

BAITING BIGHORN SHEEP WITH APPLE PULP AND TRAPPING WITH A DROP NET

By
Robert Schmidt
Colorado Division of Wildlife
Fort Collins

In 1969 the Colorado Division of Wildlife was instructed by the Wildlife Commission to determine the cause of lamb mortality. Lamb mortality had been a major cause of a decline in the bighorn sheep population in recent years. At that time six men from the Division of Wildlife and an equal number from Colorado State University, Department of Veterinary Medicine, were assigned to the study. The team was composed of men with specialties in a number of different fields.

It was found that lungworms passing transplacentally from the ewe to the fetus caused a pneumonia complex that resulted in lamb death. Further studies called for marking sheep and treating with various drugs.

In order to study drug treatments and effects, it was necessary to develop a new trapping and baiting technique. A study was conducted in the Poudre Canyon near Fort Collins. The results of this study were a 70-foot square drop net and a new bait, apple pulp. This report describes the use of apple pulp as a bait and the drop net trap to capture free-ranging sheep.

Baiting with Apple Pulp

Baiting sites should be in areas sheep are using or will use during the time of year established for trapping or treating of sheep to take place. Best areas appear to be close to bedding grounds, preferably upwind. For trapping, a location fairly flat and free of rocks must be used. Snow depths should also be considered in snow country and tops of ridges may make the best sites.

Three or 4 months prior to trapping or treating, white salt blocks should be placed at all likely trap sites. When baiting is started, use only those sites where salt has been readily used.

Apple pulp has been an excellent bait. It is the part of the apple remaining after the juice has been pressed out for apple cider. Some companies add sawdust, wood fiber, and rice hulls during the cider making process. This type of apple pulp has not been very desirable. Apple pulp must be picked up fresh from the cider mill and stored on concrete or plastic to retain the juice. All air must be forced out as in preparation of corn silage. The deeper it is piled the better. The pulp should ferment for at least 2 weeks before using, and the supply should

be close to the baiting area. In cold winter months it will keep about a week on a pickup after being removed from the pile, however, in warm weather it will keep only about 2 days. If pulp is to be held for a longer period after removing from the pile, it should be bagged and frozen.

When starting to bait an area, three types of bait are used: white block salt, apple pulp, and good green alfalfa hay. Place pulp on and around salt blocks as well as on the alfalfa. Sheep do not know what apple pulp is and must come in contact with it in order to become "hooked" on it. This should take about 3 weeks. If large numbers of sheep are in the area, about 2 pounds of apple pulp should be provided per sheep per day to "hook" them. A good example is: If 100 sheep are in the area and 40 pounds of apple pulp are used as bait only about 20 will become "hooked". When starting to bait, 40 pounds is about the right amount, then as more sheep begin to use the bait increase the bait in proportion to the additional numbers of sheep coming. Use 1 pound of alfalfa for every pound of pulp used at the bait station. Sheep that are on apple pulp will also eat big sage and other vegetation surrounding the bait station. Alfalfa will supplement the apple pulp and their requirement for roughage. If permitted an adult sheep will eat about 5 pounds of apple pulp per day; about 3-1/4 pounds in 30 minutes in the forenoon, returning in the afternoon and consuming another 1-3/4 pounds.

Sheep that are "hooked" will come to the bait station every morning, usually on the run. At this time you are ready to trap and/or treat the sheep.

Trapping Bighorn Sheep with a Drop Net Trap

Over 350 bighorn sheep have been trapped the last 3 years, with a minimal trap loss. During the 1975 trapping season 117 sheep were trapped in 4 days of trapping in three different areas, which were Whiskey Basin in Wyoming and the Poudre and Rampart herds in Colorado. Each time we trapped we were successful in catching sheep, and in two areas more sheep could have been captured the same day. Trap loss of the 117 sheep was only one sheep.

We used a 70-foot square drop net which weighs approximately 280 pounds including the net and poles. With an experienced crew the trap will handle 15 to 25 sheep. Inexperienced crews should start with five to eight sheep. The net is made of four 35-foot squares which snap together making it easier to handle and aid in removing sheep from the trap.

We use a radio-controlled detonator to drop the trap. This provides considerable flexibility and does not require a man at one point at all times. The detonator now being used has been quite successful; there have been no false drops in 3 years. The range of the radio-controlled detonator is over 2 miles, however you should stay as close as possible as it is important to get to the dropped trap as soon as possible.

The trap is designed to be used on frozen ground and can be set up in approximately an hour and a half. It withstands extremely high winds,

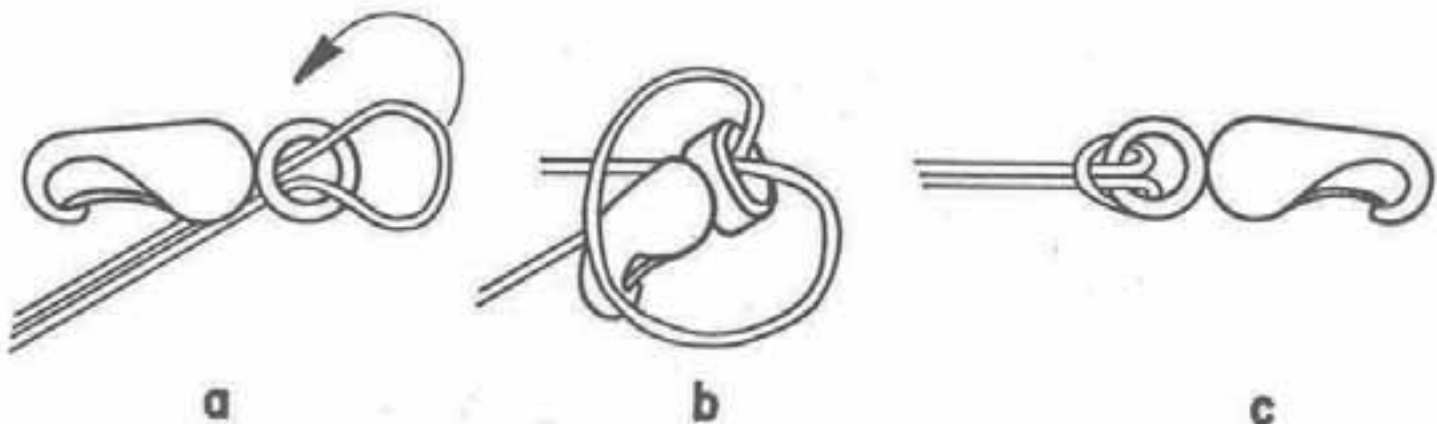
provided all steel anchor posts are wrapped with burlap at points where anchor ropes are to be tied to prevent their being cut.

Fig. 1 presents materials needed for construction of a drop net trap and diagrams a method for attaching snaps used to connect the four sections of net. Fig. 2 presents an overview of the trap. The four corner posts must be set first and squared at 76 feet. The four anchor posts are then set and wrapped with burlap. The anchor post must be set in exact line with the corner post and the opposite corner post. Snap the net together and tie in the four corner blasting cap ropes. Blasting cap ropes, which should have a bowline loop on one end, are run through the net corner ring and back through the loop. The other end of the blasting cap rope can be half-hitched to a loop in the end of the pulley rope (Fig. 3). A total of eight blasting cap ropes are used on the trap and all are attached in the same manner. Once corner blasting cap ropes are attached, connect the blasting cap wires to the detonator wire and pull the corners tight. There should be 1 to 2 feet of rope between the pulley and blasting cap (Fig. 3). Tie in the side anchor ropes with blasting cap ropes. One side anchor rope, the uphill one, does not have a blasting cap. The side anchor posts should be 20 feet from a line between the corner posts on that side (Fig. 4). Corner anchor posts should be at least 15 feet from the corner post (Fig. 2). The further the anchor posts are away from the net, the better they hold. Tie in the center blasting rope (Fig. 5). Put up side braces, making sure the side brace without blasting rope is not standing straight up. Put up the center pole (Fig. 5) and tie stop ropes to corner posts (Fig. 3). They should be tight for up to seven sheep and have 6 to 8 feet of slack for 20 to 25 sheep.

After the trap is up, bait is placed under the net in a circle one-half way between the center pole and the side of the net with bait lines from center bait to a point 10 feet outside the net. Two or three lines should lead toward the direction from which the sheep are expected to approach; one of these should lead out on the downwind side. When working with large sheep populations it is best to allow sheep to go under the net for 2 or 3 days before trapping so the less wary sheep will encourage others to come to the net.

Once sheep begin going under the net they tend to group which causes problems because they should be evenly distributed under the net. Before they are evenly distributed there may be more sheep than the trap will handle. If this occurs, move in so that some or all will leave. If they have not been there more than 10 to 15 minutes some will go right back under. This time stay closer to the net so some sheep will stay back. The total time the sheep will stay under the net is about 30 minutes. It is not a good idea to drop the net in the sheep's face if you intend to trap them later.

When taking sheep out of the trap a 5-man crew works best; four men to remove the sheep from the net and one man assigned to observe sheep in the net. It is important to watch for sheep with their head turned back along the body so tight that they are unable to breathe or are lying on top of their head. Most trap deaths result from suffocation due to failure to correct the position of such animals. These sheep must be straightened out at once.



ATTACHMENT OF SNAPS TO NET

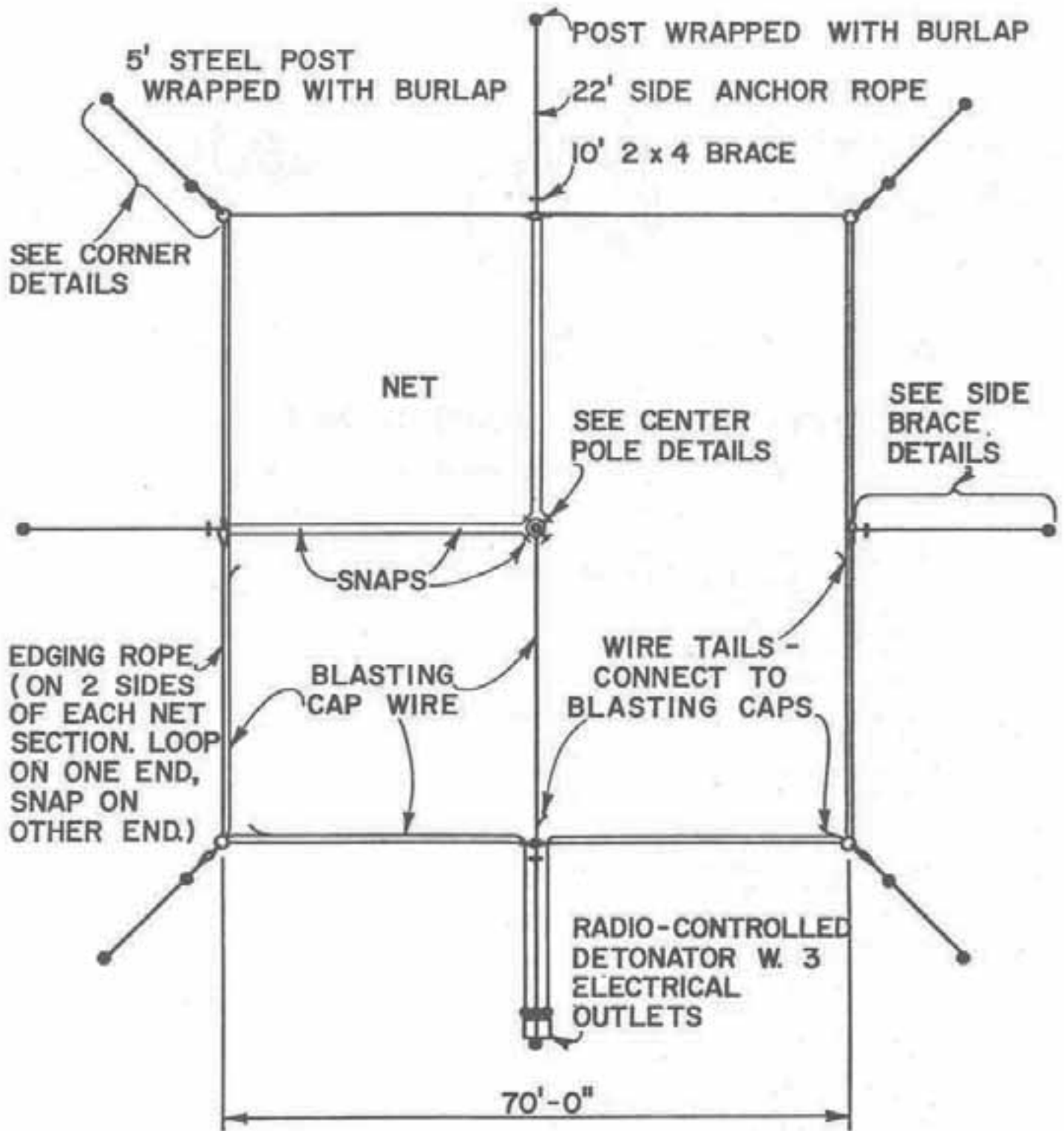
MATERIALS NEEDED FOR CONSTRUCTION OF TRAP

| | | |
|----------|---|--|
| 4 | - | 35' squares of 4" nylon net |
| 300 ft.- | - | 7/16" nylon edging rope for two sides of 35' net. |
| 4 | - | 1-1/2" corner rings |
| 1 | - | 3" center ring |
| 212 | - | snaps 830# rope |
| 7 | - | 6 foot 1" pipe |
| 4 | - | 6 foot 1-1/4" pipe |
| 3 | - | 18" 1-1/4 pipe 2 for center pole and 1 driving cap |
| 4 | - | 2" pulley |
| 4 | - | 3/8 eye bolts |
| 4 | - | 3/8 bolts |
| 4 | - | 2X4 10 foot |
| 4 | - | 1/2 eye to be welded on to 1-1/4 corner post pipe |
| 4 | - | 12 feet 3/8 nylon rope |
| 4 | - | 16 foot 5/8 hemp rope |
| 4 | - | 22 foot 3/8 nylon rope |
| 2 | - | 127 foot blasting wire |
| 1 | - | 57 foot blasting wire |
| 3 | - | electric plugs |
| 1 | - | roll 1/4" 3 strand nylon rope |
| | - | blasting caps |
| 1 | - | Ubolt for top center pole |
| 1 | - | radio detonator |
| 4 | - | 15 foot 1/4 nylon stop ropes |
| 8 | - | 5 foot steel post |

Fig. 1.

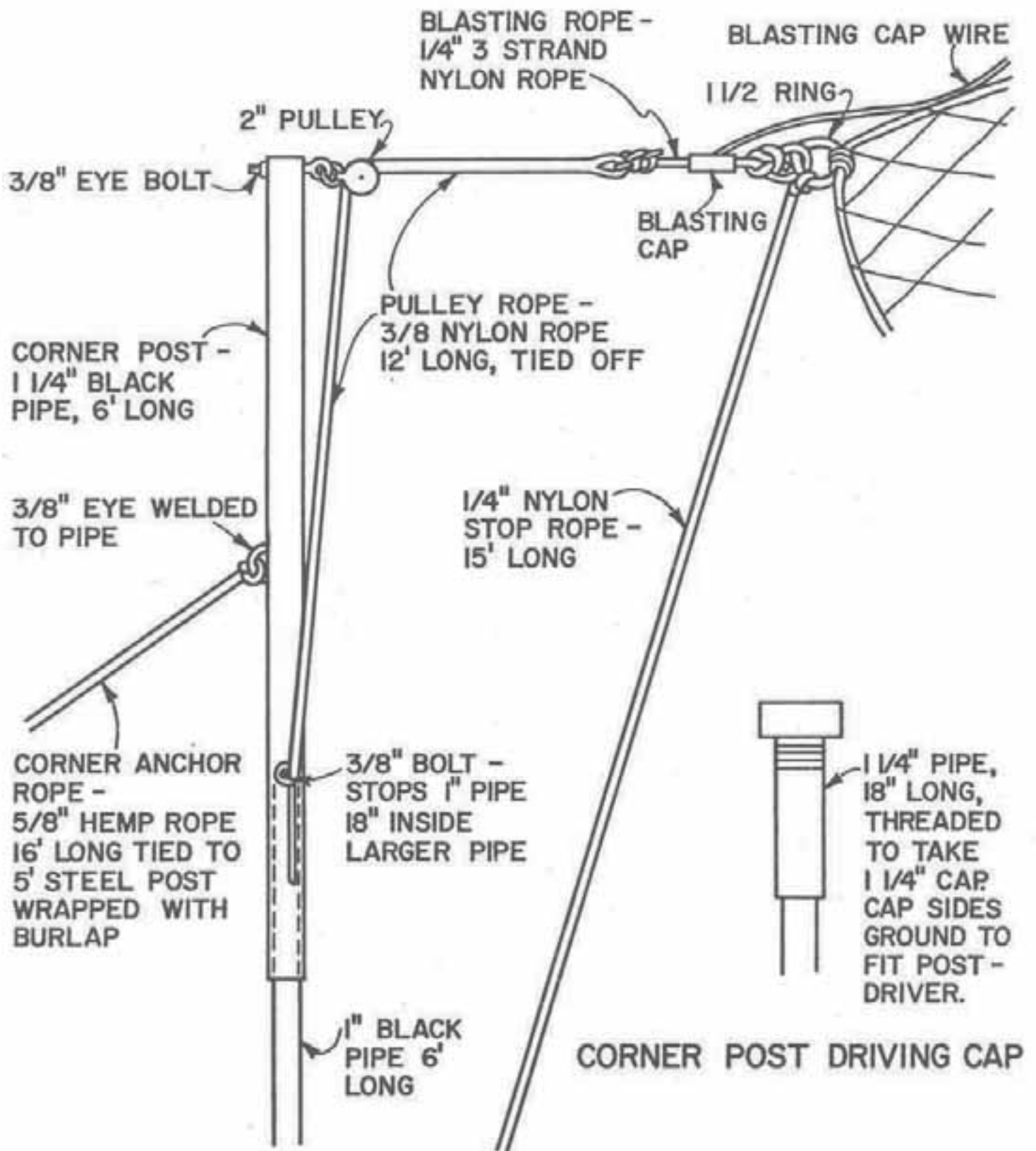
UPHILL SIDE OF TRAP

NOTE: NO BLASTING WIRE ON THIS SIDE ONLY



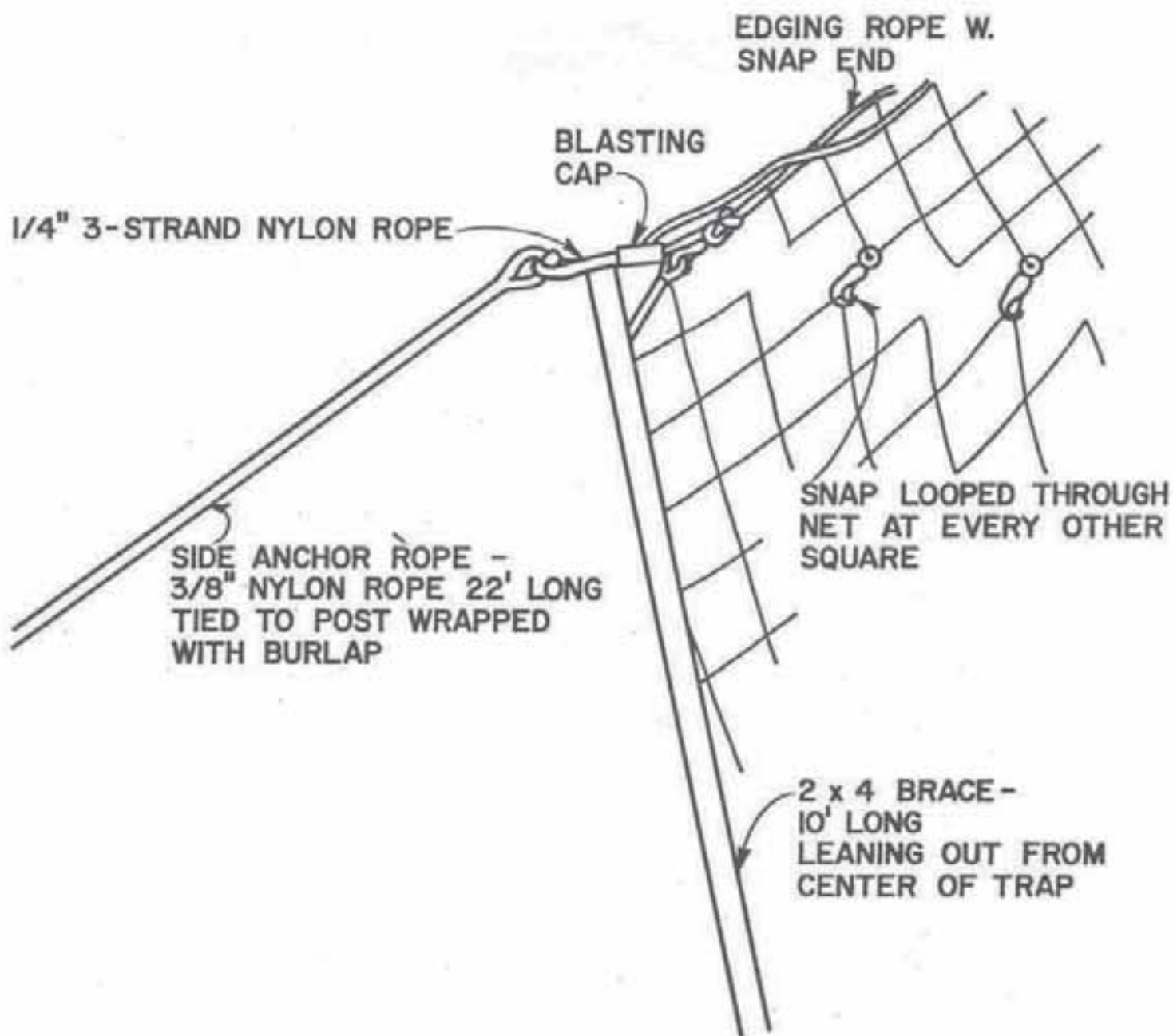
PLAN - APPROXIMATE SCALE 1/16" = 1'-0"

Fig. 2.



CORNER DETAILS - NO SCALE

Fig. 3.



SIDE BRACE DETAILS - NO SCALE

Fig. 4.

FORK WELDED TO 1" PIPE, 6' LONG

28" OF 3 STRAND ROPE
WRAPPED AROUND
BLASTING CAP
(SEE TEXT)

3" RING

4" NYLON NET,
DIAMOND
PATTERN

WELDS

1 1/4" PIPE
18" LONG

CENTER POLE

1" PIPE,
6' LONG

WELD

1 1/4" PIPE
18" LONG

SNAP EVERY OTHER SECTION

LEAN CENTER POLE
SLIGHTLY INTO PREVAILING WIND

CENTER POLE DETAILS - NO SCALE

Fig. 5.

The observer can also tell the crew which sheep should be removed from the net first. Snaps in the net (Fig. 1 and 2) are extremely helpful in getting sheep out. Sheep should be removed by pulling them out by the back legs, not by the horns or head as this could cause neck damage. Hog-tieing works well when collaring and treating sheep before release and the temperature is not too cold. When hog-tied a burlap bag should be placed over the head. Sheep that are to be transported can be removed from the net and walked to a truck with one man holding up one back leg and one man walking alongside the neck with a hand on each horn so as to guide the sheep.