

# IMPACT HURRICANE SYSTEMS

## 60 MM ROLL DOWN SHUTTERS

### INSTALLATION NOTES:

1. ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN, UNLESS OTHERWISE STATED.
2. THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
3. INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF  $\pm 1/2$  INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
4. REFER TO ANCHOR SCHEDULE CHART ON SHEETS 5, 6, 7, 9 & 11 FOR ANCHOR TYPE, SUBSTRATE TYPE, EDGE DISTANCE AND MINIMUM EMBEDMENT.
5. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
6. INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING WITH A MINIMUM TENSILE STRENGTH OF 60 ksi.
7. FOR HOLLOW BLOCK AND GROUT FILLED BLOCK, DO NOT INSTALL INSTALLATION ANCHORS INTO MORTAR JOINTS. EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.
8. INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
9. INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
  - 9.A. WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.
  - 9.B. CONCRETE -MINIMUM COMPRESSIVE STRENGTH OF 2700 PSI.
  - 9.C. MASONRY - STRENGTH CONFORMANCE TO ASTM C-90, GRADE N, TYPE 1 (OR GREATER).

### GENERAL NOTES:

1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT FLORIDA BUILDING CODE (FBC), INCLUDING HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
  - ASTM E330-02
  - ASTM E1886-02
  - ASTM E1996-02
  - TAS 201-94
  - TAS 202-94
  - TAS 203-94
2. ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY AND 2X STUD FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
3. 2X BUCKS (WHEN USED) SHALL BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
4. THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.
5. INSTALLATION OF ROLL DOWN MAY EITHER BE INSIDE OR OUTSIDE OF THE TIE BEAM.
6. ALL EXTRUSION MATERIAL: 6063-T6 ALUMINUM ALLOY, UNLESS OTHERWISE NOTED.
7. OPERATION OF ROLLUP MECHANISM IS NOT PART OF THIS APPROVAL. CARE SHOULD BE TAKEN WHEN SHUTTER IS IN MOTION ENSURING THAT PERSONAL INJURY OR DAMAGE TO THIS PRODUCT DOES NOT OCCUR.
8. FOR DESIGN PRESSURES SEE SHEETS 5-8.
9. HOOD ASSEMBLY IS IMPACT RATED AND CAN BE PLACED INSIDE FRAME OPENING AS AN EXPOSED FEATURE.

TABLE OF CONTENTS		
SHEET	REVISION	SHEET DESCRIPTION
1	-	GENERAL & INSTALLATION NOTES
2	-	ELEVATION & DESIGN PRESSURE TABLE
3	-	TYPICAL SINGLE UNIT ELEVATION
4	-	VERTICAL SECTIONS
5	-	HORIZONTAL SECTIONS
6	-	HORIZONTAL SECTIONS
7	-	HORIZONTAL SECTIONS
8	-	HORIZONTAL SECTIONS
9	-	HORIZONTAL SECTIONS
10	-	EQUALLY SPACED MULLIONS SELECTION
11	-	EQUALLY SPACED MULLIONS CONNECTION
12	-	SLAT END RETENTION AND HOOD VENT ASSEMBLY
13	-	COMPONENTS & BILL OF MATERIALS

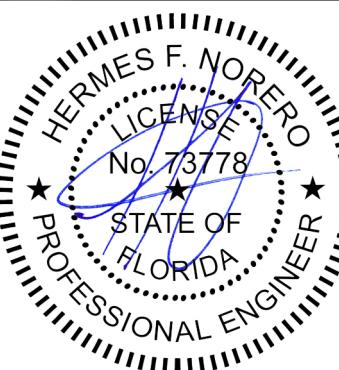
TITLE: 60 MM ROLL DOWN SHUTTERS  
GENERAL & INSTALLATION NOTES

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

REMARKS      BY      DATE

[REMARKS, BY, DATE fields]

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY: LMS      CHK. BY: HFN

SCALE: NTS

DWG. #: IHS001

SHEET: OF 13

## **DESIGN PRESSURE RATING**

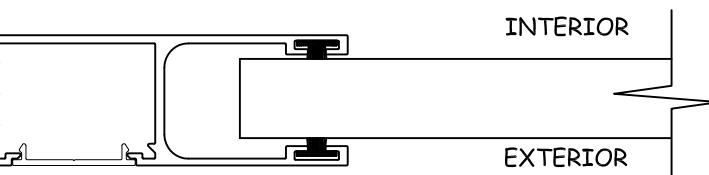
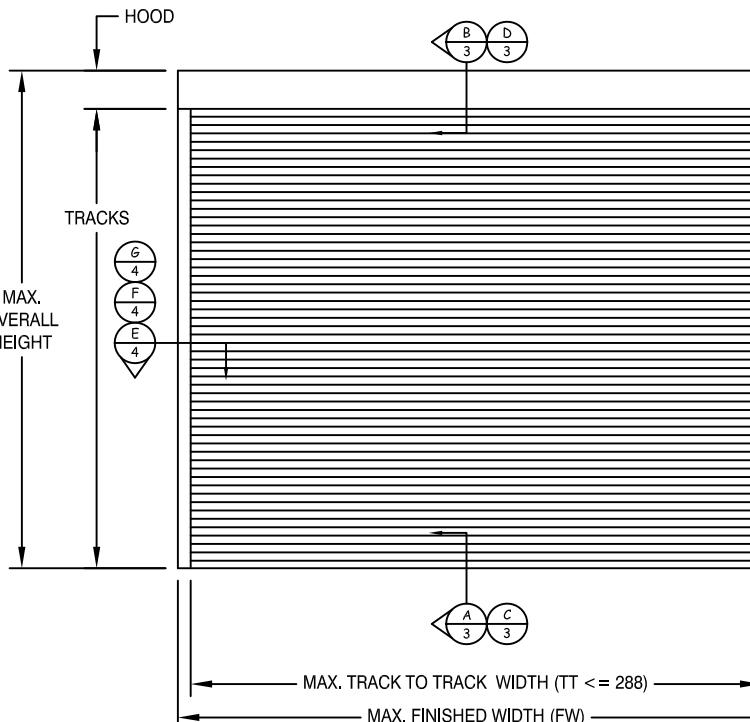
W/ END RETENTION		
TT MAX	POSITIVE	NEGATIVE
288	+40	-40
264	+45	-45
240	+50	-50
216	+55	-55
204	+60	-60
168	+100	-100
144	+125	-125
132	+135	-135
120	+150	-150
108	+160	-160
96	+175	-175
84	+185	-185
72	+200	-200
W/O END RETENTION		
TT MAX	POSITIVE	NEGATIVE
72	+60	-60

NOTES:

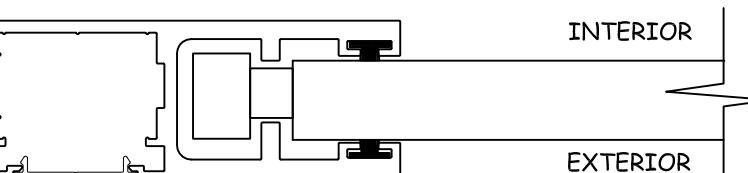
1. DESIGN PRESSURES MUST NOT EXCEED 200 PSF FOR END RETENTION SYSTEM.
2. SHUTTER SIZE (TT) MUST NOT EXCEED 288".

MULTIPLE SHUTTER NOTES:

1. USE TABLE 1 TO VERIFY MAXIMUM ALLOWABLE PRESSURE.
2. USE TABLE 2, 3 & 4 TO SELECT INTERMEDIATE AND END MULLIONS.
3. SELECT PROPER MULLION ANCHORAGE.



# WITHOUT END RETENTION



## WITH END RETENTION

**60 MM ROLL DOWN SHUTTERS**

**ELEVATION & DESIGN PRESSURE**

**TABLE**

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33930  
PHONE: (786) 367-8740

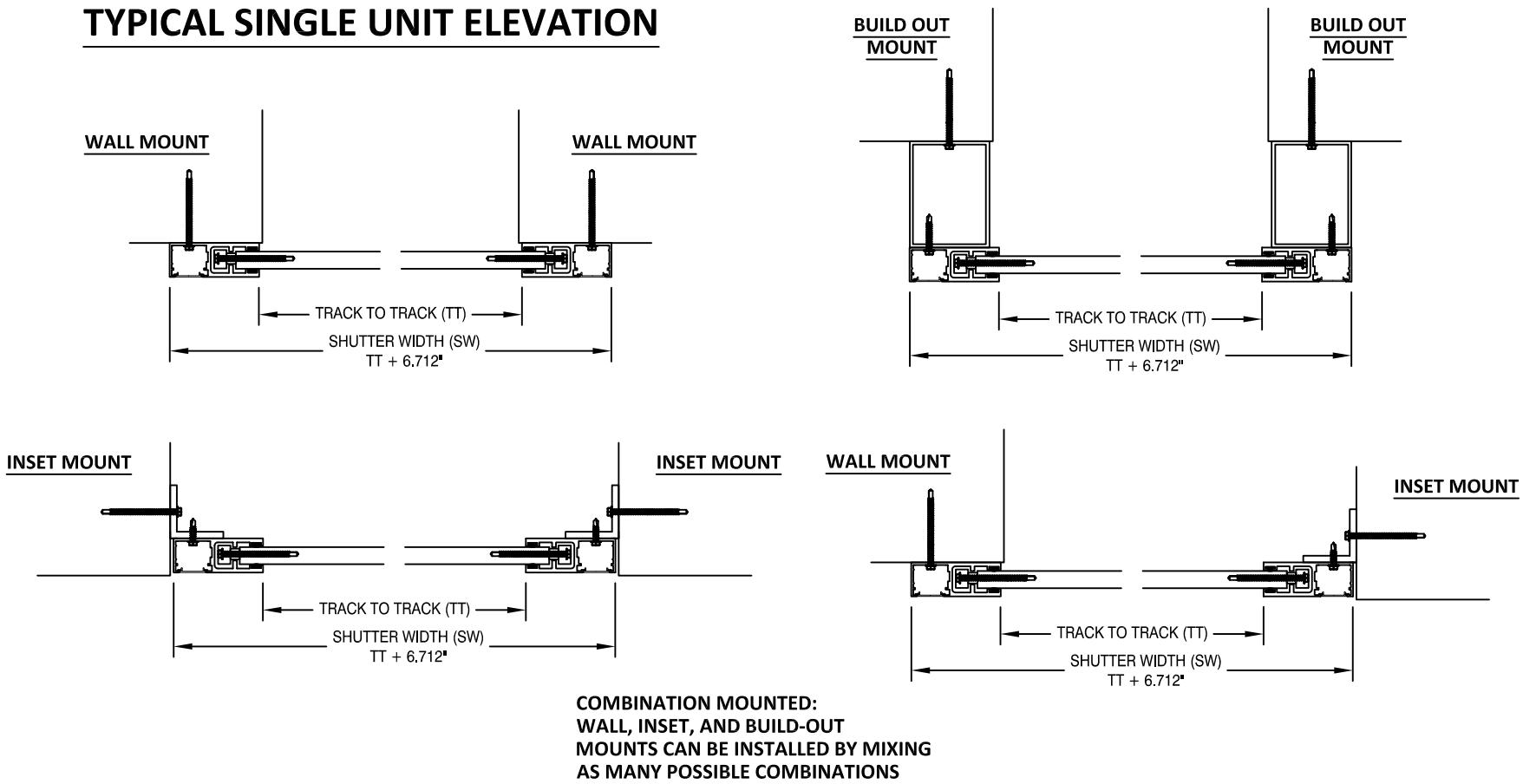
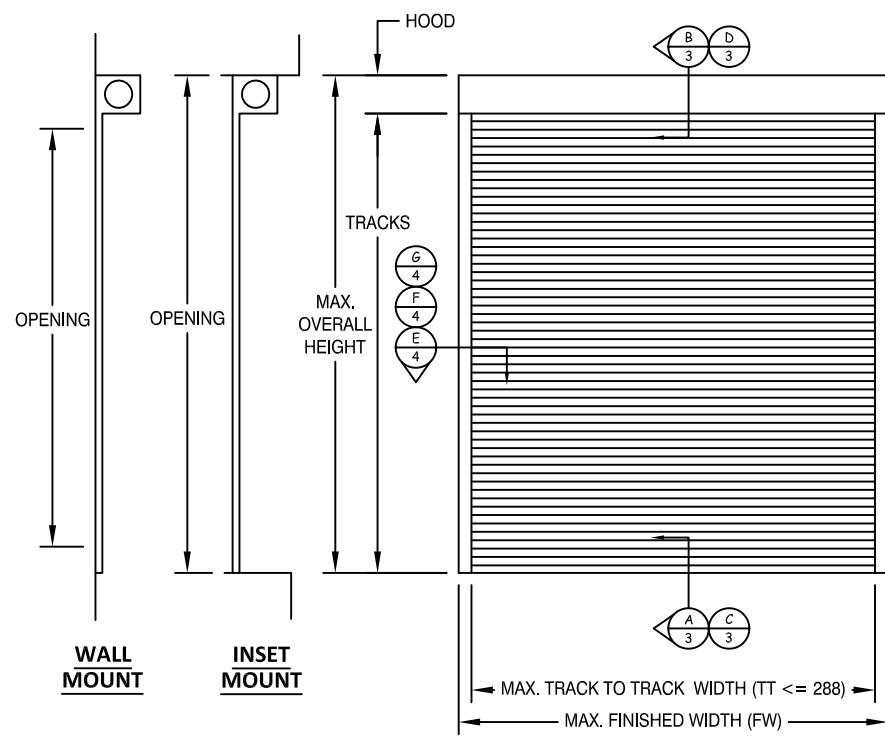
THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC.  
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART  
WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC.  
ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER  
MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND  
INVALIDATE OUR CERTIFICATION



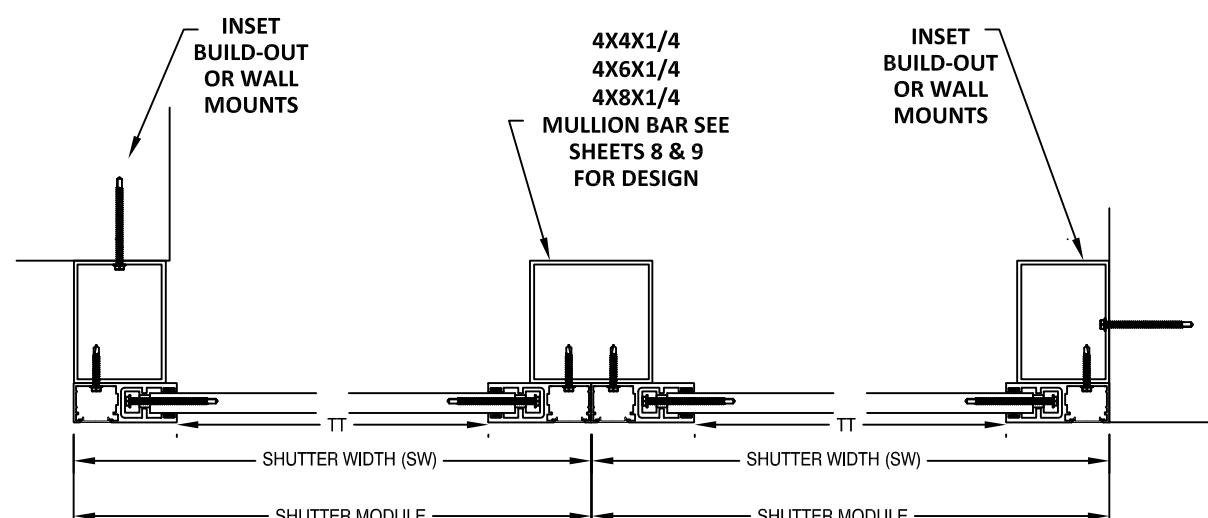
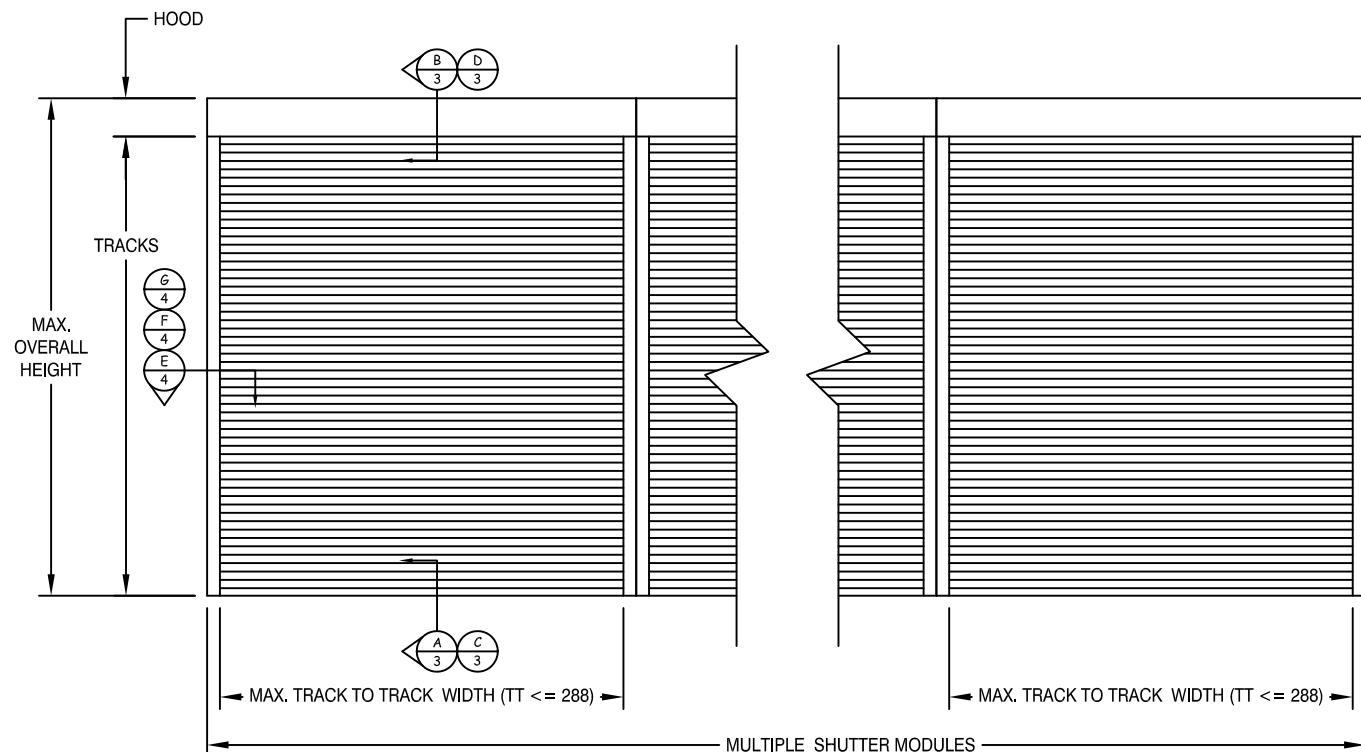
DATE:	02.06.17
DWG. BY:	CHK. BY:
LMS	HFN
SCALE:	NTS
DWG. #:	IHS001
SHEET:	OF 13

2

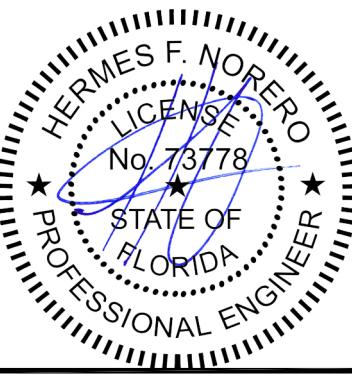
## TYPICAL SINGLE UNIT ELEVATION



## TYPICAL MULTIPLE UNITS ELEVATION

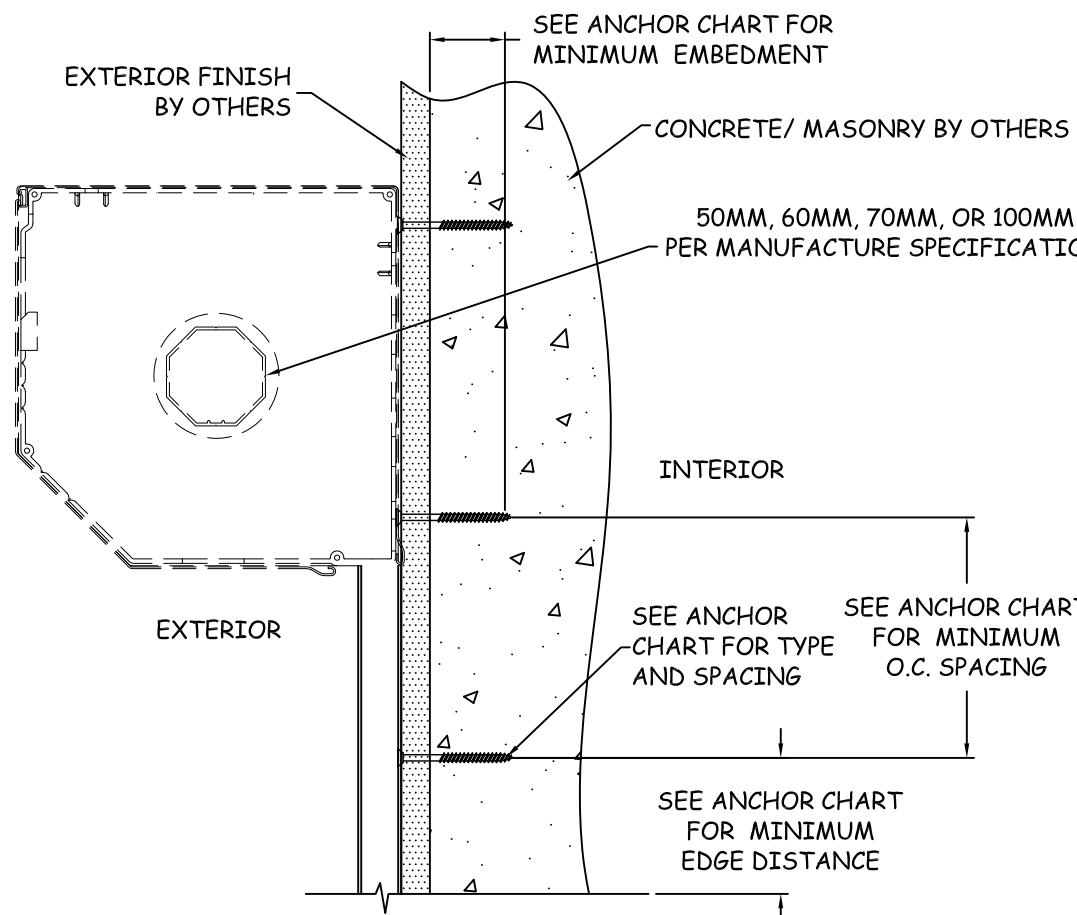


THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.



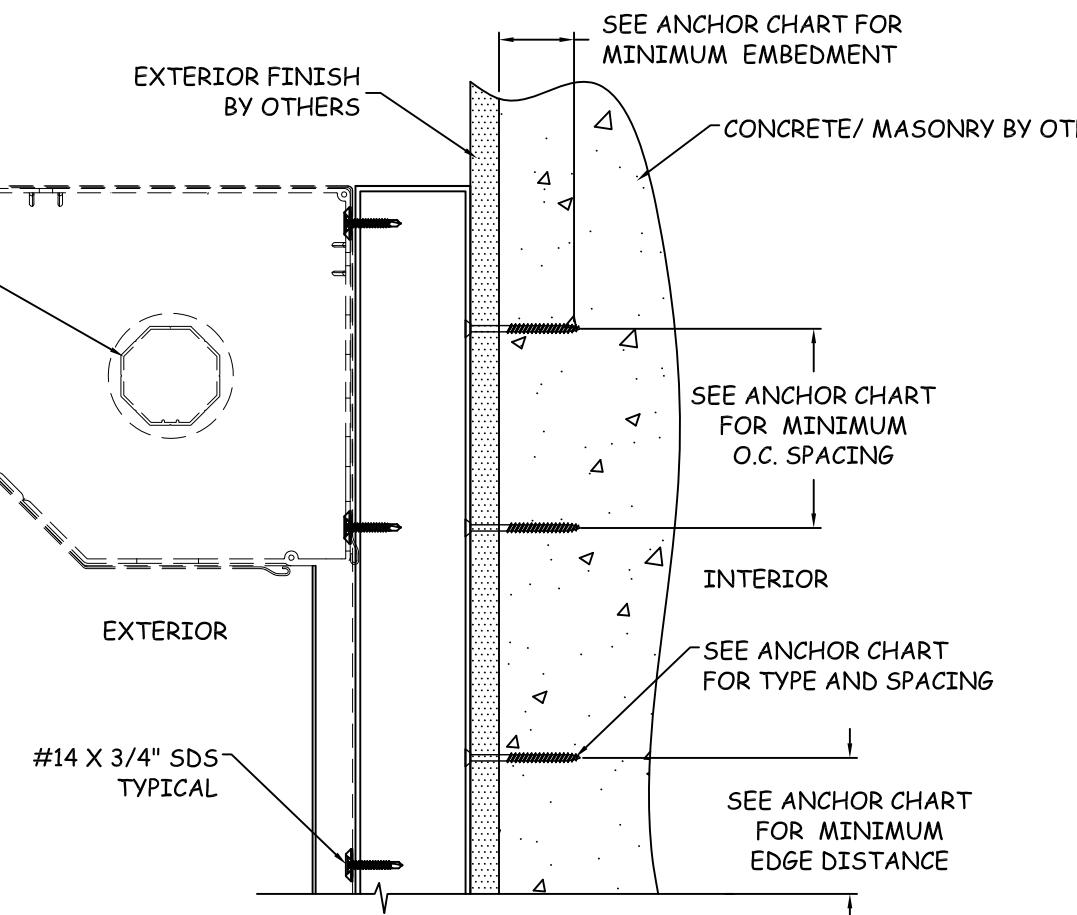
DATE: 02.06.17  
DWG. BY: LMS CHK. BY: HFN  
SCALE: NTS  
DWG. #: IHS001  
SHEET: OF 13

## TYPICAL VERTICAL SECTIONS



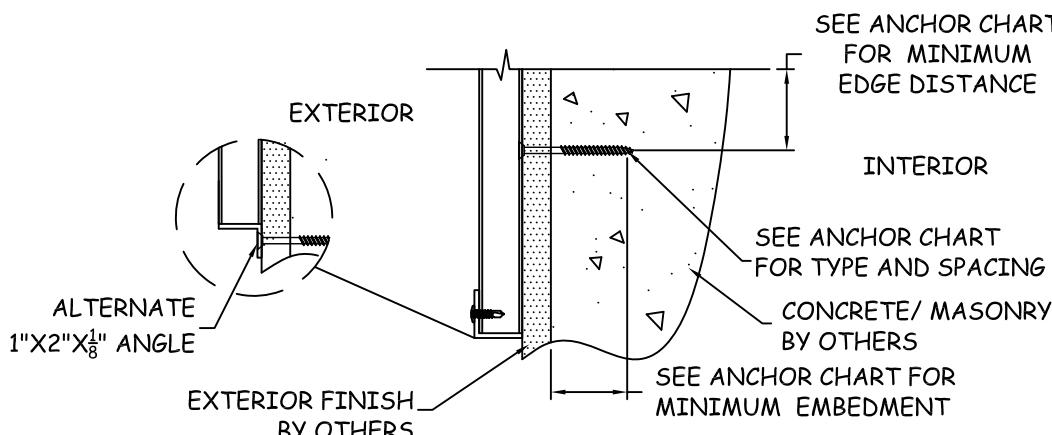
**B**  
**4** VERTICAL SECTION

MASONRY/CONCRETE SUBSTRATE - WALL MOUNT  
SEE CHARTS ON SHEETS 5 & 6 FOR OTHER SUBSTRATES



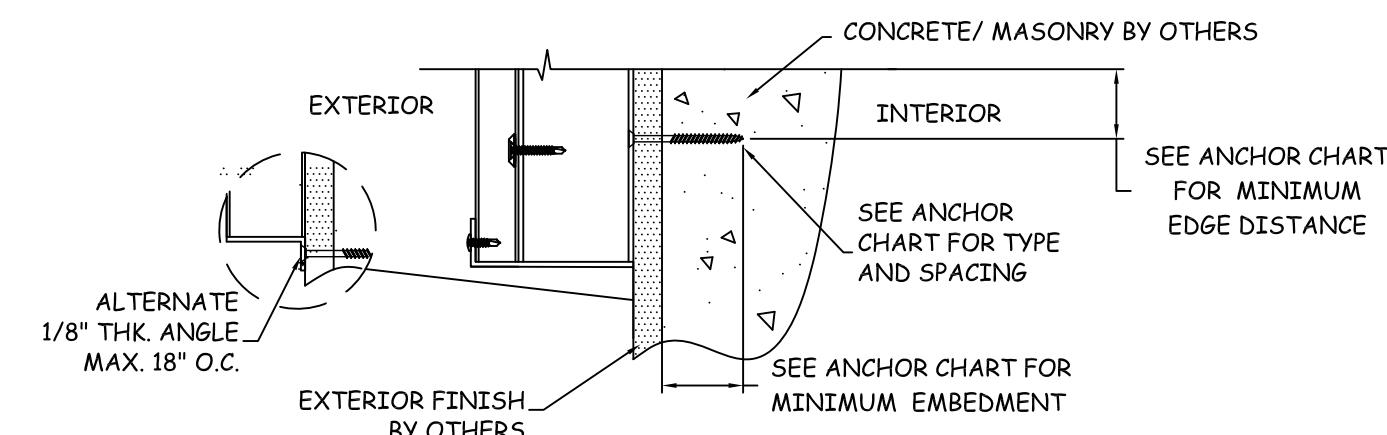
**D**  
**4** VERTICAL SECTION

MASONRY/CONCRETE SUBSTRATE - BUILDOUT  
SEE CHARTS ON SHEETS 5 & 6 FOR OTHER SUBSTRATES



**A**  
**4** VERTICAL SECTION

MASONRY/CONCRETE SUBSTRATE - WALL MOUNT  
SEE CHARTS ON SHEETS 5 & 6 FOR OTHER SUBSTRATES



**C**  
**4** VERTICAL SECTION

MASONRY/CONCRETE SUBSTRATE - BUILDOUT  
SEE CHARTS ON SHEETS 5 & 6 FOR OTHER SUBSTRATES

NOTES:

1. SLATS NOT SHOWN FOR CLARITY
2. REVERSED INSTALLATION IS ACCEPTABLE

TITLE: 60 MM ROLL DOWN SHUTTERS  
COMPONENTS & BILL OF MATERIALS

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC.  
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART  
WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC.  
ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER  
MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND  
INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY: LMS CHK. BY: HFN

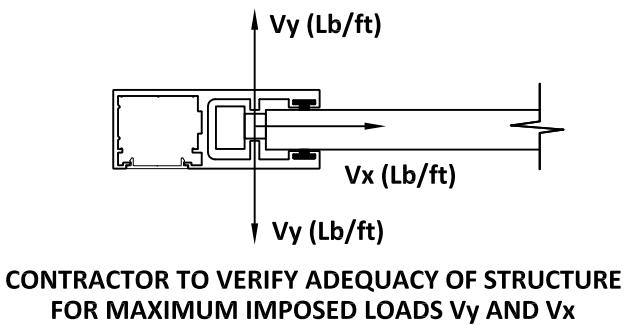
SCALE: NTS

DWG. #: IHS001

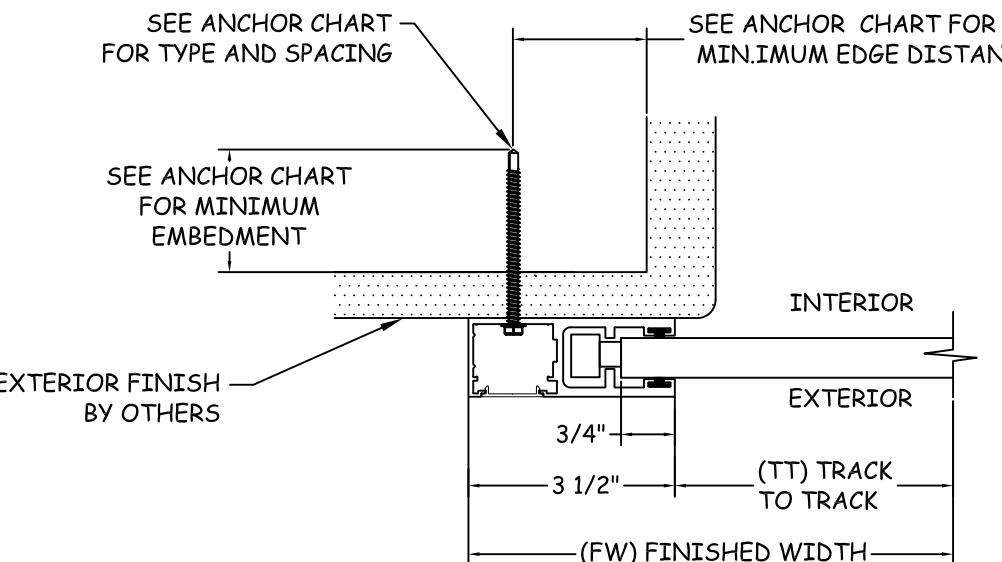
SHEET: OF 13

TITLE: 60 MM ROLL DOWN SHUTTERS  
HORIZONTAL SECTIONS  
IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

TABLE 2 - ANCHOR SPACING				ANCHOR TYPE & SPACING WALL - MOUNT 1						ANCHOR TYPE & SPACING 2X4, 3X4, OR 3X3 BO - MOUNT 2					
TT	PD	Vx	Vy	A	B	C	D	E	F	A	B	C	D	E	F
72	40	0	10.93	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	12.30	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	13.67	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	15.03	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	16.40	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	17.76	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	19.13	6	6	6	6	-	6	12	12	12	12	12	12
	75	0	20.50	6	6	6	6	-	6	12	12	12	12	12	12
	80	0	21.86	6	6	6	6	-	6	12	12	12	12	12	12
84	40	0	12.60	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	14.17	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	15.75	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	17.32	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	18.90	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	20.47	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	22.05	6	6	6	6	-	6	12	12	12	12	12	12
	75	0	23.62	6	6	6	6	-	6	12	12	12	12	12	12
	80	0	25.20	6	6	6	6	-	6	12	12	12	12	12	12
96	40	0	14.27	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	16.05	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	17.83	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	19.62	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	21.40	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	23.18	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	24.96	6	6	6	6	-	6	12	12	12	12	12	12
	75	0	26.75	6	6	6	6	-	6	12	12	12	12	12	12
	80	0	28.53	6	6	6	6	-	6	12	12	12	12	12	12
108	40	0	15.93	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	17.92	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	19.92	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	21.91	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	23.90	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	25.89	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	27.88	6	6	6	6	-	6	12	12	12	12	12	12
	75	0	29.87	6	6	6	6	-	6	12	12	12	12	12	12
	80	0	31.86	6	6	6	6	-	6	12	12	12	12	12	12



## TYPICAL HORIZONTAL SECTIONS WALL MOUNT



### HORIZONTAL SECTION

MOUNT TYPE 1  
WALL MOUNT

\*WITH OR WITHOUT END RETENTION

#### ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	3/8" X 4" WEDGE BOLT	MIN. 3000 PSI CONCRETE	3 1/2"	3 3/4"
B	5/16" X 3" TAPCON	MIN. 3513 PSI CONCRETE	2"	3 1/8"
C	3/8" X 4" WEGDE BOLT	GROUT FILLED C-90 BLOCK	3 1/2"	3 3/4"
D	5/16" X 3" TAPCON	GROUT FILLED C-90 BLOCK	2 1/4"	4"
E	#14 X 3/4" DRIL-FLEX SELF DRILLING SCREW	MIN 1/4" 6063-T6 ALUM. OR A36 3/16" STEEL	3 threads penetration	1/2" 3/8"
F	5/16" ELCO Ultracon	MIN. SG = 0.55 WOOD	2"	19/16"

DATE: 02.06.17  
DWG. BY: LMS      CHK. BY: HFN  
SCALE: NTS  
DWG. #: IHS001  
SHEET: OF 13

5

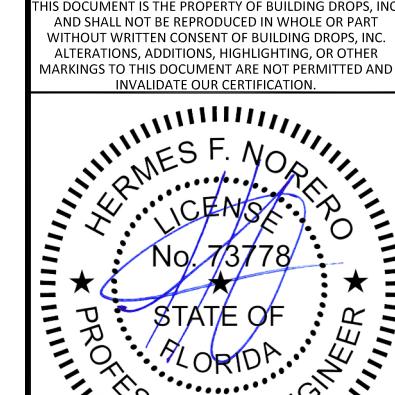
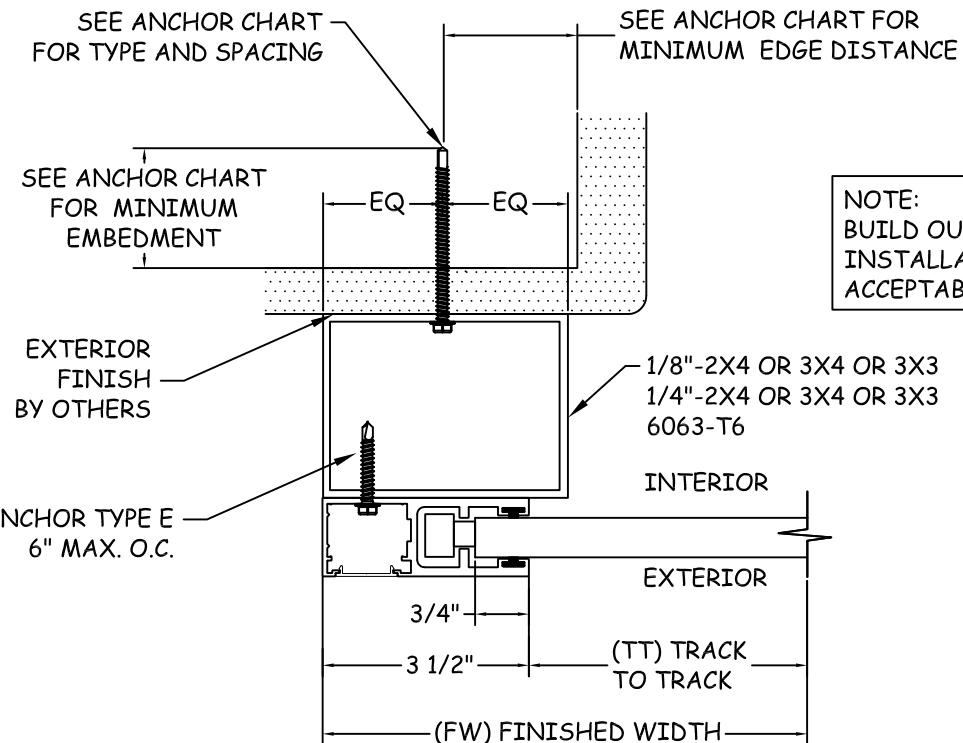


TABLE 2 - ANCHOR SPACING				ANCHOR TYPE & SPACING WALL - MOUNT 1						ANCHOR TYPE & SPACING 2X4, 3X4, OR 3X3 BO - MOUNT 2					
TT	PD	Vx	Vy	A	B	C	D	E	F	A	B	C	D	E	F
120	40	0	17.60	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	19.80	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	22.00	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	24.20	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	26.40	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	28.60	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	30.80	6	6	6	6	-	6	12	12	12	12	12	12
	75	0	33.00	6	6	6	6	-	6	12	12	12	12	12	12
132	40	0	19.27	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	21.67	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	24.08	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	26.49	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	28.90	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	31.31	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	33.71	6	6	6	6	-	6	12	12	12	12	12	12
	75	0	36.12	6	6	6	6	-	6	12	12	12	12	12	12
144	40	0	20.93	6	6	6	6	-	6	12	12	12	12	12	12
	45	0	23.55	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	26.17	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	28.78	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	31.40	6	6	6	6	-	6	12	12	12	12	12	12
	65	0	34.01	6	6	6	6	-	6	12	12	12	12	12	12
	70	0	36.63	6	6	6	6	-	6	12	12	12	12	12	12
	40	0	24.27	6	6	6	6	-	6	12	12	12	12	12	12
168	45	0	27.30	6	6	6	6	-	6	12	12	12	12	12	12
	50	0	30.33	6	6	6	6	-	6	12	12	12	12	12	12
	55	0	33.37	6	6	6	6	-	6	12	12	12	12	12	12
	60	0	36.40	6	6	6	6	-	6	12	12	12	12	12	12
	40	29.63971	29.27	6	6	6	6	-	6	12	6	7	7	8	8
204	45	52.69282	32.92	6	6	6	6	-	6	10	4	4	4	5	5
	50	71.13531	36.58	6	6	6	6	-	6	8	3	3	3	3	3
	55	86.22462	40.24	6	5	6	5	-	5	6	-	-	-	3	3
	60	98.79904	43.90	6	4	5	4	-	4	6	-	-	-	-	-
	40	31.77456	30.93	6	6	6	6	-	6	12	6	6	6	7	7
216	45	56.48811	34.80	6	6	6	6	-	6	10	4	4	4	4	4
	50	76.25894	38.67	6	6	6	6	-	6	7	3	3	3	3	3
	55	92.43508	42.53	6	5	5	5	-	5	6	-	-	-	3	3
	40	35.61808	34.27	6	6	6	6	-	6	12	5	5	5	6	6
240	45	63.32103	38.55	6	6	6	6	-	6	8	3	3	3	4	4
	50	85.4834	42.83	6	5	6	5	-	5	6	-	-	-	3	3
	40	77.39882	37.60	6	6	6	5	-	6	7	3	3	3	3	3
264	45	103.1984	42.30	6	4	5	4	-	4	5	-	-	-	-	-
	40	81.50313	40.93	6	5	6	5	-	5	7	-	3	3	3	3

## TYPICAL HORIZONTAL SECTIONS BUILD OUT



### HORIZONTAL SECTION

MOUNT TYPE 2  
BUILD-OUT MOUNT

\*WITH OR WITHOUT END RETENTION

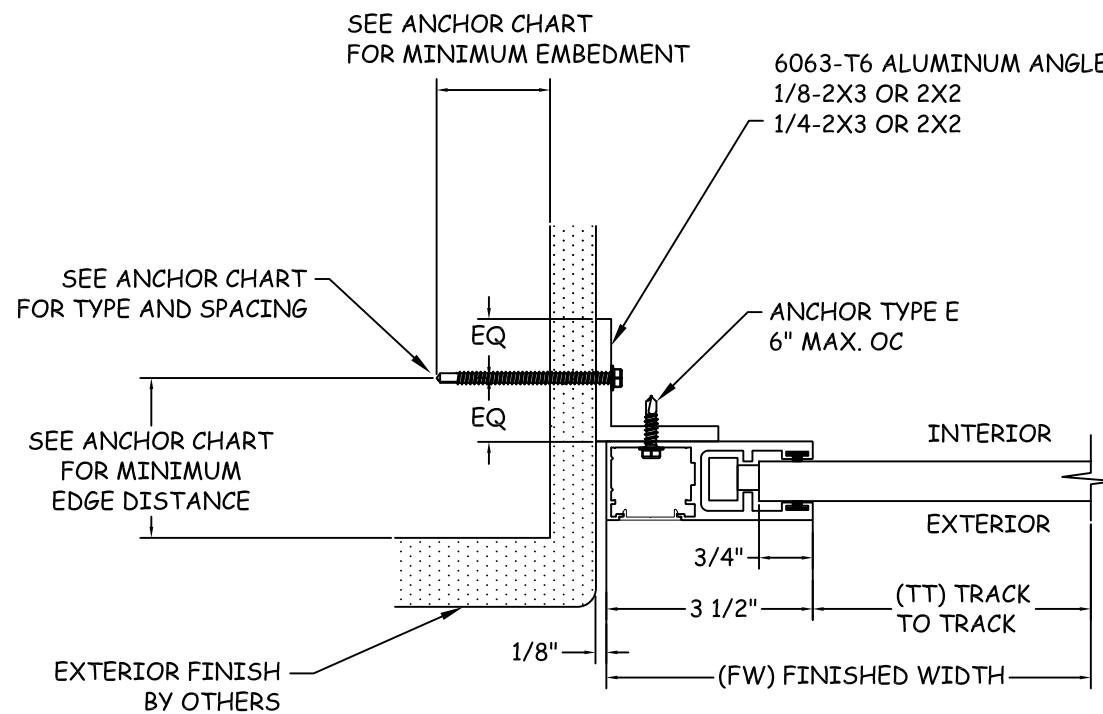
#### ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	3/8" X 4" WEDGE BOLT	MIN. 3000 PSI CONCRETE	3 1/2"	3 3/4"
B	5/16" X 3" TAPCON	MIN. 3513 PSI CONCRETE	2"	3 1/8"
C	3/8" X 4" WEGDE BOLT	GROUT FILLED C-90 BLOCK	3 1/2"	3 3/4"
D	5/16" X 3" TAPCON	GROUT FILLED C-90 BLOCK	2 1/4"	4"
E	#14 X 3/4" DRIL-FLEX SELF DRILLING SCREW	MIN 1/4" 6063-T6 ALUM. OR A36 3/16" STEEL	3 threads penetration	1/2" 3/8"
F	5/16" ELCO Ultracon	MIN. SG = 0.55 WOOD	2"	19/16"

DATE: 02.06.17  
DWG. BY: LMS CHK. BY: HFN  
SCALE: NTS  
DWG. #: IHS001  
SHEET: OF 13

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

## TYPICAL HORIZONTAL SECTIONS INSET MOUNT

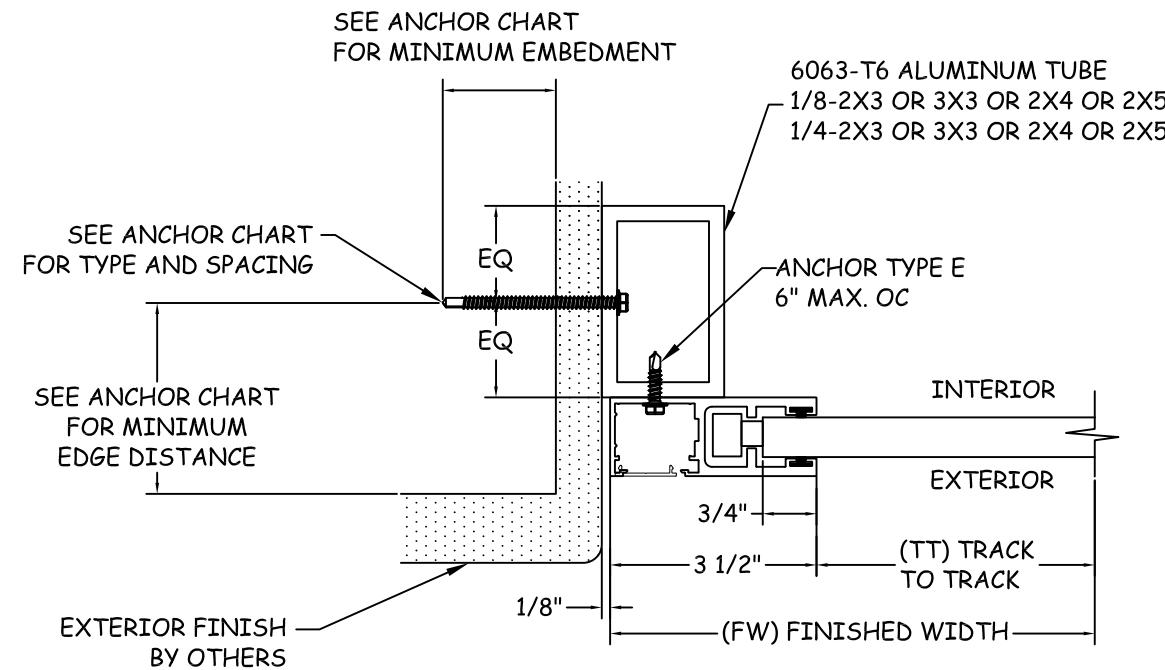


**G**  
**7**

### HORIZONTAL SECTION

MOUNT TYPE 3  
INSET MOUNT

\*WITH OR WITHOUT END RETENTION

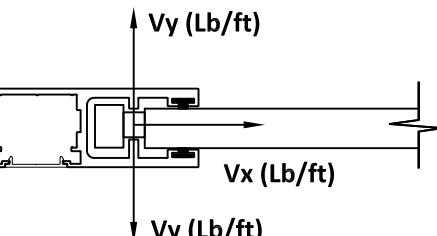


**H**  
**7**

### HORIZONTAL SECTION

MOUNT TYPE 3  
INSET MOUNT

\*WITH OR WITHOUT END RETENTION



CONTRACTOR TO VERIFY ADEQUACY OF STRUCTURE  
FOR MAXIMUM IMPOSED LOADS Vy AND Vx

SEE SHEETS 8 & 9 FOR ANCHOR SPACING TABLES

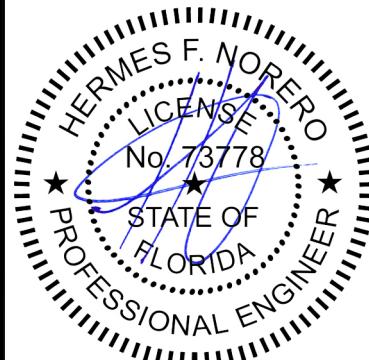
ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	3/8" X 4" WEDGE BOLT	MIN. 3000 PSI CONCRETE	3 1/2"	3 3/4"
B	5/16" X 3" TAPCON	MIN. 3513 PSI CONCRETE	2"	3 1/8"
C	3/8" X 4" WEDGE BOLT	GROUT FILLED C-90 BLOCK	3 1/2"	3 3/4"
D	5/16" X 3" TAPCON	GROUT FILLED C-90 BLOCK	2 1/4"	4"
E	#14 X 3/4" DRIL-FLEX SELF DRILLING SCREW	MIN 1/4" 6063-T6 ALUM. OR A36 3/16" STEEL	3 threads penetration	1/2" 3/8"
F	5/16" ELCO Ultracon	MIN. SG = 0.55 WOOD	2"	1 9/16"

TITLE: 60 MM ROLL DOWN SHUTTERS  
INSET MOUNT ANCHOR SPACING

REMARKS	BY	DATE

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY: LMS      CHK. BY: HFN

SCALE: NTS

DWG. #: IHS001

SHEET: OF 13

**PREPARED BY:**



**BUILDING DROPS, INC.**  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954)399-8478  
FAX: (954)744.4738  
WEB: [www.buildingdrops.com](http://www.buildingdrops.com)

TABLE 4 - ANCHOR SPACING				ANCHOR TYPE & SPACING 2X2 INSET - MOUNT 3						ANCHOR TYPE & SPACING 2X3 OR 3X3 INSET - MOUNT 3						ANCHOR TYPE & SPACING 2X4 INSET - MOUNT 3						ANCHOR TYPE & SPACING 2X5 INSET - MOUNT 3					
TT	PD	Vx	Vy	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
72	40	0	10.93	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	45	0	12.30	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	50	0	13.67	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	55	0	15.03	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	60	0	16.40	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	65	0	17.76	12	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	70	0	19.13	12	10	10	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	75	0	20.50	12	9	10	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	80	0	21.86	12	9	9	9	11	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
84	40	0	12.60	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	45	0	14.17	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	50	0	15.75	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	55	0	17.32	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	60	0	18.90	12	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	65	0	20.47	12	9	10	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	70	0	22.05	12	9	9	9	10	10	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	75	0	23.62	12	8	8	8	10	10	12	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	80	0	25.20	12	7	8	8	9	9	12	10	11	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12
96	80	0	14.27	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	45	0	16.05	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	50	0	17.83	12	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	55	0	19.62	12	10	10	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	60	0	21.40	12	9	9	9	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	65	0	23.18	12	8	9	9	10	10	12	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	70	0	24.96	12	8	8	8	9	9	12	10	11	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	75	0	26.75	12	7	7	7	9	9	12	9	10	10	11	11	12	11	12	11	12	12	12	12	12	12	12	12
	80	0	28.53	12	7	7	7	8	8	12	9	9	9	10	10	12	10	11	11	12	12	12	12	12	12	12	12
108	40	0	15.93	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	45	0	17.92	12	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	50	0	19.92	12	10	10	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	55	0	21.91	12	9	9	9	11	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	60	0	23.90	12	8	8	8	10	10	12	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	65	0	25.89	12	7	8	8	9	9	12	10	10	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12
	70	0	27.88	12	7	7	7	8	8	12	9	9	9	10	10	12	11	11	12	12	12	12	12	12	12	12	12
	75	0	29.87	12	6	7	7	8	8	12	8	9	9	10	10	12	10	11	11	12	11	12	11	12	11	12	12
	80	0	31.86	12	6	6	6	7	7	12	8	8	8	9	9	12	9	10	10	12	10	11	11	11	11	11	11

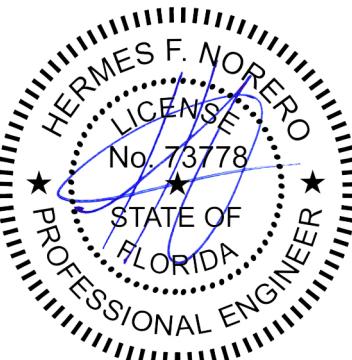
**60 MM ROLL DOWN SHUTTERS**

---

**INSET MOUNT ANCHOR SPACING**

REMARKS	BY	DATE
---------	----	------

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC.  
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART  
WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC.  
ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER  
MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND  
INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY:  
**LMS**

CHK. BY:  
**HFN**

SCALE: NTS

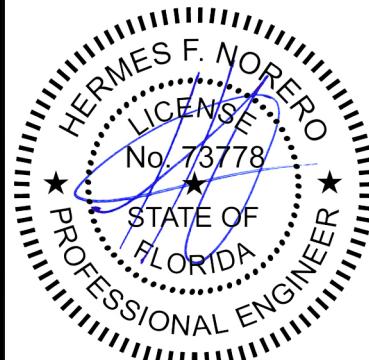
DWG. #: IHS001

SHEET: OF 13

TITLE: 60 MM ROLL DOWN SHUTTERS  
INSET MOUNT ANCHOR SPACING

REMARKS	BY	DATE

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC.  
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART  
WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC.  
ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER  
MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND  
INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY: LMS CHK. BY: HFN

SCALE: NTS

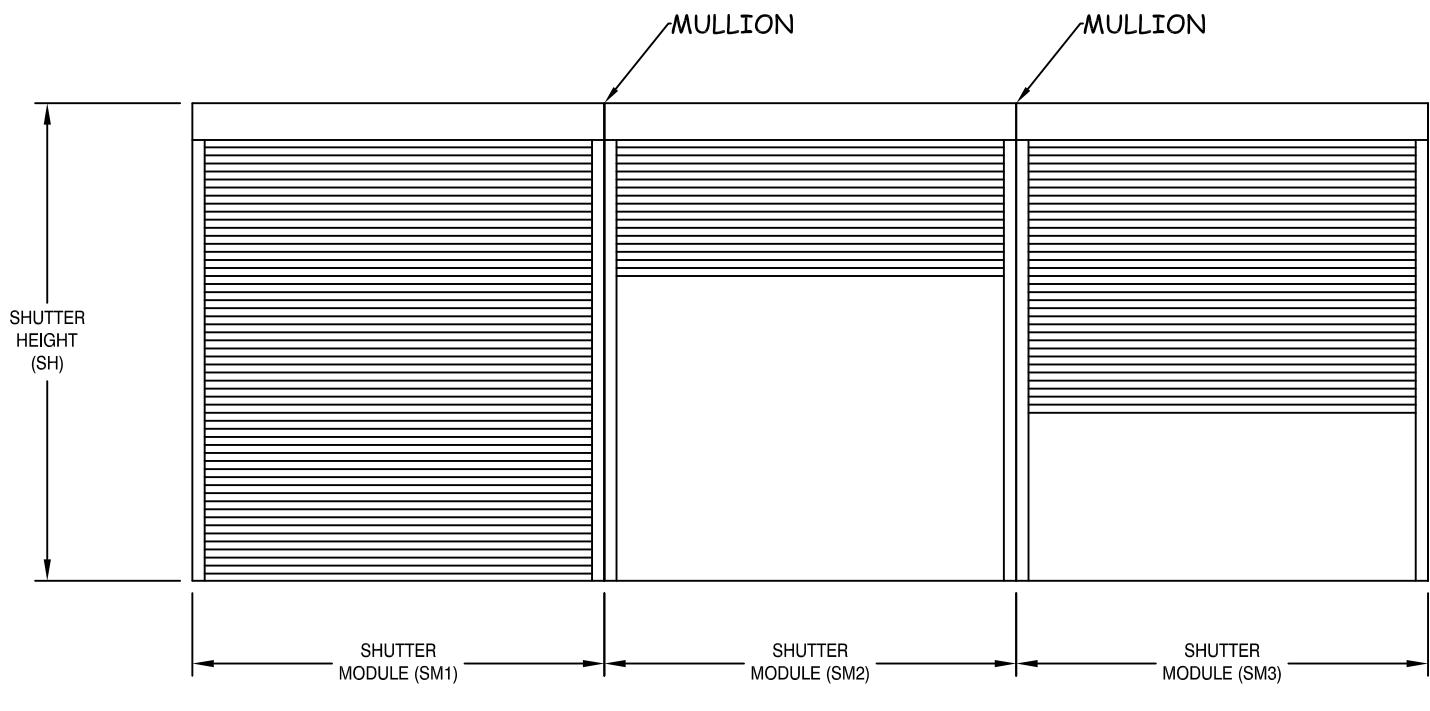
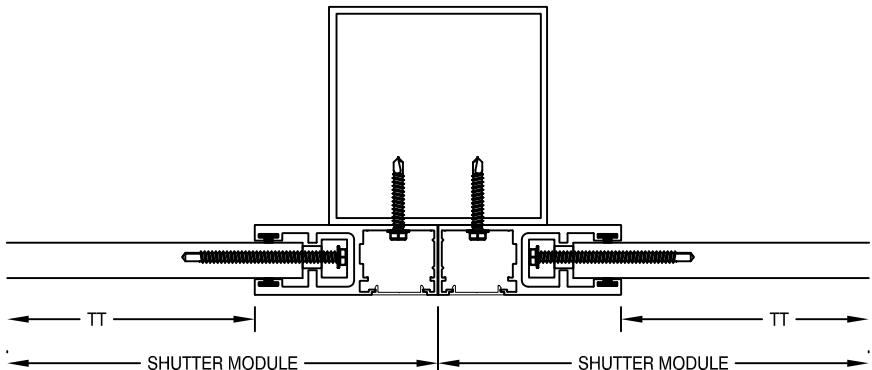
DWG. #: IHS001

SHEET: OF 13

TABLE 4 - ANCHOR SPACING				ANCHOR TYPE & SPACING 2X2 INSET - MOUNT 3						ANCHOR TYPE & SPACING 2X3 OR 3X3 INSET - MOUNT 3						ANCHOR TYPE & SPACING 2X4 INSET - MOUNT 3						ANCHOR TYPE & SPACING 2X5 INSET - MOUNT 3																
TT	PD	Vx	Vy	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F					
120	40	0	17.60	12	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12						
	45	0	19.80	12	10	10	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
	50	0	22.00	12	9	9	9	11	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
	55	0	24.20	12	8	8	8	10	10	12	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
	60	0	26.40	12	7	7	8	9	9	12	9	10	10	11	11	12	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
	65	0	28.60	12	7	7	7	8	8	12	9	9	9	10	10	12	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
	70	0	30.80	12	6	6	6	7	7	12	8	9	8	9	9	12	10	10	11	11	12	11	12	11	12	12	12	12	12	12	12	12	12	12				
	75	0	33.00	12	6	6	6	7	7	12	7	8	8	9	9	12	9	10	10	12	10	11	10	11	11	11	11	11	11	11	11	11	11	11				
132	40	0	19.27	12	10	10	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
	45	0	21.67	12	9	9	9	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
	50	0	24.08	12	8	8	8	10	10	12	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
	55	0	26.49	12	7	7	7	9	9	12	9	10	10	11	11	12	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
	60	0	28.90	12	6	7	7	8	8	12	9	9	9	10	10	12	10	11	10	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
	65	0	31.31	12	6	6	6	7	7	12	8	8	8	9	9	12	9	10	10	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11		
	70	0	33.71	12	5	6	6	7	7	12	7	8	8	8	8	12	8	9	9	12	9	10	10	11	10	11	11	11	11	11	11	11	11	11	11	11		
	75	0	36.12	12	5	5	5	6	6	12	7	7	8	8	8	12	8	9	9	12	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
144	40	0	20.93	12	9	10	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12			
	45	0	23.55	12	8	8	8	10	10	12	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12			
	50	0	26.17	12	7	8	8	9	9	12	10	10	10	11	11	12	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12		
	55	0	28.78	12	6	7	7	8	8	12	9	9	9	10	10	12	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12		
	60	0	31.40	12	6	6	6	7	7	12	8	8	8	9	9	12	9	10	10	12	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
	65	0	34.01	12	5	6	6	7	7	12	7	8	7	8	8	12	9	9	10	10	12	10	11	10	11	10	11	11	11	11	11	11	11	11	11	11	11	11
	70	0	36.63	12	5	5	5	6	6	12																												

## EQUALLY SPACED MULLIONS SELECTION

### FACE MOUNT MULLION

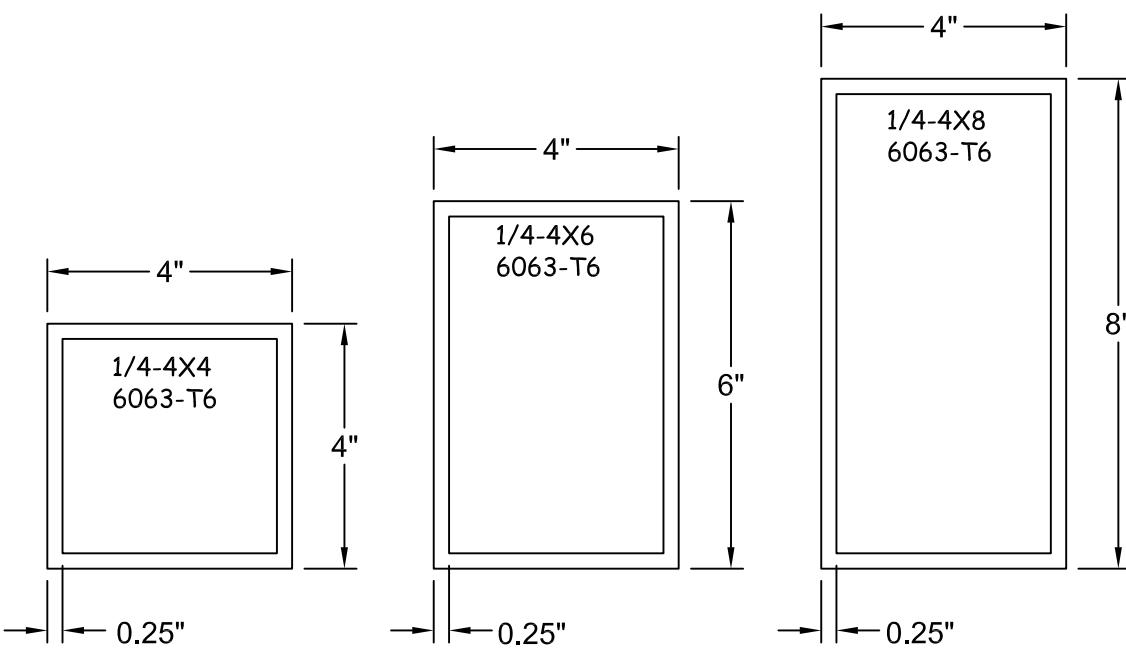


Maximum Mullion Designed Pressures (PSF)

TT Max.	1/4-4x8 mullion span			1/4-4x6 mullion span			1/4-4x4 mullion span		
	144	120	96	144	120	96	144	120	96
288	34	40	40	N/A	N/A	40	N/A	N/A	N/A
264	37	45	45	N/A	31	45	N/A	N/A	N/A
240	41	50	50	N/A	35	50	N/A	N/A	N/A
216	45	55	55	N/A	39	55	N/A	N/A	N/A
204	48	60	60	N/A	41	60	N/A	N/A	30
168	58	100	100	N/A	50	97	N/A	N/A	36
144	68	118	125	33	58	114	N/A	N/A	42
132	74	129	135	36	63	124	N/A	N/A	46
120	82	142	150	40	70	137	N/A	N/A	51
108	91	158	160	45	78	152	N/A	N/A	57
96	103	175	175	50	87	171	N/A	33	64
84	117	185	185	58	100	185	N/A	37	73
72	137	200	200	67	117	200	N/A	44	85

NOTES:

1. MULLIONS WERE DESIGNED BY RATIONAL ANALYSIS BASED ON THE ALUMINUM DESIGN MANUAL 2010 EDITION AND THE FLORIDA BUILDING CODE. ABOVE LOADS ARE ALSO LIMITED BY THE MAX. CAPACITY OF THE PRODUCT.
2. DEFLECTION CRITERIA: MAX. SPAN/180
3. VALUES ABOVE ARE APPLICABLE ONLY FOR EQUAL MODULES SM1=SM2=SM3
4. UNEQUAL MODULES ARE TO BE DESIGNED BY RATIONAL ANALYSIS IN A CASE BY CASE BASIS.



TITLE: 60 MM ROLL DOWN SHUTTERS  
SLAT END RETENTION & HOOD ASSEMBLY

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

REMARKS      BY      DATE

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

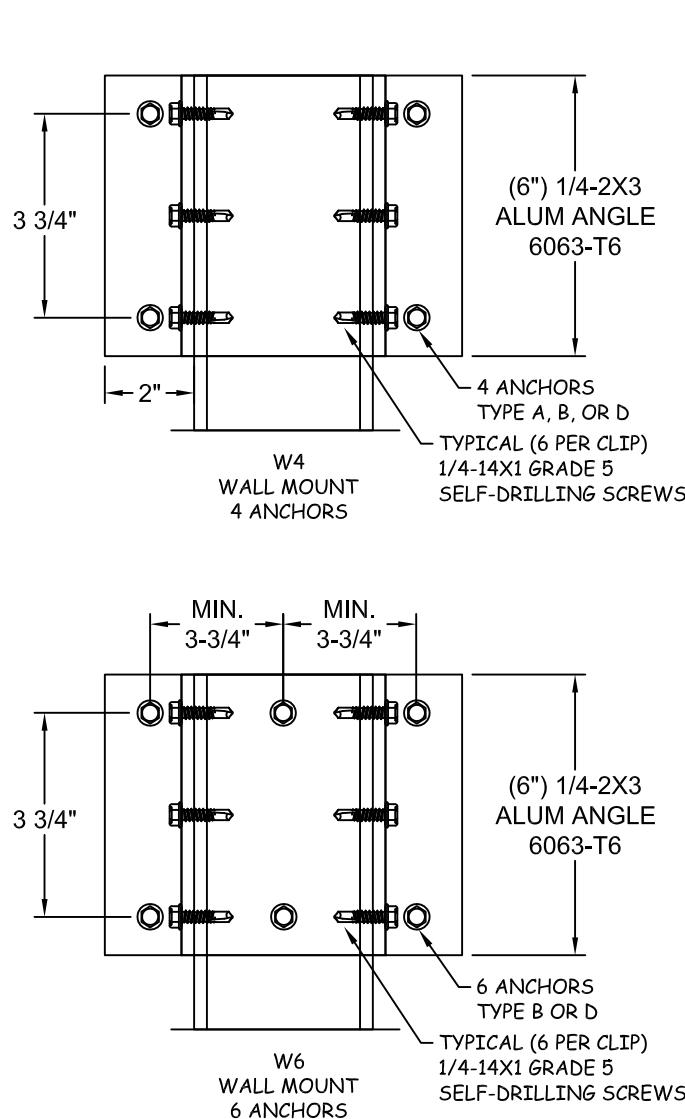
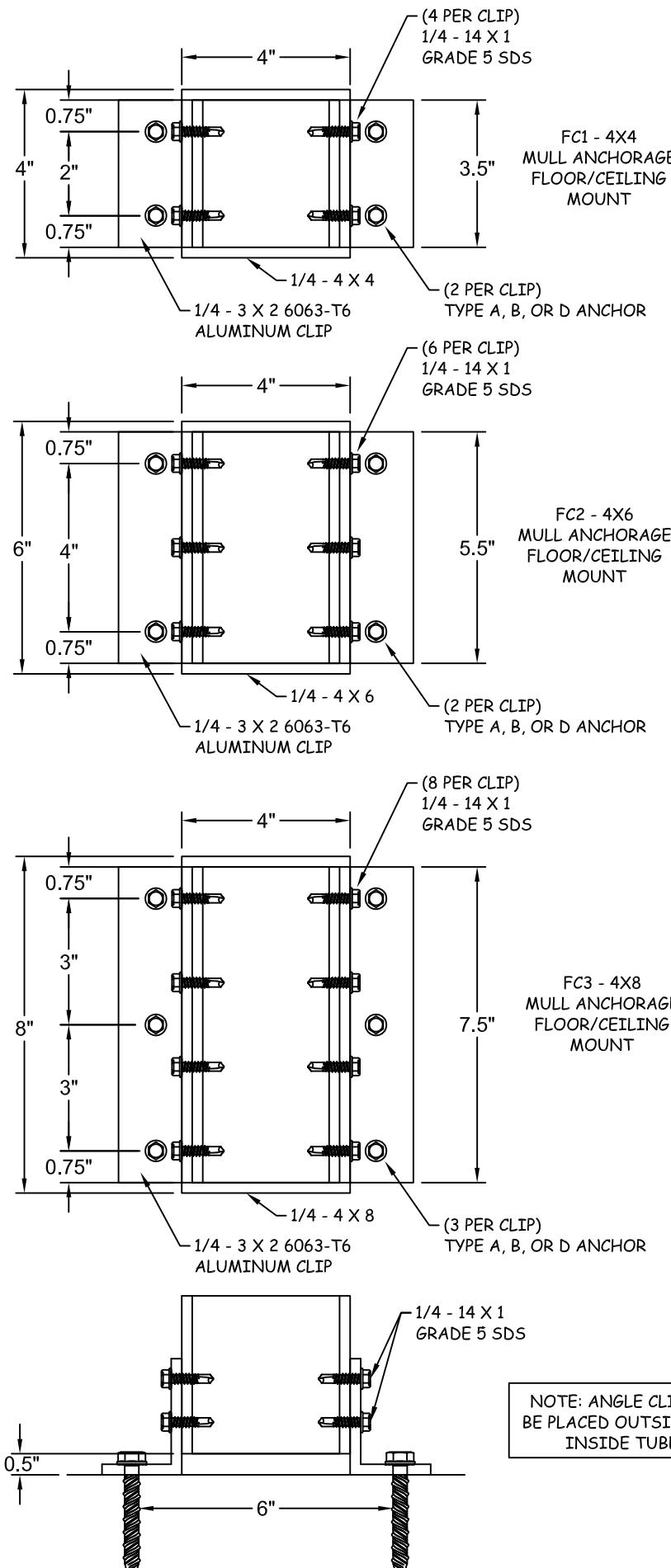
DWG. BY: LMS      CHK. BY: HFN

SCALE: NTS

DWG. #: IHS001

SHEET: OF 13

## EQUALLY SPACED MULLIONS WALL AND INSET CONNECTIONS



ANCHOR TYPE	MULLION TYPE		
	4X4	4X6	4X8
A	W4	W4	W4
B	W4	W6	W7
D	W4	W6	W6

### ANCHOR SCHEDULE:

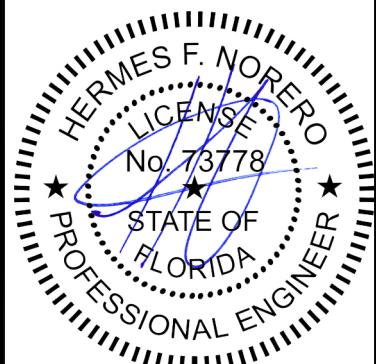
ANCHOR	DESCRIPTION	MATERIAL	EMBEDMENT	EDGE DISTANCE
A	3/8" X 4" WEDGE BOLT	MIN. 3000 PSI CONCRETE	3 1/2"	3 3/4"
B	5/16" X 3" TAPCON	MIN. 3513 PSI CONCRETE	2"	3 1/8"
D	5/16" X 3" TAPCON	GROUT FILLED C-90 BLOCK	2 1/4"	4"

TITLE: **60 MM ROLL DOWN SHUTTERS SLAT END RETENTION & HOOD ASSEMBLY**

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

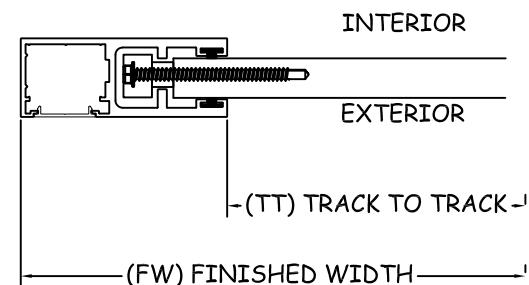
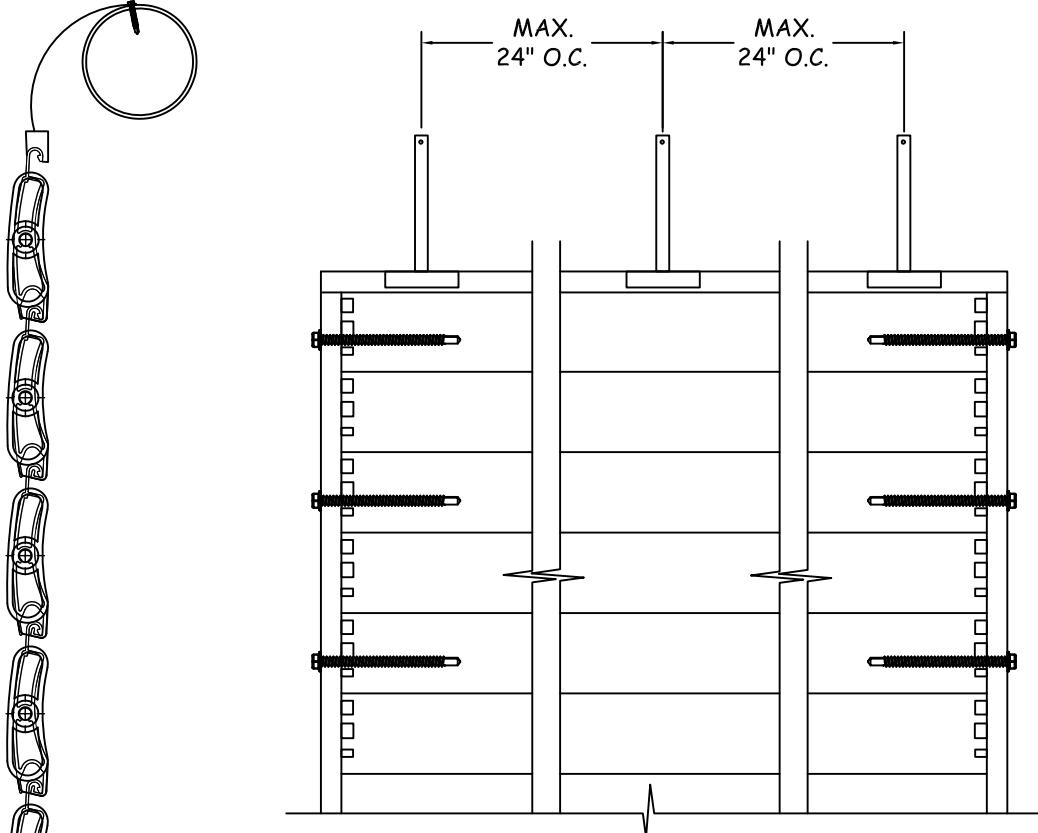
REMARKS BY DATE

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

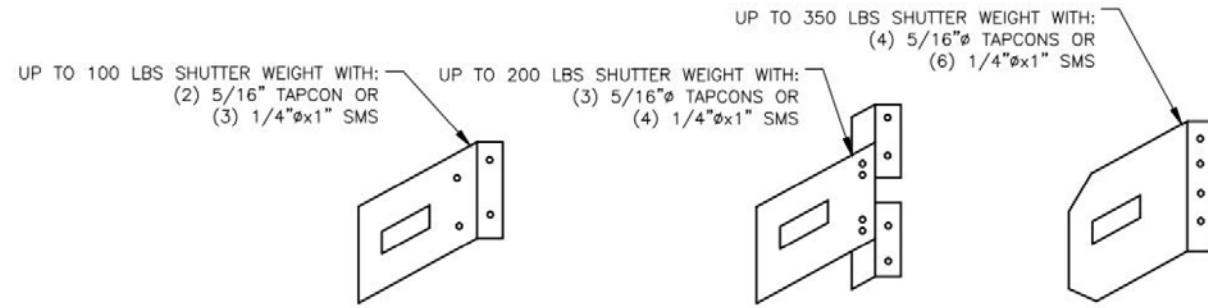


DATE: **02.06.17**  
DWG. BY: **LMS** CHK. BY: **HFN**  
SCALE: **NTS**  
DWG. #: **IHS001**  
SHEET: **OF 13**

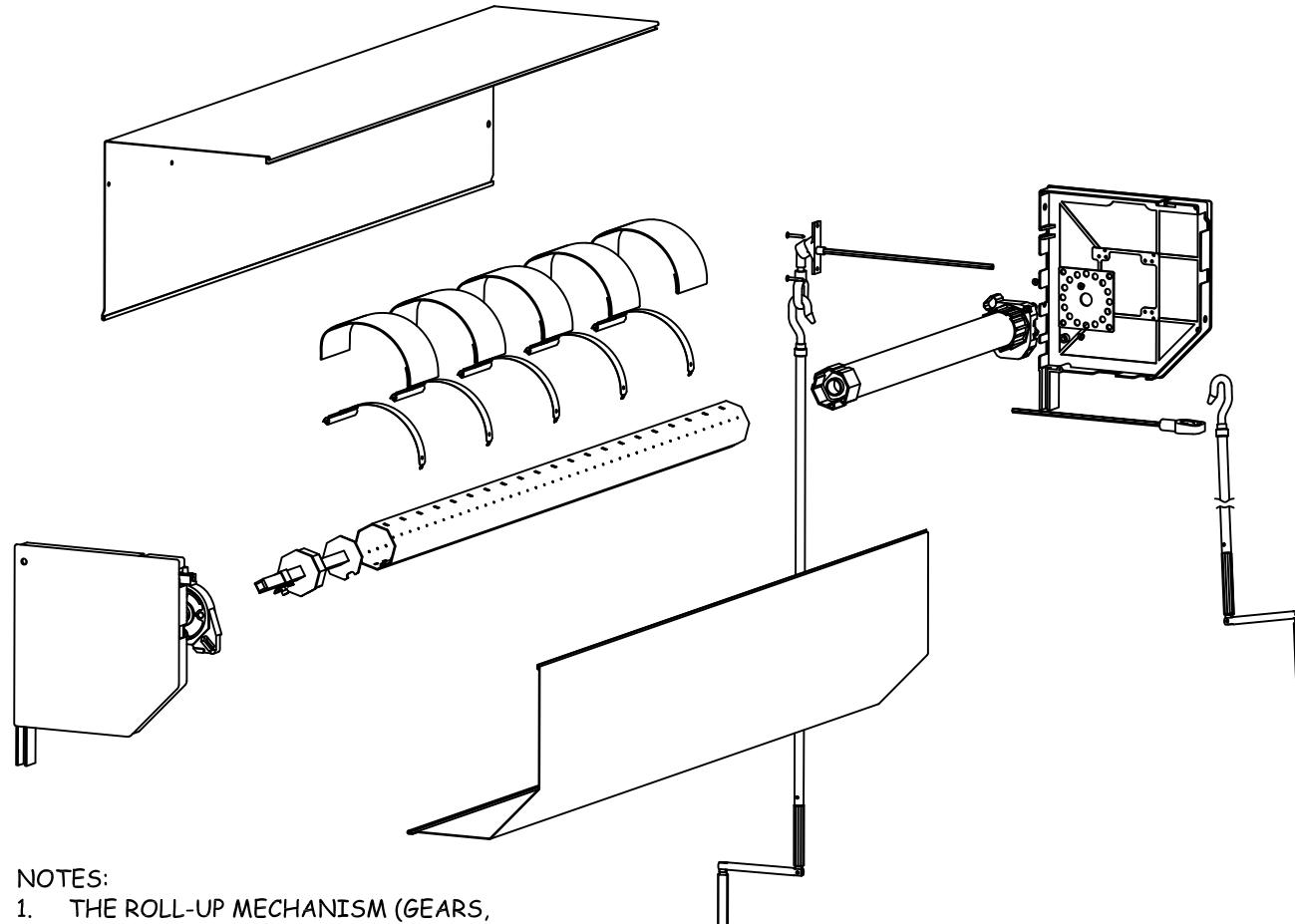
## SLAT END RETENTION LAY-OUT



## MOUNTING BRACKET



## HOOD ASSEMBLY EXPLODED



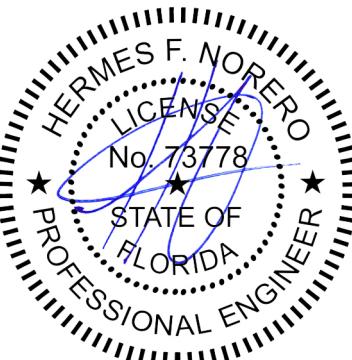
### NOTES:

1. THE ROLL-UP MECHANISM (GEARS, MOTOR, SUPPORTING END PLATES) ARE NOT APART OF THIS APPROVAL.
2. THE USE OF 70MM AND 100MM ALUMINUM TUBE IS ACCEPTABLE.
3. TUBULAR MOTOR MAY BE REPLACED WITH GEAR FOR MANUAL OPERATION.

TITLE: 60 MM ROLL DOWN SHUTTERS  
SLAT END RETENTION & HOOD ASSEMBLY

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC.  
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART  
WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC.  
ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER  
MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND  
INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY: LMS      CHK. BY: HFN

SCALE: NTS

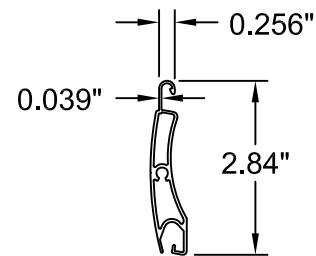
DWG. #: IHS001

SHEET: OF 13

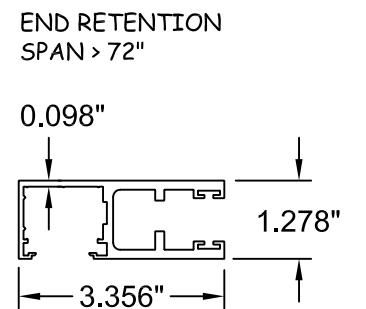
## BILL OF MATERIALS

ITEM NO.	DESCRIPTION	MATERIAL	MANUFACTURER
1	SLAT	6063-T6	ALUMINA
2	HEAVY GUIDE RAIL	6063-T6	ALUMINA
3	GUIDE RAIL	6063-T6	ALUMINA
4	COVER CAP	6063-T6	ALUMINA
5	SLAT LOCK	NYLON	-
6	ALUMINUM L ANGLE	6063-T6	-

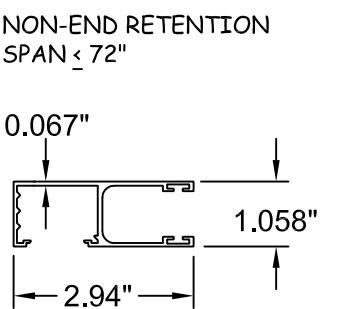
1 SLAT  
6063-T6



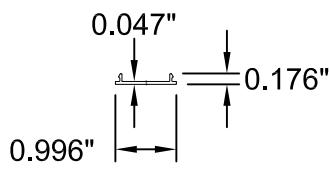
2 HEAVY GUIDE RAIL  
6063-T6



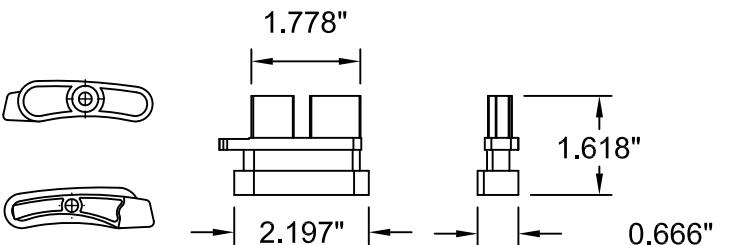
3 GUIDE RAIL  
6063-T6



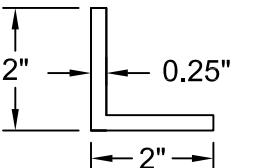
4 COVER CAP  
6063-T6



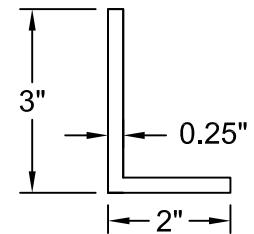
5 SLAT LOCK  
NYLON



6 ALUMINUM L ANGLE  
6063-T6



6A ALUMINUM L ANGLE  
6063-T6



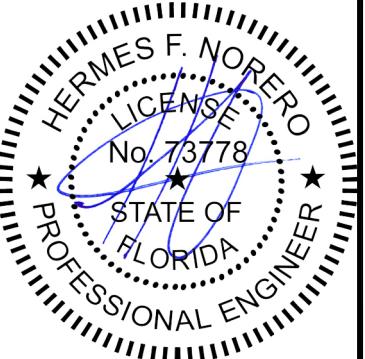
TITLE: 60 MM ROLL DOWN SHUTTERS  
SLAT END RETENTION & HOOD ASSEMBLY

IMPACT HURRICANE SYSTEMS, INC.  
1114 SE 12TH COURT  
CAPE CORAL, FL 33990  
PHONE: (786) 367-8740

PREPARED BY:  
  
**BUILDING DROPS, INC.**  
 398 E. DANIA BEACH BLVD., STE. 338  
 DANIA BEACH, FL 33004  
 PH: (954)399-8478  
 FAX: (954)744-4738  
 WEB: www.buildingdrops.com

REMARKS  BY  DATE

THIS DOCUMENT IS THE PROPERTY OF BUILDING DROPS, INC.  
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART  
WITHOUT WRITTEN CONSENT OF BUILDING DROPS, INC.  
ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER  
MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND  
INVALIDATE OUR CERTIFICATION.



DATE: 02.06.17

DWG. BY: LMS  CHK. BY: HFN

SCALE: NTS

DWG. #: IHS001

SHEET: OF 13