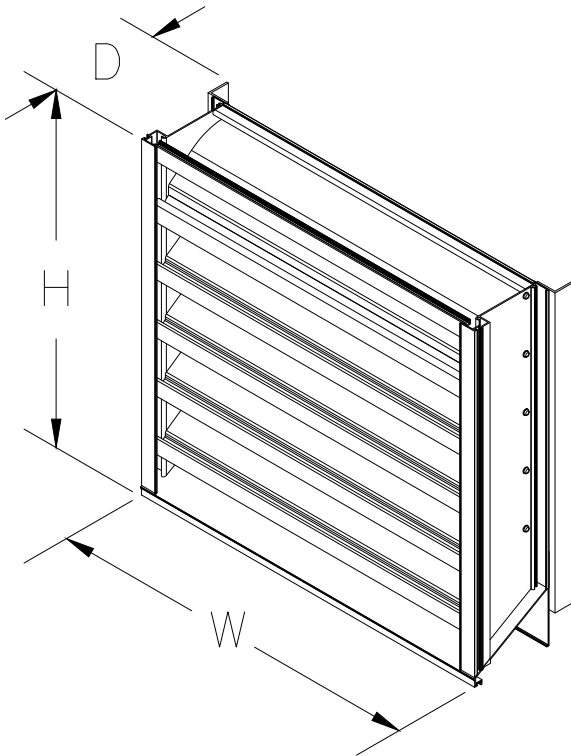


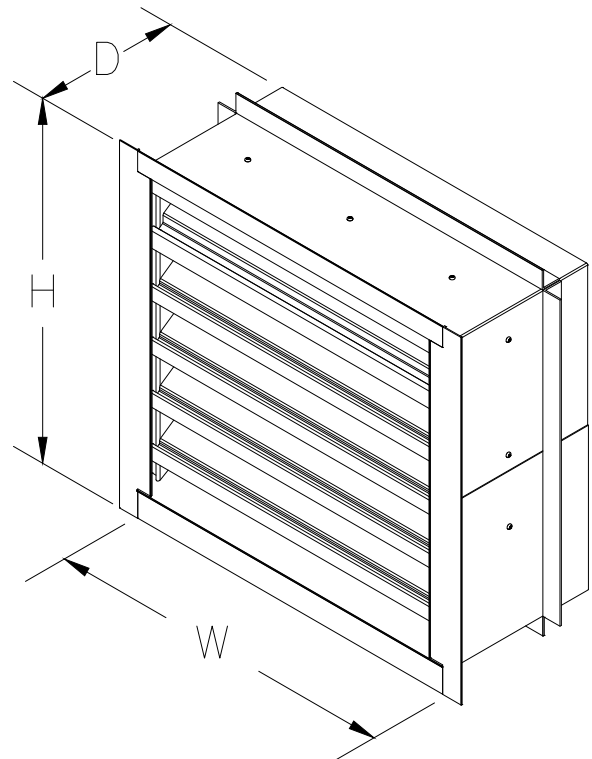
## Installation, Operation, and Maintenance Instructions

This manual is the property of the owner, and is required for future maintenance.  
Please leave it with the owner when the job is complete.

### Channel Installation



### Flange/Sleeve Installation

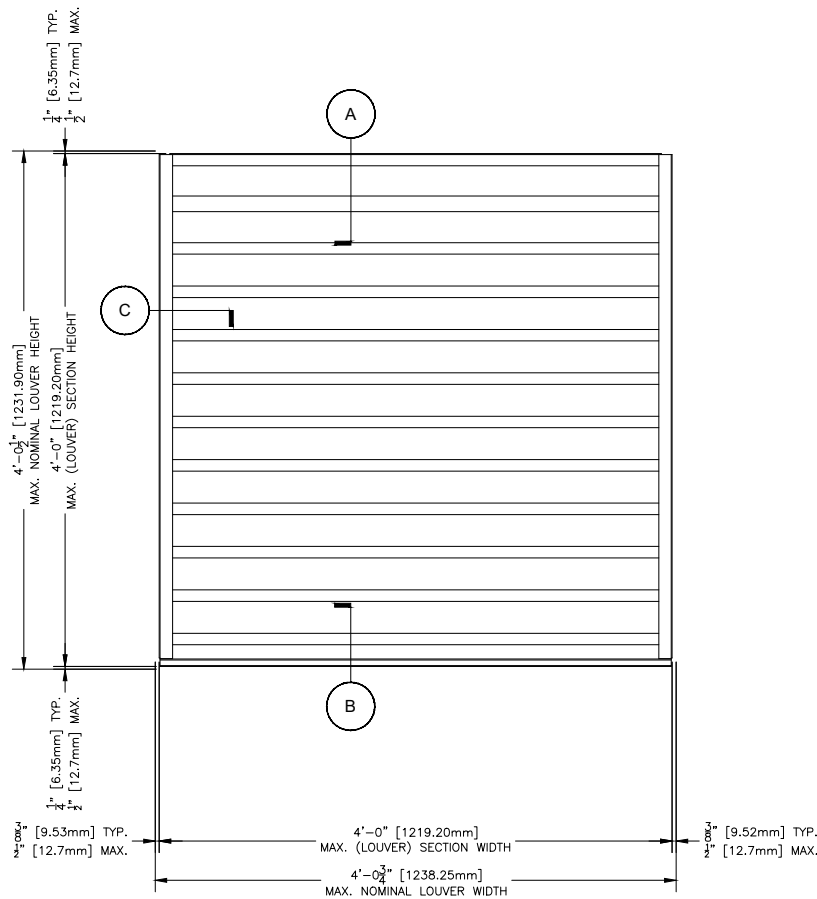


### **SAFETY WARNING:**

**Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.**

## Maximum Size and Installation Information

Model ESD-635DE is a Miami-Dade Approved and Florida Product Approved louver and must be installed in accordance with the installation instructions shown herein. Model ESD-635DE is qualified for installation within concrete/masonry, steel stud, structural steel, aluminum or wood framed building conditions. Model ESD-635DE is structurally calculated to withstand positive and negative wind-loads up to +/-150 PSF. The maximum typical rough opening height is limited to 48.50 in. and the typical rough opening width is limited to 48.75 in.



**Minimum Typical Rough Opening Size**  
12 in. W x 12 in. H

**Maximum Typical Rough Opening Size**  
48.75 in. W x 48.50 in. H

## Building Condition/Substrate Limitations

### Channel Installation

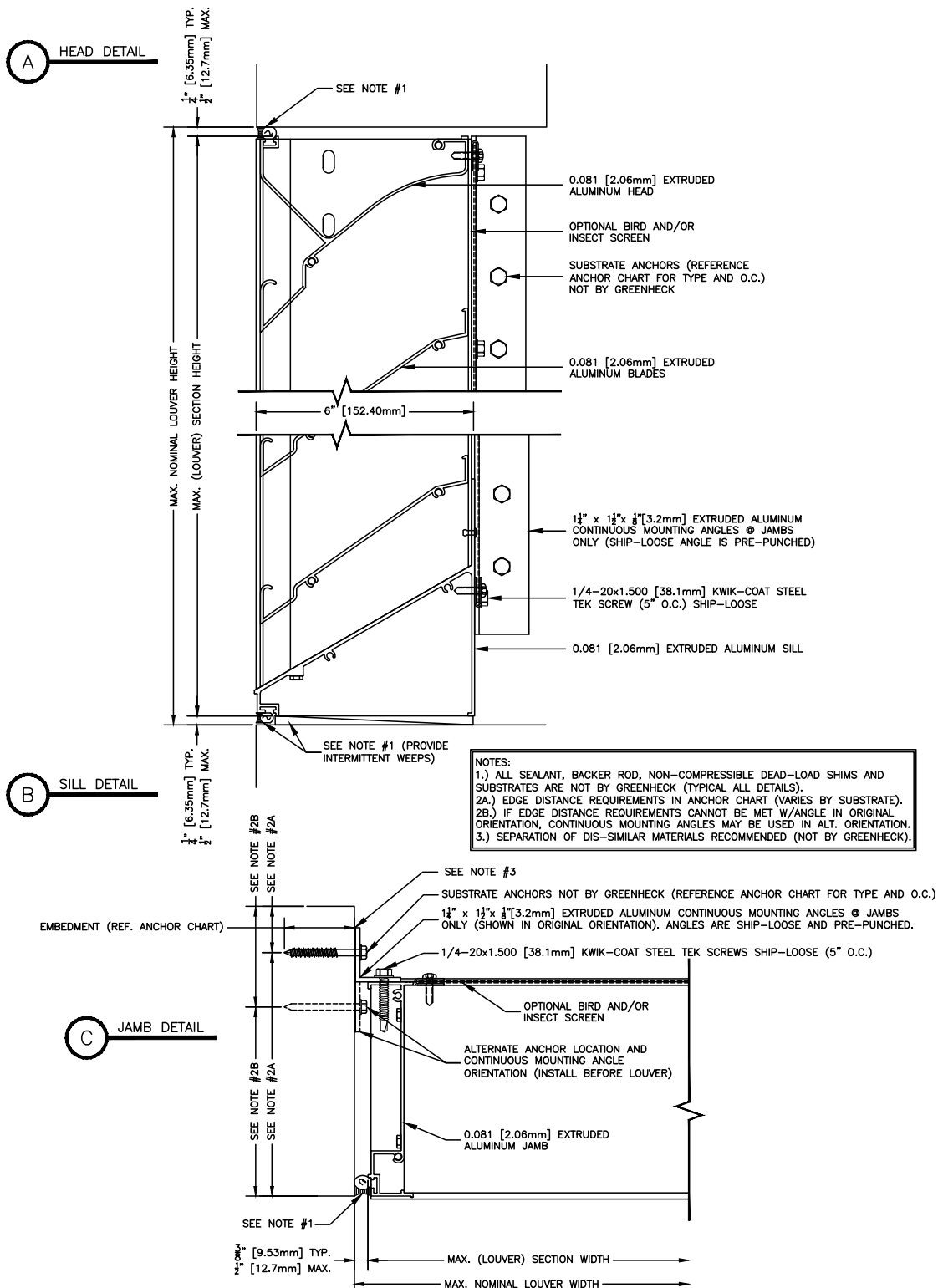
- All steel substrate should be min. 16 Ga. FY= 33 KSI
- All concrete substrate shall be min. 2000 PSI
- All concrete masonry shall be ASTM C90, Type II, grout-filled
- All wood substrate shall be G= 0.42 density or better
- All aluminum substrate shall be min 0.125 in. thick FY=16 KSI

# Installation Instructions

# ESD-635DE

## Channel Installation

Maximum Wind-load: +/-150 PSF

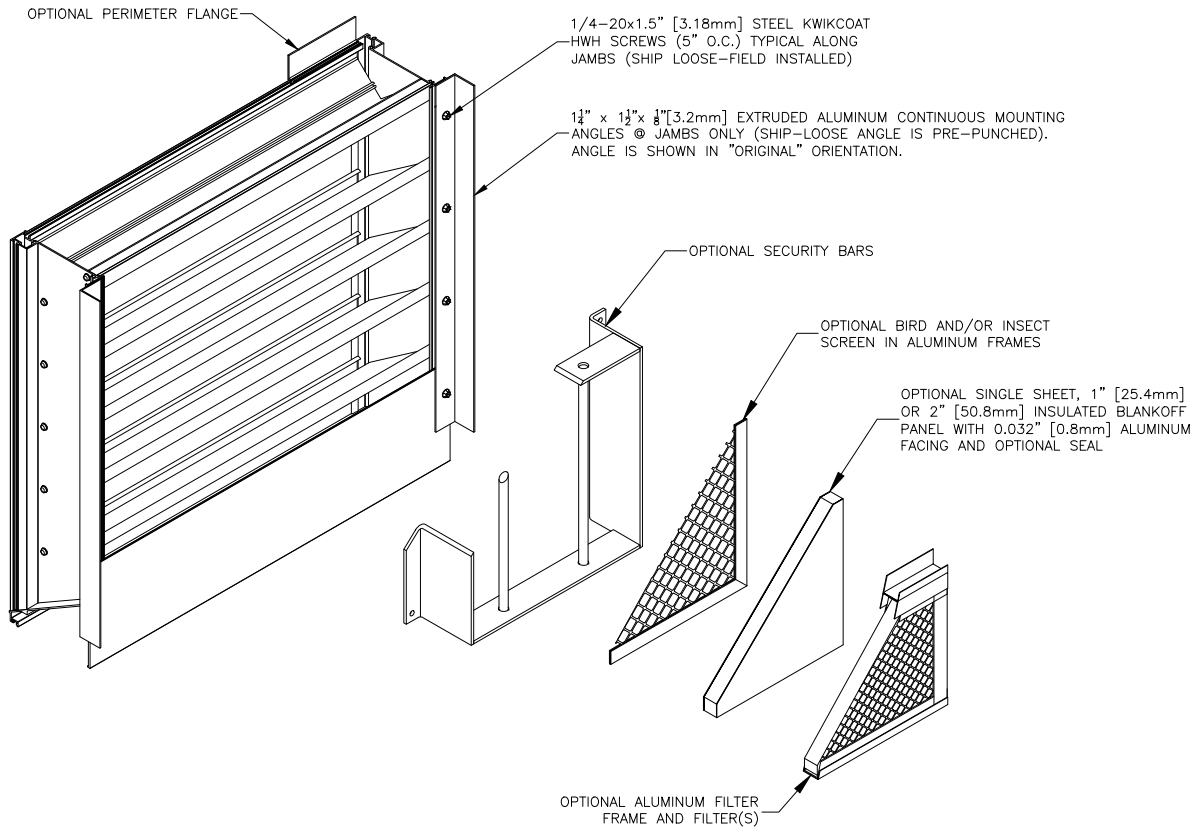


# Installation Instructions

# ESD-635DE

## Channel Installation

Maximum Wind-load: +/-150 PSF



# ANCHOR CHART

# ESD-635DE

Channel Installation

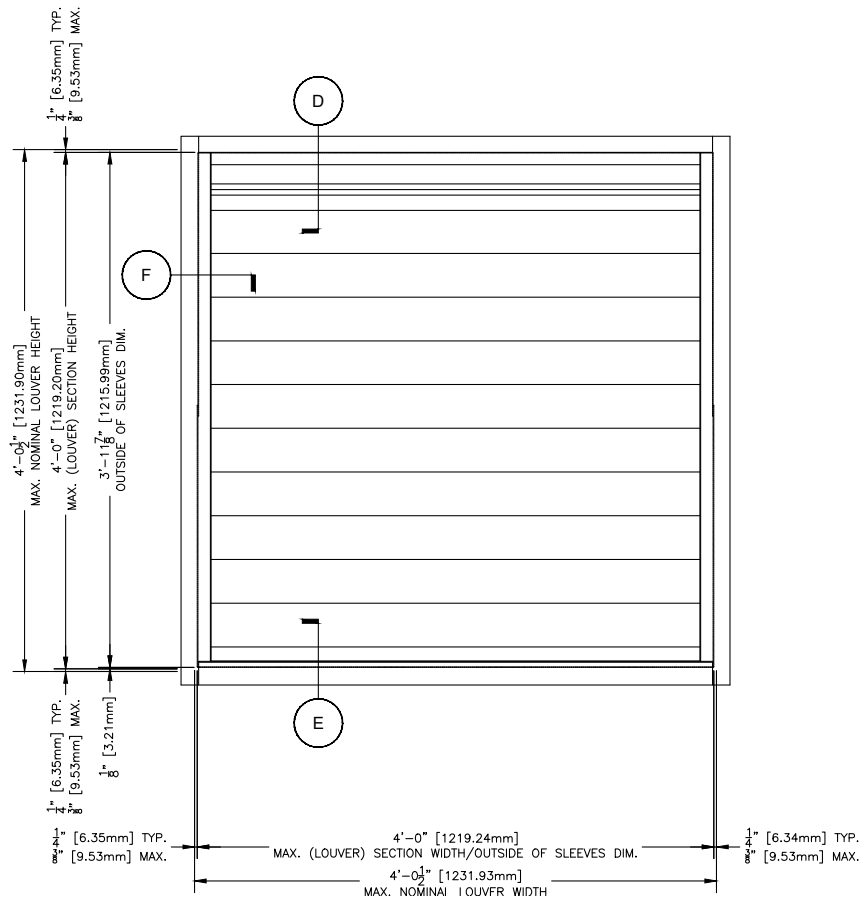
Maximum Wind-load: +/-150 PSF

SUBSTRATE AND FASTENER TABLE											
ITEM 31, SUBSTRATE			ITEM 30, SUBSTRATE FASTENER								
TYPE	THICKNESS MIN	MATERIAL MIN	TYPE (ALL FASTENERS ARE HEX HEAD STYLE)	MAT'L	DIA.	EDGE MIN	EMBED. MIN	ANCHOR SPACING	HEAD DIA. MIN	ANGLE HOLE ITEM 5, MAX	SUBSTRATE HOLE, MAX
WOOD	3	G OF 0.42	LAG SCREW, 3 INCH MIN LENGTH	*	1/4	1 1/2	23/32	4	1/2	5/16	SEE FASTENER MANUFACTURER INSTRUCTIONS
					3/8	1 1/2	23/32	6	5/8	7/16	
STEEL	16 GA (0.056)	Fy 33 KSI Fu 45 KSI	BOLT W/ NUT	*	1/4-20	5/8	0.056	8	1/2 HEAD 9/16 NUT	5/16	SEE FASTENER MANUFACTURER INSTRUCTIONS
	14 GA (0.070)		0.070				6	1/2			
	12 GA (0.099)		0.099				8				
ALUMINUM	1/8	6063-T5	BOLT W/ NUT	*	1/4-20	1/2	1/8	8	1/2 HEAD 9/16 NUT	5/16	1/4 SEE FASTENER MANUFACTURER INSTRUCTIONS
			THREAD CUTTING/TAPPING SCREW					1/2			
CONCRETE	VARIES WITH SIZE OF FASTENER USED. SEE FASTENER MANUFACTURER INSTRUCTIONS	2 KSI	BUILDEX TAPCON (BLUE, WHITE, OR 410 SS)	VARIES	1/4	1 1/2	1 1/2	4	AS MANUFACTURED	1/4	SEE FASTENER MANUFACTURER INSTRUCTIONS
						2 1/4		6			
						2 1/2		6			
		3				6					
		1 1/2				1 1/4	4				
		2				4					
		3 KSI	3	3	3	3	3	1 1/2	1 3/4	6	
								2	6		
								3	6		
		2.3 KSI	ELCO AGGRE-GATOR	300 SS	1/4	1 1/2	1 3/8	6	AS MANUFACTURED	1/4	
							1 3/4	6			
		2.9 KSI	ELCO ULTRACON SS4	410 SS	1/4	1	1 3/4	4	AS MANUFACTURED	1/4	
							2 1/2	8			
		3.4 KSI	ELCO CRETE-FLEX SS4, SMALL HEAD ELCO CRETE-FLEX SS4, FLANGED HEAD	410 SS	1/4	1	1 3/4	6	AS MANUFACTURED	1/4	
								8			
2.5 KSI	POWERS 316 STAINLESS STEEL WEDGE-BOLT	316 SS	1/4	1 1/2	1 7/8	4	AS MANUFACTURED	5/16			
						2	6				
						2 3/4	6				
						1 1/2	4				
						2	2 3/8		6		
						2 1/2	8				
2 KSI	POWERS WEDGE-BOLT PLUS	STEEL	1/4	1 1/2	1 1/2	1 1/8	AS MANUFACTURED	5/16			
						2	8				
						1 1/8	4				
						1 5/8	8				
						1 1/8	2				
						2 1/8	8				
4 KSI	2 KSI	4 KSI	3/8	1 1/2	1 1/2	1 1/8	AS MANUFACTURED	7/16			
						2	8				
						1 1/8	4				
						1 3/4	8				
GROUT FILLED CMU	NOTE 1	ELCO AGGRE-GATOR	300 SS	1/4	2	2	8	AS MANUFACTURED	1/4	SEE FASTENER MANUFACTURER INSTRUCTIONS	
	NOTE 2	ELCO ULTRACON SS4	410 SS	1/4	2	1	2				
	NOTE 3	POWERS WEDGE-BOLT PLUS	STEEL	3/8	2	2 1/2	8				

NOTE \*: LAG SCREWS SHALL HAVE STRENGTHS OF MINIMUM GRADE 1 STEEL, OTHER BOLT AND SCREWS SHALL HAVE STRENGTHS OF MINIMUM GRADE 2 STEEL.  
 NOTE 1: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6" WIDE, CMU CONFORMING TO ASTM C-90 FILLED WITH 4,747 KSI GROUT.  
 NOTE 2: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6" WIDE, 2 KSI CMU CONFORMING TO ASTM C-90 WITH 1624 KSI GROUT.  
 NOTE 3: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6" WIDE, GRADE N, TYPE II, LIGHT-WEIGHT/MEDIUM-WEIGHT/NORMAL-WEIGHT CMU CONFORMING TO ASTM C-90. MORTAR MUST BE TYPE N.

### Maximum Size and Installation Information

Model ESD-635DE is a Miami-Dade Approved and Florida Product Approved louver and must be installed in accordance with the installation instructions shown herein. Model ESD-635DE is qualified for installation within any substrate capable of withstanding imposed loads. Model ESD-635DE is structurally calculated to withstand positive and negative wind-loads up to +/-150 PSF. The maximum typical rough opening height is limited to 48.50 in. and the typical rough opening width is limited to 48.5 in.



**Minimum Typical Rough Opening Size**  
12 in. W x 12 in. H

**Maximum Typical Rough Opening Size**  
48.50 in. W x 48.50 in. H

### Building Condition/Substrate Limitations

#### Flange/Sleeve Installation

- Any substrate acceptable that is capable of withstanding imposed loads.

