



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 1606DHPM Aluminum Louver w/ and w/o Damper – L.M.I.

APPROVAL DOCUMENT: Drawing No. **1606DHPM**, titled “1606DHPM Louver w/ and w/o Damper”, sheets 1 through 27 of 27, prepared by manufacturer, dated 11/29/2021, with revision B dated 08/14/2024, signed and sealed by Wayne K. Helmila, P.E., bearing the Miami-Dade County Product Control revision 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 **revises NOA No. 23-0724.23** and consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**



08/15/24

NOA No. 24-0516.04
Expiration Date: August 30, 2028
Approval Date: August 15, 2024

Nailor Industries Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS “Submitted under NOA No. 18-0117.12”

1. Drawing No. **1606DHPM**, titled “1606DHPM Louver w/ and w/o Damper”, sheets 1 through 21 of 21, dated 06/14/17, prepared by the manufacturer, signed and sealed by Wayne K. Helmila, P.E.

B. TESTS “Submitted under NOA No. 18-0117.12”

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 1606 DHPM Louver System, prepared by Intertek, Test Report No. **H1900.01-801-18-R2**, dated 09/21/17 and revised on 05/23/18, signed and sealed by Tyler Westerling, P.E.
2. Test Report on Wind Driven Rain Resistance per TAS 100(A)-95 on a Model 1606 DHPM Aluminum Louver with damper, prepared by Intertek, Test Report No. **H0222.04-801-18**, dated 09/27/17, signed and sealed by Tyler Westerling, P.E.
3. Test Report on High Velocity Wind Driven Rain Resistance per ANSI/AMCA 550-09 on a Model 1606 DHPM Aluminum Louver, prepared by Intertek, Test Report No. **H0222.03-801-18**, dated 09/28/17, signed and sealed by Tyler Westerling, P.E.

C. CALCULATIONS “Submitted under NOA No. 18-0117.12”

1. Louver structural calculations dated 11/03/17, prepared by Rice Engineering, signed and sealed by Wayne K. Helmila, 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 6th Edition (2017)** issued by Rice Engineering, dated 04/16/18, signed and sealed by Wayne K. Helmila, P.E.
2. Statement letter of no financial interest issued by Rice Engineering, dated 04/16/18, signed and sealed by Wayne K. Helmila, P.E.



Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 24-0516.04
Expiration Date: August 30, 2028
Approval Date: August 15, 2024

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. EVIDENCE SUBMITTED UNDER NOA # 21-0630.10 AND NEW

A. DRAWINGS

1. Drawing No. **1606DHPM**, titled “1606DHPM Louver w/ and w/o Damper”, sheets 1 through 27 of 27, prepared by manufacturer, dated 11/29/2021, with revision B dated 08/14/2024, prepared by the manufacturer, signed and sealed by Wayne K. Helmila, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. Louver calculations, prepared by Rice Engineering, dated 08/14/2024, signed and sealed by Wayne K. Helmila, 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 8th edition (2023) of the FBC, issued by Rice Engineering, dated 07/22/2024, signed and sealed by Wayne K. Helmila, P.E.
2. Statement letter of no financial interest issued by Rice Engineering, dated 07/22/2024, signed and sealed by Wayne K. Helmila, P.E.
“Submitted under NOA # 21-0630.10”
3. Statement letter of code conformance to the 7th edition (2020) FBC, issued by Rice Engineering, dated 08/16/2021, signed and sealed by Wayne K. Helmila, P.E.



Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 24-0516.04
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DRAWING INDEX:

1. INDEX TO DRAWINGS AND NOTES.
2. 1606DHPM LOUVER- FLANGE FRAME SLEEVE MOUNT
3. 1606DHPM LOUVER- CONTINUOUS ANGLE MOUNT
4. 1606DHPM / DAMPER- FLANGE FRAME SLEEVE MOUNT
5. 1606DHPM / DAMPER- CONTINUOUS ANGLE MOUNT
6. 1606DHPM LOUVER- FLANGE FRAME SLEEVE MOUNT HEAD & SILL DETAIL
7. 1606DHPM LOUVER- MULLION ANGLE MOUNT HEAD & SILL DETAIL.
8. 1606DHPM LOUVER- BLADE SUPPORT DETAIL.
9. 1606DHPM LOUVER- FLANGE FRAME SLEEVE MOUNT JAMB AND SUPPORT DETAIL
10. 1606DHPM LOUVER- CONTINUOUS ANGLE MOUNT JAMB AND SUPPORT DETAIL.
11. 1606DHPM LOUVER- FLANGE FRAME SLEEVE MOUNT MULLION DETAIL.
12. 1606DHPM LOUVER- CONTINUOUS ANGLE MOUNT MULLION DETAIL.
13. 1606DHPM LOUVER / DAMPER FLANGE FRAME W/ SLEEVE & MULLION ANGLE MOUNT HEAD & SILL DETAIL.
14. 1606DHPM / DAMPER- FLANGE FRAME SLEEVE MOUNT CMU SUBSTRATE HEAD & SILL DETAIL
15. 1606DHPM / DAMPER- FLANGE FRAME SLEEVE MOUNT JAMB AND MULLION DETAIL
16. 1606DHPM LOUVER / DAMPER FLANGE FRAME SLEEVE MOUNT 9 X 3 X 1/4 & 11 X 3 X 1/4 ANGLE MULLION DETAIL
17. 1606DHPM LOUVER / DAMPER CONTINUOUS ANGLE MOUNT JAMB AND MULLION DETAIL.
18. 1606DHPM LOUVER / DAMPER COUNTINUOUS ANGLE MOUNT 9 X 3 X 1/4 & 11 X 3 X 1/4 ANGLE MULLION DETAIL
19. 1606DHPM LOUVER W/ AND W/O DAMPER- SLEEVE / CONTINUOUS MOUNT PART PROFILES.
20. 1606DHPM LOUVER W/ AND W/O DAMPER- SLEEVE / CONTINUOUS MOUNT PART PROFILES CONT.
21. 16" MULLION ANGLES BACK OF THE WALL MOUNT
22. 20" MULLION ANGLES BACK OF THE WALL MOUNT.
23. 30" CMU MULLION ANGLES BACK OF THE WALL MOUNT.
24. 1606DHPM LOUVER W/ AND W/O DAMPER AVAILBLE SHAPES
25. 1606DHPM LOUVER W/ AND W/O DAMPER- SLEEVE / CONTINUOUS MOUNT BILL OF MATERIAL.
26. 1606DHPM LOUVER W/ AND W/O DAMPER FASTENER TABLES
27. 1606DHPM LOUVERW/ AND W/O DAMPER GENERAL NOTES.

NOTES:

- 1) THE 1606DHPM HAS BEEN TESTED IN ACCORDANCE WITH THE MIAMI-DADE COUNTY PROTOCOLS TAS - 100 (A),TAS-201, 202, & 203 FOR LARGE MISSILE IMPACT, UNIFORM PRESSURE AND CYCLIC WIND PRESSURE.
- 2) THIS LOUVER SYSTEM IS APPROVED FOR APPLICATIONS WITH DESIGN PRESSURES OF +/- 150 PSF OR LESS
- 3) THIS LOUVER SYSTEM IS NON-BEARING AND IS NOT DESIGNED TO WITHSTAND BUILDING DEAD LOADS.
- 4) LOUVER ANCHORS ARE REVIEWED FOR ATTACHMENT INTO STEEL, CONCRETE, MASONRY, OR TIMBER SUBSTRUCTURE. MINIMUM EDGE DISTANCE AND EMBEDMENT REQUIREMENTS ARE SHOWN. NAILOR IND. DOES NOT DETERMINE THE STURCTURE INTEGRITY OF THE SUBSTRUCTURE.
- 5) MAXIMUM SINGLE SECTION SIZE : 72" WIDE X 120" HIGH.
- 6) MAXIMUM ASSEMBLED LOUVER SIZE UNLIMITED WIDE X 120" HIGH. MAX. MULLION SPACING IS 72".
- 7) SECTIONS OR ASSEMBLIES MAY BE STACKED VERTICALLY PROVIDING A SUITABLE STRUCTURAL SUPPORT IS DESIGNED AND INSTALLED BY OTHERS TO SUPPORT ALL LOADS TRANSFERRED FROM THE LOUVER.

TESTS PREFORMED:

TAS-100 (A) WIND DRIVEN RAIN RESISTANCE
 TAS-201 LARGE MISSILE IMPACT
 TAS-202 UNIFORM STATIC AIR PRESSURE TEST
 TAS-203 CYCLIC WIND PRESUSRE TEST
 DESIGN PRESSURE RATING 150 PSF

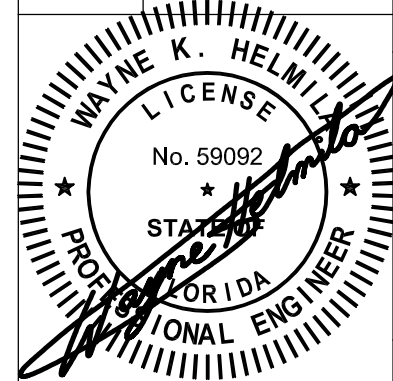
CHK BY: BDennis
 SCALE: NTS
 DWN BY: fcoirtinas
 DATE: 11/29/2021

SHEET: 1 OF 27

REV B
 DWG. NO. 1606DHPM

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

TITLE:
 1606DHPM LOUVER
 W/ AND W/O DAMPER
 INDEX

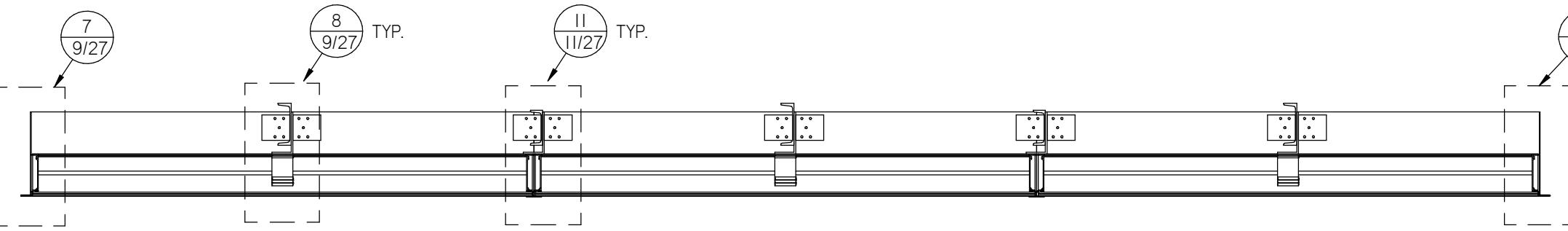


07/23/2024
 COA: 9090

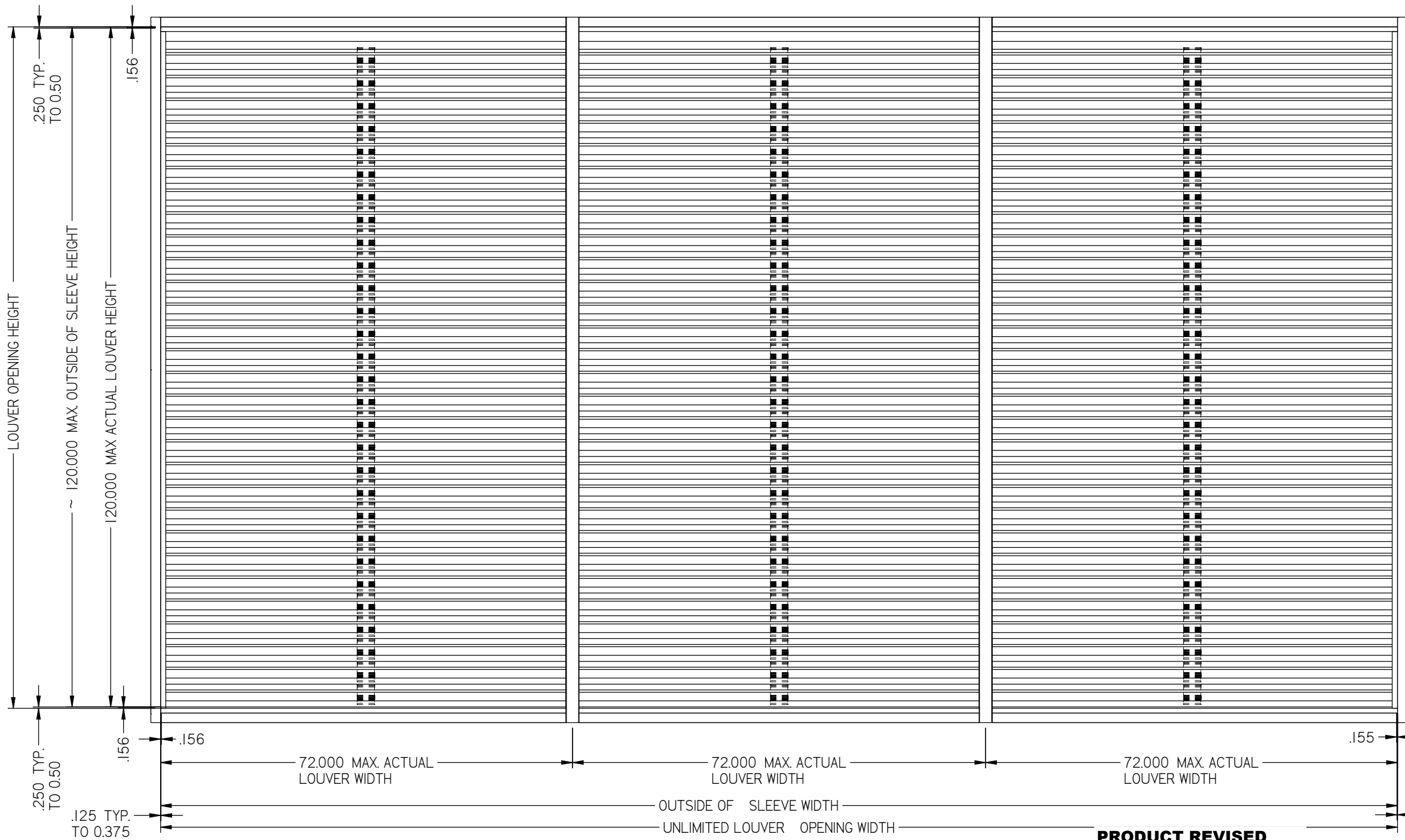
PRODUCT REVISED
 as complying with the Florida
 Building Code
 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *R. Helms*
 Miami-Dade Product Control

RICE
 ENGINEERING
 105 School Creek Trail
 Luxemburg, WI 54217
 Phone: (920) 617-1042
 Fax: (920) 617-1100
 www.rice-inc.com
 Florida Firm No: F-01000005061
 Certificate of Authorization: #9090
 Wayne K. Helmila
 Registration No: 59092

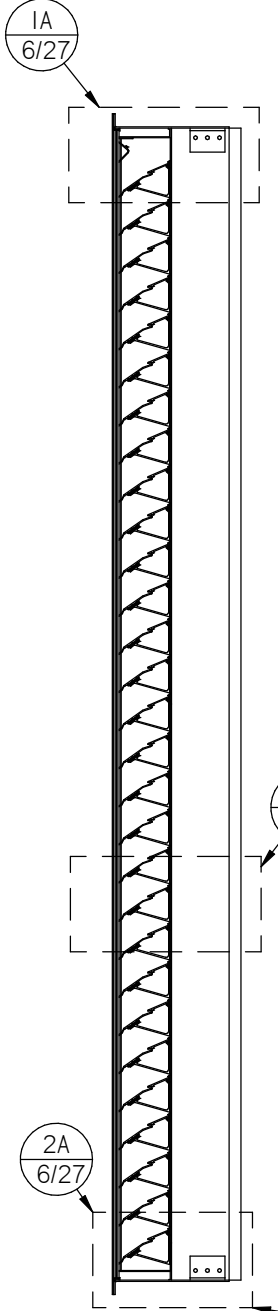
REVISIONS:
 REV B: UPDATED DRAWING INDEX
 REV B : PG 20,21,22,23,24,25,26,27



HORIZONTAL CROSS SECTION



ELEVATION

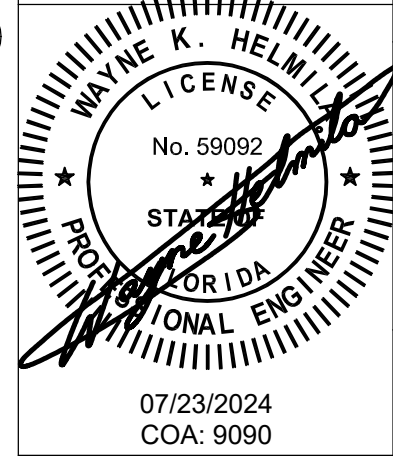


VERTICAL CROSS SECTION

PRODUCT REVISED
 as complying with the Florida
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 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *[Signature]*
 Miami-Dade Product Control

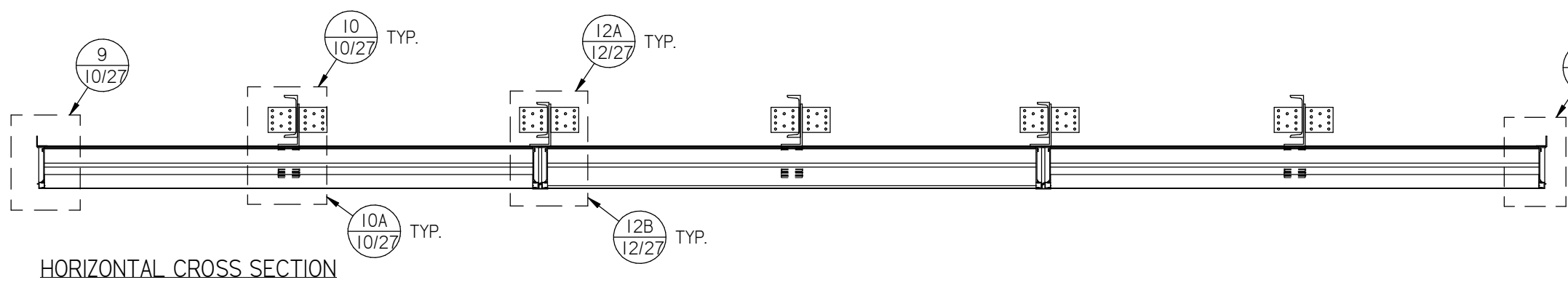
DWN BY: fcortinas	CHK BY: BDennis
DATE: 11/29/2021	SCALE: NTS
SHEET: 2 OF 27	
DWG. NO.	REV B
1606DHPM	

Nailor Industries Inc.
 4714 Winfield Road Houston, TX 77039
 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086
 TITLE:
1606DHPM LOUVER
FLANGE FRAME
SLEEVE MOUNT




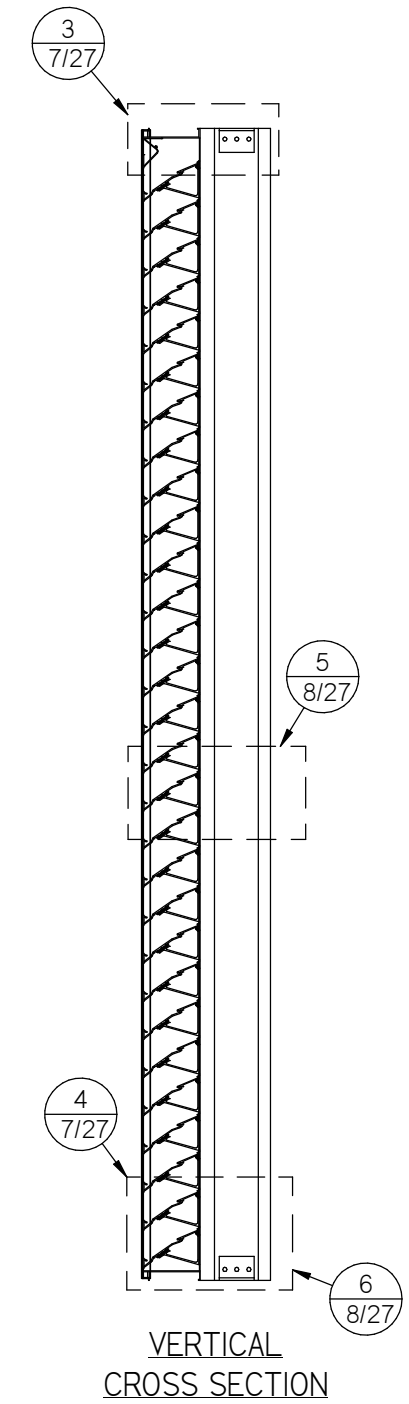
07/23/2024
 COA: 9090


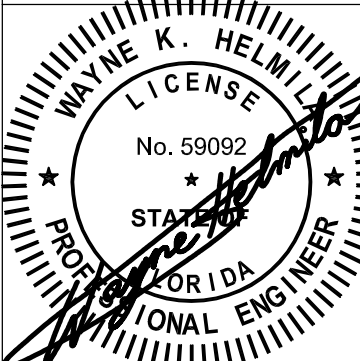
RICE
ENGINEERING
 105 School Creek Trail
 Luxemburg, WI 54217
 Phone: (920) 617-1042
 Fax: (920) 617-1100
 www.rice-inc.com
 Florida Firm No: F-01000005061
 Certificate of Authorization: #9090
 Wayne K. Helmila
 Registration No: 59092

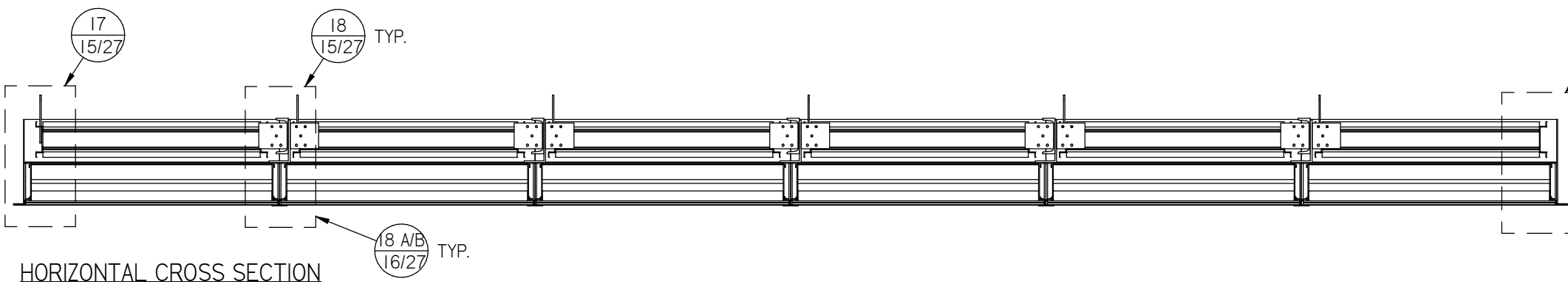


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 Expiration Date 08/30/2028

By 
 Miami-Dade Product Control



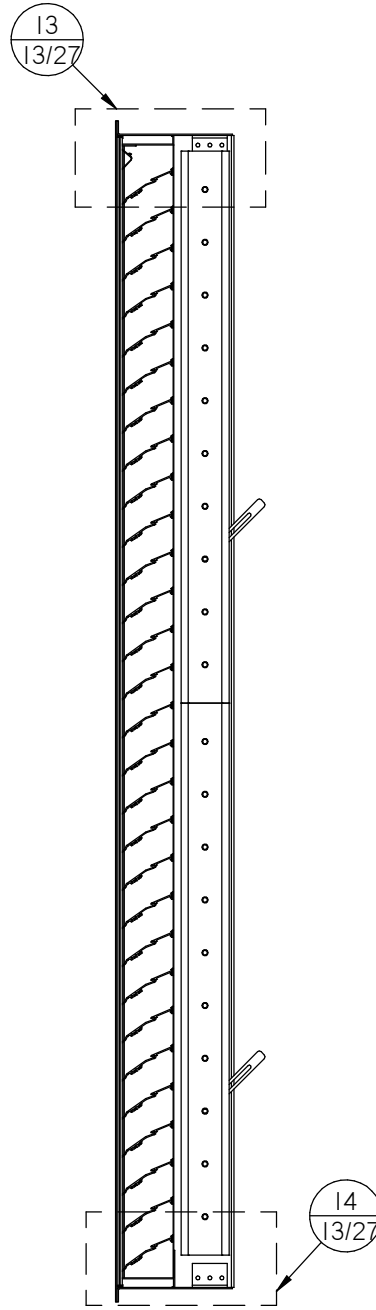
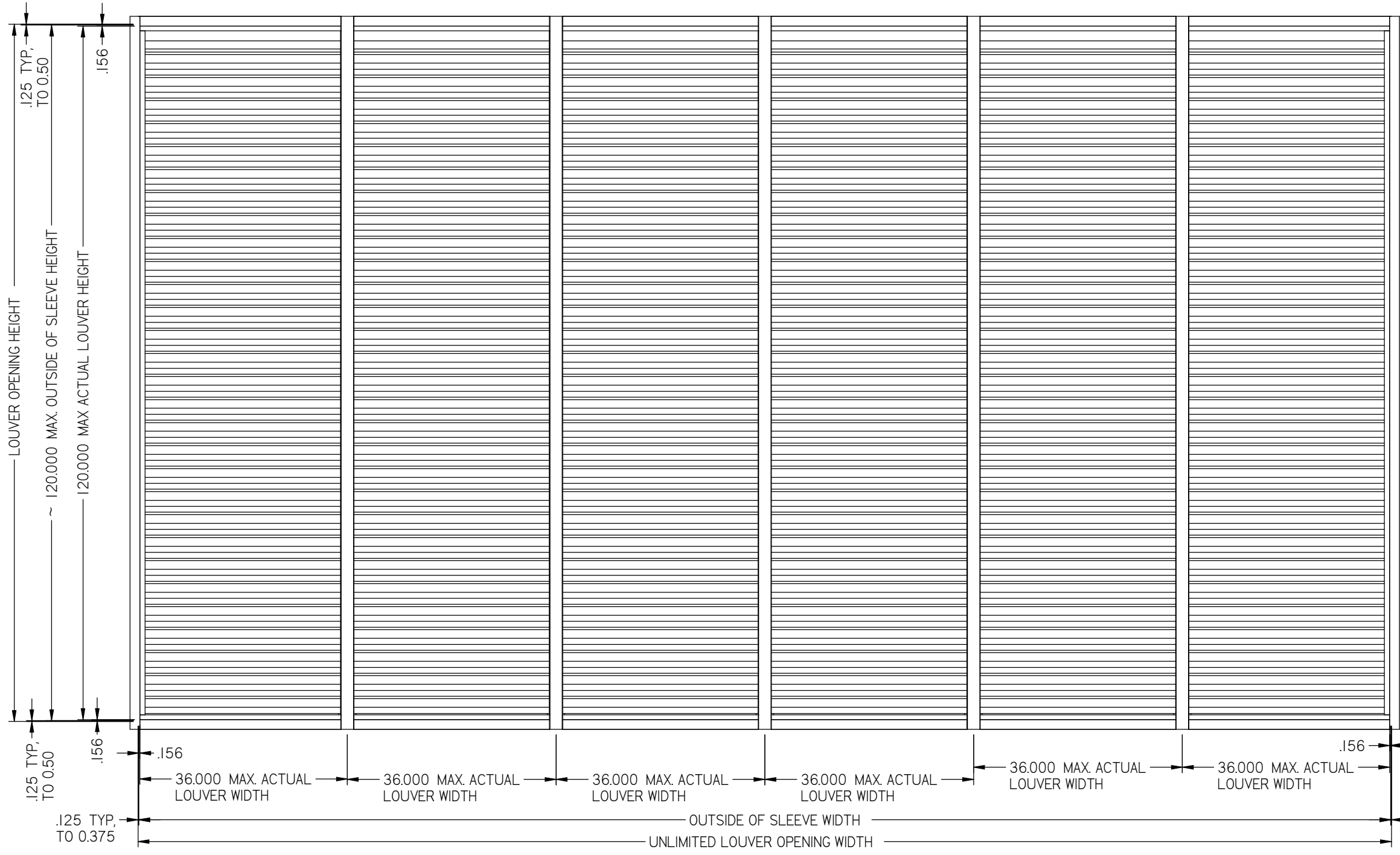
 Nailor Industries Inc. 4714 Winfield Road Houston, TX 77039 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086	DWN BY: fcortinas DATE: 11/29/2021	CHK BY: BDennis SCALE: NTS	SHEET: 3 OF 27 DWG. NO. 1606DHPM
	TITLE: 1606DHPM LOUVER COUNTINOUS ANGLE MOUNT		
 07/23/2024 COA: 9090			REV B
RICE ENGINEERING 105 School Creek Trail Luxemburg, WI 54217 Phone: (920) 617-1042 Fax: (920) 617-1100 www.rice-inc.com Florida Firm No: F-01000005061 Certificate of Authorization: #9090 Wayne K. Helmila Registration No: 59092			



(17) 15/27 OPP.

PRODUCT REVISED
 as complying with the Florida
 Building Code
 NOA-No. 24-0516.04
 Expiration Date 08/30/2028

By *[Signature]*
 Miami-Dade Product Control



CHK BY: BDennis

DWN BY: fcortinas

DATE: 11/29/2021

SCALE: NTS

SHEET: 4 OF 27

DWG. NO. 1606DHPM

REV B

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

TITLE:
1606DHPM / DAMPER
FLANGE FRAME
SLEEVE MOUNT

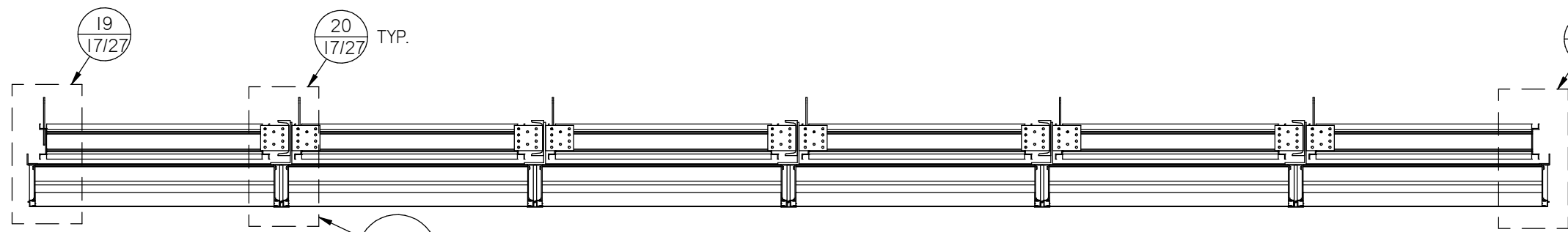
WAYNE K. HELMILA
 LICENSE
 No. 59092
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

07/23/2024
 COA: 9090

RICE
 ENGINEERING

105 School Creek Trail
 Luxemburg, WI 54217
 Phone: (920) 617-1042
 Fax: (920) 617-1100
 www.rice-inc.com

Florida Firm No: F-0100005061
 Certificate of Authorization: #9090
 Wayne K. Helmila
 Registration No: 59092

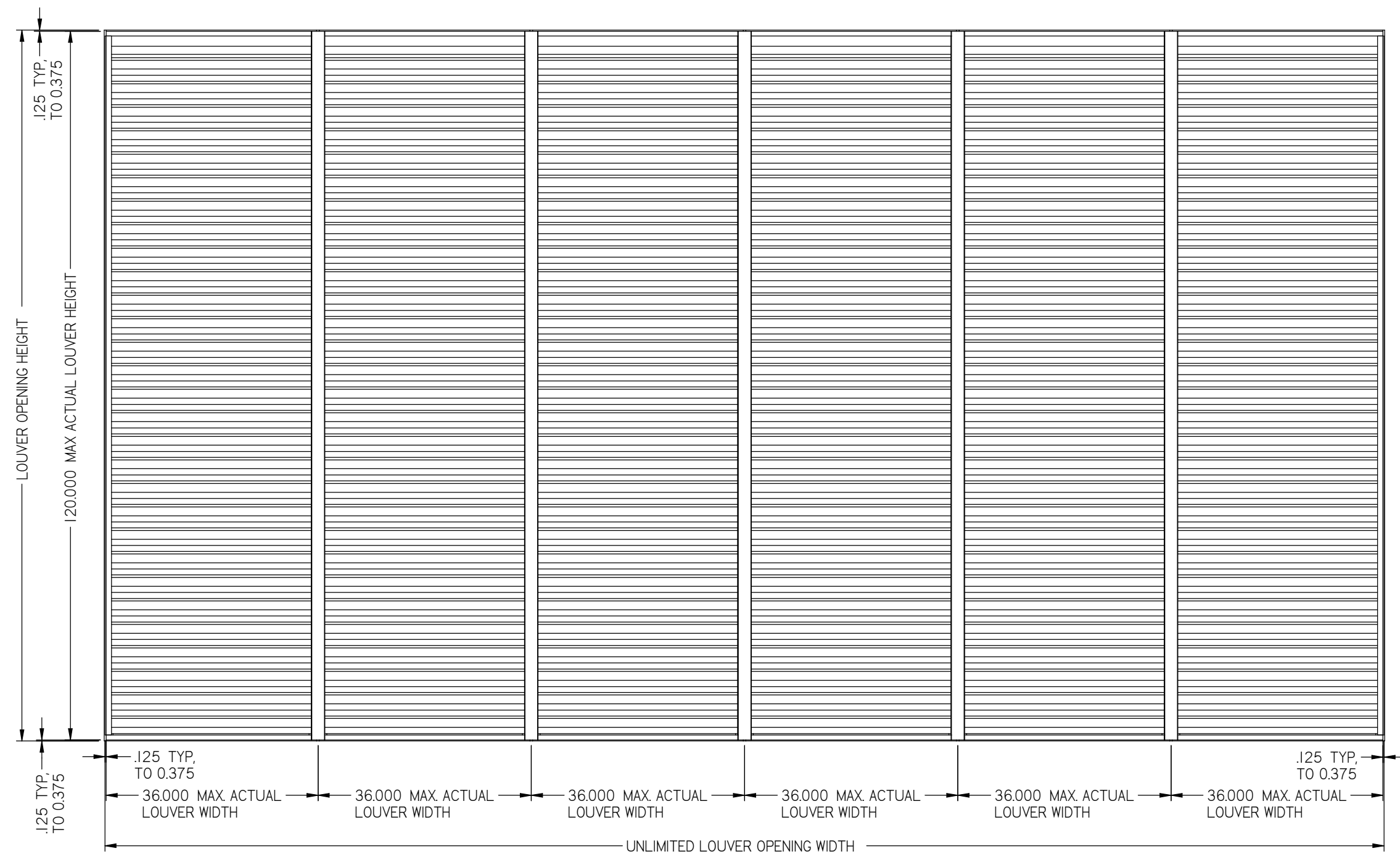


HORIZONTAL CROSS SECTION

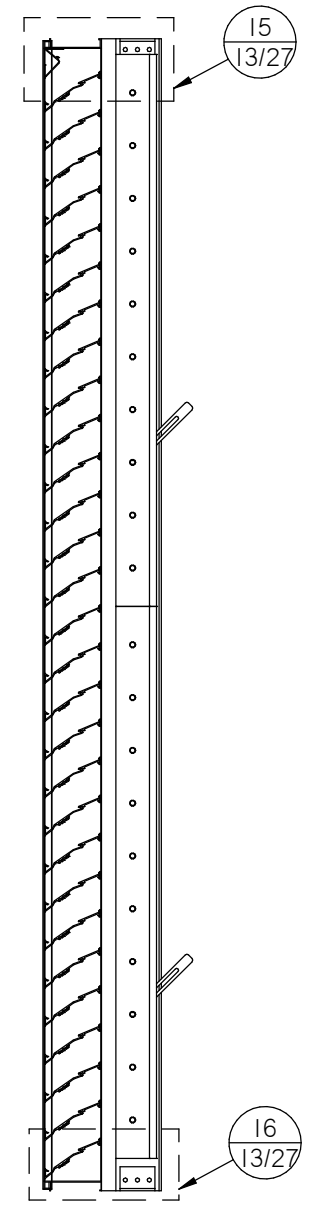
20 A/B/C
18/27 TYP.

19 17/27 OPP.

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *R. Dennis*
Miami-Dade Product Control



ELEVATION



VERTICAL CROSS SECTION

CHK BY: BDennis	SCALE: NTS	SHEET: 5 OF 27	REV B
DWN BY: fcortinas	DATE: 11/29/2021		
DWN BY: fcortinas		DWG. NO. 1606DHPM	

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

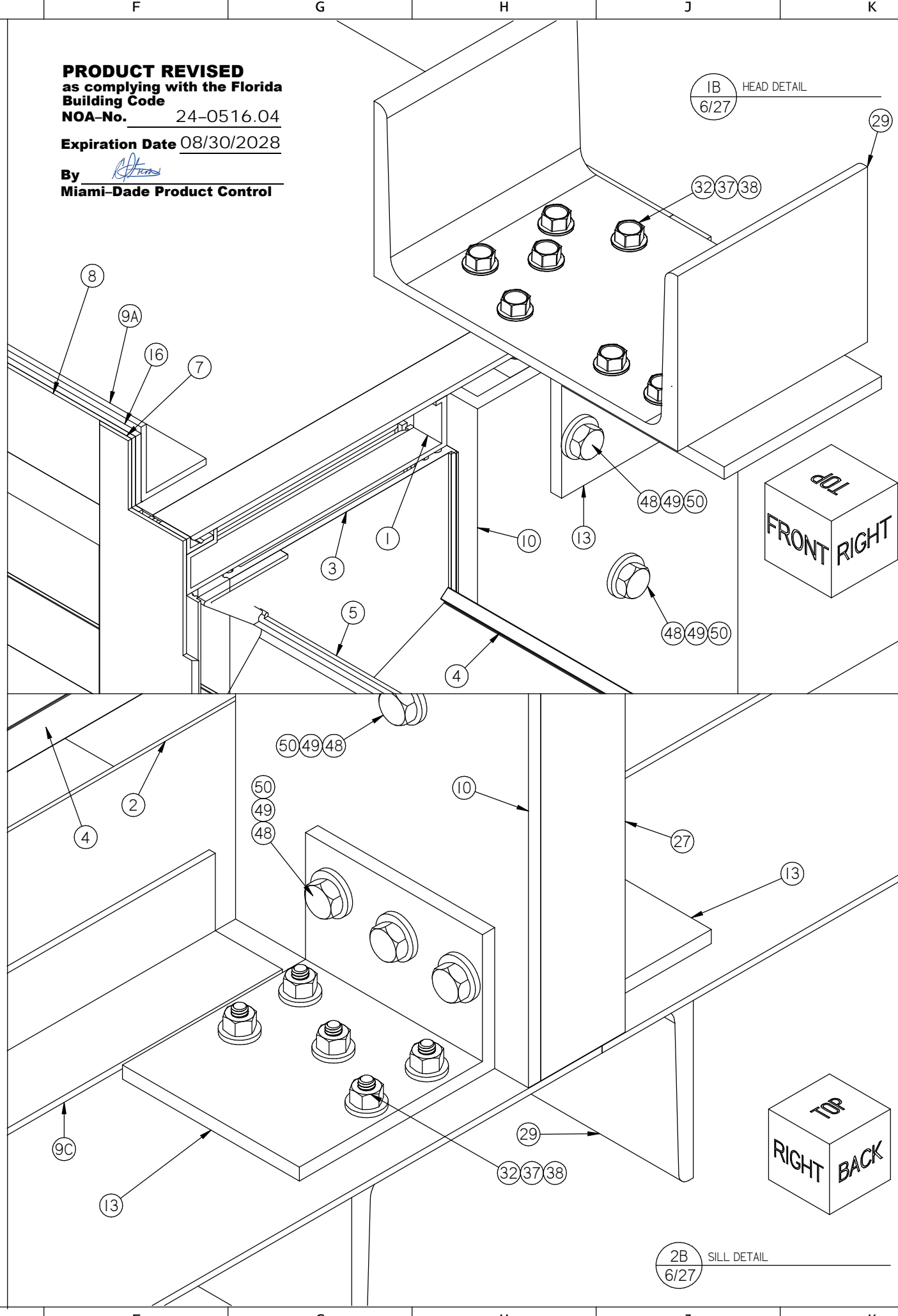
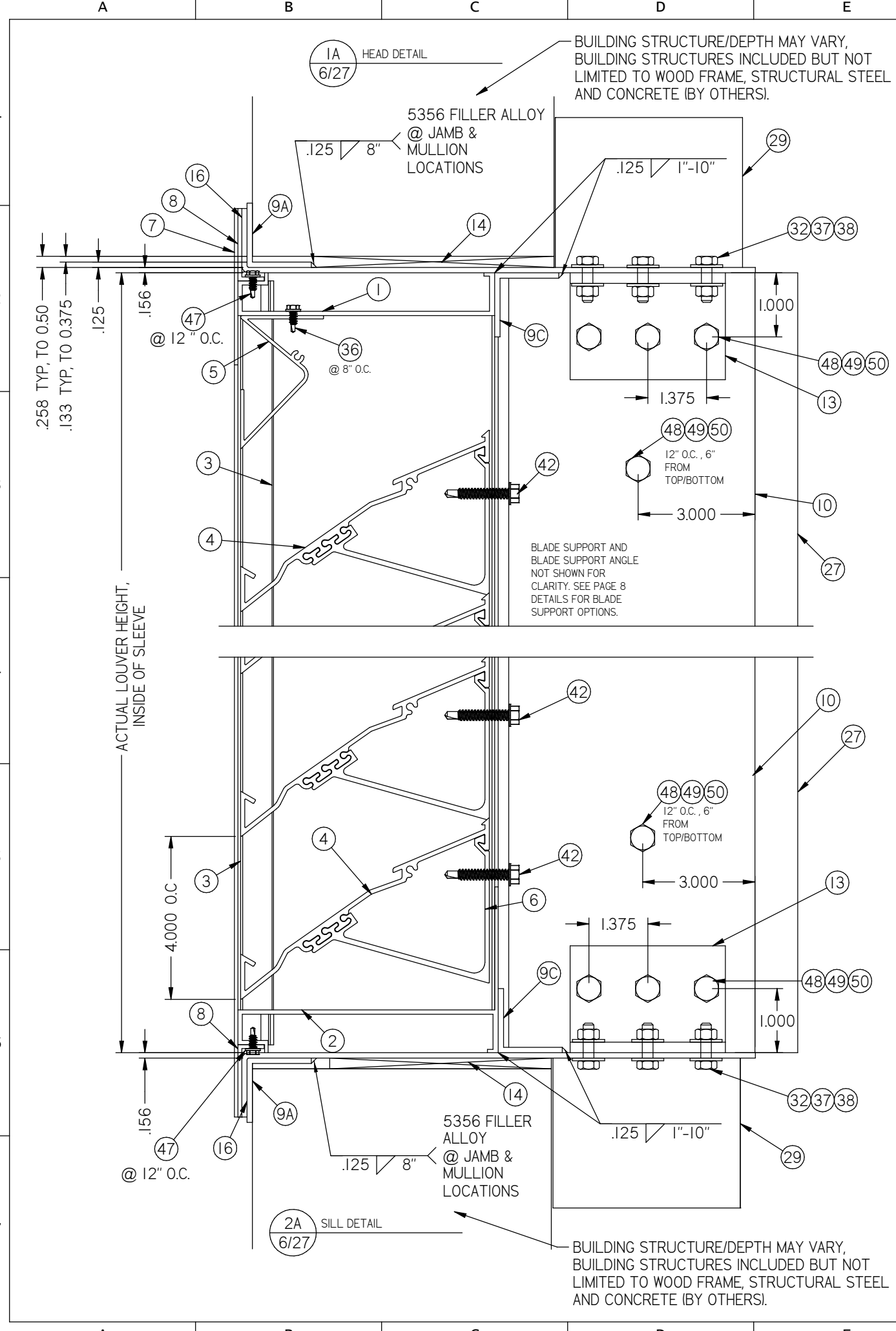
TITLE: 1606DHPM / DAMPER CONTINUOUS ANGLE MOUNT

WAYNE K. HELMILA
LICENSE No. 59092
STATE OF FLORIDA
PROFESSIONAL ENGINEER

07/23/2024
COA: 9090

RICE ENGINEERING
105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
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Florida Firm No: F-01000005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092



 4714 Winfield Road Houston, TX 77039 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086	DWN BY: f cortinas DATE: 11/29/2021	CHK BY: BDennis SCALE: NTS
	TITLE: 1606DHPM LOUVER FLANGE FRAME SLEEVE MOUNT HEAD & SILL DETAIL	
WAYNE K. HELMILA LICENSE No. 59092 STATE OF FLORIDA PROFESSIONAL ENGINEER 07/23/2024 COA: 9090		
RICE ENGINEERING 105 School Creek Trail Luxemburg, WI 54217 Phone: (920) 617-1042 Fax: (920) 617-1100 www.rice-inc.com Florida Firm No: F-0100005061 Certificate of Authorization: #9090 Wayne K. Helmila Registration No: 59092		

MULLION ANGLE DIRECT MOUNT (SHOWN HERE AT HEAD) IS FOR SUBSTRATES WHERE MINIMUM FASTENER EDGE DISTANCE CAN BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. DETAIL IS TYPICAL FOR BOTH HEAD AND SILL CONDITIONS WHEN APPLICABLE.

REFER TO FASTENER TABLE 2 (SHEET 26 OF 27)

3 HEAD DETAIL
7/27
SUBSTRATE LIMITED TO WOOD, STEEL, CONCRETE (BY OTHERS).

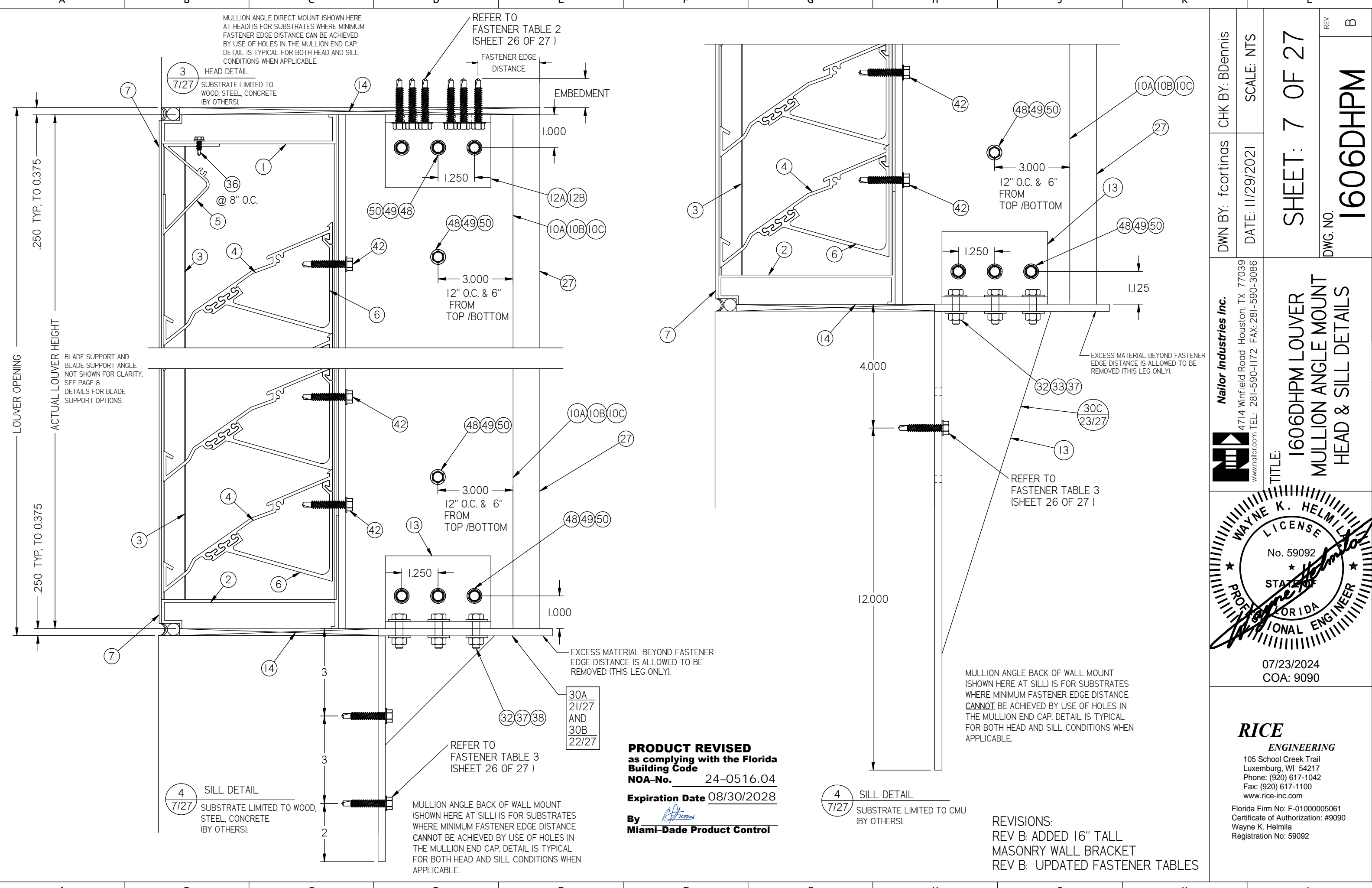
4 SILL DETAIL
7/27
SUBSTRATE LIMITED TO WOOD, STEEL, CONCRETE (BY OTHERS).

MULLION ANGLE BACK OF WALL MOUNT (SHOWN HERE AT SILL) IS FOR SUBSTRATES WHERE MINIMUM FASTENER EDGE DISTANCE CANNOT BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. DETAIL IS TYPICAL FOR BOTH HEAD AND SILL CONDITIONS WHEN APPLICABLE.

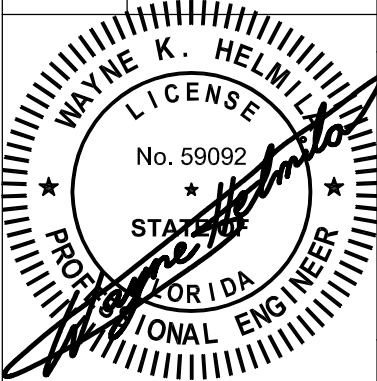
PRODUCT REVISED
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By *[Signature]*
Miami-Dade Product Control

MULLION ANGLE BACK OF WALL MOUNT (SHOWN HERE AT SILL) IS FOR SUBSTRATES WHERE MINIMUM FASTENER EDGE DISTANCE CANNOT BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. DETAIL IS TYPICAL FOR BOTH HEAD AND SILL CONDITIONS WHEN APPLICABLE.

REVISIONS:
REV B: ADDED 16" TALL MASONRY WALL BRACKET
REV B: UPDATED FASTENER TABLES



Nailor Industries Inc.
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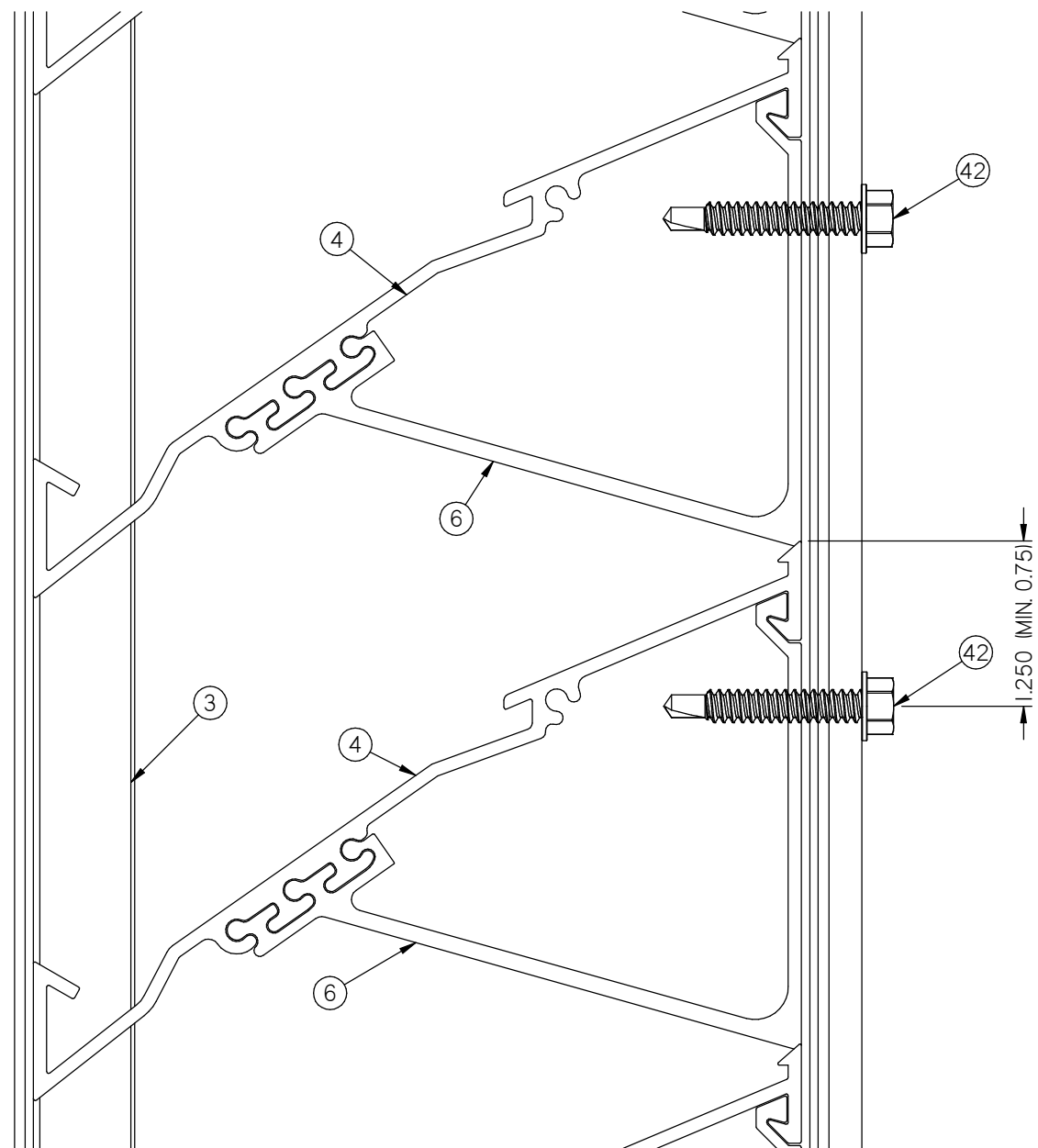
07/23/2024
COA: 9090

RICE
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105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
Fax: (920) 617-1100
www.rice-inc.com
Florida Firm No: F-0100005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

DWN BY: f cortinas
CHK BY: BDennis
DATE: 11/29/2021
SCALE: NTS

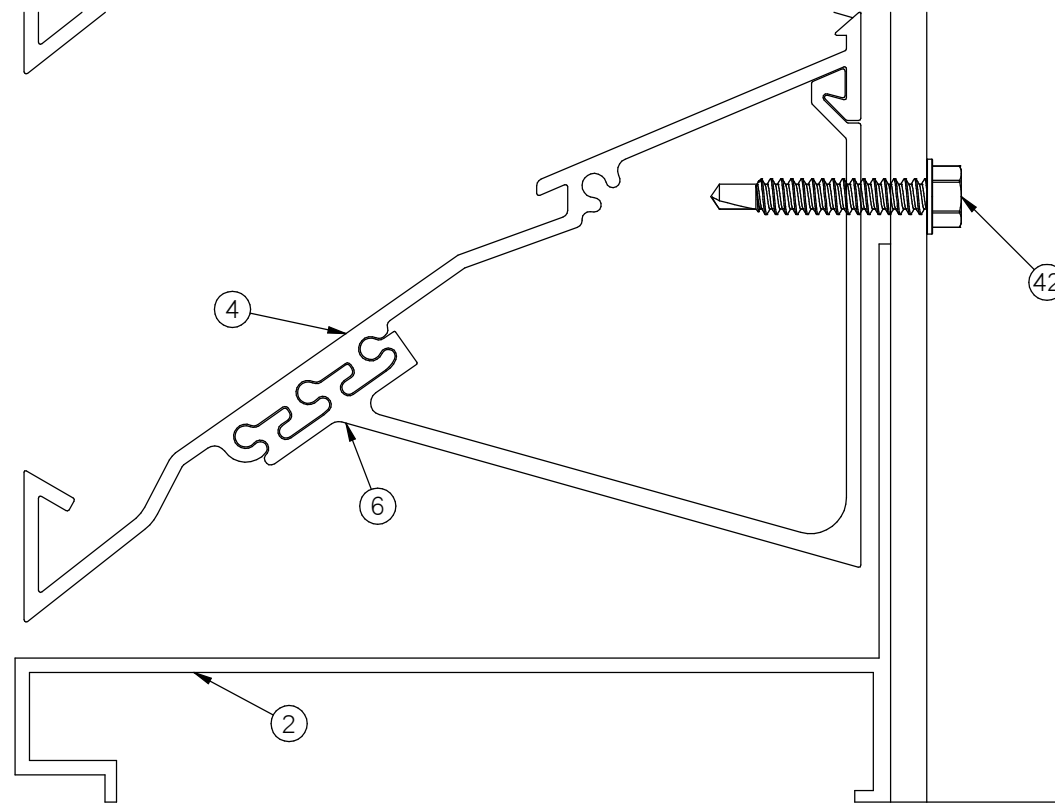
TITLE:
**1606DHPM LOUVER
MULLION ANGLE MOUNT
HEAD & SILL DETAILS**

SHEET: 7 OF 27
DWG. NO. **1606DHPM**



5 BLADE SUPPORT DETAIL
8/27

NOTE: THE BLADE SUPPORT ANGLE (ITEM 10 IS NOT SHOWN IN THE DETAILS IN ORDER TO IMPROVE CLARITY. THE BLADE SUPPORT ANGLE IS ATTACHED TO THE BLADE SUPPORT BRACE (ITEM 6). BLADE SUPPORT BRACKET 6 (SHOWN) IS ANY OF THE DRAWINGS FOR DETAIL 6.

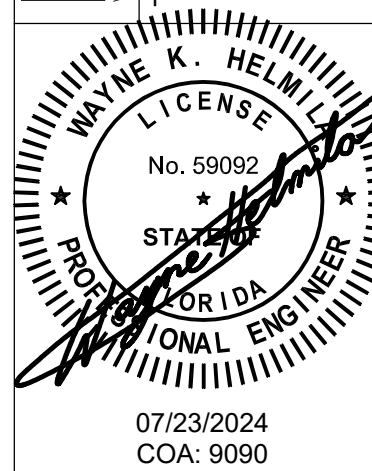


6 BOTTOM BLADE SUPPORT DETAIL
8/27

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

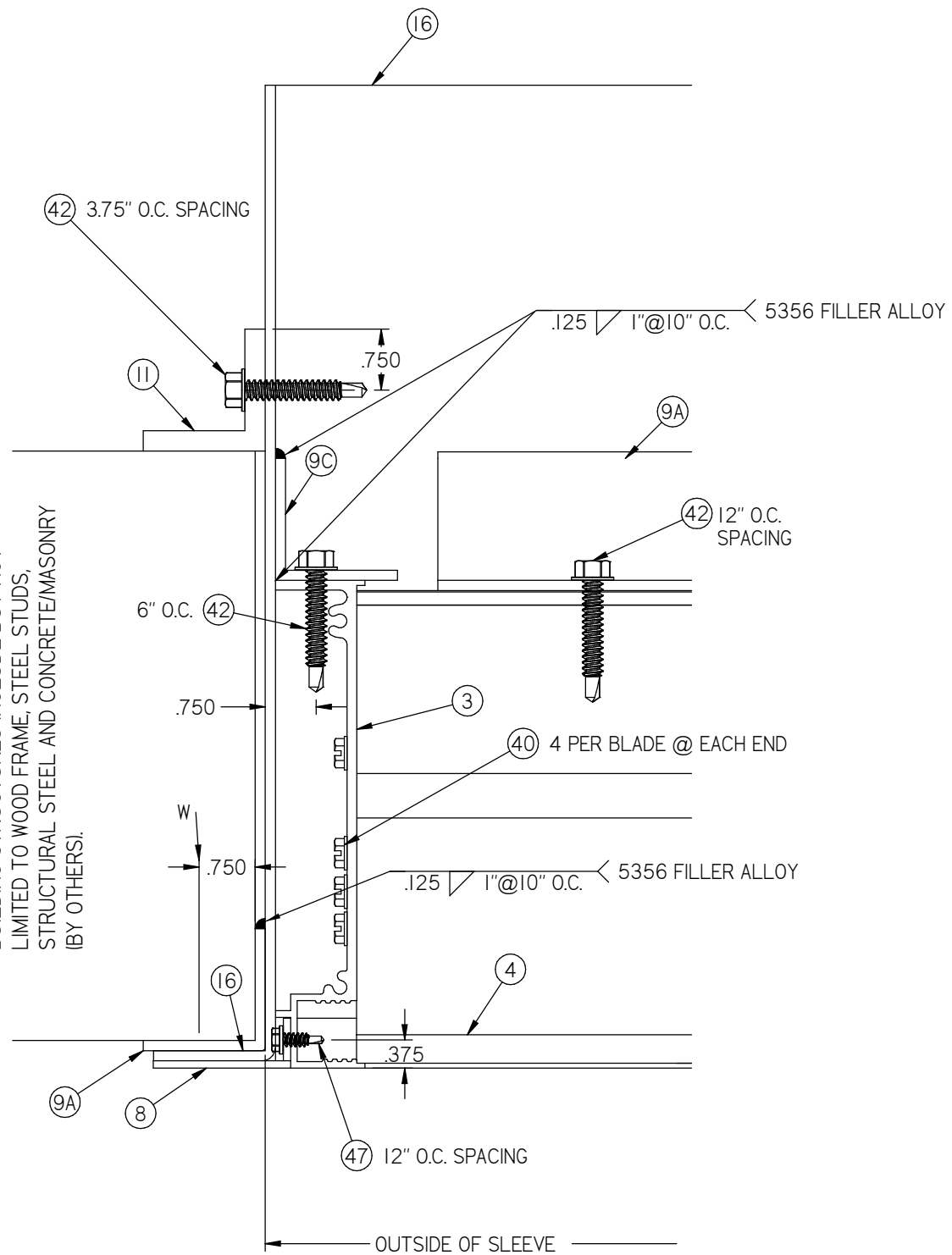
DWN BY: fcortinas
CHK BY: BDennis
DATE: 11/29/2021
SCALE: NTS
SHEET: 8 OF 27
DWG. NO. 1606DHPM
REV. B

Nailor Industries Inc.
4714 Winfield Road Houston, TX 77039
www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086
TITLE: 1606DHPM LOUVER
BLADE SUPPORT DETAIL

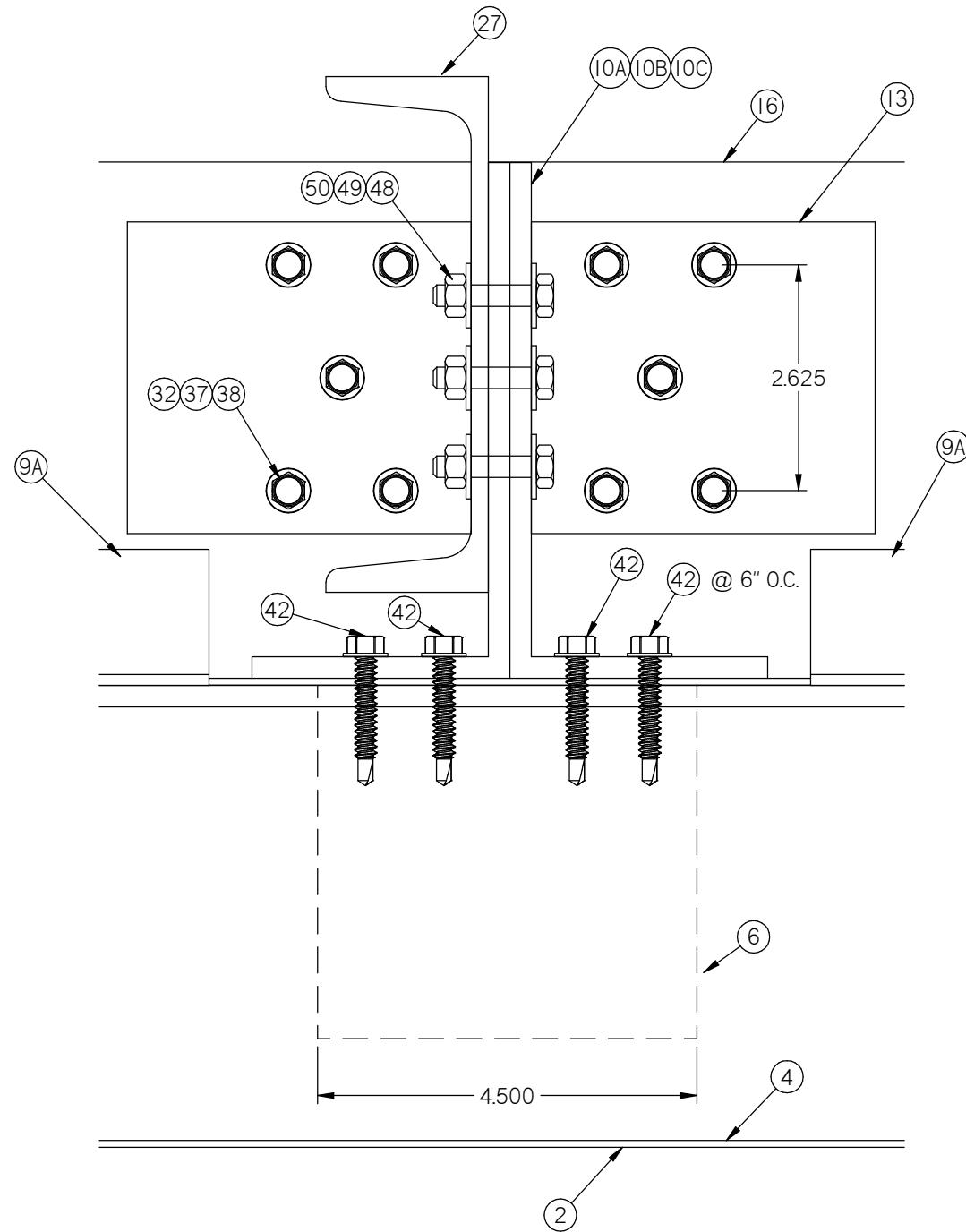


RICE
ENGINEERING
105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
Fax: (920) 617-1100
www.rice-inc.com
Florida Firm No: F-01000005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

BUILDING STRUCTURE/DEPTH MAY VARY.
 BUILDING STRUCTURES INCLUDE BUT NOT
 LIMITED TO WOOD FRAME, STEEL STUDS,
 STRUCTURAL STEEL AND CONCRETE/MASONRY
 (BY OTHERS).



7 JAMB DETAIL
 9/27



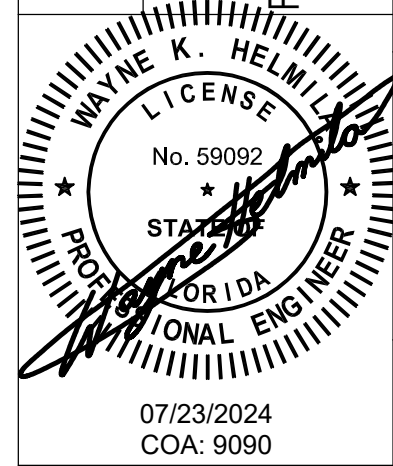
8 BLADE SUPPORT DETAIL
 SLEEVE MOUNT
 9/27

PRODUCT REVISED
 as complying with the Florida
 Building Code
 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *[Signature]*
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DWN BY: f cortinas	CHK BY: BDennis
DATE: 11/29/2021	SCALE: NTS
SHEET: 9 OF 27	
DWG. NO.	REV B
1606DHPM	

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

TITLE:
**1606DHPM LOUVER
 FLANGE FRAME SLEEVE MOUNT
 JAMB DETAILS**



RICE
 ENGINEERING
 105 School Creek Trail
 Luxemburg, WI 54217
 Phone: (920) 617-1042
 Fax: (920) 617-1100
 www.rice-inc.com
 Florida Firm No: F-0100005061
 Certificate of Authorization: #9090
 Wayne K. Helmila
 Registration No: 59092

A B C D E F G H J K L

1
2
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7

PRODUCT REVISED
 as complying with the Florida
 Building Code
 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *R. Helmla*
 Miami-Dade Product Control

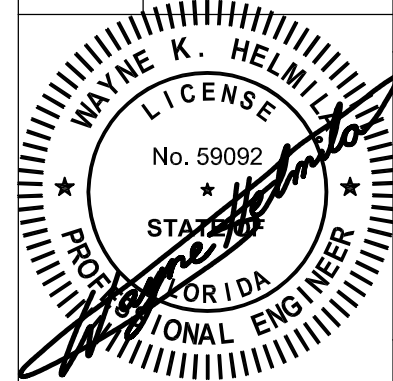
CHK BY: BDennis
 DWN BY: fcorntinas
 DATE: 11/29/2021
 SCALE: NTS

SHEET: 10 OF 27

DWG. NO. 1606DHPM
 REV. B

Nailor Industries Inc.
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 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086

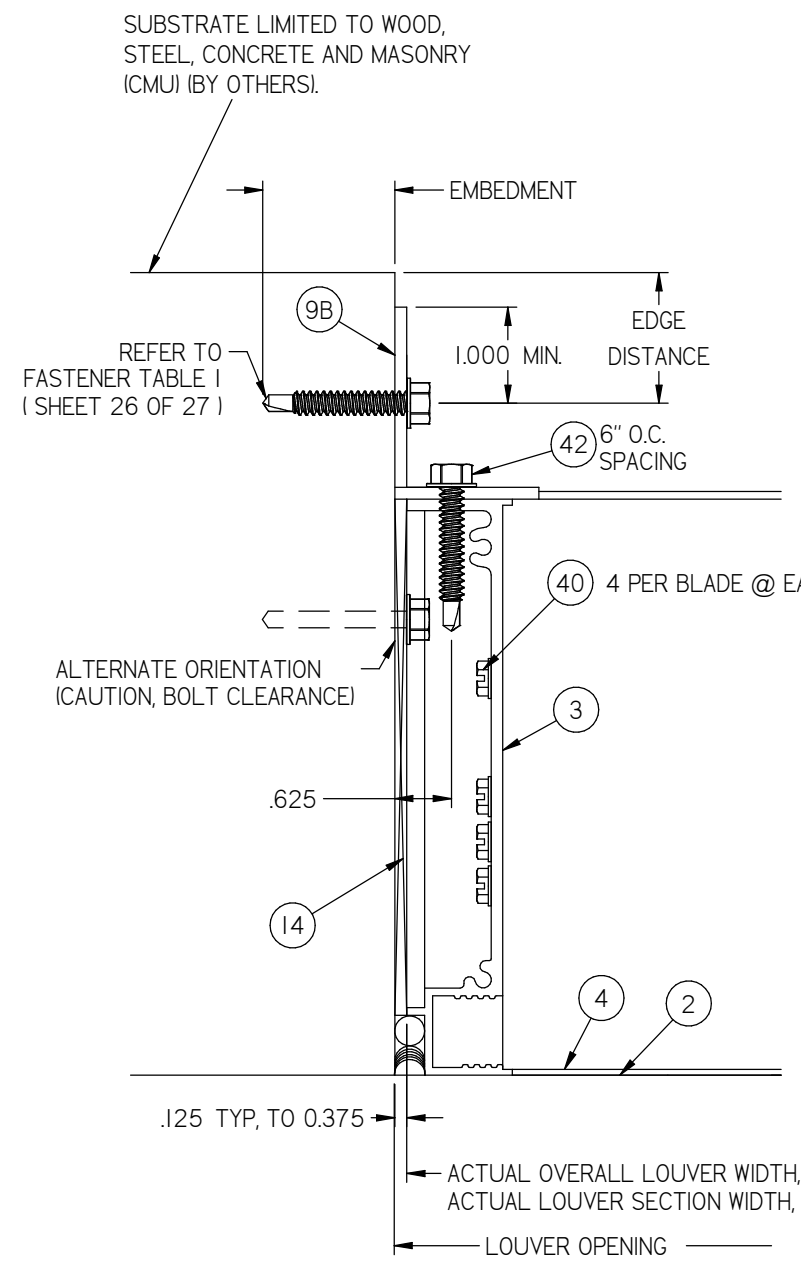
TITLE:
 1606DHPM LOUVER
 COUNTINOUS ANGLE MOUNT
 JAMB DETAIL



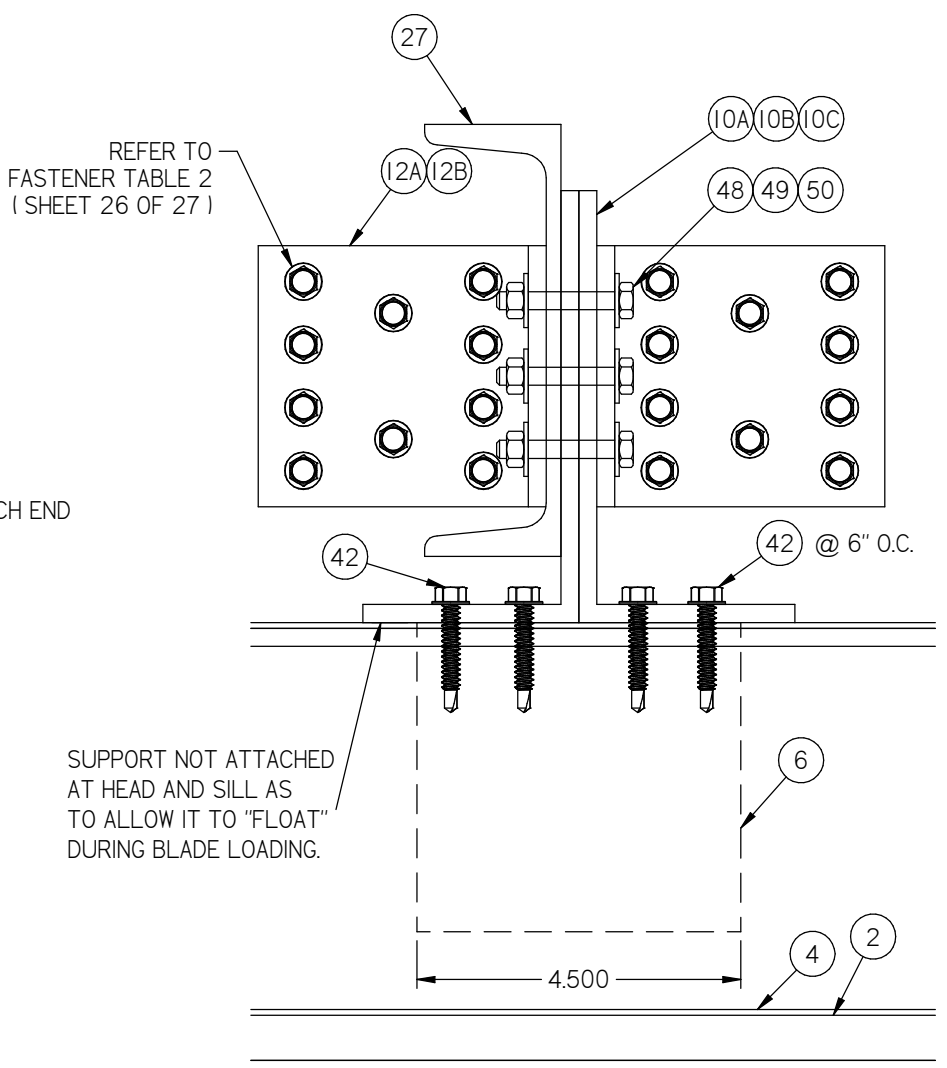
07/23/2024
 COA: 9090

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 105 School Creek Trail
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 Fax: (920) 617-1100
 www.rice-inc.com
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 Certificate of Authorization: #9090
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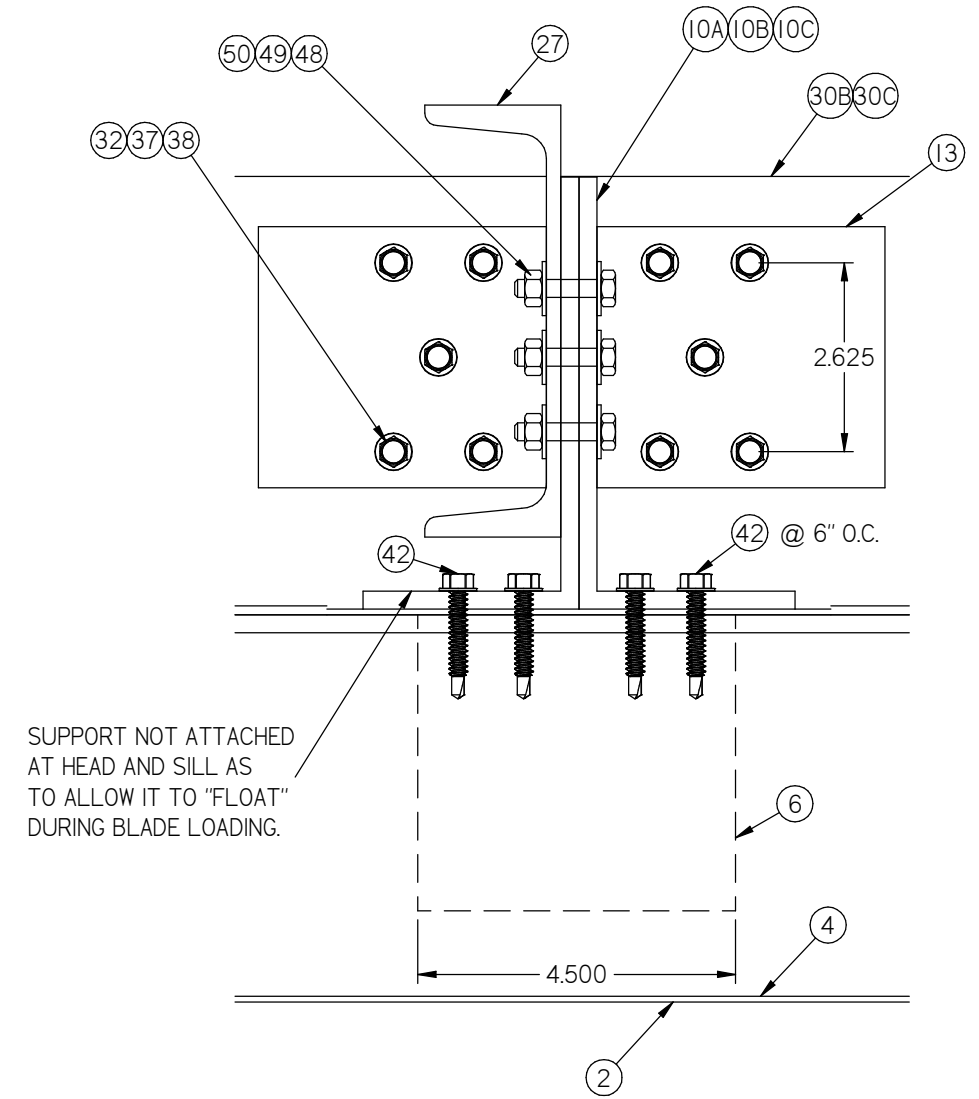
REVISIONS:
 REV B: UPDATED FASTENER TABLES



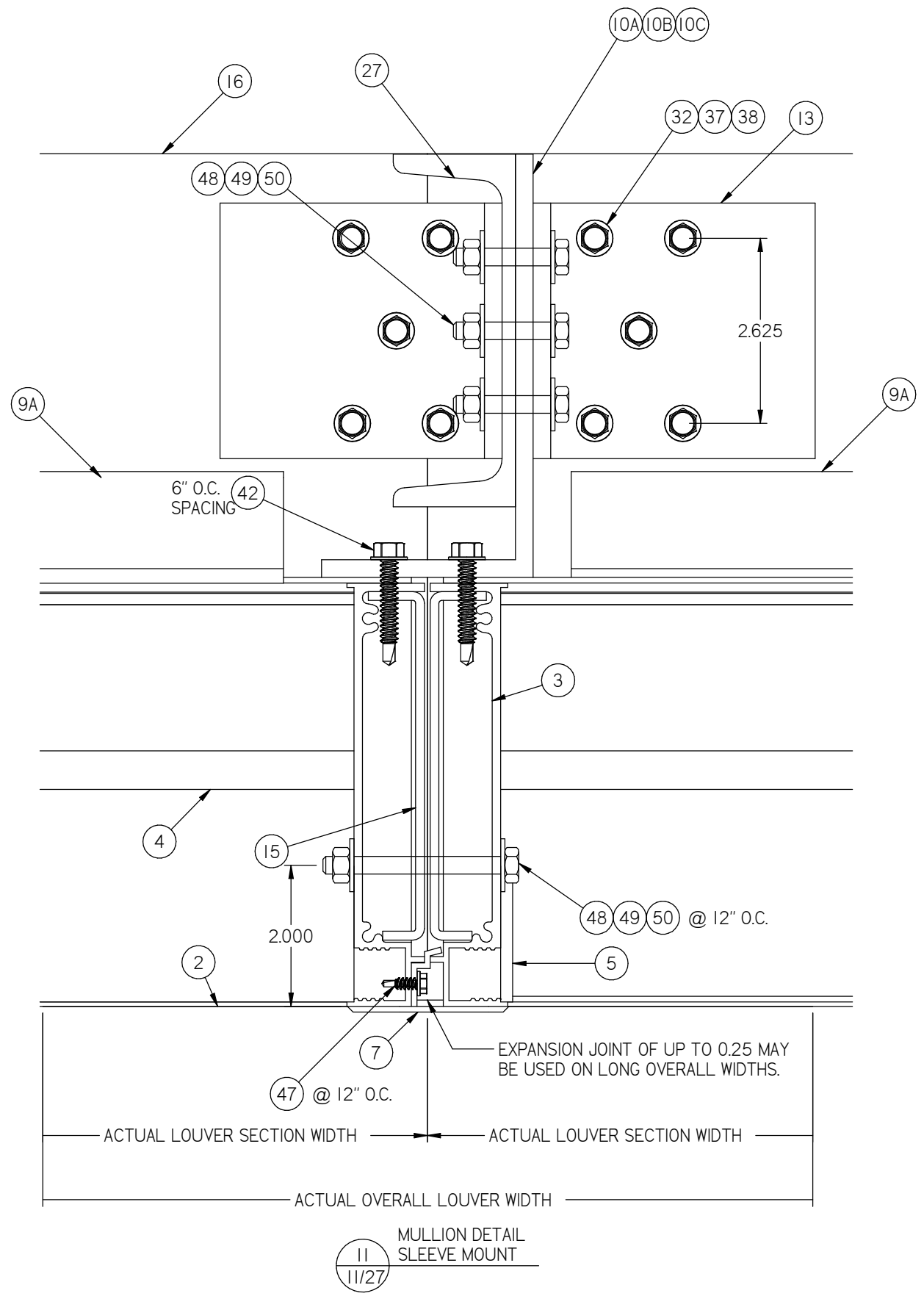
9 JAMB DETAIL
 10/27



10 BLADE SUPPORT DETAIL
 DIRECT MOUNT
 10/27



10A BLADE SUPPORT DETAIL
 BACK OF OF WALL MOUNT
 FOR CONT. ANGLE
 10/27



EXPANSION JOINT OF UP TO 0.25 MAY BE USED ON LONG OVERALL WIDTHS.

47 @ 12" O.C.

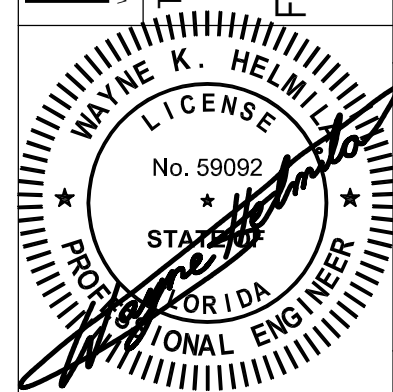
ACTUAL LOUVER SECTION WIDTH

ACTUAL LOUVER SECTION WIDTH

ACTUAL OVERALL LOUVER WIDTH

MULLION DETAIL
SLEEVE MOUNT
11
11/27

PRODUCT REVISED
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Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
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Miami-Dade Product Control



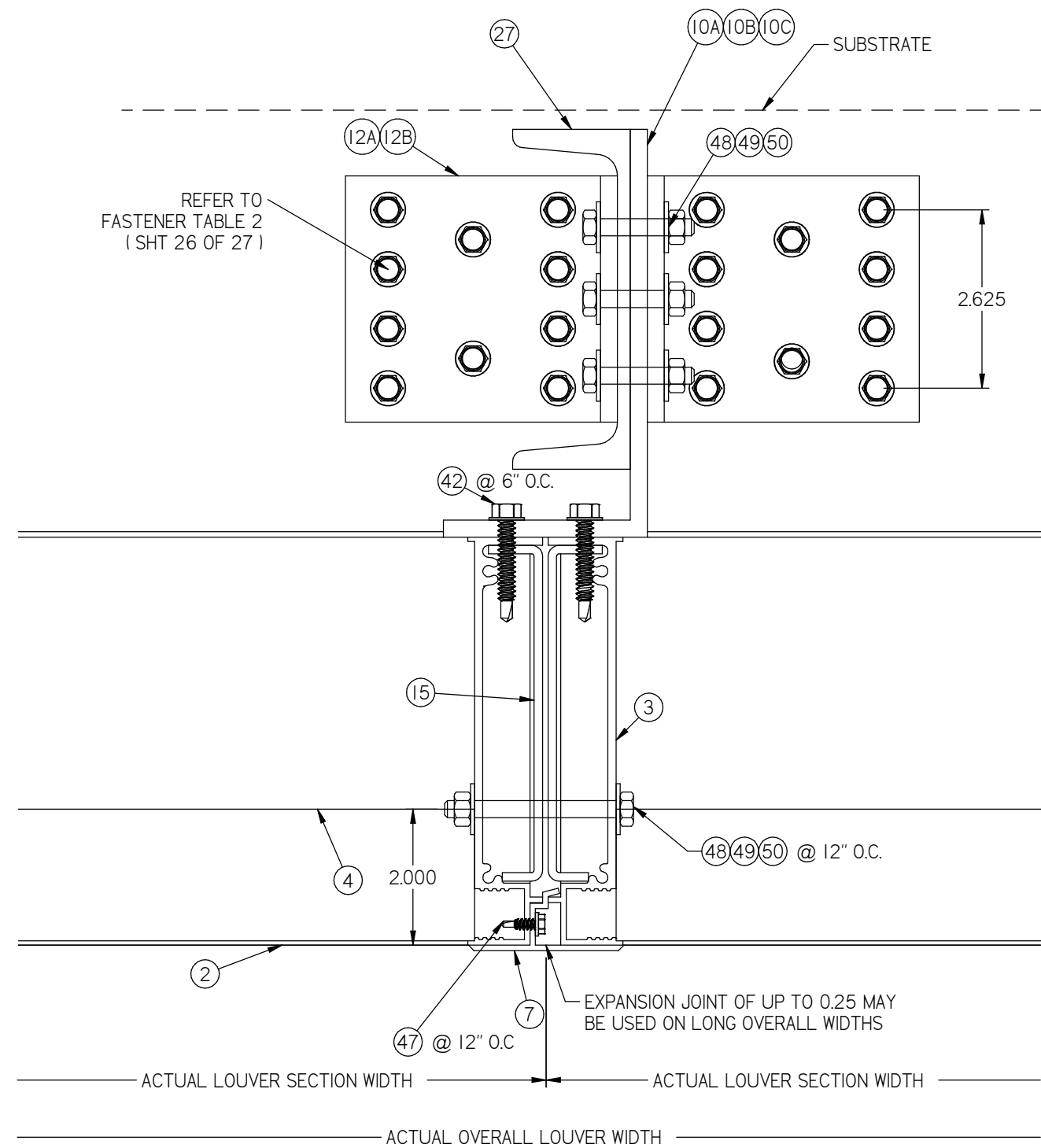
07/23/2024
COA: 9090

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105 School Creek Trail
Luxemburg, WI 54217
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Fax: (920) 617-1100
www.rice-inc.com
Florida Firm No: F-0100005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

DWN BY: fcortinas
CHK BY: BDennis
DATE: 11/29/2021
SCALE: NTS
SHEET: 11 OF 27
REV B

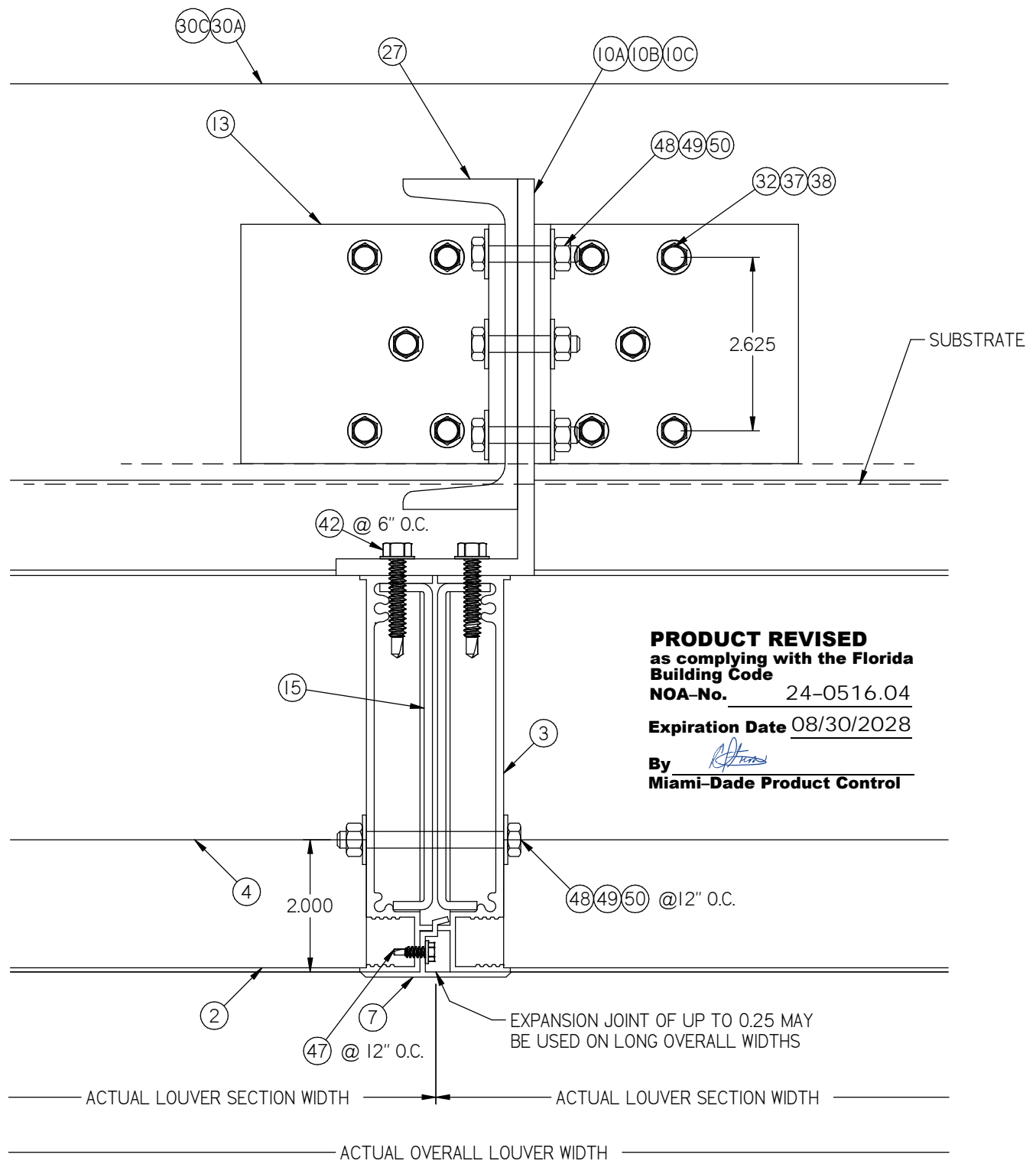
Nailor Industries Inc.
4714 Winfield Road Houston, TX 77039
www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086
TITLE:
1606DHPM LOUVER
FLANGE FRAME SLEEVE MOUNT
MULLION DETAIL
DWG. NO. 1606DHPM

REFER TO FASTENER TABLE 2 (SHT 26 OF 27)



MULLION ANGLE DIRECT MOUNT (SHOWN HERE AT HEAD) IS FOR SUBSTATES WHERE MINIMUM FASTENER EDGE DISTANCE CAN BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. DETAIL IS TYPICAL FOR BOTH HEAD AND SILL CONDITIONS WHEN APPLICABLE.

MULLION DETAIL DIRECT MOUNT
12A
12/27



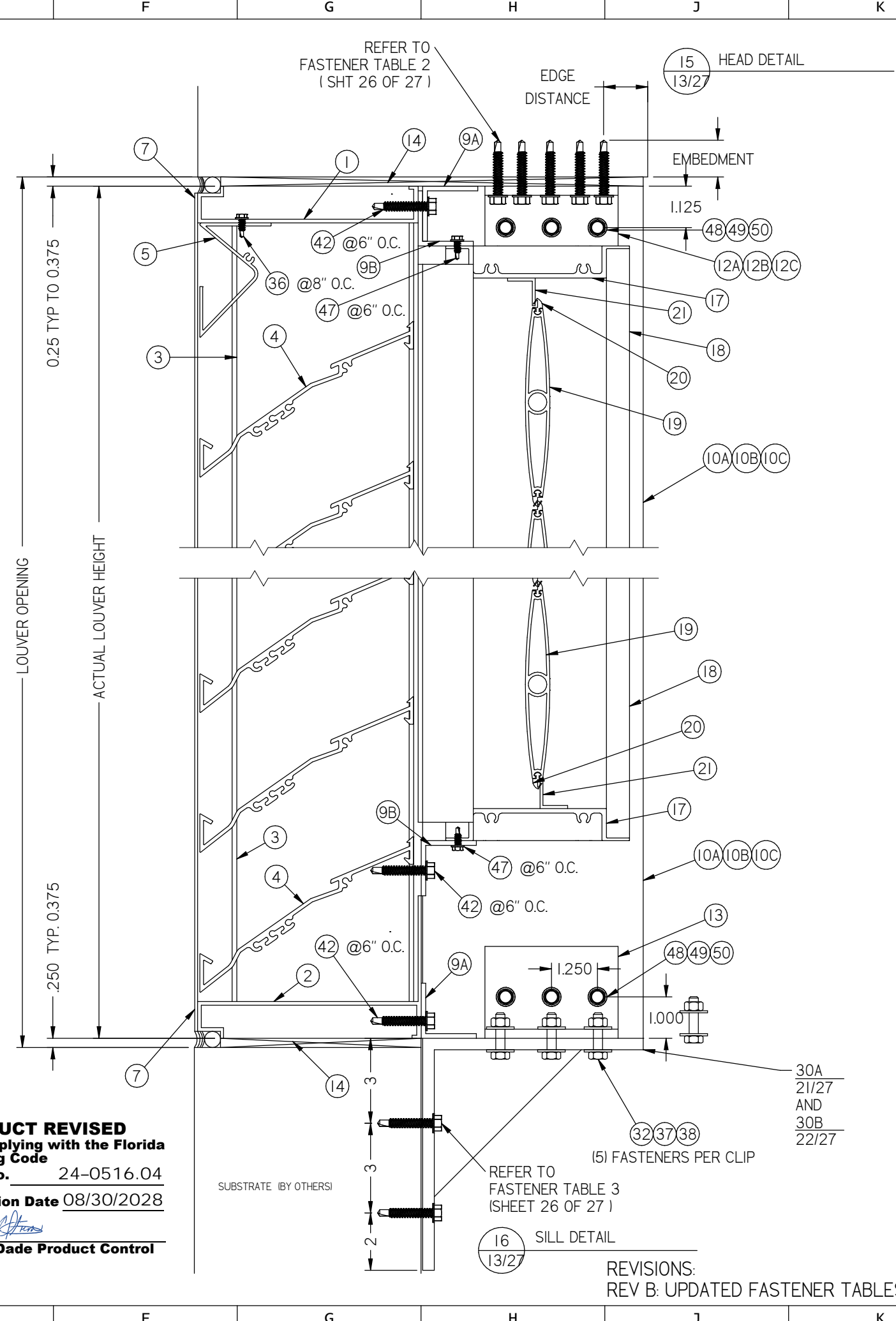
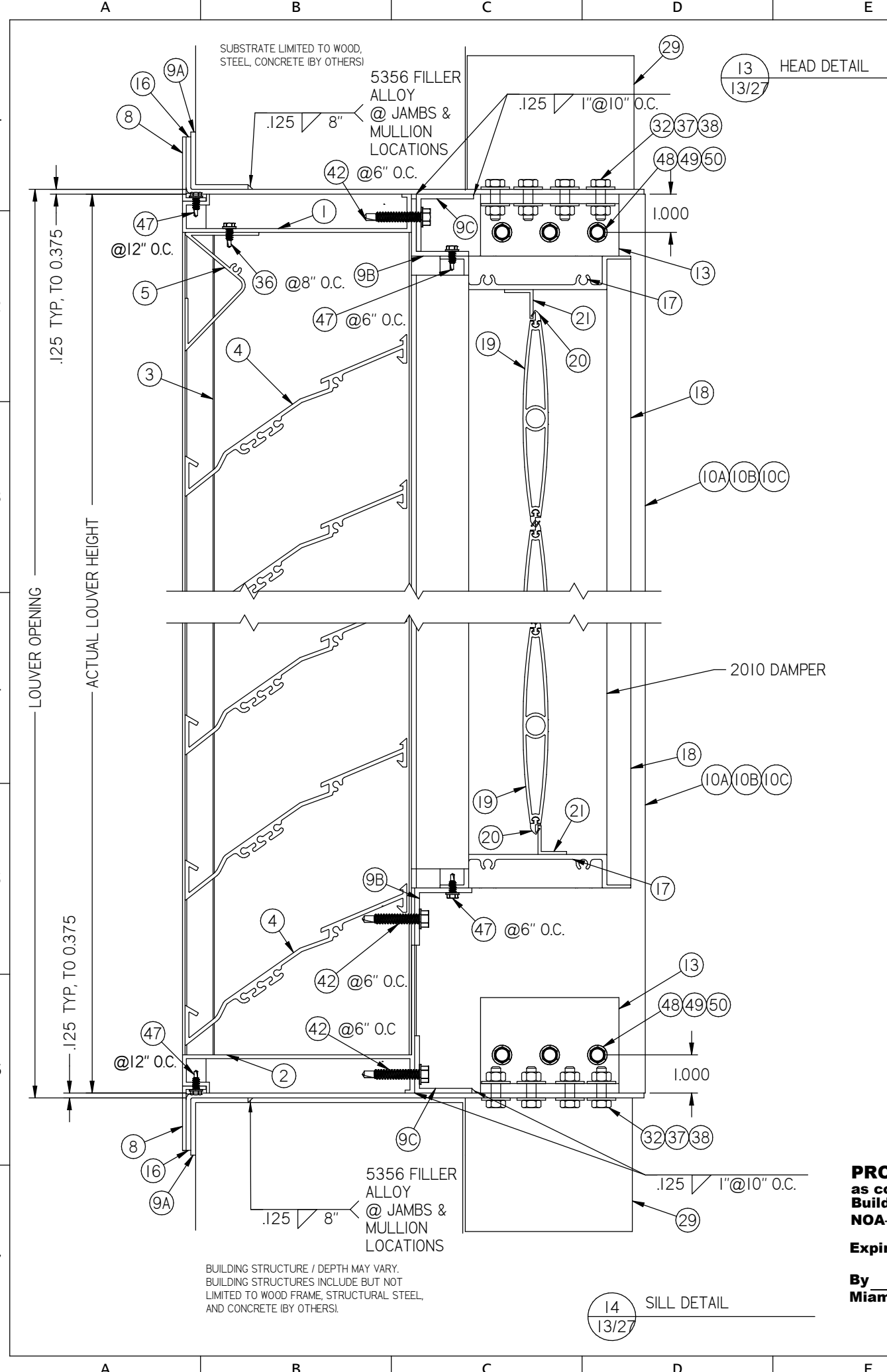
MULLION ANGLE BACK OF WALL MOUNT (SHOWN HERE AT SILL) IS FOR SUBSTATES WHERE MINIMUM FASTENER EDGE DISTANCE CANNOT BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. DETAIL IS TYPICAL FOR BOTH HEAD AND SILL CONDITIONS WHEN APPLICABLE.

MULLION DETAIL BACK OF WALL MOUNT
12B
12/27

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

REVISIONS:
REV B: UPDATED FASTENER TABLES

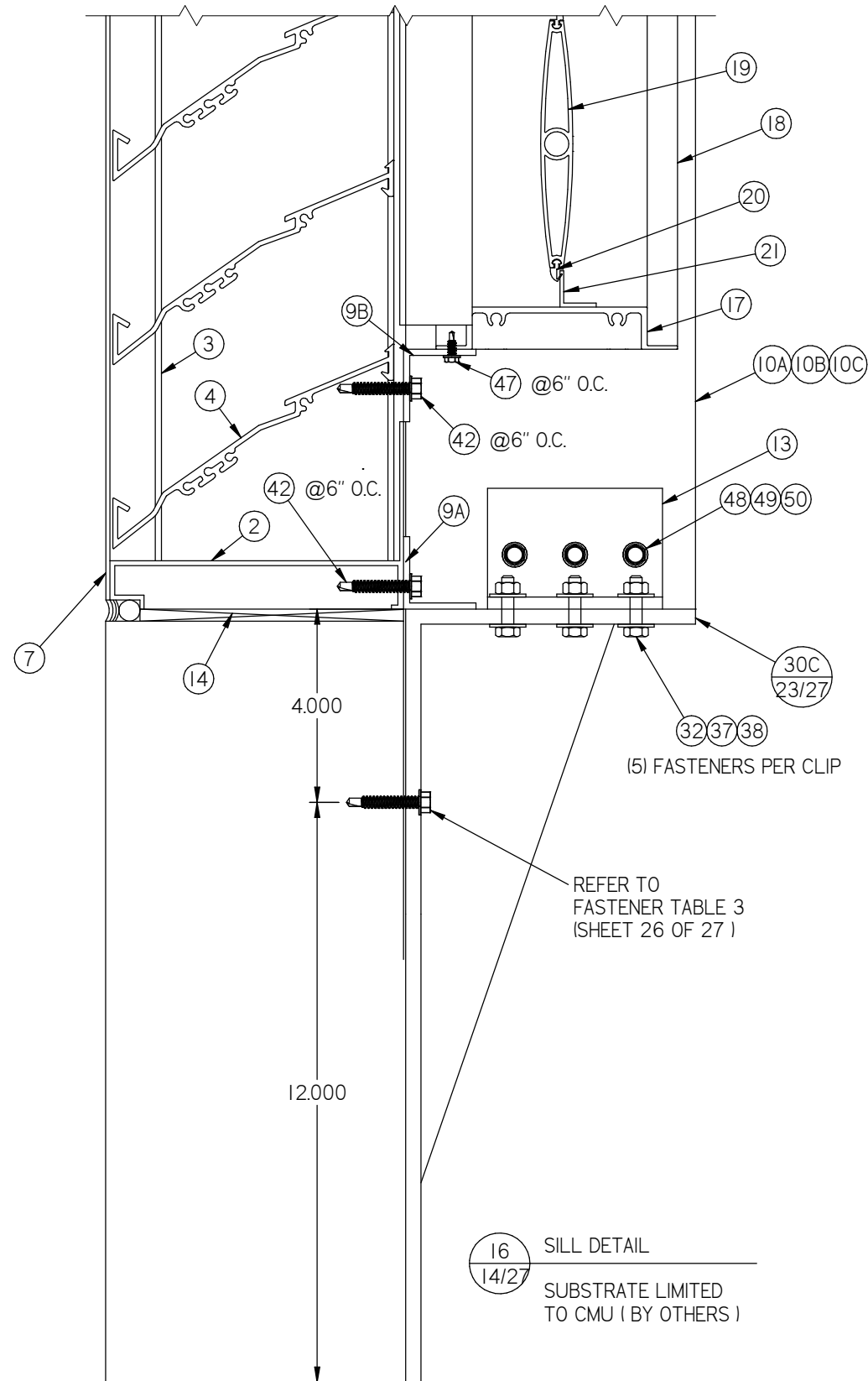
DWN BY: f cortinas	CHK BY: BDennis	SCALE: NTS	SHEET: 12 OF 27	REV B
DATE: 11/29/2021				
 Nailor Industries Inc. 4714 Winfield Road Houston, TX 77039 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086		TITLE: 1606DHPM LOUVER COUNTINOUS ANGLE MOUNT MULLION DETAIL		
		07/23/2024 COA: 9090		
RICE ENGINEERING 105 School Creek Trail Luxemburg, WI 54217 Phone: (920) 617-1042 Fax: (920) 617-1100 www.rice-inc.com Florida Firm No: F-0100005061 Certificate of Authorization: #9090 Wayne K. Helmila Registration No: 59092				



PRODUCT REVISED
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 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *[Signature]*
 Miami-Dade Product Control

 4714 Winfield Road Houston, TX 77039 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086	DWN BY: fcorinas DATE: 11/29/2021	CHK BY: BDennis SCALE: NTS
	TITLE: 1606DHPM LOUVER / DAMPER FLANGE FRAME W/SLEEVE MULLION ANGLE MOUNT HEAD & SILL DETAIL	
SHEET: 13 OF 27 DWG. NO. 1606DHPM		
07/23/2024 COA: 9090		
RICE ENGINEERING 105 School Creek Trail Luxemburg, WI 54217 Phone: (920) 617-1042 Fax: (920) 617-1100 www.rice-inc.com Florida Firm No: F-01000005061 Certificate of Authorization: #9090 Wayne K. Helmila Registration No: 59092		

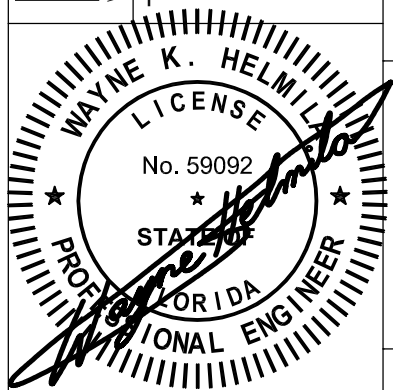
REVISIONS:
 REV B: UPDATED FASTENER TABLES



PRODUCT REVISED
 as complying with the Florida
 Building Code
 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *[Signature]*
 Miami-Dade Product Control

REVISIONS:
 REV B: ADDED 16" TALL
 MASONRY WALL BRACKET
 W/ UPDATED FASTENER TABLES

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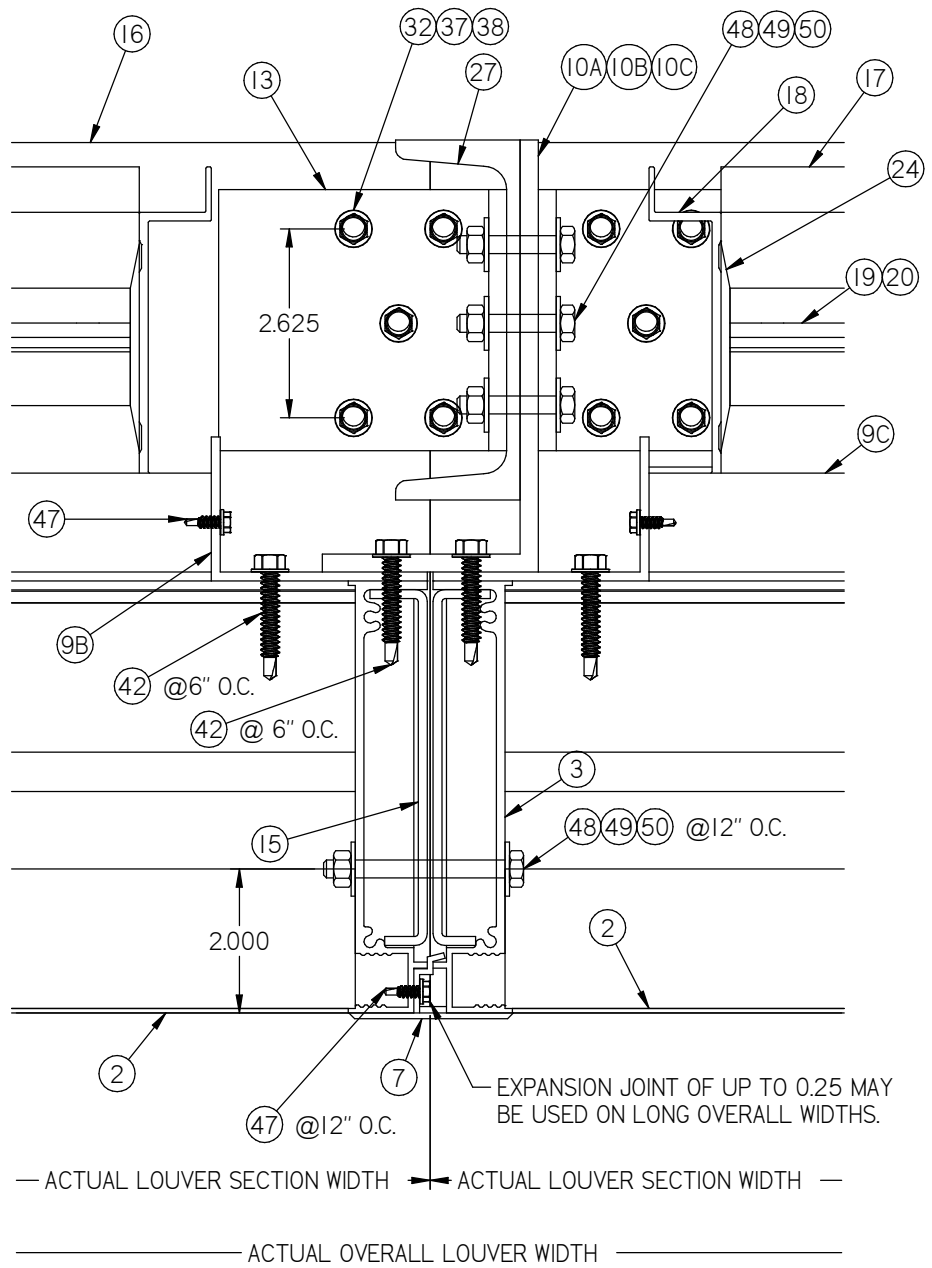
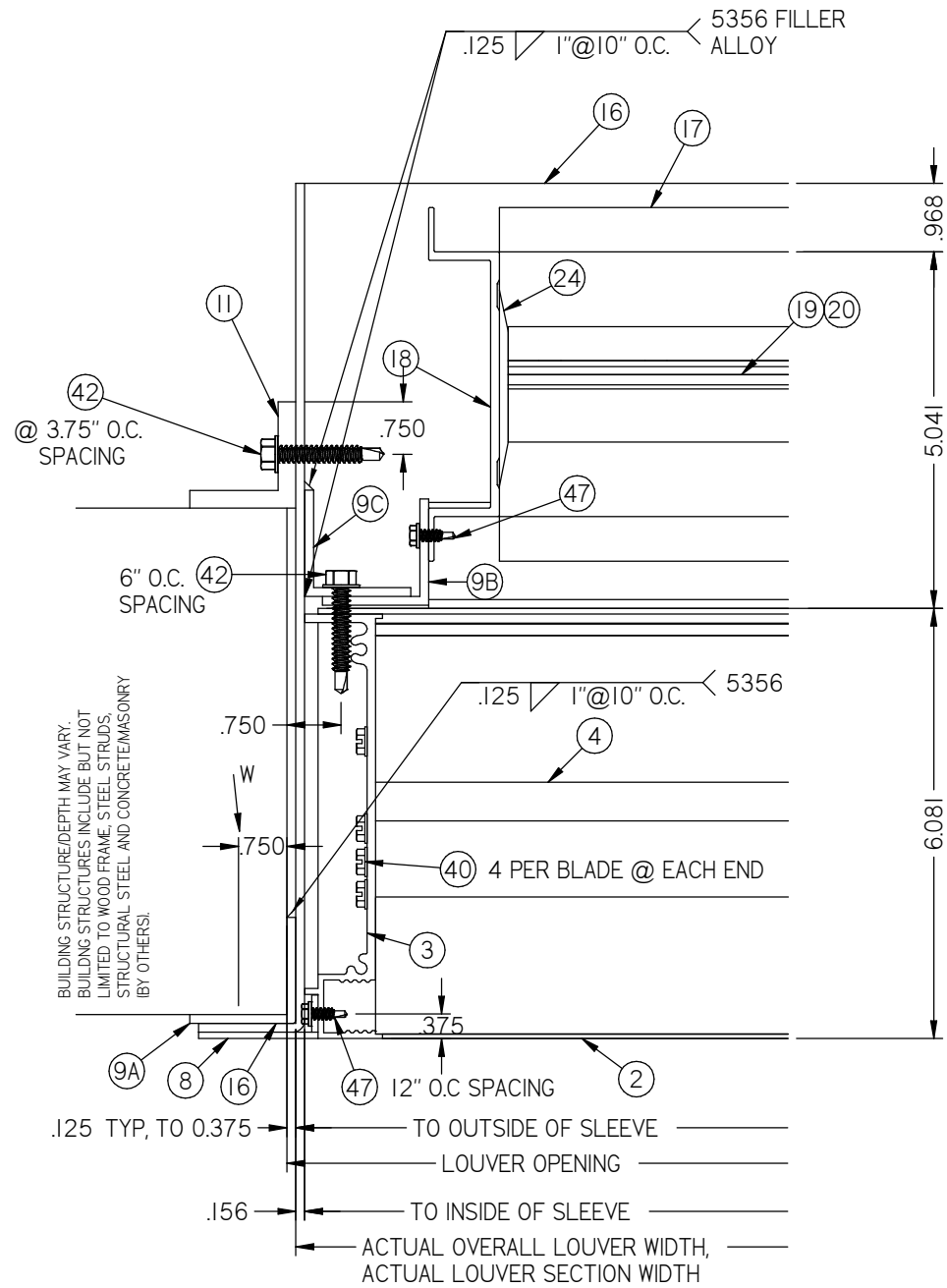
DWN BY: f cortinas
 CHK BY: BDennis
 DATE: 11/29/2021
 SCALE: NTS
 SHEET: 14 OF 27
 DWG. NO. 1606DHPM
 REV B

A B C D E F G H J K L

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PRODUCT REVISED
 as complying with the Florida
 Building Code
 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
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DWN BY: fcortinas
 DATE: 11/29/2021
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 SCALE: NTS
 SHEET: 15 OF 27
 DWG. NO. 1606DHPM
 REV B



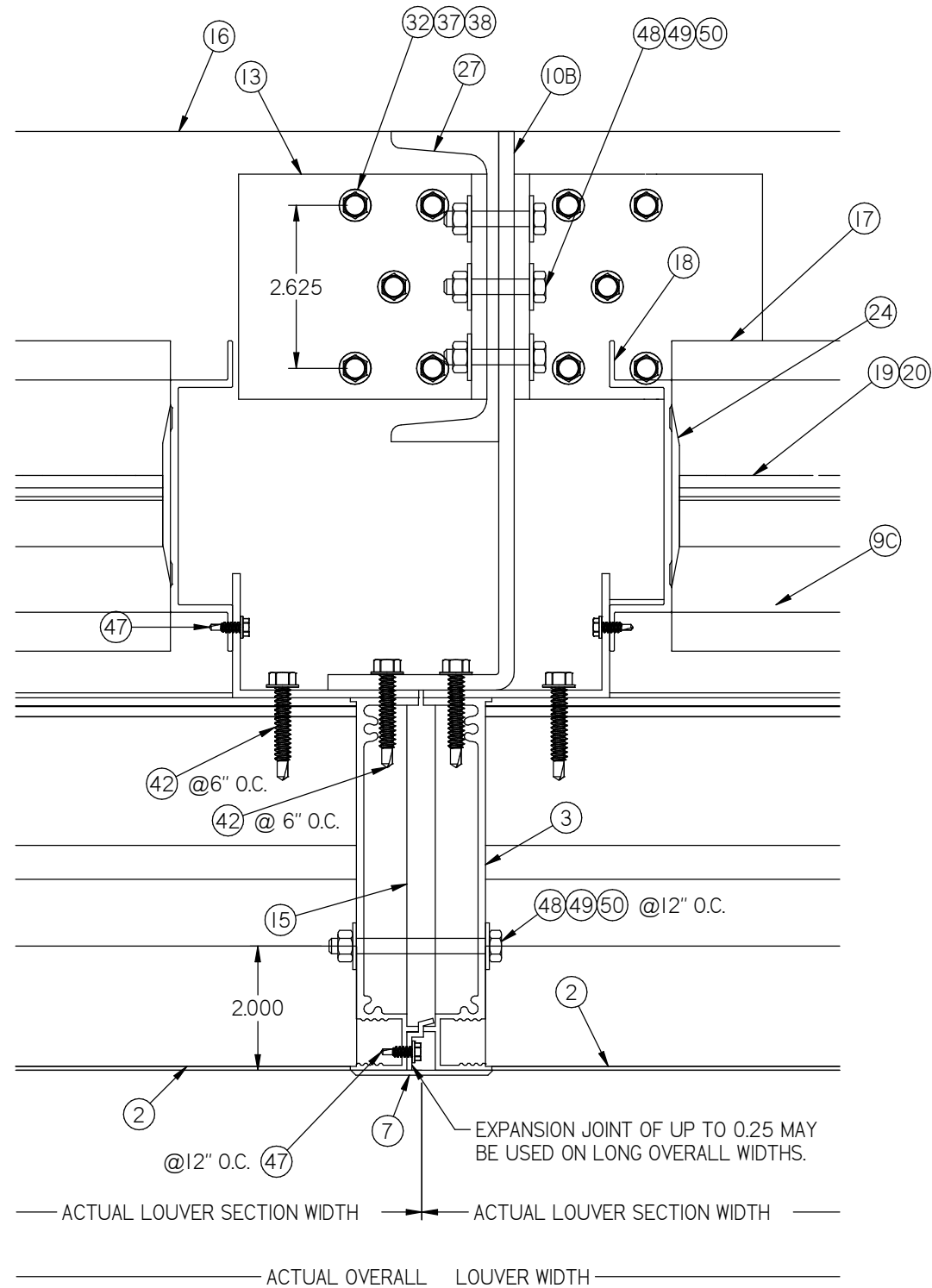
Nailor Industries Inc.
 4714 Winfield Road Houston, TX 77039
 www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086
 TITLE:
 1606DHPM LOUVER / DAMPER
 FLANGE FRAME SLEEVE MOUNT
 JAMB AND MULLION DETAIL



07/23/2024
 COA: 9090
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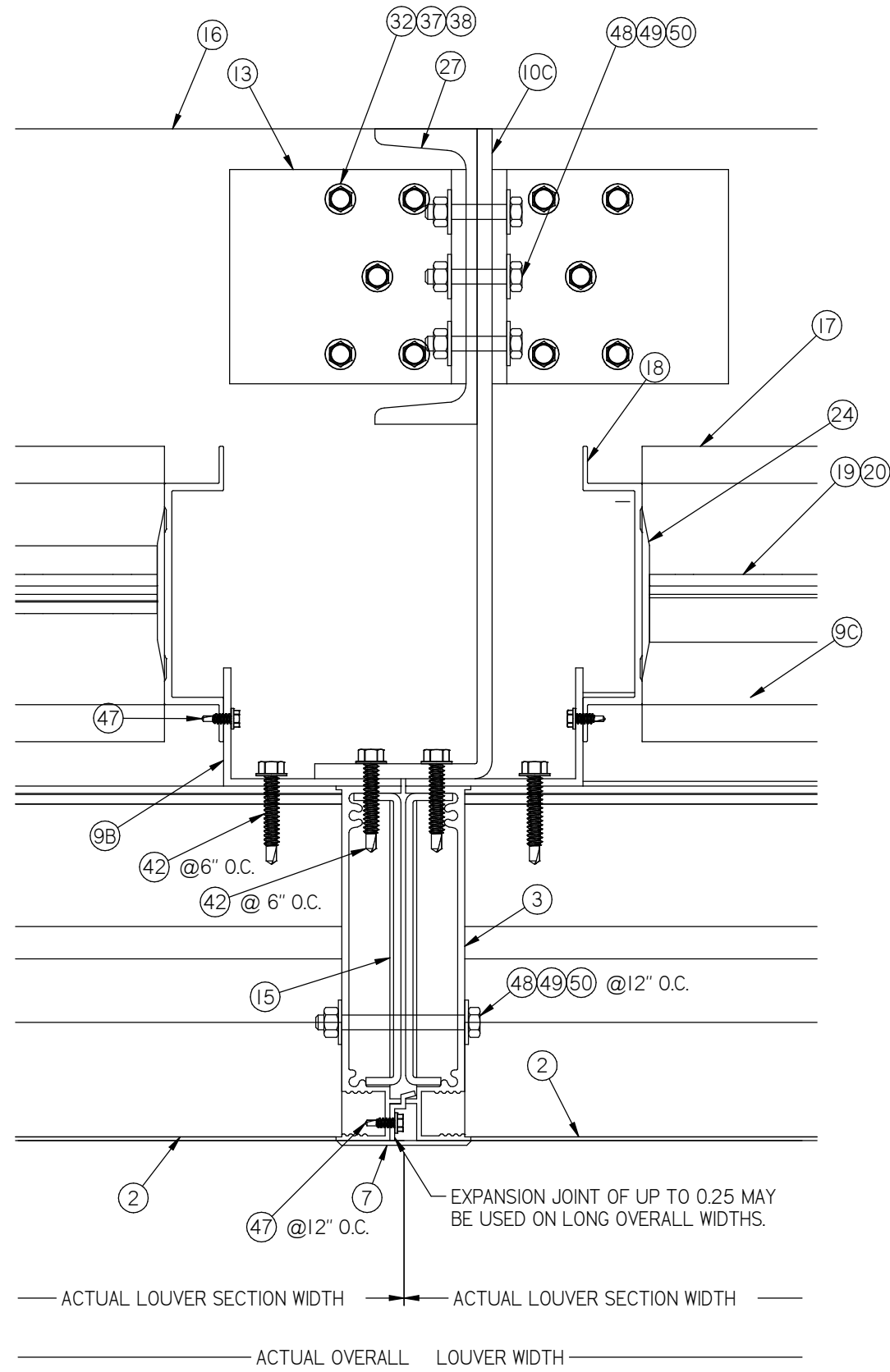
REVISIONS:
 REV B: UPDATED PAGE NUMBERS

A B C D E F G H J K L



18A
16/27
MULLION DETAIL
SLEEVE MOUNT
FOR 36" BLADE SLEEVE MOUNT
STEEL C6X8.2 & ALUM 9X3 X 1/4 "

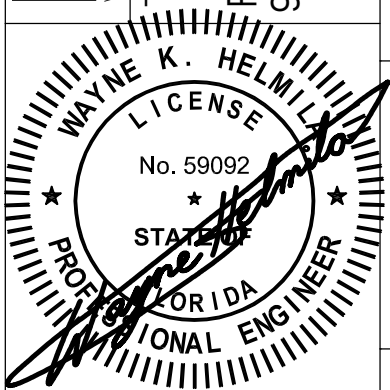
PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control



18B
16/27
MULLION DETAIL
SLEEVE MOUNT
FOR 36" BLADE SLEEVE MOUNT
STEEL C6X8.2 & ALUM 11X3 X 1/4 "

REVISIONS:
REV B: ADDED 9X3 ANGLE AND
11 X 3 ANGLE SECTION.
REV B: UPDATED PAGE NUMBER.

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Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

DWN BY: fcortinas
DATE: 11/29/2021
CHK BY: BDennis
SCALE: NTS

TITLE:
1606DHPM LOUVER / DAMPER
FLANGE FRAME SLEEVE MOUNT
9 X3 X 1/4 & 9 X 11 X 1/4 ANGLE
MULLION DETAIL

SHEET: 16 OF 27

DWG. NO. 1606DHPM
REV. B

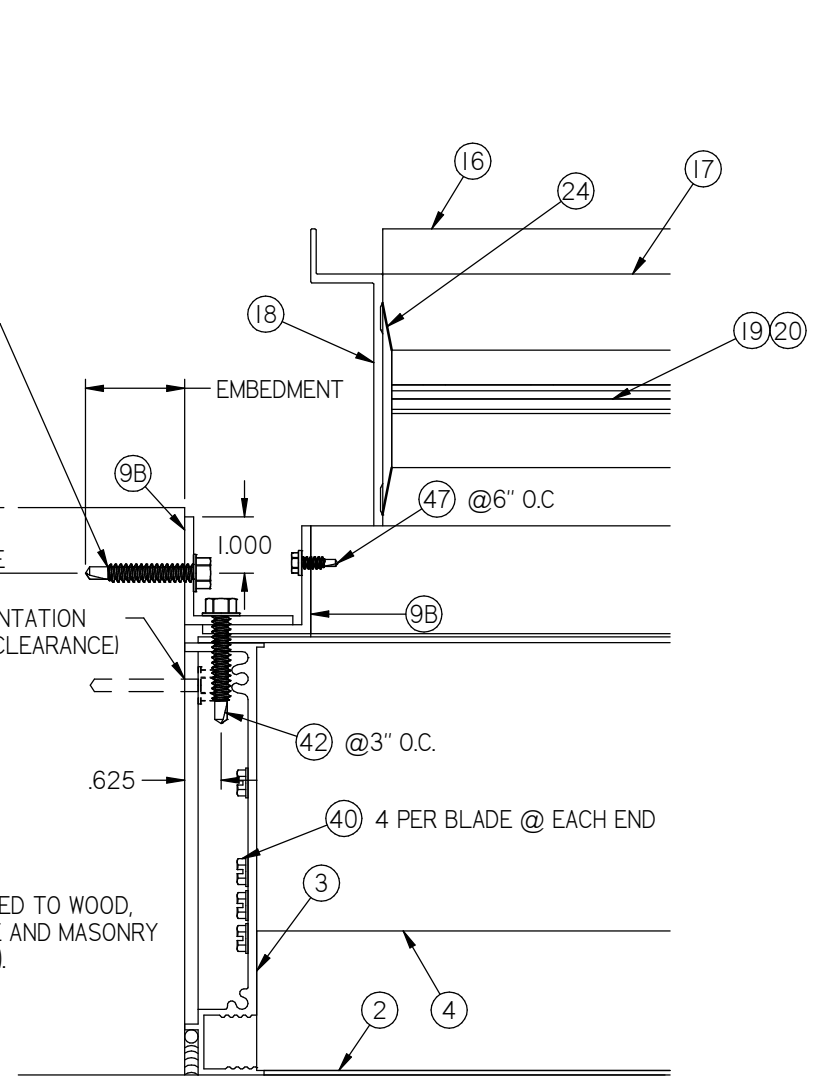
REFER TO FASTENER TABLE I (SHEET 26 OF 27)

EDGE DISTANCE
ALTERNATE ORIENTATION (CAUTION, BOLT CLEARANCE)

SUBSTRATE LIMITED TO WOOD, STEEL, CONCRETE AND MASONRY (CMU) (BY OTHERS).

.125 TYP, TO 0.375
ACTUAL OVERALL LOUVER WIDTH, ACTUAL LOUVER SECTION WIDTH
LOUVER OPENING

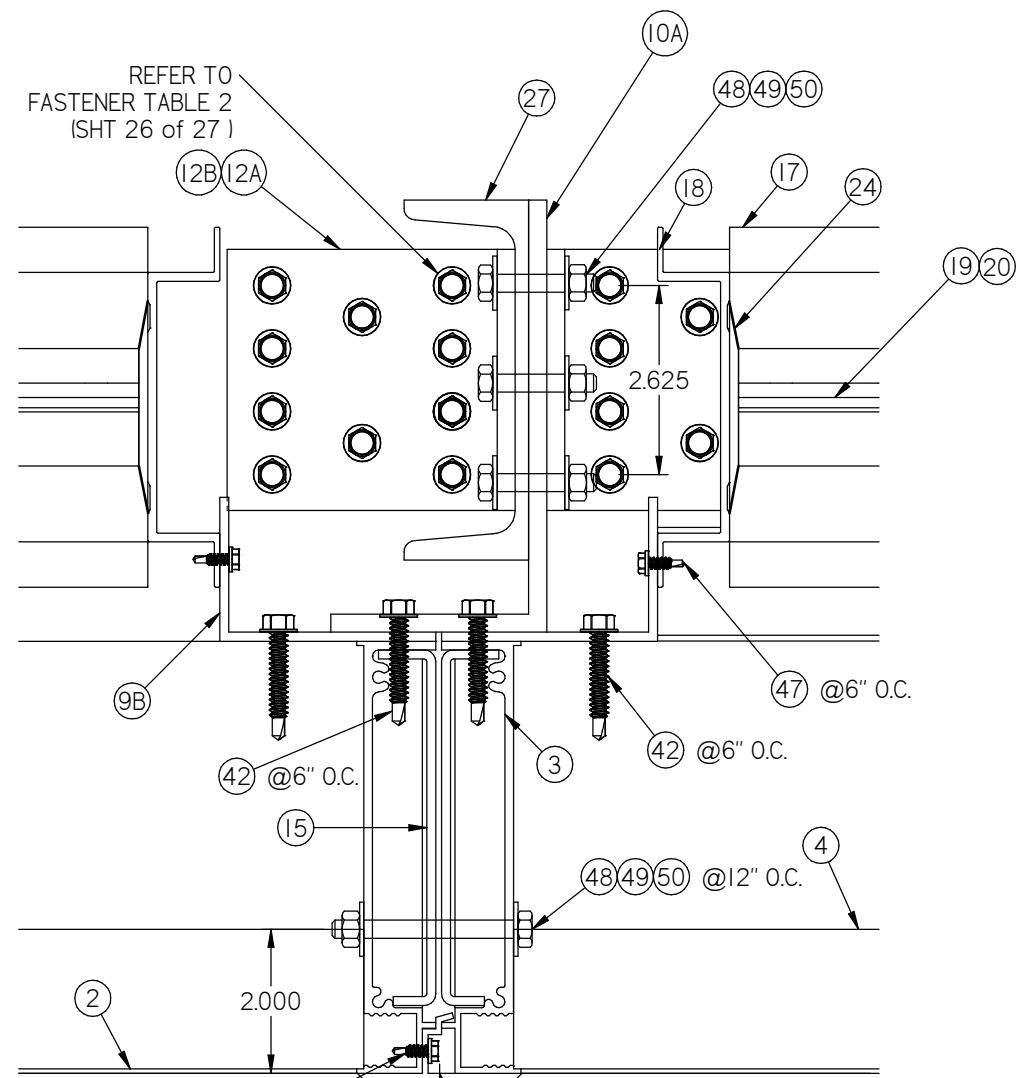
19 JAMB DETAIL
17/27



REFER TO FASTENER TABLE 2 (SHT 26 of 27)

EXPANSION JOINT OF UP TO 0.25 MAY BE USED ON LONG OVERALL WIDTHS.
ACTUAL LOUVER SECTION WIDTH
ACTUAL LOUVER SECTION WIDTH
ACTUAL OVERALL LOUVER WIDTH

20 MULLION DETAIL DIRECT MOUNT
17/27



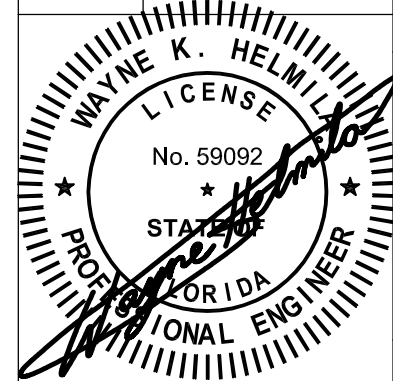
PRODUCT REVISED
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NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

REVISIONS:
REV B: UPDATED FASTENER TABLES AND PAGE NUMBERS.

DWN BY: fcortinas	CHK BY: BDennis
DATE: 11/29/2021	SCALE: NTS
SHEET: 17 OF 27	
DWG. NO.	REV B
1606DHPM	

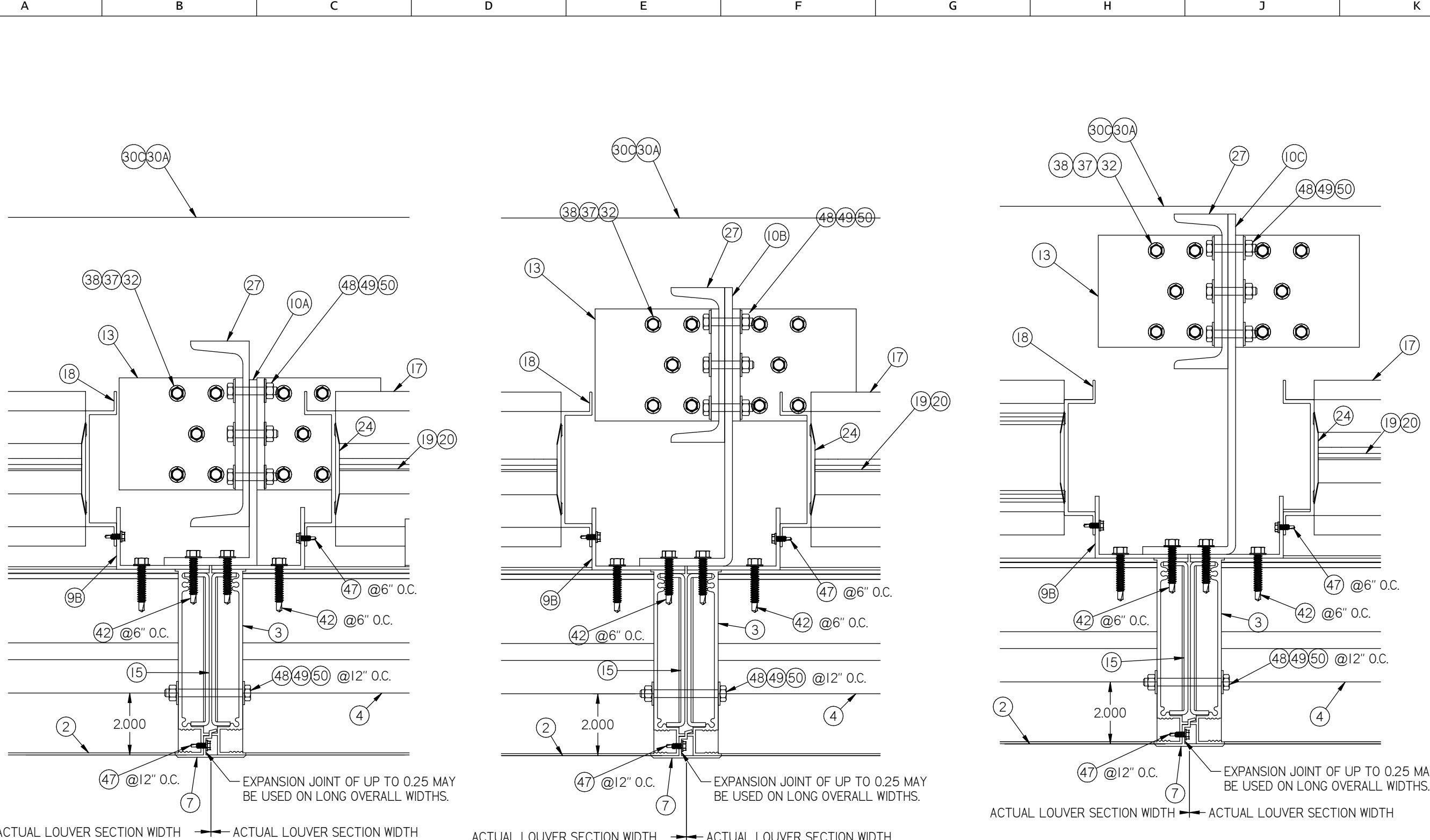
Nailor Industries Inc.
4714 Winfield Road Houston, TX 77039
www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086

TITLE:
1606DHPM LOUVER / DAMPER CONTINUOUS ANGLE MOUNT JAMB AND MULLION DETAIL



07/23/2024
COA: 9090

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105 School Creek Trail
Luxemburg, WI 54217
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Florida Firm No: F-01000005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092



20 A
18/27
MULLION DETAIL BACK OF WALL MOUNT FOR 36" BLADE SLEEVE MOUNT STEEL C6X8.2 & ALUM 6X3 X 1/4 "

20 B
18/27
MULLION DETAIL BACK OF WALL MOUNT FOR 36" BLADE SLEEVE MOUNT STEEL C6X8.2 & ALUM 9X3 X 1/4 "

20 C
18/27
MULLION DETAIL BACK OF WAL MOUNT FOR 36" BLADE SLEEVE MOUNT STEEL C6X8.2 & ALUM 11X3 X 1/4 "

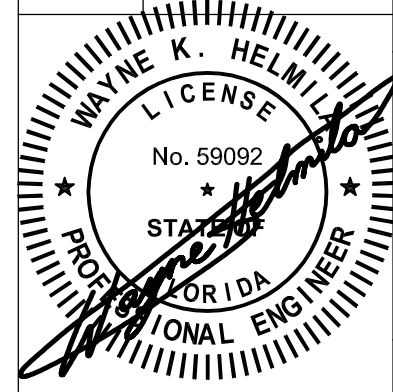
PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

REVISIONS:
REV B: ADDED 9X3 ANGLE AND 11 X 3 ANGLE SECTION.
REV B: UPDATED PAGE NUMBER.

DWN BY: f cortinas	CHK BY: BDennis
DATE: 11/29/2021	SCALE: NTS
SHEET: 18 OF 27	
DWG. NO. 1606DHPM	REV B

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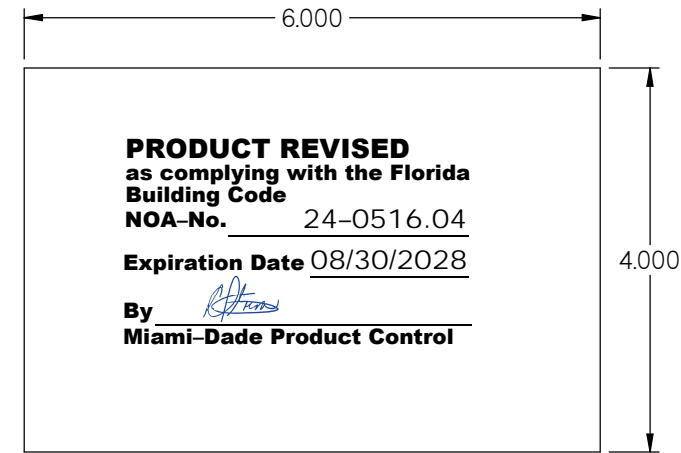
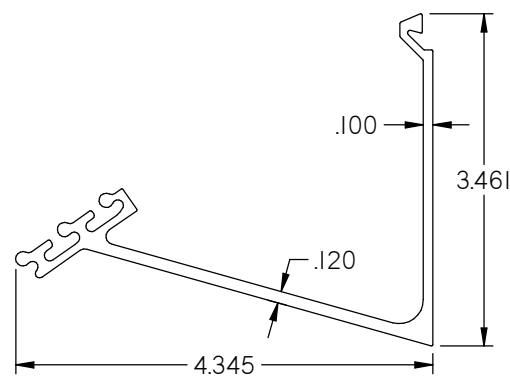
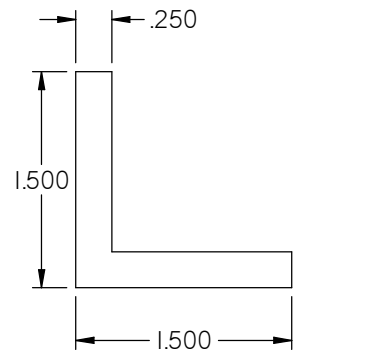
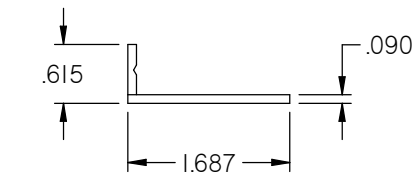
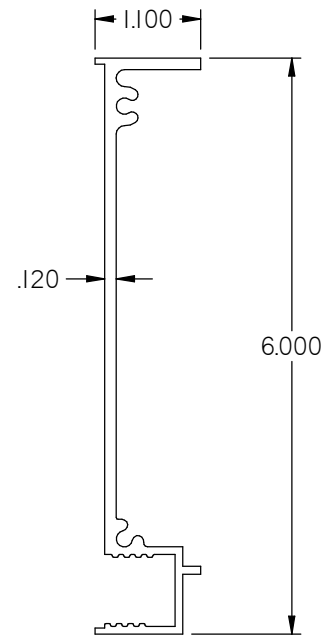
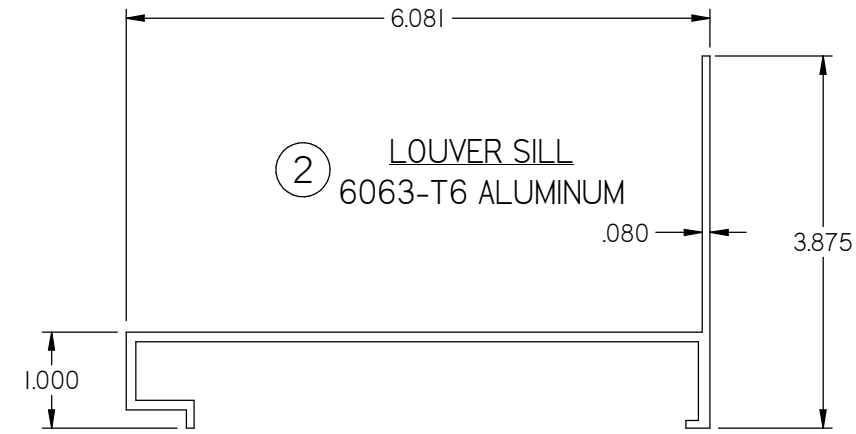
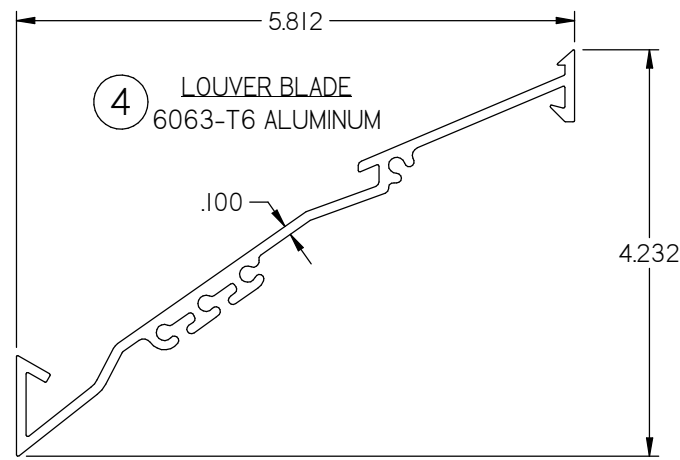
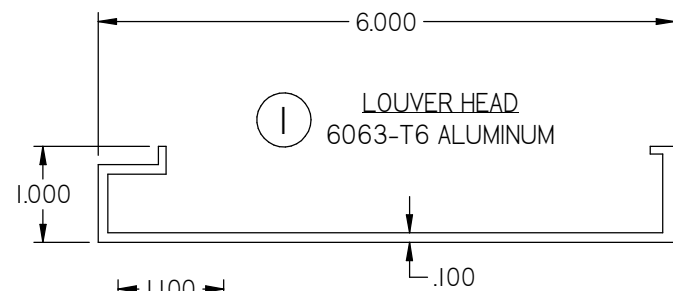
TITLE:
1606DHPM LOUVER / DAMPER CONTINUOUS ANGLE MOUNT 9 X3 X 1/4 & 9 X 11 X 1/4 ANGLE MULLION DETAIL



07/23/2024
COA: 9090

RICE ENGINEERING
105 School Creek Trail
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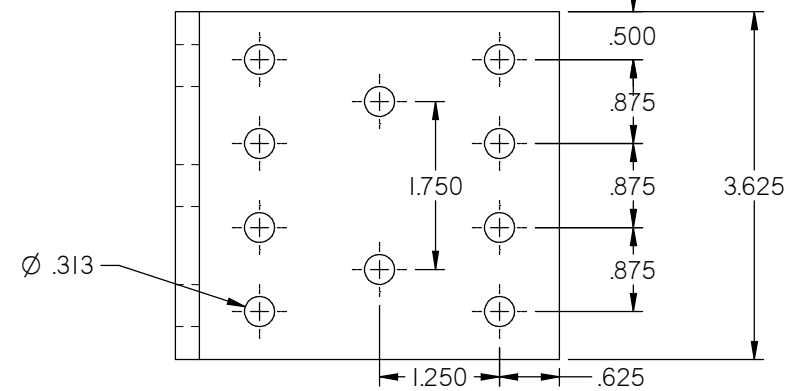
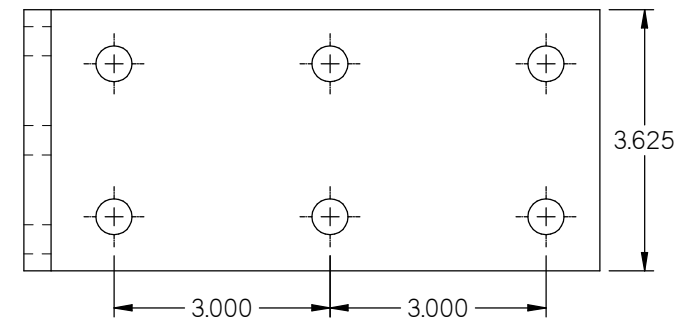
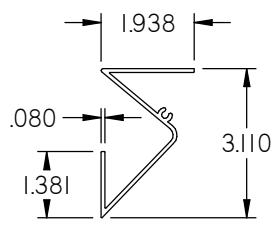
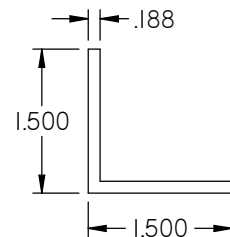
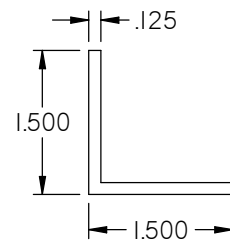
3 LOUVER JAMB
6063-T6 ALUMINUM

7 MULLION COVER
6063-T6 ALUMINUM

11 LOUVER SLEEVE MOUNT ANGLE
6063-T6 ALUMINUM

6 LOUVER BLADE BRACE
6063-T6 ALUMINUM

14 ALUMINUM SUPPORT SHIM
1/4" THICK
5052-H32 ALUMINUM



9A LOUVER SLEEVE ATTACHMENT ANGLE CONT.
6063-T6 ALUMINUM

9C LOUVER SLEEVE ATTACHMENT ANGLE CONT.
6061-T6 ALUMINUM

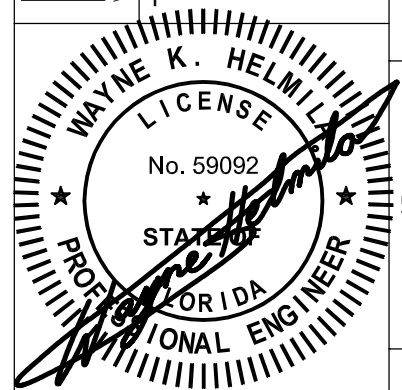
5 DRAIN HEAD
6063-T6 ALUMINUM

12B MULLION MOUNTING ANGLE
3.00 X 8.00 X 0.375 X 3.625 LONG
6061-T6 ALUM. ANGLE
FOR 1/2" DIA SS. LAG SCREW

12A MULLION MOUNTING ANGLE
4.00 X 2.50 X 0.25 X 3.625 LONG
6061-T6 ALUM. ANGLE

PRODUCT REVISED
as complying with the Florida
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Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

Nailor Industries Inc.
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07/23/2024
COA: 9090

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Registration No: 59092

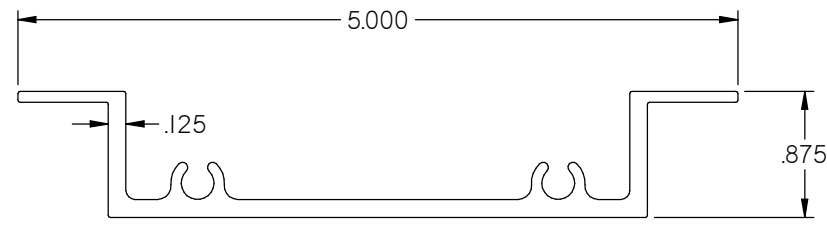
DWN BY: fcorinas
CHK BY: BDennis

DATE: 11/29/2021
SCALE: NTS

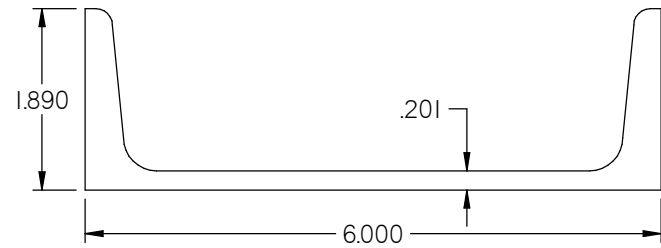
SHEET: 19 OF 27

DWG. NO. 1606DHPM
REV B

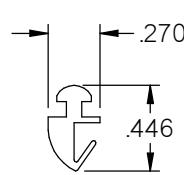
TITLE:
1606DHPM LOUVER,
W/ AND W/O DAMPER
SLEEVE/CONTINUOUS MOUNT
PART PROFILES



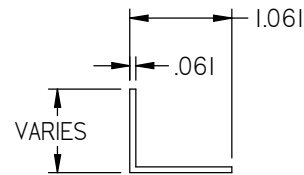
17 DAMPER HEAD/SILL
6063-T6 ALUMINUM



27 LOUVER BRACE
SUPPORT CHANNEL
C6X8.2 ASTM A36 STEEL CHANNEL



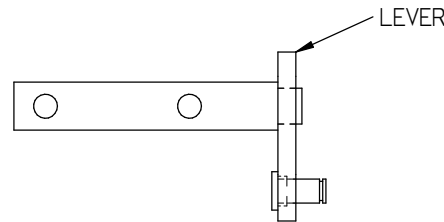
20 DAMPER BLADE SEAL
MATERIAL VARIES



21 DAMPER TOP/BOTTOM
CLOSER
ALUMINUM



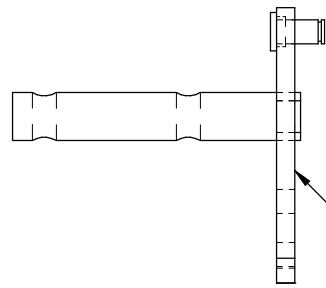
22 DAMPER BUSHING
MATERIAL VARIES



25 NON DRIVE DAMPER AXEL ASM
MATERIAL VARIES

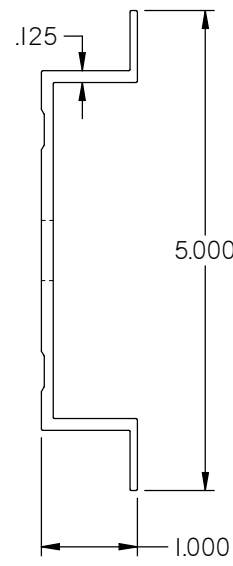


23 DAMPER LINKAGE BAR
MATERIAL VARIES

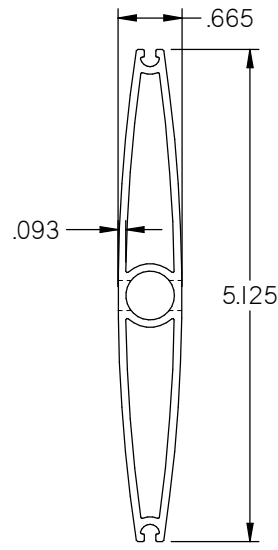


26 DRIVE SIDE DAMPER AXLE ASM
MATERIAL VARIES

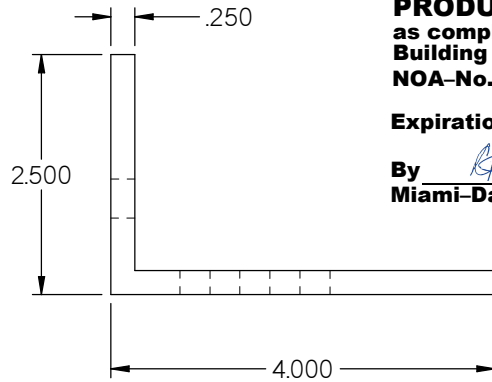
24 DAMPER JAMB SEAL
STAINLESS STEEL



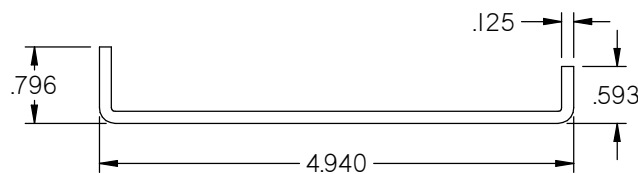
18 DAMPER JAMB
6063-T6 ALUMINUM



19 DAMPER BLADE
6063-T6 ALUMINUM



13 SLEEVE ATTACHMENT ANGLE
4.00X 2.50 X 0.25 X 3.625 LONG
6061-T6 ALUM. ANGLE

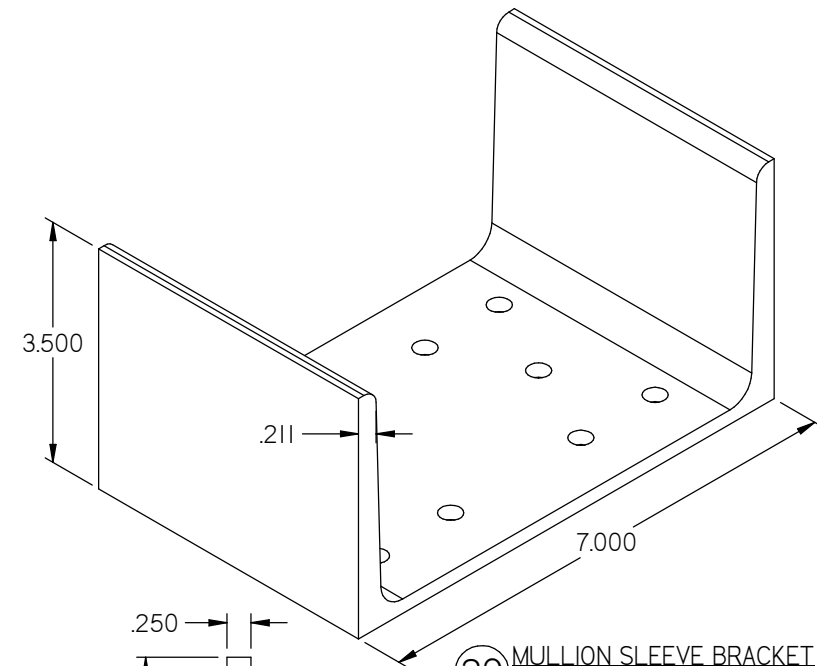


15 MULLION STIFFNER ALUM.
6063-T6 ALUMINUM

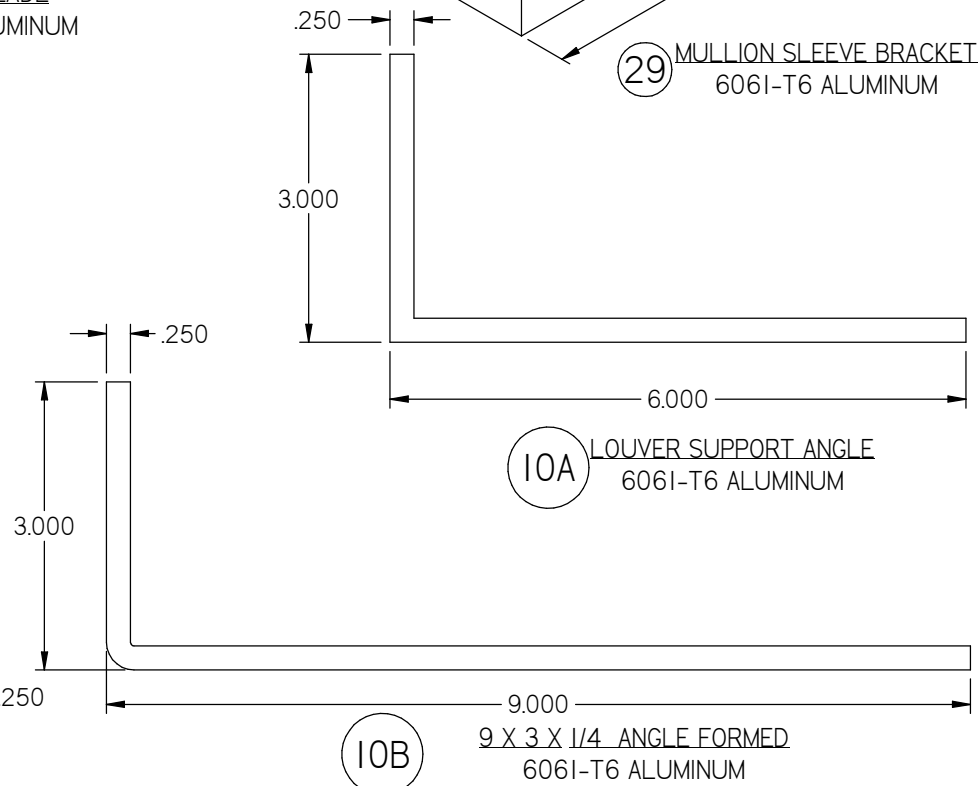


16 SLEEVE FORMED ALUM.
5052-H32 ALUMINUM

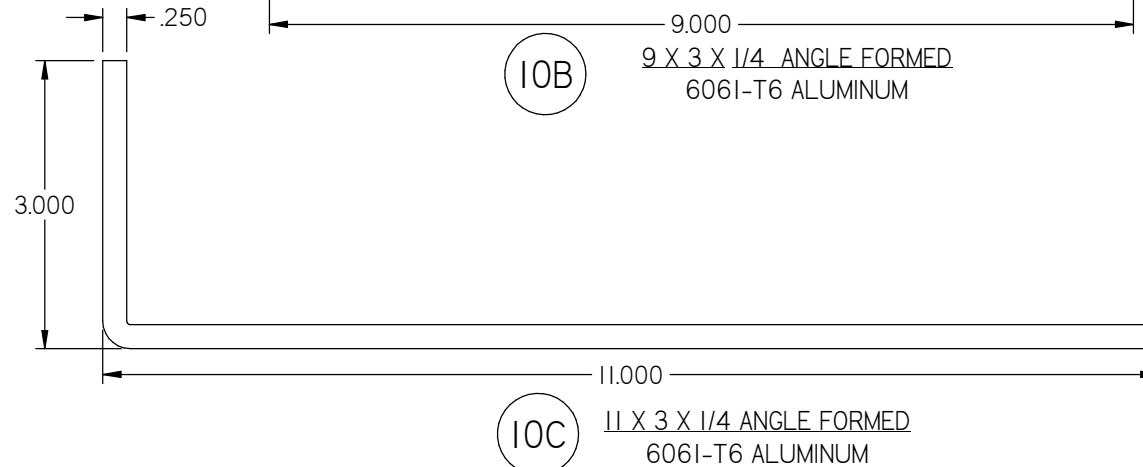
PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control



29 MULLION SLEEVE BRACKET
6061-T6 ALUMINUM



10A LOUVER SUPPORT ANGLE
6061-T6 ALUMINUM



10B 9 X 3 X 1/4 ANGLE FORMED
6061-T6 ALUMINUM

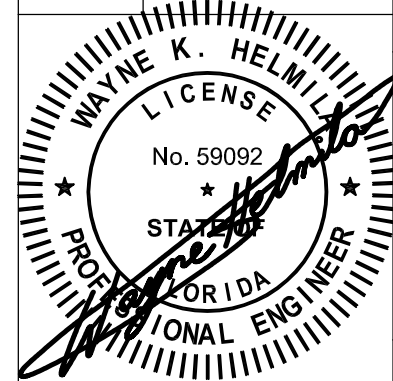
10C 11 X 3 X 1/4 ANGLE FORMED
6061-T6 ALUMINUM

REVISIONS:
REV B: ADDED 10A, 9X3 X .25 ANGLE
10B, 11X3X.25 ANGLE.

CHK BY: BDennis	SCALE: NTS	SHEET: 20 OF 27	REV B
DWN BY: fcorinas	DATE: 11/29/2021		

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

TITLE:
1606DHPM LOUVER
W/ AND W/O DAMPER
SLEEVE/CONTINUOUS MOUNT
PART PROFILES CONT.



07/23/2024
COA: 9090

RICE
ENGINEERING
105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
Fax: (920) 617-1100
www.rice-inc.com

Florida Firm No: F-0100005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

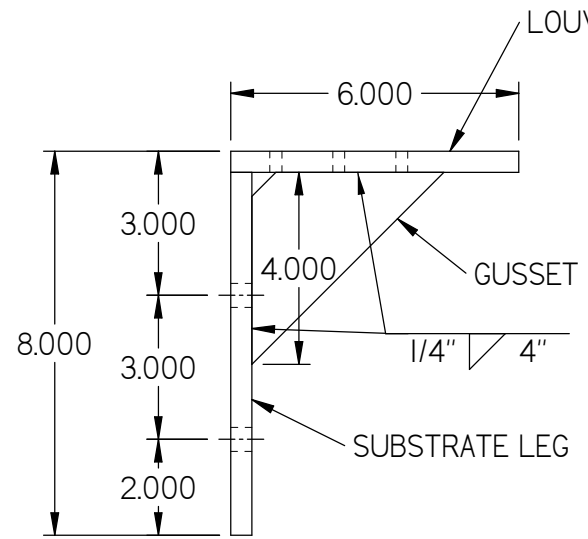
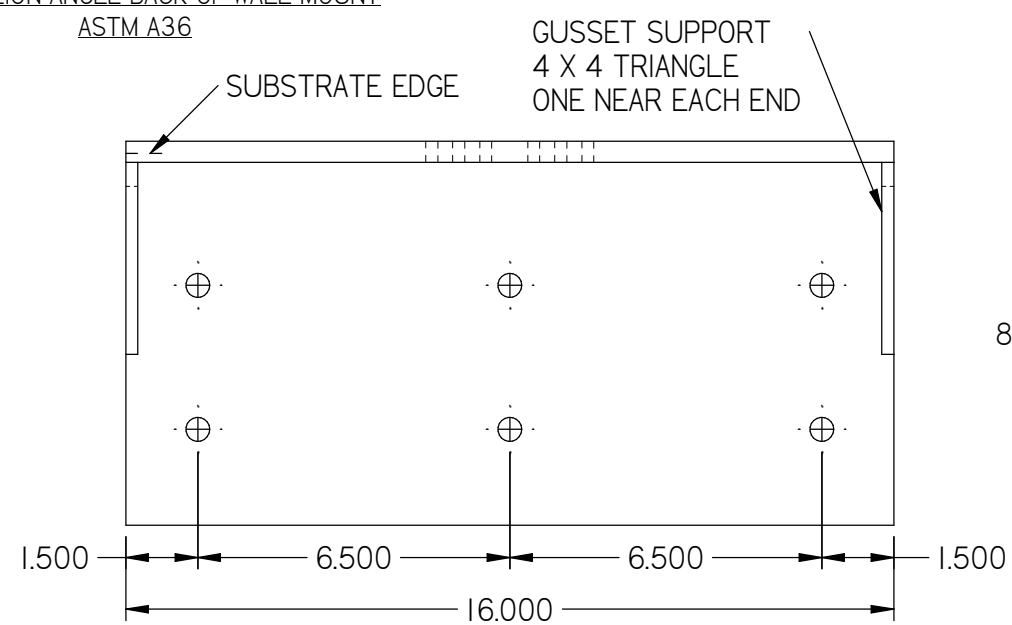
30A

MULLION MOUNTING BRACKET
FOR MULLION ANGLE BACK OF WALL MOUNT
ASTM A36

L8X6X7/16 AT 16" LONG
STEEL (A36)

1/2" DIA S.S. 316 HILTI KWIK HUS-EZ

USE (6) 1/2" DIA S.S. 316 HILTI KWIK HUS-EZ
3" EMBEDMENT
6.5" SPACING (HORIZ) / 3" SPACING (VERT.)
3" MIN. EDGE DISTANCE
4" MIN END DISTANCE
SPACING AS SHOWN
ASSUME FC= 4000 PSI CRACKED CONCRETE

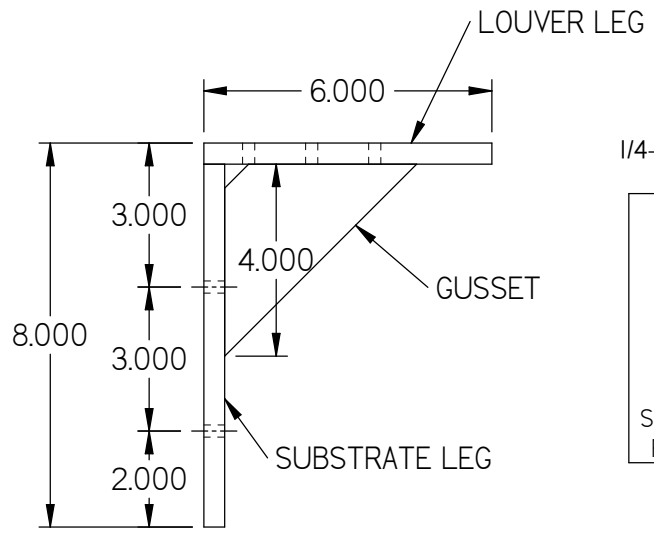
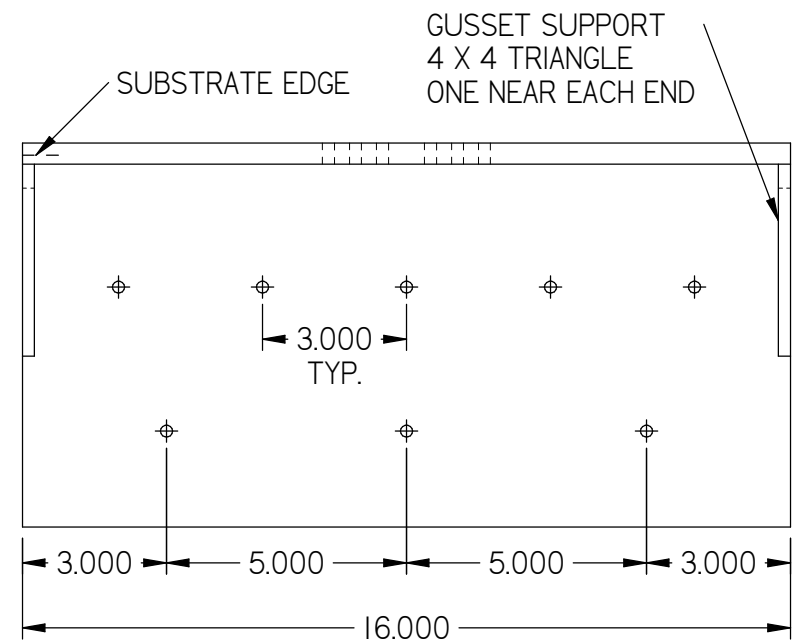


THESE MOUNTING BRACKETS ARE
FOR DETAILS 12B-12/27,
20A-18/27, 20B-18/27, AND
20C-18/27
(CONCRETE AND WOOD)

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

1/4" DIA LAG SCREWS ANCHORS:

USE (8) 1/4" DIA. X 6" LONG
STANDARD HEX S.S. SERIES 300
LAG SCREW
3-9/32" FULL THREAD ENGAGEMENT
1-1/2" MIN. EDGE/END DISTANCE
SPACING AS SHOWN
ASSUME: SPRUCE/PINE/FIR, SG=0.42

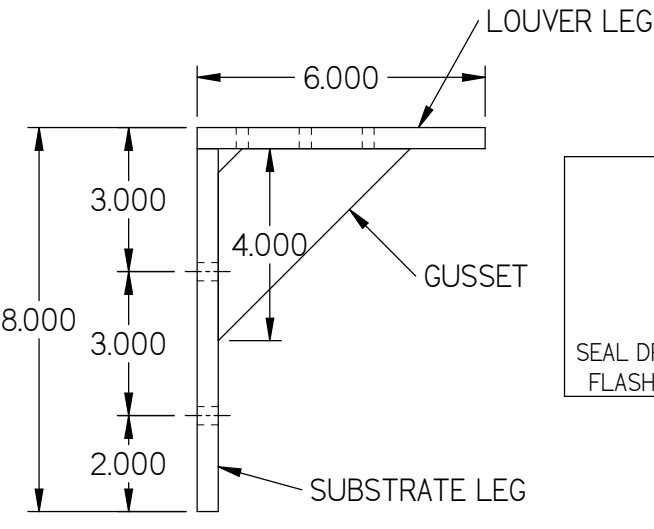
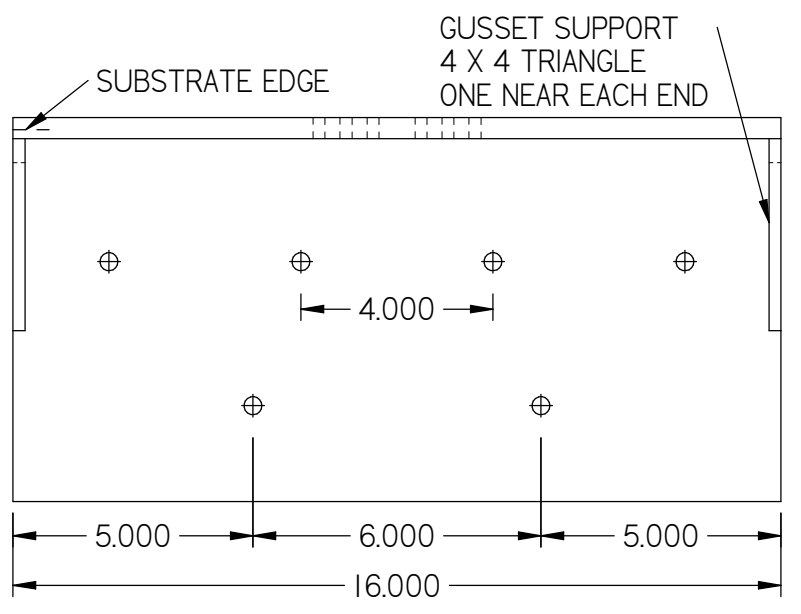


1/4-20 DIA. S.S. ELCO BI-FLEX AND DRIL-FLEX ANCHORS:

USE (8) 1/4" DIA S.S. SERIES 300
ELCO BI-FLEX OR
ELCO DRIL-FLEX FASTENERS
FULL THREAD ENGAGEMENT
1" MIN. EDGE/END DISTANCE
SPACING AS SHOWN
ASSUME: 1/4" STEEL (A-36)
SEAL DRIL-FLEX FASTENERS WITH LIQUID PROSOCO
FLASHING IF EXPOSED TO EXTERIOR CONDITIONS.

3/8" DIA. LAG SCREWS ANCHORS:

USE (6) 3/8" DIA X 6" LONG
STANDARD HEX S.S. SERIES 300
LAG SCREW
3-9/32" FULL THREAD ENGAGEMENT
1-1/2" MIN. EDGE/END DISTANCE
SPACING AS SHOWN
ASSUME: SPRUCE / PINE / FIR, SG= 0.42



5/16-24 DIA. DRIL-FLEX ANCHORS
USE (6) 5/16" DIA.
S.S. ELCO DRIL-FLEX FASTENERS
FULL THREAD ENGAGEMENT
1" MIN. EDGE/END DISTANCE
SPACING AS SHOWN
ASSUME: 1/4" STEEL (A36)
SEAL DRIL-FLEX FASTENERS WITH LIQUID PROSOCO
FLASHING IF EXPOSED TO EXTERIOR CONDITIONS

REVISIONS:
REV B: UPDATED 16" MULLION BRACKET

CHK BY: BDennis
DWN BY: fcorinas
DATE: 11/29/2021
SCALE: NTS
SHEET: 21 OF 27
DWG. NO. 1606DHPM
REV B

Nailor Industries Inc.
4714 Winfield Road Houston, TX 77039
www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086
TITLE: 16" MULLION ANGLES
BACK OF THE WALL MOUNT

WAYNE K. HELMILA
LICENSE
No. 59092
STATE OF FLORIDA
PROFESSIONAL ENGINEER

07/23/2024
COA: 9090
RICE
ENGINEERING
105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
Fax: (920) 617-1100
www.rice-inc.com
Florida Firm No: F-0100005061
Certificate of Authorization: #9092
Wayne K. Helmila
Registration No: 59092

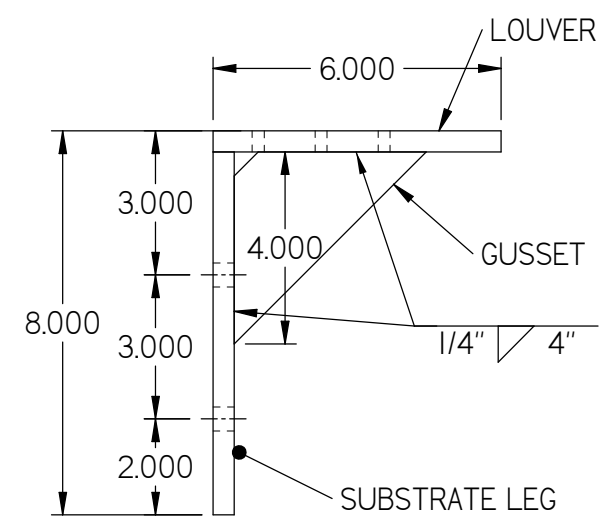
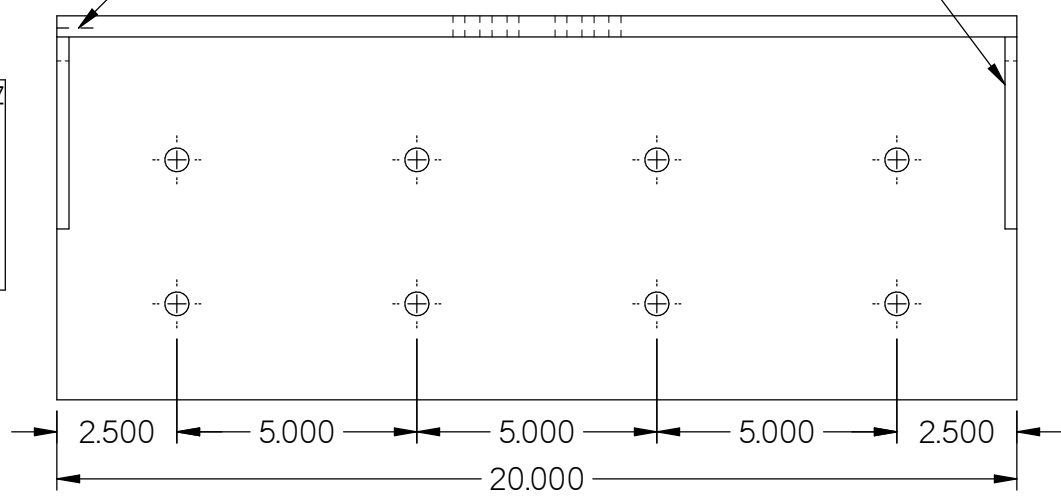
30B

MULLION MOUNTING BRACKET FOR MULLION ANGLE BACK OF WALL MOUNT ASTM A36

GUSSET SUPPORT 4 X 4 TRIANGLE ONE NEAR EACH END

L8X6X7/16 AT 20" LONG STEEL (A36)

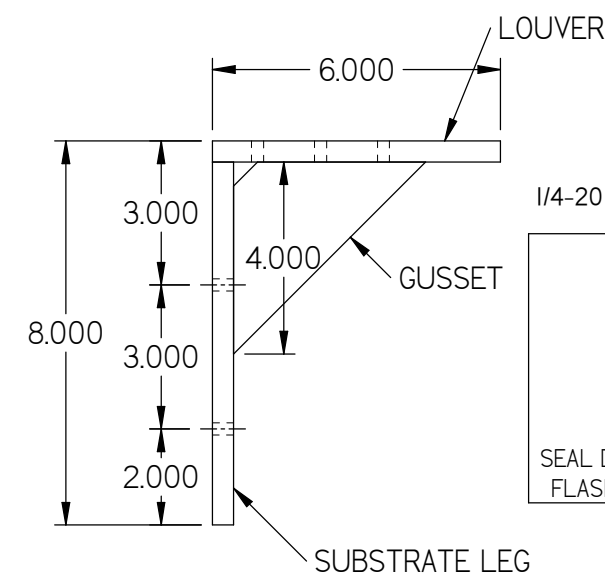
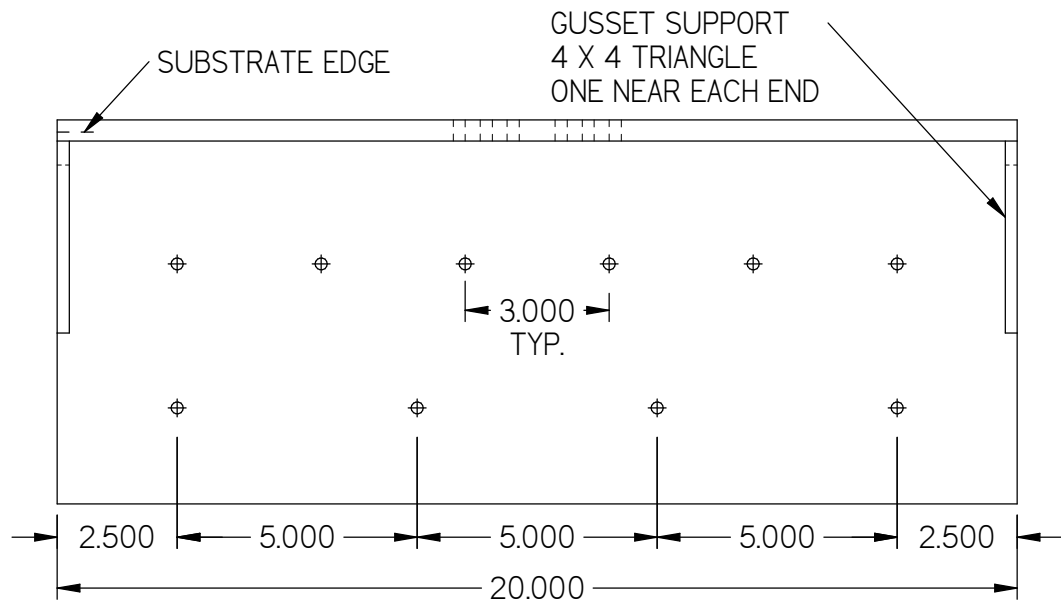
1/2" DIA S.S. SERIES 300 HILTI KWIK BOLT EZ
USE (8) 1/2" DIA S.S. SERIES 300 HILTI KWIK BOLT-EZ 4-1/4" EMBEDMENT 5" SPACING (HORIZ.) / 3" SPACING (VERT.) 3" MIN. EDGE DISTANCE 4" MIN END DISTANCE SPACING AS SHOWN ASSUME FC= 4000 PSI CRACKED CONCRETE



THESE MOUNTING BRACKETS ARE FOR DETAILS 10A-10/27 (CONCRETE AND WOOD)

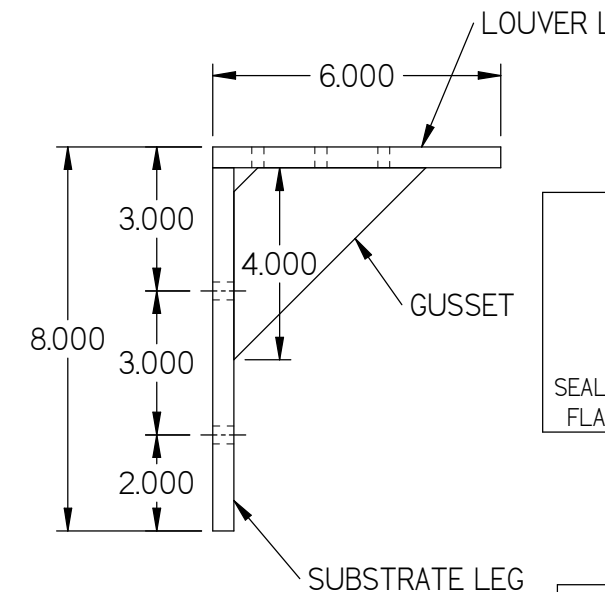
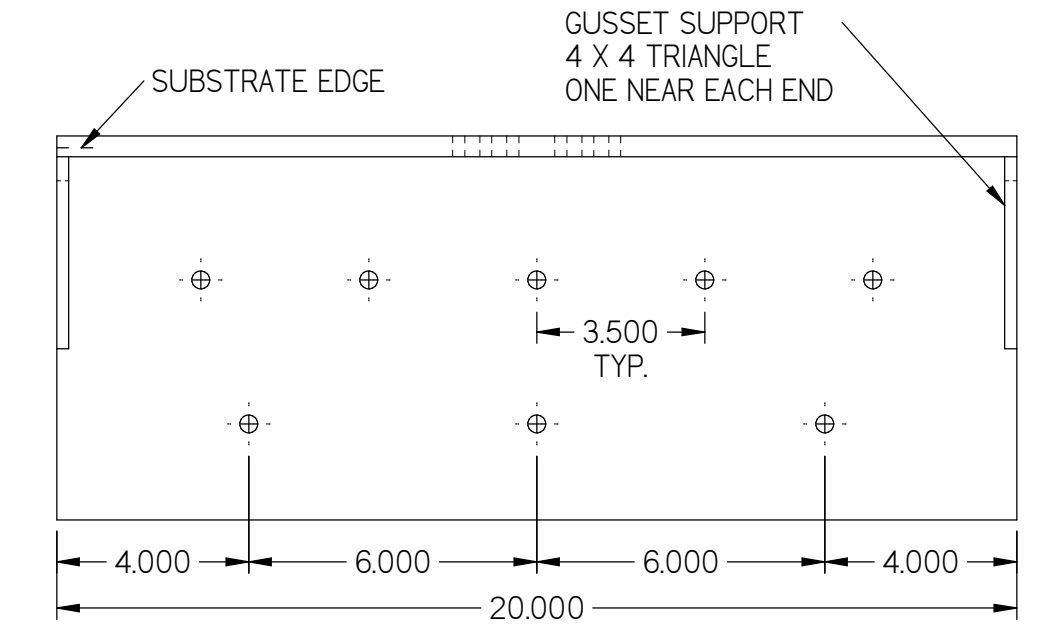
PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

1/4" DIA LAG SCREWS ANCHORS
USE (10) 1/4" DIA. X 6" LONG STANDARD HEX S.S. SERIES 300 LAG SCREW 3-11/32" FULL THREAD ENGAGEMENT 1" MIN. EDGE/END DISTANCE SPACING AS SHOWN ASSUME: SPRUCE/PINE/FIR, SG=0.42



1/4-20 DIA. S.S. ELCO BI-FLEX AND DRIL-FLEX ANCHOR
USE (10) 1/4" DIA. S.S. SERIES 300 ELCO BI-FLEX OR ELCO DRIL-FLEX FASTENERS FULL THREAD ENGAGEMENT 1" MIN. EDGE/END DISTANCE SPACING AS SHOWN ASSUME: 1/4" STEEL (A-36) SEAL DRIL-FLEX FASTENERS WITH LIQUID PROSOCO FLASHING IF EXPOSED TO EXTERIOR CONDITIONS.

3/8" DIA. LAG SCREWS ANCHORS
USE (8) 3/8" DIA. X 6" LONG STANDARD HEX S.S. SERIES 300 LAG SCREW 3-9/32" FULL THREAD ENGAGEMENT 1-1/2" MIN. EDGE/END DISTANCE SPACING AS SHOWN ASSUME: SPRUCE / PINE / FIR, SG= 0.42



5/16-24 DIA. DRIL-FLEX ANCHOR
USE (8) 5/16" DIA. ELCO DRIL-FLEX FASTENERS FULL THREAD ENGAGEMENT 1" MIN. EDGE/END DISTANCE SPACING AS SHOWN ASSUME: 1/4" STEEL (A36) SEAL DRIL-FLEX FASTENERS WITH LIQUID PROSOCO FLASHING IF EXPOSED TO EXTERIOR CONDITIONS

REVISIONS:
REV B: ADDED 20" MULLION BRACKET

CHK BY: BDennis
DWN BY: fcortinas
DATE: 11/29/2021
SCALE: NTS
SHEET: 22 OF 27
DWG. NO. 1606DHPM
REV B

Nailor Industries Inc.
4714 Winfield Road Houston, TX 77039
www.nailor.com TEL: 281-590-1172 FAX: 281-590-3086
TITLE: 20" MULLION ANGLES BACK OF THE WALL MOUNT

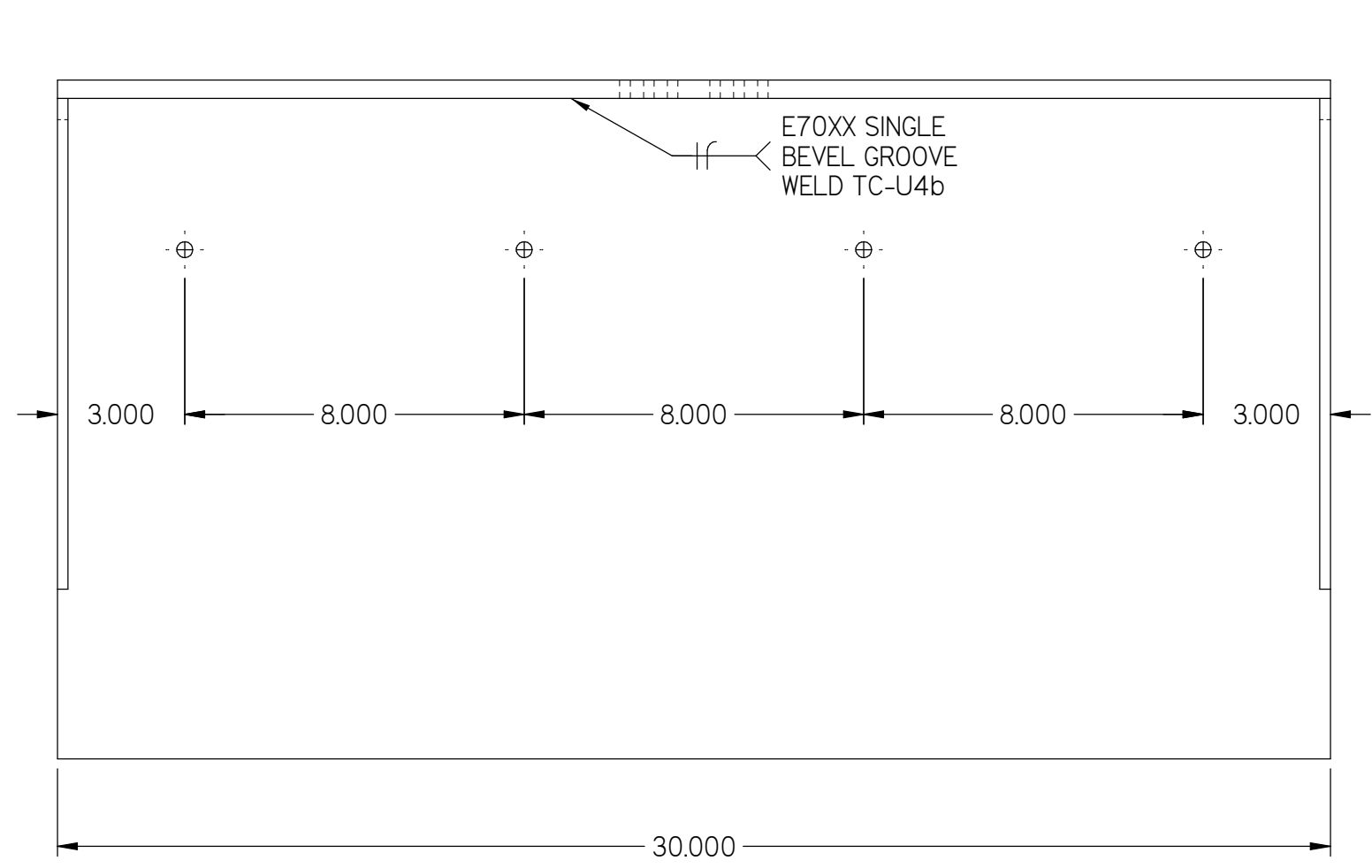
WAYNE K. HELMILA
LICENSE No. 59092
STATE OF FLORIDA
PROFESSIONAL ENGINEER
07/23/2024
COA: 9090

RICE ENGINEERING
105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
Fax: (920) 617-1100
www.rice-inc.com
Florida Firm No: F-0100005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

30C

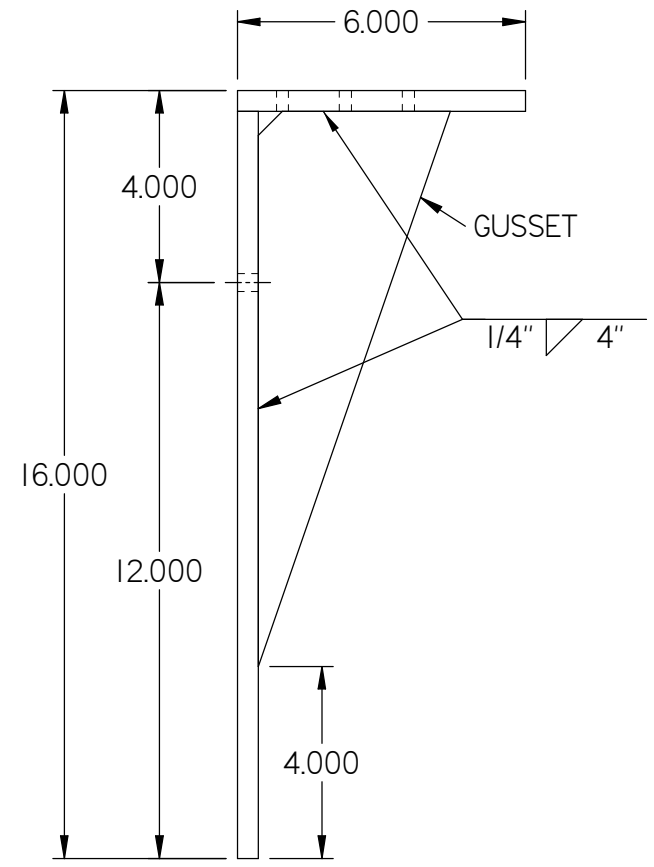
MULLION MOUNTING BRACKET
FOR MULLION ANGLE BACK OF WALL MOUNT
ASTM A36

USE 16" X 6" X 1/2" STEEL PLATE ANGLE
AT 30" LONG AS SHOWN (A36 OR BETTER)
WELD 1/2" STEEL PLATE ANGLE TOGETHER WITH FULL
PENETRATION BEVEL GROOVE WELD.
(2) 1/4" X 4" GUSSET PLATES AT 12" LONG WELDED TO
EACH END
WELD 1/4" GUSSET PLATES WITH FILLET WELDS.



E70XX SINGLE
BEVEL GROOVE
WELD TC-U4b

USE (4) 1/2" DIA. HILTI KWIK HUZ-EZ SCREW ANCHORS
4-1/4" EMBEDMENT
8" SPACING AS SHOWN. LOCATE (I) FASTENER IN THE CENTER OF EACH
MASONRY CELL. BRACKET CAN BE INSTALL 4" LEFT OR RIGHT OF MULLION
CENTERLINE SO ANCHORS CAN BE INSTALLED AT CENTER OF MASONRY CELLS.
4" MIN. EDGE DISTANCE
4" MIN END DISTANCE
ASSUME GROUT FILLED MASONRY FM= 2000 PSI (DESIGNED BY OTHERS)
SEAL FASTENERS WITH LIQUID PROSOCO FLASHING AT EXTERIOR CONDITIONS.



THESE MOUNTING BRACKETS ARE
FOR DETAILS 10A-10/27,
12B-12/27, 20A-18/27I,
20B-18/27, AND 20C-18/27
(GROUT FILLED CMU)

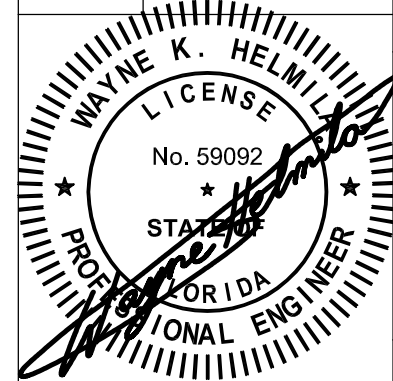
PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028
By *[Signature]*
Miami-Dade Product Control

REVISIONS:
REV B: ADDEDD 30" MULLION BRACKET

DWN BY: f cortinas	CHK BY: BDennis
DATE: 11/29/2021	SCALE: NTS
SHEET: 23 OF 27	
DWG. NO.	REV B
1606DHPM	

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

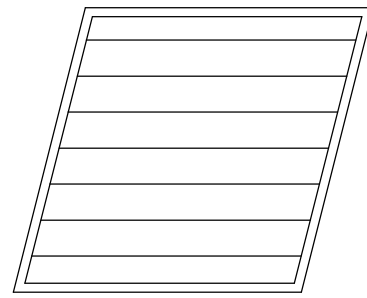
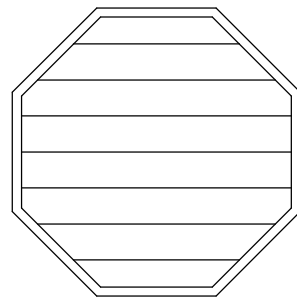
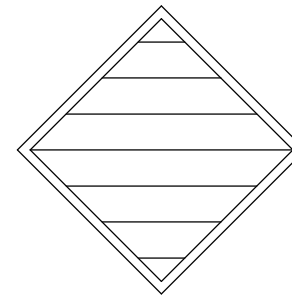
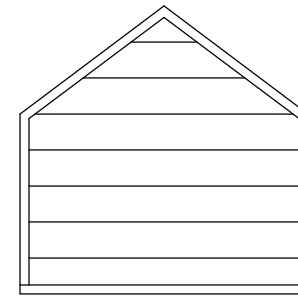
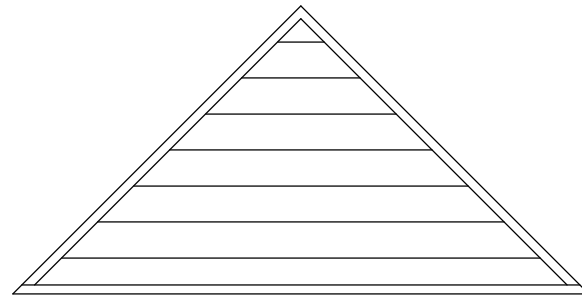
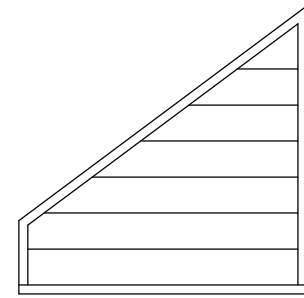
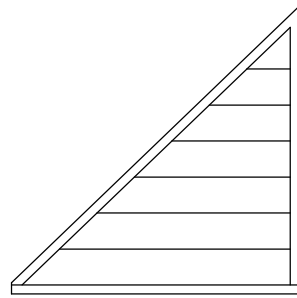
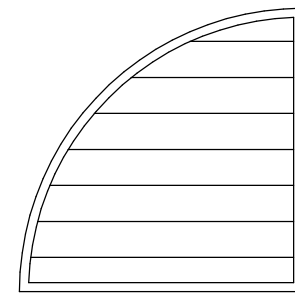
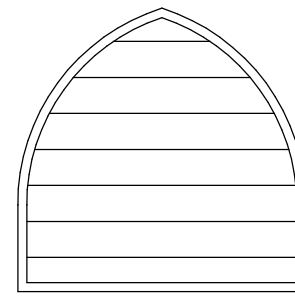
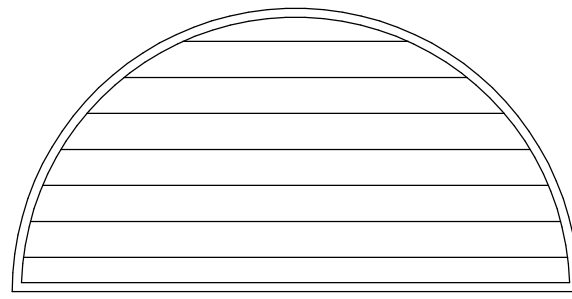
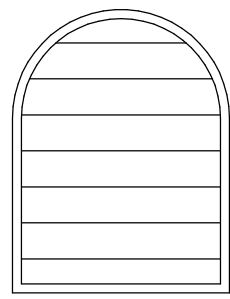
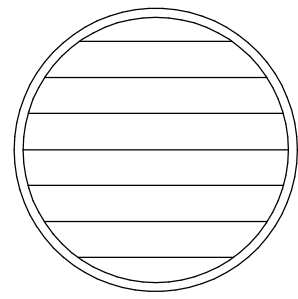
TITLE:
30" CMU MULLION ANGLES
BACK OF THE WALL MOUNT



07/23/2024
COA: 9090

RICE
ENGINEERING
105 School Creek Trail
Luxemburg, WI 54217
Phone: (920) 617-1042
Fax: (920) 617-1100
www.rice-inc.com

Florida Firm No: F-0100005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092



NOTES:

1. OTHER SHAPES MAY APPLY PROVIDING THEY ARE SIMILAR TO THOSE SHOWN AND HAVE CORNER CONSTRUCTION AS DESCRIBED ON ALL SHEETS.

2. ALL SHAPED LOUVER PANELS ARE RESTRICTED TO THE SAME PANEL WIDTH AND PRESSURE AS THE RECTANGULAR LOUVER PANELS AND BE STACKED VERTICALLY AND HORIZONTALLY THE SAME AS THE RECTANGULAR PANELS.

3. WHEN SECTION EXCEED 36" IN LENGTH BLADE SUPPORT ANGLES AND BRACKETS ARE REQUIRED.

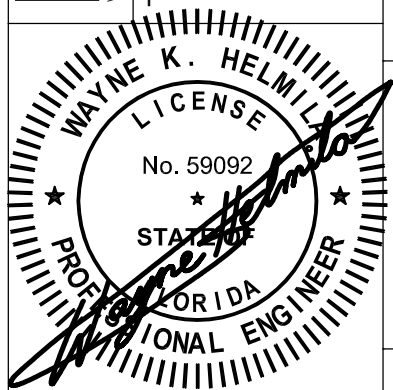
4. USE CONTIUOUS ANGLES TO ANCHOR OTHER LOUVER SHAPES TO BUILDING SUBSTRATE. SEE ANCHOR SCHEDULE FOR SUBSTRATE-SPECIFIC LIMITATIONS.

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 24-0516.04

Expiration Date 08/30/2028

By 
Miami-Dade Product Control

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



07/23/2024
COA: 9090

RICE
ENGINEERING

105 School Creek Trail
Luxemburg, WI 54217
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Fax: (920) 617-1100
www.rice-inc.com

Florida Firm No: F-0100005061
Certificate of Authorization: #9090
Wayne K. Helmila
Registration No: 59092

DWN BY: f cortinas CHK BY: BDennis

DATE: 11/29/2021 SCALE: NTS

SHEET: 24 OF 27

DWG. NO.

1606DHPM

REV

B

TITLE:
**1606DHPM LOUVER
W/ AND W/O DAMPER
AVAILABLE SHAPES**

BILL OF MATERIALS				
ITEM	DESCRIPTION	MATERIAL	NOTES	
1	1	C6-139 LOUVER HEAD	6063-T6 ALUMINIUM	
1	2	C6-140 LOUVER SILL	6063-T6 ALUMINIUM	
1	3	C6-141 LOUVER JAMB	6063-T6 ALUMINIUM	
1	4	C6-142 LOUVER BLADE	6063-T6 ALUMINIUM	
1	5	C6-168 LOUVER DRAIN	6063-T6 ALUMINIUM	
1	6	C6-143 LOUVER BLADE BRACE	6063-T6 ALUMINIUM	
1	7	C6-104 MULLION COVER	6063-T6 ALUMINIUM	
1	8	C6-096 LOUVER FLANGE	6063-T6 ALUMINIUM	
2	9A	C6-176 1 1/2 X 1 1/2 X 1/8 ANGLE CONT.	6063-T6 ALUMINIUM USED AT HEAD/SILL/JAMB, OF LOUVER AND SLEEVE	
2	9B	C6-160 2 X 2 X 1/8 ANGLE CONT.	6063-T6 ALUMINIUM USE AS ATTACHMENT ANGLE	
2	9C	1 1/2 X 1 1/2 X 3/16 ANGLE CONT.	6063-T6 ALUMINIUM USE AS ATTACHMENT ANGLE	
2	10A	C6-161B 6 X 3 X 1/4 ANGLE	6061-T6 ALUMINIUM USED AT BLADE SUPPORT AND JAMB SUPPORT	
2	10B	9 X 3 X 1/4 ANGLE	6061-T6 ALUMINIUM FORMED ALUM ANGLE	
2	10C	11 X 3 X 1/4 ANGLE	6061-T6 ALUMINIUM FORMED ALUM ANGLE	
2	11	1 1/2 X 1 1/2 X 1/4 ANGLE	6063-T6 ALUMINIUM USED AT HEAD/SILL/JAMB OF SLEEVE	
2	12A	4 X 2.50 X 1/4 X 3 5/8 LONG ANGLE	6063-T6 ALUMINIUM USED AT HEAD/ SILL OF MULLION ATTACHMENT	
2	12B	8 X 3 X 3-5/8 LONG ANGLE	6063-T6 ALUMINIUM USED AT HEAD/ SILL OF MULLION ATTACHMENT W/ 1/2" LAG	
3	13	4 X 2.50 X 1/4 X 3 5/8 LONG ANGLE	6061-T6 ALUMINIUM USED AT HEAD/ SILL OF LOUVER SLEEVE ATTACHMENT	
3	14	6 X 4 X 1/4 ALUMINIUM SUPPORT SHIM	6063-T6 ALUMINIUM USED AT SILL FOR SUPPORT ANGLE	
3	15	MULLION STIFFENER ALUM	6063-T6 ALUMINIUM 1/8 FORMED ALUM CHANNEL USED AT MULLION	
3	16	FORMED SLEEVE 1/8 THK	5052-H32 ALUMINIUM 1/8 FORMED SLEEVE - DEPTH VARIES	
3	17	B2-610 DAMPER HEAD/SILL	6063-T6 ALUMINIUM	
3	18	B2-609 DAMPER JAMB	6063-T6 ALUMINIUM	
3	19	B2-527 DAMPER BLADE	6063-T6 ALUMINIUM	
3	20	DAMPER BLADE SEAL	SILICONE / RUBBER TYPE MATERIAL VARIES	
4	21	DAMPER TOP/BOTTOM CLOSURE	ALUMINIUM	
4	22	DAMPER BUSHING	BRONZE / SS	
4	23	DAMPER LINKAGE BAR	SS	
4	24	DAMPER JAMB SEAL	SS	
4	25	NON DRIVE DAMPER AXEL ASM	SS	
4	26	DRIVE SIDE DAMPER AXEL ASM	SS	
4	27	C6 X 8.2 STEEL CHANNEL	ASTM A36 USED AT BLADE BLACE & MULLION	
5	29	7" X 21" ALUMINIUM SLEEVE BRACKET	6061-T6 MULLION SLEEVE BRACKET	
5	30	MULLION MOUNTING ANGLE BRACKET	ASTM A36 MULLION MOUNTING	
5	31	C6-180	SCREW,MTL,10-24X1,HEX	
5	32	C6-181	1/4 NYLON INSERT LOCKNUT	
5	33	C6-182	1/4-20x2-1/2 HEX CAP SCREW	
5	34	C6-183	WASHER,BONDED,10X1/2,SS	300 SERIES, SS COND. CW FY = 65 KSI
5	35	C6-184	SCREW,MTL,12-24-1-1/4,HEX	300 SERIES, SS COND. CW FY = 65 KSI
5	36	C6-185	1/4-20x1 HEX SCREW	300 SERIES, SS COND. CW FY = 65 KSI
5	37	C6-186	1/4 COMM'L FLAT WASHER	300 SERIES, SS COND. CW FY = 65 KSI
6	38	C6-187	1/4-20x1 HEX CAP SCREW 18-8 SS	300 SERIES, SS COND. CW FY = 65 KSI
6	39	C6-188	SCREW, MTL,HEX, 8-32 X 1,	300 SERIES, SS COND. CW FY = 65 KSI
6	40	C6-189	SCREW, METAL, HW, 10-24 X 1-1/2,	300 SERIES, SS COND. CW FY = 65 KSI
6	41	C6-192	SCREW, MTL, HEX, 8 X 1-1/2,	300 SERIES, SS COND. CW FY = 65 KSI
6	42	C6-193	SCREW, METAL, HEX, 1/4-20 X 1-1/2	300 SERIES, SS COND. CW FY = 65 KSI
6	43	C6-194	SCREW, METAL, HEX, 12 X 1-1/2, SS	300 SERIES, SS COND. CW FY = 65 KSI
6	44	C6-195	1/4-20 X 1 1/4 HEX CAP SCREW 18-8 S/S	300 SERIES, SS COND. CW FY = 65 KSI
6	45	C6-196	1/4-20 FIN. HEX NUT 18-8 S/S	300 SERIES, SS COND. CW FY = 65 KSI
7	46	C6-197	1/4 LOCKWASHER 18-8 S/S	300 SERIES, SS COND. CW FY = 65 KSI
7	47	C6-198	SCREW, MTL, HEX, 8 X 3/4,	300 SERIES, SS COND. CW FY = 65 KSI
7	48		3/8"-16 X 2 18-6 HEX HEAD BOLT SS	300 SERIES, SS COND. CW FY = 65 KSI
7	49		3/8-16 HEX LOCK NUT SS	300 SERIES, SS COND. CW FY = 65 KSI
7	50		3/8-FLAT WASHER SS	300 SERIES, SS COND. CW FY = 65 KSI

CHK BY: BDennis
DWN BY: f cortinas
DATE: 11/29/2021
SCALE: NTS
SHEET: 25 OF 27
DWG. NO. 1606DHPM

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TITLE: 1606DHPM LOUVER W/ AND W/O DAMPER SLEEVE / CONTINUOUS MOUNT BILL OF MATERIAL

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 24-0516.04
Expiration Date 08/30/2028

By *[Signature]*
Miami-Dade Product Control

REVISIONS:
REV B: UPDATED BILL OF MATERIAL

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Wayne K. Helmila
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*EMBEDMENT DEPTH IS EQUAL TO OVERALL LENGTH FOR CONCRETE /CMU FASTENERS. IF SHIMS ARE USED, FASTENER LENGTH MUST BE INCREASED BY THICKNESS OF SHIMS

LOUVER MODEL 1606DHPM FASTENER TABLES

JAMB ANGLE MOUNT FASTENER, WIDTH ≤ 72 INCHES (TABLE 1)

WOOD	STEEL STUD	STEEL	CONCRETE	CMU	MIN.	FASTENER TYPE	DIAMETER	# Rqd	CENTERS	EDGE	END	EMBEDMENT
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	1/4"	1	3"	2"		2"
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	3/8"	1	5"	2"		2"
	X				16 Ga.	ELCO BI-FLEX DRILLING SCREWS (300 SERIES SS- COND. CW- Fy= 65ksi)	1/4"	1	4-1/2"	2"		3 THREAD BEYOND SUBSTRATE
		X			A-36	ELCO BI-FLEX DRILLING SCREWS (300 SERIES SS- COND. CW- Fy= 65ksi)	1/4"	1	13-1/2"	2"		1/4"
		X			A-36	ELCO DRILL-FLEX DRILLING SCREWS (COND. CW- Fy= 65ksi) SEALED w/ PROSOCO SEALANT	5/16"	1	20"	2"		1/4"
			X-CRACKED 6" DEEP		4ksi	HILTI KWIK HUS-EZ SS316 ANCHOR	1/4"	1	7"	4"		2"
			X-CRACKED 6" DEEP		4ksi	HILTI KWIK HUS-EZ SS316 ANCHOR	3/8"	1	12"	4"		2"
				X	2ksi	HILTI KWIK HUS-EZ SS316 ANCHOR	3/8"	1	12"	4"		3-1/4"
				X	2ksi	DEWALT GALVANIZED SCREW-BOLT+ ANCHOR	3/8"	1	4-1/2"	1-1/2"	1-1/2"	3-1/4"

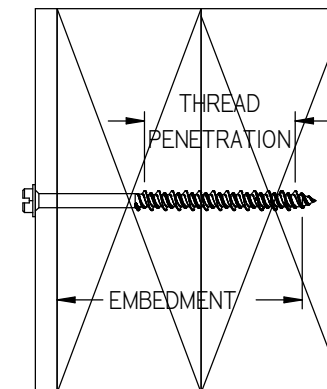
MULLION ANGLE MOUNT FASTENERS, HEIGHT ≤ 120 INCHES (TABLE 2)

WOOD	STEEL STUD	STEEL	CONCRETE	CMU	MIN.	FASTENER TYPE	DIAMETER	# Rqd / CLIP	CENTERS	EDGE	END	EMBEDMENT
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	1/4"	10	1-1/4 X 7/8	2"		2-5/8 "
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	3/8"	6	2-1/8 X 3	2"		1-5/8"
		X			A-36	ELCO BI-FLEX DRILLING SCREWS (300 SERIES SS- COND. CW- Fy= 65ksi)	1/4"	4	2-1/2" X 2-5/8"	2"		1/4"
		X			A-36	ELCO DRILL-FLEX DRILLING SCREWS (COND. CW- Fy= 65ksi) SEALED w/ PROSOCO SEALANT	5/16"	4	2-1/2" X 2-5/8"	2"		1/4"

MULLION ANGLE MOUNT BACK OF WALL FASTENERS, HEIGHT ≤ 120 INCHES (TABLE 3)

WOOD	STEEL STUD	STEEL	CONCRETE	CMU	MIN.	FASTENER TYPE	DIAMETER	# Rqd	CENTERS	EDGE	END	EMBEDMENT
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	1/4"	8	VARIES	1"		3-11/32"
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	1/4"	10	VARIES	1"		3-11/32"
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	3/8"	6	VARIES	1-1/2"		3-9/32"
X					SG 0.42	LAG SCREW (300 SERIES SS- COND. CW- Fy = 65ksi)	3/8"	8	VARIES	1-1/2"		3-9/32"
		X			A-36	ELCO BI-FLEX DRILLING SCREWS (300 SERIES SS- COND. CW- Fy= 65ksi)	1/4"	8	VARIES	1"		FULL THREAD ENGAGEMENT
		X			A-36	ELCO BI-FLEX DRILLING SCREWS (300 SERIES SS- COND. CW- Fy= 65ksi)	1/4"	10	VARIES	1"		FULL THREAD ENGAGEMENT
		X			A-36	ELCO DRILL-FLEX DRILLING SCREWS (COND. CW- Fy= 65ksi) SEALED w/ PROSOCO SEALANT	5/16"	6	VARIES	1"		FULL THREAD ENGAGEMENT
		X			A-36	ELCO DRILL-FLEX DRILLING SCREWS (COND. CW- Fy= 65ksi) SEALED w/ PROSOCO SEALANT	5/16"	8	VARIES	1"		FULL THREAD ENGAGEMENT
			X-CRACKED 8" DEEP		4ksi	HILTI KWIK HUS-EZ SS316 **	1/2"	6	6-1/2 X 3	3"	4"	3"
			X-CRACKED 8" DEEP		4ksi	HILTI KWIK BOLT EZ SS 300 SERIES **	1/2"	8	5 X 3	3"	4"	4-1/4"
				X	2ksi	HILTI KWIK HUS-EZ SCREW ANCHORS - SEAL w/ LIQUID PROSOCO @ EXTERIOR CONDITIONS	1/2"	4	8"	4"	4"	4-1/4"

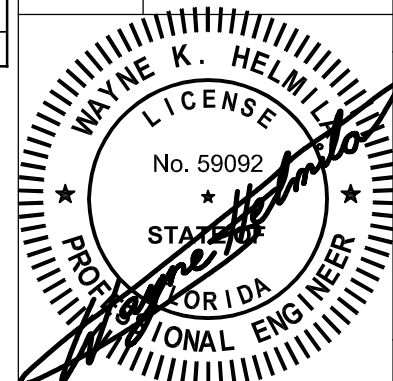
PRODUCT REVISED
 as complying with the Florida
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 NOA-No. 24-0516.04
 Expiration Date 08/30/2028
 By *[Signature]*
 Miami-Dade Product Control



REVISIONS:
 REV B: UPDATED FASTENER TABLES

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08/14/2024
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DWN BY: fcorinas

SCALE: NTS


DATE: 11/29/2021

SHEET: 26 OF 27

DWG. NO. 1606DHPM

GENERAL NOTES:

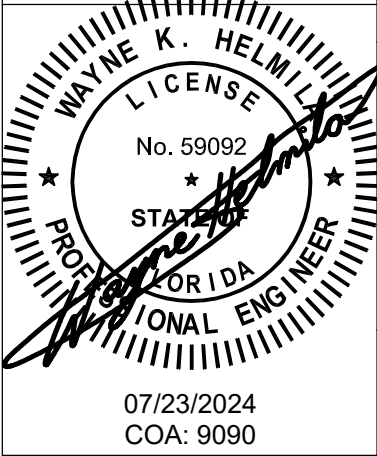
1. IT SHALL BE THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS IMPOSED BY THE LOUVER(S).
 2. THE 1606DHPM WITH /WITHOUT DAMPER HAVE BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE (FBC) AND TEST PROTOCOLS TAS 100(A) WIND DRIVEN RAIN, TAS-201 (IMPACT), TAS-202 (UNIFORM STATIC PRESSURE) , AND TAS-203 (CYCLIC FATIGUE).
 3. MAXIMUM SINGLE SECTION SIZE IS 72" WIDE X 120" HIGH.
 4. MAXIMUM ASSEMBLED LOUVER SIZE IS UNLIMITED WIDE X 120" HIGH.
 5. SECTIONS OR ASSEMBLIES MAY BE STACKED VERTICALLY PROVIDING A SUITABLE STRUCTURAL SUPPORT IS DESIGNED AND INSTALLED BY OTHERS TO SUPPORT ALL LOADS TRANSFERRED FROM THE LOUVER.
 6. CMU SHALL BE ASTM C90, TYPE II, 2,000 MIN PSI GROUT-FILLED, STEEL STUDS TO BE 16 G.A. FY=50ksi MIN.
 7. THE SLEEVE MOUNT STYLE LOUVER UTILIZES AN ANCHORLESS INSTALLATION METHOD THAT DOES NOT REQUIRE THE USE OF FASTENERS INTO THE SUBSTRATE. IT MAY BE INSTALLED IN ANY SUBSTRATE THAT WILL WITHSTAND THE LOADS TRANSFERRED TO IT BY THE LOUVER. NAILOR IND. DOES NOT DETERMINE THE STRUCTURAL INTERGRITY OF THE SUBSTRATE STRUCTURE.
 8. THE CONTINUOUS ANGLE MOUNT STYLE UTILIZES A CONTINUOUS JAMB ANGLE THAT IS ATTACHED TO THE SUBSTRATE BY FASTENERS. IT MAY BE INSTALLED IN CONCRETE, CMU, STEEL, OR WOOD ACCORDING TO THE FASTENER SCHEDULE. NAILOR IND. DOES NOT DETERMINE THE STRUCTURAL INTERGRITY OF THE SUBSTRATE STRUCTURE.
 9. LOUVER ASSEMBLY IS QUALIFIED FOR A MAXIMUM DESIGN LOAD OF ± 150 PSF.
 10. LOUVER ASSEMBLY WITH AND WITHOUT DAMPER SHALL ONLY 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 / WATER PROOF EQUIPMENT, COMPONENTS, AND / OR SUPPLIES.
 11. INSTALLER TO PROVIDE SEPERATION OF DISSIMILAR MATERIALS AS REQUIRED.
 12. THE 2020 DAMPER MAY BE OPERATED BY A MANUAL QUADRANT OR BY AN ELECTRIC OR PNEUMATIC ACTUATOR, THE DAMPER'S ACTUATOR IS NOT PART OF THIS APPROVAL, BUT SHALL BE CERTIFIED BY AN INDEPENDENT TESTING AGENCY.
 13. FRAME CONSTRUCTION, HEAD AND SILL ARE SQUARE CUT, JAMBS ARE SQUARE CUT @ HEAD AND SILL. CORNERS ARE SECURED WITH (2) #10-24 x 1 1/2 HW, BLADES ARE SECURED TO JAMBS WITH (4) #10-24 X 1 1/2 HW, @ EACH END.
 14. STEEL / STAINLESS-STEEL/ ALUMINIUM PARTS MAY BE MADE OUT OF ALTERNATE ALLOY THA HAS EQUAL OR GREATER YIELD STRENGTH.
 15. BLADE SUPPORT ANGLE AND BLADE SUPPORT BRACE ONLY REQUIRED WHEN ACTUAL LOUVER SECTION WIDTH IS GREATER THAN 36 INCHES.
 16. THREAD PENETRATION LENGTH SIGNIFIES THE REQUIRED LENGTH OF THE THREADED PORTION OF THE FASTENER INTO THE WOOD SUBSTRATE PROVIDING FULL CONTACT WITH WOOD. LAG SCREW TIP CANNOT BE CONSIDERED PART OF THE THREADED PORTION OF THE SCREW. LAG SCREWS ARE NOT TO BE INSTALLED AT WOOD JOINTS/SPLICES WHERE THE LAG SCREW COULD FALL BETWEEN MEMEBERS.
- ** NOTE ENGINEER OF RECORD (EOR) IS RESPONSIBLE FOR DETERMINING IF CONCRETE IS TO BE CONSIDERED CRACKED OR UNCRACKED.

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REVISIONS:
 REV B: ADDED GENERAL NOTES PAGE

CHK BY: BDennis
 DWN BY: fcortinas
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 REV B

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 TITLE: 1606DHPM LOUVER W/ AND W/O DAMPER GENERAL NOTES



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