

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: 04/22/2024

TABLE OF CONTENTS	
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 WINDOW
IMPACT HVHZ
NOTES

DRAWN:
R.L.

DWG NO.
08–03967

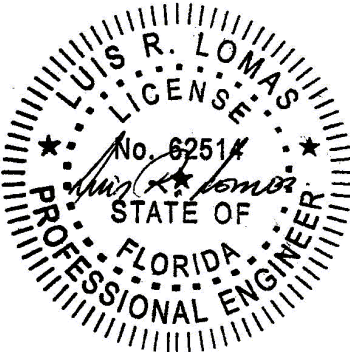
REV
–

SCALE NTS

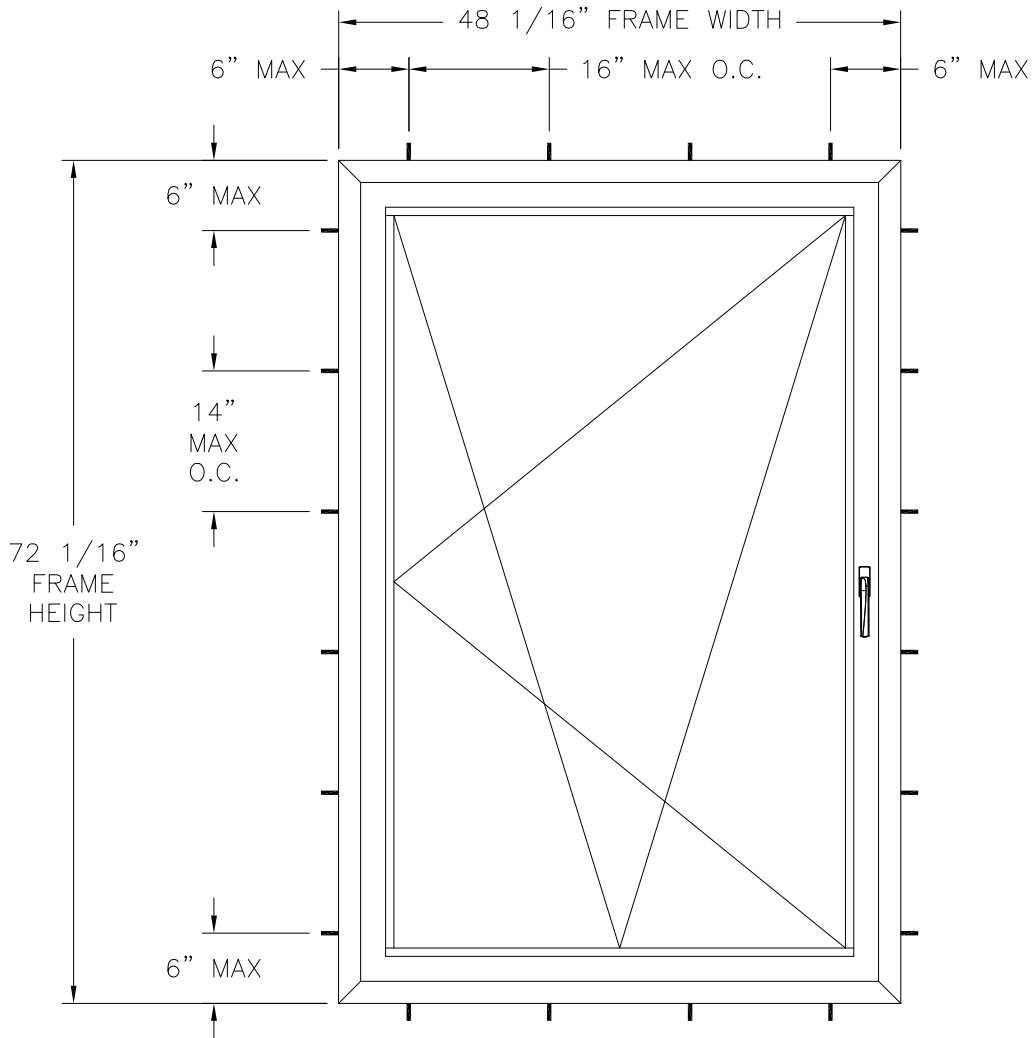
DATE 12/15/23

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.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

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: 04/22/2024

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

SL88 TILT AND TURN WINDOW
IMPACT HVHZ
ELEVATION AND RATINGS

DRAWN:
R.L.

DWG NO.
08-03967

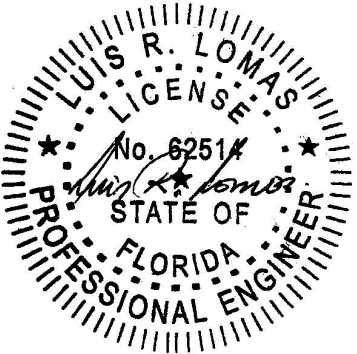
REV
-

SCALE
NTS

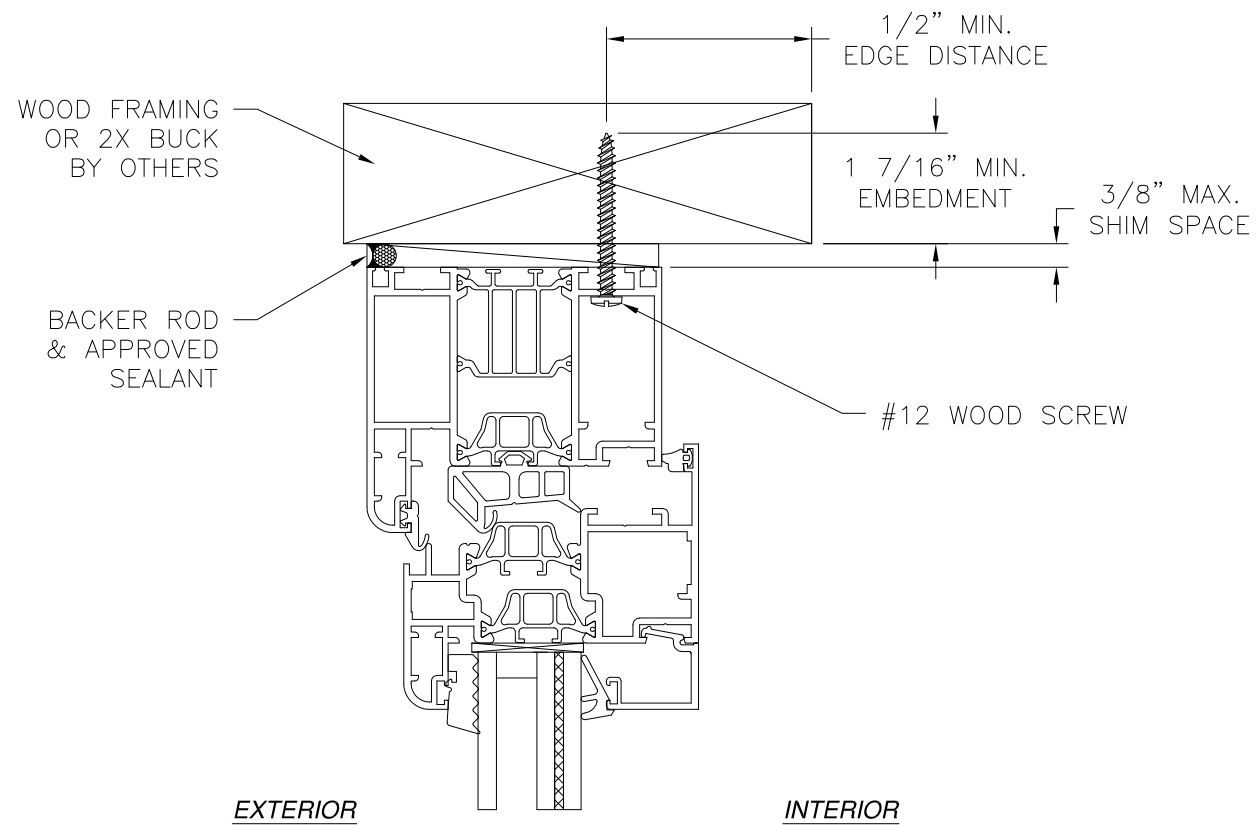
DATE
12/15/23

SHEET
2 OF 9

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

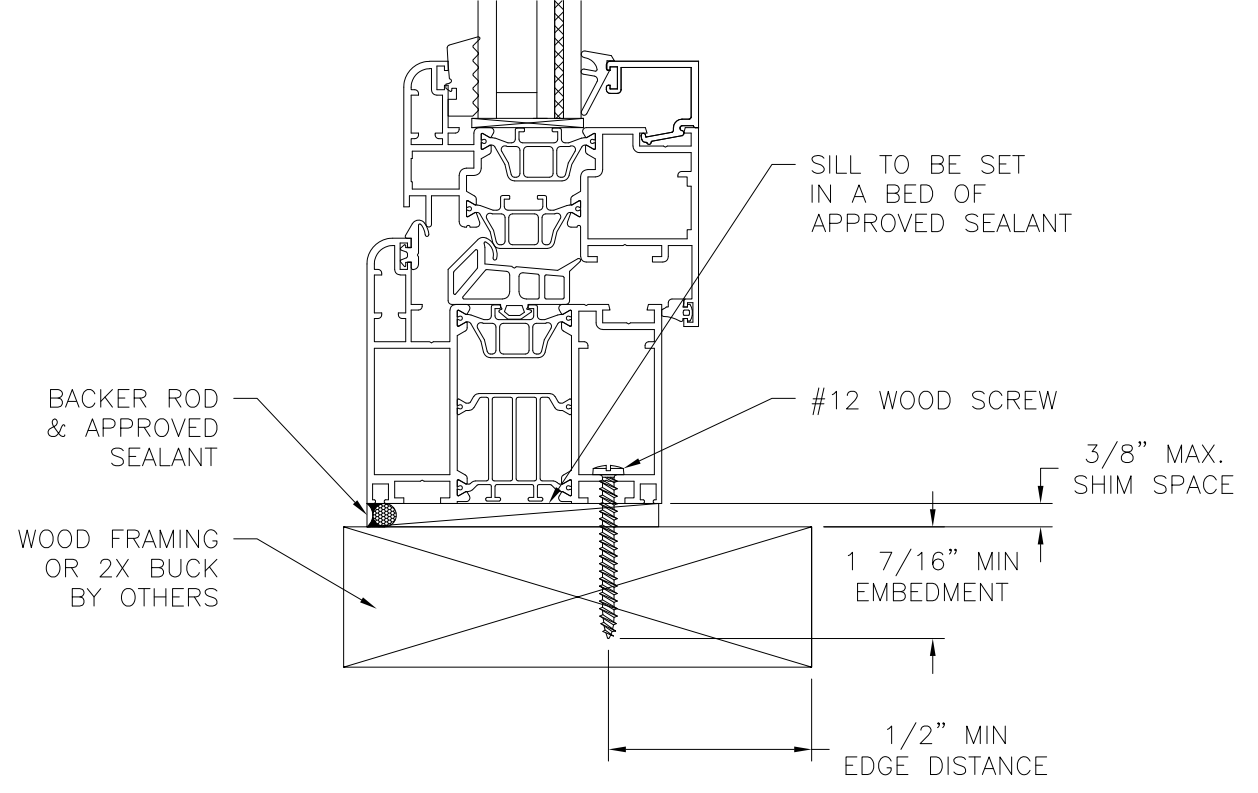


Luis R. Lomas P.E.
FL No.: 62514

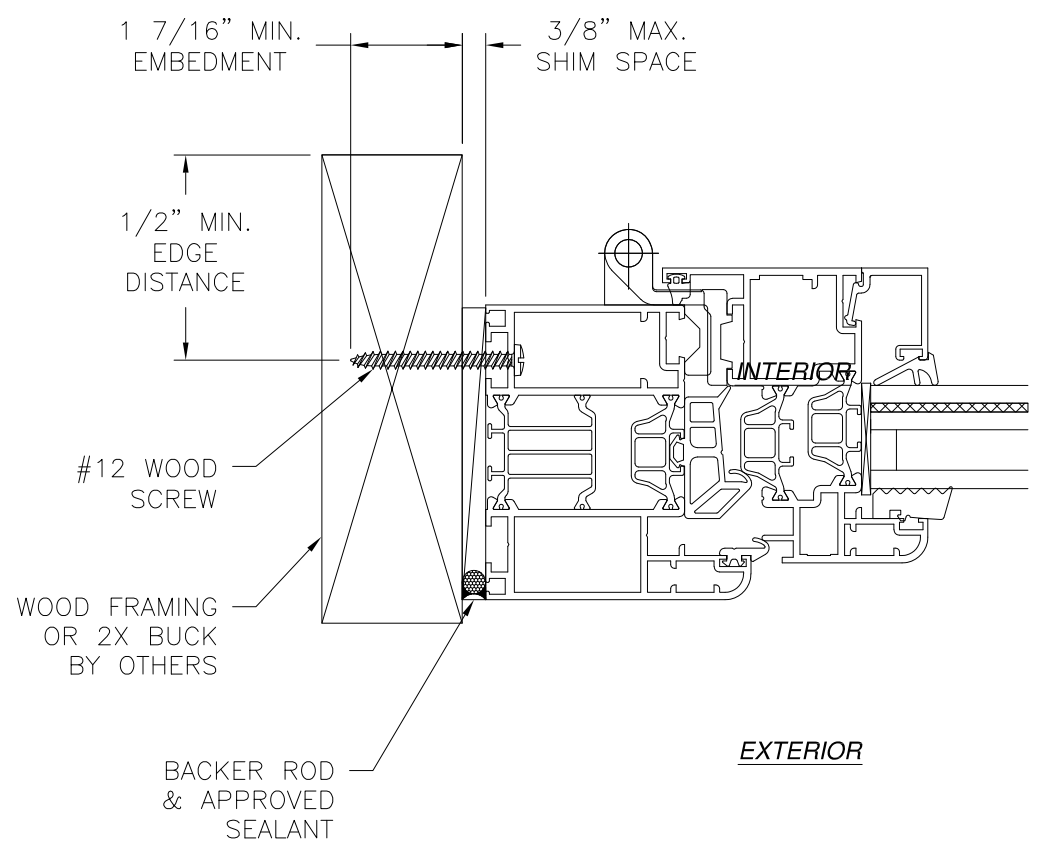


EXTERIOR

INTERIOR



VERTICAL CROSS SECTION
WOOD FRAMING OR 2X BUCK INSTALLATION



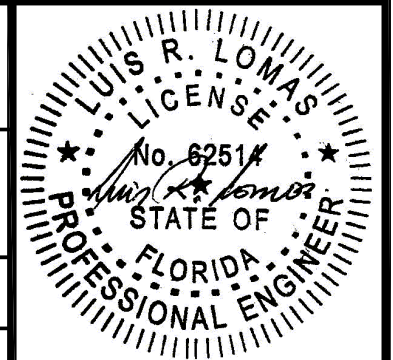
JAMB INSTALLATION DETAIL
WOOD FRAMING OR 2X BUCK INSTALLATION

- 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

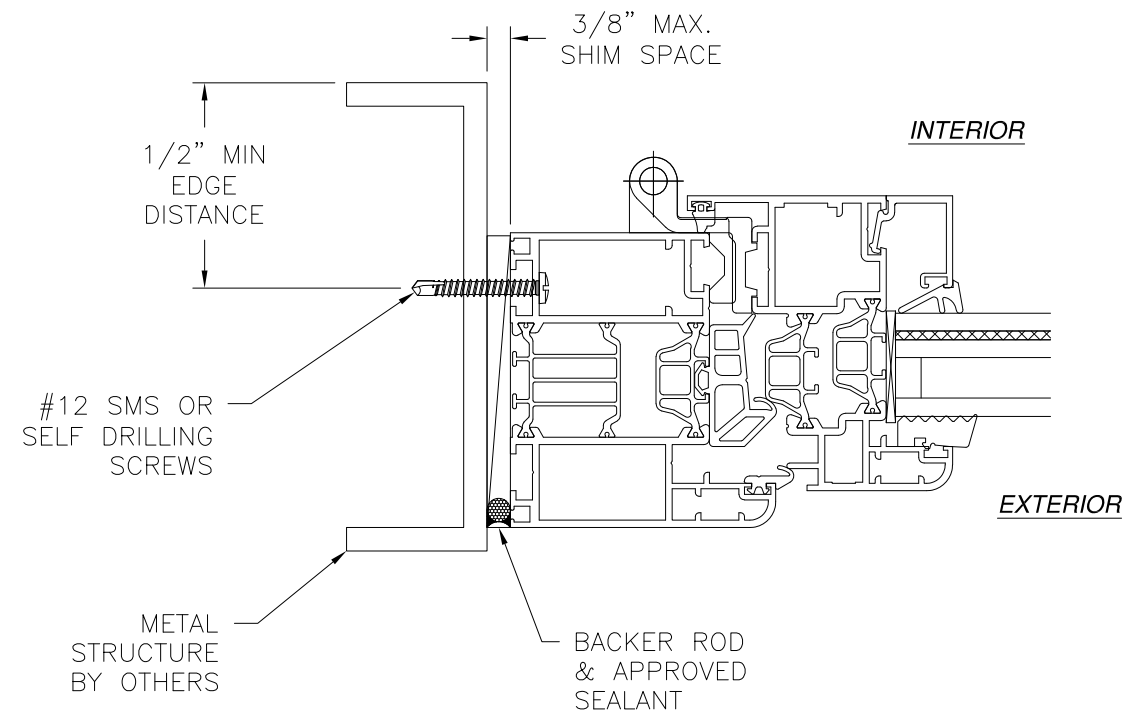
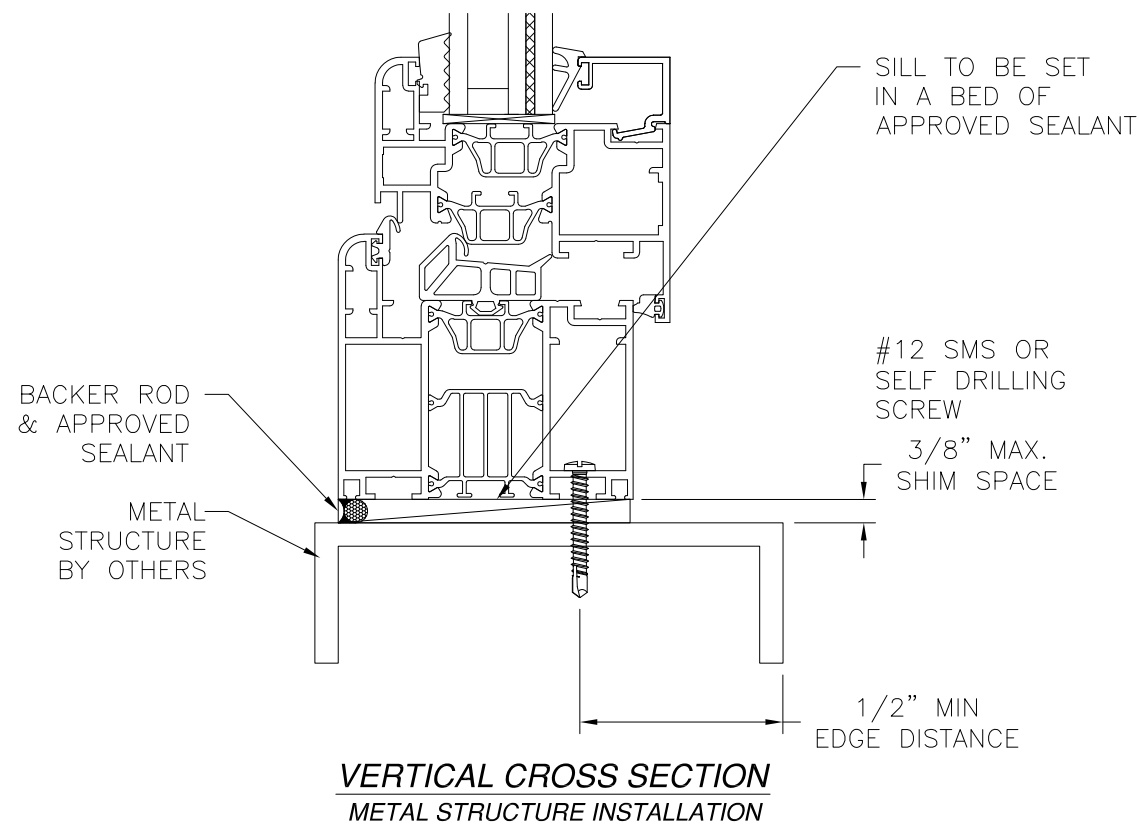
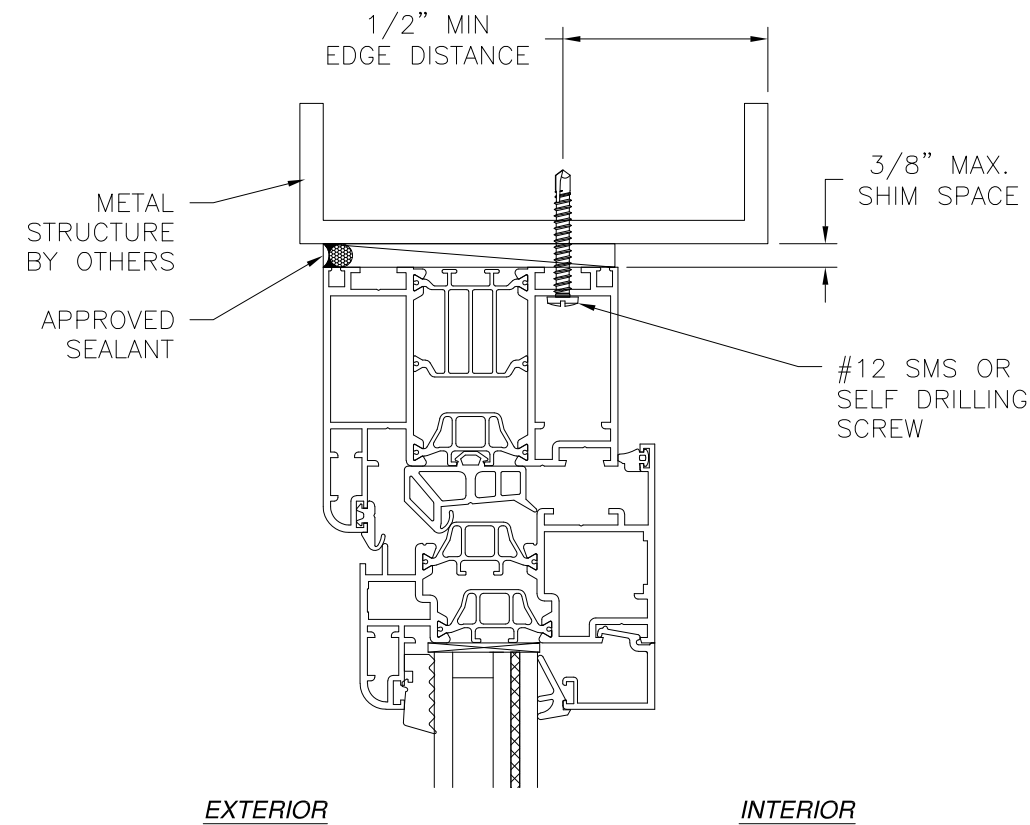
SIGNED: 04/22/2024

NANA WALL SYSTEMS, INC. 100 MEADOWCREEK DRIVE, SUITE 250 CORTE MADERA, CA 94925		
SL88 TILT AND TURN WINDOW IMPACT HVHZ INSTALLATION DETAILS		
DRAWN: R.L.	DWG NO. 08-03967	REV -
SCALE NTS	DATE 12/15/23	SHEET 3 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

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

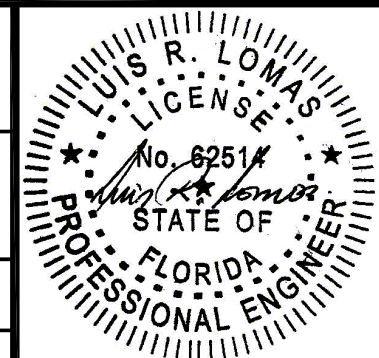


JAMB INSTALLATION DETAIL
METAL STRUCTURE INSTALLATION

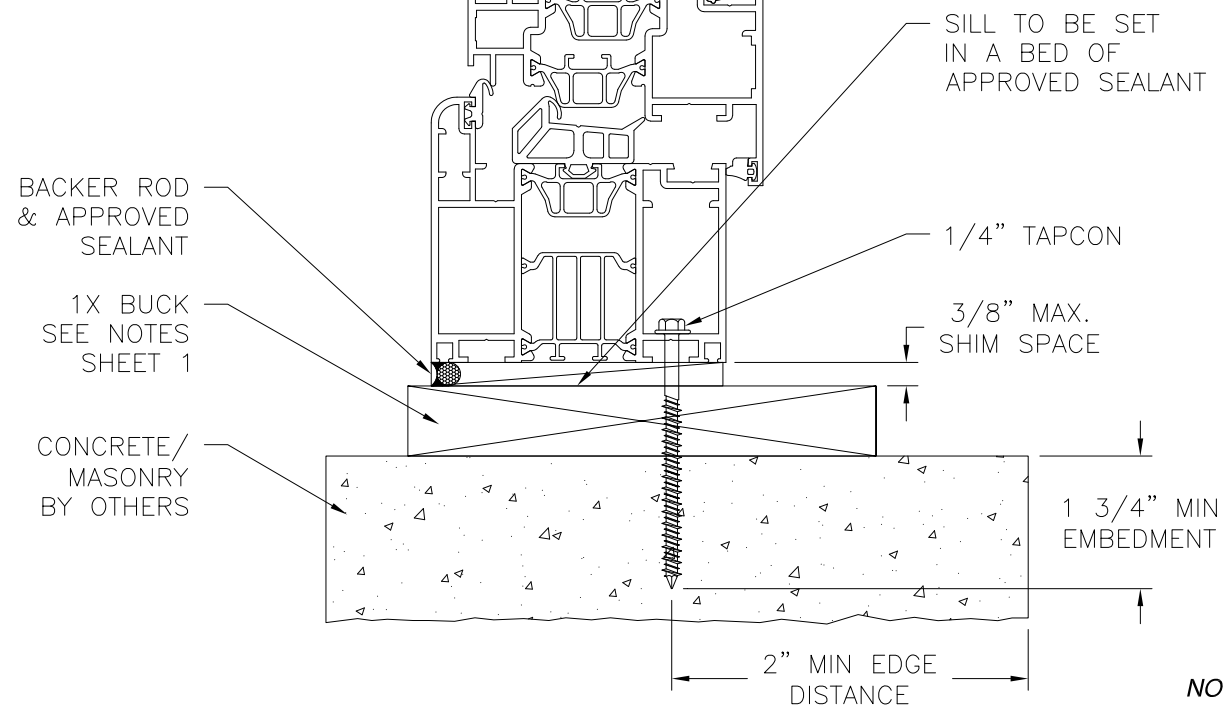
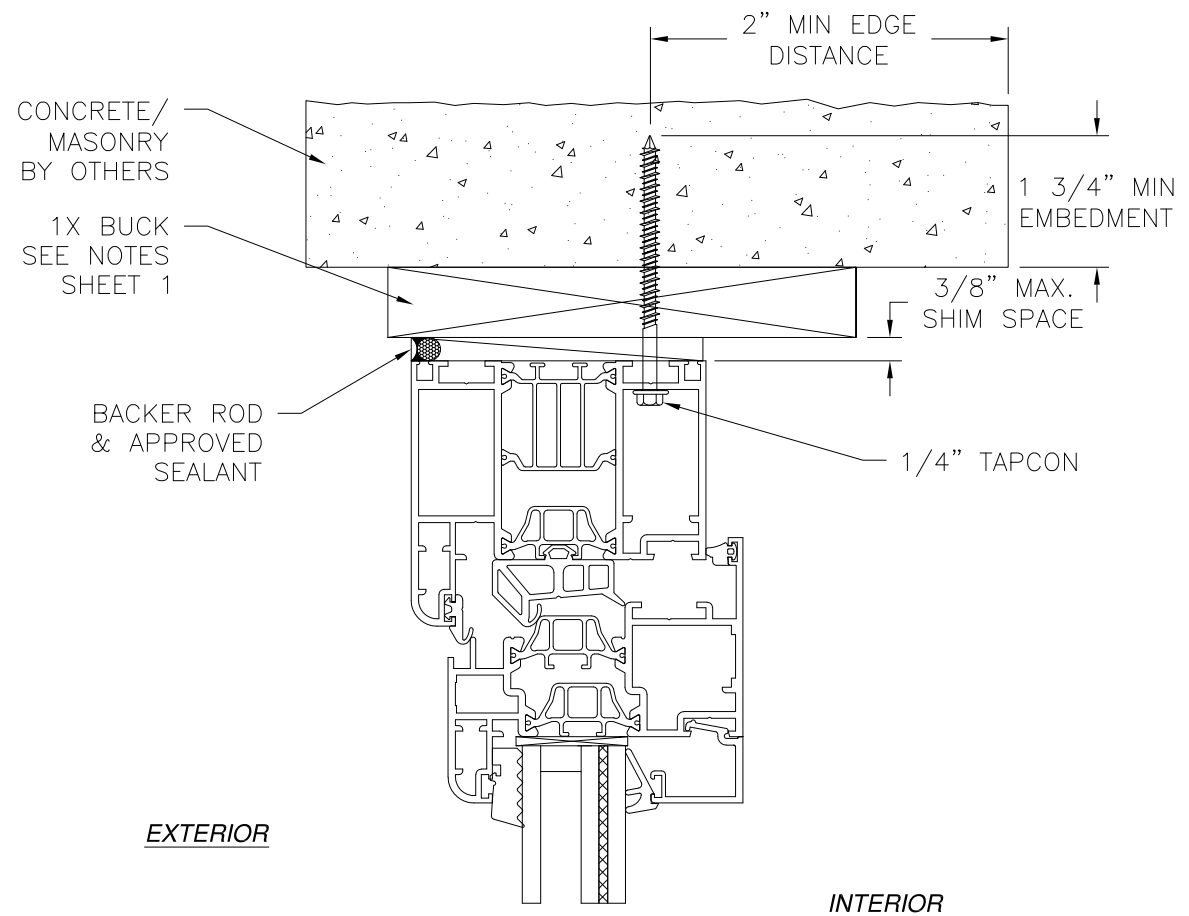
- NOTES:
1. INTERIOR AND EXTERIOR FINISHES, BY OTHERS, NOT SHOWN FOR CLARITY.
 2. PERIMETER AND JOINT SEALANT BY OTHERS TO BE DESIGNED IN ACCORDANCE WITH ASTM E2112

SIGNED: 04/22/2024

NANA WALL SYSTEMS, INC. 100 MEADOWCREEK DRIVE, SUITE 250 CORTE MADERA, CA 94925		
SL88 TILT AND TURN WINDOW IMPACT HVHZ INSTALLATION DETAILS		
DRAWN: R.L.	DWG NO. 08-03967	REV -
SCALE NTS	DATE 12/15/23	SHEET 4 OF 9
L. ROBERTO LOMAS P.E. 208 7th Ave, INDIALANTIC, FL 32903 434-688-0609 rllomas@lrlomaspe.com		



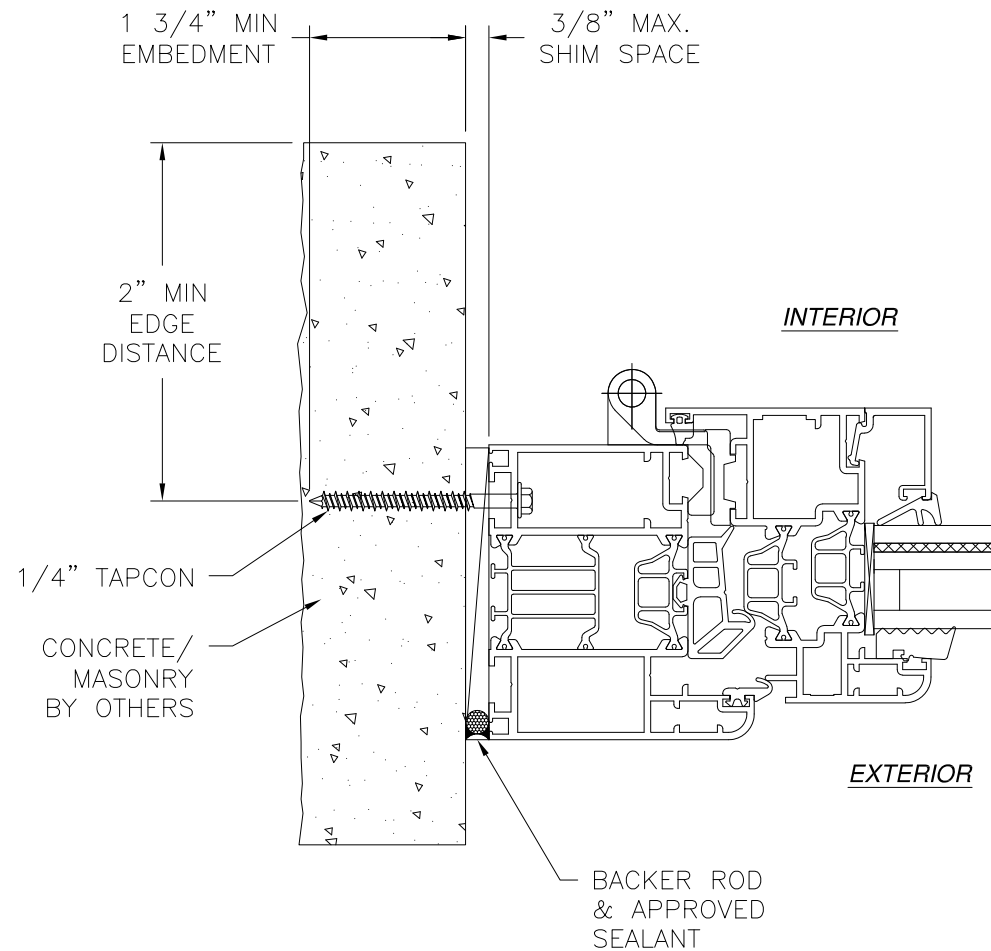
Luis R. Lomas P.E.
FL No.: 62514



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

NOTES:

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

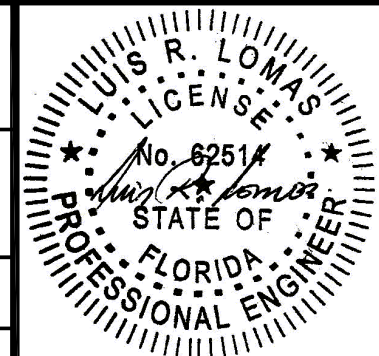


JAMB INSTALLATION DETAIL
CONCRETE/MASONRY WITHOUT 1X BUCK INSTALLATION
FOR CONCRETE/MASONRY WITH 1X BUCK REFER TO
HEAD AND SILL INSTALLATION DETAILS

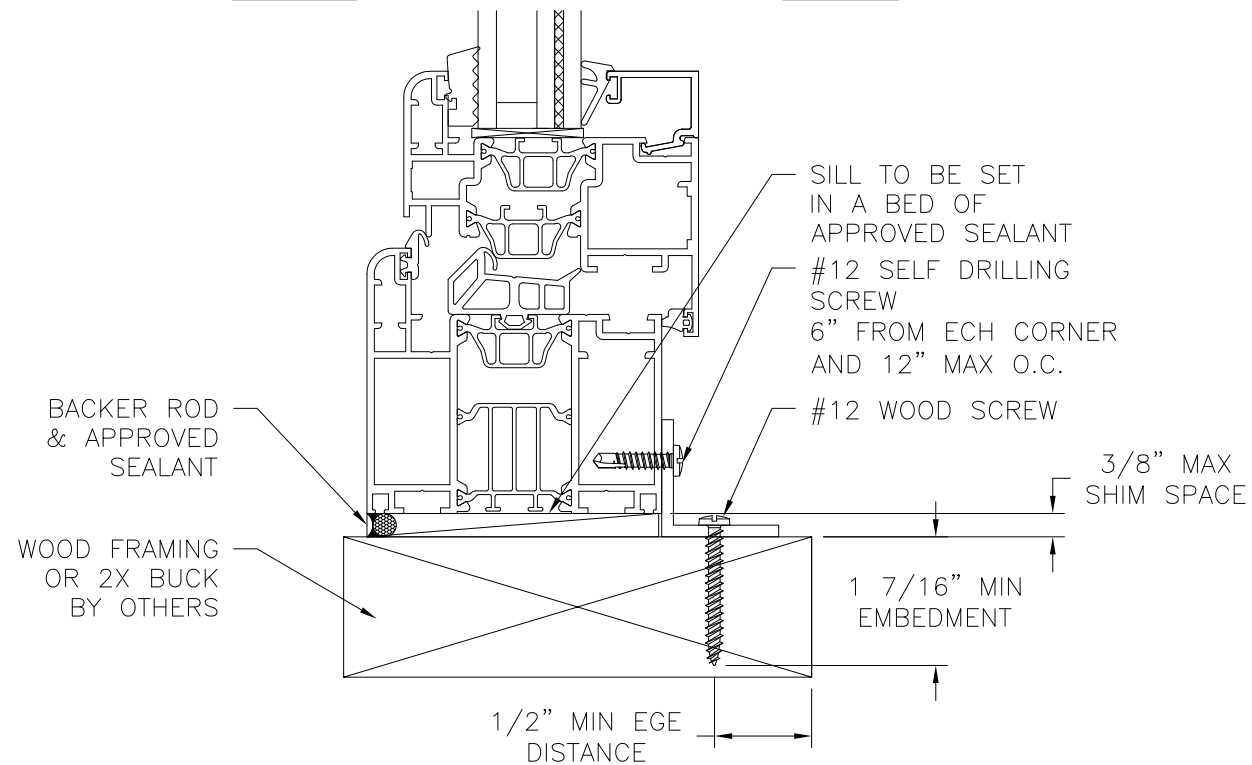
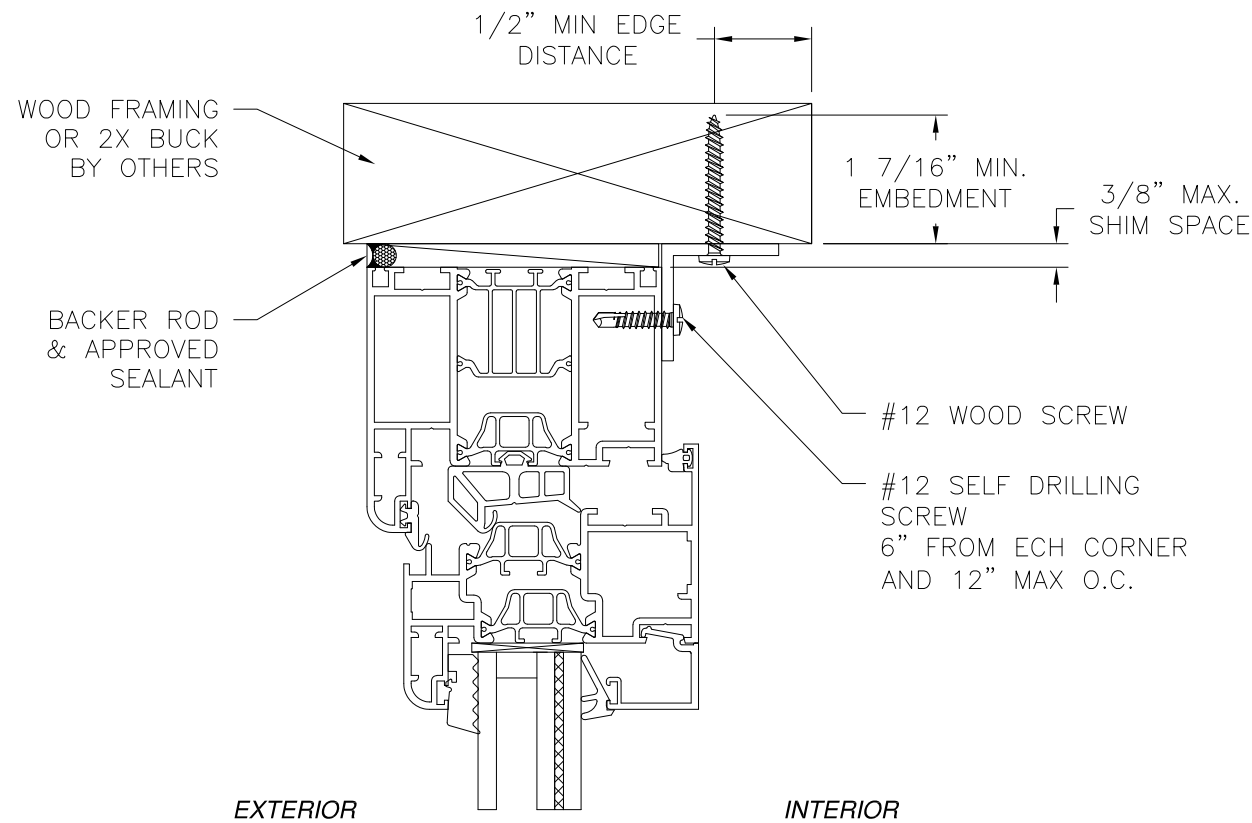
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

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

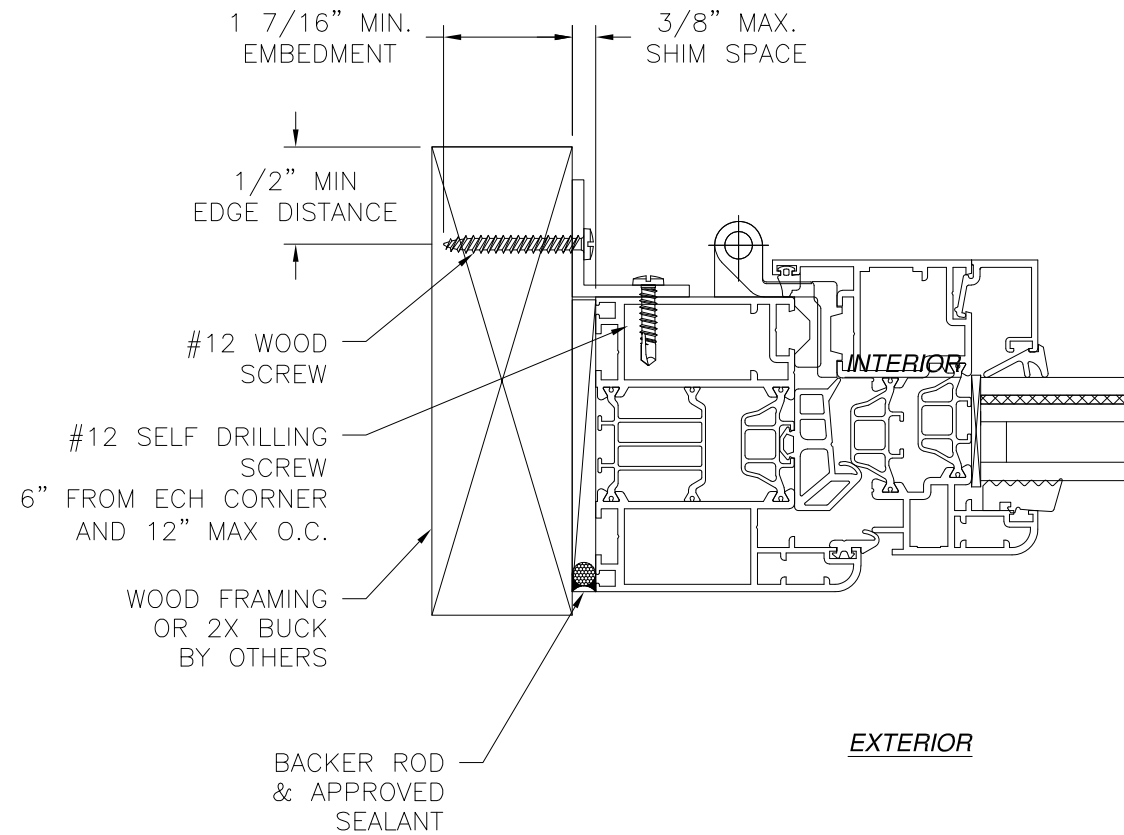
SIGNED: 04/22/2024



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



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

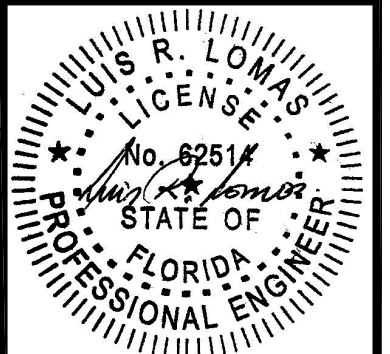
NANA WALL SYSTEMS, INC.
100 MEADOWCREEK DRIVE, SUITE 250
CORTE MADERA, CA 94925

SL88 TILT AND TURN WINDOW
IMPACT HVHZ
INSTALLATION DETAILS

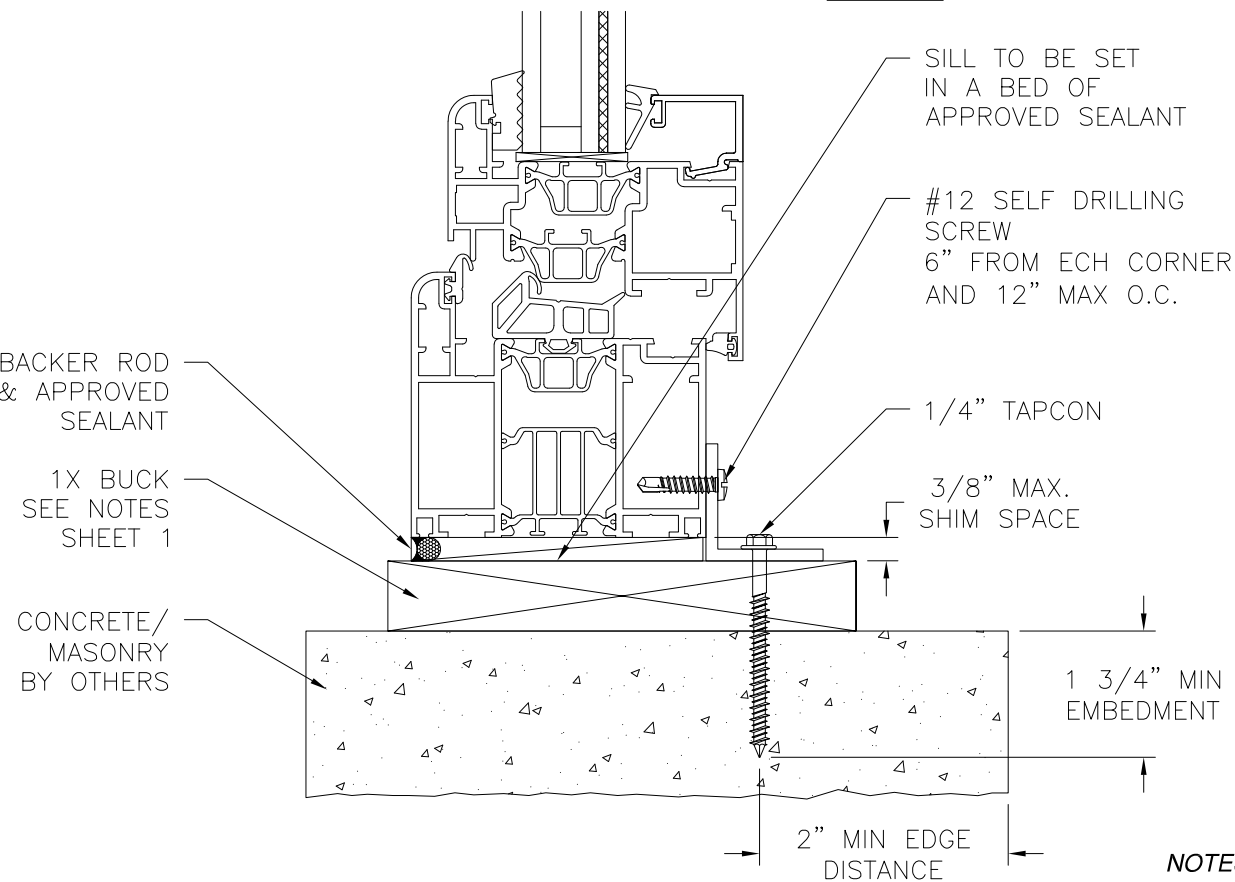
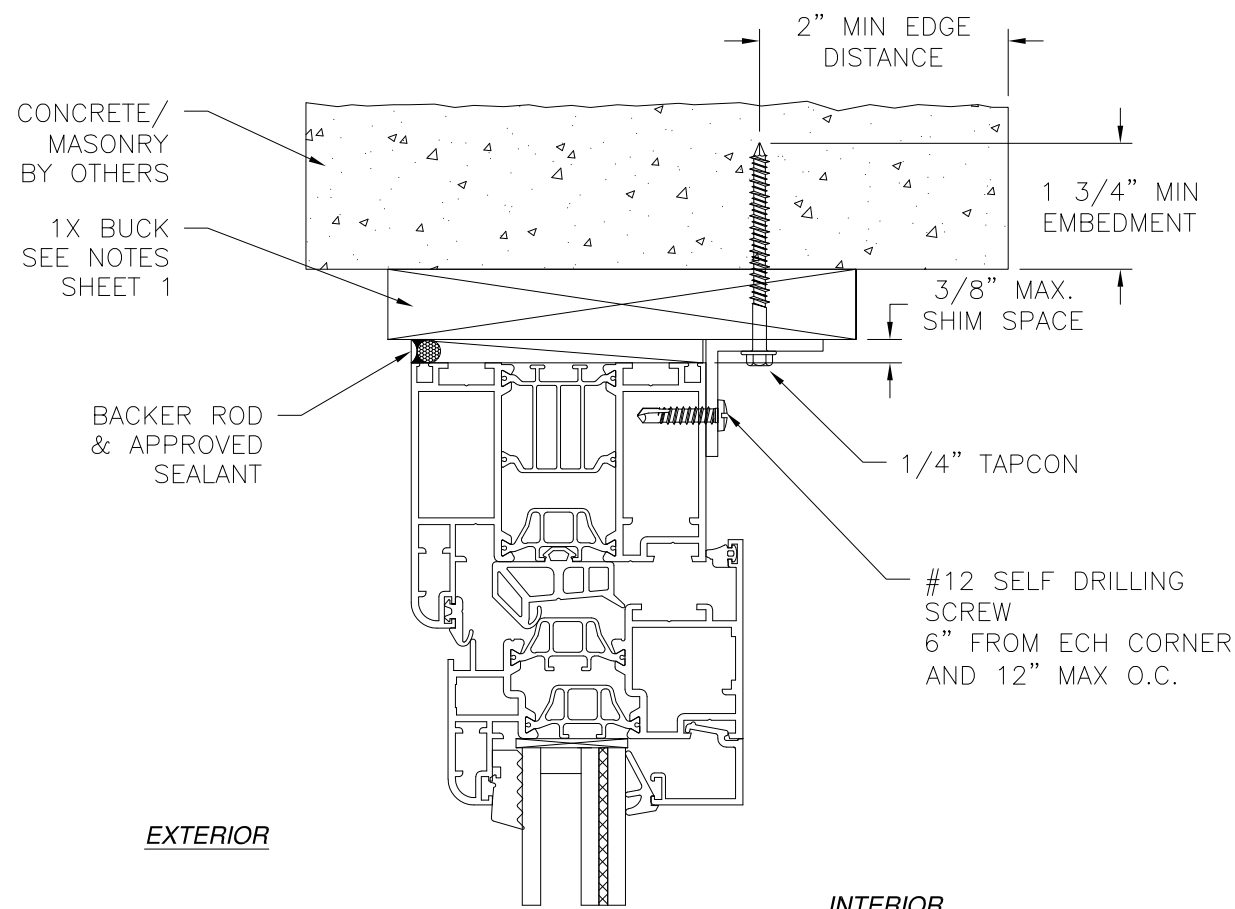
DRAWN: R.L.	DWG NO. 08-03967	REV -
SCALE NTS	DATE 12/15/23	SHEET 6 OF 9

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

SIGNED: 04/22/2024



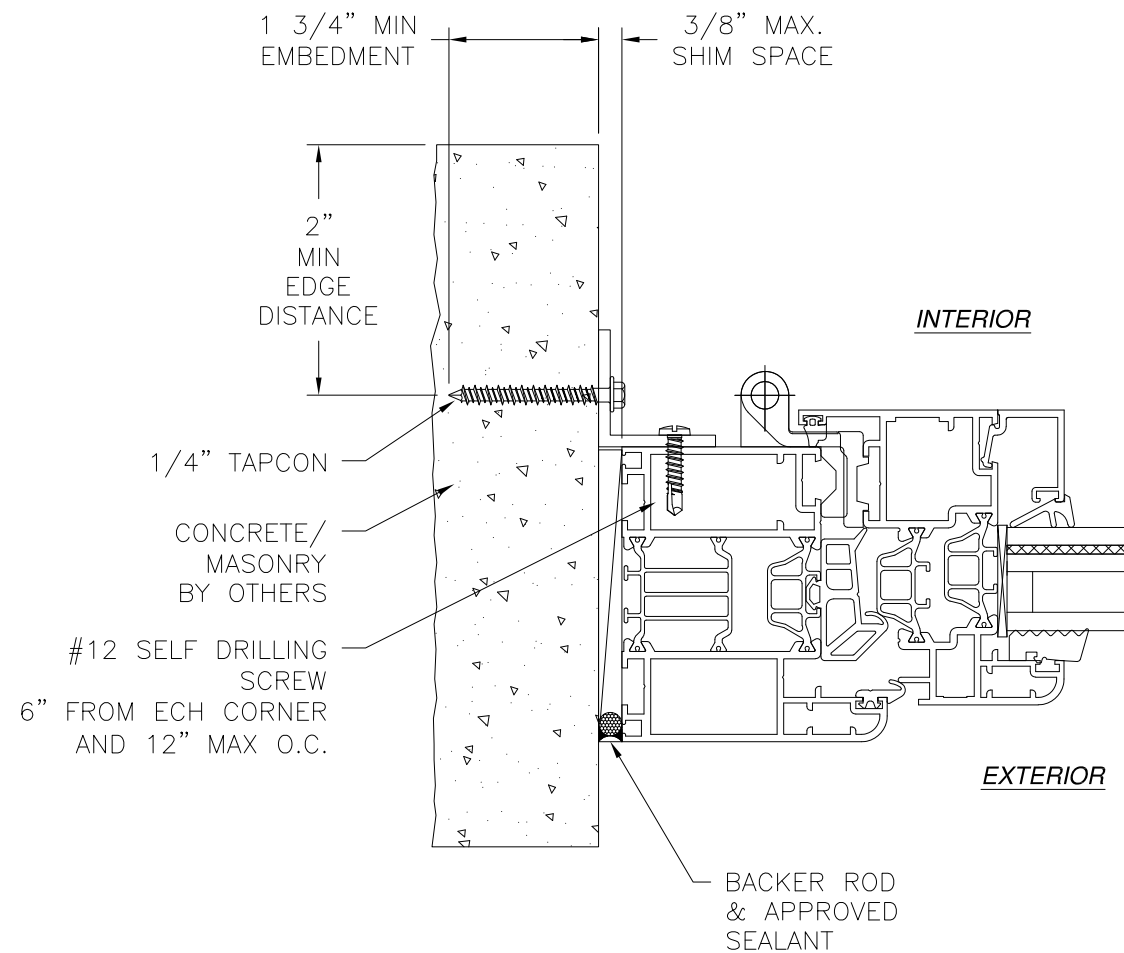
Luis R. Lomas P.E.
FL No.: 62514



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

- 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

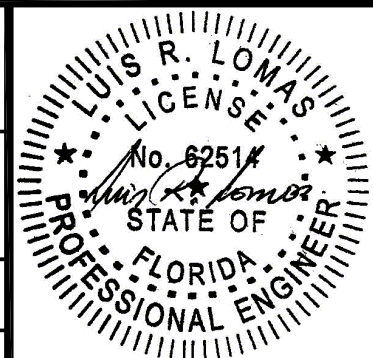
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



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

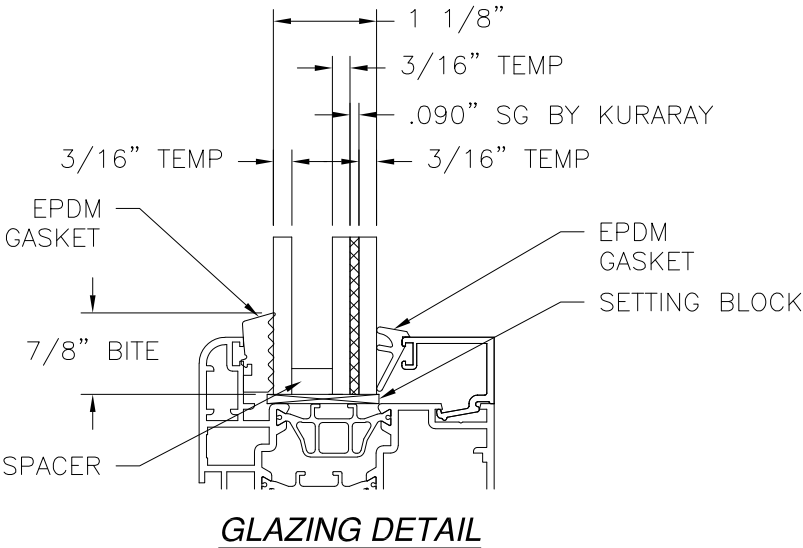
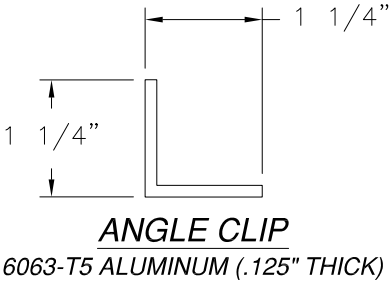
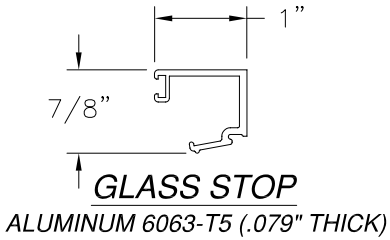
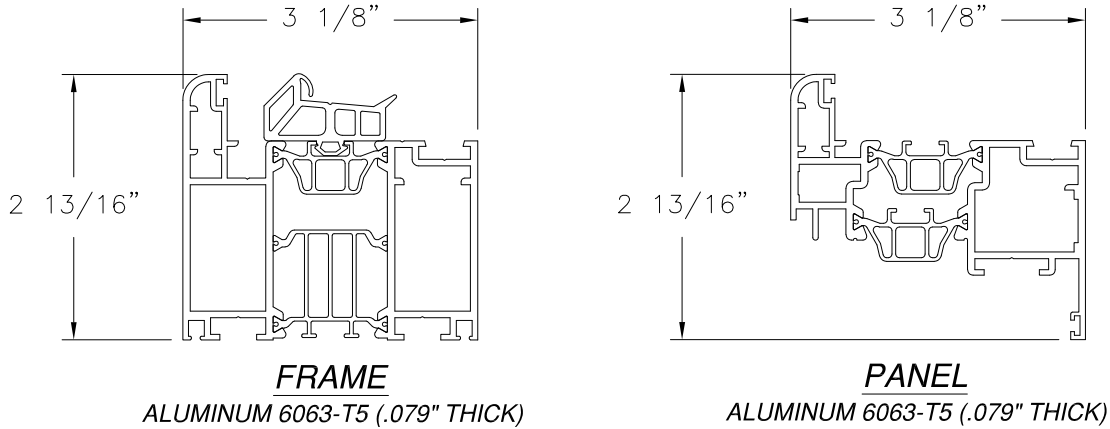
SIGNED: 04/22/2024

NANA WALL SYSTEMS, INC. 100 MEADOWCREEK DRIVE, SUITE 250 CORTE MADERA, CA 94925		
SL88 TILT AND TURN WINDOW IMPACT HVHZ INSTALLATION DETAILS		
DRAWN: R.L.	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		



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

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



SIGNED: 04/22/2024

NANA WALL SYSTEMS, INC.

100 MEADOWCREEK DRIVE, SUITE 250
CORTE MADERA, CA 94925

SL88 TILT AND TURN WINDOW
IMPACT HVHZ
COMPONENTS

DRAWN:
R.L.

DWG NO.
08-03967

REV
-

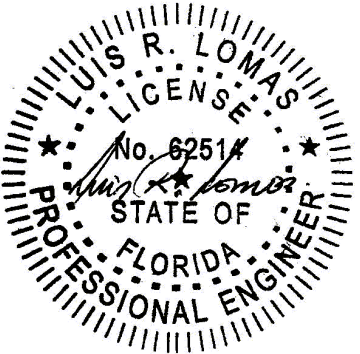
SCALE
NTS

DATE
12/15/23

SHEET
9 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