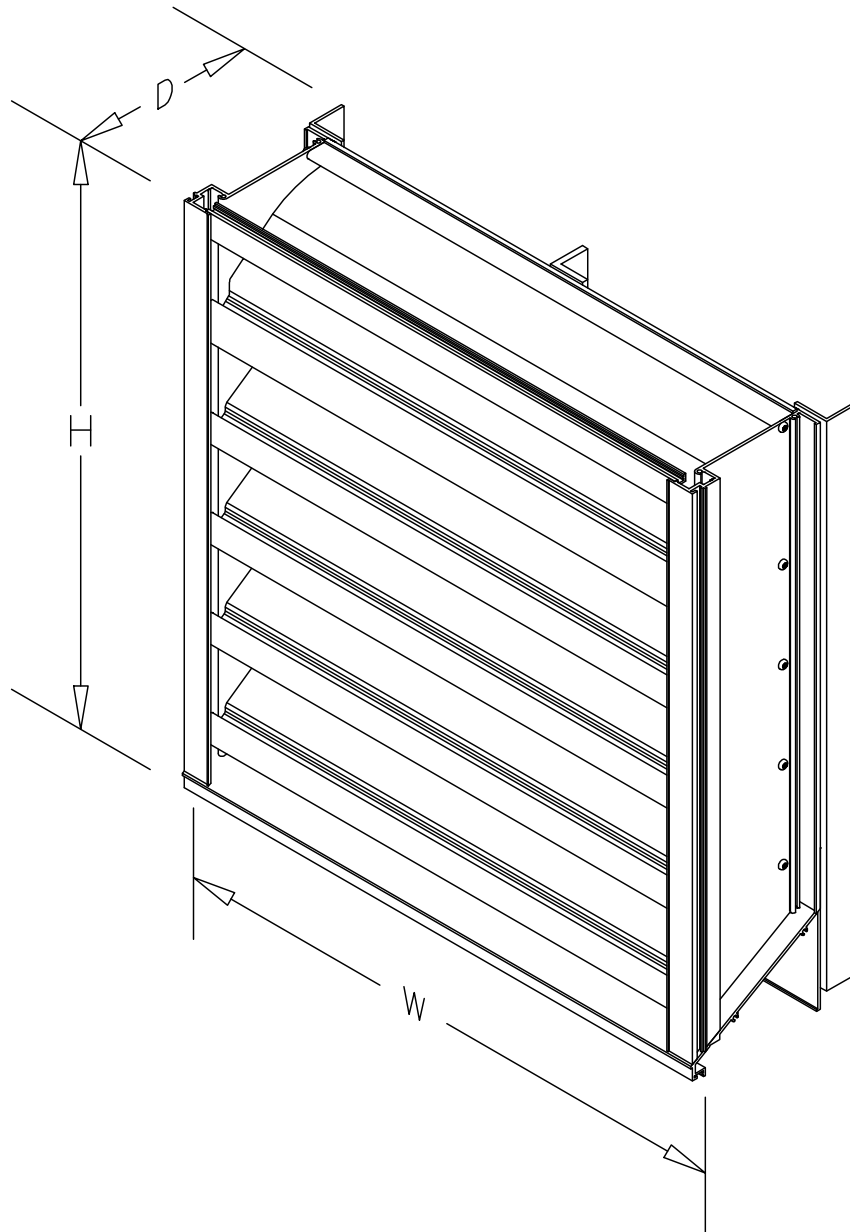


Installation, Operation, and Maintenance Instructions

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.

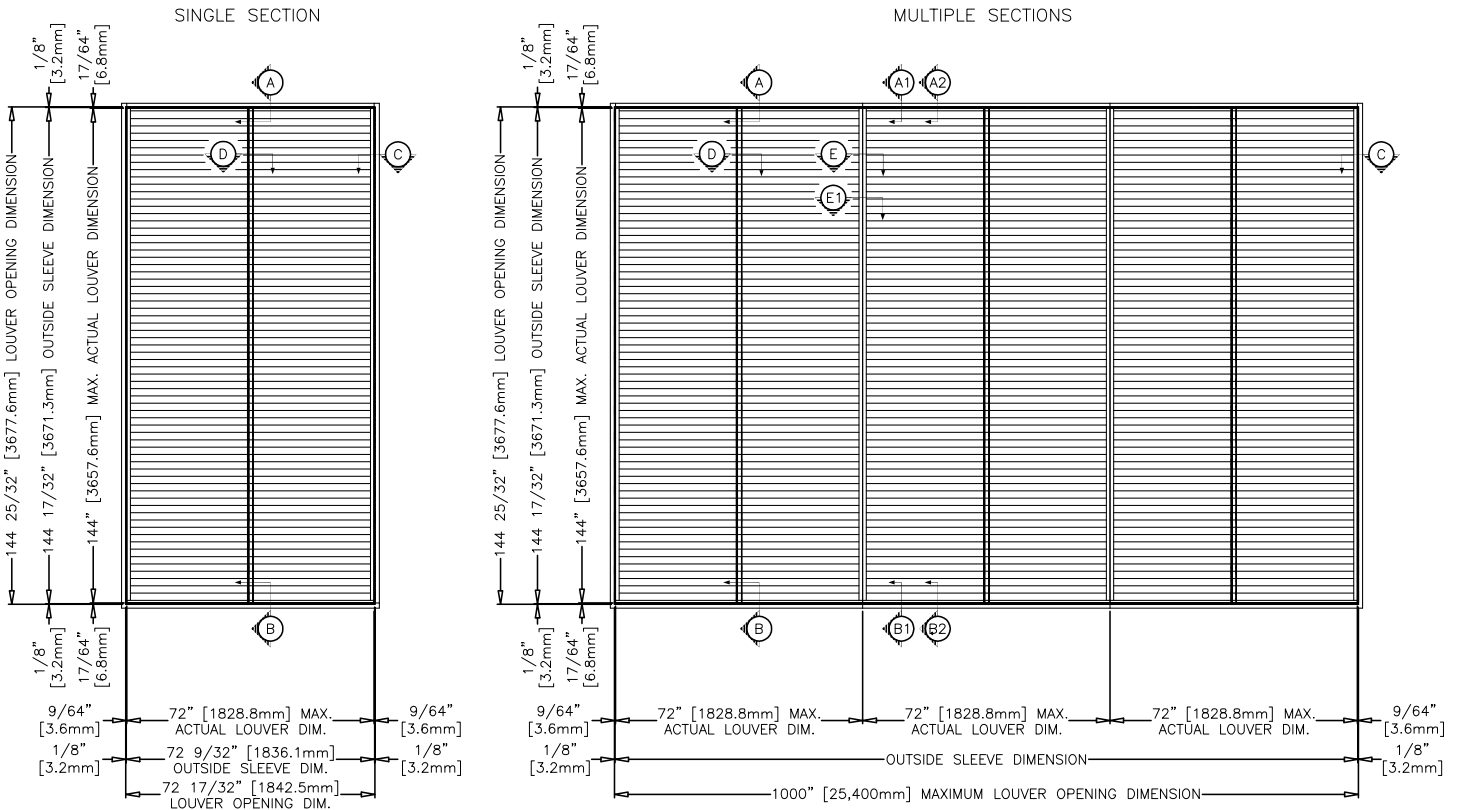


SAFETY WARNING:

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-635D is a Miami-Dade Qualified and Florida Product Approved louver and must be installed in accordance with the installation instructions shown herein. Model ESD-635D is qualified for installation within concrete/masonry, steel stud, structural steel or wood framed building conditions. Model ESD-635D is structurally calculated to withstand positive and negative wind-loads up to 150 PSF. The maximum single section rough opening width is 72.75 in. The maximum single section rough opening height is 144.50 in. While the maximum rough opening height is limited to 144.50 in., the rough opening width is limited to 1,000 in. as multiple sections may be installed side by side in accordance with installation instructions.



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

**Maximum Single Section
Rough Opening Size**
72.75 in. W x 144.50 in. H

Building Condition/Substrate Limitations

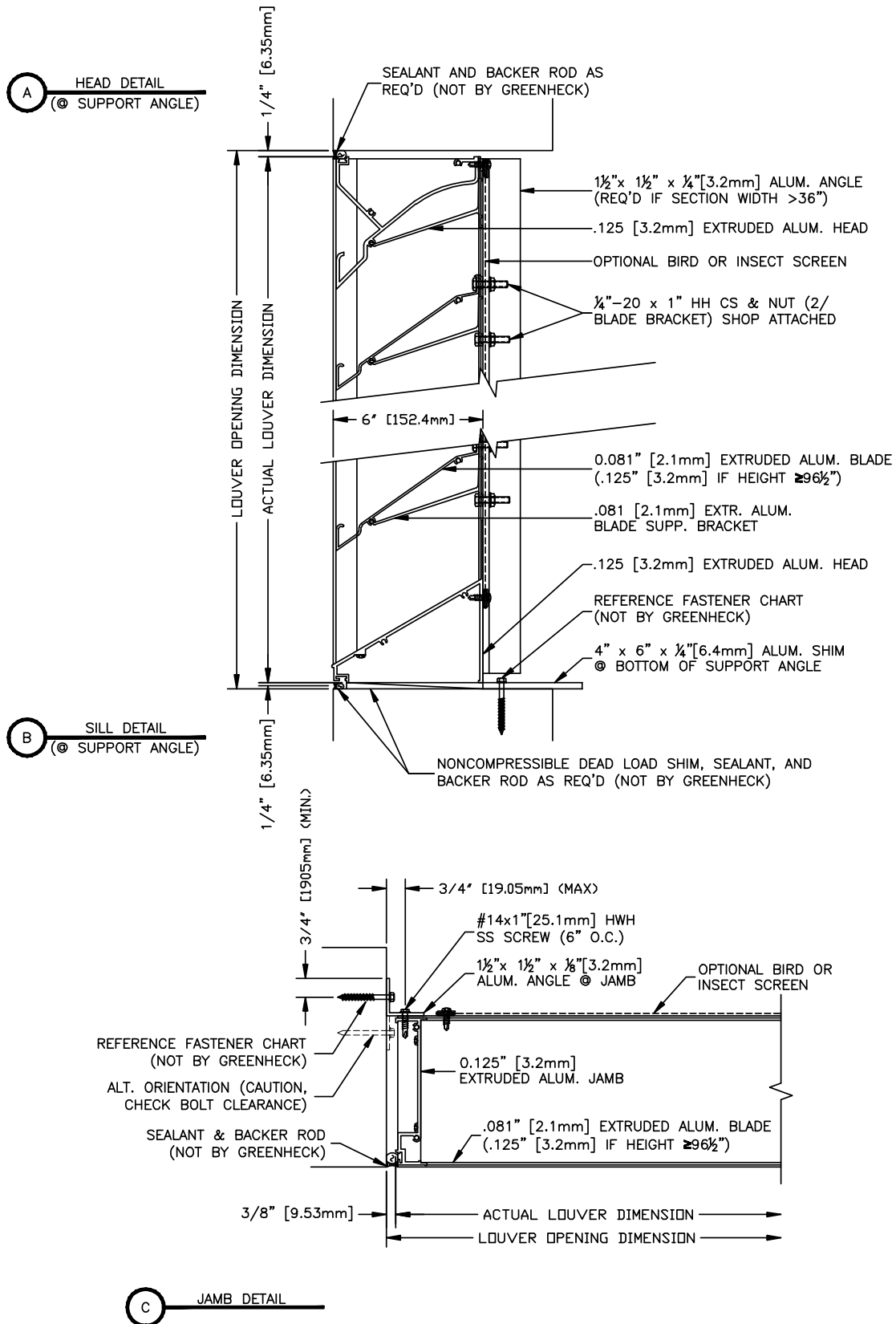
- All metal stud substrate should be min. 10 Ga. FY= 36 KSI
- All structural steel substrate shall be min. 0.125 in. thick FY= 36 KSI
- All concrete substrate shall be min. 4000 PSI (2000 PSI allowed with SDR)
- Concrete masonry shall be ASTM C90, Type II, 2000 PSI, grout-filled

Installation Instructions

ESD-635D

Channel Installation
Single Section

Florida Product Approval No: FL10088
Miami-Dade NOA No.: 10-0921.09
Maximum Wind-load: 150 PSF



Installation Instructions

ESD-635D

Channel Installation

Florida Product Approval No: FL10088

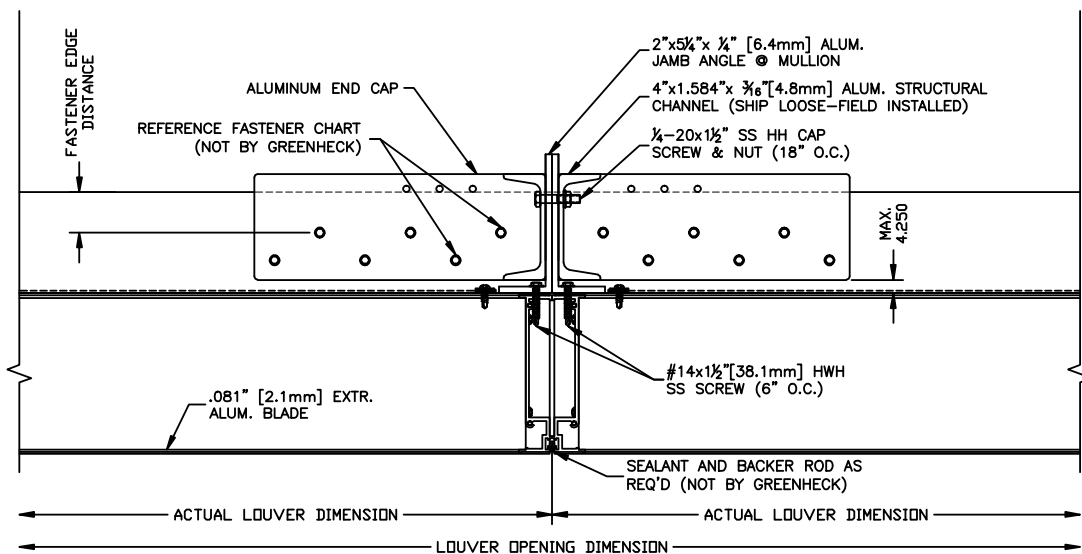
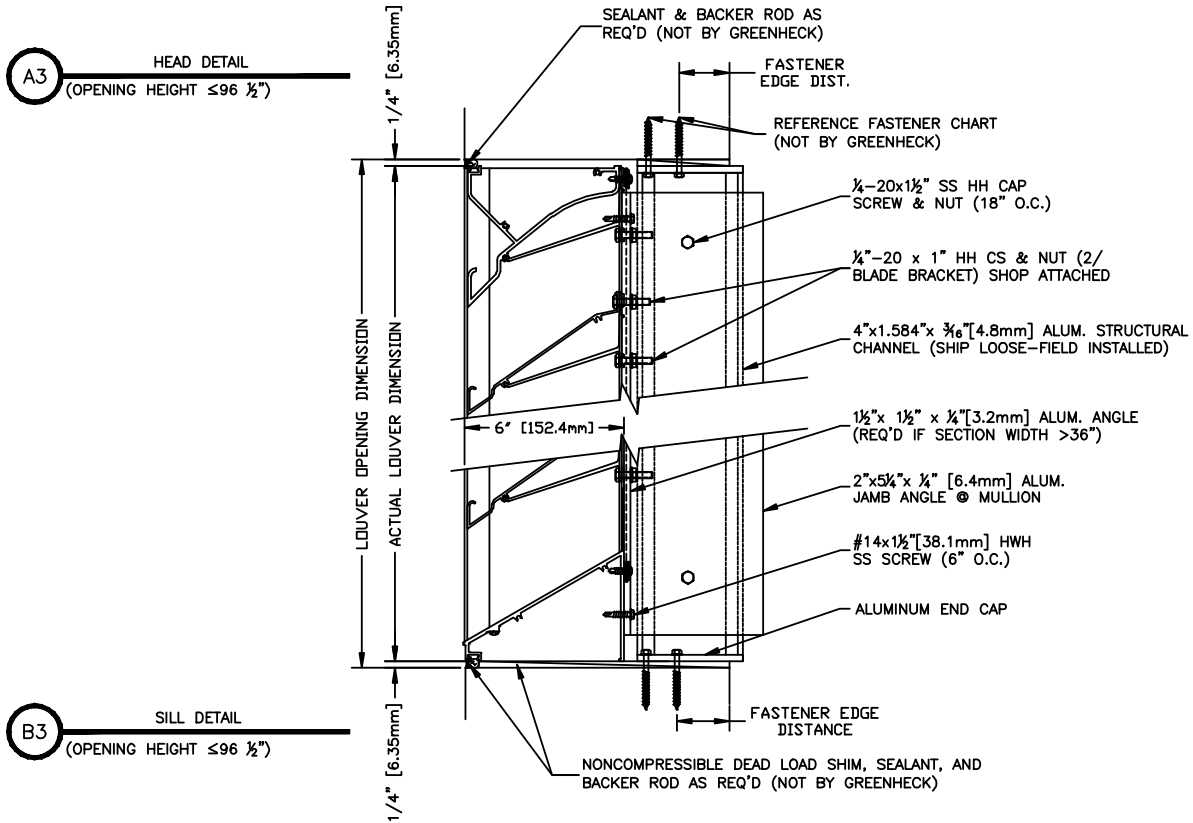
Multiple Sections

Miami-Dade NOA No.: 10-0921.09

Height $\leq 96 \frac{1}{2}$

Maximum Wind-load: 150 PSF

Reference page 5 for alternate head/sill detail.

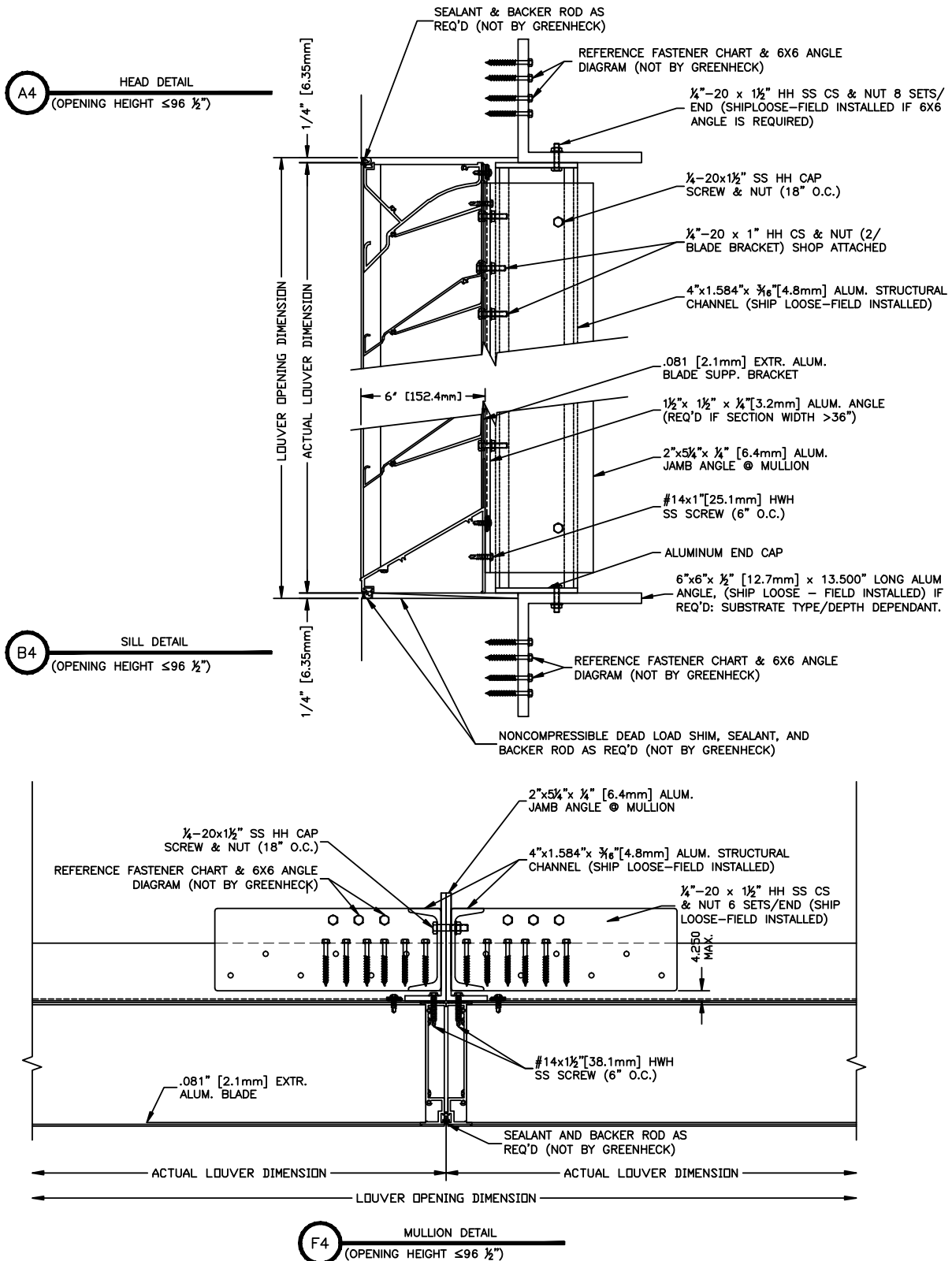


Installation Instructions

ESD-635D

Channel Installation
 Multiple Sections
 Height $\leq 96 \frac{1}{2}$

Florida Product Approval No: FL10088
 Miami-Dade NOA No.: 10-0921.09
 Maximum Wind-load: 150 PSF



Installation Instructions

ESD-635D

Channel Installation

Florida Product Approval No: FL10088

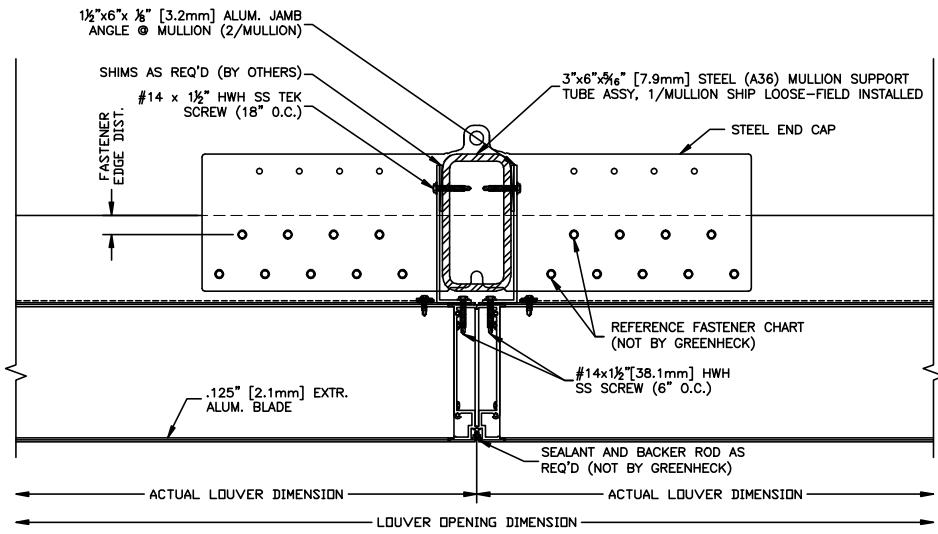
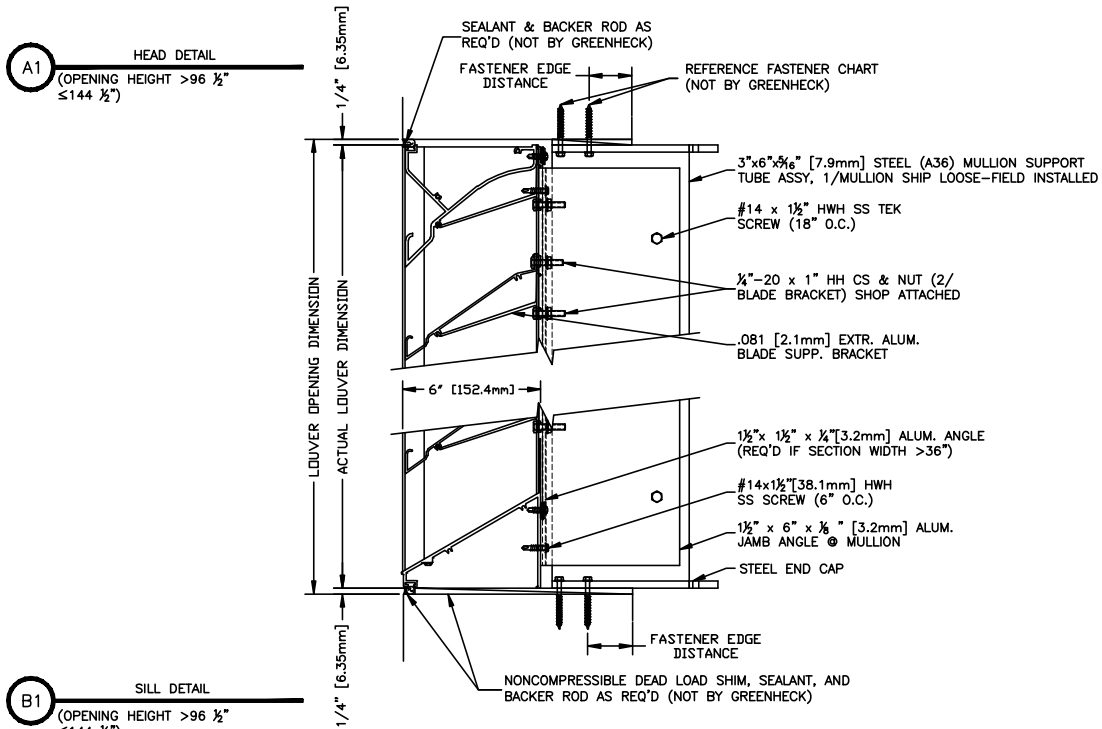
Multiple Sections

Miami-Dade NOA No.: 10-0921.09

Height > 96 1/2" ≤ 144 1/2"

Maximum Wind-load: 150 PSF

Reference page 7 for alternate head/sill detail.



F1 MULLION DETAIL
(OPENING HEIGHT >96 1/2" ≤144 1/2")

Installation Instructions

ESD-635D

Channel Installation

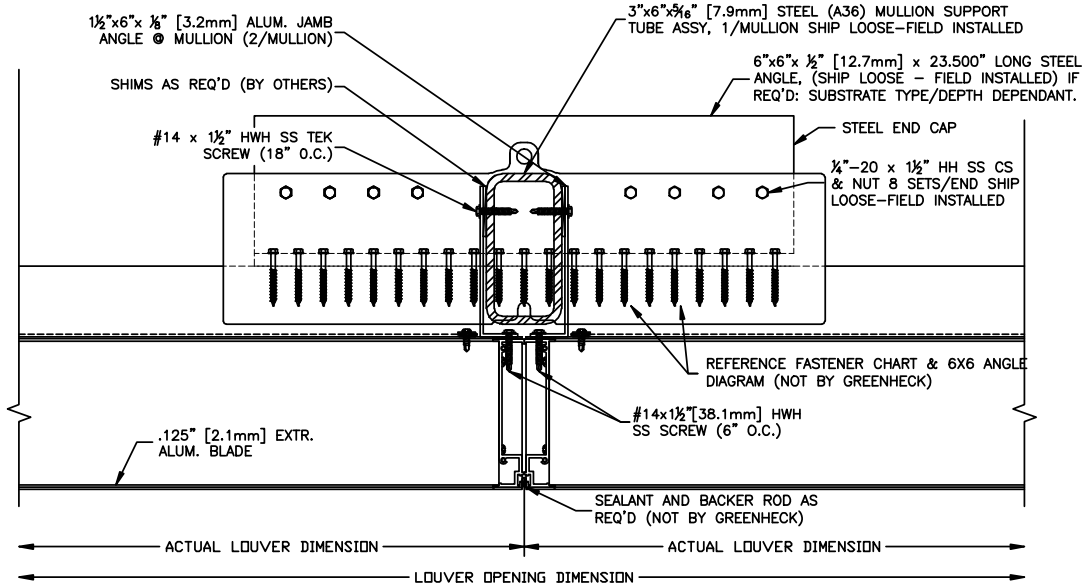
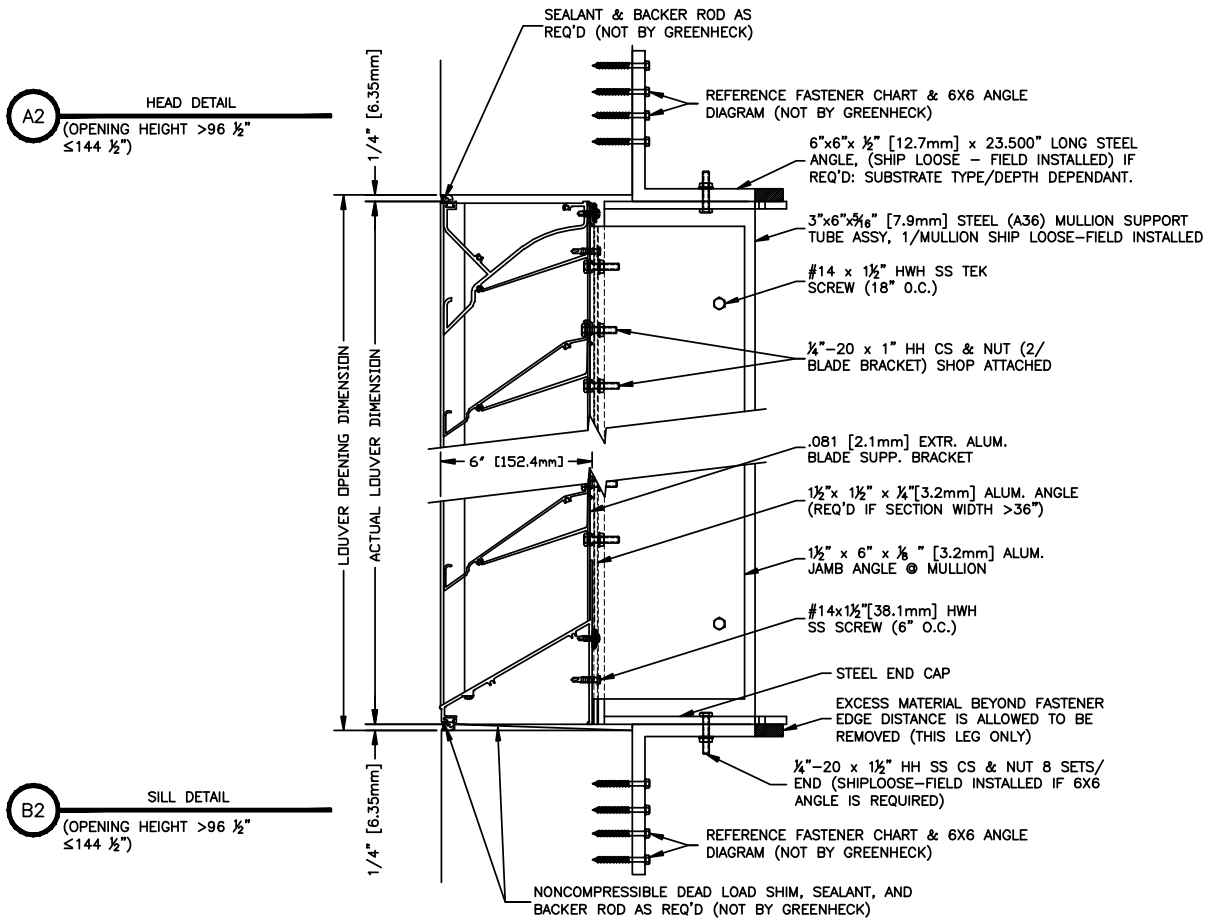
Florida Product Approval No: FL10088

Multiple Sections

Miami-Dade NOA No.: 10-0921.09

Height > 96 1/2" ≤ 144 1/2"

Maximum Wind-load: 150 PSF

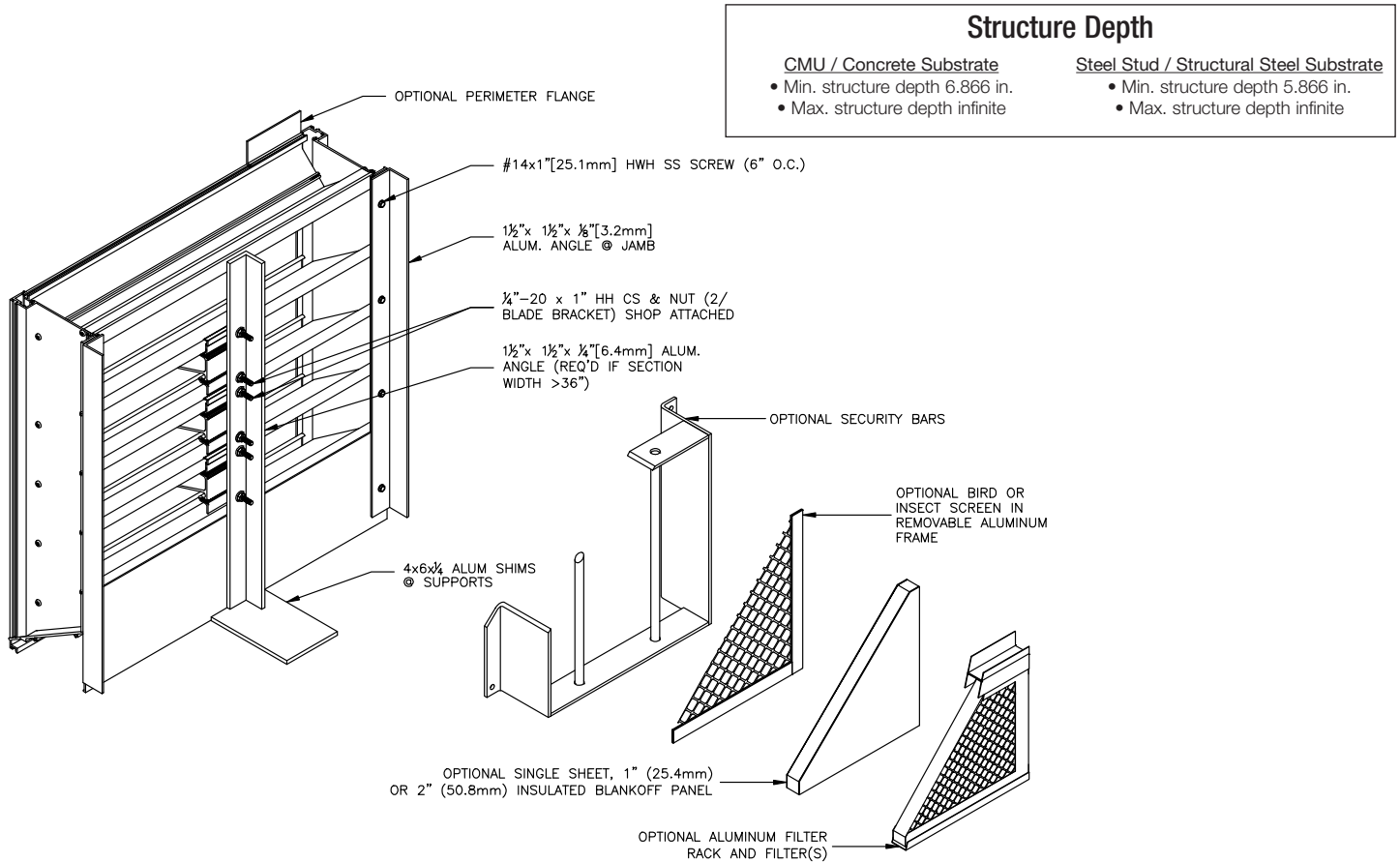


Installation Instructions

ESD-635D

Channel Installation Single Section

Florida Product Approval No: FL10088
Miami-Dade NOA No.: 10-0921.09
Maximum Wind-load: 150 PSF



Structure Depth	
CMU / Concrete Substrate	Steel Stud / Structural Steel Substrate
• Min. structure depth 6.866 in.	• Min. structure depth 5.866 in.
• Max. structure depth infinite	• Max. structure depth infinite

FASTENER SCHEDULE (FIELD INSTALLED - NOT BY GREENHECK)										
CONCRETE	CMU	STEEL	MIN.	FASTENER TYPE	DIAMETER	# RQD.	CENTERS	EDGE	EMBED.*	
JAMB PERIMETER ANGLE FASTENER										
X			2KSI	SCOTS TAPCON / TAPCON	1/4	VARIES	4.750	1.500	1.750	
X			4KSI	SCOTS TAPCON / TAPCON	1/4	VARIES	6.000	1.500	1.750	
	X		1.5KSI	SCOTS TAPCON / TAPCON	1/4	VARIES	3.000	1.500	1.750	
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	VARIES	6.000	0.500	0.125	
MULLION END PLATE FASTENER, HEIGHT <=144										
X			2KSI	SCOTS TAPCON / TAPCON	1/4	9/END	2.000	1.500	1.625	
X			4KSI	SCOTS TAPCON / TAPCON	1/4	8/END	2.000	1.500	1.625	
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	8/END	1.000	0.500	0.125	
MULLION ANGLE MOUNT FASTENER, HEIGHT <=144										
X			2KSI	SCOTS TAPCON / TAPCON	1/4	32/ANG.	2.000	1.500	1.750	3.375
X			4KSI	SCOTS TAPCON / TAPCON	1/4	27/ANG.	2.000	1.500	1.750	3.375
	X		1.5KSI	SCOTS TAPCON / TAPCON	1/4	32/ANG.	2.000	1.500	1.750	3.375
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	16/ANG.	1.000	0.500	0.125	3.000
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	11/ANG.	1.000	0.500	0.188	3.000
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	16/ANG.	1.000	0.500	0.188	3.766
MULLION END PLATE FASTENER, HEIGHT <=96										
X			2KSI	SCOTS TAPCON / TAPCON	1/4	6/CAP	2.000	1.500	1.750	
X			4KSI	SCOTS TAPCON / TAPCON	1/4	6/CAP	2.000	1.500	1.750	
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	3/CAP	1.000	0.500	0.125	
MULLION ANGLE MOUNT FASTENER, HEIGHT <=96										
X			2KSI	SCOTS TAPCON / TAPCON	1/4	11/ANG.	2.000	1.500	1.750	3.375
X			4KSI	SCOTS TAPCON / TAPCON	1/4	9/ANG.	2.000	1.500	1.750	3.375
	X		1.5KSI	SCOTS TAPCON / TAPCON	1/4	11/ANG.	2.000	1.500	1.750	3.375
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	7/ANG.	1.000	0.500	0.125	3.766
		X	65KSI Fy	BOLT/NUT OR TAPPING SCREW	1/4	6/ANG.	1.000	0.500	0.125	3.000

* EMBEDMENT DEPTH IS EQUAL TO OVERALL FASTENER LENGTH FOR CONCRETE/CMU FASTENERS. IF SHIMS ARE USED, FASTENER LENGTH MUST BE INCREASED BY THICKNESS OF SHIMS.
• REFERENCE SUBSTRATE DEPTH CHART TO DETERMINE IF MULLION ANGLE IS REQUIRED.

Installation Instructions

ESD-635D

Channel Installation

Multiple Sections

Height $\leq 96 \frac{1}{2}$

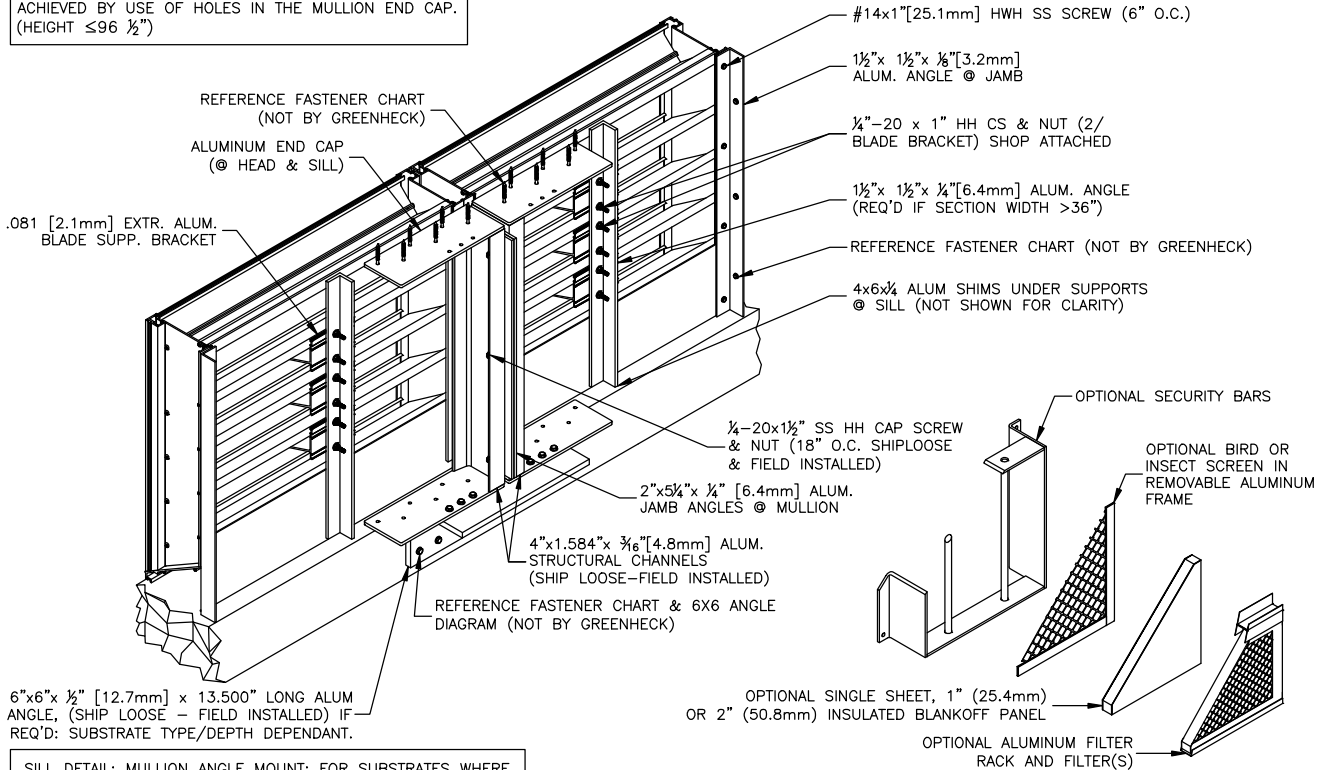
Florida Product Approval No: FL10088

Miami-Dade NOA No.: 10-0921.09

Maximum Wind-load: 150 PSF

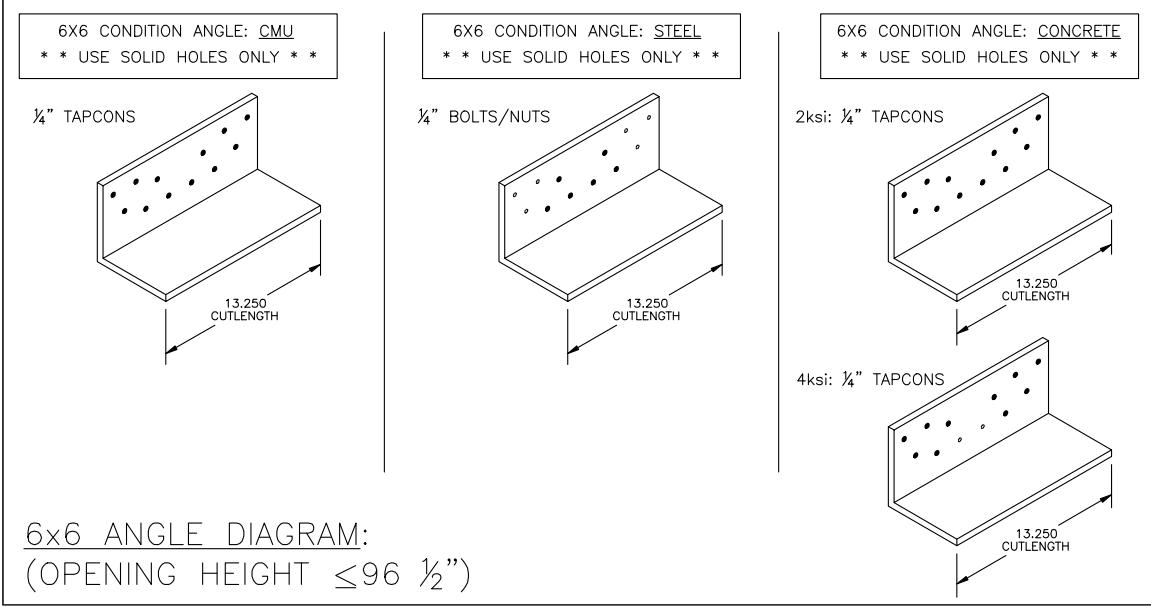
Structure Depth		
CMU Substrate	Concrete Substrate	Steel Stud / Structural Steel Substrate
<ul style="list-style-type: none"> • Min. structure depth 6.866 in. • Max. structure depth 12.275 in. 	<ul style="list-style-type: none"> • Min. structure depth 6.866 in. • Max. structure depth infinite 	<ul style="list-style-type: none"> • Min. structure depth 5.866 in. • Max. structure depth infinite

HEAD DETAIL: **MULLION DIRECT MOUNT:** FOR SUBSTRATES WHERE MINIMUM FASTENER EDGE DISTANCE CAN BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. (HEIGHT $\leq 96 \frac{1}{2}$)



6"x6"x ½" [12.7mm] x 13.500" LONG ALUM ANGLE, (SHIP LOOSE - FIELD INSTALLED) IF REQ'D: SUBSTRATE TYPE/DEPTH DEPENDANT.

SILL DETAIL: **MULLION ANGLE MOUNT:** FOR SUBSTRATES WHERE MIN. FASTENER EDGE DISTANCE CANNOT BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP.(HEIGHT $\leq 96 \frac{1}{2}$)



Installation Instructions

ESD-635D

Channel Installation

Florida Product Approval No: FL10088

Multiple Sections

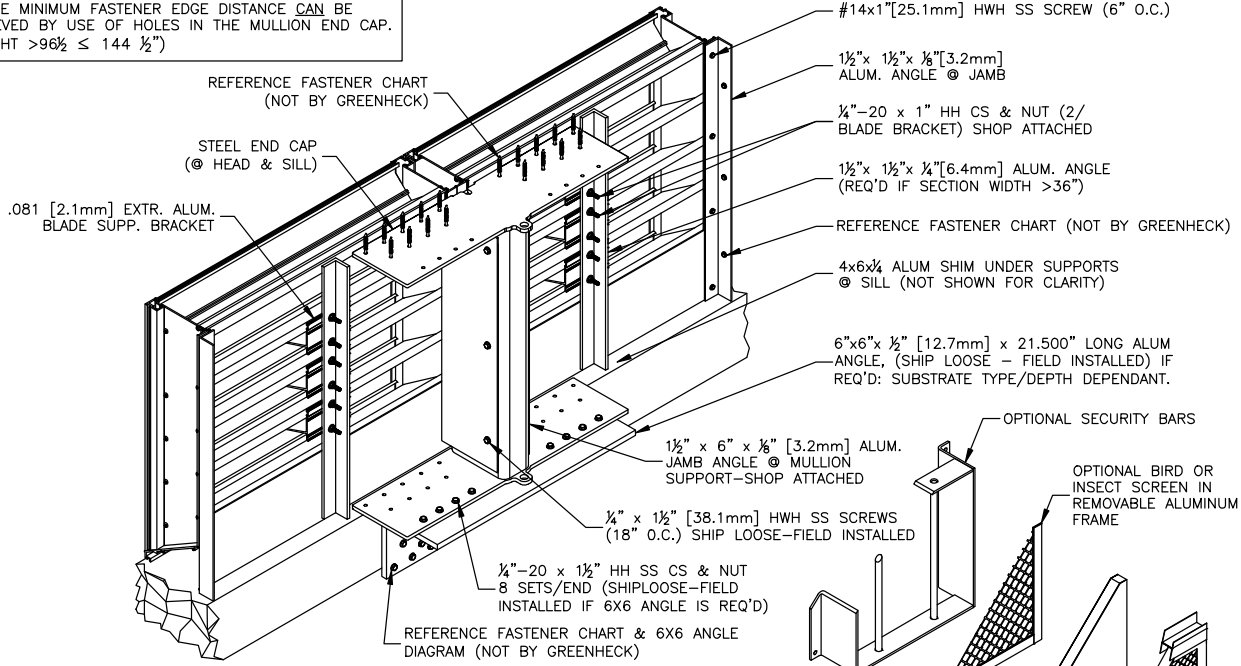
Miami-Dade NOA No.: 10-0921.09

Height > 96 1/2" ≤ 144 1/2"

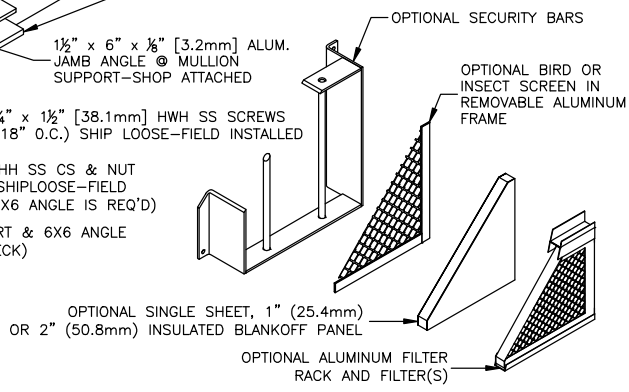
Maximum Wind-load: 150 PSF

Structure Depth		
CMU Substrate	Concrete Substrate	Steel Stud / Structural Steel Substrate
<ul style="list-style-type: none"> • Min. structure depth 6.866 in. • Max. structure depth 15.000 in. 	<ul style="list-style-type: none"> • Min. structure depth 6.866 in. • Max. structure depth infinite 	<ul style="list-style-type: none"> • Min. structure depth 5.866 in. • Max. structure depth infinite

HEAD DETAIL: **MULLION DIRECT MOUNT**; FOR SUBSTRATES WHERE MINIMUM FASTENER EDGE DISTANCE CAN BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. (HEIGHT >96 1/2" ≤ 144 1/2")



SILL DETAIL: **MULLION ANGLE MOUNT**; FOR SUBSTRATES WHERE MIN. FASTENER EDGE DISTANCE CANNOT BE ACHIEVED BY USE OF HOLES IN THE MULLION END CAP. (HEIGHT >96 1/2" & ≤ 144 1/2")



6X6 CONDITION ANGLE: <u>CMU</u> ** USE SOLID HOLES ONLY **	6X6 CONDITION ANGLE: <u>STEEL</u> ** USE SOLID HOLES ONLY **	6X6 CONDITION ANGLE: <u>CONCRETE</u> ** USE SOLID HOLES ONLY **
<p>1/4" TAPCONS</p> <p>21.500 CUTLENGTH</p>	<p>1/4" BOLTS/NUTS</p> <p>21.500 CUTLENGTH</p>	<p>2ksi: 1/4" TAPCONS</p> <p>21.500 CUTLENGTH</p> <p>4ksi: 1/4" TAPCONS (ANY 9 IN ROWS 1,2,&4)</p> <p>21.500 CUTLENGTH</p>
<p>6x6 ANGLE DIAGRAM: (OPENING HEIGHT >96 1/2" & ≤ 144 1/2")</p>		



ESD-635D Channel Installation with Damper IOM
June 2011, Rev. 1
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