

## Florida Product Approved Drainable Blade Louver

### Application and Design

ESD-635X is a Florida Product Approved drainable blade louver designed to protect air intake and exhaust openings in building exterior walls. Design incorporates drain gutters in the head member and horizontal blades to channel water to the louver side jambs where water is further channeled through vertical downspouts and out at the sloped louver sill. The ESD-635X is an **AMCA CERTIFIED LOUVER** enabling designers to select and apply with confidence. ESD-635X is qualified per the Uniform Static Air Pressure Test (ASTM E330/TAS 202). With optional welded construction ESD-635X is also qualified per the Large Missile Impact Test (ASTM E1996/TAS 201) and the Cyclic Wind-Loading Test (TAS 203). Qualified for wind-loads up to 200 PSF. Refer to UL published certification for size and design load rating restrictions.

### Standard Construction

- Frame** . . . . . Heavy gauge extruded 6063-T5 aluminum, 6 in. x 0.081 in. nominal wall thickness
- Blades** . . . . . Drainable style, heavy gauge extruded 6063-T5 aluminum, 0.081 in. nominal wall thickness, positioned at 35° angles on approximately 4 in. centers
- Construction** . . . Mechanically fastened
- Birdscreen** . . . . 3/4 in. x 0.051 in. flattened expanded aluminum in removable frame, inside mount (rear)
- Finish** . . . . . Mill

**Anchor Clips** . . . Factory attached (mill finish)

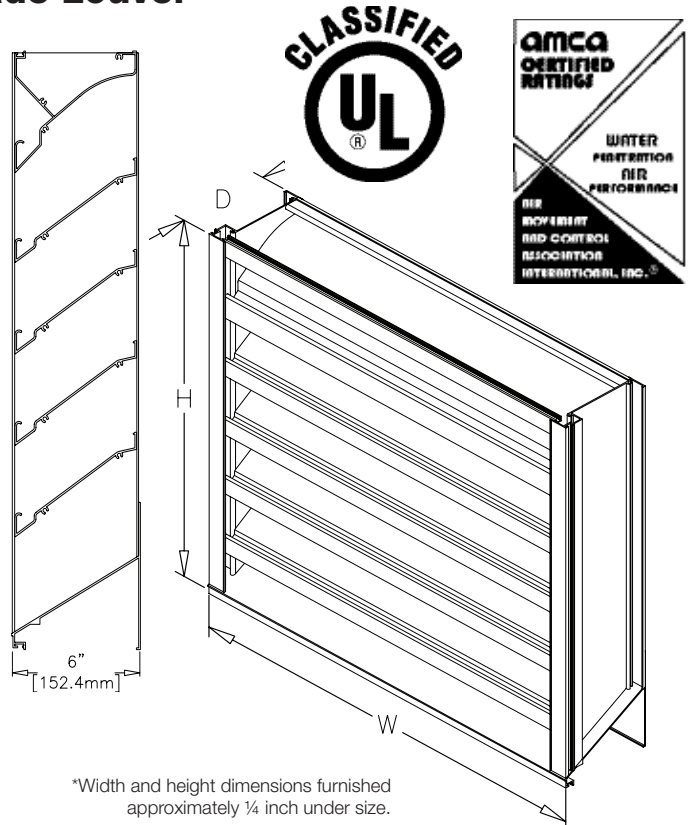
**Minimum Size** . . 12 in. W x 12 in. H

**Maximum Single**

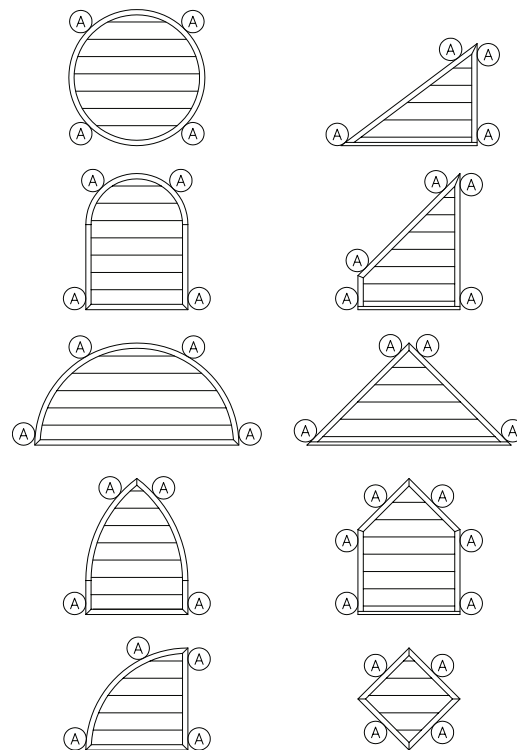
**Section Size** . . . 84 in. W x 144 in. H. or 120 in. W x 84 in. H.

### Options (at additional cost)

- A variety of bird and insect screens
- Blank off panel
- Clip angles
- Extended sill
- Filter rack
- Flanged frame
- Security bars
- Welded construction (*Large Missile Impact Qualified*)
- 0.125 in. nominal wall thickness
- Qualified shapes (*only rectangular shapes maintain AMCA licensed performance data*)
- A variety of architectural finishes including:
  - Clear anodize
  - Integral color anodize
  - Baked enamel paint
  - Kynar paint



### Qualified Shapes



Ⓐ Anchor points

# PERFORMANCE DATA


# ESD-635X

Florida Product Approval No.: FL6876.4

UL Classified: R25119

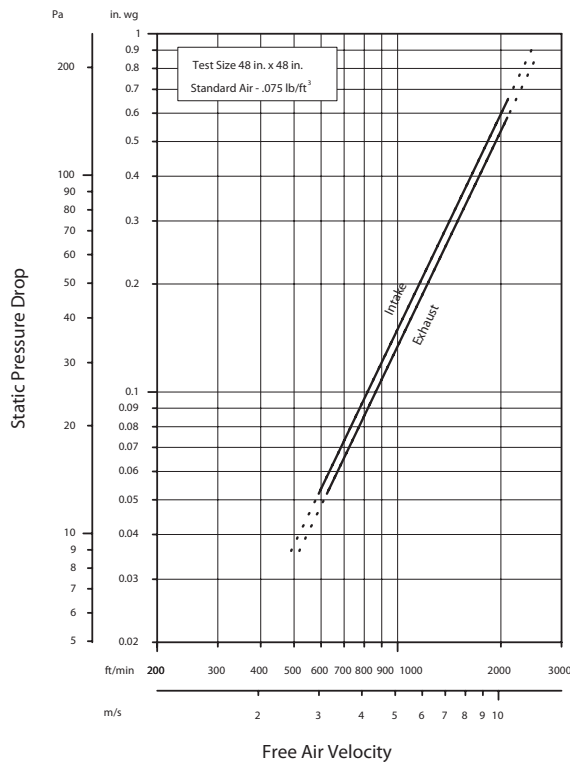
## Free Area Chart (Sq. ft.)

Louver Height Inches	Louver Width Inches															
	12	18	24	36	42	48	60	66	72	84	90	96	108	114	120	
12	0.19	0.32	0.44	0.69	0.82	0.94	1.16	1.29	1.41	1.66	1.79	1.91	2.13	2.26	2.38	
24	0.77	1.27	1.77	2.77	3.27	3.76	4.64	5.14	5.64	6.63	7.13	7.63	8.51	9.01	9.50	
30	1.05	1.73	2.41	3.77	4.45	5.13	6.32	7.01	7.69	9.05	9.73	10.41	11.60	12.28	12.96	
42	1.62	2.67	3.71	5.81	6.86	7.91	9.74	10.79	11.84	13.94	14.99	16.03	17.87	18.92	19.97	
48	1.92	3.17	4.42	6.91	8.16	9.41	11.59	12.84	14.09	16.58	17.83	19.08	21.26	22.51	23.75	
60	2.49	4.10	5.71	8.94	10.55	12.16	14.98	16.59	18.21	21.43	23.04	24.66	27.48	29.09	30.70	
66	2.75	4.53	6.32	9.88	11.67	13.45	16.57	18.36	20.14	23.71	25.49	27.27	30.40	32.18	33.96	
78	3.31	5.46	7.61	11.91	14.06	16.21	19.98	22.13	24.28	28.58	30.73	32.88	36.64	38.79	40.94	
84	3.62	5.96	8.31	13.00	15.35	17.69	21.80	24.15	26.49	31.19	33.53	35.88	39.98	42.33	44.68	
96	4.18	6.90	9.61	15.04	17.75	20.46	25.21	27.92	30.64	36.06	38.78	41.49	46.24	48.95	51.66	
102	4.44	7.33	10.21	15.98	18.86	21.74	26.79	29.67	32.55	38.32	41.20	44.09	49.13	52.01	54.90	
114	5.01	8.26	11.51	18.01	21.26	24.51	30.20	33.45	36.70	43.20	46.45	49.70	55.39	58.64	61.89	
120	5.31	8.76	12.21	19.10	22.55	26.00	32.03	35.48	38.92	45.82	49.27	52.71	58.74	62.19	65.64	
132	5.88	9.69	13.51	21.14	24.95	28.77	35.44	39.26	43.07	50.70	54.51	58.33	65.00	68.82	72.63	
138	6.17	10.17	14.14	22.18	26.18	30.18	37.19	41.19	45.19	53.20	57.20	61.20	68.21	72.21	76.21	
144	6.45	10.63	14.81	23.17	27.36	31.4	38.85	43.04	47.22	55.58	59.76	63.95	71.26	74.50	79.63	



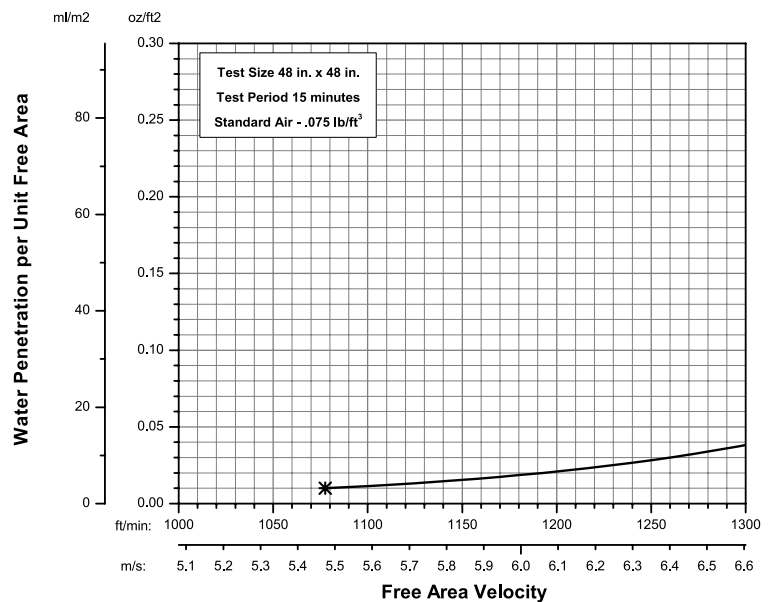
Greenheck Fan Corporation certifies that the ESD-635X louvers shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and water penetration ratings.

## Airflow Resistance (Standard Air - .075 lb/ft<sup>3</sup>)



Model ESD-635X resistance to airflow (pressure drop) varies depending on louver application (air intake or air exhaust). Free area velocities (shown) are higher than average velocity through the overall louver size. See louver selection information.

## Water Penetration (Standard Air - .075 lb/ft<sup>3</sup>)



The AMCA Water Penetration Test provides a method for comparing various louver models and designs as to their efficiency in resisting the penetration of rainfall under specific laboratory test conditions. The beginning point of water penetration is defined as that velocity where the water penetration curve projects through .01 oz. of water (penetration) per sq. ft. of louver free area. **\*The beginning point of water penetration for Model ESD-635X is 1077 fpm free area velocity.** These performance ratings do not guarantee a louver to be weather-proof or stormproof and should be used in combination with other factors including good engineering judgement in selecting louvers.



# INSTALLATION DETAILS

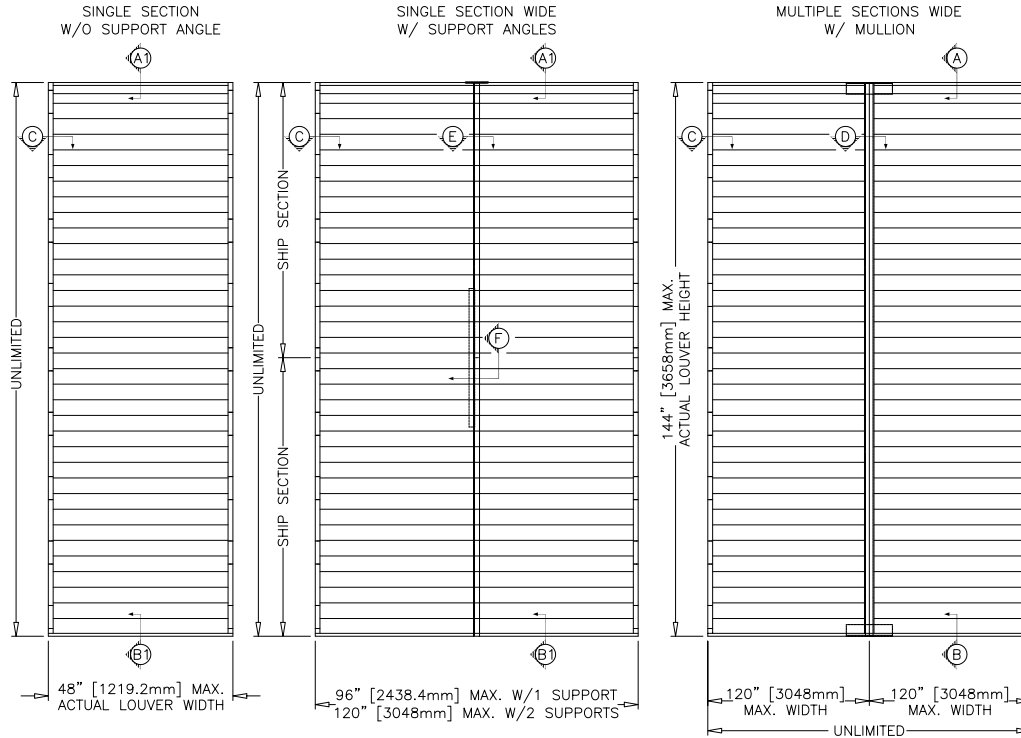
# ESD-635X

Florida Product Approval No.: FL6876.4

UL Classified: R25119

## Maximum Size and Installation Information

Model ESD-635X is a Florida Product Approved louver and must be installed in accordance with the installation instructions shown herein. Model ESD-635X is qualified for installation within concrete/masonry, steel stud, structural steel or wood framed building conditions. Model ESD-635X is structurally calculated to withstand positive and negative wind-loads up to 200 PSF. The louver section size will determine the actual maximum wind-load that the louver sections will withstand. The maximum single section size can be either 84 in. W x 144 in. H or 120 in. W x 84 in. H. The maximum opening width may be unlimited as multiple sections may be installed side by side in accordance with installation instructions.



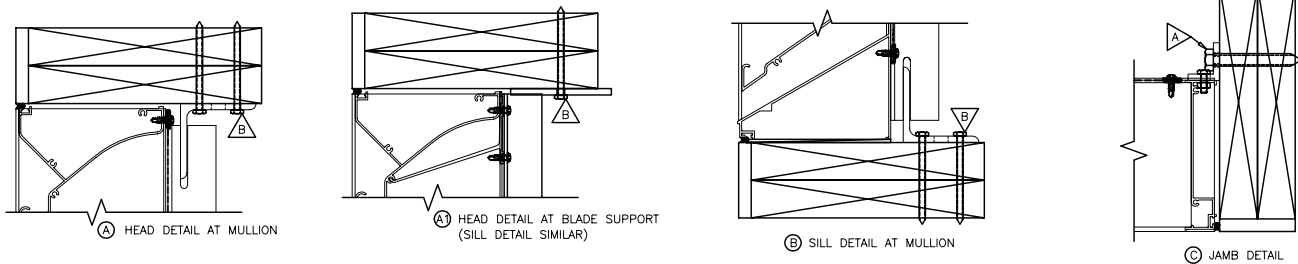
### Minimum Single Section Size

12 in. W x 12 in. H

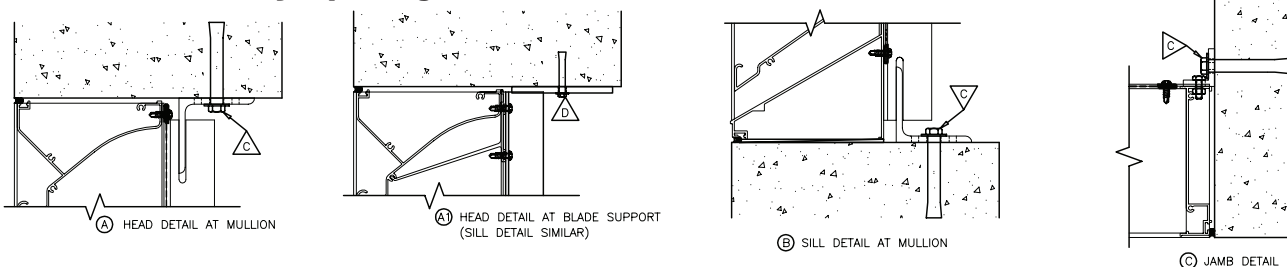
### Maximum Single Section Size

84 in. W x 144 in. H. or  
120 in. W x 84 in. H.

## Wood Opening



## Concrete/Masonry Opening



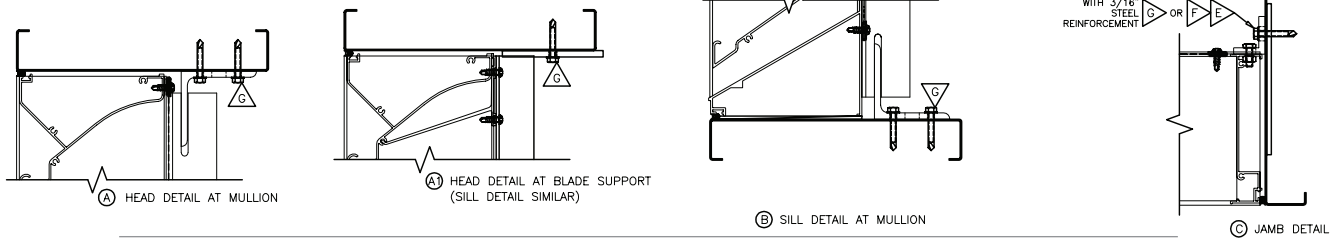
# INSTALLATION DETAILS

# ESD-635X

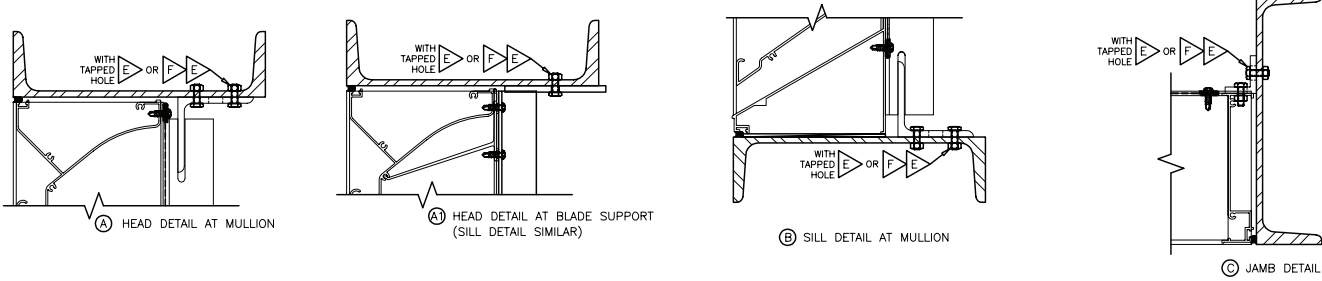
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## Steel Stud Opening



## Structural Steel Opening

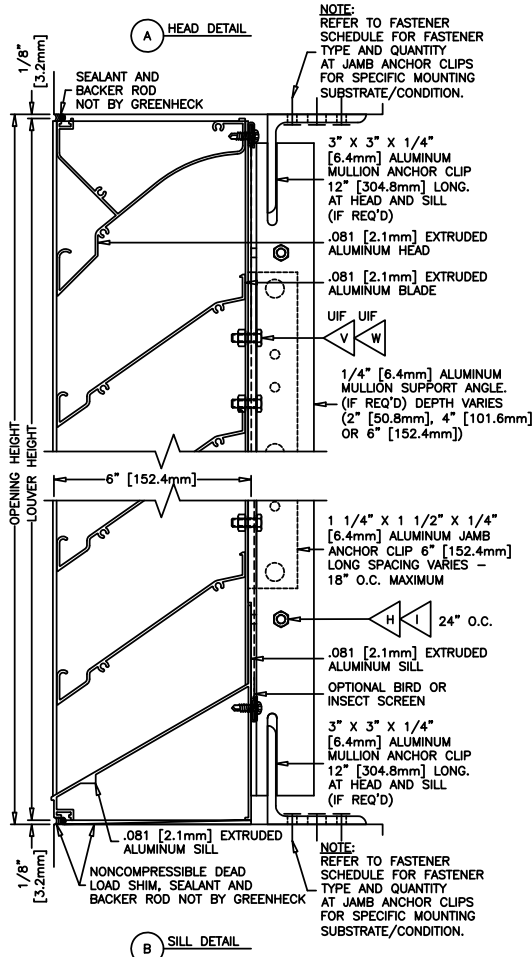


FASTENER SCHEDULE (FIELD INSTALLED - NOT BY GREENHECK)							
MOUNTING SUBSTRATE	FASTENER TYPE	DESCRIPTION	ANCHOR CLIP LOCATION	QUANTITY	MIN. EMBED.	MIN. EDGE DIST.	MIN. SPACING
WOOD	A	1/2" DIA. LAG SCREW	JAMB	2 PER CLIP	3"	2 1/2"	3"
WOOD	B	1/4" DIA. LAG SCREW	VERT. MULLION (HEAD/SILL)	12 PER CLIP	3"	1/2"	1 1/2"
WOOD	B	1/4" DIA. LAG SCREW	SUPPORT ANGLE SHIM @ HEAD/SILL	2 PER SHIM	3"	1/2"	1 1/2"
CONCRETE	C	1/2" DIA. SLEEVE ANCH.	JAMB	2 PER CLIP	3"	3"	5"
CONCRETE	C	1/2" DIA. SLEEVE ANCH.	VERT. MULLION (HEAD/SILL)	3 PER CLIP	3"	3"	5"
CONCRETE	D	1/4" DIA. SLEEVE ANCH.	SUPPORT ANGLE SHIM @ HEAD/SILL	2 PER SHIM	1 1/2"	1 1/2"	2 1/2"
MASONRY BLOCK	C	1/2" DIA. SLEEVE ANCH.	JAMB	2 PER CLIP	1 1/2"	3"	5"
MASONRY BLOCK	C	1/2" DIA. SLEEVE ANCH.	VERT. MULLION (HEAD/SILL)	3 PER CLIP	1 1/2"	3"	5"
MASONRY BLOCK	D	1/4" DIA. SLEEVE ANCH.	SUPPORT ANGLE SHIM @ HEAD/SILL	2 PER SHIM	1 1/2"	1 1/2"	2 1/2"
STEEL STUD	E & F	1/4" DIA. BOLT & NUT	JAMB	2 PER CLIP	THRU BOLT	1/2"	1"
STEEL STUD (3/16" STEEL REINFORCED)	G	1/4" DIA. SCREW	JAMB	2 PER CLIP	FULL	1/2"	1"
STEEL STUD	G	1/4" DIA. SCREW	VERT. MULLION (HEAD/SILL)	12 PER CLIP	FULL	1/2"	1"
STEEL STUD	G	1/4" DIA. SCREW	SUPPORT ANGLE SHIM @ HEAD/SILL	2 PER SHIM	FULL	1/2"	1"
STRUCTURAL STEEL	E & F	1/4" DIA. BOLT & NUT	JAMB	2 PER CLIP	THRU BOLT	1/2"	1"
STRUCTURAL STEEL	E	1/4" DIA. BOLT	JAMB (FIELD DRILL & TAP HOLE)	2 PER CLIP	FULL	1/2"	1"
STRUCTURAL STEEL	E & F	1/4" DIA. BOLT & NUT	VERT. MULLION (HEAD/SILL)	3 PER CLIP	THRU BOLT	1/2"	1"
STRUCTURAL STEEL	E	1/4" DIA. BOLT	VERT. MULLION (HEAD/SILL) FIELD DRILL & TAP HOLE	3 PER CLIP	FULL	1/2"	1"
STRUCTURAL STEEL	E & F	1/4" DIA. BOLT & NUT	SUPPORT ANGLE SHIM @ HEAD/SILL	2 PER SHIM	THRU BOLT	1/2"	1"
STRUCTURAL STEEL	E	1/4" DIA. BOLT	SUPPORT ANGLE SHIM @ HEAD/SILL FIELD DRILL & TAP HOLE	2 PER SHIM	FULL	1/2"	1"
STRUCTURAL STEEL	G	1/4" DIA. SCREW	JAMB	2 PER CLIP	FULL	1/2"	1"
STRUCTURAL STEEL	G	1/4" DIA. SCREW	SUPPORT ANGLE SHIM @ HEAD/SILL	2 PER SHIM	FULL	1/2"	1"
ALL	H & I	1/4" DIA. SHOULDER BOLT & NUT	MULLION JOINT	VARIES			

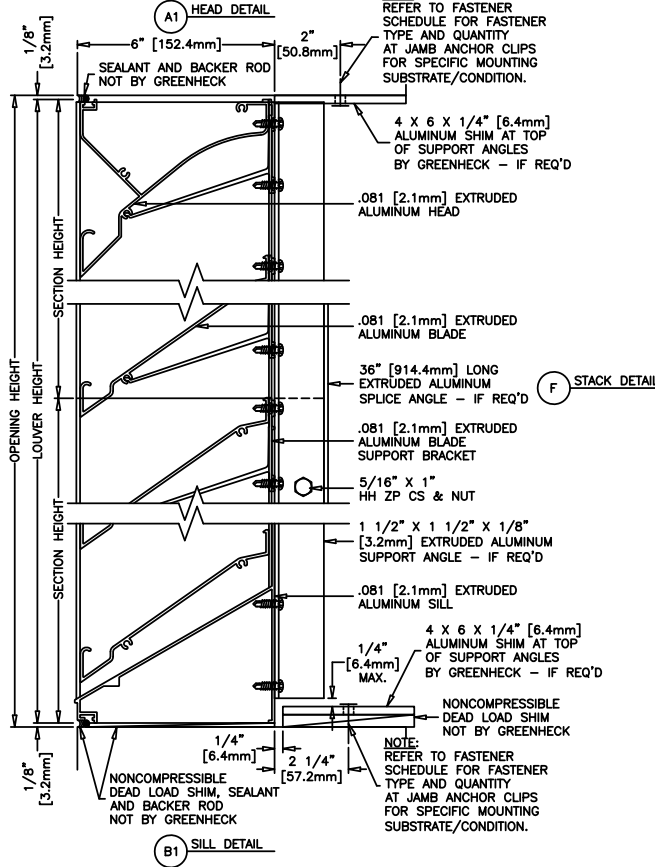
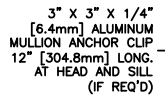
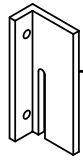
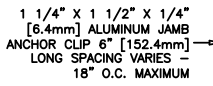
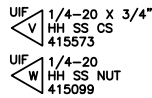
**GENERAL NOTES:**

- 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.
- INSTALLER TO PROVIDE SEPARATION OF DISSIMILAR MATERIALS AS REQUIRED.
- WOOD SUBSTRATE TO BE MINIMUM G = 0.42 DENSITY.
- CONCRETE SUBSTRATE TO BE MINIMUM 3,000 PSI.
- STEEL STUD OPENINGS (16 GA. MINIMUM THICKNESS) TO BE MINIMUM Fy = 33 ksi.
- STRUCTURAL STEEL OPENINGS (1/4" MINIMUM THICKNESS) TO BE MINIMUM Fy = 36 ksi.

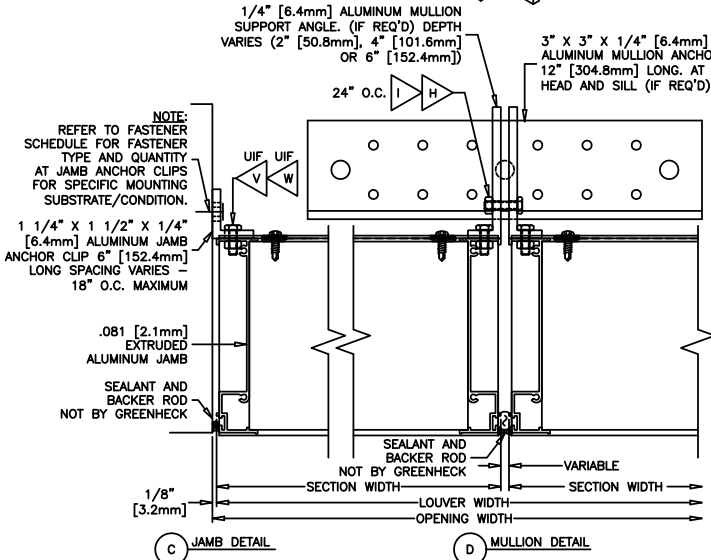




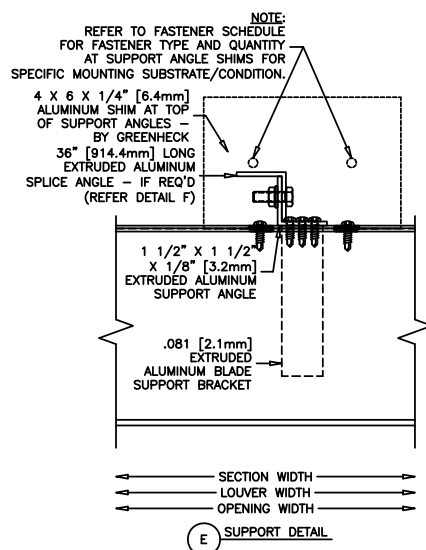
**B** SILL DETAIL



**F** STACK DETAIL



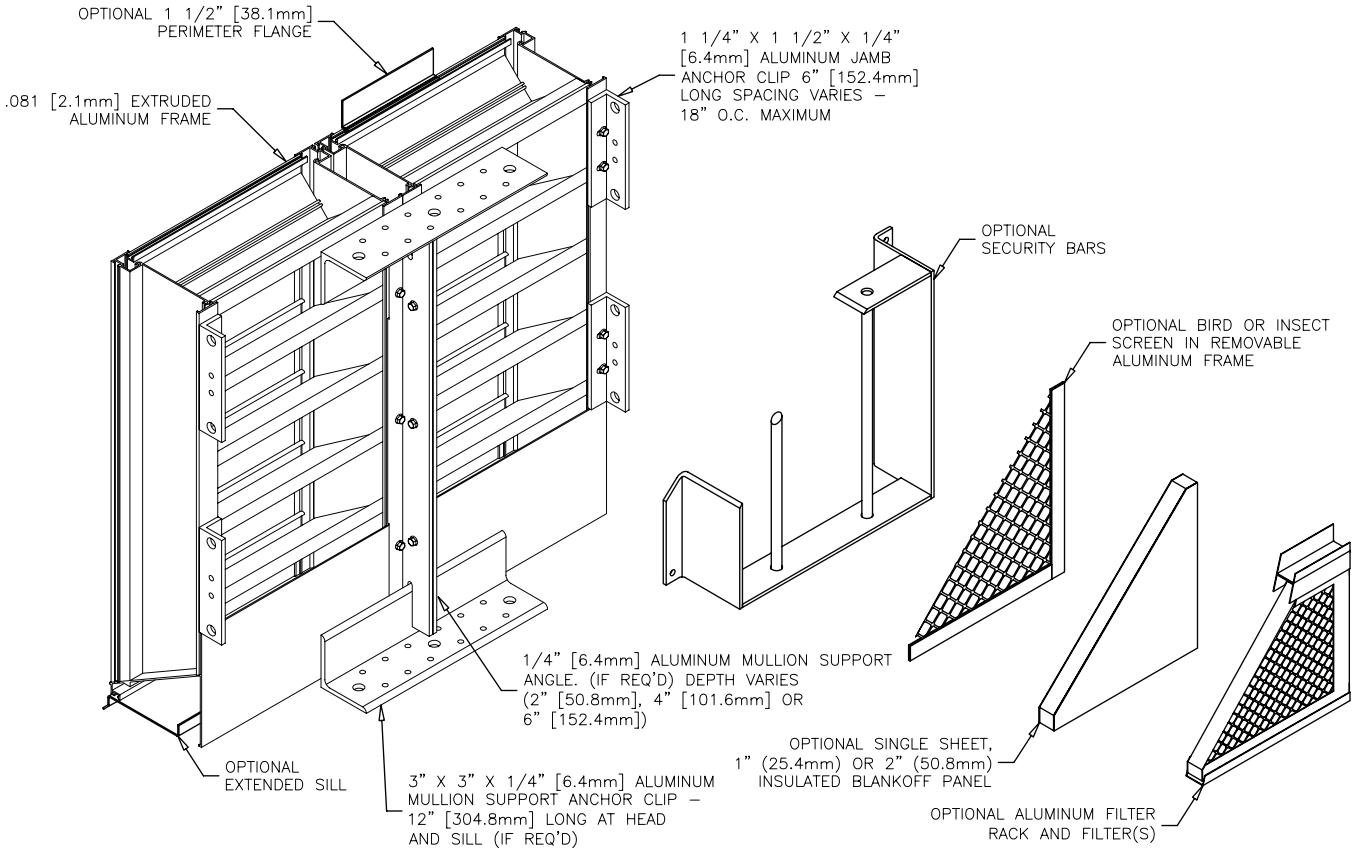
**D** MULLION DETAIL



# OPTION DRAWINGS

# ESD-635X

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## FINISHES

Finish Type	Description/Application	Color Selection	Standard Warranty (Aluminum)
2-coat 70% KYNAR 500®/HYLAR 5000® AAMA 2605 - Dry film thickness 1.2 mil. (AKA: Duranar®, Fluoropon®, Trinar®, Fluoropolymer, Polyvinylidene Fluoride, PVDF2)	<b>"Best."</b> The premier finish for extruded aluminum. Tough, long-lasting coating has superior color retention and abrasive properties. Resists chalking, fading, chemical abrasion and weathering.	<b>Standard Colors:</b> Any of the 24 standard colors shown can be furnished in 70% or 50% KYNAR 500®/HYLAR 5000® or Baked Enamel.  <b>2-Coat Mica:</b> Greenheck offers 9 standard 2-coat Mica colors. Other colors are available. Consult Greenheck for possible extra cost when selecting non-standard colors or special finishes.	10 Years (Consult Greenheck for availability of extended warranty)
2-coat 50% KYNAR 500®/HYLAR 5000® AAMA 2604 - Dry film thickness 1.2 mil. (AKA: Acroflur®, Acrynar®)	<b>"Better."</b> Tough, long-lasting coating has excellent color retention and abrasive properties. Resists chalking, fading, chemical abrasion and weathering.		5 Years
Baked Enamel AAMA 2603 - Dry film thickness 0.8 mil. (AKA: Acrabond Plus®, Duracron®)	<b>"Good."</b> Provides good adhesion and resistance to weathering, corrosion and chemical stain.		1 Year
Integral Color Anodize AA-M10C22A42 (>0.7 mil)	"Two-step" anodizing is produced by following the normal anodizing step with a second, colorfast process.	Light, Medium or Dark Bronze; Champagne; Black	5 years
Clear Anodize 215 R-1 AA-M10C22A41 (>0.7 mil)	Clear, colorless and hard oxide aluminum coating that resists weathering and chemical attack.	Clear	5 years
Clear Anodize 204 R-1 AA-M10C22A31 (0.4-0.7 mil)	Clear, colorless and hard oxide aluminum coating that resists weathering and chemical attack.	Clear	1 Year
Industrial coatings	Greenheck offers a number of industrial coatings such as Hi-Pro Polyester, Epoxy, and Permatector®. Consult a Greenheck Product Specialist for complete color and application information.		Consult Greenheck
Mill	Materials may be supplied in natural aluminum or galvanized steel finish when normal weathering is acceptable and there is no concern for color or color change.		n/a

Finishes meet or exceed AAMA 2605, AAMA 2604, and AAMA 2603 requirements. Please consult [www.greenheck.com](http://www.greenheck.com) for complete information on standard and extended paint warranties. Paint finish warranties are not applicable to steel products.



ESD-635X  
January 2009 Rev. 2  
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