-7"	4'-0"	4'-10"	4'-2"	3'-9"	3'-9"	4'-0"	5'-10"	5'-1"	4'-7"	4'-7"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
145	4'-7"	4'-0"	3'-7"	3'-7"	4'-0"	4'-9"	4'-1"	3'-8"	3'-8"	4'-0"	5'-9"	5'-0"	4'-6"	4'-6"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
150	4'-6"	3'-11"	3'-6"	3'-5"	4'-0"	4'-8"	4'-0"	3'-7"	3'-7"	4'-0"	5'-8"	4'-11"	4'-5"	4'-5"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
155	4'-5"	3'-10"	3'-5"	3'-5"	4'-0"	4'-7"	3'-11"	3'-6"	3'-6"	4'-0"	5'-7"	4'-10"	4'-4"	4'-4"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"
160	4'-4"	3'-9"	3'-5"	3'-5"	4'-0"	4'-6"	3'-11"	3'-6"	3'-6"	4'-0"	5'-6"	4'-9"	4'-3"	4'-3"	6'-11"	6'-0"	6'-11"	6'-11"	6'-11"	6'-11"

* STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED.



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ROLLER STAR CORPORATION
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REV. NO.	1	DATE	02-05-13E	REV. NO.	2	DATE	7/21/08
DESCRIPTION		REVISION		DESCRIPTION		REVISION	

DRAWN BY: M.C.M./A.L.
 DATE: 07/21/08
 08-190
 DRAWING NO.
 SHEET 16 OF 19

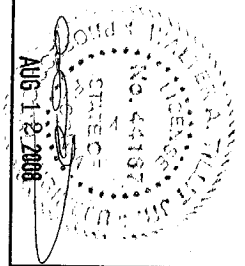
F.B.C./N.H.V.H.Z.)

STORM BAR LOADING CHART
MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING MAXIMUM SPAN "L" FOR A GIVEN TYPE OF STORM BAR AND STORM BAR SPACING.
 (USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)

MAX. SPAN FOR STORM BARS W/SPRING-LOADED SYSTEM

MAXIMUM DESIGN LOAD (p.s.f.)	TYPE 1 STORM BAR 2'x2'x1/4"						TYPE 2 STORM BAR 2'x3'x1/8"						TYPE 3 STORM BAR 2'x4'x1/8"						TYPE 4 STORM BAR 2'x4'x1/4"					
	STORM BAR SPACING						STORM BAR SPACING						STORM BAR SPACING						STORM BAR SPACING					
	2' TO 3'	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 7'	7' TO 8'	2' TO 3'	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 7'	7' TO 8'	2' TO 3'	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 7'	7' TO 8'	2' TO 3'	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 7'	7' TO 8'
25	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
30	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
35	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
40	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
45	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
50	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
55	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
60	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
65	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
70	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
75	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
80	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
85	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
90	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
95	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
100	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
105	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
110	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
115	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
120	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
125	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"
130	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	10'-0"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"	11'-6"

* STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED.



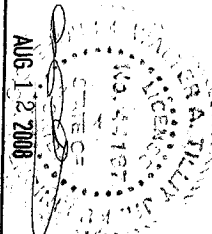
TILECO INC.
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ROLLER STAR CORPORATION
 60mm & 40mm ROLL-UP SHUTTER
 DRAWN BY: M.C.V.A.A.
 DATE: 07/21/08
 1460 SW 6th COURT BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-792-7008
 DATE: 08-190
 DRAWING No
 SHEET 17 OF 19

F.B.C./N.H.V.H.Z.)

**HEADER LOADING CHART MAXIMUM NEGATIVE DESIGN PRESSURE RATING "W" (P.s.f.)
AND CORRESPONDING MAXIMUM SPAN "L" FOR A GIVEN TYPE OF HEADER.
(USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)**

MAXIMUM DESIGN LOAD W ^o (p.s.f.)	TYPE ① HEADER 2" x 4" x 1/8"				TYPE ② HEADER 2" x 4" x 1/4"				TYPE ③ HEADER 2" x 6" x 1/4"				
	STORM BAR HEIGHT				STORM BAR HEIGHT				STORM BAR HEIGHT				
400 OR LESS	≤ 5'-0"	5' TO 8'	8' TO 10'	≤ 6'-0"	6' TO 8'	8' TO 10'	10' TO 12'	12' TO 14'	≤ 6'-0"	6' TO 8'	8' TO 10'	10' TO 12'	12' TO 14'
450	12'-2"	9'-8"	8'-8"	14'-10"	12'-10"	11'-6"	10'-6"	9'-9"	19'-4"	17'-8"	15'-9"	14'-5"	13'-4"
500	11'-6"	9'-1"	8'-2"	14'-0"	12'-2"	10'-10"	10'-10"	9'-11"	18'-10"	16'-8"	14'-11"	13'-7"	12'-7"
550	10'-11"	8'-8"	7'-4"	13'-4"	11'-6"	10'-4"	9'-5"	8'-9"	18'-3"	15'-9"	14'-1"	12'-11"	12'-2"
600	10'-5"	8'-3"	7'-4"	12'-8"	12'-8"	11'-0"	9'-10"	9'-0"	17'-5"	15'-1"	13'-6"	12'-3"	11'-5"
650	10'-0"	7'-11"	7'-1"	12'-2"	10'-6"	10'-6"	9'-5"	8'-7"	16'-8"	14'-5"	12'-11"	11'-9"	10'-11"
700	9'-7"	7'-7"	6'-9"	11'-8"	10'-1"	9'-0"	8'-3"	7'-8"	16'-0"	13'-10"	12'-5"	11'-4"	10'-6"
750	8'-11"	7'-1"	6'-4"	11'-3"	10'-10"	9'-5"	8'-8"	7'-11"	15'-5"	13'-4"	11'-11"	10'-11"	10'-1"
800	8'-8"	6'-10"	5'-11"	10'-10"	10'-6"	9'-1"	8'-2"	7'-8"	14'-11"	12'-11"	11'-6"	10'-6"	9'-9"
850	8'-4"	6'-7"	5'-11"	10'-6"	9'-1"	8'-2"	7'-5"	7'-3"	14'-5"	12'-6"	11'-2"	10'-2"	9'-5"
900	8'-2"	6'-5"	5'-9"	10'-2"	8'-10"	7'-11"	7'-0"	6'-8"	14'-0"	12'-1"	10'-10"	9'-11"	9'-2"
950	7'-11"	6'-3"	5'-7"	9'-8"	8'-4"	7'-8"	7'-0"	6'-6"	13'-7"	11'-9"	10'-6"	9'-4"	8'-8"
1000	7'-9"	6'-1"	5'-6"	9'-5"	8'-2"	7'-3"	6'-10"	6'-2"	13'-3"	11'-5"	10'-3"	9'-4"	8'-5"
1050	7'-6"	5'-11"	5'-4"	9'-2"	7'-11"	7'-1"	6'-6"	6'-0"	12'-11"	11'-2"	10'-0"	9'-1"	8'-3"
1100	7'-4"	5'-10"	5'-2"	9'-0"	7'-9"	6'-11"	6'-4"	5'-10"	12'-7"	10'-11"	10'-0"	9'-1"	8'-3"
1150	7'-2"	5'-8"	5'-1"	8'-9"	7'-7"	6'-9"	6'-2"	5'-9"	12'-3"	10'-8"	9'-8"	8'-8"	8'-1"
1200	7'-1"	5'-7"	5'-0"	8'-7"	7'-5"	6'-8"	6'-2"	5'-7"	12'-0"	10'-5"	9'-4"	8'-6"	7'-10"
1250	6'-11"	5'-6"	4'-11"	8'-5"	7'-3"	6'-6"	6'-1"	5'-7"	11'-9"	10'-2"	9'-1"	8'-4"	7'-8"
1300	6'-9"	5'-4"	4'-9"	8'-3"	7'-2"	6'-5"	5'-11"	5'-6"	11'-6"	10'-0"	8'-11"	8'-2"	7'-7"
1350	6'-8"	5'-3"	4'-8"	8'-1"	7'-0"	6'-3"	5'-9"	5'-4"	11'-4"	9'-9"	8'-9"	8'-0"	7'-5"
1400	6'-6"	5'-2"	4'-7"	7'-11"	6'-11"	6'-2"	5'-7"	5'-1"	11'-1"	9'-7"	8'-7"	7'-10"	7'-3"
1450	6'-5"	5'-1"	4'-6"	7'-10"	6'-9"	6'-2"	5'-6"	5'-1"	10'-11"	9'-5"	8'-5"	7'-8"	7'-2"
1500	6'-4"	5'-0"	4'-5"	7'-8"	6'-8"	6'-1"	5'-5"	5'-0"	10'-6"	9'-3"	8'-3"	7'-7"	7'-0"
1550	6'-2"	4'-11"	4'-5"	7'-7"	6'-7"	6'-1"	5'-4"	4'-11"	10'-4"	9'-1"	8'-2"	7'-6"	6'-11"
1600	6'-1"	4'-10"	4'-4"	7'-5"	6'-5"	5'-9"	5'-3"	4'-10"	10'-2"	9'-0"	8'-0"	7'-4"	6'-9"



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60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
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POUNAWO BEACH, FL 33069
Phone: 800-762-7009

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DATE: 07/21/08
08-130
DRAWING NO.
SHEET 18 OF 19

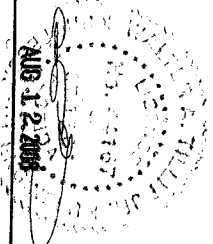
REV.	DATE	BY	CHK.
1	02/21/08	J	J

F.B.C./ (N.H.V.H.Z.)

**MULLION LOADING CHART MAXIMUM DESIGN PRESSURE RATING "W" (p.s.f.) AND CORRESPONDING
MAXIMUM SPAN "L" (FT) FOR A GIVEN TYPE OF MULLION AND MULLION SPACING (FT.).**
(USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)

MAXIMUM DESIGN LOAD (p.s.f.)	TYPE ① MULLION (M) 2" x 3" x 1/4"										TYPE ② MULLION (N) 4" x 4" x 1/4"										TYPE ③ MULLION (O) 4" x 6" x 1/4"									
	MULLION SPACING										MULLION SPACING										MULLION SPACING									
	3'-0"	3'-0"	4'-0"	4'-0"	5'-0"	5'-0"	6'-0"	6'-0"	8'-0"	8'-0"	4'-0"	4'-0"	5'-0"	5'-0"	6'-0"	6'-0"	8'-0"	8'-0"	10'-0"	10'-0"	4'-0"	4'-0"	5'-0"	5'-0"	6'-0"	6'-0"	8'-0"	8'-0"	10'-0"	10'-0"
45.0 OR LESS	8'-3"	7'-6"	7'-6"	6'-11"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	10'-11"	10'-11"	10'-2"	9'-7"	8'-8"	8'-8"	15'-8"	14'-7"	13'-8"	12'-5"	11'-2"	11'-2"	13'-8"	12'-5"	11'-2"	11'-2"	11'-2"	11'-2"	10'-11"	10'-11"
50.0	7'-11"	7'-3"	6'-8"	6'-8"	6'-4"	6'-4"	6'-4"	6'-4"	6'-4"	6'-4"	10'-7"	10'-7"	9'-3"	8'-5"	8'-5"	14'-8"	14'-8"	13'-7"	12'-10"	12'-10"	11'-2"	11'-2"	12'-10"	11'-8"	10'-10"	10'-2"	10'-6"	10'-6"	10'-6"	
55.0	7'-6"	7'-0"	6'-6"	6'-6"	6'-1"	6'-1"	6'-1"	6'-1"	6'-1"	6'-1"	10'-3"	10'-3"	9'-9"	8'-2"	8'-2"	14'-3"	13'-3"	12'-5"	12'-5"	11'-4"	10'-6"	10'-6"	11'-4"	10'-6"	10'-6"	10'-6"	10'-6"	10'-6"	10'-6"	10'-6"
60.0	7'-6"	6'-10"	6'-4"	6'-4"	5'-11"	5'-11"	5'-9"	5'-9"	5'-9"	5'-9"	10'-0"	10'-0"	9'-4"	8'-0"	8'-0"	13'-11"	12'-11"	12'-2"	12'-2"	11'-0"	10'-3"	10'-3"	11'-0"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"
65.0	7'-3"	6'-7"	6'-2"	6'-2"	5'-8"	5'-8"	5'-8"	5'-8"	5'-8"	5'-8"	9'-9"	9'-9"	8'-6"	7'-11"	7'-11"	13'-7"	12'-7"	12'-7"	12'-7"	11'-0"	10'-3"	10'-3"	11'-0"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"
70.0	7'-1"	6'-6"	6'-0"	6'-0"	5'-8"	5'-8"	5'-6"	5'-6"	5'-6"	5'-6"	9'-7"	9'-7"	8'-4"	7'-9"	7'-9"	13'-5"	12'-5"	12'-5"	12'-5"	11'-0"	10'-3"	10'-3"	11'-0"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"
75.0	6'-11"	6'-4"	5'-10"	5'-10"	5'-9"	5'-9"	5'-6"	5'-6"	5'-6"	5'-6"	9'-7"	9'-7"	8'-4"	7'-9"	7'-9"	13'-3"	12'-3"	12'-3"	12'-3"	11'-0"	10'-3"	10'-3"	11'-0"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"
80.0	6'-10"	6'-2"	5'-9"	5'-9"	5'-5"	5'-5"	5'-5"	5'-5"	5'-5"	5'-5"	9'-4"	9'-4"	8'-8"	7'-5"	7'-5"	12'-11"	12'-0"	12'-0"	12'-0"	11'-4"	10'-3"	10'-3"	11'-4"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"	10'-3"
85.0	6'-8"	6'-1"	5'-7"	5'-7"	5'-5"	5'-5"	5'-3"	5'-3"	5'-3"	5'-3"	9'-2"	9'-2"	8'-6"	7'-3"	7'-3"	12'-8"	11'-9"	11'-9"	11'-9"	11'-1"	10'-1"	10'-1"	11'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"
90.0	6'-6"	5'-11"	5'-6"	5'-6"	5'-2"	5'-2"	5'-2"	5'-2"	5'-2"	5'-2"	9'-0"	9'-0"	8'-4"	7'-10"	7'-10"	12'-5"	11'-7"	11'-7"	11'-7"	11'-1"	10'-1"	10'-1"	11'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"
95.0	6'-5"	5'-10"	5'-5"	5'-5"	5'-1"	5'-1"	5'-1"	5'-1"	5'-1"	5'-1"	8'-10"	8'-10"	8'-4"	7'-9"	7'-9"	12'-3"	11'-4"	11'-4"	11'-4"	11'-4"	10'-8"	10'-8"	11'-4"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"	10'-8"
100.0	6'-4"	5'-9"	5'-4"	5'-4"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	8'-8"	8'-8"	8'-1"	7'-9"	7'-9"	12'-0"	11'-4"	11'-4"	11'-4"	11'-4"	10'-6"	10'-6"	11'-4"	10'-6"	10'-6"	10'-6"	10'-6"	10'-6"	10'-6"	10'-6"
105.0	6'-3"	5'-8"	5'-3"	5'-3"	4'-11"	4'-11"	4'-11"	4'-11"	4'-11"	4'-11"	8'-6"	8'-6"	8'-1"	7'-7"	7'-7"	11'-10"	11'-0"	11'-0"	11'-0"	11'-0"	10'-4"	10'-4"	11'-0"	10'-4"	10'-4"	10'-4"	10'-4"	10'-4"	10'-4"	10'-4"
110.0	6'-1"	5'-7"	5'-2"	5'-2"	4'-10"	4'-10"	4'-10"	4'-10"	4'-10"	4'-10"	8'-5"	8'-5"	7'-10"	7'-4"	7'-4"	11'-8"	10'-10"	10'-10"	10'-10"	10'-2"	9'-3"	9'-3"	10'-2"	9'-3"	9'-3"	9'-3"	9'-3"	9'-3"	9'-3"	9'-3"
115.0	6'-0"	5'-6"	5'-1"	5'-1"	4'-9"	4'-9"	4'-9"	4'-9"	4'-9"	4'-9"	8'-3"	8'-3"	7'-8"	7'-3"	7'-3"	11'-6"	10'-8"	10'-8"	10'-8"	10'-0"	9'-1"	9'-1"	10'-0"	9'-1"	9'-1"	9'-1"	9'-1"	9'-1"	9'-1"	9'-1"
120.0	5'-11"	5'-5"	5'-0"	5'-0"	4'-9"	4'-9"	4'-8"	4'-8"	4'-8"	4'-8"	8'-2"	8'-2"	7'-7"	7'-2"	7'-2"	11'-4"	10'-6"	10'-6"	10'-6"	9'-9"	8'-10"	8'-10"	9'-9"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"
125.0	5'-10"	5'-4"	4'-11"	4'-11"	4'-8"	4'-8"	4'-8"	4'-8"	4'-8"	4'-8"	8'-1"	8'-1"	7'-6"	7'-0"	7'-0"	11'-2"	10'-4"	10'-4"	10'-4"	9'-8"	8'-10"	8'-10"	9'-8"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"
130.0	5'-9"	5'-3"	4'-11"	4'-11"	4'-7"	4'-7"	4'-7"	4'-7"	4'-7"	4'-7"	8'-1"	8'-1"	7'-5"	7'-0"	7'-0"	11'-0"	10'-3"	10'-3"	10'-3"	9'-6"	8'-8"	8'-8"	9'-6"	8'-8"	8'-8"	8'-8"	8'-8"	8'-8"	8'-8"	8'-8"
135.0	5'-9"	5'-2"	4'-10"	4'-10"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	4'-6"	7'-10"	7'-3"	7'-3"	6'-10"	6'-3"	6'-3"	10'-11"	10'-1"	10'-1"	9'-6"	8'-6"	8'-6"	9'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"
140.0	5'-8"	5'-2"	4'-9"	4'-9"	4'-5"	4'-5"	4'-5"	4'-5"	4'-5"	4'-5"	7'-9"	7'-2"	7'-2"	6'-9"	6'-3"	6'-3"	10'-9"	10'-0"	10'-0"	9'-5"	8'-4"	8'-4"	9'-5"	8'-4"	8'-4"	8'-4"	8'-4"	8'-4"	8'-4"	8'-4"
145.0	5'-6"	5'-1"	4'-8"	4'-8"	4'-4"	4'-4"	4'-4"	4'-4"	4'-4"	4'-4"	7'-8"	7'-1"	7'-1"	6'-8"	6'-1"	6'-1"	10'-7"	9'-10"	9'-10"	9'-3"	8'-3"	8'-3"	9'-3"	8'-3"	8'-3"	8'-3"	8'-3"	8'-3"	8'-3"	8'-3"
150.0	5'-6"	5'-0"	4'-8"	4'-8"	4'-3"	4'-3"	4'-3"	4'-3"	4'-3"	4'-3"	7'-7"	7'-0"	7'-0"	6'-7"	6'-0"	6'-0"	10'-5"	9'-8"	9'-8"	9'-2"	8'-1"	8'-1"	9'-2"	8'-1"	8'-1"	8'-1"	8'-1"	8'-1"	8'-1"	8'-1"
155.0	5'-5"	4'-11"	4'-7"	4'-7"	4'-2"	4'-2"	4'-2"	4'-2"	4'-2"	4'-2"	7'-6"	7'-0"	6'-7"	6'-1"	6'-1"	10'-5"	9'-8"	9'-8"	9'-8"	8'-1"	7'-11"	7'-11"	9'-8"	8'-1"	8'-1"	8'-1"	8'-1"	8'-1"	8'-1"	8'-1"
160.0	5'-5"	4'-11"	4'-6"	4'-6"	4'-1"	4'-1"	4'-1"	4'-1"	4'-1"	4'-1"	7'-5"	6'-11"	6'-6"	5'-10"	5'-10"	10'-0"	9'-7"	9'-7"	9'-7"	8'-10"	7'-10"	7'-10"	9'-7"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"	8'-10"

NOTES : REFER TO ELEVATIONS ON SHEET 2 OF 19
 1- FOR MULLIONS INSTALLED W/O STORM BARS
 A) MULLION SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED
 2- FOR MULLIONS INSTALLED W/ STORM BARS & HEADERS
 A) MULLION SPACING SHALL BE SUCH THAT MAXIMUM HEADER SPAN SHALL NOT BE EXCEEDED
 B) STORM BAR SPACING SHALL BE SUCH THAT MAXIMUM SLAT SPAN SHALL NOT BE EXCEEDED



TILECO INC.
 2008 TILECO, INC.
 TILLET TESTING & ENGINEERING COMPANY
 1460 SW 8th COURT BUILDING 1400
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 WWW.TILECO.COM
 ER-0008719
 WALTER A. TILLET, P.E.
 FLORIDA LIC. # 41167

ROLLER STAR CORPORATION
 60mm & 40mm ROLL-UP SHUTTER
 DRAWN BY: M.C.V./A.
 DATE: 07/21/98
 1460 SW 8th COURT BUILDING 1400
 FORT LAUDERDALE, FL 33309
 Phone: 800-762-7009
 OB-190
 DRAWING NO.
 SHEET 19 OF 19

F.B.C./ (N.H.V.H.Z.)