

IMPORTANT: READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH INSTALLATION

General

The following guidelines provide basic assembly and installation instructions for EXA-645-MD extruded aluminum combination louvers mounting to cast concrete building conditions. The EXA-645-MD is designed to withstand severe weather effects typically associated with hurricanes, and is certified by Miami-Dade County for resistance to impacts, cyclic fatigue, and static pressures up to 120 psf. The design features stationary drainable louver blades to protect against water penetration and an integral airfoil-blade control damper to allow positive shut-off of air intake and exhaust openings.

1. For additional details, refer to the product drawing package posted at www.pottorff.com as well as any job-specific submittal drawings when provided.
2. Carefully lift louver sections by the frames using multiple lifting points if necessary to avoid distortion, racking, or other damage. **Do not apply excessive force to a single point and NEVER LIFT UNITS BY LOUVER BLADES, LINKAGE, OR ACTUATOR.** Take necessary precautions to prevent marring the louver finish.
3. While installation is underway and before louver sections are permanently fastened in place, Pottorff recommends that the installer employ temporary straps or bracing (by others) to prevent units from shifting unexpectedly.
4. All gaskets, caulk, and anchors to the building condition are supplied by others.

Preparation

Louvers and Hardware:

1. Locate all crates, boxes, cartons, etc.
2. Remove louvers from packaging, inspect for damage, confirm quantities and sizes with packing list, and organize parts in order of installation. To verify installation hardware, refer to Table 1. Installation hardware will typically be shipped in a separate box.
3. Notify your Pottorff representative immediately of any shortages or shipping damage.

Openings:

1. Inspect openings for damage, repair as needed, and remove any obstructions or debris.
2. Prior to installation, verify that openings are square and plumb and that the louvers will fit properly.

Sill Flashing

1. Locate all sill flashing (by others or optional by Pottorff). Sill flashing is recommended for all louver installations, especially for multiple-section wide louvers.
2. Confirm that the sill of the opening and the underside of the flashing are clean and free of all debris.
3. Apply caulk to the sill of the opening and firmly set the sill flashing in the caulk. See Figure 1.1.
 - a. For wider openings, multiple pieces of flashing may be necessary in order to cover the entire width. When this occurs, caulk at all overlapping joints and firmly set. See Figure 1.2.
 - b. Closed end flashing pieces (if supplied by Pottorff) will include extra length on each end which must be cut, and manually bent into place to close off the sill flashing ends. Carefully bend up the end tabs and thoroughly caulk the corner seams. See figure 1.3

Single Section Louver Installation

1. Attach jamb clip angles (A-1) to the sides of the wall opening using one (1) 1/2" x 5" DeWalt Screw-Bolt+ anchor (F-5) for each clip angle.
 - a. Clip angle centers should be no more than 20" apart and a maximum of 10" from the top or bottom of the opening.
 - b. NOTE: On the right-hand side, clip angles may need to be shifted several inches up or down in order to avoid interference with the actuator or locking quadrant. Be sure to determine the required clearance before anchoring the clip angles.
 - c. Determine the thickness of the building wall. If overall wall depth is less than 9-5/8", use the configuration shown in the jamb detail of Figure 3 for a tension-type connection. Otherwise, refer to Figure 2 for a shear-type connection.

Tension Connections (Figure 3):

- d. For tension connections, drill a 9/16" clearance hole through the 5" leg of each jamb shelf angle (A-2). The hole should be approximately centered, and located 2-1/8" away from the angle corner.
- e. Using the jamb shelf angles as templates, drill 1/2"-diameter holes into the rear of the concrete along the sides of the wall opening. Holes should be at least 5-1/4" deep. Be careful to maintain proper location as illustrated in Figure 3. Anchors should be placed 2-1/4" from the edge of the concrete.
- f. After cleaning any dust or loose material from the holes, fasten each jamb shelf angle to the back of the wall using 1/2" x 5" DeWalt Screw-Bolt+ anchors inserted through the clearance holes in the angles into the anchor holes in the concrete. The 3" leg of each angle should be flush with the edge of the opening. Tighten the anchors to the correct installation torque specified by DeWalt.
- g. Fasten a jamb clip angle (A-1) to each jamb shelf angle using two (2) 1/4-14 x 1-1/2" self-drilling screws (F-4) per connection.
 - i. Drill clearance holes through the jamb clip angles.
 - ii. As necessary, drill pilot holes through the secondary jamb clip angles. To ensure proper thread engagement, pilot hole diameters must not exceed 3/16".

Shear Connections (Figure 2):

- h. For shear connections, drill a 9/16" clearance hole through the 5" leg of each jamb clip angle (A-1). The hole should be approximately centered, and located 1-3/8" away from the angle corner.
- i. Using the jamb clip angles as templates, drill 1/2"-diameter holes into concrete along the sides of the wall opening. Holes should be at least 5-1/4" deep. Be careful to maintain proper location as illustrated in Figure 2. Recess clip angles as necessary to account for the approximate 6" depth of the louver frame. Anchors should be placed no closer than 2-1/4" to any edge of the concrete.
- j. After cleaning any dust or loose material from the holes, fasten each jamb clip angle to the side of the opening using 1/2" x 5" DeWalt Screw-Bolt+ anchors inserted through the clearance holes in the angles into the anchors holes in the concrete. Tighten the anchors to the correct installation torque specified by DeWalt.

Single Section Louver Installation, cont'd

2. Lift the louver section up and place it into the opening as shown in Figure 2 or Figure 3, as appropriate. With the clip angles located correctly, the front of the louver will be approximately flush with the outside face of the wall while the back of the louver sits directly against the clip angles.
3. As necessary, shim around the perimeter to level the louver and to maintain an approximate 1/4" clearance between the louver frame and the edges of the opening (shims are by others).
4. Attach the louver section to the jamb clip angles using 1/4-14 x 1-1/2" self-drilling screws (F-4) running through the existing 5/16" holes in the clips into the louver frame.
 - a. Three (3) fasteners will be used for each jamb clip
 - b. As necessary, drill pilot holes into the frame. To ensure proper thread engagement, pilot hole diameters must not exceed 3/16".
5. Install backer rod and caulk around the entire perimeter of the louver, as required. If flashing is used, do not caulk between louver and sill flashing to allow for drainage.

Multiple Section Wide Louver Installation

1. Follow step 1 from "Single Section Louver Installation" to locate and install jamb clip angles (A-1) and jamb shelf angles (A-2, if required) along both sides of the opening.
2. Identify the left-most louver section and install it following steps 2-4 from "Single Section Louver Installation."
 - a. NOTE: Left, right, and center sections are of distinct construction and ARE NOT INTERCHANGEABLE. Refer to Figure 4 for correct identification of sections.
3. Moving to the right, lift the next section into place. Shim as necessary to maintain an approximate 1/4" clearance between the louver frame and the wall condition, and approximately 1/4" between sections (shims by others).
4. At the top and bottom of the opening, install mullion clip angles (A-3) centered on the vertical joint between sections.
 - a. Determine the thickness of the building wall. If overall wall depth is less than 10-7/8", use the configuration shown in the mullion details of Figure 3 for a tension-type connection. Otherwise, refer to Figure 2 for a shear-type connection.

Tension Connections (Figure 3):

- b. For tension connections, mullion shelf angles (A-4) will first attach to concrete along the top or bottom of the opening using four (4) 5/8" x 6" DeWalt Screw-Bolt+ anchors (F-9) per connection.
- c. In the 6" leg of each mullion shelf angle, drill a series of 11/16" clearance holes along a line located 2-1/4" from the angle corner. Holes should be spaced 9-1/8" on center and at least 1-1/4" from the ends.
- d. Using the mullion shelf angles as templates, drill 5/8"-diameter holes into the rear of the concrete wall above and below the opening. Holes should be at least 6" deep. Be careful to maintain proper location as illustrated in Figure 3. Anchor should be placed 2-1/4" from the edge of the opening.

- e. After cleaning any dust or loose material from the holes, fasten each mullion shelf angle to the back of the wall using 5/8" x 6" DeWalt Screw-Bolt+ anchors inserted through the clearance holes in the angles into the anchor holes in the concrete. The 4" leg of each angle should be flush with the edge of the opening. Tighten the anchors to the correct installation torque specified by DeWalt.
- f. Fasten a mullion clip angle (A-3) to each secondary mullion clip angle using ten (10) 1/4-14 x 1-1/2" self-drilling screws (F-4) at each connection as shown in the mullion detail of Figure 3.
 - i. Drill 5/16" clearance holes through the mullion clip angles.
 - ii. As necessary, drill pilot holes through the secondary mullion clip angles. To ensure proper thread engagement, pilot hole diameters must not exceed 3/16".

Shear Connections (Figure 2):

- g. For shear connections, mullion clip angles (A-3) will first attach to concrete along the top or bottom of the opening using four (4) 1/2" x 5" DeWalt Screw-Bolt+ anchors (F-5) per connection.
 - h. In the 6" leg of each mullion clip angle, drill a series of 9/16" clearance holes along a line located 1-3/8" from the angle corner. Holes should be spaced 7-1/2" on center and at least 3/4" from the ends.
 - i. Using the mullion clip angles as templates, drill 1/2"-diameter holes into concrete along the top and bottom of the wall opening. Holes should be at least 5-1/4" deep. Be careful to maintain proper location as illustrated in Figure 2. Anchors should be no closer than 3-3/8" to any edge of the concrete.
 - j. After cleaning any dust or loose material from the holes, fasten each mullion clip angle to the top or bottom of the opening using 1/2" x 5" DeWalt Screw-Bolt+ anchors inserted through the clearance holes in the angles into the anchor holes in the concrete. Tighten the anchors to the correct installation torque specified by DeWalt.
5. Fasten each mullion clip angle (A-3) to the back of the louver frame using a total of eight (8) 1/4-14 x 1-1/2" self-drilling screws (F-4) running through the existing 5/16" holes in the 4" angle leg. As necessary, drill pilot holes into the louver frame, but do not exceed 3/16" for pilot hole diameters.
 6. Install any remaining louver sections using the procedure described above. Finish by installing backer rod and caulk in the following locations:
 - a. All vertical joints between sections.
 - b. Around the entire perimeter of the opening.**To allow for drainage, do not caulk between louvers and sill flashing (if used).**

Actuator Connection

All electrical and pneumatic connections should be done in accordance with local code requirements and actuator installation documentation. Before applying power to an actuator, verify power requirements. After appropriate power has been connected to the actuator, cycle the louver to ensure proper operation.

Figure 1.1 Sill Flashing Vertical Section

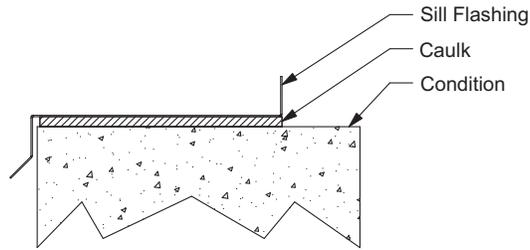


Figure 1.2 Sill Flashing Assembly

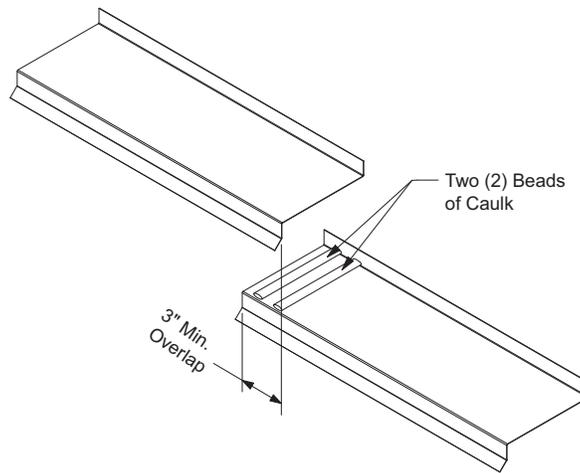
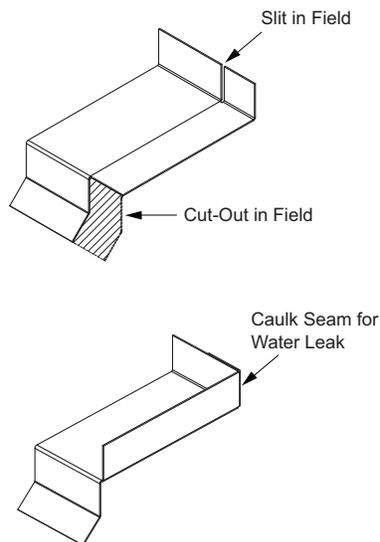


Figure 1.3 Closed End Sill Flashing



EXA-645-MD Installation Instructions, Concrete Condition M-54882 Rev. A. (3/7) October 2021

Table 1: Standard Installation Hardware, Concrete Building Condition

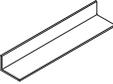
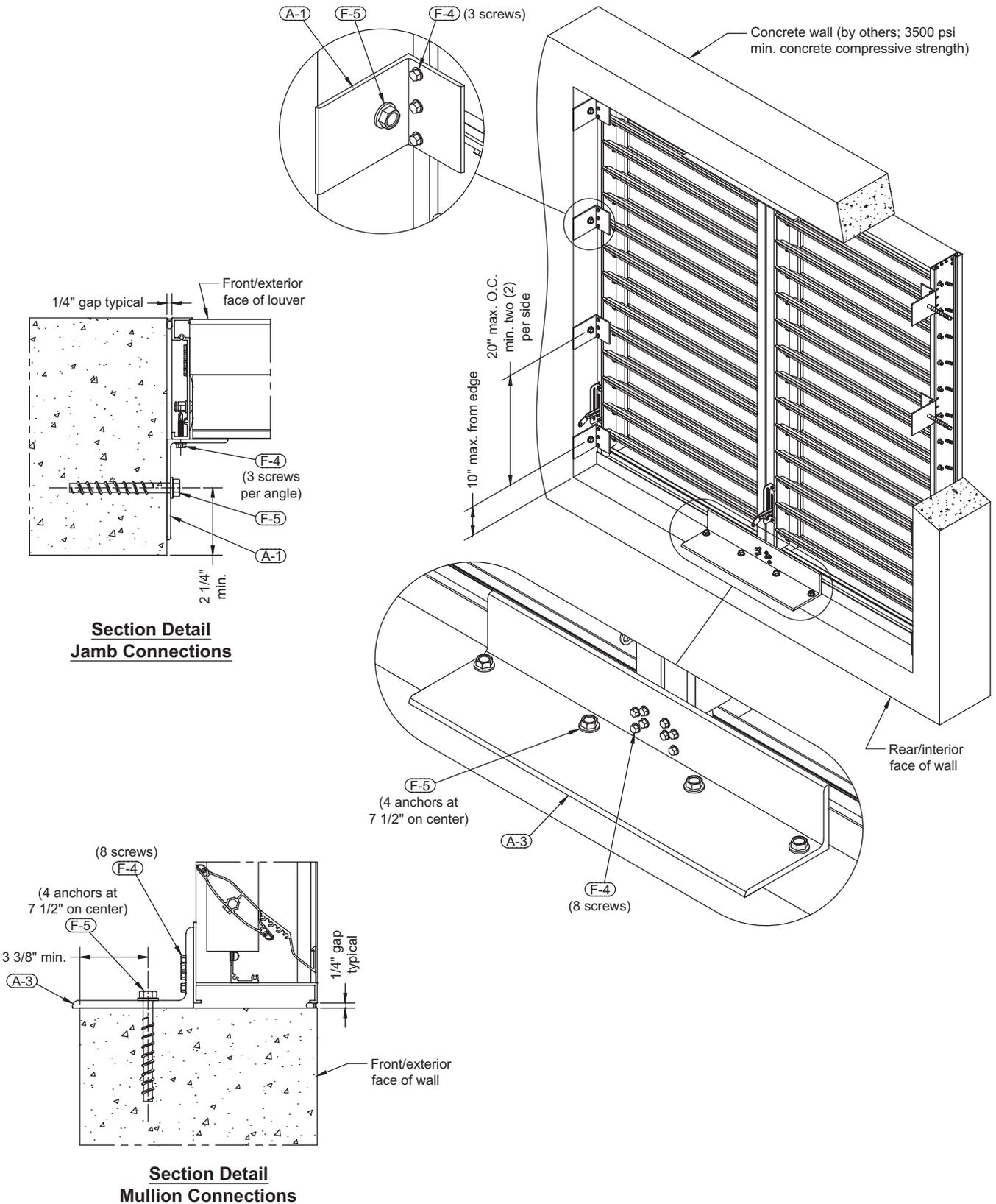
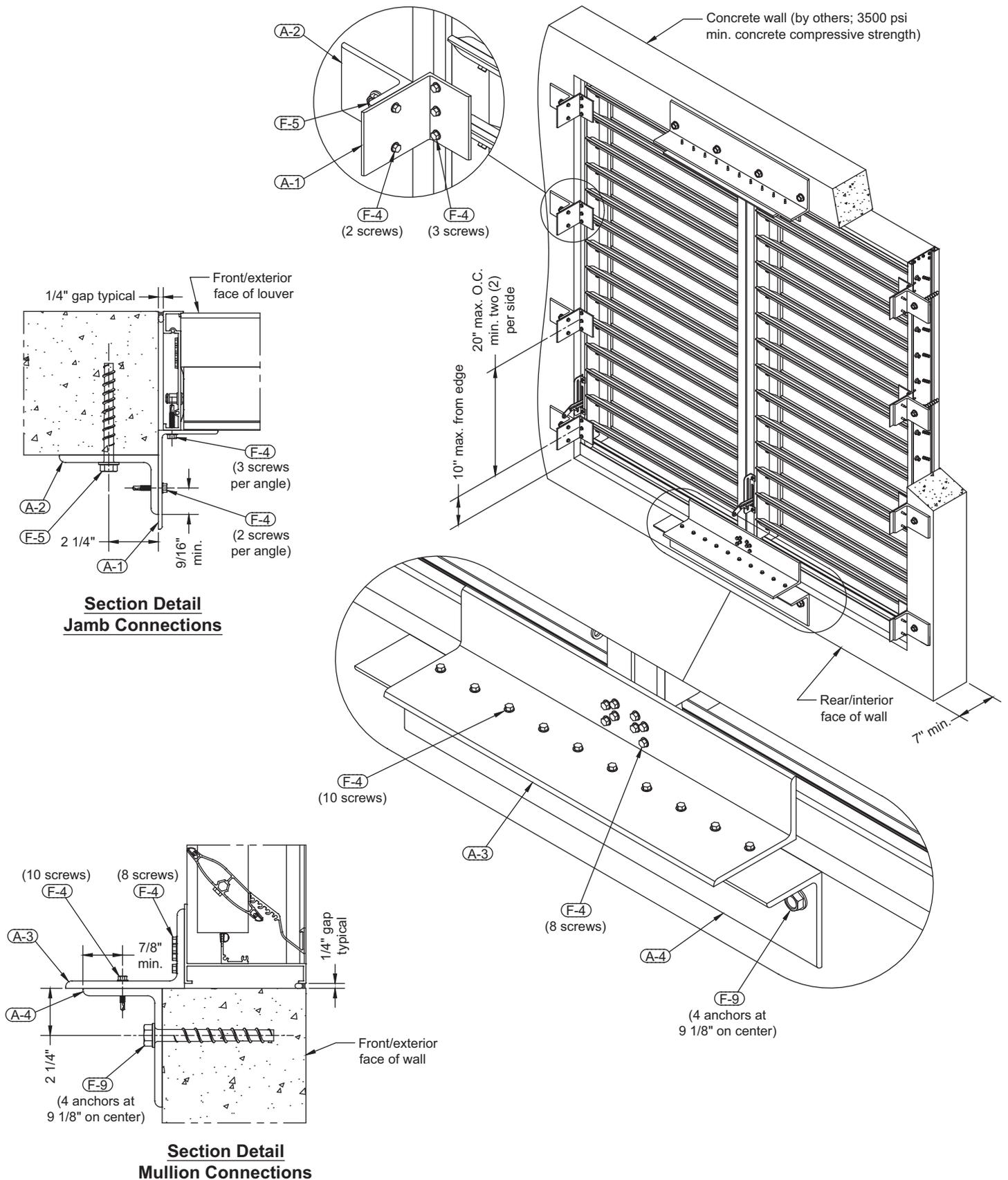
Part	Description		
A-1	Jamb Clip Angle (5" x 3" x 3/16" x 4"-Long)		Included
A-2	Jamb Shelf Angle (5" x 3" x 3/8" x 4"-Long)		Included
A-3	Mullion Clip Angle (6" x 4" x 3/8" x 24"-Long)		Included for multi-wide assemblies only
A-4	Mullion Shelf Angle (6" x 4" x 3/8" x 30"-Long)		Included for multi-wide assemblies only
F-4	1/4-14 x 1 1/2" Hex-Head Self-Drilling Screw		Included
F-5	1/2" x 5" DeWalt Screw-Bolt+ Screw Anchor, Galvanized Finish		Supplied by others
F-9	5/8" x 6" DeWalt Screw-Bolt+ Screw Anchor, Galvanized Finish		Supplied by others (tension connection only)

Figure 2: Louver Installation, Concrete Building Condition, Shear Connection



EXA-645-MD Installation Instructions, Concrete Condition M-54882 Rev. A. (5/7) October 2021

Figure 3: Louver Installation, Concrete Building Condition, Tension Connection



EXA-645-MD Installation Instructions, Concrete Condition **M-54882** Rev. A. (6/7) October 2021

Figure 4: Identifying Sections in a Multi-Wide Assembly

