



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](http://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.

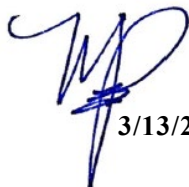
**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**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 6<sup>th</sup> Edition (2017)** and **FBC 7<sup>th</sup> 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**

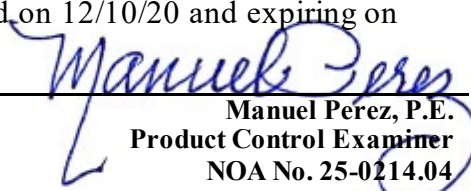
1. None.

**F. STATEMENTS**

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

**G. OTHERS**

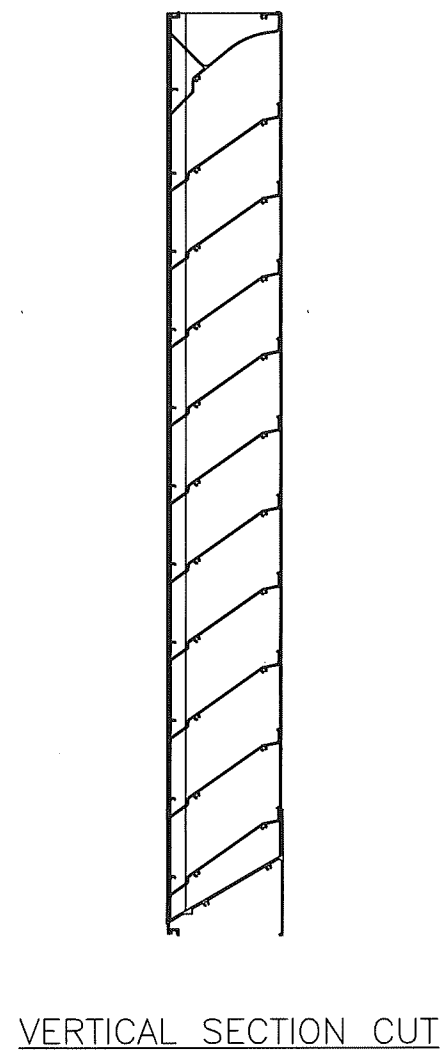
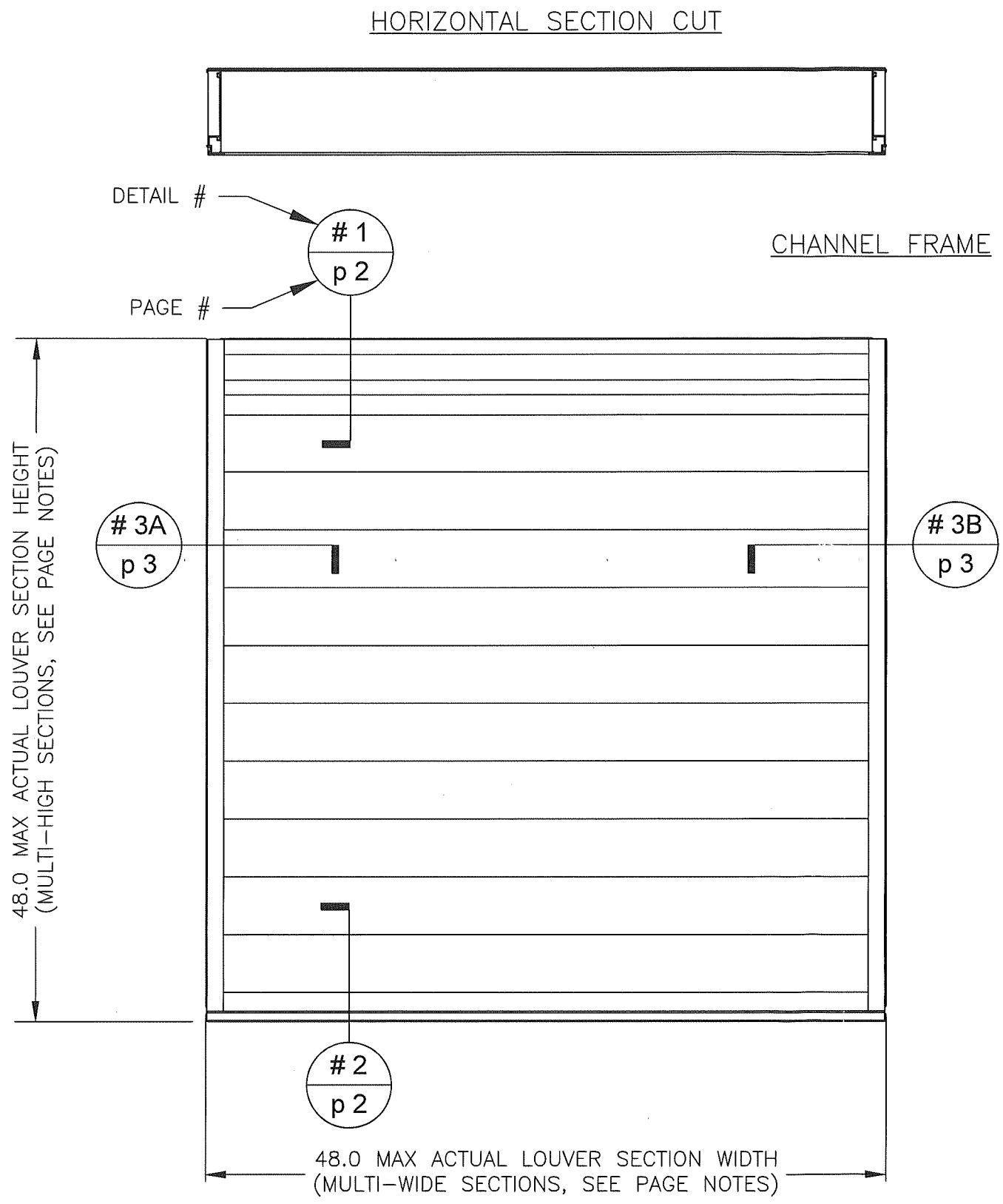
1. Notice of Acceptance No. **20-0929.07**, issued to Greenheck Fan Corporation for their Model ESD-635DE Aluminum Louver, approved on 12/10/20 and expiring on 02/04/26.

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

①

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

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



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

**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

**STRUCTURAL ONLY**  
ROBERT V. NANGIA  
LICENSE  
No. 69555  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

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.

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

ESD-635DE  
CHANNEL FRAME ELEVATION

REV 01: 12/11/24, UPDATED DETAIL CALLOUT PAGE NUMBERS AS NEEDED ON ALL PAGES, ADDED STAMPING BOXES ON ALL PAGES, REMOVED BLADE STRAP & ITS NOTE, ADDED MODEL NAME EQUIVALENTS, & ADDED DESIGN PRESSURE.

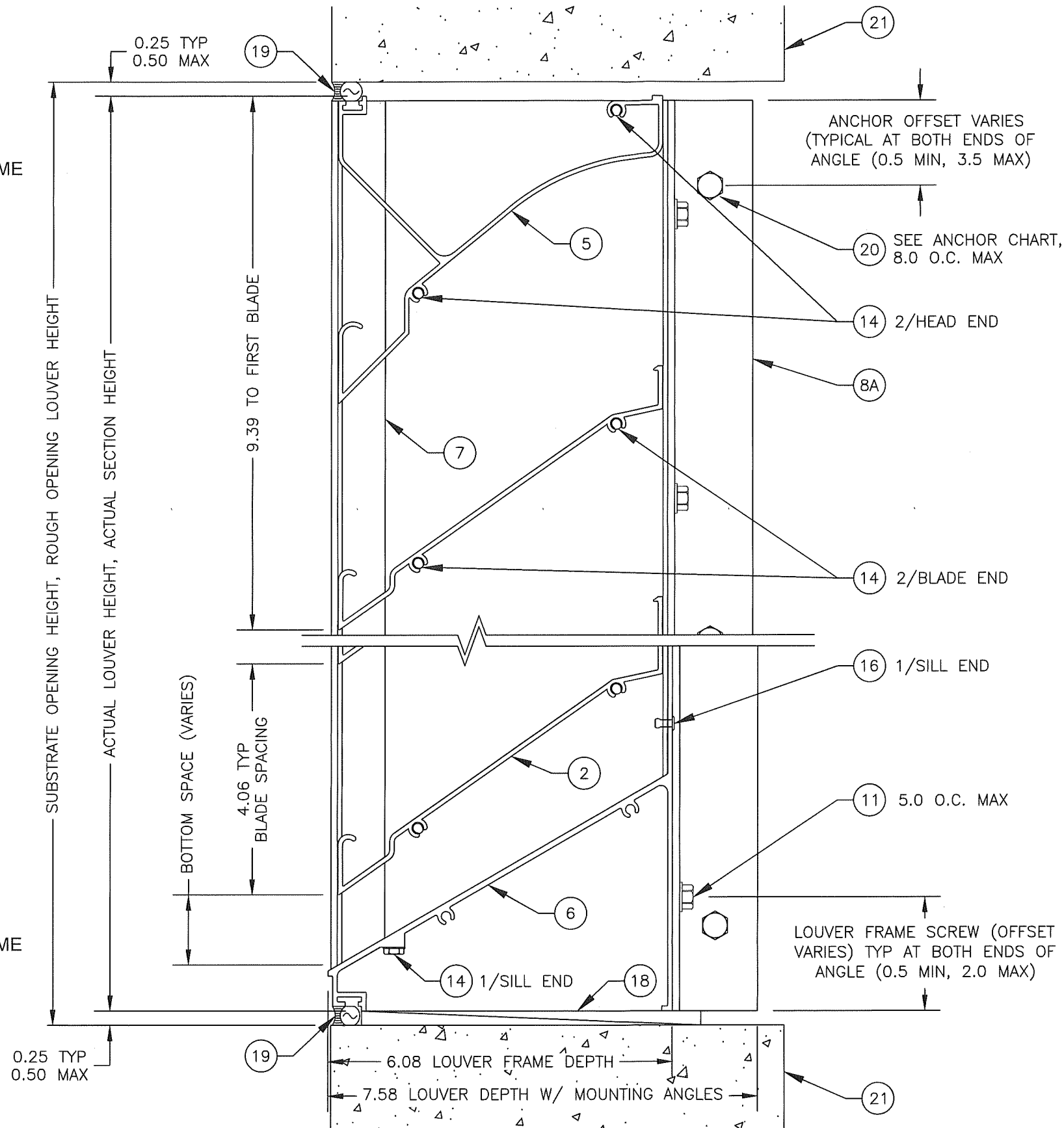
DETAIL #  
PAGE #

1 2  
DET. PAGE

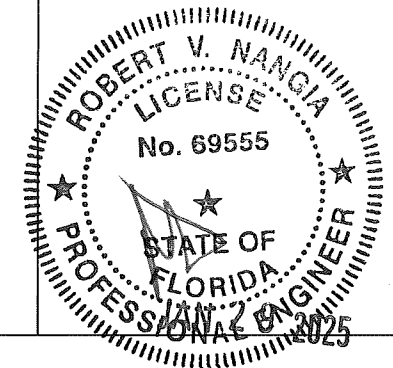
HEAD,  
CHANNEL FRAME

2 2  
DET. PAGE

SILL,  
CHANNEL FRAME



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Miami-Dade Product Control



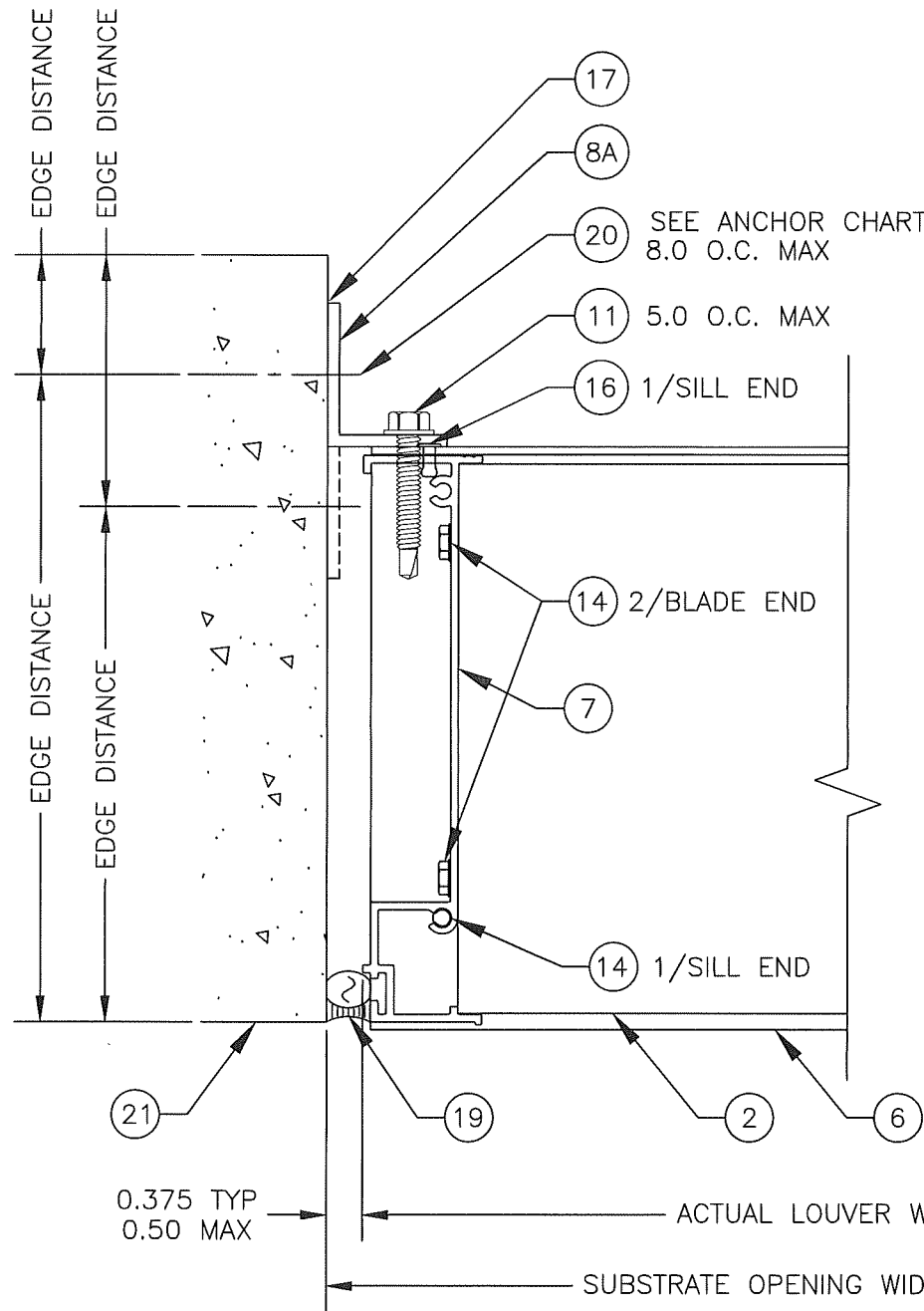
PAGE NOTES:

- 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

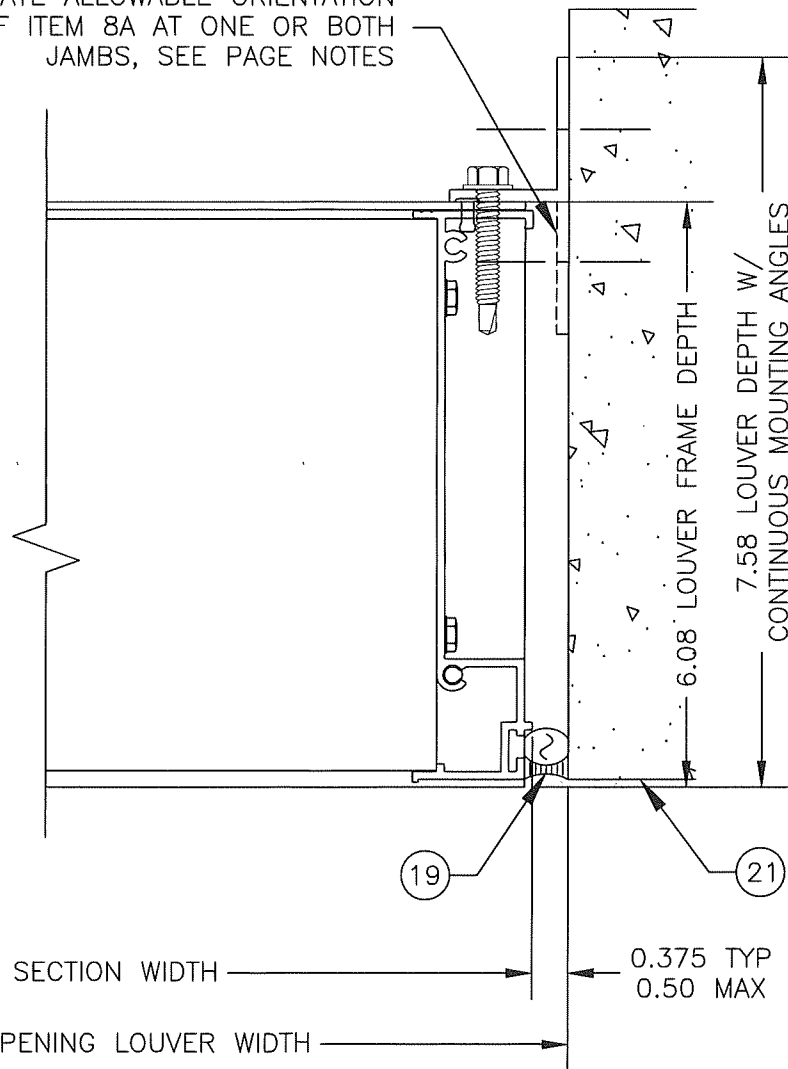
DATE 10/27/15  
DRAWN BY STEELE  
SCALE 1:1  
SHEET NO. 2 OF 17  
TITLE: ESD-635DE  
CHANNEL FRAME DETAILS  
CAD DRAWING NO. ESD-635DE





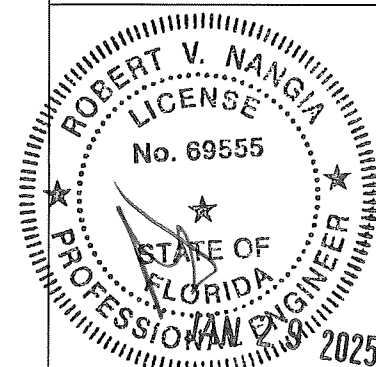
3A 3  
DET. PAGE  
JAMB,  
CHANNEL FRAME

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



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

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Expiration Date: **02/04/2031**  
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Miami-Dade Product Control

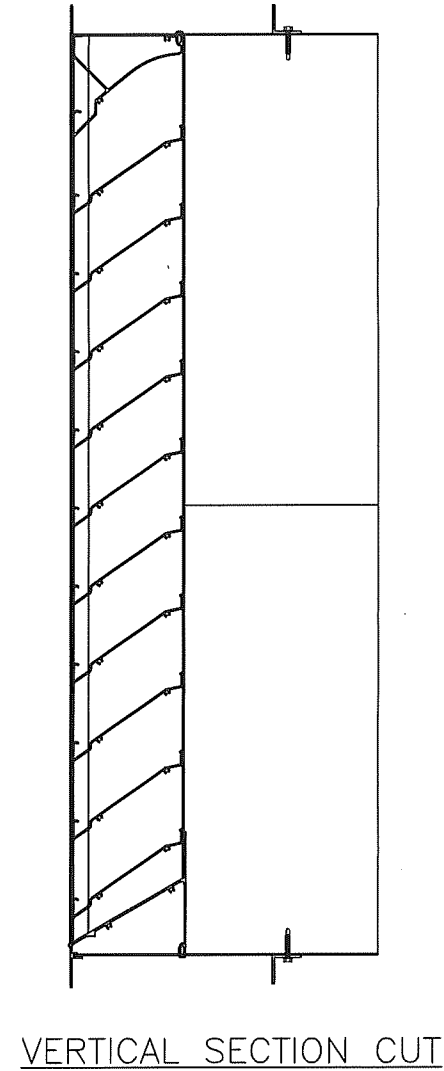
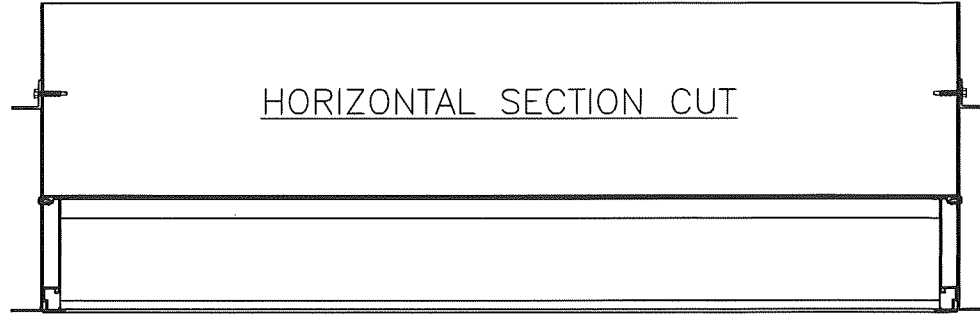
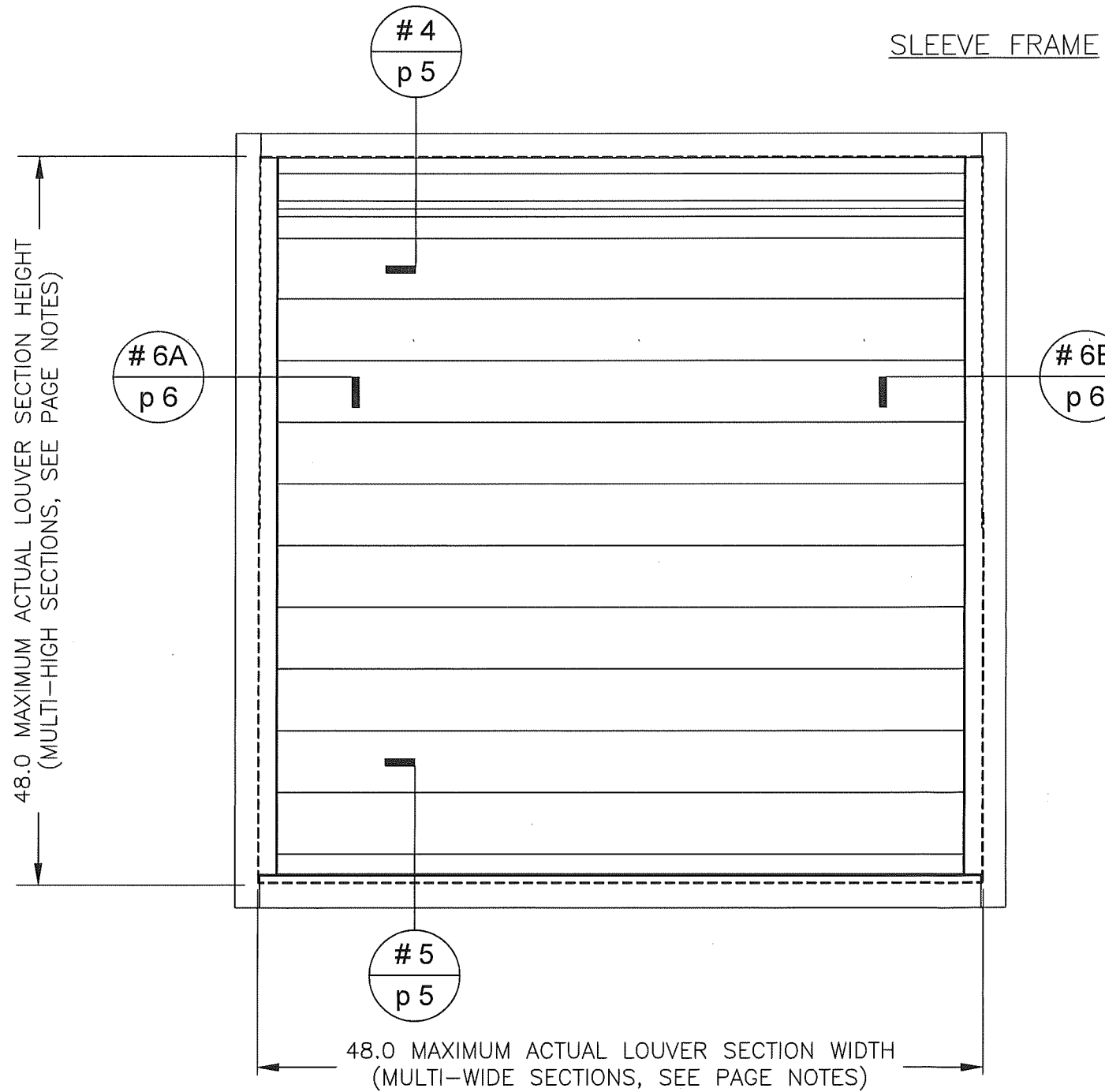


PAGE NOTES:  
• TO ALLOW FOR SUBSTRATE ANCHOR HEAD CLEARANCE, STANDARD LOUVER WIDTH DOWNSIZING IS 0.375 PER END (0.75 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING. THERE IS NO NEED FOR ADDITIONAL DOWNSIZING AT THE JAMBS WHEN USING THE ALTERNATE ANCHOR ORIENTATION.

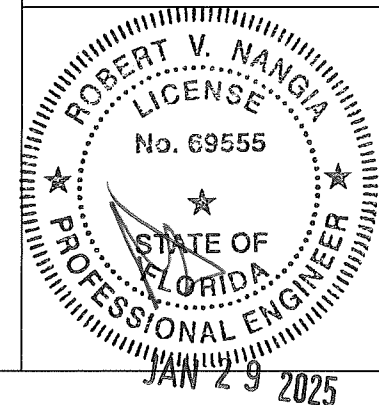
**GREENHECK**  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

TITLE:  
ESD-635DE  
CHANNEL FRAME DETAILS

DRAWN BY: STEELE  
SCALE: 1:1  
DATE: 10/27/15  
SHEET NO.: 3 OF 17  
CAD DRAWING NO.: ESD-635DE



**PRODUCT REVISED**  
As complying with the Florida  
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NOA-No. **25-0214.04**  
Expiration Date: **02/04/2031**  
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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.

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

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

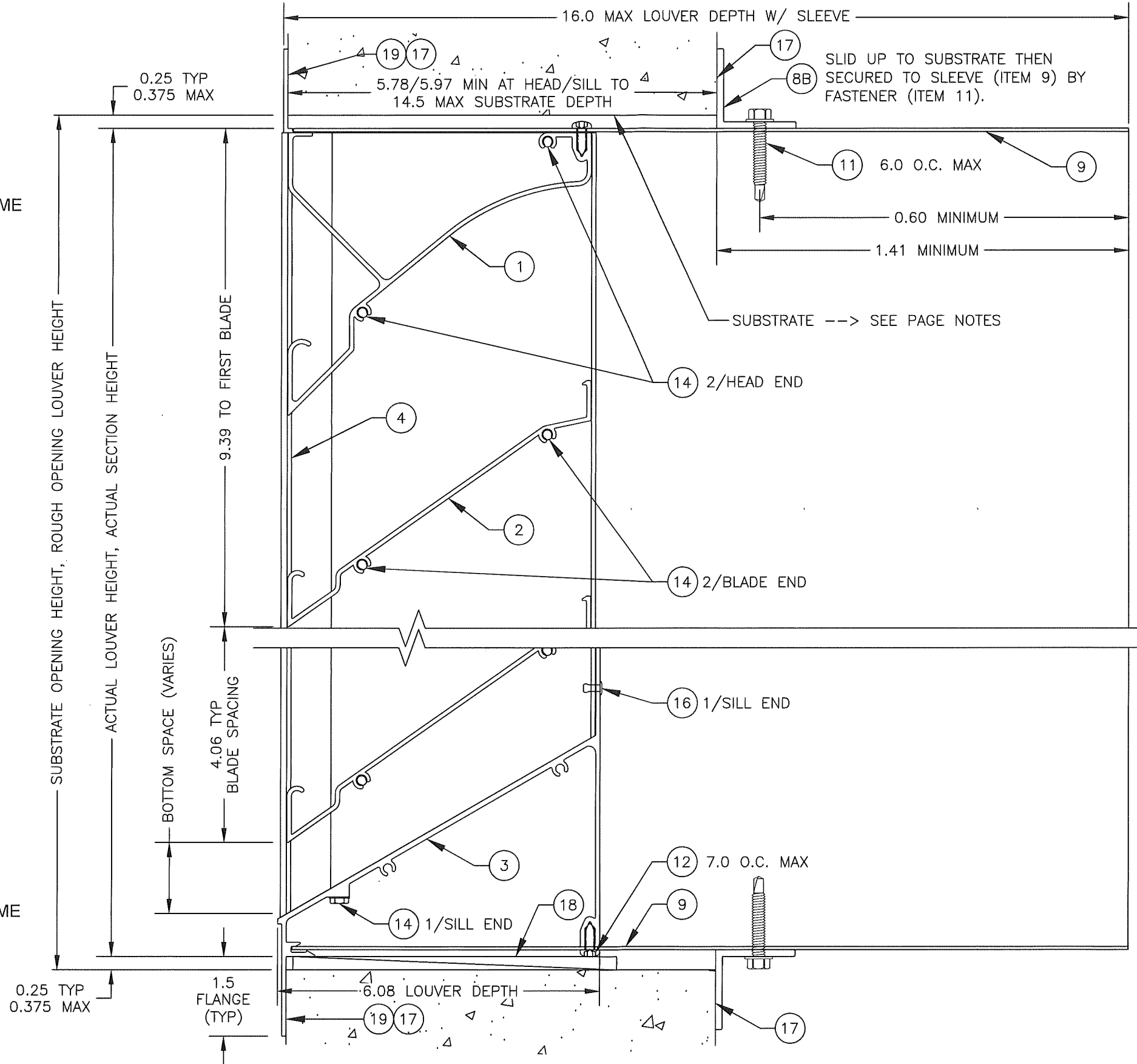
TITLE:  
ESD-635DE  
SLEEVE FRAME ELEVATION

4 5  
DET. PAGE

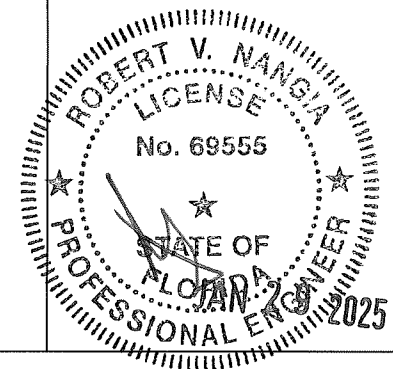
HEAD,  
SLEEVE FRAME

5 5  
DET. PAGE

SILL,  
SLEEVE FRAME



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PAGE NOTES:

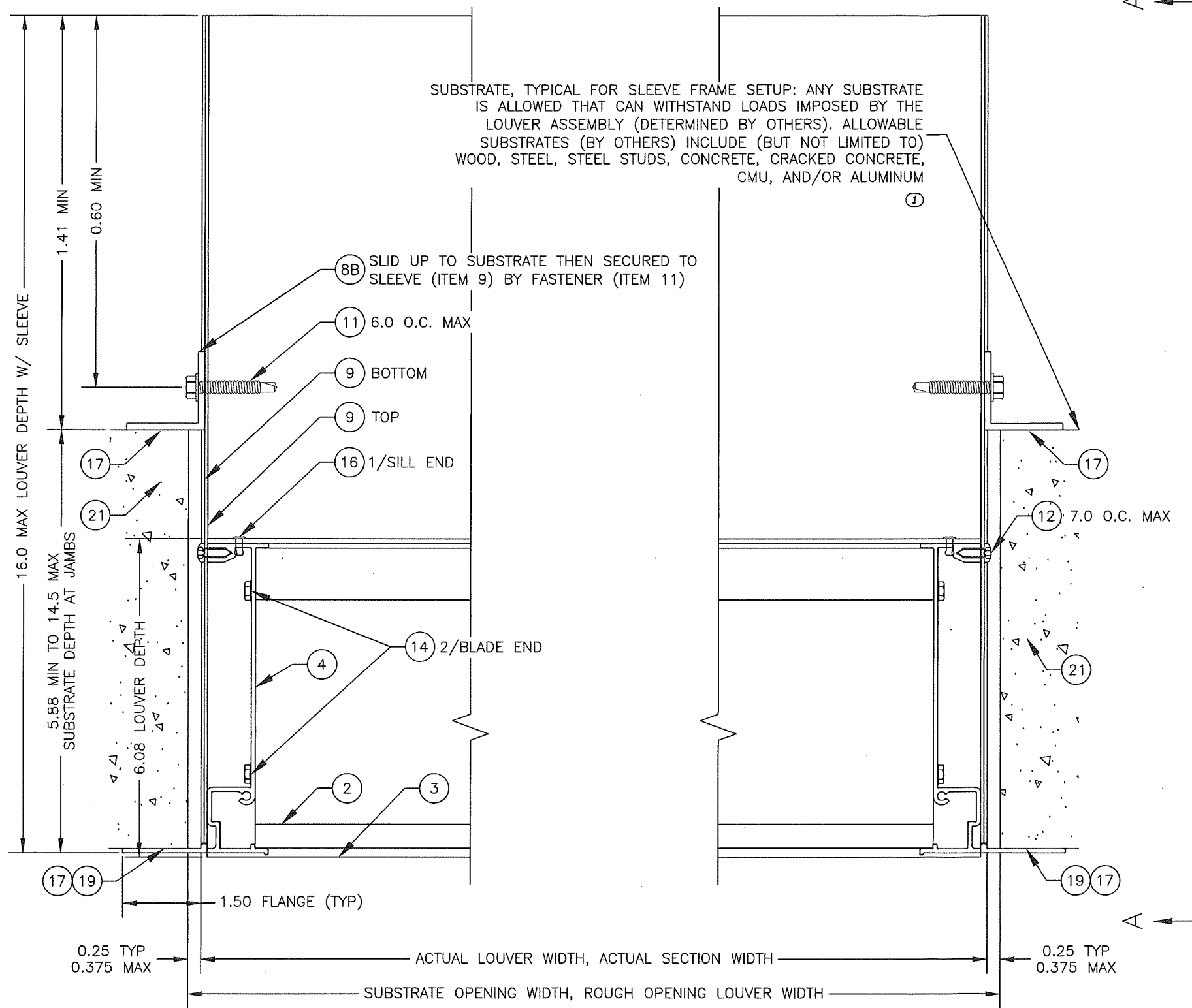
- SUBSTRATE, TYP. FOR SLEEVE FRAME SETUP: ANY SUBSTRATE IS ALLOWED THAT CAN WITHSTAND LOADS IMPOSED BY THE LOUVER ASSEMBLY (DETERMINED BY OTHERS). ALLOWABLE SUBSTRATES (BY OTHERS) INCLUDE (BUT NOT LIMITED TO) WOOD, STEEL, STEEL STUDS, CONCRETE, CRACKED CONCRETE, CMU, AND/OR ALUMINUM.
- STANDARD LOUVER 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

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





6A 6  
DET. PAGE  
JAMB,  
SLEEVE FRAME

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

LOCATION @ MID-LOUVER HEIGHT

FRONT EDGE OF SLEEVES

1.0 OVERLAP

VIEW  
"A-A"

9  
TOP SLEEVE

9  
BOTTOM SLEEVE

TOP SLEEVE IS TUCKED  
BEHIND BOTTOM SLEEVE

1.5 (TOP SLEEVE  
1ST HOLE LOCATION)

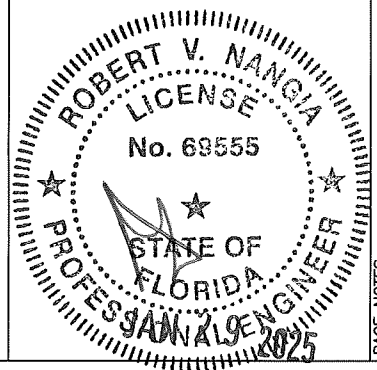
2.0 (BOTTOM SLEEVE  
1ST HOLE LOCATION)

HOLE SPACING  
(7.0 O.C. MAX)

HOLE SPACING  
(7.0 O.C. MAX)

LOUVER PARTS NOT SHOWN FOR CLARITY

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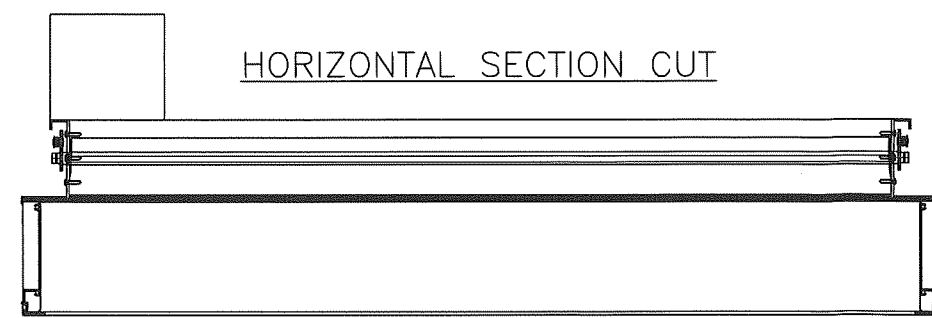
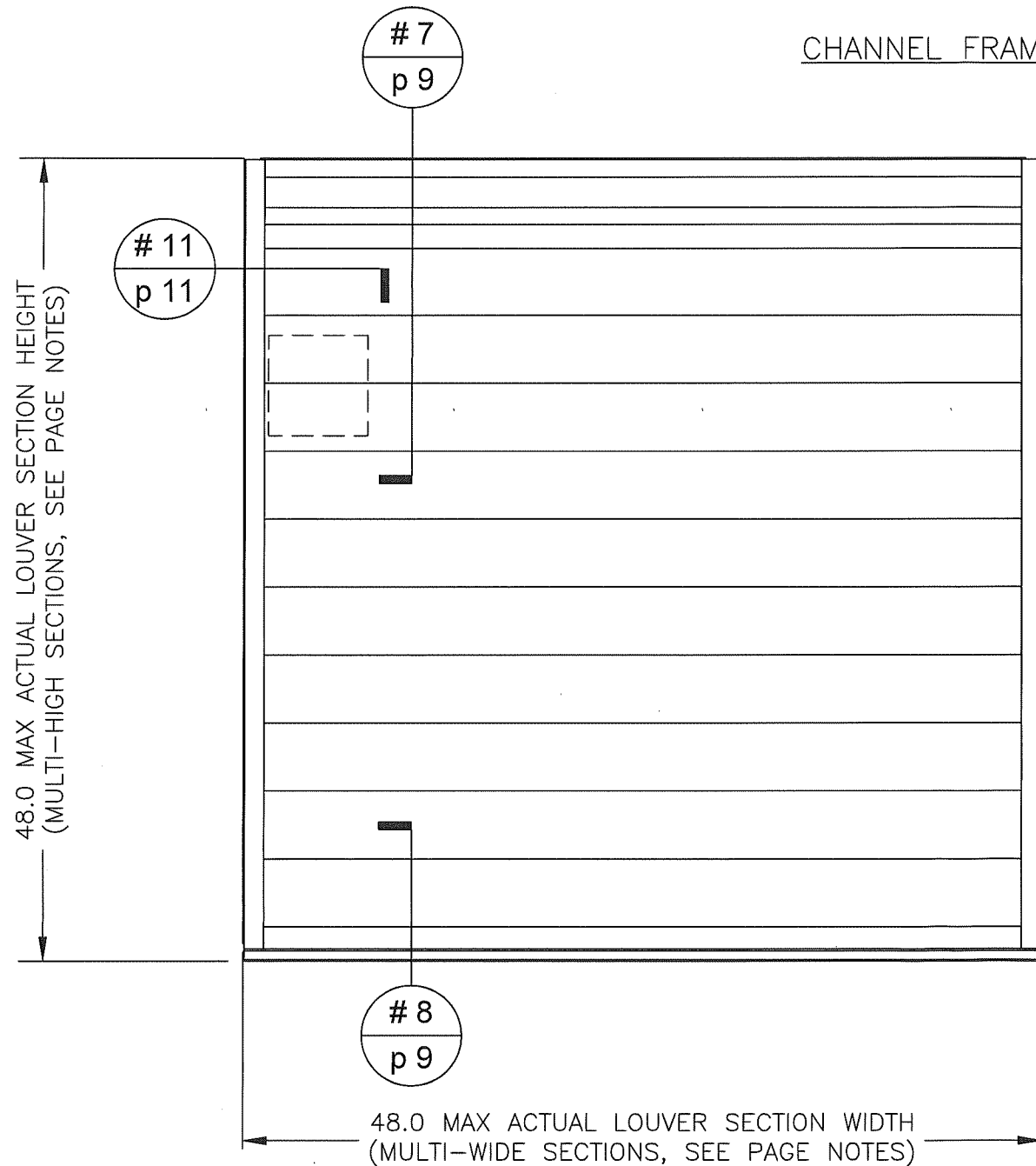


PAGE NOTES:  
• STANDARD LOUVER WIDTH DOWNSIZING IS 0.25 PER END (0.50 OVERALL TOTAL) WHEN ORDERED BASED ON ROUGH OPENING SIZING.

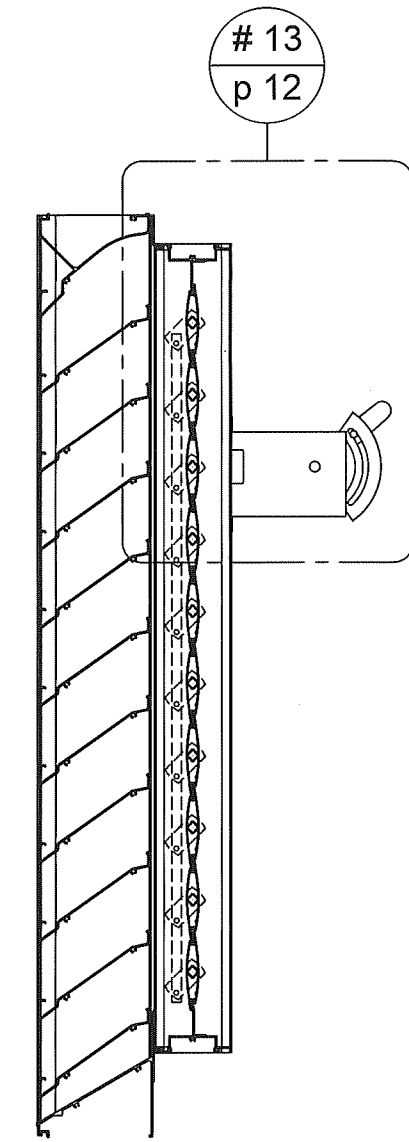
**GREENHECK**  
P.O. BOX 410 SCHOFIELD,  
WISCONSIN 54476-0410

DATE 10/27/15  
DRAWN BY STEELE  
SCALE 1:1.1  
SHEET NO. 6 OF 17  
CADD DRAWING NO. ESD-635DE

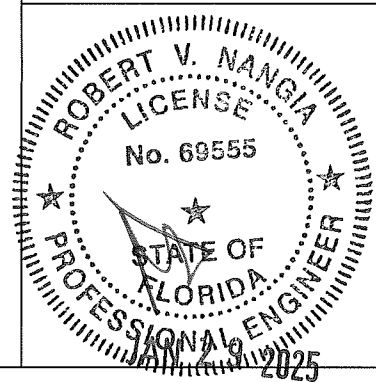
ESD-635DE  
SLEEVE FRAME DETAILS



CHANNEL FRAME W/ DAMPER



VERTICAL SECTION CUT



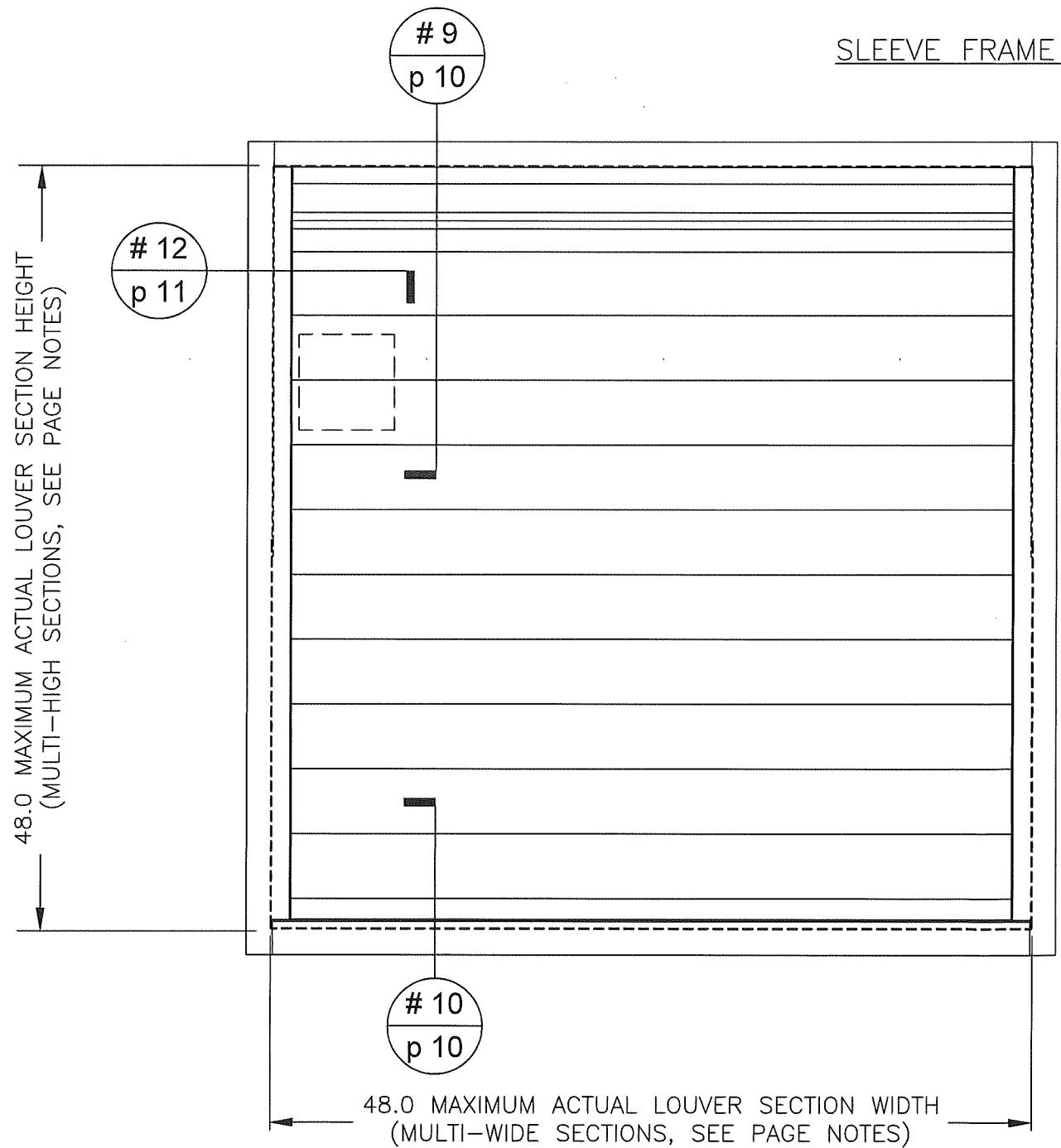
**PRODUCT REVISED**  
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 By: *Manuel Perez*  
 Miami-Dade Product Control

PAGE NOTES:  
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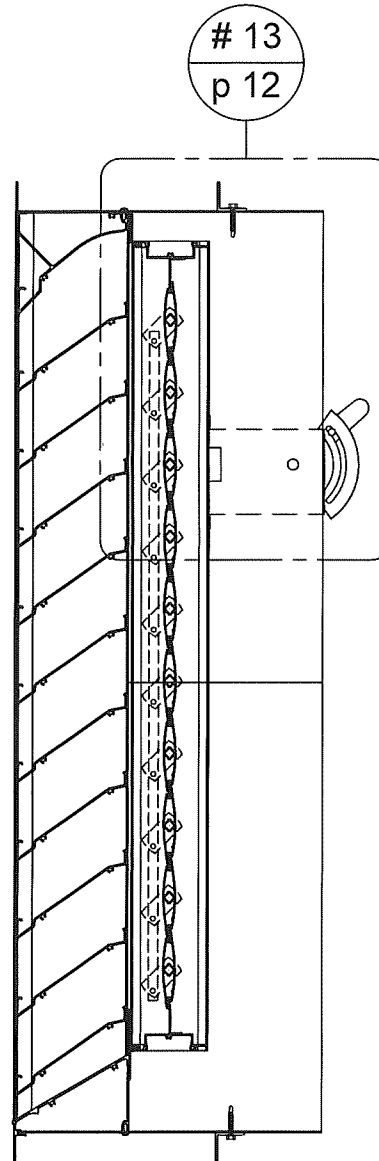
TITLE:  
 ESD-635DE W/ VCD-40 DAMPER  
 CHANNEL FRAME ELEVATION

DRAWN BY	STEELE	DATE	10/27/15
SCALE	1:5		
SHEET NO.	7 OF 17		
CAD DRAWING NO.	ESD-635DE		



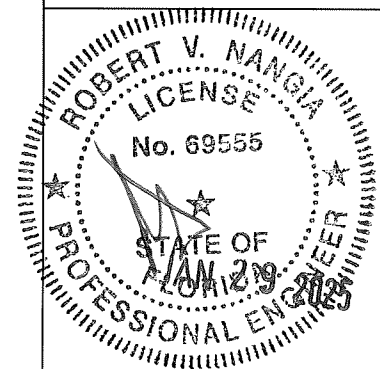
HORIZONTAL SECTION CUT

SLEEVE FRAME W/ DAMPER



VERTICAL SECTION CUT

**PRODUCT REVISED**  
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TITLE:  
ESD-635DE W/ VCD-40 DAMPER  
SLEEVE FRAME ELEVATION

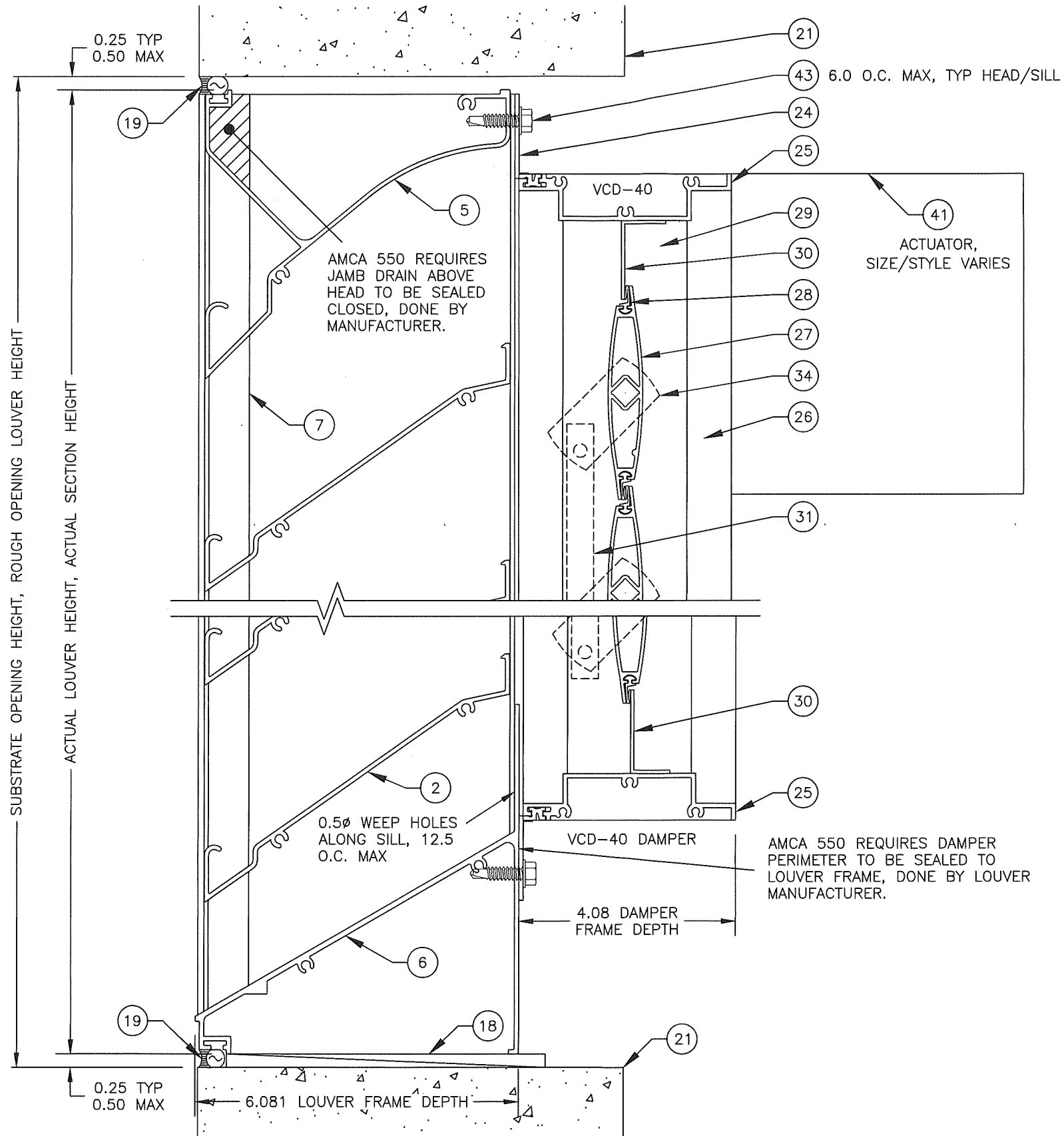
DRAWN BY	STEELE	DATE	10/27/15
SCALE	1:5		
SHEET NO.	8 OF 17		
CAD DRAWING NO.	ESD-635DE		

7 9  
DET. PAGE

DAMPER HEAD,  
CHANNEL FRAME

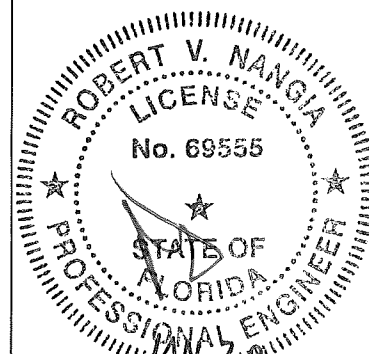
8 9  
DET. PAGE

DAMPER SILL,  
CHANNEL FRAME



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

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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 W/ VCD-40 DAMPER  
CHANNEL FRAME DETAILS

DRAWN BY STEELE  
SCALE 1:1  
DATE 10/27/15  
SHEET NO. 9 OF 17  
CAD DRAWING NO. ESD-635DE

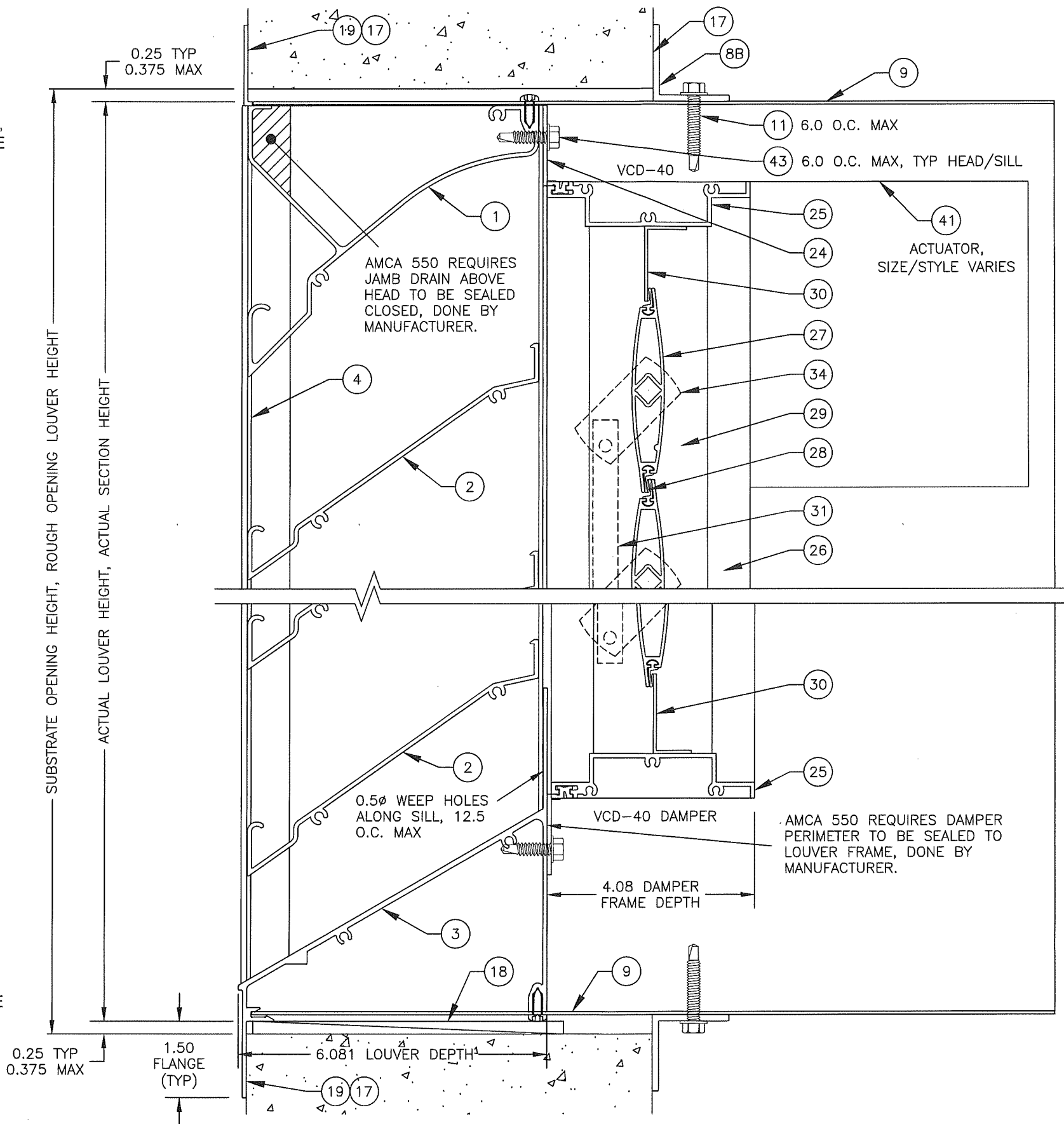


9 10  
DET. PAGE

DAMPER HEAD,  
SLEEVE FRAME

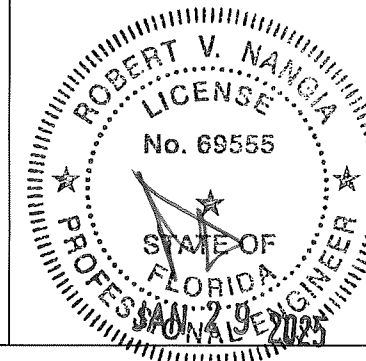
10 10  
DET. PAGE

DAMPER SILL,  
SLEEVE FRAME



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

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

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STEEL

SCALE

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DATE

10/27/15

SHEET NO.

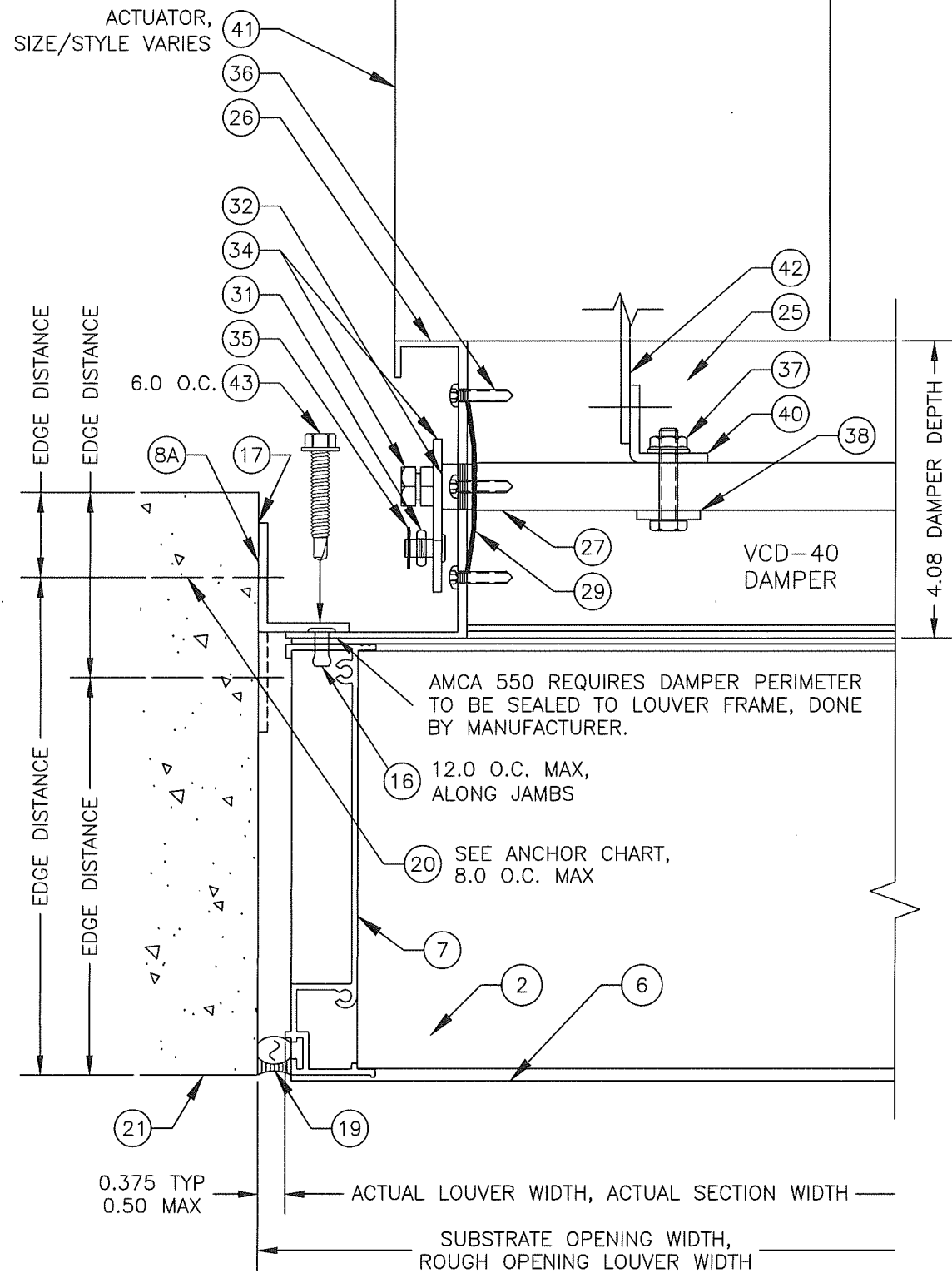
10 OF 17

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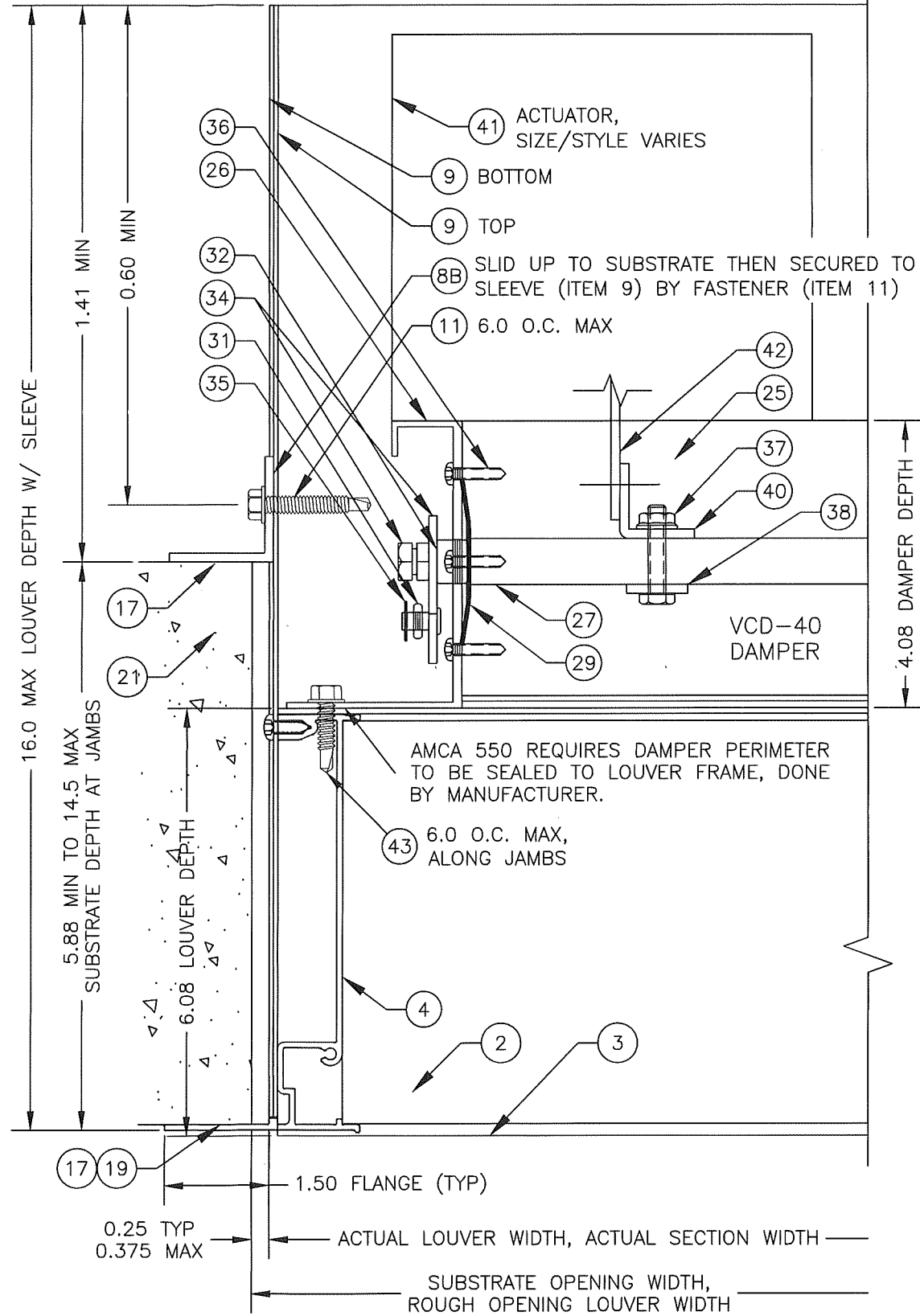
ESD-635DE

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



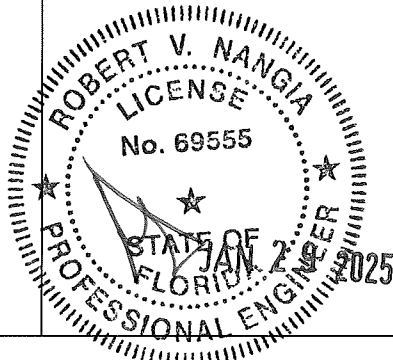


11 11 DAMPER JAMB, CHANNEL FRAME  
DET. PAGE



12 11 DAMPER JAMB, SLEEVE FRAME  
DET. PAGE

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



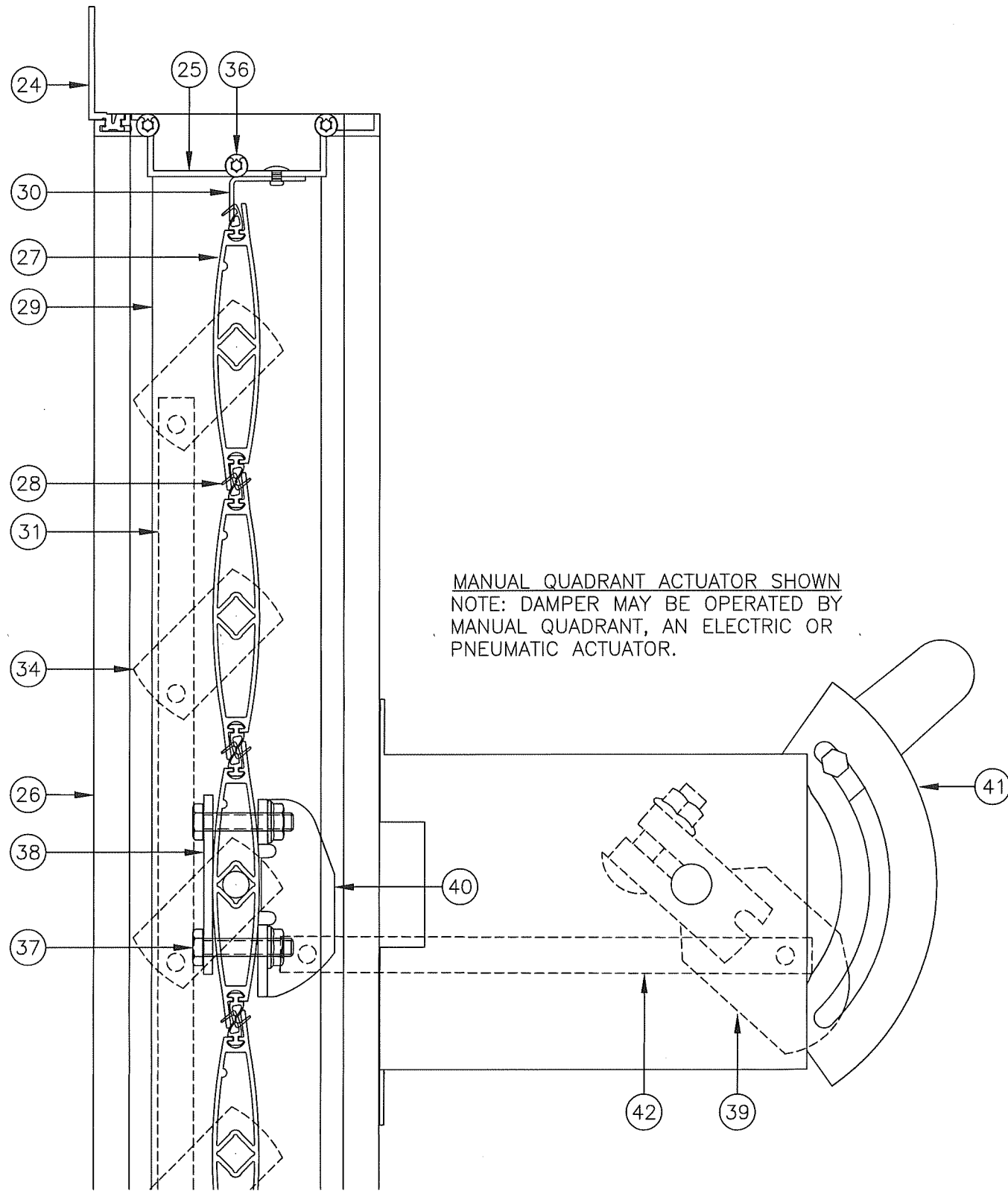
PAGE NOTES:

- 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.

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	SCALE	1:1	
SHEET NO.		11 OF 17	
JOB DRAWING NO.		ESD-635DE	



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

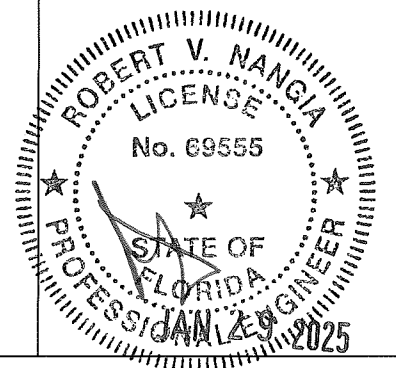


13	12
DET.	PAGE

VCD-40 DAMPER & ACTUATOR,  
CHANNEL & SLEEVE FRAME

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

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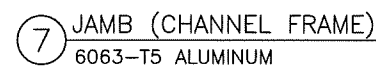
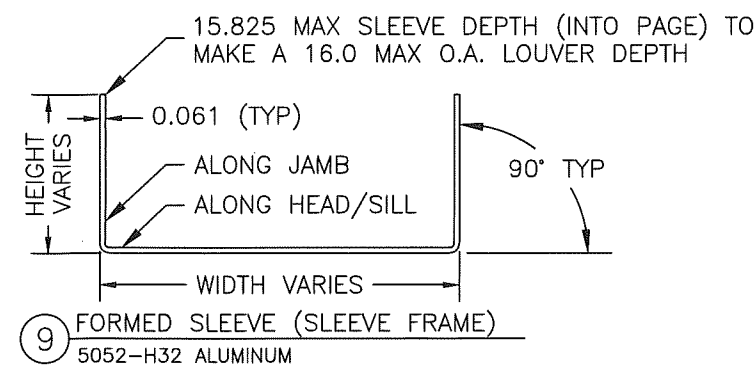
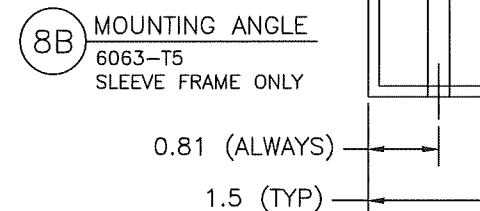
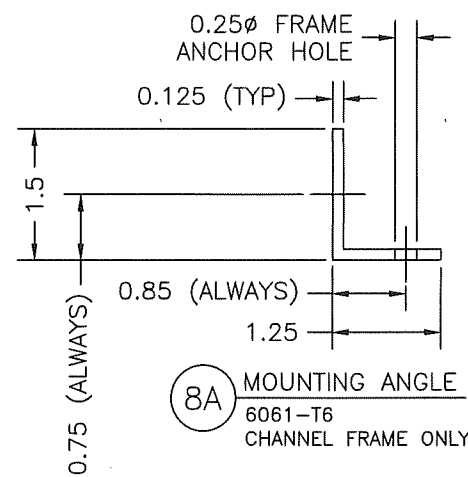
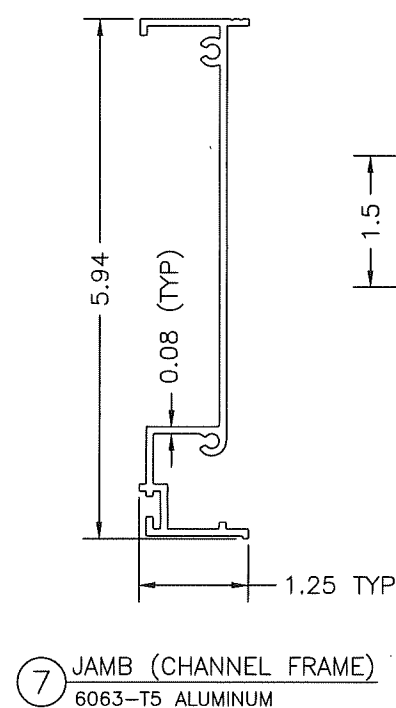
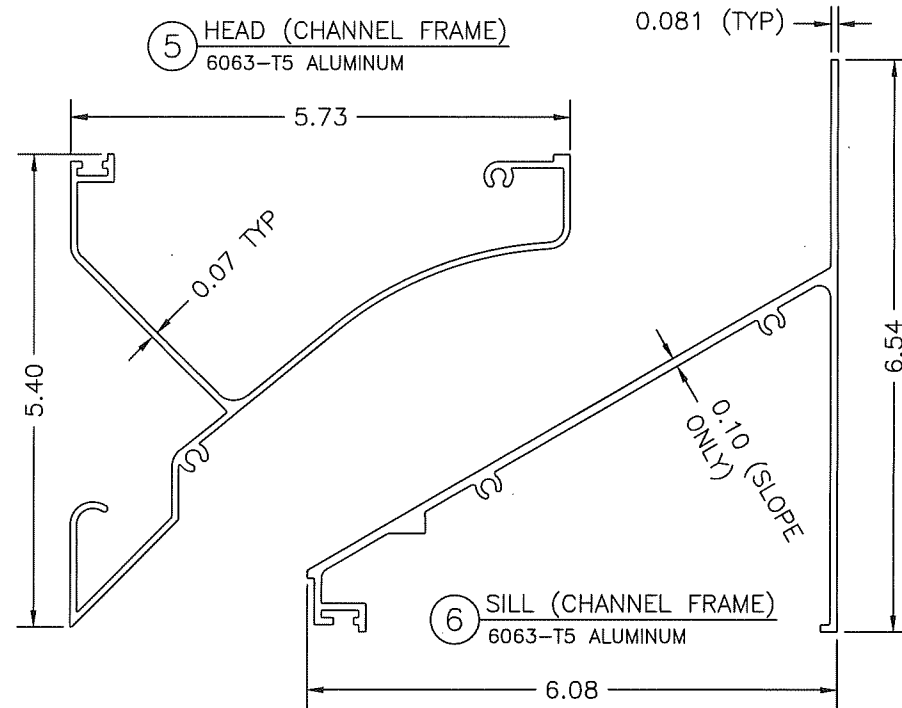
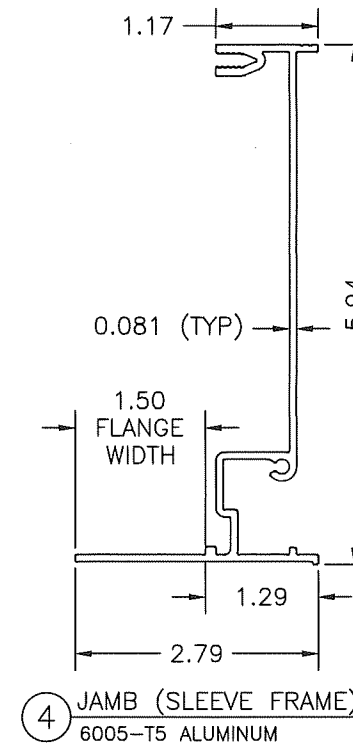
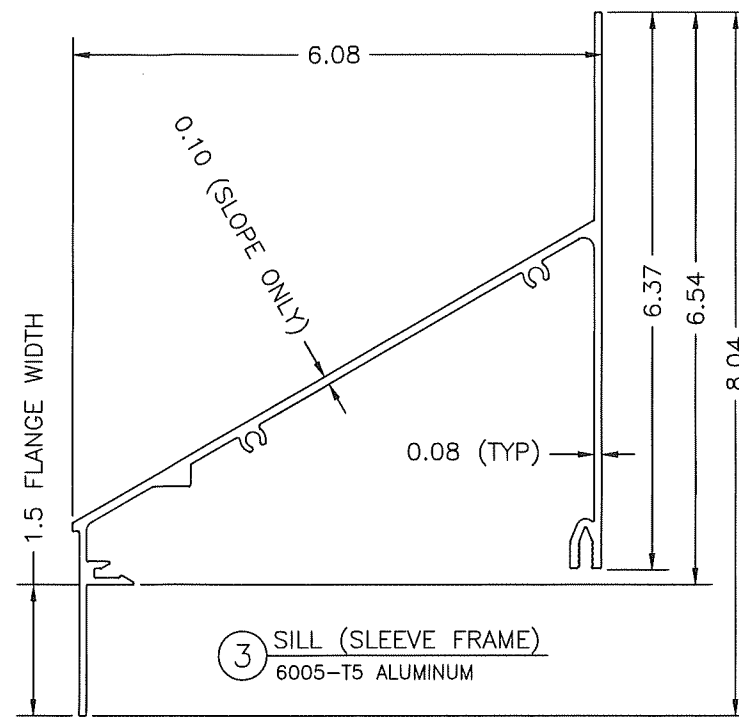
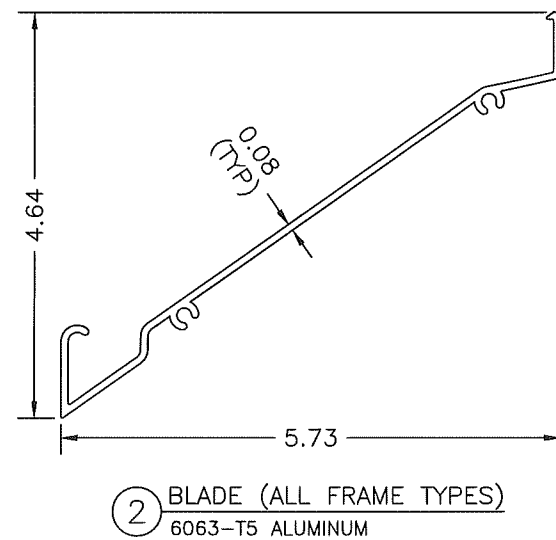
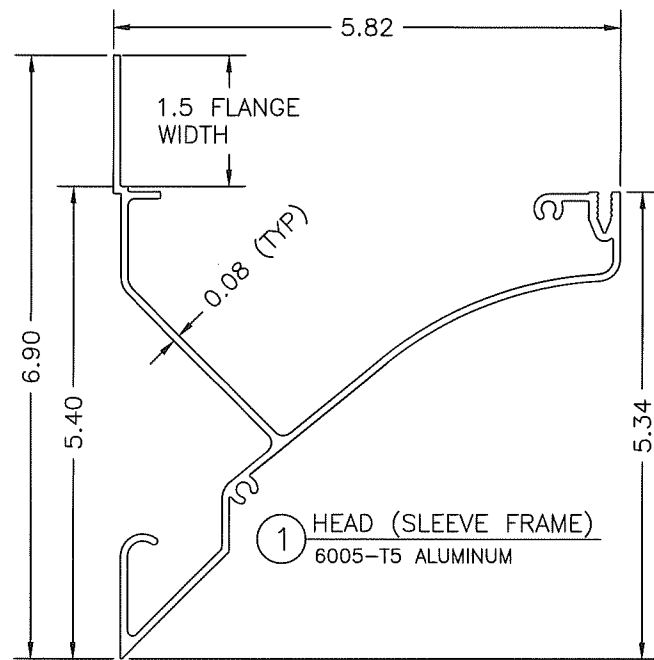


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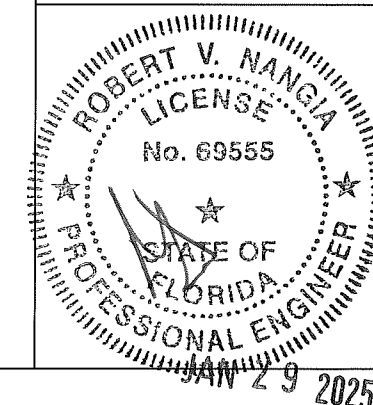
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STEELE	10/27/15
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ECO DRAWING NO.	ESD-635DE

TITLE:  
VCD-40 DAMPER  
CHANNEL & SLEEVE FRAME DETAIL



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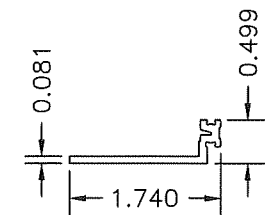


PAGE NOTES:  
• ALL SHEET METAL PARTS ARE SHOWN AT ACTUAL THICKNESS

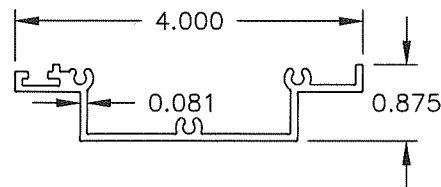
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SCALE: 1:1  
DATE: 10/27/15  
SHEET NO.: 13 OF 17  
CAD DRAWING NO.: ESD-635DE

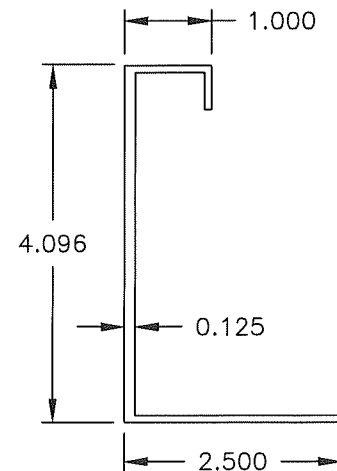
ESD-635DE  
PART DETAILS



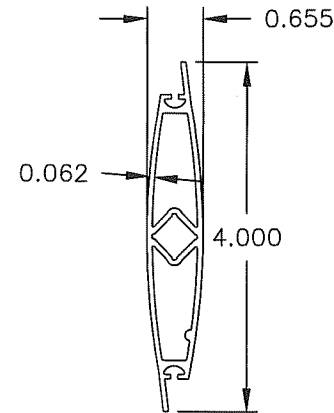
24 DAMPER FLANGE  
6063-T5 ALUMINUM



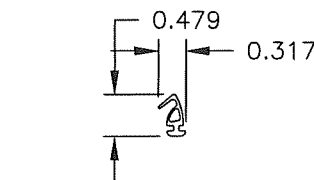
25 DAMPER HEAD/SILL  
6063-T5 ALUMINUM



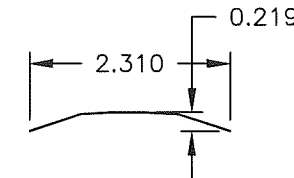
26 DAMPER JAMB  
6063-T5 ALUMINUM



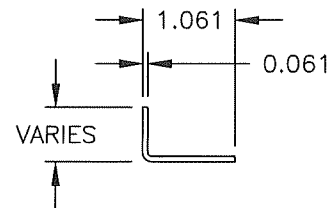
27 DAMPER BLADE  
6063-T5 ALUMINUM



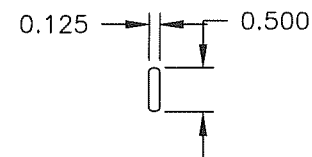
28 DAMPER BLADE SEAL  
MATERIAL VARIES



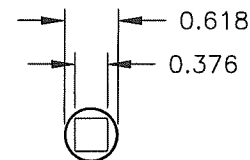
29 DAMPER JAMB SEAL  
0.007 SS



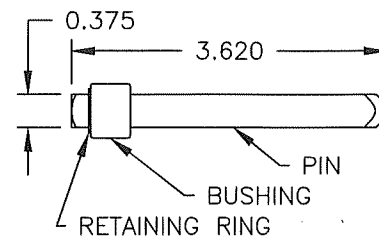
30 DAMPER TOP/BOTTOM CLOSURE  
ALUMINUM



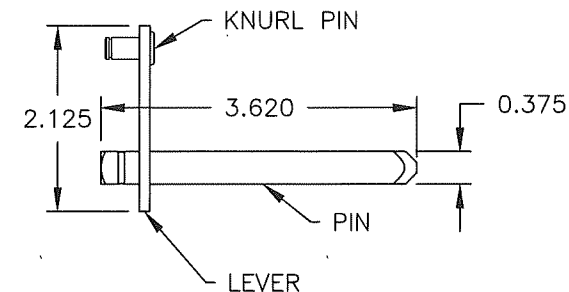
31 DAMPER LINKAGE BAR, JAMB  
MATERIAL VARIES



32 DAMPER AXLE BUSHING 0.45 LONG  
MATERIAL VARIES

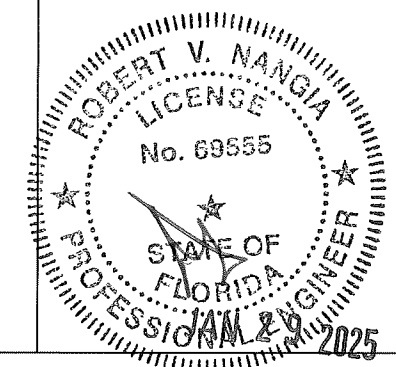


33 DAMPER AXLE ASSEMBLY, NON-DRIVE SIDE  
MATERIAL VARIES



34 DAMPER AXLE ASSEMBLY, DRIVE SIDE  
MATERIAL VARIES

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Miami-Dade Product Control



DRAWN BY	STEELE	DATE	10/27/15
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TITLE:		CAD DRAWING NO.	ESD-635DE

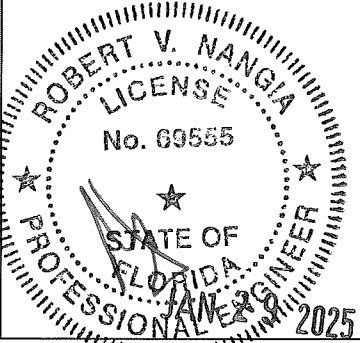
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WISCONSIN 54476-0410

VCD-40 DAMPER  
PART DETAILS



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 ①	---	---	---
11	1/4-14 DEWALT/ELCO BI-FLEX, PROVIDED BY LOUVER MANUFACTURER ①	300 SS HEAD & SHANK W/ COATED STEEL TIP ①	---	CHANNEL FRAME: 5.0 O.C. MAX SLEEVE FRAME: 6.0 O.C. MAX ①
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 ①	---	---	---
16	1/8"Ø 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 ①
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. ①
	SUBSTRATE - CONCRETE	CONCRETE	---	
	SUBSTRATE - STEEL STUD	STEEL	---	
	SUBSTRATE - STRUCTURAL STEEL	STEEL	---	
	SUBSTRATE - WOOD	WOOD	---	
	SUBSTRATE - ALUMINUM	ALUMINUM	---	
---	DAMPER PARTS SHOWN BELOW ①			
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	DELRIN OR BRONZE	---	---
33A	DAMPER AXLE ASSEMBLY, NON-DRIVE SIDE	ZP STEEL & DELRIN	---	ZP STEEL PIN W/ DELRIN BUSHING
33B		ZP STEEL & BRONZE	---	ZP STEEL PIN W/ BRONZE BUSHING
33C		SS & DELRIN	---	SS PIN W/ DELRIN 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.



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STEELE

DATE  
10/27/15

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1:1

SHEET NO.  
15 OF 17

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

ESD-635DE & VCD-40 DAMPER  
ITEM DESCRIPTIONS

CAD DRAWING NO.  
ESD-635DE



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

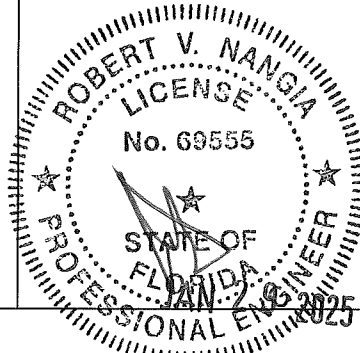
REV 01: 12/11/24, MOVED GENERAL NOTES TO THIS NEW PAGE, ADDED IMPACT SPEED AND AMCA 550 TO #2, ADDED ASD TO #3, REMOVED STRAP FROM #5, CONDENSED #6 TO ONE SENTENCE, ADDED LAST SENTENCE TO #7, #8 IS OLD #9, #9 IS OLD #10, UPDATED #9 TO STATE W/O THE DAMPER, ADDED #10, #11 IS OLD #10, & ADDED #12-#15.

DATE	10/27/15
DRAWN BY	STEELE
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SHEET NO.	16 OF 17
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**GREENHECK**  
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WISCONSIN 54476-0410

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

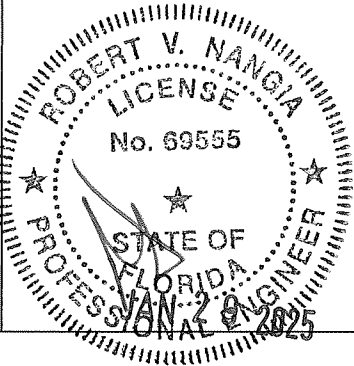
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By: *Manuel Perez*  
Miami-Dade Product Control



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
					3/8	1 1/2	23/32	6 1/4		5/8	7/16	
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								
	12 GA (0.099)						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
		2 1/8				6						
		3 KSI			1/4	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	6	3		1/4	
		2.9 KSI	DEWALT/ELCO ULTRACON SS4	410 SS	1/4	1	1 3/4	4	3		1/4	
			2 1/2	8								
		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	
						2		6				
3/8	1 1/8				2 3/8	4	7/16					
	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 ULTRACON SS4	410 SS	1/4	1	2	2	1 1/2		1/4		
		2.5		6	3							
	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.



**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

DATE  
10/27/15

DRAWN BY  
STEELE

SCALE  
1:1.2

SHEET NO.  
17 OF 17

CAD DRAWING NO.  
ESD-635DE

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

TITLE:  
SUBSTRATE AND ANCHOR TABLE