

# INSTALLATION INSTRUCTIONS

## HORIZONTAL CABLE RAILING – FULL FRAME SYSTEM

### 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.

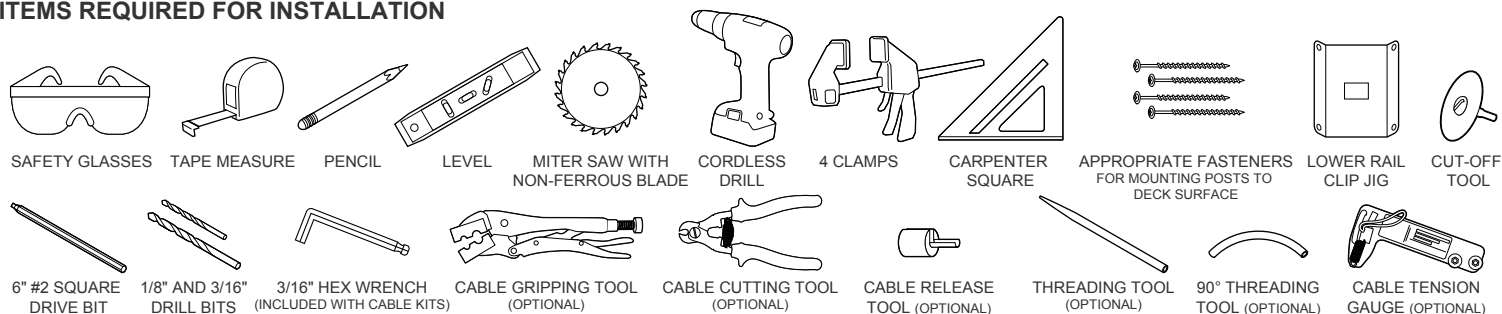
**THESE INSTRUCTIONS COVER INSTALLATION OF A HORIZONTAL CABLE RAILING SYSTEM. PLEASE VISIT MANUFACTURER'S WEBSITE FOR OTHER RAILING SYSTEMS.**

#### IMPORTANT NOTES:

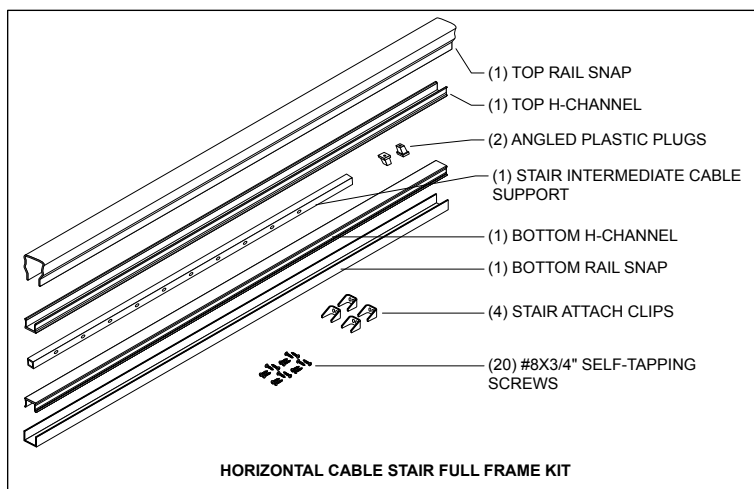
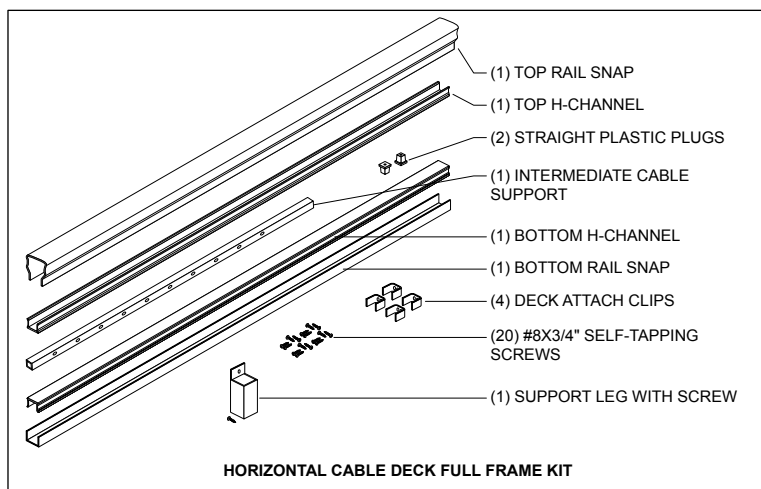
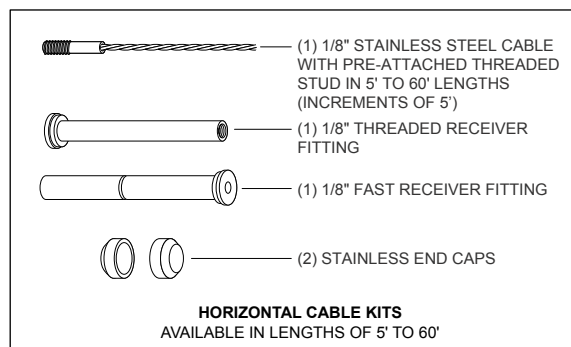
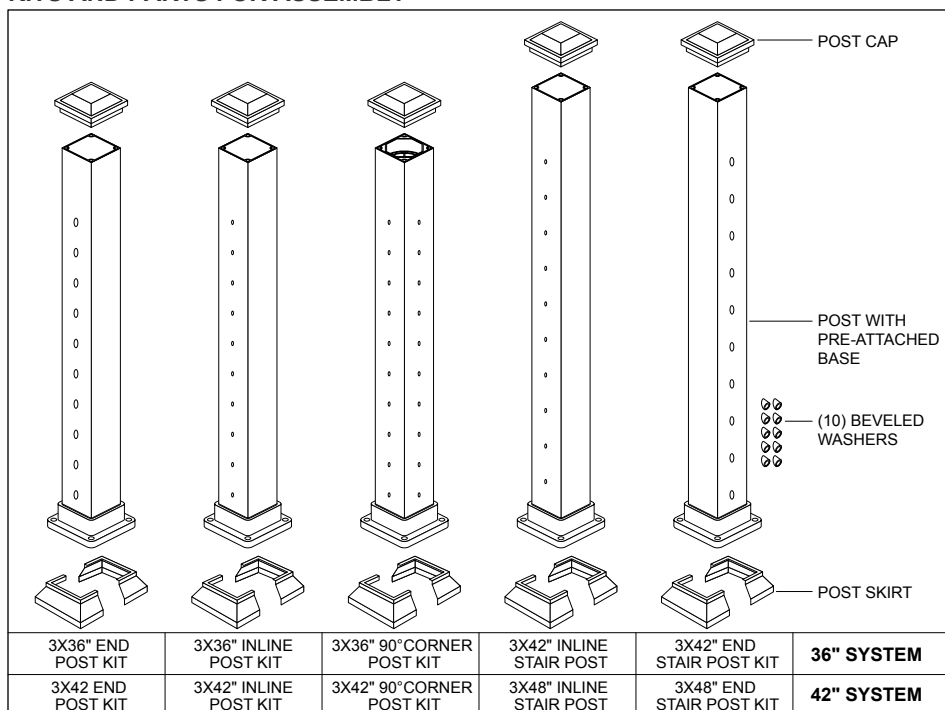
- Do not install base plate covers until railing assembly is completed.
- Actual cable panel lengths: 69.43" and 91.31"
- 3" posts are required to reach 6' and 8' lengths.
- 42" post kits are required for middle and bottom stair posts with the 36" railing system.
- 48" post kits are required for middle and bottom stair posts with the 42" railing system.
- All illustrations show the 36" system. Measurements for the 42" system are included.

**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. 4). **IMPORTANT:** Only install 1-upper clip per opening.
- **Full Frame Kits Only (with bottom rail):** Using the lower clip jig included with the post kits, install lower clip on post and secure with (2) - #8x3/4" Self-Tapping Screws (Dia. 3). Clips & screws are located in the Panel Kit
- **IMPORTANT:** Stair posts preparation will be addressed in stair installation section.
- **Top Rail Kits (without bottom rail):** If no bottom rail is installed, do not install lower rail clips. 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, 10th cable must be installed with 36" rail height.

## 3 Secure Posts to Deck

- Install proper post blocking as per (Dia. 5). 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.

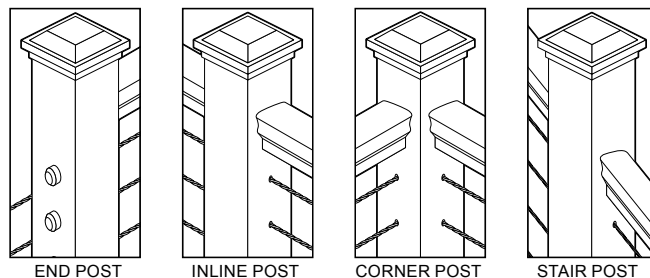
### POST-TO-SURFACE MOUNTING SCREWS:

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

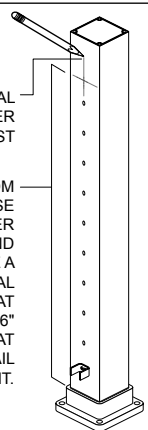
Dia. 1



Dia. 2

PLACE A VERTICAL MARK AT CENTER OF POST

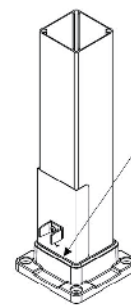
MEASURE FROM TOP OF BASE PLATE UPPER SHOULDER AND PLACE A HORIZONTAL PENCIL MARK AT 33-13/16" FOR 36" RAIL HEIGHT; OR AT 39-3/8" FOR 42" RAIL HEIGHT.



Dia. 3

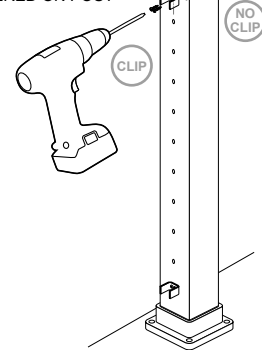
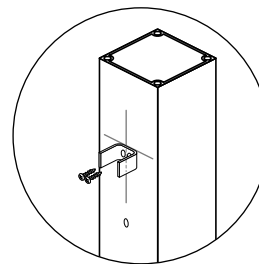
REST JIG ON BASE PLATE HERE - ARROW DOWN

PLACE CLIP IN HOLE, HOLD CLIP FIRMLY WHILE INSTALLING (2) SELF-TAPPING SCREWS.

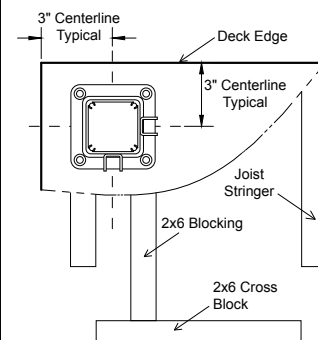


Dia. 4

INSTALL ONLY ONE (1) UPPER CLIP PER OPENING. ALIGN TOP EDGE OF CLIP ON HORIZONTAL PENCIL LINE, CENTERED ON POST

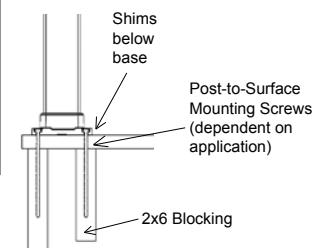


Dia. 5



3/16" holes for deck screws

5/8" hole for lighting wires (optional)



# DECK INSTALLATION WITH BOTTOM RAIL

(USE DECK/STAIR FULL FRAME KITS)

## 1 Cut & Drill Top and Bottom U-Channels

- Measure openings between posts and cut two (2) u-channels per opening. Cut 1/16" less than opening size. (Dia. 1)
- **RECOMMENDATION:** Cut channels using a miter saw and non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Measure each u-channel and mark the center of u-channels (Dia. 2)
- Drill 1/8" hole in the center of each u-channel

## 2 Cut & Install Intermediate Cable Support

- The Deck Intermediate Cable Support measures 40 5/16".
- For 36" height railing cut support to 30 9/64". For 42" height railing cut support to 35 23/32" (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.
- Attach 3/4"x3/4" plastic plug to the flat side of each u-channel with 3/4" stainless screw (Dia. 2)
- Insert 3/4"x3/4" intermediate cable support onto plastic plug which is attached to lower u-channel, then attach upper u-channel by inserting attached plastic plug. Again, verify alignment of cable holes with posts.

## 3 Attach Cable Frame to Posts

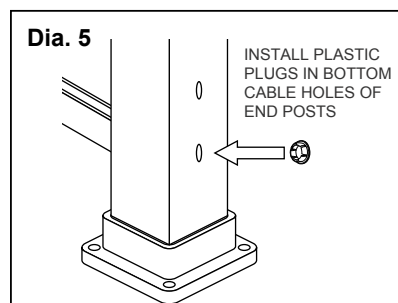
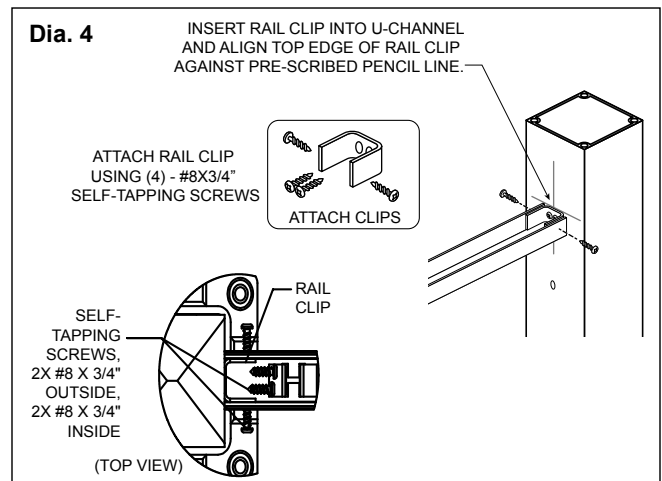
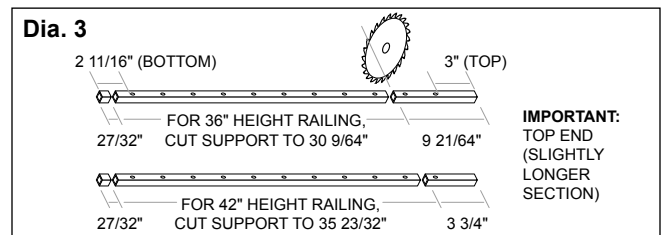
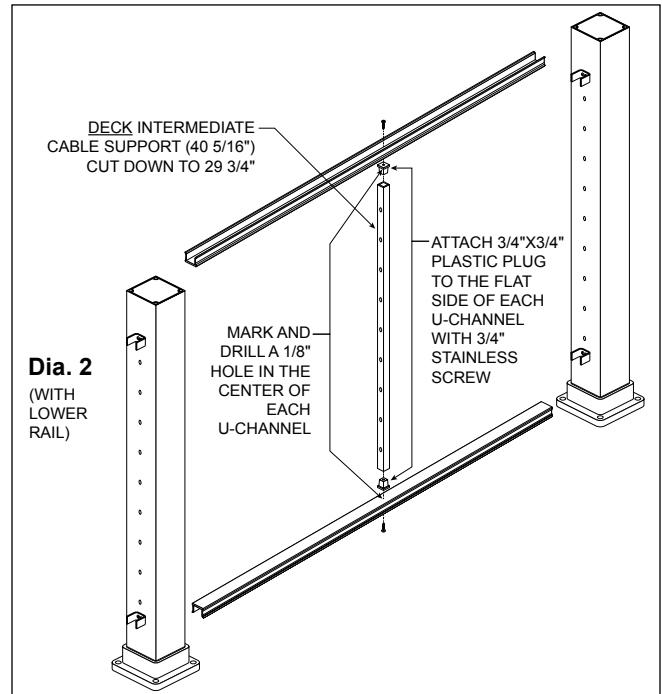
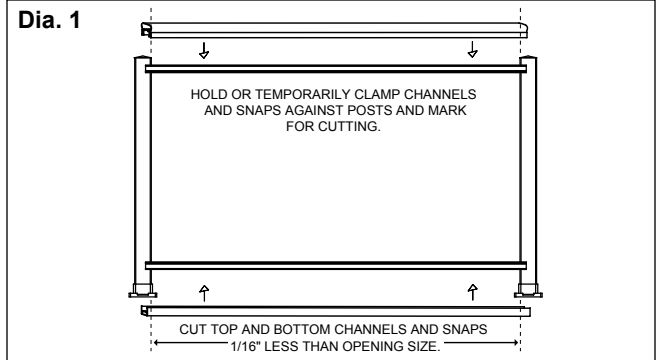
- Place railing frame onto lower rail clips and slide one (1) end of u-channel onto pre-installed upper attach clip.
- Secure one (1) end of u-channel to pre-installed upper attach clip using (2) - #8x3/4" Self-Tapping Screws (Dia. 4)
- At opposite end of u-channel, insert rail clip into u-channel, align 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 and Bottom 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 and bottom snaps using a miter saw and non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Install Bottom Rail Snap first by pressing over lower u-channel until properly seated (Dia. 1)
- Install support leg by sliding support leg under bottom rail at center of railing opening. Using (1) - Painted #8x3/4 self-tapping screw, secure support leg to the bottom rail snap
- Install Top Rail Snap by pushing down on snap until fully seated on the upper u-channel
- **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\*\***

## 5 Install End Post Plugs

- Install plastic plugs only in bottom cable holes of end posts which are not used with a bottom rail application (Dia. 5).



# STAIR INSTALLATION WITH BOTTOM RAIL

(USE DECK/STAIR FULL 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.

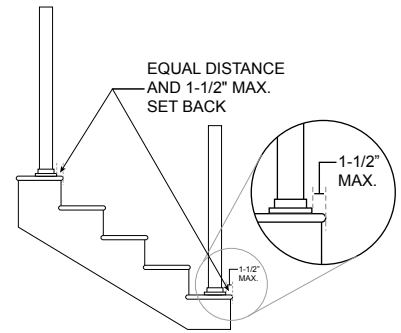
## 1 Determine Necessary Stair Posts Required (top, in-line and bottom)

- Install appropriate posts as per post installation instructions, step #2
- **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

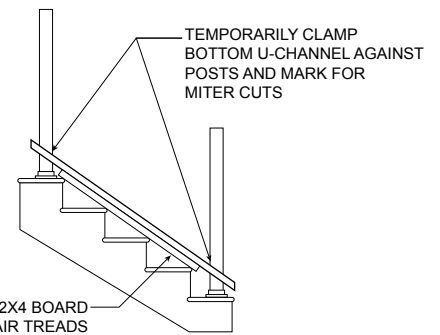
## 2 Cut & Drill Bottom U-Channels

- At each stair opening position one (1) u-channel 1-1/2" above stair nosing. **TIP:** place a 2x4 board flat on nose of stair treads and lay u-channel on top of 2x4 board. Clamp u-channel against 3" stair posts. Using a sharp #2 pencil, mark the u-channel (Dia. 2).
- Remove clamps and cut u-channel with miter saw and a non-ferrous saw blade
- Clean cut areas and apply touch-up paint on exposed ends
- Measure and mark the center of each u-channel (Dia. 3)
- Drill 1/8" hole in the center of each u-channel

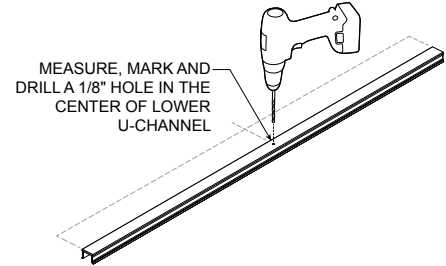
Dia. 1



Dia. 2



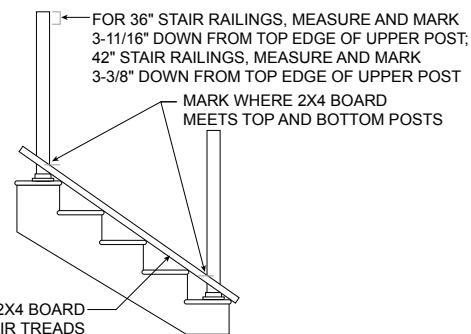
Dia. 3



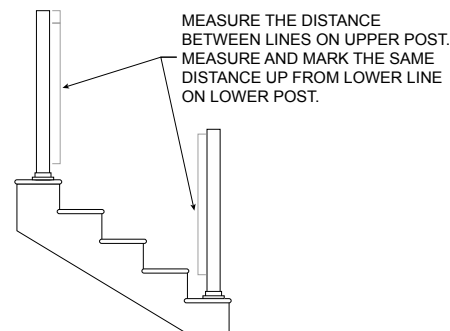
### 3 Install Upper and Lower Stair Clips On Posts

- 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. 4). Next, measure the center of the 3" posts and place a vertical mark at center of post.
- Place a 2x4 board on nose of stairs between posts (Dia. 4)
- Place pre-cut u-channel on top of 2x4 and scribe a pencil line on 3" post at upper and lower post locations where u-channel meets post
- Center and align top edge of lower stair rail clips with pencil marks. Attach using (2) - #8x3/4" Self-Tapping Screws
- At top post location, measure distance between top edge of lower clip to upper line (note measurement). Return to bottom post and measure up from top edge of lower clip and place pencil mark on post at equal distance as noted on top post. (Dia. 5).
- Clamp upper u-channel against posts at marked locations
- NOTE: Using a carpenter square to align u-channel at marked locations is recommended (Dia. 6)
- Once channel is clamped to side of post, measure both top and bottom distance between lower u-channel and upper u-channel (Dia. 7), make necessary adjustments to achieve equal opening distance.
- Using a sharp #2 pencil, scribe the side of u-channel cut lines (Dia. 8)
- **IMPORTANT:** Before removing clamps, if adjustments were made from original marked line, a new line will need to be drawn. Use a carpenter square to properly mark new attachment clip position (Dia. 6)
- Install upper clips (both upper and lower posts) with top edge of clip on marked line. (Dia. 9)

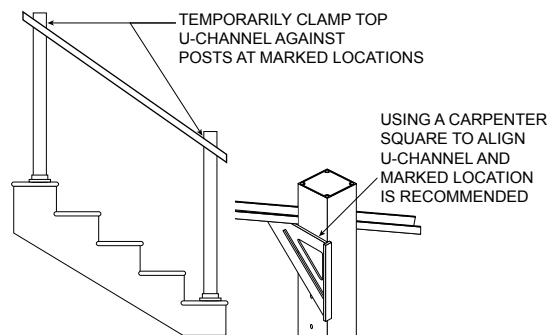
Dia. 4



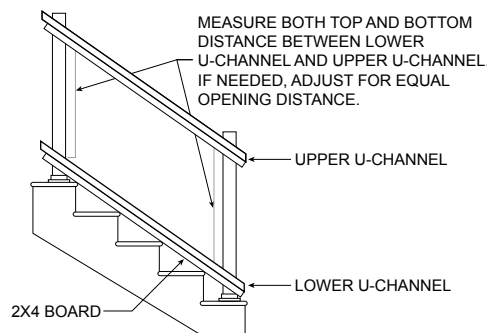
Dia. 5



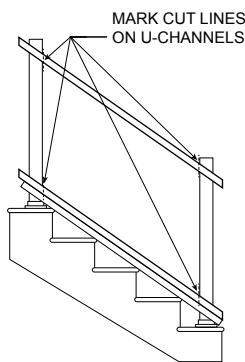
Dia. 6



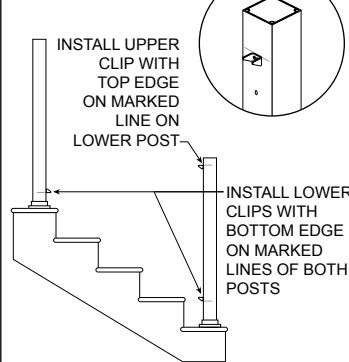
Dia. 7



Dia. 8



Dia. 9



## 4 Install Lower Angled Plastic Plug and Secure Upper and Lower U-Channels To Posts

- Attach 1-plastic 3/4"x3/4" angled plug to lower u-channel with one (1) - #8x3/4" self-tapping screw (Dia. 10)
- Secure upper and lower u-channels to attach clips with #8x3/4" self-tapping screws (Dia. 11)

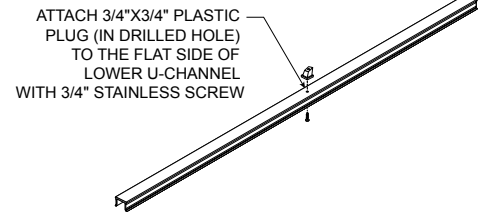
## 5 Measure, Cut And Install Intermediate Cable Support

- The Stair Intermediate Cable Support measures 45 5/16".
- Clamp Intermediate cable support vertically to the center of upper and lower u-channels (Dia. 12)
- **IMPORTANT:** Ensure cable holes align with upper and lower post hole locations
- Using a sharp #2 pencil, scribe cut lines on intermediate cable support (Dia. 12)
- Remove clamps and cut intermediate cable support at scribed pencil lines, taking care to cut at appropriate angle. Use of Miter saw with a sharp non-ferrous blade is recommended. **IMPORTANT:** Cut 1/8" less (saw blade thickness) than scribed line to allow for fitment of plastic plugs
- Clean cut areas and apply touch-up paint on exposed ends
- Insert plastic plug into upper hole of 3/4" x 3/4" intermediate cable support (Dia. 13)
- Position 3/4"x3/4" intermediate cable support onto lower u-channel plastic plug, then attach upper intermediate cable support to upper u-channel with one (1) #8x3/4" self-tapping screw (Dia. 13).

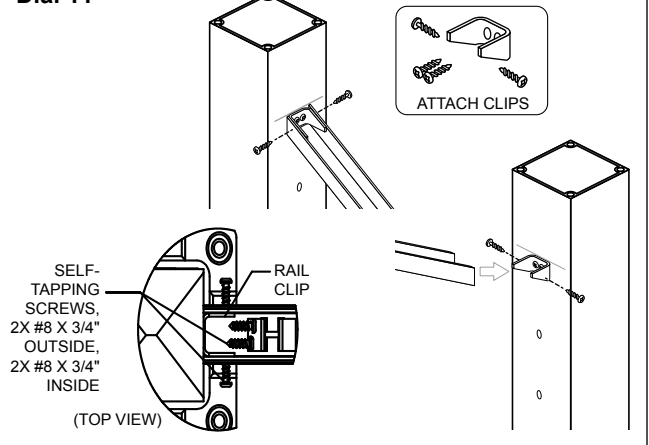
## 6 Measure, Cut & Install Top & Bottom Snap

- Following the same angle as the secured u-channels, clamp or hold top/bottom rail snaps against posts (Fig. 14). Using a sharp #2 pencil, mark the top/bottom rail snaps.
- Remove clamps and cut top/bottom rail snaps, taking care to cut snaps at appropriate stair angle. Cut 1/16" less than opening size (use of miter saw with a sharp non-ferrous blade is recommended)
- Clean cut areas and apply touch-up paint on exposed ends
- Install Bottom Rail Snap first by pressing over lower u-channel until properly seated
- Install Top Rail Snap by pushing down on snap until fully seated on the upper u-channel
- **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.

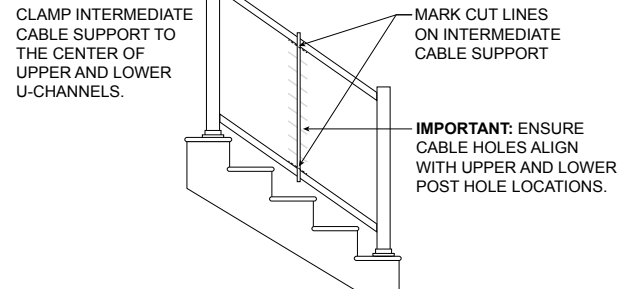
Dia. 10



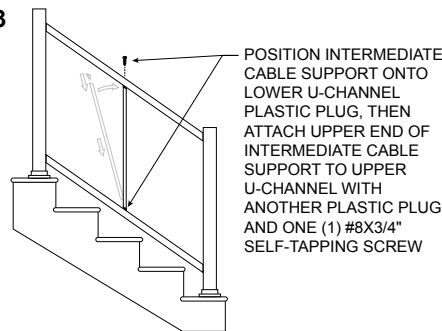
Dia. 11



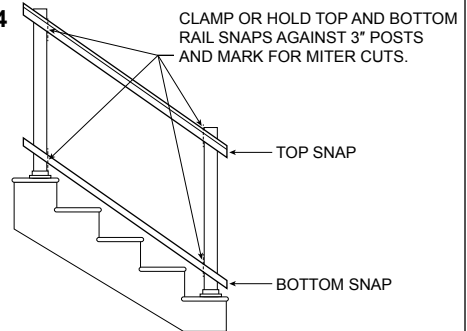
Dia. 12



Dia. 13



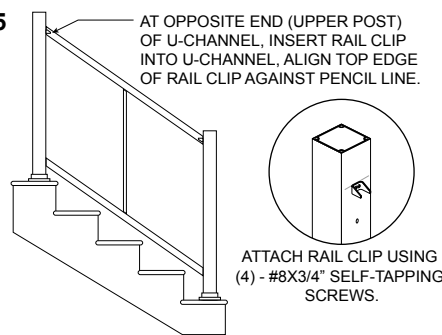
Dia. 14



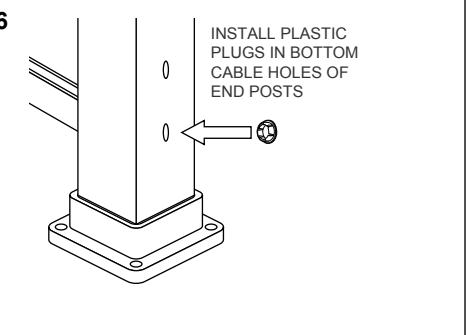
## 7 Install End Post Plugs

- Install plastic plugs only in bottom cable holes of end posts which are not used with a bottom rail application (Dia. 16).

Dia. 15



Dia. 16



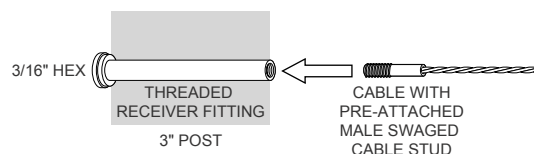


# CABLE INSTALLATION

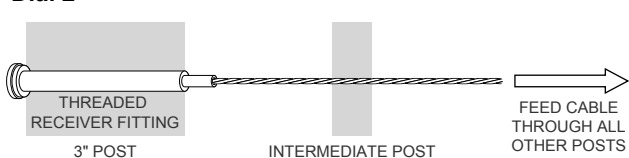
## 1 Install the Threaded Receiver Fittings into One End of Post (Cable starting point)

- **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 too 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.

Dia. 1



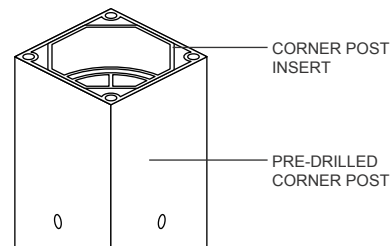
Dia. 2



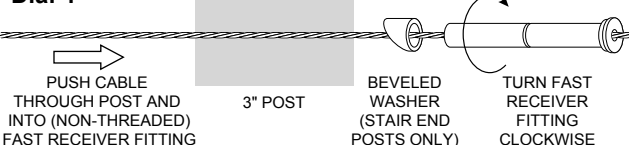
## 2 Feed Cable through Intermediate Cable Support and End/Corner Posts

- 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. 2). Corner Post Inserts allow for easy feeding of cable through 90° posts. (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.
- **NOTE:** Alignment plugs are installed in 90° posts to keep insert holes aligned. Do not remove plugs until cables are installed into empty holes.

Dia. 3



Dia. 4



## 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.

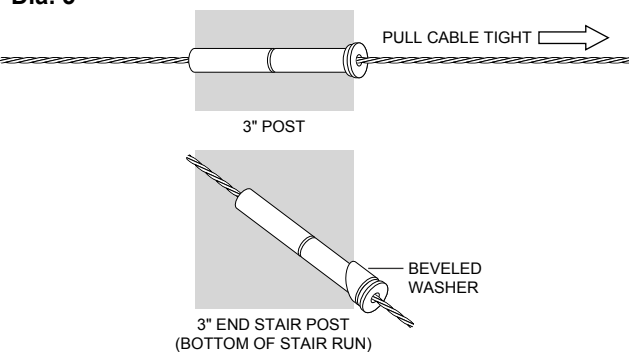
**Note:** It is normal to have trouble inserting the cable into some fittings. This occurs if the locking mechanism is already locked. To free it up, insert a Cable Release Tool or other tool with 1/8" or smaller diameter. Larger tools may get locked in the fitting and become very difficult to remove.

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.

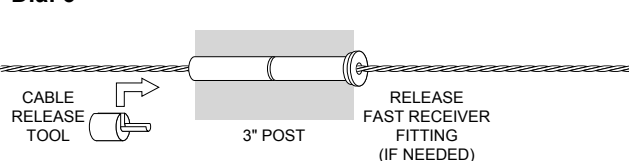
If you need to remove a cable from the Fast Receiver Fitting, slide a Cable Release Tool onto the cable, then push firmly into the fitting. This will release the mechanism to pull the cable back out. (Dia. 6)

Cut the cable flush with the hole in the back of the Fast Receiver Fitting using a cut-off wheel. (Dia. 7)

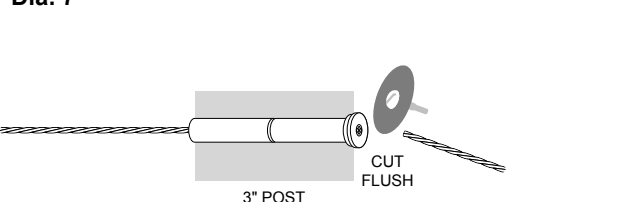
Dia. 5



Dia. 6



Dia. 7



## 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)

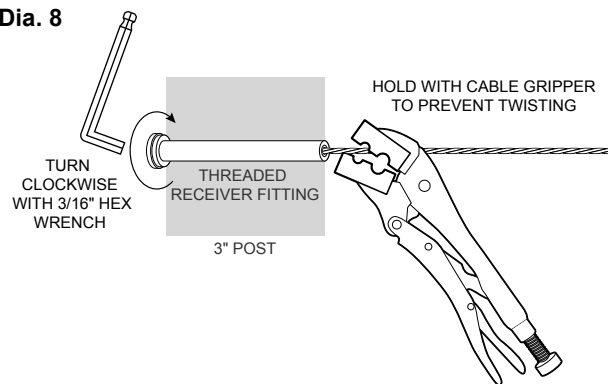
Optional: Use a Loos Cable Tension Gauge to test cables near the center of the cables to reach the appropriate tensions. The recommended range on the PT-1 scale is 13~15 or 110-137 lbs using the Loos Cable Tension Gauge. CAUTION: DO NOT OVER TIGHTEN!

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

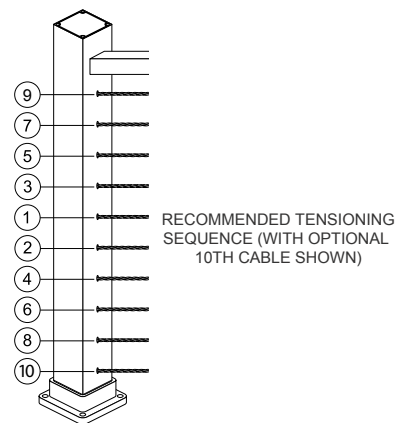
Press Stainless Steel caps onto the Fast Receiver Fittings and Threaded Receiver Fittings. (Dia. 10) **Helpful Hint:** Spray window cleaner on to Stainless Steel Caps to ease installation.

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

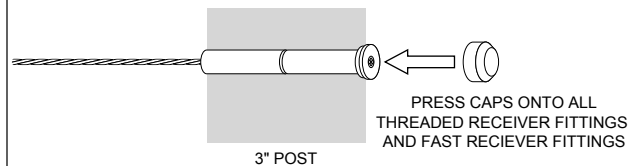
Dia. 8



Dia. 9



Dia. 10



Dia. 11

