

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 MAY BE INSTALLED AT HIGH ELEVATION ZONE OR STORM ZONE.
- DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE ABOVE MENTIONED CODE. IN ORDER TO VERIFY THAT WIND LOADS AND ANCHORS ON THIS P.E.D. ARE TESTED WERE NOT OVER STRESSED, A 11% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THIS ANALYSIS. HOWEVER, A DURATION FACTOR OF 1.60 WAS USED FOR VERIFICATION OF FASTENERS IN WOOD.
- ROLL-UP SHUTTERS'S ADJUDICATORY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1626 OF THE ABOVE MENTIONED CODE AS PER 16S-2011, 202 & 203 PROTOCOLS PER FEMURATION TESTING LAB REPORTS # 4195, 4196, 4197, 4198, 4199, 4200, 4201, 4202, 4203, 4204, 4205, 4206, 4207, 4211, 4212, 4214, 4215, 4217, 4219, 4221, 4223, 4224, 4226, 4227, 4228, 4229, 4230, 4232, 4233, 4234, 4235, 4236, 4239 & 4238.
- ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 8063-T6 ALLOY & TEMPER (UNLESS OTHERWISE NOTED).
- ALL SCREENS 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 SCREENS SHALL BE AS MANUFACTURED BY THE BUILDEX, 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 ACQUIND INSTALLATIONS MAY BE REMOVABLE AT NON HURRICANE CONDITIONS. HOWEVER, EACH STORM BAR SHALL BEK REMAINING 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 BAR 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 RAILS & BOX CONNECTION SHALL BE AS FOLLOWS: (UNLESS OTHERWISE NOTED)
 - TO EXISTING POURED CONCRETE (Min. $f_c=3192$ psi).
 - 1/4" TAPCON ANCHORS MANUFACTURED BY THE BUILDEX, INC.
- 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
 - 1/4" TAPCON ANCHORS MANUFACTURED BY THE BUILDEX, INC.
 - 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:
 - LAG SCREWS PER N.D.S. 2005
 - 1/4" TAPCON ANCHORS PER N.D.S. 2005
- 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, VENER OR PAVERS BE FOUND ON THE EXISTING WALL, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE 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 & MULLION 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 & CAL-IN ANCHORS TO BE MANUFACTURED BY POWERS FASTENERS, INC., KIM BOLT 12 MANUFACTURED BY MILIT, INC., & TAPCON ANCHORS MANUFACTURED BY I.T.W. BUILDEX, INC.

ANCHOR	SPACING	EDGE DISTANCE	POURED CONCRETE	MINIMUM EMBEDMENT
-1/4" TAPCON	3"	3"	1 3/4" (Min. $f_c=3192$ psi)	1 1/4" (ASTM C-90)
-1/4" CALK-IN	2 1/2"	1 1/2"	1 7/8" (Min. $f_c=3000$ psi)	-
-3/8" CALK-IN	3 3/4"	1 1/2"	1 7/8" (Min. $f_c=3000$ psi)	-
-3/8" POWER BOLT	3 3/4"	4 1/2"	1 3/4" (Min. $f_c=3000$ psi)	-
-3/8" KWK BOLT T2	6"	3/8"	2" (Min. $f_c=3000$ psi)	1 1/4" (ASTM C-90)
-1/2" KWK BOLT T2	9 3/4"	6"	3 1/4" (Min. $f_c=3000$ psi)	-

10. PROTEUS® FLAME RETARDANT 186, IS A POLYPROPYLENE MANUFACTURED BY POLY H SOLIDUR, INC. USED AT SPRING LOADED SYSTEM FOR REMOVABLE STORM BARS & COMPLETS W/ THE FOLLOWING SPECIFICATIONS:

DESIGNATION	PROPERTIES	VALUE
ASTM D-792	DENSITY	59.51 lb/ft ³ (AVERAGE)
ASTM D-638	YIELD POINT	3200 psi (AVERAGE)
ASTM D-638	TENSILE BREAK	3250 psi (AVERAGE)
ASTM D-638	ELONGATION AT BREAK	600 % (AVERAGE)
ASTM D-790	FLEXURAL MODULUS	145000 psi (AVERAGE)
ASTM D-4020	IZOD IMPACT	0.15 ft-lbs/inch (AVERAGE)
UL 94	BURN RATING	V-0-5-1A (AVERAGE)
ASTM E-84	FLAME SPREAD INDEX	15.97 (AVERAGE)
ASTM E-84	SMOKE DEVELOPMENT INDEX	375.97 (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 ONLY BE ATTACHED TO CONCRETE, BLOCK OR WOOD FRAME BUILDINGS STRICTLY FOLLOWING DETAILS INDICATED ON THIS DRAWING.

12. THE INSTALLATION CONTRACTOR IS TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION, CAULK 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 GENERAL AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; (b) WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

(c) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF 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.

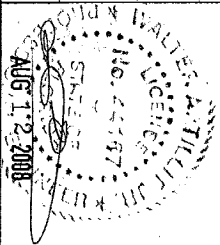
(d) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(e) 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.

(f) 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.

(g) 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.B.3 OF FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABELING TO COMPLY WITH SECTION 1714.B.2 OF THE FLORIDA BUILDING CODE.



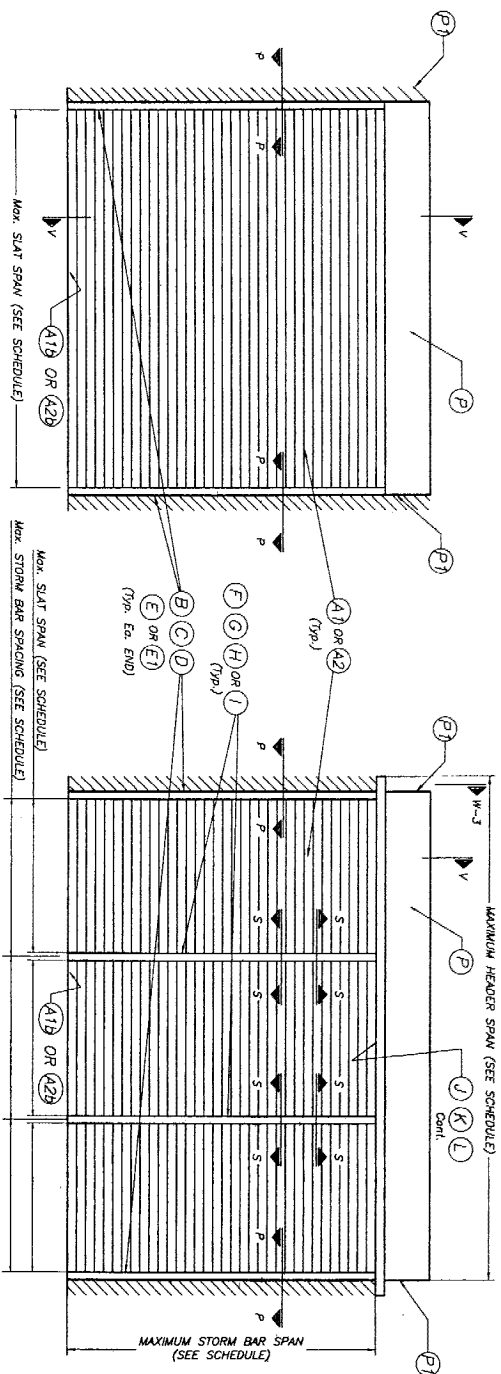
TILECO INC.
 2008 TILECO, INC.
 TILT TESTING & ENGINEERING COMPANY
 1485 BRUNNEN BLDG. SUITE 1000
 PALM BEACH GARDENS, FLORIDA 33418
 Phone: 561-444-0000
 Fax: 561-444-0001
 Email: info@tileco.com
 Website: www.tileco.com
 License No. 11487
 State of Florida

ROLLER STAR CORPORATION
 1485 BRUNNEN BLDG. SUITE 1000
 PALM BEACH GARDENS, FLORIDA 33418
 Phone: 561-444-0000
 Fax: 561-444-0001
 Email: info@tileco.com
 Website: www.tileco.com

REV. NO.	DATE	BY	CHK.
1	08/12/08		
2	08/12/08		

DRAWN BY: M.C.K./A.L.
 DATE: 07/21/08
 08-189
 DRAWING NO.
 SHEET 1 OF 19

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

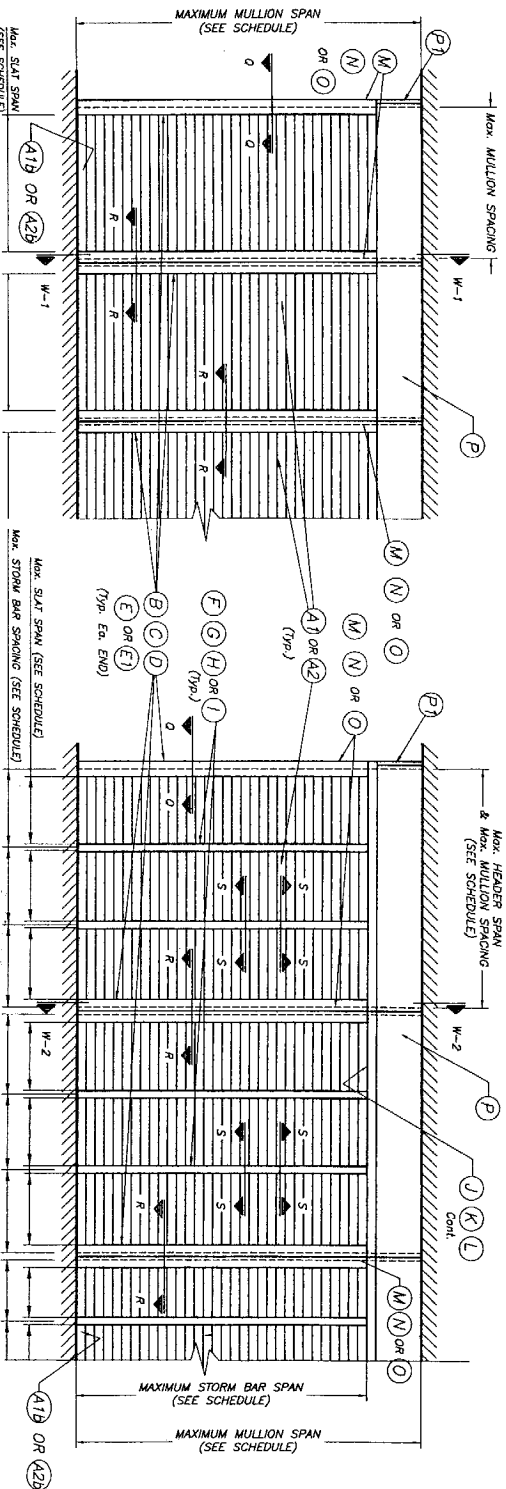


TYPICAL SINGLE UNIT ELEVATION (NO STORM BARS REQUIRED)

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 6 THRU 14.

© 2008 TILTECO, INC.

TILTECO INC.

TILTIT TESTING & ENGINEERING COMPANY
 1460 SW 8th COURT BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-782-7009
 Fax: (904) 781-1153
 Email: tilteco@tilteco.com
 Website: www.tilteco.com

WALTER B. COOPER, P.E.
 FLORIDA Lic. # 44167

REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	QUO. Q5-138	2/21/08	1		
2			1		

60mm & 40mm ROLL-UP SHUTTER

ROLLER STAR CORPORATION

1460 SW 8th COURT BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-782-7009

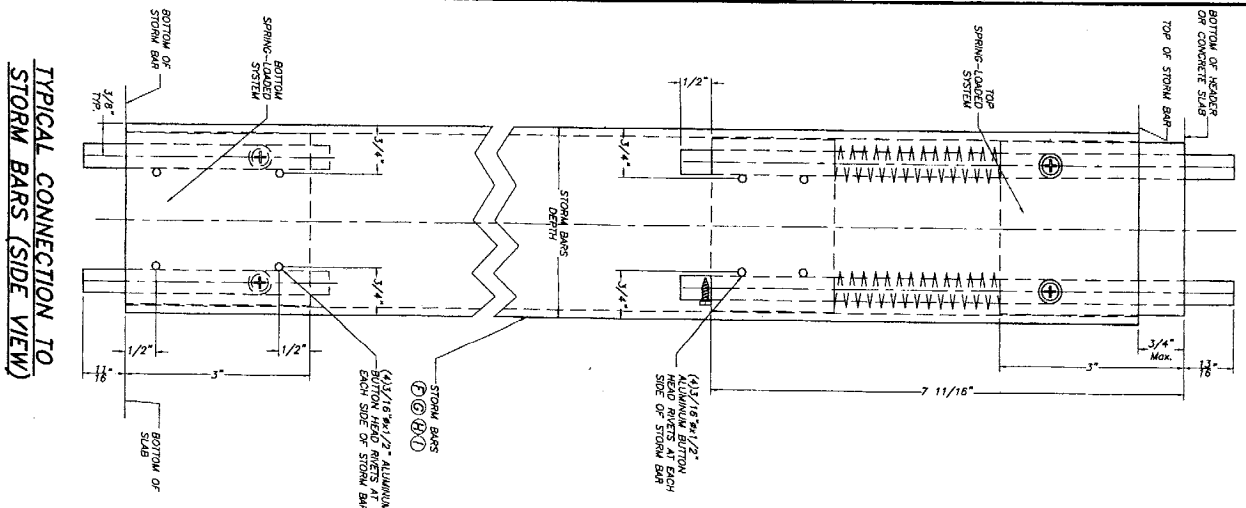
DRAWN BY: M.G.V./A.A.
 DATE: 07/21/08

08-189
 DRAWING No

SHEET 2 OF 19

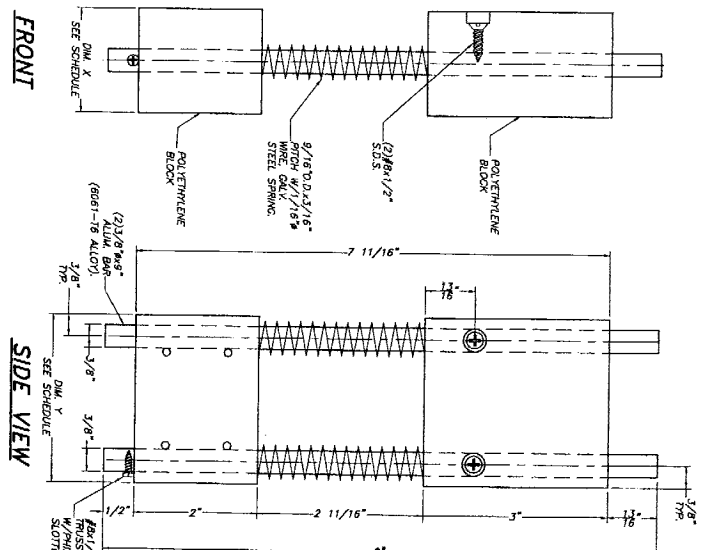
AUG 1 2 2008

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



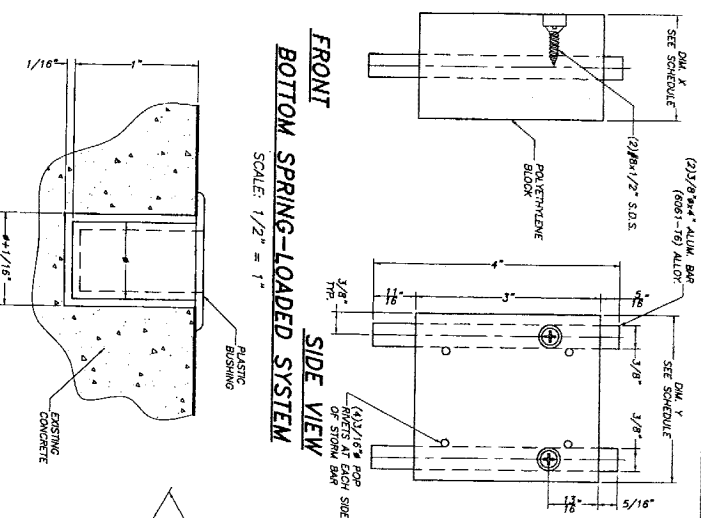
TYPICAL CONNECTION TO STORM BARS (SIDE VIEW)

SCALE: 1/2" = 1"



FRONT TOP SPRING-LOADED SYSTEM

SCALE: 1/2" = 1"

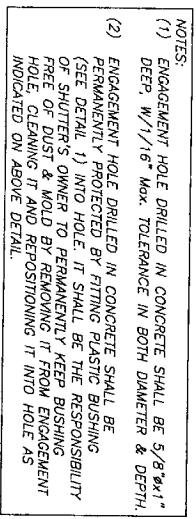


FRONT SIDE VIEW BOTTOM SPRING-LOADED SYSTEM

SCALE: 1/2" = 1"

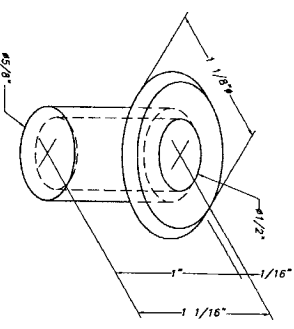
ENGAGEMENT HOLE DETAIL (IN CONCRETE) FOR REMOVABLE SPRING-LOADED STORM BARS

SCALE: 1" = 1"



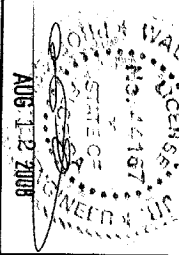
PLASTIC BUSHING: DETAIL 1 (ISOMETRIC)

SCALE: 1" = 1"



X, Y DIMENSIONS FOR A GIVEN TYPE OF STORM BAR			
STORM BAR TYPE	X(1)	Y(1)	Y(2)
①	1 19/32"	1 19/32"	
②	1 23/32"	2 21/32"	
③	1 23/32"	2 21/32"	
④	1 19/32"	3 19/32"	

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



© 2008 TILTECO, INC.

TILTECO INC.

TILIT TESTING & ENGINEERING COMPANY
 6338 N. W. 31st Ave., Suite 100, Coral Gables, Florida 33134
 Phone: 305-444-1111
 e-mail: tilteco@tilteco.com
 WFLA-TV - Channel 10
 WFTS-TV - Channel 28
 WTVT-TV - Channel 3
 WFTS-TV - Channel 28

60mm & 40mm ROLL-UP SHUTTER

ROLLER STAR CORPORATION

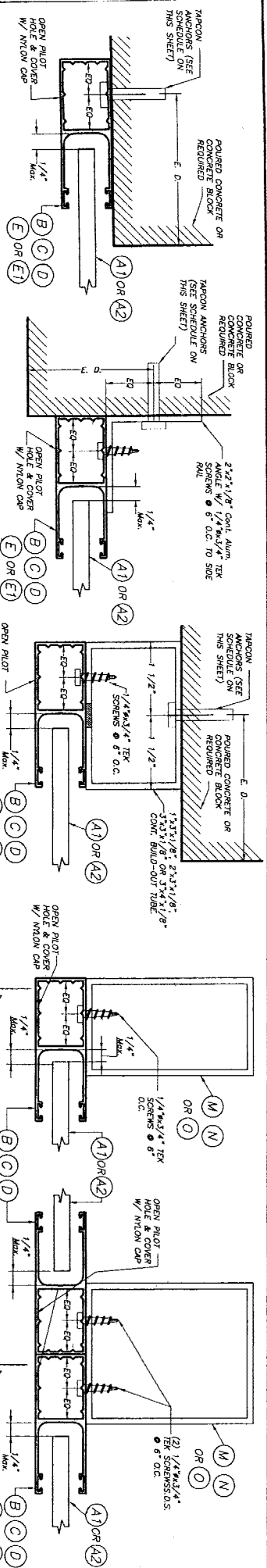
1480 SW 6th COURT BUILDING 1400
 Fort Lauderdale, FL 33304
 Phone: 800-742-7008

DRAWN BY: K.C.V./A.
 DATE: 07/21/08

08-189
 DRAWING NO.

SHEET 4 OF 19

F.B.C. / (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) & (E1) CONNECTION TO POURED CONCRETE OR MASONRY WALL

(E) CONNECTION TO POURED CONCRETE OR MASONRY WALL (USE MAXIMUM VALUES BETWEEN POSITIVE AND NEGATIVE LOADS)

CONCRETE BLOCK
POURED CONCRETE

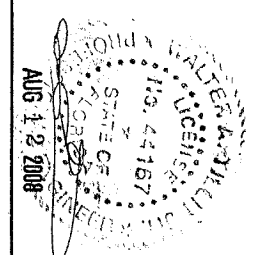
SUBSTRATE LEGEND

MAXIMUM DESIGN LOAD "W" (P.S.F.)	SIDE RAIL (B)		SIDE RAIL (C)		SIDE RAIL (D)		SIDE RAIL (E)		SIDE RAIL (E1)	
	WALL MOUNT	BUILD-OUT MOUNT	WALL MOUNT	BUILD-OUT MOUNT	WALL MOUNT	BUILD-OUT MOUNT	WALL MOUNT	BUILD-OUT MOUNT	WALL MOUNT	BUILD-OUT MOUNT
45 OR LESS	9"	6"	9"	6"	9"	6"	9"	6"	9"	6"
>45 TO 60	9"	3 1/2"	9"	4 1/2"	9"	6"	9"	6"	9"	6"
>60 TO 100	9"	6"	9"	6"	9"	6"	9"	6"	9"	6"
>100 TO 160	9"	6 1/2"	9"	7"	9"	6"	9"	6"	9"	6"

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

MAXIMUM ANCHOR SPACINGS ARE VALID FOR 3" EDGE DISTANCE. FOR E. D. LESS THAN 3" REDUCE ANCHOR SPACING BY MULTIPLYING SPACING SHOWN ON SCHEDULE BY THE FOLLOWING FACTORS (IN ORDER FOR THIS OPERATION TO BE MADE REDUCED SPACING OBTAINED USING FACTORS SHALL NOT BE LESS THAN 3"):

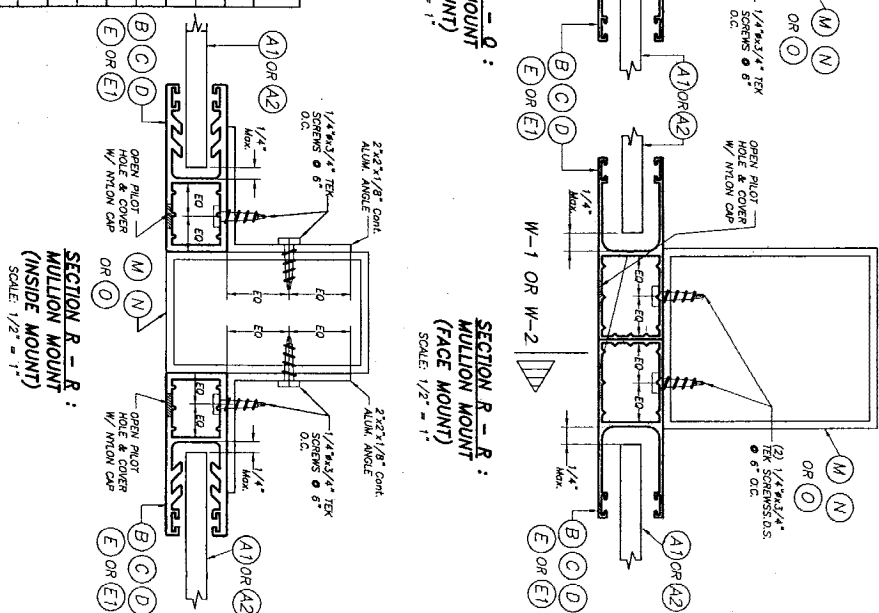
ACTUAL E. D.	FACTOR
1 1/2"	0.35

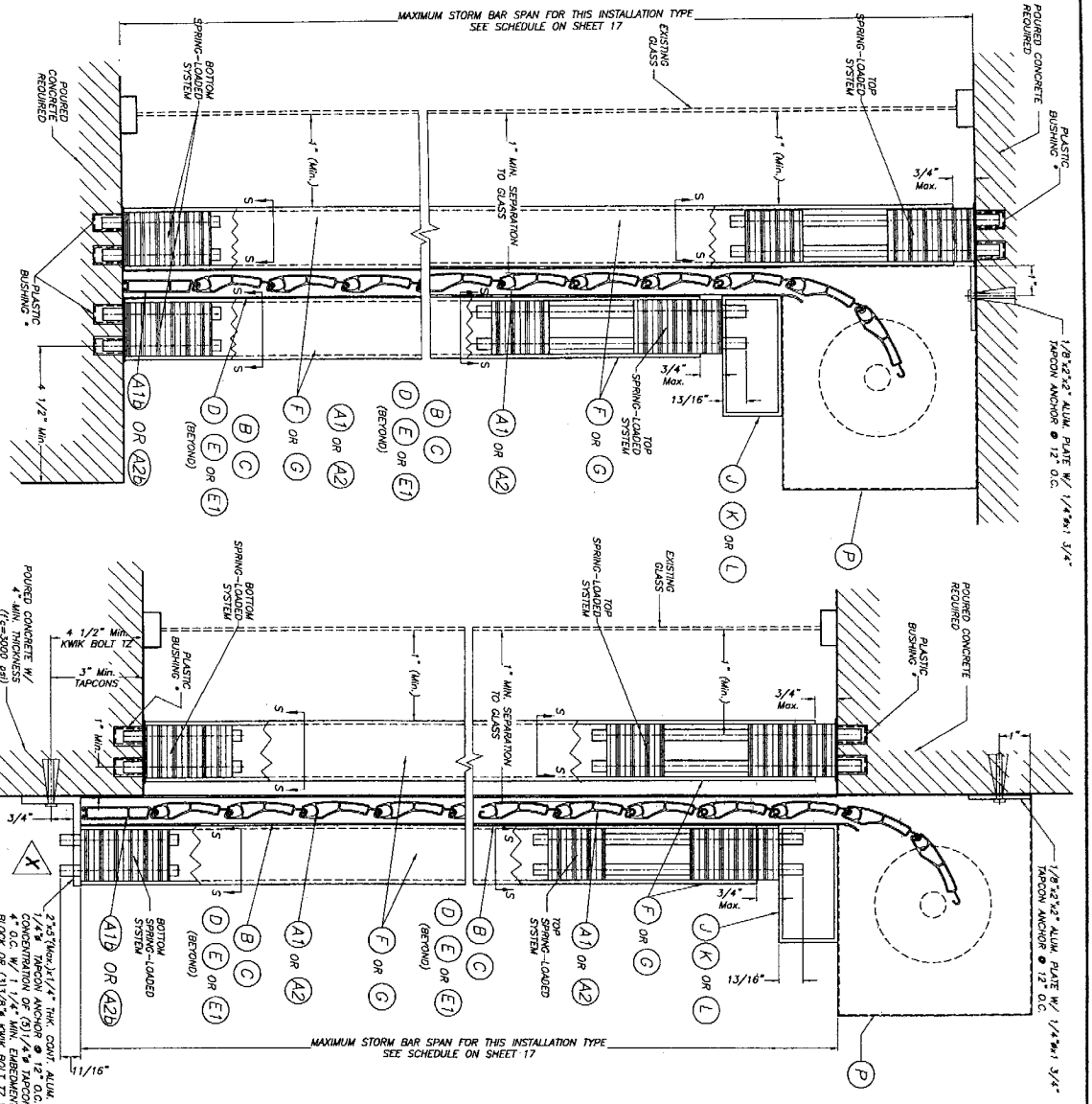


TILECO INC.
 TILE TESTING & ENGINEERING COMPANY
 1480 SW 6th COURT, BUILDING 1400
 PALM BEACH, FL 33409
 Phone: 800-782-7009

ROLLER STAR CORPORATION
 60mm & 40mm ROLL-UP SHUTTER
 DRAWN BY: M.C.V./A.
 DATE: 07/21/08
 1480 SW 6th COURT, BUILDING 1400
 PALM BEACH, FL 33409
 Phone: 800-782-7009
 DESIGNED: W.A.T./P.E.
 DATE: 08-189
 SHEET 6 OF 19

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





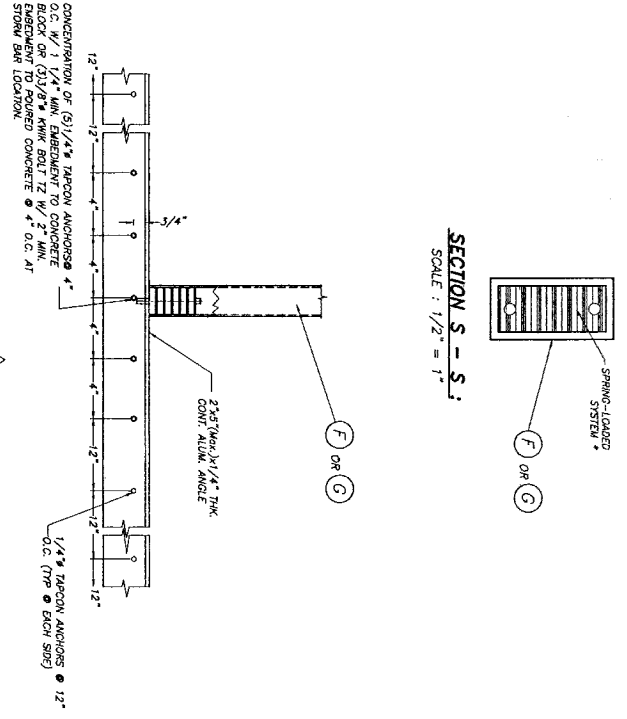
SCALE : 1/4" = 1'
 SECTION V - V (3)

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

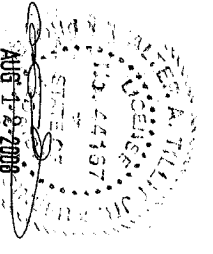
* SEE SHEET # OF 19 FOR SPECS & DETAILS

* SEE SHEET # OF 19 FOR SPECS & DETAILS

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

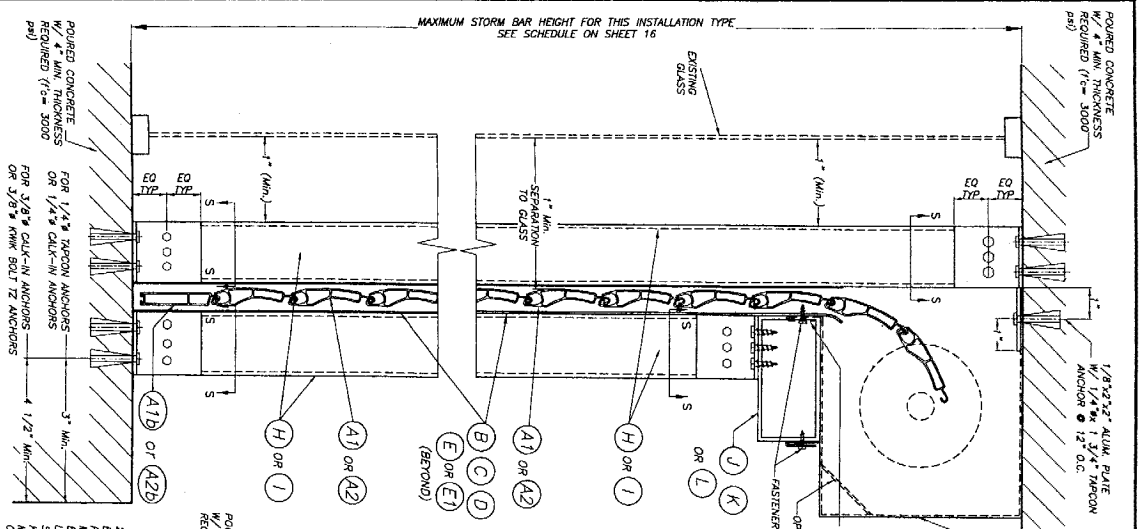


ELEVATION X
 SCALE : 1/8" = 1'



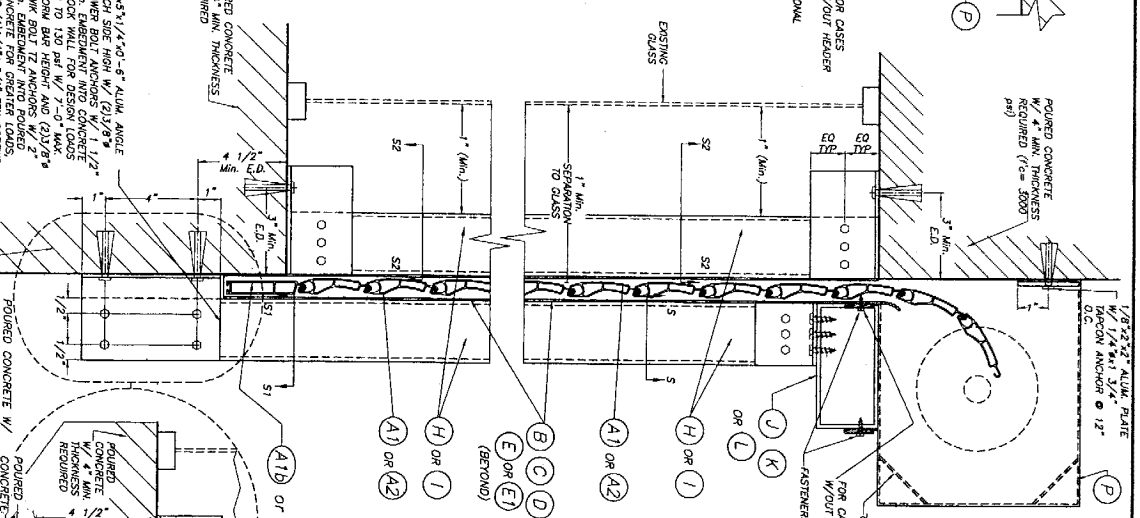
TILECO INC.
 TILE TESTING & ENGINEERING COMPANY
 4700 N. W. 13th Ave., Ft. Lauderdale, FL 33309
 Phone: (954) 581-1331 Fax: (954) 581-1331
 WALTER A. TRULTY, P.E.
 FLORENCE, FL 32204

60mm & 40mm ROLL-UP SHUTTER		DRAWN BY W.C.K./A.L.
ROLLER STAR CORPORATION 1480 SW 6th COURT BUILDING 1400 POMERAYO BEACH, FL 33069 Phone: 800-782-7039		DATE 07/21/08
REV. NO	DESCRIPTION	DATE
1	OLD 05-128	7/21/08
2		
DRAWING NO 08-189		DATE 08-189
SHEET B OF 19		



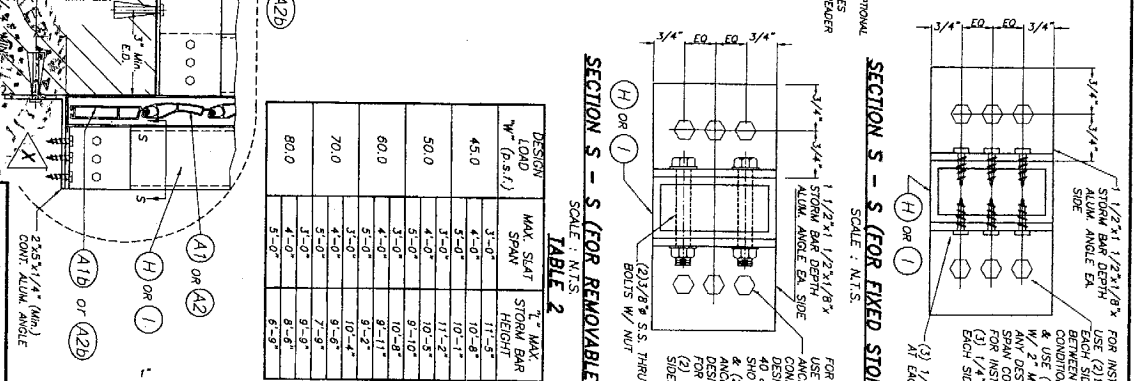
CEILING & FLOOR MOUNTING SECTION V-V(2) INSTALLATION
 W/ FIXED OR REMOVABLE STORM BARS W/ CONCRETE ANCHORS
 (SEE SECTION S* FOR ANCHOR TYPE REQUIREMENT)
 SCALE: N.T.S.

SINGLE SPAN SECTIONS AND DETAILS ARE SIMILAR TO ABOVE SHOWN WITHOUT STORM BAR & ANCHORS.



WALL MOUNTING SECTION V-V(1) INSTALLATION
 W/ FIXED STORM BARS W/ CONCRETE ANCHORS
 SCALE: N.T.S.

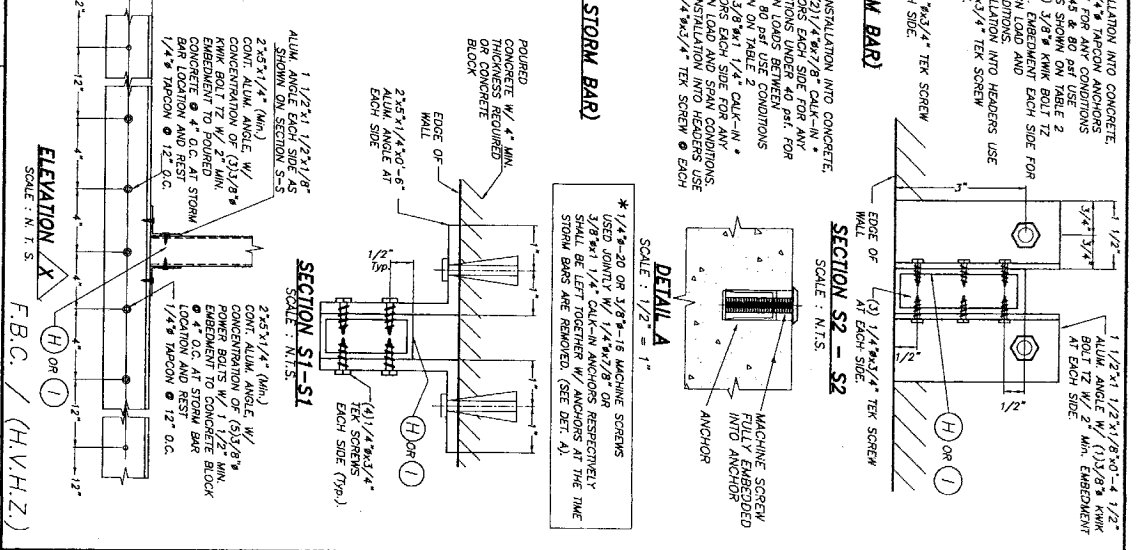
SINGLE SPAN SECTIONS AND DETAILS ARE SIMILAR TO ABOVE SHOWN WITHOUT STORM BAR & ANCHORS.



SECTION S - S (FOR REMOVABLE STORM BAR)
 SCALE: N.T.S.

TABLE 2

DESIGN LOAD W (D.S.F.)	MAX SLAT SPAN	MIN. MAX. STORM BAR HEIGHT
45.0	3'-0"	11'-5"
50.0	3'-0"	11'-2"
50.0	3'-0"	10'-8"
50.0	3'-0"	10'-5"
50.0	3'-0"	10'-2"
50.0	3'-0"	9'-11"
50.0	3'-0"	9'-8"
50.0	3'-0"	9'-5"
50.0	3'-0"	9'-2"
50.0	3'-0"	8'-9"
50.0	3'-0"	8'-6"
50.0	3'-0"	8'-3"

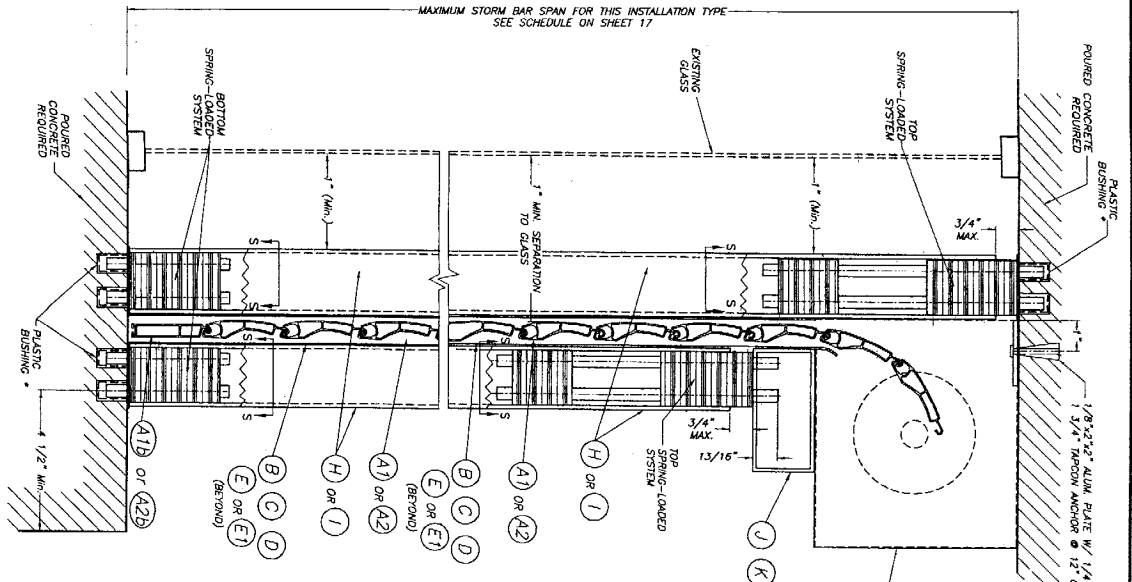


SECTION S1-S1
 SCALE: N.T.S.

SINGLE SPAN SECTIONS AND DETAILS ARE SIMILAR TO ABOVE SHOWN WITHOUT STORM BAR & ANCHORS.

TILECO INC.
 TILT TESTING & ENGINEERING COMPANY
 1450 SW 10th Street, Suite 100
 Ft. Lauderdale, FL 33304
 Phone: 954-342-7008
 Fax: 954-342-7009
 Email: info@tileco.com
 Website: www.tileco.com

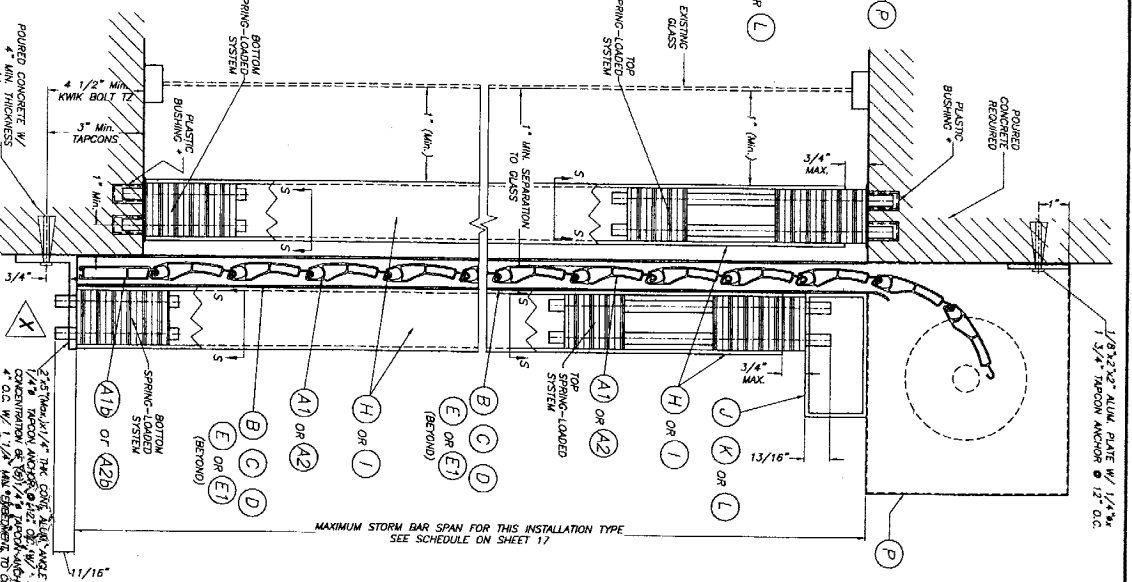
ROLLER STAR CORPORATION
 1450 SW 10th Street, Suite 100
 Ft. Lauderdale, FL 33304
 Phone: 954-342-7008
 Fax: 954-342-7009
 Email: info@rollerstar.com
 Website: www.rollerstar.com



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

SCALE: 1/4" = 1"

* SEE SHEET 4 OF 19 FOR SPECS
& DETAILS

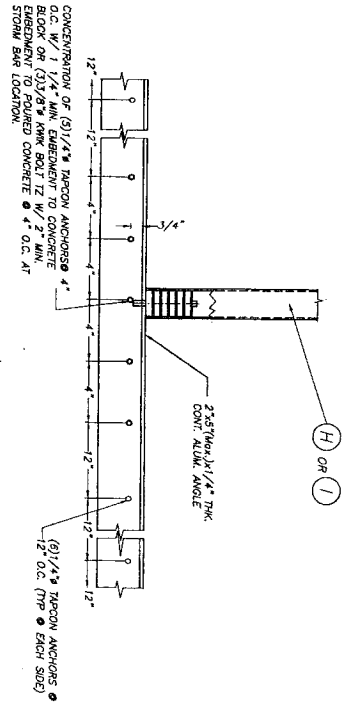


**WALL MOUNTING INSTALLATION W/
REMOVABLE STORM BARS W/SPRING-LOADED SYSTEM ***

SCALE: 1/4" = 1"

* SEE SHEET 4 OF 19 FOR SPECS
& DETAILS

ANG 12 2008



ELEVATION X
SCALE: 1/8" = 1"

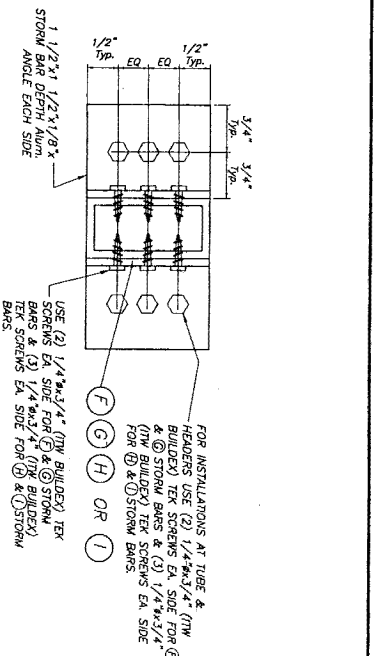
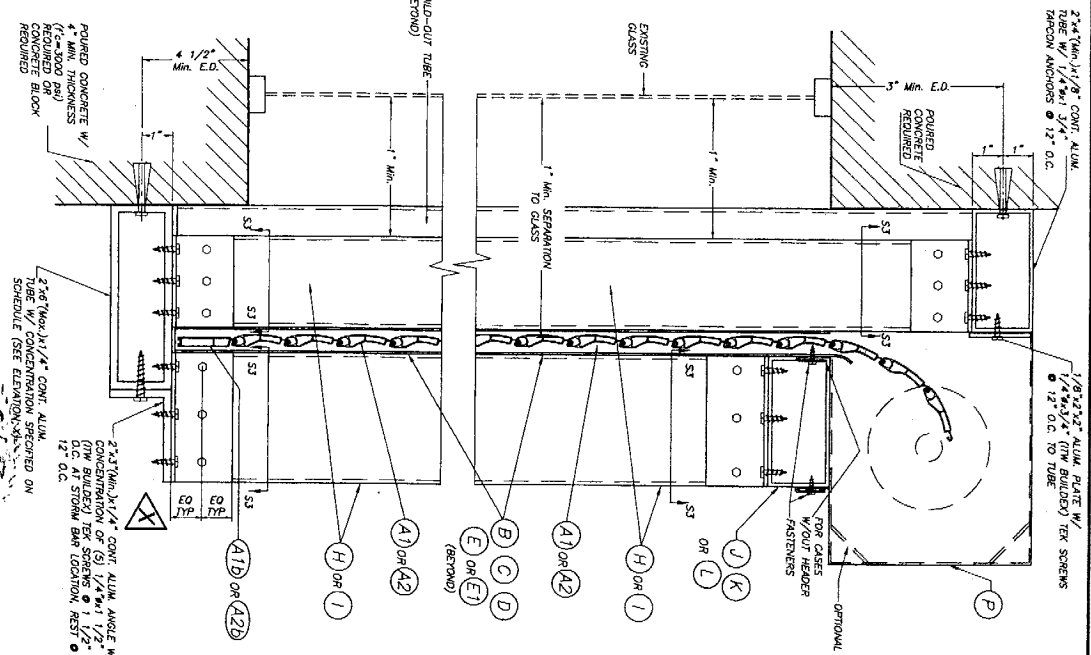
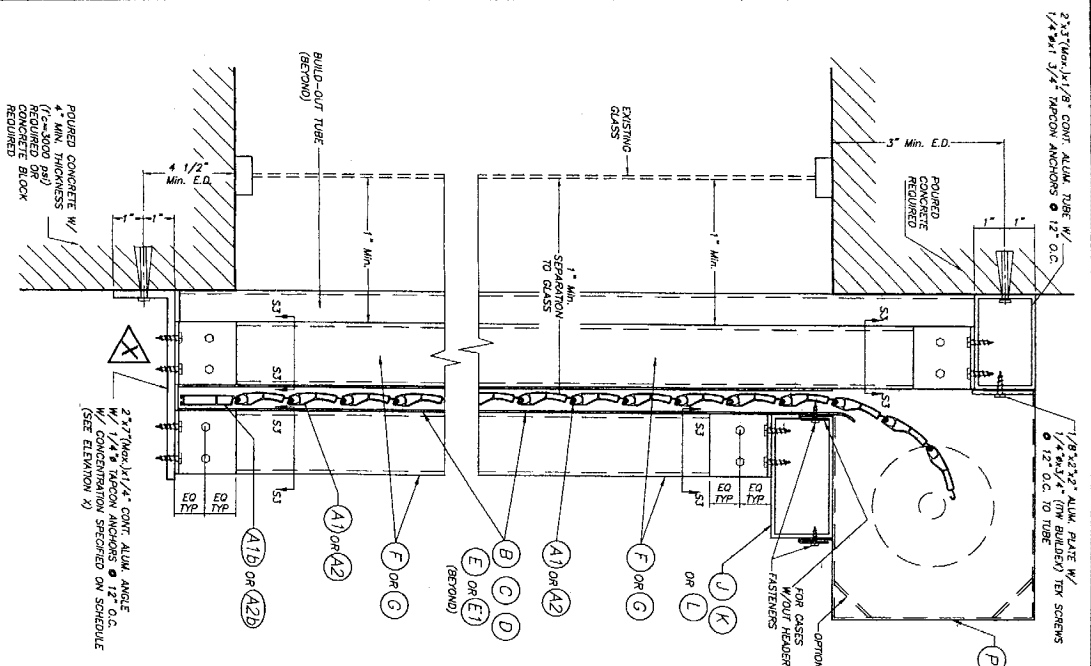
© 2008 TILTECO, INC.
TILTECO INC.
 TILT TESTING & ENGINEERING COMPANY
 1480 SW 8th COURT, BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-282-7009
 e-mail: tilteco@tilteco.com
 WWW.TILTECO.COM
 FLORIDA Lic. # 44457

REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	Q.D. 05-138	7/21/08	1		

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
 1480 SW 8th COURT, BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-282-7009

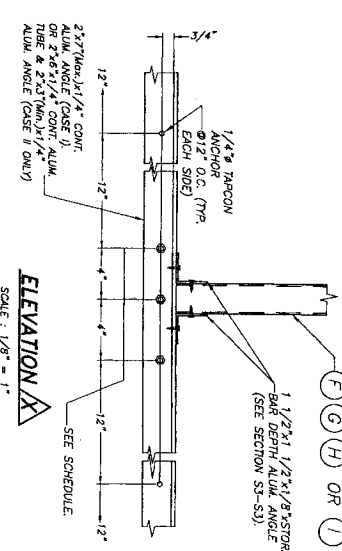
OSMUN BR.
 M.C.V./I.A.
 07/21/08
 DATE
 08-189
 DRAWING NO.
 SHEET 10 OF 19

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



ANCHORS & STORM BARS SCHEDULE FOR ELEVATION.

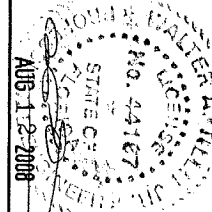
CASES	SUBSTRATE	ANCHOR TYPE	STORM BAR TYPE
CASE 1	BLOCK	(3) 3/8" POWER BOLT	(F), (G)
	CONCRETE	(1) 3/8" ANK BOLT TZ	(H), (I)
CASE 2	BLOCK	(3) 3/8" POWER BOLT	(H), (I)
	CONCRETE	(1) 3/8" ANK BOLT TZ	(H), (I)



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

NOTE: SHAW SECTIONS AND DETAILS ARE SUBJECT TO REVISIONS. STORM BAR & HEADERS.

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



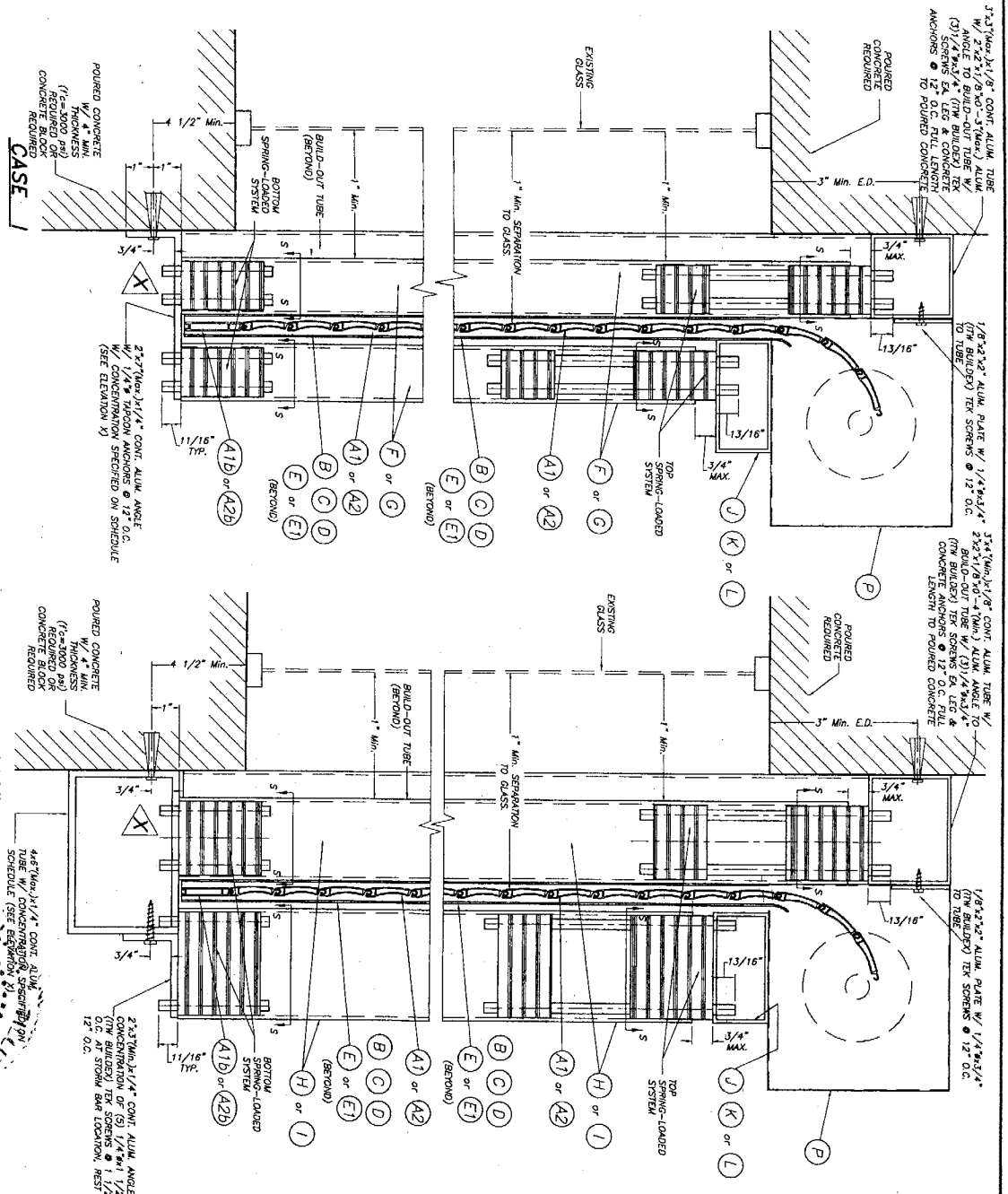
TILTECO INC.
© 2008 TILTECO, INC.
TILLIT TESTING & ENGINEERING COMPANY
2008 W. 13th Ave., Suite 100, Pompano Beach, FL 33062
Tel: 954-781-1100, Fax: 954-781-1101
www.tilteco.com

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
1460 SW 8th St., Building 4100
Pompano Beach, FL 33062
Phone: 800-782-7009

REV. NO.	DESCRIPTION	DATE	BY	CHK.	APPROVED
1	Q.D. 03-138	2/21/08	3	4	

DRAWN BY: M.C.V./A.A.
DATE: 07/21/08
08-189
DRAWING NO.
SHEET 11 OF 19

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

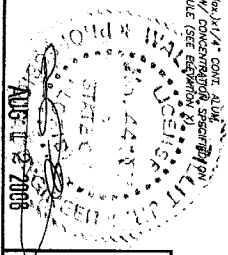


**REMOVABLE STORM BAR CONNECTION AT BUILD-OUT
INSTALLATIONS W/SPRING-LOADED SYSTEM ***

SCALE: 1/4" = 1"

SECTION V - V (3)

SEE SHEET 4 OF 19 FOR SPECS & DETAILS.



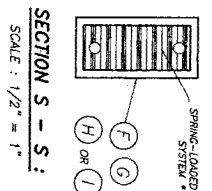
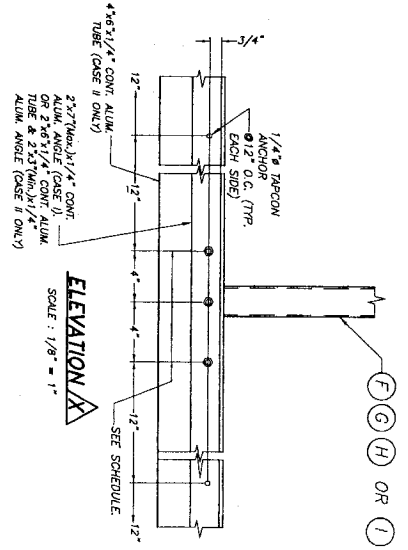
© 2008 TILTECO INC.
TILTECO INC.
 TILTUP TESTING & ENGINEERING COMPANY
 4330 W. 13th Ave., Suite 100
 Pompano Beach, FL 33069
 Phone: 800-782-7009
 4-Trade: WILCOBOL@tilteco.com
 WALTER TILTECO, P.E.
 FLORIDA LIC # 44167

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
 1460 SW 6th COURT BUILDING 1400
 Pompano Beach, FL 33069
 Phone: 800-782-7009

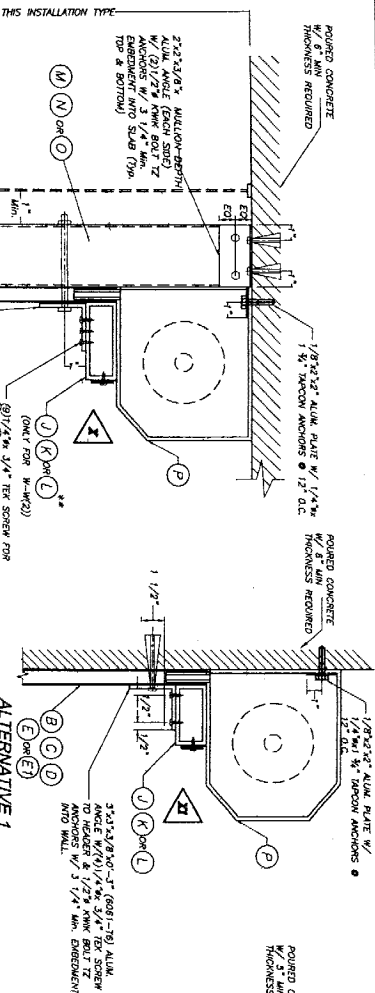
07/31/08
 M.C.M./J.A.
 08-189
 DRAWING No
 SHEET 12 OF 19

ANCHORS & STORM BARS SCHEDULE FOR ELEVATION.

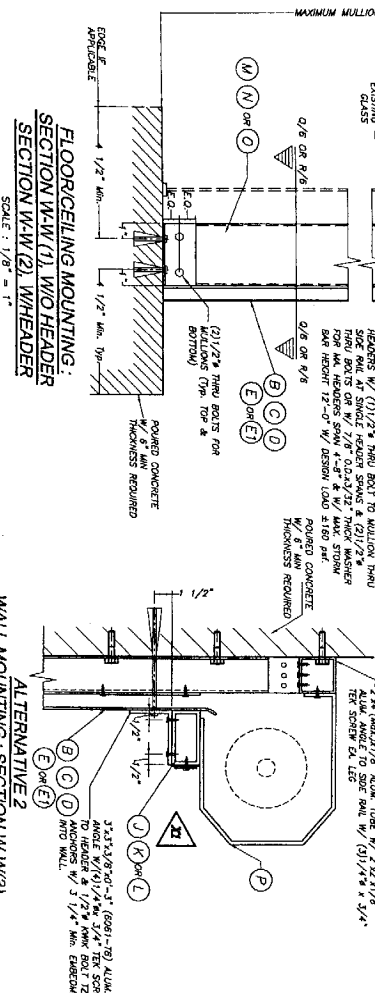
CASES	SUBSTRATE	ANCHOR TYPE	STORM BAR TYPE
CASE 1	BLOCK	(2) 3/8" POWER BOLT	(F) (G)
	CONCRETE	(1) 3/8" KWK BOLT TZ	(H) (I)
CASE 2	BLOCK	(2) 3/8" POWER BOLT	(H) (I)
	CONCRETE	(1) 3/8" KWK BOLT TZ	(H) (I)



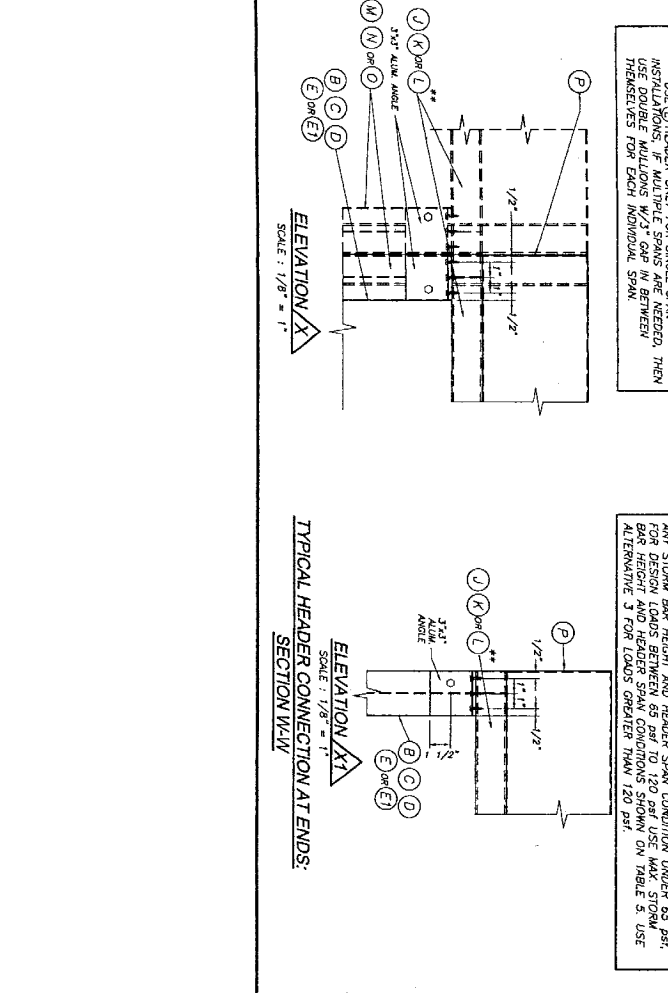
F.B.C. / (H.V.H.Z.)



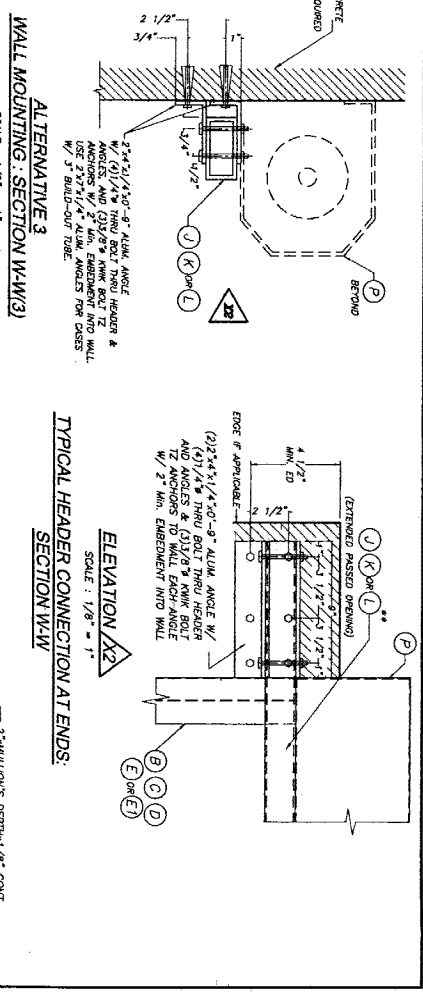
ELEVATION X1
SCALE: 1/8" = 1"



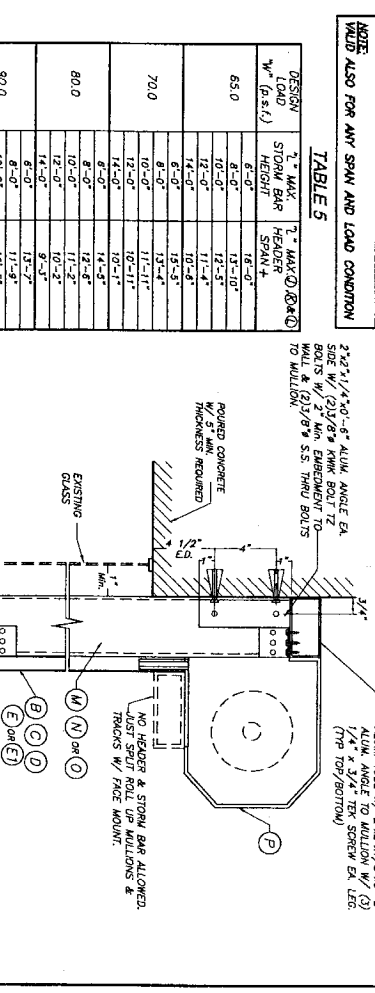
ELEVATION X2
SCALE: 1/8" = 1"



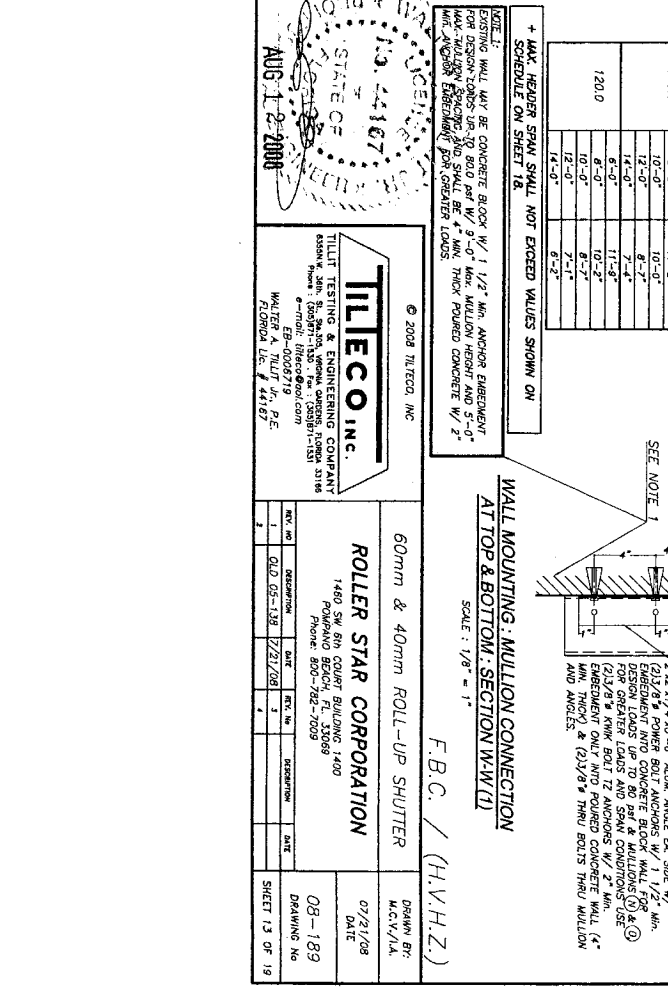
ELEVATION X3
SCALE: 1/8" = 1"



ELEVATION X4
SCALE: 1/8" = 1"



ELEVATION X5
SCALE: 1/8" = 1"



ELEVATION X6
SCALE: 1/8" = 1"

TABLE 5
DESIGN LOAD (p.s.f.)

DESIGN LOAD (p.s.f.)	7" MAX. STORM BAR HEIGHT	7" MAX. HEADER SPAN +
65.0	8'-0"	16'-0"
70.0	10'-0"	18'-0"
80.0	12'-0"	20'-0"
90.0	14'-0"	22'-0"
100.0	16'-0"	24'-0"
120.0	18'-0"	26'-0"

NOTE: MAX. HEADER SPAN SHALL NOT EXCEED VALUES SHOWN ON SCHEDULE ON SHEET 18.

NOTE: INSTALLATION DETAILS SHOWN ON ALTERNATIVES 1 & 2 ARE VALID FOR ANY STORM BAR HEIGHT AND HEADER SPAN CONDITION UNDER 65 psf. ANY STORM BAR HEIGHT AND HEADER SPAN CONDITIONS SHOWN ON TABLE 5 USE ALTERNATIVE 3 FOR LOADS GREATER THAN 120 psf.

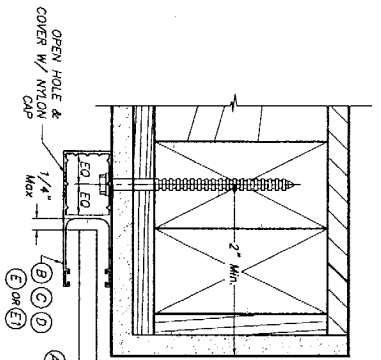
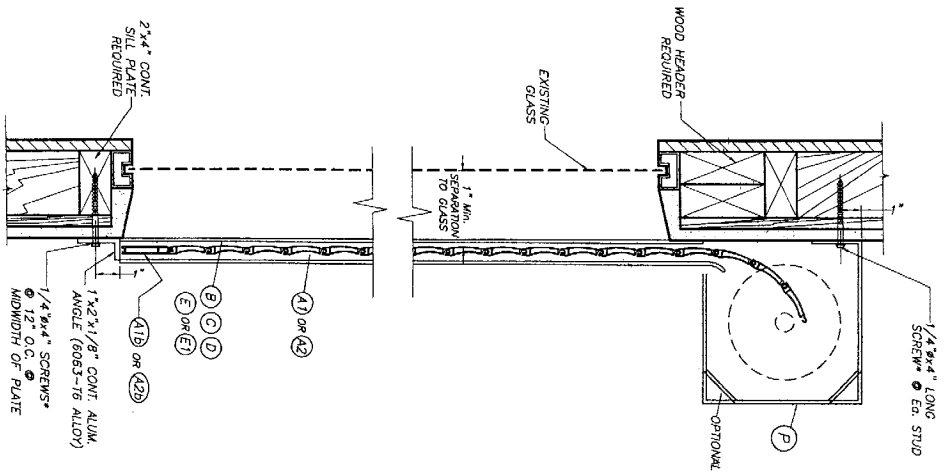
NOTE: USE (1) HEADER ONLY FOR SINGLE SPAN INSTALLATIONS. USE MULTIPLE SPANS ARE NEEDED, THEN USE DOUBLE MULLIONS W/3" GAP IN BETWEEN THEMSELVES FOR EACH INDIVIDUAL SPAN.

TILECO INC.
2008 TILECO, INC.
TILE TESTING & ENGINEERING COMPANY
1480 SW 8th COURT BUILDING 1400
POMERAY BEACH, FL 33069
Phone: 800-792-7009

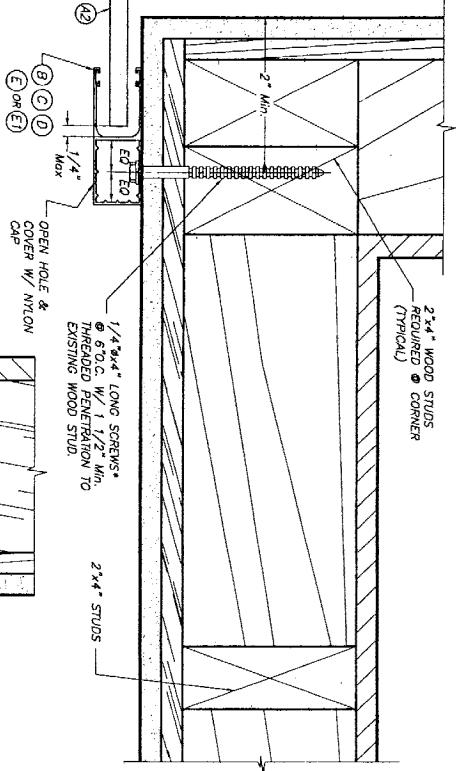
ROLLER STAR CORPORATION
60mm & 40mm ROLL-UP SHUTTER
DRAWN BY: M.C.V./J.A.
DATE: 07/21/08
08-189
DRAWING NO.

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

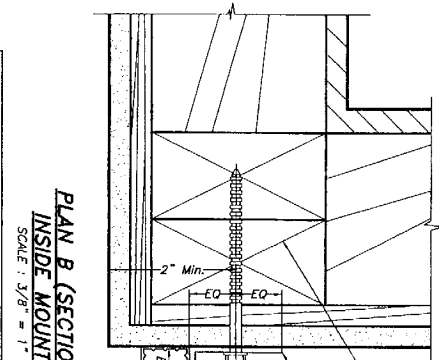
STATE OF FLORIDA
AUG 12 2008



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



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

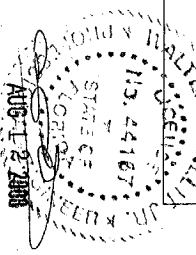


PLAN C (SECTION)
BUILD-OUT
SCALE: 3/8" = 1"

- 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" MIN.
 4. * SCREWS = LAG SCREWS OR TAPCONS.

WALL MOUNTING INSTALLATION
SINGLE SPAN CONDITION

N. I. S.



TILECO INC.
60mm & 40mm ROLL-UP SHUTTER
1480 SW 8th COURT BUILDING 1400
POMERAY BEACH, FL 33069
Phone: 800-792-7009

ROLLER STAR CORPORATION
60mm & 40mm ROLL-UP SHUTTER
DRAWN BY: M.C.V./A.A.
DATE: 07/23/08
08-189
DRAWING NO. SHEET 14 OF 19

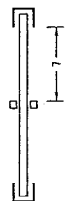
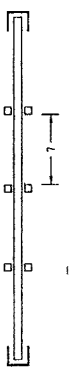
© 2008 TILECO, INC.
TILE TESTING & ENGINEERING COMPANY
1500 NW 13th St., Ft. Lauderdale, FL 33304
Phone: (954) 571-1500 Fax: (954) 571-1501
www.tileco.com

REV.	DESCRIPTION	DATE	BY	CHECKED
1	QUD 05-138	12/21/08	1	
2				

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

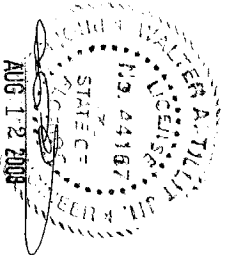
**SLAT PERFORMANCE CHART: MAXIMUM NEGATIVE DESIGN PRESSURE RATING
"W" (psf) AND CORRESPONDING MAXIMUM SLAT SPAN "L" FOR TYPE 1 & 2 SLAT**
(USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)

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



SPAN DEFINITION

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



© 2008 TILTECO, INC.
TILTECO Inc.
TILLET TESTING & ENGINEERING COMPANY
3530 N. 24th St., Suite 200, Miramar, Florida 33181
Phone: 800-752-7003
e-mail: tilteco@tilteco.com
WALTER A. TILLET, P.E.
EP-0006719
FLORIDA Lic. # 194187

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
1460 SW 6th Street, Building 3450
Miramar, Florida 33181
Phone: 800-752-7003

REV. NO. 1 DESCRIPTION DATE
1 Q.D. 03-12 7/27/08 2
3

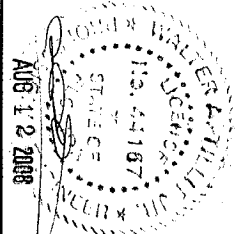
DRAWN BY: M.C.V.A.L.
DATE: 07/21/08
08-189
DRAWING No.
SHEET 15 OF 19

F.B.C. / (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 (F) STORM BAR 2" x 2" x 1/4"					TYPE (G) STORM BAR 2" x 3" x 1/8"					TYPE (H) STORM BAR 2" x 4" x 1/8"					TYPE (I) 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"	< 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'
50	7'-3"	6'-9"	6'-2"	5'-6"	5'-4"	8'-0"	7'-4"	6'-7"	6'-0"	5'-9"	9'-11"	8'-11"	8'-0"	7'-4"	7'-0"	< 3'-0"	3' TO 4'	4' TO 5'	5' TO 6'	6' TO 6.5'
55	7'-0"	6'-5"	5'-9"	5'-3"	5'-4"	8'-0"	6'-11"	6'-8"	5'-8"	5'-5"	9'-4"	8'-6"	8'-6"	7'-7"	6'-8"	11'-6"	10'-8"	10'-1"	9'-8"	9'-3"
60	6'-11"	5'-11"	5'-6"	5'-0"	5'-0"	7'-8"	6'-8"	5'-11"	5'-5"	5'-5"	8'-1"	7'-3"	6'-7"	6'-7"	10'-11"	10'-5"	10'-2"	9'-7"	8'-9"	8'-10"
65	6'-9"	5'-11"	5'-4"	4'-10"	4'-10"	7'-4"	6'-4"	5'-2"	5'-2"	5'-0"	8'-7"	7'-9"	6'-11"	6'-4"	10'-8"	10'-6"	9'-9"	9'-2"	8'-4"	8'-1"
70	6'-7"	5'-8"	5'-1"	4'-8"	4'-8"	6'-9"	5'-11"	5'-5"	5'-0"	4'-10"	8'-3"	7'-2"	6'-5"	5'-10"	10'-4"	9'-6"	8'-6"	7'-9"	7'-9"	7'-6"
75	6'-4"	5'-6"	4'-11"	4'-6"	4'-6"	6'-7"	5'-8"	5'-1"	4'-8"	4'-8"	8'-0"	6'-11"	6'-2"	5'-8"	10'-1"	9'-2"	8'-2"	7'-6"	7'-6"	7'-6"
80	6'-2"	5'-4"	4'-9"	4'-4"	4'-4"	6'-4"	5'-6"	5'-6"	4'-6"	4'-6"	7'-9"	6'-9"	6'-0"	5'-6"	9'-11"	8'-11"	7'-11"	7'-3"	7'-3"	7'-0"
85	6'-0"	5'-2"	4'-8"	4'-3"	4'-3"	6'-2"	5'-4"	4'-9"	4'-4"	4'-4"	7'-4"	6'-6"	5'-10"	5'-4"	9'-10"	8'-7"	7'-8"	7'-8"	6'-10"	6'-10"
90	5'-10"	5'-0"	4'-6"	4'-1"	4'-1"	6'-0"	5'-2"	4'-8"	4'-3"	4'-3"	7'-4"	6'-4"	5'-8"	5'-2"	9'-8"	8'-4"	7'-6"	7'-6"	6'-10"	6'-10"
95	5'-8"	4'-11"	4'-5"	4'-0"	4'-0"	5'-10"	5'-1"	4'-6"	4'-1"	4'-1"	7'-1"	6'-2"	5'-6"	5'-0"	9'-5"	8'-2"	7'-3"	7'-3"	6'-8"	6'-8"
100	5'-6"	4'-9"	4'-3"	3'-11"	3'-11"	5'-8"	4'-11"	4'-5"	4'-0"	4'-0"	6'-11"	6'-0"	5'-4"	4'-11"	9'-2"	7'-11"	7'-1"	6'-6"	6'-6"	6'-6"
105	5'-5"	4'-8"	4'-2"	3'-10"	3'-10"	5'-7"	4'-10"	4'-4"	3'-11"	3'-11"	6'-9"	6'-0"	5'-3"	4'-9"	8'-11"	7'-9"	7'-9"	6'-11"	6'-4"	6'-4"
110	5'-3"	4'-7"	4'-1"	4'-1"	4'-1"	5'-5"	4'-8"	4'-2"	4'-2"	4'-2"	6'-7"	5'-9"	5'-1"	5'-1"	8'-9"	7'-7"	7'-7"	6'-9"	6'-4"	6'-4"
115	5'-2"	4'-5"	4'-0"	4'-0"	4'-0"	5'-4"	4'-7"	4'-1"	4'-1"	4'-1"	6'-6"	5'-7"	5'-0"	5'-0"	8'-7"	7'-5"	7'-5"	6'-8"	6'-8"	6'-8"
120	5'-0"	4'-4"	3'-11"	3'-11"	3'-11"	5'-2"	4'-6"	4'-0"	4'-0"	4'-0"	6'-4"	5'-6"	4'-11"	4'-11"	8'-4"	7'-3"	7'-3"	6'-6"	6'-6"	6'-6"
125	4'-11"	4'-3"	3'-10"	3'-10"	3'-10"	5'-1"	4'-5"	3'-11"	3'-11"	3'-11"	6'-2"	5'-4"	4'-10"	4'-10"	8'-2"	7'-1"	7'-1"	6'-4"	6'-4"	6'-4"
130	4'-10"	4'-2"	3'-9"	3'-9"	3'-9"	5'-0"	4'-4"	3'-10"	3'-10"	3'-10"	6'-1"	5'-3"	4'-9"	4'-9"	8'-1"	7'-0"	7'-0"	6'-3"	6'-3"	6'-3"
135	4'-9"	4'-1"	3'-8"	3'-8"	3'-8"	4'-11"	4'-3"	3'-9"	3'-9"	3'-9"	6'-0"	5'-2"	4'-7"	4'-7"	8'-1"	6'-10"	6'-10"	6'-1"	6'-1"	6'-1"
140	4'-8"	4'-0"	3'-7"	3'-7"	3'-7"	4'-10"	4'-2"	3'-8"	3'-8"	3'-8"	5'-10"	5'-1"	4'-6"	4'-6"	7'-9"	6'-9"	6'-9"	6'-0"	6'-0"	6'-0"
145	4'-7"	4'-0"	3'-7"	3'-7"	3'-7"	4'-9"	4'-1"	3'-8"	3'-8"	3'-8"	5'-9"	5'-0"	4'-6"	4'-6"	7'-7"	6'-7"	6'-7"	5'-11"	5'-11"	5'-11"
150	4'-6"	3'-11"	3'-6"	3'-6"	3'-6"	4'-8"	4'-0"	3'-7"	3'-7"	3'-7"	5'-8"	4'-11"	4'-5"	4'-5"	7'-6"	6'-6"	6'-6"	5'-10"	5'-10"	5'-10"
155	4'-5"	3'-10"	3'-5"	3'-5"	3'-5"	4'-7"	3'-11"	3'-6"	3'-6"	3'-6"	5'-7"	4'-10"	4'-4"	4'-4"	7'-4"	6'-5"	6'-5"	5'-8"	5'-8"	5'-8"
160	4'-4"	3'-9"	3'-5"	3'-5"	3'-5"	4'-6"	3'-11"	3'-6"	3'-6"	3'-6"	5'-6"	4'-9"	4'-3"	4'-3"	7'-3"	6'-3"	6'-3"	5'-7"	5'-7"	5'-7"

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



© 2008 TILTECO, INC.
TILTECO INC.
 TILT/TESTING & ENGINEERING COMPANY
 6000 N.W. 13th St., Suite 100
 Ft. Lauderdale, FL 33309
 Phone: 954-333-1313
 Fax: 954-333-1313
 Email: info@tilteco.com

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
 1480 SW 8th COURT, BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-792-7009

DATE: 07/21/08
 DRAWN BY: M.C.V./A.A.
 CHECKED BY: M.C.V./A.A.
 SHEET 16 OF 19

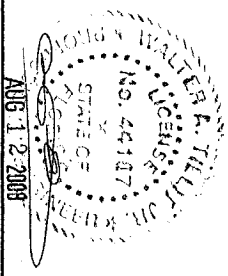
F.B.C. / (H.V.H.Z.)

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 WIND (p.s.f.)	TYPE 1 STORM BAR (F) 2 X2 X 1/4"						TYPE 2 STORM BAR (G) 2 X3 X 1/8"						TYPE 3 STORM BAR (H) 2 X4 X 1/8"						TYPE 4 STORM BAR (I) 2 X4 X 1/4"					
	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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-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"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"	7'-6"

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



© 2008 TILTECO, INC.
TILTECO INC.
 TILIT TESTING & ENGINEERING COMPANY
 1480 SW 6th COURT BUILDING 1400
 FOLKLAND BEACH, FL 33069
 Phone: 800-782-7009
 Fax: 800-782-7009
 e-mail: info@tilteco.com
 walters@tilteco.com
 FLORIDA Lic. # 44187

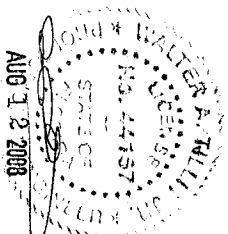
60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
 1480 SW 6th COURT BUILDING 1400
 FOLKLAND BEACH, FL 33069
 Phone: 800-782-7009
 Fax: 800-782-7009
 e-mail: info@rollerstar.com
 rollerstar@rollerstar.com
 FLORIDA Lic. # 44187

DRAWN BY: M.C.V./A.
 DATE: 07/21/08
 08-189
 DRAWING NO.
 SHEET 17 OF 19

F.B.C. / (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 (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				
40.0 OR LESS	12-2"	5'-10 8"	8'-10 10"	≤ 6'-0"	6'-10 8"	8'-10 10"	10'-10 12"	12'-10 14"	≤ 6'-0"	6'-10 8"	8'-10 10"	10'-10 12"	12'-10 14"
45.0	11-6"	9'-1"	8'-2"	14-10"	12-10"	10-10"	9-11"	9-2"	19-4"	17-8"	15-9"	14-5"	13-4"
50.0	10-11"	8'-8"	7'-9"	14-0"	12-2"	10-10"	9-11"	9-2"	18-10"	16-8"	14-11"	13-7"	12-7"
55.0	10-5"	8'-5"	7'-4"	13-4"	11-6"	10-4"	9-5"	8-8"	18-3"	15-9"	14-1"	12-11"	11-11"
60.0	10-0"	8'-1"	7-11"	12-8"	11-0"	9-10"	9-0"	8-4"	17-5"	15-1"	13-6"	12-3"	11-5"
65.0	9-7"	7-7"	6-9"	11-8"	10-1"	9-0"	8-3"	7-8"	16-0"	14-5"	12-11"	11-9"	10-11"
70.0	9-3"	7-4"	6-6"	11-3"	9-9"	8-8"	7-11"	7-4"	15-5"	13-4"	11-11"	10-11"	10-1"
75.0	8-11"	7-1"	6-4"	10-10"	9-5"	8-5"	7-8"	7-1"	14-11"	12-11"	11-6"	10-6"	9-9"
80.0	8-8"	6-10"	6-1"	10-6"	9-1"	8-2"	7-5"	6-11"	14-5"	12-6"	11-2"	10-2"	9-5"
85.0	8-4"	6-7"	5-11"	10-2"	8-10"	7-11"	7-3"	6-8"	14-0"	12-1"	10-10"	9-11"	9-2"
90.0	8-2"	6-5"	5-9"	9-11"	8-7"	7-8"	7-0"	6-6"	13-7"	11-9"	10-6"	9-7"	8-11"
95.0	7-11"	6-3"	5-7"	9-8"	8-4"	7-6"	6-10"	6-4"	13-3"	11-5"	10-3"	9-4"	8-8"
100.0	7-9"	6-1"	5-6"	9-5"	8-2"	7-3"	6-8"	6-2"	12-11"	11-2"	10-0"	9-1"	8-5"
105.0	7-6"	5-11"	5-4"	9-2"	7-11"	6-11"	6-6"	6-0"	12-7"	10-11"	9-9"	8-11"	8-3"
110.0	7-4"	5-10"	5-2"	9-0"	7-9"	6-11"	6-4"	5-10"	12-3"	10-8"	9-6"	8-6"	8-1"
115.0	7-2"	5-8"	5-1"	8-9"	7-7"	6-9"	6-2"	5-9"	12-0"	10-5"	9-4"	8-6"	7-10"
120.0	7-1"	5-7"	5-0"	8-7"	7-5"	6-8"	6-1"	5-7"	11-9"	10-2"	9-1"	8-4"	7-8"
125.0	6-11"	5-6"	4-11"	8-5"	7-3"	6-6"	5-11"	5-6"	11-6"	10-0"	8-11"	8-2"	7-7"
130.0	6-9"	5-4"	4-9"	8-3"	7-2"	6-5"	5-10"	5-5"	11-4"	9-9"	8-9"	8-0"	7-5"
135.0	6-8"	5-3"	4-8"	8-1"	7-0"	6-3"	5-7"	5-4"	11-1"	9-7"	8-7"	7-10"	7-3"
140.0	6-6"	5-2"	4-7"	7-11"	6-1"	6-2"	5-7"	5-2"	10-11"	9-5"	8-5"	7-8"	7-2"
145.0	6-5"	5-1"	4-6"	7-10"	6-9"	6-1"	5-6"	5-1"	10-8"	9-3"	8-3"	7-7"	7-0"
150.0	6-4"	5-0"	4-5"	7-8"	6-8"	5-11"	5-5"	5-0"	10-6"	9-1"	8-2"	7-5"	6-11"
155.0	6-2"	4-11"	4-5"	7-7"	6-7"	5-10"	5-4"	4-11"	10-4"	9-0"	8-0"	7-4"	6-9"
160.0	6-1"	4-10"	4-4"	7-5"	6-5"	5-9"	5-3"	4-10"	10-2"	8-10"	7-11"	7-2"	6-8"



© 2008 TILTECO, INC.
TILTECO INC.
 TILT TESTING & ENGINEERING COMPANY
 1460 SW 6th COURT, BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-782-7009
 Fax: (904) 782-1831
 e-mail: info@tilteco.com
 walt@tilteco.com
 WALTER A. TILT P.E.
 FLORIDA Lic. # 44187

60mm & 40mm ROLL-UP SHUTTER
 DRAWN BY: M.C.V./A.
 DATE: 07/21/08
ROLLER STAR CORPORATION
 1460 SW 6th COURT, BUILDING 1400
 POMPANO BEACH, FL 33069
 Phone: 800-782-7009
 DATE: 08-189
 DRAWING NO.
 SHEET 18 OF 19

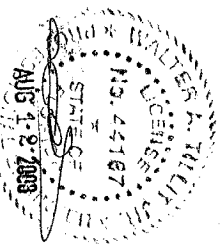
F.B.C. / (H.V.H.Z.)

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 (FL).

(USE MAXIMUM VALUES BETWEEN POSITIVE & NEGATIVE LOADS)

MAXIMUM DESIGN LOAD W _p (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							
45.0 OR LESS	< 3'-0"	3'-0" to 4'-0"	4'-0" to 5'-0"	5'-0" to 6'-0"	6'-0" to 7'-0"	7'-0" to 8'-0"	< 4'-0"	4'-0" to 5'-0"	5'-0" to 6'-0"	6'-0" to 7'-0"	7'-0" to 8'-0"	< 4'-0"	4'-0" to 5'-0"	5'-0" to 6'-0"	6'-0" to 7'-0"	7'-0" to 8'-0"	8'-0" to 9'-0"	9'-0" to 10'-0"	10'-0" to 11'-0"	11'-0" to 12'-0"
50.0	7'-11"	7'-3"	6'-8"	6'-4"	6'-1"	5'-8"	10'-11"	10'-2"	9'-7"	9'-3"	8'-8"	15'-2"	14'-1"	13'-3"	12'-0"	11'-2"	10'-6"	10'-1"	9'-5"	8'-9"
55.0	7'-8"	7'-0"	6'-6"	6'-1"	5'-7"	5'-4"	10'-7"	9'-10"	9'-5"	9'-1"	8'-5"	14'-8"	13'-7"	12'-10"	11'-8"	10'-10"	10'-2"	9'-11"	9'-1"	8'-5"
60.0	7'-6"	6'-10"	6'-4"	6'-1"	5'-11"	5'-8"	10'-3"	9'-9"	9'-4"	8'-9"	8'-2"	14'-3"	13'-3"	12'-5"	11'-4"	10'-6"	9'-11"	9'-1"	8'-5"	7'-9"
65.0	7'-3"	6'-7"	6'-2"	5'-9"	5'-6"	5'-3"	10'-0"	9'-4"	8'-9"	8'-3"	7'-11"	13'-11"	12'-11"	12'-2"	11'-0"	10'-3"	9'-8"	9'-1"	8'-5"	7'-9"
70.0	7'-1"	6'-6"	6'-0"	5'-8"	5'-5"	5'-2"	9'-9"	9'-1"	8'-6"	8'-0"	7'-9"	13'-7"	12'-7"	12-0"	11-10"	10-9"	10-0"	9-5"	8-9"	8-3"
75.0	6'-11"	6'-4"	5'-10"	5'-6"	5'-3"	5'-0"	9'-7"	9'-1"	8'-6"	8'-0"	7-7"	13-3"	12-3"	12-0"	11-7"	10-6"	9-9"	9-2"	8-6"	8-0"
80.0	6'-10"	6'-2"	5'-9"	5-9"	5-5"	5-2"	9-4"	8-8"	8-2"	7-5"	7-5"	12-11"	12-0"	11-4"	10-3"	9-7"	9-0"	8-4"	7-8"	7-2"
85.0	6'-8"	6'-1"	5-7"	5-7"	5-3"	5-0"	9-2"	8-6"	8-0"	7-3"	7-3"	12-8"	12-8"	11-9"	10-1"	9-4"	8-9"	8-3"	7-7"	7-1"
90.0	6'-6"	5-11"	5-6"	5-5"	5-1"	5-0"	9-0"	8-4"	7-10"	7-2"	7-2"	12-5"	11-7"	10-11"	9-11"	8-2"	7-6"	7-0"	6-4"	5-8"
95.0	6'-5"	5-10"	5-5"	5-5"	5-1"	5-0"	8-10"	8-2"	7-9"	7-0"	7-0"	12-3"	11-4"	10-8"	9-9"	9-0"	8-3"	7-7"	7-1"	6-5"
100.0	6'-4"	5-9"	5-4"	5-4"	5-0"	5-0"	8-8"	8-1"	7-7"	6-11"	6-11"	12-0"	11-2"	10-6"	9-7"	8-10"	8-1"	7-5"	6-9"	6-3"
105.0	6'-3"	5-8"	5-3"	5-3"	4-11"	4-11"	8-6"	7-11"	7-6"	6-9"	6-9"	11-10"	11-0"	10-4"	9-5"	8-9"	8-3"	7-7"	7-1"	6-5"
110.0	6'-1"	5-7"	5-2"	5-2"	4-10"	4-10"	8-5"	7-10"	7-4"	6-8"	6-8"	11-8"	10-10"	10-2"	9-3"	8-7"	8-1"	7-5"	6-9"	6-3"
115.0	6'-0"	5-6"	5-1"	5-1"	4-9"	4-9"	8-3"	7-8"	7-3"	6-7"	6-7"	11-6"	10-8"	10-0"	9-1"	8-5"	7-9"	7-3"	6-7"	6-1"
120.0	5'-11"	5-5"	5-0"	5-0"	4-9"	4-9"	8-2"	7-7"	7-2"	6-6"	6-6"	11-4"	10-6"	10-6"	9-11"	8-0"	7-4"	6-8"	6-2"	5-6"
125.0	5'-10"	5-4"	4-11"	4-11"	4-8"	4-8"	8-1"	7-6"	7-0"	6-5"	6-5"	11-2"	10-4"	10-4"	9-9"	8-10"	7-4"	6-8"	6-2"	5-6"
130.0	5'-9"	5-3"	4-11"	4-11"	4-6"	4-6"	7-11"	7-5"	7-3"	6-11"	6-11"	11-0"	10-1"	10-1"	9-6"	8-6"	8-0"	7-4"	6-8"	6-2"
135.0	5'-9"	5-2"	4-10"	4-10"	4-6"	4-6"	7-10"	7-3"	7-2"	6-10"	6-10"	10-11"	10-1"	9-6"	8-6"	8-0"	7-4"	6-8"	6-2"	5-6"
140.0	5'-8"	5-2"	4-9"	4-9"	4-5"	4-5"	7-9"	7-2"	7-2"	6-9"	6-9"	10-9"	10-0"	9-5"	8-4"	7-8"	7-2"	6-6"	6-0"	5-4"
145.0	5'-7"	5-1"	4-8"	4-8"	4-4"	4-4"	7-8"	7-1"	7-1"	6-8"	6-8"	10-7"	9-10"	9-3"	8-3"	7-7"	7-1"	6-5"	5-9"	5-3"
150.0	5'-6"	5-0"	4-8"	4-8"	4-3"	4-3"	7-7"	7-0"	7-0"	6-7"	6-7"	10-5"	9-9"	9-2"	8-1"	7-5"	6-9"	6-3"	5-7"	5-1"
155.0	5'-5"	4-11"	4-7"	4-7"	4-2"	4-2"	7-6"	7-0"	7-0"	6-7"	6-7"	10-5"	9-8"	9-1"	7-11"	7-11"	6-5"	5-9"	5-3"	4-7"
160.0	5'-5"	4-11"	4-6"	4-6"	4-1"	4-1"	7-5"	6-11"	6-6"	5-10"	5-10"	10-0"	9-7"	9-0"	7-10"	7-10"	6-4"	5-8"	5-2"	4-6"

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



© 2008 TILTECO, INC.
TILTECO INC.
 TILLET TESTING & ENGINEERING COMPANY
 4330 W. 38th, Tampa, Florida 33618
 Phone: 800-292-7008
 e-mail: tilteco@tilteco.com
 FAX: 813-987-1871

60mm & 40mm ROLL-UP SHUTTER
ROLLER STAR CORPORATION
 1400 SW 6th COURT, BUILDING 1400
 Ft. Lauderdale, Florida 33304
 Phone: 800-292-7008

REV. NO.	DESCRIPTION	DATE	REV. NO.	DESCRIPTION	DATE
1	QAD 03-138	7/21/08	2		

DRAWN BY: MCV/LAA
 DATE: 07/21/08
 08-189
 DRAWING NO.
 SHEET 19 OF 19

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