Code Compliance Research Report
CCRR-0280

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DIVISION: 05 00 00 - METALS
Section: 05 52 00 – Metal Railings

REPORT HOLDER:
Deckorators, Inc.
68956 US Highway 131
White Pigeon, MI 49099
www.deckorators.com

REPORT SUBJECT:
ALX Contemporary Guard Systems
- **ALX Contemporary Round Railing**
- **ALX Contemporary Rectangular Railing**
- **ALX Contemporary Cable Railing**
- **Revolution Rod Railing**

Rapid Rail Guardrail System

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:
- 2024, 2021, 2018 *International Building Code®* (IBC)
- 2024, 2021, 2018 *International Residential Code®* (IRC)

NOTE: This report references the most recent Code editions cited. Section numbers in earlier editions may differ.

1.2 The ALX Contemporary and Rapid Rail Guard Systems have been evaluated for the following properties (see Table 1):
- Structural Performance

1.3 The ALX Contemporary and Rapid Rail Guard Systems have been evaluated for the following uses (see Table 1):
- Guards (aka. guardrails) under the definitions of the referenced codes.
- Guard assemblies are provided as level guards for walking areas such as decks and balconies. Sloped guards are for open sides of stairways.

2.0 STATEMENT OF COMPLIANCE

The ALX Contemporary and Rapid Rail Guard Systems comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2 and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.0.

2.1 2024 IBC and IRC Evaluation Reports: The Intertek CCRR is an *Evaluation Report* for approval of an alternate material, design, or method of construction in accordance with Section 104.2.3.6.1 of the 2024 IBC and Section R104.2.2.6.1 of the 2024 IRC.

3.0 DESCRIPTION

3.1 Level guards are provided with rail lengths up to 96 inches in length and installed heights of 42 inches measured from the top of the upper rail to the walking surface. See Tables 2-6 for lengths and configurations.

3.2 Stair guards are provided with rail lengths up to 97 inches along the sloping length between the inside of supports and an installed height of 42 inches measured vertically from the top of the upper rail to the leading edge of the stair tread or landing.

3.3 The ALX Contemporary and Rapid Rail Guard Systems are an assemblage of extruded aluminum top rails, bottom rails, brackets, balusters, and posts.

3.4 The ALX Contemporary Rectangular, Cable and Revolution Rod Guard top rails are rectangular extruded aluminum profiles. See Figure 2. The ALX Contemporary Round Guard top rail is a round extruded aluminum profile. See Figure 1.

3.5 The ALX Contemporary Rectangular and Round Guard bottom rail is a square extruded aluminum profile. ALX Contemporary Cable and Revolution Rod Guard Systems do not include a bottom rail. See Figure 3.

3.6 The Rapid Rail top and bottom rails are two component rails consisting of a top and base fit together from extruded aluminum profiles. See Figure 9.

3.7 Zinc die-cast collar brackets are used for various configurations. See Figures 4, 10, 12, and 13.

3.8 ALX Guard Systems infill varies by guard system and configuration. See Tables 2, 3, 4 or 5. Available infill described below and shown in Figures 5, 6, and 7.

3.8.1 Classic - aluminum 3/4-inch-diameter round pickets, fit into routing in the top and bottom rails.

3.8.2 Estate - aluminum 3/4-inch square pickets, fit into routing in the top and bottom rails.

3.8.3 Aluminum, 3/4-inch square pickets, factory welded to the top and bottom rails with a 1/8-inch continuous fillet weld.

3.8.4 Stainless steel horizontal cable infill, with intermediate 3/4-inch square pickets. Stair guard systems use two intermediate pickets and level guard systems use one intermediate picket.

3.8.5 A full-length #8-32 stainless steel threaded rod with a 1/4 in. outside diameter stainless steel rod sleeve. An intermediate baluster is required.

3.9 The Rapid Rail Guardrail System uses 5/8-inch square aluminum balusters, fit into routing in the top and bottom rails. See Table 6 and Figure 11.

3.10 Posts consist of square aluminum extrusions welded to an aluminum base plate that is pre-drilled for anchoring to the supporting structure. See Figure 8.

3.10.1 The heavy wall post is a 2-1/2-inch square by 0.15-inch wall aluminum extrusion.

3.10.2 The light wall post is a 2-1/2-inch square by 0.080-inch wall aluminum extrusion.

3.10.3 The 4x4 post is a 4-inch square by 0.125-inch wall aluminum extrusion.

3.10.4 The heavy wall post and light wall post are attached to a 5-inch x 5-inch x 3/8-inch-thick aluminum base plate with a 1/4-inch continuous fillet weld. The base plates have four 3/8-inch-diameter holes for attachment to the deck surface.

3.10.5 The 4x4 post is attached to a 6-1/2-inch x 6-1/2-inch x 1/2-inch-thick aluminum base plate with a 3/16-inch continuous fillet weld. The base plate has four 5/8-inch-diameter holes for attachment to the deck surface

4.0 PERFORMANCE CHARACTERISTICS

4.1 The guard systems described in this report have demonstrated capacity to resist design loading specified in Chapter 16 of the IBC and Section R301 of the IRC when tested in accordance with ICC-ES AC 273.

5.0 INSTALLATION

5.1 The ALX Contemporary and Rapid Rail Guard Systems must be installed in accordance with the manufacturer's published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Guards may be assembled in various configurations identified in Tables 2-6. Refer to Tables 7-11 for the fastening schedule of all system components**.**

5.3 Posts are anchored to with (4) minimum 3/8" bolts of the type and size suitable for the construction type and condition of the supporting structure. See Section 6.3 under Conditions of Use for additional requirements.

6.0 CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 Only those types of fasteners and fastening methods described in this report have been evaluated for the installation of ALX Contemporary and Rapid Rail Guard Systems. Other methods of attachment are outside the scope of this report.

6.3 Anchorage of the structural post is not within the scope of this report and is subject to evaluation and approval by the building official. Anchors must satisfy the design load requirements specified in Chapter 16 of the building code and must meet the following minimum requirements:

6.3.1 A minimum of four anchor bolts must be used and located in the four pre-drilled holes in the structural post base plate.

6.3.2 The anchors must have a minimum nominal diameter of 3/8 inch.

6.3.3 Where required by the building official, engineering calculations and details shall be provided. The calculations verify that the anchorage and supporting structure complies with the building code for the type and condition of the supporting structure.

6.4 The ALX Contemporary and Rapid Rail Guard Systems are manufactured under an approved quality control system with third-party inspections by Intertek.

7.0 SUPPORTING EVIDENCE

7.1 Drawings and installation instructions submitted by the manufacturer.

7.2 Reports of testing and engineering analysis demonstrating compliance with the performance requirements of Acceptance Criteria for Handrails and Guards ICC-ES AC273, revised June 2017.

7.3 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

7.4 Intertek Listing Reports "Deckorators, Inc - ALX Contemporary Guardrail Systems" and "Deckorators, Inc – Rapid Rail Guardrail Systems", on the Intertek Directory of Building Products.

8.0 IDENTIFICATION

The ALX Contemporary and Rapid Rail Guard Systems are identified with the manufacturer's name (Deckorators, Inc.), the product name (ALX Contemporary Guard Systems or Rapid Rail Guardrail Systems), when applicable "For Use in One-and Two-Family Dwellings Only", the Intertek Mark as shown below, the Intertek Control Number, and the Code Compliance Research Report number (CCRR-0280).

CODE COMPLIANCE
ETL US
Intertek
CCRR-0280

9.0 OTHER CODES

This section is not applicable.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1: PROPERTIES EVALUATED

PROPERTY	2024 IBC SECTION	2024 IRC SECTION
Guard Structural Performance	1607.9.1	Table R301.5

TABLE 2: CODE OCCUPANCY CLASSIFICATION – ALX CONTEMPORARY ROUND RAILING

GUARD TYPE	MAXIMUM DIMENSIONS[1]	INFILL	SUPPORT POST	SUPPORT BLOCK	CODE OCCUPANCY CLASSIFICATION
Level / In-Line Application	97 in. by 42 in.	3/4 in Diameter Round Hollow Aluminum Picket	Heavy Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. dia. round picket	IRC - One- and Two-Family Dwellings
Stair Application	75.5 in. by 42 in.		Heavy Wall Light Wall[2] 4x4 Post		IRC - One- and Two-Family Dwellings IBC – All Use Groups

[1] Guardrails are qualified up to and included the listed maximum guardrail system dimensions for use in the referenced Code Occupancy Classification. Guardrail lengths are actual railings lengths, i.e. clear space between supports for level rails and sloping length of rail between supports for stair rails.

[2] Light Wall post is limited to use in IRC One- and Two-family Dwelling applications with a maximum rail height of 36 inches.

TABLE 3: CODE OCCUPANCY CLASSIFICATION – ALX CONTEMPORARY RECTANGULAR RAILING

GUARD TYPE	MAXIMUM DIMENSIONS[1]	INFILL	SUPPORT POST	SUPPORT BLOCK	CODE OCCUPANCY CLASSIFICATION
Level / In-Line Application One-Piece Bracket	73 in. by 36 in.[2]	3/4 in Square Hollow Aluminum Picket	Light Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. square picket	IRC - One- and Two-Family Dwellings
	93.5 in. by 42 in.[2]		Heavy Wall 4x4 Post		
	93.5 in. by 42 in.	Welded 3/4 in Square Hollow Aluminum Picket	Heavy Wall 4x4 Post	One, 3 in. long section of 3/4 in. square picket	IRC - One- and Two-Family Dwellings IBC - All Use Groups
	70.5 in. by 42 in.			None	
Level / In-Line Application Two-Piece Bracket	69.5 in. by 42 in.	Welded 3/4 in Square Hollow Aluminum Picket	Heavy Wall Light Wall[3] 4x4 Post	None	IRC – One- and Two-Family Dwellings IBC – All Use Groups
	69.5 in. by 42 in.	3/4 in Square Hollow Aluminum Picket Or Welded 3/4 in Square Hollow Aluminum Picket		One, 3 in. long section of 3/4 in. square picket	
	87 in. by 42 in.			Two, 3 in. long sections of 3/4 in. square picket	
	93.5 in. by 42 in.			One, 3 in. long section of 3/4 in. square picket	IRC – One- and Two-Family Dwellings
Level Over-The-Post Brackets	93 in. by 36 in.	3/4 in Square Hollow Aluminum Picket	Light Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. square picket	IRC - One- and Two-Family Dwellings
Stair Application One-Piece Bracket	97 in. by 42 in.	3/4 in Square Hollow Aluminum Picket	Heavy Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. square picket	IRC - One- and Two-Family Dwellings
		3/4 in Diameter Round Hollow Aluminum Picket	Heavy Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. dia. round picket	
	85.3 in. by 42 in.	3/4 in Square Hollow Aluminum Picket	Heavy Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. square picket	IRC - One- and Two-Family Dwellings IBC - All Use Groups
	75.5 in. by 42 in.		Heavy Wall Light Wall[3] 4x4 Post		
Stair Over-The-Post Brackets	96 in. by 42 in	3/4 in Square Hollow Aluminum Picket	Light Wall 4x4 Post	Two, 3 in. long sections of 3/4 in. square picket	IRC - One- and Two-Family Dwellings

[1] Guardrails are qualified up to and included the listed maximum guardrail system dimensions for use in the referenced Code Occupancy Classification. Guardrail lengths are actual railings lengths, i.e. clear space between supports for level rails and sloping length of rail between supports for stair rails.

[2] The usage of the angular brackets for 22° to 45° post to rail installation is limited to these assemblies.

[3] Light Wall post is limited to use in IRC One- and Two-family Dwelling applications with a maximum rail height of 36 inches.

TABLE 4: CODE OCCUPANCY CLASSIFICATION – ALX CONTEMPORARY CABLE RAILING

GUARD TYPE	MAXIMUM DIMENSIONS[1]	INFILL	SUPPORT POST	CABLE SPACER SUPPORT BLOCK	CODE OCCUPANCY CLASSIFICATION
Level / In-Line Application One-Piece Bracket	93.5 in. by 42 in.	12 horizontal 1/8 in Diameter 1x19 stainless steel cables equidistant between the top rail and deck surface. One intermediate ¾ inch square aluminum picket at the midspan is utilized.	Heavy Wall 4x4 Post	One Under Top Rail	IRC - One- and Two-Family Dwellings
	90.5 in. by 42 in.				IRC - One- and Two-Family Dwellings IBC – All Use Groups
Level / In-Line Application Two-Piece Bracket	93.5 in. by 42 in.		Heavy Wall Light Wall[2] 4x4 Post	One Under Top Rail	IRC – One- and Two-Family Dwellings
	87 in. by 42 in.		Heavy Wall Light Wall[2] 4x4 Post	Two Under Top Rail	IRC – One and Two-Family Dwellings
	69.5 in. by 42 in.			One Under Top Rail	IBC – All Use Groups.
Level Over-The-Post Brackets	91 in. by 42 in.	12 horizontal 1/8 in Diameter 1x19 stainless steel cables equidistant between the top rail and deck surface. Two intermediate ¾ inch square aluminum picket at the midspan is utilized.	Heavy Wall 4x4 Post	Two Under Top Rail	IRC - One- and Two-Family Dwellings
	88 in. by 42 in.				IRC - One- and Two-Family Dwellings IBC – All Use Groups
Stair Application	96 in. by 42 in.		Heavy Wall 4x4 Post	Two Under Top Rail	IRC - One- and Two-Family Dwellings
	86.6 in. by 42 in.				IRC - One- and Two-Family Dwellings IBC – All Use Groups
Stair Over-The-Post Brackets	89 in. by 42 in.		Heavy Wall 4x4 Post	Two Under Top Rail	IRC - One- and Two-Family Dwellings
	83 in. by 42 in.				IRC - One- and Two-Family Dwellings IBC – All Use Groups

[1] Guardrails are qualified up to and included the listed maximum guardrail system dimensions for use in the referenced Code Occupancy Classification. Guardrail lengths are actual railings lengths, i.e. clear space between supports for level rails and sloping length of rail between supports for stair rails.

[2] Light Wall post is limited to use in IRC One- and Two-family Dwelling applications with a maximum rail height of 36 inches.

TABLE 5: CODE OCCUPANCY CLASSIFICATION – REVOLUTION ROD RAILING

GUARD TYPE	MAXIMUM DIMENSIONS[1]	INFILL	SUPPORT POST	ROD SPACER SUPPORT BLOCK	CODE OCCUPANCY CLASSIFICATION
Level / In-Line Application	68 in. by 36 in.	Full-length horizontal pickets each of #8-32 stainless steel threaded rod and 1/4" OD hollow stainless steel sleeve.	Light Wall Heavy Wall 4x4 Post	One Under Top Rail	IRC - One- and Two-Family Dwellings
Stair Application					

[1] Guardrails are qualified up to and included the listed maximum guardrail system dimensions for use in the referenced Code Occupancy Classification. Guardrail lengths are actual railings lengths, i.e. clear space between supports for level rails and sloping length of rail between supports for stair rails.

TABLE 6: CODE OCCUPANCY CLASSIFICATION – RAPID RAIL

GUARD TYPE	GUARDRAIL DIMENSIONS[1]	INFILL	SUPPORT POST	SUPPORT BLOCK	CODE OCCUPANCY CLASSIFICATION
Level/In-Line	93.5 in. × 42 in.	5/8-in. Square Hollow Aluminum Baluster	Light Wall[2] Heavy Wall 4x4 Post	Two, 3 in. long sections of ¾ in. square picket	IRC – One- and Two-Family Dwellings
	69.5 in. × 36 in.			One, 3 in. long section of ¾ in. square picket	
Stair	92.5 in. × 42 in.			Two, 3 in. long sections of ¾ in. square picket	
	72 in. × 36 in.			One, 3 in. long section of ¾ in. square picket	
Continuous Stair[3]	89.5 in. x 42 in.		Light Wall[2] Heavy Wall	Two, 3 in. long sections of ¾ in. square picket	
Level/In-line	69.5 in. × 42 in.	5/8-in. Square Hollow Aluminum Baluster	Light Wall[2] Heavy Wall 4x4 Post	One, 3 in. long section of ¾ in. square picket	IRC - One- and Two-Family Dwellings IBC – All Use Groups.
Stair	72 in. × 42 in.				
Continuous Stair[3]	72 in. x 42 in.		Light Wall[2] Heavy Wall		

[1] Guardrails are qualified up to and included the listed maximum guardrail system dimensions for use in the referenced Code Occupancy Classification. Guardrail lengths are actual railings lengths, i.e. clear space between supports/posts for level rails, sloping length of rail between supports/posts for stair rails, and sloping length of rail between brackets for continuous stair rails.

[2] Light Wall post is limited to use in IRC One- and Two-family Dwelling applications with a maximum rail height of 36 inches.

[3] Continuous Stair guard is comprised of two or more rail spans with Continuous Stair Brackets (Figure 13) at intermediate posts and standard Rapid Rail Brackets (Figure 10) at end posts.

TABLE 7: FASTENING SCHEDULE – ALX CONTEMPORARY ROUND RAILING

GUARD TYPE	CONNECTION	FASTENER[1]
Level Application	Top Rail Bracket to Post	Two 1/4-14 x 1 in hex-head, self-drilling sheet metal screws
	Top Rail Bracket to Rail	Four #8-18 x 1-1/2 in flat-head, machine screws
	Bottom Rail Bracket to Post	Two 1/4-14 x 1 in hex-head, self-drilling sheet metal screws
	Bottom Rail Bracket to Rail	Two #8-18 x 1-1/2 in flat-head, machine screws
	Support Block / Nylon Connector to Bottom Rail	One #8-14 x 1 in flat head, machine screw
	Angle Bracket to Post	Two #10-16 by 1-inch, self-drilling stainless steel screws
	Angle Bracket to Rail	Two #10-16 by 1-inch, self-drilling stainless steel screws
Stair Application	Top Rail Bracket to Post	Two #10-32 x 1 in flat-head, self-drilling sheet metal screws
	Top Rail Bracket to Rail	Two #10-16 x 1 in pan-head, self-drilling sheet metal screws
	Bottom Rail Bracket to Post	Two #10-32 x 1 in flat-head, self-drilling sheet metal screws
	Bottom Rail Bracket to Rail	Two #10-16 x 1 in pan-head, self-drilling sheet metal screws
	Swivel to Collar	1/4-28 x 1 in button head socket cap screw
	Support Block / Nylon Connector to Bottom Rail	One #8-14 x 1 in flat head, machine screw

[1] All fasteners are 300 series stainless steel.

TABLE 8: FASTENING SCHEDULE – ALX CONTEMPORARY RECTANGULAR RAILING

GUARD TYPE	CONNECTION	FASTENER[1]
Level Application	Top Rail Bracket to Post	Two 1/4-14 x 1 in hex-head, self-drilling sheet metal screws
	Top Rail Bracket to Rail	Four #8-18 x 1-1/2 in flat-head, machine screws
	Over the Post Bracket to Post	Four 1/4-14 by 1" (0.182 in minor diameter), pan-head, self-drilling, galvanized carbon steel screws (installed in screw chases in post)
	Over the Post Bracket to Rail	Two #8-18 by 3/4" (0.122 in minor diameter), countersunk head, self-drilling, galvanized carbon steel screws
	Bottom Rail Bracket to Post	Two 1/4-14 x 1 in hex-head, self-drilling sheet metal screws
	Bottom Rail Bracket to Rail	Two #8-18 x 1-1/2 in flat-head, machine screws
	Support Block / Nylon Connector to Bottom Rail	One #8-18 x 1 in flat head, machine screw
	Angle Bracket to Post	Two #10-16 by 1-inch, self-drilling stainless steel screws
	Angle Bracket to Rail	Two #10-16 by 1-inch, self-drilling stainless steel screws
Stair Application	Top Rail Bracket to Post	Two #10-16 x 1 in countersunk head, self-drilling, stainless steel screws
	Top Rail Bracket to Rail	Two #10-16 x 1 in pan-head, self-drilling stainless steel screws
	Swivel Over the Post Bracket to Post	Four 1/4-14 by 1" (0.182 in minor diameter), pan-head, self-drilling, galvanized carbon steel screws (installed in screw chases in post)
	Swivel Over the Post Bracket to Rail	Two #8-18 by 3/4" (0.122 in minor diameter), countersunk head, self-drilling, galvanized carbon steel screws
	Bottom Rail Bracket to Post	Two #10-16 x 1 in countersunk head, self-drilling, stainless steel screws
	Bottom Rail Bracket to Rail	Two #10-16 x 1 in pan-head, self-drilling stainless steel screws
	Original Swivel to Collar	1/4-28 x 1 in button head socket cap screw Swivel secured using Barrel Bolt with 1/4-28 x 1 in button head socket cap screw
	Support Block / Nylon Connector to Bottom Rail	One #8-18 x 1 in countersunk head, self-drilling, stainless steel screw

[1] All fasteners are 300 series stainless steel.

TABLE 9: FASTENING SCHEDULE – ALX CONTEMPORARY CABLE RAILING

GUARD TYPE	CONNECTION	FASTENER[1]
Level Application	Top Rail Bracket to Post	Two 1/4-14 x 1 in hex-head, self-drilling sheet metal screws
	Top Rail Bracket to Rail	Four #8-18 x 1-1/2 in flat-head, machine screws
	Over the Post Bracket to Post	Four 1/4-14 by 1" (0.182 in minor diameter), pan-head, self-drilling, galvanized carbon steel screws (installed in screw chases in post)
	Over the Post Bracket to Rail	Two #8-18 by 3/4" (0.122 in minor diameter), countersunk head, self-drilling, galvanized carbon steel screws
	Bottom Rail Bracket to Post	Two 1/4-14 x 1 in hex-head, self-drilling sheet metal screws
	Bottom Rail Bracket to Rail	Two #8-18 x 1-1/2 in flat-head, machine screws
	Cable Infill Intermediate Picket / Nylon Connector to Top Rail and Deck Surface	One #8-18 by 1-inch, countersunk head, self-drilling stainless steel screw
	Cable Infill to Post	Pull-Lock® (Part No. PUL-4-12) fitting pulled through the width of the post to the opposite side, and tightened with brass lock nut and stainless-steel washer on threaded stud
Stair Application	Top Rail Bracket to Post	Two #10-16 x 1 in countersunk head, self-drilling, stainless steel screws
	Top Rail Bracket to Rail	Two #10-16 x 1 in pan-head, self-drilling stainless steel screws
	Swivel Over the Post Bracket to Post	Four 1/4-14 by 1" (0.182 in minor diameter), pan-head, self-drilling, galvanized carbon steel screws (installed in screw chases in post)
	Swivel Over the Post Bracket to Rail	Two #8-18 by 3/4" (0.122 in minor diameter), countersunk head, self-drilling, galvanized carbon steel screws
	Bottom Rail Bracket to Post	Two #10-16 x 1 in countersunk head, self-drilling, stainless steel screws
	Bottom Rail Bracket to Rail	Two #10-16 x 1 in pan-head, self-drilling stainless steel screws
	Original Swivel to Collar	1/4-28 x 1 in button head socket cap screw Swivel secured using Barrel Bolt with 1/4-28 x 1 in button head socket cap screw
	Cable Infill Intermediate Picket / Nylon Connector to Top Rail and Deck Surface	One #8-18 by 1-inch, countersunk head, self-drilling stainless steel screw
	Cable Infill to Post	Pull-Lock® (Part No. PUL-4-12) fitting pulled through the width of the post to the opposite side, and tightened with brass lock nut and stainless-steel beveled washer on threaded stud

[1] All stainless-steel fasteners are 300 series stainless steel.

TABLE 10: FASTENING SCHEDULE – REVOLUTION ROD RAILING

GUARD TYPE	CONNECTION	FASTENER[1]
Level Application	Top Rail Bracket to Post	Two #10-16 x 1 in. Torx-drive, flat-head, self-drilling screws
	Top Rail Bracket to Rail	Two #8-20 x 1/2 in. Torx-drive, flat-head, self-drilling screws
	Horizontal Picket to Side Channel	Slip fit rod rail connector shaft to side channel. Attach rod rail connector shaft to threaded rod of picket, secure with connector wrench.
	Horizontal Picket to Intermediate Baluster	Slip Fit
	Side Channel to Post	Six #10-16 x 1 in. Torx-drive, flat-head, self-drilling screws
	Intermediate Baluster to Top Rail	Nylon baluster plug attached to top rail with one #10-16 x 1 in. Torx-drive, flat-head, self-drilling screw
	Intermediate Baluster to Deck	Nylon baluster plug attached to deck with one #10-16 x 1 in. Torx-drive, flat-head, self-drilling screw
Stair Application	Top Rail Bracket to Post	Two #10-16 x 1 in. Torx drive, flat-head, self-drilling screws
	Top Rail Bracket to Rail	Two #10-16 x 1 in. Torx drive, flat-head, self-drilling screws
	Stair Bracket Socket to Swivel	One 1/4-28 by 1 in. square-drive, pan-head, machine screw
	Stair Bracket Hinged Connector	One 1-1/4 in. long 2-piece connector pin
	Horizontal Picket to Side Channel	Slip fit rod rail connector shaft to side channel. Attach rod rail connector shaft to threaded rod of picket, secure with connector wrench.
	Horizontal Picket to Intermediate Baluster	Slip Fit
	Side Channel to Post	Six #10-16 x 1 in. Torx drive, flat-head, self-drilling screws
	Intermediate Baluster to Top Rail	Nylon baluster plug attached to top rail with one #10-16 x 1 in. Torx-drive, flat-head, self-drilling screw
	Intermediate Baluster to Deck	Nylon baluster plug attached to deck with one #10-16 x 1 in. Torx-drive, flat-head, self-drilling screw

[1] All stainless-steel fasteners are 300 series stainless steel.

TABLE 11: FASTENING SCHEDULE – RAPID RAIL

GUARD TYPE	CONNECTION	FASTENER[1]
Level Application	Top Rail Bracket to Post	Two #10-16 by 1 in. star drive, countersunk head, self-drilling stainless steel screws
	Top Rail Bracket to Rail	Two #8-18 by ½ in. star drive, countersunk head, self-drilling, stainless steel screws
	Bottom Rail Bracket to Post	Two #10-16 by 1 in. star drive, countersunk head, self-drilling stainless steel screws
	Bottom Rail Bracket to Rail	Two #8-18 by ½ in. star drive, countersunk head, self-drilling, stainless steel screws
	Support Block / Nylon Connector to Bottom Rail	One #8-18 by 1 in. square drive, countersunk head, self-drilling, stainless steel screw
	Support Block / Nylon Connector to Support Block	Slip fit – no mechanical connection
	Baluster to Top/Bottom Rail	Slip fit – no mechanical connection
Stair Application	Top Rail Bracket to Post	Two #10-16 by 1 in. star drive, countersunk head, self-drilling stainless steel screws
	Top Rail Bracket to Rail	Two #8-18 by ½ in. star drive, countersunk head, self-drilling, stainless steel screws
	Bottom Rail Bracket to Post	Two #10-16 by 1 in. star drive, countersunk head, self-drilling stainless steel screws
	Bottom Rail Bracket to Rail	Two #8-18 by ½ in. star drive, countersunk head, self-drilling, stainless steel screws
	Continuous Stair Bracket to Post	Four ¼-20 x ¾ in. star drive, pan-head, thread-forming, stainless steel screws into post screw chases
	Continuous Stair Bracket to Rail	Two #8-18 by ½ in. star drive, countersunk head, self-drilling, stainless steel screws
	Support Block / Nylon Connector to Bottom Rail	One #8-18 by 1 in. square drive, countersunk head, self-drilling, stainless steel screw
	Support Block / Nylon Connector to Support Block	Slip fit – no mechanical connection
	Baluster to Top/Bottom Rail	Slip fit – no mechanical connection
	Top Stair Rail Bracket Base to Bracket Mount	One #10-16 by 1 in. star drive, countersunk head, self-drilling, stainless steel screw
	Bottom Stair Rail Bracket Base to Bracket Mount	One #10-16 by 1 in. star drive, countersunk head, self-drilling, stainless steel screw
	Continuous Stair Bracket Base to Bracket Mount	Two ¼-20 x ½ in. countersunk head stainless steel machine screws

[1] All stainless-steel fasteners are 300 series stainless steel.

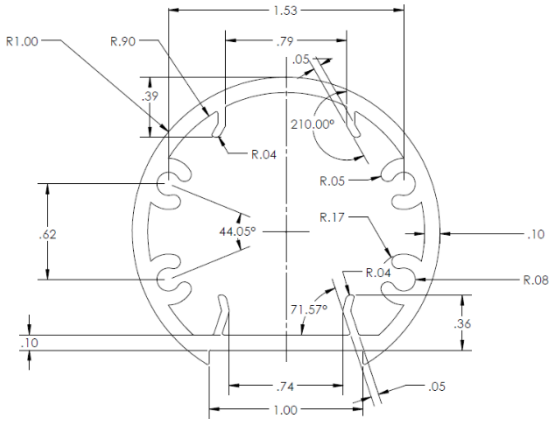


FIGURE 1 – ALX ROUND TOP RAIL

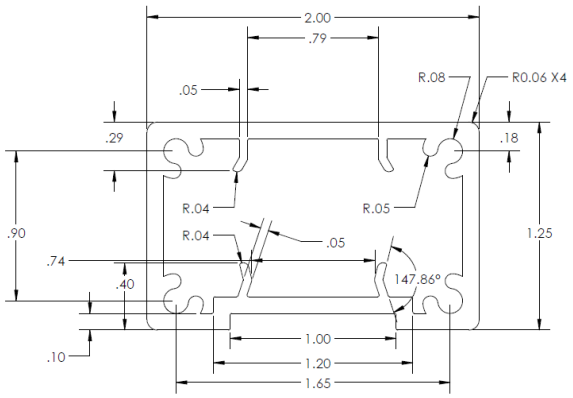


FIGURE 2 – ALX RECTANGULAR TOP RAIL

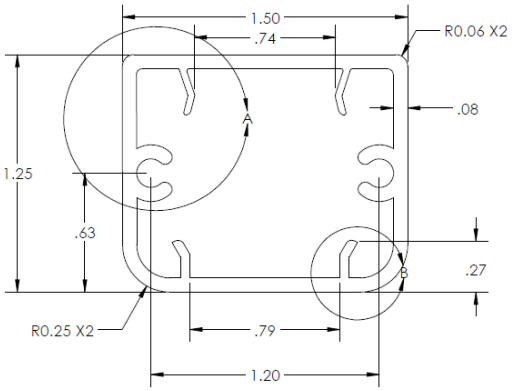
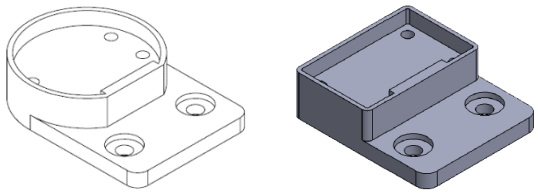
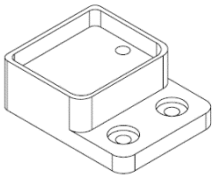


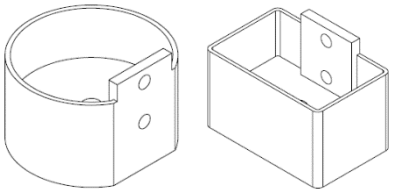
FIGURE 3 – ALX SQUARE BOTTOM RAIL



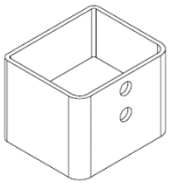
ALX Level Round and Rectangular Top Rail Brackets



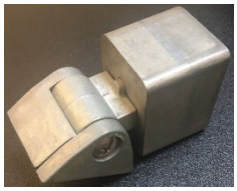
ALX Level Square Bottom Rail Bracket



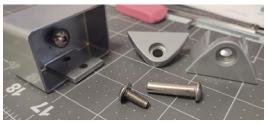
ALX Stair Round and Rectangular Top Rail Brackets



ALX Stair Bottom Rail Bracket

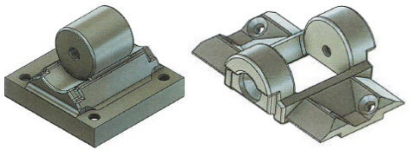


Bracket

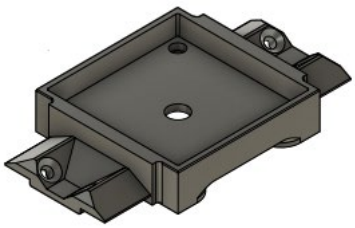


Fasteners

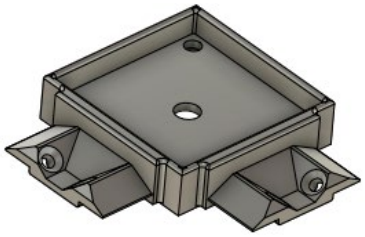
Original ALX Swivel Bracket for Stair Assembly and 22.5° To 45° Angle Brackets for Level Assemblies



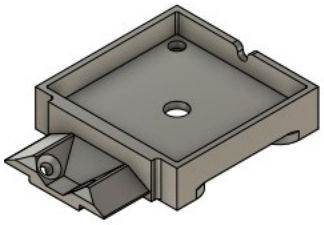
Over The Top ALX Swivel Bracket for Stairs Only



Continuous (Level/In-Line)



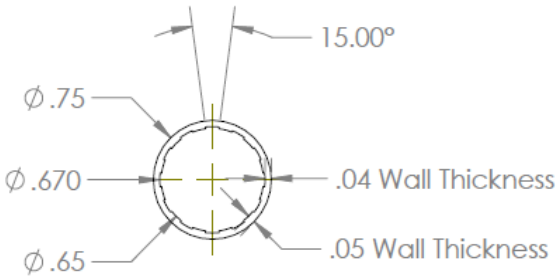
Corner



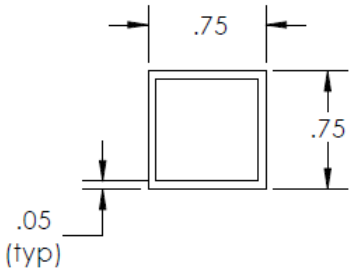
End

Over The Post ALX Rectangular Bracket

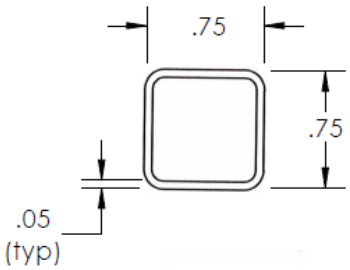
FIGURE 4 – ALX RAIL BRACKETS



Classic 3/4 inch Dia. Picket Profile

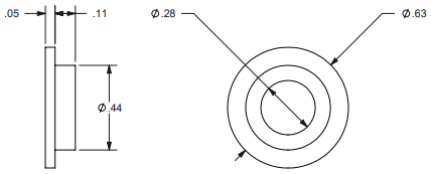


Estate 3/4 inch Square Picket Profile

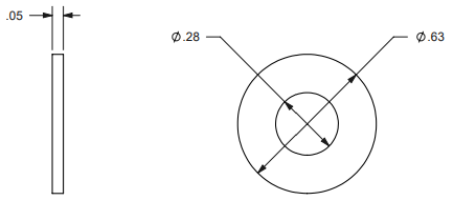


Welded to Rails, 3/4-inch Square Picket Profile

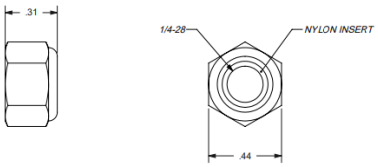
FIGURE 5 – ALX PICKET INFILL



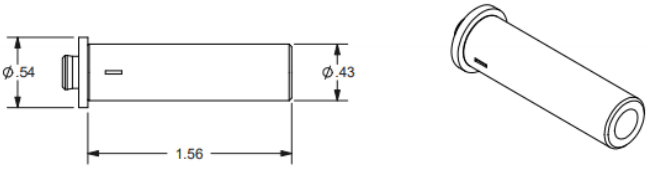
Kit Bushing



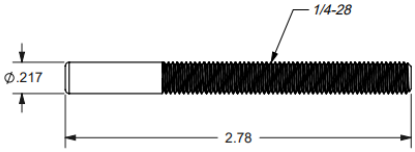
Kit Washer for Threaded Stud



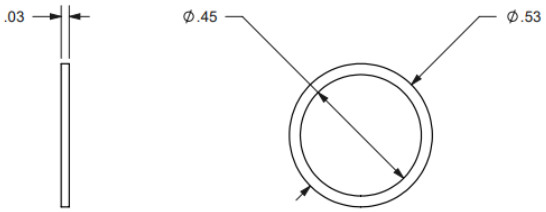
Kit Nut 1/4-28



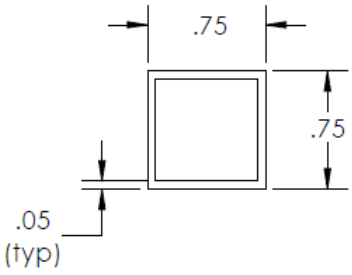
Pull-Lock 1/8" Cable Swageless Fitting



Threaded Stud

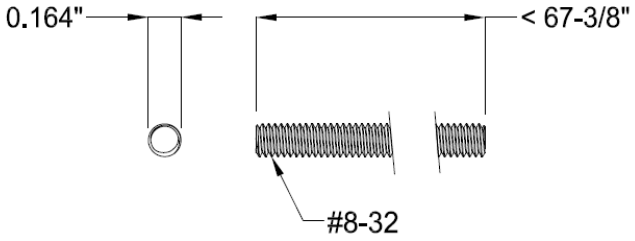


Kit Washer for Pull-Lock in Metal Post

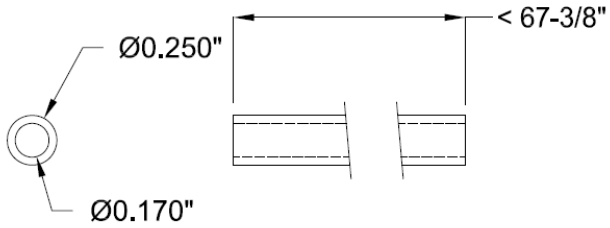


Intermediate 3/4" square Picket

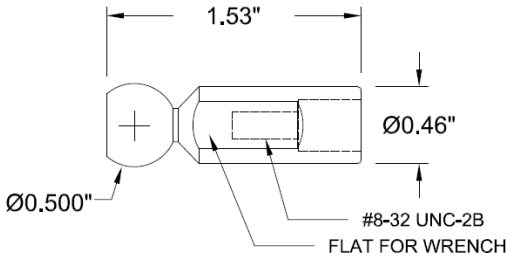
FIGURE 6 – ALX CABLE RAIL INFILL COMPONENTS



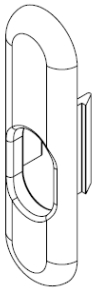
Threaded Rod Infill



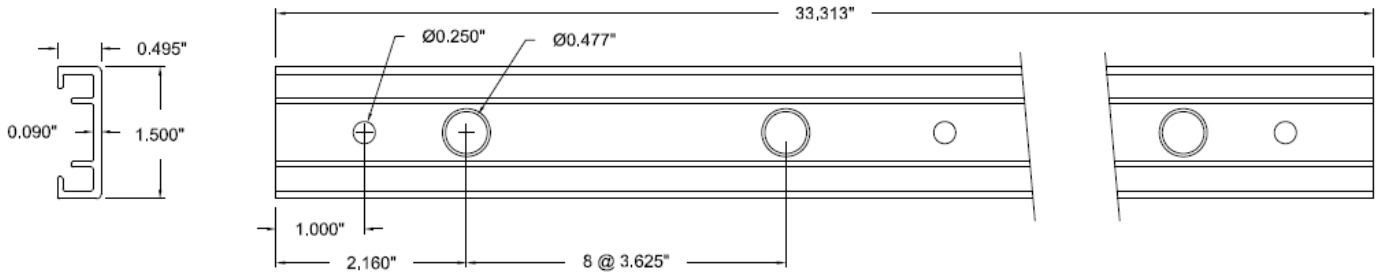
Rod Sleeve



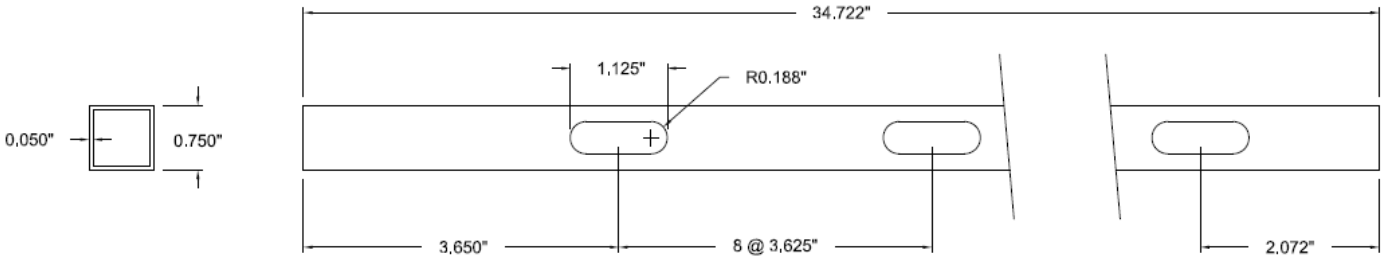
Connector



Spacer Grommet

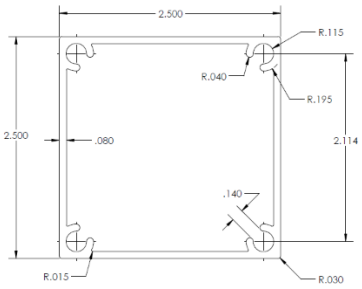


Side Channel

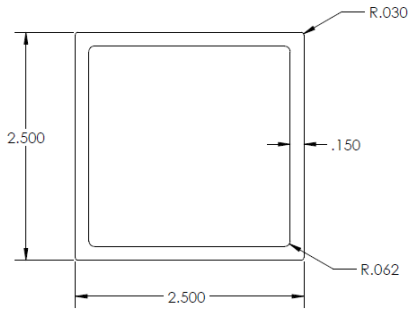


Intermediate Baluster

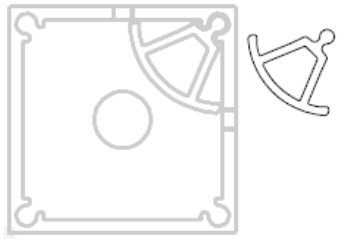
FIGURE 7 – REVOLUTION ROD INFILL COMPONENTS



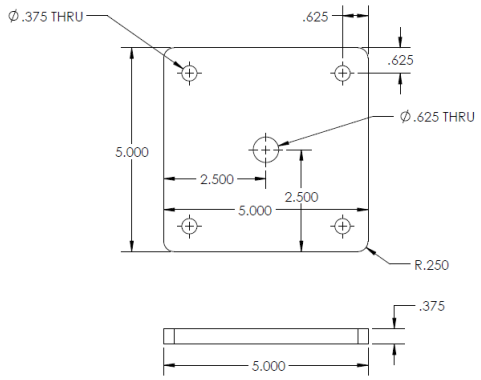
Light Wall Post



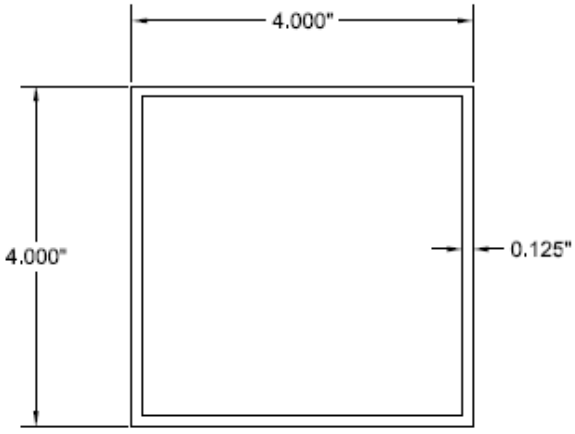
Heavy Wall Post



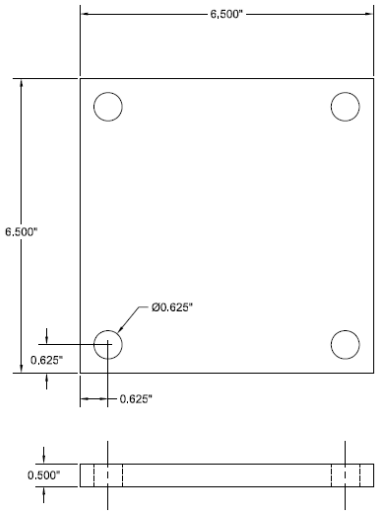
Heavy Wall Post with Cable Corner



Light Wall, Heavy Wall and Heavy Wall with Cable Corner Post Base Plate

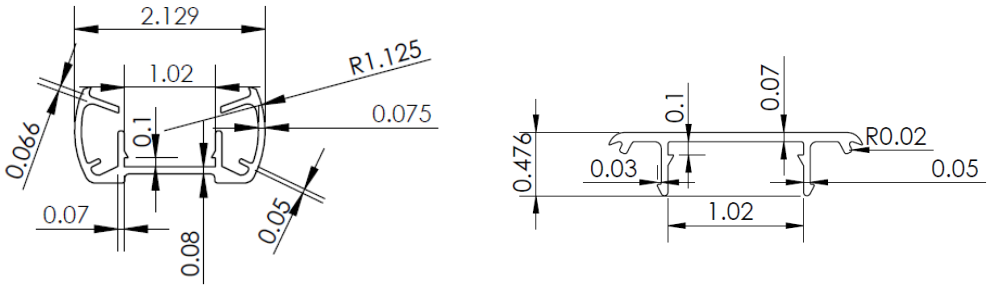


4x4 Post



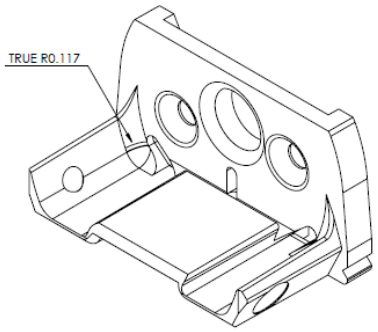
4x4 Post Base Plate

FIGURE 8 – SUPPORT POSTS

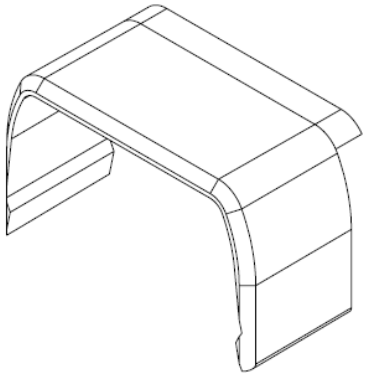


Base **Cap**

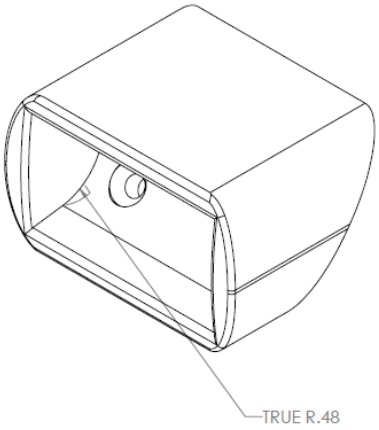
FIGURE 9 – RAPID RAIL TOP AND BOTTOM RAIL



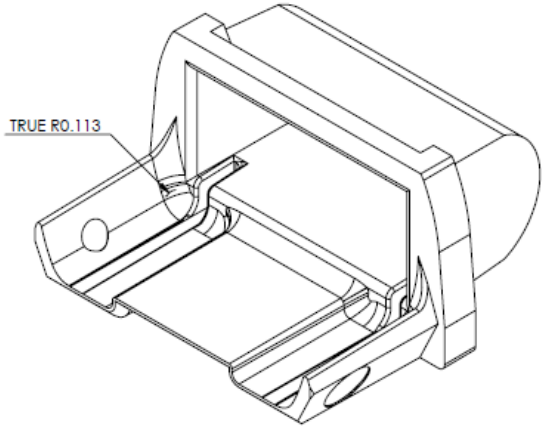
Base Bracket



Bracket Cap



Stair Bracket Mount



Stair Bracket Base

FIGURE 10 – RAPID RAIL BRACKETS

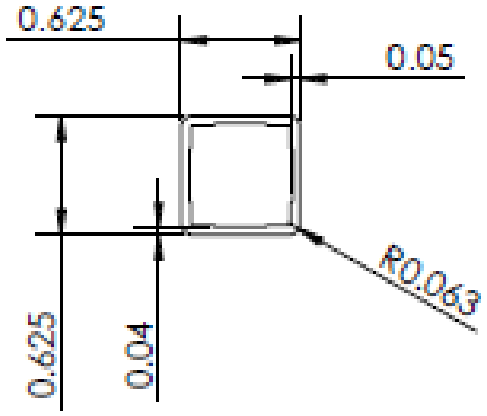
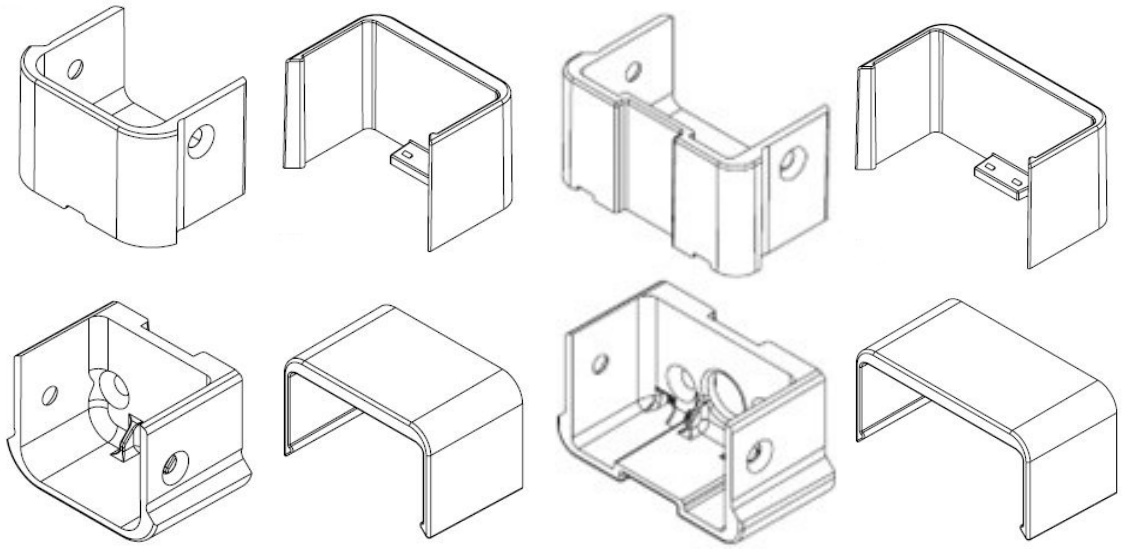


FIGURE 11 – RAPID RAIL 5/8" BALUSTER



Bottom Base **Bottom Cap** **Top Base** **Top Cap**

FIGURE 12 – 2-PIECE ALX CONTEMPORARY BRACKET

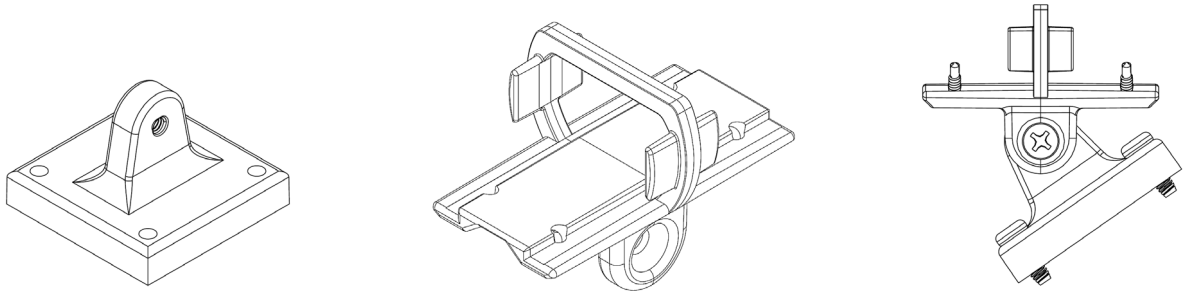


FIGURE 13 – RAPID RAIL CONTINUOUS STAIR BRACKET