

# IMPRESSION RAIL EXPRESS® INSTALLATION GUIDE

## HORIZONTAL CABLE RAIL

### 36" AND 42" HEIGHTS WITH 3" ALUMINUM POSTS

It is the responsibility of the installer to meet all local code requirements and obtain all required building permits. The installer should determine and implement appropriate installation techniques for each installation situation. The manufacturer or its reseller shall not be held responsible for improper or unsafe installation.

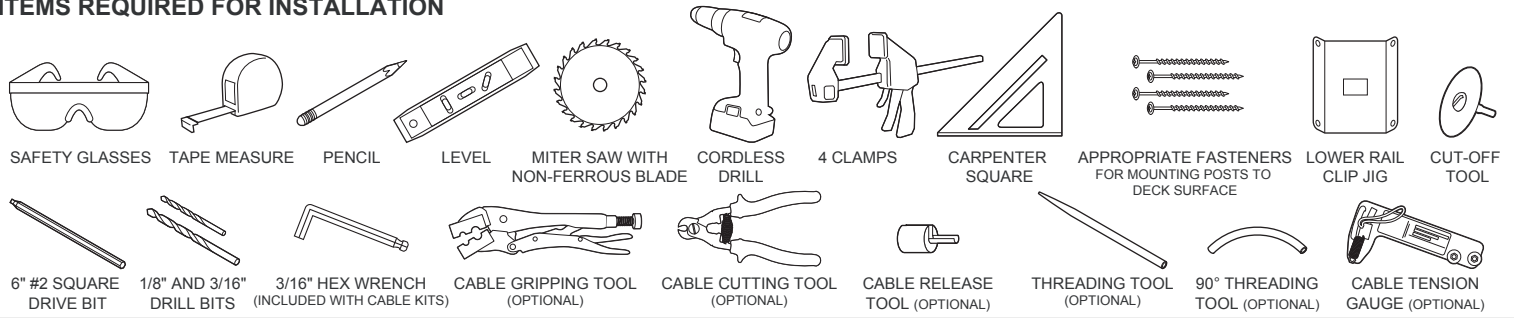
**THESE INSTRUCTIONS COVER INSTALLATION OF A HORIZONTAL CABLE RAILING SYSTEM. PLEASE VISIT MANUFACTURER'S WEBSITE FOR OTHER RAILING SYSTEMS.**

**IMPORTANT NOTES:**

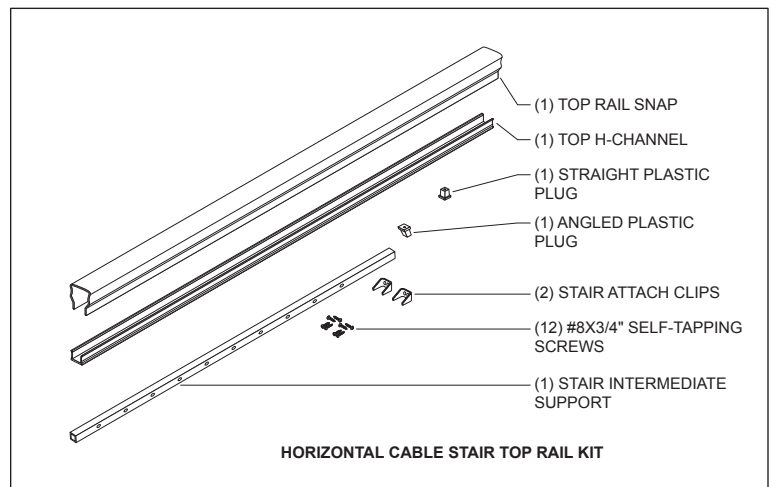
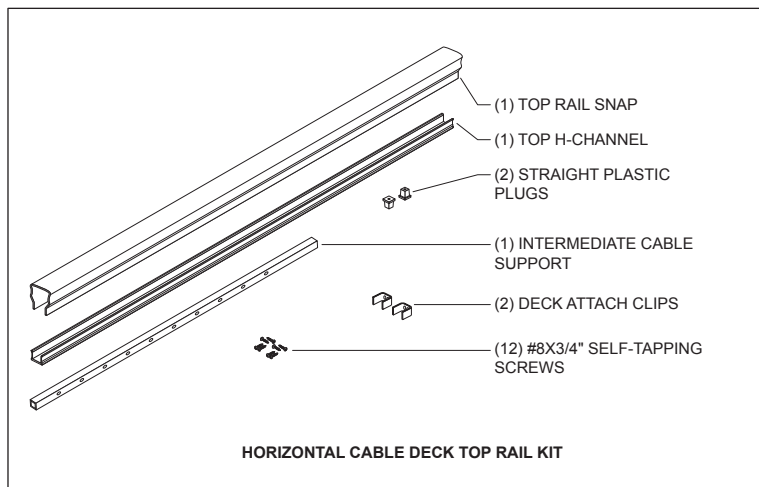
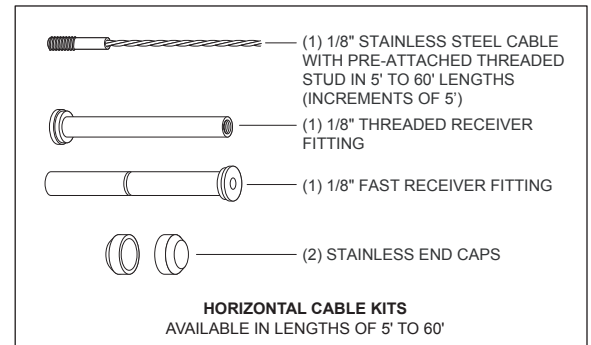
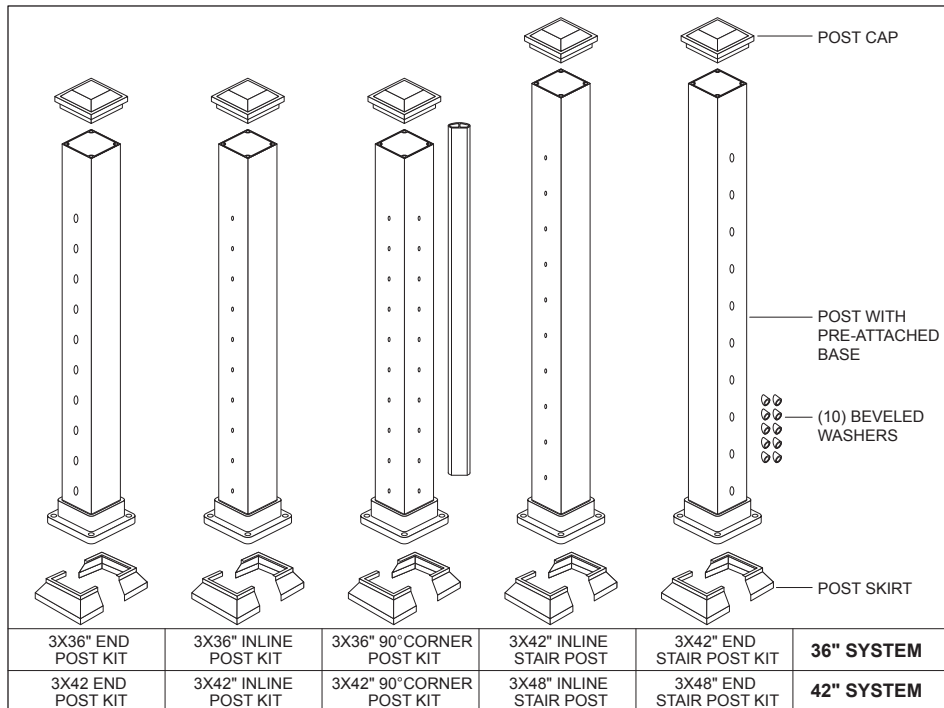
- Do not install base plate covers until railing assembly is completed.
- Actual cable panel lengths: 69.43" and 91.31". 3" posts are required to reach 6' and 8' lengths.
- 42" post kits are required for middle and bottom stair posts with the 36" railing system.
- 48" post kits are required for middle and bottom stair posts with the 42" railing system.
- All illustrations show the 36" system. Measurements for the 42" system are included.
- Cables have a pre-attached threaded stud and can only be used for one run. They cannot be cut and used as two pieces. Discard excess cut cable – it is not reusable.

**CAUTION! IF INSTALLING LIGHTING, WIRING MUST BE INSTALLED PRIOR TO SECURING POSTS TO DECK SURFACE AND INSTALLING TOP RAIL SNAPS.**

**ITEMS REQUIRED FOR INSTALLATION**



**KITS AND PARTS FOR ASSEMBLY**



# 3" ALUMINUM POST INSTALLATION

(USE ONLY CORRECT RAILING POSTS)

## 1 Determine Necessary Posts Required (end, inline and corner)

- **NOTE:** For structural integrity and proper installation, it is critical to use the correct Railing Posts in all locations. (Dia. 1). Corner Posts are required for all 90° corners and in-line posts are required for all 45° corners. 42" stair posts are required for 36" stair applications; 48" stair posts are required for 42" stair applications. Plan ahead for cables up to 60' in length and install end posts at the appropriate locations.
- **IMPORTANT:** For 90° corner post applications. Prior to installing railing attachment clips, ensure plastic plugs are installed in 2-pre-drilled hole locations. Leave plastic plugs in place until threading cable through corner posts.

## 2 Prepare Posts

- **FOR DECK APPLICATIONS ONLY**, measure from the top of the base plate upper shoulder (Dia. 2), place a horizontal pencil mark at 33 13/16" for 36" rail height; or at 39 3/8" for 42" rail height. Next, measure the center of the 3" posts and place a vertical mark at center of post
- **Install One Upper Attach Clip Per Opening.** Center one (1) upper clip on pencil line which was marked in previous step (Dia. 2). Secure attach clip with (2) - #8x3/4" Self-Tapping Screws (Dia 3). **IMPORTANT:** Only install 1-upper clip per opening.
- **IMPORTANT:** Stair posts preparation will be addressed in stair installation section.
- **Top Rail Kits:** Bottom rail, bottom rail snap, lower rail clips and support legs are not included in top rail kits. **IMPORTANT:** For safety and to comply with building codes, all cables (including bottom cable) must be installed.
- **FOR CORNER POSTS:** Remove corner post inserts and cut to lengths: For 36" Top Rail Only Systems, cut to 33.75"; for 42" Top Rail Only Systems, cut to 39.75". Set aside corner post inserts to be installed later.

## 3 Secure Posts to Deck

- Install proper post blocking as per (Dia. 4). Use proper attachment screws or anchors as directed below. (Deck screws at each post location, are not included with post kits, see Post-To-Surface Mounting Screw Suggestion.
- With 3/16" drill bit, pre-drill through deck boards and into blocking.
- Drill a 5/8" hole in center of four deck screw holes for lighting wires (optional).
- Level and plumb post using shims.
- Secure posts to deck with suggested screws.

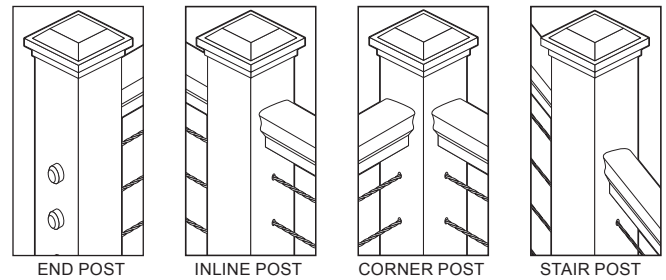
### POST-TO-SURFACE MOUNTING SCREWS:

3" Posts – Residential Deck Applications – 5/16" X 6" Exterior Torx/Star Drive Construction Screws

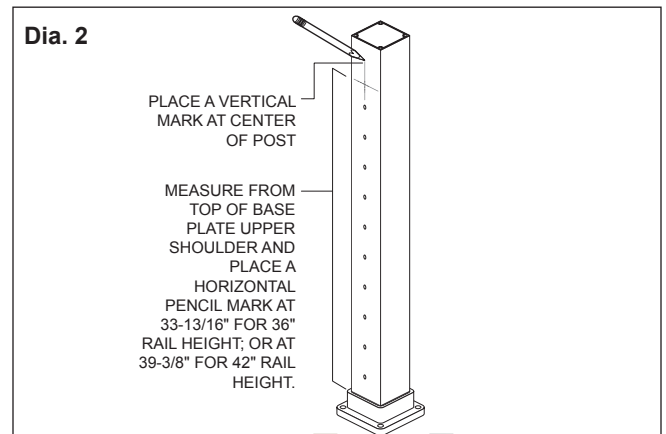
3" Posts – Commercial Deck Applications – 3/8" X 6" Exterior Torx/Star Drive Construction Screws

3" Posts – Residential Concrete Applications – Tapcon® 5/16" x 3" Hex Washer Head Concrete Anchor

Dia. 1

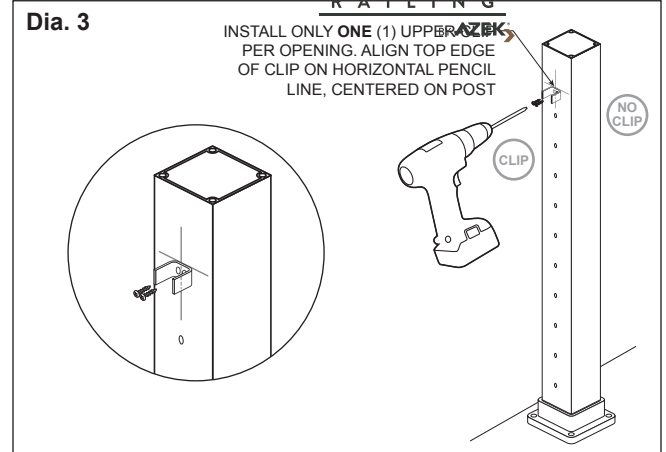


Dia. 2

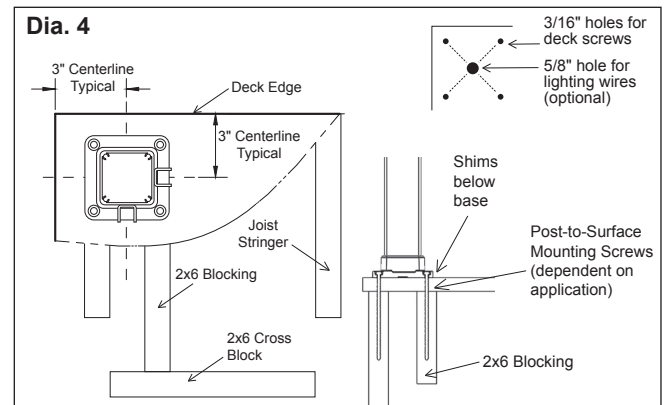


**TimberTech**  
RAILING

Dia. 3



Dia. 4

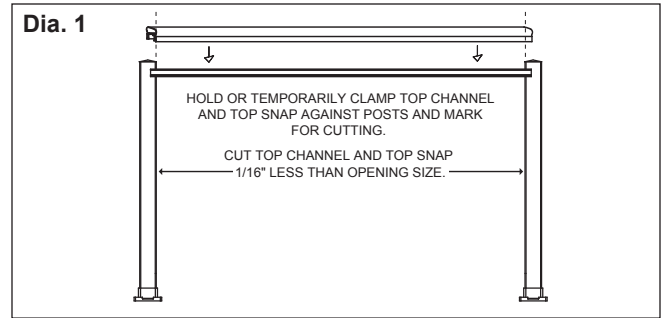


# DECK INSTALLATION WITHOUT BOTTOM RAIL

(USE DECK/STAIR TOP FRAME KITS)

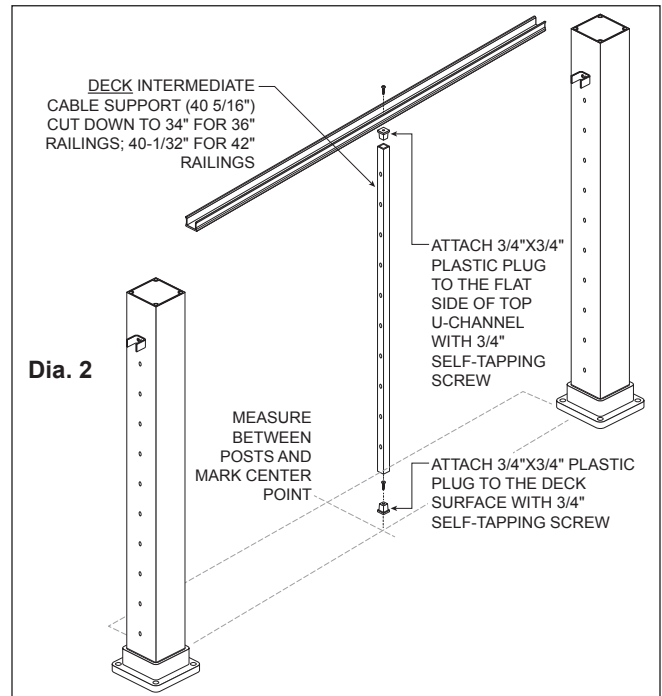
## 1 Cut & Drill Upper U-Channel (no bottom rail used)

- Measure openings between posts and cut one (1) u-channel per opening, cut 1/16" less than opening size. (Dia. 1)
- **RECOMMENDATION:** Cut channel using a miter saw and non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Measure and mark the center of top u-channel (Dia. 2)
- Drill 1/8" hole in the center of top u-channel
- Attach 3/4"x3/4" plastic plug to the flat side of top u-channel with (1) - #8x3/4" Self-Tapping Screw (Dia. 2)



## 2 Cut & Install Intermediate Cable Support (no bottom rail used)

- The Deck Intermediate Cable Support measures 40 5/16".
- For 36" height railing, cut cable support to 34", for 42" height railing, cut cable support to 40-1/32" (FOR DECK APPLICATIONS ONLY. See page 5 for intermediate cable supports in stair applications.) (Dia. 3)
- **IMPORTANT:** Identify the top and bottom ends of support which can be identified by the distance from the last hole to the end of the support. Verify alignment of cable holes with posts before cutting.
- Measure between posts and mark center point on deck surface (Dia. 2)
- Attach 3/4"x3/4" plastic plug to the deck surface with (1) - #8x3/4" Self-Tapping Screw (Dia. 2).
- Insert 3/4"x3/4" intermediate cable support onto plastic plug, which is attached to deck surface, then attach upper u-channel by inserting attached plastic plug (Dia. 2). Again, verify alignment of cable holes with posts.

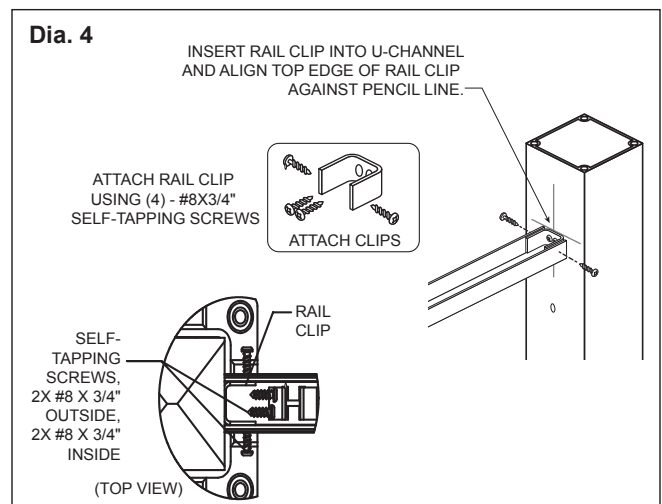
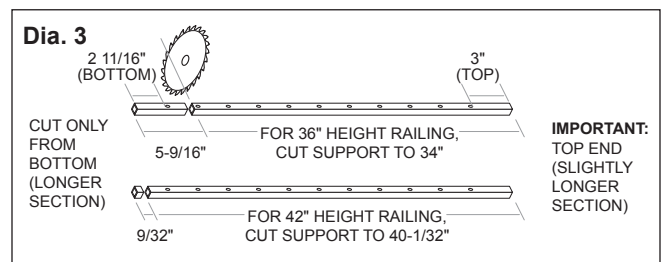


## 3 Attach Cable Frame to Posts

- Secure one (1) end of u-channel to pre-installed upper attach clip using (2) - #8x3/4" Self-Tapping Screws (Dia. 4)
- At opposite end of u-channel, insert rail clip into u-channel, align top edge of rail clip against pre-scribed pencil line (Dia. 4)
- Attach rail clip using (4) - #8x3/4" Self-Tapping Screws (Dia. 4)

## 4 Install Top Rail Snaps

- Clamp or hold the Top Snap against posts and mark for cutting (Dia. 1).
- Cut Top snaps 1/16" less than opening size
- **RECOMMENDATION:** Cut top rail snaps using a miter saw and non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Push Top rail snap down onto the top rail channel until properly seated. (Dia.1)
- **HELPFUL HINT:** Apply downward pressure on top rail starting at one (1) post and working towards the other post – **\*\*DO NOT USE A HAMMER TO SECURE TOP RAIL\*\***



# STAIR INSTALLATION WITHOUT BOTTOM RAIL

(USE DECK/STAIR TOP FRAME KITS)

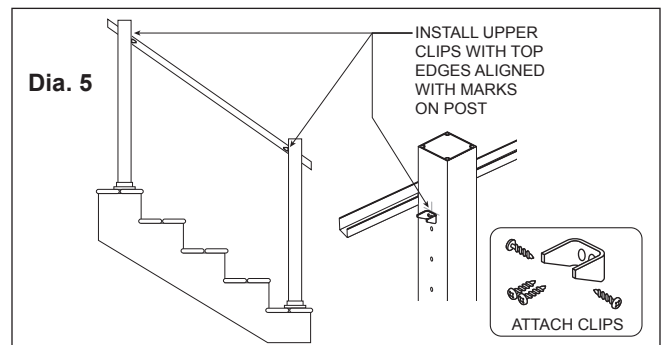
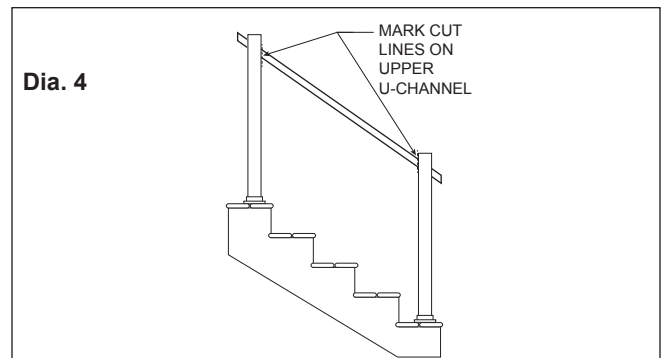
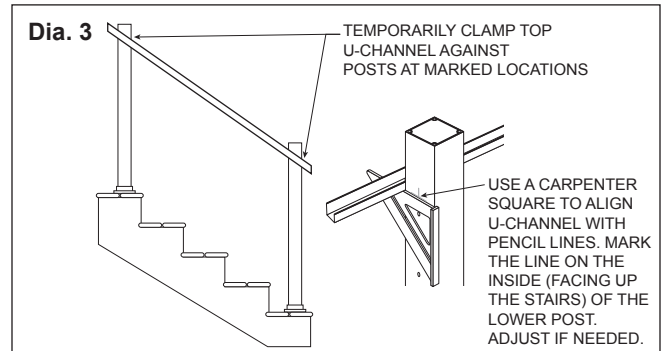
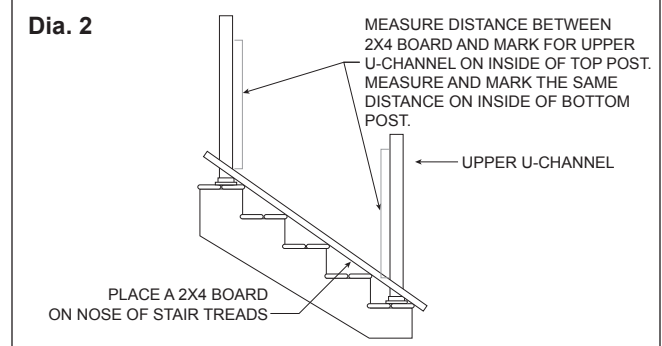
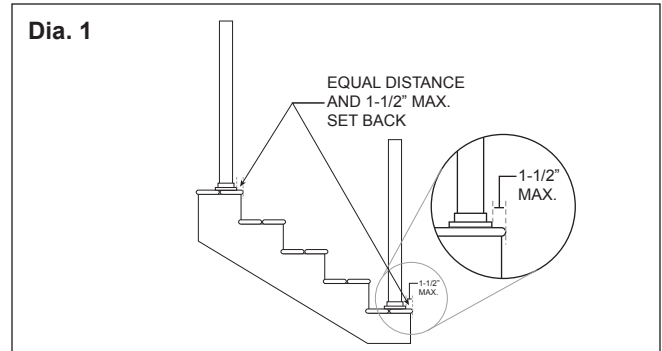
Prior to construction, check with your local regulatory agency for special code requirements in your area. Commercial decks attached to multifamily buildings regulated under the international building code (IBC) require 42" high guardrails. Common residential stair railing height is 36". ADA secondary grab rail may be necessary to meet local code compliance. For all other applications, consult a design professional for more information. Read installation instructions thoroughly before proceeding with assembly.

## 1 Determine Necessary Stair Posts Required (top, in-line and bottom)

- Install appropriate posts as per post installation instructions
- **IMPORTANT:** Front edge of base plate should be equal distance from nose of stairs, however no further than 1-1/2" set back (Dia. 1)
- **NOTE:** Ensure cable holes align with up/down direction of stairs

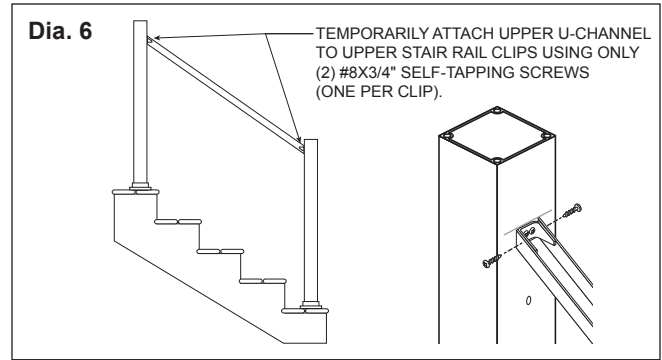
## 2 Measure, Mark and Install Upper Stair Clips On 3" Posts

- For 36" stair railings, measure and mark 3 5/8" down from top edge of upper post; 42" stair railings, measure and mark 3 7/16" down from top edge of upper post (Dia. 2). Top rail will be attached here.
- Place a 2x4 board on nose of stair treads between posts
- Measure distance between 2x4 board and the horizontal pencil mark on inside of top post, note measurement. At bottom post location, measure from the 2x4 (the distance noted at top post) and place a horizontal pencil mark the same distance on the inside of the bottom post
- Clamp upper u-channel against posts at marked locations
- **NOTE:** Using a carpenter square to align u-channel and marked locations is recommended (Dia. 3)
- While upper channel is still clamped to posts, mark the u-channel cut lines with a sharp #2 pencil (Dia. 4)
- Center and align top edge of upper stair rail clips with pencil mark
- Attach upper stair rail clips to post using (2) - #8x3/4" self-tapping screws (Dia. 5)



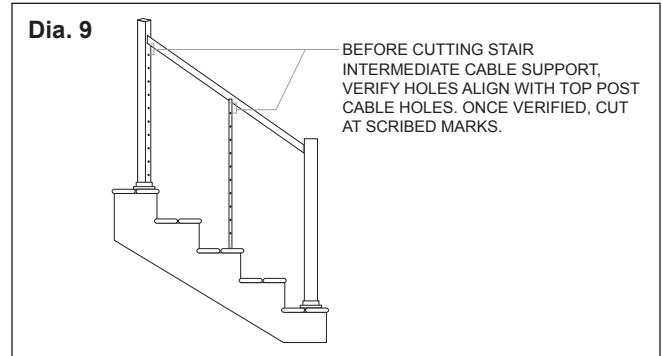
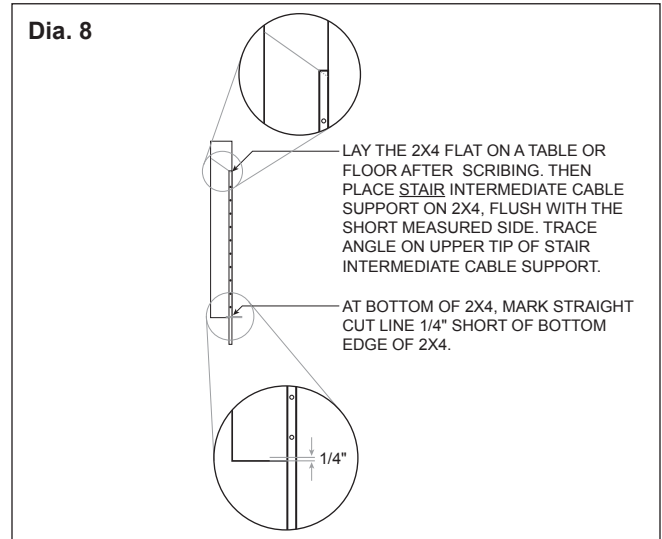
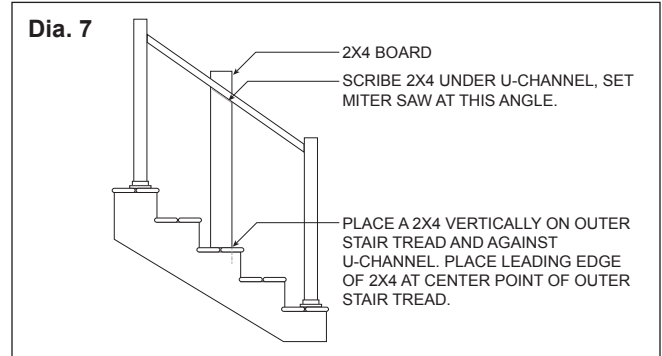
### 3 Cut and Install Upper U-Channel (no bottom channel used)

- Cut previously marked upper u-channel 1/16" less than opening size.  
**RECOMMENDATION:** Cut channel using a miter saw and non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Ensure u-channel is completely bottomed out in stair rail clips. Temporarily attach upper u-channel to upper stair rail clips. Only install (2)-#8x3/4" self-tapping screws into the upper u-channel to stair rail clips at this time. (Dia 6)



### 4 Measure and Cut Stair Intermediate Cable Support

- The Stair Intermediate Cable Support measures 45 5/16".
- Determine the angle of upper u-channel. **Helpful Hint:** Place a 2x4 vertically plumb on outer stair tread and against u-channel. Place leading edge of 2x4 at center point of outer stair tread. Scribe 2x4 under u-channel, set miter saw at this angle. (Dia 7)
- Lay the 2x4 flat on a table or floor after scribing, then place Stair Intermediate Cable Support on 2x4, flush with the short measured side. Trace angle on upper tip of Stair Intermediate Cable Support. At bottom of 2x4, Mark straight cut line 1/4" short of bottom edge of 2x4. (Dia 8)
- Before cutting Stair Intermediate Cable Support, verify holes align with top post cable holes; adjust if needed. (Dia. 9) Once verified, cut at scribed marks.



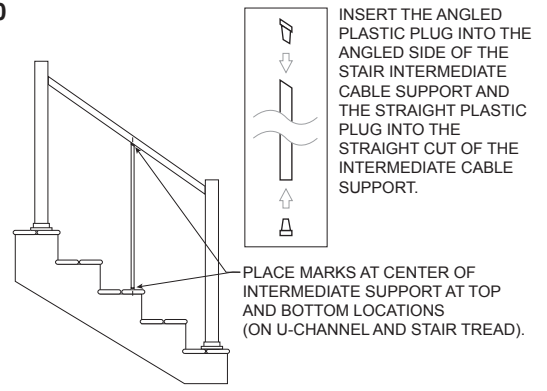
## 5 Install Stair Intermediate Cable Support

- Insert the angled plastic plug into the angled side of the Stair Intermediate Cable Support and the straight plastic plug into the straight cut of the Stair Intermediate Cable Support (Dia 10)
- Place the Stair Intermediate Cable Support under the upper u-channel and on the stair tread. Once Intermediate cable support is in position, plumb and aligned with top and bottom posts, place marks at center of intermediate support at top and bottom locations. (Dia 10)
- Drill a 1/8" hole in the center of the upper u-channel (Dia 11)
- Remove plugs from Stair Intermediate cable support. Install angled plastic plug into 1/8" hole drilled into upper u-channel with 3/4" self-tapping screw and secure straight plug to stair tread (at center mark) with 3/4" self-tapping screw. (Dia 11)
- Insert Stair Intermediate cable support on straight plug, tilt support to align with angled plastic plug. Remove lower end of upper u-channel to allow for insertion of angled plug onto Stair Intermediate Cable Support. **TIP:** Rotate upper u-channel and Stair Intermediate Cable Support out to the side just enough to fit them together. Then rotate back in to realign with posts. Reinstall u-channel to lower side and secure channel to both clips with remainder of #8x3/4" self-tapping screws. (four total screws per clip) (Dia. 12)

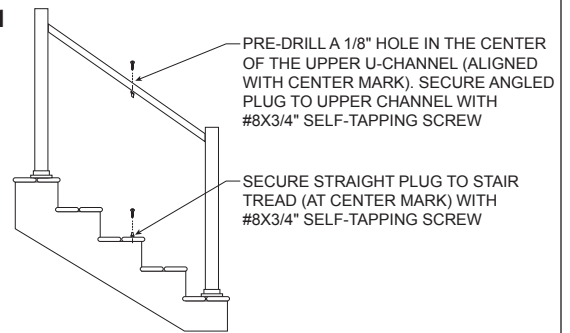
## 6 Measure, Cut & Install Top Snap

- Following the same angle as the secured u-channel, clamp or hold top rail snap against posts (Dia. 13). Using a sharp #2 pencil, mark the top rail snap.
- Remove clamps and cut top rail snap 1/16" less than opening size. Take care to cut snap at the appropriate stair angle **RECOMMENDATION:** Cut top rail snaps using a miter saw and non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Install top snap cover by pressing down onto upper u-channel (Dia 13)
- **HELPFUL HINT:** Apply downward pressure on top rail starting at one (1) post and working towards the other post – **DO NOT USE A HAMMER TO SECURE TOP RAIL.**

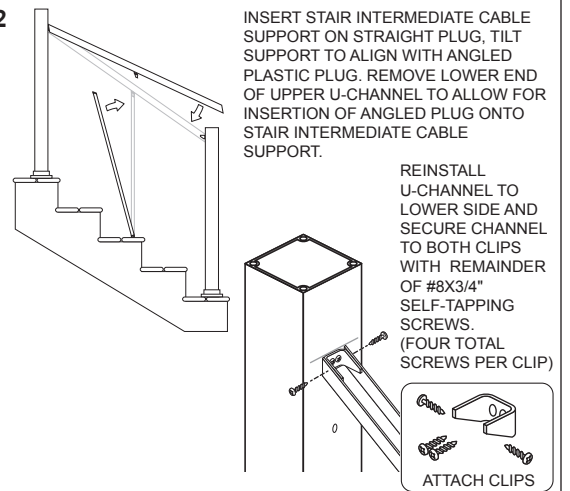
Dia. 10



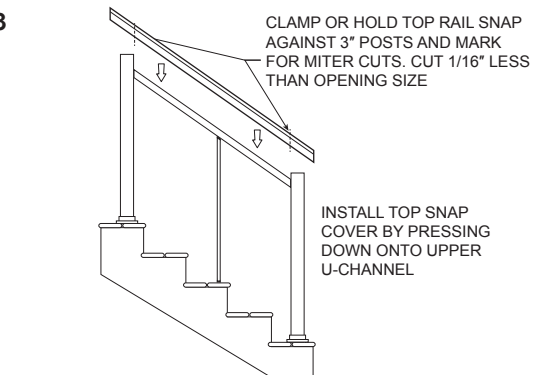
Dia. 11



Dia. 12



Dia. 13





# CABLE INSTALLATION

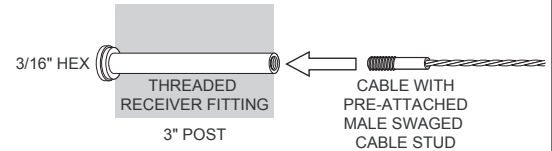
## 1 Install the Threaded Receiver Fittings into One End of Post (Cable starting point)

- **NOTE:** Install beveled washers (included with Stair End Post Kit) on threaded receiving fitting or Fast Receiver Fitting prior to insertion into Stair End Posts.
- Insert the Threaded Receiver Fittings into the post. (Note: If end post was installed close to a house wall, it may be necessary to loosen post anchor bolts).
- **NOTE:** Plan so that the Threaded Receiver Fittings are at the starting point and the Fast Fitting Receivers are at the bottom of stair run or the final post on the deck. Cable runs cannot be longer than 60'. If railing is longer than 60' an end post will need to be used to finish and start a new cable run.
- Thread the male swaged cable stud (attached to the cable) into the Threaded Receiver Fitting and turn 3-4 complete turns, thread about 1/2 of the stud into the Threaded Receiver Fitting.

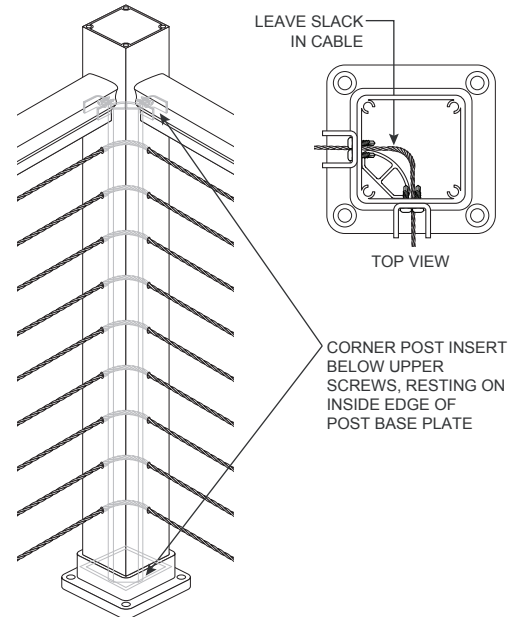
## 2 Feed Cable through Intermediate Cable Support and End/Corner Posts

- **NOTE:** When feeding cables through 90° Corner Posts, leave enough slack to slide in previously cut Corner Post Inserts which provide smooth, round corners inside the post. Corner Post Inserts should rest on the edge of post base, inside the post. If properly cut, they will fit below the upper screws (Dia. 2)
- **TIPS:** When feeding cables through 90° Corner Posts, it is recommended to feed all cables through one Corner Post BEFORE moving on to the next posts. In order to create slack inside the Corner Post, it helps to push in the cables from both sides. Once all cables are fed through the Corner Post and the Insert is set on the edge of post base, pull on the cables to shift the Insert into place.
- Feed the bare end of the cable through all your intermediate cable supports and through the end post where you will be installing the Fast Receiver Fitting (Dia. 3).
- Cable threading tools (straight and corner versions) are recommended for easy feeding of cables. When using the threading tools, push the cable through posts rather than pulling them – this prevents separation of the cable and tool.

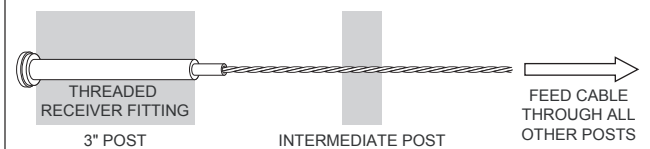
Dia. 1



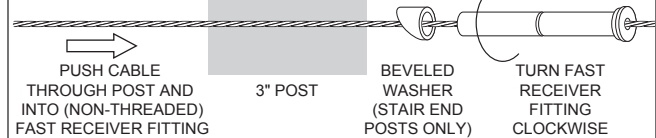
Dia. 2



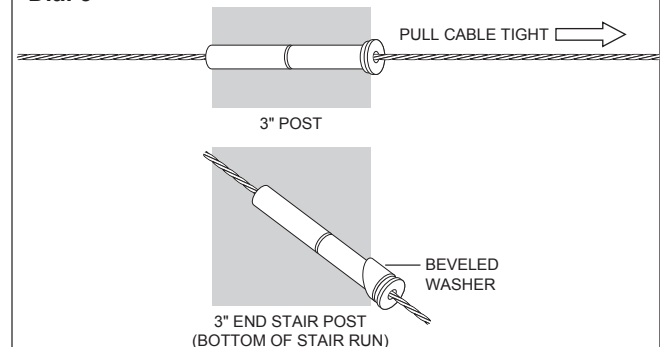
Dia. 3



Dia. 4



Dia. 5



### 3 Install the Non-Tensioning End

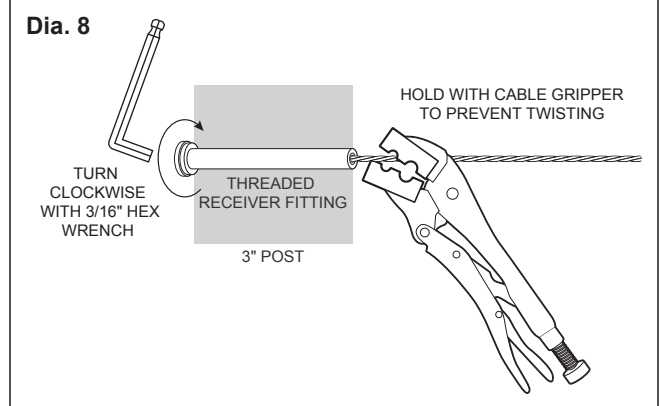
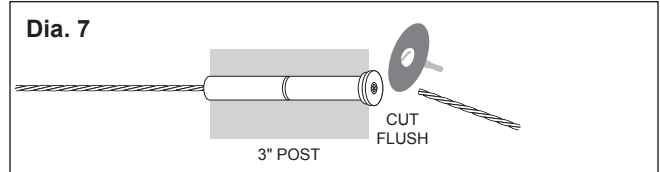
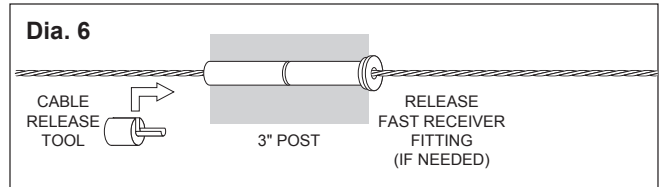
Rotate the Fast Receiver Fitting clockwise as you push it onto the cable (Dia.4). If the cable begins to unravel, you are rotating the fitting in the wrong direction. **Important:** for bottom of stair runs, beveled washers must be installed to align Fast Receiver Fittings with pre-drilled holes in post.

**Note:** It is normal to have trouble inserting the cable into some fittings. This occurs if the locking mechanism is already locked. To free it up, insert a Cable Release Tool or other tool with 1/8" or smaller diameter. Larger tools may get locked in the fitting and become very difficult to remove.

Push the Fast Receiver Fitting along the cable and firmly into the hole in your post. While holding the Receiver against the end post, pull the bare end of the cable to remove as much slack in the cable as possible. (Dia. 5) **IMPORTANT:** Inspect to ensure there is no slack across the whole length of the wire, especially around corners.

If you need to remove a cable from the Fast Receiver Fitting, slide a Cable Release Tool onto the cable, then push firmly into the fitting. This will release the mechanism to pull the cable back out. (Dia. 6)

Cut the cable flush with the hole in the back of the Fast Receiver Fitting using a cut-off wheel. (Dia. 7) Discard excess cut cable – it is not reusable and cannot be used without a pre-attached threaded stud.

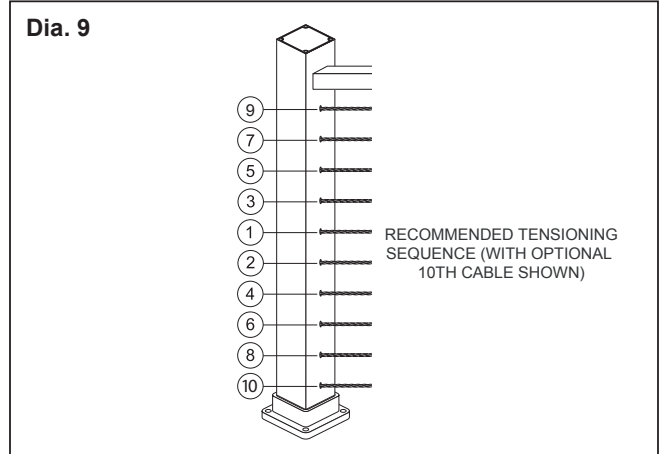


### 4 Tension Cables

Go to the other end and tension the cable by holding the cable securely to prevent it from turning while you turn the Threaded Receiver Fitting with a hex wrench. A cable gripping tool is recommended. Be careful to protect the cable from damage while tensioning. The Male Swaged Cable Stud will be pulled into the Threaded Receiver Fitting by rotating the Threaded Receiver Fitting clockwise. (Dia. 8)

Tension all cables in sequence, beginning with the center cables, moving up and down toward the top and bottom. As you tension each cable, give it a sharp pull downward mid-span to help set the wedges (gripping mechanisms in Fast Receiver Fittings), then re-tension as necessary in the same sequence. Be aware that the cable may move as much as 3/16" toward the tensioning terminal as the wedges seat. (Dia. 9)

Optional: Use a Loos Cable Tension Gauge to test cables near the center of the cables to reach the appropriate tensions. The recommended range on the PT-1 scale is 13~15 or 110-137 lbs using the Loos Cable Tension Gauge. **CAUTION: DO NOT OVER TIGHTEN!**



### 5 Install All Caps and Post Base Plate Vinyl Covers

Press Stainless Steel caps onto the Fast Receiver Fittings and Threaded Receiver Fittings. (Dia. 10) **Helpful Hint:** Spray window cleaner on to Stainless Steel Caps to ease installation.

Install post caps and post base plate vinyl covers after railing assembly is completed. (Dia. 11)

