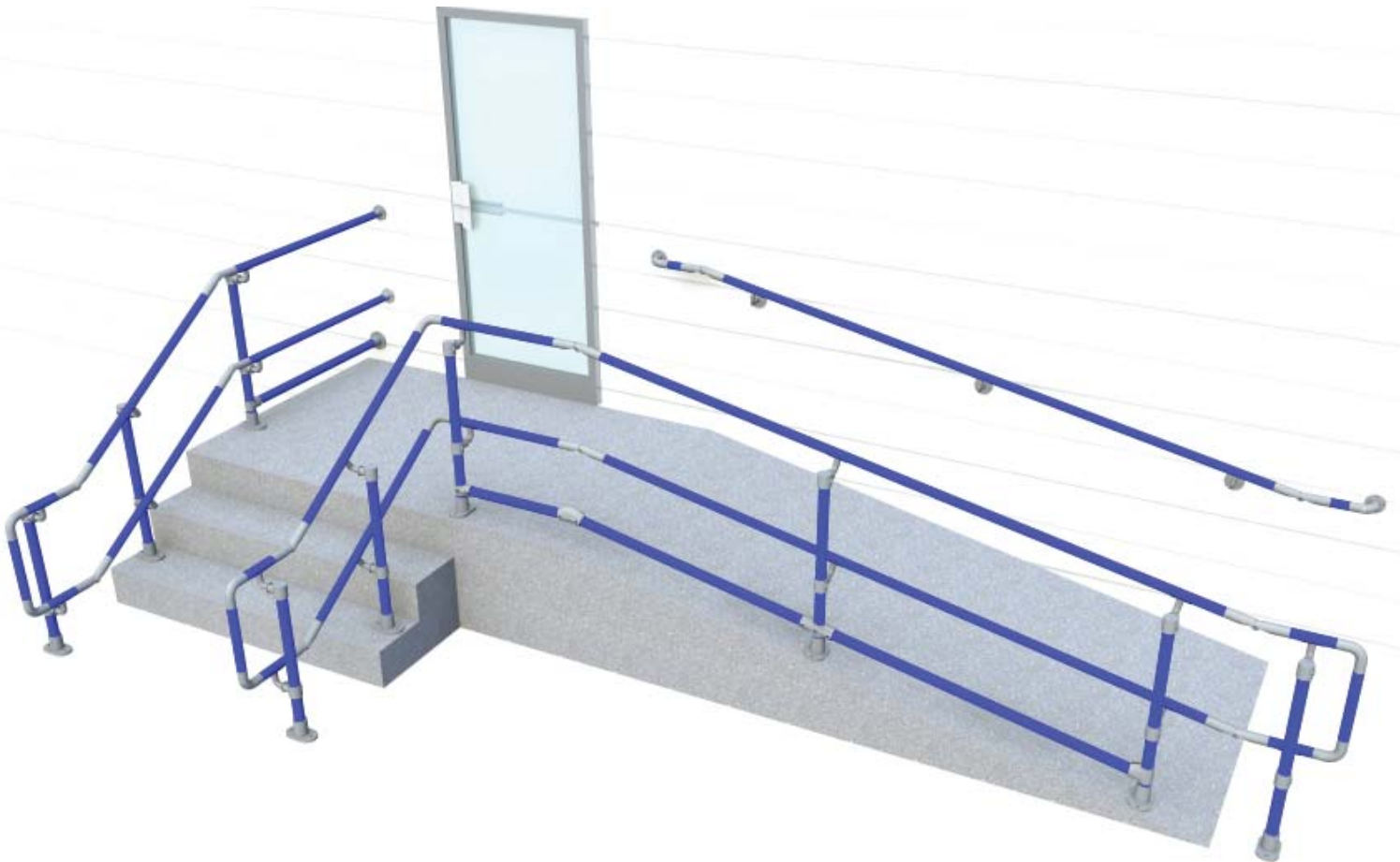


# NDA Manual

## Simplified NDA Handrail System



SIMPLIFIED  
**BUILDING**



For assistance visit: [www.simplifiedbuilding.ie/solutions/nda-handrail/](http://www.simplifiedbuilding.ie/solutions/nda-handrail/) or call 1890 100 047

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## HOW TO USE THIS MANUAL

This manual is not meant to provide comprehensive, step-by-step instructions for installing your handrail. Each handrail is different in application and arrangement. This manual is designed to give you the general principals necessary for installing a Simplified NDA Handrail. Please read the basic principals and then refer to the diagram that is most relevant to your application.

## WHICH DRAWING DO I USE?

Use the table below to determine which drawing(s) in this manual will be of the greatest help to you.

Top Rail NDA Handrail (ignore bottom rail)	Page 5
Top & Mid Rail NDA Handrail (ignore bottom rail)	Page 4
Top, Mid & Bottom Handrail	Page 4
Top & Bottom Handrail	Page 5
Stair Handrail	Page 4
Wall Attachement	Page 4 & 6



## RECOMENDED TOOLS

### ALLEN KEY

A size 7 or 8 allen key required for tightening set screws in the fittings

### SAW TO CUT TUBE

- Chop Saw
- Band Saw
- Hack Saw

### DRILL

- Hammer drill may be needed when drilling into brick or concrete

## NEEDED MATERIALS

### SELF DRILLING SCREWS (NO. 12) OR MULTI-GRIP POP RIVETS

For attaching handrail to brackets

### MOUNTING HARDWARE FOR BASE FLANGES

- 6mm For Wall Mounts
- 12mm For Base Flanges

### RECOMENDATIONS:

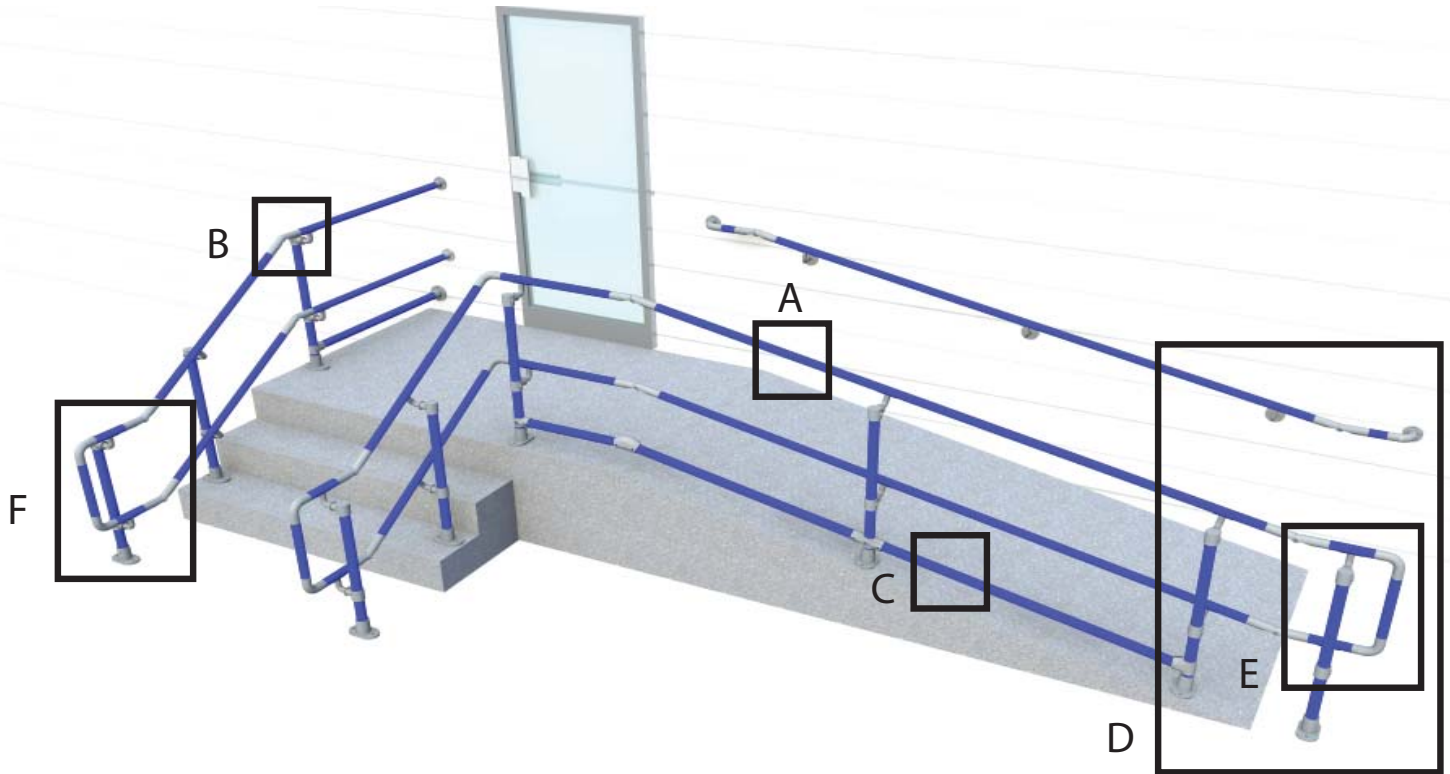
- Lag Screws
- Tapcons
- Bolts
- Chemical Anchors

(please refer to a fixing supplier for advice on selection)

## INSTALLATION TIPS

- Cut the tube at the job site.
- Use the type 62 base flange when fitting to concrete, avoiding installing close to the edge and instead of core drilling to prevent rust to upright.
- Center uprights not to exceed 1.8m when loadings not exceeding 0.74 KN / m are required.
- Uprights must be offset from corners and bends in the railing.

# BASIC PRINCIPLES OF NDA



A) HANDRAIL: Handrail must be a continuous smooth surface. Handrail must be on both sides of ramp or stairs.



B) HANDRAIL HEIGHT: Handrail must be 900mm-1.1m in height.



C) EDGE PROTECTION: When there is a drop off, ramps require a curb or curb rail to prevent wheel chairs from slipping out from under the railing. In some cases a mid rail is sufficient to provide this protection.



D) CLEARANCE: A ramp must have a minimum clear width of 1m.

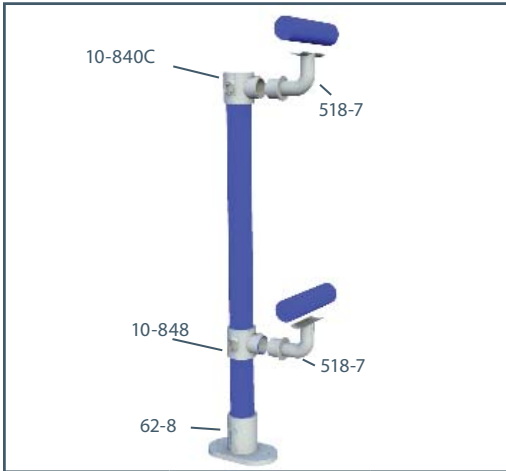
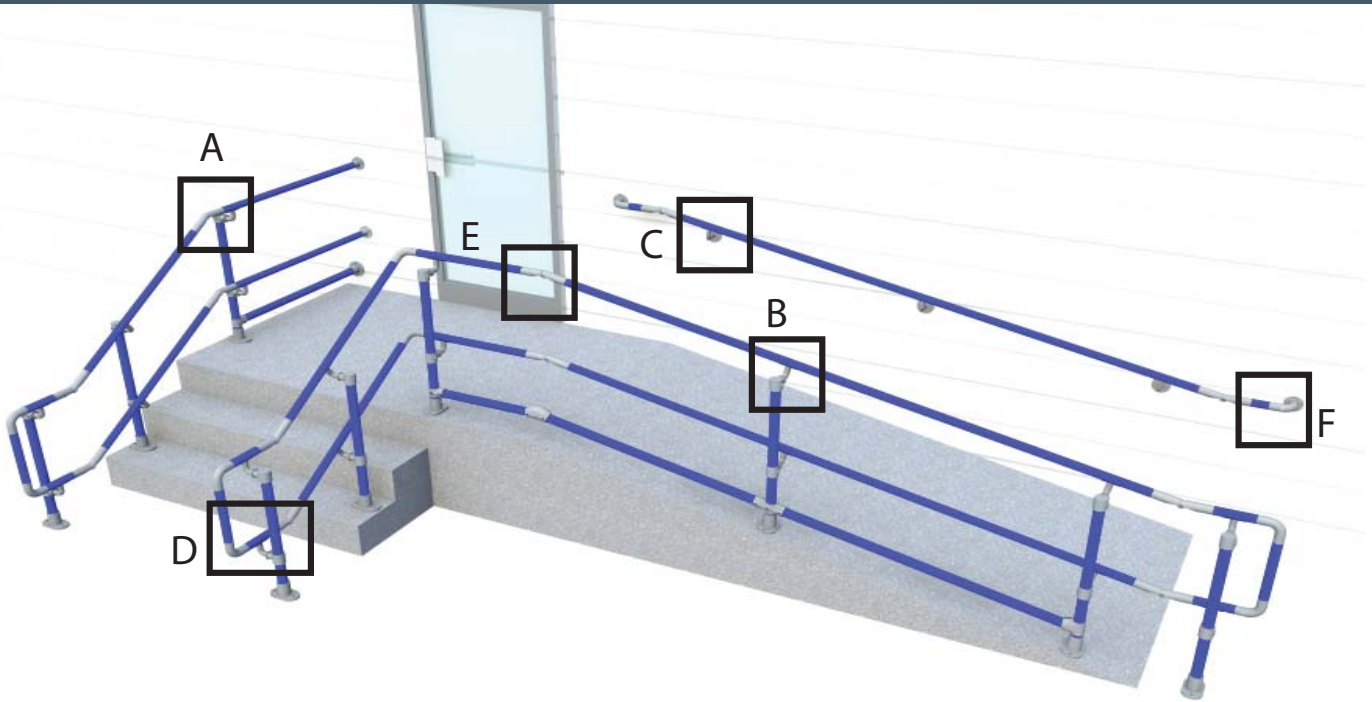


E) D RETURNS: Rail ends need to be rounded or return smoothly into a floor, wall or post.

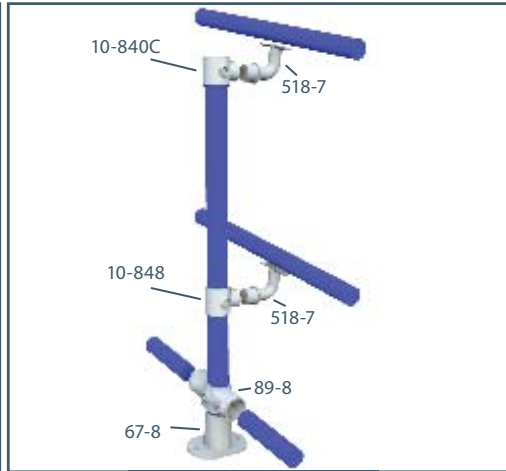


F) EXTENSIONS: Stairs: Handrails should extend the width of one stair tread and then level out for 300mm  
Ramps: Handrail should extend parallel to walking surface 300mm past the top and bottom of the ramp.

# DIAGRAM 1: TOP, MIDDLE, & BOTTOM RAIL



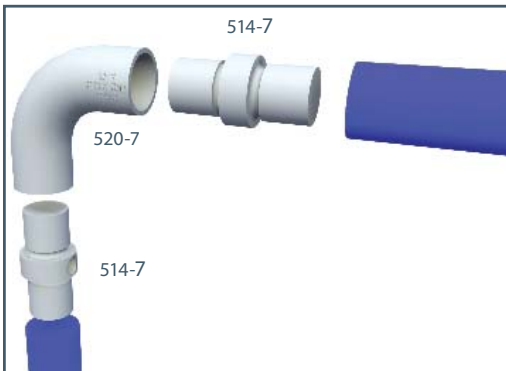
A) STANDARD UPRIGHT: The 62-8 base flange is for mounting to level surfaces. The 518-7 connects to 10-848 and 10-840C fitting.



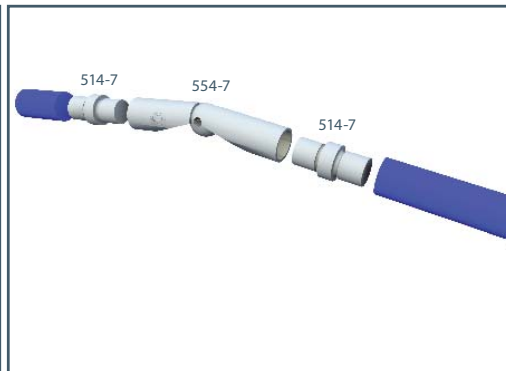
B) RAMP UPRIGHT: The 67-8 base flange is for mounting to angled surfaces. The angle is fixed by tightening the set screws. The railings are attached in the same manner as the Standard Upright. The bottom rails are connected with 89-8 on mids and 86-8 on ends.



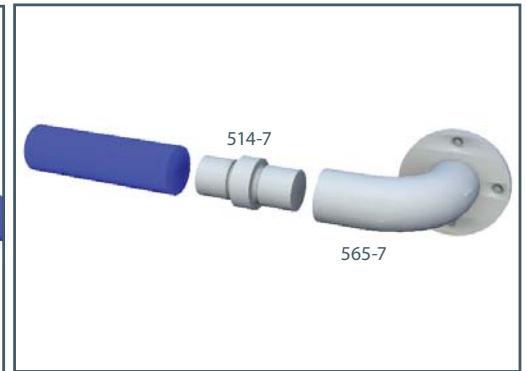
C) WALL MOUNT: The 570-7 is connected to the wall or wood posts using 6mm screws or bolts. The 570-7 is attached to the railing with No. 12 self-drilling screws or pop rivets.



D) D RETURNS: D returns are constructed with 520-7s and 514-7. The 520-7s are connected vertically with a small piece of tube. This assembly is then joined to the top and midrail with 514-7s.

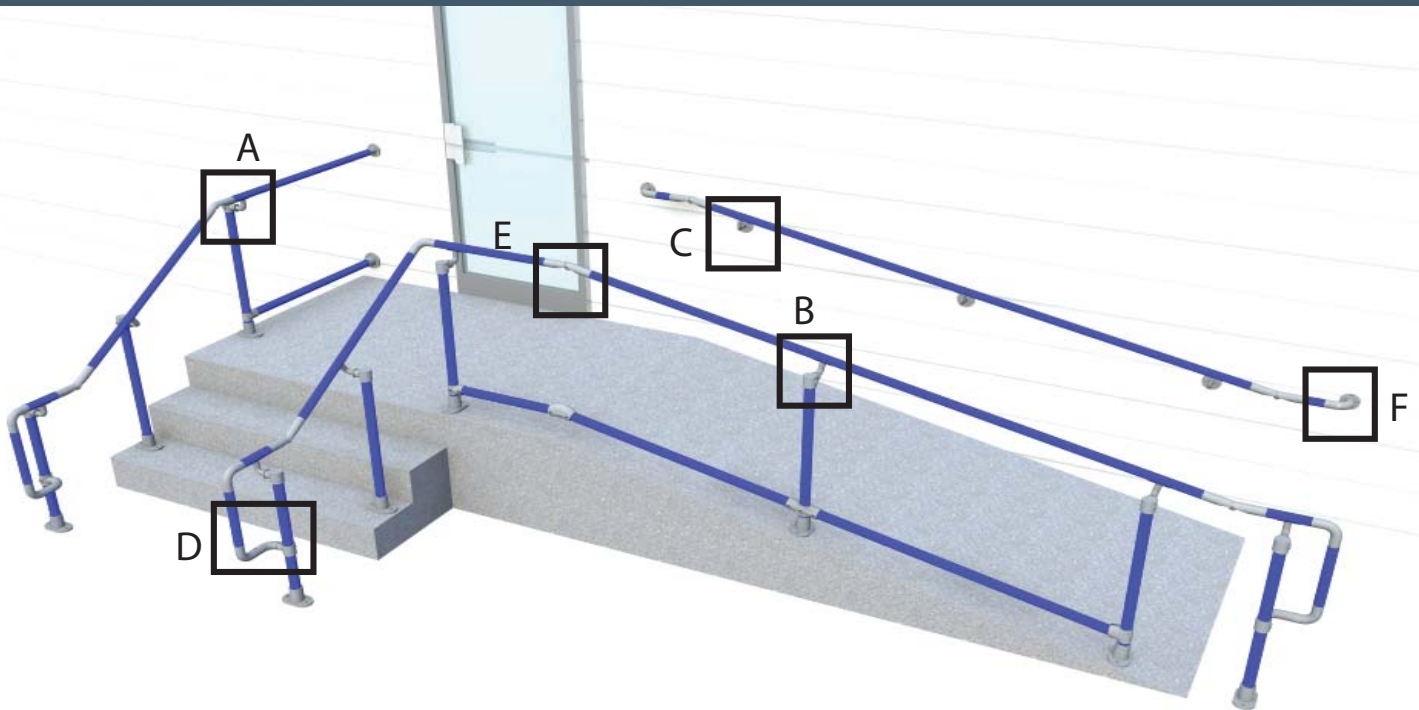


E) ADJUSTABLE ANGLES: In order to accomplish angles with a smooth surface, use the 554-7 and 514-7s. These are frequently used at the top and bottom of ramps and stairs.

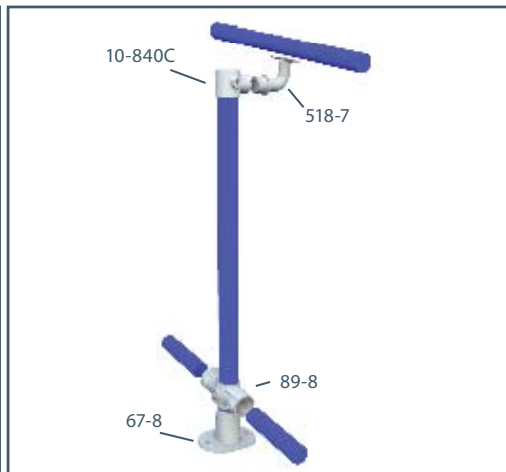


F) WALL RETURN: The 565-7 wall return flange is connected to the wall and then connected to the tube with a 514-7.

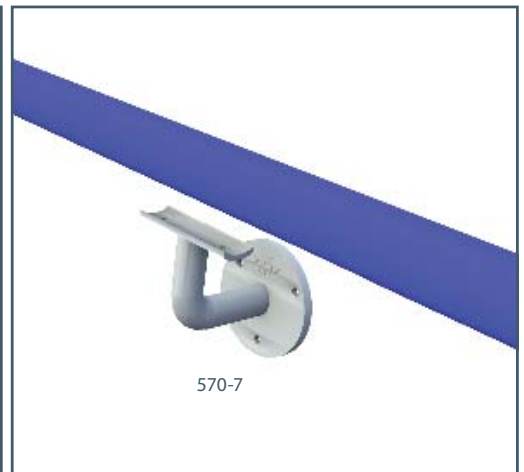
# DIAGRAM 2: TOP & BOTTOM RAIL



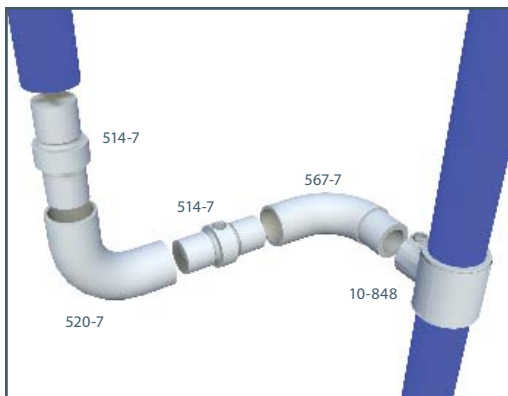
A) STANDARD UPRIGHT: The 62-8 base flange is for mounting to level surfaces. The 518-7 connects the railing to the 10-840C fitting.



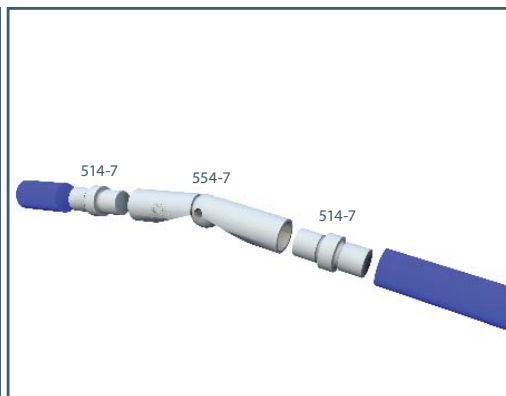
B) RAMP UPRIGHT: The 67-8 base flange is for angled surfaces. The upright angle is fixed by tightening the set screws. The railings are attached in the same manner as the Standard Upright. The bottom rails are connected with 89-8 on mids and 86-8 on ends.



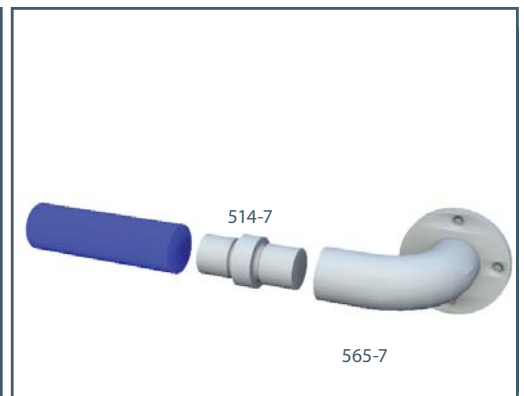
C) WALL MOUNT: The 570-7 is connected to the wall or wood posts using 6mm screws or bolts. The 570-7 is attached to the railing with No. 12 self-drilling screws.



D) POST RETURN D-RETURN: The D-return connects to the post using the 567-7 and 10-848. The 10-848 receives the small end of the 567-7. The 567-7 is then joined to the 520-7 using a 514-7.

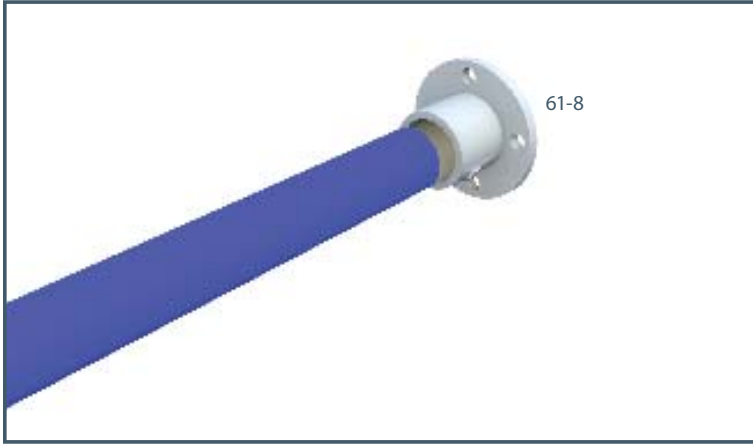


E) ADJUSTABLE ANGLES: In order to accomplish angles with a smooth surface, use the 554-7 and two 514-7. These are frequently used at the top and bottom of ramps and stairs.

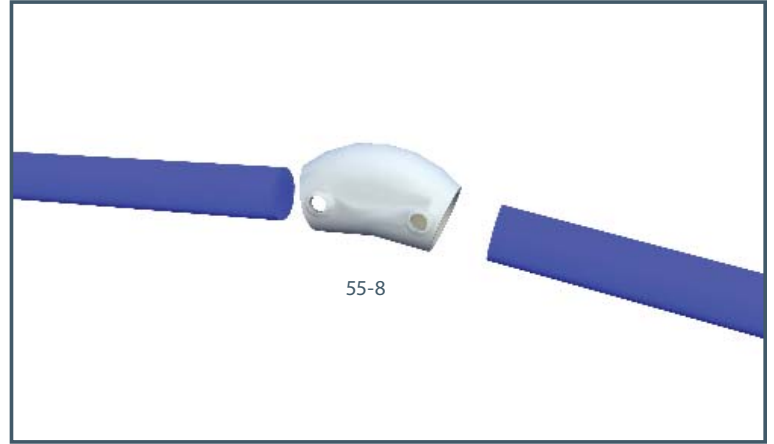


F) WALL RETURN: The 565-7 wall return flange is connected to the wall or wooden posts with 6mm screws or bolts. It is then connected to the pipe with a 514-7.

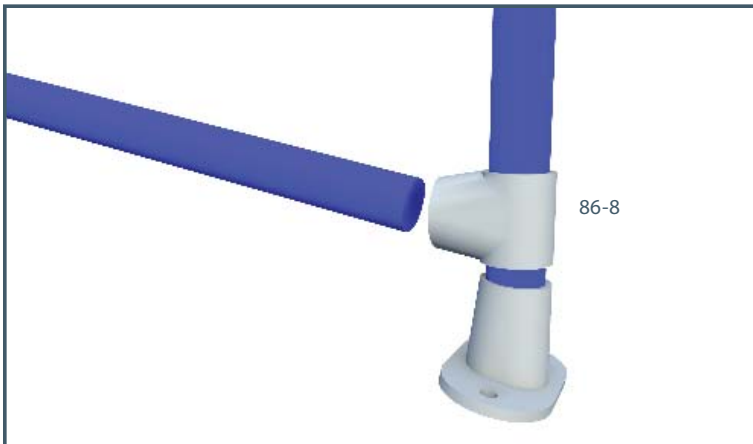
## APPENDIX: ADDITIONAL DIAGRAMS



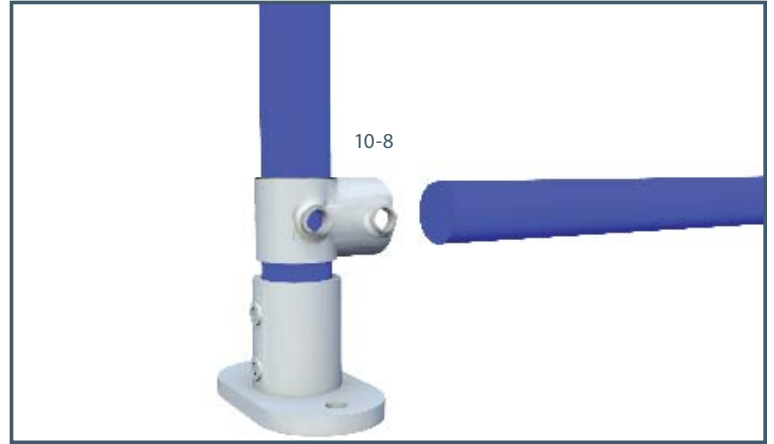
**BOTTOM RAIL HANDRAIL END:** Connect the bottom rail to the wall with a 61-8 wall flange.



**BOTTOM RAIL VERTICAL CHANGE:** The vertical change on the bottom rail of a ramp is typically done using a BC53-8 or a 55-8.



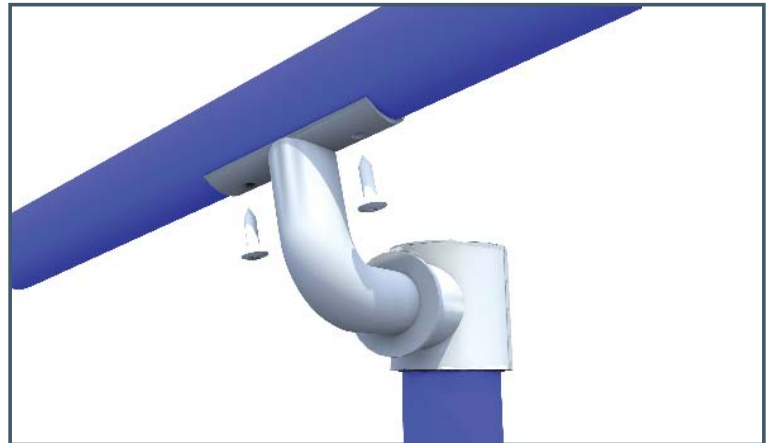
**POST MOUNTED RAMP BOTTOM RAIL END:** The bottom rail on a ramp terminates into a railing post using a 86-8. When the set screw is tightened, the angle of the bottom rail will be fixed.



**POST MOUNTED BOTTOM RAIL END:** The bottom rail on a flat surface terminates into a railing post using a 10-8.



**HANDRAIL RAILING END:** Mount the 561-7 to the wall. The handrail or mid-rail tube is then connected to this fitting using a 514-7.



**HANDRAIL BRACKET ATTACHMENT:** Brackets attach to the handrail tube with two No. 12 self drilling screws or pop rivets. Use high quality hardware for the best results.