

Alaska Division of Parks &
Outdoor Recreation

Guidelines for Snowmobile Trail Signing and Placement

2003

SnoTRAG

SNOWMOBILE TRAILS
ADVISORY COMMITTEE



Guidelines for Snowmobile Trail Signing and Placement

11/2002

TABLE OF CONTENTS

1.0 INTRODUCTION	
2.0 PURPOSE OF THIS DOCUMENT	
3.0 TRAIL SIGNING REQUIREMENTS	.2
4.0 TRAIL SIGN PLACEMENT2
4.1 Sign Orientation2
4.2 Posting Distances3
4.3 Mounting Considerations	.4-5
5.0 STANDARD TRAIL SIGN LIST	6
5.1 Regulatory Signs	7
5.2 Warning Signs	8-9
5.3 Trail Markers	9
5.4 Informational Signs	10
6.0 EXAMPLES OF SIGN USE	6
6.1 Road Crossing11
6.2 Bridge12
6.3 Trail Intersection13
6.4 Bump, Dip, Grade14
6.5 Curve15
6.6 Tight Turn16
7.0 STAKING	17
7.1 Stake Construction	17
7.2 Stake Installation	17-18
8.0 ACKNOWLEDGEMENTS	



Alaska State Parks
550 W. 7th Ave., Suite 1380
Anchorage, Alaska 99501
Attn. Snowmobile Trails Grant Program
1 (907) 269-8699

Guidelines for Snowmobile Trail Signing and Placement

1.0 INTRODUCTION

The Snowmobile Trails Advisory Committee (SnoTRAC) was created in 1999 by the Alaska State Parks Director to evaluate and rank Snowmobile Trail Grant Applications. SnoTRAC also works on policies and programs to benefit Alaska's snowmobilers. Guidelines for Snowmobile Trail Signing and Placement was adopted by SnoTRAC in December 2000 as the standard for signs and signage for the Snowmobile Trails Grant Program.

Snowmobilers travel beyond their local trail systems much more frequently now than ever before. When traveling on unfamiliar trails, a rider's enjoyment and safety are greatly enhanced by uniform trail route 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.

Grooming and trail routing is an important component of a good trail system, however basic signing should be a top priority for all trails. Every club must accept trail signing as their first priority. The trail administrator, landowner, rider, local club and organized snowmobiling in general all benefit from good basic signing practices.

The purpose of snowmobile trail signs is to:

- a) guide and regulate the flow of traffic along the trails,
- b) warn riders of trail characteristics and potential hazards and
- c) provide information necessary to the enjoyment of the recreation.

Uniform snowmobile trail signing will:

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

Many clubs have developed and implemented excellent signing programs. In other areas, local traffic conditions or limited resources make elaborate signing systems inappropriate or impossible. Regardless of local circumstances, 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 Alaska 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, that these guidelines will continue to evolve through time.

Guidelines for Snowmobile Trail Signing and Placement

3.0 TRAIL SIGNING REQUIREMENTS

This manual has been developed to provide the minimum guidelines for regulatory, warning signs and trail markers. These guidelines should be applied to all designated snowmobile trails that are open to the public. Their placement should follow the guidelines described in Section 4.

4.0 TRAIL SIGN PLACEMENT

What sign to use where is dealt with in the next section. This section provides basic information on how 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.

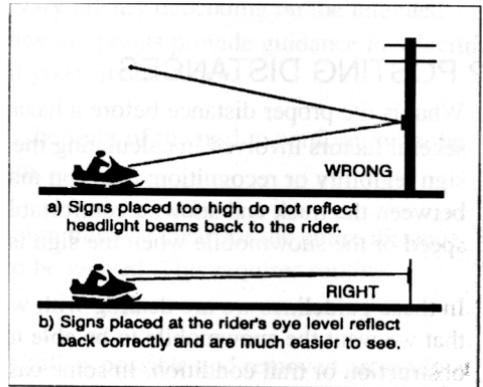


Figure 1 - Sign Orientation, Side View

Figure 3 defines an imaginary “window” for sign locations. Signs should be oriented perpendicular to trail within a 5.0 ft x 5.0 ft area which starts 3.0 ft from the trail’s edge and 2.0 ft above the trail. Signs mounted outside the window will not perform as well.

Guidelines for Snowmobile Trail Signing and Placement

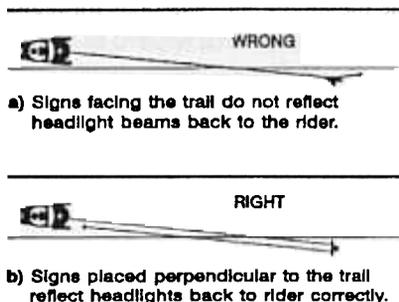


Figure 2 - Sign Orientation, Plan View

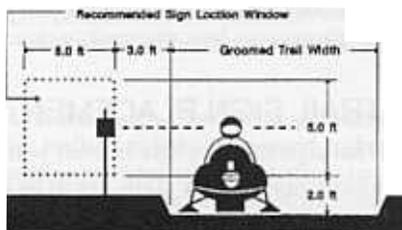


Figure 3 - Recommended Sign Location Window

4.2 POSTING DISTANCES

What is the proper distance before a hazard to place a warning sign? There are several factors involved in calculating the minimum posting distance including: sign legibility or recognition; decision making time; the coefficient of friction between the track and snow; a comfortable breaking distance; and the initial speed of the snowmobile when the sign is seen by the operator.

In these guidelines we are dealing with warning and regulatory signs with the idea that we want the snowmobile to be able to come to a complete stop before the obstruction or trail condition. In some case a complete stop is not necessary, but we suggest posting distance should be sufficient for a complete stop in the event that it is necessary.

The factor with the greatest effect on the calculations for posting distances is speed of the vehicle when the operator sees the sign. For this reason, the following sign placement distance table is based on speed in miles per hour. It becomes the sign crew's responsibility to estimate the common appropriate speeds on the portion of the trail where the signs are being installed. The intent of the table is to give a recommended minimum distance and an acceptable range rather than a specified distance.

Guidelines for Snowmobile Trail Signing and Placement

Sign Placement Table

Average Anticipated Speed on the Trail	Recommended Minimum Distance from Sign to Hazard or Stop
25 mph	150 feet
35 mph	250 feet
45 mph	350 feet
55 mph	500 feet

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 through which the sign is intended to be viewed. This requires routine monitoring.
- ✱ 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.

Guidelines for Snowmobile Trail Signing and Placement

- ✿ 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 owner has been obtained.
- ✿ Use durable materials for permanent installations, ie. flexible plastic, fiberglass, steel, or pressure treated lumber.
- ✿ 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 is often 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 businesses should be carefully controlled by the trail operator.
- ✿ Extra regulatory and warning signs should be carried on grooming equipment and by patrollers to replace those which have been lost or damaged.

Guidelines for Snowmobile Trail Signing and Placement

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 International Association of Snowmobile Administrators (IASA) Guidelines for Snowmobile Trail Signing. The regulatory and warning signs listed in this section are the minimum recommended.

5.1 REGULATORY SIGNS

5.2 WARNING SIGNS

5.3 TRAIL MARKERS

5.4 INFORMATIONAL SIGNS

6.0 EXAMPLES OF SIGN USE

The following six pictograms are intended to give signing crews an example of a few of the basic situations that they will encounter on most trails. Only a few of the signs contained in section 5.0 are shown in these pictogram examples. It is very possible that future updates of this manual may contain examples showing the placement of additional signs, but the distance will still correspond to the table in section 4.2.

These pictograms serve as simplistic guidelines for use on snowmobile trail. 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

6.2 BRIDGE

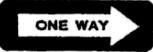
6.3 TRAIL INTERSECTION

6.4 BUMP, DIP, GRADE

6.5 CURVE

6.6 TIGHT TURN

5.1 REGULATORY SIGNS

DESIGN	NAME AND USE	PHYS. CHARACTERISTICS
	STOP Instructs riders to bring their snowmobile to a complete stop before proceeding with caution.	12in x 12in octagon Red background with white lettering.
	SNOWMOBILING ALLOWED Identifies areas where snowmobiling is allowed.	12in x 12in square White background, black graphic w/green circle.
	NO SNOWMOBILING Identifies areas where snowmobiling is not allowed.	12in x 12in square White background, black graphic w/red circle & slash.
	DO NOT ENTER Instructs riders not to enter a particular road or trail.	12in x 12in square White background, red circle with white lettering.
	SPEED LIMIT Instructs riders not to exceed the speed indicated in miles per hour.	8in x 12in rectangle White background, black lettering.
	ONE WAY Identifies sections on the trail where snowmobiles may travel in one direction only.	8in x 24in rectangle White arrow on black background with black lettering.
	KEEP RIGHT Reminds riders to stay on the right side of the trail.	12in x 12in square White background, black lettering.
	STAY ON TRAIL Reminds riders of the importance of staying on the designated trail.	12in x 12in square White background, black lettering.
	TRAIL CLOSED Informs riders that the trail ahead is closed.	12in x 12in square White background, black lettering.
	SNOWMOBILE TRAIL NO WHEELED VEHICLES Informs drivers of wheeled vehicles that they are not permitted on this trail.	8in x 24in rectangle White background, black lettering.

5.1 WARNING SIGNS

DESIGN	NAME AND USE	PHYS. CHARACTERISTICS
	STOP AHEAD Informs riders that they are approaching a Stop sign.	12in x 12in diamond Yellow background, red octagon, black arrow.
	CAUTION Informs riders that they are approaching an area where a potential hazard may exist.	12in x 12in diamond Yellow background, black lettering & reflective stripes.
	SLOW Instructs riders to temporarily slow their vehicle.	12in x 12in diamond Yellow background, black lettering & reflective stripes.
	RIGHT OR LEFT TURN Informs riders that the trail ahead makes a significant change in direction.	12in x 12in diamond Yellow background, black arrow.
	GATE AHEAD Informs riders that they are approaching a gate across the trail.	12in x 12in diamond Yellow background, black lettering.
	JUNCTION AHEAD Informs riders that they are approaching a trail intersection.	12in x 12in diamond Yellow background, black lettering.
	BRIDGE AHEAD Informs riders that they are approaching a bridge which is narrower than the trail.	12in x 12in diamond Yellow background, black graphic & black lettering.
	WINDING TRAIL Informs riders that they are approaching a series of curves.	12in x 12in diamond Yellow background, black arrow.
	BUMP Informs riders that they are approaching a spot that is abruptly higher than the trail surface on both sides.	12in x 12in diamond Yellow background, black graphic & black lettering.
	DIP Informs riders that they are approaching a spot that is abruptly lower than the trail surface on both sides.	12in x 12in diamond Yellow background, black graphic & black lettering.
	STEEP HILL Informs riders that they are approaching a section of trail with an exceptionally steep grade.	12in x 12in diamond Yellow background, black graphic & black lettering.
	BLIND HILL Informs riders that they are approaching a section of trail with reduced sight view in both directions.	12in x 12in diamond Yellow background, black graphic & black lettering.

5.1 WARNING SIGNS (continued)

DESIGN	NAME AND USE	PHYS. CHARACTERISTICS
	ICE Informs riders that they are approaching a section of trail that may be ice covered and slippery, proceed with caution.	12in x 12in diamond Yellow background, black graphic & black lettering.
	ICE CROSSING Informs riders that they are approaching a section of trail which crosses a frozen body of water.	12in x 12in diamond Yellow background, black graphic & black lettering.
	CAUTION GROOMING AT ANY HOUR Informs riders that trail grooming may be done at any hour of the day.	12in x 12in diamond Yellow background, black graphic & black lettering.
	CAUTION LOGGING OPERATIONS Informs riders that logging operations are taking place in the area and trucks may be on or crossing the trail ahead.	12in x 12in diamond Yellow background, black graphic & black lettering.
	SHARED USE TRAIL Informs riders that other recreationists are frequently encountered on this section of trail.	12in x 12in diamond Yellow background, black graphic & black lettering.
	RIGHT HAIRPIN CURVE Informs riders that they are approaching a sharp right turn of or close to 180 degrees.	12in x 12in diamond Yellow background, black arrow.
	LEFT HAIRPIN CURVE Informs riders that they are approaching a sharp left turn of or close to 180 degrees.	12in x 12in diamond Yellow background, black arrow.
	HAZARD MARKER Identifies a fixed object hazard at the side of the trail. Used anytime the fixed object narrows the normal width of the trail such as bridge railings. The stripes slope down toward the trail.	6in x 12in rectangle Yellow background, black stripes.

5.3 TRAIL MARKERS

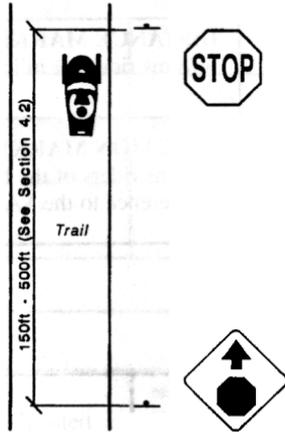
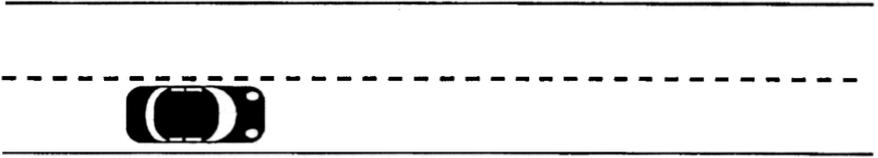
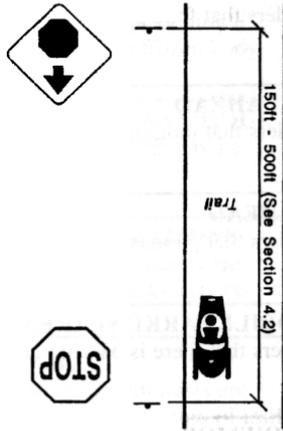
	REASSURING BLAZER Informs riders that they are on a designated snowmobile trail.	5in x 7in diamond Green or orange with reflective border and arrow in center.
---	--	--

5.4 INFORMATIONAL SIGNS

DESIGN	NAME AND USE	PHYS. CHARACTERISTICS
	FUEL AHEAD Informs riders that fuel is ahead.	6in x 6in square Blue background, white lettering.
	FOOD AHEAD Informs riders that food is ahead.	6in x 6in square Blue background, white lettering.
	LODGING AHEAD Informs riders that lodging is ahead.	6in x 6in square Blue background, white lettering.
	PHONE AHEAD Informs riders that phones are ahead.	6in x 6in square Blue background, white lettering.
	SNOWMOBILE PARKING AREA Informs riders that there is parking ahead.	6in x 6in square Blue background, white lettering.
	YOUR SNOWMOBILE REGISTRATION FEES AT WORK For Snowmobile Trails Grant Program grant recipients.	8in x 8in square Brown background, white lettering.
Town Name	CUSTOM LOCATOR SIGNS Informs riders of next town.	2in x 12in Green/Orange background, white lettering.
___ mi.	DISTANCE MARKER Informs riders of miles to next location.	3in x 6in Green/Orange background, white lettering.
LE-34	JUNCTION MARKER Informs riders of the location that they are at in reference to the VAST Trail Map.	3in x 6in Black background, white lettering.

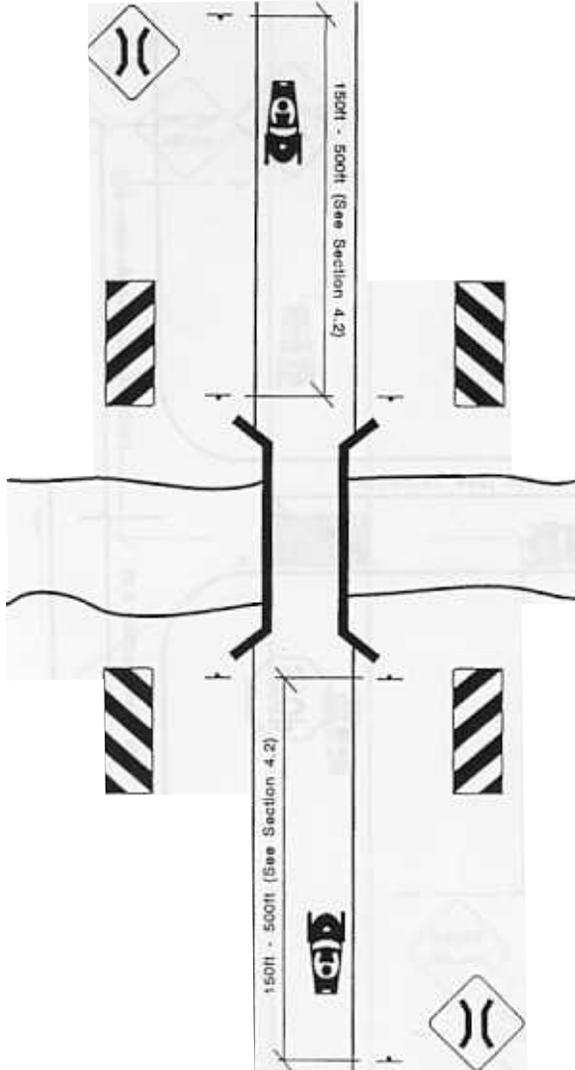
Guidelines for Snowmobile Trail Signing and Placement

6. - ROAD CROSSING



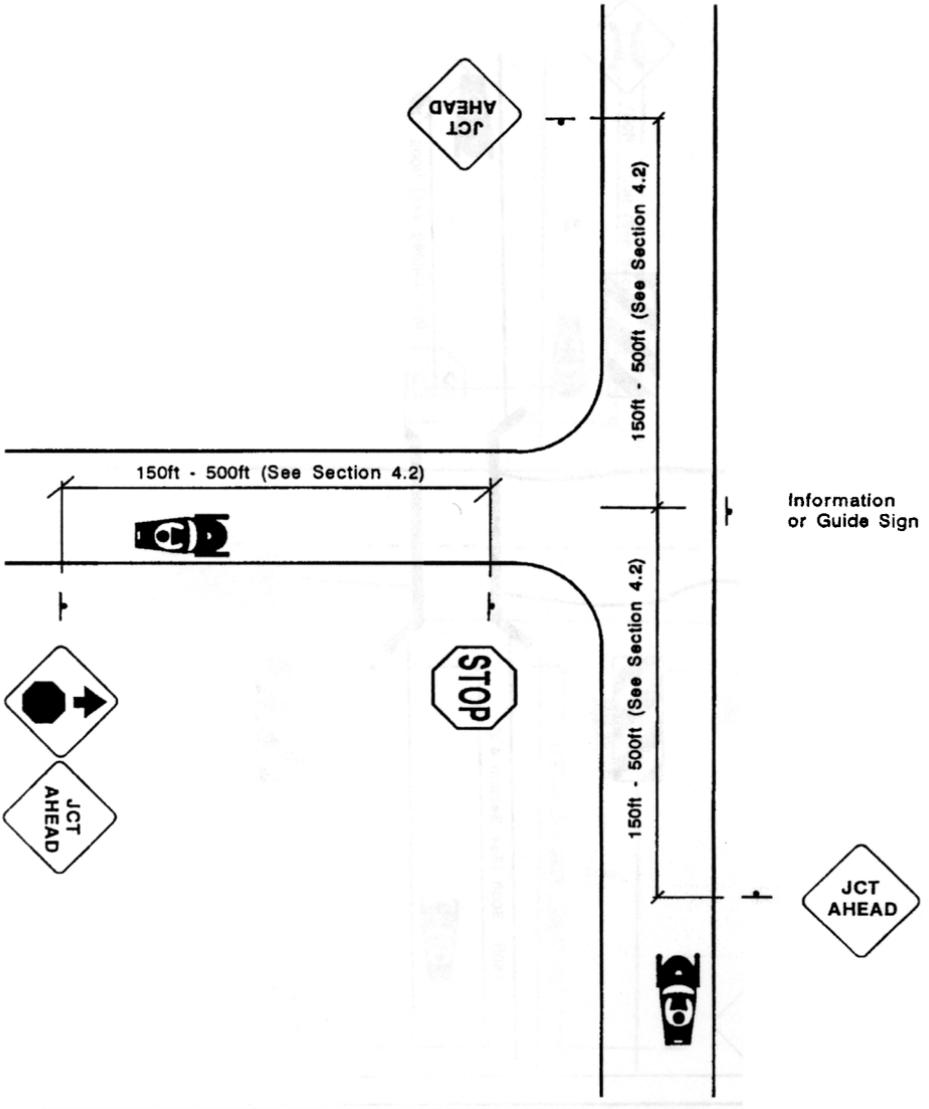
Guidelines for Snowmobile Trail Signing and Placement

6.2 - BRIDGE



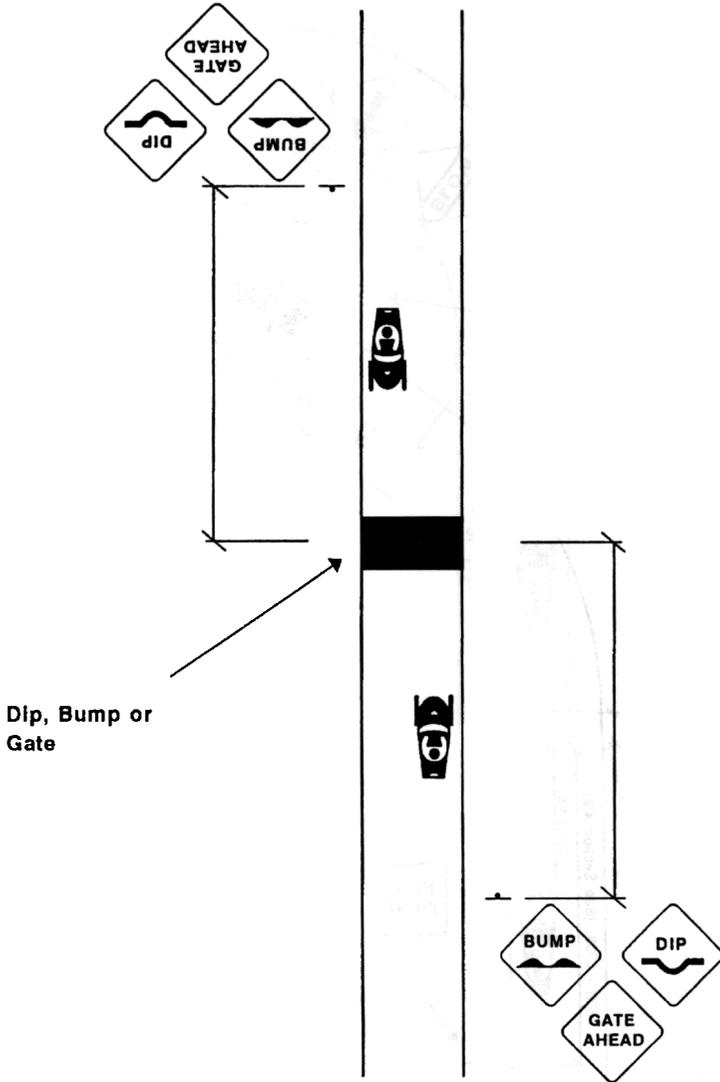
Guidelines for Snowmobile Trail Signing and Placement

6.3 - TRAIL INTERSECTION



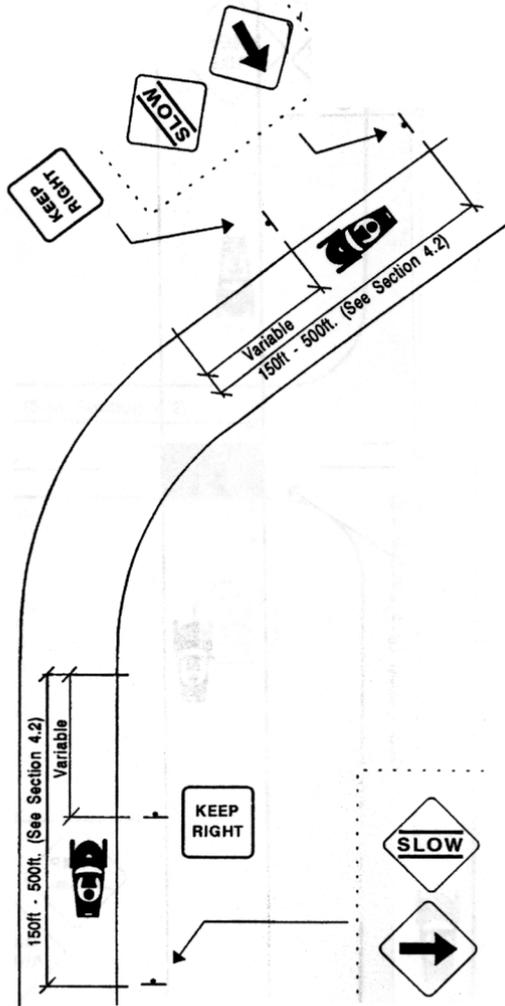
Guidelines for Snowmobile Trail Signing and Placement

6.4 - BUMP



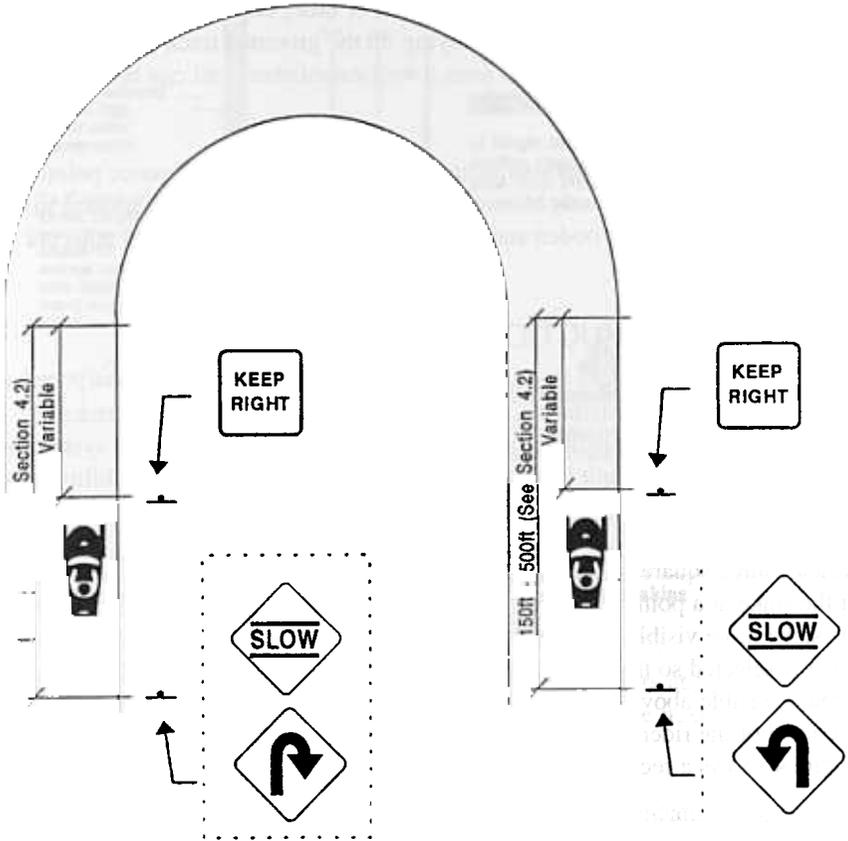
Guidelines for Snowmobile Trail Signing and Placement

6.5 - CURVE



Guidelines for Snowmobile Trail Signing and Placement

6.6 - TIGHT TURN



Guidelines for Snowmobile Trail Signing and Placement

7.0 STAKING

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

Both snowmobilers and groomer operators need continuous reference points to navigate the trail confidently. A simple method of identifying trail routing in open areas is to use special wooden stakes driven into the snow or ground adjacent to the trail.

7.1 STAKE CONSTRUCTION

A typical stake is a 2"x 2" (minimum) piece of inexpensive lumber sharpened at one end to facilitate installation. A minimum of 16" at the top of the stake is painted red although jurisdictions with color-based trail identification systems may choose other colors. High impact colors are preferred to improve visibility at a distance.

At least three square inches of reflective material should be attached on both sides of the stake at a point four 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 42" of stake remains visible above the top of the snow with the reflective being as close to the eye level of the riders as possible. Stake lengths of 5 ft and 6 ft are typical. Figure 4 shows a recommended configuration for a standard stake.

7.2 STAKE INSTALLATION

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.

Guidelines for Snowmobile Trail Signing and Placement

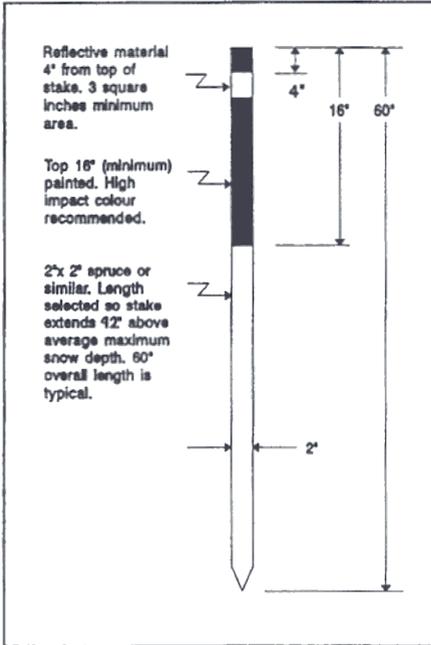


Figure 4 - Recommended Stake

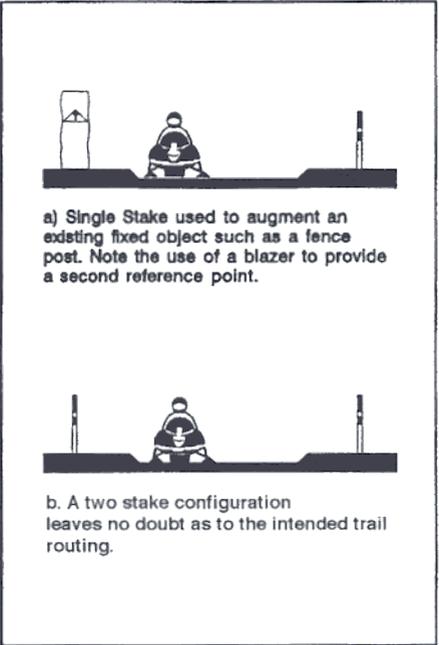


Figure 5 - Examples of Staking

Since they identify trail routing, stakes need to be driven in pairs at right angles to the trail so that riders know that they are to pass between them. The next pair should be easily visible immediately after passing through a stake pair.

The frequency of stakes should be increased significantly to indicate a turn although if the turn is sharp, the signing requirements for curves discussed earlier should be used instead of stakes. Figure 5 illustrates these concepts.

Guidelines for Snowmobile Trail Signing and Placement

8.0 ACKNOWLEDGEMENTS

This document consists of material developed by the Northeast Chapter of the IASA as well as material developed by a number of snowmobile trail operating organizations throughout the U.S. and Canada. We thank all of those individuals and groups for their contributions.

In particular, we wish to thank the Ontario Federation of Snowmobile Clubs and the Vermont Association of Snow Traveleers, Inc. for generously sharing material and expertise in the preparation of this document.

