

Cattle Producer's Handbook

Management Section

790

Protective Shelters for Beef Calves

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Beef calves are often born under adverse conditions during late winter or early spring. Cold temperatures, strong winds, and excessive moisture place these calves in a stress situation. Often little opportunity exists to provide natural shelter to reduce this stress.

Exposure of young calves to severe cold temperatures for extended periods of time causes depression, physical weakness, reluctance or inability to nurse, difficulty in maintenance of normal body temperature, and eventual coma and death. Also, stress from chilling reduces the concentration of several blood constituents and white blood cells that normally aid the animals in resistance to disease. Practices such as bedding the wind-protected side of brushy fence-rows or other natural or artificial windbreaks help calves maintain their body temperature and have been shown to reduce the incidence and death loss from calf scours and pneumonia.

University of Idaho Calf Shelter

Ranches with little or no natural wind protection may consider constructing protective shelters. Fig. 1 shows the University of Idaho calf shelter design. This 8x8 foot shelter is readily constructed from plywood. The shelter does not have a floor. It is designed to accommodate 10 calves. The front opening of the shelter is large

enough to allow calves to enter and leave at will but is too small for cows to enter.

A sufficient number of shelters should be constructed to house the amount of calves expected on the site. The shelters should be placed near the feeding area to minimize the distance between the nursing area and the shelter area. The open front of the shelters should face in a direction opposite the prevailing winds or storms. Shelters are usually placed in parallel rows in an area that is well drained.

Dry, clean bedding should be added to each shelter. As bedding becomes soiled and wet, each shelter should be moved to a dry location and fresh bedding added. In areas of deep or packed snow shelters should be located in a well drained and bladed area in anticipation of the spring thaw.

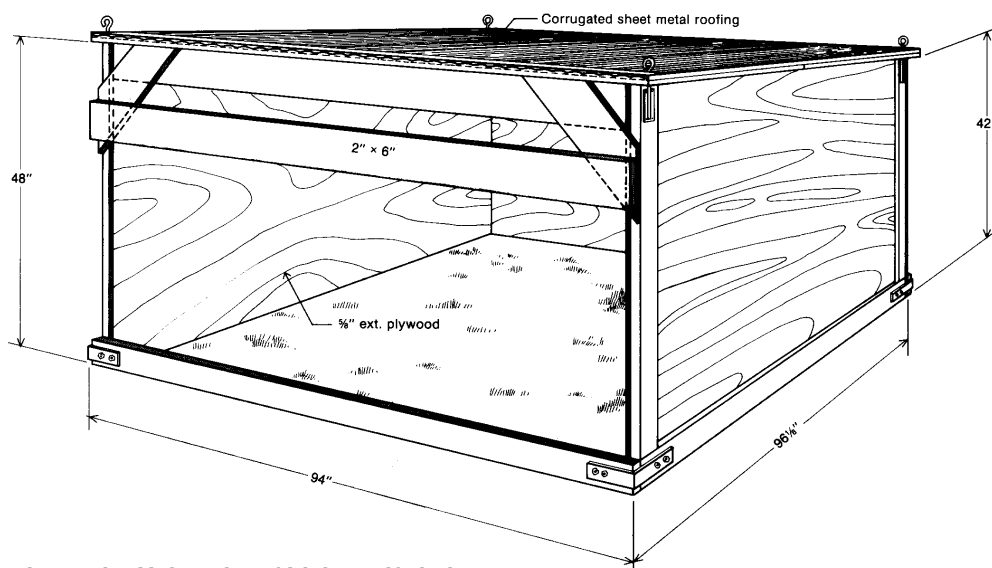


Fig. 1. The University of Idaho calf shelter.

Modified Idaho Calf Shelter

Modifying the Idaho shelter to an 8x16 foot dimension with skids and slatted floor (1-inch crack between floor boards, may be a better design for calving in areas of extreme cold and wind (see Figs. 2 and 3). These larger shelters are usually frame construction with rough lumber and a metal roof.

Two 8-foot creep panels and a 16-foot panel are attached to the front of the basic shelter design. The structure is placed with the open side away from the prevailing wind. The shelter and the enclosed area in front are both bedded with clean, dry straw. This design will provide protection for 30 to 35 calves.

If a wet storm occurs, soiling the bedding, the panels can be loaded on top of the shelter, and moved to a new, clean location and rebedded. These shelters are heavier and less affected by strong winds than the smaller University of Idaho design.

Construction Plans and Materials List

The calf shelter here can easily be constructed with five (5) sheets of 4x8 foot exterior plywood, nine (9) 8-foot 2x4s, and two (2) 8-foot 2x6s for framing (Fig. 1). The finished unit is 8 feet wide and 8 feet deep and has a front height of 4 feet that slopes to a rear height of 3 1/2 feet to allow for drainage of rain and melted snow.

The design is such that the sides can be assembled on the ground. Note that the 2x4 supports on the sides, front, and back are located on the outside of the plywood. No inside floor exists, and a tractor with a front-end loader can move the unit short distances by use of the 1/2-inch eye bolts mounted on the upper corners.

Alternately, skids made of 4-inch diameter wood poles may be installed on the sides and used for relocation of the shelters. Skids may also be made of 4x4-inch

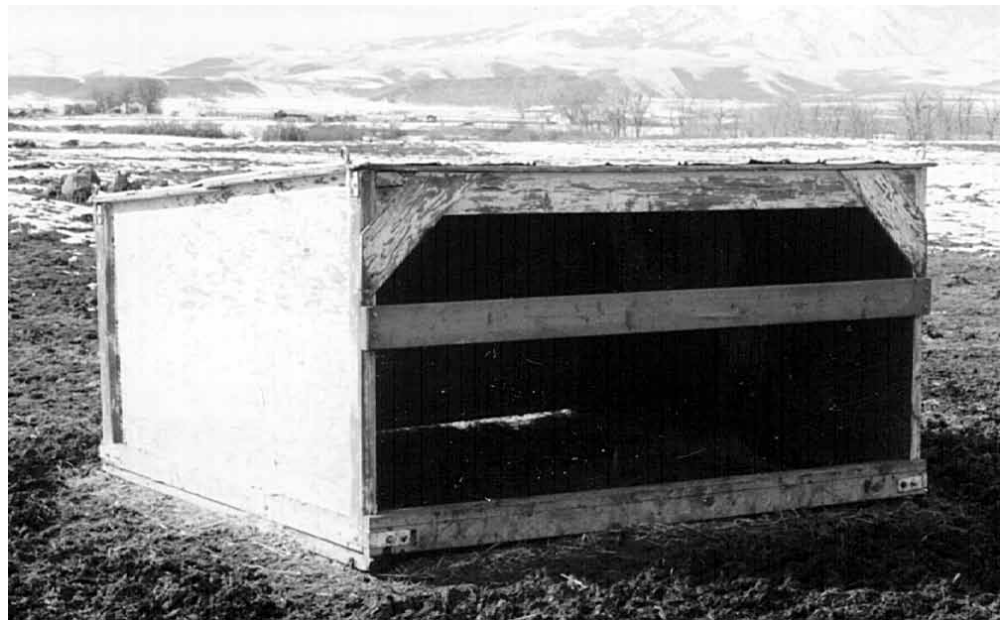


Fig. 2. University of Idaho calf shelter modified with runners and additional bracing.



Fig. 3. Enlarged University of Idaho calf shelter modified with 2 x 8 foot backside braces, skids, and a metal roof.

posts, although the bottom edges should be rounded to minimize the surface area that may freeze to the ground. The outside and outside surfaces of the bottom 6 inches of the unit are treated with a wood preservative, and a good quality latex or oil-base exterior paint should be applied to all weather-exposed surfaces.

Side Panel Construction

On Fig. 4, note the dimensions of the side plywood panels (92 1/2-inch (L); 48-inch (H) in front; 42-inch (H) in rear). The 2x4s are nailed to the plywood on the outside with 8d galvanized nails, and the nails are clinched.

The joist hangers are positioned midway between front and rear and directly beneath the junction of the front and rear roof panels and fastened to the plywood sides with 1/4x1 1/4-inch carriage bolts.

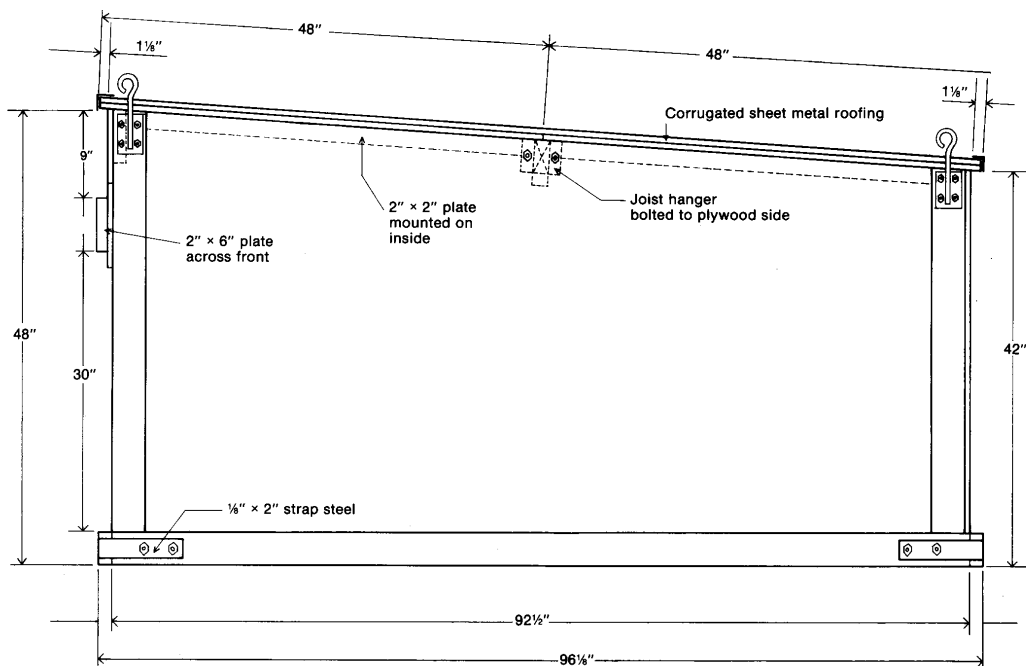


Fig. 4. Side view construction plans for the University of Idaho calf shelter.

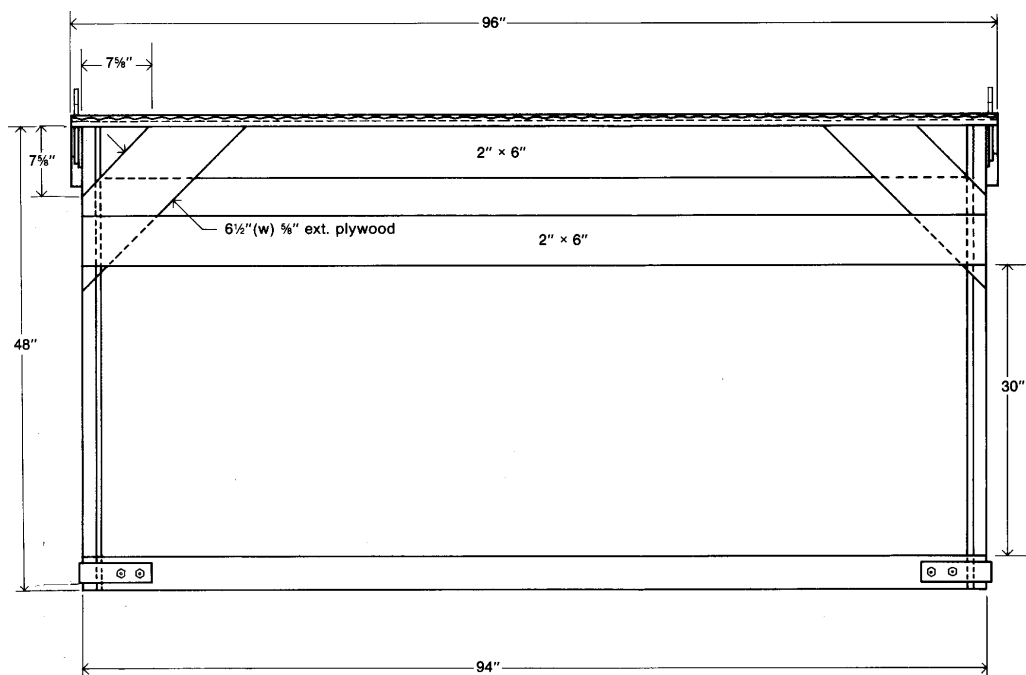


Fig. 5. Front view construction plans for the University of Idaho calf shelter.

Unit Assembly

The rear plywood panel is cut to a width of 94 inches and a height of 42 inches and nailed to the 2x4 support member with 8d galvanized nails. The assembled panel is then nailed to the rear edges of the side panels with 8d galvanized nails.

The lengths of the 2x4 and 2x6 framing members for the front of the shelter are 94 inches and 89 3/4 inches, respectively. The 2x6 is positioned on top between the

side panels and temporarily fastened with 16d galvanized nails. The 2x4 is positioned at the bottom and across the front edge and is temporarily attached with 16d galvanized nails. The 1/8x2-inch metal straps should then be bolted onto the corners with 3/8x2-inch and 3/8x3-inch carriage bolts.

The 2x4 joist, cut to a length of 89 3/4 inches, should now be placed into the joist hangers and fastened with 8d galvanized nails. An optional 2x4 joist, placed from front to rear and midway between the sides, may be used to provide added stability to the roof panels. Next, make 2x2-inch plates from 2x4 material and nail to the inside upper edges of the side and rear plywood panels with 8d galvanized nails. The 2x2-inch plates long the side plywood will have to be cut to length to accommodate the 2x4 joist.

Make certain the front of the shelter is plumb, and then nail the front gusset braces (6 1/2 inches wide, cut to 45 degree angles, and made from the waste of the rear plywood panel) in place. Cut the front 2x6 plate to length (94 inches), and nail over

the gusset braces so as to leave a 30-inch clearance space from top to bottom (see Fig. 5).

Be certain the shelter is square (about 133 inches between opposite corners), then attach the plywood roof panels to the 2x2-inch plates and the 2x4 joist with 8d galvanized nails. Next attach the corrugated metal roofing to the plywood roof panels with roofing nails. Cover the front and rear ends of the roofing with metal flashing, and trim, or turn in all sharp corners.

Finally, the 3/8-inch eye bolts are welded to 1/8x3x3-inch plates and attached to the front corners by 3/8x3-inch carriage bolts and by 3/8x4-inch lag screws fastened through to the 2x6 framing members as shown. The eye bolts attached to the rear corners are fastened by 3/8x3-inch carriage bolts.

Final Thought

Attention to proper sanitation with any kind of shelter is absolutely essential to success. If calves are too concentrated or are stressed because of wet, fouled bedding, calfhood disease incidence may be higher than if shelters were not provided.



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