



primefacts

FOR PROFITABLE, ADAPTIVE AND SUSTAINABLE PRIMARY INDUSTRIES

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Weean cattle yards

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Introduction

The real test of cattle yard design is to see if stock walk straight into the race and are drawn to the other end without stopping. The 'Weean' yard design (see Figure 1) achieves this by eliminating corners, and encourages the tendency of cattle to 'ring' or move in circles. Cattle follow a curved course from the time they enter until the time they leave the yards. The curved race fills automatically with the minimum of pushing-up, and once a beast enters the race, it follows the curve right to the end, without baulking or reversing.

This design allows for handling of 100–200 head.

Figure 1 shows the reference points and measurements.

Figure 2 shows details of the fencing.

Figure 3 is an adapted Weean yard design with relocated calf race and added drafting pen.

Figure 4 shows a Weean yard without the holding yards.

Features of the yard

- The easy-fill curved race has a raised walkway along the near side for good worker access to animals when carrying out operations such as drenching or bleeding.
- Worker entry points into the forcing yard and drafting pound allow for easy operation when filling the race.
- The round drafting pound is designed for one-person operation, although two operators will achieve faster throughput. To draft cattle, about a dozen head are let into the pound. The operator then gets cattle circling anticlockwise and opens the required gate inwards to draft each animal

into any one of five receiving yards. This is a very efficient method of drafting. Cattle can also be drafted two ways out of the crush.

- A calf race alongside the adult race gives rapid throughput when marking calves, or when drenching weaners. To prevent large calves from jumping out of the calf race, a single pipe rail is fitted over the centre of the race and runs the full length of the race. The supports of the rail are hinged to allow it to be lifted clear of the calf race.
- The forcing pen has a blind panel on each side of the adult race entrance. This panel is actually a solid (non-see-through) gate forming the entrance to the calf race. The shape of the forcing pen and the presence of this blind panel are essential for smooth filling of the adult race. If this shape is altered to a narrower funnel, cattle will baulk at the entrance to the race.
- The loading ramp ends in a level loading platform.

Construction materials

Posts specified here are 300 mm diameter timber, but pipe or old railway line can also be used.

You will also need pegs, at least 20 m of string, tape measure, spray can of paint, 6 m of lightweight scrap timber, about 40 mm x 10 mm.

The timber is to make a large right-angled triangle with sides of 1.5 m, 2 m and 2.5 m.

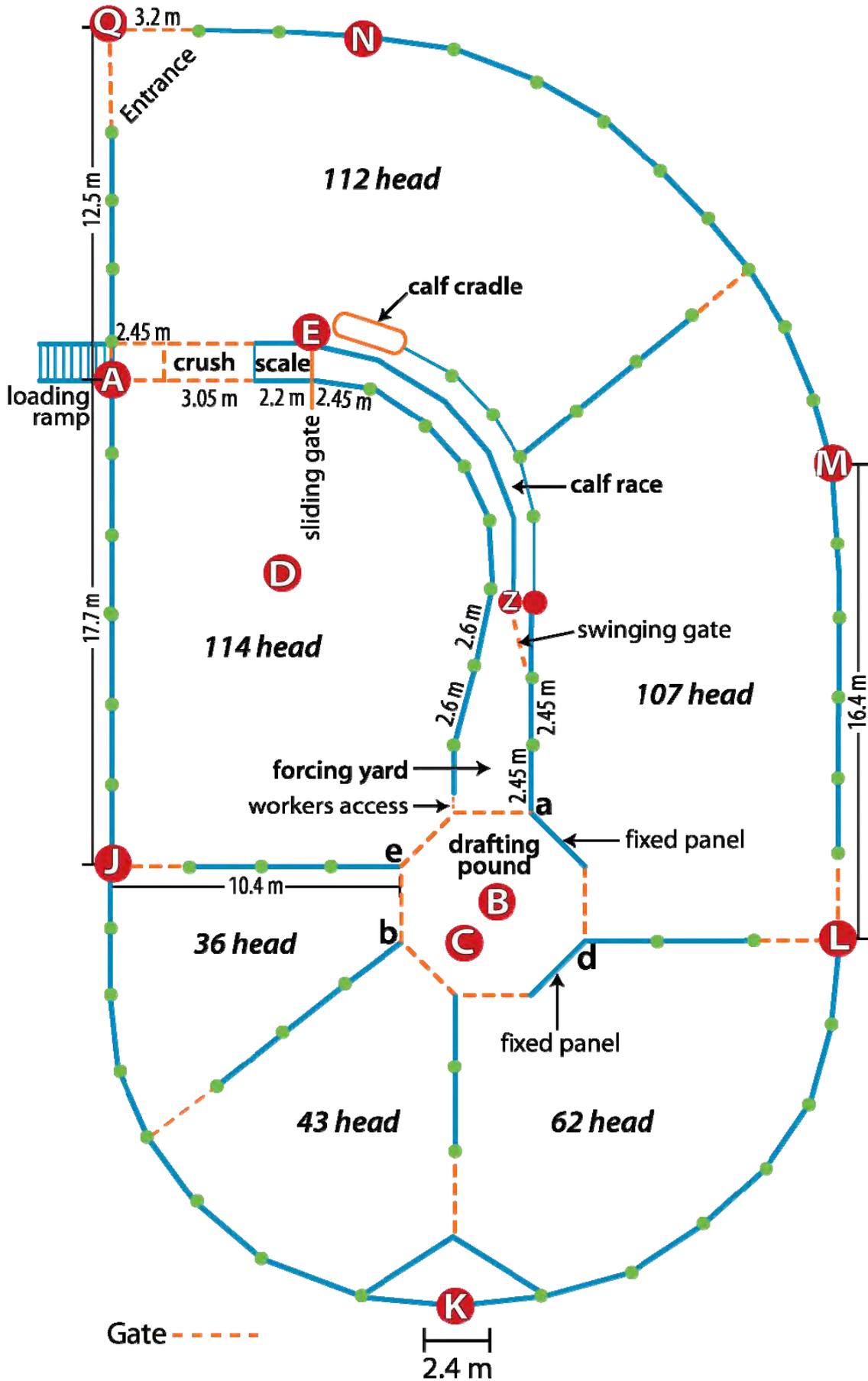
Race and forcing yard

The race and forcing yard are constructed from sawn timber rails (150 mm x 50 mm) and timber posts (300 mm diameter).

Drafting pound

The octagonal drafting pound consists of timber posts (300 mm diameter and 2.6 m above ground level), six steel gates, and two fixed panels of either steel or timber rails. All posts in the pound are tied overhead by a 38 mm pipe cap-rail.

Figure 1. Weean cattle yards – reference points and measurements.



Gateways

All gateways consist of two long timber posts (300 mm diameter and 2.6 m high) tied over the top by a 38 mm pipe cap-rail. Posts are sunk into the ground to a depth of 1200 mm.

Yard fences

All fences, other than the race, forcing yard and drafting pound, consist of eight steel cables run through timber posts, with a 38 mm pipe cap-rail joining all posts. The cap-rail is attached to posts by coach screws through angle iron brackets welded to the cap-rail. Cables can be of any diameter, from 8 mm upwards. They are kept taut by turnbuckles.

Second-hand cables can often be purchased cheaply from lift manufacturers, coal mines or other sources.

The steel cables are spaced 180 mm apart, with turnbuckles joining cables in the centre of each strain, rather than at the end post (see figure 2). Cables are returned through holes in end posts and joined with another turnbuckle.

Cables are attached to turnbuckles by PMG twist, U-bolts, 'twisters' or similar.

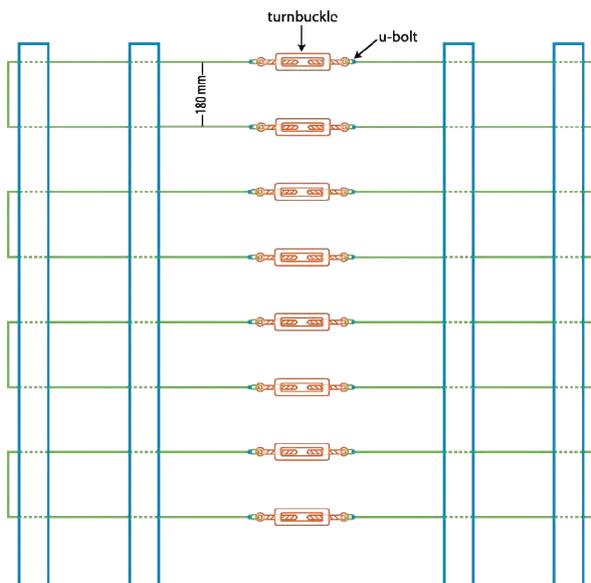


Figure 2. Cables are kept taut by turnbuckles.

Summary of measurements

Adult race width: 685–700 mm internal measurement.

If 300 mm diameter posts are used, pegs for the race should be 990 mm apart to give a finished race width of 685–700 mm.

Calf race width: 350 mm

Place pegs at 650 mm width to give finished width of 350 mm when using 300 mm diameter posts.

Fence heights

- Adult race: 1350–1500 mm
- Loading ramp: 1350–1500 mm
- Calf race: 1050 mm
- Perimeter fence: 1700 mm
- Internal fences: 1500 mm

Height of gate posts above ground: 2600 mm

Depth of posts in ground

- Adult race: 1050–1200 mm concreted
- Gate posts: 1200 mm
- Work yards: 1050 mm
- Loading ramp: 1200 mm
- Calf race: 900 mm
- Holding race: 760 mm

Loading level for loading ramp: 1140 mm

Gate widths:

- Entrance gate: 3200 mm
- Internal gates: 2750 mm

Concrete slab for race: mix, 4:2:1 (15 megapascal mix)

Siting the yard

The yard should be sited where the forcing yard and race run uphill or on the flat. Cattle may feel uncomfortable about running into the race where the ground drops away ahead and to the right. If this is a problem it can be overcome by fitting visually solid walls to the forcing yard and race on the downhill side.

If possible, the yard entrance should be sited in a part of the paddock to which cattle naturally run. This will make yarding-up an easy process.

Reference points for the yard plan

Note. Before you start to peg out the yards, follow these directions on paper at a suitable scale.

Reference points and measurements are:

- A** Starting point.
- B** Centre of drafting pound.
- C** Centre of semi-circular fence **J–K–L**. Radius 13 m. Found 2.65 m from **b** on straight line **b–d**.
- D** Centre of outside fence of adult race, radius 8.3 m. Also centre of outside fence **M–N**; radius 20 m.

All measurements are 'centre post to centre post', and are approximately 2.75 m unless otherwise specified.

Pegging out the yard

Curved yards are more difficult to peg out than square designs, but the 'Weean' yard can be pegged out by two people in half a day by following the steps outlined below. Assistance in pegging-out is available from your District Livestock Officer (Beef Cattle).

1. Locate and peg reference point **A** from the plan.
2. Measure 17.7 m from **A** to peg **J**.
3. Measure 10.4 m on a right angle from **J** to peg **e**.
4. Measure 2.75 m on a right angle from **e** to **b**.
5. To locate peg **B** (the centre of the drafting pound) attach a string to peg **e** and use this string to mark an arc on the ground with a radius of 3.6 m from peg **e**. A can of fluoro spray paint may be the easiest way of doing this. Next, attach a string to peg **b**, and mark another arc with a radius of 3.6 m from peg **b**. Place peg **B** where these two arcs cross.
6. Using **B** as the centre, peg out the posts around the drafting pound on a radius of 3.6 m. Pegs in the circle are 2.75 m apart.
7. To locate **E**, measure 7.7 m (or enough room for scales, crush and draft gates) from **A** on a right angle. Then measure 975 mm on a right angle to find the outside of the adult race, **E**.
8. To locate **F**, measure 7.34 m from **a** on a right angle. Then measure 0.3 m (300 mm) on a right angle towards **D** to find point **Z** on the outside line of the adult race. Allow for a gate on a shallow angle from **Z** to either side of the forcing yard.
9. To locate **D** attach a string to peg **Z** and use this string to mark an arc on the ground with a radius of 8.3 m from peg **Z**. Next, attach a string to peg **E**, and mark another arc with a radius of 8.3 m from peg **E**. Place peg **D** where these two arcs cross.
10. Attach a string to peg **D** and mark an arc with radius 8.3 m for the outside of the adult race.
11. Peg the posts along the arc at 2.75 m intervals from the race entrance post at **Z** to the entrance to the scales panel.
12. Peg the posts for the inside of the race by measuring 975 mm from each outside race peg towards the centre of the circle, **D**.
13. Locate **Q** on a straight line 12.5 m from **A**.
14. Using peg **D** as the centre, mark a circle on a radius of 20 m to give the fenceline **M-N**. Locate **N** by measuring 9 m from **Q** to this arc. Starting from **N**, peg out each post along the arc at intervals of 2.75 m.

15. Locate peg **C** 2.65 m from **b** on straight line **b-d**. Using **C** as the centre, mark an arc with radius 13 m to give fenceline **J-K-L**. Place pegs for each post along this arc at 2.75 m intervals.
16. **L** is on a continuation of the line **b-d**.
17. Distance from peg **L** to peg **M** is 16.4 m.
18. Following the yard plan, it is now a straightforward matter to peg all other posts to complete the yard.

Sliding gate height: Make sure that the top rail from which the sliding gate hangs is at least 2100 mm above the ground. This avoids head injuries and inconvenience to operators.

Timber posts: Avoid tying timber posts together over the top of the race. High posts in a race are a hindrance to any operation, such as drenching, where the operator has to bend over the top rail and move along the race. They can be tied by using a steel rod through the posts at ground level.

Adapted 'Weean' yards

The adapted 'Weean' yard design in Figure 3 shows the relocation of the calf race and adds one more drafting pen.

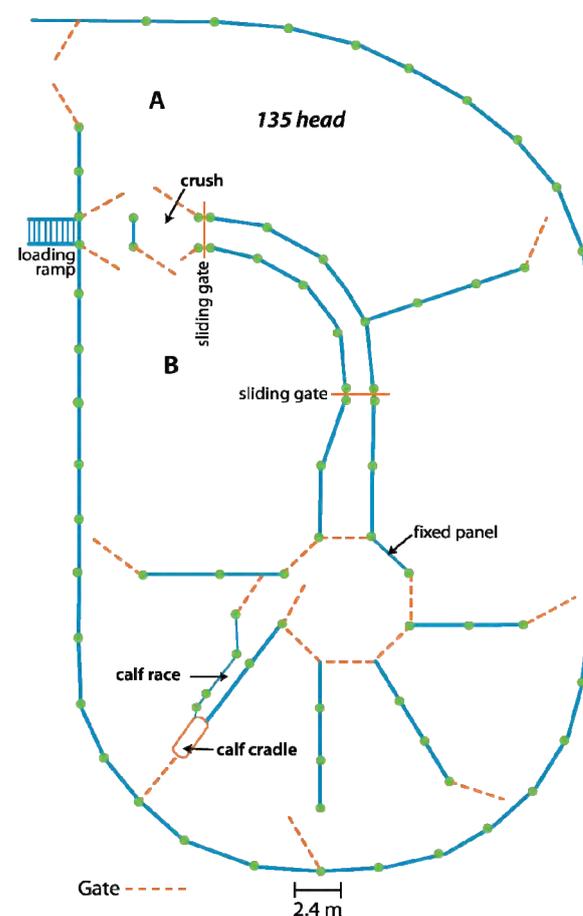
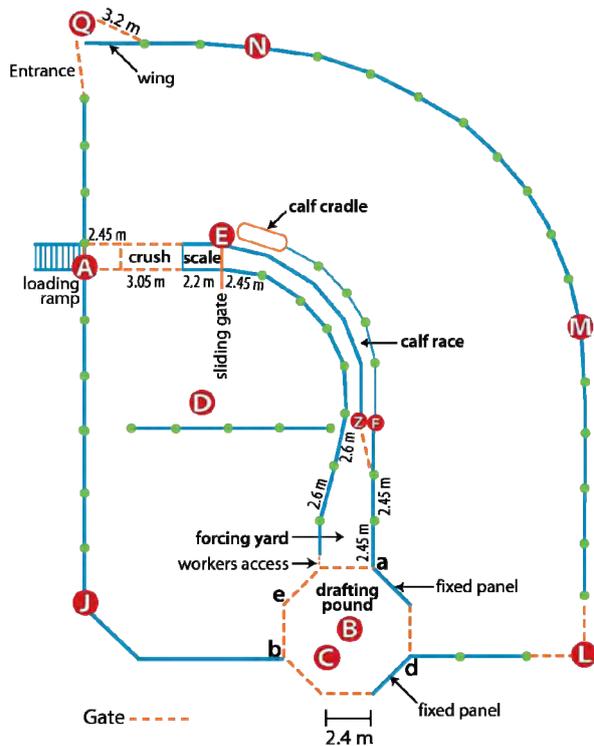


Figure 3. Adapted Weean yard with relocated calf race and added drafting pen.

Figure 4 shows the 'Weean' yard working area without the holding yard facilities.

Relocating the loading ramp and extending the yards at the end of the race would enable the incorporation of a dip. Having two drying pens allows one batch to dry while the other pen is being loaded.

Figure 4. Weean yard without the holding yard facilities.



Acknowledgments

This Primefact is based on information originally written by Ian Dixon, updated in 2001 by Roy Hurst.

Diagrams were re-drawn in 2009 by Lara Maloy.

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