



**EXTRUDED ALUMINUM STATIONARY HYBRID LOUVER
MIAMI-DADE QUALIFIED • FLORIDA PRODUCT APPROVED
HIGH VELOCITY WIND-DRIVEN RAIN AND IMPACT RESISTANT
9" (229) DEEP • HORIZONTAL AND VERTICAL BLADE
MODEL: 1609HM**

QUALIFICATIONS:

- Miami-Dade County 23-0823.05
- Florida Product Approval 41947.1
- Tested in accordance with: TAS-100A (Wind-Driven Rain Test), TAS-201 (Large Missile Impact Test), TAS-202 (Uniform Static Air Pressure Test), TAS-203 (Cyclic Wind Pressure Loading Test).
- AMCA 500-L (Wind-Driven Rain, Water Penetration, Air Performance).
- AMCA 540 (Wind-Borne Debris Impact Test [Enhanced "Level E" Protection]).
- AMCA 550 (High Velocity Wind-Driven Rain Resistance Test).
- Wind load rating ± 160 PSF.

STANDARD CONSTRUCTION:

FRAME: **Front:** 4" (102) deep, Type 6063-T6 extruded aluminum, .080" (2.03) nominal wall thickness. Integral caulking slot provided.

Rear: 5" (127) deep, Type 6063-T6 extruded aluminum, .080" (2.03) nominal wall thickness. Integral downspouts provided.

BLADES: **Front:** Horizontal Type 6063-T6 extruded aluminum, .080" (2.03) nominal wall thickness, with reinforcing bosses. J style. Fixed at 37 degrees.

Rear: Vertical Type 6063-T6 extruded aluminum, .060" (1.52) nominal wall thickness, with reinforcing bosses.

BLADE SPACING: **Front:** Approx. 4" (102) on centers. **Rear:** Approx. 1 1/2" (38) on centers.

BLADE SUPPORT: **Front:** Concealed type, factory installed on rear of louver on maximum 60" (1524) centers.

Rear: 2.5" (64) strap every 60" (1524) or less in height.

SCREEN: 3/4" x .050 (19 x 1.3) expanded, flattened aluminum bird screen in removable frame, inside (rear) mount (adds approximately 3/8" [10] to louver depth).

SILL PAN: Aluminum sill pan with end dams. (louver width undersized an additional 1/4" (6) to accommodate sill pan).

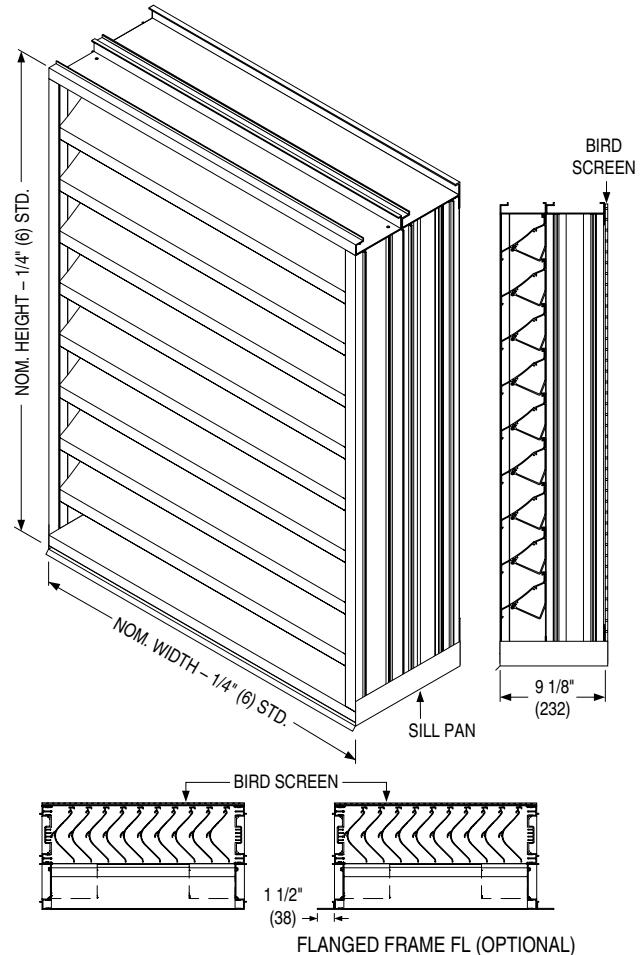
FINISH: Mill.

MINIMUM SIZE: 12" W x 12" H (305 x 305).

MAXIMUM SINGLE 60" W x 120" H (1524 x 3048). 50 sq. ft.

SECTION SIZE: (4.6 m²). Larger louvers will require field assembly of smaller sections.

MAXIMUM SIZE: Unlimited Width x 120" H (3048).



OPTIONS:

- BSSS** Type 304 S. S. Bird Screen.
- BSN** No Bird Screen.
- ISSS** Type 304 S. S. Insect Screen.
- ISA** Aluminum Insect Screen.
- FL15** Flanged Frame, 1 1/2" (38).
- FL20** Flanged Frame, 2" (51).
- Other: _____.

OPTIONAL FINISHES:

- PC3** Powder Coat AAMA 2603. Color: _____.
- PC4** High Performance Powder Coat AAMA 2604 (Equivalent to 50% Kynar®). Color: _____.
- PC5** Fluoropolymer Powder Coat AAMA 2605 (Equivalent to 70% Kynar®). Color: _____.
- PCC** Prime Coat.
- AN04** Clear Anodized 204-R1.
- AN15** Clear Anodized 215-R1.

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Page 1 of 3
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
4 - 12 - 24	1600M	NEW	1609HM



EXTRUDED ALUMINUM STATIONARY HYBRID LOUVER
MIAMI-DADE QUALIFIED • FLORIDA PRODUCT APPROVED
HIGH VELOCITY WIND-DRIVEN RAIN AND IMPACT RESISTANT
9" (229) DEEP • HORIZONTAL AND VERTICAL BLADE
PERFORMANCE DATA
MODEL: 1609HM

FREE AREA in Square Feet and Square Meters

		Width in Inches and Meters								
		12 0.30	18 0.46	24 0.61	30 0.76	36 0.91	42 1.07	48 1.22	54 1.37	60 1.52
Height in Inches and Meters	12 0.30	0.21 0.02	0.39 0.04	0.56 0.05	0.73 0.07	0.90 0.08	1.07 0.10	1.24 0.12	1.41 0.13	1.58 0.15
	18 0.46	0.42 0.04	0.76 0.07	1.10 0.10	1.44 0.13	1.78 0.17	2.12 0.20	2.46 0.23	2.80 0.26	3.13 0.29
	24 0.61	0.63 0.06	1.14 0.11	1.65 0.15	2.15 0.20	2.66 0.25	3.17 0.29	3.67 0.34	4.18 0.39	4.69 0.44
	30 0.76	0.84 0.08	1.52 0.14	2.19 0.20	2.87 0.27	3.54 0.33	4.21 0.39	4.89 0.45	5.56 0.52	6.24 0.58
	36 0.36	1.05 0.10	1.89 0.18	2.74 0.25	3.58 0.33	4.42 0.41	5.26 0.49	6.10 0.57	6.95 0.65	7.79 0.72
	42 1.07	1.26 0.12	2.27 0.21	3.28 0.30	4.29 0.40	5.30 0.49	6.31 0.59	7.32 0.68	8.33 0.77	9.34 0.87
	48 1.22	1.47 0.14	2.65 0.25	3.83 0.36	5.00 0.46	6.18 0.57	7.36 0.68	8.53 0.79	9.71 0.90	10.89 1.01
	54 1.37	1.68 0.16	3.03 0.28	4.37 0.41	5.72 0.53	7.06 0.66	8.41 0.78	9.75 0.91	11.09 1.03	12.44 1.16
	60 1.52	1.89 0.18	3.40 0.32	4.92 0.46	6.43 0.60	7.94 0.74	9.45 0.88	10.97 1.02	12.48 1.16	13.99 1.30
	66 1.68	2.10 0.20	3.78 0.35	5.46 0.51	7.14 0.66	8.82 0.82	10.50 0.98	12.18 1.13	13.86 1.29	15.54 1.44
	72 1.83	2.31 0.21	4.16 0.39	6.01 0.56	7.85 0.73	9.70 0.90	11.55 1.07	13.40 1.24	15.24 1.42	17.09 1.59
	78 1.98	2.52 0.23	4.53 0.42	6.55 0.61	8.57 0.80	10.58 0.98	12.60 1.17	14.61 1.36	16.63 1.54	18.64 1.73
	84 2.13	2.73 0.25	4.91 0.46	7.10 0.66	9.28 0.86	11.46 1.06	13.64 1.27	15.83 1.47	18.01 1.67	20.19 1.88
	90 2.29	2.94 0.27	5.29 0.49	7.64 0.71	9.99 0.93	12.34 1.15	14.69 1.36	17.04 1.58	19.39 1.80	21.75 2.02
	96 2.44	3.15 0.29	5.67 0.53	8.19 0.76	10.70 0.99	13.22 1.23	15.74 1.46	18.26 1.70	20.78 1.93	23.30 2.16
	102 2.59	3.36 0.31	6.04 0.56	8.73 0.81	11.42 1.06	14.10 1.31	16.79 1.56	19.47 1.81	22.16 2.06	24.85 2.31
	108 2.74	3.57 0.33	6.42 0.60	9.27 0.86	12.13 1.13	14.98 1.39	17.84 1.66	20.69 1.92	23.54 2.19	26.40 2.45
	114 2.90	3.78 0.35	6.80 0.63	9.82 0.91	12.84 1.19	15.86 1.47	18.88 1.75	21.91 2.04	24.93 2.32	27.95 2.60
	120 3.05	3.99 0.37	7.18 0.67	10.36 0.96	13.55 1.26	16.74 1.56	19.93 1.85	23.12 2.15	26.31 2.44	29.50 2.74

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Page 2 of 3

Dimensions are in inches (mm).

DATE

B SERIES

SUPERSEDES

DRAWING NO.

4 - 12 - 24

1600M

NEW

1609HM



EXTRUDED ALUMINUM STATIONARY HYBRID LOUVER
MIAMI-DADE QUALIFIED • FLORIDA PRODUCT APPROVED
HIGH VELOCITY WIND-DRIVEN RAIN AND IMPACT RESISTANT
9" (229) DEEP • HORIZONTAL AND VERTICAL BLADE
PERFORMANCE DATA
MODEL: 1609HM

AIRFLOW/WATER PENETRATION DATA
for 48" x 48" (1219 x 1219) Louver Size

Free Area %		53%
Free Area sq. ft. (sq. m.)		8.53 (0.79)
I	Free Area Velocity at Point of Beginning Water Penetration at .01 oz./sq. ft. (3 ml/sq. m) (15 min. test duration)	1011 fpm (308 m/min.)
N	Air Volume at 1011 fpm	8,624 cfm (4070 l/s)
T	Free Area Velocity	
A	Pressure Drop @ 1011 fpm	.34 in. w.g. (85 Pa)
K		
E		

NOTE: To minimize water penetration when sizing intake louvers, select a Free Area Velocity that is **below** the beginning point of water penetration.

WIND DRIVEN RAIN PERFORMANCE

Core Ventilation Rate in fpm (m/s)	0 (0.00)	99 (0.50)	198 (1.01)	297 (1.51)	393 (2.00)	494 (2.51)	590 (3.00)	690 (3.51)	789 (4.01)	889 (4.52)	985 (5.00)
Free Area Ventilation Rate in fpm (m/s)	0 (0.00)	174 (0.88)	348 (1.77)	522 (2.65)	690 (3.51)	868 (4.41)	1036 (5.26)	1212 (6.16)	1386 (7.04)	1561 (7.93)	1730 (8.79)
Effectiveness Ratio (%)	100	100	100	100	100	100	100	100	100	100	99.9
Penetration Class	A	A	A	A	A	A	A	A	A	A	A

Test was based on a 39.375" x 39.375" (1.0 m x 1.0 m) core area louver tested at a rainfall rate of 3" per hour (76 mm/hour) with a wind velocity of 29 mph (13 m/s).

DISCHARGE LOSS COEFFICIENT CLASS (INTAKE): 3. (Discharge Loss Coefficient Classification is as follows: 1=0.4 and above, 2=0.3 to 0.399, 3 = 0.2 to 0.299, 4 = 0.199 and below.)

Core Ventilation Rate in fpm (m/s)	0 (0.00)	96 (0.49)	197 (1.00)	288 (1.46)	396 (2.01)	482 (2.45)	593 (3.01)	691 (3.51)	793 (4.03)	894 (4.54)	988 (5.02)
Free Area Ventilation Rate in fpm (m/s)	0 (0.00)	169 (0.86)	346 (1.76)	506 (2.57)	696 (3.54)	847 (4.30)	1042 (5.29)	1214 (6.17)	1393 (7.08)	1570 (7.98)	1735 (8.81)
Effectiveness Ratio (%)	100	100	100	100	100	100	99.8	99.6	99.1	98.5	97.9
Penetration Class	A	A	A	A	A	A	A	A	B	B	B

Test was based on a 39.375" x 39.375" (1.0 m x 1.0 m) core area louver tested at a rainfall rate of 8" per hour (203 mm/hour) with a wind velocity of 50 mph (22 m/s).

DISCHARGE LOSS COEFFICIENT CLASS (INTAKE): 3. (Discharge Loss Coefficient Classification is as follows: 1=0.4 and above, 2=0.3 to 0.399, 3 = 0.2 to 0.299, 4 = 0.199 and below.)



Nailor Industries Inc. certifies that the Model 1609HM shown herein is licensed to bear the AMCA Certified Ratings Program seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Program seal applies to air performance, water penetration and wind driven rain performance ratings.

Louvers were tested in accordance with AMCA Standard 500-L.



HIGH VELOCITY RAIN
RESISTANT WITH BLADES
FULLY OPEN AND
IMPACT RESISTANT LOUVER
Enhanced Protection Level E

See www.AMCA.org for all certified or listed products

This label does not signify
AMCA airflow performance
certification.

Nailor Industries Inc. certifies that the 1609HM shown herein is approved to bear the AMCA International Listing Label. The ratings shown are based on tests and procedures performed in accordance with AMCA publications and comply with the requirements of the AMCA International Listing Label program. The AMCA International Listing Label applies to pressure cycle tested wind borne debris impact resistant louvers rated for 'Enhanced Protection' and +/- 160PSF with a minimum blade span of 12 in. (305mm) and a maximum unsupported blade span of 59 in. (1499 mm) and to High Velocity Wind-Driven Rain Resistant Louvers tested in the fully open position that permits airflow through a louver.

Page 3 of 3
Dimensions are in inches (mm).

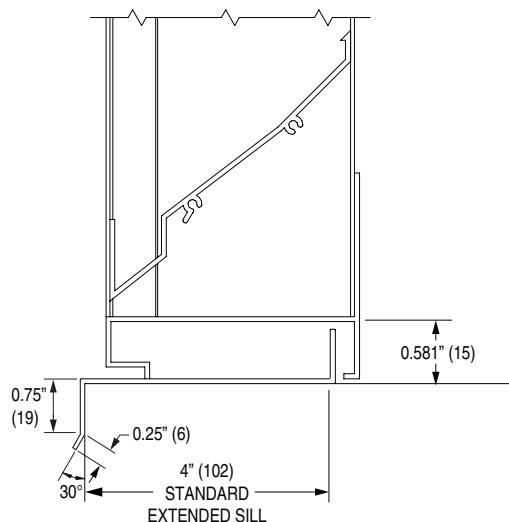
SCHEDULE TYPE:			
PROJECT:			
ENGINEER:			
CONTRACTOR:			

DATE	B SERIES	SUPERSEDES	DRAWING NO.
4 - 12 - 24	1600M	NEW	1609HM

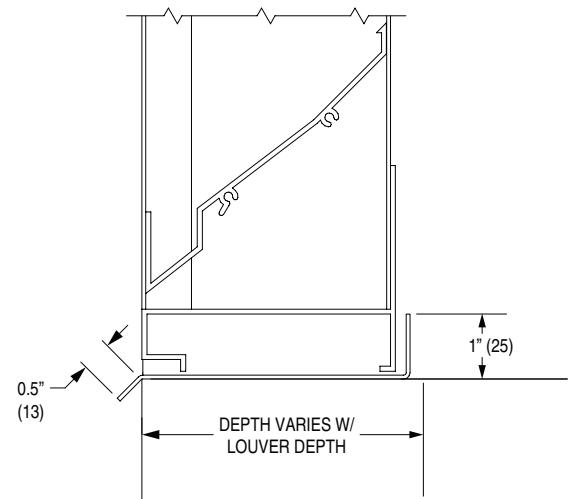


**LOUVER ACCESSORIES
MODEL SERIES: 1600 & 1700
ESI EXTENDED SILL & PASI SILL PAN**

ESI Extended Sill

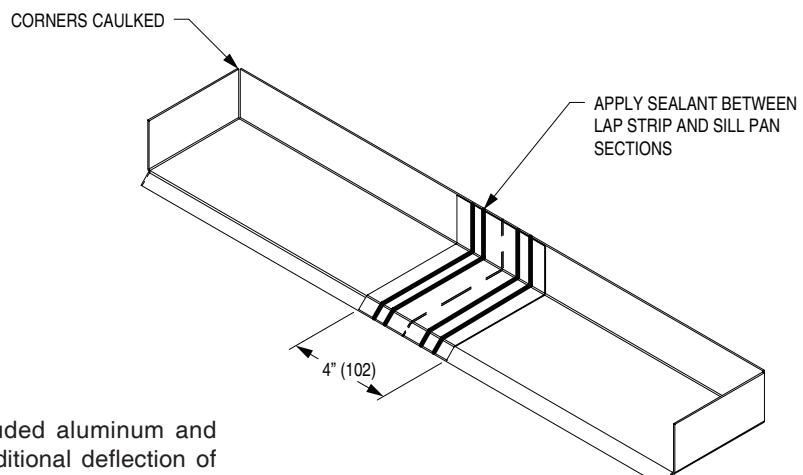


PASI Sill Pan (Extended Sill with End Dams)



SILL PAN (Side View)

*Shipped in sections for multiple section width louvers where necessary.



APPLICATION:

Sill extensions are available on all Nailor extruded aluminum and formed steel louver models and can provide additional deflection of water away from the louver opening. An extended sill option may also provide a transition between the louver and adjacent structures.

NOTES:

1. The finish will match the louver.
2. When ordered, sill extensions are shipped loose for field installation.
3. Customization available upon request.

MATERIALS:

1. **ESI** Extended Sill 6063-T6 0.081" (2.1) thick extruded aluminum.
2. **PASI** Extended Sill 5052-H32 0.060" (1.5) thick formed aluminum

SCHEDULE TYPE:

Dimensions are in inches (mm).

PROJECT:

ENGINEER:

CONTRACTOR:

DATE	B SERIES	SUPERSEDES	DRAWING NO.
1 - 29 - 26	ACC-ESI	New	ACC-ESI



**DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)**

**MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION**
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/building

**Nailor Industries Inc.
4714 Winfield Road
Houston, TX 77039**

SCOPE: This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Model 1609HM Aluminum Louver System

APPROVAL DOCUMENT: Drawing No. **1609HM-NOA**, titled "BOM, Notes, Anchors, Elevation, Mull Details, Assembly Details, Head/Sill, Jamb, Profiles", sheets 1 through 7 of 7, prepared by manufacturer, dated 05/27/2021, signed and sealed by Lucas A. Turner, P.E. on 03/07/2024, bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, Houston, TX, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

LIMITATION: This system is to be installed in a location where the room behind the louver is designed to drain water penetrating into the room, and the room will house water resistant/waterproof equipment, components, or supplies.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1 and evidence page E-1, as well as approval document mentioned above. The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**

**MIAMI-DADE COUNTY
APPROVED**

05/09/24

**NOA No. 23-0823.05
Expiration Date: April 4, 2029
Approval Date: April 4, 2024
Page 1**

Nailor Industries Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **1609HM-NOA**, titled “BOM, Notes, Anchors, Elevation, Mull Details, Assembly Details, Head/Sill, Jamb, Profiles”, sheets 1 through 7 of 7, prepared by manufacturer, dated 05/27/2021, signed and sealed by Lucas A. Turner, P.E. on 03/07/2024.

B. TESTS

1. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
2) Large Missile Impact Test per FBC, TAS 201-94
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with installation diagram of Model 1609HM Louver Systems, prepared by Intertek, Test Report No. **K4977.01-801-18-r1**, dated 02/04/2022, revised on 05/23/2022, signed and sealed by Tyler Westerling, P.E.
2. Test Report on Test Method for Louvers Impacted by Wind Borne Debris per ANSI/AMCA 540-13 on a Model 1609HM Aluminum Louver Systems, prepared by Intertek, Test Report No. **K4975.01-801-18-R2**, dated 06/28/2021, revised on 01/04/2022, signed and sealed by Tyler Westerling, P.E.
3. Test Report on High Velocity Wind Driven Rain Resistance per ANSI/AMCA 550-15 on a Model 1609HM Aluminum Louver System, prepared by Intertek, Test Report No. **K4976.01-801-44-R2**, dated 05/06/2021, revised on 01/21/2022, signed and sealed by Tyler Westerling, P.E.

C. CALCULATIONS

1. Louver structural calculations, dated 08/09/2023, prepared by Turner Engineering Consulting, Inc., signed and sealed by Lucas A. Turner, P.E.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER).

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS

1. Statement letter of code conformance to the **FBC, 7th Edition (2020)** and **FBC, 8th Edition (2023)**, issued by Turner Engineering Consulting, Inc., dated 08/09/2023, signed and sealed by Lucas A. Turner, P.E.
2. Statement letter of no financial interest issued by Turner Engineering Consulting, Inc., dated 08/09/2023, signed and sealed by Lucas A. Turner, P.E.



Carlos M. Utrera, P.E.

Product Control Examiner

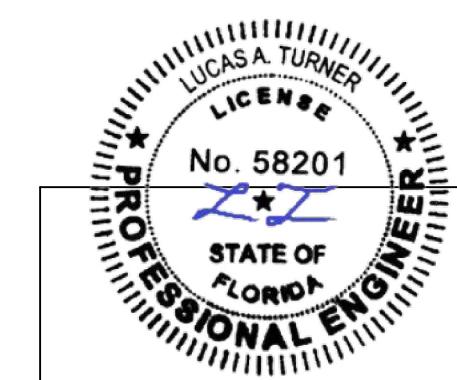
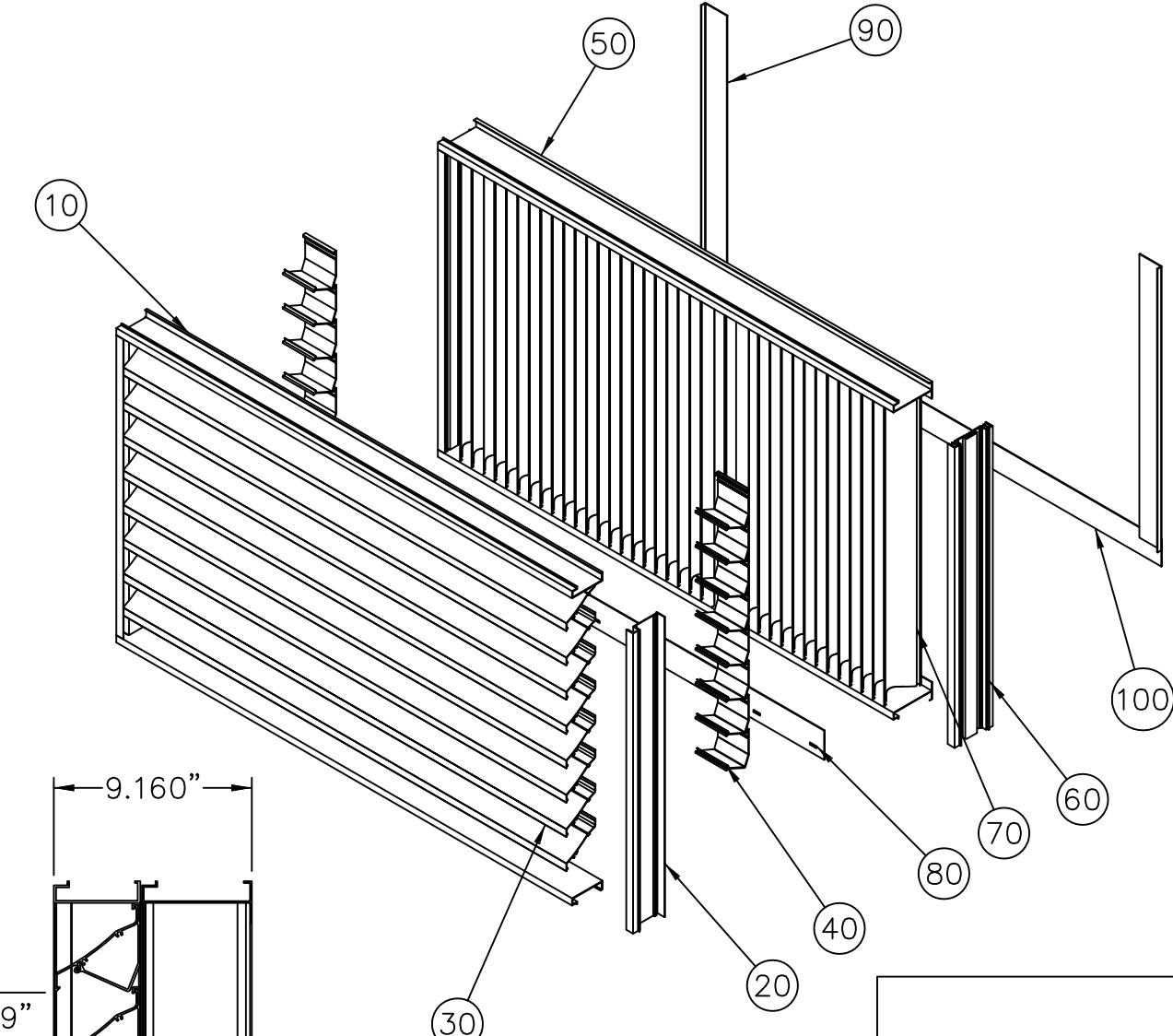
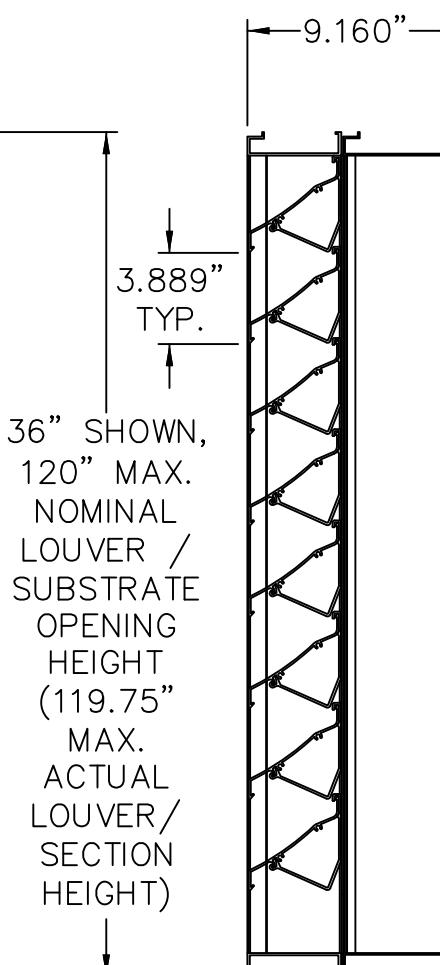
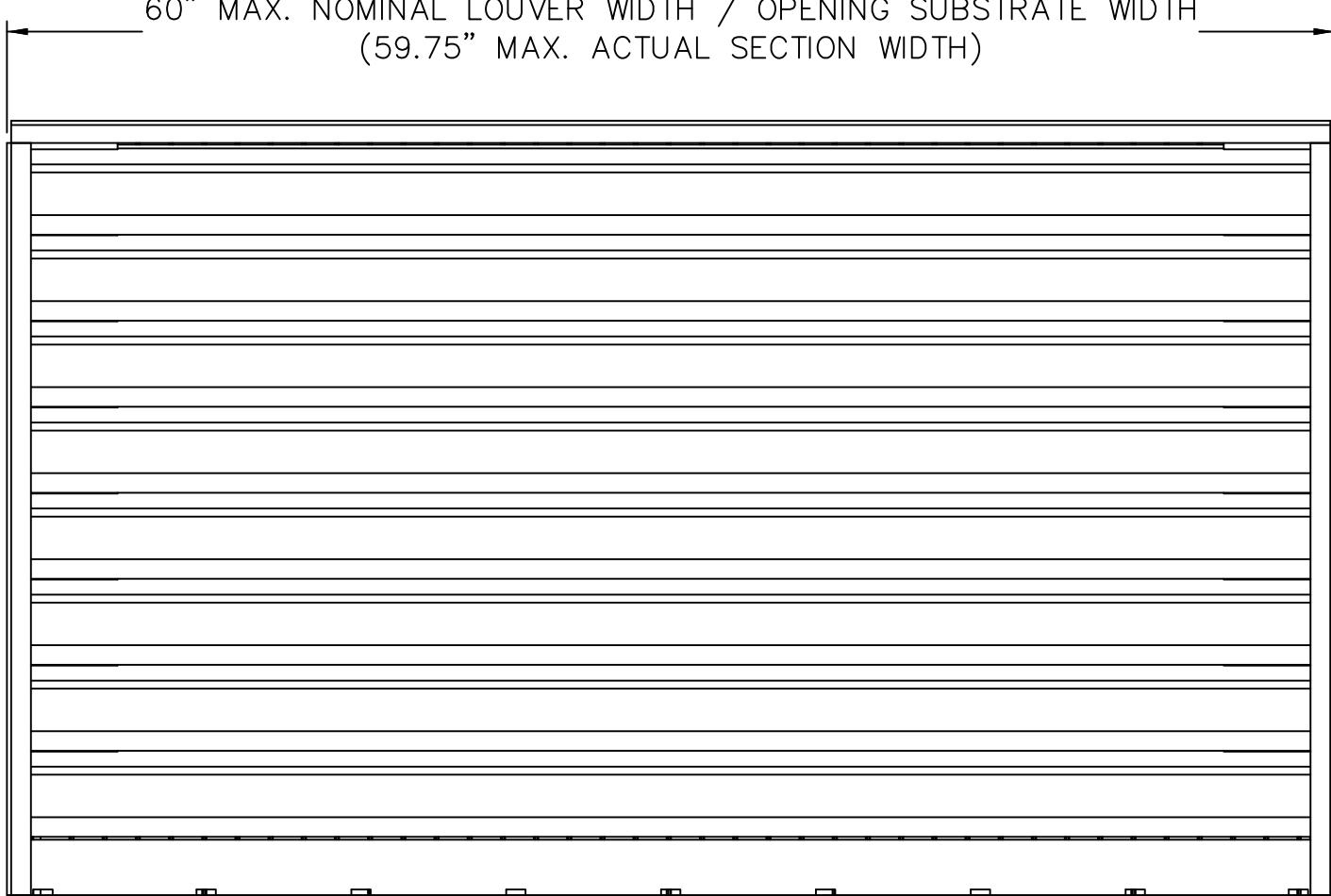
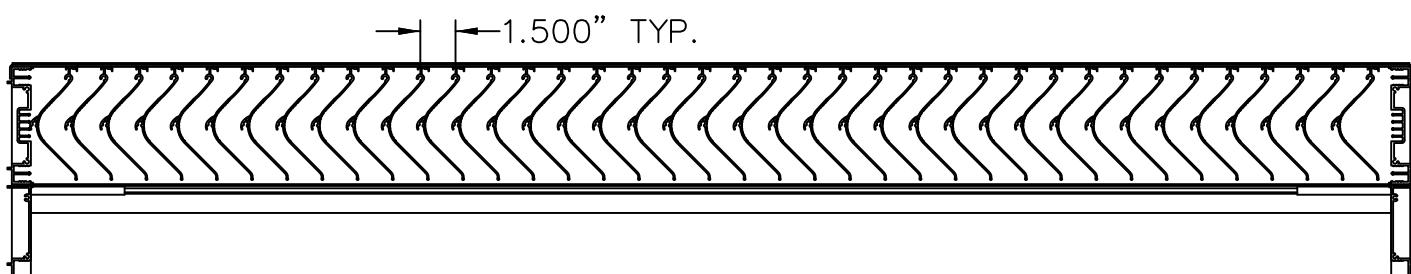
NOA No. 23-0823.05

Expiration Date: April 4, 2029

Approval Date: April 4, 2024

A B C D E F G H J K L

TYPICAL ASSEMBLY, SINGLE LOUVER SECTION



3/7/2024
LUCAS TURNER
FL PE 58201
TURNER ENGINEERING &
CONSULTING, INC.,
2428 OLD NATCHEZ TRACE TRL.
CAMDEN, TN, 38320
PH 941-380-1574



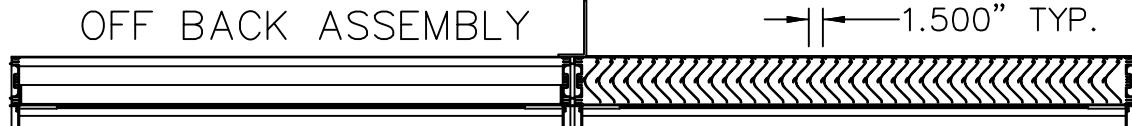
Nailor Industries Inc.
4714 Winfield Road
Houston, TX 77039
TEL: 281-590-1172
FAX: 281-590-3086
www.nailor.com

REV	BY	DESCRIPTION	DATE
DWN BY:	fcortinas	SCALE:	NTS
DATE:	5/27/2021	SHEET:	2 OF 7
SHEET DESCRIPTION:	1609HM 60.00 X 36.00	REV	
DWG:	1609HM-NOA		0

A B C D E F G H J K L

TYPICAL ASSEMBLY, MULLED LOUVERS
(TWO LOUVER SECTIONS SHOWN, BUT
UNLIMITED SECTIONS MAY BE MULLED)

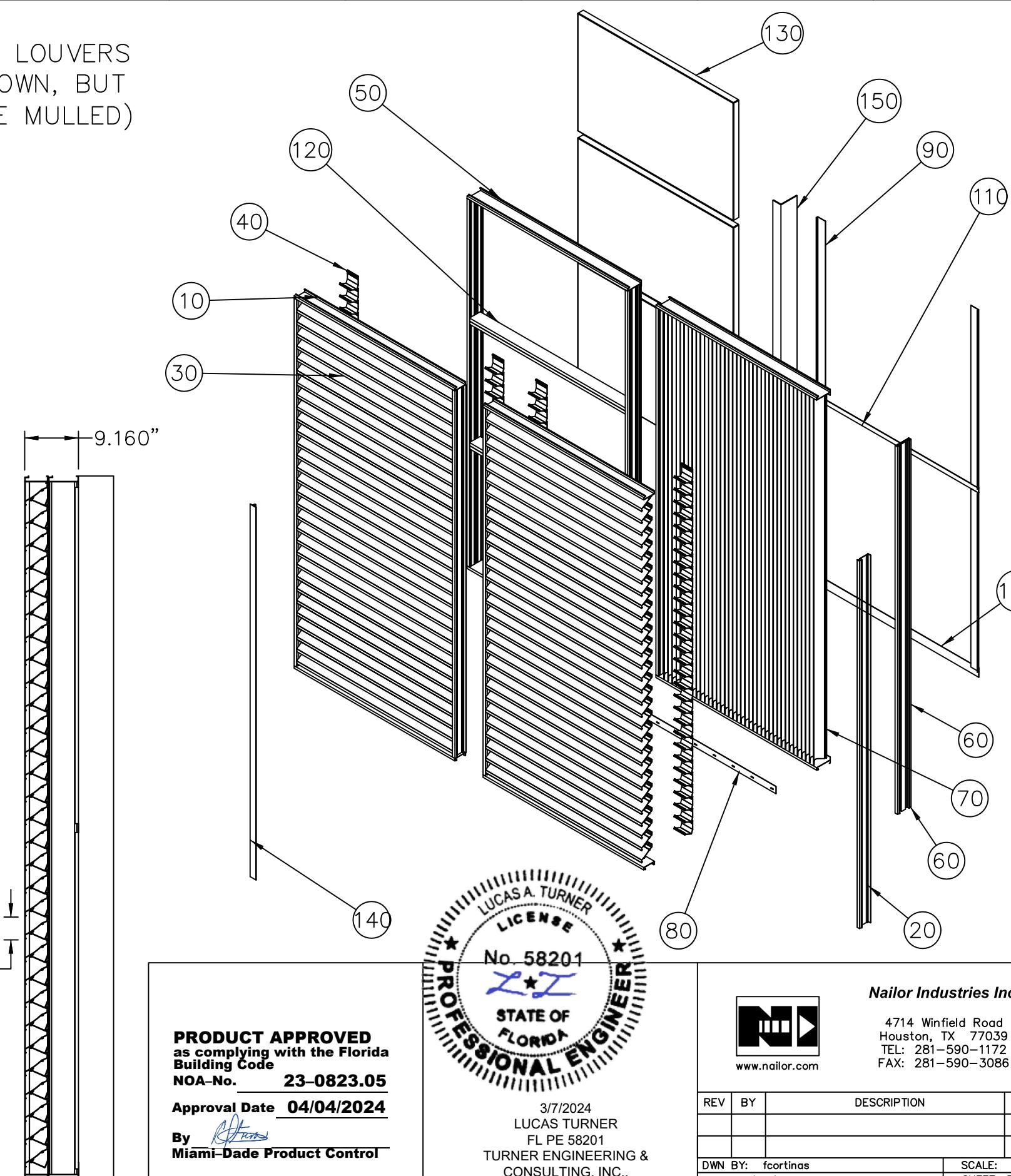
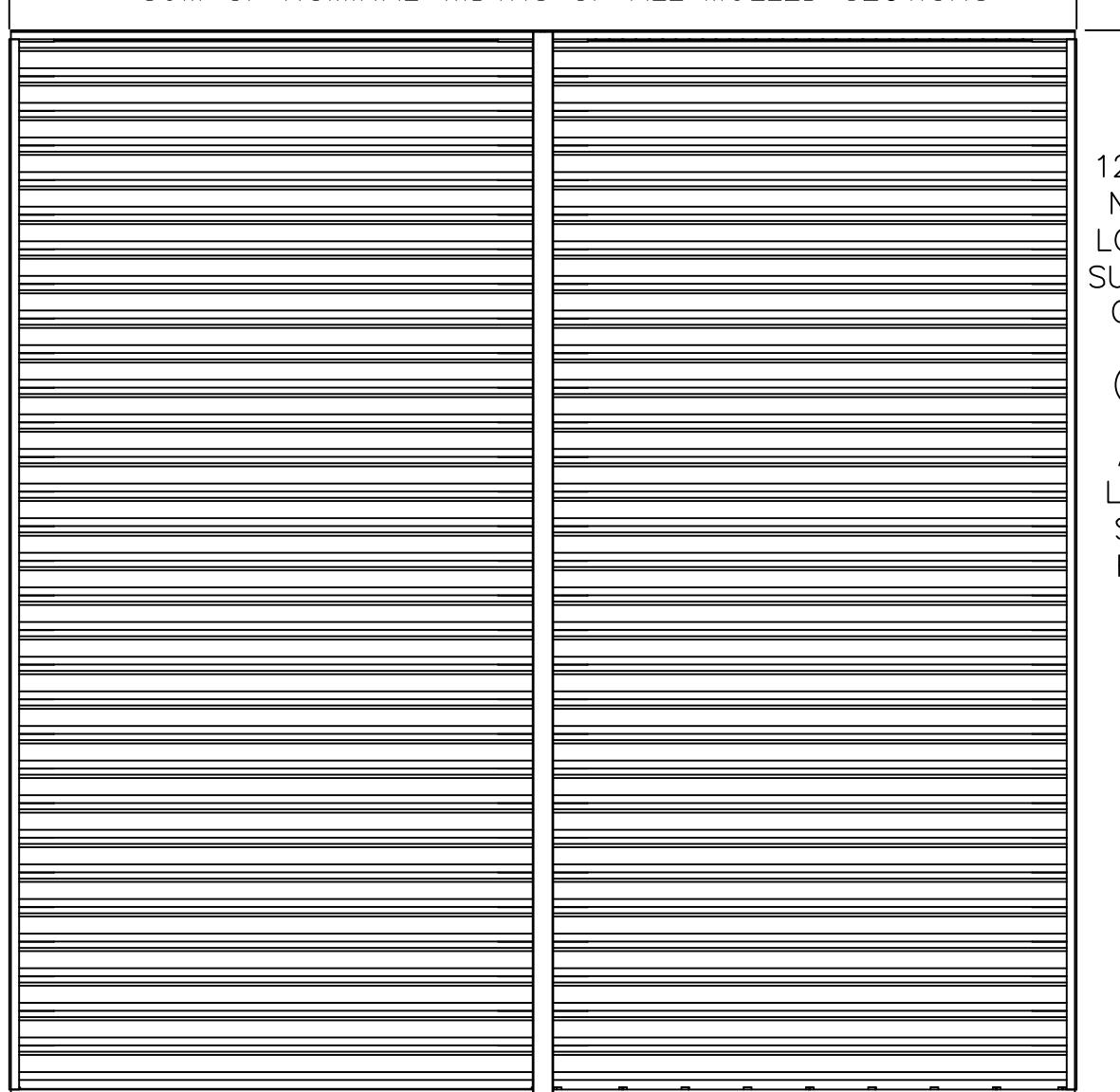
OPTIONAL BLANKED
OFF BACK ASSEMBLY



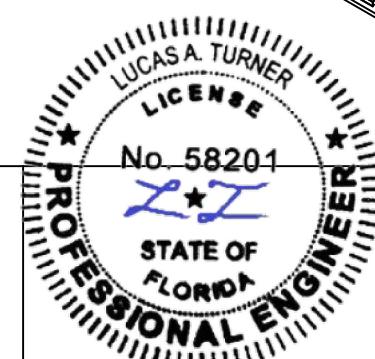
30" MAX. NOMINAL WIDTH @
BLANK OFF BACK ASSEMBLY
(29.75" MAX. ACTUAL
SECTION WIDTH)

60" MAX. NOMINAL WIDTH @
LOUVER BACK ASSEMBLY
(59.75" MAX. ACTUAL
SECTION WIDTH)

OVERALL NOMINAL LOUVER WIDTH /
SUBSTRATE OPENING WIDTH
= SUM OF NOMINAL WIDTHS OF ALL MULLED SECTIONS



PRODUCT APPROVED
as complying with the Florida
Building Code
NOA-No. **23-0823.05**
Approval Date **04/04/2024**
By 
Miami-Dade Product Control

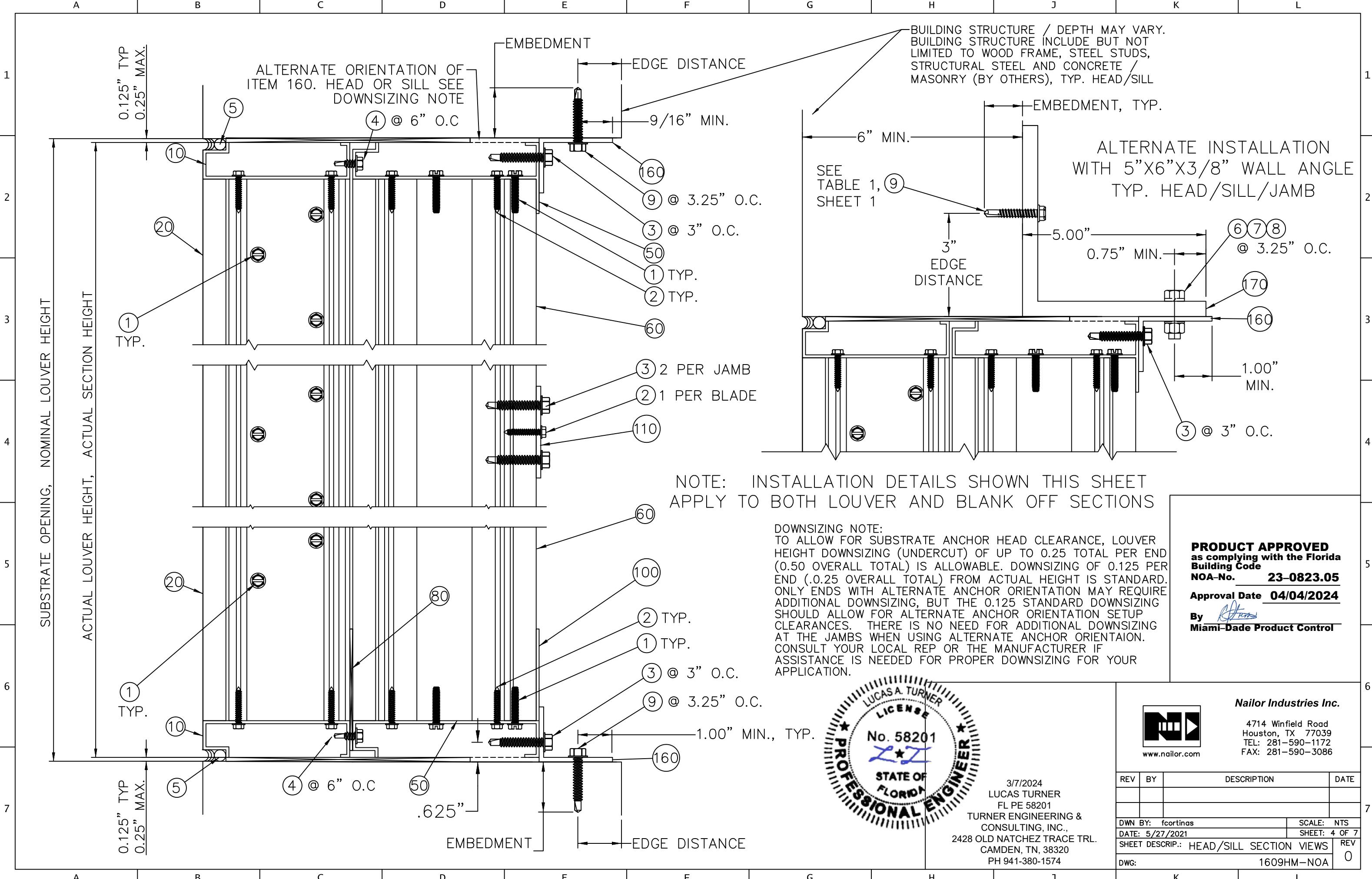


3/7/2024
LUCAS TURNER
FL PE 58201
TURNER ENGINEERING &
CONSULTING, INC.,
2428 OLD NATCHEZ TRACE TRL.
CAMDEN, TN, 38320
PH 941-380-1574

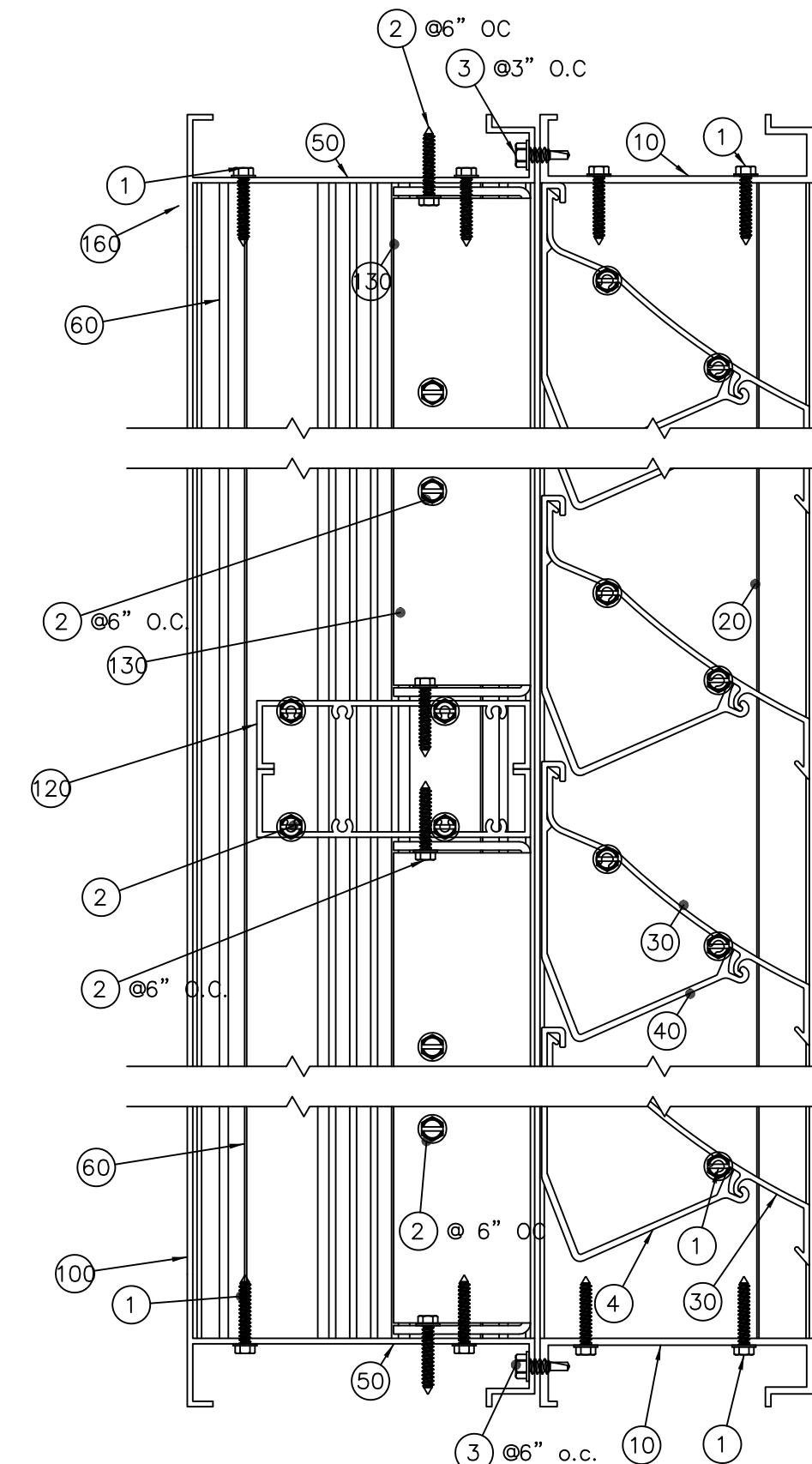


Nailor Industries Inc.
4714 Winfield Road
Houston, TX 77039
TEL: 281-590-1172
FAX: 281-590-3086
www.nailor.com

REV	BY	DESCRIPTION	DATE
DWN BY: fcortinas		SCALE: NTS	
DATE: 5/27/2021		SHEET: 3 OF 7	
SHEET DESCRIPT.: 1609HM 120.00 X 120.00		REV	
DWG: 1609HM-NOA			0

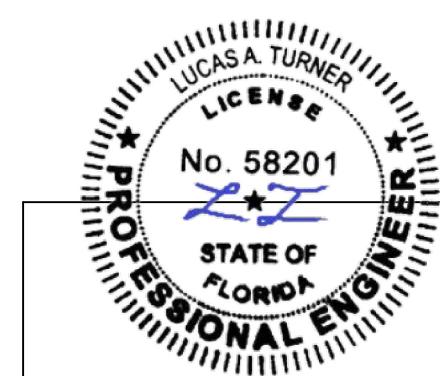


A B C D E F G H J K L



BLANK OFF VERTICAL SECTION
(FOR INSTALLATION DETAILS SEE SHEET 4)

EXT.



3/7/2024
LUCAS TURNER
FL PE 58201
TURNER ENGINEERING &
CONSULTING, INC.,
2428 OLD NATCHEZ TRACE TRL.
CAMDEN, TN, 38320
PH 941-380-1574



Nailor Industries Inc.

4714 Winfield Road
Houston, TX 77039
TEL: 281-590-1172
FAX: 281-590-3086

REV	BY	DESCRIPTION	DATE

DWN BY: fcortinas SCALE: NTS
DATE: 5/27/2021 SHEET: 5 OF 7
SHEET DESCRIPT.: HEAD/SILL SECTION VIEWS REV
DWG: 1609HM-NOA 0

