

# ANDERSEN CORPORATION

## STRUCTURAL STEEL TUBE CLIPPED MULLION



100 FOURTH AVE. NORTH  
BAYPORT, MN 55003-1096  
PH: (651) 264-5150 FX: (651) 264-5485

### INSTALLATION NOTES:

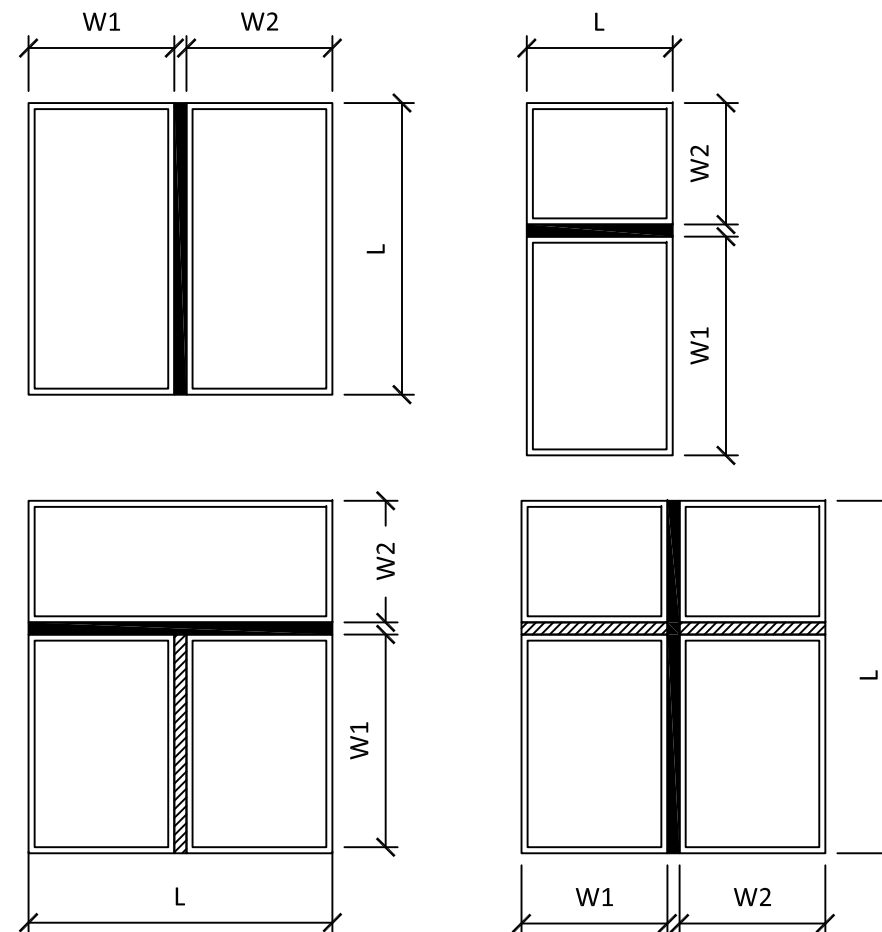
- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN, UNLESS OTHERWISE STATED.
- THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
- INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF  $\pm 1/2$  INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE SHEATHING, & WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
- INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
- INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
  - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.
  - CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
  - 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.
  - HOLLOW BLOCK CMU - UNIT STRENGTH CONFORMS TO ASTM C-90 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
  - STEEL - MINIMUM WALL THICKNESS OF 54 MILS (16 GA.) WHEN THROUGH GUSSET INSTALLATION.
  - ALUMINUM - 1/8" MINIMUM THICKNESS (6063-T5)

### MULLING INSTRUCTIONS:

- STEP 1: ESTABLISH MULL ASSEMBLY FRAME TYPES AND MULL CONFIGURATION.
- STEP 2: VERIFY MULL ASSEMBLY CONSTRUCTION FROM SHEETS 2-3.
- STEP 3: DETERMINE ALLOWABLE LOAD OF MULL ASSEMBLY FROM APPLICABLE LOAD TABLE, REFER TO SHEETS 4-9.
- STEP 4: INSTALL MULLION BASED ON APPLICABLE SPECIFICATIONS SHOWN ON SHEET 3.

### GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE 6TH EDITION (2017) FLORIDA BUILDING CODE (FBC) EXCLUDING HVHZ. ALL PRODUCTS UNDER THE SCOPE OF THIS DOCUMENT HAVE BEEN EVALUATED ACCORDING TO THE FOLLOWING:
  - 6TH EDITION FLORIDA BUILDING CODE SECTION 1709.8
- ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY, 2X AND METAL STUD FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- 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.
- SEE SHEET 3 FOR ANCHOR INFORMATION ON EDGE DISTANCE AND EMBEDMENT & OTHER INSTALLATION REQUIREMENTS.
- 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. IN HVHZ AREAS, ONE TIME PRODUCT APPROVAL TO BE OBTAINED FROM MIAMI-DADE PERA OR AHJ.
- APPROVED IMPACT PROTECTIVE SYSTEM **IS NOT REQUIRED** TO PROTECT THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE IN WIND ZONE 3 OR LESS.
- APPROVED IMPACT PROTECTIVE SYSTEM **IS REQUIRED** TO PROTECT THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE IN WIND ZONE 4
- MULLION MATERIAL: *ASTM A36 STEEL (MIN. 36KSI)*.
- IN ACCORDANCE WITH CURRENT FBC, WOOD COMPONENTS SHALL HAVE BEEN PRESERVATIVE TREATED OR SHALL BE OF A DURABLE SPECIES PER CH24.
- IN ACCORDANCE WITH THE CURRENT FBC, DISSIMILAR METALS INCLUDING FASTENERS THAT MAY COME INTO CONTACT WITH ALUMINUM UNIT FRAMING SHALL BE PROTECTED PER CH20.
- DESIGNATIONS "X" AND "O" STAND FOR THE FOLLOWING:  
X: OPERABLE PANEL  
O: FIXED PANEL
- CUSTOM SIZES AVAILABLE UPON REQUEST. CUSTOM DESIGN PRESSURE WILL BE ASSIGNED EQUAL TO NEXT LARGER STANDARD SIZE.
- MULL ASSEMBLIES ARE QUALIFIED FOR TWO OR MORE UNITS PER OPENING IN THE FOLLOWING CONFIGURATIONS:
  - "ONE WAY" - RIBBON OR STACKED MULLIONS
  - "TWO WAY" - 'X' OR 'T' MULLIONS



### TYPICAL ELEVATIONS

### TABLE OF CONTENTS

SHEET	REVISION	SHEET DESCRIPTION
1		GENERAL & INSTALLATION NOTES
2		MULLIONS AND COMPONENTS
3		VERTICAL SECTIONS AND INSTALLATION DETAILS
4		1" x 3" x 1/8" STEEL TUBE MULLION ONE WAY LOAD TABLE
5		1" x 3" x 1/8" STEEL TUBE MULLION TWO WAY LOAD TABLE
6		2" x 4" x 1/8" STEEL TUBE MULLION ONE WAY LOAD TABLE
7		2" x 4" x 1/8" STEEL TUBE MULLION TWO WAY LOAD TABLE
8		2" x 4" x 1/4" STEEL TUBE MULLION ONE WAY LOAD TABLE
9		2" x 4" x 1/4" STEEL TUBE MULLION TWO WAY LOAD TABLE

MISSILE IMPACT RATING
WZ3 LARGE MISSILE IMPACT RATED

TITLE: STEEL TUBE CLIPPED MULLION

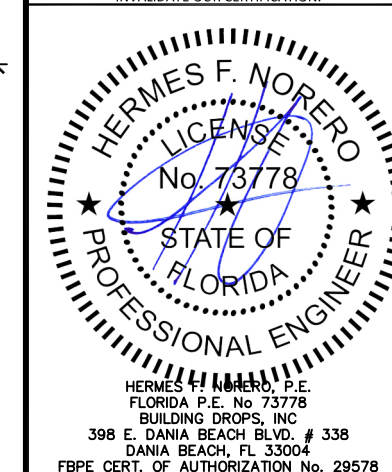
GENERAL AND INSTALLATION NOTES

PREPARED BY:

**BUILDING DROPS, INC.**  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954) 399-8478  
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WEB: www.buildingdrops.com

REMARKS	BY	DATE
6TH FBC CODE CHANGE	RV	10/17

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FL #:	<b>FL24231</b>
DATE:	<b>10.05.17</b>
DWG. BY:	<b>RV</b>
CHK. BY:	<b>HFN</b>
SCALE:	<b>NTS</b>
DWG. #:	<b>AWD196</b>
SHEET	<b>1</b>
	<b>OF 9</b>



100 FOURTH AVE. NORTH  
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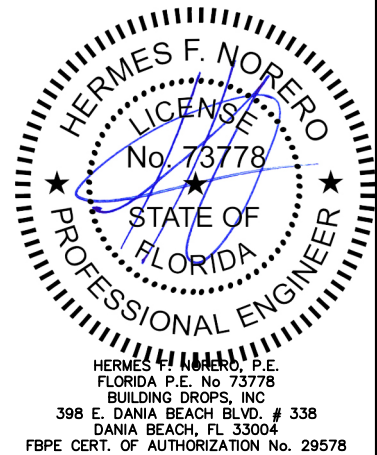
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MULLIONS AND COMPONENTS

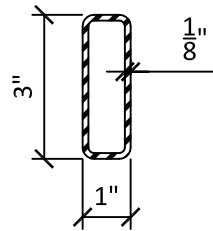
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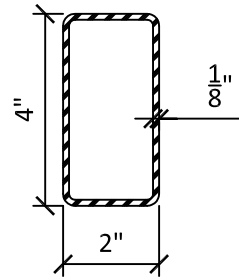
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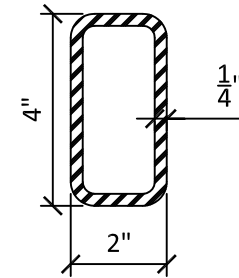
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SHEET	<b>2</b>



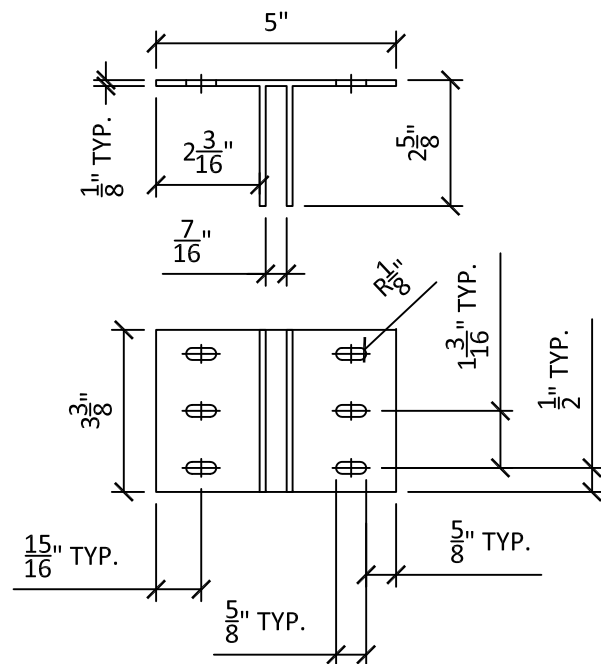
**1"x3"x1/8" STEEL TUBE MULLION**  
ASTM A36 STEEL



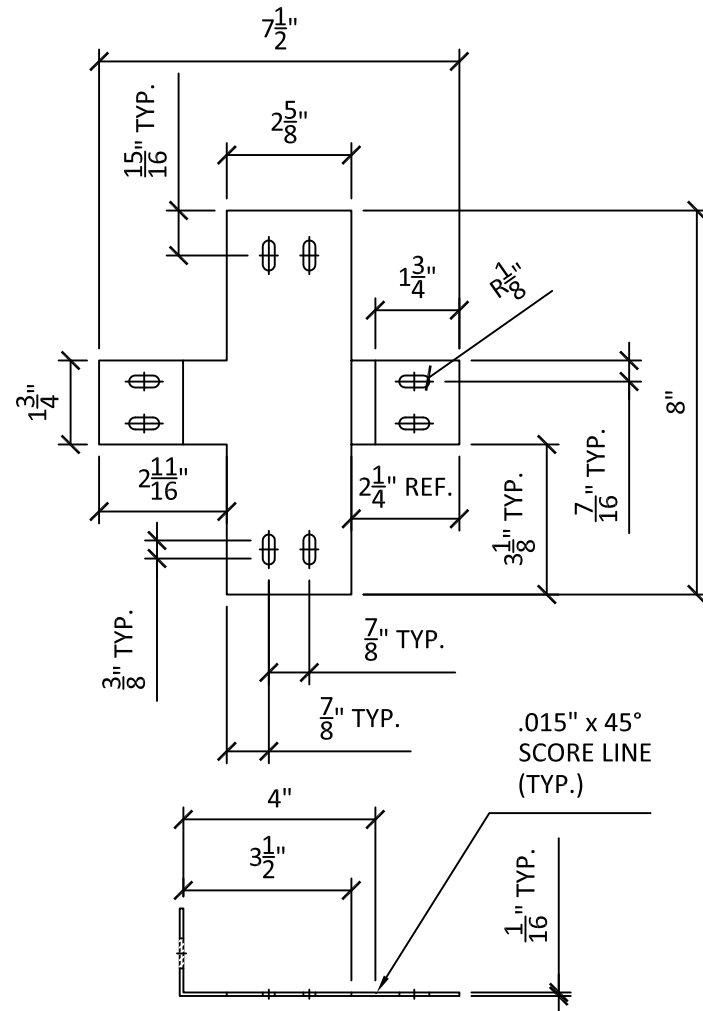
**2"x4"x1/8" STEEL TUBE MULLION**  
ASTM A36 STEEL



**2"x4"x1/4" STEEL TUBE MULLION**  
ASTM A36 STEEL



**MULLION CLIP - F1**  
ALUMINUM (6063-T6)



**MULLION CLIP - B1**  
ALUMINUM (6063-T6)

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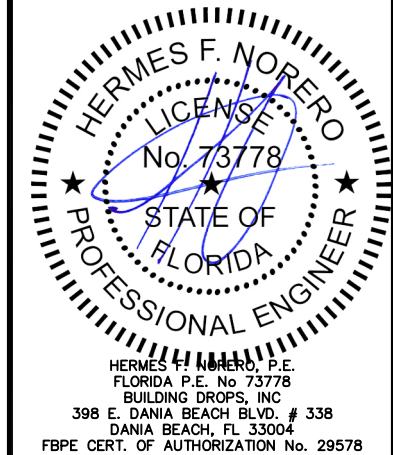
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**TITLE:** STEEL TUBE CLIPPED MULLION  
**VERTICAL SECTIONS AND INSTALLATION DETAILS**

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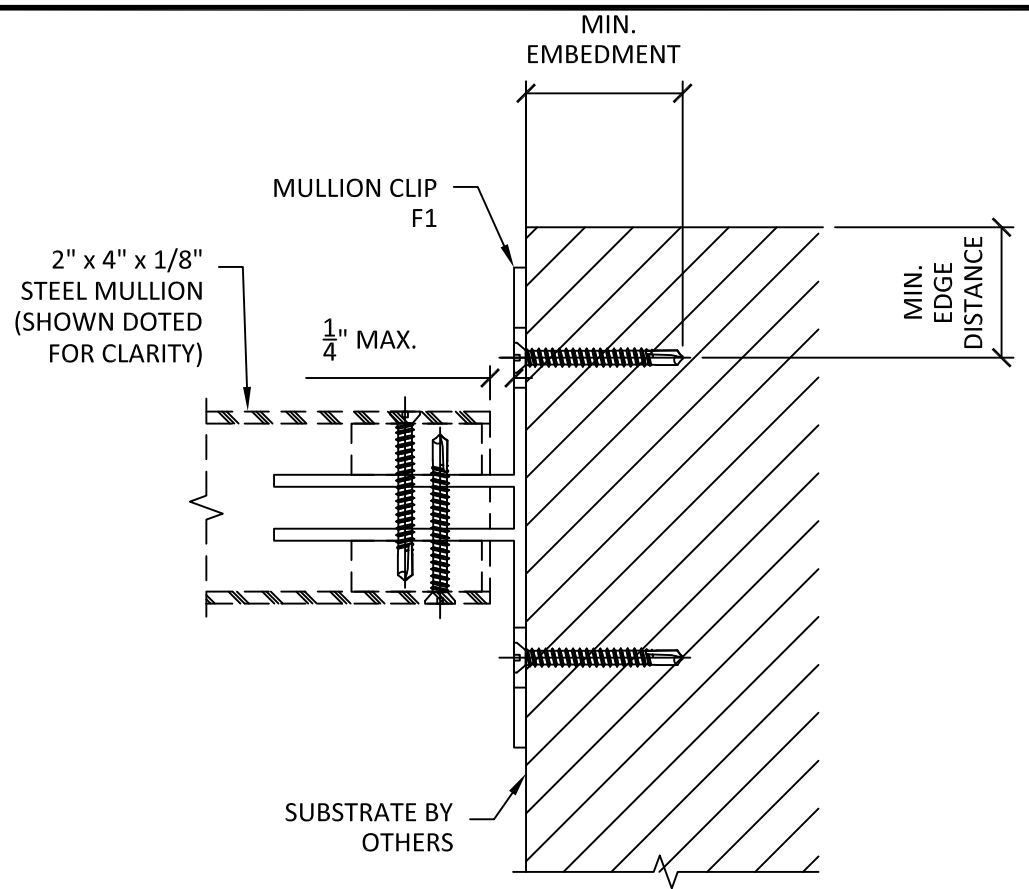
SCALE: **NTS**

DWG. #: **AWD196**

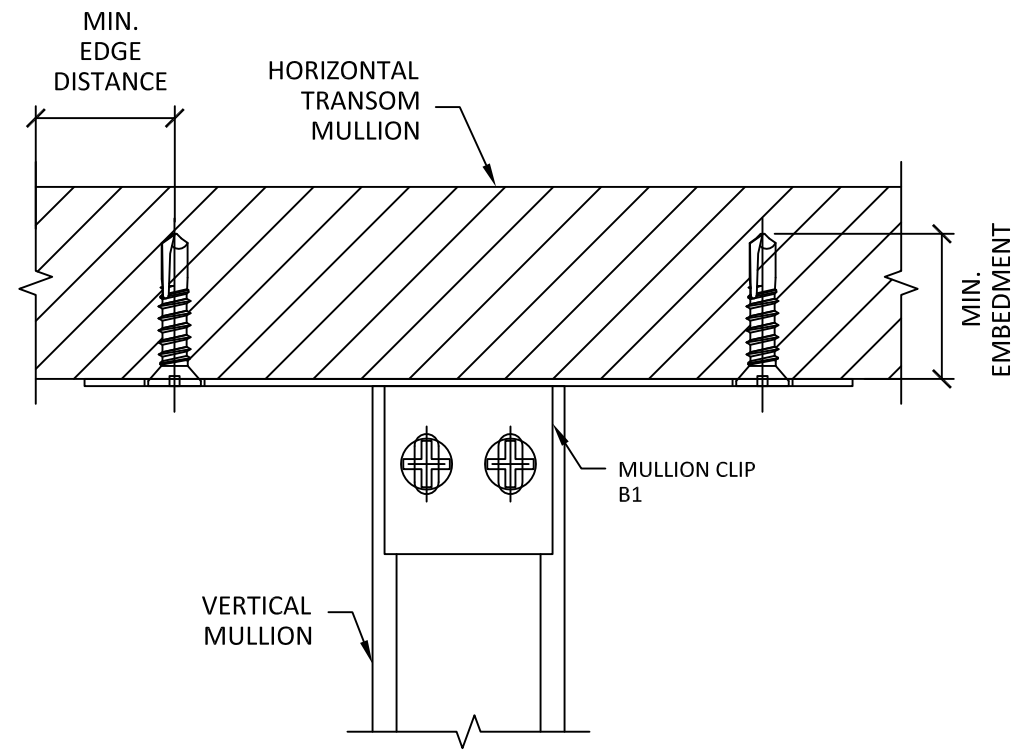
SHEET

**3**

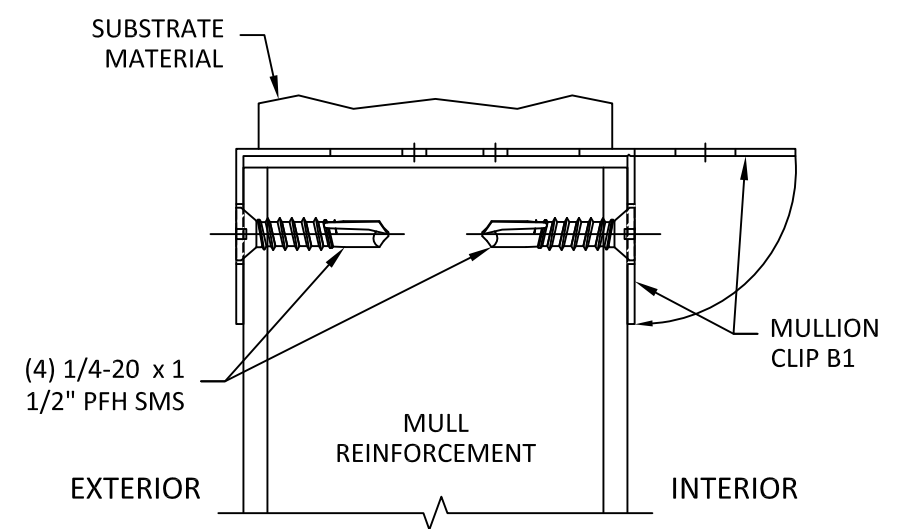
OF 9



**A**  
**3**      **VERTICAL SECTION**  
CLIP F1 INSTALLATION



**B**  
**3**      **INSTALLATION DETAIL**  
CLIP B1 INSTALLATION



**INSTALLATION PROCEDURE**  
2"x4x1/4" & 1"x3"x1/8"  
SIMILAR

ANCHOR SCHEDULE FOR F1 & B1 CLIPS				
SUBSTRATE	SCREW QTY PER LOCATION	ANCHOR TYPE	EMBEDMENT (IN.)	EDGE DISTANCE (IN.)
WOOD MIN. S.G.= 0.55	6	#10 x 1 1/2" SELF DRILLING SCREW	1.5	0.75
CONCRETE MIN. f'c =3000PSI	6	1/4" ITW TAPCON SCREWS	1.0	2.50
MASONRY CMU BLOCK MIN. f'c =2000PSI	6	1/4" ITW TAPCON SCREWS	1.0	2.50
STEEL MIN. 18 GAUGE	6	#10 x 1 1/2" SELF DRILLING SCREW	3 THREADS MIN PENETRATION	0.50
STEEL MULLION	4	1/4-20 x 1 1/2" PFH SMS	3 THREADS MIN PENETRATION	0.50

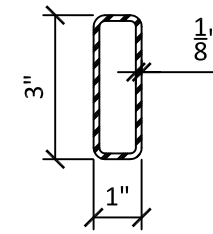
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**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF) 1" X 3" X 1/8" One Way:**

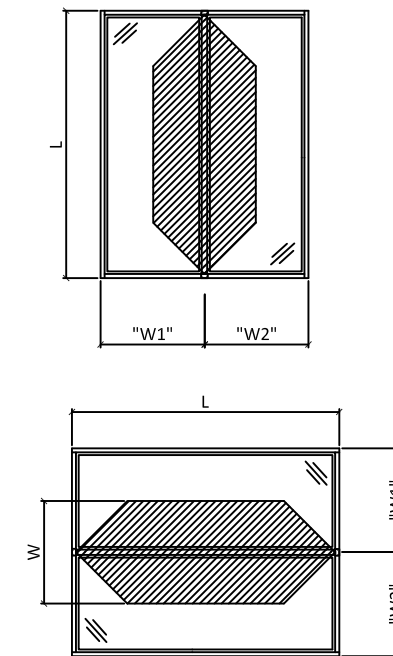
L - Mull Length (in)	W - Tributary Width (in)												
	24.0	28.0	32.0	36.0	40.0	44.0	48.0	52.0	56.0	60.0	64.0	68.0	72.0
20.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
28.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
32.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
40.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
44.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
48.0	150.0	150.0	150.0	149.3	144.0	141.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
52.0	150.0	150.0	140.0	131.8	126.0	122.2	120.0	119.3	119.3	119.3	119.3	119.3	119.3
56.0	150.0	137.1	126.0	117.9	112.0	107.8	105.0	103.4	102.9	102.9	102.9	102.9	102.9
60.0	140.0	125.2	114.5	106.7	100.8	96.5	93.3	91.2	90.0	89.6	89.6	89.6	89.6
64.0	129.2	115.2	105.0	97.4	91.6	87.3	84.0	81.6	80.0	79.1	78.8	78.8	78.8
68.0	120.0	106.7	96.9	89.6	84.0	79.7	75.8	72.5	70.0	68.3	67.3	67.0	67.0
72.0	112.0	99.3	90.0	82.0	75.4	70.2	66.2	63.0	60.5	58.7	57.4	56.7	56.4
76.0	104.7	90.9	80.7	72.9	66.9	62.1	58.4	55.3	53.0	51.1	49.7	48.7	48.2
80.0	94.2	81.7	72.4	65.3	59.8	55.4	51.9	49.1	46.8	45.0	43.5	42.5	41.7
84.0	85.2	73.8	65.3	58.8	53.8	49.7	46.5	43.8	41.7	39.9	38.5	37.4	36.6
88.0	77.5	67.0	59.2	53.3	48.6	44.9	41.9	39.4	37.4	35.7	34.4	33.3	32.4
92.0	70.7	61.1	54.0	48.5	44.2	40.8	38.0	35.7	33.8	32.2	30.9	29.8	28.9
96.0	64.8	56.0	49.4	44.4	40.4	37.2	34.6	32.4	30.7	29.2	27.9	26.9	26.0
100.0	59.6	51.5	45.4	40.7	37.1	34.1	31.7	29.7	28.0	26.6	25.4	24.4	23.6
104.0	55.1	47.5	41.9	37.5	34.1	31.4	29.1	27.2	25.6	24.3	23.2	22.2	21.4
108.0	51.0	44.0	38.7	34.7	31.5	28.9	26.8	25.1	23.6	22.3	21.3	20.4	19.6
112.0	46.3	40.0	35.3	31.7	28.8	26.4	24.5	23.0	21.6	20.5	19.5	18.7	18.0
116.0	41.7	35.9	31.7	28.4	25.8	23.7	22.0	20.5	19.3	18.3	17.4	16.7	16.0
120.0	37.6	32.4	28.6	25.6	23.2	21.3	19.8	18.4	17.3	16.4	15.6	-	-



**NOTE:**

- 1) MULLION CHART APPLIES TO 1" X 3" X 1/8" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY, STACK OR RIBBON, CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS:
  - F1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
  - B1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
- 6) TRIBUTARY WIDTH =  $W = (W1+W2)/2$
- 7) REFER TO SHEET 3 FOR INSTALLATION DETAILS.
- 8) WHEN WINDOWS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.

$$\frac{W1 + W2}{2} = W$$



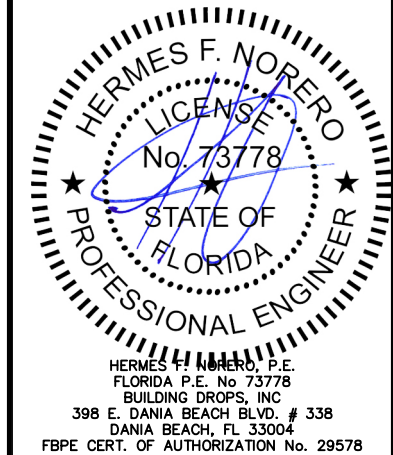
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PH: (651) 264-5150 FX: (651) 264-5485

**TITLE:** STEEL TUBE CLIPPED MULLION  
1" x 3" x 1/8" STEEL TUBE MULLION ONE WAY LOAD TABLE

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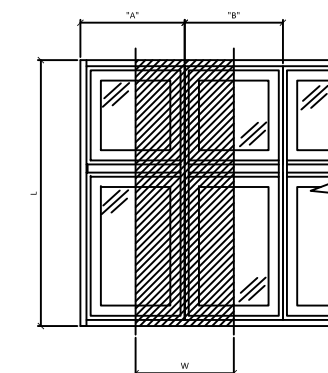
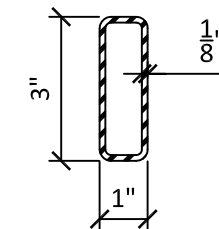
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DWG. #: **AWD196**

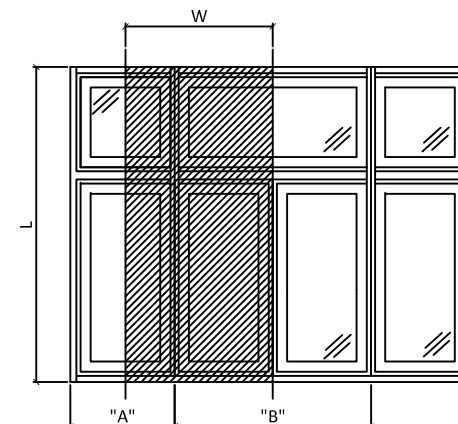
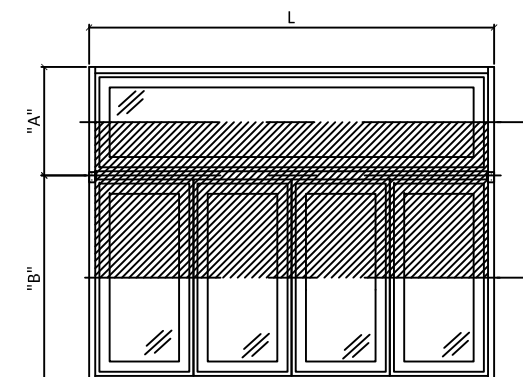
SHEET **4** OF 9

**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF): STRUCTURAL MULLIONS (TWO-WAY CONFIGURATIONS) FOR USE OF 1" X 3" X 1/8"**

L - Mull Length (in)	W - Tributary Width (in)												
	24.0	28.0	32.0	36.0	40.0	44.0	48.0	52.0	56.0	60.0	64.0	68.0	72.0
20.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	144.0	134.4	126.0	118.6	112.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	140.0	129.2	120.0	112.0	105.0	98.8	93.3
28.0	150.0	150.0	150.0	150.0	144.0	130.9	120.0	110.8	102.9	96.0	90.0	84.7	80.0
32.0	150.0	150.0	150.0	140.0	126.0	114.5	105.0	96.9	90.0	84.0	78.8	74.1	70.0
36.0	150.0	150.0	140.0	124.4	112.0	101.8	93.3	86.2	80.0	74.7	70.0	65.9	62.2
40.0	150.0	144.0	126.0	112.0	100.8	91.6	84.0	77.5	72.0	67.2	63.0	59.3	56.0
44.0	150.0	130.9	114.5	101.8	91.6	83.3	76.4	70.5	65.5	61.1	57.3	53.9	50.9
48.0	140.0	120.0	105.0	93.3	84.0	76.4	70.0	64.6	60.0	56.0	52.5	49.4	46.7
52.0	129.2	110.8	96.9	86.2	77.5	70.5	64.6	59.6	55.4	51.7	48.5	45.6	43.1
56.0	120.0	102.9	90.0	80.0	72.0	65.5	60.0	55.4	51.4	48.0	45.0	42.4	40.0
60.0	112.0	96.0	84.0	74.7	67.2	61.1	56.0	51.7	48.0	44.8	42.0	39.5	37.3
64.0	105.0	90.0	78.8	70.0	63.0	57.3	52.5	48.5	45.0	42.0	39.4	37.1	35.0
68.0	98.8	84.7	74.1	65.9	59.3	53.9	49.4	45.6	42.4	39.5	37.1	34.9	32.9
72.0	93.3	80.0	70.0	62.2	56.0	50.9	46.7	43.1	40.0	37.3	35.0	32.9	31.1
76.0	88.4	75.8	66.3	58.9	53.1	48.2	44.2	40.8	37.9	35.4	33.2	31.2	29.5
80.0	84.0	72.0	63.0	56.0	50.4	45.8	42.0	38.8	36.0	33.6	31.5	29.6	28.0
84.0	80.0	68.6	60.0	53.3	48.0	43.6	40.0	36.9	34.3	32.0	30.0	28.2	26.7
88.0	75.5	64.7	56.6	50.3	45.3	41.2	37.8	34.9	32.4	30.2	28.3	26.7	25.2
92.0	69.1	59.2	51.8	46.1	41.5	37.7	34.5	31.9	29.6	27.6	25.9	24.4	23.0
96.0	63.4	54.4	47.6	42.3	38.1	34.6	31.7	29.3	27.2	25.4	23.8	22.4	21.1
100.0	58.5	50.1	43.9	39.0	35.1	31.9	29.2	27.0	25.1	23.4	21.9	20.6	19.5
104.0	54.1	46.3	40.5	36.0	32.4	29.5	27.0	25.0	23.2	21.6	20.3	19.1	18.0
108.0	50.1	43.0	37.6	33.4	30.1	27.3	25.1	23.1	21.5	20.1	18.8	17.7	16.7
112.0	45.5	39.0	34.1	30.3	27.3	24.8	22.8	21.0	19.5	18.2	17.1	16.1	15.2
116.0	41.0	35.1	30.7	27.3	24.6	22.3	20.5	18.9	17.6	16.4	15.4	14.5	13.7
120.0	37.0	31.7	27.8	24.7	22.2	20.2	18.5	17.1	15.9	14.8	13.9	13.1	12.3



$$\frac{W1 + W2}{2} = W$$



**NOTE:**

- 1) MULLION CHART APPLIES TO 1" X 3" X 1/8" MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY, STACK OR RIBBON, CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS:
  - F1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
  - B1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
- 6) TRIBUTARY WIDTH =  $W = (W1+W2)/2$
- 7) REFER TO SHEET 3 FOR INSTALLATION DETAILS.
- 8) WHEN WINDOWS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.

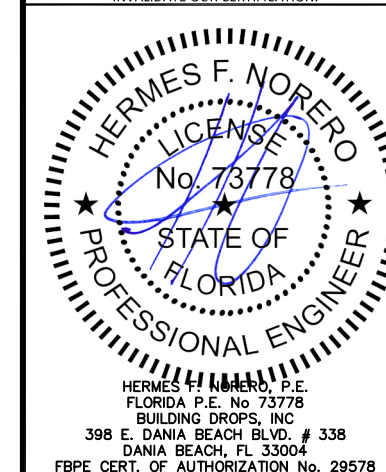


100 FOURTH AVE. NORTH  
BAYPORT, MN 55003-1096  
PH: (651) 264-5150 FX: (651) 264-5485

**TITLE:** STEEL TUBE CLIPPED MULLION  
1" x 3" x 1/8" STEEL TUBE MULLION TWO WAY LOAD TABLE  
**PREPARED BY:** BUILDING DROPS, INC.  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954) 399-8478  
FAX: (954) 744-4738  
WEB: www.buildingdrops.com

REMARKS	BY	DATE
6TH FBC CODE CHANGE	RV	10/17

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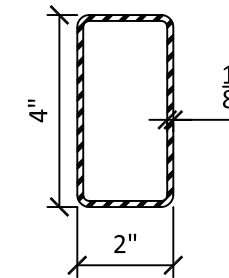


FL #:  
**FL24231**  
DATE: 10.05.17  
DWG. BY: RV  
CHK. BY: HFN  
SCALE: NTS  
DWG. #: AWD196  
SHEET

s:\projects\andersen\windows\cc-17-0737\bc-2017\code change - andersen, km1, weiland, eagle, silverline\dwg\196-steel tube clipped mullion\awd196 - fl15267-steel tube clipped mullion.dwg 10/24/2017 1:49 PM

**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF) 2" X 4" X 1/8" One Way:**

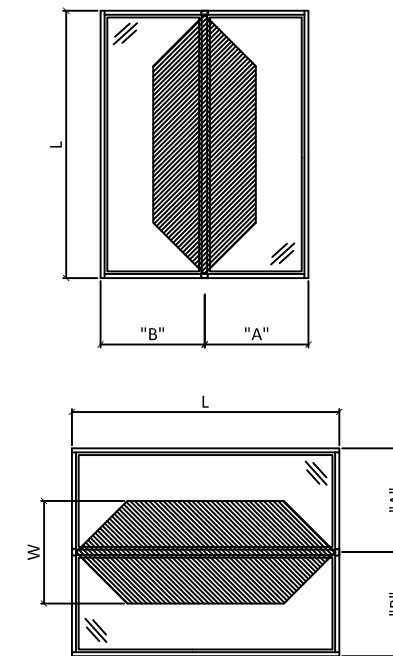
L - Mull Length (in)	W - Tributary Width (in)												
	24.0	29.0	35.0	39.0	45.0	49.0	54.0	59.0	64.0	69.0	74.0	79.0	84.0
20.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
28.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
32.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
40.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
44.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
48.0	150.0	150.0	144.6	138.9	134.5	134.0	134.0	134.0	134.0	134.0	134.0	134.0	134.0
52.0	150.0	141.9	127.8	121.8	116.3	114.6	114.2	114.2	114.2	114.2	114.2	114.2	114.2
56.0	146.2	128.3	114.6	108.4	102.4	100.0	98.6	98.4	98.4	98.4	98.4	98.4	98.4
60.0	134.0	117.0	103.8	97.7	91.5	88.7	86.6	85.8	85.8	85.8	85.8	85.8	85.8
64.0	123.7	107.5	94.8	88.9	82.7	79.8	77.3	75.8	75.4	75.4	75.4	75.4	75.4
68.0	114.9	99.5	87.3	81.6	75.4	72.4	69.7	68.0	67.0	66.8	66.8	66.8	66.8
72.0	107.2	92.6	80.9	75.4	69.3	66.3	63.5	61.6	60.3	59.7	59.6	59.6	59.6
76.0	100.5	86.6	75.4	70.1	64.1	61.2	58.3	56.3	54.8	53.9	53.5	53.5	53.5
80.0	94.6	81.3	70.6	65.4	59.7	56.8	53.9	51.8	50.3	49.2	48.5	48.2	48.2
84.0	89.3	76.6	66.3	61.4	55.8	52.9	50.2	48.0	46.4	45.2	44.4	43.9	43.8
88.0	84.6	72.4	62.6	57.8	52.4	49.6	46.9	44.7	43.1	41.8	40.9	40.3	40.0
92.0	80.4	68.7	59.2	54.6	49.4	46.7	44.0	41.9	40.2	38.9	37.9	37.2	36.8
96.0	76.6	65.3	56.2	51.7	46.7	44.1	41.4	39.3	37.7	36.4	35.4	34.6	34.0
100.0	73.1	62.3	53.5	49.2	44.3	41.7	39.2	37.1	35.5	34.2	33.1	32.3	31.7
104.0	69.9	59.5	51.0	46.8	42.1	39.6	37.1	35.1	33.5	32.2	31.1	30.3	29.6
108.0	67.0	56.9	48.7	44.7	40.1	37.7	35.3	33.3	31.7	30.4	29.4	28.5	27.8
112.0	64.3	54.6	46.7	42.8	38.3	36.0	33.6	31.7	30.2	28.9	27.8	27.0	26.3
116.0	61.8	52.4	44.8	41.0	36.7	34.4	32.1	30.2	28.7	27.5	26.4	25.5	24.8
120.0	59.6	50.5	43.0	39.4	35.2	33.0	30.7	28.9	27.4	26.2	25.1	24.3	23.6



**NOTE:**

- MULLION CHART APPLIES TO 2" X 4" X 1/8" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY, STACK OR RIBBON, CONFIGURATIONS.
- DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS:
  - F1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
  - B1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
- TRIBUTARY WIDTH =  $W = (W1+W2)/2$
- REFER TO SHEET 3 FOR INSTALLATION DETAILS.
- WHEN WINDOWS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.

$$\frac{A + B}{2} = W$$

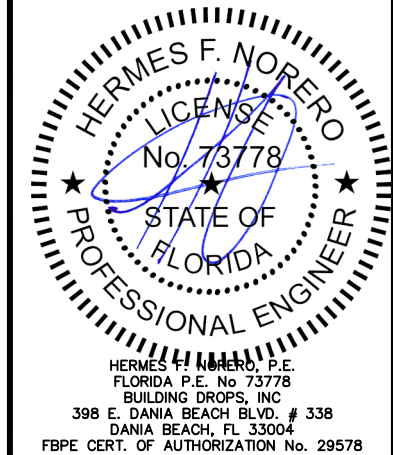


100 FOURTH AVE. NORTH  
BAYPORT, MN 55003-1096  
PH: (651) 264-5150 FX: (651) 264-5485

TITLE: STEEL TUBE CLIPPED MULLION  
4" x 2" x 1/8" STEEL TUBE MULLION ONE WAY LOAD TABLE  
PREPARED BY: BUILDING DROPS, INC.  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954) 399-8478  
FAX: (954) 744-4738  
WEB: www.buildingdrops.com

REMARKS	BY	DATE
6TH FBC CODE CHANGE	RV	10/17

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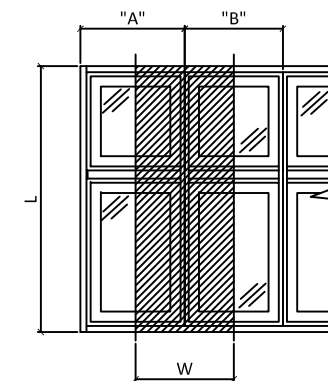
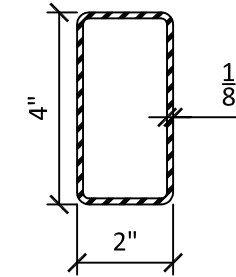


FL #: **FL24231**  
DATE: **10.05.17**  
DWG. BY: **RV** CHK. BY: **HFN**  
SCALE: **NTS**  
DWG. #: **AWD196**  
SHEET

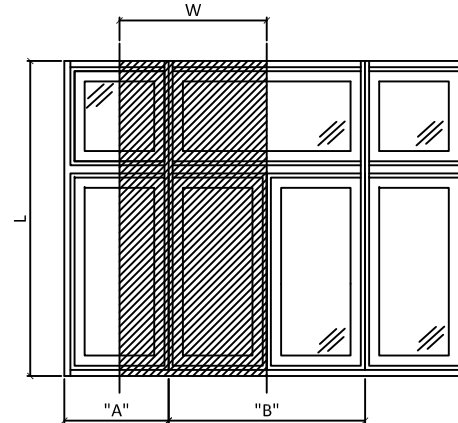
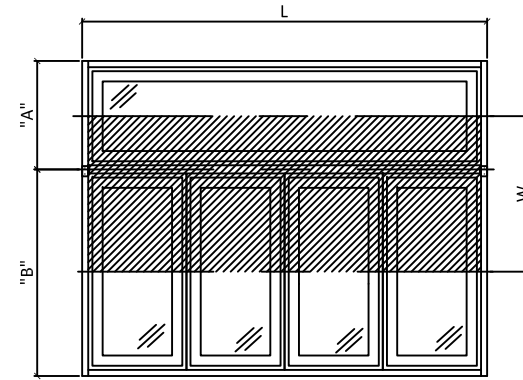
6

**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF): STRUCTURAL MULLIONS (TWO-WAY CONFIGURATIONS) FOR USE OF 2" X 4" X 1/8"**

L - Mull Length (in)	W - Tributary Width (in)												
	24.0	29.0	35.0	39.0	45.0	49.0	54.0	59.0	64.0	69.0	74.0	79.0	84.0
20.0	150.0	150.0	150.0	150.0	150.0	150.0	149.3	136.7	126.0	116.9	109.0	102.1	96.0
24.0	150.0	150.0	150.0	150.0	149.3	137.1	124.4	113.9	105.0	97.4	90.8	85.1	80.0
28.0	150.0	150.0	150.0	147.7	128.0	117.6	106.7	97.6	90.0	83.5	77.8	72.9	68.6
32.0	150.0	150.0	144.0	129.2	112.0	102.9	93.3	85.4	78.8	73.0	68.1	63.8	60.0
36.0	150.0	150.0	128.0	114.9	99.6	91.4	83.0	75.9	70.0	64.9	60.5	56.7	53.3
40.0	150.0	139.0	115.2	103.4	89.6	82.3	74.7	68.3	63.0	58.4	54.5	51.0	48.0
44.0	150.0	126.4	104.7	94.0	81.5	74.8	67.9	62.1	57.3	53.1	49.5	46.4	43.6
48.0	140.0	115.9	96.0	86.2	74.7	68.6	62.2	56.9	52.5	48.7	45.4	42.5	40.0
52.0	129.2	106.9	88.6	79.5	68.9	63.3	57.4	52.6	48.5	44.9	41.9	39.3	36.9
56.0	120.0	99.3	82.3	73.8	64.0	58.8	53.3	48.8	45.0	41.7	38.9	36.5	34.3
60.0	112.0	92.7	76.8	68.9	59.7	54.9	49.8	45.6	42.0	39.0	36.3	34.0	32.0
64.0	105.0	86.9	72.0	64.6	56.0	51.4	46.7	42.7	39.4	36.5	34.1	31.9	30.0
68.0	98.8	81.8	67.8	60.8	52.7	48.4	43.9	40.2	37.1	34.4	32.1	30.0	28.2
72.0	93.3	77.2	64.0	57.4	49.8	45.7	41.5	38.0	35.0	32.5	30.3	28.4	26.7
76.0	88.4	73.2	60.6	54.4	47.2	43.3	39.3	36.0	33.2	30.8	28.7	26.9	25.3
80.0	84.0	69.5	57.6	51.7	44.8	41.1	37.3	34.2	31.5	29.2	27.2	25.5	24.0
84.0	80.0	66.2	54.9	49.2	42.7	39.2	35.6	32.5	30.0	27.8	25.9	24.3	22.9
88.0	76.4	63.2	52.4	47.0	40.7	37.4	33.9	31.1	28.6	26.6	24.8	23.2	21.8
92.0	73.0	60.4	50.1	44.9	39.0	35.8	32.5	29.7	27.4	25.4	23.7	22.2	20.9
96.0	70.0	57.9	48.0	43.1	37.3	34.3	31.1	28.5	26.3	24.3	22.7	21.3	20.0
100.0	67.2	55.6	46.1	41.4	35.8	32.9	29.9	27.3	25.2	23.4	21.8	20.4	19.2
104.0	64.6	53.5	44.3	39.8	34.5	31.6	28.7	26.3	24.2	22.5	21.0	19.6	18.5
108.0	62.2	51.5	42.7	38.3	33.2	30.5	27.7	25.3	23.3	21.6	20.2	18.9	17.8
112.0	60.0	49.7	41.1	36.9	32.0	29.4	26.7	24.4	22.5	20.9	19.5	18.2	17.1
116.0	57.9	47.9	39.7	35.6	30.9	28.4	25.7	23.6	21.7	20.1	18.8	17.6	16.6
120.0	56.0	46.3	38.4	34.5	29.9	27.4	24.9	22.8	21.0	19.5	18.2	17.0	16.0



$$\frac{A + B}{2} = W$$



**NOTE:**

- 1) MULLION CHART APPLIES TO 2" X 4" X 1/8" MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY, STACK OR RIBBON, CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS:
  - F1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
  - B1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
- 6) TRIBUTARY WIDTH =  $W = (W1+W2)/2$
- 7) REFER TO SHEET 3 FOR INSTALLATION DETAILS.
- 8) WHEN WINDOWS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.

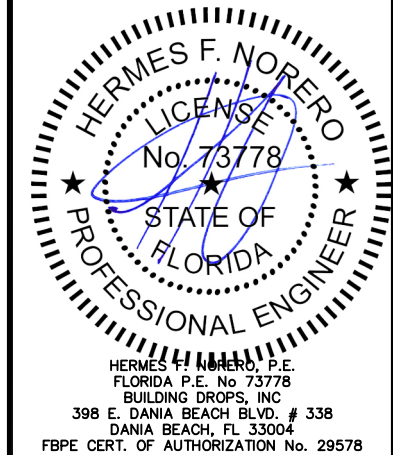


100 FOURTH AVE. NORTH  
BAYPORT, MN 55003-1096  
PH: (651) 264-5150 FX: (651) 264-5485

**TITLE:** STEEL TUBE CLIPPED MULLION  
4" x 2" x 1/8" STEEL TUBE MULLION TWO WAY LOAD TABLE  
**PREPARED BY:** BUILDING DROPS, INC.  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954) 399-8478  
FAX: (954) 744-4738  
WEB: www.buildingdrops.com

REMARKS	BY	DATE
6TH FBC CODE CHANGE	RV	10/17

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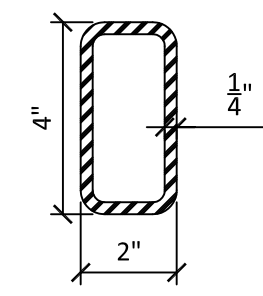
**FL #:** FL24231  
**DATE:** 10.05.17  
**DWG. BY:** RV **CHK. BY:** HFN  
**SCALE:** NTS  
**DWG. #:** AWD196  
**SHEET**

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10/21/2017 1:49 PM

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**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF) 2" X 4" X 1/4" One Way:**

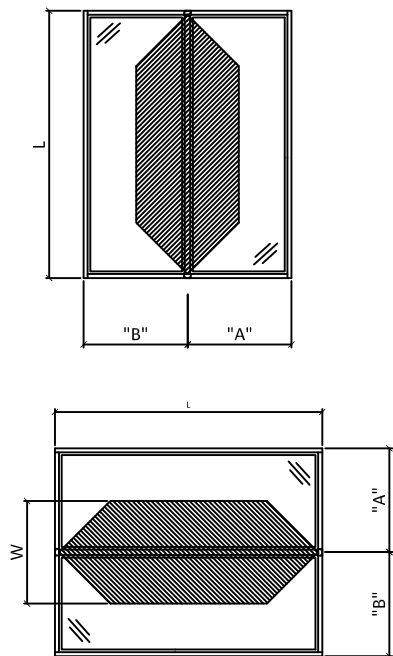
L - Mull Length (in)	W - Tributary Width (in)													
	44.0	50.0	56.0	62.0	63.0	69.0	76.0	82.0	88.0	95.0	101.0	107.0	114.0	120.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
26.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
28.0	150.0	150.0	150.0	150.0	150.0	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	150.0	150.0	150.0	150.0	150.0
32.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
34.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
38.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
40.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
42.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
44.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
46.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
48.0	141.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
50.0	130.9	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0
52.0	122.2	119.5	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3
54.0	114.5	111.2	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6
56.0	107.8	104.1	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
58.0	101.8	97.7	96.0	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9
60.0	96.5	92.2	90.0	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6
62.0	91.6	87.2	84.7	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9
64.0	87.3	82.7	80.0	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8
66.0	83.3	78.7	75.8	74.3	74.2	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0
68.0	79.7	75.0	72.0	70.3	70.1	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8
70.0	76.4	71.7	68.6	66.7	66.5	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8
72.0	73.3	68.6	65.5	63.4	63.2	62.3	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2
74.0	70.5	65.8	62.6	60.5	60.2	59.2	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9



**NOTE:**

- MULLION CHART APPLIES TO 2" X 4" X 1/4" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY, STACK OR RIBBON, CONFIGURATIONS.
- DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS:
  - F1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
  - B1 CLIP INSTALLATION TO WOOD, METAL STUD, CONCRETE OR STEEL MULLION.
- TRIBUTARY WIDTH =  $W = (W1+W2)/2$
- REFER TO SHEET 3 FOR INSTALLATION DETAILS.
- WHEN WINDOWS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.

$$\frac{A + B}{2} = W$$



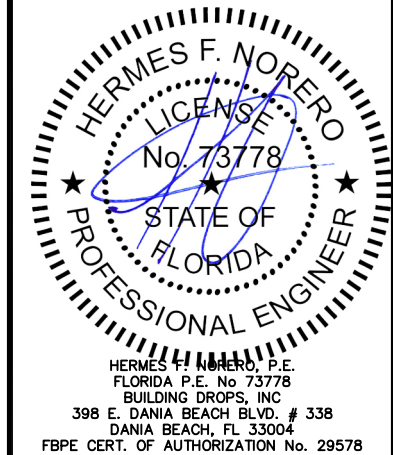
100 FOURTH AVE. NORTH  
BAYPORT, MN 55003-1096  
PH: (651) 264-5150 FX: (651) 264-5485

TITLE: **STEEL TUBE CLIPPED MULLION**  
4" x 2" x 1/4" STEEL TUBE MULLION ONE WAY LOAD TABLE

PREPARED BY: **BUILDING DROPS, INC.**  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954) 399-8478  
FAX: (954) 744-4738  
WEB: www.buildingdrops.com

REMARKS	BY	DATE
6TH FBC CODE CHANGE	RV	10/17

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FL #: **FL24231**

DATE: **10.05.17**

DWG. BY: **RV**      CHK. BY: **HFN**

SCALE: **NTS**

DWG. #: **AWD196**

SHEET

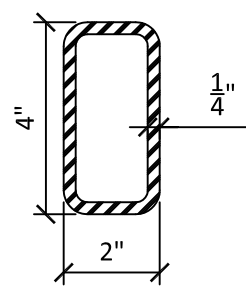




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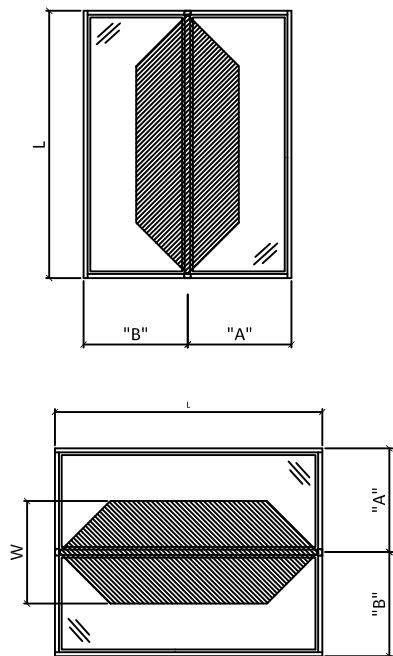
**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF) 2" X 4" X 1/4" One Way:**

L - Mull Length (in)	W - Tributary Width (in)													
	44.0	50.0	56.0	62.0	63.0	69.0	76.0	82.0	88.0	95.0	101.0	107.0	114.0	120.0
24.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
26.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
28.0	150.0	150.0	150.0	150.0	150.0	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	150.0	150.0	150.0	150.0	150.0
32.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
34.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
36.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
38.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
40.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
42.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
44.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
46.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
48.0	141.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0
50.0	130.9	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0	129.0
52.0	122.2	119.5	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3	119.3
54.0	114.5	111.2	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6	110.6
56.0	107.8	104.1	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9
58.0	101.8	97.7	96.0	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9	95.9
60.0	96.5	92.2	90.0	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6	89.6
62.0	91.6	87.2	84.7	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9	83.9
64.0	87.3	82.7	80.0	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8	78.8
66.0	83.3	78.7	75.8	74.3	74.2	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0
68.0	79.7	75.0	72.0	70.3	70.1	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8
70.0	76.4	71.7	68.6	66.7	66.5	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8	65.8
72.0	73.3	68.6	65.5	63.4	63.2	62.3	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2
74.0	70.5	65.8	62.6	60.5	60.2	59.2	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9



- NOTE:**
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$$\frac{A + B}{2} = W$$



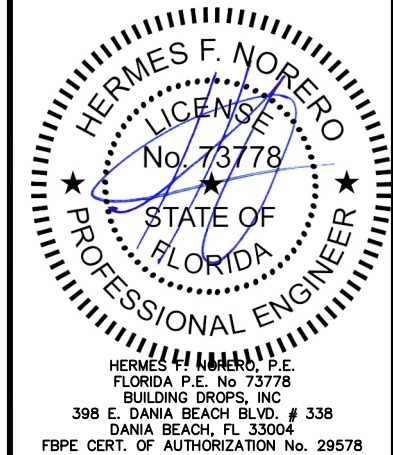
100 FOURTH AVE. NORTH  
BAYPORT, MN 55003-1096  
PH: (651) 264-5150 FX: (651) 264-5485

**TITLE:** STEEL TUBE CLIPPED MULLION  
4" x 2" x 1/4" STEEL TUBE MULLION TWO WAY LOAD TABLE

**PREPARED BY:** BUILDING DROPS, INC.  
398 E. DANIA BEACH BLVD., STE. 338  
DANIA BEACH, FL 33004  
PH: (954) 399-8478  
FAX: (954) 744-4738  
WEB: www.buildingdrops.com

REMARKS	BY	DATE
6TH FBC CODE CHANGE	RV	10/17

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FL #: **FL24231**

DATE: **10.05.17**

DWG. BY: **RV**      CHK. BY: **HFN**

SCALE: **NTS**

DWG. #: **AWD196**

SHEET