

**Miami-Dade Qualified  
Drainable Blade Louvered Penthouse****Application and Design**

ESD-635PD is a gravity intake or exhaust louvered penthouse. Model ESD-635PD incorporates high performance horizontal drainable style blades. Meets the performance requirements established by the Florida Building Code and Miami-Dade County. Tested in accordance with and passes TAS 201 (Large Missile Impact), TAS 202 (Uniform Static Air Pressure) and TAS 203 (Cyclic Wind-Loading). This system should be installed in a location where the enclosed area/room inside the penthouse is designed to drain water penetrating into the area/room, and the area/room will house water resistant/proof equipment, components and/or supplies. Roof curbs specifically designed for model ESD-635PD may be supplied by Greenheck as an option. Qualified for installation onto concrete/masonry, steel stud, structural steel or wood substrate. Model ESD-635PD may also be supplied as an equipment enclosure without hood members.

**Standard Construction**

**Frame** . . . . . Heavy gauge extruded 6063-T5 aluminum,  
6 in. x 0.081 in. nominal wall thickness

**Blades** . . . . . Drainable blade design, heavy gauge extruded 6063-T5 aluminum,  
0.081 in. nominal wall thickness, positioned at 37° angles on approximately  
4 in. centers

**Construction** . . . . . Welded and mechanically fastened

**Birdscreen** . . . . . 3/4 in. x 0.051 flattened expanded aluminum removable frame, inside mount (rear)

**Finish** . . . . . Mill

**Minimum**

**Throat Size** . . . . . 12 in. W x 12 in. L

**Maximum**

**Throat Size** . . . . . 84 in. W x 108 in. L

**Minimum**

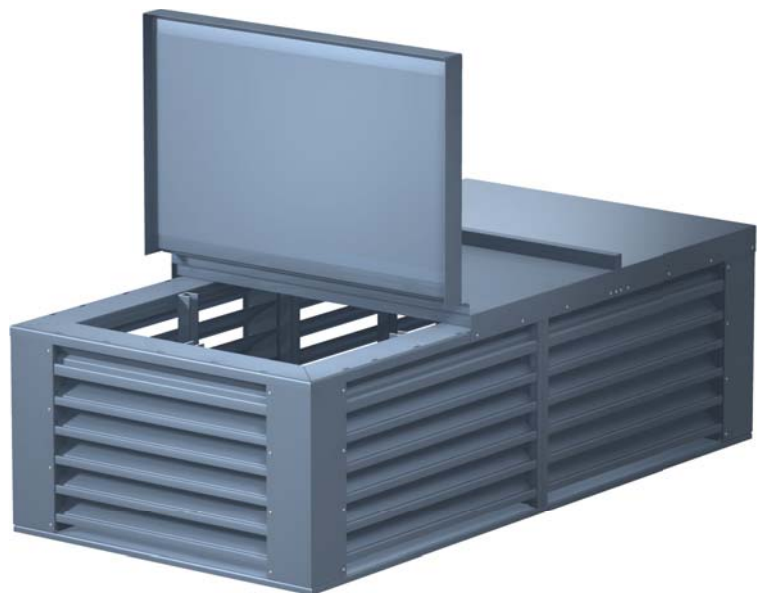
**Louver Height** . . . 12 in.

**Maximum**

**Louver Height** . . . 84 in.

**Options (at additional cost)**

- A variety of bird and insect screens
- Blank-off panels
- Filter racks
- Hood
- Hood insulation
- Roof curb-flat or pitched
- Security bars
- A variety of architectural finishes including:
  - Clear anodize
  - Integral color anodize
  - Baked enamel
  - Kynar



# PERFORMANCE DATA

# ESD-635PD

Florida Product Approval No.: FL11350.2

Miami-Dade NOA No.: 08-0505.05

Maximum Wind-load: 115 PSF

Performance data shown herein is a result of in-house airflow resistance testing procedures in an AMCA Accredited Laboratory. The static pressure drops shown at given throat velocities include the pressure drop through the throat of the product as well as through the louvers themselves. The recommended height shown herein allows for equal to or greater than effective louver free area to that of the penthouse inside throat area. Increasing the product height will have minimal affect on the static pressure drop. The static pressure drops shown do not include the effects of bird screen, insect screen or any other appurtenance.

Throat W x L	Recommended Louver Height	Louver Throat Area (sq. ft.)	Intake CFM			Exhaust CFM			
			Total Pressure Drop in inches wg*			Total Pressure Drop in inches wg*			
			0.067	0.152	0.268	0.030	0.068	0.120	0.187
			Throat Velocity (ft./min.)			Throat Velocity (ft./min.)			
			400	600	800	400	600	800	1000
12 x 12	12	1	400	600	800	400	600	800	1000
<b>12 x 24</b>	<b>16</b>	<b>2</b>	<b>800</b>	<b>1200</b>	<b>1600</b>	<b>800</b>	<b>1200</b>	<b>1600</b>	<b>2000</b>
24 x 24	16	4	1600	2400	3200	1600	2400	3200	4000
<b>24 x 48</b>	<b>20</b>	<b>8</b>	<b>3200</b>	<b>4800</b>	<b>6400</b>	<b>3200</b>	<b>4800</b>	<b>6400</b>	<b>8000</b>
36 x 36	20	9	3600	5400	6400	3600	5400	6400	9000
<b>36 x 72</b>	<b>24</b>	<b>18</b>	<b>7200</b>	<b>10,800</b>	<b>14,400</b>	<b>7200</b>	<b>10,800</b>	<b>14,400</b>	<b>18,000</b>
48 x 48	24	16	6400	9600	12,800	6400	9600	12,800	16,000
<b>48 x 96</b>	<b>32</b>	<b>32</b>	<b>14,400</b>	<b>21,600</b>	<b>28,800</b>	<b>14,400</b>	<b>21,600</b>	<b>28,800</b>	<b>36,000</b>
60 x 60	28	25	10,000	15,000	20,000	10,000	15,000	20,000	25,000
<b>60 x 108</b>	<b>36</b>	<b>45</b>	<b>18,000</b>	<b>27,000</b>	<b>36,000</b>	<b>18,000</b>	<b>27,000</b>	<b>36,000</b>	<b>45,000</b>
72 x 72	32	36	14,400	21,600	28,800	14,400	21,600	28,800	36,000
<b>72 x 96</b>	<b>40</b>	<b>48</b>	<b>19,200</b>	<b>28,800</b>	<b>38,400</b>	<b>19,200</b>	<b>28,800</b>	<b>38,400</b>	<b>48,000</b>
84 x 84	40	49	19,600	29,400	39,200	19,600	29,400	39,200	49,000
<b>84 x 96</b>	<b>40</b>	<b>56</b>	<b>22,400</b>	<b>33,600</b>	<b>44,800</b>	<b>22,400</b>	<b>33,600</b>	<b>44,800</b>	<b>56,000</b>
84 x 108	44	63	25,200	37,800	50,400	25,200	37,800	50,400	63,000

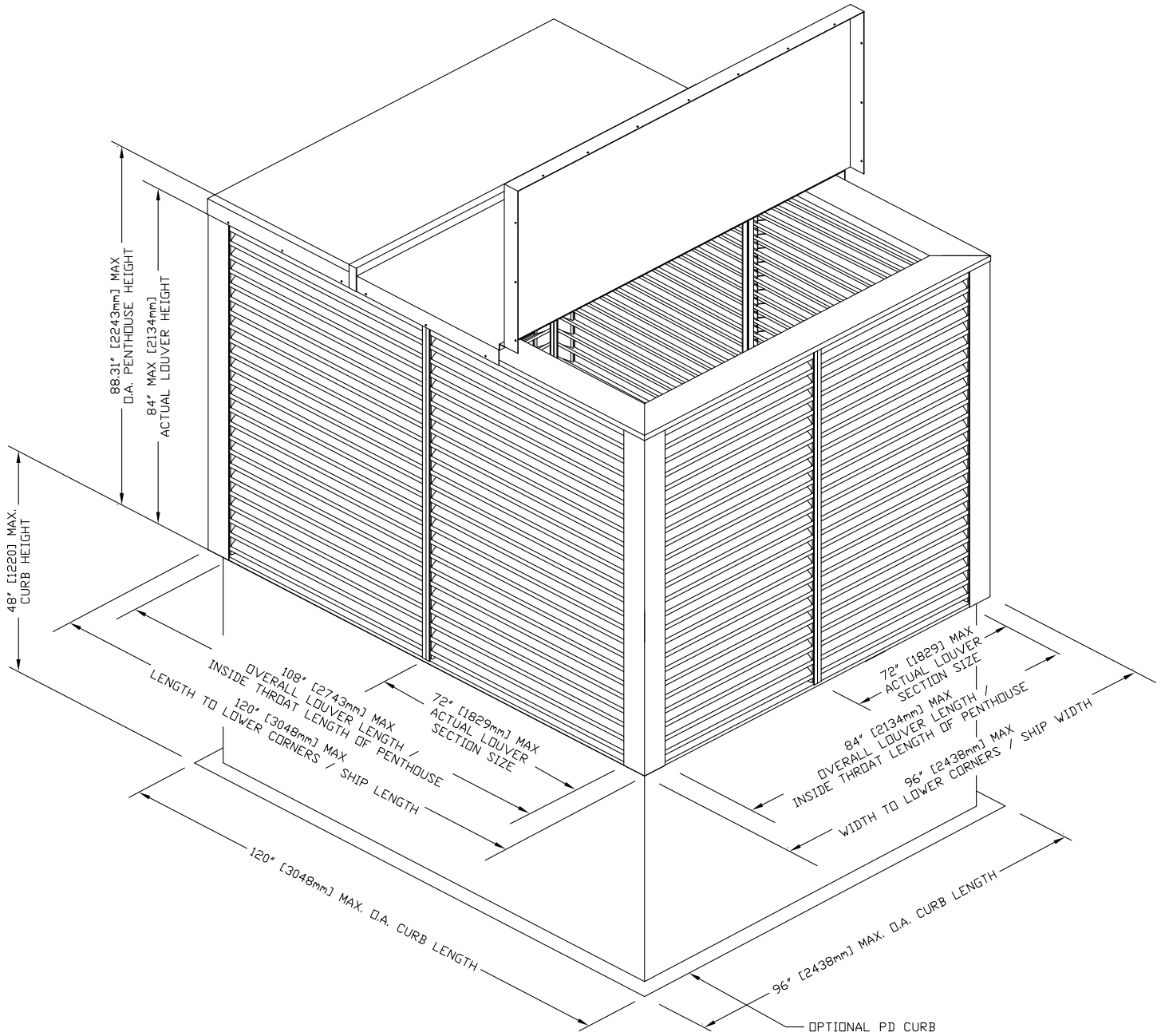
# DETAILS

# ESD-635PD

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Maximum Wind-load: 115 PSF



# DETAILS

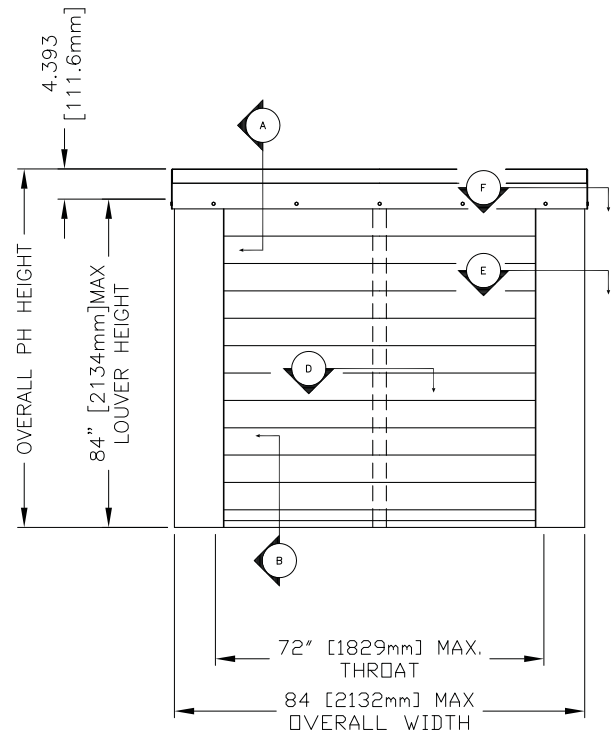
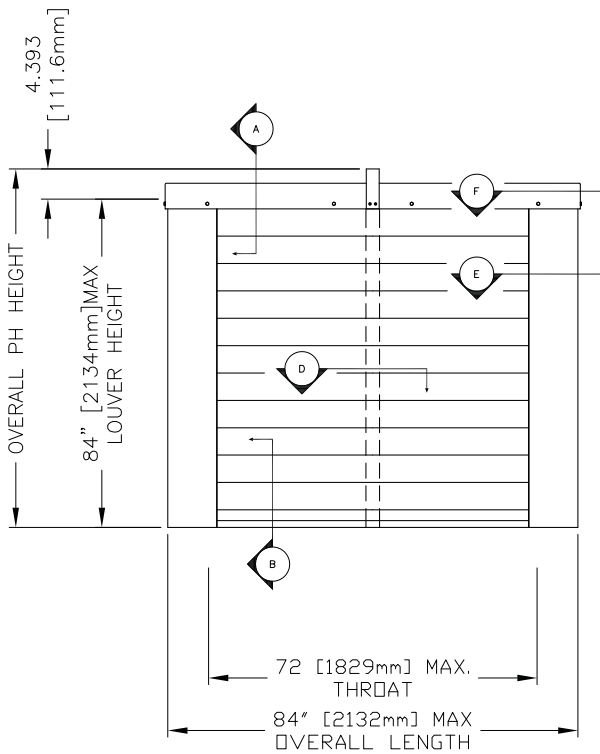
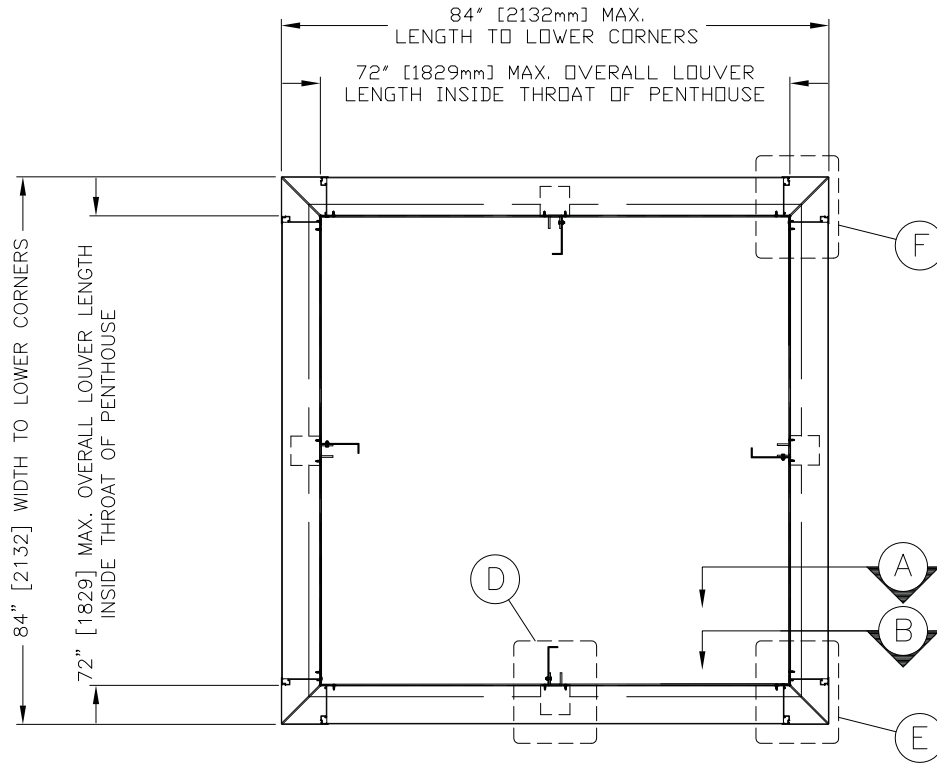
## SINGLE SECTION-WITHOUT HOOD

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# DETAILS

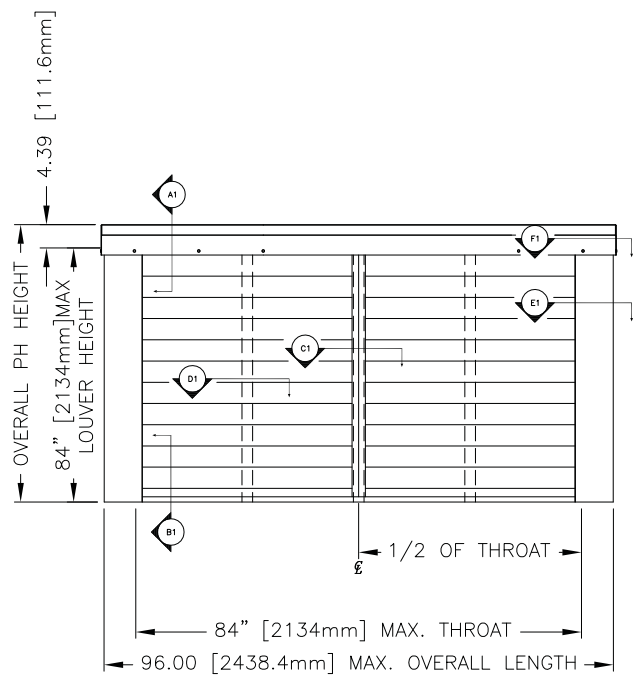
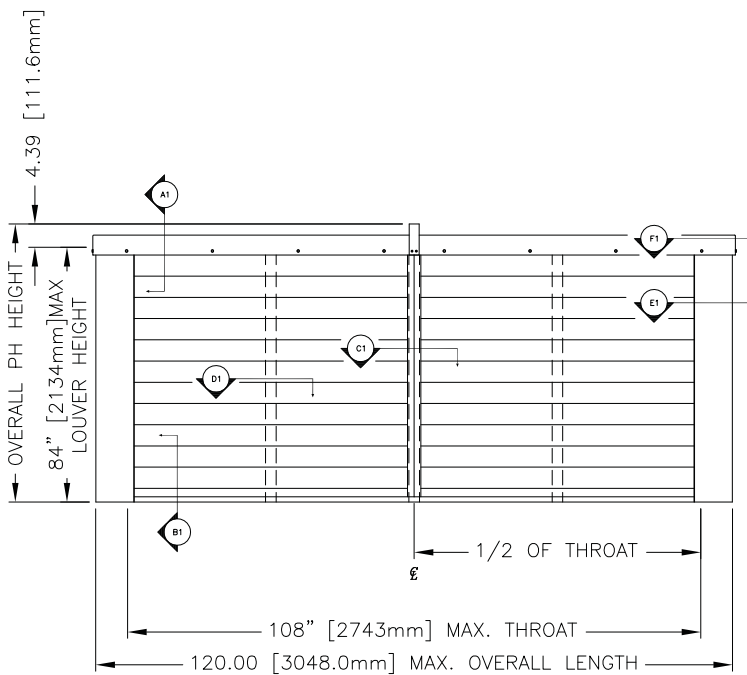
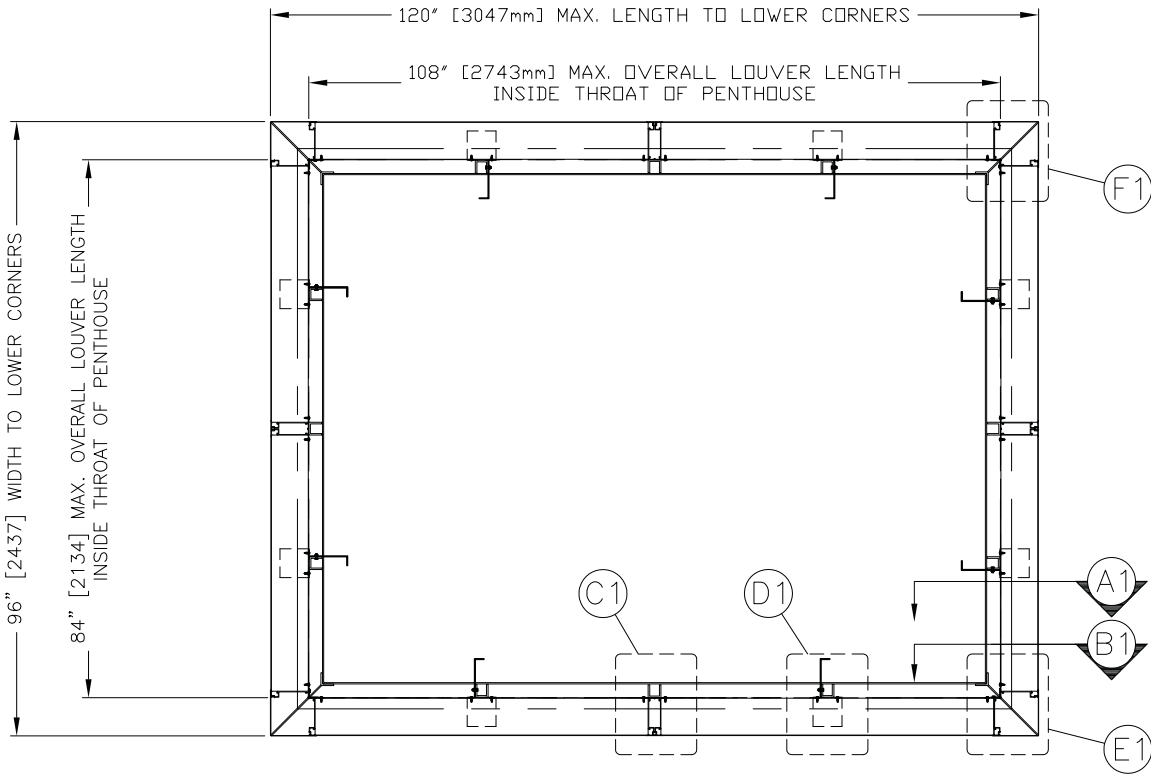
## TWO SECTION-WITHOUT HOOD

**ESD-635PD**

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Maximum Wind-load: 115 PSF



# DETAILS

## LESS THAN 54 IN. HEIGHT

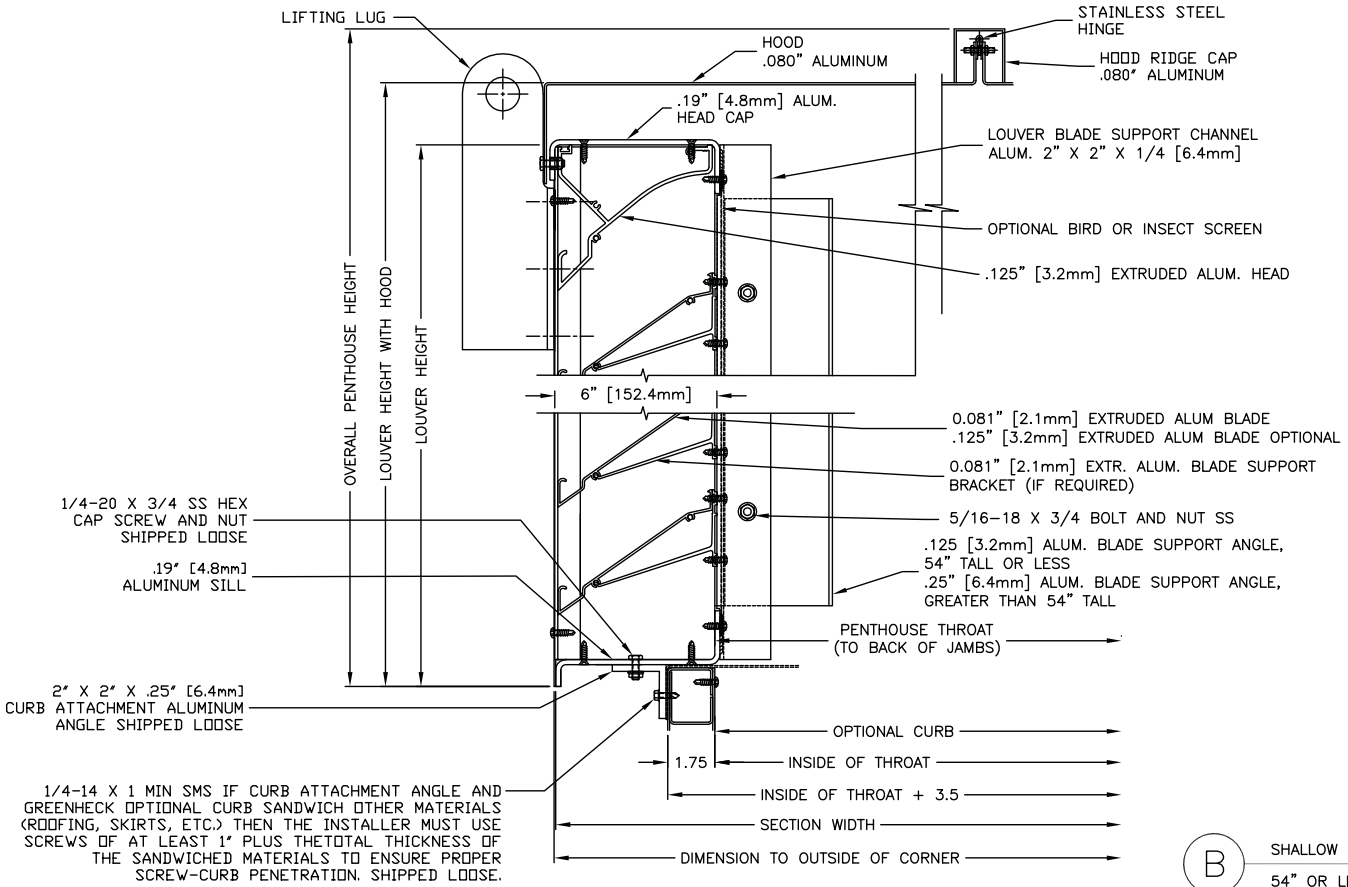
# ESD-635PD

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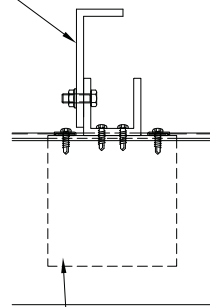
Maximum Wind-load: 115 PSF

**A** SHALLOW HEAD DETAIL



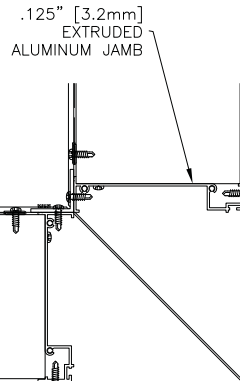
**B** SHALLOW SILL DETAIL  
54" OR LESS TALL

.25" [6.4mm] ALUM. BLADE BRACKET SUPPORT ANGLE WHEN 53" TALL OR TALLER



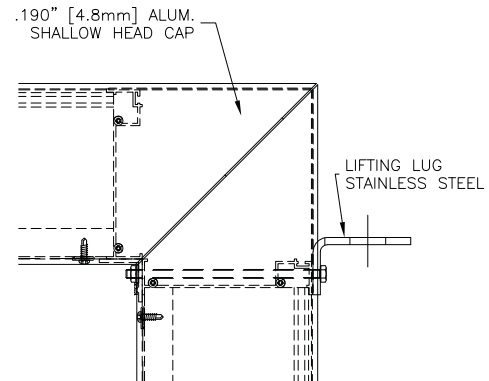
0.081" [2.1mm] EXTR. ALUM. BLADE SUPPORT BRACKET

**D** SHALLOW SILL SUPPORT DETAIL



.125" [3.2mm] EXTRUDED ALUMINUM JAMB  
0.060" [1.5mm] ALUM. OUTSIDE CORNER COVER

**E** SHALLOW SILL CORNER DETAIL



**F** SHALLOW HEAD CAP CORNER DETAIL

# DETAILS

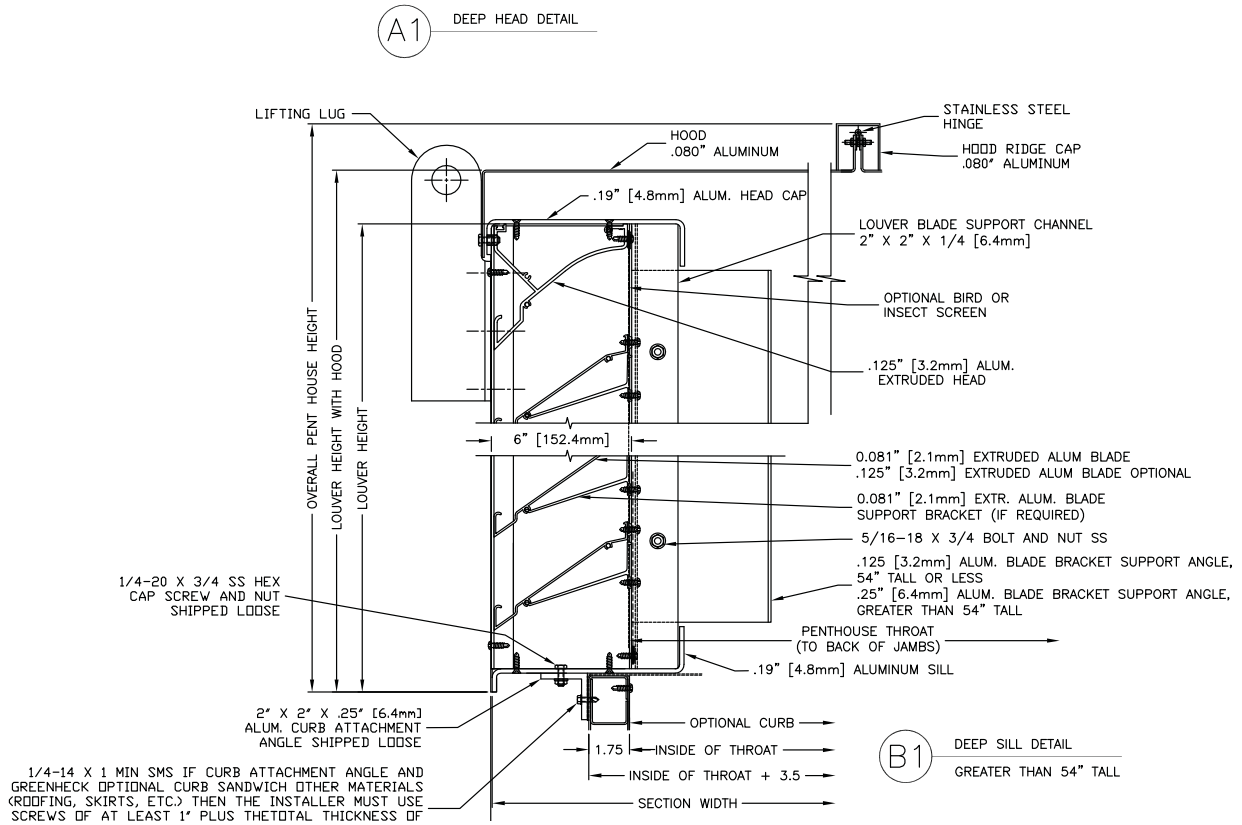
## GREATER THAN 54 IN. HEIGHT

# ESD-635PD

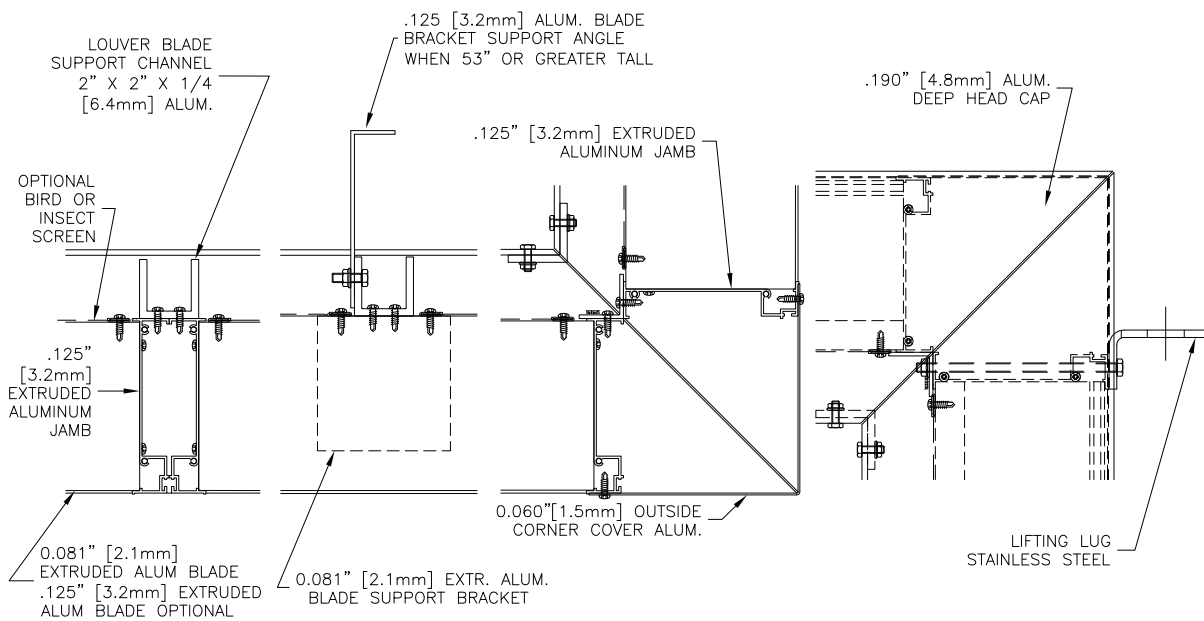
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Maximum Wind-load: 115 PSF



**B1 DEEP SILL DETAIL  
GREATER THAN 54" TALL**



**C1 MULLION DETAIL**

**D1 DEEP SILL SUPPORT DETAIL**

**E1 DEEP SILL CORNER DETAIL**

**F1 DEEP HEAD CAP CORNER DETAIL**

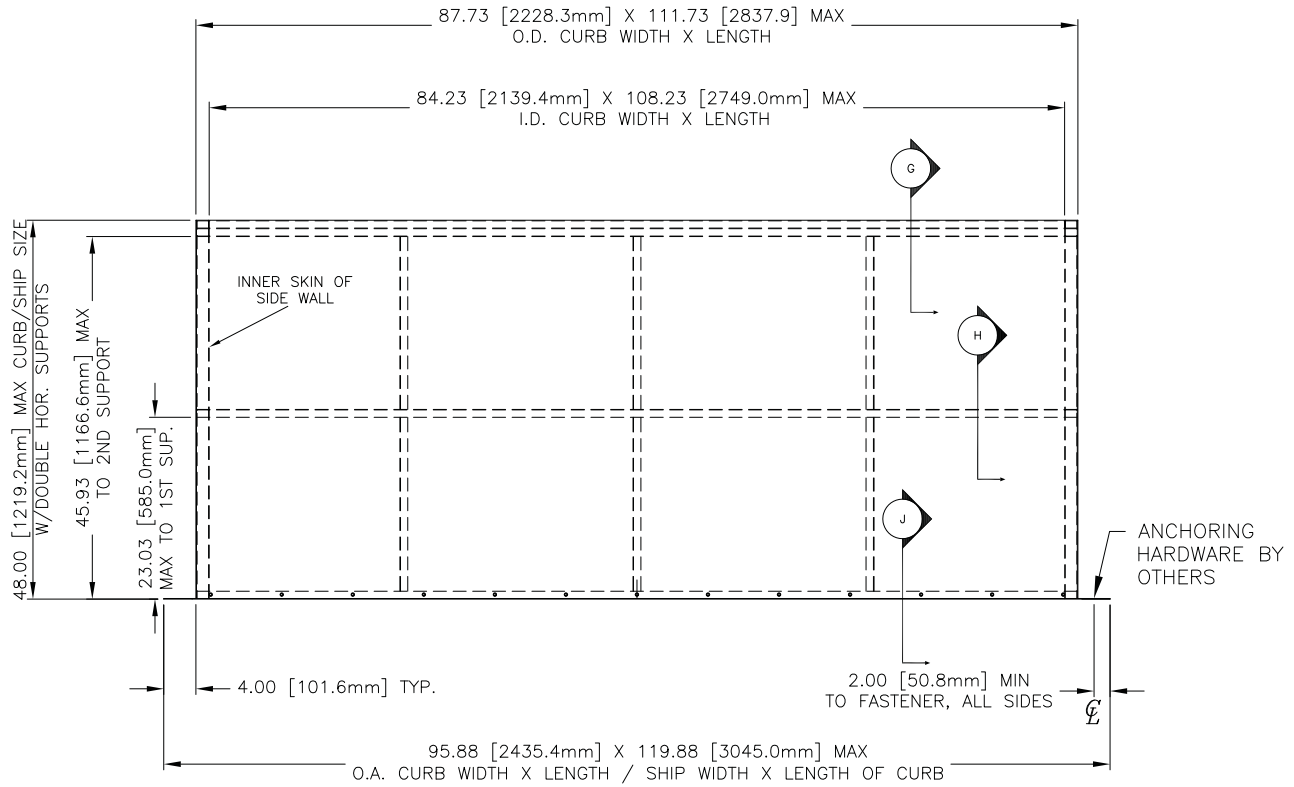
# CURB DETAILS

# ESD-635PD

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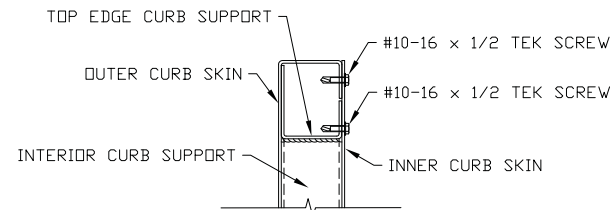
Miami-Dade NOA No.: 08-0505.05

Maximum Wind-load: 115 PSF

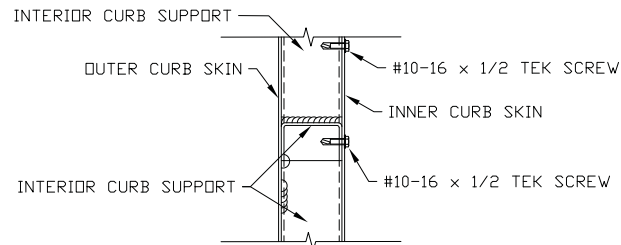


CURB DETAIL

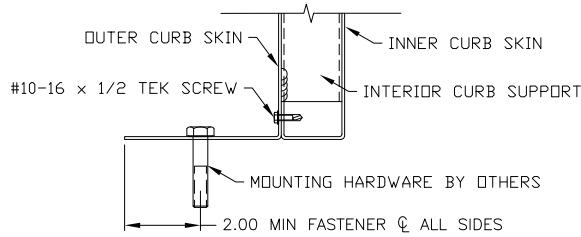
G CURB DETAILS TOP



H CURB DETAILS MIDDLE



J CURB DETAILS BOTTOM



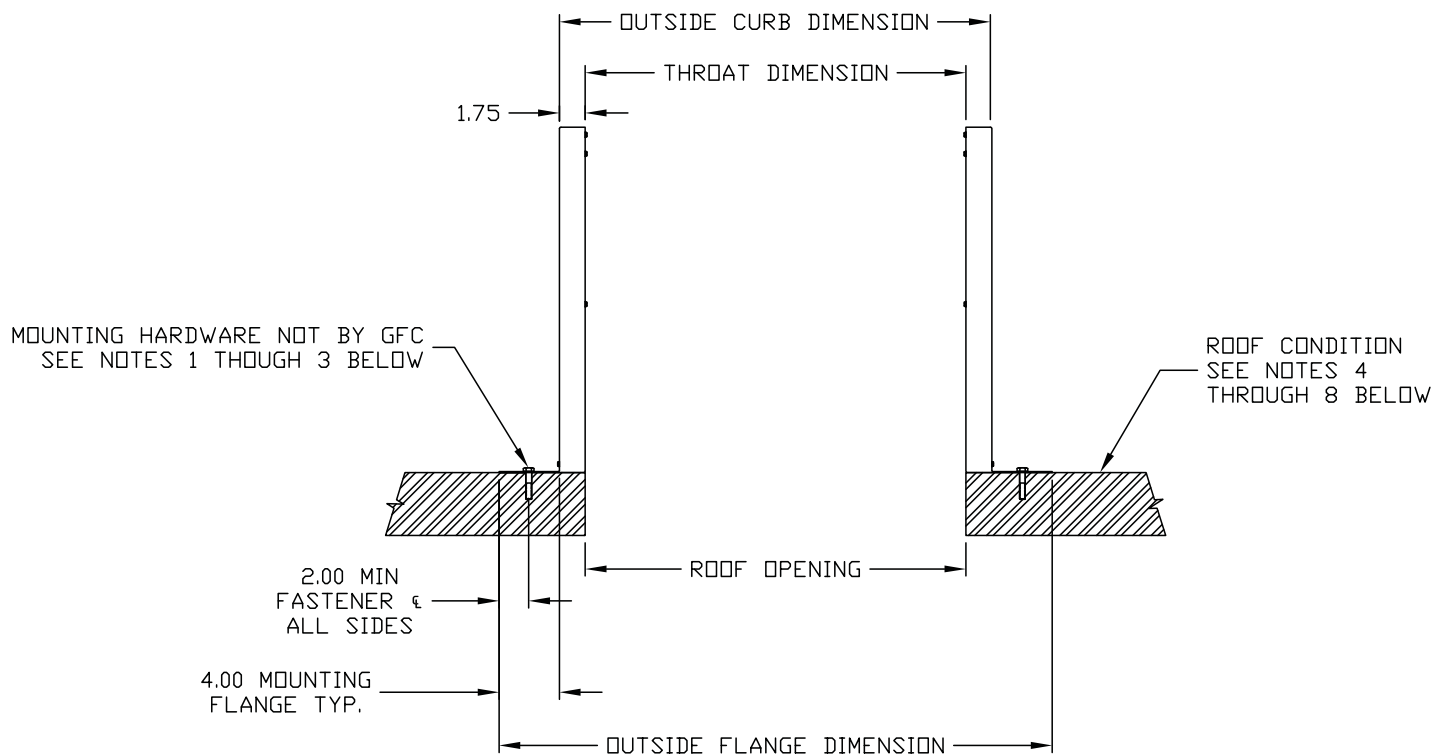
# ROOF OPENING DETAILS

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## NOTES:

1. 3/8-16 X 3 MIN PLATED STEEL EXPANDABLE ANCHOR 12" MAX CENTERS, 2.5" MIN CONCRETE ENGAGEMENT, 3.25 MIN TO CONCRETE EDGE.
2. #12-14 X 1 MIN SMS, PLATED STEEL 4.5" MAX CENTERS W/ 3/ CORNER, 1/4" MIN VERTICAL THREAD ENGAGEMENT INTO STEEL, 2" MIN TO STEEL EDGE.
3. 1/2 X 3 MIN PLATED STEEL LAG BOLT 8" MAX CENTERS, 2.93" MIN WOOD ENGAGEMENT, 2" MIN TO WOOD EDGE.
4. ALL WOOD SUBSTRATE SHALL BE G = 0.55 DENSITY OR BETTER.
5. ALL METAL STUD SUBSTRATE SHALL BE MIN. 16 GA. FY = 50 KSI
6. ALL STRUCTURAL STEEL SUBSTRATE SHALL BE MIN. 1/4" THICK FY = 36 KSI.
7. ALL CONCRETE SUBSTRATE SHALL BE MIN. 3000 PSI.
8. CONCRETE MASONRY SHALL BE ASTM C90, TYPE II, MIN 2000 PSI GROUT-FILLED.

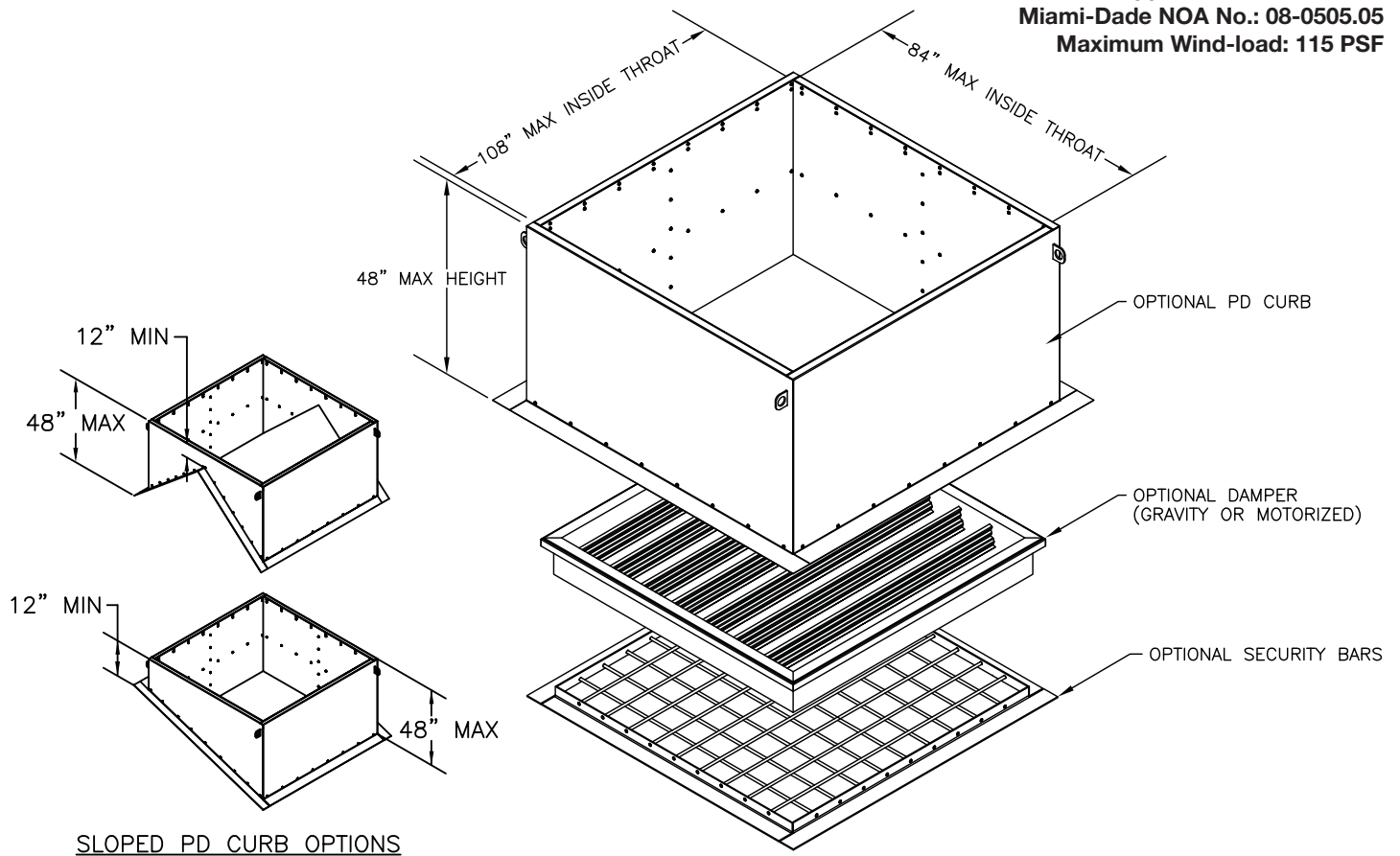
# OPTION DRAWINGS

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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 Permator®. 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-635PD

September 2009 Rev. 1

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