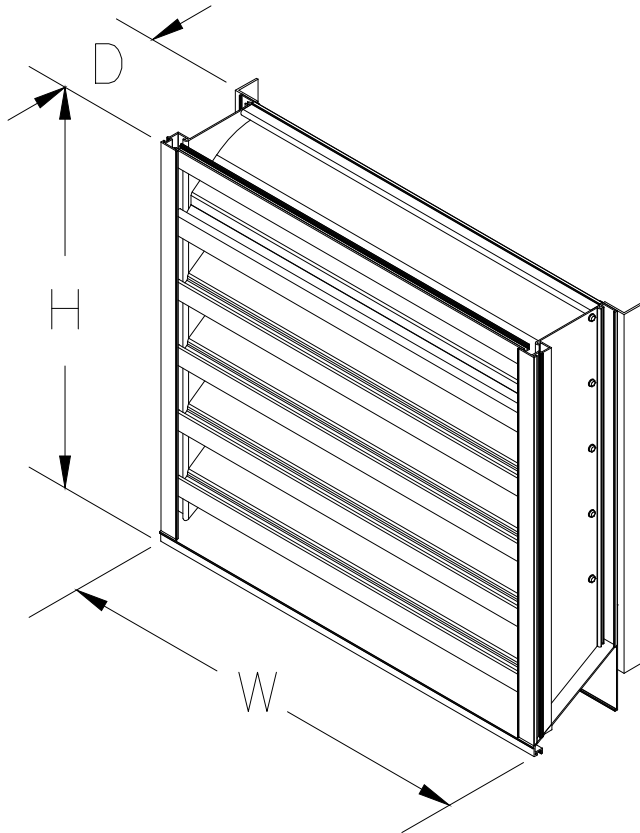


## Installation, Operation and Maintenance Manual

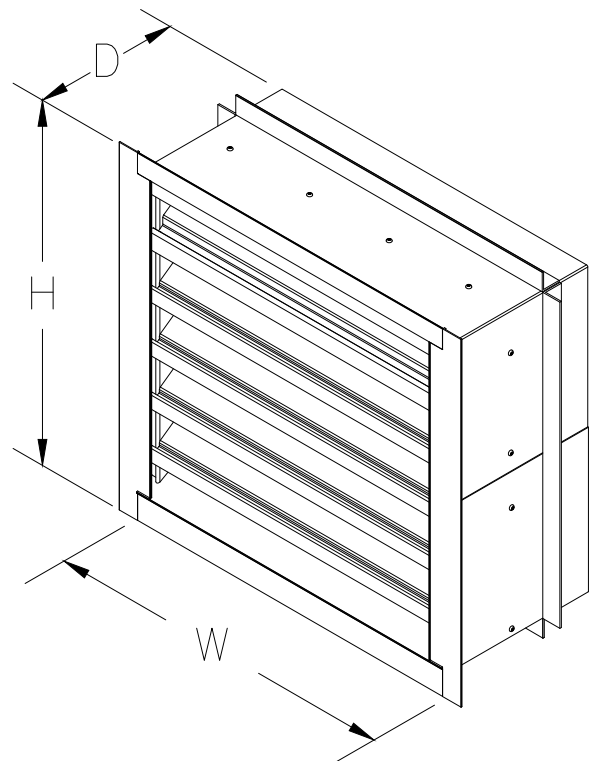
Please read and save these instructions for future reference. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with these instructions will result in voiding of the product warranty and may result in personal injury and/or property damage.

Maximum Wind-load: +/-150 PSF

Channel Installation



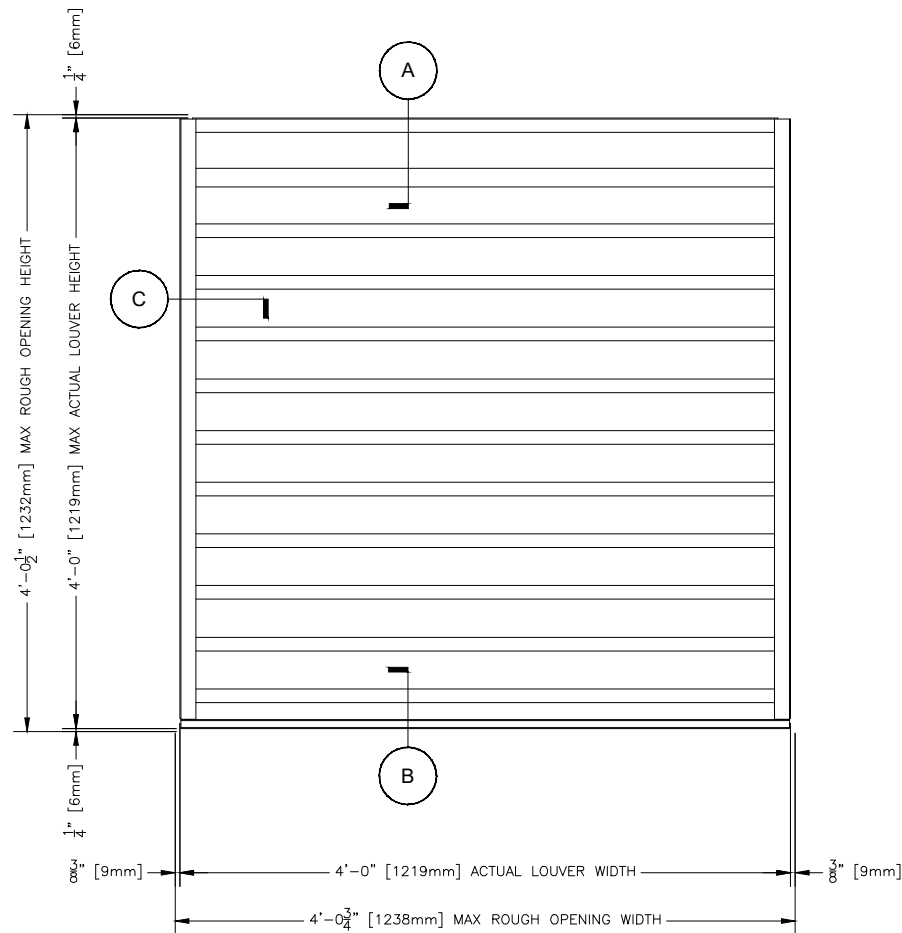
Flange/Sleeve Installation



## Channel Installation

### 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 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 7 in. H

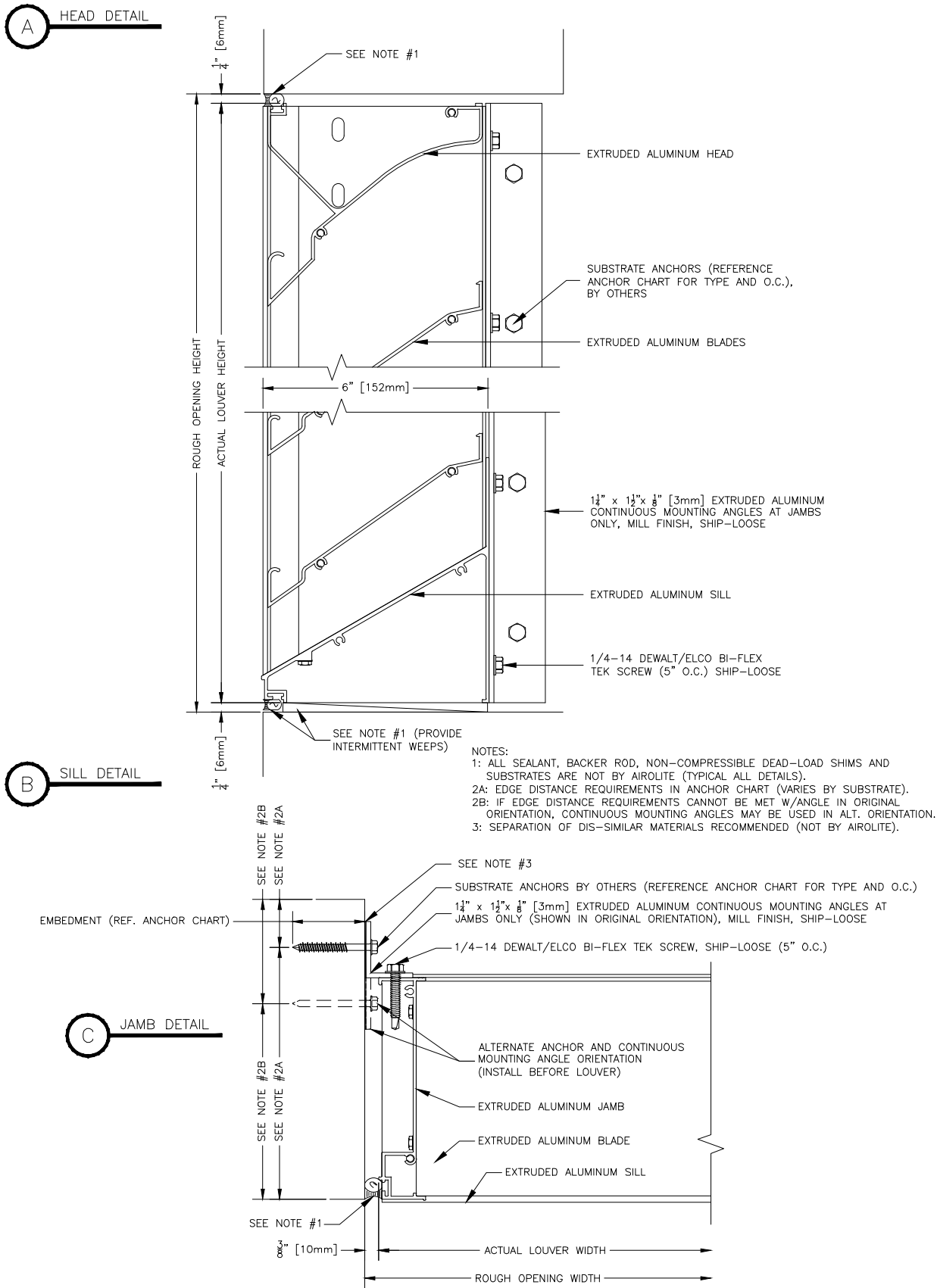
**Maximum Typical  
Rough Opening Size**  
48.75 in. W x 48.50 in. H

## Building Condition/Substrate Limitations

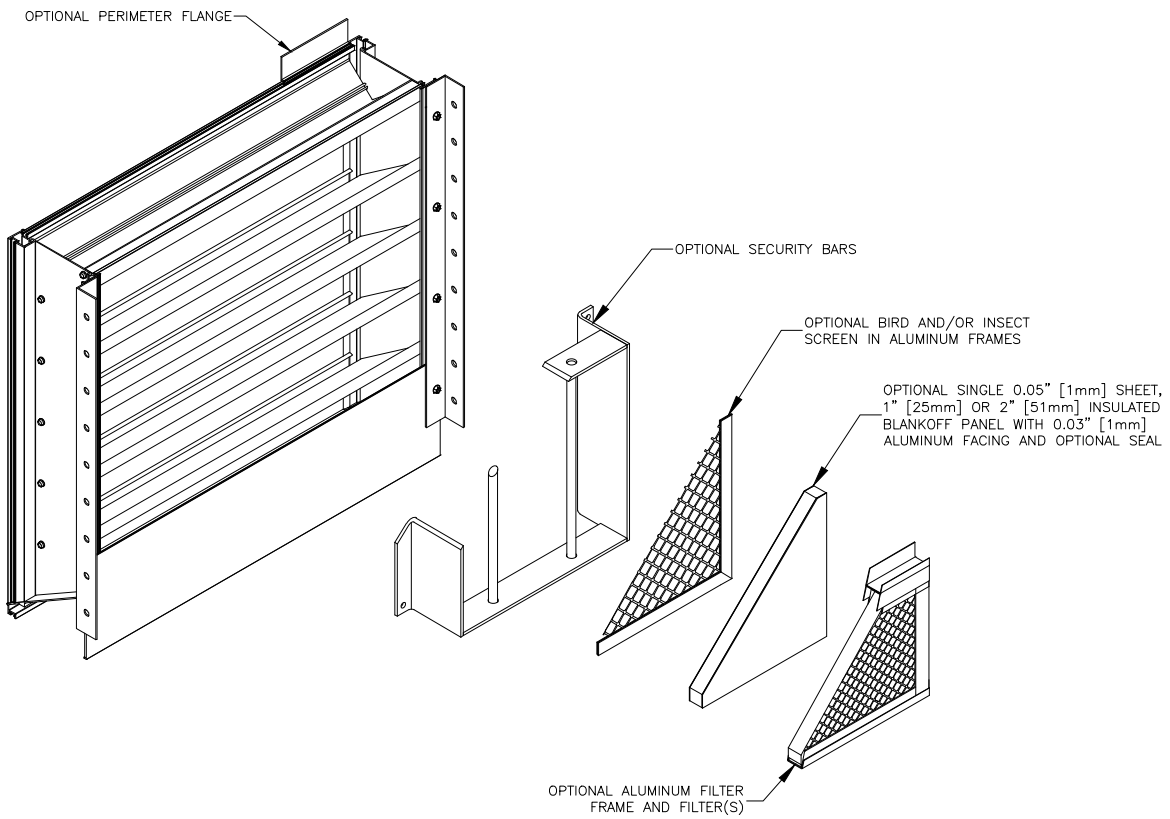
### Channel Installation

- 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

Channel Installation



## Channel Installation



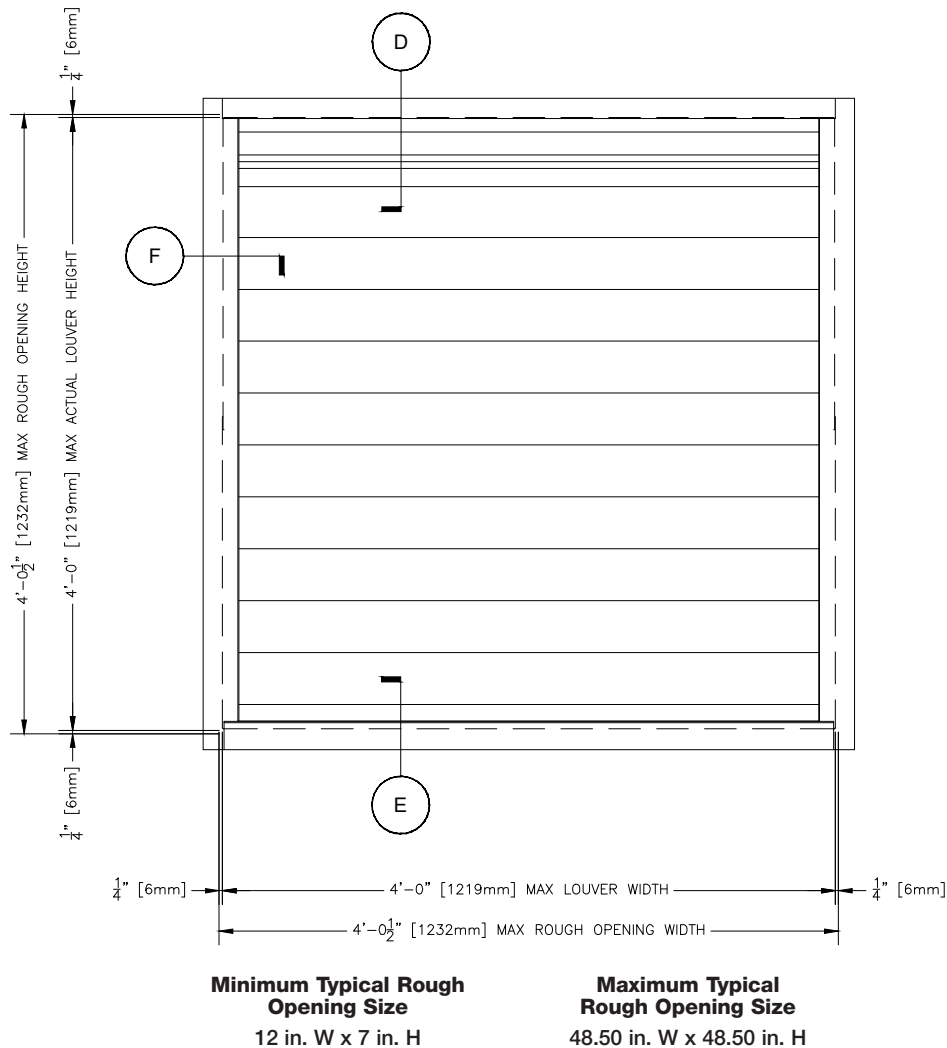
## Channel Installation

SUBSTRATE AND SUBSTRATE FASTENER TABLE																				
SUBSTRATE			SUBSTRATE FASTENER																	
TYPE	THICKNESS MIN	MATERIAL MIN	TYPE (ALL FASTENERS ARE HEX HEAD STYLE)	MAT'L	DIA.	EDGE MIN	EMBED. MIN	SPACING MAX *	SPACING MIN *	HEAD DIA. MIN	ANGLE HOLE ITEM 5, MAX	SUBSTRATE HOLE, MAX								
WOOD	3	G OF 0.42	LAG SCREW, 3 INCH MIN LENGTH	300 SS	1/4 3/8	1 1/2 1 1/2	23/32 23/32	5 3/4 6 1/4	3	1/2 5/8	5/16 7/16	SEE FASTENER MANUFACTURER INSTRUCTIONS								
STEEL	16 GA (0.056)	Fy 33 KSI Fu 45 KSI	1/4-20 BOLT W/ NUT	300 SS	1/4	5/8	0.056	8 5 5/8	1	1/2 HEAD 9/16 NUT	5/16	5/16								
	1/4-14 DEWALT/ELCO BI-FLEX SCREW, 300 SS HEAD & SHANK W/ COATED STEEL TIP		MULTI	0.070			6 3/4	1/2		SEE FASTENER MANUFACTURER INSTRUCTIONS										
				0.099			8													
ALUMINUM	1/8	6063-T5	1/4-20 BOLT W/ NUT	300 SS	1/4	1/2	1/8	8 7	1	1/2 HEAD 9/16 NUT	5/16	1/4								
			1/4-14 DEWALT/ELCO BI-FLEX SCREW, 300 SS HEAD & SHANK W/ COATED STEEL TIP	MULTI				1/2		SEE FASTENER MANUFACTURER INSTRUCTIONS										
CONCRETE	VARIES WITH SIZE OF FASTENER USED. SEE FASTENER MANUFACTURER INSTRUCTIONS	2 KSI	BUILDEX TAPCON, STAINLESS	410 SS	1/4	1 1/2 2 1/8	1 1/2	4 6	2	AS MANUFACTURED	1/4	SEE FASTENER MANUFACTURER INSTRUCTIONS								
		3 KSI				1/4	1 1/2 3 1 1/2	1 1/4 6												
							2.3 KSI	DEWALT/ELCO AGGRE-GATOR					300 SS	1/4	1 1/2	1 3/8	6	3	1/4	
		2.9 KSI	DEWALT/ELCO ULTRACON SS4	410 SS	1/4	1 2 1/2	1 3/4	4 8	3		1/4									
		3.4 KSI	DEWALT/ELCO CRETE-FLEX SS4, SMALL HEAD	410 SS	1/4	1	1 3/4	6 8	6		1/4									
			DEWALT/ELCO CRETE-FLEX SS4, FLANGED HEAD																	
		2.5 KSI	DEWALT/POWERS 316 STAINLESS STEEL WEDGE-BOLT	316 SS	1/4	1 3/8 2	1 7/8	4 6	1		5/16									
						3/8	1 1/8 1 5/8 2 3/8	2 3/8			4 6 8		7/16							
					NOTE #: MANUFACTURER MAY PROVIDE PILOT HOLES IN MOUNTING ANGLE AT 2" O.C. FOR SUBSTRATE ANCHOR. INSTALLER SHALL USE HOLES WHICH DO NOT VIOLATE SHOWN MIN & MAX SPACING.															
					NOTE 1: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6" WIDE, CMU CONFORMING TO ASTM C-90 FILLED WITH 4,747 PSI GROUT.															
		NOTE 2: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6" WIDE, 2 KSI CMU CONFORMING TO ASTM C-90 FILLED WITH 1624 PSI GROUT.																		
NOTE 3: CONCRETE MASONRY (CMU) SHALL BE > THE FOLLOWING: 6" WIDE, CONFORMING TO ASTM C-90 FILLED WITH 3,350 PSI GROUT.																				

## Flange/Sleeve Installation

### 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 with Flange/Sleeve is qualified for installation into any substrate that can withstand the loads transferred by the louver, including but not limited to concrete/masonry, aluminum, steel stud, structural steel 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 48.5 in.

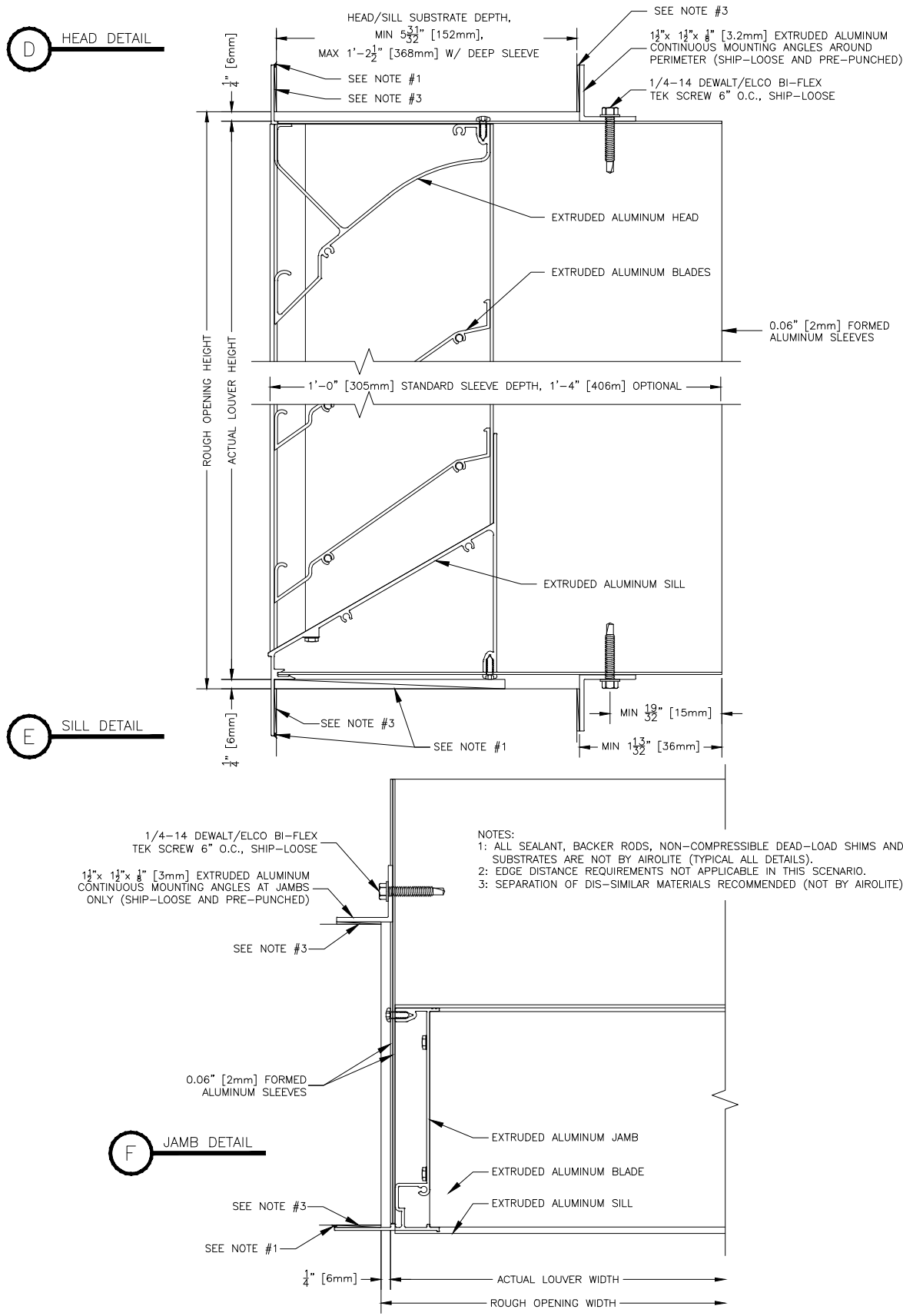


## Building Condition/Substrate Limitations

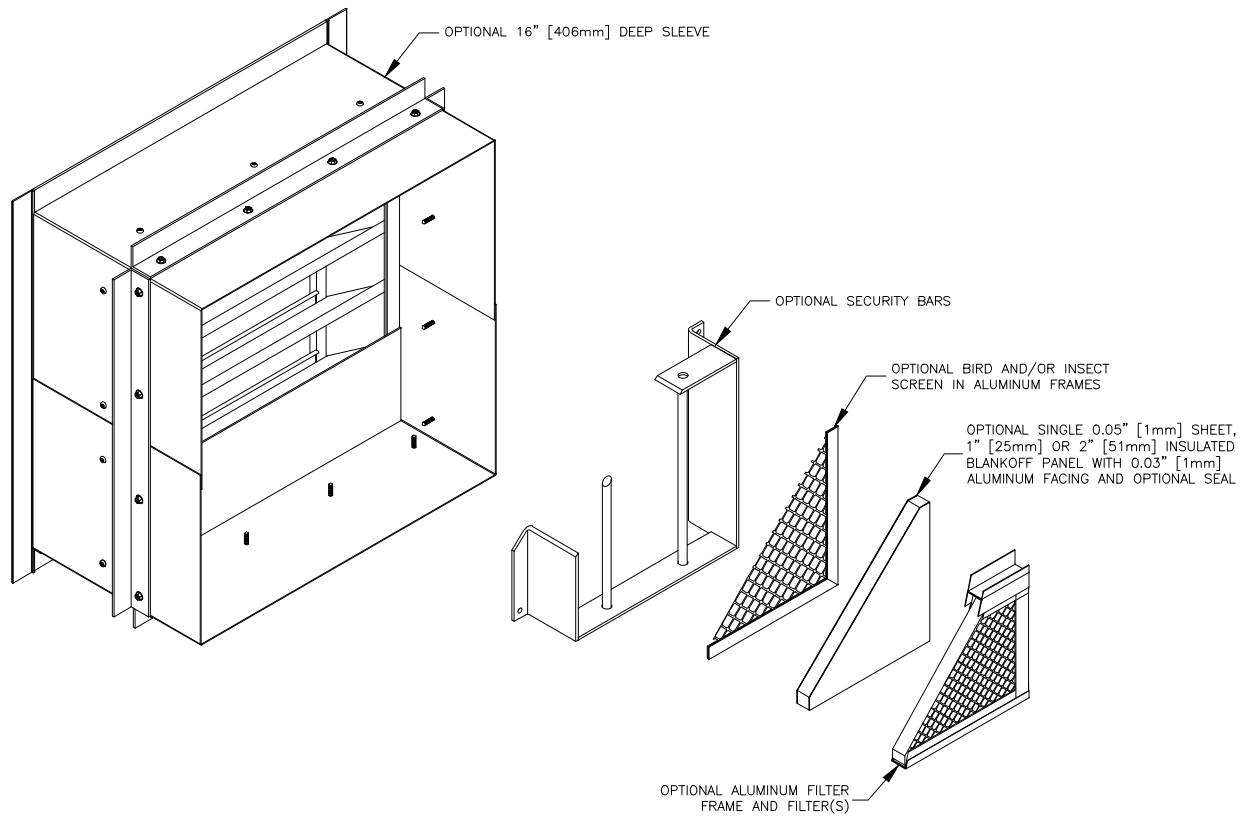
### Flange/Sleeve Installation

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

Flange/Sleeve Installation



## Flange/Sleeve Installation



## Our Commitment

*As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.*

Product warranties can be found online at [Greenheck.com](http://Greenheck.com), either on the specific product page or in the literature section of the website at [Greenheck.com/Resources/Library/Literature](http://Greenheck.com/Resources/Library/Literature).

