**NATURAL RESOURCES CONSERVATION SERVICE**
**MONTANA CONSERVATION INTERIM PRACTICE STANDARD**

# LIVESTOCK CONFINEMENT FACILITY (FEET)

## CODE 770

## DEFINITION

A heavy-duty, permanent, structural facility utilized to confine animals for calving, backgrounding, feeding, and/or other type of animal management.

## PURPOSE

- To protect and improve surface and ground water quality in accordance with State and Federal laws and regulations.
- To re-build or re-organize livestock confinement facilities after the improvement of surface water drainage to storage or treatment areas.
- To re-build or re-organize livestock confinement facilities after filling depressional areas which pond feedlot runoff and contribute to the deep percolation of contaminates to groundwater.
- To re-organize livestock confinement facilities for the efficient and effective removal of feedlot waste to comply with a Comprehensive Nutrient Management Plan.
- To re-locate livestock confinement facilities after the relocation of feedlots from the riparian corridor.

## CONDITIONS WHERE PRACTICE APPLIES

This practice applies to Animal Feeding Operations where the existing confinement facility needs to be relocated in order to address the surface water quality or degraded riparian area resource concerns.

## CRITERIA

**General Criteria Applicable to all Purposes**

The area potentially impacted by the facility placement must be investigated with regards to cultural resources and any federal, tribal, or state listed threatened or endangered species or their habitat. Any concerns identified must be resolved prior to implementation.

Location and orientation of the confinement structure shall allow implementation of a Vegetated Treatment Area (VTA) according to Practice Code 635 or a Waste Storage Facility according to Practice Code 313.

Stabilization of areas frequently and intensively used by people, animals or vehicles shall conform to Heavy Use Area Protection according to Practice Code 561.

The facility shall be designed (height, extent, style, and materials) for the intended use. Materials other than those discussed below are acceptable when shown to provide adequate strength and durability for the intended use. Allowance for expansion and contraction of materials shall be incorporated into the facility design.

**Criteria Applicable to Wooden Boards**

Posts need not be new materials; however, they shall be sound and free from decay and shall meet the following minimum criteria for durability and protective coating. Juniper, cedar, and black locust posts are acceptable without protective coating. Pine or similar wood type and railroad ties require complete penetration of the sapwood with ammoniacal-copper-arsenate, chromate-copper-arsenate mixture or other approved





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treatment materials that extend a minimum of 42 inches up the post from the butt. Used railroad ties, provided they are structurally sound, can be accepted without question for adequate protective coating.

Wood posts shall have a minimum diameter of 6 inches. Posts shall be set solidly in the ground a minimum depth of 36 inches. Post spacing shall not exceed 10 feet.

Wood boards shall be Douglas fir, western larch, southern yellow pine, white oak, or other wood of equal life and strength. Alternative materials may be used when the manufacturer's literature certifies the materials equal or exceed in strength and durability of wooden boards.

Wood boards shall be at least 2 inches thick (nominal) and at least 8 inches wide (nominal). Consider painting or treating board lumber with creosote or comparable preservative. If painting is desired, lumber should be treated with an anti-fungal agent in a light oil (mineral spirits or kerosene) or a waterborne preservative such as acid copper chromate or chromate zinc chloride.

Ensure that board union joints will not be located next to each other on any given post by staggering the location of the joints for adjacent rails.

Nails, screws, and other fasteners shall be galvanized, zinc, or cadmium coated. Minimum nail size shall be 30-d for 2-inch stock. Deformed shank (flute, screw, helically threaded or annually threaded) aluminum or galvanized hardened fasteners are also acceptable.

**Criteria Applicable to Pipe Confinement Structure**

Post quality shall be new ASTM-A-500, #1 condition used, or new, reject oil field tubing, casing or drill pipe. Number 1 quality means, cosmetically it is satisfactory, adequate wall thickness still remains, and there is no heavy pitting or holes visible. Oil field pipe that has been used in a hydrogen sulfide (H2S) environment is unacceptable as the life span of the material has likely been dramatically reduced.

Steel posts shall have a minimum outside diameter of 2-3/8 inch and wall thickness of 0.188 inches. Line and corner posts shall be set solidly in the ground a minimum depth of 36 inches. Post spacing for panel and/or steel tubing shall not exceed 10 feet. Post spacing for rods or cables shall not exceed 8 feet. Hollow posts 1 inch or greater in diameter shall be capped to prevent access by birds and other wildlife.

Rails constructed with steel tubing shall be at least 14 gauge material and have a minimum diameter of 1-1/4 inch. Used material shall have at least 50% of its wall thickness remaining.

**Criteria Applicable to Steel Gates**

Gates should be heavy-duty steel. Gate posts should be set at a minimum depth of 48 inches. Posts for gates larger than 14-foot span shall be set into concrete.

Steel gate posts shall have a minimum outside diameter of 2-7/8 inch and minimum wall thickness of 0.188 inches. Steel posts for gates shall be of the same quality as noted above for Pipe Confinement Structure.

**Criteria Applicable to Guardrail Fence**

Guardrail material may be obtained in used condition. Used materials shall be sound, free of excessive deformities and deterioration, and deemed serviceable for the design life of the practice.

## CONSIDERATIONS

Location and orientation of the confinement facility should consider: topography, soil properties, livestock management, stockwater potential, flooding potential, and safety.

Consider adding a top rail of steel tubing to finish the top of the facility and structurally tie all posts together. This component increases the strength and integrity of the entire facility.

Practice standards Obstruction Removal (Code 500), Waste Facility Closure (Code 360), and Critical Area Planting (Code 342) shall be used for removal and disposal of existing fences and remediation of the abandoned feedlot area.

## PLANS AND SPECIFICATIONS

Plans and specifications are to be prepared for all fence types, installations and specific sites.

Requirements for applying the practice to achieve all of its intended purposes shall be described.

When appropriate, manufacturer's guidelines will be followed closely during to assure that all components are assembled properly.

Plans and specifications shall include material type and size, construction details, and layout dimensions.

## OPERATION AND MAINTENANCE

Regular inspection of confinement facility should be part of an ongoing maintenance program. Inspection of perimeter on a regular basis and daily during periods of heavy stocking is necessary to insure the continued proper function of the facility.

Maintenance and repairs will be performed in a timely manner as needed. Remove and properly discard all broken material and hardware. Include all necessary precautions, such as overhead inspection for electrical lines, in the Operation and Maintenance Plan to ensure the safety of construction and maintenance crews.

Wooden structure painted for preservative treatment shall be repainted as needed to maintain complete treatment coverage.

## REFERENCES

MWPS-6. 1987. Beef Housing and Equipment Handbook. 4th Edition. Midwest Plan Service, Ames, Iowa.

NRCS, eFOTG, Conservation Practice Standard 382, "Fence."

NRCS, eFOTG, Wooden Board Fence Specification, Practice Code 382, Fence.

NRCS, eFOTG, Heavy Use Area Protection Job Sheet, Practice Code 561, "Heavy Use Area Protection."