

# ESS MANUFACTURING, INC.

## ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)



ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

### GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT EDITION FLORIDA BUILDING CODE (FBC), INCLUDING HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
  - TAS 201-94
  - TAS 202-94
  - TAS 203-94
  - ASTM E330-14
  - ASTM E1886-13a
  - ASTM E1996-17
- 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.
- 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.
- 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.
- INSTALLATION OF ROLL DOWN MAY EITHER BE INSIDE OR OUTSIDE OF THE TIE BEAM.
- ALL EXTRUSION MATERIAL: 6063-T6 ALUMINUM ALLOY, UNLESS OTHERWISE NOTED.
- DESIGN AND OPERATION OF ROLL UP MECHANISM IS NOT PART OF THIS APPROVAL, MANUFACTURER SPECIFICATIONS SHOULD BE FOLLOWED. CARE SHOULD BE TAKEN WHEN SHUTTER IS IN MOTION ENSURING THAT PERSONAL INJURY OR DAMAGE TO THIS PRODUCT DOES NOT OCCUR.
- FOR DESIGN PRESSURES SEE SHEETS 2 & 3. SEE SHEETS 14, 16 AND 17 FOR DESIGN PRESSURES BASED ON MULLIONS.
- HOOD ASSEMBLY IS IMPACT RATED AND CAN BE PLACED INSIDE FRAME OPENING AS AN EXPOSED FEATURE.
- SHUTTER MANUFACTURER LABEL SHALL BE LOCATED IN A READILY VISIBLE LOCATION, PER FBC CHAPTER 17.

### INSTALLATION NOTES:

- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN, UNLESS OTHERWISE STATED.
- THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
- 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.
- REFER TO ANCHOR SCHEDULE CHARTS ON SHEETS 8, 9, 10, 12 AND 13 FOR ANCHOR TYPE, SUBSTRATE TYPE, EDGE DISTANCE AND MINIMUM EMBEDMENT.
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
- ASSEMBLY FASTENERS SHALL BE CORROSION RESISTANT IN ACCORDANCE WITH ESS MANUFACTURING REQUIREMENTS.
- EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.
- 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.
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
  - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.
  - CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. SEE ANCHOR SCHEDULES, SHEETS 8, 9, 10, 12 AND 13 FOR ADDITIONAL REQUIREMENTS.
  - GROUT FILLED MASONRY - STRENGTH CONFORMANCE TO ASTM C-90, MIN 2000 PSI.
  - STEEL - MINIMUM A36,  $3/16$ " THICKNESS
  - ALUMINUM - MINIMUM 6063-T6  $1/4$ " THICKNESS.

TABLE OF CONTENTS	
SHEET	SHEET DESCRIPTION
1	INSTALLATION & GENERAL NOTES
2	DESIGN PRESSURE TABLES - WITHOUT CLIP
3	DESIGN PRESSURE TABLES - WITH CLIP
4	TYPICAL SINGLE UNIT HORIZONTAL SECTIONS
5	BUILD OUT MOUNT DETAILS
6	MULTIPLE UNITS HORIZONTAL SECTIONS
7	TYP. VERTICAL SECTIONS
8	HORIZONTAL SECTIONS/ANCHOR SCHEDULE
9	HORIZONTAL SECTIONS/ANCHOR SCHEDULE
10	ANCHOR SCHEDULE / SPACING
11	TYPICAL HORIZONTAL SECTION - INSET MOUNT
12	TYPICAL HORIZONTAL SECTION - INSET MOUNT ANCHOR SCHEDULE
13	INSET MOUNT - ANCHOR SCHEDULE
14	EQUALLY SPACED MULLION
15	EQUALLY SPACED MULLION ANCHORS
16	END MULLION
17	CORNER MULLION
18	END MULLION / CORNER MULLION CONNECTIONS
19	4.25" TUBE & 6" HOOD DETAILS
20	BILL OF MATERIALS & COMPONENTS

TITLE: ULTRASHIELD HURRICANE SCREEN  
(HVHZ) (IMPACT)

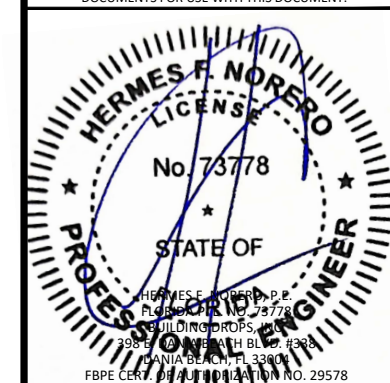
GENERAL & INSTALLATION NOTES

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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141

DATE: 05.23.23

DWG. BY: DI  
CHK. BY: HFN

SCALE: NTS

DWG. #: ESS001

SHEET: OF 20

1

## DESIGN PRESSURE RATINGS - WITHOUT CLIP AT CENTER

FRAME WIDTH	POSITIVE	NEGATIVE
288.0	20.00	20.00
276.0	26.50	26.50
264.0	33.75	33.75
252.0	40.00	40.00
240.0	47.50	47.50
228.0	54.00	54.00
216.0	61.00	61.00
204.0	68.00	68.00
192.0	75.00	75.00
180.0	82.50	82.50
168.0	90.00	90.00
156.0	97.50	97.50
144.0	105.00	105.00
132.0	112.50	112.50
120.0	120.00	120.00
108.0	127.50	127.50
96.0	135.00	135.00
84.0	142.50	142.50
72.0	150.00	150.00

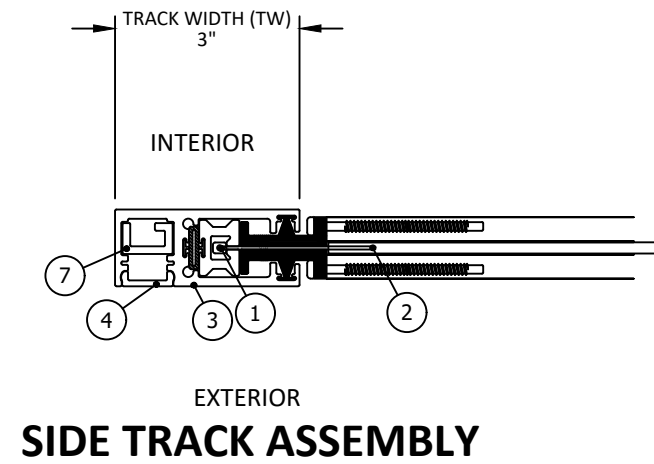


TABLE 2: GLASS SEPARATION (GS) INCHES - WITHOUT CLIP

LOAD (PSF)	FRAME WIDTH (IN)																		
	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288
20.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.50	6.25	7.25	8.50	9.50	11.00	12.50	14.75	17.50	21.50	27.50	38.00
26.50	5.00	5.00	5.00	5.00	5.00	5.00	6.00	7.00	8.00	9.25	11.00	12.25	14.25	16.25	19.25	23.00	28.25	36.25	-
33.75	5.00	5.00	5.00	5.00	5.25	6.25	7.25	8.50	10.00	11.75	13.75	15.50	17.75	20.50	24.25	29.00	35.75	-	-
40.00	5.00	5.00	5.00	5.00	6.00	7.25	8.50	10.00	11.75	13.75	16.00	18.25	21.00	24.25	28.50	34.25	-	-	-
47.50	5.00	5.00	5.00	6.00	7.00	8.50	10.00	11.75	13.75	16.00	19.00	21.50	24.75	28.50	33.75	-	-	-	-
54.00	5.00	5.00	5.50	6.50	8.00	9.50	11.25	13.00	15.50	18.25	21.50	24.25	28.00	32.25	-	-	-	-	-
61.00	5.00	5.00	6.00	7.25	8.75	10.50	12.50	14.75	17.25	20.25	24.00	27.25	31.50	-	-	-	-	-	-
68.00	5.00	5.25	6.50	8.00	9.75	11.75	13.75	16.25	19.25	22.50	26.75	30.50	-	-	-	-	-	-	-
75.00	5.00	5.75	7.25	8.75	10.75	12.75	15.25	17.75	21.00	24.75	29.50	-	-	-	-	-	-	-	-
82.50	5.00	6.25	7.75	9.75	11.75	14.00	16.50	19.50	23.00	27.25	-	-	-	-	-	-	-	-	-
90.00	5.25	6.75	8.50	10.50	12.75	15.25	18.00	21.25	25.00	-	-	-	-	-	-	-	-	-	-
97.50	5.50	7.25	9.00	11.25	13.50	16.25	19.50	23.00	-	-	-	-	-	-	-	-	-	-	-
105.00	5.75	7.75	9.75	12.00	14.50	17.50	20.75	-	-	-	-	-	-	-	-	-	-	-	-
112.50	6.25	8.25	10.50	12.75	15.50	18.75	-	-	-	-	-	-	-	-	-	-	-	-	-
120.00	6.50	8.75	11.00	13.50	16.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
127.50	7.00	9.25	11.75	14.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135.00	7.25	9.75	12.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
142.50	7.75	10.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150.00	8.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**NOTES:**

1. MINIMUM GLASS SEPARATION BASED ON MAXIMUM DEFLECTION + 1".
2. ANALYSIS IS LIMITED BY DEFLECTION UNDER STRUCTURAL LOADS AS WELL AS DEFLECTION DUE TO MISSILE LEVEL D LARGE MISSILE IMPACTS.
3. APPROPRIATE INSTALLATION METHOD SHALL BE USED TO ACHIEVE THE REQUIRED SEPARATION IN THE ABOVE TABLE.
4. GLASS SEPARATION REQUIRED IN HVHZ AREAS. GLASS SEPARATION REQUIREMENTS TO BE DETERMINED BY AHJ OUTSIDE OF HVHZ REGION. GLASS SEPARATION WILL BE 1" MIN. FOR NON-HVHZ.

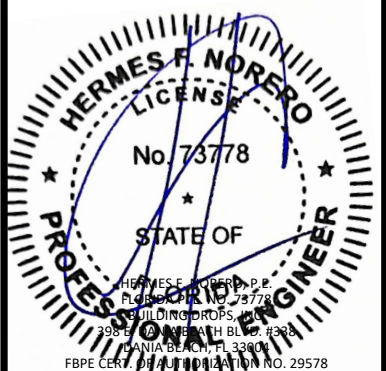
TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT) DESIGN PRESSURE TABLES WITHOUT CLIP

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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141

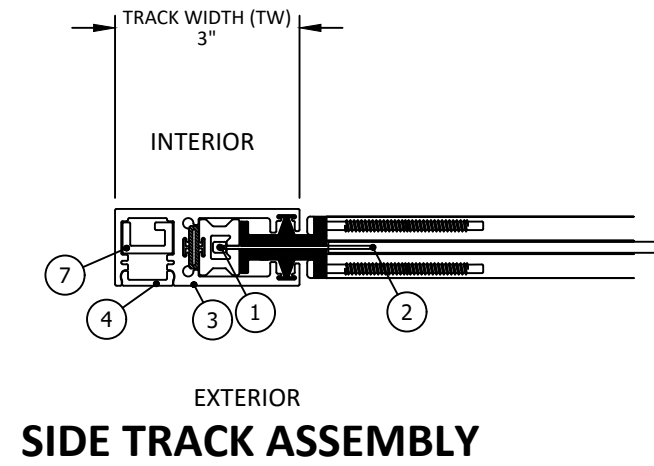
DATE: 05.23.23	
DWG. BY: DI	CHK. BY: HFN
SCALE: NTS	
DWG. #: ESS001	
SHEET: 2	OF 20

# DESIGN PRESSURE RATINGS - WITH CLIP AT CENTER (ONLY REQUIRED FOR FRAME WIDTHS GREATER THAN 192")



ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

FRAME WIDTH	POSITIVE	NEGATIVE
288.0	35.0	35.0
276.0	40.0	40.0
264.0	45.0	45.0
252.0	50.0	50.0
240.0	55.0	55.0
228.0	60.0	60.0
216.0	65.0	65.0
204.0	70.0	70.0
192.0	75.0	75.0
180.0	82.5	82.5
168.0	90.0	90.0
156.0	97.5	97.5
144.0	105.0	105.0
132.0	112.5	112.5
120.0	120.0	120.0
108.0	127.5	127.5
96.0	135.0	135.0
84.0	142.5	142.5
72.0	150.0	150.0



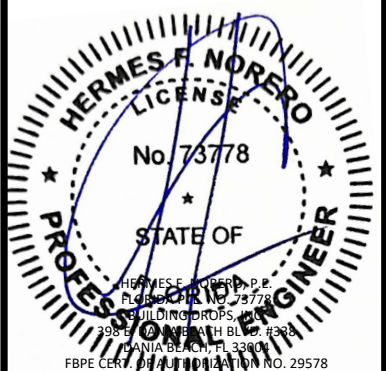
TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)  
DESIGN PRESSURE TABLES WITH CLIP

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
NEW TESTING UPDATE	SH	8.8.23

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.



LOAD (PSF)	FRAME WIDTH (IN)																		
	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288
35	5.00	5.00	5.00	5.00	5.50	6.50	7.50	8.75	10.25	12.00	14.25	15.50	16.75	18.50	20.50	22.75	25.75	29.25	34.00
40	5.00	5.00	5.00	5.00	6.00	7.25	8.50	10.00	11.75	13.75	16.00	17.50	19.00	21.00	23.25	26.00	29.25	33.25	-
45	5.00	5.00	5.00	5.75	6.75	8.00	9.50	11.00	13.00	15.25	18.00	19.50	21.50	23.50	26.00	29.00	32.75	-	-
50	5.00	5.00	5.00	6.25	7.50	8.75	10.50	12.25	14.25	16.75	20.00	21.75	23.75	26.00	28.75	32.25	-	-	-
55	5.00	5.00	5.50	6.75	8.00	9.50	11.25	13.25	15.75	18.50	21.75	23.75	26.00	28.50	31.75	-	-	-	-
60	5.00	5.00	6.00	7.25	8.75	10.50	12.25	14.50	17.00	20.00	23.75	25.75	28.25	31.00	-	-	-	-	-
65	5.00	5.00	6.25	7.75	9.25	11.25	13.25	15.50	18.25	21.75	25.50	27.75	30.50	-	-	-	-	-	-
70	5.00	5.50	6.75	8.25	10.00	12.00	14.25	16.75	19.75	23.25	27.50	30.00	-	-	-	-	-	-	-
75	5.00	5.75	7.25	8.75	10.75	12.75	15.25	17.75	21.00	24.75	29.50	-	-	-	-	-	-	-	-
82.5	5.00	6.25	7.75	9.75	11.75	14.00	16.50	19.50	23.00	27.25	-	-	-	-	-	-	-	-	-
90	5.25	6.75	8.50	10.50	12.75	15.25	18.00	21.25	25.00	-	-	-	-	-	-	-	-	-	-
97.5	5.50	7.25	9.00	11.25	13.50	16.25	19.50	23.00	-	-	-	-	-	-	-	-	-	-	-
105	5.75	7.75	9.75	12.00	14.50	17.50	20.75	-	-	-	-	-	-	-	-	-	-	-	-
112.5	6.25	8.25	10.50	12.75	15.50	18.75	-	-	-	-	-	-	-	-	-	-	-	-	-
120	6.50	8.75	11.00	13.50	16.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
127.5	7.00	9.25	11.75	14.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	7.25	9.75	12.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
142.5	7.75	10.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	8.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

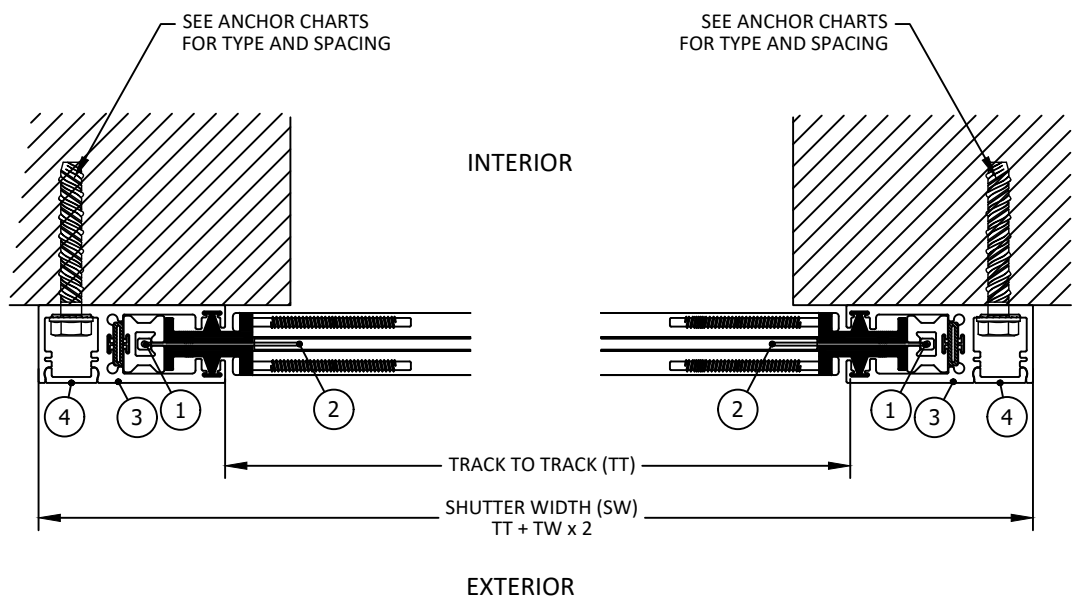
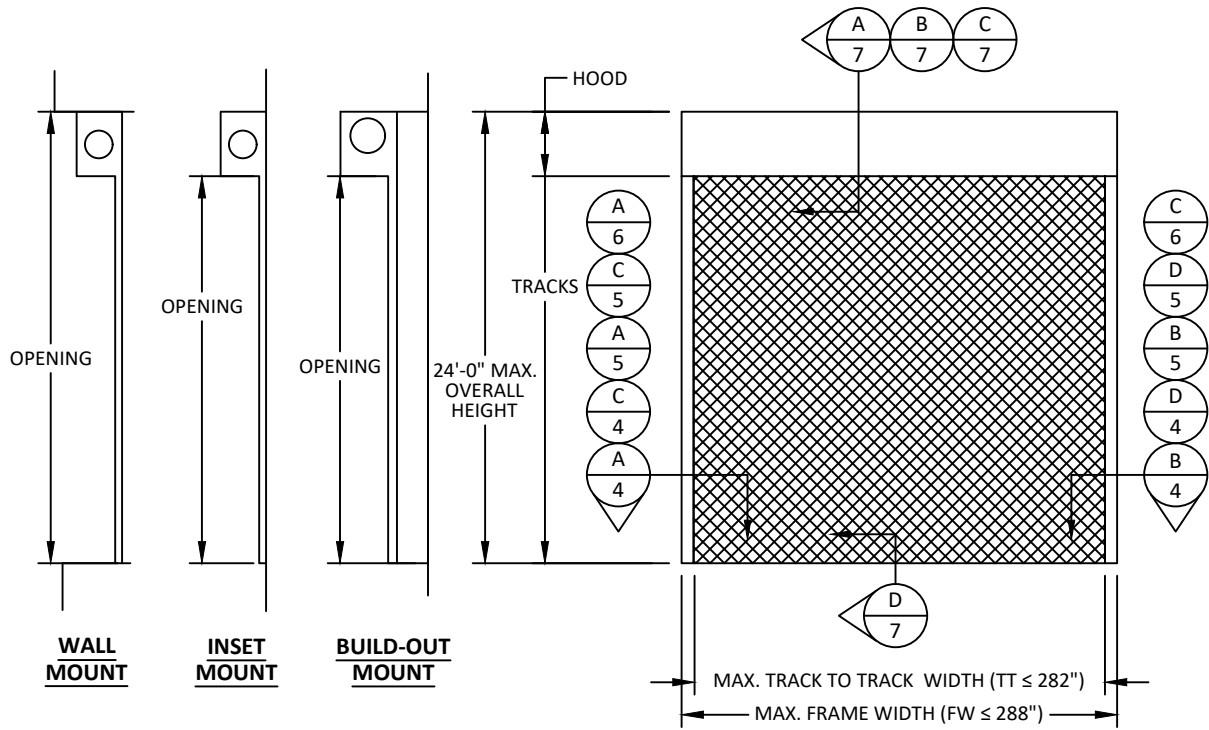
NOTES:

1. MINIMUM GLASS SEPARATION BASED ON MAXIMUM DEFLECTION + 1".
2. ANALYSIS IS LIMITED BY DEFLECTION UNDER STRUCTURAL LOADS AS WELL AS DEFLECTION DUE TO MISSILE LEVEL D LARGE MISSILE IMPACTS.
3. APPROPRIATE INSTALLATION METHOD SHALL BE USED TO ACHIEVE THE REQUIRED SEPARATION IN THE ABOVE TABLE.
4. GLASS SEPARATION REQUIRED IN HVHZ AREAS. GLASS SEPARATION REQUIREMENTS TO BE DETERMINED BY AHJ OUTSIDE OF HVHZ REGION. GLASS SEPARATION WILL BE 1" MIN. FOR NON-HVHZ.

FL42141	
DATE: 05.23.23	
DWG. BY: DI	CHK. BY: HFN
SCALE: NTS	
DWG. #: ESS001	
SHEET: 3	OF 20

# TYPICAL SINGLE UNIT ELEVATION WALL AND INSET MOUNT DETAILS

ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

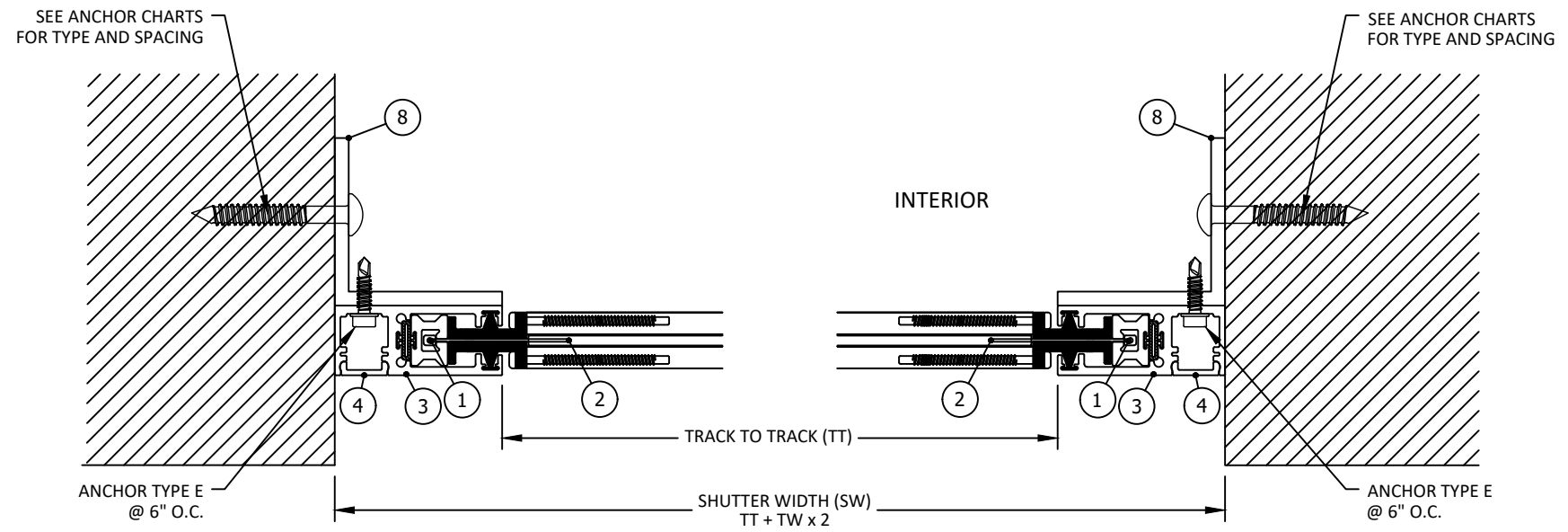


**A**  
**4** HORIZONTAL SECTION  
WALL MOUNT

**B**  
**4** HORIZONTAL SECTION  
WALL MOUNT

COMBINATION MOUNTED:  
WALL, INSET, AND BUILD-OUT  
MOUNTS CAN BE INSTALLED BY MIXING  
ANY POSSIBLE COMBINATIONS

SEE DETAILS ON SHEETS 8-13 FOR  
ANCHOR REQUIREMENTS



**C**  
**4** HORIZONTAL SECTION  
INSET MOUNT

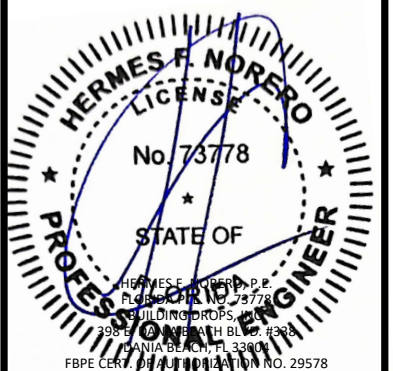
**D**  
**4** HORIZONTAL SECTION  
INSET MOUNT

TITLE: ULTRASHIELD HURRICANE SCREEN  
(HVHZ) (IMPACT)  
TYP. SINGLE UNIT  
HORIZONTAL SECTIONS

PREPARED BY:  BUILDING DROPS  
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

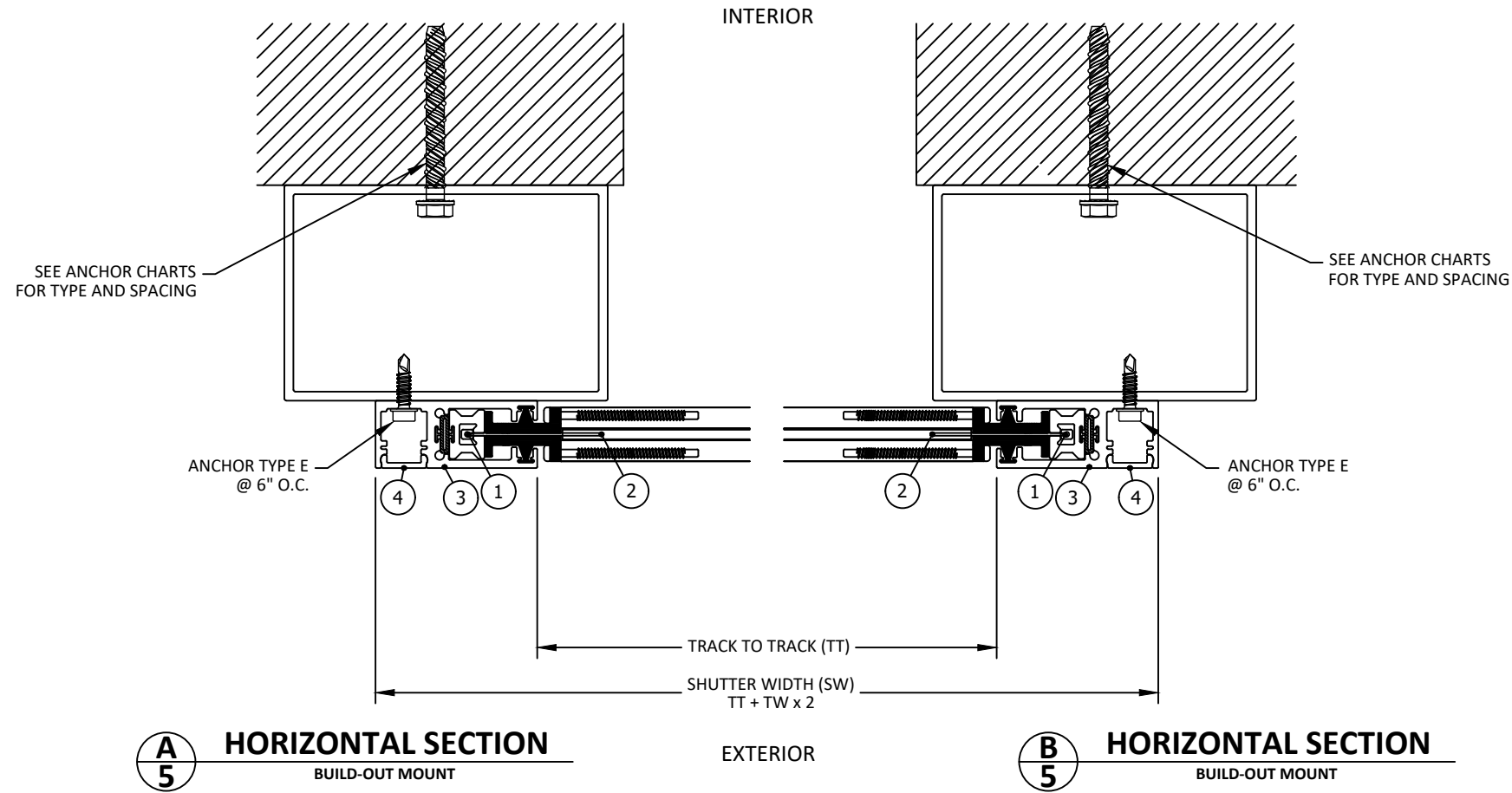
REMARKS	BY	DATE
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141	
DATE: 05.23.23	
DWG. BY: DI	CHK. BY: HFN
SCALE: NTS	
DWG. #: ESS001	
SHEET: 4	OF 20

# BUILD OUT MOUNT DETAILS



SEE DETAILS ON SHEETS 8-13 FOR ANCHOR REQUIREMENTS

**COMBINATION MOUNTED:  
WALL, INSET AND BUILD-OUT  
MOUNTS CAN BE INSTALLED BY MIXING  
ANY POSSIBLE COMBINATIONS**



ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)  
BUILD OUT MOUNT DETAILS

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



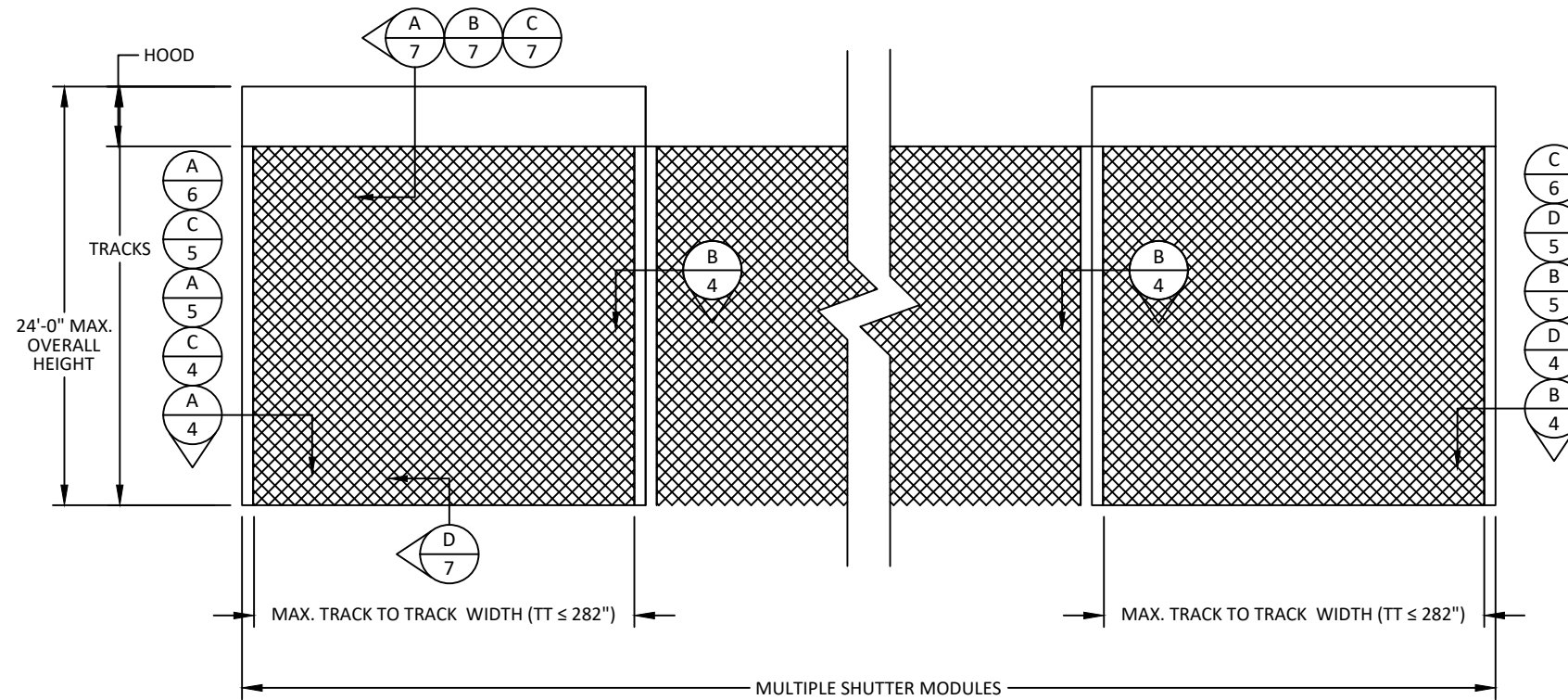
REMARKS	BY	DATE
NEW TESTING UPDATE	SH	8.8.23

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.

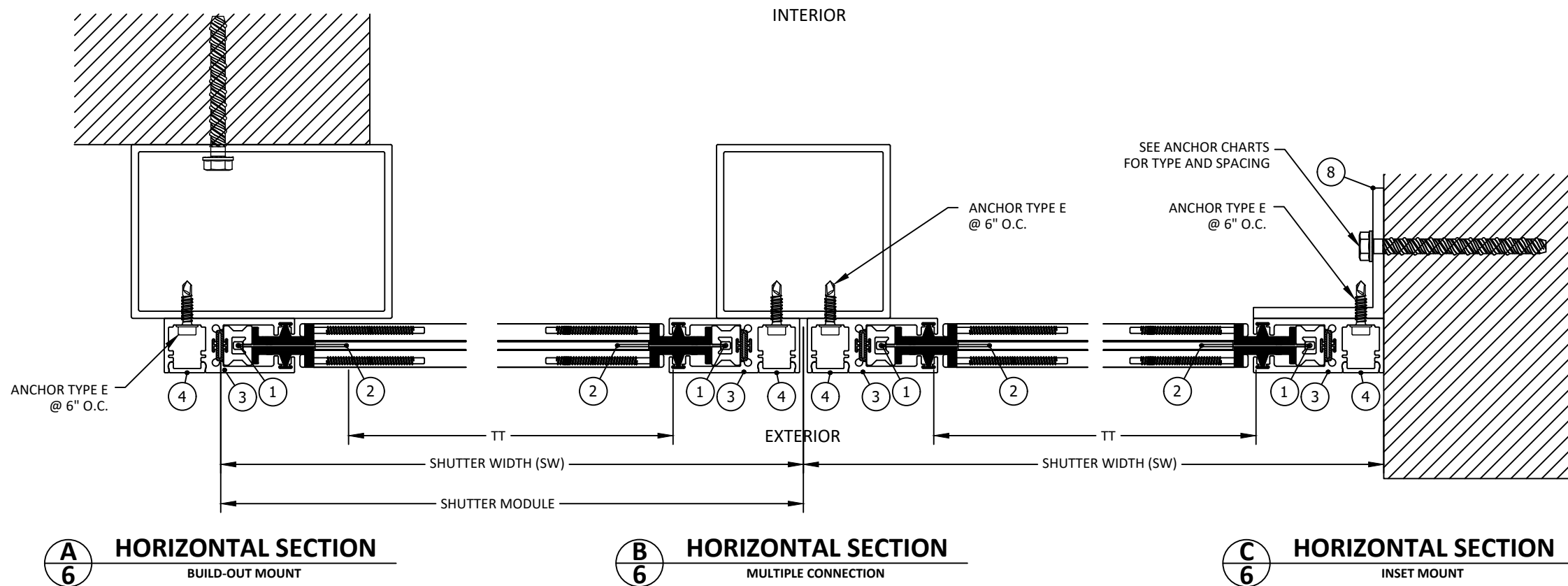


<b>FL42141</b>	
DATE: 05.23.23	
DWG. BY: DI	CHK. BY: HFN
SCALE: NTS	
DWG. #: ESS001	
SHEET: 5	OF 20

# TYPICAL MULTIPLE UNITS ELEVATION



SEE DETAILS ON SHEETS 8-13 FOR ANCHOR REQUIREMENTS



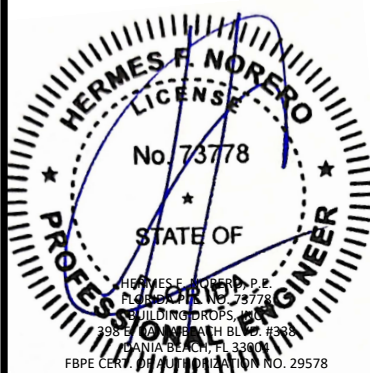
TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT) MULTIPLE UNITS HORIZONTAL SECTIONS

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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141

DATE: 05.23.23

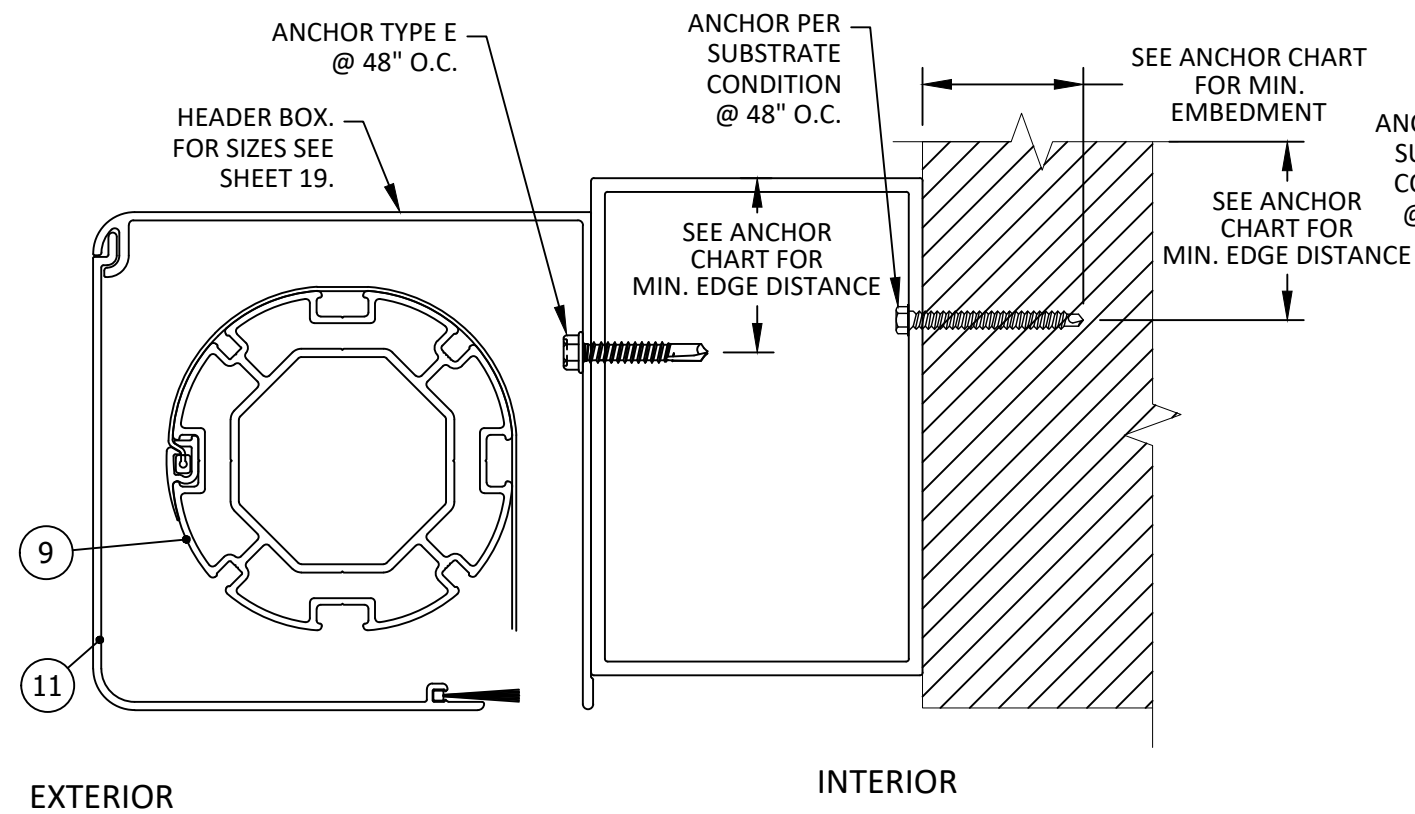
DWG. BY: DI      CHK. BY: HFN

SCALE: NTS

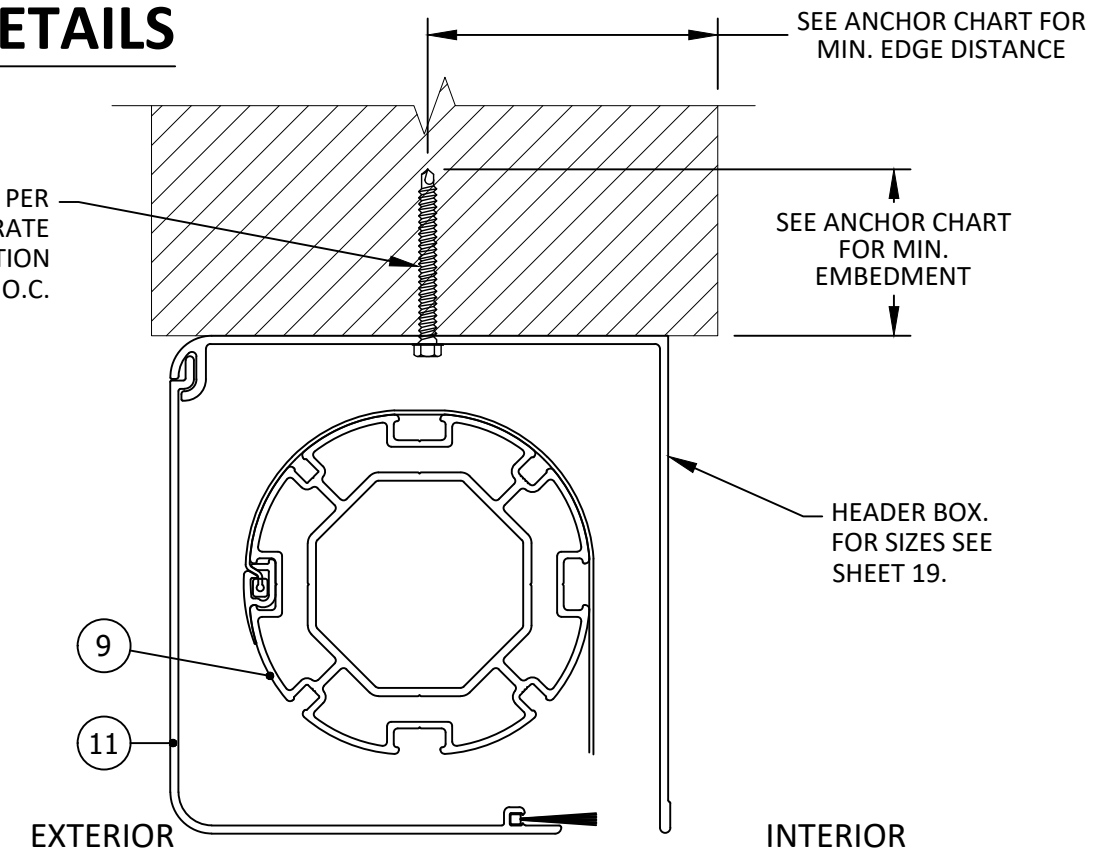
DWG. #: ESS001

SHEET:                      OF 20

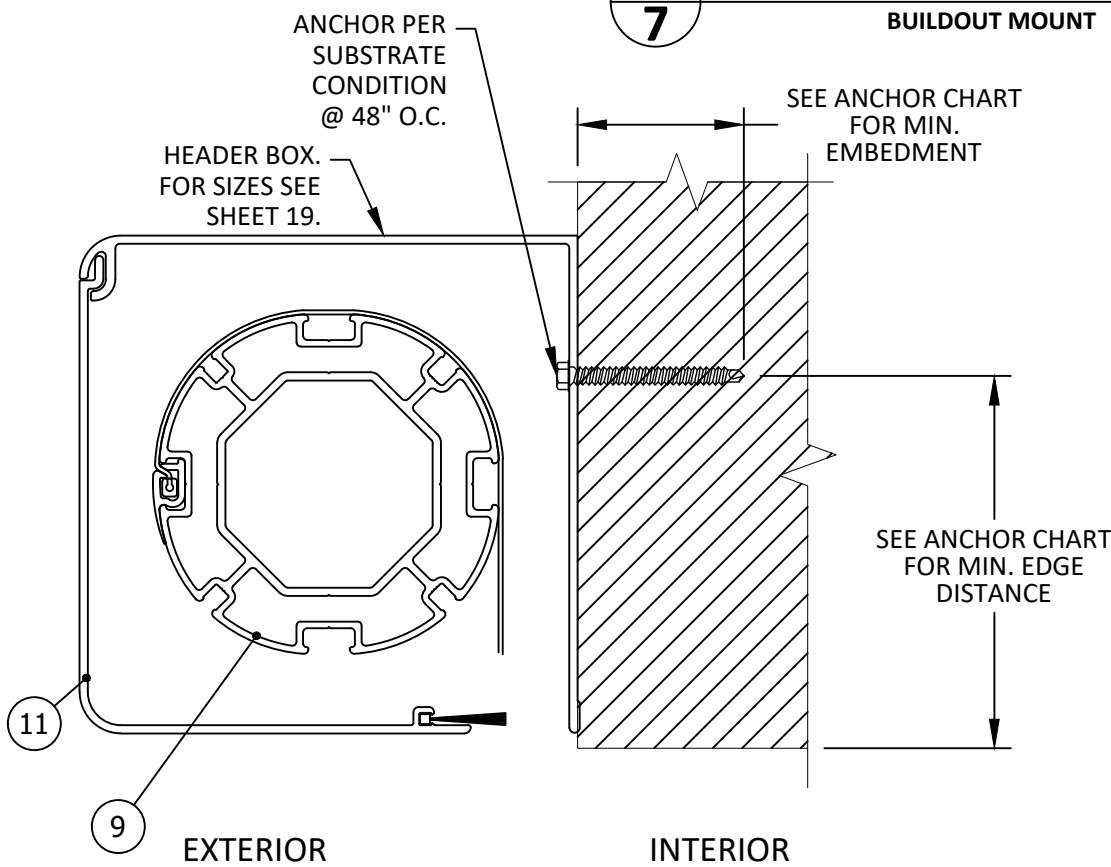
# TYPICAL HEAD/SILL DETAILS



**A**  
**7**  
**VERTICAL SECTION**  
BUILDOUT MOUNT

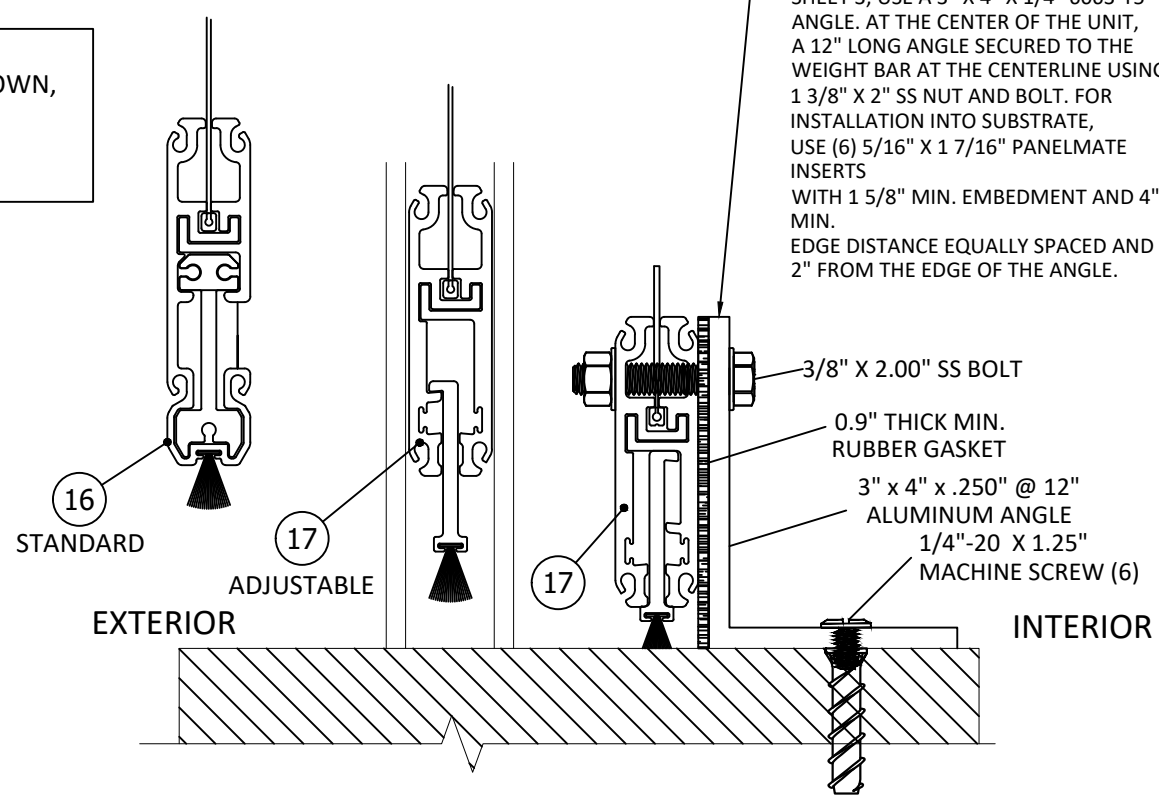


**C**  
**7**  
**VERTICAL SECTION**  
INSET MOUNT



**B**  
**7**  
**VERTICAL SECTION**  
WALL MOUNT

NOTE:  
4.25" TUBE AND 6" HOOD ASSEMBLY SHOWN,  
SEE SHEET 19 FOR MORE DETAILS.  
HOOD AND TUBE SHALL FOLLOW  
MANUFACTURERS SPECIFICATIONS.



**D**  
**7**  
**VERTICAL SECTION**  
SILL

FOR SHUTTERS WITH FW  
CORRESPONDING TO THE TABLES ON  
SHEET 3, USE A 3" X 4" X 1/4" 6063-T5  
ANGLE. AT THE CENTER OF THE UNIT,  
A 12" LONG ANGLE SECURED TO THE  
WEIGHT BAR AT THE CENTERLINE USING  
1 3/8" X 2" SS NUT AND BOLT. FOR  
INSTALLATION INTO SUBSTRATE,  
USE (6) 5/16" X 1 7/16" PANELMATE  
INSERTS  
WITH 1 5/8" MIN. EMBEDMENT AND 4"  
MIN.  
EDGE DISTANCE EQUALLY SPACED AND  
2" FROM THE EDGE OF THE ANGLE.



ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)

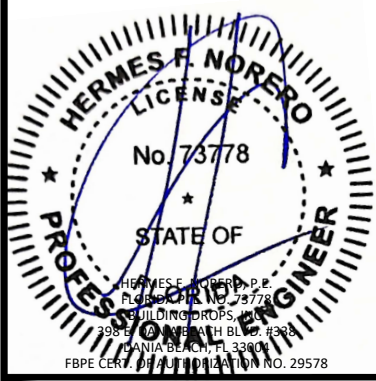
TYP. VERTICAL SECTIONS

PREPARED BY:  
**B.D.**  
BUILDING DROPS

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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141	
DATE:	05.23.23
DWG. BY:	DI
CHK. BY:	HFN
SCALE:	NTS
DWG. #:	ESS001
SHEET:	OF 20





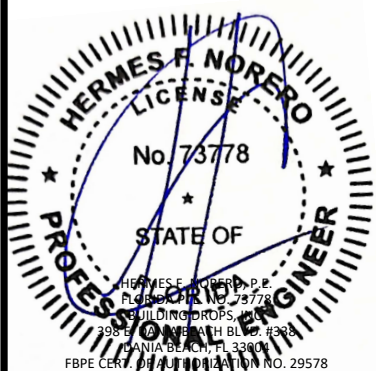
TITLE: **ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)**  
**HORIZONTAL SECTIONS & ANCHOR SCHEDULE**

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
NEW TESTING UPDATE	SH	8.8.23

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.



**FL42141**

DATE: **05.23.23**

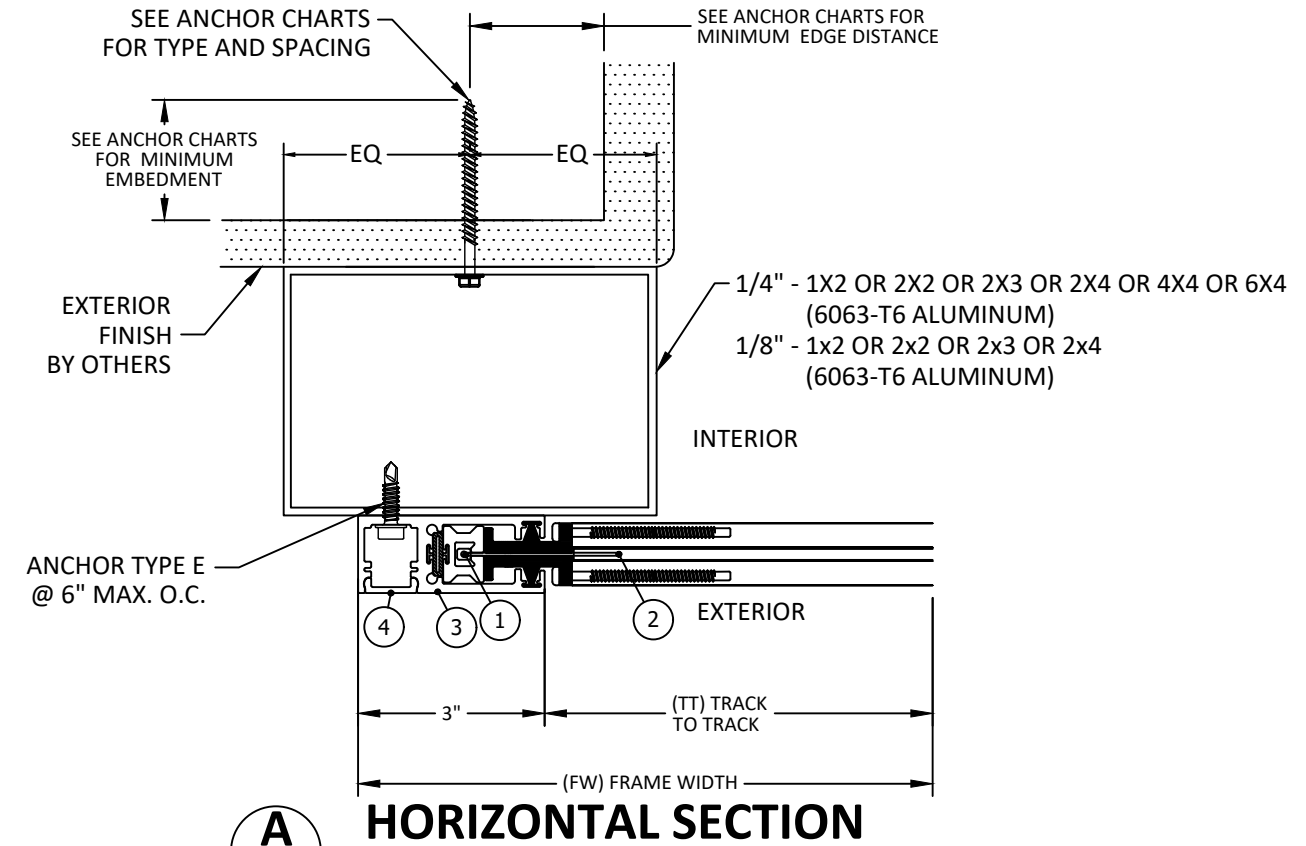
DWG. BY: **DI** CHK. BY: **HFN**

SCALE: **NTS**

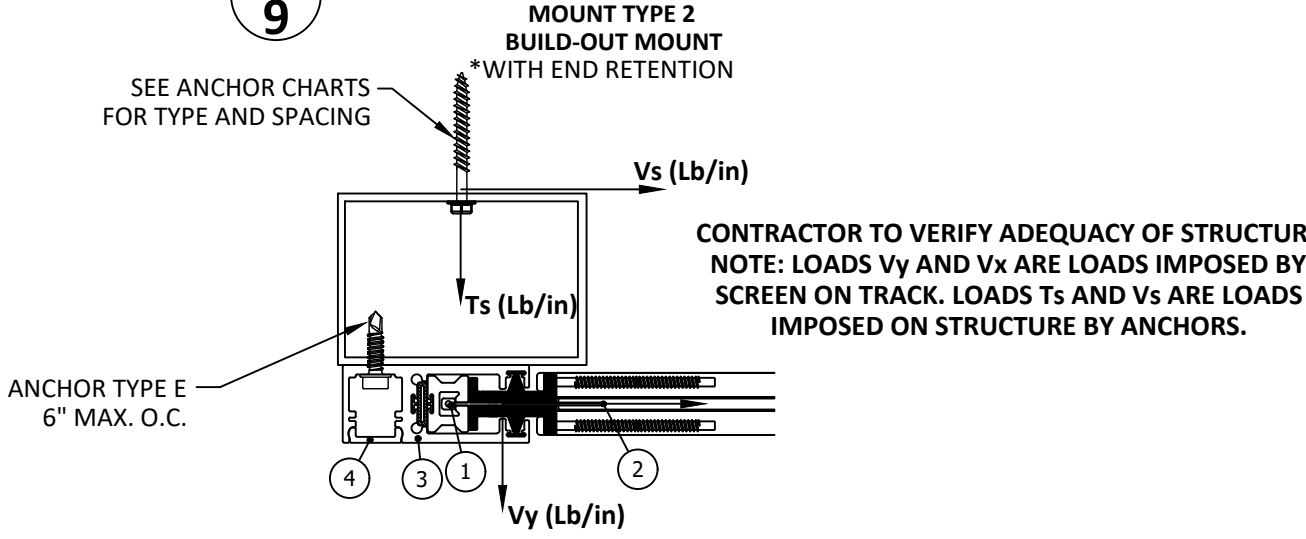
DWG. #: **ESS001**

SHEET: **OF 20**

## TYPICAL HORIZONTAL SECTIONS BUILD OUT



### A9 HORIZONTAL SECTION



CONTRACTOR TO VERIFY ADEQUACY OF STRUCTURE  
NOTE: LOADS Vy AND Vx ARE LOADS IMPOSED BY SCREEN ON TRACK. LOADS Ts AND Vs ARE LOADS IMPOSED ON STRUCTURE BY ANCHORS.

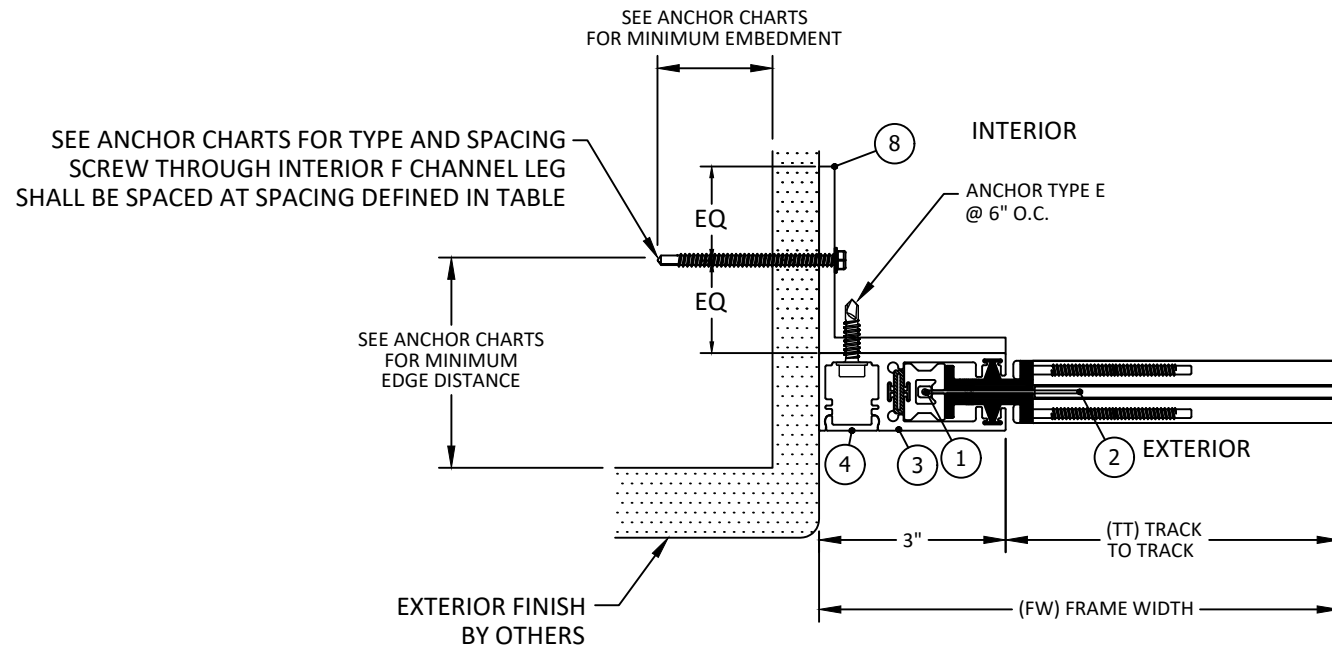
#### ANCHOR SCHEDULE:

ANCHOR	DESCRIPTION	MATERIAL	EDGE DISTANCE	EMBEDMENT
A	3/8" DEWALT/POWERS WEDGE BOLT OT	MIN. 3000 PSI CONCRETE	3 3/4"	3 1/2"
B	5/16" ITW TAPCON	MIN. 3000 PSI CONCRETE	2 3/16"	2 1/4"
C	3/8" DEWALT/POWERS WEGDE BOLT OT	GROUT FILLED C-90 BLOCK f'm ≥ 1500 PSI	2	2 1/2"
D	5/16" ITW TAPCON	GROUT FILLED C-90 BLOCK f'm ≥ 2000 PSI	4"	2 1/4"
E	#14 DEWALT DRIL-FLEX SELF DRILLING SCREW	MIN 1/4" 6063-T6 ALUM. A36 3/16" STEEL	1/2" 3/8"	3 THREADS PENETRATION
F	5/16" DEWALT ULTRACON	MIN. SG = 0.55 WOOD	1 1/2"	2"

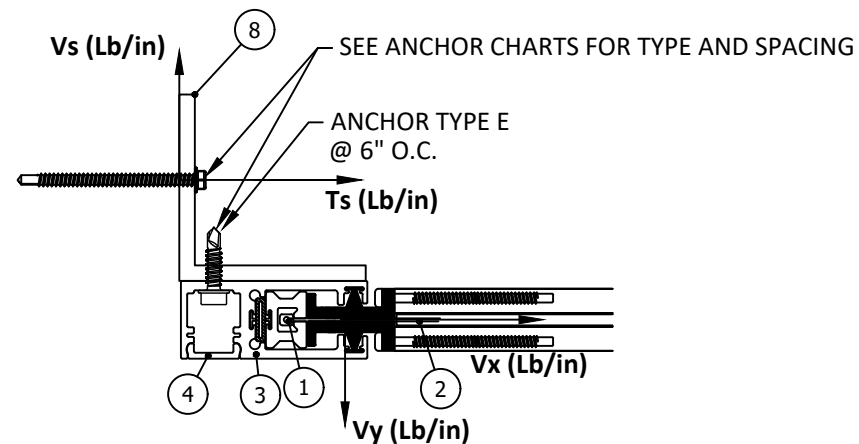
TABLE 3 - ANCHOR SPACING						ANCHOR TYPE & SPACING WALL - MOUNT 1						ANCHOR TYPE & SPACING 2X3, 2X4, 4X4 OR 4X6 BO - MOUNT 2					
FW	DP	Vx	Vy	Vs	Ts	A	B	C	D	E	F	A	B	C	D	E	F
96	20.00	94.7	6.7	94.7	223.8	6	6	6	6	6	6	6	6	4	6	6	6
96	26.50	94.7	8.8	94.7	225.4	6	6	6	6	6	6	6	6	4	6	6	6
96	33.75	94.7	11.3	94.7	227.1	6	6	6	6	6	6	6	6	4	6	6	6
96	35.00	94.7	11.7	94.7	227.4	6	6	6	6	6	6	6	6	4	6	6	6
96	40.00	94.7	13.3	94.7	228.6	6	6	6	6	6	6	6	6	4	6	6	6
96	45.00	94.7	15.0	94.7	229.8	6	6	6	6	6	6	6	6	4	6	6	6
96	47.50	94.7	15.8	94.7	230.4	6	6	6	6	6	6	6	6	4	6	6	6
96	50.00	94.7	16.7	94.7	231.0	6	6	6	6	6	6	6	6	4	6	6	6
96	54.00	94.7	18.0	94.7	231.9	6	6	6	6	6	6	6	6	4	6	6	6
96	55.00	94.7	18.3	94.7	232.2	6	6	6	6	6	6	6	6	4	6	6	6
96	60.00	94.7	20.0	94.7	233.3	6	6	6	6	6	6	6	6	4	6	6	6
96	61.00	94.7	20.3	94.7	233.6	6	6	6	6	6	6	6	6	4	6	6	6
96	65.00	94.7	21.7	94.7	234.5	6	6	6	6	6	6	6	6	4	6	6	6
96	66.70	94.7	22.2	94.7	234.9	6	6	6	6	6	6	6	6	4	6	6	6
96	68.00	94.7	22.7	94.7	235.3	6	6	6	6	6	6	6	6	4	6	6	6
96	70.00	94.7	23.3	94.7	235.7	6	6	6	6	6	6	6	6	4	6	6	6
96	75.00	94.7	25.0	94.7	236.9	6	6	6	6	6	6	6	6	4	6	6	6
96	80.00	94.7	26.7	94.7	238.1	6	6	6	6	6	6	6	6	4	6	6	6
96	82.50	94.7	27.5	94.7	238.7	6	6	6	6	6	6	6	6	4	6	6	6
96	90.00	94.7	30.0	94.7	240.5	6	6	6	6	6	6	6	6	4	6	6	6
96	95.00	94.7	31.7	94.7	241.7	6	6	6	6	6	6	6	6	4	6	6	6
96	97.50	94.7	32.5	94.7	242.3	6	6	6	6	6	6	6	6	4	6	6	6
96	100.00	94.7	33.3	94.7	242.9	6	6	6	6	6	6	6	6	4	6	6	6
96	105.00	94.7	35.0	94.7	244.1	6	6	6	6	6	6	6	6	4	6	6	6
96	110.00	94.7	36.7	94.7	245.2	6	6	6	6	6	6	6	6	4	6	6	6
96	112.50	94.7	37.5	94.7	245.8	6	6	6	6	6	6	6	6	4	6	6	6
96	115.00	94.7	38.3	94.7	246.4	6	6	6	6	6	6	6	6	4	6	6	6
96	117.50	94.7	39.2	94.7	247.0	6	6	6	6	6	6	6	6	4	6	6	6
96	120.00	94.7	40.0	94.7	247.6	6	6	6	6	6	6	6	6	4	6	6	6
96	122.50	94.7	40.8	94.7	248.2	6	6	6	6	6	6	6	6	4	6	6	6
96	125.00	94.7	41.7	94.7	248.8	6	6	6	6	6	6	6	6	4	6	6	6
96	127.50	94.7	42.5	94.7	249.4	6	6	6	6	6	6	6	6	4	6	6	6
96	130.00	94.7	43.3	94.7	250.0	6	6	6	6	6	6	6	6	4	6	6	6
96	132.50	94.7	44.2	94.7	250.6	6	6	6	6	6	6	6	6	4	6	6	6
96	135.00	94.7	45.0	94.7	251.2	6	6	6	6	6	6	6	6	4	6	6	6
108	20.00	95.4	7.5	95.4	225.9	6	6	6	6	6	6	6	6	4	6	6	6
108	26.50	95.4	9.9	95.4	227.6	6	6	6	6	6	6	6	6	4	6	6	6
108	33.75	95.4	12.7	95.4	229.6	6	6	6	6	6	6	6	6	4	6	6	6
108	35.00	95.4	13.1	95.4	229.9	6	6	6	6	6	6	6	6	4	6	6	6
108	40.00	95.4	15.0	95.4	231.2	6	6	6	6	6	6	6	6	4	6	6	6
108	45.00	95.4	16.9	95.4	232.6	6	6	6	6	6	6	6	6	4	6	6	6
108	47.50	95.4	17.8	95.4	233.2	6	6	6	6	6	6	6	6	4	6	6	6
108	50.00	95.4	18.8	95.4	233.9	6	6	6	6	6	6	6	6	4	6	6	6
108	54.00	95.4	20.3	95.4	235.0	6	6	6	6	6	6	6	6	4	6	6	6
108	55.00	95.4	20.6	95.4	235.2	6	6	6	6	6	6	6	6	4	6	6	6
108	60.00	95.4	22.5	95.4	236.6	6	6	6	6	6	6	6	6	4	6	6	6
108	61.00	95.4	22.9	95.4	236.8	6	6	6	6	6	6	6	6	4	6	6	6
108	65.00	95.4	24.4	95.4	237.9	6	6	6	6	6	6	6	6	4	6	6	6
108	66.70	95.4	25.0	95.4	238.4	6	6	6	6	6	6	6	6	4	6	6	6
108	68.00	95.4	25.5	95.4	238.7	6	6	6	6	6	6	6	6	4	6	6	6
108	70.00	95.4	26.3	95.4	239.2	6	6	6	6	6	6	6	6	4	6	6	6
108	75.00	95.4	28.1	95.4	240.6	6	6	6	6	6	6	6	6	4	6	6	6
108	80.00	95.4	30.0	95.4	241.9	6	6	6	6	6	6	6	6	4	6	6	6
108	82.50	95.4	30.9	95.4	242.6	6	6	6	6	6	6	6	6	4	6	6	6
108	90.00	95.4	33.8	95.4	244.6	6	6	6	6	6	6	6	6	4	6	6	6
108	95.00	95.4	35.6	95.4	245.9	6	6	6	6	6	6	6	6	4	6	6	6
108	97.50	95.4	36.6	95.4	246.6	6	6	6	6	6	6	6	6	4	6	6	6
108	100.00	95.4	37.5	95.4	247.3	6	6	6	6	6	6	6	6	4	6	6	6
108	105.00	95.4	39.4	95.4	248.6	6	6	6	6	6	6	6	6	4	6	6	6
108	110.00	95.4	41.3	95.4	250.0	6	6	6	6	6	6	6	6	4	6	6	6
108	112.50	95.4	42.2	95.4	250.6	6	6	6	6	6	6	6	6	4	6	6	6
108	115.00	95.4	43.1	95.4	251.3	6	6	6	6	6	6	6	6	4	6	6	6
108	117.50	95.4	44.1	95.4	252.0	6	6	6	6	6	6	6	6	3	6	6	6
108	120.00	95.4	45.0	95.4	252.6	6	6	6	6	6	6	6	6	3	6	6	6
108	122.50	95.4	45.9	95.4	253.3	6	6	6	6	6	6	6	6	3	6	6	6
108	125.00	95.4	46.9	95.4	254.0	6	6	6	6	6	6	6	6	3	6	6	6
108	127.50	95.4	47.8	95.4	254.6	6	6	6	6	6	6	6	6	3	6	6	6



# TYPICAL HORIZONTAL SECTIONS INSET MOUNT



**A**  
**11**  
**HORIZONTAL SECTION**  
MOUNT TYPE 3  
INSET MOUNT  
\*WITH END RETENTION



CONTRACTOR TO VERIFY ADEQUACY OF STRUCTURE  
NOTE: LOADS  $V_y$  AND  $V_x$  ARE LOADS IMPOSED BY SCREEN ON TRACK. LOADS  $T_s$  AND  $V_s$  ARE LOADS IMPOSED ON STRUCTURE BY ANCHORS.  
NOTE:  $T_s$  AND  $V_s$  VALUES ARE TOTAL LOAD APPLIED BY BOTH SCREWS.

SEE SHEETS 12 & 13 FOR ANCHOR SPACING TABLES

**ANCHOR SCHEDULE:**

ANCHOR	DESCRIPTION	MATERIAL	EDGE DISTANCE	EMBEDMENT
A	3/8" DEWALT/POWERS WEDGE BOLT OT	MIN. 3000 PSI CONCRETE	3 3/4"	3 1/2"
B	5/16" ITW TAPCON	MIN. 3000 PSI CONCRETE	2 3/16"	2 1/4"
C	3/8" DEWALT/POWERS WEGDE BOLT OT	GROUT FILLED C-90 BLOCK $f'm \geq 1500$ PSI	2	2 1/2"
D	5/16" ITW TAPCON	GROUT FILLED C-90 BLOCK $f'm \geq 2000$ PSI	4"	2 1/4"
E	#14 ELCO DRIL-FLEX SELF DRILLING SCREW	MIN 1/4" 6063-T6 ALUM. A36 3/16" STEEL	1/2" 3/8"	3 THREADS PENETRATION
F	5/16" ELCO Ultracon	MIN. SG = 0.55 WOOD	1 1/2"	2"

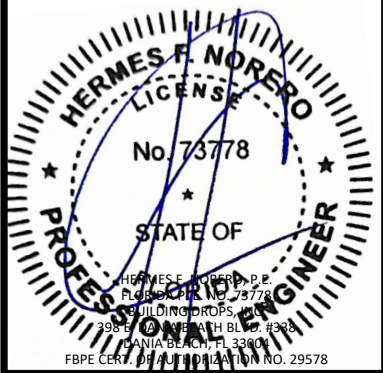
ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

TITLE: ULTRASHIELD HURRICANE SCREEN  
(HVHZ) (IMPACT)  
TYP. HORIZONTAL SECTION  
- INSET MOUNT

PREPARED BY: **BD** BUILDING DROPS  
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
NEW TESTING UPDATE	SH	8.8.23

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.



**FL42141**

DATE: **05.23.23**

DWG. BY: **DI**      CHK. BY: **HFN**

SCALE: **NTS**

DWG. #: **ESS001**

SHEET:                      OF 20

**11**

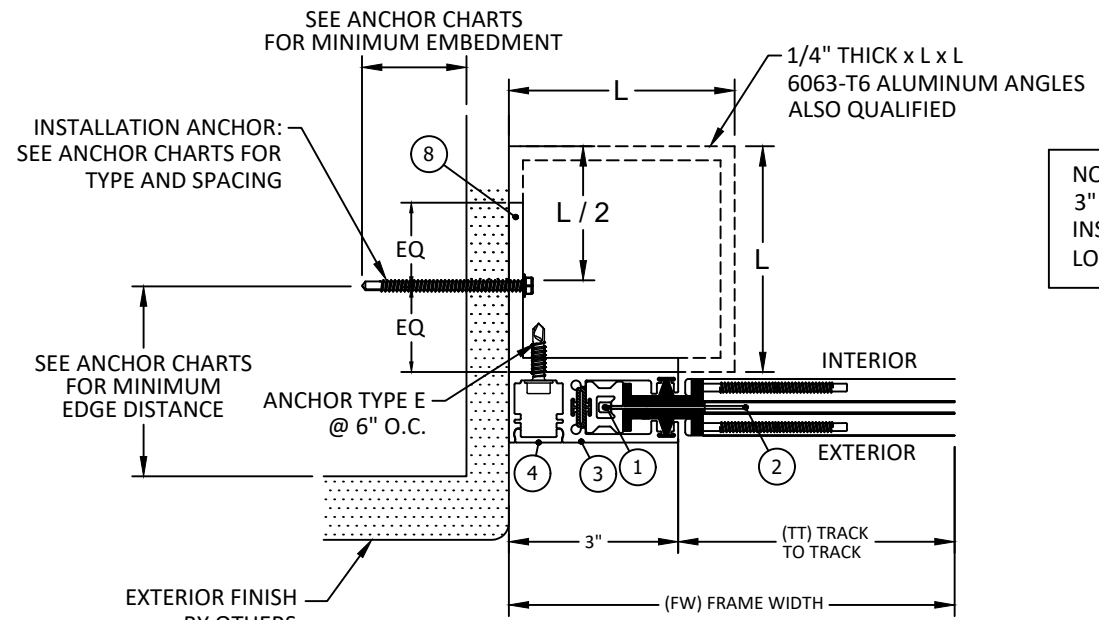
TABLE 4 - ANCHOR SPACING

TT	ANCHOR TYPE & SPACING 3X3 INSET - MOUNT 3								
	DP	Vx	Vy	A	B	C	D	E	F
	20.00	94.7	5.0	6	6	5	6	6	6
	26.50	94.7	6.6	6	6	5	6	6	6
	33.75	94.7	8.4	6	6	5	6	6	6
	35.00	94.7	8.8	6	6	5	6	6	6
	40.00	94.7	10.0	6	6	5	6	6	5
	45.00	94.7	11.3	6	6	5	6	6	5
	47.50	94.7	11.9	6	6	4	6	6	5
	50.00	94.7	12.5	6	6	4	6	6	5
	54.00	94.7	13.5	6	6	4	5	6	5
	55.00	94.7	13.8	6	6	4	5	6	5
	60.00	94.7	15.0	6	6	4	5	6	5
	61.00	94.7	15.3	6	6	4	5	6	5
	65.00	94.7	16.3	6	6	4	5	6	5
	66.70	94.7	16.7	6	6	4	5	6	5
	68.00	94.7	17.0	6	6	4	5	6	5
	70.00	94.7	17.5	6	5	4	5	6	5
	75.00	94.7	18.8	6	5	4	5	6	5
	80.00	94.7	20.0	6	5	4	5	6	5
	82.50	94.7	20.6	6	5	4	5	6	5
	90.00	94.7	22.5	6	5	4	5	6	4
	95.00	94.7	23.8	6	5	4	5	6	4
	97.50	94.7	24.4	6	5	4	5	6	4
	100.00	94.7	25.0	6	5	4	5	6	4
	105.00	94.7	26.3	6	5	3	4	6	4
	110.00	94.7	27.5	6	5	3	4	6	4
	112.50	94.7	28.1	6	5	3	4	6	4
	115.00	94.7	28.8	6	5	3	4	6	4
	117.50	94.7	29.4	6	5	3	4	6	4
	120.00	94.7	30.0	6	5	3	4	6	4
	122.50	94.7	30.6	6	5	3	4	6	4
	125.00	94.7	31.3	6	5	3	4	6	4
	127.50	94.7	31.9	6	4	3	4	6	4
	130.00	94.7	32.5	6	4	3	4	6	4
	132.50	94.7	33.1	6	4	3	4	6	4
	135.00	94.7	33.8	6	4	3	4	6	4
	137.50	94.7	34.4	6	4	3	4	6	4
	140.00	94.7	35.0	6	4	3	4	6	4
	142.50	94.7	35.6	6	4	3	4	6	4
	145.00	94.7	36.3	6	4	3	4	6	4
	147.50	94.7	36.9	6	4	3	4	6	4
	150.00	94.7	37.5	6	4	3	4	6	4
72	20.00	94.2	5.8	6	6	5	6	6	6
	26.50	94.2	7.7	6	6	5	6	6	6
	33.75	94.2	9.8	6	6	5	6	6	5
	35.00	94.2	10.2	6	6	5	6	6	5
	40.00	94.2	11.7	6	6	5	6	6	5
	45.00	94.2	13.1	6	6	4	6	6	5
	47.50	94.2	13.9	6	6	4	5	6	5
	50.00	94.2	14.6	6	6	4	5	6	5
	54.00	94.2	15.8	6	6	4	5	6	5
	55.00	94.2	16.0	6	6	4	5	6	5
	60.00	94.2	17.5	6	6	4	5	6	5
	61.00	94.2	17.8	6	6	4	5	6	5
	65.00	94.2	19.0	6	5	4	5	6	5
	66.70	94.2	19.5	6	5	4	5	6	5
	68.00	94.2	19.8	6	5	4	5	6	5
	70.00	94.2	20.4	6	5	4	5	6	5
	75.00	94.2	21.9	6	5	4	5	6	5
	80.00	94.2	23.3	6	5	4	5	6	4
	82.50	94.2	24.1	6	5	4	5	6	4
	90.00	94.2	26.3	6	5	4	5	6	4
	95.00	94.2	27.7	6	5	3	4	6	4
	97.50	94.2	28.4	6	5	3	4	6	4
	100.00	94.2	29.2	6	5	3	4	6	4
	105.00	94.2	30.6	6	5	3	4	6	4
	110.00	94.2	32.1	6	4	3	4	6	4
	112.50	94.2	32.8	6	4	3	4	6	4
	115.00	94.2	33.5	6	4	3	4	6	4
	117.50	94.2	34.3	6	4	3	4	6	4
	120.00	94.2	35.0	6	4	3	4	6	4
	122.50	94.2	35.7	6	4	3	4	6	4
	125.00	94.2	36.5	6	4	3	4	6	4
	127.50	94.2	37.2	6	4	3	4	6	4
	130.00	94.2	37.9	6	4	3	4	6	4
	132.50	94.2	38.6	6	4	3	4	6	4
	135.00	94.2	39.4	6	4	3	4	6	4
	137.50	94.2	40.1	6	4	3	4	6	3
	140.00	94.2	40.8	6	4	3	4	6	3
	142.50	94.2	41.6	6	4	3	4	6	3

TABLE 4 - ANCHOR SPACING

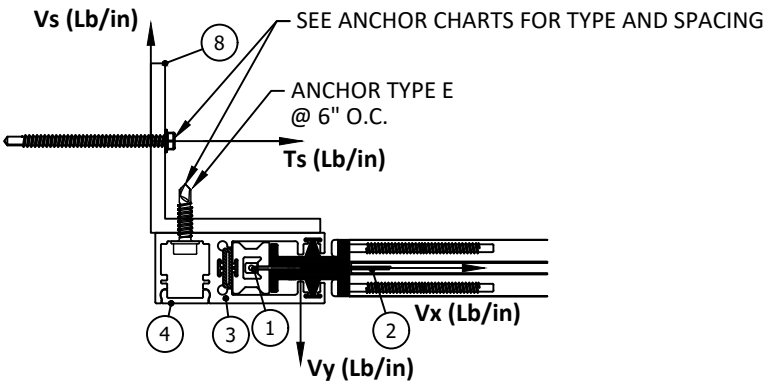
TT	ANCHOR TYPE & SPACING 3X3 INSET - MOUNT 3								
	DP	Vx	Vy	A	B	C	D	E	F
	20.00	94.7	6.7	6	6	5	6	6	6
	26.50	94.7	8.8	6	6	5	6	6	6
	33.75	94.7	11.3	6	6	5	6	6	5
	35.00	94.7	11.7	6	6	4	6	6	5
	40.00	94.7	13.3	6	6	4	5	6	5
	45.00	94.7	15.0	6	6	4	5	6	5
	47.50	94.7	15.8	6	6	4	5	6	5
	50.00	94.7	16.7	6	6	4	5	6	5
	54.00	94.7	18.0	6	5	4	5	6	5
	55.00	94.7	18.3	6	5	4	5	6	5
	60.00	94.7	20.0	6	5	4	5	6	5
	61.00	94.7	20.3	6	5	4	5	6	5
	65.00	94.7	21.7	6	5	4	5	6	5
	66.70	94.7	22.2	6	5	4	5	6	4
	68.00	94.7	22.7	6	5	4	5	6	4
	70.00	94.7	23.3	6	5	4	5	6	4
	75.00	94.7	25.0	6	5	4	5	6	4
96	80.00	94.7	26.7	6	5	3	4	6	4
	82.50	94.7	27.5	6	5	3	4	6	4
	90.00	94.7	30.0	6	5	3	4	6	4
	95.00	94.7	31.7	6	4	3	4	6	4
	97.50	94.7	32.5	6	4	3	4	6	4
	100.00	94.7	33.3	6	4	3	4	6	4
	105.00	94.7	35.0	6	4	3	4	6	4
	110.00	94.7	36.7	6	4	3	4	6	4
	112.50	94.7	37.5	6	4	3	4	6	4
	115.00	94.7	38.3	6	4	3	4	6	4
	117.50	94.7	39.2	6	4	3	4	6	3
	120.00	94.7	40.0	6	4	3	4	6	3
	122.50	94.7	40.8	6	4	3	4	6	3
	125.00	94.7	41.7	6	4	3	4	6	3
	127.50	94.7	42.5	6	4	3	4	6	3
	130.00	94.7	43.3	6	4	3	4	6	3
	132.50	94.7	44.2	6	4	3	3	6	3
	135.00	94.7	45.0	6	4	3	3	6	3
108	20.00	95.4	7.5	6	6	5	6	6	6
	26.50	95.4	9.9	6	6	5	6	6	5
	33.75	95.4	12.7	6	6	4	5	6	5
	35.00	95.4	13.1	6	6	4	5	6	5
	40.00	95.4	15.0	6	6	4	5	6	5
	45.00	95.4	16.9	6	5	4	5	6	5
	47.50	95.4	17.8	6	5	4	5	6	5
	50.00	95.4	18.8	6	5	4	5	6	5
	54.00	95.4	20.3	6	5	4	5	6	5
	55.00	95.4	20.6	6	5	4	5	6	5
	60.00	95.4	22.5	6	5	4	5	6	4
	61.00	95.4	22.9	6	5	4	5	6	4
	65.00	95.4	24.4	6	5	4	5	6	4
	66.70	95.4	25.0	6	5	4	5	6	4
	68.00	95.4	25.5	6	5	3	5	6	4
	70.00	95.4	26.3	6	5	3	4	6	4
	75.00	95.4	28.1	6	5	3	4	6	4
	80.00	95.4	30.0	6	5	3	4	6	4
	82.50	95.4	30.9	6	4	3	4	6	4
	90.00	95.4	33.8	6	4	3	4	6	4
	95.00	95.4	35.6	6	4	3	4	6	4
	97.50	95.4	36.6	6	4	3	4	6	4
	100.00	95.4	37.5	6	4	3	4	6	4
	105.00	95.4	39.4	6	4	3	4	6	3
	110.00	95.4	41.3	6	4	3	4	6	3
	112.50	95.4	42.2	6	4	3	4	6	3
	115.00	95.4	43.1	6	4	3	4	6	3
	117.50	95.4	44.1	6	4	3	3	6	3
	120.00	95.4	45.0	6	4	3	3	6	3
	122.50	95.4	45.9	6	4	-	3	6	3
	125.00	95.4	46.9	6	4	-	3	6	3
	127.50	95.4	47.8	6	4	-	3	6	3

**TYPICAL HORIZONTAL SECTIONS  
INSET MOUNT**



NOTE:  
3" ≤ L ≤ 6" AS LONG AS THE INSTALLATION ANCHOR IS LOCATED AT L/2.

**A**  
12  
**HORIZONTAL SECTION**  
**MOUNT TYPE 3 INSET MOUNT**  
\*WITH END RETENTION



CONTRACTOR TO VERIFY ADEQUACY OF STRUCTURE  
 NOTE: LOADS Vy AND Vx ARE LOADS IMPOSED BY SCREEN ON TRACK. LOADS Ts AND Vs ARE LOADS IMPOSED ON STRUCTURE BY ANCHORS.  
 NOTE: Ts AND Vs VALUES ARE TOTAL LOAD APPLIED BY BOTH SCREWS.

TITLE: **ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)**  
**TYP. HORIZONTAL SECTION - INSET MOUNT ANCHOR SPACING TABLE**

PREPARED BY: **BUILDING DROPS, INC.**  
 398 E. DANIA BEACH BLVD., STE. 338  
 DANIA BEACH, FL 33004  
 PH: (954)959-8478  
 FAX: (954)744-4738  
 WEB: www.buildingdrops.com

REMARKS	BY	DATE
NEW TESTING UPDATE	SH	8.8.23

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.

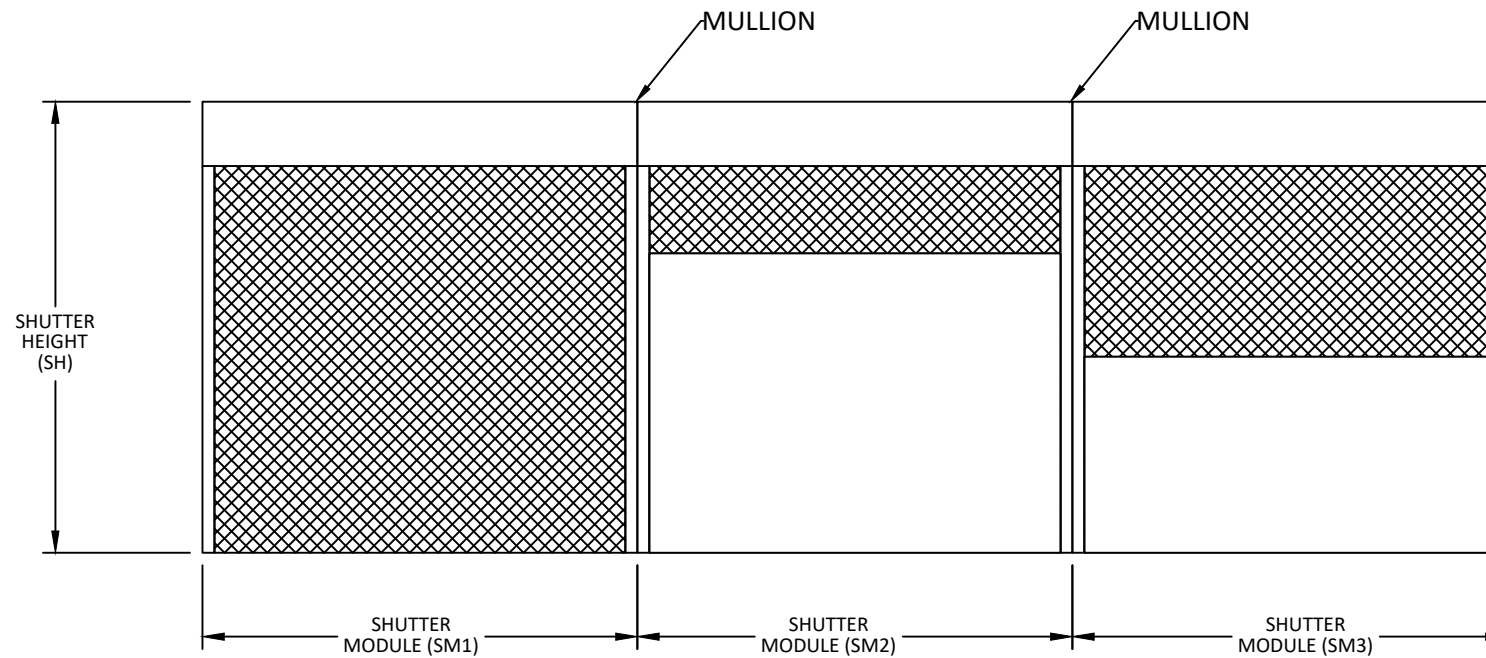
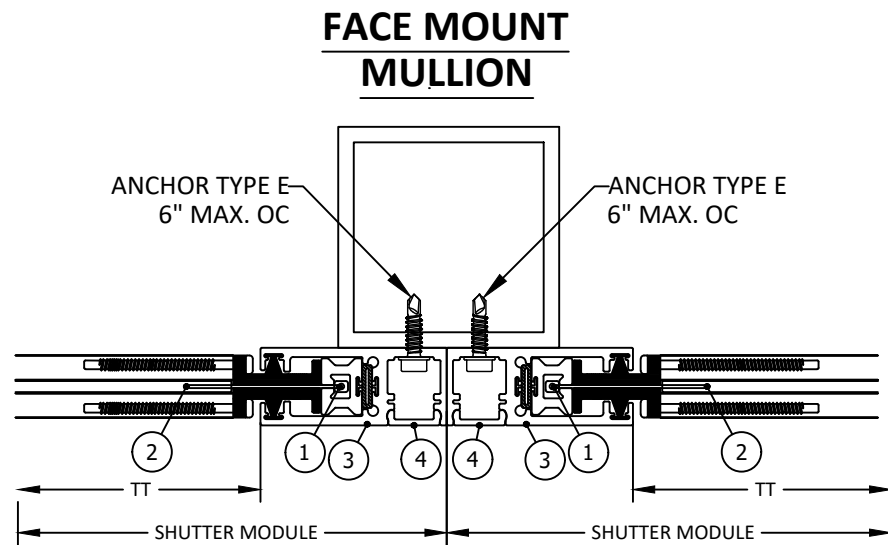


TABLE 4 - ANCHOR SPACING				ANCHOR TYPE & SPACING 3X3 INSET - MOUNT 3						
TT	DP	Vx	Vy	A	B	C	D	E	F	
120	20.00	95.7	8.3	6	6	5	6	6	5	
	26.50	95.7	11.0	6	6	4	6	6	5	
	33.75	95.7	14.1	6	6	4	5	6	5	
	35.00	95.7	14.6	6	6	4	5	6	5	
	40.00	95.7	16.7	6	5	4	5	6	5	
	45.00	95.7	18.8	6	5	4	5	6	5	
	47.50	95.7	19.8	6	5	4	5	6	5	
	50.00	95.7	20.8	6	5	4	5	6	5	
	54.00	95.7	22.5	6	5	4	5	6	4	
	55.00	95.7	22.9	6	5	4	5	6	4	
	60.00	95.7	25.0	6	5	4	5	6	4	
	61.00	95.7	25.4	6	5	3	4	6	4	
	65.00	95.7	27.1	6	5	3	4	6	4	
	66.70	95.7	27.8	6	5	3	4	6	4	
	68.00	95.7	28.3	6	5	3	4	6	4	
	70.00	95.7	29.2	6	5	3	4	6	4	
	75.00	95.7	31.3	6	4	3	4	6	4	
	80.00	95.7	33.3	6	4	3	4	6	4	
	82.50	95.7	34.4	6	4	3	4	6	4	
	90.00	95.7	37.5	6	4	3	4	6	4	
	95.00	95.7	39.6	6	4	3	4	6	3	
	97.50	95.7	40.6	6	4	3	4	6	3	
	100.00	95.7	41.7	6	4	3	4	6	3	
	105.00	95.7	43.8	6	4	3	3	6	3	
	110.00	95.7	45.8	6	4	-	3	6	3	
	112.50	95.7	46.9	6	4	-	3	6	3	
	115.00	95.7	47.9	6	4	-	3	6	3	
	117.50	95.7	49.0	6	4	-	3	6	3	
	120.00	95.7	50.0	6	3	-	3	6	3	
	132	20.00	95.5	9.2	6	6	5	6	6	5
		26.50	95.5	12.1	6	6	4	6	6	5
		33.75	95.5	15.5	6	6	4	5	6	5
35.00		95.5	16.0	6	6	4	5	6	5	
40.00		95.5	18.3	6	5	4	5	6	5	
45.00		95.5	20.6	6	5	4	5	6	5	
47.50		95.5	21.8	6	5	4	5	6	4	
50.00		95.5	22.9	6	5	4	5	6	4	
54.00		95.5	24.8	6	5	4	5	6	4	
55.00		95.5	25.2	6	5	3	5	6	4	
60.00		95.5	27.5	6	5	3	4	6	4	
61.00		95.5	28.0	6	5	3	4	6	4	
65.00		95.5	29.8	6	5	3	4	6	4	
66.70		95.5	30.6	6	4	3	4	6	4	
68.00		95.5	31.2	6	4	3	4	6	4	
70.00		95.5	32.1	6	4	3	4	6	4	
75.00		95.5	34.4	6	4	3	4	6	4	
80.00		95.5	36.7	6	4	3	4	6	4	
82.50		95.5	37.8	6	4	3	4	6	4	
90.00		95.5	41.3	6	4	3	4	6	3	
95.00		95.5	43.5	6	4	3	3	6	3	
97.50		95.5	44.7	6	4	3	3	6	3	
100.00		95.5	45.8	6	4	-	3	6	3	
105.00		95.5	48.1	6	4	-	3	6	3	
110.00		95.5	50.4	6	3	-	3	6	3	
112.50		95.5	51.6	6	3	-	3	6	3	
144		20.00	94.7	10.0	6	6	5	6	6	5
		26.50	94.7	13.3	6	6	4	5	6	5
		33.75	94.7	16.9	6	6	4	5	6	5
		35.00	94.7	17.5	6	5	4	5	6	5
		40.00	94.7	20.0	6	5	4	5	6	5
		45.00	94.7	22.5	6	5	4	5	6	4
	47.50	94.7	23.8	6	5	4	5	6	4	
	50.00	94.7	25.0	6	5	4	5	6	4	
	54.00	94.7	27.0	6	5	3	4	6	4	
	55.00	94.7	27.5	6	5	3	4	6	4	
	60.00	94.7	30.0	6	5	3	4	6	4	
	61.00	94.7	30.5	6	5	3	4	6	4	
	65.00	94.7	32.5	6	4	3	4	6	4	
	66.70	94.7	33.4	6	4	3	4	6	4	
	68.00	94.7	34.0	6	4	3	4	6	4	
	70.00	94.7	35.0	6	4	3	4	6	4	
	75.00	94.7	37.5	6	4	3	4	6	4	
	80.00	94.7	40.0	6	4	3	4	6	3	
	82.50	94.7	41.3	6	4	3	4	6	3	
	90.00	94.7	45.0	6	4	3	3	6	3	
	95.00	94.7	47.5	6	4	-	3	6	3	
	97.50	94.7	48.8	6	4	-	3	6	3	
	100.00	94.7	50.0	6	4	-	3	6	3	
	105.00	94.7	52.5	6	3	-	3	6	3	

TABLE 4 - ANCHOR SPACING				ANCHOR TYPE & SPACING 3X3 INSET - MOUNT 3						
TT	DP	Vx	Vy	A	B	C	D	E	F	
156	20.00	93.3	10.8	6	6	5	6	6	5	
	26.50	93.3	14.4	6	6	4	6	6	5	
	33.75	93.3	18.3	6	6	4	5	6	5	
	35.00	93.3	19.0	6	6	4	5	6	5	
	40.00	93.3	21.7	6	5	4	5	6	5	
	45.00	93.3	24.4	6	5	4	5	6	4	
	47.50	93.3	25.7	6	5	4	5	6	4	
	50.00	93.3	27.1	6	5	4	5	6	4	
	54.00	93.3	29.3	6	5	3	4	6	4	
	55.00	93.3	29.8	6	5	3	4	6	4	
	60.00	93.3	32.5	6	5	3	4	6	4	
	61.00	93.3	33.0	6	4	3	4	6	4	
	65.00	93.3	35.2	6	4	3	4	6	4	
	66.70	93.3	36.1	6	4	3	4	6	4	
	68.00	93.3	36.8	6	4	3	4	6	4	
	70.00	93.3	37.9	6	4	3	4	6	4	
	75.00	93.3	40.6	6	4	3	4	6	3	
	80.00	93.3	43.3	6	4	3	4	6	3	
	82.50	93.3	44.7	6	4	3	4	6	3	
	90.00	93.3	48.8	6	4	-	3	6	3	
	95.00	93.3	51.5	6	4	-	3	6	3	
	97.50	93.3	52.8	6	3	-	3	6	3	
	168	20.00	91.0	11.7	6	6	5	6	6	6
		26.50	91.0	15.5	6	6	4	6	6	5
		33.75	91.0	19.7	6	6	4	5	6	5
		35.00	91.0	20.4	6	6	4	5	6	5
		40.00	91.0	23.3	6	5	4	5	6	5
		45.00	91.0	26.3	6	5	4	5	6	4
		47.50	91.0	27.7	6	5	4	5	6	4
		50.00	91.0	29.2	6	5	4	5	6	4
		54.00	91.0	31.5	6	5	3	4	6	4
		55.00	91.0	32.1	6	5	3	4	6	4
60.00		91.0	35.0	6	5	3	4	6	4	
61.00		91.0	35.6	6	4	3	4	6	4	
65.00		91.0	37.9	6	4	3	4	6	4	
66.70		91.0	38.9	6	4	3	4	6	4	
68.00		91.0	39.7	6	4	3	4	6	4	
70.00		91.0	40.8	6	4	3	4	6	4	
75.00		91.0	43.8	6	4	3	4	6	3	
80.00		91.0	46.7	6	4	3	4	6	3	
82.50		91.0	48.1	6	4	3	3	6	3	
90.00		91.0	52.5	6	4	-	3	6	3	
180		20.00	88.0	12.5	6	6	5	6	6	6
		26.50	88.0	16.6	6	6	5	6	6	5
		33.75	88.0	21.1	6	6	4	5	6	5
		35.00	88.0	21.9	6	6	4	5	6	5
		40.00	88.0	25.0	6	5	4	5	6	5
		45.00	88.0	28.1	6	5	4	5	6	5
		47.50	88.0	29.7	6	5	4	5	6	4
		50.00	88.0	31.3	6	5	4	5	6	4
		54.00	88.0	33.8	6	5	3	4	6	4
		55.00	88.0	34.4	6	5	3	4	6	4
		60.00	88.0	37.5	6	5	3	4	6	4
		61.00	88.0	38.1	6	5	3	4	6	4
	65.00	88.0	40.6	6	4	3	4	6	4	
	66.70	88.0	41.7	6	4	3	4	6	4	
	68.00	88.0	42.5	6	4	3	4	6	4	
	70.00	88.0	43.8	6	4	3	4	6	4	
	75.00	88.0	46.9	6	4	3	4	6	3	
	80.00	88.0	50.0	6	4	3	4	6	3	
	82.50	88.0	51.6	6	4	3	3	6	3	
	192	20.00	84.2	13.3	6	6	5	6	6	6
		26.50	84.2	17.7	6	6	5	6	6	6
		33.75	84.2	22.5	6	6	4	6	6	5
		35.00	84.2	23.3	6	6	4	6	6	5
		40.00	84.2	26.7	6	6	4	5	6	5
		45.00	84.2	30.0	6	5	4	5	6	5
		47.50	84.2	31.7	6	5	4	5	6	5
		50.00	84.2	33.3	6	5	4	5	6	4
		54.00	84.2	36.0	6	5	3	5	6	4
		55.00	84.2	36.7	6	5	3	5	6	4
		60.00	84.2	40.0	6	5	3	4	6	4
		61.00	84.2	40.7	6	5	3	4	6	4
		65.00	84.2	43.3	6	4	3	4	6	4
66.70		84.2	44.5	6	4	3	4	6	4	
68.00		84.2	45.3	6	4	3	4	6	4	
70.00		84.2	46.7	6	4	3	4	6	4	
75.00		84.2	50.0	6	4	3	4	6	3	

TABLE 4 - ANCHOR SPACING				ANCHOR TYPE & SPACING 3X3 INSET - MOUNT 3					
TT	DP	Vx	Vy	A	B	C	D	E	F
204	20.00	87.0	14.2	6	6	5	6	6	6
	26.50	87.0	18.8	6	6	5	6	6	5
	33.75	87.0	23.9	6	6	4	5	6	5
	35.00	87.0	24.8	6	6	4	5	6	5
	40.00	87.0	28.3	6	5	4	5	6	5
	45.00	87.0	31.9	6	5	4	5	6	4
	47.50	87.0	33.6	6	5	3	5	6	4
	50.00	87.0	35.4	6	5	3	4	6	4
	54.00	87.0	38.3	6	5	3	4	6	4
	55.00	87.0	39.0	6	5	3	4	6	4
	60.00	87.0	42.5	6	4	3	4	6	4
	61.00	87.0	43.2	6	4	3	4	6	4
	65.00	87.0	46.0	6	4	3	4	6	4
	66.70	87.0	47.2	6					

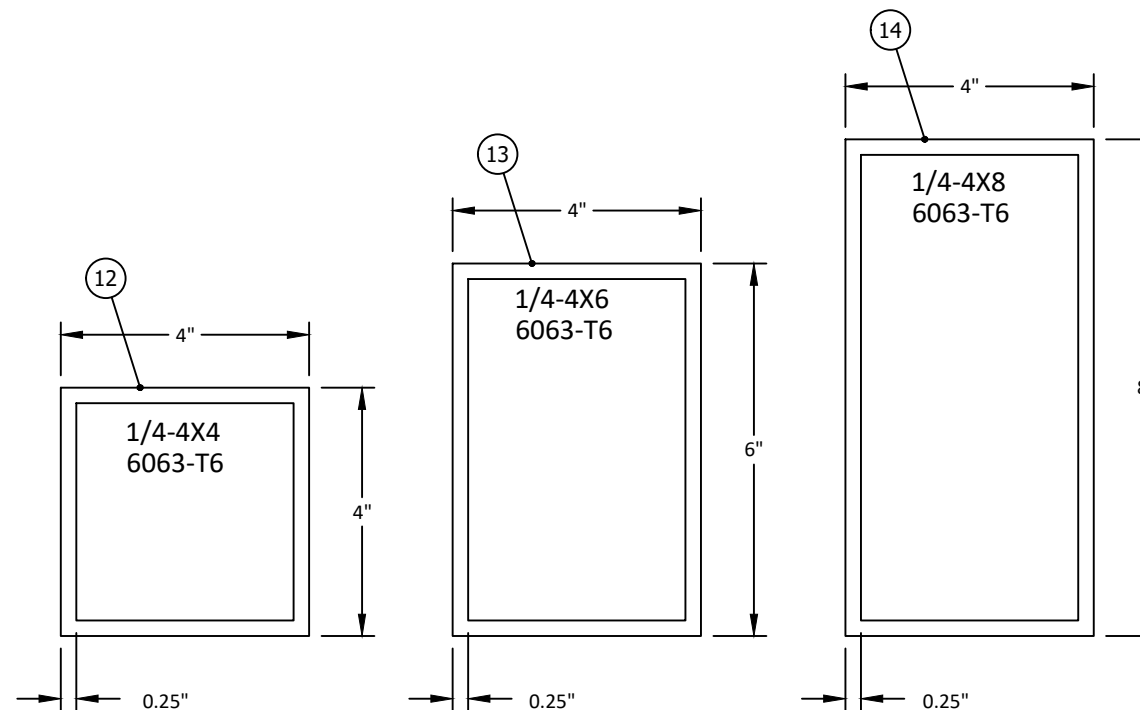
# EQUALLY SPACED MULLIONS SELECTION



SM1 = SM2 = SM3

MAXIMUM MULLION DESIGN PRESSURE (PSF)									
FW 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	34.0	34.0	34.0	N/A	29.0	34.0	N/A	N/A	21.0
276	35.0	39.0	39.0	N/A	30.0	39.0	N/A	N/A	22.0
264	37.0	44.0	44.0	N/A	31.0	44.0	N/A	N/A	23.0
252	39.0	49.0	49.0	N/A	33.0	49.0	N/A	N/A	24.0
240	41.0	54.0	54.0	20.0	35.0	54.0	N/A	N/A	25.0
228	43.0	59.0	59.0	21.0	36.0	59.0	N/A	N/A	27.0
216	45.0	64.0	64.0	22.0	39.0	64.0	N/A	N/A	28.0
204	48.0	69.0	69.0	23.0	41.0	69.0	N/A	N/A	30.0
192	51.0	75.0	75.0	25.0	43.0	75.0	N/A	N/A	32.0
180	54.0	80.0	82.0	27.0	46.0	82.0	N/A	N/A	34.0
168	58.0	85.0	90.0	29.0	50.0	88.0	N/A	N/A	36.0
156	63.0	92.0	97.0	31.0	54.0	94.0	N/A	20.0	39.0
144	68.0	100.0	105.0	33.0	58.0	102.0	N/A	22.0	42.0
132	74.0	109.0	112.0	36.0	63.0	112.0	N/A	24.0	46.0
120	82.0	120.0	120.0	40.0	70.0	120.0	N/A	26.0	51.0
108	91.0	127.0	127.0	45.0	78.0	127.0	N/A	29.0	57.0
96	103.0	135.0	135.0	50.0	87.0	135.0	N/A	33.0	64.0
84	117.0	142.0	142.0	58.0	100.0	142.0	21.0	37.0	73.0
72	137.0	150.0	150.0	67.0	117.0	150.0	25.0	44.0	85.0

- NOTES:
- MULLIONS WERE DESIGNED BY RATIONAL ANALYSIS BASED ON THE ALUMINUM DESIGN MANUAL AND THE FLORIDA BUILDING CODE. ABOVE LOADS ARE ALSO LIMITED BY THE MAX. CAPACITY OF THE PRODUCT.
  - DEFLECTION CRITERIA: MAX. SPAN/180
  - VALUES ABOVE ARE APPLICABLE ONLY FOR EQUAL MODULES SM1=SM2=SM3
  - UNEQUAL MODULES ARE TO BE DESIGNED BY RATIONAL ANALYSIS IN A CASE BY CASE BASIS.
  - LESSER DESIGN PRESSURE OF THIS TABLES AND TABLES ON SHEETS 2 & 3 SHALL GOVERN.



**ESS MANUFACTURING, INC.**  
 "We're Taking The Shutter Industry By Storm!"  
 1-844-320-4800

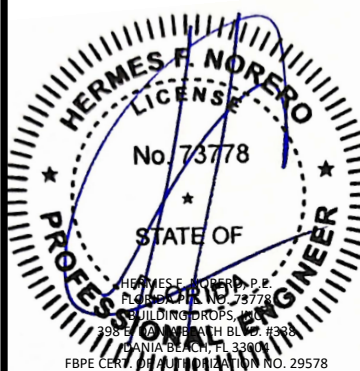
ESS MANUFACTURING, INC.  
 668 SW WHITMORE DR  
 PORT SAINT LUCIE, FLORIDA 34984  
 PH: 844-320-4800

TITLE: **ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)**  
**EQUALLY SPACED MULLIONS**

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
NEW TESTING UPDATE	SH	8.8.23

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.



**FL42141**

DATE: **05.23.23**

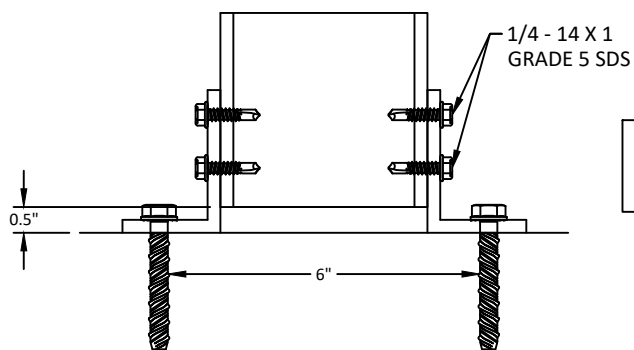
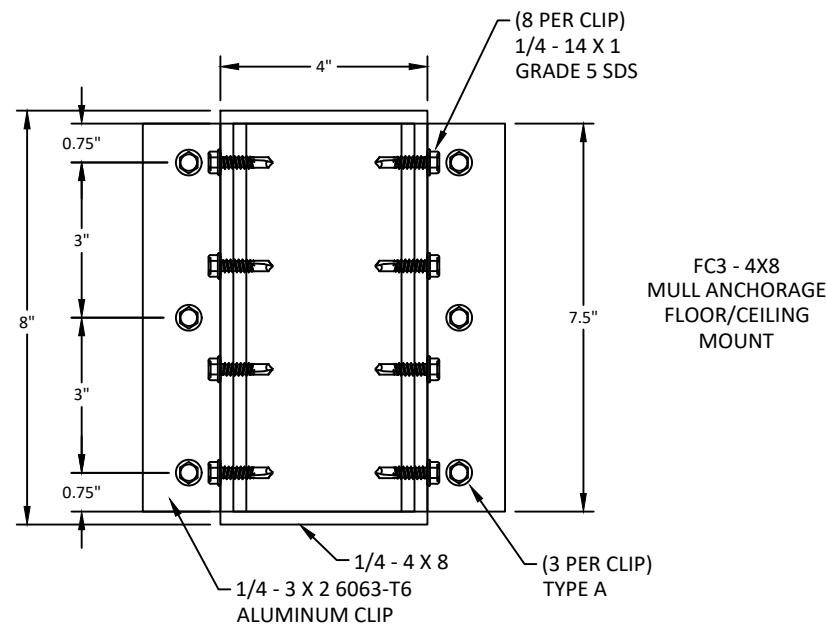
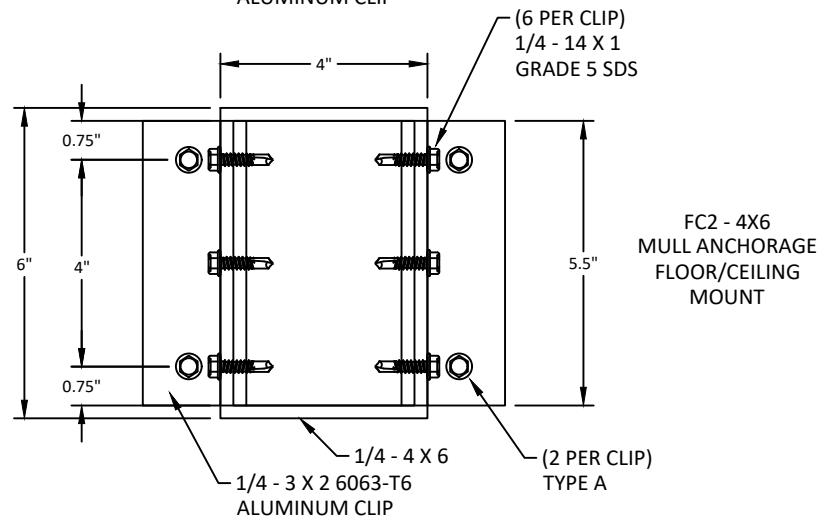
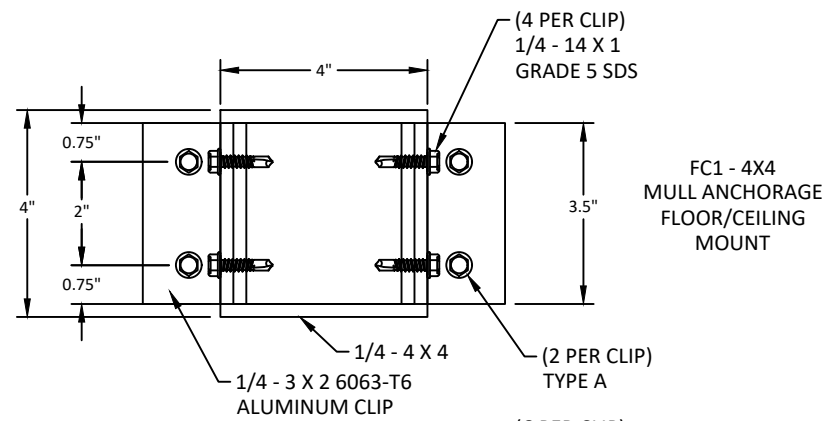
DWG. BY: **DI**      CHK. BY: **HFN**

SCALE: **NTS**

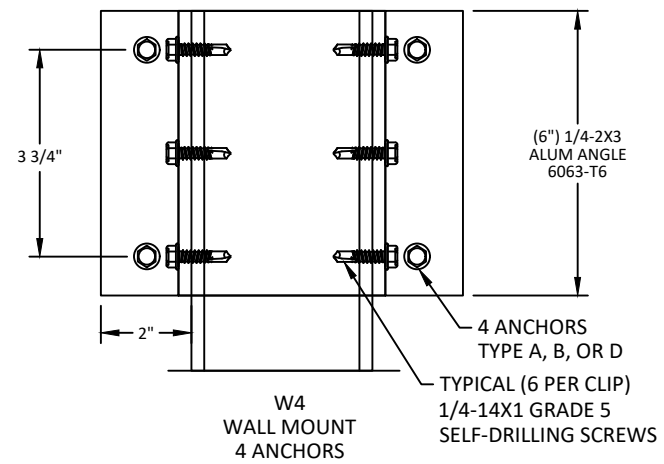
DWG. #: **ESS001**

SHEET:                      OF 20

## EQUALLY SPACED MULLIONS WALL AND INSET CONNECTIONS



NOTE: ANGLE CLIP TO  
BE PLACED OUTSIDE OR  
INSIDE TUBE



WALL MOUNT ANCHOR SELECTION			
ANCHOR TYPE	MULLION TYPE		
	4X4	4X6	4X8
A	W4	W4	W4
B	W4	N/A	N/A
D	W4	N/A	N/A

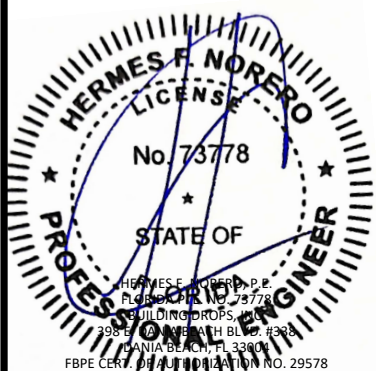
FLOOR/CEILING MOUNT ANCHOR SELECTION			
ANCHOR TYPE	MULLION TYPE		
	4X4	4X6	4X8
A	FC1	FC2	FC3

TITLE: ULTRASHIELD HURRICANE SCREEN  
(HVHZ) (IMPACT)  
EQUALLY SPACED MULLION  
ANCHORS

PREPARED BY:  BUILDING DROPS  
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
NEW TESTING UPDATE	SH	8.8.23

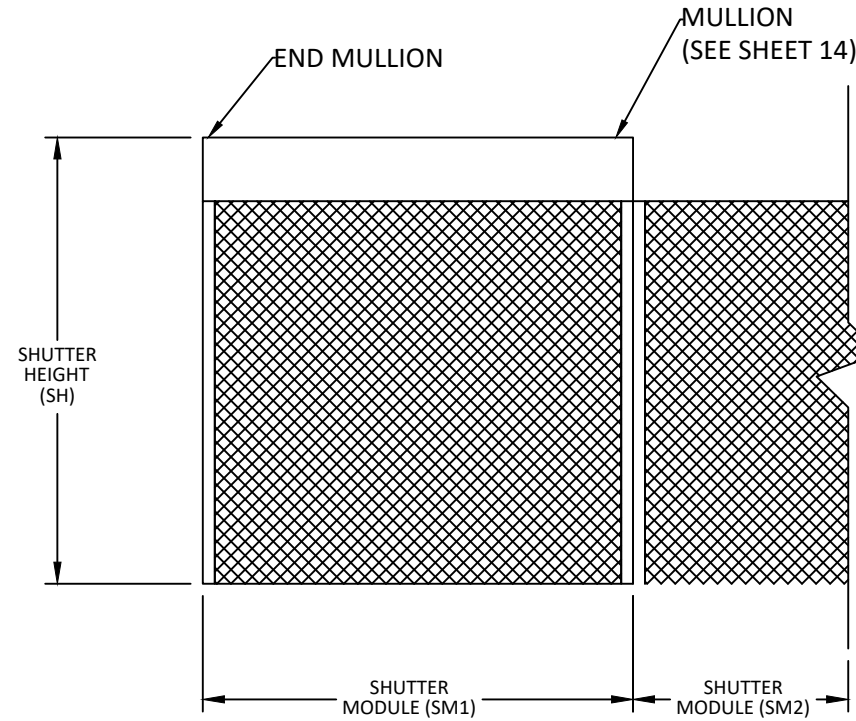
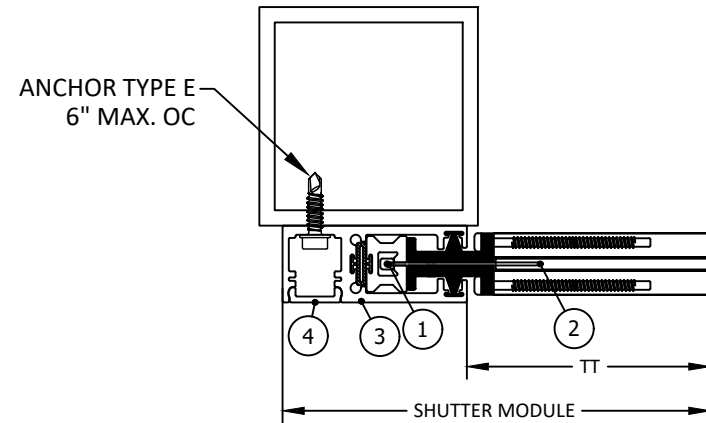
THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.



FL42141  
DATE: 05.23.23  
DWG. BY: DI  
CHK. BY: HFN  
SCALE: NTS  
DWG. #: ESS001  
SHEET: OF 20

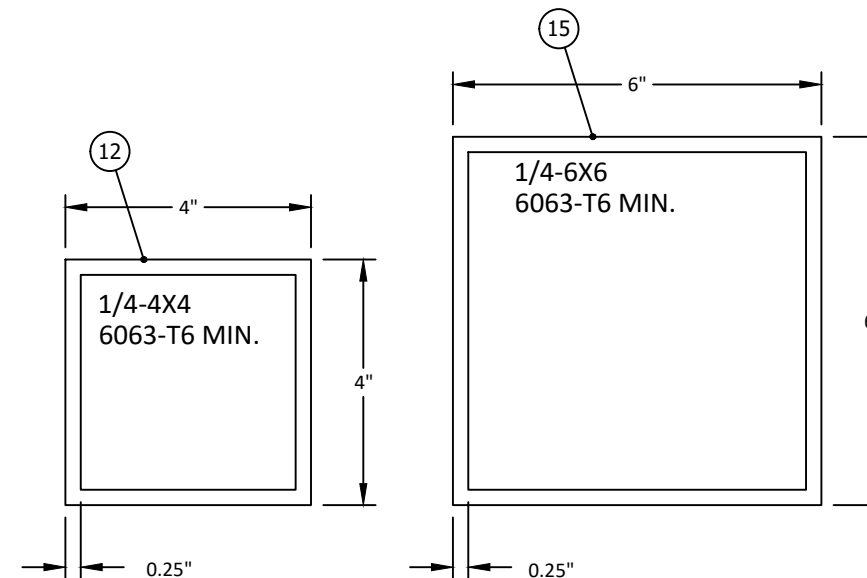
## END MULLION SELECTION

### FACE MOUNT MULLION



SM1 = SM2

MAXIMUM END MULLION SPANS AND DESIGN PRESSURES			
FW MAX (in)	ALLOWABLE DP (PSF)	ALLOWABLE MULLION SPANS (FT)	
		4" x 4" X 0.25" 6063-T6 MIN.	6" x 6" X 0.25" 6063-T6 MIN.
72	150.0	12.00	12.00
84	142.5	12.00	12.00
96	135.0	12.00	12.00
108	127.5	12.00	12.00
120	120.0	12.00	12.00
132	112.5	12.00	12.00
144	105.0	12.00	12.00
156	97.5	12.00	12.00
168	90.0	12.00	12.00
180	82.5	12.00	12.00
192	75.0	12.00	12.00
204	70.0	12.00	12.00
216	65.0	12.00	12.00
228	60.0	12.00	12.00
240	55.0	12.00	12.00
252	50.0	12.00	12.00
264	45.0	12.00	12.00
276	40.0	12.00	12.00
288	35.0	12.00	12.00



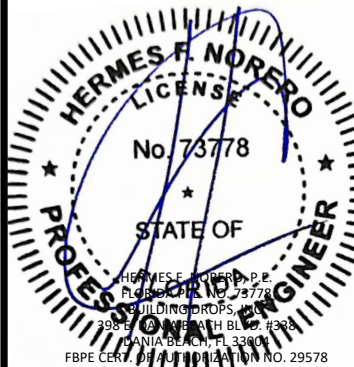
- NOTES:
1. MULLIONS WERE DESIGNED BY RATIONAL ANALYSIS BASED ON THE ALUMINUM DESIGN MANUAL AND THE FLORIDA BUILDING CODE. ABOVE LOADS ARE ALSO LIMITED BY THE MAX. CAPACITY OF THE PRODUCT.
  2. VALUES ABOVE ARE APPLICABLE FOR END MULLIONS ONLY

TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT) END MULLION

PREPARED BY: BUILDING DROPS  
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

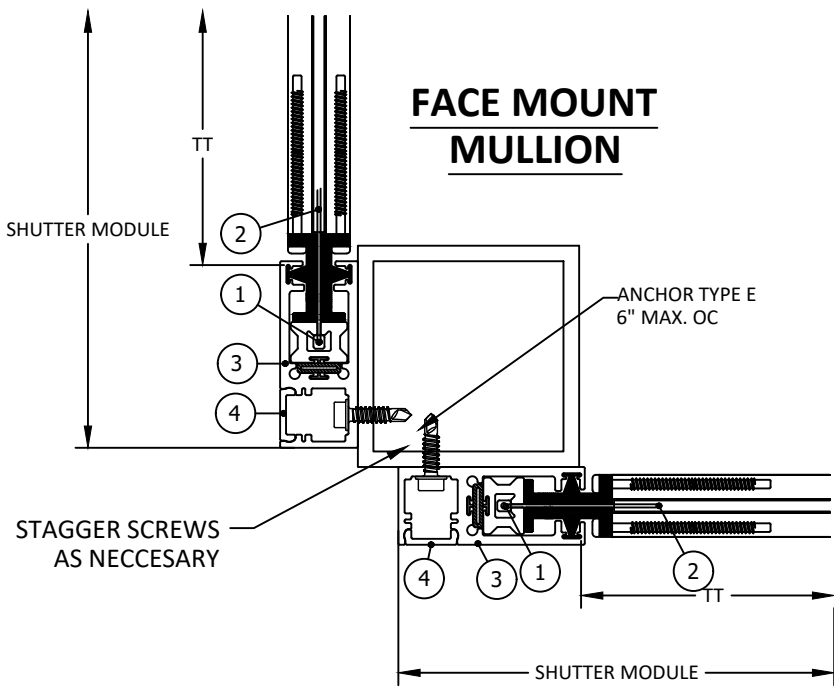
REMARKS	BY	DATE
NEW TESTING UPDATE	SH	8.8.23

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.

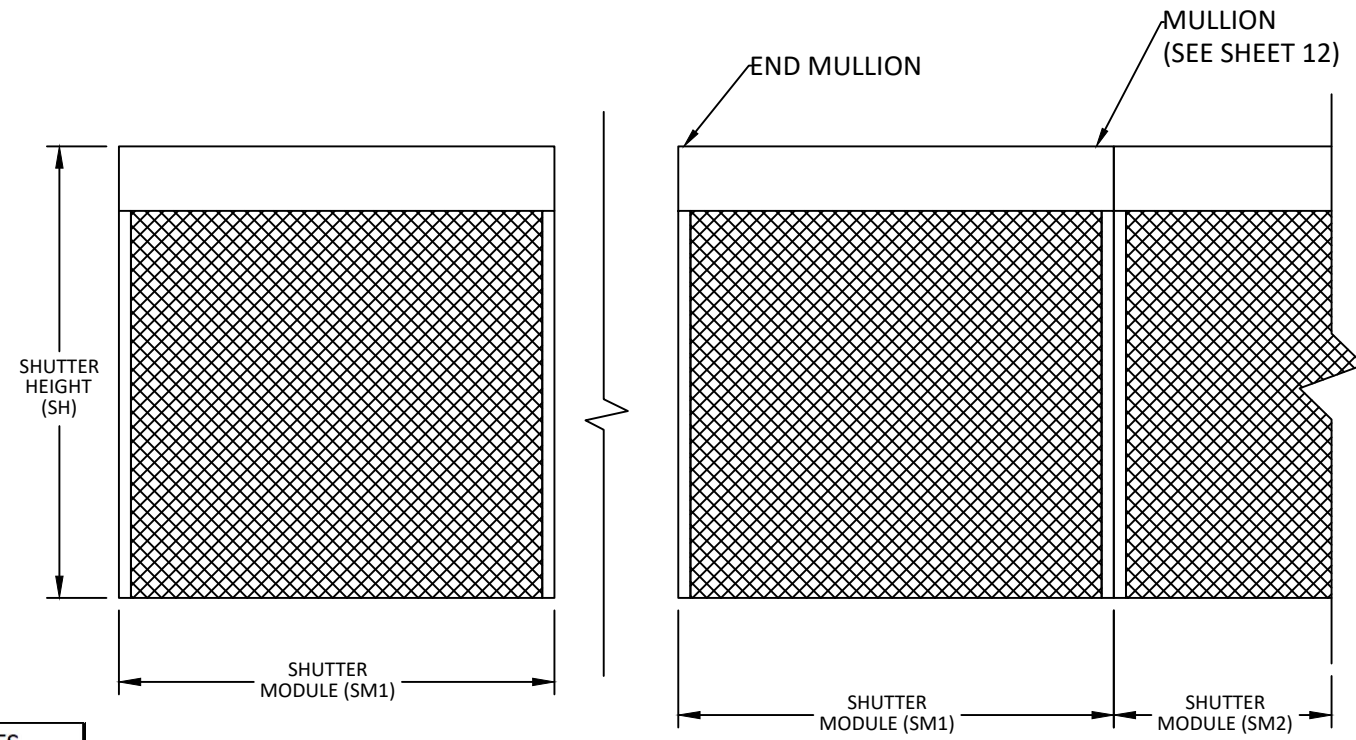


<b>FL42141</b>	
DATE: <b>05.23.23</b>	
DWG. BY: <b>DI</b>	CHK. BY: <b>HFN</b>
SCALE: <b>NTS</b>	
DWG. #: <b>ESS001</b>	
SHEET: <b>16</b>	OF 20

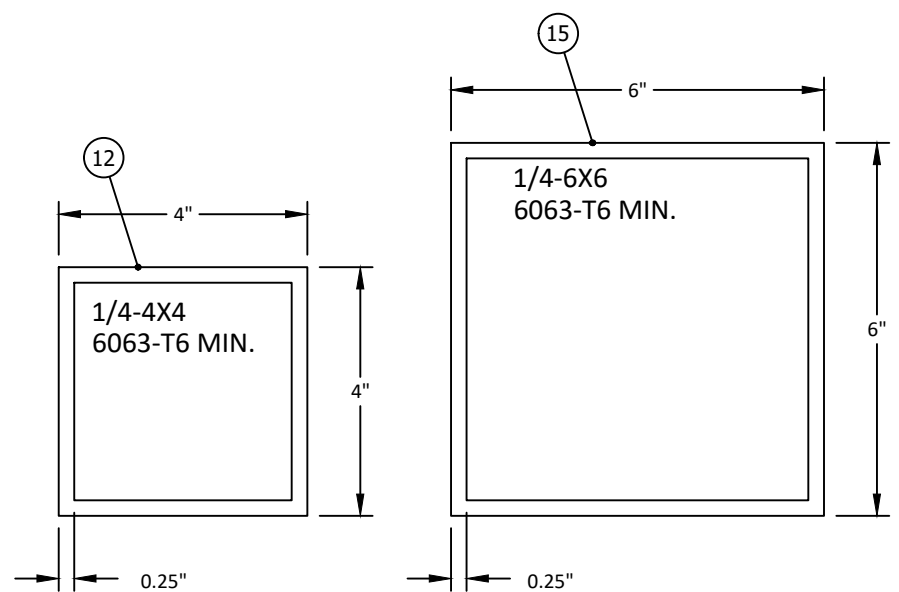




### CORNER MULLION SELECTION



MAXIMUM CORNER MULLION SPANS AND DESIGN PRESSURES			
FW MAX (in)	ALLOWABLE DP (PSF)	ALLOWABLE MULLION SPANS (FT)	
		4" x 4" X 0.25" 6063-T6 MIN.	6" x 6" X 0.25" 6063-T6 MIN.
72	150.0	12.00	12.00
84	142.5	12.00	12.00
96	135.0	12.00	12.00
108	127.5	11.93	12.00
120	120.0	11.88	12.00
132	112.5	11.87	12.00
144	105.0	11.90	12.00
156	97.5	11.98	12.00
168	90.0	12.00	12.00
180	82.5	12.00	12.00
192	75.0	12.00	12.00
204	70.0	12.00	12.00
216	65.0	12.00	12.00
228	60.0	12.00	12.00
240	55.0	12.00	12.00
252	50.0	11.82	12.00
264	45.0	11.98	12.00
276	40.0	11.24	12.00
288	35.0	11.45	12.00



- NOTES:
- MULLIONS WERE DESIGNED BY RATIONAL ANALYSIS BASED ON THE ALUMINUM DESIGN MANUAL AND THE FLORIDA BUILDING CODE. ABOVE LOADS ARE ALSO LIMITED BY THE MAX. CAPACITY OF THE PRODUCT.
  - VALUES ABOVE ARE APPLICABLE FOR CORNER MULLIONS ONLY WITH EQUAL WIDTH SHUTTERS ON BOTH SIDES, UNEQUAL SHUTTERS SHALL BE EVALUATED ON A CASE BY CASE BASIS.

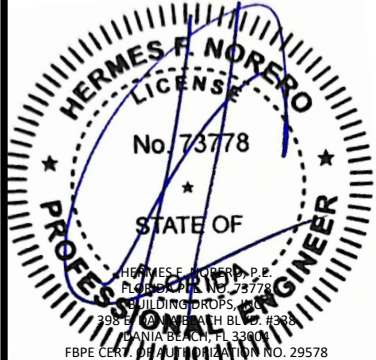
ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)  
CORNER MULLION

PREPARED BY: BUILDING DROPS  
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

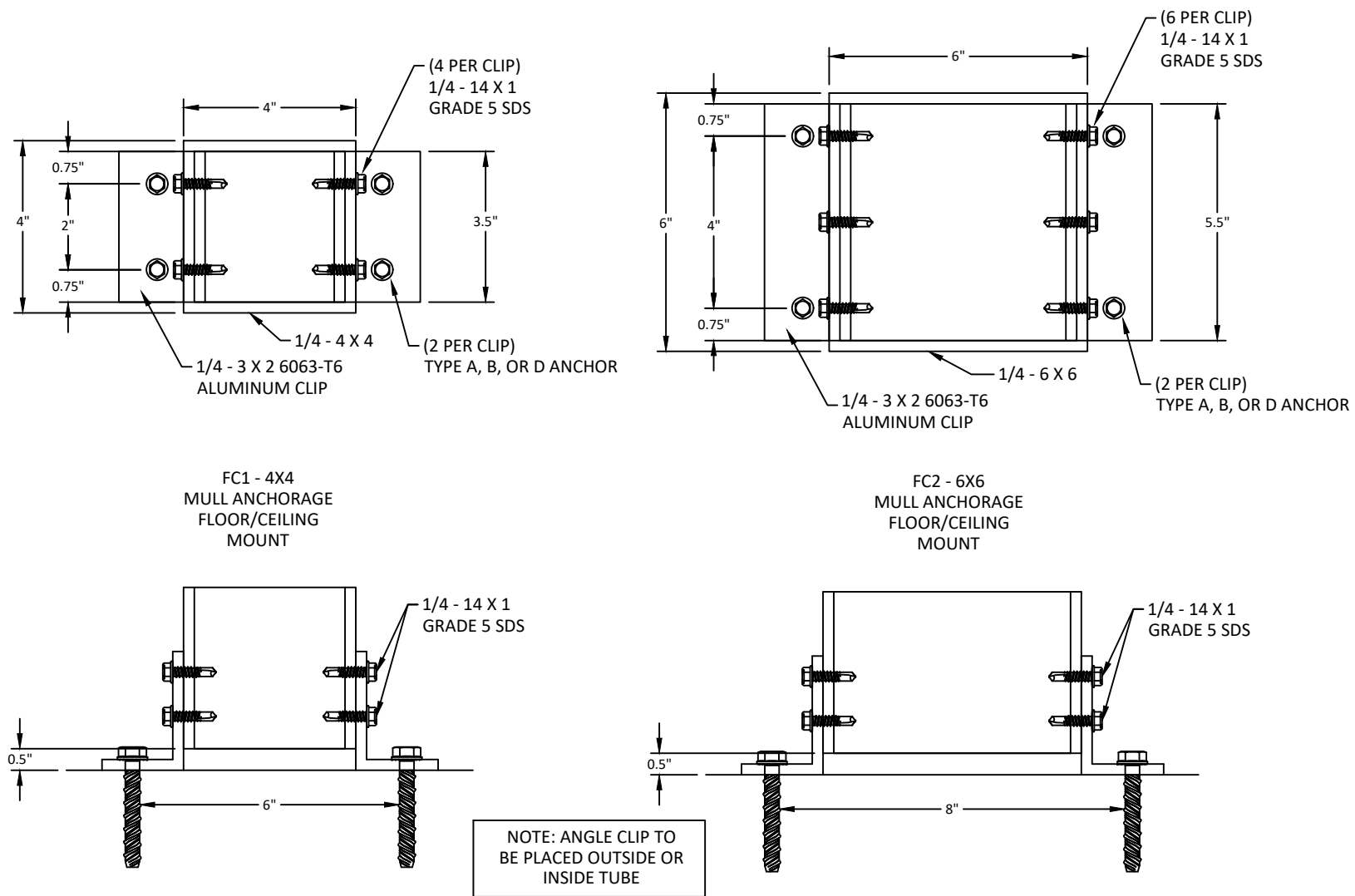
REMARKS	BY	DATE
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141  
DATE: 05.23.23  
DWG. BY: DI  
CHK. BY: HFN  
SCALE: NTS  
DWG. #: ESS001  
SHEET: OF 20

### END MULLION AND CORNER MULLION WALL AND INSET CONNECTIONS

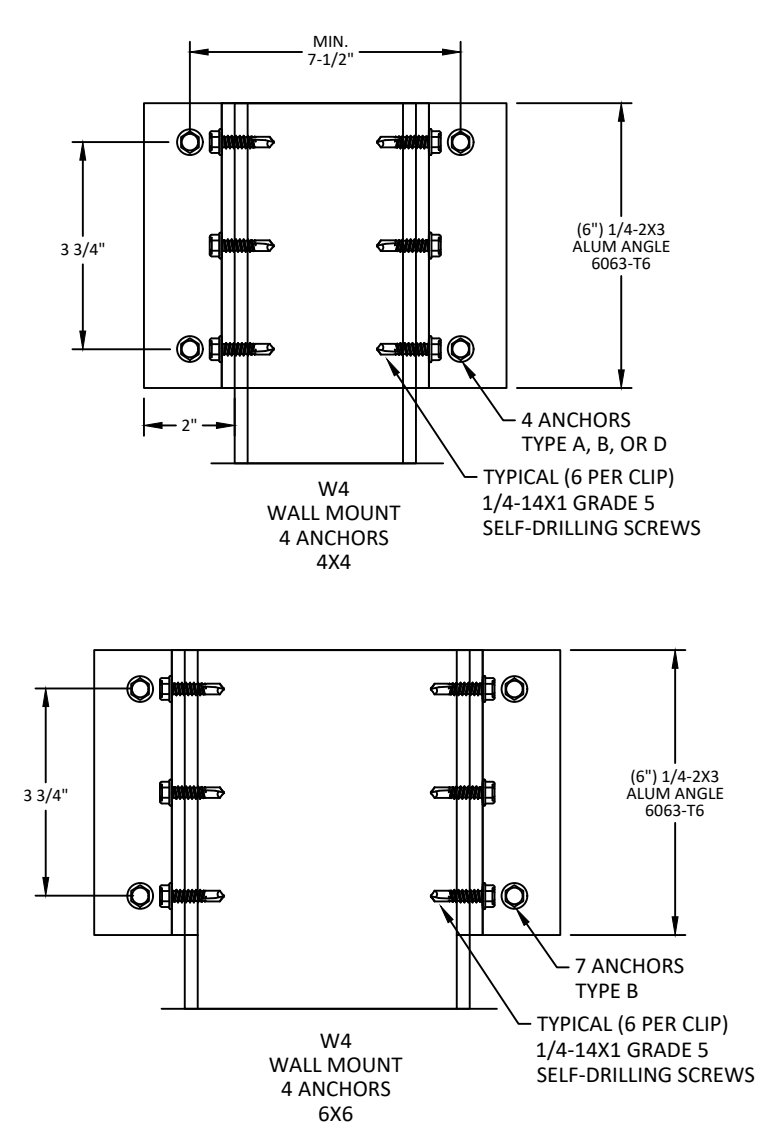


MULL FLOOR/CEILING MOUNT ANCHOR SELECTION				
ANCHOR TYPE	END MULLION TYPE		CORNER MULLION TYPE	
	4X4	6X6	4X4	6X6
A	FC1	FC2	FC1	FC2
B	FC1	FC2	FC1	FC2
D	FC1	FC2	FC1	FC2

**ANCHOR SCHEDULE:**

ANCHOR	DESCRIPTION	MATERIAL	EDGE DISTANCE	EMBEDMENT
A	3/8" POWERS WEDGE BOLT	MIN. 3000 PSI CONCRETE	3 3/4"	3 1/2"
B	5/16" ITW TAPCON	MIN. 3000 PSI CONCRETE	2 3/16"	2 1/4"
D	5/16" ITW TAPCON	GROUT FILLED C-90 BLOCK f'm ≥ 2000 PSI	4"	2 1/4"

### END MULLION WALL CONNECTIONS



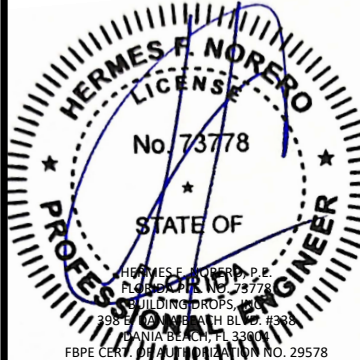
WALL MOUNT ANCHOR SELECTION		
ANCHOR TYPE	END MULLION TYPE	
	4X4	6X6
A	W4	W4
B	W4	W4
D	W4	W4

TITLE: ULTRASHIELD HURRICANE SCREEN  
(HVHZ) (IMPACT)  
END MULLION / CORNER MULLION  
CONNECTIONS

PREPARED BY: **B.D.**  
BUILDING DROPS  
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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141

DATE: 05.23.23

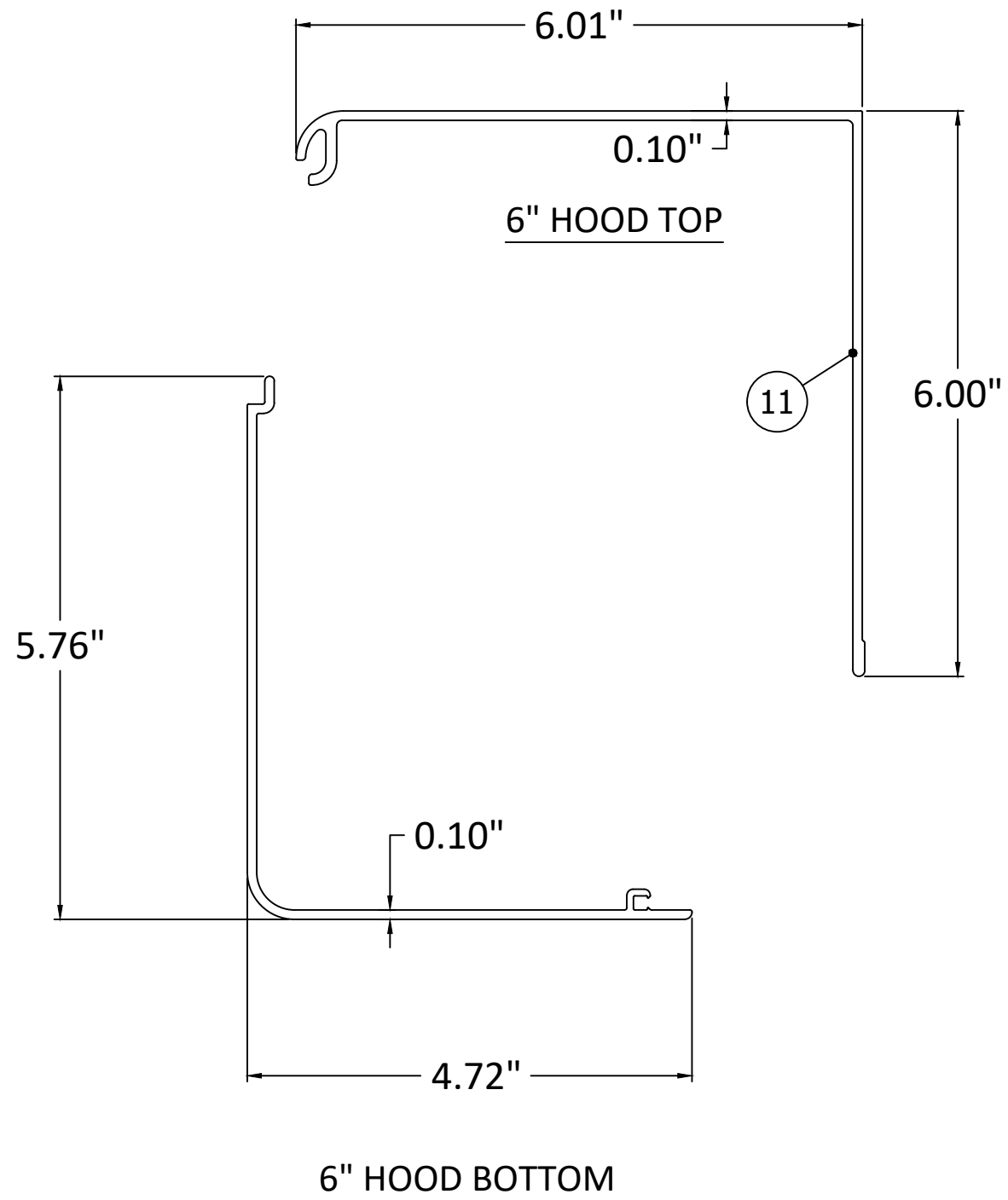
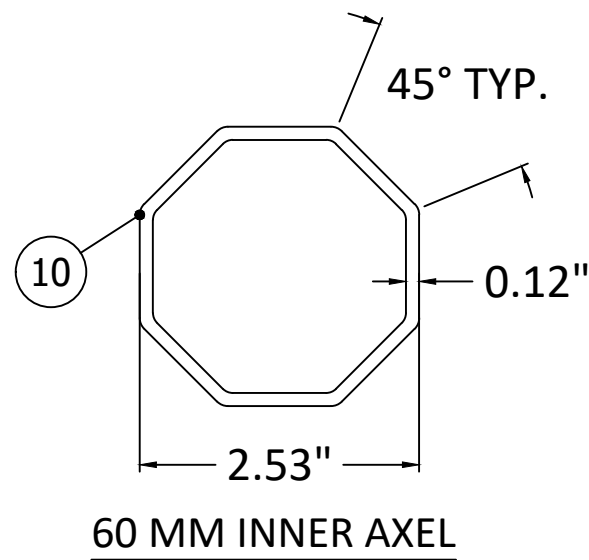
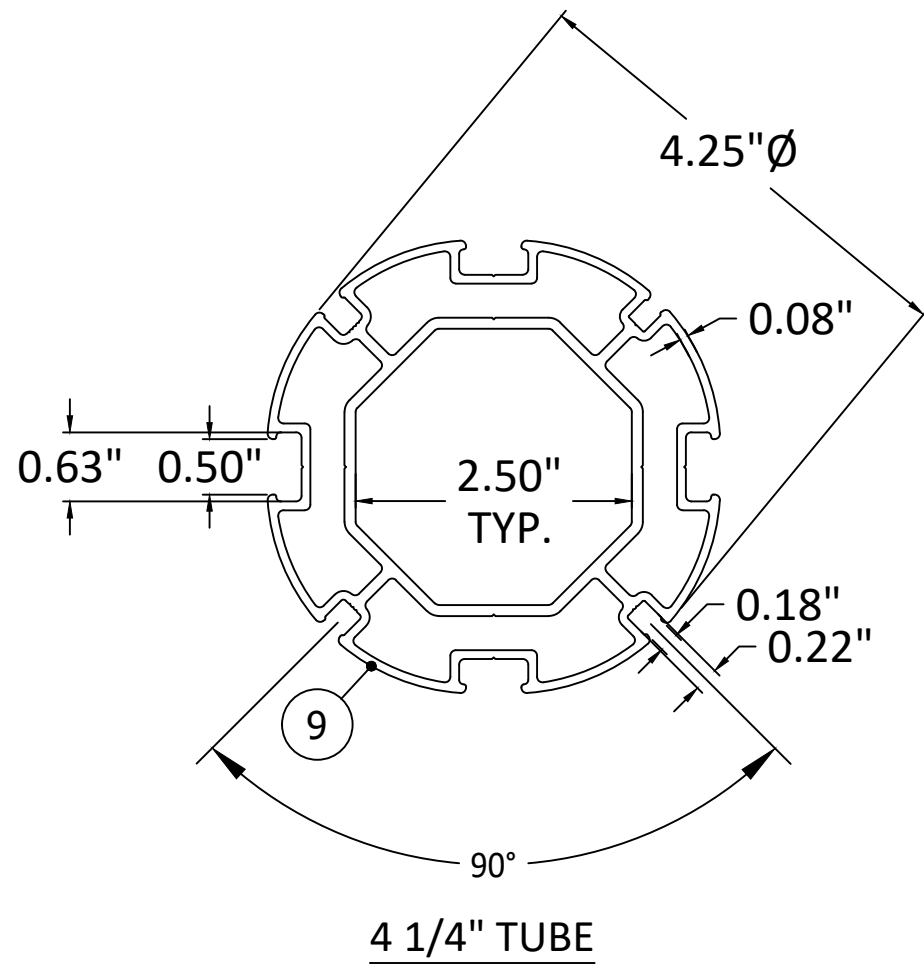
DWG. BY: DI      CHK. BY: HFN

SCALE: NTS

DWG. #: ESS001

SHEET:                      OF 20

# 4.25" TUBE AND 6.5" HOOD DETAILS



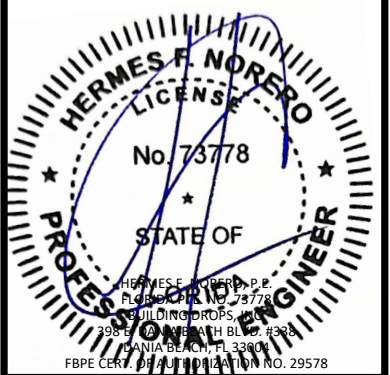
ESS MANUFACTURING, INC.  
668 SW WHITMORE DR  
PORT SAINT LUCIE, FLORIDA 34984  
PH: 844-320-4800

TITLE: ULTRASHIELD HURRICANE SCREEN  
(HVHZ) (IMPACT)  
4.25" TUBE & 6" HOOD DETAILS

PREPARED BY: **BD** BUILDING DROPS  
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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141

DATE: 05.23.23

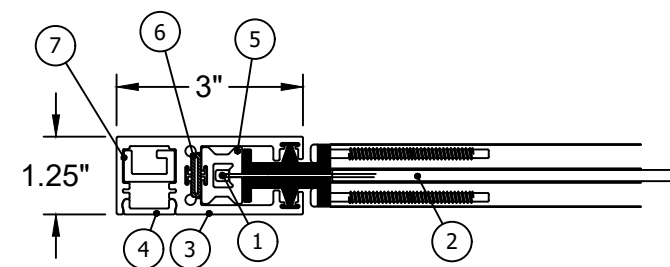
DWG. BY: DI      CHK. BY: HFN

SCALE: NTS

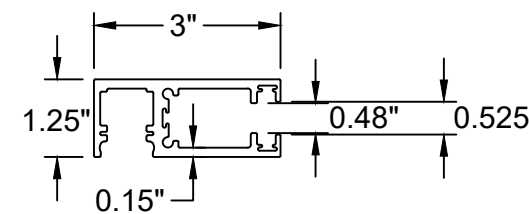
DWG. #: ESS001

SHEET:                      OF 20

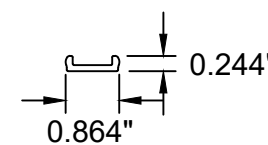
BILL OF MATERIALS		
ITEM	DESCRIPTION	MATERIAL
1	DERLIN KEDER FOR SIDES	POM/NYLON
2	TWITCHELL FABRIC	FABRIC
3	SIDE RAIL	ALUMINUM (6063 T6)
4	SNAP IN SCREW COVER	ALUMINUM (6063 T6)
5	CHANNEL	PVC
6	EXPANSION JOINT	RUBBER
7	BAYONET	ALUMINUM (6063 T6)
8	3" x 3" x 1/4" ANGLE	ALUMINUM (6063 T6)
9	4.25" TUBE	ALUMINUM (6063 T6)
10	60mm INNER AXEL	ALUMINUM (6063 T6)
11	6" HOOD CAP (TOP & BOTTOM)	ALUMINUM (6063 T6)
12	MULLION - 4" x 4" x 1/4"	ALUMINUM (6063 T6)
13	MULLION - 6" x 4" x 1/4"	ALUMINUM (6063 T6)
14	MULLION - 8" x 4" x 1/4"	ALUMINUM (6063 T6)
15	MULLION - 6" x 6" x 1/4"	ALUMINUM (6063 T6)
16	STANDARD BASE SLAT	ALUMINUM (6063 T6)
17	ADJUSTABLE BASE SLAT	ALUMINUM (6063 T6)



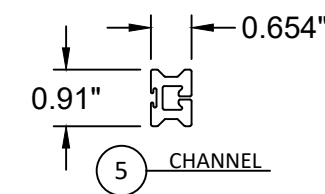
(A) WALL MOUNT AND INSET MOUNT



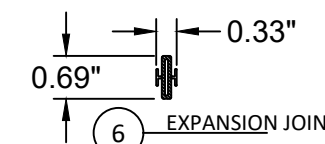
(3) SIDE RAIL



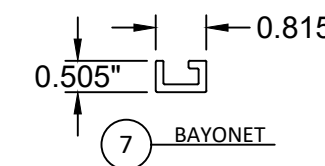
(4) SNAP IN SCREW COVER



(5) CHANNEL




(6) EXPANSION JOINT



(7) BAYONET

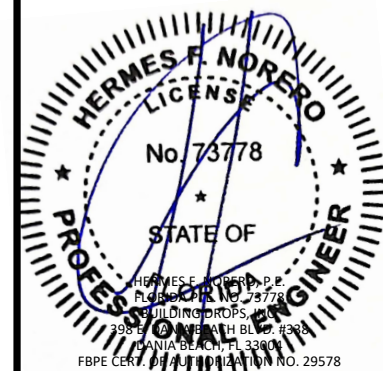
TWITCHELL T03S21163 FABRIC PROPERTIES				
PROPERTY	TEST METHOD	WARP	FILL	TYPICAL
WEIGHT, oz/yd <sup>2</sup>	D3776-96	16	15	21.8
TENSILE STRENGTH (GRAB), lb	D5034-95	654.10	424.80	-
TENSILE STRENGTH (STRIP), lb	D5035-95	369.70	429.40	-
TEAR STRENGTH, lb	D1117-97	198.80	167.50	-
ELONGATION, %	D5035-95	22.80	17.90	-
ABRASION RESISTANCE	D3884-92	NO EXPOSURE TO CORE YARN		
MILDEW RESISTANCE	G21-13	NO GROWTH		
WEATHER ABILITY, 1200 HOURS	G53-96	TRACE DISCOLORATION		
THICKNESS (IN)	D1777-96	-	-	0.0462
OPENNESS (%)	-	-	-	9
RATE OF BURN (CLASS C-1) (IN/MIN)	D635-03	0.0		
SMOKE DENSITY (SDR)	D2843-99	10.60%		
SELF IGNITION TEMPERATURE (°F)	1929-96	751		

TITLE: ULTRASHIELD HURRICANE SCREEN (HVHZ) (IMPACT)  
BILL OF MATERIALS & COMPONENTS

PREPARED BY:  BUILDING DROPS  
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
NEW TESTING UPDATE	SH	8.8.23

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.



FL42141  
DATE: 05.23.23  
DWG. BY: DI  
CHK. BY: HFN  
SCALE: NTS  
DWG. #: ESS001  
SHEET: OF 20