



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)

**Ruskin Company**  
**3900 Dr. Greaves Road**  
**Grandview, MO 64030**

**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 ELF375DXD Aluminum Louver**

**APPROVAL DOCUMENT:** Drawing No. **60-021902-00D**, titled "ELF375DXD Louver", sheets 1 through 14 of 14, dated 05/26/2006, with revision **E** dated 09/27/2023, prepared by Ruskin Company, signed and sealed by Jeffrey Devon Smith, 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, Geneva, AL and Juarez, Mexico, model/ series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**LIMITATION:** This louver 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/ water proof 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 # 23-1116.11** and consists of this page 1 and evidence pages E-1, E-2 and E-3, as well as approval document mentioned above.

The submitted documentation was reviewed by **Sifang Zhao, P.E.**



*S.Z.*  
07/18/2024

NOA-No. 24-0403.02  
Expiration Date: January 03, 2028  
Approval Date: July 18, 2024  
Page 1

**Ruskin Company**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. Drawing No. **60-021902-00D**, titled “ELF375DXD Louver”, sheets 1 through 11 of 11, dated 05/26/2006, with revision **D** dated 03/02/2018, prepared by Ruskin Company, signed and sealed by Melissa M. Massar, P.E. *“Submitted under NOA # 18-0201.08”*

**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 ELF375DXD Test Louver, prepared by National Certified Testing Laboratories, Inc., Test Report No. **NCTL-210-3377-1**, dated 03/19/2007, signed and sealed by Gerard J. Ferrara, P.E.  
*“Submitted under NOA # 07-0621.07”*
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 ELF375DXD Test Louver, prepared by National Certified Testing Laboratories, Inc., Test Report No. **NCTL-210-4090-01**, dated 12/07/2017, signed and sealed by Douglas J. McDougall, P.E.  
*“Submitted under NOA # 18-0201.08”*

**C. CALCULATIONS**

1. Louver and anchor calculations prepared by Ruskin Engineering, dated 09/08/2015, signed and sealed by Chelsea GQ Welch, P.E. *“Submitted under NOA # 15-0923.05”*
2. Louver and anchor calculations prepared by Ruskin Engineering, dated 05/14/2007 and 11/20/2007, signed and sealed by Daniel J. Rau, P.E.  
*“Submitted under NOA # 07-0621.07”*
3. Louver wind load review prepared by Ruskin Company, dated 03/08/2018, signed and sealed by Melissa M. Massar, P.E. *“Submitted under NOA # 18-0201.08”*

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. None.



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Sifang Zhao, P.E.  
Product Control Examiner  
NOA-No. 24-0403.02  
Expiration Date: January 03, 2028  
Approval Date: July 18 2024

**Ruskin Company**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**F. STATEMENTS**

1. Distributor agreement dated 09/22/2016. *“Submitted under NOA # 16-1110.03”*
2. Statement letter of code conformance to 2010 FBC, issued by Ruskin Company, dated 06/13/2012, signed and sealed by Daniel J. Rau, P.E. *“Submitted under NOA # 12-0816.02”*
3. Statement letter of code conformance to the 5<sup>th</sup> edition (2014) FBC, issued by Ruskin Company, dated 09/08/2015, signed and sealed by Chelsea GQ Welch, P.E. *“Submitted under NOA # 15-0923.05”*
4. No financial interest letter issued by Ruskin Company, dated 05/25/2007, signed and sealed by Daniel J. Rau, P.E. *“Submitted under NOA # 07-0621.07”*
5. Statement letter of code conformance to the 6<sup>th</sup> edition (2017) FBC and of no financial interest issued by Ruskin Company, dated 03/08/2018, signed and sealed by Melissa M. Massar, P.E. *“Submitted under NOA # 18-0201.08”*
6. Laboratory compliance letter for Test Report No. **NCTL-210-4090-01**, issued by National Certified Testing Laboratories, Inc., dated 12/07/2017, signed and sealed by Douglas J. McDougall, P.E. *“Submitted under NOA # 18-0201.08”*
7. Statement letter of code conformance to the **8<sup>th</sup> Edition** (2023) of the FBC and of no financial interest, issued by Ruskin Company, dated 10/30/2023, signed and sealed by Jeffrey Devon Smith, P.E.

**G. OTHER**

1. This NOA **revises NOA # 22-1215.04** for the 8<sup>th</sup> edition (2023) of the FBC update.



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Sifang Zhao, P.E.  
Product Control Examiner  
NOA-No. 24-0403.02  
Expiration Date: January 03, 2028  
Approval Date: July 18 2024

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**2. NEW EVIDENCE SUBMITTED UNDER NOA # 24-0403.02**

**A. DRAWINGS**

1. Drawing No. **60-021902-00D**, titled “ELF375DXD Louver”, sheets 1 through 14 of 14, dated 05/26/2006, with revision **E** dated 09/27/2023, prepared by Ruskin Company, signed and sealed by Jeffrey Devon Smith, P.E

**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 ELF375DXD Test Louver, prepared by Intertek., Test Report No. **P5506.01-801-18 R0**, dated 01/09/2023, signed and sealed by Tyler Westerling, P.E.

**C. CALCULATIONS**

1. Louver wind load review prepared by Ruskin Company, dated 11/07/2023, signed and sealed by Jeffrey D. Smith, 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 8<sup>th</sup> edition (2023) of the FBC, issued by Ruskin Company, dated 11/09/2023, signed and sealed by Jeffrey D. Smith, P.E.

**G. OTHER**

1. This NOA revises NOA # 23-1116.11.



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Sifang Zhao, P.E.  
Product Control Examiner  
NOA-No. 24-0403.02  
Expiration Date: January 03, 2028  
Approval Date: July 18 2024



TABLE 01 - PARTS LIST			
ITEM #	DESCRIPTION	MATERIAL	ALLOY
1	HEAD FRAME	.080" THK. EXTRUDED ALUM.	6063-T6
2	SILL FRAME	.125" THK. EXTRUDED ALUM.	6063-T6
3	JAMB FRAME	.080" THK. EXTRUDED ALUM.	6063-T6
4	BLADE	.080" THK. EXTRUDED ALUM.	6063-T6
5	BLADE BRACE	.080" THK. EXTRUDED ALUM.	6063-T6
6	WATERSTOP	.063" THK. EXTRUDED ALUM.	6063-T6
7	OFFSET TEE SUPPORT	.125" THK. EXTRUDED ALUM.	6063-T6
8	SCREW #10-16 X 1" LG HWH	410 SS/ZC PLT	
9	FSNR KIT 1/4-20 X 3/4" LG W LOCKNUT	ZINC PLT	

TABLE 02 - MULTI-SECTION CONNECTION PARTS			
ITEM #	DESCRIPTION	MATERIAL	ALLOY
11	MULLION ATTACHMENT ANGLE	.125" THK. EXTRUDED ALUM.	6063-T6
12	SCREW #10-16 X 1" LG HWH	410 SS/ZC PLT	

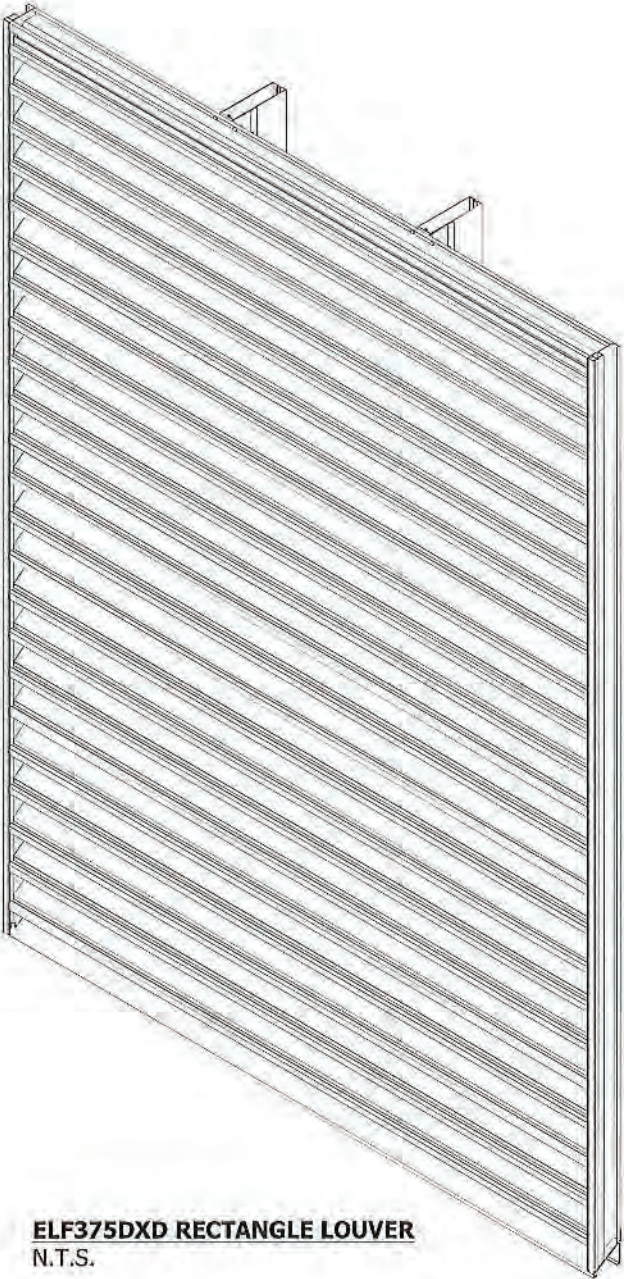
TABLE 03 - SHIP LOOSE PARTS			
ITEM #	DESCRIPTION	MATERIAL	ALLOY
13	CLIP ANG 2 X 2 X 1/4 X 6" LG PUNCHED STD	.25" THK. EXTRUDED ALUM.	6063-T6
14	CLIP ANG 2 X 2 X 1/4 X 6" LG PUNCHED CNTRSNG	.25" THK. EXTRUDED ALUM.	6063-T6
15	CLIP ANG 2 X 2 X 1/4 X 2" LG PUNCHED	.25" THK. EXTRUDED ALUM.	6063-T6
16	CLIP ANG 2 X 2 X 1/4 X 2" LG CNTRSNG	.25" THK. EXTRUDED ALUM.	6063-T6
17	SCREW #10-16 X 1 1/4" LG HWH	410 SS/ZC PLT	
18	SCREW #10-16 X 1 1/2" LG HWH	410 SS/ZC PLT	
19	SCR 1/4X1 HWH TEK	410 SS/ZC PLT	
20	FSNR KIT 3/8-16X3" LG W LOCKNUT	ZINC PLT	
21	STRUCTURAL ATTACHMENT ANGLE - HEAD/SILL	.375" THK. EXTRUDED ALUM.	6063-T6
22	CMU ATTACHMENT ANGLE - HEAD/SILL	.25" THK. FORMED ALUM.	3003-H14
23	CLIP ANG 2 X 2 X 1/4 X 8" LG PUNCHED STD	.25" THK. EXTRUDED ALUM.	6063-T6
24	3/8-16 X 2" LG. A307 GRADE A HHB W/WASHER & LOCKNUT	ZINC PLT	
25	ATTACHMENT ANGLE - JAMB	.25" THK. EXTRUDED ALUM.	6063-T6
26	CMU ATTACHMENT ANGLE - JAMB	.25" THK. FORMED ALUM.	3003-H14
27	1/4-20 X 1.5" LG. A307 GRADE A HHB W/WASHER & LOCKNUT	ZINC PLT	
28	SUBSTRATE FASTENER	REF TABLE 6/09 & 7/09	

TABLE 04 - PARTS - UNIVERSAL SLEEVE INSTALL			
ITEM #	DESCRIPTION	MATERIAL	ALLOY
29	HEAD FRAME W INTEGRAL FLANGE (FF)	.080" THK. EXTRUDED ALUM.	6063-T6
30	SILL FRAME W INTEGRAL FLANGE (FF)	.125" THK. EXTRUDED ALUM.	6063-T6
31	JAMB FRAME W INTEGRAL FLANGE (FF)	.080" THK. EXTRUDED ALUM.	6063-T6
32	UNIVERSAL SLEEVE	.190" THK. FORMED ALUM.	3003-H14
33	CONT. RETAINING ANGLE - HEAD/SILL	.25" THK. EXTRUDED ALUM.	6063-T6
34	CONT. RETAINING ANGLE - JAMBS	.25" THK. EXTRUDED ALUM.	6063-T6
35	UNIVERSAL SLEEVE ATTACHMENT ANGLE	.25" THK. EXTRUDED ALUM.	6063-T6
36	SCR 1/4X1 HWH TEK 410/ZC	410 SS/ZC PLT	
37	1/2-13 X 3.5" LG. SAE GRADE 2 HHB W/WASHER & LOCKNUT	ZINC PLT	

TABLE 05 - H.V.B.S. / MULLION SUPPORTS OPTIONS BASED ON SECTION HEIGHT

ITEM #	DESCRIPTION	LOUVER HEIGHT RANGE	MATERIAL	ALLOY
38	3" ALUM. H.V.B.S.	UP TO 35" TALL	EXT. ALUM.	6063-T6
39	6" ALUM. H.V.B.S.	GREATER THAN 35" TO 50"	EXT. ALUM.	6063-T6
40	6" ALUM. "I" H.V.B.S.	GREATER THAN 50" TO 66"	EXT. ALUM.	6063-T6
41	2X4 TUBE H.V.B.S.	GREATER THAN 66" TO 74"	EXT. ALUM.	6063-T6
42	2X6 TUBE H.V.B.S.	GREATER THAN 74" TO 100"	EXT. ALUM.	6063-T6
43	2X8 TUBE H.V.B.S.	GREATER THAN 100" TO 120"	EXT. ALUM.	6063-T6

- DRAWING SHEET INDEX:**
- SHEET 01** - STANDARD LOUVER SPECIFICATIONS
  - SHEET 02** - SINGLE-SECTION (CF) ASSEMBLY & DETAILS
  - SHEET 03** - MULTI-SECTION (CF) ASSEMBLY
  - SHEET 04** - STANDARD LOUVER BUILD DETAILS
  - SHEET 05** - STANDARD INSTALLATION DETAILS
  - SHEET 06** - ALTERNATE INSTALLATION DETAILS - REVERSED
  - SHEET 07** - ALTERNATE INSTALLATION DETAILS (>6" CMU)
  - SHEET 08** - ALTERNATE INSTALLATION DETAILS (6" CMU)
  - SHEET 09** - WALL FASTENER TABLE
  - SHEET 10** - UNIVERSAL SLEEVE ASSEMBLY
  - SHEET 11** - UNIVERSAL SLEEVE INSTALLATION DETAILS
  - SHEET 12** - LOUVER ASSEMBLY PART PROFILES
  - SHEET 13** - INSTALLATION PART PROFILES
  - SHEET 14** - INSTALLATION PART PROFILES



ELF375DXD RECTANGLE LOUVER  
N.T.S.

**NOTES:**

- THE **ELF375DXD** HAS BEEN TESTED IN ACCORDANCE WITH MIAMI-DADE COUNTY PROTOCOLS **TAS-201, 202, & 203** FOR LARGE MISSILE IMPACT, UNIFORM PRESSURE AND CYCLIC WIND PRESSURE.
- THIS LOUVER SYSTEM IS APPROVED FOR APPLICATIONS WITH **DESIGN PRESSURES OF +/- 130 PSF** OR LESS. THIS LOUVER SYSTEM IS NON-BEARING AND IS NOT DESIGNED TO WITHSTAND BUILDING DEAD LOADS.
- THIS LOUVER TO BE INSTALLED IN A LOCATION WHERE THE ROOM BEHIND THE LOUVER IS DESIGNED TO DRAIN WATER THAT PENETRATES INTO THE ROOM & THE ROOM WILL HOUSE WATER RESISTANT/PROOF EQUIPMENT, COMPONENTS, OR SUPPLIES.
- RUSKIN DOES NOT DETERMINE STRUCTURAL INTEGRITY OF THE STRUCTURE. SUBSTRATE REQUIREMENTS GIVEN IN THE TABLE 6 & 7 ON SHEET 09 ARE AS NEEDED FOR ANCHORAGE ONLY.
- MAXIMUM SINGLE SECTION SIZE: **90" WIDE X 120" HIGH**. UNLIMITED WIDTH CAN BE ACCOMPLISHED BY PLACING SINGLE SECTIONS SIDE-BY-SIDE.
- SECTIONS OR ASSEMBLIES MAY BE STACKED VERTICALLY PROVIDING A SUITABLE STRUCTURAL MEMBER IS DESIGNED & INSTALLED BY OTHERS TO SUPPORT ALL THE LOADS TRANSFERRED FROM THE LOUVER.
- ALL CMU BLOCK MUST BE GROUT FILLED. MIN. PRISM STRENGTH OF 1500 PSI AT TIME OF INSTALLATION. CMU BLOCKS MUST BE MINIMUM TYPE 1, GRADE N, LIGHT, MEDIUM, OR NORMAL WEIGHT PER ASTM C90. GROUT AND MORTAR MUST COMPLY WITH FBC.
- ALL WELDED ATTACHMENTS REQUIRE A MINIMUM FILLER OF 4043 ALUMINUM ALLOY WITH MINIMUM TENSILE STRENGTH OF 24KSI.
- SQUARE BALLOONS INDICATE SHIP LOOSE PARTS.**

- ABBREVIATIONS:**
- B.O. - BLANK OFF
  - CF - CHANNEL FRAME
  - CONT. - CONTINUOUS
  - C-C - CENTER TO CENTER
  - DIM - DIMENSION
  - FLG - FLANGE
  - FF - FLANGED FRAME
  - HDG - HOT DIP GALVANIZED
  - H.V.B.S. - HIDDEN VERTICAL BLADE SUPPORT
  - H.H.B.S. - HIDDEN HORIZONTAL BLADE SUPPORT
  - HWH - HEX WASHER HEAD
  - L.D. - LOUVER DIMENSION
  - MAX. - MAXIMUM
  - MIN. - MINIMUM
  - NOM. - NOMINAL
  - N.T.E. - NOT TO EXCEED
  - N.T.S. - NOT TO SCALE
  - O/C - ON CENTER
  - OPP. - OPPOSITE
  - N.I.C. - NOT IN CONTRACT
  - R.O. - ROUGH OPENING
  - REF - REFERENCE
  - SHT - SHEET
  - S.S. - SHIP SECTION
  - S.S.D. - SHIP SECTION DIMENSION
  - S.D.S. - SELF DRILLING SCREW
  - SIM - SIMILAR
  - STL - STEEL
  - TYP. - TYPICAL
  - U.N.O. - UNLESS NOTED OTHERWISE



JEFFREY SMITH, P.E.  
NO. 91182

**PRODUCT REVISED**  
as complying with the Florida  
Building Code  
**NOA-No.** 24-0403.02

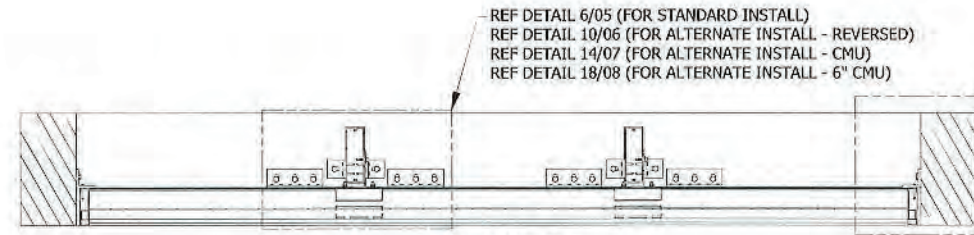
**Expiration Date** 01/03/2028

By   
**Miami-Dade Product Control**

Tolerances  
Unless Stated Otherwise  
Use W1Q-007

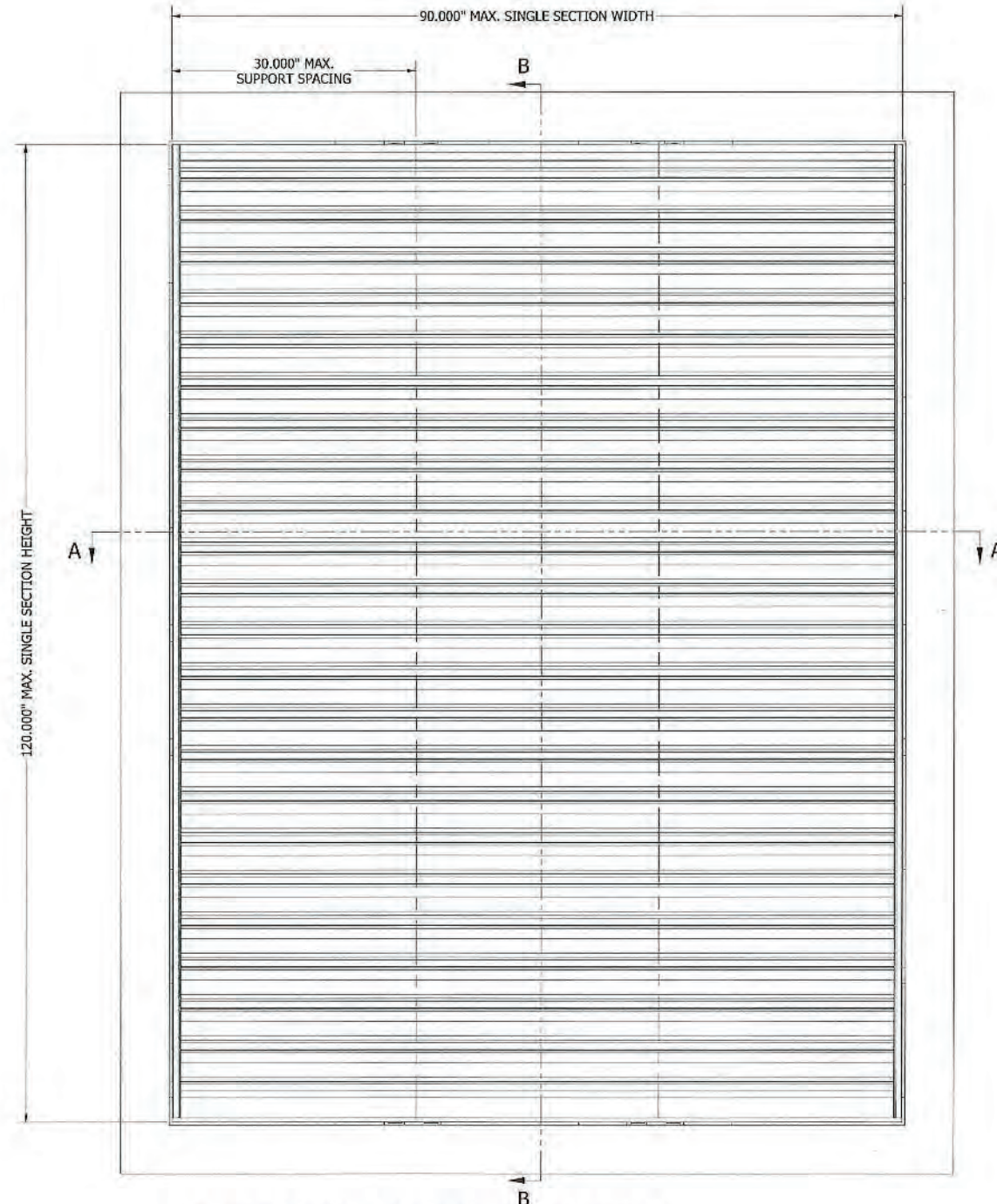
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D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
APPROVED						
MATERIAL	EXTRUDED ALUMINUM					
PRODUCT	ELF375DXD LOUVER					
TITLE	STANDARD LOUVER SPECIFICATIONS					
SIZE	D	DWG NO.	60-021902-00D			REV E
ECN	SCALE	NONE	INVENTOR			SHEET 1 of 14





**SECTION A-A**

REF DETAIL 6/05 (FOR STANDARD INSTALL)  
 REF DETAIL 10/06 (FOR ALTERNATE INSTALL - REVERSED)  
 REF DETAIL 14/07 (FOR ALTERNATE INSTALL - CMU)  
 REF DETAIL 18/08 (FOR ALTERNATE INSTALL - 6" CMU)

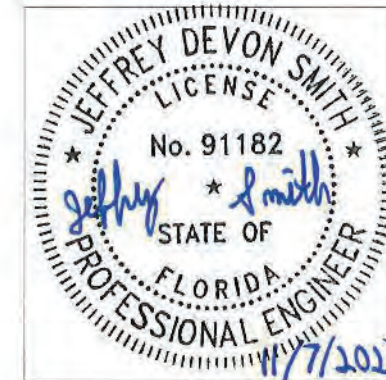


**SINGLE SECTION - CHANNEL FRAME LOUVER**  
 SUBSTRATE & INSTALL PARTS NOT SHOWN FOR CLARITY

REF DETAIL 8/05 (FOR STANDARD INSTALL)  
 REF DETAIL 12/06 (FOR ALTERNATE INSTALL - REVERSED)  
 REF DETAIL 16/07 (FOR ALTERNATE INSTALL - CMU)  
 REF DETAIL 20/08 (FOR ALTERNATE INSTALL - 6\"/>



**SECTION B-B**



**JEFFREY SMITH, P.E.**  
**NO. 91182**

**PRODUCT REVISED**  
 as complying with the Florida  
 Building Code  
**NOA-No.** 24-0403.02  
**Expiration Date** 01/03/2028  
 By *[Signature]*  
**Miami-Dade Product Control**

E	COMPLETE REVISION	NS	RCG	JDS		9/27/23
D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
MATERIAL	EXTRUDED ALUMINUM					
PRODUCT	ELF375DXD LOUVER					
TITLE	SINGLE SECTION (CF) ASSEMBLY & DETAILS					
SIZE	D	DWG NO	60-021902-00D			REV E
SCALE	NONE	INVENTOR				SHEET 2 OF 14

Tolerances  
 Unless Stated Otherwise  
 Use W1Q-007

**RUSKIN**  
 AUTHORITY IN AIR CONTROL  
 3900 Doctor Greaves Rd,  
 Grandview, MO 64030  
 PROPRIETARY AND  
 CONFIDENTIAL



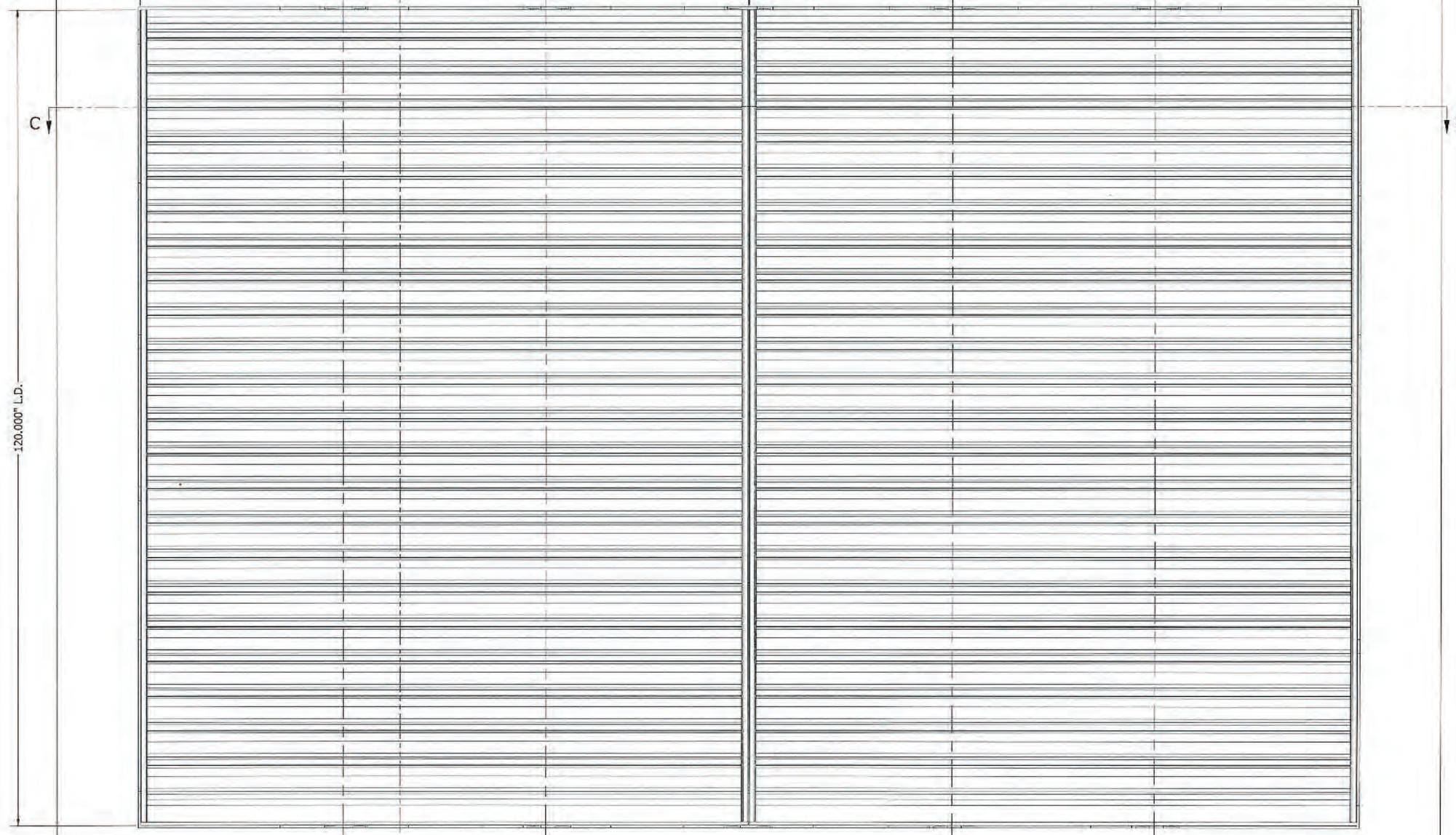
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REF DETAIL 11/06 (FOR ALTERNATE INSTALL - REVERSED)  
REF DETAIL 15/07 (FOR ALTERNATE INSTALL - CMU)  
REF DETAIL 19/08 (FOR ALTERNATE INSTALL - 6" CMU)

SECTION C-C

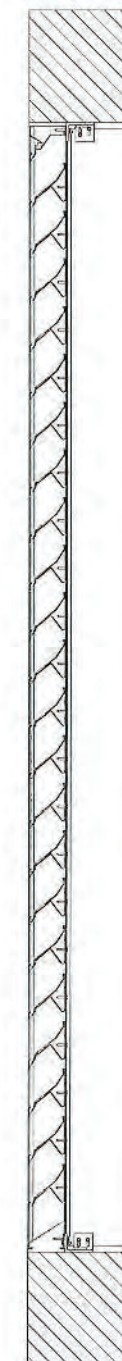
180.000" L.D.

89.938" S.S.D.

89.938" S.S.D.

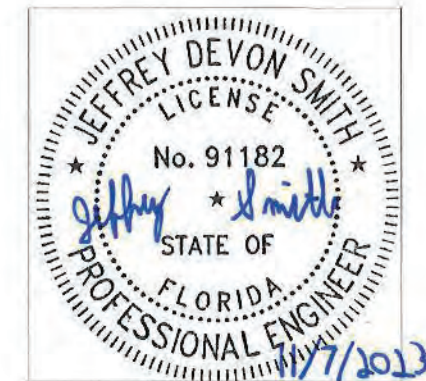


**MULTI-SECTION ASSEMBLY - CHANNEL FRAME LOUVER**  
UNLIMITED WIDE X 120" H (180" W X 120" H SHOWN FOR CLARITY)



SECTION D-D

Tolerances  
Unless Stated Otherwise  
Use W1Q-007



JEFFREY DEVON SMITH, P.E.  
NO. 91182

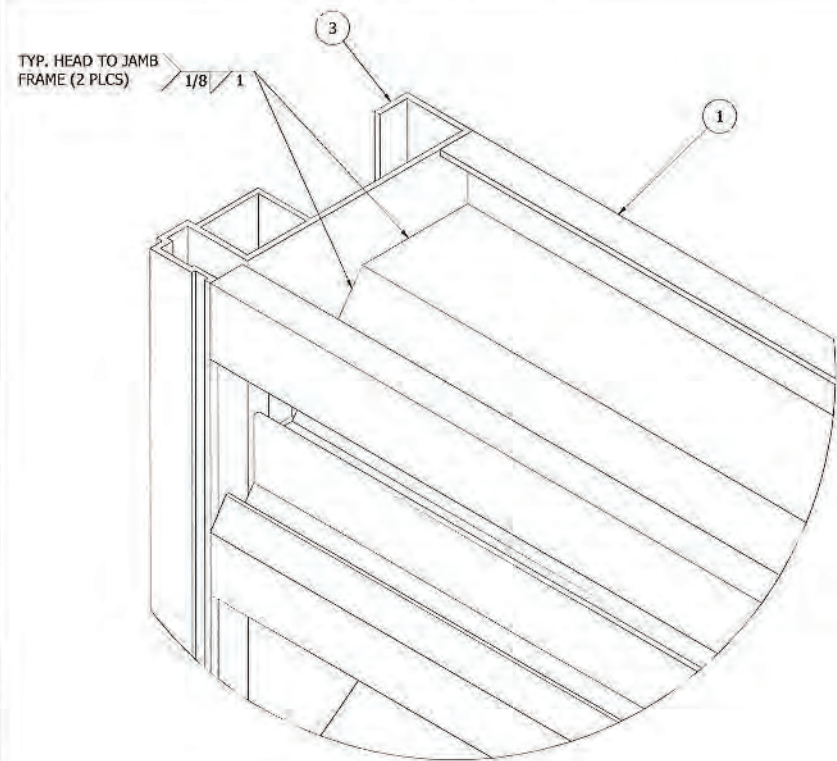
**PRODUCT REVISED**  
as complying with the Florida  
Building Code  
NOA-No. 24-0403.02

Expiration Date 01/03/2028

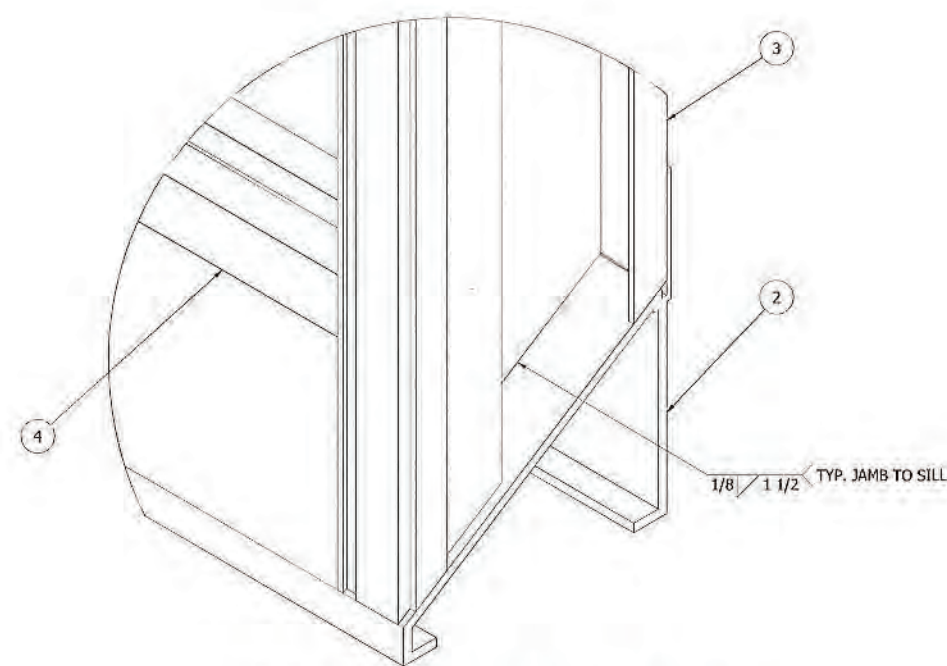
By   
Miami-Dade Product Control

E	COMPLETE REVISION	NS	RCG	JDS	9/27/23	
D	COMPLETE REVISION	CJD	SDL	MMM	3/2/18	
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006			3900 Doctor Greaves Rd, Grandview, MO 64030	
CHECKED	DLC	5/26/2006			PROPRIETARY AND CONFIDENTIAL	
APPROVED	DLC	5/26/2006				
APPROVED						
MATERIAL	EXTRUDED ALUMINUM	PRODUCT	ELF375DXXD LOUVER			
		TITLE	MULTI-SECTION (CF) ASSEMBLY			
		SIZE	D	DWG NO.	60-021902-00D	REV
						E
ECN		SCALE	NONE		INVENTOR	SHEET 3 OF 14

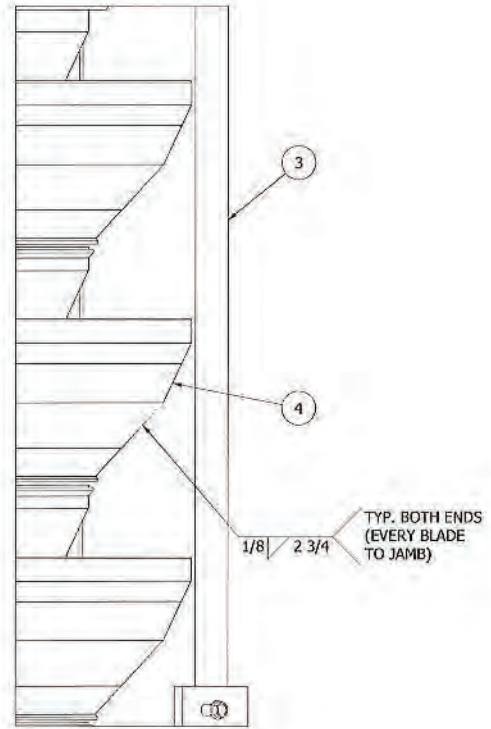




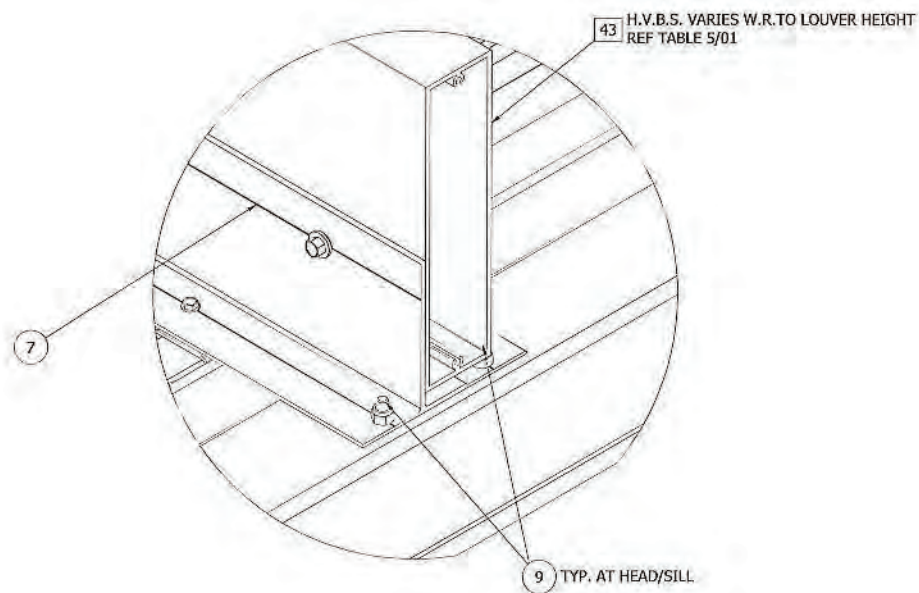
1  
-  
HEAD FRAME CONNECTION DETAIL



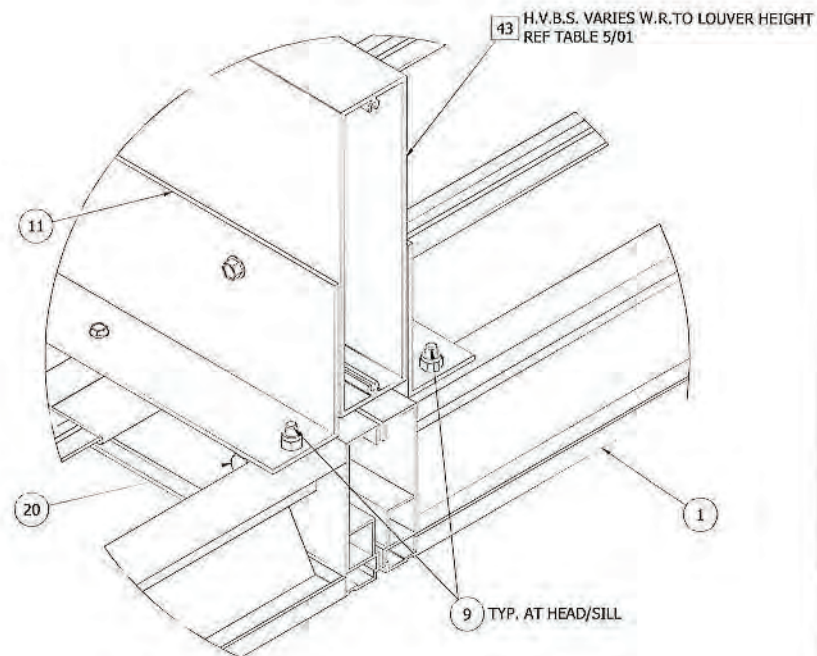
2  
-  
SILL FRAME CONNECTION DETAIL



3  
-  
BLADE ATTACHMENT DETAIL



4  
-  
H.V.B.S. ATTACHMENT DETAIL



5  
-  
MULLION SUPPORT ATTACHMENT DETAIL



JEFFREY SMITH, P.E.  
NO. 91182

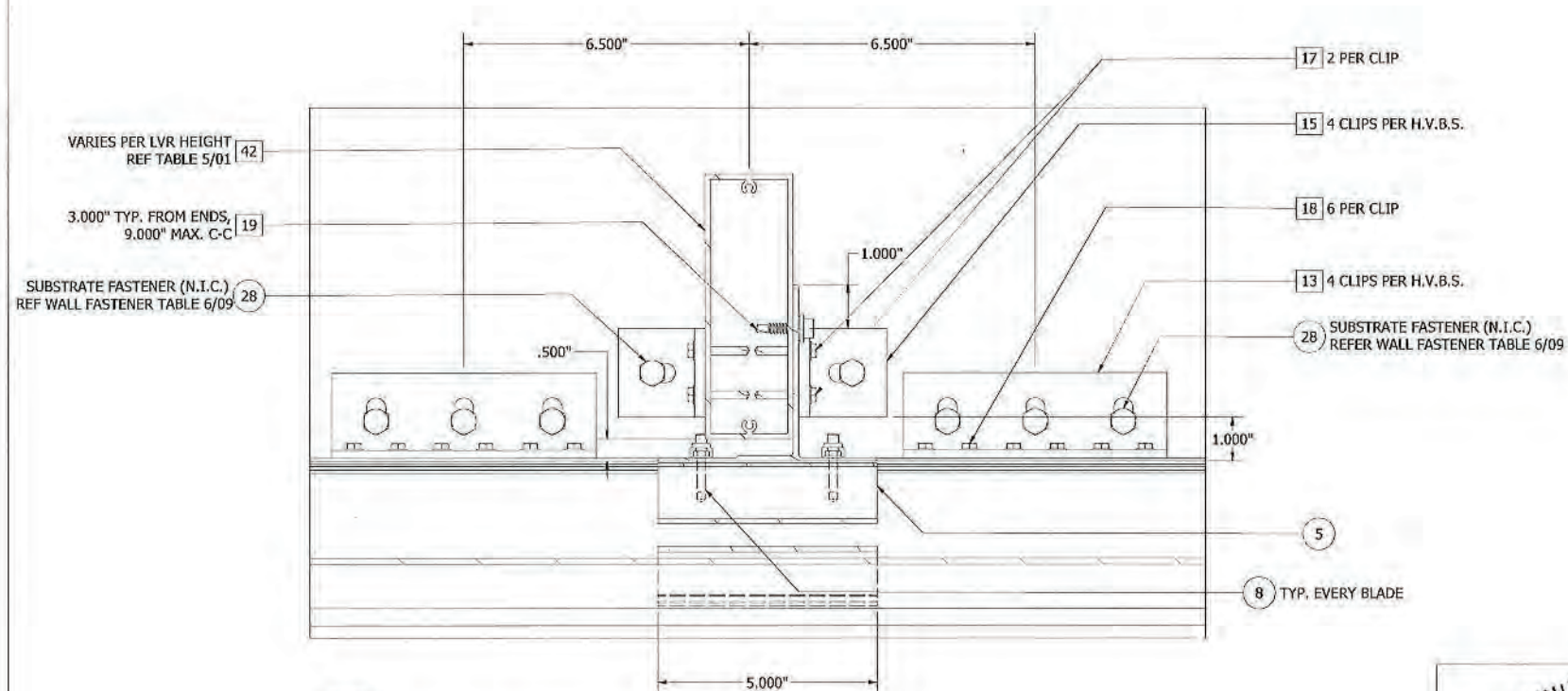
**PRODUCT REVISED**  
as complying with the Florida  
Building Code  
NOA-No. 24-0403.02  
Expiration Date 01/03/2028  
By *CS*  
Miami-Dade Product Control

Tolerances  
Unless Stated Otherwise  
Use WQ 007

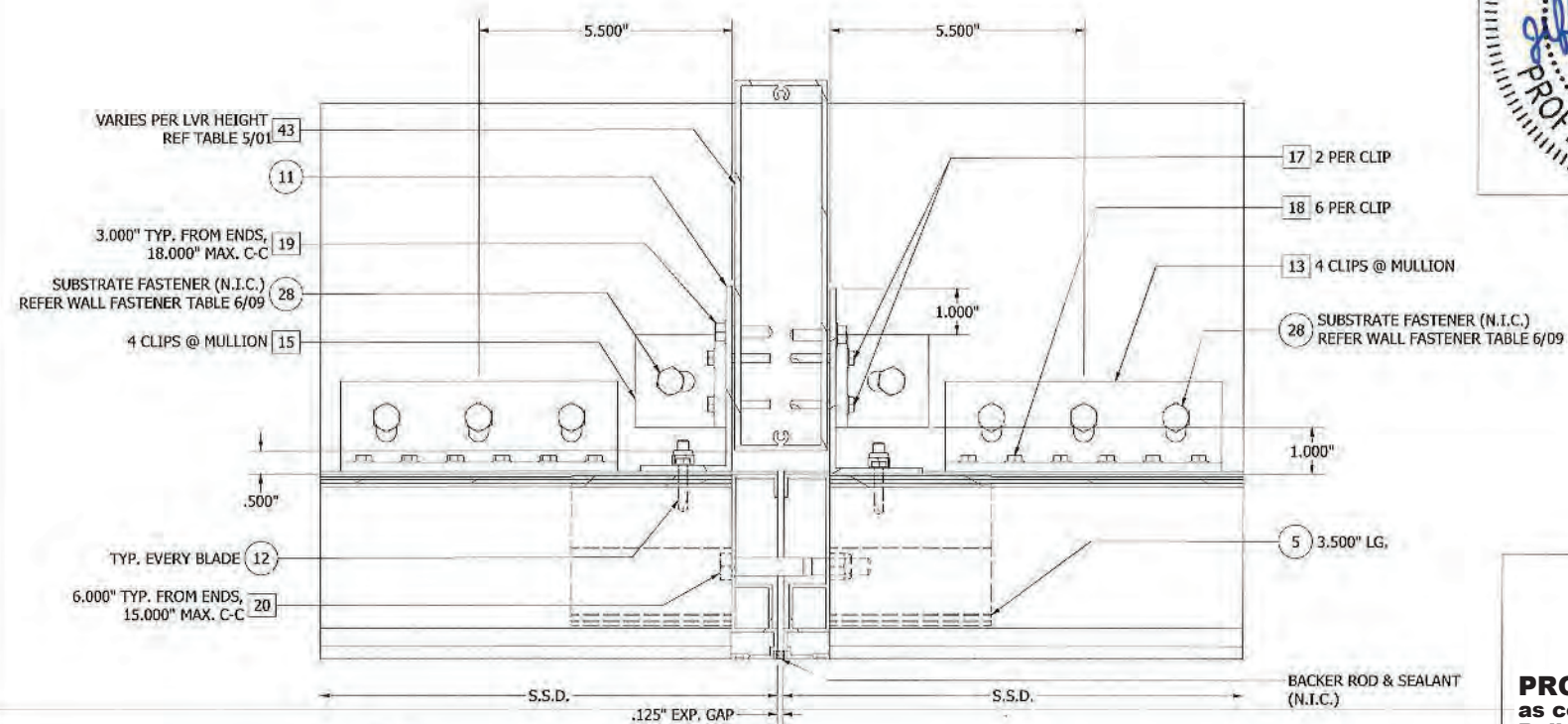
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D	COMPLETE REVISION		CJD	SDL	MMM	3/2/18	
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AUTHOR	DJR	3/15/2006	 3900 Doctor Greaves Rd, Grandview, MO 64030 PROPRIETARY AND CONFIDENTIAL				
CHECKED	DLC	5/26/2006					
APPROVED	DLC	5/26/2006					
APPROVED							
MATERIAL	EXTRUDED ALUMINUM		PRODUCT		ELF37SDXD LOUVER		
TITLE			STANDARD LOUVER BUILD DETAILS				
SIZE D			DWG NO		60-021902-00D		REV E
ECN	SCALE		NONE		INVENTOR		SHEET 4 OF 14

**RUSKIN**  
AUTHORITY IN AIR CONTROL  
3900 Doctor Greaves Rd,  
Grandview, MO 64030  
PROPRIETARY AND  
CONFIDENTIAL

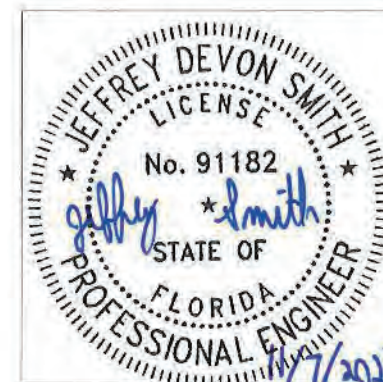




**6**  
**02** H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(WOOD/METAL/CONCRETE)



**7**  
**03** MULLION ATTACHMENT DETAIL @ HEAD/SILL  
(WOOD/METAL/CONCRETE)

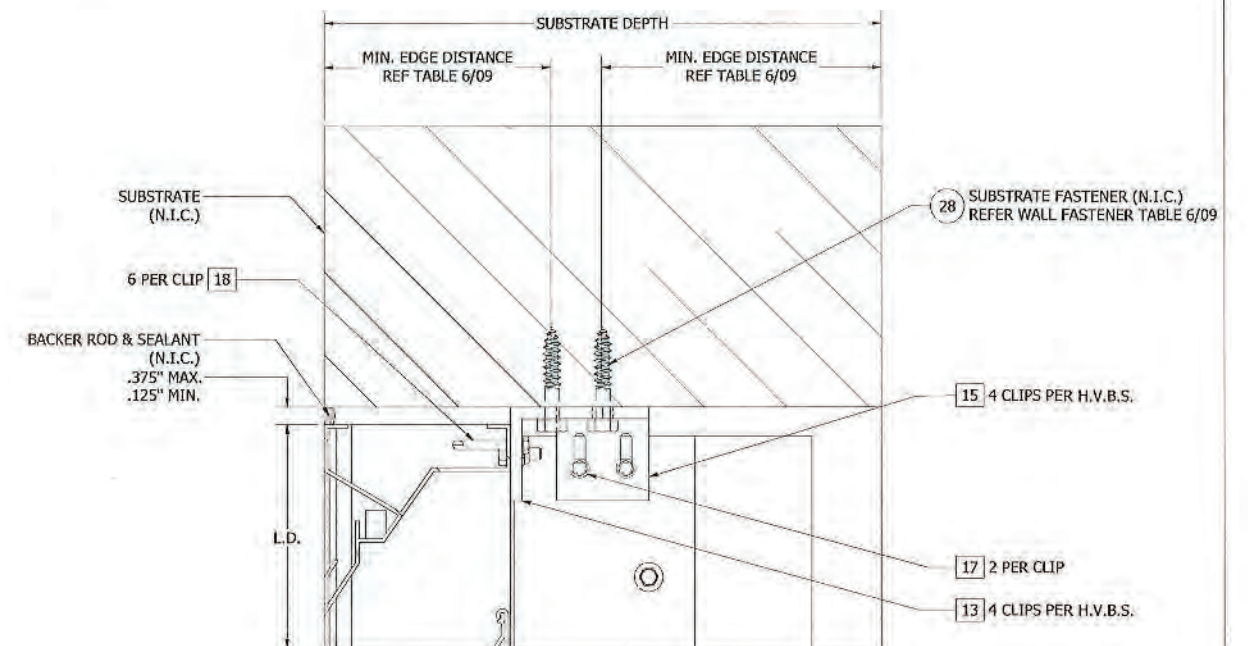


JEFFREY DEVON SMITH, P.E.  
NO. 91182

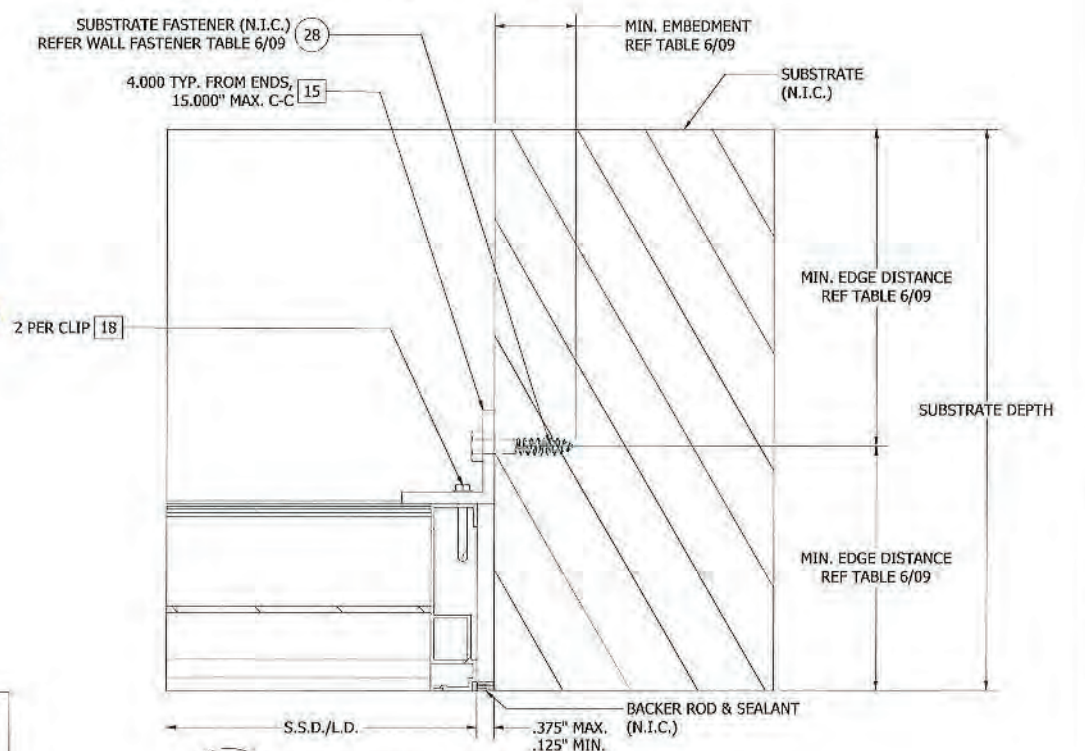
**PRODUCT REVISED**  
as complying with the Florida  
Building Code  
NOA-No. 24-0403.02

Expiration Date 01/03/2028

By   
Miami-Dade Product Control



**8**  
**02** H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(WOOD/METAL/CONCRETE)

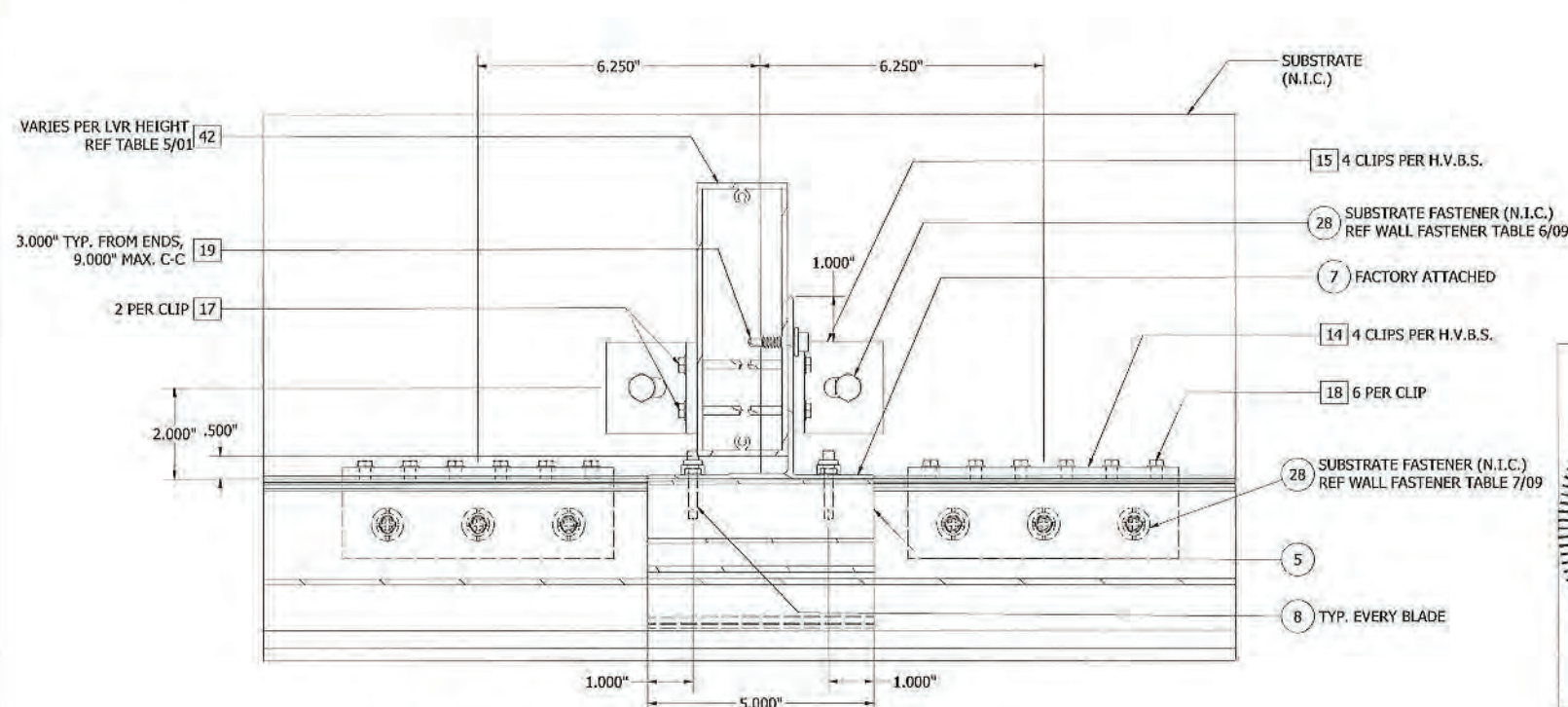


**9**  
**02** JAMB ATTACHMENT DETAIL  
(WOOD/METAL/CONCRETE/10\"/>

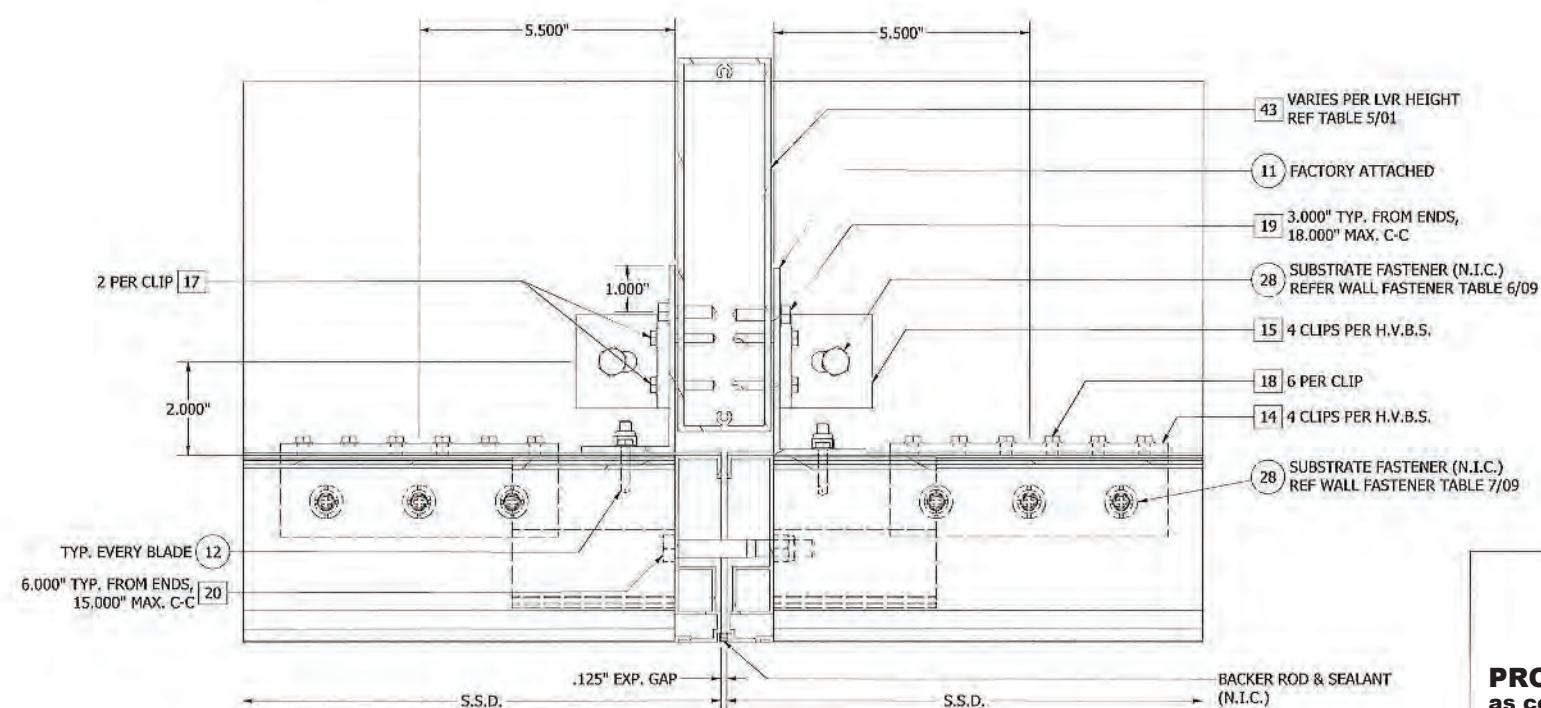
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D	COMPLETE REVISION		CJD	SDL	MMM	3/2/18	
REV	DESCRIPTION		BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006	 <b>RUSKIN</b> AUTHORITY IN AIR CONTROL		3900 Doctor Groves Rd, Grandview, MO 64030 PROPRIETARY AND CONFIDENTIAL		
CHECKED	DLC	5/26/2006					
APPROVED	DLC	5/26/2006					
APPROVED							
MATERIAL		PRODUCT		ELF375DXD LOUVER			
EXTRUDED ALUMINUM		TITLE		STANDARD INSTALLATION DETAILS			
		SIZE	D	DRG NO.		60-021902-00D	
ECN		SCALE		NONE		INVENTOR	SHEET 5 OF 14
						REV E	

Tolerances  
Unless Stated Otherwise  
Use WQ-D07

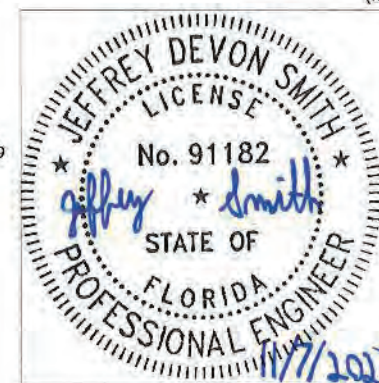




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02** ALTERNATE H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
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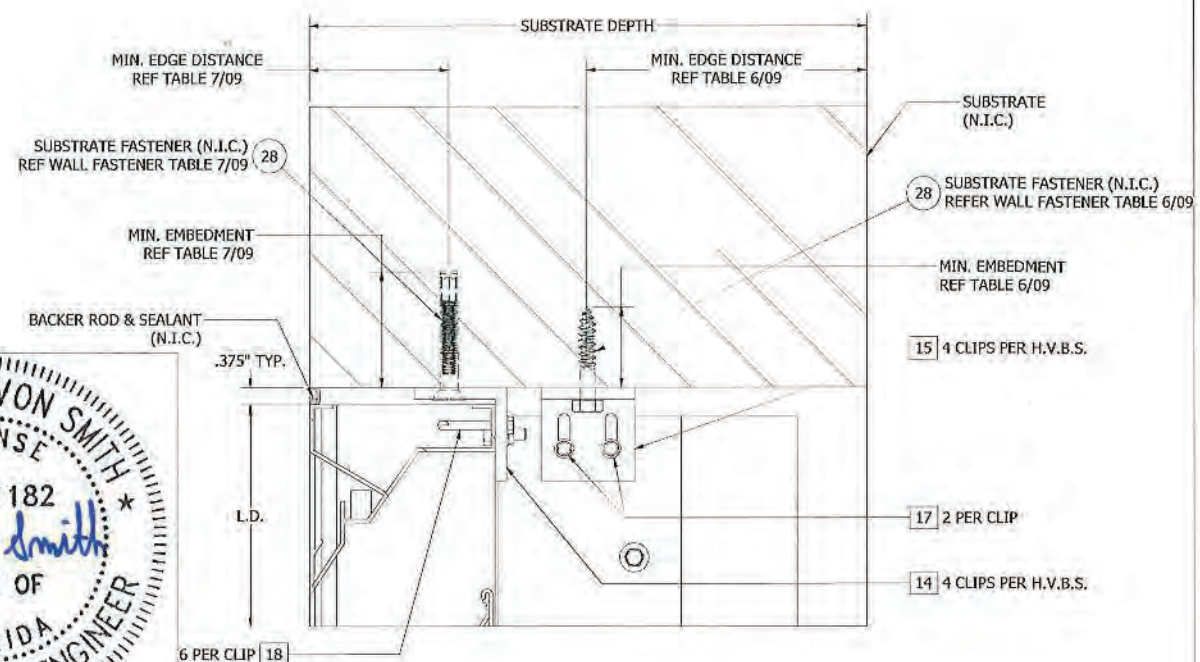


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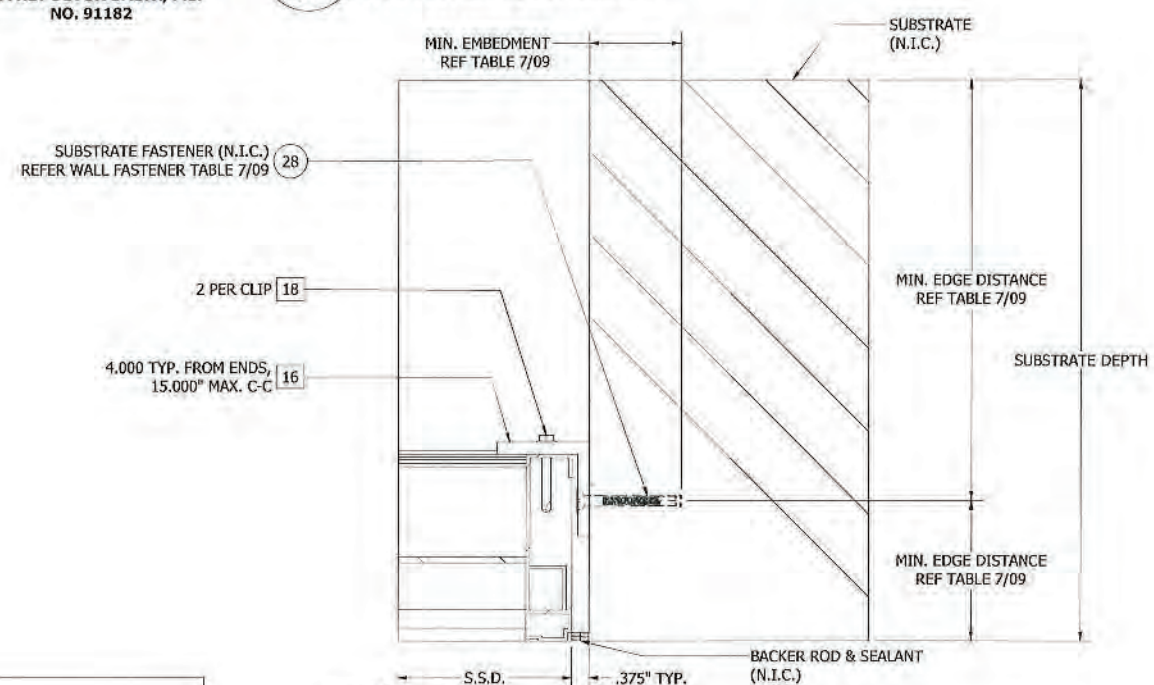


JEFFREY DEVON SMITH, P.E.  
NO. 91182

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Building Code  
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Expiration Date 01/03/2028  
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Miami-Dade Product Control



**12  
02** ALTERNATE H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(WOOD/METAL/CONCRETE)



**13  
02** ALTERNATE JAMB ATTACHMENT DETAIL  
(WOOD/METAL/CONCRETE/10" & 12" CMU)

Tolerances  
Unless Stated Otherwise  
Use WQ 007

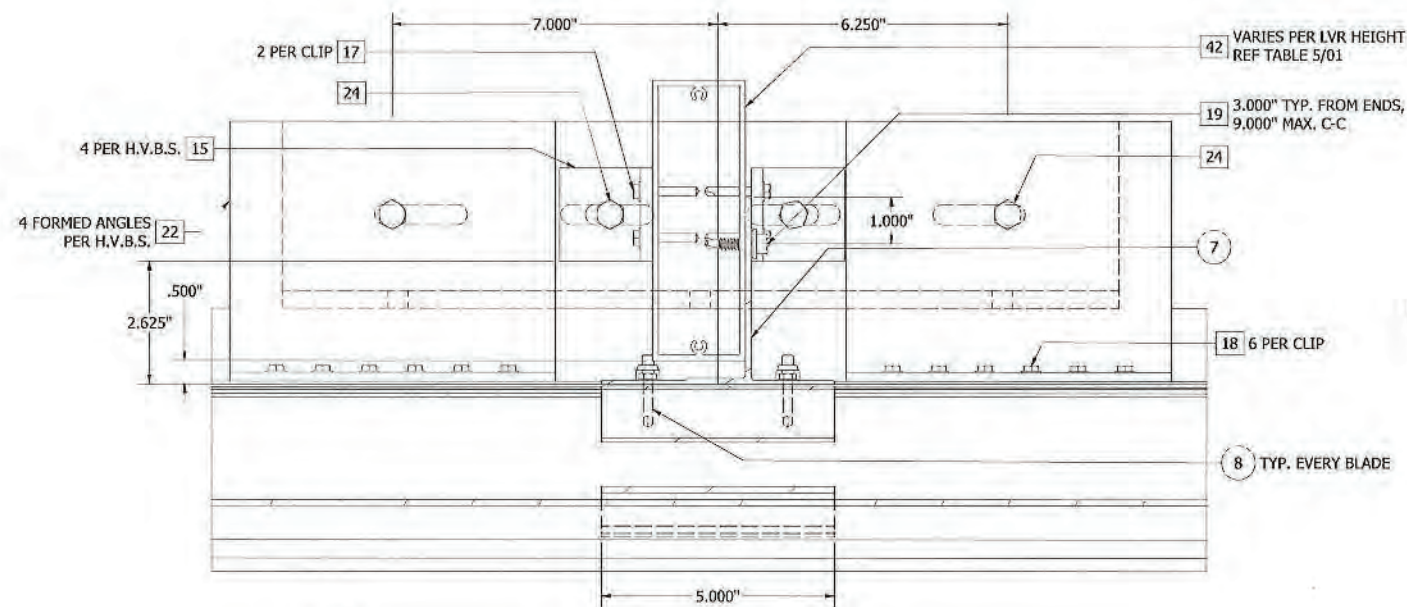
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D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
MATERIAL	EXTRUDED ALUMINUM					
PRODUCT	ELF375DXD LOUVER					
TITLE	ALTERNATE INSTALLATION DETAILS - REVERSED					
SIZE	D	DWG NO	60-021902-00D			REV E
SCALE	NONE	INVENTOR				SHEET 6 OF 14

**RUSKIN**  
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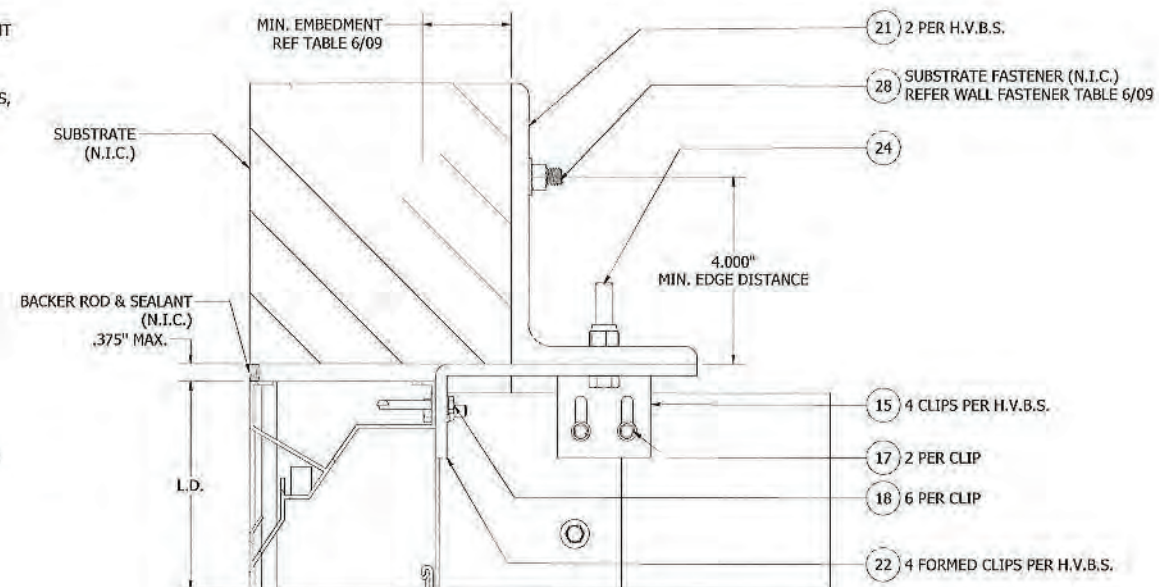




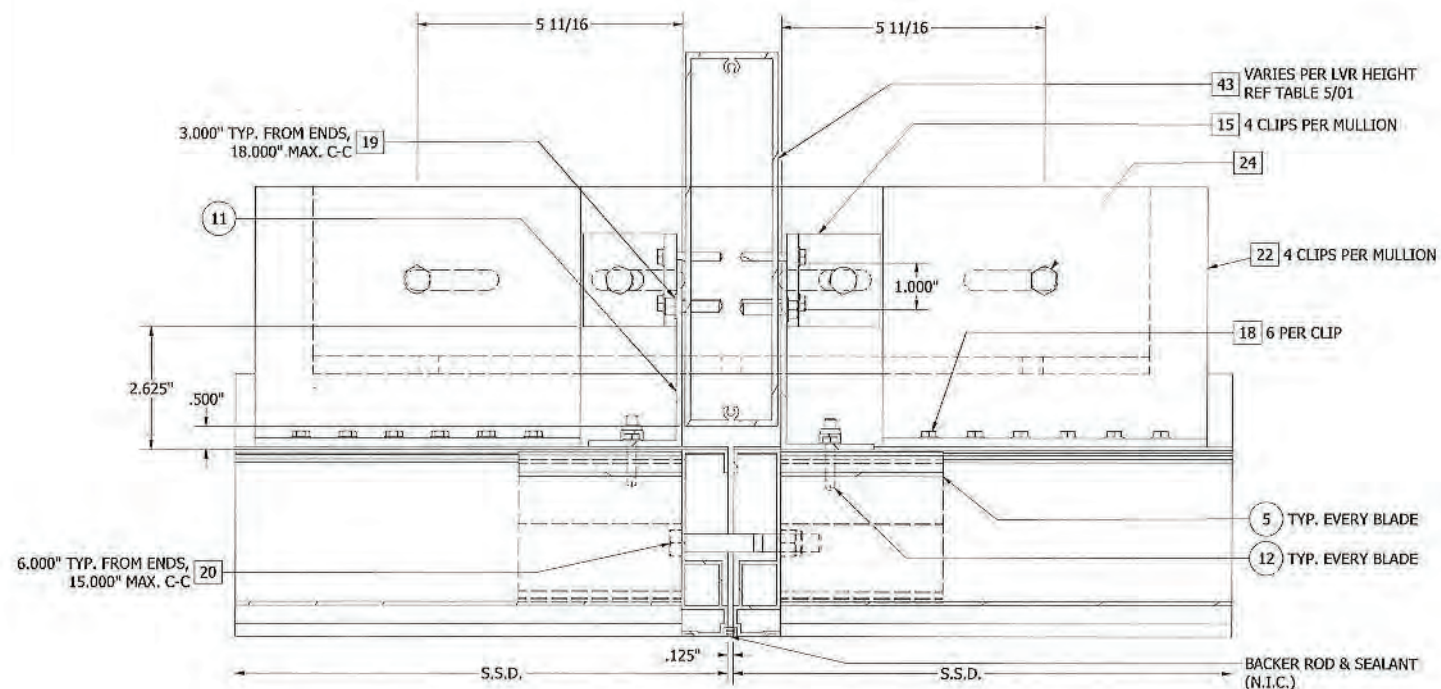




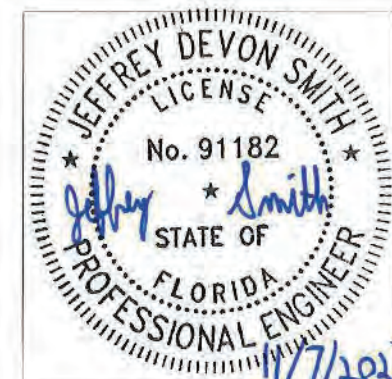
18  
02 ALTERNATE H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(6" CMU)



20  
02 ALTERNATE H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(6" CMU)



19  
03 ALTERNATE MULLION ATTACHMENT DETAIL @ HEAD/SILL  
(6" CMU)



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NO. 91182

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Building Code  
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Expiration Date 01/03/2028

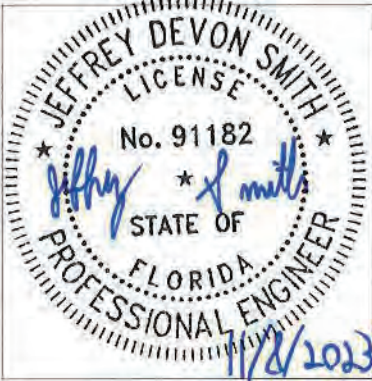
By *[Signature]*  
Miami-Dade Product Control

E	COMPLETE REVISION	NS	RCG	JDS		9/27/23
D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
APPROVED						
MATERIAL	EXTRUDED ALUMINUM					
PRODUCT	ELF375DXD LOUVER					
TITLE	ALTERNATE INSTALLATION DETAILS - 6" CMU					
SIZE	D	DWG No.	60-021902-00D			REV E
SCALE	NONE	INVENTOR				SHEET 8 OF 14

Tolerances  
Unless Stated Otherwise  
Use W10.007



TABLE 06 - ELF375DXD - WALL FASTENER TABLE (N.I.C.)						
SUBSTRATE TYPE	MIN. SUBSTRATE REQUIREMENTS	LOCATION	FASTENER TYPE	MIN. EMBEDMENT	MIN. EDGE DISTANCE	FASTENER QTY
WOOD	SPECIFIC GRAVITY = 0.4	HVBS/MULLION SUPPORT	3/8" Ø A307 STEEL/STAINLESS STEEL BOLT, WASHER & LOCKNUT	3 THREADS BEYOND NUT	2 1/2"	1 PER 6" LG. ANGLE
			3/8" Ø X 2" LONG LAG SCREW, A307 STEEL/STAINLESS STEEL	1 3/4"	2 1/2"	3 PER 6" LG. ANGLE
		JAMBS	1/4" Ø A307 STEEL/STAINLESS STEEL BOLT, WASHER & LOCKNUT	3 THREADS BEYOND NUT	2 1/2"	1 PER 2" LG. ANGLE
			3/8" Ø X 2" LONG LAG SCREW, A307 STEEL	1 3/4"	2 1/2"	1 PER 2" LG. ANGLE
STEEL & ALUMINUM	STEEL - MIN. 14 GA ALUMINUM - MIN. 1/8" THICK	HVBS/MULLION SUPPORT	3/8" Ø A307 STEEL/STAINLESS STEEL BOLT, WASHER & LOCKNUT	3 THREADS BEYOND NUT	3/4"	1 PER 6" LG. ANGLE
			3/8" Ø SCREW, A307 STEEL/STAINLESS STEEL	3 THREADS BEYOND SUBSTRATE	3/4"	3 PER 6" LG. ANGLE
		JAMBS	5/16" Ø - 18 A307 STEEL/STAINLESS STEEL BOLT OR TEK SCREW	3 THREADS BEYOND NUT OR SUBSTRATE	5/8"	1 PER 2" LG. ANGLE
CONCRETE	3000 PSI MIN. COMP. STRENGTH	HVBS/MULLION SUPPORT	3/8" Ø HILTI KWIK HUS SCREW ANCHOR	3 1/4"	4 1/2"	1 PER 6" LG. ANGLE
		JAMBS	1/4" Ø X 2 1/4" SS HILTI KWIK CON +	1 3/4"	2 1/2"	1 PER 2" LG. ANGLE
GROUT FILLED CMU	ASTM C-90 BLOCK, 1500 PSI GROUT COMP. STRENGTH	HVBS/MULLION SUPPORT	3/8" Ø X 3 1/2" HILTI KWIK HUS EZ SCREW ANCHOR	3 1/4"	4"	3 PER SUPPORT ANGLE (ITEM 21)
		JAMBS (SINGLE ANGLE)	1/4" Ø X 2" HILTI KWIK HUS EZ W/WASHER	1 5/8"	4"	1 PER 2" LG. ANGLE
		JAMBS (DOUBLE ANGLE)	1/4" Ø X 1 1/4" SS HILTI KWIK CON +	1"	2 1/2"	2 PER ANGLE (ITEM 25)



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Expiration Date 01/03/2028

By   
Miami-Dade Product Control

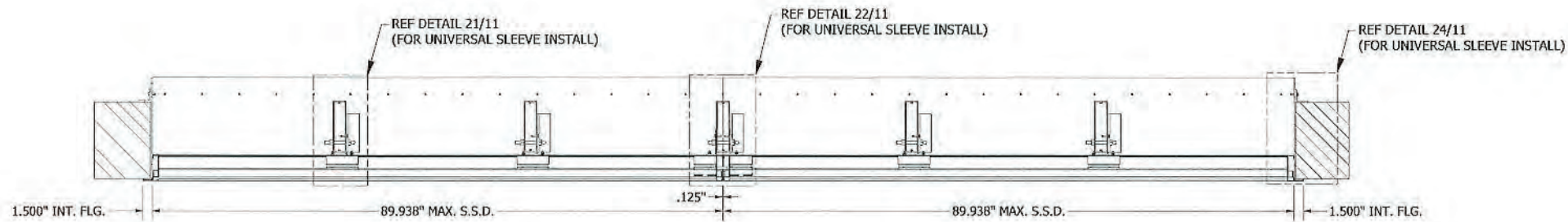
TABLE 07 - ELF375DXD - COUNTERSUNK FASTENER TABLE (N.I.C.)						
SUBSTRATE TYPE	MIN. SUBSTRATE REQUIREMENTS	FASTENER TYPE	MIN. EMBEDMENT	MIN. EDGE DISTANCE	FASTENER QTY. PER 6" LG. ANGLE	FASTENER QTY. PER 2" LG. ANGLE
STEEL	14GA, 45 KSI TENSILE STRENGTH, 33 KSI YIELD STRENGTH	1/4-20 BOLT, A307 STEEL/STAINLESS STEEL GRADE A	3 THREADS BEYOND NUT	1/2"	3	1
	12GA, 45 KSI TENSILE STRENGTH, 33 KSI YIELD STRENGTH	1/4-20 SD SCREW, A307 STEEL/STAINLESS STEEL GRADE A	3 THREADS BEYOND SUBSTRATE THICKNESS			
ALUMINUM	1/8" THICK, 20 KSI TENSILE STRENGTH, 15 KSI YIELD STRENGTH	1/4-20 BOLT, A307 STEEL/STAINLESS STEEL GRADE A	3 THREADS BEYOND NUT	1/2"	3	1
	3/16" THICK, 20 KSI TENSILE STRENGTH, 15 KSI YIELD STRENGTH	1/4-20 SD SCREW, A307 STEEL/STAINLESS STEEL GRADE A	3 THREADS BEYOND SUBSTRATE THICKNESS			
CONCRETE	3000 PSI MIN. COMP. STRENGTH	1/4" DIA HILTI KWIK HUS EZ SCREW ANCHOR	2 1/2"	4"	2	1
GROUT FILLED CMU	ASTM C-90 BLOCK, 1500 PSI GROUT COMP. STRENGTH	1/4" Ø X 2" HILTI KWIK HUS EZ W/WASHER	1 5/8"	4"	N/A	1

**NOTE FOR COUNTERSUNK ATTACHMENT:**  
MULTIPLE ANCHORS ARE ONLY FOR HVBS/MULLION ATTACHMENT.  
JAMB ATTACHMENT NEEDS ONLY ONE ANCHOR PER ANGLE.

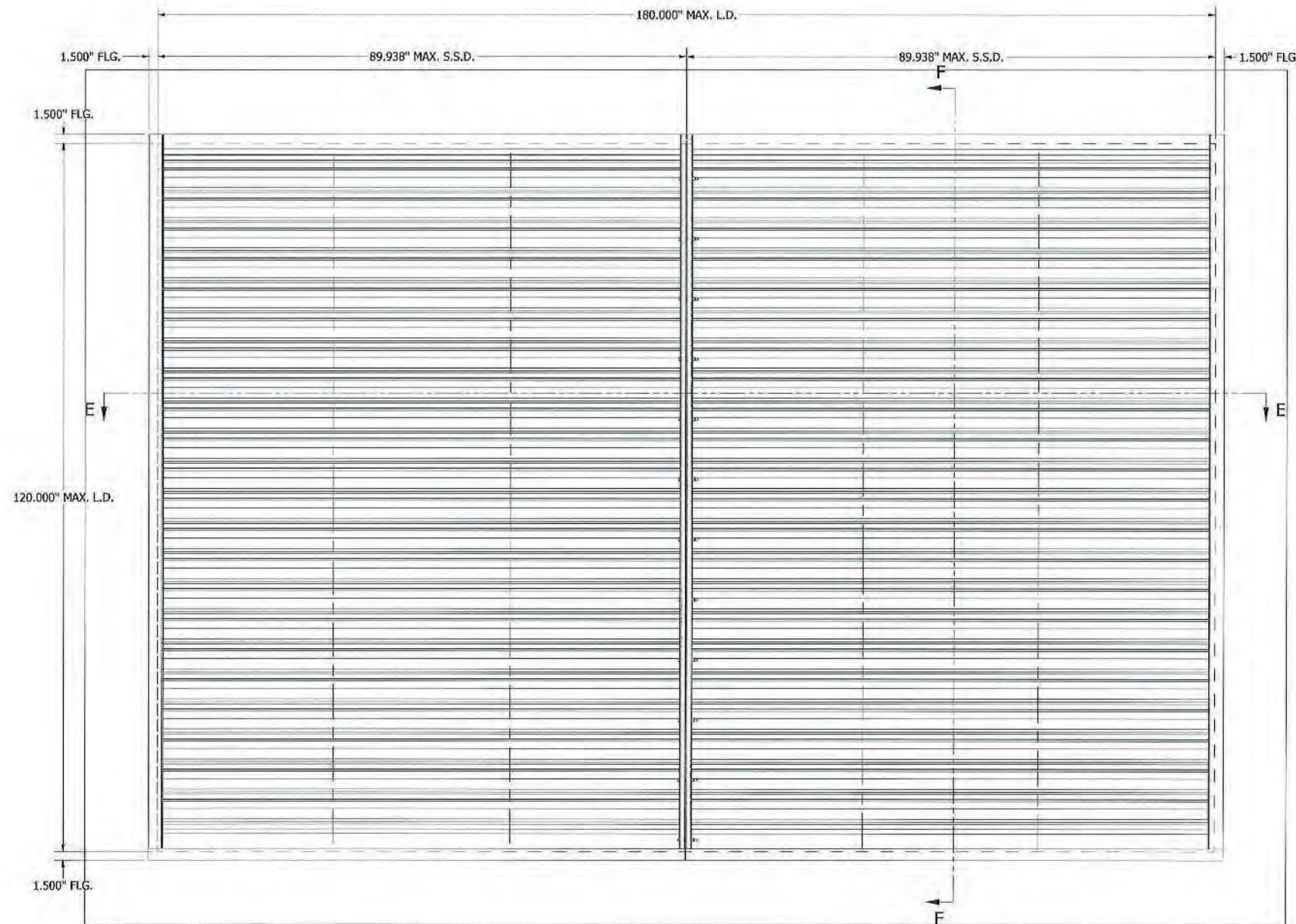
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REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
MATERIAL	EXTRUDED ALUMINUM					
PRODUCT	ELF375DXD LOUVER					
TITLE	WALL FASTENER TABLE					
SIZE	D	01010				
SCALE	NONE					
INVENTOR						
SHEET	9	OF	14			

Tolerances  
Unless Stated Otherwise  
Use W10-007

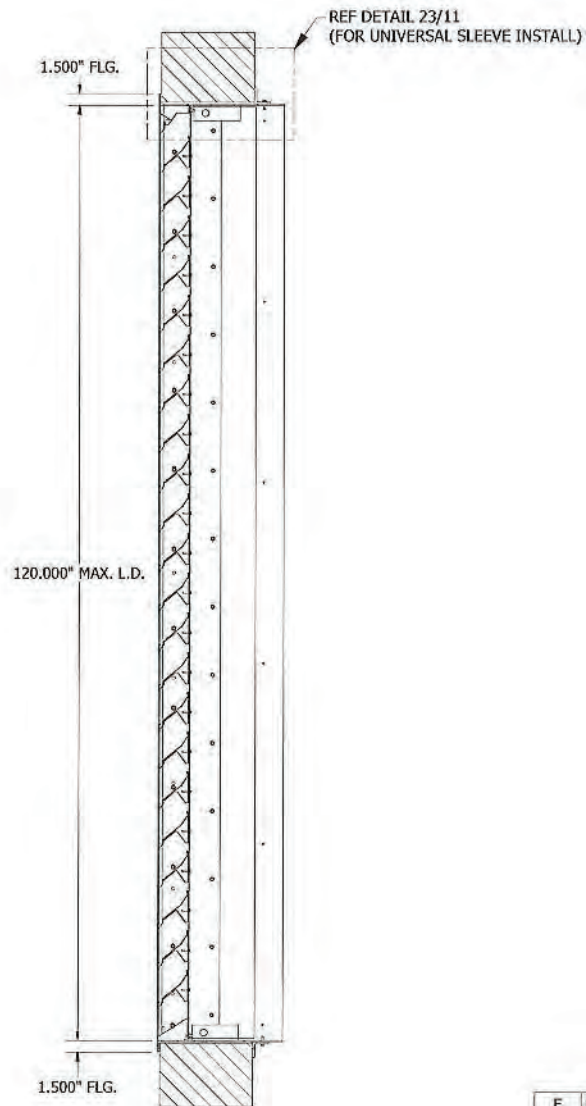




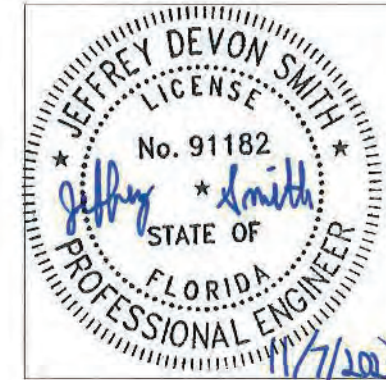
SECTION E-E



MULTI-SECTION ASSEMBLY - UNIVERSAL SLEEVE  
180" W X 120" H



SECTION F-F



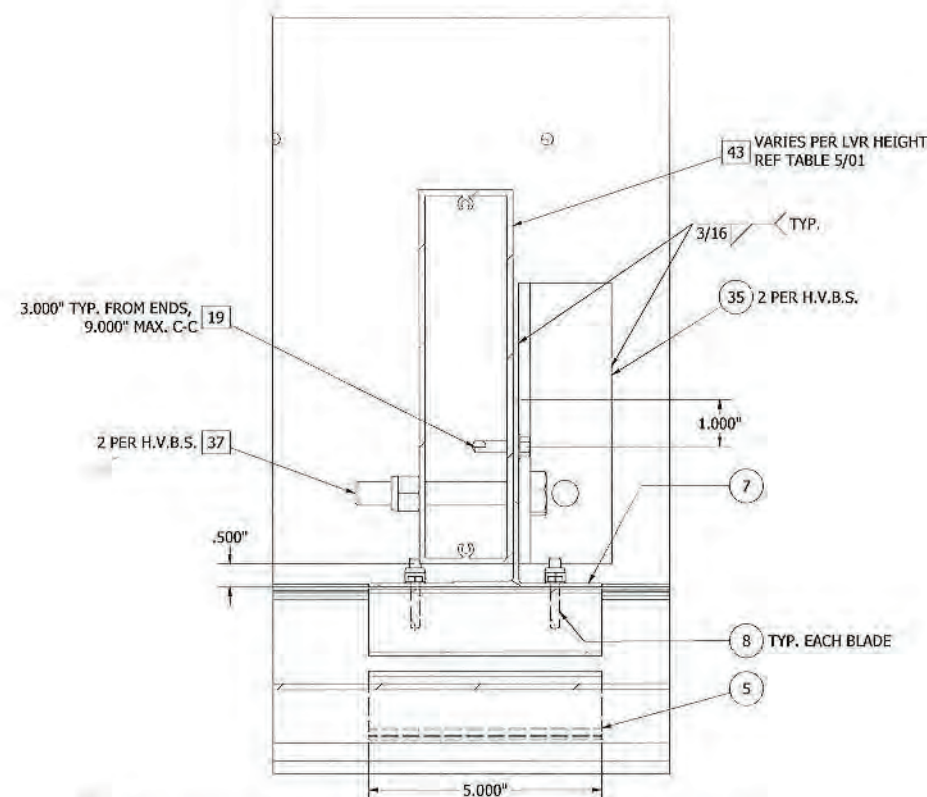
JEFFREY SMITH, P.E.  
NO. 91182

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Building Code  
NOA-No. 24-0403.02  
Expiration Date 01/03/2028  
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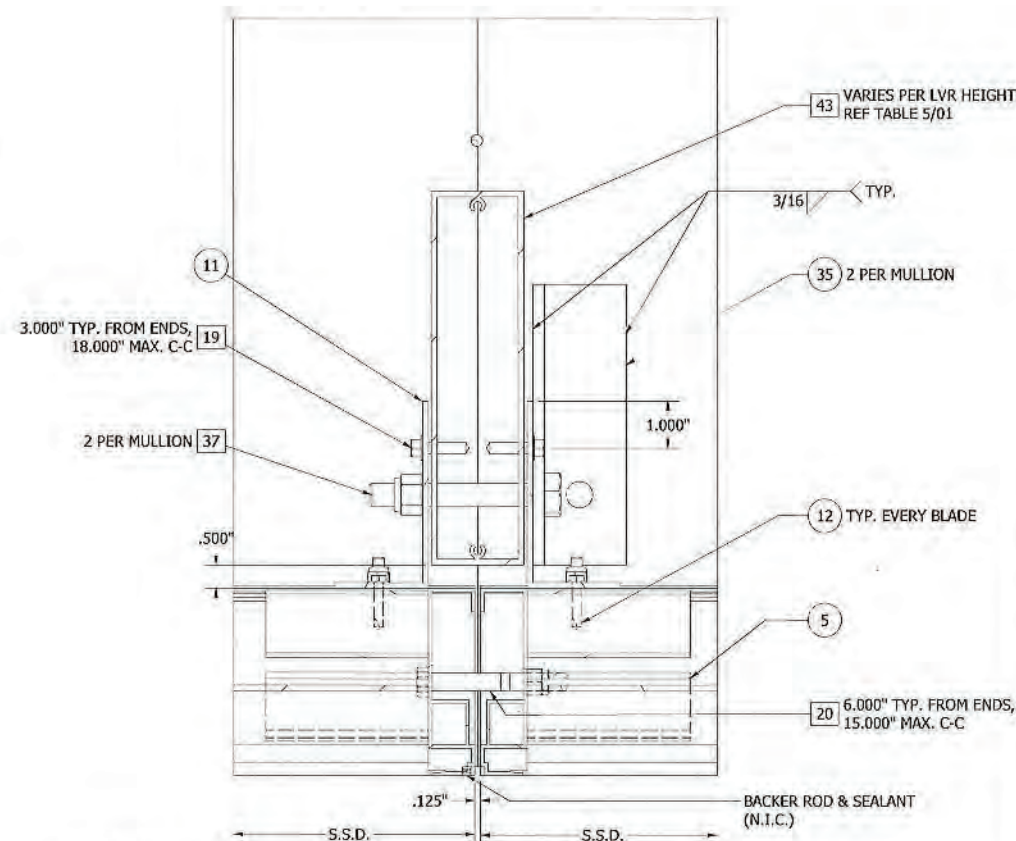
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AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
APPROVED						
MATERIAL	EXTRUDED ALUMINUM					
PRODUCT	ELF375DXD LOUVER					
TITLE	UNIVERSAL SLEEVE ASSEMBLY					
SIZE	D					
SCALE	NONE					
ECN						
DWG NO	60-021902-00D					
REV	E					
INVENTOR						
SHEET	10					
OF	14					

Tolerances  
Unless Stated Otherwise  
Use WIG-007

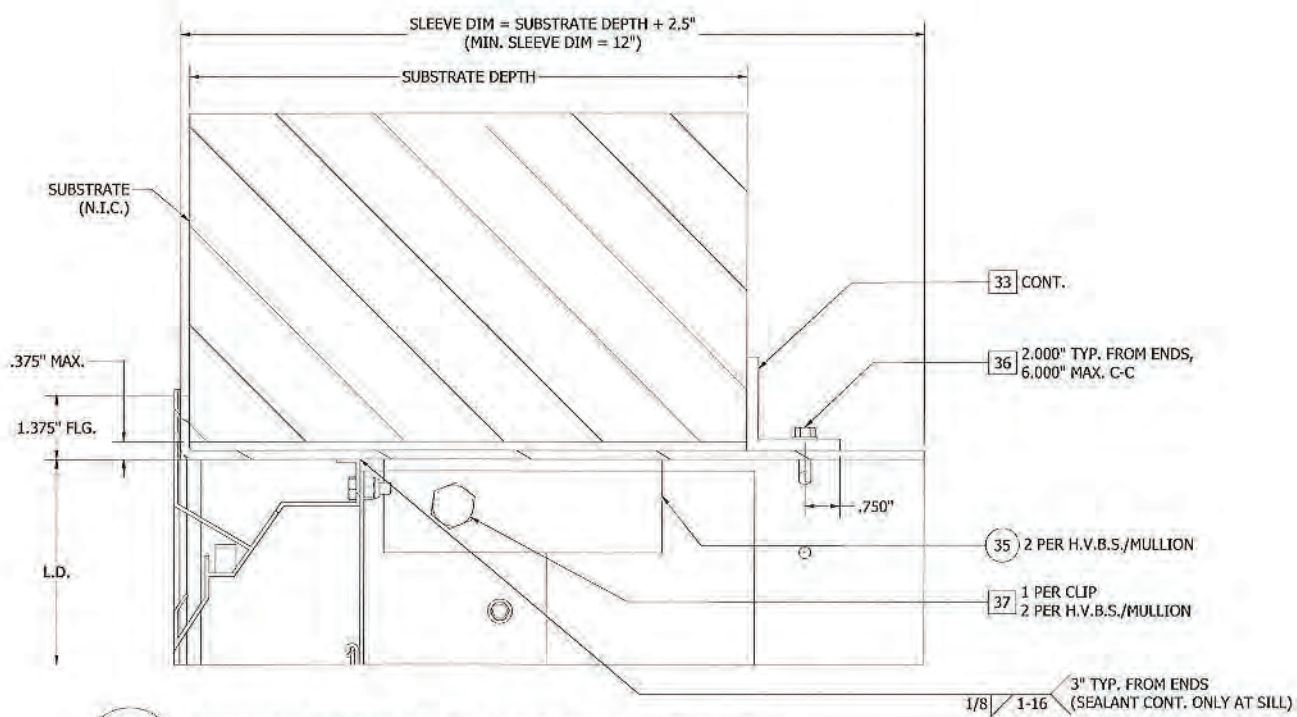




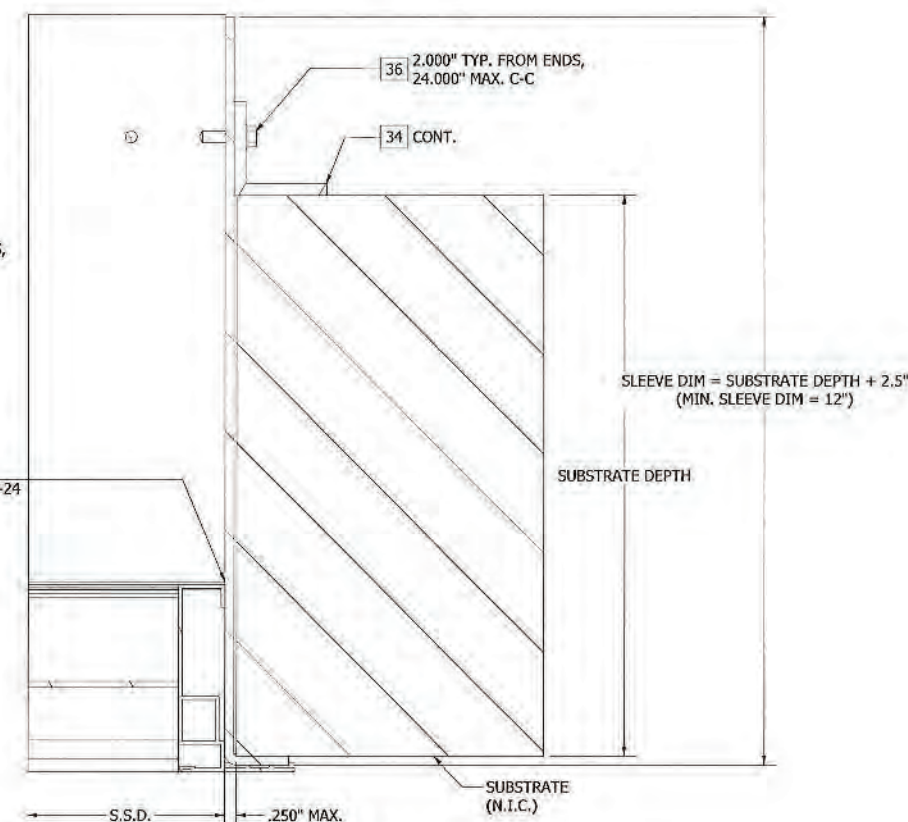
21  
10 ALTERNATE H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(UNIVERSAL SLEEVE INSTALL)



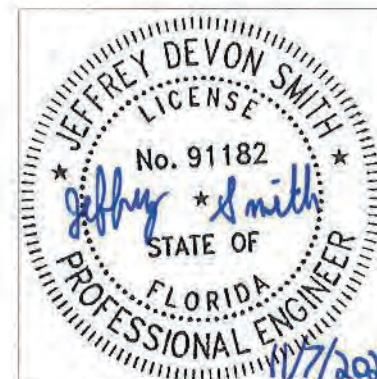
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10 ALTERNATE MULLION ATTACHMENT DETAIL @ HEAD/SILL  
(UNIVERSAL SLEEVE INSTALL)



23  
10 ALTERNATE H.V.B.S. ATTACHMENT DETAIL @ HEAD/SILL  
(UNIVERSAL SLEEVE INSTALL)



24  
10 ALTERNATE JAMB ATTACHMENT DETAIL  
(UNIVERSAL SLEEVE INSTALL)



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By *[Signature]*  
Miami-Dade Product Control

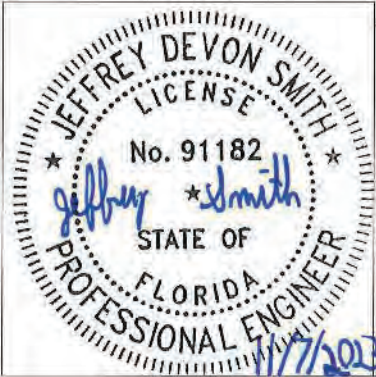
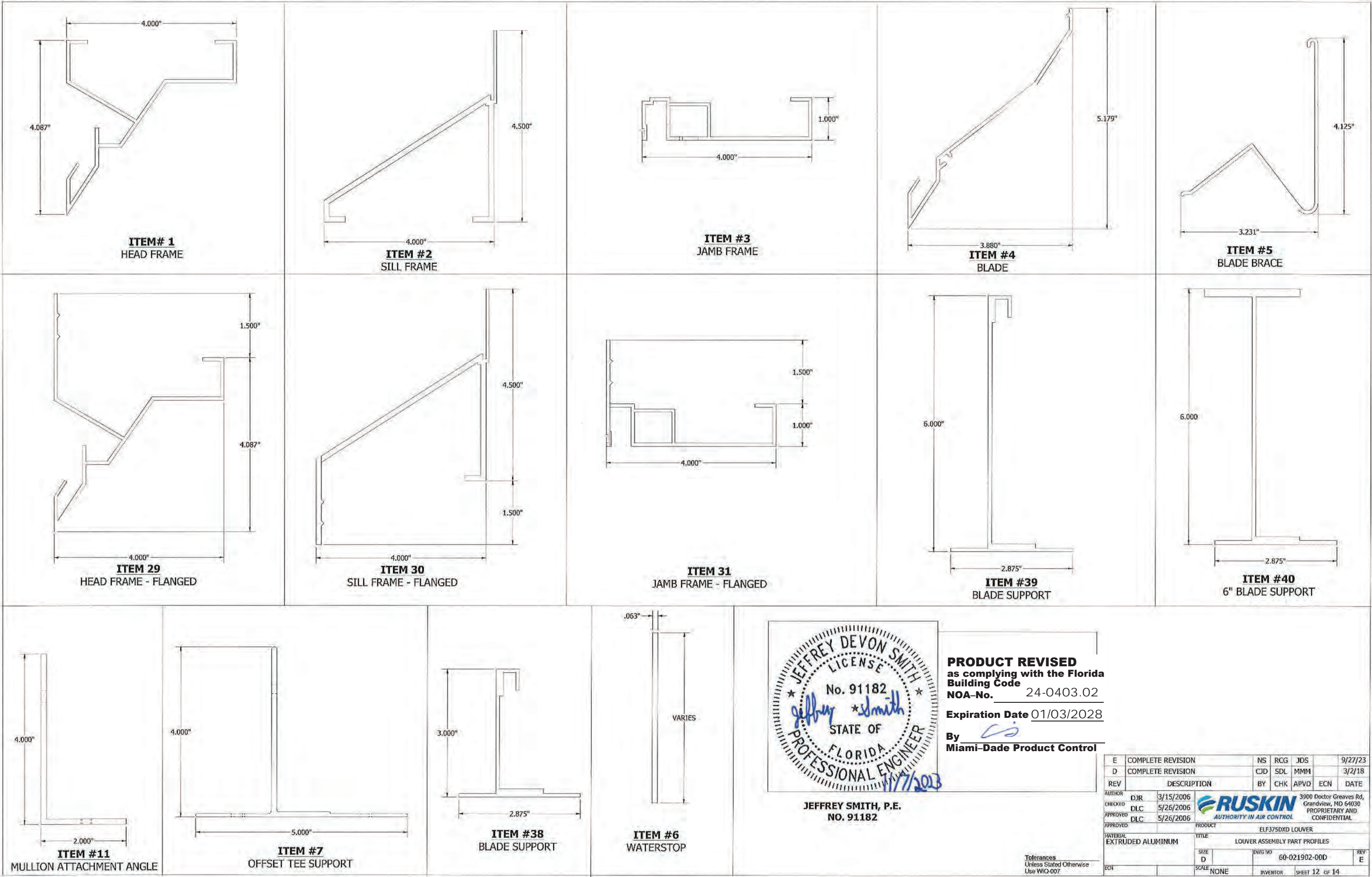
Tolerances  
Unless Stated Otherwise  
Use WIC-007

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D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006				
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
APPROVED						
MATERIAL	EXTRUDED ALUMINUM					
SIZE	D					
SCALE	NONE					
INVENTOR						
SHEET	11	OF	14			

**RUSKIN**  
AUTHORITY IN AIR CONTROL  
3900 Doctor Greaves Rd.  
Grandview, MO 64030  
PROPRIETARY AND  
CONFIDENTIAL

PRODUCT: ELF375DXD LOUVER  
TITLE: UNIVERSAL SLEEVE INSTALLATION DETAILS  
DWG NO: 60-021902-00D  
REV: E





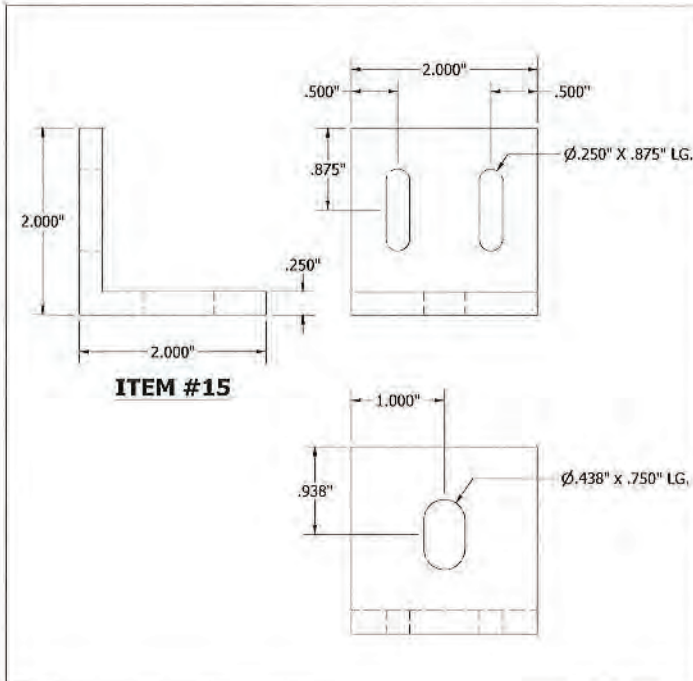
JEFFREY SMITH, P.E.  
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Expiration Date 01/03/2028  
By *[Signature]*  
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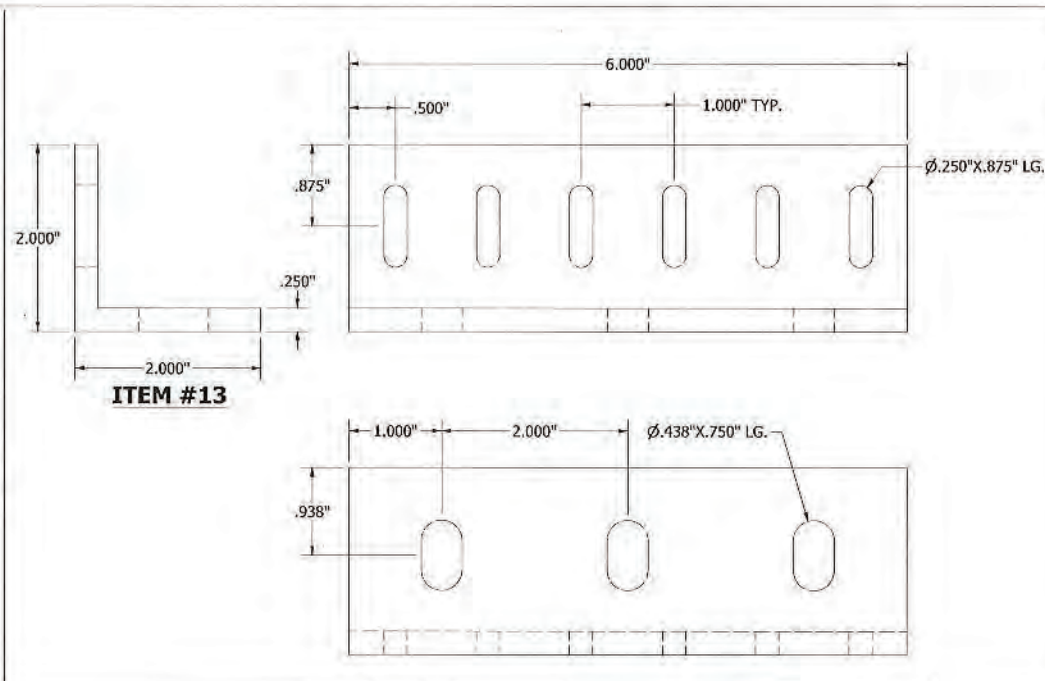
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REV	DESCRIPTION				BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006	 3900 Doctor Greaves Rd, Grandview, MO 64030 PROPRIETARY AND CONFIDENTIAL						
CHECKED	DLC	5/26/2006							
APPROVED	DLC	5/26/2006							
APPROVED									
MATERIAL			PRODUCT		ELF375DXD LOUVER				
EXTRUDED ALUMINUM			TITLE		LOUVER ASSEMBLY PART PROFILES				
			SIZE		DWG NO				REV
			D		60-021902-00D				E
ECN			SCALE		NONE		INVENTOR		SHEET 12 OF 14

Tolerances  
Unless Stated Otherwise  
Use WIC-007

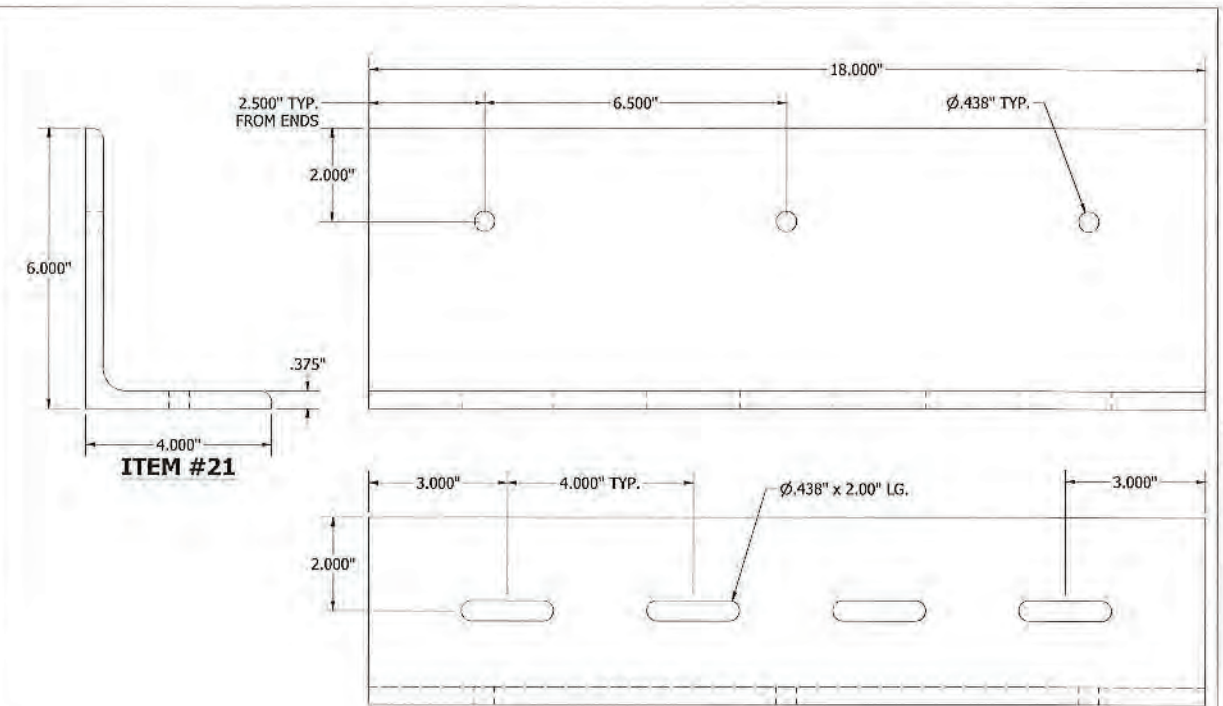




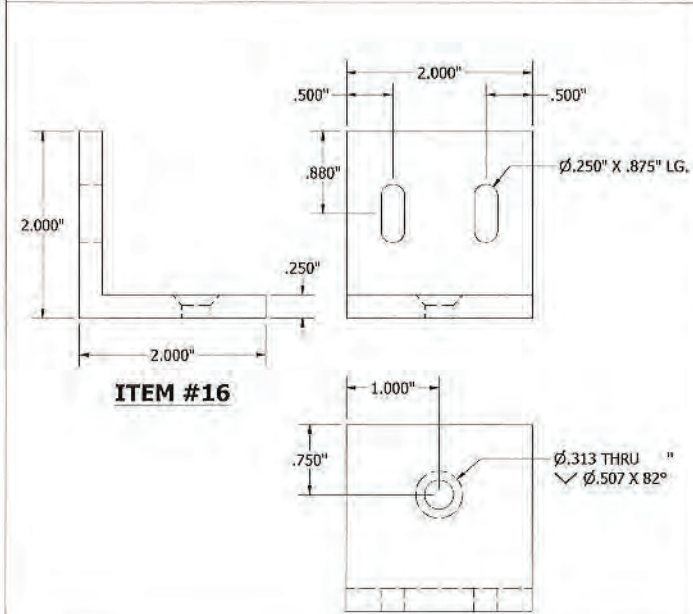
ITEM #15



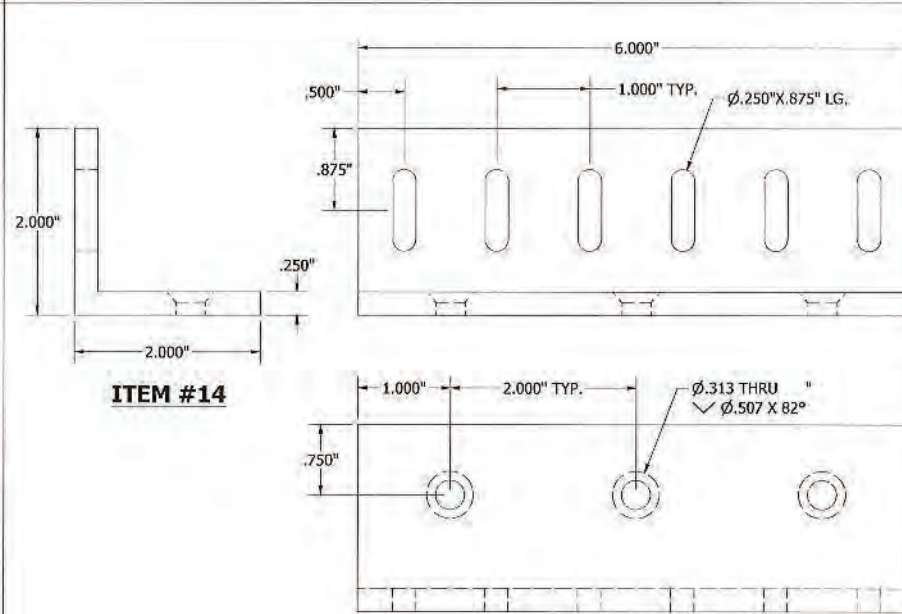
ITEM #13



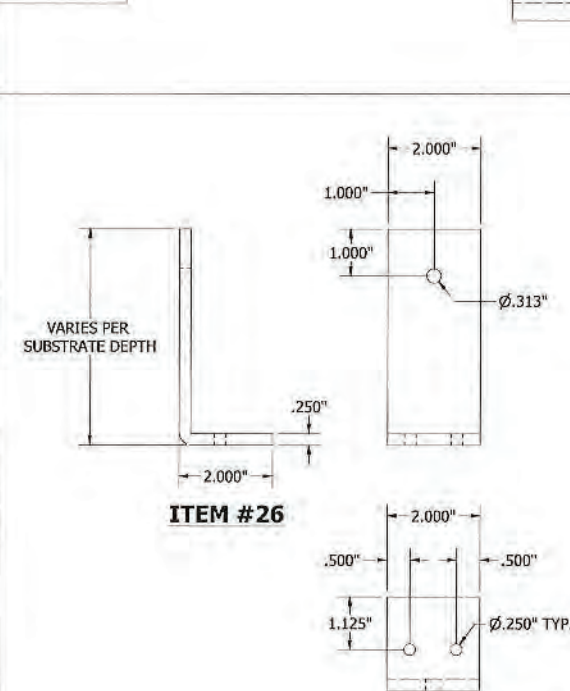
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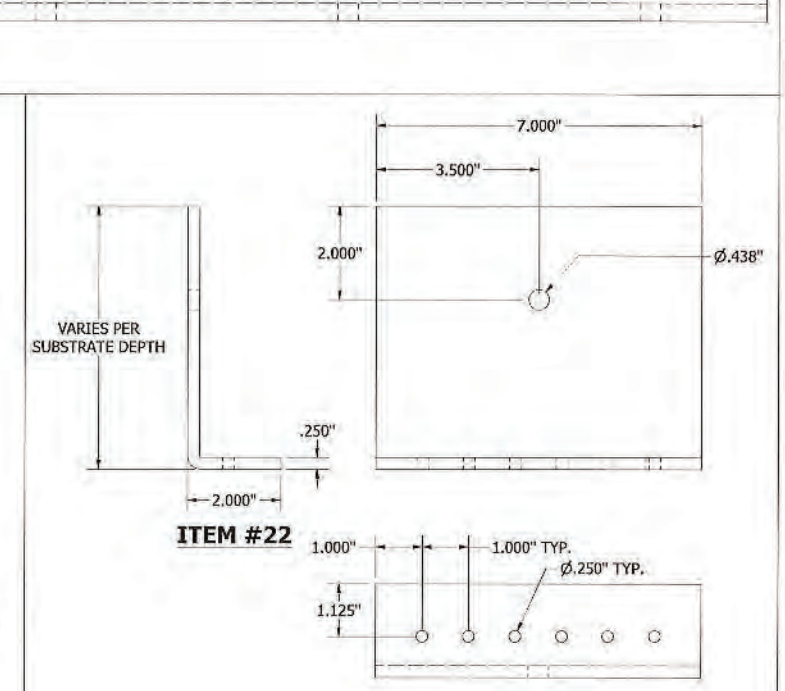
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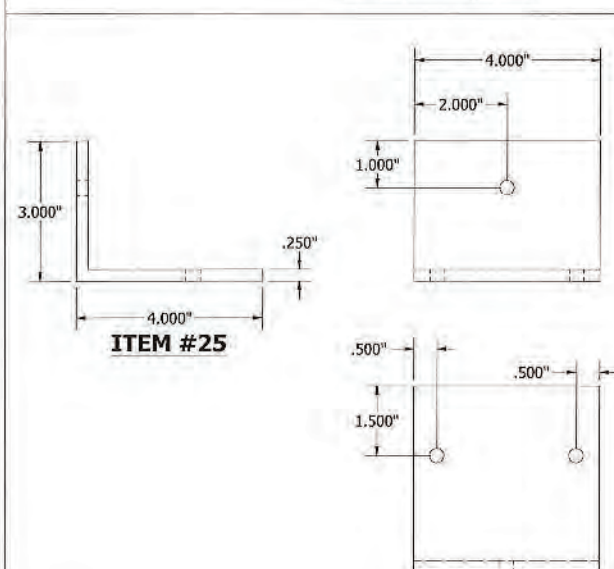
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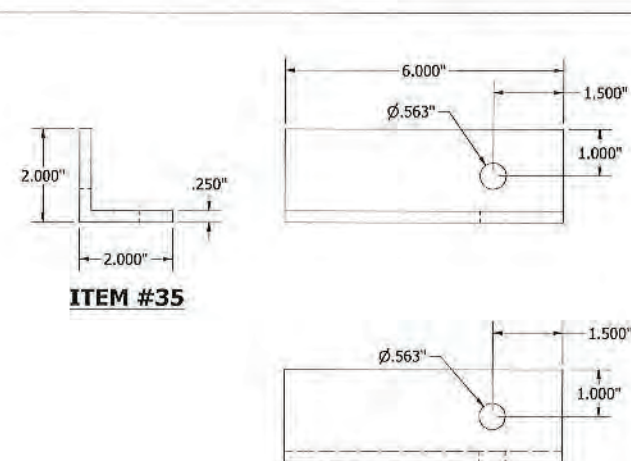
ITEM #26



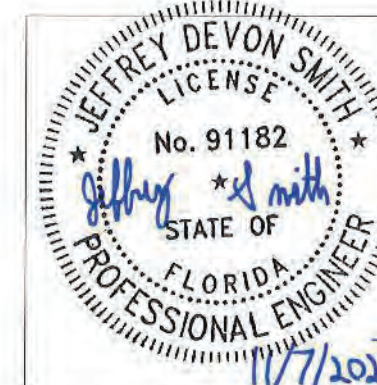
ITEM #22



ITEM #25



ITEM #35



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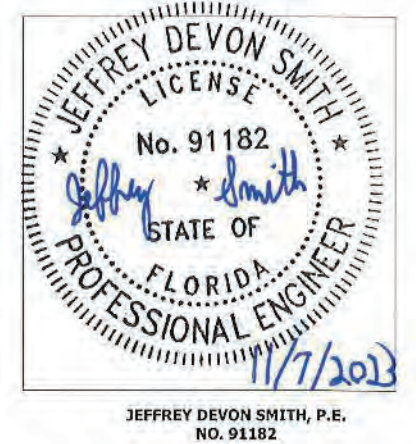
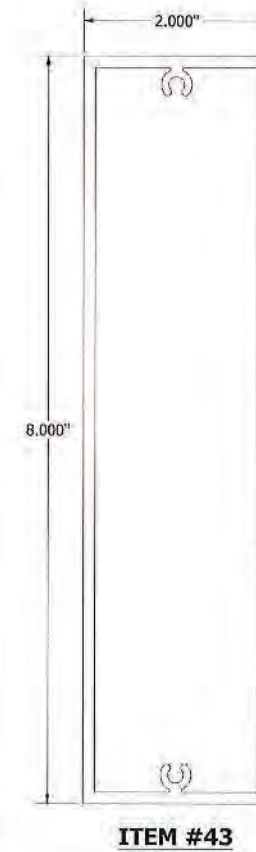
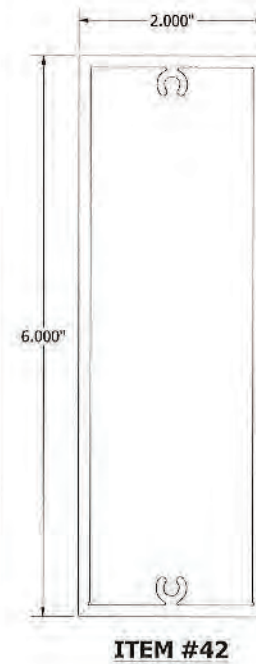
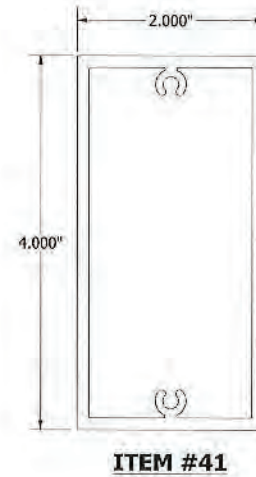
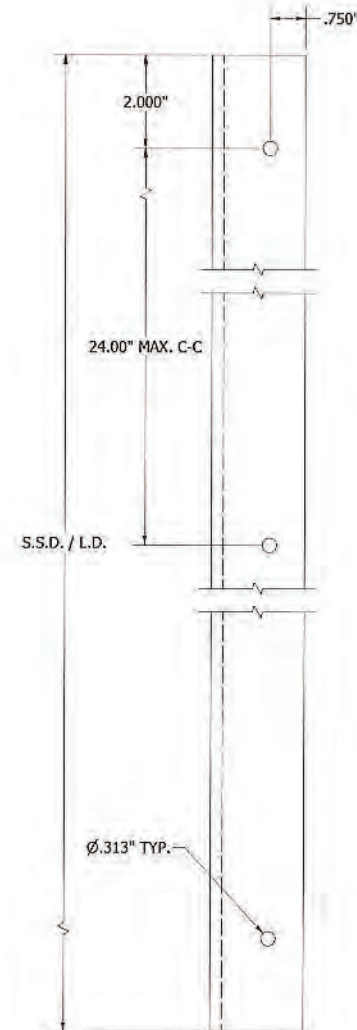
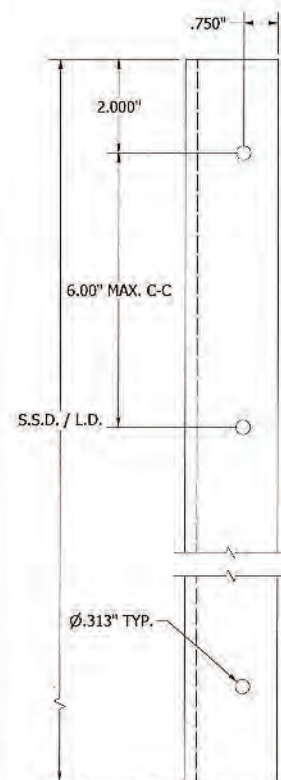
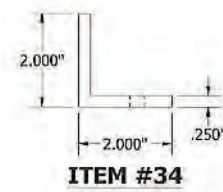
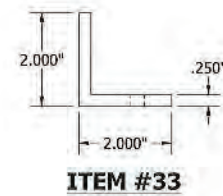
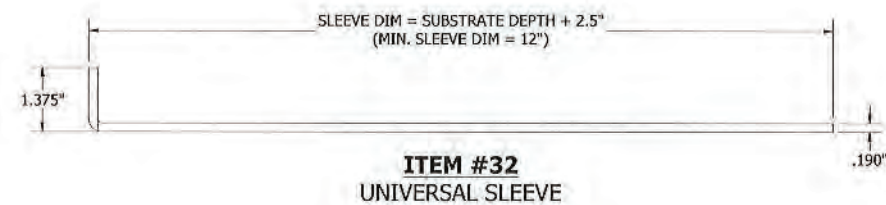
Expiration Date 01/03/2028


By *[Signature]*  
Miami-Dade Product Control

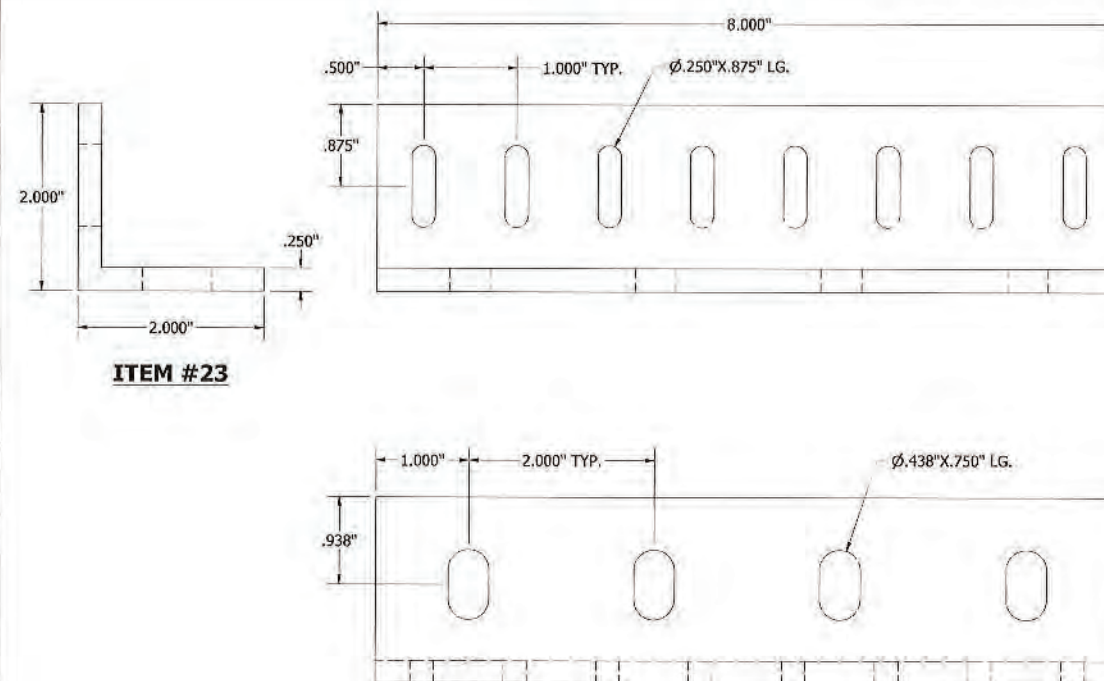
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D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006	 3900 Doctor Goads Rd, Grandview, MO 64030 PROPRIETARY AND CONFIDENTIAL			
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
APPROVED			PRODUCT	ELF375DXD LOUVER		
MATERIAL	EXTRUDED ALUMINUM	TITLE		INSTALLATION PART PROFILES		
ECN		SIZE D	DWG NO	60-021902-00D		REV E
		SCALE NONE	INVENTOR		SHEET 13 OF 14	

Tolerances:  
Unless Stated Otherwise  
Use W10-007





**PRODUCT REVISED**  
as complying with the Florida  
Building Code  
NOA-No. 24-0403.02  
Expiration Date 01/03/2028  
By   
Miami-Dade Product Control



E	COMPLETE REVISION	NS	RCG	JDS		9/27/18
D	COMPLETE REVISION	CJD	SDL	MMM		3/2/18
REV	DESCRIPTION	BY	CHK	APVD	ECN	DATE
AUTHOR	DJR	3/15/2006	 <div style="position: absolute; top: 0; right: 0; text-align: right;">           3900 Route Groves Rd,            Gaithersburg, MD 20878            PROPRIETARY AND            CONFIDENTIAL         </div>			
CHECKED	DLC	5/26/2006				
APPROVED	DLC	5/26/2006				
APPROVED						
MATERIAL EXTRUDED ALUMINUM		PRODUCT	ELF375DXX LOUVER			
		TITLE	INSTALLATION PART PROFILES			
		SIZE D	DWG NO		60-021902-00D	
ECN		SCALE	NONE		INVENTOR	SHEET 14 OF 14
						REV E

**Tolerances**  
Unless Stated Otherwise  
Use WIQ-007