

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION**

**FENCE**

(feet)

**CODE 382**

**CORRALS**

**SCOPE**

This specification establishes the technical details, workmanship, quality and extent of materials required to install the corral in accordance with the Conservation Practice Standard.

The appropriate NRCS Washington Jobsheet shall be used to document the site-specific requirements for installing, operating, and maintaining the corral. The work shall consist of furnishing and installing materials for the specified design at the location(s) shown on the plan map, drawings, or as staked in the field.

Fencing includes brace assemblies, line assemblies, gates, cattle guards, and other components required for meeting site conditions and achieving the objectives of the practice application. Other documents (worksheets, maps, drawings, and narrative statements in the conservation plan) may be used to document site specifications, plan or design the practice. If a fence is being planned that is not provided for in the following specifications, contact the Washington State Range Management Specialist for approval at the beginning of the planning process and prior to construction.

The fence will be installed in accordance with proper safety procedures. The completed job shall be workmanlike and present a good appearance.

If brush or rock clearing, grading or other land work is to be done in conjunction with the fence installation, appropriate grading and erosion control measures shall be undertaken or installed. Specifications for all measures to be installed in conjunction with the fence should be attached to the Jobsheet.

**Application:** To relocate and build new livestock confinement structures, corrals and/or feed pens away from riparian and water supply areas.

**MATERIAL AND INSTALLATION SPECIFICATIONS**

All materials used in the construction of fences shall have a minimum life expectancy of ten (10) years. Fences will be constructed that equal or exceed the strength and durability of one built in accordance with the materials specifications in the following tables.

If a corral is to have improved longevity and reduced maintenance use one of more of the following concepts:

- a. Larger diameter posts, and/or
- b. Deeper setting of longer posts

All posts shall be placed to the required depth and shall be firmly embedded

**Line Posts** - All wood line posts shall have a minimum top diameter of 6 inches. All metal line posts shall have a minimum outside diameter (O D) of 3 inches. All posts shall be a minimum of 8 feet long. Metal posts shall be set a minimum of 3 feet into an 8-inch diameter minimum concrete fill. Wood posts shall be set to a minimum depth of 3 feet. The maximum post spacing is 8 feet for 6-inch diameter wood posts and 10 feet for 8-inch diameter posts.

**Gate and Corner Posts** - Wood posts shall have a minimum top diameter of 8 inches. Metal posts shall have a minimum outside diameter (O D) of 4 inches. All posts shall be a minimum of 8.5 feet long. Metal posts shall be set a minimum of 3.5 feet into a 12-inch diameter minimum concrete fill. Wood posts shall be set to a minimum depth of 3.5 feet.

**Gates** shall be heavy-duty steel with heavy-duty hinges to minimize sagging. It is strongly suggested that a top rail of steel tubing be installed overhead from one gate post to the other. This will add additional stability to the gate.

## **FENCE PANEL OPTIONS**

### **WOOD PANELS**

Rails may be either rough-cut lumber or poles. Rough-cut lumber shall be 2" X 8" minimum material. Poles shall have a minimum diameter of 3 inches. The spacing between rails shall not exceed 8 inches. All wood panel/rail fences shall have a minimum of 4 rails. The bottom rail shall not be more than 16 inches above the ground surface and the top rail shall be no less than 60 inches above the ground surface.

Fasteners – Fasten rails to posts with ½ inch bolts, 3/8 inch U-bolts, or 6 inch ring-shank nails (at least 30 common on rough cut lumber and 60 common on poles). When using U-bolts at a fence splice a strap or plate shall be used to hold the splice together. On metal posts a metal plate for attaching the rails shall be welded to the post.

### **WIRE PANELS**

Wire panels shall have a minimum thickness of at least 0.23 inches, wire-bar spacing no greater than 6 by 8 inches, a minimum of height of 52 inches and shall be galvanized. The top of the wire panel shall not be less than 60 inches from the ground surface and the bottom of the panel shall be no more than 12 inches from the ground surface.

Wire Panel Fasteners – A minimum of 4 fasteners per post shall be used. Staples shall have a minimum length of 2 inches.

Add a top rail of steel tubing or 2" by 6" lumber that serves to finish the top of the fence and structurally tie all fence posts together, magnifying the strength and integrity of the entire fence. If metal posts are used weld the top rail to the posts other wise use the same fasteners as listed for wood panels

## **COMMERCIALLY AVAILABLE NEW CORRAL PANELS.**

Corral Panels shall be at least 1 7/8" round x 14 ga. rails, 11 ga. end posts- 5' 3" H with at least six (6) rails

On metal posts metal plates for attaching the rails shall be welded to the post. Welded in at least 2 locations per panel to metal line or gate post. If wood post are used the panels will be bolted with straps and ½ inch bolts to the posts and at least 2 additional straps will be welded on to the panels to hold the panels together. Welds cleaned and painted. |

### **PIPE**

Pipe quality should be either #1 condition used, or new reject oil field tubing. Do not use oil field pipe that has been used in a hydrogen sulfide (H<sub>2</sub>S) environment. This sour gas environment drastically escalates the degradation of the steel tubing and offers a short life span. Refer to Table A. Criteria to qualify used steel tubing for pipe corrals for size requirements.

All pipe corrals have a life expectancy of 20 years and should be installed, operated and maintained properly to achieve that life span.

### **GUARDRAILS**

**With interior corral fences where livestock will be on both sides of the fence, a guardrail will be placed** on the opposite side of the fence panel/rails. The guardrails may be of

wood, metal pipe, or similar materials. Wood guard rails shall be of 2 X 8 inch lumber minimum; wood poles shall be at least 3 inch diameter at the small end; pipe shall be no less than 2 inch outside diameter and metal plate shall be at least 3/8 inch thickness and 6 inches wide.

**Table A. Criteria to qualify used steel tubing for pipe corrals\***

<b>New Material (full wall thickness):</b>		<b>Used Material (50% or more remaining wall thickness)</b>	
<b>Outside Diameter (inch)</b>	<b>Pounds/foot of material</b>	<b>Outside Diameter (inch)</b>	<b>Pounds/foot of material</b>
2-3/8	4.6	2-3/8	3.0
2-7/8	6.4	2-7/8	4.0
3-1/2	9.2	3-1/2	5.0 to 6.0
4-1/2	9.5 to 12.6	4-1/2	9.0

\* For questionable used materials, consult with NRCS engineer as per the Engineering Field Manual guidance to determine if used material is acceptable.

**BASIS FOR ACCEPTANCE**

After the fence has been installed, a site inspection will be made to determine if the materials and the design and installation adhered to the site-specific specifications documented in the practice Jobsheet.