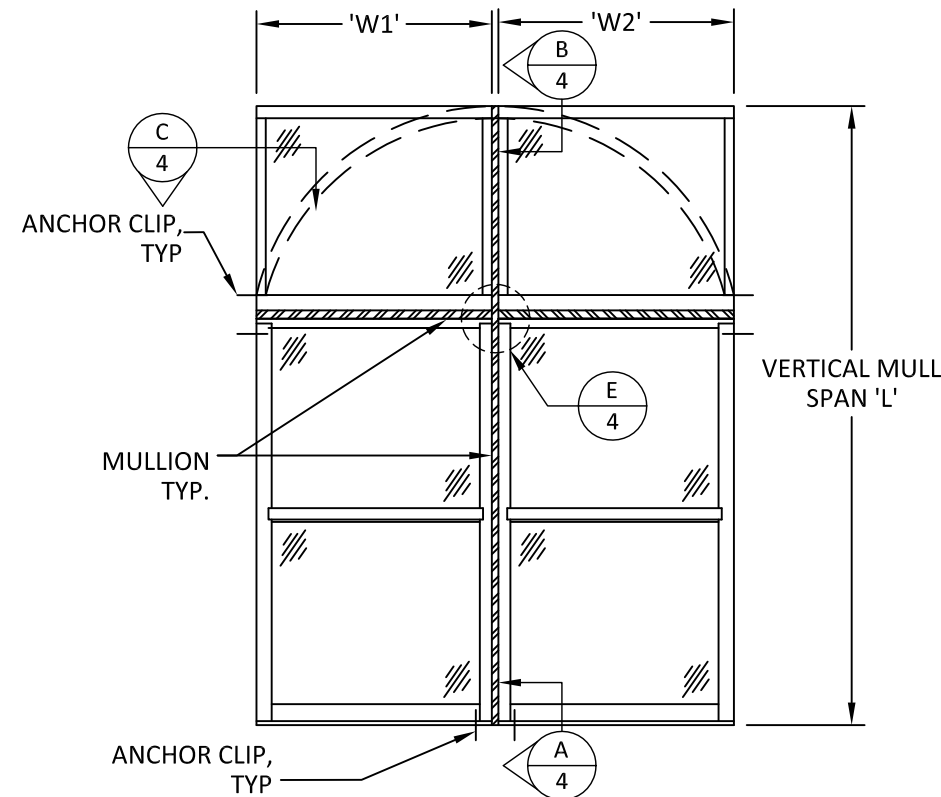


NORTHEAST BUILDING PRODUCTS

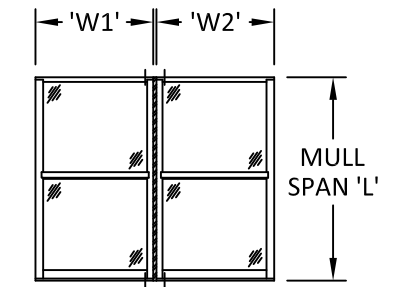
CLIPPED ALUMINUM TUBE MULLIONS

GENERAL NOTES:

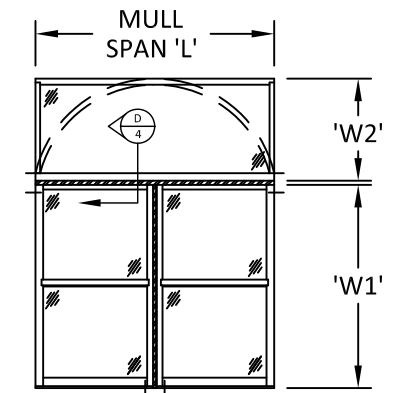
1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE 2006 INTERNATIONAL BUILDING CODE, 2006 INTERNATIONAL RESIDENTIAL CODE, AND TEXAS REVISIONS.
3. APPROVED IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED FOR THIS PRODUCT IN WIND BORNE DEBRIS REGIONS. INDIVIDUAL UNITS ATTACHED TO MULLIONS MUST BE IMPACT RATED.
4. ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY AND 2X 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.
5. 1X AND 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.
6. 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 IN NON-HVHZ AREAS.
7. MULLION & CLIP MATERIAL: ALUMINUM 6005-T5 & 6063-T6 (AS NOTED)
8. MULLIONS MAY ONLY BE USED WITH NORTHEAST BUILDING PRODUCTS WINDOWS AND DOORS OR VENTANA USA WINDOWS, WHICH MUST HAVE A SEPARATE TDI APPROVAL.
9. SEE SHEETS 5-9 FOR INSTALLATION ANCHOR REQUIREMENTS FOR SPECIFIC ANCHORING REQUIREMENTS, MULLION CONFIGURATIONS, AND DESIGN LOAD CAPACITIES.
10. IN ACCORDANCE WITH THE 2006 INTERNATIONAL BUILDING CODE, DISSIMILAR METALS INCLUDING FASTENERS THAT MAY COME INTO CONTACT WITH ALUMINUM UNIT FRAMING SHALL BE PROTECTED AS DEFINED IN CHAPTER 16.



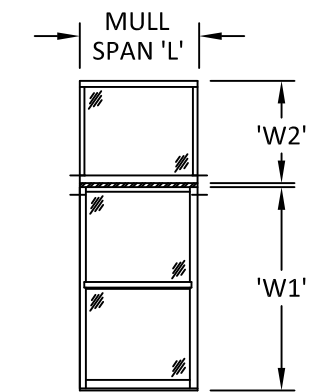
TYPICAL MULLION ASSEMBLY



VERTICAL SPAN



HORIZONTAL "T" MULL SPAN

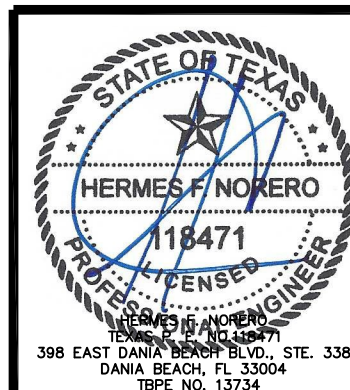


HORIZONTAL SPAN

INSTRUCTIONS:

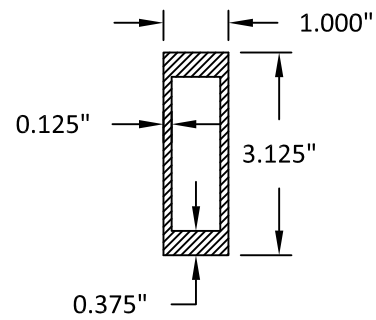
1. DETERMINE REQUIRED DESIGN PRESSURE FOR OPENING.
2. CHOOSE A MULLION THAT PROPERLY FITS THE FENESTRATION PRODUCT.
3. DETERMINE WHETHER ASSEMBLY REQUIRES ONE-WAY OR TWO-WAY MULLIONS:
 - ASSEMBLIES CONSISTING OF STACKED OR SIDE-BY-SIDE UNITS REQUIRE USE OF ONE-WAY MULLIONS.
 - ASSEMBLIES CONSISTING OF MULTIPLE UNITS MULLED TOGETHER WITH MULTIPLE MULLIONS REQUIRE USE OF TWO-WAY MULLIONS.
 - SEE SHEET 11 FOR ASSEMBLY AND LOAD EXAMPLES.
4. VERIFY THAT MULLION DESIGN PRESSURE MEETS OR EXCEEDS REQUIRED DESIGN PRESSURE OF OPENING USING CHARTS ON SHEETS 6-10.
5. QUALIFIED CLIP TYPES APPEAR ON SHEETS 6-10. MULTIPLE ANCHOR TYPE/SUBSTRATE/CLIP COMBINATIONS WITHIN AN OPENING ARE ALLOWED.
6. THE LESSER DESIGN PRESSURE OR MULLION OR FENESTRATION PRODUCT WILL GOVERN OVERALL ASSEMBLY DESIGN PRESSURE RATING.

TABLE OF CONTENTS		
SHEET	REVISION	SHEET DESCRIPTION
1	-	GENERAL NOTES, INSTRUCTIONS, AND ELEVATIONS
2	-	MULLION DETAILS
3	-	ANCHOR CLIP DETAILS
4	-	MULLION SECTIONS
5	-	TYPICAL MULLION & CLIP ASSEMBLIES
6	-	1" X 3-1/8" (LIGHT) MULLION DESIGN LOAD TABLES
7	-	1" X 3-1/8" (HEAVY) MULLION DESIGN LOAD TABLES
8	-	1" X 4" MULLION DESIGN LOAD TABLES
9	-	2" X 4" MULLION DESIGN LOAD TABLES
10	-	2" X 6" MULLION DESIGN LOAD TABLES
11	-	MULLION ASSEMBLY AND LOAD EXAMPLES



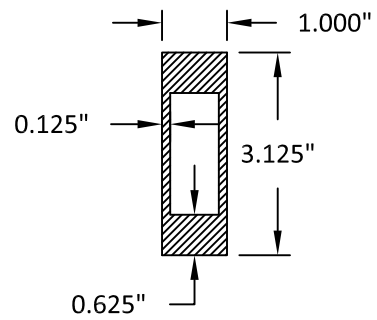
REVISIONS			
BY	DATE	DESCRIPTION	REV

		NORTHEAST BUILDING PRODUCTS 4280 ARAMINGO AVE. PHILADELPHIA, PA 19124 PH: (215) 535-7110 HTTP://WWW.NBPWINDOWS.COM/	
		TITLE: CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS GENERAL AND INSTALLATION NOTES	
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.	
DRAWING NO: NBP001	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004	
SHEET: 1 OF 11	REV: -	PH: (954)399-8478 FAX:(954)-744.4738 WEB: www.buildingdrops.com	



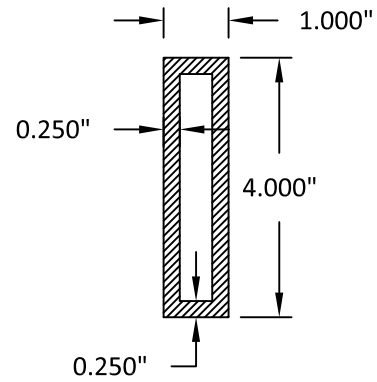
**1" X 3-1/8" (LIGHT)
MULLION**

SEE SHEET 6 FOR
QUALIFIED CLIPS



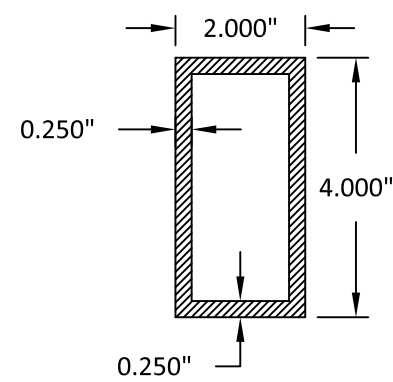
**1" X 3-1/8" (HEAVY)
MULLION**

SEE SHEET 7 FOR
QUALIFIED CLIPS



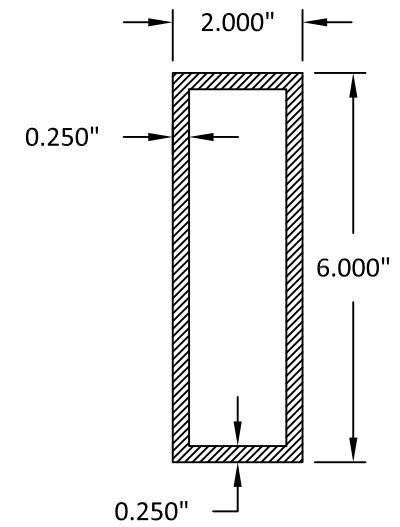
**1" X 4"
MULLION**

SEE SHEET 8 FOR
QUALIFIED CLIPS



**2" X 4"
MULLION**

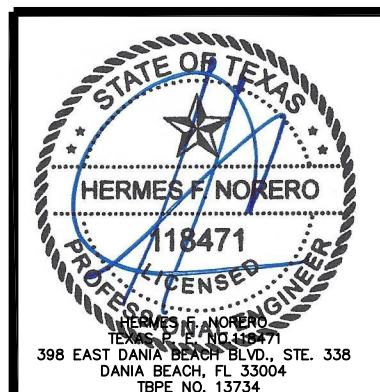
SEE SHEET 9 FOR
QUALIFIED CLIPS




**2" X 6"
MULLION**

SEE SHEET 10 FOR
QUALIFIED CLIPS

NOTE: SEE SHEET 3 FOR SPECIFIC CLIP
TYPES AND DIMENSIONS.



REVISIONS			
BY	DATE	DESCRIPTION	REV

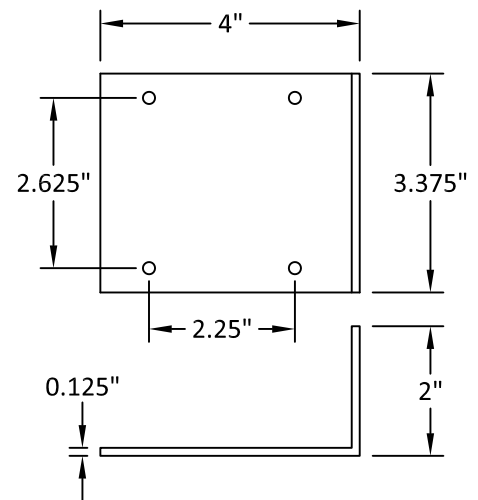


**NORTHEAST
BUILDING PRODUCTS**
WINDOWS & DOORS

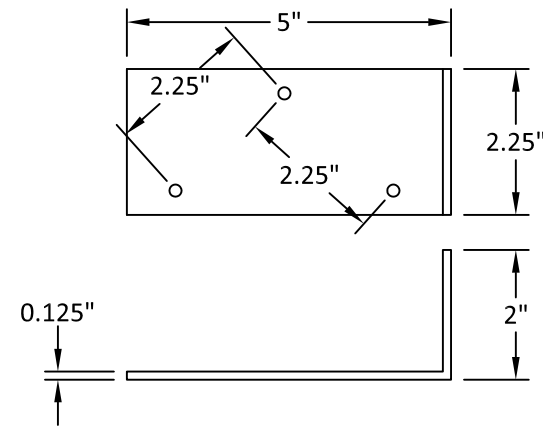
NORTHEAST BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH: (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: **HVHZ CLIPPED ALUMINUM TUBE MULLIONS
VERTICAL AND HORIZONTAL CONFIGURATIONS
MULLION CROSS SECTIONS**

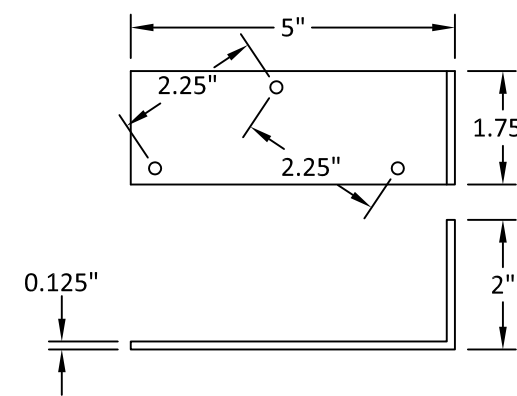
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.
DRAWING NO: NBP001	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004 PH: (954)399-8478 FAX: (954)-744.4738
SHEET: 2 OF 11	REV: -	WEB: www.buildingdrops.com



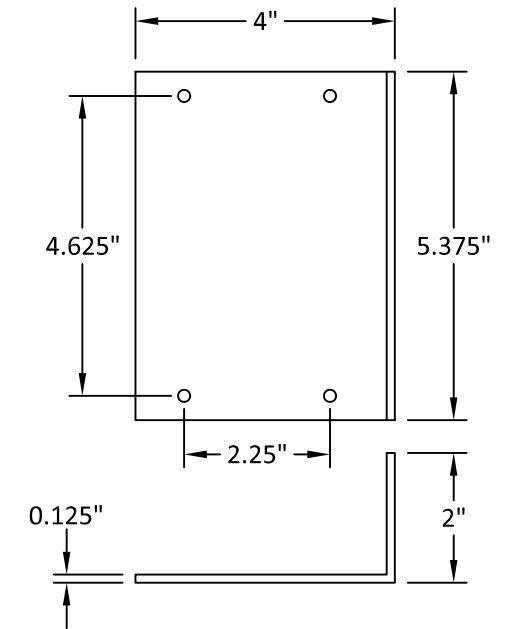
2" X 4" X 3 3/8" L-CLIP
ALUMINUM 6063-T6



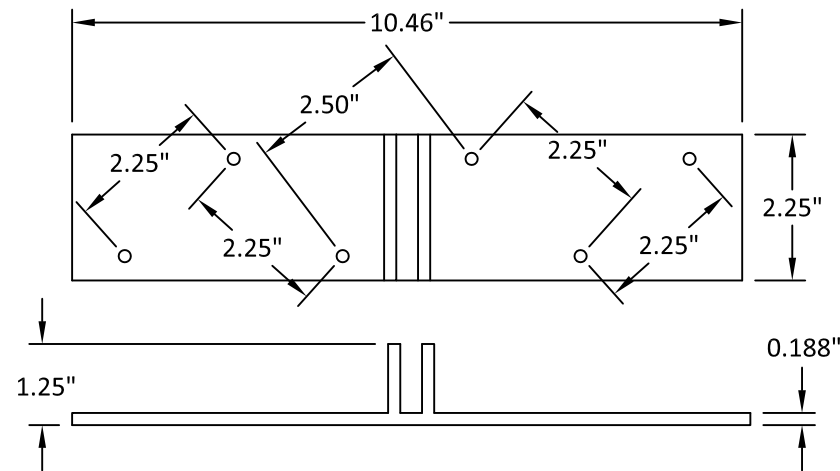
2" X 5" X 2 1/4" L-CLIP
ALUMINUM 6063-T6



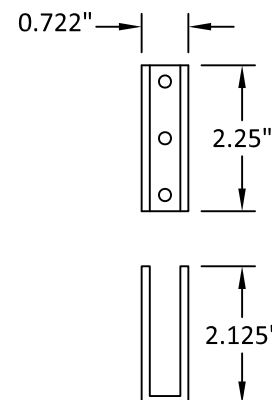
2" X 5" X 1 3/4" L-CLIP
ALUMINUM 6063-T6



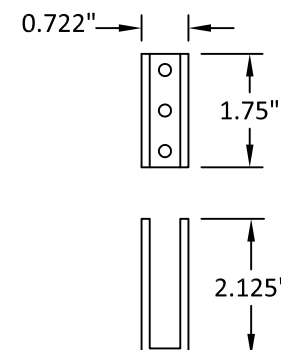
2" X 4" X 5 3/8" L-CLIP
ALUMINUM 6063-T6



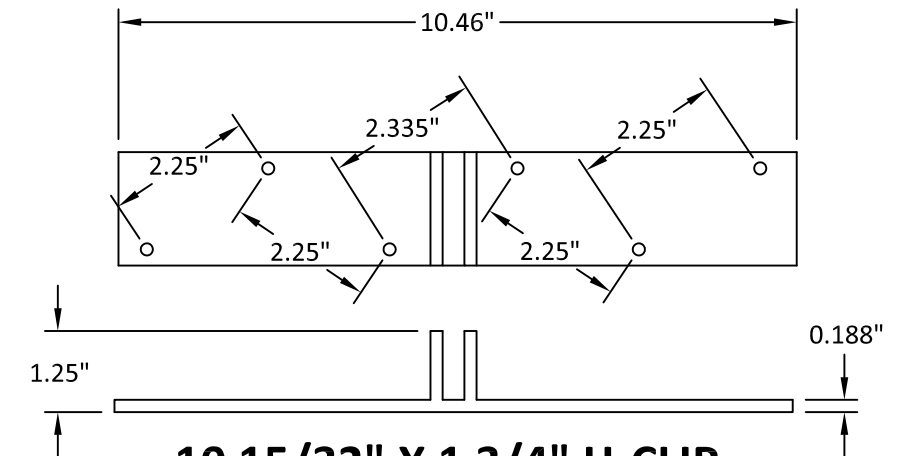
10 15/32" X 2 1/4" H-CLIP
ALUMINUM 6063-T6



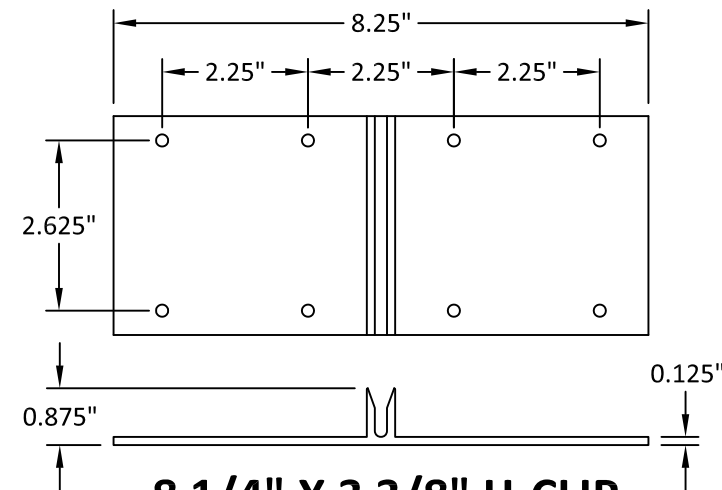
2 1/4" U-CLIP
ALUMINUM 6005-T5



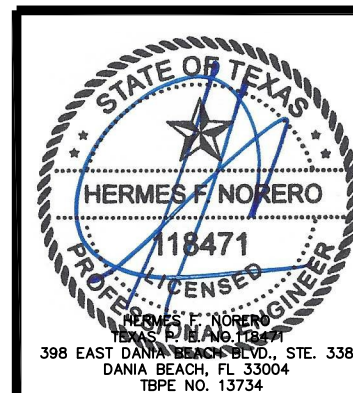
1 3/4" U-CLIP
ALUMINUM 6005-T5




10 15/32" X 1 3/4" H-CLIP
ALUMINUM 6063-T6



8 1/4" X 3 3/8" H-CLIP
ALUMINUM 6063-T6



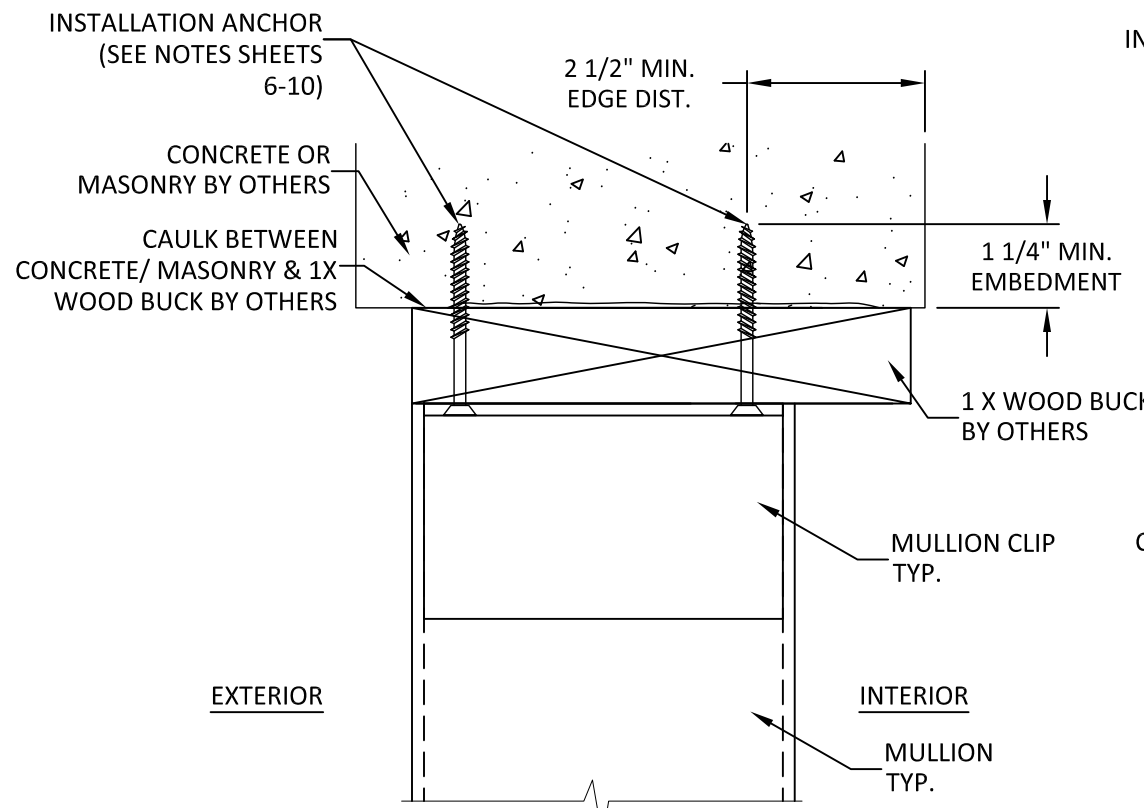
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BY	DATE	DESCRIPTION	REV



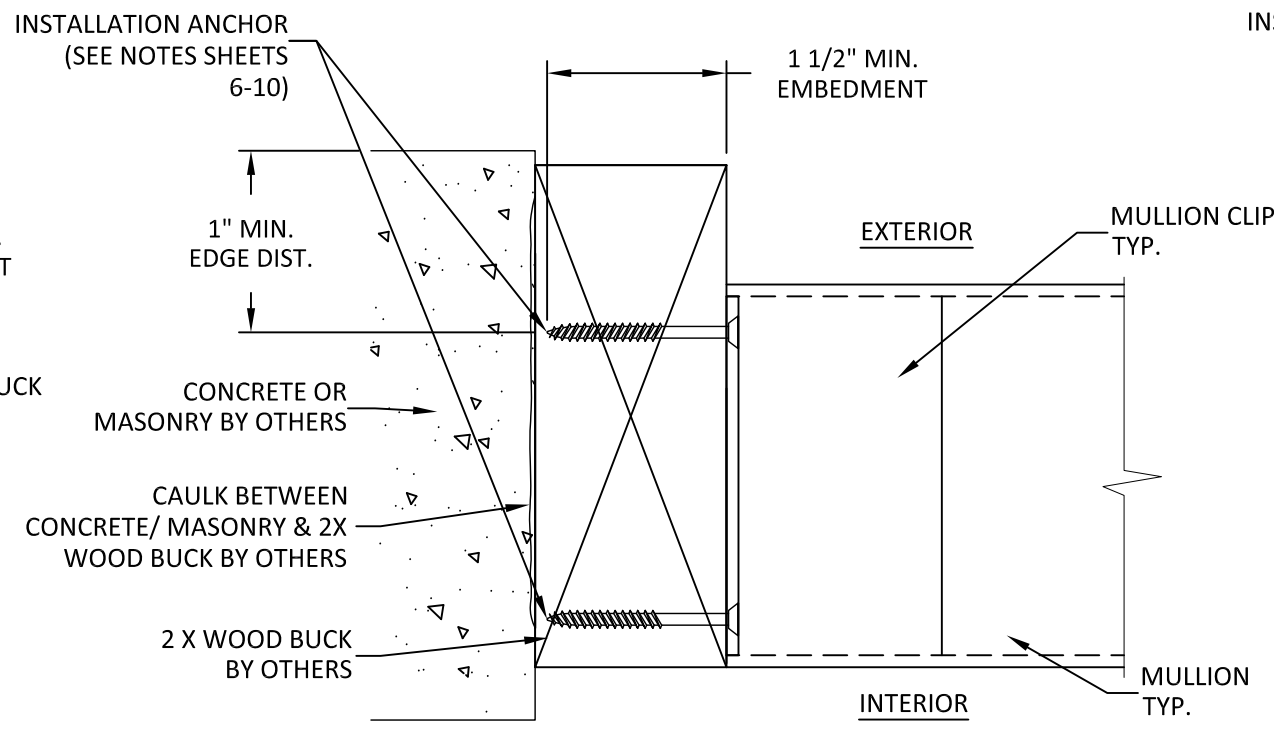
NORTHEAST BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH. (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: **HVHZ CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS CLIP DETAILS**

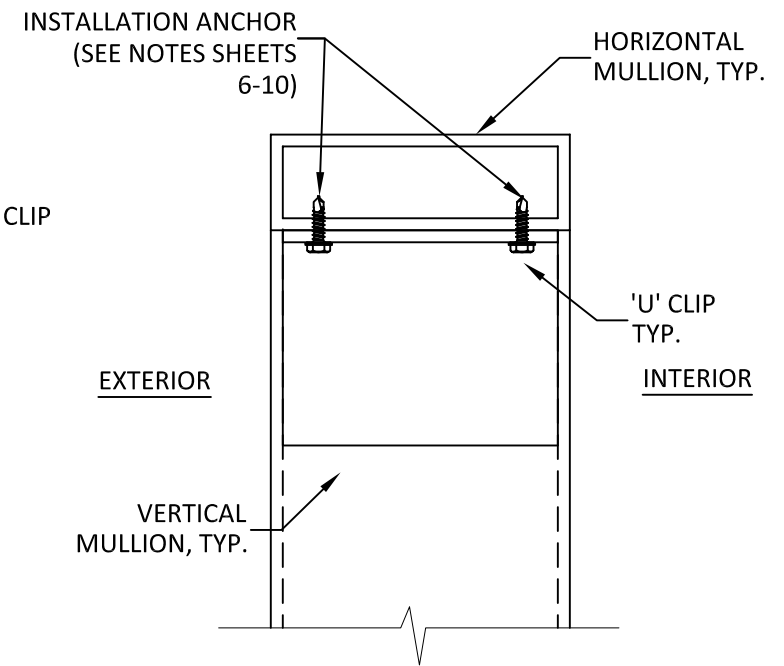
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.
DRAWING NO: NBPO01	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004
SHEET: 3 OF 11	REV: -	PH: (954)399-8478 FAX: (954)-744.4738
		WEB: www.buildingdrops.com



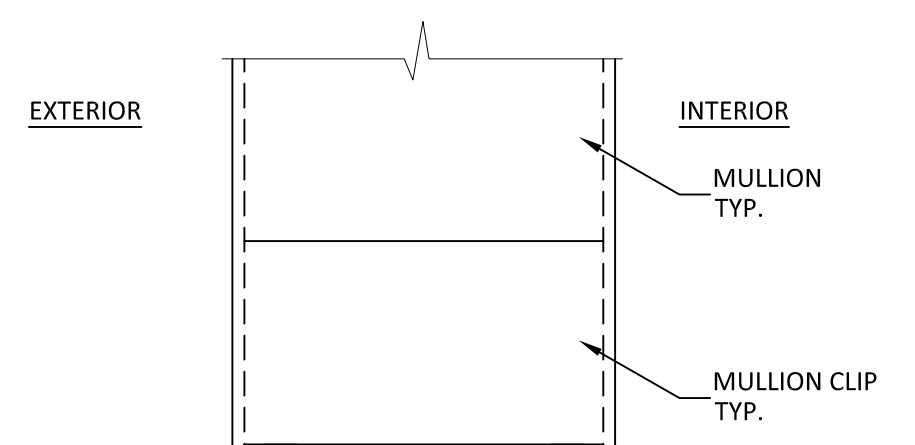
B
4 **VERTICAL SECTION**
HEAD - CONCRETE/MASONRY
SIDE VIEW-VERTICAL



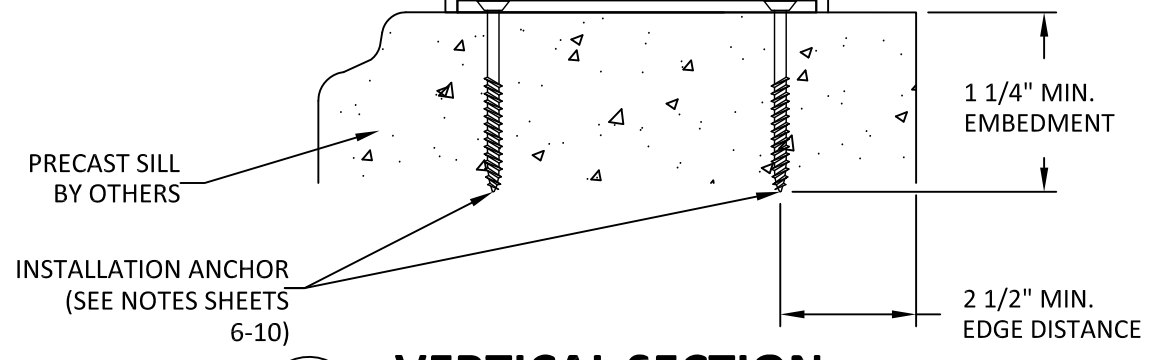
C
4 **HORIZONTAL SECTION**
JAMB - 2X WOOD BUCK
SIDE VIEW-HORIZONTAL



D
4 **HORIZONTAL SECTION**
T-MULLION INTERSECT DETAIL
SIDE VIEW

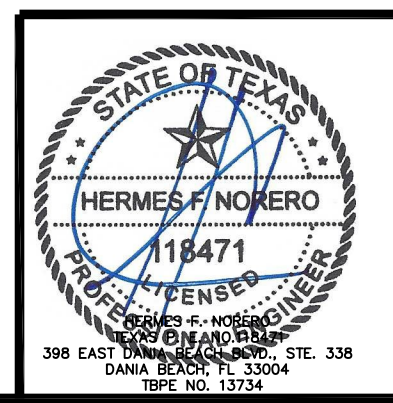


E
4 **HORIZONTAL SECTION**
X-MULLION INTERSECT DETAIL
SIDE VIEW



A
4 **VERTICAL SECTION**
SILL - CONCRETE/MASONRY
SIDE VIEW-VERTICAL

NOTE
DETAILS SHOWN ARE TYPICAL FOR ALL MULLION & CLIP ASSEMBLIES. SEE SHEETS 6-10 FOR ALLOWABLE MULLION CONFIGURATIONS, SIZES, AND DESIGN PRESSURES.



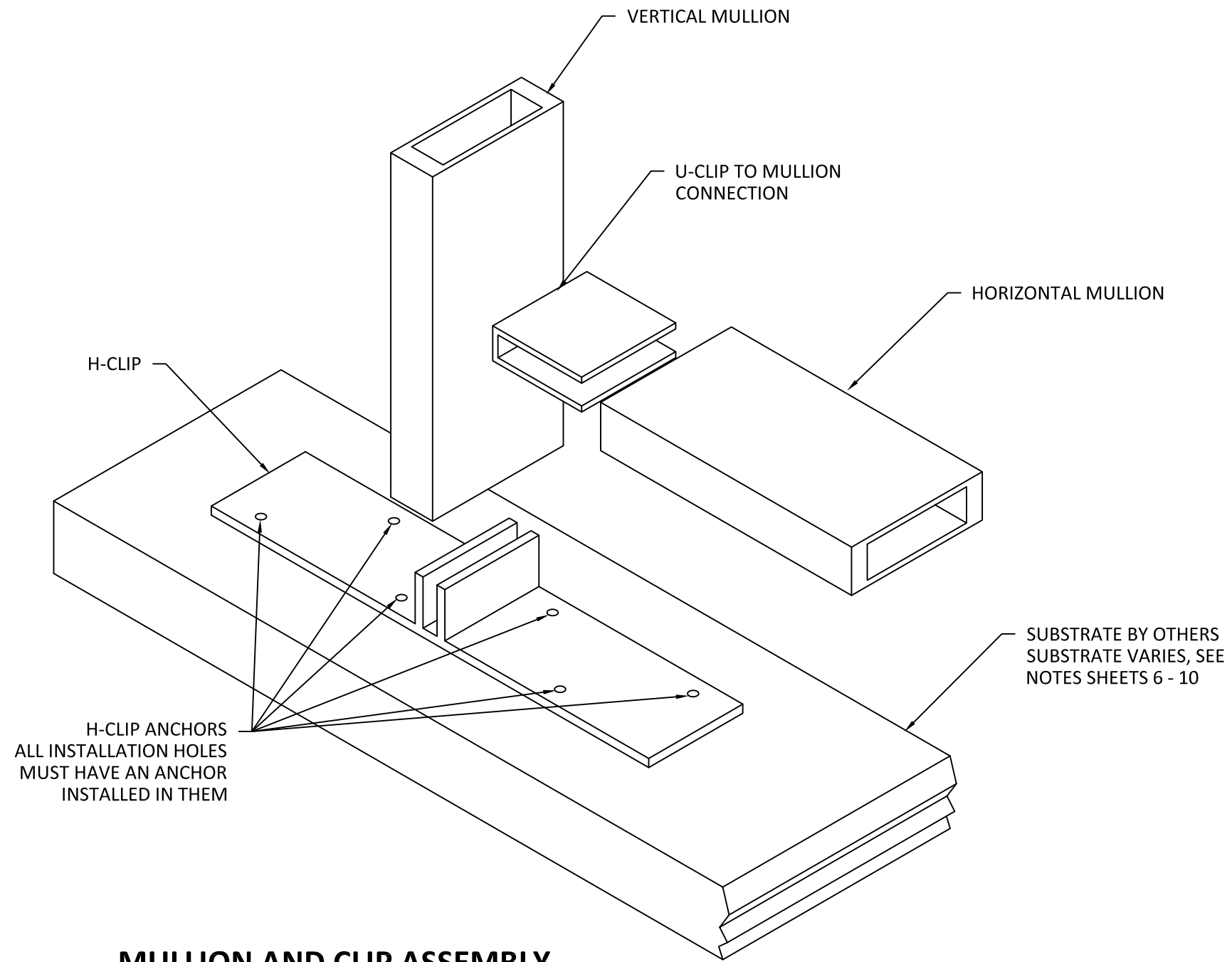
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BY	DATE	DESCRIPTION	REV

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4280 ARAMINGO AVE.
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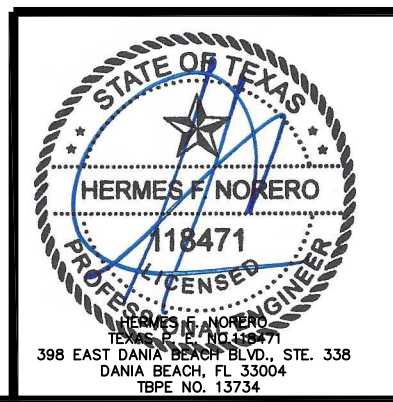
TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS INSTALLATION DETAILS

DATE: 02/05/13	DRAWN BY: TJH	<p>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</p>
DRAWING NO: NBP001	SCALE: N.T.S.	
SHEET: 4 OF 11	REV: -	



MULLION AND CLIP ASSEMBLY

TYPICAL ASSEMBLY SHOWN WITH 1" x 3 1/8" MULLION AND H-CLIP. OTHER MULLIONS AND CLIPS ARE APPROVED. SEE INDIVIDUAL MULLION SHEETS



REVISIONS			
BY	DATE	DESCRIPTION	REV



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PH. (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: **HVHZ CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS MULLION AND CLIP ASSEMBLY DETAILS**

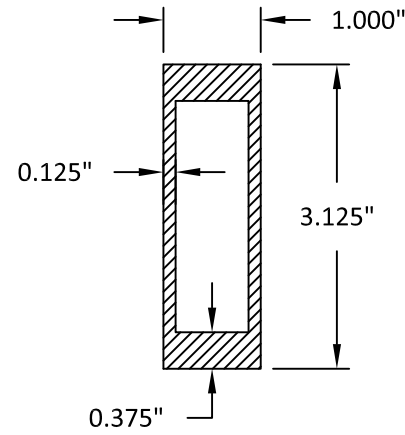
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.
DRAWING NO: NBP001	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004
SHEET: 5 OF 11	REV: -	PH: (954)399-8478 FAX: (954)-744.4738 WEB: www.buildingdrops.com

DESIGN PRESSURE LIMITS FOR MULLION: 1" x 3-1/8" (LIGHT) - ONE-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
60	200.0	200.0	181.0	158.0	143.3	134.3	129.8	129.3	127.6
72	161.6	123.7	101.5	87.3	77.7	71.1	67.2	66.7	63.8
84	101.0	76.9	62.7	53.5	47.1	42.6	39.7	39.3	36.9
96	67.4	51.1	41.5	35.2	30.8	27.6	25.6	25.2	23.5
108	47.2	35.7	28.9	24.4	21.3	19.0	17.5	17.2	15.9

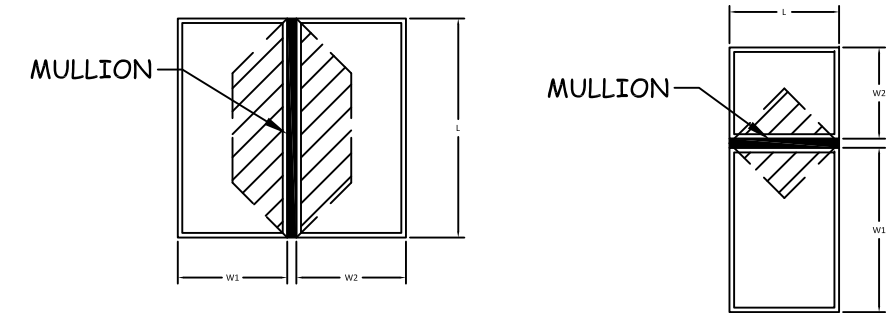
DESIGN PRESSURE LIMITS FOR MULLION: 1" x 3-1/8" (LIGHT) - TWO-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	191.4	167.5	151.3	148.9	134.0
48	200.0	200.0	200.0	167.5	143.6	125.6	113.5	111.7	100.5
60	200.0	200.0	160.8	134.0	114.9	100.5	90.8	89.3	80.4
72	157.6	118.2	94.5	78.8	67.5	59.1	53.4	52.5	47.3
84	99.2	74.4	59.5	49.6	42.5	37.2	33.6	33.1	29.8
96	66.5	49.9	39.9	33.2	28.5	24.9	22.5	22.2	19.9
108	46.7	35.0	28.0	23.3	20.0	17.5	15.8	15.6	14.0

1" X 3-1/8" (LIGHT) MULLION

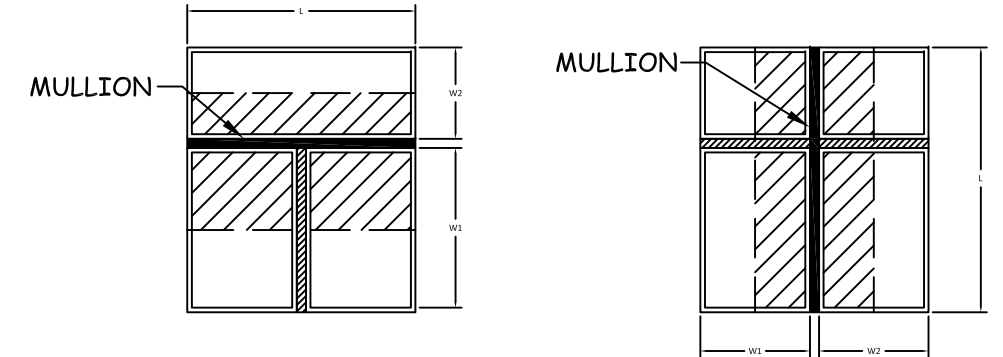
ALUMINUM 6005-T5



$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$



ONE-WAY MULLION DIAGRAMS



TWO-WAY MULLION DIAGRAMS

QUALIFIED ANCHOR CLIPS

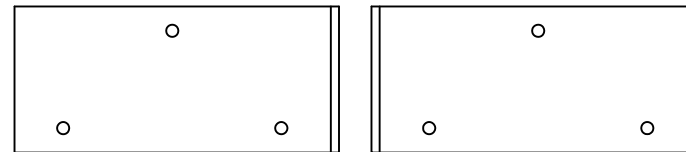


2 1/4" U-CLIP

ALUMINUM 6005-T5

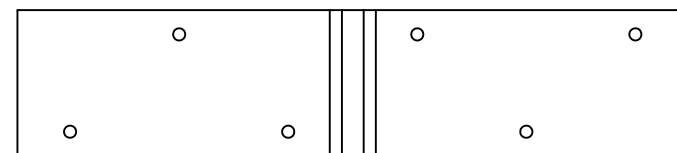
U-CLIP FOR USE ONLY IN
MULLION-TO-MULLION
CONNECTIONS

NOTE: SEE SHEET 3 FOR SPECIFIC CLIP
TYPES AND DIMENSIONS.



2" X 5" X 2 1/4" L-CLIP

ALUMINUM 6063-T6
**MUST BE USED IN PAIRS

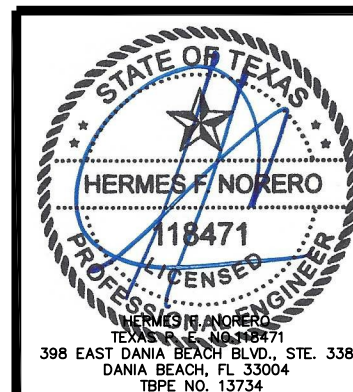


10 15/32" X 2 1/4" H-CLIP


ALUMINUM 6063-T6

TABLE NOTES:

- SEE SHEET 1 FOR INSTRUCTIONS ON USING TABLES. SEE SHEETS 4 AND 5 FOR TYPICAL INSTALLATION METHODS & CLIP DETAILS.
- LINEAR INTERPOLATION BETWEEN LISTED WIDTHS AND SPANS IS ALLOWED.
- SEE THIS SHEET FOR SPECIFIC MULLION DIMENSIONS.
- SEE SHEET 3 FOR SPECIFIC CLIP DIMENSIONS.
- ANCHOR REQUIREMENTS:
 - WOOD: #14 WOOD SCREWS
 - CMU: 1/4" ITW TAPCONS
 - CONCRETE: 1/4" ITW TAPCONS
 - METAL: 1/4" SELF-DRILLING SCREWS (GRADE 5)
- INSTALLATION SUBSTRATES:
 - WOOD ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/2" & EDGE DISTANCE OF 1". WOOD SHALL BE MIN. S.G.=0.42.
 - HOLLOW CMU ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/4" & EDGE DISTANCE OF 2-1/2". HOLLOW CMU SHALL BE MEDIUM WEIGHT CONFORMING TO ASTM C 90.
 - CONCRETE ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-3/4" & EDGE DISTANCE OF 2-1/2". CONCRETE SHALL BE MIN. 4000 PSI.
 - METAL ANCHORS SHALL HAVE A MIN. (3) THREADS PENETRATION BEYOND METAL STRUCTURE. STEEL SHALL BE MIN. 18 GA. (0.045" THICK) 33 KSI YIELD. ALUMINUM SHALL BE MIN. 1/8" THICK ALUMINUM 6063-T5.



REVISIONS			
BY	DATE	DESCRIPTION	REV



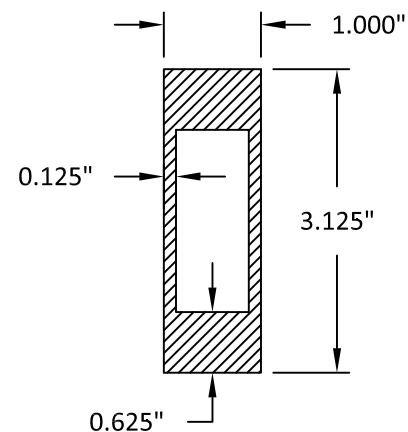
NORTHEAST BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH. (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS
VERTICAL AND HORIZONTAL CONFIGURATIONS
1" x 3 1/8" LIGHT MULLION

DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY:
DRAWING NO: NBPO01	SCALE: N.T.S.	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
SHEET: 6 OF 11	REV: -	

DESIGN PRESSURE LIMITS FOR MULLION: 1" x 3-1/8" (HEAVY) - ONE-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
60	200.0	200.0	200.0	191.4	176.7	167.5	162.2	161.6	159.4
72	200.0	154.5	126.8	109.1	97.1	88.9	84.0	83.3	79.7
84	126.2	96.1	78.4	66.8	58.9	53.2	49.6	49.1	46.1
96	84.2	63.9	51.8	44.0	38.5	34.5	31.9	31.5	29.3
108	58.9	44.6	36.1	30.5	26.6	23.7	21.8	21.5	19.9

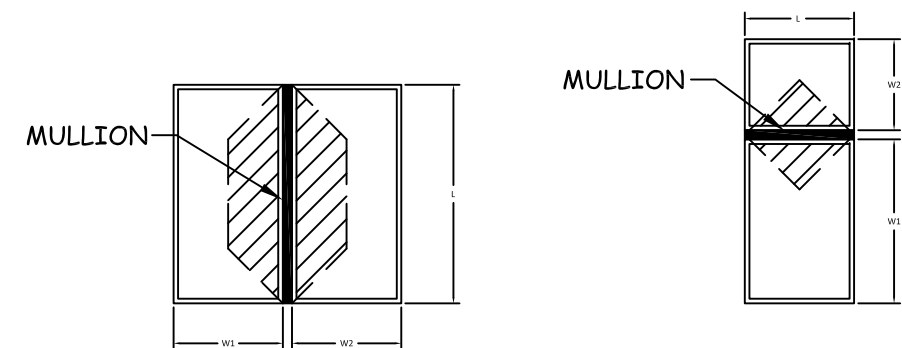
DESIGN PRESSURE LIMITS FOR MULLION: 1" x 3-1/8" (HEAVY) - TWO-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	191.4	167.5	151.3	148.9	134.0
48	200.0	200.0	200.0	167.5	143.6	125.6	113.5	111.7	100.5
60	200.0	200.0	160.8	134.0	114.9	100.5	90.8	89.3	80.4
72	196.8	147.6	118.1	98.4	84.4	73.8	66.7	65.6	59.1
84	124.0	93.0	74.4	62.0	53.1	46.5	42.0	41.3	37.2
96	83.0	62.3	49.8	41.5	35.6	31.1	28.1	27.7	24.9
108	58.3	43.7	35.0	29.2	25.0	21.9	19.8	19.4	17.5



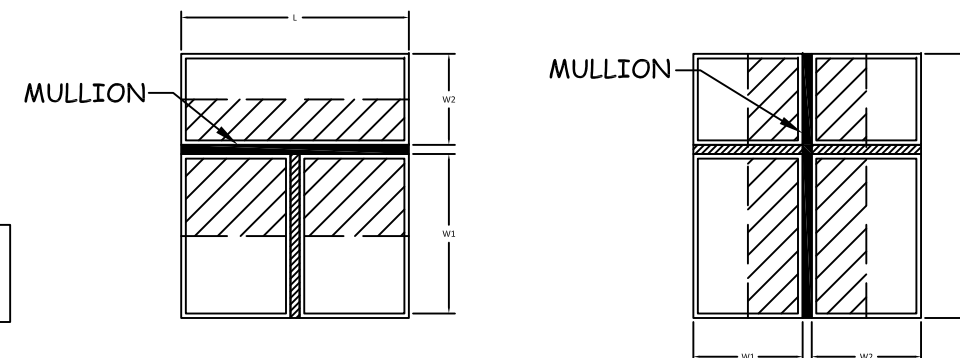
1" X 3-1/8" (HEAVY) MULLION

ALUMINUM 6005-T5

$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$

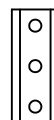


ONE-WAY MULLION DIAGRAMS



TWO-WAY MULLION DIAGRAMS

QUALIFIED ANCHOR CLIPS



1 3/4" U-CLIP

ALUMINUM 6005-T5

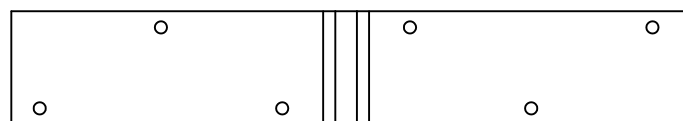
U-CLIP FOR USE ONLY IN MULLION-TO-MULLION CONNECTIONS



2" X 5" X 1 3/4" L-CLIP

ALUMINUM 6063-T6

**MUST BE USED IN PAIRS



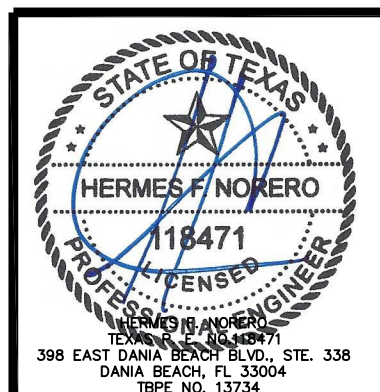
10 15/32" X 1 3/4" H-CLIP

ALUMINUM 6063-T6

NOTE: SEE SHEET 3 FOR SPECIFIC CLIP TYPES AND DIMENSIONS.

TABLE NOTES:

- SEE SHEET 1 FOR INSTRUCTIONS ON USING TABLES. SEE SHEETS 4 AND 5 FOR TYPICAL INSTALLATION METHODS & CLIP DETAILS.
- LINEAR INTERPOLATION BETWEEN LISTED WIDTHS AND SPANS IS ALLOWED.
- SEE THIS SHEET FOR SPECIFIC MULLION DIMENSIONS.
- SEE SHEET 3 FOR SPECIFIC CLIP DIMENSIONS.
- ANCHOR REQUIREMENTS:
 - WOOD: #14 WOOD SCREWS
 - CMU: 1/4" ITW TAPCONS
 - CONCRETE: 1/4" ITW TAPCONS
 - METAL: 1/4" SELF-DRILLING SCREWS (GRADE 5)
- INSTALLATION SUBSTRATES:
 - WOOD ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/2" & EDGE DISTANCE OF 1". WOOD SHALL BE MIN. S.G.=0.42.
 - HOLLOW CMU ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/4" & EDGE DISTANCE OF 2-1/2". HOLLOW CMU SHALL BE MEDIUM WEIGHT CONFORMING TO ASTM C 90.
 - CONCRETE ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-3/4" & EDGE DISTANCE OF 2-1/2". CONCRETE SHALL BE MIN. 4000 PSI.
 - METAL ANCHORS SHALL HAVE A MIN. (3) THREADS PENETRATION BEYOND METAL STRUCTURE. STEEL SHALL BE MIN. 18 GA. (0.045" THICK) 33 KSI YIELD. ALUMINUM SHALL BE MIN. 1/8" THICK ALUMINUM 6063-T5.



REVISIONS			
BY	DATE	DESCRIPTION	REV



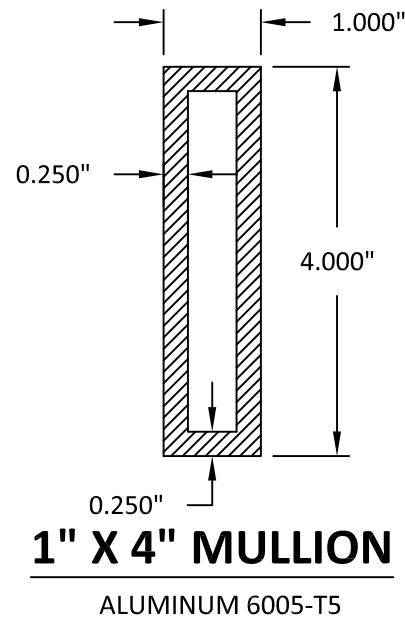
NORtheast BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH: (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS
VERTICAL AND HORIZONTAL CONFIGURATIONS
1" x 3 1/8" HEAVY MULLION

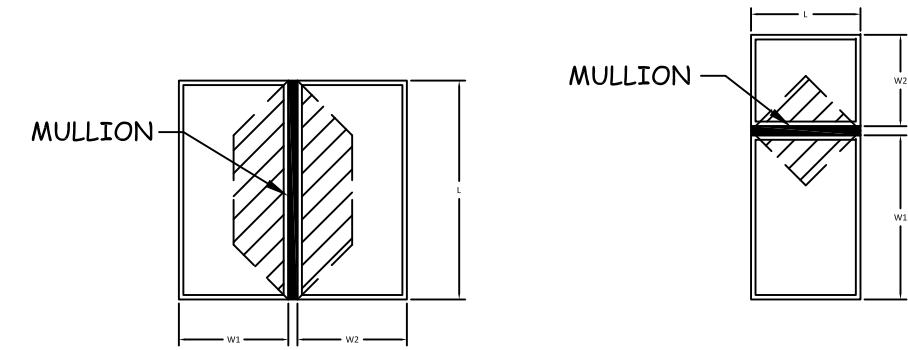
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY:
DRAWING NO: NBPO01	SCALE: N.T.S.	BUILDING DROPS, INC. 398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004 PH: (954)399-8478 FAX: (954)-744.4738 WEB: www.buildingdrops.com
SHEET: 7 OF 11	REV: -	

DESIGN PRESSURE LIMITS FOR MULLION: 1" x 4" - ONE-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
60	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
72	200.0	200.0	200.0	181.5	161.6	147.9	139.7	138.6	132.6
84	200.0	159.9	130.4	111.2	98.0	88.5	82.5	81.7	76.7
96	140.1	106.3	86.3	73.2	64.1	57.4	53.1	52.5	48.8
108	98.1	74.2	60.1	50.8	44.3	39.5	36.3	35.9	33.1

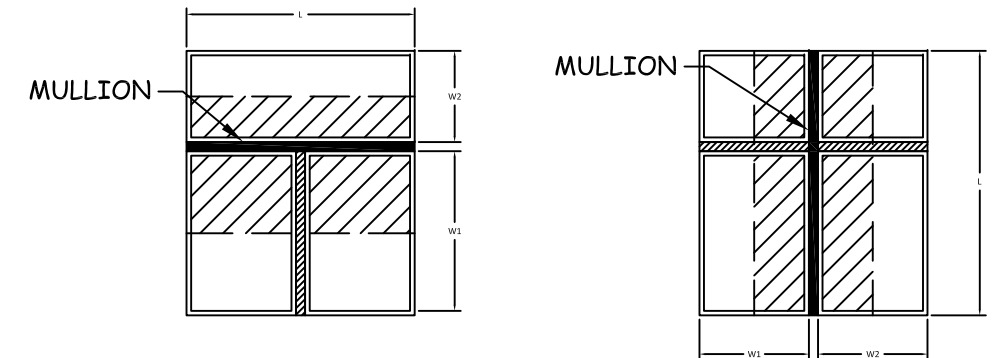
DESIGN PRESSURE LIMITS FOR MULLION: 1" x 4" - TWO-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	198.5
48	200.0	200.0	200.0	200.0	200.0	186.1	168.1	165.4	148.8
60	200.0	200.0	200.0	198.5	170.1	148.8	134.5	132.3	119.1
72	200.0	200.0	196.6	163.8	140.4	122.9	111.0	109.2	98.3
84	200.0	154.7	123.8	103.2	88.4	77.4	69.9	68.8	61.9
96	138.2	103.7	82.9	69.1	59.2	51.8	46.8	46.1	41.5
108	97.1	72.8	58.2	48.5	41.6	36.4	32.9	32.4	29.1



$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$

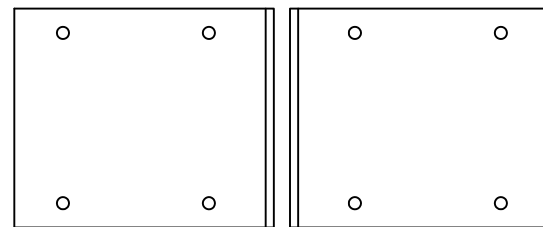


ONE-WAY MULLION DIAGRAMS



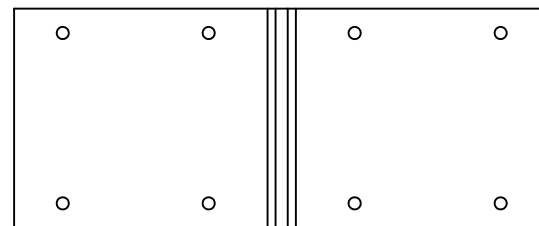
TWO-WAY MULLION DIAGRAMS

QUALIFIED ANCHOR CLIPS



2" X 4" X 3 3/8" L-CLIP

ALUMINUM 6063-T6
**MUST BE USED IN PAIRS



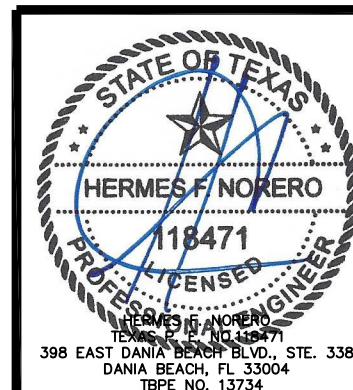
8 1/4" X 3 3/8" H-CLIP

ALUMINUM 6063-T6

NOTE: SEE SHEET 3 FOR SPECIFIC CLIP TYPES AND DIMENSIONS.

TABLE NOTES:

- SEE SHEET 1 FOR INSTRUCTIONS ON USING TABLES. SEE SHEETS 4 AND 5 FOR TYPICAL INSTALLATION METHODS & CLIP DETAILS.
- LINEAR INTERPOLATION BETWEEN LISTED WIDTHS AND SPANS IS ALLOWED.
- SEE THIS SHEET FOR SPECIFIC MULLION DIMENSIONS.
- SEE SHEET 3 FOR SPECIFIC CLIP DIMENSIONS.
- ANCHOR REQUIREMENTS:
 - WOOD: #14 WOOD SCREWS
 - CMU: 1/4" ITW TAPCONS
 - CONCRETE: 1/4" ITW TAPCONS
 - METAL: 1/4" SELF-DRILLING SCREWS (GRADE 5)
- INSTALLATION SUBSTRATES:
 - WOOD ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/2" & EDGE DISTANCE OF 1". WOOD SHALL BE MIN. S.G.=0.42.
 - HOLLOW CMU ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/4" & EDGE DISTANCE OF 2-1/2". HOLLOW CMU SHALL BE MEDIUM WEIGHT CONFORMING TO ASTM C 90.
 - CONCRETE ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-3/4" & EDGE DISTANCE OF 2-1/2". CONCRETE SHALL BE MIN. 4000 PSI.
 - METAL ANCHORS SHALL HAVE A MIN. (3) THREADS PENETRATION BEYOND METAL STRUCTURE. STEEL SHALL BE MIN. 18 GA. (0.045" THICK) 33 KSI YIELD. ALUMINUM SHALL BE MIN. 1/8" THICK ALUMINUM 6063-T5.



REVISIONS			
BY	DATE	DESCRIPTION	REV



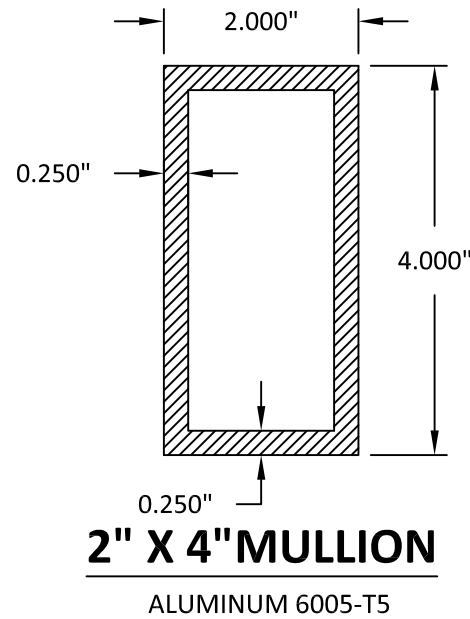
NORtheast BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH: (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS
VERTICAL AND HORIZONTAL CONFIGURATIONS
1" x 4" MULLION

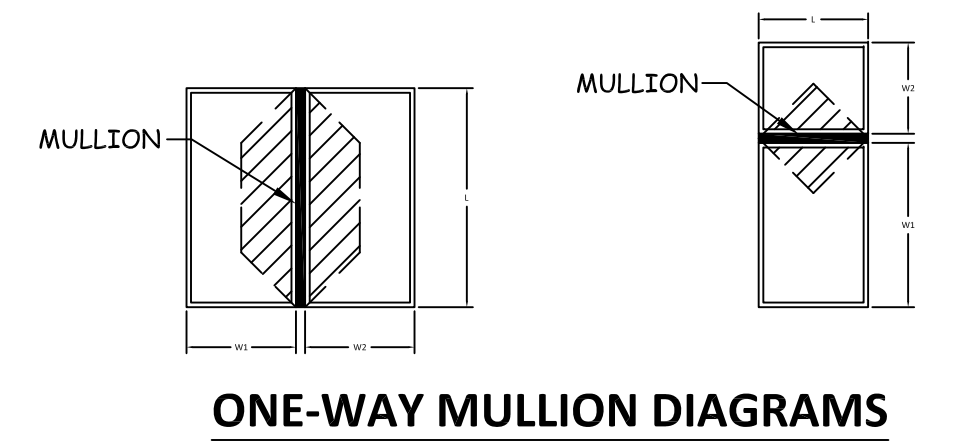
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.
DRAWING NO: NBP001	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004 PH: (954)399-8478 FAX: (954)-744.4738
SHEET: 8 OF 11	REV: -	WWW.BUILDINGDROPS.COM

DESIGN PRESSURE LIMITS FOR MULLION: 2" x 4" - ONE-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
60	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
72	200.0	200.0	200.0	200.0	200.0	197.0	188.0	186.8	180.1
84	200.0	200.0	195.1	166.4	146.6	132.5	123.5	122.2	114.8
96	200.0	159.0	129.1	109.5	95.9	85.9	79.5	78.5	73.0
108	146.7	111.1	89.9	76.0	66.2	59.1	54.4	53.7	49.5

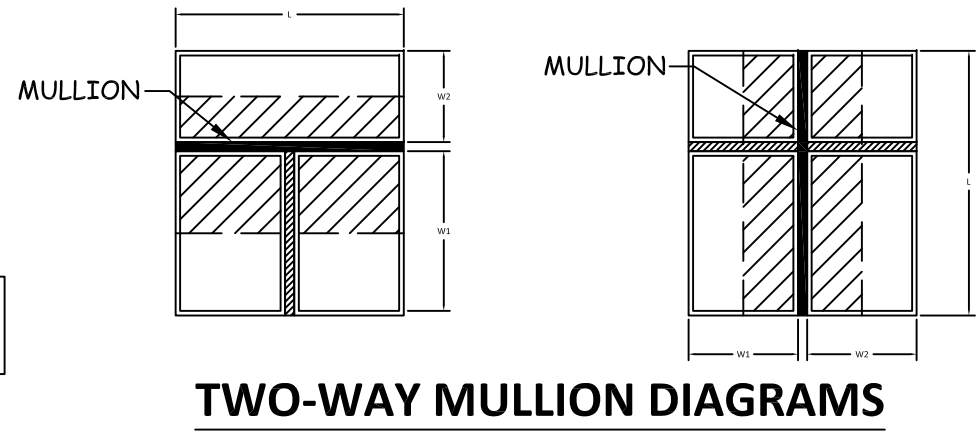
DESIGN PRESSURE LIMITS FOR MULLION: 2" x 4" - TWO-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	197.0	178.0	175.1	157.6
60	200.0	200.0	200.0	200.0	180.1	157.6	142.4	140.1	126.1
72	200.0	200.0	200.0	175.1	150.1	131.3	118.7	116.7	105.1
84	200.0	200.0	180.1	150.1	128.7	112.6	101.7	100.1	90.1
96	200.0	155.1	124.1	103.4	88.6	77.6	70.1	68.9	62.0
108	145.2	108.9	87.1	72.6	62.2	54.5	49.2	48.4	43.6



$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$

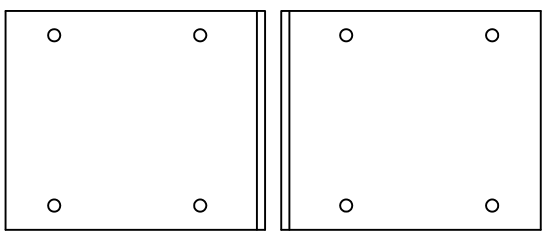


ONE-WAY MULLION DIAGRAMS



TWO-WAY MULLION DIAGRAMS

QUALIFIED ANCHOR CLIPS

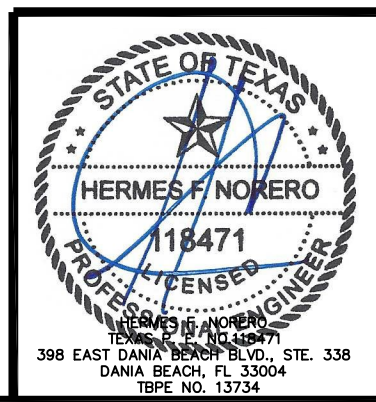


2" X 4" X 3 3/8" L-CLIP
ALUMINUM 6063-T6
**MUST BE USED IN PAIRS


NOTE: SEE SHEET 3 FOR SPECIFIC CLIP TYPES AND DIMENSIONS.

TABLE NOTES:

- SEE SHEET 1 FOR INSTRUCTIONS ON USING TABLES. SEE SHEETS 4 AND 5 FOR TYPICAL INSTALLATION METHODS & CLIP DETAILS.
- LINEAR INTERPOLATION BETWEEN LISTED WIDTHS AND SPANS IS ALLOWED.
- SEE THIS SHEET FOR SPECIFIC MULLION DIMENSIONS.
- SEE SHEET 3 FOR SPECIFIC CLIP DIMENSIONS.
- ANCHOR REQUIREMENTS:
 - WOOD: #14 WOOD SCREWS
 - CMU: 1/4" ITW TAPCONS
 - CONCRETE: 1/4" ITW TAPCONS
 - METAL: 1/4" SELF-DRILLING SCREWS (GRADE 5)
- INSTALLATION SUBSTRATES:
 - WOOD ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/2" & EDGE DISTANCE OF 1". WOOD SHALL BE MIN. S.G.=0.42.
 - HOLLOW CMU ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/4" & EDGE DISTANCE OF 2-1/2". HOLLOW CMU SHALL BE MEDIUM WEIGHT CONFORMING TO ASTM C 90.
 - CONCRETE ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-3/4" & EDGE DISTANCE OF 2-1/2". CONCRETE SHALL BE MIN. 4000 PSI.
 - METAL ANCHORS SHALL HAVE A MIN. (3) THREADS PENETRATION BEYOND METAL STRUCTURE. STEEL SHALL BE MIN. 18 GA. (0.045" THICK) 33 KSI YIELD. ALUMINUM SHALL BE MIN. 1/8" THICK ALUMINUM 6063-T5.



REVISIONS			
BY	DATE	DESCRIPTION	REV



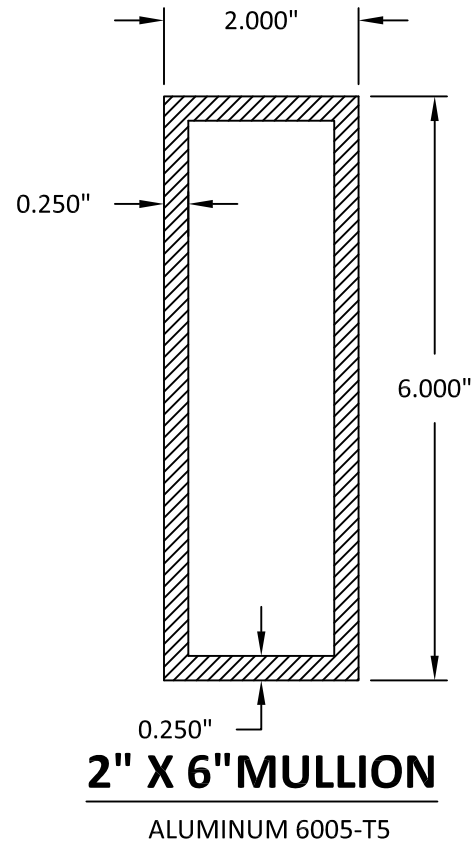
NORtheast BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH: (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS 2" x 4" MULLION

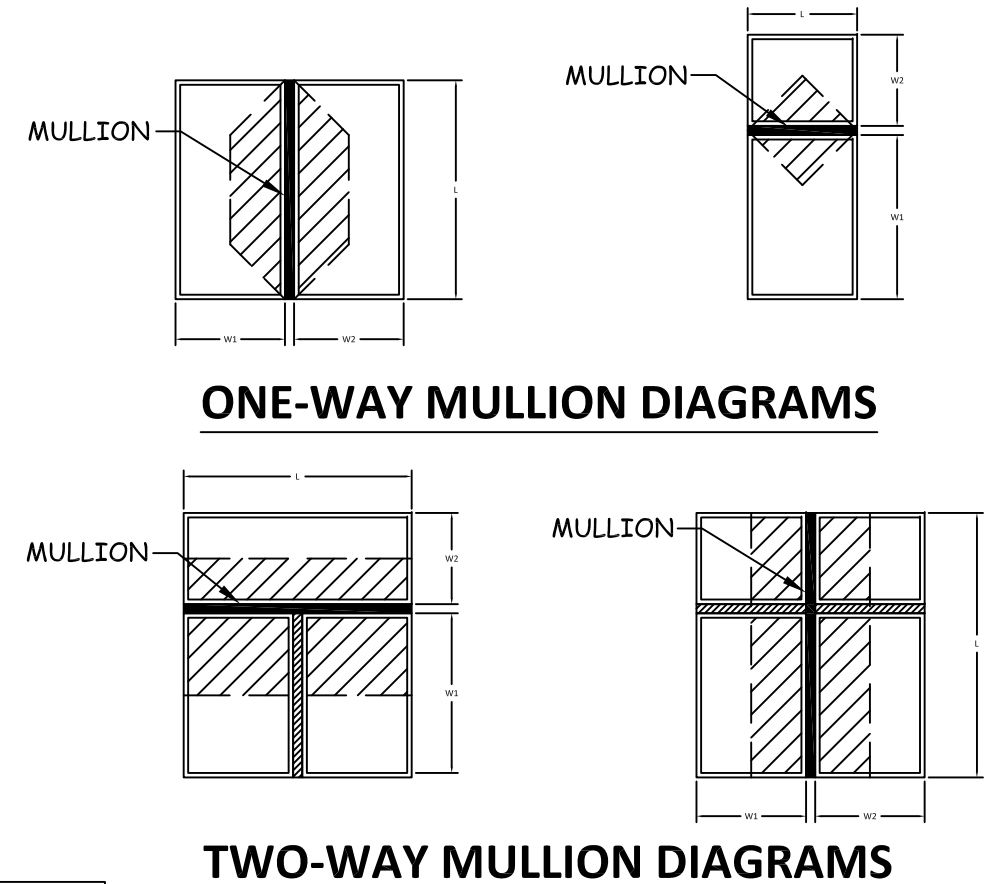
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.
DRAWING NO: NBPO01	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004
SHEET: 9 OF 11	REV: -	PH: (954)399-8478 FAX:(954)-744.4738
		WEB: www.buildingdrops.com

DESIGN PRESSURE LIMITS FOR MULLION: 2" x 6" - ONE-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
60	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
72	200.0	200.0	200.0	200.0	200.0	197.0	188.0	186.8	180.1
84	200.0	200.0	200.0	191.0	171.5	157.6	148.7	147.5	140.1
96	200.0	200.0	186.8	161.6	144.1	131.3	123.0	121.8	114.6
108	200.0	197.0	162.7	140.1	124.2	112.6	104.9	103.8	97.0

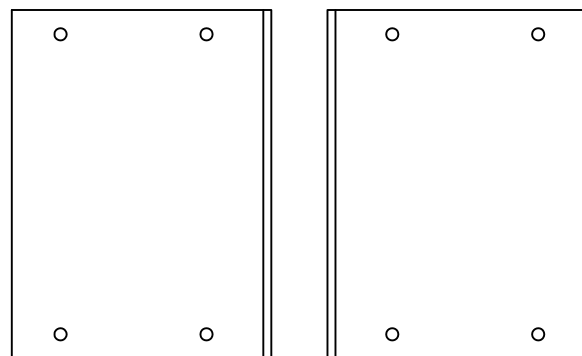
DESIGN PRESSURE LIMITS FOR MULLION: 2" x 6" - TWO-WAY MULLIONS									
SPAN 'L' (IN.)	TRIBUTARY WIDTH 'W' (IN.)								
	18	24	30	36	42	48	53.125	54	60
24	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
36	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
48	200.0	200.0	200.0	200.0	200.0	197.0	178.0	175.1	157.6
60	200.0	200.0	200.0	200.0	180.1	157.6	142.4	140.1	126.1
72	200.0	200.0	200.0	175.1	150.1	131.3	118.7	116.7	105.1
84	200.0	200.0	180.1	150.1	128.7	112.6	101.7	100.1	90.1
96	200.0	197.0	157.6	131.3	112.6	98.5	89.0	87.6	78.8
108	200.0	175.1	140.1	116.7	100.1	87.6	79.1	77.8	70.0



$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$



QUALIFIED ANCHOR CLIPS



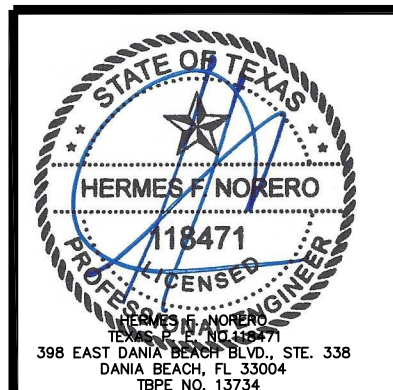
2" X 4" X 5 3/8" L-CLIP

ALUMINUM 6063-T6
**MUST BE USED IN PAIRS

NOTE: SEE SHEET 3 FOR SPECIFIC CLIP TYPES AND DIMENSIONS.

TABLE NOTES:

- SEE SHEET 1 FOR INSTRUCTIONS ON USING TABLES. SEE SHEETS 4 AND 5 FOR TYPICAL INSTALLATION METHODS & CLIP DETAILS.
- LINEAR INTERPOLATION BETWEEN LISTED WIDTHS AND SPANS IS ALLOWED.
- SEE THIS SHEET FOR SPECIFIC MULLION DIMENSIONS.
- SEE SHEET 3 FOR SPECIFIC CLIP DIMENSIONS.
- ANCHOR REQUIREMENTS:
 - WOOD: #14 WOOD SCREWS
 - CMU: 1/4" ITW TAPCONS
 - CONCRETE: 1/4" ITW TAPCONS
 - METAL: 1/4" SELF-DRILLING SCREWS (GRADE 5)
- INSTALLATION SUBSTRATES:
 - WOOD ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/2" & EDGE DISTANCE OF 1". WOOD SHALL BE MIN. S.G.=0.42.
 - HOLLOW CMU ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-1/4" & EDGE DISTANCE OF 2-1/2". HOLLOW CMU SHALL BE MEDIUM WEIGHT CONFORMING TO ASTM C 90.
 - CONCRETE ANCHORS SHALL HAVE A MIN. EMBEDMENT OF 1-3/4" & EDGE DISTANCE OF 2-1/2". CONCRETE SHALL BE MIN. 4000 PSI.
 - METAL ANCHORS SHALL HAVE A MIN. (3) THREADS PENETRATION BEYOND METAL STRUCTURE. STEEL SHALL BE MIN. 18 GA. (0.045" THICK) 33 KSI YIELD. ALUMINUM SHALL BE MIN. 1/8" THICK ALUMINUM 6063-T5.



REVISIONS			
BY	DATE	DESCRIPTION	REV

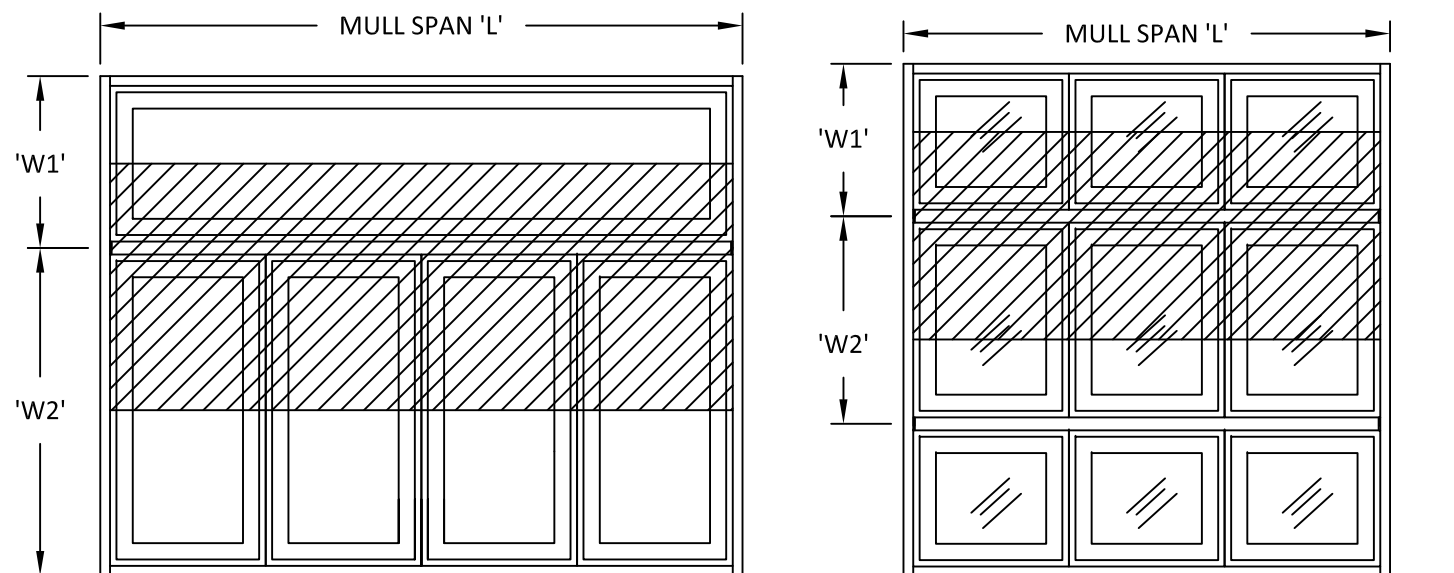


NORtheast BUILDING PRODUCTS
4280 ARAMINGO AVE.
PHILADELPHIA, PA 19124
PH: (215) 535-7110
HTTP://WWW.NBPWINDOWS.COM/

TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS 2" x 6" MULLION

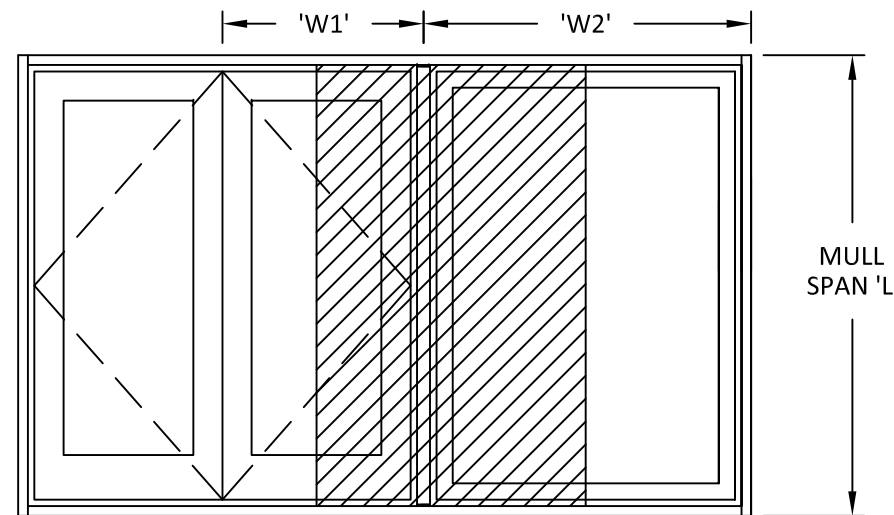
DATE: 02/05/13	DRAWN BY: TJH	PREPARED BY: BUILDING DROPS, INC.
DRAWING NO: NBPO01	SCALE: N.T.S.	398 E. DANIA BEACH BLVD., STE. 338 DANIA BEACH, FL 33004
SHEET: 10 OF 11	REV: -	PH: (954)399-8478 FAX:(954)-744.4738
		WEB: www.buildingdrops.com

EXAMPLES OF TWO-WAY MULLION ASSEMBLIES



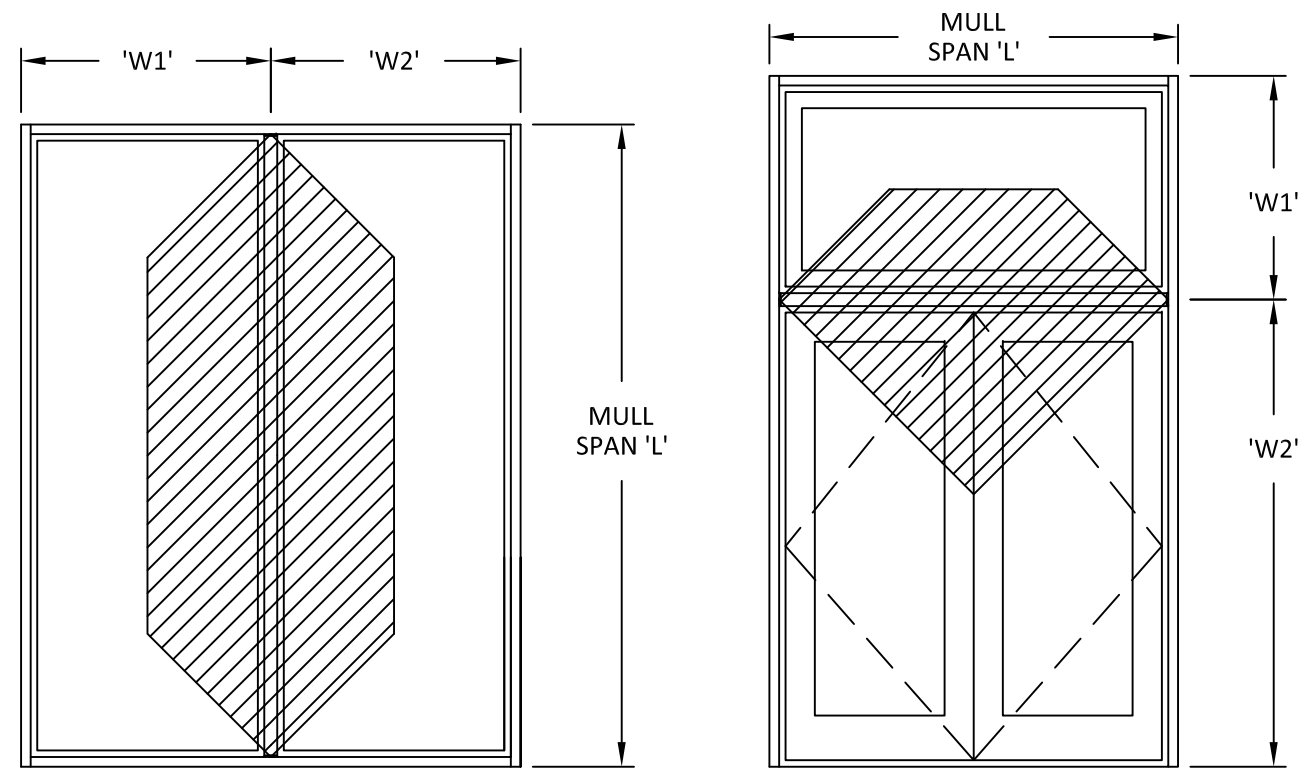
HORIZONTAL MULLION TRANSOM OVER MULTIPLE UNITS

HORIZONTAL MULLION MULTIPLE UNIT ASSEMBLY



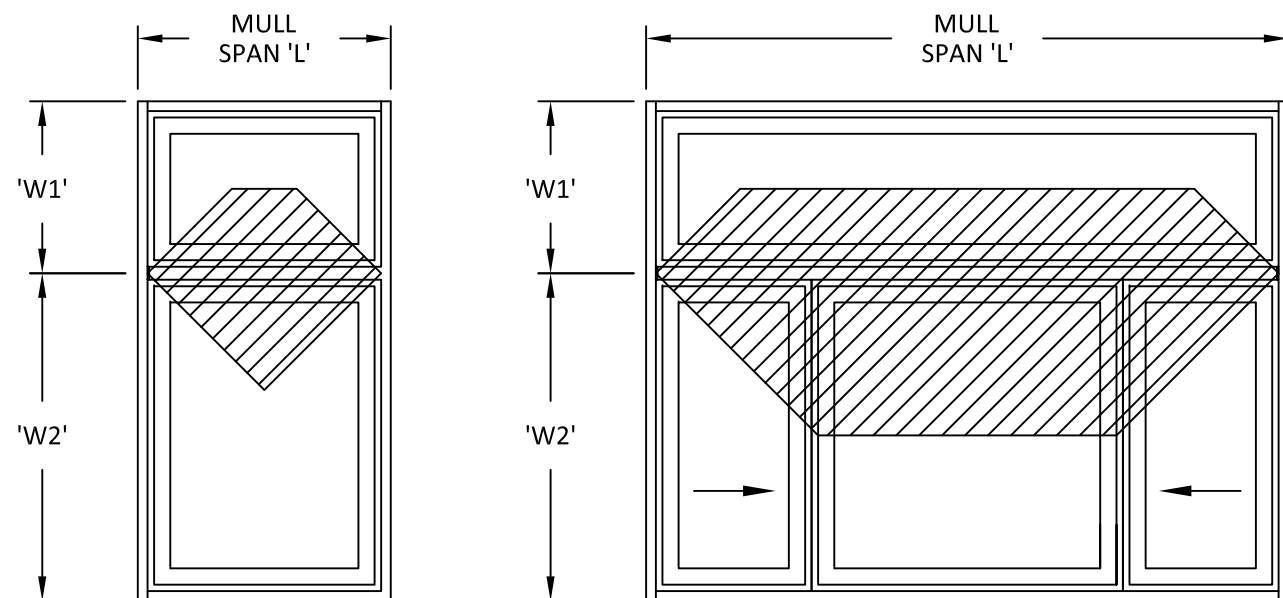
VERTICAL MULLION HINGED DOOR W/ SIDELITE

EXAMPLES OF ONE-WAY MULLION ASSEMBLIES



VERTICAL MULLION

HORIZONTAL MULLION



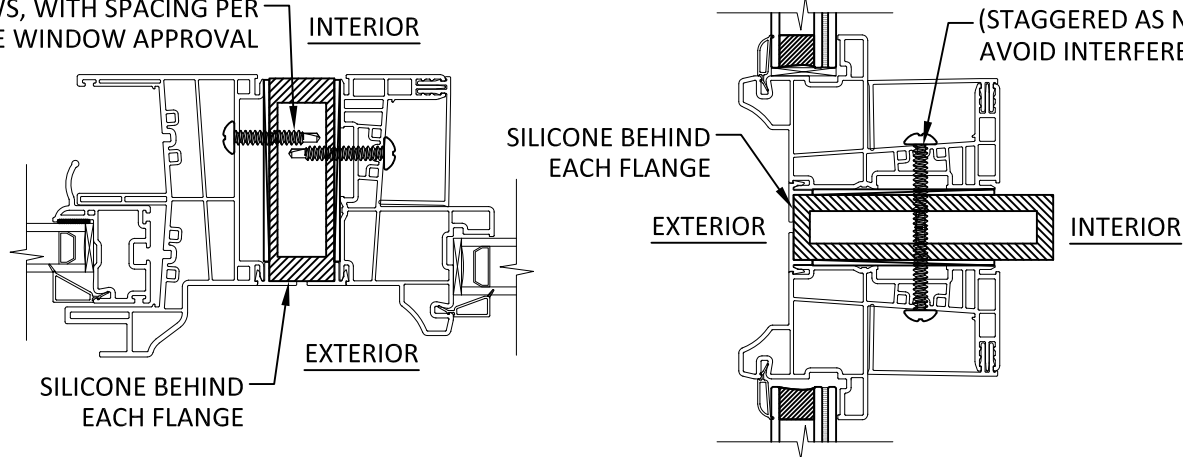
HORIZONTAL MULLION

HORIZONTAL MULLION

TYPICAL MULLED SECTION DETAILS

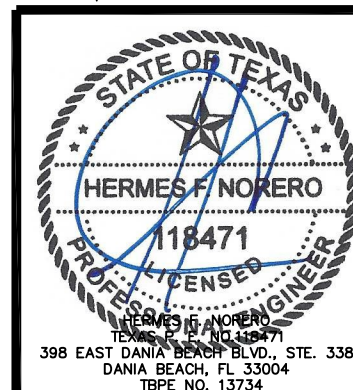
#10 HILTI KWIK-FLEX OR ITW TEK SCREWS, WITH SPACING PER SEPARATE WINDOW APPROVAL

#10 HILTI KWIK-FLEX OR ITW TEK SCREWS, WITH SPACING PER SEPARATE WINDOW APPROVAL (STAGGERED AS NEEDED TO AVOID INTERFERENCE)



NOTES:

1. WINDOWS AND DOORS SHALL HAVE SEPARATE TDI APPROVAL.
2. WINDOWS AND DOORS SHALL BE ANCHORED TO ALUMINUM MULLION PER THE ANCHORING REQUIREMENTS OF THE SEPARATE APPROVAL, FASTENERS TO BE #10 HILTI KWIK-FLEX OR ITW TEK SCREWS, WITH CORNER AND ON CENTER SPACING AS REQUIRED BY SEPARATE APPROVAL.



REVISIONS			
BY	DATE	DESCRIPTION	REV



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TITLE: HVHZ CLIPPED ALUMINUM TUBE MULLIONS VERTICAL AND HORIZONTAL CONFIGURATIONS MULLION ASSEMBLY AND LOAD EXAMPLES

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