

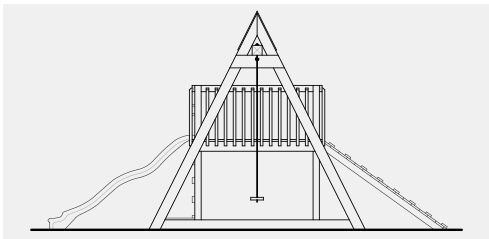
# CONSTRUCT A CHILDREN'S PLAYGROUND

## CONSTRUCTION PLAN



Difficulty level: **||||| EXPERT**

Completion time: **Project Week-end**



# CONSTRUCT A CHILDREN'S PLAYGROUND

Every child loves to play on a swingset. Create a playground paradise in your own backyard and be the envy of the neighbourhood. Complete with a slide, swing and sandbox, the children in your life will be entertained outdoors for hours at a time.

The overall playground measures roughly 216" wide by 168" deep and 120" high. This backyard playground might be a welcomed challenge for the intermediate DIY-er and could easily be tackled by the expert.

The playground requires a substantial amount of wood and hardware, making it a higher costing project. However, with a handful of out-of-pocket resources, a free weekend and a determined carpenter, the finished product (and smiles on those faces) will be well worth the investment!



## TOOLS AND MATERIALS NEEDED

### TOOLS

- > 3/8" bit
- > 1/2" bit
- > 3" hole saw
- > Bevel square (optional)
- > Circular saw
- > Compass (optional)
- > Drill
- > Jigsaw
- > Mitre saw (optional)
- > Sandpaper
- > Screwdriver
- > Square
- > Tape measure

### MATERIALS

#### Base

- > 2 pieces 2" x 10" x 120"- Treated Lumber Border
- > 1 piece 2" x 10" x 168"- Treated Lumber Border
- > 4 pieces 6" x 6" x 144"- Treated Lumber Post
- > 1 piece 2" x 8" x 168"- Treated Lumber Bench
- > 3 piece 4" x 4" x 168"- Treated Lumber Post
- > 1 piece 2" x 6" x 96"- Treated Lumber Footbridge
- > 1 piece 1 1/4" x 6" x 96"- Treated Lumber Footbridge

#### Top Part

- > 2 pieces 2" x 6" x 144"- Treated Lumber Beam
- > 1 piece 2" x 6" x 96"- Treated Lumber Joist
- > 4 pieces 2" x 6" x 168"- Treated Lumber Joist
- > 8 pieces 1 1/4" x 6" x 144"- Treated Lumber Decking
- > 2 pieces 2" x 6" x 120"- Treated Lumber Hand Rail
- > 32 pieces 2" x 2" x 32"- Treated Lumber Railing
- > 1 piece 2" x 2" x 96"- Spruce Ladder
- > 1 piece 2" x 4" x 96"- Treated Lumber Ladder
- > 10 pieces Joist hanger 2" x 6" - Structure
- > 2 pieces Handles - Ladder

#### Access Ramp

- > 2 pieces 2" x 4" x 168"- Spruce Joist
- > 1 piece 2" x 6" x 96"- Spruce Joist
- > 5 pieces 1 1/4" x 6" x 120"- Treated Lumber Decking
- > 1 piece 1 1/4" x 4" x 96"- Treated Lumber Decking
- > 2 pieces 1 1/4" x 4" x 120"- Treated Lumber Decking

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## MATERIALS

- | Misc.  | Hardware  |
|--|---|
| > 1 piece 6" x 6" x 168" Treated Lumber - Beam         | > 5 pounds 3 1/2" Ardox galvanized nails - Structure              |
| > 2 sheets 1/2" Treated Plywood - Shape                | > 2 pounds 1 1/2" Ardox galvanized nails - Hangers                |
| > 1 piece 2" x 4" x 96" Treated Lumber -Reinforcement  | > 4 pieces 3/8" x 3 1/2" Galvanized lag screws - Post / 2" x 4"   |
| > 1 piece 2" x 4" x 96" Treated Lumber - Reinforcement | > 4 pieces 1/2" Galvanized washers - Post / 2" x 4"               |
| > 4 pieces Hooks & Bolts - Chain                       | > 16 pieces 3/8" x 3 1/2" Galvanized lag screws - Post / 2" x 6"  |
| > 32 linear feet Chain (or nylong cable) - Swing       | > 16 pieces 3/8" Galvanized washers - Post / 2" x 6"              |
| > 4 pieces 'U' Hooks & Bolts - Swing                   | > 4 pieces 3/8" x 3 1/2" Galvanized lag screws - Border / 4" x 4" |
|  | > 4 pieces 3/8" Galvanized washers - Border / 4" x 4"             |
|  | > 4 pieces 3/8" x 3 1/2" Galvanized lag screws - Border / 6" x 6" |
|  | > 4 pieces 3/8" Galvanized washers - Border / 6" x 6"             |
|  | > 4 pieces 1/2" x 10" Galvanized carriage bolts - Post / 4" x 4"  |
|  | > 4 pieces 1/2" Galvanized washers - Post / 4" x 4"               |
|  | > 4 pieces 1/2" Galvanized nuts - Post / 4" x 4"                  |
|  | > 10 pieces 3 1/2" Exterior type screws - Structure               |
|  | > 700 pieces 2 1/2" Exterior type screws - Floor / Miscellaneous  |
|  | > 200 pieces 2" Exterior type screws - Finishing                  |

## NOTE ON TREATED WOOD

### TREATED WOOD SHOULD BE HANDLED WITH PRECAUTIONS.

- Wear gloves and long sleeves when handling treated wood to avoid skin contact and to protect against splinters.
- Wear dust mask, eye protection, gloves and long sleeves when sawing, sanding or shaping treated wood to avoid skin contact with or inhalation of sawdust, to protect against splinters and to protect eyes from flying particles. When making cross cuts, use a cut sealer as the factory-treatment rarely goes to the heartwood.

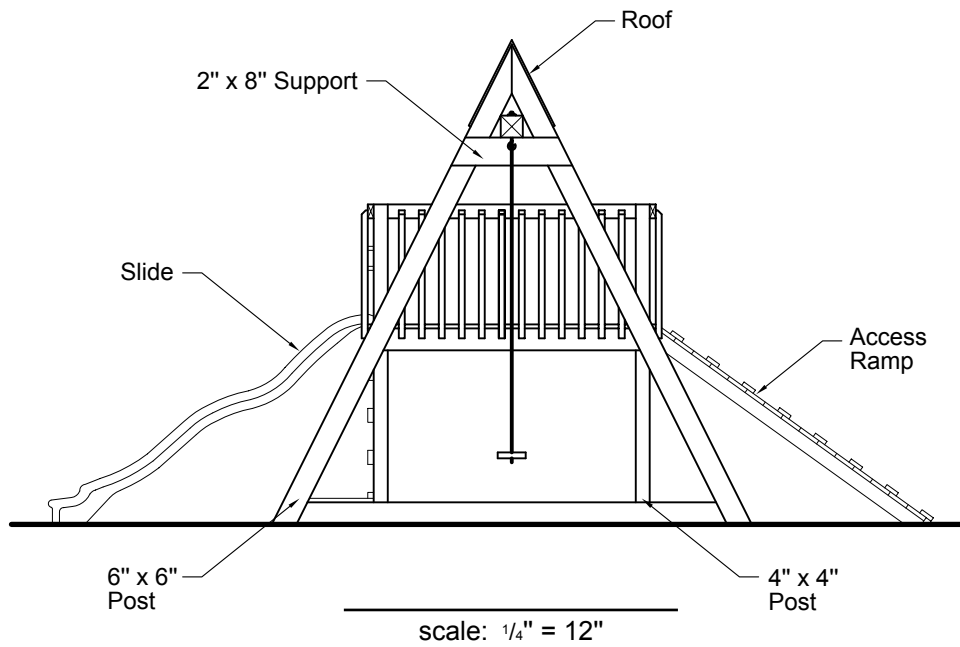
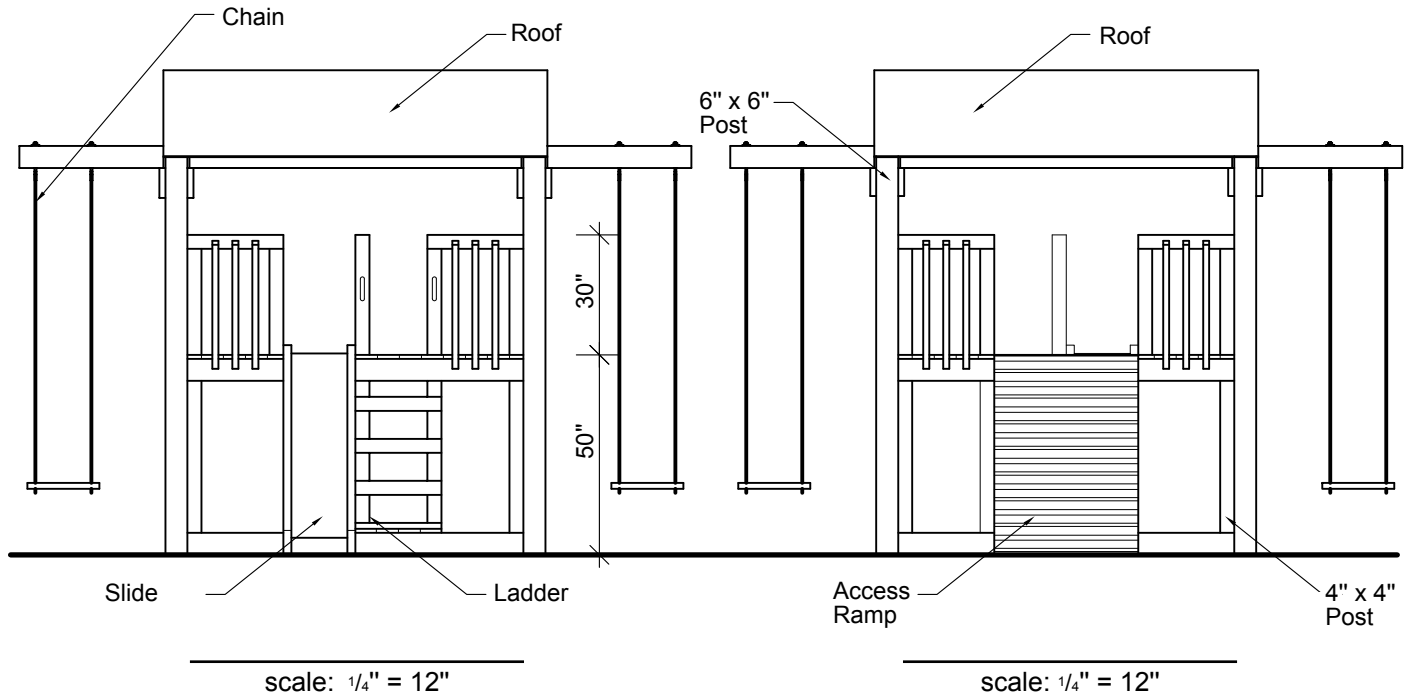
### DURING CONSTRUCTION

- Apply a wood preservative on the cut ends.
- Use nails, screws, bolts, connectors and other hardware resistant to corrosion: stainless steel, hot dipped galvanized, yellow zinc or other hardware specially coated for outdoor use. Ordinary fasteners will rust, causing unsightly stains and weakening the structure, ultimately causing it to fail.
- Make certain the wood is thoroughly dry before painting or staining, and follow the coating manufacturer's recommendations. Use only good quality oil or acrylic coatings on water repellent pressure treated wood.
- Do not dispose of treated wood remnants or sawdust in compost heaps, wood chips, or mulch.
- Do not use it as animal bedding or litter.

Never burn treated wood.

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## ELEVATIONS

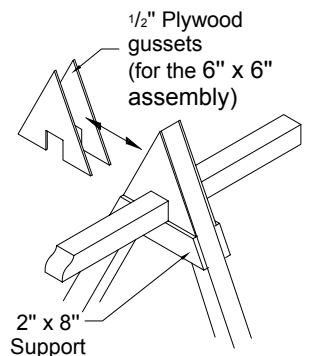
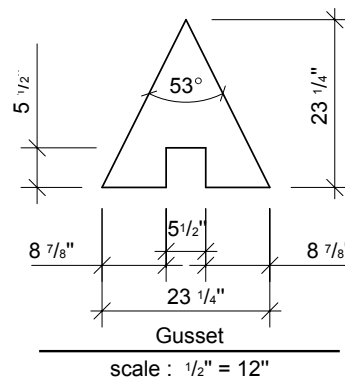
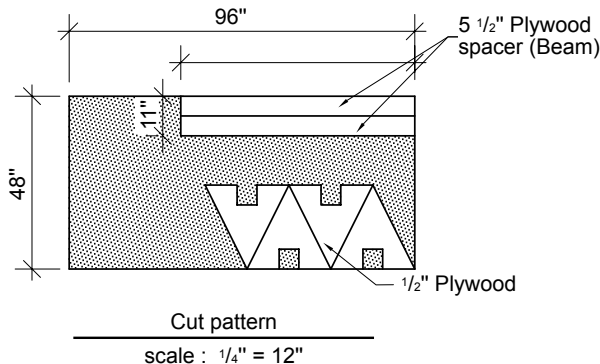
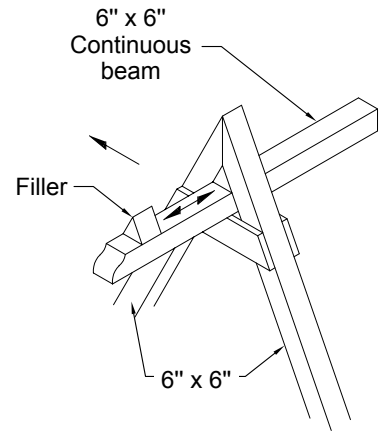
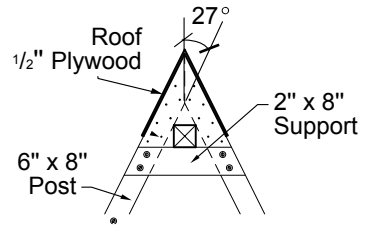


# CONSTRUCT A CHILDREN'S PLAYGROUND

## ASSEMBLY

### 1 RAISE THE STRUCTURE

- 1.1 With stakes and strings, mark off the perimeter of the area where you will need to dig a 120" x 96" hole.
- 1.2 Excavate the entire surface to a depth of 6". At each corner (inside the perimeter) dig an 8" x 8" square 10" deep for the structure's four posts, which will be driven in at a 63° angle.
- 1.3 Cut one end of each of the four 6" x 6" posts at a 27° angle. These posts will then be joined in pairs to form two peaks.
- 1.4 We suggest assembling the structure on the ground before placing it in the excavated area. Lay your two 6" x 6" posts flat on the ground to form a "V" and screw or nail them together.
- 1.5 Mark the two posts where the gap between them is 5 1/2". Mark again 5 1/2" lower, in line with the peak, at the centre of the two posts. This second line will mark the top of the beam support. As a precaution, leave an extra 1/4" clearance for easier insertion of the beam.
- 1.6 Cut the beam supports (a total of 4) out of 2" x 8" planks, cutting the ends at a 63° angle so that they align with the peak, along the posts (at 27°).
- 1.7 Bolt the supports to the posts or attach them using lag screws (two at each end).
- 1.8 Now place the two rafters sideways on the ground and insert the 6" x 6" x 168" beam into the two spaces provided so that they protrude by 36 1/2" at each end. Nail it at a 45° angle into the two support boards. Use wood scraps to make one or two blocking pieces that you will insert into the remaining (triangular-shaped) space. Toe nail them in.
- 1.9 Trace and cut out four gussets (pieces of wood to stop the legs spreading) from a 1/2" sheet of plywood. They will be used to close the two sides of each peak. Cut out a space at the base of each one to insert the beam. A head to tail layout on your plywood will limit the number of cuts and save plywood. Using an electric drill, screw in the gussets on each side of the posts.
- 1.10 Stand the structure upright and place it inside the perimeter, inserting the posts into the corners. Pack top soil around the base of the posts.



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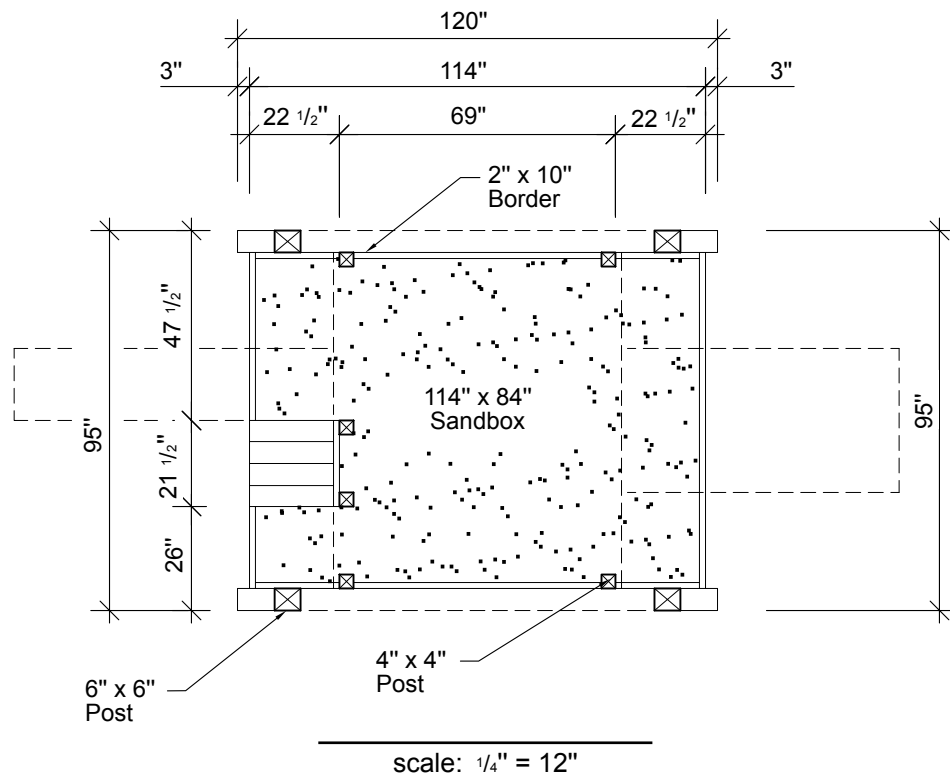
## ASSEMBLY

### 2 MAKE A SANDBOX

- 2.1 Spread a geotextile sheet over the entire excavated area.
- 2.2 Nail together the four 2" x 10" planks that will edge the sandbox and place them inside the perimeter (over the geotextile sheet) and resting against the posts at the four corners, without extending beyond the borders. According to this plan, your sandbox will be 108 1/2" x 84".

The border will be buried 4" into the ground. Backfill the outside.

- 2.3 Attach the four corners of the border to the four posts with lag screws.



### 3 PLACE THE BEAMS OF THE PLATFORM

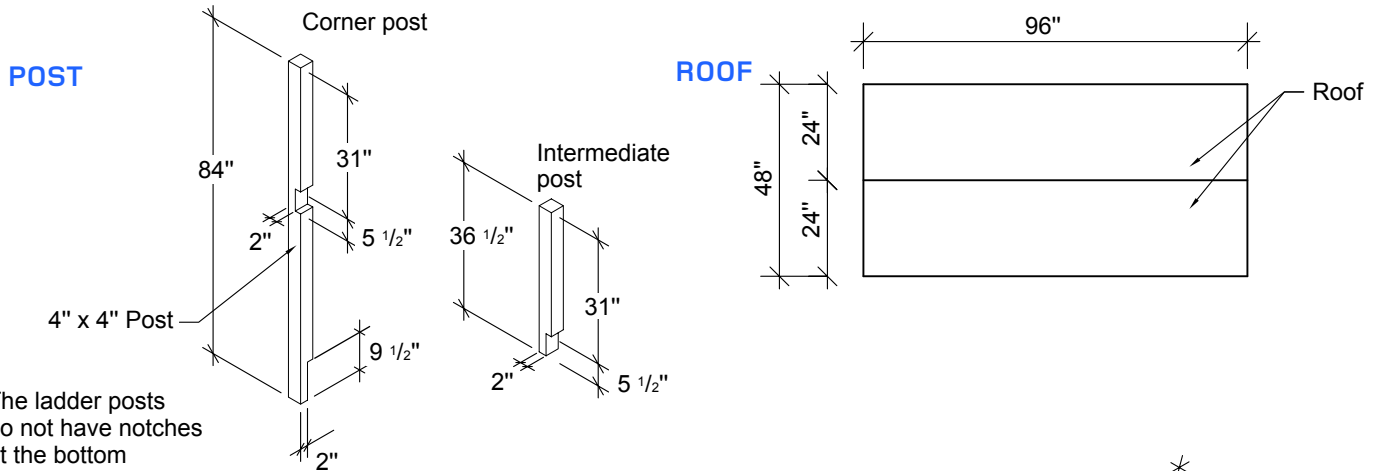
- 3.1 Cut six 4" x 4" posts into 84" lengths. Using a table saw, make a notch 1 1/2" deep and 9 1/2" long at the bottom of the six posts.

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## ASSEMBLY

### 3 PLACE THE BEAMS OF THE PLATFORM

**3.2** Set the height of your circular saw blade at  $\frac{1}{2}$ " before making a notch into the six posts, at 31" from the unnotched end. On the four posts already notched, this second notch should be on one of the lateral sides in relation to the previous notch so that the two notches are on adjacent sides.

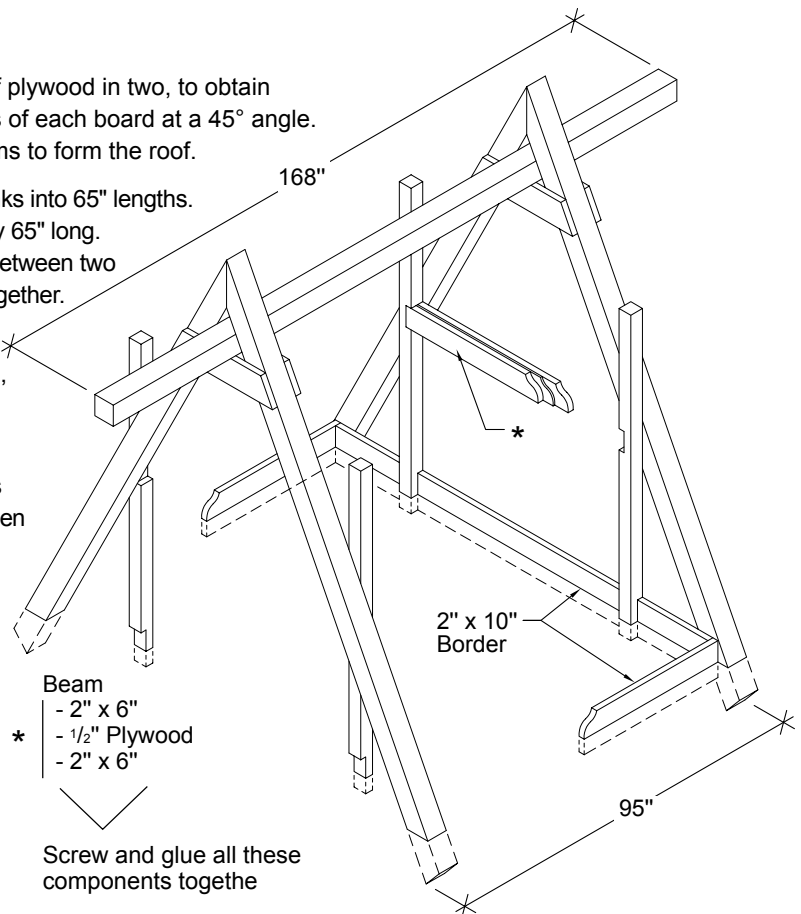


**3.3** To make the roof, cut a  $\frac{1}{2}$ " x 48" x 96" sheet of plywood in two, to obtain two 24" x 96" boards. Rip one of the long ends of each board at a 45° angle. Attach the two boards to each side of the beams to form the roof.

**3.4** To build the platform beams, cut four 2" x 6" planks into 65" lengths. In your plywood, cut out two boards 5 1/2" wide by 65" long. Make two beams by inserting a plywood board between two 2" x 6" planks. Glue and bolt the three boards together.

**3.5** Insert each beam into the lateral notches in the two corner posts and, using an electric drill, screw them in opposite the notches from outside the posts.

**3.6** Place the notches at the bottom of the corner posts on the sandbox border and centre the frame between the structure posts (peaks).



- Beam
- 2" x 6"
- \* -  $\frac{1}{2}$ " Plywood
- 2" x 6"

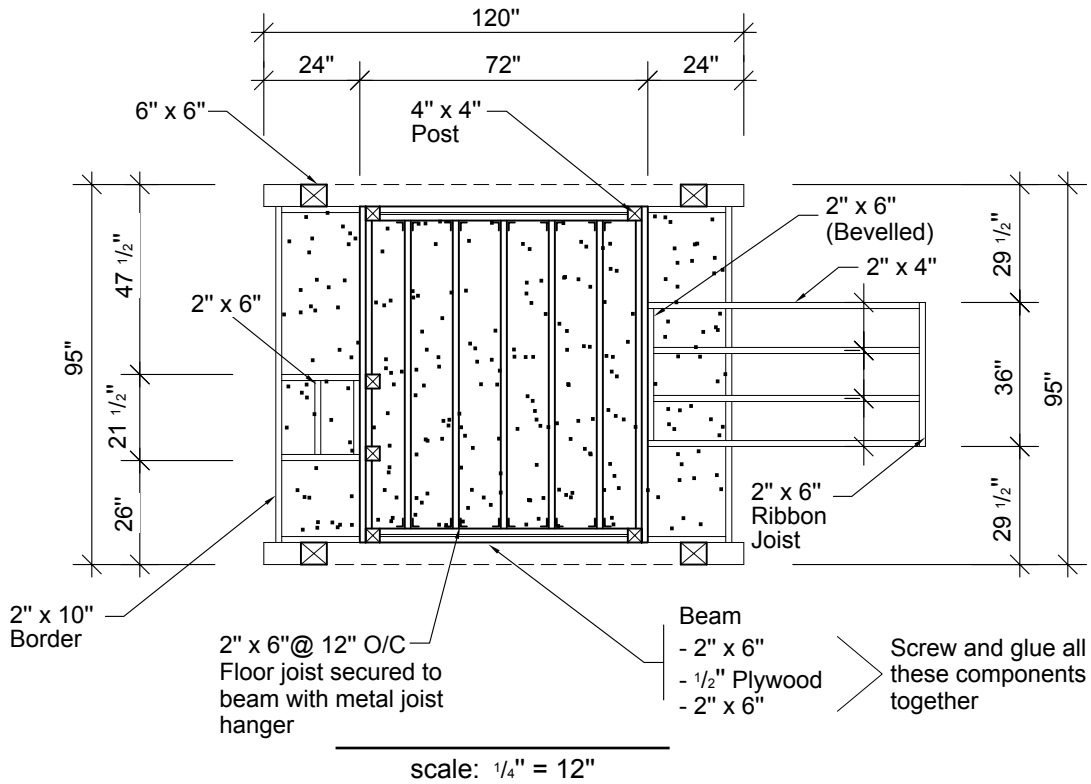
Screw and glue all these components together

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## ASSEMBLY

### 4 INSTALL THE JOISTS OF THE PLATFORM

- 4.1 Place metal hangers for the 2" x 6" floor joists on the beams so that once installed, they will be centered 12" apart.
- 4.2 Cut joists out of 2" x 6" boards. You will need seven 108" long joists for the ends. Also plan two other 115" long joists for the ends.
- 4.3 Attach the joists to the hangers and double the border joists by attaching the two boards that make up the ends of the posts to the outside edges of the border joists.
- 4.4 To make the studs, cut three 4" x 4" posts into 36 1/2" lengths. At one end of each, make a notch 2" deep and 5 1/2" long.



- 4.5 Position the two remaining 4" x 4" posts, placing the notches out, over the border joist before attaching them to the joists. The first post will be attached to the joist 26" from the outside end of the 6" x 6" post and the second 18 1/2" from the first measurement.
- 4.6 Use the same procedure to attach the three studs. Position the first stud 18 1/2" from the last stud attached in the preceding step, and the other two at the opposite end of the platform, each 26" from the outer edge of the 6" x 6" structure, on the border joist (notch out).

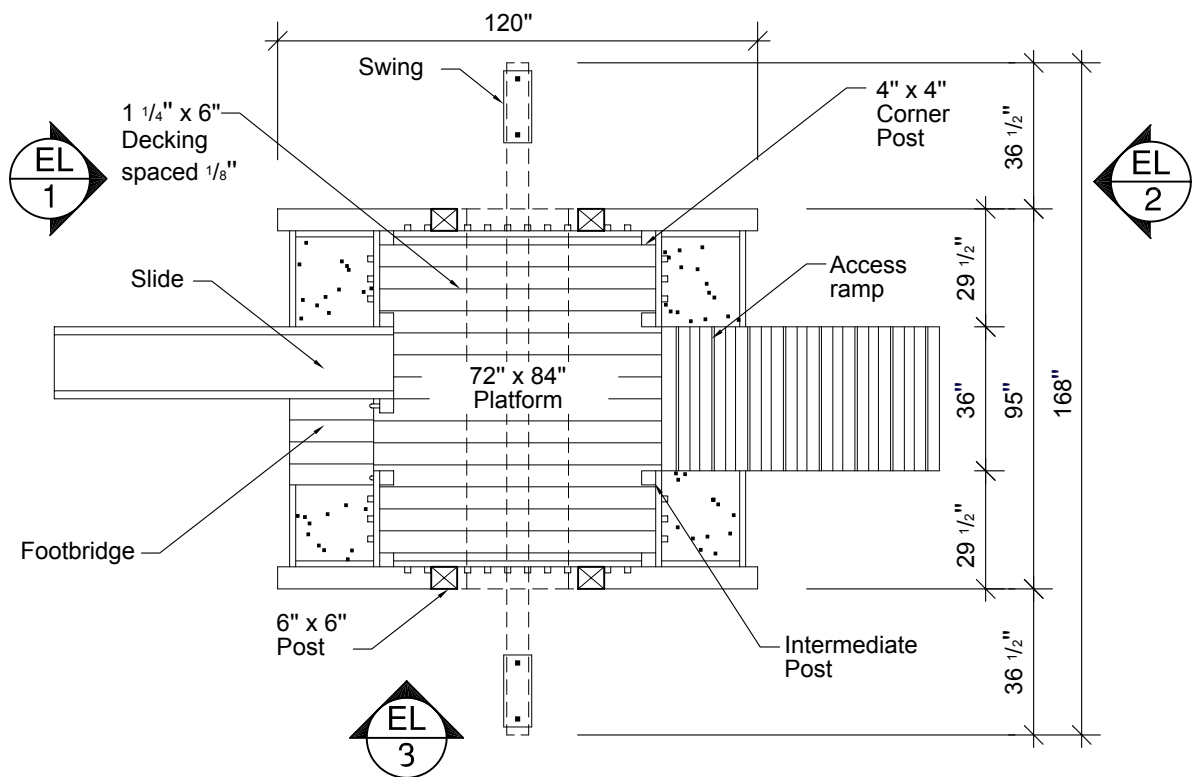


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## ASSEMBLY

### 5 BUILD THE FLOOR OF THE PLATFORM

- 5.1 Cut  $1\frac{1}{4}$ " x 6" boards into 72" lengths. Following this plan, you should require about fifteen of these boards.
- 5.2 Use an electric drill to screw the boards to each floor joist, leaving a  $\frac{1}{8}$ " clearance between each.  
To ensure uniform spacing, temporarily insert the tip of a  $\frac{1}{8}$ " diameter nail into each joist.
- 5.3 Where there are posts, measure and mark the cutting line on the board. Use a jigsaw to cut the appropriate opening.



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## ASSEMBLY

### 6 ADD A RAILING TO THE PLATFORM

- 6.1 To build the railing, cut two 2" × 4" boards into 62" lengths for the two sections that will be between the 6" × 6" posts. Cut the boards into 26" lengths for the four other sections.
- 6.2 Screw the long railing sections to the 4" × 4" posts at a 45° angle (the height of both being equal).
- 6.3 Cut 32" rails out of 2" × 2" boards. Make a 45° cut at one end of each for finishing. Calculate the number of rails required, keeping in mind that they will be centered 4" apart.
- 6.4 Attach the rails (bevelled end up) to the ramp and the border joist or post, as the case may be, screwing them in with an electric drill. Set them 1 ½" from the top of the ramp. Make sure they are level.

### 7 DRESS UP THE ACCESS RAMP

- 7.1 Cut four 2" × 4" planks, two for the outside pieces, 84" long and the two others, for the inside pieces, 82 ½" long. Cut one end of all four pieces at a 54° angle. Cut two 2" × 6" planks, one to a length of 36" and the second 33" long. Bevel the ends of the 33" plank at a 54° angle.
- 7.2 Build the access ramp upside down on the ground. Center the right angle ends of the 2" × 4" boards to the 36" long 2" × 6" board every 12".  
  
Be sure to leave a 1" clearance on the 2" × 6" to attach the floor. House the 33" long 2" × 6" into the other end of the ramp and attach it to the 2" × 4".
- 7.3 Flip the assembled component right side up and screw it to the main structure. Working from the bottom up, finish the access ramp floor by nailing in 36" long 1 ¼" × 6" boards.
- 7.4 Starting at the ground section of the access ramp, attach 1 ¼" × 4" boards to every second floorboard, making sure to center the boards over the voids. These boards will be used as stairs for easier access to the structure's upper level.

### 8 BUILD THE BRIDGE

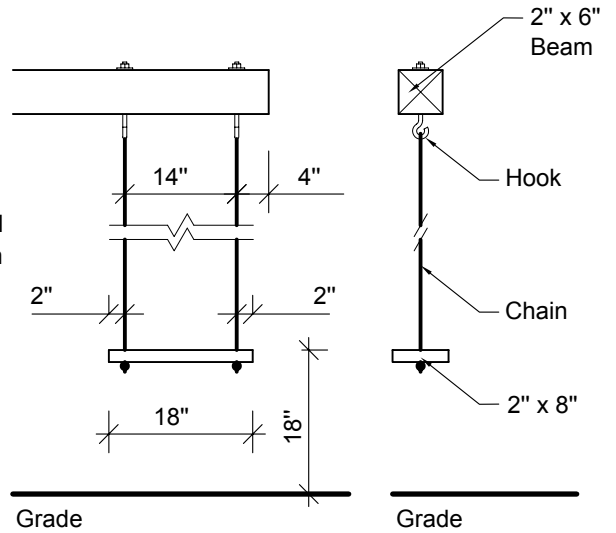
- 8.1 Out of two 2" × 6" boards, make two 21" and two 18 ½" long boards. Attach the two longest boards perpendicular to the sandbox border and to the ladder posts by screwing or nailing them in at a 45° angle.
- 8.2 Nail the two other boards perpendicular to the first two, equidistant from the ends and at a 45° angle.
- 8.3 Finish the floor the same way as for the platform floor, with four 22 ½" long 1 ¼" × 6" boards.

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## ASSEMBLY

### 9 FIX THE LADDER

- 9.1 Attach a 2" x 2" board to the top of the bridge.
- 9.2 Determine the height of the four 21 1/2" long 2" x 4" boards that will be used as steps by calculating the distance between the platform floor and the top of the 2" x 2" board attached at step 1. The steps should be evenly spaced.



### 10 INSTALL THE SWINGS

- 10.1 In a 2" x 8" board, cut two 18" lengths and drill a hole 2" from each end, for the ropes.
- 10.2 For each swing, drill two holes at the centre of the beam, leaving a 4" space at the end of the beam. The two holes should be 14" apart. Bolt the two support hooks into the holes.
- 10.3 Thread the rope through the holes in the swing and tie securely.
- 10.4 Cut the rope so that the height between the ground and the top of the seat of the swing is 18".

