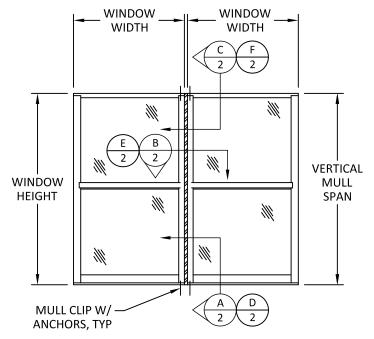
CROFT, LLC

SERIES 9100 WOODBUCK MULLION AND SERIES 9100 HEAVY-DUTY MULLION (VERTICAL) (WZ3)(IMPACT)

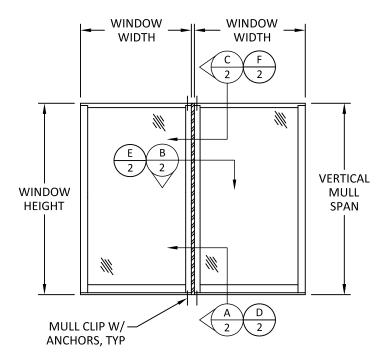
NOTES:

- 1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE 7TH EDITION FBC, SECTION 1709.8.
- 2. MULLION INSTALLATION DETAILS APPLY TO EXTRUDED MULLIONS WITH EXTRUDED ALUMINUM ANCHOR CLIP WHEN USED TO MULL WINDOWS SIDE BY SIDE
- 3. APPROVED IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED ON THESE PRODUCTS IN WIND BORNE DEBRIS REGIONS ZONE 3 OR LESS SUCH THAT ADJOINING WINDOWS ARE IMPACT RATED.
- 4. APPROVED IMPACT PROTECTIVE SYSTEM <u>IS REQUIRED</u> ON THESE PRODUCTS IN WIND BORNE DEBRIS REGIONS ZONE 4.
- USE TWO (2) #10 WOOD SCREWS, PER CLIP, OF SUFFICIENT LENGTH TO ACHIEVE MINIMUM EMBEDMENT OF 1 1/2" INTO WOOD FRAMING. (SEE INSTALLATION DETAILS ON SHEET 2).
- 6. USE TWO (2) $\frac{3}{16}$ " ITW TAPCONS, PER CLIP, OF SUFFICIENT LENGTH TO ACHIEVE MINIMUM EMBEDMENT OF $1\frac{3}{4}$ " INTO CONCRETE OR 1" WHEN INTO HOLLOW BLOCK CMU. (SEE INSTALLATION DETAILS ON SHEET 2).
- 7. USE ONE (1) ¼" ITW TAPCON, PER CLIP, OF SUFFICIENT LENGTH TO ACHIEVE MINIMUM EMBEDMENT OF 1¾" WHEN ANCHORED INTO CONCRETE.
- 8. USE TWO (2) #10-16 SELF-DRILLING SCREWS, PER CLIP, OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM 3 THREADS PENETRATION BEYOND STEEL SUBSTRATE. (SEE INSTALLATION DETAILS ON SHEET 2).
- 2X WOOD BUCKS AND STEEL STUDS TO BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO STRUCTURE AND IS THE RESPONSIBILITY OF THE ARCHITECT OR ENGINEER OF RECORD.
- 10. SEE CHARTS & NOTES ON SHEET 3, 4, & 5 FOR DESIGN PRESSURE RATINGS.
- 11. THIS MULLION IS ONLY VALID WHEN USED IN CONJUNCTION WITH ALL APPLICABLE CROFT, LLC PRODUCTS.
- 12. ALL WINDOWS USED WITH THIS MULLION SHALL BE QUALIFIED UNDER SEPARATE APPROVAL. THE LESSER DESIGN PRESSURE RATING OF THE WINDOW OR THE MULLION OF INSTALLATION SHALL GOVERN THE OVERALL DESIGN PRESSURE OF THE ASSEMBLY.
- 13. MULLION MATERIAL: 6063-T5 ALUMINUM.
- 14. CLIP MATERIAL: 6063-T5 ALUMINUM
- 15. 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. CMU SHALL CONFORM TO MINIMUM REQUIREMENTS OF ASTM C90
 - D. STEEL MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM 18 GA. WALL THICKNESS.

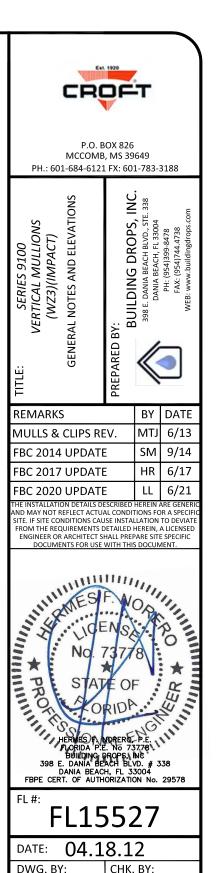
	TABLE OF CONTENTS
SHEET	SHEET DESCRIPTION
1	GENERAL NOTES & ELEVATIONS
2	MULLION INSTALLATION DETAILS & ANCHORING
3	SERIES 9100 WOODBUCK MULL DP CHART & DETAILS
4	SERIES 9100 HEAVY-DUTY MULL DP CHART & DETAIL
5	SERIES 9100 HEAVY-DUTY (LIGHT) MULL DP CHART & DETAIL



VERTICAL MULLION FOR TWIN HUNG WINDOWS



VERTICAL MULLION FOR TWIN WINDOWS



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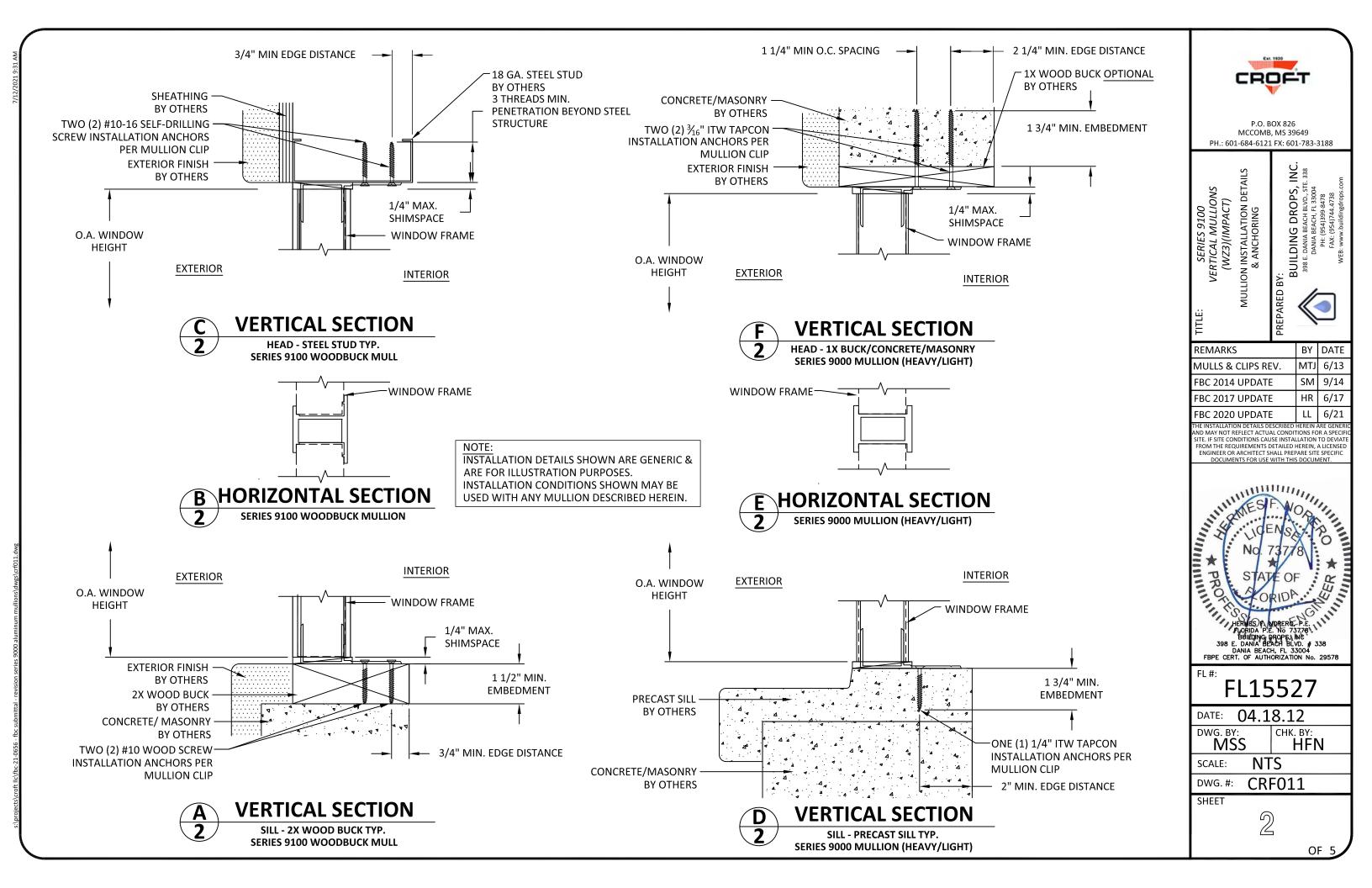
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SERIES 9100 WOODBUCK MULL DESIGN PRESSURE CHART

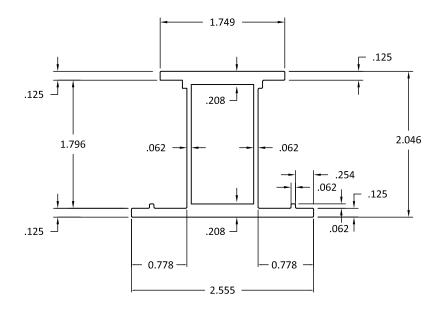
Maximum design pressure capacity chart (psf) Series 9100 Woodbuck Mullion

Design pressures are limited either by mullion or anchor screws or anchor clip capacity

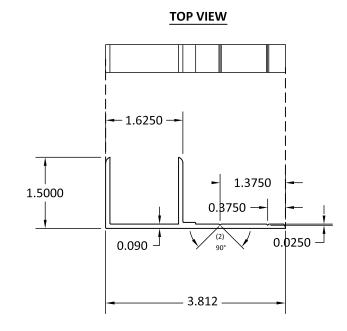
Height	Unit Width (in)								
(in)	18.0	21.0	24.0	27.0	30.0	32.0	36.0	42.0	48.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
30.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	143.0	135.5	130.7	128.7	127.1	127.1	127.1
42.0	138.6	124.5	114.4	107.0	101.7	99.0	95.3	93.4	93.4
48.0	117.3	104.6	95.3	88.4	83.2	80.4	76.2	72.6	71.5
54.0	101.7	90.1	81.7	75.3	70.4	67.7	63.5	59.4	57.2
60.0	89.7	79.2	71.5	65.6	61.0	58.5	54.5	50.3	47.7
66.0	80.3	70.7	63.5	58.1	53.8	51.2	46.7	41.9	38.8
72.0	65.3	56.5	49.9	44.9	41.0	38.8	35.3	31.4	28.8
78.0	51.2	44.2	39.0	35.0	31.9	30.2	27.3	24.2	22.0
84.0	40.8	35.2	31.1	27.9	25.3	23.9	21.6	19.0	17.2
90.0	33.1	28.6	25.2	22.5	20.5	19.3	17.4	15.3	13.7
96.0	27.2	23.5	20.7	18.5	16.8	15.8	14.2	12.4	11.2

NOTES FOR SERIES 9100 WOODBUCK MULLION FOR TWIN WINDOW AND MULLION CLIP INSTALLATIONS

- 1. THE DESIGN PRESSURES IN THIS CHART ARE FOR THE MULLIONS LISTED ABOVE WHEN USED WITH THE CLIP LISTED ABOVE.
- 2. FOR VERTICAL MULL CLIPS IN WOOD FRAMING INSTALLATION USE TWO (2) #10 WOOD SCREWS AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1 1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR DETAILS.
- 3. FOR VERTICAL MULL CLIPS IN STEEL FRAME INSTALLATION, USE (2) TWO #10-16 SELF-DRILLING SCREWS AT EACH ANCHOR CLIP WITH SUFFICIENT LENGTH TO ACHIEVE A MINIMUM 3 THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR DETAILS.
- 4. FOR VERTICAL MULL CLIPS IN CONCRETE OR CMU INSTALLATION USE TWO (2) 3/16" ITW TAPCONS AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1" MINIMUM EMBEDMENT INTO CMU (HOLLOW BLOCK) OR 1 3/4" EMBEDMENT INTO CONCRETE. SEE SHEET 2 FOR DETAILS. FOR ALTERNATE INSTALLATION TO CONCRETE, SEE NOTE 5 BELOW.
- 5. FOR VERTICAL MULL CLIPS IN CONCRETE INSTALLATION USE ONE (1) 1/4" ITW TAPCON AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1 3/4" EMBEDMENT INTO CONCRETE. SEE SHEET 2 FOR DETAILS.
- 6. CHART APPLIES ONLY TO SERIES 9100 WOODBUCK MULLION AS SPECIFIED ABOVE WHEN USED TO MULL WINDOWS SIDE BY SIDE.
- 7. READ WINDOW WIDTH AND MULL SPAN IN INCHES. DESIGN PRESSURE VALUES ON THIS CHART ARE POSITIVE AND NEGATIVE POUNDS PER SQUARE FOOT (PSF).
- 8. DESIGN PRESSURE VALUES APPLY TO MULLION WHERE TWO OR MORE WINDOWS ARE LISTED IN A SINGLE OPENING. LESSER DESIGN PRESSURE OF INDIVIDUAL WINDOW OR MULLION OF INSTALLATION SHALL GOVERN.
- 9. REFER TO EVALUATION REPORT# 7646 FOR MORE MULLION SPECIFICATIONS.



SERIES 9100 WOODBUCK MULL DETAIL



SERIES 9000 MULLION CLIP DETAIL

FOR USE WITH ALL SERIES 9000 MULLIONS



P.O. BOX 826 MCCOMB, MS 39649 PH.: 601-684-6121 FX: 601-783-3188

SERIES 9100 WOODBUCK I DP CHART & DETAILS

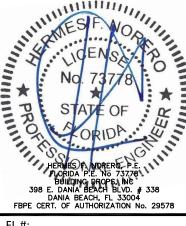
REMARKS

FBC 2020 UPDATE

BUILDING DROPS,

BY DATE MTJ 6/13 MULLS & CLIPS REV. FBC 2014 UPDATE FBC 2017 UPDATE 6/17

SITE, IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIAT FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSE ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.



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DATE: 04.18.12 DWG. BY: CHK. BY: HFN

MSS SCALE:

NTS **CRF011** DWG. #:

SHEET



OF 5

SERIES 9100 MULLION-HEAVY DUTY DESIGN PRESSURE CHART

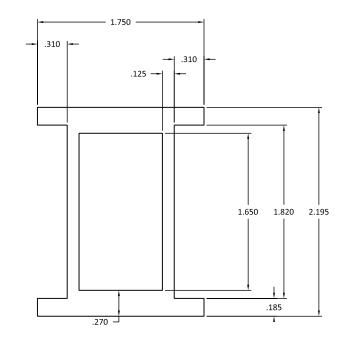
Maximum design pressure capacity chart (psf) Series 9100 Heavy Duty Mullion

Design pressures are limited either by mullion or anchor screws or anchor clip capacity

Height	Unit Width (in)								
(in)	18.0	21.0	24.0	27.0	30.0	32.0	36.0	42.0	48.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
30.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	143.0	135.5	130.7	128.7	127.1	127.1	127.1
42.0	138.6	124.5	114.4	107.0	101.7	99.0	95.3	93.4	93.4
48.0	117.3	104.6	95.3	88.4	83.2	80.4	76.2	72.6	71.5
54.0	101.7	90.1	81.7	75.3	70.4	67.7	63.5	59.4	57.2
60.0	89.7	79.2	71.5	65.6	61.0	58.5	53.5	48.2	44.9
66.0	79.7	69.0	61.0	54.9	50.1	47.5	43.2	38.5	35.4
72.0	66.7	57.6	50.9	45.7	41.6	39.3	35.6	31.6	28.8
78.0	56.7	48.9	43.1	38.7	35.1	33.2	30.0	26.4	23.9
84.0	48.8	42.0	37.0	33.1	30.1	28.4	25.6	22.4	20.2
90.0	42.4	36.5	32.1	28.7	26.1	24.6	22.1	19.3	17.3
96.0	36.5	31.5	27.7	24.8	22.5	21.2	19.1	16.7	15.0

NOTES FOR SERIES 9100 HEAVY-DUTY MULLION FOR TWIN WINDOW AND MULLION CLIP INSTALLATIONS

- THE DESIGN PRESSURES IN THIS CHART ARE FOR THE MULLIONS LISTED ABOVE WHEN USED WITH THE CLIP LISTED ABOVE.
- 2. FOR VERTICAL MULL CLIPS IN WOOD FRAMING INSTALLATION USE TWO (2) #10 WOOD SCREWS AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1 1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR DETAILS.
- 3. FOR VERTICAL MULL CLIPS IN STEEL FRAME INSTALLATION, USE (2) TWO #10-16 SELF-DRILLING SCREWS AT EACH ANCHOR CLIP WITH SUFFICIENT LENGTH TO ACHIEVE A MINIMUM 3 THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR DETAILS.
- 4. FOR VERTICAL MULL CLIPS IN CONCRETE OR CMU INSTALLATION USE TWO (2) 3/16" ITW TAPCONS AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1" MINIMUM EMBEDMENT INTO CMU (HOLLOW BLOCK) OR 1 3/4" EMBEDMENT INTO CONCRETE. SEE SHEET 2 FOR DETAILS. FOR ALTERNATE INSTALLATION TO CONCRETE, SEE NOTE 5 BELOW.
- 5. FOR VERTICAL MULL CLIPS IN CONCRETE INSTALLATION USE ONE (1) 1/4" ITW TAPCON AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 13/4" EMBEDMENT INTO CONCRETE. SEE SHEET 2 FOR DETAILS.
- 6. CHART APPLIES ONLY TO SERIES 9100 HEAVY DUTY MULLION AS SPECIFIED ABOVE WHEN USED TO MULL WINDOWS SIDE BY SIDE.
- 7. READ WINDOW WIDTH AND MULL SPAN IN INCHES. DESIGN PRESSURE VALUES ON THIS CHART ARE POSITIVE AND NEGATIVE POUNDS PER SQUARE FOOT (PSF).
- 8. DESIGN PRESSURE VALUES APPLY TO MULLION WHERE TWO OR MORE WINDOWS ARE LISTED IN A SINGLE OPENING. LESSER DESIGN PRESSURE OF INDIVIDUAL WINDOW OR MULLION OF INSTALLATION SHALL GOVERN.
- 9. REFER TO EVALUATION REPORT# 7646 FOR MORE MULLION SPECIFICATIONS.



SERIES 9100 MULLION-HEAVY DUTY DETAIL



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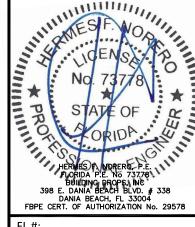
SERIES 9100 VERTICAL MULLIONS (WZ3)(IMPACT)

SERIES 9100 HEAVY-DUTY DP CHART & DETAIL

D BY:
BUILDING DROPS, IF
398 E. DANIA BEACH BLVD., STE.:
DANIA BEACH, FL 33004
PH: (954)399-8478

REMARKS BY DATE MTJ 6/13 MULLS & CLIPS REV. FBC 2014 UPDATE SM 9/14 FBC 2017 UPDATE HR 6/17 6/21 FBC 2020 UPDATE

SITE, IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIAT FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSE



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DATE: 04.18.12

DWG. BY: CHK. BY: MSS HFN

SCALE:

CRF011 DWG. #:

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OF 5

SERIES 9100 MULLION-HEAVY DUTY (LIGHT) DESIGN PRESSURE CHART

Maximum design pressure capacity chart (psf) Series 9100 Heavy Duty (Light) Mullion

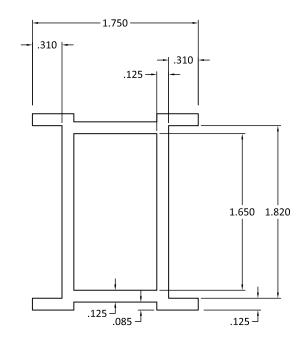
Design pressures are limited either by mullion or anchor screws or anchor clip capacity

Height				Unit	t Width ((in)
(in)	18.0	21.0	24.0	27.0	30.0	3
				1		

(in)	18.0	21.0	24.0	27.0	30.0	32.0	36.0	42.0	48.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
30.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	137.2	127.8	121.6	119.0	116.8	116.8	116.8
42.0	121.9	107.0	96.3	88.5	82.8	79.8	75.8	73.6	73.6
48.0	91.9	80.2	71.7	65.3	60.5	57.9	53.9	50.4	49.3
54.0	71.9	62.5	55.6	50.4	46.3	44.1	40.6	37.2	35.2
60.0	57.8	50.1	44.4	40.1	36.7	34.9	31.9	28.7	26.7
66.0	47.5	41.1	36.4	32.7	29.9	28.3	25.7	23.0	21.1
72.0	39.8	34.4	30.3	27.2	24.8	23.5	21.2	18.8	17.1
78.0	33.8	29.2	25.7	23.0	20.9	19.8	17.9	15.7	14.2
84.0	29.1	25.0	22.1	19.8	17.9	16.9	15.2	13.4	12.0
90.0	25.0	21.5	19.0	17.0	15.4	14.5	13.1	11.5	10.3
96.0	20.5	17.7	15.6	13.9	12.6	11.9	10.7	9.4	8.4

NOTES FOR SERIES 9100 HEAVY-DUTY (LIGHT) MULLION FOR TWIN WINDOW AND MULLION CLIP INSTALLATIONS

- 1. THE DESIGN PRESSURES IN THIS CHART ARE FOR THE MULLIONS LISTED ABOVE WHEN USED WITH THE CLIP LISTED ABOVE.
- 2. FOR VERTICAL MULL CLIPS IN WOOD FRAMING INSTALLATION USE TWO (2) #10 WOOD SCREWS AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1 1/2" MINIMUM EMBEDMENT INTO FRAMING. SEE SHEET 2 FOR DETAILS.
- 3. FOR VERTICAL MULL CLIPS IN STEEL FRAME INSTALLATION, USE (2) TWO #10-16 SELF-DRILLING SCREWS AT EACH ANCHOR CLIP WITH SUFFICIENT LENGTH TO ACHIEVE A MINIMUM 3 THREAD PENETRATION BEYOND STEEL SUBSTRATE. SEE SHEET 2 FOR DETAILS.
- 4. FOR VERTICAL MULL CLIPS IN CONCRETE OR CMU INSTALLATION USE TWO (2) 3/16" ITW TAPCONS AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 1" MINIMUM EMBEDMENT INTO CMU (HOLLOW BLOCK) OR 1 3/4" EMBEDMENT INTO CONCRETE. SEE SHEET 2 FOR DETAILS. FOR ALTERNATE INSTALLATION TO CONCRETE, SEE NOTE 5 BELOW.
- 5. FOR VERTICAL MULL CLIPS IN CONCRETE INSTALLATION USE ONE (1) 1/4" ITW TAPCON AT EACH MULLION CLIP. ANCHORS MUST BE OF SUFFICIENT LENGTH TO ACHIEVE A 13/4" EMBEDMENT INTO CONCRETE. SEE SHEET 2 FOR DETAILS.
- 6. CHART APPLIES ONLY TO SERIES 9100 HEAVY DUTY MULLION (LIGHT) AS SPECIFIED ABOVE WHEN USED TO MULL WINDOWS SIDE BY SIDE.
- READ WINDOW WIDTH AND MULL SPAN IN INCHES. DESIGN PRESSURE VALUES ON THIS CHART ARE POSITIVE AND NEGATIVE POUNDS PER SQUARE FOOT (PSF).
- 8. DESIGN PRESSURE VALUES APPLY TO MULLION WHERE TWO OR MORE WINDOWS ARE LISTED IN A SINGLE OPENING. LESSER DESIGN PRESSURE OF INDIVIDUAL WINDOW OR MULLION OF INSTALLATION SHALL GOVERN.
- 9. REFER TO EVALUATION REPORT# 7646 FOR MORE MULLION SPECIFICATIONS.



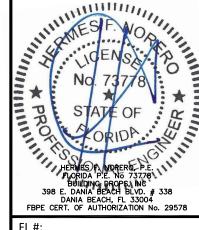
SERIES 9100 MULLION-HEAVY DUTY (LIGHT) DETAIL



SERIES 9100 HEAVY-DUTY (LIGHT) MULL DP CHART & DETAIL

REMARKS BY DATE MTJ 6/13 MULLS & CLIPS REV. FBC 2014 UPDATE SM 9/14 FBC 2017 UPDATE HR | 6/17 6/21 FBC 2020 UPDATE

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



FL15527

DATE: 04.18.12 DWG. BY: CHK. BY:

MSS SCALE:

> **CRF011** DWG. #:

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