1. Completely read the application instructions... before starting the installation of the railing.
2. Properly unload and store DuraLife™ RailWays® components...
   - Do not dump or drop railing components... from the back of a truck or trailer. They should be off-loaded by forklift or by hand. Store railing components on a level area on wood supports.
   - Protect DuraLife™ RailWays® Universal Railing Collection during storage with lumber cover or tarp.
3. Use proper lifting techniques... when lifting DuraLife™ RailWays® Universal Railing Collection components.
4. Follow all local and state building codes... while planning and installing your railing system.
5. Use normal wood working tools... to cut, route, or fasten DuraLife™ RailWays® Universal Railing Collection
6. Always use personal safety equipment... when using tools.

RailWays® Structural Posts may be attached to concrete or wood surfaces... with appropriate fasteners (sold separately).

Attachment to concrete surfaces...
1. Four - 3/8” x 3” concrete anchor bolts... are required for each post.
2. Use base plate as template (see FIG. 4-1)... to mark location for fasteners. 
3. Pre-drill holes... for concrete fasteners following the fastener manufacturer's instructions.
4. Install 3/8” x 3” concrete anchor bolts... to fasten base plate to concrete surface (see FIG. 4-2).
5. To level, use leveling shims as provided.

Attachment to wood surfaces...
1. A wood mounting kit... is required (sold separately) to install each post.
2. Install wood blocking... wood blocking MUST be installed as shown in FIG. 4-3.
3. Use base plate as template (see FIG. 4-1)... to mark location for fasteners.
4. Pre-drill holes... for bolts.
5. Use 3/8” x 6” hot dipped galvanized bolts, surface plate, bottom plate, top & bottom washers, and nuts... that are included in the wood mounting kit to fasten base plate to wood blocking as shown in FIG. 4-4.
6. To level, use 3/8” x 1” set screws & leveling shims as provided.
**Post Sleeve Installation and Rail Measurement**

5” x 5” post sleeves... are designed to slide over standard 4” x 4” wooden posts or structural post mount kits (see FIG. 4-7).

After post sleeve installation... install trim collars. Determine the total rail length... by measuring the distance between post sleeves.

Evenly space baluster... by removing an equal length from each end of the rail.

**TIP:** Place bottom rail against both post sleeves and slide left or right until there is an equal distance between the baluster pilot holes and the post sleeves (See FIG. 4-7). Make a pencil mark and cut the bottom rail. Repeat procedure for top rail.

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**Install Uni-Ball™ Baluster Connectors and Foot Block**

Install the Uni-Ball™ baluster connectors... to each rail at the pilot hole locations (See FIG. 4-8).

Install supplied foot block... to bottom center of the bottom rail (pre-drill rail before attaching). (See FIG. 4-9).

**CAUTION:** Do NOT remove baluster once it has been applied to the Uni-Ball™ connector.

If it is necessary to remove the baluster from the Uni-Ball™ connector, remove and replace the Uni-Ball™ connector before reapplying the baluster.

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**Install Bottom Rail**

Place the 90° mounting brackets... on underside of the rail.

Position brackets... flush with the ends of the rail.

Mark... the screw hole locations.

Pre-drill... screw holes using a 7/32” drill bit.

**IMPORTANT:** Drill additional hole for drainage... at each end an equal distance from the bracket holes.

Fasten brackets... to the rail using the supplied 1-1/2” lag screws and washers (See FIG. 4-10).

With the foot block attached position and level... the bottom rail between the posts.

Mark... the screw hole locations on the posts.

Pre-drill... screw holes using a 7/32” drill bit.

Fasten the bottom rail to the posts... using the supplied lag screws and washers (See FIG. 4-10).

Add screw caps... over screw heads.

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**Install Balusters on Bottom Rail**

Insert a baluster... over each Uni-Ball™ connector on the bottom rail.
**Install Top Rail**

Place the 90° mounting brackets... on underside of the rail.
Position brackets... flush with the ends of the rail.
Mark... the screw hole locations.
Pre-drill... screw holes using a 7/32" drill bit.
Fasten brackets... to the rail using the 1-1/2" lag screws and washers provided (See FIG 4-10).
Align and insert... top rail with the attached Uni-Ball™ connectors into each baluster (See FIG. 4-8)
Gently tap the top rail down... using a non-marring rubber mallet to secure it into position.
Center the top rail on each post... and mark each screw hole location (see FIG. 4-8 and 4-11)
Lean top rail... away from marked locations.
Pre-drill... screw holes using a 7/32" drill bit.
Re-align the top rail... with the screw holes.
Fasten the top rail to the posts... using the supplied lag screws and washers (See FIG. 4-10).
Add screw caps... over screw heads.
Install post caps... on each post.

**Stair Railing Installation... Determine Bottom Rail Length**

Place bottom rail on stair treads... against the two posts (with the post sleeves installed).
Center... sliding left or right until there is an equal distance from the end baluster pilot hole to the post sleeves (see FIG. 4-12).
Make a mark...along each post sleeve onto the rail to create the proper stair angle.
Cut each end... of the rail at the marks.

**Determine Top Rail Length**

Invert the top rail 180°... from its standard position (see FIG. 4-13).
Place top rail on stair treads... against the two posts (post sleeves installed).
Center... sliding left or right until there is an equal distance from the end baluster pilot hole to the post sleeves (see FIG. 4-13).

**IMPORTANT:** To ensure perpendicular baluster installation... slide the top rail down 5/16" (see FIG. 4-13).
Make a mark... along each post sleeve onto the rail to acquire the proper stair angle.
Cut each end... of the rail at the marks.
Install the Uni-Ball™ baluster connectors… to each rail at the pilot hole locations (See FIG. 4-14).

**CAUTION:** Do NOT remove baluster after it has been applied to the Uni-Ball™ Connector. If it is necessary to remove the baluster from the Uni-Ball™ Connector, remove and replace the Uni-Ball™ Connector before reapplying the baluster.

**Install Mounting Brackets To Bottom Of Top And Bottom Rails**

- Place brackets… on underside of the rail.
- Position brackets… flush with the ends of the rail.

**TIP:** Adjust the hinged brackets to match the angle of each end of the rail (See FIG. 4-15).
- Mark… the screw hole locations.
- Pre-drill… screw holes using a 7/32” drill bit.
- Fasten brackets… to the rail using the supplied lag screws and washers (See FIG. 4-16).

**Fabricate Baluster**

Cut the ends of each baluster to the angles… already established from the top and bottom rail. Confirm lengths and angles… are the same for each baluster (see FIG. 4-17).

**Install Bottom Rail**

Determine the height… for your bottom rail and mark the location of each post sleeve.
Align the underside of the bottom rail to this line, center the rail on each post… and mark each screw hole location.
Pre-drill… screw holes using a 7/32” drill bit.
Re-align the bottom rail… with the screw holes.
Fasten the bottom rail to the posts… using the supplied lag screws and washers (See FIG. 4-16).

**Install Balusters On Bottom Rail**

Insert a baluster… over each Uni-Ball™ connector on the bottom rail.

**Install Top Rail**

Align and insert… top rail with the attached Uni-Ball™ connectors into each baluster (see FIG. 4-17).
Gently tap the top rail down… using a rubber mallet to secure it into position.
Center the top rail on each post… and mark each screw hole location.
Lean top rail… away from marked locations.
Pre-drill… screw holes using a 7/32” drill bit.
Re-align the top rail… with the screw holes.
Fasten the top rail to the posts… using the supplied lag screws and washers provided (See FIG. 4-16).
Add screw caps… over screw heads.
Install post caps… on each post.