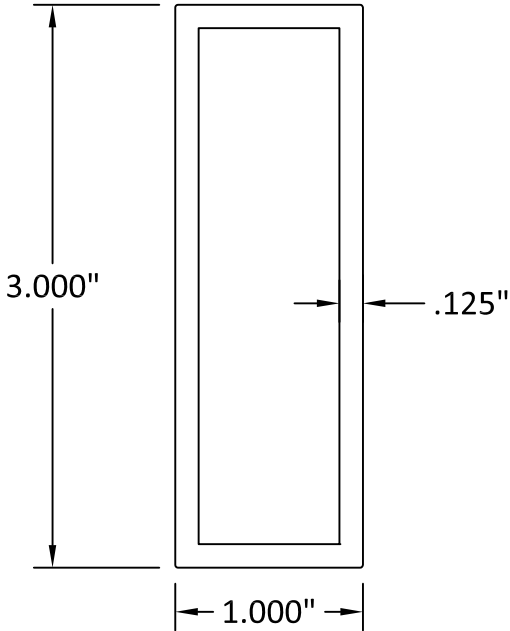


AIR MASTER AWNING, LLC

ALUMINUM TUBE MULLION

GENERAL NOTES:

1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT FLORIDA BUILDING CODE (FBC), INCLUDING HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
 - TAS 201-94
 - TAS 202-94
 - TAS 203-94
2. THIS FLORIDA PRODUCT APPROVAL QUALIFIES THE USE OF AIR MASTER AWNING, LLC ALUMINUM TUBE MULLION FOR USE WITH AIR MASTER AWNING, LLC CONTINENTAL SERIES WINDOWS, FOR THE SIZES AND CONFIGURATIONS APPROVED WITHIN THIS DOCUMENT. THIS MULLION MAY BE USED WITH THE CONTINENTAL SERIES CASEMENT WINDOW, PROJECT OUT WINDOW AND PICTURE WINDOW. ALL WINDOWS ARE UNDER SEPARATE APPROVAL AND APPROVED FOR LARGE AND SMALL MISSILE IMPACT RESISTANCE.
3. ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY, STEEL, 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.
4. 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.
5. 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 RER.
6. APPROVED IMPACT PROTECTIVE SYSTEM **IS NOT REQUIRED** ON THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
7. MULLION MATERIAL: ALUMINUM 6063-T6
8. DISSIMILAR METALS INCLUDING FASTENERS THAT MAY COME INTO CONTACT WITH ALUMINUM UNIT FRAMING SHALL BE PROTECTED IN ACCORDANCE WITH THE FBC.



ALUMINUM TUBE MULLION

TABLE OF CONTENTS		
SHEET	REVISION	SHEET DESCRIPTION
1	-	GENERAL NOTES
2	-	QUALIFIED CONFIGURATIONS
3	-	FABRICATION AND ANCHOR REQUIREMENTS
4	-	TYPICAL CROSS SECTIONS & INSTALLATION DETAILS
5	-	TYPICAL CROSS SECTIONS & INSTALLATION DETAILS

DESIGN PRESSURE RATING	
DESIGN PRESSURE	MISSILE IMPACT RATING
+/- 70 PSF	LARGE & SMALL MISSILE IMPACT

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TITLE: ALUMINUM TUBE MULLION

GENERAL NOTES

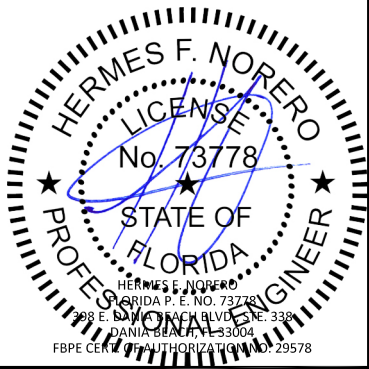
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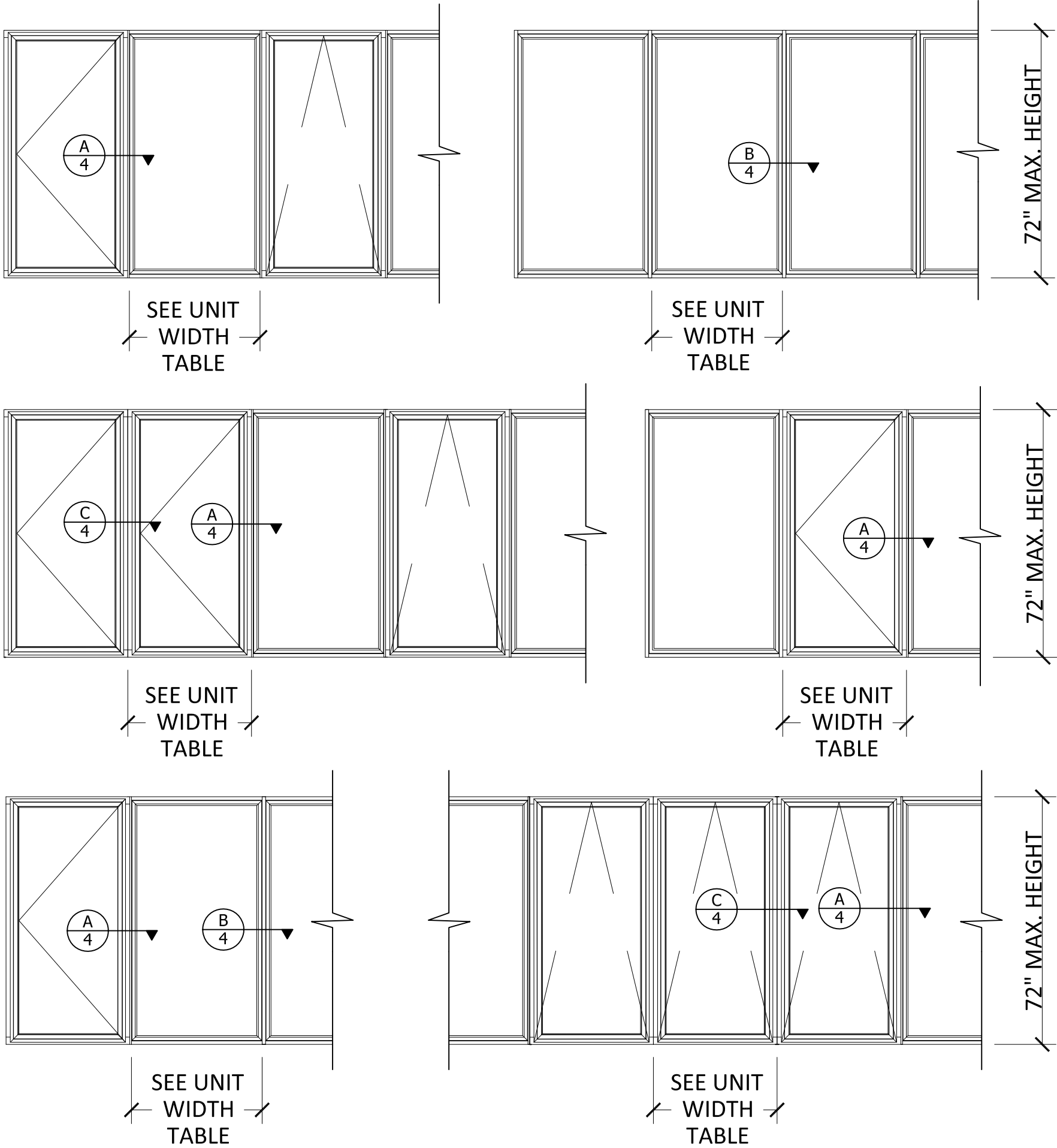


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SM	HFN
SCALE:	NTS
DWG. #:	AIR013
SHEET:	OF 5

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UNIT WIDTH TABLE	
PRODUCT TYPE	ALLOWABLE UNIT WIDTH
CONTINENTAL PICTURE WINDOW	38"*
CONTINENTAL CASEMENT WINDOW	36"
CONTINENTAL PROJECT OUT WINDOW	36"

- NOTES:
1. ALUMINUM TUBE MULLION IS USED BETWEEN WINDOW FRAMES AS DETAILED ON SHEET 4.
 2. WINDOWS SHALL NOT EXCEED THE SIZES APPROVED ON THIS PAGE. WINDOWS ARE UNDER SEPARATE APPROVAL AND ARE INDIVIDUALLY IMPACT RATED.
 3. THE ELEVATIONS SHOWN ARE TYPICAL QUALIFIED CONDITIONS. ANY COMBINATION OF AIR MASTER CONTINENTAL SERIES PICTURE, PROJECT OUT, OR CASEMENT WINDOWS IS QUALIFIED FOR USE, IN ANY QUANTITY.
 4. THE ALUMINUM TUBE MULLION IS A 1" X 3" X 1/8" ALUMINUM 6063-T6 TUBE.
 5. SEE SHEET 3 FOR FABRICATION AND ANCHORAGE REQUIREMENT DETAILS
 6. * 38" WIDTH FOR THE PICTURE WINDOW IS ONLY FOR THE SASH. PICTURE WINDOW SHALL ALSO USE THE 1" X 3" TUBE AROUND ITS FULL PERIMETER AS PER SEPARATE APPROVAL, RESULTING IN A 40" WIDTH FOR A SINGLE UNIT.

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TITLE:ALUMINUM TUBE MULLION
QUALIFIED CONFIGURATIONS

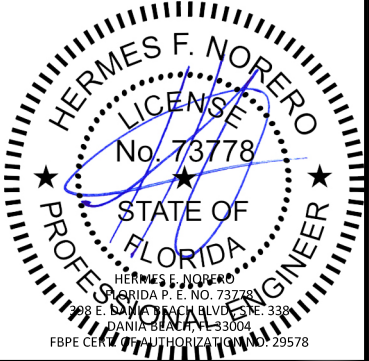
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AIR MASTER CONTINENTAL SERIES MULLED ASSEMBLY FABRICATION:

1. WHEN MULLING A PICTURE WINDOW TO A PICTURE WINDOW:

1.1. MULLION IS LOCATED BETWEEN WINDOWS. IN ADDITION, THE SAME 1" X 3" ALUMINUM TUBE IS USED ALONG THE FULL PERIMETER OF THE PICTURE WINDOW FRAME. THE VERTICAL TUBE IS ATTACHED TO THE HORIZONTAL TUBE USING A 1-1/2" X 5/8" X 1/8" ALUMINUM ANGLE AND FOUR #10 X 1" S/S F/H SMS SCREWS (TWO FROM THE CLIP TO THE VERTICAL, AND TWO FROM THE CLIP TO THE HORIZONTAL). SEE DETAILS OF PICTURE WINDOW CONSTRUCTION UNDER SEPARATE APPROVAL.

1.2. EACH PICTURE WINDOW FRAME IS TO BE FASTENED TO THE 1" X 3" TUBE USING #10 X 1-1/2" S/S F/H SMS SCREWS, SCREWS ARE TO BE SPACED 7" FROM THE TOP AND BOTTOM OF THE WINDOW FRAME AND SPACED A MAXIMUM OF 14-1/2" O.C.
2. WHEN MULLING A PICTURE WINDOW TO A CASEMENT OR PROJECT OUT WINDOW:

2.1. FOLLOW NOTE 1 ABOVE FOR ATTACHMENT OF PICTURE WINDOW FRAME TO MULL.

2.2. PROJECT OUT OR CASEMENT WINDOW FRAMES ARE TO BE FASTENED TO THE 1" X 3" TUBE USING #10 X 1-1/2" S/S F/H SMS SCREWS, SCREWS ARE TO BE SPACED 6" FROM THE TOP AND BOTTOM OF THE WINDOW FRAME AND SPACED A MAXIMUM OF 15" O.C.
3. WHEN MULLING TWO OPERABLE UNITS TOGETHER (WHETHER CS-CS, PO-PO, OR PO-CS):

3.1. PROJECT OUT OR CASEMENT WINDOW FRAMES ARE TO BE FASTENED TO THE 1" X 3" TUBE USING #10 X 1-1/2" S/S F/H SMS SCREWS, SCREWS ARE TO BE SPACED 6" FROM THE TOP AND BOTTOM OF THE WINDOW FRAME AND SPACED A MAXIMUM OF 15" O.C.
4. SEE SHEET 4 FOR TYPICAL DETAILS OF THE MULLED ASSEMBLIES.

AIR MASTER CONTINENTAL SERIES MULLED ASSEMBLY ANCHOR REQUIREMENTS:

1. ALL ANCHORS SHALL BE AS FOLLOWS:

1.1. FOR CONCRETE (MIN f'c=3000 PSI) OR GROUT FILLED CMU (CONFORMS TO ASTM C-90) USE 1/4" ELCO ULTRACONS, OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM OF 1-3/4" EMBEDMENT AND LOCATE ANCHORS SUCH THAT A MINIMUM EDGE DISTANCE OF 2-1/2" IS ATTAINED.

1.2. FOR 2X WOOD (MIN. S.G. = 0.55) USE #14 WOOD SCREW OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM OF 1-1/2" EMBEDMENT AND LOCATE ANCHORS SUCH THAT A MINIMUM EDGE DISTANCE OF 1" IS ATTAINED.
2. WHEN MULLING A PICTURE WINDOW TO A PICTURE WINDOW:

2.1. MULLED UNIT INSTALLATION SHALL USE TYPICAL THROUGH FRAME ANCHORAGE AS SPECIFIED UNDER THE SEPARATE FLORIDA PRODUCT APPROVALS FOR INDIVIDUAL WINDOW UNITS, WITH THE FOLLOWING ADDITIONAL REQUIREMENTS FOR ANCHORS INSTALLED THROUGH THE WINDOW FRAMES TO THE OPENING.

2.1.1. TWO (2) THROUGH FRAME ANCHORS SHALL BE CLUSTERED TO EACH SIDE OF THE VERTICAL MULLION (FOUR IN TOTAL), INSTALLED THROUGH THE WINDOW HEAD AND SILL, SPACED 2" AND 6" FROM THE CENTERLINE OF THE VERTICAL MULLION. AFTER THE CLUSTER, ANCHORS SHALL BE SPACED AND INSTALLED IN ACCORDANCE WITH THE ANCHOR LAYOUT OF THE PICTURE WINDOW UNDER SEPARATE APPROVAL.
3. WHEN MULLING A PICTURE WINDOW TO A CASEMENT OR PROJECT OUT WINDOW:

3.1. MULLED UNIT INSTALLATION SHALL USE TYPICAL THROUGH FRAME ANCHORAGE AS SPECIFIED UNDER THE SEPARATE FLORIDA PRODUCT APPROVALS FOR INDIVIDUAL WINDOW UNITS, WITH THE FOLLOWING ADDITIONAL REQUIREMENTS FOR ANCHORS INSTALLED THROUGH THE WINDOW FRAMES TO THE OPENING.

3.1.1. THREE (3) THROUGH FRAME ANCHORS SHALL BE CLUSTERED TO THE PICTURE WINDOW SIDE OF THE VERTICAL MULLION, INSTALLED THROUGH THE PICTURE WINDOW HEAD AND SILL, SPACED 2", 6" AND 10" FROM THE CENTERLINE OF THE VERTICAL MULLION. AFTER THE CLUSTER, ANCHORS SHALL BE SPACED AND INSTALLED IN ACCORDANCE WITH THE ANCHOR LAYOUT OF THE PICTURE WINDOW UNDER SEPARATE APPROVAL.
4. WHEN MULLING TWO OPERABLE UNITS TOGETHER (WHETHER CS-CS, PO-PO, OR PO-CS):

4.1. TWO 2" X 2" X 3/16" 6063-T5 ANGLE CLIPS SHALL BE USED TO ANCHOR THE MULLION TO THE OPENING.

4.1.1. CLIPS ARE FASTENED TO THE VERTICAL MULLION USING TWO #10 X 1" S/S F/H SMS SCREWS PER CLIP. CLIPS SHALL HAVE A MINIMUM ENGAGEMENT OF 1-1/2" INTO 1" X 3" TUBE.

4.1.2. EACH CLIP SHALL BE ANCHORED TO THE SUBSTRATE USING A SINGLE ANCHOR PER CLIP, PER THE REQUIREMENTS OF ANCHOR REQUIREMENT NOTE #1 ABOVE.

4.1.3. ANCHORAGE OF WINDOW FRAME SHALL BE PER THE WINDOW APPROVAL.
5. SEE SHEET 4 AND 5 FOR TYPICAL DETAILS OF THE ANCHOR REQUIREMENTS.

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TITLE: ALUMINUM TUBE MULLION

FABRICATION AND ANCHOR REQUIREMENTS

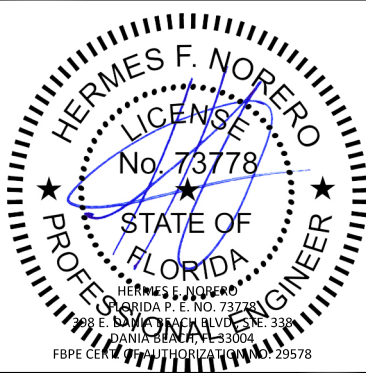
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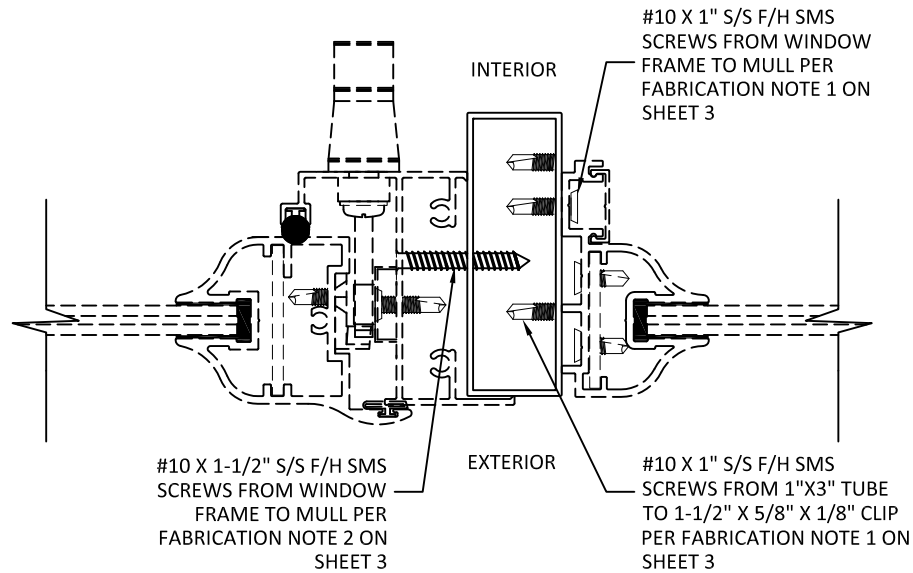
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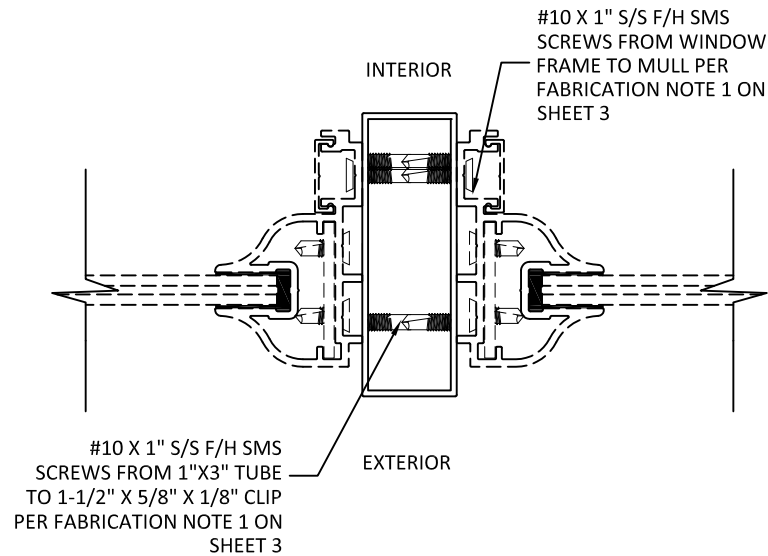
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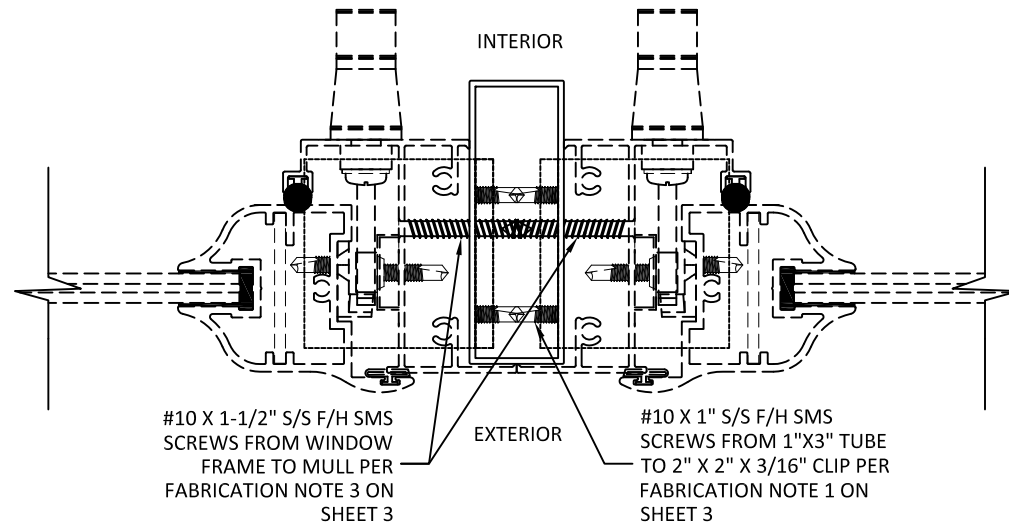


A
4 HORIZONTAL SECTION
TYPICAL MULL - OPERABLE TO FIXED

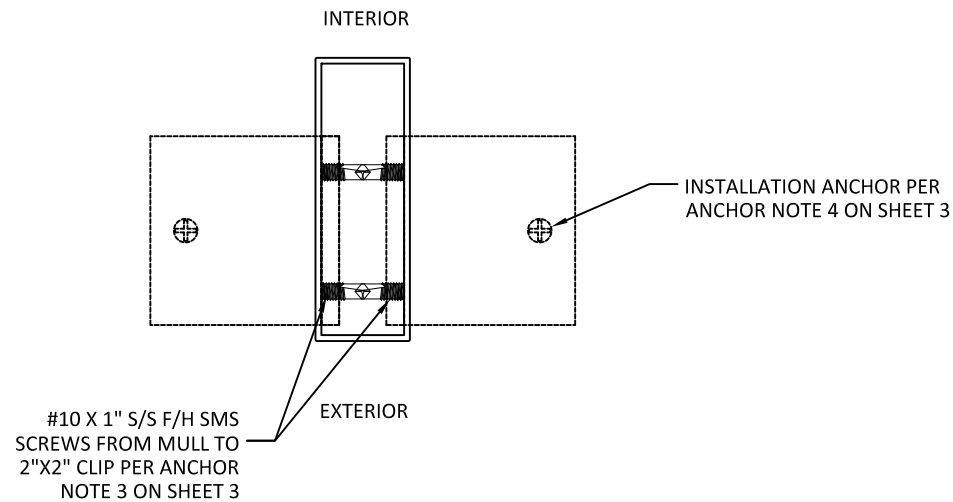


B
4 HORIZONTAL SECTION
TYPICAL MULL - FIXED TO FIXED

- NOTES:
1. TYPICAL MULLION ASSEMBLIES SHOWN.
 2. REFER TO SHEET 3 ANCHOR REQUIREMENTS FOR SPECIFICATIONS OF ANCHOR QUANTITY AND LOCATION REQUIREMENTS.
 3. WINDOWS UNDER SEPARATE APPROVAL.



C
4 HORIZONTAL SECTION
TYPICAL MULL - OPERABLE TO OPERABLE



D
4 HORIZONTAL SECTION
MULL CLIP ANCHOR DETAIL
OPERABLE TO OPERABLE
(WINDOW FRAMES REMOVED FOR CLARITY)

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TITLE:
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TYPICAL CROSS SECTIONS
AND INSTALLATION DETAILS

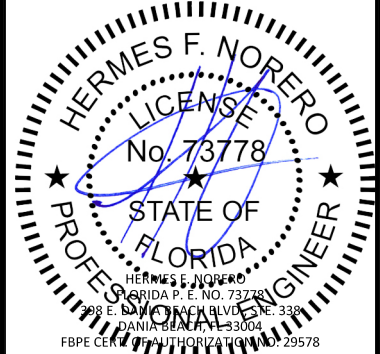
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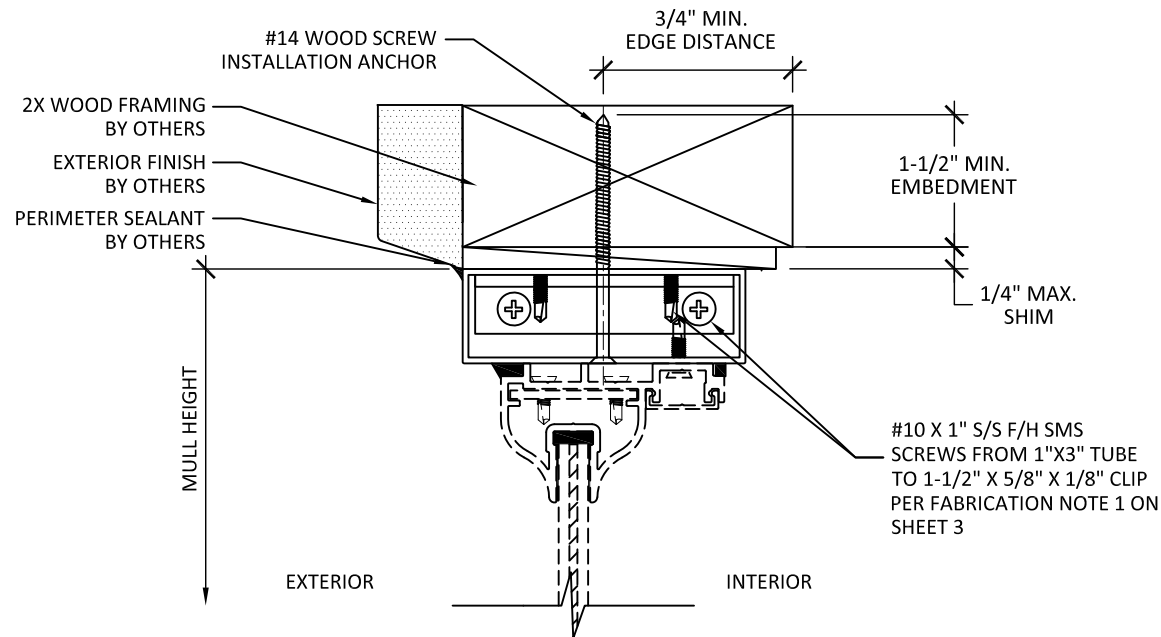
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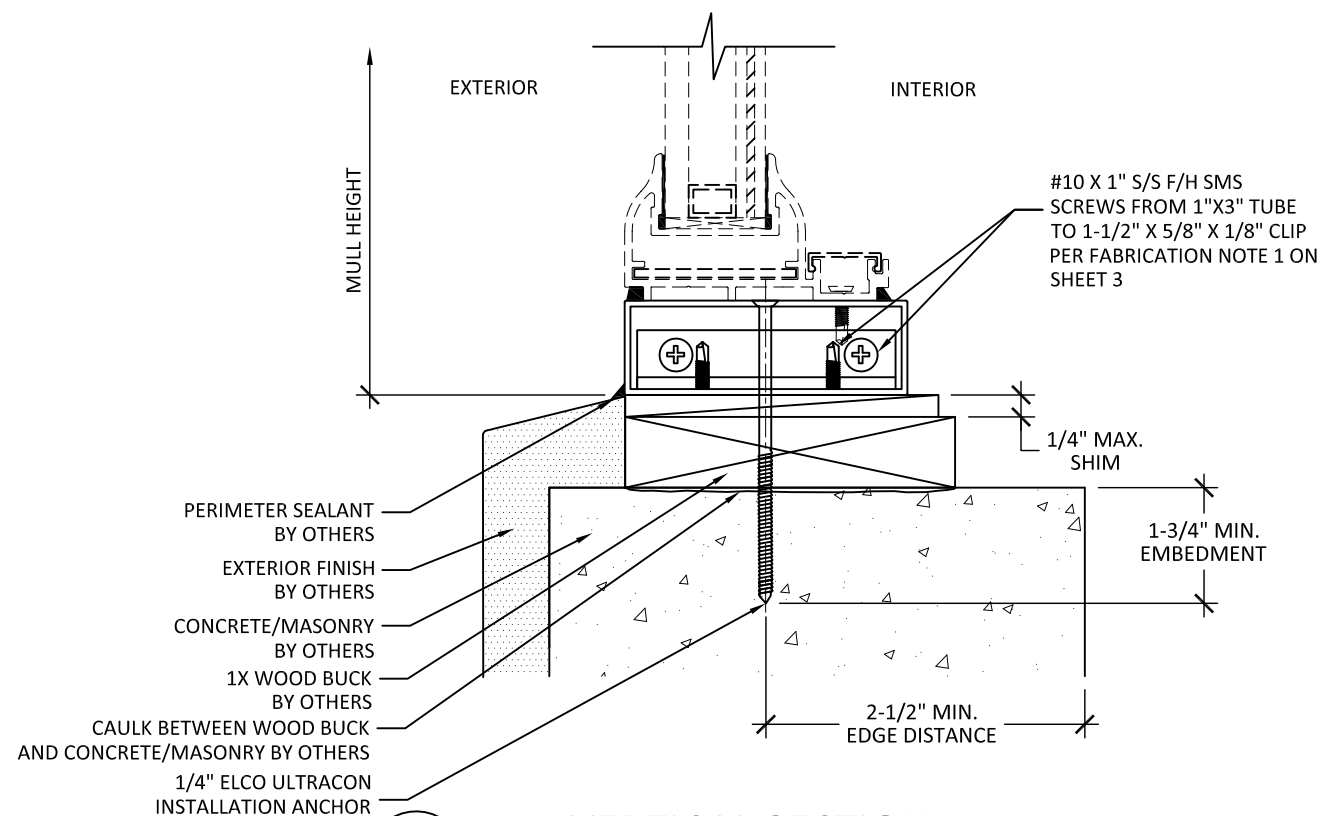
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D
5 VERTICAL SECTION
ANCHOR DETAIL - 2X WOOD FRAME



E
5 VERTICAL SECTION
ANCHOR DETAIL - CONCRETE/MASONRY
WITH 1X WOOD BUCK

NOTES:

1. TYPICAL ANCHOR DETAILS SHOWN FOR THROUGH FRAME ANCHOR REQUIREMENTS FOR PICTURE WINDOW.
2. REFER TO SHEET 3 ANCHOR REQUIREMENTS FOR SPECIFICATIONS OF ANCHOR QUANTITY AND LOCATION REQUIREMENTS.
3. WINDOWS UNDER SEPARATE APPROVAL.

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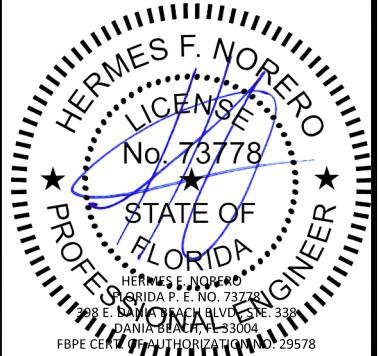
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