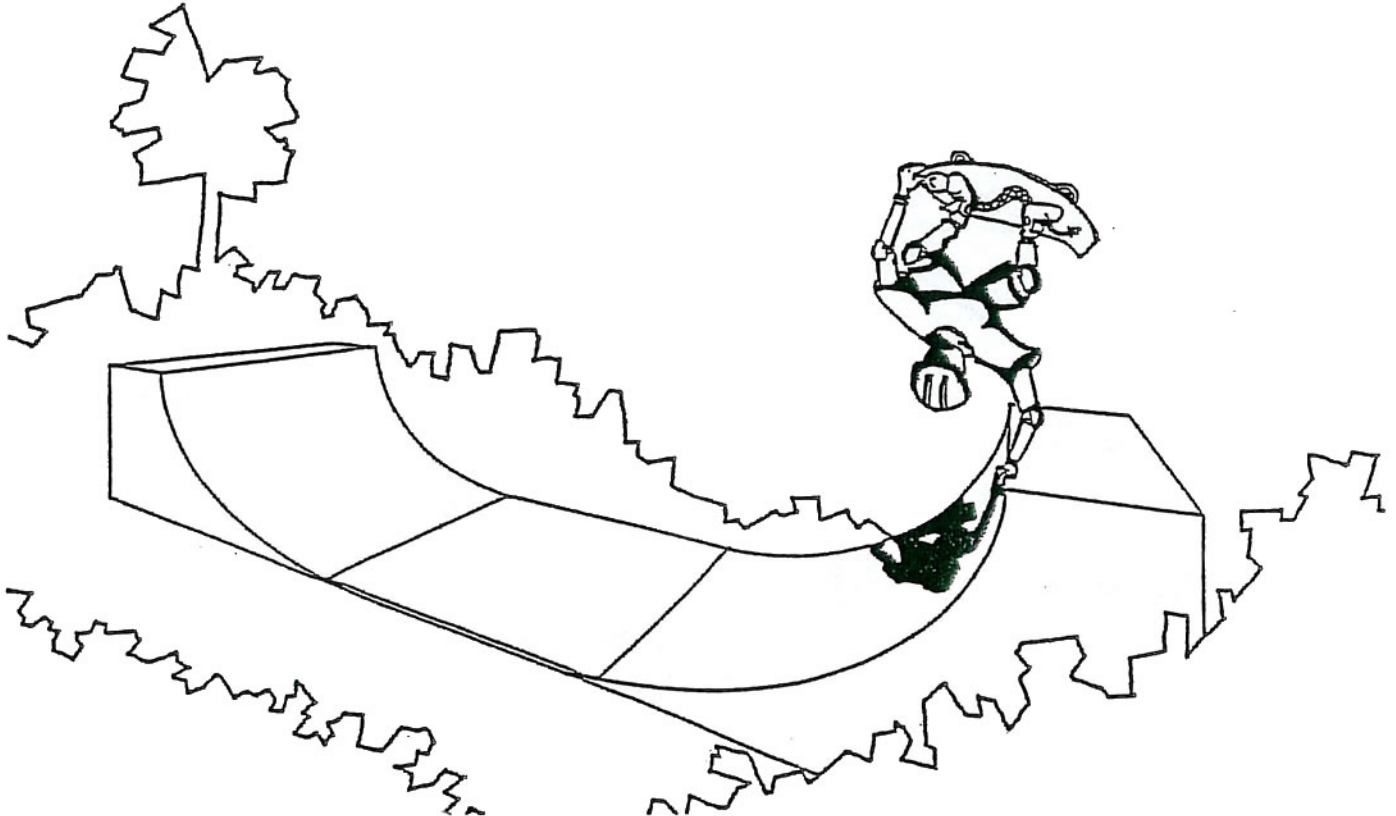




How to Build SKATEBOARD RAMPS Using PAA Plywood

The rage of the day is skateboards, and the best, safest and most economical method of protecting the young folk from the dangers of traffic is to help them build a half pipe or quarter pipe skateboard ramp. These transportable units can be easily constructed from a few sheets of plywood, some timber and nails to give years of pleasure at home, in a safe environment.



Introduction

This is a simple design for a quarter pipe skateboard or jump ramp, which can be expanded to a half pipe ramp as the children become more adept. Height has been kept purposefully low to be reasonably safe for the younger or inexperienced riders. Any height increases will warrant closer analysis for safety, portability, maintaining stability in use and other similar considerations.

The national organisations promoting skateboard riding require all participants to wear a full set of protective equipment. Before using this ramp, make sure all persons, no matter what age, are properly protected.

All of the timber and plywood should be stained or painted for protection. The ramp should not be stored or left on damp ground for long periods.

Consult your local plywood distributor on what materials are available and suitable for use in exterior equipment.

For exterior work all fasteners (screws, bolts, nails, etc.) should be galvanized or otherwise corrosion resistant. P.V.A. Glue can be used in all joints.

Although exact sizes are quoted, continuously check dimensions as work proceeds and adjust sizes where necessary. Plywood and timber are very user friendly.

Tools required

Keyhole saw or electric jigsaw, hand saw, carpenter's square, adjustable bevel, measuring tape or rule, pencil, hammer, hand or electric drill, drill bits, screwdriver, protractor (optional), sandpaper block.

QUARTER PIPE RAMP

Materials required

Plywood

2 sheets 2400 x 1200 x 7mm CD grade structural plywood — ramp face, back
2 sheets 2400 x 1200 x 17mm CD grade structural plywood — sides, top

Minimum stress grade of the plywood to be F11

Timber

6 pieces 70 x 35mm 2400mm sized seasoned softwood — joists
Minimum stress grade of the timber to be F5

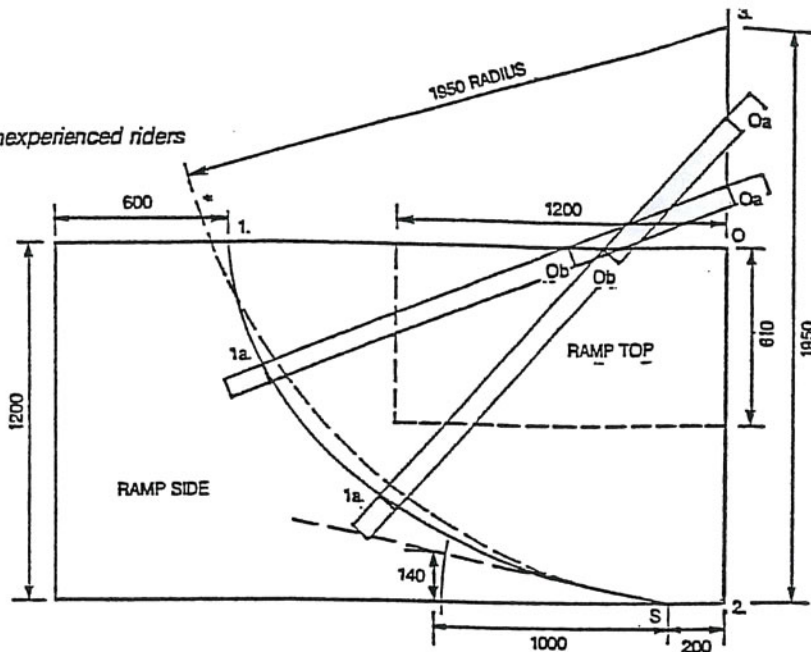
Hardware

30/60mm x 12ga countersunk head zinc plated woodscrews
74/30mm x 8ga countersunk head zinc plated woodscrews
90/25mm x 6ga countersunk head zinc plated woodscrews
10/65 x 3.15mm galvanized bullet head nails

Miscellaneous

Two only two wheel gripneck castors complete with metal sockets.
100% Acrylic stain blocking primer and acrylic latex exterior paint (alternatively, water repellent timber preservative).

*Alternative ramp profile for inexperienced riders



1. Ramp Sides

On one sheet of 2400 x 1200 x 17mm plywood mark point "S" 200mm from the corner along the 2400 edge and mark a line commencing from that point at 8° to the edge. If not using a protractor set out a right angled triangle with base 1000mm from "S" along the same edge and with a short side of 140mm. Draw the hypotenuse of the triangle through "S".

From the corner of the plywood, diagonally opposite point "S", mark point "1" 600mm in from shortest edge.

Use a spare strip of plywood as a trammel. Place the trammel along the top edge and transfer marks at points "1" and "0". These points are referred to as "1a" and "0a" respectively.

Place the trammel along the side edge, "0-2", with point marked "1a" coinciding with "2". Transfer mark at point "0" onto edge of trammel and designate this as point "0b".

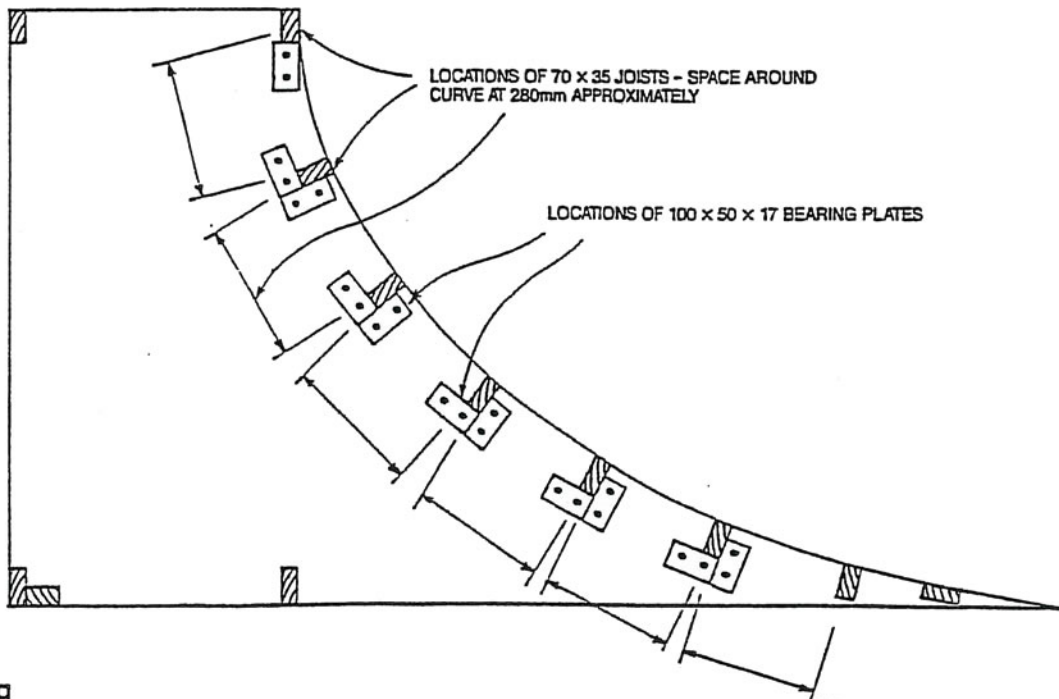
Draw a line at right angles to edge "0-1" from point "0" on the ground, or place another plywood sheet next to the first, so that one edge forms a line at right angles to edge "0-1" and through point "0".

Place trammel so point "0a" is on the line at right angles to edge "0-1", and point "0b" is on edge of ply sheet "01". Point "1a" on the trammel marks a point on the curve. Repeat this step by moving points "0a" and "0b" along their respective axis, as shown. Mark out as many points on curve as required. Join these points to form the required elliptical shape of the ramp.

A strip of thin plywood may be used to curve between points marked to make the curve continuous and smooth, particularly where elliptical curve and 8° line meet tangentially.

For the younger or inexperienced rider, an easier curve can be used as shown dotted. Simply measure 1950mm from point "2" to point "3" and use the trammel or a piece of string to mark an arc of a circle tangential to the 8° line.

Cut along lines marked. Place finished shape on second plywood sheet and mark out curve. Cut second sheet to match first. If an electric jigsaw is used, both sheets may be cut together. Nail or clamp sheets together to stop movement during cutting.



2. Framing

Cut twelve joists 1166mm in length from the 70 x 35mm timber. Allowing that the ramp top is to be cut from one of the 17mm plywood offcuts, cut sixteen blocks 100 x 50mm from the 17mm plywood offcuts. Mark out positions of the joists on the ramp sides as per the diagram. Mark both sheets together so that the joist locations coincide each side.

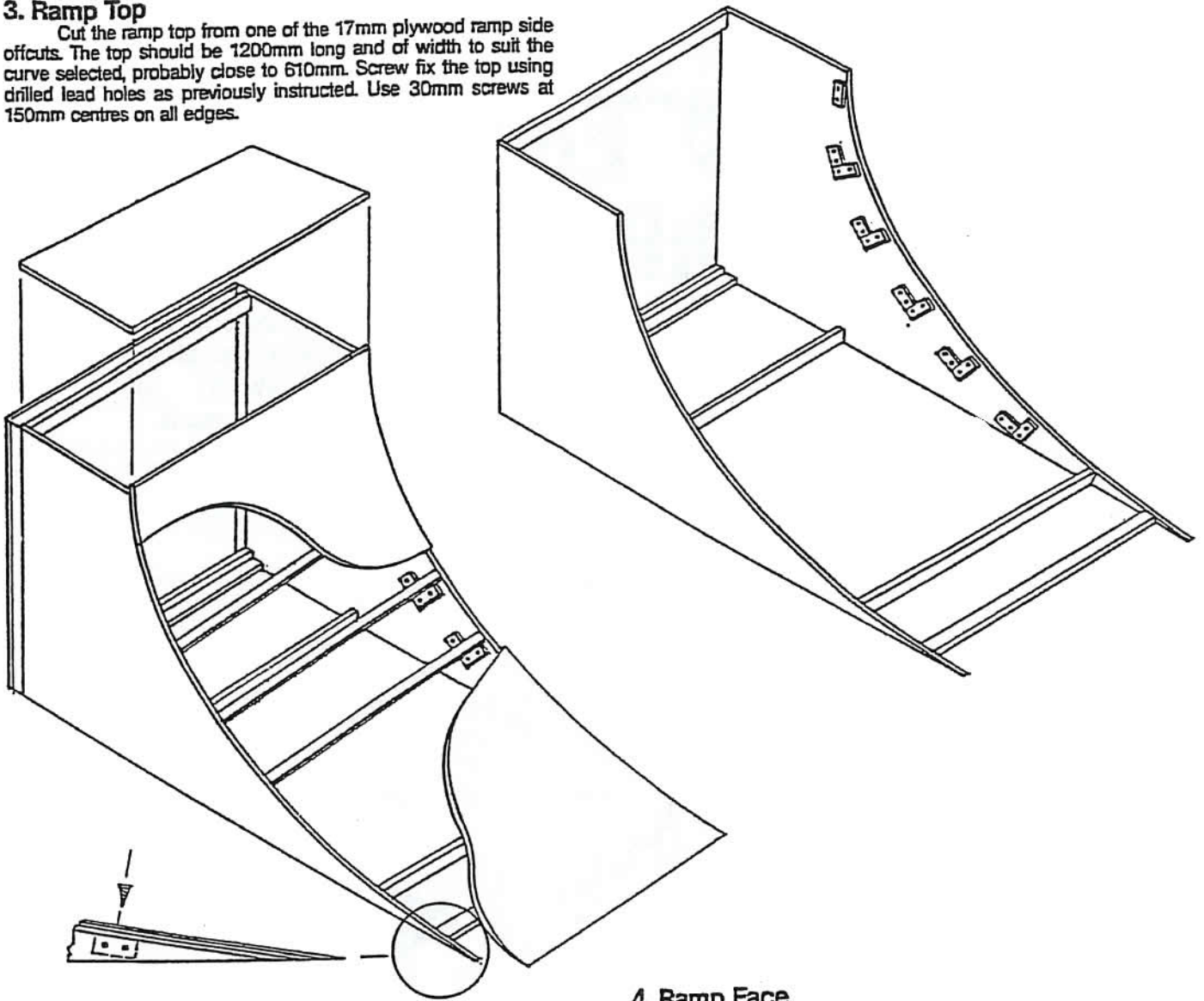
Fix the 100 x 50mm plywood blocks to the inside of the ramp sides in the locations shown using two 30mm screws. It is good practice to drill lead holes for the screws, and countersink the holes. The diameter of the holes should be slightly smaller than the screw thread.

The blocks are designed to help carry the loads from the joists. Fix all the joists using two 60mm woodscrews each end. The two joists at the back corner should be nail laminated together using 65mm bullet head nails at 150mm centres before fixing to the ramp sides. The joist at the bottom of the curve should be located so the lowermost corner will be level with the bottom edge of the ramp sides, and thus provide support for that section of the ramp.

Alternatively, the joists can be fixed to the ramp sides by small joist hangers or similar pre-punched connector plates using 30mm clouts to the joists, and 20mm x 6ga wood screws to the ramp sides.

3. Ramp Top

Cut the ramp top from one of the 17mm plywood ramp side offcuts. The top should be 1200mm long and of width to suit the curve selected, probably close to 610mm. Screw fix the top using drilled lead holes as previously instructed. Use 30mm screws at 150mm centres on all edges.



4. Ramp Face

With a hand plane, taper one end of 7mm ramp face plywood as shown. Use the level set at 8° to check the angle.

Position the tapered end of the ramp face plywood so that it will bear on the ground, and align the sheet at the top, so that when bent to shape the plywood sheet will be flush with the ramp sides and top.

Commencing at the bottom edge, form sheet to the curve of the ramp. Permanently fix the ramp face to ramp sides and joists using 25mm countersunk screws at 150mm centres. After fixing the ramp face, trim the excess plywood at the top edge of the face down to the level of the ramp top.

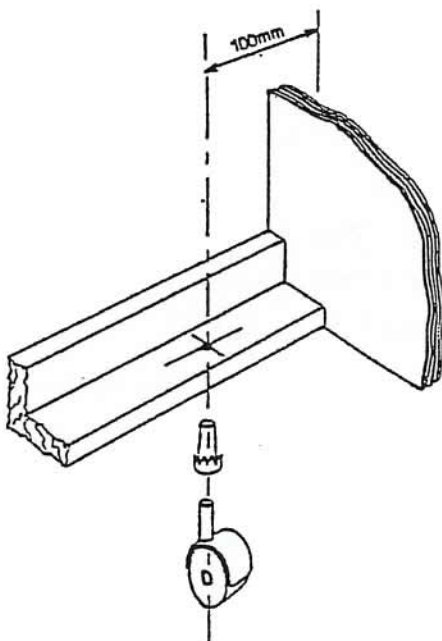
5. Wheel Assembly

Drill a 10mm hole to suit the female insert of the castor wheel assembly, 100mm in from each end of the nail laminated joists at the back of the ramp. The holes should be in the middle of the 70mm face of the lower joist as shown in the diagram. Hammer the metal insert flush with the bottom of the skateboard ramp. The castor wheel assemblies can then be inserted whenever the ramp needs to be transported to a new location. Alternatively, old skateboard "trucks" could be adapted, and used instead of the castor wheel systems.

6. Completion

Check the construction to ensure there are no hazards or unsafe parts. Punch all bullet head nails. All screwheads must be slightly countersunk below the surface of plywood. With sandpaper, remove all sharp edges and corners. Stop up nail holes and finish your skateboard ramp as colourfully as you like. Because of the high wear factor and being an outdoors piece of equipment, the skateboard ramp should be finished with a 100 percent acrylic latex system as detailed in the PAA publication "Facts About Plywood".

Pick up tapered end and use the lowermost joist as a hand hold to roll the ramp home or to your mate's place. When using the ramp, make sure the ramp will not move by placing it against a wall, garden kerb or pegs in the ground.



JUMP RAMP

A lower height ramp suitable for jumping over at speed. Similar in construction to the quarter pipe ramp only lower and utilising 2400 x 900mm x 17mm structural plywood for the ramp sides. The jump ramp is an alternative for the more experienced rider.

HALF PIPE RAMP

All skateboard competitions are conducted on a half pipe apparatus or a shell. To convert the quarter pipe ramp to a half pipe ramp is relatively simple.

Firstly, construct a second quarter pipe ramp as previously described. The two quarter pipe ramps are then connected by a "flat" the construction of which is detailed as follows:

Materials required

Plywood

1 sheet 2400 x 1200 x 7mm CD grade structural plywood
Minimum stress grade of the plywood F11

Timber

5 pieces 70 x 35mm 2400mm sized seasonal softwood
Minimum stress grade of the timber F5

Hardware

82/25mm x 6ga countersunk head zinc plated woodscrews
8/1/4" x 3/2" galvanised hex. head bolts, washers and wing nuts
4/1/4" x 1/2" galvanised hex. head bolts, washers and wing nuts
4/750mm long 40 x 2mm galvanised steel strap

1. Edges

Make a 8° chamfer to the underside of both short edges of the 2400 x 1200 x 7mm structural plywood. Fit two 2400 lengths of 70 x 35mm on the flat as side rails under each 2400 edge of the plywood using 25mm countersunk screws through the plywood face at 150mm centres.

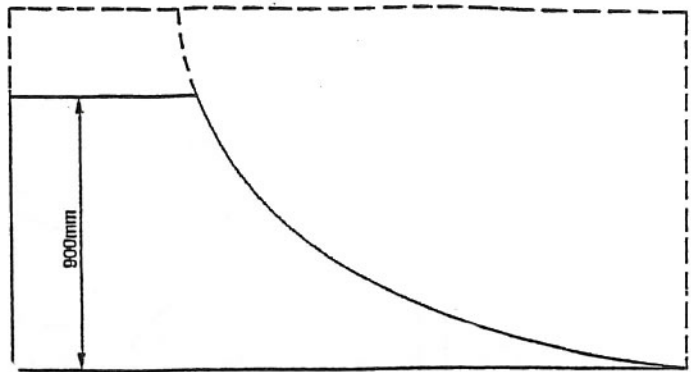
Cut ends of the side rails to 8° angle as a continuation of the chamfer on each end of the plywood.

2. Joists

Cut six joists from the remaining 70 x 35mm timber to fit between the side rails. The length should be close to 1060mm. Fix the two end joists on the flat and between the side rails so that they are 350mm clear of the tapered end of the plywood using 25mm countersunk screws at 150mm centres. Fit the remaining four joists at approximately 340mm centres. using 25mm countersunk screws.

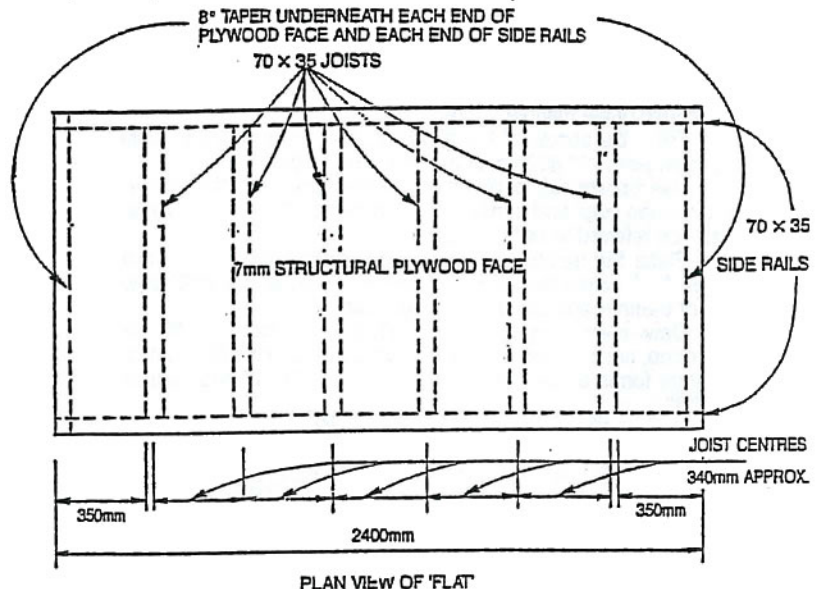
Drill three 7mm holes in each piece of 40 x 2mm steel strap so that one hole is centered 40mm from one end, another 40mm from the other end plus a third hole centered 65mm from one end hole.

On a flat section of concrete such as a garage floor, position the 2400 x 1200 "flat" assembly over the quarter pipe ramp, so that the chamfered edge fits snugly to the quarter pipe ramp face. If not a snug fit, use a hand plane to make good.

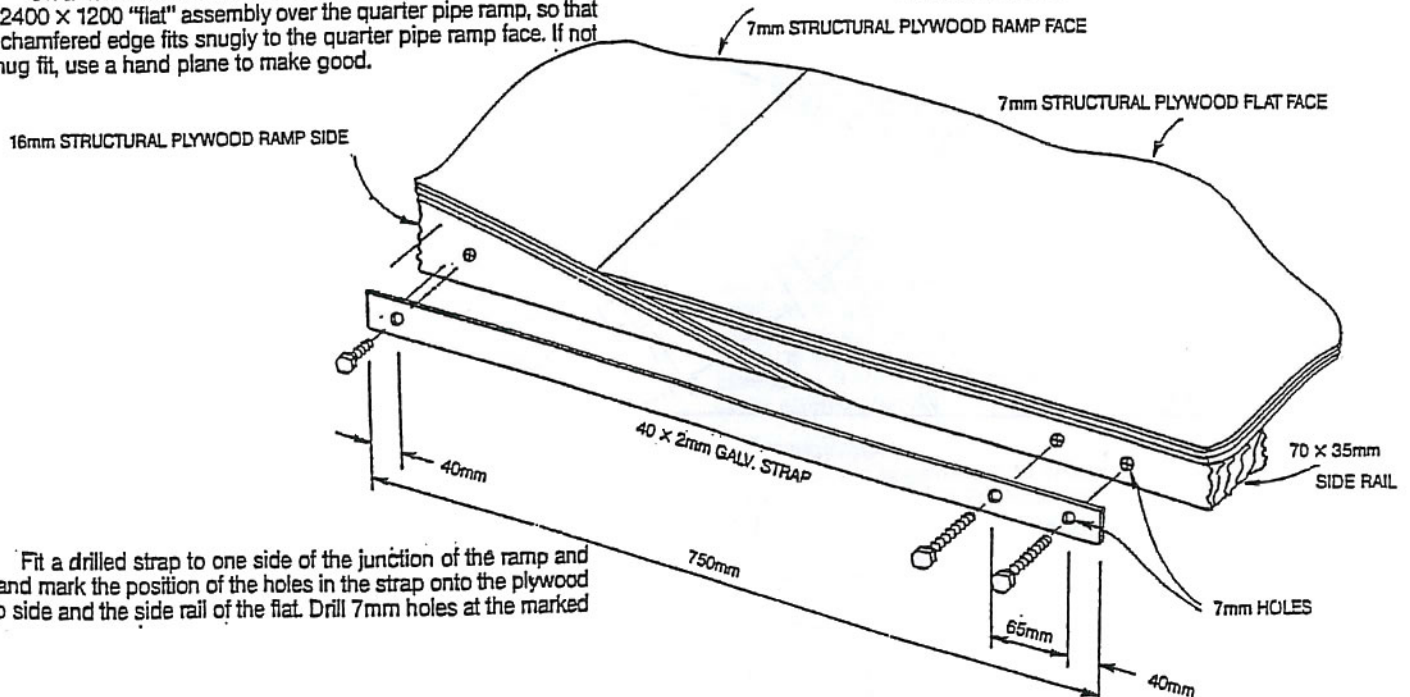


positions and secure the strap to the flat side rail and ramp side by two galvanised 1/4" x 3/2" bolts and wing nut through the side rails, and one 1/4" x 1/2" bolt and wing nut through the 17mm plywood ramp side. Use washers under the bolt heads and the wing nuts. Repeat for the other side.

Repeat by fixing the second quarter pipe to the other end of the flat using the two remaining galvanised straps. Finish as previously described. Now enjoy your handiwork.



PLAN VIEW OF 'FLAT'



Fit a drilled strap to one side of the junction of the ramp and flat, and mark the position of the holes in the strap onto the plywood ramp side and the side rail of the flat. Drill 7mm holes at the marked