

Installation Instructions

3110/3110FV/G2-3110 Ligature Resistant Handrails

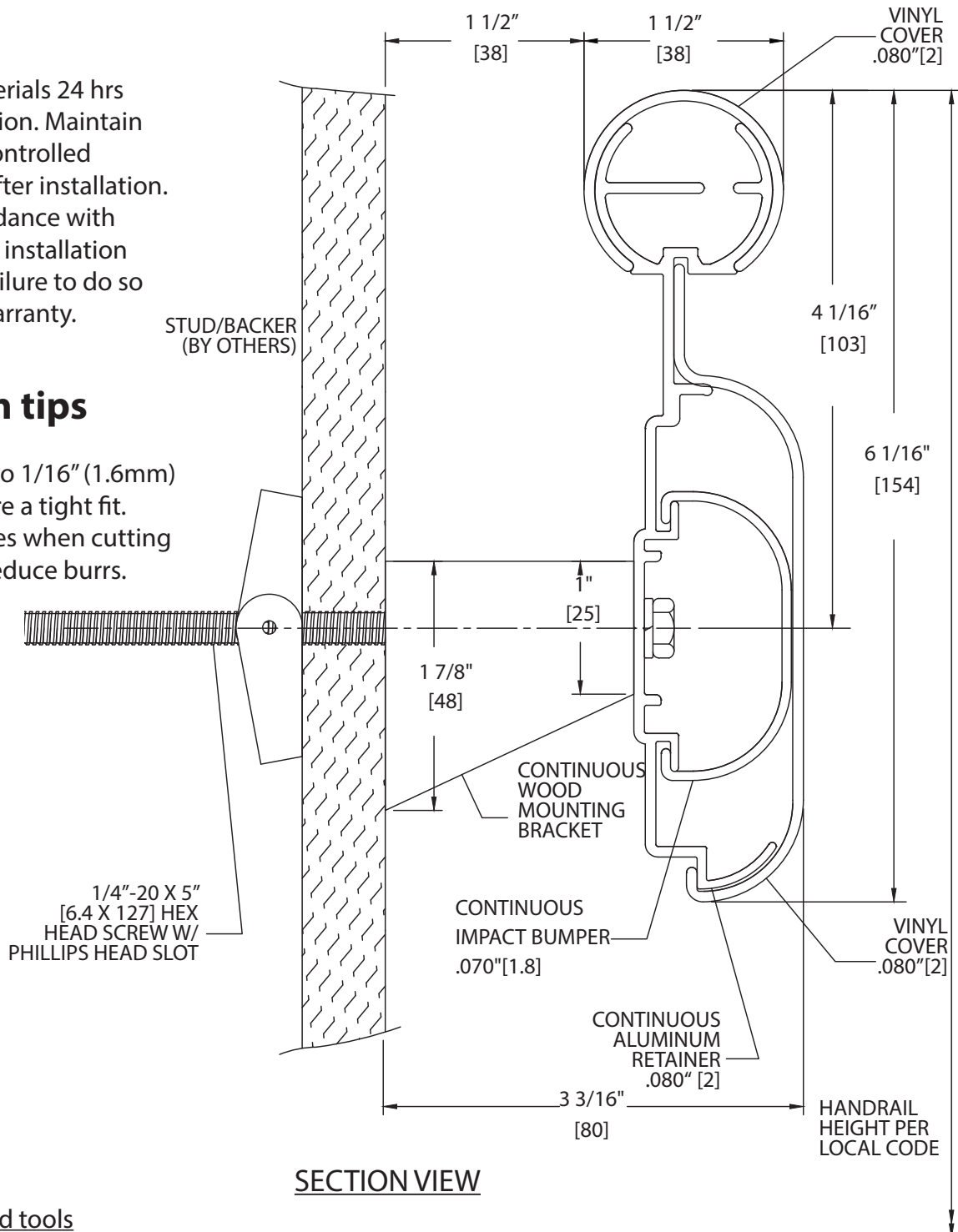
Please read all instructions before installing handrail.

Important

1. Acclimate materials 24 hrs before installation. Maintain temperature controlled environment after installation.
2. Install in accordance with manufacturer's installation instructions. Failure to do so will void the warranty.

Installation tips

1. Cut covers up to 1/16" (1.6mm) longer to ensure a tight fit.
2. Lubricate blades when cutting aluminum to reduce burrs.



SECTION VIEW

Recommended tools

Safety Glasses, Tape Measure, 3/8" socket for machine screw hex bolt, 7/16" socket for wood screw hex bolt, Level, Phillips and Flat head Screwdrivers, Power Drill, Drill Bits - 1/4" masonry (concrete/ concrete block), Power Miter Saw, 10" Blade with 60-80 Carbide Tipped Teeth.

IPC.2150/REV.1

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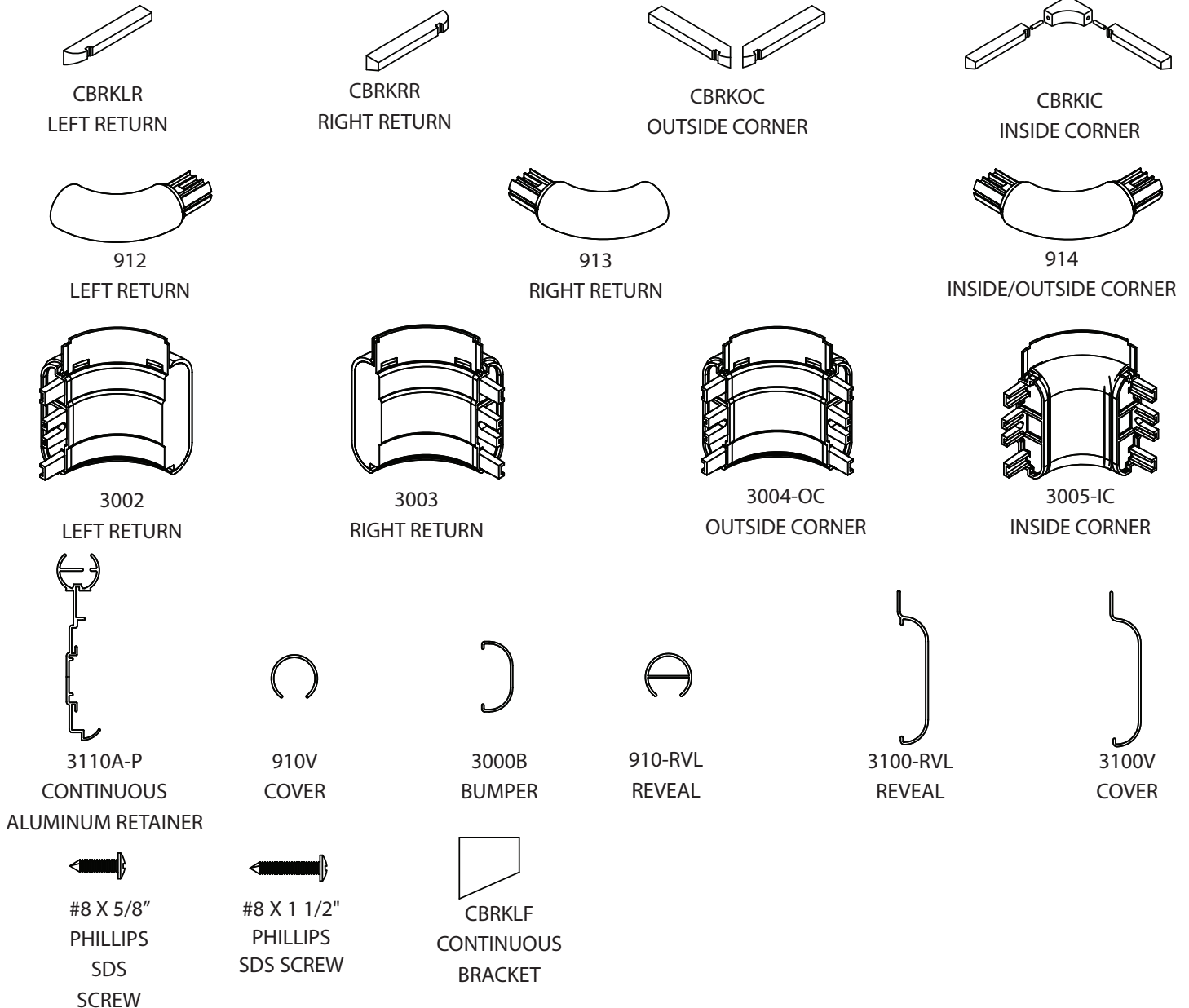
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Component Overview



Wall Condition	Specified Fasteners	Inpro Part#
Steel Stud/Gypsum Wall	1/4-20 x 5" Phillips hex head bolt with toggle wing and lock washer	HWK-1001D
Concrete/Concrete Block	1/4-20 x 5" Phillips hex head bolt with lead anchor and lock washer	HWK-1001C
Wood Stud/Gypsum Wall	1/4" x 5" Hex Head Wood Screw and lock washer	HWK-1001W
16 gauge steel Backer/Gypsum wall	#14 x 4" Indented hex washer, zink-plated TEK screw	HW69
Steel Stud or Metal Backer/Drywall (OSHPD)	1/4-20 x 5" Phillips hex head Bolt with lock washer and 1/4" Hilit Toggle	HWK-1001OD
Concrete/Concrete Block (OSHPD)	1/4" x 4" Torx Hex Washer Head Screw (Hilti Kwik-Con II) and lock washer	HWK-1001OC
Wood Stud or Wood Backer/Gypsum Wall (OSHPD)	1/4" x 5" Hex Head Wood Screw and lock washer	HWK-1001OW

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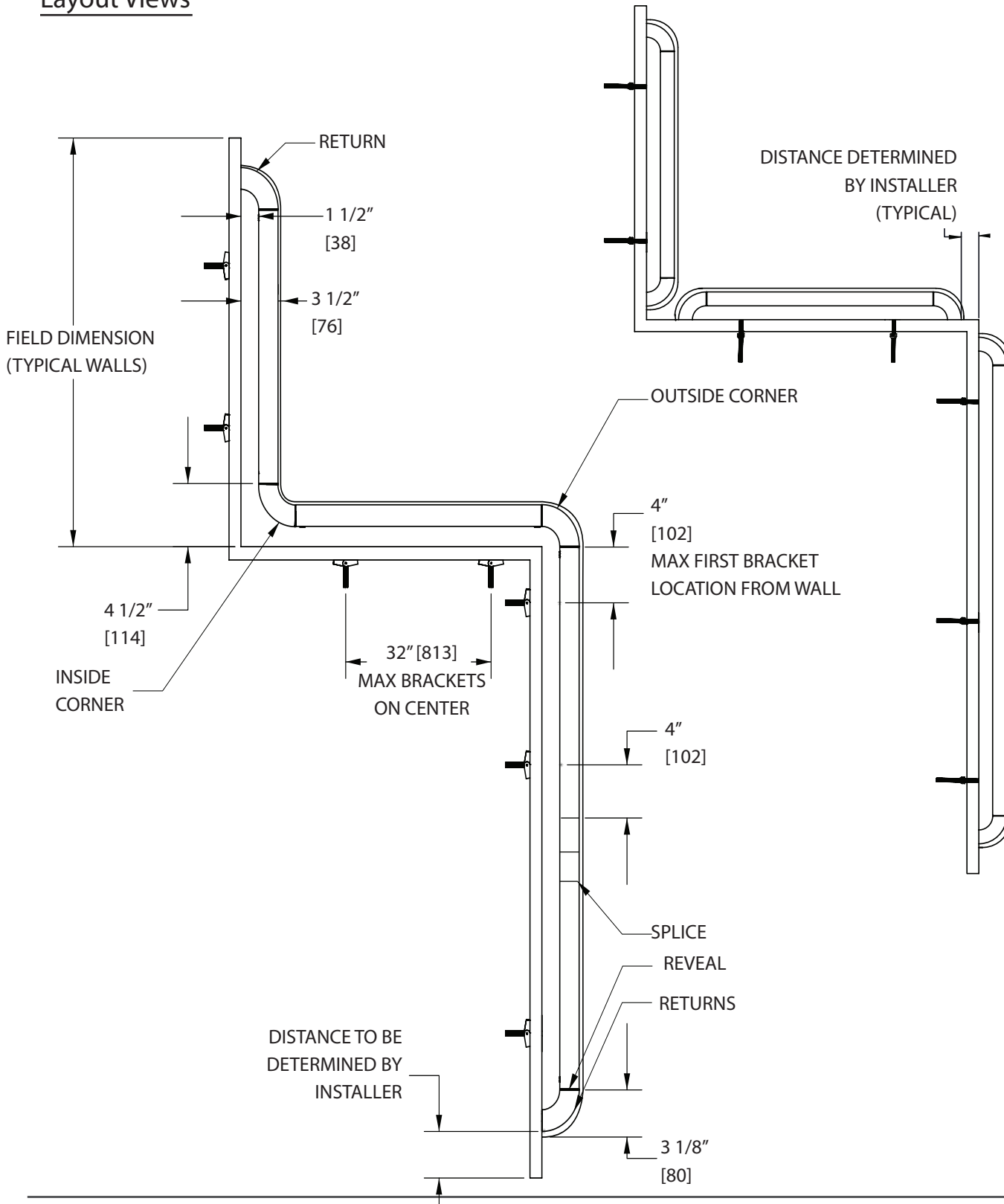
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Layout Views



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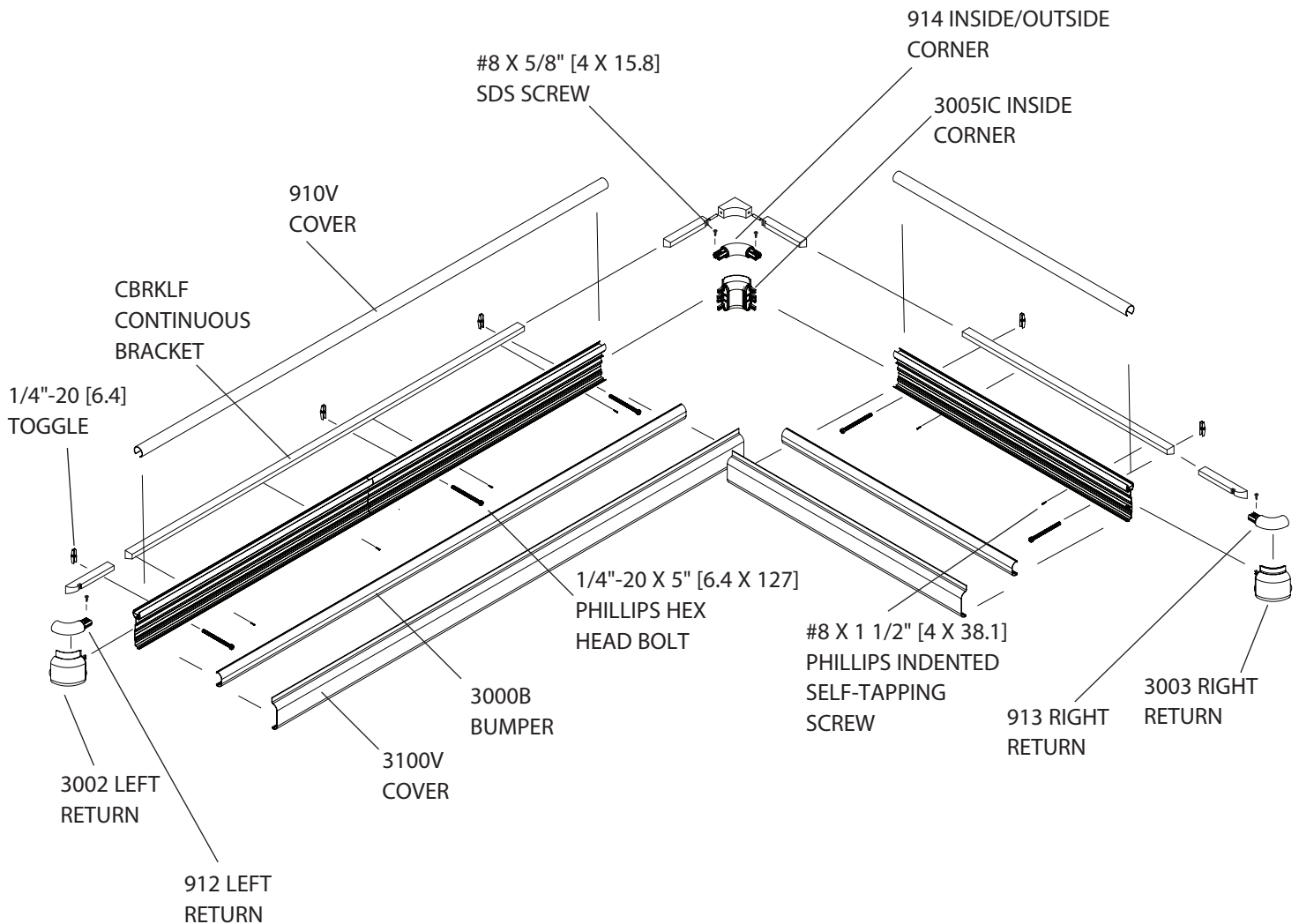
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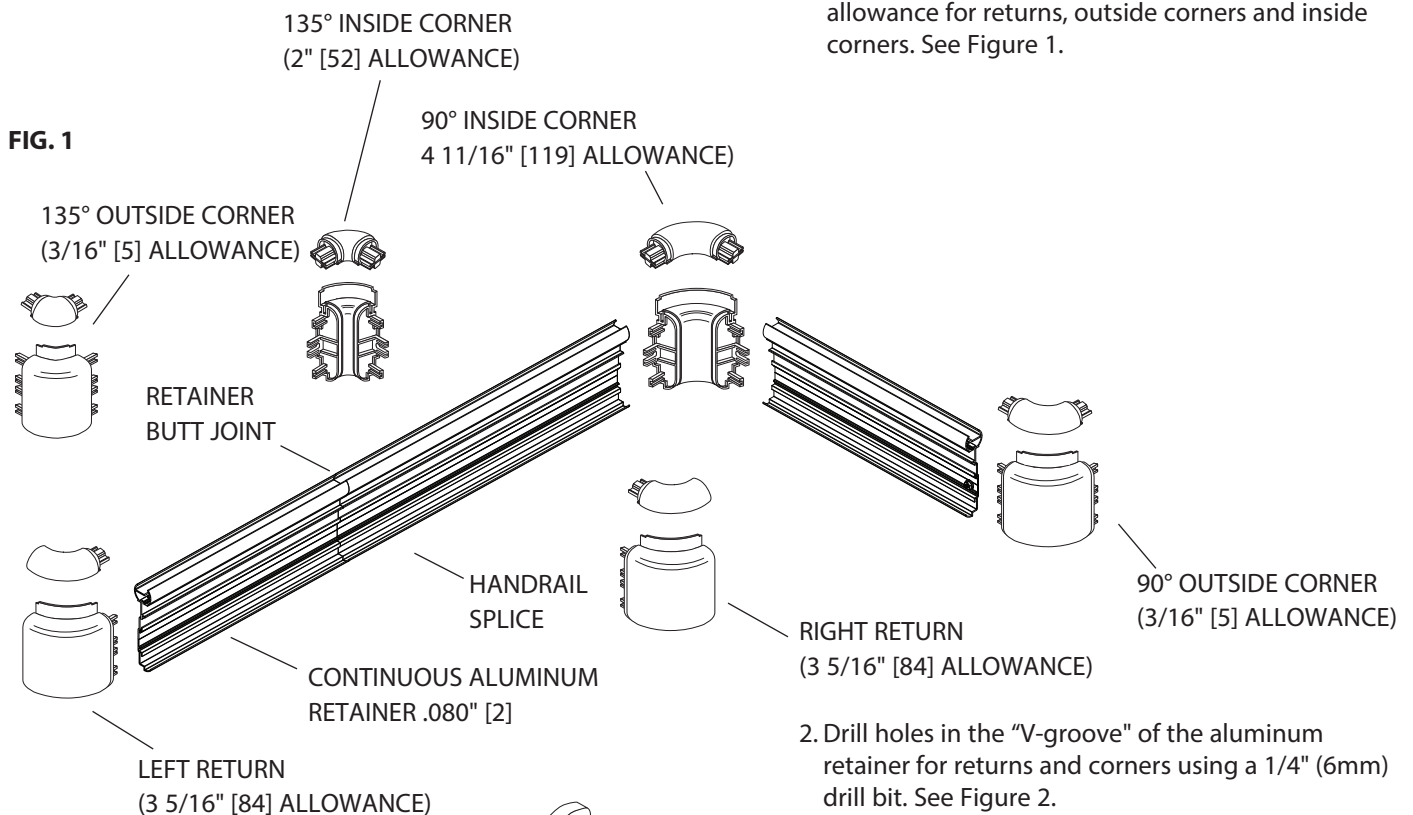
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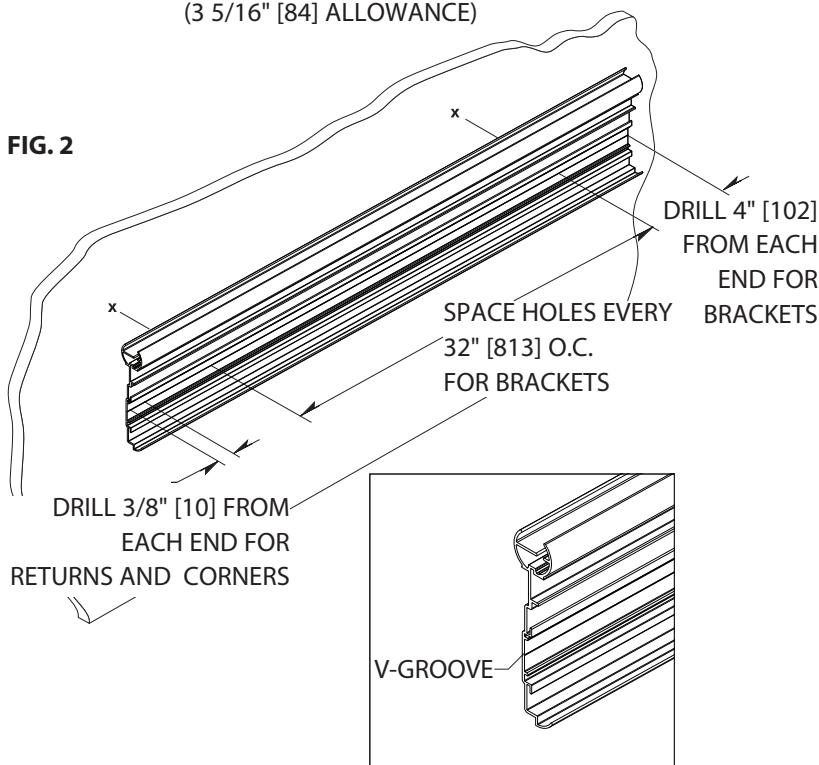
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FIG. 1



1. Cut aluminum retainer to desired length, leaving allowance for returns, outside corners and inside corners. See Figure 1.

FIG. 2



2. Drill holes in the "V-groove" of the aluminum retainer for returns and corners using a 1/4" (6mm) drill bit. See Figure 2.

3. For the lower portion of the handrail slip optional reveal onto returns/corners, slide tabs of returns/corners onto retainer and fasten. Attach returns and corners to the aluminum retainer using one 1/4" x 20 [6] serrated flange hex bolt and one 1/4"-20 [6.4] serrated flange hex nut for each return. To allow for adjustments, leave at least a 1/16" [2] gap between the returns and corners and the end of the aluminum retainer when sliding the two components together.

4. Cut the continuous bracket pieces to the correct length to fit the back of the handrail.
- A. Left and right outside corner pieces mate to form a complete outside corner.
 - B. Left and Right inside corner pieces mate and connect with dowels to the inside corner part to complete an inside corner condition.
 - C. When bracket pieces butt together apply a small amount of IPC Vinylseal to the mating surfaces.
5. Attach the bracket pieces to the aluminum with a #8 x 1 1/2" [4 x 38] phillips SDS screw from the front of the retainer.

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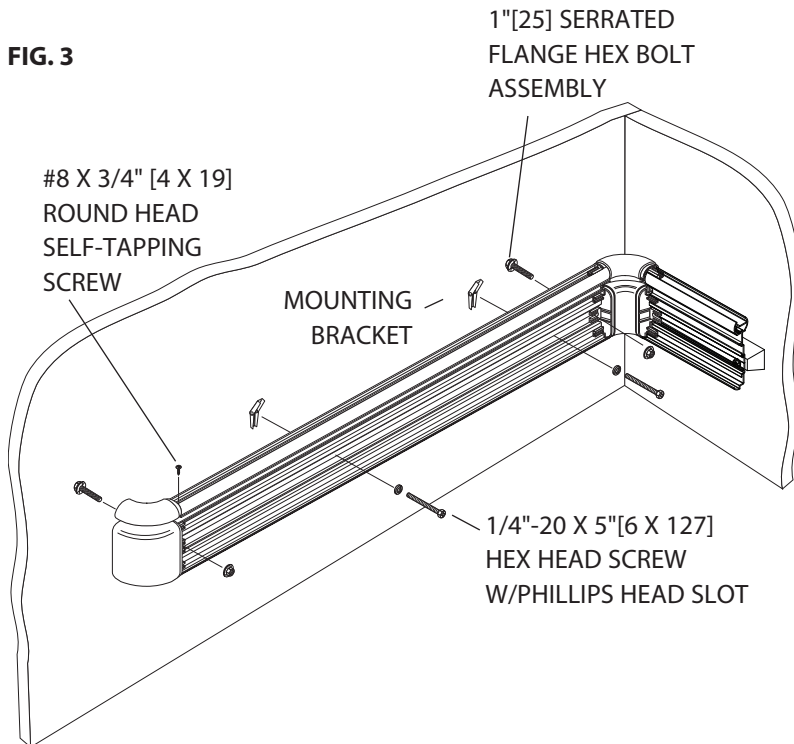
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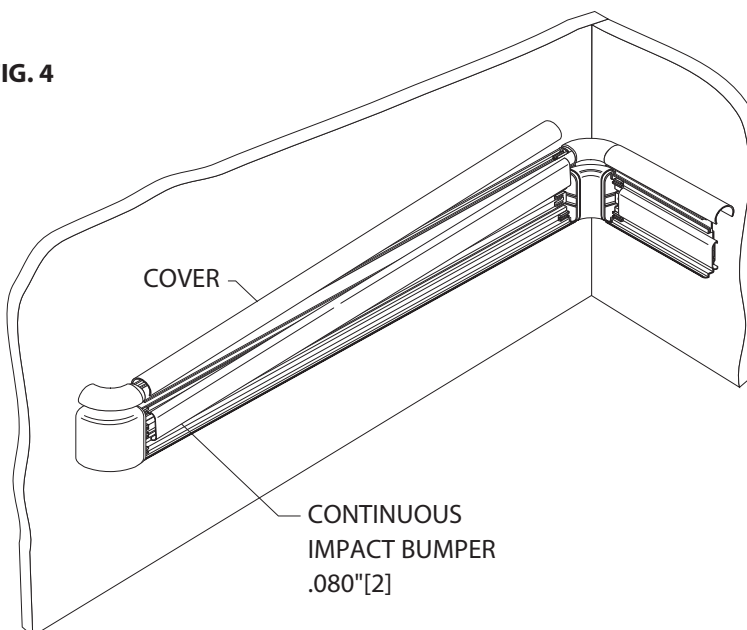
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FIG. 3



6. Run a bead of IPC Vinylseal caulk along the top edge of the bracket and aluminum, while also filling in any gaps by the fasteners for the returns and corners.
7. Drill 1/4" [6] holes on the centerline of the aluminum retainer and through the continuous mounting bracket, for the mounting fasteners. Holes should be 4" [102] from the ends and spaced every 32" [812] max. See figure 3. Hold the handrail and bracket assembly to the wall at the required height. Level and transfer the mounting holes to the wall. Drill all marked holes on the wall with a 3/4" [19] drill bit for toggle bolts or 1/2" [13] drill bit for lead anchors.
8. Insert 5" [127] hex head screw, one lock washer and one toggle wing or lead anchor. Mount the assembled retainer with bracket into holes on wall. Level the retainer and tighten screws to secure the retainer to the wall.

FIG. 4



9. Cut the inner bumper to the length between the tabs on the returns/corners. Position and snap inner bumper in place. Cut cover for top portion of handrail to length between returns and/or corners. (Note: Trim factory edges square before installation) Position cover on retainer at one end and work to the other end by snapping the cover over the retainer. See Figure 4.

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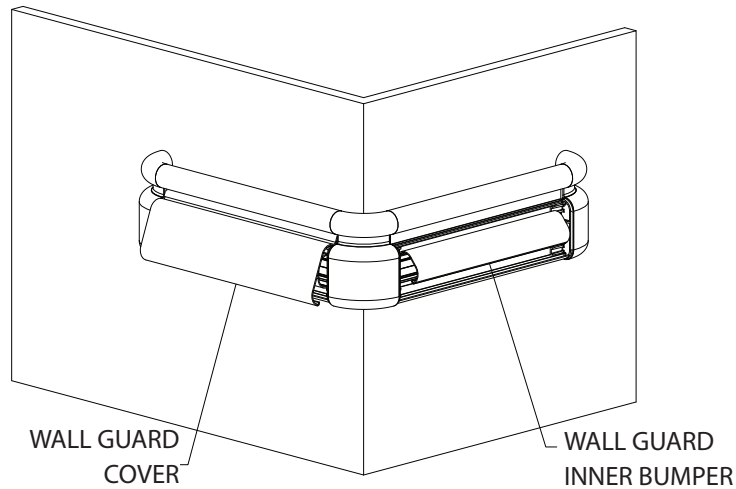
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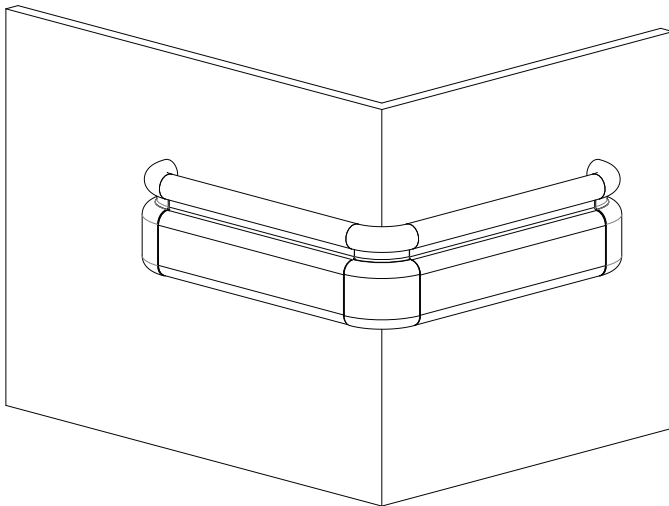
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FIG. 5



5. Cut the cover for lower portion of handrail to the length between reveals on returns and/or corners. (Note: Trim all factory edges square before installation.) Position cover on retainer. Starting with top edge of cover, slip cover under handrail and snap cover on retainer by pivoting bottom of cover over retainer. See Figure 5.

FIG. 6



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