

| REVISIONS |             |      |          |
|-----------|-------------|------|----------|
| REV       | DESCRIPTION | DATE | APPROVED |

NOTES:

1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH REQUIREMENTS OF THE FLORIDA BUILDING CODE INCLUDING THE HVHZ.
2. WOOD FRAMING AND MASONRY OPENING TO BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO STRUCTURE. FRAMING AND MASONRY OPENING IS THE RESPONSIBILITY OF THE ARCHITECT OR ENGINEER OF RECORD.
3. WHERE SHIM OR BUCK THICKNESS IS LESS THAN 1–1/2” UNITS MUST BE ANCHORED THROUGH THE FRAME IN ACCORDANCE WITH MANUFACTURER’S PUBLISHED INSTALLATION INSTRUCTIONS. ANCHORS SHALL BE SECURELY FASTENED DIRECTLY INTO MASONRY, CONCRETE OR OTHER STRUCTURAL SUBSTRATE MATERIAL.
4. WHERE WOOD BUCK THICKNESS IS 1–1/2” OR GREATER, BUCK SHALL BE SECURELY FASTENED TO MASONRY, CONCRETE OR OTHER STRUCTURAL SUBSTRATE. UNITS MAY BE ANCHORED THROUGH FRAME TO SECURED WOOD BUCK IN ACCORDANCE WITH MANUFACTURER’S PUBLISHED INSTALLATION INSTRUCTIONS.
5. WHERE 1X BUCK IS NOT USED DISSIMILAR MATERIALS MUST BE SEPARATED WITH APPROVED COATING OR MEMBRANE. SELECTION OF COATING OR MEMBRANE IS THE RESPONSIBILITY OF THE ARCHITECT OR ENGINEER OF RECORD.
6. BUCKS SHALL EXTEND BEYOND UNIT FRAME INTERIOR FACE SO THAT FULL FRAME SUPPORT IS PROVIDED.
7. SHIM AS NEEDED AT EACH ANCHOR LOCATION WITH LOAD BEARING SHIM. SHIM WHERE SPACE OF 1/16” OR GREATER OCCURS. MAXIMUM ALLOWABLE SHIM STACK TO BE 3/8”.
8. SHIMS SHALL BE LOCATED, APPLIED AND MADE FROM MATERIALS AND THICKNESS CAPABLE OF SUSTAINING APPLICABLE LOADS.
9. WIND LOAD DURATION FACTOR Cd=1.6 WAS USED FOR WOOD ANCHOR CALCULATIONS.
10. FRAME MATERIAL: EXTRUDED ALUMINU.
11. UNITS MUST BE GLAZED PER ASTM E1300, SEE SHEET 9 FOR GLASS DETAILS.
12. APPROVED IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED FOR THIS PRODUCT IN WIND BORNE DEBRIS REGIONS.

13. FOR ANCHORING INTO WOOD FRAMING OR 2X BUCK USE #12 WOOD SCREWS WITH SUFFICIENT LENGTH TO ACHIEVE A 1 7/16” MINIMUM EMBEDMENT INTO SUBSTRATE. LOCATE ANCHORS AS SHOWN IN ELEVATIONS AND INSTALLATION DETAILS.
14. FOR ANCHORING INTO MASONRY/CONCRETE USE 1/4” TAPCONS WITH SUFFICIENT LENGTH TO ACHIEVE A 1 3/4” MINIMUM EMBEDMENT INTO SUBSTRATE WITH 2” MINIMUM EDGE DISTANCE. LOCATE ANCHORS AS SHOWN IN ELEVATIONS AND INSTALLATION DETAILS.
15. FOR ANCHORING INTO METAL STRUCTURE USE #12 SMS OR SELF DRILLING SCREWS WITH SUFFICIENT LENGTH TO ACHIEVE 3 THREADS MINIMUM BEYOND STRUCTURE INTERIOR WALL. LOCATE ANCHORS AS SHOWN IN ELEVATIONS AND INSTALLATION DETAILS.
16. ALL FASTENERS TO BE CORROSION RESISTANT.
17. INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER’S INSTALLATION INSTRUCTIONS AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BELOW:
- 17.A. WOOD: MINIMUM SPECIFIC GRAVITY OF G=0.42
- 17.B. CONCRETE: MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI.
- 17.C. MASONRY: HOLLOW/FILLED BLOCK PER ASTM C90 WITH Fm=2,000PSI MINIMUM.
- 17.D. METAL STRUCTURE: STEEL 18GA (.048”) FY=33KSI/FU=52KSI OR 1/4” THICK STRUCTURAL STEEL.

SIGNED: 02/15/2024

| TABLE OF CONTENTS |                      |
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| SHEET NO.         | DESCRIPTION          |
| 1                 | NOTES                |
| 2                 | ELEVATION            |
| 3 – 5             | INSTALLATION DETAILS |
| 6                 | COMPONENTS           |

NANA WALL SYSTEMS, INC.

100 MEADOWCREEK DRIVE, SUITE 250

CORTE MADERA, CA 94925

SL88 TILT AND TURN

IMPACT HVHZ

NOTES

DRAWN: R.L.

DWG NO. 08–03967

REV –

SCALE NTS

DATE 12/15/23

SHEET 1 OF 9

L. ROBERTO LOMAS P.E.

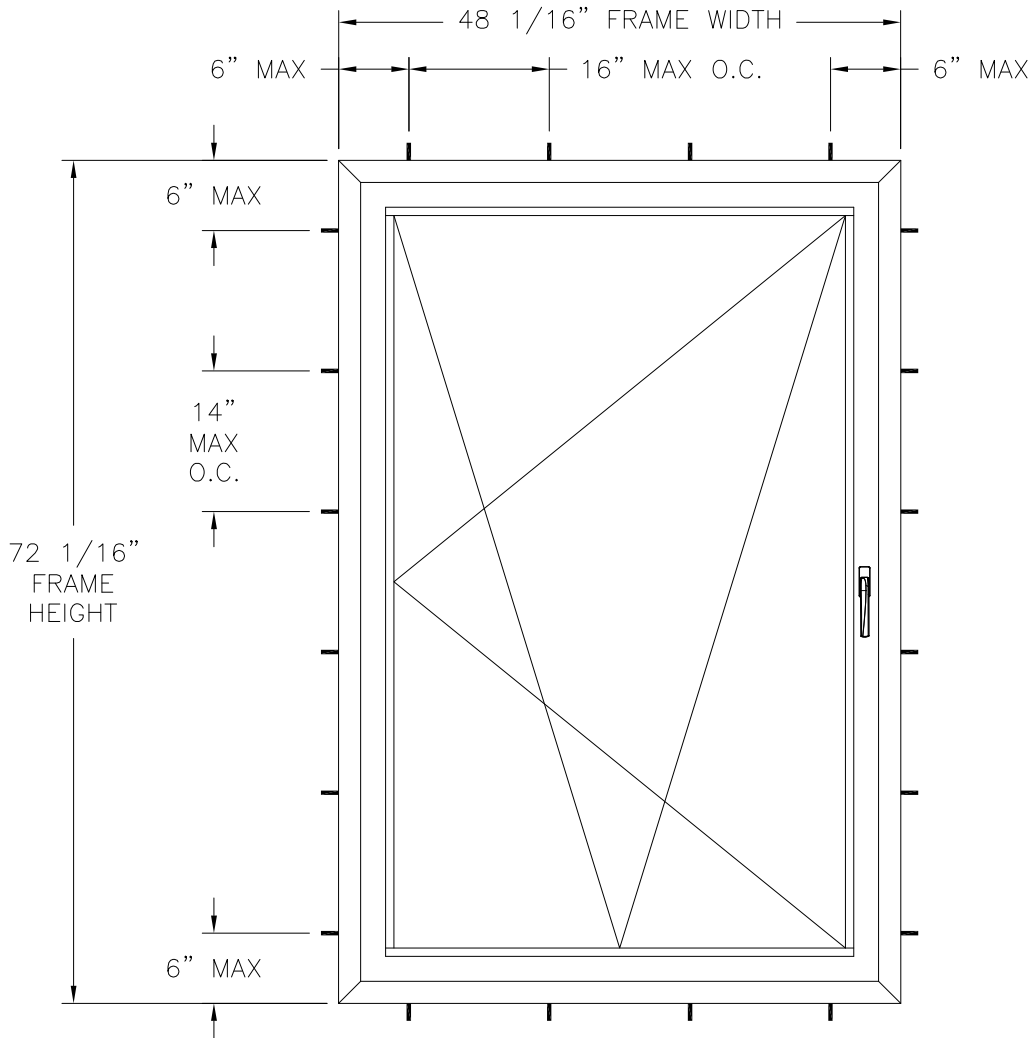
208 7th Ave, INDIALANTIC, FL 32903

434-688-0609 rllomas@lrlomaspe.com



Luis R. Lomas P.E.

FL No.: 62514



SL 88 TILT & TURN  
EXTERIOR VIEW

|                        |                                |
|------------------------|--------------------------------|
| DESIGN PRESSURE RATING | IMPACT RATING                  |
| +70.0/-100.0PSF        | LARGE AND SMALL MISSILE IMPACT |

MISSILE LEVEL D, WIND ZONE 4, AND HVHZ  
48 1/16" X 72 1/16" UNIT SHOWN. OTHER SIZES APPROVED AS LONG AS  
FRAME AREA DOES NOT EXCEED 24.05 FT²

- NOTES:
- SASH SIZE: 44 3/16" X 68 3/16"
  - MAXIMUM D.L.O.: 38 9/16" X 65 9/16"
  - DUAL ACTION HARDWARE WITH LOCKS AT MIDSPAN OF HEAD AND SILL, 21" AND 42" FROM SILL AT HINGE JAMB, 20", 41" AND 52" FROM SILL AT LOCK JAMB.

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Chart #1

Rating (psf)

| Frame Height (in) | Frame width (in) |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                   | 24.00            |       | 30.00 |       | 36.00 |       | 42.00 |       | 48.06 |       | 54.00 |       | 60.00 |       |
|                   | Pos              | Neg   | Pos   | Neg   | Pos   | Neg   | Pos   | Neg   | Pos   | Neg   | Pos   | Neg   | Pos   | Neg   |
| 30.00             | 90.0             | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 |
| 36.00             | 90.0             | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 89.7  | 120.0 |
| 42.00             | 90.0             | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 85.4  | 120.0 | 81.7  | 116.7 |
| 48.00             | 90.0             | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 84.0  | 120.0 | 79.4  | 113.5 | 75.7  | 108.1 |
| 54.00             | 90.0             | 120.0 | 90.0  | 120.0 | 90.0  | 120.0 | 85.4  | 120.0 | 79.4  | 113.4 | 74.8  | 106.8 | 71.0  | 101.4 |
| 60.00             | 90.0             | 120.0 | 90.0  | 120.0 | 89.7  | 120.0 | 81.7  | 116.7 | 75.6  | 108.0 | 71.0  | 101.4 | -     | -     |
| 66.00             | 90.0             | 120.0 | 90.0  | 120.0 | 86.6  | 120.0 | 78.6  | 112.3 | 72.6  | 103.7 | -     | -     | -     | -     |
| 72.06             | 90.0             | 120.0 | 90.0  | 120.0 | 84.1  | 120.0 | 76.1  | 108.7 | 70.0  | 100.0 | -     | -     | -     | -     |
| 78.00             | 90.0             | 120.0 | 90.0  | 120.0 | 81.9  | 117.1 | 73.9  | 105.6 | -     | -     | -     | -     | -     | -     |
| 84.00             | 90.0             | 120.0 | 90.0  | 120.0 | 80.1  | 114.4 | -     | -     | -     | -     | -     | -     | -     | -     |
| 90.00             | 90.0             | 120.0 | 89.7  | 120.0 | 74.8  | 106.9 | -     | -     | -     | -     | -     | -     | -     | -     |
| 96.00             | 90.0             | 120.0 | 84.2  | 120.0 | 70.2  | 100.2 | -     | -     | -     | -     | -     | -     | -     | -     |

SIGNED: 02/15/2024

NANA WALL SYSTEMS, INC.  
100 MEADOWCREEK DRIVE, SUITE 250  
CORTE MADERA, CA 94925

SL88 TILT AND TURN  
IMPACT HVHZ  
ELEVATION AND RATINGS

DRAWN:  
R.L.

DWG NO.  
08-03967

REV  
-

SCALE  
NTS

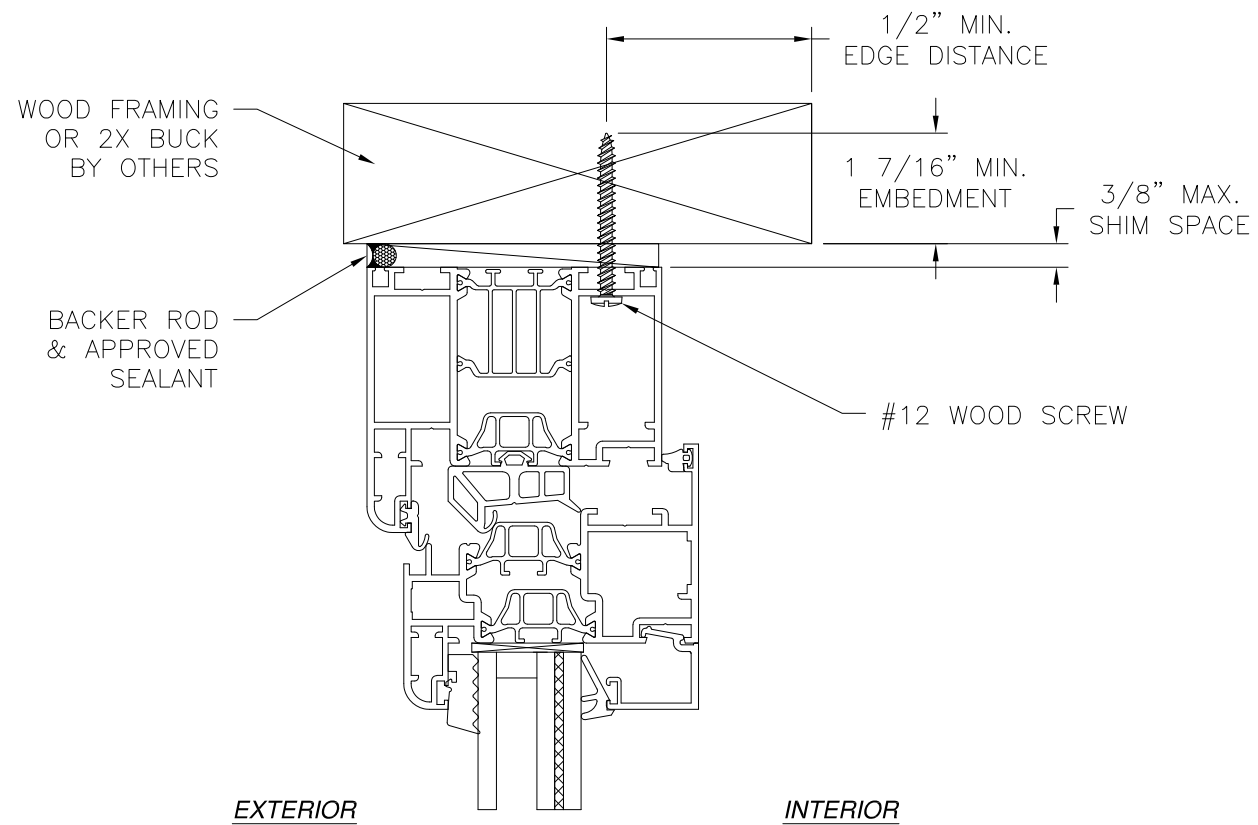
DATE  
12/15/23

SHEET  
2 OF 9

L. ROBERTO LOMAS P.E.  
208 7th Ave, INDIALANTIC, FL 32903  
434-688-0609 rllomas@lrlomaspe.com

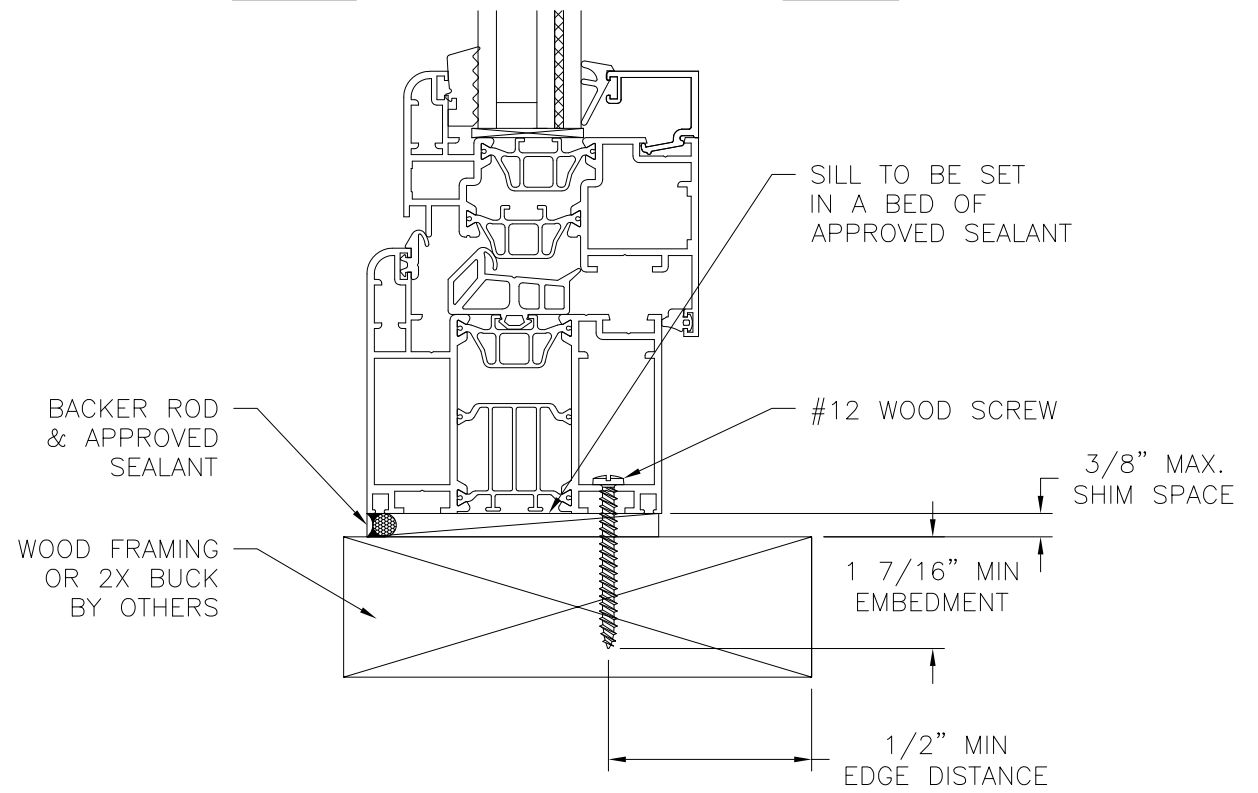
LUIS R. LOMAS  
LICENSE  
No. 62514  
STATE OF  
FLORIDA  
PROFESSIONAL ENGINEER

Luis R. Lomas P.E.  
FL No.: 62514

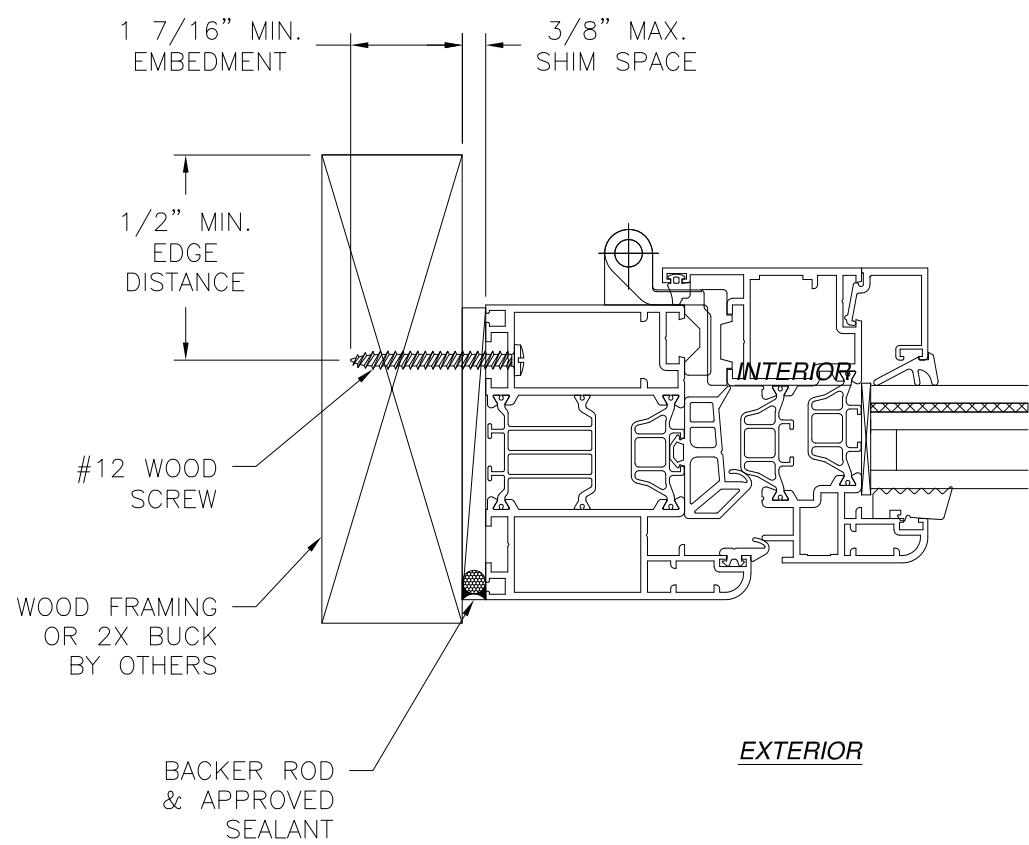


EXTERIOR

INTERIOR



**VERTICAL CROSS SECTION**  
WOOD FRAMING OR 2X BUCK INSTALLATION



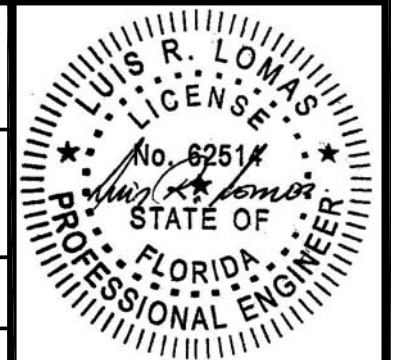
**JAMB INSTALLATION DETAIL**  
WOOD FRAMING OR 2X BUCK INSTALLATION

- NOTES:**
1. INTERIOR AND EXTERIOR FINISHES, BY OTHERS, NOT SHOWN FOR CLARITY.
  2. PERIMETER AND JOINT SEALANT BY OTHERS TO BE DESIGNED IN ACCORDANCE WITH ASTM E2112

| REVISIONS |             |      |          |
|-----------|-------------|------|----------|
| REV       | DESCRIPTION | DATE | APPROVED |

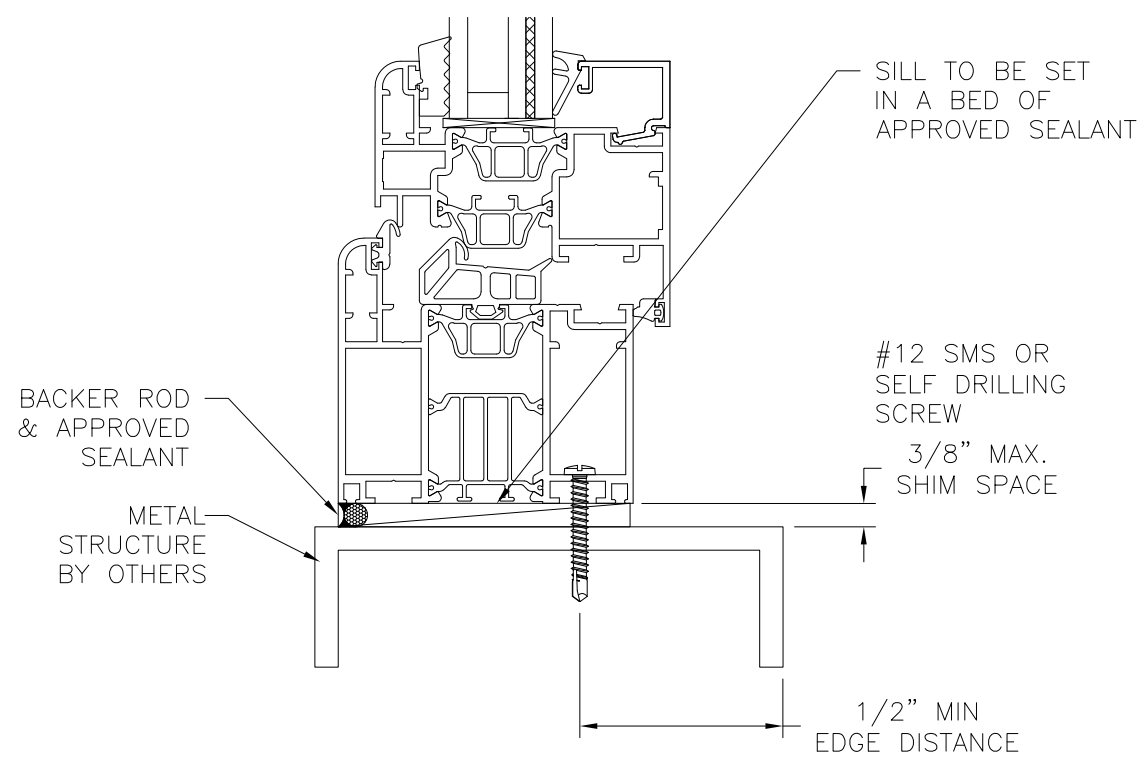
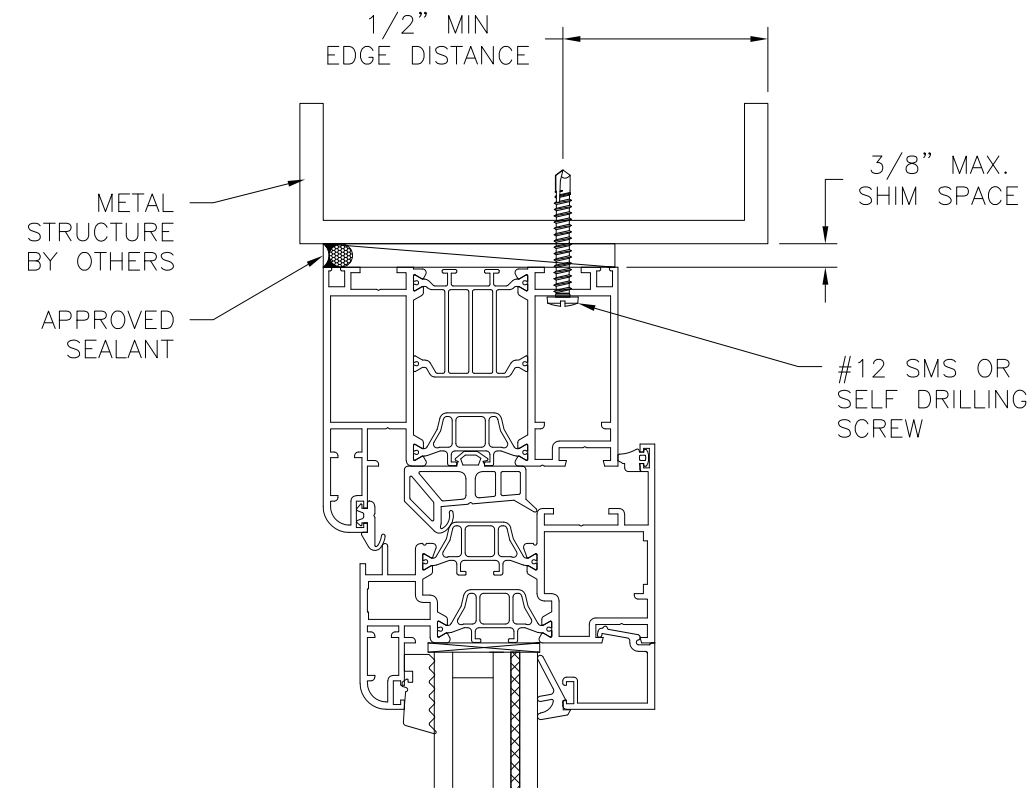
SIGNED: 02/15/2024

|                                                                                                            |                             |                     |
|------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------|
| <p><b>NANA WALL SYSTEMS, INC.</b><br/>100 MEADOWCREEK DRIVE, SUITE 250<br/>CORTE MADERA, CA 94925</p>      |                             |                     |
| <p>SL88 TILT AND TURN<br/>IMPACT HVHZ<br/>INSTALLATION DETAILS</p>                                         |                             |                     |
| <p>DRAWN:<br/>R.L.</p>                                                                                     | <p>DWG NO.<br/>08-03967</p> | <p>REV<br/>-</p>    |
| <p>SCALE NTS</p>                                                                                           | <p>DATE 12/15/23</p>        | <p>SHEET 3 OF 9</p> |
| <p>L. ROBERTO LOMAS P.E.<br/>208 7th Ave, INDIALANTIC, FL 32903<br/>434-688-0609 rllomas@lrlomaspe.com</p> |                             |                     |

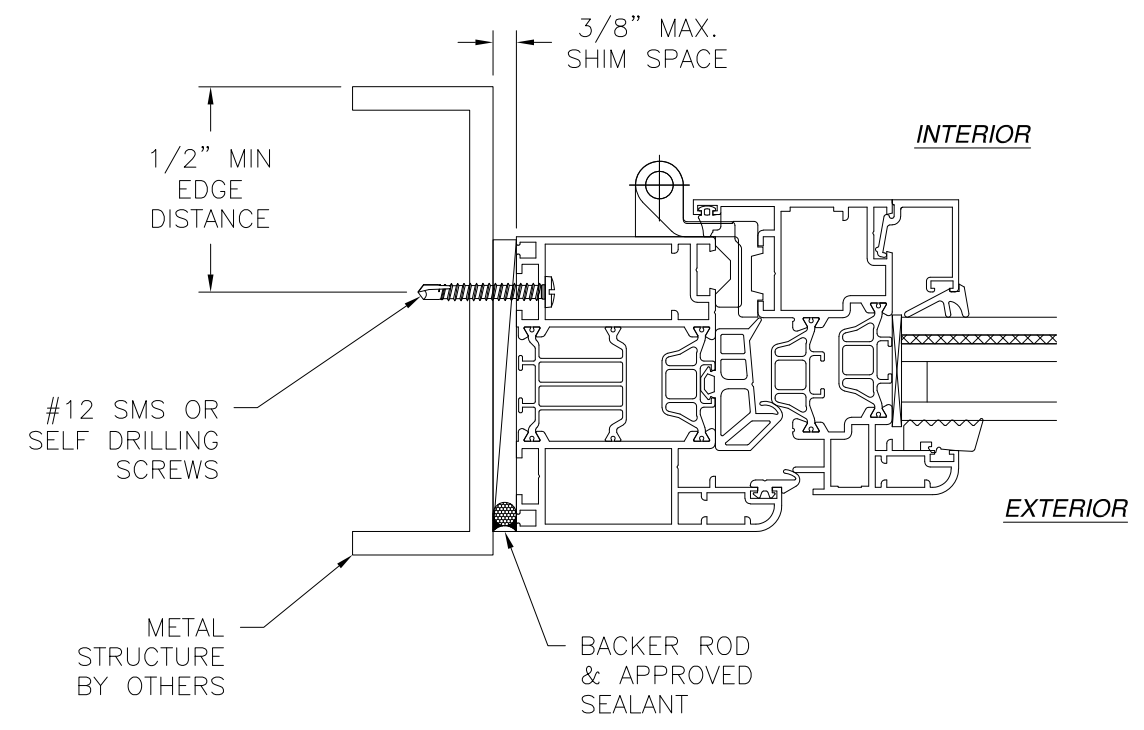


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**VERTICAL CROSS SECTION**  
METAL STRUCTURE INSTALLATION



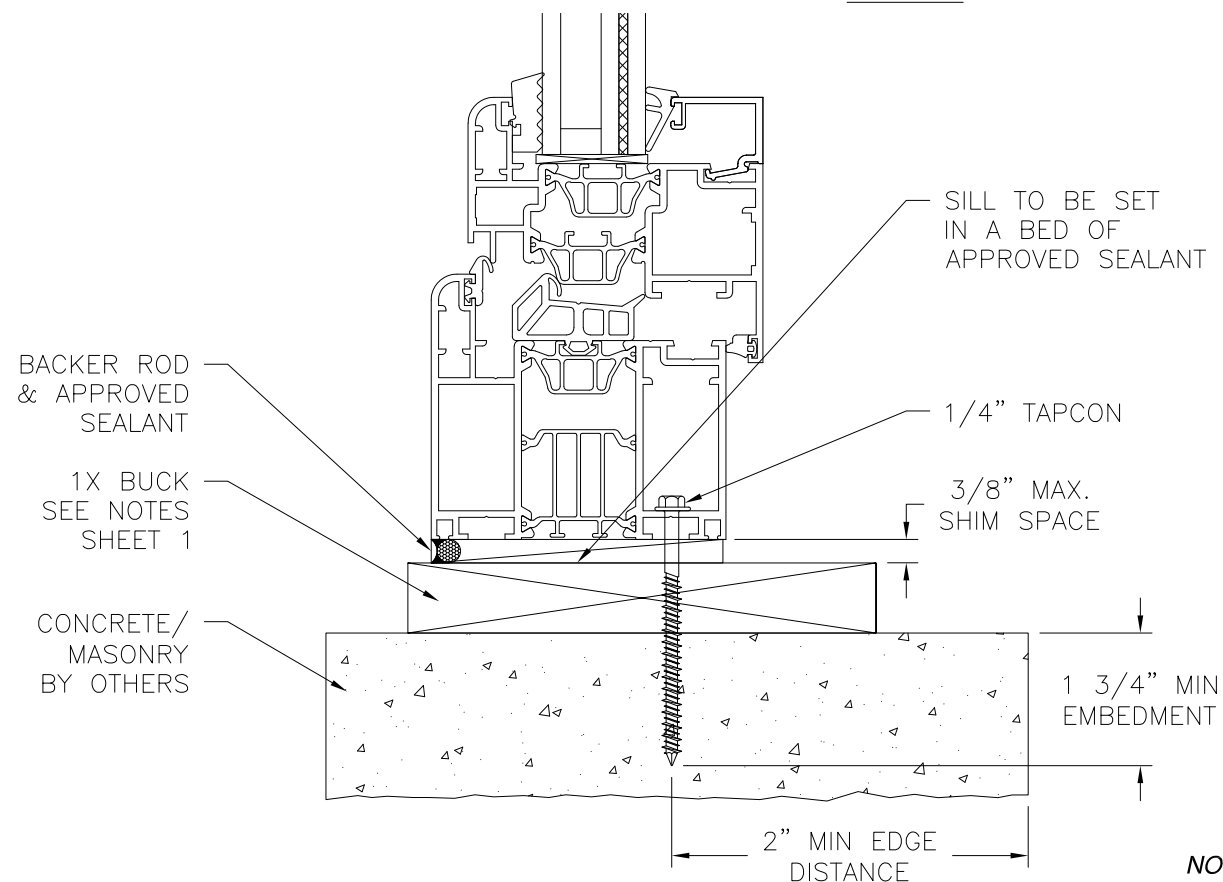
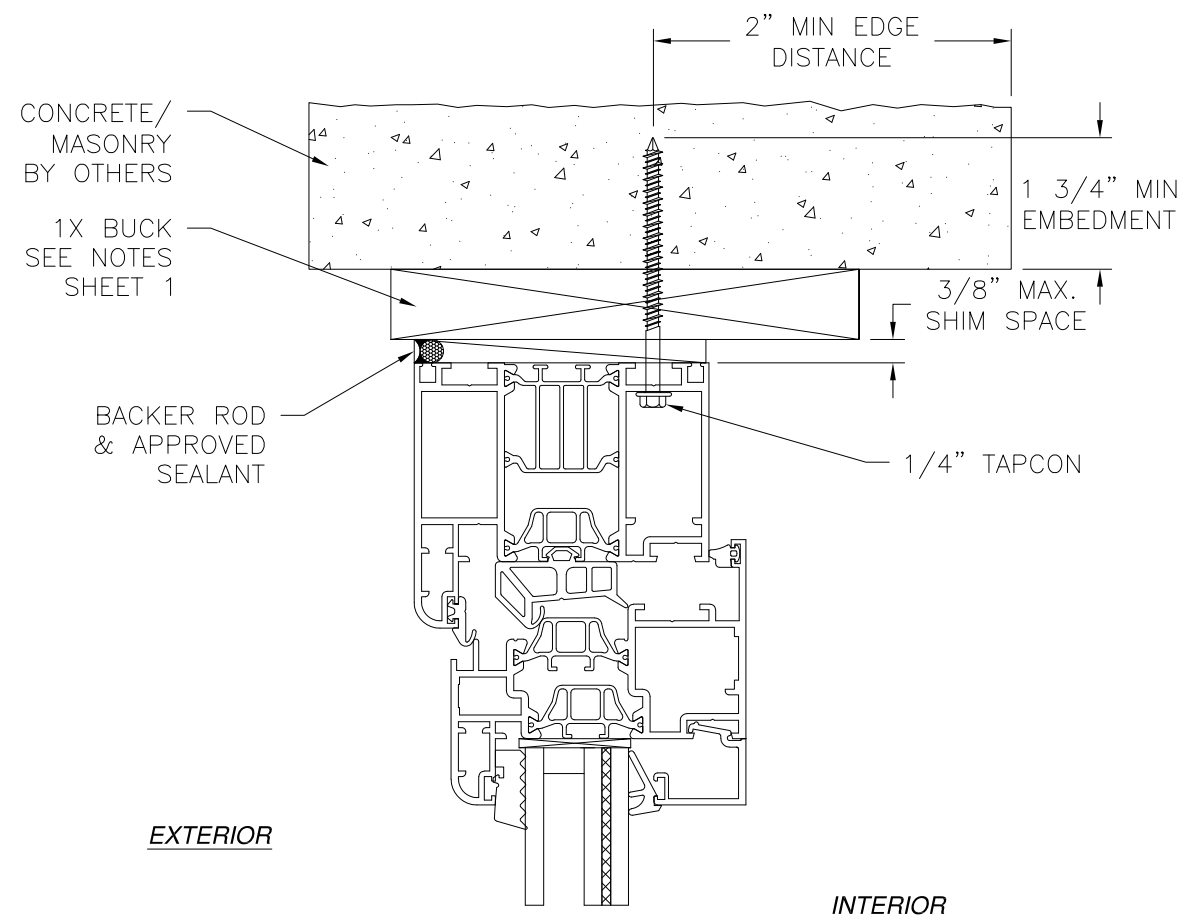
**JAMB INSTALLATION DETAIL**  
METAL STRUCTURE INSTALLATION

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SIGNED: 02/15/2024

|                                                                                                   |                     |                 |
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| SL88 TILT AND TURN<br>IMPACT HVHZ<br>INSTALLATION DETAILS                                         |                     |                 |
| DRAWN:<br>R.L.                                                                                    | DWG NO.<br>08-03967 | REV<br>-        |
| SCALE<br>NTS                                                                                      | DATE<br>12/15/23    | SHEET<br>4 OF 9 |
| L. ROBERTO LOMAS P.E.<br>208 7th Ave, INDIALANTIC, FL 32903<br>434-688-0609 rllomas@lrlomaspe.com |                     |                 |

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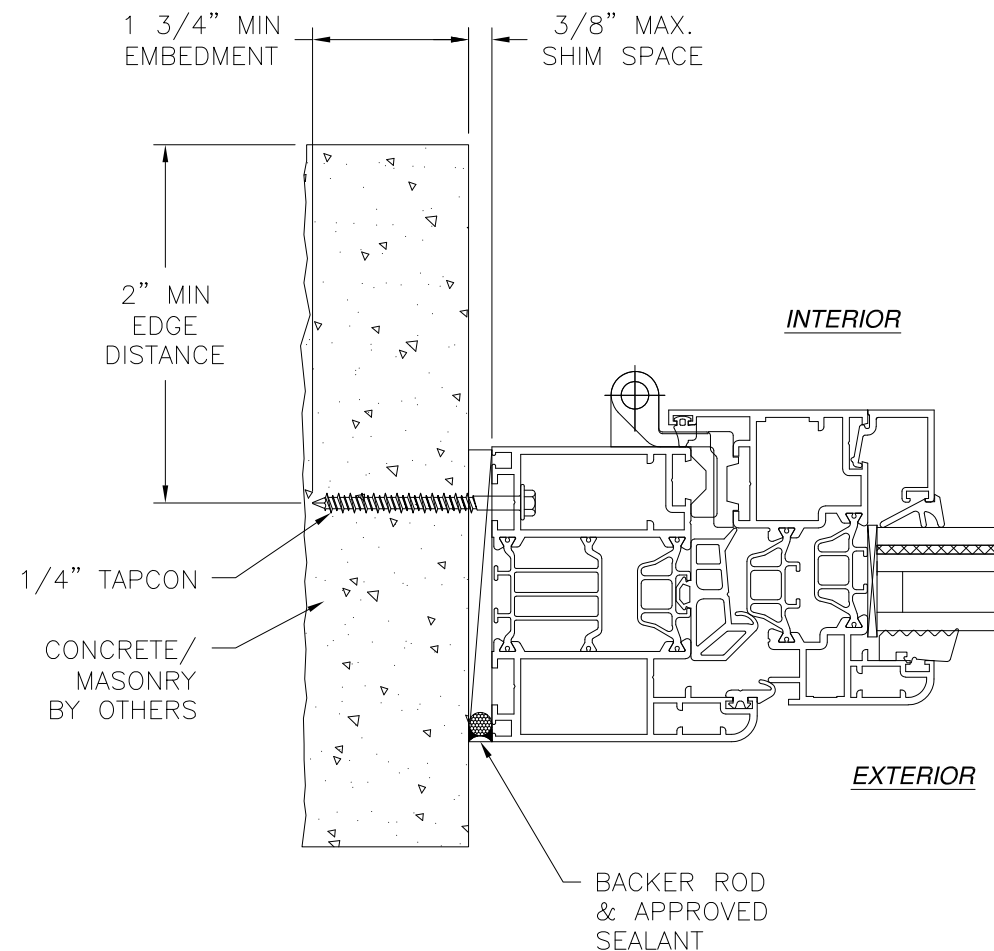


**VERTICAL CROSS SECTION**  
CONCRETE/MASONRY WITH 1X BUCK INSTALLATION  
FOR CONCRETE/MASONRY WITHOUT 1X BUCK REFER TO  
JAMB INSTALLATION DETAIL

**NOTES:**

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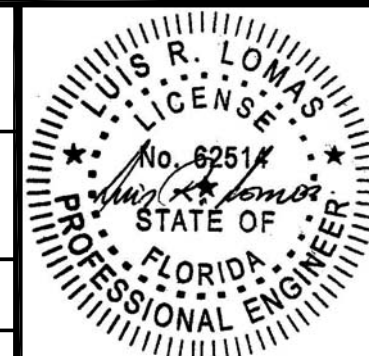
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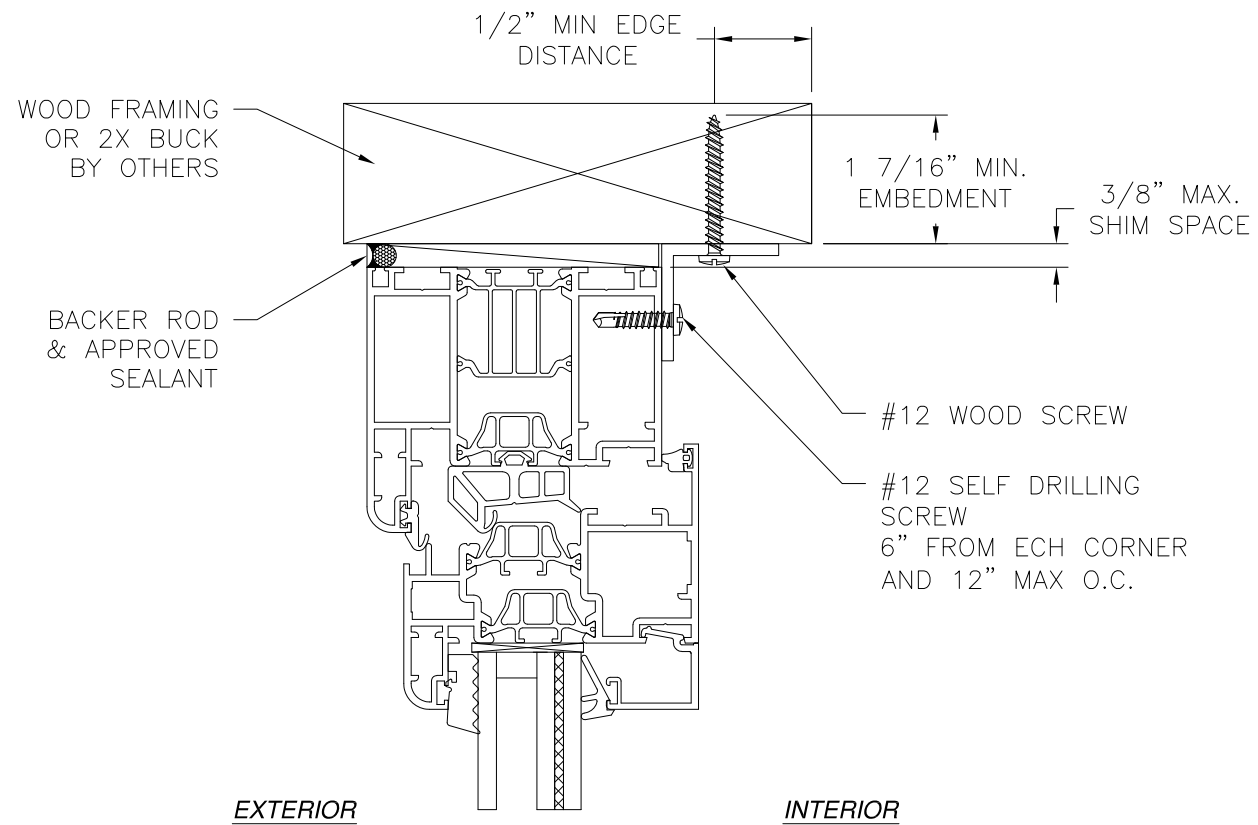
**JAMB INSTALLATION DETAIL**  
CONCRETE/MASONRY WITHOUT 1X BUCK INSTALLATION  
FOR CONCRETE/MASONRY WITH 1X BUCK REFER TO  
HEAD AND SILL INSTALLATION DETAILS

SIGNED: 02/15/2024

|                                                                                                   |                     |                 |
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| NANA WALL SYSTEMS, INC.<br>100 MEADOWCREEK DRIVE, SUITE 250<br>CORTE MADERA, CA 94925             |                     |                 |
| SL88 TILT AND TURN<br>IMPACT HVHZ<br>INSTALLATION DETAILS                                         |                     |                 |
| DRAWN:<br>R.L.                                                                                    | DWG NO.<br>08-03967 | REV<br>-        |
| SCALE<br>NTS                                                                                      | DATE<br>12/15/23    | SHEET<br>5 OF 9 |
| L. ROBERTO LOMAS P.E.<br>208 7th Ave, INDIALANTIC, FL 32903<br>434-688-0609 rllomas@lrlomaspe.com |                     |                 |

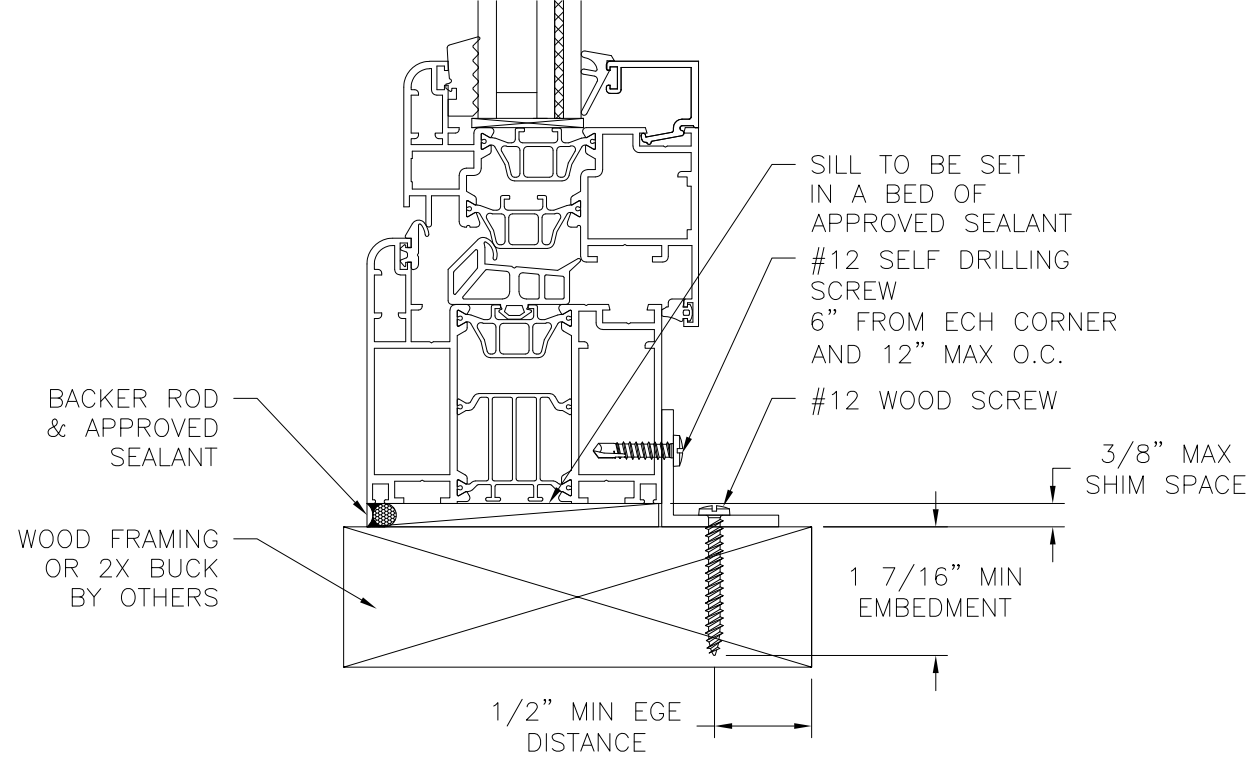


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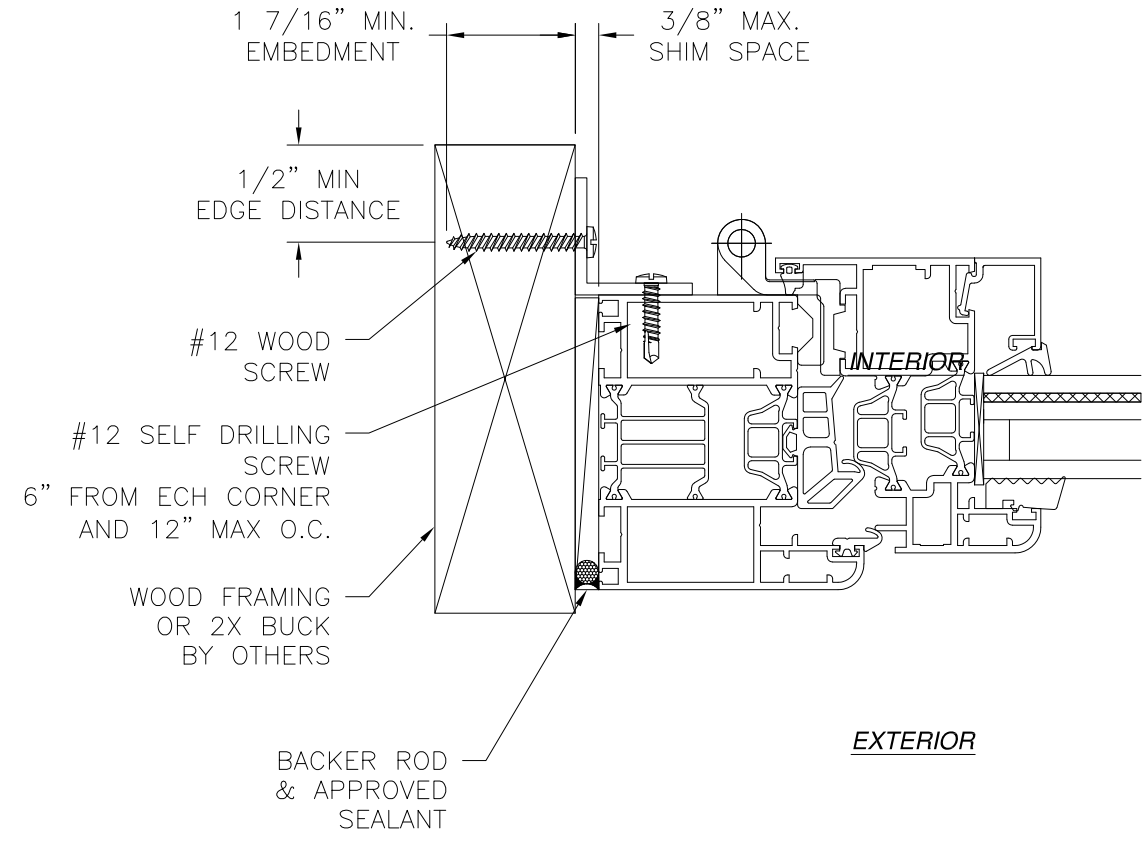


EXTERIOR

INTERIOR



**VERTICAL CROSS SECTION**  
WOOD FRAMING OR 2X BUCK INSTALLATION



**JAMB INSTALLATION DETAIL**  
WOOD FRAMING OR 2X BUCK INSTALLATION

- NOTES:**
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100 MEADOWCREEK DRIVE, SUITE 250  
CORTE MADERA, CA 94925

SL88 TILT AND TURN  
IMPACT HVHZ  
INSTALLATION DETAILS

DRAWN:  
R.L.

DWG NO.  
08-03967

REV  
-

SCALE  
NTS

DATE  
12/15/23

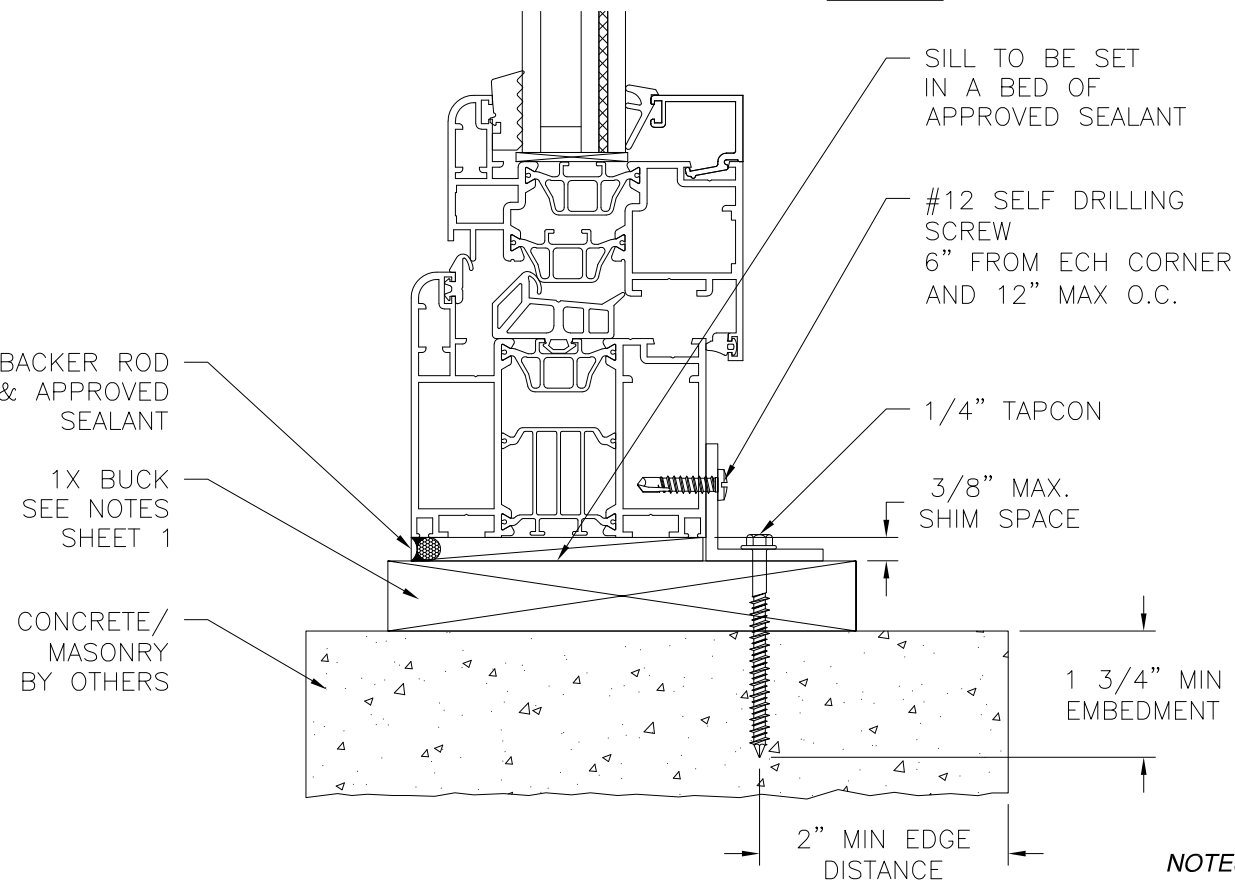
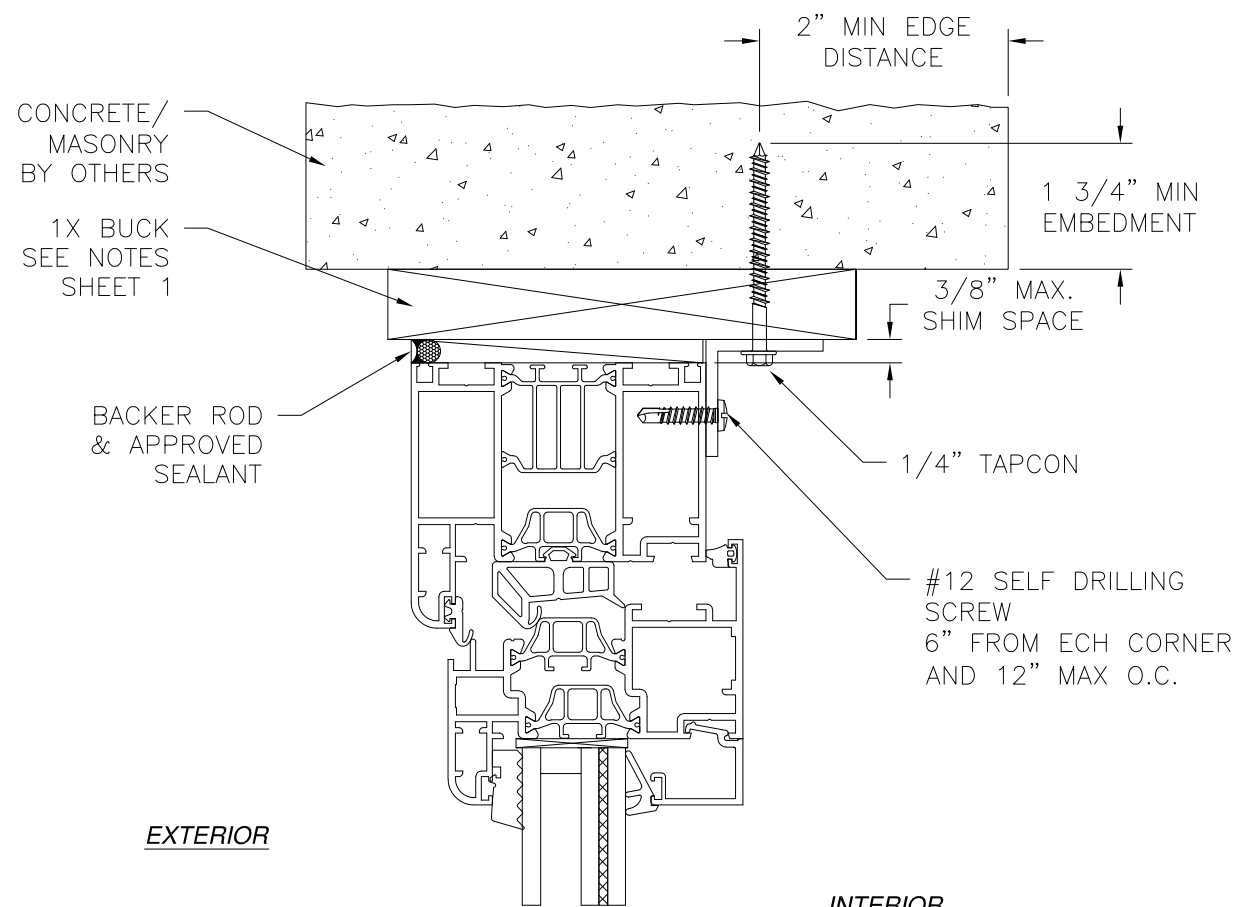
SHEET  
6 OF 9

L. ROBERTO LOMAS P.E.  
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434-688-0609 rllomas@rlomaspe.com

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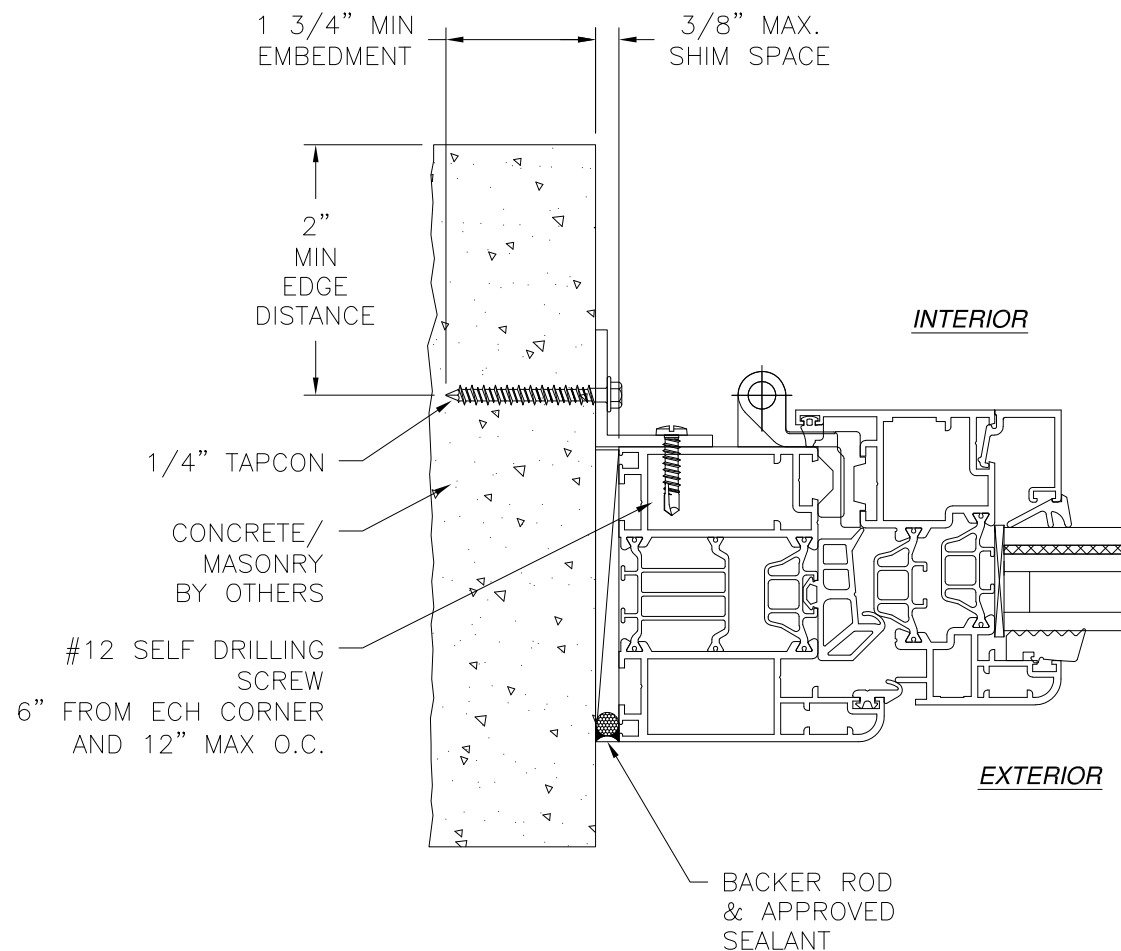
Luis R. Lomas P.E.  
FL No.: 62514





**VERTICAL CROSS SECTION**  
CONCRETE/MASONRY WITH 1X BUCK INSTALLATION  
FOR CONCRETE/MASONRY WITHOUT 1X BUCK REFER TO  
JAMB INSTALLATION DETAIL

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**JAMB INSTALLATION DETAIL**  
CONCRETE/MASONRY WITHOUT 1X BUCK INSTALLATION  
FOR CONCRETE/MASONRY WITH 1X BUCK REFER TO  
HEAD AND SILL INSTALLATION DETAILS

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100 MEADOWCREEK DRIVE, SUITE 250  
CORTE MADERA, CA 94925

SL88 TILT AND TURN  
IMPACT HVHZ  
INSTALLATION DETAILS

DRAWN: MIN EDGE  
R.L. DISTANCE

DWG NO.  
08-03967

REV  
-

SCALE NTS

DATE 12/15/23

SHEET 8 OF 9

L. ROBERTO LOMAS P.E.

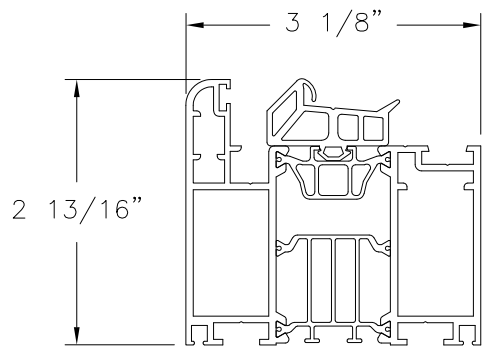
208 7th Ave, INDIALANTIC, FL 32903

434-688-0609 rllomas@lrlomaspe.com

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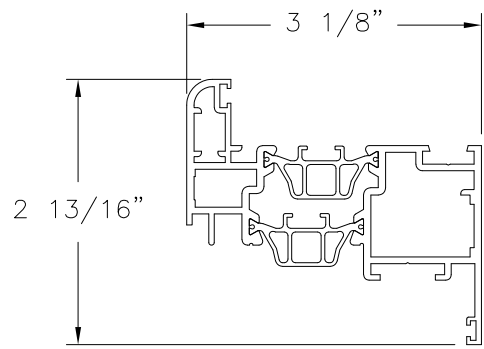
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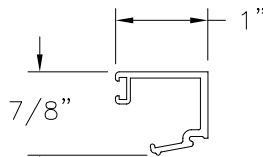
**FRAME**

ALUMINUM 6063-75, .079" THICKNESS



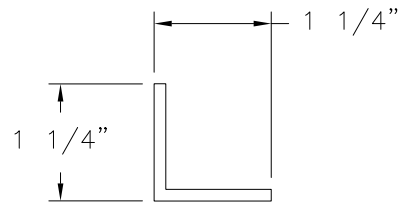
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ALUMINUM 6063-75, .079" THICKNESS



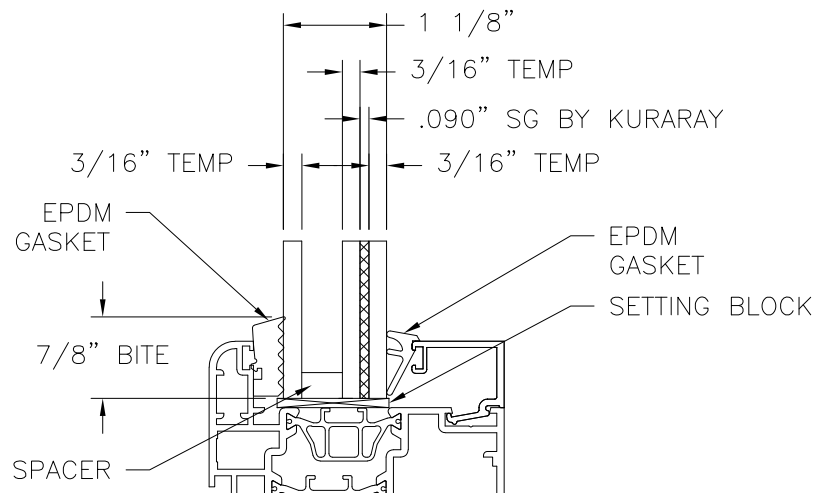
**GLASS STOP**

ALUMINUM 6063-75, .079" THICKNESS



**ANGLE CLIP**

6063-T5 ALUMINUM, .125" THICKNESS



**GLAZING DETAIL**

SIGNED: 02/15/2024

|                                                                                                   |                     |                 |
|---------------------------------------------------------------------------------------------------|---------------------|-----------------|
| NANA WALL SYSTEMS, INC.<br>100 MEADOWCREEK DRIVE, SUITE 250<br>CORTE MADERA, CA 94925             |                     |                 |
| SL88 TILT AND TURN<br>IMPACT HVHZ<br>COMPONENTS                                                   |                     |                 |
| DRAWN:<br>R.L.                                                                                    | DWG NO.<br>08-03967 | REV<br>-        |
| SCALE<br>NTS                                                                                      | DATE<br>12/15/23    | SHEET<br>9 OF 9 |
| L. ROBERTO LOMAS P.E.<br>208 7th Ave, INDIALANTIC, FL 32903<br>434-688-0609 rllomas@lrlomaspe.com |                     |                 |



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