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**ADDITIONAL DETAILS:**

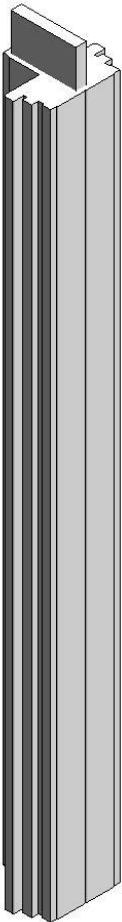
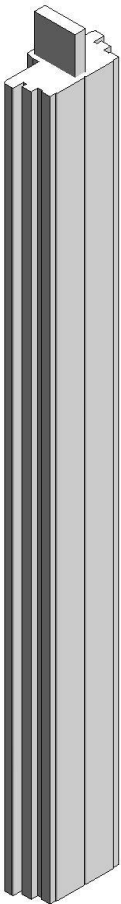
FOR SPECIAL SITE CONDITION, CONTACT HARTMAN WINDOWS AND DOORS, LLC. TO OBTAIN AUTOCAD/REVIT COMPATIBLE DETAILS OF THIS PRODUCT, KINDLY GET IN TOUCH WITH US BY SCANNING THE QR CODE PROVIDED BELOW OR CONTACTING US VIA OUR OFFICIAL EMAIL ADDRESS: CONTACT@JA-PE.COM.

- THIS APPROVAL APPLIES TO MULLION COMBINATIONS WITH FRAME MEMBERS OF AMERICAN SERIES TRANSOMS, SIDELITES AND DOORS IN ANY COMBINATIONS.
- SEE HARTMAN WINDOW SEPERATE APPROVALS FOR WINDOW/DOOR ANCHORS AND DESIGN LOAD CAPACIITY. LOWEST VALUE RESULTING FROM MULLION, WINDOW OR DOOR APPROVAL WILL APPLY TO ENTIRE SYSTEM.

**DESIGN PRESSURES:** SEE SHEET 102 THROUGH 106

HARTMAN WINDOWS & DOORS, LLC.  
AMERICAN CLIPPED-UNCLIPPED WOOD & STEEL MULLION  
(LARGE AND SMALL MISSILE IMPACT RATED)

FL#20517.1



JAVAD AHMAD PE, inc

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CONSULTING • STRUCTURAL DESIGN • FACADES • BUILDING ENVELOPE • SYSTEM DESIGN • PRODUCT APPROVALS

AMERICAN CLIPPED-UNCLIPPED  
WOOD & STEEL MULLION  
(LARGE AND SMALL MISSILE IMPACT RATED)

HARTMAN WINDOWS & DOORS, LLC.  
2107 W. BLUE HERON BLVD.  
WEST PALM BEACH, FL 33404  
PHN. (561) 296-9600

GENERAL NOTES

- THIS SYSTEM PRESENTED HEREIN HAS UNDERGONE DESIGN AND TESTING IN FULL COMPLIANCE WITH THE FLORIDA BUILDING CODE EIGHTH EDITION (2023) AND IS INTENDED FOR USE BOTH WITHIN AND OUTSIDE THE HIGH-VELOCITY HURRICANE ZONE (HVHZ) PER TAS 201/202/203.
- THE GLASS CAPACITIES SPECIFIED IN THE CHARTS OF THIS CERTIFICATION ARE BASED ON ASTM E1300-16, UTILIZING A 3-SECOND GUST WIND SCENARIO.
- THE DESIGN PRESSURES OUTLINED IN THIS DOCUMENT ARE DERIVED FROM MAXIMUM TESTED PRESSURES AND INCORPORATE A 1.5 SAFETY FACTOR.
- THE PRESSURES PROVIDED IN THIS CERTIFICATION ARE DETERMINED USING THE ALLOWABLE STRESS DESIGN METHOD (ASD).
- THIS PRODUCT HAS BEEN RIGOROUSLY TESTED IN ACCORDANCE WITH THE STANDARDS DESCRIBED IN NOTE 1 OF THE GENERAL NOTES. IT IS CONFIRMED TO BE RESISTANT TO LARGE MISSILE IMPACT, THEREBY NOT NECESSITATING THE USE OF IMPACT-RESISTANT SHUTTERS.
- THE DESIGN OF THIS SYSTEM DOES NOT INCORPORATE A 33-1/3% INCREASE IN ALLOWABLE STRESS. FOR WOOD ANCHOR DESIGN, A WIND LOAD DURATION FACTOR OF CD=1.6 HAS BEEN EMPLOYED.
- THE ARCHITECT/ENGINEER OF RECORD RESPONSIBLE FOR THE PROJECT'S SUPERSTRUCTURE, WITH WHICH THIS DESIGN IS ASSOCIATED, SHALL ENSURE THE INTEGRITY OF ALL SUPPORTING SURFACES. COORDINATION WITH THE PERMITTING CONTRACTOR IS REQUIRED, AND PROPER ANCHORING OF WOOD BUCKS (BY OTHERS) MUST FACILITATE LOAD TRANSFER TO THE EXISTING STRUCTURE.

- THE DETAILS OF THE SYSTEM PROVIDED HEREIN ARE OF A GENERIC NATURE AND DO NOT OFFER SPECIFIC SITE INFORMATION. FOR SITE CONDITIONS THAT DIFFER FROM THOSE SPECIFIED HERE, A LICENSED ENGINEER OR REGISTERED ARCHITECT MUST PREPARE SITE-SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS CERTIFICATION.
- THE CONTRACTOR IS ACCOUNTABLE FOR INSULATING ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS (E.G., STEEL WITH ALUMINUM).
- THE SUBSTITUTION OF FASTENERS DESCRIBED IN THIS CERTIFICATION IS PERMISSIBLE, PROVIDED THE ALTERNATIVE ANCHOR EXHIBITS STRENGTH EQUAL TO OR GREATER THAN THE ORIGINALLY SPECIFIED ANCHOR. FINAL APPROVAL OF SUBSTITUTED ANCHORS SHALL BE GRANTED BY RELEVANT AUTHORITIES.
- THE WOOD SCREWS REFERENCED IN THIS CERTIFICATION MUST MEET A MINIMUM GRADE OF 2 (FU = 74,000 PSI).
- FASTENERS MUST BE CADMIUM PLATED OR COMPOSED OF OTHERWISE CORROSION-RESISTANT MATERIAL, CONFORMING TO "SPECIFICATIONS FOR ALUMINUM STRUCTURES" AS OUTLINED IN SECTION J.3 OF THE CURRENT CODE BY THE ALUMINUM ASSOCIATION, INC., IN ADDITION TO ANY APPLICABLE FEDERAL, STATE, AND/OR LOCAL CODES.
- THE ENGINEER'S SEAL AFFIXED HERE VALIDATES THE STRUCTURAL DESIGN AS PRESENTED SOLELY. ANY USE OF THIS SPECIFICATION BY THE CONTRACTOR OR OTHERS INDEMNIFIES AND SAVES THE ENGINEER HARMLESS FROM ALL COSTS AND DAMAGES, INCLUDING LEGAL FEES AND APPELLATE FEES

- ARISING FROM MATERIAL FABRICATION, SYSTEM ERECTION, AND CONSTRUCTION PRACTICES BEYOND THE SCOPE CALLED FOR BY LOCAL, STATE, AND FEDERAL CODES OR DEVIATIONS FROM THE PLAN.
- NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED BEYOND WHAT IS EXPRESSLY PROVIDED IN THIS DOCUMENT.
  - ALTERATIONS, ADDITIONS, OR ANY MARKINGS TO THIS DOCUMENT ARE STRICTLY PROHIBITED AND WILL INVALIDATE THIS CERTIFICATION.
  - PROPER SAFETY MEASURES MUST BE OBSERVED DURING THE INSTALLATION AND USE OF THIS SYSTEM, EVEN THOUGH THEY ARE NOT EXPLICITLY LISTED IN THIS CERTIFICATION.
  - EACH PRODUCT SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER SYSTEM, CONTAINING THE FOLLOWING REQUIRED INFORMATION:  
HARTMAN WINDOWS AND DOORS, LLC  
2107 WEST BLUE HERON BLVD  
WEST PALM BEACH, FLORIDA 33404  
TAS 201/202/203  
APPROVED BY FLORIDA BUILDING COMMISSION  
FLORIDA PRODUCT APPROVAL NUMBER FL# 20517.1

THIS PRODUCT IS APPROVED FOR IMPACT RESISTANCE LEVEL 'D'

| drawing no. | date: | JA-1425-23 | drawn by: | SA | check by: | BS | REVISION |      |    |             |
|-------------|-------|------------|-----------|----|-----------|----|----------|------|----|-------------|
|             |       |            |           |    |           |    | No.      | DATE | BY | DESCRIPTION |
|             |       |            |           |    |           |    |          |      |    |             |

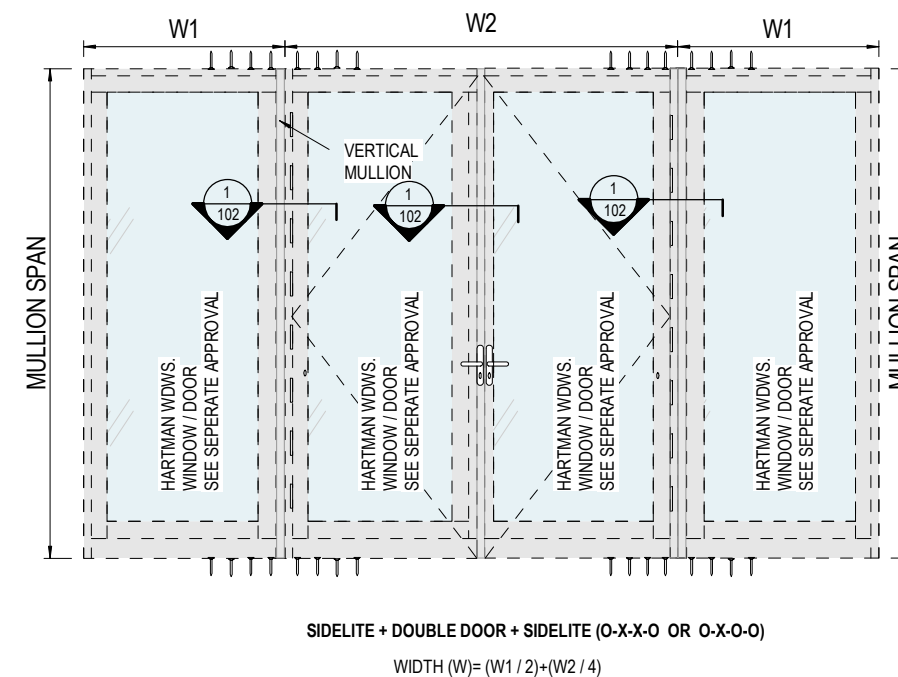
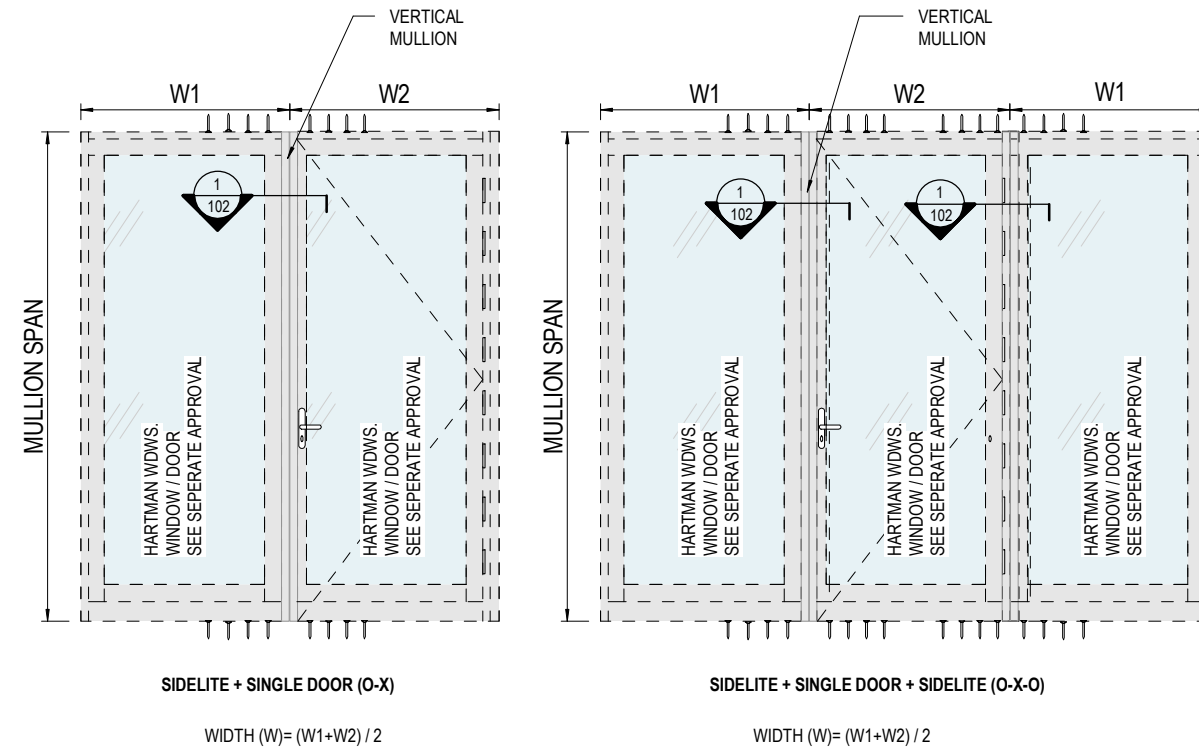
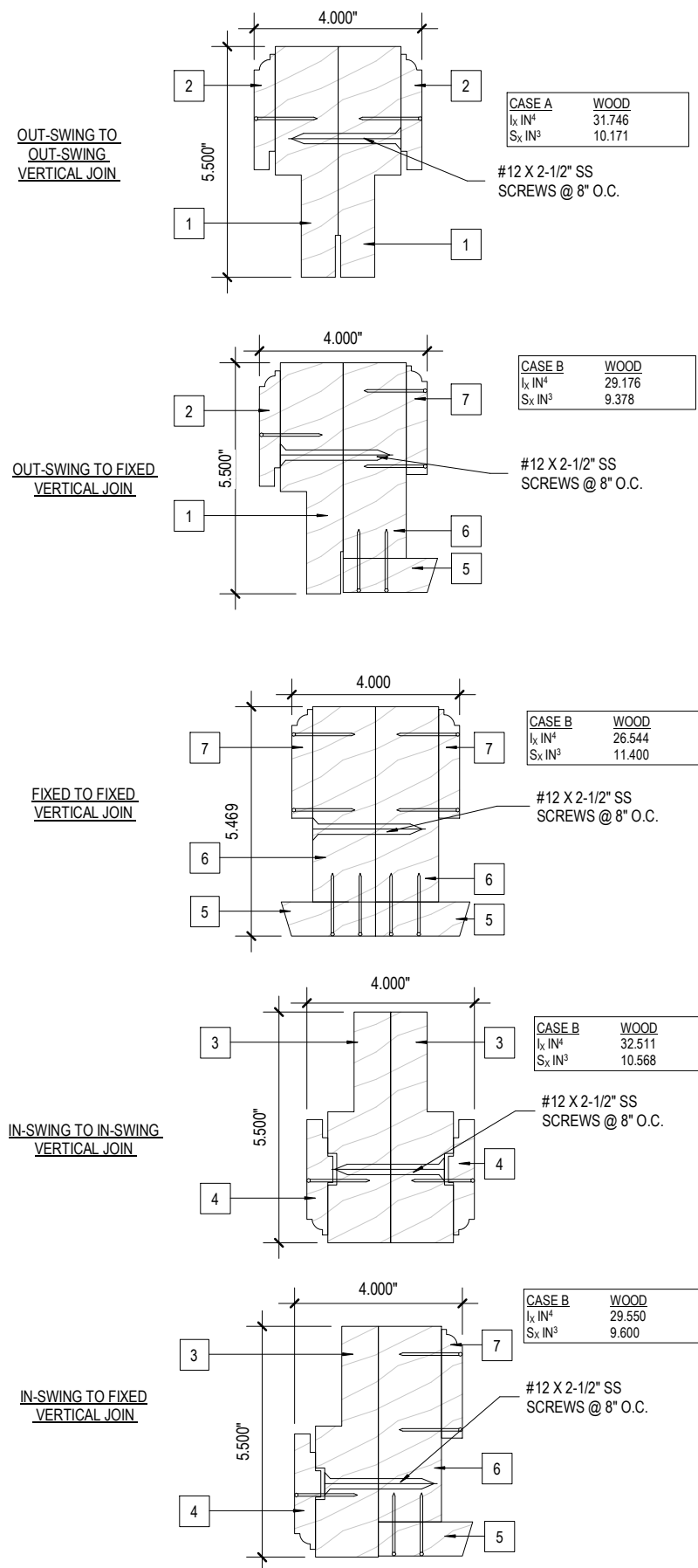


Sealed: 04-23-2024

## VERTICAL MULLION-ELEVATION AND SECTIONS

**FL#20517.1**

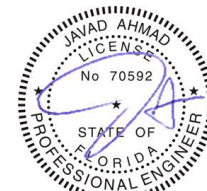
| DESIGN LOAD CAPACITY - (+/-) PSF |           |                   |
|----------------------------------|-----------|-------------------|
| NOMINAL DIMS.                    |           | MULLION W/O STEEL |
| WIDTH (W)                        | MULL SPAN | ANCHORS TYPE A    |
| 24"                              | 66"       | 70                |
| 30"                              |           | 70                |
| 36"                              |           | 70                |
| .41"                             |           | 10                |
| 48"                              |           | 70                |
| 24"                              | 72"       | 70                |
| 30"                              |           | 70                |
| 36"                              |           | 70                |
| 42"                              |           | 70                |
| 48"                              |           | 66.7              |
| 24"                              | 78        | 70                |
| 30"                              |           | 70                |
| 36"                              |           | 10                |
| 42"                              |           | 70                |
| 48                               |           | 61.5              |
| 24"                              | 84"       | 70                |
| 30"                              |           | 70                |
| 36"                              |           | 70                |
| 42"                              |           | 65.3              |
| 48"                              |           | 57.1              |
| 24"                              | 90        | 70                |
| 30"                              |           | 70                |
| 36"                              |           | 70                |
| 42"                              |           | 61                |
| 48"                              |           | 53.3              |
| 24                               | 96"       | 70                |
| 30                               |           | 70                |
| 36"                              |           | 66.7              |
| 42"                              |           | 57.1              |
| 48"                              |           | 50                |
| 24"                              | 102"      | 70                |
| 30"                              |           | 70                |
| 36"                              |           | 62.6              |
| 42"                              |           | 53.8              |
| 48"                              |           | 47.1              |
| 24"                              | 108"      | 70                |
| 30"                              |           | 66                |
| 36"                              |           | 55.6              |
| 42"                              |           | 48.3              |
| 48"                              |           | 42.9              |
| 24                               | 114"      | 70                |
| 30"                              |           | 59.1              |
| 36"                              |           | 49.7              |
| 42"                              |           | 43.1              |
| 48"                              |           | 38.3              |
| 24"                              | 120'      | 63.9              |
| 30"                              |           | 51.6              |
| 35"                              |           | 43.5              |
| 42"                              |           | 37.7              |
| 48"                              |           | 33.5              |



**AMERICAN CLIPPED-UNCLIPPED  
WOOD & STEEL MULLION  
(LARGE AND SMALL MISSILE IMPACT RATED)**

**HARTMAN WINDOWS & DOORS, LLC.**  
2107 W. BLUE HERON BLVD.  
WEST PALM BEACH, FL 33404  
PHN. (561) 296-9600

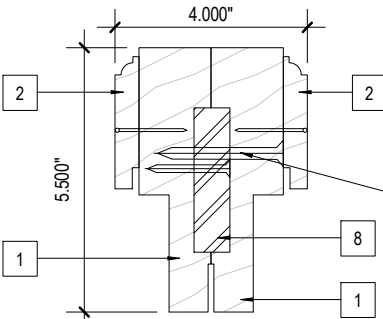
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|-------------|------------|-----------|----|
| drawing no. | JA-1425-23 | drawn by: | SA |
| date:       | 04-23-2024 | check by: | BS |



Sealed: 04-23-2024

VERTICAL MULLION-ELEVATION AND SECTIONS

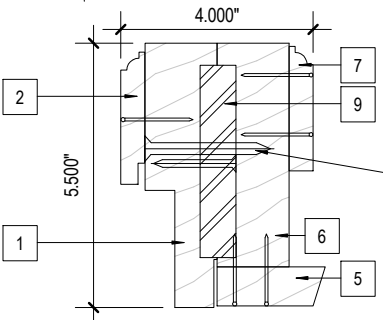
| DESIGN LOAD CAPACITY - (+/-) PSF |           |                  |                  |                  |                  |                  |                  |
|----------------------------------|-----------|------------------|------------------|------------------|------------------|------------------|------------------|
| NOMINAL DIMS.                    |           | 3" MULLION       |                  |                  | 4" MULLION       |                  |                  |
| WIDTH (W)                        | MULL SPAN | ANCHORS TYPE 'A' | ANCHORS TYPE 'B' | ANCHORS TYPE 'C' | ANCHORS TYPE 'A' | ANCHORS TYPE 'B' | ANCHORS TYPE 'C' |
| 24                               | 48"       | 70               | 70               | 70               | 70               | 70               | 70               |
| 30"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 36"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 42"                              |           | 65.3             | 70               | 70               | 65.3             | 70               | 70               |
| 48"                              | 96"       | 57.1             | 70               | 70               | 57.1             | 70               | 70               |
| 24"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 30"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 36"                              |           | 66.7             | 70               | 70               | 66.7             | 70               | 70               |
| 42"                              | 108"      | 57.1             | 70               | 70               | 57.1             | 70               | 70               |
| 48"                              |           | 50.0             | 70               | 70               | 50               | 70               | 70               |
| 24"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 30"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 36"                              | 120"      | 59.3             | 70               | 70               | 59.3             | 70               | 70               |
| 42"                              |           | 50.8             | 70               | 70               | 50.8             | 70               | 70               |
| 48"                              |           | 44.4             | 68.9             | 70               | 44.4             | 68.9             | 70               |
| 24"                              |           | 70               | 70               | 70               | 70               | 70               | 70               |
| 30"                              | 120"      | 64               | 70               | 70               | 64               | 70               | 70               |
| 36"                              |           | 53.3             | 70               | 70               | 53.3             | 70               | 70               |
| 42"                              |           | 45.7             | 70               | 70               | 45.7             | 70               | 70               |
| 48"                              | 120"      | 40               | 62               | 69.7             | 40               | 62               | 70               |



OUT-SWING TO OUT-SWING VERTICAL JOIN

| CASE A                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 29.582 | 1.688 |
| S <sub>x</sub> IN <sup>3</sup> | 9.241  | 1.125 |

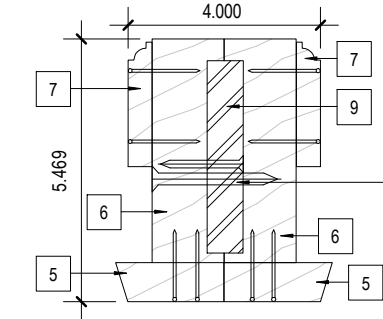
TYPICAL ANCHORS  
(SEE SHEET 108  
FOR SPACING)



OUT-SWING TO FIXED VERTICAL JOIN

| CASE B                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 24.842 | 4     |
| S <sub>x</sub> IN <sup>3</sup> | 7.898  | 2     |

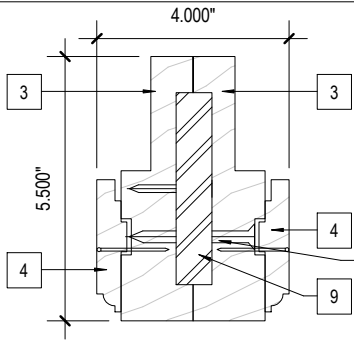
TYPICAL ANCHORS  
(SEE SHEET 108  
FOR SPACING)



FIXED TO FIXED VERTICAL JOIN

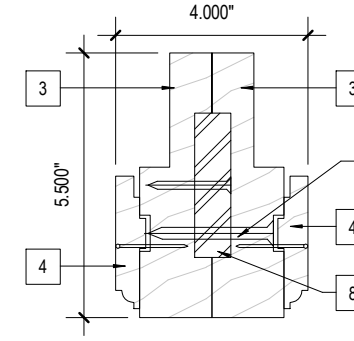
| CASE B                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 22.352 | 4     |
| S <sub>x</sub> IN <sup>3</sup> | 9.447  | 2     |

TYPICAL ANCHORS  
(SEE SHEET 108  
FOR SPACING)



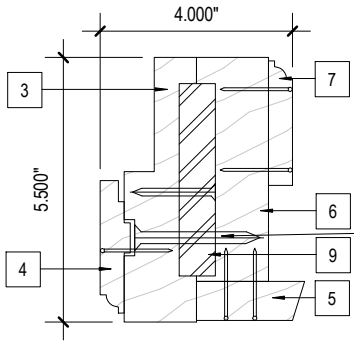
| CASE B                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 27.887 | 4     |
| S <sub>x</sub> IN <sup>3</sup> | 8.775  | 2     |

IN-SWING TO IN-SWING VERTICAL JOIN



| CASE B                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 30.440 | 1.688 |
| S <sub>x</sub> IN <sup>3</sup> | 9.676  | 1.125 |

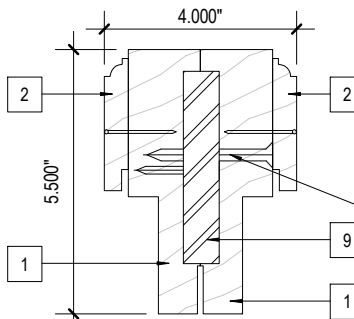
IN-SWING TO IN-SWING VERTICAL JOIN



IN-SWING TO FIXED VERTICAL JOIN

| CASE B                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 24.916 | 4     |
| S <sub>x</sub> IN <sup>3</sup> | 7.838  | 2     |

TYPICAL ANCHORS  
(SEE SHEET 108  
FOR SPACING)



OUT-SWING TO OUT-SWING VERTICAL JOIN

| CASE B                         | WOOD   | STEEL |
|--------------------------------|--------|-------|
| I <sub>x</sub> IN <sup>4</sup> | 27.530 | 4     |
| S <sub>x</sub> IN <sup>3</sup> | 8.752  | 2     |

TYPICAL ANCHORS  
(SEE SHEET 108  
FOR SPACING)

SECTIONAL DETAIL- MULLION CONFIGURATIONS  
FOR DIFFERENT COMBINATIONS

1  
103

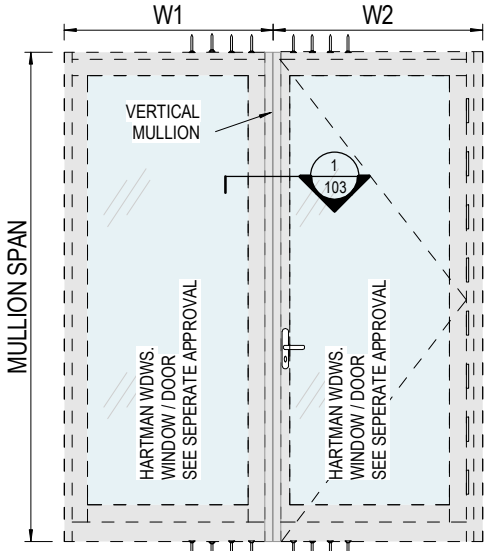
SECTIONAL DETAIL- MULLION CONFIGURATIONS FOR  
DIFFERENT COMBINATIONS  
NOT TO SCALE

NOTE: SEE SHEET XXX FOR ANCHOR SCHEDULE

FL#20517.1

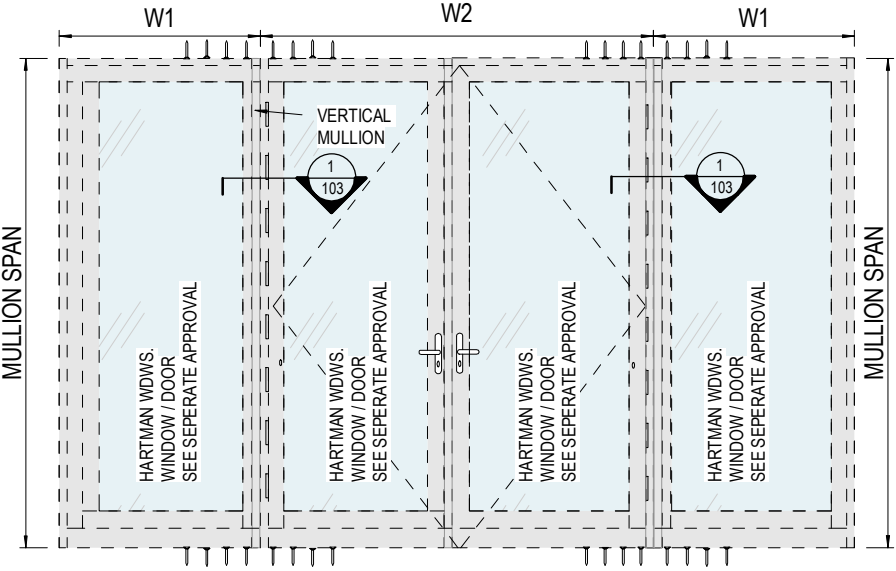
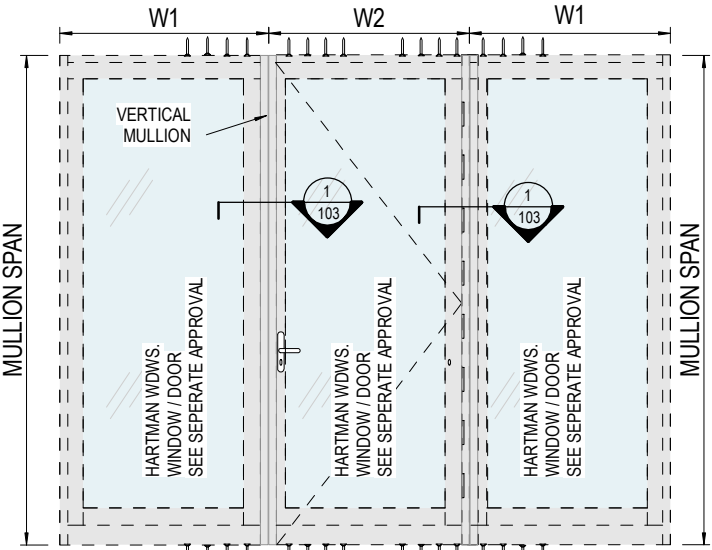
SIDELITE + SINGLE DOOR (O-X)

WIDTH (W) =  $\frac{W1+W2}{2}$



SIDELITE + SINGLE DOOR  
+ SIDELITE (O-X-O)

WIDTH (W) =  $\frac{W1+W2}{2}$



SIDELITE + DOUBLE DOOR + SIDELITE (O-X-X-O OR O-X-O-O)

WIDTH (W) =  $\frac{W1}{2} + \frac{W2}{4}$

2  
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TYPICAL ELEVATIONS-DOOR AND SIDELITE COMBINATIONS  
NOT TO SCALE



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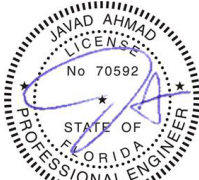
HARTMAN WINDOWS & DOORS, LLC.

2107 W. BLUE HERON BLVD.

WEST PALM BEACH, FL 33404

PHN. (561) 296-9600

| drawing no. | JA-1425-23 | drawn by: | SA | date: | 04-23-2024 | check by: | BS | REVISION |      |    |             |
|-------------|------------|-----------|----|-------|------------|-----------|----|----------|------|----|-------------|
|             |            |           |    |       |            |           |    | No.      | DATE | BY | DESCRIPTION |
|             |            |           |    |       |            |           |    |          |      |    |             |
|             |            |           |    |       |            |           |    |          |      |    |             |
|             |            |           |    |       |            |           |    |          |      |    |             |
|             |            |           |    |       |            |           |    |          |      |    |             |



Sealed: 04-23-2024

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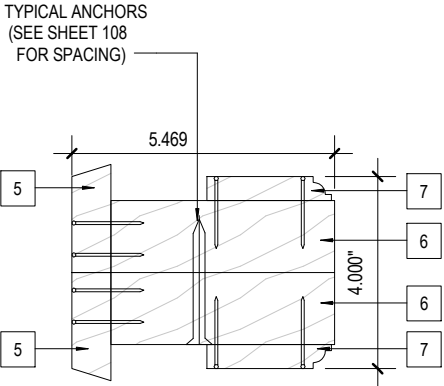
HORIZONTAL MULLION-ELEVATION AND SECTIONS

FL#20517.1

| DESIGN LOAD CAPACITY - (+/-) PSF |                                 |                       |                                   |
|----------------------------------|---------------------------------|-----------------------|-----------------------------------|
| NOMINAL DIMS.                    |                                 |                       | MULLION W/O STEEL ANCHOR TYPE 'A' |
| OPNG. WIDTH INCHES               | FIX. WDW HT. DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | TRANSOM TO FIXED WINDOW           |
| 72                               | 84                              | 12                    | 70                                |
|                                  |                                 | 18                    | 70                                |
|                                  |                                 | 24                    | 70                                |
|                                  |                                 | 30                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 42                    | 70                                |
|                                  |                                 | 48                    | 70                                |
| 84                               |                                 | 12                    | 70                                |
|                                  |                                 | 18                    | 70                                |
|                                  |                                 | 24                    | 66.6                              |
|                                  |                                 | 30                    | 63.4                              |
|                                  |                                 | 36                    | 60.7                              |
|                                  |                                 | 42                    | 58.3                              |
|                                  |                                 | 48                    | 56.3                              |
| 96                               |                                 | 12                    | 57.1                              |
|                                  |                                 | 18                    | 53.8                              |
|                                  |                                 | 24                    | 50.9                              |
|                                  |                                 | 30                    | 48.4                              |
|                                  |                                 | 36                    | 46.2                              |
|                                  |                                 | 42                    | 44.4                              |
|                                  |                                 | 48                    | 42.7                              |
| 72                               | 96                              | 12                    | 70                                |
|                                  |                                 | 18                    | 70                                |
|                                  |                                 | 24                    | 70                                |
|                                  |                                 | 30                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 42                    | 70                                |
|                                  |                                 | 48                    | 70                                |
| 84                               |                                 | 12                    | 66.2                              |
|                                  |                                 | 18                    | 62.9                              |
|                                  |                                 | 24                    | 59.9                              |
|                                  |                                 | 30                    | 57.3                              |
|                                  |                                 | 36                    | 55                                |
|                                  |                                 | 42                    | 53.1                              |
|                                  |                                 | 48                    | 51.5                              |
| 96                               |                                 | 12                    | 50.7                              |
|                                  |                                 | 18                    | 48.1                              |
|                                  |                                 | 24                    | 45.8                              |
|                                  |                                 | 30                    | 43.8                              |
|                                  |                                 | 36                    | 42                                |
|                                  |                                 | 42                    | 40.4                              |
|                                  |                                 | 48                    | 39.1                              |

| DESIGN LOAD CAPACITY - (+/-) PSF |                                 |                       |                                   |
|----------------------------------|---------------------------------|-----------------------|-----------------------------------|
| NOMINAL DIMS.                    |                                 |                       | MULLION W/O STEEL ANCHOR TYPE 'A' |
| OPNG. WIDTH INCHES               | FIX. WDW HT. DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | TRANSOM TO FIXED WINDOW           |
| 72                               | 108                             | 12                    | 70                                |
|                                  |                                 | 18                    | 70                                |
|                                  |                                 | 24                    | 70                                |
|                                  |                                 | 30                    | 70                                |
|                                  |                                 | 36                    | 69                                |
|                                  |                                 | 42                    | 67                                |
|                                  |                                 | 48                    | 65.3                              |
| 84                               |                                 | 12                    | 59.6                              |
|                                  |                                 | 18                    | 56.9                              |
|                                  |                                 | 24                    | 54.4                              |
|                                  |                                 | 30                    | 52.3                              |
|                                  |                                 | 36                    | 50.4                              |
|                                  |                                 | 42                    | 48.8                              |
|                                  |                                 | 48                    | 47.4                              |
| 96                               |                                 | 12                    | 45.6                              |
|                                  |                                 | 18                    | 43.5                              |
|                                  |                                 | 24                    | 41.6                              |
|                                  |                                 | 30                    | 39.9                              |
|                                  |                                 | 36                    | 38.4                              |
|                                  |                                 | 42                    | 37.1                              |
|                                  |                                 | 48                    | 36                                |
| 72                               | 120                             | 12                    | 70                                |
|                                  |                                 | 18                    | 70                                |
|                                  |                                 | 24                    | 68                                |
|                                  |                                 | 30                    | 65.6                              |
|                                  |                                 | 36                    | 63.6                              |
|                                  |                                 | 42                    | 61.8                              |
|                                  |                                 | 48                    | 60.4                              |
| 84                               |                                 | 12                    | 54.2                              |
|                                  |                                 | 18                    | 51.9                              |
|                                  |                                 | 24                    | 49.9                              |
|                                  |                                 | 30                    | 48.1                              |
|                                  |                                 | 36                    | 46.5                              |
|                                  |                                 | 42                    | 45.1                              |
|                                  |                                 | 48                    | 43.9                              |
| 96                               |                                 | 12                    | 41.5                              |
|                                  |                                 | 18                    | 39.7                              |
|                                  |                                 | 24                    | 38.1                              |
|                                  |                                 | 30                    | 36.7                              |
|                                  |                                 | 36                    | 35.5                              |
|                                  |                                 | 42                    | 34.3                              |
|                                  |                                 | 48                    | 33.4                              |

| DESIGN LOAD CAPACITY - (+/-) PSF |                                 |                       |                                   |
|----------------------------------|---------------------------------|-----------------------|-----------------------------------|
| NOMINAL DIMS.                    |                                 |                       | MULLION W/O STEEL ANCHOR TYPE 'A' |
| OPNG. WIDTH INCHES               | FIX. WDW HT. DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | TRANSOM TO FIXED WINDOW           |
| 30                               | 108                             | 24                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 48                    | 70                                |
| 36                               |                                 | 24                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 48                    | 70                                |
| 42                               |                                 | 24                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 48                    | 70                                |
| 48                               |                                 | 24                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 48                    | 70                                |
| 54                               |                                 | 24                    | 70                                |
|                                  |                                 | 36                    | 70                                |
|                                  |                                 | 48                    | 70                                |



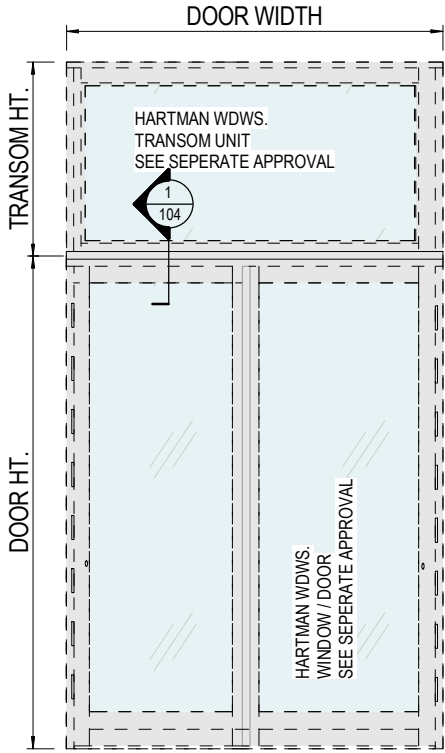
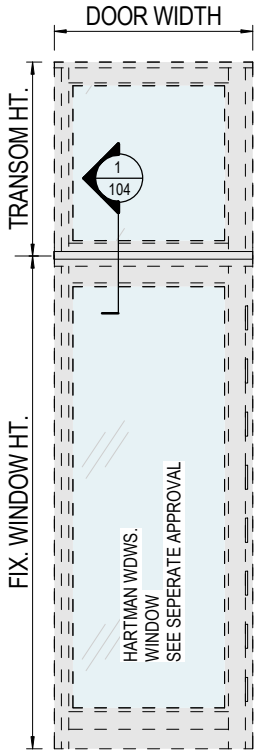
TRANSOM TO FIXED WINDOW HORIZONTAL JOIN

Ix IN<sup>4</sup> 26.544  
Sx IN<sup>3</sup> 11.402

SECTION DETAILS - TRANSOM TO FIXED WINDOW HORIZONTAL JOIN

NOT TO SCALE

1  
104



WIDTH (W) = (W1+W2)/2

SEE SHEET 108 FOR ANCHOR DETAILS

2  
104

TYPICAL ELEVATIONS-DOOR AND SIDELITE COMBINATIONS

NOT TO SCALE



JAVAD AHMAD PE, inc  
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AMERICAN CLIPPED-UNCLIPPED WOOD & STEEL MULLION (LARGE AND SMALL MISSILE IMPACT RATED)

HARTMAN WINDOWS & DOORS, LLC.  
2107 W. BLUE HERON BLVD.  
WEST PALM BEACH, FL 33404  
PHN. (561) 296-9600

|             |            |           |           |             |
|-------------|------------|-----------|-----------|-------------|
| drawing no. | JA-1425-23 | drawn by: | SA        |             |
|             |            |           |           |             |
| REVISION    |            |           | check by: | BS          |
| No.         | DATE       | BY        |           | DESCRIPTION |
|             |            |           |           |             |
|             |            |           |           |             |
|             |            |           |           |             |



Sealed: 04-23-2024

104

104 OF 110

HORIZONTAL MULLION-ELEVATION AND SECTIONS

| DESIGN LOAD CAPICITY - (+/-) PSF |                    |                       |               |                 |                 |               |                 |                 |
|----------------------------------|--------------------|-----------------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|
| NOMINAL DIMS.                    |                    |                       | 3"- MULLION   |                 |                 | 4" MULLION    |                 |                 |
| OPNG. WIDH INCHES                | DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 |
| 72                               | 84                 | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 42                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 48                    | 70            | 70              | 70              | 70            | 70              | 70              |
| 12                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 18                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 24                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 30                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 36                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 42                               |                    | 70                    | 70            | 67.2            | 70              | 70            | 67.2            |                 |
| 48                               |                    | 70                    | 70            | 64.7            | 70              | 70            | 64.7            |                 |
| 96                               | 12                 | 70                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  | 18                 | 70                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  | 24                 | 70                    | 70            | 68.6            | 70              | 70            | 68.6            | 68.6            |
|                                  | 30                 | 70                    | 70            | 64.2            | 70              | 70            | 64.2            | 64.2            |
|                                  | 36                 | 67.4                  | 70            | 60.6            | 67.4            | 70            | 60.6            | 60.6            |
|                                  | 42                 | 64.2                  | 70            | 57.7            | 64.2            | 70            | 57.7            | 57.7            |
|                                  | 48                 | 61.5                  | 70            | 55.4            | 61.5            | 70            | 55.4            | 55.4            |
| 72                               | 96                 | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 42                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 48                    | 70            | 70              | 70              | 70            | 70              | 70              |
| 12                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 18                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 24                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              |                 |
| 30                               |                    | 70                    | 70            | 68              | 70              | 70            | 68              |                 |
| 36                               |                    | 70                    | 70            | 64.7            | 70              | 70            | 64.7            |                 |
| 42                               |                    | 69                    | 70            | 62.1            | 69              | 70            | 62.1            |                 |
| 48                               |                    | 66.7                  | 70            | 60              | 66.7            | 70            | 60              |                 |
| 96                               | 12                 | 70                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  | 18                 | 70                    | 70            | 67.2            | 70              | 70            | 67.2            | 67.2            |
|                                  | 24                 | 69.6                  | 70            | 62.6            | 69.6            | 70            | 62.6            | 62.6            |
|                                  | 30                 | 65.5                  | 70            | 58.9            | 65.5            | 70            | 58.9            | 58.9            |
|                                  | 36                 | 62.1                  | 70            | 55.9            | 62.1            | 70            | 55.9            | 55.9            |
|                                  | 42                 | 59.4                  | 70            | 53.5            | 59.4            | 70            | 53.5            | 53.5            |
|                                  | 48                 | 57.1                  | 67.8          | 51.4            | 57.1            | 70            | 51.4            | 51.4            |

| DESIGN LOAD CAPICITY - (+/-) PSF |                    |                       |               |                 |                 |               |                 |                 |      |
|----------------------------------|--------------------|-----------------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|------|
| NOMINAL DIMS.                    |                    |                       | 3"- MULLION   |                 |                 | 4" MULLION    |                 |                 |      |
| OPNG. WIDH INCHES                | DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 |      |
| 72                               | 108                | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 42                    | 70            | 70              | 68.8            | 70            | 70              | 68.8            |      |
|                                  |                    | 48                    | 70            | 70              | 67              | 70            | 70              | 67              |      |
| 12                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
| 18                               |                    | 70                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
| 24                               |                    | 70                    | 70            | 66.2            | 70              | 70            | 66.2            | 66.2            |      |
| 30                               |                    | 69.8                  | 70            | 62.8            | 69.8            | 70            | 62.8            | 62.8            |      |
| 36                               |                    | 66.7                  | 70            | 60              | 66.7            | 70            | 60              | 60              |      |
| 42                               |                    | 64.2                  | 70            | 57.7            | 64.2            | 70            | 57.7            | 57.7            |      |
| 48                               |                    | 62.1                  | 70            | 55.9            | 62.1            | 70            | 55.9            | 55.9            |      |
| 96                               | 12                 | 70                    | 70            | 66.2            | 70              | 70            | 66.2            | 66.2            |      |
|                                  | 18                 | 68.3                  | 70            | 61.4            | 68.3            | 70            | 61.4            | 61.4            |      |
|                                  | 24                 | 64                    | 70            | 57.6            | 64              | 70            | 57.6            | 57.6            |      |
|                                  | 30                 | 60.5                  | 69.3          | 54.5            | 60.5            | 70            | 54.5            | 54.5            |      |
|                                  | 36                 | 57.7                  | 66.7          | 51.9            | 57.7            | 70            | 51.9            | 51.9            |      |
|                                  | 42                 | 55.3                  | 64.5          | 49.8            | 55.3            | 70            | 49.8            | 49.8            |      |
|                                  | 48                 | 53.3                  | 62.5          | 48              | 53.3            | 70            | 48              | 48              |      |
| 72                               | 120                | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |      |
|                                  |                    | 30                    | 70            | 70              | 68.8            | 70            | 70              | 68.8            | 68.8 |
|                                  |                    | 36                    | 70            | 70              | 66.2            | 70            | 70              | 66.2            | 66.2 |
|                                  |                    | 42                    | 70            | 70              | 64.2            | 70            | 70              | 64.2            | 64.2 |
|                                  |                    | 48                    | 69.6          | 70              | 62.6            | 69.6          | 70              | 62.6            | 62.6 |
| 12                               |                    | 70                    | 70            | 69.4            | 70              | 70            | 69.4            | 69.4            |      |
| 18                               |                    | 70                    | 70            | 64.9            | 70              | 70            | 64.9            | 64.9            |      |
| 24                               |                    | 68.1                  | 70            | 61.3            | 68.1            | 70            | 61.3            | 61.3            |      |
| 30                               |                    | 64.8                  | 70            | 58.3            | 64.8            | 70            | 58.3            | 58.3            |      |
| 36                               |                    | 62.1                  | 70            | 55.9            | 62.1            | 70            | 55.9            | 55.9            |      |
| 42                               |                    | 60                    | 70            | 54              | 60              | 70            | 54              | 54              |      |
| 48                               |                    | 58.2                  | 70            | 52.4            | 58.2            | 70            | 52.4            | 52.4            |      |
| 12                               | 67.4               | 70                    | 60.6          | 67.4            | 70              | 60.6          | 60.6            |                 |      |
| 96                               | 18                 | 62.9                  | 69            | 56.6            | 62.9            | 70            | 56.6            | 56.6            |      |
|                                  | 24                 | 59.3                  | 66.2          | 53.3            | 59.3            | 70            | 53.3            | 53.3            |      |
|                                  | 30                 | 563                   | 63.7          | 50.6            | 56.3            | 70            | 50.6            | 50.6            |      |
|                                  | 36                 | 53.8                  | 61.6          | 48.4            | 53.8            | 70            | 48.4            | 48.4            |      |
|                                  | 42                 | 51.7                  | 59.6          | 46.5            | 51.7            | 70            | 46.5            | 46.5            |      |
|                                  | 48                 | 50                    | 57.9          | 45              | 50              | 70            | 45              | 45              |      |

MULLION SPAN

H2

H1

2

105

HARTMAN WDWS. WINDOW / DOOR SEE SEPERATE APPROVAL

MULLION SPAN

H2

H1

2

105

HARTMAN WDWS. TRANSOM UNIT SEE SEPERATE APPROVAL

HARTMAN WDWS. FIX / OPER. DOOR / SIDELITE SEE SEPERATE APPROVAL

HEIGHT (H) = (H1+H2)/2

SEE SHEET 108 FOR ANCHOR DETAILS

1

105

TYPICAL ELEVATIONS -DOOR AND SIDELITE COMBINATIONS

NOT TO SCALE

| ITEM                                 | TYPICAL SECTION                                                                                                                                                            | SECTIONAL PROPERTIES                   |                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|
|                                      |                                                                                                                                                                            | MOMENT OF INERTIA (Ix) IN <sup>4</sup> | MOMENT OF INERTIA (Iy) IN <sup>4</sup> |
| TRANSOM TO OUT-SWING HORIZONTAL JOIN | <div><div><div>5.500"</div><div>4.000"</div><div>5</div><div>7</div><div>6</div><div>1</div><div>2</div></div><div>TYPICAL ANCHORS (SEE SHEET 108 FOR SPACING)</div></div> | 29.176                                 | 9.348                                  |
| TRANSOM TO IN-SWING HORIZONTAL JOIN  | <div><div><div>5.500"</div><div>4.000"</div><div>5</div><div>7</div><div>6</div><div>3</div><div>4</div></div><div>TYPICAL ANCHORS (SEE SHEET 108 FOR SPACING)</div></div> | 29.550                                 | 9.601                                  |

2

105

SECTION DETAILS - TRANSOM TO OUT-SWING / IN -SWING HORIZONTAL JOIN

NOT TO SCALE

JA-1425-23

04-23-2024

SA

BS

drawn by:

check by:

date:

REVISION

| NO. | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
|     |      |    |             |
|     |      |    |             |
|     |      |    |             |

JAVAD AHMAD

LICENSE

No 70592

STATE OF FLORIDA

PROFESSIONAL ENGINEER

Sealed: 04-23-2024

105

105 OF 110

FL#20517.1

JAVAD AHMAD PE, inc

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support@ja-pe.com

AMERICAN CLIPPED-UNCLIPPED WOOD & STEEL MULLION (LARGE AND SMALL MISSILE IMPACT RATED)

HARTMAN WINDOWS & DOORS, LLC.

2107 W. BLUE HERON BLVD.

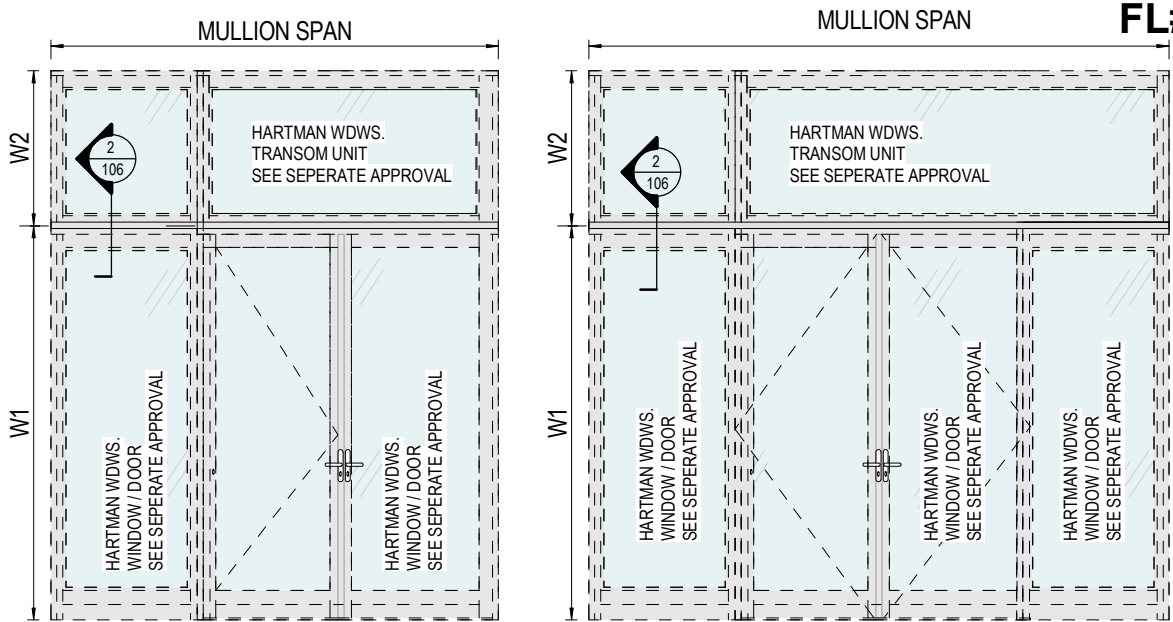
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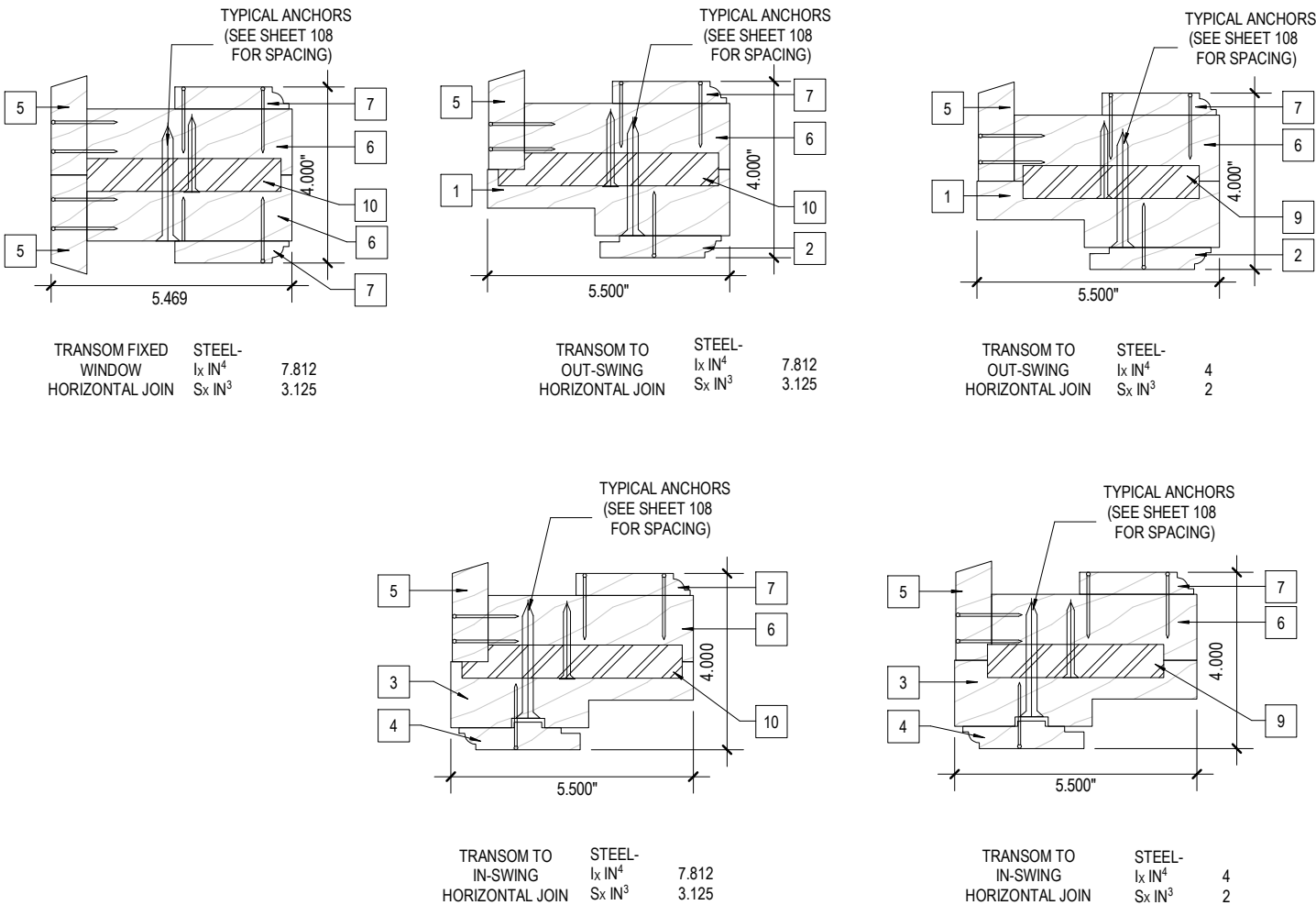
HORIZONTAL MULLION-ELEVATION AND SECTIONS

| DESIGN LOAD CAPACITY - (+/-) PSF |           |                 |                 |                 |                 |                 |                 |                 |                 |
|----------------------------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| NOMINAL DIMS.                    |           | 4" MULLION      |                 |                 |                 | 5" MULLION      |                 |                 |                 |
| WIDTH (W)                        | MULL SPAN | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 | ANCHOR TYPE C.1 | ANCHOR TYPE C.2 | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 | ANCHOR TYPE C.1 | ANCHOR TYPE C.2 |
| 48"                              | 96"       | 70              | 45              | 70              | 67.5            | 70              | 45              | 70              | 67.5            |
| 54"                              |           | 68.9            | 40              | 70              | 60              | 68.9            | 40              | 70              | 60              |
| 60"                              |           | 62              | 36              | 70              | 54              | 62              | 36              | 70              | 54              |
| 66"                              |           | 56.4            | 32.7            | 70              | 49.1            | 56.4            | 32.7            | 70              | 49.1            |
| 72"                              |           | 51.7            | 30              | 70              | 45              | 51.7            | 30              | 70              | 45              |
| 78"                              |           | 47.7            | 27.7            | 69.2            | 41.5            | 47.7            | 27.7            | 70              | 41.5            |
| 84"                              |           | 44.3            | 25.7            | 64.3            | 38.6            | 44.3            | 25.7            | 66.4            | 38.6            |
| 48"                              |           | 68.9            | 40              | 70              | 60              | 68.9            | 40              | 70              | 60              |
| 54"                              | 108"      | 61.2            | 35.6            | 70              | 53.3            | 61.2            | 35.6            | 70              | 53.3            |
| 60"                              |           | 55.1            | 32              | 70              | 48              | 55.1            | 32              | 70              | 48              |
| 66"                              |           | 50.1            | 29.1            | 64.6            | 43.6            | 50.1            | 29.1            | 70              | 43.6            |
| 72"                              |           | 45.9            | 26.7            | 59.3            | 40              | 45.9            | 26.7            | 68.9            | 40              |
| 78"                              |           | 42.4            | 24.6            | 54.7            | 36.9            | 42.4            | 24.6            | 63.6            | 36.9            |
| 84"                              |           | 39.4            | 22.9            | 50.8            | 34.3            | 39.4            | 22.9            | 59              | 34.3            |
| 48"                              |           | 62              | 36              | 70              | 54              | 62              | 36              | 70              | 54              |
| 54"                              |           | 55.1            | 32              | 64              | 48              | 55.1            | 32              | 70              | 48              |
| 60"                              | 120"      | 49.6            | 28.8            | 57.6            | 43.2            | 49.6            | 28.8            | 70              | 43.2            |
| 66"                              |           | 45.1            | 26.2            | 52.4            | 39.3            | 45.1            | 26.2            | 67.6            | 39.3            |
| 72"                              |           | 41.3            | 24              | 48              | 36              | 41.3            | 24              | 62              | 36              |
| 78"                              |           | 38.2            | 22.2            | 44.3            | 33.2            | 38.2            | 22.2            | 57.2            | 33.2            |
| 84"                              |           | 35.4            | 20.6            | 41.1            | 30.9            | 35.4            | 20.6            | 53.1            | 30.9            |
| 48"                              |           | 56/1            | 32.7            | 59.5            | 49.1            | 56.4            | 32.7            | 70              | 49.1            |
| 54"                              |           | 50.1            | 29.1            | 52.9            | 43.6            | 50.1            | 29.1            | 70              | 43.6            |
| 60"                              |           | 45.1            | 26.2            | 47.6            | 39.3            | 45.1            | 26.2            | 67.6            | 39.3            |
| 66"                              | 132"      | 41              | 23.8            | 43.3            | 35.7            | 41              | 23.8            | 61.5            | 35.7            |
| 72"                              |           | 37.6            | 21.8            | 39.7            | 32.7            | 37.6            | 21.8            | 56.4            | 32.7            |
| 78"                              |           | 34.7            | 20.1            | 36.6            | 30.2            | 34.7            | 20.1            | 52              | 30.2            |
| 84"                              |           | 32.2            | -               | 34              | 28.1            | 32.2            | -               | 48.3            | 28.1            |
| 48"                              |           | 49.7            | 30              | 49.7            | 45              | 51.7            | 30              | 70              | 45              |
| 54                               |           | 44.2            | 26.7            | 44.2            | 40              | 45.9            | 26.7            | 68.9            | 40              |
| 60"                              |           | 39.8            | 24              | 39.8            | 36              | 41.3            | 24              | 62              | 36              |
| 66"                              |           | 36.2            | 21.8            | 36.2            | 32.7            | 37.6            | 21.8            | 56.4            | 32.7            |
| 72"                              | 144"      | 33.2            | 20              | 33.2            | 30              | 34.4            | 20              | 51.7            | 30              |
| 78"                              |           | 30.6            | -               | 30.6            | 27.7            | 31.8            | -               | 47.7            | 27.7            |
| 84"                              |           | -               | -               | -               | -               | -               | -               | 44.3            | 25.7            |
| 48                               |           | 39.1            | 27.7            | 39.1            | 39.1            | 47.7            | 27.7            | 66.6            | 41.5            |
| 54"                              |           | 34.8            | 24.6            | 34.8            | 34.8            | 42.4            | 24.6            | 59.2            | 36.9            |
| 60"                              |           | 31.3            | 22.2            | 31.3            | 31.3            | 38.2            | 22.2            | 53.3            | 33.2            |
| 66"                              |           | -               | -               | -               | -               | 34.7            | 20.1            | 48.4            | 30.2            |
| 72"                              |           | -               | -               | -               | -               | 31.8            | -               | 44.4            | 27.7            |
| 78"                              | 156"      | -               | -               | -               | -               | -               | -               | 41              | 25.6            |
| 84"                              |           | -               | -               | -               | -               | -               | -               | 38              | 23.7            |



FL#20517.1

1  
106  
TYPICAL ELEVATIONS- DOOR AND SIDELITE COMBINATIONS  
NOT TO SCALE



2  
106  
SECTIONAL DETAIL - TRANSOM TO SIDELITE/FIX./OPER. DOOR  
NOT TO SCALE



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AMERICAN CLIPPED-UNCLIPPED  
WOOD & STEEL MULLION  
(LARGE AND SMALL MISSILE IMPACT RATED)

HARTMAN WINDOWS & DOORS, LLC.

2107 W. BLUE HERON BLVD.

WEST PALM BEACH, FL 33404

PHN. (561) 296-9600

| drawing no. | JA-1425-23 | drawn by: | SA | date: | 04-23-2024 | check by: | BS | REVISION |      |    |             |
|-------------|------------|-----------|----|-------|------------|-----------|----|----------|------|----|-------------|
|             |            |           |    |       |            |           |    | No.      | DATE | BY | DESCRIPTION |
|             |            |           |    |       |            |           |    |          |      |    |             |
|             |            |           |    |       |            |           |    |          |      |    |             |
|             |            |           |    |       |            |           |    |          |      |    |             |

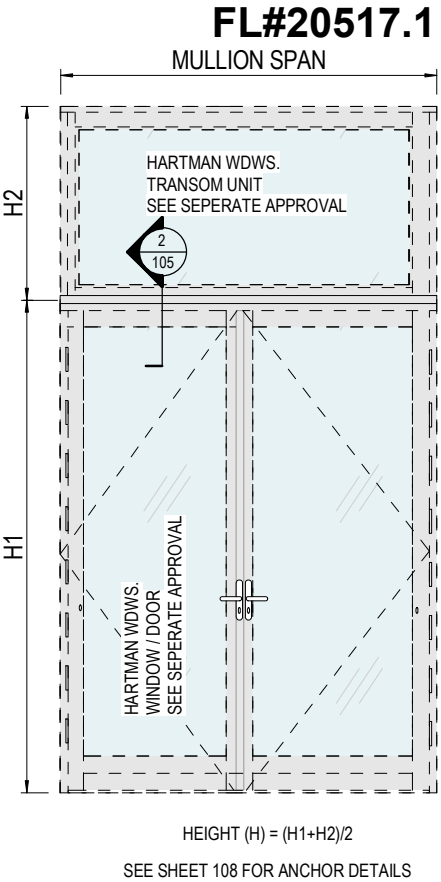
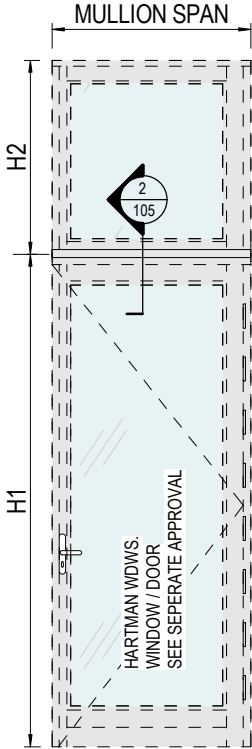


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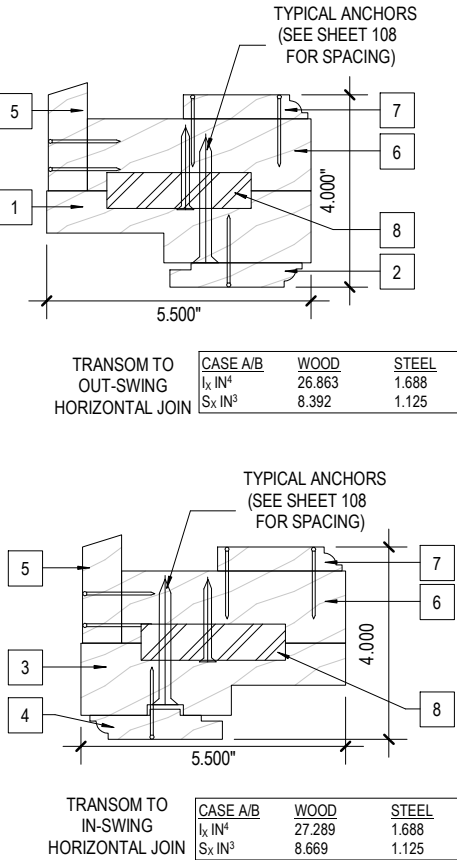
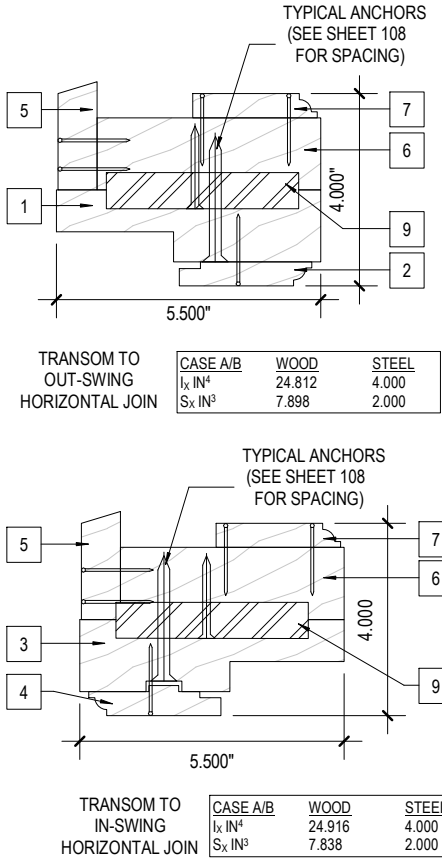
HORIZONTAL MULLION-ELEVATION AND SECTION

| DESIGN LOAD CAPICITY - (+/-) PSF |                    |                       |               |                 |                 |               |                 |                 |
|----------------------------------|--------------------|-----------------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|
| NOMINAL DIMS.                    |                    |                       | 3"- MULLION   |                 |                 | 4" MULLION    |                 |                 |
| OPNG. WIDH INCHES                | DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 |
| 72                               |                    | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 42                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 48                    | 70            | 70              | 70              | 70            | 70              | 70              |
| 84                               | 84                 | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 42                    | 70            | 70              | 67.2            | 70            | 70              | 67.2            |
|                                  |                    | 48                    | 70            | 70              | 64.7            | 70            | 70              | 64.7            |
| 96                               |                    | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 68.6            | 70            | 70              | 68.6            |
|                                  |                    | 30                    | 70            | 70              | 64.2            | 70            | 70              | 64.2            |
|                                  |                    | 36                    | 67.4          | 70              | 60.6            | 67.4          | 70              | 60.6            |
|                                  |                    | 42                    | 64.2          | 70              | 57.7            | 64.2          | 70              | 57.7            |
|                                  |                    | 48                    | 61.5          | 70              | 55.4            | 61.5          | 70              | 55.4            |
| 72                               |                    | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 42                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 48                    | 70            | 70              | 70              | 70            | 70              | 70              |
| 84                               | 96                 | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 68              | 70            | 70              | 68              |
|                                  |                    | 36                    | 70            | 70              | 64.7            | 70            | 70              | 64.7            |
|                                  |                    | 42                    | 69            | 70              | 62.1            | 69            | 70              | 62.1            |
|                                  |                    | 48                    | 66.7          | 70              | 60              | 66.7          | 70              | 60              |
| 96                               |                    | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 67.2            | 70            | 70              | 67.2            |
|                                  |                    | 24                    | 69.6          | 70              | 62.6            | 69.6          | 70              | 62.6            |
|                                  |                    | 30                    | 65.5          | 70              | 58.9            | 65.5          | 70              | 58.9            |
|                                  |                    | 36                    | 62.1          | 70              | 55.9            | 62.1          | 70              | 55.9            |
|                                  |                    | 42                    | 59.4          | 70              | 53.5            | 59.4          | 70              | 53.5            |
|                                  |                    | 48                    | 57.1          | 67.8            | 51.4            | 57.1          | 70              | 51.4            |

| DESIGN LOAD CAPICITY - (+/-) PSF |                    |                       |               |                 |                 |               |                 |                 |
|----------------------------------|--------------------|-----------------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|
| NOMINAL DIMS.                    |                    |                       | 3"- MULLION   |                 |                 | 4" MULLION    |                 |                 |
| OPNG. WIDH INCHES                | DOOR HEIGHT INCHES | TRANSOM HEIGHT INCHES | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 | ANCHOR TYPE A | ANCHOR TYPE B.1 | ANCHOR TYPE B.2 |
| 72                               |                    | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 36                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 42                    | 70            | 70              | 68.8            | 70            | 70              | 68.8            |
|                                  |                    | 48                    | 70            | 70              | 67              | 70            | 70              | 67              |
| 84                               | 108                | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 66.2            | 70            | 70              | 66.2            |
|                                  |                    | 30                    | 69.8          | 70              | 62.8            | 69.8          | 70              | 62.8            |
|                                  |                    | 36                    | 66.7          | 70              | 60              | 66.7          | 70              | 60              |
|                                  |                    | 42                    | 64.2          | 70              | 57.7            | 64.2          | 70              | 57.7            |
|                                  |                    | 48                    | 62.1          | 70              | 55.9            | 62.1          | 70              | 55.9            |
| 96                               |                    | 12                    | 70            | 70              | 66.2            | 70            | 70              | 66.2            |
|                                  |                    | 18                    | 68.3          | 70              | 61.4            | 68.3          | 70              | 61.4            |
|                                  |                    | 24                    | 64            | 70              | 57.6            | 64            | 70              | 57.6            |
|                                  |                    | 30                    | 60.5          | 69.3            | 54.5            | 60.5          | 70              | 54.5            |
|                                  |                    | 36                    | 57.7          | 66.7            | 51.9            | 57.7          | 70              | 51.9            |
|                                  |                    | 42                    | 55.3          | 64.5            | 49.8            | 55.3          | 70              | 49.8            |
|                                  |                    | 48                    | 53.3          | 62.5            | 48              | 53.3          | 70              | 48              |
| 72                               |                    | 12                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 18                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 24                    | 70            | 70              | 70              | 70            | 70              | 70              |
|                                  |                    | 30                    | 70            | 70              | 68.8            | 70            | 70              | 68.8            |
|                                  |                    | 36                    | 70            | 70              | 66.2            | 70            | 70              | 66.2            |
|                                  |                    | 42                    | 70            | 70              | 64.2            | 70            | 70              | 64.2            |
|                                  |                    | 48                    | 69.6          | 70              | 62.6            | 69.6          | 70              | 62.6            |
| 84                               | 120                | 12                    | 70            | 70              | 69.4            | 70            | 70              | 69.4            |
|                                  |                    | 18                    | 70            | 70              | 64.9            | 70            | 70              | 64.9            |
|                                  |                    | 24                    | 68.1          | 70              | 61.3            | 68.1          | 70              | 61.3            |
|                                  |                    | 30                    | 64.8          | 70              | 58.3            | 64.8          | 70              | 58.3            |
|                                  |                    | 36                    | 62.1          | 70              | 55.9            | 62.1          | 70              | 55.9            |
|                                  |                    | 42                    | 60            | 70              | 54              | 60            | 70              | 54              |
|                                  |                    | 48                    | 58.2          | 70              | 52.4            | 58.2          | 70              | 52.4            |
| 96                               |                    | 12                    | 67.4          | 70              | 60.6            | 67.4          | 70              | 60.6            |
|                                  |                    | 18                    | 62.9          | 69              | 56.6            | 62.9          | 70              | 56.6            |
|                                  |                    | 24                    | 59.3          | 66.2            | 53.3            | 59.3          | 70              | 53.3            |
|                                  |                    | 30                    | 56.3          | 63.7            | 50.6            | 56.3          | 70              | 50.6            |
|                                  |                    | 36                    | 53.8          | 61.6            | 48.4            | 53.8          | 70              | 48.4            |
|                                  |                    | 42                    | 51.7          | 59.6            | 46.5            | 51.7          | 70              | 46.5            |
|                                  |                    | 48                    | 50            | 57.9            | 45              | 50            | 70              | 45              |



1  
107  
TYPICAL ELEVATIONS -DOOR AND SIDELITE COMBINATIONS  
NOT TO SCALE



2  
107  
SECTIONAL VIEWS  
NOT TO SCALE

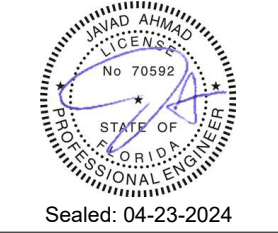


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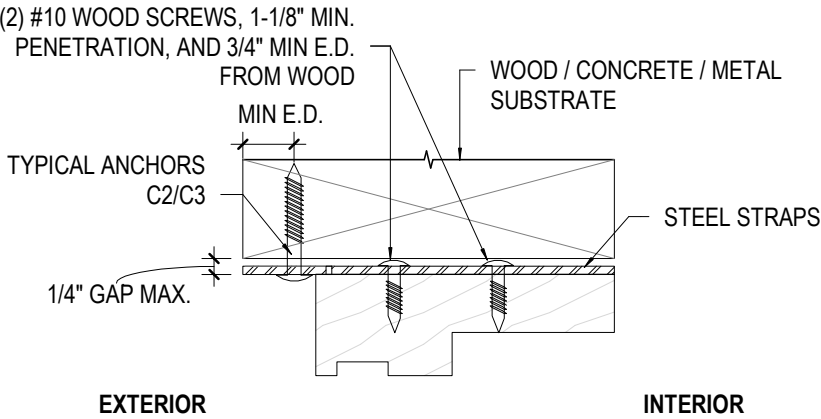
AMERICAN CLIPPED-UNCLIPPED  
WOOD & STEEL MULLION  
(LARGE AND SMALL MISSILE IMPACT RATED)

HARTMAN WINDOWS & DOORS, LLC.  
2107 W. BLUE HERON BLVD.  
WEST PALM BEACH, FL 33404  
PHN. (561) 296-9600

| drawing no. | date: | JA-1425-23 | 04-23-2024 | REVISION |  | No. | DATE | BY | DESCRIPTION |
|-------------|-------|------------|------------|----------|--|-----|------|----|-------------|
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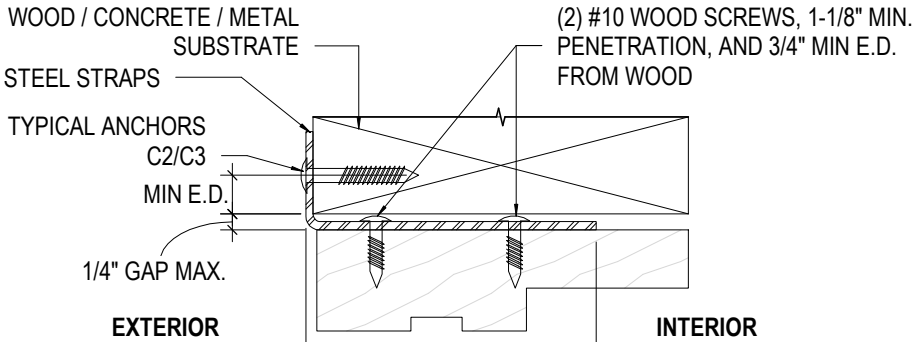


ALTERNATE ANCHORING

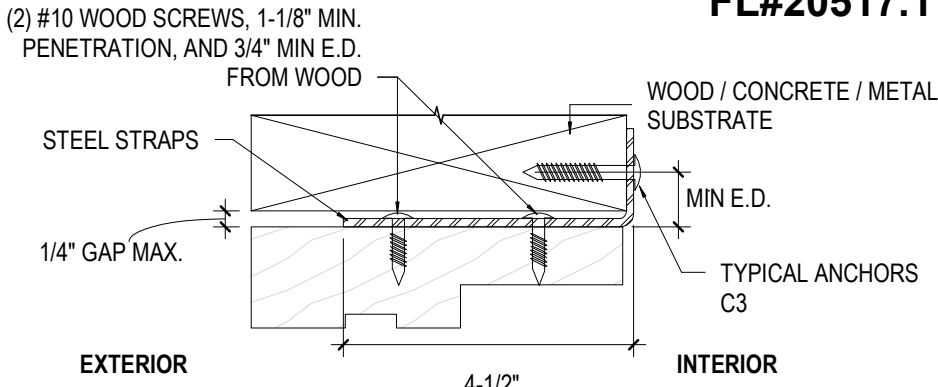


1  
108  
EXTERIOR FLAT STRAP  
N.T.S

4-1/2" 16 GA. SS OR GALV SIMPSON CS16Z STEEL STRAPS

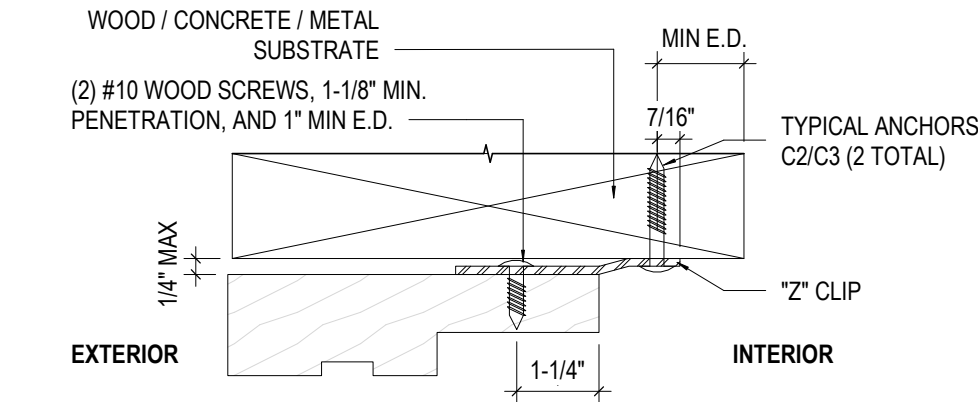


2  
108  
EXTERIOR BENT STRAP  
N.T.S



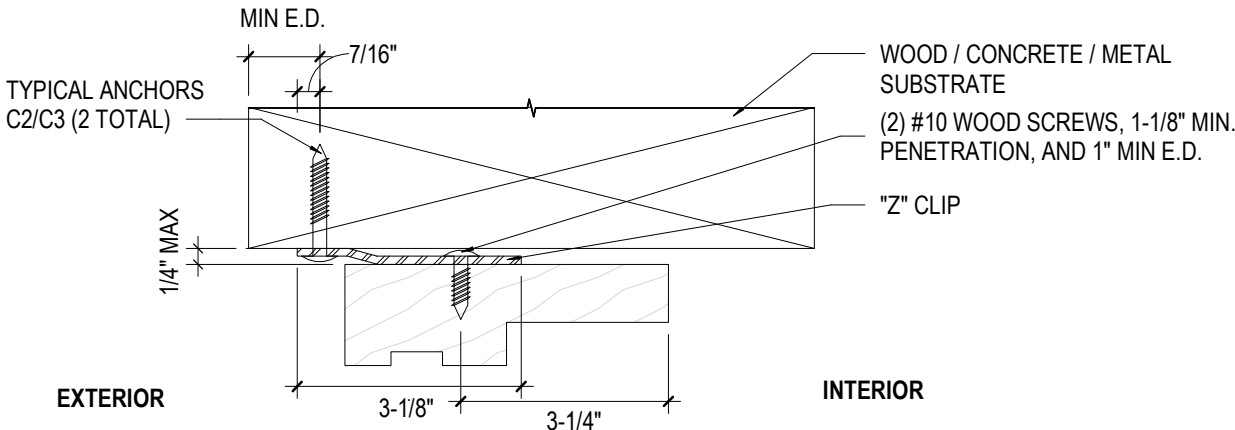
3  
108  
INTERIOR BENT STRAP  
N.T.S

FL#20517.1



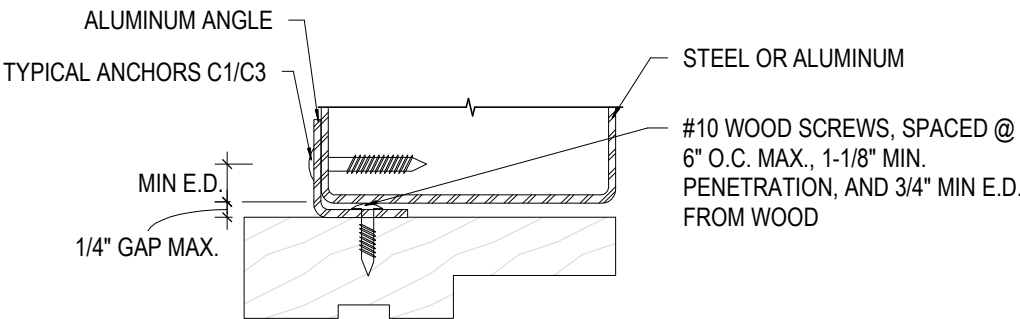
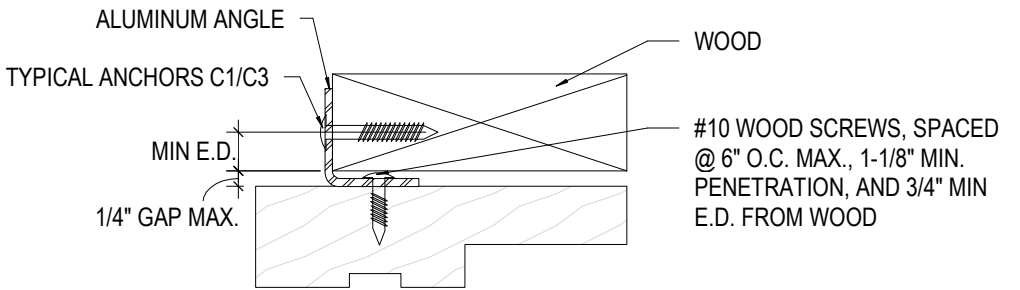
4  
108  
INTERIOR Z-CLIP STRAP  
N.T.S

GALVANIZED STEEL "Z" CLIP (14 GA)



5  
108  
EXTERIOR Z-CLIP STRAP  
N.T.S

1-1/2" X 1-1/2" X 1/8" ALUMINUM ANGLE (CONT.)



TYPICAL ANCHOR TYPES

TYPE C1 - 1/4" DEWALT ULTRACON (Fu = 177,000 PSI, Fy = 155,000 PSI)

- INTO 2BY WOOD WITH 1-1/2" MIN EMBEDMENT, AND 3/4" MIN EDGE DISTANCE

TYPE C2 - 1/4" DEWALT ULTRACON (Fu = 177,000 PSI, Fy = 155,000 PSI)

- INTO 2BY WOOD WITH 1-1/2" MIN EMBEDMENT, AND 3/4" MIN EDGE DISTANCE
- DIRECTLY INTO CONCRETE, OR HOLLOW/GROUT FILLED MASONRY\* WITH 1-3/4" EMBEDMENT, AND 2-1/2" MIN EDGE DISTANCE

TYPE C3 - #12 SMS OR SDS (GRADE 5 MIN/316 SS)

- INTO ALUMINUM / STEEL WITH 5 PITCHES PASSED THE THREAD PLANE, AND 3/4" MIN EDGE DISTANCE
- INTO APPROVED MULLIONS WITH 5 PITCHES PASSED THE THREAD PLANE, AND 3/4" MIN EDGE DISTANCE
- INTO 2BY WOOD WITH 1-1/2" MIN ENGAGEMENT, AND 3/4" MIN EDGE DISTANCE

SUBSTRATE NOTES:

- WOOD AT HEAD, SILL OR JAMBS IS SOUTHERN YELLOW PINE #2 (SG=0.55 MIN.)
- CONCRETE AT HEAD, SILL OR JAMBS fc= 3000 PSI
- HOLLOW/GROUT FILLED MASONRY UNITS AT JAMBS fm= 2000 PSI
- STEEL (1/8" THICK, A36 MIN) AT HEAD, SILL OR JAMBS
- ALUMINUM (1/8" THICK, 6063-T6 MIN) AT HEAD, SILL OR JAMBS

NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR INSULATING ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS (EXAMPLE: STEEL WITH ALUMINUM)

ANCHOR LAYOUT / SPACING:

FOR 1-1/2" X 1-1/2" X 1/8" ALUMINUM ANGLE (CONT.)-

- ANCHORS C1/C2/C3 SHALL BE PLACED AT-
- MAX. 6" O.C. SPACING
- MAX. 3" FROM UNIT CORNER FOR HEAD
- MAX. 4" FROM UNIT CORNER FOR JAMB

FOR GALVANIZED STEEL "Z" CLIP (14 GA) OR 4-1/2" 16 GA. SS OR GALV SIMPSON CS16Z STEEL STRAPS-

ANCHORS C1/C2/C3 SHALL BE PLACED AS PER ANCHOR LAYOUT SHOWN ON SHEET 108

THE STEEL CLIPS SHALL BE PLACED AT-

- MAX. 8" O.C. SPACING
- MAX. 3" FROM UNIT CORNER FOR HEAD
- MAX. 4" FROM UNIT CORNER FOR JAMB



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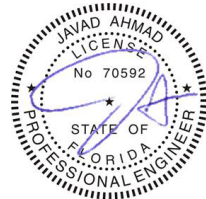
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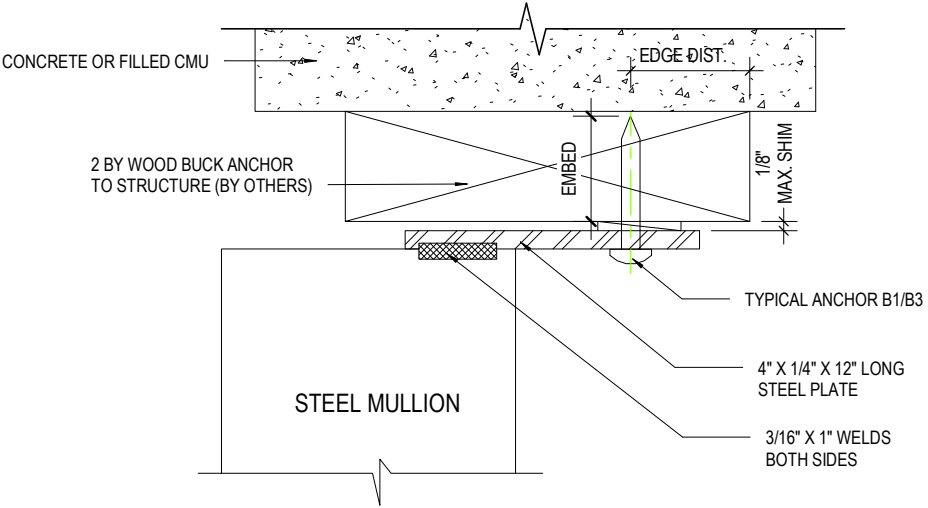
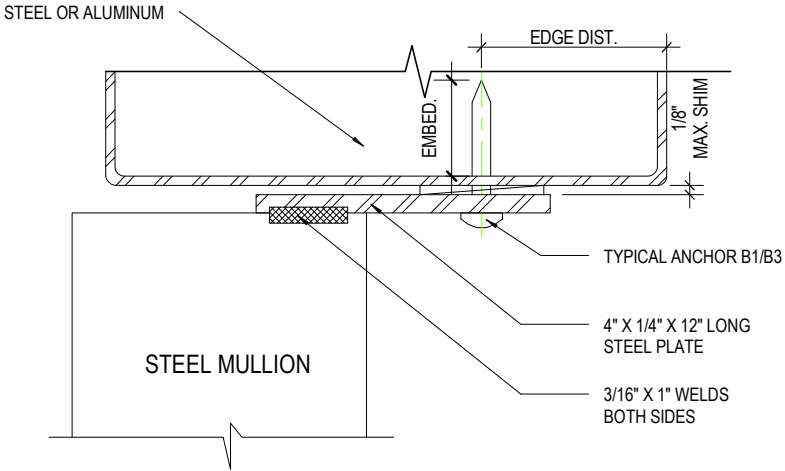
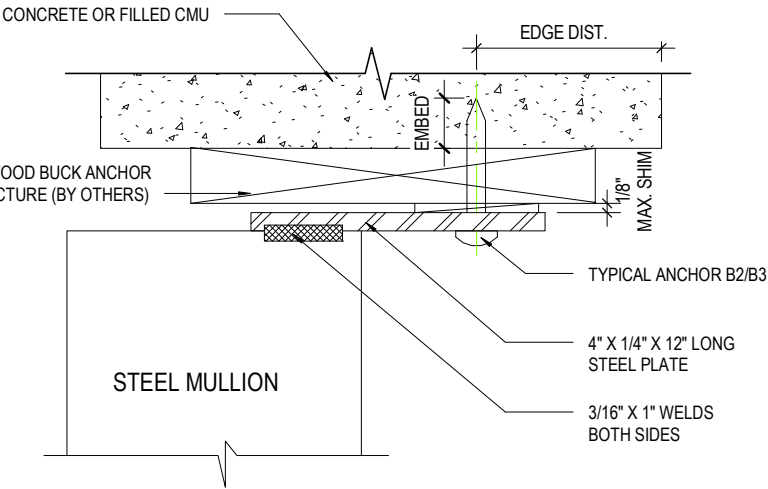
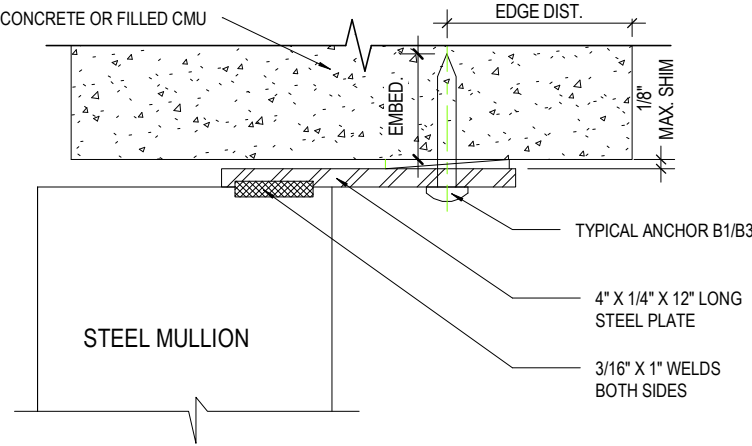
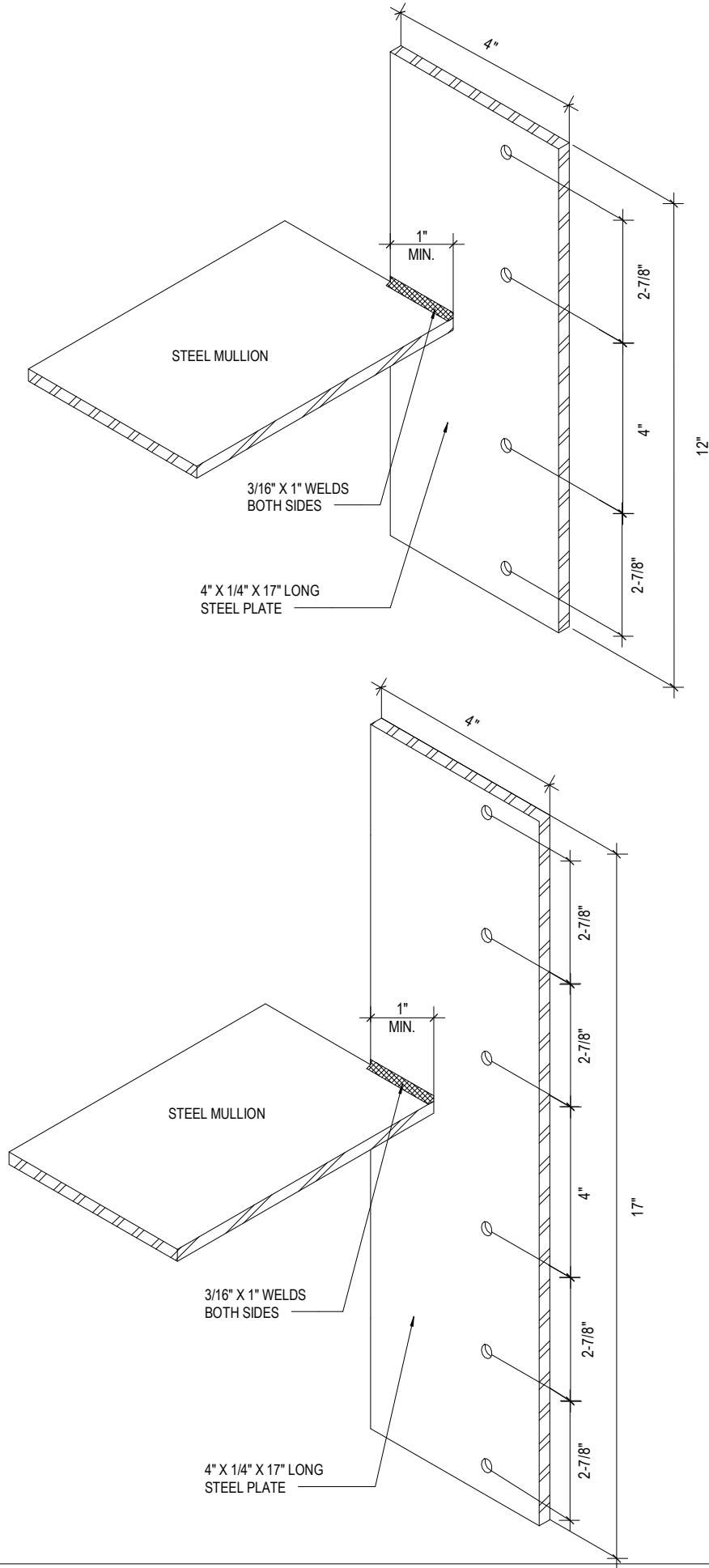
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| drawing no. | date: | JA-1425-23 | drawn by: | check by: | REVISION |      |    |             |
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|             |       |            |           |           | No.      | DATE | BY | DESCRIPTION |
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|             |       |            |           |           |          |      |    |             |
|             |       |            |           |           |          |      |    |             |
|             |       |            |           |           |          |      |    |             |



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ALTERNATIVE ANCHORING



TYPICAL ANCHOR TYPES

TYPE B1 - 1/4" DEWALT ULTRACON (Fu = 177,000 PSI, Fy = 155,000 PSI)

- INTO 2BY WOOD BUCKS OR WOOD STRUCTURE 1-1/2" MIN EMBEDMENT INTO WOOD (HEAD/SILL/JAMBS)
- THRU 1BY BUCKS INTO CONCRETE 1-3/4" NMIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
- DIRECTLY INTO CONCRETE 1-3/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)

TYPE B2 - 1/4" DEWALT ULTRACON (Fu = 177,000 PSI, Fy = 155,000 PSI)

- THRU 1BY BUCKS INTO FILLED BLOCKS 1-3/4" MIN EMBEDMENT, INTO FILLED BLOCKS (JAMBS)
- DIRECTLY INTO FILLED BLOCKS 1-3/4" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

TYPE B3 - #14 SMS OR SDS (GRADE 5 MIN/316 SS)

- INTO ALUMINUM / STEEL WITH 5 PITCHES PASSED THE THREAD PLANE, AND 3/4" MIN EDGE DISTANCE

SUBSTRATE NOTES:

- WOOD AT HEAD, SILL OR JAMBS IS SOUTHERN YELLOW PINE #2 (SG=0.55 MIN.)
- CONCRETE AT HEAD, SILL OR JAMBS f'c= 3000 PSI
- C-90 GROUT FILLED BLOCK AT JAMBS f'm= 2000 PSI
- STEEL (1/8" THICK, A36 MIN) AT HEAD, SILL OR JAMBS
- ALUMINUM (1/8" THICK, 6063-T6 MIN) AT HEAD, SILL OR JAMBS

NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR INSULATING ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS (EXAMPLE: STEEL WITH ALUMINUM)

ANCHOR EDGE DISTANCES:

- INTO CONCRETE AND FILLED BLOCK = 2-1/2" MIN.
- INTO WOOD STRUCTURE = 1" MIN.
- INTO METAL STRUCTURE = 3/4".

ANCHOR CL TO CL DISTANCE:

- INTO CONCRETE AND FILLED BLOCK = 2-7/8" MIN.
- INTO WOOD STRUCTURE = 1" MIN.
- INTO METAL STRUCTURE = 1" MIN.

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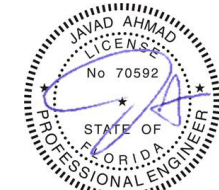
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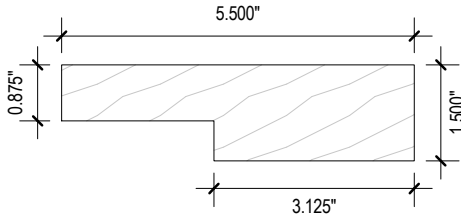
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| drawing no. | date: | JA-1425-23 | drawn by: | SA | check by: | BS | REVISION |      |    |             |
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|             |       |            |           |    |           |    | No.      | DATE | BY | DESCRIPTION |
|             |       |            |           |    |           |    |          |      |    |             |
|             |       |            |           |    |           |    |          |      |    |             |
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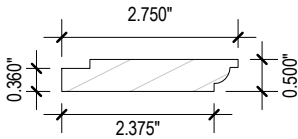


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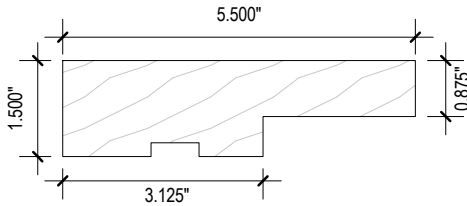
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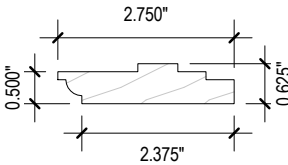
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OPERATING DOOR FIX. DOOR.  
SIDELITE UNIT



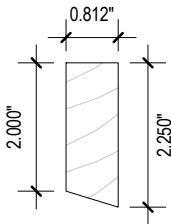
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DOOR STOP



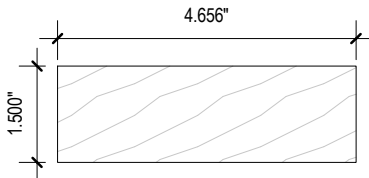
3. IN SWING DOOR FRAME HEAD/JAMB  
OPERATING DOOR FIX. DOOR  
SIDELITE UNIT



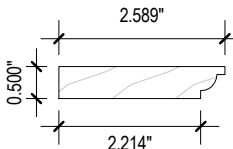
4. IN-SWING DOOR  
DOOR STOP



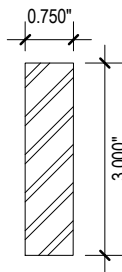
5. EXTERIOR GLASS STOP.



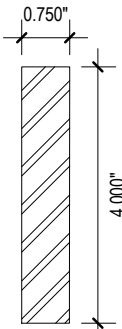
6. TRANSOM WINDOW



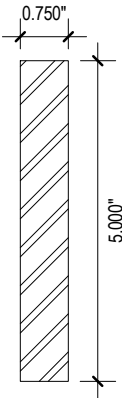
7. INTERIOR TRIM



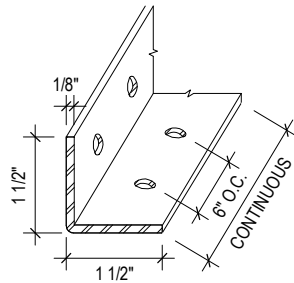
8. 3" STEEL MULLION



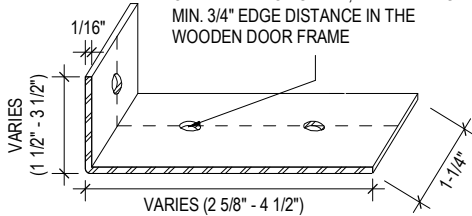
9. 4" STEEL MULLION



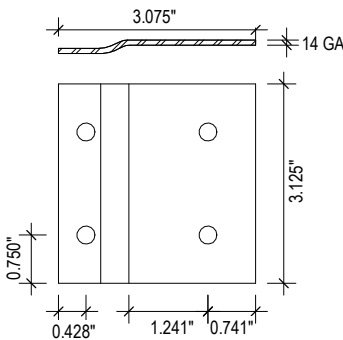
10. 5" STEEL MULLION



11. 1-1/2" X 1-1/2" X 1/8" ALUMINUM ANGLE (CONT.)



12. 4 1/2" 16 GA SS OR GALV. SIMPSON CS16Z STEEL STRAPS



13. GALVANIZED STEEL "Z" CLIP (14 GA)

FL#20517.1

| ITEM # | REQD.    | DESCRIPTION                                               | MATERIAL   | MANF./SUPPLIER/REMARKS |
|--------|----------|-----------------------------------------------------------|------------|------------------------|
| 1      | AS REQD. | OUTSWING DOOR FRAME HEAD/JAMB (OPERATING DOOR, FIX. DOOR) | WOOD       | MAHOGANY               |
| 2      | AS REQD. | OUTSWING DOOR INTERIOR STOP                               | WOOD       | MAHOGANY               |
| 3      | AS REQD. | INSWING DOOR FRAME HEAD/JAMB (OPERATING DOOR, FIX. DOOR)  | WOOD       | MAHOGANY               |
| 4      | AS REQD. | INSWING DOOR EXTERIOR STOP                                | WOOD       | MAHOGANY               |
| 5      | AS REQD. | TRANSOM EXT. GLASS STOP                                   | WOOD       | MAHOGANY               |
| 6      | AS REQD. | TRANSOM FRAME (HEAD/SILL/JAMB)                            | WOOD       | MAHOGANY               |
| 7      | AS REQD. | TRANSOM INTERIOR TRIM                                     | WOOD       | MAHOGANY               |
| 8      | AS REQD. | 3" MULLION                                                | STEEL      | A36, Fu MIN. - 58 KSI  |
| 9      | AS REQD. | 4" MULLION                                                | STEEL      | A36, Fu MIN. - 58 KSI  |
| 10     | AS REQD. | 5" MULLION                                                | STEEL      | A36, Fu MIN. = 58 KSI  |
| 11     | AS REQD. | 1-1/2" X 1-1/2" X 1/8" ANGLE (CONT.)                      | ALUMINUM   | 606.3-T5 MIN.          |
| 12     | AS REQD. | 4-1/2" SIMPSON CS16Z STEEL STRAPS                         | SS OR GALV | 16GA                   |
| 13     | AS REQD. | GALVANIZED STEEL -"Z"- CLIP (14GA)                        | STEEL      | 14GA                   |

TYPICAL WOOD-HONDURES MAHOGANY LUMBER

SPECIFIC GRAVITY = 0.45 MIN.  
GRADE = 2 MIN.  
MOISTURE CONTENT = 19% MAX.

THE APPROVED PRODUCTS NOTED HEREIN ARE EXEMPT FROM PRESERVATIVE TREATMENT PER FLORIDA BUILDING CODE WHICH EXEMPTS WOOD SPECIES LISTED AS 'NATURALLY DURABLE'. THE SPECIFIC PRODUCTS HEREIN ARE EXEMPTED HONDURAN MAHOGANY-SWIETENIA MACROPHYLLA OR EQUIVALENT SPECIES BASED ON USDA LISTING AND MUST HAVE A SPECIFIC GRAVITY EQUAL TO OR HIGHER THAT THE REFERENCED SPECIES.



JAVAD AHMAD PE, inc

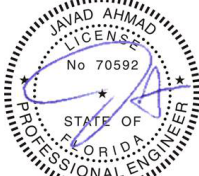
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Doral, FL 33126  
Ph: (305) 424-8001  
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WOOD & STEEL MULLION  
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WEST PALM BEACH, FL 33404  
PHN. (561) 296-9600

| drawing no. | date: | JA-1425-23 | drawn by: | SA | REVISION |      |    |             |
|-------------|-------|------------|-----------|----|----------|------|----|-------------|
|             |       |            |           |    | No.      | DATE | BY | DESCRIPTION |
|             |       | 04-23-2024 | check by: | BS |          |      |    |             |



Sealed: 04-23-2024