

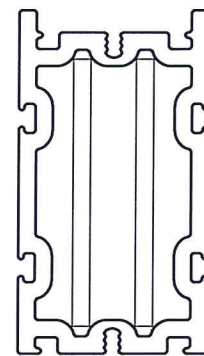
4100 / 4150 / 4160 / 4175

Extruded Aluminum

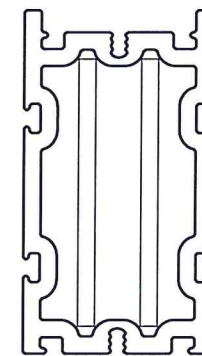
GENERAL NOTES

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements, excluding the "High Velocity Hurricane Zone".
2. When used in areas requiring wind borne debris protection, this product (if mulled together with impact rated windows) does not require protection from an impact resistant covering when used in Wind Zones 1, 2 and 3 as defined by ASTM E 1996 and FBC Sections 1609.1.2.2 & R301.2.1.2.1.
3. In Wind Zone 4 as defined by ASTM E 1996, this product must be protected with an impact resistant covering complying with FBC Sections 1609.1.2 & R301.2.1.2.
4. Separate product approvals for each glazing product used with these mullions must be submitted along with this mullion product approval. The design pressure rating of the assembly shall be the lesser of the load capacity of the mullion as specified using this approval or the design pressure rating of the individual glazing products used.
5. Anchoring of each glazing product to the mullion shall be as shown in this drawing or as shown in each individual glazing product approval, whichever is more stringent.
6. Mullion anchor embedment to base material shall be beyond wall dressing or stucco.
7. Any conditions not covered in this evaluation are subject to separate engineering evaluation.
8. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.

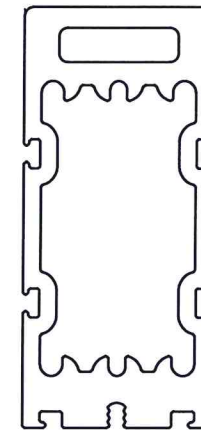
TABLE OF CONTENTS	
SHEET #	DESCRIPTION
1	Typical elevations & general notes
2	Component details & cross sections
3	Design pressure tables (concrete installation)
4	Design pressure tables (concrete installation)
5	Design pressure tables (wood installation)
6	Design pressure tables (wood installation)
7	Anchor bracket details
8	Buck anchoring



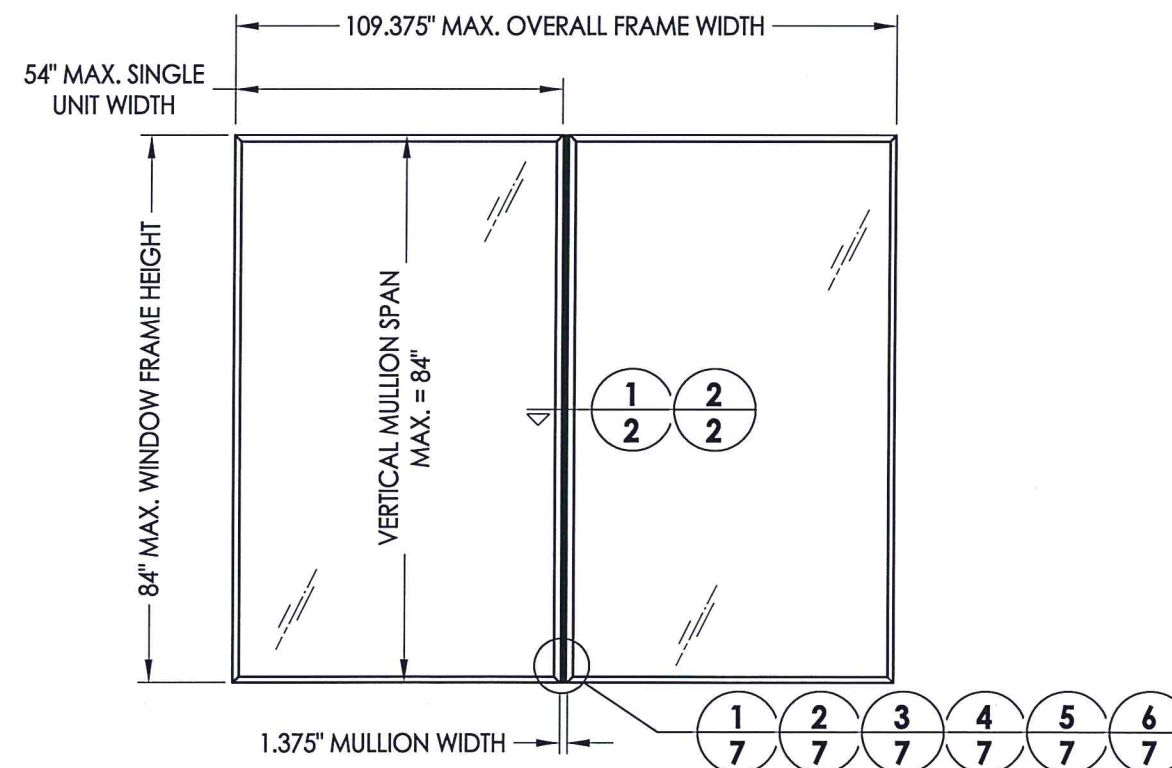
4100 Mullion



**4150 Mullion
(Aluminum Reinforced)**



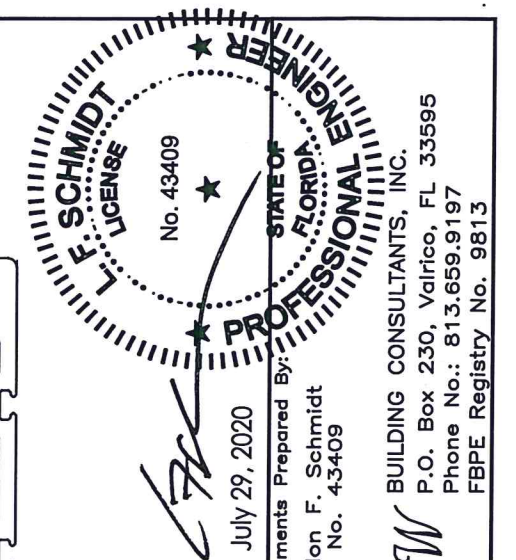
**4160 Mullion
(Steel Reinforced)**



MULLED WINDOW UNITS

(Twin unit shown, multiples also allowed)

See Sheets 3, 4, 5 & 6 for Design Pressure Ratings



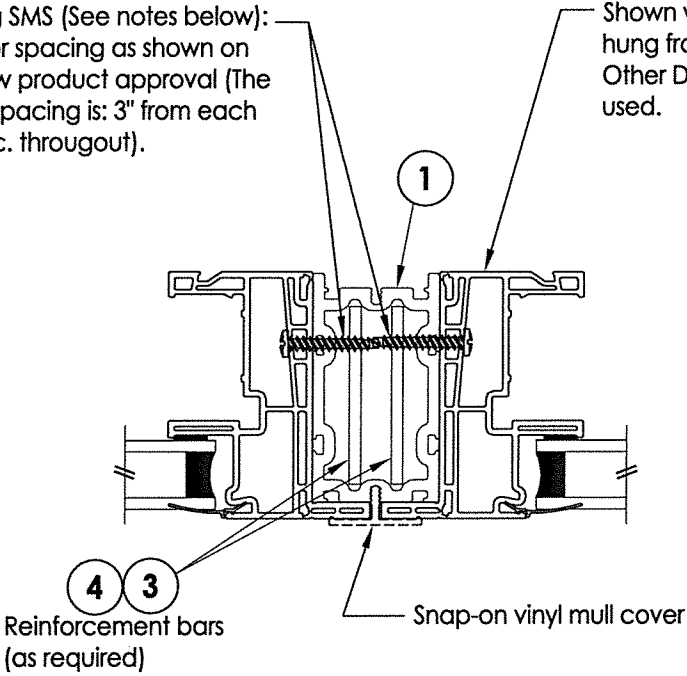
Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

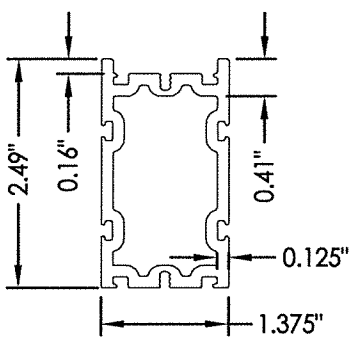
DATE: 1/7/13		PRODUCT:	
SCALE: N.T.S.		CLIPPED MULLION	
DWG. BY: JK		LFS	
CHK. BY: LFS		JK	
DRAWING NO.: FL-15417.4		PART OR ASSEMBLY:	
SHEET 1 OF 8		TYPICAL ELEVATIONS & GENERAL NOTES	

R:\Clients\Doers PERMANENT\A - Florida Product Approvals\FL-15417 Windows - Mullions\C - Drawings\FL 15417 (2020) R7\FL-15417-6.dwg, 2-4

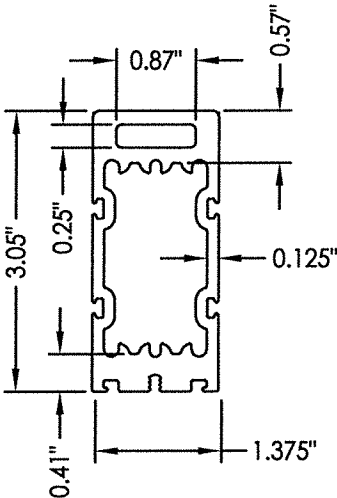
#8 X 1" PH Self-Drilling SMS (See notes below):
Use the frame anchor spacing as shown on
the individual window product approval (The
min. required screw spacing is: 3" from each
end and 24" max. o.c. throughout).



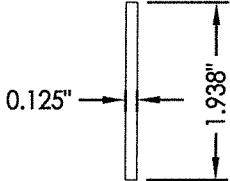
1 HORIZONTAL CROSS SECTION
Shown with 4100 / 4150 / 4160 Mullions



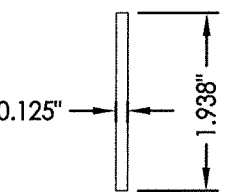
1 MULLION (4100/4150)
6063-T6 ALUM



2 MULLION (4175)
6063-T6 ALUM



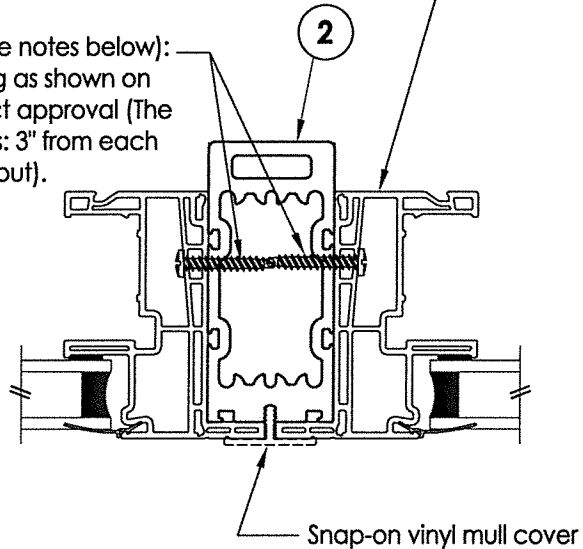
4 MULLION REINFORCEMENT
ASTM A36 STEEL BAR



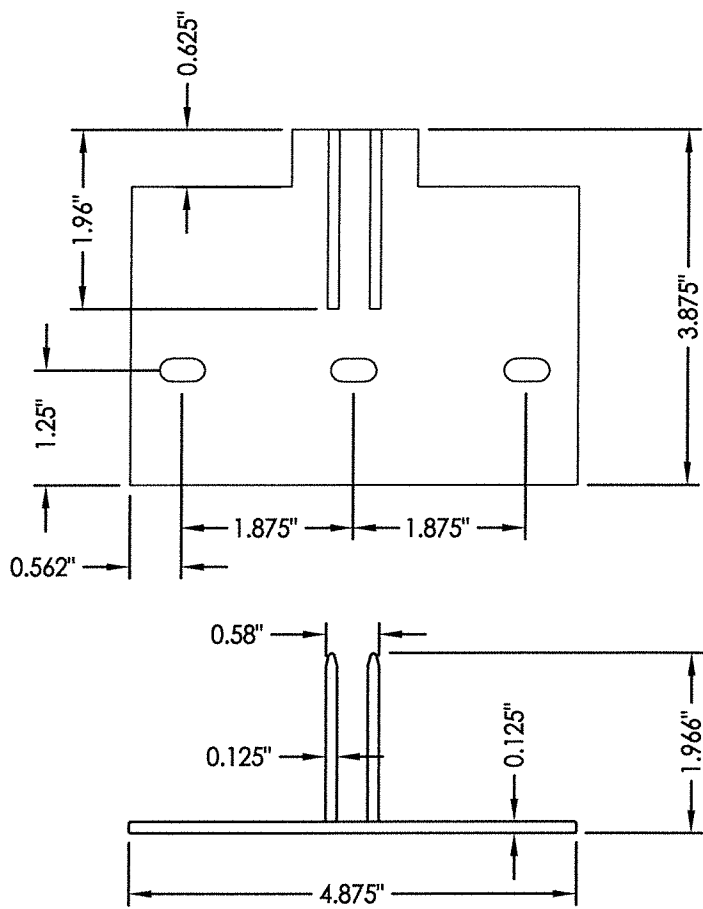
3 MULLION REINFORCEMENT
6063-T6 ALUM BAR

Shown with Doers Series 4000 single
hung frame under separate approval.
Other Doers approved frames may be
used.

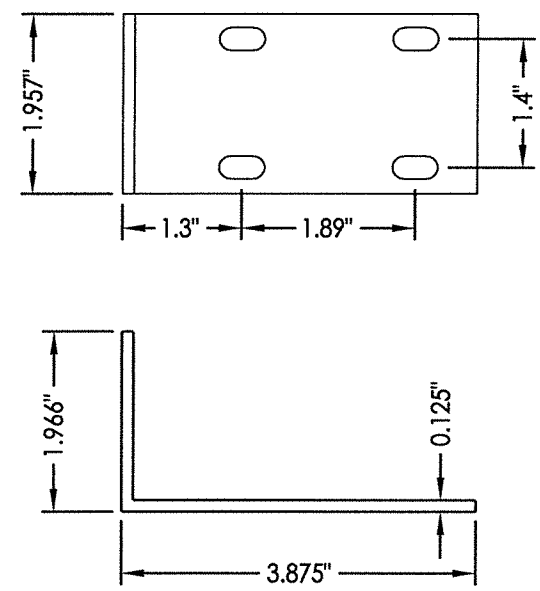
#8 X 1" PH Self-Drilling SMS (See notes below):
Use the frame anchor spacing as shown on
the individual window product approval (The
min. required screw spacing is: 3" from each
end and 24" max. o.c. throughout).



2 HORIZONTAL CROSS SECTION
Shown with 4175 Mullion



5 MULLION ANCHOR BRACKET (3419)
6063-T6 ALUM



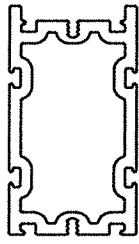
6 MULLION ANCHOR BRACKET (3418)
6063-T6 ALUM

Professional Engineer
F. SCHMIDT
No. 43409
STATE OF FLORIDA
July 29, 2020
Documents Prepared By:
Lyndon F. Schmidt
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R.W. BUILDING CONSULTANTS, INC.
P.O. Box 230, Vairico, FL 33595
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FBPE Registry No. 9813

PRODUCT:		CLIPPED MULLION	
PART OR ASSEMBLY:		COMPONENT DETAILS & CROSS SECTIONS	
DATE:	1/7/13	NO.	DATE
SCALE:	N.T.S.	BY	
DWG. BY:	JK		
CHK. BY:	LFS		
DRAWING NO.:	FL-15417.4		
SHEET	2	OF	8

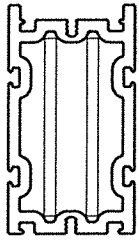
- Notes:
- Refer to individual window product approval for fabrication and installation requirements, including glazing details, frame reinforcement and anchoring specifications.
 - Sheet metal screws (self-drilling) shall have a minimum of 3 threads protrude completely through the mullion frame. Maintain a min. 1/2" edge distance.

R:\Clients\Doers PERMANENT\A - Florida Product Approvals\FL-15417 Windows - Mullions\C - Drawings\FL 15417 (2020) R7\FL-15417.4-6.dwg, 3-4



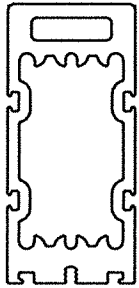
4100 MULLION

4100 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	34	27	23	20			
	80"	40	31	27	24	22	21	20
	76"	46	37	32	28	26	25	24
	72"	53	44	38	34	31	30	29
	69"	56	46	41	38	35	34	34
	66"	59	49	44	40	38	37	36
	63"	63	52	47	43	41	40	39
	60"	67	56	50	46	44	43	43
	54"	77	65	59	55	53	53	53
	48"	80	77	71	68	67	67	67



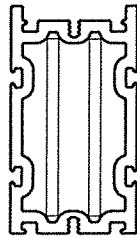
4150 MULLION
(ALUMINUM REINFORCED)

4150 MULLION (ALUMINUM REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	41	32	28	24	22	21	20
	80"	47	38	32	29	26	25	24
	76"	50	41	36	33	30	30	29
	72"	53	44	39	35	33	32	31
	69"	56	46	41	38	35	34	34
	66"	59	49	44	40	38	37	36
	63"	63	52	47	43	41	40	39
	60"	67	56	50	46	44	43	43
	54"	77	65	59	55	53	53	53
	48"	80	77	71	68	67	67	67



4175 MULLION

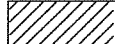
4175 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	45	36	32	28	26	25	25
	80"	47	38	34	30	28	27	26
	76"	50	41	36	33	30	30	29
	72"	53	44	39	35	33	32	31
	69"	56	46	41	38	35	34	34
	66"	59	49	44	40	38	37	36
	63"	63	52	47	43	41	40	39
	60"	67	56	50	46	44	43	43
	54"	77	65	59	55	53	53	53
	48"	80	77	71	68	67	67	67



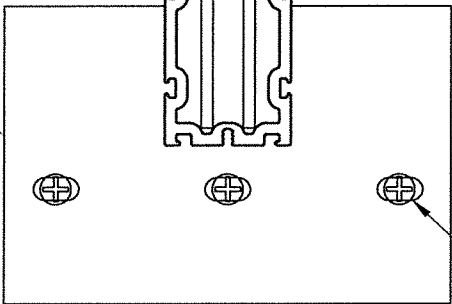
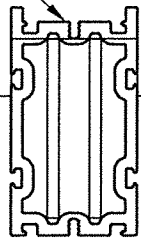
4160 MULLION
(STEEL REINFORCED)

4160 MULLION (STEEL REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	45	36	32	28	26	25	25
	80"	47	38	34	30	28	27	26
	76"	50	41	36	33	30	30	29
	72"	53	44	39	35	33	32	31
	69"	56	46	41	38	35	34	34
	66"	59	49	44	40	38	37	36
	63"	63	52	47	43	41	40	39
	60"	67	56	50	46	44	43	43
	54"	77	65	59	55	53	53	53
	48"	80	77	71	68	67	67	67

Notes:

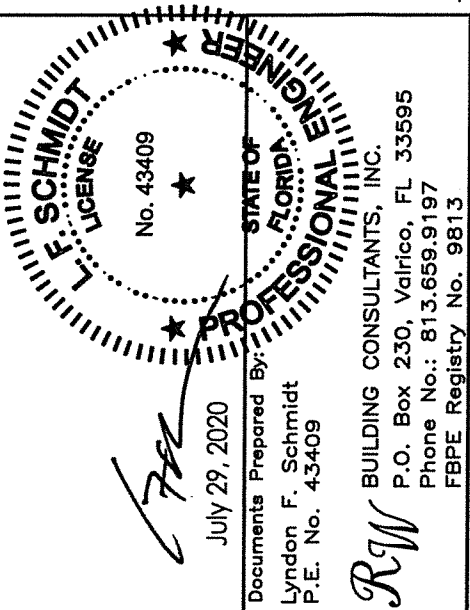
- Design pressure tables are applicable only for the anchor bracket and anchors specified on this sheet. Refer to Sheet 7 for cross section details.
-  Design Pressure is not available for this mullion length and frame width.

2 1



BRACKET (3419) TO MULLION DETAILS
Concrete Anchor Installation

(3) Concrete Anchors required



July 29, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

PRODUCT:
CLIPPED MULLION

PART OR ASSEMBLY:

DESIGN PRESSURE TABLES
(CONCRETE INSTALLATION)

NO.	DATE	REVISIONS
4	7/29/20	UPDATE TO 7TH ED (2020) FBC
3	9/26/17	UPDATE TO 6TH ED. (2017) FBC
2	12/07/15	REVISED 4175 MULLION
1	04/22/15	UPDATE TO 5TH ED. (2014) FBC

DATE: 1/7/13

SCALE: N.T.S.

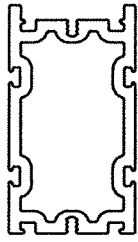
DWG. BY: JK

CHK. BY: LFS

DRAWING NO.:

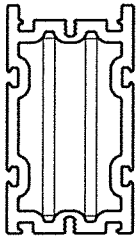
FL-15417.4

SHEET 3 OF 8



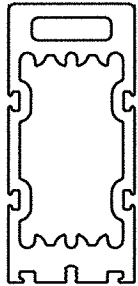
4100 MULLION

4100 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	34	27	23	20			
	80"	40	31	27	24	22	21	20
	76"	46	37	32	28	26	25	24
	72"	55	44	38	34	31	30	29
	69"	63	50	43	39	36	35	34
	66"	72	58	50	45	42	41	40
	63"	80	67	59	53	50	48	47
	60"	80	78	69	63	59	58	57
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80



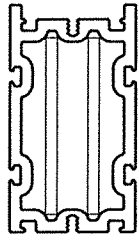
4150 MULLION
(ALUMINUM REINFORCED)

4150 MULLION (ALUMINUM REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	41	32	28	24	22	21	20
	80"	48	38	32	29	26	25	24
	76"	56	44	38	34	31	30	29
	72"	66	53	45	41	37	36	35
	69"	75	60	52	47	43	42	41
	66"	80	69	60	54	50	49	48
	63"	80	80	71	64	60	58	57
	60"	80	80	80	73	70	69	68
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80



4175 MULLION

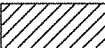
4175 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	71	58	51	46	42	41	40
	80"	76	62	54	49	45	44	43
	76"	80	66	58	53	49	47	46
	72"	80	71	62	57	53	52	50
	69"	80	74	66	60	57	55	54
	66"	80	79	70	65	61	59	58
	63"	80	80	75	69	65	64	63
	60"	80	80	80	75	71	70	69
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80

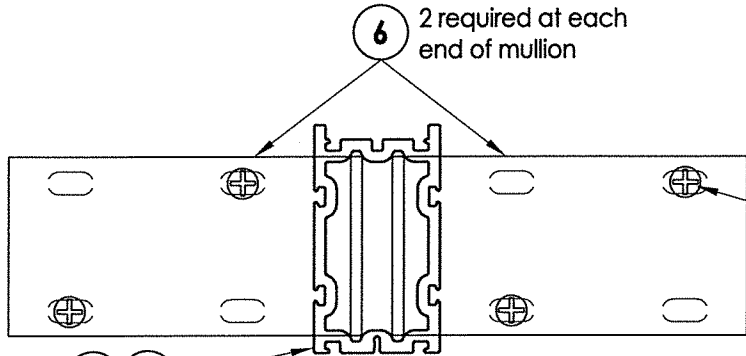


4160 MULLION
(STEEL REINFORCED)

4160 MULLION (STEEL REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	55	43	37	33	30	28	27
	80"	64	50	43	38	35	34	32
	76"	74	59	51	45	41	40	39
	72"	80	65	61	54	50	48	47
	69"	80	74	65	60	57	55	54
	66"	80	79	70	65	61	59	58
	63"	80	80	75	69	65	64	63
	60"	80	80	80	75	71	70	69
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80

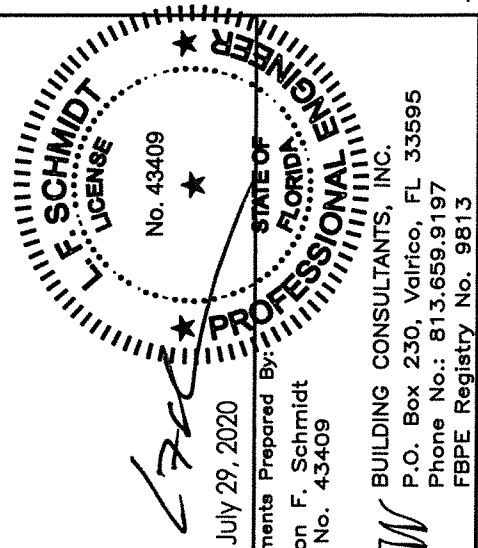
Notes:

- Design pressure tables are applicable only for the anchor bracket and anchors specified on this sheet. Refer to Sheet 7 for cross section details.
-  Design Pressure is not available for this mullion length and frame width.



(4) Concrete Anchors required

Install anchors in alternating holes as shown



July 29, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT: CLIPPED MULLION

PART OR ASSEMBLY:
DESIGN PRESSURE TABLES
(CONCRETE INSTALLATION)

NO.	DATE	REVISIONS
4	7/29/20	UPDATE TO 7TH ED (2020) FBC
3	9/26/17	UPDATE TO 6TH ED. (2017) FBC
2	12/07/15	REVISED 4175 MULLION
1	04/22/15	UPDATE TO 5TH ED. (2014) FBC

DATE: 1/7/13

SCALE: N.T.S.

DWG. BY: JK

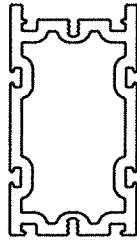
CHK. BY: LFS

DRAWING NO.:

FL-15417.4

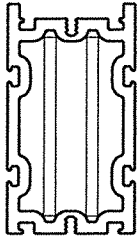
SHEET 4 OF 8

R:\Clients\Doers PERMANENTVA - Florida Product Approvals\FL-15417 Windows - Mullions\C - Drawings\FL 15417 (2020) R7\FL-15417.4-6.dwg, 5-4



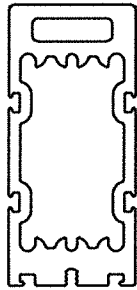
4100 MULLION

4100 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	34	27	23	20			
	80"	40	31	27	24	22	21	20
	76"	46	37	32	28	26	25	24
	72"	55	44	38	34	31	30	29
	69"	63	50	43	39	36	35	34
	66"	72	58	50	45	42	41	40
	63"	80	67	59	53	50	48	47
	60"	80	78	69	63	59	58	57
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80



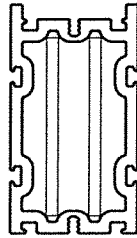
4150 MULLION
(ALUMINUM REINFORCED)

4150 MULLION (ALUMINUM REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	41	32	28	24	22	21	20
	80"	48	38	32	29	26	25	24
	76"	56	44	38	34	31	30	29
	72"	66	53	45	41	37	36	35
	69"	75	60	52	47	43	42	41
	66"	80	69	60	54	50	49	48
	63"	80	80	71	64	60	58	57
	60"	80	80	80	73	70	69	68
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80



4175 MULLION

4175 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	71	58	51	46	42	41	40
	80"	76	62	54	49	45	44	43
	76"	80	66	58	53	49	47	46
	72"	80	71	62	57	53	52	50
	69"	80	74	66	60	57	55	54
	66"	80	79	70	65	61	59	58
	63"	80	80	75	69	65	64	63
	60"	80	80	80	75	71	70	69
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80

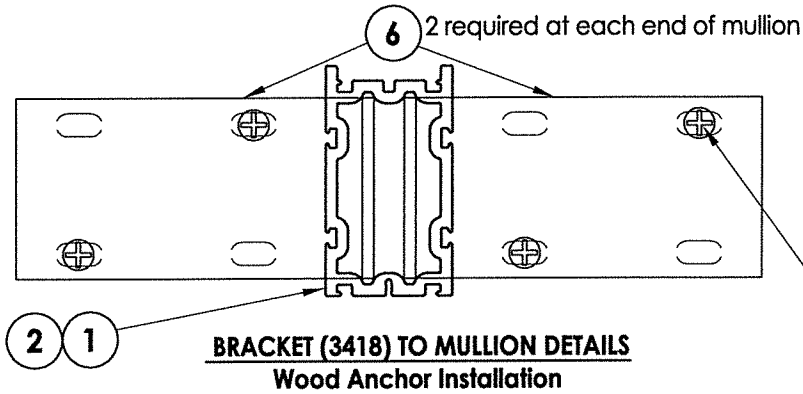


4160 MULLION
(STEEL REINFORCED)

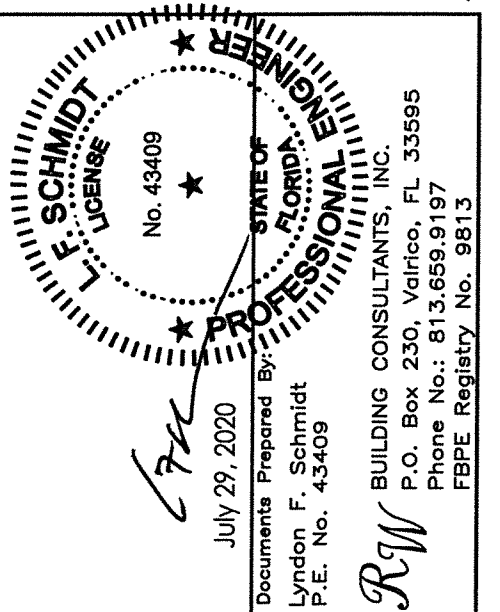
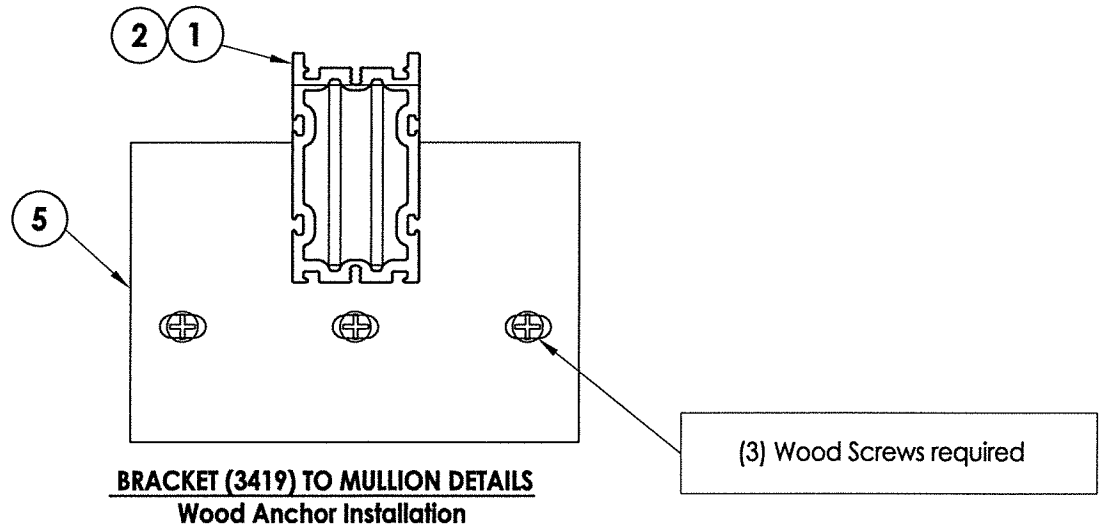
4160 MULLION (STEEL REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	55	43	37	33	30	28	27
	80"	64	50	43	38	35	34	32
	76"	74	59	51	45	41	40	39
	72"	80	65	61	54	50	48	47
	69"	80	74	65	60	57	55	54
	66"	80	79	70	65	61	59	58
	63"	80	80	75	69	65	64	63
	60"	80	80	80	75	71	70	69
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80

Notes:

- Design pressure tables are applicable only for the anchor bracket and anchors specified on this sheet. Refer to Sheet 7 for cross section details.
-  Design Pressure is not available for this mullion length and frame width.

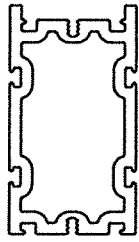


Install anchors in alternating holes as shown



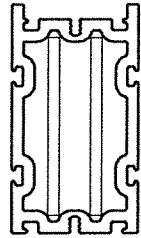
PRODUCT:		CLIPPED MULLION	
PART OR ASSEMBLY:		DESIGN PRESSURE TABLES (WOOD INSTALLATION)	
NO.	DATE	BY	REVISIONS
4	7/29/20	LFS	UPDATE TO 7TH ED (2020) FBC
3	9/26/17	JK	UPDATE TO 6TH ED. (2017) FBC
2	12/07/15	LFS	REVISED 4175 MULLION
1	04/22/15	JK	UPDATE TO 5TH ED. (2014) FBC

DATE: 1/7/13
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-15417.4
SHEET 5 OF 8



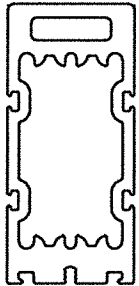
4100 MULLION

4100 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	34	27	23	20			
	80"	40	31	27	24	22	21	20
	76"	46	37	32	28	26	25	24
	72"	55	44	38	34	31	30	29
	69"	63	50	43	39	36	35	34
	66"	72	58	50	45	42	41	40
	63"	80	67	59	53	50	48	47
	60"	80	78	69	63	59	58	57
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80



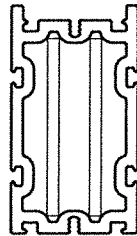
4150 MULLION
(ALUMINUM REINFORCED)

4150 MULLION (ALUMINUM REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	41	32	28	24	22	21	20
	80"	48	38	32	29	26	25	24
	76"	56	44	38	34	31	30	29
	72"	66	53	45	41	37	36	35
	69"	75	60	52	47	43	42	41
	66"	80	69	60	54	50	49	48
	63"	80	80	71	64	60	58	57
	60"	80	80	80	73	70	69	68
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80



4175 MULLION

4175 MULLION		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	80	65	56	49	45	43	41
	80"	80	77	65	58	53	51	49
	76"	80	80	77	68	62	60	58
	72"	80	80	80	80	75	72	70
	69"	80	80	80	80	80	80	80
	66"	80	80	80	80	80	80	80
	63"	80	80	80	80	80	80	80
	60"	80	80	80	80	80	80	80
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80

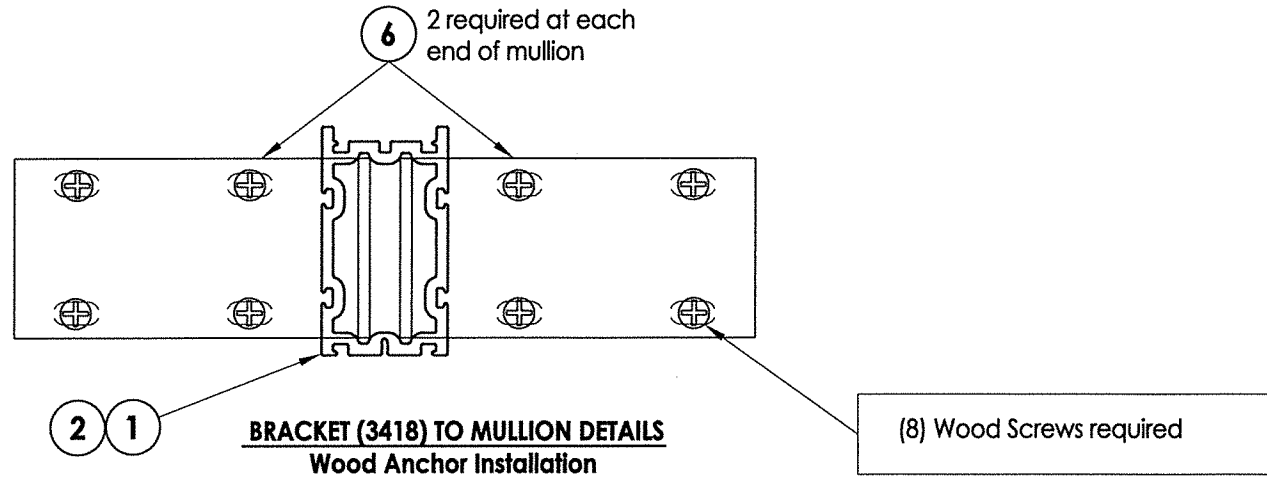


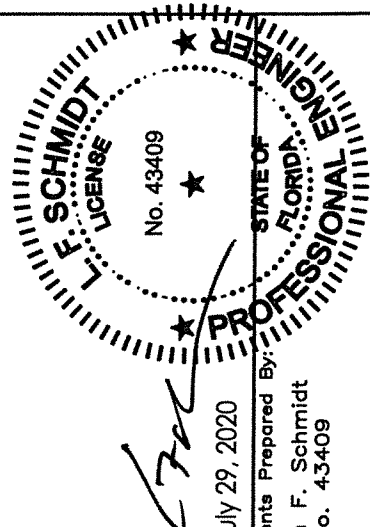
4160 MULLION
(STEEL REINFORCED)

4160 MULLION (STEEL REINFORCED)		DESIGN PRESSURE (PSF)						
		MAX. OVERALL FRAME WIDTH						
		48"	62"	74"	86"	98"	104"	109.375"
MAX. MULLION SPAN	84"	55	43	37	33	30	28	27
	80"	64	50	43	38	35	34	32
	76"	74	59	51	45	41	40	39
	72"	80	65	61	54	50	48	47
	69"	80	80	65	63	58	56	55
	66"	80	80	80	73	68	66	64
	63"	80	80	80	80	80	78	76
	60"	80	80	80	80	80	80	80
	54"	80	80	80	80	80	80	80
	48"	80	80	80	80	80	80	80

Notes:

- Design pressure tables are applicable only for the anchor bracket and anchors specified on this sheet. Refer to Sheet 7 for cross section details.
-  Design Pressure is not available for this mullion length and frame width.



		Documents Prepared By:		July 29, 2020	
		Lyndon F. Schmidt P.E. No. 43409			
PRODUCT:		CLIPPED MULLION		PART OR ASSEMBLY:	
				DESIGN PRESSURE TABLES (WOOD INSTALLATION)	
DATE:		1/7/13		SCALE:	
DWG. BY:		JK		CHK. BY:	
DRAWING NO.:		FL-15417.4		SHEET 6 OF 8	
NO.		DATE		REVISIONS	
4		7/29/20		UPDATE TO 7TH ED. (2020) FBC	
3		9/26/17		UPDATE TO 6TH ED. (2017) FBC	
2		12/07/15		REVISED 4175 MULLION	
1		04/22/15		UPDATE TO 5TH ED. (2014) FBC	

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1/2" MAX.

1-1/4" MIN. EMBEDDED

3/16" Ø ITW FH concrete screws
(See Concrete Anchor Notes, Sheet 8)

2 1

1/2" MAX.

6 6

1-3/8" MIN. EMBED.

1" MIN. EDGE DISTANCE

2X Buck
($G \geq 0.42$)

#10 x 1-1/2" FH
Wood Screws



Prepared By: Schmidt
 4-3409

BUILDING CONSULTANTS, INC.
 P.O. Box 230, Valrico, FL 33595
 Phone No.: 813.659.9197
 FBPE Registry No. 9813

Documents Prepared By
Lyndon F. Schmidt
P.E. No. 43409



BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

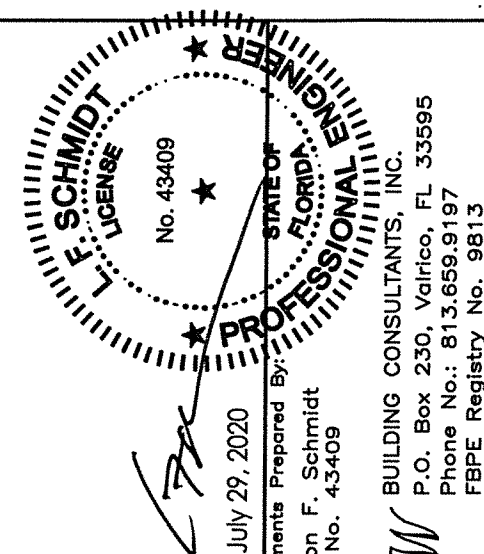
[illegible]

1. Substitution of equal concrete anchors from a different supplier may have different edge distance and center distance requirements.
2. Concrete anchor locations at the corners may be adjusted to maintain the min. edge distance to mortar joints. If concrete anchor locations noted as "MAX. ON CENTER" must be adjusted to maintain the min. edge distance to mortar joints, additional concrete anchors may be required to ensure the "MAX. ON CENTER" dimensions are not exceeded.
3. Concrete anchor table:

ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW TAPCON®	3/16"	1-1/4"	2"	1-7/8"
ITW TAPCON®	1/4"	1-1/4"	2-1/2"	3"

-
- MULLION ANCHORING**

SEE DESIGN PRESSURE TABLES (SHEETS 3, 4, 5 & 6)
FOR QUANTITY OF CONCRETE OR WOOD
ANCHORS REQUIRED PER EACH CLIP



Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT:	CLIPPED MULLION
PART OR ASSEMBLY:	BUCK ANCHORING

	4	7/29/20	UPDATE TO 7TH ED.	(2020)	FBC
LFS	3	9/26/17	UPDATE TO 6TH ED.	(2017)	FBC
JFK	2	12/07/15	REVISED 4175 MULLION		
LFS	1	04/22/15	UPDATE TO 5TH ED.	(2014)	FBC
	NO.	DATE			
					RY

DATE: 1/7/13

SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

DRAWING NO.:

FL-15417.

SHEET 8 OF 8