REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

NOTES:
1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH REQUIREMENTS OF THE 2018 IBC AND THE 2018 IRC.
2. WOOD FRAMING TO BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO STRUCTURE. FRAMING IS THE RESPONSIBILITY OF THE ARCHITECT OR ENGINEER OF RECORD.
3. ALLOWABLE STRESS INCREASE OF 1/3 WAS NOT USED IN THE DESIGN OF THE PRODUCT SHOWN HEREIN. WIND LOAD DURATION FACTOR Cd=1.6 WAS USED FOR WOOD ANCHOR CALCULATIONS.
4. APPROVED IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED FOR THIS PRODUCT IN WIND BORNE DEBRIS REGIONS UP TO WIND ZONE 3.
5. DESIGN PRESSURE AND INSTALLATION DETAILS SHOWN IN THIS DOCUMENT APPLY ONLY TO MULLION. WINDOWS MUST BE APPROVED UNDER SEPARATE APPROVAL.
6. SINGLE WINDOWS TO BE MULLED ARE NOT LIMITED TO THOSE SHOWN IN THIS DRAWING. WINDOWS MUST BE MANUFACTURED BY MI WINDOWS AND DOORS, INC.
7. DESIGN PRESSURE OF MULLED UNIT SHALL BE CONTROLLED BY THE LESSER DESIGN PRESSURE OF THE MULLION OR THE INDIVIDUAL WINDOW OR DOOR UNIT.
8. UNITS MAY BE MULLED TOGETHER INDEFINITELY AS LONG AS SINGLE UNIT WIDTH AND HEIGHT ARE NOT EXCEEDED AND MULLION IS ANCHORED AS SHOWN HEREIN.
9. MULLION VERTICAL INSTALLATION IS SHOWN, MULLION MAY BE USED IN HORIZONTAL APPLICATIONS AS LONG AS DIMENSIONS INDICATED HEREIN ARE NOT EXCEEDED AND MULLION IS ANCHORED ACCORDING TO THIS DOCUMENT.

ANCHORING NOTES:
1. FOR ANCHORING INTO WOOD FRAMING OR 2X BUCK USE #10 WOOD SCREW WITH SUFFICIENT LENGTH TO ACHIEVE A 1 3/8" MINIMUM EMBEDMENT. LOCATE ANCHORS AS SHOWN IN INSTALLATION DETAILS SHEET 3.
2. FOR ANCHORING INTO CONCRETE USE 3/16" ELCO ULTRACON TAPCON WITH SUFFICIENT LENGTH TO ACHIEVE A 1 1/4" MINIMUM EMBEDMENT WITH 1" MINIMUM EDGE DISTANCE. LOCATE ANCHORS AS SHOWN IN INSTALLATION DETAILS SHEET 4.
3. FOR ANCHORING INTO METAL FRAMING USE #10 SMS OR SELF DRILLING SCREW WITH SUFFICIENT LENGTH TO ACHIEVE A 3 THREADS MINIMUM BEYOND STRUCTURE INTERIOR WALL. LOCATE ANCHORS AS SHOWN IN ELEVATIONS AND INSTALLATION DETAILS.
4. FOR ATTACHING WINDOW UNITS TO MULLION USE #10 SELF TAPPING SCREWS WITH SUFFICIENT LENGTH TO ACHIEVE A MINIMUM EMBEDMENT OF THREE THREADS PAST THE MULLION WALL. LOCATE SCREWS 6" FROM EACH MULLION END AND 12" MAX. O.C. THEREAFTER. STAGGER SCREWS AT EACH WINDOW.
5. ALL FASTENERS TO BE CORROSION RESISTANT.
6. 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 BELOW:
   A. WOOD – MINIMUM SPECIFIC GRAVITY OF G=0.42
   B. CONCRETE – MINIMUM COMPRESSIVE STRENGTH OF 4,200 PSI.
   C. MASONRY – STRENGTH CONFORMANCE TO ASTM C–90, GRADE N, TYPE 1 (OR GREATER).
   D. METAL – STEEL 18GA (.048") FY=33KSI/FU=52KSI OR ALUMINUM 6063–T5 FU=30KSI .0625" THICK MINIMUM.

DESIGN PRESSURE TABLE INSTRUCTIONS:
1. DEFINE REQUIRED DESIGN LOAD PER TEXAS BUILDING CODE CHAPTER 16.
2. DETERMINE TRIBUTARY WIDTH AND MULLION SPAN BASED ON PRODUCT TO BE INSTALLED. SEE FORMULA FOR TRIBUTARY WIDTH.
3. LOCATE MULLION SPAN (UNIT HEIGHT) AND TRIBUTARY WIDTH. AT THE INTERSECTION OF ROW AND COLUMN CONTAINING THE MULLION SPAN AND TRIBUTARY WIDTH RESPECTIVELY IS THE MULLION RATING FOR PRODUCT IN STEP 2.
   MULLION RATING MUST BE EQUAL OR GREATER THAN REQUIRED DESIGN PRESSURE OBTAINED IN STEP 1.

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

SIGNED: 05/11/2020

TABLE OF CONTENTS

MI WINDOWS AND DOORS
650 WEST MARKET STREET
GRATZ, PA 17030–0370

M–2285 – VERTICAL MULLION
84" MULLION SPAN
NOTES

DRAWN:	DWG NO.	REV
A.R.	08–03263	–

SCALE	DATE	SHEET
NTS	06/04/18	1 OF 4

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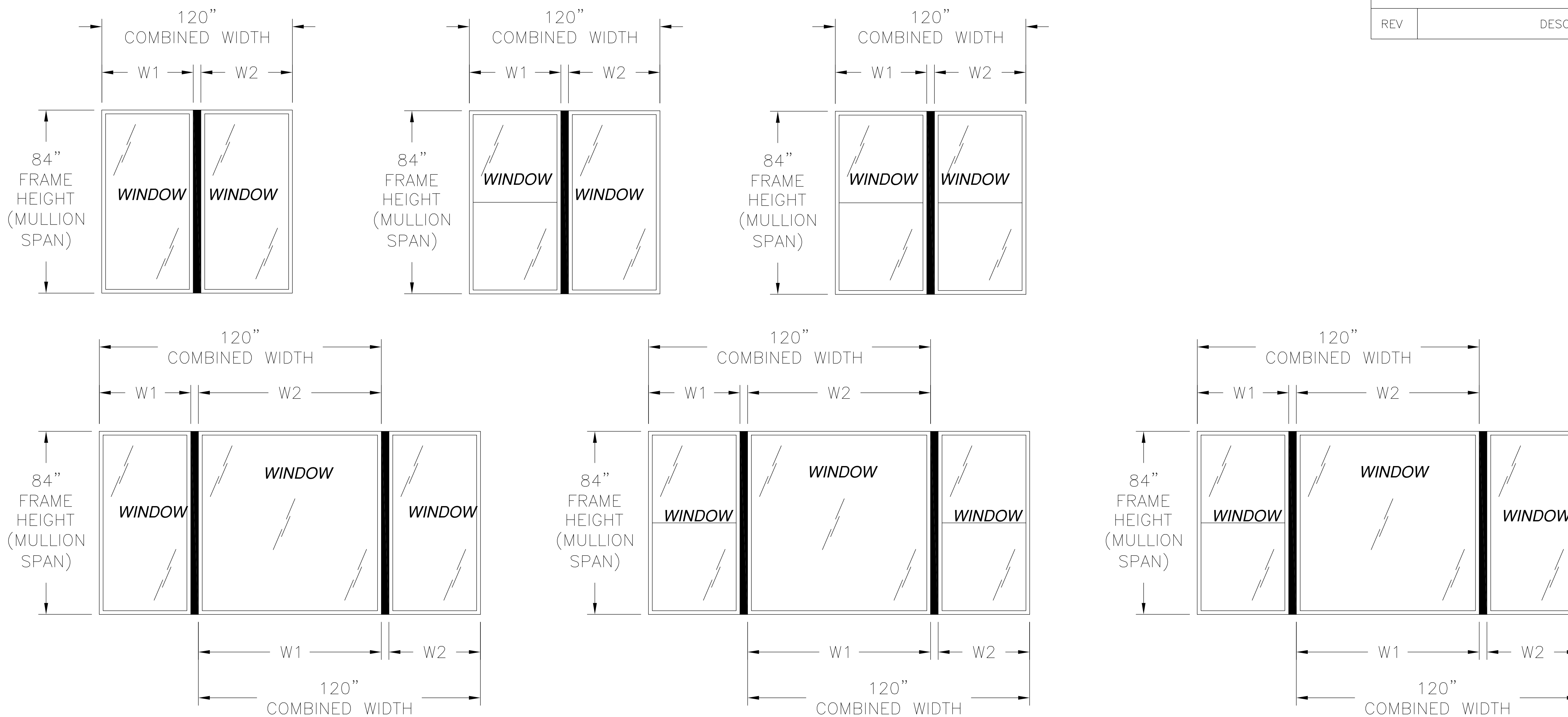
101889
LICENSED
PROFESSIONAL ENGINEER

Luis R. Lomas P.E.
TX No.: 101889

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



APPROVED CONFIGURATIONS

MULTIPLE UNITS MAYBE MULLED TOGETHER AS LONG AS COMBINED WIDTH DOES NOT EXCEED 120" AS SHOWN HEREIN.

Design pressure rating (psf) Units anchored into wood and metal framing							
Mullion span (in)	Tributary width (in)						
	18.13	25.50	36.00	42.00	48.00	54.00	60.00
25.00	120.0	120.0	120.0	120.0	120.0	120.0	120.0
37.38	120.0	120.0	120.0	120.0	120.0	120.0	120.0
49.63	120.0	98.3	81.2	76.9	75.2	75.1	75.1
62.00	96.4	73.6	56.7	50.9	47.2	44.9	43.9
65.63	90.2	66.8	49.9	44.6	41.0	38.7	37.4
72.00	75.7	55.0	40.7	36.1	32.9	30.6	29.1
84.00	55.3	39.9	29.2	25.6	23.1	21.2	19.8

Design pressure rating (psf) Units anchored into masonry/concrete							
Mullion span (in)	Tributary width (in)						
	18.13	25.50	36.00	42.00	48.00	54.00	60.00
25.00	120.0	120.0	120.0	120.0	120.0	120.0	120.0
37.38	120.0	120.0	120.0	120.0	120.0	120.0	120.0
49.63	120.0	109.2	90.2	85.4	83.5	83.4	83.4
62.00	102.9	75.3	56.7	50.9	47.2	44.9	43.9
65.63	91.6	66.8	49.9	44.6	41.0	38.7	37.4
72.00	75.7	55.0	40.7	36.1	32.9	30.6	29.1
84.00	55.3	39.9	29.2	25.6	23.1	21.2	19.8

LARGE AND SMALL MISSILE IMPACT, LEVEL D, WIND ZONE 3
DIMENSIONS IN CHART ARE FRAME DIMENSIONS AND DO NOT INCLUDE FLANGE

SIGNED: 05/11/2020

MI WINDOWS AND DOORS
650 WEST MARKET STREET
GRATZ, PA 17030-0370

M-2285 - VERTICAL MULLION
84" MULLION SPAN
CONFIGURATIONS AND DP CHARTS

DRAWN: A.R.	DWG NO. 08-03263	REV -
SCALE NTS	DATE 06/04/18	SHEET 2 OF 4

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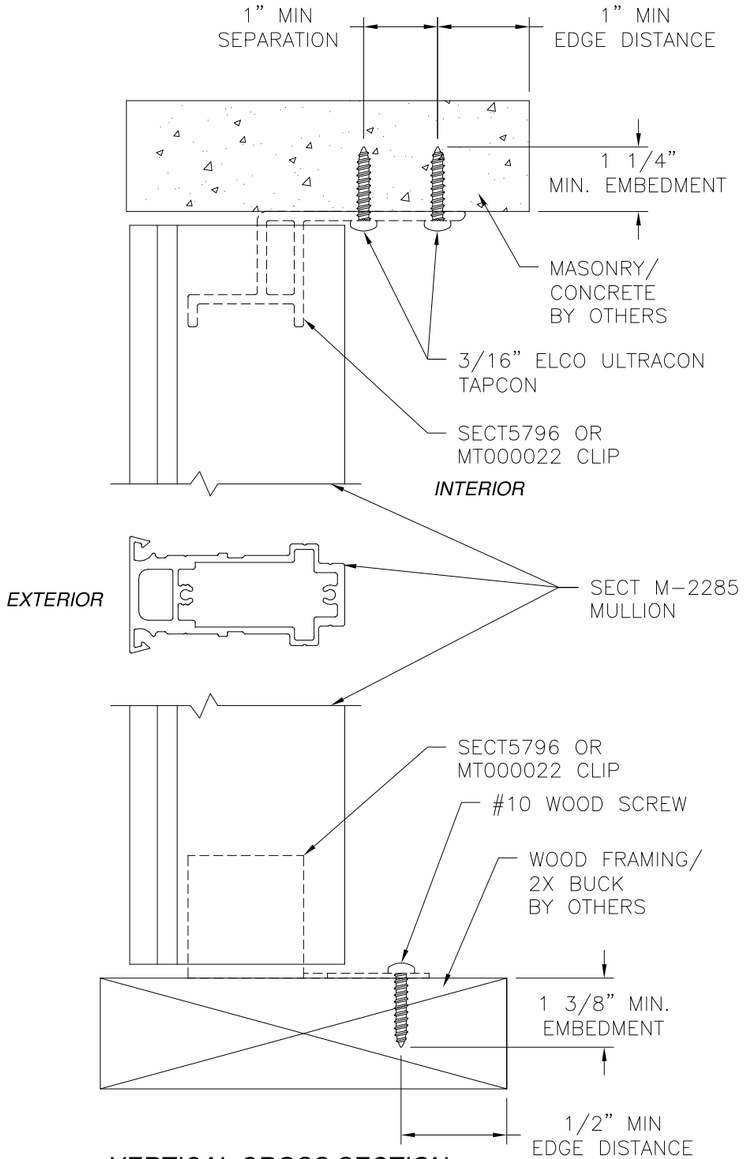
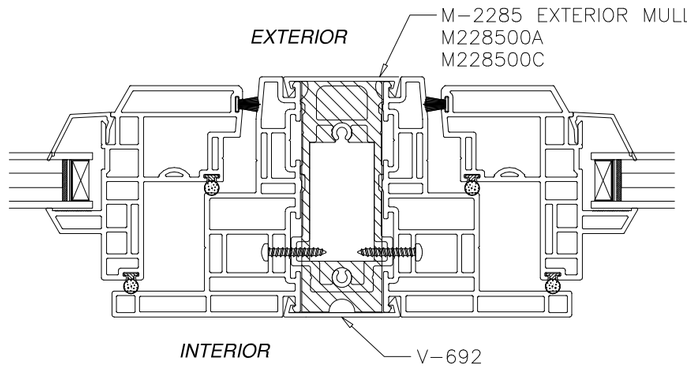
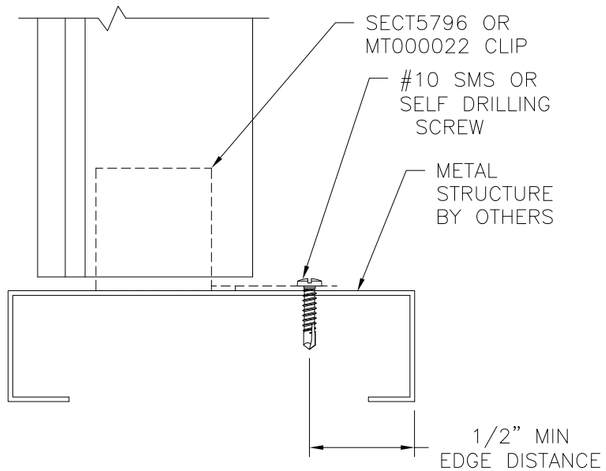


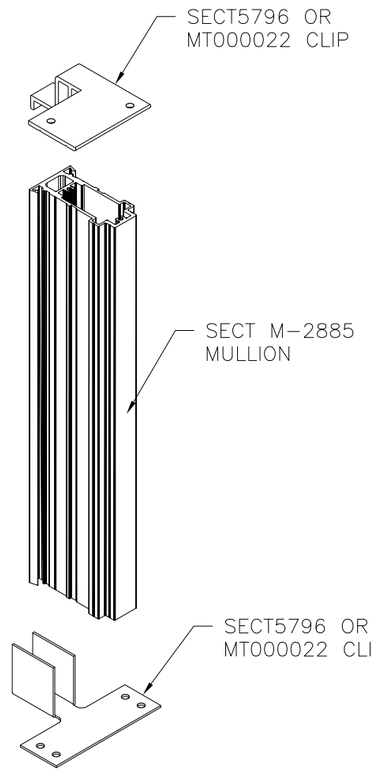
VERTICAL CROSS SECTION
MASONRY/CONCRETE AND WOOD FRAMING INSTALLATION



WINDOW & MULLION ASSEMBLY
MASONRY/CONCRETE AND WOOD FRAMING INSTALLATION



VERTICAL CROSS SECTION
METAL STRUCTURE INSTALLATION



CLIP INSTALLATION

SIGNED: 05/11/2020

MI WINDOWS AND DOORS
650 WEST MARKET STREET
GRATZ, PA 17030-0370

M-2285 - VERTICAL MULLION
84" MULLION SPAN
INSTALLATION DETAILS

DRAWN:	DWG NO.	REV
A.R.	08-03263	-
SCALE NTS	DATE 06/04/18	SHEET 3 OF 4

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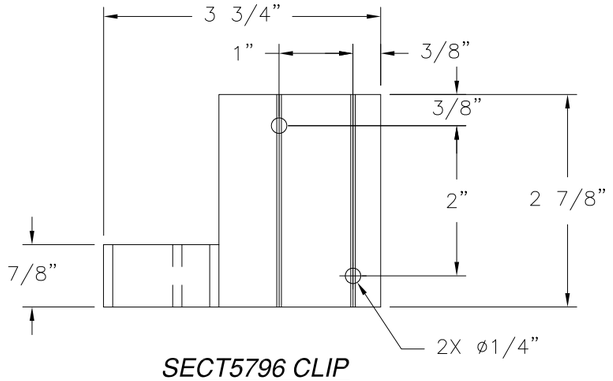
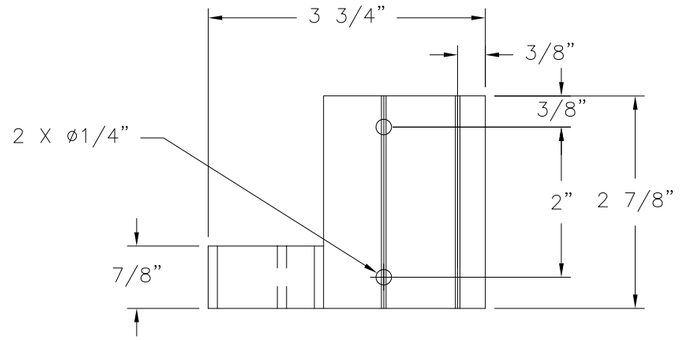
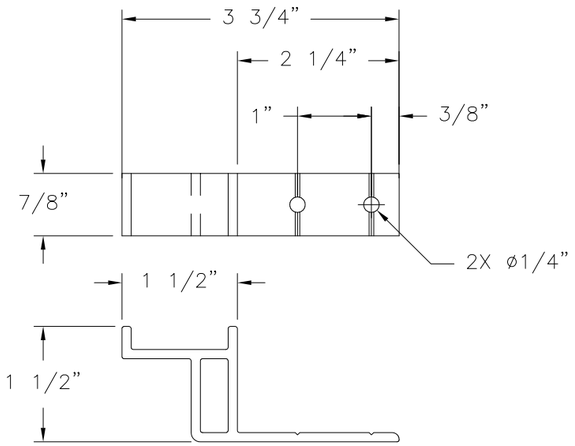


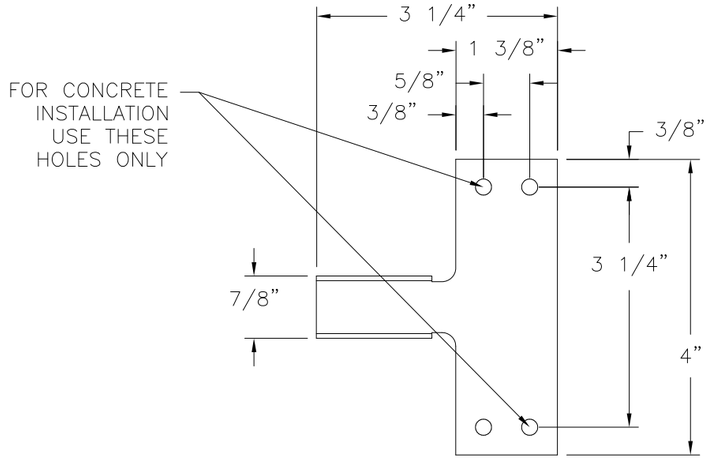
SECT5796 CLIP
FOR CONCRETE INSTALLATION
ALUMINUM 6063-T5 .125" THICK



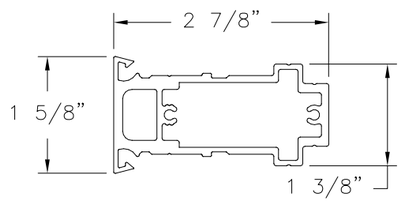
SECT5796 CLIP
FOR CONCRETE INSTALLATION
ALUMINUM 6063-T5 .125" THICK



SECT5796 CLIP
FOR WOOD AND METAL FRAMING INSTALLATION
ALUMINUM 6063-T5 .125" THICK



MT000022 CLIP
16GA (.063") GALVANIZED STEEL
FOR WOOD AND METAL FRAMING INSTALL (4) ANCHORS PER CLIP
FOR MASONRY/CONCRETE INSTALLATION USE (2) ANCHORS PER CLIP AS SHOWN



SECT M-2285 MULLION
ALUMINUM 6063-T5 .125" THICK

SIGNED: 05/11/2020

MI WINDOWS AND DOORS
650 WEST MARKET STREET
GRATZ, PA 17030-0370

M-2285 – VERTICAL MULLION
84" MULLION SPAN
COMPONENTS

DRAWN:	DWG NO.	REV
A.R.	08-03263	–
SCALE NTS	DATE 06/04/18	SHEET 4 OF 4

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