

## CHINA – QUARTZ DIVIDE AVALANCHE

Saturday, January 15, 2011

### Incident Report

**Location:** (See Appendix A-1, Maps) China Basin-West Quartz Divide, T32N, R32W, Section 29, SW1/4 of SW1/4 of SW1/4 of NW1/4.

Libby Ranger District

Kootenai National Forest – Region One

Lincoln County, Montana

**Summary:** 1 Snowmobiler caught, buried, uninjured

**Weather:** On January 12-13, a major storm deposited 12” snow at the site. This storm came in cold (20°F) and finished warm (32°F). January 14-15, widespread rain and above freezing temps (34-36°F) covered the site. January 12 there were southwest winds transporting snow at the site, but none thereafter. The above information comes from the Banfield Mountain Snotel site (5600’) located 13 miles east northeast of the incident site within the same Purcell Mountain range.

**Avalanche Condition:** At 8:00AM the morning prior to the avalanche incident, Glacier Country Avalanche Center issued an advisory for the Purcell Mountain Range (as part of its larger forecast area). Avalanche risk was identified as Considerable with a trend toward High, due to forecasted widespread rain and thawing temperatures following a major storm loading event.

**Group Information:** The snowmobiling party consisted of 15 individuals, a mix of men and women. The party leader was BR a “pro rider” presenting a snowmobile skills clinic. His trip objective was to teach riders advanced riding skills and safety. Fourteen riders had signed up for his on-snow skills course.

The party departed from the trailhead at approximately 10:00AM and traveled mostly by road 16 miles to China Lake. There a fire was built as the central meeting point. China Lake is surrounded by a large spruce basin logged in the 1960s. Terrain is gentle and trees are widely scattered, this area is commonly known as China Basin. Riders played in China Basin till lunch time then met at the fire.

At approximately 12:45PM three snowmobilers from Troy approached the fire at China Lake from the northeast. They told the group of 15, “Don’t go over there, we just started an avalanche”. The pro rider (BR) said to the group, “I got to go see this”, and departed on his own. BR back tracked the Troy snowmobiler’s trail to a 6100’ knob on the China-Quartz Divide then northeast down a spur ridge. Near the bottom, BR followed the snowmobile tracks side sloping south into the bottom of a small basin. BR found the debris field on top of a small flat at 5600’ and stopped along its north side at 1:15PM. The avalanche measured 30 yards wide and ran 100 yards.

Several people at the China Lake fire seeing BR leave thought they should accompany him. AM, JF, and PG followed BR to the debris field of the avalanche. AM was the first to arrive at 1:30PM. PG arrived next and proceeded up the slope above BR and south of the first avalanche. PG triggered a larger avalanche measuring 200 yards wide which ran 300 yards down slope. BR sitting on his snowmobile was struck by this avalanche and buried. AM was able to safely out run the slide to the south side of the track. JF arrived at the site shortly after the slide. BR's snowmobile was on top of the debris field. JF went to the snowmobile and saw one of BR's boots under the machine. When JF grabbed the boot it was attached and he felt movement. The snowmobile was moved aside and excavation of BR proceeded. JF commented that the debris was so hard only small amounts could be removed at a time. BR was positioned at a 30' angle to the snow surface with his head buried 2.5 feet below. BR was extracted in approximately three minutes and was blue in color. BR's airway was cleared, he choked a couple of times and began breathing on his own then his color returned. BR commented that the snow pressed so hard against him that he could only take the shallowest of breaths. During this rush of activity, PG had disappeared and the rescuers momentarily wondered if he too were buried. Subsequently PG was located back at the China Lake fire. Though greatly shaken, BR was able to ride his snowmobile the 17 miles back to the trailhead. The entire party of 15 was back at the trailhead at 4:00PM.

**Avalanche Characteristics:** Jon Jeresek and Mark Mason, Kootenai National Forest, visited the scene at 1130 hours on Monday, January 24. Subsequent to the significant thaw/rain event of January 14-17, the temperatures have been below freezing forming a six inch thick knife hard crust. No significant loading by storm or wind had occurred since January 17<sup>th</sup>.

- \*Avalanche central aspect measured N80'E (ENE).
- \*Average slope angle at the highest portion of the crown fracture measured 40 degrees.
- \*Elevation at the highest portion of the crown fracture measured 5880 feet.
- \*Elevation at the toe of the run out measured 5500 feet.
- \*Total vertical fall calculated 380'.
- \*Total slope distance calculated 910'.
- \*Total horizontal distance calculated 766'.
- \*Avalanche width estimated 600'.
- \*Avalanche released at 1330 hours, Saturday, January 15, 2011.
- \*Avalanche type was HS, hard slab.
- \*Avalanche trigger was AM, snowmobile.
- \*Destructive force was D2; could bury, injure, or kill a person.

\*Size relative to the path was R2, Small.

\*Avalanche released within the old snow.

\*The bed surface was a 4" knife hard crust formed during the December 12-14 rain/thaw event.

\*The weak layer above the bed surface was 2-3mm angular blocks of 1-finger hardness.

\*Liquid content of the entire snowpack was dry at the time of observation; surface and near surface snow was moist the day of the release due to the preceding 36 hours of above freezing temps and light rain.

\*Failing slab thickness and crown height varied from 24" to 30" measured.

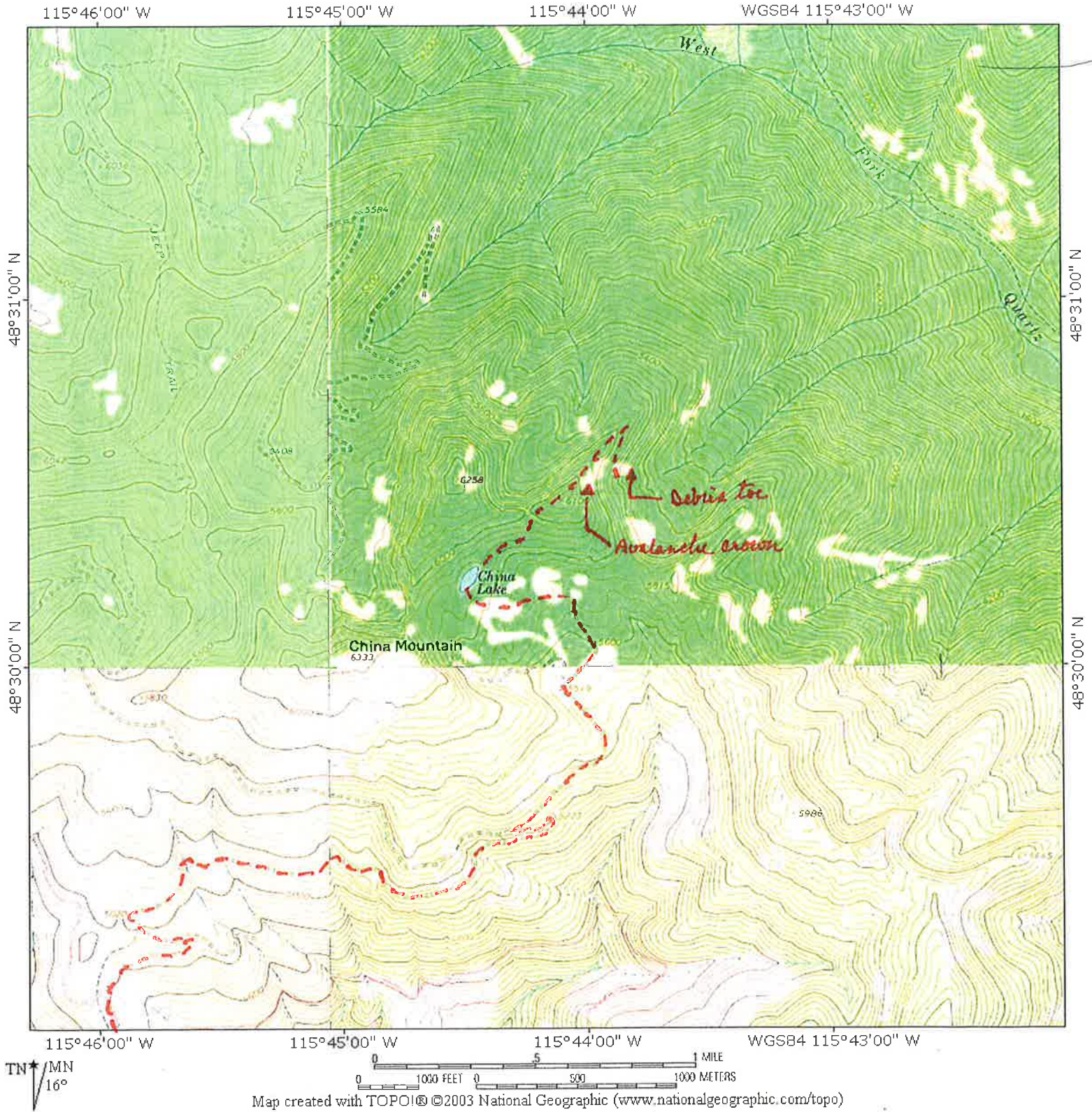
**Emergency Response:** none required as companion rescue was successful.

**Appreciation:** I very much appreciate the assistance of those unnamed individuals from the snowmobile party who shared information that make this report possible.

Jon Jeresek, Kootenai National Forest

January 25, 2011

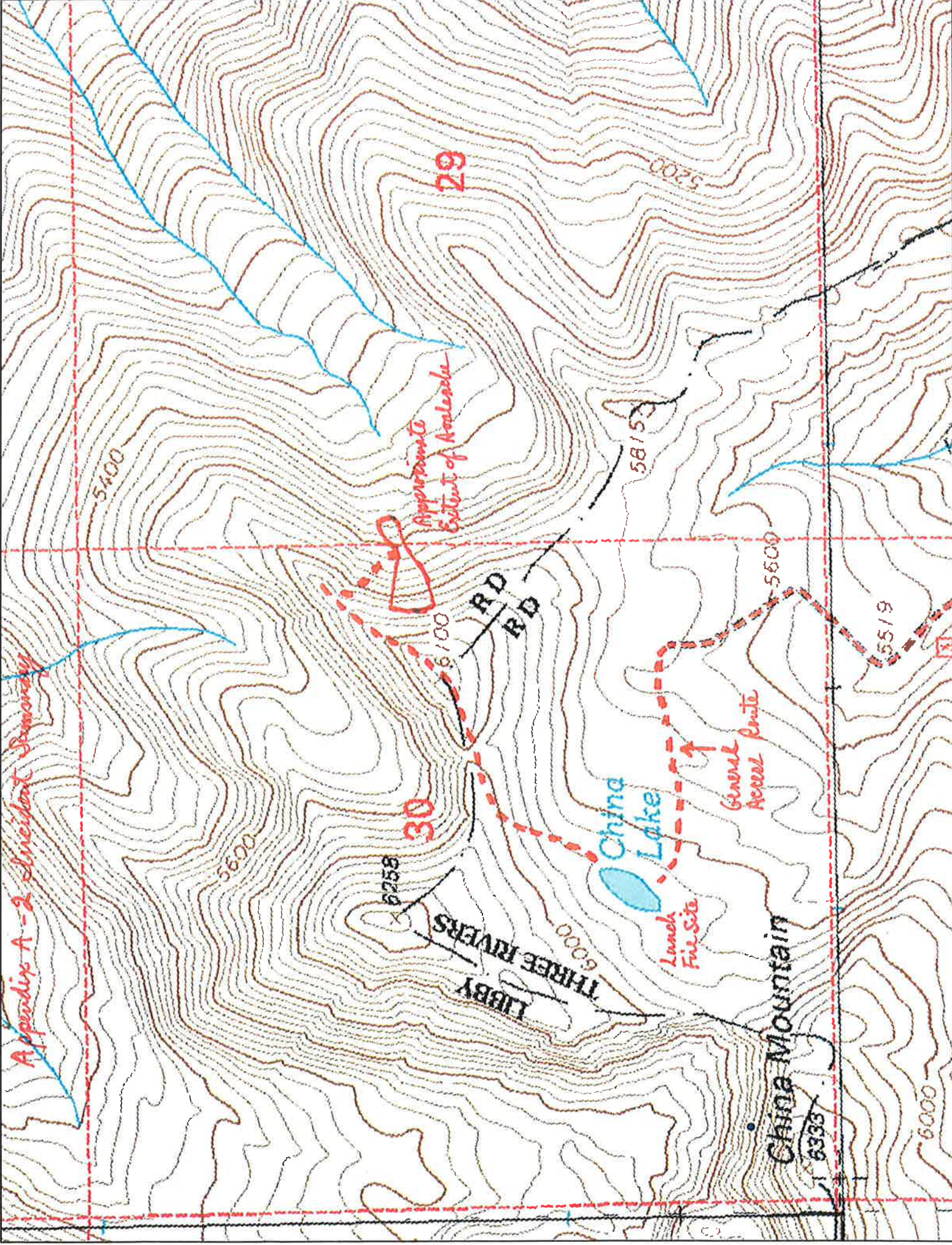
# Appendix A-1 Maps



- - - - General access route used by group



Appendix A - 2 Incident Summary

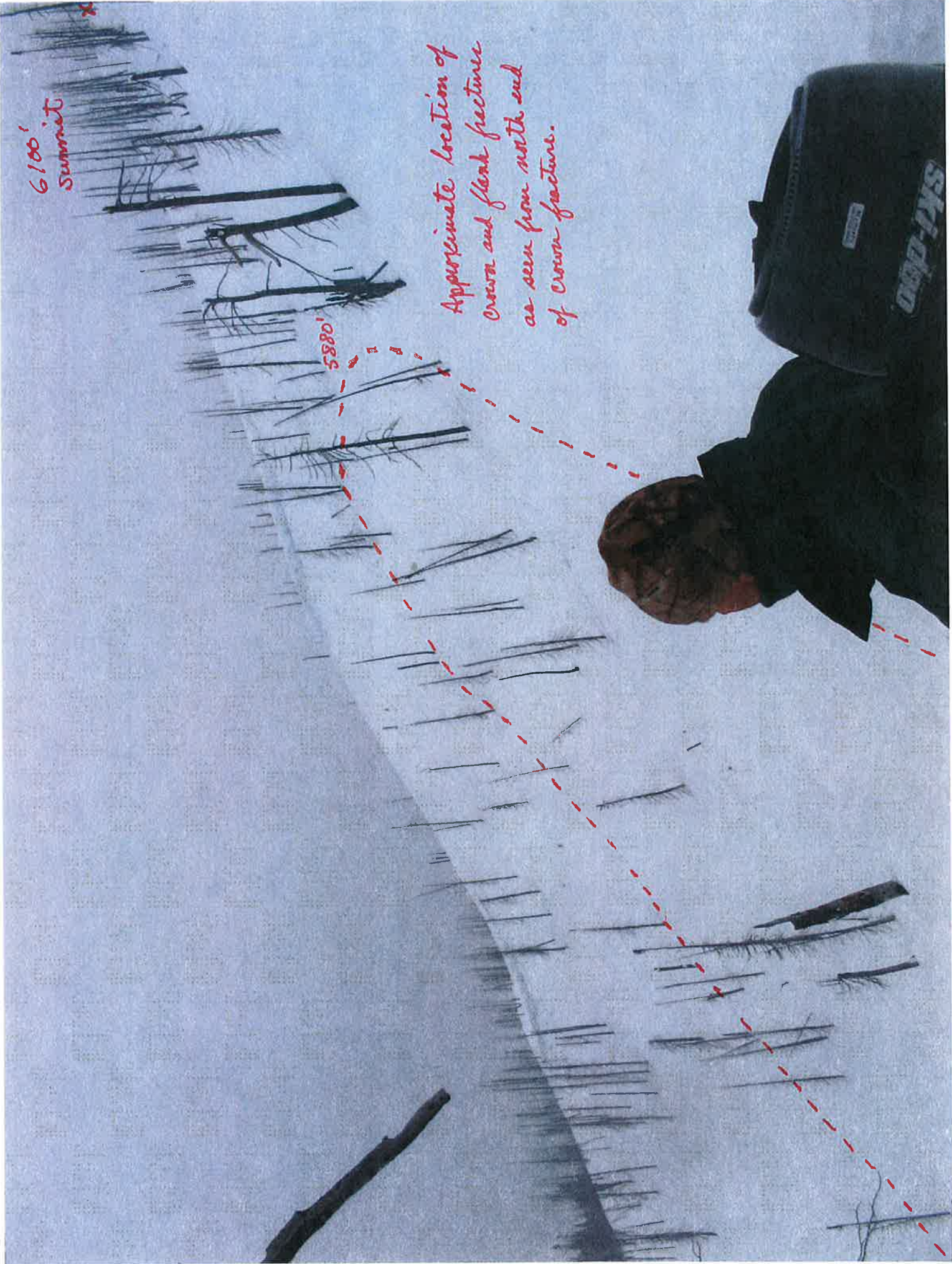




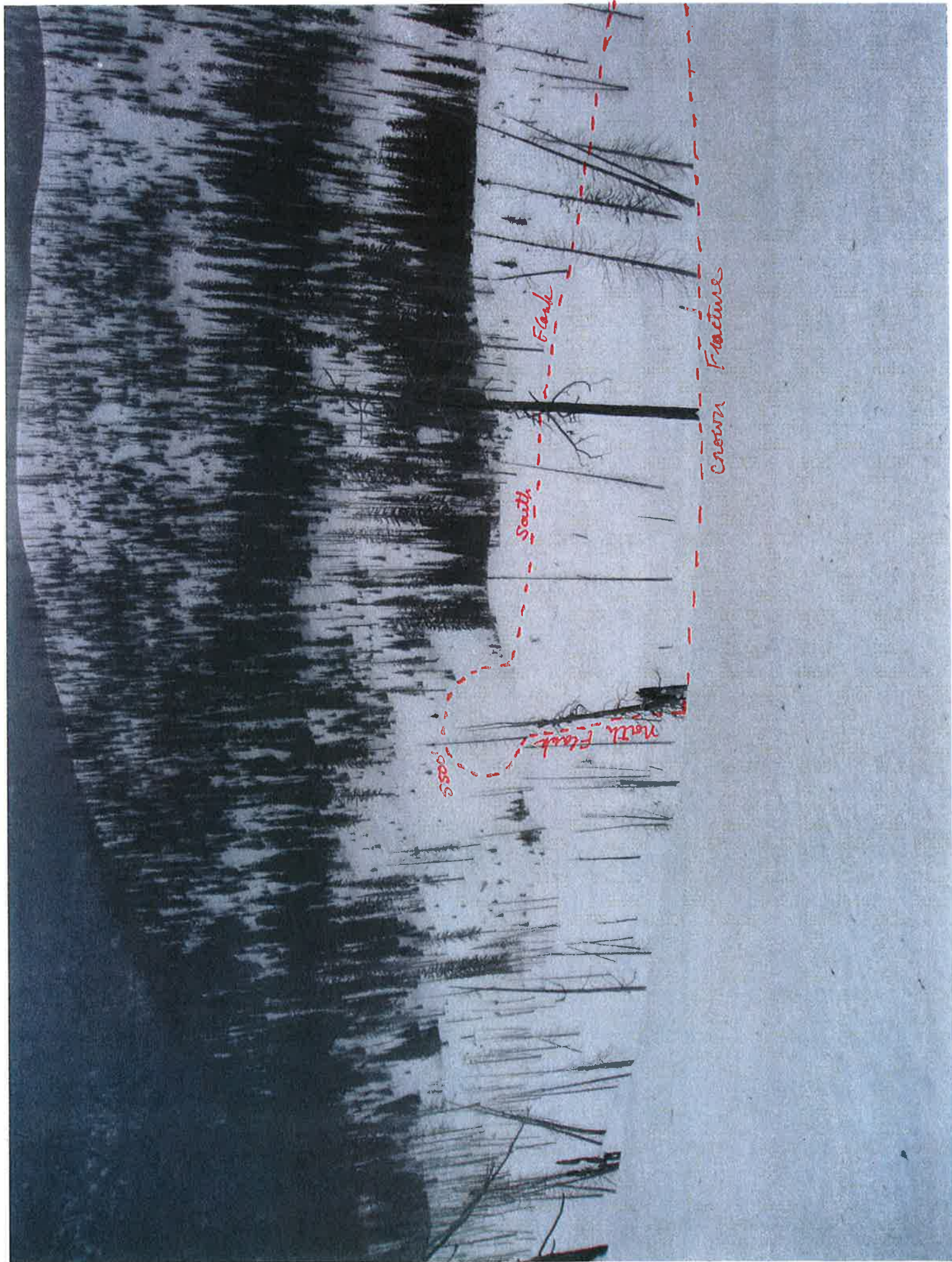
6100'  
Summit

Approximate location of  
Crown and flank fracture  
as seen from north end  
of Crown fracture.

5880'







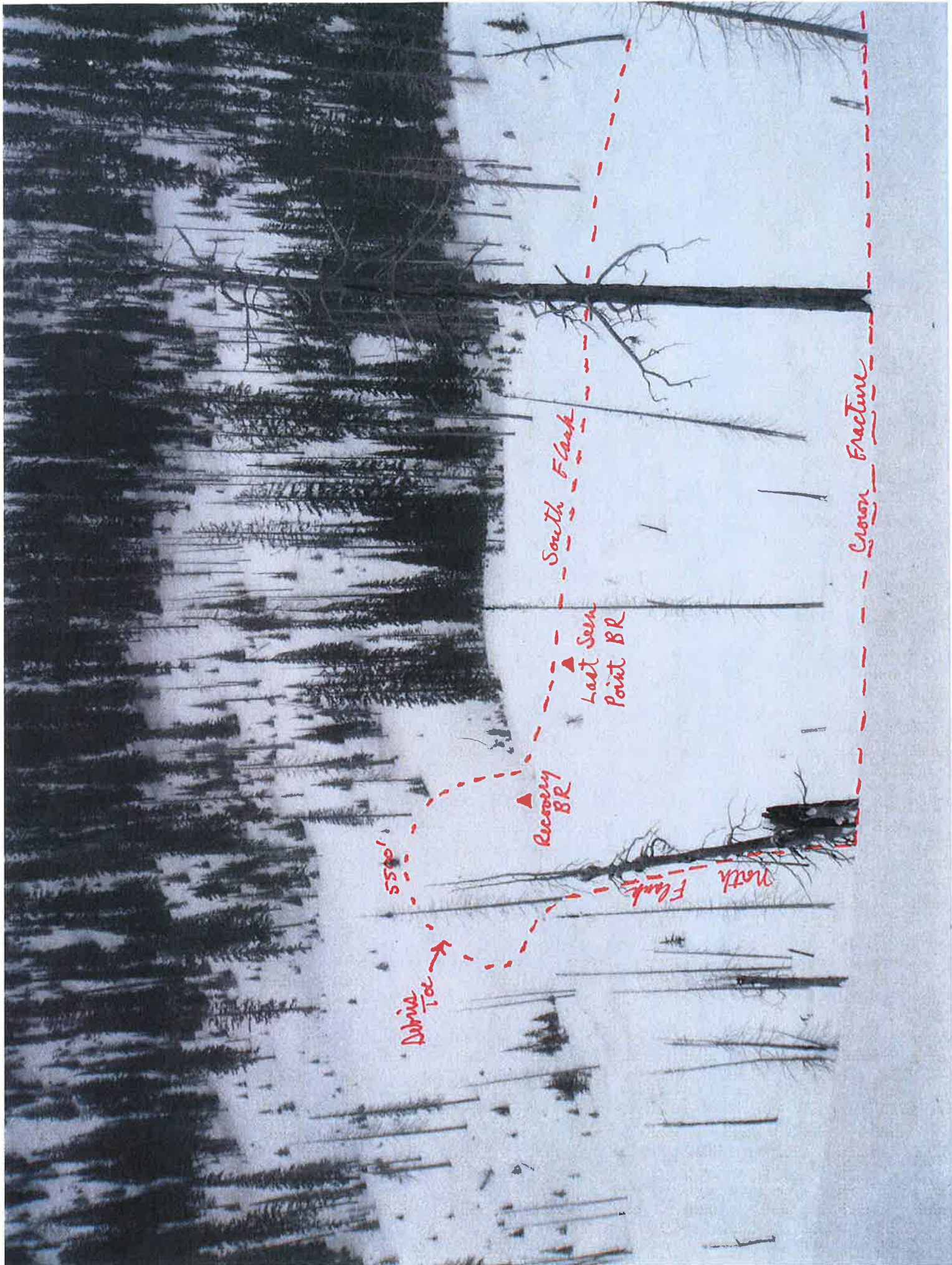
North Flank

South

Flank

Crown Fracture





Debris Ice

5500'

North Flank

Recovery BR

Last Seen Point BR

South Flank

Crown Fracture