

PLY GEM WINDOWS

SERIES 1500 BEVELED FRAME

MULLION

NOTES:

1.

THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT FLORIDA BUILDING CODE.
2.

MULLION INSTALLATION DETAILS APPLY TO PLY GEM SERIES 1500 BEVELED FRAME MULLION WHEN USED TO MULL WINDOWS WITH A ONE-WAY OR TWO-WAY MULLION USING THE INSTALLATION METHODS SHOWN HEREIN.
3.

APPROVED IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED FOR THIS PRODUCT IN WIND BORNE DEBRIS REGIONS ZONE 3 OR LESS. INDIVIDUAL UNITS MUST BE IMPACT RATED.
4.

APPROVED IMPACT PROTECTIVE SYSTEM IS REQUIRED FOR THIS PRODUCT IN WIND BORNE DEBRIS REGION ZONE 4.
5.

USE #8 WOOD SCREWS OF SUFFICIENT LENGTH TO ACHIEVE MINIMUM EMBEDMENT OF 1 1/2" INTO WOOD FRAMING. (SEE CHARTS & NOTES ON SHEETS 4 & 5 FOR DESIGN PRESSURE AND ANCHOR NOTES).
6.

USE 3/16" ITW TAPCON SCREWS OF SUFFICIENT LENGTH TO ACHIEVE MINIMUM EMBEDMENT OF 1 1/4" INTO CONCRETE/MASONRY SUBSTRATE. (SEE CHARTS & NOTES ON SHEETS 4 & 5 FOR DESIGN PRESSURE AND ANCHOR NOTES).
7.

USE #8 GRADE 5 SELF-TAPPING SCREWS OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM (3) THREAD PENETRATION BEYOND STEEL SUBSTRATE. (SEE CHARTS & NOTES ON SHEETS 4 & 5 FOR DESIGN PRESSURE AND ANCHOR NOTES).
2.

ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY, 2X FRAMING, OR STEEL 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.

SEE CHARTS & NOTES ON SHEETS 4-5 FOR DESIGN PRESSURE.
4.

THIS MULLION IS ONLY VALID WHEN USED IN CONJUNCTION WITH APPLICABLE PLY GEM SERIES 1500 WINDOW PRODUCTS UTILIZING THE BEVELED FRAME COMPONENT SHOWN HEREIN.
5.

ALL WINDOWS USED WITH THIS MULLION SHALL BE QUALIFIED UNDER SEPARATE APPROVAL.
6.

MULLION MATERIAL: PVC
7.

MULLION REINFORCEMENT MATERIAL: HSLA 50 GALVANIZED STEEL
8.

INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:

A.

WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.

B.

CONCRETE -MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.

C.

GROUT-FILLED CMU- UNIT STRENGTH CONFORMS TO ASTM C-90 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AND GROUT CONFORMS TO ASTM C 476, MINIMUM GROUT COMPRESSIVE STRENGTH OF 2000 PSI.

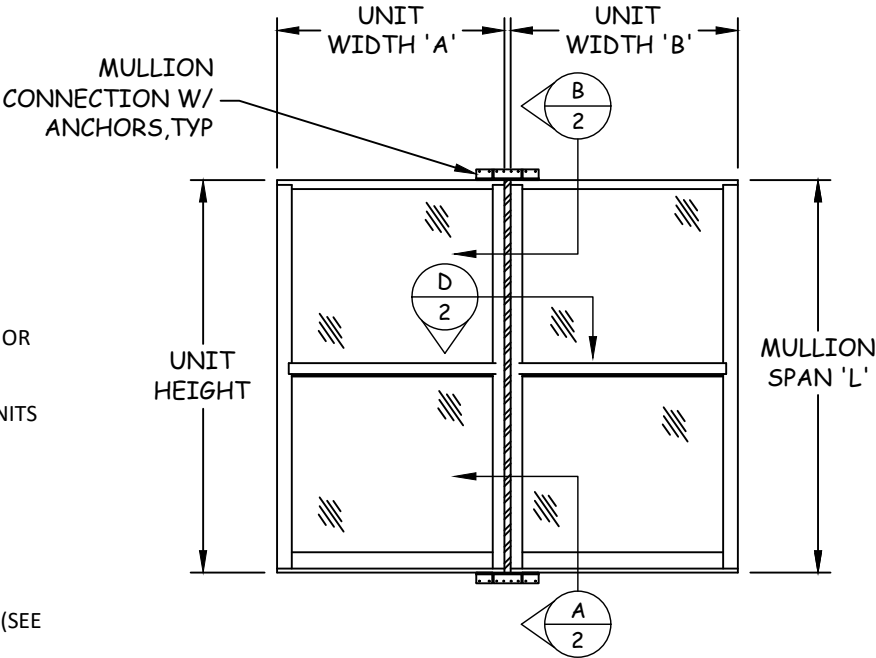
D.

HOLLOW BLOCK CMU - UNIT STRENGTH CONFORMS TO ASTM C-90 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.

E.

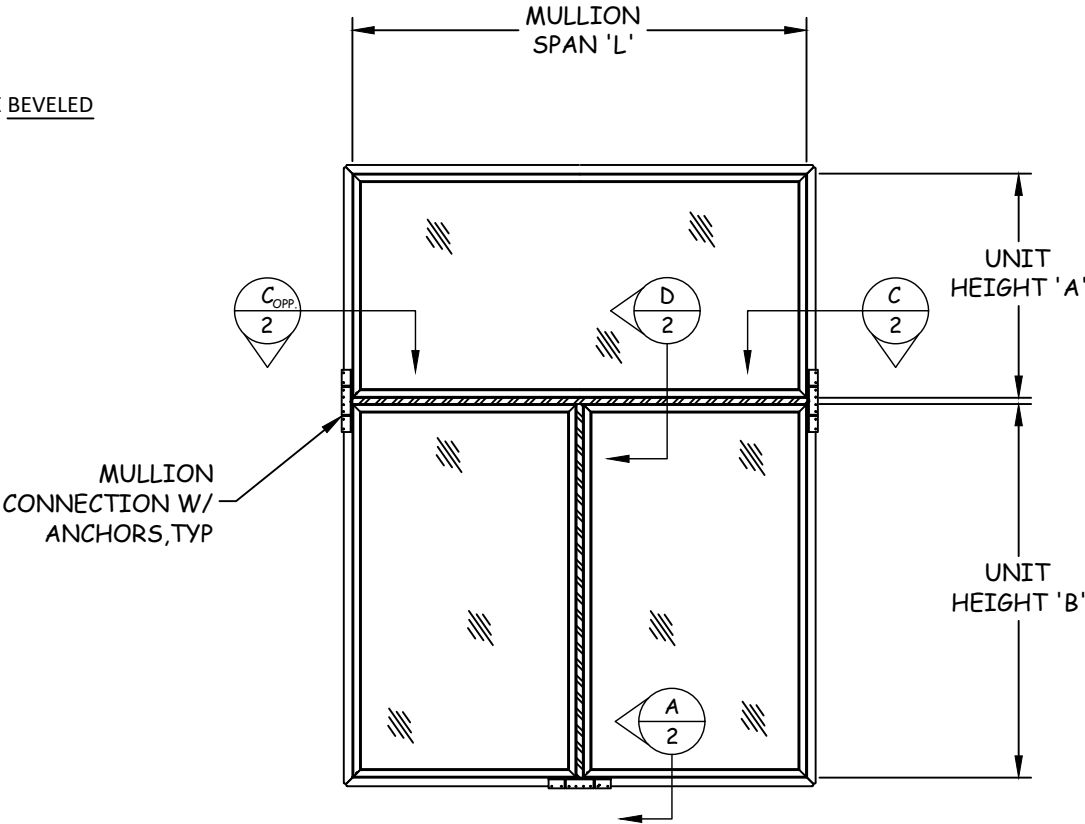
STEEL - MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM 18 GA. WALL THICKNESS.

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SHEET	SHEET DESCRIPTION
1	MULLION ASSEMBLY ELEVATIONS & NOTES
2	MULLION SECTION DETAILS
3	ANCHORAGE METHOD DETAILS
4	ONE-WAY MULLION DESIGN PRESSURE CHARTS
5	TWO-WAY MULLION DESIGN PRESSURE CHARTS



ONE-WAY MULLION

EXAMPLE



TWO-WAY MULLION

EXAMPLE

Digitally signed by Hermes F. Norero, P.E.
Reason: I am approving this document
Date: 2017.10.16 12:44:59 -04'00'



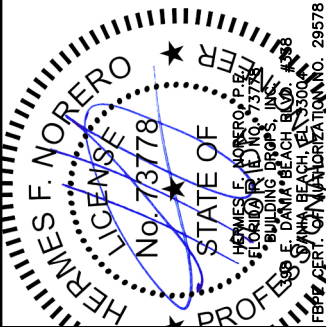
433 N. MAIN ST., PO BOX 559,
ROCKY MOUNT, VA 24151

PH: 540-484-6348 FX: 540-484-6683

TITLE: SERIES 1500 BEVELED FRAME MULLION MULLION ASSEMBLY ELEVATIONS & NOTES	PREPARED BY:	
	— BUILDING DROPS, INC. 398 E. DANIA BEACH BLVD. #338 DANIA BEACH, FL 33004 PH: (954) 399-8478 FX: (954) 744-4738	

REVISIONS

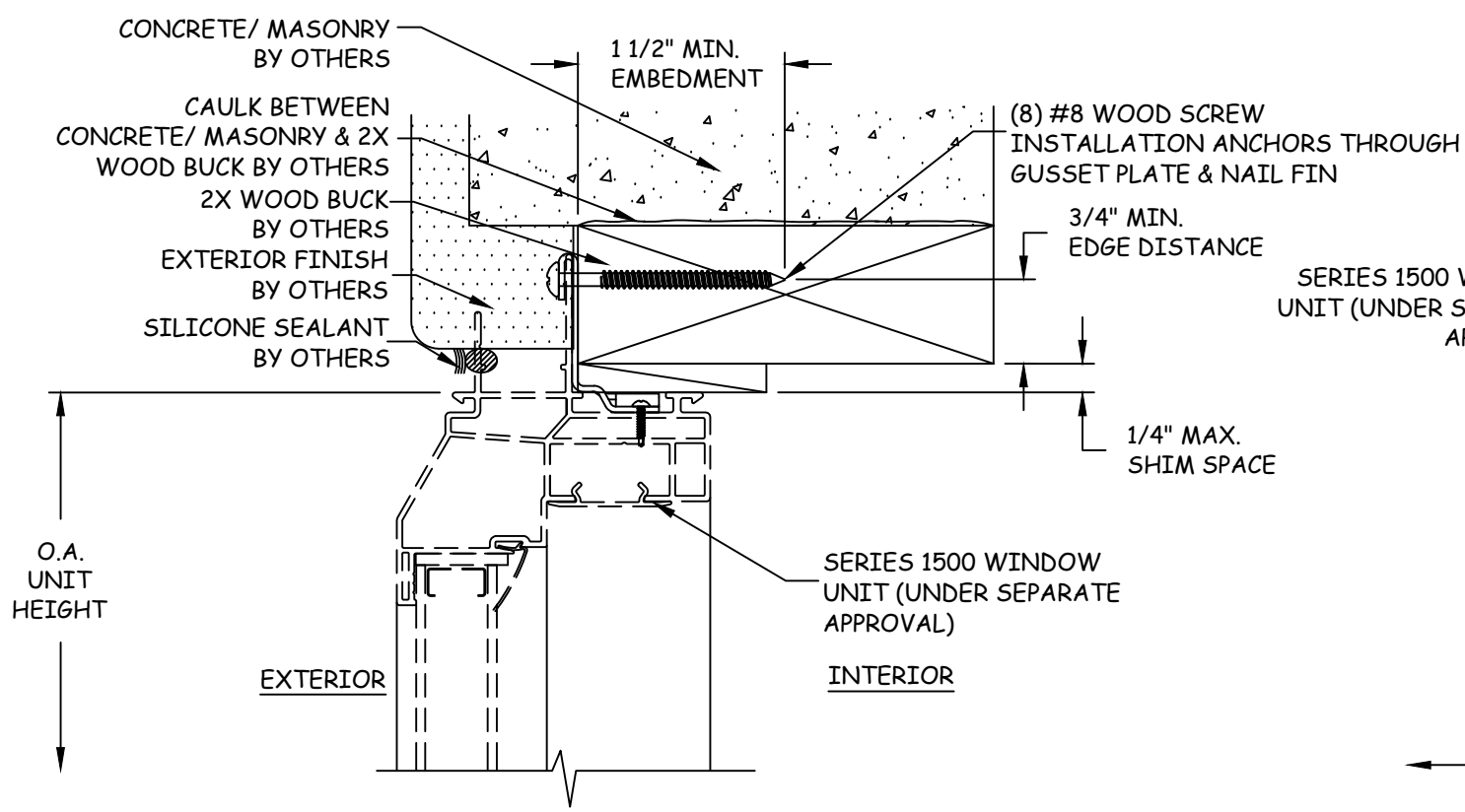
NO.	DESCRIPTION	BY	DATE
A	REVISED INSTALLATION METHOD	MTJ	05.29.13
B	5TH EDITION FBC UPDATE	SM	08.20.14
C	ADDED NOTE 5 ON SHEETS 4 & 5	LWH	10.02.17



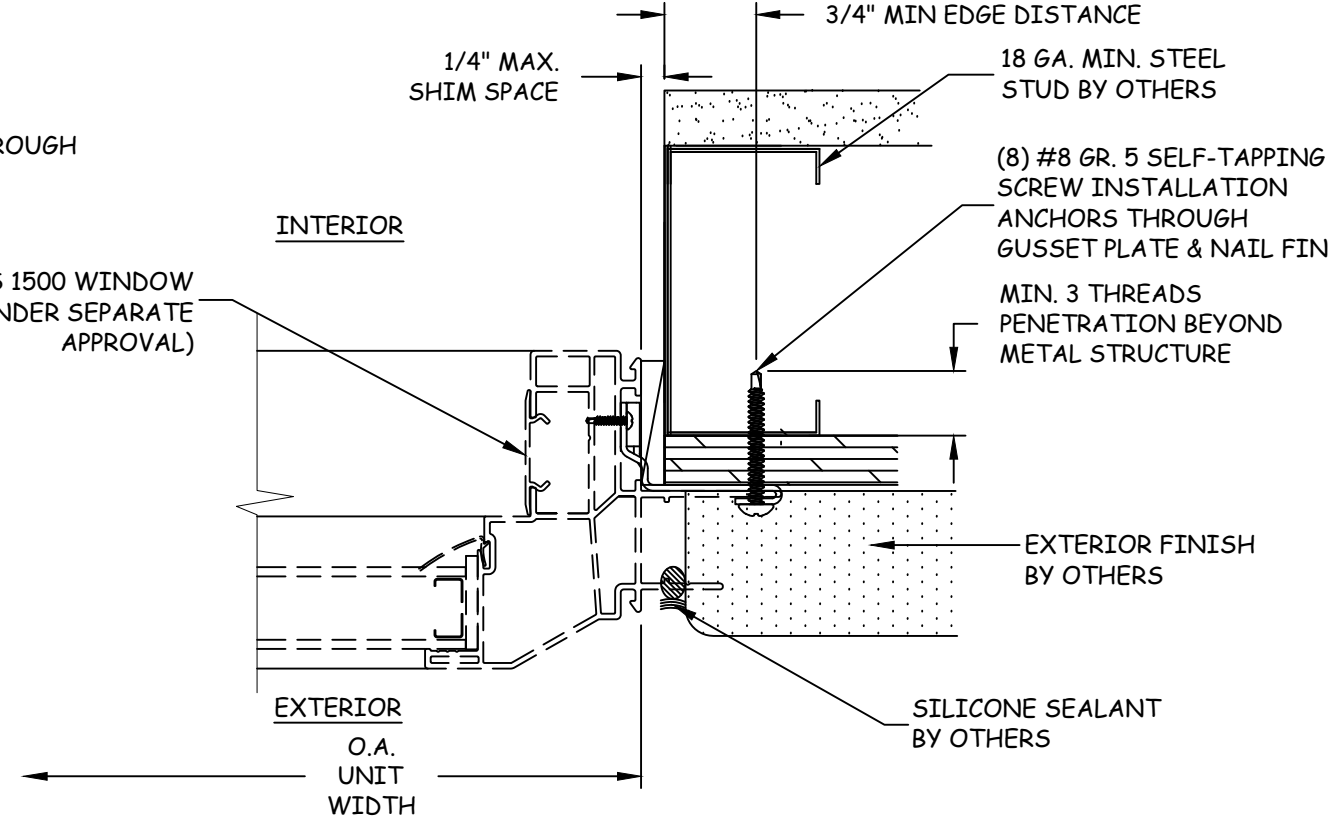
DATE: 12.13.12	DWN BY: JLA	CHK BY: HFN	SCALE: NTS
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DWG #:
PGW190

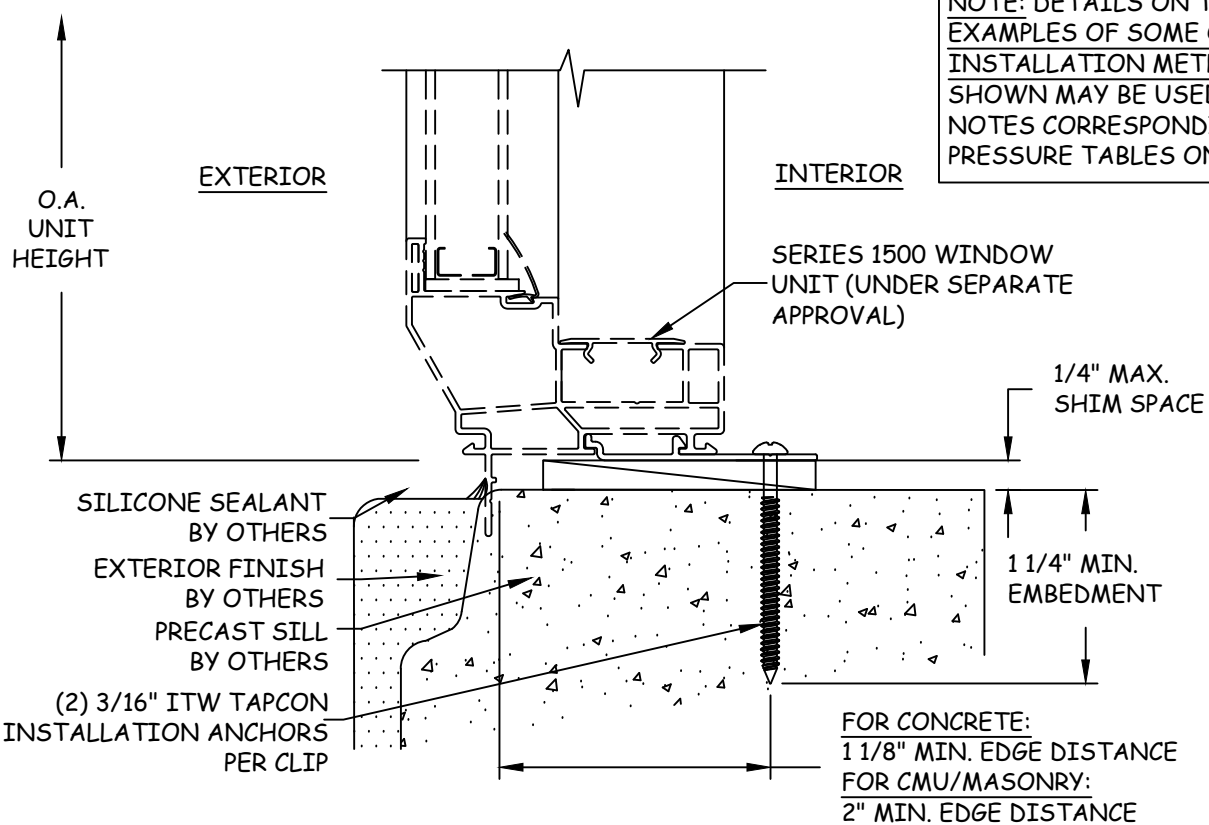
SHEET:
1 OF 5



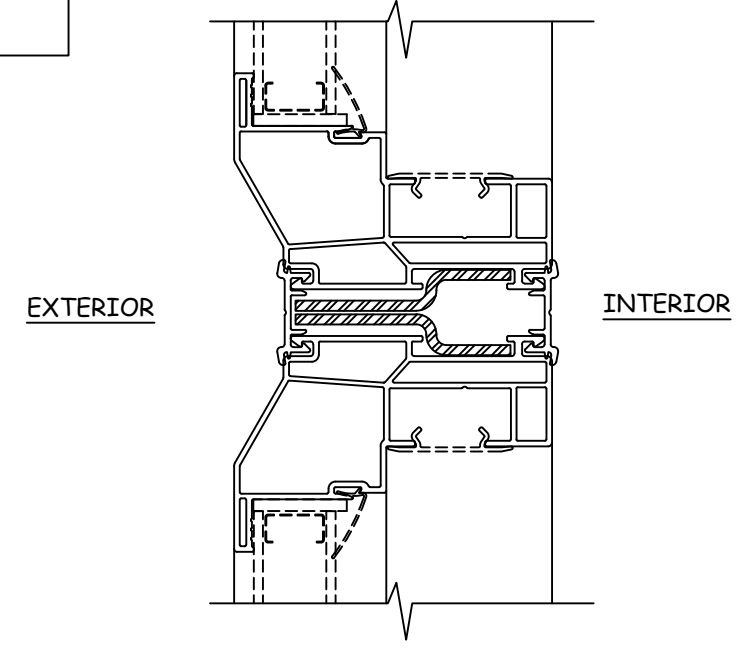
B
2 **VERTICAL SECTION**
2X WOOD BUCK
NAIL FIN & GUSSET PLATE INSTALLATION



C
2 **HORIZONTAL SECTION**
STEEL STUD
NAIL FIN & GUSSET PLATE INSTALLATION



A
2 **VERTICAL SECTION**
MASONRY/CONCRETE
ANCHOR CLIP INSTALLATION



D
2 **CROSS SECTION**
MULLION
TYPICAL

NOTE: DETAILS ON THIS SHEET REPRESENT
EXAMPLES OF SOME OF THE AVAILABLE
INSTALLATION METHODS. METHODS
SHOWN MAY BE USED AS SPECIFIED IN
NOTES CORRESPONDING TO DESIGN
PRESSURE TABLES ON SHEETS 4-5.



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ROCKY MOUNT, VA 24151

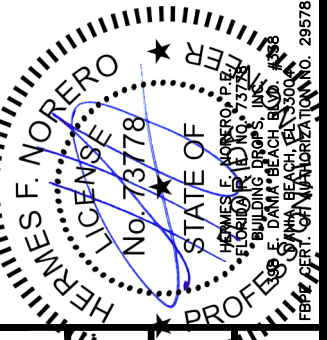
PH: 540-484-6348 FX: 540-484-6683

TITLE: SERIES 1500
BEVELED FRAME MULLION
MULLION SECTION
DETAILS

PREPARED BY:
— BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD. #338
DANIA BEACH, FL 33004

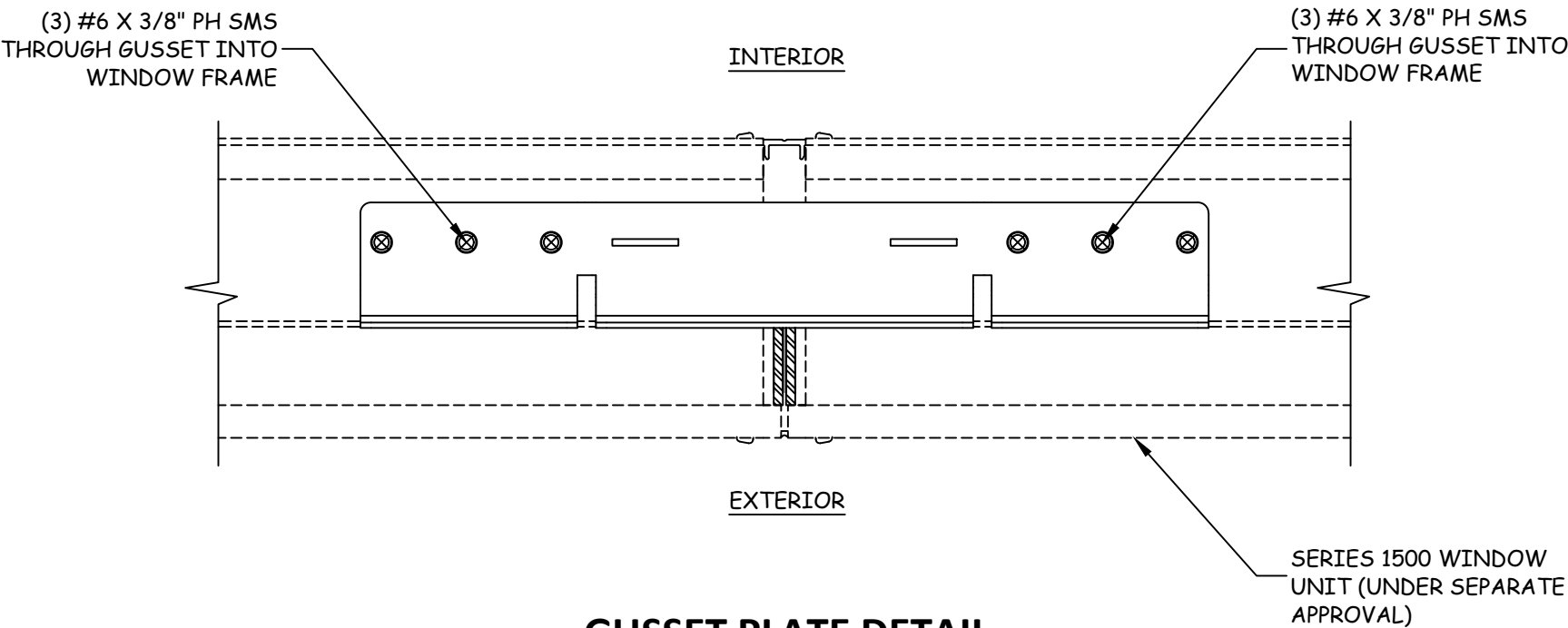
PH: (954) 399-8478 FX: (954) 744-4738

REVISIONS		DESCRIPTION	BY	DATE
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A		REVISED INSTALLATION METHOD	MTJ	05.29.13
B		5TH EDITION FBC UPDATE	SM	08.20.14
C		ADDED NOTE 5 ON SHEETS 4 & 5	LWH	10.02.17

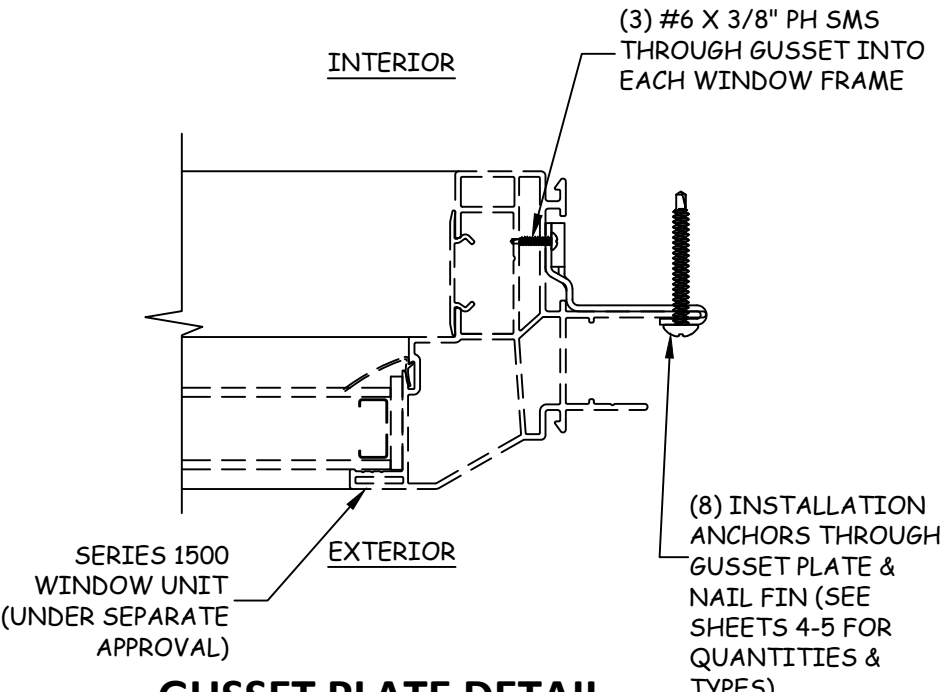


DATE: 12.13.12
DWN BY: JLA
CHK BY: HFN
SCALE: NTS

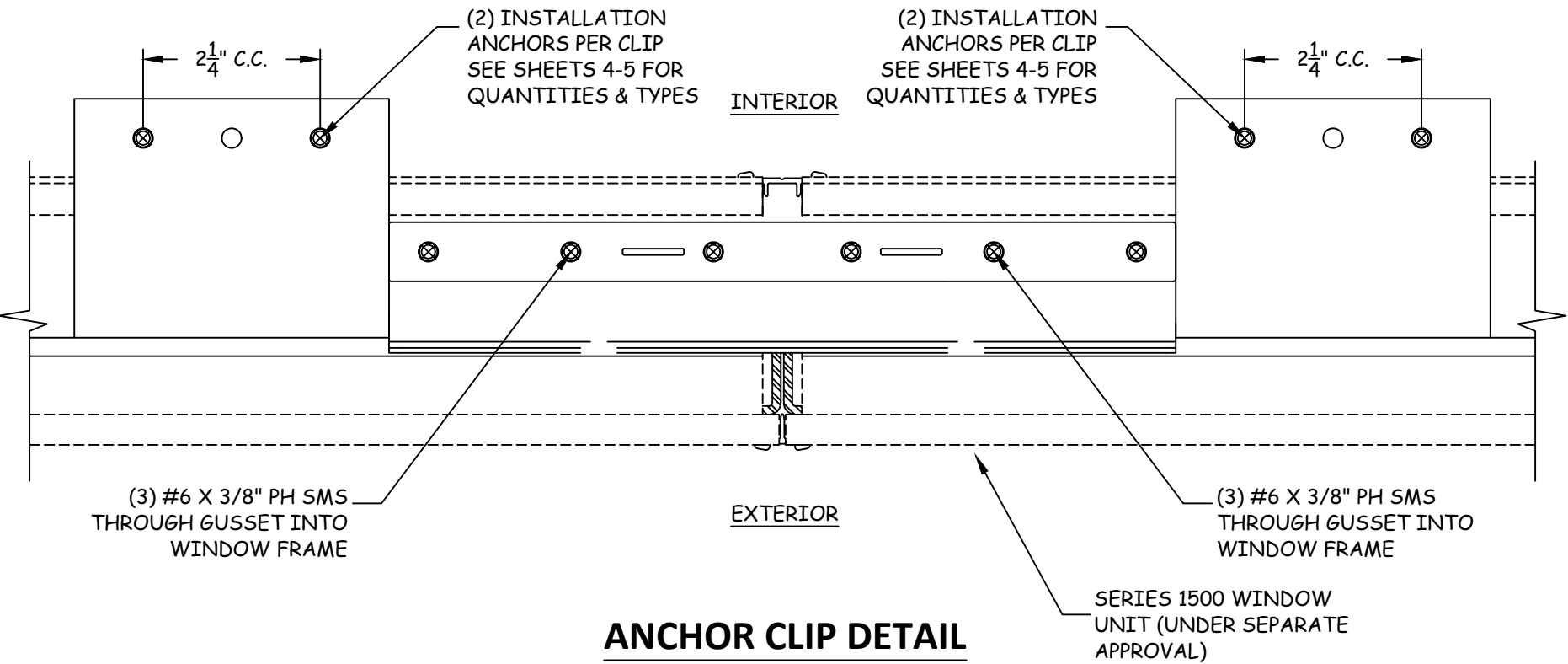
DWG #: **PGW190**
SHEET: **2 OF 5**



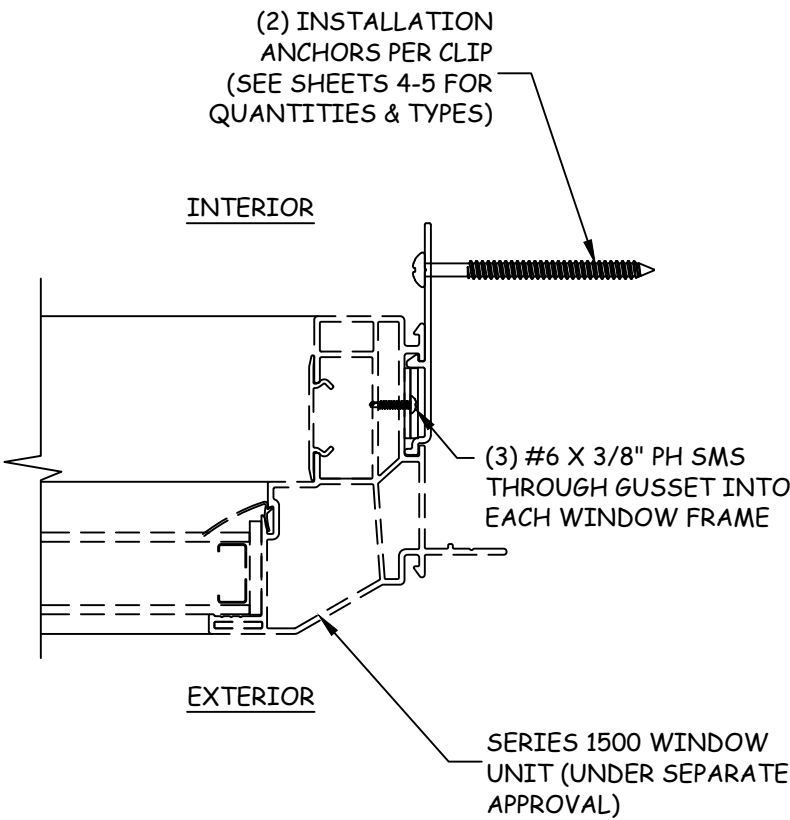
**GUSSET PLATE DETAIL
PLAN VIEW**



**GUSSET PLATE DETAIL
SIDE VIEW**



**ANCHOR CLIP DETAIL
PLAN VIEW**



**ANCHOR CLIP DETAIL
SIDE VIEW**



433 N. MAIN ST., PO BOX 559,
ROCKY MOUNT, VA 24151

PH: 540-484-6348 FX: 540-484-6683

TITLE: SERIES 1500 BEVELED FRAME MULLION ANCHORAGE METHOD DETAILS	PREPARED BY:			
	— BUILDING DROPS, INC. 398 E. DANIA BEACH BLVD. #338 DANIA BEACH, FL 33004 PH: (954) 399-8478 FX: (954) 744-4738			

REVISIONS		NO.	DESCRIPTION	BY	DATE
		A	REVISED INSTALLATION METHOD	MTJ	05.29.13
		B	5TH EDITION FBC UPDATE	SM	08.20.14
		C	ADDED NOTE 5 ON SHEETS 4 & 5	LWH	10.02.17



DATE: 12.13.12	DWN BY: JLA	CHK BY: HFN	SCALE: NTS
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DWG #:
PGW190
SHEET:
3 OF 5

PLY GEM SERIES 1500 BEVELED FRAME MULLION - DESIGN PRESSURE TABLE FOR 'ONE-WAY' MULLIONS (PSF)															
WIDTH 'W'	MULLION SPAN 'L'														
	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	83 1/2"	90"	96 1/2"	108"	120"
18"	150.0	150.0	150.0	150.0	150.0	127.2	102.3	84.1	70.4	59.8	51.2	40.8	33.0	23.5	17.1
21"	150.0	150.0	150.0	150.0	142.0	110.6	88.7	72.8	60.8	51.6	44.2	35.1	28.4	20.2	---
24"	150.0	150.0	150.0	150.0	126.9	98.4	78.6	64.4	53.7	45.5	38.9	31.0	25.0	17.8	---
27"	150.0	150.0	150.0	150.0	115.6	89.1	71.0	57.9	48.2	40.8	34.9	27.7	22.4	15.9	---
30"	150.0	150.0	150.0	146.4	107.0	82.0	65.0	52.9	43.9	37.1	31.8	25.2	20.3	---	---
33"	150.0	150.0	150.0	139.1	100.4	76.3	60.2	48.8	40.4	34.1	29.2	23.1	18.6	---	---
36"	150.0	150.0	150.0	134.1	95.4	71.9	56.4	45.5	37.6	31.6	27.1	21.4	17.2	---	---
39"	150.0	150.0	150.0	131.2	91.8	68.5	53.3	42.8	35.3	29.6	25.3	20.0	16.1	---	---
42"	150.0	150.0	150.0	130.2	89.2	65.8	50.8	40.6	33.3	27.9	23.9	18.8	15.1	---	---
45"	150.0	150.0	150.0	130.2	87.7	63.8	48.9	38.8	31.7	26.4	22.6	17.8	---	---	---
48"	150.0	150.0	150.0	130.2	77.5	62.4	47.3	37.3	30.3	25.2	21.6	16.9	---	---	---
51"	150.0	150.0	150.0	130.2	77.5	61.5	46.1	36.1	29.2	24.2	20.7	16.2	---	---	---
54"	150.0	150.0	150.0	130.2	77.5	43.0	45.3	35.2	28.3	23.3	19.9	15.5	---	---	---
57"	150.0	150.0	150.0	130.2	77.5	43.0	44.8	34.5	27.5	22.6	19.2	15.0	---	---	---
60"	150.0	150.0	150.0	130.2	77.5	43.0	34.5	34.0	26.9	21.9	18.6	---	---	---	---

1. THE DESIGN PRESSURES IN THIS CHART ARE FOR ONE-WAY MULLIONS WHEN INSTALLED USING THE NAIL FIN & GUSSET PLATE METHOD OR ANCHOR CLIP METHOD.

2. FOR NAIL FIN & GUSSET PLATE METHOD:

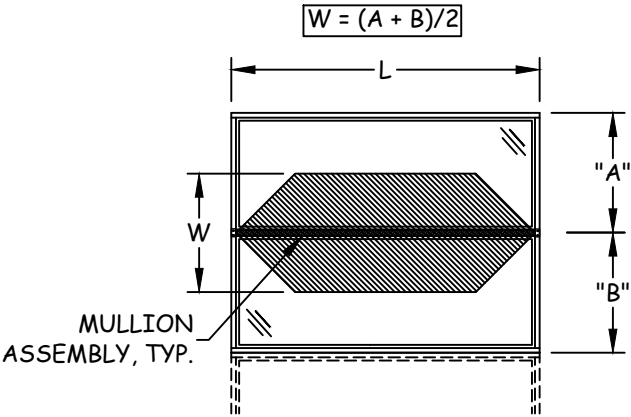
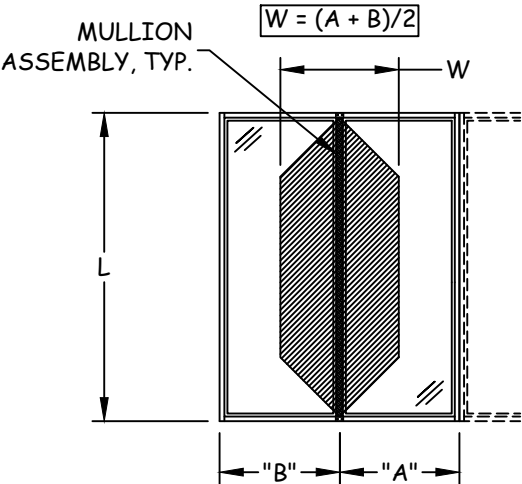
- A. FOR WOOD FRAMING INSTALLATION USE EIGHT (8) #8 WOOD SCREWS AT EACH GUSSET PLATE THROUGH THE PLATE AND NAIL FIN. WOOD SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1-1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.
- B. FOR STEEL FRAME INSTALLATION USE EIGHT (8) #8 GR. 5 SELF-TAPPING SCREWS AT EACH GUSSET PLATE THROUGH THE PLATE AND NAIL FIN. SELF-TAPPING SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM (3) THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

3. FOR ANCHOR CLIP METHOD:

- A. FOR WOOD FRAMING INSTALLATION USE TWO (2) #8 WOOD SCREWS PER CLIP. USE TWO CLIPS PER MULLION END. WOOD SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1-1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.
- B. FOR STEEL FRAME INSTALLATION USE TWO (2) #8 GR. 5 SELF-TAPPING SCREWS PER CLIP. USE TWO CLIPS PER MULLION END. SELF-TAPPING SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM (3) THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.
- C. FOR CONCRETE/MASONRY FRAMING INSTALLATION USE TWO (2) 3/16" ITW TAPCONS PER CLIP. USE TWO CLIPS PER MULLION END. ITW TAPCONS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1-1/4" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

4. DESIGN PRESSURE VALUES APPLY TO MULLION WHERE TWO OR MORE WINDOWS ARE LISTED IN A SINGLE OPENING.DESIGN PRESSURE VALUES ON THIS CHART ARE POSITIVE AND NEGATIVE PSF.

5. REFER TO PER 5113 FOR MORE MULLION SPECIFICATIONS.



TYPICAL ONE-WAY MULLION LAYOUTS

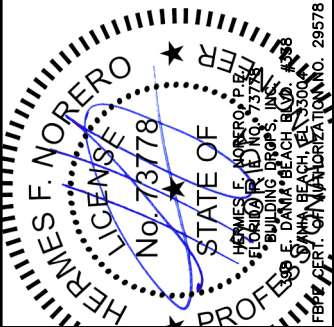


433 N. MAIN ST., PO BOX 559,
ROCKY MOUNT, VA 24151

PH: 540-484-6348 FX: 540-484-6683

TITLE: SERIES 1500 BEVELED FRAME MULLION ONE-WAY MULLION DESIGN PRESSURE CHARTS	PREPARED BY: — BUTLIDING DROPS, INC. 398 E. DANIA BEACH BLVD. #338 DANIA BEACH, FL 33004 PH: (954) 399-8478 FX: (954) 744-4738
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REVISIONS		DATE	BY
NO.	DESCRIPTION		
A	REVISED INSTALLATION METHOD	05.29.13	MTJ
B	5TH EDITION FBC UPDATE	08.20.14	SM
C	ADDED NOTE 5 ON SHEETS 4 & 5	10.02.17	LWH



DATE: 12.13.12	DWN BY: JLAI	CHK BY: HFNI	SCALE: NTS
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DWG #: PGW190
SHEET: 4 OF 5

PLY GEM SERIES 1500 BEVELED FRAME MULLION - DESIGN PRESSURE TABLE FOR 'TWO-WAY' MULLIONS (PSF)															
WIDTH 'W'	MULLION SPAN 'L'														
	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	83 1/2"	90"	96 1/2"	108"	120"
18"	150.0	150.0	150.0	150.0	150.0	141.9	114.9	95.0	79.8	68.0	59.3	51.1	45.4	31.4	22.9
21"	150.0	150.0	150.0	150.0	150.0	121.6	98.5	81.4	68.4	58.3	50.9	43.8	38.9	26.9	19.6
24"	150.0	150.0	150.0	150.0	134.6	106.4	86.2	71.2	59.8	51.0	44.5	38.3	34.0	23.5	17.1
27"	150.0	150.0	150.0	150.0	119.7	94.6	76.6	63.3	53.2	45.3	39.6	34.0	30.2	20.9	15.2
30"	150.0	150.0	150.0	140.7	107.7	85.1	68.9	57.0	47.9	40.8	35.6	30.6	27.2	18.8	---
33"	150.0	150.0	150.0	127.9	97.9	77.4	62.7	51.8	43.5	37.1	32.4	27.9	24.7	17.1	---
36"	150.0	150.0	139.3	117.2	89.8	70.9	57.4	47.5	39.9	34.0	29.7	25.5	22.7	15.7	---
39"	150.0	150.0	128.6	108.2	82.9	65.5	53.0	43.8	36.8	31.4	27.4	23.6	20.9	---	---
42"	150.0	143.3	119.4	100.5	76.9	60.8	49.2	40.7	34.2	29.1	25.4	21.9	19.4	---	---
45"	150.0	133.7	111.4	93.8	71.8	56.7	46.0	38.0	31.9	27.2	23.7	20.4	18.1	---	---
48"	150.0	125.3	104.5	87.9	67.3	53.2	43.1	35.6	29.9	25.5	22.2	19.1	17.0	---	---
51"	147.5	118.0	98.3	82.8	63.4	50.1	40.6	33.5	28.2	24.0	20.9	18.0	16.0	---	---
54"	139.3	111.4	92.8	78.2	59.8	47.3	38.3	31.7	26.6	22.7	19.8	17.0	15.1	---	---
57"	131.9	105.6	88.0	74.0	56.7	44.8	36.3	30.0	25.2	21.5	18.7	16.1	---	---	---
60"	125.3	100.3	83.6	70.3	53.9	42.6	34.5	28.5	23.9	20.4	17.8	15.3	---	---	---

1. THE DESIGN PRESSURES IN THIS CHART ARE FOR ONE-WAY MULLIONS WHEN INSTALLED USING THE NAIL FIN & GUSSET PLATE METHOD OR ANCHOR CLIP METHOD.

2. FOR NAIL FIN & GUSSET PLATE METHOD:

A. FOR WOOD FRAMING INSTALLATION USE EIGHT (8) #8 WOOD SCREWS AT EACH GUSSET PLATE THROUGH THE PLATE AND NAIL FIN. WOOD SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1-1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

B. FOR STEEL FRAME INSTALLATION USE EIGHT (8) #8 GR. 5 SELF-TAPPING SCREWS AT EACH GUSSET PLATE THROUGH THE PLATE AND NAIL FIN. SELF-TAPPING SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM (3) THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

3. FOR ANCHOR CLIP METHOD:

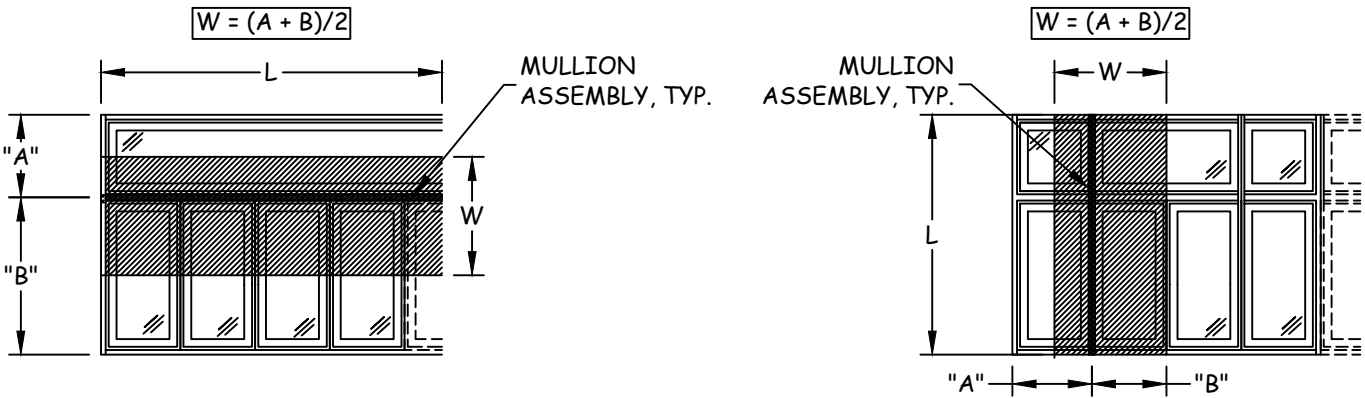
A. FOR WOOD FRAMING INSTALLATION USE TWO (2) #8 WOOD SCREWS PER CLIP. USE TWO CLIPS PER MULLION END. WOOD SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1-1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

B. FOR STEEL FRAME INSTALLATION USE TWO (2) #8 GR. 5 SELF-TAPPING SCREWS PER CLIP. USE TWO CLIPS PER MULLION END. SELF-TAPPING SCREWS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM (3) THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

C. FOR CONCRETE/MASONRY FRAMING INSTALLATION USE TWO (2) 3/16" ITW TAPCONS PER CLIP. USE TWO CLIPS PER MULLION END. ITW TAPCONS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1-1/4" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR TYPICAL INSTALLATION DETAILS.

4. DESIGN PRESSURE VALUES APPLY TO MULLION WHERE TWO OR MORE WINDOWS ARE LISTED IN A SINGLE OPENING.DESIGN PRESSURE VALUES ON THIS CHART ARE POSITIVE AND NEGATIVE PSF.

5. REFER TO PER 5113 FOR MORE MULLION SPECIFICATIONS.



TYPICAL TWO-WAY MULLION LAYOUTS



433 N. MAIN ST., PO BOX 559,
ROCKY MOUNT, VA 24151

PH: 540-484-6348 FX: 540-484-6683

TITLE: SERIES 1500 BEVELED FRAME MULLION TWO-WAY MULLION DESIGN PRESSURE CHARTS	PREPARED BY:		
	— BUTLING DROPS, INC. 398 E. DANIA BEACH BLVD. #338 DANIA BEACH, FL 33004 PH: (954) 399-8478 FX: (954) 744-4738		

REVISIONS	NO.	DESCRIPTION	BY	DATE
	A	REVISED INSTALLATION METHOD	MTJ	05.29.13
	B	5TH EDITION FBC UPDATE	SM	08.20.14
	C	ADDED NOTE 5 ON SHEETS 4 & 5	LMH	10.02.17



DATE: 12.13.12	DWN BY: JLA	CHK BY: HFNE	SCALE: NTS
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DWG #:	PGW190
SHEET:	5 OF 5