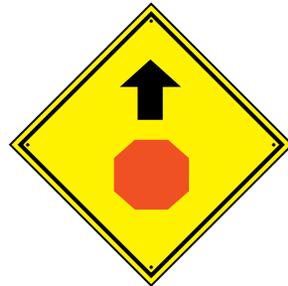
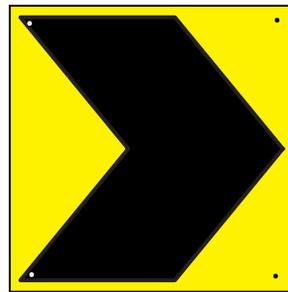


Guidelines for Snowmobile Trail Signing & Placement

2000



iasa

International Association of Snowmobile Administrators

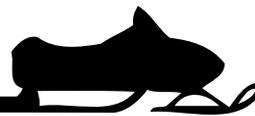


Table of Contents

1.0	Introduction	4	6.0	Examples of Sign Use.....	11
2.0	Purpose of this Document.....	4	6.1	Road Crossing.....	12
3.0	Trail Signing Requirements	4	6.2	Bridge	13
4.0	Trail Sign Placement.....	5	6.3	Trail Intersection	14
4.1	Sign Orientation.....	5	6.4	Bump	15
4.2	Posting Distances.....	5	6.5	Curve	16
4.3	Mounting Considerations.....	7	6.6	Tight Turn.....	17
5.0	Standard Trail Sign List.....	8	7.0	Corridor Setting	18
5.1	Regulatory Signs	8	8.0	Acknowledgments	19
5.2	Caution Signs	9			
5.3	Trail Markers.....	11			

1.0 Introduction

Snowmobilers travel beyond their local trail systems much more frequently now than ever before. When travelling on unfamiliar trails, a riders' enjoyment and safety are greatly enhanced by uniform trail markings, detailed information signage, and careful identification of potential hazards. Few experiences in snowmobiling rival for unpleasantness the feeling of being lost, hungry and low on fuel, somewhere along a poorly signed trail system.

While there are many good reasons why grooming or trail routing in a particular area is less than optimum, there are very few acceptable excuses for the absence of basic signing. Every trail operator must accept trail signing as their first priority. The trail administrator, land owner, rider, local club, and organized snowmobiling in general all benefit from good basic signing practices.

The purposes of snowmobile trail signs are to:

- a) regulate the flow of traffic along the trails,
- b) inform riders of trail characteristics and,
- c) provide information necessary to the enjoyment of the trail riding experience.

Uniform snowmobile trail signing will:

- a) enhance the safety and security of persons, vehicles, and property,
- b) improve travel within and between districts, and
- c) professionalize and promote recreational snowmobiling.

Many jurisdictions have developed and implemented excellent comprehensive signing programs. In other areas, local traffic conditions or limited resources make elaborate signing systems inappropriate or impossible. Regardless of local circumstance, every trail must be signed to a minimum level which exhibits a fundamental concern for the safety of those using it.

2.0 Purpose of this Document

This document provides guidelines for the effective placement of signs on recreational snowmobile trails. It should be seen as a process to improve snowmobile trail development in a safe and cost effective manner as opposed to a rigid policy statement. It is anticipated that as a result of ongoing communication and development, these guidelines will continue to evolve through time.

The International Association of Snowmobile Administrators (IASA) recognizes that the suggested guidelines contained in this document may not be the best recommendation, or indeed even practical in certain specific situations. This being the case, IASA would recommend that this document be considered general guidelines for the development of your trail signing program. This sign placement guideline should be used as a supplement to the Guidelines for Snowmobile Trail Signing adopted by the IASA in 1988.

3.0 Trail Signing Requirements

The International Association of Snowmobile Administrators has developed this manual to provide the minimum guidelines for regulatory, caution signs, and trail markers. These guidelines should be applied to all officially designated snowmobile trails. Each state and province should develop guidelines for their own information and guide signs. Their placement should follow the guidelines described in Section 4.

4.0 Trail Sign Placement

This section provides basic information on how snowmobile trail signs are to be oriented and installed.

4.1 Sign Orientation

The most critical part of sign mounting is understanding how reflective signs work. One good analogy is to think of reflective signs as mirrors. To maximize the nighttime view of the sign it must be placed *at eye level, perpendicular to the direction of travel of the trail*. This orientation also ensures that the sign is visible over the longest possible period so that the rider has a chance to understand the message and to react accordingly. This important concept is illustrated by Figures 1 and 2.

Figure 3 defines an imaginary “window” for sign locations. Signs should be oriented perpendicular to trail within a 5 ft x 5 ft area which starts 3 ft from the trails edge and 2 ft above the trail. Signs mounted outside the window will not perform as well.

4.2 Posting Distances

One of the most frequently asked questions in posting signs is how far in advance of the trail condition should the sign be placed. Table 1 below offers some guidance on what the appropriate sign posting distances should be. These recommendations have been developed through a variety of snowmobile and traffic publications, including the Manual on Uniform Traffic Control Devices and field observations. The minimum sign posting distances recommended below pertain only to caution signs.

The sign posting table looks at two situations. The first is a situation where a caution sign is posted so that a snowmobile can come to a complete stop before the trail condition. The most common examples of this situation would be a “Stop Ahead,” “Bridge Ahead” and “Intersection Ahead.” The second signing situation is one where a caution sign is posted so that a snowmobiler might have to reduce speed, but not necessarily come to a complete stop. Examples of this situation might be “Logging Ahead,” “Left Curve,” “Steep Hill,” or “Dip.”

A key factor in using Table 1 is the judgment of the signing crew on what the speed of the majority of snowmobilers in that situation would be and what reduction in speed, if any, would be necessary for the snowmobiler to comfortably and safely negotiate the trail condition.

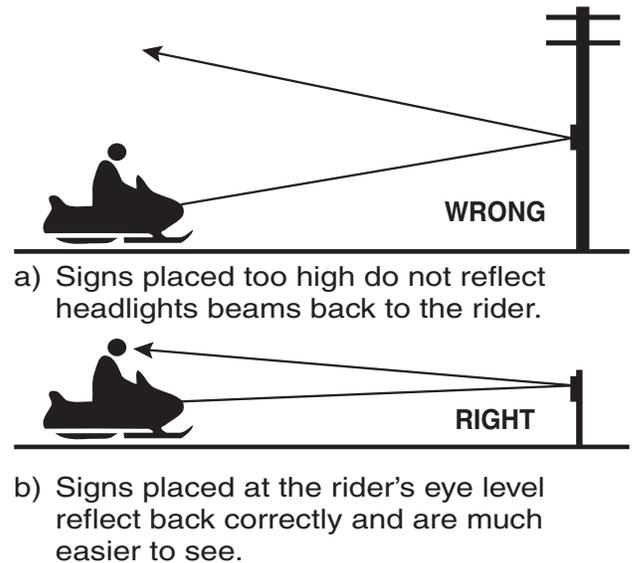


Figure 1 Sign orientation, side view

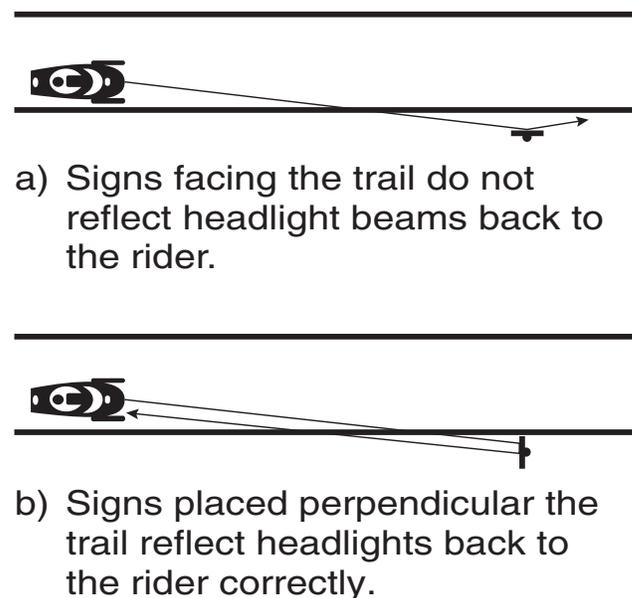


Figure 2 Sign orientation, plan view

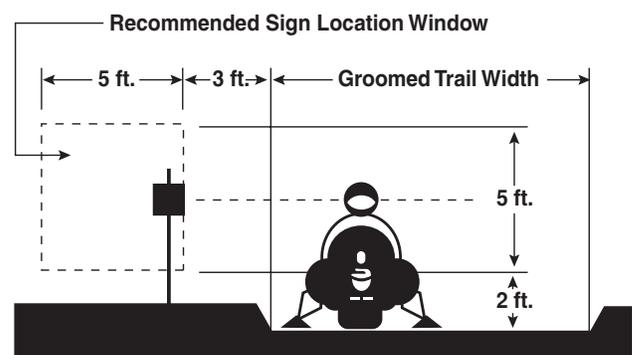


Figure 3 Recommended Sign Location Window

Table 1: Caution Sign Placement

Suggested Minimum Posting Distances for Snowmobile Caution Signs					
Judged Speed (mph)	Condition Requiring Stop "X" =	Deceleration Distance to Desired Speed (mph) "Y" =			
		10	20	30	40
20	*	**			
25	*	100	**		
30	175	150	100		
35	225	200	175	**	
40	300	275	250	175	
45	350	350	300	250	**
50	425	400	400	325	225
55	500	500	475	400	300

- * No suggested minimum distance recommended. At these speeds, sign location depends on physical conditions at the site.
- ** No suggested minimum distance. At these 5 mile per hour reductions in speed, location depends on the physical conditions at the site.

Examples showing the use of Table 1 above can be found on pages 12 through 17.

Regulatory signs shall be placed to the side of the trail in accordance with the section 4.1. Unlike caution signs, regulatory signs are located where the desired action is to take place.

4.3 Mounting Considerations

The methods used to mount trail signs vary greatly depending on the intended permanence of the installation. The following points provide guidance in selecting an appropriate mounting method to suit your circumstance.

- Generally, signs should be placed to the right of the trail to conform with the riders familiarity with highway signs.
- The sightline from the driver to the sign must be clear for the entire distance though which the sign is intended to be viewed. This requires routine monitoring.
- On private property, signs should be placed as late in the fall as possible and removed promptly at the end of the season. This reduces vandalism, reduces potential trespass, and conserves sign life by reducing exposure to the sun and elements.
- Mounting signs on living trees is not recommended. If it is the only alternative, use aluminum nails. Ensure that all nails are removed when the signs are removed.
- On posts, use bolts or screws instead of nails to reduce vandalism and theft. A cordless drill with spare battery packs is an ideal tool to drive screws providing the sign holes are predrilled.
- Use an existing mounting object, such as a fence post, only if it is within the recommended sign location window and the permission of the landowner has been obtained.
- Use durable materials for permanent installations, i.e. flexible plastic, fiberglass, steel, or wooden post.
- If more than one sign is used at the same location, they should be placed vertically with the most important sign on top.
- It must be remembered that the trail will be used in both directions. Separate and often different signing is required for each direction of travel.
- Signing should be done by persons who are familiar with the trail and who know where they are and where they are going. When putting up signs, imagine that you have never been in this area or on this trail before. Try to picture what signs would be necessary to get you safely to your destination.
- Have your signage reviewed by someone less familiar with the area to identify locations that need improvement.
- Overuse of signs should be avoided. Only authorized trail signs should be allowed to avoid clutter and confusion. Signage posted by business should be carefully controlled by the trail operator.
- Extra regulatory and caution signs should be carried on grooming equipment and by trail patrollers to replace those which have been vandalized.
- Maintaining visibility of signs in areas of heavy snowfall accumulations poses additional challenges in terms of sign mounting techniques and materials. These signing situations will require periodic inspections and adjustment of sign poles or stakes throughout the winter to keep signs from being obliterated by snowfall.

5.0 Standard Trail Sign List

The key to establishing a uniform signing system is the development of a list of standard signs based on the IASA Guidelines for Snowmobile Trail Signing. The regulatory and caution signs listed in this section are the minimum recommended by the IASA. Each individual state or province is encouraged to add to this list supplementary signs that they feel are appropriate when developing their own trail sign list.

- 5.1 Regulatory Signs..... (page 8)
- 5.2 Caution Signs..... (page 9)
- 5.3 Trail Markers..... (page 11)

5.1 Regulatory Signs

Typical Design	Name And Use	Usual Characteristics
	Stop Instruct riders to bring their snowmobile to a complete stop before proceeding with caution.	12 in x 12 in octagon Red background with white lettering.
	Yield Instructs riders to yield the right of way to vehicles traveling on the other trail	12 in x 12 in triangle Red/white background with red lettering
	Snowmobiling Allowed Identifies areas where snowmobiling is allowed.	12 in x 12 in square White background, black graphic with green circle.
	No Snowmobiling Identifies areas where snowmobiling is not allowed	12 in x 12 in square White background, black graphic with red circle and slash.
	Stay On Trail Reminds riders of the importance of staying on the designated trail.	Square or rectangle White background, black lettering

The following are examples of additional regulatory signs for consideration

	Speed Limit Reminds riders not to exceed the speed limit indicated.	8 in x 12 in rectangle White background, black lettering
---	---	---



One Way

Identifies sections on the trail where snowmobiles may travel in one direction only.

8 in x 12 in rectangle
Black arrow on white background with black lettering



Do Not Enter

Instructs riders not to enter a particular road or trail. Typically used in conjunction with one way trails.

8 in x 12 in rectangle
White background, red circle with black lettering



Snowmobile Trail No Wheeled Vehicles

Informs drivers of wheeled vehicles that they are not permitted on this trail.

8 in x 12 in rectangle
White background, black lettering



Other Regulatory Signs

Other regulatory signs may be needed as necessary

8 in x 12 in rectangle.
White background, black lettering

5.2 Caution Signs

Typical Design	Name And Use	Usual Characteristics
	Stop Ahead Informs riders that they are approaching a stop sign.	12 in x 12 in diamond Yellow background, red octagon, black arrow.
	Caution Use this sign to warn of a hazard when no specific sign is available for that hazard. The specific hazard should be printed on the space provided on the sign.	12 in x 12 in diamond Yellow background, black lettering
	Slow Instructs riders to temporarily slow their vehicle.	12 in. x 12 in diamond Yellow background, black lettering
	Hazard Marker Identifies a fixed object at the side of the trail. Used any time the fixed object narrows the normal width of the trail such as bridge railings. The stripes slope down towards the trail.	12 in x 12 in square Yellow and black stripes
	Right or Left Turn Informs the rider that the trail ahead makes significant changes in direction.	12 in x 12 in diamond Yellow background, black arrow.

The following are examples of additional caution signs for consideration.



Gate Ahead

Informs riders that they are approaching a gate across the trail.

12 in x 12 in diamond
Yellow background,
black lettering.



Junction Ahead

Informs riders that they are approaching a trail intersection

12 in x 12 in diamond
Yellow background,
black lettering.



Bridge Ahead

Informs riders that they are approaching a bridge which is narrower than the trail.

12 in x 12 in diamond
Yellow background,
black graphic and black
lettering.



Winding Trail

Informs riders that they are approaching a series of curves.

12 in x 12 in diamond
Yellow background,
black arrow.



Bump

Informs riders that they are approaching a spot that is abruptly higher or lower than the trail on both sides.

12 in x 12 in diamond
Yellow background,
black graphic and black
lettering.



Chevron

Provides additional guidance to the rider in a sharp turn.

12 in x 12 in square
Yellow background,
black graphic



Steep Hill

Informs the rider that they are approaching a section of trail with an exceptionally steep grade.

12 in x 12 in diamond
Yellow background,
black graphic and black
lettering.



Ice

Informs the rider that they are approaching a section of trail that may be ice covered and slippery. Proceed with caution.

12 in x 12 in diamond
Yellow background,
black graphic and black
lettering.



Ice Crossing

Informs the rider that they are approaching a section of trail which crosses a frozen body of water.

12 in x 12 in diamond
Yellow background,
black graphic and black
lettering.



Caution Grooming At Any Hour

Informs the rider that trail grooming may be done at any hour of the day.

12 in x 12 in diamond
Yellow background,
black graphic and black
lettering.



Caution Logging Operations

Informs the rider that logging operations are taking place in the area and trucks may be on or crossing the trail.

12 in x 12 in diamond
Yellow background, black graphic and black lettering.

**Skiers On Trail**

Informs the rider that other recreationists are frequently encountered on this section of trail

12 in x 12 in diamond
Yellow background, black graphic and black lettering.

**Right Hairpin Curve**

Informs the rider that they are approaching a sharp right turn of or close to 180 degrees.

12 in x 12 in diamond
Yellow background, black arrow.

**Left Hairpin Curve**

Informs the rider that they are approaching a sharp left turn of or close to 180 degrees.

12 in x 12 in diamond
Yellow background, black arrow.

5.3 Trial Markers

**Reassurance Blazer**

Informs the rider that they are on a designated snowmobile trail.

5 in x 7 in uneven diamond. Orange with reflective border.

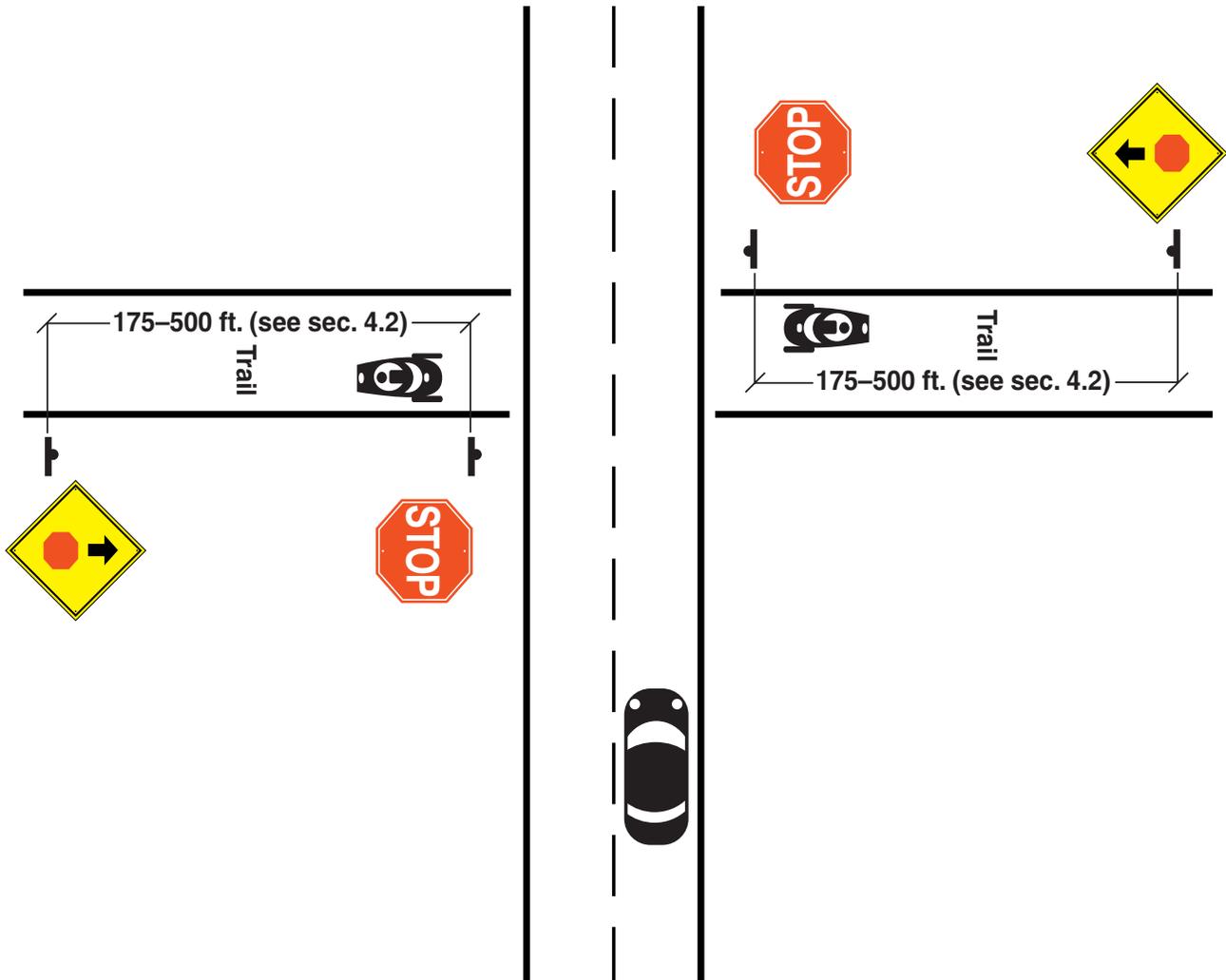
6.0 Examples Of Sign Use

The following six illustrations are intended to give signing crews an example of a few of the basic situations they will encounter on most trails. Only a few of the signs contained in section 5.0 are shown in these illustrated examples.

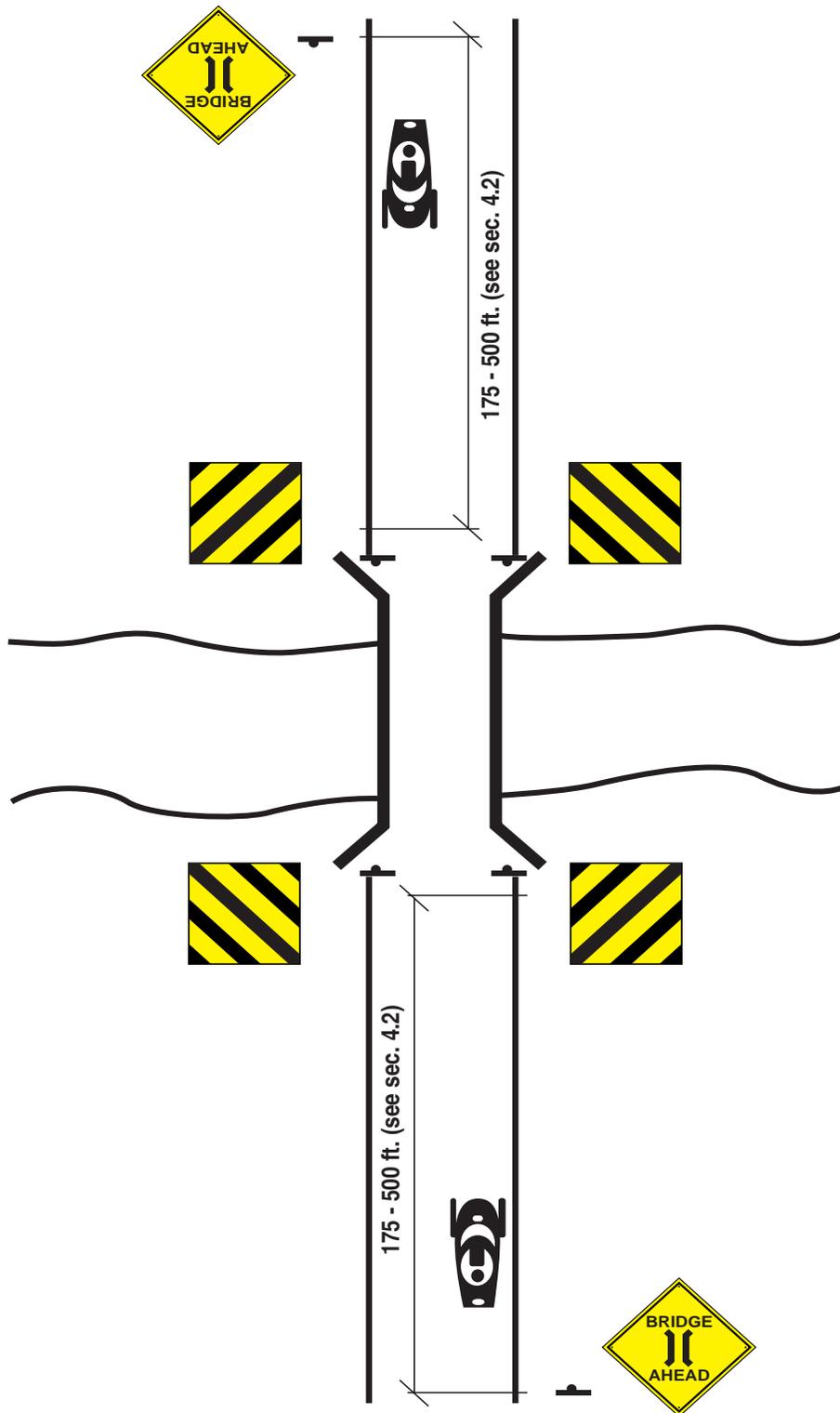
These illustrations serve as simplistic guidelines for use on snowmobile trails. It is understood that unusual situations may be encountered relating to trail conditions, topography, man made objects, or other circumstances that will require some modifications to typical sign placement. The most suitable placement of each sign must be determined at the site where all variables are visible. It would be prudent to document the case where sign placement is outside the range indicated in this manual and prepare written justification for your files.

- 6.1 Road Crossing (page 12)
- 6.2 Bridge..... (page 13)
- 6.3 Trail Intersection (page 14)
- 6.4 Bump..... (page 15)
- 6.5 Curve..... (page 16)
- 6.6 Tight Turn (page 17)

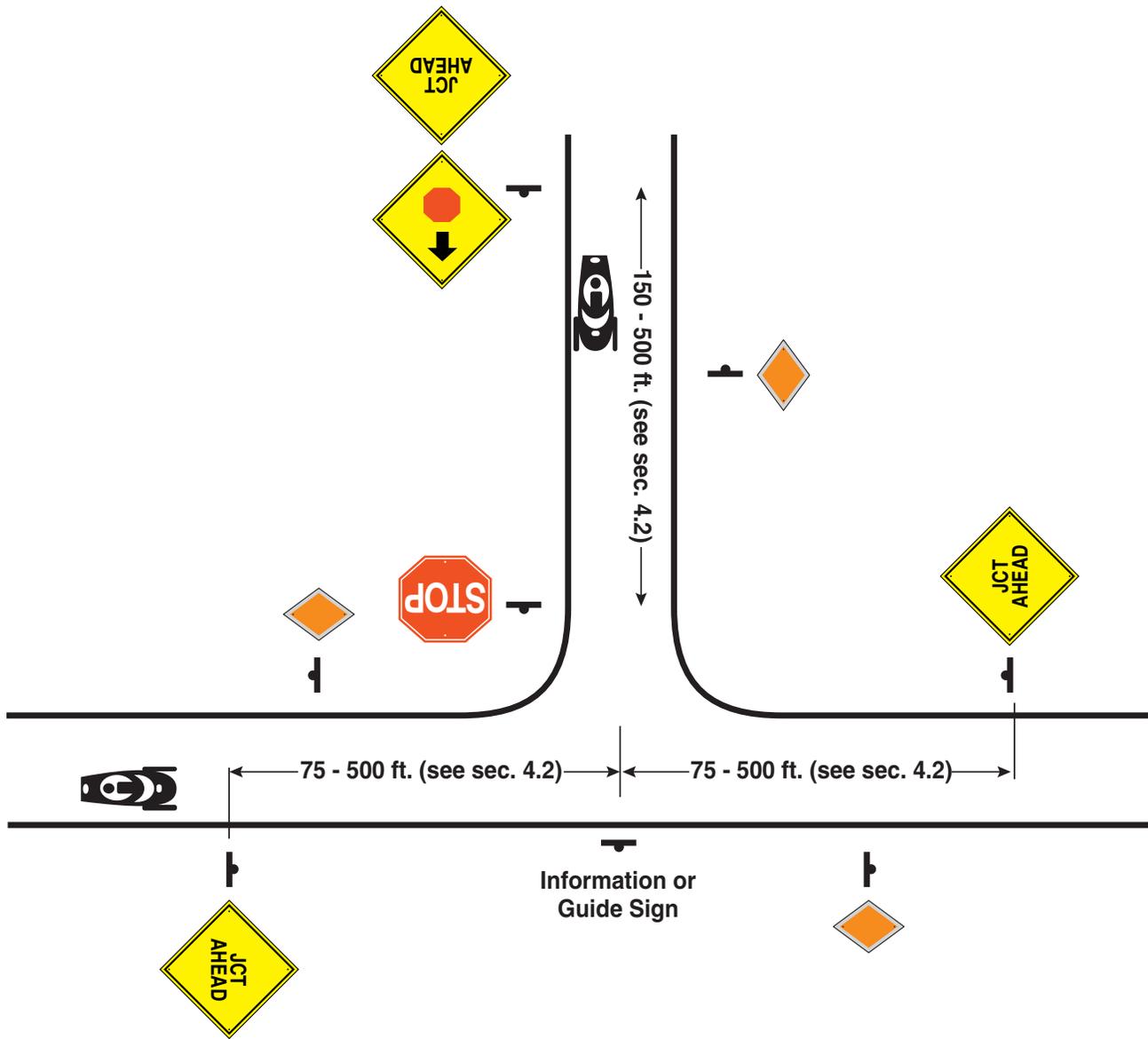
6.1 Road Crossing



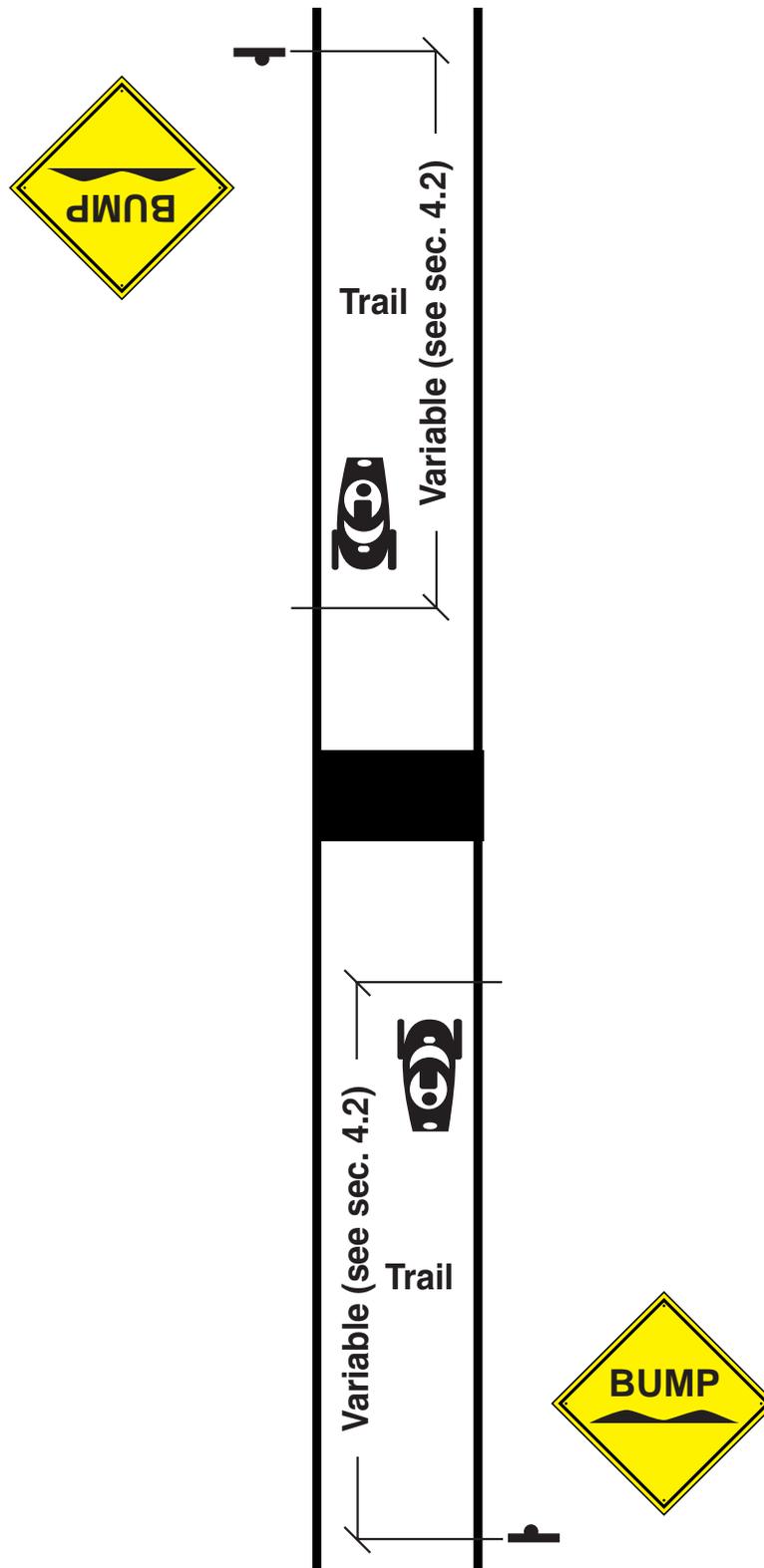
6.2 Bridge



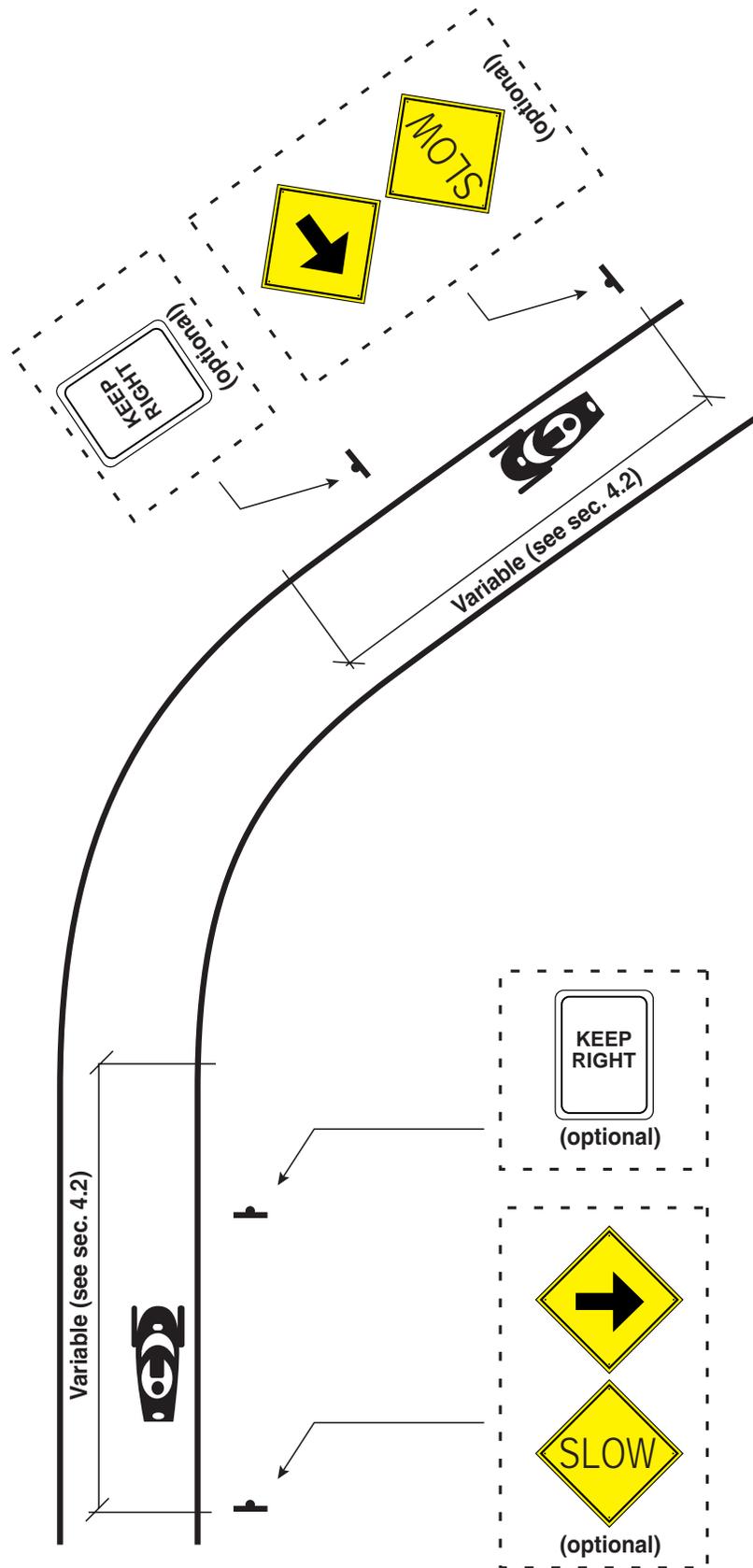
6.3 Trail Intersection



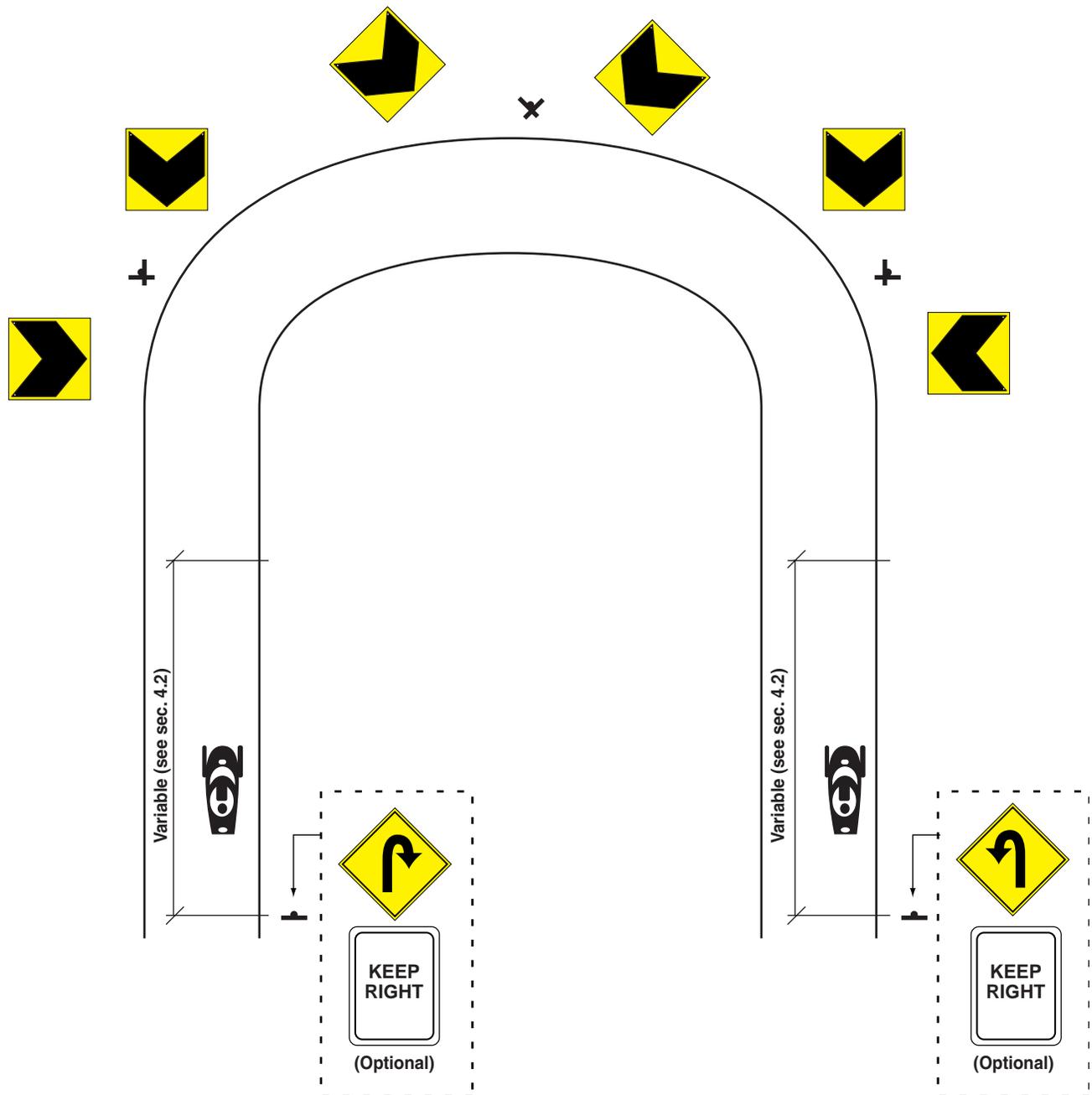
6.4 Bump



6.5 Curve



6.6 Tight Turn



7.0 Corridor Setting

In forested areas, following the trail may be a fairly obvious and straightforward task. However, when trails cross fields, lakes, meadows or other cleared areas, trail routing may not be at all obvious. Relying on the groomed track for trail routing is not adequate since even a well-established trail can be quickly obscured by a heavy snow fall.

Both snowmobilers and groomer operators need continuous reference points to navigate the trail confidently. A simple method of identifying the trail corridor in open areas is to use stakes or poles that are mounted into the ground or snow adjacent to the trail.

7.1 Stakes/Poles

In areas where snow depths are low to moderate, a typical stake is a 2" x 2" (minimum) piece of inexpensive lumber sharpened at one end to allow for mounting in the ground. A minimum of 12" at the top of the stake is painted a color that offers high contrast to the background, e.g. blaze or fluorescent orange. This will make the stake more visible during the flat light conditions that can occur during daylight hours.

At least 3 square inches of reflective material should be attached on both sides of the stake at a point 4 inches down from the top of the stake. This will make the stake more visible at night from both directions of travel. The length of the stake is selected so that when it is driven into place, a minimum of 40" of stake remains visible above the top of the snow with the reflective material being as close to eye level as possible. Stake lengths in these snow conditions are typically 4, 5 or 6 feet.

Figure 4 shows a recommended configuration an inexpensive wooden stake.

Stakes are driven into the snow or ground within the sign location window previously defined in figure 3. A commercial post driver is a simple and inexpensive tool that makes this task much easier.

In areas where snow depths are moderate to heavy (6'-12'+) it may not be practical to use stakes that are driven into the ground. Large seasonal snow depths may dictate the use of plastic fence posts, PVC tubing or similar commercially manufactured synthetic products that are mounted in the snowpack adjacent to the trail. The characteristics of contrasting color and reflectorization mentioned in the previous paragraphs apply. The major differences are the typical lengths of the material, 6'-12', and the necessity for inspection and occasional readjustment to reflect changes in snow depth.

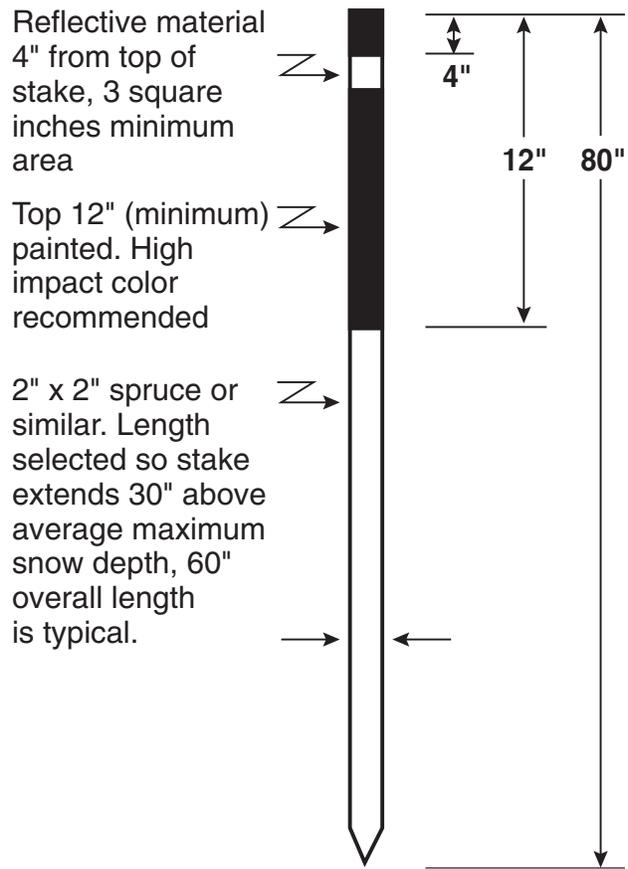
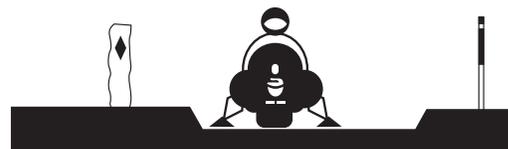
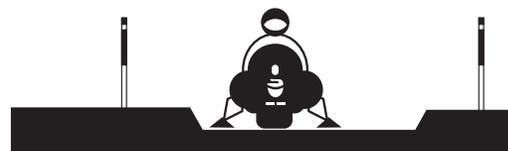


Figure 4 Typical Stake



- a) Single Stake used to augment an existing fixed objects such as a fence post. Note the use of a blazer to provide a second reference point.



- b) Standard two stake configuration leaves no doubt as to the intended trail routing.

Figure 5 Examples of Staking

7.2 Setting the Corridor

There are two generally accepted methods of establishing a corridor: (a) placing stakes or poles in pairs at right angles to the trail to set a “gate” through which a snowmobiler passes through or (b) setting a single line of single stakes or poles with periodic pairs of stakes or poles to reinforce which side of the stake or pole line is intended for the flow of traffic.

In either case, the next stake/pole or stake/pole pair must be easily visible after passing by a stake/pole or stake/pole pair. This spacing will vary on the nature of the terrain being marked. The frequency of stake/pole sets should be increased significantly to indicate a turn, although if the turn is sharp, the signing requirements for curves discussed earlier should be used. Figure 5 illustrates these concepts.

8.0 Acknowledgments

This document consists of materials previously developed by the International Association of Snowmobile Administrators (IASA) and its various working committees as well as materials developed by a number of snowmobile trail operating organizations. We thank all of these individuals and groups for their contributions.

In particular, we wish to thank the Ontario Federation of Snowmobile Clubs (OFSC) for generously sharing materials and expertise in the preparation of this document. We would also like to acknowledge the efforts of the Northeast Chapter of the IASA for their efforts at reviewing and refining drafts of this material.

Color graphics and layout provided by
Wisconsin Department of Natural Resources

