

SAWMILL GULCH TIMBER SALE

DECISION MEMO

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ENVIRONMENTAL
QUALITY COUNCIL

I have reviewed the Environmental Assessment for the proposed Sawmill Gulch Timber Sale located in Sec. 30, T14N, R5W. I have decided to implement Alternative B -- the timber harvest proposal. The alternative as proposed will substantially improve a segment of existing road on private land, initiate forest management activity on approximately 20 acres of State land and 2 acres of private land and provide an estimated \$13,000 to \$49,000 of income to the School Trust. The proposal will not affect open road densities or substantially impact wildlife cover. Significant impacts will not result from implementing the proposal and there is no need to prepare an EIS.

Garry T. Williams 5/12/92

Garry T. Williams
Manager, Forest & Lands Program
Central Land Office

EXHIBIT 3

FILE NO. 016

ENVIRONMENTAL ASSESSMENT COVER SHEET

DS-251

APPLICANT Department of State Lands

TYPE OF OPERATION Timber Harvest

LOCATION W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 30, T14N, R5W - Sawmill Gulch

PERSON PREPARING EA Darrel J. Bakken

() DRAFT EIS
(X) NO DRAFT EIS

DATE PREPARED 4-24-92 EXPECTED IMPLEMENTATION DATE _____

REVIEWED BY <u><i>[Signature]</i></u>	RECOMMENDATION	() DRAFT EIS
REVIEWED BY <u><i>[Signature]</i></u>	RECOMMENDATION	(X) NO DRAFT EIS
REVIEWED BY _____	RECOMMENDATION	() DRAFT EIS
ADMINISTRATOR'S SIGNATURE _____	RECOMMENDATION	() DRAFT EIS
		() NO DRAFT EIS

SUMMARY OF POTENTIAL IMPACTS

PHYSICAL ENVIRONMENT	SIGNIFICANT		INSIGNIFICANT WITH MITIGATION		INSIGNIFICANT AS PROPOSED	
	SHORT TERM	LONG TERM	SHORT TERM	LONG TERM	SHORT TERM	LONG TER.
1. <u>TOPOGRAPHY</u>					X	X
2. <u>GEOLOGY</u> ; stability					X	X
3. <u>SOILS</u> ; Quality, distribution					X	X
4. <u>WATER</u> ; Quality, quantity, distribution					X	X
5. <u>AIR</u> ; Quality					X	X

PHYSICAL ENVIRONMENT(cont)

	SIGNIFICANT		INSIGNIFICANT WITH MITIGATION		INSIGNIFICANT AS PROPOSED	
	SHORT TERM	LONG TERM	SHORT TERM	LONG TERM	SHORT TERM	LONG TERM
6. <u>UNIQUE, ENDANGERED, FRAGILE, or LIMITED</u> environmental resources					X	X

BIOLOGICAL ENVIRONMENT

1. <u>TERRESTRIAL, AVIAN, and AQUATIC</u> ; species and habitats					X	X
2. <u>VEGETATION</u> ; quantity, quality, species					X	X
3. <u>AGRICULTURE</u> ; grazing, crops, production					X	X

HUMAN ENVIRONMENT

1. <u>SOCIAL</u> ; structures and more					X	X
2. <u>CULTURAL</u> ; uniqueness, diversity					X	X
3. <u>POPULATION</u> ; quantity and distribution					X	X
4. <u>HOUSING</u> ; quantity and distribution					X	X
5. <u>HUMAN HEALTH & SAFETY</u>					X	X
6. <u>COMMUNITY AND PERSONAL INCOME</u>					X	X

HUMAN ENVIRONMENT(cont)

	SIGNIFICANT		INSIGNIFICANT WITH MITIGATION		INSIGNIFICANT AS PROPOSED	
	SHORT TERM	LONG TERM	SHORT TERM	LONG TERM	SHORT TERM	LONG TERM
7. <u>EMPLOYMENT</u> ; quantity and distribution					X	X
8. <u>TAX BASE</u> ; local and state revenue					X	X
9. <u>GOVERNMENT SERVICES</u> ; demand on					X	X
10. <u>INDUSTRIAL, COMMERCIAL</u> and <u>AGRICULTURAL</u> activities					X	X
11. <u>HISTORICAL</u> and <u>ARCHAEOLOGICAL</u>					X	X
12. <u>AESTHETICS</u>					X	X
13. <u>ENVIRONMENTAL PLANS</u> and <u>GOALS</u> local and regional					X	X
14. <u>DEMANDS</u> on <u>ENVIRONMENTAL RESOURCES</u> of land, water, air and energy					X	X
15. <u>TRANSPORTATION</u> networks and traffic flows					X	X

Route copies to: Environmental Quality Council (EQC)
File (#016.4)

**SAWMILL GULCH
ENVIRONMENTAL ASSESSMENT**

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Environmental Assessment
Sawmill Gulch
Section 30, T14N, R5W

I. Purpose/Management Objectives

A. Proposal and Project Area

The Department of State Lands is proposing to harvest an estimated 272 MBF of timber on approximately 20 acres of state land plus an additional 39 MBF of timber on 2 acres of private land. The Sawmill Gulch proposal is located in Section 30, T14N, R5W M.P.M. Sawmill Gulch is located approximately 4 miles southeast of Flesher Pass on the east side of the Continental Divide in Lewis & Clark County.

The Sawmill Gulch section has been classified as forest land by the Department of State Lands since 1967. This section is a part of the State Reform School Land Grant.

B. Management Objectives

Management direction for State owned lands can be found in several State Statutes. Section 77-1-202 which describes the powers and duties of the Board (of Land Commissioners) states that "... the guiding rule and principal is that these lands and funds are held in trust for the support of education and for the attainment of other worthy objects helpful to the well-being of the people of this State. The Board shall administer this trust to secure the largest measure of legitimate and reasonable advantage to the State." Multiple use management for State lands is addressed in Section 77-1-203. Multiple use management is the coordinated management of all the various resources on State land in that combination best meeting the needs of the people and the trust without impairment of the productivity of the land. State land will be managed insofar as is possible to maintain or enhance multiple use values but will make the most judicious use of the land, allowing for changing needs and realizing that some land may be used for less than all of the resources. Section 77-1-601 states that "It is in the best interest and to the great advantage of the State of Montana to seek the highest development of state owned lands..." Management options and proposals for state lands must comply with, and be evaluated in accordance with these legislated mandates.

Consistent with the forest land classification, the Sawmill Gulch section should be managed with an emphasis on the timber and watershed values which it contains. A list of site specific management objectives is in Table 1.

TABLE 1	
Site Specific Management Objectives	
1)	Timber Production
2)	Maintain water yield from State land
3)	Income to the School Trust
4)	Long term maintenance of wildlife habitat

C. Decision to be Made

The decision to be made is whether the Department of State Lands should continue the current management actions as they are (the no action/project alternative), or if the Department should begin forest management and harvesting actions. The forest management actions considered are those various alternatives which were analyzed as part of this Environmental Assessment.

The Central Land Office Area Manager, the State Forester and ultimately, the State Land Board must decide which course of action to follow. The selection will be based upon the combined environmental, social, and economic factors which best meet the general and site specific management objectives for this section.

D. Issue Determination

Adjacent landowners and the State's surface lessee were contacted by mail early during project development. They were informed of our interest in harvesting timber in Section 30 and were asked for their concerns. A temporary right-of-way agreement was negotiated with the Sieben Ranch Company (John Baucus), which controls access to the area.

Soils, hydrology, wildlife and archaeological specialists with the Department of State Lands were provided the initial proposal and offered an on-site field review. Gary Frank (D.S.L. - hydrologist) and Jeff Collins (D.S.L. - Soil Scientist) participated in the field review. Their reports are in Appendix section D (pages VI, D, 1-13).

Gayle Joslin, Wildlife Biologist for the Department of Fish, Wildlife & Parks was provided the initial proposal for comment. Gayle expressed concern relating to several wildlife issues and proposed an analysis process that will be discussed in the section on environmental effects.

From this process, several potential issues or areas of concern were identified. The following listed issues have been addressed

sufficiently and will not be discussed in Section IV (Environment Effects).

Issue #1 - Cumulative Watershed Effects

Some concern was expressed that the increased water yield, resulting from past harvest activity and proposed harvests on State and private land, would exceed recommended tolerances.

Gary Frank (D.S.L. _ Hydrologist) evaluated the watershed and reported that "There are no cumulative watershed effect constraints with this sale. This recommendation is based on the following reasons: 1) only a moderate level of timber harvest has occurred in the drainage. 2) The watershed is partially non-forested. 3) The small size of the prescription and harvest unit and 4) The moderate amount of runoff produced over the sale area." (See memo dated 2-13-92, Section VI, D, 1).

Issue #2 - Existing road use in S.M.Z.

Portions of the existing road are located immediately adjacent to Rattlesnake Creek and continued use would be in opposition to recommended Best Management Practices (B.M.P.).

Several mitigation measures were designed into the proposal and reviewed in the field by Jeff Collins and Gary Frank. The mitigation measures were also approved by John Baucus, owner of the property and road segment in question.

The mitigation measures were determined to be sound, will improve the existing situation and will provide an appropriate solution to the long term prevention of water quality impacts. The action proposal will include the following mitigation measures. (The no action alternative will not include these road improvements.)

- improve drainage of the existing road by insloping and maintaining an outside berm on several sections of road to ensure that road surface drainage does not enter the stream.
- install six drain dips with man made sediment traps at selected locations to disperse road surface drainage.
- install additional drain dips with natural sediment traps for road drainage where the stream is 50 feet or more from the road.
- relocate a segment of road (0.30 miles length) away from the creek. Relocation will involve installation of a 36" CMP at a new site. A "124" permit has been received for this installation.
- close and seed to grass the old road segment.
- rock armor all existing culvert inlets.

Issue #3 - Noxious Weeds

There are some concern that the harvest activity will contribute to the spread of noxious weeds.

A noxious weed plan has been prepared and approved by the County Weed Board. All off road equipment will be washed prior to entering the site. Also, because knapweed is present along the access road, off road equipment which is "walked" out, must be washed when leaving the sale. Disturbed areas will be seeded to grass.

The following issues were analyzed in detail and will be discussed more in the section on Environmental Effects (Section IV).

Issue #4 - Effects on Grizzly Bears

There have been reports for several years of grizzly bear use in the Lyon Mountain area. There is concern that the proposed State harvest, in conjunction with on-going private harvest, will increase potential bear/human conflicts and reduce security values sufficiently to displace the bears to unknown areas.

The Lyon Mountain area is outside of a designated Bear Management Unit. The nearby Northern Rocky Mountain Recovery Zone has established standards and guidelines for the management of grizzly bear habitat. For lack of another option, the Grizzly Bear Standards and Guides for the Northern Zone, will be used as a basis for evaluating effects on this proposal.

Important evaluation criteria include the following:

- open road densities
- available security cover
- harvest unit size, travel corridors, and distance to cover
- road locations

Please refer to Section IV for a detailed discussion of this issue.

Issue #5 - Effects on Elk Populations

Concern was expressed that the area has reached its limits in absorbing habitat changes and that any additional timber harvest will reduce security cover and result in further deterioration of the bull elk populations.

A moderate amount of harvest has occurred in this area over the past 20-25 years. More recently, harvest on private lands has renewed. The cumulative effect of past and proposed harvests was evaluated. Important evaluation criteria included the following:

- road management
- % available hiding and thermal cover non DSL
- % available hiding and thermal cover on DSL
- timing of operations

This issue is also discussed in more detail in Section IV.

II. Alternatives/Proposal

Through the analysis process, the Helena Unit developed 2 viable alternatives. These two alternatives, as well as early alternatives which are no longer considered, are described in this section.

A. Alternative A - No Project

The no project alternative will not initiate any new actions, but current management will continue. At present the Sawmill Gulch parcel is included in a State Forest Land Use Authorization for grazing. There are several sections included in this single lease. The State land in Section 30 contributes an estimated 3 A.U.M.'s of grazing, each year, from June 15 - Oct. 15. Hunting will continue on the State land. The designated open road, which loops through the Sieben Ranch, passes by this parcel of State land. The saddle located along the State land offers one of the few favorable parking locations for big game hunters. The State section receives considerable hunting pressure by virtue of this location. Fire suppression activities will also continue as situations develop.

B. Alternative B - Proposed Project

The proposed project will include the following actions:

- road drainage repairs as previously listed in the description of Issue #2.
- new construction of a temporary road in Section 30. Estimated length of construction is 0.5 mile (+/- 0.1 mile). Close Road After Use.
- harvesting of two timber stands
 - Unit 1, lower 2/3 of slope on southside of the ridge. Clearcut, cable yarding, planting to mixture of Douglas-fir and Lodgepole pine. Total area of harvest is 15 acres on State and adjoining area of 2 acres on the private land.
 - Unit 2, upper 1/3 of slope on south side of the ridge. Group selection, tractor skidding, natural regeneration. Total size of harvest 7 to 8 acres in size.
- Treat slash to reduce fire hazard, provide for nutrient cycling and maintain accessibility for wildlife and livestock.

- Continued grazing at 3 A.U.M.'s/year as in A.
- Continue hunting use as in A.

C. Early Alternatives

During the planning process, additional alternatives were briefly considered, but eventually disregarded due to undesirable impacts, or poor economics. One such option was to limit all logging to the upper 1/3 of the slope. In this option the volume harvested, even if an evenaged silvicultural system was used, would not support the development costs. Costs could have been reduced, for example, by omitting the road drainage work on the Rattlesnake Road, but this would have been in violation of B.M.P.'s. A second option was to limit all harvest to the lower 2/3 of the slope on the cable ground. The effects of this option are not noticeably different than the proposed project, but trust income would be less and no action would be taken to ensure long term maintenance of the thermal cover values in the upper 1/3 of the slope. We also briefly considered development of a domestic use post and pole area on the north side of the ridge. This option was dropped to maintain wildlife cover on the north side that may be desirable in light of harvesting on the southside of the ridge.

III. Affected Environment

A. General

The Sawmill Gulch section is located in mountainous terrain just east of the Continental Divide in Lewis & Clark County. The geology and soils of the area are described in Jeff Collins' memo dated 4-2-92 which can be found in the Appendix on Pages VI.D. 11 & 12. Watershed descriptions and information can be found in Gary Frank's memo dated 2-13-92 which is also in the Appendix on Pages VI.D.1 & 2.

The Sawmill Gulch parcel of State land includes 75.60 total acres. There are 58.5 timbered acres and 17.1 open rangeland acres on this state parcel. Timbered stands on the north side of the ridge are mostly Lodgepole pine, post and rail size (5" - 7" d.b.h.). Average slope on the north side of the ridge is 40-45%. The timber stands on the south side of the ridge are mostly Douglas-fir, greater than 7" d.b.h. (sawtimber size). Slopes south of the ridge average 35% in the upper 1/3 of the slope and 40% in the lower 2/3. All stands of timber are overmature and stagnant. Natural mortality is beginning to increase. Some winter kill is evident on the north side of the ridge, due to a sudden cold snap in January 1989. Western Spruce budworm has also been an on-going problem in the Douglas-fir. Budworm activity has been prevalent so long that there is no established Douglas-fir regeneration below the overmature stands of timber. The only Douglas-fir seedlings which have been able to survive are encroachment trees which become started where they are not directly below the canopy of mature Douglas-

fir. This encroachment is gradually filling in the ridge top area where the 17.1 acres of rangeland is located.

The Sawmill Gulch area is used by elk, mule deer, blue grouse, black bears, grizzly bears and other "non game" species. The Sieben Ranch allows public hunting on their lands, and the state lands which they lease. The Department of Fish, Wildlife & Parks has worked out a Cooperative Road Management Plan with the Sieben Ranch. One main loop road is designated open, up Rattlesnake Creek, over the ridge in Section 30 and down the Miners Gulch/Big Sheep Creek side. All other spur roads are posted "No Motor Vehicles". The area receives considerable hunting pressure, both drive through and walking. The flat saddle in the SW $\frac{1}{4}$ of Section 30 provides an often used parking area for big game hunters, indicating that the State parcel receives its share of the hunting pressure.

There is an old fenceline near the eastside of the State property line, between the State and Sieben lands. This fence is down and is of no concern in this analysis. The Department archeologist (Dori Passmann) does not anticipate any historical or archeological concerns for this area.

The area around the State parcel is mostly private (Sieben Ranch Company) and U.S. Forest Service. The State does own Section 36, T14N, R6W which lies southwest of this parcel. This section may offer forest management options in the future, depending upon the results of this proposal and the cumulative effects of as yet unplanned activities on private lands. The Helena Unit will evaluate this section more fully in the future. The Forest Service has not conducted any harvesting activities in their adjacent lands and, when contacted, stated that they had no harvesting plans in the foreseeable future. Harvesting activity to date has been on the adjacent private lands. Most of this harvest was conducted in the 70's. Some additional private harvesting started on the Sieben Ranch in 1992 and this contract, per a conversation with John Baucus, will expire at the end of 1992.

The two main issues for this proposal are Effects on Grizzly Bears and Elk Security. Gayle Joslyn (DFW&P) was concerned with several aspects of grizzly and elk habitat and recommended that a study of the wildlife habitat for a 4 mile radius around Lyon Mountain be conducted to determine if there were any adverse effects. As noted previously, the Standards and Guides for grizzly bear from the Northern Rocky Mountains will be used as a basis for evaluating effects to grizzly. The State also has elk winter range Standards and Guidelines which apply to this area to base potential effects to elk upon.

A wildlife cover study was conducted by Bob Harrington (D.S.L. - Sale Prep Forester). Aerial photography, updated with current knowledge of private land activities was used to develop the data. The four mile radius was expanded to include additional sections along the southside to better evaluate conditions around the current proposal. The full results of this study are shown in Bob Harrington's letter to Gayle Joslyn, dated 30 January, 1992 in the Appendix page VI, D 17-29. The

results are further clarified in correspondence to Gayle Joslin from D.J. Bakken, dated 4-13-92 in the Appendix on pages VI.D. 35-38.

B. Existing Forest Cover

The analysis area identified by Gayle Joslin is displayed in Figure 1. The area encompasses an estimated 54,876 acres. The majority of the land in the area is privately owned of which the principle landowner is the Sieben Ranch Company. The ownership summary of the analysis area is as follows:

Department of State Lands	17%
U.S. Forest Service	29%
Sieben Ranch Company	30%
Other Private	23%
Bureau of Land Management	<u>1%</u>
	100%

Ortho-photo quads and 1988 aerial photos were used to determine existing conditions within the analysis area for those criteria relevant to elk and grizzly bear populations. The total forested acreage within the analysis area was calculated as well as total forested acreage on State land. Past timber harvest activity was evaluated from the aerial photos and hazard reduction records. For the purpose of the analysis it was assumed that all non-harvested stands provided some hiding and thermal cover while all harvested stands have no thermal or hiding cover. This assumption was made due to the lack of available data and the magnitude of the proposed project. Since a majority of the ownership is private, there is minimal data available. A cooperative project has been underway for almost 3 years in an attempt to quantify the resource data in this area on a GIS system. However, the project is not far enough along to provide useable information for this analysis. Needless to say, it is not efficient to field check a 54,000 acre analysis area for a 22 acre harvest unless there is sufficient indication of a high probability that substantial impacts would occur. It is reasonable to assume that non-harvested forest stands represent the natural thermal and security cover available in this area.

The following table summarizes the existing forested acreage data for the analysis area:

TABLE 2

	<u>Open Grassland</u>	<u>Forested Not Harvested</u>	<u>Forest & Harvested</u>	<u>Total</u>
DSL ownership				
% of Total	18%	80%	2%	100%
% of Forested	--	98%	2%	100%
Total Analysis Area				
% of Total	19%	68%	13%	100%
% of Forested	--	84%	16%	100%

Sieben Ranch Company

U.S. F. S.

Other Private

B.L.M.

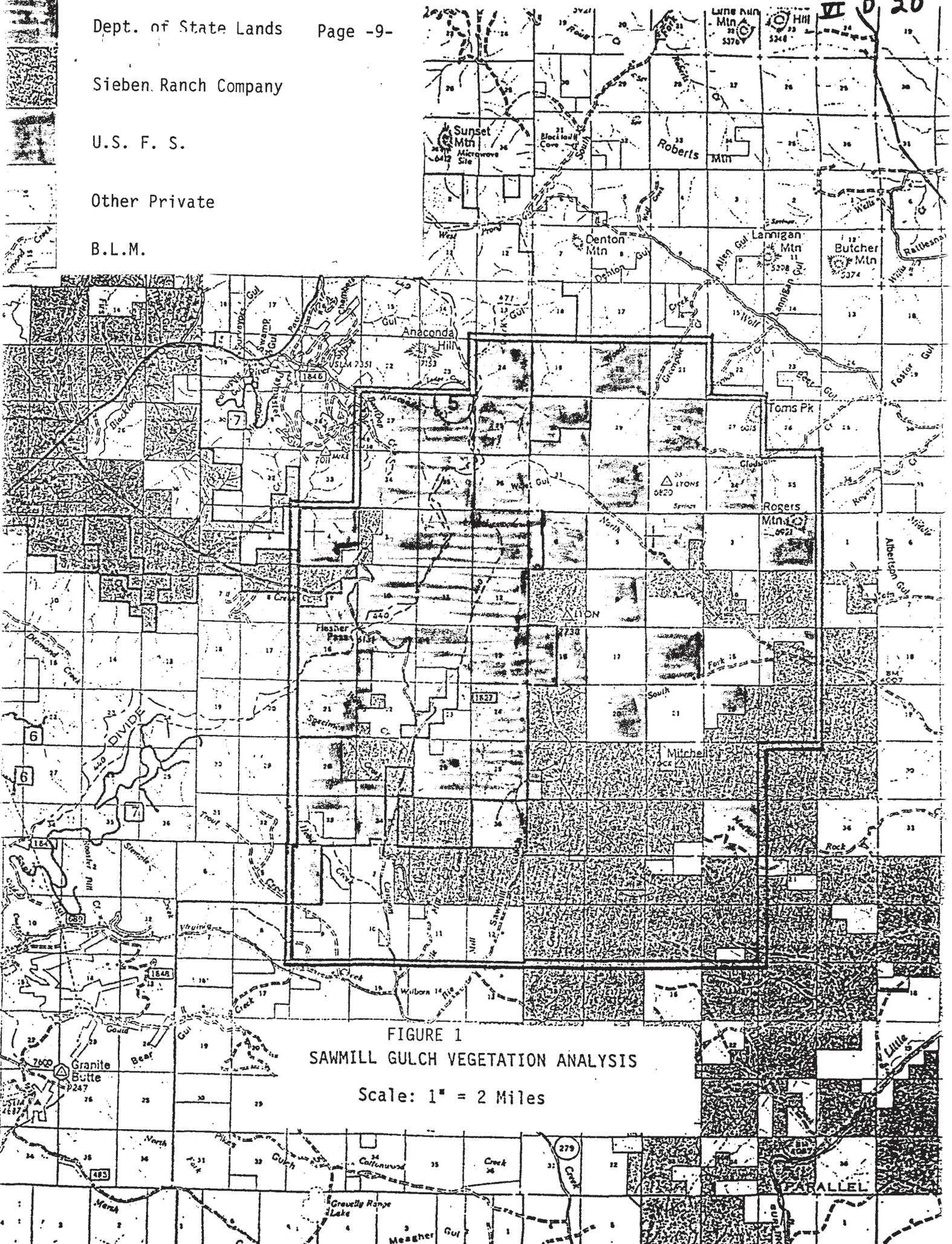


FIGURE 1
SAWMILL GULCH VEGETATION ANALYSIS

Scale: 1" = 2 Miles

As indicated above, an estimated 16% of the total forested acreage has been harvested to some extent over the past 20-25 years. Some of that area has completely regenerated, more recent harvest, have not regenerated to date. An estimated 2% of the total forested land on DSL ownership has been harvested, most in the past few years.

The area harvested in the table above includes private land that is currently under a hazard reduction agreement. It was assumed that those acres under an agreement will be harvested in the next 2 years and was considered as already been cut.

The USFS was contacted to determine their past harvest activity as well as future harvest plans. The USFS land base in the analysis is primarily in management categories other than timber. There are no known future USFS timber harvest plans in the analysis area.

C. Open Road Densities

The Dept. of Fish, Wildlife & Parks has recently established a cooperative road management program with landowners in this analysis area. Past timber harvest activity has created a network of spur roads throughout the area that until recent years were generally open to public use by the Sieben Ranch Company. Recently, most of the spur roads have been closed to public use by erecting signs indicating no vehicular traffic. A few of the roads have been physically closed in conjunction with other timber harvests. The spur road network is mostly available for administrative use by ranch personnel. One major loop road through the Sieben Ranch Co. property has been designated as open to public use as part of the cooperative road management program.

Open road lengths were measured from ortho photo quads or topographic maps within the analysis area. Those roads that have been administratively closed by signing were not considered open. The road lengths were measured for the entire analysis area as well as the 3rd order drainage.

IV. Environmental Effects

A. Effects on Grizzly Bears

- **Open road densities:** The grizzly bear guidelines recommend that important grizzly habitat has an open road density of no more than 1 mile per section. An open road is defined as being open to public travel. Initially, we evaluated open road densities for the entire 54,876 acre study area and came up with 0.41 miles per section. Per correspondence with Gayle Joslin we later calculated road densities for the drainage (Big Mill and Sawmill Gulch 3rd order drainage) and determined a localized open road density of 0.55 miles/section.

Alternative A proposes no road construction so will have no effect on open road density. Alternative B will build a temporary road in Section 30, but this road will be closed and left in a

condition less travelable than the adjacent terrain so long term open road densities will not be effected.

- **Available security cover:** The grizzly guidelines suggest that 40% of the total area be maintained in a cover condition. The cover study estimated that cover will be at 67.8% of the total area with the selection of Alternative A. If Alternative B is chosen, the cover levels would drop to 67.7% of the total area.

- **Harvest unit size:** Guidelines recommend that units should not exceed 26 acres, or if they are irregular in shape up to 50 acres. Alternative A has no harvest units. Alternative B would have two harvest units of 15 and 7 acres respectively.

- **Travel corridors:** The Sawmill Gulch drainage could be used by grizzly bears as a travel corridor from south to north. Management Guidelines suggest that travel corridors be maintained along riparian areas and that openings in a travel corridor do not exceed 600 feet across. Alternative A would maintain all cover as it now exists. (At least for the immediate future. The old stagnant stands of timber are beginning to experience significant amounts of mortality which, over the long term will cause a reduction in cover values even if Alternative A is selected.) Alternative B would maintain corridors along two ephemeral drainages to the west of the proposal area. The opening created by the clear cut unit will not exceed 600' at its widest point.

- **Distance to cover:** Grizzly guidelines suggest that no point in a harvest unit should be more than 600' from cover. There are no harvest units in Alternative A. Alternative B has harvest units that are 500' or less wide so no point will be more than 600' from cover.

- **Road locations:** The guidelines recommend that loop roads not be used, that roads not parallel draws closer than 500' and that vertical and horizontal alignment be broken up as much as possible. Alternative A has no new road construction. Alternative B has no loop roads, the temporary road which will be built crosses the draw at nearly a right angle, then pulls away. The new road will be closed completely so concerns for vertical and horizontal alignment to limit sight distances of future users is not applicable.

B. Effects on Elk Populations

- **Road management:** Elk winter range standards require that all spur roads, at a minimum, be closed, and that overall road management plans be devised with adjacent landowners. The DFW&P has set up a road management plan with the adjacent landowners. All spur roads in this plan are closed to the public vehicle use. Alternative B includes construction and closure of a new spur road. Alternative A has no road construction or closure plans.

- **% Available hiding and thermal cover - non DSL:** Elk guidelines recommend deferral of State harvest if hiding and thermal cover drops below 50% of the forested area on non-DSL lands. Non-DSL lands in the study area are 20% open grassland and 80% forested types. Current and planned harvest on non-DSL lands will alter the cover on 19% of the forested lands. In other words, 81% of the non-DSL forested land will remain forested. Alternative A will not change these figures. Alternative B includes 2 acres of private harvest which is already included above, so will have no added effect.

- **% Available hiding and thermal cover - DSL lands.** Elk standards require D.S.L. to maintain 50-70% of the State forested land in a cover condition. The state land in the study area is 18% open range and 82% forested land. To date, 2.5% of the forested land has been harvested. In Alternative A, with no additional harvest, 97.5% of the states forested land will be in unaltered forest cover. Selection of Alternative B would reduce this to 97.2% of the total forested area.

- **Timing of operations:** Elk guidelines recommend restricting road use in elk winter range from Dec. 1 through May 15. The designated route through the Sieben Ranch is open all year round. winter snows usually block the road and limit traffic. However snowmobile use is allowed. Neither Alternative A or Alternative B will effect this condition. Harvest operations under Alternative B will not be allowed to be conducted during the period from Dec. 1 through April 30.

V. Recommendation

The Helena Unit prefers the selection of Alternative B. Alternative B will place 20-22 acres under active timber management. This will create income to the school trust, improve timber production for future generations, and begin long term maintenance of wildlife cover. In addition the existing road adjacent to Rattlesnake Creek will be improved and a segment relocated to reduce the long term water quality impacts resulting from the continuing road use. No significant adverse environmental effects were identified in the analysis process.

VI. Appendix

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G. "124" Permit	G 1-8
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List of Agencies and Persons Contacted

Department of State Land

Gary Frank

Jeff Collins, Soil Scientist, Forestry Division

*Alan Wood, Wildlife Biologist, Forestry Division

Dori Passmann, Archeologist, Lands Division

*Greg Morris, Fire Specialist, Central Land Office

Allen Branine, Area Forester, Central Land Office

Department of Fish, Wildlife & Parks

Gayle Joslyn, Wildlife Biologist, Helena R-8

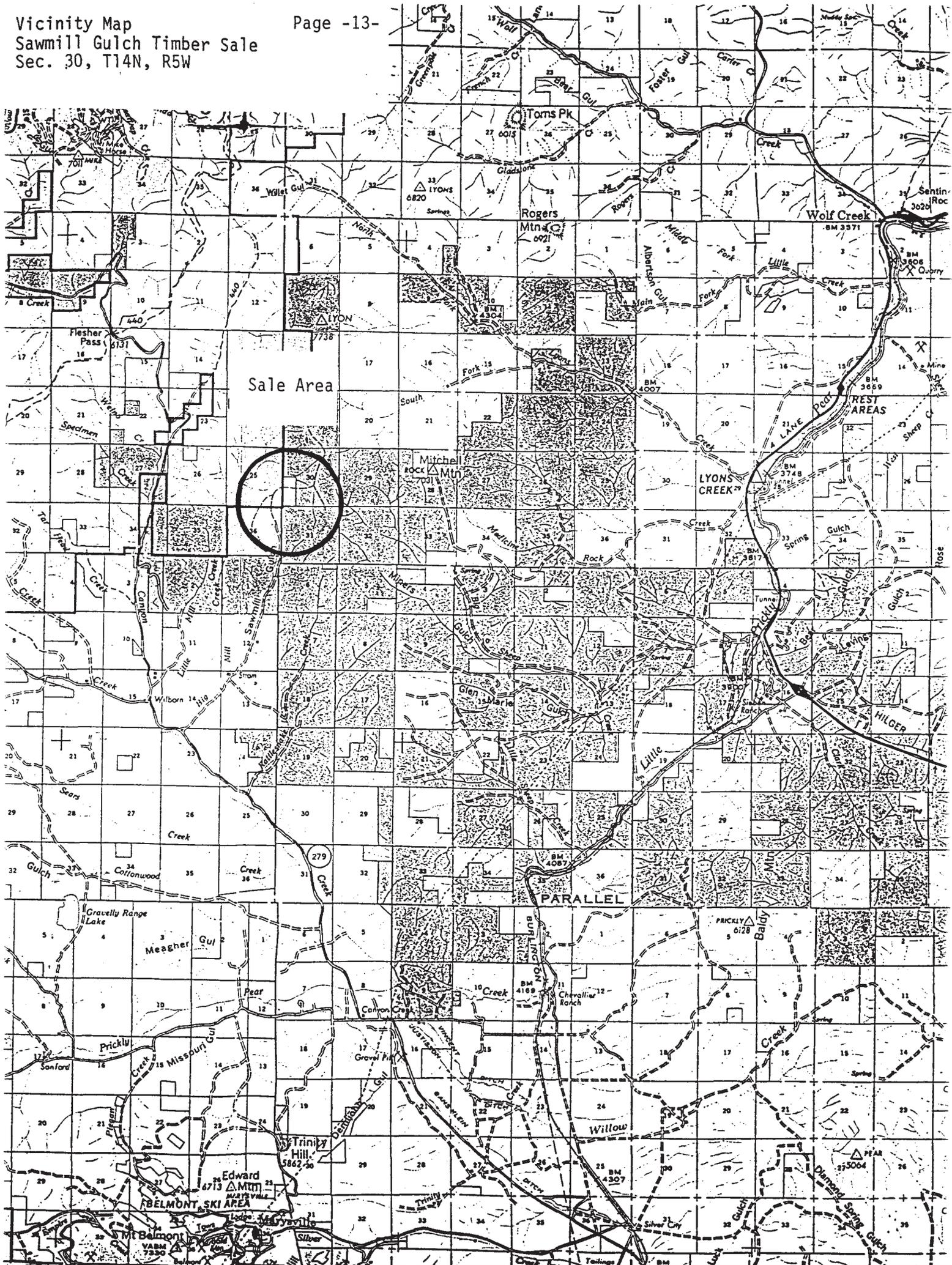
Mark Lere, Fisheries Biologist, Helena R-8 ("124")

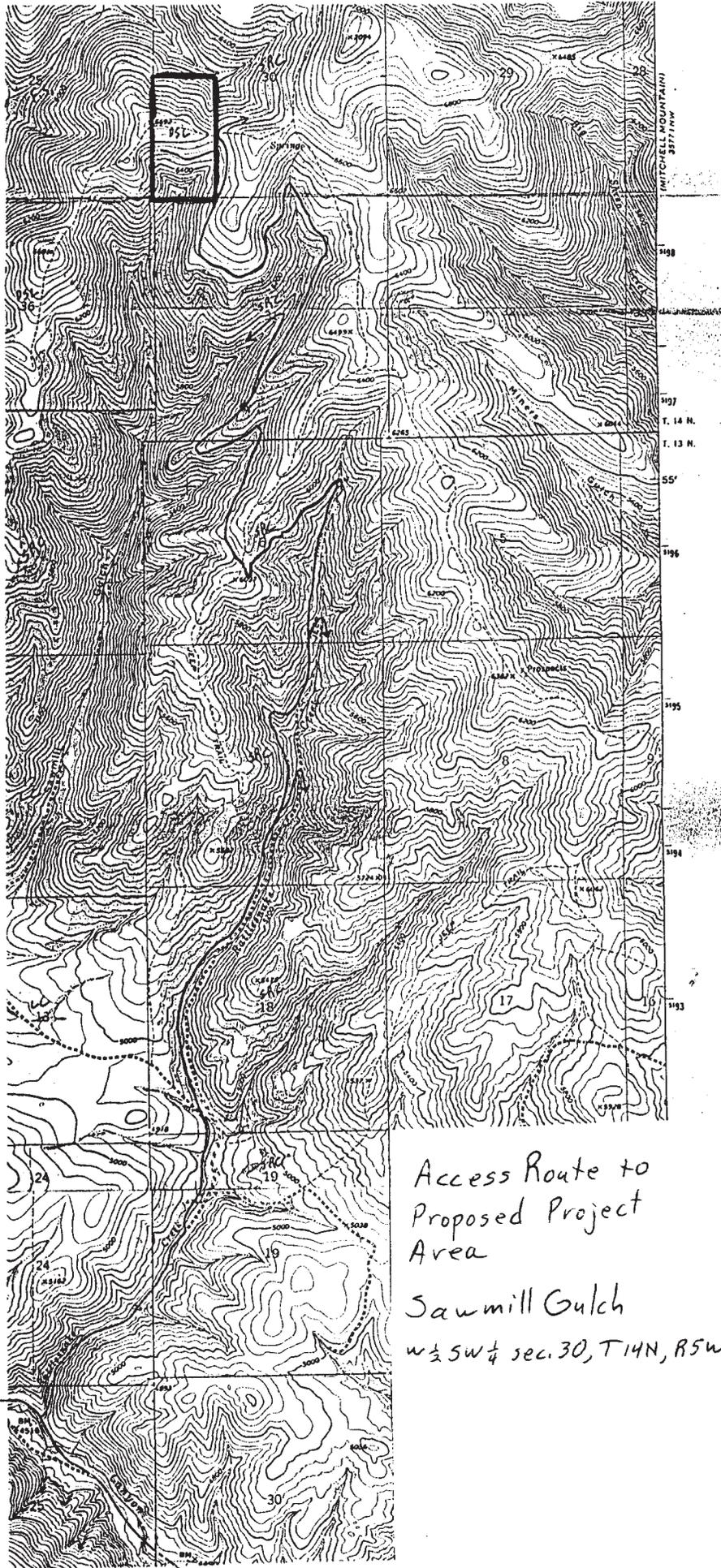
*United State Forest Service, Helena N.F., Lincoln

Sieben Ranch Company

John Baucus, Adjacent Landowner, Right-of-Way and
Grazing Lease

*Verbal contact - by phone or in person





Access Route to
Proposed Project
Area
Sawmill Gulch
w 1/2 SW 1/4 sec. 30, T. 14 N., R. 5 W

To Fletcher
Pass

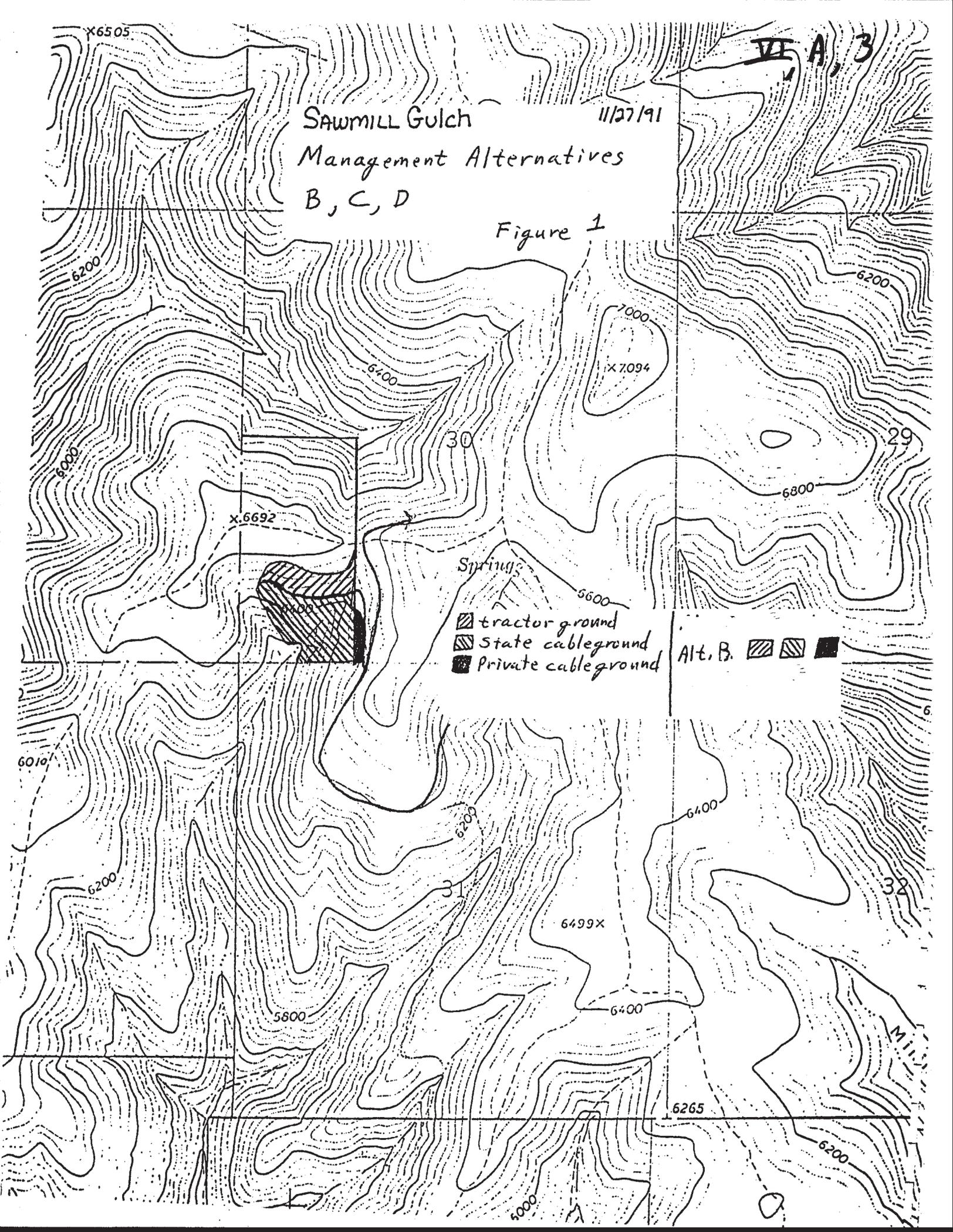
to Helena

VI, A, 3

Sawmill Gulch
Management Alternatives
B, C, D

11/27/91

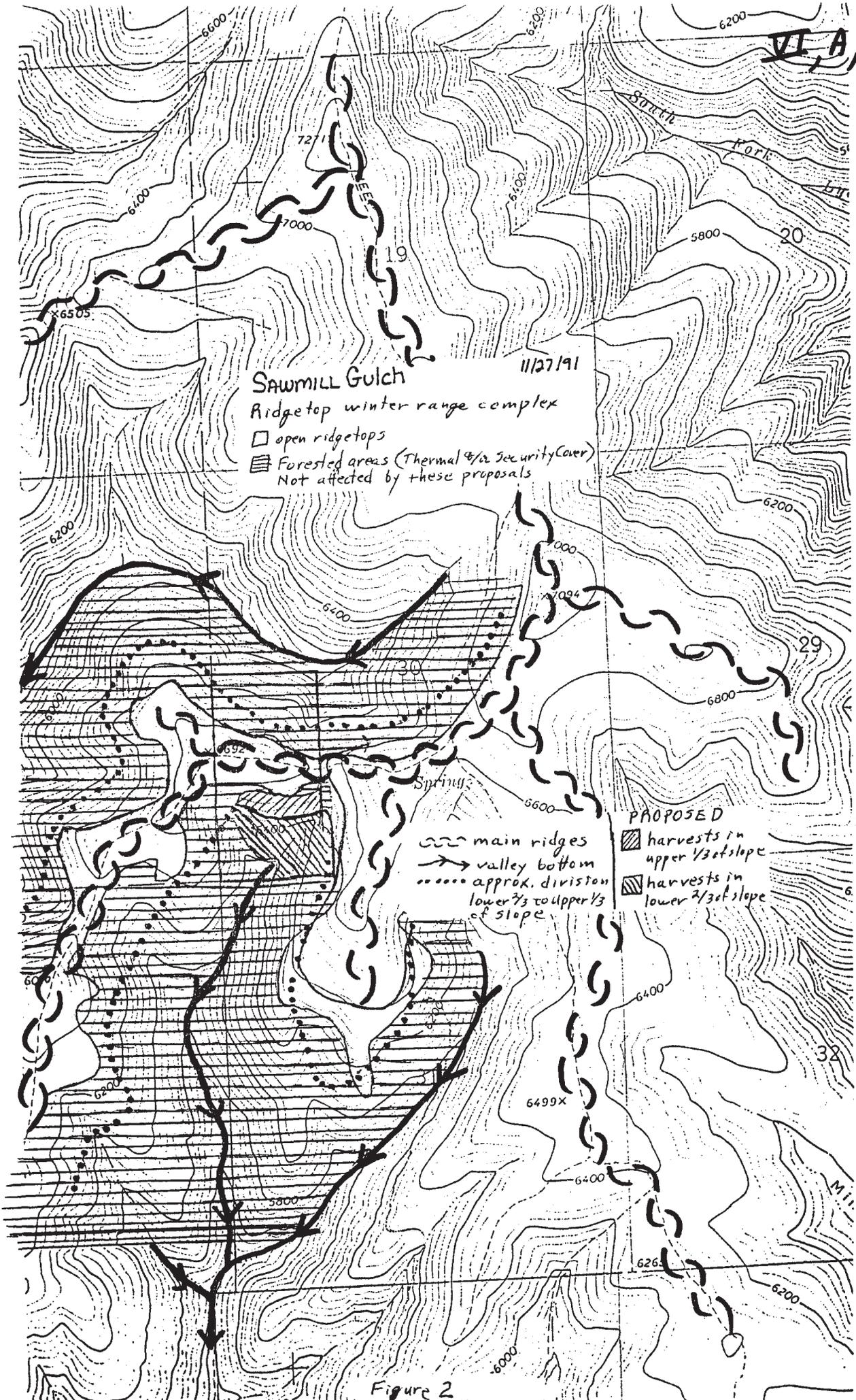
Figure 1



Spring

-  tractor ground
-  state cableground
-  private cableground

Alt. B.   



Sawmill Gulch
 Ridgetop winter range complex

11/27/91

- open ridgetops
- ▨ Forested areas (Thermal & Security Cover)
- Not affected by these proposals

- main ridges
- valley bottom
- approx. division lower 2/3 to upper 1/3 of slope

- PROPOSED
- ▨ harvests in upper 1/3 of slope
 - ▨ harvests in lower 2/3 of slope

Figure 2

TEMPORARY RIGHT-OF-WAY AGREEMENT

Permission is hereby granted by the Sieben Ranch Co., of box 1682, Helena, MT 59601 hereinafter called the "Grantor" to the Montana Department of State Lands and the purchasers of State forest products in the N1/2, SW1/4 section 30, T14N, R5W herein after called the "Grantee", to use, subject to the conditions set forth below, the following described lands:

Existing Roadway and areas of new construction as described in Exhibits "B" and "C" and as shown in blue on Exhibit "A" attached hereto.

Description:

The right-of-way covered by this agreement shall be of the minimum width necessary for roads of like standards, 30 feet in width, 15 feet on each side of the centerline, with such additional width as may be required for adequate protection of cuts and fills.

This easement covers a right-of-way an estimated 3.75 miles in length (7.75 miles existing, 0.55 miles reconstruction, and 0.45 miles new construction) and is granted for the purpose of log hauling and related forest management activity. A segment of the new road (approx. 1000 ft) which is located adjacent to the harvest unit will be used for cable yarding, decking and loading of logs.

This easement shall be in effect from the date signed until the completion of the State timber sale which is located in the N1/2, SW1/4, sec. 30, T14N, R5W.

The Grantor has the right to suspend the agreement upon breach of any of the conditions herein. The Grantor shall notify the Grantee in writing of the reason for suspension. If the Grantee fails to take corrective actions within a reasonable time following written notification the Grantor will have the right to terminate the agreement.

Conditions:

1. Access will be allowed year around while this agreement is in force. All use by the Grantee will be restricted to dry or frozen conditions to prevent damage to the roadway.
2. If the roadway or any other improvement is damaged due to the Grantees use, it will be repaired to presale or better conditions in a timely manner.
3. The right-of-way as shown in Exhibit "A" is the only route to be used by the Grantee. Some minor reconstruction may be needed (e.g. widening of curves, installation of drainage structures, etc.) to provide for safer travel and to protect water quality.
4. If the attached Exhibit "A" indicates an area of new road construction the standards of the new construction will be shown in Exhibit "B".

5. Any areas disturbed by the new or reconstruction will be seeded with 10 pounds per acre of grass seed the spring or fall immediately following the disturbance. In addition, some segments of the existing road which lay next to the creek will be closed and seeded to grass after the new road segments are built.

6. All gates will be left as found after each passage. The Grantor will allow the Grantee to "double lock" any locked gates so that both parties will have access.

7. No hunting by the Grantee is authorized by this temporary Right-of-Way agreement.

8. The Grantee will complete the new construction, reconstruction and the installation of drainage and stream protection structures.

9. The grantee shall pay a road maintenance fee of \$200.00 per mile to cover a one time road blading along the existing stretches of the right-of-way. (7.75 miles at \$200.00 per mile equals \$1550.00.) Full payment will be made to the grantor upon execution of the timber sale contract.

10. The grantee shall notify the grantor at least 45 days prior to the start of operations, to facilitate scheduling of the grading.

11. The grantor will sell to the grantee, a 2 acre strip of timber which lays between the proposed new road and the state property, as shown on the attached map. The grantee has cruised this strip at 38.26 MBF net total volume. The sale will be managed as a part of the clearcut cable yarding area on the adjacent State land. The sale will be lump sum based upon the cruised volume. The purchaser of the State's timber sale shall pay the bid stumpage price plus \$11.00 T.S.I. to the grantor prior to any cutting. The grantee will be responsible for the brush and hazard reduction work associated with the harvest of the grantor's timber as described above. The minimum acceptable bid per thousand board feet will be \$31.79. Ownership of the grantor's timber shall pass to the grantee after it is paid for, cut, and removed from the site.

Liability :

The Grantee agrees to assume all risk of and indemnify and hold harmless, and at its expense, defend the Grantor from and against, any claims, loss, cost legal actions, liability or expense or account of personal injury or death of any person whomsoever, including but not limited to the grantor, or damage to or destruction of property to whomsoever belonging, including but not limited to property of the Grantor resulting partially or wholly, directly or indirectly, from the Grantees exercise of the rights herein granted, accepting only such claims, costs, damage, injury or expense which may be caused by the sole negligence of the Grantor.

The estimated volume of timber to be transported over this Right-of-Way is 375 thousand board feet. (Scribner decimal C rule.)

This temporary Right-of-Way shall go with the property if the property should be sold during the term of the agreement. It shall be the full responsibility

of the Grantor to notify potential purchasers of the Grantor's property of the existence and terms of this right-of-way agreement.

By signing below the Grantor hereby certifies that they have full legal authority to grant a temporary Right-of-Way to the Grantee.

If the Grantor fails to notify the purchasers of their property of this agreement, or if it is discovered that the Grantor does not have full legal authority to grant the right-of-way, then the Grantee may hold the Grantor liable, either fully or partially for any losses, including but not limited to wages and operating expenses incurred during the preparation of the timber sale.

It is understood and agreed that the permission granted herein is not exclusive and the Grantor reserves the right to use and grant to others the right to use the roads jointly with the Grantee.

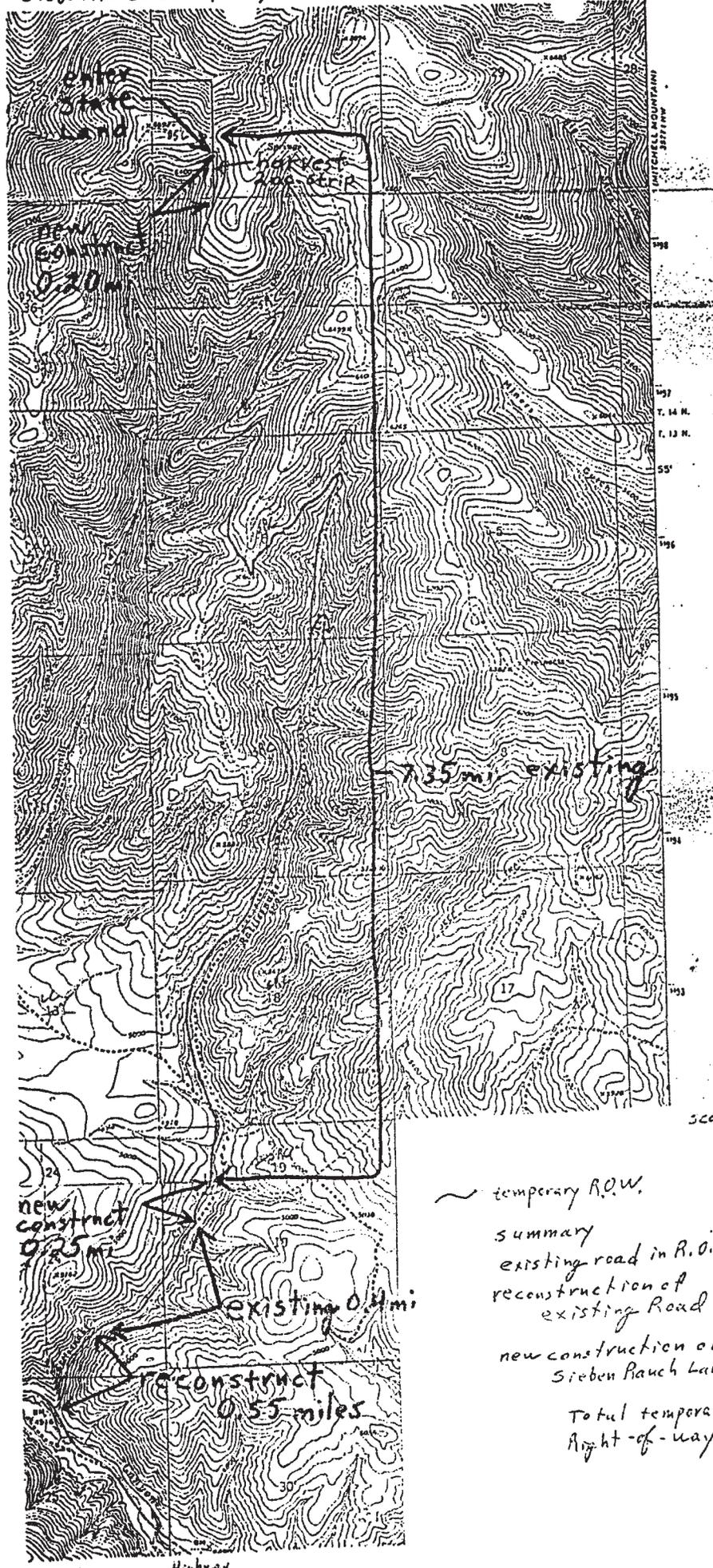
IN WITNESS WHEREOF, this temporary Right-of-Way agreement is executed on this the 23 day of March, 19 92.

Grantor:

Deben Ranch Co by John F. Bauers date 3/15/92

Grantee:

David J. Bohm date 3/23/92
Dept. of State Lands



N
↑
scale: 1.6"/mile

~	temporary R.O.W.	
—	summary existing road in R.O.W.	7.75 mi
—	reconstruction of existing Road	0.55 mi
—	new construction on Sieben Ranch Lands	0.45 mi
	Total temporary Right-of-way	8.75 mi

new construct 0.25 mi
existing 0.4 mi
reconstruct 0.55 miles

Highway 279

CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR SECONDARY HAUL ROADS

Alignment:

Minimum Curve Radius 50 ,
 Except Switch Backs NA ,

Gradient Maximum:

Favorable 10 %
 Adverse 5 %
 Short Pitches 11 %

Finished Road Surface:

On Tangents 14 ,
 On Curves Up to 20 ,
 when required by the
 Forest Officer in charge

Ditches:

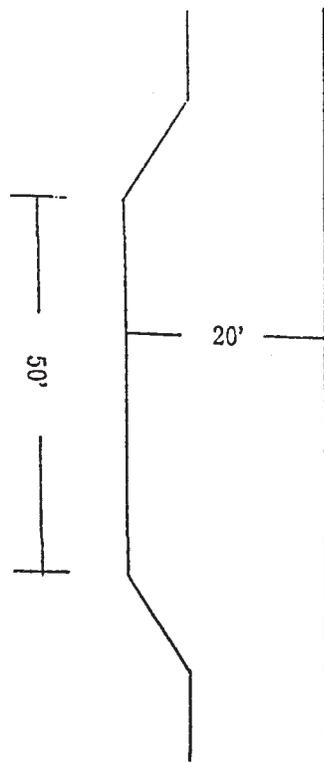
Width 2 ' Depth 1 ,
 or as required in this agreement

Drainage Structures:

Bridges—Native timber unless otherwise specified.

Native culverts or corrugated galvanized metal pipe as required in this agreement.

Typical Turn-out Construction:



Grading:

Cut Slopes:
 20% and less—1 to 1
 20% to 50%— $\frac{3}{4}$ to 1
 50% and over— $\frac{1}{2}$ to 1
 or as will stand when approved by
 Forest Officer in charge

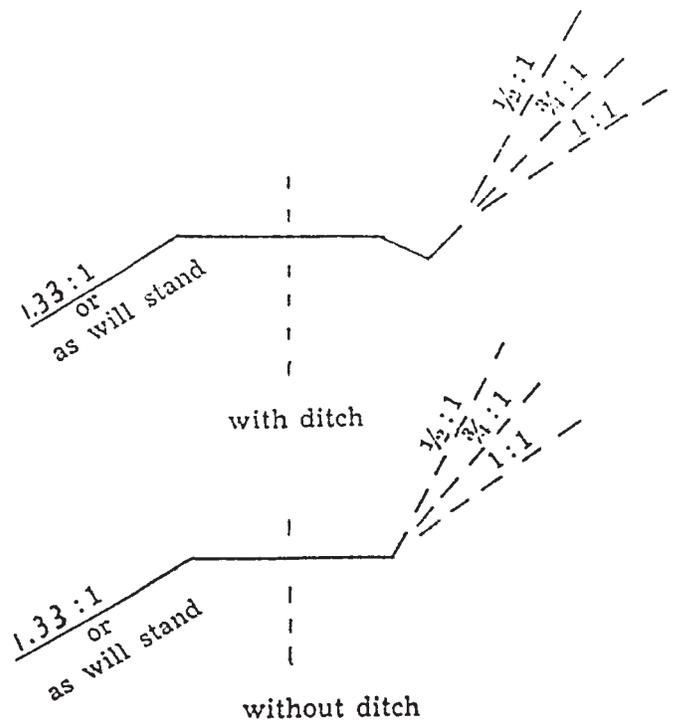
Turn-outs:

Width 20 ,
 Length 50 ,
 Spacing—intervisible

Clearing:

0-20% side slope 10 ' each side
 of centerline
 20-40% side slope 15 ' each side
 of centerline
 Over 40% as required and marked by
 Forest Officer

Typical Cross Section



Sieben Ranch Company
Temporary Right-of-Way Agreement

Mile	Station	Road Log
0.00	0+00	Start at junction of Rattlesnake Rd. and Highway 279
	2+28	Fill pot hole, install drain dip and sediment trap
	2+61	Rip rap head cut between road and creek
	3+91	Repair inlet to 24" aluminum CMP, <i>clean inlet of small pipe & armour inlet</i>
	6+47	Install drain dip and sediment trap
	9+00	Install drain dip and sediment trap
	12+67	Install drain dip and sediment trap, start gravel fill over rock
	13+63	End fill over rocks, start inslope
	14+36	Maintain inslope and start gravel fill over rocks
	15+62	Drain dip, sediment trap and possible fill source
	17+03	Start gravel fill over rocks - haul in - do not drift fill past existing CMP @ STA 16+ 35, <i>move larger rock at inlet to pipe,</i>
	17+83	Install drain dip and sediment trap
	18+43	Start inslope
	19+83	End inslope
	23+56	Install drain dip, start shifting centerline 8' into the cutslope bank
	25+21	Install drain dip
	26+66	Install drain dip
	27+66	Tapper road centerline back to existing location
0.55	29+04	Follow existing road, Sieben Ranch begins blading
0.95	50+16	End blading of existing road, start new construction
	54+74	Install permanent CMP, 36" x 34", <i>and pipe 4" into stream bed, begin turnpike construction</i>
	59+97	Intersect old roadbed, <i>and turnpike construction</i>
1.2	64+92	Intersect existing road, Sieben Ranch begins blading
3.3		Install drain dip for seep
6.55		Install drain dip for seep
7.35		Repair inlet of existing CMP
8.25		Start new construction, see below
8.6		Sieben Ranch ends blading at saddle
		 New Road Construction, starting at mile 8.25
	0+00	Start new construction
	9+39	Drive through draw crossing, 70' above a spring
	10+58	Cross from Sieben to state property
	15+77	Pass below rock outcrop, ripable
	22+19	End road

February 13, 1992

562

TO: GARRY WILLIAMS, CLO
BOB VLAHOVICH, MANAGER, HELENA UNIT
D.J. BAKKEN, FORESTER, HELENA UNIT
PAT FLOWERS, SUPERVISOR, STATE LAND MANAGEMENT

FROM: GARY FRANK, HYDROLOGIST *gf*

SUBJECT: SAWMILL GULCH TIMBER SALE

The Sawmill Gulch Timber Sale was reviewed in the field on October 30, 1991 by D.J. Bakken, John Monzie, Jeff Collins and Gary Frank.

Watershed: The proposed sale area lies in the Big Sawmill Gulch drainage. Sawmill Gulch is a perennial third order tributary to Canyon Creek. Canyon Creek is a tributary to the Little Prickly Pear Creek on the Missouri River System. The watershed area is partially non-forested rangeland and foothills. The drainage receives an average of approximately 25" of precipitation annually, resulting in moderate-low runoff. Ownership is largely private ranchland with some Forest Service and State land in the headwaters portion of the drainage.

Water Use: There are existing water right for livestock watering downstream of the sale area.

Cumulative Effects: There are no cumulative watershed effect constraints with this sale. This recommendation is based on the following reasons: 1) Only a moderate level of timber harvest has occurred in the drainage. 2) The watershed is partially non-forested. 3) The small size of the prescription and harvest unit. and 4) The moderate amount of runoff produced over the sale area.

Harvest Units: The proposed sale consist a single harvest unit that has been divided into two different treatments (see Map #1). A portion of the unit is located on gentle side slopes and will be treated with selection harvest using tractor skidding. The remaining harvest area is located on steeper side slopes and will be clearcut using cable yarding. There is a first order intermittent stream channel within the harvest area. To ensure compliance with House Bill 731, establish a streamside management zone with a minimum width of 50 ft. on both sides of the channel. Merchantable trees may be removed from the SMZ by directional felling and cable yarding. Retain all sub-merchantable trees within the SMZ and merchantable trees that are rooted in the edge of the streambank.

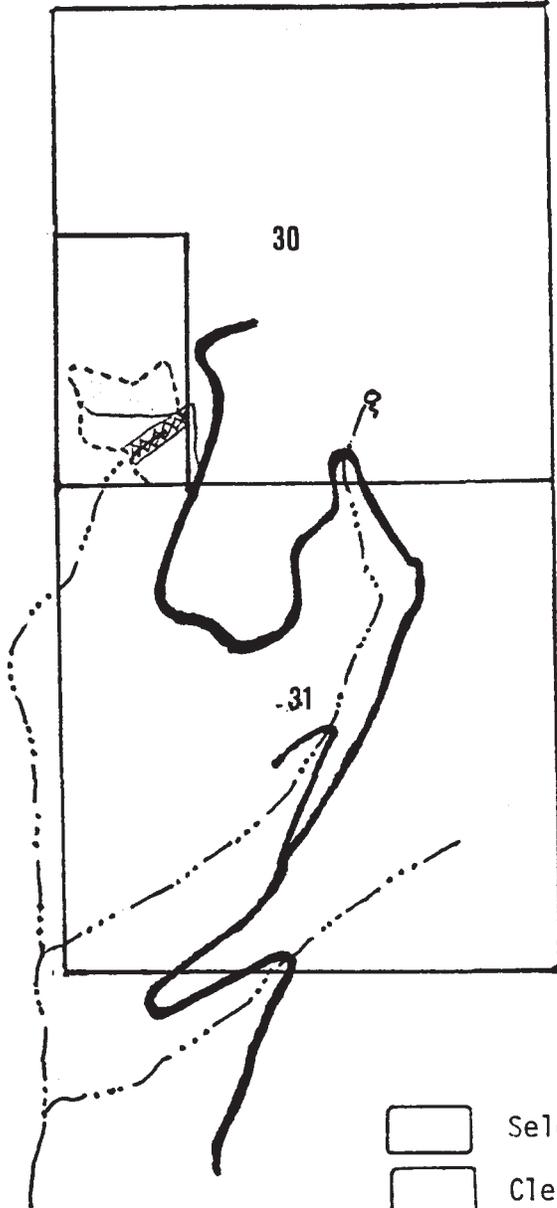
Roads: The sale will primarily utilize existing roads with the exception of one short segment of new road construction. Install drain dips as needed to provide adequate road surface drainage.

Be sure to inspect all existing culverts and relief structures to ensure that they are functioning properly. Provide for maintenance of any damaged or obstructed drainage structures.

Portions of the existing road are located immediately adjacent to Rattlesnake Creek. During the field review we determined that the road did not meet BMPs in its existing condition. I have reviewed your proposal for mitigating the potential water quality impacts of the existing road with the installation of drain dips, berms, sediment traps and by relocating a portion of the road away from the stream. I support this approach and believe that these measures, if properly implemented, will greatly improve the existing situation.

I would like to have an opportunity to review the locations of the sediment mitigation structures and the new stream crossing in the field. Please contact me when weather conditions will permit an evaluation in the field.

Sawmill Gulch
Timber Sale



-  Selection Harvest
-  Clearcut - Cable Yard
-  SMZ
-  New Road Construction

TO: Jeff Collins, Soil Scientist, Forest Management Bureau
Bill Schultz, Forest Hydrologist, Forest Management Bureau

FROM: Greg Morris, Fire Forester, CLO *GM*

DATE: November 27, 1991

SUBJECT: Sawmill Gulch Timber Sale

Attached are two maps showing the proposed road work in the areas you had concerns. As you are aware, the major concern is the close proximity of the existing road to Rattlesnake Creek. We had some difficulty in locating drain dips and sediment traps in areas where the road grade would "naturally" drain into the creek. We hope we have accommodated adequate drainage using insloping, outside berming and numerous dips and traps (Stations 2+28 - 27+66 see map).

We would like to relocate the main road from mile .95 to 1.25 (Stations 53+74 - 64+92 see map). We feel there would be no way to adequately drain this stretch of road as it exists now. We intend to cross Rattlesnake Creek at Station 54+74 with a 3' diameter CMP. The road would run across a brushy flat connect with an old road grade and tie back into the existing road at Station 64+92. The existing stretch of road will be closed, signed and seeded.

D.J. Bakken is meeting with John Baucus of Sieben Ranch to make sure his needs are being addressed. I would like both your comments on this proposal. If you have any questions, please call D.J. or myself.

dh

cc: D.J. Bakken
Sawmill Timber Sale ✓

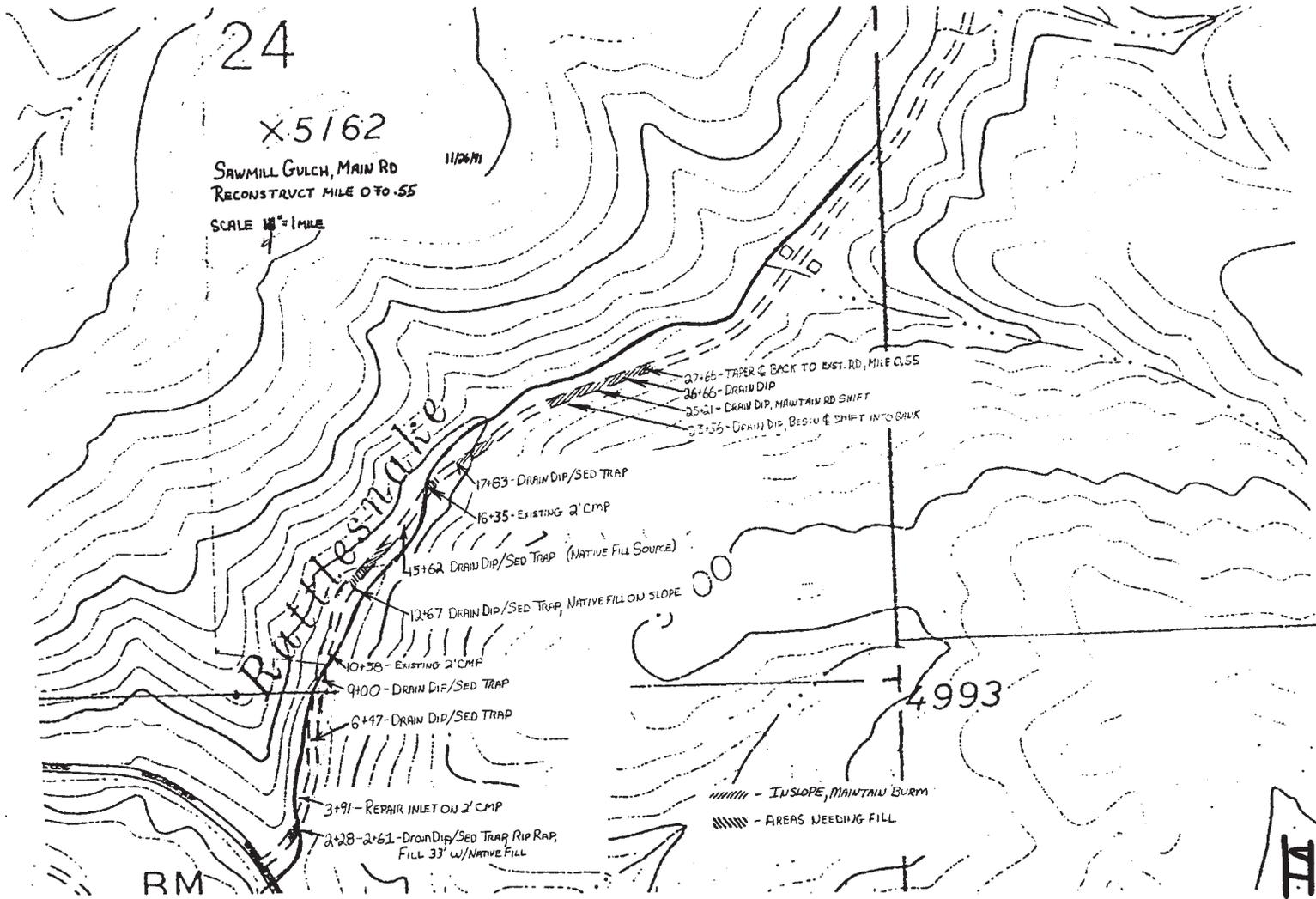
24

X.5162

SAWMILL GULCH, MAIN RD
RECONSTRUCT MILE 0 TO .55

11/26/11

SCALE 1" = 1 MILE



27+66 - TAPER & BACK TO EXST. RD, MILE 0.55
 26+66 - DRAIN DIP
 25+21 - DRAIN DIP, MAINTAIN RD SHIFT
 23+36 - DRAIN DIP, BEFORE SHIFT INTO BANK

17+63 - DRAIN DIP/SED TRAP
 16+35 - EXISTING 2' CMP
 15+62 DRAIN DIP/SED TRAP (NATIVE FILL SOURCE)
 13+67 DRAIN DIP/SED TRAP, NATIVE FILL ON SLOPE

10+38 - EXISTING 2' CMP
 9+00 - DRAIN DIP/SED TRAP
 8+47 - DRAIN DIP/SED TRAP

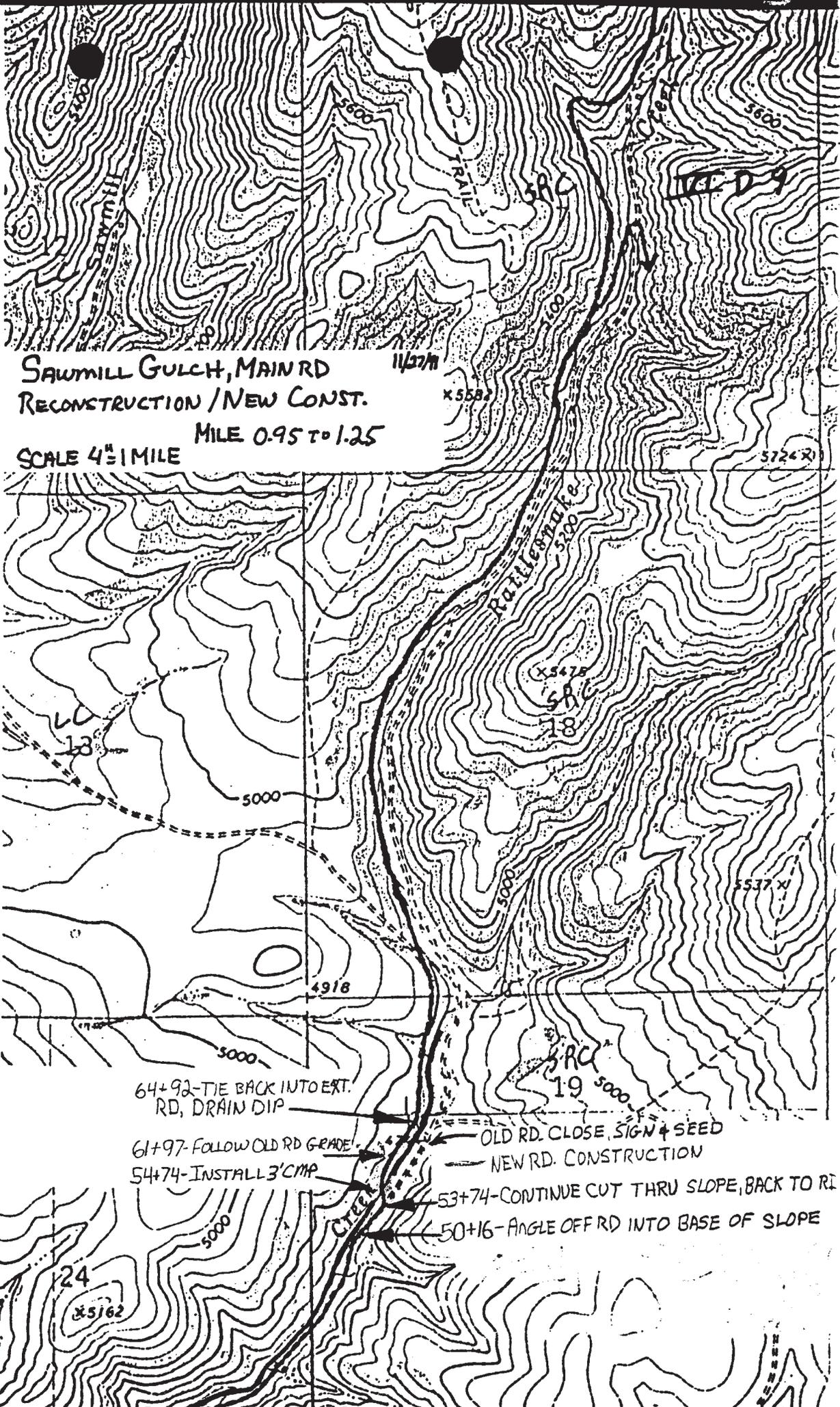
3+91 - REPAIR INLET ON 2' CMP
 2+28 - 2+61 - DRAIN DIP/SED TRAP RIP RAP, FILL 33' w/ NATIVE FILL

||||| - INSLOPE, MAINTAIN BURM
 ||||| - AREAS NEEDING FILL

4.993

RM

VED 8



SAWMILL GULCH, MAIN RD
RECONSTRUCTION / NEW CONST.

SCALE 4" = 1 MILE MILE 0.95 TO 1.25

64+92-TIE BACK INTO EXT.
RD, DRAIN DIP

61+97-FOLLOW OLD RD GRADE

54+74-INSTALL 3' CMP

OLD RD. CLOSE, SIGN & SEED

NEW RD. CONSTRUCTION

53+74-CONTINUE CUT THRU SLOPE, BACK TO RI

50+16-ANGLE OFF RD INTO BASE OF SLOPE

24

X5162

4918

RC

19

X5475

SR

18

X5582

11/27/71

5724 X

5537 X

SAWMILL GULCH

RAIL

Rattlesnake

CREEPER

LEG D-9

March 30, 1992

TO: GARY WILLIAMS, CLO
PAT FLOWERS, SUPERVISOR, STATE LAND MANAGEMENT
BOB VLAHOVICH, MANAGER, HELENA UNIT
D.J. BAKKEN, FORESTER, HELENA UNIT

FROM: GARY FRANK, HYDROLOGIST *GF*

SUBJECT: SAWMILL GULCH TIMBER SALE - ROAD MITIGATION AND STREAM CROSSING.

The Sawmill Gulch Timber Sale was first reviewed in the field on October 30, 1991 by D.J. Bakken, John Monzie, Jeff Collins and Gary Frank. Portions of the existing access road are located immediately adjacent to Rattlesnake Creek. During the field review we determined that the road did not meet the required BMPs in its existing condition. We were unable to complete our review and discuss specific mitigation measures in detail because of the late hour and lack of daylight.

On March 2, 1992 Jeff Collins, D.J. Bakken, Allen Branine, Bob Harrington and Gary Frank completed a second field review of the lower road system. The following items were evaluated: 1) The design and location of all proposed sediment mitigation structures 2) the condition of existing culverts, and 3) a proposed segment of road relocation with a new stream crossing.

We found the design and location of the mitigation structures to be reasonable and sound. Some minor adjustment to design and locations were discussed and flagged in the field. Several of the existing 24" aluminum culverts will require maintenance and all culverts should have rock armoring placed around the inlets. I support the proposed segment of road relocation as a good long term solution to preventing water quality impacts. The planned installation of a 36" CMP at the new stream crossing is adequate for this location. Flow from the stream should be temporarily diverted during culvert installation to provide dry conditions and to decrease the risk of water quality impacts.

April 2, 1992

552

TO: PAT FLOWERS, Supervisor, State Land Management Section
GARRY WILLIAMS, Silviculturist, Central Land Office
BOB VLAHOVICH, Field Supervisor, Helena Unit
D.J. BAKKEN, Forester, Helena Unit

FROM: JEFF COLLINS, Soil Scientist JC

SUBJECT: SAWMILL GULCH TIMBER SALE,
W1/2 SW1/4 Section 30 T13N, R5W

The harvest area is located on moderate to steep slopes with residual soils forming in colluvial material weathered from bedrock of argillite and some igneous rock on the sideslopes. Cutting units are located on Stemple/Tigeron very channery loam soils on slopes of 30-60% which are well drained.

Rock outcrops occur with shallow soils on upper slopes and ridges that form low productivity sites.

The Tigeron soils occur in swales and concave spots and have some clay in subsoils at about 22" depth. These soils have a long season of use and form the more productive timber sites. Surface soils are shallow very channery loams over extremely channery loams and clay loams. The potential for soil compaction is moderate. Potential soil displacement and erosion of the shallow topsoils are the primary concerns on steep slopes.

General Recommendations:

Harvest units are well located to avoid steep areas. Tractor skidding should be limited to slopes less than 45% , and tractor brush piling only on slopes less than 35% .

Timber hauling and equipment operations should be should be limited to periods when soils are relatively dry, frozen or snow covered to maintain road drainage features.

Soils along draw bottom have higher clay contents and have higher potential for rutting. The equipment restriction zone located along draw is well located to minimize site impacts.

ROADS- The short spur of new road is on well located grade and alignment. Bedrock occurs at shallow depth along portions of the road.

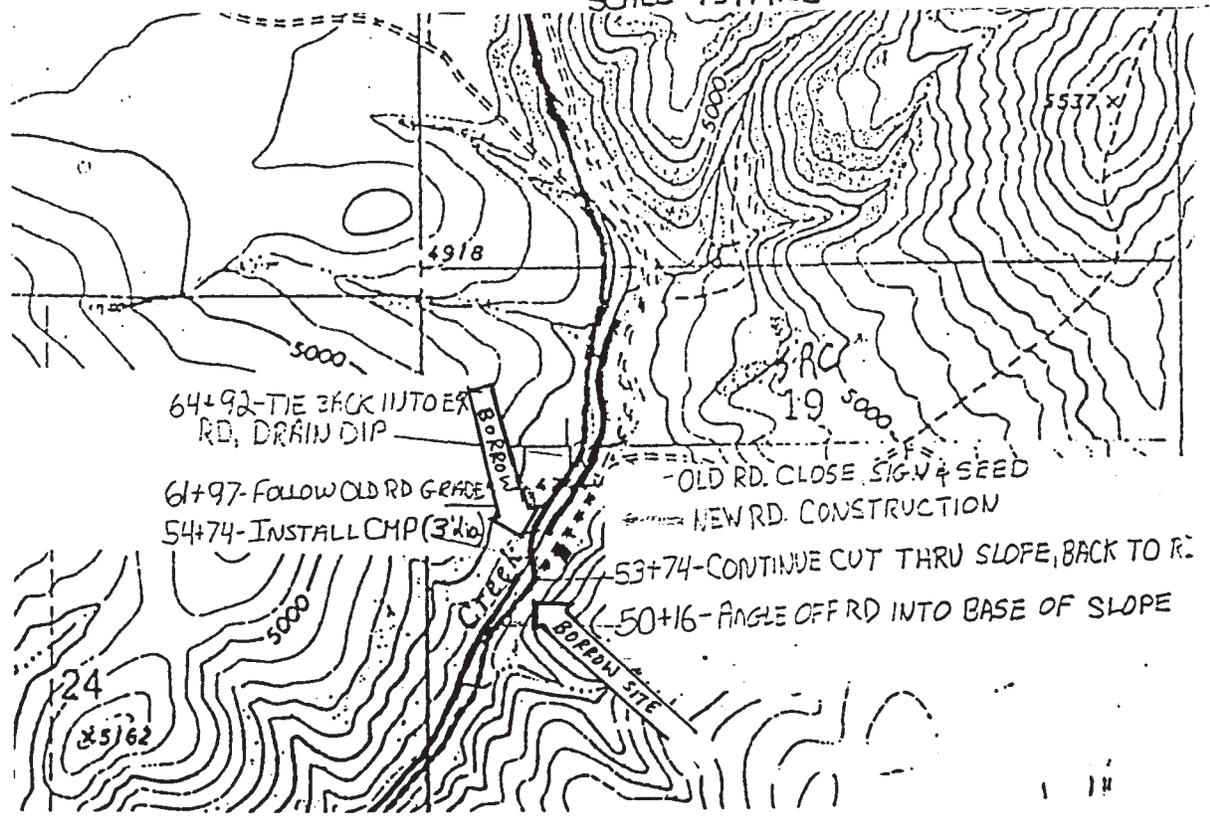
Helena Unit recognized the existing roads require reconstruction and drainage work to meet BMP's. Use erosion index 50 for general spacing of drainage features. The road logs and engineering drawings of specific reconstruction details were well done and helped in our evaluation. I agree with Gary Frank's summary of our field review.

* Road relocation and crossing site in NW Section 19 is well located on alluvial flat. Turnpike road construction is required from about sta. 54+00 to 61+00. Sidecast and embank surface 6" of organic soils to either side of centerline and double ditch to build up road prism. Stop ditch short of creek crossing. Culvert at 54+74 will need select fill from sources near sta. 53+75 or 62+00.

* Several small borrow sites will be needed for fill over low spots. Suitable material is available in small quantities along road, but will require some processing to remove oversize rocks and boulders. Borrow sites will be located and approved by Forest Officer on site. Avoid undercutting cutslopes and where feasible, round upper edge of cutslope with backhoe.

* All newly bared ground on roads should be promptly seeded with site adapted grasses to reduce erosion and weed infestation.

SAWMILL GULCH, MAIN RD
 RECONSTRUCTION / NEW CONST. 11/27/78
HM ART.
 MILE 0.95 TO 1.25
 SCALE 4" = 1 MILE



Turnpike road

DEPARTMENT OF STATE LANDS



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

(406) 444-2074

1625 ELEVENTH AVENUE
HELENA, MONTANA 59620

December 10, 1991

MEMORANDUM

TO: Robert Vlahovich, Helena Unit Manager, CLO

FROM: Dori Passmann, Archaeologist, Land Management Section 

RE: Sawmill Gulch Sale
SW $\frac{1}{4}$ SW $\frac{1}{4}$ 30-14N-5W

No cultural properties are recorded in your area of interest. Due to the fairly steep slopes, significant sites are unlikely within the project area. This sale has archaeological clearance.

Please let me know if I can be of further assistance.

/ns

III D 14

DEPARTMENT OF STATE LANDS
FIELD OPERATIONS DIVISION



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

Central Land Office: Helena, MT (406) 444-3633
Eastern Land Office: Miles City, MT (406) 232-2034
Northeastern Land Office: Lewistown, MT (406) 538-5989

Northwestern Land Office: Kalispell, MT (406) 752-7994
Southern Land Office: Billings, MT (406) 259-3264
Southwestern Land Office: Missoula, MT (406) 542-4200

8001 No. Mont. Ave.
Helena, MT 59601
Nov. 1, 1991

Montana Dept. of Fish, Wildlife & Parks
Attn: Gayle Joslyn
1455 Big Horn Road
Helena, MT 59601

Dear Gayle:

I have been looking at the timber management and harvest options in the W $\frac{1}{2}$ SW $\frac{1}{2}$ Sec. 30, T14N, R5W. When we made up our sale plans, this section was planned for a small permit. After further review, it looks like there may be the potential for a 300 MBF sale here. I have a proposal flagged on-the-ground. The enclosed map shows the proposal we have.

I showed the area to our Soils & Hydrology Specialists last week and they saw no potential impacts in their areas of expertise.

There has been considerable harvesting in the adjacent Rattlesnake, Big Mill and Little Mill Creek drainages. My proposal would harvest approximately 24 acres in the head of Sawmill Gulch. The area on the north side of the ridge (NWSW Sec. 30) will have no harvesting. I am not aware of any Forest Service harvesting past or planned. I will likely add Section 36, T14N, R6W to one of the future years on our sale plan. I am not sure of the status of the remaining timber on the Sieben Ranch lands in this area.

There are obvious signs of deer and elk use in this area. This section is also in close proximity to the head of the South Fork Lyons Creek drainage.

What are your thoughts regarding this proposal? I realize with such a small parcel of state land and small proposal area, that there is not much room for negotiations. It's kind of a go or no go deal. Some restrictions as to operating season and road management can be incorporated.

Please look this over and contact me when you can.

Sincerely,

D.J. BAKKEN
Unit Forester
Helena Unit

**Montana Department
of
Fish, Wildlife & Parks**



1404 Eighth Avenue
Helena, MT 59620

November 20, 1991

Montana Dept. of State Lands
ATTN: D.J. Bakken
Central Land Office
Capitol Station
Helena, MT 59620

Dear D.J.,

Upon reviewing your proposal to harvest 300,000 board feet of timber in the head of Sawmill Gulch, I have several questions that I hope you will be able to help me out with. Last year Garry Williams issued a letter to the Department listing timber sales for the 6 year plan for the Central Land Office (February 22, 1990 letter). The sales in Section 30 and 36 in Sawmill-Big Mill gulches were not among those. Does this mean that a sale can be proposed at any time on DSL lands regardless of the 6 year plan? yes

This area lies in the northern portion of hunting district 439, near Flesher Pass. Vegetative cover for this area is limited to the northern portion of the district, and this cover is declining with timber harvest activities on Sieben Ranch Company and DSL lands. This area is intensively used by recreationists from Helena and Great Falls. It receives a substantial amount of hunting pressure, and as you know, the Department has been intensively working toward a completely managed road system in order to protect wildlife security in this area.

The Lyons Mountain/Mitchell Mountain country supports an elk herd of approximately 500, roughly 400 mule deer, at least 3 known grizzly bears, blue grouse, several mountain lions, and regularly reported sightings of wolves.

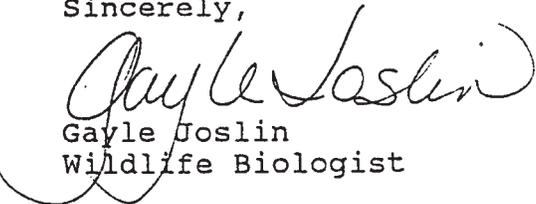
I believe that in order to analyze impacts to wildlife for Sawmill Gulch Section 30 (and eventually Section 36) which is on the flank of Lyons Mountain (numerous active timber sales in Lyons Creek), as well as current sales in Big Mill, Little Mill, and Canyon Creek, the effects of all sales occurring and planned for this area should be evaluate. In addition, the Helena National Forest has announced plans to assess oil and gas leasing for the Rogers Pass area, which includes the Lyons Mountain country. So, in order to accomplish a comprehensive analysis, I will need

information relative to existing vegetation condition, current and proposed land use activities, and road placement for an analysis area having a radius of four miles around Lyons Mountain. Can your office supply maps of existing vegetation condition and roads in this area?

* In using criteria established by the Forest Service for
* conducting cumulative impact analysis, the area utilized by an elk herd unit is considered. In addition, an analysis called the Canfield-Hillis Paradigm is generally applied to give a measure of elk security. Once land use information is available for the analysis area, FWP will evaluate seasonal elk use, security values and grizzly bear habitat issues. This analysis will likely take some time, but as soon as your office can supply some of the necessary information, we will get started, and hopefully will have initial information for you by March 1.

Although a broad cumulative effects analysis of this country will be initially time consuming, it will preempt the need for repeated analysis of individual projects, and at the same time it will provide a much more realistic assessment of wildlife impacts. Both wildlife management and land management should be on more firm ground subsequent to such an analysis. Thanks for your continued attention to wildlife in this area.

Sincerely,


Gayle Joslin
Wildlife Biologist

cc: Jerry Wells, R-8
Graham Taylor, R-4
John McCarthy, R-4
Alan Wood, DSL
Barry Paulsen, LRD

DEPARTMENT OF STATE LANDS
FIELD OPERATIONS DIVISION



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

Central Land Office: Helena, MT (406) 444-3633
Eastern Land Office: Miles City, MT (406) 232-2034
Northeastern Land Office: Lewistown, MT (406) 538-5989

Northwestern Land Office: Kalispell, MT (406) 752-7994
Southern Land Office: Billings, MT (406) 259-3264
Southwestern Land Office: Missoula, MT (406) 542-4200

8001 N. Montana
Helena, MT 59601
30 January 1992

Montana Dept. of Fish, Wildlife, and Parks
ATTN: Gayle Joslin
1404 Eighth Avenue
Helena, MT 59601

Dear Gayle,

Enclosed are results of our vegetative analysis of the area surrounding the proposed Sawmill Gulch Timber Sale. In the following pages, I'll discuss the methods I used, the results of the analysis, and the conclusions we've reached based on these results. I've also enclosed the following attachments:

- A. A map of the analysis area (1/2"/mile);
- B. Vegetative condition summaries by section, and calculations;
- C. Copies of pertinent DSL Management Standards and Guidelines for Elk and Grizzly Bear;
- D. Aerial photo copy with proposed Sawmill Gulch Unit and potential sale area in Section 36, T14N R6W;
- E. Management Area Map, Helena National Forest Plan.

1. Methods - The analysis area includes those sections encompassing a 4-mile radius around Lyon Mountain, and a 16-section addition to the south resulting from our conversation on 23 January.

- A. Using 2.64"/mile ortho-photos, vegetative conditions were delineated into the following stands:
1. Forest - not harvested
 2. Forest - harvested
 3. Open grassland

To supplement the ortho-photos, aerial photos from 1988 and recent Hazard Reduction Agreements were used to identify more recent logging activity on private lands. For the purpose of the analysis, it is assumed that all non-harvested stands have some value for either hiding or thermal cover, and harvested stands have no value at all, regardless of harvest type (clearcut vs. partial cut).

B. After delineation, stand acreages were determined using a dot grid, and totals were calculated for each cover condition by section. All section acreages were obtained from county records.

C. Total acreage by cover condition was calculated for the following strata:

1. All ownerships in the Analysis Area;
2. Non-DSL lands;
3. DSL lands;

Using these figures, I calculated the percentage of the forest land and total land area occupied by each cover condition, in order to compare with minimum cover levels established in DSL Forest Management Standards and Guidelines.

Results - The following table details the results of the analysis:

<u>STRATA</u>	<u>NOT HARVESTED</u>	<u>HARVESTED</u>	<u>OPEN GRASSLAND</u>	<u>TOTAL</u>
Total Analysis Area				
% of Total Area	68%	13%	19%	100%
% of Forest Land	84%	16%	---	100%
Non-DSL Land				
% of Total Area	65%	15%	20%	100%
% of Forest Land	81%	19%	---	100%
DSL Land				
% of Total Area	80%	2%	18%	100%
% of Forest Land	98%	2%	---	100%

2. Discussion -

A. Existing Conditions - According to DSL Management Standards and Guidelines for elk (Attachment C), if the combined hiding and thermal cover in an analysis area has been reduced to less than 50% on adjacent non-DSL lands, timber harvest on DSL land will be deferred until cover values improve to at least 50% on the non-DSL land. This analysis shows that approximately 81% of the non-DSL forest land is presently occupied by unaltered forest cover. If we assume that all of the existing forest cover provides either hiding or thermal cover for elk, then we seem to be well within our guidelines for the analysis area.

For DSL lands, the Guidelines recommend that 50 - 70% of the forest land be retained in thermal and hiding cover. This analysis shows that the current level of 98% in unaltered forest cover is well above the guidelines.

DSL Standards and Guidelines for Grizzly Bears (Attachment C) suggest a minimum of 40% of the total land in an analysis area (or third order drainage) be retained in hiding cover. This guideline also appears to be met by current conditions for this analysis area.

B. Future Conditions - At this time, our 5-year sale plan has a total of approximately 269 acres scheduled for harvest on DSL land within the analysis area (attachment B, Table 4). This would decrease cover conditions on DSL land by approximately 4%, to a total of 94% of the forest land, still well within the 50-70% guideline.

For private land within the analysis area, it is a safe assumption that timber harvesting will continue at an accelerated rate for at least one more year. This analysis accounts for some of that harvest, as detailed on current Hazard

Reduction Agreements with private landowners. Conversations with John Baucus indicate that their agreement with Pinnacle Mountain will terminate within one year, and after that he plans to reduce timber harvest on the Sieben Ranch lands. For each of the proposed DSL sales, we can use subsequent HRAs to add any additional private logging acreage into this analysis at the time of sale planning and layout, and make necessary adjustments to our plans at that time.

Forest Service lands within the analysis area are primarily designated in management area categories other than timber management (Attachment E). Forest Service personnel on the Lincoln Ranger District told us that there are no timber sale activities in the planning horizon for our analysis area.

C. Sawmill Gulch Timber Sale - The proposed unit is comprised of a 7-acre selective cut above the road, and a 16-acre clearcut below the road. If this unit is harvested, 61% of the DSL forest land in Section 30 will remain in forest cover (Attachment B, Table 4). The intent of the selectively-logged area above the road is to maintain thermal cover values on the ridge top, by retaining clusters of larger diameter trees. The clearcut area below the road will be cable-yarded, and a 50-foot streamside management zone designated and protected on each side of the stream bottom.

D. Section 36, T14N R6W - At this time, we anticipate harvesting a total of 25-30 acres in the east 1/2 of this section, in a similar manner to the unit in Section 30. The road would be extended around the head of the gulch, with selective logging above and clearcut logging below on two units of 10-15 acres each (See Attachment D).

E. Road Densities - As a part of this analysis, I measured the length of all roads within the analysis area which are open to public access (Attachment B, Table 5). These roads total 35.25 miles in length, which over an analysis area of 85.74 square miles yields an open road density of 0.41 miles per square mile. This is well within the DSL guideline of one mile of open road per square mile of land within seasonally important grizzly habitat.

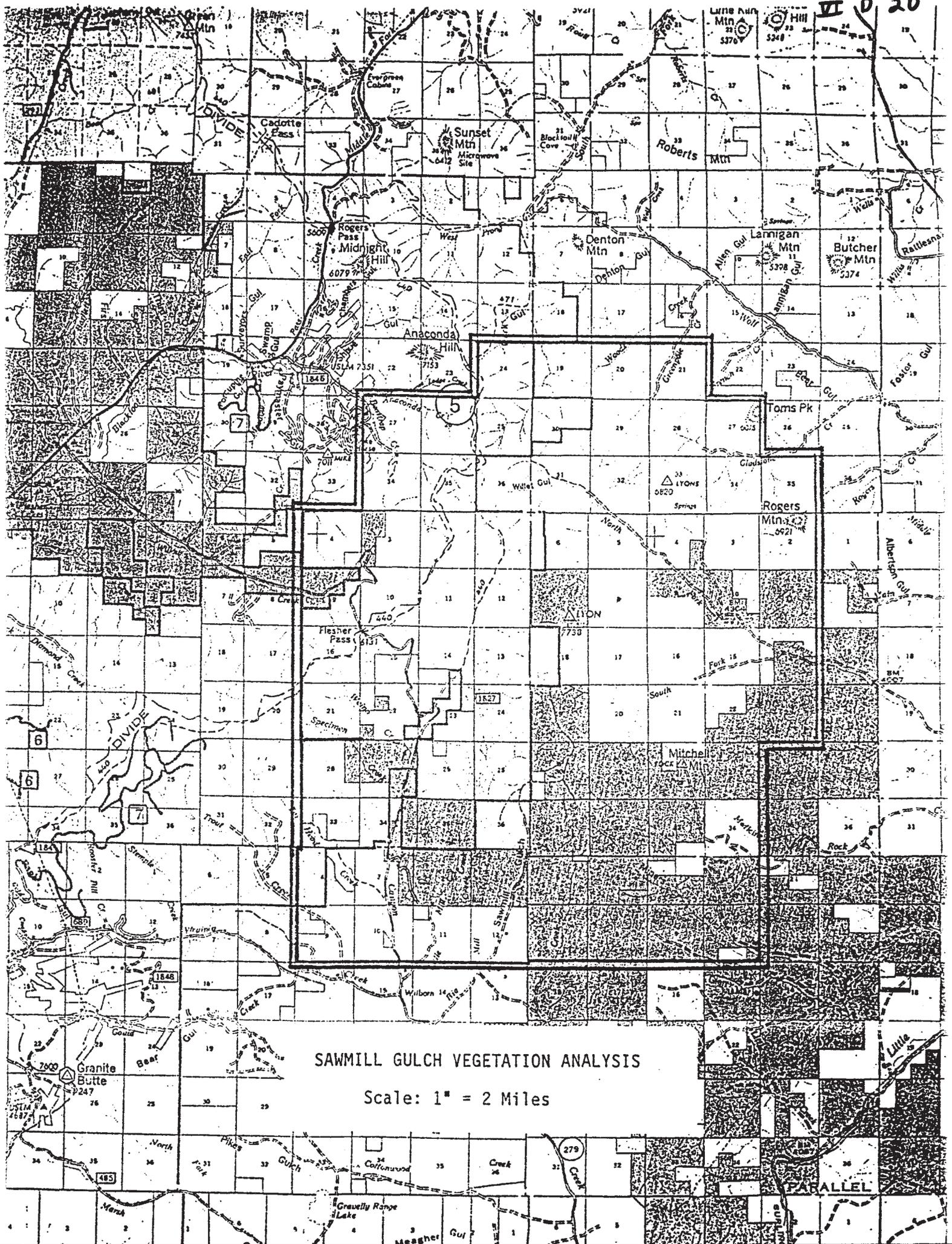
3. Conclusions - From this analysis, it is our opinion that we should be able to proceed with the proposed Sawmill Gulch Timber Sale. The analysis area covers an area sufficient to consider the adjacent private lands which have been intensively harvested, and the results for elk and grizzly bear cover values, in addition to road densities, are all within DSL management guidelines. We are very much interested in your comments regarding this proposal and analysis, and hope we can develop a plan which will address all of your concerns. Please feel free to contact myself or D.J. regarding this analysis, and we would be more than willing to schedule a field review of the proposed sale area.

Thank you for your time and effort on this project, and I will be contacting you within a week to hear your comments.

Sincerely,

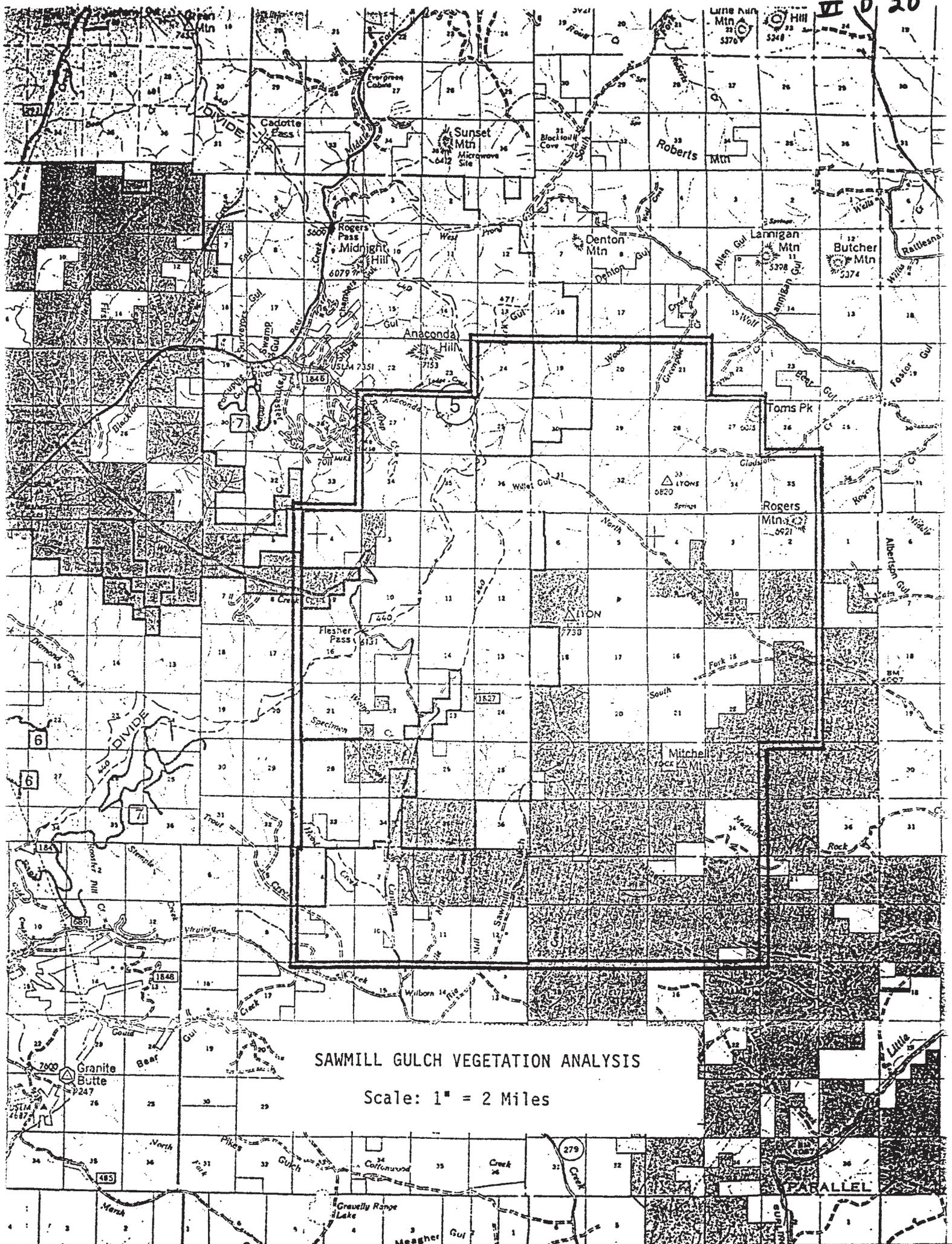


Bob Harrington
Forester
Helena Unit, CLO



SAWMILL GULCH VEGETATION ANALYSIS

Scale: 1" = 2 Miles



WILL GULCH WILDLIFE ANALYSIS
 AREA BY VEGETATIVE CONDITION

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TABLE 1

LOCATION	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
14N,5W, Sec.2	396	--	244	640
3	437	46	157	640
4	472	125	43	640
5	523	32	85	640
6	469	--	146	615
7	524	--	95	619
8	640	--	--	640
9		640	--	640
10	101	539	--	640
11	--	640	--	640
14	480	50	110	640
15	383	223	34	640
16	605	29	6	640
17	640	--	--	640
18	556	--	67	623
19	437	57	133	627
20	640	--	--	640
21	620	--	20	640
22	373	59	208	640
23	153	267	220	640
27	174	159	307	640
28	340	--	300	640
29	545	--	95	640
30	298	118	214	630
31	273	195	165	633
32	328	118	194	640
33	468	130	42	640
34	436	--	204	640
Total	11358	3427	3084	17874

SAWMILL GULCH WILDLIFE ANALYSIS
AREA BY VEGETATIVE CONDITION

TABLE 1

LOCATION	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
14N,6W, Sec. 1	564	---	76	640
2	608	---	32	640
3	557	67	16	640
4	613	7	20	640
9	565	33	42	640
10	623	--	17	640
11	412	--	228	640
12	564	--	76	640
13	560	--	80	640
14	520	--	120	640
15	601	10	29	640
16	630	4	6	640
21	534	--	106	640
22	409	--	231	640
23	573	--	67	640
24	561	--	79	640
25	568	--	69	637
26	534	--	106	640
27	635	--	5	640
28	583	--	57	640
33	391	--	165	556
34	465	59	32	556
35	290	211	53	554
36	405	--	145	550
TOTAL	12765	391	1857	15013

SAWMILL GULCH WILDLIFE ANALYSIS
 AREA BY VEGETATIVE CONDITION

TABLE 1

LOCATION	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
T15N,R5W,Sec.19	430	--	210	640
20	545	--	95	640
21	428	19	193	640
27	604	30	6	640
28	426	--	214	640
29	406	--	234	640
30	420	--	220	640
31	543	75	22	640
32	616	--	24	640
33	468	--	172	640
34	607	--	33	640
35	614	--	26	640
TOTAL	6107	124	1449	7680
T15N,6W, Sec.24	316	--	324	640
25	390	--	250	640
26	410	--	230	640
27	539	19	82	640
34	640	--	--	640
35	403	225	12	640
36	453	10	177	640
TOTAL	3151	254	1075	4480

SAWMILL GULCH WILDLIFE ANALYSIS
AREA BY VEGETATIVE CONDITION

TABLE 1

LOCATION	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
T13N,5W Sec.3	76	--	461	537
4	314	80	142	536
5	106	112	318	536
6	178	250	108	536
7	309	297	34	640
8	129	--	511	640
9	135	--	505	640
10	234	--	406	640
TOTAL	1481	739	2485	4705
T13N,6W Sec.1	541	--	103	644
2	254	357	29	640
3	236	360	44	640
4	561	42	37	640
9	14	599	27	640
10	152	408	80	640
11	349	119	172	640
12	222	323	95	640
TOTAL	2329	2208	587	5124

ANALYSIS AREA TOTAL

TABLE 1

LOCATION	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
T13N,R5W	1481	739	2485	4705
T13N,R6W	2329	2208	587	5124
T14N,R5W	11358	3427	3089	17874
T14N,R6W	12765	391	1857	15013
T15N,R5W	6107	124	1449	7680
T15N,R6W	3151	254	1075	4480
TOTAL	37191	7143	10542	54876
% OF TOTAL	68%	13%	19%	100%
% of Forest H.T.	84%	16%	--	100%

NON-DSL LAND

TABLE 2

	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
	29824	6960	8967	45751
% OF TOTAL	65%	15%	20%	100%
% OF FOREST LAND	81%	19%	--	100%

STATE LAND WITHIN ANALYSIS AREA

VI D 27

TABLE 3

LOCATION	NOT HARVESTED	HARVESTED	OPEN GRASSLAND	TOTAL
T14N,R5W, Sec.2	396	---	244	640
4	472	45	43	560
6	469	--	146	615
8	640	--	--	640
10	101	99	--	200
16	605	29	6	640
18	300	--	20	320
20	640	--	--	640
28	120	--	40	160
30	62	--	18	80
34	436	--	204	640
TOTAL	4241	173	721	5135
T14N,6W Sec. 36	405	--	145	550
T15N,5W, Sec.20	545	--	95	640
28	426	--	214	640
30	90	--	150	240
32	600	--	40	640
34	607	--	33	640
TOTAL	2268	0	532	2800
T15N,6W Sec. 36	453	10	177	640
T14N,R5W	4241	173	721	5135
T14N,R6W	405	0	145	550
T15N,R5W	2268	0	532	2800
T15N,R6W	453	10	177	640
TOTAL	7367	183	1575	9125
% OF TOTAL	80%	2%	18%	100%
% OF FOREST LAND	98%	2%	--	100%

5-YEAR SALE PLAN

TABLE 4

SALE	AREA HARVESTED (ASSUME 7 MBF/AC.)
Sawmill FY 92	24
Flesher FY 94	120
Sawmill FY 94	25
Gladstone FY 95	100
TOTAL	269 ac.

Effect of 5-Year Sale Plan on Cover Ratio:

269 Ac. = 3% reduction = 77% Forest Cover of Total Land Area
9125 Ac. Total

269 Ac. = 4% reduction = 94% Forest Cover of Total Forest Land
7550 Ac. Forest Land

Effect of Sawmill Gulch on Sec. 30 Cover Conditions:

80 Ac. Total; 62 Ac. Timbered; 24 Ac. Unit

62 Ac. - 24 Ac. = 38 Ac. Forested Remaining = 61%
62 Ac. Forested H.T.

OPEN ROAD DENSITY

II D 29

TABLE 5

ROAD	LOCATION	LENGTH
Lincoln Rd. Hwy 279	T13N,R6W Sec. 10 T14N,R6W Sec. 9	11.5 mi.
Old Hwy 279 Segment	T14N,R6W Sec. 15 Sec. 22 Sec. 23	1.5
Hwy.279 Curve	T14N,R6W - Sec. 23 Sec. 14	0.75
Rattlesnake Creek Loop	T13N,R5W - Sec. 8 Sec. 10	12.75
Drill Site Access	T13N,R5W - Sec. 30	0.75
Lyons Creek No.	T13N,R5W - Sec. 30 T14N,R6W - Sec. 31	5.75
Lyons Creek So.	T13N,R5W - Sec. 14 Sec. 15	1.5
Gladstone Creek	T14N,R5W - Sec. 27	1.25
Greenpole Creek	T14N,R5W - Sec. 21	0.5
TOTAL		35.25 mi.

OPEN ROAD MILEAGE FOR ANALYSIS AREA = $\frac{35.25 \text{ MI.}}{85.74 \text{ MI.}^2}$
 TOTAL ANALYSIS AREA - 54876 AC.

= $\boxed{0.42 \text{ MI./MI.}^2}$

**Montana Department
of
Fish, Wildlife & Parks**



1404 Eighth Avenue
Helena, MT 59620

March 10, 1992

Montana Dept. of State Lands
ATTN: Bob Harrington
8001 N. Montana
Helena, MT 59601

Dear Bob,

I have reviewed the Sawmill Gulch timber proposal and you are to be commended on the extent and detail of the analysis put into this proposal. The maps and attachments helped clarify your rationale and perspective. I would like to offer additional perspective for the benefit of wildlife needs, with emphasis on elk and grizzly bear.

The area is at its limits of absorbing habitat changes resulting in security declines without further deteriorating the age structure of the bull elk population, which is far below acceptable levels (ELK PLAN, 1992). The proposals in Section 30 and 36, coupled with current and planned timber harvest on adjacent private lands are likely to have a significant effect upon elk security. For grizzly bear, we are aware that the Lyons Creek/Medicine Rock Creek area is used during summer and fall. We strongly suspect that this area is utilized yearlong. Efforts this spring to document grizzly occurrence and possibilities of dens should be undertaken. Perhaps a joint effort in this endeavor can be worked out.

To establish a basis of understanding and reference, the Section 30 and future Section 36 proposals both occur within yearlong elk range (winter, spring, summer, and fall). It is very likely that these sites are part of the grizzly bear use area in the Lyons Mountain country since they are a part of the mountain ridge complex connecting with the Continental Divide, and supplying spring and summer habitats in the form of graminoid sidehill parks, grassland/dry meadow, and talus slopes.

Much of Section 30 has been ^{NO} significantly altered from its natural state as a result of past oil and gas wild-cat drilling exploration. We can probably assume that this site will incur future energy-related activity. In fact the Helena National Forest EIS on oil and gas leasing options in the Rogers Pass area is

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February 22, 1992

currently assessing the leasing potential for the surrounding lands. This activity, timber sales on private lands, and all other activities in this area need to be assessed in a Cumulative Effects analysis for elk.

The following are comments relative to your assessment for the Sawmill proposal and any future proposals in the Sieben Ranch area.

- Biological Review for Grizzly Bear - An important need will be to evaluate potential for bear/human conflicts and available security in light of private logging activity throughout the area. Efforts should be made to assess the location and timing of private logging to determine whether grizzlies have security in the form of adequate cover and freedom from disturbance in a place to which they may be displaced. Recognizing that the Lyons Mountain area consistently supports grizzly bears, but that it is not currently described as a Bear Management Unit, some management discretion needs to be applied.

- Meeting Standards and Guidelines for Cover - We should be a bit hesitant to assume that all non-harvested timber constitutes either thermal or hiding cover for elk. Each type of "cover" has specific criteria that have not been assessed for the existing timber in the analysis area. The Guidelines for elk call for no less than 30% thermal cover. It is not possible to tell from the data how much thermal cover (or hiding cover) exists. In future analysis, I think we should reevaluate these assumptions for timber as well as openings. Your efforts were certainly a great beginning at this analysis.

I had some difficulty interpreting the Timber/Non-timber STRATA analysis illustrated on page 2 of your assessment. The way in which this information is presented is a bit confusing. Rather than state that "81% of the non-DSL forest (emphasis added) land is presently occupied by unaltered forest cover" as indicated, it is more clear to explain that 65% of all the non-DSL land is presently occupied by unaltered forest cover. For the entire analysis area, including DSL lands, the percentage is 68% presently occupied unaltered forest cover. Referencing the current condition in this manner is more in keeping with the Standards and Guidelines for elk, which require 50 to 70% cover. It is important not to manage for minimums, in other words, if the cover component is less than 70%, any further decreases should be very carefully evaluated. In this case, particularly in light of current and planned cover removal on the Sieben Ranch property, the certain trend is downward from the last year's 68% level.

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February 22, 1992

- Movement Corridor and Security - The Section 30 proposal would remove the timber at the headwaters of a drainage that is used as a movement corridor and as escape cover during hunting season by elk. This is particularly significant in that the main road, handling all public traffic across the Sieben Ranch from Highway 279 to Interstate 15 runs along the edge of the proposed cutting unit.

For grizzlies, the timbered Sawmill Gulch drainage would appear to provide the most logical movement corridor to forage in the riparian zone in the bottom. The main road occurs on the open ridge to the west (also the site of the proposed Section 36 sale), while the ridge to the east is a combination of relatively sparse timber and a large open park. In other words, little opportunity to travel the ridges exists. As bears travel up this drainage to the north toward Lyons Mountain, the proposed harvest site is perched at the head of the creek. Currently it provides a continuous stand of cover nearly at the crest of the ridge, and thus protected passage to the ridge complex connecting with the Continental Divide. This type of timber protected corridor is vitally important to both bears and elk as well as most other wildlife, and is recognized in Guideline 4.g..

- Road Density - Road distribution information gathered for the Granite Butte GIS project suggests that ~~greater than 0.4 miles of road per square mile exist within the analysis area,~~ and in some sections exceed 2-4 miles of road per square mile. Road densities should be calculated on a drainage basis, rather than the entire analysis area in order to avoid severe roading in localized areas. It should be kept in mind that those roads that have been marked with "No Motorized Vehicle" signs through the Department's Road Management program are in fact being used by the private landowner and members of the public with the landowner's permission, so are not devoid of traffic. Analysis of disturbance of roads having various types of restrictions, shows that closed roads still contribute to wildlife disturbance (as much as 50% of a closed road) because they constitute a conduit for human travel (foot, horseback, mountain bikes). A very important point relative to roads in this area is that FWP recognized the serious limitation of security in this area (see discussion of Elk Plan), so set about trying to rectify problems of security through the Road Management program. We have managed to increase security from unacceptable levels with our road closures, and now your proposal would negate some of those gains.

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 February 22, 1992

• Elk Plan Objectives - The Statewide Elk Plan was reviewed by the public and DSL, and comments were incorporated. The Plan was approved by the FWP Commission in January of this year. The Elk Plan for the Granite Butte Elk Management Unit (EMU), which includes hunting district 839, stresses maintenance of hunting opportunity and elk security by working with the land management agencies. If there is anything more we can do along these lines, please let us know. The cited habitat management strategies include:

- Reduce open road density
- Maintain or enhance vegetation structure that serves as important hiding cover for elk
- Schedule human activities to avoid disturbance to elk during winter and spring
- Implement road management programs on private lands where landowners are experiencing problems resulting from unregulated vehicle use.

We are currently doing everything we can to improve the very poor age structure of the male segment of the population in this area. It is important to try and hold the line on elk security.

* The statewide elk plan recommends: that no more than 40% of the harvest occur during the first week of the hunting season, 40% of the harvest be comprised of brow-tine bulls, and no less than 5 bulls per 100 cows occur in the population. If these circumstances occur, corrective action is warranted. In HD839, 53% of the harvest is occurring the first week of the season, virtually all of the male harvest is yearling bulls, and the bull:cow ratio averages 3:100. None of these conditions is desirable or acceptable. The problem is elk vulnerability as a result of inadequate security. We do not believe that timber can be harvested from this area without adding, in a cumulative way, to the already significant reduction in bull elk security as evidenced by low bull:cow ratios.

• Timber Harvest - Past and Future - Timber harvest on the Sieben Ranch during 1992 is a certainty, so together with recent harvest, cover removal is likely to be significant in this area. On page 3 of your analysis you indicate that "Conversations with John Baucus indicate that their agreement with Pinnacle Mountain will terminate within one year....For each of the proposed DSL sales, we can use subsequent HRAs to add any additional private logging acreage into this analysis at the time of a sale planning and layout, and make necessary adjustments to our plans at that time."

Page Five
February 22, 1992

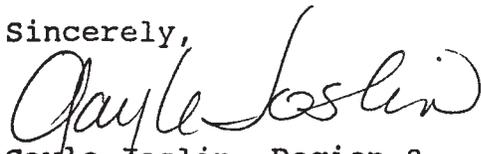
While this is certainly the conscientious thing to do at that time, the Elk Standards and Guidelines describe, for the planning process, a biological review that will address cumulative effects including future activities. Would it be possible to use an estimated scenario of planned timber harvest on both DSL and private lands in the area over the next 10 years, and incorporate recent sales over the past 10 years? This would give a realistic estimate of elk security wherein all of these cuts would not yet be providing adequate cover.

• Conclusion - While we respect your authority to implement the Sawmill Gulch Timber Sale, we do not concur with your conclusion that DSL should be "able to proceed with the proposed Sawmill Gulch Timber sale....[wherein] the results for elk and grizzly bear cover values, in addition to road densities, are all within DSL management guidelines." It is possible that all guidelines would be met, but the existing analysis is not detailed enough to prove or disprove this assumption.

We believe that the consequences of these cumulative sales are having a significant impact upon the age structure of the elk population, and could have deleterious consequences for continued grizzly bear use of this area.

If you are able to further assess the concerns we have outlined in this correspondence, perhaps there is opportunity to implement creative timber management programs in this area. Thank you again for this opportunity to comment on the Sawmill Gulch proposal.

Sincerely,



Gayle Joslin, Region 8
Wildlife Biologist

cc: Glenn Erickson, Wildlife Manager
Jerry Wells, Regional Supervisor
Steve Knapp, Habitat Bureau

8001 North Mont. Ave.
Helena, MT 59601
April 13, 1992

Montana Dept of Fish, Wildlife & Parks
Attn: Gayle Joslin
1404 Eighth Ave
Helena, MT 59601

Dear Gayle:

Thank you for taking the time to review and comment on the Lyon Mountain area Wildlife Cover Analysis which Bob Harrington completed for our Sawmill Gulch sale proposals. We too are concerned with the cover conditions in the area. The area is indeed year round elk habitat and is certainly within the range of any grizzly bears which may be using the Lyons Creek country.

All resource managers are forced to make decisions based on incomplete data, obtained by various means expanded to represent the total situation. This data, coupled with training, experience and the managers' objectivity has to be accepted in lieu of total knowledge, which is often logistically and economically impossible to acquire.

The major assumption in Bob's study was regarding the value of uncut timber for either hiding or thermal cover. Prior to doing the photo work, I had Bob contact Alan Wood (DSL Biologist-Forestry Div.) and Alan had Bob call you. It is my understanding that we all agreed with the basic premise that natural uncut forest stands provided some value as either hiding or thermal cover (if they did not, we would not be concerned with their removal). We acknowledge the fact that the uncut stands may not be 100% hiding cover, but felt this would at least be balanced by the cover that exists in harvested area that have regenerated or by the residual stands in partially cut harvest units. We considered the units harvested in the past to have zero cover value. Certainly you will find that some of those areas provide excellent hiding cover. With this in mind, I think we have to accept the current cover analysis for what it is, the best data currently available on cumulative cover changes in the area. We should also continue to search for better data as the opportunities arise.

You noted that a joint effort to document grizzly occurrence and dens should be under taken. I would like to know what ideas you have along these lines. As you know, State Lands has a lookout perched on Rogers Mountain with lots of time, a spotting scope, and plenty of maps. We also have lots of seasonal firemen in the summer which are out patrolling the area. Perhaps we could train them in identification to give us more eyes in the woods.

The cover analysis which we completed included our best estimate of the cumulative changes to the study area you recommended. The acreage calculations for harvested areas include all areas cut prior to the aerial photography used to make the ortho photos (1977 approx.). To this, we added all hazard reduction agreement data since that time, and included the planned harvest areas on all existing, but as yet uncut, hazard reduction agreements. Some of this required us to make an educated guess on location and acreage, since the private land is not covered by a reliable harvest schedule. We also contacted the Lincoln Ranger district and were told that they had no harvest plans in the area. This was the "base" to which we added the sawmill gulch proposal (and the 3 other potential state proposals) to determine if our proposals created any cumulative effect.

The data was then presented in terms of its effect on cover/total area and cover/forested area, on the entire study area, non DSL and DSL lands. This array of numbers was not presented to confuse, but rather to address specific sections in the state's Management Standards and Guidelines for elk and grizzly.

Grizzly Bear

Project Planning & Design, Guideline 4.b.

"Maintain cover that is well distributed throughout each biological unit or third order drainage. A suggested amount of cover is 40 percent of the total land area."

Without our project, the total area will be 67.8 unharvested forest. With the sawmill project this would drop to 67.7% and with all other planned state projects (keep in mind that all known private & Federal projects are already in the base data.) The cover would drop to an estimated 67.3% of the total area.

Elk

Planning Process, Guideline B, 1&2.

"1. In an analysis area, if thermal cover on non-DSL lands has been reduced to less than 30 percent of the forested habitat types on those ownerships, harvest on State Lands within the analysis area should be delayed until thermal cover occurs on at least 30% of the forested habitat types on non DSL ownerships."

"2. ...harvest on State Lands within the analysis area should be delayed until combined hiding and thermal cover occurs on at least 50% of the forested habitat types on the non-DSL ownerships."

On non DSL lands current and planned harvest will reduce forested cover to 81% of the forested habitat types.

Project Specifications, Standards 3 & 4.

"3. Keep thermal cover on at least 30-50% of DSL's forested land area within the winter range analysis area. Cover should be distributed throughout the analysis area."

"4. Keep a combined total of hiding cover and thermal cover on at least 50-70% of DSL's forested land area..."

On DSL lands, current forested cover (as a result of harvests in Lyons Creek) is 97.5% of the total forested area. The Sawmill project would further reduce this to 97.2%, addition of other potential state projects drops cover further to 94.0% of the state's forested habitats.

As you can see, cover levels are well above even the upper levels recommended in the Management Standards and Guides. This allows for a substantial margin of error in our aerial photo assessment of cover values. Given the magnitude of our sale proposal, I believe the analysis is more than adequate to determine potential impacts.

In your letter you noted some additional concerns which I will try to address next. On page 2 of your letter you noted the need to evaluate potential bear/human conflicts and security. The state has contract clauses (shown in the management standards and guides which I think you have) that gives us authority to shut down a sale if a grizzly bear is observed in the area. These clauses were not in the Lyons Creek contract, but I plan on putting them in for Sawmill Gulch. I also will specify no weapons and no camping. With these provisions there should be no "Logger"/bear conflicts. As this area is along the designated open road on the Sieben Ranch, the public can be present at any time whether we have a project or not so conflicts between other citizens and bears has no bearing on the state's project.

You also were concerned with a displacement area for bears. Because this area is outside current designated bear management areas, and because displacement south to ranch lands and homes is probably not desired, we would hope that any bear in the area is displaced north. North to the headwaters of the southfork and northfork of Lyons Creek where state and private logging is finished and where roads have been physically closed to prevent disturbance by motorized public.

Travel corridors for elk and bears were another site specific concern. In the planning of the Sawmill Gulch proposals, my preferred option is to use a light selective cut in the upper 1/3 of the ridge at the very head of Sawmill Gulch. This cut would remove patches up to $\frac{1}{4}$ acre in size above the planned road, for a total removal of less than 15% of this stand. The clearcut cable yarding unit on the lower 2/3 of the slope is less than 500 feet across at the widest point. Grizzly standards and guides state that travel corridors do not have to be continuous, but should not have open gaps greater than 600 feet. Also there are 2 other ephemeral draws just west of the proposed harvest location which will continue to provide even more continuous cover over this same ridge.

Per your request we examined open road density in the Bigmill and Sawmill Gulch drainages to determine if there were locally open road densities

exceeding recommended levels. As defined in the grizzly bear standards, open roads are those open to public use. We determined the open road density to be 0.55 mi/section for this third order drainage. As before, other roads exist, but are closed to the public and used only by the landowners for their administrative use.

One of your final concerns relates to elk security, the objectives in this EMU as stated in the statewide Elk Management Plan and the cumulative impacts that timber harvest may have on bull elk survival. As you are aware, this is an issue that is developing statewide as public pressure to provide opportunities for harvesting larger bulls increases. There is currently a substantial information void regarding this issue. There are many factors that could be influencing a decline in average bull elk age or bull/cow ratio. It is the function of research to attempt to provide information on the relationship of the various factors influencing bull elk composition in an elk herd. I believe it is beyond the scope of this analysis to determine those complex interrelationships.

Specifically regarding the analysis area of the Sawmill Gulch proposal, we have shown that a high percentage of the natural cover conditions have not been disturbed. It is clear that elk numbers have increased substantially over the past 10-15 years. It appears as though the bull/cow ratio is below the objectives in the state wide Elk Management Plan. However, it is not clear that loss of elk security is the primary reason that elk harvest levels exceed your objectives. I believe it is sufficient for the purpose of this analysis to determine what conditions currently exist and that the proposed 22 acre harvest will not substantially change those conditions. At your request we have assessed an area totalling almost 55,000 acres. I believe that analysis exceeds what is appropriate for the magnitude of the proposed project. Certainly there are larger issues and unanswered questions that need to be addressed at a different level. We will continue to cooperate with you in implementing land management activities in a manner that considers the needs of various wildlife species.

Once again, thank you for reviewing our projects and studies. We will include all of your input into the final environmental analysis. If you have further questions, please contact Garry Williams at our office.

Sincerely;



D. J. BAKKEN
Unit Forester
Helena Unit

jm

DEPARTMENT OF STATE LANDS
FIELD OPERATIONS DIVISION



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

Central Land Office: Helena, MT (406) 444-3633
Eastern Land Office: Miles City, MT (406) 232-2034
Northeastern Land Office: Lewistown, MT (406) 538-5989

Northwestern Land Office: Kalispell, MT (406) 752-7994
Southern Land Office: Billings, MT (406) 259-3264
Southwestern Land Office: Missoula, MT (406) 542-4200

8001 North Mont. Ave.
Helena, MT 59601
February 20, 1992

Dept. of Fish, Wildlife & Parks
Region 8 - Fish Manager
1420 E. 6th Ave.
Helena, MT 59620

Dear Mr. Chrest:

Enclosed is an application for a "124" Permit on Rattlesnake Creek. The existing access road was used by Champion Timberlands for harvesting on the Sieben Ranch in the late 70's. Since then, use has been by firewood cutters and hunters. The lack of maintenance through the 80's and heavy recreational use during wet seasons has caused the access road to deteriorate. Currently there are several locations where the road delivers runoff directly to Rattlesnake Creek.

The State's harvesting proposals in Section 30, T14N, R5W all include repair and maintenance work on the lower stretches of the Rattlesnake Creek road. Drain dips, straw bales and filter fabric sediment traps, berms and insloping to carry water past critical points, and some road relocation are planned to correct the existing road drainage problems. Part of the relocation will require installation of a new 36" culvert. This location will be at Station 54 + 74 of the access road, which is located near the center of the SW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 19, T13N, R5W. The installation should specify dewatering of the stream channel and the use of clean, native fill material. (Clean being free from sticks, clods, rocks and excessive amounts of silts, clays or organic matter.)

Enclosed is the Stream Preservation Act Permit Application. Also enclosed is the Road Log which shows the total road repair package, location maps, and detailed project maps. A sketch of the installation is also enclosed.

If you have any questions, or if you want to see the installation location, please give me a call.

Sincerely,

D.J. BAKKEN
Unit Forester
Helena Unit

dh/Encl.

III D 40

DEPARTMENT OF STATE LANDS

FIELD OPERATIONS DIVISION



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

Central Land Office: Helena, MT (406) 444-3633
Eastern Land Office: Miles City, MT (406) 232-2034
Northeastern Land Office: Lewistown, MT (406) 538-5989

Northwestern Land Office: Kalispell, MT (406) 752-7994
Southern Land Office: Billings, MT (406) 259-3264
Southwestern Land Office: Missoula, MT (406) 542-4200

3001 North Mont. Ave.
Helena, MT 59601
Nov. 1, 1991

Sieben Ranch Company
Attn: John Baucus
Box 1683
Helena, MT 59601

Dear John:

I have another temporary right-of-way proposal for you. This time I would like to go up the Rattlesnake Creek Road to access the W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 30, T14N, R5W.

Our sale proposal on this section is to build a new road from near the SE corner of the State property as shown on the map. Timber below the road would be cable yarded, above the road it would be tractor skidded. As you can see, there is a thin strip of your timber between the road and the state property line. We could cruise this strip and have our contractor pay you based on the cruise, or we could deck your wood separately to get actual scale, or we could leave your timber stand and clear skidding corridors through it on 75' - 100' spacings.

The right-of-way covers approximately 8 miles of road. The first half mile or so is in close proximity to the creek and may need some special erosion protection measures. From there up, the road needs some blading. Perhaps we can work out a deal utilizing your grader again? (By the way, have you received the final blading payment for Lyons Creek sale? I have no record that the mill has paid you yet.)

Please contact me regarding this proposal. The office number here is 444-3633 and my home number is 458-5054.

Sincerely,

D.J. BAKKEN
Unit Forester
Helena Unit

dh

Encl.

D 41

DEPARTMENT OF STATE LANDS
FIELD OPERATIONS DIVISION



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

Central Land Office: Helena, MT (406) 444-3633
Eastern Land Office: Miles City, MT (406) 232-2034
Northeastern Land Office: Lewistown, MT (406) 538-5989

Northwestern Land Office: Kalispell, MT (406) 752-7994
Southern Land Office: Billings, MT (406) 259-3264
Southwestern Land Office: Missoula, MT (406) 542-4200

8001 North Mont. Ave.
Helena, MT 59601
February 21, 1992

Sieben Ranch Company
Attn: John Baucus
Box 1683
Helena, MT 59601

Dear John:

Enclosed is the Temporary Right-of-Way Agreement for the proposed state sale in Sawmill Gulch (W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 30 - T14N, R5W). This time, I wrote the agreement so that the sale purchaser will pay the \$1550.00 grading fee upon execution of the contract.

Please also note Item 11 where I outlined the sale of the 2 acre strip of your timber which lies between the proposed access road and the State's timber. Harvest would be clearcut, logs will be cable yarded to the road, the state will do the brush work. We cruised this strip at 38.86 MBF. As we agreed last December, the purchaser of the State's sale will pay you lump sum for this volume at the bid stumpage rate plus \$11.00 for Timber Stand Improvement. With a minimum stumpage rate of \$31.79, your payment will be at least (\$31.79 + \$11.00 = \$42.79, \$42.79 * 38.86 MBF = \$1662.82). We normally get quite a little more for our sales than we estimate for minimum bid so in all likelihood the above estimate is low.

Please sign the enclosed agreement and return it to me, I will send you a copy for your records.

Regarding the Right-of-Way Agreement for the Lyons Creek Sale, our contractor finished logging and hauling on 1-23-92. We will need to access the site next spring to do some road closure and erosion control work on the State lands. On the Towhead Gulch Sale we have, along the highway, the contractor has about another week of work to finish the logging. All brush work on this section is still pending also. The road along the highway has become rutted. I have informed the purchaser that some road blading may be needed. I mentioned that they may be able to hire your grader for this work. I don't know if they will contact you or not.

Sincerely,

Handwritten signature of D.J. Bakken in cursive.

D.J. BAKKEN
Unit Forester
Helena Unit

SAWMILL GULCH RECOMMENDATIONS
EA FIRST DRAFT REVIEW BY ALLEN BRANINE; AREA FORESTER CLO
APRIL 4, 1992

Original proposal on the Sawmill Gulch Timber Sale was a small permit, upon further review the Helena Unit determined a much larger volume of stagnated timber could be brought under management. While the proposal was being developed the Wildlife Biologist in this area raised strong concerns over elk habitat effectiveness, and known Grizzly Bear sightings in the vicinity. Our cumulative impacts review indicated that no significant impacts would occur with the current proposal, however I feel that some of the analysis, and Affected Environment description in the first draft EA was lacking.

As the former Forest Inventory Supervisor and current Area Forester I wish to voice my concerns and make recommendations to the Helena Unit which may save time and commitment in the future and possibly provide more money to the school trust system for both short and long-term benefits. While also improving the elk habitat effectiveness, and maintaining Grizzly Bear travel corridors in the Sawmill Gulch Area.

First, let me identify what is lacking and misrepresented in the EA. The Alternatives and Environmental Effects Analysis consisted only of the proposed project on State land. The proposal includes removing all cover up to the road on two acres of Private land within Alternative C. This may exceed Grizzly Bear minimum distance to cover guidelines (600 feet) and will definitely increase the chance of shooting an elk from the main travel road as it opens up the entire top end of Sawmill Gulch basin. Secondly in the first draft of the EA we have failed to include that an adjacent state section (Sec. 36 T14N. R6W.) is scheduled for timber management activities in FY 1994. This adjacent section also includes upper reaches of Sawmill Gulch as well as a mid-portion of Big Mill creek. This section was looked at only on an air photo basis for consideration into the sale plan. Bob Harrington and I have recently completed a walk-thru examination of the section and I have concluded the following:

1) All stands on the west side of the section going into the Big Mill drainage are noncommercial or deferred stands with little present value. Most stands did have notable elk and deer use especially in the large upper stand with mixed lodgepole. No activity should take place in these stands.

2) The east side of the section which includes all the stands which are included in the Sawmill Gulch drainage are in a stagnated, high fire hazard condition. The lower stand (#9) had some partial logging in the early 60's which has improved its condition and increased elk and deer use within that stand. The rest of the stands have had a high mortality rate from spruce-budworm attacks and root rot which has led to minimum stockings, limited hiding and thermal cover, and fuel loadings ranging from 40 to 60 tons per acre. Wildlife use and pellet groups within this area were low due to the poor forest condition. The area is

ripe for wildfire and has no established route to suppress a fire along the west side of Sawmill Gulch.

RECOMMENDATIONS

Within the current Sawmill Gulch Proposal I recommend leaving all timber on the south side of the draw up to the road to break up unit and sight configuration. Such a buffer strip will enhance elk cover, maintain travel corridors and reduce the impact on the Streamside Management Zone at the head of the creek. By reducing this unit in size and leaving all timber along the road we can effectively maintain current security cover along this well traveled route.

Along with reducing the unit size in section 30 I think we can extend the current proposed road into section 36 and have a simultaneous harvest operation in both sections which will avoid a second entry. By initiating some creative forest management activities into section 36, like small group selection cuts, buffer zones and travel corridors we can improve elk security, thermal cover, reduce fire hazards and improve the vegetative habitat in the area.

Please review the maps and reconnaissance information included and if this looks like a viable alternative I will spend more time developing this alternative.

DE 044

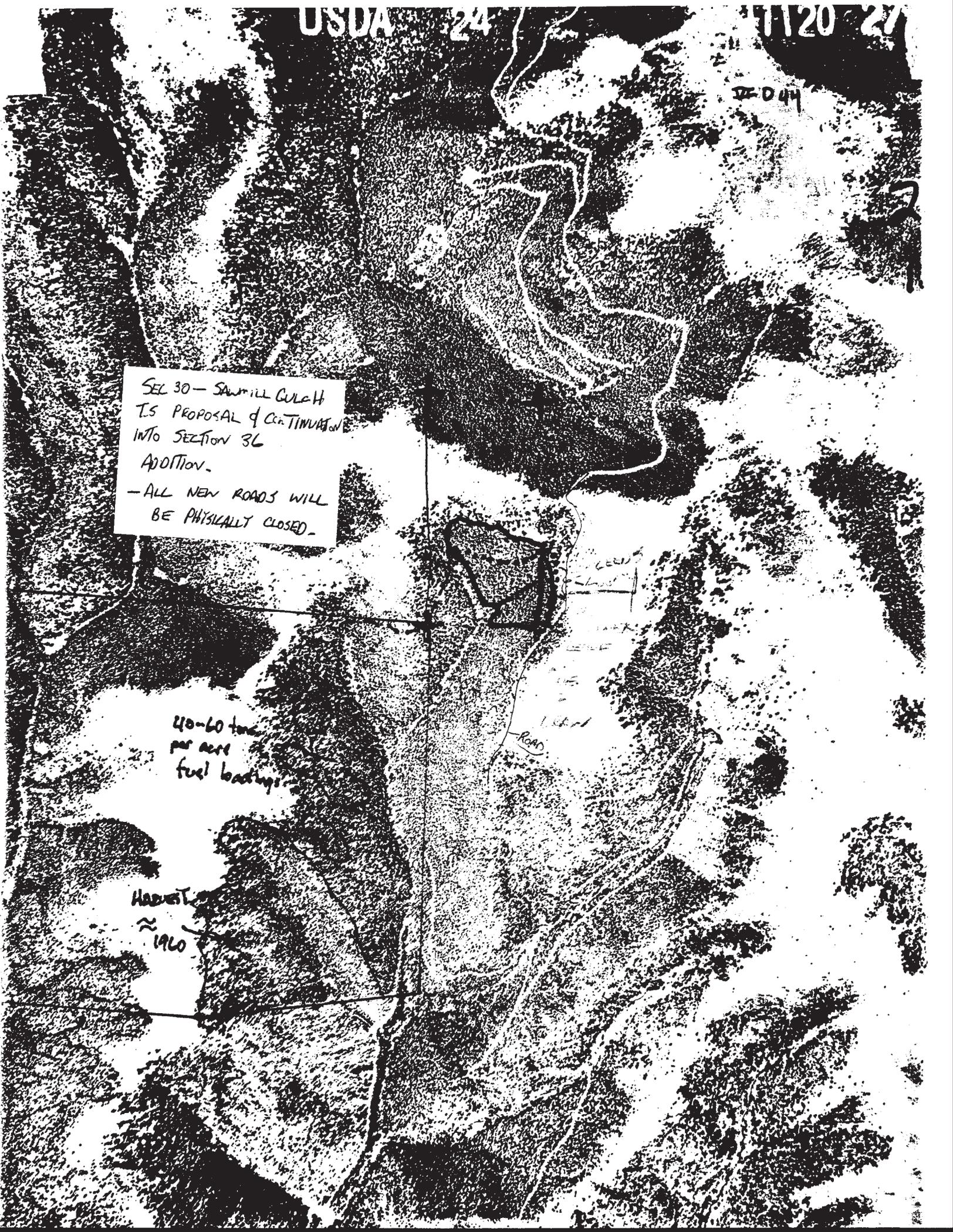
2

SEL 30 - Sawmill Gulch
 T.S. PROPOSAL of CONTINUATION
 INTO SECTION 36
 ADDITION.
 - ALL NEW ROADS WILL
 BE PHYSICALLY CLOSED -

40-60 tons
 per acre
 fuel loadings

Harvest
 ~ 1960

Road





19

VI 0 45

7235 X

TRAIL

6800

6800

6600

6495

X 651

6200

6400

700

X 70

25

6000

30

X 6692

Spring

6600

W.B. Road

6400

NE

6200

56070

NE

36

6200

6499X

5800

6400

5362

5600

S17 VIOLATION

TO: Allen Branine
FROM: Robert Vlahovich *RV*
DATE: April 13, 1992
SUBJECT: Sawmill Gulch Recommendations

Thank you for your written comments regarding the Sawmill Gulch proposal. After reviewing your written comments and our subsequent conversations we have made some minor changes in the EA wording that we feel will clarify the proposal and the acreage affected including the 2 acres of private land that would be harvested below the road in "Unit 1" in both Alternatives C & D.

We did leave Sec. 36, T14N, R6W out of the EA since it was not involved in the proposal. However early on we did do a preliminary recon on the feasibility of including it as another unit in the Sawmill proposal, we decided to not pursue it as a unit but to re-evaluate when we had better information. Your information seems to support that decision. Low volume per acre, development cost for access and expected high logging cost appear to make economic harvesting marginal without a fairly extensive cutting regime which may not be desirable. Deferring until FY 94 will not preclude the possibility of harvest but may allow a better evaluation of a more intensive cutting regime in light of current harvesting on surrounding private lands. I would feel more comfortable deferring till FY 94 rather than eliminating the section totally from the sale plan.

WEED MANAGEMENT

APPLICATION

No. _____

Date Received _____

1. NAME OF APPLICANT Dept. of State Lands
 ADDRESS 8001 N. Montana Ave. CITY/TOWN Helena
 STATE MT ZIP CODE 59601 TELEPHONE NO. 444-3633

2. Location of the proposed area 114 SW 114 SW 114 Section 30
 Township 14N Range 5W (sawmill Gulch)

3. Brief description of activity: Timber harvesting, approximately 0.5 mile of new road construction. Tractor skidding selective harvest above road, Cable yarding clearcut below road. Total harvest area is approximately 25 acres. The ^{new} Road will be physically closed after its use.

4. Date activity is proposed to commence: July 1, 1992
 Date activity is expected to be completed: Dec 1, 1993

5. THE APPLICANT CERTIFIES THAT THE STATEMENTS APPEARING HEREIN ARE TO THE BEST OF HIS KNOWLEDGE TRUE AND CORRECT AND HEREBY AUTHORIZES THE INSPECTION OF THE PROJECT SITE BY THE WEED BOARD OR REPRESENTATIVE.

Signature David J. Pabben Date: 11-8-91

RETURN COMPLETED FORM AND PROPOSED PLAN AND NOTIFICATION OF DISTURBANCE SIGNED BY APPLICANT TO THE LEWIS AND CLARK COUNTY WEED DISTRICT OFFICE, 3402 COONEY DRIVE, HELENA, MONTANA 59601.

(The following to be completed by the Lewis and Clark Weed Board.)

=====
 Weed Management Plan Submitted Yes No

The Weed Management Plan is is not accepted.

Plan changes or additions: _____

WEED BOARD SIGNATURES:

 _____ Date _____

Date of Site Inspection: _____ By: _____

REGULATION FOR RE-VEGETATION OF DISTURBED AREAS AND WEED MANAGEMENT PROGRAM

Under Section 7-22-2121 New Section C. New County Weed Law

1. The Weed District must be notified by anyone significantly disturbing vegetation on soil:
 - a. Weed District application form must be completed.
2. A written plan shall be used to accomplish re-vegetation. The plan must describe:
 - a. time and method of seeding
 - b. fertilization practices
 - c. recommended plant species
 - d. use of weed free seed
 - e. weed management procedures
3. The weed management program procedures shall include the following:
 - a. review the distribution and abundance of each noxious weed species known to occur at proposed site; a map of location must be included.
 - b. estimate personnel, operations, and equipment cost of the proposed procedure.
 - c. where at all possible, methods for such control shall include cultural, chemical and biological.
 - d. include geographic data of elevation, soil type, vegetation, precipitation, slope and acreage.
4. The plan is subject to approval by the district by the board, which may require revisions to bring the re-vegetation plan into compliance with district weed management plan. Upon approval by the board, the re-vegetation plan must be signed by the chairman of the board and the person or agency responsible for the disturbance and constitutes a binding agreement between the weed district and such person or agency.

STANDARD AND GUIDELINES FOR
RE-VEGETATION OF DISTURBED AREAS
AND WEED MANAGEMENT CONTROL PROGRAMS
FOR LEWIS AND CLARK COUNTY WEED BOARD

Standards and guidelines are designed to help the Lewis and Clark County Weed Board determine whether or not a Re-vegetation of Disturbed Areas and Weed Management Plans are practical and beneficial. These will be in coincidence with county weed management program.

Upon meeting the regulations for re-vegetation and weed management, a determination can be made for an approval or disapproval.

Procedure Outline:

1. Applicant must request rules, regulations and application forms.
2. Applicant must submit application form and management plan to the Weed District.
3. The Weed District Supervisor will review all plans and submit recommendation to the Board.
4. Board will take under advisement all recommendations and determine approval or disapproval.
5. If application is disapproved, reasons must be stated and letter of such must be presented to applicant by Weed District Supervisor for their approval of revision.
6. If application is approved, the plan will be sent back along with cover letter stating approval.
7. After completion of project a weed board member or weed supervisor will inspect for completion and date such action.

The road, skid trails and landings will be seeded with 20 lbs./ac. P.L.S. in the following mixture:

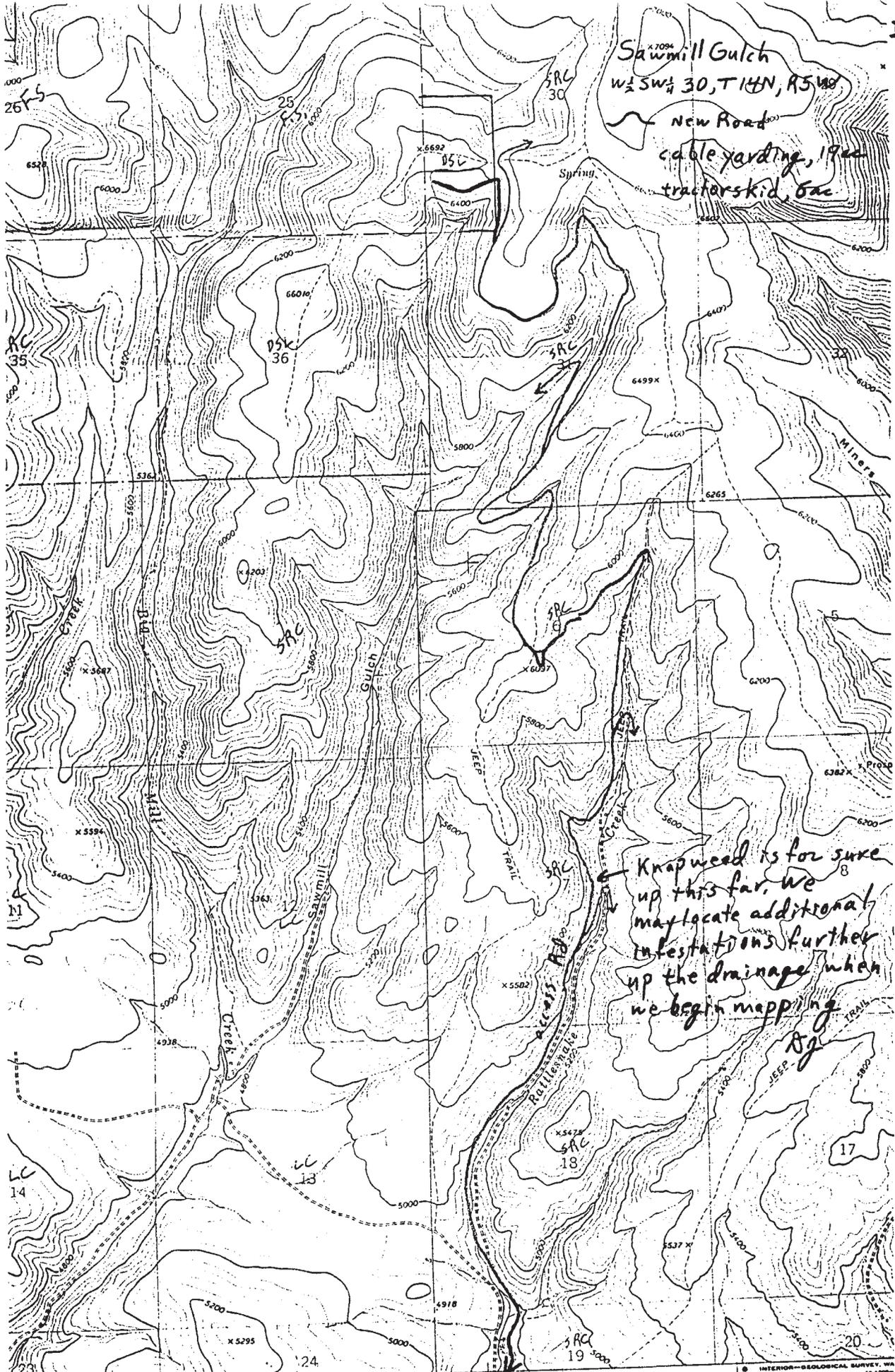
40% Smooth Brome
50% Orchard Grass
10% Slender Wheatgrass

All off road logging equipment, and the cable yarding machine, will be pressure washed prior to entering the site.

At this time, I am not aware of any noxious weed infestations on the sale area. There are knapweed infestations at several locations along the main road which access this site. These existing infestations should be the responsibility of the Sieben Ranch Company.

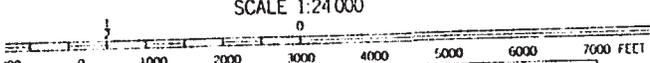
We plan on mapping the location of the existing infestations prior to our use. The harvest site will be monitored for several years following the harvest. If a new infestation develops on the sale area, then the State and our leasee (also the Sieben Ranch Company) will work out a Weed Management Plan.

Sawmill Gulch
W 1/2 SW 1/4 30, T 14 N, R 5 W
New Road
cable yarding, 1900
tractorskid, 500



Knapweed is for sure
up this far, we
may locate additional
infestations further
up the drainage when
we begin mapping

INTERIOR GEOLOGICAL SURVEY, WA 4940000
CANYON CREEK 3577 IV SE
SCALE 1:24 000
17° 30' R 5 W 1402



1.5 mi to
highway
279

ROAD CLASSIFIC/
Secondary highway, all weather, Light-
hard surface. impror

REVEGETATION PLAN FOR WEED MANAGEMENT
Montana Department of State Lands - Forestry Division

The Department of State Lands (DSL) management objective on forested State lands is to manage the land to secure the largest measure of legitimate and reasonable advantage to the school trust in the long run, while protecting the natural environment. Various silvicultural treatments are used to meet this objective. Those treatments are targeted primarily at timber production but they also affect competing vegetation, including noxious weeds. Thus, sound silviculture is the foundation of DSL's revegetation plan for weed management on State forest lands. The specific practices comprising the State's weed management efforts on State forest land are:

1. DSL will prescribe silvicultural practices intended to provide for prompt and successful tree regeneration, and maintenance of vigorous stands of timber;
2. Certified weed-free grass seed mixtures will be applied to all newly constructed and most reconstructed road cuts and fills, and road surfaces following road construction. Seed will be applied as soon as possible after construction or reconstruction and prior to spring run-off. Grand fir, cedar and subalpine fir habitat types may not require seeding following reconstruction, because of rapid regeneration of native vegetation on these sites. The mix of plant species to be seeded will be based on site specific conditions. The mix will usually include some combination of the following species: pubescent wheatgrass, crested wheatgrass, slender wheatgrass, intermediate wheatgrass, Siberian wheatgrass, hard fescue, sheep fescue, tall fescue, smooth brome, mountain brome, yellow sweet clover, white clover, alsike clover, orchard grass, Canada bluegrass, creeping foxtail, red top.

3. Road closures may be used whenever possible to prevent the transference of noxious weed seed by the recreating public;
4. Minimize brush piling and scarification efforts when noxious weeds are in seed set stage;
5. DSL's personnel are or will be trained in the identification and control of noxious weeds;
6. DSL will cooperate with county weed control boards, Conservation Districts special weed districts, adjacent private landowners, leasees, and public agencies to control the spread of noxious weeds. This may include co-operating on a herbicide spraying program.

DSL views the establishment and spread of noxious weeds as an important management concern. We expect the prevention and control measures outlined here to adequately address this concern.

Signed: William R. Hester
William Mosher
Ronald K. Hat
 Lewis & Clark County Weed Board

Rory S. Kullis 12/5/87
 Silviculturist
 Dept. of State Lands
 Central Land Office

LEWIS & CLARK COUNTY CONSERVATION DISTRICT
SEDIMENT CONTROL PROGRAM
ORDINANCE NO. 77-01-SEC 8

Feb. 1988
301 S Park Ave
Helena, MT
59626-0022

NOTICE OF PROPOSED TIMBER HARVEST

- 1. a. Name of Applicant Dept. of State Lands
Address 8001 N. Montana Ave. City or Town Helena
State MT Zip Code 59601 Telephone No. 444-3633
- b. Name and address of owner of site (if different from applicant).

Telephone No. _____

- c. Name, address and title of applicant's authorized agent for permit application coordination: (attorney, business manager, etc.)
D. J. Bakken, Forester
same as above Telephone No. same

- 2. Location of the proposed timber harvest activity: (Sawmill Gulch)
1/4 SW 1/4 SW 1/4 Section 30 Township 14N Range 5W
1/4 Section _____ Township _____ Range _____

- 3. Description of Proposed Activity:
Purpose Timber Harvest Products Saw logs
Approximate Acres 25 and Volume to be harvested 376 MBF

Describe the method of harvest, size and type of equipment, need for road construction and etc. One unit will be 19 acres, clear-cut and cable yarded. Above the road we propose 6 acres of selective harvest and tractor skidding. Equipment will likely include a skyline yarding machine, (continued on back)

- 4. Starting Date: 7-1-92 Completion Date: 12-1-93
- 5. SEDIMENT AND EROSION CONTROL PLAN: Use the reverse side of this form to prepare your plan of operation for the control of sediment.
- 6. WEED MANAGEMENT - REVEGETATION PLAN: See attached application and instructions. This required plan has been forwarded to the Lewis & Clark County Weed District. Yes No _____ If no, explain.

NOTE: This application will not be approved until the above requirement has been met.

- 7. Has any agency denied approval for this activity? Yes _____ No
If yes, explain. _____

- 8. NATURAL STREAMBED & LAND PRESERVATION ACT: If perennial streams are involved in this project (stream crossings, bridges, culverts and etc.), have you applied for a permit under this act. N/A _____ Yes _____
No If no, explain. A "124" permit will be sought from the Dept. of FW & P. Some riprap and filter fabric structures to trap sediment will be needed along the first 1/2 mile of existing road, just off highway 279. We are still working on

The applicant or his authorized agent certifies that the statements appearing a proposal herein are to the best of his knowledge true and correct, and hereby to submit authorizes the inspection of the project site by a conservation district supervisor.

D. J. Bakken
Signature of landowner or authorized agent

11-8-91
Date

Signature of applicant

Date

X

dozers and possibly rubber tired skidders. Approximately $\frac{1}{2}$ mile of new road construction will be needed. When the logging is completed, the new road will be closed with a Kelly hump road closure.

SEDIMENT AND EROSION CONTROL PLAN

Describe the approved methods to be used in controlling erosion and sediment during this activity. (Use separate sheets if necessary. See forestry guidelines attached and Forestry and Water Quality booklet available from the Division of Forestry and the Soil Conservation Service.

As a minimum, address the following items in the plan:

- A. Backsloping and revegetation of constructed roads.
- B. Installing structures for dispersing surface run-off from roads and skid trails.
- C. Revegetation of skid trails, decking areas and other severe impact areas.
- D. Leaving appropriate buffer zones along stream sides.

New roads will be constructed with a 1:1 cut slope and a 1.33:1 fill slope, 14 foot road surface. After logging the road will be physically closed. The road, landings and skid trails will be seeded with 20 lbs/acre PLS (40% smooth brome, 50% Orchard Grass & 10% slender wheatgrass.) The road grade is planned with varying rolling grade to disperse surface runoff.

A S.M.Z. will be marked along the intermittent channel that is inside the unit. This S.M.Z. will be partially cut only and will be cable yarded.

Harvest operations will be covered by our usual timber sale contract and bending procedures.

The Sediment and Erosion Control Plan as submitted is adequate and applicant can proceed with proposed activity as planned.

Paul E. [Signature] 12-16-91
 Supervisor signature Date

Additional planning and information is needed before a Sediment and Erosion Control Plan can be approved. Explanation: _____

 Supervisor signature Date

Additional planning and information is needed. Along with a recommended team inspection of applicant and Conservation District supervisor before a Sediment and Erosion Control Plan can be approved. Explanation: _____

 Supervisor signature Date

The Sediment and Erosion Control Plan as modified is adequate and applicant can proceed with the proposed as planned.

 Supervisor signature Date

X

VI 61

FWP Use Only
Form Letter to Applicant
Water Code: _____
Appl. No. _____

STREAM PRESERVATION ACT PERMIT APPLICATION

"Notice of Construction"
(Please Print or Type)

Address: (see reverse side)

To: MONTANA DEPARTMENT OF FISH, WILDLIFE & PARKS
Region 8 - Helena Attn: Fish Manager
Attn: Ken Chrest
1420 E. 6th Ave.
Helena, MT 59620

SPONSORING AGENCY: Dept. of State Lands
Address: 8001 North Mont. Ave.
Helena, MT 59601
Official In Charge: D.J. Bakken
Title: Unit Forester

Contact Person: D.J. Bakken
Title: Unit Forester
Telephone: 444-3633
Telephone: 444-3633

PROJECT IDENTIFICATION: Project Name: Road access for proposed sale in Sawmill Gulch
Project No. _____ Waterbody: Rattlesnake Creek
Location: Township 13N Range 5W Section 19 County: Lewis & Clark
Location to Nearest Town: approximately 30 miles northwest of Helena

Project Features: Bridge Culvert Other _____
 Work Bridge and Dredging _____
Removal Hydraulic Structure _____
 Bridge Demolition Channel Change _____
 Core Drill Bank Stabilization _____

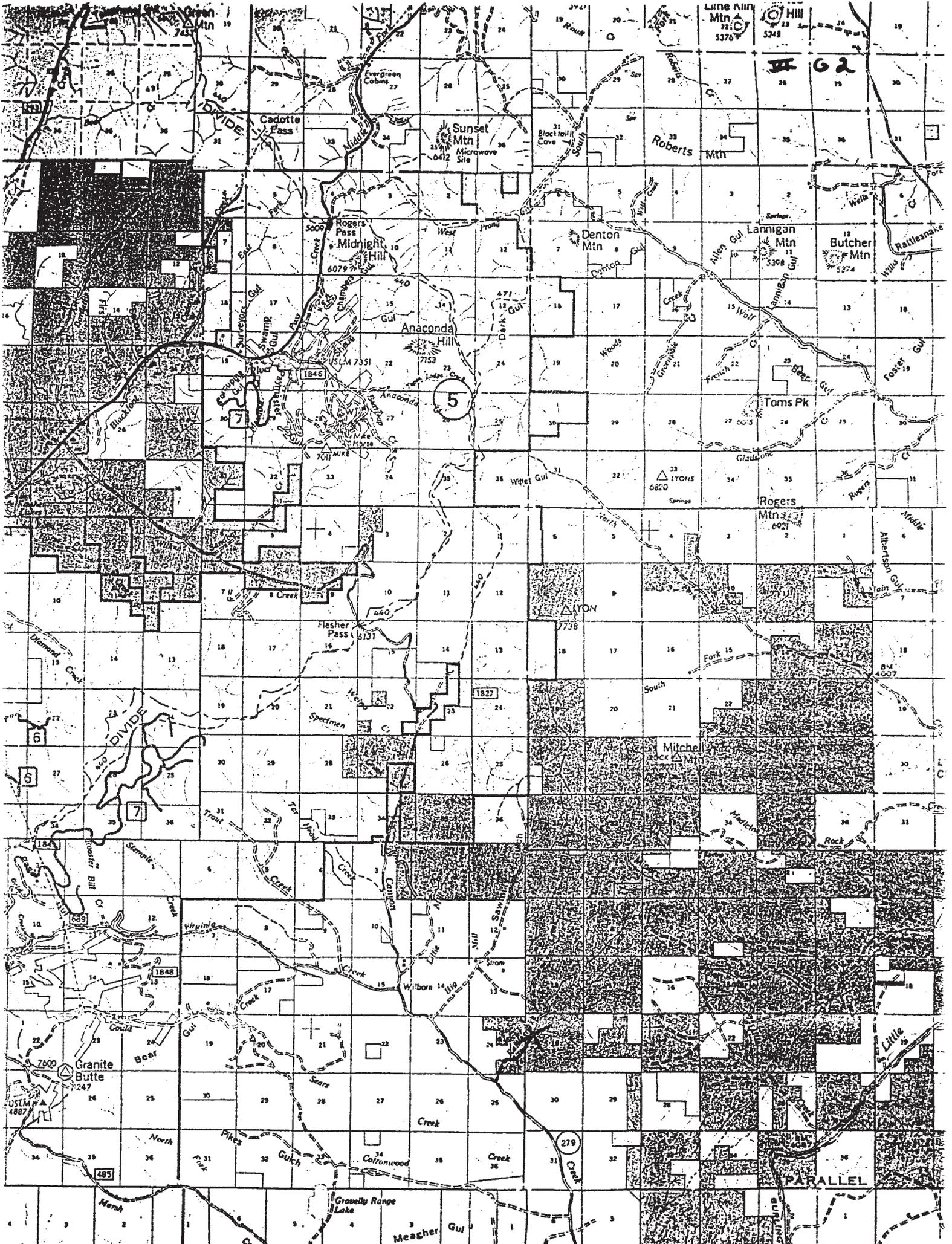
Project Scheduling: Contract Letting 6 / 30 / 92
Construction Period 7 / 1 / 92 to 11 / 30 / 92 or
7 / 1 / 93 to 11 / 30 / 93

Allow sixty (60) days for application processing. A set of preliminary plans or sketches of the proposed project must accompany this application. (NOTE: Dept. of Hwy. sponsored projects require two sets of plans sent with this form to Helena FWP address.)

Plans Sketches Other location map

Darrell Bakken
Signature

2-20-92
Date



Sieben Ranch Company
 Temporary Right-of-Way Agreement

Mile	Station	Road Log
0.00	0+00	Start at junction of Rattlesnake Rd. and Highway 279
	2+28	Fill pot hole, install drain dip and sediment trap
	2+61	Rip rap head cut between road and creek
	3+91	Repair inlet to 24" aluminum CMP
	6+47	Install drain dip and sediment trap
	9+00	Install drain dip and sediment trap
	12+67	Install drain dip and sediment trap, start gravel fill over rock
	13+63	End fill over rocks, start inslope
	14+36	Maintain inslope and start gravel fill over rocks
	15+62	Drain dip, sediment trap and possible fill source
	17+03	Start gravel fill over rocks - haul in - do not drift fill past existing CMP @ STA 16+ 35
	17+83	Install drain dip and sediment trap
	18+43	Start inslope
	19+83	End inslope
	23+56	Install drain dip, start shifting centerline 8' into the cutslope bank
	25+21	Install drain dip
	26+66	Install drain dip
	27+66	Tapper road centerline back to existing location
0.55	29+04	Follow existing road, Sieben Ranch begins blading
0.95	50+16	End blading of existing road, start new construction
	54+74	Install permanent CMP, 36" x 34'
	59+97	Intersect old roadbed
1.2	64+92	Intersect existing road, Sieben Ranch begins blading
3.3		Install drain dip for seep
6.55		Install drain dip for seep
7.35		Repair inlet of existing CMP
8.25		Start new construction, see below
8.6		Sieben Ranch ends blading at saddle
		New Road Construction, starting at mile 8.25
	0+00	Start new construction
	9+39	Drive through draw crossing, 70' above a spring
	10+58	Cross from Sieben to state property
	15+77	Pass below rock outcrop, ripable
	22+19	End road

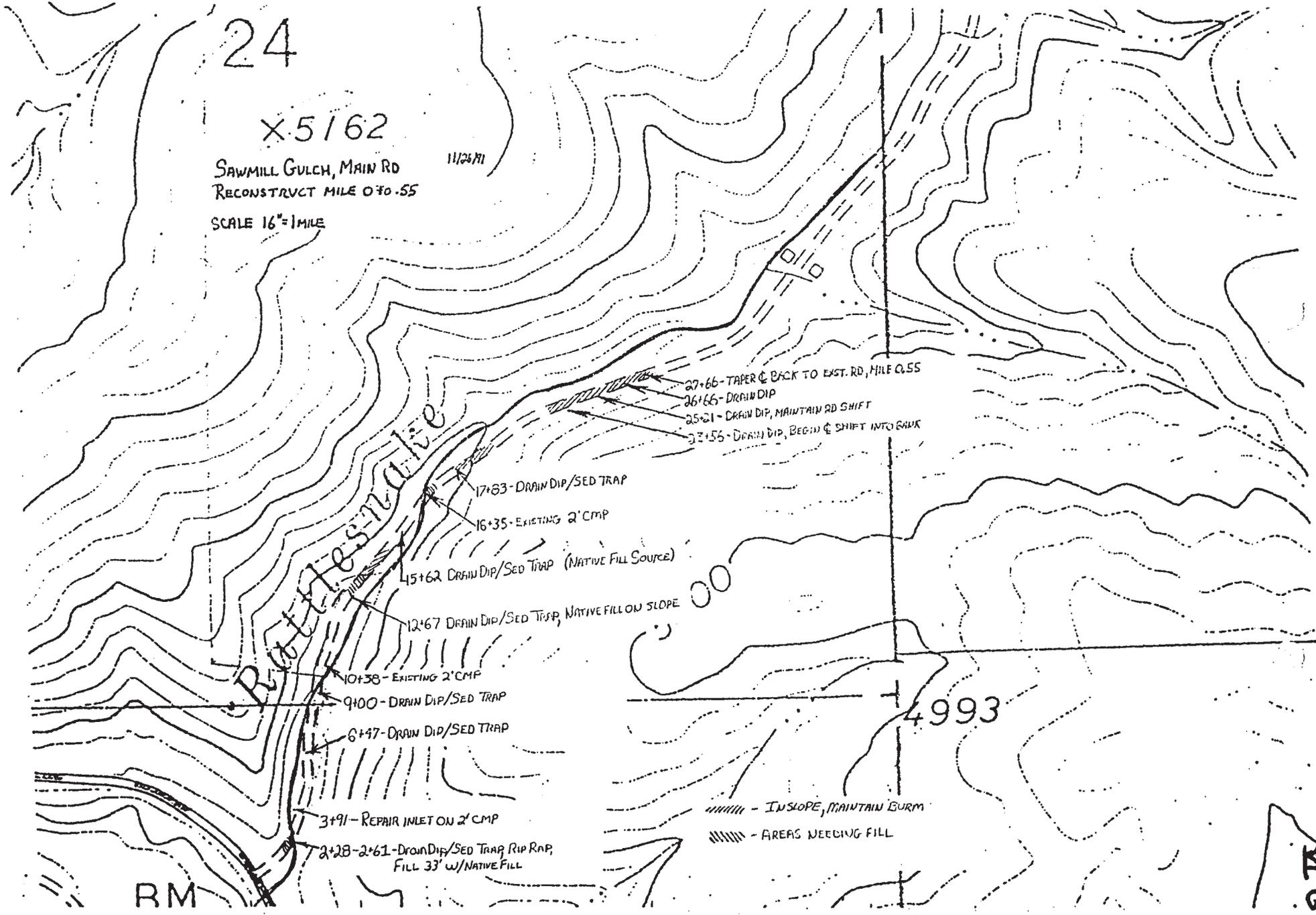
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X.5162

SAWMILL GULCH, MAIN RD
RECONSTRUCT MILE 0 TO .55

11/24/71

SCALE 16" = 1 MILE



1194

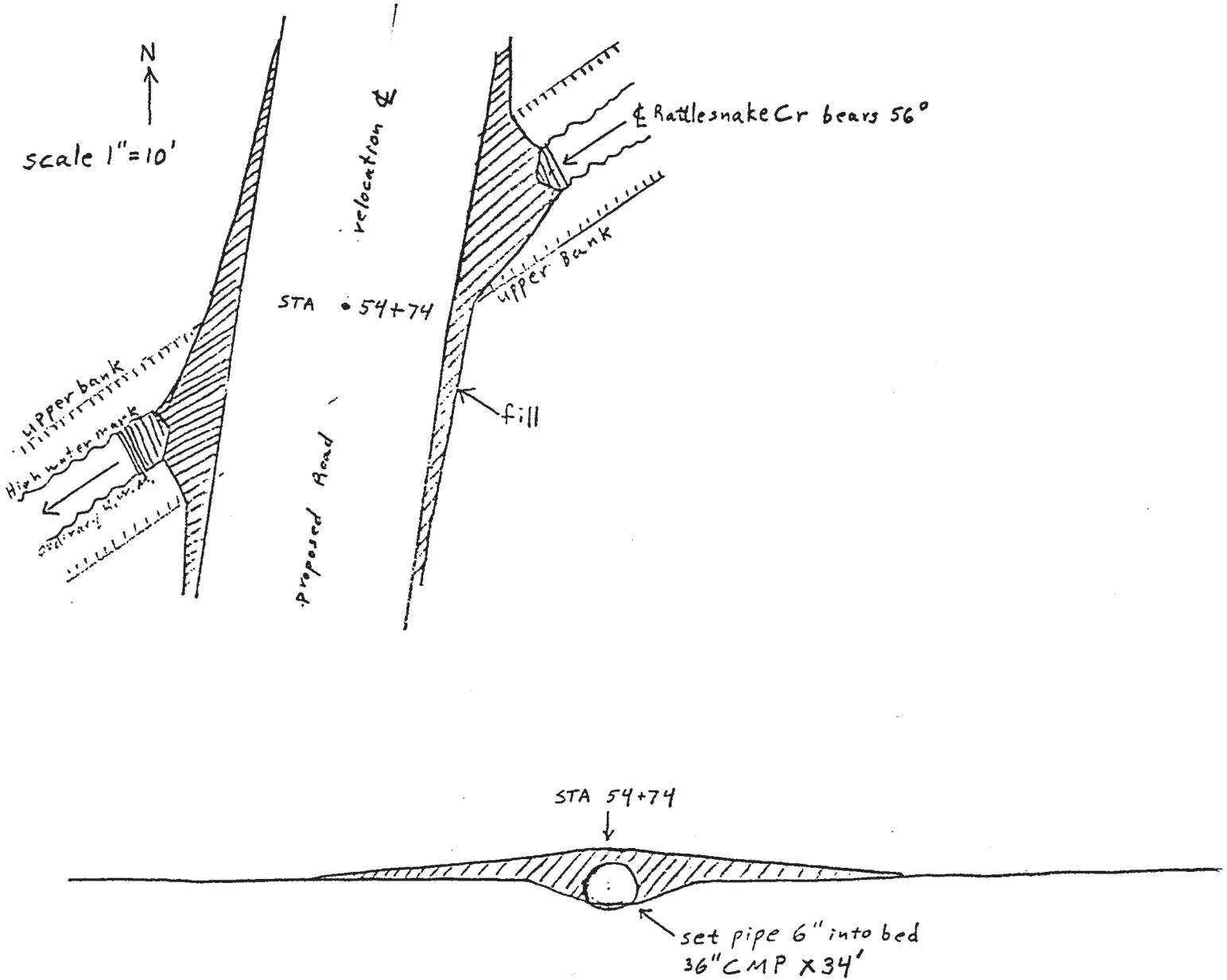
CMP Installation

Sawmill Gulch Proposed Timber Sale

STA 54+74 of Sieben Access Rd

Rattlesnake Cr. Drainage

SW 1/4 NW 1/4 19, T13N, R5W



**Montana Department
of
Fish, Wildlife & Parks**



1420 E. 6th Ave.
Helena, MT 59620
March 16, 1992

D.J. Bakken
Dept. of State Lands
8001 North Montana Ave.
Helena, MT 59620

SUBJECT: Permit No. MISC-1-92 R-8
Waterbody: Rattlesnake Creek
Project Name: Rattlesnake Cr. culvert installation
Water Code: 17-6112

Dear D.J.:

Relative to the Montana Stream Preservation Act, the Department has completed our review of your proposed project on Rattlesnake Creek. Your project has been approved with the following special conditions:

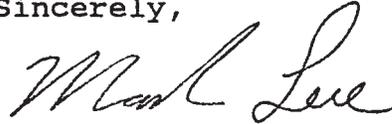
1. All in-stream work shall be completed in an expeditious manner to avoid unnecessary impacts to the stream;
2. Extra precautions shall be taken to preserve existing riparian vegetation;
3. No machinery will be allowed in the stream;
4. Construction activities performed in the stream and immediate vicinity shall be conducted in a manner to reduce in-stream turbidity along with minimizing disturbances to the streambed and/or streambank;
5. During installation of the culvert, the channel will be dewatered by something other than an unlined diversion ditch. Pumping or piping water around the construction site, as well as the use of a lined diversion ditch are acceptable practices;
6. All streambank and adjacent areas disturbed by the construction activity shall be protected with temporary erosion control measures during construction. These areas shall be reclaimed with long-term erosion control measures and revegetated immediately after construction;

NOTE: This permit is valid for one year from the date of receipt.

- This project will cause a significant increase in turbidity, therefore, the Department of Health and Environmental Sciences, Water Quality Bureau, should be contacted for an exemption from the surface water quality standards (3-A Authorization).

X This project will not cause significant turbidity and a 3-A Authorization will not be required.

Sincerely,

A handwritten signature in cursive script that reads "Mark Lere".

Mark Lere
Region 8 Fisheries

c: Ken Chrest

Silvicultural Prescriptions

Sawmill Gulch Timber Sale

W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 30, T14N, R5W

There are four (4) commercial stands of timber located on the Sawmill Gulch section. The selected alternative was to implement forest management and harvesting on 20 acres in two of these stands. The attached table and map show the location and summarize the variables for these timbered stands. The following paragraphs will further describe the selected silvicultural treatments.

Stand 1 is a 19.5 acre stand located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 30. Stand 1 is overmature Douglas-fir. The average age for Stand 1 is 225 plus years. Growth in diameter has been very slow for the last century. The average diameter is 17 inches dbh, heights are 55 to 70 feet. There has been moderate to heavy western spruce budworm activity in this area for the last decade. Reconnaissance shows no established seedlings in the understory. This is probably due to the budworm combined with the old age and low vigor of the stand. The slopes average 40%. Slope combined with road access options indicate use of a cable yarding system for Stand 1. A portion of the ridge toe on the south end of the stand is in a blind lead position. The operable area for harvest Unit 1 is therefore only 13 acres. There is abundant soilwood in the form of down and decomposed trees already on-the-site. A small intermittent stream originates and passes through Stand 1. To comply with State law, and to protect this stream course, the Streamside Management Zone (SMZ) should be delineated and carefully managed.

Stand 1 should be managed as an evenaged unit. Outside of SMZ, clearcut all live trees. Standing dead snags may be left if they do not pose a threat to crews during cable yarding activities. All slash (tree tops and non-merchantable trees) should be yarded and piled on and/or below the road when logging is completed. Tree length skidding could be an option depending on the preferences of the operator, as could excavator piling. I do not feel there is sufficient space for processing large trees on the road. Burn slash piles and rehabilitate burn spots by seeding to grass.

During spring 1994, the unit should be hand planted. Hand scalp planting spots of 8 x 8 inch to 12 x 12 inch in selected microsites. Choose microsites on the north sides of stumps and down logs. Plant 200 Douglas-fir and 100 lodgepole pine per acre (approximately 12' x 12' spacing). Use C-4 containerized stock from the Missoula nursery. Collect site specific Douglas-fir seed if possible, if not, select from available sources. Use lodgepole pine seed from Sears Gulch (Pikes Gulch Sale) which was previously collected. Complete survival studies in years 1, 5, and 10 following harvest. Replant or interplant if stocking drops below 200 trees per acre.

Stand 2 is located just below the ridge on the southside, above Unit 1. The most likely road access occurs near a slight slope break which also conveniently divides Units 1 & 2. Stand 2 is 7.7 acres total, with an average slope of 35%. The average diameter is still 17 inches. Stand 2 has a two aged structure. Clumps of trees and scattered individuals form the dominant overstory and average 225 plus years old. Approximately 110 years ago, Stand

2 was an open stand of fir, at that time an understory became established and has since filled in all available growing space. There are no established seedlings or saplings in this stand. The rangeland edges of Stand 2 support sapling size stands of Douglas-fir encroachment. Stand 2 is located on the upper 1/3 of the slope and is of special concern for elk thermal cover. The upper rangeland edge of Stand 2, with its thick encroachment and large wolfy thermal cover trees should be excluded from harvest. This will reduce the operable area in Unit 2 to 7 acres.

To maintain long term thermal cover availability, Stand 2 should be managed as an unevenaged stand. As described above, the two aged structure exists as a combination of clumps/groups and individual trees. Therefore, a combination individual tree selection and group selection will be used. Total net volume in Unit 2 is 136 MBF. Mark approximately 20 MBF to cut in Unit 2. Use the following marking guides:

- 1) specifically retain large diameter trees with live crown ratios of 80-90% in the upper portions of Unit 2 for thermal cover.
- 2) Do not mark individual merchantable trees within clumps of generally submerchantable trees.
- 3) harvest small merchantable/submerchantable trees within clumps which are generally merchantable, to create small openings.
- 4) limit group size to approximately 0-1/4 ac.
- 5) evaluate skidding alternatives prior to marking a group to cut. Omit groups which require damage to uncut clumps for access.
- 6) Stagger harvest groups where possible to create a mosaic of harvest areas.

Desired future stand should contain 400 seedlings per acre, 200 saplings per acre, 100 sawtimber (crop) trees per acre and scattered individual thermal trees and clumps.

Tree length skid within Unit 2. Use skidding to create light scarification of the seedbed. Monitor natural regeneration in years 5, 10, and 15 after harvest. Expect slow regeneration due to persistent western spruce budworm. If less than 200 seedlings per acre are established by year 15, then planting or interplanting may be needed. Consider use of alternative species to maintain long term thermal cover values in stand.

VI H3

TABLE A
Stand Conditions and Prescriptions
Sawmill Gulch - Alternative B

Stand #	1	2	3	4	5	NF	Total
Total area	19.5 ac	7.7 ac	4.7 ac	24.8 ac	1.8 ac	17.1 ac	75.6
Unit #	1	2	--	--	--	--	--
Operable harvest area	13 ac	7 ac	--	--	--	--	--
Slope Avg.	40%	35%	40	40-45	40	0-35	--
Aspect	S & W	S	E	N	NE	ridge	--
Habitat type	Psme/cage	Psme/cage	Psme/cage	Psme/vagl	Abla/vagl	--	--
Timber type	D9W	D9W	D9M	LP8MP	NC	NF	--
Age	225+	110 & 225+	110 & 225+	130-170	130-170	--	--
Avg. dia.	17"	17"	14"	6"	6"	--	--
T.P.A over 7" dbh	210	232	180	200	200	--	--
Gross vol.per acre	24.16M	24.16M	16M	6M	less than 1M	--	--
Target stand spp.	DF & LP	DF	--	--	--	--	--
Seedling Stocking	300 planted	400 natural	--	--	--	--	--
Final stocking	200 TPA	200 TPA	--	--	--	--	--
Silvic *	CC	SEL.	--	--	--	--	--
Brush**	Y.U.M.	T.L.	--	--	--	--	--
TSI***	Plant-ing	none	--	--	--	--	--

* Silvicultural treatments

CC = clearcut

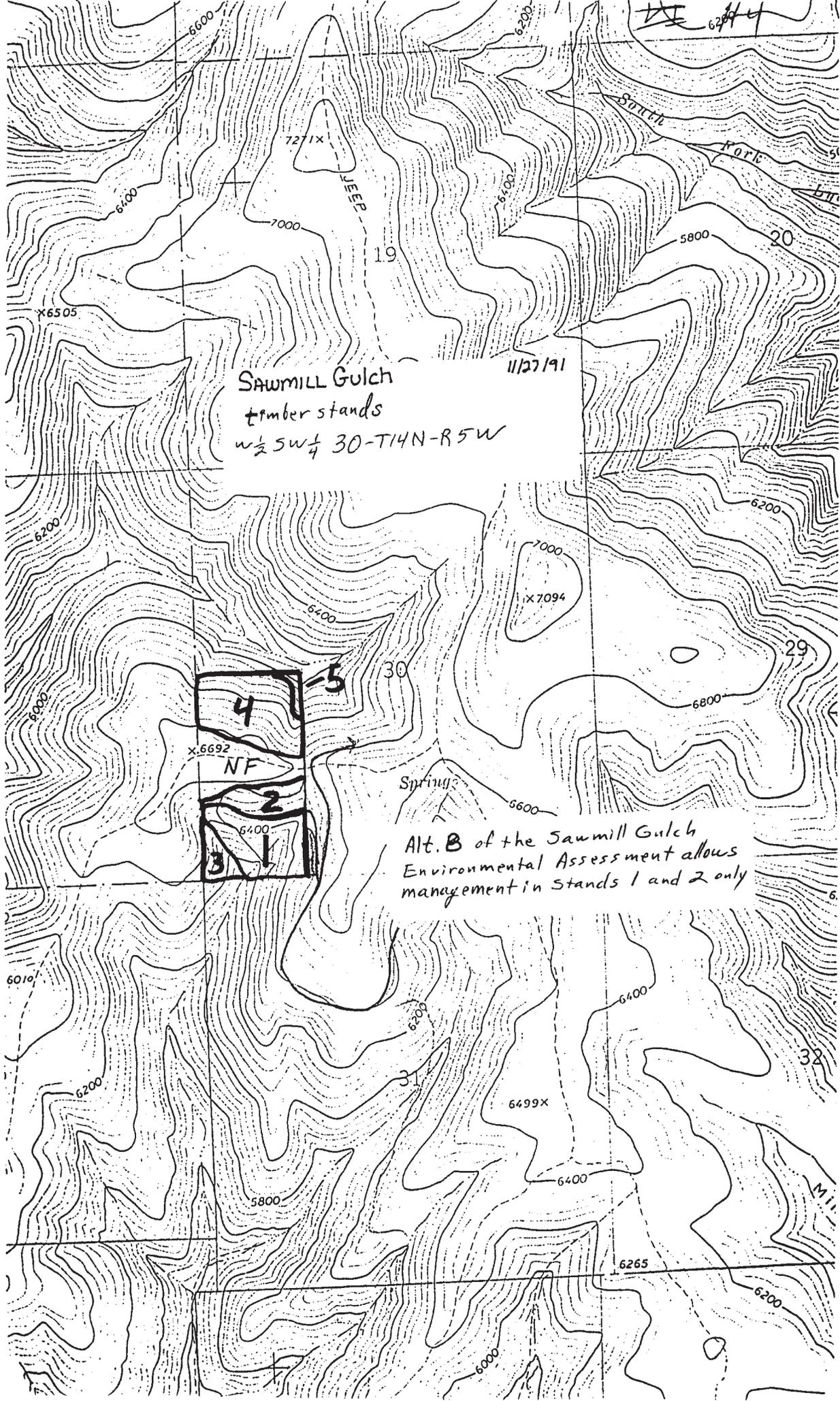
SEL = Individual Tree Selection and/or Group Selection

** Brush treatments

YUM = Yard unmerchantable material and tops and pile on and below road, or excavator piling

T.L. = tree length skid to landing and pile slash

*** Timber Stand Improvement



11/27/91

SAWMILL Gulch
timber stands
w 1/2 SW 1/4 30-T14N-R5W

Alt. B of the Sawmill Gulch
Environmental Assessment allows
management in stands 1 and 2 only



CENTRAL LAND OFFICE
Silviculture Preparation
Field Analysis

Sec. 30 Twp. 14N Rge 5W
Acres: 13 Slope: 40 avg. Unit # 1
Aspect: S and W Elevation: 6200 - 6460
Habitat Type: Psme / cage

Description of Existing Stand:

Age: Dominant 225 - 300
Codominant —
Understory —

Height: 63' (50 - 70')
Growth: extremely slow (2 inch db.h. in the last century)
I & D: budworm - chronic - no seed production - no understory seedlings
≈ 210 TPA now

Constraints:
S.M.Z. through unit & along w. side of unit.
lots of soil wood & down logs already present

Silvicultural Objectives - Target Stand:

Structure: evenaged
Species: (33) DF & LP (13)
Stocking: final 200 TPA

Treatment Alternatives:

- * 1) clearcut overmature stand, plant 200 DF & 100 LP / ac - microsite to stumps & down logs
- 2) seed tree harvest - natural regen (not so likely to succeed due to overmature age & chronic spruce budworm)
- 3) shelterwood - not preferred - enough good microsites for planting, too much budworm for natural, could underplant - but would damage lots of seedlings during b.s.R. which would be needed due to budworm.

Site Preparation/Hazard Reduction:

hand scalp small spots 8" x 8" - 12" x 12" and microsite plant seedlings
Yum yard tops and nonmerch, or tree logs, or excavator piling.

TSI:

microsite planting 200 DF & 100 LP / ac containerized C-4 stock
in the spring of 1994. Monitor survival in years 1, 5, 10.
Replant or interplant if stocking drops below 200 TPA

CENTRAL LAND OFFICE
Silviculture Preparation
Field Analysis

Sec. 30 Twp. 14N Rge. 5W
Acres: 7 Slope: 35 Unit #: 2
Aspect: S Elevation: 6440 - 6560
Habitat Type: Psme / cage

Description of Existing Stand:

Age: Dominant 225+
Codominant 110
Understory -

Height: 57

Growth: very slow

I & D: spruce budworm - some encroachment into adj. range land
has become established - but none below the stand

Constraints: Elk thermal & hiding cover on ridge (upper 1/3 of slope)

Silvicultural Objectives - Target Stand:

Structure: uneven aged
Species: DF
Stocking: 400 saplings, 200 saplings, 100 sawtimber size trees/ac
plus scattered individual thermal trees & clumps

Treatment Alternatives:

- * 1) ITS - mark to cut light amt. of volume, leave large wolfy thermal trees & clumps w/ small amt of merch. vol.
- * 2) Group selection - small stand size (7ac) would yield an un-managably small # of groups if used alone

Site Preparation/Hazard Reduction:

scarify by tree length skidding
pile slash at landings

ISI:

monitor natural regen. yrs 5, 10, & 15
expect slow regen. success due to budworm -
underplanting to alt. spp. may be needed to achieve long term
maintenance of thermal cover stand.

10/8/92

**Addendum to the Sawmill Gulch
Environmental Assessment**

The Sawmill Gulch Environmental Assessment was completed on May 12, 1992 when Garry Williams, Manager Forest & Land Programs, issued his decision notice. Shortly after that time, we became aware of additional private harvesting plans within the wildlife cover analysis area.

The purpose of this addendum is to evaluate the effects of the additional private harvest. An additional public comment period was opened on July 26 by publication of a notice in the legal section of the Helena Independent Record. The comment period was left open until September 15, 1992.

Four new Hazard Reduction Agreement were opened for newly planned private harvest within the cover analysis area. These proposed private harvests may cut an estimated 1219 acres of previously unharvested timber land. (161 acres of the newly proposed private harvests are in areas previously harvested, which have already been given a cover value of zero.) The possible results of this private harvest, should it all take place, are shown in the attached tables. The private harvest areas were field inspected on 9-29-92. Field review showed that much of the proposed private harvest is not yet completed. Based upon conversations with John Baucus (9-8-92) these private timber contracts are still set to expire at the end of 1992. Mr. Baucus stated that when these are over he probably will not be issuing anymore contracts for the next couple of years.

The following tables are taken from the 8/15/92 revision of the Lyons Mountain Area Wildlife Cover Analysis 1992, which is on file at the Helena Unit Office:

**Update to the 1992 Lyons Mountain Area
Wildlife Cover Analysis**

Additional private harvest has taken place or is planned since this analysis was completed. The following tables note the cover changes caused by these actions. Some of the planned private harvest will be removing residual trees in previously harvested areas. The previously harvested areas were given zero cover value in the original analysis, hence additional harvest in these areas will not be counted a second time. Data is from Hazard Reduction Agreement (HRA) files at the Helena Unit. The following HRA's were opened for this area after the original decision notice was issued (May 12, 1992):

<u>HRA #</u>	<u>Date Opened</u>	<u>Location</u>
25-B-16570	May 17, 1992	Little Mill Creek
25-B-16624	May 19, 1992	Specimen Creek
25-B-16626	June 3, 1992	Miners Gulch
25-B-16634	June 8, 1992	Sawmill Gulch

<u>Legal Description</u>	<u>Total Planned Harvest Area</u>	<u>Harvest Acreage Planned for Previously Unharvested Sites</u>
T13N,R5W, Sec. 4	80 ac.	80 ac.
5	5 ac.	0
6	7 ac.	4 ac.
7	10 ac.	0
T13N,R6W, Sec. 1	20 ac.	20 ac.
2	80 ac.	80 ac.
T14N,R5W, Sec. 19	45 ac.	34 ac.
29	12 ac.	12 ac.
30	100 ac.	88 ac.
31	8 ac.	8 ac.
32	133 ac.	93 ac.
33	120 ac.	60 ac.
T14N,R6W, Sec. 27	560 ac.	560 ac.
28	120 ac.	120 ac.
35	<u>60 ac.</u>	<u>60 ac.</u>
Totals	1380 ac.	1219 ac.

The original Lyons Mountain Area Wildlife Cover Analysis (completed 30 January 1992) showed the following results:

ORIGINAL

Total analysis area (DSL & non DSL combined)	54,876 ac.
Land area not harvested	37,191 ac.
Land area harvested	7,143 ac.
Land area of open grass	10,542 ac.
% of total land area not harvested	68%
% of forested area not harvested	84%
Non-DSL analysis area only	45,751 ac.
Land area not harvested, non DSL	28,824 ac.
Land area harvested, non DSL	6,960 ac.
Land area open grass, non DSL	8,967 ac.
% of total land area not harvested, non DSL	65%
% of forested area not harvested, non DSL	81%
DSL analysis area only	9,125 ac.
Land area not harvested, DSL	7,367 ac.
Land area harvested, DSL	183 ac.
Land area open grass, DSL	1,575 ac.
% of total land area not harvested, DSL	80%
% of forested area not harvested, DSL	98%

When the newly planned private harvests are added to the original data we arrive at the following revised numbers.

REVISED

Total analysis area (DSL & non DSL combined)	54,876 ac.
Land area not harvested	35,972 ac.
Land area harvested	8,362 ac.
Land area open grass	10,542 ac.
% of total land area not harvested	65%
% of forested area not harvested	81%
Non-DSL analysis area only	45,751 ac.
Land area not harvested, non DSL	28,605 ac.
Land area harvested, non DSL	8,179 ac.
Land area open grass, non DSL	8,967 ac.
% of total land area not harvested, non DSL	62%
% of forested area not harvested, non DSL	78%
DSL analysis area only (NO CHANGE)	9,125 ac.
Land area not harvested, DSL	7,367 ac.
Land area harvested, DSL	183 ac.
Land area open grass, DSL	1,575 ac.
% of total land area not harvested, DSL	80%
% of forested land area not harvested, DSL	98%

These data represent the cover conditions as of 8/15/92 per my review of HRA records. The mylar overlay on file at the Helena Unit Office was revised to show these changes.

The tables show cover percentages for the total analysis area, non-DSL & DSL lands respectively. This breakdown is done to address specific statements in the Department of State Lands Standards and Guidelines for grizzly bears and elk winter range. Interpretation of the tables is found in the following paragraphs.

Grizzly bear guidelines in use by the Department in the northern Rocky Mountains recommend maintaining 40% of the total land area in cover. The new private harvests give us a new pre-existing condition of 65% (65.55%) uncut forest on the total 54876 acres study area. Implementation of the state proposal would change this to 65.51% uncut forest. A decrease of 0.04%.

Elk winter range guidelines recommend deferral of DSL harvest if thermal cover on non-DSL lands drops below 30% of the forested area, or if combined hiding and thermal cover drops below 50% on non-DSL forested areas. With the new private harvests, the forested area on non-DSL will be 78% (77.76%) uncut. Implementation of the DSL proposal, with its joint 2 acres of private harvest, will have no statistical change (unharvested will still be 77.76%).

Elk winter range standards require DSL to defer harvest if thermal cover on DSL land falls below 30-50% of the forested area, or if combined hiding and thermal cover drops below 50-70% on DSL forested lands. The new private harvests have caused no change to previously calculated conditions on DSL land. The pre-existing condition is that 98% (97.58%) of the DSL forested land is uncut. Implementation of the proposal will reduce this to 97.31%, a decrease of 0.27%.