



**DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY AFFAIRS (PERA)  
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/pera/](http://www.miamidade.gov/pera/)

**American Warming and Ventilating (OH)  
7301 International Drive  
Holland, OH 43528**

**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 PERA - 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. PERA 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 LE-54 5" deep Aluminum Louver**

**APPROVAL DOCUMENT:** Drawing No. 1670, titled "LE-54 Impact Louver System", sheets 1 through 10 of 10, dated 07/23/2009, with revision A1 dated 11/07/2011, prepared by W. W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren. W. Schaefer, P.E., bearing the Miami-Dade County Product Control revision stamp with the Notice of Acceptance number and approval 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, city, state, and the 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 NOA # 09-1015.10 and consists of this page 1 and evidence page E-1, as well as approval document mentioned above.

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



*[Handwritten Signature]*  
01/18/2012

**NOA No. 11-1117.15  
Expiration Date: January 06, 2015  
Approval Date: January 26, 2012  
Page 1**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. Drawing No. 1670, titled "LE-54 Impact Louver System", sheets 1 through 10 of 10, dated 07/23/2009, with revision A1 dated 11/07/2011, prepared by W. W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren W. Schaefer, P.E.

**B. TESTS "Submitted under NOA # 09-1015.10"**

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 "EA-52 Aluminum Louver Systems", prepared by Hurricane Test Laboratory, Inc., Report No. 0198-0305-09, dated 09/29/2009, signed and sealed by Vinu J. Abraham, P.E.
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 "EA-52 Aluminum Louver Systems", prepared by Hurricane Test Laboratory, Inc., Report No. 0198-0715-09, dated 09/30/2009, signed and sealed by Vinu J. Abraham, P.E.

**C. CALCULATIONS "Submitted under NOA # 09-1015.10"**

1. Structural calculations prepared by W.W. Schaefer Engineering & Consulting, P.A., dated 10/06/2009, signed and sealed by Warren W. Schaefer, P.E.

**D. QUALITY ASSURANCE**

1. Miami-Dade Department of Permitting, Environment, and Regulatory Affairs (PERA)

**E. MATERIAL CERTIFICATIONS**

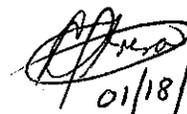
1. None.

**F. STATEMENTS**

1. Statement letter of code conformance to 2007 and 2010 FBC issued by W. W. Schaefer Engineering & Consulting, P.A., dated 11/07/2011, signed and sealed by Warren W. Schaefer, P.E.
2. No financial interest letter issued by W. W. Schaefer Engineering & Consulting, P.A., dated 11/01/2011, signed and sealed by Warren W. Schaefer, P.E.

**"Submitted under NOA # 09-1015.10"**

3. Code compliance letters issued by Hurricane Test Laboratory, Inc., dated 09/29/2003 and 09/30/2009, signed and sealed by Vinu J. Abraham, P.E.

  
01/18/2012

Carlos M. Utrera, P.E.  
Product Control Examiner  
NOA No. 11-1117.15

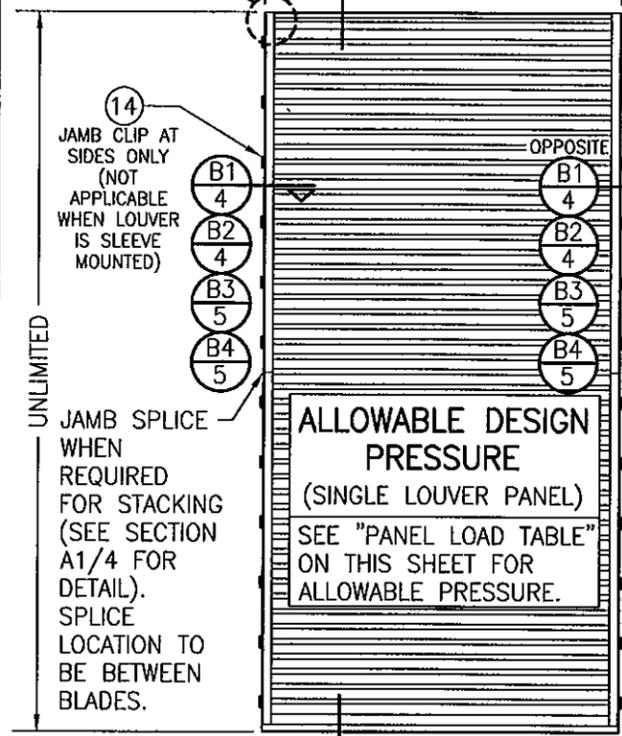
Expiration Date: January 06, 2015  
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**PANEL LOAD TABLE  
(WITH SIDE CLIPS)**

PANEL WIDTH (IN.)	(1) CLIP SPACING (IN.)	ALLOWABLE PRESSURE (+/- PSF)
36	8	120
	13	104
42	8	120
	13	89
48	8	120
	13	78
54	8	120
	13	69
60	8	120
	13	62
	18	45

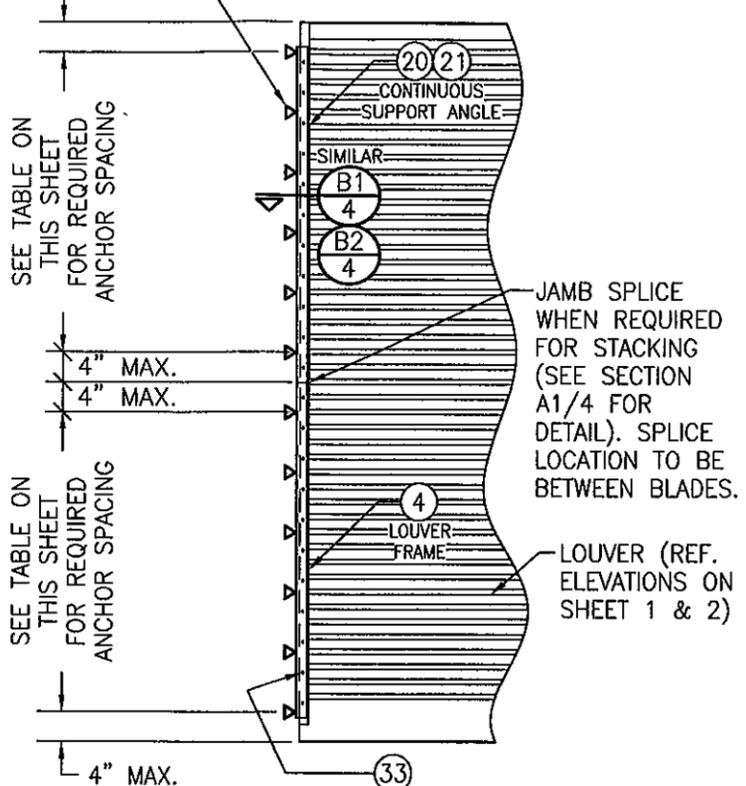
(1) CLIP SPACING WITHIN SLEEVE MOUNTED LOUVERS MAY NOT VARY AND SHALL ALWAYS BE 8".

SEE CORNER CONSTRUCTION DESCRIPTIONS ON THIS SHEET



**EXTERIOR ELEVATION:  
SINGLE LOUVER PANEL  
(ARCHITECTURAL & NON-ARCHITECTURAL)**  
SCALE: 1/2" = 1'-0"

JAMB ANCHORS TO SUBSTRATE PER ANCHOR REQUIREMENTS TABLE ON SHEET 1. SEE ANCHOR SPACING TABLE ON THIS SHEET FOR SPACING & END DISTANCE.



**INTERIOR ELEVATION:  
(OPTIONAL SIDE JAMB INSTALLATION WITH CONTINUOUS SIDE ANGLES)**  
SCALE: 1/2" = 1'-0"  
(FOR DETAIL NOT SHOWN, SEE OTHER ELEVATIONS)

**PANEL ANCHOR SPACING/PRESSURE TABLE  
(WITH CONTINUOUS SIDE SUPPORT ANGLE)**

PANEL WIDTH (IN.)	ANGLE TO SUBSTRATE ANCHORS		ANGLE TO LOUVER FRAME SCREWS		ALLOWABLE PRESSURE (+/- PSF)
	SPACING (IN.)	END DIST. (IN.)	SPACING (IN.)	END DIST. (IN.)	
36	8	4	4	2	120
	13	7 1/2	7 1/2	3 3/4	104
42	8	4	4	2	120
	13	7 1/2	7 1/2	3 3/4	89
48	8	4	4	2	120
	13	7 1/2	7 1/2	3 3/4	78
54	8	4	4	2	120
	13	7 1/2	7 1/2	3 3/4	69
60	8	4	4	2	120
	13	7 1/2	7 1/2	3 3/4	62
	18	9	9	4 1/2	45

NOTE: SINGLE LOUVER PANELS MAY BE STACKED/SPLICED VERTICALLY OR THE LOUVER PANEL MAY RUN VERTICALLY TO INFINITE HEIGHT PROVIDING OPENING IS PROPERLY DESIGNED BY OTHERS TO SUPPORT THE LOUVER PANELS.

**SLEEVE SPlicing NOTE FOR SLEEVE MOUNTED LOUVERS:**  
SLEEVE MAY BE SPliced ALONG HORIZONTAL OR VERTICAL RUNS PROVIDING SPlicing DOES NOT OCCUR WITHIN 12" OF ANY VERTICAL MULLION CENTERLINE.

**CORNER & BLADE END CONSTRUCTION:**

**FRAME HEAD:** HORIZONTAL MEMBER IS SQUARE CUT, BUTTED TO VERTICAL MEMBERS & FASTENED WITH TWO(2) NO. 7 X 1 1/4" SMS HEX HEAD SCREWS INTO THE HORIZONTAL MEMBERS SCREW SPLINES.  
**FRAME SILL:** VERTICAL MEMBERS ARE ANGLE CUT, BUTTED TO HORIZONTAL MEMBER & FASTENED WITH TWO(2) NO. 7 X 1 1/4" SMS SCREWS INTO THE VERTICAL MEMBERS SCREW SPLINES.  
**BLADE END:** HORIZONTAL BLADES ARE SQUARE CUT, BUTTED TO VERTICAL MEMBERS & FASTENED WITH TWO(2) NO. 7 OR NO. 8 X 1 1/4" SMS SCREWS INTO THE BLADE SCREW SPLINES.

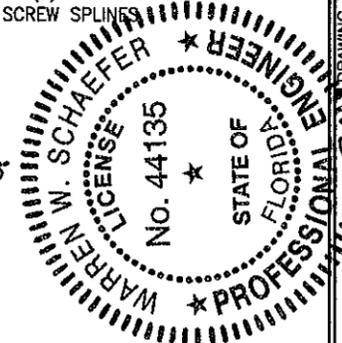
**GENERAL NOTES:**

- THESE LOUVER SYSTEMS HAVE BEEN TESTED, ANALYZED & APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN PRESSURE TABLE(S)".
- OPENINGS, BUCKING & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE. IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS SUPERIMPOSED BY THE LOUVERS.
- ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & SHALL NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS. SPECIFIED ANCHOR EMBED TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
- THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH THE FLORIDA BUILDING CODE PROTOCOLS TAS-201, 202 & 203 FOR LARGE MISSILE IMPACT LOUVERS.
- THESE LOUVER SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE (FBC) INCLUDING HIGH VELOCITY HURRICANE ZONES (HVHZ).
- IMPACT SHUTTERS ARE NOT REQUIRED WITH THESE LOUVER SYSTEMS.
- ALL ANCHORS SECURING LOUVER FRAME TO PRESSURE TREATED BUCKS OR WOOD FRAMING SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
- DETERMINE THE POSITIVE & NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE AND GOVERNING WIND VELOCITY. FOR WIND LOAD CALCULATIONS IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, A DIRECTIONALITY FACTOR OF Kd = 0.85 MAY BE APPLIED PER THE ASCE-7 STANDARD.
- NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE CERTIFICATION OF THIS PRODUCT. WIND LOAD DURATION FACTOR Cd = 1.6 WAS USED FOR WOOD SCREW ANALYSIS ONLY.
- MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF FLORIDA BUILDING CODE CHAPTER 20.
- EACH LOUVER ASSEMBLY SHALL BE PERMANENTLY LABELED AS FOLLOWS:  
AMERICAN WARMING AND VENTILATING  
HOLLAND, OH
- MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED
- THESE LOUVERS ARE NOT TESTED FOR WATER INFILTRATION RESISTANCE, THEREFORE THE LOUVERS ARE 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.
- MULLED PANELS MAY BE HORIZONTALLY INSTALLED TO AN UNLIMITED NUMBER. VERTICAL STACKING OF MULLED PANELS MAY OCCUR PROVIDING A STRUCTURAL SUPPORT IS DESIGNED & INSTALLED BY OTHERS TO SUPPORT ALL LOADS TRANSFERRED FROM THE LOUVER ASSEMBLY (SINGLE PANELS MAY RUN TO UNLIMITED HEIGHT PER ELEVATION IF NO MULLION EXISTS).

ANCHOR REQUIREMENTS TABLE			
OPENING TYPE (SUBSTRATE)	FRAME CLIP TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
<b>JAMB &amp; NON-REINFORCED MULLION END CLIP ANCHORS</b>			
MIN. 2X_ WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 14 SMS OR WOOD SCREW	1 3/8"	3/4"
MIN. 16 GA. 33 KSI METAL STUD	1/4-14 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	1/4-14 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	1/4-14 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
(3) MIN. C-90 CMU	(1) 1/4" CONCRETE SCREW	1 1/4"	2"
MIN. 3000 PSI CONCRETE	(1) 1/4" CONCRETE SCREW	1 1/2"	2"
<b>TUBE MULLION END CLIP ANCHORS</b>			
MIN. 2X_ WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 14 SMS OR WOOD SCREW	1 3/8"	3/4"
MIN. 16 GA. 33 KSI METAL STUD	1/4-14 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	1/4-14 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	1/4-14 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
3000 PSI CONCRETE	(2) 1/2" WEDGE ANCHOR	3 1/2"	3"

- CONCRETE SCREWS SHALL BE ELCO ULTRACONS, ITW RAMSET/RED HEAD TAPCONS OR HILTI KWIK-CON II (HARDENED STEEL OR S.S.).
- WEDGE ANCHORS SHALL BE HILTI STAINLESS STEEL KWIK BOLT 3
- CMU IS APPLICABLE AT SIDES ONLY.

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 11-1117, 15 Expiration Date 01/06/2015  
By [Signature] Miami Dade Product Control



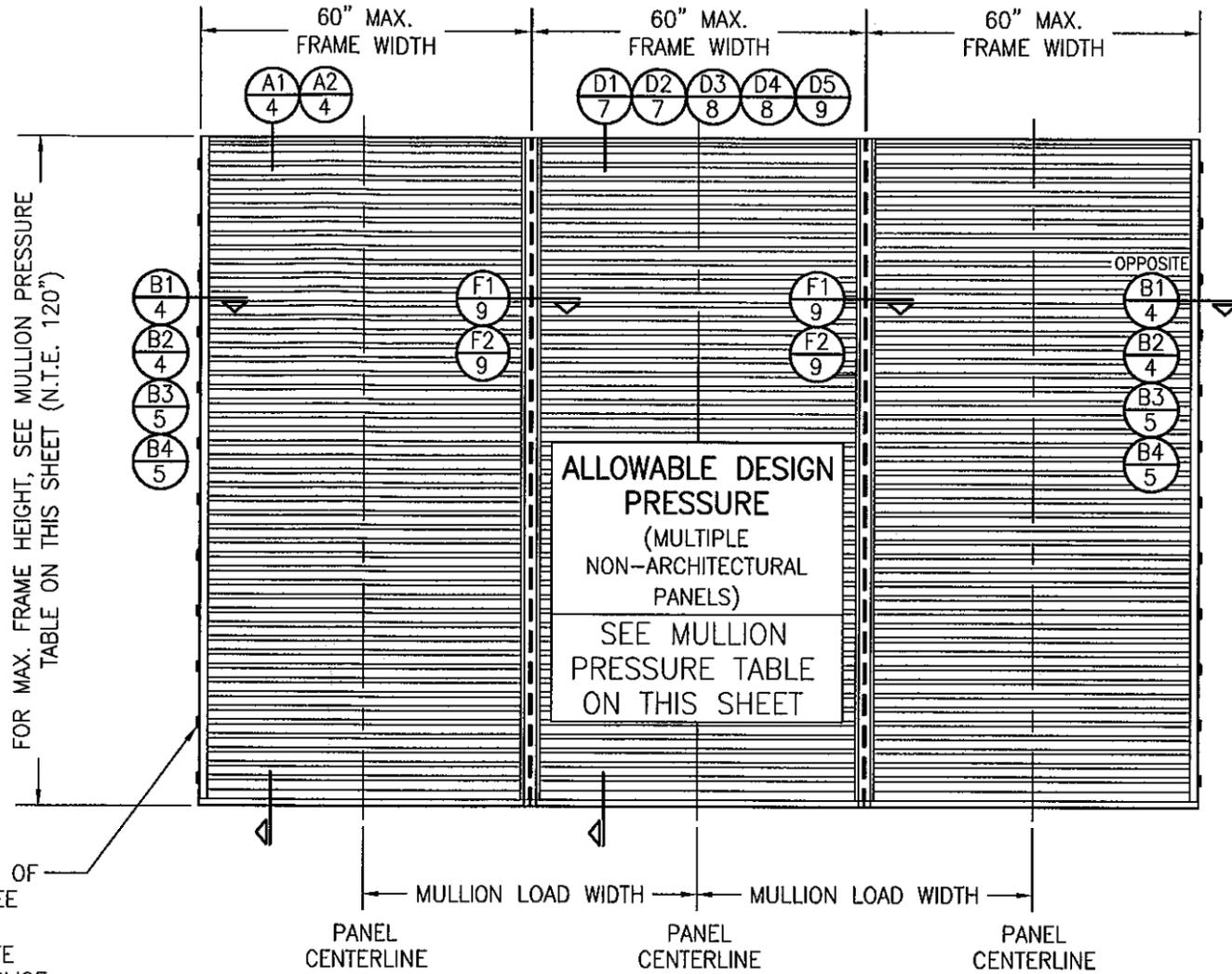
DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-24	DATE: 07/23/09
REVISION DESCRIPTION	DATE
BY	11/07/11
W.R.M.	
UPDATE CONSULTANTS ADDRESS	
NO.	A1
MANUFACTURER <b>AMERICAN WARMING &amp; VENTILATING</b> 7301 INTERNATIONAL DRIVE HOLLAND, OHIO 43528 419-865-5000	
CONSULTANTS <b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (CA 6809)</b> 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	
DRAWING TITLE <b>LE-54 IMPACT LOUVER SYSTEM</b>	
CERTIFICATION NOV 07 2011 WARREN W. SCHAEFER, P.E. P.E. NO. 44135	
DRAWING NO.	REV.
1670	A
SHEET NO.	
1 OF 10	

THESE DRAWINGS ARE APPLICABLE ONLY TO THE PRODUCT SPECIFIED. THEY MAY NOT BE USED FOR THE ASSEMBLY AND/OR INSTALLATION OF ANY OTHER PRODUCT NOR MAY THEY BE USED FOR RATIONAL AND/OR LOCAL APPROVAL OF ANY PRODUCT NOT PRODUCED BY THE MANUFACTURER STATED ON THESE DRAWINGS.

MULLION ALLOWABLE DESIGN PRESSURE  
(NON-ARCHITECTURAL LOUVERS)

MAXIMUM MULLION SPAN (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (+/- PSF)		
		WITH NO TUBE MULLION	WITH 4"X3"X3/16" TUBE MULLION	WITH 4"X3"X1/4" TUBE MULLION
120	60	30.6	46.1	61.4
	54	34.0	51.2	68.3
	48	38.3	57.6	76.8
	42	43.7	65.8	87.8
	36	51.0	76.8	102.4
	30	61.2	92.2	120.0
	24	76.5	115.2	120.0
108	18	102.0	120.0	120.0
	60	42.0	63.2	84.3
	54	46.6	70.2	93.6
	48	52.5	79.0	105.3
	42	60.0	90.3	120.0
	36	70.0	105.3	120.0
	30	84.0	120.0	120.0
96	24	104.9	120.0	120.0
	18	120.0	120.0	120.0
	60	56.3	90.0	120.0
	54	62.5	100.0	120.0
	48	70.3	112.5	120.0
	42	80.4	120.0	120.0
	36	93.8	120.0	120.0
84	30	112.5	120.0	120.0
	24	120.0	120.0	120.0
	60	64.3	120.0	120.0
	54	71.4	120.0	120.0
	48	80.4	120.0	120.0
	42	91.8	120.0	120.0
	36	107.1	120.0	120.0
72	30	120.0	120.0	120.0
	60	75.0	120.0	120.0
	54	83.3	120.0	120.0
	48	93.8	120.0	120.0
	42	107.1	120.0	120.0
60	36	120.0	120.0	120.0
	60	90.0	120.0	120.0
	54	100.0	120.0	120.0
	48	112.5	120.0	120.0
48	42	120.0	120.0	120.0
	60	112.5	120.0	120.0
	54	120.0	120.0	120.0
42	60	120.0	120.0	120.0

NOTES:  
1. SEE ELEVATION FOR DIMENSIONING OF LOAD WIDTH.  
2. ALLOWABLE UNIT PRESSURE SHALL BE THE LESSER OF THE PRESSURE SHOWN IN THIS TABLE & THAT SPECIFIED FOR THE INDIVIDUAL LOUVER PANEL.

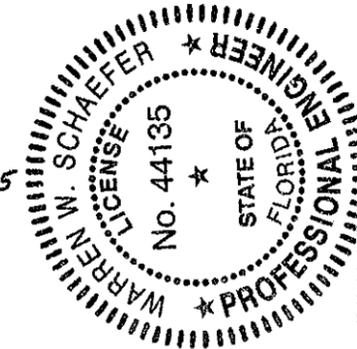


FOR LOCATIONS OF JAMB CLIPS, SEE SINGLE PANEL ELEVATION (NOTE THAT FRAME SPLICE DOES NOT APPLY TO MULLED UNITS)

**EXTERIOR ELEVATION:  
MULTIPLE LOUVER PANELS  
(NON-ARCHITECTURAL)**

SCALE: 1/2" = 1'-0"  
(3 PANEL UNIT SHOWN; MORE THAN 3 PANELS MAY BE MULLED/STACKED HORIZONTALLY)

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 11-1117,15  
Expiration Date 01/06/2015  
By *[Signature]*  
Miami Dade Product Control



DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-24	DATE: 07/23/09
DATE	
BY	
REVISION DESCRIPTION	
NO.	

DRAWING TITLE  
**LE-54 IMPACT LOUVER SYSTEM**

MANUFACTURER  
**AMERICAN WARMING & VENTILATING**  
7301 INTERNATIONAL DRIVE  
HOLLAND, OHIO 43528  
419-865-5000

CONSULTANTS  
**W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)**  
7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

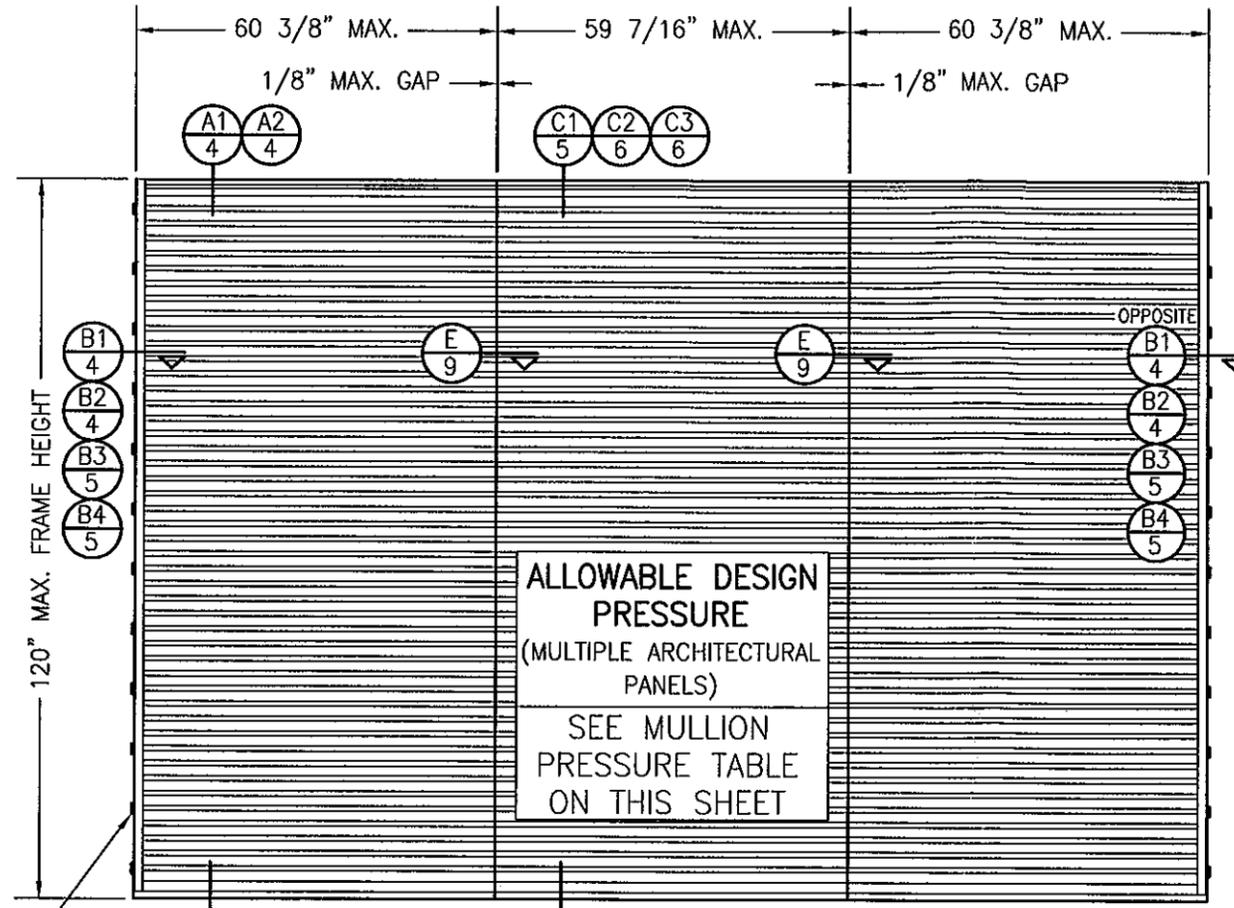
CERTIFICATION  
NOV 07 2011  
WARREN W. SCHAEFER, P.E.  
P.E. NO. 44135

DRAWING NO. 1670	REV. A
SHEET NO. 2 OF 10	

**MULLION ALLOWABLE  
DESIGN PRESSURE  
(ARCHITECTURAL  
LOUVERS)**

MAXIMUM MULLION SPAN (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (+/- PSF)
120	60	61.4
	54	68.3
	48	76.8
	42	87.8
	36	102.4
108	30	120.0
	60	84.3
	54	93.6
	48	105.3
96	42	120.0
	60	120.0

**NOTES:**  
 1. SEE ELEVATION FOR DIMENSIONING OF LOAD WIDTH.  
 2. ALLOWABLE UNIT PRESSURE SHALL BE THE LESSER OF THE PRESSURE SHOWN IN THIS TABLE & THAT SPECIFIED FOR THE INDIVIDUAL LOUVER PANEL.

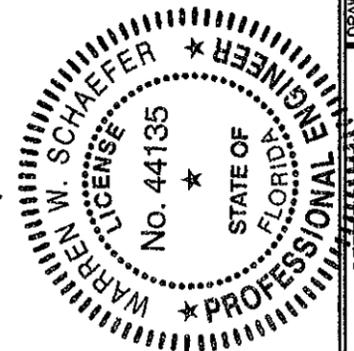


**EXTERIOR ELEVATION;  
MULTIPLE LOUVER PANELS  
(ARCHITECTURAL)**  
 SCALE: 1/2" = 1'-0"  
 (3 PANEL UNIT SHOWN; MORE THAN 3 PANELS MAY BE MULLED/STACKED HORIZONTALLY)

FOR LOCATIONS OF JAMB CLIPS, SEE SINGLE PANEL ELEVATION (NOTE THAT FRAME SPLICE DOES NOT APPLY TO MULLED UNITS)

ALLOWABLE DESIGN PRESSURE  
 (MULTIPLE ARCHITECTURAL PANELS)  
 SEE MULLION PRESSURE TABLE ON THIS SHEET

**PRODUCT REVISED**  
 as complying with the Florida Building Code  
 Acceptance No 11-1117.15  
 Expiration Date 2/10/2015  
 By *[Signature]*  
 Miami Dade Product Control



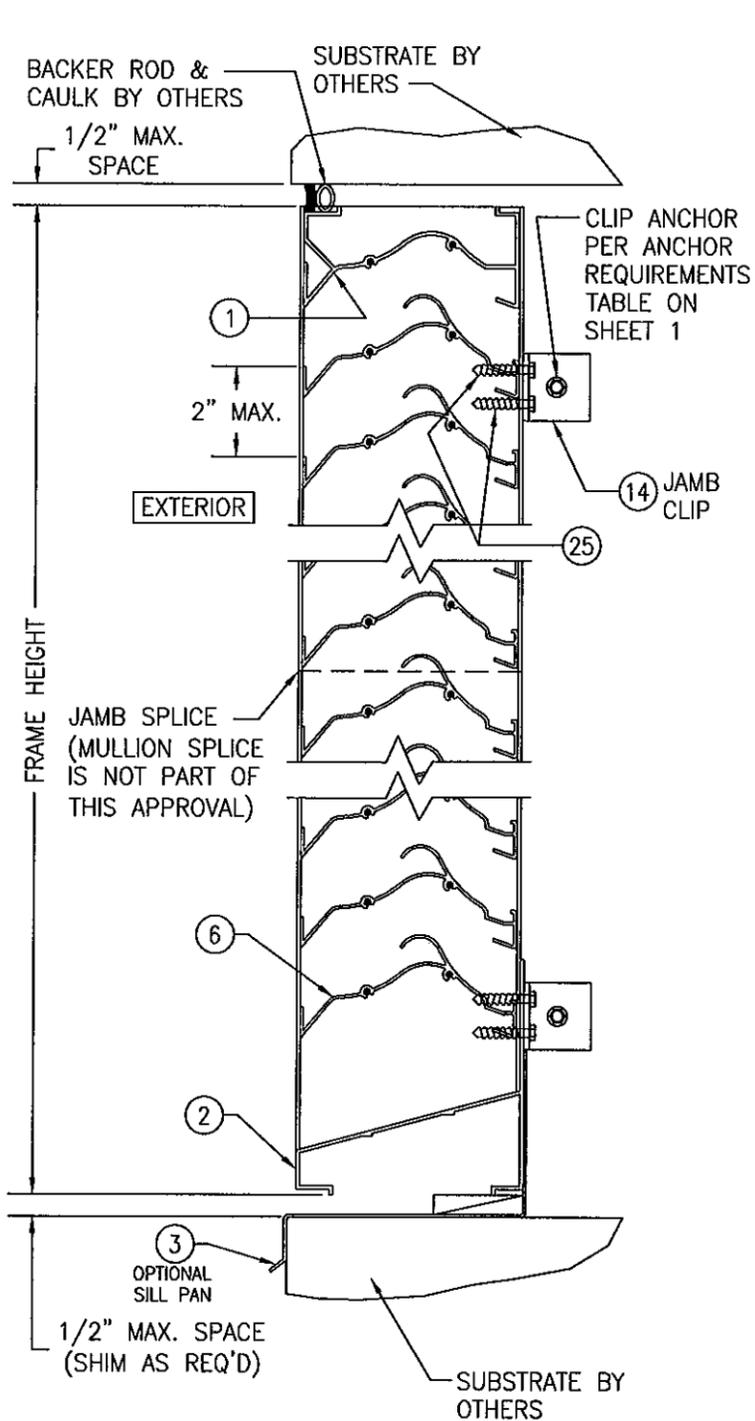
DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-24	DATE: 07/23/09
NO.	DATE
BY	
REVISION DESCRIPTION	

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 MANUFACTURER  
**AMERICAN WARMING & VENTILATING**  
 7301 INTERNATIONAL DRIVE  
 HOLLAND, OHIO 43528  
 419-865-5000

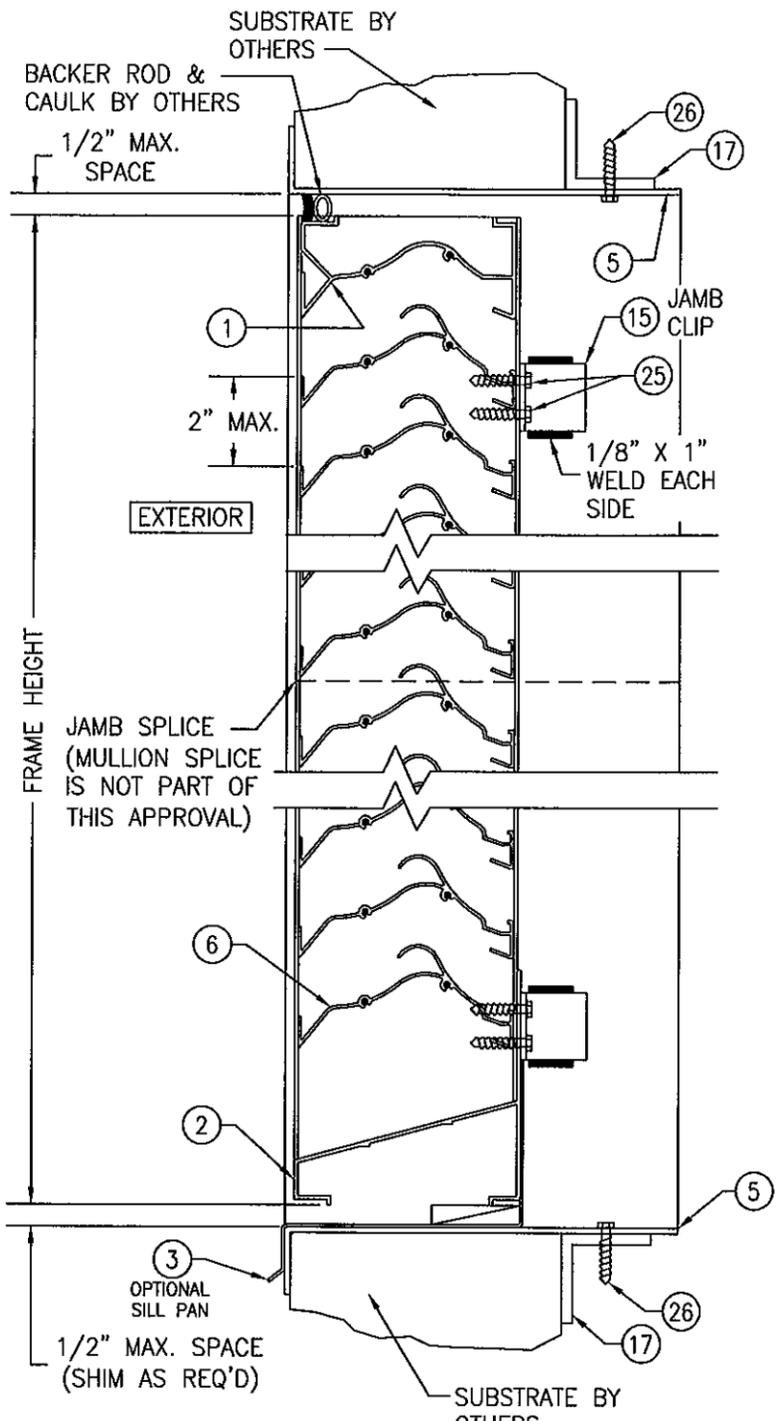
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CERTIFICATION  
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 WARREN W. SCHAEFER, P.E.  
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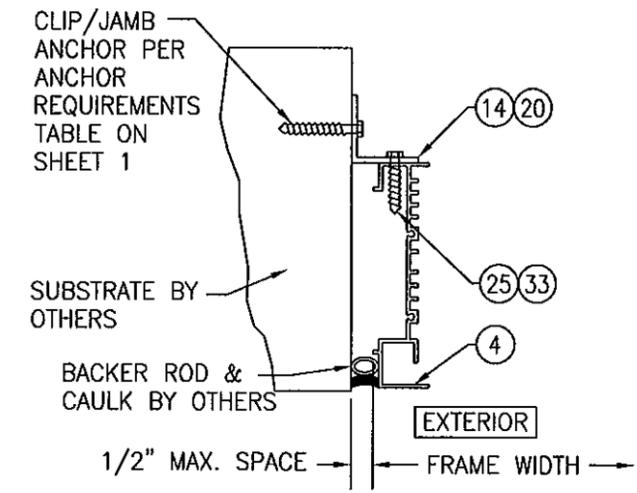
DRAWING NO. 1670	REV. A
SHEET NO. 3 OF 10	



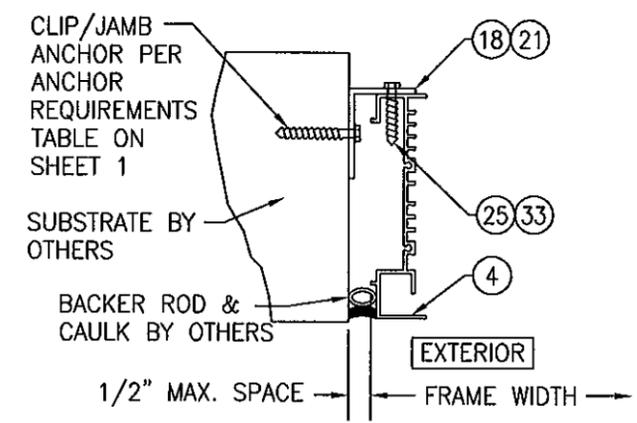
SECTION A1  
SCALE: 1/2 FULL



SECTION A2  
SCALE: 1/2 FULL  
(SLEEVE MOUNT)



SECTION B1  
SCALE: 1/2 FULL  
(NO SLEEVE & CLIPS TURNED OUT)



SECTION B2  
SCALE: 1/2 FULL  
(NO SLEEVE & CLIPS TURNED IN)

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as complying with the Florida  
Building Code  
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Expiration Date 01/06/2015  
By [Signature]  
Miami Dade Product Control



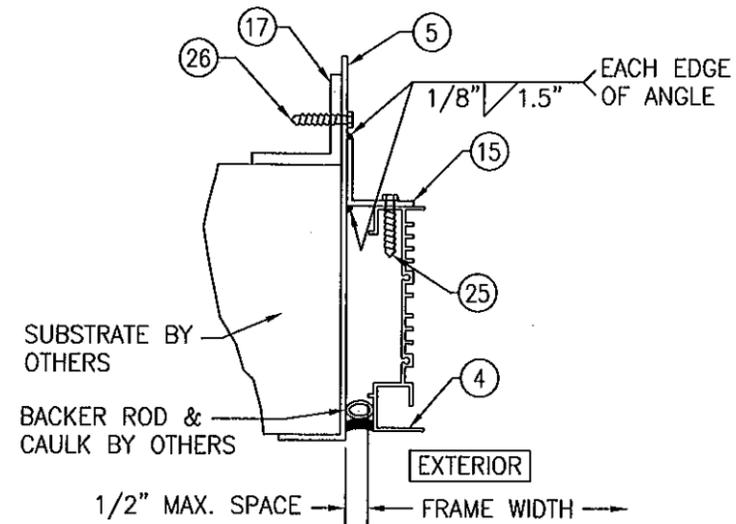
DRAWN BY:	W.R.M.	CHECKED BY:	W.W.S.
PLOT:	1=4	DATE:	07/23/09
NO.		REVISION DESCRIPTION	
DATE		BY	

DRAWING TITLE  
**LE-54 IMPACT LOUVER SYSTEM**

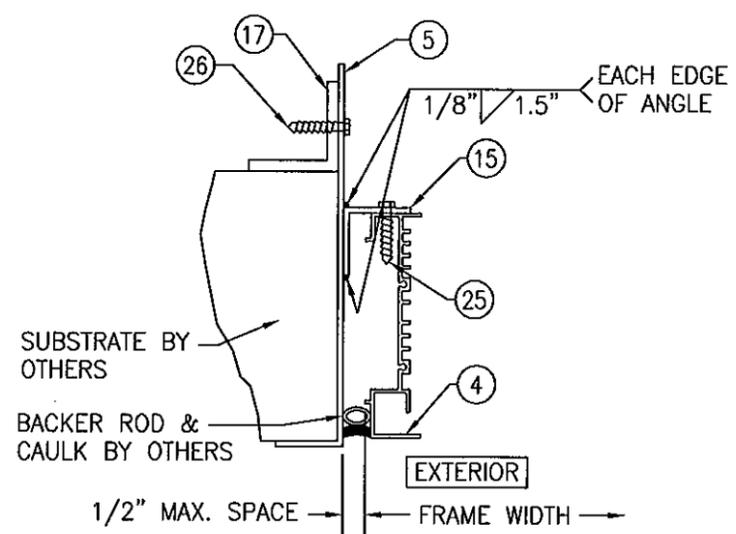
CONSULTANTS  
**W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)**  
7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

MANUFACTURER  
**AMERICAN WARMING & VENTILATING**  
7301 INTERNATIONAL DRIVE  
HOLLAND, OHIO 43528  
419-865-5000

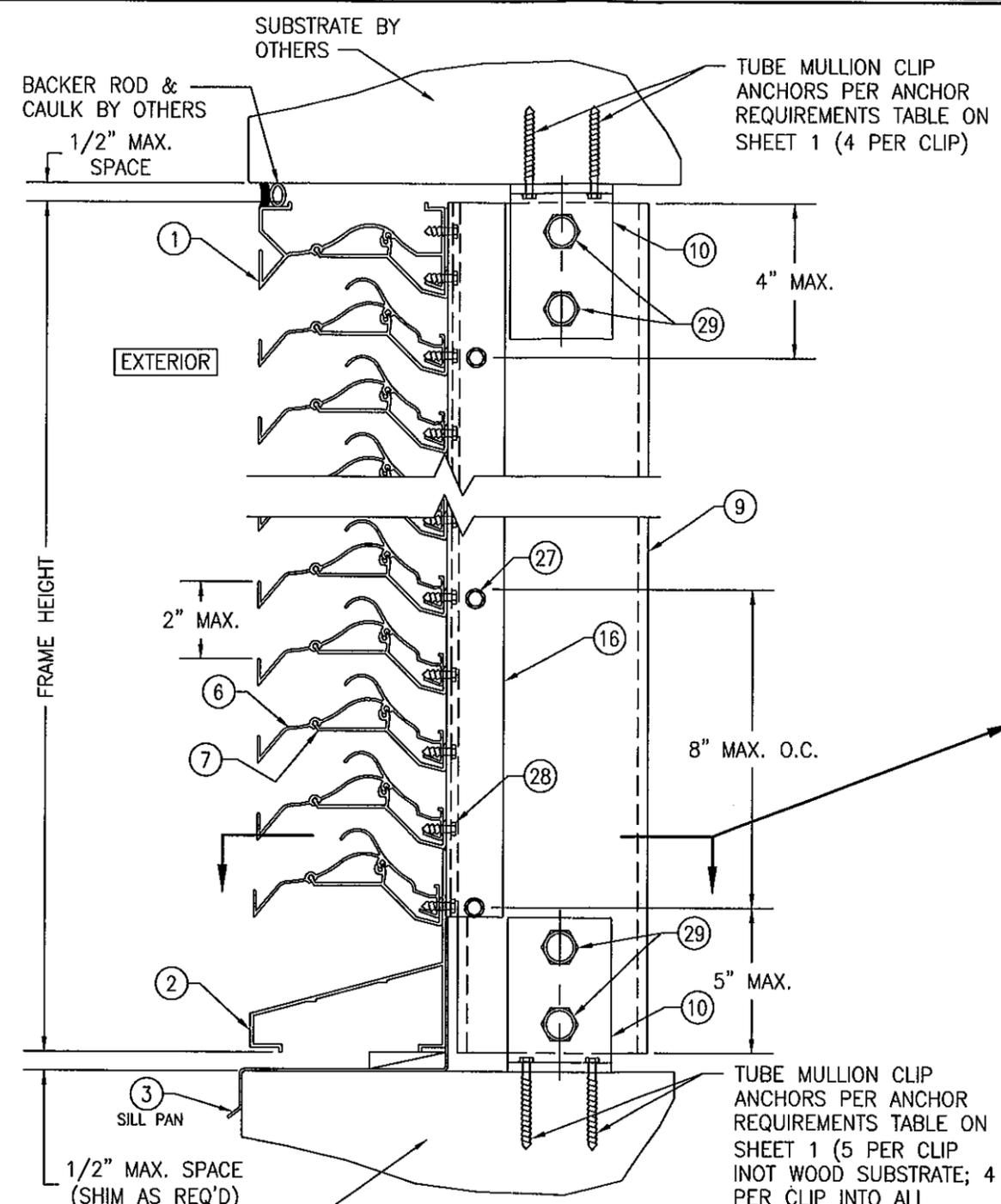
CERTIFICATION  
NOV 07 2011  
WARREN W. SCHAEFER, P.E.  
P.E. NO. 44135



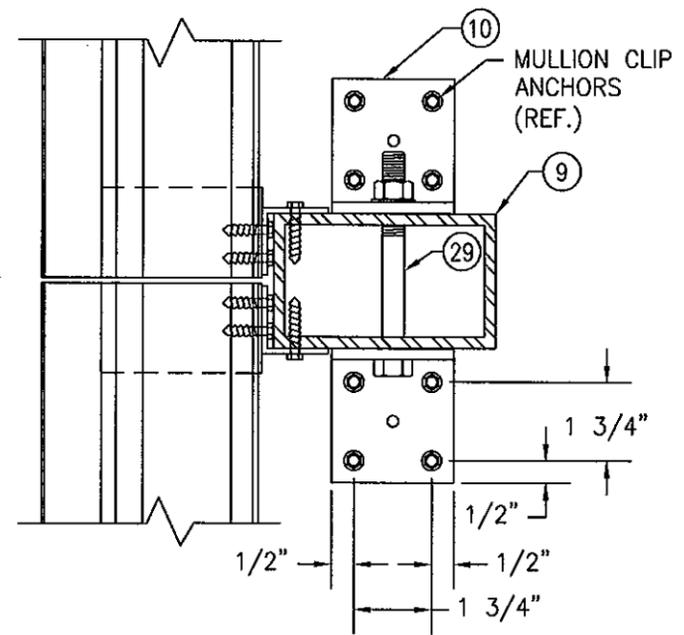
SECTION B3  
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(WITH SLEEVE & CLIPS TURNED OUT)



SECTION B4  
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(WITH SLEEVE & CLIPS TURNED IN)

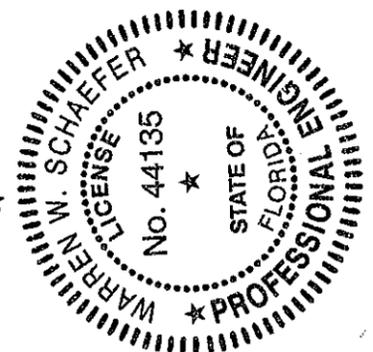


SECTION C1  
SCALE: 1/2 FULL  
(ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE; INSTALLED INTO WOOD, STEEL, ALUMINUM, OR METAL STUD SUBSTRATE)



(FOR DETAIL NOT SHOWN, SEE SECTION E/9)

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 11-1117.15  
Expiration Date 01/06/2015  
By Miami Dade Product Control



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PLOT: 1=4	DATE: 07/23/09
DATE	
BY	
REVISION DESCRIPTION	
NO.	

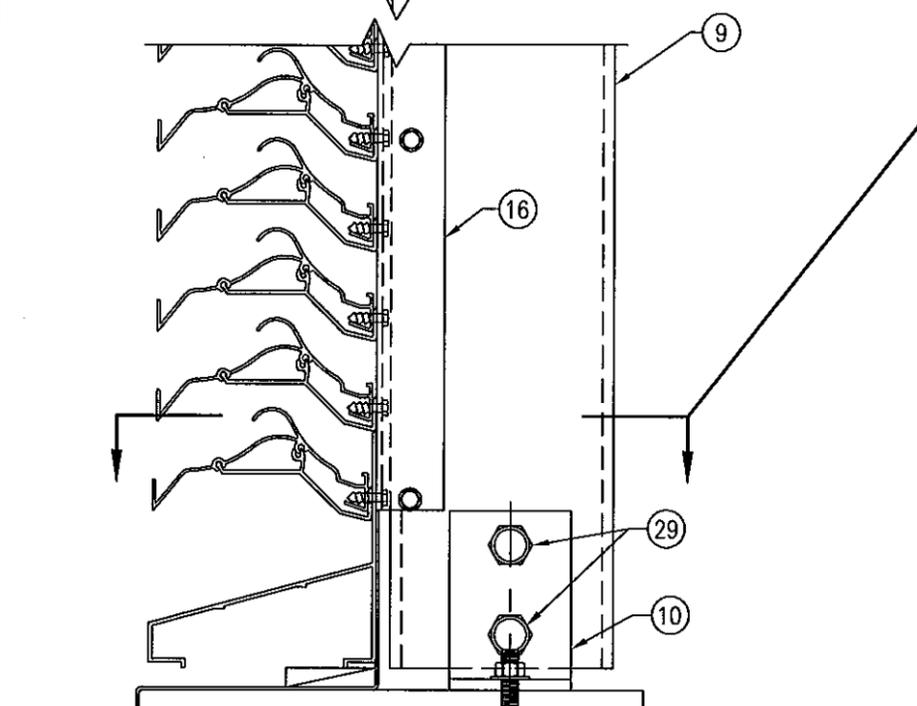
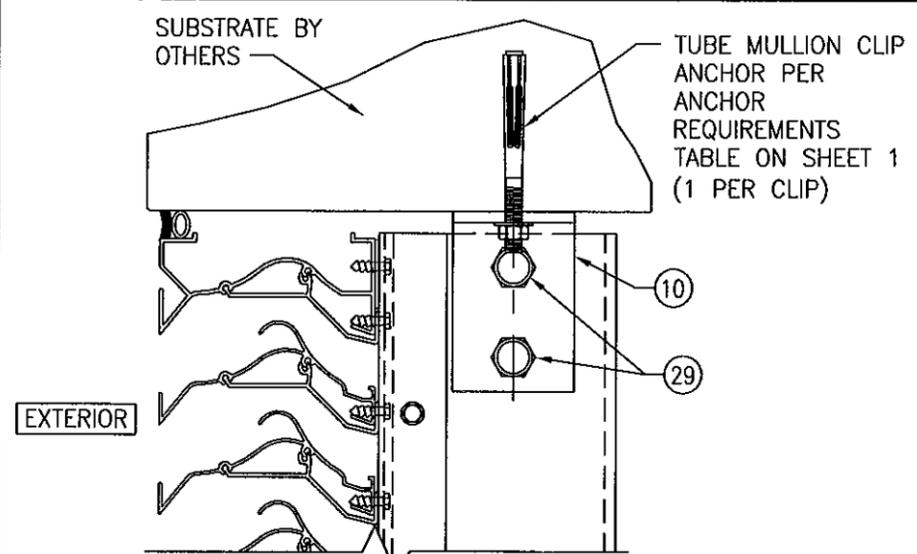
DRAWING TITLE  
**LE-54 IMPACT LOUVER SYSTEM**

CONSULTANTS  
**W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)**  
7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

MANUFACTURER  
**AMERICAN WARMING & VENTILATING**  
7301 INTERNATIONAL DRIVE  
HOLLAND, OHIO 43528  
419-865-5000

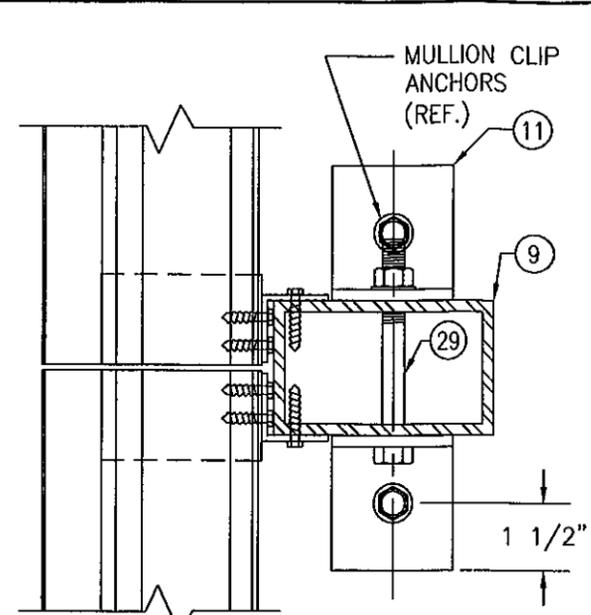
CERTIFICATION  
NOV 07 2011  
WARREN W. SCHAEFER, P.E.  
P.E. NO. 44135

DRAWING NO. 1670	REV. A
SHEET NO. 5 OF 10	

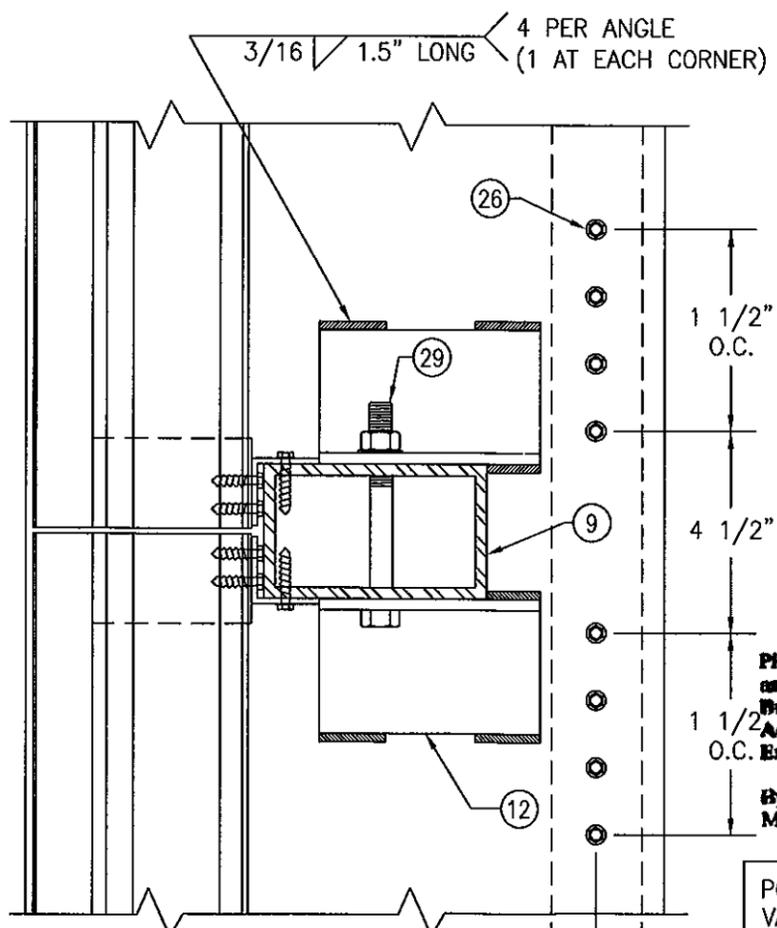


**SECTION C2**  
SCALE: 1/2 FULL  
6

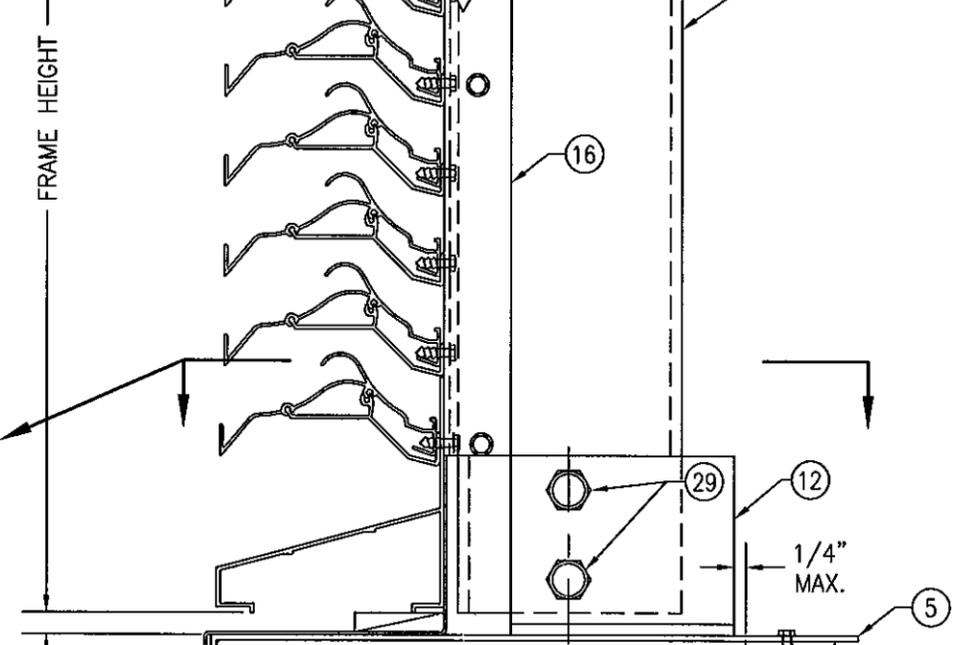
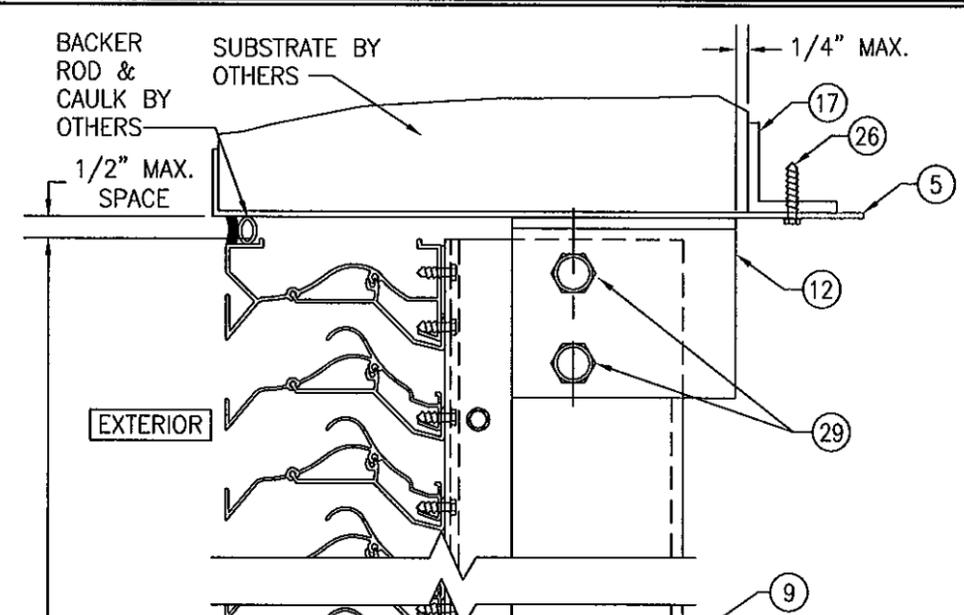
(ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE; INSTALLED INTO CONCRETE SUBSTRATE)  
(FOR DETAIL NOT SHOWN, SEE SECTION C1/5)



(FOR DETAIL NOT SHOWN, SEE SECTION E/9)



(FOR DETAIL NOT SHOWN, SEE SECTION E/9)

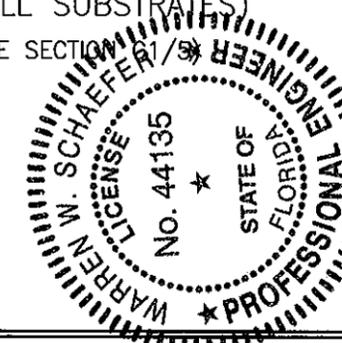


**SECTION C3**  
SCALE: 1/2 FULL  
6

(ARCHITECTURAL LOUVER WITH PERIMETER SLEEVE; INSTALLED INTO ALL SUBSTRATES)  
(FOR DETAIL NOT SHOWN, SEE SECTION C1/5)

**PRODUCT REVISED**  
as complying with the Florida Building Code  
Acceptance No. 11-1117.15  
Expiration Date 01/06/2015  
By *[Signature]*  
Miami Dade Product Control

POSITION OF THE SLEEVE PERIMETER SUPPORT ANGLE VARIES WITH SUBSTRATE THICKNESS & MAY BE POSITIONED UNDER THE MULLION END SUPPORT ANGLE. WHEN THIS OCCURS, THE SLEEVE ANGLE ATTACHMENT SCREWS SHALL MOVE WITH THE ANGLE & MAY BE POSITIONED TO RUN THROUGH THE MULLION END ANGLE AND SLEEVE.



DATE	
BY	
REVISION DESCRIPTION	
NO.	

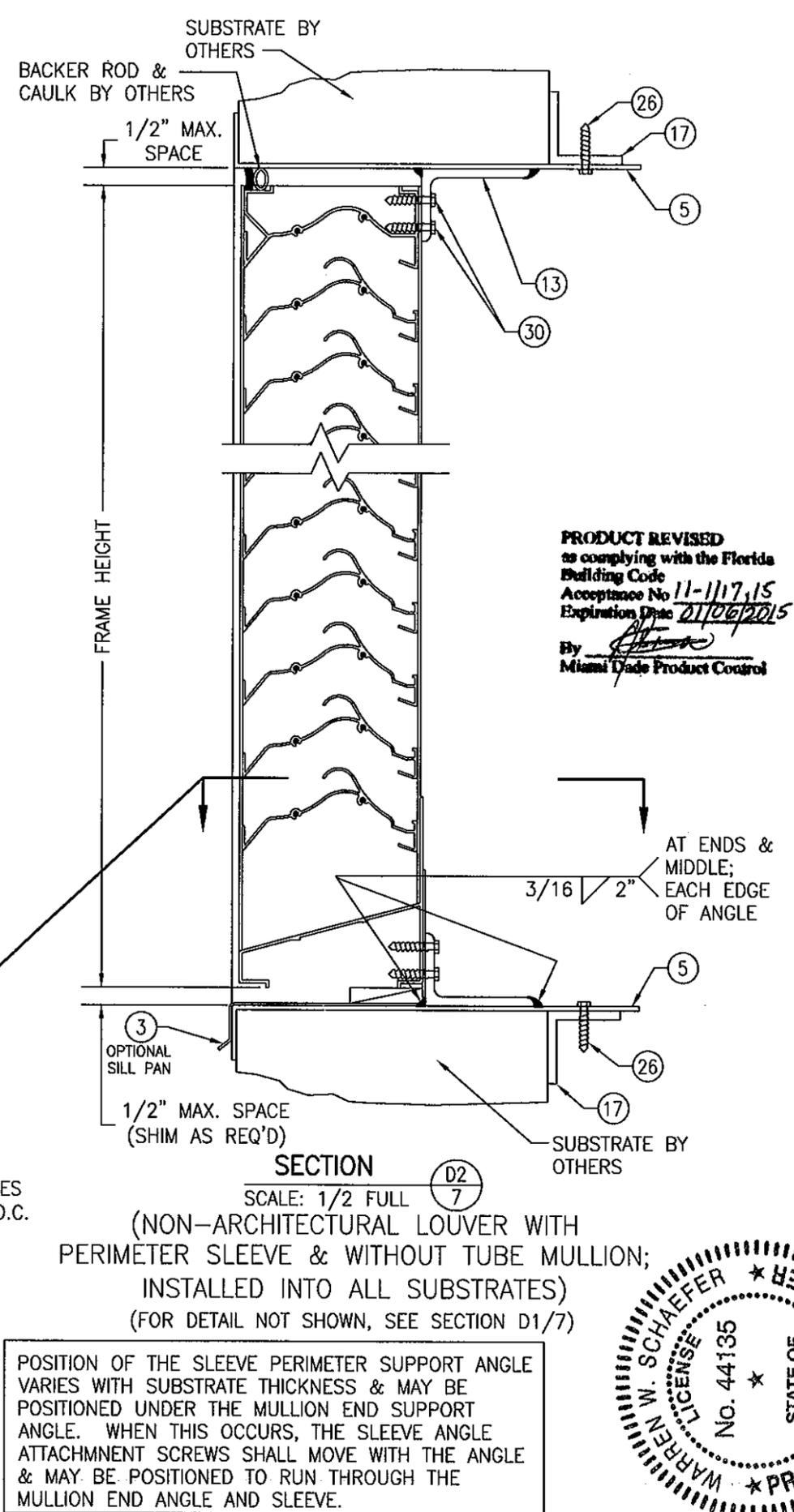
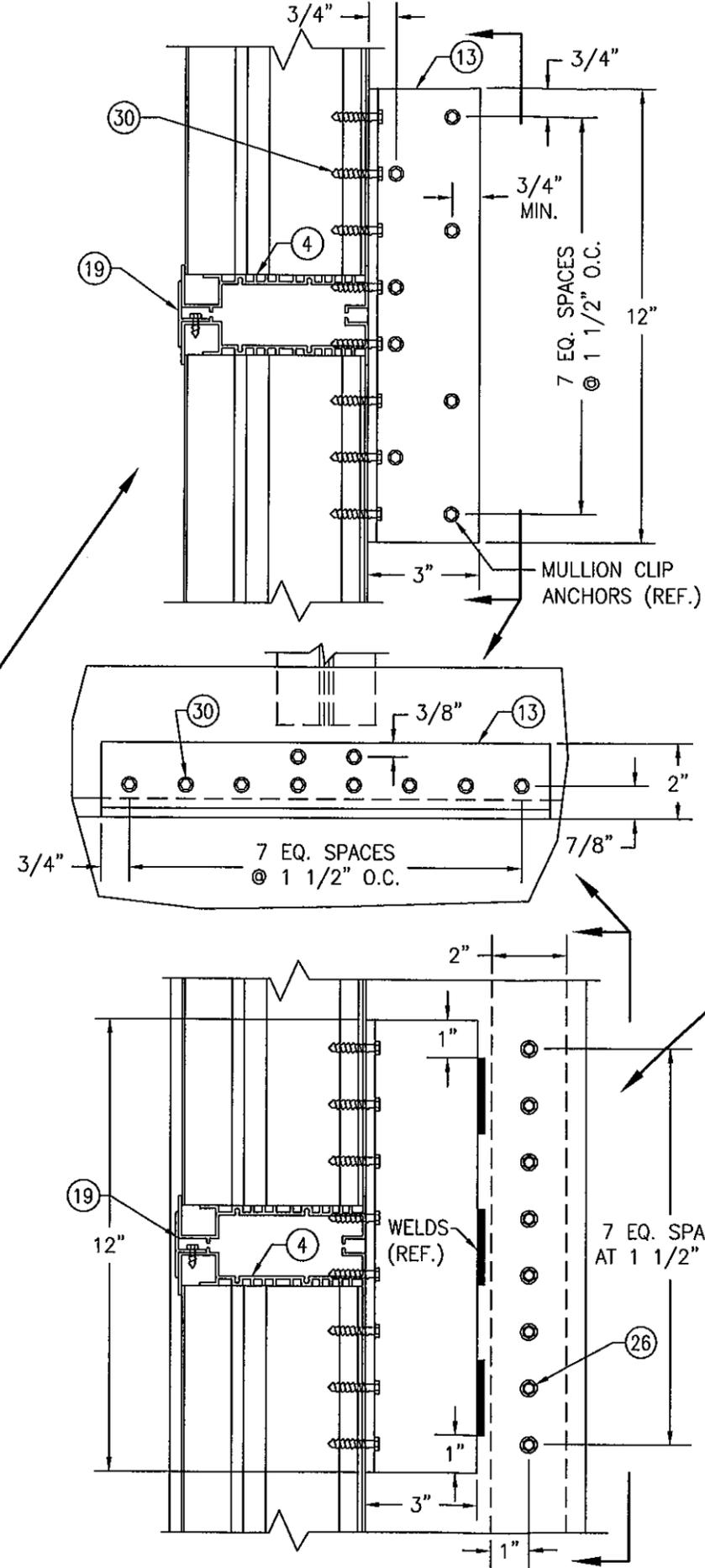
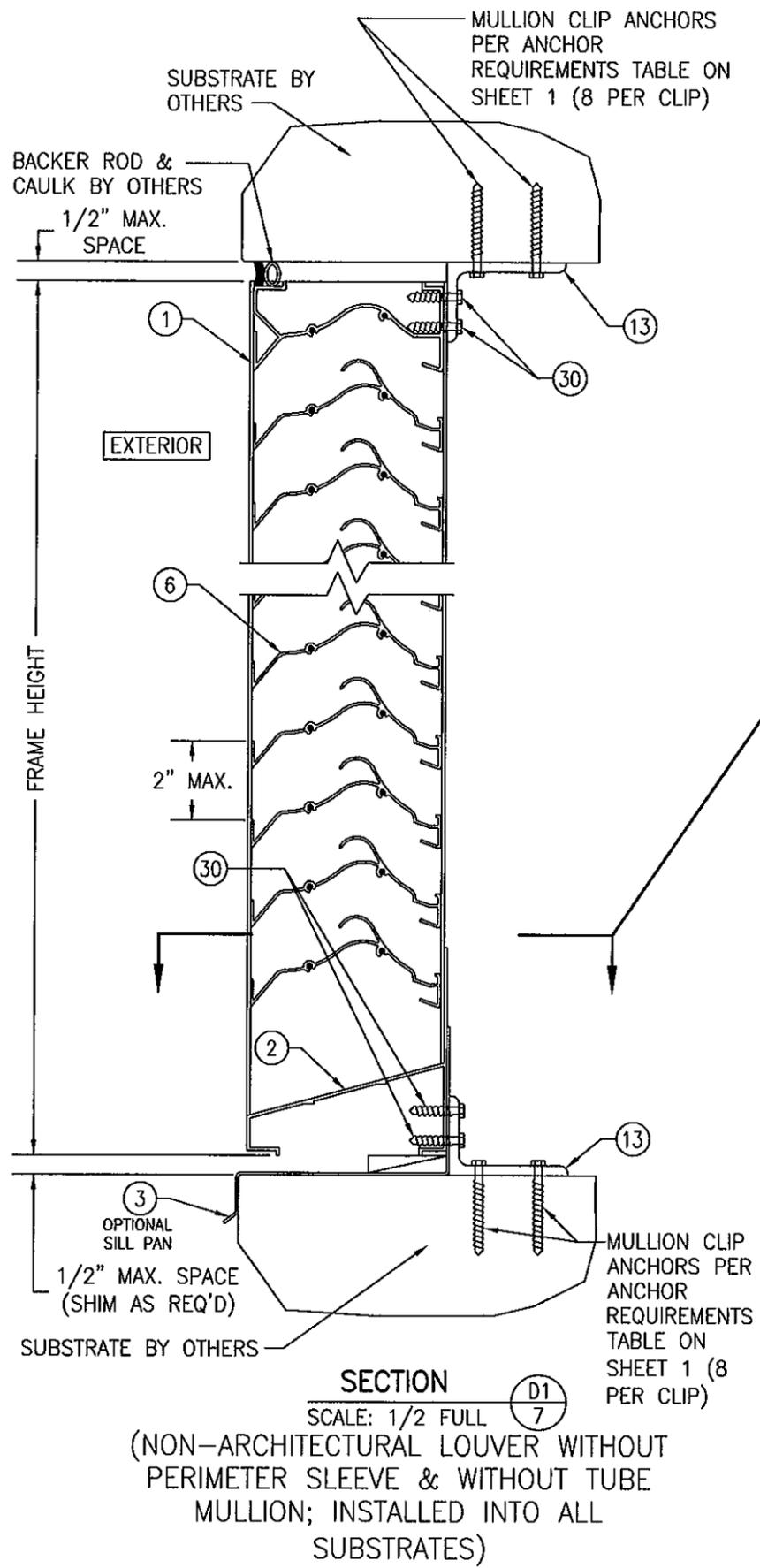
**DRAWING TITLE**  
LE-54 IMPACT LOUVER SYSTEM

**MANUFACTURER**  
AMERICAN WARMING & VENTILATING  
7301 INTERNATIONAL DRIVE  
HOLLAND, OHIO 43528  
419-865-5000

**CONSULTANTS**  
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)  
7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

**CERTIFICATION**  
NOV 07 2011  
WARREN W. SCHAEFER, P.E.  
P.E. NO. 44135

**DRAWING NO.** 1670  
**REV.** A  
**SHEET NO.** 6 OF 10

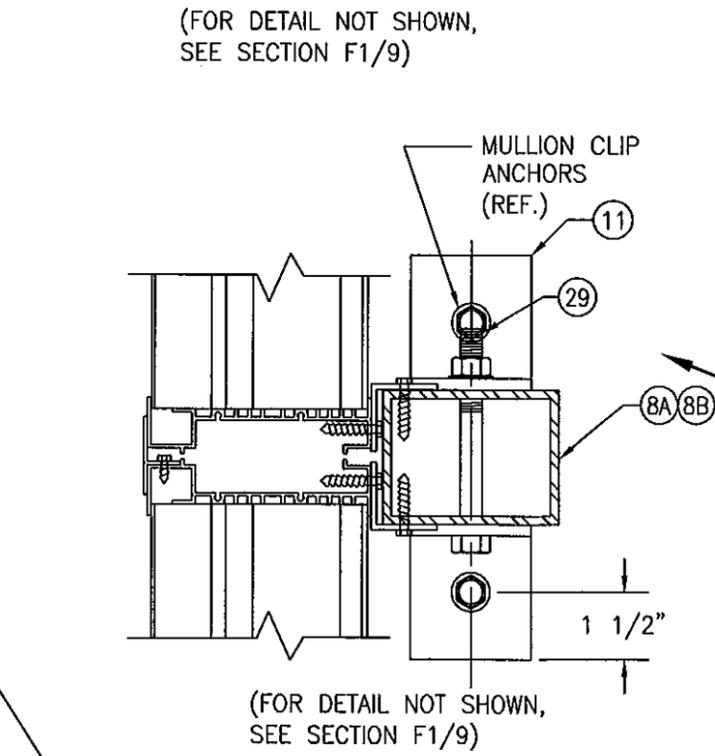
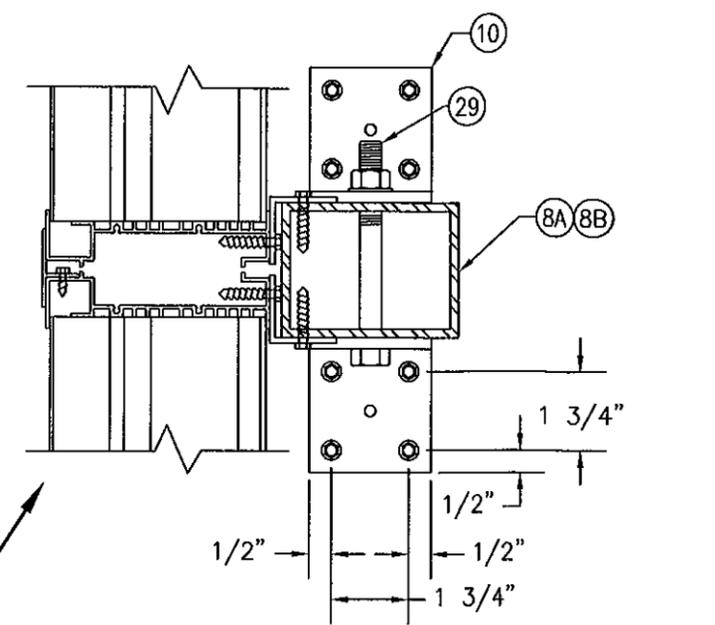
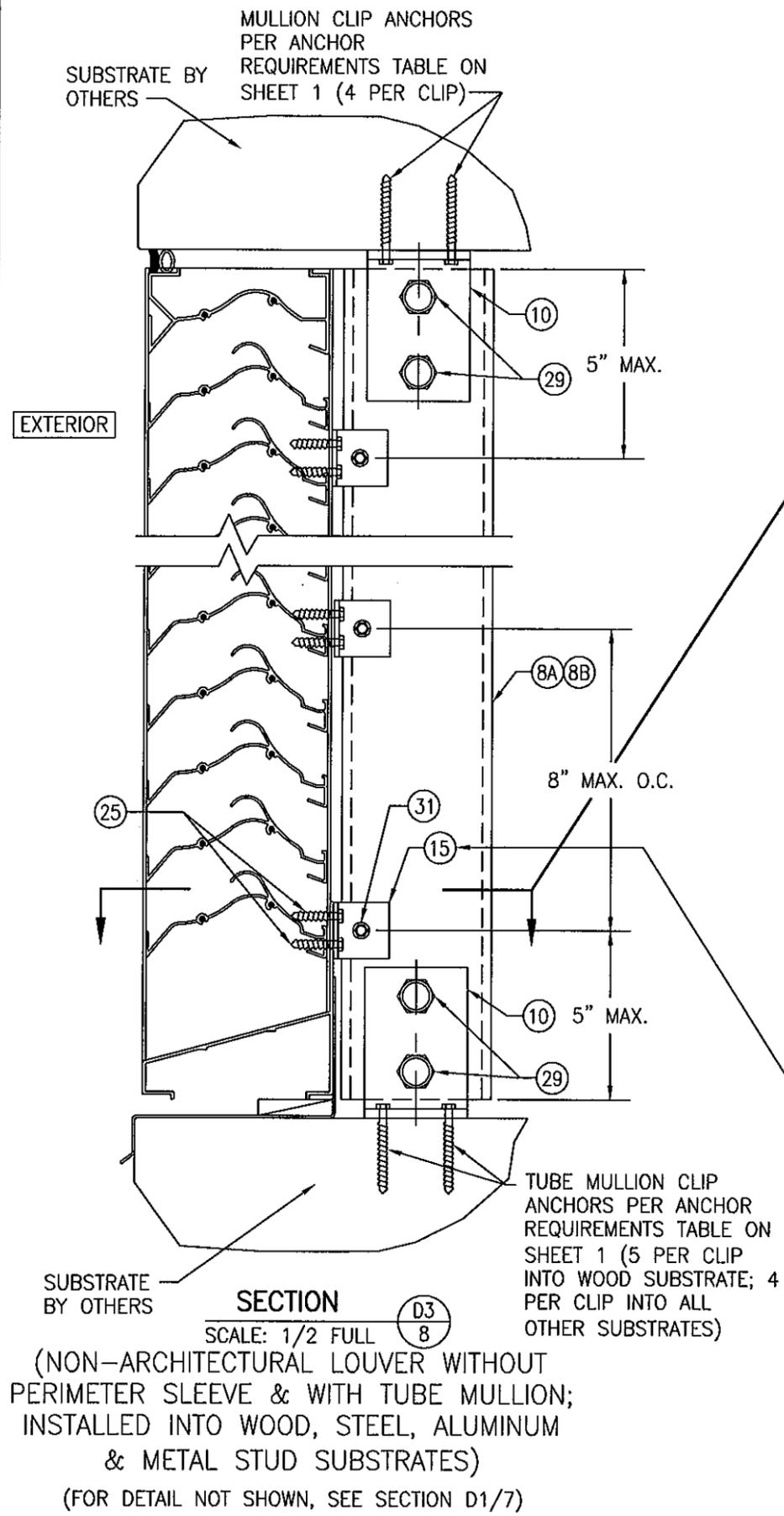


POSITION OF THE SLEEVE PERIMETER SUPPORT ANGLE VARIES WITH SUBSTRATE THICKNESS & MAY BE POSITIONED UNDER THE MULLION END SUPPORT ANGLE. WHEN THIS OCCURS, THE SLEEVE ATTACHMENT SCREWS SHALL MOVE WITH THE ANGLE & MAY BE POSITIONED TO RUN THROUGH THE MULLION END ANGLE AND SLEEVE.

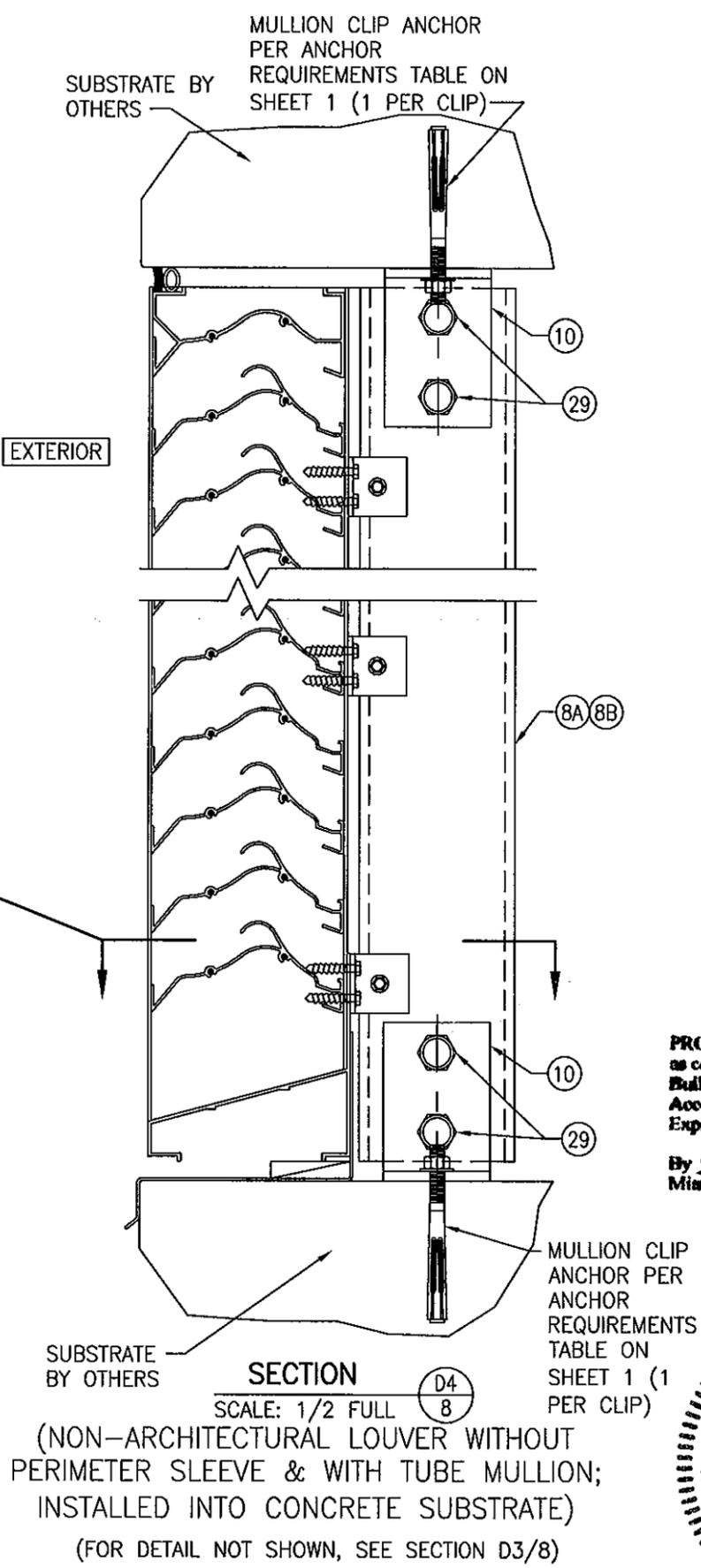
PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No 11-1117,15  
 Expiration Date 2/10/2015  
 By [Signature]  
 Miami Dade Product Control



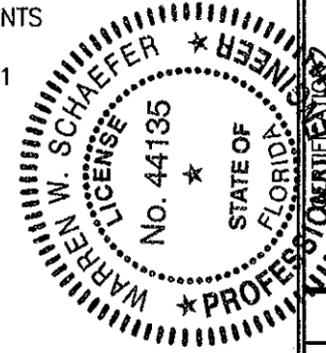
DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=4	DATE: 07/23/09
NO.	REVISION DESCRIPTION
DATE	BY
DRAWING TITLE <b>LE-54 IMPACT LOUVER SYSTEM</b>	
CONSULTANTS <b>W. W. SCHAEFFER ENGINEERING &amp; CONSULTING, P.A. (CA 6809)</b> 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	MANUFACTURER <b>AMERICAN WARMING &amp; VENTILATING</b> 7301 INTERNATIONAL DRIVE HOLLAND, OHIO 43528 419-865-5000
DRAWING NO. 670	REV. A
SHEET NO. 7	OF 10



OPTION: USE A CONTINUOUS 1 1/2" X 1 1/2" X 1/8" 6063-T5 ALUMINUM ANGLE IN LIEU OF INDIVIDUAL ANGLES PART #15. ATTACH CONTINUOUS ANGLE TO TUBE MULLION WITH 1/4-14 X 3/4" SELFTAP/DRILL SCREW WITHIN 5" OF TUBE ENDS & 8" MAX. O.C. ATTACH CONTINUOUS ANGLE TO LOUVER FRAME WITH 1/4-14 X 3/4" SELF TAP/DRILL SCREWS WITHIN 5" OF FRAME ENDS & 4" O.C.

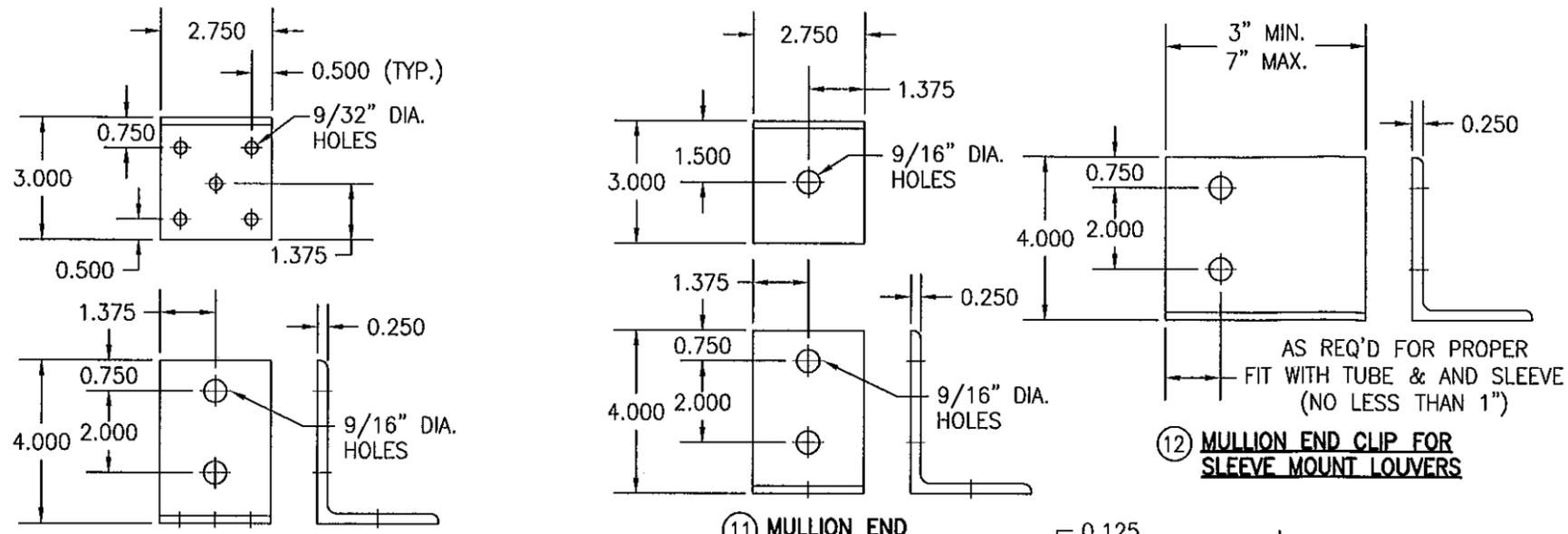


PRODUCT REVISED as complying with the Florida Building Code Acceptance No. 11-1117, 15 Expiration Date 07/06/2015 By Miami Dade Product Control



DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=4	DATE: 07/23/09
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE <b>LE-54 IMPACT LOUVER SYSTEM</b>	
CONSULTANTS <b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (CA 6809)</b>	MANUFACTURER <b>AMERICAN WARMING &amp; VENTILATING</b>
7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	7301 INTERNATIONAL DRIVE HOLLAND, OHIO 43528 419-865-5000
DRAWING NO. <b>1670</b>	REV. <b>A</b>
SHEET NO. <b>8</b>	OF <b>10</b>

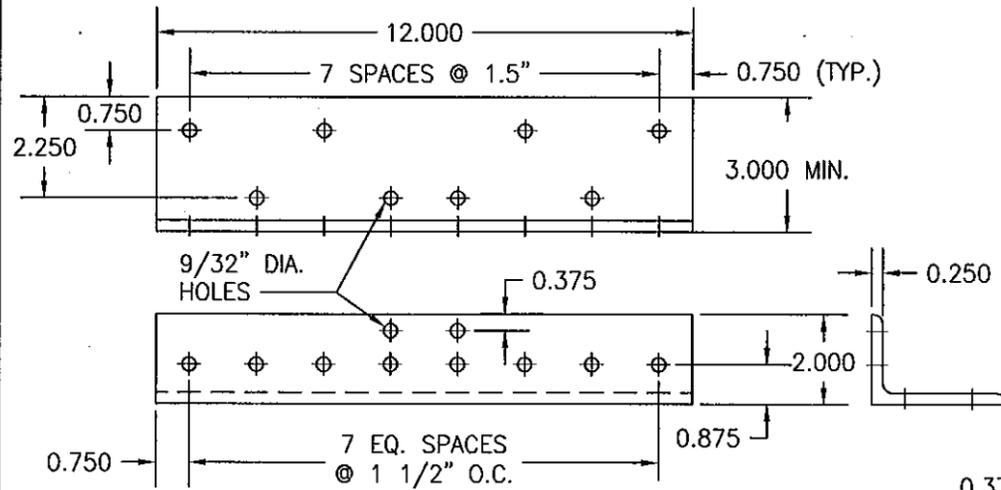




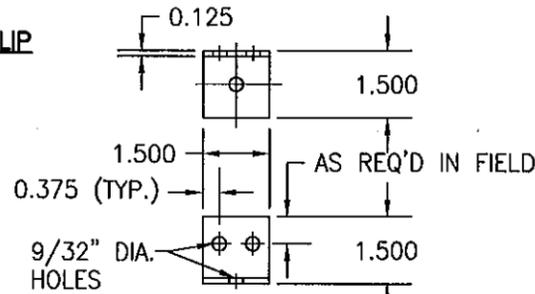
10 MULLION END INSTALLATION CLIP

11 MULLION END INSTALLATION CLIP

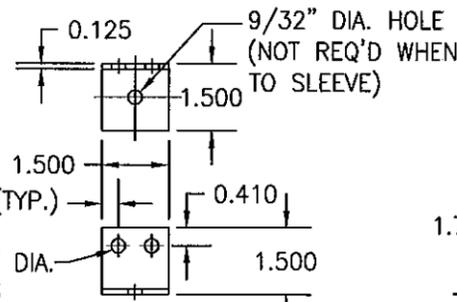
12 MULLION END CLIP FOR SLEEVE MOUNT LOUVERS



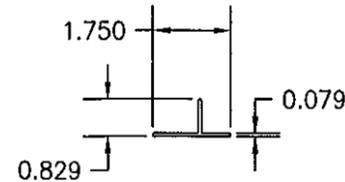
13 MULLION END INSTALLATION CLIP



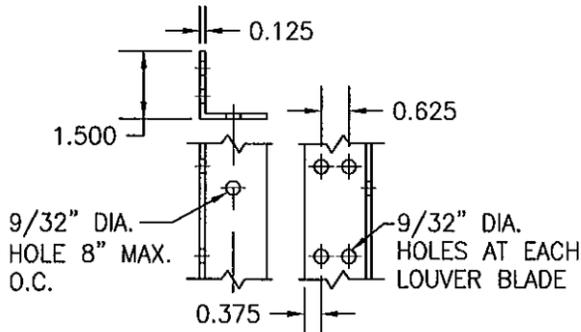
14 LOUVER JAMB TO SUBSTRATE CLIP



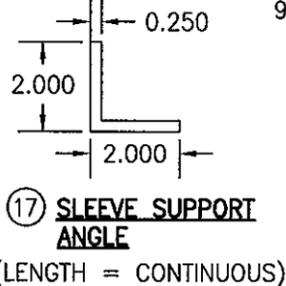
15 SLEEVE OR TUBE MULLION TO LOUVER JAMB CLIP



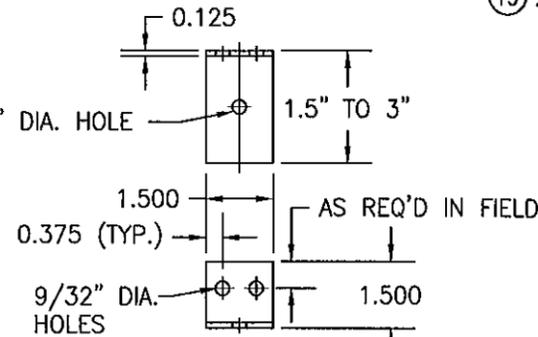
19 MULLION COVER



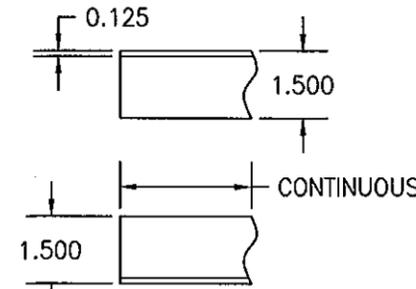
16 TUBE MULLION TO LOUVER BLADE ANGLE (ARCHITECTURAL LOUVER) (LENGTH = CONTINUOUS)



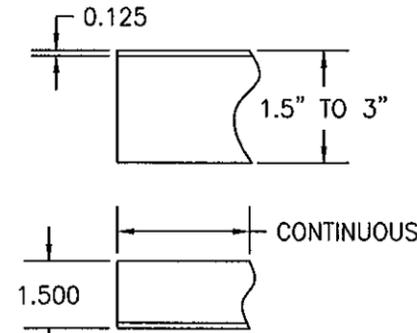
17 SLEEVE SUPPORT ANGLE (LENGTH = CONTINUOUS)



18 LOUVER JAMB TO SUBSTRATE CLIP 1.5\"/>



20 CONTINUOUS SUPPORT ANGLE



21 CONTINUOUS SUPPORT ANGLE 1.5\"/>

ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS		
1	HEAD	6063-T6 ALUMINUM
2	SILL	6063-T6 ALUMINUM
3	SILL PAN	6063-T5 ALUMINUM
4	JAMB	6063-T6 ALUMINUM
5	SLEEVE	5052-H32 ALUMINUM
6	BLADE	6063-T6 ALUMINUM
7	BLADE SUPPORT BRACKET	6063-T6 ALUMINUM
8A	TUBE MULLION (USED WITH NON-ARCHITECTURAL LOUVERS)	6063-T6 OR 6061-T6 ALUMINUM
8B	TUBE MULLION (USED WITH NON-ARCHITECTURAL LOUVERS)	6063-T6 OR 6061-T6 ALUMINUM
9	TUBE MULLION (USED WITH ARCHITECTURAL LOUVERS)	6063-T6 OR 6061-T6 ALUMINUM
10	MULLION END INSTALLATION CLIP	6061-T6 ALUMINUM
11	MULLION END INSTALLATION CLIP	6061-T6 ALUMINUM
12	MULLION END CLIP FOR SLEEVE MOUNT LOUVERS	6061-T6 ALUMINUM
13	MULLION END INSTALLATION CLIP	6061-T6 ALUMINUM
14	LOUVER JAMB TO SUBSTRATE CLIP	6063-T5 ALUMINUM
15	SLEEVE OR TUBE MULLION TO LOUVER JAMB CLIP	6063-T5 ALUMINUM (WITHIN 4\"/>
16	TUBE MULLION TO LOUVER BLADE ANGLE (ARCHITECTURAL LOUVER)	6063-T5 ALUMINUM
17	SLEEVE SUPPORT ANGLE	6063-T5 ALUMINUM
18	LOUVER JAMB TO SUBSTRATE CLIP	6063-T5 ALUMINUM
19	MULLION COVER	6063-T5 ALUMINUM
20	CONTINUOUS SUPPORT ANGLE	6063-T5 ALUMINUM
21	CONTINUOUS SUPPORT ANGLE	6063-T5 ALUMINUM
MISC. FASTENERS		
25	1/4-14 X 3/4\"/>	2 PER CLIP
26	1/4-14 X 3/4\"/>	WITHIN 4\"/>
27	1/4-14 X 3/4\"/>	8\"/>
28	1/4-14 X 3/4\"/>	4 AT HEAD & 2 PER BLADE
29	1/2\"/>	2 PER MULLION END
30	1/4-14 X 3/4\"/>	10 PER CLIP
31	1/4-14 X 3/4\"/>	1 PER CLIP
32	NO. 7 X 1/2\"/>	WITHIN 6\"/>
33	1/4-14 X 3/4\"/>	SEE ANCHOR SPACING/PRESSURE TABLE FOR SPACING REQUIREMENTS

DRAWN BY:	W.R.M.	CHECKED BY:	W.W.S.
PLOT:	1=4	DATE:	07/23/09
NO.		REVISION DESCRIPTION	
BY		DATE	

DRAWING TITLE: LE-54 IMPACT LOUVER SYSTEM

MANUFACTURER: AMERICAN WARMING & VENTILATING

7301 INTERNATIONAL DRIVE  
HOLLAND, OHIO 43528  
419-865-5000

CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)

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PALM BEACH GARDENS, FL 33418  
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CERTIFICATION: NOV 07 2011  
WARREN W. SCHAEFER, P.E.  
P.E. NO. 44135