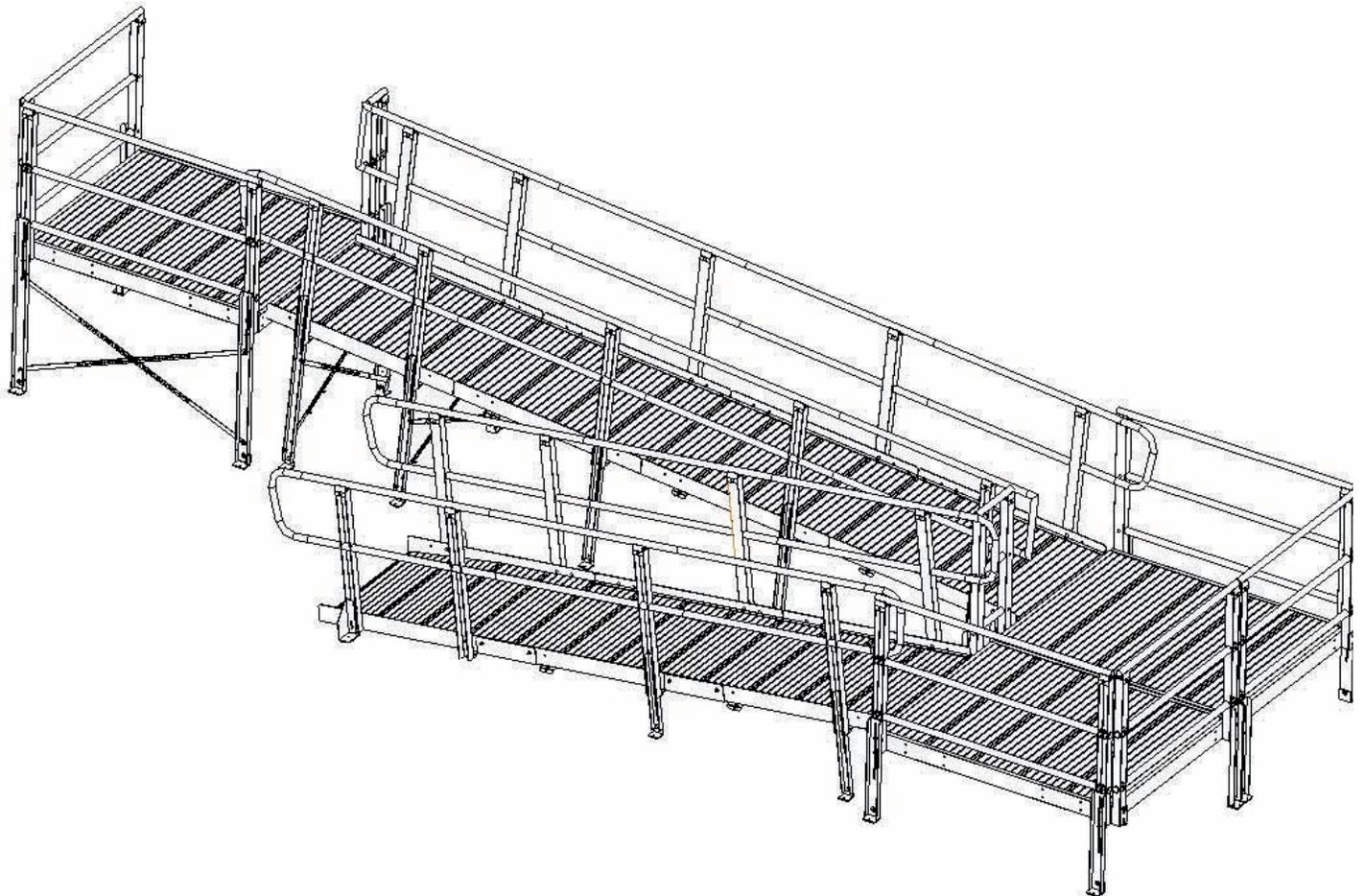


Prairie View Industries

Modular Ramp Assembly Manual



1-800-544-7267

www.pviramps.com

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Overview

Appearance: The PVI Modular Ramp System with handrails has a clean uncluttered appearance that will fit in most surroundings.

Low Maintenance: The all aluminum design has lifetime durability in all kinds of climates without periodic painting or renewal of preservatives. The aluminum alloys used are resistant to salt corrosion. The modular ramp system may even be used in coastal areas and cold climates that use deicers.

Permanent but moveable: The PVI Modular Ramp System serves the purpose as well or better than a permanent concrete ramp, but can still go along with the user if they move, or can be removed and resold when no longer needed. This ramp system is designed to be freestanding and totally independent of the existing structure. In many areas this simplifies compliance with local codes and in many cases eliminates permit requirements.

Flexible Modular Components: If or when the ramp is moved it is easy to add to, subtract from, or reconfigure the modular components at a new location. This feature makes the system attractive to lease/rental opportunities that may be available with insurance companies serving rehabilitation needs. It is best to use standard and/or existing components if possible. Custom designs add cost to the ramp and delay delivery. There are times when special components must be used and PVI is ready to provide the design and production assistance required.

Quick, Easy Assembly and Installation: The modular components of the PVI ramp are designed to be quickly and easily assembled with simple hand tools and set in place without the need for construction equipment. A van, pickup or small trailer is all that is needed to transport the ramp components (or shop assembled components) to the job site.

Quick and Economical Shipping: The modular components are stocked and warehoused so an order can be filled and shipped on short notice. The lightweight aluminum design and plant location make it economical to ship to any part of the country. Shipping cartons can be handled with ease.

Standard Components:

Ramps:

Width: 36" Standard width; custom widths are optional

Length: Minimum length of 4'.

Ramp Surface: Aluminum planking with lateral grooves, and a knurled surface.

Curbing: 2" high curb-standard

Slope: Adjustable from 1:12 to 3:12

Platforms Turn or straight configurations:

Dimensions: 48"x60", 60"x60" standard sizes.

Height: minimum height of 4 ½", maximum height of 60"

Load Capacity: 100 lb. / sq. ft.

180 Degree turn or straight through Platform:

Dimensions: 60"x96" or 60"x120" Standard.

Height: minimum height of 4 ½", maximum height of 60"

Load Capacity: 100 lb. / sq. ft.

Overview

Slopes, Handrails and Layout Considerations

NOTE: ADA COMPLIANCE IS USUALLY OPTIONAL (GUIDELINE ONLY) FOR RAMPS TO PRIVATE HOMES

Slopes: The ADA recommended slope of 1:12 is preferred when possible. However, when space is limited or other considerations require a steeper ramp, the PVI modular system will accommodate slopes up to 3:12. Any slope selected must consider the capabilities and safety of the users and their equipment.

Handrails: ADA requires handrails on any ramp with a rise of 6" or more. The PVI Modular Ramp System is available with or without handrail; however, we recommend handrails on all but the shortest ramps unless other provisions are made for the safety and assistance of the user. Not having handrail also takes away from the overall strength of the ramp system. Some codes mandate handrail spacing and/or vertical slats. Call PVI on designs with special handrail requirements.

Layout Considerations: The usable width of a standard ramp is 36", the overall width of the ramp (*from leg to leg*) is 41 ¼". The length of the individual ramp segments are as follows: 3', 4', & 5'. The segments are used in combinations to make lengths from 6' and longer in 1' increments.

Shipping

Freight Line and Freight Charges: PVI uses a combination of truck lines. Freight charges vary depending on the size and scope of the ramp system and destination. Call PVI for a price quote on a particular ramp.

Handling: All components are shipped in packages light enough to be handled with ease.

Assembly

Ramp and Platform Assembly: Complete detailed assembly instructions are included with each ramp. Assembly time for ramps is approximately one man hour per 16 foot of ramp length. Assembly time for Platforms is approximately ½ man hour. Ramps can be assembled in sub assemblies for easy transport to the job site. Site preparation, transport time and anchoring time is not included.

NOTE: During assembly do not tighten hardware all of the way until assembly is complete.

Footing and Anchoring: The PVI Modular Ramp Systems are designed to be freestanding, independent structures that do not have to be permanently attached to the building it serves. Each supporting leg is independently adjustable so any settling or heaving of the supporting surface can be adjusted quickly and easily with a single ½" ratchet. The ramps are also designed to be disassembled, moved and reassembled at a new site in a new configuration and length. Platforms must have a minimum of one leg anchored on each of the two opposite sides. Each free standing ramp must be anchored at the upper and lower end. Secure anchoring for the first pair of post at the bottom is especially important because this adds necessary strength to the lower end of the handrails. Anchoring may consist of lag screws or bolts into existing concrete, precast pads, patio pavers or poured in place.

Overview

Modular Ramp System Assembly

Step #1: Unpack all components and make sure all parts on packing list are present.

Step #2: Start by assembling the Platform at the entrance door (Top Platform).

(A) Select the Platform configuration from the configuration list.

(B) Assemble using Platform parts in section 2.2.

(C) Set in place, level, and install leg braces if required.

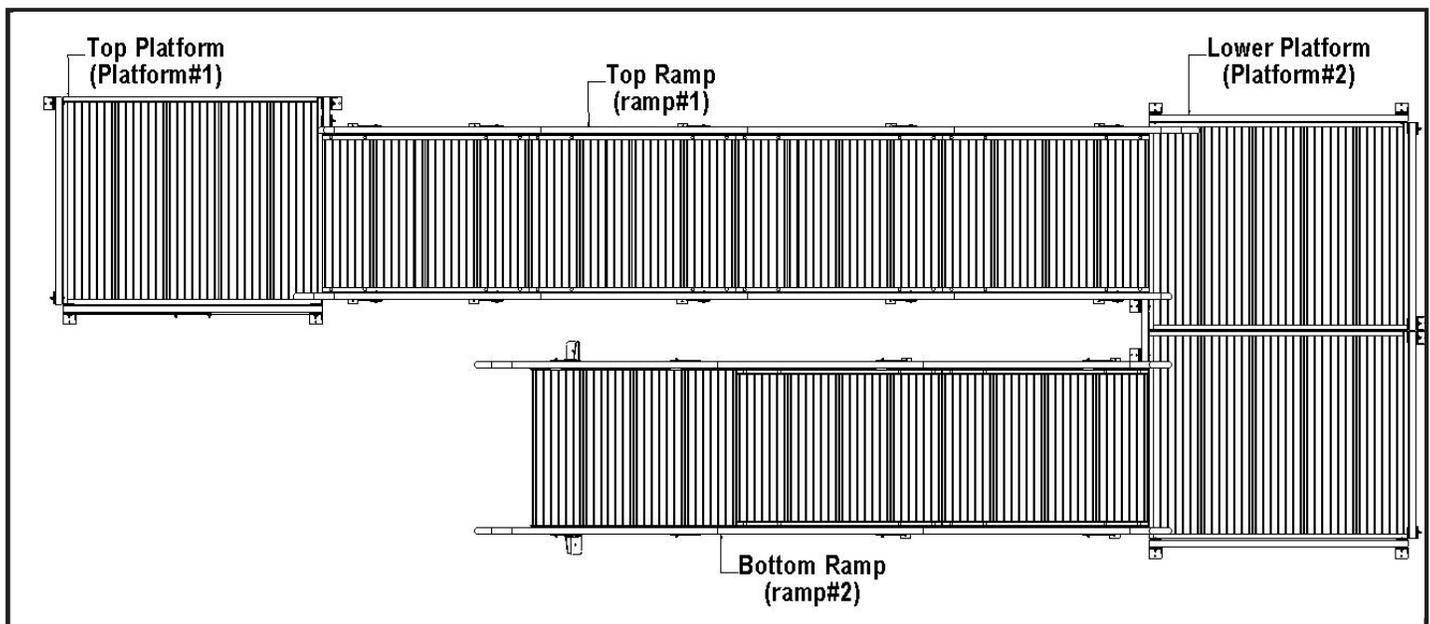
Step #3: Assemble first ramp section using parts in section 2.1. (Ramp#1)

Step #4: Assemble next Platform same as (A) (B) (C) of the top Platform. (Platform#2)

Step #5: Assemble next ramp section. (Ramp#2)

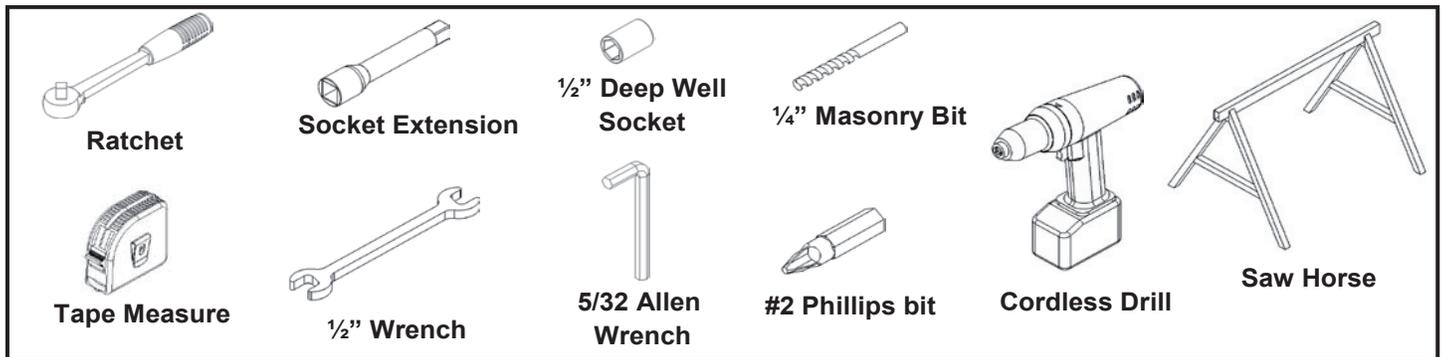
Step #6: Check all bolts and make sure all bolts are tightened.

NOTE: Some systems may only require one Platform and one ramp if so skip steps 4-6



Section 1.1 Tools Required

- * Ratchet
- *1/2" Deep Well Socket
- * Socket Extension
- *1/2" Wrench
- *Cordless Drill
- *#2 Phillips Drill Bit
- *Tape Measure
- *Saw Horses (two pair are recommended)
- *1/4" Masonry Bit (for anchoring into concrete)
- *5/32 Allen Wrench



1.2 Section Hardware List

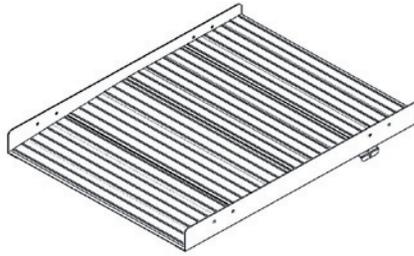
- *5/16 x 1 Carr. Bolt
- *5/16 x 2 1/2 Carr. Bolt (attaching top handrail to ramp and Platform post)
- *5/16 Selflock Nut
- *5/16 Jam Nut (attaching ramp post to ramp)
- *5/16 Flat Washer
- *Handrail Splice
- *Handrail Bolt Sleeve
- *#10-16 Self Tapping Screw (post corner kit & ramp attachment clips Platforms)



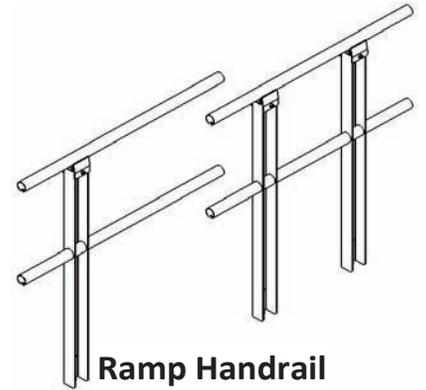
Section 2: 2.1 Standard Ramp Parts



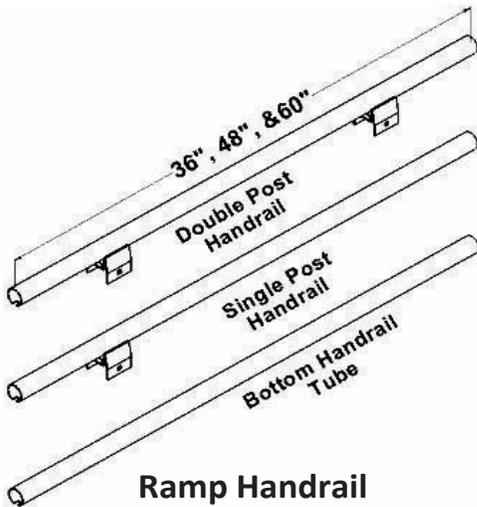
Ramp Section
3', 4', & 5'



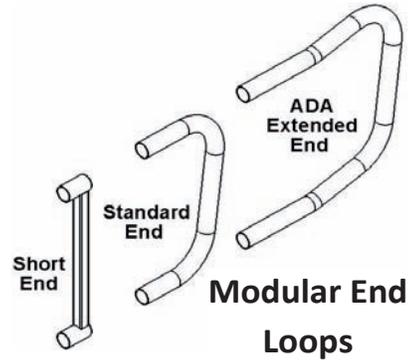
Entrance Section
3', 4', & 5'



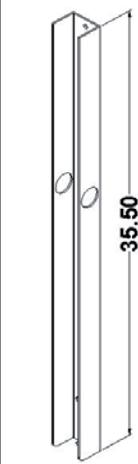
Ramp Handrail
Assemblies



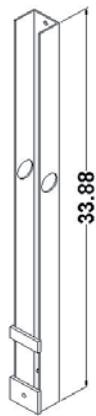
Ramp Handrail



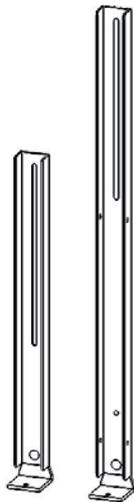
Modular End
Loops



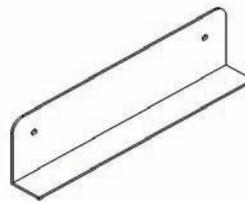
Ramp Post



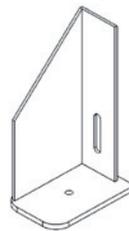
Entrance Post



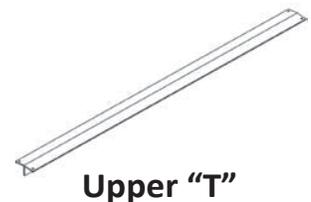
Ramp Leg



Ramp Splice



Support Bracket

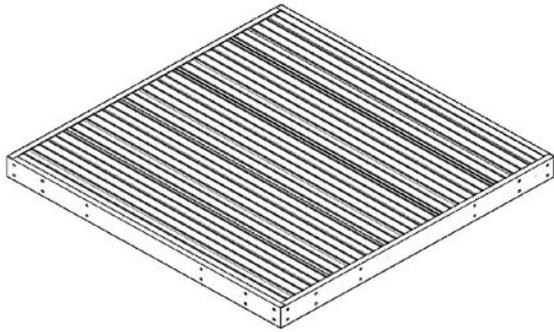


Upper "T"

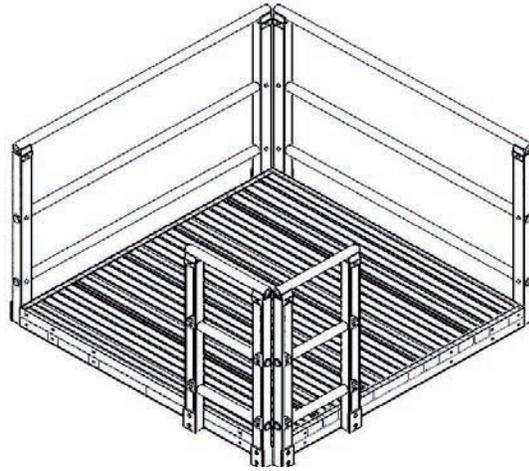


Long Leg Strap

2.2 Standard Platform Parts



Platform Bases
4x5 & 5x5



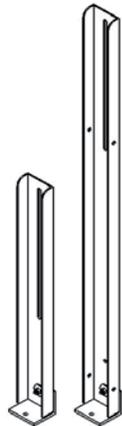
Platform Assembly
(Offset turn shown)



Platform Top Handrail Tube



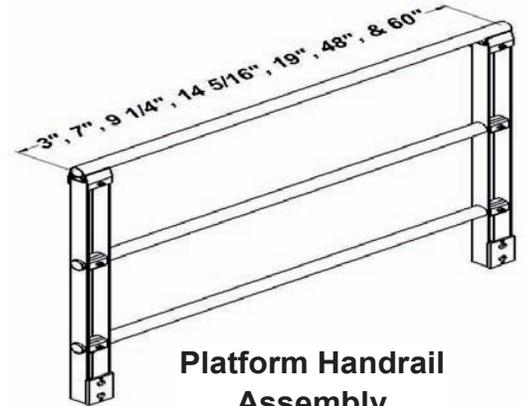
Platform Lower Handrail Tube



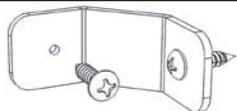
Platform Legs



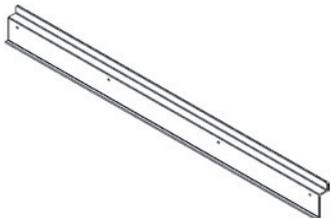
Platform Post



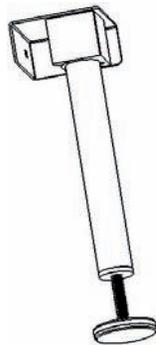
Platform Handrail Assembly



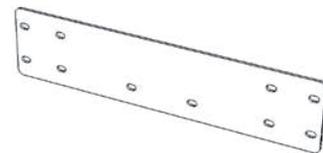
Post Corner Kit



Ramp Attachment Clip



Platform Under-Support



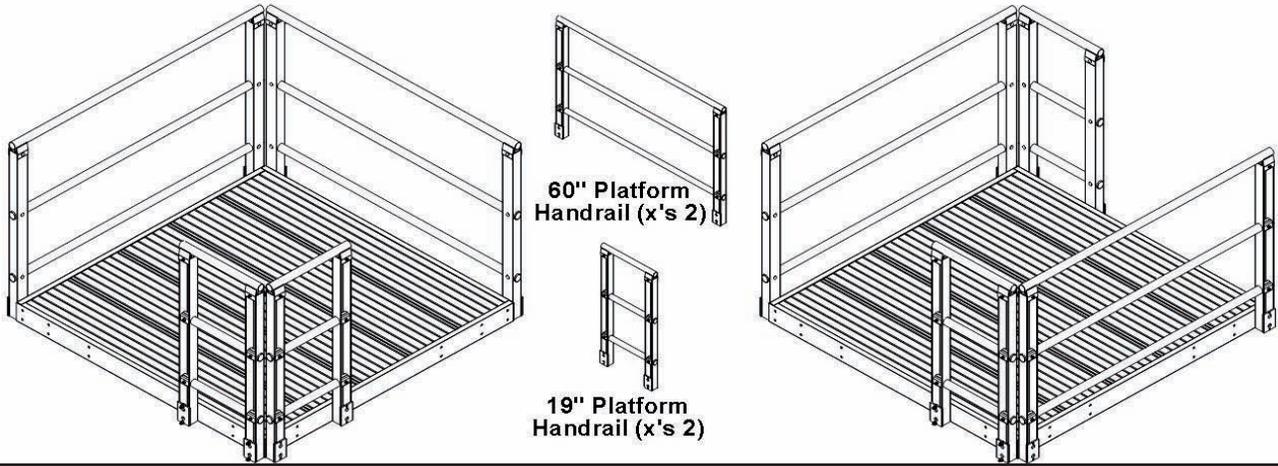
Open Sided Platform Splice



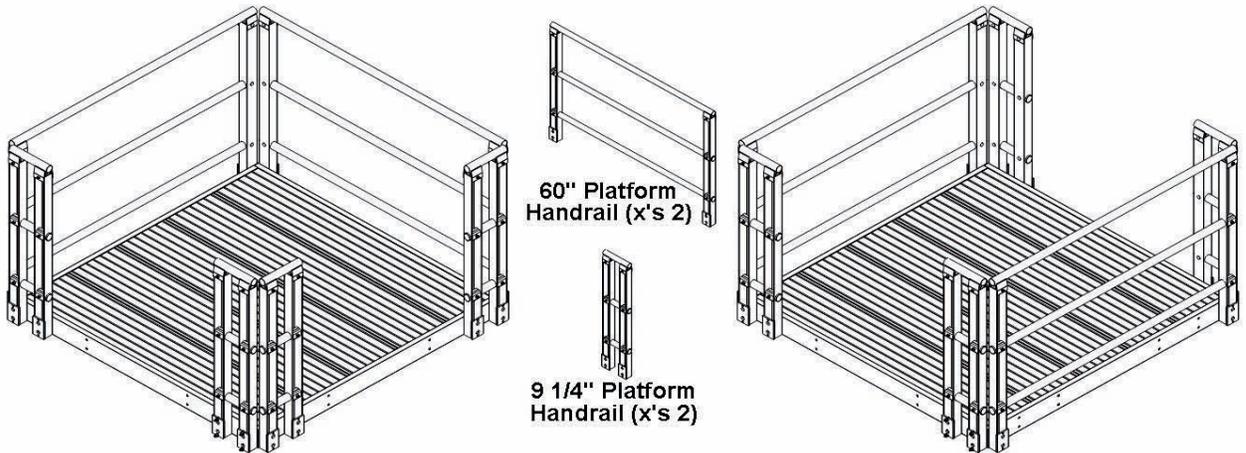
Handrail Splice Kit

2.3 (A) 5x5 Platform Configurations

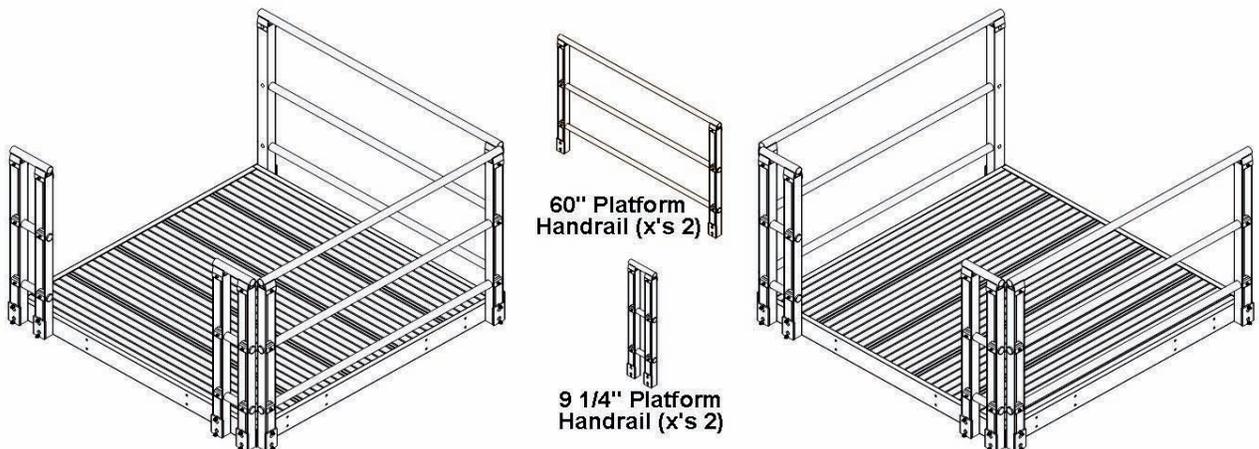
5x5 Offset Turn/Through



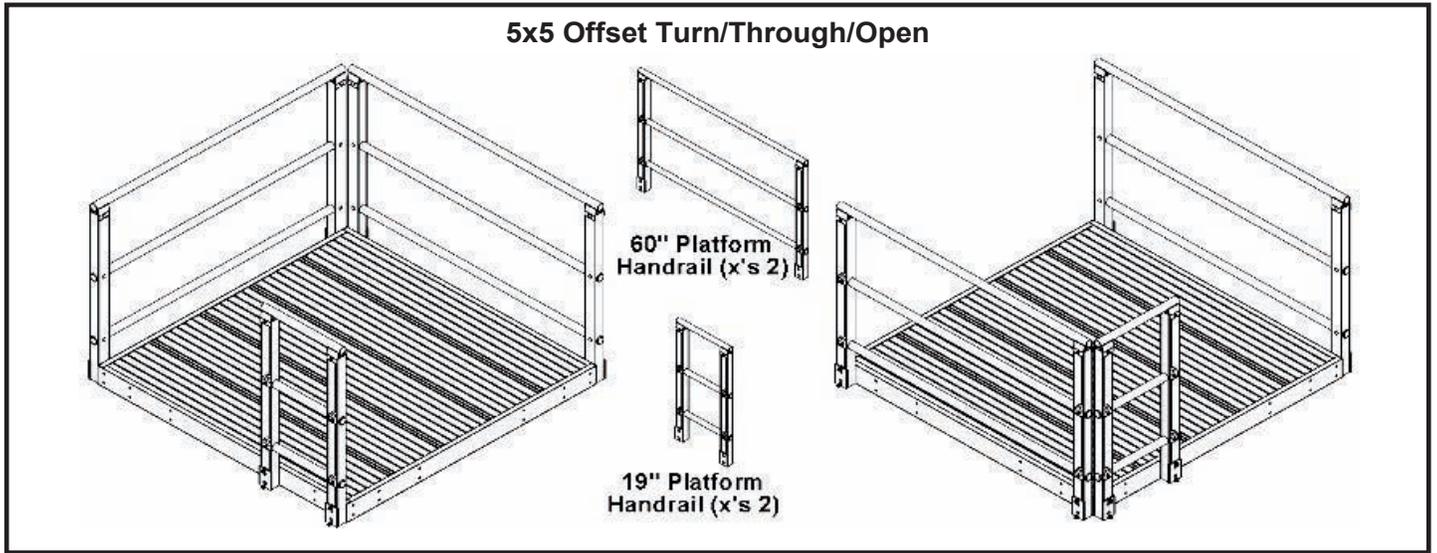
5x5 Centered Turn/Through



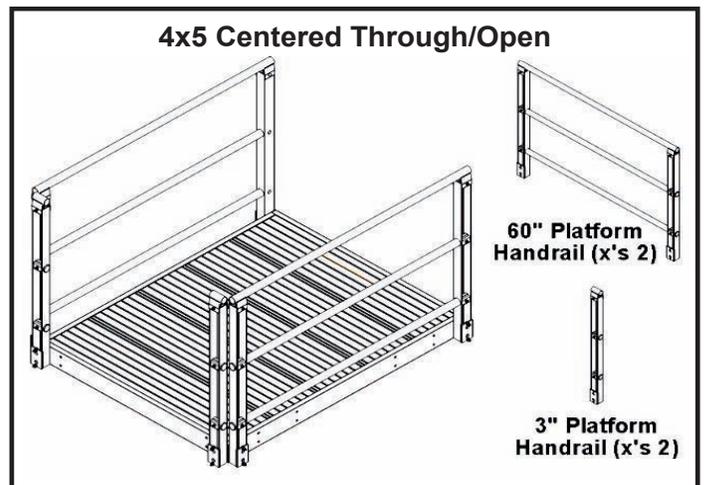
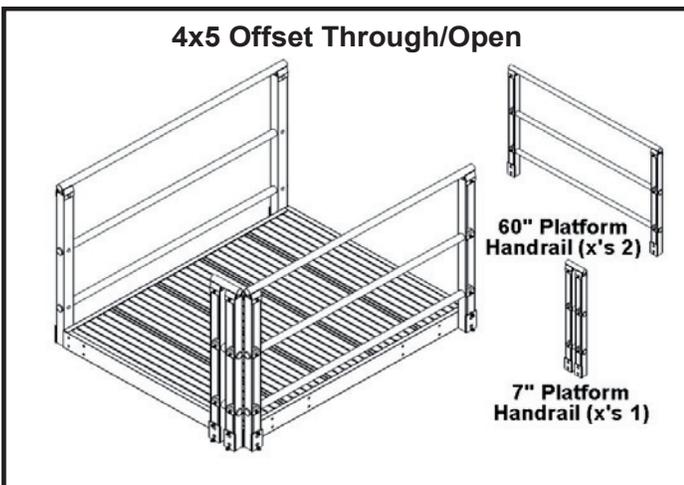
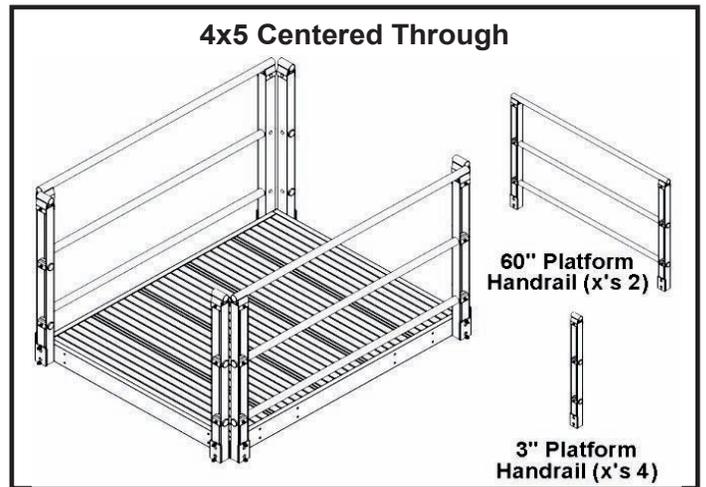
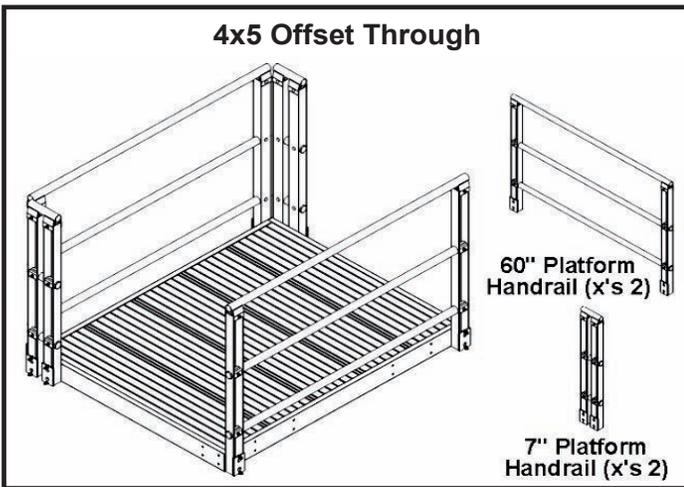
5x5 Centered-Open Turn/Through



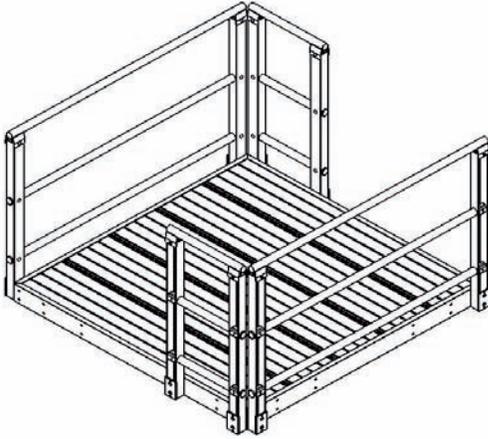
2.3 (A) 5x5 Platform Configurations



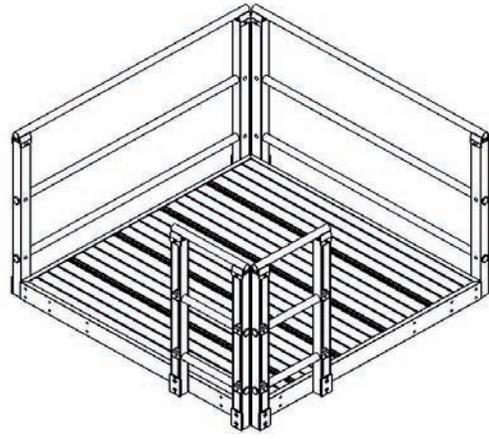
2.3 (B) 4x5 Platform Configurations



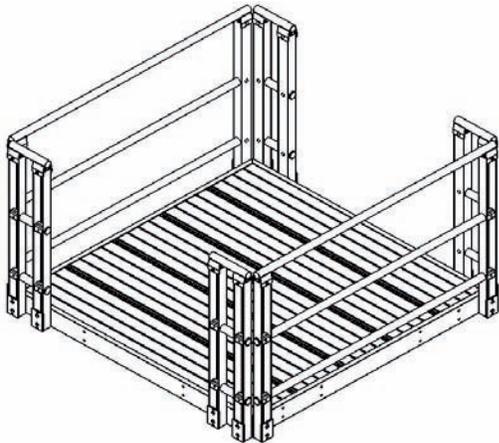
Section 2.3 Standard Platform Configurations



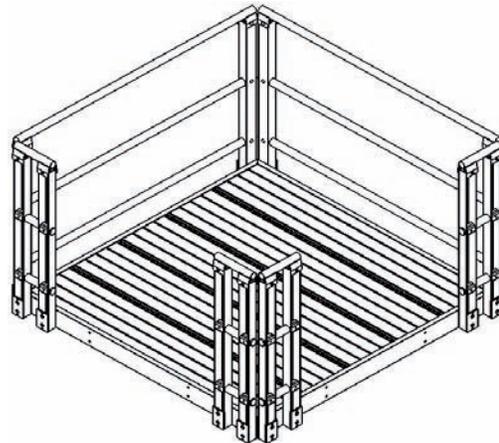
Offset Through



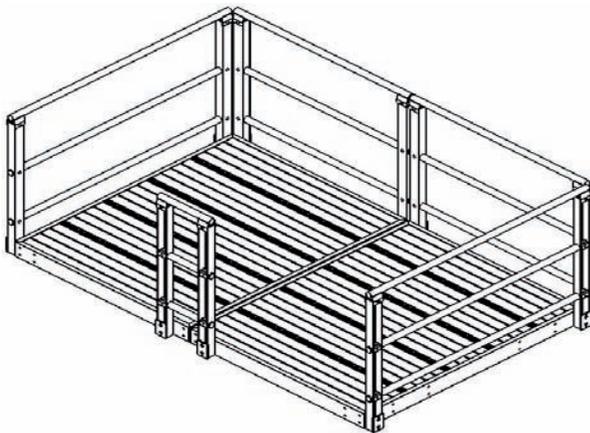
Offset Turn



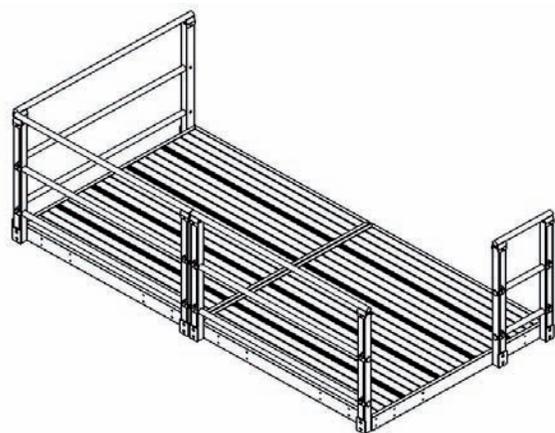
Centered Through



Centered Turn

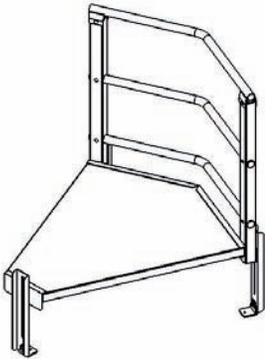


Switch Back



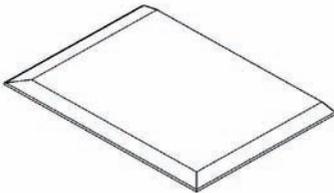
Open Sided

Section 2.4 Optional Parts



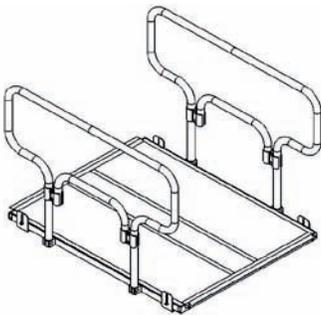
45° Wedge

45° Wedge are used when a Platform is needed, but does not have the space required to use a Platform or make a 90° turn.



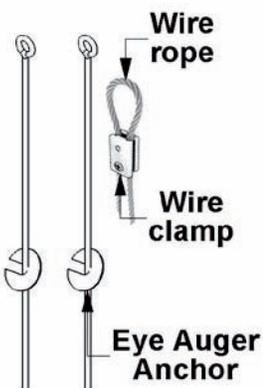
Ramp Platform

Ramp Platforms are used when bottom ramp ending surface is not suitable for accessing the bottom ramp of a modular ramp system, it is not recommended to use this as the only anchor point for a bottom ramp.



Platform Transition

Platform Transitions are used when the entrance/door off of the top Platform requires a level bridge from the Platform to the door. Platform transitions are to only be used at minimal height, and always be level.

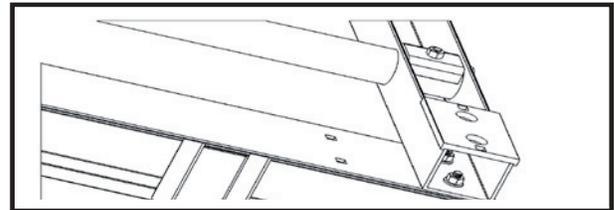
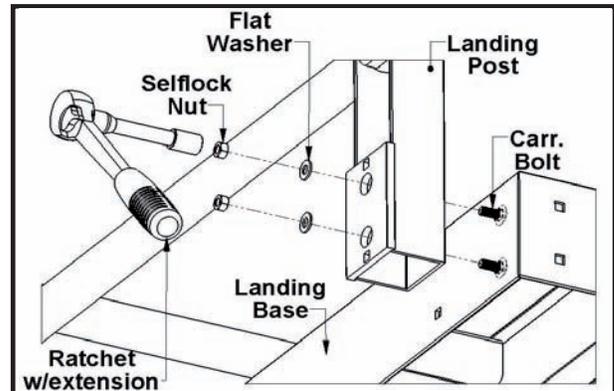
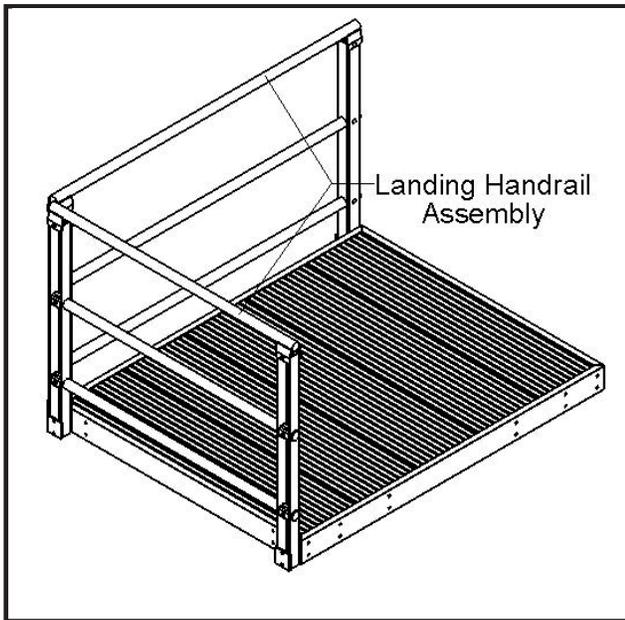


Hurricane Kit

Hurricane Kits are used when required in applications where local building codes require that the modular ramp system be anchored to the ground.

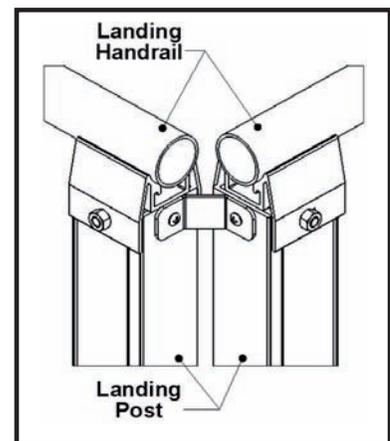
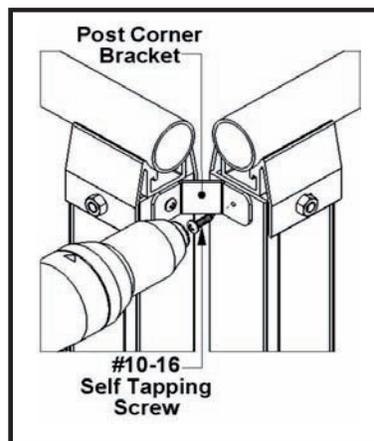
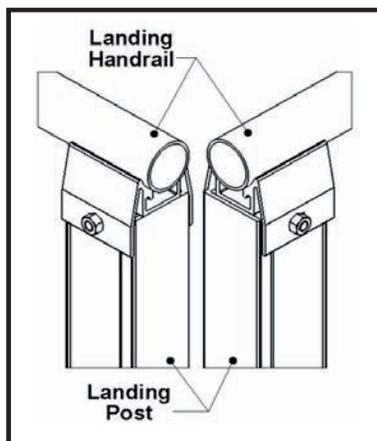
Section 3 Ramp Assembly

3.1 Handrail to Platform Attachment



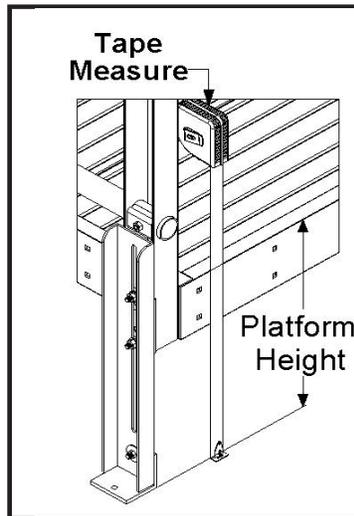
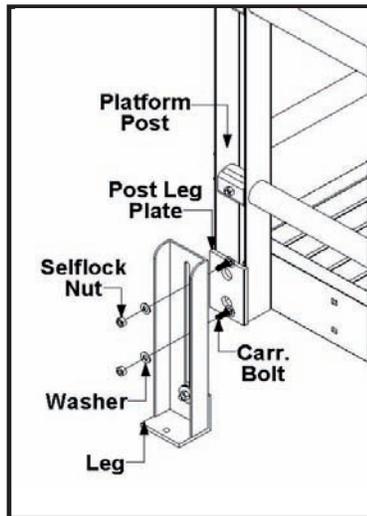
3.1 Handrail to Platform Attachment: line the two round holes at the bottom end of the handrail post up with the square holes in the frame rail of the Platform. Push a carriage bolt through the holes making sure the head of the bolt is to the inside of the Platform base. Place washer over each bolt and fasten with selflock nuts. A ratchet extension will be needed to reach the selflock nuts through the clearance holes in the leg plate. NOTE: setting the Platform base on saw horses will make the attachment of handrail quicker and easier.

3.2 Post Corner Bracket Install



3.2 Post Corner Bracket Install: Once all handrail has been attached to Platform the post corner brackets will need to be installed in all corners where handrail meet. Place bracket in the corner with the pilot hole in the bracket centered on the Platform post, and the edge flush up against the handrail bracket attached to the Platform post. Using a self tapping screw and cordless drill attach the post corner bracket to the first post. Attach the post corner bracket to the second post using the same method. The corners may not line up perfectly it may be necessary to force the second post into the proper position.

3.3 Platform Leg Attachment

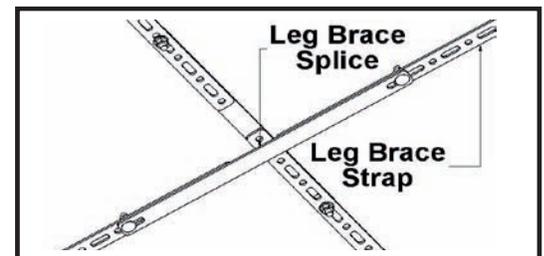
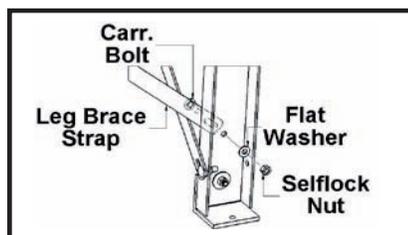
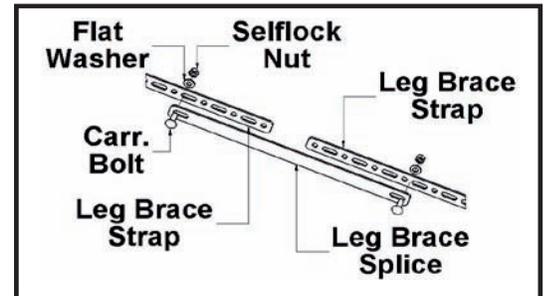
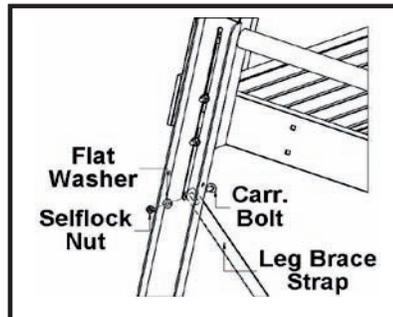
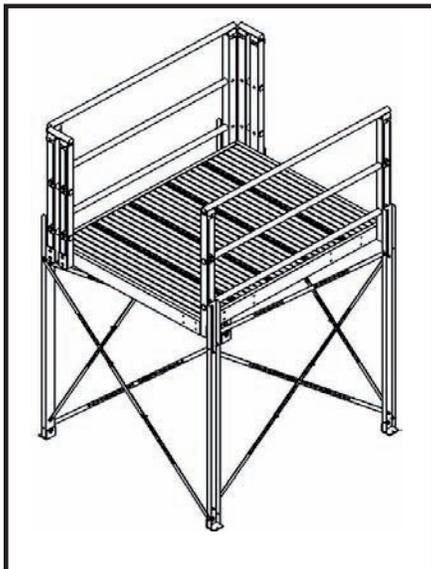


Platform Leg Adjustment Range:

- 12" Legs/Max=10"/Min=6"
- 18" Legs/Max=16"/Min=7 ½"
- 24" Legs/Max=22"/Min=13 ½"
- 30" Legs/Max=28"/Min=19 ½"
- 36" Legs/Max=34"/Min=25 ½"
- 42" Legs/Max=40"/Min=31 ½"
- 48" Legs/Max=46"/Min=37 ½"
- 54" Legs/Max=52"/Min=43 ½"
- 60" Legs/Max=28"/Min=49 ½"
- 66" Legs/Max=64"/Min=55 ½"

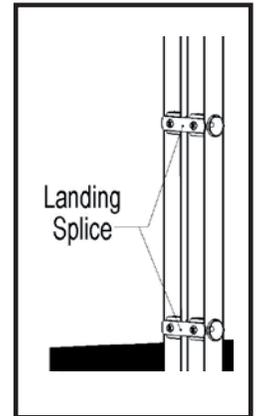
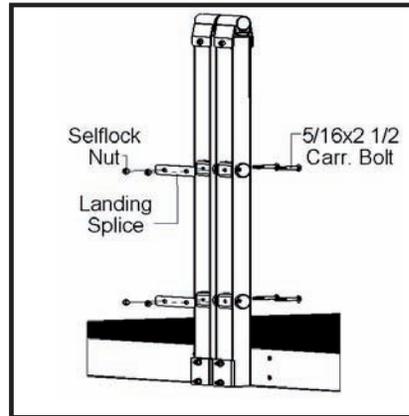
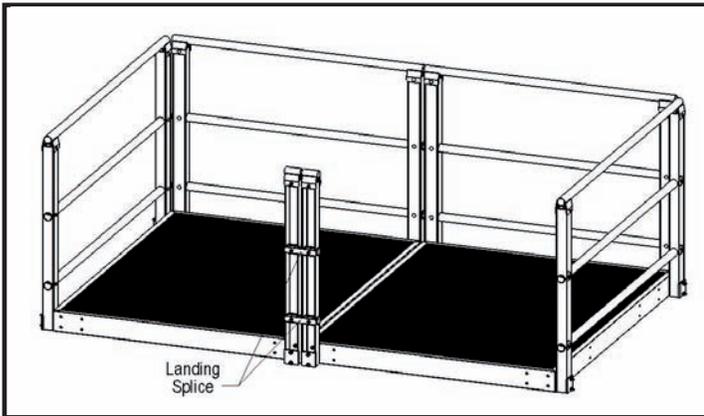
3.3 Platform Leg Attachment: To attach the legs to the Platform push the carriage bolts through the square holes of the post leg plate on the ramp post. Place the leg over the carriage bolts with the bolts coming through the slot of the leg. Using a washer and selflock nut fasten leg to the handrail post. To set the Platform height measure from the bottom of the leg to the Platform surface.

3.3.1 Platform Long Leg Supports



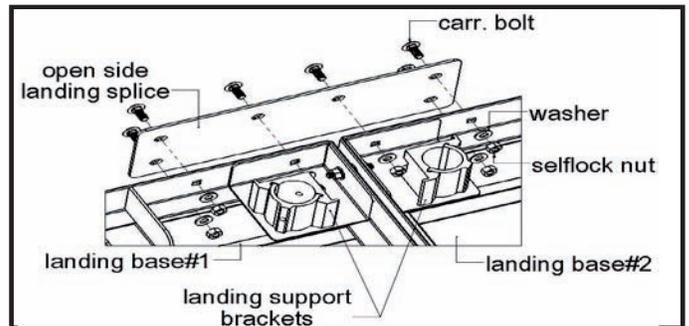
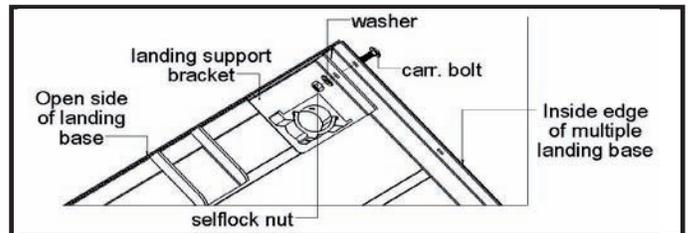
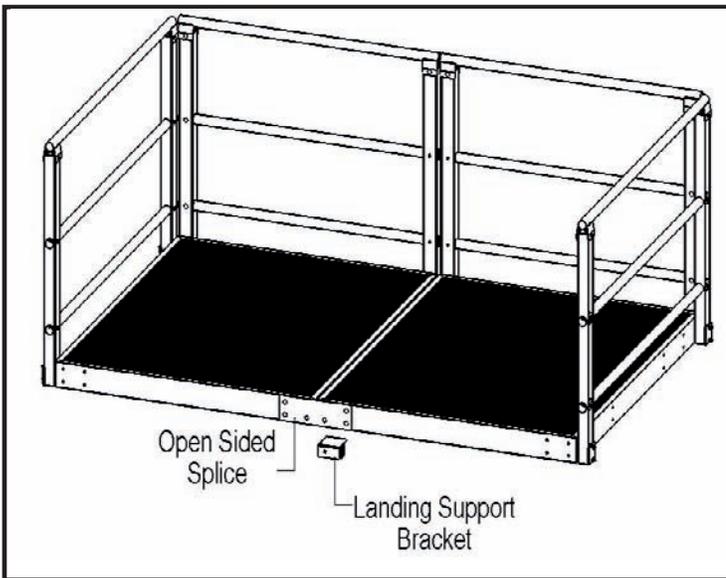
3.3.1 Platform Long Leg Support: Long leg supports for Platform applications will attach to the legs using the same method as on the ramps. Unless the application requires attaching the long leg supports to the backside of the leg channel. Using the same hardware attach the leg brace strap to the back side of the leg channel using the slotted hole at the top at the lowest point in the slot, and the round hole at the bottom. Some Platform application will require that a leg brace splice be used, center the leg brace splice between the two leg brace straps and attach using the same method as if bolting the leg brace straps together.

3.4 Multiple Platform Base Assembly



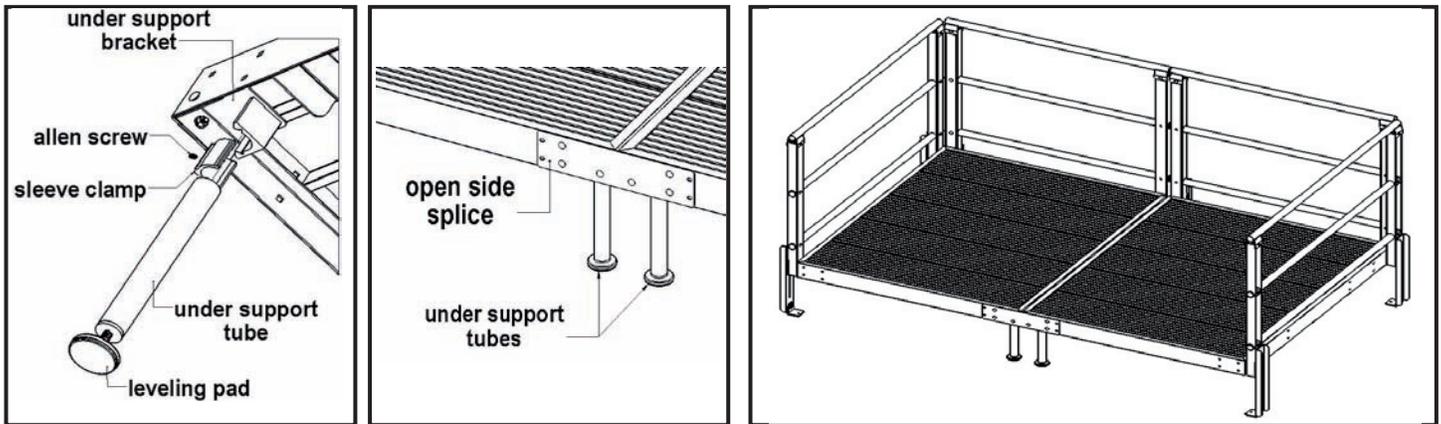
3.4 Multiple Platform Base Assembly: Position both bases with handrail fully assembled, and the legs attached side by side. Remove the 5/16x2 1/4 carriage bolts from the handrail post middle, and bottom handrail tubes. Place a Platform splice on the inside of the Platform post at both the middle and bottom handrail locations. Replace the 5/16x2 1/4 carriage bolts with 5/16x2 1/2 carriage bolts supplied with the Platform handrail splice kit. Push carriage bolt through all, after the clamp adapters have been replaced place a Platform splice over the carriage bolts at the middle and bottom handrail location. Fasten all with selflock nuts.

3.5 Multiple Platform Base Assembly Open Side



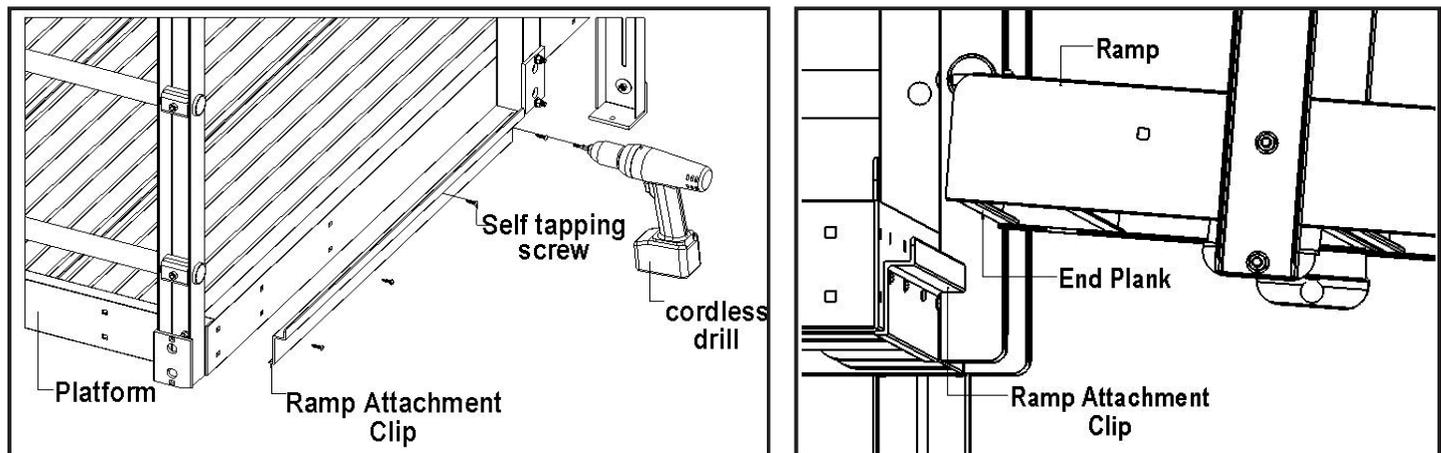
3.5 Multiple Platform Base Assembly Open Side: If an open side is needed on a multiple base Platform an open side Platform splice, and Platform support brackets will be needed. Install Platform support bracket on the inside corners of each Platform base. Only bolt the support brackets in on the inside edge for now using a 5/16x3/4carr.bolt with the selflock nut to the inside of the Platform base. With Platform support bracket installed on both bases the open side Platform splice can now be installed. Position the open side Platform splice in line with holes of the Platform bases and Platform support brackets. Push 5/16x3/4carr.bolts through all holes with bolt heads on the outside edge of Platforms. Fasten all with a washer and selflock nut.

3.6 Platform Under-Support Attachment



3.7 Platform Under-Support Attachment: To install the under support tube slide the sleeve clamp into the under support bracket, next slide the under support tube into the pocket of the under support bracket and sleeve clamp. With the under support tube inserted into the under support bracket all of the way using a 5/32 Allen wrench tighten the set screw in the sleeve clamp all the way down. The leveling pad will allow for minor adjustment, for major height adjustment the under support tube may have to be cut down to the desired length using a saw or tube cutter. If under support tube needs to be cut to size make sure not to cut the end off with the tapped insert welded in.

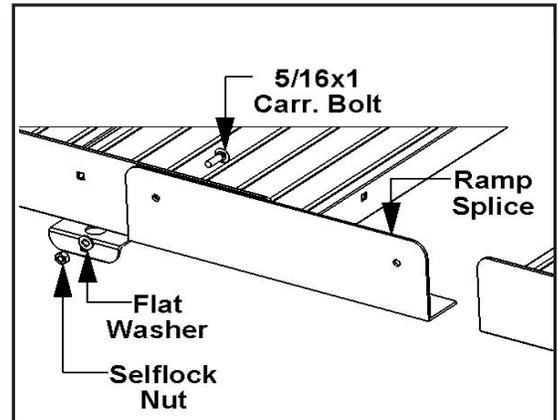
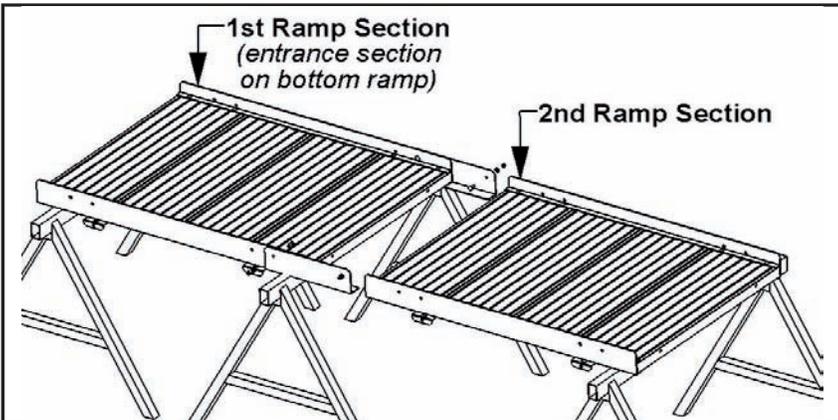
3.7 Ramp to Platform Attachment



3.7 Ramp to Platform Attachment: With the opening of the Platform to be used has been determined attach the ramp attachment bracket to the Platform base using self-tapping screws, space the ramp attachment clip on center with the opening of the Platform being used. With the ramp attachment clips installed drop the ramp into place so that the ramp attachment clip cradles the end plank of the ramp. At every on ramp to Platform transition a gap is created between the ramp and Platform, to fill this gap an upper "T" will be required. Place the upper "T" in to the gap between the Platform and ramp and attach with self-tapping screws on all four corners of the upper "T". Once the ramp has been attached to the Platform the ramp leg heights can now be fine tuned. To do this, loosen the ramp leg hardware to make sure that the legs make solid contact with the ground and re-tighten leg hardware. Making sure that the ramp section on top ramps elevated end is the end of the ramp section with the double post attached to

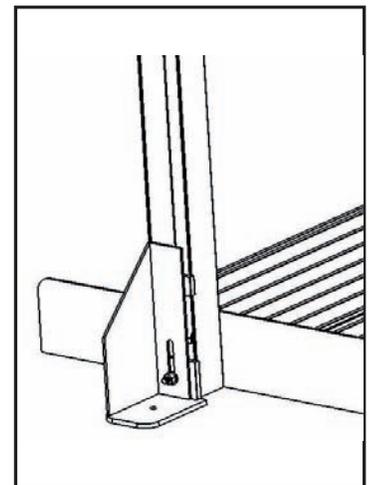
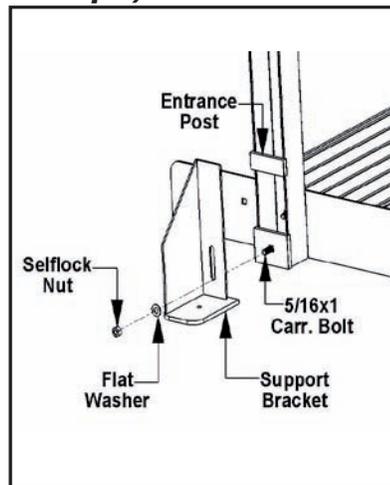
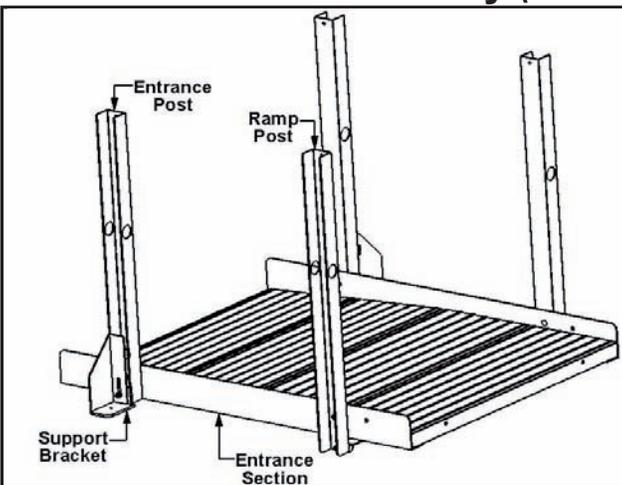
Section 4 Ramp Assembly

4.1 Ramp Section Assembly (*top ramps*)



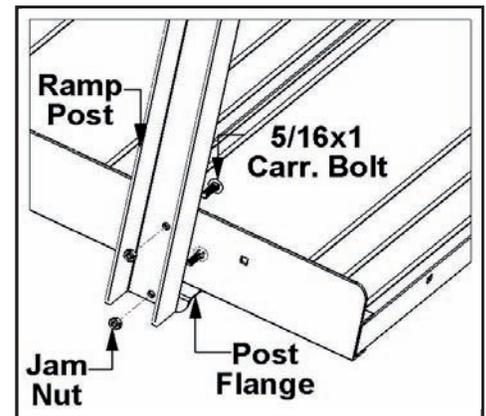
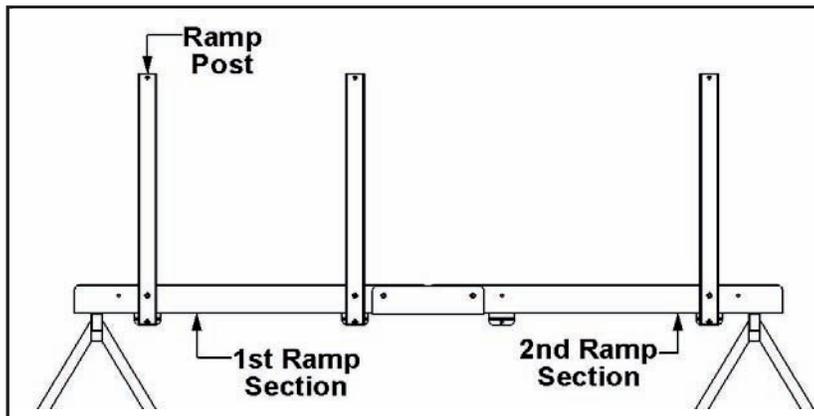
4.1 Ramp Section Assembly: If system has platforms assemble platforms first and set in place before assembling ramps. Start by setting the first ramp section (***shortest ramp section***) of the ramp run across a set of saw horses. If assembling a bottom ramp run start with the entrance section. Attach a ramp splice to each side of the first section of ramp using the square holes in the ramp frame rail closest to the end of ramp section. Place ramp splice over the ramp frame rail and align the holes of the ramp splice and ramp frame rail. Place carriage bolt through the holes making sure to keep the head of the bolt to the inside of ramp section place washer over bolt and fasten with selflock nut. Position the next section of ramp and attach using the same method, repeat this process until entire ramp run has been spliced together.

4.1.1 Entrance Assembly (*bottom ramps*)



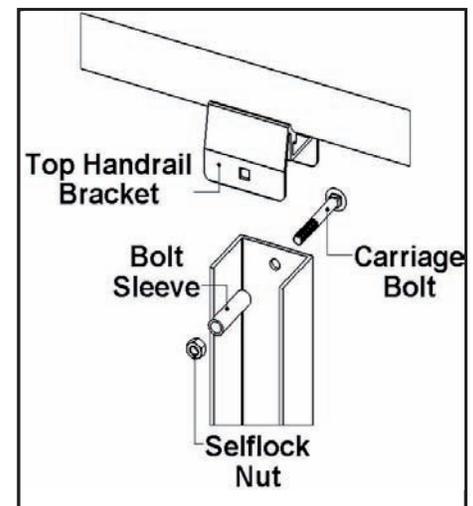
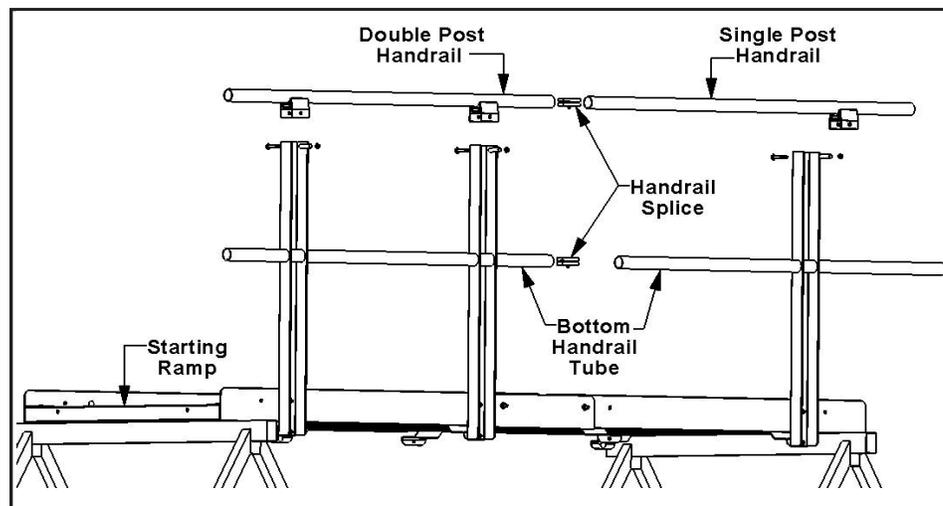
4.1.1 Entrance Assembly: Assembling the entrance section is similar to assembling the first section of a top ramp run. Except the entrance section will require attaching an entrance post at the end of the entrance section, which attach in the same manner as the ramp post only they are attached with only one bolt. The entrance post has plates welded to them to attach the support brackets at the beginning of the entrance section. To attach the support brackets run a carriage bolt through the square hole of entrance post plate, put the slotted hole of the support bracket over the carriage bolt and fasten using a flat washer and selflock nut, but do not tighten all of the way down yet. After the ramp has been positioned in its final resting place adjust support brackets so they are sitting flat on the resting surface and tighten hardware all of the way down. It is important that the ramp be anchored to the resting surface using the hole in the foot of the support bracket to provide the strength needed to the entrance post at end of the ramp.

4.2 Ramp Post Attachment



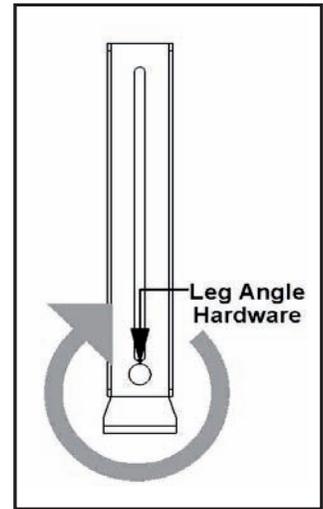
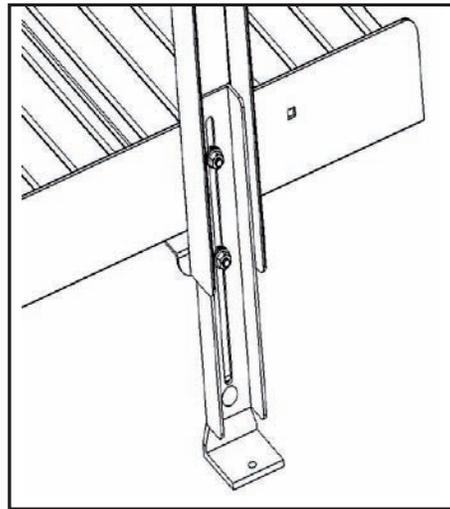
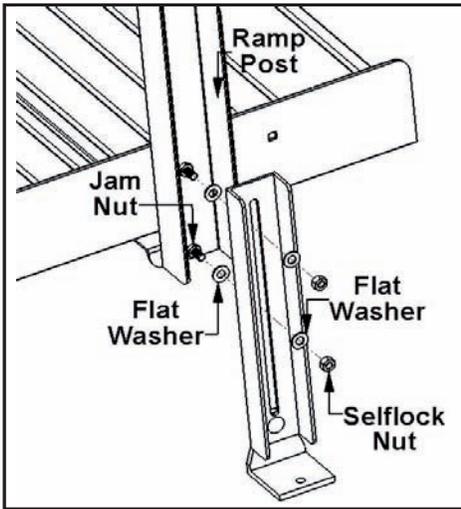
4.2 Ramp Post Attachment: With the entire ramp run spliced together the ramp post can now be attached to the ramp run. Starting at the end of the ramp (*shortest ramp run of section*) attach a ramp post at each post location, the section requiring two ramp post will be at the elevated end of the configuration. Every ramp section after the first section of ramp will only require one ramp post. To attach the ramp post to the ramp section align the holes of the ramp frame with the holes of the ramp post place a carriage bolt through the holes and fasten with a jam nut. Repeat the process with the bottom hole of the ramp post and the post flange at the bottom side of the ramp section.

4.3 Handrail Attachment



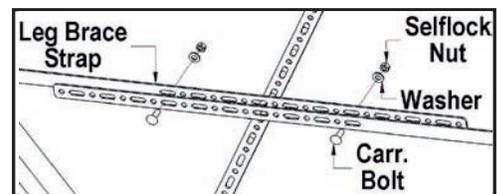
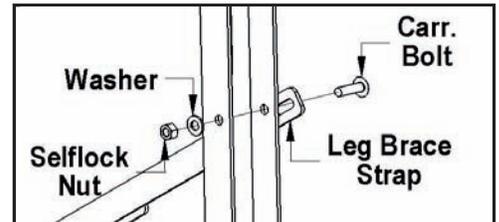
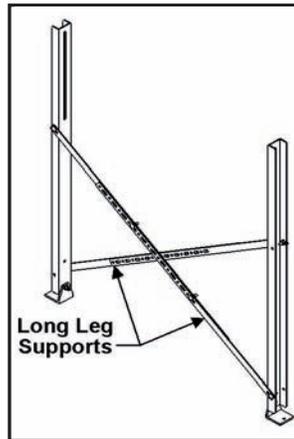
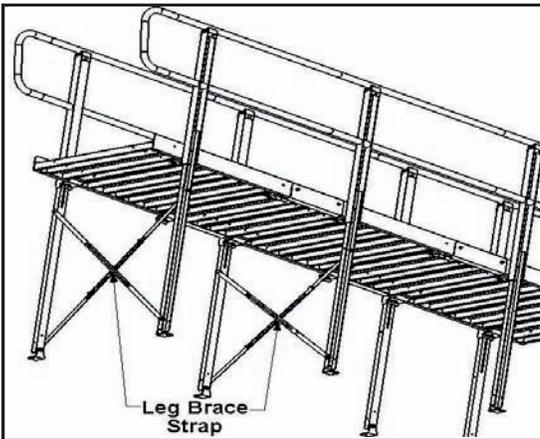
4.3 Handrail Attachment: With all of the ramp post attached to the ramp run slide the coinciding bottom handrail tube through the holes of the ramp post placing a handrail splice between each handrail tube. Once all of the bottom handrail tubes are in place start with the first section of ramp (*ramp with two post attached to it*). Slide the top handrail tube brackets over the ramp post, align the holes of the handrail brackets and the ramp post slip the handrail bolt sleeve inside of the ramp post and handrail bracket, and insert the 5/16x2 1/2 carriage bolt, fasten with a selflocking nut. **NOTE: DO NOT OVER TIGHTEN BOLT, TO AVOID DEFORMING THE HANDRAIL BRACKET.** After the top starting handrail assembly has been attached slide a handrail splice inside of the handrail tube, slip the next top handrail tube assembly over the handrail splice, and attach it to the next ramp post location, repeat these steps until all of the top handrail assemblies have been attached to the ramp run. Once all top handrail assemblies have been attached use a 5/32 Allen wrench to tighten the set screw in the handrail splice.

4.4 Leg Adjustment



4.4 Leg Attachment & Adjustment: With the ramp run completely assembled, and positioned in the final resting location the legs can now be attached and adjusted. Place a washer over the carriage bolts and jam nuts used to attach the ramp post, place leg inside of the ramp post with carriage bolts coming through the slotted hole of the ramp leg, and fasten with another flat washer and selflock nut. Slide the leg down until the angle of the leg makes solid contact with the resting surface, loosen the leg angle hardware so it rest flat on the resting surface and re-tighten hardware.

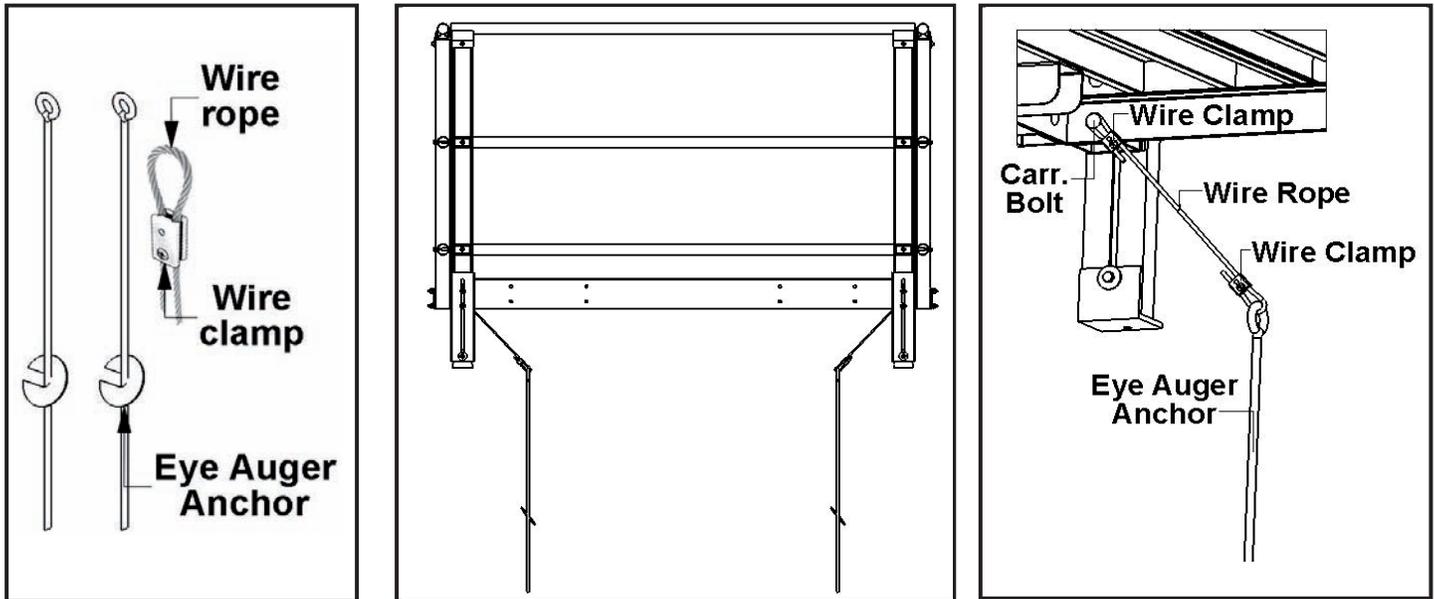
4.4.1 Long Leg Supports (ramps)



4.4.1 Long Leg Support: Long Leg Supports are required on any ramp with a rise of 36" or greater. Four leg brace straps will be required at each location requiring long leg supports. Attach the first leg brace strap to the leg channel using the end of the leg brace strap with the single slotted hole, and the round hole punched in the leg channel run a carriage bolt through both and fasten with washer and self lock nut on the inside of the leg channel. Finger tighten only, and attach the next strap on the other side of the ramp at the opposite end of the leg. Hold the leg brace straps together and run carriage bolts through the straps using the holes that line up closest to the end of the leg brace strap fasten with a washer and selflock nut. Repeat these steps on the other side of the legs running the straps the opposite direction so that the leg brace straps form an X between the ramp legs. Tighten down the hardware used to attach the leg brace strap to the leg channel the rest of the way.

Section 5 Optional Parts

5.1 Hurricane Tie Down Kit (Platforms)



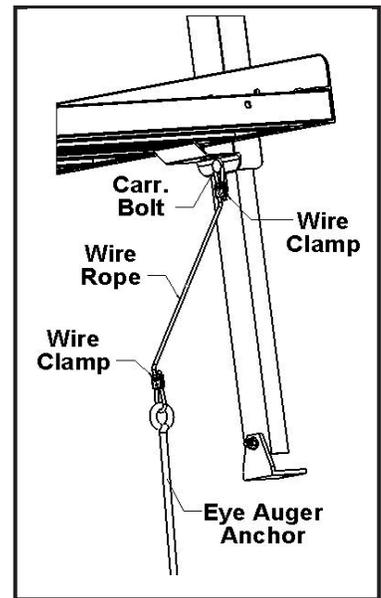
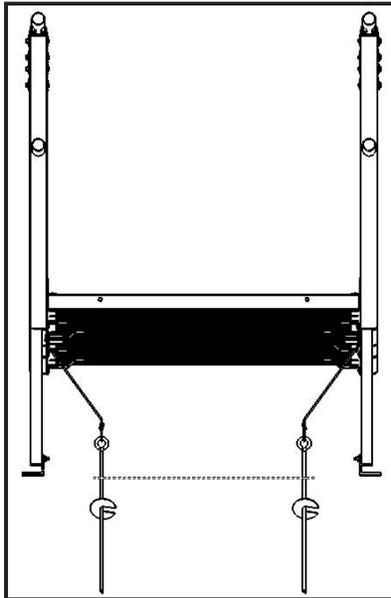
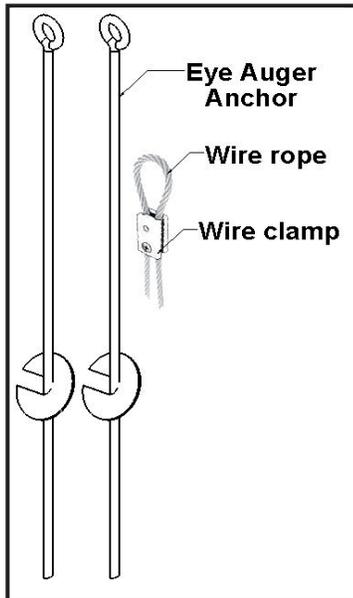
5.1 Hurricane Tie down Kit (Platforms): The field conditions will determine the location of the tie downs. Generally the anchors should be installed opposite from one another. The PVI Modular Ramp System will have to be fully assembled and installed to determine the exact anchor locations; it may be necessary to temporarily reposition components to install the anchors. For platforms an anchor needs to be installed at each corner, by loosening the lower carriage bolt at the corner post location. Run the wire rope through the wire clamp to form a loop, place the loop around the head of the carriage bolt securing the wire rope between the carriage bolt and platform, cinch wire rope and retighten hardware. Install the auger into the ground as vertical as possible, using a ½" steel rod or similar item to screw the anchor into the ground. Turn anchor into ground until only the eye is exposed. Run the wire rope through the wire clamp, and the eye of the anchor forming a loop through the anchor run wire rope back through the wire clamp. Pull wire rope tight and tighten the screws in the wire clamp. Cut off excess wire. Using electrical tape, tape off the ends of the wire rope to ensure the wire will not fray.

!!WARNING!! Prior to installing the anchors into the ground, ensure that any underground electrical conductors, natural gas lines, water/drain lines and/or other interferences are located and will not hinder the installation.

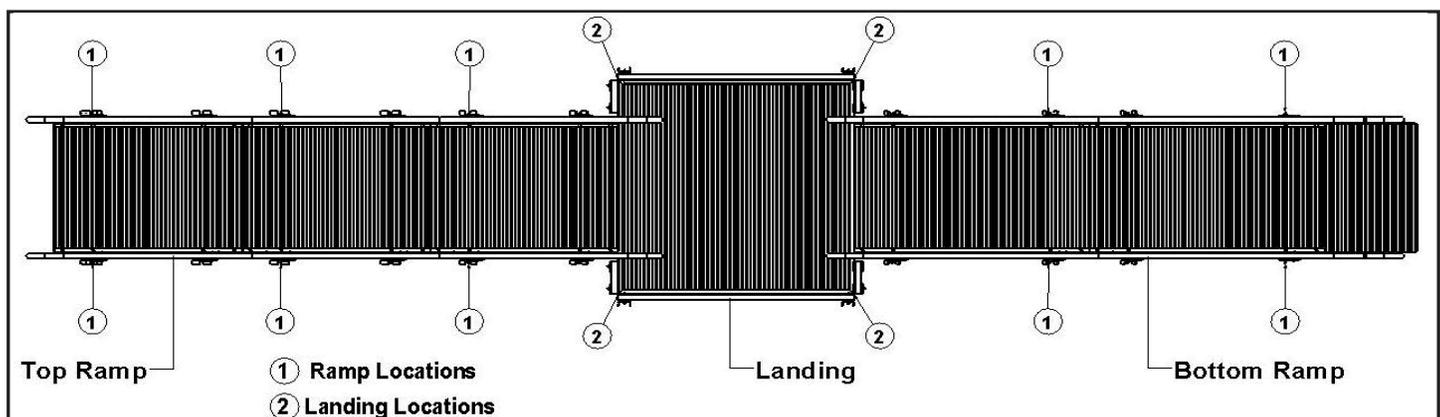
!!WARNING!! Do not use concrete anchors in asphalt. Asphalt is not considered a suitable anchoring surface. If installing on asphalt, holes will have to be made in asphalt, and the anchor auger installed into the ground.

!!WARNING!! Regularly inspect installation for any loose wire, fasteners, auger anchors, etc.

5.1 Hurricane Tie Down Kit (Ramps)



5.1 Hurricane Tie down Kit (Ramps): Ramp section will require a tie down on each side of the ramp section across from one another, at the lower post location of each ramp section. Start by loosening the carriage bolt at the lower post location. Run the wire rope through the wire clamp to form a loop, place the loop around the head of the carriage bolt securing the wire rope between the carriage bolt and ramp flange, cinch wire rope and retighten hardware. Install the auger into the ground as vertical as possible, using a 1/2" steel rod or similar item to screw the anchor into the ground. Turn anchor into ground until only the eye is exposed. Run the wire rope through the wire clamp, and the eye of the anchor forming a loop through the anchor run wire rope back through the wire clamp. Pull wire rope tight and tighten the screws in the wire clamp. Cut off excess wire. Using electrical tape, tape off the ends of the wire rope to ensure the wire will not fray.



!!WARNING!! Prior to installing the anchors into the ground, ensure that any underground electrical conductors, natural gas lines, water/drain lines and/or other interferences are located and will not hinder the installation.

!!WARNING!! Do not use concrete anchors in asphalt. Asphalt is not considered a suitable anchoring surface. If installing on asphalt, holes will have to be made in asphalt, and the anchor auger installed into the ground.