

# Farm Structures FACTSHEET



BRITISH  
COLUMBIA  
Ministry of Agriculture and Lands

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## BUILDING AN ENVIRONMENTALLY SOUND OUTDOOR RIDING RING

Constructing an outdoor riding ring with safe, clean footing that's easy to maintain, holds up in all kinds of weather, and does not cause pollution, is an elusive goal of many horse owners.

The ideal footing should provide good traction, sufficient cushion to prevent excessive concussion, be nonabrasive and as free as possible of dust and odours that irritate both horse and rider. The type of material used should not have a high potential for leachate run-off that can cause pollution.

The three key elements in building an outdoor riding ring are design, materials and maintenance.

### DESIGN

**Location:** Riding rings should be located in areas of good natural drainage. Notice where water runs and settles on your property so you can select a convenient location where the water drains away naturally. Rings should be at least 45 m (150') from a watercourse and 30 m (100') from a domestic water supply. It will likely be necessary to utilize a bulldozer or excavator to do the site preparation.

**Size:** The average size ring is approximately 21 m x 42 m. (70' x 140') The minimum recommended size is 20 m x 36 m. (65' x 120').

**Footing:** There are three major components to footing: the sub-base; the base; and the cushion. The ring site should be stripped of all vegetation and topsoil. In most areas this will leave a clay sub-base. To allow water to run off, crown the ring with

a 2% slope and compact the clay. A 1.2 m x 1.8 m (4' – 6') wide swale, 25 cm (1') deep, can be dug around the perimeter to carry away the runoff. (See Page 3).

**Drainage:** Perimeter drainage using drainage pipes (see page 3) may be required to reduce soil saturation around the ring. Water should be encouraged to run off the surface of the ring into the perimeter ditch or swale rather than move down through the ring surface. A well compacted, properly tapered sub-base is critical to good drainage. In areas of extremely high rainfall, a poly geo textile membrane may be needed over the clay to prevent it from softening and working up to the surface. Water from a swale can only be directed into a watercourse if it is not contaminated with materials that will cause pollution.

The ring design will not prevent subsoils from becoming saturated, therefore, a well drained site is imperative.

### MATERIALS

**Base:** The base further stabilizes and weatherproofs the area. A layer of uniform, dense graded, aggregate is recommended. This type of material can go by the name of stone dust, limestone screenings or decomposed granite and should not have particles larger than 9 mm. (3/8") Approximately 144 m<sup>3</sup> (180 yd<sup>3</sup>) will be required for an average ring and after damping and compacting should provide a 100 mm x 150 mm (4" to 6") base.

**Cushion:** The two most common cushion materials are sand or woodwaste products such as

sawdust, shavings or bark mulch. Sand is the most durable and able to withstand frequent use. Medium coarse, washed sand is recommended. Unwashed sand or dead sand becomes very dusty when dry. In the average ring 72 m<sup>3</sup> (90 yds<sup>3</sup>) will provide a 62 mm to 75 mm (2 ½" to 3") cushion.

Woodwaste products are less expensive than sand and less dusty than unwashed sand, however, woodwaste gradually decomposes and after several years can retain enough water to form soggy patches in the ring. Sawdust rings can also be quite slippery when dry. Woodwaste products must be used so as not to cause pollution. Leachate must not be discharged into the environment. See the Factsheet No. 655.000-2 *Woodwaste Use: Precautions to Horse Owners*.

An inexpensive and environmentally safe option is a mixture of sand and an organic material such as sawdust, peat moss or composted manure. The sand provides the traction necessary to prevent slipping and the organic material retains moisture.

**Woodwaste in general, and cedar shavings and hog fuel in particular, are not recommended as they produce toxic leachate.**

Oil products must not be used to control dust. Oil will coat small particles and be breathed in by both the horse and rider. Waste oil is not permitted to be applied on the land under Special Waste Regulations, *BC Ministry of Environment*.

## LOW USE RINGS

For a ring with low use, the base may be eliminated and a 6" (150 mm) sand cushion, compacted, can be used. In this case, grading and compaction of the sub-base again is critical for good drainage.

## FENCING

Fencing is optional and should suit the ring use. See example on Page 3. Fences, angled back (optional) to protect riders' legs, should be a maximum slope of 2.5:12.

## MAINTENANCE

### Keeping Surface Level

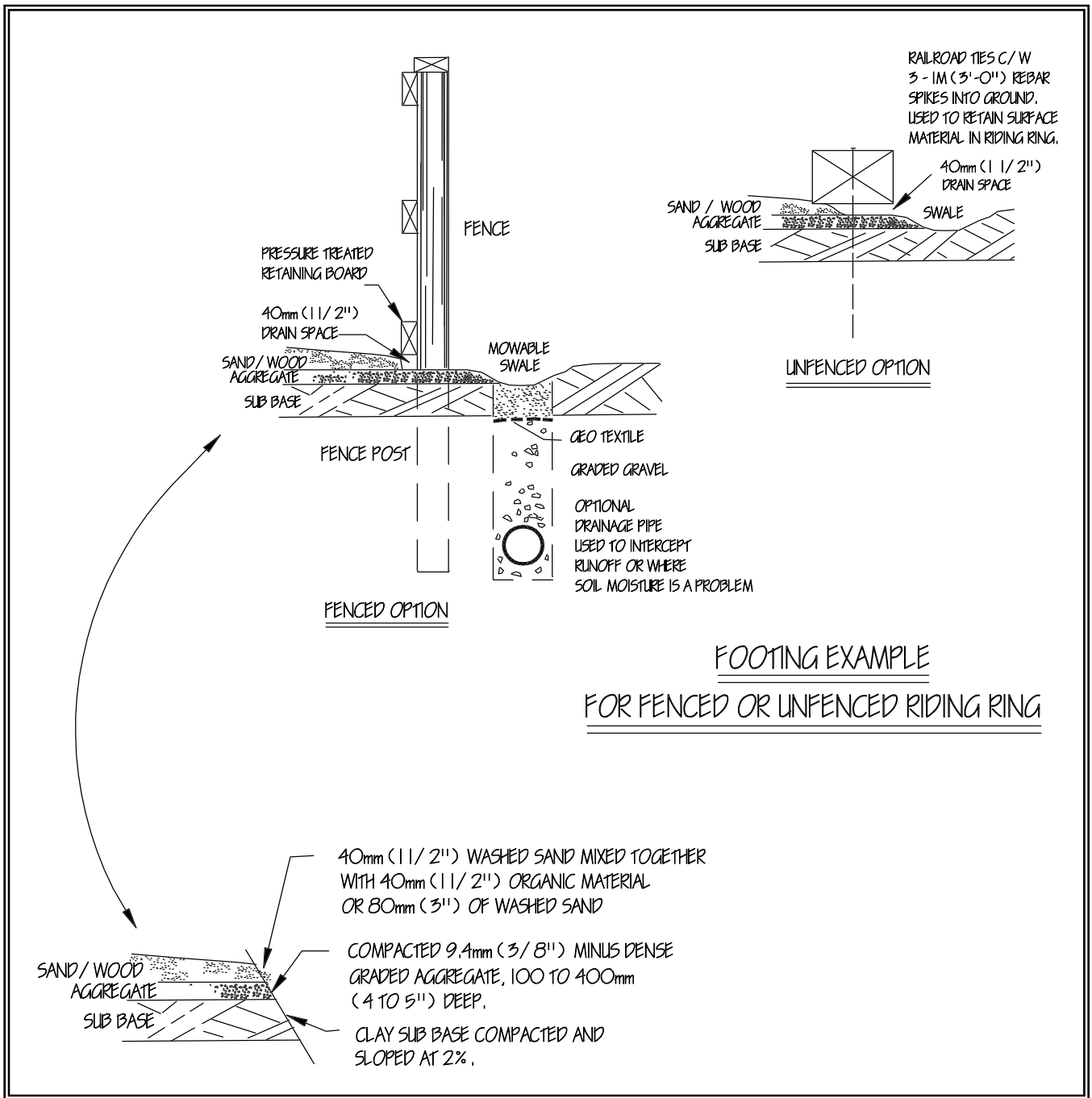
Sand rings should be "floated" frequently to keep the surface level and compacted for maximum water run-off. A simple float can be made with two railway ties that are tied together 90 cm (3') apart.

### Keeping Cushion Loose

In dry periods or after extended use, the cushion may become compacted. A harrow or shallow rototiller will loosen up the cushion.

## Summary

- Select a convenient well-drained site.
- Remove all vegetation and topsoil.
- Crown the ring with a 2% slope from centre and form a swale around the outside.
- Compact the sub-base.
- Add a base of uniform dense graded aggregate; dampen and compact to 100 mm to 150 mm. (4" to 6").
- Add a 62 mm to 75 mm (2 ½" to 3") cushion of sand, sawdust or a combination of sand and organic material.
- Keep moist and float and harrow as required.



Drawn by: Brian Scott

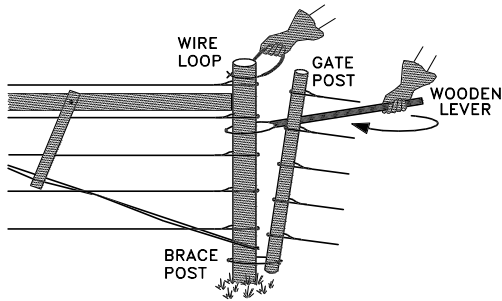
**Example of a Fenced and an Unfenced Riding Ring**

**HORSE FACT: Average Daily Manure Production and Suggested Storage**

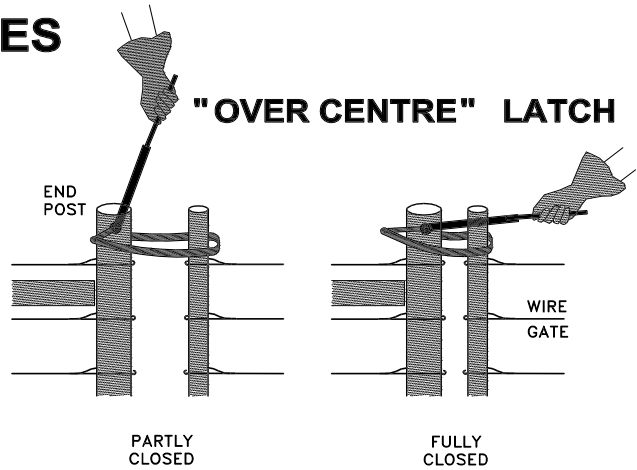
Horse Type	Manure as Excreted	Suggested Storage litres/day/animal (with bedding)
455-kilogram horse (1000 lb)	26 litres (0.92 ft. <sup>3</sup> )	56.6 litres (1.9 ft. <sup>3</sup> )

# SLIP WIRE GATE LATCHES

## WIRE LOOP WITH LEVER ASSIST

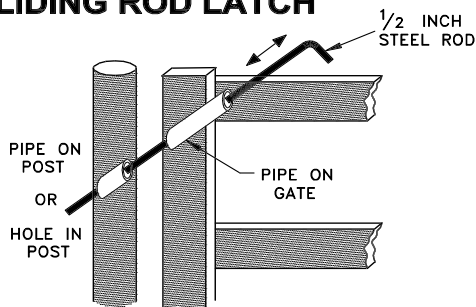


## "OVER CENTRE" LATCH

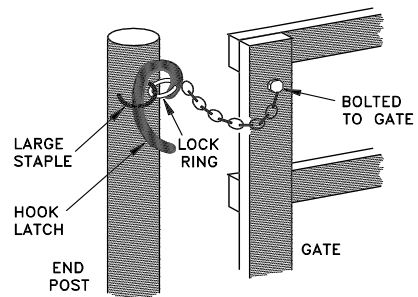


# SWING GATES

## SLIDING ROD LATCH



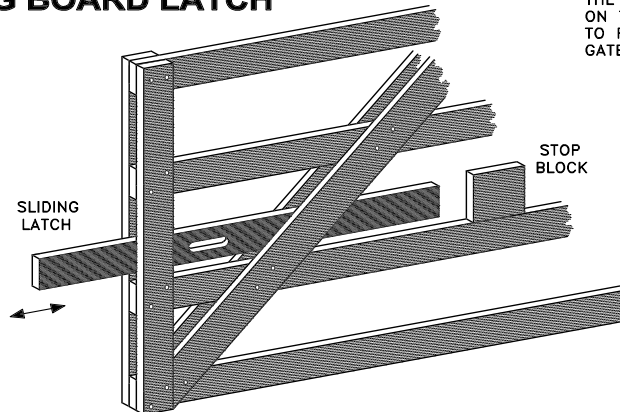
## CHAIN AND HOOK LATCH



**NOTE**

THE LOCK RING CATCHES ON THE POST STAPLE TO PREVENT ACCIDENTAL GATE OPENING.

## SLIDING BOARD LATCH



Examples of gate latch designs, some home-built, some purchased.

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**FOR FURTHER INFORMATION, CONTACT**

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