

Engineering Evaluation Report
Report FL #: 19675 for Greenheck model ESD-635DE
Report FL #: 19676 for Airolite model K6746MDE

Manufacturers: Greenheck Fan Corporation, PO Box 410, 400 Ross Ave, Schofield, WI 54476
The Airolite Company, LLC, PO Box 410, 400 Ross Ave, Schofield, WI 54476

Product Lines: Greenheck Louver Model ESD-635DE (Channel Frame and Sleeve Frame setups) with and without attached VCD-40 Damper, and equivalent nameplate Airolite Louver Model K6746MDE (Channel Frame and Sleeve Frame setups) with and without attached VCD-40 Damper.

Compliance Method: The above products have been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61G20-3 of the FL Administrative Code, and comply with the 8th Edition (2023) Florida Building Code.

Product Description: Aluminum louvers with fixed blades and butt-type frame corner construction. Blades for all setups are 6063-T5 material. Frame of channel frame setups is 6063-T5 material, and frame of sleeve frame setups is 6005-T5 and 5052-H32 materials.

Performance Summary (for entire product line): Products tested design pressure was +/- 150 PSF, allowable stress design, (ASD). Products passed ANSI/AMCA Standard 540-13 (including TAS 203-94) at Basic Impact Missile Level D (50 fps impact speed). Products passed ANSI/AMCA Standard 550-15 (Rev. 09-18) with attached VCD-40 Damper with blades in the fully closed position. Products passed TAS 201-94, TAS 202-94, and TAS 203-94. Products can be used inside and outside of the HVHZ and are impact resistant.

Performance Standards:

1. ANSI/AMCA Standard 540-13 (including TAS 203-94), Test Method for Louvers Impacted by Wind Borne Debris.
2. ANSI/AMCA Standard 550-15 (Rev. 09-18), Test Method for High Velocity Wind Driven Rain Resistant Louvers (with attached VCD-40 Damper with blades in the fully closed position).
3. FBC TAS 201-94, Impact Test Procedures.
4. FBC TAS 202-94, Criteria for Testing Impact & Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure.
5. FBC TAS 203-94, Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.

Supporting Technical Documents:

1. Approval Documents:
 - a. NOA 25-0214.04 for ESD-635DE w/ and w/o VCD-40 Damper (Channel Frame and Sleeve Frame setups), approved on 03/13/2025
 - b. NOA 25-0214.04 (same as above) for K6746MDE w/ and w/o VCD-40 Damper (Channel Frame and Sleeve Frame setups), approved on 03/13/2025
2. Listing Documents:
 - a. AMCA License Agreement to use the AMCA Listing Label for ANSI/AMCA 540 (Basic Impact Missile Level D, 50 fps):
 - i. ESD-635DE, Channel Frame, Appendix No. 423 dated 03/05/2020
 - ii. ESD-635DE, Sleeve Frame, Appendix No. 422 dated 03/05/2020
 - iii. K6746MDE, Channel Frame, Appendix No. 130 dated 03/05/2020
 - iv. K6746MDE, Sleeve Frame, Appendix No. 131 dated 03/05/2020
 - b. AMCA License Agreement to use the AMCA Listing Label for ANSI/AMCA 540 (Basic Impact Missile Level D, 50 fps) as well as the AMCA Listing Label for ANSI/AMCA 550 (with attached VCD-40 Damper with blades in the fully closed position):
 - i. ESD-635DE w/ VCD-40 Damper, Channel Frame, Appendix No. 466 dated 06/02/2020
 - ii. ESD-635DE w/ VCD-40 Damper, Sleeve Frame, Appendix No. 465 dated 12/04/24
 - iii. K6746MDE w/ VCD-40 Damper, Channel Frame, Appendix No. 159 dated 10/17/2023
 - iv. K6746MDE w/ VCD-40 Damper, Sleeve Frame, Appendix No. 169 dated 06/02/2020
3. Test Reports:
 - a. Channel Frame:
 - i. F0133.01-602-18, signed and sealed on 08/28/2015 by Justin P. McDonald, P.E., Architectural Testing, Inc., Schofield, WI
 1. FBC TAS 201-94, FBC TAS 202-94, and FBC TAS 203-94
 - ii. F0135.01-602-44, signed and sealed on 10/20/2015 by Justin P. McDonald, P.E., Architectural Testing, Inc., Schofield, WI
 1. ANSI/AMCA Standard 540-13, and FBC TAS 203-94
 - iii. QCT20-5720.02, signed and sealed on 04/13/2020 by Arlen Fisher, P.E., Quast Consulting and Testing, Inc., Mosinee, WI

1. ANSI/AMCA Standard 550-15 (Rev. 09-18)
- b. Sleeve Frame:
 - i. F0132.01-602-18, signed and sealed on 10/26/2015 by Justin P. McDonald, P.E., Architectural Testing, Inc., Schofield, WI
 1. FBC TAS 201-94, FBC TAS 202-94, and FBC TAS 203-94
 - ii. F0134.01-602-44, signed and sealed on 11/18/2015 by Justin P. McDonald, P.E., Architectural Testing, Inc., Schofield, WI
 1. ANSI/AMCA Standard 540-13, and FBC TAS 203-94
 - iii. QCT20-5720.01, signed and sealed on 04/13/2020 by Arlen Fisher, P.E., Quast Consulting and Testing, Inc., Mosinee, WI
 1. ANSI/AMCA Standard 550-15 (Rev. 09-18)

Limits and Conditions Use:

1. Limits/Conditions are as per in above approval and listing documents.
2. Products have a Maximum Design Pressure of +/- 150 PSF, Allowable Stress Design (ASD).
3. Products have a Maximum Panel Size of 48" wide x 48" high.
4. Products are rated to be used inside and outside of the HVHZ.
5. Products are impact resistant for Basic Impact Missile Level D (50 fps).
6. Products have 6063-T5 blade material. Frames of channel frame setups are 6063-T5 material, and frames of sleeve frame setups are 6005-T5 and 5052-H32 materials.
7. Products without attached VCD-40 Damper:
 - a. Per Miami-Dade D.R.E.R., the product may be installed in a location where the space behind the product is designed to drain water penetrating into the space and the space will house water resistant/proof equipment, components, and/or supplies.
8. Products with attached VCD-40 Damper:
 - a. The VCD-40 Damper blades must be in the fully closed position for the assembly to comply with passing ANSI/AMCA 550.
 - b. Per Miami-Dade D.R.E.R., the product with VCD-40 Damper may be installed in a location where the space behind the product is not designed to drain water penetrating into the space and the space will house non-water resistant/proof equipment, components, and/or supplies.
9. Products may be installed into cracked concrete substrate only if the "sleeve" installation method is used.

Installation: Products must be installed in accordance with the above NOA approval documents.

Certification of Independence: Design Dynamics, Inc. and Robert V. Nangia, P. E., do not have and will not acquire a financial interest in any company manufacturing or distributing the products for which this report is being issued. Design Dynamics, Inc. and Robert V. Nangia, P. E., do not have and will not acquire a financial interest in any other entity involved in the approval process of the above listed products.

Evaluation Report By and PE Stamp:

Prepared by:

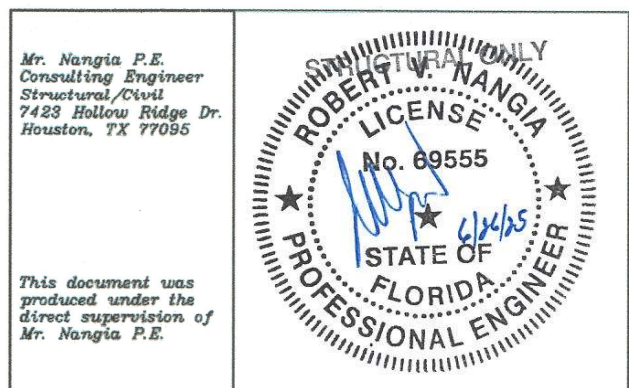

Jeffrey T. Shingler, M.ASCE, M.CFSEI
President
Design Dynamics, Inc.

**Robert
Nangia**

Digitally signed
by Robert
Nangia
Date:
2025.06.26
16:42:31 -05'00'

This item has been electronically signed and sealed by Robert V Nangia PE/SE using a Digital Signature and data. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Reviewed by:





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/economy

Greenheck Fan Corporation
1110 Greenheck Drive (P.O. Box 410)
Schofield, WI 54476

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 "ESD-635DE" Aluminum Louver w/ and w/o VCD-40 Damper

APPROVAL DOCUMENT: Drawing No. **ESD-635DE**, titled "ESD-635DE", sheets 1 through 17 of 17, dated 10/27/15, with revision 01 dated 12/11/24, prepared by manufacturer, signed and sealed by Robert V. Nangia, 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, Schofield, WI or Shelby, NC, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

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.

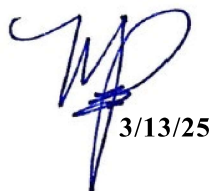
TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this 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 and renews NOA No. 20-0929.07** 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 **Manuel Perez, P.E.**




3/13/25

NOA No. 25-0214.04
Expiration Date: February 04, 2031
Approval Date: March 13, 2025
Page 1

Greenheck Fan Corporation

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 15-1109.04)
2. Drawing No. **ESD-635DE**, titled "ESD-635DE NOA Drawings", sheets 1 through 9 of 9, dated 10/27/15, prepared by the manufacturer, signed and sealed by Chander P. Nangia, P.E.
(Submitted under NOA No. 15-1109.04)

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 marked-up drawings and installation diagram of Model ESD-635ED (sleeved) aluminum louvers, prepared by Architectural Testing, Inc., Test Report No. **F0132.01-602-18**, dated 10/26/15, signed and sealed by Justin P. McDonald, P.E.
(Submitted under NOA No. 15-1109.04)
2. 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 marked-up drawings and installation diagram of Model ESD-635ED (non-sleeved) aluminum louvers, prepared by Architectural Testing, Inc., Test Report No. **F0133.01-602-18**, dated 08/27/15, signed and sealed by Justin P. McDonald, P.E.
(Submitted under NOA No. 15-1109.04)

C. CALCULATIONS

1. Structural and anchor calculations, dated 10/26/15, prepared by manufacturer, signed and sealed by Chander P. Nangia, P.E.
(Submitted under NOA No. 15-1109.04)

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)** and **FBC 7th Edition (2020)** and of no financial interest, issued by manufacturer, dated 08/26/20, signed and sealed by Chander P. Nangia, P.E.
(Submitted under NOA No. 20-0929.07)


Manuel Perez, P.E.
Product Control Examiner
NOA No. 25-0214.04
Expiration Date: February 04, 2031
Approval Date: March 13, 2025

Greenheck Fan Corporation

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

G. OTHERS

1. Notice of Acceptance No. **19-0516.08**, issued to Greenheck Fan Corporation for their Model ESD-635DE Aluminum Louver, approved on 06/27/19 and expiring on 02/04/21.

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **ESD-635DE**, titled "ESD-635DE", sheets 1 through 17 of 17, with revision 01 dated 12/11/24, prepared by manufacturer, signed and sealed by Robert V. Nangia, P.E.

B. TESTS

1. Test Report on High Velocity Wind Driven Rain Resistance per AMCA 550-15 (Rev. 9-18) of a Model ESD-635DE (Channel Frame) Aluminum Louver with VCD-40 Damper, prepared by Quast Consulting and Testing, Inc., Test Report No. **QCT20-5720.02**, dated 04/13/20, signed and sealed by Arlen Fisher, P.E.
2. Test Report on High Velocity Wind Driven Rain Resistance per AMCA 550-15 (Rev. 9-18) of a Model ESD-635DE (Sleeve Frame) Aluminum Louver with VCD-40 Damper, prepared by Quast Consulting and Testing, Inc., Test Report No. **QCT20-5720.01**, dated 04/13/20, signed and sealed by Arlen Fisher, P.E.

C. CALCULATIONS

1. Structural and anchor calculations, dated 01/13/25, prepared, signed and sealed by Robert V. Nangia, P.E.

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

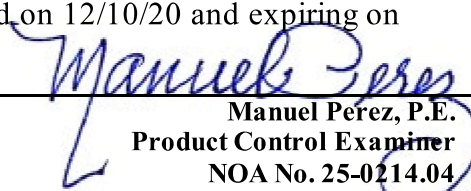
1. None.

F. STATEMENTS

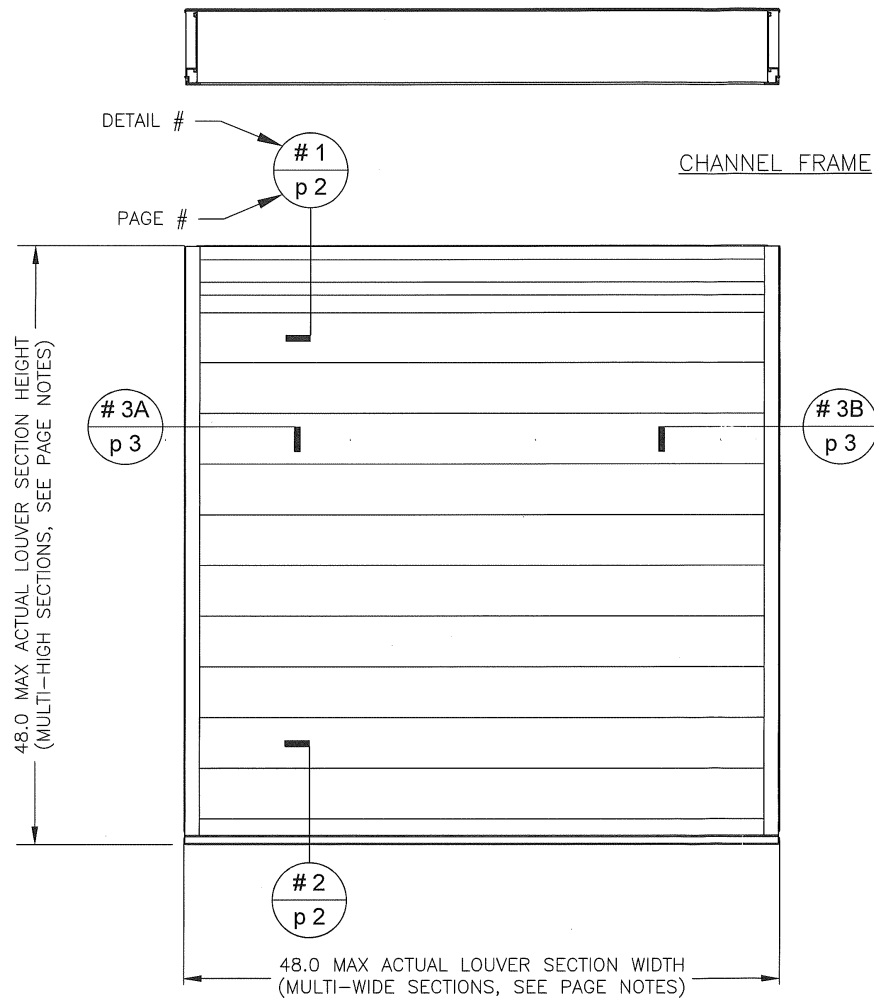
1. Statement letter of code conformance to the **FBC 6th Edition (2017)**, to the **FBC 7th Edition (2020)**, to the **FBC 8th Edition (2023)** and no financial interest, dated 01/28/25, issued by manufacturer, signed and sealed by Robert V. Nangia, P.E.

G. OTHERS

1. Notice of Acceptance No. **20-0929.07**, issued to Greenheck Fan Corporation for their Model ESD-635DE Aluminum Louver, approved on 12/10/20 and expiring on 02/04/26.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 25-0214.04
Expiration Date: February 04, 2031
Approval Date: March 13, 2025

HORIZONTAL SECTION CUT



VERTICAL SECTION CUT

Robert V. Nangia P.E.
7423 Hollow Ridge Drive
Houston, Texas 77095

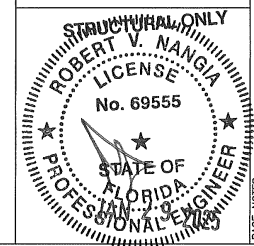
MODEL NAME EQUIVALENTS			DATE
BRAND	GREENHECK	AIRDLITE	10/27/15
MODEL	ESD-635DE	K6746MDE	
DESIGN PRESSURE	+/- 150 PSF		

GREENHECK
P.O. BOX 410 SCHUPFELD,
WISCONSIN 54476-0410

1 OF 17
ESD-635DE

CHANNEL FRAME ELEVATION

PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Fern*
Miami-Dade Product Control



PAGE NOTES:
• MULTI-WIDE AND/OR MULTI-HIGH ASSEMBLIES ARE PERMITTED AS-LONG-AS EACH LOUVER SECTION'S WIDTH/HEIGHT ARE WITHIN THE ALLOWABLE MAXIMUMS AND SUITABLE SUBSTRATE SURROUNDS EACH LOUVER SECTION'S PERIMETER AND EACH LOUVER SECTION IS INSTALLED PER DETAILS HEREIN.

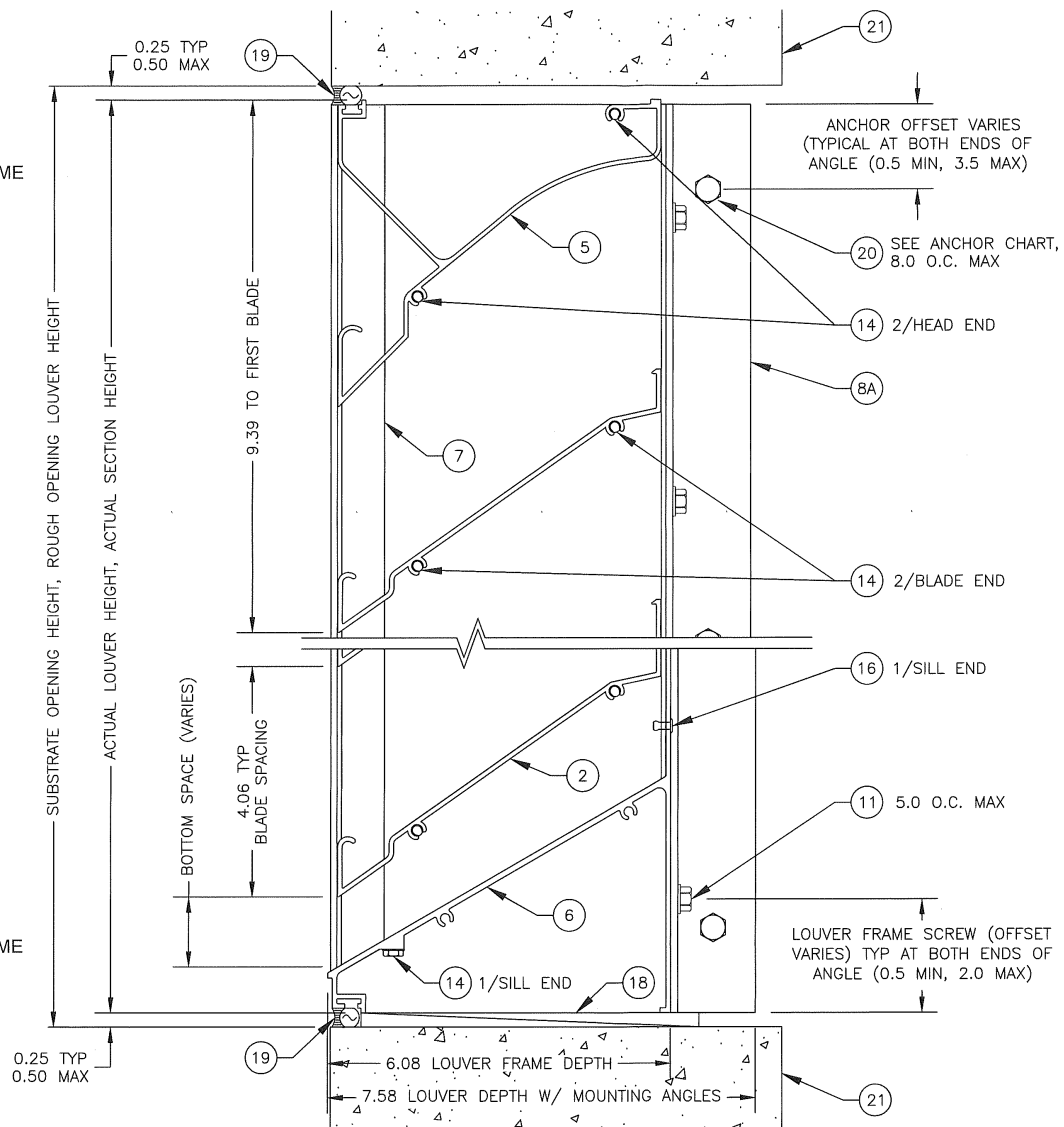
DETAIL #
PAGE #

1 2
DET. PAGE

HEAD,
CHANNEL FRAME

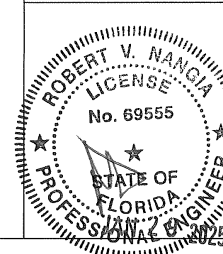
2 2
DET. PAGE

SILL,
CHANNEL FRAME



REV 01: 12/11/24, REMOVED BLADE STRAP NOTE.

PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control



PAGE NOTES:

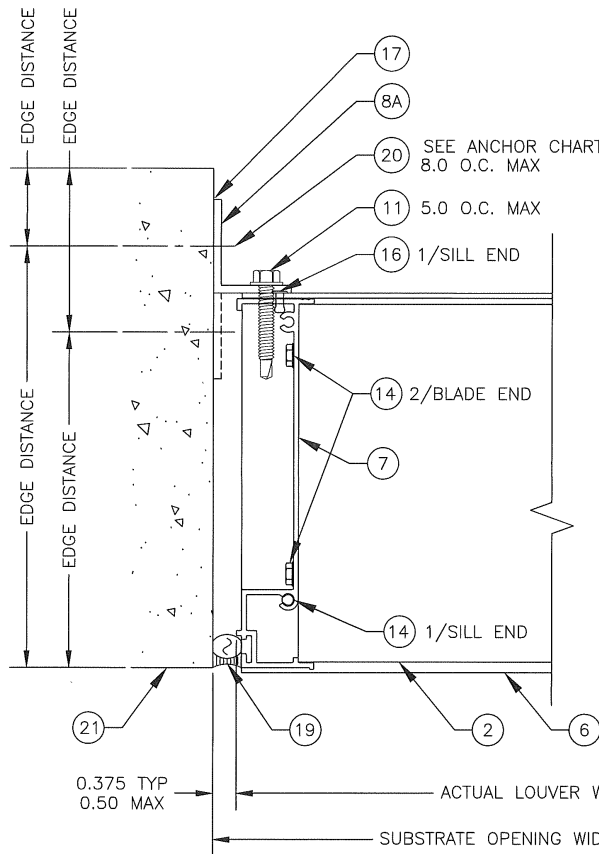
- STANDARD LOUVER HEIGHT DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.

GREENHECK
P.O. BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

TITLE:

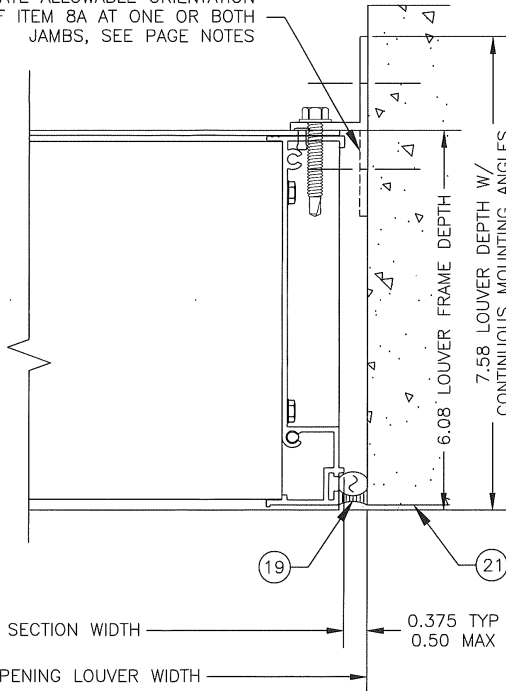
ESD-635DE
CHANNEL FRAME DETAILS

DRAWN BY: STEELE
SCALE: 1:1
SHEET NO.: 2 OF 17
DATE: 10/27/15
CADD DRAWING NO.: ESD-635DE



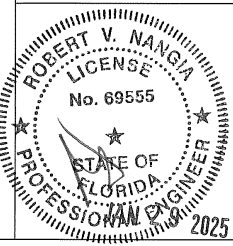
3A 3
DET. PAGE JAMB,
CHANNEL FRAME

ALTERNATE ALLOWABLE ORIENTATION
OF ITEM 8A AT ONE OR BOTH
JAMBS, SEE PAGE NOTES



3B 3
DET. PAGE JAMB, OPPOSITE,
CHANNEL FRAME

REV 01: 12/11/24, REMOVED BLADE STRAP DETAIL AND ITS NOTE.



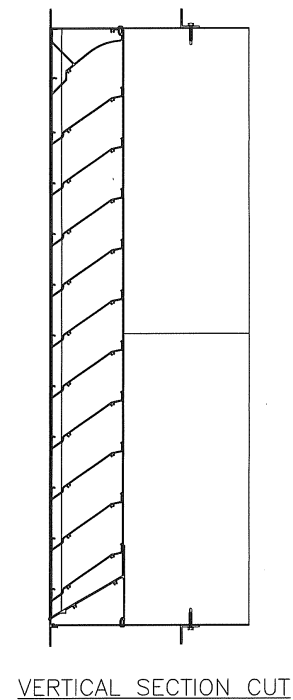
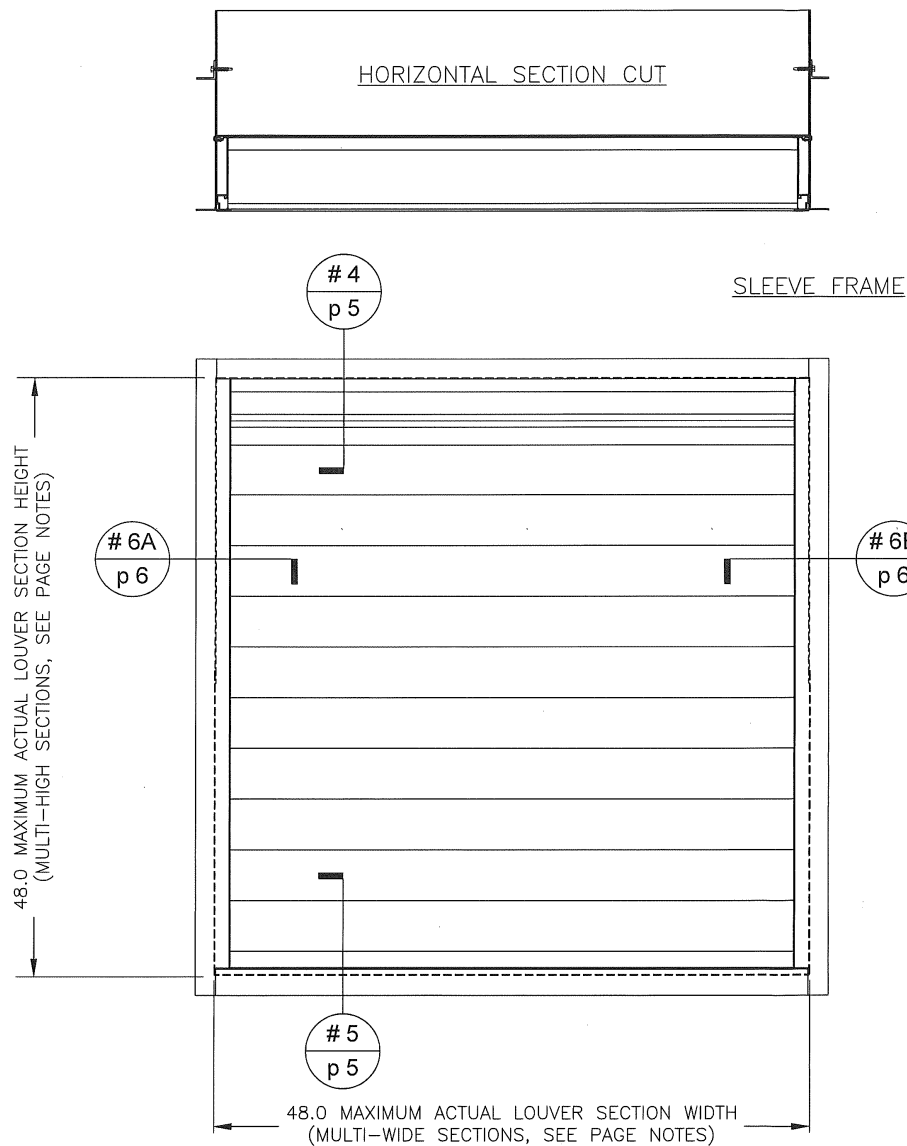
PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control

PAGE NOTES:
• TO ALLOW FOR SUBSTRATE ANCHOR HEAD CLEARANCE, STANDARD LOUVER WIDTH DOWNSIZING IS 0.375 PER END (0.75 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING. THERE IS NO NEED FOR ADDITIONAL DOWNSIZING AT THE JAMBS WHEN USING THE ALTERNATE ANCHOR ORIENTATION.

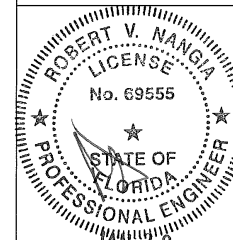


ESD-635DE
CHANNEL FRAME DETAILS

DESIGN BY	DATE
STEEL	10/27/15
SCALE	1:1
SHEET NO.	3 OF 17
DO NOT DRAWING NO.	ESD-635DE



PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Fern*
Miami-Dade Product Control



PAGE NOTES:
• MULTI-WIDE AND/OR MULTI-HIGH ASSEMBLIES ARE PERMITTED AS-LONG-AS EACH LOUVER SECTION'S WIDTH/HEIGHT ARE WITHIN THE ALLOWABLE MAXIMUMS AND SUITABLE SUBSTRATE SURROUNDS EACH LOUVER SECTION'S PERIMETER AND EACH LOUVER SECTION IS INSTALLED PER DETAILS HEREIN.



ESD-635DE
SLEEVE FRAME ELEVATION

TITLE:

DATE 10/27/15
DRAWN BY STEELE
SCALE 1:5
SHEET NO. 4 OF 17
JOB DRAWING NO. ESD-635DE

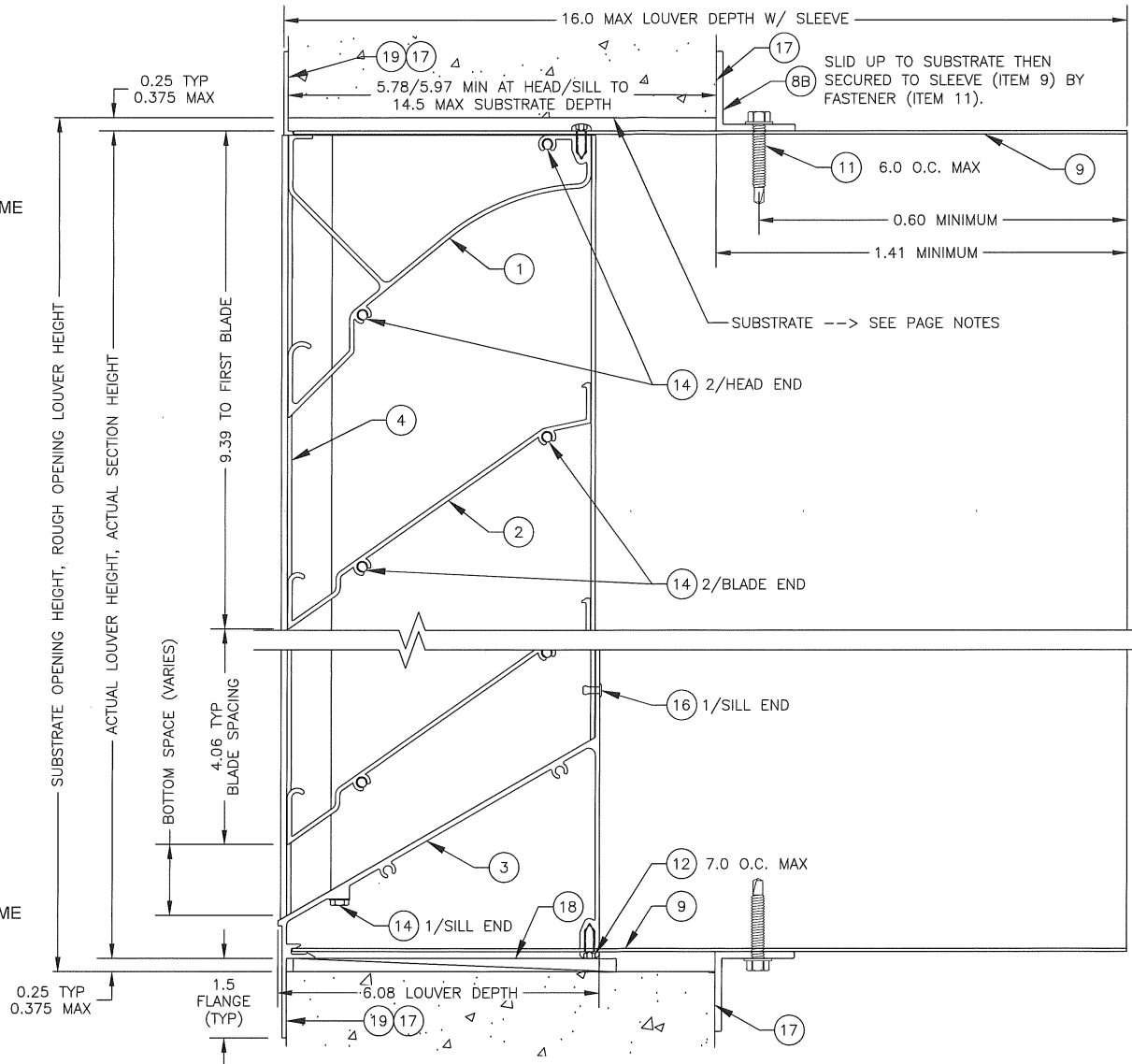
JAN 29 2025

4	5
DET.	PAGE

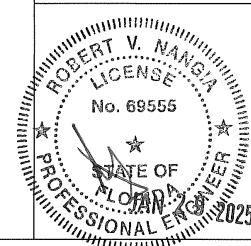
HEAD,
SLEEVE FRAME

5	5
DET.	PAGE

SILL,
SLEEVE FRAME



PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control



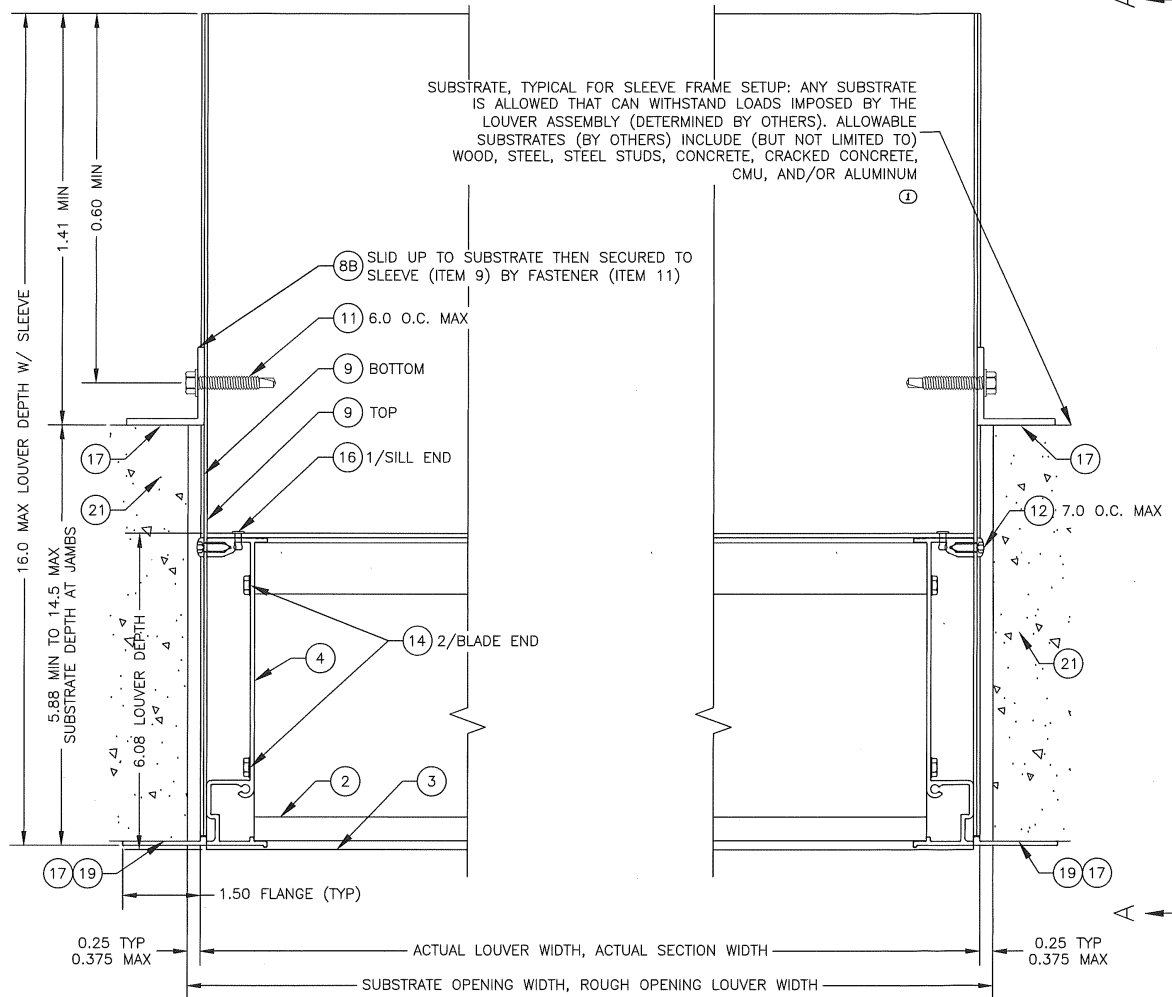
PAGE NOTES:

- SUBSTRATE, TYP. FOR SLEEVE FRAME SETUP: ANY SUBSTRATE IS ALLOWED THAT CAN WITHSTAND LOADS IMPOSED BY THE LOUVER ASSEMBLY (DETERMINED BY OTHERS). ALLOWABLE SUBSTRATES (BY OTHERS) INCLUDE (BUT NOT LIMITED TO) WOOD, STEEL, STEEL STUDS, CONCRETE, CRACKED CONCRETE, CMU, AND/OR ALUMINUM.
- STANDARD LOUVER HEIGHT DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.

GREENHECK
P.O. BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

ESD-635DE
SLEEVE FRAME DETAILS

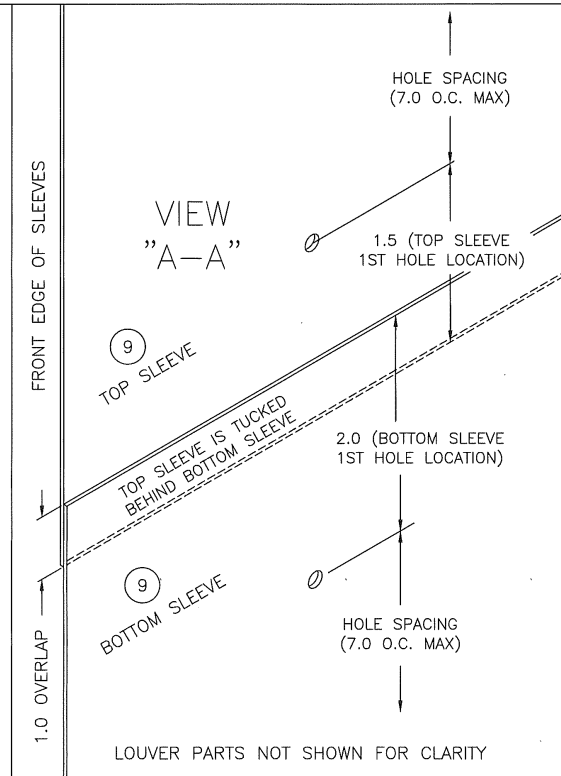
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DESIGNED BY	STEEL
SCALE	1:1
SHEET NO.	5 OF 17
DOC. NUMBER	ESD-635DE



6A 6 JAMB, SLEEVE FRAME
DET. PAGE

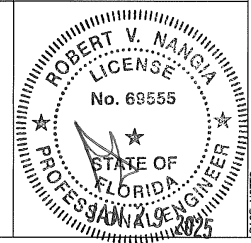
6B 6 JAMB, OPPOSITE, SLEEVE FRAME
DET. PAGE

LOCATION @ MID-LOUVER HEIGHT

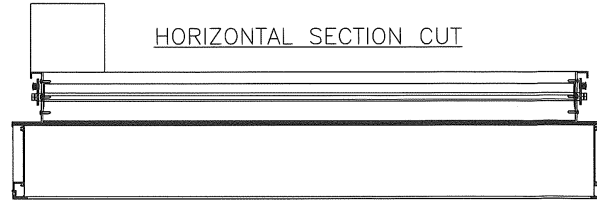


VIEW "A-A"

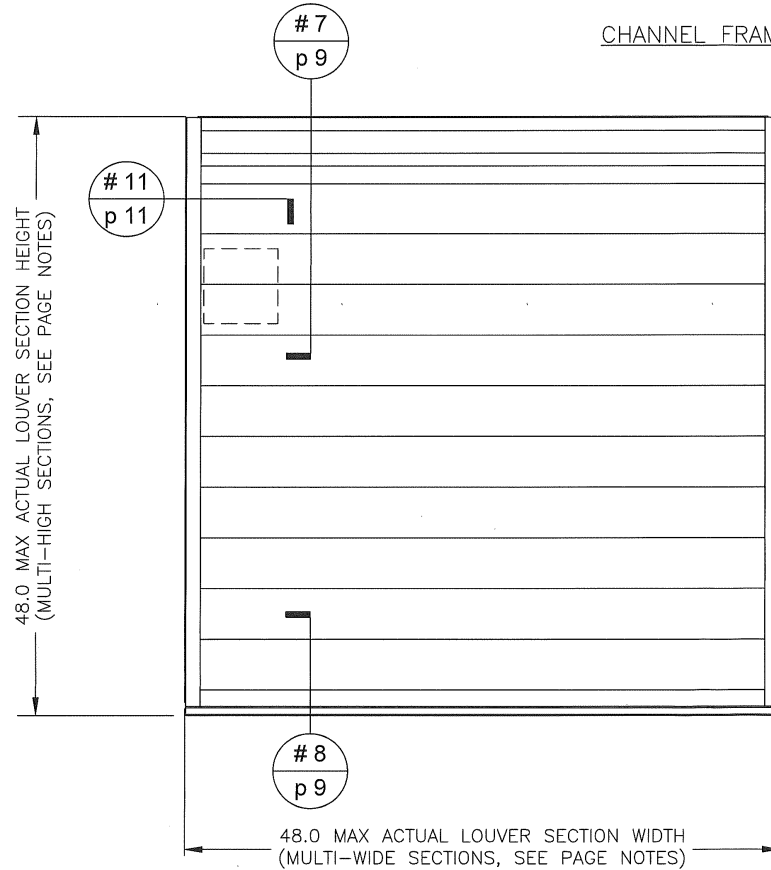
PRODUCT REVISED
As complying with the Florida Building Code
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Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control



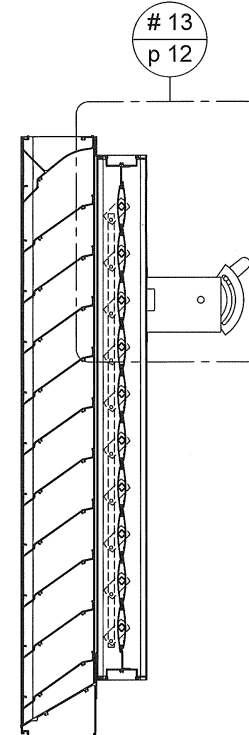
DESIGNED BY	DATE	10/27/15
STEEL		
SCALE	1:1	
SHEET NO.	6	OF 17
DATE DRAWING NO.	ESD-635DE	
TITLE: ESD-635DE SLEEVE FRAME DETAILS		
PAGE NOTES: • STANDARD LOUVER WIDTH DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.		



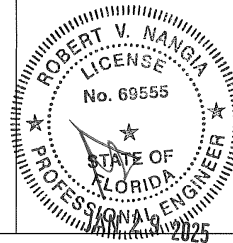
HORIZONTAL SECTION CUT



CHANNEL FRAME W/ DAMPER



VERTICAL SECTION CUT



PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Fern*
Miami-Dade Product Control

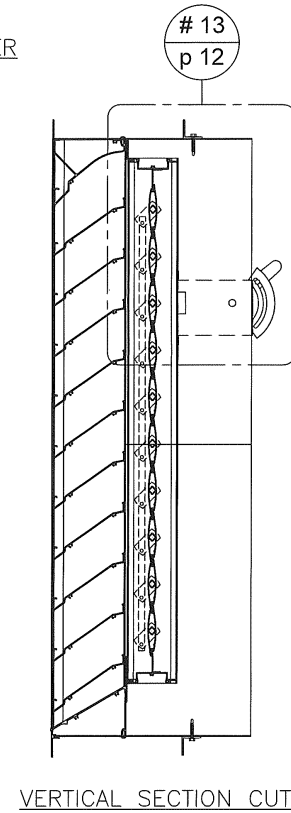
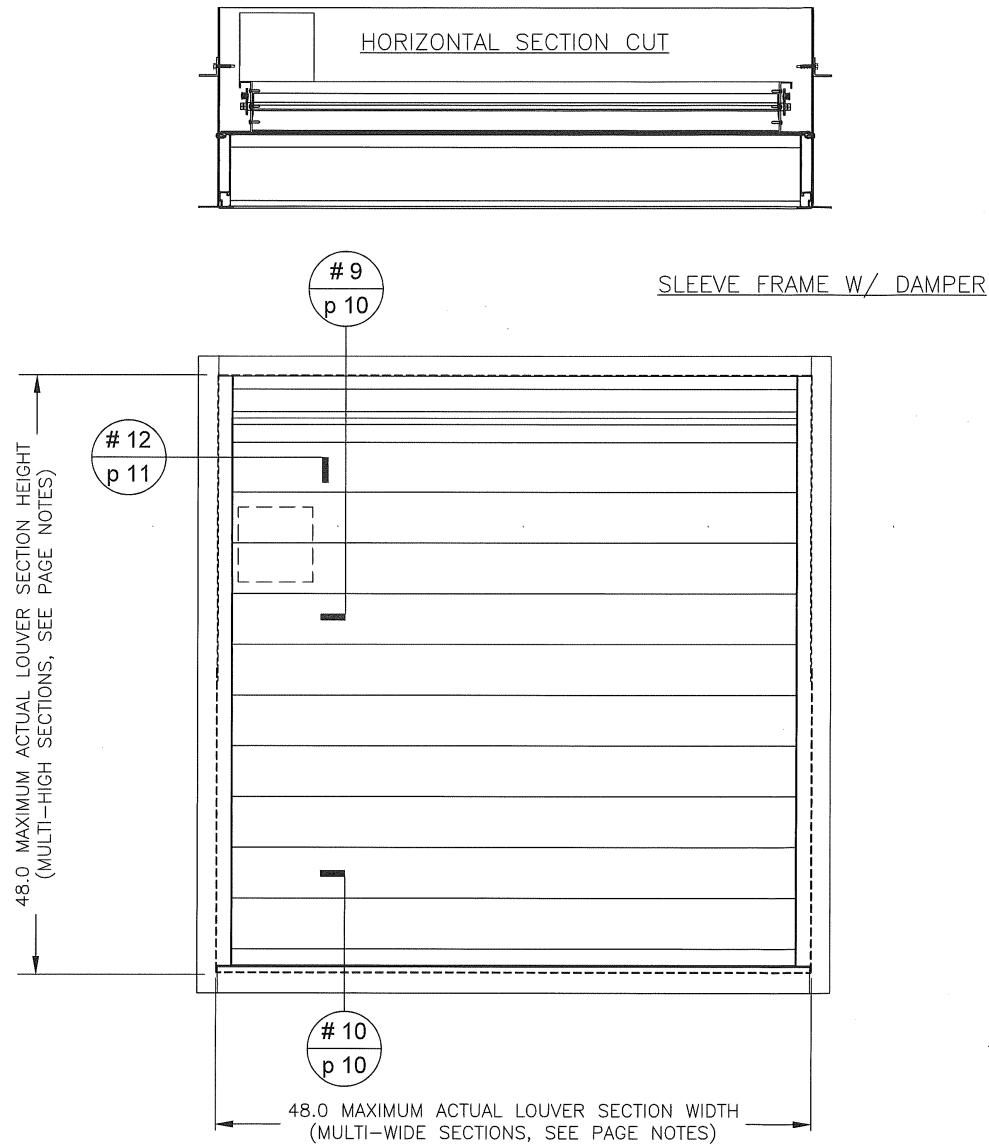
PAGE NOTES:

- MULTI-WIDE AND/OR MULTI-HIGH ASSEMBLIES ARE PERMITTED AS-LONG-AS EACH LOUVER SECTION'S WIDTH/HEIGHT ARE WITHIN THE ALLOWABLE MAXIMUMS AND SUITABLE SUBSTRATE SURROUNDS EACH LOUVER SECTION'S PERIMETER AND EACH LOUVER SECTION IS INSTALLED PER DETAILS HEREIN.

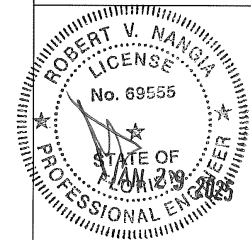


ESD-635DE W/ VCD-40 DAMPER
CHANNEL FRAME ELEVATION

DESIGN BY	DATE
STEEL	10/27/15
SCALE	1:5
SHEET NO.	7 OF 17
DATE	ESD-635DE



REV 01: 12/11/24, ADDED THIS NEW PAGE TO SHOW DAMPER ON SLEEVE FRAME.



PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Fern*
Miami-Dade Product Control

PAGE NOTES:
• MULTI-WIDE AND/OR MULTI-HIGH ASSEMBLIES ARE PERMITTED AS-LONG-AS EACH LOUVER SECTION'S WIDTH/HEIGHT ARE WITHIN THE ALLOWABLE MAXIMUMS AND SUITABLE SUBSTRATE SURROUNDS EACH LOUVER SECTION'S PERIMETER AND EACH LOUVER SECTION IS INSTALLED PER DETAILS HEREIN.



ESD-635DE W/ VCD-40 DAMPER
SLEEVE FRAME ELEVATION

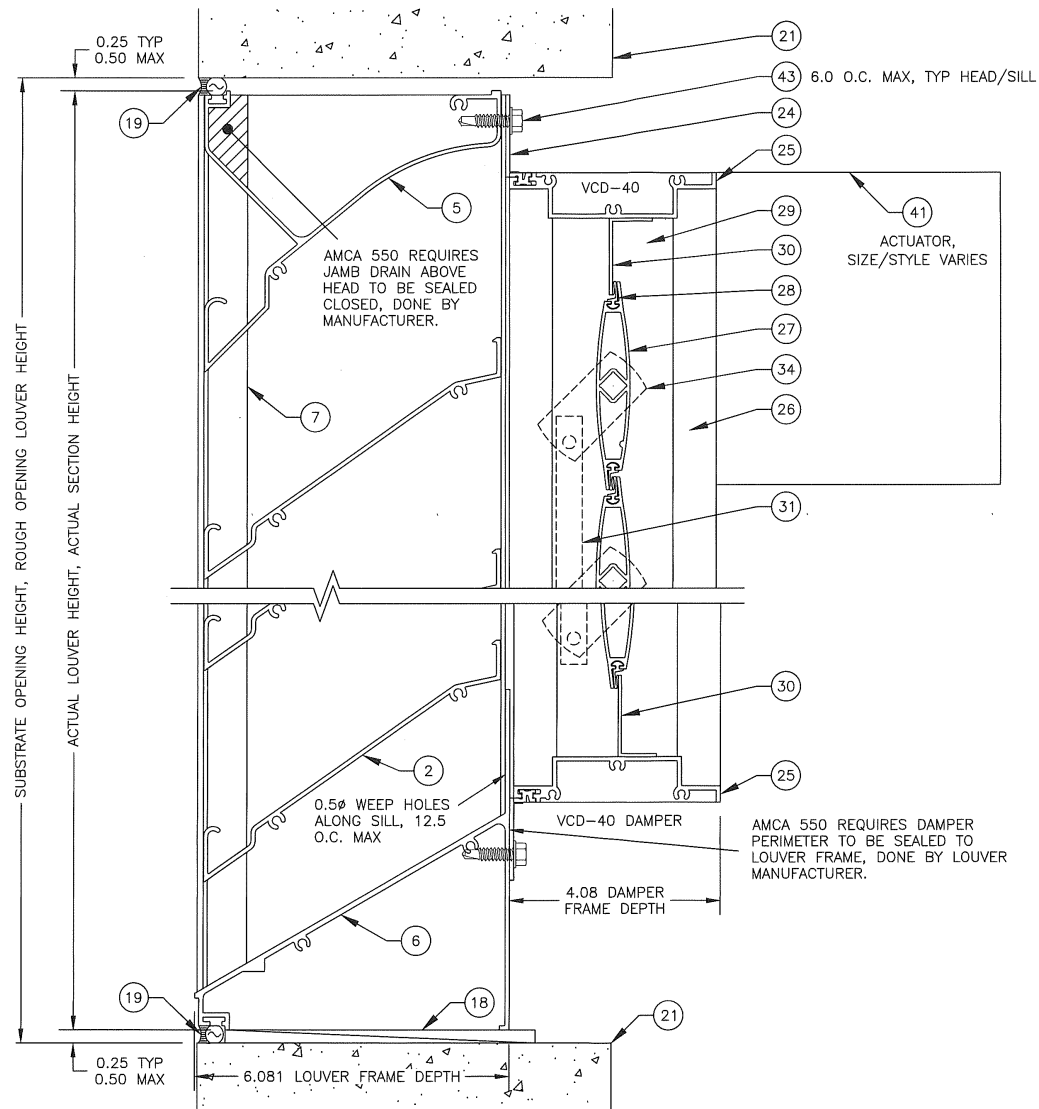
DRAWN BY: STEELE
SCALE: 1:5
SHEET NO.: 8 OF 17
JOB NUMBER: ESD-635DE

7 9
DET. PAGE

DAMPER HEAD,
CHANNEL FRAME

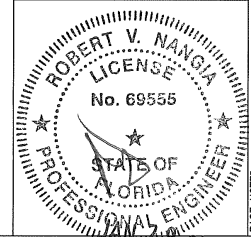
8 9
DET. PAGE

DAMPER SILL,
CHANNEL FRAME



REV 01: 12/11/24, ADDED THIS NEW PAGE TO SHOW DAMPER ON CHANNEL FRAME.

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Expiration Date: **02/04/2031**
By: *Manuel J. Perez*
Miami-Dade Product Control



DESIGNED BY	DATE
STEEL	10/27/15
SCALE	1:1
SHEET NO.	9 OF 17
DWG. DRAWING NO.	ESD-635DE
TITLE: ESD-635DE W/ VCD-40 DAMPER CHANNEL FRAME DETAILS	
PAGE NOTES: • STANDARD LOUVER HEIGHT DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.	



ESD-635DE

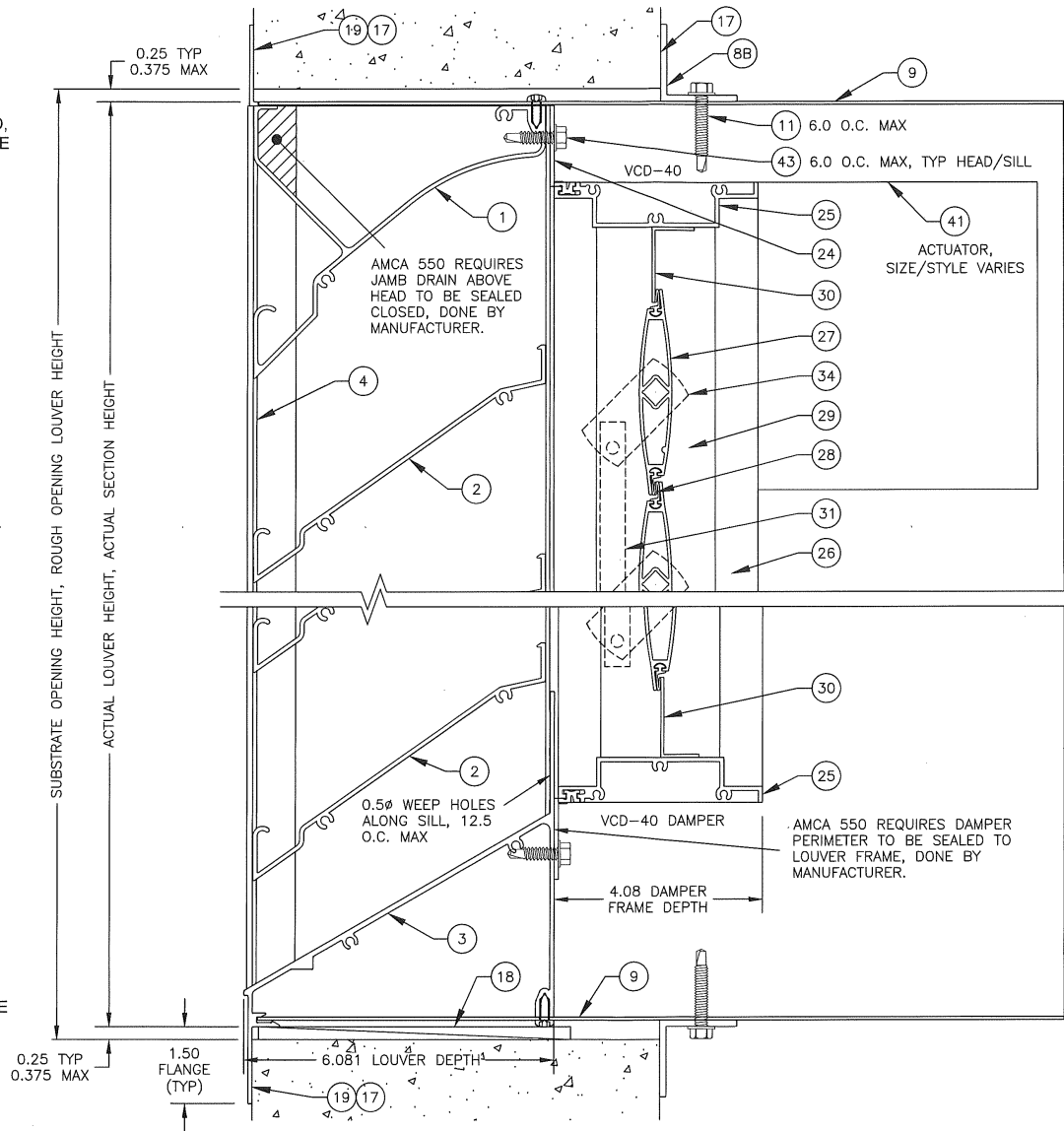
JAN 29 2025

9 10
DET. PAGE

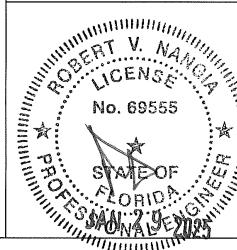
DAMPER HEAD,
SLEEVE FRAME

10 10
DET. PAGE

DAMPER SILL,
SLEEVE FRAME



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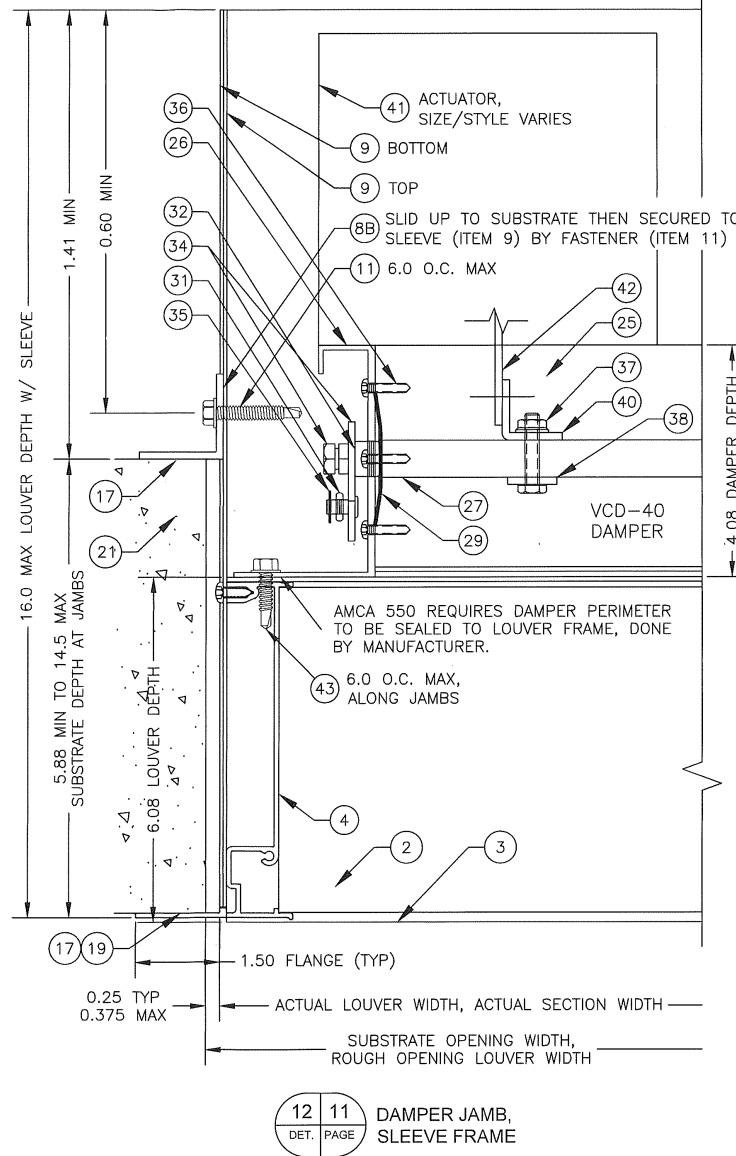
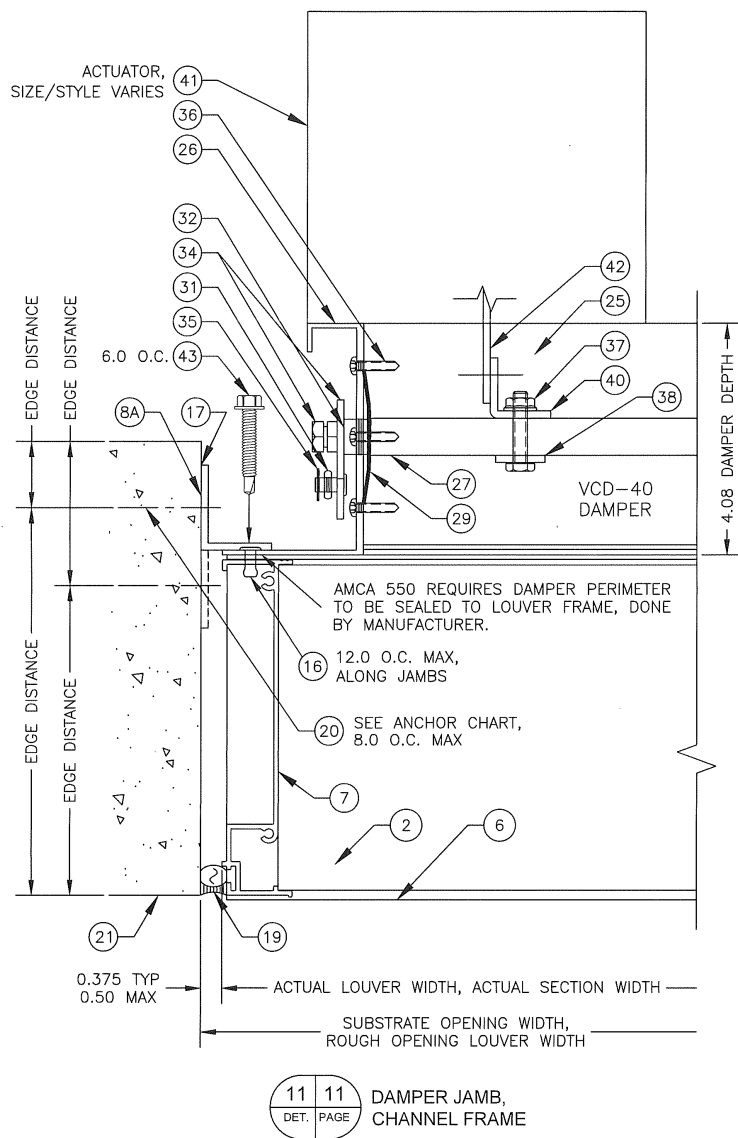


STANDARD LOUVER HEIGHT DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.

GREENHECK
P.O. BOX 410 SCHUPFELD,
WISCONSIN 54476-0410

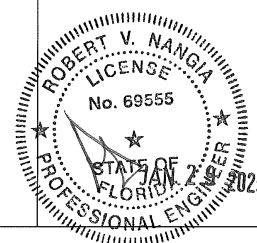
TITLE:
ESD-635DE W/ VCD-40 DAMPER
SLEEVE FRAME DETAILS

DATE: 10/27/15
DRAWN BY: STEELE
SCALE: 1:1
SHEET NO.: 10 OF 17
DWG. DRAWING NO.: ESD-635DE



REV 01: 12/11/24, ADDED THIS NEW PAGE TO SHOW DAMPER ON CHANNEL AND SLEEVE FRAMES.

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Miami-Dade Product Control

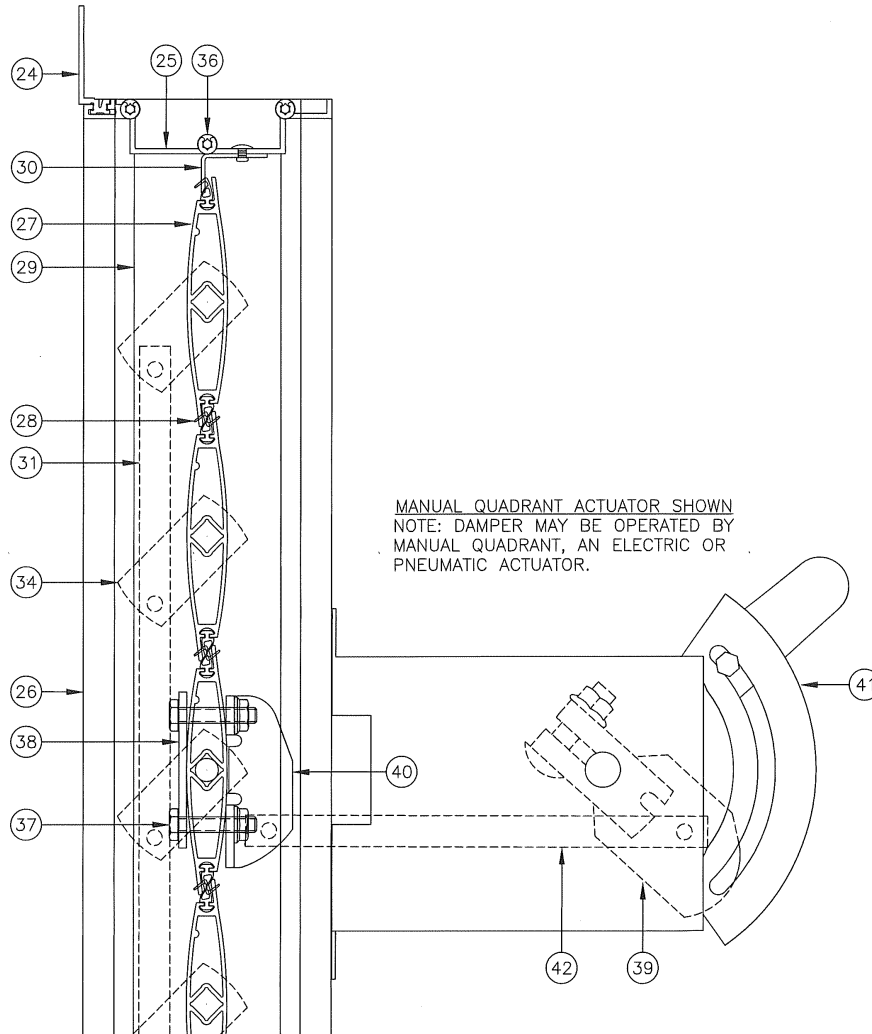


PAGE NOTES:

- CHANNEL FRAME: TO ALLOW FOR SUBSTRATE ANCHOR HEAD CLEARANCE, STANDARD LOUVER WIDTH DOWNSIZING IS 0.375 PER END (0.75 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING. THERE IS NO NEED FOR ADDITIONAL DOWNSIZING AT THE JAMBS WHEN USING THE ALTERNATE ANCHOR ORIENTATION.
- SLEEVE FRAME: STANDARD LOUVER WIDTH DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.

DATE: 10/27/15
DRAWN BY: STEELE
SCALE: 1:1
SHEET NO.: 11 OF 17
JOB DRAWING NO.: ESD-635DE

GREENHECK
P.O. BOX 410 SCHUPFELD,
WISCONSIN 54476-0410
TITLE: ESD-635DE W/ VCD-40 DAMPER
CHANNEL & SLEEVE FRAME DETAILS

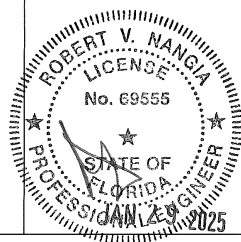


MANUAL QUADRANT ACTUATOR SHOWN
NOTE: DAMPER MAY BE OPERATED BY
MANUAL QUADRANT, AN ELECTRIC OR
PNEUMATIC ACTUATOR.

13 12
DET. PAGE

VCD-40 DAMPER & ACTUATOR,
CHANNEL & SLEEVE FRAME

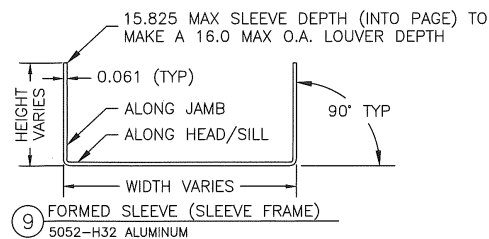
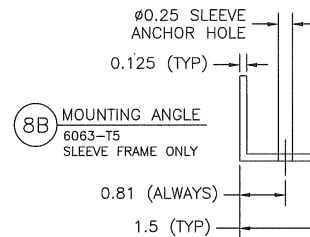
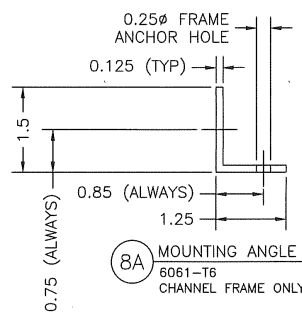
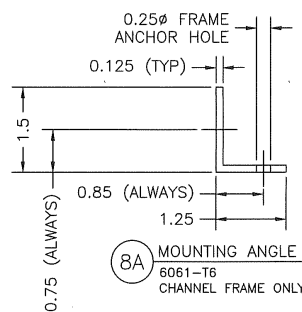
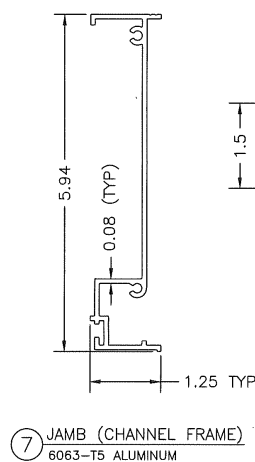
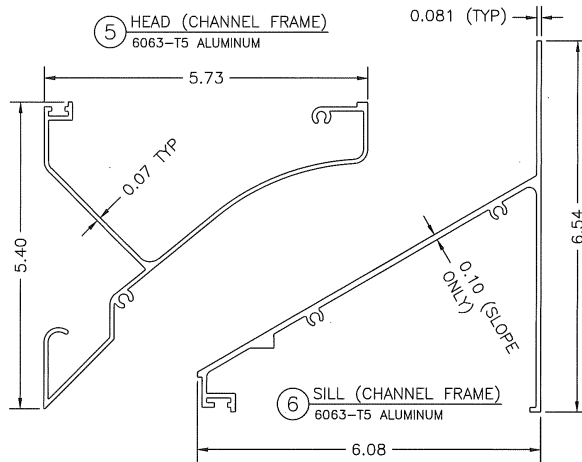
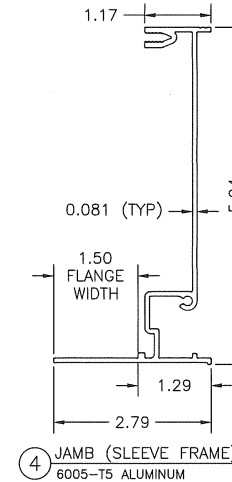
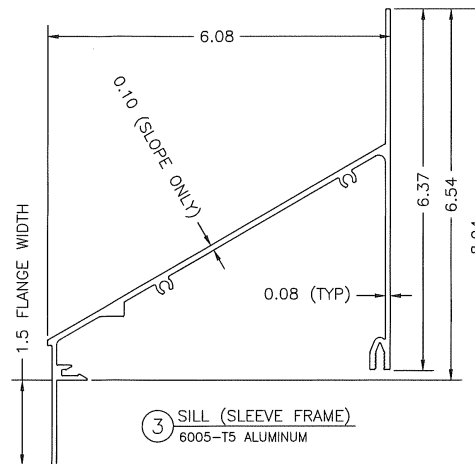
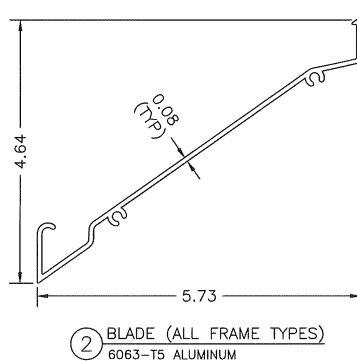
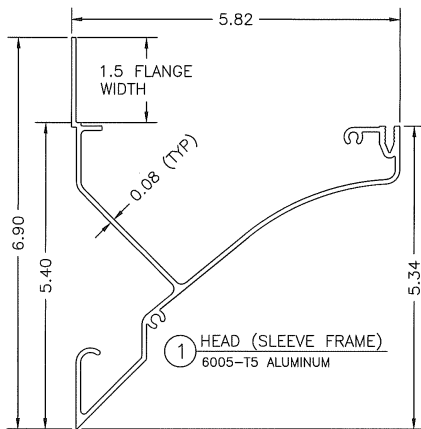
REV 01: 12/11/24, ADDED THIS NEW PAGE TO SHOW DAMPER.



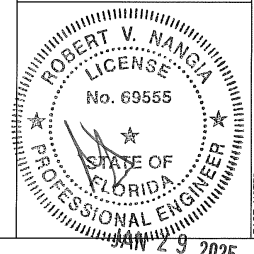
PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control

PAGE NOTES:		DRAWN BY STEEL	DATE 10/27/15	GREENHECK	
				P.O. BOX 410, SCHIFFIELD, WISCONSIN 54476-0410	
				SCALE 1:1.1	
TITLE:		SHEET NO. 12 OF 17			
CHANNEL & SLEEVE FRAME DETAIL		VCD-40 DAMPER			
		VCD DRAWING NO. ESD-635DE			

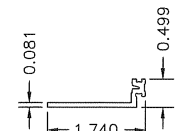
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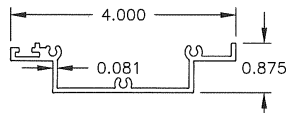
PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control



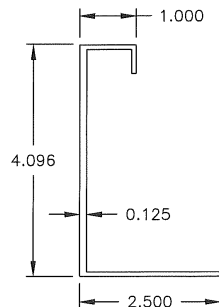
DESIGNED BY: STEELE	DATE: 10/27/15	GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410 ESD-635DE PART DETAILS
SCALE: 1:1	SHEET NO.: 13 OF 17	



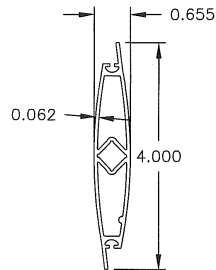
24 DAMPER FLANGE
6063-T5 ALUMINUM



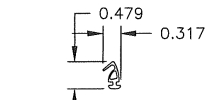
25 DAMPER HEAD/SILL
6063-T5 ALUMINUM



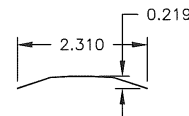
26 DAMPER JAMB
6063-T5 ALUMINUM



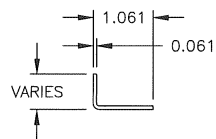
27 DAMPER BLADE
6063-T5 ALUMINUM



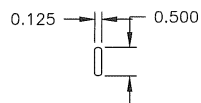
28 DAMPER BLADE SEAL
MATERIAL VARIES



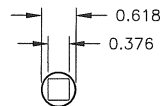
29 DAMPER JAMB SEAL
0.007 SS



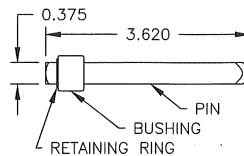
30 DAMPER TOP/BOTTOM CLOSURE
ALUMINUM



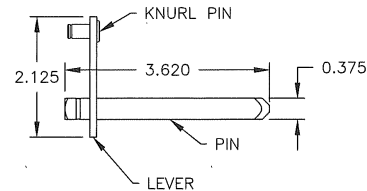
31 DAMPER LINKAGE BAR, JAMB
MATERIAL VARIES



32 DAMPER AXLE BUSHING 0.45 LONG
MATERIAL VARIES

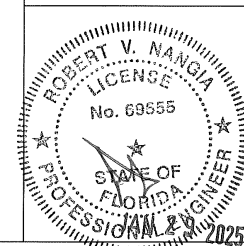


33 DAMPER AXLE ASSEMBLY, NON-DRIVE SIDE
MATERIAL VARIES



34 DAMPER AXLE ASSEMBLY, DRIVE SIDE
MATERIAL VARIES

PRODUCT REVISED
As complying with the Florida
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NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Jern*
Miami-Dade Product Control



DATE	10/27/15
DRAWN BY	STEEL
SCALE	1:1
SHEET NO.	14 OF 17
DO NOT REMOVE	ESD-63SDE

GREENHECK
P.O. BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

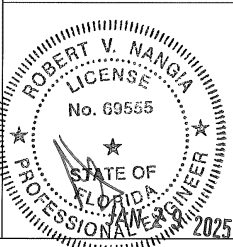
VCD-40 DAMPER
PART DETAILS

TITLE:

PAGE NOTES:

ITEM	DESCRIPTION	MATERIAL	INTERNAL ID#	NOTES
1	HEAD, SLEEVE FRAME	6005-T5 ALUM.	126098	---
2	BLADE, SLEEVE & CHANNEL FRAME	6063-T5 ALUM.	125263	4.06' O.C. SPACING
3	SILL, SLEEVE FRAME	6005-T5 ALUM.	126099	---
4	JAMB, SLEEVE FRAME	6005-T5 ALUM.	126100	---
5	HEAD, CHANNEL FRAME	6063-T5 ALUM.	125043	---
6	SILL, CHANNEL FRAME	6063-T5 ALUM.	125867	---
7	JAMB, CHANNEL FRAME	6063-T5 ALUM.	125045	---
8A	MOUNTING ANGLE, CHANNEL FRAME	6061-T6 ALUM.	125811	TYPICAL AT JAMBS ONLY
8B	MOUNTING ANGLE, SLEEVE FRAME	6063-T5 ALUM.	125151	TYPICAL AROUND SLEEVE PERIMETER
9	FORMED SLEEVE, SLEEVE FRAME	5052-H32 ALUMI.	100172	0.06 ACTUAL THICKNESS
10	NOT USED	---	---	---
11	1/4-14 DEWALT/ELCO BI-FLEX, PROVIDED BY LOUVER MANUFACTURER	300 SS HEAD & SHANK W/ COATED STEEL TIP	---	CHANNEL FRAME: 5.0 O.C. MAX SLEEVE FRAME: 6.0 O.C. MAX
12	#10-16x0.5L SCREW	300 SERIES SS	417207	7.0 MAX ON CENTERS - TYPICAL SLEEVE UNITS ONLY
13	NOT USED	---	---	---
14	#10-16x2.25L SCREW	300 SERIES SS	416351	---
15	NOT USED	---	---	---
16	1/8" RIVET	ALUMINUM	---	---
17	SHIM/SEPARATE DISSIMILAR MATERIALS	VARIES	---	BY OTHERS, AS NEEDED
18	SHIM, NON-COMPRESSIBLE	VARIES	---	BY OTHERS, OPTIONAL
19	SEALANT (AND BACKER ROD AS NEEDED)	VARIES	---	BY OTHERS, OPTIONAL, PERIMETER SEALANT REQUIRED FOR AMCA 550 COMPLIANCE
20	SUBSTRATE FASTENER, SEE ANCHOR TABLE	SEE ANCHOR TABLE	---	BY OTHERS, MINIMUM OF ONE TYPE REQUIRED, SEE ANCHOR TABLE FOR ADDITIONAL INFORMATION
21	SUBSTRATE - GROUT FILLED CMU	GROUT FILLED CMU	---	BY OTHERS, IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY AND TO FACILITATE SEPARATION OF DISSIMILAR MATERIALS. SLEEVE FRAME IS NOT LIMITED TO SUBSTRATE TYPES SHOWN. CHANNEL FRAME IS LIMITED TO MINIMUM OF ONE OF THE SUBSTRATE TYPES SHOWN.
	SUBSTRATE - CONCRETE	CONCRETE	---	
	SUBSTRATE - STEEL STUD	STEEL	---	
	SUBSTRATE - STRUCTURAL STEEL	STEEL	---	
	SUBSTRATE - WOOD	WOOD	---	
---				DAMPER PARTS SHOWN BELOW
24	DAMPER FLANGE	6063-T5 ALUM.	125147	---
25	DAMPER HEAD/SILL	6063-T5 ALUM.	125139	---
26	DAMPER JAMB	6063-T5 ALUM.	125084	---
27	DAMPER BLADE	6063-T5 ALUM.	125181	3.75 MAX SPACING
28	DAMPER BLADE SEAL	VARIES	---	VINYL/SILICONE/RUBBER
29	DAMPER JAMB SEAL	SS	190217	SS = STAINLESS STEEL
30	DAMPER TOP/BOTTOM CLOSURE	ALUMINUM	100166	---
31	DAMPER LINKAGE BAR, JAMB	SS OR ZP	175685	ZP = ZINC PLATED OR GALV.
32	DAMPER AXLE BUSHING	DELTRIN OR BRONZE	---	---
33A	DAMPER AXLE ASSEMBLY, NON-DRIVE SIDE	ZP STEEL & DELTRIN	---	ZP STEEL PIN W/ DELTRIN BUSHING
33B		ZP STEEL & BRONZE	---	ZP STEEL PIN W/ BRONZE BUSHING
33C		SS & DELTRIN	---	SS PIN W/ DELTRIN BUSHING
33D		SS & BRONZE	---	SS PIN W/ BRONZE BUSHING
34	DAMPER AXLE ASSEMBLY, DRIVE SIDE	SS OR ZP	---	---
35	1/4 DIA. E-CLIP	SS OR ZP	451588	---
36	#8 x 0.75 SCREW	SS	---	DAMPER FRAME CORNER SCREW
37	1/4-20 BOLT & NUT	SS OR ZP	---	BLADE LEVER ATTACHMENT
38	REINFORCING STRAP	SS OR ALUM.	---	OPTIONAL
39	DAMPER ACTUATOR CRANK ARM	SS OR ZP	---	---
40	DAMPER BLADE DRIVE LEVER	SS OR ZP	---	---
41	DAMPER MANUAL QUADRANT ACTUATOR	VARIES	---	OTHER STYLES/TYPES ALLOWED
42	LINKAGE BAR/ROD, ACTUATOR	SS OR ZP	---	CONNECTS ACTUATOR TO BLADE
43	1/4 SCREW	SS	416708	DAMPER FLANGE MOUNTING SCREW

REV 01: 12/11/24, WAS PAGE 8, MOVED GENERAL
NOTES TO A NEW PAGE, REMOVED ITEMS 10 & 15,
REPLACED BRAND NAME OF ITEM 11, UPDATED
THREADS OF ITEM 11, CLARIFIED MATERIAL OF ITEM
11, CORRECTED MAX O.C. OF ITEM 11, ADDED TO
NOTE OF ITEM 19, UPDATED AND ADDED FRAME
TYPE NOTES TO ITEM 21, & ADDED DAMPER PART
ITEMS 24-43.

 P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	DRAWN BY: STEELE SCALE: 1:1 SHEET NO.: 15 OF 17 DWP DRAWING NO.: ESD-635DE
	DATE: 10/27/15
TITLE: ESD-635DE & VCD-40 DAMPER ITEM DESCRIPTIONS	
PRODUCT REVISED As complying with the Florida Building Code NOA-No. 25-0214.04 Expiration Date: 02/04/2031 By: <i>Manuel Perez</i> Miami-Dade Product Control	
	

PAGE NOTES:

GENERAL NOTES:

1. IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS IMPOSED BY THE LOUVER ASSEMBLY. THE LOUVER MANUFACTURER DOES NOT DETERMINE THE STRUCTURAL INTEGRITY OF THE SUBSTRATE STRUCTURE.
2. THE LOUVER HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH MIAMI-DADE COUNTY PROTOCOLS (AND QUALIFIED IN ACCORDANCE WITH THE CURRENT FLORIDA BUILDING CODE AND TEST PROTOCOLS/STANDARDS THEREIN):
 - TAS-201 (LARGE MISSILE IMPACT TEST, 50 FT/S IMPACT SPEED) ①
 - TAS-202 (UNIFORM STATIC WIND PRESSURE TEST)
 - TAS-203 (UNIFORM CYCLIC WIND PRESSURE TEST)
 - AMCA 550 (HIGH VELOCITY WIND DRIVEN RAIN RESISTANCE, WITH OPTIONAL VCD-40 DAMPER AND DAMPER BLADES FULLY CLOSED) ①
3. THIS LOUVER HAS BEEN DESIGNED, TESTED, AND APPROVED TO WITHSTAND DESIGN PRESSURES OF UP TO AND INCLUDING +/-150 PSF ALLOWABLE STRESS DESIGN (ASD). ①
4. THE MAXIMUM SINGLE SECTION SIZE IS 48 INCHES WIDE BY 48 INCHES HIGH. MULTIPLE SECTIONS MAY BE MOUNTED TOGETHER TO CREATE A MULTI-WIDE AND/OR MULTI-HIGH ASSEMBLY PROVIDED THERE IS ADEQUATE SUBSTRATE ON ALL FOUR SIDES OF EACH SINGLE SECTION AND SECURED TO THE SUBSTRATE AS NOTED HEREIN.
5. GENERAL LOUVER CONSTRUCTION: HEAD, SILL, JAMBS, AND BLADES FOR ALL CASES ARE EXTRUDED ALUMINUM. BLADE SPACING IS 4.06 INCHES. BLADES AND HEAD ARE SECURED TO JAMBS WITH TWO SCREWS PER END. SILLS ARE SECURED TO JAMBS WITH ONE SCREW AND ONE RIVET PER SILL END.
6. INSTALLER TO PROVIDE SEPARATION OF DIS-SIMILAR MATERIALS AS REQUIRED PER THE FLORIDA BUILDING CODE. ①
7. STEEL, STAINLESS STEEL, AND ALUMINUM PARTS MAY BE MADE OUT OF ALTERNATE ALLOY THAT HAS EQUAL OR GREATER YIELD STRENGTH. PART DIMENSIONS ARE MINIMUMS UNLESS DEFINED OTHERWISE. ALL ALUMINUM, STAINLESS STEEL, AND PLATED/COATED STEEL PARTS PROVIDED BY THE LOUVER MANUFACTURER ARE INHERENTLY CORROSION RESISTANT OR HAVE A CORROSION RESISTANT COATING. ①
8. THE INTERNAL ID NUMBERS SHOWN ARE FOR FACTORY PURPOSES ONLY AND MAY BE UPDATED AT ANY TIME. ANY UPDATES WILL NOT ALTER THE ITEM AS DESCRIBED HEREIN.
9. WITHOUT THE OPTIONAL VCD-40 DAMPER, THE LOUVER IS NOT DESIGNED TO PREVENT WIND-DRIVEN RAIN FROM PENETRATING INTO THE SPACE BEHIND THE LOUVER. THE LOUVER SHALL BE INSTALLED IN A LOCATION WHERE THE SPACE BEHIND THE LOUVER IS DESIGNED TO DRAIN WATER PENETRATING INTO THE ROOM OR THE ROOM WILL HOUSE WATER RESISTANT/PROOF EQUIPMENT, COMPONENTS, AND/OR SUPPLIES. ①
10. WITH THE OPTIONAL VCD-40 DAMPER AND THE DAMPER BLADES FULLY CLOSED, THE LOUVER-DAMPER ASSEMBLY IS DESIGNED TO PREVENT WIND-DRIVEN RAIN FROM PENETRATING INTO THE SPACE BEHIND THE LOUVER-DAMPER ASSEMBLY, AND THE ASSEMBLY MAY BE IN STALLED IN A LOCATION WHERE THE ROOM BEHIND THE LOUVER IS NOT DESIGNED TO DRAIN WATER PENETRATING INTO THE ROOM AND THE ROOM CAN HOUSE NON-WATER RESISTANT/PROOF EQUIPMENT, COMPONENTS, AND/OR SUPPLIES. ①
11. ALL DIMENSION UNITS ARE IMPERIAL.
12. THE VCD-40 MAY BE OPERATED BY THE MANUAL QUADRANT SHOWN OR BY ANY TYPE OF ACTUATOR AND ANY TYPE OF LINKAGE/ASSEMBLY COMPONENTS. ①
13. THE "SLEEVE" FRAME SETUP IS APPROVED FOR INSTALLATION INTO "CRACKED CONCRETE" SUBSTRATE, WHEREAS THE "CHANNEL" FRAME SETUP IS APPROVED FOR INSTALLATION INTO "CONCRETE" SUBSTRATE. ①
14. SUBSTRATE FOR SLEEVE FRAME SETUP: ANY SUBSTRATE IS ALLOWED THAT CAN WITHSTAND LOADS IMPOSED BY THE LOUVER ASSEMBLY (DETERMINED BY OTHERS). ALLOWABLE SUBSTRATES (BY OTHERS) INCLUDE (BUT NOT LIMITED TO) WOOD, STEEL, STEEL STUDS, CONCRETE, CRACKED CONCRETE, CMU, AND/OR ALUMINUM. ①
15. SUBSTRATE FOR CHANNEL FRAME SETUP: LIMITED TO WOOD, STEEL, STEEL STUDS, CONCRETE (NON-CRACKED), GROUT FILLED CMU, AND/OR ALUMINUM. SUBSTRATES SHALL MEET THE MINIMUMS AS NOTED IN THE "SUBSTRATE AND FASTENER TABLE". ①

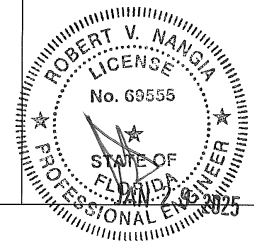
REV 01: 12/11/24, MOVED GENERAL NOTES TO THIS NEW PAGE, ADDED IMPACT SPEED AND AMCA 550 TO #2, ADDED ASD TO #3, REMOVED STRAP FROM #5, CONDENSED #6 TO ONE SENTENCE, ADDED LAST SENTENCE TO #7, #8 IS OLD #9, #9 IS OLD #10, UPDATED #9 TO STATE W/O THE DAMPER, ADDED #10, #11 IS OLD #10, & ADDED #12-#15.

DATE	10/27/15
DRAWN BY	STEEL
SCALE	1:1
SHEET NO.	16 OF 17
DOC. NUMBER	ESD-635DE



TITLE: ESD-635DE & VCD-40 DAMPER
GENERAL NOTES

PRODUCT REVISED
As complying with the Florida
Building Code
NOA-No. **25-0214.04**
Expiration Date: **02/04/2031**
By: *Manuel Perez*
Miami-Dade Product Control



PAGE NOTES:

SUBSTRATE AND SUBSTRATE FASTENER TABLE

ITEM 21, SUBSTRATE			ITEM 20, SUBSTRATE FASTENER											
TYPE	THICKNESS MIN	MATERIAL MIN	TYPE (ALL FASTENERS ARE HEX HEAD STYLE)	MAT'L	DIA.	EDGE MIN	EMBED. MIN	SPACING MAX *	SPACING MIN *	HEAD DIA. MIN	ANGLE HOLE ITEM 5, MAX	SUBSTRATE HOLE, MAX		
WOOD ①	3	G OF 0.42	LAG SCREW, 3 INCH MIN LENGTH	300 SS	1/4	1 1/2	23/32	5 3/4	3	1/2	5/16	SEE FASTENER MANUFACTURER INSTRUCTIONS		
STEEL ①	16 GA (0.056)	Fy 33 KSI Fu 45 KSI	1/4-20 BOLT W/ NUT	300 SS	1/4	5/8	0.056	8	1	1/2 HEAD 9/16 NUT	5/16	5/16		
	1/4-14 DEWALT/ELCO BI-FLEX SCREW, 300 SS HEAD & SHANK W/ COATED STEEL TIP		MULTI	5 5/8			1/2	SEE FASTENER MANUFACTURER INSTRUCTIONS						
				0.070						6 3/4				
				0.099						8				
ALUMINUM ①	1/8	6063-T5	1/4-20 BOLT W/ NUT	300 SS	1/4	1/2	1/8	8	1	1/2 HEAD 9/16 NUT	5/16	1/4		
	1/4-14 DEWALT/ELCO BI-FLEX SCREW, 300 SS HEAD & SHANK W/ COATED STEEL TIP	MULTI	7 ①	1/2			SEE FASTENER MANUFACTURER INSTRUCTIONS							
CONCRETE ①	VARIES WITH SIZE OF FASTENER USED, SEE FASTENER MANUFACTURER INSTRUCTIONS	2 KSI	BUILDEX TAPCON, STAINLESS	410 SS	1/4	1 1/2	1 1/2	4	2	AS MANUFACTURED	1/4	SEE FASTENER MANUFACTURER INSTRUCTIONS		
		3 KSI			2 1/8		6	1 1/2					1 1/4	4
					3		6	1 1/2					1 3/4	
					2.3 KSI	DEWALT/ELCO AGGRE-GATOR	300 SS	1/4					1 1/2	1 3/8
		2.9 KSI	DEWALT/ELCO ULTRAQON SS4	410 SS	1/4	1	1 3/4	4			8		3	1/4
		3.4 KSI	DEWALT/ELCO CRETE-FLEX SS4, SMALL HEAD	410 SS	1/4	1	1 3/4	6			6		1/4	
			DEWALT/ELCO CRETE-FLEX SS4, FLANGED HEAD					8						
		2.5 KSI	DEWALT/POWERS 316 STAINLESS STEEL WEDGE-BOLT	316 SS	1/4	1 3/8	1 7/8	4	1		5/16			
					3/8	2		6			7/16			
						1 1/8	2 3/8	4						
1 5/8						6								
2 3/8		8												
GROUT FILLED CMU ①	NOTE 1	DEWALT/ELCO AGGRE-GATOR	300 SS	1/4	2	2	8	3	AS MANUFACTURED	1/4	SEE FASTENER MANUFACTURER INSTRUCTIONS			
	NOTE 2	DEWALT/ELCO ULTRAQON SS4	410 SS	1/4	1	2	2	1 1/2		1/4				
	NOTE 3	DEWALT/ELCO CRETE-FLEX SS4, FLANGED HEAD	410 SS	1/4	1 3/4	1 1/4	6	6		1/4				
NOTE *: MANUFACTURER MAY PROVIDE PILOT HOLES IN MOUNTING ANGLE AT 2' O.C. FOR SUBSTRATE ANCHOR. INSTALLER SHALL USE HOLES WHICH DO NOT VIOLATE SHOWN MIN & MAX SPACING. ①														
NOTE 1: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6' WIDE, CMU CONFORMING TO ASTM C-90 FILLED WITH 4,747 PSI GROUT.														
NOTE 2: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6' WIDE, 2 KSI CMU CONFORMING TO ASTM C-90 FILLED WITH 1624 PSI GROUT.														
NOTE 3: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6' WIDE, CONFORMING TO ASTM C-90 FILLED WITH 3,350 PSI GROUT.														

REV 01: 12/11/24, WAS PAGE 9, REMOVED ALL NON-STAINLESS STEEL ANCHORS, ADDED SS ALLOY TO WOOD/STEEL/ALUMINUM/TAPCON ANCHORS (X4), THREAD CUTTING ANCHORS NOW A SPECIFIC TYPE (X2), UPDATED ALUMINUM SCREW MAX ON CENTER, ADDED DEWALT BRAND NAME TO ALL ELCO/POWERS CONCRETE & CMU ANCHORS (X8), ADDED ASTERISK TO MIN & MAX SPACING COLUMN, & DELETED OLD ASTERISK NOTE AND REPLACED WITH A NEW NOTE.

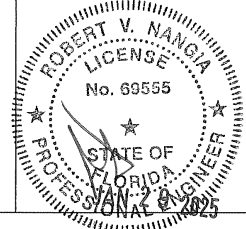
DATE
10/27/15
DRAWN BY
STEEL
SCALE
1:12
SHEET NO.
17 OF 17
CMT DRAWING NO.
ESD-635DE



ESD-635DE
SUBSTRATE AND ANCHOR TABLE

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