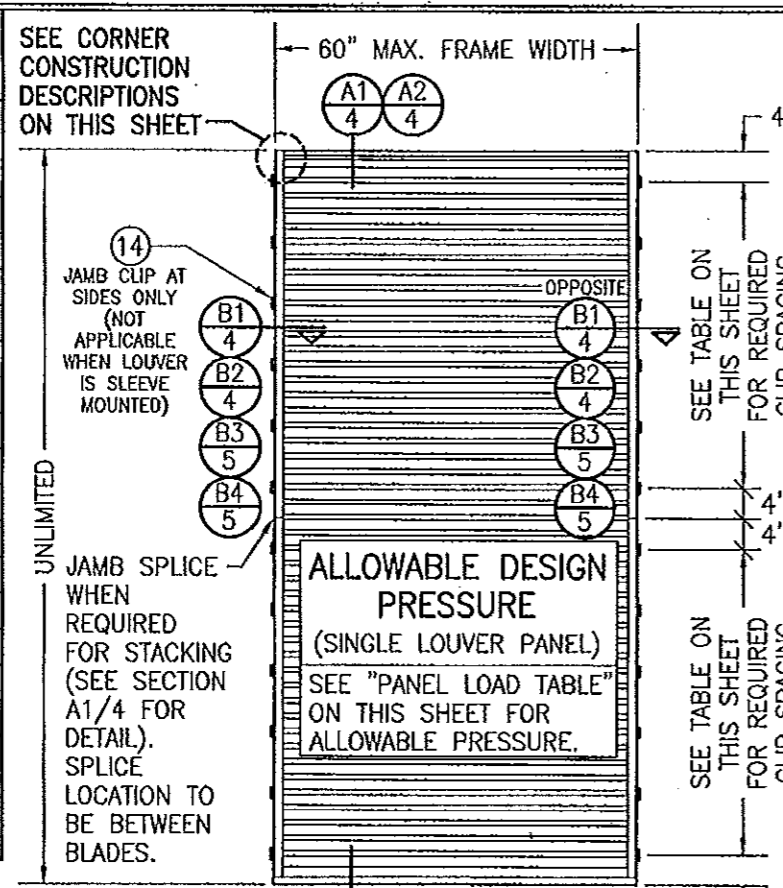
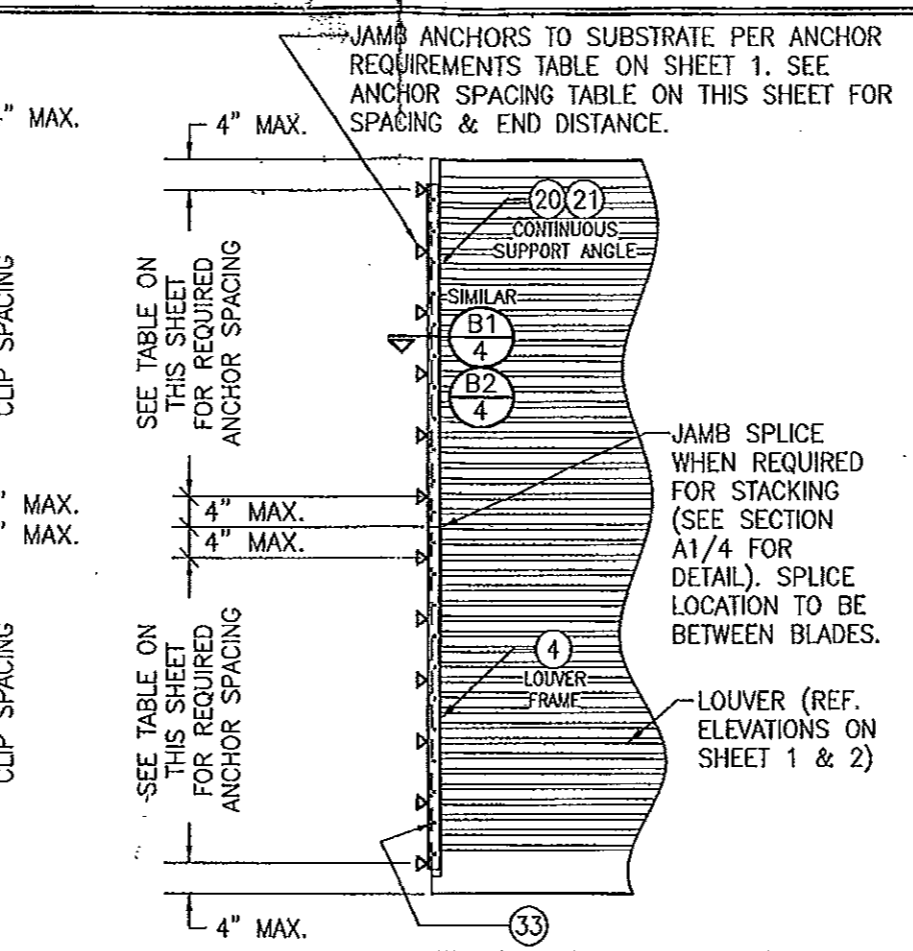


PANEL LOAD TABLE (WITH SIDE CLIPS)		
PANEL WIDTH (IN.)	(1) CLIP SPACING (IN.)	ALLOWABLE PRESSURE (+/- PSF)
36	8	120
	13	104
42	8	120
	13	89
48	8	120
	13	78
54	8	120
	13	69
60	8	120
	13	62
	18	45

(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 SPlicing 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.

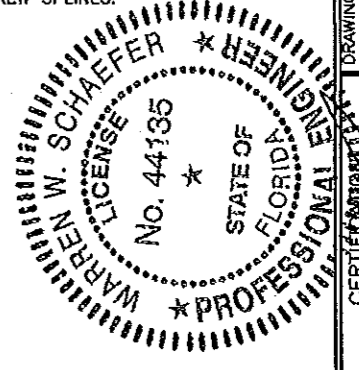
PRODUCT RENEWED as complying with the Florida Building Code
Acceptance No. 12-0513-07
Expiration Date 2/10/2020
By [Signature]
Miami Trade Product Control

- 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).

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"	

- 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. 11-1117-10
Expiration Date 2/10/2015
By [Signature]
Miami Trade Product Control



DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-24	DATE: 07/23/09
DATE: 11/09/11	
BY: W.R.M.	
REVISION DESCRIPTION & UPDATE CONSULTANTS' ADDRESS	
NO. A1	
DRAWING TITLE: EA-52 IMPACT LOUVER SYSTEM	
MANUFACTURER: ARROW UNITED INDUSTRIES	
450 RIVERSIDE DRIVE	
WYALUSING, PA 18855	
570-746-1888	
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)	
7480 150TH COURT NORTH	
PALM BEACH GARDENS, FL 33418	
PHONE: 951-744-5424	
CERTIFICATION: NO. 082011	
WARREN W. SCHAEFER, P.E.	
P.E. NO. 44135	
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.

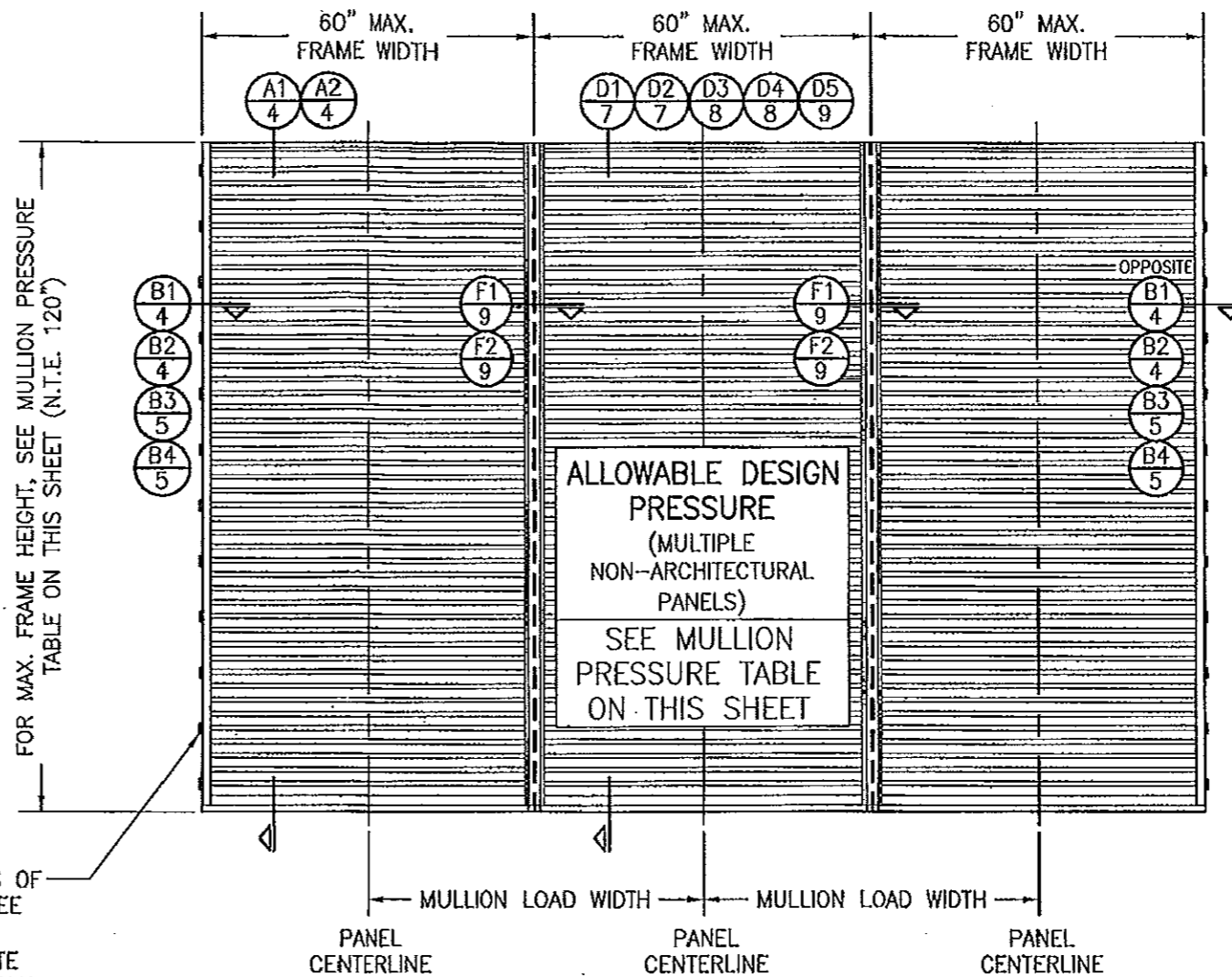
MULLION ALLOWABLE DESIGN PRESSURE
(NON-ARCHITECTURAL LOUVERS)

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
	42	107.1	120.0	120.0
	36	120.0	120.0	120.0
	60	60	90.0	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
42	54	120.0	120.0	120.0
	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 MAX. FRAME HEIGHT, SEE MULLION PRESSURE TABLE ON THIS SHEET (N.T.E. 120")

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

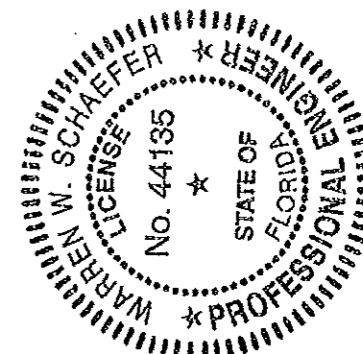


EXTERIOR ELEVATION:
MULTIPLE LOUVER PANELS
(NON-ARCHITECTURAL)

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

PRODUCT 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



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

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

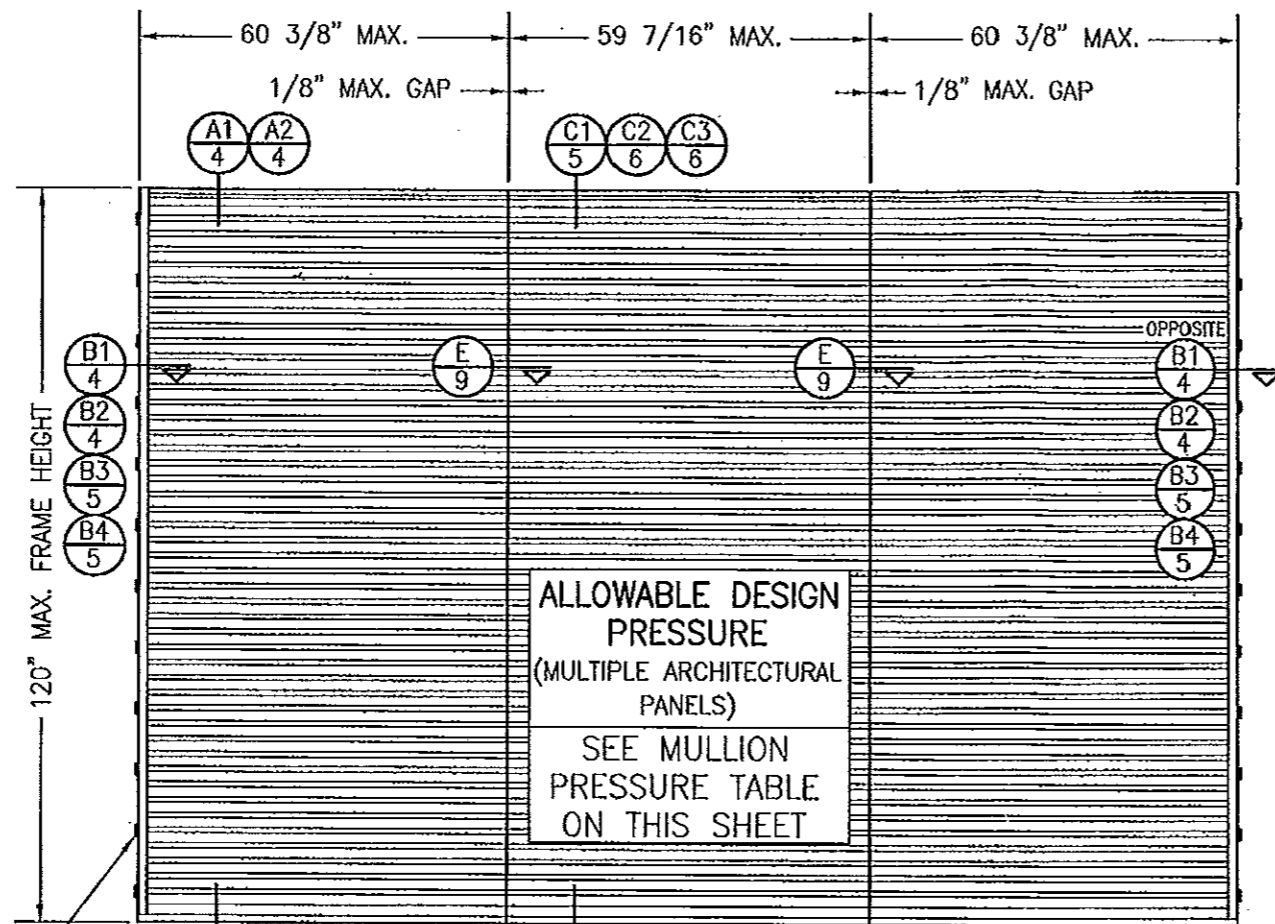
CONSULTANTS
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)
7480 150TH COURT NORTH
PALM BEACH GARDENS, FL 33418
PHONE: 561-744-3424

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

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.



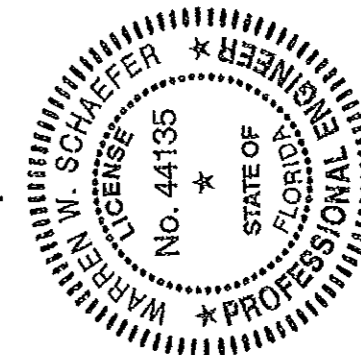
ALLOWABLE DESIGN PRESSURE (MULTIPLE ARCHITECTURAL PANELS)
 SEE MULLION PRESSURE TABLE ON THIS SHEET

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

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

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 Acceptance No 14-0513.07
 Expiration Date 2/16/2020
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 Expiration Date 01/06/2015
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PLOT: 1-24	DATE: 07/23/09
DATE	
BY	
REVISION DESCRIPTION	
NO.	

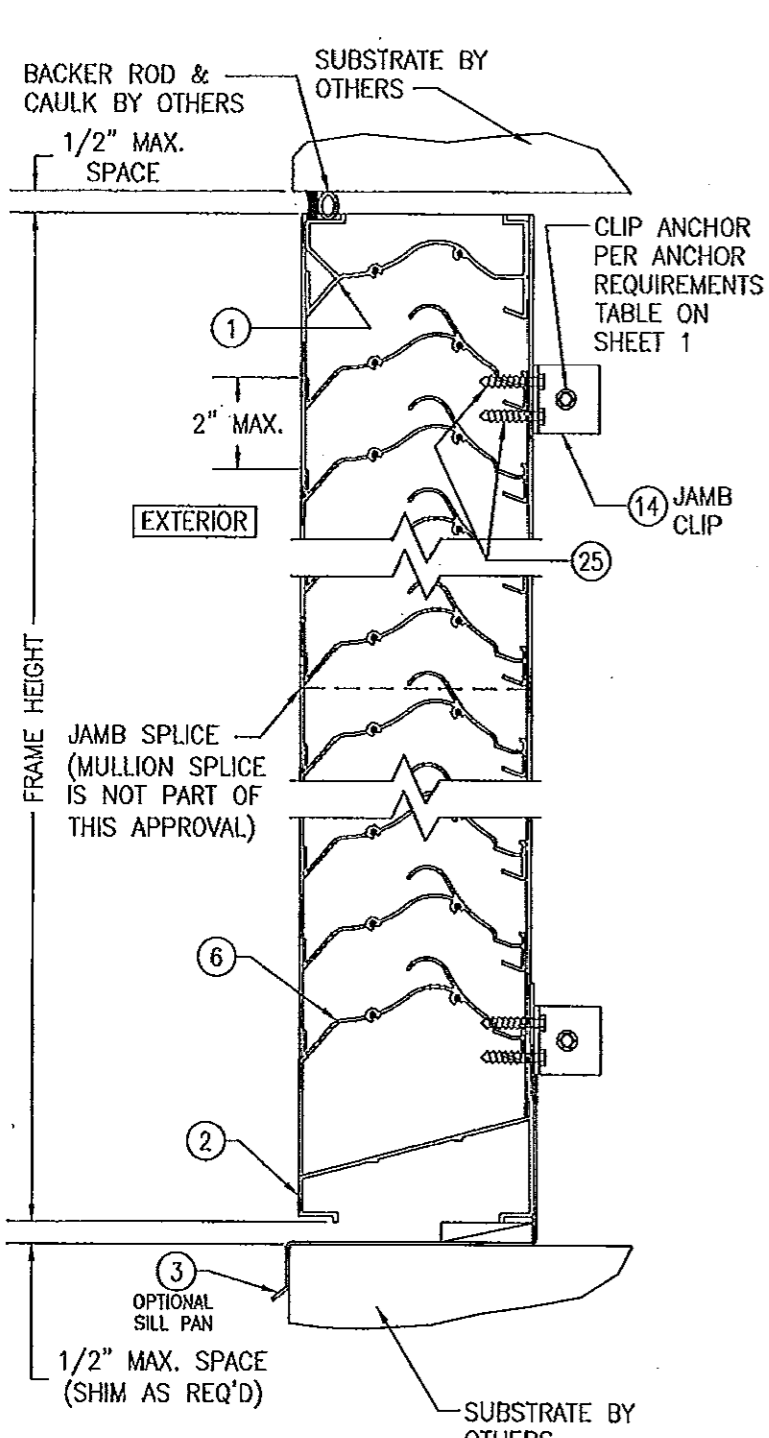
DRAWING TITLE: EA-52 IMPACT LOUVER SYSTEM

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

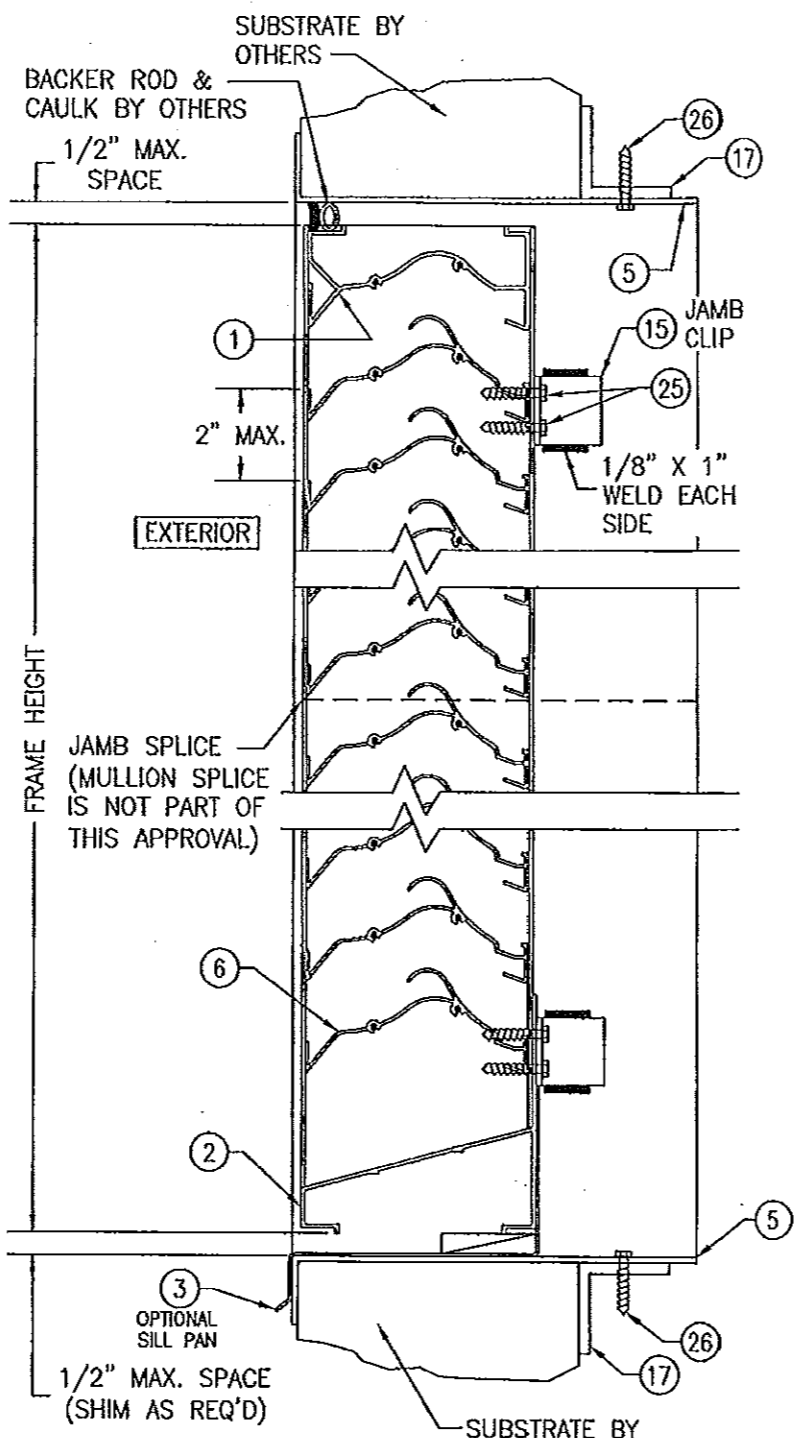
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)
 7480 150TH COURT NORTH
 PALM BEACH GARDENS, FL 33418
 PHONE 561-744-3424

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 WARREN W. SCHAEFER, P.E.
 P.E. NO. 44135

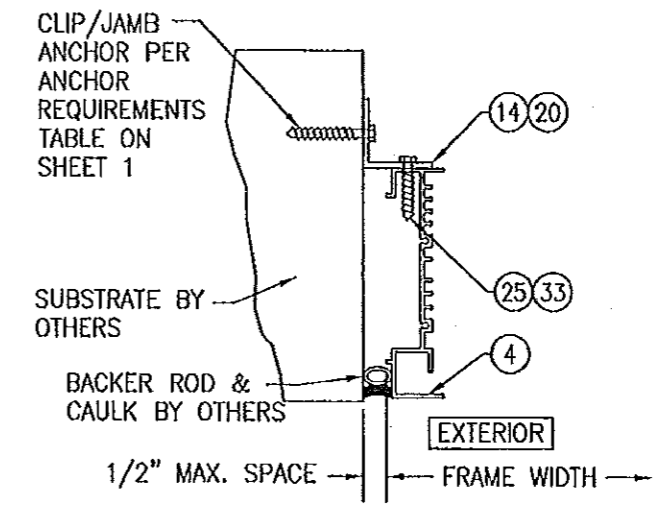
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SHEET NO. 3 OF 10	



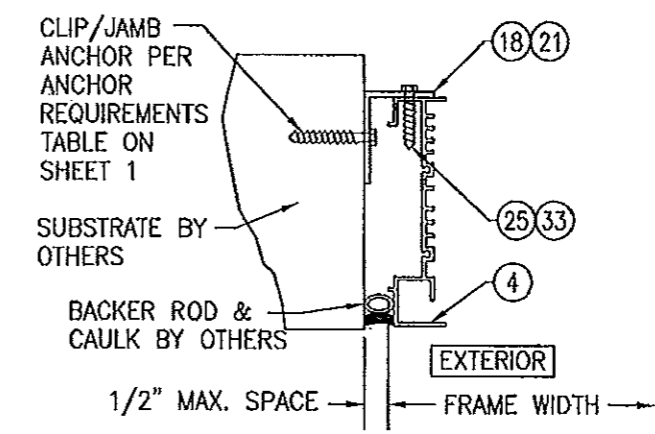
SECTION A1
SCALE: 1/2 FULL



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



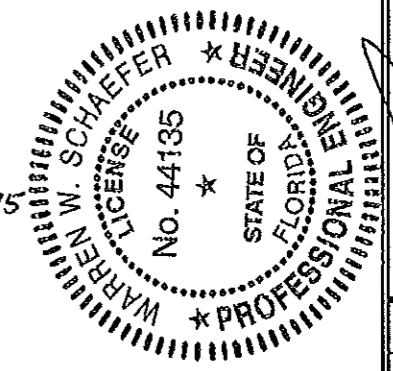
SECTION B1
SCALE: 1/2 FULL
(NO SLEEVE & CLIPS TURNED OUT)



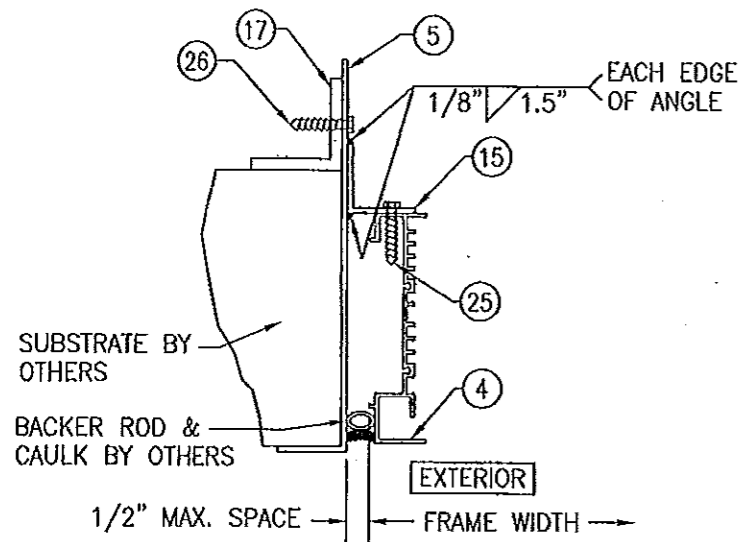
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SCALE: 1/2 FULL
(NO SLEEVE & CLIPS TURNED IN)

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Building Code
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By *[Signature]*
Miami Dade Product Control

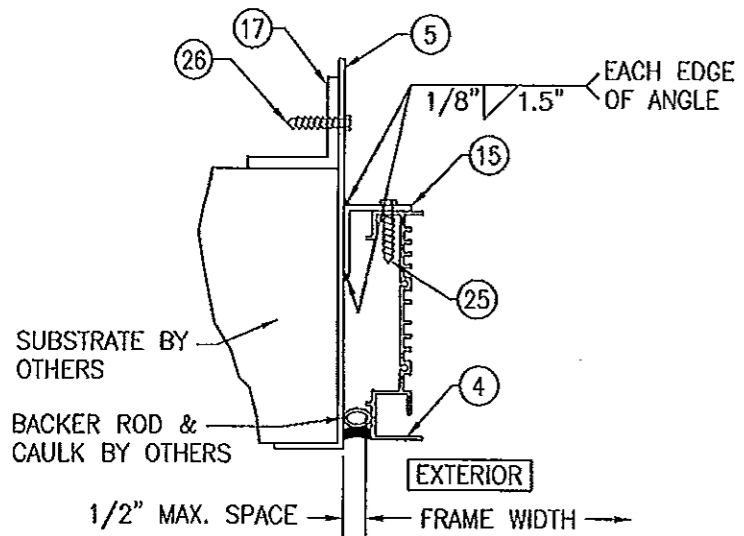
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 11-1117.00
Expiration Date 21/06/2015
By *[Signature]*
Miami Dade Product Control



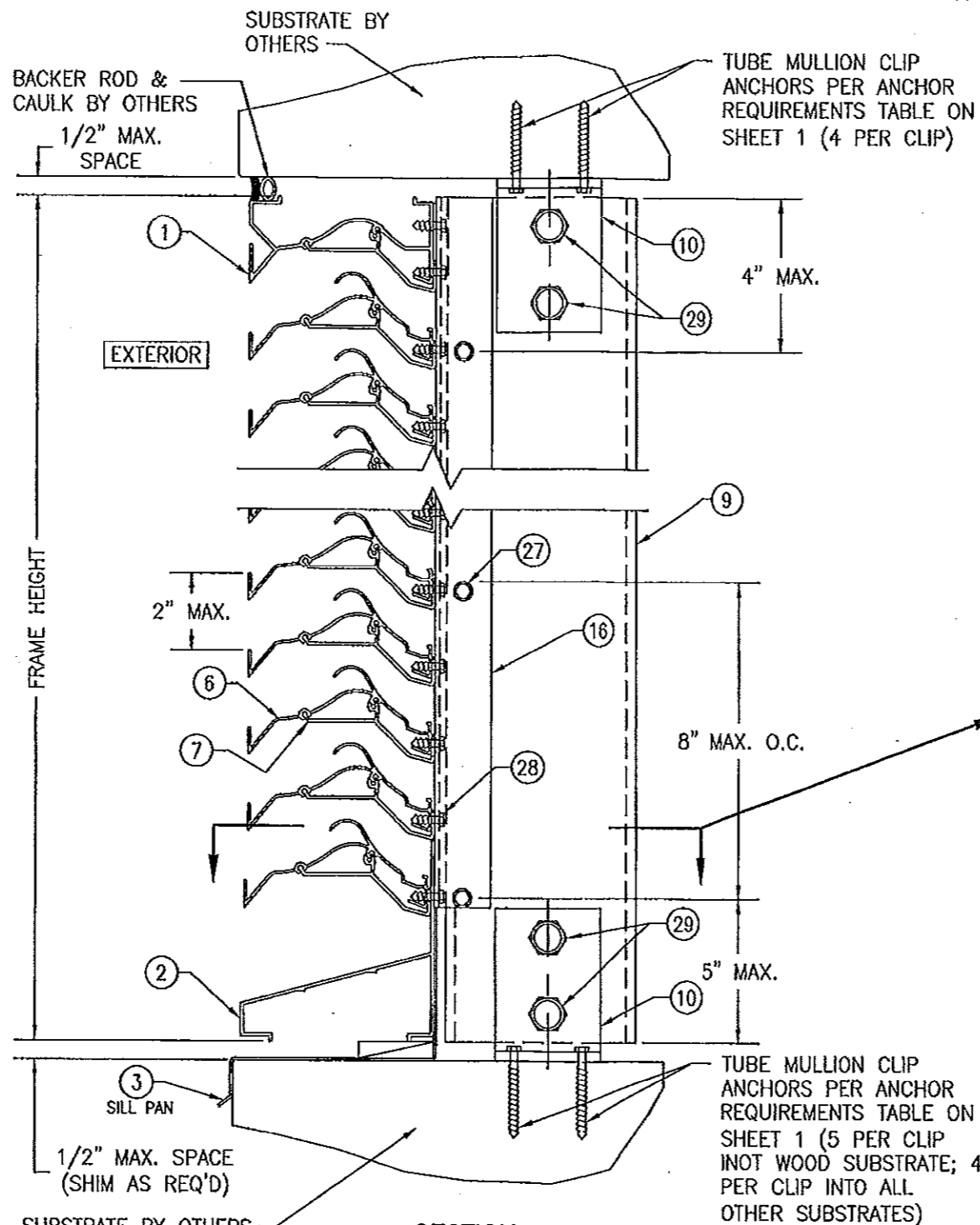
DRAWN BY: W.R.M.		CHECKED BY: W.W.S.	
PLOT: 1-4		DATE: 07/23/09	
NO.	REVISION	DESCRIPTION	DATE
DRAWING TITLE: EA-52 IMPACT LOUVER SYSTEM			
CONSULTANTS		MANUFACTURER	
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		ARROW UNITED INDUSTRIES	
7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		450 RIVERSIDE DRIVE WYALUSING, PA 18853 570-746-1888	
CERTIFICATION		NOV 08 2011	
WARREN W. SCHAEFER, P.E.		WARREN W. SCHAEFER, P.E.	
P.E. NO. 44135		P.E. NO. 44135	
DRAWING NO.	REV.		
1685	A		
SHEET NO.			
4 OF 10			



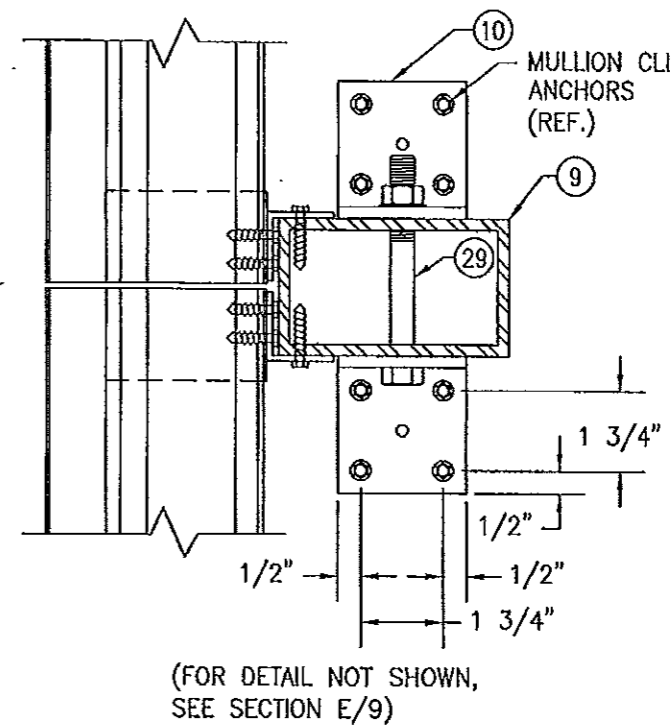
SECTION B3
SCALE: 1/2 FULL
(WITH SLEEVE & CLIPS TURNED OUT)



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

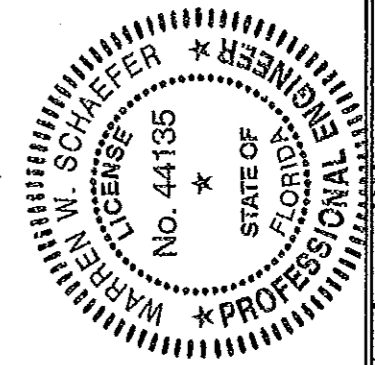


SECTION C1
SCALE: 1/2 FULL
(ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE; INSTALLED INTO WOOD, STEEL, ALUMINUM, OR METAL STUD SUBSTRATE)



PRODUCT RENEWED
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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



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

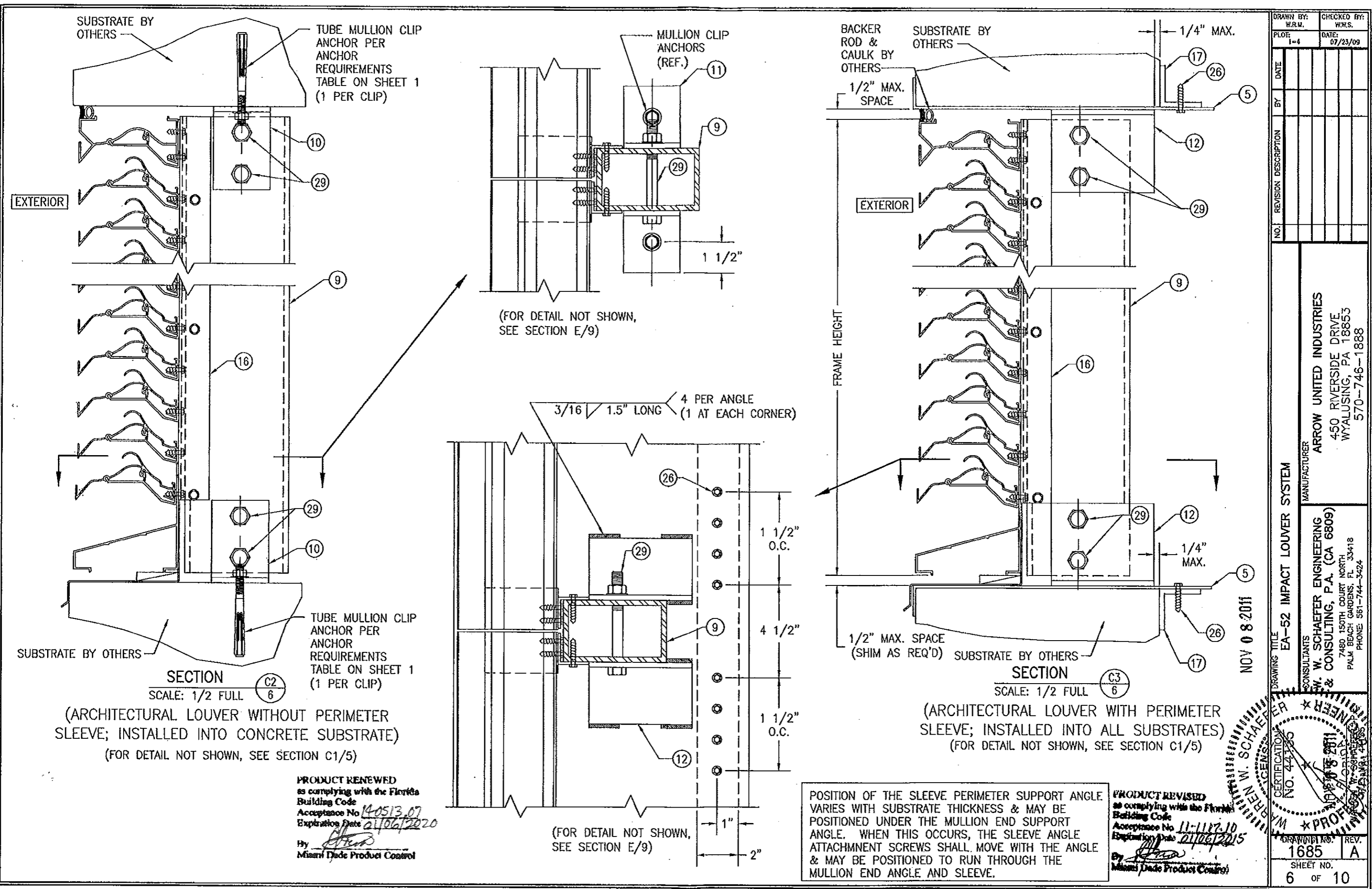
DRAWING TITLE
EA-52 IMPACT LOUVER SYSTEM

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

CERTIFICATION
NOV 8 2011
WARREN W. SCHAEFER, P.E.
P.E. NO. 44135

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



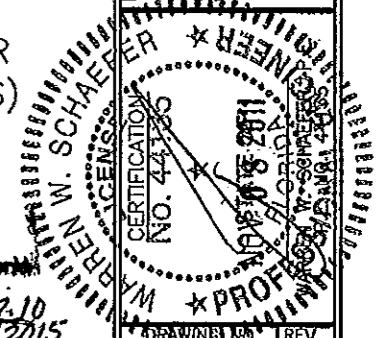
DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=4	DATE: 07/23/09
DATE	
BY	
REVISION DESCRIPTION	
NO.	

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

MANUFACTURER
ARROW UNITED INDUSTRIES
CONSULTANTS
W. W. 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

NOV 08 2011

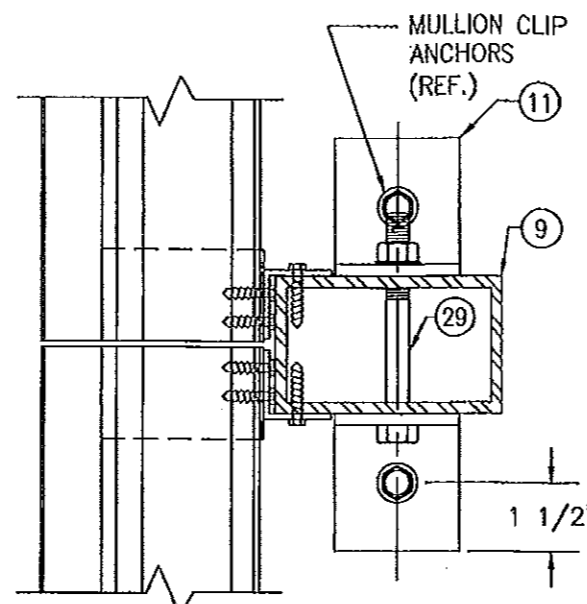


DRAWING NO. 1685	REV. A
SHEET NO. 6 OF 10	

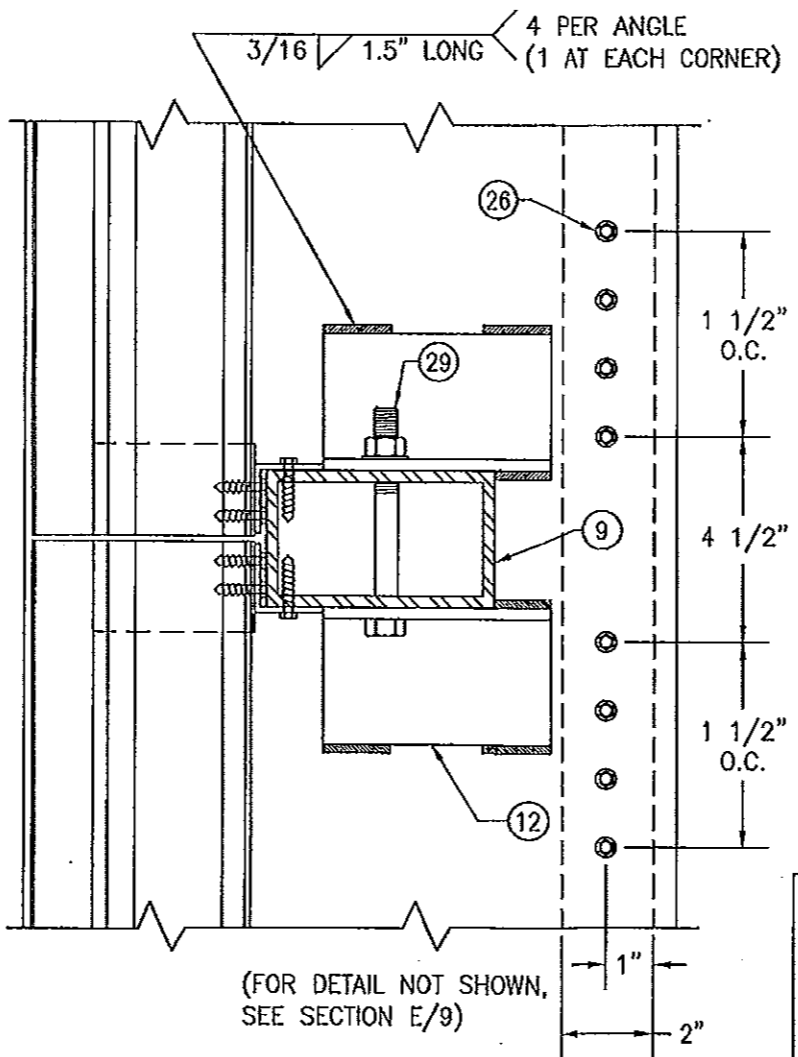
SUBSTRATE BY OTHERS

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

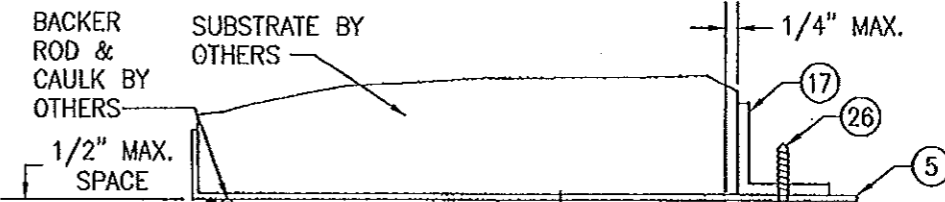
EXTERIOR



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

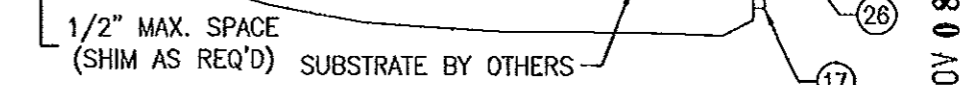


(FOR DETAIL NOT SHOWN, SEE SECTION E/9)



EXTERIOR

FRAME HEIGHT



(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 01/06/2015
By: [Signature]
Miami Dade Product Control

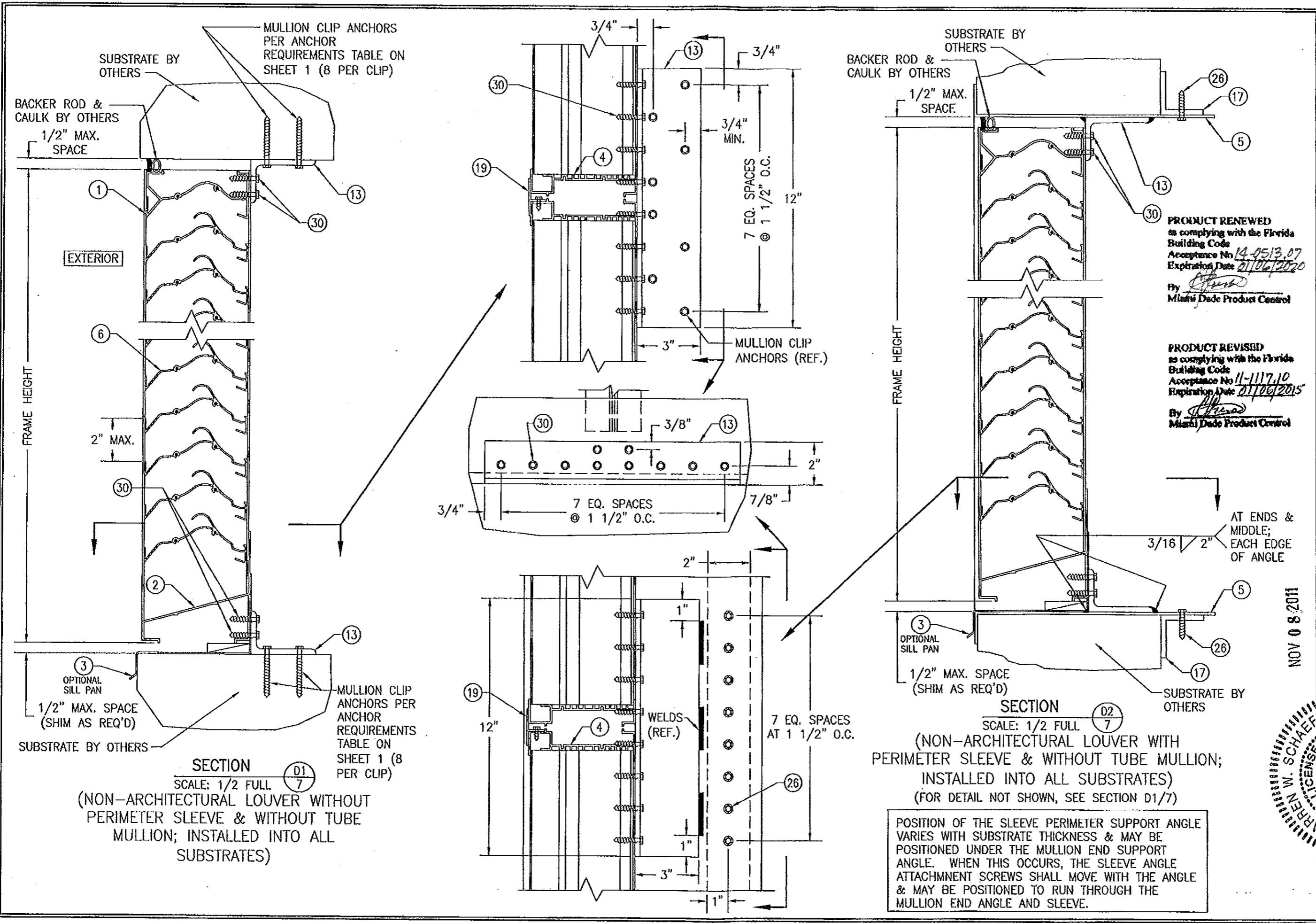
SUBSTRATE BY OTHERS

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

SECTION C2
SCALE: 1/2 FULL
6

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

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



DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-4	DATE: 07/23/09
DATE	BY
REVISION DESCRIPTION	NO.
MANUFACTURER ARROW UNITED INDUSTRIES 450 RIVERSIDE DRIVE WYALUSING, PA 18853 570-746-1888	
CONSULTANTS W. 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	
PROFESSIONAL SEAL W. SCHAEFER STATE OF FLORIDA PROFESSIONAL ENGINEER NO. 135	
DRAWING NO. 1685	REV. A
SHEET NO. 7 OF 10	

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

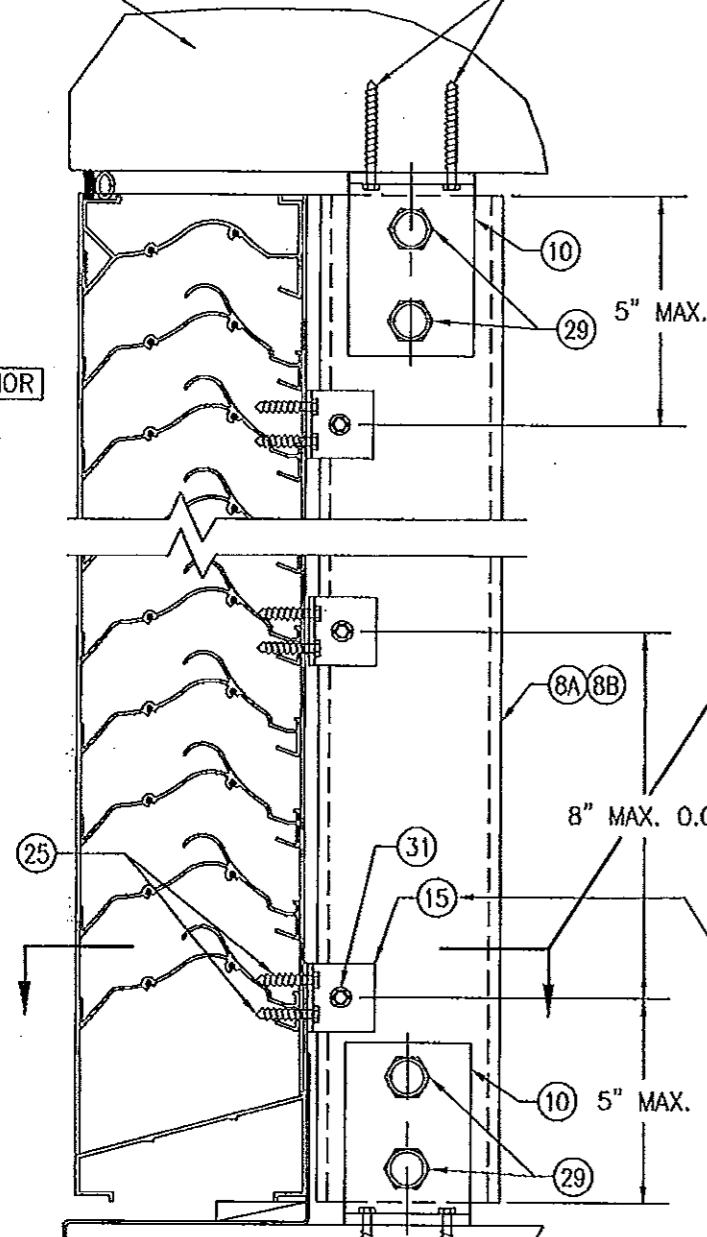
PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No 11-1117.10
 Expiration Date 2/10/2015
 By *[Signature]*
 Miami Dade Product Control

NOV 08 2011

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

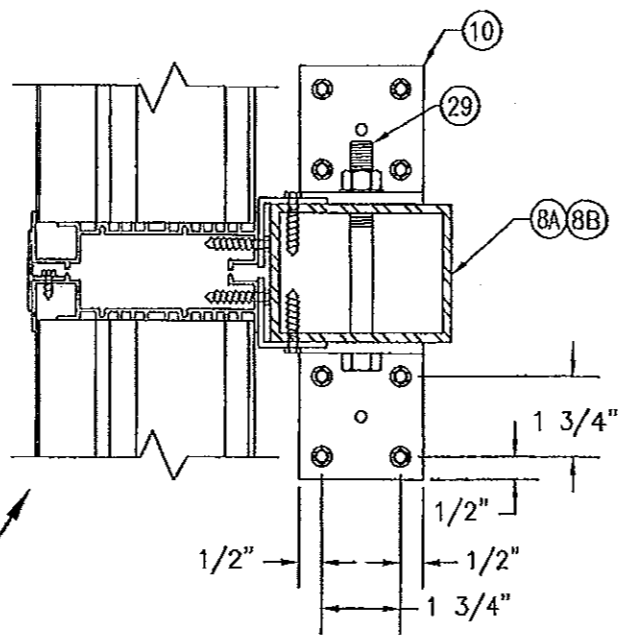


SECTION D3
SCALE: 1/2 FULL

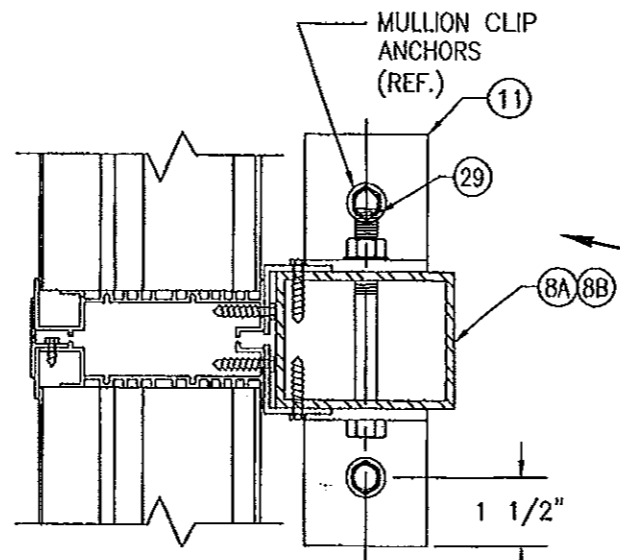
(NON-ARCHITECTURAL LOUVER WITHOUT PERIMETER SLEEVE & WITH TUBE MULLION; INSTALLED INTO WOOD, STEEL, ALUMINUM & METAL STUD SUBSTRATES)
(FOR DETAIL NOT SHOWN, SEE SECTION D1/7)

TUBE MULLION CLIP ANCHORS PER ANCHOR REQUIREMENTS TABLE ON SHEET 1 (5 PER CLIP INOT WOOD SUBSTRATE; 4 PER CLIP INTO ALL OTHER SUBSTRATES)

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.



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

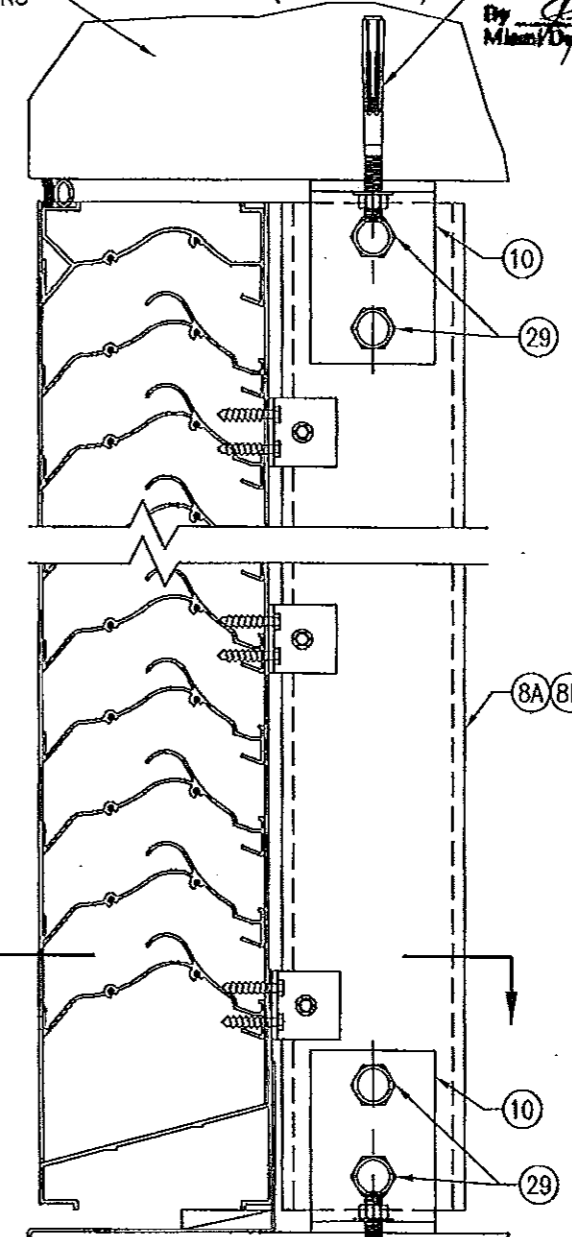


(FOR DETAIL NOT SHOWN, SEE SECTION F1/9)

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

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)

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

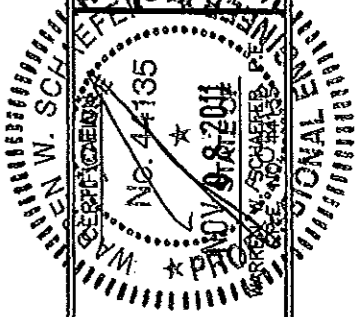
PRODUCT REVISED as complying with the Florida Building Code Acceptance No 11-1117.10 Expiration Date 01/06/2015
By Miami Dade Product Control

NOV 08 2011

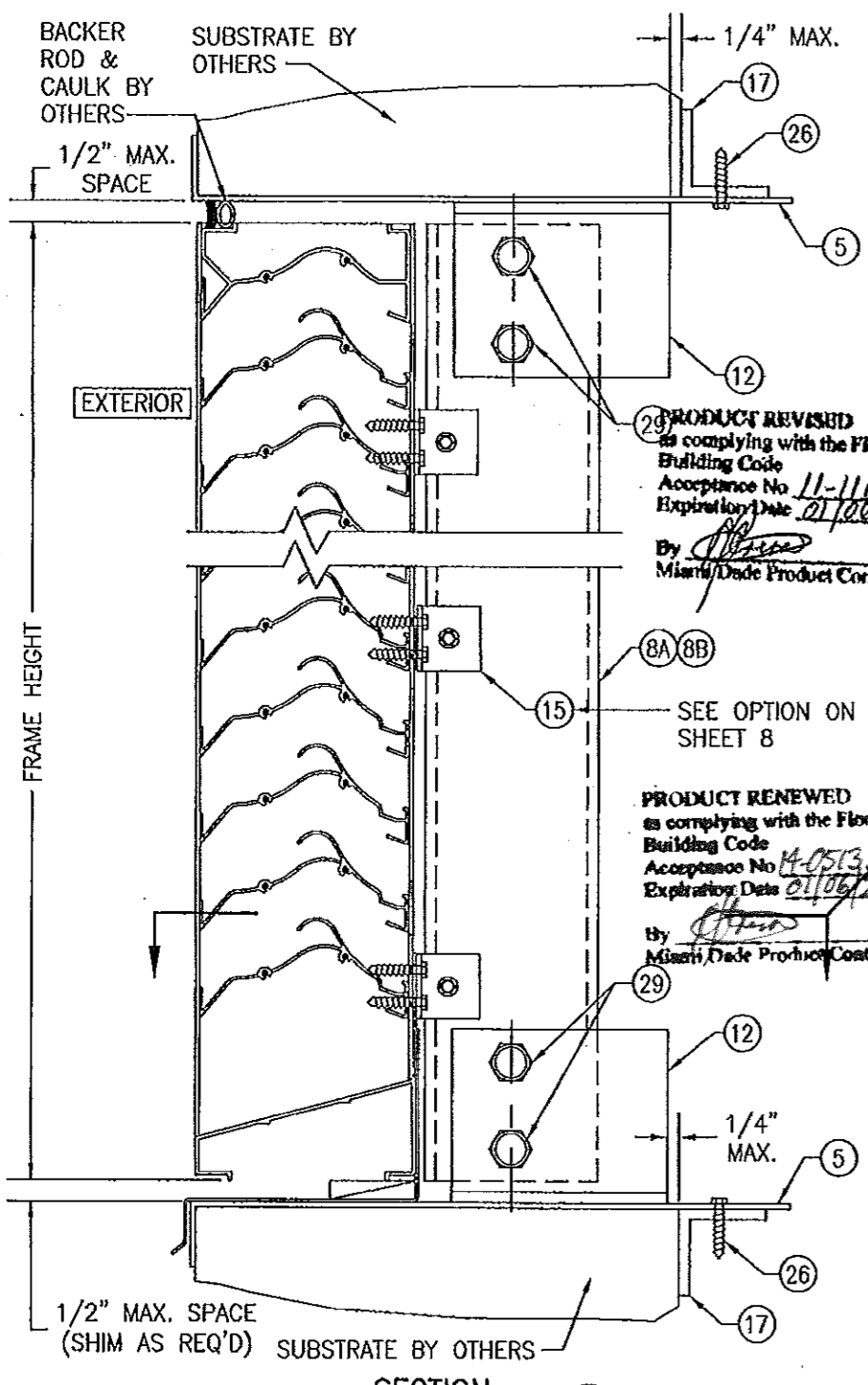
DRAWN BY:	W.R.M.	CHECKED BY:	W.W.S.
PLOT:	1-4	DATE:	01/23/09
NO.		REVISION DESCRIPTION	
DATE			

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

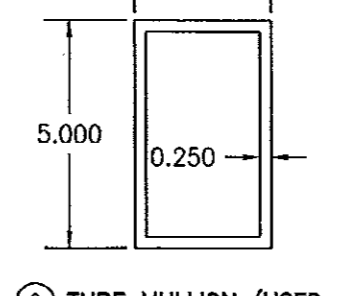
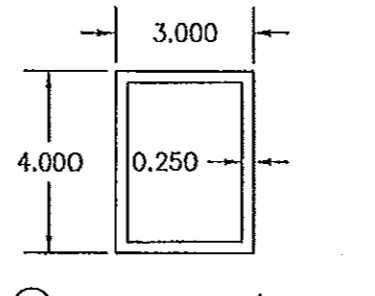
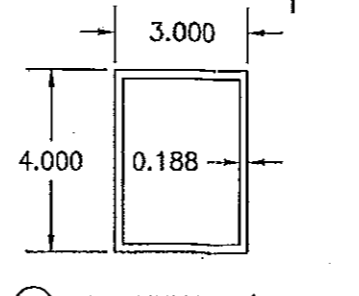
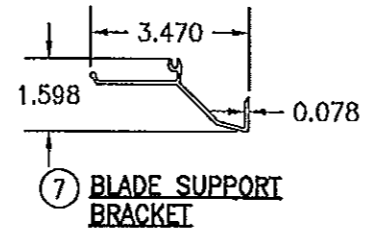
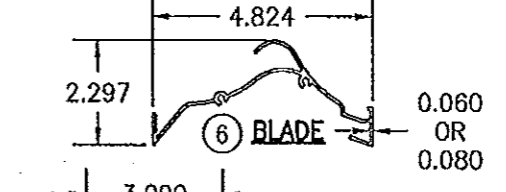
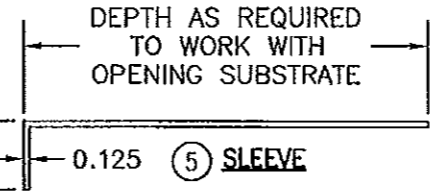
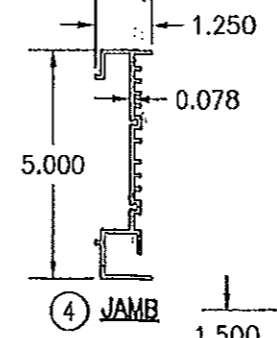
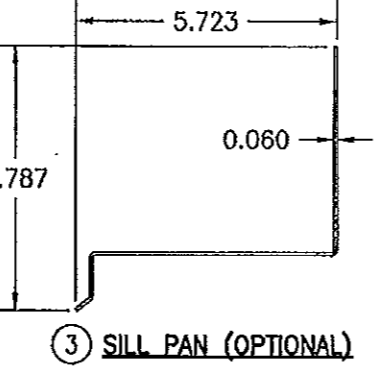
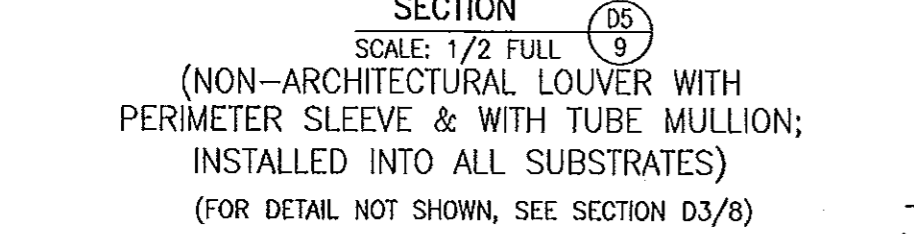
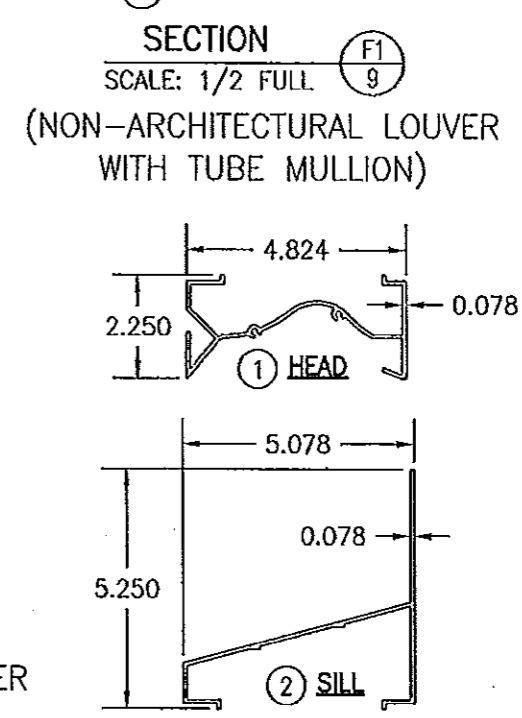
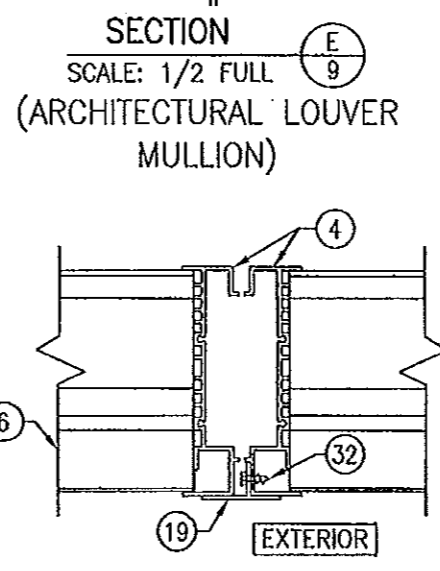
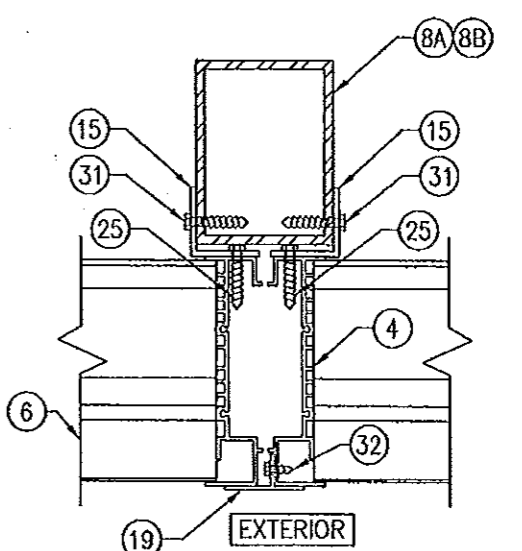
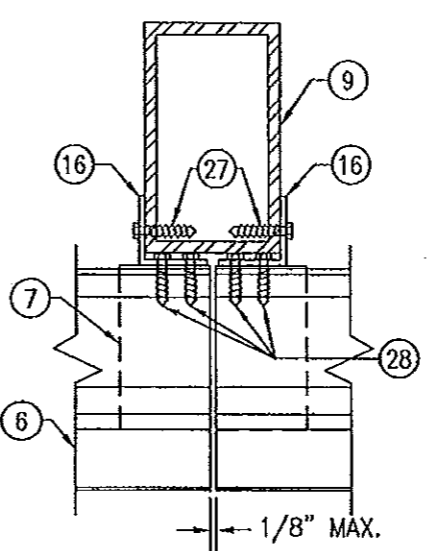
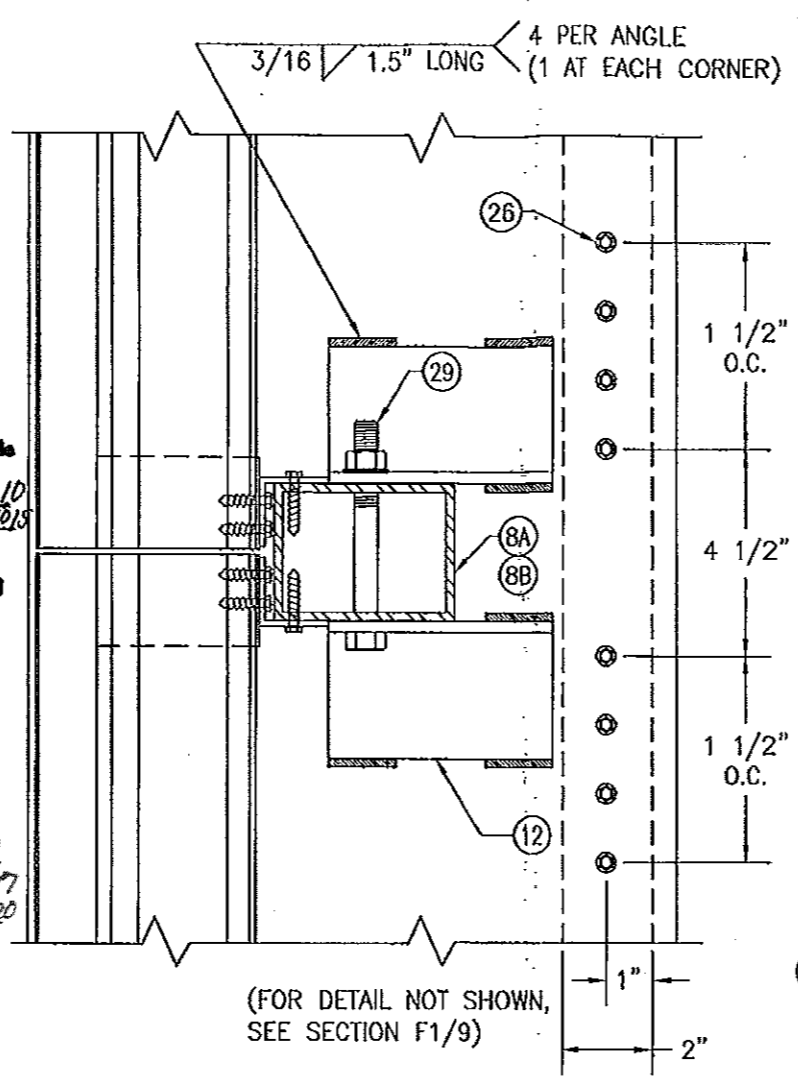


DRAWING NO.	REV.
1685	A
SHEET NO.	
8	OF 10



PRODUCT REVISED
 as complying with the Florida
 Building Code
 Acceptance No. 11-1117.10
 Expiration Date 01/26/2018
 By *[Signature]*
 Miami/Dade Product Control

PRODUCT RENEWED
 as complying with the Florida
 Building Code
 Acceptance No. 14-0513.107
 Expiration Date 01/06/2020
 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.

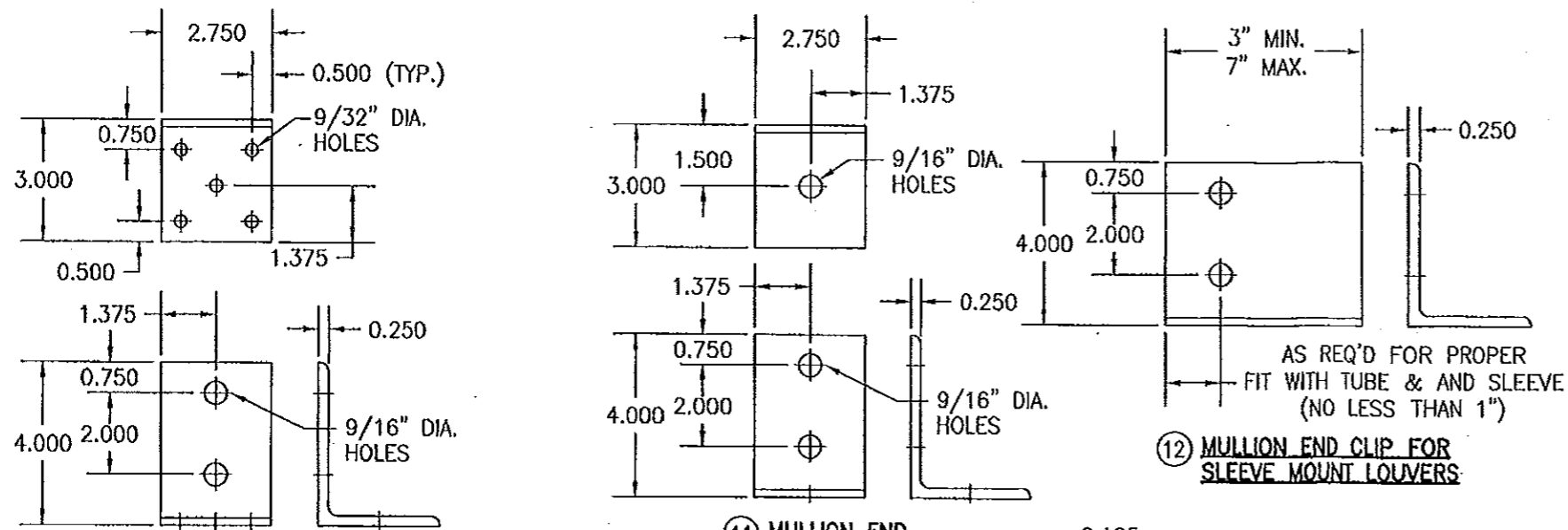
DRAWN BY: W.R.M.	CHECKED BY: W.S.
PLOT: 1-4	DATE: 07/23/09
NO.	REVISION DESCRIPTION

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

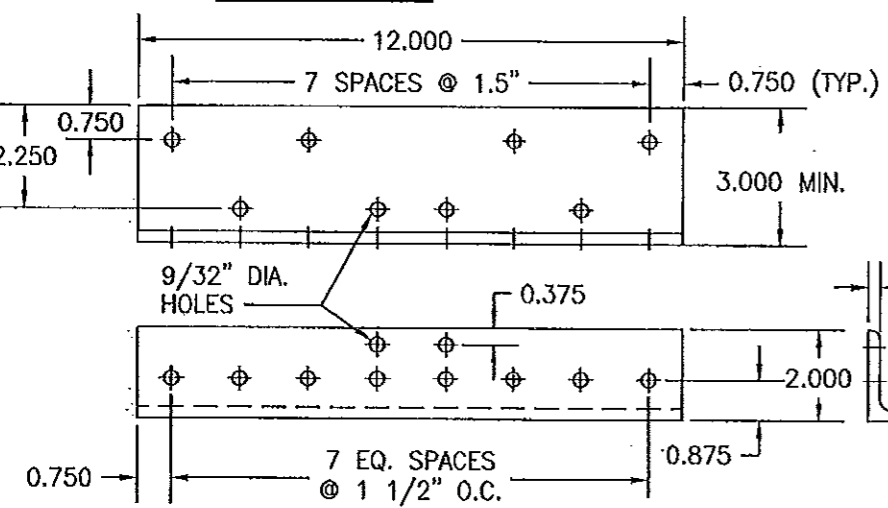


CERTIFICATION: *[Signature]*
 NOV 08 2011
 WARREN W. SCHAEFER, P.E.
 P.E. NO. 44135

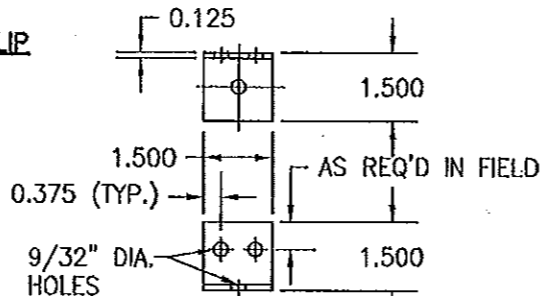


10 MULLION END INSTALLATION CLIP

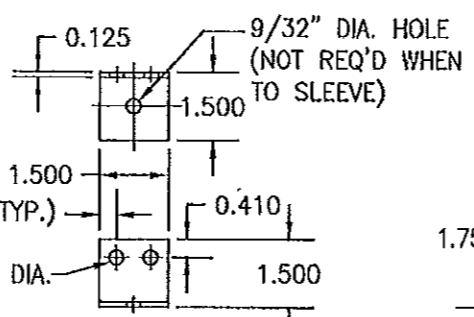
11 MULLION END INSTALLATION CLIP



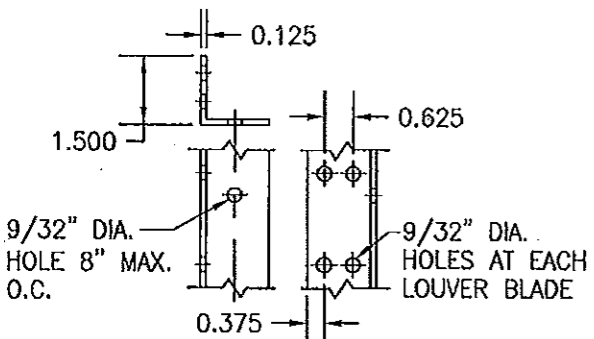
13 MULLION END INSTALLATION CLIP



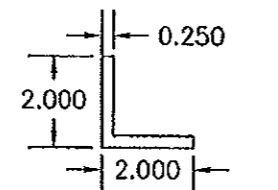
14 LOUVER JAMB TO SUBSTRATE CLIP



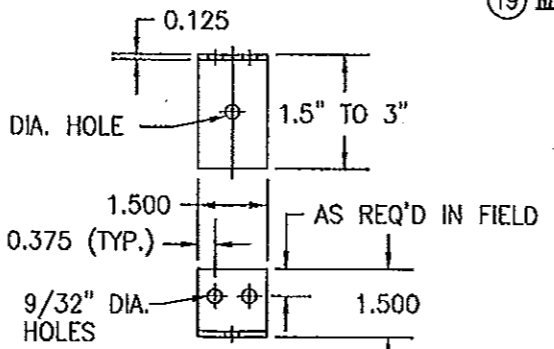
15 SLEEVE OR TUBE MULLION TO LOUVER JAMB CLIP



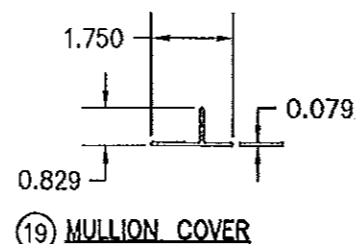
16 TUBE MULLION TO LOUVER BLADE ANGLE (ARCHITECTURAL LOUVER) (LENGTH = CONTINUOUS)



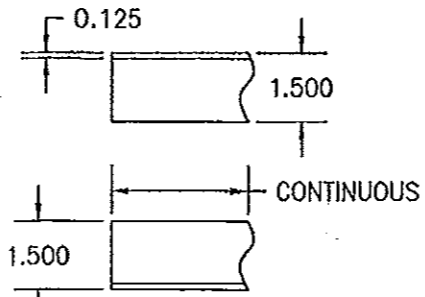
17 SLEEVE SUPPORT ANGLE (LENGTH = CONTINUOUS)



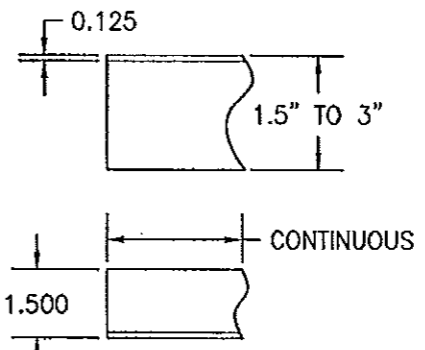
18 LOUVER JAMB TO SUBSTRATE CLIP 1.5" LEG SHALL BE SECURED TO THE LOUVER JAMB



19 MULLION COVER



20 CONTINUOUS SUPPORT ANGLE



21 CONTINUOUS SUPPORT ANGLE 1.5" LEG SHALL BE SECURED TO THE LOUVER JAMB

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

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

12 MULLION END CLIP FOR SLEEVE MOUNT LOUVERS

AS REQ'D IN FIELD

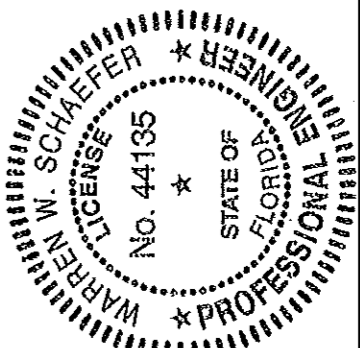
15 SLEEVE OR TUBE MULLION TO LOUVER JAMB CLIP

AS REQ'D IN FIELD

18 LOUVER JAMB TO SUBSTRATE CLIP

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

PRODUCT REVISID as complying with the Florida Building Code Acceptance No 11-1117.10 Expiration Date 2/10/2015 By Miami Dade Product Control



DRAWING TITLE: EA-52 IMPACT LOUVER SYSTEM

DRAWN BY: W.R.M. CHECKED BY: W.W.S.

PLOT: 1-4 DATE: 07/23/09

REVISION DESCRIPTION BY DATE

NO. 1

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 M. SCHAEFER P.E. NO. 44135

DRAWING NO. 1685 REV. A

SHEET NO. 10 OF 10