



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

Arrow United Industries
 450 Riverside Drive
 Wyalusing, PA 18853

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 EA-52 5" deep Aluminum Louver

APPROVAL DOCUMENT: Drawing No. 1685, titled "EA-52 Impact Louver System", sheets 1 through 10 of 10, dated 07/23/2009, with revision A1 dated 11/08/2011, 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 renewal 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, city, state, 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 renews NOA # 11-1117.10 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 and date: 10/23/2014

NOA No. 14-0513.07
 Expiration Date: January 06, 2020
 Approval Date: July 31, 2014
 Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS *"Submitted under NOA # 11-1117.10"*

1. Drawing No. 1685, titled "EA-52 Impact Louver System", sheets 1 through 10 of 10, dated 07/23/2009, with revision A1 dated 11/08/2011, prepared by W. W. Schaefer Engineering & Consulting, P.A., signed and sealed by Warren W. Schaefer, P.E.

B. TESTS *"Submitted under NOA # 09-1015.09"*

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

1. Wood screw calculations prepared by W.W. Schaefer Engineering & Consulting, P.A., dated 04/14/2014, signed and sealed by Warren W. Schaefer, P.E.

"Submitted under NOA # 09-1015.09"
2. 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 Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS

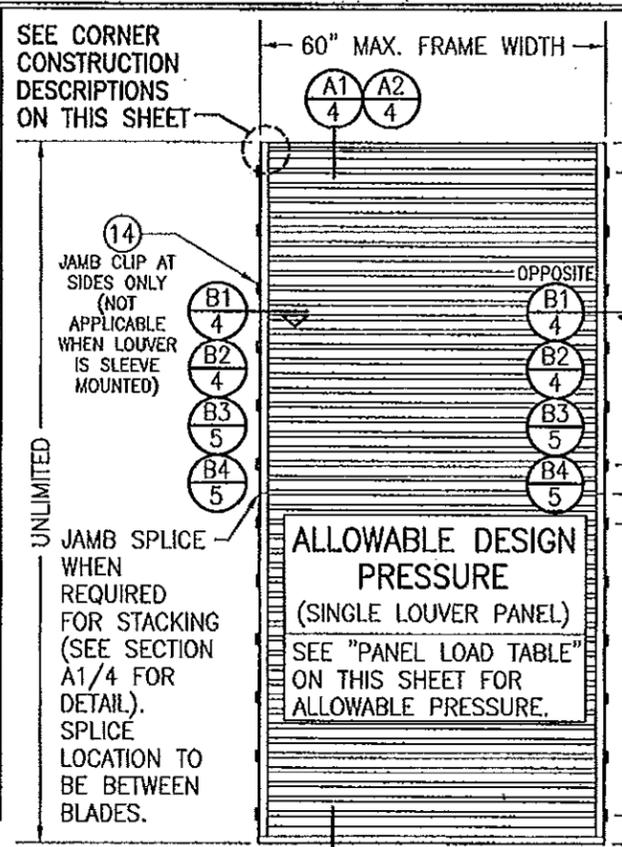
1. Statement letter of code conformance to 2010 and 5th edition (2014) FBC issued by W. W. Schaefer Engineering & Consulting, P.A., dated 04/14/2014, signed and sealed by Warren W. Schaefer, P.E.
2. No financial interest letter issued by W. W. Schaefer Engineering & Consulting, P.A., dated 04/14/2014, signed and sealed by Warren W. Schaefer, P.E.


107/23/2014

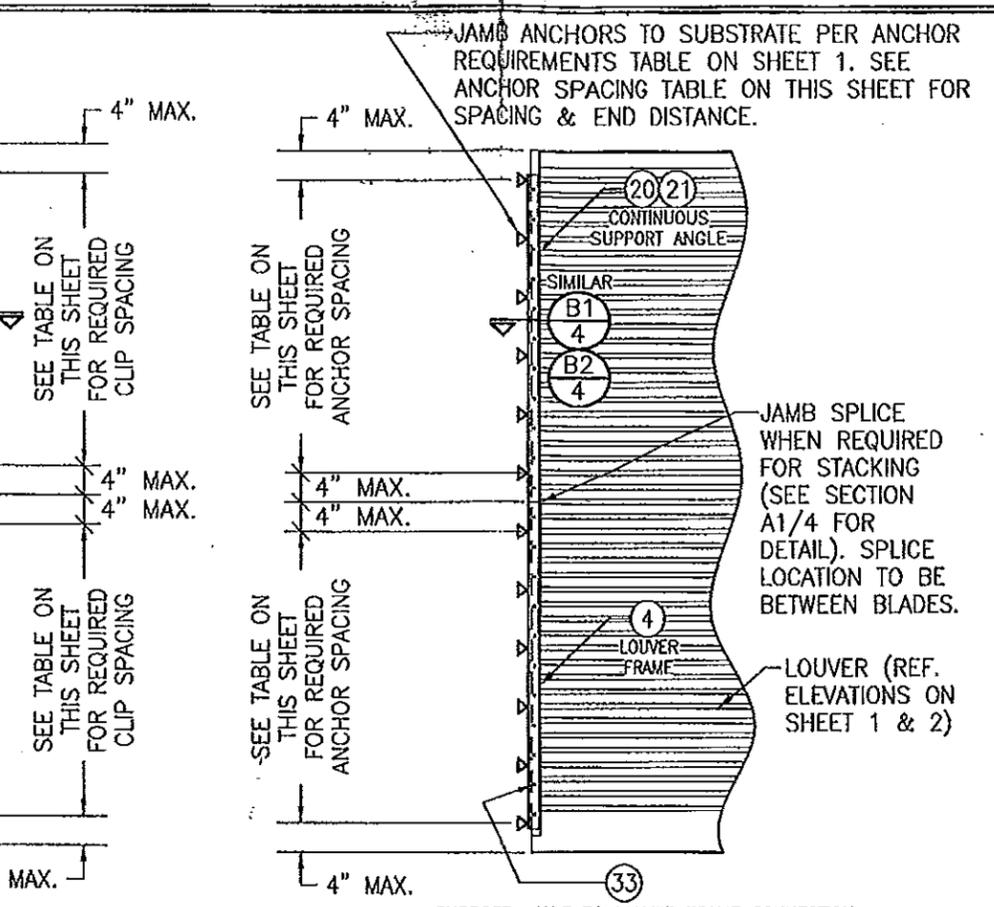
Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 14-0513.07
Expiration Date: January 06, 2020
Approval Date: July 31, 2014

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".



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



**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 SPICING NOTE FOR SLEEVE MOUNTED LOUVERS:
SLEEVE MAY BE SPLICED ALONG HORIZONTAL OR VERTICAL RUNS PROVIDING SPLICE 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.

ANCHOR REQUIREMENTS TABLE			
OPENING TYPE (SUBSTRATE)	FRAME CLIP TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
JAMB & NON-REINFORCED MULLION END CLIP ANCHORS			
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"
TUBE MULLION END CLIP ANCHORS			
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"

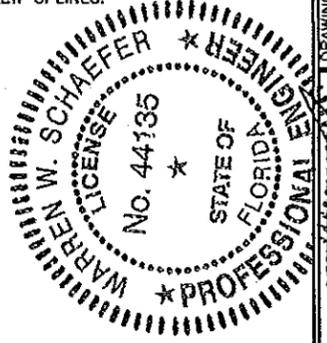
(1) CONCRETE SCREWS SHALL BE ELCO ULTRACONS, ITW RAMSET/RED HEAD TAPCONS OR HILTI KWIK-CON II (HARDENED STEEL OR S.S.).
(2) WEDGE ANCHORS SHALL BE HILTI STAINLESS STEEL KWIK BOLT 3
(3) CMU IS APPLICABLE AT SIDES ONLY.

PRODUCT RENEWED
as complying with the Florida Building Code
Acceptance No. 14-1513-07
Expiration Date 2/10/2020
By *[Signature]*
Miami Dade Product Control

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 = 1.8 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:
ARROW UNITED INDUSTRIES
WYALUSING, PA
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).

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No. 11-1112-10
Expiration Date 2/10/2015
By *[Signature]*
Miami Dade Product Control



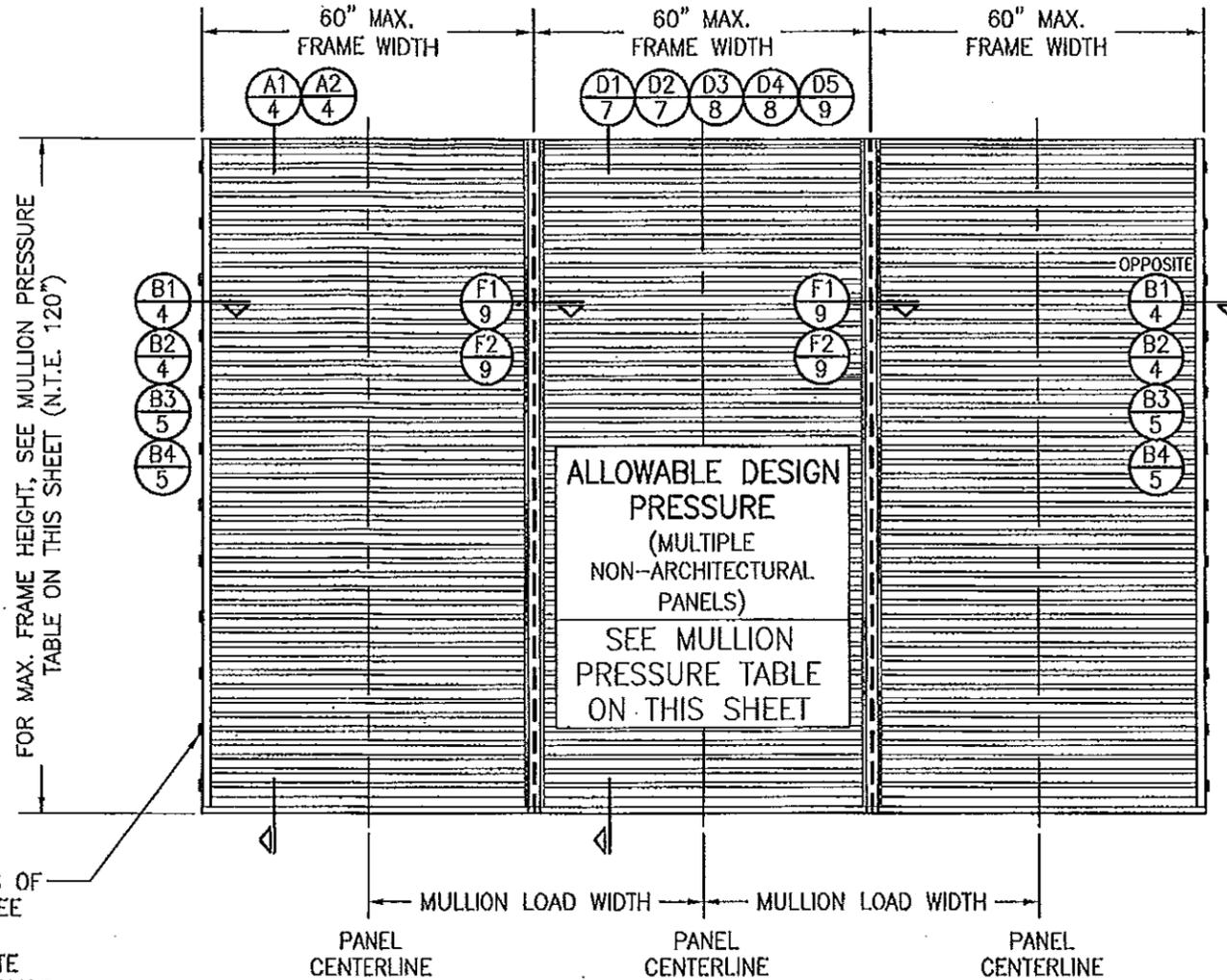
DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-24	DATE: 07/23/09
DATE: 11/08/11	
BY: W.R.M.	
REVISION DESCRIPTION & DATE	
NO. 1	UPDATE CONSULTANTS & MANUFACTURERS ADDRESS
EA-52 IMPACT LOUVER SYSTEM MANUFACTURER: ARROW UNITED INDUSTRIES 450 RIVERSIDE DRIVE WYALUSING, PA 18853 570-746-1888	
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	
DRAWING NO. 1685 REV. 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
60	42	107.1	120.0	120.0
	36	120.0	120.0	120.0
	60	90.0	120.0	120.0
	54	100.0	120.0	120.0
48	42	112.5	120.0	120.0
	48	120.0	120.0	120.0
42	60	112.5	120.0	120.0
	54	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.



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 RENEWED
in compliance with the Florida Building Code
Acceptance No. 14-0513.07
Expiration Date 21/06/2020
By [Signature]
Miami Dade Product Control

PRODUCT REVISED
in compliance with the Florida Building Code
Acceptance No. 11-1117.10
Expiration Date 21/06/2015
By [Signature]
Miami Dade Product Control



DRAWN BY: W.R.U.	CHECKED BY: W.W.S.
DATE: 1=24	DATE: 07/23/09
NO.	REVISION DESCRIPTION

ARROW UNITED INDUSTRIES
450 RIVERSIDE DRIVE
WYALUSING, PA 18853
570-746-1888

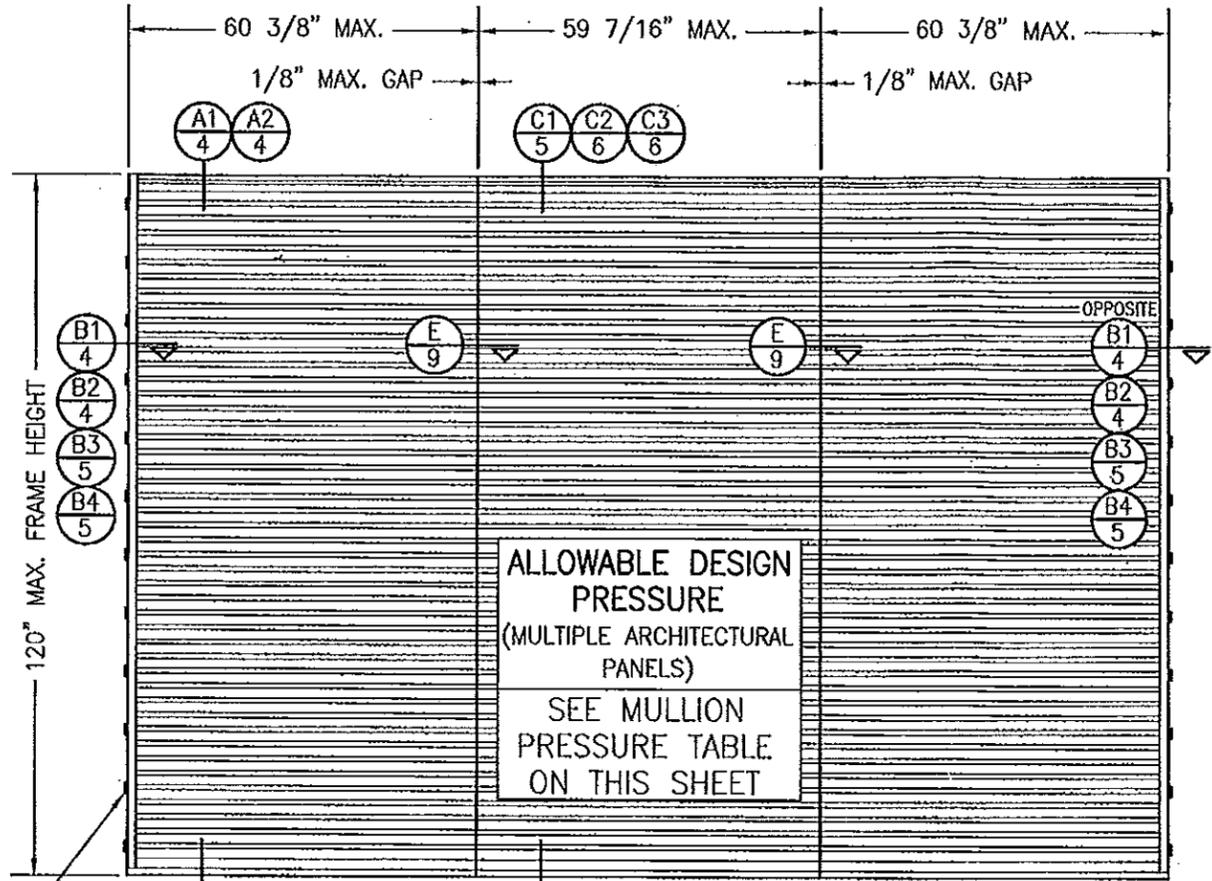
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)
7480 150TH COURT NORTH
PALM BEACH GARDENS, FL 33418
PHONE: 561-744-3424

CERTIFICATION
NOV 08 2011
WARREN W. SCHAEFER, P.E.
P.E. NO. 44135

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	60	84.3
	54	93.6
	48	105.3
	42	120.0
96	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.



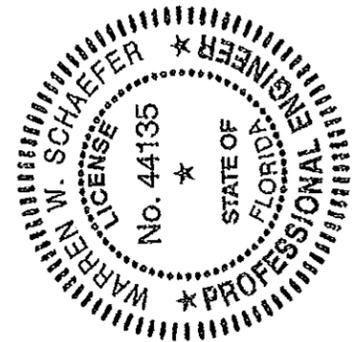
**EXTERIOR ELEVATION;
 MULTIPLE LOUVER PANELS
 (ARCHITECTURAL)**
 SCALE: 1/2" = 1'-0"
 (3 PANEL UNIT SHOWN; MORE THAN 3 PANELS MAY BE MULLED/STACKED HORIZONTALLY)

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 RENEWED
 as complying with the Florida Building Code
 Acceptance No 14-0513.07
 Expiration Date 21/06/2020
 By *[Signature]*
 Miami Dade Product Control

PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No 11-1117.10
 Expiration Date 01/09/2015
 By *[Signature]*
 Miami Dade Product Control



DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-24	DATE: 01/23/09
DATE	
BY	
REVISION DESCRIPTION	
NO.	

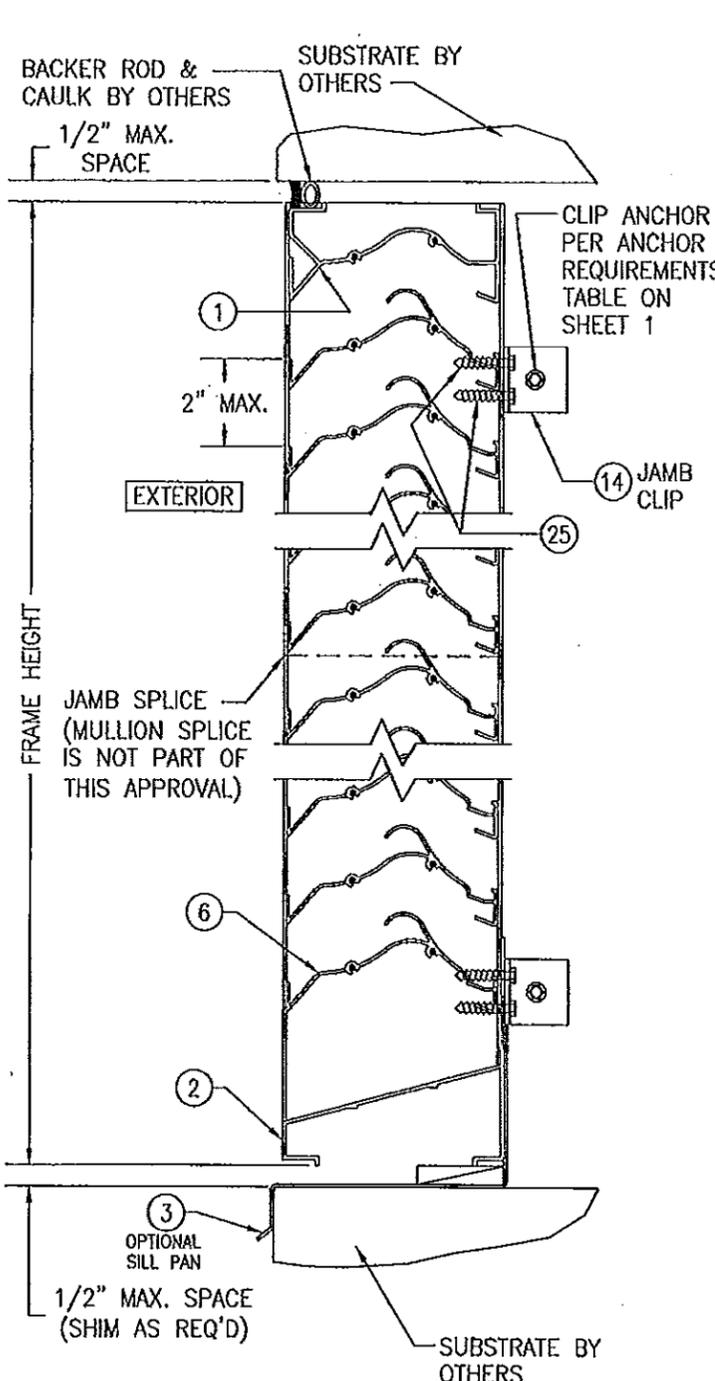
EA-52 IMPACT LOUVER SYSTEM
 MANUFACTURER
ARROW UNITED INDUSTRIES
 450 RIVERSIDE DRIVE
 WYALUSING, PA 18853
 570-746-1888

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

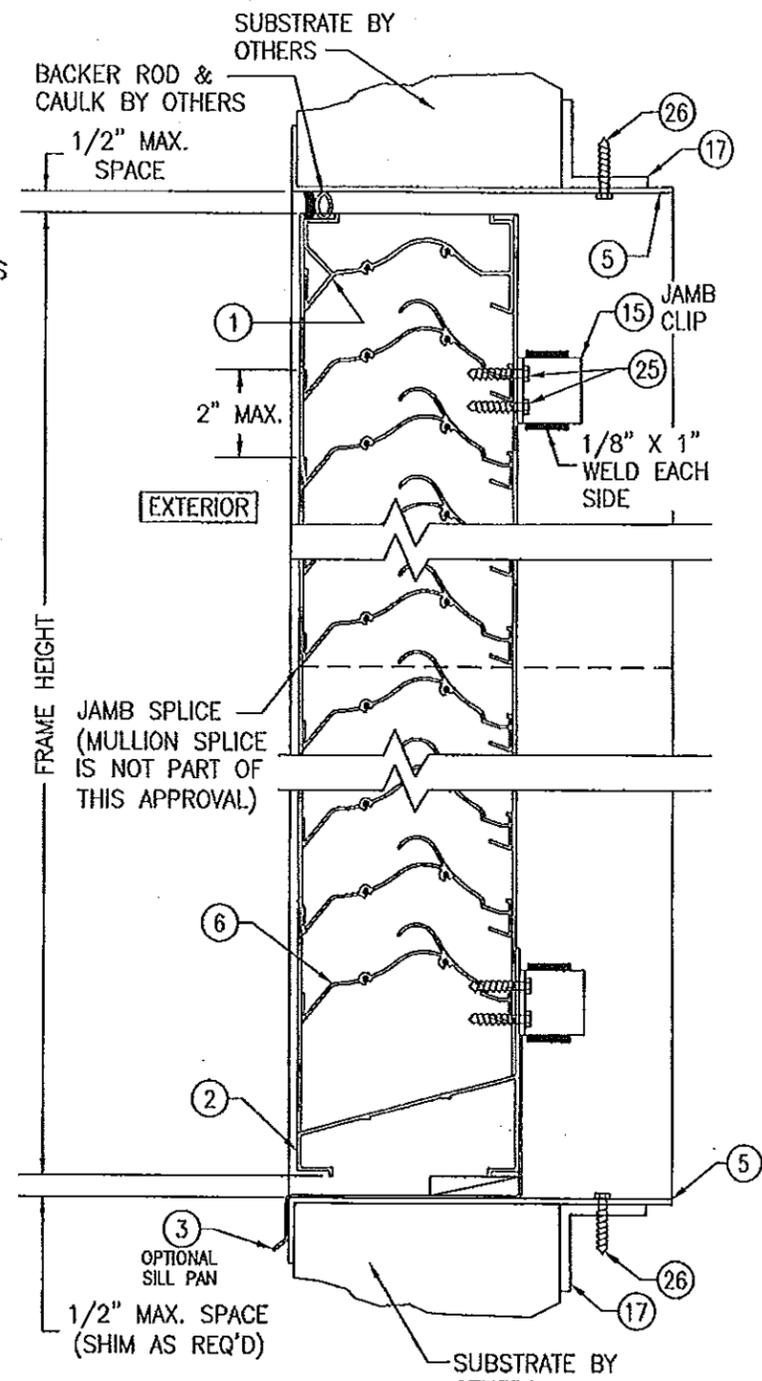
CERTIFICATION

 NOV 08 2011
 WARREN W. SCHAEFER, P.E.
 P.E. NO. 44135

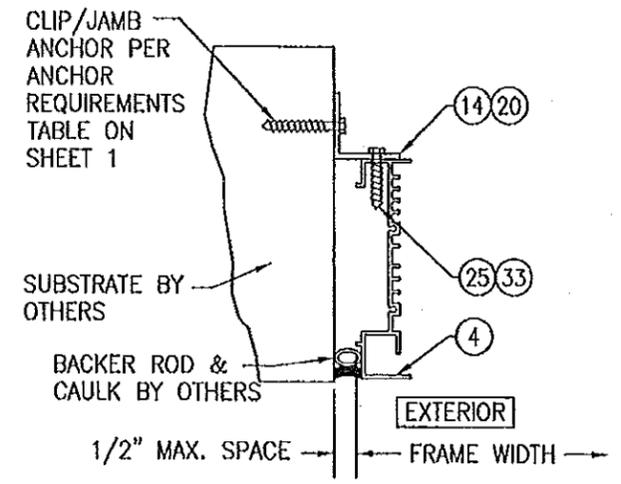
DRAWING NO. 1685	REV. A
SHEET NO. 3 of 10	



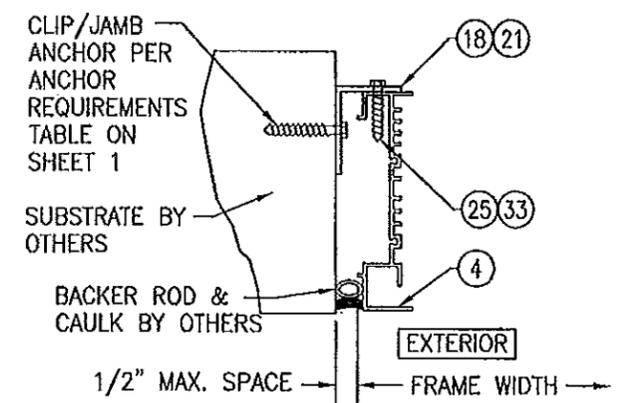
SECTION A1
SCALE: 1/2 FULL



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



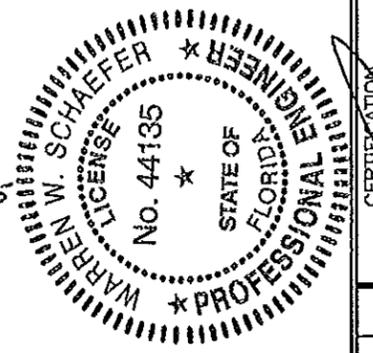
SECTION B1
SCALE: 1/2 FULL
(NO SLEEVE & CLIPS TURNED OUT)



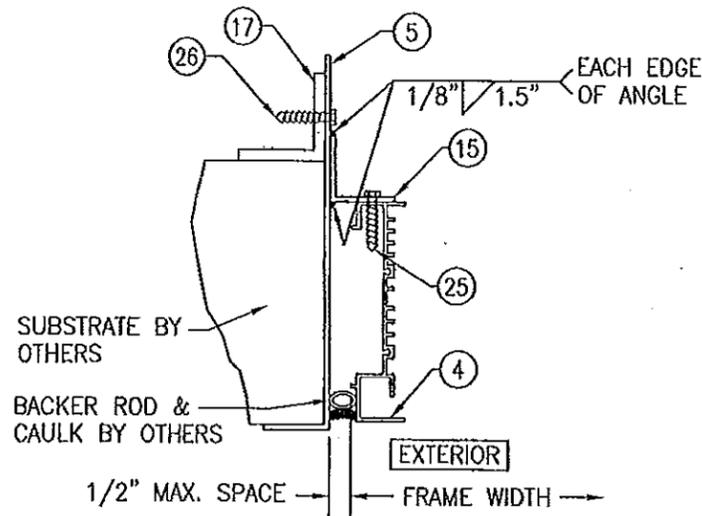
SECTION B2
SCALE: 1/2 FULL
(NO SLEEVE & CLIPS TURNED IN)

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No. 14-0513.07
Expiration Date 01/06/2010
By *[Signature]*
Miami Dade Product Control

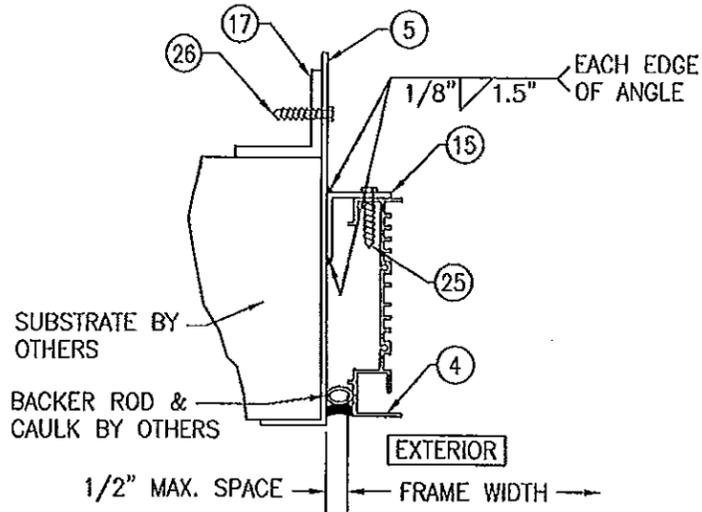
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 11-1117.10
Expiration Date 01/06/2015
By *[Signature]*
Miami Dade Product Control



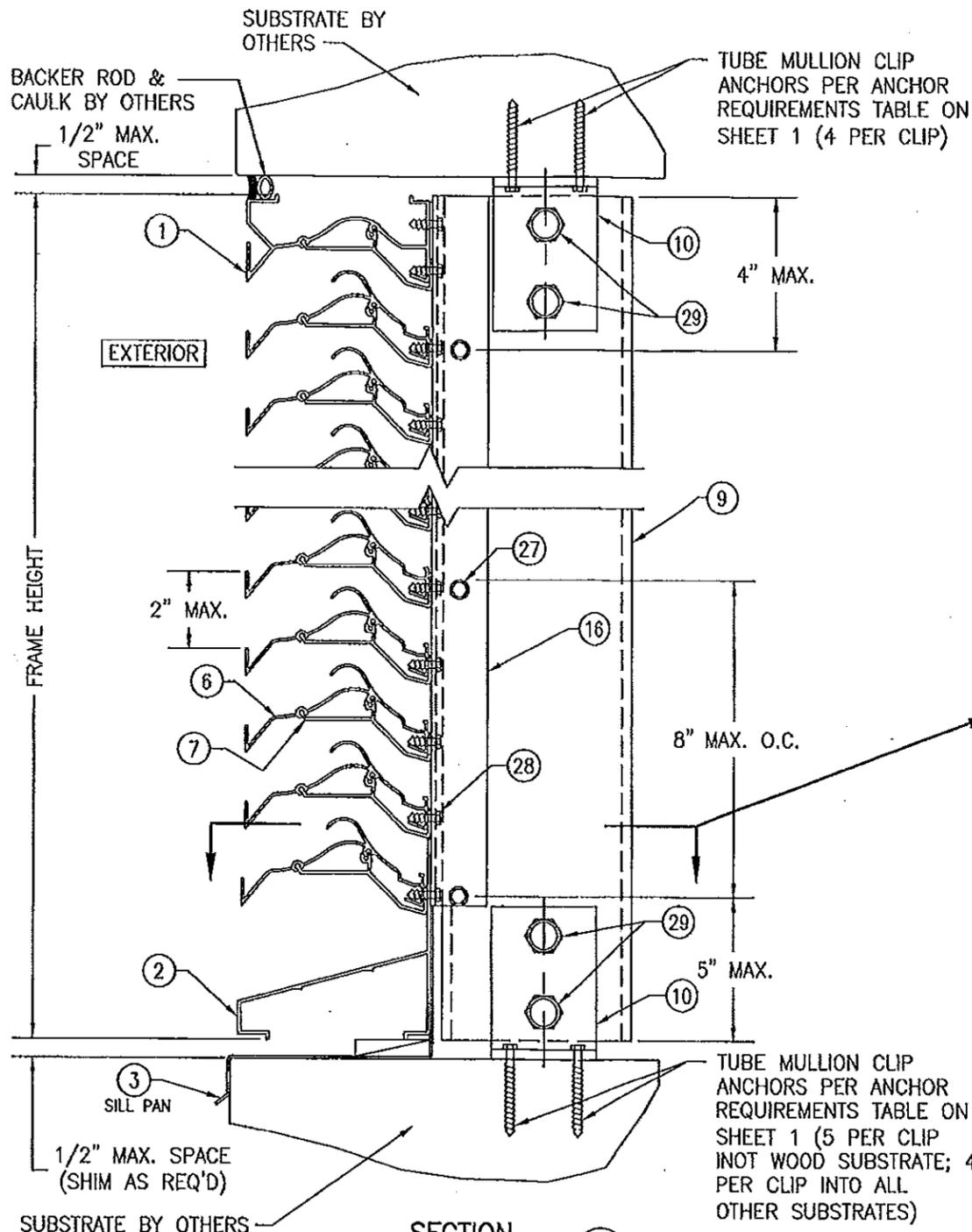
DRAWN BY: W.R.M.	CHECKED BY: W.N.S.		
PLOT: 1-4	DATE: 07/23/09		
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE EA-52 IMPACT LOUVER SYSTEM			
MANUFACTURER ARROW UNITED INDUSTRIES 450 RIVERSIDE DRIVE WYALUSING, PA 18853 570-746-1888			
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT, NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-5424			
CERTIFICATION NOV 08 2011 WARREN W. SCHAEFER, P.E. P.E. NO. 44135			
DRAWING NO.	REV.		
1685	A		
SHEET NO. 4 OF 10			



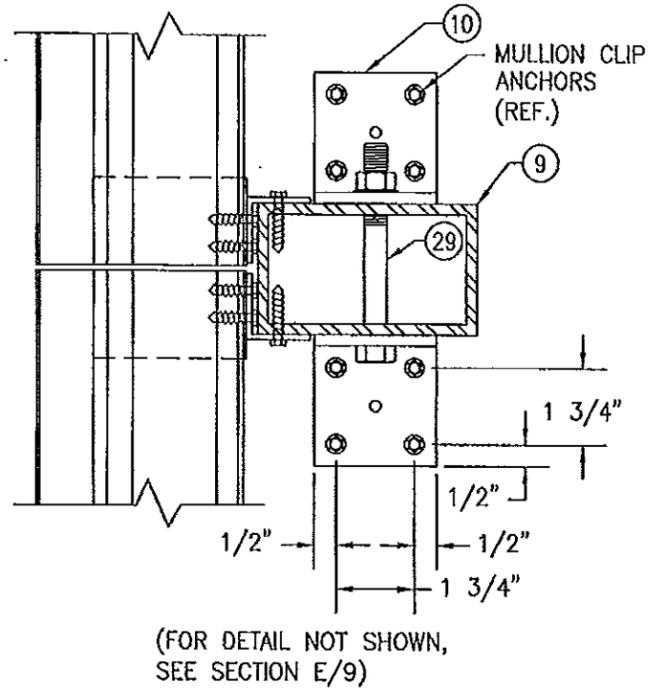
SECTION B3
SCALE: 1/2 FULL
(WITH SLEEVE & CLIPS TURNED OUT)



SECTION B4
SCALE: 1/2 FULL
(WITH SLEEVE & CLIPS TURNED IN)



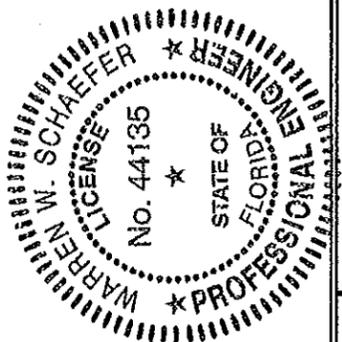
SECTION C1
SCALE: 1/2 FULL
(ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE; INSTALLED INTO WOOD, STEEL, ALUMINUM, OR METAL STUD SUBSTRATE)



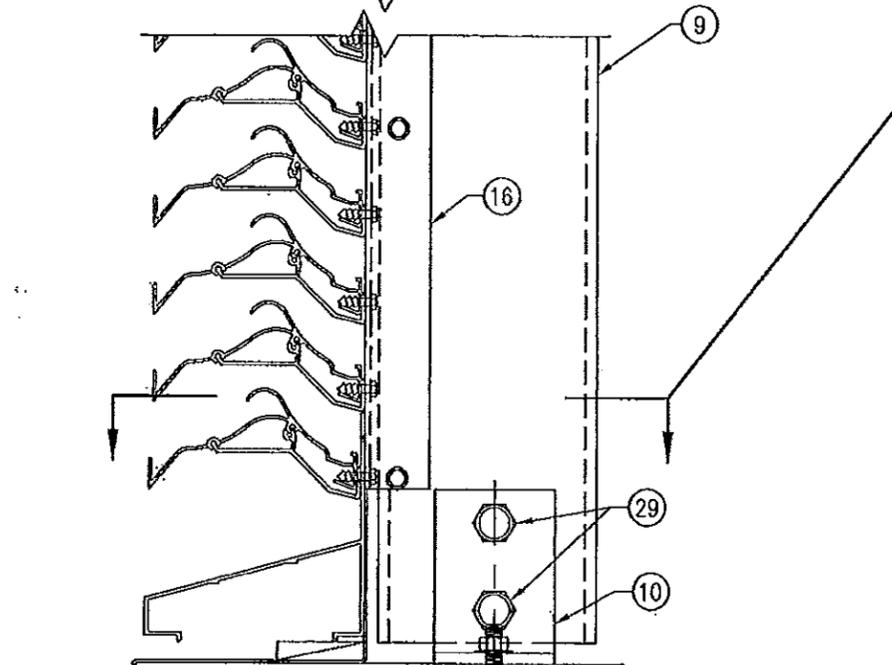
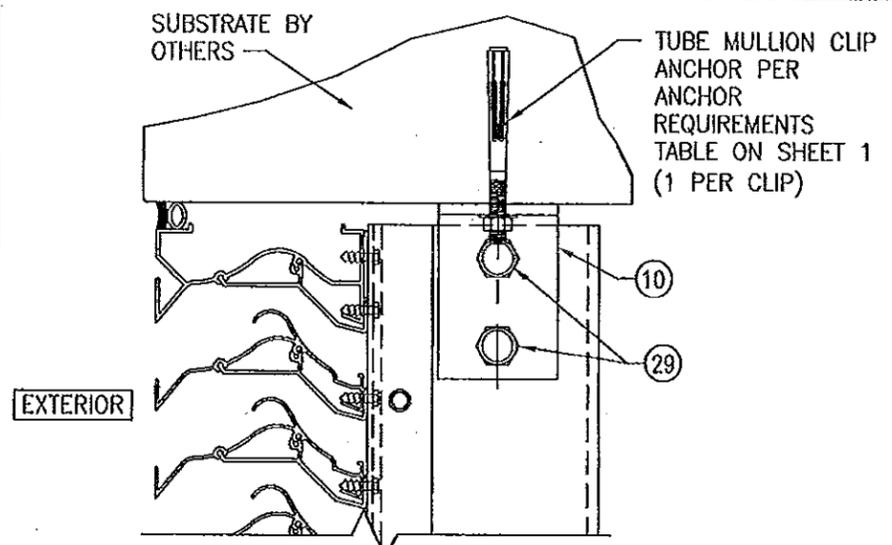
(FOR DETAIL NOT SHOWN, SEE SECTION E/9)

PRODUCT RENEWED as complying with the Florida Building Code
Acceptance No 14-0513.07
Expiration Date 2/10/2020
By [Signature] Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code
Acceptance No 11-0117.10
Expiration Date 2/10/2015
By [Signature] Miami Dade Product Control

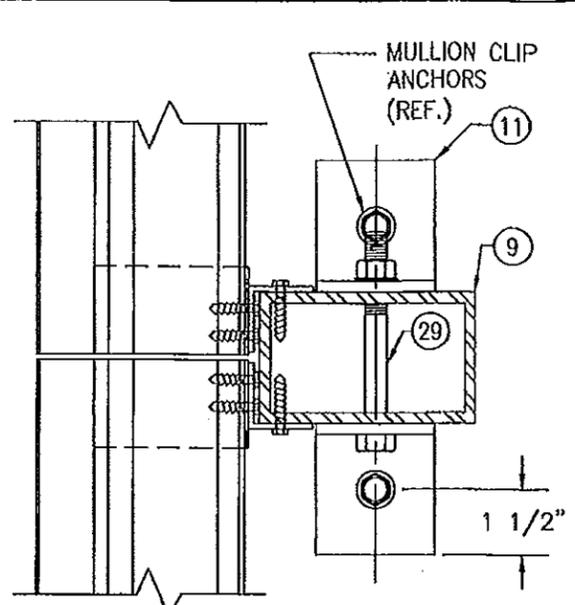


DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=4	DATE: 07/23/09
DATE	BY
REVISION DESCRIPTION	
NO.	
DRAWING TITLE: EA-52 IMPACT LOUVER SYSTEM	
MANUFACTURER: ARROW UNITED INDUSTRIES	CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)
450 RIVERSIDE DRIVE	7480 150TH COURT NORTH
WYALUSING, PA 18853	PALM BEACH GARDENS, FL 33418
570-746-1888	PHONE: 561-744-3424
CERTIFICATION	NOV 8 2011
	WARREN W. SCHAEFER, P.E.
	P.E. NO. 44135
DRAWING NO. 1685	REV. A
SHEET NO. 5	OF 10

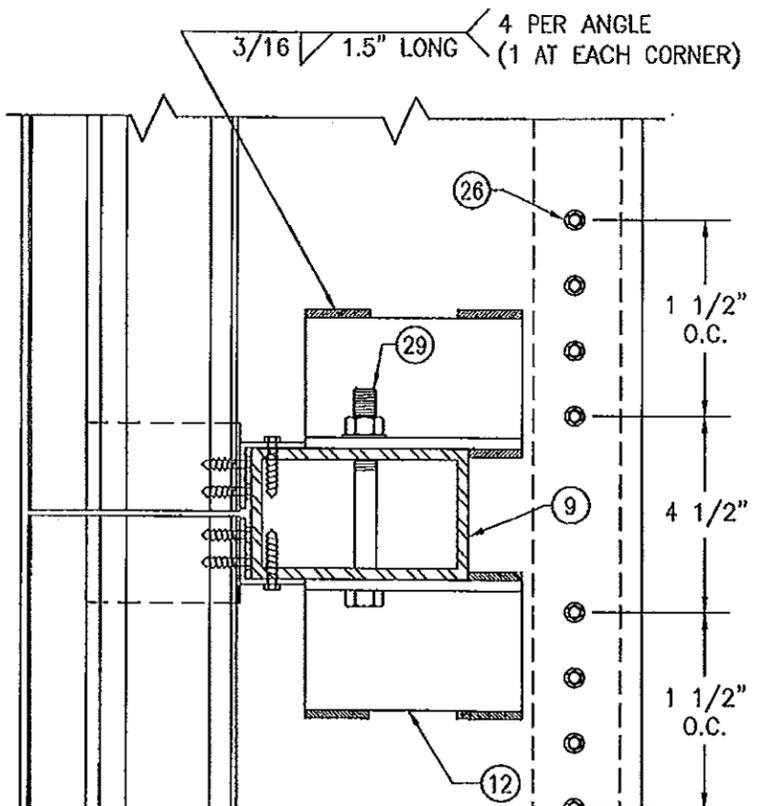


SECTION C2
SCALE: 1/2 FULL
(ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE; INSTALLED INTO CONCRETE SUBSTRATE)
(FOR DETAIL NOT SHOWN, SEE SECTION C1/5)

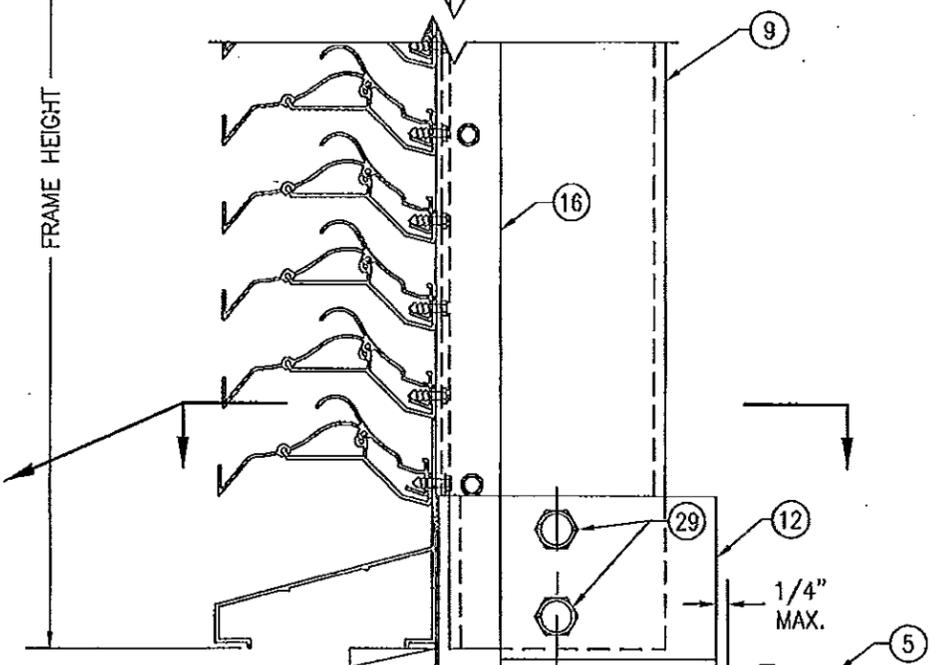
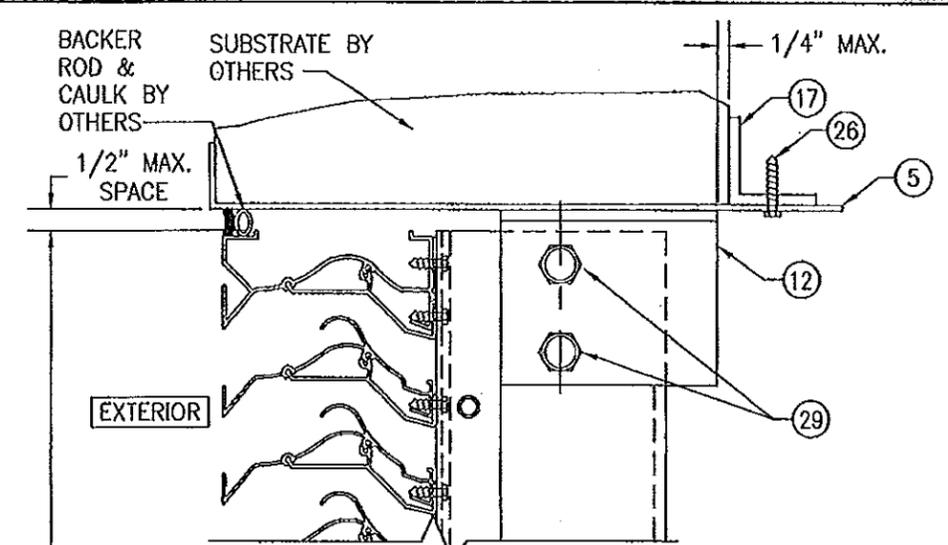
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 140513.07
Expiration Date 2/10/2020
By [Signature]
Miami Dade Product Control



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



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

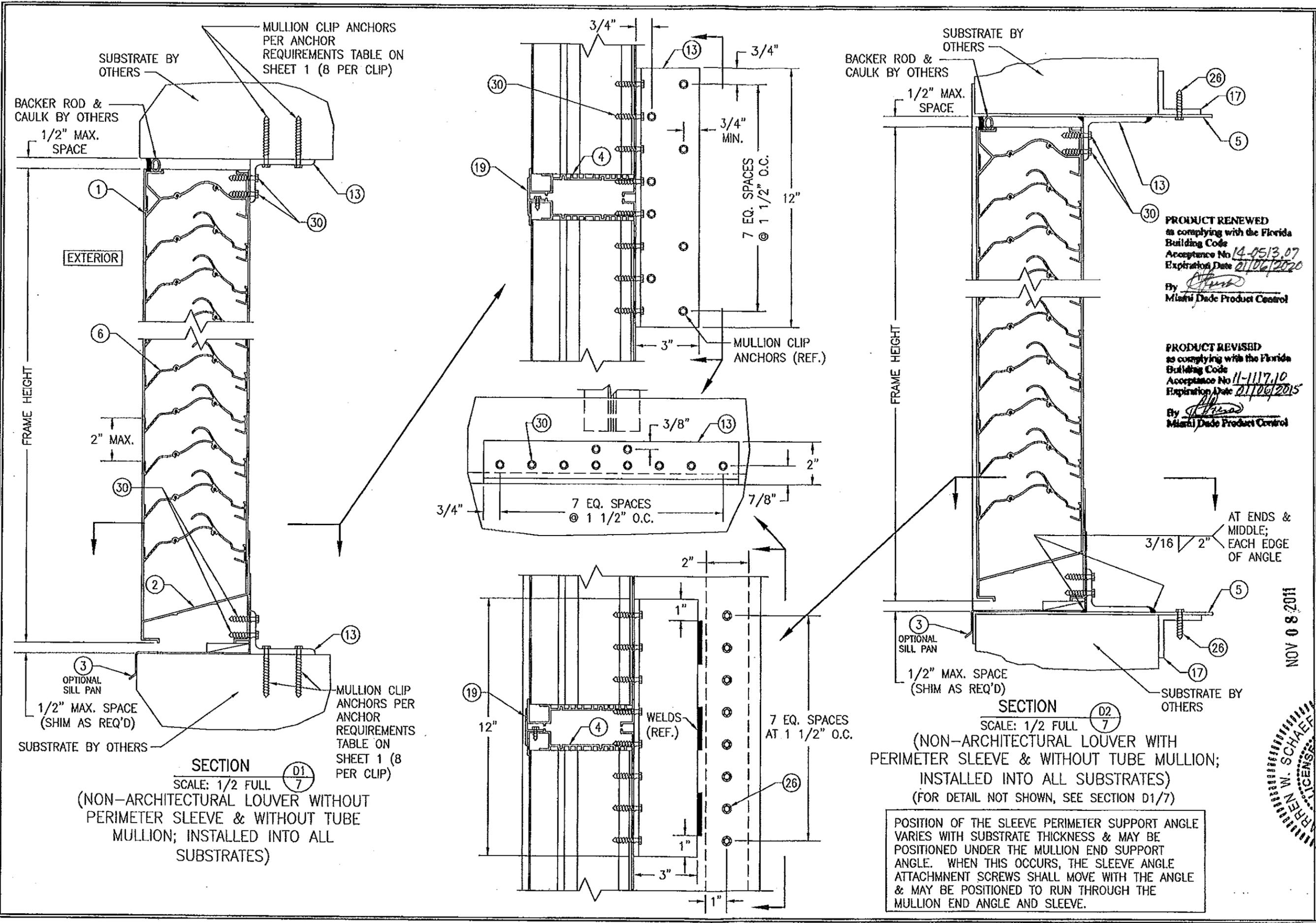


SECTION C3
SCALE: 1/2 FULL
(ARCHITECTURAL LOUVER WITH PERIMETER SLEEVE; INSTALLED INTO ALL SUBSTRATES)
(FOR DETAIL NOT SHOWN, SEE SECTION C1/5)

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. 11-1127-10
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.	DATE
BY	
REVISION DESCRIPTION	
DRAWING TITLE EA-52 IMPACT LOUVER SYSTEM	
MANUFACTURER ARROW UNITED INDUSTRIES 450 RIVERSIDE DRIVE WYALUSING, PA 18853 570-746-1888	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE 561-744-3424	
NOV 08 2011	
CERTIFICATION NO. 44135	NOV 08 2011
DRAWN BY: W.R.M.	REV. A
1685	
SHEET NO. 6 OF 10	



DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-4	DATE: 07/23/09
NO.	DATE
BY	
REVISION DESCRIPTION	
MANUFACTURER ARROW UNITED INDUSTRIES 450 RIVERSIDE DRIVE WYALUSING, PA 18853 570-746-1888	
CONSULTANTS SW. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	
DRAWING TITLE EA-52 IMPACT LOUVER SYSTEM	
DATE NOV 08 2011	
DRAWING NO.	REV.
1685	A
SHEET NO.	
7	OF 10

PRODUCT RENEWED
 as complying with the Florida Building Code
 Acceptance No 14-0513.07
 Expiration Date 01/06/2020
 By *[Signature]*
 Miami Dade Product Control

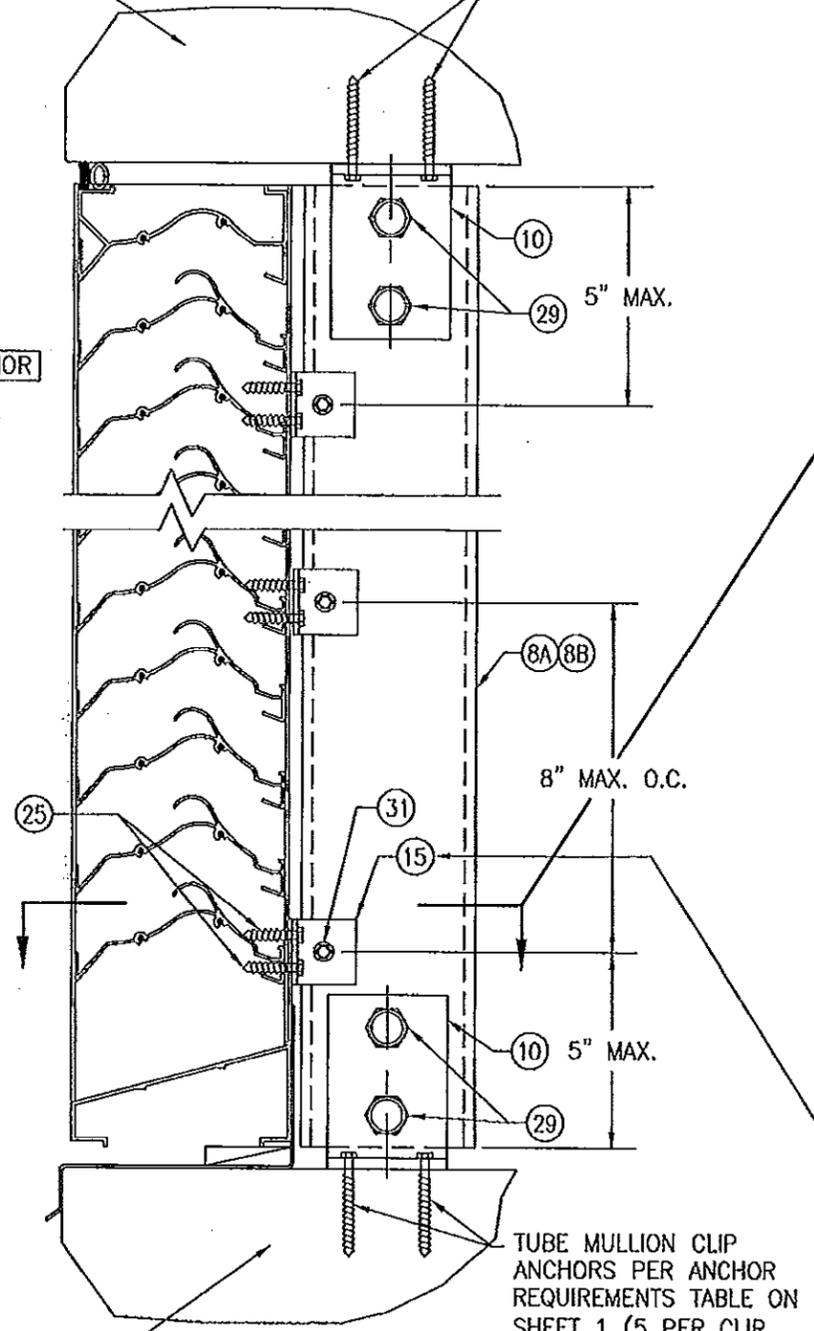
PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No 11-1117.10
 Expiration Date 01/06/2015
 By *[Signature]*
 Miami Dade Product Control

SECTION D2
 SCALE: 1/2 FULL
 (NON-ARCHITECTURAL LOUVER WITH PERIMETER SLEEVE & WITHOUT TUBE MULLION; INSTALLED INTO ALL SUBSTRATES)
 (FOR DETAIL NOT SHOWN, SEE SECTION D1/7)

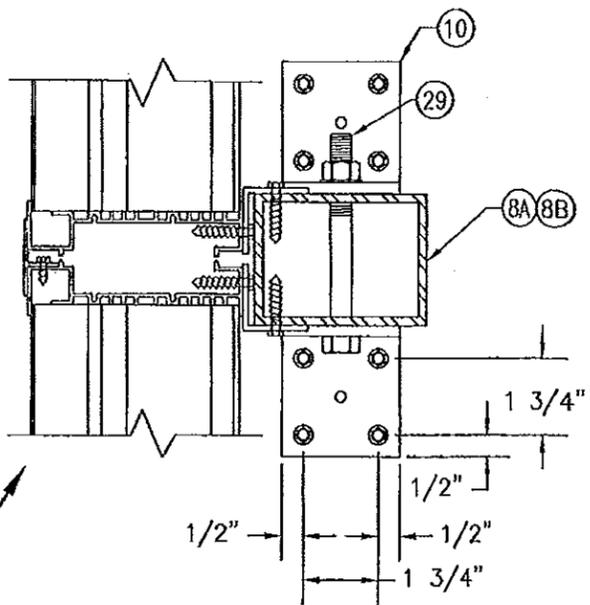
POSITION OF THE SLEEVE PERIMETER SUPPORT ANGLE VARIES WITH SUBSTRATE THICKNESS & MAY BE POSITIONED UNDER THE MULLION END SUPPORT ANGLE. WHEN THIS OCCURS, THE SLEEVE ANGLE ATTACHMENT SCREWS SHALL MOVE WITH THE ANGLE & MAY BE POSITIONED TO RUN THROUGH THE MULLION END ANGLE AND SLEEVE.

MULLION CLIP ANCHORS PER ANCHOR REQUIREMENTS TABLE ON SHEET 1 (4 PER CLIP)

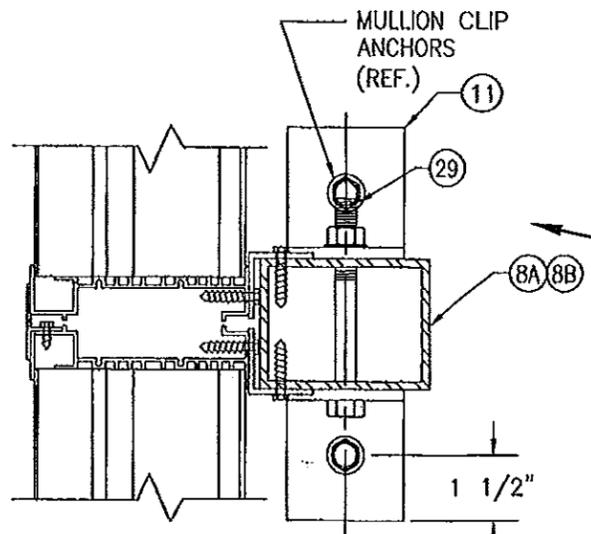
EXTERIOR



SECTION D3
SCALE: 1/2 FULL
(NON-ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE & WITH TUBE MULLION; INSTALLED INTO WOOD, STEEL, ALUMINUM & METAL STUD SUBSTRATES)
(FOR DETAIL NOT SHOWN, SEE SECTION D1/7)



(FOR DETAIL NOT SHOWN, SEE SECTION F1/9)

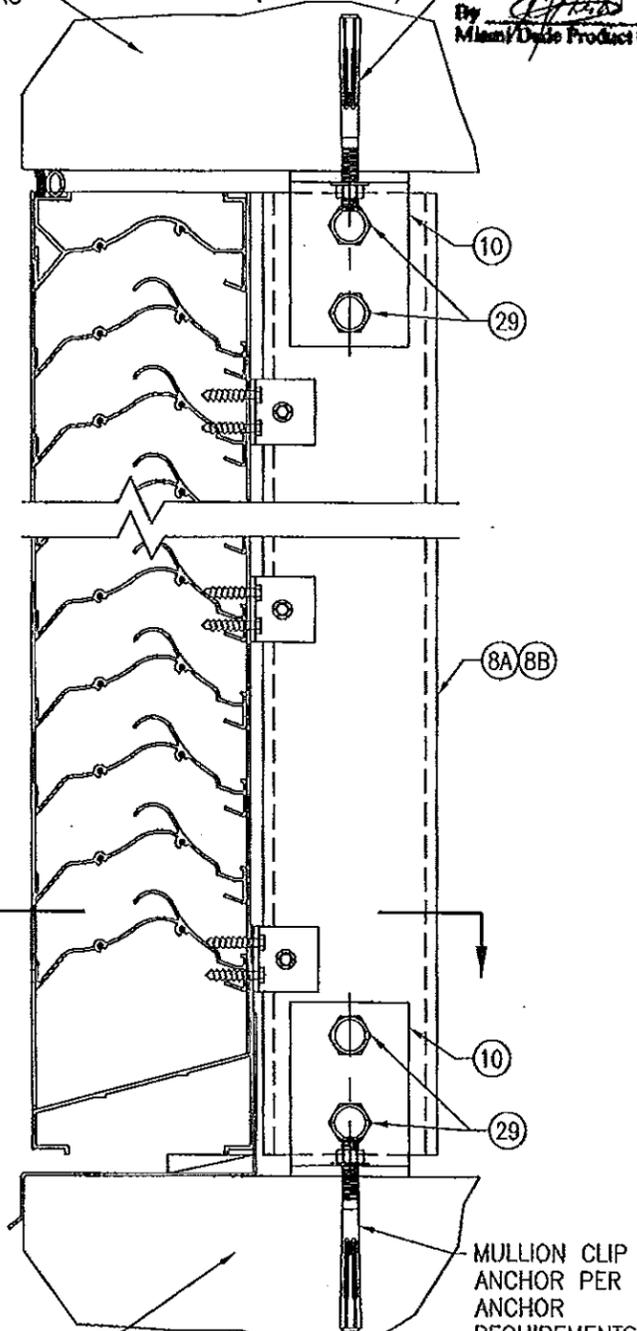


(FOR DETAIL NOT SHOWN, SEE SECTION F1/9)

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.

MULLION CLIP ANCHOR PER ANCHOR REQUIREMENTS TABLE ON SHEET 1 (1 PER CLIP)

EXTERIOR



SECTION D4
SCALE: 1/2 FULL
(NON-ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE & WITH TUBE MULLION; INSTALLED INTO CONCRETE SUBSTRATE)
(FOR DETAIL NOT SHOWN, SEE SECTION D3/8)

PRODUCT RENEWED as complying with the Florida Building Code Acceptance No 14-1513.07 Expiration Date 01/06/2020 By Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 11-1117.10 Expiration Date 01/06/2015 By Miami Dade Product Control

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

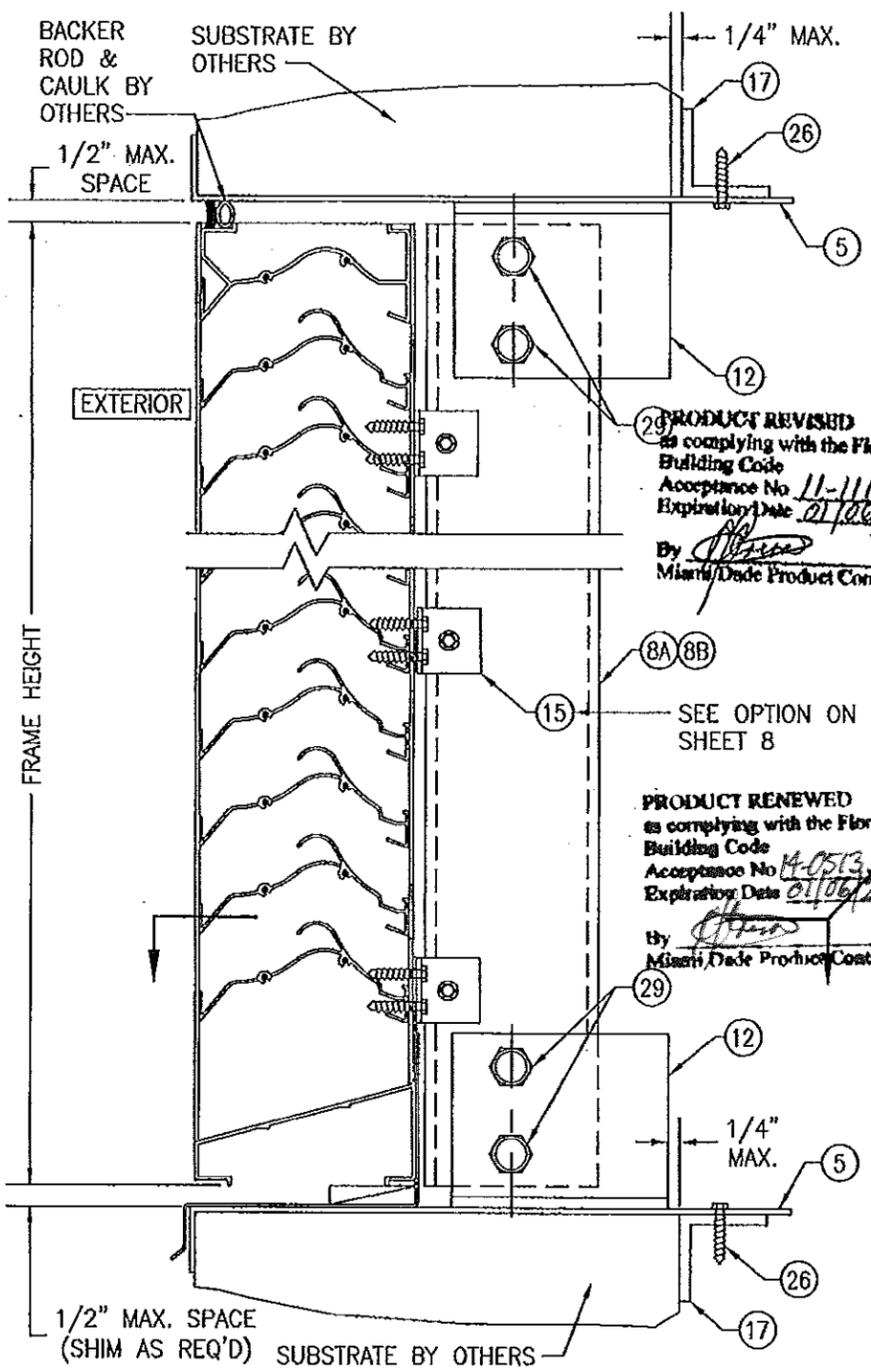
NOV 08 2011

MANUFACTURER
ARROW UNITED INDUSTRIES
450 RIVERSIDE DRIVE
WYALUSING, PA 18853
570-746-1888

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

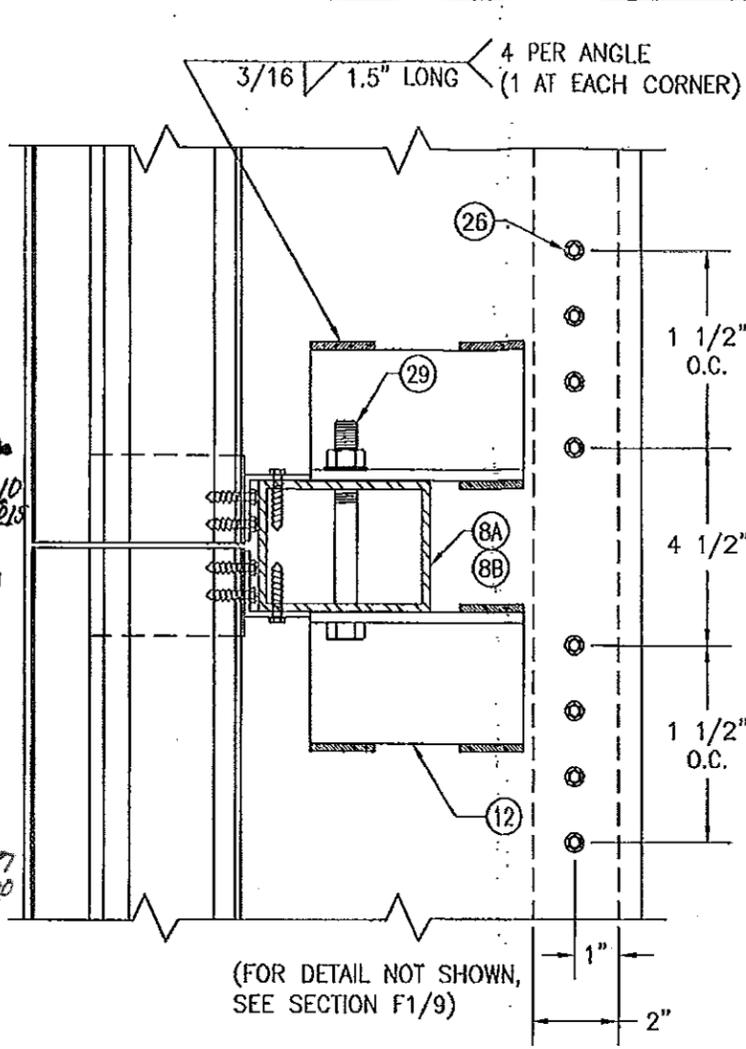


DRAWING NO.	REV.
1685	A
SHEET NO.	
8	OF 10

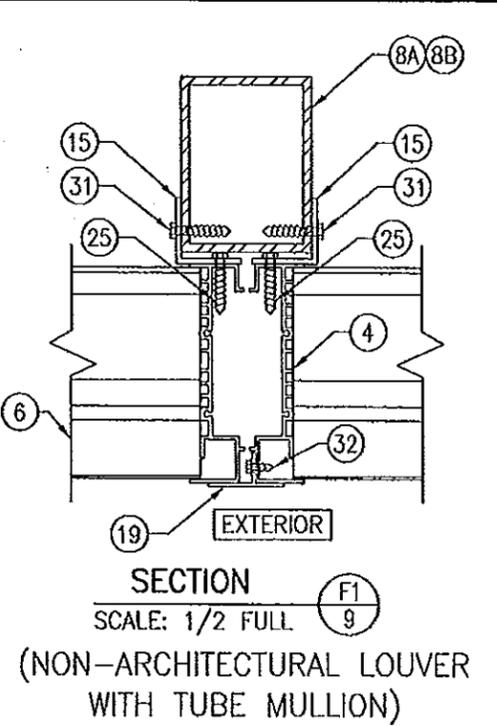


SECTION D5
SCALE: 1/2 FULL
(NON-ARCHITECTURAL LOUVER WITH PERIMETER SLEEVE & WITH TUBE MULLION; INSTALLED INTO ALL SUBSTRATES)
(FOR DETAIL NOT SHOWN, SEE SECTION D3/8)

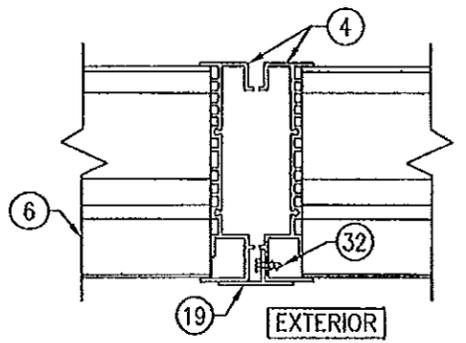
POSITION OF THE SLEEVE PERIMETER SUPPORT ANGLE VARIES WITH SUBSTRATE THICKNESS & MAY BE POSITIONED UNDER THE MULLION END SUPPORT ANGLE. WHEN THIS OCCURS, THE SLEEVE ANGLE ATTACHMENT SCREWS SHALL MOVE WITH THE ANGLE & MAY BE POSITIONED TO RUN THROUGH THE MULLION END ANGLE AND SLEEVE.



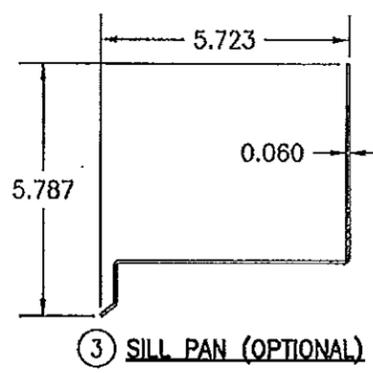
SECTION E
SCALE: 1/2 FULL
(ARCHITECTURAL LOUVER MULLION)



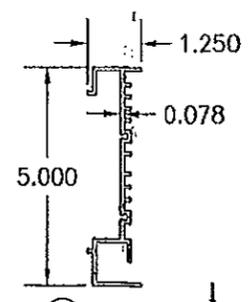
SECTION F1
SCALE: 1/2 FULL
(NON-ARCHITECTURAL LOUVER WITH TUBE MULLION)



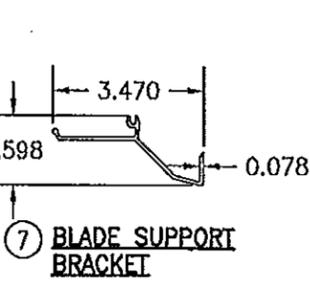
SECTION F2
SCALE: 1/2 FULL
(NON-ARCHITECTURAL LOUVER WITH NO TUBE MULLION)



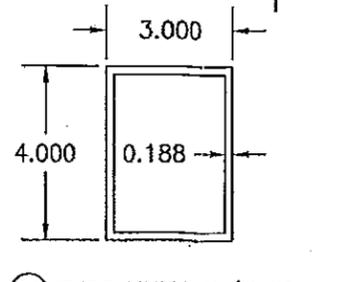
3 SILL PAN (OPTIONAL)



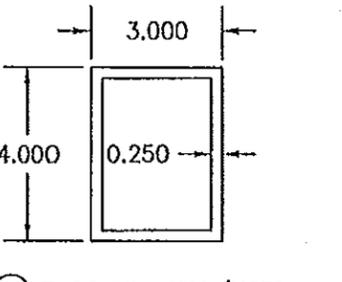
4 JAMB



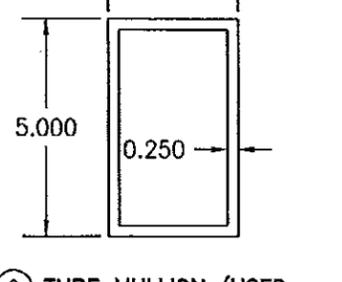
7 BLADE SUPPORT BRACKET



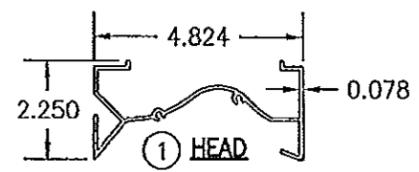
8A TUBE MULLION (USED WITH NON-ARCHITECTURAL LOUVERS)



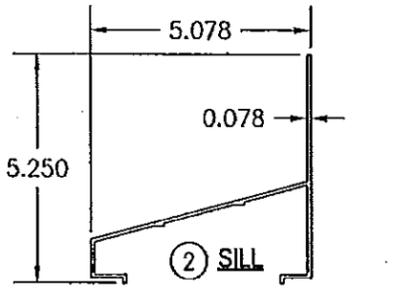
8B TUBE MULLION (USED WITH NON-ARCHITECTURAL LOUVERS)



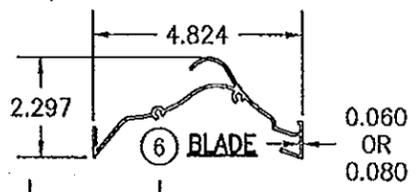
9 TUBE MULLION (USED WITH ARCHITECTURAL LOUVERS)



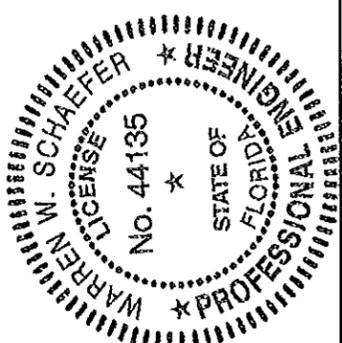
1 HEAD



2 SILL



6 BLADE



DRAWN BY:	W.R.U.	CHECKED BY:	W.W.S.
DATE:	1-4	DATE:	07/23/09
NO.		REVISION DESCRIPTION	
BY			

DRAWING TITLE
EA-52 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

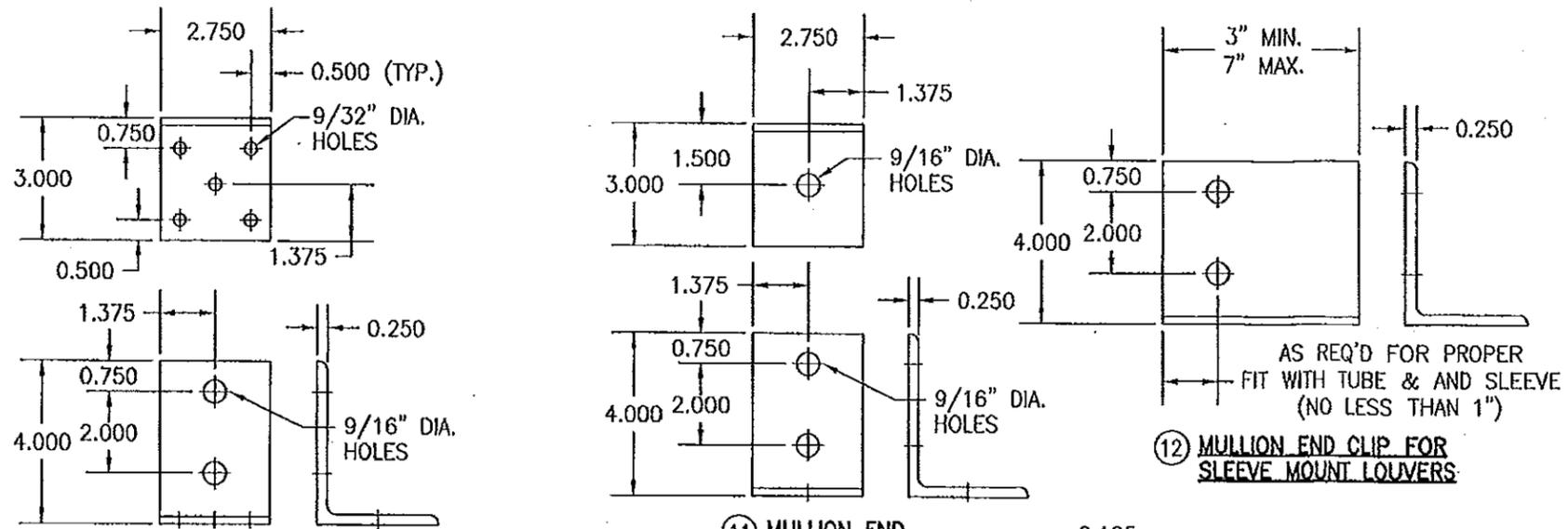
MANUFACTURER
ARROW UNITED INDUSTRIES
450 RIVERSIDE DRIVE,
WYALUSING, PA 18853
570-746-1888

CERTIFICATION
NOV 08 2011
WARREN M. SCHAEFER, P.E.
P.E. NO. 44135

DRAWING NO.
1685

REV.
A

SHEET NO.
9 OF 10

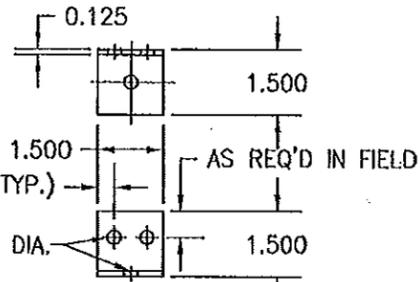


10 MULLION END INSTALLATION CLIP

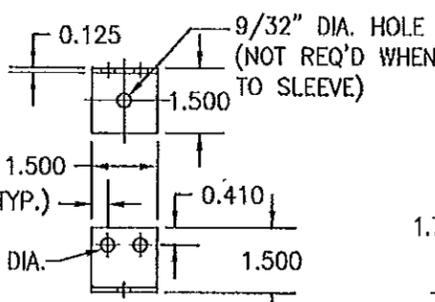
11 MULLION END INSTALLATION CLIP

AS REQ'D FOR PROPER FIT WITH TUBE & AND SLEEVE (NO LESS THAN 1")

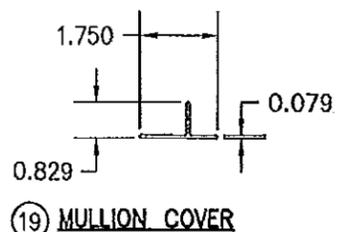
12 MULLION END CLIP FOR SLEEVE MOUNT LOUVERS



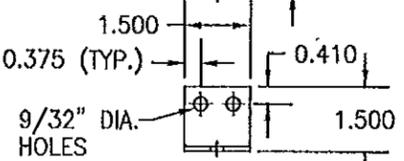
14 LOUVER JAMB TO SUBSTRATE CLIP



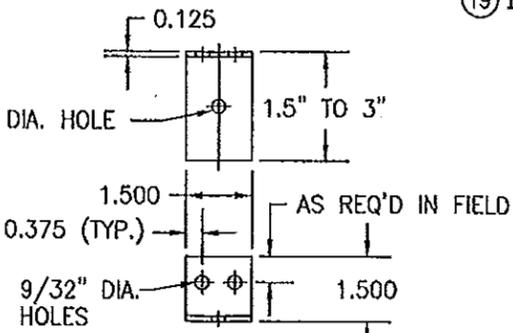
15 SLEEVE OR TUBE MULLION TO LOUVER JAMB CLIP



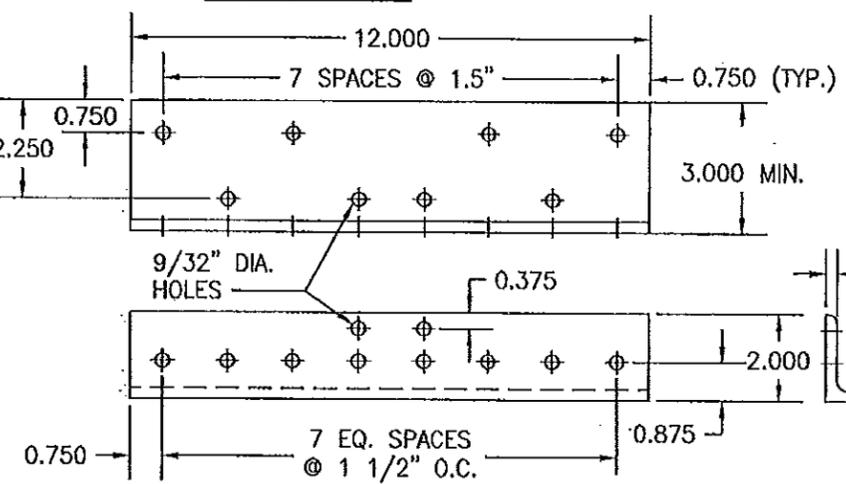
19 MULLION COVER



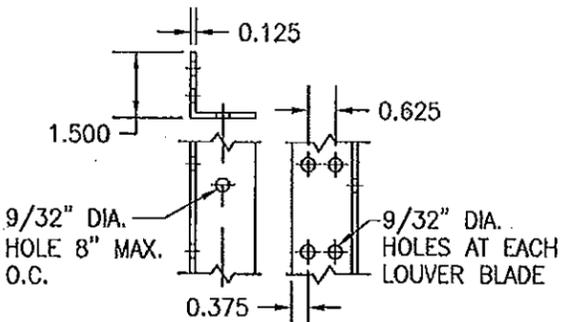
18 LOUVER JAMB TO SUBSTRATE CLIP



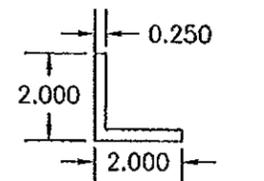
20 CONTINUOUS SUPPORT ANGLE



13 MULLION END INSTALLATION CLIP



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

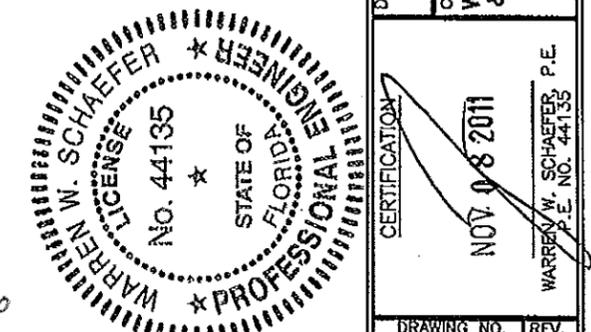


17 SLEEVE SUPPORT ANGLE (LENGTH = CONTINUOUS)

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" OF SLEEVE CORNERS OR TUBE MULLION ENDS AND MAX. 8" O.C.)
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" SELF TAP/DRILL SCREW	2 PER CLIP
26	1/4-14 X 3/4" SELF TAP/DRILL SCREW	WITHIN 4" OF CORNERS & SLEEVE SPLICES & MAX. 8" O.C. (CLUSTERED AT MULLION ENDS PER DETAILS)
27	1/4-14 X 3/4" SELF TAP/DRILL SCREW	8" O.C. PER SECTIONS
28	1/4-14 X 3/4" SELF TAP/DRILL SCREW	4 AT HEAD & 2 PER BLADE
29	1/2" X 5" A307 HEX HEAD PLATED STEEL OR S/STL NUT & BOLT	2 PER MULLION END
30	1/4-14 X 3/4" SELF TAP/DRILL SCREW	10 PER CLIP
31	1/4-14 X 3/4" SELF TAP/DRILL SCREW	1 PER CLIP
32	NO. 7 X 1/2" SMS SCREW	WITHIN 6" OF CORNERS & 24" MAX. O.C.
33	1/4-14 X 3/4" SELF TAP/DRILL SCREW	SEE ANCHOR SPACING/PRESSURE TABLE FOR SPACING REQUIREMENTS

PRODUCT REVISED as complying with the Florida Building Code
 Acceptance No 11-1117.10
 Expiration Date 01/06/2015
 By [Signature]
 Miami Dade Product Control

PRODUCT RENEWED as complying with the Florida Building Code
 Acceptance No 14-0513.07
 Expiration Date 01/06/2020
 By [Signature]
 Miami Dade Product Control



DRAWING TITLE: EA-52 IMPACT LOUVER SYSTEM

MANUFACTURER: ARROW UNITED INDUSTRIES
 450 RIVERSIDE DRIVE
 WYALUSING, PA 18853
 570-746-1888

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

CERTIFICATION: NOV 08 2011
 WARREN W. SCHAEFER, P.E.
 P.E. NO. 44135

DRAWING NO. 1685
 SHEET NO. 10 OF 10

DRAWN BY: W.R.U. CHECKED BY: W.W.S.
 PLOT: 1-4 DATE: 07/23/09

REVISION DESCRIPTION: NO. 1