

AVALANCHE ATLAS

UNITED STATES PROGRAM
ON MAN AND THE
BIOSPHERE

MAB
Unesco MAB Project 6

OURAY COUNTY, COLORADO

Betsy R. Armstrong
Richard L. Armstrong



Occasional Paper
No. 25, 1977

INSTITUTE OF ARCTIC AND ALPINE RESEARCH
UNIVERSITY OF COLORADO

AVALANCHE ATLAS
OURAY COUNTY, COLORADO

by

Betsy R. Armstrong and Richard L. Armstrong

INSTAAR Snow and Avalanche Project
Institute of Arctic and Alpine Research
University of Colorado
Silverton, Colorado 81433

June 1977

Prepared for the Ouray County Commissioners
and the Ouray County Planning Commission

A contribution to the United States
Unesco Man and the Biosphere (MAB) Program Project 6:
Study of the impact of human activities on mountain
and tundra ecosystems

University of Colorado
Institute of Arctic and Alpine Research

Occasional Paper 25

ISSN 0069-6145

INSTAAR/OP-25

Cover Photograph:

An aerial photograph of the town of Ouray and U.S. Highway 550 in the Uncompahgre Gorge.

Citation of this publication is Institute of Arctic and Alpine Research,
University of Colorado, Occasional Paper No. 25, 1977.

TABLE OF CONTENTS

PREFACE	v
INTRODUCTION	1
DEFINITION OF TERMS	7
LISTING OF AVALANCHE PATHS AND PATH REFERENCE NUMBERS	13
SECTION I: U.S. Highway 550	15
USGS 1:24,000 scale topographic maps	17
Red Mountain Pass to Ouray, east side of highway: photographs and summary sheets	21
Ouray to Red Mountain Pass, west side of highway: photographs and summary sheets	63
SECTION II: Colorado Highway 361	105
USGS 1:24,000 scale topographic maps	107
Photographs and summary sheets	109

PREFACE

This is the second avalanche atlas produced by the Institute of Arctic and Alpine Research (INSTAAR) for the main transportation arteries of a San Juan Mountain county. In a sense, it is a natural extension of the first, compiled by Miller, Armstrong, and Armstrong (1976), for San Juan County. Together, the two atlases represent a major component of INSTAAR's research, now in its sixth year, that deals with snow and avalanche studies in the San Juan Mountains. This atlas constitutes the work of the INSTAAR SNOW AND AVALANCHE PROJECT, based at Silverton under the leadership of Richard L. Armstrong. It is complemented by a natural hazard research project supported by a grant from the National Aeronautical and Space Administration (NASA) Office of University Affairs.

Snow avalanches present a major obstacle to effective land-use planning in the San Juan Mountains in particular, and in the entire mountain area of the Western United States and Canada in general. Despite several generations of studies in Switzerland, and in adjacent Alpine countries, many serious problems remain unsolved. It is perhaps not so remarkable that the mechanical properties of snow are so far from being fully understood when it is realized that the physical properties of the medium itself change constantly in time and space. In view of this problem, it seemed logical for INSTAAR to adopt a multi-faceted strategy which includes: studies of the properties of snow; attempts to develop a numerical forecast model to improve the prediction of avalanche occurrence; systematic collection of data on current and past avalanche events; studies of alternative methods to explosives for artificial avalanche release; and graphic portrayal of avalanche path characteristics in map and atlas forms.

The atlas form is an outgrowth of early work in Switzerland (Frutiger, 1977) which was applied to Colorado initially in 1963/64 (Frutiger, 1964). The next steps in the development of the avalanche atlas in the United States were taken under the leadership of Edward LaChapelle (1971, 1975) in the State of Washington. The current atlas represents another evolutionary step from this very respectable ancestry. It is hoped that its flexible format, which permits the addition of new data, will encourage observers of avalanche events within the area covered by the atlas to communicate directly with INSTAAR.

For the development of the INSTAAR SNOW AND AVALANCHE PROJECT (INSAP) as a whole, grateful acknowledgment is made to a variety of funding agencies, including: the Bureau of Reclamation; US Army Research Office (Durham); Colorado and Washington State Highway Departments and the Federal Department of Transportation; NASA, Office of University Affairs. Extensive scientific advice has been provided by Drs. Malcolm Mellor and Wilford Weeks of US Army Cold Regions Research and Engineering Laboratory (CRREL), while Dr. E.R. LaChapelle has played a major role as INSTAAR Research Associate and senior consultant. The preparation and production of the atlas itself was aided financially by Ouray County through Colorado House Bill 1041. Elizabeth Senear assisted extensively by handling the data reduction, and Steven Meyers made a vital contribution by providing the photographic reproduction. The crucial contribution to both the atlas production and the research project as a whole, has been provided by the Armstrong team, since Richard and Betsy have, in effect, given continuity and inspiration from the beginning.

The atlas is presented to Ouray County in the hopes that it will assist in the county's development of sound land-use policies, and in the reduction of danger to members of the public who travel through and live in this beautiful mountain region. It represents a contribution of the United States UNESCO* Man and the Biosphere (MAB) Program: Project 6A - study of the impact of human activities on mountain ecosystems, and to the International Geographical Union Commission on Mountain Geoecology.



Jack D. Ives,
 Director, Institute of Arctic and Alpine Research
 Chairman, U.S. MAB 6A Directorate,
 Chairman, IGU Commission on Mountain Geoecology
 15th May, 1977

* United Nations Educational, Scientific and Cultural Organization

INTRODUCTION

The Ouray County Avalanche Atlas has been prepared by the University of Colorado Institute of Arctic and Alpine Research (INSTAAR), at the request of the Ouray County Commissioners. The atlas provides detailed information on avalanche paths affecting Colorado Highway 361 and U.S. Highway 550 from the town of Ouray to Red Mountain Pass, based on aerial photographs, USGS 1:24,000 scale maps and all available avalanche event data from 1877 through 1976. Currently, Colorado Highway 361 and U.S. Highway 550 represent the major avalanche hazard areas in the county; since 1958, the eight recorded avalanche fatalities in Ouray County have all occurred on these roads, four deaths on each road (Armstrong, 1977).

The atlas is intended as a land-use planning aid and as an educational tool for those who travel these routes. In addition to this atlas, all avalanche hazard areas within the county have been mapped by INSTAAR, using remote sensing techniques (Bovis et al. 1976a; Ives and Bovis, 1978). The Ouray County Atlas covers the above mentioned road network, which not only represents the area of current maximum hazard, but because these routes have experienced continuous use for nearly 100 years, the avalanche event record is more complete than for any other location within the county. Historical avalanche event data for the entire county have been compiled in Avalanche Hazard in Ouray County, Colorado, 1877-1976 (Armstrong, 1977) and have been incorporated into this atlas and into the maps produced by Bovis et al. (1976a).

The work done by Bovis et al. represents an approach of another dimension. Such work involved mapping only and covered all areas of avalanche activity within the county. The purpose was to utilize remote sensing techniques to identify terrain subject to avalanche activity. This work was supported by a research grant from the Office of University Affairs, NASA (NASA-PY Grant No. NGL-06-003-200), and is directly linked to the requirements of Colorado State House Bill 1041. This type of mapping, which covers avalanche as well as other geomorphic hazards, has also been completed by INSTAAR for San Juan, San Miguel and Hinsdale Counties (Bovis et al., 1976 b and c; Knepper, et al., 1977).

The idea of an avalanche atlas is not a new one. In 1872, the Federal Government of Switzerland acknowledged the need to compile information on areas affected by avalanche activity and for detailed mapping of such areas, and requested that statistics be gathered on avalanches throughout the country. This resulted in the 1910 publication of Statistics and Structural Control of Avalanches in the Swiss Alps (Frutiger, 1977). In North America, the first avalanche atlas was produced by the U.S. Forest Service for use by the Colorado Department of Highways (Frutiger, 1964) and is still being used for avalanche control, highway design, and highway maintenance. Similar atlases were developed for the Washington State Highway Department by the Geophysics Program and Department of Civil Engineering, University of Washington. The first preliminary avalanche zone maps in Colorado were produced by INSTAAR for the vicinity of Vail (Krebs, ed., 1974; Ives and Krebs, 1978), and for Ophir, in San Miguel County (Ives et al., 1976). This work immediately preceded passage of Colorado House Bill 1041 which stimulated systematic studies by the Colorado Geological Survey and resulted in the publication of avalanche zone maps for 14 critical areas (Mears, 1975; Rogers et al., 1974). The bill also accelerated production of the San Juan Mountain county maps mentioned above (Bovis et al., 1976 a, b, and c) and a total of 37 maps have been completed at a scale of 1:24,000, in collaboration with the Colorado Geological Survey.

A further step in the evolution of the avalanche atlas in the United States was the atlas produced by INSTAAR for San Juan County, Colorado (Miller et al., 1976) at the request of the San Juan County Commissioners. This atlas includes the mapping on USGS 1:24,000 scale maps of all avalanche paths affecting U.S. Highway 550 and Colorado Highway 110 within the county, outlines of the paths on aerial photographs, and pertinent dimensional data, terrain and vegetation parameters for the starting zone, track and runout zone of each path, and a compilation of observed avalanche activity from 1875 through 1976.

The Ouray County Avalanche Atlas follows basically the same format as that of the San Juan County Atlas. The information contained within this publication is not intended for critical engineering purposes, but rather as a guide for subsequent data-gathering. More detailed studies, such as those involving the location of a specific structure, would necessitate maps of a larger scale than

the 1:24,000 USGS maps currently available. The exact scale of such maps would be determined by the requirements of the investigator doing the detailed analysis and would likely be 1:2000 or larger.

The avalanche path outlines and technical data were determined on the basis of current understanding and experience with snow avalanche behavior in the mountains of Ouray County. The authors cannot assume responsibility for the future behavior of snow avalanches when affected by extraordinary winter storms, changes in climate, destruction of forest cover or other unforeseen events.

Additional information may be added to the atlas without difficulty since a separate sheet is devoted to each path. To assist with the continued improvement of our historical record, would atlas users in the San Juans please inform INSTAAR of any avalanche event they observe. Time of day, date and size of event should be noted and information mailed to: Director, Institute of Arctic and Alpine Research, University of Colorado, Boulder, Colorado 80309.

REFERENCES

- Armstrong, B.R., 1977. Avalanche hazard in Ouray County, Colorado. University of Colorado Institute of Arctic and Alpine Research Occasional Paper No. 24, Boulder, Colorado, 125 pp.
- Bovis, M.J., Summer, R.M., Sauchyn, D.H., Squier, M., Trench, N.R., Waterman, J.L., Knepper, D.H., and Ives, J.D., 1976a. Natural hazards of Ouray County, Colorado. Report to the Ouray County Planning Commission. NASA-PY Grant No. NGL 06-003-200. University of Colorado, Institute of Arctic and Alpine Research, Boulder, Colorado, 48pp.
- Bovis, M.J., Summer, R.M., Knepper, D.H., and Ives, J.D., 1976b. Natural hazards of San Juan County, Colorado. Report to the San Juan County Planning Commission. NASA-PY Grant No. NGL 06-003-200. University of Colorado, Institute of Arctic and Alpine Research, Boulder, Colorado, 50pp.
- Bovis, M.J., O'Boyle, P.S., Summer, R.M., Squier, M., Knepper, D.H., and Ives, J.D., 1976c. Natural hazards of San Miguel County, Colorado. Report to the San Miguel County Planning Commission. NASA-PY Grant No. NGL 06-003-200. University of Colorado, Institute of Arctic and Alpine Research, Boulder, Colorado, 51pp.
- Frutiger, H., 1977. Avalanche damage and avalanche protection. World Data Center A for Glaciology, Glaciological Data No. 1, (in press).
- Frutiger, H., 1964. Snow avalanches along Colorado mountain highways. U.S. Forest Service Research Paper RM-7, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado, 85pp.
- Ives, J.D. and Bovis, M.J., 1978. Natural hazard maps for land-use planning, San Juan Mountains, Colorado. Proceedings of the IGU Commission on High Altitude Geocology Symposium, Caucasus Mountains, Soviet Union, July 1976, In preparation.
- Ives, J.D. and Krebs, P.V., 1978. Natural hazards research and land-use planning responses in mountain terrain: the township of Vail, Colorado. Rocky Mountains, Proceedings of the IGU Commission on High Altitude Geocology Symposium, Caucasus Mountains, Soviet Union, July 1976, In Preparation.
- Ives, J.D., Mears, A.I., Carrara, P.E., and Bovis, M.J., 1976. Natural hazards in mountain Colorado. Annals of the Association of American Geographers, 66(1): 129-44.
- Knepper, D.H., Hansen, K.J., O'Boyle, P.S., Sauchyn, D.H., Summer, R.M., Trench, N.R., and Waterman, J.L., 1977. Natural hazards of Northern Hinsdale County, Colorado. Report to the Hinsdale County Planning Commission. NASA-PY Grant No. NGL 06-003-200. University of Colorado, Institute of Arctic and Alpine Research, Boulder, Colorado, 67pp.

- Krebs, P.V., ed., 1974. Evaluation of the snow avalanche hazard in the valley of Gore Creek, Eagle County, Colorado. University of Colorado, INSTAAR NASA-PY Grant No. NGL 06-003-200. Final Report to the town of Vail, Colorado, 34pp.
- LaChapelle, E.R., ed., 1975. Cascade Passes avalanche atlas. Part II. Stevens Pass and Tumwater Canyon. Report to the Washington State Highway Department. Geophysics Program and Department of Civil Engineering, University of Washington, Seattle, Washington, 94pp.
- LaChapelle, E.R., ed., 1974. Cascade Passes avalanche atlas. Part I. Chinook, Cayuse, White and Snoqualamie Passes. Report to the Washington State Highway Department. Geophysics Program and Department of Civil Engineering, University of Washington, Seattle, Washington, 103pp.
- LaChapelle, E.R. and Leonard, R., 1971. North Cascades Highway avalanche atlas, SR-20. Report to the Washington State Highway Department. Geophysics Program and Department of Civil Engineering, University of Washington, 177pp.
- Mears, A., 1975. Snow avalanche hazards. Open file report, Colorado Geological Survey, Department of Natural Resources, State of Colorado.
- Miller, L., Armstrong, B.R., and Armstrong, R.L., 1976. Avalanche atlas: San Juan County, Colorado. University of Colorado Institute of Arctic and Alpine Research Occasional Paper No. 17, Boulder, Colorado, 232pp.
- Rogers, W.P., et al., 1974. Guidelines and criteria for identification and land-use controls of geologic hazard and mineral resource areas. Colorado Geological Survey Special Publication No. 6, Denver, 46pp.

DEFINITION OF TERMS

MAPS:

All maps are 7 1/2' USGS topographic reproductions at a scale of 1:24,000. These maps comply with U.S. Map Accuracy Standards, meaning that not more than 10 percent of the well-defined points on the map (such as buildings) are in error by more than 1/50 inch and not more than 10 percent of the elevations are in error by more than one-half the contour interval. Each path for which avalanche event data have been tabulated is outlined and numbered. The outlines are an approximate boundary of the path and do not indicate absolute limits. These limits can only be established by a detailed ground study of the path in question and by the use of maps with a larger scale than the 1:24,000 maps which are currently available. An arrow without an accompanying number indicates an area of avalanche activity which has not been observed on a regular basis or does not affect the highway. No summary sheet has been prepared for these paths.

PHOTOGRAPHS:

The majority of photographs were taken with a 35 mm camera from a light aircraft in April 1977. April is usually the period of maximum snow depth, thus the optimum time for air-photography. However, due to the extremely light winter of 1976-1977, several photographs taken in December 1974 were utilized for the Iron-ton Park and Uncompahgre Gorge areas on U.S. Highway 550. Each avalanche path is outlined and numbered on the photograph.

AVALANCHE SUMMARY SHEETS:

Path name(s): All names, both historic and current, are listed.

Path reference number: All paths which affect the highway or have been observed for five years or more, have been catalogued with a reference number. The first three digits indicate the station. Station 152 refers to U.S. Highway 550. Station 150 refers to Colorado Highway 361. The remaining three digits indicate the avalanche path. (A station number is a U.S. Forest Service classification number for a highway, mine, or town).

Area: An area is a region of geographic similarity: for example, the Canyon Creek drainage from the Camp Bird Mine to the town of Ouray is considered a single area (Colorado Highway 361, area 4). U.S. Highway 550 is divided into three areas:

Area 1: Red Mountain Pass

Area 2: Ironton Park

Area 3: Uncompahgre Gorge

Map number: Each map in the atlas is numbered. Map numbers on the summary sheet indicate the maps on which the particular avalanche path is outlined.

Photograph number: Each photograph in the atlas is numbered. Photograph numbers on the summary sheet indicate the photographs on which the particular avalanche path is pictured and outlined.

Specifications:

Elevations: Top and bottom elevations represent the highest elevation within the starting zone and the lowest elevation within the runout zone. Elevations are from the USGS 1:24,000 scale maps.

Vertical fall: The difference between top and bottom elevations.

Path length: The length of each path is calculated from vertical fall (VF) and horizontal map distance (HD) data. Length of path = $\sqrt{(VF)^2 + (HD)^2}$. Horizontal distance is determined by measuring on the map along the center line of the avalanche path from the highest elevation of the starting zone to the lowest elevation of the runout zone.

Number of starting zones: The number of starting zones are obtained from maps, photographs and field observations. In cases where the number of starting zones is difficult to obtain due to the complexity of terrain, the term multiple is used.

Starting zone: The starting zone is that area of the path where the initial rupture of the snowcover occurs under most circumstances and where the avalanche begins its downward course. A starting zone generally possesses a slope angle of between 30° and 45° , although avalanches may release on both steeper and more gentle slopes.

Track: Once initial failure and acceleration have occurred within the starting zone, the moving avalanche travels down the track where it attains its maximum velocity. The track may be well confined by valley sides or may be an unconfined open slope. The track, in general, possesses a gradient of from 20° to 30° . Often the boundary between starting zone and track can be well defined according to slope angle or topography (for example, a broad, open basin feeding into a narrow gully) but often, and especially in the case of open slopes with little variation in slope angle, the distinction is difficult to make.

Runout zone: The runout zone is that portion of the path where the avalanche normally decelerates and comes to rest. Runout zone slopes usually are less than 20° and may actually be flat. A runout zone may also extend up an opposite slope. The runout zone may be considered the most hazardous zone because its gentle slopes often provide the optimum construction sites within a mountain environment.

Runout zone boundaries as drawn on the maps and photographs are based on documented observations of maximum runout distances for the respective path. Where this direct information is lacking, the boundary is inferred from actual data taken from nearby paths with similar dimensions. Runout distances have not been established by means of theoretical equations.

Slope angles: Average slope angles were calculated from map data for starting zone, track and runout zone.

$$\frac{\text{vertical fall}}{\text{horizontal distance}} = \text{tangent of the slope angle}$$

Acreages: Area in acres was calculated from maps by the grid method. Grid density is one reference dot per 2.5 mm^2 map area or 0.9 acres on the ground.

Mean widths: These values represent the average track width as measured on the map.

Tree line: The treeline data were obtained from air photographs and field observations. The letter (B) indicates below timberline; (A) indicates above timerline.

Terrain and vegetation cover: Subjective descriptions of the terrain and vegetation in the starting zone, track and runout zone of each avalanche path are given. Relative density of geomorphic features, vegetation cover and forestation are given in terms of light, moderate and heavy.

History:

Historical avalanche event data for each path have been compiled and summarized from the monograph Avalanche Hazard in Ouray County, Colorado, 1877-1976 (Armstrong, 1977). The numbers represent data gathered from all known sources, and while perhaps not absolute totals, they give the reader an indication of the frequency of avalanche activity in each path. Detailed historical event data for each path, including dates for each observed event, whether the avalanche reached the road, was released artificially, or reached full-track, and any damage recorded, are listed in the above publication (Armstrong, 1977).

Avalanche event data are divided by period and data source for each highway.

U.S. Highway 550:

- I. 1877-1950. Data collected from newspapers and personal interviews (Armstrong, 1977).
- II. 1951-1971. Data collected by the Colorado Highway Department and compiled by the U.S. Forest Service, Fort Collins, Colorado, and personal interviews (Armstrong, 1977).
- III. 1971-1976. Data collected by INSTAAR Snow and Avalanche Project and the Colorado Highway Department and personal interviews (Armstrong, 1977).

Colorado Highway 361:

- I. 1877-1940, Data collected from newspapers and personal interviews (Armstrong, 1977).
- II. 1940-1976. Data collected by Camp Bird Mine observers and compiled by the U.S. Forest Service, Fort Collins, Colorado, and personal interviews (Armstrong, 1977).

Definitions of Terms:

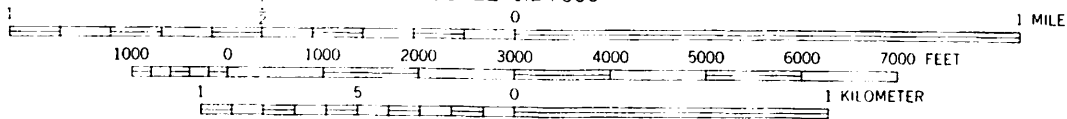
Event: The total number of avalanches observed during the period.

Highway: The number of times the avalanche was observed to reach or cross the highway.

Full-track: The number of times the avalanche was observed to release within the starting zone and reach the runout zone, traveling the full length of the path.

Map Scale

SCALE 1:24 000




CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

Road Classification

Medium duty  Light duty 

Unimproved dirt 

 U. S. Route

 State Route

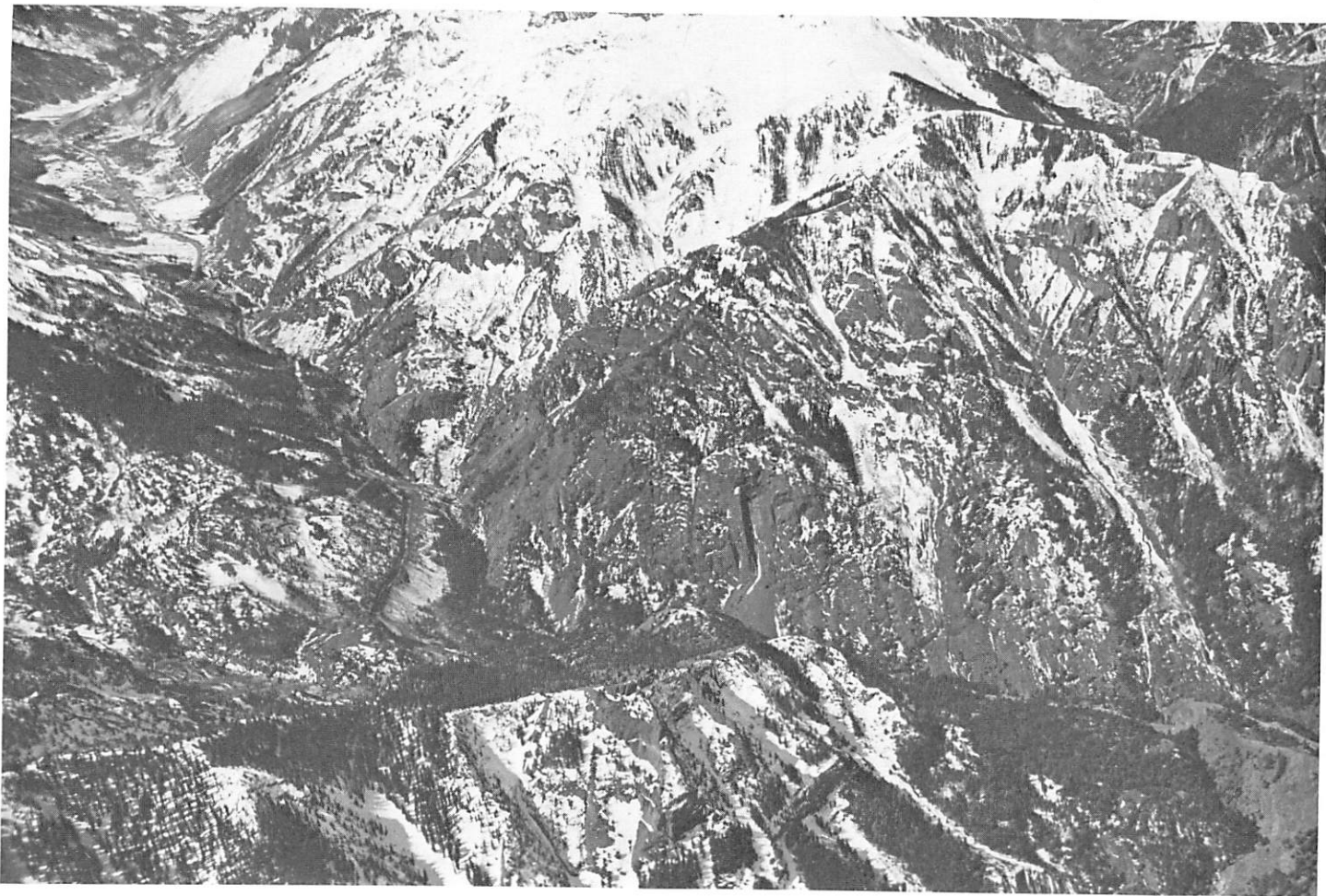
LISTING OF AVALANCHE PATHS AND PATH REFERENCE NUMBERS

U.S. HIGHWAY 550

COLORADO HIGHWAY 361

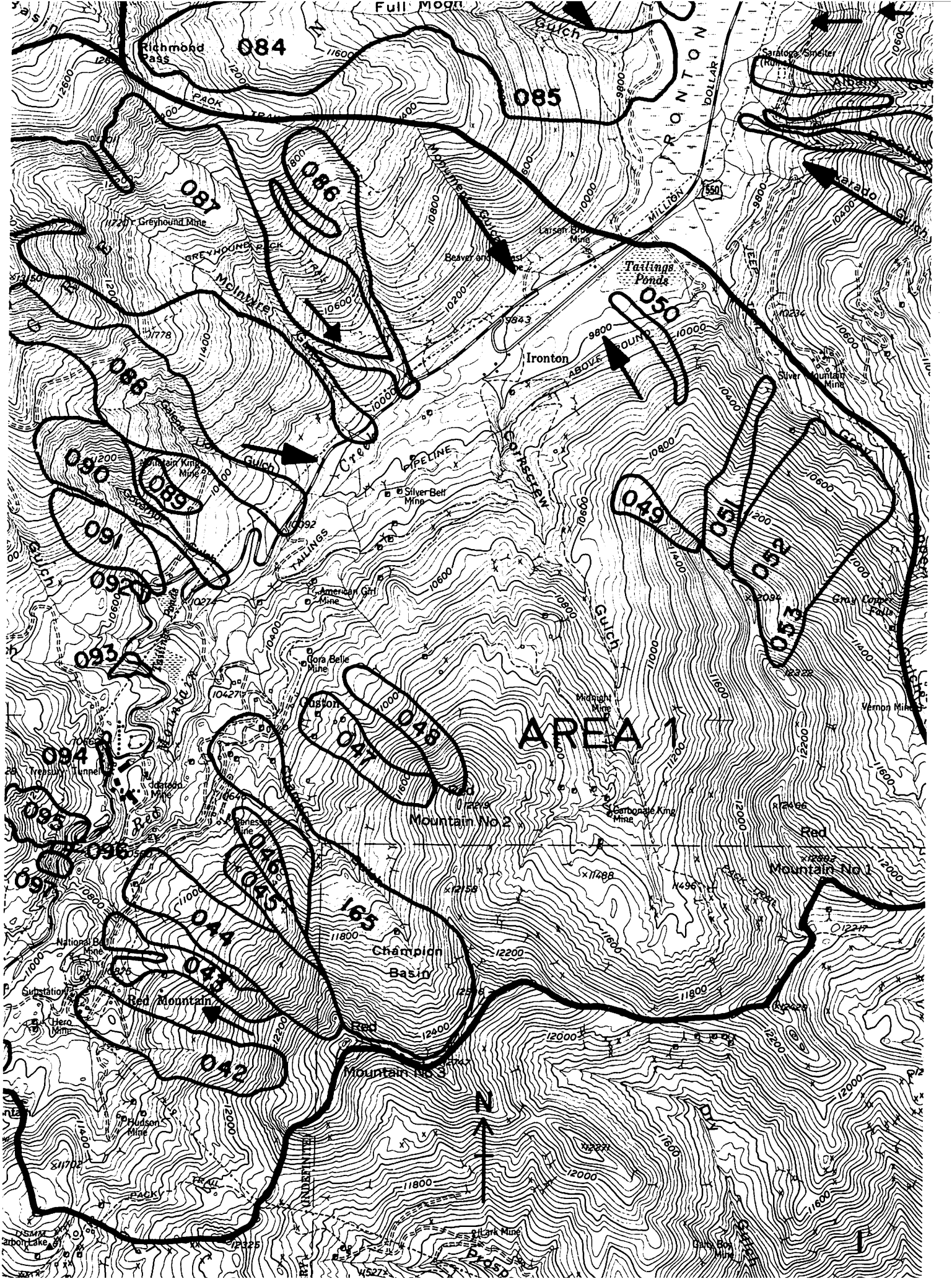
Red Mountain Pass to Ouray
(east side)Ouray to Red Mountain Pass
(west side)

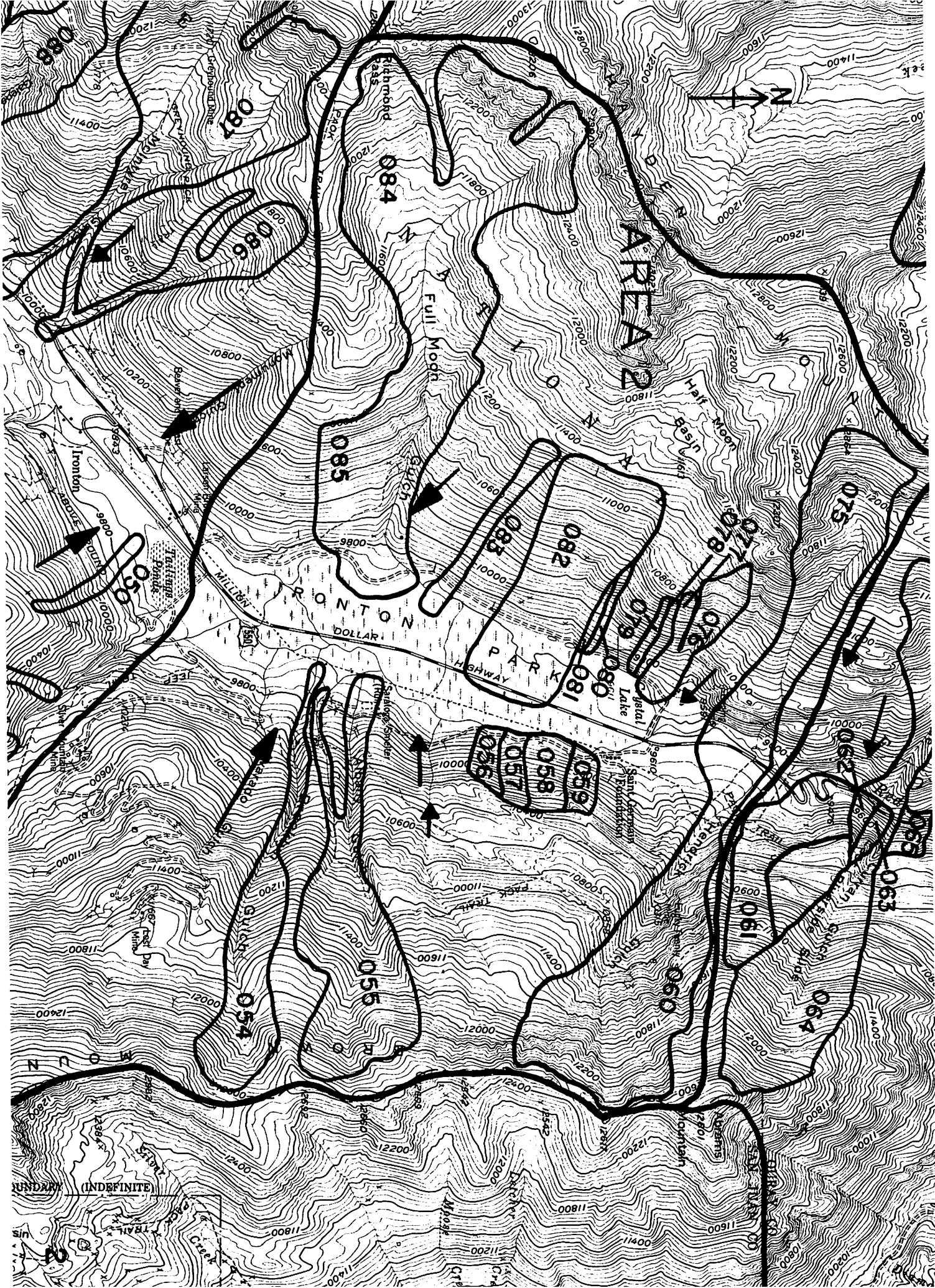
reference number	path name	reference number	path name	reference number	path name
040	Red Mountain Pass	072	White Fir	016	Squaw Gulch
042	National Bell South	073	Silver Gulch	017	Lewis Creek
043	National Bell North	074	West Riverside	018	Thistledown Creek
044	Red Mountain 3	075	West Guadalupe	001	Fall Creek
045	Genessee South	076	Water Guage North	002	Senator Gulch - Switchbacks
046	Genessee North	077	Lake	003	Swede Pete
165	Champion Gulch	078	Earth	004	Shirttail
047	Red Mountain 2	079	Fire	005	Neighbor White
048	Cora Bell	080	Air	006	Splitter
049	Red Mountain 1	081	Water	007	Hayden
050	Ripple	082	Ironton	008	Dolly Varden
051	Italian	083	Tidy	009	East Waterhole
052	Swiss	084	Full Moon Gulch	010	West Waterhole
053	Colony	085	Daisy Hill	011	East Schoolhouse
054	Brooklyn Gulch	086	Richmond	012	West Schoolhouse
055	Albany Gulch	087	McIntyre Gulch	013	U.S.
056	Manie	088	Galena Lion Gulch	014	Mt. Hayden South
057	Moe	089	G. Ridge	015	Mt. Hayden North
058	Jack	090	Govenor Gulch		
059	St. Germain	091	King		
060	East Guadalupe	092	Twin Bridges		
061	Slippery Jim	093	Barstow		
062	East Riverside South	094	Idarado		
063	East Riverside Right	095	Willow Swamp		
064	East Riverside	096	Blue Willow		
065	East Riverside Left	097	Blue Point		
066	North of Emergency Phone	098	Snowflake		
067	Cliff	099	Fence		
068	Dunsmore				
069	Mother Cline				
070	Silver Point				
071	Jackpot				

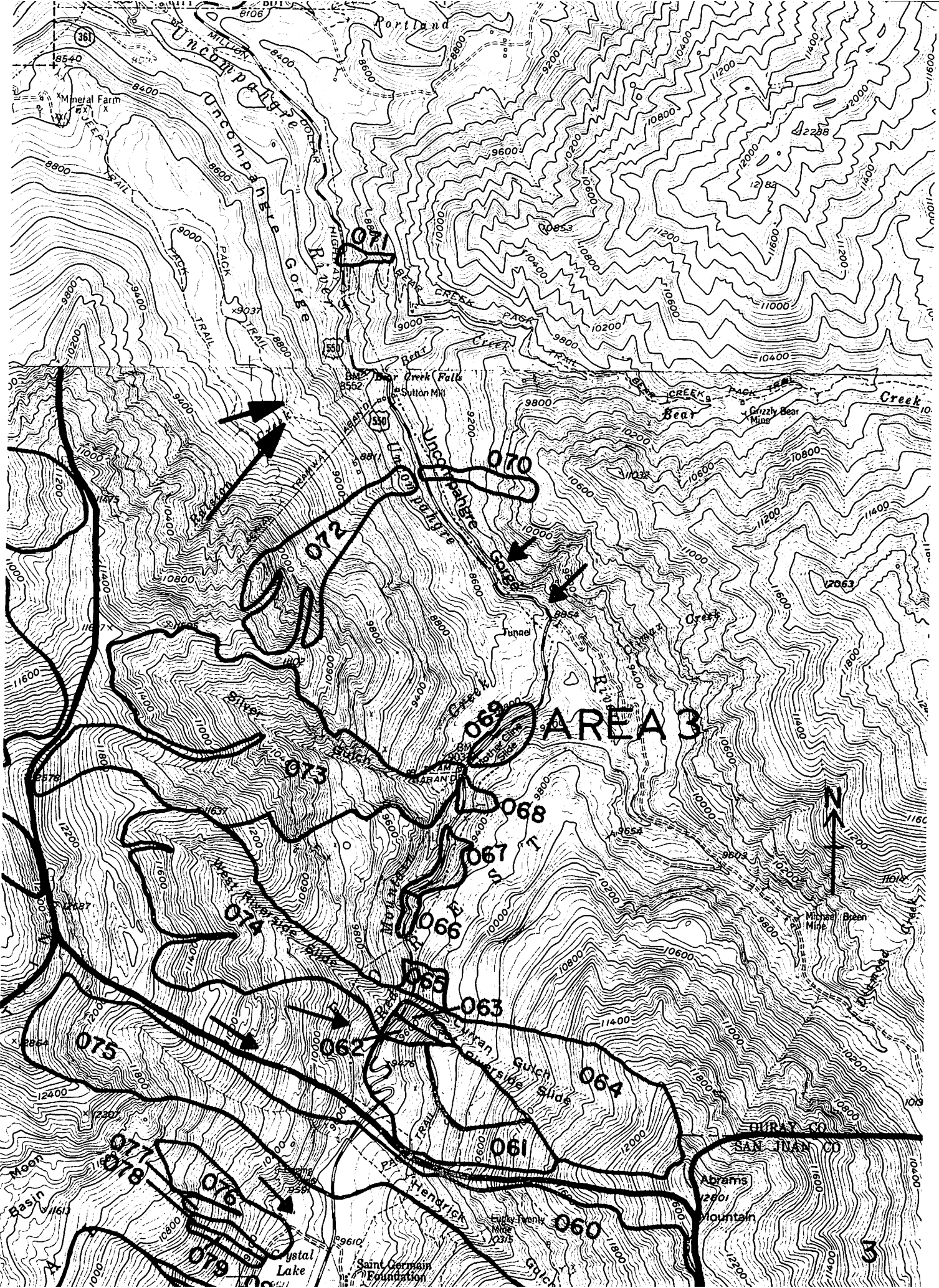


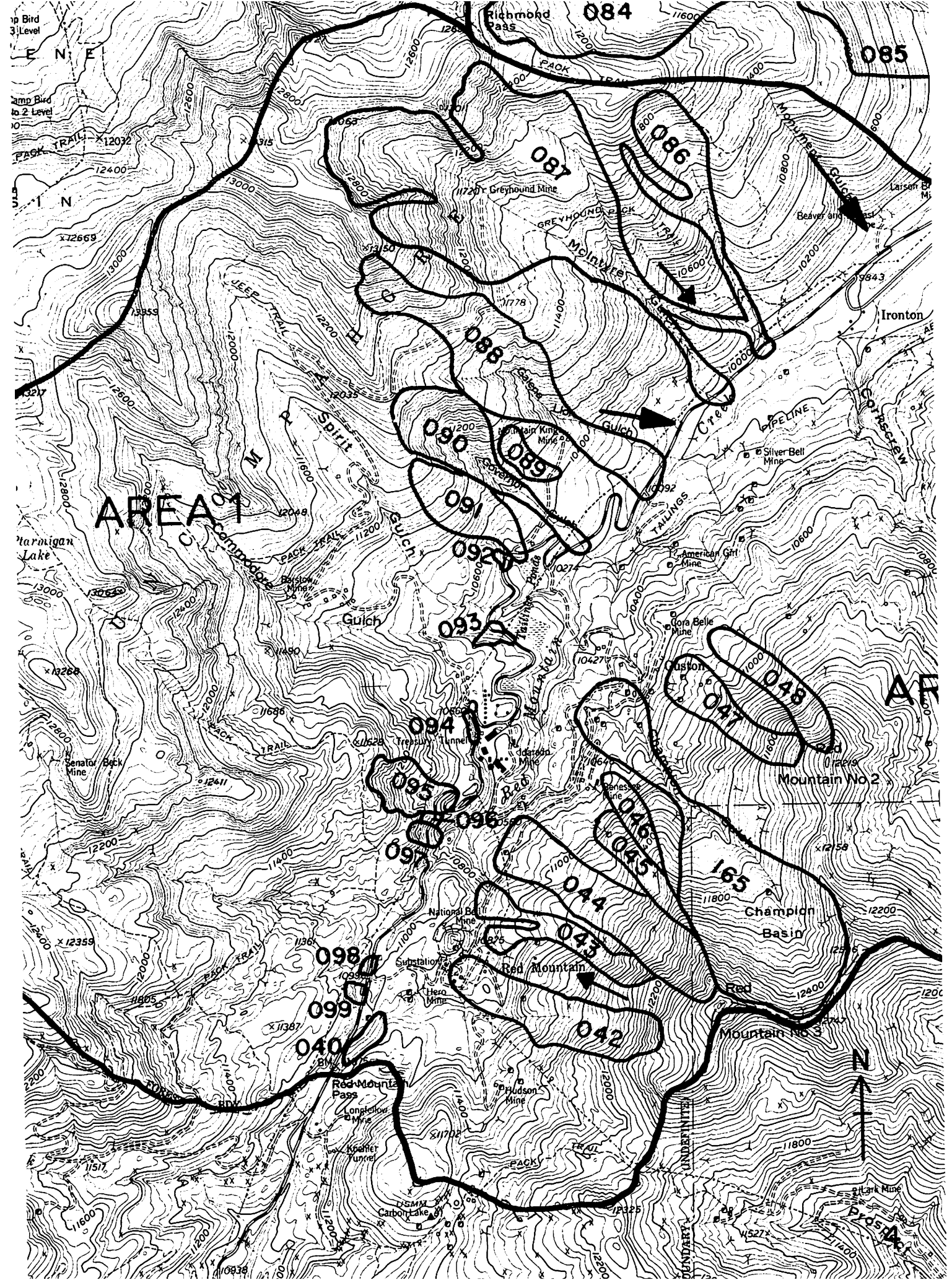
An aerial photograph of U.S. Highway 550 from the White Fir avalanche path (072) to Ironton Park.

U.S. HIGHWAY 550









U.S. HIGHWAY 550: EAST SIDE

**Red Mountain Pass to Ouray
avalanche paths:040-071**

Avalanche Summary Sheet

PATH NAME: Red Mountain Pass

PATH REFERENCE NUMBER: 152040 AREA: 1

MAP NUMBER: 4 PHOTOGRAPH NUMBER: 1

SPECIFICATIONS:

TOP ELEV.: 11200' BOTTOM ELEV.: 11020' VERTICAL FALL: 180'

LENGTH OF PATH: 400' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>29°</u>	<u>0°</u>
AREA ACRES	<u>1</u>	MEAN WIDTH <u>1200</u>	AREA ACRES <u><1</u>
		LENGTH <u>230</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

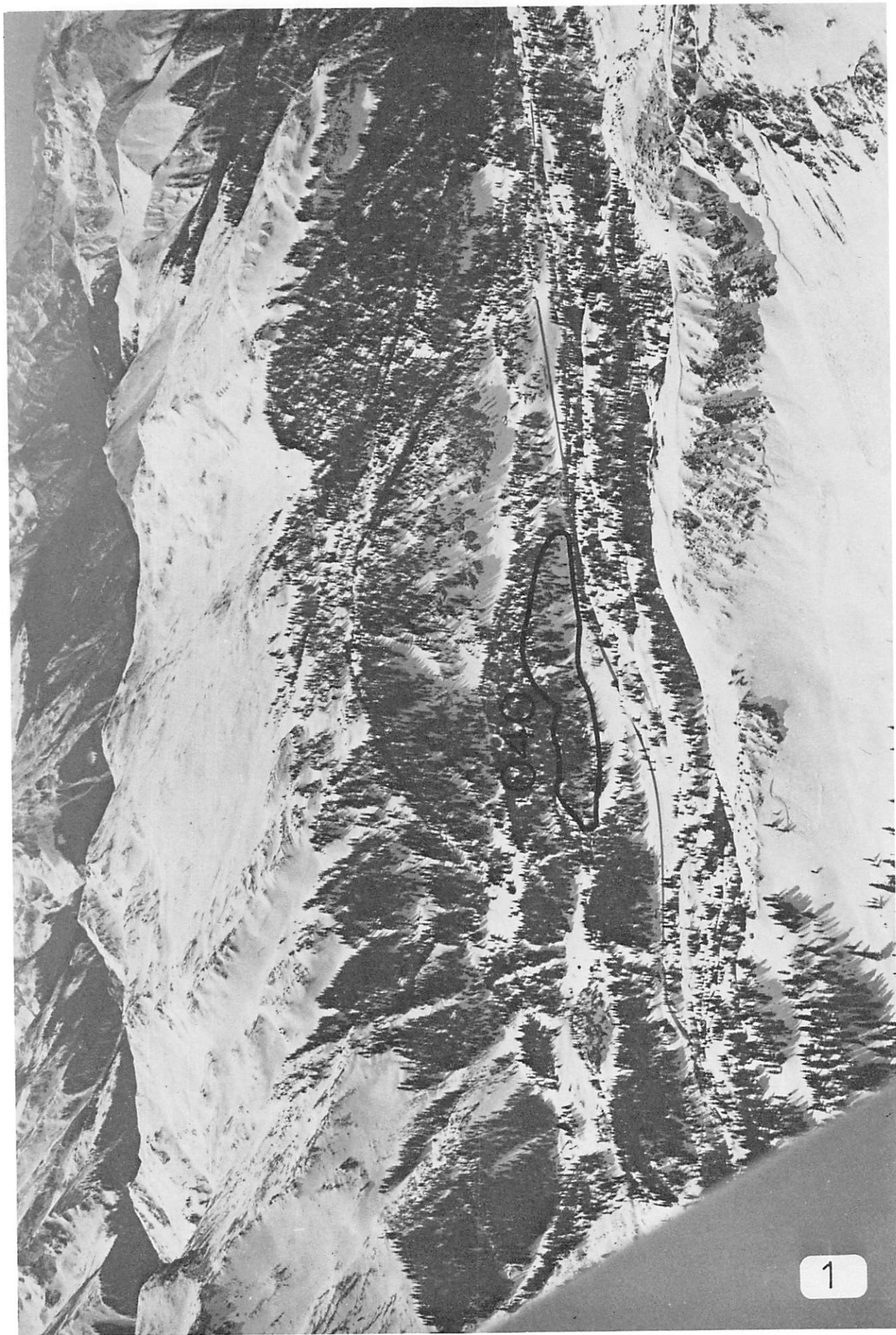
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, rock outcrops, grass and moderate coniferous

TRACK: Open slope, grass and light coniferous

RUNOUT ZONE: Open slope, grass

HISTORY: III. events: 10
highway: 0
full-track: 2



Avalanche Summary Sheet

PATH NAME: National Bell South

PATH REFERENCE NUMBER: 152042 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 2, 3

SPECIFICATIONS:

TOP ELEV.: 12400' BOTTOM ELEV.: 10950' VERTICAL FALL: 1450'

LENGTH OF PATH: 4460' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>32°</u>	<u>24°</u>	<u>5°</u>
AREA ACRES	<u>5</u>	MEAN WIDTH <u>800</u>	AREA ACRES <u>14</u>
		LENGTH <u>2540</u>	
TREE LINE	<u>A</u>	<u>A</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin, cliffs with talus and large boulders below

TRACK: Broad, open depression, talus and rock outcrops

RUNOUT ZONE: Broad, open slope, heavy coniferous

HISTORY: III. events: 4
highway: 0
full-track: 2

Avalanche Summary Sheet

PATH NAME: National Bell North

PATH REFERENCE NUMBER: 152043 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 2, 3

SPECIFICATIONS:

TOP ELEV.: 12200' BOTTOM ELEV.: 10740' VERTICAL FALL: 1460'

LENGTH OF PATH: 3737' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>30°</u>	<u>21°</u>	<u>16°</u>
AREA ACRES	<u>5</u>	MEAN WIDTH <u>400'</u>	AREA ACRES <u>13</u>
		LENGTH <u>2230'</u>	
TREE LINE	<u>A</u>	<u>A</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad open slope, talus and rock outcrops

TRACK: Broad shallow depression, talus and rock outcrops, grass

RUNOUT ZONE: Broad open slope, heavy coniferous

HISTORY: III. events: 9
highway: 0
full-track: 5

Avalanche Summary Sheet

PATH NAME: Red Mountain 3

PATH REFERENCE NUMBER: 152044 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 2, 3

SPECIFICATIONS:

TOP ELEV.: 12800' BOTTOM ELEV.: 10680' VERTICAL FALL: 2120'

LENGTH OF PATH: 5030' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>36°</u>	<u>23°</u>	<u>13°</u>
AREA ACRES	<u>16</u>	MEAN WIDTH <u>880'</u>	AREA ACRES <u>17</u>
		LENGTH <u>2970'</u>	
TREE LINE	<u>A</u>	<u>A</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad shallow basin, talus and rock outcrops

TRACK: Open slope, talus

RUNOUT ZONE: Broad open slope, moderate boulders, grass and very light small coniferous

HISTORY: III. events: 17
highway: 0
full-track: 4

Avalanche Summary Sheet

PATH NAME: Genessee South

PATH REFERENCE NUMBER: 152045 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 2, 3

SPECIFICATIONS:

TOP ELEV.: 12120' BOTTOM ELEV.: 10880' VERTICAL FALL: 1240'

LENGTH OF PATH: 2700' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>35°</u>	<u>24°</u>	<u>21°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>480'</u>	AREA ACRES <u>16</u>
		LENGTH <u>1560'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Shallow basin, talus

TRACK: Broad open slope, moderate small coniferous and brush

RUNOUT ZONE: Broad open slope, heavy coniferous

HISTORY: I. events: 5. During this period, 4 men and 15 mules were caught, with only one surviving. Genessee Mine buildings were damaged on 3 occasions

III. events: 8
highway: 0
full-track: 6

Avalanche Summary Sheet

PATH NAME: Genessee North

PATH REFERENCE NUMBER: 152046 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 3

SPECIFICATIONS:

TOP ELEV.: 11700' BOTTOM ELEV.: 10750' VERTICAL FALL: 950'

LENGTH OF PATH: 2360' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>32°</u>	<u>21°</u>	<u>12°</u>
AREA ACRES	<u>2</u>	MEAN WIDTH <u>400'</u>	AREA ACRES <u>31</u>

LENGTH 1100'

TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>
-----------	----------	----------	----------

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad open slope, cliffs, rock outcrops and talus, brush

TRACK: Broad open slope, grass, brush and moderate coniferous

RUNOUT ZONE: Broad open slope, grass and bare ground, moderate coniferous

HISTORY: III. events: 6
highway: 0
full-track: 4



Avalanche Summary Sheet

PATH NAME: Champion Gulch, Yankee Girl

PATH REFERENCE NUMBER: 152165 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 3

SPECIFICATIONS:

TOP ELEV.: 12800' BOTTOM ELEV.: 10480' VERTICAL FALL: 2320'

LENGTH OF PATH: 7260' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>29°</u>	<u>17°</u>	<u>12°</u>
AREA ACRES	<u>51</u>	Upper: 480' Lower: 240'	AREA ACRES <u>31</u>
		MEAN WIDTH	
		LENGTH <u>5360'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad basin, talus, rock outcrops

TRACK: Broad, open basin cut by two V-shaped depressions, talus, bare ground, light coniferous, grass

RUNOUT ZONE: Broad, open slope, bare ground, light, small coniferous, grass

HISTORY: I. events: 2. In January, 1886, this avalanche buried 9 men at the Dutton Mine; 4 were killed, 4 survived. In December, 1916, 11 men were caught in the Yankee Girl slide; one was killed, one was injured, 9 were uninjured.

III. events: 2
highway: 0
full-track: 1

Avalanche Summary Sheet

PATH NAME: Red Mountain 2

PATH REFERENCE NUMBER: 152047 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 3

SPECIFICATIONS:

TOP ELEV.: 11800' BOTTOM ELEV.: 10680' VERTICAL FALL: 1120'

LENGTH OF PATH: 2900' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>32°</u>	<u>30°</u>	<u>16°</u>
AREA ACRES	<u>7</u>	MEAN WIDTH <u>800'</u>	AREA ACRES <u>18</u>
		LENGTH <u>1200'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad open slope, talus

TRACK: Shallow depression, talus and rock outcrops, very light coniferous with heavy coniferous below

RUNOUT ZONE: Broad open slope, heavy coniferous with open areas of grass and bare ground below

HISTORY: I. events: 1

III. events: 8
highway: 0
full-track: 5

Avalanche Summary Sheet

PATH NAME: Cora Bell

PATH REFERENCE NUMBER: 152048 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 3

SPECIFICATIONS:

TOP ELEV.: 12200' BOTTOM ELEV.: 10720' VERTICAL FALL: 1480'

LENGTH OF PATH: 3450' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>29°</u>	<u>14°</u>
AREA ACRES	<u>7</u>	MEAN WIDTH <u>560'</u>	AREA ACRES <u>16</u>
		LENGTH <u>1450'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad shallow basin, talus and rock outcrops

TRACK: Broad shallow depression, talus and rock outcrops

RUNOUT ZONE: Broad open slope, heavy coniferous with open areas of grass and bare ground below

HISTORY: III. events: 12
 highway: 0
 full-track: 4



Avalanche Summary Sheet

PATH NAME: Red Mountain 1

PATH REFERENCE NUMBER: 152049 AREA: 1

MAP NUMBER: 1 PHOTOGRAPH NUMBER: 4

SPECIFICATIONS:

TOP ELEV.: 11800' BOTTOM ELEV.: 10800' VERTICAL FALL: 1000'

LENGTH OF PATH: 2090' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>51°</u>	<u>30°</u>	<u>20°</u>
AREA ACRES	<u>1</u>	MEAN WIDTH <u>320'</u>	AREA ACRES <u>8</u>
		LENGTH <u>1200'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad open slope, cliffs with talus and rock outcrops below

TRACK: Broad open slope, talus, light coniferous

RUNOUT ZONE: Broad open slope, rock outcrops, heavy aspen and coniferous

HISTORY: III. events: 2
highway: 0
full-track: 1

Avalanche Summary Sheet

PATH NAME: Ripple

PATH REFERENCE NUMBER: 152050 AREA: 1

MAP NUMBER: 1 PHOTOGRAPH NUMBER: 4

SPECIFICATIONS:

TOP ELEV.: 10600' BOTTOM ELEV.: 9740' VERTICAL FALL: 860'

LENGTH OF PATH: 1480' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>31°</u>	<u>27°</u>	<u>5°</u>
AREA ACRES	<u>1</u>	MEAN WIDTH <u>320'</u>	AREA ACRES <u>1</u>
		LENGTH <u>1340'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, moderate coniferous and bare ground

TRACK: Open slope, moderate coniferous and bare ground

RUNOUT ZONE: Open slope, heavy aspen and coniferous

HISTORY: III. events: 1
 highway: 0
 full-track: 1

Avalanche Summary Sheet

PATH NAME: Italian

PATH REFERENCE NUMBER: 152051 AREA: 1

MAP NUMBER: 1 PHOTOGRAPH NUMBER: 4

SPECIFICATIONS:

TOP ELEV.: 11920' BOTTOM ELEV.: 10020' VERTICAL FALL: 1900'

LENGTH OF PATH: 3880' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>28°</u>	<u>27°</u>
AREA ACRES	<u>14</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>2</u>
		LENGTH <u>2520'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, cliffs, rock outcrops and talus

TRACK: Open slope with brush, bare ground and light small coniferous, incised gully with bare ground below

RUNOUT ZONE: Crosses drainage of Gray Copper Gulch and may ascend opposite slope

HISTORY: III. events: 6
highway: 0
full-track: 4

Avalanche Summary Sheet

PATH NAME: Swiss, Colony

PATH REFERENCE NUMBER: 152052-53 AREA: 1

MAP NUMBER: 1 PHOTOGRAPH NUMBER: 4

SPECIFICATIONS:

TOP ELEV.: 12280' BOTTOM ELEV.: 10180' VERTICAL FALL: 2100'

LENGTH OF PATH: 3900' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>35°</u>	<u>29°</u>	<u>20°</u>
AREA ACRES	<u>55</u>	MEAN WIDTH <u>1840'</u>	AREA ACRES <u>21</u>
		LENGTH <u>2300'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

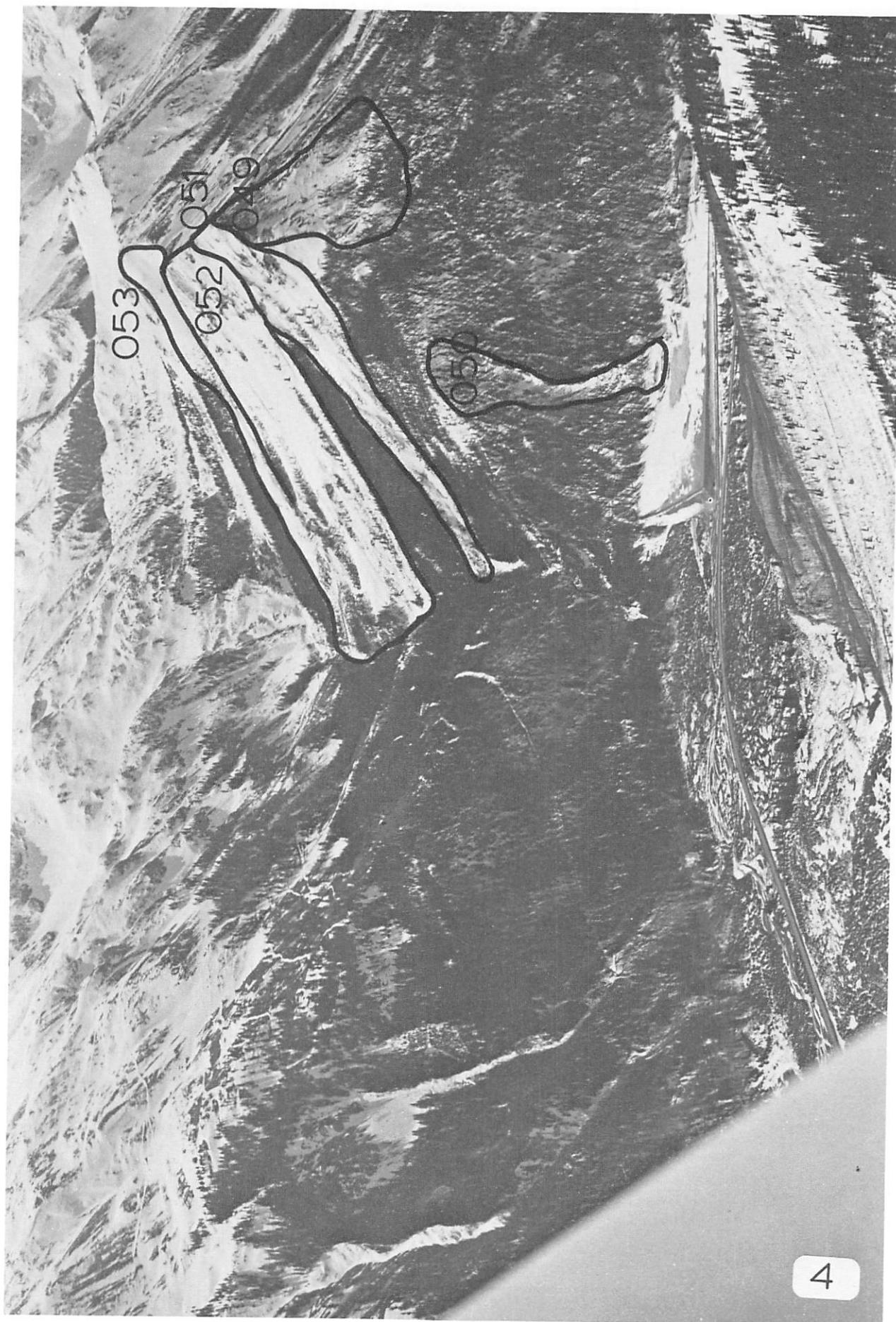
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, cliffs, talus, rock outcrops

TRACK: 152052: Open slope, talus, rock outcrops, brush
152053: Shallow depression, grass, moderate coniferous

RUNOUT ZONE: Crosses drainage of Gray Copper Gulch and may ascend opposite slope

HISTORY: III. events: 5
highway: 0
full-track: 5



Avalanche Summary Sheet

PATH NAME: Brooklyn Gulch

PATH REFERENCE NUMBER: 152054 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 5

SPECIFICATIONS:

TOP ELEV.: 12600' BOTTOM ELEV.: 9680' VERTICAL FALL: 2920'

LENGTH OF PATH: 8070' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>33°</u>	<u>22°</u>	<u>9°</u>
		Upper: 880'	
AREA ACRES	<u>22</u>	MEAN WIDTH Lower: 320'	AREA ACRES <u>3</u>
		LENGTH <u>6370'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad basin, talus and rock outcrops, grass

TRACK: Broad V-shaped depression, rock outcrops, brush, grass

RUNOUT ZONE: Broad, open slope, heavy aspen and coniferous

HISTORY: I. events: 1. In Dec., 1883, 3 men were caught in their cabin.
Only the cat was killed.

III. events: 2
highway: 0
full-track: 0

Avalanche Summary Sheet

PATH NAME: Albany Gulch

PATH REFERENCE NUMBER: 152055 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 5

SPECIFICATIONS:

TOP ELEV.: 12600' BOTTOM ELEV.: 9680' VERTICAL FALL: 2920'

LENGTH OF PATH: 7470' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>30°</u>	<u>21°</u>	<u>16°</u>
AREA ACRES	<u>49</u>	Upper: 1280' Lower: 320'	AREA ACRES <u>15</u>
		MEAN WIDTH	
		LENGTH <u>5500'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad shallow basin, talus and grass

TRACK: Broad V-shaped depression with moderate coniferous and grass, narrowing to V-shaped depression with brush and bare ground

RUNOUT ZONE: Broad V-shaped depression, heavy aspen

HISTORY: III. events: 2
 highway: 0
 full-track: 1

Avalanche Summary Sheet

PATH NAME: Manie, Moe, Jack, St. Germain

PATH REFERENCE NUMBER: 152056-059 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 5, 6

SPECIFICATIONS:

TOP ELEV.: 10400' BOTTOM ELEV.: 9640' VERTICAL FALL: 760'

LENGTH OF PATH: 1420' NUMBER OF STARTING ZONES: Multiple

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>32°</u>	<u>20°</u>
AREA ACRES	<u>10</u>	MEAN WIDTH <u>2160'</u>	AREA ACRES <u>10</u>
		LENGTH <u>1040'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, shallow depression, moderate to heavy coniferous and aspen

TRACK: Broad, shallow depression, moderate to heavy aspen

RUNOUT ZONE: Open, level area, heavy brush

HISTORY: III. events: 8
highway: 0
full-track: 5



Avalanche Summary Sheet

PATH NAME: East Guadalupe

PATH REFERENCE NUMBER: 152060 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 6, 7

SPECIFICATIONS:

TOP ELEV.: 12560' BOTTOM ELEV.: 9560' VERTICAL FALL: 3000'

LENGTH OF PATH: 7450' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>40°</u>	<u>24°</u>	<u>9°</u>
AREA ACRES	<u>106</u>	MEAN WIDTH <u>640'</u>	AREA ACRES <u>29</u>
		LENGTH <u>5250'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin, cliffs, rugged rock outcrops, talus

TRACK: Broad, V-shaped depression, rock outcrops, brush, grass

RUNOUT ZONE: Broadening fan, light aspen, broad, open grassy slope below

HISTORY: I. events: 5. During this period, the Guadalupe Mine boarding house was destroyed twice; March, 1912, and February, 1919

II. events: 4
highway: 3
full-track: 3

III. events: 22
highway: 0
full-track: 2

Avalanche Summary Sheet

PATH NAME: Slippery Jim

PATH REFERENCE NUMBER: 152061 AREA: 2

MAP NUMBER: 2, 3 PHOTOGRAPH NUMBER: 6, 7

SPECIFICATIONS:

TOP ELEV.: 11600' BOTTOM ELEV.: 9520' VERTICAL FALL: 2080'

LENGTH OF PATH: 3440' NUMBER OF STARTING ZONES: Multiple

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>39°</u>	<u>35°</u>	<u>9°</u>
AREA ACRES	<u>11</u>	Upper: 560' Lower: 1840'	AREA ACRES <u>12</u>
		MEAN WIDTH	
		<u>2420'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

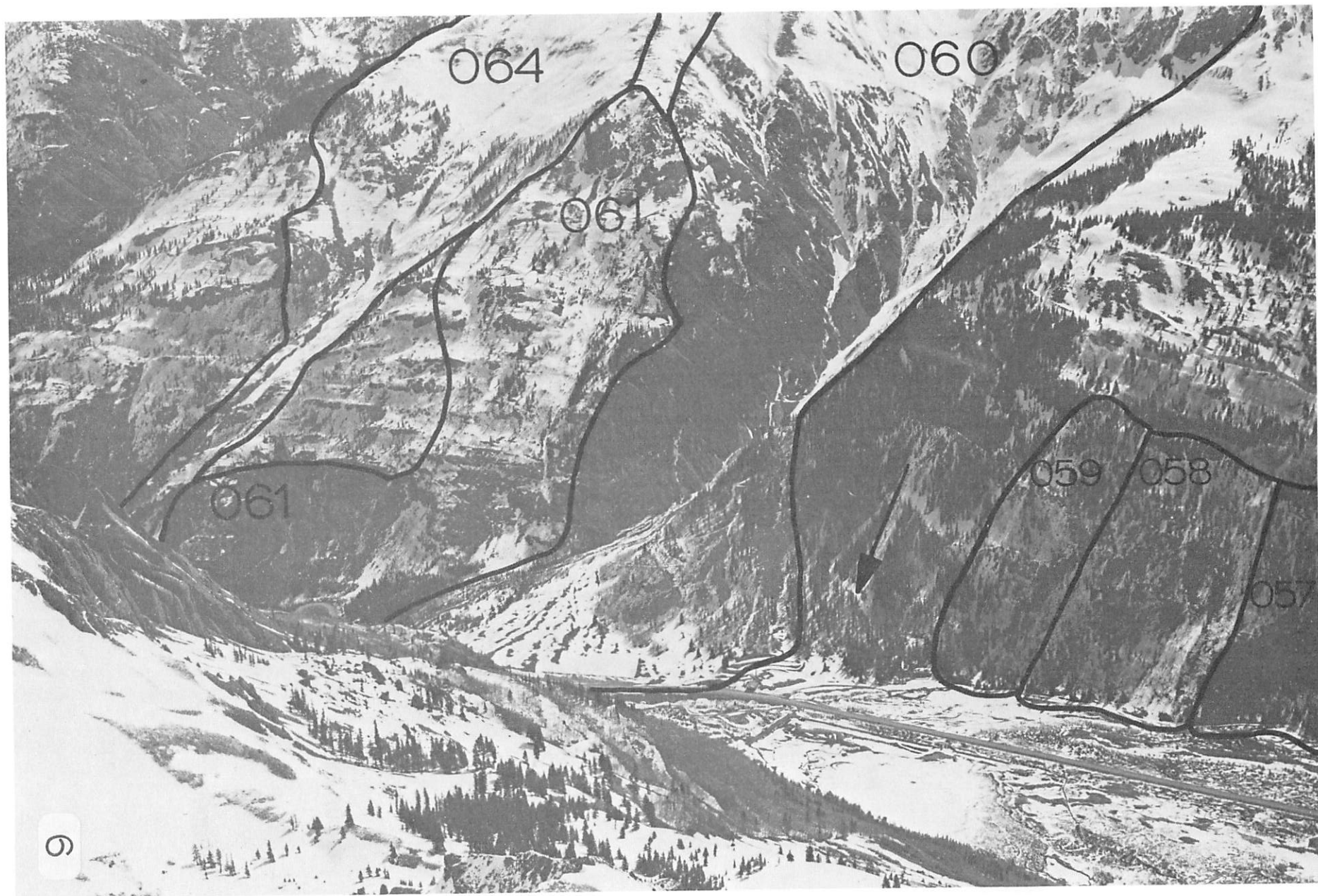
STARTING ZONE: Broad, shallow depressions, smooth rock ledges, grass, light coniferous

TRACK: Broad open slope with shallow depressions, smooth rock ledges, moderate aspen and grass

RUNOUT ZONE: Broad, open slope, grass, brush

HISTORY: II. events: 16
highway: 12
full-track: 12

III. events: 37
highway: 4
full-track: 13



Avalanche Summary Sheet

PATH NAME: East Riverside South

PATH REFERENCE NUMBER: 152062 AREA: 3

MAP NUMBER: 2, 3 PHOTOGRAPH NUMBER: 7, 8

SPECIFICATIONS:

TOP ELEV.: 10080' BOTTOM ELEV.: 9360' VERTICAL FALL: 720'

LENGTH OF PATH: 1400' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>38°</u>	<u>42°</u>	<u>27°</u>
AREA ACRES	<u>1</u>	MEAN WIDTH <u>280'</u>	AREA ACRES <u>2</u>
		LENGTH <u>640'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Narrow, V-shaped depression, rock outcrop

TRACK: Broadening open slope, bare ground, light, small coniferous and aspen

RUNOUT ZONE: Broad, open slope, boulders, bare ground, crosses drainage of Red Mountain Creek

HISTORY: III. events: 9
 highway: 7
 full-track: 5

Avalanche Summary Sheet

PATH NAME: East Riverside Right

PATH REFERENCE NUMBER: 152063 AREA: 3

MAP NUMBER: 2, 3 PHOTOGRAPH NUMBER: 7, 8

SPECIFICATIONS:

TOP ELEV.: 10080' BOTTOM ELEV.: 9340' VERTICAL FALL: 740'

LENGTH OF PATH: 1410' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>42°</u>	<u>27°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>320'</u>	AREA ACRES <u>1</u>
		LENGTH <u>560'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, cliffs with rock outcrops, moderate coniferous and aspen below

TRACK: Open slope, rock outcrops, moderate coniferous and aspen

RUNOUT ZONE: Open slope, boulders, bare ground, crosses drainage of Red Mountain Creek

HISTORY: III. events: 7
highway: 4
full-track: 4

Avalanche Summary Sheet

PATH NAME: East Riverside

PATH REFERENCE NUMBER: 152064 AREA: 3

MAP NUMBER: 2, 3 PHOTOGRAPH NUMBER: 7, 8

SPECIFICATIONS:

TOP ELEV.: 12600' BOTTOM ELEV.: 9320' VERTICAL FALL: 3280'

LENGTH OF PATH: 6600' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>29°</u>	<u>27°</u>
AREA ACRES	<u>53</u>	Upper: 1280' Lower: 560'	AREA ACRES <u>8</u>
		LENGTH <u>4950'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin, rock outcrops, grass

TRACK: V-shaped depression narrowing to incised gully, rock outcrops, light, small aspen

RUNOUT ZONE: Open slope, crosses drainage of Red Mountain Creek, frequently ascends opposite slope

HISTORY: I. events: 35. During this period, 3 people, 5 horses, and a dog were caught: one man, 2 horses, and the dog were killed

II. events: 90
highway: 68
full-track: 18
During this period, 7 people were caught, 4 were killed

III. events: 45
highway: 33
full-track: 21

Avalanche Summary Sheet

PATH NAME: East Riverside Left

PATH REFERENCE NUMBER: 152065 AREA: 3

MAP NUMBER: 2, 3 PHOTOGRAPH NUMBER: 7, 8

SPECIFICATIONS:

TOP ELEV.: 9800' BOTTOM ELEV.: 9240' VERTICAL FALL: 560'

LENGTH OF PATH: 980' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>48°</u>	<u>40°</u>	<u>27°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>560'</u>	AREA ACRES <u>1</u>
		LENGTH <u>460'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

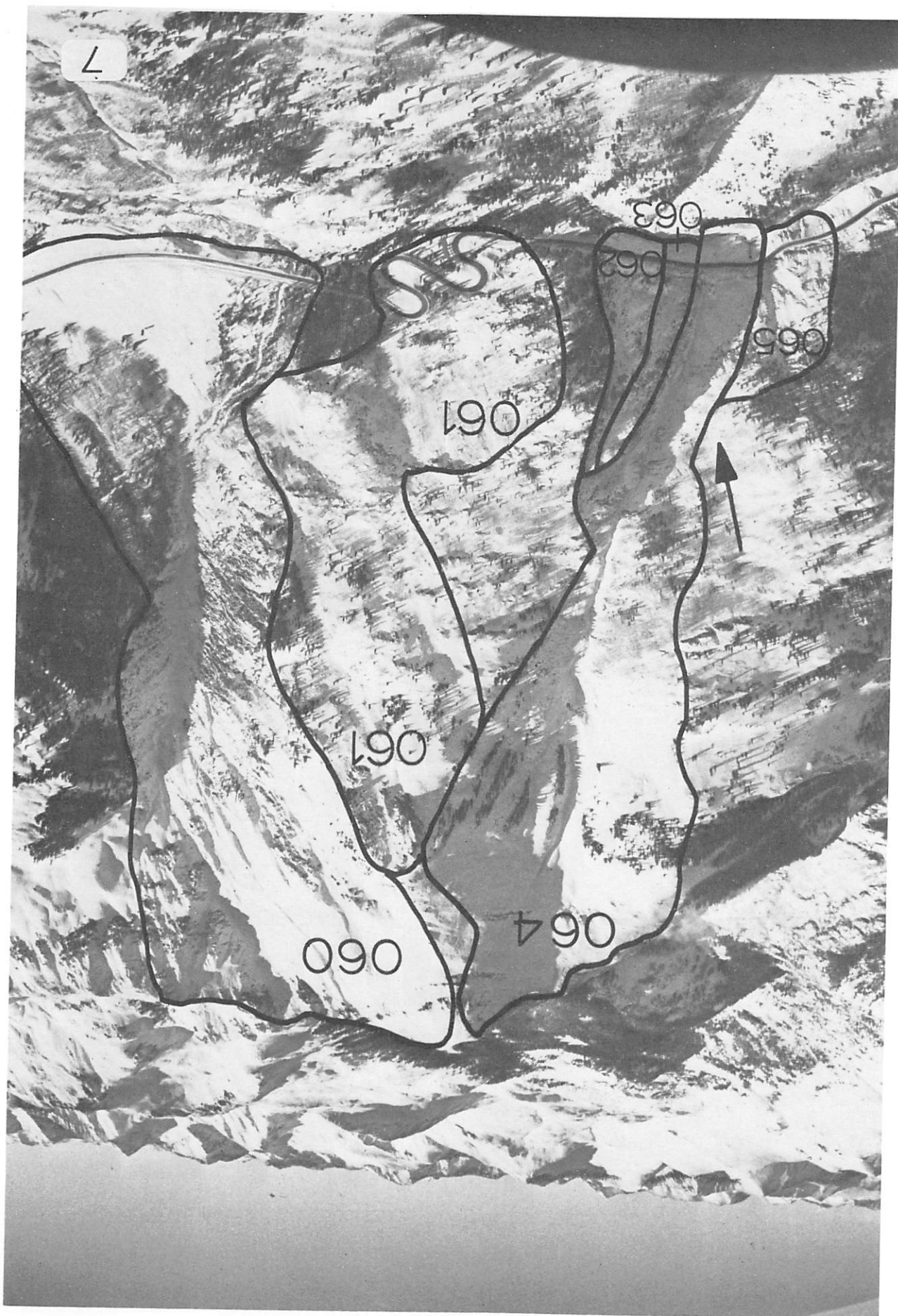
STARTING ZONE: Broad, open slope, smooth rock faces, light, small coniferous

TRACK: Broad, open slope, bare ground, grass, cliff face of road cut below

RUNOUT ZONE: Open slope, bare ground, crosses drainage of Red Mountain Creek

HISTORY: III. events: 30
highway: 20
full-track: 19

7



Avalanche Summary Sheet

PATH NAME: North of Emergency Phone

PATH REFERENCE NUMBER: 152066 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 8

SPECIFICATIONS:

TOP ELEV.: 9360' BOTTOM ELEV.: 9160' VERTICAL FALL: 200'

LENGTH OF PATH: 310' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>49°</u>	<u>45°</u>	<u>27°</u>
AREA ACRES	<u>41</u>	MEAN WIDTH <u>720'</u>	AREA ACRES <u>2</u>
		LENGTH <u>110'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, rock outcrops, smooth rock slabs

TRACK: Open slope, grass, light coniferous

RUNOUT ZONE: Vertical cliff face of the road cut and the road

HISTORY: II. events: 2
highway: 2
full-track: 0

III. events: 4
highway: 2
full-track: 2

Avalanche Summary Sheet

PATH NAME: Cliff

PATH REFERENCE NUMBER: 152067 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 8

SPECIFICATIONS:

TOP ELEV.: 9600' BOTTOM ELEV.: 9160' VERTICAL FALL: 440'

LENGTH OF PATH: 710' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>51°</u>	<u>45°</u>	<u>27°</u>
AREA ACRES	<u>2</u>	MEAN WIDTH <u>1200'</u>	AREA ACRES <u>3</u>
		LENGTH <u>330'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Cliff with talus, moderate small aspen below

TRACK: Open slope, talus, moderate small aspen, light coniferous

RUNOUT ZONE: Broad, shallow depression, small rocks, bare ground, brush light coniferous

HISTORY: III. events: 4
 highway: 2
 full-track: 2

Avalanche Summary Sheet

PATH NAME: Dunsmore

PATH REFERENCE NUMBER: 152068 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 8, 9

SPECIFICATIONS:

TOP ELEV.: 9600' BOTTOM ELEV.: 9040' VERTICAL FALL: 560'

LENGTH OF PATH: 850' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>53°</u>	<u>41°</u>	<u>27°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>400'</u>	AREA ACRES <u><1</u>
		LENGTH <u>470'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

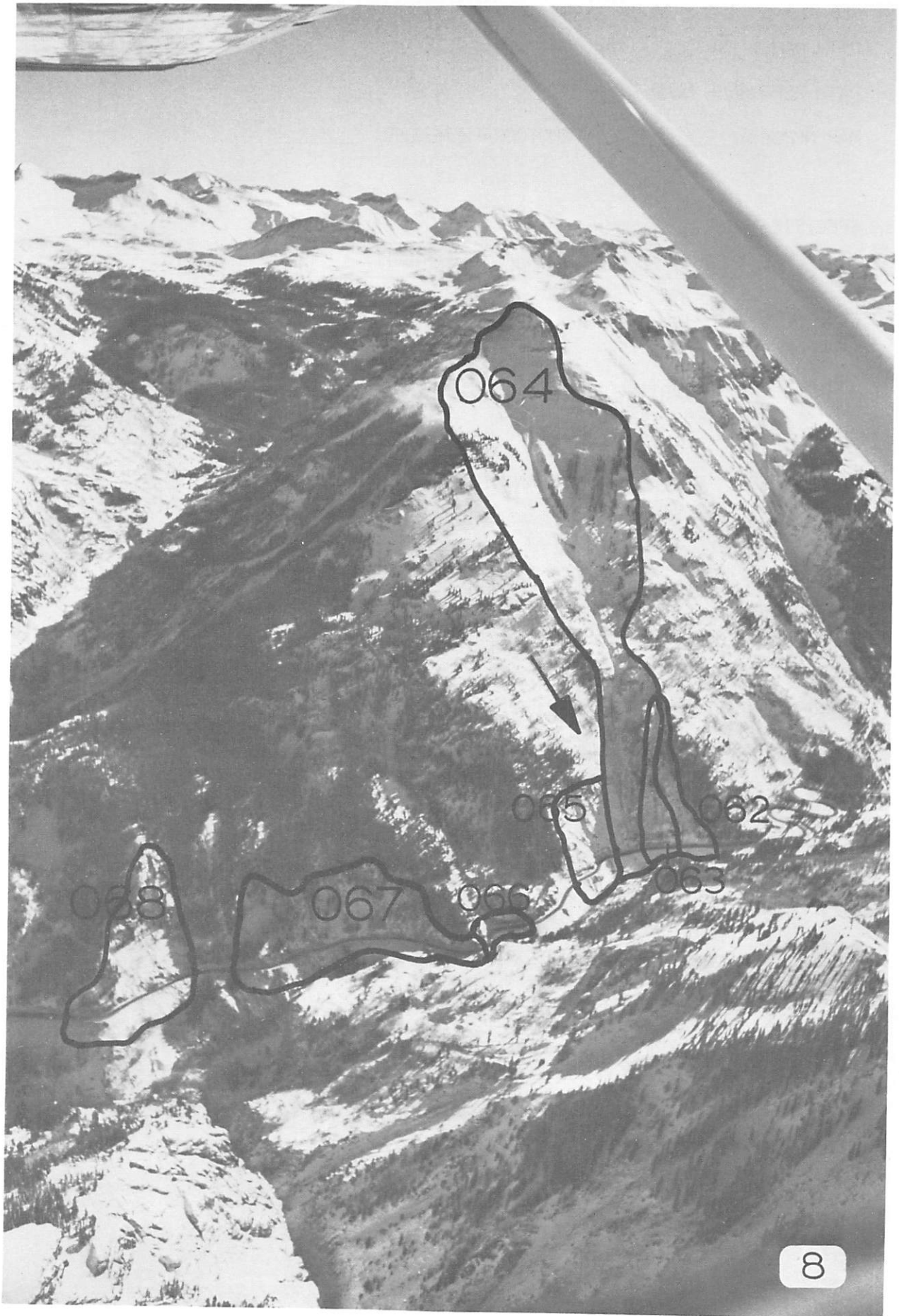
STARTING ZONE: Open slope, cliffs with smooth rock slab below

TRACK: Open slope, talus, large boulders

RUNOUT ZONE: Shallow depression, talus, moderate aspen and brush

HISTORY: II. events: 2
highway: 2
full-track: 1

III. events: 8
highway: 6
full-track: 4



Avalanche Summary Sheet

PATH NAME: Mother Cline

PATH REFERENCE NUMBER: 152069 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 9

SPECIFICATIONS:

TOP ELEV.: 9400' BOTTOM ELEV.: 8880' VERTICAL FALL: 520'

LENGTH OF PATH: 760' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>45°</u>	<u>45°</u>	<u>27°</u>
AREA ACRES	<u>4</u>	MEAN WIDTH <u>1280'</u>	AREA ACRES <u>3</u>
		LENGTH <u>330'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, smooth rock slabs

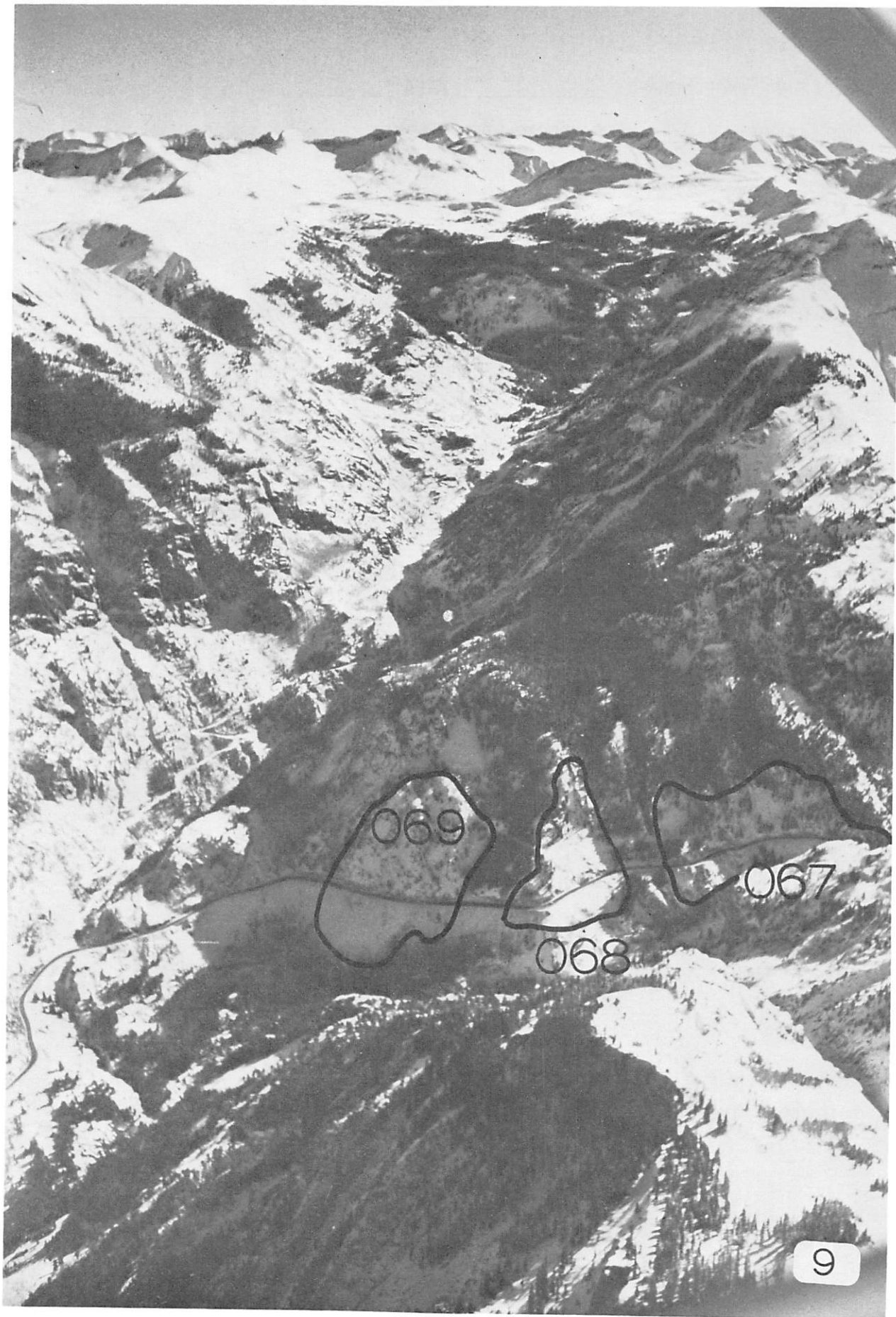
TRACK: Broad, open slope, smooth rock slabs, light coniferous

RUNOUT ZONE: Broad, convex slope, rock outcrops, talus

HISTORY:

- I. events: 28. On Feb. 21, 1895, the Red Mt. mail carrier and his horses were buried: all survived
- II. events: 71
highway: 52
full-track: 10
During this period, 3 vehicles were buried.
- III. events: 70
highway: 54
full-track: 18
During this period, 3 vehicles were buried, one 4 times.
On April 27, 1973, the Mother Cline ran 7 times.

56



Avalanche Summary Sheet

PATH NAME: Silver Point

PATH REFERENCE NUMBER: 152070 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 10

SPECIFICATIONS:

TOP ELEV.: 10200' BOTTOM ELEV.: 8640' VERTICAL FALL: 1560'

LENGTH OF PATH: 2600' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>45°</u>	<u>36°</u>	<u>34°</u>
AREA ACRES	<u>5</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>1</u>
		LENGTH <u>1690'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

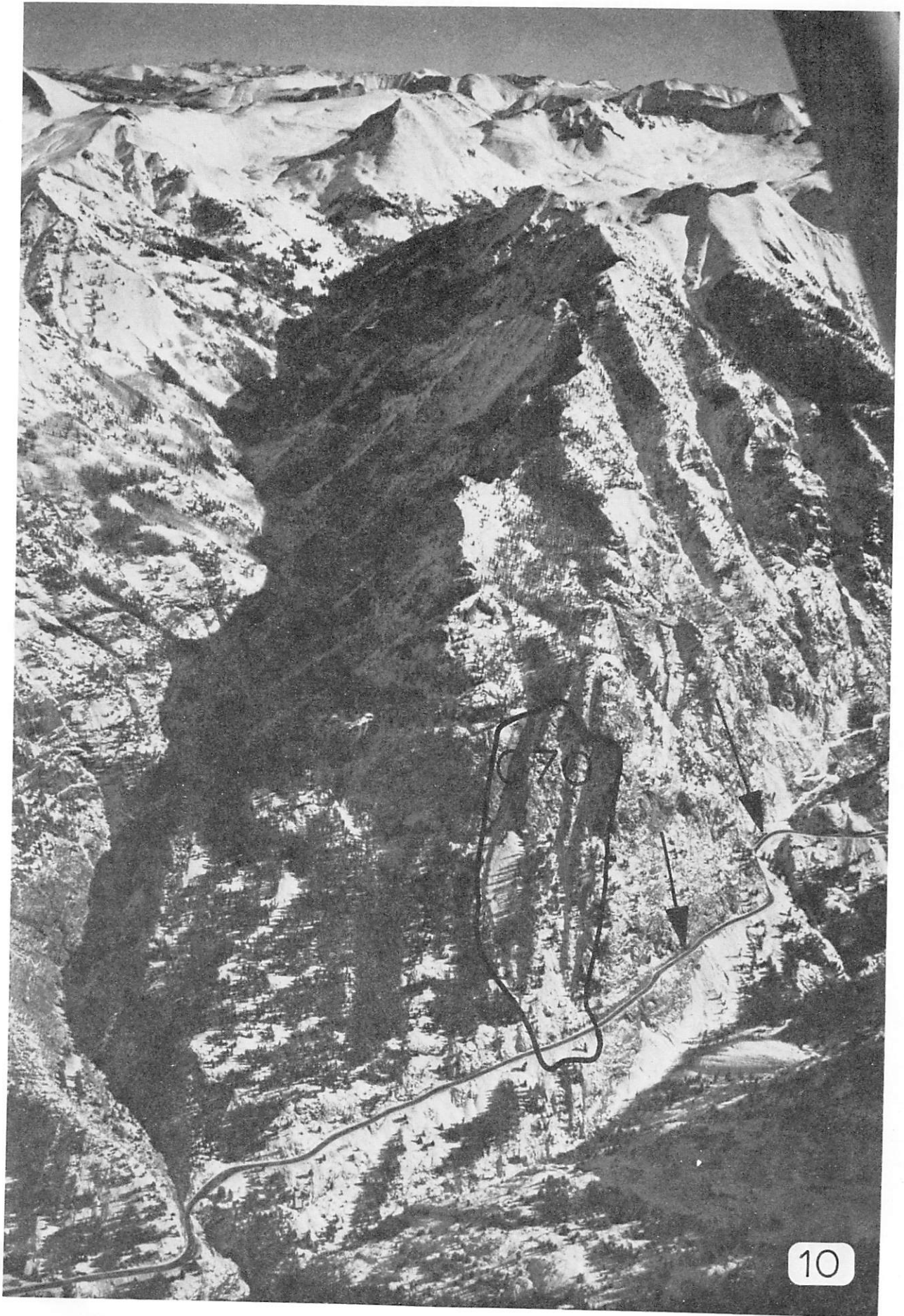
STARTING ZONE: Open slope, smooth rock cliffs

TRACK: Open slope, smooth rock face, very light, small coniferous

RUNOUT ZONE: Open slope, talus, moderate coniferous

HISTORY: II. events: 6
 highway: 6
 full-track: 2

III. events: 10
 highway: 7
 full-track: 4



Avalanche Summary Sheet

PATH NAME: Jackpot

PATH REFERENCE NUMBER: 152071 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 11

SPECIFICATIONS:

TOP ELEV.: 9640' BOTTOM ELEV.: 8320' VERTICAL FALL: 1320'

LENGTH OF PATH: 2010' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>59°</u>	<u>38°</u>	<u>23°</u>
AREA ACRES	<u>6</u>	Upper: 560' Lower: 200'	AREA ACRES <u>4</u>
		LENGTH <u>1110'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

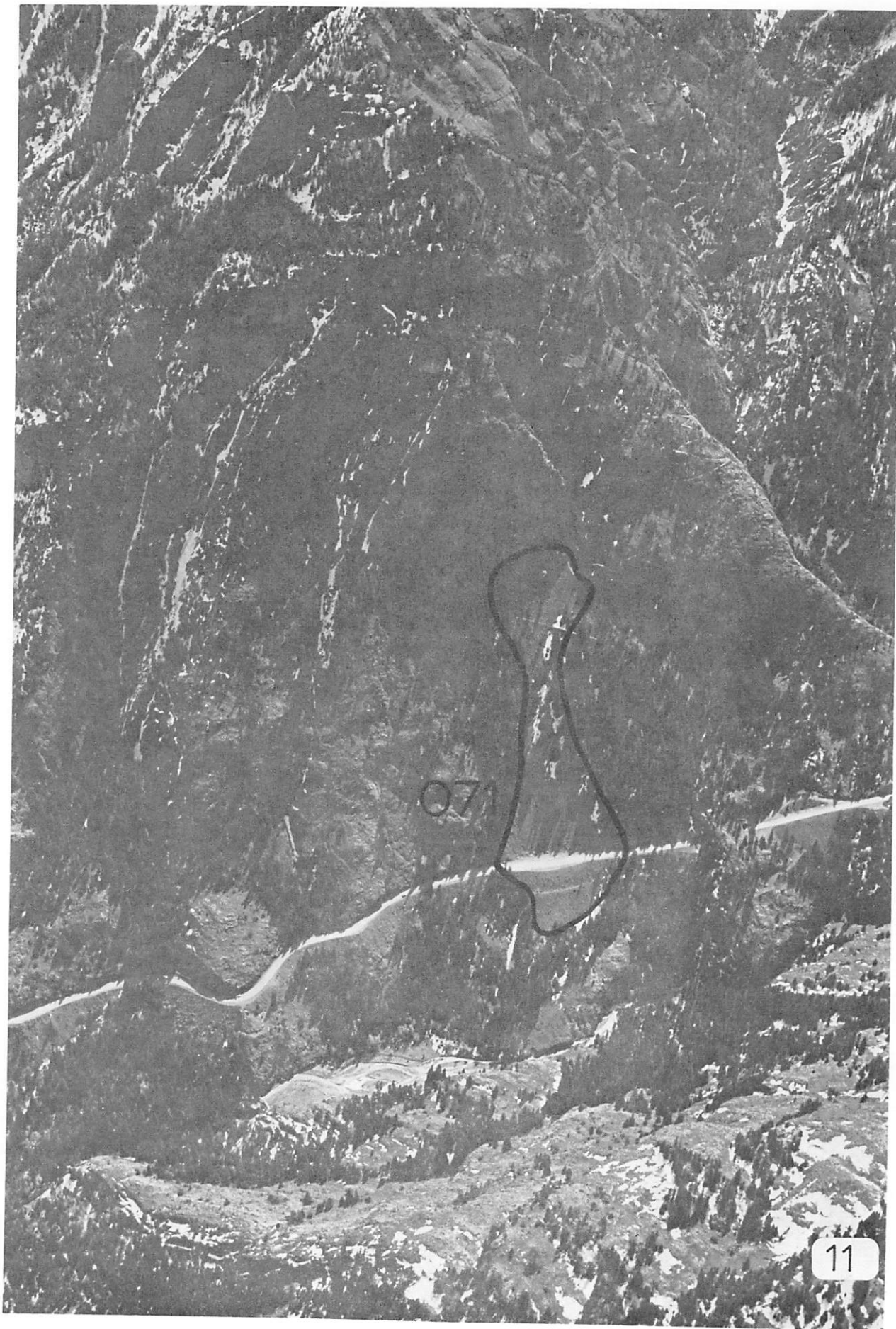
STARTING ZONE: Open slope, rock slabs

TRACK: Shallow depression, light to moderate coniferous, bare ground

RUNOUT ZONE: Broad, open slope, talus, grass, bare ground

HISTORY: II. events: 4
 highway: 4
 full-track: 4

 III. events: 2
 highway: 2
 full-track: 2



U.S. HIGHWAY 550: WEST SIDE

**Ouray to Red Mountain Pass
avalanche paths:072-099**

Avalanche Summary Sheet

PATH NAME: White Fir

PATH REFERENCE NUMBER: 152072 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 12

SPECIFICATIONS:

TOP ELEV.: 11200' BOTTOM ELEV.: 8360' VERTICAL FALL: 2840'

LENGTH OF PATH: 4990' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>42°</u>	<u>32°</u>	<u>23°</u>
AREA ACRES	<u>33</u>	MEAN WIDTH <u>560'</u>	AREA ACRES <u>4</u>
		LENGTH <u>2980'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, cliffs, light coniferous

TRACK: Open slope, cliffs, smooth rock outcrops, brush, grass

RUNOUT ZONE: Open slope, cliffs, smooth rock outcrops, brush, grass, crosses drainage of Red Mountain Creek

HISTORY: III. events: 11
highway: 0
full-track: 2



Avalanche Summary Sheet

PATH NAME: Silver Gulch

PATH REFERENCE NUMBER: 152073 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 13

SPECIFICATIONS:

TOP ELEV.: 12520' BOTTOM ELEV.: 8840' VERTICAL FALL: 3680'

LENGTH OF PATH: 8590' NUMBER OF STARTING ZONES: 5

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>36°</u>	<u>27°</u>	<u>14°</u>
AREA ACRES	<u>84</u>	MEAN WIDTH <u>1200'</u>	AREA ACRES <u>7</u>
		LENGTH <u>6850'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

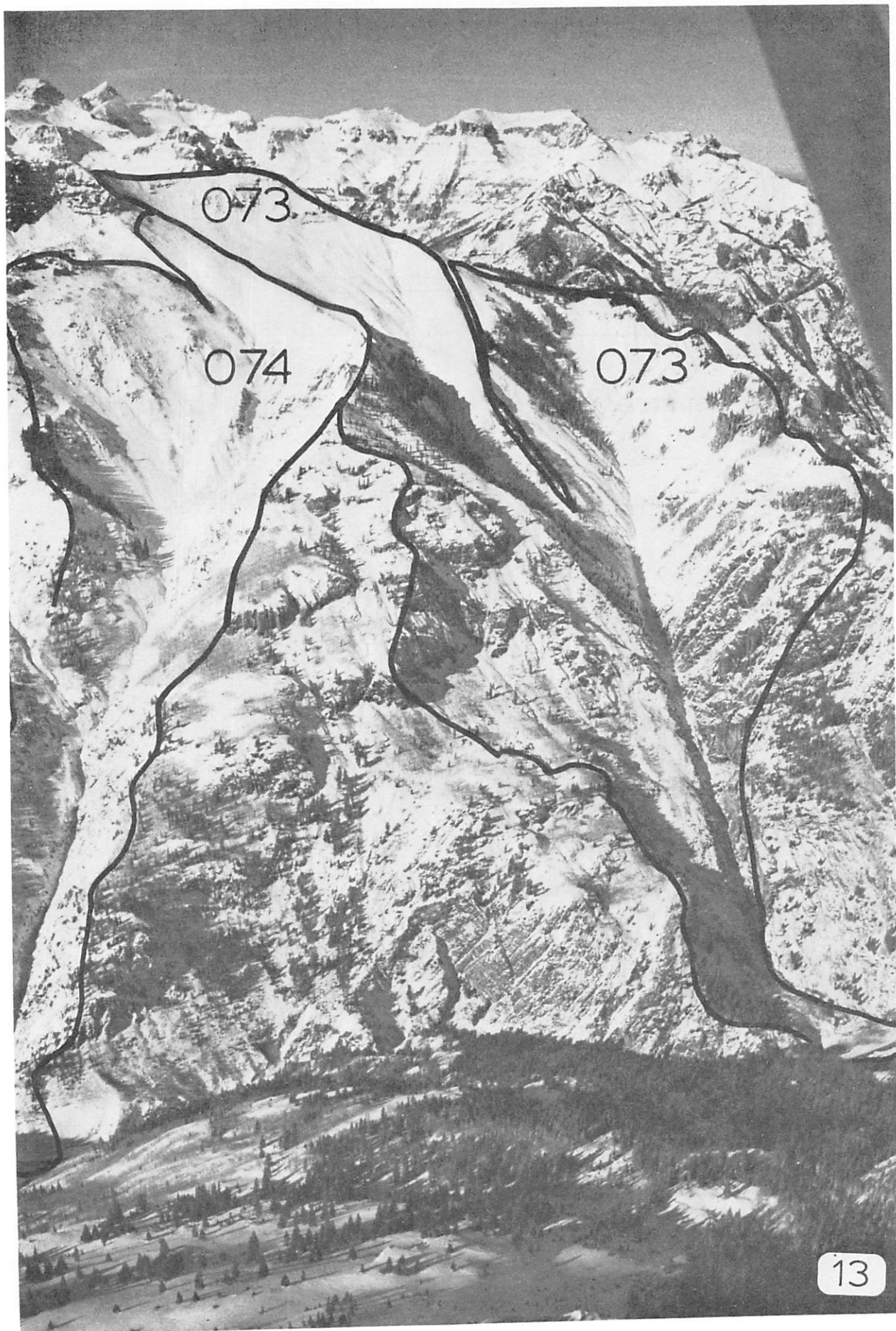
TERRAIN AND VEGETATION COVER:

STARTING ZONE: South upper: Broad basin with cliff bands above, bare ground, talus below. South lower: Broad, open slope with rock outcrops, light coniferous, grass, bare ground. Main path: Broad, V-shaped depression, rock outcrops, moderate coniferous, grass, bare ground.

TRACK: Deep, narrow, V-shaped gully, rugged rock outcrops, boulders, cliffs

RUNOUT ZONE: Broad, shallow depression, talus, brush, crosses drainage of Red Mountain Creek, occasionally ascends the opposite slope

HISTORY: III. events: 17
 highway: 1
 full-track: 6



Avalanche Summary Sheet

PATH NAME: West Riverside

PATH REFERENCE NUMBER: 152074 AREA: 3

MAP NUMBER: 3 PHOTOGRAPH NUMBER: 13, 14

SPECIFICATIONS:

TOP ELEV.: 11800' BOTTOM ELEV.: 9320' VERTICAL FALL: 2480'

LENGTH OF PATH: 6380' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>33°</u>	<u>23°</u>	<u>34°</u>
AREA ACRES	<u>90</u>	MEAN WIDTH <u>400'</u>	AREA ACRES <u>8</u>
		LENGTH <u>5750'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin, grass

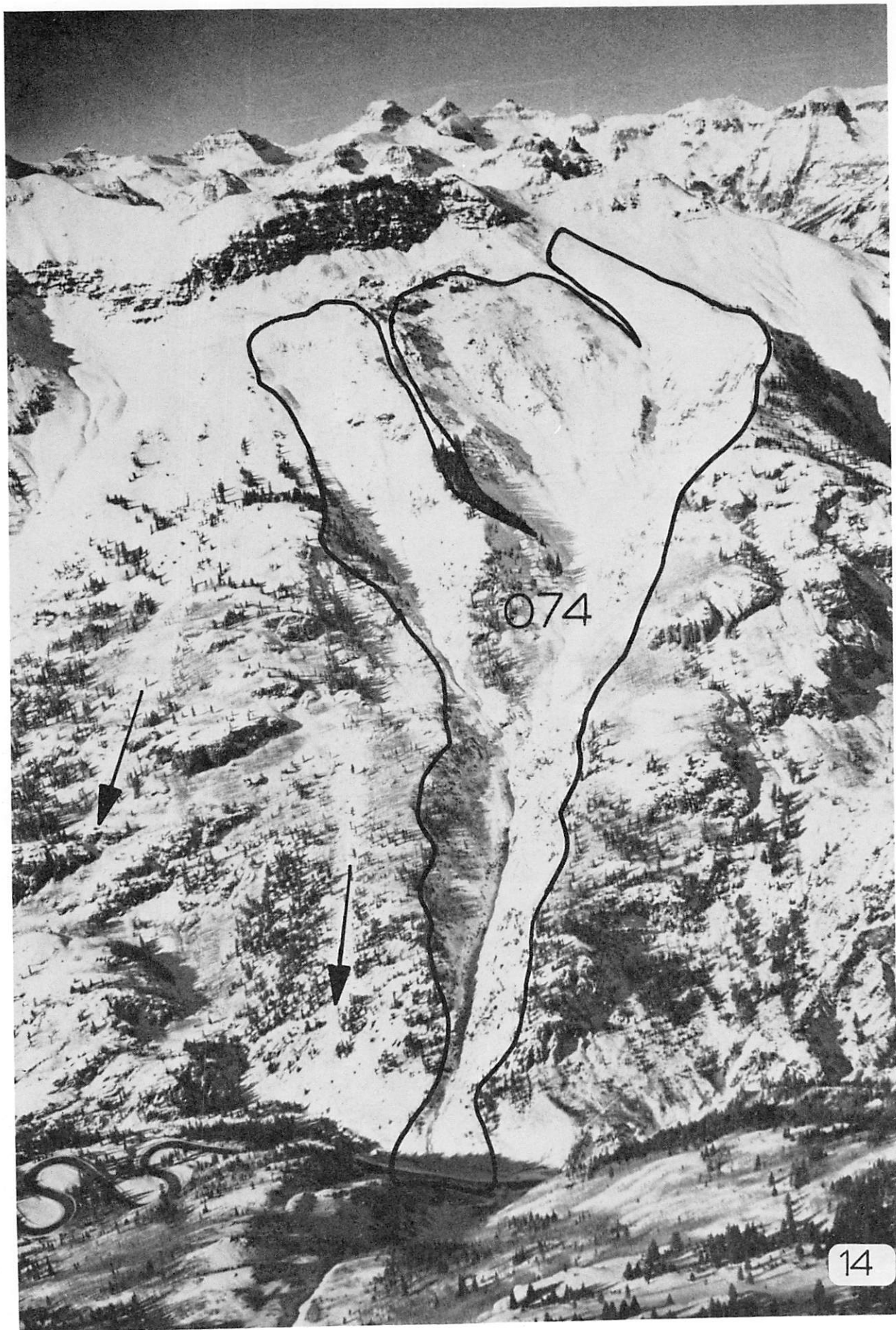
TRACK: Narrow, V-shaped depression with incised gully, smooth rock outcrops, cliffs

RUNOUT ZONE: Broad, shallow depression, boulders, bare ground, grass, crosses drainage of Red Mountain Creek, frequently ascends the opposite slope

HISTORY: I. events: 5

II. events: 18
highway: 11
full-track: 2

III. events: 15
highway: 2
full-track: 9



Avalanche Summary Sheet

PATH NAME: West Guadalupe

PATH REFERENCE NUMBER: 152075 AREA: 2

MAP NUMBER: 2, 3 PHOTOGRAPH NUMBER: 15

SPECIFICATIONS:

TOP ELEV.: 12800' BOTTOM ELEV.: 9560' VERTICAL FALL: 3240'

LENGTH OF PATH: 6910' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>37°</u>	<u>27°</u>	<u>12°</u>
AREA ACRES	<u>47</u>	MEAN WIDTH <u>720'</u>	AREA ACRES <u>29</u>
		LENGTH <u>5220'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

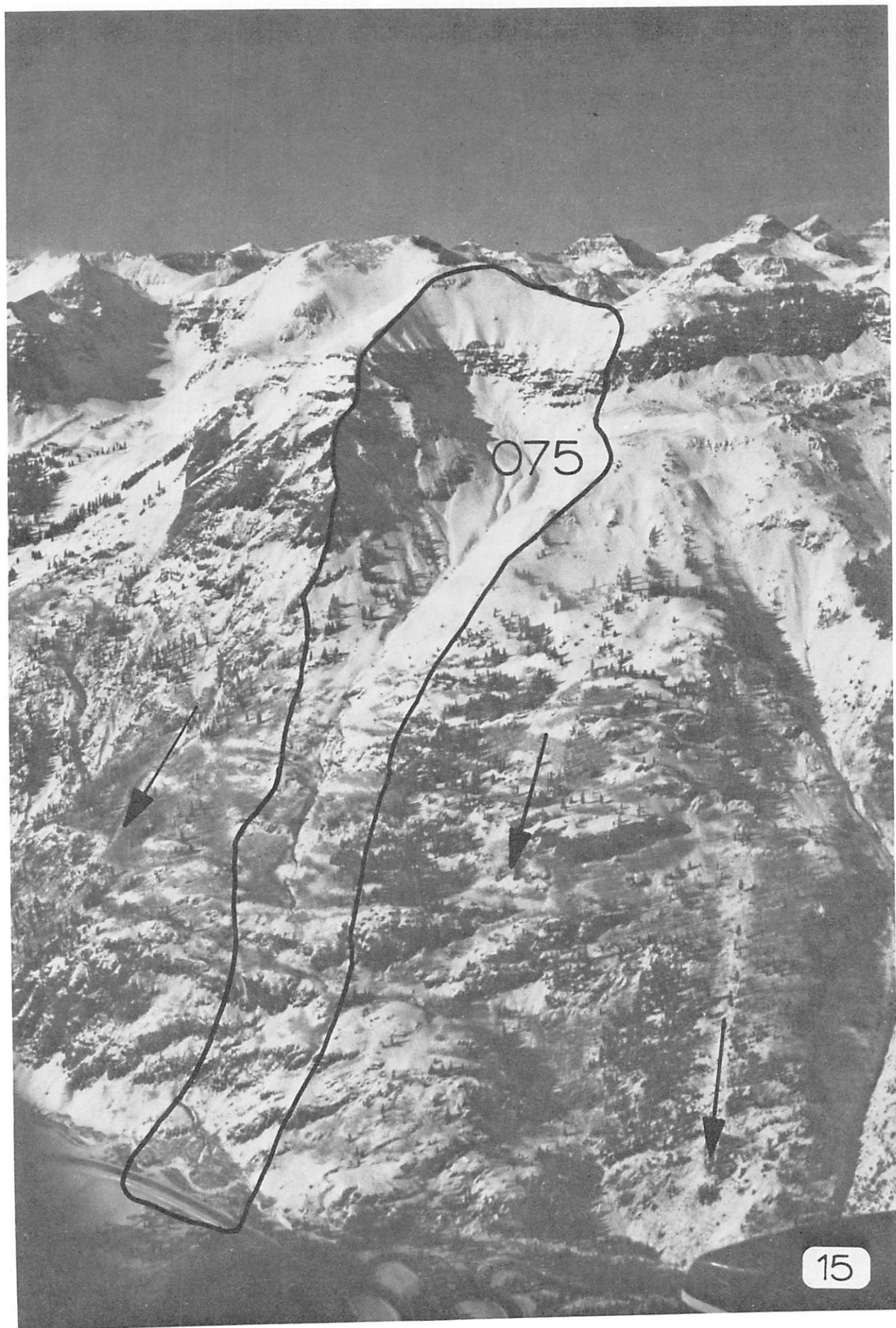
STARTING ZONE: Broad, open slope, smooth cliffs

TRACK: Broad, shallow depression, smooth rock outcrops, moderate coniferous and aspen

RUNOUT ZONE: Broad open slope, moderate to heavy coniferous and aspen, occasionally crosses highway

HISTORY: II. events: 1
 highway: 1
 full-track: 0

 III. events: 15
 highway: 0
 full-track: 5



Avalanche Summary Sheet

PATH NAME: Water Gauge North

PATH REFERENCE NUMBER: 152076 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 16

SPECIFICATIONS:

TOP ELEV.: 11520' BOTTOM ELEV.: 9600' VERTICAL FALL: 1920'

LENGTH OF PATH: 3460' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>43°</u>	<u>31°</u>	<u>0°</u>
AREA ACRES	<u>11</u>	MEAN WIDTH <u>160'</u>	AREA ACRES <u>3</u>
		LENGTH <u>1780'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, rock outcrops, moderate coniferous and aspen

TRACK: Upper: Open slope, rock outcrops, moderate coniferous and aspen
Lower: Open slope, heavy, small aspen

RUNOUT ZONE: Crystal Lake

HISTORY: III. events: 14
 highway: 0
 full-track: 4

Avalanche Summary Sheet

PATH NAME: Lake

PATH REFERENCE NUMBER: 152077 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 16

SPECIFICATIONS:

TOP ELEV.: 11000' BOTTOM ELEV.: 9600' VERTICAL FALL: 1400'

LENGTH OF PATH: 2570' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>45°</u>	<u>34°</u>	<u>0°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>3</u>
		LENGTH <u>1640'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, rock outcrops, boulders, bare ground, light, small aspen

TRACK: Shallow depression, moderate to heavy, small aspen and brush

RUNOUT ZONE: Crystal Lake

HISTORY: III. events: 4
 highway: 0
 full-track: 2

Avalanche Summary Sheet

PATH NAME: Earth, Fire

PATH REFERENCE NUMBER: 152078-079 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 16

SPECIFICATIONS:

TOP ELEV.: 10800' BOTTOM ELEV.: 9640' VERTICAL FALL: 1160'

LENGTH OF PATH: 1910' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>35°</u>	<u>36°</u>	<u>0°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>350'</u>	AREA ACRES <u><1</u>
		LENGTH <u>1340'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

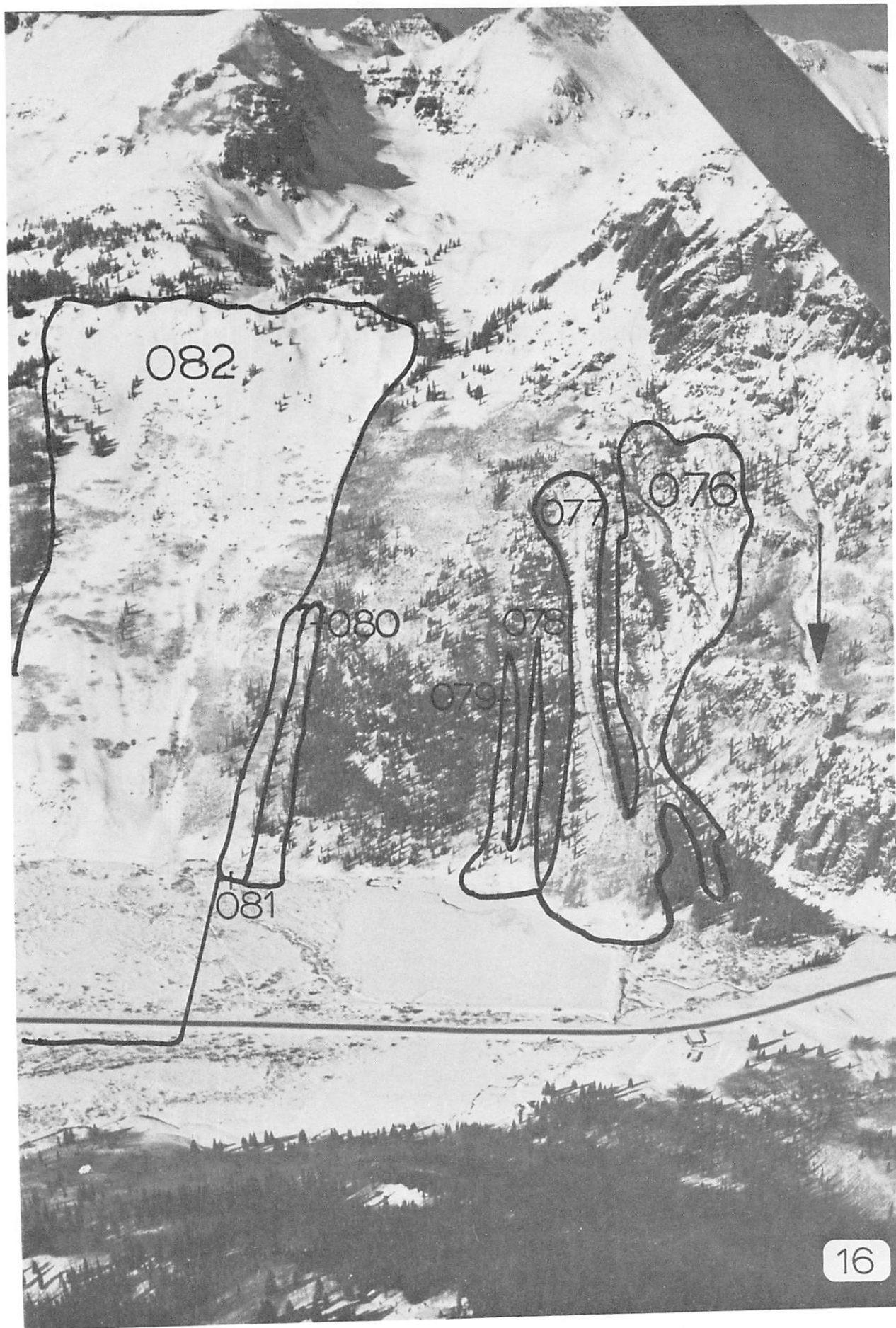
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, rock outcrops, boulders, light coniferous

TRACK: Shallow depression, bare ground, grass, light, small aspen

RUNOUT ZONE: Crystal Lake

HISTORY: III. events: 8
highway: 0
full-track: 2



Avalanche Summary Sheet

PATH NAME: Ironton

PATH REFERENCE NUMBER: 152082 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 16, 17

SPECIFICATIONS:

TOP ELEV.: 11320' BOTTOM ELEV.: 9620' VERTICAL FALL: 1700'

LENGTH OF PATH: 4500' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>31°</u>	<u>28°</u>	<u>0°</u>
AREA ACRES	<u>20</u>	MEAN WIDTH <u>1440'</u>	AREA ACRES <u>39</u>
		LENGTH <u>2860'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad basin, cliffs, rock ridges, rock outcrops

TRACK: Broad, open slope, grass, light small aspen, very light coniferous

RUNOUT ZONE: Broad level area, heavy brush, grass

HISTORY: II. events: 2
highway: 2
full-track: 2
On February 14, 1958, the avalanche crossed the highway,
removing several power poles

III. events: 9
highway: 0
full-track: 4

Avalanche Summary Sheet

PATH NAME: Air, Water

PATH REFERENCE NUMBER: 152080.081 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 16, 17

SPECIFICATIONS:

TOP ELEV.: 10600' BOTTOM ELEV.: 9640' VERTICAL FALL: 960'

LENGTH OF PATH: 1920' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>32°</u>	<u>31°</u>	<u>14°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u><1</u>

LENGTH 1500'

TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>
-----------	----------	----------	----------

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, small rock outcrops, moderate to heavy aspen

TRACK: Open slope, heavy, small aspen with steep rock band below

RUNOUT ZONE: Open, level area, brush, grass

HISTORY: III. events: 1
highway: 0
full-track: 0

Avalanche Summary Sheet

PATH NAME: Tidy

PATH REFERENCE NUMBER: 152083 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 17, 18

SPECIFICATIONS:

TOP ELEV.: 11320' BOTTOM ELEV.: 9640' VERTICAL FALL: 1680'

LENGTH OF PATH: 3900' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>31°</u>	<u>29°</u>	<u>0°</u>
AREA ACRES	<u>5</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>4</u>
		LENGTH <u>2740'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

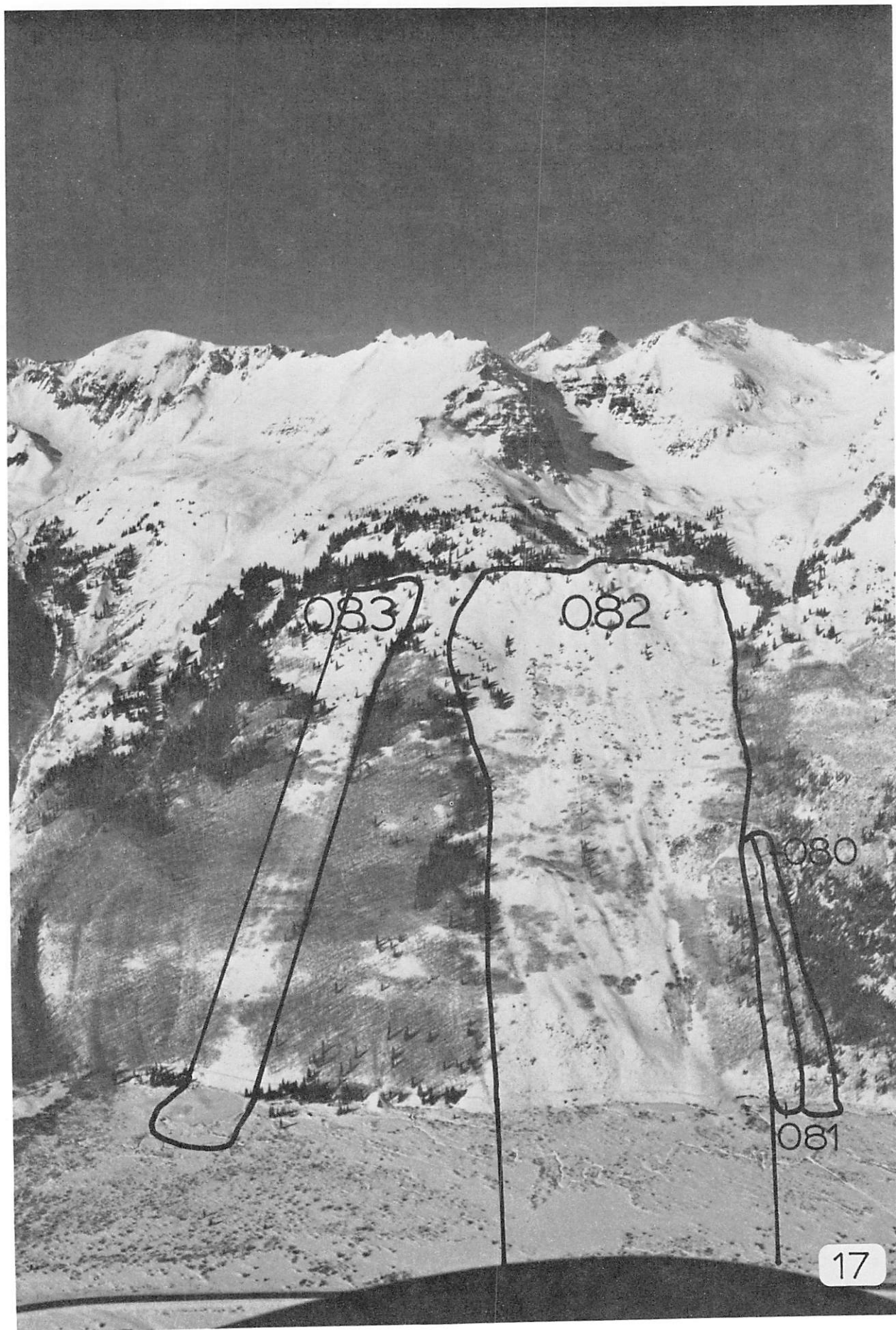
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, grass, bare ground, light coniferous

TRACK: Open slope, grass, bare ground, heavy, small aspen in lower track

RUNOUT ZONE: Broad, level area, heavy brush

HISTORY: III. events: 9
highway: 0
full-track: 5



Avalanche Summary Sheet

PATH NAME: Full Moon Gulch

PATH REFERENCE NUMBER: 152084 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 18

SPECIFICATIONS:

TOP ELEV.: 12800' BOTTOM ELEV.: 9660' VERTICAL FALL: 3140'

LENGTH OF PATH: 10024' NUMBER OF STARTING ZONES: 4

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>37°</u>	<u>18°</u>	<u>8°</u>
AREA ACRES	<u>55</u>	Upper: 1920' Lower: 400'	AREA ACRES <u>21</u>
		LENGTH <u>8320'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Very large basin, cliffs, rock ridges, rock outcrops

TRACK: Broad, V-shaped depression, light coniferous, brush, grass

RUNOUT ZONE: Broad, open slope, heavy grass and brush

HISTORY: III. events: 12
highway: 0
full-track: 2

Avalanche Summary Sheet

PATH NAME: Daisy Hill

PATH REFERENCE NUMBER: 152085 AREA: 2

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 18

SPECIFICATIONS:

TOP ELEV.: 11000' BOTTOM ELEV.: 9660' VERTICAL FALL: 1340'

LENGTH OF PATH: 3470' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>40°</u>	<u>25°</u>	<u>8°</u>
AREA ACRES	<u>13</u>	MEAN WIDTH <u>1200'</u>	AREA ACRES <u>21</u>
		LENGTH <u>1930'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

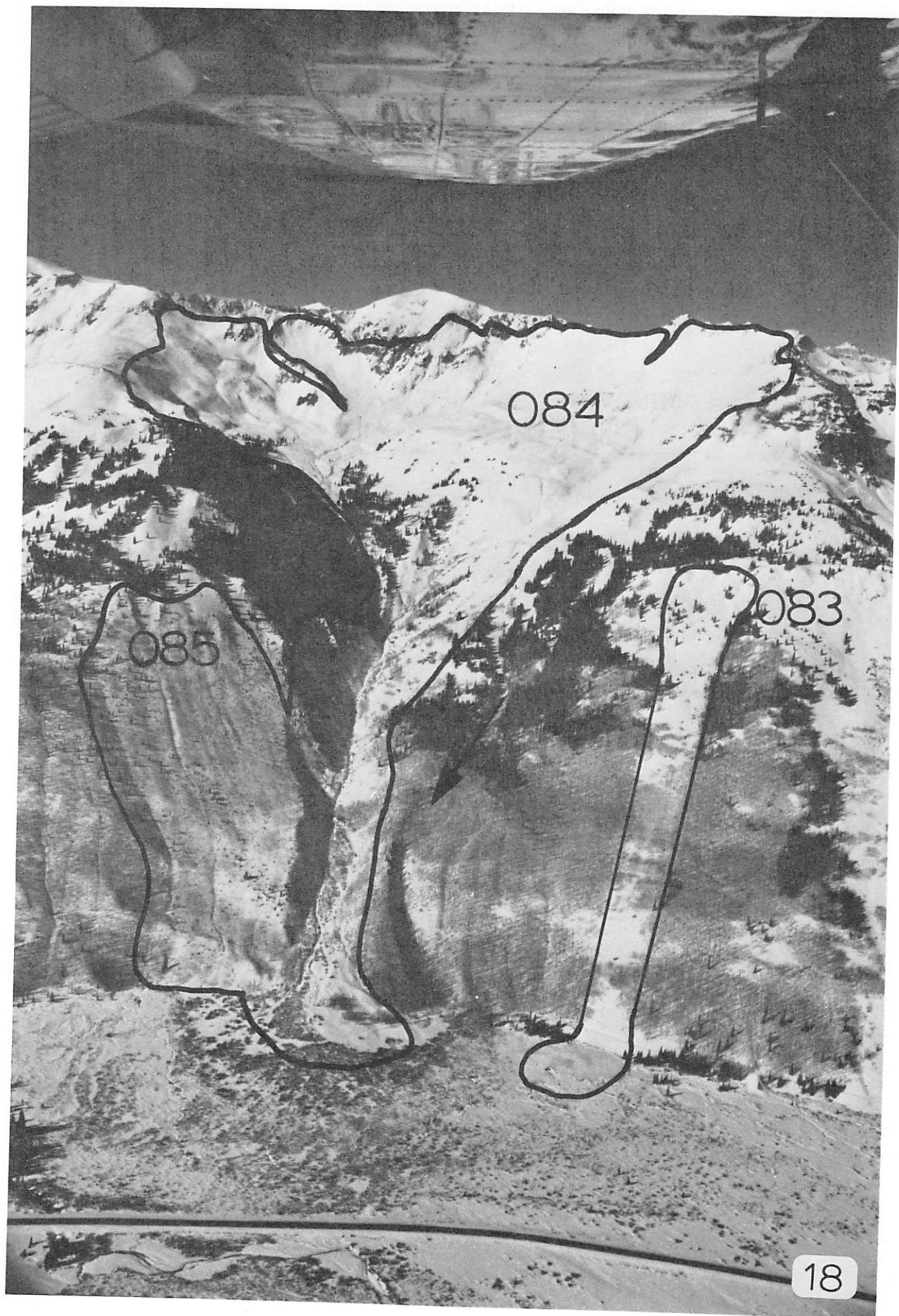
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, bare ground, grass, light, small aspen

TRACK: Broad, open slope, moderate to heavy small aspen

RUNOUT ZONE: Broad, open slope, moderate to heavy small aspen, brush

HISTORY: III. events: 9
highway: 0
full-track: 3



Avalanche Summary Sheet

PATH NAME: Richmond

PATH REFERENCE NUMBER: 152086 AREA: 1

MAP NUMBER: 2 PHOTOGRAPH NUMBER: 19

SPECIFICATIONS:

TOP ELEV.: 12000' BOTTOM ELEV.: 9920' VERTICAL FALL: 2080'

LENGTH OF PATH: 4720' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>25°</u>	<u>15°</u>
AREA ACRES	<u>7</u>	Upper: 960' Lower: 120'	AREA ACRES <u>2</u>
		LENGTH <u>4220'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad shallow basin, rock outcrops

TRACK: Broad, V-shaped depression, grass, light coniferous above, with rugged, heavily-eroded rock outcrops below

RUNOUT ZONE: Broad, V-shaped depression, bare ground, moderate coniferous and aspen

HISTORY: III. events: 4
highway: 0
full-track: 0

Avalanche Summary Sheet

PATH NAME: McIntyre Gulch

PATH REFERENCE NUMBER: 152087 AREA: 1

MAP NUMBER: 4 PHOTOGRAPH NUMBER: 19

SPECIFICATIONS:

TOP ELEV.: 13000' BOTTOM ELEV.: 9960' VERTICAL FALL: 3040'

LENGTH OF PATH: 8860' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>38°</u>	<u>19°</u>	<u>13°</u>
AREA ACRES	<u>79</u>	Upper: 3120' Lower: 240'	AREA ACRES <u>10</u>
		MEAN WIDTH	
		<u>7290'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

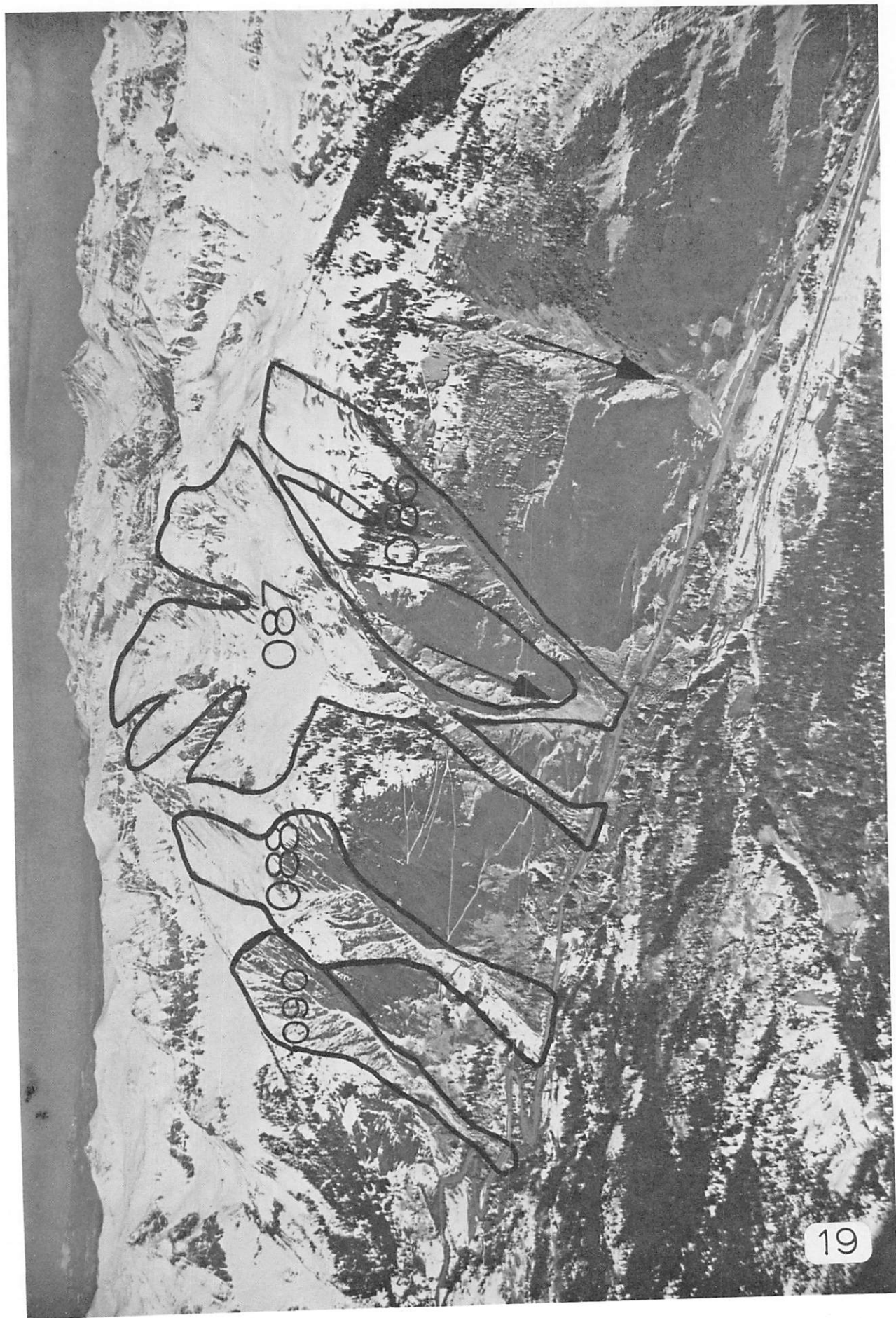
STARTING ZONE: Broad, shallow depression, smooth rock outcrops, grass

TRACK: Narrow, V-shaped gully, rock outcrops, bare ground, brush, grass

RUNOUT ZONE: Open slope, heavy brush and aspen

HISTORY: II. events: 2
 highway: 2
 full-track: 0

 III. events: 5
 highway: 0
 full-track: 1



Avalanche Summary Sheet

PATH NAME: Galena Lion Gulch

PATH REFERENCE NUMBER: 152088 AREA: 1

MAP NUMBER: 1 4 PHOTOGRAPH NUMBER: 19, 20

SPECIFICATIONS:

TOP ELEV.: 13150' BOTTOM ELEV.: 10080' VERTICAL FALL: 3070'

LENGTH OF PATH: 7100' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	Upper: 39°	Upper: 31°	
	Lower: 40°	Lower: 20°	<u>13°</u>
	Upper: 15		
AREA ACRES	Lower: 47	MEAN WIDTH <u>400'</u>	AREA ACRES <u>18</u>

Upper: 4530'
LENGTH Lower: 2310'

TREE LINE A B B

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Upper: Broad, open slope, cliffs, rock outcrops, grass
below. Lower: Broad, rugged, incised basin, bedrock

TRACK: Narrow, V-shaped gully, rugged rock outcrops

RUNOUT ZONE: Open slope, grass, moderate small aspen, brush

HISTORY: I. events: 1

 II. events: 1
 highway: 1
 full-track: 1

 III. events: 10
 highway: 0
 full-track: 1

Avalanche Summary Sheet

PATH NAME: G. Ridge

PATH REFERENCE NUMBER: 152089 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 20, 21

SPECIFICATIONS:

TOP ELEV.: 11000' BOTTOM ELEV.: 10400' VERTICAL FALL: 600'

LENGTH OF PATH: 1340' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>36°</u>	<u>24°</u>	<u>18°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>400'</u>	AREA ACRES <u>5</u>
		LENGTH <u>700'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

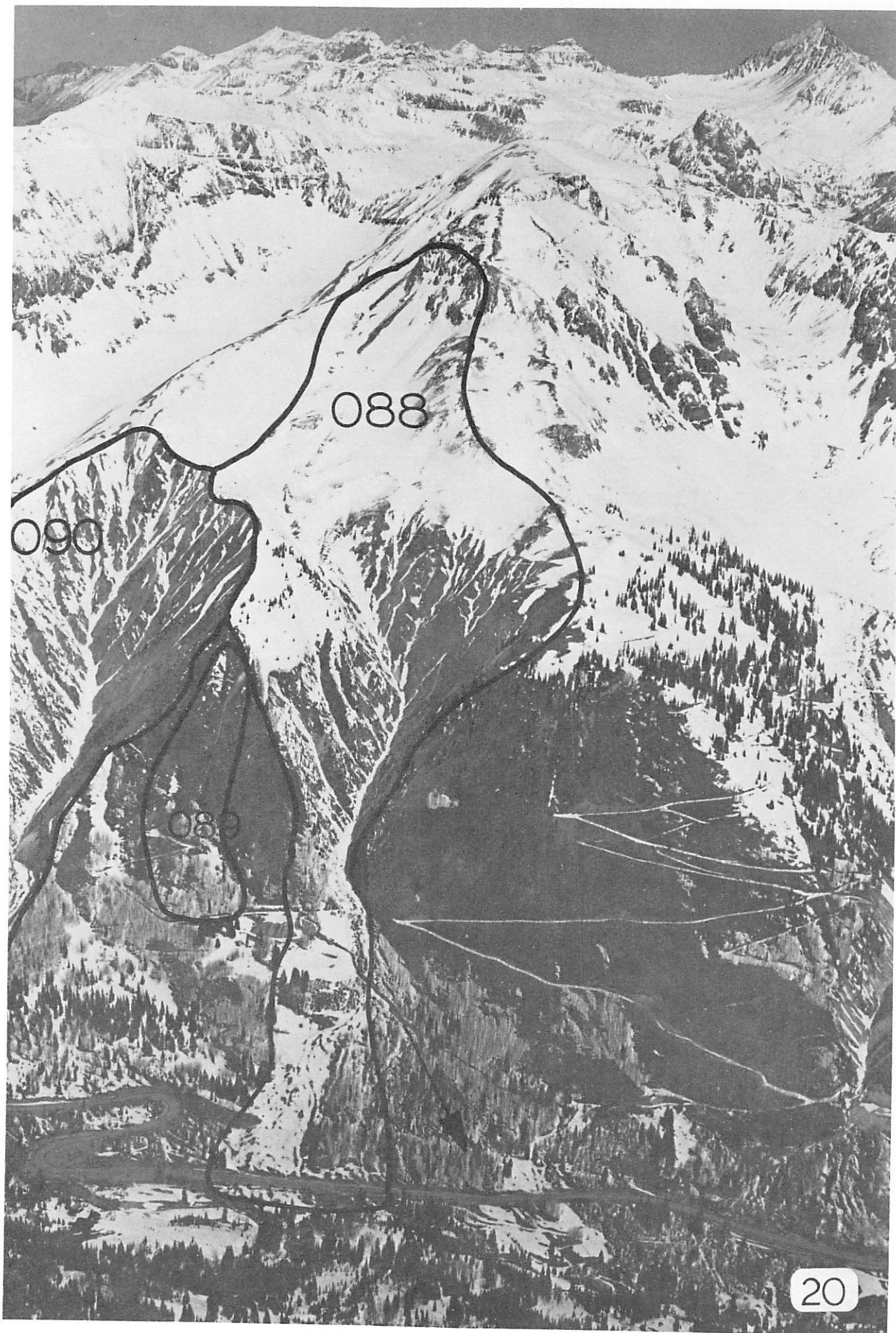
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, smooth rock outcrops, light, small aspen, grass

TRACK: Broad, open slope, moderate to heavy small aspen

RUNOUT ZONE: Broad, open slope, moderate to heavy small aspen

HISTORY: III. events: 4
highway: 0
full-track: 2



Avalanche Summary Sheet

PATH NAME: Governor Gulch

PATH REFERENCE NUMBER: 152090 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 19, 21

SPECIFICATIONS:

TOP ELEV.: 12000' BOTTOM ELEV.: 10200' VERTICAL FALL: 1800'

LENGTH OF PATH: 4530' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>37°</u>	<u>17°</u>	<u>13°</u>
AREA ACRES	<u>35</u>	MEAN WIDTH <u>400'</u>	AREA ACRES <u>5</u>
		LENGTH <u>2090'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Basin, rugged, heavily eroded bedrock, bare ground

TRACK: Narrow, incised gully

RUNOUT ZONE: Broad, open slope, heavy aspen, light coniferous

HISTORY: III. events: 10
highway: 0
full-track: 2

Avalanche Summary Sheet

PATH NAME: King

PATH REFERENCE NUMBER: 152091 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 21, 22

SPECIFICATIONS:

TOP ELEV.: 11600' BOTTOM ELEV.: 10340' VERTICAL FALL: 1260'

LENGTH OF PATH: 2780' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>32°</u>	<u>30°</u>	<u>8°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>650'</u>	AREA ACRES <u>2</u>
		LENGTH <u>2020'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, grass

TRACK: Broad, open slope, light aspen and coniferous, grass

RUNOUT ZONE: Broad, open slope, light aspen and coniferous, grass

HISTORY: III. events: 19
highway: 0
full-track: 3

Avalanche Summary Sheet

PATH NAME: Twin Bridges

PATH REFERENCE NUMBER: 152092 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 21, 22

SPECIFICATIONS:

TOP ELEV.: 10600' BOTTOM ELEV.: 10420' VERTICAL FALL: 180'

LENGTH OF PATH: 740' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>27°</u>	<u>25°</u>	<u>10°</u>
AREA ACRES	<u>1</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u><1</u>
		LENGTH <u>340'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

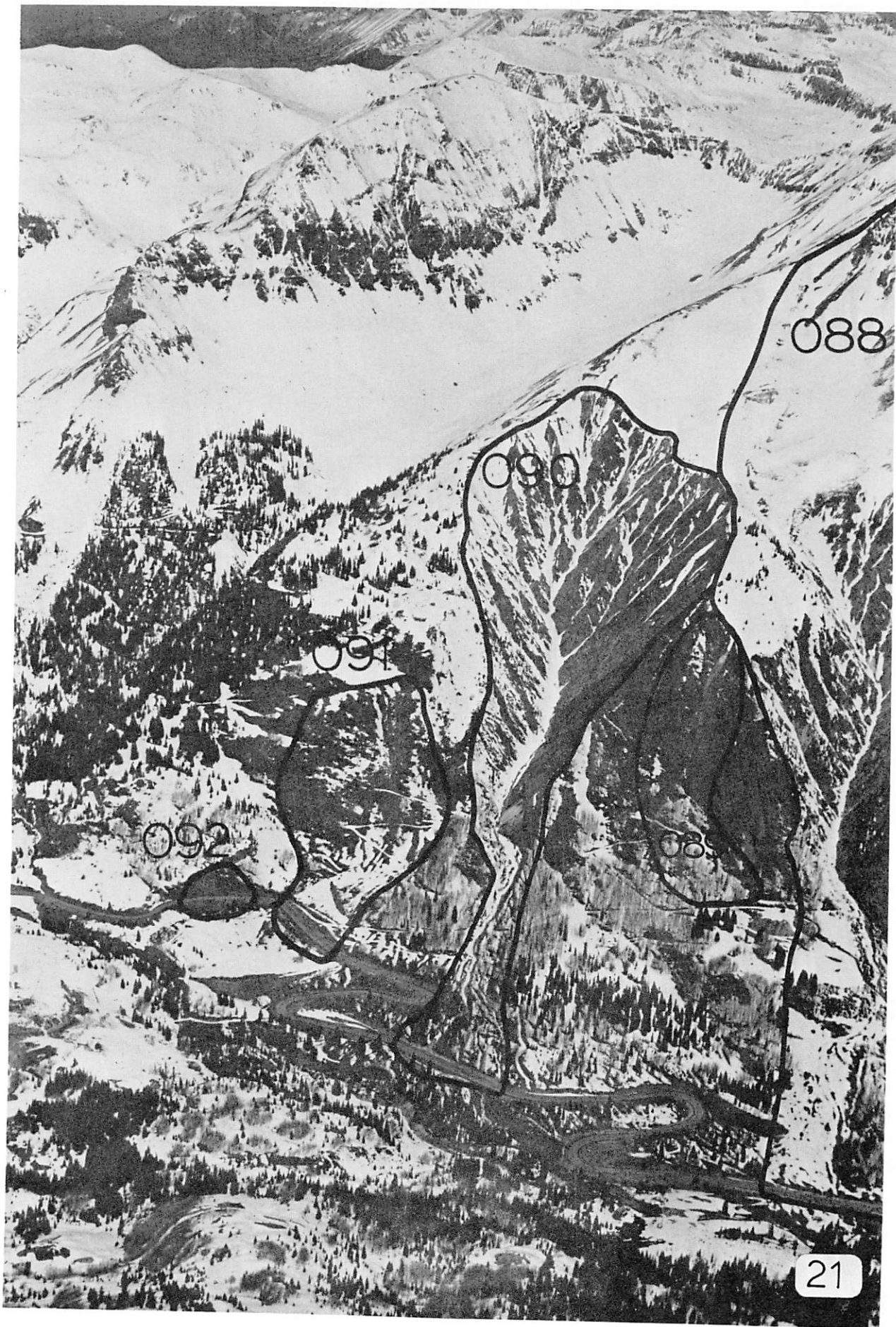
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, rock outcrops

TRACK: Broad, open slope, grass, moderate aspen, light coniferous

RUNOUT ZONE: Broad, open slope, grass, light coniferous

HISTORY: II. events: 4
 highway: 4
 full-track: 0



Avalanche Summary Sheet

PATH NAME: Barstow

PATH REFERENCE NUMBER: 152093 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 22

SPECIFICATIONS:

TOP ELEV.: 10520' BOTTOM ELEV.: 10360' VERTICAL FALL: 160'

LENGTH OF PATH: 430' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>30°</u>	<u>14°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>960'</u>	AREA ACRES <u><1</u>
		LENGTH <u>140'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, rock outcrops, light coniferous, grass

TRACK: Broad, open slope, light coniferous, grass

RUNOUT ZONE: Broad, open slope, light coniferous, grass, with highway below

HISTORY: II. events: 9
highway: 9
full-track: 0



Avalanche Summary Sheet

PATH NAME: Idarado

PATH REFERENCE NUMBER: 152094 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 23

SPECIFICATIONS:

TOP ELEV.: 10760' BOTTOM ELEV.: 10700' VERTICAL FALL: 60'

LENGTH OF PATH: 170' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>45°</u>	<u>45°</u>	<u>0°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>640'</u>	AREA ACRES <u><1</u>
		LENGTH <u>90'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Shallow depression, rock outcrops, brush, grass

TRACK: Shallow depression, rock outcrops, light aspen, grass

RUNOUT ZONE: Highway 550

HISTORY: II. events: 6
 highway: 6
 full-track: 2

 III. events: 11
 highway: 1
 full-track: 1

Avalanche Summary Sheet

PATH NAME: Willow Swamp

PATH REFERENCE NUMBER: 152095 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 23

SPECIFICATIONS:

TOP ELEV.: 11440' BOTTOM ELEV.: 10750' VERTICAL FALL: 690'

LENGTH OF PATH: 1670' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>37°</u>	<u>23°</u>	<u>19°</u>
AREA ACRES	<u>7</u>	MEAN WIDTH <u>640'</u>	AREA ACRES <u>4</u>
		LENGTH <u>880'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, shallow basin, moderate smooth rock outcrops, grass

TRACK: Broad, shallow depression, moderate talus and coniferous, grass

RUNOUT ZONE: Broad, open slope, bare ground, brush, grass

HISTORY: I. events: 6
On Jan. 20, 1933, a Colorado Highway Department truck with two men was caught, both survived.

II. events: 44
highway: 24
full-track: 7

III. events: 79
highway: 9
full-track: 15

Avalanche Summary Sheet

PATH NAME: Blue Willow

PATH REFERENCE NUMBER: 152096 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 23

SPECIFICATIONS:

TOP ELEV.: 11040' BOTTOM ELEV.: 10680' VERTICAL FALL: 360'

LENGTH OF PATH: 630' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>34°</u>	<u>34°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>80'</u>	AREA ACRES <u><1</u>
		LENGTH <u>210</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, cliffs

TRACK: Broad, open slope, grass, bare ground

RUNOUT ZONE: Broad, open slope, grass, bare ground

HISTORY: III. events: 33
highway: 9
full-track: 19

Avalanche Summary Sheet

PATH NAME: Blue Point

PATH REFERENCE NUMBER: 152097 AREA: 1

MAP NUMBER: 1, 4 PHOTOGRAPH NUMBER: 23

SPECIFICATIONS:

TOP ELEV.: 11160' BOTTOM ELEV.: 10720' VERTICAL FALL: 440'

LENGTH OF PATH: 780' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>45°</u>	<u>34°</u>	<u>27°</u>
AREA ACRES	<u>2</u>	MEAN WIDTH <u>300'</u>	AREA ACRES <u>2</u>
		LENGTH <u>280'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

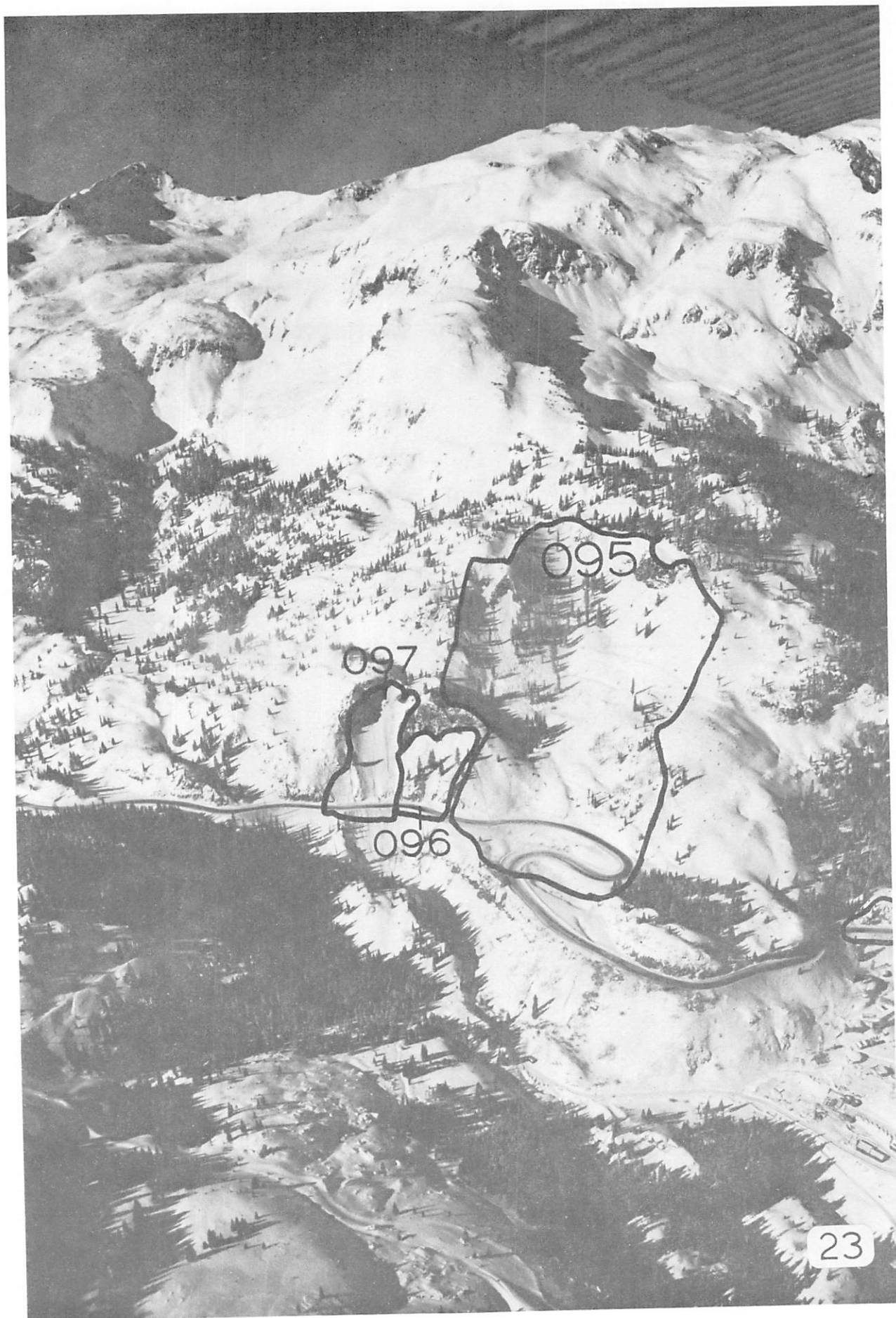
STARTING ZONE: Small basin, cliffs, rock outcrops, grass

TRACK: Broad, shallow basin, smooth rock outcrops, grass

RUNOUT ZONE: Broad, shallow depression, talus, brush

HISTORY: II. During this period, Blue Point crossed the road 102 times

III. During this period, Blue Point crossed the road 48 times



Avalanche Summary Sheet

PATH NAME: Snowflake

PATH REFERENCE NUMBER: 152098 AREA: 1

MAP NUMBER: 4 PHOTOGRAPH NUMBER: 24

SPECIFICATIONS:

TOP ELEV.: 11120' BOTTOM ELEV.: 11000' VERTICAL FALL: 120'

LENGTH OF PATH: 340' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>30°</u>	<u>34°</u>	<u>0°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u>300'</u>	AREA ACRES <u><1</u>
		LENGTH <u>240'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Rock outcrop, light, small coniferous, grass

TRACK: Rock outcrops, light coniferous, brush, grass

RUNOUT ZONE: Highway 550

HISTORY: II. events: 16
 highway: 14
 full-track: 3

 III. events: 6
 highway: 3
 full-track: 4

Avalanche Summary Sheet

PATH NAME: Fence

PATH REFERENCE NUMBER: 152099 AREA: 1

MAP NUMBER: 4 PHOTOGRAPH NUMBER: 24

SPECIFICATIONS:

TOP ELEV.: 11160' BOTTOM ELEV.: 11000' VERTICAL FALL: 160'

LENGTH OF PATH: 390' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>30°</u>	<u>34°</u>	<u>0°</u>
AREA ACRES	<u><1</u>	MEAN WIDTH <u> </u>	AREA ACRES <u><1</u>
		LENGTH <u>270'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

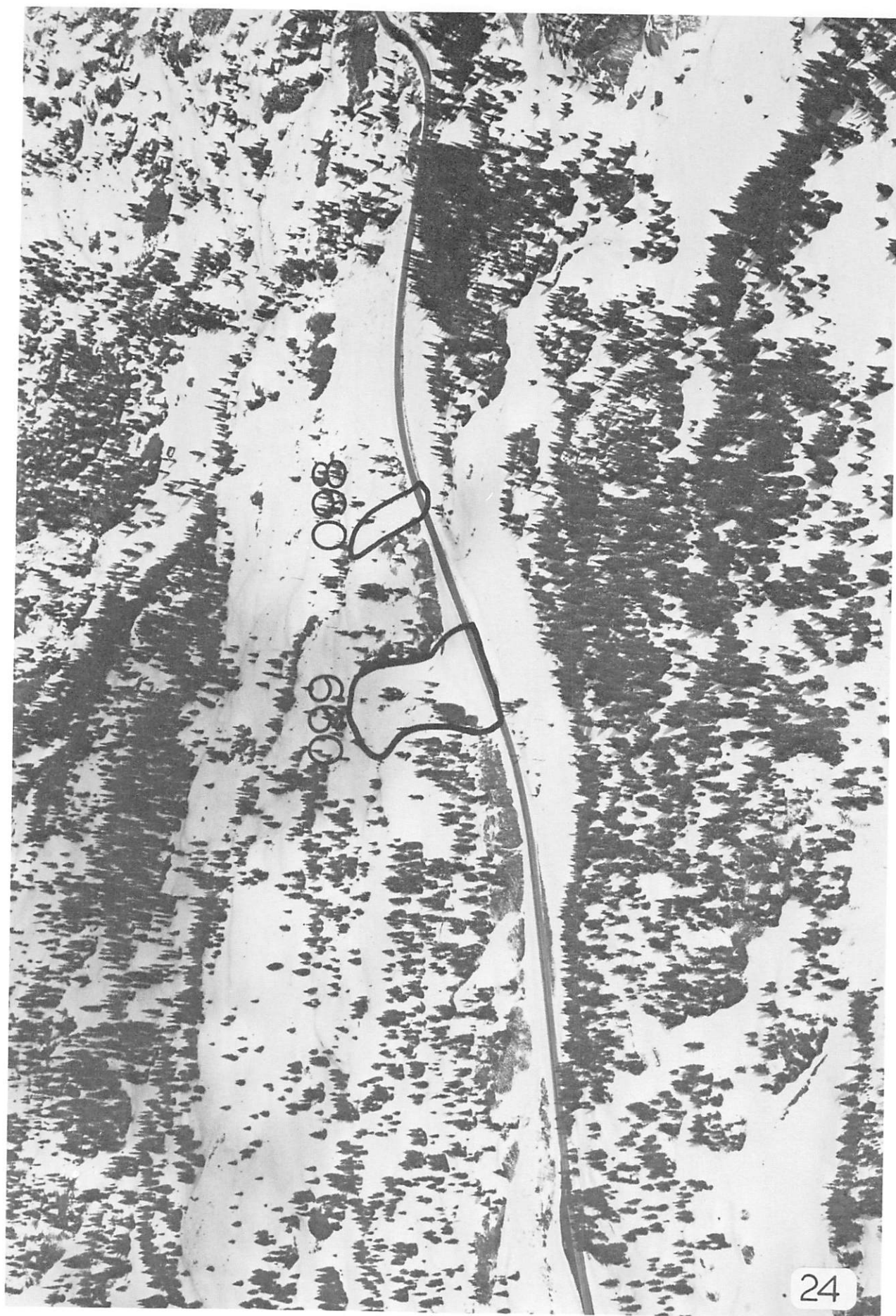
STARTING ZONE: Rock outcrops, light coniferous, grass

TRACK: Cliff, rock outcrops, light coniferous, grass

RUNOUT ZONE: Highway 550

HISTORY: II. events: 3
 highway: 3
 full-track: 0

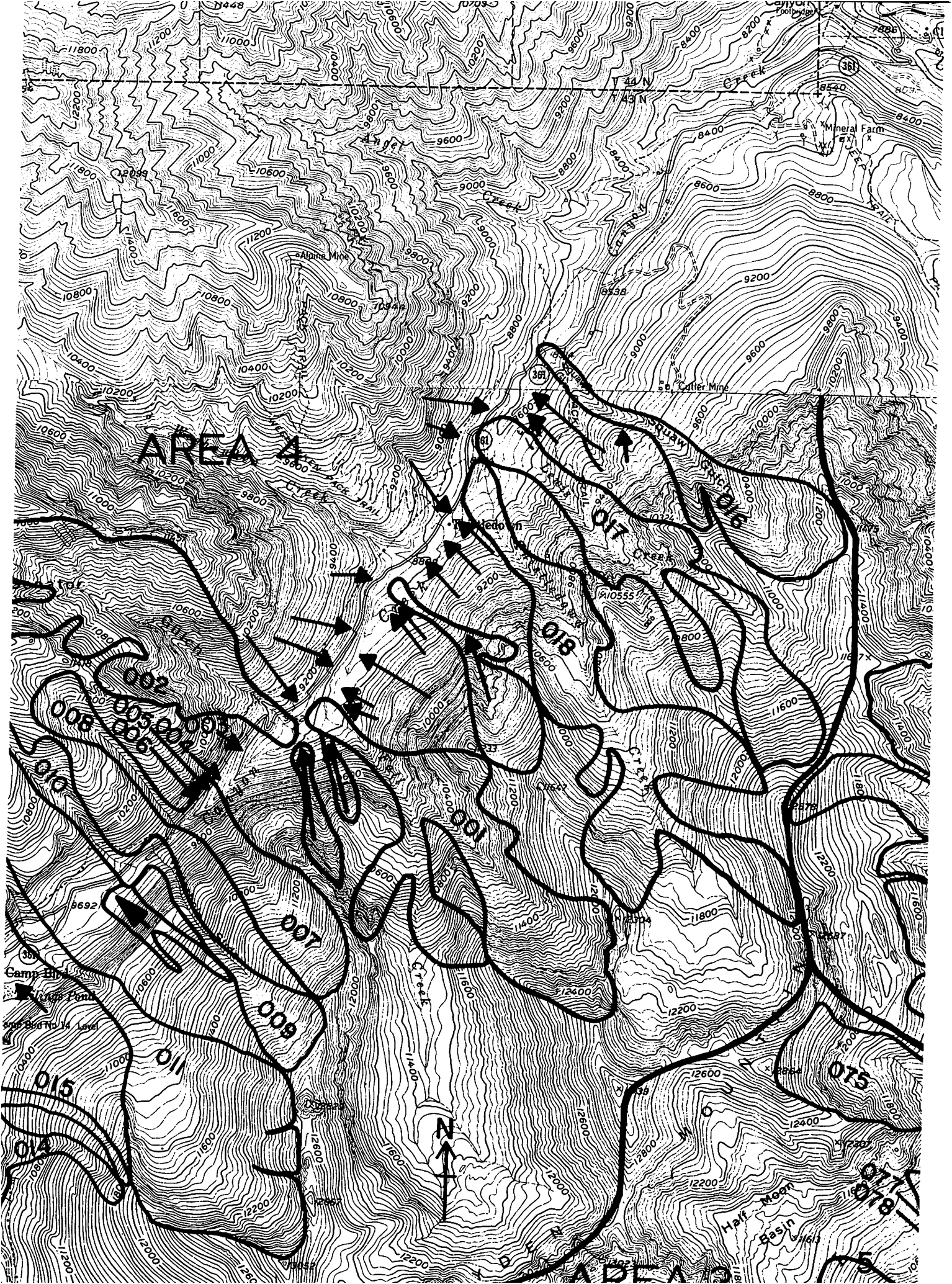
III. events: 4
 highway: 0
 full-track: 3

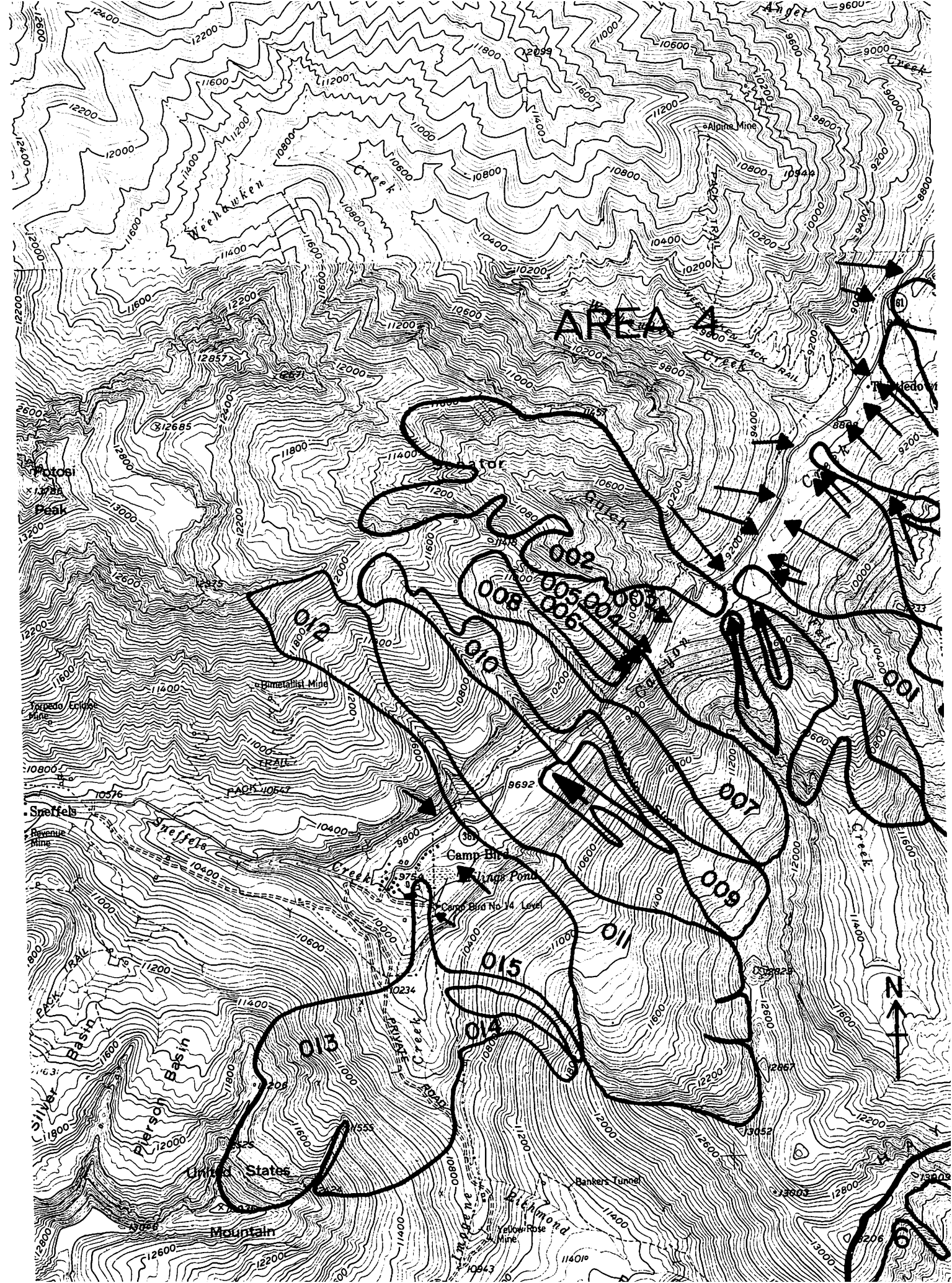




An aerial photograph of Colorado Highway 361 looking southwest towards U.S. Mountain and the Camp Bird Mine.

COLORADO HIGHWAY 361





Avalanche Summary Sheet

PATH NAME: Squaw Gulch

PATH REFERENCE NUMBER: 150016 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 25, 26

SPECIFICATIONS:

TOP ELEV.: 11400' BOTTOM ELEV.: 8520' VERTICAL FALL: 2880'

LENGTH OF PATH: 7180' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>32°</u>	<u>27°</u>	<u>18°</u>
AREA ACRES	<u>68</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>7</u>
		LENGTH <u>5320'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin, light coniferous

TRACK: V-shaped drainage, rock outcrops, light, small coniferous, brush, grass

RUNOUT ZONE: Broad, open slope, moderate to heavy aspen and coniferous

HISTORY: II. events: 2
 highway: 1
 full-track: 0



Avalanche Summary Sheet

PATH NAME: Lewis Creek

PATH REFERENCE NUMBER: 150017 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 26

SPECIFICATIONS:

TOP ELEV.: 12200' BOTTOM ELEV.: 8600' VERTICAL FALL: 3600'

LENGTH OF PATH: 10000' NUMBER OF STARTING ZONES: 4

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>36°</u>	<u>24°</u>	<u>9°</u>
AREA ACRES	<u>55</u>	MEAN WIDTH <u>640'</u>	AREA ACRES <u>22</u>
		LENGTH <u>7810'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Open slope, moderate, small coniferous, light, medium coniferous, grass

TRACK: Shallow, V-shaped depression, rock outcrops, bare ground, brush

RUNOUT ZONE: Broad fan, brush, light aspen, grass

HISTORY:

Avalanche Summary Sheet

PATH NAME: Thistledown Creek

PATH REFERENCE NUMBER: 150018 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 26

SPECIFICATIONS:

TOP ELEV.: 12600' BOTTOM ELEV.: 8640' VERTICAL FALL: 3960'

LENGTH OF PATH: 10480' NUMBER OF STARTING ZONES: 6

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>35°</u>	<u>24°</u>	<u>17°</u>
AREA ACRES	<u>103</u>	MEAN WIDTH <u>960'</u>	AREA ACRES <u>15</u>
		LENGTH <u>8100'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

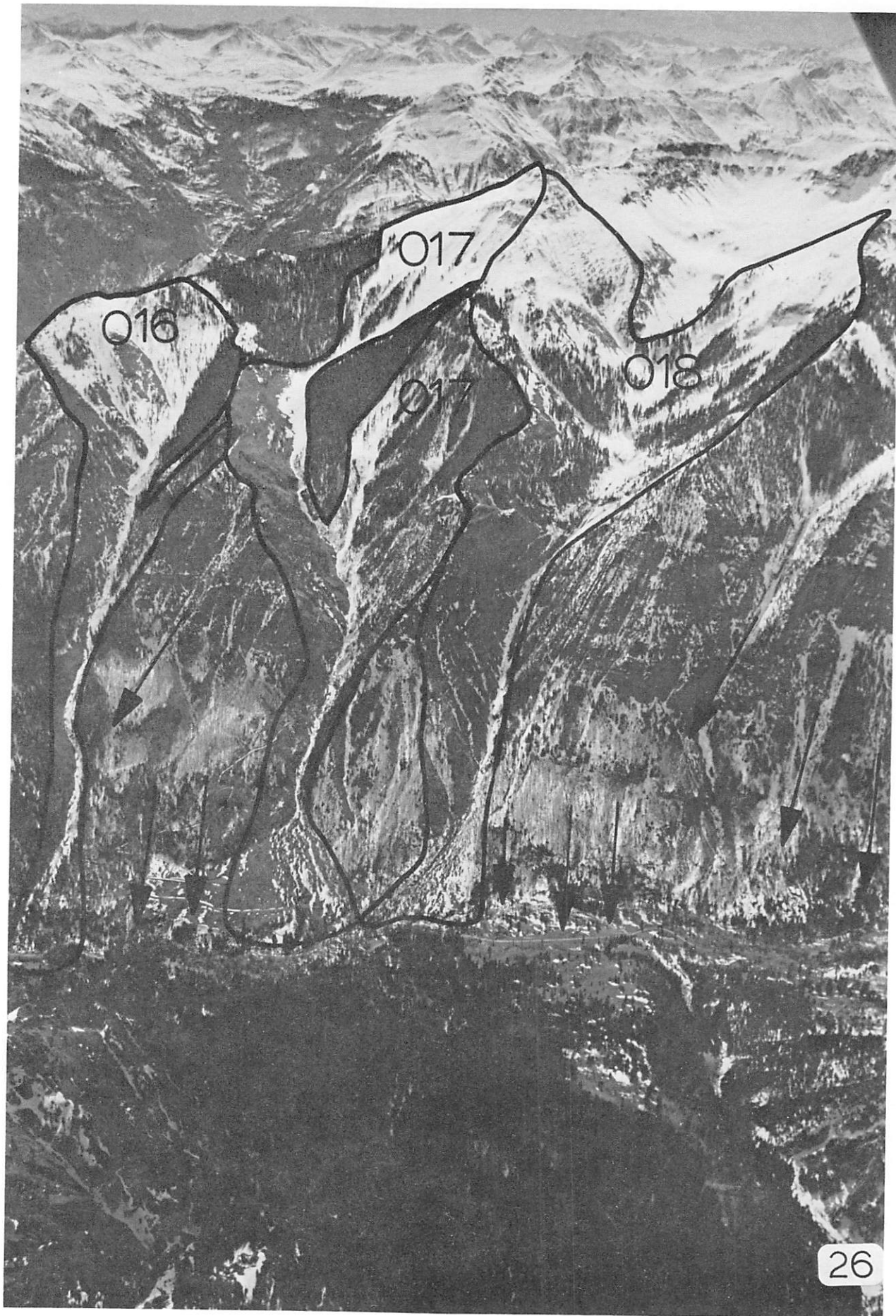
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, shallow, open basin with cliffs above, narrowing into a V-shaped depression with rock outcrops, light coniferous

TRACK: V-shaped gully, smooth rock face, boulders, light coniferous and brush

RUNOUT ZONE: Broad, open fan, brush, light, small aspen, grass

HISTORY:



Avalanche Summary Sheet

PATH NAME: Fall Creek

PATH REFERENCE NUMBER: 150001 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 27

SPECIFICATIONS:

TOP ELEV.: 12800' BOTTOM ELEV.: 8960' VERTICAL FALL: 3840'

LENGTH OF PATH: 8340' NUMBER OF STARTING ZONES: 5

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>39°</u>	<u>29°</u>	<u>20°</u>
AREA ACRES	<u>128</u>	MEAN WIDTH <u>560'</u>	AREA ACRES <u>13</u>
		LENGTH <u>4710'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

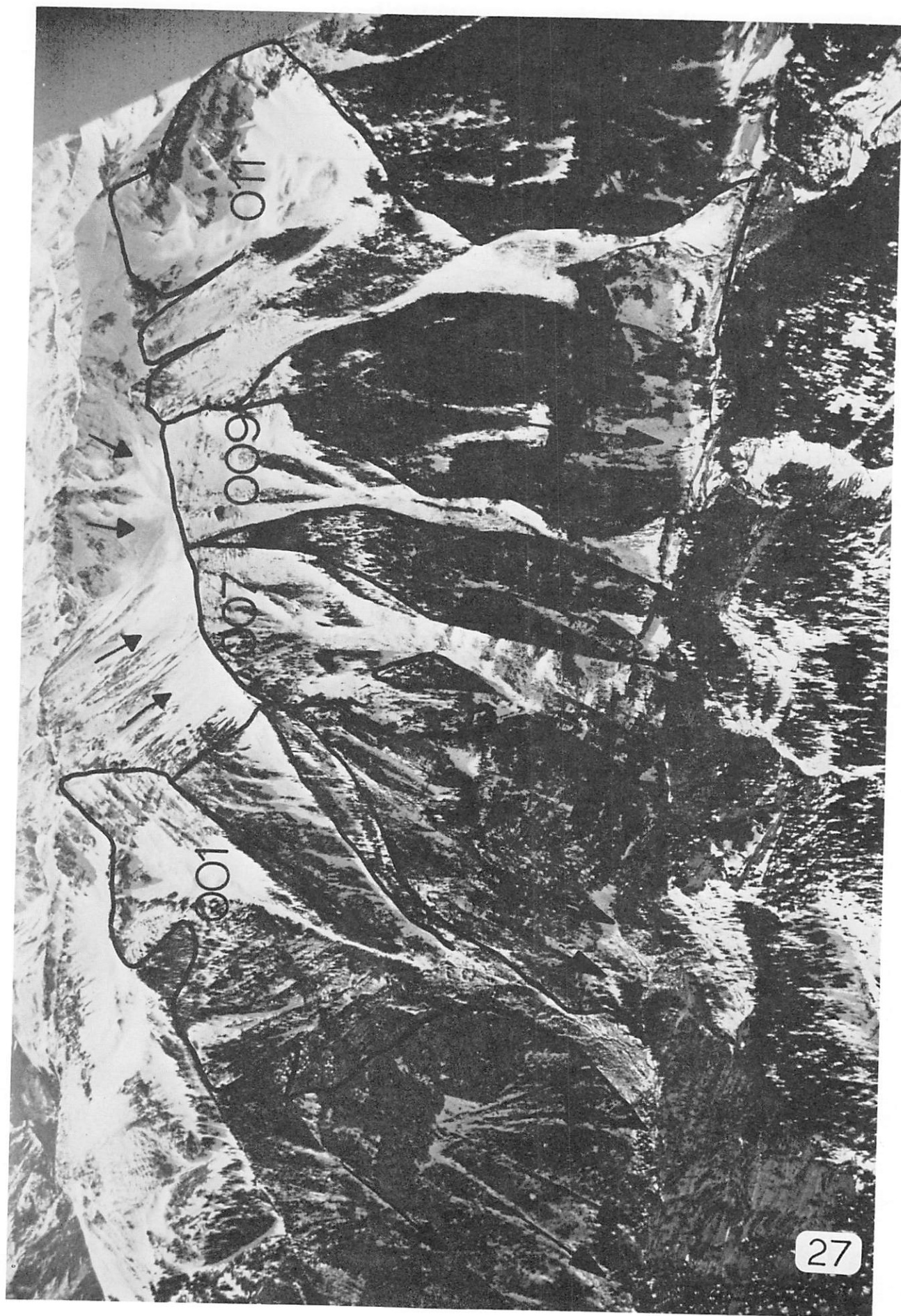
TERRAIN AND VEGETATION COVER:

STARTING ZONE: North: Broad, steep-sided basin, rock outcrops, cliffs, talus, rock glacier below. South: Broad, shallow basin, rock outcrops, light coniferous, grass

TRACK: Narrow, V-shaped gully, rock outcrops, boulders, brush, grass

RUNOUT ZONE: Broad, open fan, heavy brush

HISTORY: II. events: 5
 highway: 1
 full-track: 0



Avalanche Summary Sheet

PATH NAME: Hayden

PATH REFERENCE NUMBER: 150007 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 27, 28

SPECIFICATIONS:

TOP ELEV.: 12200' BOTTOM ELEV.: 9360' VERTICAL FALL: 2840'

LENGTH OF PATH: 4970' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>37°</u>	<u>37°</u>	<u>27°</u>
AREA ACRES	<u>40</u>	MEAN WIDTH <u>640'</u>	AREA ACRES <u>9</u>

LENGTH 3340'

TREE LINE A B B

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin divided by rock outcrop, cliffs,
light coniferous

TRACK: Broad, open slope broken by cliff bands, light, small coniferous
and brush

RUNOUT ZONE: Crosses drainage of Canyon Creek, frequently ascends
opposite slope

HISTORY: I. events: 2

II. events: 31
highway: 5
full-track: 4

Avalanche Summary Sheet

PATH NAME: East Waterhole

PATH REFERENCE NUMBER: 150009 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 27, 28

SPECIFICATIONS:

TOP ELEV.: 12400' BOTTOM ELEV.: 9600' VERTICAL FALL: 2800'

LENGTH OF PATH: 5390' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>35°</u>	<u>33°</u>	<u>29°</u>
AREA ACRES	<u>35</u>	MEAN WIDTH <u>160'</u>	AREA ACRES <u>7</u>

LENGTH 2660'

TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>
-----------	----------	----------	----------

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, large rock outcrops, smaller cliff bands, grass

TRACK: Shallow, V-shaped depression cut by narrow, incised gully in lower portion, bedrock, light, small coniferous

RUNOUT ZONE: Broad, open slope broken by cliff band, grass, moderate small coniferous and brush, crosses drainage of Canyon Creek, frequently ascends opposite slope

HISTORY: I. Waterhole avalanches - events: 20
On Jan. 29, 1909, 4 men and 26 stock were caught and killed
In 1936, the County Road Gang was caught

II. events: 53
highway: 13
full-track: 7

Avalanche Summary Sheet

PATH NAME: East Schoolhouse

PATH REFERENCE NUMBER: 150011 AREA: 4

MAP NUMBER: 5 PHOTOGRAPH NUMBER: 27

SPECIFICATIONS:

TOP ELEV.: 13040' BOTTOM ELEV.: 9680' VERTICAL FALL: 3360'

LENGTH OF PATH: 5390' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>39°</u>	<u>24°</u>	<u>17°</u>
		Upper: 2560'	
AREA ACRES	<u>90</u>	Lower: 480'	AREA ACRES <u>11</u>
		LENGTH <u>2660'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

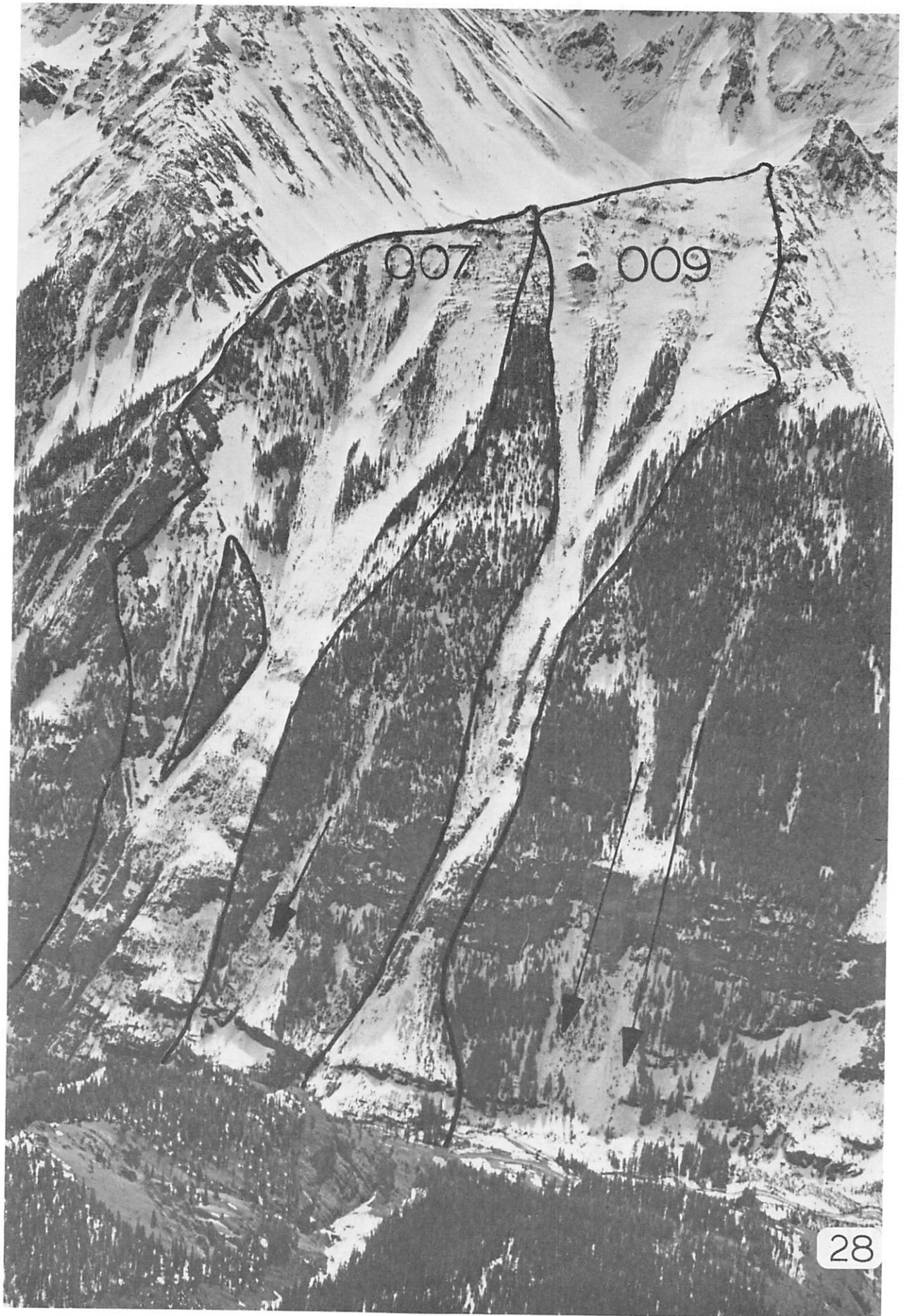
STARTING ZONE: Broad, shallow depression, rock outcrops, talus, grass below

TRACK: Shallow depression, grass, light, small coniferous, large cliff band in lower portion

RUNOUT ZONE: Broad, open slope, grass, brush, crosses drainage of Canyon Creek

HISTORY: I. events: 1

II. events: 14
 highway: 0
 full-track: 2
 On Feb. 14, 1958, a caterpillar tractor and 4 men were caught,
 3 were killed



Avalanche Summary Sheet

PATH NAME: U.S.

PATH REFERENCE NUMBER: 150013 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 29

SPECIFICATIONS:

TOP ELEV.: 12960' BOTTOM ELEV.: 9750' VERTICAL FALL: 3210'

LENGTH OF PATH: 7590' NUMBER OF STARTING ZONES: 3

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>41°</u>	<u>31°</u>	<u>13°</u>
AREA ACRES	<u>100</u>	MEAN WIDTH <u>3280'</u>	AREA ACRES <u>68</u>
		LENGTH <u>2520'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: North: Two broad, shallow depressions broken by cliff bands and rock outcrops, grass, light coniferous. Middle: Steep-sided, broad, open basin, cliffs with talus below. South: Open slope, cliff bands with grass and brush.

TRACK: North: Shallow depressions, smooth bedrock, grass, brush. Middle: Broad, shallow depression, talus, grass. South: Open slope, cliff bands with grass and brush.

RUNOUT ZONE: North: Broad, open slope, grass, brush. Middle, South: Upper portion is broad, open, nearly level area with moderate to heavy coniferous below; lower portion is a cliff band with a broad, open slope, light, small coniferous below.

HISTORY: I. events: 11. This avalanche destroyed the U.S. Mine boarding house, the Camp Bird Mill, and killed one man on 17 March 1906

II. events: 15
highway: 0
full-track: 4

Avalanche Summary Sheet

PATH NAME: Mt. Hayden, South and North

PATH REFERENCE NUMBER: 150014-015 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 29

SPECIFICATIONS:

TOP ELEV.: 11880' BOTTOM ELEV.: 10200' VERTICAL FALL: 1680'

LENGTH OF PATH: 3400' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>30°</u>	<u>20°</u>
	North: 4		North: 15
AREA ACRES	<u>South: 6</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>South: 13</u>

LENGTH 1860'

TREE LINE A B B

TERRAIN AND VEGETATION COVER:

STARTING ZONE: North: Open slope, grass, light, small coniferous.
South: Open slope, grass, moderate, very small coniferous with cliff bands below.

TRACK: North: Shallow depression, grass, brush. South: Shallow depression with smooth bedrock, grass, light, small coniferous.

RUNOUT ZONE: Open slope, grass, moderate coniferous

HISTORY: I. events: 2. Both the Camp Bird Mill and the Camp Bird tramway were damaged by this slide



013

014

Avalanche Summary Sheet

PATH NAME: West Schoolhouse

PATH REFERENCE NUMBER: 150012 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 30, 33

SPECIFICATIONS:

TOP ELEV.: 12400' BOTTOM ELEV.: 9680' VERTICAL FALL: 2720'

LENGTH OF PATH: 6080' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>34°</u>	<u>26°</u>	<u>9°</u>
AREA ACRES	<u>33</u>	Upper: 960' Lower: 240'	AREA ACRES <u>11</u>

LENGTH 3940'

TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>
-----------	----------	----------	----------

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slope, rock outcrops, light coniferous

TRACK: Narrow, deep, steep-sided gorge, bedrock, light coniferous

RUNOUT ZONE: Broad, open slope, moderate to heavy aspen and coniferous, grass, crosses drainage of Canyon Creek

HISTORY: II. events: 12
highway: 4
full-track: 4

Avalanche Summary Sheet

PATH NAME: West Waterhole

PATH REFERENCE NUMBER: 150010 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 30, 31, 33

SPECIFICATIONS:

TOP ELEV.: 11800' BOTTOM ELEV.: 9620' VERTICAL FALL: 2180'

LENGTH OF PATH: 5270' NUMBER OF STARTING ZONES: 2

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>27°</u>	<u>26°</u>	<u>18°</u>
AREA ACRES	<u>15</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>6</u>
		LENGTH <u>3560'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open basin, rock outcrops, light coniferous

TRACK: Deep, steep-sided, V-shaped gorge, bedrock with cliff bands

RUNOUT ZONE: Broad, open fan, rock outcrops, grass, light, small coniferous, crosses drainage of Canyon Creek

HISTORY: II. events: 10
highway: 2
full-track: 2
On Feb. 14, 1958, 2 men were caught, one was killed



Avalanche Summary Sheet

PATH NAME: Dolly Varden

PATH REFERENCE NUMBER: 150008 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 31, 33

SPECIFICATIONS:

TOP ELEV.: 11200' BOTTOM ELEV.: 9480' VERTICAL FALL: 1720'

LENGTH OF PATH: 3970' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>37°</u>	<u>29°</u>	<u>34°</u>
AREA ACRES	<u>15</u>	MEAN WIDTH <u>240'</u>	AREA ACRES <u>4</u>
		LENGTH <u>2780'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

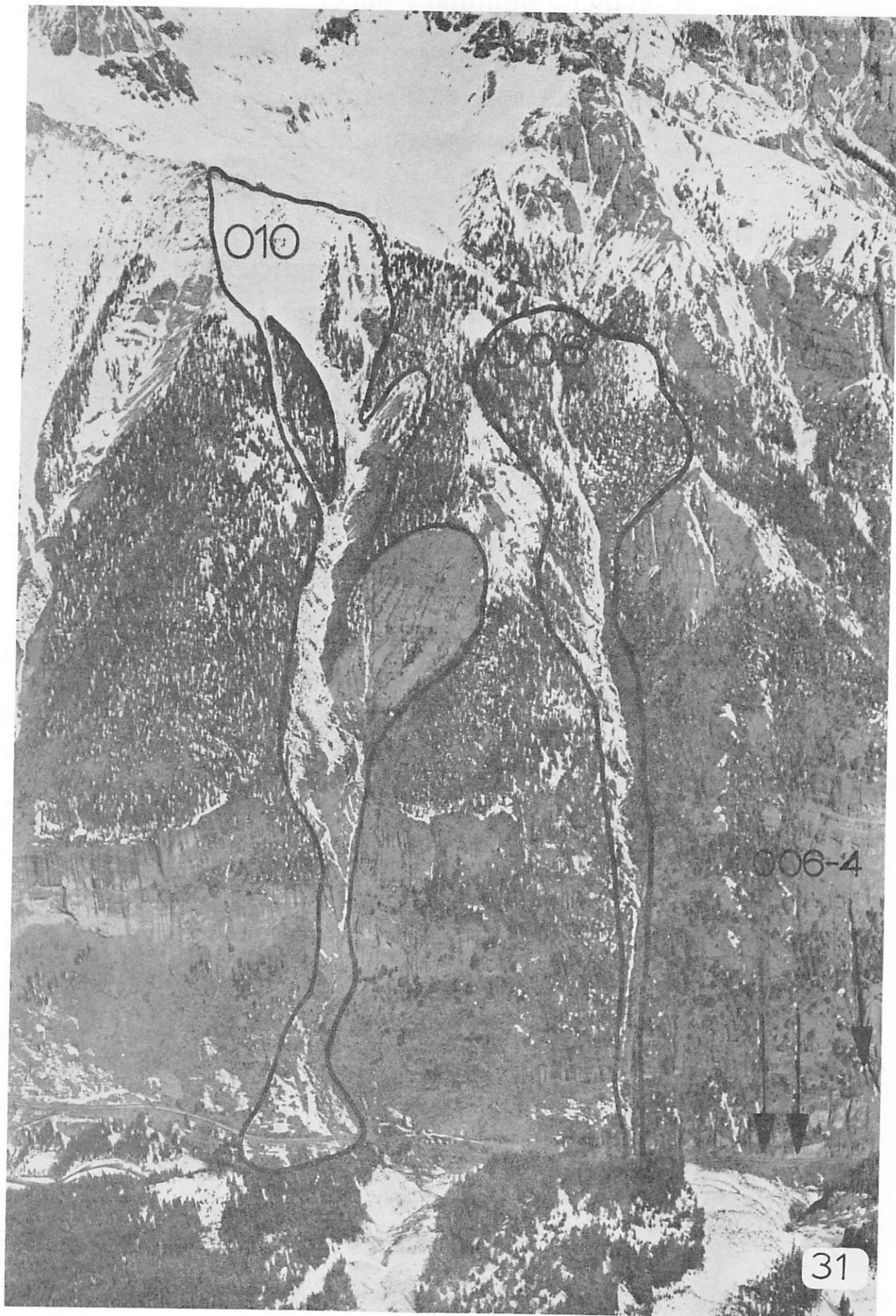
TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, V-shaped depression, rock outcrops, moderate coniferous

TRACK: Narrow, incised gully, bedrock

RUNOUT ZONE: Open slope, crosses drainage of Canyon Creek

HISTORY: II. events: 10
highway: 5
full-track: 2



Avalanche Summary Sheet

PATH NAME: Swede Pete, Shirttail, Neighbor White, Splitter

PATH REFERENCE NUMBER: 150003-006 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 31, 32

SPECIFICATIONS:

TOP ELEV.: 10400' BOTTOM ELEV.: 9600' VERTICAL FALL: 800'

LENGTH OF PATH: 1100' NUMBER OF STARTING ZONES: 4

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>48°</u>	<u>58°</u>	<u>27°</u>
AREA ACRES	<u>3</u>	MEAN WIDTH <u>---</u>	AREA ACRES <u><1</u>
		LENGTH <u>1020'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Narrow, incised gully, cliffs, light coniferous

TRACK: Rock cliffs, couloirs

RUNOUT ZONE: Broad, open slope, boulders, bare ground, heavy brush

HISTORY: I. events: 5. In Feb., 1936, 3 men, 20 mules, and 4 horses were caught by the Neighbor White

II. events: 59
highway: 41
full-track: 17

Avalanche Summary Sheet

PATH NAME: Switchbacks

PATH REFERENCE NUMBER: 150002 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 32, 33

SPECIFICATIONS:

TOP ELEV.: 11200' BOTTOM ELEV.: 9040' VERTICAL FALL: 2160'

LENGTH OF PATH: 4200' NUMBER OF STARTING ZONES: 1

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>40°</u>	<u>31°</u>	<u>16°</u>
AREA ACRES	<u>23</u>	MEAN WIDTH <u>480'</u>	AREA ACRES <u>9</u>
		LENGTH <u>1670'</u>	
TREE LINE	<u>B</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Shallow depression with small cliffs above, rock outcrops moderate, small aspen

TRACK: Shallow, V-shaped depression, rock outcrops, moderate, small aspen and coniferous

RUNOUT ZONE: Broad, shallow depression, heavy brush, light, small aspen, cabin, crosses switchbacks of highway and drainage of Canyon Creek

HISTORY: I. events: 5. In Feb., 1893, 7 men and 24 horses were caught, 4 men and all of the horses were killed

II. events: 15
highway: 10
full-track: 3



Avalanche Summary Sheet

PATH NAME: Senator Gulch

PATH REFERENCE NUMBER: 150002 AREA: 4

MAP NUMBER: 6 PHOTOGRAPH NUMBER: 32, 33

SPECIFICATIONS:

TOP ELEV.: 11760' BOTTOM ELEV.: 9040' VERTICAL FALL: 2720'

LENGTH OF PATH: 7700' NUMBER OF STARTING ZONES: 6

	STARTING ZONE	TRACK	RUNOUT ZONE
SLOPE ANGLE	<u>38°</u>	<u>22°</u>	<u>16°</u>
AREA ACRES	<u>99</u>	MEAN WIDTH <u>1120'</u>	AREA ACRES <u>9</u>
		LENGTH <u>5350'</u>	
TREE LINE	<u>A</u>	<u>B</u>	<u>B</u>

TERRAIN AND VEGETATION COVER:

STARTING ZONE: Broad, open slopes, multiple cliff bands, rock outcrops, light to moderate coniferous

TRACK: Broad, V-shaped depression, light to moderate coniferous, bare ground

RUNOUT ZONE: Broad, shallow depression, heavy brush, light, small aspen, cabin, crosses switchbacks of highway and drainage of Canyon Creek

HISTORY:



INSTITUTE OF ARCTIC AND ALPINE RESEARCH OCCASIONAL PAPERS

Numbers 1 through 5, and 11 and 12 are out of print. A second edition of Number 1 is available from the author. Numbers 2, 4, 5 and 11 are available from National Technical Information Service, U.S. Department of Commerce. For details, please write to INSTAAR.

6. *Guide to the Mosses of Colorado*. By W.A. Weber. 1973. 48 pp. Order from the author, University of Colorado Museum, Boulder, Colorado 80309. \$2.50.
7. *A Climatological Study of Strong Downslope Winds in the Boulder Area*. By W.A.R. Brinkmann. 1973. 228 pp. Order from the author, Institute for Environmental Studies, University of Wisconsin, 1225 West Dayton Street, Madison, Wisconsin 53706.
- †8. *Environmental Inventory and Land Use Recommendations for Boulder County, Colorado*. Edited by R.F. Madole. 1973. 228 pp. 7 plates. \$6.00.
- †9. *Studies of Climate and Ice Conditions in Eastern Baffin Island. 1971-73*. By J.D. Jacobs, R.G. Barry, R.S. Bradley, and R.L. Weaver. 1974. 77 pp. \$3.00.
- †10. *Simulation of the Atmospheric Circulation Using the NCAR Global Circulation Model With Present Day and Glacial Period Boundary Conditions*. By J.H. Williams. 1974. 328 pp. \$4.75.
11. *Solar and Atmospheric Radiation Data for Broughton Island, Eastern Baffin Island, Canada, 1971-73*. By J.D. Jacobs. 1974. 54 pp. (Out of print.) NTIS PB-248 955/7GA. Paper \$4.50. Microfiche \$2.55.
12. *Deglacial Chronology and Uplift History: Northeastern Sector, Laurentide Ice Sheet*. By A.S. Dyke. 1974. 113 pp. (Out of print.)
- †13. *Development of Methodology for Evaluation and Prediction of Avalanche Hazard in the San Juan Mountains of Southwestern Colorado*. By R.L. Armstrong, E.R. LaChapelle, M.J. Bovis, and J.D. Ives. 1975. 141 pp. \$4.75.
- †14. *Quality Skiing at Aspen, Colorado: A Study in Recreational Carrying Capacity*. By C. Crum London. 1975. 134 pp. 3 plates. \$5.50.
- †15. *Palynological and Paleoclimatic Study of the Late Quaternary Displacements of the Boreal Forest-Tundra Ecotone in Keewatin and Mackenzie, N.W.T., Canada*. By H. Nichols. 1975. 87 pp. \$4.00.
- †16. *Computer Techniques for the Presentation of Palynological and Paleoenvironmental Data*. By M. Nichols, M. Eccles, and H. Nichols. 1976 (in preparation).
- †17. *Avalanche Atlas: San Juan County, Colorado*. By L. Miller, B.R. Armstrong, and R.L. Armstrong. 1976. 260 pp. 60 plates. \$4.25.
- †18. *Century of Struggle Against Snow: A History of Avalanche Hazard in San Juan County, Colorado*. By B.R. Armstrong. 1976. 97 pp. 11 plates. \$4.50.
- †19. *Avalanche Release and Snow Characteristics, San Juan Mountains, Colorado*. Edited by R.L. Armstrong and J.D. Ives. 1976. 256 pp. 7 plates. \$7.50.
- †20. *Landslides Near Aspen, Colorado*. C.P. Harden. 1976. 61 pp. 5 plates. \$3.75.
- †21. *Radiocarbon Date List III. Baffin Island N.W.T., Canada*. By J.T. Andrews. 1976. 50 pp. \$2.50.
- †22. *Physical Mechanisms Responsible for the Major Synoptic Systems in the Eastern Canadian Arctic in the Winter and Summer of 1973*. By E.F. LeDrew. 1976. 205 pp. \$4.50.
- †23. *Procedures for the Study of Snow Avalanche Chronology Using Growth Layers of Woody Plants*. By C.J. Burrows and V.L. Burrows. 1976. 60 pp. \$4.00.
- †24. *Avalanche Hazard in Ouray County, Colorado, 1877-1976*. By B.R. Armstrong. 1977. 125 pp. 32 plates. \$4.50.
- †25. *Avalanche Atlas, Ouray County, Colorado*. By B.R. Armstrong and R.L. Armstrong. 1977. 132 pp. 34 plates. \$6.00.
- †26. *Energy Budget Studies in Relation to Fast-ice Breakup Processes in Davis Strait: Climatological Overview*. R.G. Barry and J.D. Jacobs with others. 1978. 284 pp. \$7.00.
- †27. *Geocology of Southern Highland Peru: a Human Adaptation Perspective*. By B. P. Winterhalder and R. Brooke Thomas. 1978. 91 pp. \$6.00.

†Order from INSTAAR, University of Colorado, Boulder, Colorado 80309. Orders by mail add 65 cents per title.

Occasional Papers are a miscellaneous collection of reports and papers on work performed by INSTAAR personnel and associates. Generally, these papers are too long for publication as journal articles, or they contain large amounts of supporting data that are normally difficult to publish in the standard literature.



A stylized "ankh," the ancient Egyptian sign for life, has been incorporated into the symbol of the Program on Man and the Biosphere (MAB).