

RECEIVED

JUL 06 1992

ENVIRONMENTAL
QUALITY COUNCIL

Forest Management Notebook 08

DS-251 ENVIRONMENTAL ASSESSMENT COVER SHEET File#: 016.4

APPLICANT Department of State Lands, NWLD, Plains Unit

TYPE OF OPERATION Burke Hill Timber Sale

LOCATION Section 16, T21N, R24W, M.P.M.

PERSON PREPARING E.A. Jon M. Hayes () DRAFT EIS
Lead Mgmt. Forester, Plains Unit (X) NO DRAFT EIS

DATE PREPARED March 17, 1992 EXPECTED IMPLEMENTATION DATE June 1992

REVIEWED BY *[Signature]* RECOMMENDATION () DRAFT EIS
(X) NO DRAFT EIS

REVIEWED BY *[Signature]* RECOMMENDATION () DRAFT EIS
(/) NO DRAFT EIS

REVIEWED BY *[Signature]* RECOMMENDATION () DRAFT EIS
~~() NO DRAFT EIS~~

APPROVED BY *[Signature]* RECOMMENDATION () DRAFT EIS
(X) 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 Term
1. TOPOGRAPHY					X	X
	See EA/Prescription, Pg. 1 & Exhibit B					
2. GEOLOGY; stability					X	X
	See EA/Prescription, Exhibit D					
3. SOILS; Quality, distribution					X	X
	See EA/Prescription, Pgs. 1,2,6,8,9 and Exhibit D					
4. WATER; Quality, Quantity, Distribution					X	X
	See EA/Prescription, Pg. 1,4,6 and Exhibit C					
5. AIR; Quality					X	X
	See EA/Prescription, Pg. 9					
6. UNIQUE, ENDANGERED, FRAGILE, or LIMITED environmental resources					X	X
	See EA/Prescription, Pgs. 2-3					

DSL-251 continued

BIOLOGICAL ENVIRONMENT	SIGNIFICANT		INSIGNIFICANT WITH MITIGATION		INSIGNIFICANT AS PROPOSED	
	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
1. <u>TERRESTRIAL</u> , <u>AVIAN</u> , & <u>AQUATIC</u> ; species and habitats					X	X
	See EA/Prescription, Pgs. 2, 4-9					
2. <u>VEGETATION</u> ; quantity, quality, species					X	X
	See EA/Prescription, Pgs. 2-9 & Exhibit E					
3. <u>AGRICULTURE</u> ; grazing crops, production					X	X
	See EA/Prescription, Pg. 3					
HUMAN ENVIRONMENT						
1. <u>SOCIAL</u> structure and mores					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 & PERSONAL INCOME</u>					X	X
7. <u>EMPLOYMENT</u> ; quantity and distribution					X	X
8. <u>TAX BASE</u> : local & State tax revenue					X	X

DS-251 continued

HUMAN ENVIRONMENT (continued)	SIGNIFICANT		INSIGNIFICANT WITH MITIGATION		INSIGNIFICANT AS PROPOSED	
	Short Term	Long Term	Short Term	Long Term	Short Term	Long Term
9. <u>GOVERNMENT SERVICES:</u> demand on					X	X
10. <u>INDUSTRIAL, COMMERCIAL & AGRICULTURAL</u> activities					X	X
11. <u>HISTORICAL & ARCHAEOLOGICAL</u>					X	X
	See EA/Prescription, Pg. 3					
12. <u>AESTHETICS</u>					X	X
	See EA/Prescription, Pg. 5					
13. <u>ENVIRONMENTAL PLANS</u> and <u>GOALS</u>					X	X
14. <u>DEMANDS on ENVIRONMENTAL RESOURCES</u> of land, water, air and energy					X	X
15. <u>TRANSPORTATION</u> networks and traffic flows					X	X
	See EA/Prescription, Pgs. 4, 6 & 8					

Route Copies to:

1. Environmental Quality Council (EQC)
2. File (016.4)

BURKE HILL TIMBER SALE
SUMMARY OF ACTION

The proposed action is a timber sale set up to generate revenue for the Public School (C.S.) Trust Grant. Also, this action will minimize volume and value losses presently being incurred due to various insect, disease and decay problems. The sale consists of one harvest unit totaling 266 acres. A total of 1,672 thousand board feet (MBF) of sawtimber will be harvested. This sale is located in Sanders County, on the Flathead Indian Reservation, in Section 16, T21N, R24W. The gross sale area is 560 acres.

No new road construction will be necessary to properly access this area for this harvest entry. About 6 miles of road will require minor surface blading.

The sale area provides range for several big game species. Recommendations of a wildlife biologist from the Confederated Salish and Kootenai Tribes have been incorporated into this sale to help protect the habitat for future game use.

Slash disposal and site preparation will be done by excavator piling and burning. Burning will take place during periods of good atmospheric ventilation to allow for rapid smoke dispersal.

No unusual land features were found on the sale area. There will be no impacts on or to adjacent lands. Tribal Cultural Resource Specialists from both the Flathead and the Kootenai Cultural Resource Committees were shown the sale area. No historic or cultural sites were located.

No major environmental impacts will result from this harvest operation. A further discussion of impacts is included in the EA/Silvicultural Prescription.

EA/SILVICULTURAL PRESCRIPTION

for

BURKE HILL TIMBER SALE

I. LOCATION:

The Burke Hill Timber Sale lies approximately 1½ miles south of the town of Hot Springs, Montana, in Sanders County. This sale is located within the Flathead Indian Reservation in Section 16, T21N, R24W (see Sale Map - Exhibit A). The State owns 560 acres of this section. A total of 266 acres will be treated in this harvest entry.

This parcel of land is surrounded on all sides by a combination of Tribal and privately owned lands.

Access to this section is by way of Hot Springs Road HS-1000 which intersects Highway 28 at the 11.5 mile marker.

II. SITE DATA:

A. Physiography:

This sale area lies on a moderately steep hillside with ephemeral draws that drain into Hot Springs Creek approximately 2 miles downstream from the State section (see Topography Map - Exhibit B).

Slopes within the sale area vary from 20-55%. The main aspect on the sale is north. Elevations within the harvest unit vary from 3459 feet to 4280 feet.

B. Hydrology:

This section lies within an unnamed third order tributary watershed of Hot Springs Creek. The sale area is drained by two first order channels.

The area receives a low amount of precipitation - approximately 16-18" - which results in low runoff. There are several existing water rights from domestic wells and livestock use immediately downstream of the sale area.

The DSL Hydrologist has reviewed the sale plans for this harvest and made an on-site inspection of the area (see Hydrologist Report - Exhibit C). There is no discernable stream channel located within the planned harvest unit.

C. Soils:

The soils in the foot slopes of the harvest unit are mainly deep very gravelly silt loam soils with a 4-8" surface layer of volcanic ash influenced silt loams. The upper slopes of the harvest unit include rocky, moderately deep soils weathered from colluvium and bedrock. Surface soils are 4-6" volcanic ash.

The DSL Soil Scientist has reviewed the sale plans for this harvest and made an on-site inspection of the area. His main concerns are maintaining topsoil depth and minimizing soil displacement/erosion (see Soil Scientist Report - Exhibit D).

These soils are moderately productive, well drained and have a fairly long season of use.

D. Habitat Types:

This sale area contains two different habitat types (see Habitat Type Map - Exhibit E). The habitat types found within the harvest units are Pseudotsuga menziesii/Symphoricarpos albus (PSME/SYAL), and Pseudotsuga menziesii/Physocarpus malvaceus (PSME/PHMA). In some places throughout the sale area the two types extend into each other, and there are not necessarily distinct breaks.

The most widely represented habitat type is PSME/PHMA. This type covers approximately 246 acres of the harvest area. The PSME/SYAL type covers approximately 20 acres of the harvest area.

According to Forest Habitat Types of Montana, by Robert D. Pfister, et. al., these habitat types have the following yield capabilities:

PSME/SYAL	42 to 94 cu.ft./acre/year
PSME/PHMA	46 to 94 cu.ft./acre/year

Field observations indicate that these types are capable of growing within the mid to upper part of the ranges shown.

E. Wildlife Use:

The sale area provides range for several big game species, including deer, elk and black bear.

A wildlife biologist with the Department of Fish, Wildlife & Parks declined to review the sale area because it is located within the boundaries of the Flathead Indian Reservation.

Big game use of this area is variable, ranging from transitory and/or bedding activity, to winter use by deer. Intensity of use probably depends on snowpack depth, and the availability of favored browse species.

The sale area was reviewed by a tribal wildlife biologist in May 1991. Her main concerns were to maintain thermal cover and to

coordinate harvest activities on State and tribal lands so as not to displace resident deer populations. No written comments/recommendations were received from the tribal wildlife biologist. The sale proposal was approved by the Tribal Council (see Approval Letter - Exhibit F).

Adequate thermal cover will be maintained within the harvest unit, and our timber sale contract was shortened to two years so we won't be actively harvesting when the Tribe's Welcome Springs timber sale is active.

F. Human Use of the Area:

Due to the close proximity to the town of Hot Springs, quite a bit of general recreation takes place on this section. This area receives year round hunting pressure from tribal members.

A four wire, wooden pole telephone line transects the sale area to provide phone service to the Camas Prairie area south of Hot Springs (see Sale Map - Exhibit A).

G. Cultural & Historic Sites:

In the preliminary field investigation of the sale area, no obvious cultural, historic or archaeological sites were noticed.

Tribal Cultural Resource Specialists from both the Flathead and the Kootenai Cultural Resource Committees were shown the sale area. No historic or cultural sites were located, and clearance was issued (see Approval Letter - Exhibit F). Later, during the time of actual preparation, no sites were found.

H. Management History:

Three major timber sales have occurred on this section. The first was in 1951, when 1112 MBF of sawtimber was removed. The second was in 1978 when 395 MBF of sawtimber was removed, and the third sale occurred in 1983 when 960 MBF of sawtimber was removed.

The total volume removed to date from this parcel is 2,627 MBF. The sale of forest products from this section has brought in a total of \$84,526.58 in stumpage payments.

I. Grazing:

The grazing on this section is leased by Prongua Ranch Company. The permit allows 98 AUM's worth of grazing use each year. This area receives light summer grazing use by cattle. No grazing problems are in evidence.

The sale is expected to increase the forage and grazing potential on this site for both cattle and wildlife.

J. Roads:

The existing road system is adequate for this harvest entry. No new road construction is planned. The existing roads however, will require minor blading and drainage improvement.

A portion of the old unmaintained county road that is located in the shallow draw bottom will be closed with earthen barriers. This road was poorly located, the grade is too steep and it is impossible to maintain. We have tried unsuccessfully to close this portion of the road in the past.

K. Trust Account:

This section, totalling 560 acres of State Trust Land, is part of the Public School (C.S.) Trust Grant.

III. CUMULATIVE EFFECTS:

A. Water Yield:

There are no water yield cumulative effect constraints with this proposed sale. This is based on the following reasons: 1) only a moderate level of harvest and road construction has occurred in the drainage; 2) the sale prescription is for 266 acres of selection harvest; and 3) the low amount of runoff produced over the sale area.

B. Wildlife:

1. Grizzly Bear: This sale location lies outside the Northern Continental Divide Grizzly Recovery Area. Therefore, a cumulative effects analysis for grizzly bears is not needed for this sale.

2. Bald Eagle: There are no identified bald eagle nesting sites within many miles of the sale area. Therefore, a cumulative effects analysis for bald eagles is not needed for this sale.

3. Gray Wolves: There are no confirmed gray wolves or denning sites in or near the sale area.

Management in support of gray wolf recovery translates into protection of active denning sites and managing lands to support the wolf's prey base. Site-specific and cumulative effects considerations implemented for big game species in this proposal are considered adequate for gray wolves because they assure perpetuation of a healthy prey base.

4. White-tailed Deer: This sale area receives some winter range use by white-tailed deer, but due to the close proximity to the

town of Hot Springs and the year round hunting pressure, it's value as winter range is greatly reduced. Because the area is white-tailed deer winter range, the DSL White-Tailed Deer Winter Range Standards and Guidelines were used in designing this sale. The timing of sale activity was coordinated with the Tribe so as not to displace resident deer populations in the area. No adverse cumulative effects are anticipated.

C. Old Growth:

This section was first logged during 1951, at which time most of the old growth timber was removed. The stand within the planned sale area exhibits some of the characteristics of old growth as defined in the Interim Old-Growth Standards for State Lands. Although these standards do not apply to this scattered section, it is important to note that some characteristics of old growth are present. The State of Montana owns only 560 acres in this general vicinity. After this planned harvest, many large snags and large down logs, as well as large green cull trees, will remain. Old growth was not raised as an issue during sale planning.

D. Visual Qualities:

The upper one-half of the proposed harvest unit will be visible from the town of Hot Springs. A selective type of harvest will create some small openings, but will be scattered across the hill side and should resemble natural openings. This planned harvest activity will have no major effect on the general visual quality of the area.

IV. STAND DATA:

A. Composition and Stocking:

The overstory within the sale unit is a mixture of three species, dominated by Douglas-fir (70%), followed by ponderosa pine (21%), and western larch (9%). The percentage break down is based on trees per acre from the cruise data. Although the percentage breakdown is based on trees marked to cut, it is representative of the stand as a whole.

The overstory within the two habitat types (PSME/SYAL, PSME/PHMA) is dominated by Douglas-fir. The ponderosa pine is better represented in the PSME/SYAL type. The overstory as a whole is 60-80 years old with scattered individual, and small clumps of 250+ year old trees. The overstory stand volumes vary from 12 to 18 MEF per acre (gross). This stand is stagnating.

The understory stand is also dominated by Douglas-fir. The understory is 15 to 30 years old and varies from 10 to 30 feet tall. Stocking levels vary from 500 trees per acre to over 1,500 trees

per acre. This understory is clumpy in nature and is scattered throughout the harvest area. It occurs mostly in the openings created by the previous logging.

B. Insect and Disease Activity:

1. Mountain Pine Beetle: The Mountain Pine Beetle (Dendroctonus ponderosae) has attacked and killed some of the ponderosa pine in the sale area. Bark beetle populations appear to be on the decline. Few fresh beetle hit trees were observed during sale preparation.
2. Dwarf Mistletoe: Dwarf mistletoe is present in both the Douglas-fir (Arceuthobium douglasii) and the western larch (Arceuthobium laricis). It is quite severe at this time. An effort was made to mark all trees that are infected with mistletoe.
3. Brown Cubicle Root and Butt Rot: Many of the larger, older Douglas-fir contain visible signs of root rot (Phaeolus schweinitzii).
4. Western Gall Rust: A minor amount of western gall rust (Endocronartium harknessii) is present in the ponderosa pine. It is not yet serious, but could weaken individual trees.

V. MANAGEMENT OBJECTIVES:

- A. Provide revenue to the Public School (C.S.) Trust Grant.
- B. Remove decadent, mature and overmature trees, and provide for a healthy, well spaced stand through a commercial thinning treatment.
- C. Minimize volume and value losses presently being incurred due to various insect, disease, and decay problems.
- D. Protect the overall integrity of the section for big game use, while still meeting the timber management goals. Leave areas of big game thermal cover.
- E. Minimize soil displacement.
- F. Minimize potential soil compaction problems.
- G. Protect the water influence zones from damage.
- H. Correct existing road drainage problems.

VI. PUBLIC REVIEW AND INVOLVEMENT:

A public notice ad was placed in the three local newspapers (Plainsman, Sanders County Ledger, and the Clark Fork Valley Press) seeking public input regarding this proposed sale activity. A copy of the ad is included in this EA (see Exhibit I).

In addition to the newspaper ads, a letter was sent out to adjacent landowners. A total of 20 letters was sent out. Of the 20 letters, we had 5 responses - 4 in writing and one by telephone; two of the letters came back undeliverable.

All comments were either favorable or neutral. Concerns, if any, were easily incorporated into this EA.

A file with all of the comments received is being maintained and is available for review upon request at the Plains Unit Office.

VII. ALTERNATIVES:

A. No action:

This would involve no harvest of timber from the sale area and would have the following effects:

Income to the Public School Trust Grant would not be realized. No suitable (revenue generating) alternative uses have been identified at this time for this tract.

No action would forego silvicultural treatments designed to improve timber productivity on this site. This option would result in continued deterioration of this timber stand, and long term management opportunities would be reduced.

This action would also increase mortality, volume and value loss due to continued effects of Dwarf mistletoe and various other insects and diseases.

Security cover and thermal cover for big game animals would be unchanged. Forage value for cattle and big game animals would continue to decrease.

The chance of sedimentation due to ground disturbance from skidding and decking would be eliminated. However, existing road drainage problems would continue to cause sedimentation.

In the short term, scenic values would not change, but in the long term a deteriorating stand could cause a negative impact in scenic values.

B. Harvest Proposal:

The entire 560 acres was explored to determine the need and feasibility of timber harvesting activities. The north half of this section was commercially thinned in the late 70's and early 80's. The stands have responded well to the thinning. Upon inspection, it was determined that there is no need to enter the north half of the section at this time.

The south half of the section has received no treatment since 1951. There are pockets of severe Dwarf mistletoe infection and areas of over crowding. To reduce volume losses and improve vigor, some type of treatment would be required.

The section as a whole contains moderate slope readings with average slope readings being 35%. It is felt that this section could be tractor skidded without any adverse effects.

There are no roads in the extreme south end of the section, and new road construction may be required to access the south end of the section.

VIII. SELECTED ALTERNATIVE/PREScribed TREATMENT:

The selected alternative is Alternative B. It is felt that this option will best meet all of the management objectives.

The prescribed treatment includes one harvest unit totalling 266 acres, and no new road construction. We opted for longer skids rather than new road construction, as we felt this would have less of an overall impact. Roughly half of this tract of land will receive treatment on this entry.

The silvicultural system chosen to implement this harvest entry is a combination of sanitation/salvage and commercial thin/tree improvement cutting. The sanitation/salvage portion of the harvest is aimed at eliminating all trees that have been attacked or are at risk from mountain pine beetle and all trees infected by Dwarf mistletoe. The commercial thin/tree improvement portion of the harvest is aimed at eliminating poor trees in favor of the better ones and providing the remaining trees more room to grow.

The changing stand pattern made it necessary for field personnel to constantly be aware of the changes in stand type and to continuously change marking strategy. Marking guidelines are included with this EA/Prescription (see Marking Guidelines - Exhibit G).

The areas where establishment of natural regeneration is a sale objective are scattered throughout the sale area in conjunction with the mistletoe group selection marking. In those specific areas, site scarification will be needed to provide bare mineral soil for seedling

establishment. Scarification will occur at the time of brush piling. The goal will be to achieve about a 30% mineral soil exposure in these areas. To avoid soil displacement and soil compaction, the brush will be spot piled with a track mounted excavator.

Following removal of the merchantable timber in the harvest unit, the slash will be excavator spot piled and burned. This work will be done to reduce the fire hazard and dispose of the logging slash. Ten to fifteen tons/acre of large down woody material will be left on site for soil recruitment. Extensive mineral soil exposure is not needed. The piles will be burned when the atmospheric conditions are suitable for rapid smoke dispersal, and when weather conditions minimize the risk of an escaped fire (see Brush/TSI Appraisal - Exhibit H).

Throughout the sale area, large snags suitable for use by cavity nesters will be saved from cutting. The sale Purchaser will not be allowed to cut ponderosa pine or larch snags greater than 14 inches in diameter for firewood or pulp. Also, large, obviously cull, green trees were retained for cavity nesters.

IX. LONG-TERM PRESCRIPTION:

After this entry, the harvest area will remain well stocked and should be growing at an optimum rate. The harvest area, as well as the north half of this section, should be left alone to grow for 30-40 more years (except for salvage of blowdown, etc.). At that time, numerous options will be available for the next entry. These will include regeneration type harvests or a multi-age management system.

X. TIME TABLE:

Summer/Fall 1992	Harvest work to begin on sale.
September 1, 1994	End of sale contract. Sale terminated.
Fall 1994	Complete piling and burning.
2029	Next harvest entry.

XI. ACKNOWLEDGEMENTS AND LITERATURE CITED:

Gary Frank, Hydrologist, Department of State Lands, Missoula, MT.

Jeff Collins, Soil Scientist, Department of State Lands, Missoula, MT.

Ralph E. Goode, Tribal Forestry Department Head, Confederated Salish and Kootenai Tribes, Ronan, MT.

Clarinda Burke, Archaeologist, Kootenai Tribes Cultural Committee, St. Ignatius, MT.

Sue Ball, Wildlife Biologist, Confederated Salish & Kootenai Tribes, Pablo, MT.

Seth Makepeace, Tribal Hydrologist, Confederated Salish & Kootenai Tribes, Pablo, MT.

Pfister, et. al., Forest Habitat Types of Montana, U.S.D.A. Forest Service General Technical Report, INT 34, May 1977.

Best Management Practices for Forestry in Montana, Department of State Lands, July 1989.

Interim White-Tailed Deer Winter Range Management Standards and Guidelines, Department of State lands, November 1989.

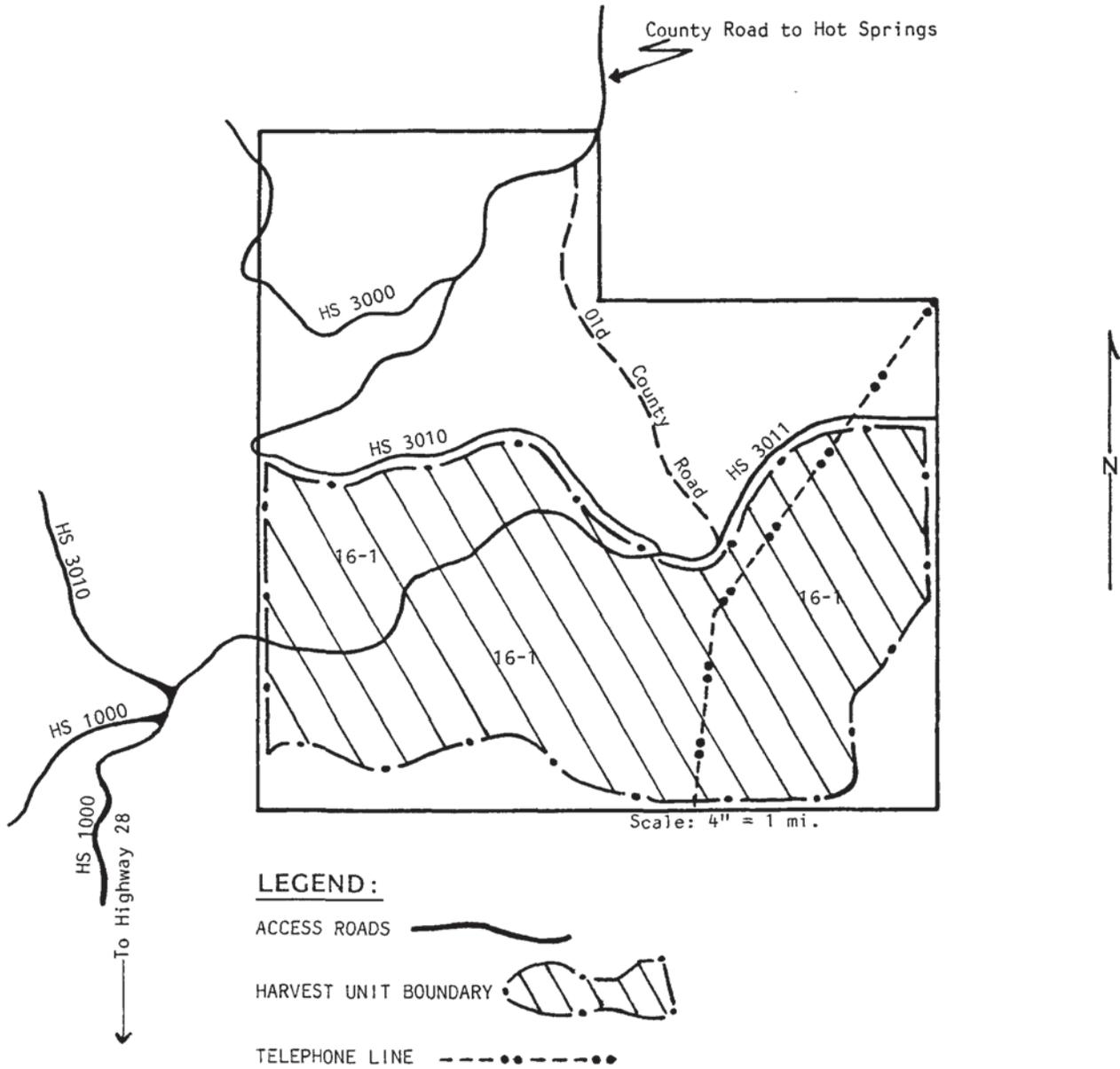
The Enabling Act of 1889, (25 STAT. 679) State of Montana.

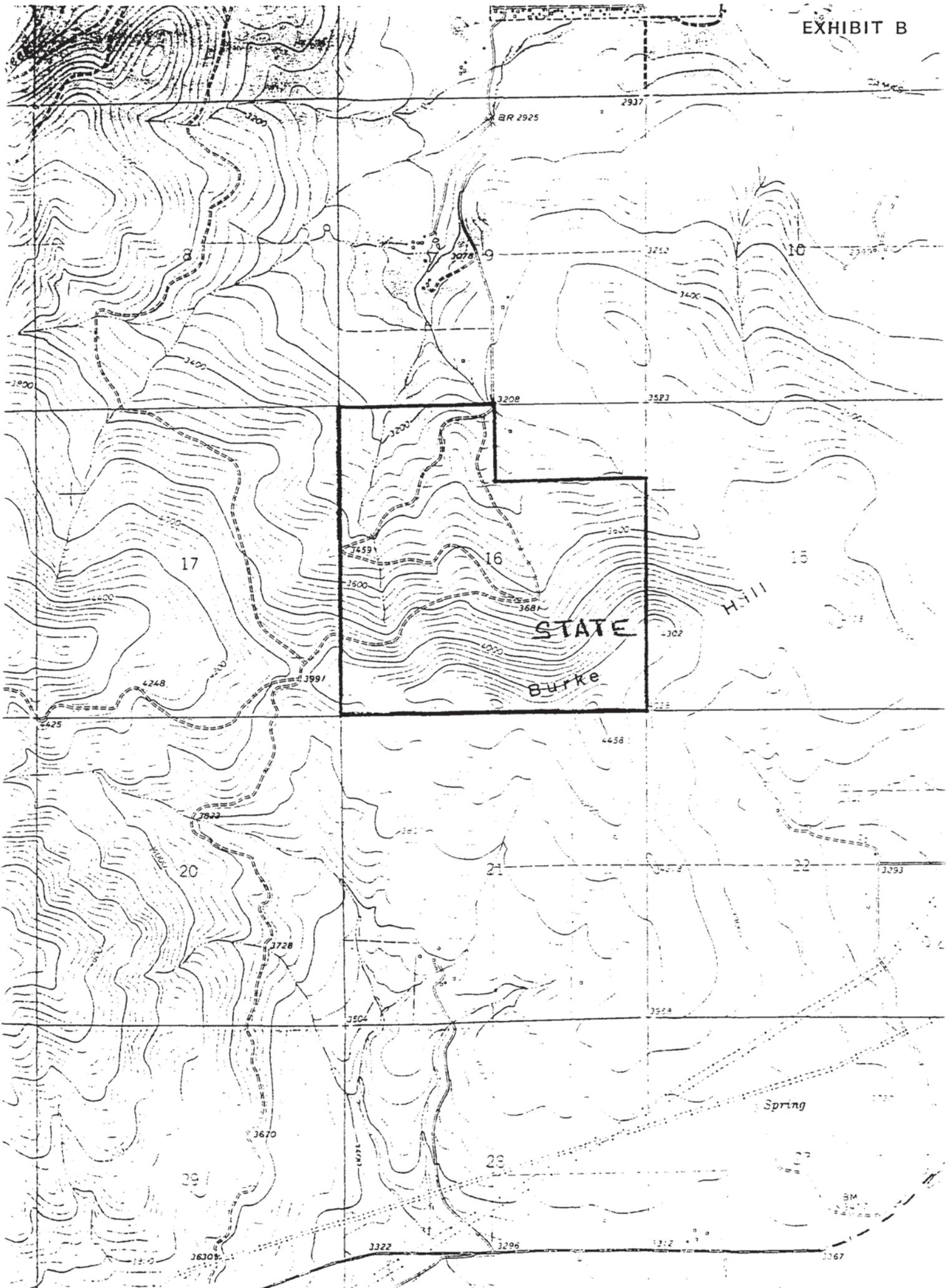
Interim Old-Growth Standards for State Lands, Department of State Lands, May 1991.

BURKE HILL TIMBER SALE

S16 T21N R24W

SALE MAP





February 13, 1991

562

TO: JIM GRAGG, AREA MANAGER, NWLO
MARV MILLER, UNIT MANAGER, PLAINS UNIT
JON HAYES, FORESTER, PLAINS UNIT
PAT FLOWERS, SUPERVISOR, STATE LAND MANAGEMENT

FROM: GARY FRANK, HYDROLOGIST *GF*

SUBJECT: BURKE HILL TIMBER SALE (Section 16, T21N R24W).

The proposed sale was reviewed in the field during June of 1991 with foresters from the Plains Unit and representative of the Salish-Kootenai Tribe.

Watershed: The sale section lies within an unnamed third order tributary watershed of Hot Springs Creek. The sale area is drained by two first order channels. The area receives a low amount of precipitation (approximately 16-18") resulting in low runoff. There are several existing water rights from domestic (well) and livestock use immediately downstream of the sale area.

Cumulative Effects: There are no cumulative effect constraints with the proposed sale. This recommendation is based on the following reasons: 1) Only a moderate level of harvest and road construction has occurred in the drainage. 2) The proposed sale prescription is for 266 acres of selection harvest. and 3) The low amount of runoff produced over the sale area.

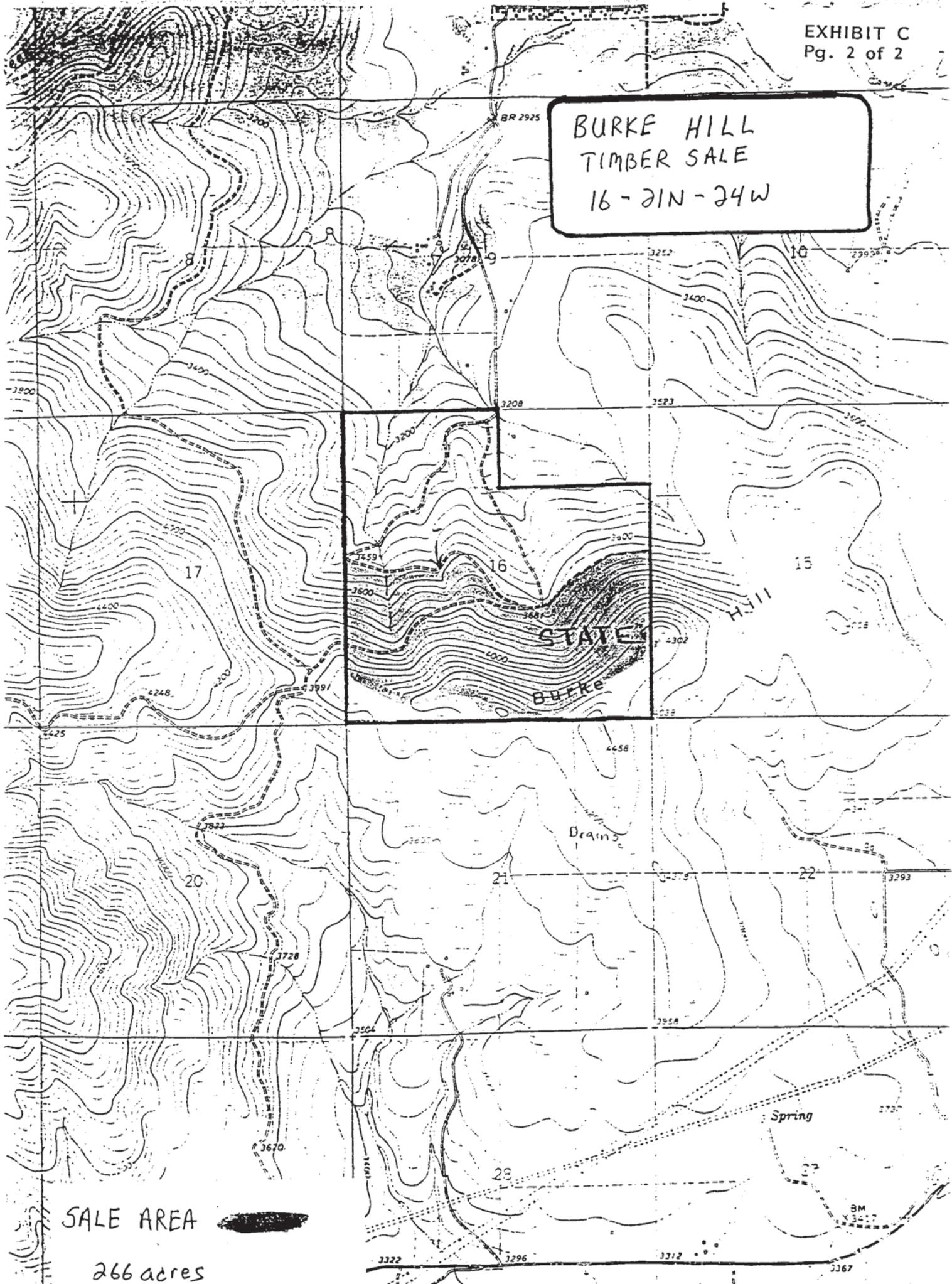
Roads: The sale will utilize existing roads on state and private ownership for both access and hauling. No new road construction is proposed. The most recent road access proposal was not reviewed in the field. However, I have talked to both Jon Hayes and Jeff Collins who are familiar with the road and I do not have any major concerns with the proposal.

Install drain dips as needed to provide adequate road surface drainage. Be sure to inspect all existing culverts and relief structure to ensure that they are functioning properly. Provide for maintenance to any damaged or obstructed drainage structures. Additional drain dips should be installed above the stream crossing located at the northern section boundary. Erosion of the road surface is contributing sediment directly to the stream crossing. I realize that the current proposal does not include using this segment of road or the county controlled/maintained crossing. However, I recommend that we mitigate this problem with this sale to prevent immediate and future water quality impacts originating from the road on state owned land.

Harvest Units: The USGS map of this area shows a first order intermittent stream channel flowing through the harvest unit (see attached map). If there is a discernable stream channel at this location, mark and maintain a streamside management zone (SMZ) with a minimum width of 50 ft. on each side. Equipment may not operate within the SMZ and we are required to retain some merchantable and submerchantable timber in the SMZ. Use directional felling and cable winch to remove trees selected for harvest from the SMZ.

Do not allow skidding up or down draws, use designated locations to cross draws. I do not anticipate any water quality impacts with the proposed harvest as long as BMPs are fully implemented.

BURKE HILL
TIMBER SALE
16-21N-24W



SALE AREA

266 acres

February 7, 1992

552

TO: JIM GRAGG, Area Manager, Northwest Land Office
MARV MILLER, Field Supervisor, Plains Unit
JON HAYES, Forester, Plains Unit
PAT FLOWERS, Supervisor, State Land Management Section

FROM: JEFF COLLINS, Soil Scientist JC

SUBJECT: BURKE HILL Section 16, T21N-R24W

The sale area is located on moderate slopes and well drained soils. Bedrock is well fractured Prichard argillite. This is stable ground with few soil related limitations.

The footslopes within the Selection harvest unit are mainly deep very gravelly silt loam soils with a 4-8" surface layer of volcanic ash influenced silt loams. Soils productivity can be affected by displacement / rutting if soils are operated on when wet.

The upper slopes of the commercial thin unit include, rocky moderately deep soils weathered from colluvium and bedrock. Surface soils are 4-6" volcanic ash which is susceptible to displacement. These soils tend to be droughty and support more pinegrass.

RECOMMENDATIONS: Skidding and brush piling should be planned for periods when soils are dry, frozen or snow covered. The upper slopes tend to dry out earlier in the year allowing a longer season of use.

The section has a developed road and skid trail network. Use existing skid trails and landings wherever possible and minimize new trails as designated by Forest Officer.

Dozer operators should take care during brush piling and scarification to avoid displacing topsoils and exposing the less fertile subsoils. Scarification of 30-40% should provide adequate site prep.

ROADS- Plan is to use existing roads and to haul out to the southwest. Roads need reshaping and additional drain-dips installed for road drainage on the access road to the HWY 28. Erosion hazard is moderate to low and easily controlled with standard road drainage practices.

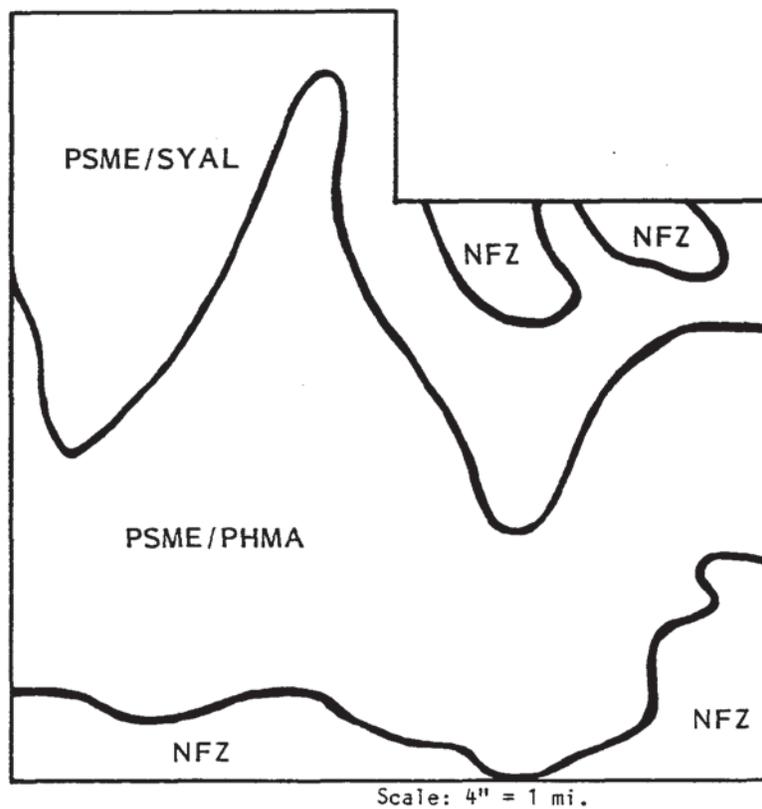
If hauling out to the North, the creek crossing will need to be reconstructed to avert ditch sediment from washing into the creek as outlined by hydrologist. I understand this problem is on a county road and is their maintenance duty.

No significant soils related problems are expected with this sale if BMP'S and recommendations are implemented.

BURKE HILL TIMBER SALE

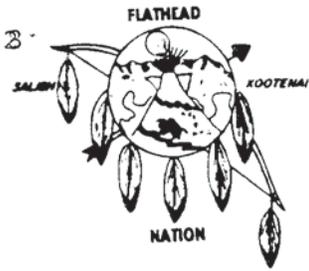
S16 T21N R24W

HABITAT TYPE MAP



LEGEND:

- PSME/SYAL - *Pseudotsuga menziesii*/*Symphoricarpos albus*
- PSME/PHMA - *Pseudotsuga menziesii*/*Physocarpus malvaceus*
- NFZ - Non-Forested Zone



THE CONFEDERATED SALISH AND KOOTENAI TRIBES
OF THE FLATHEAD NATION

P. O. Box 278
Pablo, Montana 59855
(406) 675-2700
Fax (406) 675-2806



Joesph E. Dupuis - Executive Secretary
Vern L. Clairmont - Executive Treasurer
Bernice Hewankorn - Sergeant-at-Arms

November 20, 1991

TRIBAL COUNCIL MEMBERS:
Michael T. "Mickey" Pablo - Chairman
Laurence Kenmille - Vice Chairman
Elmer "Sonny" Morigeau, Jr. - Secretary
Joe Dog Felsman - Treasurer
Louis Adams
Lloyd Irvine
Patrick Lefthand
Henry "Hank" Baylor
Antoine "Tony" Incashola
John "Chris" Lozeau

Department of State Lands
Plains Unit Office
Marvin Miller, Unit Manager
P. O. Box 219
Plains, Mt 59859

Dear Marvin,

On November 14, the Confederated Salish and Kootenai Tribes reviewed and approved the State's proposed harvest of the Burke Hill timber sale with a ending date of August, 1994. Right-of-way was approved and Division of Lands will be contacting you with the permit and details. Lee Padilla will be the person to contact if you have questions at 675-2700 ext. 441.

The Tribes want to express their appreciation for your cooperation and consideration of our specialist's concerns. We believe that it is good management for all landowners to cooperate in resource management planning when adjoining land boundaries are involved.

If we can be of further service to you, please contact Ralph Goode at 676-3755 or myself at 675-2700, ext. 452.

Thanks again for your cooperation.

Sincerely,

Sonny Morigeau
Michael T. Pablo
Tribal Chairman

MARKING GUIDELINES FOR
BURKE HILL TIMBER SALE

General Information

1. This sale will generally be a commercial thinning type harvest, but will combine various other treatment methods. These include: tree improvement cutting, salvage and sanitation cutting, group selection, and removal of overmature timber. All trees should be marked that contain any of the following problems or defects:

- a. insect activity, such as pine beetle
- b. disease activity, such as mistletoe, or gall rust
- c. spike tops or forked tops
- d. bad butt scars, fire scars or visible rot
- e. bad sweep or crook
- f. bad lean
- g. trees that are root cut or undercut along roads, or any trees that occur in the road prism (cut slope or fill slope).

2. In marking the ponderosa pine for harvesting, Keen's system of tree classification will be used as marking guides. This treatment is directed toward managing the desirable dominants and codominants, along with retaining enough of the intermediates to retain near-full stocking levels on the site.

3. The spacing within the leave stand will be variable, based upon suitability of leave trees and crown sizes. A crown spacing guide of 4 to 5 feet of open space between crowns of leave trees will be used to provide area for crown expansion. On a stem spacing basis, this should provide for approximately 18 to 20 feet between leave trees.

4. Trees to be cut will be individually marked with blue paint. Mark with a horizontal stripe at dbh and either stripe or dot at ground level on the stump. Mark every cut tree on at least 2 sides, preferably on both the downhill and uphill sides.

5. We want to favor Ponderosa pine on this site if possible, but we don't want to sacrifice tree quality to do it. For example: if you have a choice between a very thrifty Douglas-fir and an average looking Ponderosa pine, leave the Douglas-fir. We want to leave the best trees on the site to continue to grow, and favor Ponderosa pine when we can.

6. Merchantable standards for all species will be any tree with at least 8.0" dbh, which contains a 16 foot log to a 5 1/2" top.

GUIDELINES BY SPECIES

PONDEROSA PINE

1. Follow the Keen Tree Classification while marking.

2. Mark all overmature pine for removal (all 4's).
3. The exception to #2 is to leave the obvious cull old pine cobs that won't make boards. The tops are usually out of them and they have woodpecker holes all up and down them. There are quite a few of them scattered throughout the harvest unit so be on the lookout for them.
4. Mark all green bug hit pine.
5. Mark all 3 C's and 3 D's (mature and rapidly declining intermediates).
6. Mark all 2 C's and 2 D's (bullpine, declining or defective) if they contain a merchantable sawlog.
7. It is acceptable to leave a few 2 C's and 3 C's if they are needed to meet the target stocking level (about 100 trees per acre).
8. Thin out the clumps of pine. We want to leave the healthy, vigorous, thrifty trees and remove the rest.

DOUGLAS-FIR

1. Mark all overmature Douglas-fir, using crown form.
2. Mark all Douglas-fir containing mistletoe. This will mean some group selections up to ½ acre plus in size (in places that contain severe mistletoe infections). Don't be shy, kill mistletoe infected trees!
3. In the mistletoe infected areas, try to leave ponderosa pine and western larch if possible even if they aren't super good looking trees.
4. Throughout the harvest area numerous clumps of nearly pure Douglas-fir pole timber occur. Do not mark trees in the middle of these clumps unless they can be removed without damage to the rest of the clump.

WESTERN LARCH

1. Mark all overmature larch.
2. Mark all larch with mistletoe, spike tops or other visible problems.
3. Do not mark any large diameter larch that are obviously cull, such as those with tops broken out, those with woodpecker holes, and those with quinine conks.
4. Thin out the clumps of larch. We want to leave the healthy, vigorous, thrifty trees and remove the rest.

LODGEPOLE PINE

1. Mark all merchantable lodgepole.
2. Not very many lodgepole on this site, but if you find one mark it!

GRAND FIR

1. Mark all merchantable grand fir.
2. Not very many (if any) grand fir on this site, but if you find one mark it!

CRUISE AND TALLY

1. Measure and record diameters to the nearest inch.
2. Measure and record total tree height.
3. Record height on the 1st 10 tally trees of each species. After that, record heights on only every other tally tree.
4. Estimate and record visible defect on all tally trees including sweep.
5. Tally species according to the following:

Douglas-fir	1 in 50
Ponderosa pine	1 in 50
W. Larch	1 in 50
Lodgepole pine	1 in 50
Grand fir	1 in 50

K E E N T R E E C L A S S I F I C A T I O N

A number of tree classifications have been developed for the guidance of presalvage cutting. One of the best-known examples of such a classification is that developed by Keen for the interior ponderosa pine type of California and the Northwest (Miller and Keen, 1960). Vulnerability to loss from bark beetles is so closely correlated with growth rate and the various stages of the life cycle of ponderosa pine that this classification is suitable for selecting trees for cutting even where risk of beetle attack is not the main consideration.

Keen's classification (Fig. 6-2) is based on the two major factors of age and crown vigor. There are four age classes and four vigor classes within each age class, making a total of sixteen classes. The four age classes are termed: 1—young, 2—immature, 3—mature, and 4—over-mature; they should be thought of as grouped by relative maturity rather than by any definite ranges of age. Actual age limits for the groups vary in different parts of the ponderosa pine region. Color and type of bark, total height, shape of top, characteristics of branches, and diameter are the chief external indications of maturity. The four crown vigor classes are: A—full vigor, B—good to fair vigor, C—fair to poor vigor, and D—very poor vigor. The size of the crown (length, width, and circumference), its density, and the shape of its top indicate the crown vigor and consequently the inherent capacity of the tree to grow and endure exposure to beetles.

Keen's classification was originally designed to provide a means of evaluating the risk that trees left after selection cutting would be attacked by beetles during a cutting cycle of approximately 30 years. The possibility of making light cuttings at much more frequent intervals has necessitated introduction of another classification designed for use in determining which trees are in imminent danger of death (Salman and Bongberg, 1942). The most important criteria are the condition of the needles, the number of dead twigs in the crown, and the health of the top of the crown, although allowances are also made for obvious signs of injury from beetles and other agencies. The most recent modification of this classification and its use have been described by Sowder (1951), Whiteside (1951), and Hallin (1959).

Keen's tree classification has been modified by Hornibrook (1939) for use in the Black Hills and by Thomson (1940) for the Southwest. Classifications that are similar in general purpose to those developed for ponderosa pine have been applied in other forest types.

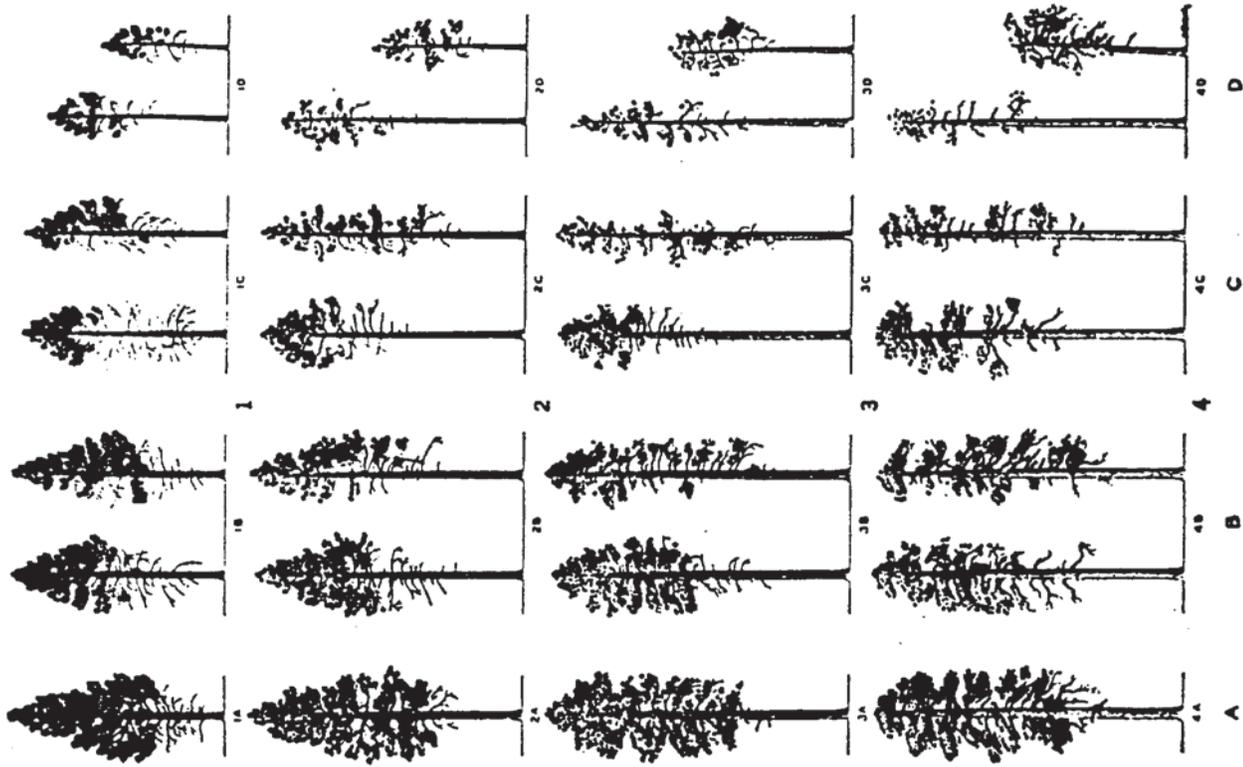


Fig. 6-2. Keen's tree classification for ponderosa pine. The four age classes range from 1, the youngest, to 4, the oldest; the four crown vigor classes, from A, the most vigorous, to D, the poorest. (Sketch by U. S. Forest Service.)

BURKE HILL TIMBER SALE
PROJECTED BRUSH & TSI INCOME

Brush 1,673 MBF @ \$11.00/MBF	=	\$ 18,403.00
TSI 1,673 MBF @ \$11.00/MBF	=	<u>\$ 18,403.00</u>
TOTAL		\$ 36,806.00

Spot excavator pile Unit 1.

266 acres @ \$90.00/acre	=	\$ 23,940.00
--------------------------	---	--------------

Burn excavator piles

10 man days @ \$70.00/man day	=	\$ 700.00
-------------------------------	---	-----------

TOTAL projected cost	=	\$ 24,640.00
----------------------	---	--------------

Net Brush/TSI Credit = \$12,166.00

**WE WANT YOUR INPUT
ON THREE TIMBER SALES!
The Montana Department of State Lands**

The Department of State Lands, Plains Unit, is in the process of planning three timber sales. The first is located in the Upper Sears Gulch area, Section 32, T23N, R26W. This parcel of State forest land is about 17 air miles northwest of the town of Plains. This sale is being considered to reduce insect and disease potential and to generate income for the Public Building Trust Fund. The sale will most likely involve selective harvest of about 600 acres, and could potentially produce about 1.0 to 1.5 million board feet for harvest.

The second sale is located in the Clark-Hinchwood Creek area, Section 16, T21N, R25W. This parcel of State forest land is about 8 air miles northeast of the town of Plains. This sale is being considered to salvage mountain pine beetle infested lodgepole pine, and to generate income for the Public School Trust Fund. This sale will most likely involve regeneration type harvests on approximately 200 acres, and could potentially produce about 2.0 to 2.5 million board feet for harvest.

The third sale is located on the Flathead Indian Reservation, and is about 1.5 miles south of the town of Hot Springs in Section 16, T21N, R24W. This sale is being considered to reduce insect and disease potential, increase growth rates, and generate income for the Public School Trust Fund. The sale will most likely involve commercially thinning about 300 acres of second growth sawtimber. Such a sale could potentially produce about 1 to 1.5 million board feet for harvest.

The Plains Unit is now seeking public comment on these proposed sales. Additional information is available for each sale at the Plains Unit office. Please have your comments to us by July 20, 1991, so that they can be incorporated into the sale planning process.

Please direct written or oral comment to:

Marvin W. Miller
P.O. Box 219
Plains, MT 59359
or phone 826-3791