



EXTRUDED ALUMINUM COMBINATION LOUVER/DAMPER
MIAMI-DADE QUALIFIED • FLORIDA PRODUCT APPROVED
HIGH VELOCITY WIND-DRIVEN RAIN AND IMPACT RESISTANT
6" (152) DEEP • DRAINABLE BLADE • OPERABLE AIRFOIL DAMPER
MODEL: 1606CM

QUALIFICATIONS:

- Miami-Dade County NOA No. 23-0823.04
- Florida Product Approval No. 41947.2.
- Tested in accordance with: TAS-101A (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 (Water Penetration, Air Performance).
- AMCA 540 (Wind-Borne Debris Impact Test [Basic "Level D" Protection]).
- AMCA 550 (High Velocity Wind-Driven Rain Resistance Test [with blades closed]).
- Wind load rating +/- 120 PSF.

STANDARD CONSTRUCTION:

FRAME: 6" (152) deep, Type 6063-T6 extruded aluminum, 0.120" (3.05) nominal wall thickness. Integral downspouts and caulking slot provided.

BLADES: Front Stationary Blades: Drainable style, Type 6063-T6 extruded aluminum, 0.080" (2.03) nominal wall thickness. Fixed at 37.5 degrees. Rear Operable Blades: Airfoil style, Type 6063-T6 extruded aluminum, 0.080" (2.03) nominal wall thickness.

BLADE SPACING: Approximately 4.84" (123) on centers.

BLADE SEALS: Santoprene. Mechanically locked in place.

JAMB SEALS: Cambered stainless steel.

BEARINGS: 1/2" (13) dia. Celcon®.

AXLES: 1/2" (13) dia. plated steel double bolted to blades.

LINKAGE: Concealed in frame.

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).

ACTUATOR: Hand locking louver quadrant.

FINISH: Mill.

MINIMUM SIZE: 12" W x 16" H (305 x 406).

MAX. SINGLE SECTION SIZE: 60" W x 120" H (1524 x 3048). 50 sq. ft. (4.6 m²). Larger louvers will require field assembly of smaller sections.

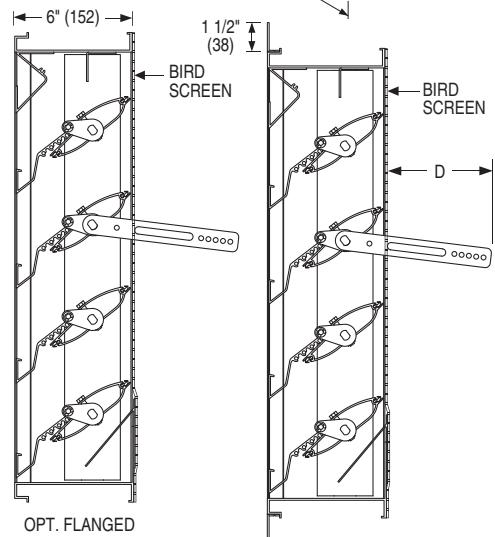
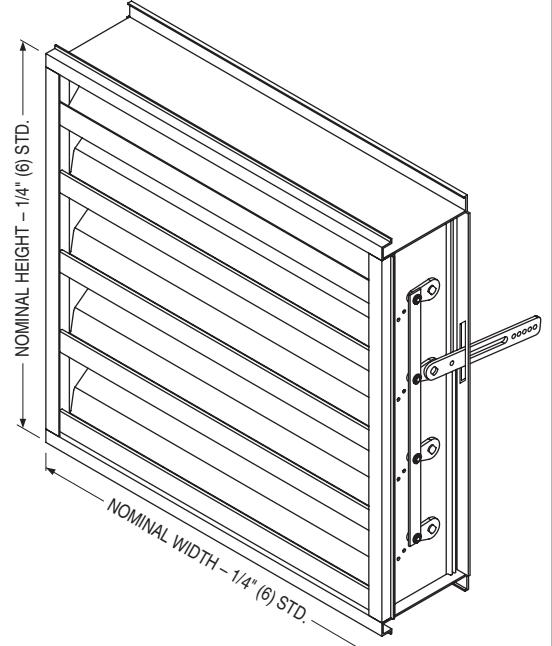
MAXIMUM SIZE: Unlimited Width x 120" H (3048).

OPTIONS:

- FL15** Flanged Frame, 1 1/2" (38).
- FL20** Flanged Frame, 2" (51).
- BSSS** Type 304 S.S. Bird Screen.
- BSN** No Bird Screen.
- ISA** Aluminum Insect Screen.
- ISSS** Type 304 S.S. Insect Screen.
- ESI** Extended Sill.
- PASI** Sill Pan.
- ACT** Electric Actuator. Specify: _____.
- 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.
- ANLB** Light Bronze.
- ANMB** Medium Bronze.
- ANDB** Dark Bronze.
- ANBK** Black.



D = 6" (152) with Manual HLLQ

D = 9" (229) with Actuator

SCHEDULE TYPE:

PROJECT:

ENGINEER:

CONTRACTOR:

Page 1 of 2
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
6 - 10 - 25	1600M	10 - 22 - 24	1606CM



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6" (152) DEEP • DRAINABLE BLADE • OPERABLE AIRFOIL DAMPER
PERFORMANCE DATA
MODEL: 1606CM

FREE AREA in Square Feet and Square Meters

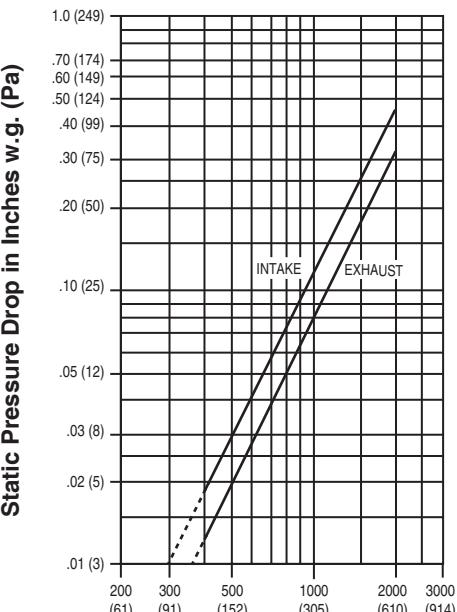
Height in Inches and Meters	Width in Inches and Meters								
	12 0.30	18 0.46	24 0.61	30 0.76	36 0.91	42 1.07	48 1.22	54 1.37	60 1.52
12	0.19	0.30	0.41	0.53	0.64	0.76	0.87	0.98	1.10
18	0.37	0.60	0.83	1.06	1.28	1.51	1.74	1.97	2.20
24	0.85	1.36	1.88	2.40	2.91	3.43	3.94	4.46	4.98
30	1.03	1.66	2.29	2.92	3.55	4.18	4.81	5.44	6.07
36	1.22	1.96	2.71	3.45	4.20	4.94	5.68	6.43	7.17
42	1.41	2.26	3.12	3.98	4.84	5.70	6.55	7.41	8.27
48	1.59	2.56	3.53	4.50	5.47	6.44	7.40	8.38	9.35
54	1.94	3.12	4.30	5.49	6.67	7.85	9.04	10.22	11.40
60	2.15	3.47	4.78	6.09	7.41	8.72	10.03	11.35	12.66
66	2.34	3.77	5.19	6.62	8.05	9.48	10.90	12.33	13.76
72	2.53	4.07	5.61	7.15	8.69	10.23	11.77	13.32	14.86
78	2.90	4.67	6.44	8.21	9.98	11.75	13.51	15.28	17.05
84	3.09	4.97	6.85	8.74	10.62	12.50	14.38	16.27	18.15
90	3.27	5.27	7.27	9.26	11.26	13.26	15.25	17.25	19.25
96	3.46	5.57	7.68	9.79	11.90	14.01	16.12	18.23	20.34
102	3.65	5.87	8.10	10.32	12.54	14.77	16.99	19.22	21.44
108	4.02	6.47	8.93	11.38	13.83	16.28	18.73	21.19	23.64
114	4.21	6.77	9.34	11.91	14.47	17.04	19.60	22.17	24.74
120	4.39	7.07	9.75	12.43	15.11	17.79	20.47	23.15	25.83
	3.05	0.41	0.66	0.91	1.16	1.40	1.65	1.90	2.15

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

Free Area %		46 %
Free Area sq. ft. (sq. m.)		7.40 (0.69)
I	Free Area Velocity at Point of Beginning Water Penetration at .01 oz./sq. ft. (3 ml/sq. m) (15 min. test duration)	1178 fpm (359 m/min.)
A	Air Volume at 1178 fpm	8717 cfm (4114 l/s)
K	Free Area Velocity	
E	Pressure Drop @ 1178 fpm	0.16 in. w.g. (40 Pa)

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

PRESSURE DROP



Air Velocity in Feet (Meters) Per Minute

Through Free Area

Louver test size: 48" x 48" (1219 x 1219 mm).

Standard air density @ 0.075 lbs/ft³.

Tested to AMCA Fig. 5.5 – 6.5.



Nailor Industries Inc. certifies that the Model 1606CM 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 and Water Penetration performance ratings.

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



HIGH VELOCITY RAIN
RESISTANT WITH BLADES
FULLY CLOSED AND
IMPACT RESISTANT LOUVER
Basic Protection Level D
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 1606CM 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 Basic Protection and +/- 120PSF with a minimum blade span of less than 12 in. (305mm) and a maximum unsupported blade span of 58 in. (1473 mm) and to High Velocity Wind-Driven Rain Resistant Louvers tested in the fully closed position that stops airflow through a louver.

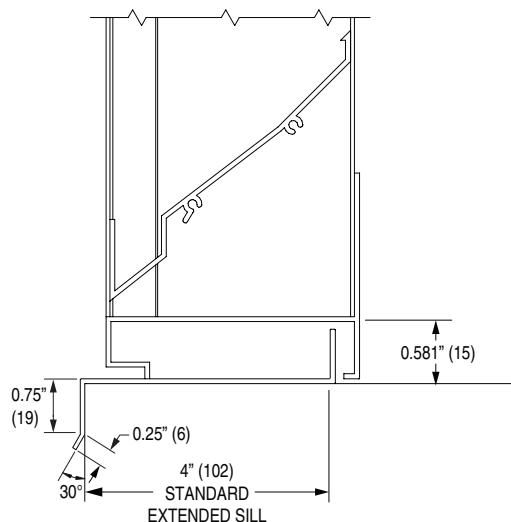
Page 2 of 2
Dimensions are in inches (mm).

SCHEDULE TYPE:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
PROJECT:	6 - 10 - 25	1600M	10 - 22 - 24	1606CM
ENGINEER:				
CONTRACTOR:				

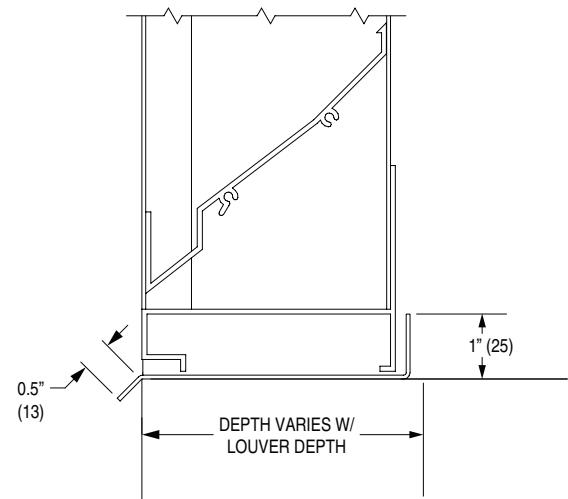


**LOUVER ACCESSORIES
MODEL SERIES: 1600 & 1700
ESI EXTENDED SILL & PASI SILL PAN**

ESI Extended Sill

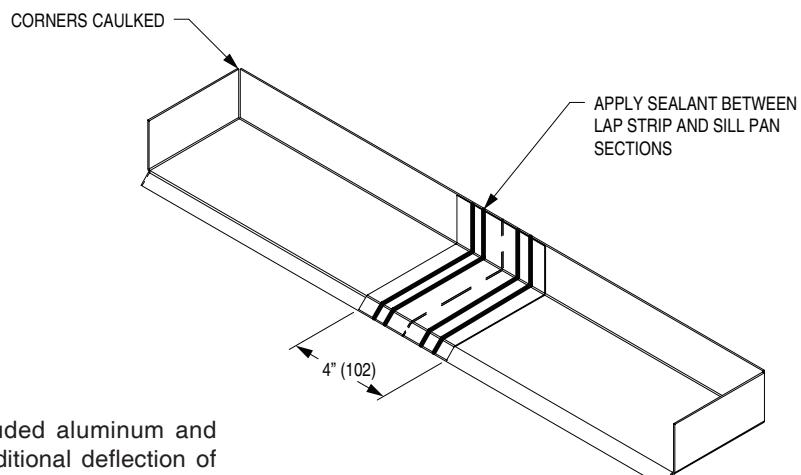


PASI Sill Pan (Extended Sill with End Dams)



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



Slate Blue **LF01**



Medium Bronze **LF02**



Sandstone **LF03**



Light Gray **LF04**



Charcoal **LF05**



Bone White **LF06**



Western Tan **LF07**



Architectural Bronze **LF08**



Regal Blue **LF09**



Forest Green **LF10**



Surrey Beige **LF11**



Royal Brown **LF12**



Barn Red **LF13**



Burgundy **LF14**



Clay **LF15**



Almond **LF16**



Coastal White **LF17**



Vista Green **LF18**



Black **LF19**



Gloss Black **LF20**



Campus Green **LF21**

Nailor offers 21 standard paint colors selected for architectural exterior use which meet or exceed AAMA specifications and performance requirements for color retention, chalk resistance, gloss retention, erosion, corrosion and chemical resistance as well as dry film thickness and hardness. Our state-of-the-art powder coat system provides an environment friendly finishing solution with more uniform coverage and coating thickness. The result is an exceptional finish that better resists scratching, fading and general wear. Additional liquid coat facilities for special requirements complete our ability to provide unmatched beauty and durability for any application.

Custom color matching is also available upon request. Contact your local Nailor representative.

Available Finishes

FINISH TYPE	DESCRIPTION	STANDARD WARRANTY
Fluoropolymer Powder Coat AAMA 2605-Superior Finish (AKA: Powdura® 5000, Coraflon® Powder, Interpon® D3000-Fluoromax, IFS 500FP)	"Ultimate" - A next generation hyper durable powder coating, based on FEVE fluoropolymer resins and ceramic pigmentation that the industry has acknowledged as the foundation for superior performance coatings. They provide a hard surface that is resistant to scratching and scuffing, with superior color and gloss retention, when applied to a variety of exterior architectural applications. This technology represents the "ultimate" in environmentally friendly finishes, with Zero-VOC emissions. A superior alternative to traditional 70% Kynar 500® / Hylar 500® PVDF fluoropolymer liquid coatings.	10 years (Consult Nailor for availability of extended warranty)
High Performance Powder Coat AAMA 2604 - High Performance Finish (AKA: Powdura® 4000, Envirocron® Ultra Durable Powder, Dynadure™ 400, Interpon® D2000, IFS 400SD)	"Better" - A high performance polyester powder coating, based on "super durable" resins that utilize infrared reflective pigments, which provides excellent resistance to outdoor weathering. A harder and more environmentally friendly coating than other liquid paint counterparts and with Zero-VOC emissions. A good alternative to 50% Kynar 500® / Hylar 5000® liquid coatings.	5 years
Durable Powder Coat AAMA 2603 - Pigmented Organic Coatings (AKA: Powdura® 3000, Envirocron® Durable Powder, Dynadure™ 300, Interpon® D1000, IFS 300SP)	"Good" - A durable powder coat based on thermosetting polyester resin technology. Provides a good economical combination of physical and chemical resistance properties. Environmentally superior to liquid spray paints and Zero – VOC emissions.	1 year
Clear Anodize 215-R1 AA-M10C22A41 (0.7 mil. min.)	Architectural Class I. Clear, colorless and hard oxide aluminum coating that resists weathering and chemical attack. Recommended for severely corrosive and abrasive atmospheric exposure.	5 years
Clear Anodize 204-R1 AA-M10C22A31 (0.4 - 0.7 mil.)	Architectural Class II. Clear, colorless and hard oxide aluminum coating that resists weathering and chemical attack. Recommended for normal weather exposure.	1 year
Color Anodize AA-M10C22A44 (0.7 mil. min.)	Architectural Class I. "Two-step" aluminum coating process. Following a standard anodizing procedure, a second electrolytic process deposits colored metallic pigments which penetrate the aluminum oxide pores, producing a corrosion resistant, colorfast finish. Available in light, medium, dark bronze and black.	5 years
Prime Coat	Prime coat provides a stable base for painting of louvers in the field. Surface pretreatment includes degreasing and a chemical cleaning before an epoxy prime coat is applied. Finish coat should be field applied as soon as possible for best adhesion, after a thorough cleaning for dust etc. that can contaminate the final finish and cause premature flaking or peeling.	N/A

Paint finish warranties are not applicable to steel products.

Powdura® is a registered trademark of The Sherwin-Williams Company.

Coraflon® and Envirocron® are registered trademarks of PPG Industries Ohio, Inc.

Interpon® is a registered trademark of Akzo Nobel Powder Coatings Ltd.

Kynar 500® is a registered trademark of Arkema, Inc.

Hylar 5000® is a registered trademark of Solvay Solexis, Inc.



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 1606CM Aluminum Louver System

APPROVAL DOCUMENT: Drawing No. **1606CM-NOA**, titled "BOM, Notes, Anchors, Elevation, Mull Details, Assembly Details, Head/Sill, Jamb, Profiles", sheets 1 through 8 of 8, prepared by manufacturer, dated 05/27/2021, signed and sealed by Lucas A. Turner, P.E. on 10/04/2023, 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

NOA No. 23-0823.04
Expiration Date: November 2, 2028
Approval Date: November 2, 2023

Page 1

Nailor Industries Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **1606CM-NOA**, titled “BOM, Notes, Anchors, Elevation, Mull Details, Assembly Details, Head/Sill, Jamb, Profiles”, sheets 1 through 8 of 8, prepared by manufacturer, dated 05/27/2021, signed and sealed by Lucas A. Turner, P.E. on 10/04/2023.

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 1606CM Louver Systems, prepared by Intertek, Test Report No. **K4982.01-801-18-R0**, dated 04/08/2022, 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 1606CM Aluminum Louver Systems, prepared by Intertek, Test Report No. **K4980.01-801-18-R1**, dated 10/20/2021, revised on 03/01/2022, 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 1606CM Aluminum Louver System, prepared by Intertek, Test Report No. **K4981.01-801-44-R1**, dated 05/13/2021, revised on 05/17/2021, 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. 23-0823.04
Expiration Date: November 2, 2028
Approval Date: November 2, 2023

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GENERAL NOTES

1. THE 1606CM LOUVER SYSTEM SHOWN IN THE CONFIGURATIONS HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE REQUIREMENTS OF THE 7TH EDITION (2020) AND 8TH EDITION (2023) FLORIDA BUILDING CODES INCLUDING THE HIGH VELOCITY HURRICANE ZONE PROVISIONS, FOR APPLICATIONS WITH DESIGN PRESSURE (ASD) REQUIREMENTS OF 120 PSF OR LESS.

2. THIS PRODUCT HAS BEEN TESTED IN ACCORDANCE WITH TAS 100A, TAS 201, TAS 202, TAS 203, AMCA 540 AND AMCA 550. FOR FULL PRODUCT TESTING DETAILS SEE INTERTEK TEST REPORTS K4980.01-801-18-R1, K4981.01-801-44-R1, AND K4982.01-801-18-R0.

3. THIS PRODUCT AS SHOWN IN THIS DRAWING IS MISSILE LEVEL D LARGE MISSILE IMPACT RESISTANT, AND DOES NOT REQUIRE THE USE OF IMPACT PROTECTIVE DEVICES (SHUTTERS) IN WINDBORNE DEBRIS REGIONS.

4. THIS LOUVER SYSTEM HAS BEEN TESTED IN ACCORDANCE WITH TAS 100A TO PREVENT WIND-DRIVEN RAIN FROM PENETRATING THE SPACE BEHIND THE LOUVER FOR WIND SPEEDS UP TO 110 MPH AND INSTALLATION IN HEIGHTS UP TO 33 FT.

5. THIS LOUVER SYSTEM IS NON-BEARING AND IS NOT DESIGNED TO WITHSTAND BUILDING DEAD LOADS.

6. THE 4/3 ALLOWABLE STRESS INCREASE FACTOR (SHORT-TERM INCREASE FACTOR) HAS NOT BEEN USED IN THE ANCHOR ANALYSIS FOR THIS SYSTEM. THE 1.6 Cd FACTOR WAS USED IN THE ANALYSIS OF ANCHORAGE INTO WOOD SUBSTRATE.

7. THE OPENING SUBSTRATE MATERIALS (FRAMING, MASONRY, BUCKS) AND ATTACHMENT OF BUCKS TO THE SUBSTRATE ARE BY OTHERS AND SHALL BE VERIFIED BY THE ARCHITECT OR ENGINEER OF RECORD OR AS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ). BUCKING, OPENINGS, & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED BY OTHERS IN ACCORDANCE WITH THE FBC TO TRANSFER SUPERIMPOSED LOADS TO THE STRUCTURE.

8. DISSIMILAR MATERIALS THAT COME INTO CONTACT SHALL BE COATED OR OTHERWISE PROTECTED TO PREVENT GALVANIC REACTIONS. WOOD BUCKS, IF USED, SHALL BE PRESSURE TREATED, WITH EITHER A TREATMENT OR COATING COMPATIBLE WITH THIS PRODUCT.

9. ANCHORAGE NOTES: INSTALL PRODUCTS WITH MAXIMUM SHIM GAP, MINIMUM EDGE DISTANCE AND EMBEDMENT, AND WITH FASTENER TYPE AS SHOWN IN THE DETAILS AND AS INDICATED IN TABLE 1 FOR THE APPROPRIATE SUBSTRATE, OR AS APPROVED, SIGNED, AND SEALED BY A FLORIDA-REGISTERED PROFESSIONAL ENGINEER ON A SITE-SPECIFIC BASIS. ALL ANCHORS USED SHALL BE OF A MATERIAL OR HAVE A COATING COMPATIBLE WITH THE OPENING SUBSTRATE AND ALL OTHER LOUVER MATERIALS. INSTALL ONE ANCHOR AT EACH LOCATION SHOWN IN THE ELEVATION. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE. SHIMS SHALL BE LOAD-BEARING (PLASTIC OR METALLIC) AND CAPABLE OF TRANSFERRING LOADS TO SUBSTRATE. SPECIFIED ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL FINISH OR STUCCO.

TABLE 1. INSTALLATION ANCHOR REQUIREMENTS (NOTE: THIS TABLE APPLIES TO ANCHORAGE OF 3X6X1/4 MULL AND JAMB CLIPS DIRECTLY TO SUBSTRATE, AS WELL AS 4X4X3/8 MOUNTING ANGLES TO SUBSTRATE)

ANCHOR ID	OPENING SUBSTRATE	ANCHOR TO OPENING FASTENER TYPE	MINIMUM EMBEDMENT	MINIMUM EDGE DISTANCE
A	SOLID UNCRACKED CONCRETE (4000 PSI MIN.)	3/8" DEWALT COATED CARBON STEEL SCREW-BOLT+	2 1/2"	1 1/2"
B	GROUT-FILLED CMU (ASTM C-90 WITH 1,500 PSI MIN. GROUT)	3/8" DEWALT COATED CARBON STEEL SCREW-BOLT+	3 1/4"	1 1/2"
C	1/4" THICK MIN. A36 MIN. STEEL	3/8"-16 BOLT, 300 SERIES COND. CW SS (65ksi MIN. YIELD)	1/4"	9/16"
D	SOUTHERN PINE (SG = 0.55 MIN.)	3/8" LAG SCREW, 300 SERIES COND. CW SS (65ksi MIN. YIELD)	3"	1 1/2"
E	SOLID UNCRACKED CONCRETE (4000 PSI MIN.)	1/2" DEWALT COATED CARBON STEEL SCREW-BOLT+	2 1/2"	1 3/4"
F	SOUTHERN PINE (SG = 0.55 MIN.)	1/2" LAG SCREW, 300 SERIES COND. CW SS (65ksi MIN. YIELD)	3"	2"

TABLE 2. 3X6X1/4 ALUMINUM MULL CLIP (ITEM 157) ATTACHMENT DIRECTLY TO SUBSTRATE, ANCHOR QUANTITY / CLIP LENGTH REQUIREMENTS (SEE TABLE 1 FOR FULL DESCRIPTION OF ANCHOR TYPES / SUBSTRATES)

MULLION DESIGN PRESSURE (PSF)	ANCHOR ID	MAX. LOUVER ACTUAL HEIGHT (IN.)				
		72	84	96	108	120
100	A (3/8" SCREW-BOLT+ / CONC.)	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP	QTY 8 / 15" CLIP	QTY 9 / 15" CLIP
	B (3/8" SCREW-BOLT+ / CMU)	QTY 8 / 15" CLIP	QTY 9 / 15" CLIP	QTY 10 / 18" CLIP	QTY 11 / 18" CLIP	QTY 13 / 21" CLIP
	C (3/8"-16 BOLT / STEEL)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP
	D (3/8" LAG / WOOD)	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP
	E (1/2" SCREW-BOLT+ / CONC.)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 5 / 9" CLIP	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP
	F (1/2" LAG / WOOD)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 5 / 9" CLIP
110	A (3/8" SCREW-BOLT+ / CONC.)	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP	QTY 8 / 15" CLIP	QTY 9 / 15" CLIP	QTY 10 / 18" CLIP
	B (3/8" SCREW-BOLT+ / CMU)	QTY 8 / 15" CLIP	QTY 10 / 18" CLIP	QTY 11 / 18" CLIP	QTY 12 / 21" CLIP	QTY 14 / 24" CLIP
	C (3/8"-16 BOLT / STEEL)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP
	D (3/8" LAG / WOOD)	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 8 / 15" CLIP
	E (1/2" SCREW-BOLT+ / CONC.)	QTY 4 / 9" CLIP	QTY 5 / 9" CLIP	QTY 5 / 9" CLIP	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP
	F (1/2" LAG / WOOD)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 5 / 9" CLIP	QTY 5 / 9" CLIP
120	A (3/8" SCREW-BOLT+ / CONC.)	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP	QTY 8 / 15" CLIP	QTY 9 / 15" CLIP	QTY 10 / 18" CLIP
	B (3/8" SCREW-BOLT+ / CMU)	QTY 9 / 15" CLIP	QTY 11 / 18" CLIP	QTY 12 / 21" CLIP	QTY 14 / 24" CLIP	QTY 14 / 24" CLIP
	C (3/8"-16 BOLT / STEEL)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP
	D (3/8" LAG / WOOD)	QTY 6 / 12" CLIP	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP	QTY 7 / 12" CLIP	QTY 9 / 15" CLIP
	E (1/2" SCREW-BOLT+ / CONC.)	QTY 4 / 9" CLIP	QTY 5 / 9" CLIP	QTY 6 / 12" CLIP	QTY 7 / 12" CLIP	QTY 7 / 12" CLIP
	F (1/2" LAG / WOOD)	QTY 4 / 9" CLIP	QTY 4 / 9" CLIP	QTY 5 / 9" CLIP	QTY 5 / 9" CLIP	QTY 6 / 12" CLIP

TABLE OF CONTENTS**SHEET DESCRIPTION**

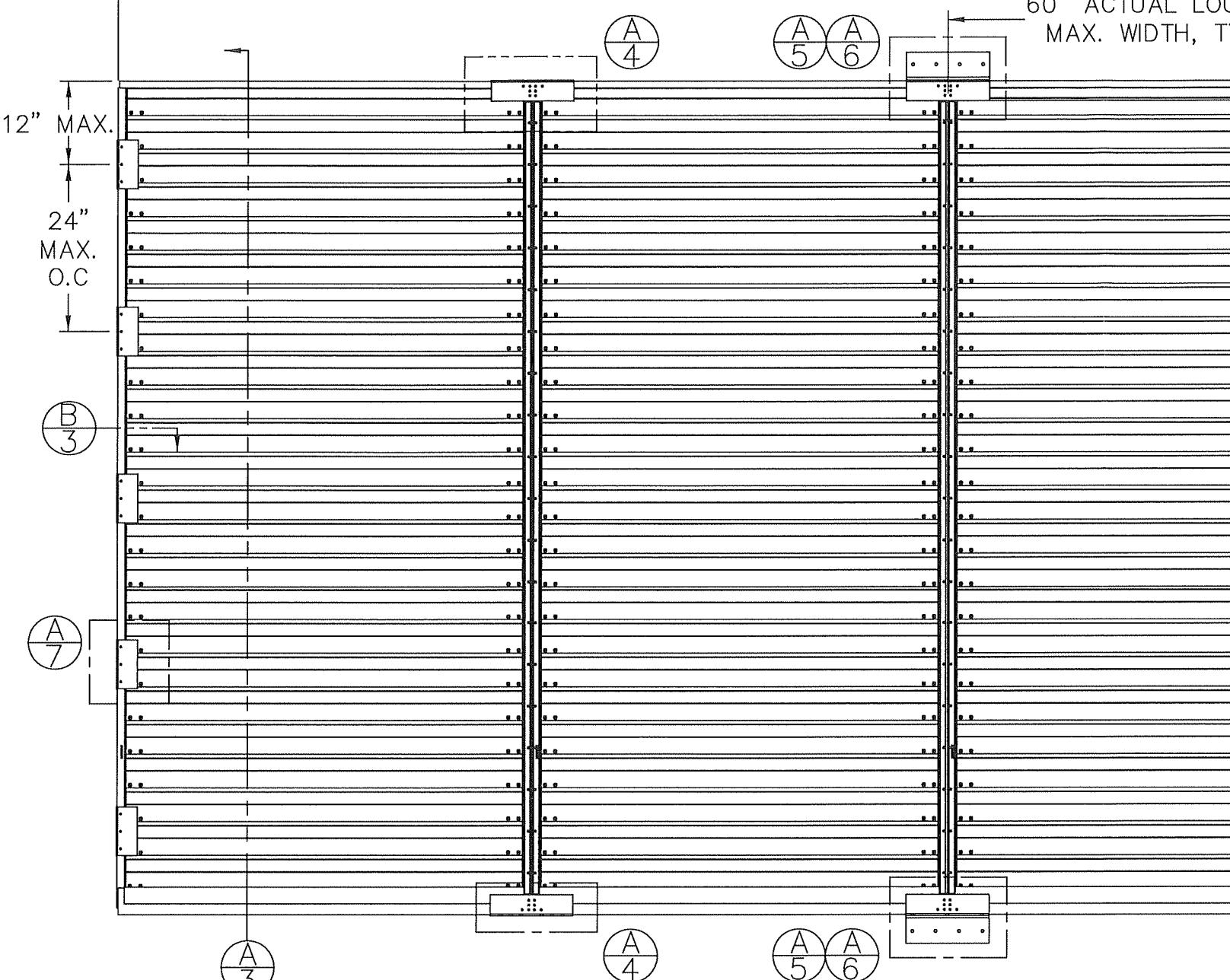
- 1 NOTES, ANCHOR TABLE 1
- 2 TYP. ELEVATION, MULLION DETAILS
- 3 LOUVER ASSEMBLY DETAILS
- 4 HEAD/SILL INSTALL. DIRECTLY TO SUBSTRATE
- 5 HEAD/SILL INSTALL. W/ ALUM. MOUNTING ANGLE, 6" WALL
- 6 HEAD/SILL INSTALL. W/ STEEL MOUNTING ANGLE
- 7 JAMB INSTALLATION
- 8 BILL OF MATERIALS, PROFILES

PRODUCT APPROVED as complying with the Florida Building Code		NOA-No. 23-0823.04
Approval Date 11/02/2023		By Miami-Dade Product Control
LUCAS TURNER, FL PE 58201 TURNER ENGINEERING & CONSULTING, INC. 2428 OLD NATCHEZ TRACE TRL. CAMDEN, TN, 38320 PH 941-380-1574		
REV	BY	DESCRIPTION
DWN BY: fcortinas		SCALE: NTS
DATE: 5/27/2021		SHEET: 1 OF 8
SHEET DESCRIPTION: BOM, NOTES, ANCHORS		
DWG:	REV 0	
1606CM-NOA		

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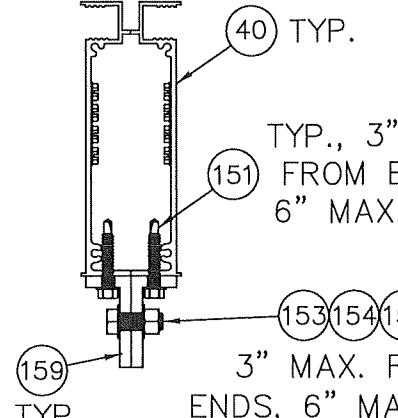
4714 Winfield Road
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TEL: 281-590-1172
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www.nailor.com

OVERALL ACTUAL LOUVER WIDTH =
SUM OF ACTUAL WIDTHS OF ALL MULLED LOUVERS

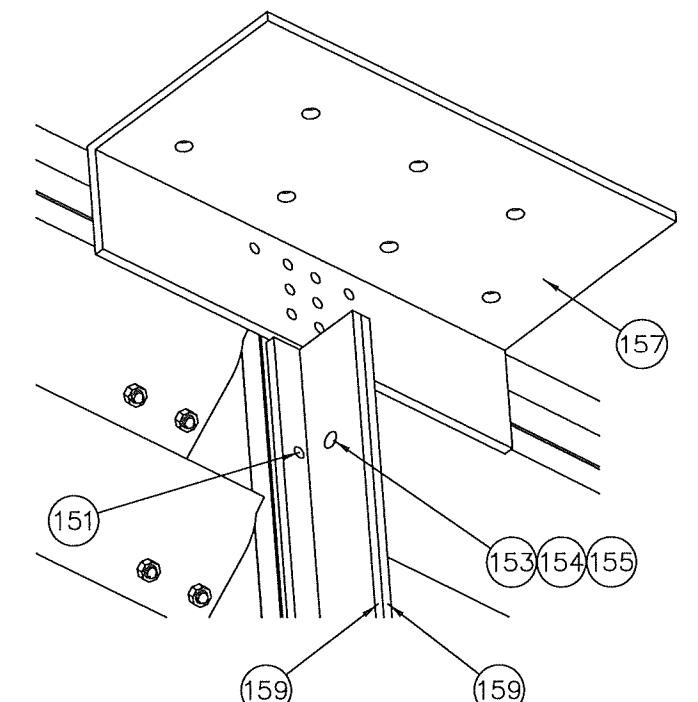


TYPICAL ELEVATION

EXT.

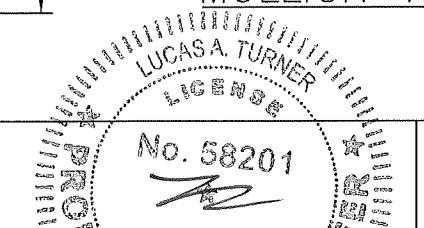


VERTICAL MULLION ASSEMBLY



MULLION VIEW FROM INTERIOR

PRODUCT APPROVED
as complying with the Florida
Building Code
NOA-No. **23-0823.04**
Approval Date **11/02/2023**
By **Miami-Dade Product Control**



Nailor Industries Inc.
4714 Winfield Road
Houston, TX 77039
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REV	BY	DESCRIPTION	DATE
DWN BY:	fcontinas	SCALE:	NTS
DATE:	5/27/2021	SHEET:	2 OF 8
SHEET DESCRIPTION:	ELEVATION, MULL DET.	REV	0
DWG:	1606CM-NOA		

FOR INSTALLATION
DETAILS, SEE
SHEETS 4 AND 5

FOR INSTALLATION
DETAILS, SEE
SHEET 6

This technical cross-sectional diagram illustrates the assembly of a louver opening. The diagram is labeled with various components and dimensions:

- EXT.**: External reference line at the top.
- ACTUAL LOUVER HEIGHT**: Vertical dimension line on the left.
- 1/4" MAX. SHIM**: Dimension line for the top shim thickness.
- 1/4" MAX.**: Dimension line for the bottom shim thickness.
- 120**: Reference number for the top horizontal plate.
- 10**: Reference number for the top hinge.
- 100**: Reference number for the top louver panel.
- 30**: Reference number for the middle hinge.
- 50**: Reference number for the middle louver panel.
- 20**: Reference number for the bottom hinge.
- 160**: Reference number for the bottom louver panel.
- 161**: Reference number for the bottom hinge.
- 110**: Reference number for the bottom horizontal plate.

The diagram shows the louver panels (100, 50, 160) being held in place by hinges (10, 30, 20) and secured to a frame by horizontal plates (120, 110) and shims (161). Arrows indicate the direction of assembly or movement for the louver panels.

BLADE SUPPORT AND
BLADE SUPPORT ANGLE
NOT SHOWN FOR
CLARITY.

 VERTICAL SECTION DETAIL

This technical diagram illustrates an exploded view of a pleated filter assembly. The assembly consists of a stack of pleated filter media (30) held together by a top frame (10) and a bottom frame (50). The top frame (10) features a central vertical rib (60) and a horizontal rib (100) extending from its top edge. The bottom frame (50) is shown partially disassembled, with a rib (40) and a base plate (80) visible. To the right, a vertical support structure (90) is shown with a series of horizontal slots (B2-). A callout arrow points from the text 'EXPLDED VIEW' at the bottom to the support structure (90). Reference numerals include 10, 120, 30, 100, 60, 50, 80, 40, B2-, 90, and 70.

EXPLDED VIEW

1/4" MAX. SHIM EXT. ACTUAL LOUVER WIDTH LOUVER OPENING

 JAMB
DETAII

PRODUCT APPROVED
as complying with the Florida
Building Code

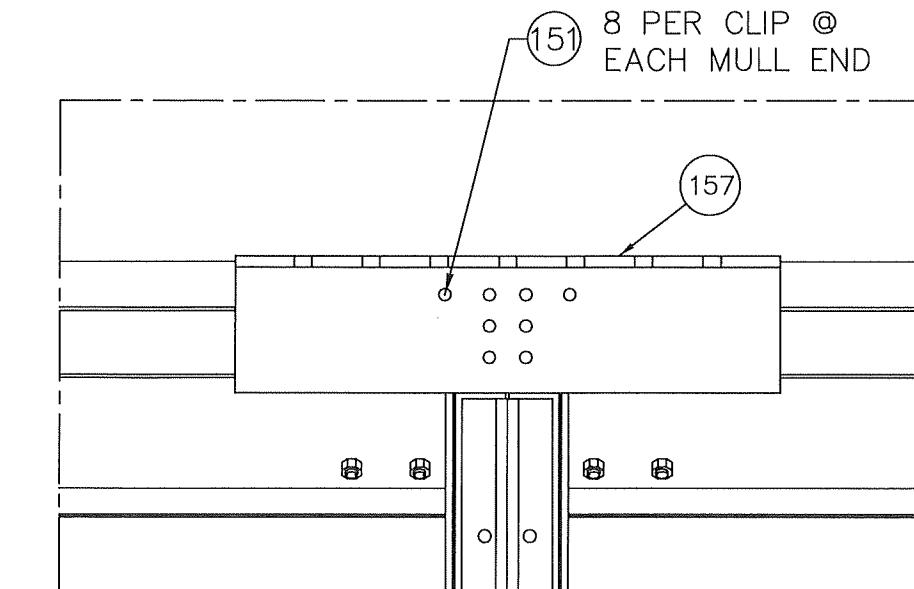
NOA-No. 23-0823.04

Approval Date 11/02/2023
By R. Hines

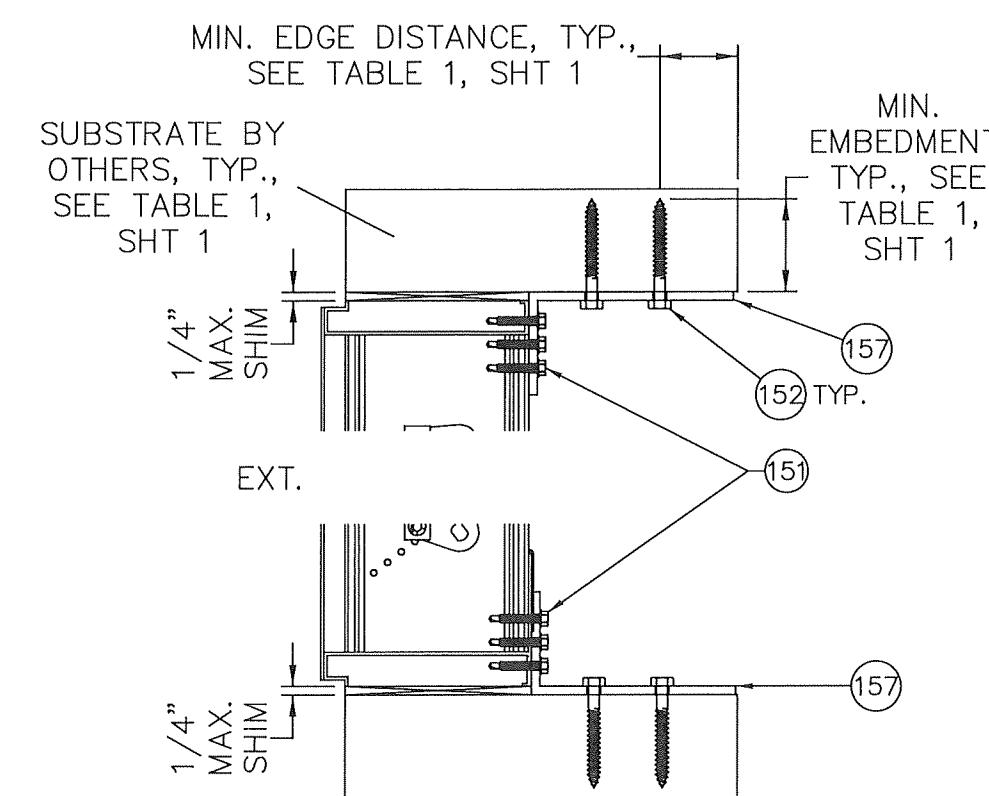
The seal is circular with a dotted outer border. The words "FLORIDA PROFESSIONAL ENGINEERING" are written in a circular pattern along the top and bottom. The number "58201" is in the center. The name "LUCAS TURNER" is at the top, and "FLORIDA" is at the bottom. The date "10/4/2023" is at the bottom. The text "STATE OF FLORIDA" is in the center.

Nailor Industries Inc.

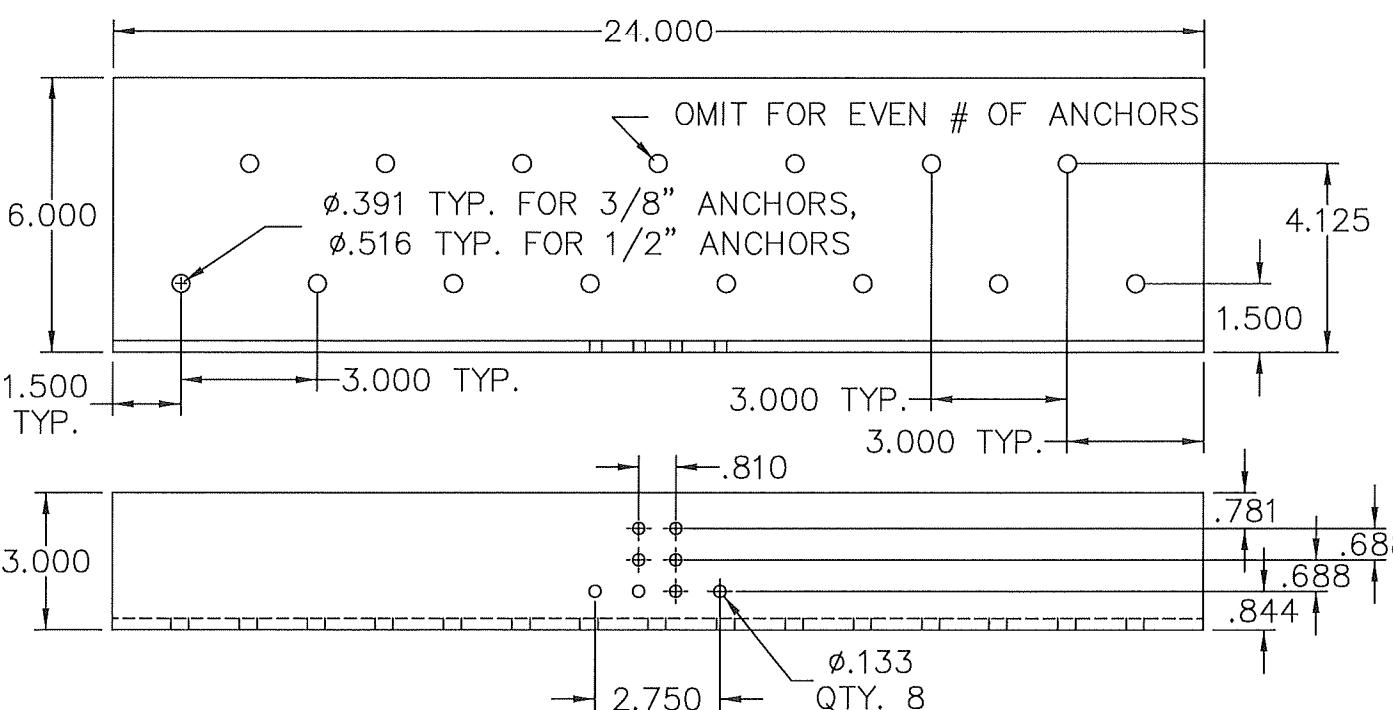
BY	DESCRIPTION	DATE
BY: fcortinas	SCALE: NTS	
E: 5/27/2021	SHEET: 3 OF 8	
ET DESCRIPTION: ASSEMBLY DETAILS	REV	
		O
	1606CM-NOA	



(A) 3x6x1/4" ATTACHMENT TO LOUVER
WITH MULL CLIP DIRECT TO SUBSTRATE



3x6x1/4" ALUMINUM MULL
CLIP HEAD/SILL ATTACHMENT
TO SUBSTRATE

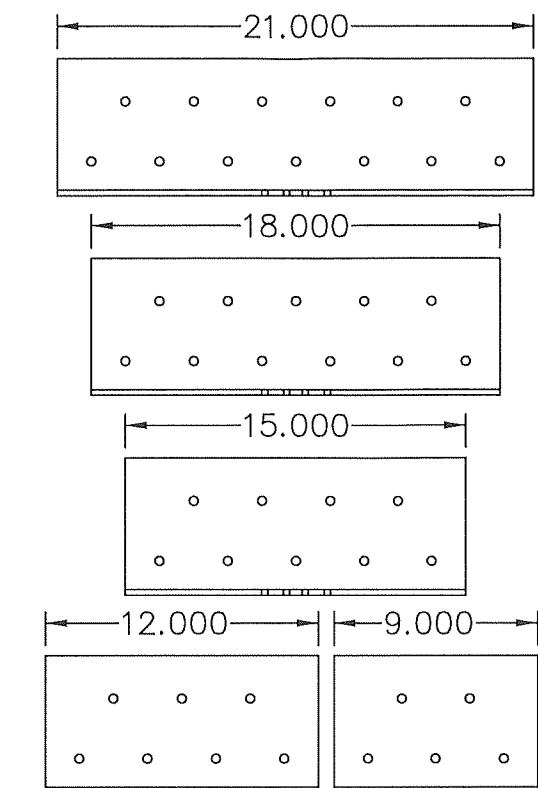


(157) 3x6x1/4" ALUMINUM MULL CLIP FOR
ATTACHMENT TO SUBSTRATE

(9" TO 24" LENGTHS, 24" LAYOUT SHOWN ABOVE, SEE ALTERNATE MULL
CLIP TO SUBSTRATE SIZE LAYOUTS THIS SHEET FOR SMALLER WIDTHS)

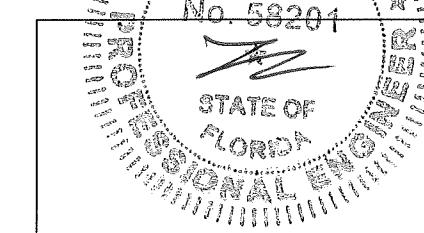
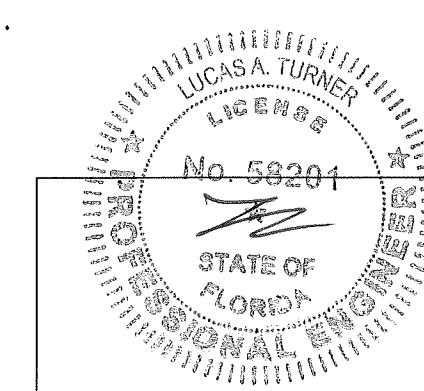
NOTE: THE WEIGHT OF
THE LOUVER ASSEMBLY
MUST BE SUPPORTED
BY THE SUBSTRATE,
NOT THE MULL CLIPS.

SEE TABLE 2, SHEET 1
FOR MULL CLIP LENGTH
AND ANCHOR QUANTITY
REQUIREMENTS BY
LOUVER SIZE / DP. IF
TABLE 2 REQUIRES AN
EVEN NUMBER OF
ANCHORS, DO NOT USE
ANCHOR IN THE CENTER
HOLE OF THE CLIP



(157) MULL CLIP TO SUBSTRATE
ALTERNATE SIZE LAYOUTS (FOLLOW
SAME EDGE / HOLE SPACING AS 24")

PRODUCT APPROVED
as complying with the Florida
Building Code
NOA-No. **23-0823.04**
Approval Date **11/02/2023**
By 
Miami-Dade Product Control

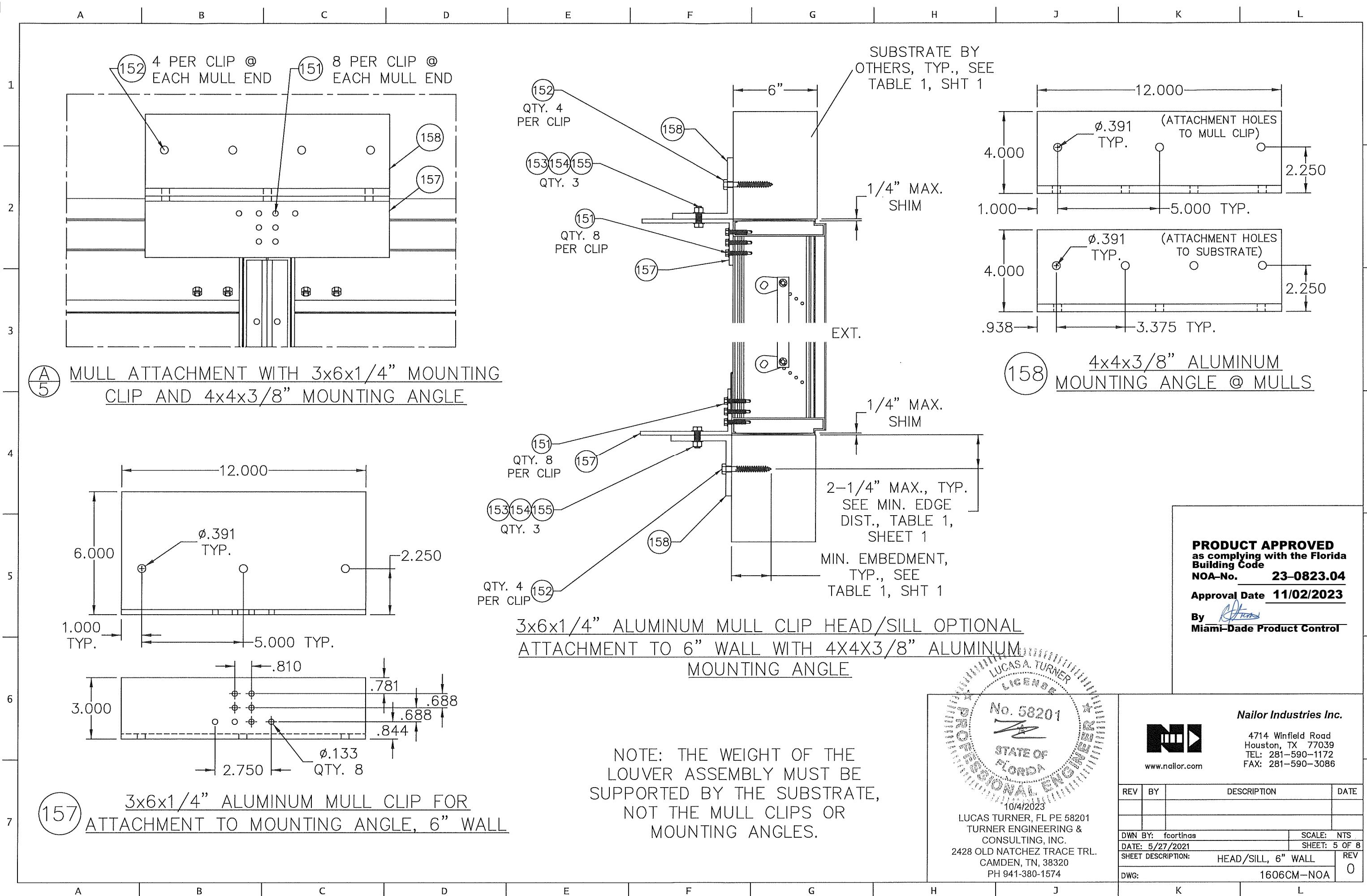


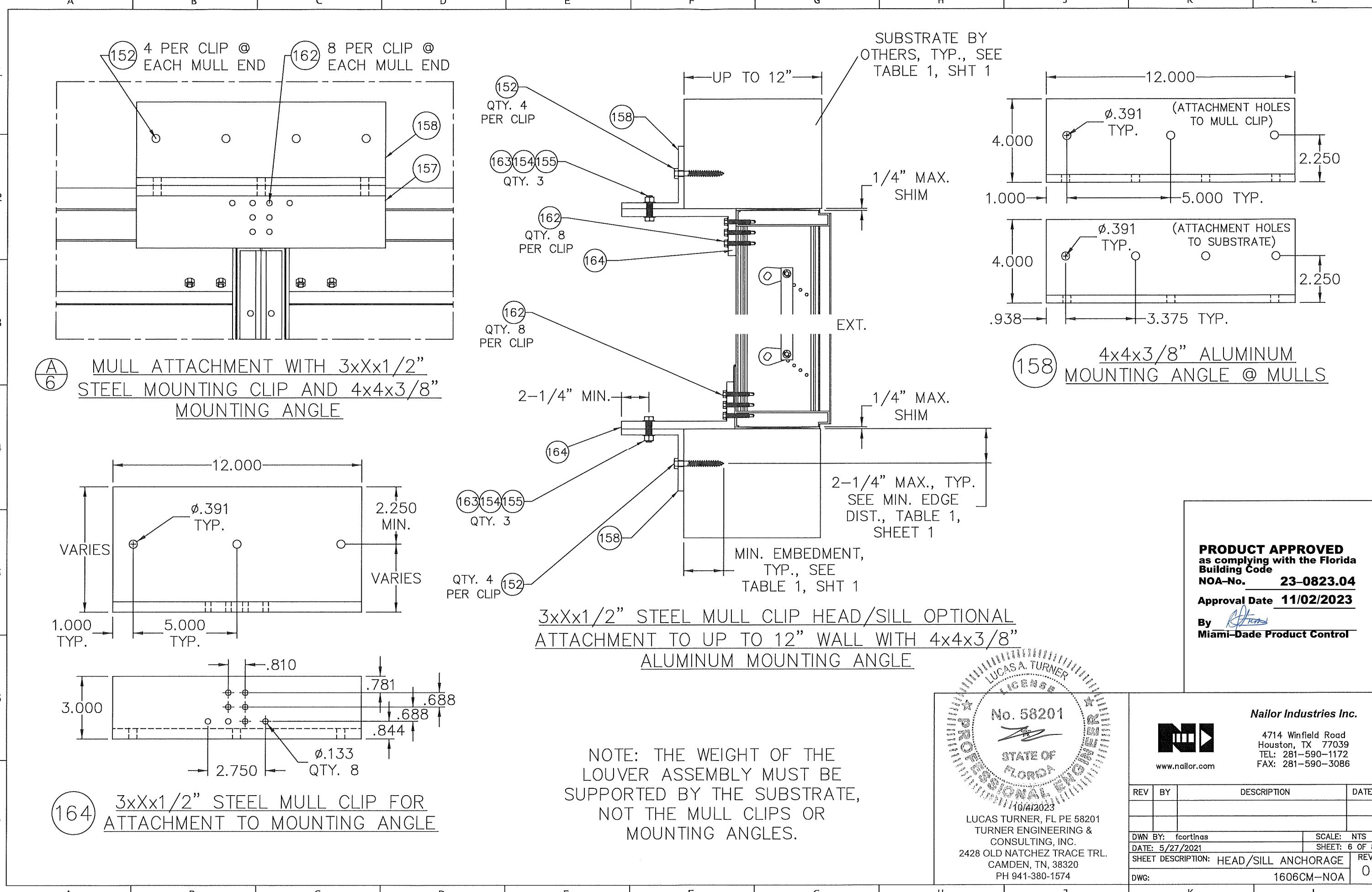
Nailor Industries Inc.

4714 Winfield Road
Houston, TX 77039
TEL: 281-590-1172
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REV	BY	DESCRIPTION	DATE
DWN BY:	fcontinas	SCALE:	NTS
DATE:	5/27/2021	SHEET:	4 OF 8
SHEET DESCRIPTION:	HEAD/SILL TO SUBSTRATE	REV	0
DWG:	1606CM-NOA		





MIN. EMBEDMENT,
TYP., SEE
TABLE 1, SHT 1

MIN. EDGE
DISTANCE,
SEE TABLE 1,
SHT 1

SUBSTRATE BY
THERS, TYP., SEE
TABLE 1, SHT 1

157

152 QTY. 2 PER CLIP

151 QTY. 3 PER CLIP

40

EXT.

1/4" MAX.
SHIM

3x6x1/4" ALUM. JAMB CLIP
ATTACHMENT TO SUBSTRATE

MIN. EMBEDMENT,
TYP., SEE
TABLE 1, SHT 1

158

152 QTY. 2 PER CLIP

157

153 154 155 QTY. 2 PER CLIP

151 QTY. 3 PER CLIP

3/8" MIN.

40

EXT.

2-1/4" MAX., TYP.
SEE MIN. EDGE
DIST., TABLE 1,
SHEET 1

1/4" MAX.
SHIM

3x6x1/4" ALUM. JAMB CLIP
OPTIONAL ATTACHMENT TO 6"
WALL WITH MOUNTING ANGLE

The technical drawing illustrates a mechanical part with two views. The top view shows a rectangular base with a width of 5.000 and a height of 1.000 TYP. Two circular holes, each with a diameter of $\phi .391$, are located on the top edge, with a vertical distance of 2.250 between them. The bottom view shows the part with a total width of 7.000. The base has a height of 1.000 TYP and a width of 5.000. The top edge has a height of 4.000 and a $\phi .391$ hole. A callout detail on the right shows a vertical slot with a width of .375 and a height of 4.000, positioned 4.000 units from the bottom edge.

158 4x4x3/8" ALUM. MOUNTING
ANGLE @ JAMBS

A technical drawing of a vertical rectangular part. A horizontal slot is located near the bottom. Two circular holes are positioned on the right side, with a center-to-center distance of 5.000. A dimension of 1.000 is shown from the left edge to the center of the slot. A dimension of 2.250 is shown from the bottom edge to the top of the slot. A dimension of 6.000 is shown from the bottom edge to the top edge of the part. A note 'TYP.' is present in the bottom right corner.

Technical drawing showing a part with two holes. The left side has a vertical dimension of 'VARIES' with two arrows. The right side has a dimension of $\phi .391$ TYP. A horizontal dimension of 1.000 is shown below the base plate, with 'TYP' written below it. The total width of the base plate is 5.000.

Technical drawing showing a rectangular part with the following dimensions:

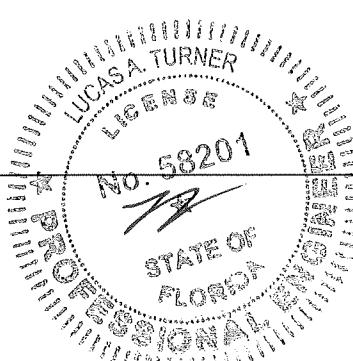
- Total width: 7.000
- Total height: 3.000
- Top edge height (from bottom): 1.000
- Bottom edge height (from top): 2.500
- Center hole diameter: Ø.266
- Side gap from center line to edge: .625

157 3x6x1/4"
ALUMINUM

165 3xXx3/8"
ALUMINUM

JAMB CLIPS FOR ATTACHMENT DIRECTLY TO SUBSTRATE OR TO MOUNTING ANGLE

3xXx3/8" ALUMINUM JAMB CLIP
OPTIONAL ATTACHMENT TO UP TO
12" WALL WITH MOUNTING ANGLE

MIN.	PRODUCT APPROVED as complying with the Florida Building Code NOA-No. 23-0823.04 Approval Date 11/02/2023 By  Miami-Dade Product Control		
			
Nailor Industries Inc.  www.nailor.com 4714 Winfield Road Houston, TX 77039 TEL: 281-590-1172 FAX: 281-590-3086			
REV	BY	DESCRIPTION	
DWN BY: fcortinas			SCALE: NTS
DATE: 5/27/2021			SHEET: 7 OF
SHEET DESCRIPTION: JAMB ANCHORAGE			RE
DWG: 1606CM-NOA			(
10/4/2023 LUCAS TURNER, FL PE 58201 TURNER ENGINEERING & CONSULTING, INC. 2428 OLD NATCHEZ TRACE TRL. CAMDEN, TN, 38320 PH 941-380-1574			

Nailor Industries Inc.

EV	BY	DESCRIPTION	DATE
WN BY: fcortinas	SCALE: NTS		
ATE: 5/27/2021	SHEET: 7 OF 8		
HEET DESCRIPTION: JAMB ANCHORAGE		REV	
WG:	1606CM-NOA	O	

