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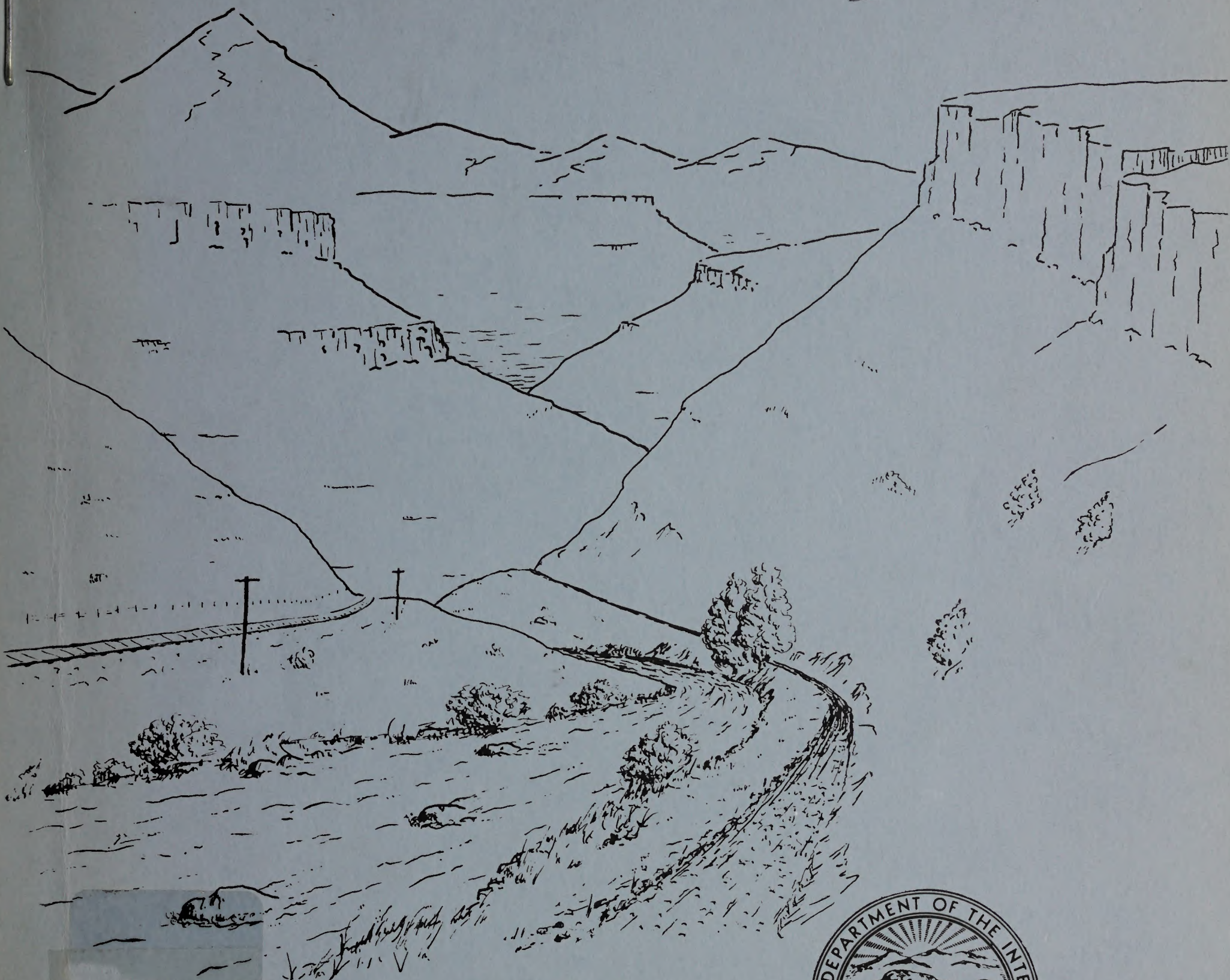


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ENVIRONMENTAL ASSESSMENT RECORD  
DESCHUTES RIVER ROAD PAVING  
MACKS CANYON SEGMENT

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*Cahly*  
*Sumner*  
*Walter*  
*Walter*

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1977

UNITED STATES DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
PRINEVILLE DISTRICT

MAY 1977



SECRET

# United States Department of the Interior



BUREAU OF LAND MANAGEMENT

District Office

P.O. Box 550

Prineville, Oregon 97754

JUNE 3, 1977

WE ARE PRESENTLY CONSIDERING PAVING THE ACCESS ROAD FROM SHERARS BRIDGE TO MACKS CANYON AND HAVE PREPARED THE ENCLOSED ENVIRONMENTAL ASSESSMENT RECORD TO ANALYZE THE ENVIRONMENTAL IMPACTS OF OUR PROPOSED COURSE OF ACTION.

AFTER YOU HAVE HAD A CHANCE TO READ THE ENCLOSED MATERIAL I WOULD APPRECIATE RECEIVING ANY COMMENTS YOU MAY HAVE REGARDING OUR PROPOSED ACTION OR ANY OF THE ALTERNATIVES WE ARE PRESENTLY CONSIDERING.

A WRITTEN RESPONSE PRIOR TO JULY 5 WILL HELP US IN MAKING A DECISION.

PAUL W. ARRASMITH

DISTRICT MANAGER

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Save Energy and You Serve America!



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## INTRODUCTION

This Environmental Assessment Record is prepared to assess the environmental impacts of paving the Deschutes River Access Road from Sherars Bridge to Macks Canyon. Only those impacts which can be reasonably connected to the proposed action or alternatives, are discussed and analyzed in this document.

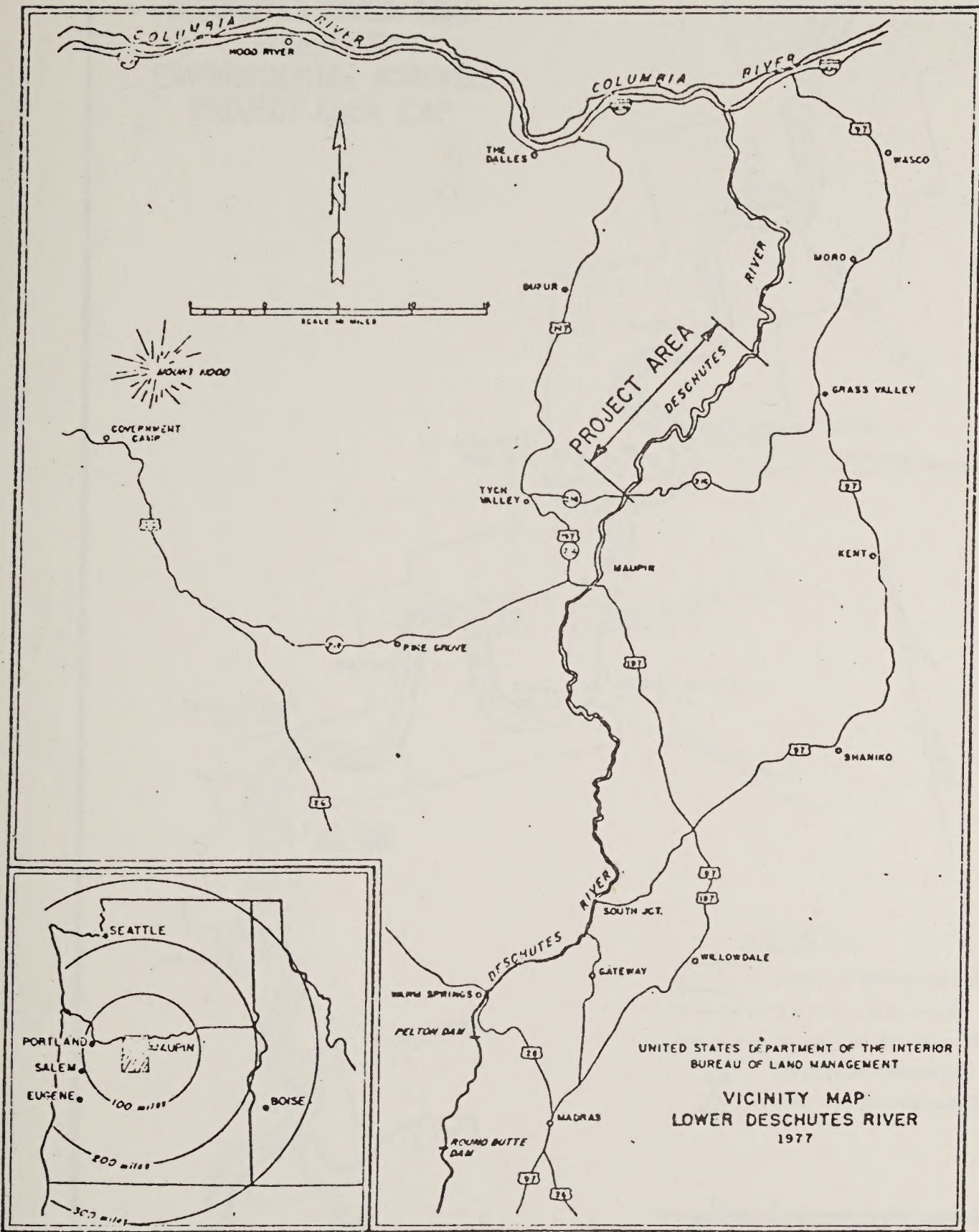
Management of resources along the Deschutes River is a complex subject. Many actions affecting the river area are presently being considered by Congress, various Federal and State Agencies and the Warm Springs Tribal Council. These proposals include such things as designation of the Deschutes as a Federal Wild and Scenic River, changes in fishing regulations, restrictions on use of motorized boats, Indian fishing rights, etc. A new fish hatchery on the Warm Springs Indian Reservation is under construction and nearly completed.

While recognizing that such actions will affect the Deschutes area, an analysis of these effects and how they will interact with the proposed road paving is beyond the scope of this report.

The environmental impacts identified in this report are separated into two sections. Section IIIA, Item 1 through 6 deals only with impacts directly related to the construction and maintenance stages of the proposed action. It is recognized that paving the road may attract more visitors to this section of the river. Section III A7 of the report deals exclusively with impacts associated with such use.

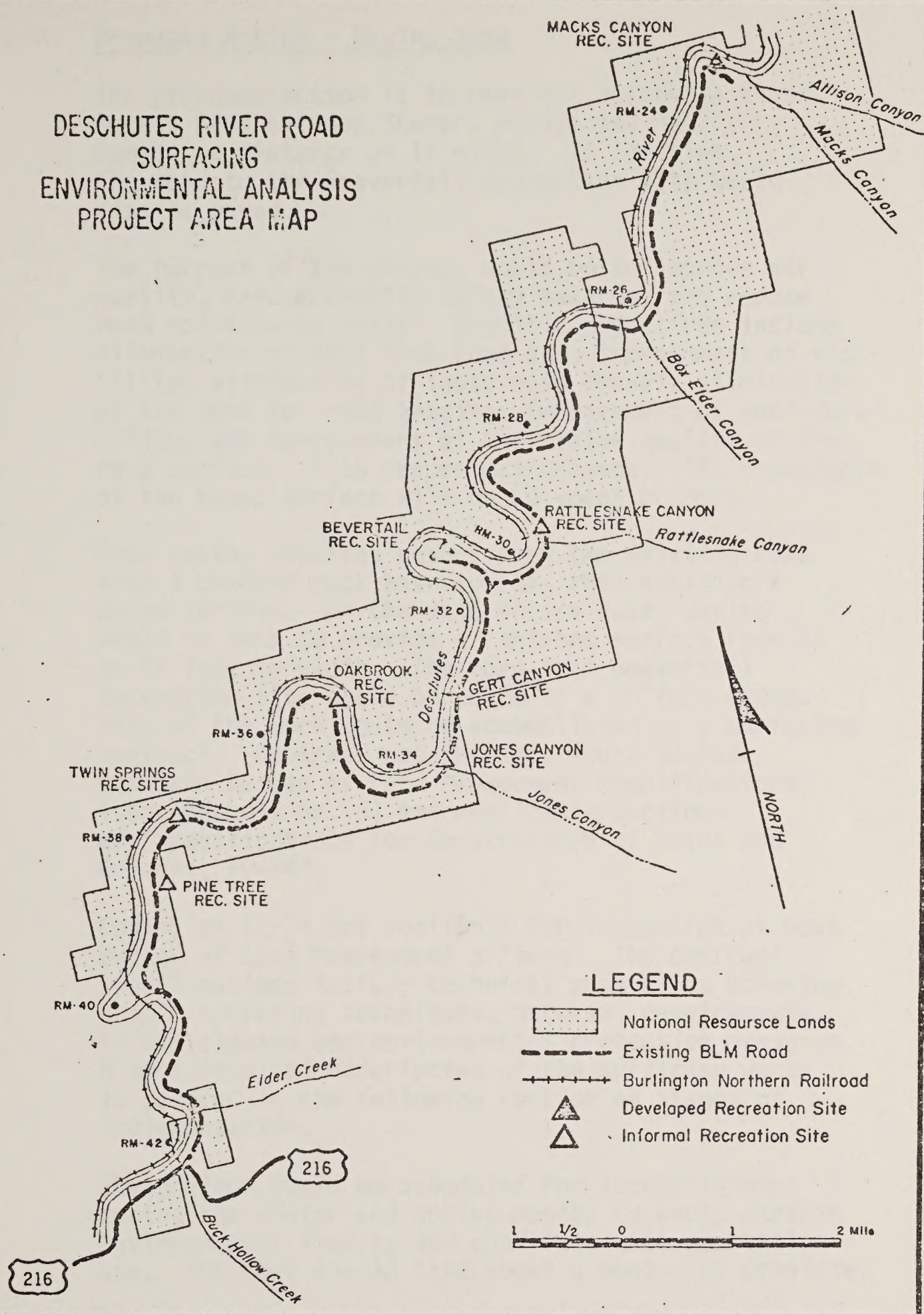
The Deschutes River Access Road, in its present form was constructed and gravel surfaced in 1966. With few exceptions, the road follows the abandoned Deschutes Railroad grade. At present the road is maintained to a width of 20 to 24 feet. However, most of the original gravel is now gone, exposing the old subbase and railroad balast rock. Recreational traffic on the road is high, especially on weekends and holidays during the steelhead season. In 1976, 17,203 vehicles used the road giving an annual average traffic of 47 vehicles per day. Additional data on traffic volumes and trends are shown in Appendix No. 4. Under heavy use conditions the exposed sub-base creates serious traffic hazards. NOTE: See appendix for photographs of the existing road and surrounding area.

On the following page is a vicinity map showing the project location, national resource lands ownership, Burlington Northern Railroad, recreation sites, proposed Jones Canyon Quarry and general features of the area.





DESCHUTES RIVER ROAD  
SURFACING  
ENVIRONMENTAL ANALYSIS  
PROJECT AREA MAP







# I. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

## A. Proposed Action - Paving Road

The proposed action is to pave the Deschutes River Access Road between Sherars Bridge and Mack's Canyon, a distance of 17 miles. In addition, the road to the Beavertail Recreation Site would also be paved.

The purpose of the project would be to improve air quality, reduce traffic safety hazards, and reduce road maintenance costs. Specific objectives include elimination of dust from road use; improvement of visibility; elimination of loose road gravel; elimination of the need for road grading; improvement of road durability; and improvement of the riding quality of the road surface. With proper maintenance, life expectancy of the paved surface will be 20 years or more.

Road paving involves resurfacing the existing road with a crushed rock base course, then applying a paved surface. On the main access road, paving would be done to provide a finished surface from 22 to 24 feet in width. The road into Beavertail Recreation Site would be paved to a 20 foot width. Most of the work would be accomplished by a surfacing contract. Contract requirements would include standard Bureau of Land Management specifications (see Appendix No. 5) and applicable portions of "Specifications for Construction of Roads and Bridges, FP-74".

Copies of FP-74 are available for inspection at most Bureau of Land Management offices. The contract specifications include technical provisions covering proper surfacing techniques, material requirements, safety clauses and environmental protection measures. A more detailed description of the surfacing work is covered in the following section on stages of implementation.

The project would be scheduled for accomplishment during the winter and spring months to avoid certain environmental impacts and conflicts with recreation use. The work should take about 5 months to complete.

The proposed action has been coordinated with the Lower Deschutes River Management Framework Plan

and Prineville District Transportation Plan.  
Copies of these documents are available for review  
at the Prineville District BLM Office.

A segment of the Deschutes River Road near Maupin,  
Oregon, was paved in 1969. Under the proposed  
action, the Sherars Bridge to Macks Canyon Road  
would be paved in much the same manner. Appearance  
of the finished project would be very similar.  
Photographs, taken in February, 1977, of the Maupin  
project show the intended appearance of the pro-  
posed paving project (facing page).

For the purpose of analysis, the proposed action  
has been separated into the following Stages  
of Implementation and Discreet Operations (A  
detailed analysis of each is contained in the  
Appendix No. 1, "Environmental Analysis Worksheet").

Stage of Implementation	Discreet Operations
1. Pre-contract maintenance and roadbed preparation	Clearing Blasting Excavation and Grading
2. Quarry development, quarry rock crushing	Clearing Blasting Excavation Operation of crusher plant
3. Road Surfacing and Paving	Operation of Equipment Operation of Trucks Asphalt placement
4. Road operation and maintenance	Surface patching Maintenance of drainage facilities Maintenance of structures Traffic Use

Stage 1 - The pre-contract road maintenance work  
would consist of cleaning and repairing ditches,  
culverts, cattleguards, etc. It will be a  
very thorough job of regular maintenance. For  
example, the roadside ditch will be completely  
cleared of all rockslides and generally re-  
constructed to its original dimensions. Blasting  
of large rocks in the ditchline may be required.  
Equipment used for the work will include graders,  
loaders, dump trucks and if needed, a rock drill.

1969 MAUPIN PAVING PROJECT  
DESCHUTES RIVER ROAD



VIEW TOWARDS SHERARS FALLS



VIEW DOWNRIVER FROM POINT 1.5 MILES  
SOUTH OF SHERARS FALLS  
PHOTOS TAKEN February, 1977

Most of this work (except blasting) would be done by regular BLM maintenance crews.

Roadbed preparation consists of grading, shaping and compacting the existing road. The objective is to obtain a smooth, hard roadbed for subsequent surface work. Large boulders protruding above the roadbed would be broken up with heavy equipment or by blasting. This work will be done as part of the surfacing contract using equipment as outlined above plus rollers and water trucks. Water for road compaction and subsequent surfacing operations will be obtained from the Deschutes River. Water trucks will be driven to the river side on existing roads and filled by using portable pumps.

Stage 2 - This stage of implementation includes the development of the rock quarry site, quarry access road and crusher plant sites. Also included is the quarry blasting and excavation and operation of the crusher plant. All work would be done under terms of the surfacing contract. The objective of this stage of implementation is to produce approximately 50,000 cubic yards of crushed rock.

Development of the quarry, road and crusher site would be controlled by a "Quarry Development Plan" (copy in Appendix No. 6). Actual work involves construction of a "cat road" around the upper perimeter of the quarry site. Drilling of dynamite holes would start on this road and proceed downward into the designated quarry area. Drilling and blasting operations would be designed to produce benches or steps in the hillside. The loosened rock would be bulldozed toward the crusher plant then drilling and blasting operations resumed to loosen more rock and create another bench in the hillside. The crusher site would be prepared by simply clearing the designed area of sagebrush then leveling and compacting the site. An existing road to the area would be widened and graded for heavy truck traffic. Upon completion of quarry use under this contract, a lockable gate will be installed on the access road to prevent public use of the quarry site. Equipment used in all this work would consist of bulldozers, rock drills, loaders, trucks and a grader. The quarry and crusher site will be limited to an area of approximately 5 acres. Of this, about 2 acres will be used in the actual

quarry face on the hillside.

Operation of the crusher plant entails setting up the various components including the "jaws" or primary crusher, secondary crusher, conveyors, screens, etc. In operation quarry rock is bulldozed into the primary unit. The rock is then circulated through the various units, coming out as crushed rock of the dimensions required. Dust or "crusher reject" is an undesirable by-product of the operation. Operation of a crusher plant is quite noisy and dusty but new safety regulations place limits on dust production.

Stage 3 - Road surfacing and paving consists of the placement of crushed rock base material and asphalt paving on the prepared roadbed. All work would be contracted. This phase of work begins with the watering of the roadbed. Additional rolling may be necessary. Crushed rock is then hauled from the quarry and dumped on the road. Graders mix and spread the rock to the required depth. Depending upon roadbed conditions this base rock may vary in depth from 2 to 6 inches. The rock is compacted by rolling and maintained in this condition until asphalt surfacing is started.

The actual paving may be done by one of two different methods. A bituminous surface treatment (BST) is the alternating application of hot asphaltic oils and fine crushed rock to build up a thin flexible pavement. This process requires very careful control of material quality and construction techniques. The alternate method, application of an emulsified asphalt pavement, involves mixing crushed rock and cold emulsified oil in a pugmill at the quarry. This material is trucked to the road and applied in a 2 to 3 inch layer with a paving machine. Much rolling is required to achieve proper compaction.

Equipment involved in surfacing operations includes large (20 cu. yd.) rock trucks, loaders, graders, water trucks, rollers, asphalt oil trucks and spreaders. The emulsified asphalt pavement method requires the addition of a pugmill at the quarry and a paving machine for spreading the material. The most active part of road surfacing is trucking large quantities

of crushed rock and/or emulsified asphalt paving mix from the quarry to the road. Neither paving method requires operation of a paving batch plant (hot plant) and the resulting heat and smoke.

Stage 4 - Road operation and maintenance refers to work on, and use of, the road after completion of the resurfacing and paving project. Maintenance can be separated into different operations. Surface patching involves placement of asphalt paving material in holes or breaks in the road surface. For routine patching, only a truck load of asphalt and hand labor is involved. This work would probably be unnecessary for the first year or two after paving. Thereafter, patching would usually be done once a year.

Maintenance of drainage ditches, culverts and other facilities such as cattleguards, fences, signs, etc. will be done annually or as required. The most common maintenance need along roads such as the Deschutes, is to remove rock slides from the ditch and road surface. The occurrence of significant rock slides is related to weather factors such as heavy rain and freezing - thawing action. Equipment used for these maintenance activities includes graders, loaders and trucks. Much hand work is involved. To avoid conflicts with recreationists, routine maintenance is scheduled during low use periods.

Road operation refers to use of the facility, and if needed, controls on such use. The volume of traffic is related to many factors including time of year, weather, steelhead runs, fishing success, and the quality or comfort of road conditions. Speed of traffic is related to road condition. At this time, plans call for posting a 40 mile per hour speed limit on the road. Dangerous areas such as stream ford crossings, sharp curves and narrow areas will be properly posted. All signing will be kept to a minimum.

## B. Alternative Actions Considered

### 1. Alternative Action - Crushed Rock Resurfacing

This alternative to the proposed action is to resurface the existing Deschutes River Road with crushed rock.

No paving would be done. The purpose of this action would be to restore the original gravel surface. The specific objective would be to provide a smooth gravel road surface with sufficient depth to permit routine grading and to eliminate that portion of the safety hazards caused by the rough exposed subgrade balast. Useful life of the gravel surface would be 6 to 8 years under present and projected traffic volumes. By then the road surface will revert to its present condition and complete resurfacing will be necessary.

Resurfacing would consist of the placement of crushed rock on 17 miles of the main access road to a width of 24 feet and depth of 6 inches. The one mile road into the Beavertail Recreation Site would be surfaced to a 20 foot width and 4 inch depth. Approximately 60,000 to 65,000 cubic yards of crushed rock would be required.

In most construction aspects, this action would be identical to the proposed action -- specifically, the stages of implementation for pre-contract maintenance and quarry development. The road surfacing stage would be the same except there would be no paving or use of asphalt.

Stage 4, road operation and maintenance would be different. Road surface maintenance would involve grading the entire road at least two times a year. The maintenance of ditches and related facilities would be similar to the proposed action.

Road operation would require little or no change from the existing situation. Controls on traffic speed would probably be unnecessary.

## 2. Alternative Action - No Action

This alternative assumes continued road maintenance at present levels. No road improvement or restoration work would be done.

Present maintenance consists of grading, cleaning ditches and culverts twice each year. Special efforts have been made to retrieve gravel from the road shoulders in order to maintain the road surface in a useable condition. In spite of this effort the road is deteriorating because of a heavy volume of high speed traffic.

The surface material has been lost on approximately one third of the road and the remaining two thirds will be gone within the next 5 years. Once this occurs blading the surface will be impossible because of the exposed balast rock from the original railroad bed.

After this point the only practical maintenance would be of a very primitive nature. Maintenance would include removal of loose boulders and rock-slides to permit travel by vehicles with high clearance and good tires. (covering the balast with crushed rock is discussed under alternative number 1 - surface with crushed rock).

The following analysis considers the impacts that would occur beginning at the point when only primitive maintenance would be performed.

For purposes of this analysis it is assumed that visitor use will continue to increase 5% per year until such time as only primitive maintenance is possible. When only primitive maintenance is performed use will decrease slightly and stabilize at a rate somewhat higher than present use rates. (Use rates appear to be more closely related to size of fish runs than to road conditions).

### 3. Alternative Action - Close Road

This alternative would be to close the Deschutes River Road below Sherars Bridge. Such action could take place immediately or after the road became too costly to maintain. Physical blocking of the road near Sherars Bridge would be required for implementation. Hiking and equestrian use could be permitted and boating use would continue. All public lands and roads in the river area would be closed to motorized vehicles.

Recreation use would be limited to those who could hike, boat or ride horses into the area. Developed recreation sites at Beavertail and Macks Canyon would have to be closed or converted for non-vehicular use and maintenance by boat or helicopter. A road closure would cause an increase in use along other areas of the Deschutes.



This alternative is not responsive to well established patterns of recreation use.

## II. DESCRIPTION OF EXISTING ENVIRONMENT

### A. Non Living Components

#### 1. Air

Marine air coming up the Columbia River Gorge causes an inversion in north-south temperature. This marine air also influences the Deschutes River Canyon. Temperatures are warmer in the canyon resulting in spring growth starting several weeks earlier in the canyon than the adjacent top country. The growing season in this portion of the canyon is approximately 150 days.

The air in the Deschutes River Canyon is generally free of foreign material most of the year. Slash burning on the forest to the west of the river and field burning in the Willamette Valley have short term effects on air quality along the Deschutes. In the immediate vicinity of the Deschutes River Access Road, there is serious degradation of air quality caused by dust from vehicle traffic. Air particulate matter is very high and visibility reduced.

No measurements of suspended particulate matter have been made on the project site. Oregon's Ambient Air Quality standards for suspended particulate matter are:

"Concentrations of suspended particulate matter at a primary air mass proved by and on file with the Department of Environmental Quality, or by an equivalent method, shall not exceed:

(a) 60 micrograms per cubic meter of air, as an annual geometric mean for any calendar year.

(b) 100 micrograms per cubic meter of air, 24 hour concentration for more than 15 percent of the samples collected in any calendar month.

(c) 150 micrograms per cubic meter of air,  
24 hour concentration, more than once per year."

## 2. Lands

Soils in the area have been identified in the Sherman County details soil survey. They are primarily river-wash, sand and rockland associated with shallow Lickskillet soils and the deeper Wrentham and Sagemoore soil series. The existing gravel road is built on an abandoned railroad bed that is a composite of the above soils and parent material. There is very little evidence of roadside erosion. The old railroad bed is primarily made up of coarse rock fragments and has an excellent road support capability. Silt loam dust from loess origin in the Lickskillet, Wrentham and Sagemoore soil series form part of the parent material for soils in the area.

The geology of the area consists mainly of Columbia basaltic flows, which have a depth of over 1,000 feet. These basaltic flows are overlaid with basaltic deposits which provide soil ideal for growing cereal crops. The area is a high basalt plateau with deeply entrenched canyons of the Deschutes River.

## 3. Water

The flow of the Lower Deschutes River remains almost constant due to the upstream regulating dams. This provides consistently cool water temperatures and, consequently ideal habitat for rainbow trout and anadromous fish. Numerous springs also contribute to the river's low water temperature and high water quality.

Water quality monitoring stations are located at the mouth of the Deschutes River and 51 miles upstream at Maupin. Water quality is usually excellent at Maupin with a high of 12 Jackson Turbidity Units recorded. The river occasionally has an excessive amount of coliform, a low amount of dissolved oxygen and higher turbidity (27 JTU) at the mouth of the river. The increase is generally caused from side tributaries such as the White River. Present water quality standards are developed for the Deschutes River by the State of Oregon Department of Environmental Quality. Present standards are:

"Dissolved Oxygen concentrations shall not be less than 90 percent of saturation at the seasonal low, or less than 95 percent of saturation in spawning areas during spawning, incubation, hatching, and fry stages of salmonid fishes.

Average concentrations of coliform organisms shall not exceed 240 per 100 milliliters, except during periods of high natural surface runoff.

No more than a 10 percent cumulative increase in natural stream turbidities (JTU) shall be allowed, except for certain specifically limited duration activities which may be specifically authorized by DEQ under such conditions as it may prescribe and which are necessary to accommodate essential dredging, construction, or other legitimate uses or activities where turbidities in excess of this standard are unavoidable."

## B. Living Components

For convenience in discussion, the vegetative types have been subdivided in order to correspond with the wildlife habitats. Additional subdivision is in the cliff and rock, and in the road sluff vegetative types. Sketches with accompanying photographs of typical vegetation and wildlife habitat zones are shown on the following pages. (A summary of the vegetative types and acreages is included under IIB4 Animal Habitats).

### 1. Plants (Aquatic)

The rapid flow of the river water combined with the periodic rise and fall of the water level severely limits the variety of aquatic vegetation. While not a true aquatic, some coyote willow is found rooted in the water's edge, widefruit sedge grows in the water during high water periods but is rooted in dry land during periods of low water. Algae cling to the rocks all along the river.

### 2. Plants (Terrestrial)

The vegetative types have been categorized into several components. The first and major break

is between those types which are strongly influenced by the river which have been labeled Types A, and those types not influenced by the river, but closely resembling vegetative types on the surrounding hills. These have been labeled types B. The Type A or aquatic influenced vegetative types occupy a strip of vegetation from one to twenty feet in width all along the river's edge.

The first of these moist types, labeled A-1, consists of cliff and rock. This contains basalt rock in vertical or near vertical faces to the water. Vegetation is sparse or lacking, but may include bluebunch wheatgrass, Idaho fescue, little bluegrass, cheatgrass, buckwheat, yarrow and an occasional shrub of rose, currant, or clematis. Of the 20 miles of river line beneath the road about 1 mile would be the cliff and rock A-1 type. Figuring an average ten foot width of this habitat we would have about 1.2 acres of the type lying beneath the road.

The second aquatic influenced type, labeled A-2, consists of road sluff. These areas consist of large and small boulders and coarse fill which were pushed into the river's edge during the original road construction. This type supports virtually no vegetation, although an occasional hackberry or white alder tree may be found growing between the rocks. In the section of river affected by the proposed action about one-half mile of riverbank would consist of the road sluff. Figuring an average 10 foot width of the type area, this would make up about .6 acres.

The third aquatic influenced vegetative type, labeled A-3, is the most extensive and also has the greatest variety of vegetation. This is the tree-shrub-grass-forb riverbank type. The trees are primarily white alder and hackberry with some coyote willow included. This is occasionally underlain by a layer of shrubs consisting of gooseberry, rose and/or clematis. Kentucky bluegrass is virtually the only grass present, although cheatgrass will be found towards the drier edges. Also found are rushes and sedges with widefruit sedge the primary sedge species. Sagewart, penstemon and cockleburr are common. Vegetative disturbance in this type as from overgrazing or heavy use by campers and fishermen has resulted in deterioration of the vegetation to include large quantities of poverty weed, green rabbitbrush,

mullein and cocklebur. Of the 20 miles of riverbank a bit over 18 are comprised of the A-3 vegetative types. This, figuring a 10 foot average width, would be about 22 acres of the tree-shrub-grass-forb type.

About one-quarter mile of river front is classified under a vegetative type which is similar to the A-3, but has no trees. This, the A-4 vegetative type, has the same non-tree vegetation as the A-3, but may have some additional species such as orchard grass, timothy tall fescue and red top. This would comprise less than a quarter of an acre.

Getting away from the water's edge we find the B vegetative types -- those types not influenced by the adjacent water. Of these the B-1 cliff and rock type and the B-2 rock sluff type are identical to the A-1 and A-2 types except for being farther from the water's edge. There is about  $\frac{1}{2}$  acre of B-1 below the road, but over 30 acres in a 100 foot wide strip above the road. The B-2 type comprises a bit under 50 acres.

Type B-3 is a tree-shrub-grass-forb vegetative type. While there is only a trace of this type above the road, there are about 25 acres of the type below the road. The trees are hackberry or sumac or a mixture of both, while the shrubs are primarily big sagebrush with some areas of green rabbitbrush. The original dominant grass of the type was bluebunch wheatgrass; however, little of this now remains. At present the predominant grass is cheatgrass. Small percentages of yarrow, flox, and buckwheat are frequently found in the type.

Type B-4, the shrub-grass-forb vegetative type, is quite similar to the B-3 type with the exception of the absence of the tree layer. This type is by far the most common type along the road consisting of about 166 acres in a 100 foot wide strip above the road and of about 130 acres below the road. This type is separated into two sub-types: the north facing fescue dominated type, and the west and south facing bluebunch wheatgrass types. Vegetation on the west and south slopes is quite similar to the B-3 with the trees removed. As the slope becomes more north facing Idaho fescue appears until on north to northwest slopes the fescue becomes co-dominant with bluebunch wheatgrass.

Of the approximately 5 acres affected by the quarry site, most consists of the type B-4 (wheatgrass phase). A trace of the B-3 occupies the site. The fifth dryland type, labeled B-5, is the grass-forb vegetative type. While only about an acre of this type is found below the road, over 10 acres is found in the 100 foot strip above the road. The primary grass on the slopes adjacent to the road is cheatgrass; however, fair percentages of squirreltail grass and bluebunch wheatgrass are common. Further up the slopes Idaho fescue and 6-weeks fescue form portions of the grass composition.

On all of the dryland types discussed, historical grazing pressure on areas adjacent to the river has caused the dominance of the annual cheatgrass (with local occurrences of other weedy annual brome grasses). As the perennial bunchgrasses decreased, sagebrush probably increased considerably on many areas. Under the more moderate grazing now practiced the squirreltail and bluebunch wheatgrass are beginning to increase. The return to bunchgrass, however, is a very slow process on annual-dominated sites. Cheatgrass and sagebrush will be the dominant vegetation on these lower slopes for many years to come.

Some impairment of the physiological processes of a given plant may result from road dust settling on the aerial parts of the plant, primarily the leaves. The most likely damage would occur as a result of the fine dust plugging or hampering the opening and closing the stama through which the majority of the exchange of gases occur.

Since the majority of the stamata occur on the underside of the leaves, it is doubtful the normal road dust situation presents a serious impediment to plant health. Another possible hindrance could occur as a result of the dust preventing or diverting the light rays away from the leaf surface and inhibiting the photosynthetic process. Normal wind and moisture occurrence would ordinarily prevent this from becoming a serious problem.

Road dust and wind movement from passing vehicles and possibly other related factors could affect insect activity on vegetation.

### 3. Endangered Plants

Six species of threatened or endangered plants may occur along the Deschutes River:

- a. Astragalus misellus (Pauper milkvetch) is found along the John Day and Deschutes drainages (IIB) (Regional endemics).
- b. Claytonia umbellata (Great Basin claytonia) has been collected on rocky sites in Wasco Co. (III) (Rare or threatened in Oregon).
- c. Lomatium minus (John Day Valley lomatium) grows in fractured basalts in widely disjunct sites, from Wasco to Grant Counties. (Narrow endemic—thought by some to be common and should be removed from the list.)
- d. Lomatium watsonii (Watson's lomatium) grows on dry hillsides in Wasco Co. (Regional endemic).
- e. Penstemon eriantherus var. argillosus (crested tongue penstemon) is known to grow on dry slopes along the John Day and Deschutes drainages (Regional endemic).
- f. Ranunculus reconditus (obscure buttercup) is found among the sagebrush slopes in Wasco Co. (Regional endemic).

1/ BLM, Oregon State Office, Suspected Endangered Plants of Oregon and Washington, January 17, 1977.

The quarry site was examined by a competent botanist in February, 1977. None of the above plants could be identified at that time as being present in the immediate quarry site.

### 4. Animal Habitats

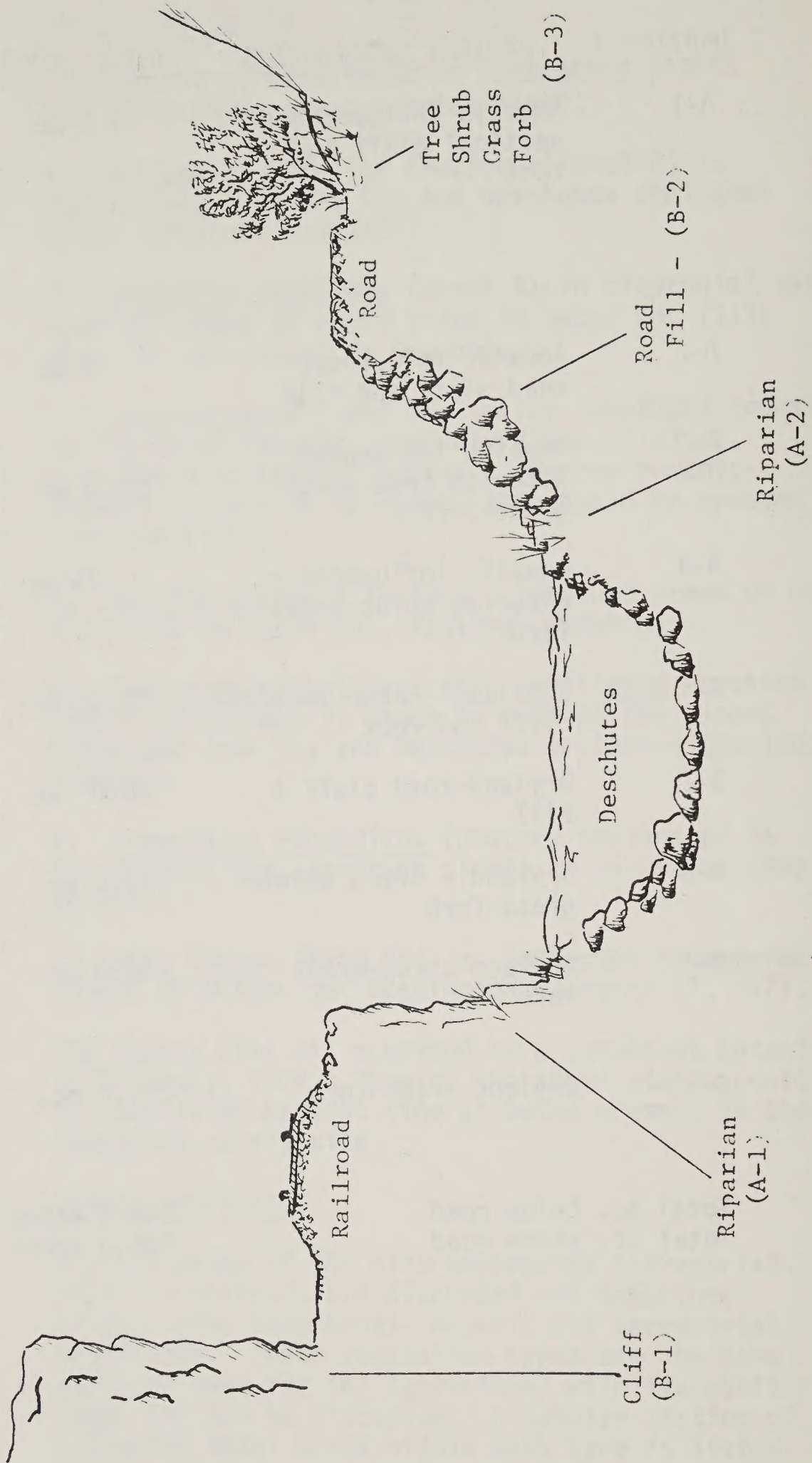
A description of the nine segregated terrestrial wildlife habitats are discussed and described under Living Components, Aquatic and Terrestrial Vegetation. These vegetative types are the same as those used for the terrestrial wildlife habitat types and are so discussed. A tabular listing of estimated total acres within each type is listed below. The areas described are found from the water



up to the road surface and within a strip 100 feet wide above the road.

HABITAT #	HABITAT DESCRIPTION	TOTAL ACRES	REMARKS
A-1	Aquatic influenced or vertical cliff and rock	1.2 ac	All cliffs entering the water were considered aquatic influenced.
A-2	Aquatic influenced road sluff and fill	.6 ac	
A-3	Aquatic influenced-Riparian tree-shrub-grass-forb	22.0 ac	
A-4	Aquatic influenced - riparian shrub-grass-forb	.25 ac	
B-1	Dry land - near vertical cliff and rock	30.50 ac.	30.00 ac. above road
B-2	Dryland-road sluff & fill	50.0 ac	All below
B-3	Dryland - tree, shrub-grass-forb	25.0 ac	Nearly all below road
B-4	Dryland-shrub-grass forb	296.0 ac	166 ac. located above the road
B-5	Dryland-grass-forb	11.0 ac.	10 ac above road, one ac. below.
Total ac. below road		230.0 acres	
Total ac. above road		206.0 acres	

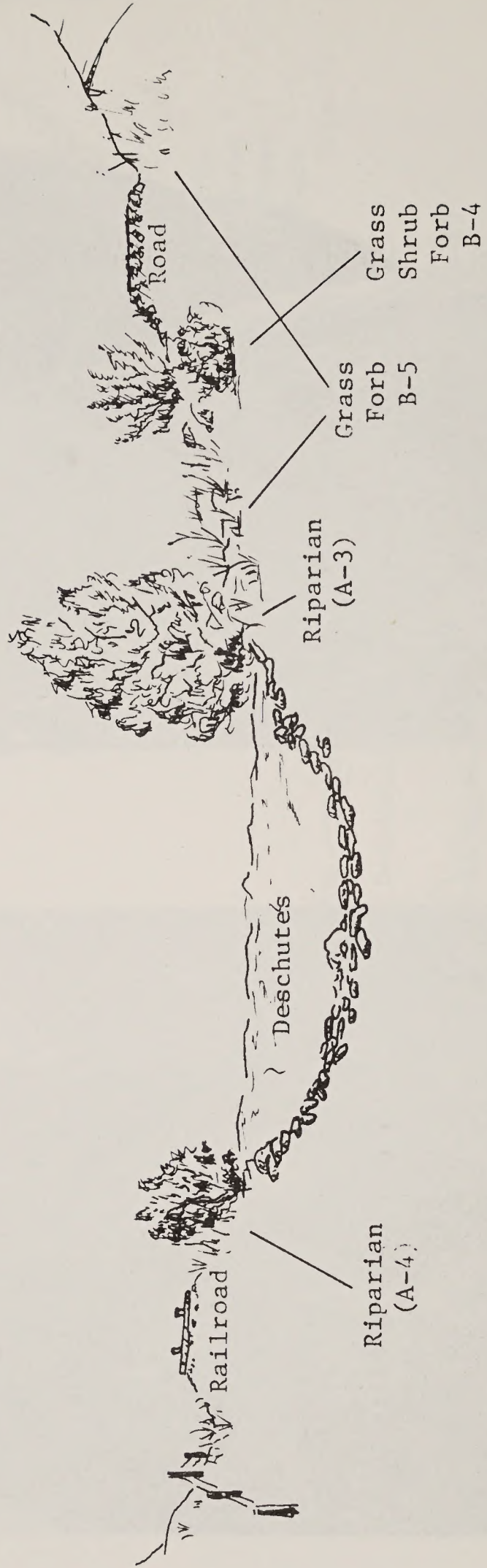
VEGETATIVE - WILDLIFE HABITAT TYPES



PHOTOGRAPHS SHOWING TYPICAL HABITATS  
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VEGETATIVE - WILDLIFE HABITAT TYPES



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The only aquatic habitat adjacent or close to the road is the Deschutes River.

a. Aquatic Habitats

In its truest sense, water is not a habitat but is a medium in which many habitats are found. The Deschutes River, although looking rather homogenous in nature, contains a large amount of diversity. Bottom stratas go from large boulders in deep channels to shallow sandy bars and eddy areas. There are spots where marshy pools are formed when flows are high and gravel bars that frequently wash into the river from intermittent side streams.

The Deschutes River supports one of the largest populations of wild steelhead found in Oregon. Research data, furnished by the Oregon Department of Fish and Wildlife (O.D.F.W.), from 1973-76 shows the annual steelhead run in the Deschutes River ranged from 26,000 in 1972 to 22,000 in 1976 (See Tables 1 & 2). Sampling programs in recent years (75 & 76) have determined 70% of the annual harvest is being supported by wild fish and 30% by hatchery stock. The average total steelhead catch for the years 1972-1976 was 8,976 fish. Approximately 1,272 of the total number harvested per year are caught by the dip net fishery at Sherars Falls. 1/ The high percentage of wild steelhead in the harvest is felt, by the O.D.F.W., to be detrimental to maintaining a viable wild population.

Chinook Salmon are also caught in this river section but harvest is generally incidental to steelhead fishing, especially from July through October. Data furnished by the O.D.F.W. for 1972 and 1973 reflects the following harvest:

<u>Year (July-Oct)</u>	<u>Chinook Harvest</u>	
	<u>Jacks</u>	<u>Adults</u>
1972	<u>172</u>	<u>17</u>
1973	273	37

No information is presently available for the harvest of spring chinook. Along the road most of the pressure on this run is concentrated in the Sherars Falls area. However, some fishing for salmon does occur within the first three or four miles of the Macks Canyon road.

TABLE 1  
Deschutes River Steelhead Catch Data

Year	Population Estimate	Catch by Areas						Trout Cr. South Junct.	% Harvest Total Run	Total Harvest
		Mouth	Kloan	Macks Can. Road	Sherars Falls Sport Catch	Sherars Falls Dip Catch	Maupin			
1972*	26,000	3,056	524	2,463	No Est.	No Est.	884	No Est.	27%	6,926
1973	Est. Comparable to 1972	2,845	980	2,987	371	1,314	1,126	No Est.	40%	9,623
1974	Est. Comparable to 1972	3,312	929	3,992	423	2,605	(Est.) <sup>1/</sup> 1,000	388	49%	12,649
1975	22,000	Included with Kloan	3787	1,610	215	898	1,000 <sup>1/</sup> (Est.)	500 <sup>2/</sup>	36%	8,010
1976	Est. Comparable to 1975	Included with Kloan Est.	4000	1,563	189	424	1,500 <sup>3/</sup>	Included with Maupin	35%	7,676

\*Best Estimate

<sup>1/</sup> Estimate based on 1972-73 samples

<sup>2/</sup> Estimate based on 1974 sample

<sup>3/</sup> Estimate based on 1973 Maupin sample and 1974 Trout Cree - South Junction sample

Data furnished by O.D.F.W., Dalles, Oregon.



TABLE 2

EXPANDED STEELHEAD CATCH  
Macks Canyon Road  
Deschutes River

YEAR	ANGLERS	% CHANGE	HOURS FISHED	% CHANGE	STEELHEAD	% CHANGE	HOURS/ FISH	FISH/ ANGLER
1976	8,128	1	50,743	-6	1,563	-3	32.5	0.19
1975	8,068	-25	53,880	-22	1,610	-60	33.5	0.20
1974	10,793	-3	69,156	13	3,992	34	17.5	0.37
1973	11,141	24	60,987	12	2,987	21	20.7	0.26
1972	8,953	19	54,528	51	2,463	9	22.2	0.28
1971	7,507	72	36,026	113	2,253	190	18.9	0.30
1970	4,373	10	16,924	-5	776	-24	21.8	0.18
1969	3,962	67	17,866	58	1,019	59	17.5	0.26
1968	2,362		11,309		642		17.6	0.27
1967	4,573		15,406		755		20.4	0.17
1966	2,522		12,193		404		30.2	0.16

Angling pressure for the Macks Canyon road area was estimated at approximately 8,068 fishermen in 1975 for an increase of 300% since 1966.<sup>2/</sup> However, this is a reduction of 27½% from 1973. Since fishing pressure appears to be directly related to the size of the run and runs are expected to increase in future years, the fisherman days are predicted to reach 10,000 days per year by 1980. <sup>1/</sup> Nearly all the fishing that occurs along the Macks Canyon Road is for steelhead. There is some early season pressure for trout, but many of the fish that are caught are steelhead smolt and not resident rainbow. The O.D.F.W. feels that presently the resource is supporting the maximum pressure it can consistently handle. Another factor contributing to projected increased angling use in the future is the operation of the new Warm Springs Fish Hatchery. It is estimated that the hatchery will increase the Deschutes River sport fishery catch by 2,300 steelhead and 1,600 chinook salmon. <sup>2/</sup> This will represent an increase of 26% from 1971 to 1976 over the average steelhead catch <sup>1/</sup> and an increase of 46% for the average sport salmon catch for the same period. <sup>3/</sup> First returns are expected back in 1981.

Approximately 8,128 steelhead fishermen <sup>1/</sup> and 3,400 trout fishermen <sup>4/</sup> used the road in 1976. This represented a total "Personal Income Generated" of \$103,275 from steelhead and \$27,200 from trout or a total of \$130,475 attributed to the sport fishery. <sup>5/</sup>

Species other than steelhead using the river include chinook salmon, sockeye salmon (limited) Coho salmon, rainbow trout, whitefish, squaw fish, Dolly Varden, suckers, dace, carp and sculpin. Insects include salmon flies, mayflies, diptera larvae (flies), dragon flies, mosquitoes, and caddis flies. Aquatic birds include herons, shorebirds, mergansers, puddle ducks, kingfishers, and Canadian geese. Mammals are limited primarily to beaver and muskrat with an occasional otter and mink.

- <sup>1/</sup> All data furnished by the O.D.F.W., The Dalles, Oregon
- <sup>2/</sup> B.S.F.W., EIS, Warm Springs National Fish Hatchery
- <sup>3/</sup> O.D.F.W., Oregon Salmon & Steelhead Catch Data - 1965-75.
- <sup>4/</sup> Prineville Dist., Deschutes River Visitor Use Study, 1976
- <sup>5/</sup> Youmans, et al, OSU, Ext. Serv. 1974, Dietering, S.

## b. Terrestrial Habitats - Aquatic Influenced

A-1 Habitat - Near vertical cliff and rock. These comprise a very small area along the river. Water movement up the cliff is minor but the entire face is influenced by its presence. Cliff swallows nest in these areas and Kingfishers use them for hunting observation sites.

A-2 Road Sluff and Fill - These areas were formed when the railroad grade was originally constructed. Water influence is only in an area approximately 10' wide. Vegetation is lacking in these areas and thusly wildlife species. Insects using the water trapped within the rock interspaces attract shorebirds and snakes.

A-3 Tree-Shrub-Grass-Forb - This habitat is the most diversified and productive of all the terrestrial habitats in the area. It contains the three major mediums for nesting, resting and feeding (trees-low shrub-and grass). This habitat also contains the greatest diversity of wildlife species. It is found in a 10' wide (average) strip along the river. Small mammals like deer mice, meadow mice, and harvest mice are found in the grass. Sage sparrows, white crowned sparrows and vesper sparrows are among those using the lower shrubs while mourning dove, grossbeaks, flycatchers, and warblers are among the species found in the taller hackberry and alder trees. Other species spadefoot toad, pacific tree frog, garter snake, rattlesnake, and lizards.

A-4 Grass-Shrub-Forb - This habitat is essentially the same as A-3 except tree oriented species are basically lacking

## c. Terrestrial Habitats - Dryland

The heaviest wildlife recreation use of dryland habitats is in the form of chukar partridge and mule deer hunting. Accessibility and good populations combine to provide excellent recreation opportunities. Jet boaters frequently put in at Macks Canyon and run down river, or across river, to hunt more inaccessible areas.

The dryland habitats number B-1 through B-4 are the same as A-1 through A-4 except they are lacking the aquatic influenced species. The B-5 habitat consists of only grass and forbs. Animal use is much reduced in these dryland habitats over the aquatic ones. Species include chukar partridge, sparrows, golden mantle ground squirrel, chipmunks, lizards, mule deer and cottontail rabbits.

The area within the proposed rock pit is primarily B-4 with some B-3 on the east side. Total area is approximately 5 acres.

The importance of the "A" habitats is increased because it is adjacent to the primary water source for area wildlife. There are some natural springs up high but basically most species rely on the river for water needs. Riparian cover is very important for concealment and shade during hot summer days.

Road dust, generated mainly by traffic, has an observed detrimental influence on wildlife use of affected habitats. Accumulation of dust particles, over the dry summer months, gives all adjacent vegetation a brown cast. Wildlife use of these habitats seems to increase after rainstorms only to decrease again with the increased silt accumulation.

This is based purely on observation and has not been studied for correlation to other possible factors such as displacement by autos, fishing use, sightseeing, etc.

#### 5. Endangered Species

The only classified species known or thought to occur in the area are the Northern Bald Eagle (State - Threatened) and the Peregrine Falcon (State and Federal - Endangered). Neither of these species are known to nest in the area. They are regarded as fall and winter migrants and have only been observed during these time periods.

## C. Ecological Interrelationships

Successional processes and community relationships are highly complex and diverse systems. Endemic plant and animal communities are constantly changing with alterations in or outside the community. Major change factors, such as fire, have been eliminated resulting in false climax situations. Assuming true climax is no longer an alternative and that induced climax, under sound management, is a more realistic base, the following possible energy flows were developed. Only the three types of major importance will be discussed.

### 1. Stream Habitats

Stream habitats are very fragile environments which react quickly to change. Algae and planktons forming the basis for the food chains, are often used as indicators for change. Besides providing the main food source for aquatic organisms, algae also provide important cover for small fish and crustaceans. Protein transfer, important in the early growth in higher life forms, comes mainly from aquatic insects. Energy conversion decreases however with increases in levels of the food chain. Dissolved oxygen (D.O.) is also a very complex component in the stream and concentration levels dictate the species that can survive in the habitat. Species that require higher oxygen levels such as mayflies are found in riffles where levels are higher while water strider larvae are found in quieter, lower D.O. waters. Water temperature, aquatic plants, decaying material, pool-riffle ratios, water quality, volume, and velocity all effect the high and low saturation levels of oxygen in the stream. Changes in any one of these can change the species composition and consequently modify the entire system.

### 2. Big Sagebrush Habitats

Big sagebrush communities have a wider diversity of species than most types in the area. The open character of this brush-grass mixture requires mammals to have traits including high mobility and larger home ranges. Species are basically nonsocial. A preponderance of omnivorous feeders and a variety

of nesting-feeding habits are present. The habitat is fully utilized with species that nest and feed on all mediums. Beetles, caterpillars, and ants are common while small flying insects generally decrease.

### 3. Riparian Habitats

Riparian habitats normally contain 1% or less of the total land base yet they are typically very important and highly productive. They possess several levels for nesting, feeding, and resting ranging from the taller hackberry trees down through the lower sumac and sagebrush to the sedge and grasses at ground level. This variety allows for high wildlife diversity but the reduction of any one level severely limits its productivity. These habitats also provide essential thermal and escape cover during winter and summer stress conditions and frequently draw species from other habitats during these periods. These habitats are often abused or heavily used by livestock, recreation user groups, or man made intrusions but still have the capability to quickly respond with management.

### 4. Summary

Energy flows through the eco-system, it does not cycle. The components of the energy flow consist generally of abiotic inputs, producers, consumers, and decomposers. For example, grasses (producers) capture energy from the sun by photosynthesis and utilize soil nutrients, water, etc., to produce vegetation. herbivorous and carnivorous animals (consumers) feed on plants and other animals to acquire energy. Bacteria, fungi, and some kinds of animals (decomposers) derive energy in the process of decomposition of dead organisms. Energy is continuously being utilized (used by each group of organisms or lost) and new energy is being acquired from solar radiation.

In the Lower Deschutes solar radiation is high but due to other climatic factors such as limited precipitation and sparse vegetative cover, little solar energy is captured by the plants and used. Therefore, the production capacity of the area in comparison to more diversified sites such as timber, is greatly reduced and the food chain shortened.

Certain chemicals such as nitrogen, oxygen, phosphorous, and potassium are essential elements to sustain life. These nutrients, as well as others, continuously circulate through the environment following fixed patterns or cycles and in the process are made available in various forms to man and animals (consumers). For example, nitrogen is recycled from plants (producers) to the atmosphere and back in a complicated process whereby organic material is converted into organic ammonia, nitrites, and nitrate by successive armies of microorganisms (decomposers). The nitrate, if not looped back through plants or stored in the soil, is broken down and the nitrogen is returned to the atmosphere as gas where it again is available to nitrogen fixing plants, thus, completing the cycle.

#### D. Human Values

##### 1. Landscape Character

###### a. Landscape Type

The definition of landscape character and the basic elements which make up a landscape are as follows:

Every landscape, regardless of location, has a definable character. That character is determined, for the most part, by the relationship between four basic elements: form, line, color, and texture. All of the basic elements are present in each landscape but exert varying degrees of visual influence. The more elements there are in the landscape which exert a strong visual influence or contrast, the stronger or more interesting the landscape character. The degree of variety and harmony among the basic elements determines whether or not a given landscape is pleasant to look at.

The following is a brief description of the four basic elements of landscape character and how they are perceived in the landscape:

(1) Form. Form is generally considered as the mass or shape of an object. It is most strongly expressed in the shape of the land surface, usually the result of some type of erosion, but may also be reflected on the shape of the openings or changes in vegetation, or in the

structures placed on the landscape.

(2) Line Lines found in the natural landscape are usually the result of an abrupt contrast in form, texture, or color. Lines may be found as ridges, skylines, structures, changes in vegetative types or individual trees and branches.

(3) Color A phenomenon of light or visual perception that enables one to distinguish between otherwise identical objects. A hue, as contrasted with black, white or gray. Color as perceived in the landscape is usually most prominent in the vegetation but may be expressed in the soil, rocks, water, etc., and may vary with the time of day, time of year, and with the weather.

(4) Texture Texture is the result of the size, shape, and placement of parts, their uniformity and the distance from which they are being observed. Texture, as it is perceived in the landscape, is usually the result of the vegetation or vegetative patterns on the landscape. Texture may also be the result of the erosive patterns in rocks or soil.

The visual quality of the area was evaluated in terms of scenic quality, the viewing distance and sensitivity of the viewing public. With this criteria, lands are categorized into 1 of 5 management objective classes. A definition of these visual management classes and the objectives of these classes are contained in Appendix 9.

Scenery quality is determined by evaluating the topography of the land as well as the natural colors present. The presence of a water body and surrounding vegetation are also considered. The presence of any intrusions which degrade the scenic quality are then considered to temper and reflect an accurate picture of overall scenic quality of an area.



Because of the high scenic quality of this segment of the Deschutes Canyon, the high sensitivity of the viewing public to their surroundings and the restricted nature of the canyon, this area warrants a Class II designation. This designation recommends that any changes in the land form, line, color, or texture of the landscape caused by a management activity should not be evident.

Features seen in this landscape include steep canyon walls rising abruptly from the edge of the Deschutes River. The vertical formations of Columbia River basalt exposed by the cutting action of the Deschutes River are accented by tributary drainages which have also cut dramatic geologic features into the otherwise gently undulating Columbia Plateau.

Nearly all of the land is unimproved with sparse grass and brush cover, extensive talus slopes and boulder fields. The riparian zone along the river and in the bottoms of the major drainages support vegetation ranging from grass to brush with Hackberry and Alder Trees dotting the banks of the river. This vegetation provides a pleasant contrast to an otherwise harsh environment.

The character of the canyon is expressed in the form of steep canyon walls with vertical basalt rock outcrops. Line is expressed vividly in individual trees, shrubs and rocks. The skyline or canyon rim restricts viewing beyond the confines of the canyon and provides strong lines of contrast against the sky. A variety of colors are visible from the deep blue and green of the river to the gray and greens of the grass-brush tree vegetative associations. The soil and rocks provide brown, black and red to the already varied spectrum of color in the canyon.

The feeling one gets in the canyon is of close association with the geology of the area with interesting sights appearing around every turn of the river. One feels dwarfed by the massive structure of the canyon and the power of the river.

b. Harmonious Elements

Harmony exists in the canyon with the rugged walls of the canyon, the sparse vegetation, and the feeling of a harsh environment which it creates. The river and riparian zone also creates a harmonious environment giving the feeling of cool water and shade or shelter from the severe environment which exists out of the influence zone of the river. This character changes from the heat of the summer to the cold winds and rain which occur during the winter months.

Although the strong natural character of the canyon is not dominated by man-made intrusions, it has been significantly depreciated. The visual impact of the Burlington Northern Railroad with 15 to 20 trains a day moving up and down west side of the canyon, as well as the alteration of the landscape which was done in construction of that railroad grade was and still is an encroachment on the natural landscape. Powerline, signals, signs and maintenance buildings associated with the railroad operation add to the intrusion. Since the construction of the railroad, man's development has continued to affect the Deschutes Canyon.

Various high tension powerlines cross or skirt the edges of the canyon while other small utility lines provide electricity to nearby communities and rural residences. In more recent years the abandoned Deschutes Railroad grade on the east side of the river was reconstructed into a two-lane graveled road by the BLM. This road now provides, access for over 21,000 recreationists during the spring, summer and fall in all forms of motorized vehicles. Some of the facilities needed to pursue or accomodate the wide range of recreational activities that occur in the canyon are vehicles, power boats, trailers, toilets, garbage receptacles, campgrounds, boat ramps, etc. The number of vehicles traveling over the existing gravel road creates a significant amount of road dust. This dust factor along with the above mentioned facilities and improvements are intrusions on the characteristic landscape.

Various tracts of private land are also inter-mixed with national resource lands in this area. Some of these tracts have various improvements which are out of character with the natural environment of the canyon. Some of these improvements include old box cars converted into temporary living quarters, trailers, signs, barbed wire fences and various livestock management facilities.

c. Accentuating Elements

The river influence zone and the drier canyon walls create harmonious elements in and of themselves. The lush, moist environment near the river accents the sparse, dry character of the canyon walls and provides a dramatic contrasting element which dominates ones feelings. Rock outcrops, individual trees and lines of nearby bluffs accent the landscape to a lesser degree.

2. Socio Cultural Interest

a. Educational - Scientific

The Deschutes River Canyon is rich in geological, archeological and historical values. The high canyon walls exhibit many years of geological history through varying types of rock and soil structure.

Both professional and amateur archeologists find the area of great interest.

A 100% cultural resource survey of the area to be affected by the proposed action was completed in 1976. The survey was conducted by Brian Gannon, Charles Hibbs and Cynthia Willard, all professional archeologists. There were 36 cultural sites identified in the vicinity (within 300 yards) of the road. Sixteen of these sites are historical and are associated with the construction of the railroad during the early 1900's. The remaining 20 sites are Native American sites ranging from rockshelters material quarrying and manufacturing sites to shell middens and pit houses, including the Macks Canyon village site which has been added to the National Register of Historic Places. Two other archeological

sites are in the process of being nominated to the National Register. The proposed action and alternatives will have no affect on these or any other identified cultural resource site thus no mitigating measures or further analysis under Section 106 of the National Historic Preservation Act of 1966 or Executive Order 11593 is required.

There were undoubtedly many additional Native American Sites destroyed during the construction of the Deschutes Railroad in the early nineteen hundreds. Later abaoneded, this railroad grade now serves as a base for the present Deschutes River Access Road.

b. Cultural Values

Cultural values in the Lower Deschutes Canyon include remnants of Indian habitation and activities such as fishing at Sherars Falls. Ranching is another life style. Many old ranches are still occupied and operated in much the same way as they were at the time of their original establishment. The area has a rich history of cattle and sheep ranching and wheat farming.

c. Social Welfare

Most income in the area is derived from agriculture, lumber, recreaiton and the railroad. A lumber mill in Maupin and one at Tygh Valley are probably the single largest employers. Most of the tourism or recreation income is directly related to the Deschutes River. Many thousands of visitors come from the Willamette Valley and other places to enjoy various forms of river-based recreation. Providing services to these visitors results in a major source of income for Maupin area residents.

d. Attitudes and Expectations

The attitudes of local residents and recreationists towards the Deschutes River and BLM management objectives is complex and varied. The recreation use and management of the Deschutes River is a very controversial and emotional subject. Most of the controversy has developed within the last ten years. The main concern involves the

amount of use and development of the river area. Leading to the controversy are several factors including past development of road access and recreation facilities, the general increase in public recreation due to increases in leisure time and income and, the rising concern for environmental protection.

The Deschutes has long been a famous trout, steelhead and salmon fishing river. Some sportsman groups have purchased private lands for fishing rights and built summer homes. Other ardent fishermen hiked or traveled the railroad into remote sites. Road and campground developments have provided opportunities for use by more people. Drift boating and jet boating added another aspect to river use. As use grew, so did studies to evaluate resource values and plan development. The studies fired the growing use controversy and the resulting publicity further increased the use.

In 1970 the Oregon Scenic Waterways Act designated the Deschutes River as a state scenic waterway. The "zoning effect" of this act was to prevent any change in the use of land within 1/2 mile of the river without approval from the State of Oregon. The intent of this act was to preserve the "Natural Character" of the canyon. In 1971 the BLM issued the Lower Deschutes River Planning Report and held many public meetings. Concern over the use and development of the area exploded into a major environmental vs. development issue that soon involved politics at all levels. Battle lines were drawn between landowners, sportsmen's clubs, environmentalists, special use groups such as drift boaters, and the average recreationist seeking a place to camp and fish. Most of the public comment was in opposition to further road or campground development along the river. Most comment did favor provision of legal hiking access. Comment on the maintenance or improvement of existing facilities was light and varied.

Largely as a result of this controversy, all BLM development activities were halted and only maintenance and limited improvement work done. Since that time legislation has been proposed and is presently pending

would make the lower 100 mile segment of the Deschutes River a component of the National Wild and Scenic Rivers System.

Meanwhile recreation use of the river has continued to grow. The development controversy has been relatively quiet but surfaces whenever the BLM works on existing facilities or makes any improvement proposals.

e. Local Regulatory Structure

The following Federal, state and county agencies have involvement in the planning, implementation and enforcement of activities along the Lower Deschutes River:

Federal Agencies

Bureau of Land Management - This agency is responsible for the multiple use management of public lands along the Deschutes River.

Federal Highway Administration - Provides assistance and approval of designs of roads on public land. Will aid with contract administration for road construction projects.

Bureau of Sport Fisheries & Wildlife - Provides assistance and advice on such things as endangered species. Constructs and operates fish hatcheries.

Environmental Protection Agency - Enforces environmental laws and regulations administered by E.P.A. These deal with air and water pollution, pesticides and oil spills. Conducts inspections monitoring and compliance activities.

U. S. Corps of Engineers - Is responsible for issuance of permits or modification of streambeds affecting navigable streams.

## State Agencies:

Emergency Service Division The Emergency Services Division operates a Search and Rescue Center to coordinate ground searches for people who are lost in Oregon's 96,000 square mile area.

State Engineer - The State Engineer enforces laws relating to the appropriation, diversion and use of the public surface and ground waters of the State.

Department of Environmental Quality - The Environmental Quality Commission and the Department of Environmental Quality are responsible for the administration and enforcement of State laws relating to water pollution control, air pollution control, noise pollution control, subsurface sewage systems and solid waste disposal.

Oregon Department of Fish and Wildlife - The Department formulates the general policies and programs of the state respecting the management of fish and wildlife and wildlife oriented recreation; establishes seasons, bag limits and methods of taking fish and wildlife.

The Department has the responsibility of preserving, propagating, protecting, cultivating, developing and promoting all fish in the waters of the State of Oregon and conducts a continuous research program in anadromous food fish management.

Land Conservation & Development Commission - The initial duties of the Commission are to identify critical areas of statewide concern, establish standards for land use planning for state and local agencies; coordinate activities of statewide significance; and initiate a statewide program of citizen involvement in the land use planning processes.

State Marine Board - The Oregon State Marine Board issues certificates of number and titles to the approximately 110,000 undocumented vessels of this state. It cooperates with federal, state and local agencies to promote uniformity of laws and regulations

relating to boating and advises and assist county sheriffs and other peace officers in the enforcement of such laws. The Board makes regulations consistent with safety and related to the operation of boats on any waters within the territorial limits of any political subdivision of the state.

State Police - Is responsible for enforcement of Fish and Game laws and other laws affecting public use of The Deschutes River area.

Traffic Safety Commission - The commission is responsible for the development and conduct of a comprehensive statewide highway safety program and coordination of activities and programs of those agencies engaged in promotion of highway safety.

State Advisory Committee on Historic Preservation

The Committee is charged with reviewing nominations to the National Register of Historic Places from the State of Oregon and recommending approved nominations to the State Historic Preservation Officer, all pursuant to and in accordance with the National Historic Preservation Act of 1966, Public Law 89-665, as amended.

State Highway Division - This Division has responsibility for the administration of the State Scenic Waterways Act and for design, review and approval of approach roads to state highways.

State Water Resources Board - The Board has instituted the State Water Management Program which is designed to meet three objectives: (1) A current state water policy in regard to use of the state's water resources; (2) minimum conflicts over use of the waters of the state; and (3) continued state sovereignty in regard to control of Oregon's waters.

Workmen's Compensation Board - Has the responsibility for enforcement of safety codes and laws, and administers the Occupational Safety and Health Act.



## County Government - Sherman & Wasco Counties

County Courts - Courts are responsible for regulatory matters and land use zoning.

Planning Departments - They are responsible for developing land use plans and drafting regulations for lands within the respective counties.

Sheriff Departments - Have responsibility for law enforcement within their areas of jurisdiction.

Health Departments - Have responsibility to enforce sewage and sanitary regulations.

Other Entities - The Warm Springs Tribe has interests concerning water quality, stream flow and fish runs within the river.

### 3. Recreation Use and Trends

During the primary recreation use season (April 23 - September 26) there were approximately 21,512 visitors to the segment of the Deschutes River between Buckhollow Creek and Macks Canyon in 1976. This use was in the form of vehicle traffic over all or part of the existing graveled road which parallels the river. Nearly 11,500 of those visitors entered this area to fish. Sightseeing and camping was the second most popular activity with 5420 participants. Whitewater boating accounted for about 7% (1500 boaters) of the total recreation use in this segment of the river.

Out of every 10 people to visit this area, 6 were from western Oregon and slightly less than 3 were eastern Oregonians. Only about 10% of the visitors were from outside the State of Oregon.

From the summer of 1975 to the summer of 1976, overall vehicle traffic on the graveled access road increased by 4.7%.

This and other visitor use data for this area is contained in the 1976 Deschutes River Visitor Use Study which is in Appendix No. 3 of this report.

### 4. Public Safety and Comfort

As shown above, recreation use along the Sherars Bridge - Macks Canyon segment of the Deschutes River involves many

thousands of visitors every year. Traffic counts on the road show use by over 17,000 vehicles annually. Much of the use is concentrated on weekends and holidays during the steelhead fishing season. During such periods traffic safety becomes a serious problem. Hazards include reduced visibility from dust, loose gravel and rough road conditions. Drivers not used to such conditions and vehicle speeds too high for existing road conditions aggravate the situation.

The road dust adversely affects the health and comfort of some individuals. The dust can aggravate respiratory problems and personal cleanliness is difficult.

### III. ASSESSMENT OF PROPOSED ACTION AND ALTERNATIVES

#### Introduction

In analyzing and comparing the environmental impacts resulting from the proposed action and alternatives, it is important to fully understand the existing situation.

The reader must realize that this area is not presently in a pristine condition. A railroad runs along the west bank of the river and a gravel road parallels the east bank. Man's past influence on the environment of this area is quite evident. The river is no longer subject to extreme fluctuation in flows because of upstream dams, and outdoor recreation is presently a primary use of the river.

This assessment considers the environmental impacts, adverse and beneficial, that are expected to occur as a result of the proposed action and alternatives on the existing environment.

The "Environmental Analysis Worksheets", Appendix 1, analyze and the impact of each discrete operation of each stage of implementation on each environmental component and sub-component described in the existing environment. The major impacts -- adverse and beneficial -- identified on the checklist are discussed in the following section along with possible and recommended mitigating measures, and residual impacts.

#### A. Proposed Action - Pave Road

##### 1. Environmental Impacts

###### (a) Impacts on Non-Living Components (air, land, water)

(1) Air - The primary adverse impacts on air associated with the proposed action is particulate matter (dust) resulting from the clearing, excavation, blasting, crusher plant operation, and operation of heavy equipment during the 5 month (February - June) construction phases of the project. Those will be moderate impacts and will be restricted to the immediate work area. Impacts listed on the worksheets (Appendix 1) are the greatest that could be expected under unusually dry conditions. Normal winter and springtime moisture conditions would greatly reduce the amount of dust. After completion of the paving air quality along the



road should be much improved over the existing situation.

(2) Land - The existing roadbed is nearly devoid of soils. The limited amount of soils which do exist have been disturbed during previous construction and/or maintenance activities.

The quarry site has been identified as rock outcrops and rubble land in the Sherman County Soil Survey Report. Because the quarry site is comprised of rock outcrops and alluvial gravels, no adverse impacts on the soils will be experienced under the proposed action (see photos - Appendix 6).

The quarry operation will not affect the overall geologic structure of the area, however, the removal of 50,000 cubic yards of material from the site will have a low impact on the appearance of the immediate area.

Suitability - The quarry and crusher site is suitable for development because of its coarse gravel deposits which make it a very low productive site, and the abundance and quality of gravel rock material. The roadbed is suitable for surfacing because the existing subgrade has been in existence for over 60 years and has been utilized by an operating railroad as well as vehicle traffic in more recent years. The proposed action will have no adverse effect on the suitability of these areas for the proposed use.

Compatability - Upon completion the quarry sites will look similar to other cliffs within the area. Within 5 years native vegetation will be established on the crusher site and the area will look similar to the surrounding country. The paved road will be compatible with other uses of the area when related to present uses. (Note: Compatability of a paved road is a matter of personal opinion regarding the overall character of this portion of the Deschutes River.)

(3) Water - Only the quarry operation would produce possible significant impacts on water quality. If within 2 or 3 years heavy flooding occurs down Jones Canyon, the residual fine material left from the crushing operation could be carried downstream into the Deschutes River.

A storm of sufficient magnitude to move this material only occurs once every 25 years. If such a storm did occur, the impact would be in the form of sedimentation of the Deschutes River, and could amount to as much as 500 cubic yards of material.

(b) Impacts on Living Components (Plants and Animals)

Plants - Aquatic - There are no anticipated impacts on aquatic plants.

Plants - Terrestrial - All grasses, forbs, and shrubs will be destroyed over a 5 acre area within the quarry and crushing site as a result of the proposed action.

Where necessary to restore the roadside ditch and/or shoulder nearly all vegetation within a 3-4 foot strip on either side of the road could be destroyed during construction and paving operations.

The proposed action will have a positive affect on plant vigor on the sites immediately adjacent to the road. This effect will be the result of elimination of road dust, and concentration of water runoff in the ditchline and road shoulder areas.

Animals - Aquatic - The proposed action will have no significant impact on aquatic animals. Possible impacts on the fishery due to increased visitor use (fishing pressure) are discussed in the section entitled "Anticipated Impacts of Increased Visitor Use After Paving."

Animals - Terrestrial - The impacts of the proposed action will result in the destruction of habitat along the road ditchline and shoulders and in the 5 acre quarry and crusher site. Animals which utilize or inhabit the roadside and quarry areas will be displaced or killed during construction activities. Species which may be impacted the most include garter snakes, lizards, rattlesnakes,

ground squirrels, wood rats and insects.

The noise and activity of the construction work will displace the larger and more mobile species. These species are expected to return to the area once construction activities cease. Those species include mule deer, chukar partridge, cottontail rabbits and raptors. No bald eagle or perrigrin falcon nests presently exist in the project area. Increased rates of vehicle speed on the paved road could result in increasing the rate of injury and death to animals as a result of collision with vehicles.

(c) Impacts on Ecological Processes

Plant succession within the construction zone will be interrupted and the area reduced to bare ground. Wildlife species inhabiting or otherwise utilizing the construction area will also be affected through loss of habitat.

(d) Impacts on Human Values

(1) Landscape Character - The presence of equipment with the accompanying noise, activity, and odors of diesel exhaust and asphalt oil during construction activities will detract from the character of the area.

When the project is complete three elements of the landscape character will be impacted. A new line will be placed on the landscape, with the sharp edge of the paved surface material reducing the more natural transition zone between the existing road surface, shoulder and ditchline. Additional color will be added to the landscape with the black color of the asphalt road instead of a brown dirt and gravel road. Texture will also be changed from a relatively coarse gravel surface to a smooth, hard asphalt surface.

(2) Sociocultural Values - Paving the road will increase the safety and comfort of visitors as they travel to and through the area.

The attitudes and expectation of people interested in the Deschutes River area are discussed in the section entitled "Anticipated Impacts of Increased

Visitor Use After Paving." (Section III A-7).

(3) Local Regulatory Structure - The construction and maintenance phases of the proposed action will not have a significant impact on programs and responsibilities of other agencies having management responsibilities in this area.

The proposed action will involve regulatory duties by the following agencies: Workmens Compensation Board, concerning construction health and safety requirements, State Engineer concerning use of water for construction activities, E.P.A. and D.E.Q. concerning environmental safeguards, State Highway Division - concerning approach to state highway at Buck Hollow and as project affects State Scenic Waterway Act. Federal Highway Administration - Concerning construction design and funding.

## 2. Possible Mitigating or Enhancing Measures

### (a) Impacts on Non-Living Components (air, land, water)

(1) Air - Contract stipulations (Appendix 5) require watering and controls on construction methods to reduce the amount of dust.

(2) Land - The contract specifications (Appendix 5) mitigate all identified impacts except those under "Compatability" dealing with personal opinion concerning the character of the paved road.

(3) Water - To reduce the potential hazard of washing residual crusher fines into the river the area could be scarified, fertilized, and seeded to a suitable mixture of grasses, shrubs, and forbs to establish a soil binding sod. Site stability should be achieved within three to five years.

Another possible mitigating measure is to cover the residual fines with large rocks. Covering over 50% of the area with rocks 3 feet or more in diameter would reduce velocity and increase deposition of suspended sediments in the event of a severe storm.



(b) Impacts on Living Components

(1) Plants - Aquatic - No impacts were identified.

(2) Plants - Terrestrial - To mitigate the loss of vegetation, the three acre crusher site could be scarified, fertilized, and seeded to a suitable mixture of native or introduced grasses, forbs, and shrubs. The same recommendation could be applied to disturbed areas within the construction zone along the road.

It is presently felt there is no feasible or need to revegetate the rock face of the 2 acre quarry site.

(3) Animals - Aquatic - No adverse impacts were identified as a result of proposed action (See section entitled "Anticipated Impacts of Increased Visitor Use After Paving" for potential impacts on the fisheries resource.)

(4) Animals - Terrestrial - During the construction phase there are no recognized mitigating measures to offset anticipated animal displacement, death and habitat destruction. To reduce animal death and injury from automobiles, a low speed limit could be imposed on the road after paving.

(c) Impacts on Ecological Processes

No mitigations for the loss of roadside vegetation have been identified. Existing adjacent seed sources allow for quick revegetation after periodic maintenance. Wildlife species utilizing these habitats will be displaced until revegetation occurs. Seeding of the three acre crusher site to native or introduced species of grass, forbs or shrubs could be done to re-establish destroyed vegetation. This may reduce the time necessary for re-establishment of vegetation.

(d) Impacts on Human Values

(1) Landscape Character

No mitigating measures are identified to reduce permanent impacts on the tone, color and texture of the paved road on landscape character. There is a partial mitigation of impacts from

Construction activities by limiting the construction phase to the late winter - early spring period of the year when visitor use is generally low.

(2) Socio-Cultural Interests

No mitigating measures are identified for impacts on Socio Cultural values.

3. Recommended Mitigating or Enhancing Measures

Air - No additional measures are recommended to limit dust during the construction phase of the project.

Land - No additional measures are recommended to Limit or mitigate impacts on the land as a result of the proposed action.

Water - In the quarry area, the crusher site should be scarified, fertilized, and seeded to keep the residual fines in place. Placement of large boulders would hinder possible use of the quarry site for obtaining patching material. It would also be more expensive and unsightly as compared to re-vegetating the area.

Aquatic Plants - No recommendations are necessary for mitigating impacts on aquatic plants.

Terrestrial Animals - A maximum 40 mile per hour speed limit should be imposed after road project is completed.

Ecological Process - No recommendations are presently identified as necessary for mitigating impacts upon ecological processes.

It is recommended that the crusher site be revegetated to natural grasses, forbs and shrubs to reduce the time necessary for reestablishment of vegetation.

Human Values - Landscape Character - There are no recommendatons for mitigating impacts on landscape character.

Human Values - Socio Cultural Interests - There are no recommendations proposed for mitigating impacts on socio cultural interests (See Section III A-7).

#### 4. Residual Impacts (After Mitigation)

Air - After construction dust will be less than what is presently experienced with the existing road.

Land - The character of the land will be changed by the presence of a quarry site and a paved road replacing the existing gravel road. The quarry site after rehabilitation will not be apparent to the average visitor to the area since the site will not be visible from the main road. The paved road is a matter of personal opinion. Some people have no objection to a paved road. On the other hand some people feel the existing gravel road along the Deschutes River adds to the quality of their recreation experience, and paving would lessen their enjoyment of the area.

Water - It is not anticipated that any residual impacts will affect water quality.

Aquatic Plants - It is not anticipated that the proposed action will result in any residual adverse impacts on aquatic plants.

Terrestrial Plants - It will take three to five years for the crusher site to be revegetated. Until that time the quarry site will be in a disturbed condition. Vegetation presently growing in the ditches and road shoulders is periodically removed during normal maintenance of the gravel road. This will continue to a lesser extent after paving.

No vegetation will grow on the quarry sites and it will look similar to other rock cliffs within the area. Reduction in dust and increased water runoff from the pavement will enhance plant growth adjacent to the road.

Animals (Aquatic) - The project as proposed will not result in any significant adverse impacts on aquatic animals (Long term use of the fisheries resource is discussed under the Section III A.7. entitled "Anticipated Impacts of Increased Visitor Use After Paving").

Animals (Terrestrial) - Certain animals will be

displaced or killed as a result of the proposed action. Those that will be killed include small reptiles, mice and possibly squirrels that live in the road side ditches or within the quarry site. Total numbers killed are not considered significant. Animals displaced by construction noise and activities will return after the job is complete.

Increased speeds after paving will increase the possibility of collisions with birds and animals unless the posted speed limit is similar to present rates of travel.

Ecological Processes - Plant succession will be interrupted along the road shoulders by periodic maintenance. This is the same as the present situation. Upon revegetation of the crusher site, plant succession will continue within the limits of this site.

Wildlife use of vegetation will be interrupted by the periodic removal of roadside vegetation during maintenance. This is the same as the present situation.

Landscape Character - The impacts of the actual construction will be short duration and will be done during the period of the year when fewer people visit the area. The long term impacts of paving the road cannot be mitigated. After paving the character of the landscape will be changed.

(NOTE: It is a matter of personal opinion whether this lasting impact is beneficial or adverse).

Sociocultural Values - A paved road will enhance the safety and comfort of visitors traveling on the road.

#### 5. Relationship Between Short Term Use and Long Term Productivity

The proposed paving may result in an increase in visitor use and could affect the long term productivity of the area as measured in the quality of the recreation experience. This is further discussed under the following section that analyze the impacts of increased visitor use.

## 6. Irreversible and Irretrievable Commitment of Resources

The proposed action (road paving) would result in the use of approximately 70,000 tons of crushed rock material and 670 tons of asphalt. These materials would be used to construct the paved road surface and constitute a permanent or irreversible commitment of the physical resources. In the Deschutes area, rock is a plentiful resource. Asphalt is a petroleum derivative and known reserves are dwindling. The use of other materials such as fuel, lubricants, etc., is considered relatively minor.

Losses to the resource base from soil erosion, and destruction of vegetation and wildlife habitat should be negligible since the proposed action mainly involves the existing road area. Some wildlife habitat will be permanently destroyed in the 2 acre rock quarry.

Road paving will change the character of the existing road but should not change the resulting land use along the Deschutes River. The existing access road has already committed the area to recreation use.

## 7. Anticipated Environmental Impacts of Increased Visitor Use After Paving

### Introduction

The preceding sections of this analysis have attempted to analyze the environmental impact of the construction and maintenance phases of the proposed road paving. Those sections did not attempt to analyze the impacts of a possible increase in visitor use and resulting impacts of increased use on the total environment of this portion of the river.

Increased visitor use is not part of the proposed action but it must be recognized that paving may attract more people to the area. It is the increased use and resulting impacts that appear to be of primary concern to the many publics presently interested in the Lower Deschutes. For purposes of the following analysis it is assumed that use will increase 20% the first year after paving and then revert to the normal increase of approximately 5% per year. In most cases impacts resulting from this use will be directly proportional to the anticipated increase in use. In other words no new impacts are

anticipated, only a change in the level of the impacts that are presently occurring within the area are predicted.

(a) Environmental Impacts

(1) Non Living Components

Increased visitor use will further complicate existing problems with soil compaction and wind and water erosion resulting from the driving of vehicles off designated roadways, and camping and parking in undeveloped areas. It is not anticipated that air and water quality will be significantly affected by the possible increase in visitor use.

(2) Living Components

Increased visitor use will increase existing problems with damage to vegetation resulting from the driving of vehicles off designated roadways, wildfire, camping and parking in undeveloped areas and the cutting of brush and trees for firewood.

With the exception of waterfowl and other animals associated with the river being disturbed by increased presence of people the primary concern of increased visitation is the potential affect on the steelhead fishery.

The Deschutes River supports one of the largest runs of wild steelhead found in Oregon. Over the last 5 years the size of the steelhead runs have ranged from approximately 26,000 fish in 1972 to 22,000 fish in 1976. During the 1972-1976 period an average of approximately 7700 steelhead were sport caught each year in the entire river. (This excludes the Indian dip net fishery). This accounts for a 32% harvest of the average run. By including the Indian dip net fishery at Sherars Falls, the overall average harvest increased to 37% (8976 fish) of the total run.

Of the area influenced by the Deschutes River Access Road, the average annual sport catch was 2523 steelhead for the same 5 year (1972-1976)

period. This accounts for approximately 33% of the total fish caught by sport anglers in the entire river, or about 10% of the total run.

In 1971, harvest data indicated that 50% of the total fish caught in the Deschutes River were wild fish while in 1976, 70% of the fish caught were wild fish, with the remaining 30% being hatchery stock.

Steelhead caught within the influence area of the access road presently accounts for approximately 10% of the total run: the estimated 20% increase in the number of steelhead anglers resulting from the surfacing of the road will increase steelhead harvest by approximately 505 fish. This will account for a total catch of approximately 3023 fish or an overall increase of 2% in the harvest of the average run in the river. See Table 3.

It can be estimated that every 10% increase in fishing use in the proposed project area will result in approximately a 1% increase in harvest of the total run in the Deschutes River.

The above projections are not meant to be absolute. Instead they merely represent a straight line projection based on data for the past 5 years provided Oregon Department of Fish and Wildlife.

Increased "trout" fishing along the Macks Canyon Road during April and May will result in an increased harvest of steelhead smolt. The O.D.F.W. feels this situation will be damaging to future steelhead runs.

No data is available to show the magnitude of the smolt harvest or the impact it has on existing and projected steelhead populations.

### (3) Ecological Processes

Possible impacts on ecological processes resulting from an anticipated 20% increase in recreation use include: removal of snags and other vegetation for firewood, trampling of vegetation thus reducing habitat for woodpeckers, small mammals, waterfowl, songbirds and insects. Human presence within the riparian zone (shoreline area) will disturb wildlife.

### (4) Human Values

Impacts on human values resulting from increased visitor use and how this additional use is perceived by other visitors to the area is a matter of personal opinion. Some people have no objection to the presence of more people. On the other hand some people feel the existing levels of use along the Deschutes River Road are high enough (or too high now) and additional numbers of people would lessen their enjoyment of the area.

Increased use could also have a resulting impact on law enforcement and various managing agencies with responsibilities in this area. This impact would be in the form of increased needs for on-the-ground patrol, supervision and enforcement.

## (b) Possible Mitigating or Enhancing Measures

### (1) Nonliving Components

Restrict all vehicles to designated roads, campgrounds, and parking areas to reduce damage to soils through compaction, removal of organic material, and destruction of cover. Overnight Use could be confined to designated campgrounds.

No significant impacts were identified for air and water quality.



(2) Living Components

(a) Vegetation - Vehicle and camping restrictions could be the same as those listed above. Signs could be the same as those listed above. Signs could be posted prohibiting the cutting of brush and trees for fires and wood could be provided; campfires could be allowed only at designated sites; or fire restrictions could be permanently imposed.

(b) Animals - No mitigating measures are identified for disturbance to birds and mammals.

Possible mitigating measures to reduce the anticipated impacts on the steelhead fishery are:

(1) Limit the total number of recreationists using the Macks Canyon Road.

(2) Reduce the harvest in other sections of the river to equalize the estimated increased catch along the proposed paved road.

(3) Limit the harvest along the Macks Canyon Road.

(4) Limit the harvest in the entire river.

The last three possible mitigating measures are under the jurisdiction of the Oregon Department of Fish and Wildlife.

Possible mitigating measures to reduce the anticipated impacts on steelhead smolt are:

(1) Limit the total number of recreationists using the Macks Canyon Road.

(2) Prohibit trout fishing below Buck Hollow.

(3) Reduce the limit for trout below Buck Hollow.

(4) Delay trout season below Buck Hollow.

The latter three possible mitigating measures are under the jurisdiction of the Department of Fish and Wildlife.

(3) Impacts on Ecological Processes

Possible mitigating measures to reduce impacts on Ecological Processes are the same as those covered under vegetation concerning the cutting of firewood and the management of visitor use.

(4) Impacts on Human Values

Crowding is a situation of personal opinion and no impacts have, at this time, been identified that can be mitigated. However, crowding has several spin off impacts that indicate regulation. Possible mitigation would be to develop an acceptable level of use, in relation to crowding and other resources and implementation of a management plan to control the number of people permitted to use the area.

Possible mitigating measures to lessen the impacts on the local regulatory structure include:

(1). Increase BLM patrols and maintenance activities.

(2) Contract with the local county sheriffs department to compensate for the increased workload.

(c) Recommended Mitigating or Enhancing Measures

(1) Non-Living Components - Develop a visitor management plan to confine recreation use to designated areas for parking, camping and hiking.

(2) Living Components - Vegetation - Develop a visitor management plan to confine recreation use to designated areas for parking, camping and hiking.

Prohibit the use of vegetation material within the canyon for the kindling of fires. Provide firewood and allow fires only in designated areas.

(3) Living Components - Animals - Once optimum levels of fish harvest have been determined by the Department of Fish and Wildlife a management plan for regulating recreation use should be developed. The management plan should be compatible with regulations established by the O.D.F.W.

(4) Ecological Processes - Develop a visitor management plan to confine recreation use to designated areas for parking, camping and hiking.

(5) Human Values - After Study and Public Input Management should decide what levels of use are acceptable. Increase BLM patrols and maintenance activities and contract with the local county sheriff office to compensate for the increased workload.

(d) Residual Impacts (After Mitigation)

(1) Implementation of a visitor management plan could mitigate increased impacts resulting from increased use. Such a plan could reduce adverse impacts that are resulting from present use levels.

With the projected increase of 20% in visitor use additional harassment of ducks, herons, and other animals associated with the river will occur.

Impacts on steelhead runs without action by BLM and the Oregon Department of Fish and Wildlife have been estimated to be an increased harvest of approximately 500 fish the first year after paving.

With implementation of a visitor management plan and possible changes in regulations to limit the catch of steelhead, the impacts on the fisheries resource could be lessened to the point that no significant residual impacts would occur.

(2) Ecological Processes - Assuming implementation of a visitor use management plan, the impact of increased visitor use will not result in significant increases in impacts on ecological processes.

(3) Human Values - With an increase in use, some of the people presently using the area will feel a lessening of the quality of their own personal recreation experience. Some of the people may no longer come to the area to fish and camp. Other people do not seem to be bothered by the increase in use.

The residual impact is that those who do not like more crowded conditions may no longer come to the area. However, after the level of use desired from a multiple use management standpoint is established, then a plan can be implemented to limit use to a level acceptable to the using public.

(4) Local Regulatory Structure - An increased presence of BLM personnel and resulting public contact with recreational access will lessen the impacts of increased use on local law enforcement agencies. This assumption is based on the fact that less vandalism and visitor conflicts result when users know that their actions will be observed.

(e) Relationship Between Short Term Use and Long Term Productivity

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Paving the road is considered to be a long term commitment. While it may be technically possible to remove the road and underlying railroad grade to restore the east bank to its original condition, no one can reasonably expect this to occur. The road is there now and must be considered a permanent intrusion on the wilderness character the same as the railroad paralleling the west bank of the Deschutes. Paving the road is expected to increase public use 20% to the first year and then fall back to the present annual increase of approximately 5% per year.

Increasing use of areas for outdoor recreation is not unique to the Deschutes River.

The primary affect of this anticipated increase in use on the long term productivity of the area seems to center around social concerns rather than impacts on the environment.

More visitors will result in more competition for use of the resources in and along the river. Without regulation additional pressure will be placed on the fisheries resource and long term productivity could be reduced. At some time in the future this will happen even if the road is not paved. Paving the road will hasten the time when additional restrictions and increased management will be required but paving the road will not in itself cause a change in the productivity of the resources of the area.

If long term productivity is measured in terms of the quality of the recreational experience then increased competition associated with increasing use will lessen the quality of the experience. Quality is an extremely variable and personal thing and varies from those who feel quality fishing is a full creel for everyone, to those who feel catch and release is the true reflection of quality.

In summary the long term productivity of the resources of the area need not be lessened because of road paving, but there will be more people competing for the resources along the Deschutes.

(f) Irreversible and Irretrievable Commitment of Resources

When analyzing the impacts of possible increased visitor use on the Hacks Canyon segment of the Deschutes River, the resource impacted or committed becomes this segment of the canyon in its entirety with all its components such as the river itself, fish, wildlife, vegetation, etc. The predominant use in the broad sense is outdoor recreation including fishing, sightseeing, camping, etc.

Through previous development, the river area resource is already committed to recreation use. The use and therefore the commitment is increasing. Paving the road may attract more visitors to the area, deepening the commitment and putting more pressure on the overall resource. For all practical purposes, this resource commitment is irreversable and irretrievable. The level of the commitment is the manageable factor. The amount of recreation use and the resulting commitment of the overall resource can be managed through implementation of a visitor use management plan.

In summary, the proposed action tends to reinforce the fact of resource commitment but does not necessarily commit the resource to more intensive use.

## B. Alternative - Number 1 - Crushed Rock Surfacing

### INTRODUCTION

Many of the impacts associated with Alternative #1 (Crushed Rock Surfacing) are the same as those discussed concerning the proposed action. Only those impacts associated with Alternative #1 which differ significantly from those identified under the Proposed Action Section will be discussed in detail in the following analysis. For purposes of this section of the analysis it is assumed that visitor use will continue to increase at an annual rate of 5%. This is the average annual increase that has been occurring during the past several years.

#### 1. Environmental Impacts

##### a. Impacts on Non Living Components

(1) Air - Impacts on air quality during the construction phase of the project will be identical to those described under the proposed action. Subsequent use of the road will result in dusty conditions similar to the present situation.

(2) Land - Impacts on land during the construction phase of the project will be identical to those described under the proposed action with the exception of the compatability aspects of the

paved road. The alternative action will require the removal of an additional 10,000 to 15,000 cubic yards of rock from the quarry site.

A 2,000 or more cubic yard stockpile of gravel would be left at the quarry site for future maintenance purposes. The additional rock removed from the quarry site and presence of a gravel stockpile would not create a significant additional impact.

Water - Impacts on water quality during the construction phase of the contract and those resulting from quarry activities would be identical to those identified under the proposed action.

b. Impacts on Living Components

Plants Aquatic - There are no anticipated impacts on aquatic plants.

Most impacts on terrestrial plants resulting from the construction phases will be identical to those identified under the proposed action. An exception to this is that crushed rock surfacing will not produce a positive effect on plant vigor from reduced dust and increased water runoff that would be experienced from paved road.

Animals - Aquatic - The alternative action will have no significant impact on aquatic animals. The use and resulting impacts on the steelhead fishery is expected to follow established trends.

Animals - Terrestrial - Impacts on terrestrial animals from the construction phase will be identical to those identified under the proposed action. Subsequent use of the road should not result in significant increases in traffic speed and resulting impacts on animals.

c. Impacts on Ecological Processes

Impacts on plant succession and wildlife during construction phases will be identical to those identified under the proposed action.

d. Impacts on Human Values

(1) Landscape Character

During the construction phase the presence of equipment with the accompanying noise and activity and odors of diesel exhaust will detract from the character of the area.

(2) Sociocultural Values

Since resurfacing the existing road with gravel will not materially change the character of the area, little impact would occur on the attitudes and expectations of the present users of the area.

No additional impacts on local authorities above those presently occurring would be anticipated.

In general the area would remain "as is" except for the impacts that are occurring under present use trends.

2. Possible Mitigating or Enhancing Measures

a. Non-Living Components

(1) Air - For the construction phase the possible mitigating or enhancing measures are the same as those described under the proposed action.

Mitigation of dust resulting from traffic use on the road could include the following:

(a) Reduce traffic speeds to 20 mph or less to reduce dust and increase the road life.

(b) Use a dust oil seal in the rock.

(c) Water the road surface as needed.

(2) Land - During the construction phase possible mitigating or enhancing measures are the same as those for the proposed action excluding the compatibility aspect of the paved road. No possible additional mitigating measures are identified for the impacts of removing an extra 15,000



cu. yds. of rock or the 2,000 cu. yd. gravel stockpile.

(3) Water - No additional impacts outside of those identified in the proposed action - construction phase are identified.

b. Impacts on Living Components

(1) Plants - There are no identified significant impacts on aquatic plants.

Possible mitigating measures for impacts on terrestrial plants are the same as those identified in the proposed action. The size of the area needing mitigation however will be reduced by  $\frac{1}{2}$  acre by the gravel stockpile. Impacts of continued dust accumulation on roadside vegetation could be the same as discussed above in the section on air.

(2) Animals - There are no identified impacts on aquatic animals from the construction phase of the proposed action. Possible mitigating measures to minimize presently occurring impacts on steel-head smolt caught during trout season include:

(a) Limit recreation use in the area during the trout season.

(b) Close the area to spring trout fishing.

(c) Reduce the trout limit to reduce smolt harvest.

The latter two recommendations are under the jurisdiction of the O.D.F.W.

There is no significant change in possible mitigating measures for terrestrial animals. There should not be an increase in auto-animal accidents over the present situation.

c. Impacts on Ecological Processes

Possible mitigating measures are unchanged from those in proposed action. This includes revegetation of the disturbed crusher site.

d. Impacts on Human Values

There are no mitigating measures identified to reduce impacts on landscape character. There is a partial mitigating measure in the proposed action limiting construction to the spring of the year.

Socio Cultural Interest are without significant impact and no mitigating measures were identified.

3. Recommended Mitigating or Enhancing Measures

a. Impacts on Non-Living Components

(1) Air - Recommendation for mitigating impacts on air during the construction stages are the same as those recommended under the proposed action.

In order to significantly reduce dust from vehicle traffic, it would be necessary to reduce speed to 20 miles per hour or less. It is not felt that such low speeds would be acceptable to the recreation users.

To reduce dust by watering would require daily road watering during the hot summer use season. The expense and amount of water required for this purpose is not acceptable. A dust oil seal would look similar to a paved road and does not hold up well under moderate to heavy use.

Therefore, no measures are recommended to mitigate dust resulting from use of the road.

(2) Land - No significant impacts are identified and no additional mitigating measures are recommended.

(3) Water - There are no recommended mitigating measures in addition to those concerning rehabilitation of the crusher site.

b. Impacts on Living Components

(1) Plants - There are no identified significant impacts on aquatic plants and no mitigating measures are recommended. Recommended mitigating measures remain the same as those identified in the proposed

action including scarifying, fertilizing and seeding of the quarry site. It appears impractical to mitigate the impacts of dust on roadside vegetation and no measures are recommended.

(2) Animals - There are no recommended mitigating measures at this time to reduce impacts on steel-head smolt. In the future, if adverse impacts are identified, then plans can be formulated to reduce identified problems.

There are no recommended mitigating measures for impacts on terrestrial animals.

- c. Impacts on Ecological Processes - Recommended mitigating measures are the same as those in the proposed action including revegetation of the crusher site to a mixture of vegetative species.
- d. Impacts on Human Values - There are no recommended mitigating measures for landscape character or Soio-Cultural Interests.

#### 4. Residual Impacts (After Mitigation)

Air - Under this alternative the primary impacts on air quality will be similar to the existing dusty conditions caused by vehicular travel.

Land - Under this alternative there would be eventually no change from the proposed action except for the paving operation. The quarry and crushing site would still be required, however, an additional 10,000 to 15,000 yards of gravel would be required since a 6 inch crushed rock surface would be needed to provide a service life equivalent to the 4 inch base and paved surface. In addition, a stockpile of gravel would be left at the crusher site for future maintenance needs.

To some people, the existence of a gravel road rather than a paved road would be considered more compatible with the area.

Water - Although not considered to be a major pollutant, dust from a gravel road will continue to drift over

and into the Deschutes River.

A major storm down Jones Canyon prior to the time the crusher site is revegetated could wash as much as 500 yards of residual fine material into the river. Such a storm normally occurs only once every 25 years.

Plants - Upon completion of graveling the major residual impacts on plants will be the continuation of dust accumulation on vegetation adjacent to the road.

Animals - Animals displaced during the construction phase of this alternative will return to the area after work is completed. The few animals actually killed during construction (snakes, lizards, mice) will be lost. However, adjacent populations will increase and reoccupy the area wherever suitable habitat is available. Thus, the residual impacts on animals will not be appreciably different than that which will be experienced under the present use trends.

Ecological Processes - Plant succession will be interrupted along the road shoulders by periodic maintenance. This is the same as the present situation. Upon revegetation of the crusher site, plant succession will continue within the limits of this site. Wildlife use of vegetation will be interrupted by the periodic removal of roadside vegetation during maintenance.

Human Values - The landscape character would remain essentially the same as it is if the road were resurfaced with crushed rock. The existing situation with regards to problems associated with recreational use of the area will continue in line with present use trends.

##### 5. Relationship Between Short-Term Use and Long-Term Productivity

Resurfacing the existing road with crushed rock is not estimated to significantly increase visitor use above the average annual increase of approximately 5% per year. As previously explained the existing road is considered to be a permanent facility within the canyon. In terms of recreational use the long term productivity of the area will not be reduced as a result of graveling the road. If quality is expressed in a "wilderness" or "primitive" connotation then increasing visitor use would lessen the recreation experience. However, if productivity is measured by the number of recreation days then the normal increase in visitors will allow

for full use of the recreational productivity of the area.

Graveling the road will permit proper maintenance of the road and help insure public safety of those recreationists using the area.

#### 6. Irreversible and Irretrievable Commitment of Resources

The alternative action of resurfacing the road with crushed rock will result in the use of approximately 100,000 tons of crushed rock. No asphalt would be used. While use of the rock constitutes an irreversible commitment of the resource, rock is a plentiful item in the Deschutes area. The use of fuels and lubricants for construction equipment is a relatively minor resource use.

Losses to the resource base from soil erosion and destruction of vegetation and wildlife habitat would be negligible since the action involves the existing road area. Wildlife habitat in the 2 acre rock quarry will be permanently destroyed.

The road resurfacing will not change basic land use in the Deschutes River area.

#### C. Alternative No. 2 - No Action

A "No Action: Alternative is by definition, a continuation of the "Present Situation" section of this analysis. It is expected that recreation use will continue to increase, at approximately the same level (5%) that is now occurring even as the road condition continues to deteriorate until such time as only primitive maintenance is possible. This assumption is based on use of the road upstream from Maupin which is in an almost undriveable condition yet still receiving an annual increase in recreation use. Fishing pressure for steelhead and trout will follow their established trends. Road maintenance will become increasingly difficult as the remaining gravel surface is thrown off the base. This situation is estimated to occur within the next five years. Visitor use may then level off and could actually decrease.

##### 1. Environmental Impacts

###### a. Impacts on Non-Living Environment

Air - As the road continues to deteriorate, vehicles, will by necessity have to travel at slower speeds and dust would be reduced below present levels.

Land - No adverse impacts on soils or other land uses have been identified under this alternative.

The effect of a primitive road on recreation uses presently occurring in the canyon are analyzed in the Socio-cultural values section of this analysis.

Water - None

b. Impacts on Living Environment.

Aquatic Plants - None

Terrestrial Plants - Levels of recreation use under alternative will reduce the effect of road dust on vegetation.

Aquatic Animals - Less people visiting the area may catch fewer fish than would be caught with better road access. However, higher percentage of the recreationists traveling over a more primitive road are expected to be fishermen. Casual visitors such as sightseers etc. will not tolerate poor road conditions.

Animals Terrestrial - Harrassment of wildlife by people will not be as great under this alternative. Lower quality vehicle access in the area may also reduce the harvest of game animals.

c. Impacts on Ecological Processes. No significant impacts or changes in ecological succession will result from this alternative.

d. Human Values -

It is anticipated that recreation use in this area will be less with only primitive access than it would otherwise be with a higher standard road. This lower level of public use will lessen public expenditures in the local economy.

Allowing the existing road bed to deteriorate to a primitive level will be an emotional issue with every user of the area. Some will be strongly in favor of more primitive access since it will reduce competition for use of the resource. Those who are not willing or unable to tolerate the rough condition of the road but still want to use the area will strongly oppose this alternative.

Results of this alternative could be the redistribution of some forms of recreation use from the Sherars Falls-Macks Canyon area to other more accessible or useable areas of the Deschutes River. This situation would further compound management problems in these areas.

## 1. Possible Mitigating Measures

### a. Impacts on Non-Living Components

Air - No adverse impacts have been identified.

Land - No adverse impacts have been identified.

Water - No adverse impacts have been identified.

### b. Impacts on Living Components

Plants, Aquatic - No adverse impacts have been identified.

Plants, Terrestrial - No adverse impacts have been identified.

Fish - No adverse impacts have been identified.

Animals, Terrestrial - No adverse impacts have been identified.

c. Impacts on Ecological Processes - There are no impacts identified and therefore no mitigating measures are possible.

d. Impacts on Human Values - The feelings for or against this alternative cannot be mitigated.

## 2. Recommended Mitigating and Enhancing Measures

Air - No mitigating measures are recommended.

Land - No adverse impacts were identified.

Water - No adverse impacts were identified.

Aquatic Plants - No adverse impacts were identified.

Terrestrial Plants - No adverse impacts were identified.

Aquatic Animals - NO mitigating measures are recommended.

Terrestrial Animals - No mitigating measures are recommended.

Ecological Processes - No major change in ecological processes are anticipated so no mitigating measures are recommended.

Human Values - There are no recommended mitigating measures to reduce the impacts of possible reduced access because of road deterioration.

3. Residual Impacts (After Mitigation)

Air - Less dust from vehicles would occur under this alternative.

Land - Erosion will not increase and a primitive road in this area would be compatible with the land base.

Water - No significant changes in water quality would result from this alternative.

Plants - (Aquatic) This alternative would have no residual impacts on aquatic plants.

Plants - (Terrestrial) Vegetation will be more vigorous adjacent to the road because of a reduction in the amount of road dust.

Animals (Aquatic) - Harvests of fish may decrease as a result of poorer access. It is also possible that boat use may increase and result in some additional fishing pressure. Once the road reverts to a primitive condition it is anticipated that the majority of the users will be fishermen. Recreationists may not want to take trailers and campers into the area and those who prefer this type of camping will go elsewhere. Thus it is difficult to determine what the long term impacts on fish population would be.

Animals - Terrestrial - The long term impacts on animals should be beneficial. If recreation use levels off there should be less harassment of wildlife.



Ecological Processes - No significant change in ecological processes should occur as a result of this alternative. If use patterns change then plant succession may change in corresponding areas.

Human Values - When use levels stabilize; business dependent on increasing recreation use will be adversely impacted.

Poorer road access may increase the number of people using drift boats and jet boats in this section of the river. However, when the road deteriorates to a certain point, people may no longer be willing to drive to Macks Canyon and use it as a put in and take out point. Thus it is possible that only those boaters who have time to drift from the vicinity of Sherars Bridge to the mouth would use the area. If this happens boating use could actually decrease.

If boating use decreases on this portion of the river it is anticipated that use will increase on other sections of the Deschutes.

#### 4. Relationship Between Short Term Use and Long Term Productivity

It is estimated that Short Term Recreation Use, over the next five years, will continue to increase to the point the road condition becomes the limiting factor. Future use beyond this five year period will continue at a somewhat stable or slightly reduced level. There will be a loss in total recreation days and corresponding economic values but a gain in residual consumptive living components. Limitations on consumption of resources may become self-regulating reducing the need for legislative action.

#### 5. Irreversible and Irretrievable Commitments of Resources

Under this alternative the money and resources presently invested in the existing road will be lost. The area would be committed for a more primitive type of recreation use as contrasted to the present type of use.

The Beavertail and Macks Canyon Campgrounds are designed to accomodate recreation vehicles and high levels of use.

These facilities would in a sense be overdesigned

for a more primitive type of recreation use.

Use of the riparian zone for camping, fishing, hiking, wood cutting, and picnicking will continue to increase for the next five years and then level off. Maintenance of existing campgrounds and sanitary facilities will become more difficult as road conditions deteriorate. Vehicle damage from road use, may increase as large rocks and chuck-holes increase in frequency. Dust, however, should decrease as remaining free material is removed, larger material is exposed and vehicle speed is decreased. Impacts on vegetation, wildlife, fish populations, human values, etc., will continue as described in the text.

The Bureau of Land Management is responsible for multiple use management of all resources and lands under its jurisdiction. Allowing an existing facility that receives heavy recreational use to deteriorate in an attempt to regulate use is not an acceptable way to meet management responsibilities.

When recreational use meets or exceeds the capability of the resource to sustain such use, then use must be limited through a planned management action.

D. Alternative No. 3 - Close Road

The physical closing the Deschutes River Access Road between Buck Hollow Creek and Macks Canyon and closing all public land to motorized vehicles, would have a beneficial impact on the nonliving as well as the living components of the Lower Deschutes River Canyon. Access to this segment of the river would be by boat and the existing roadbed could be converted to a hiking and horseback trail. This would then require the abandonment, or conversion of the Beavertail and Macks Canyon Campgrounds as well as the other lesser developed sites into boat, hiker, and/or equestrian camps.

As a result of closing the road visitor use dependent on vehicles for access or camping will no longer use the area or will find other methods of access. It should be noted that prior to building the present road in 1967 a number of individuals had point access to the river over private lands. Once these people got to the river it was possible for them to drive up and down portions of the river on the old railroad bed. Under this

alternative, point access would still be possible over private lands but the public lands would be closed to motorized vehicles.

It is estimated that use levels will decrease by approximately 65%. This assumes that the majority of the non fishing recreation use will stop, and only those who walk in, have point access over private land, or those coming in by boat will be able to use the area. Boat use may actually decrease on the lower river since it would no longer be possible to put in or take out boats between the road closure and the river mouth.

## 1. Environmental Impacts

### (a) Impacts on Non-Living Components

Air - The closing of the road will eliminate all vehicle travel in the area. The road dust problem previously caused by vehicle travel over the Deschutes Road will no longer exist.

Land - Road maintenance operation will cease with closure of the road. Culverts and ditchlines along the road will eventually be blocked, causing portions of the road to wash out.

Water - With the end of road maintenance work, culverts and ditchlines will eventually be blocked by debris. As a result, portions of the road may be washed out, depositing sediment and debris in the river.

### (b) Impacts on Living Components

Aquatic Plants - None

Terrestrial Plants - Damage to vegetation by vehicle traffic will no longer occur. Plants will, for the most part, revegetate disturbed areas and achieve better plant vigor without road dust and being crushed by vehicles.

Animals - The harvest of fish in the Buckhollow-Blacks Canyon area may be decreased by as much as 50% with the closure of the road. This will have a beneficial affect on the wild portion of the steelhead run. Harrassment and harvest of wildlife will also be

reduced with limited access.

(c) Impacts on Ecological Processes

Vegetative and animal succession will proceed with less disturbance due to the reduction in visitor use. Some impacts on vegetation will occur if use of the area by horses is allowed.

(d) Human Values- A 65% reduction in visitor use in the Buckhollow-Macks Canyon area will have significant effect on public expenditures in the local economy.

The majority of recreationists who presently use this segment of the Deschutes River Canyon will be prevented from gaining access to the area. Only about 35% of the present using public who can hike, boat, or ride a horse into the area will be able to enjoy the fishing and other recreational values which existing in this section of the canyon. The approximately 14,000 visitors who are unable to enter the area will strongly oppose this action, while those who are able to hike, ride a horse or use a boat to gain access into the area will favor closing the road to prevent crowding and competition from the people. This action will account for a loss of approximately 30,000 visitor days annually in this area. This use would certainly be transferred to other sections of the Deschutes River or other similar recreation areas.

2. Possible Mitigating or Enhancing measures

a. Impacts on Non-Living Components

Air - Further enhancement of air quality is possible by scarification and seeding of portions of the roadbed and other areas denuded by vehicular activity which would respond to this treatment, further abating the dust occurrence.

Land - There would be little opportunity to mitigate this alternative other than seeding where practical as under air.

Water - Removal of the culverts where the natural drainages pass under the road bed and seeding where

practical as under air and land is a possible mitigating measure.

b. Impacts on Living Components

Plants - Since positive benefits would accrue, mitigation is not needed. Revegetation could be enhanced through seeding or planting of desirable, appropriate vegetative species.

Animals - No adverse impacts have been identified.

c. Impacts on Ecological Processes - No adverse impacts have been identified.

d. Impact on Human Values - One possible mitigating measure to reduce the impact of the road closure is to provide similar access and facilities in other places under BLM jurisdiction along the Deschutes River.

3. Recommended Mitigating or Enhancing Measures

Air - Closing the road is in itself a mitigating measure that would reduce present high dust levels. No other measures are recommended to enhance this action. The main road bed is considered too rocky to scarify or rip and side roads should revegetate without help.

Land - There are no recommended mitigating or enhancing measures. Removal of culverts and stabilization of the creekbed is felt to have more of an impact than leaving them in place.

Water - No mitigating measures are recommended to reduce impacts of sediment into the river. Duration of flows will be short term and felt insignificant, well below the allowed 10% increase over present water quality.

Plants - No enhancing measures are recommended to supplement the benefits to plants because of the reduction in vehicle and recreation use. Livestock will still have an impact on riparian vegetation.

Animals - No mitigating or enhancing measures are recommended for animals.

Ecological Processes - There are no recommended mitigating or enhancing measures. Present facilities in other areas along the river are operating at capacity and are not felt capable to handle the estimated displacement. Constructing additional facilities or upgrading existing facilities or other portions of the river is a possible way to mitigate the loss of 30,000 visitor days in the Macks Canyon Road segment. In addition to the expense of the constructing new facilities and the loss of monies in closing existing facilities the result would be the relocation of existing recreation impacts from the Macks Canyon Road area to other portions of the river.

#### 4. Residual Impacts (After Mitigation)

Air - All dust from the present vehicle use would be terminated.

Land - After a few years the present culverts will fill in and portions of the existing road may wash out causing some short term erosion until the stream beds became stabilized.

Water - The impacts of road slough washing into the river from lack of proper road maintenance would be short term and not of major significance since it is not felt that water quality will be changed by more than 10%.

Plants - Plants will no longer be destroyed by vehicle use or damaged by dust from road traffic. Livestock use would still have an impact on riparian vegetation.

Animals - Disturbance of animals will be reduced with fewer people using the area. Harvest of chuckars, waterfowl and deer would be reduced. The harvest of fish would be reduced perhaps by as much as 50% in this area. This would be especially beneficial to the wild portion of the steelhead run since many of these fish stay in this area.

Ecological Processes - Plant succession would no longer be seriously interrupted by man's activities. Livestock use of the riparian area would continue. If horses are used for access these animals could have an impact on vegetation.

Human Values - With a reduction in visitor use, those businesses that supply goods and services will experience a reduction in sales.

Those people who will still be able and willing to use the area will find it more attractive because of less competition. The approximately 14,000 people who will no longer use the area will have to find other areas for recreation, or will no longer be able to find their preferred kind of recreation.

5. Relationship Between Short Term Use and Long Term Productivity

Closing the Macks Canyon Road to vehicle traffic would reduce recreation use in the area by an estimated 65% or 3,000 visitor days. Some users will relocate in other areas along the river that provide vehicle access but it is felt many will not. The resulting reduction in angling pressure should be beneficial to the wild portion of the steelhead run and reduce harvest of migrating steelhead smolt during the early trout season. The harvest of game animals will decrease but success per hunter should increase. There will be some economic loss to the local economy from reduced recreation days but only from those who do not relocate their use along another portion of the river.

This action should effectively delay the need for administrative regulations on consumptive use. This alternative will also result in an estimated annual loss of 30,000 recreation visitor days.

6. Irreversible and Irretrievable Commitments of Resources

Under this alternative the present investment in the existing road and recreation facilities would be lost.

Recreational opportunities would be reduced approximately 65% since only those people having point access across private lands, those able to hike, ride or get to the area by boat would be able to use the area.

The wild portion of the steelhead run may be better able to sustain itself without additional regulation of the harvest.

The recreation resource would be committed to those

individuals who are able to acquire access by means other than driving along the existing road.

The average annual harvest of 2,523 steelhead taken in the Macks Canyon Road area would probably be reduced significantly even though the area would still be accessible to fishermen who gain access to the area by foot, or horse. It would be impossible to accurately predict the magnitude of the decrease in steelhead catch.

Abandonment of the existing road would allow the road-bed and adjacent areas which have been disturbed by vehicle traffic in the past, to partially revegetate. By allowing the road to return to a natural state and removing other facilities, the landscape would then be less impacted by man's "improvements."

The amount of improvement in the natural character of the area is questionable, however, due to the impact of the operating railroad and other intrusions as discussed in the DESCRIPTION OF THE EXISTING ENVIRONMENT section of this analysis.

This action would completely eliminate the recreation use of this area for many visitors who annually gain access to this part of the canyon by vehicle to enjoy recreational activities that do not involve a boat. This action would require them to go elsewhere for their desired types of outdoor recreation. The result of this would be heavier, more concentrated use of the other areas of the river which are accessible by vehicle. The closure of the road would also eliminate the 1,000 to 1,350 non-recreation vehicles (6-8% of the total traffic volume) that travel the access road annually.

The effect of this alternative on the cultural values (archeological-historical) is not known. Undoubtedly fewer people would enter the area if the road were closed. However, in other similar areas road access and vandalism to archeological or historic sites do not seem closely related, i.e., some of the most remote isolated sites have been heavily vandalized.

This alternative is not felt to be responsive to general public sentiment and would essentially require the abandonment of over one million dollars of public investments in facilities which presently provide for a wide range of outdoor recreational opportunities.



IV. RECORDATION OF PERSONS, GROUPS, AND GOVERNMENT AGENCIES  
CONSULTED

Contact for Opinion and Data

1. The following contacts were made with organized groups by the District Manager to obtain opinion on the proposed action.

September 20, 1976 - Deschutes Chapter Izaak Walton League-Maupin, Oregon - Group was generally in favor of project, but expressed concern for potential increase in visitor use.

September 29, 1976 - Dalles Chapter Izaak Walton League, group generally agreed with need for maintaining road surface, but expressed concern that this might draw added visitors and pressure to this river segment.

October 5, 1976 - Deschutes Chapter, Northwest Steelheaders Council, Trout Unlimited, Bend, OR. Group responded with letter expressing opposition to proposed action and suggested as an alternative closure and abandonment of the roadway.

November 11, 12, 1976 - Oregon State Scenic Waterways Committee. The group expressed no opinion.

2. On September 17, 1976, the District Manager apprised an Interagency Group including the Warm Springs Indians of the proposed project. The group took no position.

3. In September, 1976, the Oregon State Office Wildlife Specialist discussed the proposed project with the Portland Chapter, Izaak Walton League. The group expressed no consensus position.

4. The Oregon Fish and Wildlife Department was requested to provide both data and opinion concerning the proposed action. The Department furnished significant data pertinent to the Lower Deschutes Fishery which are portrayed in other sections of this assessment. By way of opinion, the Department is on record as opposing the proposed action. This position stems from the assumption that road improvement will spur increase in visitor use. Thus, the wild steelhead fishery, riparian vegetation and wildlife will be adversely affected.

5. In November 24, 1976, the Oregon State Multiple Use Advisory Board (BLM) was briefed on the proposed action. The Board adopted a resolution "That the road from Sherars Bridge to Macks Canyon be black-topped to preserve and protect environmental values in the Deschutes Canyon."



The proposed action in itself may have no direct impact on plans and programs of other agencies. However, with the proposed action, it is assumed that visitor use will increase disproportionately from the present normal yearly visitor use increases. An extreme increase in yearly visitor use will impact programs of the Oregon Fish and Wildlife Department.

A number of letters from individuals have been received concerning the proposed paving of the road. These letters generally express opposition to paving because they feel it will tend to attract additional visitors to the area. (Appendix No. 10).



## V. INTENSITY OF PUBLIC INTEREST

Public interest in the proposed action is extremely keen as it has been for the past 10 years for any program or action proposed for public lands adjacent to the lower 100 miles of the Deschutes River. The central theme of interest rests with:

(1) What is the proper level of use for lands and water comprising the Lower Deschutes? Expressed another way; (2) What is the visitor experience quality for each segment of the Lower Deschutes River? This theme has been the subject of numerous interagency, public and special committee meetings through the years. No general consensus for the various river segments has ever been achieved.

From the numerous consultations reflected in IV above and review of the many letters received, this same theme prevails, will the proposed action increase visitor use to an unacceptable level, with a resultant diminishment of visitor experience quality?



**VI. PARTICIPATING STAFF**

This Environmental Assessment Record was prepared in the Prineville District of the Bureau of Land Management by:

- Milt Rogers, Team Leader, District Engineer
- Reinard Okeson, Coordination - Chief, Division of Resource Management
- Wayne Elmore, Wildlife Biologist
- Brian Cunninghame, Recreation Specialist
- Darwin Jeppesen, Soil Scientist and Watershed Specialist
- Earl McKinney, Range Conservationist
- Berta Yardi, Botanist
- Dennis Davis, Geologist





## VII. SUMMARY CONCLUSION

As explained in preceding sections of this report, a double lane, gravel surfaced road already provides access to the Sherars Bridge-Macks Canyon segment of the Deschutes River. Road and recreation use is already high and steadily increasing. When compared to other segments of the river, existing environmental intrusions are already substantial.

Recreation use patterns are well established and would be difficult to change. As use has increased, vehicle traffic has severely damaged the access road. Travel has become difficult and more hazardous, yet traffic increases. Loss of gravel road surfacing has made maintenance very difficult and costly. The situation has been watched and studied for several years and we have now reached the point that something must be done. Alternatives range from outright closure of the road to all vehicular travel to paving the road. Closing the road flies in the face of well established and expected use. Paving would risk certain increases in some environmental impacts. Following is a summary analysis of the more critical existing and anticipated impacts.

1. Air Quality - Air quality in the overall canyon area is very good. However, in the vicinity of the access road, dust from vehicle traffic is serious. The dust reduces visibility on the road to near zero conditions, creating a serious traffic hazard. It has severe effects on aesthetics by disrupting view of the scenery and covering all nearby vegetation. To some people the dust is a health hazard. The proposed action would eliminate the dust problem. The alternatives of resurfacing with crushed rock or doing nothing (no action) will not change the present dust situation. Closing the road will eliminate vehicle caused dust.

2. Wildlife - Other Than Fish - Under present use conditions, recreationists use the valuable riparian wildlife habitat. Some popular areas are already heavily used. In other words, an impact on wildlife of varying intensity already exists. Paving the road will probably increase recreation use. Impacts upon wildlife and habitat would increase in some areas. Resurfacing the road with gravel or doing nothing (no action) would not substantially alter existing conditions. Closing the road would greatly reduce recreation use and wildlife disturbance.

### 3. Fish

Presently, trout fishing along this stretch of river is not too popular, but is increasing. Steelhead fishing is very popular and increasing. There is evidence the fishing pressure is somewhat related to the quality of the steelhead run. Studies show that since 1968, visitor use and fishing pressure has increased 5% or more per year.

Paving the road is expected to increase use, especially in the first year following completion of the work. A substantial increase in trout fishing pressure during the spring could increase harvest of steelhead smolt. This coupled with an increase in adult steelhead harvest could have adverse effects on future steelhead runs.

The alternative action of resurfacing or doing nothing (no action) would not substantially change present use or fishing pressure. Closing the road would reduce recreation use and fishing pressure.

### 4. Man's Use

This is a mixed situation. Presently, people use the area for recreation and are already affected by dust, rough road conditions and the resulting traffic hazards and discomfort. On the other hand the numbers of visitors may be limited by these conditions. Paving would permit safer and more comfortable use of the area at the expense of increasing the use, decreasing solitude. Resurfacing with gravel would not substantially change the present situation.

The alternative of no action would allow the road to become very rough. This would discourage some people from using the area and the present increase in use may stop. Closing the road would eliminate the present vehicle based form of recreation, limiting use to those who would hike, ride horses or boat into the area.

### 5. Project Alternatives and Scheduling

This analysis has dealt intensively with the proposed action of paving and the alternative action of gravel resurfacing. It is anticipated that someone may

offer another alternative of gravel resurfacing now and paving the road a year or more later if road use or condition warrant. This idea was not considered a viable alternative. Road paving must be done on a well compacted base of crushed rock. To compact properly, crushed rock must contain the proper proportion of large to fine rock particles. Use of a graveled road by high volume, moderately fast traffic in dry weather causes the finer rock particles to be carried off the road in the form of dust, leaving only the more coarse material. This material will not form a proper base for paving. Depending on the amount of use and degradation, the road base would have to be reprocessed with the addition of fine material, or the gravel base replaced. Either method is costly and considered a waste of resources.







APPENDIX  
TABLE OF CONTENTS

<u>APPENDIX</u>	<u>SUBJECT</u>
1	Environmental Analysis Worksheets
2	Photographs
3	Deschutes River Visitor Use Study
4	Traffic Count Data
5	Surfacing Contract Specifications
6	Quarry Development Plan
7	Wildlife List
8	Visual Contrast Rating
9	Visual Resource Management Object Classes Definition
10	Letters from Interested Individuals, Groups and Agencies.





INSTRUCTIONS  
ENVIRONMENTAL ANALYSIS  
WORKSHEET

1. Action - Enter action being taken, analytic step for which worksheet is being used, environmental viewpoint of impact, and any assumptions relating to impact.
  - a. Worksheet is normally used to analyze "Anticipated Impacts" of action; however, it may be used to analyze "Residual Impacts." Worksheets may also be used to compare impacts before and after mitigating measures are applied.
  - b. State viewpoint that best describes environmental impact. For example, a fence viewed down the fence line has greater impact than the same fence viewed over an entire allotment. Generally, narrow viewpoints better illustrate specific impacts than will broad viewpoints.
  - c. Assumptions may be made to establish a base for analysis (e.g. estimated time periods, season of year, etc.).
2. Stages of Implementation - Identify different phases of proposed project (e.g. a road project consists of survey, construction, use, and maintenance stages).
3. Discrete Operations - Identify separate actions comprising a particular stage of implementation (e.g. the construction stage of the road project has the discrete operations of clearing, grading and surfacing).
4. Elements Impacted - Enter under appropriate heading all environmental elements susceptible to impact from action and alternatives. Relevant elements not contained in the digest should also be entered. See BLM Manual 1791, Appendix 2, Environmental Digest.
5. Anticipated Impact - Evaluate anticipated impact on each element and place an entry in the appropriate square indicating degree of impact as low (L), medium (M), high (H), no impact (O), or unknown or negligible (X). Precede each entry by a plus (+) or minus (-) sign indicating a beneficial or adverse type of impact. If type of impact

reflects a matter of opinion or is not known, do not precede with a sign. For example, construction of a windmill on open range has a definite visual impact; however, to some people the effect is detrimental while to others it is an improvement. By not entering a plus (+) or minus (-) sign the worksheet is kept factual and unbiased. If both degree and type of impact are unknown, place an (x) in the appropriate square.

a. The measures of impact (e.g. low, medium, and high) are relative and their meaning may vary slightly from action to action. The term "low" should not be applied to impacts of a negligible nature. For example, we know that a pickup truck driving down a proposed fence line laying wire has some impact on air quality. However, the significance of this impact is not normally great enough to warrant even a "low" rating. In cases like this, the impact will usually be marked "0" or the element left off the worksheet.

b. It is recognized that some environmental elements may defy accurate measurement or in-depth analysis within current Bureau capabilities or expertise. The nature of the action as well as type and degree of impact should guide in the decision to seek outside expertise or assistance.

6. Remarks - Enter clarifying information.

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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action: Deschutes River Road Paving
2. Stages of Implementation: Pre-contract Maintenance and Roadbed Preparation

3. Discrete Operations	Clear- ing	Blast- ing	Excavat- ing	
------------------------	---------------	---------------	-----------------	--

4. Components, Sub-components and Elements Impacted	5. Anticipated Impacts	6. Remarks
---	------------------------	------------

I. Nonliving Components	A. Air			Limited to immediate work area	
	Particulate Matter	-M	-L		-M
	Hydrocarbons	-L	0	-L	
	B. Land			Shallow and disturbed soils, little existing structure, limited soils in ditchline Land presently used for road	
	Soil Depth	-L	X		-L
	Soil Structure	X	0		X
	Soil Erosion	-L	0		-L
	Land Use Compatability	X	X		X
	Land Use Suitability	X	X	X	
	C. Water			Unintentional slough of material towards river.	
Sediment Load	-L	0	-L		
Solid debris	-L	0	-L		
II. Living Components	A. Plants (Aquatic)			Outside of work zone.	
	Vascular Plants	0	0		0

III. INTERRELATIONSHIPS  
 II. LIVING COMPONENTS (Con.)

Discrete Operations		Clearing	Blasting	Excavation	
Components, Sub-components, and Elements Impacted		Anticipated Impacts			Remarks
<b>B. Plants (Terrestrial)</b>					
Lichens and Mosses		-H	-H	-H	Within 3 to 4' of road edge
Grasses and Forbs		-H	-H	-H	"
Shrubs		-H	-H	-H	"
Trees		0	0	0	Outside of work zone
<b>C. Animals (Aquatic)</b>					
Birds		-L	-L	-L	Displacement by noise and activity
Amphibians & Reptiles		-L	-L	-L	
Fish		0	0	0	Outside of work zone
<b>D. Animals (Terrestrial)</b>					
Mammals		-M	-M	-M	Displacement by noise and activity
Birds		-L	-L	-L	And possible injury or death within work zone
Reptiles		-H	-H	-H	
Invertebrates		-M	-M	-M	
Man		-L	-L	-L	Inconvenience to road users
<b>A. Ecological Processes</b>					
Succession		-H	-H	-H	Within Work Zone

Discrete Operations		Clearing	Blasting	Excavation	
Components, Sub-components, and Elements Impacted		Anticipated Impacts			Remarks
IV. Human Values	A. Landscape Character				
	Harmonious	-H	-H	-H	Activity and noise during work - no permanent effects
	B. Sociocultural Interests				
	Social Welfare	+L	+L	+L	Local economic benefit generally negative but level unknown
	Attitudes and Expectations	--	--	--	

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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action - Deschutes River Road Paving
2. Stages of implementation: Quarry Development, Quarry Road and Rock Crushing

- |                        |               |               |                 |                           |  |
|------------------------|---------------|---------------|-----------------|---------------------------|--|
| 3. Discrete Operations | Clear-<br>ing | Blast-<br>ing | Excava-<br>tion | Crusher<br>Opera-<br>tion |  |
|------------------------|---------------|---------------|-----------------|---------------------------|--|

- |   |                        |            |
|---|------------------------|------------|
| 4. Components, Sub-components and Elements Impacted | 5. Anticipated Impacts | 6. Remarks |
|---|------------------------|------------|

I. Nonliving Components

A. Air

Particulate Matter	-M	-M	-M	-M	Limited to work area
Hydrocarbons	-L	-L	-L	-L	"

B. Land

Soil Depth	-L	-L	-L	0	Mostly a gravel and rock area
Soil Structure	-L	-L	-L	0	Mostly a gravel and rock area
Soil Erosion	-L	-L	-L	0	Mostly a gravel and rock area
Geologic Structure	-L	-L	-L	0	Change appearance in quarry face
Land Use Compatibility	-L	-L	-L	-L	Other uses very limited
Land Use Suitability	+	+	+	+	Rock outcrop and gravel area

C. Water

Sediment Load	-M	-L	-M	-M	Impact if major runoff occurs in Jones Canyon
Chemicals (petro products)	-L	-L	-L	-L	soon after job completion
Solid debris	-L	-L	-L	-L	

Discrete Operations    Clearing    Blasting    Excavation    Crusher  
 Operation

Components, Sub-  
 components, and  
 Elements Impacted    Anticipated Impacts    Remarks

A. Plants (Aquatic)

None    Outside work area

B. Plants (Terrestrial)

II. Living Components

Lichens & Mosses	-H	-H	-H	-H	Within quarry site only
Grasses (mostly annuals)	-H	-H	-H	-H	Within quarry site only
Forbs	-H	-H	-H	-H	Within quarry site only
Shrubs	-H	-H	-H	-H	Within quarry site only
Trees	-H	-H	-H	-H	Within Quarry Site only

C. Animals (Aautic)

None    Outside work area

D. Animals (Terrestrial)

Mammals	-M	-M	-M	-M	Mostly displacement by noise and activity - some injury and death in work area
Birds	-L	-L	-L	-L	
Reptiles	-H	-H	-H	-H	
Invertabrates	-M	-M	-M	-M	

III. Interrelationships

A. Ecological Processes

Succession	-H	-H	-H	-H	Within quarry site only.
------------	----	----	----	----	--------------------------

IV. Human Values

A. Landscape Character

Harmonious	-H	-H	-H	-H	Activity and noise from work
------------	----	----	----	----	------------------------------

B. Sociocultural Interests

Social Welfare	+L	+L	+L	+L	Local economic benefit
Attitudes and Expectations	-	-	-	-	Generally negative but level unknown.

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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action - Deschutes River Road Paving
2. Stages of Implementation - Road Surfacing and Paving
3. Discrete Operations

		Truck Operation	Equipment Operation	Asphalt Placement	
4.	Components, Sub-components, and Elements Impacted	5. Anticipated Impacts			6. Remarks
I. Nonliving Components	A. Air				
	Particulate Matter	-M	-M	-L	Impact in work area if weather is dry.
	Hydrocarbons	-L	-L	-L	
	B. Land				
	Soil Factors	0	0	0	Work on existing roadbed only
	Land Use Compatibility	+L	+L	+L	Land presently used for road
	Land Use Suitability	+M	+M	+M	Land presently used for road
	C. Water				
	Sediment Load	-L	-L	-0	Unintentional slough towards river runoff from road after first rain - may not reach river.
	Chemicals (asphalt)	0	0	-L	



Discrete Operations      Truck  
Operation      Equipment  
Operation      Asphalt  
Placement

Components, Sub-  
components, and  
Elements Impacted      Anticipated Impacts      Remarks

A. Plants (Aquatic)

All aquatic plants      x      x      x      Outside work zone

B. Plants (Terrestrial)

Lichens and Mosses      -L      -L      x      Impact from dust during  
Grasses and Forbs      -L      -L      +M      road work - after com-  
Shrubs      -L      -L      +M      pletion, plants will  
Trees      -L      -L      +M      benefit from increased  
water runoff and lack of  
dust.

C. Animals (Aquatic)

All aquatic Ani-  
mals      0      0      0      Outside work zone

D. Animals (Terrestrial)

Mammals      -M      -M      -M      Displacement by noise and  
Birds      -L      -L      -L      activity  
Reptiles and  
Invertebrates      -L      -L      -L  
Man      -L      -L      -L      Inconvenience to road users

A. Ecological  
Processes

Succession      0      0      0      Work on existing road only

II. Living Components

III. Interrelationships

Discrete Operations

Truck  
Operation  
Equipment  
Operation  
Asphalt  
Placement

Components, Sub-  
components, and  
Elements Impacted

Anticipated Impacts

Remarks

A. Landscape Character

Harmonious	-H	-M	-M	Activity and noise during construction, permanent effect on visual character
Accentuating	-M	-M	-H	

B. Sociocultural Interests

Social Welfare	+L	+L	+L	Local economic benefit Generally negative - level unknown
Attitudes and Expectations	--	--	--	
Local Regulatory Structure	X	X	X	

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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action - Deschutes River Road Paving

2. Stages of Implementation - Road Maintenance and Operation

3. Discrete Operations

NOTE: Impacts are compared to present situation. In most aspects there is little or no change.

Surface  
Patching      Drainage  
Facilities      Structures  
Traffic  
Use

4. Components, Sub components, and elements impacted

5. Anticipated Impacts

6. Remarks

I. Nonliving Components

A. Air

Particulate Matter	+M	0	0	+H	Decreased road dust in vicinity of road
Hydrocarbons	+L	0	0	X	

B. Land

Soil Factors	0	0	0	0	Disturbed soils near road, land already used for road.
Land Use Compatibility	0	0	0	0	
Land Use Suitability	0	0	0	0	

C. Water

Sediment Load	+L	0	0	0	Decreased road dust
---------------	----	---	---	---	---------------------

II. Living Components

A. Aquatic Plants

All aquatic plants	0	0	0	0
--------------------	---	---	---	---

B. Plants (Terrestrial)

All plants	+L	0	0	+L	Decreased road dust
------------	----	---	---	----	---------------------

C. Animals (Aquatic)

All aquatic animals	0	0	0	0
---------------------	---	---	---	---

		Surface Patching	Drainage Facilities	Structures	Traffic Use		
Discrete Operations							
Components, Sub-components and Elements Impacted						Remarks	
III. Interrelationships	D. Animals (Terrestrial)						
	Mammals	+M	0	0	+L	Less maintenance activity and less noise and dust after paving	
	Birds	+M	0	0	+L		
	Reptiles and Invertebrates	+M	0	0	+L		
	Man	+M	0	0	+L		
	Ecological Processes						
	Succession	0	0	0	0	Disturbed area near road	
	IV. Human Values	A. Landscape Character					
		Harmonious	+M	0	0	x	Less noise and activity from reduced maintenance
		Accentuating	0	0	0	x	
B. Sociocultural Interests							
Social Welfare Attitudes and Expectations		0	0	0	+		
Safety and Comfort		x	x	x	--	Generally negative at present less maintenance and better road may increase traffic patrol needs.	
Local Regulatory structure		+M	0	0	+H		

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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action - Alternative - Crushed Rock Resurfacing
2. Stages of Implementation - Road Maintenance and Operation
3. Discrete Operations

NOTE: Impacts are in comparison to the present situation. In most aspects there is little or no change.

Surface  
Grading  
Drainage  
Facilities  
Structures  
Traffic  
Use

4. Components, Sub-components and Elements Impacted	5. Anticipated Impacts				6. Remarks
---	------------------------	--	--	--	------------

II. Living Components  
NonLiving Components

A. Air					
Particulate Matter	0	0	0	0	In vicinity of road
Hydrocarbons	0	0	0	0	"
Carbon Monoxide	0	0	0	0	"
B. Land					
Soil Depth	0	0	0	0	Soils near road previously disturbed
Soil Structure	0	0	0	0	
Soil Erosion	0	0	0	0	
Land Use Compatibility	0	0	0	0	Land presently used for road
Land Use Suitability	0	0	0	0	
C. Water					
Sediment Load	0	0	0	0	
Solid Debris	0	0	0	0	
A. Plants (Aquatic)					
All aquatic Plants	0	0	0	0	Outside of work and use zone.



IV. Human Values  
 III. Interrelationships  
 II. Living Components

Discrete Operations		Surface Grading	Drainage Facilities	Structures	Traffic Use	
Components, Sub-components, and Elements Impacted		Anticipated Impacts				Remarks
<b>B. Plants (Terrestrial)</b>						
Lichens and Mosses		0	0	0	0	Disturbed by present operations
Grasses and Forbs		0	0	0	0	"
Brush		0	0	0	0	"
<b>C. Animals (Aquatic)</b>						
All aquatic animals		0	0	0	0	Outside of work zone.
<b>D. Animals (Terrestrial)</b>						
Mammals		0	0	0	0	Disturbed by present operations
Birds		0	0	0	0	"
Reptiles		0	0	0	0	"
Invertebrates		0	0	0	0	"
Man		0	0	0	0	"
<b>A. Ecological Process</b>						
Succession		0	0	0	0	Area previously disturbed
<b>A. Landscape character</b>						
Harmonious		0	0	0	0	
Accentuating		0	0	0	0	

Discrete Operations

Surface  
Patching

Drainage  
Facilities

Structures

Traffic Use

Remarks

Components, Sub-  
components and  
Elements Impacted

IV. Human Values

B. Sociocultural Interests

Social Welfare	0	0	0	+	Generally negative at present less maintenance and better road may increase traffic patrol needs
Attitudes and Expectations	x	x	x	--	
Safety and Comfort	+M	0	0	+H	
Local Regulatory Structure	x	x	x	+	



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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action - Alternative Number 2 - No Action
2. Stages of Implementation - None
3. Discrete Operations

NOTE: Impacts are compared to the present situation.

4. Components, Sub-components and Elements Impacted	5. Anticipated Impacts		6. Remarks
	Primitive Maintenance	Continued Public Use	
<b>I. Nonliving Components</b>			
A. Air			
Particulate Matter	+L	+L	Less maintenance, less increase in traffic and slower traffic
	0	0	
Hydrocarbons	0	0	
B. Land			
Soil Factors	0	0	Land already used for road
Soil Erosion	0	0	
Land Use Compatability	0	0	
Land Use Suitability	0	0	
C. Water			
Sediment Load	0	0	
Solid debris	0	0	
<b>II. Living Components</b>			
A. Plants (Aquatic)			
All plants	0	0	

		Discrete Operations	Primitive Maintenance	Continued Public Use	Remarks
		Components, Sub- components, and elements impacted			
III. Interrelationships II. Living Components	B. Plants (Terrestrial)				
	All Plants	+L	+L		Reduced road dust.
	C. Animals (Aquatic)				
	Fish	0	+L		Fishing pressure will not increase as fast when road access deteriorates
	D. Animals (Terrestrial)				
	All	0	+L		Deteriorating road access will limit future increases in recreation use.
III. Interrelationships II. Living Components	A. Ecological Processes				
	Succession	0	X		Some impacts on plant succession may occur as use patterns change.
	A. Landscape Character				
III. Interrelationships II. Living Components	Harmonious	0	X		A primitive road would be harmonious with the area.
	Accentuating	0	X		The same is true of a higher standard road
IV. Human Values	B. Sociocultural Interests				
	Social Welfare	-L	-L		Road maintenance decreased. Deteriorating road may limit future increases in recreation use. Depends on opinion - likely an emotional issue with present users.
	Attitudes and Expectations	M	M		

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ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action - Alternative #3 - Close Road
- 2 Stages of Implementation - None
3. Discrete Operations

NOTE: Impacts are compared to present situation. In most aspects there is little or no change

		Physical Closures	Continued Public Use	
4. Components, Sub-components, and elements impacted		5. Anticipated Impacts		6. Remarks
I. NONLIVING COMPONENTS	A. Air			
	Particulate Matter	0	+H	Within immediate vicinity of road
	B. Land			
	Soil Erosion	0	-L	A slight amount of erosion will occur as the road maintenance stops and culverts fill up with debris
	Land Use Compatability	0	0	Area is suitable for closure
Land Use Suitability	0	X		
II. LIVING COMPONENTS	C. Water			
	Sediment Load	0	-L	Some impact on water quality will result from lack of maintenance
	Solid debris	0	-L	
	A. Plants (Aquatic)			
	All Plants	0	0	

		Physical Closure	Continued Public Use	Remarks
Discrete Operations Components, Sub-components and Elements Impacted				
<hr/>				
III. Interrelationships	B. Plants (Terrestrial)			Elimination of vehicles and resulting dust will benefit vegetation. Decreased visitor use will reduce damage to vegetation.
	Living Components			
	All Plants	0	+M	
	C. Animals (Aquatic)			
II. D.	Fish	0	+H	Less people will catch fewer fish.
	Animals (Terrestrial)			
A.	All animals	0	+H	Less people will have a reduced impact on wildlife.
	Ecological Processes			
III. Interrelationships	Succession	0	+L	Reduced visitor use would allow plant succession to proceed with less disturbance.
	A. Landscape Character			
IV. Human Values	Harmonious	0	M	The character as perceived by the visitor will change as a result of lack of motorized vehicles. Trains and jet boats would still be apparent.
	Accentuating	0	M	
IV. Human Values	B. Sociocultural Interests			
	Social Welfare	0	-M	Recreation expenditures in the area will decrease.
	Attitudes and expectations	H	H	This is a very emotional issue with the present users.

PHOTOGRAPHS - GENERAL VIEW



BEGINNING OF ROAD



VIEW DOWNRIVER TOWARDS  
TWIN TUNNELS

PHOTOGRAPHS - GENERAL VIEW

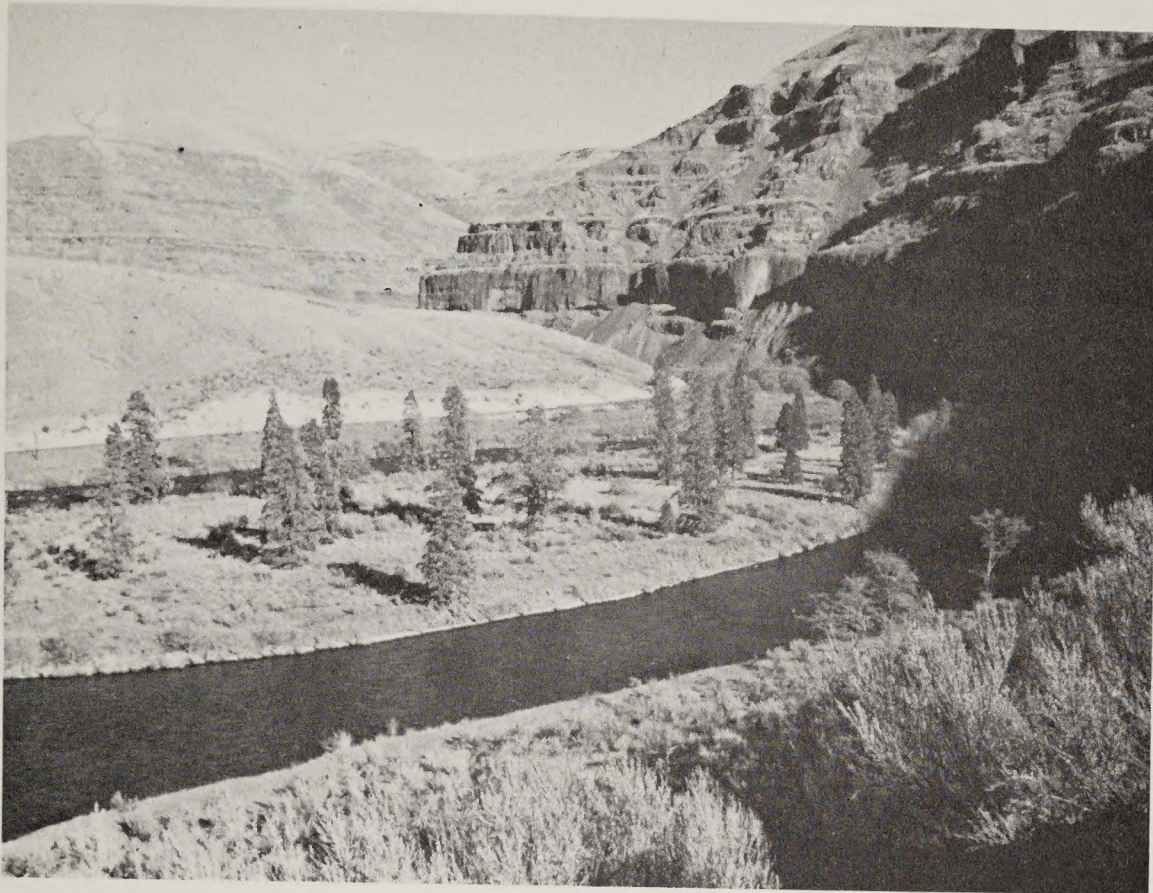


SINIMOX AREA - LOOKING DOWNRIVER



TWIN TUNNELS AREA - LOOKING DOWNRIVER

PHOTOGRAPHS - GENERAL VIEWS



CEDAR ISLAND - LOOKING DOWNRIVER

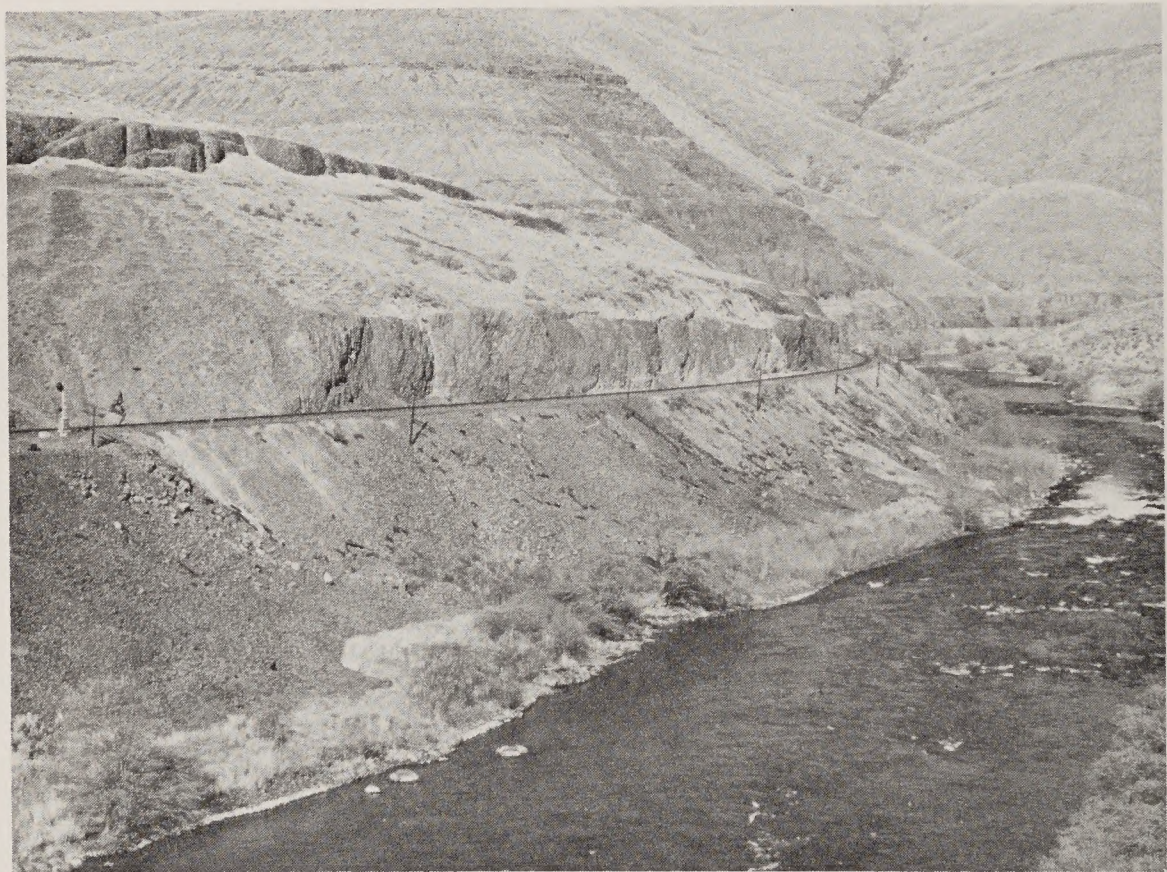


CEDAR ISLAND - LOOKING UPRIVER

PHOTOGRAPHS - RAILROAD



BRIDGE NEAR TWIN TUNNELS



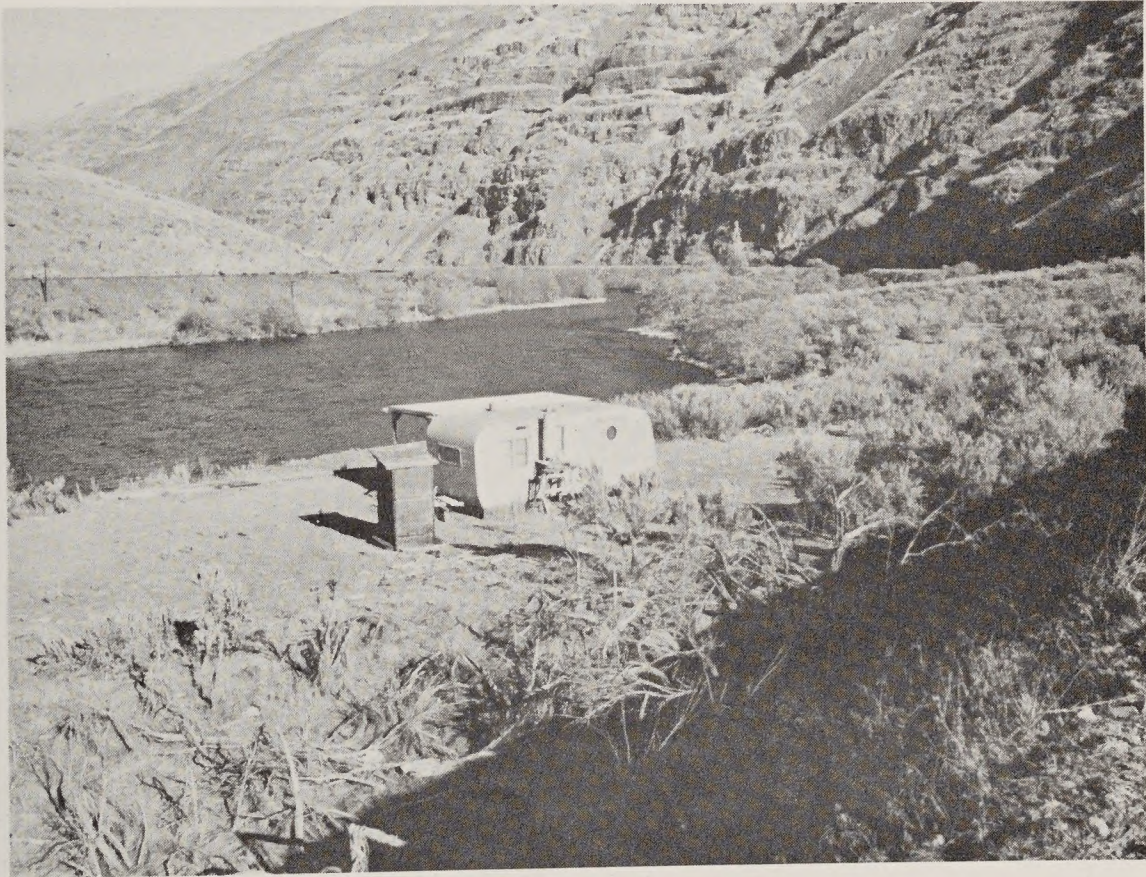
RAILROAD GRADE LOOKING DOWNRIVER FROM TWIN TUNNELS



PHOTOGRAPHS - PRIVATE DEVELOPMENTS



"BOXCARS" NEAR BOX ELDER CANYON

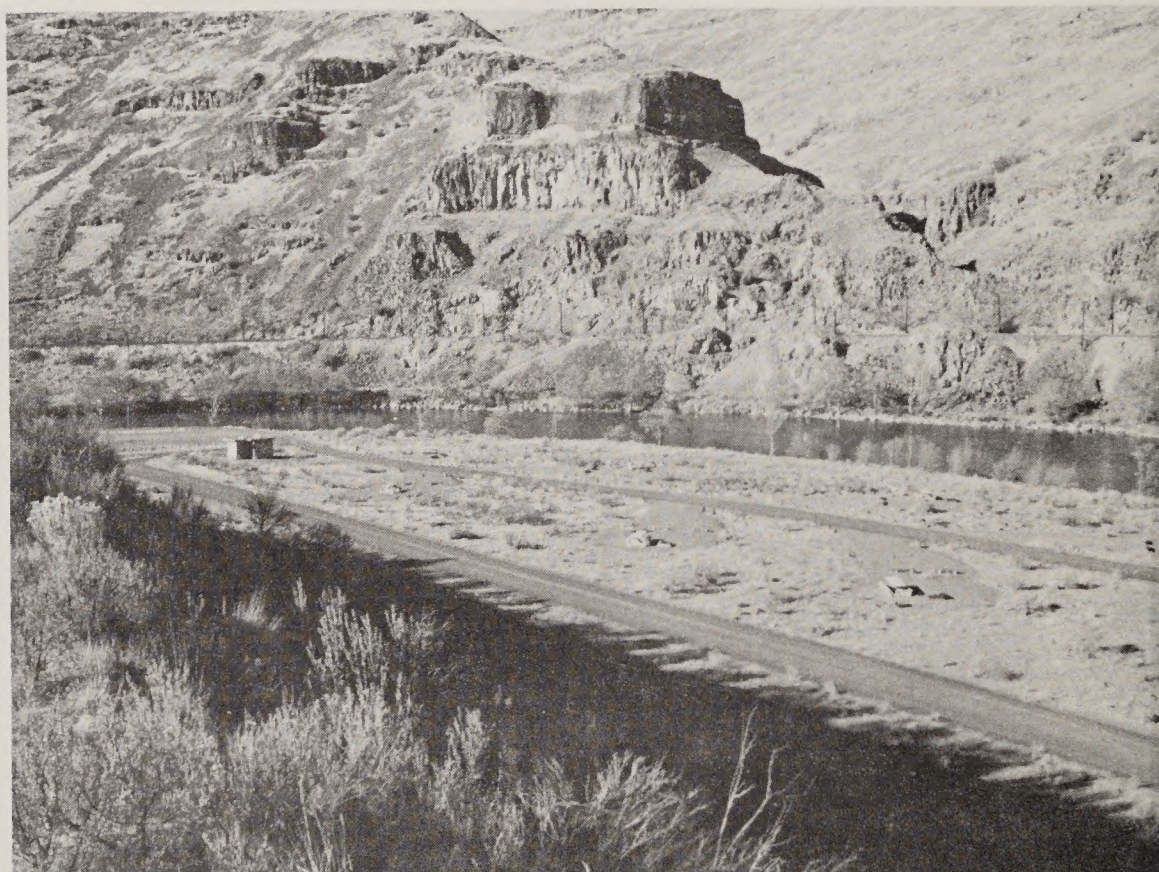


TRAILER CAMP NEAR BOX ELDER CANYON  
Second Trailer Located Left Of  
Photo

PHOTOGRAPHS - RECREATION SITES



MACKS CANYON CAMPGROUND



MACKS CANYON CAMPGROUND

PHOTOGRAPHS - RECREATION SITES



BEAVERTAIL CAMPGROUND

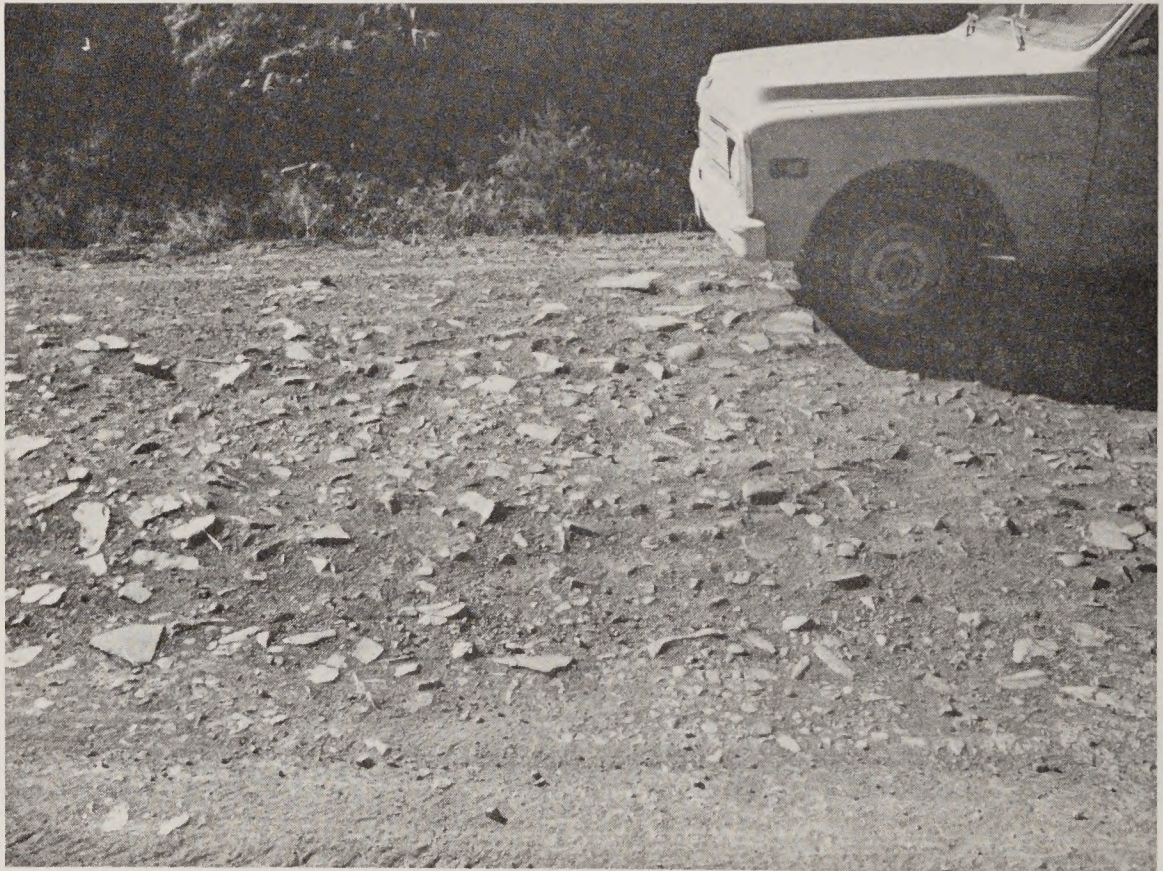


GERT CANYON - INFORMAL SITE

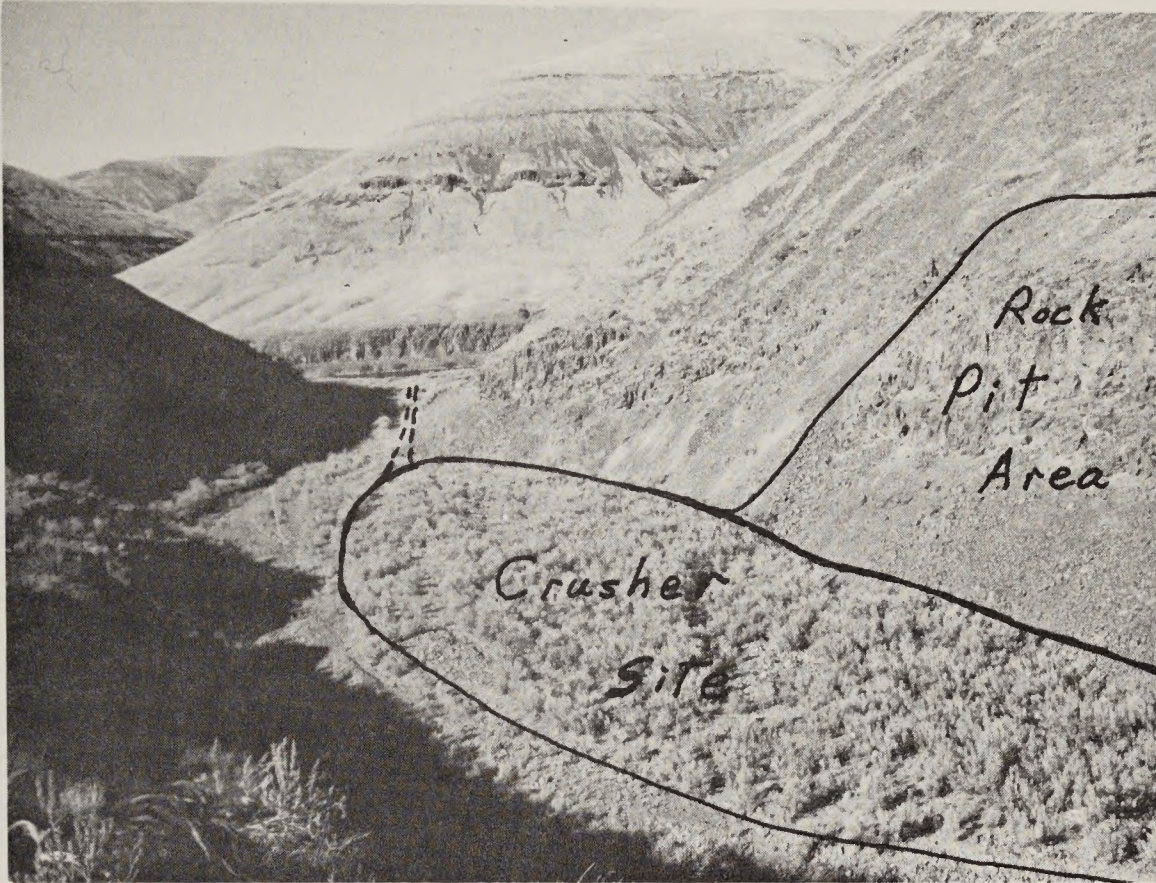
PHOTOGRAPHS - ROAD CONDITION



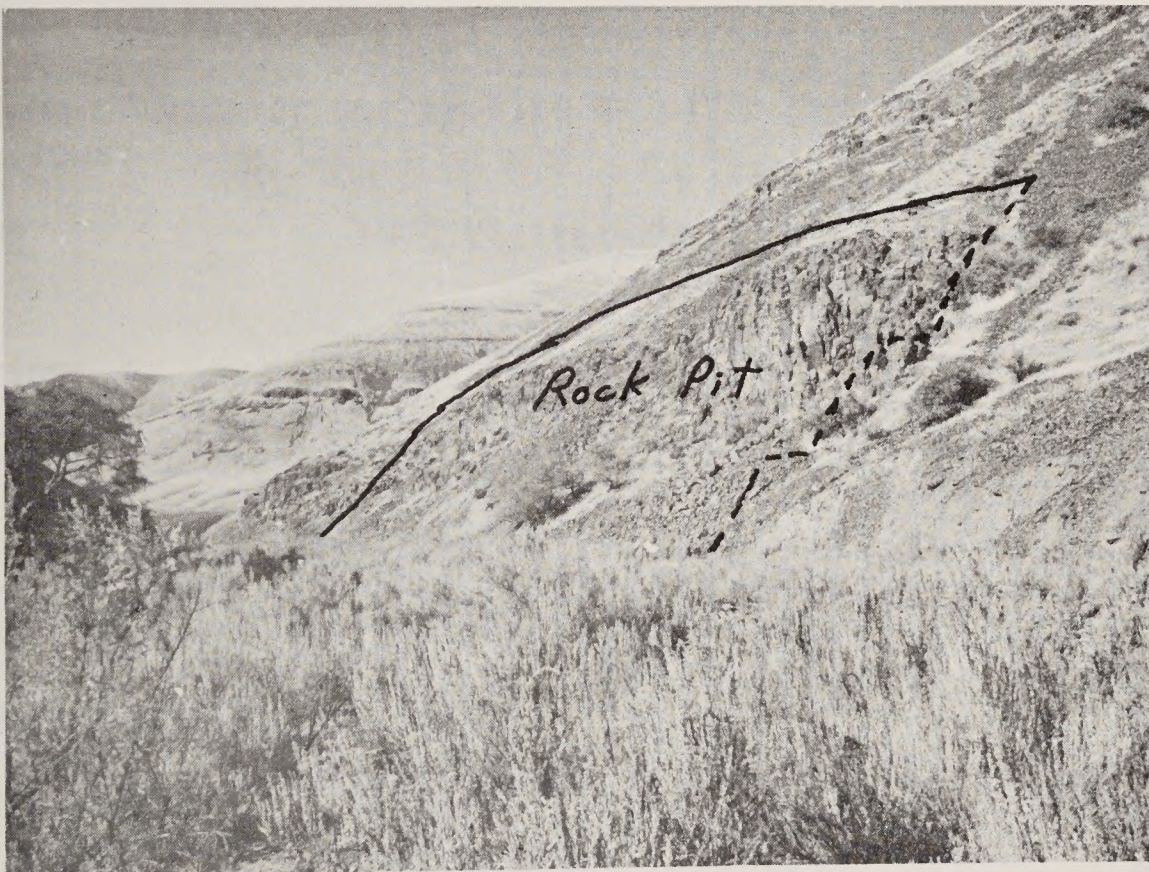
TYPICAL AREAS OF DETERIORATING ROAD SURFACE



PHOTOGRAPHS - ROCK QUARRY



PROPOSED QUARRY AND CRUSHER SITE



PROPOSED QUARRY SITE  
Foreground Vegetation Not In Area To Be Developed



## DESCHUTES RIVER VISITOR USE STUDY

1976

(Sherars Falls -Mouth)

Between April 23 and September 26, 1976, a study of recreation visitor use of the Deschutes River was done to supplement and upgrade the data which was collected by a similar study in 1975. The 1975 study provided use volumes and user characteristics for the 100 mile segment of the Deschutes River between Warm Springs and the confluence of the Deschutes with the Columbia River. Acceptable data was obtained for that segment of the river between Warm Springs and Sherars Falls. However many problems affected the quality of the data for the segment between Sherars Falls and the mouth. For this reason, the 1976 study concentrated on this river segment in an effort to bring the reliability of the data for the lower area up to a level comparable with the stretch upstream from Sherars Falls. No interviewing was done upstream from Sherars Falls, however, the traffic counter data was collected. The user characteristics from 1975 and the 1976 traffic volumes were merely expanded to reflect changes in levels of use in 1976.

The same study procedures, assumptions and limitations that were established in 1975 were carried forward into the 1976 study effort, except for refining and improving some sampling techniques.

## A. VISITOR USE ANALYSIS

A breakdown of visitor use by site or river segment for 1975 and 1976 is as follows:

AREA NAME	1975 Visitation	Change (+ or -)	1976 Visitation
Warm Springs Reservation Vicinity	28,545	?	28,545
Gateway	6,970	+11%	7,737
South Junction	3,421	+5%	3,592
Maupin-North Junction	27,819	-.6%	27,652
Maupin Vicinity	4,017	?	4,017
Maupin-Sherars Falls	45,011	+6%	47,712
Sherars Falls Vicinity	--	---	12,027
Buckhollow-Blacks Canyon	--	----	21,512
Kloan	--	----	4,537

AREA NAME	1975 Visitation	Change (+ or -)	1976 Visitation
Moody	----	-----	21,500
Deschutes State Park	----	-----	53,968
Highway 206 Bridge (Mouth of River)	----	-----	- 1,076
			<u><u>Total visitors 233,875</u></u>

Overall recreational visitor use of the Deschutes between Warm Springs and Sherars Falls increased by an average of 4% in 1976 over 1975.

The remainder of this analysis will pertain only to that segment of the river between Sherars Falls and the mouth. The 1975 study report should be consulted for specific information pertaining to sites or river segments upstream from Sherars Falls.

#### B. VISITATION BY AREA:

	Visitors 4-23-76 - 7-31-76	Average Daily Visitors	Visitors 8-1-76 thru 9-26-76	Average Daily Visitors	TOTAL
Sherars Falls Vicinity	8,609	87	3,418	83	12,027
Buckhollow-Macks Canyon	12,118	122	9,394	229	21,512
Kloan	2,445	25	2,092	51	4,537
Moody	11,872	120	9,628	235	21,500
Deschutes State Park	31,770	320	22,198	541	53,968
Highway 206 Bridge	<u>764</u>	<u>8</u>	<u>312</u>	<u>8</u>	<u>1,076</u>
TOTAL	67,578	682	47,042	1147	<u><u>114,620</u></u>



Visitation on this river segment changes drastically with the movement of steelhead into the river. During the primary trout season, (April-July) there were an average of 682 visitors to this area daily. When steelhead fishing began picking up, visitation nearly doubled to 1147 people per day average. The most popular periods of use on the river are the weekend and holiday periods with 60% of the total use occurring at these times. Even though there are twice as many weekdays as there are weekend days and holidays, only 40% of the recreation use occurs during the normal work week (Monday through Friday).

A breakdown of the visitor use by recreation activity is as follows:

ACTIVITY	VISITORS
A. Fishing*	
1. Bank Fishermen	53,735
2. Boating Fishermen	4,986
TOTAL	<u>58,721</u>
	*only 79% or 46,148 of the people in fishing parties actually fished.
B. Sightseeing	37,970
C. Camping	10,786
D. Whitewater boating	7,143
TOTAL	<u>114,620</u>

NOTE: By adding the boating fishermen and the whitewater boaters together, a total of 12,129 boaters used the river between Sherars Falls and the mouth.

As was expected, fishing is the primary reason people visit the Deschutes. For those who fished for trout, an average of 8.3 hours was spent fishing for each fish that was kept. Several more fish that were either trash fish or undersized were caught but not kept. The above figure is only for game fish caught and kept. During the steelhead season an average of 32 hours was spent fishing for each fish that was caught and kept.

Visitors who come to the Deschutes River to fish or boat usually stay overnight. A breakdown of the average length of stay by recreation activity is as follows:

<u>ACTIVITY</u>	<u>AVERAGE LENGTH OF STAY</u> <u>(Hours)</u>
Fishing	
Bank Fishermen	22.9
Boating Fishermen	32.0
Sightseeing	1.6
Whitewater boating	21.3
Camping	37.8
Hunting	8.0

A breakdown of the origin of visitors to the lower segment of the Deschutes Canyon is as follows:

<u>ORIGIN of VISITOR</u>	<u>PERCENT OF TOTAL VISITORS</u>
Eastern Oregon	31%
Portland-Vancouver Metro Area	42%
Other western Oregon	13%
Other Washington	7%
California	3%
Idaho	1%
Other	3%
	<u>TOTAL 100%</u>

NOTE - The percentage of Oregon use is significantly lower than what was portrayed in the 1975 study because of the addition of the Deschutes State Park to the sample and the higher out of state use of that area from Interstate 80N. Also, the amount of non-recreation traffic is greater in 1976 primarily because of the large number of railroad workers, ranchers, road crews, etc. using the Moody Road as well as the State Park. If just the Buckhollow-Macks Canyon Road and Klua were considered, non-recreation traffic would only be about 6 to 8%.

A description of boating use between Sherars Falls and the mouth is as follows:

<u>BOAT TYPE</u>	<u>PEOPLE IN THAT TYPE OF BOAT</u>	<u>PERCENT OF TOTAL BOATING USE</u>
Jetboat	3,000	25%
Driftboat	3,050	25%
Raft	4,700	39%
Canoe-Kayak	474	4%
Other	904	7%

In interviewing boaters throughout the season, only 10% declared their use to be commercial, leaving 90% as non-commercial. Of the 12,129 boaters 41% were fishing, while 59% were merely there for the white water boating aspect of the river. Early in the season (April through July) there were a greater proportion of whitewater boaters. During August and September, the boating fishermen far outnumbered the white water boaters. The same situation existed for commercial outfitters. There was a much smaller proportion of commercial guides interviewed from April to July than there were in August and September.

### C. USE CHARACTERISTICS BY SITE

#### PRIMARY PURPOSE OF VISIT (Percent of Total Use)

Name of Area	Fishing Use	Sightseeing	Whitewater Boating	Boat Spotter	Camping	Total Number Visitor
Sherars Falls Vicinity	82%	6%	4%	0%	8%	12,027
BuckHollow-Macks Canyon	68%	17%	6%	1%	8%	21,512
Kloan	83%	12%	0%	0%	0%	4,537
Deschutes State Park	31%	50%	5%	2%	12%	53,963
Moody	53%	24%	7%	2%	9%	21,500
Highway 206 Bridge	93%	2%	0%	0%	0%	1,076
OVERALL AVERAGE	51%	33%	6%	1%	9%	114,620

TYPE OF VEHICLE

Name of Area	Single Vehicle (Not Self-Contained)	Vehicle Pulling Trailer (camp or boat)	Pickup Camper	Motor Home
Sherars Falls Vicinity	-----	-----	-----	-----
BuckHollow- Macks Canyon	64%	11%	23%	2%
Kloan	95%	0%	5%	0%
Deschutes State Park	73%	8%	16%	3%
Moody	62%	19%	16%	3%
OVERALL AVERAGE	69%	11%	18%	2%

NOTE: Of the total 49,932 vehicles entering the above areas during the study period 10,186 (20%) were there for other than recreational purposes. There were 39,746 recreational vehicles.

VISITOR ORIGIN  
(Percent of Total Use)

Name of Area	Eastern Oregon	Portland-Vancouver Metro Area	Other Western Oregon	Other Washington	California	Other
Sherars Falls Vicinity	51%	45%	4%	0%	0%	0%
BuckHollow- Macks Canyon	33%	49%	15%	2%	2%	0%
Kloan	66%	30%	4%	0%	0%	0%
Deschutes State Park	23%	43%	13%	12%	3%	6%
Moody	34%	38%	16%	5%	3%	4%
OVERALL AVERAGE	31%	42%	13%	7%	3%	4%

BOAT LAUNCHING AND LANDING ACTIVITY  
BY SITE

NAME OF AREA	PERCENT OF BOATERS ENTERING RIVER AT THAT POINT	PERCENT OF BOATERS LEAVING RIVER AT THAT POINT	TOTAL BOATERS BUCKHOLLOW-MOUTH
Buckhollow	13%	0%	
Pine Tree	13%	0%	
Beavertail	3%	1%	Season 1 (April 23-July 31) 6,586 boaters
			Season 2 (August 1-Sept. 26) 5,543 boaters
Macks Canyon	50%	24%	
Deschutes State Park	3%	29%	
Moody	18%	46%	
TOTAL	100%	100%	12,129 boaters

NAME OF AREA	AVERAGE LENGTH OF STAY PER VISIT (HOURS)	PERCENT OF VISITORS MAKING MORE THAN ONE ROUND TRIP PAST INTERVIEW POINT DURING VISIT
Sherars Falls Vicinity	25.7 hours	--
Buckhollow-Macks Canyon	23.4 hours	14%
Kloan	5.1 hours	0%
Deschutes State Park	19.7 hours	13%
Moody	16.4 hours	11%

NOTE: 10,580 (9%) visitors spent time in more than 1 of the above areas during their visit. The average number of people per recreation vehicle for the above areas is 2.55.

On the gravelled access road at Buckhollow, a separate question was asked of the recreation visitors using the Buckhollow-Macks Canyon Section. The question was "During your visit did you enter the Beavertail or Macks Canyon Campgrounds for any reason?" In response to that question, 4,062 people (19% of the total visitors) answered "Yes".

At the Deschutes State Park two separate questions were asked of the people as they left the park. The questions were "Did you camp at the State Park?" and "Did you come to the park because of the Deschutes River?". From the response, 24% of all visitors to the park camped at least one night. Over 56% of all the visitors stopping at the park did so to enjoy some recreational aspect of the Deschutes River. 44% stopped merely to use the facilities.

ROAD TRAFFIC COUNTS

The table below shows traffic count data for the Sherars Bridge - Macks Canyon segment of the Deschutes River Road. Data is from a traffic meter located near the beginning of the road. The data shows total vehicle use and changes in use from year to year. No further analysis is available.

Year	Vehicle Count	Change + -	Percent Change +- -----
1968	12,848		
1969	12,219	-629	-5%
1970	12,629	+410	+3%
1971	14,477	+1348	+15%
1972	16,402	+1925	+13%
1973	18,574	+2172	+13%
1974	21,325	+2751	+15%
*1975	17,687	-3638	-17%
1976	17,203	-484	- 3%

\*1975 steelhead run was very poor, possibly causing dramatic drop on traffic count.





DESCHUTES RIVER PLD ROAD

BLM PROJECT NO. 7568-A2

SURFACING CONTRACT

Prineville District Office

DESCHUTES RIVER PLD ROAD  
BLM PROJECT NO. 7568-A2  
SURFACING

Bid Schedule

**BASIS FOR AWARD:** Bids will be received on the following schedule on an all or none basis; no bids will be considered for only a part of a schedule. Bidders must submit bids on each item under all schedules. Depending on availability of funds, bids will be considered first, on an all or none basis for Schedule "A"; Second, if sufficient funds are available, bids will be considered on an all or none basis for a combination of Schedules "A" and "B". Award will be made to the lowest qualified bidder based upon that unit price quoted. Bidders are cautioned, therefore, to be sure that a unit price is shown for each item. Failure to show a unit price for each item may result in rejection of the bid as nonresponsive.

**DISCOUNTS:** Bidder may offer time discounts for prompt payment. Such discounts, if offered, will apply to the entire contract and all modifications thereto. For bid comparison and award, such discounts will be evaluated on the basis of the gross amount bid; provided, however, that discounts offered for a period of less than twenty (20) days will not be considered in evaluating bids for award of contract.

If discounts are offered, the discount time will commence on receipt of the contract payment documents in the paying office. In the case of final payment under the contract, discount time will commence on the date of receipt in the paying office of the Contractor's invoice, and (if required) a release on contract.

TIME DISCOUNT: \_\_\_\_\_ % 20 days \_\_\_\_\_ % 30 days

Schedule of Items

Schedule "A" - Deschutes River Road

<u>Item No.</u>	<u>Description</u>	<u>Pay Item No.</u>	<u>Estimated Quantities</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Amount</u>
1.	Extra & Misc. Work	10	All Required		Cont.	\$ 2,000
2.	Furnishing flagmen and/or Pilot Car Oper. @ \$7.00 per hour	104(1)	1,000	hr.	\$7.00	\$ 7,000
3.	Develop Water Supply and Watering	207(2)	6,079	M-Gal	\$ _____	\$ _____

4.	Finishing Roadbed	208(1)	17.80	Mile	\$ _____	\$ _____
5.	Crushed Aggregate Base, Grading E	304(4)	59,000	Ton	\$ _____	\$ _____
6.	Stockpile Aggregate, Sec. 304, Grading E.	311(2a)	200	Ton	\$ _____	\$ _____
7.	Stockpile Aggregate, Sec. 410 Designation E-35	311(2b)	300	Ton	\$ _____	\$ _____
8.	Prime Coat, Asphalt Grade MC-250	408(2)	318	Ton	\$ _____	\$ _____
9.	Blotter Aggregate, Grading D, Prime Coat	408(8)	1,900	Ton	\$ _____	\$ _____
10.	Aggregate, Designation E-35, Bituminous Surface Treatment	410(4)	4,170	Ton	\$ _____	\$ _____
11.	Emulsified Asphalt, Grade CRS-2, Bituminous Surface Treatment	410(8)	318	Ton	\$ _____	\$ _____

Schedule "B" - Beavertail Campground Spur Road

<u>Item No.</u>	<u>Description</u>	<u>Pay Item No.</u>	<u>Estimated Quantities</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Amount</u>
3.	Develop Water Supply & Watering	207(2)	421	M-Gal	\$ _____	\$ _____
4.	Finishing Roadbed	208(1)	1.0	Mile	\$ _____	\$ _____
5.	Crushed Aggregate Base, Grading E	304(4)	3,000	Ton	\$ _____	\$ _____
8.	Prime Coat, Asphalt Grade MC-250	408(2)	15	Ton	\$ _____	\$ _____
9.	Blotter Aggregate, Grading D, Prime Coat	408(8)	100	Ton	\$ _____	\$ _____

10.	Aggregate, Designation E-35, Bituminous Surface Treatment	410(4)	230	Ton	\$ _____	\$ _____
11.	Emulsified Asphalt, Grade CRS-2, Bituminous Surface Treatment	410(8)	15	Ton	\$ _____	\$ _____

Total Bid, Items 3-11 incl., Schedule B(all or none) \_\_\_\_\_

Total Bid, Schedules A and B \_\_\_\_\_

The Pay Item numbers shown in the Bid Schedule corresponds to the sections contained in "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-74", published by the U.S. Department of Transportation, Federal Highway Administration.

A copy of this publication may be reviewed at the Bureau of Land Management Offices listed below:

Oregon State Office  
729 N.E. Oregon St.  
P.O. Box 2965  
Portland, Oregon 97208

Prineville District Office  
185 E. 4th Street  
P.O. Box 550  
Prineville, Oregon 97754

Copies may be obtained by mailing \$4.55 to:

Superintendent of Documents  
U.S. Government Printing Office  
Washington, D.C. 20402

BLM FORM 1510-28  
ADDITIONAL SPECIAL PROVISIONS

22. Site inspection.--Prospective bidders are expected and urged to make an examination of the work sites. It will be the responsibility of each bidder to determine, to his satisfaction, working conditions incident to successful completion of the contract. Only one inspection tour of the work site will be conducted by the Bureau of Land Management. The time and meeting place will be at 10:00 a.m., \_\_\_\_\_ at the Riverside Motel, Maupin, Oregon.

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23. Commencement, prosecution and completion of work.--The Contractor shall begin work within 10 calendar days after receipt of notice to proceed. The Contractor shall continue performance of the work under the contract without delay or interruption except by causes beyond his control as defined in the General Provisions of the contract, or by the receipt of a "Stop Work Order" issued by the Government. Failure to do so will be considered a breach of contract. The Contractor shall complete all work within 150 calendar days from the date of receipt of the notice to proceed; provided, however, that the time allowed for the completion of the work may be reduced by one (1) calendar day for each calendar day's delay in excess of 10 calendar days, or any extension thereof, in returning properly executed contract, and if required, performance and payment bonds.

Due to the time of year award of contract is contemplated, issuance of the Notice to Proceed may be delayed up to 90 calendar days in order to coordinate the surfacing operation with anticipated spring temperatures in the Deschutes River Canyon. However, the Contractor may, at his option, request that the Notice to Proceed be issued at an earlier date in order to develop the quarry with the understanding that "Stop Work Order" will be issued by the Government when this work is completed.

24. Liquidated damages.--Time is of the essence of the contract. If the work is not completed on or before the date fixed for its completion, the Contractor shall pay to the Government, as fixed, agreed, and liquidated damages, the sum of \$250.00 per day for each calendar day's delay until the work is satisfactorily completed.

25. The Contracting Officer's Authorized Representative is Lyle Johnson, Chief of Operations, Bureau of Land Management, Prineville, Oregon. The Authorized Representative will designate an employee or employees to provide on-site inspection and/or supervision of the work. Such inspector will be responsible for giving the Contractor any special instructions or guidance to complete the work in an orderly manner.

26. Drawings.--Full size sets of drawings are available for inspection at the following offices:

Bureau of Land Management  
729 N.E. Oregon Street  
Portland, Oregon 97232

Bureau of Land Management  
185 E. 4th Street  
Prineville, Oregon 97754

These sets may not be removed from the office. Sufficient drawings will be furnished for the successful bidder.

27. Price reduction for defective cost or pricing data - price adjustments.--

(a) This clause shall become operative only with respect to any change or other modification of this contract which involves a price adjustment in excess of \$100,000 that is not based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation. The right to price reduction under this clause shall be limited to such price adjustments.

(b) If the Contracting Officer determines that any price, including profit or fee, negotiated in connection with any price adjustment under this contract was increased by any significant sums because the Contractor or any subcontractor pursuant to the clause of this contract entitled "Subcontractor Cost or Pricing Data - Price Adjustments" or any subcontract clause therein required, furnished incomplete or inaccurate cost or pricing data or data not current as of the date of execution of his Contractor's Certificate of Current Cost or Pricing Data, then such price shall be reduced accordingly and the contract shall be modified in writing to reflect such reduction. (Note: Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the Contractor may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the Contractor. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by his lower tier subcontractors.)

(c) Failure to agree on a reduction shall be a dispute concerning a question of fact within the meaning of the "Disputes" clause of this contract.

SPECIAL PROVISIONS

To the standard specifications for construction of roads and bridges on Federal Highway Projects, FP-74, U.S. Department of Transportation, Federal Highway Administration.

DESCHUTES RIVER PLD ROAD  
BLM PROJECT NO. 7568-A2

Type: Sufacing  
Length: 18.80 Miles

Prineville District Office

DESCHUTES RIVER PLD ROAD  
BLM PROJECT NO. 7568-A2

GENERAL REQUIREMENTS

FP-74

(100 - 110)

Prineville District Of



Section 101. - DEFINITIONS AND TERMS

101.02 - Definitions.

Administrator - Delete.

Change Order - Delete definition and substitute the following:

A written order issued by the Contracting Officer to the Contractor, covering changes within the scope of the contract and establishing the basis of payment and time adjustments for work effected by the changes.

Contracting Officer - Add the following:  
and BLM Form 1510-28.

Engineer - Revise as follows:

Contracting Officer's Authorized Representative (COAR)

Section 102. - BIDDING REQUIREMENTS AND CONDITIONS

Delete in entirety subsections 102.01, 102.02, 102.03, 102.06, 102.07, 102.08, 102.09, 102.10, 102.11, 102.12, 102.13 and 102.14.

Section 103. - AWARD AND EXECUTION OF CONTRACT

Delete in entirety. Award and execution of contract will be made in accordance with the terms and conditions of the invitation for bids.

Section 104. - SCOPE OF WORK

104.01 Intent of Contract. Add the following: Location of Work: Along the east bank of the Deschutes River.

104.04 - Maintenance for traffic. (c) Flagging Service and Pilot Car Operators. Add the following:

The Contractor will be reimbursed for flagging service under Item 104(1), Flagmen and/or Pilot Car Operators, at the fixed hourly rate of \$7.00 per man hour, for each approved flagman and/or pilot car operator used. No payment will be made for traffic control services not conforming to the Manual or Uniform Traffic Control Devices or for flagman and pilot car operators considered by the COAR to be incompetent, careless or otherwise objectionable.

Add the following:

The Contractor shall be responsible for the repair of any damage to the Bureau of Land Management Deschutes River Road caused by his operations.

Section 105. - CONTROL OF WORK

Delete subsections 105.01, 105.09, 105.10 and 105.16 and refer to SF-23A, General Provisions (Construction Contract) and BLM Forms 1510-28 and 1510-28a.

105.13 Load Restrictions. Add the following:

Hauling vehicles shall not travel at a speed in excess of 35 miles per hour on the Bureau of Land Management administered roads. If, in the opinion of the COAR, these roads are being damaged by the hauling vehicles, the weight hauled and/or the speed shall be reduced as directed by the COAR.

Section 106. - CONTROL OF MATERIALS

106.02 Local Material Sources. Delete the entire text under this subsection and substitute the following:

The Contractor shall obtain all natural materials for use in the production of aggregate under sections 304, 408 and 410 from the following required source:

Material Source No. 35-28-005, known as the Jones Cr. Quarry, located in the NE $\frac{1}{4}$  SE  $\frac{1}{4}$ , Sec. 17, T35, R15E, WM., Sherman County, Oregon, on NRL land, as shown on the Route Map.

Materials from other sources located in the Deschutes River Recreation Area will not be accepted.

Development and use of Material Source No. 35-28-0005 shall be in strict accordance with the plans and these special provisions.

Rock excavation using controlled blasting shall begin with a short test section of a length approved by the COAR. The test section shall be production drilled and blasted and sufficient material excavated whereby the COAR can determine if the Contractor's proposed methods will produce satisfactory results.

Whenever the Contractor's blasting methods do not produce acceptable rock slopes, the COAR may require the Contractor to furnish a revised production blasting plan and to construct additional test sections prior to resuming full scale production.

The cost of controlled blasting and scaling shall be considered incidental to the quarry development and no direct payment will be allowed for this work.

The Contractor shall notify the COAR at least five (5) days prior to commencing quarry operations.

The Contractor shall comply with MESA Requirements for nonmetal surfacing mining operations. This includes submittal of Form 6-1555, Metal-Nonmetal Mine Injury and Illness Report on a quarterly basis.

All extracted rock material shall be utilized or disposed of as shown on the plan. If necessary, secondary blasting shall be employed to reduce the oversized quarried rock to a size suitable for crushing.

Waste or disposal areas and quarry access roads shall be located and constructed as shown on the Quarry Development Plan and as directed by the COAR.

Final restoration of waste or disposal areas shall include grading, establishment of vegetative cover or other necessary treatment as outlined in the Quarry Development Plan and as outlined as directed by the COAR.

Upon completion of the work, the Contractor shall put the quarry access road in a condition satisfactory to the COAR.

106.03 Samples, Tests, Cited Specifications. Add the following:

When reference is made to the following test methods in this contract, the modifications shown shall apply:

AASHTO T11, modified to allow higher drying temperatures.

AASHTO T27, modified to allow higher drying temperatures, the use of mechanical sample splitters, and to clarify sample size.

AASHTO T87, modified to allow higher drying temperatures.

AASHTO T164, modified the sample size and sieve analysis requirements.

AASHTO T176, modified to clarify sample drying requirements and to limit the use of the referee method.

AASHTO T205, modified to permit using the Washington Densometer.

AASHTO T224, modified to allow a rapid test for bulk specific gravity.

AASHTO M92, modified to allow greater variation in the dimensions of wire cloth used in the manufacture of sieves.

106.05 Field Laboratory; Bulletin Board. Add the following:

The Government will furnish for the exclusive use of the COAR, a trailer equipped for field laboratory use, which will be set up by the COAR in the vicinity of the project. The Contractor shall provide a water supply which shall furnish a minimum flow of 2 gallons per minute at the laboratory testing facilities. Water furnished shall be subject to the COAR's approval, shall be reasonably clear and free of oil, acid, rust, alkali, sugar and vegetable substance. The trailer with its testing facilities also requires a 120 volt, 60 cycle a.c. regulated electrical supply of at least 7.5 kilowatts and a supply of liquified petroleum gas.

The Contractor shall make all necessary connections to the service outlets of the trailer and shall furnish the above utilities at all times as directed by the COAR.

Section 107. - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.05 Federal Procurement Regulations. Delete.

107.07 Public Convenience and Safety. Add the following:

Surfacing is required to be performed part-width at a time; the width not under construction shall be made available to public traffic under alternate one-way control. When ordered by the COAR, the contractor shall furnish flagmen, pilot car and drivers, or both, to direct traffic through sections of road under one-way control. Delays to the public traffic that are due to the contractor's construction operations, including delays caused by part-width construction, shall not exceed 30 minutes except by written permission of the COAR.

107.11 Use of Explosives. Add the following:

The contractor shall obtain any necessary permit from, and comply with the requirements of the local authority before any explosives are used. This includes compliance with local ordinances governing the storage of explosives.

Special signs shall be furnished and erected by the Contractor to warn the public of blasting operations. If blasting is by means of electric detonator, signs shall include a warning to have radio transmitters turned off in the blasting area.

Under no circumstances will the Contractor leave explosives which have failed to detonate during the blasting operations. Measures shall be taken to destroy such explosives. Drill holes not utilized in the operation shall be filled and sealed.

107.12 Protection and Restoration of Property and Landscape. Add the following:

The Contractor shall take reasonable and prudent care in conducting his operations to prevent unnecessary disturbance of the soil at the work site and equipment storage area.

Special care shall be taken to protect the landscape and natural vegetation of the area. The Contractor shall not deface, injure, or destroy trees or shrubs, or remove or cut them.

Construction equipment will not be allowed outside of construction limits without the written approval of the COAR.

Any debris that may fall into the streams and river as a result of the Contractor's operation shall be removed and disposed of as directed by the COAR. Noncombustible debris and silt-laden materials shall be placed in areas where high water or heavy rain will not wash them into or cause siltatio of streams. Combustible material shall be disposed of as directed by the COAR.

Extreme care shall be exercised by the Contractor in conducting his operation to minimize slough of construction debris and other materials into the Deschutes River. Under no circumstances shall the Contractor discharge bituminous material directly into, or on the banks of the Deschutes River. In application of bituminous material, the Contractor shall exercise reasonable care to prevent splattering on roadway vegetation and areas adjacent to the roadway.

As soon as practicable, the Contractor shall remove all rubbish and temporary buildings. He shall replace any fences damaged and repair in an acceptable manner all property, both public and private, damaged during the prosecution of the work, and shall leave the quarry site, project roads, and adjacent roadway areas in a neat and presentable condition satisfactory to the COAR. All excavated material placed in the Jones Cr. channel shall be removed before final acceptance.

107.13 Forest, Park and Public Lands Protection.

(a) Fire Regulations. Add the following:

The Contractor shall submit to the COAR a copy of his fire control plan for the project, prepared in accordance with these special provisions.

The COAR will notify the Contractor in writing when a period of fire danger has been declared. At such time, the Contractor shall immediately effect compliance with the fire stipulations listed under Subsection 107.13(b) and (c) of these Special Provisions.

(b) Fire Guard. Add the following.

During periods of fire danger, a watchman shall be provided at each construction area where power driven equipment has been operated during the day. He shall be on duty for a minimum of 3 hours after the time the equipment is shut down for the day.

When blasting is permitted during periods of fire danger, the Contractor shall also place a watchman at each point where blasting is done, who shall remain on duty for at least one hour after blasting is finished, and who shall be equipped with a shovel and a filled backpack can with pump.

Watchman service on one area will satisfy requirements on adjacent areas if the travel time with available transportation is not in excess of five (5) minutes to any of the other areas requiring such service.

(c) Fire fighting equipment required. Add the following:

As a minimum, the Contractor shall provide the following listed equipment to be maintained in good operating condition, in areas where construction operations are in progress during periods of fire danger.

1. A serviceable truck or trailer with towing unit equipped with a filled 500 gallon water tank and pump. The pump may be a portable power pump or a suitable power take-off pump capable of discharging 20 gallons per minute through a 50-foot length of 1-inch or 1-1/2 inch rubber-lined hose, using a 1/4-inch nozzle tip at pump level.

The tank truck or trailer shall be equipped with a live reel containing at 250 feet of 1-inch fabric jacketed rubber-lined (FJRL) hose, or equal, with nozzle. In addition to the hose on the live reel, 250 feet of 1-inch FJRL hose shall be carried on the tank truck or trailer with necessary connections and fittings. The nozzle shall be an adjustable stream shut-off type. A pressure relief valve shall be attached to the pumper to allow the nozzleman to open and shut the discharge nozzle as needed. A water supply sufficient for rapidly filling the tank shall be provided.

2. All vehicles with internal combustion engines used in construction operations shall be equipped with fire extinguishers having a combined Underwriters Laboratory (UL) Rating of at least 4 B.C. Such rating shall be the total of the individual ratings shown on each extinguisher.
3. Fire extinguishers shall be mounted so as to be readily obtainable for immediate use on all equipment and shall be inspected and serviced in accordance with manufacturer's recommendations.
4. All pickups and cars used in the construction operations shall be equipped with shovels, axes, and water buckets.
5. Listing of the above minimum fire fighting requirements is not intended to relieve the Contractor in any way from compliance with state laws and regulations covering fire prevention and suppression applicable to the operations under this contract.

107.20 Construction Safety and Health Standards. Delete and Refer to BLM Form 1510-28a.



Section 108. - PROSECUTION AND PROGRESS

108.01 Subcontracting. Delete and Refer to BLM Form 1510-28 and 1510-28a.

108.03 Progress Schedule. Delete the entire text under this subsection and substitute the following:

After the contract has been awarded and before issuance of the Notice to Proceed with the work, the COAR will designate a time and place for a preconstruction conference with the Contractor. At this conference, the Contractor will submit to the COAR his accident and fire plans and progress schedule. No work will be authorized or paid for until after the above items are accepted in writing.

108.05 Character of Workmen; Methods and Equipment. Add the following:

When the method of measurement requires determination of pay quantities by weighing, the Contractor shall furnish a competent, qualified weighman to weigh the materials on accurate approved scales or other approved weighing devices in accordance with Section 109.

The weighman shall record to the nearest 100 pounds, the weights of all loads on a daily tally sheet. The original shall be certified correct by the Contractor and furnished to the COAR at the end of each shift.

The weighman's daily tally sheet shall include the following information: (1) Load number; (2) Truck number; (3) Net weight; (4) other information as designated by the COAR.

The Contractor shall also furnish a dumpman. The dumpman shall maintain a record book in which he shall record the load number, truck number, and time of arrival of each load of material delivered. This record shall be furnished to the COAR at the end of each shift or when requested.

The COAR may, at random intervals, designate previously weighed vehicles to be reweighed, in his presence, to verify the weight of the material being purchased. This will include empty or loaded vehicles as the COAR may designate.

All costs in connection with furnishing a competent, qualified weighman and dumpman shall be included in the unit contract prices for the various pay items of the project.

108.06 Determination and Extension of Contract Time. Delete and refer to SF-23A and BLM Forms 1510-28 and 1510-28a.

108.07 Failure to Complete Work within Contract Time. Delete and Refer to BLM Form 1510-28.

Section 109. - MEASUREMENT AND PAYMENT

109.01 General. MEASUREMENT OF QUANTITIES. Delete the first paragraph at the top of page 38 and substitute the following:

WEIGHING DEVICES. Add the following:

Belt-conveyor scales shall comply to the applicable requirements of the National Bureau of Standards Handbook No. 44.

109.04 Force Account Work. (c) Equipment. Add the following to the first paragraph:

Rental rates to be paid for equipment operated on force account work shall not exceed those specified in the Oregon State Highway Division current publication of equipment rental rates in effect on the date the order is issued and these same rates shall apply to any subsequent amendments of that order.

These rates apply to modern equipment in good working condition without operator. The rates include fuel, oil, lubrication, repairs, maintenance, insurance, and incidental expenses. Equipment which is not in good working order may be used only with the approval of the COAR and when furnished at appropriately reduced rates.

Copies of the Oregon equipment rental rates may be inspected at the BLM State Office, 729 NE Oregon Street, Portland, Oregon 97208.

Payment will be made at the appropriate rental rate(s) for the actual number of hours that the equipment is in operation on the work.

Delete the last paragraph and substitute the following:

Fifteen percent (15%) of the total due the Contractor for rental of equipment shall be added for overhead, profit, and all other costs incidental to furnishing and operating such equipment. No percentage will be added to equipment rental rates for equipment ordered held on the job on a standby basis.

109.09 Contingent Sum Pay Items. Add the following:

Item 10, Extra and Miscellaneous Work, shall consist principally of the following described work which is not otherwise provided for in the plans, bid items and specifications:

1. Minor landscaping.
2. Special work necessary in the correction of drainage.
3. Grading and shaping of cut and fill slopes.
4. Minor erosion control work.
5. Seeding and mulching
6. Slope protection

Section 110. - REFERENCED SPECIFICATIONS

Copies of any referenced specifications, standards, and codes referred to herein may be procured by Contractor, at his expense, from the following:

ASTM Specifications: American Society for Testing Materials  
1916 Race Street  
Philadelphia, Pennsylvania 19103

Federal Specifications Superintendent of Documents  
(including FP-74) Government Printing Office  
Washington, D.C. 20402

Single copies of Federal Specifications, except FP-74, required for bidding purposes may also be secured, without charge, at Business Service Centers of Regional Offices of the General Services Administration. When referenced specifications (Federal, ASTM, ASI, etc.) are cited, the latest revision shall apply.

Copies of the FHWA supplement covering modifications to the AASHTO test methods as outlined under subsection 106.03 may be inspected at the following offices:

Oregon State Office  
729 N.E. Oregon Street  
PO Box 2965  
Portland, Oregon 97208

Prineville District Office  
185 E. 4th Street  
PO Box 550  
Prineville, Oregon 97754

DESCHUTES RIVER PLD. ROAD

BLM PROJECT NO 7568-A2

CONSTRUCTION DETAILS

FP - 74

(200 - 700)

Prineville District Of

Section 207. - DEVELOP WATER SUPPLY AND WATERING

Description

207.01 Add the following:

This work shall consist of developing an adequate water supply and furnishing and applying water required for the compaction of embankments, roadbeds, backfills, base courses, surface courses, finishing, modification, and reconditioning of roadbeds, and for laying dust caused by the above operations and public travel, or for other uses as directed by the COAR.

The following watering sites shall be used by the Contractor in obtaining water from the Deschutes River:

Mouth of Elder Creek  
Beavertail Campground Boat Ramp  
Macks Canyon Campground Boat Ramp

Use of other watering sites on the Deschutes River may be permitted if authorized in writing by the COAR.

The Contractor shall acquire the necessary permits as required under the General Provisions of the contract (SF-23A).

Under no circumstances will the Contractor pump water from the Deschutes River in or around spawning gravel areas.

At the designated campground watering sites, the Contractor shall maintain a neat "out-of-the-way" pumping station at all times. No gas or oil will be stored at the site. During the fishing and/or tourist season, the Contractor shall remove all pumping equipment from the recreation area on weekends.

The Contractor shall take special precautions to prevent the spillage of oil and/or gas into the Deschutes River during his pumping operations.

The Contractor shall maintain existing roads to the watering sites in their present condition; improvement to such roads will not be allowed unless approved in writing by the COAR.

Section 212. - COMPACTION EQUIPMENT AND DENSITY CONTROL STRIPS  
AND NUCLEAR TESTING DEVICES

Construction Requirements

212.03 Construction of Control Strips and Determination of Target Density. Delete the second sentence of the first paragraph and substitute the following:

Each control strip, constructed to acceptable surface tolerances shall remain in place and become a section of the completed roadway.

Delete the sixth paragraph under this subsection and substitute the following:

If the mean density of the control strip is less than 95 percent of the density of laboratory compacted specimens, the COAR may order the construction of another control strip.

212.04 Control of Compaction. Delete this subsection.

212.05 Acceptance Sampling and Testing. Delete this subsection.

Section 304. - AGGREGATE BASE AND SUBBASE COURSES

Materials

304.02 Aggregate. Add the following:

When aggregates are being produced and stockpiled for future use in the work, the COAR will perform informational testing during the crushing operation to determine if the aggregates being produced may be expected to meet target values at the time they are incorporated into the work. This data will be made available to the Contractor for his information but shall not be construed as acceptance by the Government.

Lot size and sample frequency will be determined as follows:

For the purpose of acceptance sampling and testing, a lot is defined as the number of units (tons or yards) of material or work produced, placed and represented by randomly selected samples tested for acceptance. The size of a lot will be approximately 5000 units or two days' production. The COAR will establish the lot sizes to fit field conditions, testing, and production capabilities. Samples will be selected using a statistical procedure such that all units have a chance of being sampled and tested.

Normally, five samples will be tested for each lot and acceptance will be based upon the mean of the test results. When inclement weather, equipment breakdown, or other causes result in an extended halt in production, the lot may be terminated as determined by the COAR and acceptance of the lot will be based on available test data.

When the pay factor for the previous lot is 1.00, and test results for the current lot (after testing any three of the five samples taken) show test results within the range specified for five tests, the COAR may waive the testing of the remaining two samples and establish a pay factor of 1.00 for the current lot. Under this provision, the choice of samples to be tested shall rest with the COAR and he need not test samples in the order in which they are taken.

Construction Requirements

304.05 Mixing. Add the following:

The Contractor shall use method (a) for mixing all new quarry materials.

(c) Road mix method. Revise as follows:

where significant quantities of the original crushed aggregate base course exist on the roadbed, the Contractor shall utilize these materials by blade mixing on the road with the crushed aggregate

furnished under (a) above at the required moisture content. The COAR may direct other methods of utilizing the existing rock materials if proper stabilization and compaction is not being obtained by mixing with the crushed quarry aggregate.

304.07 Spreading and Compacting. Delete the fifth paragraph and substitute the following:

The Contractor shall compact each layer of aggregate material using equipment meeting the minimum requirements set forth in Section 212. The desired degree of density is 95 percent of the maximum density as determined by test procedure described on pages 92 - 98 in Highway Research Board Bulletin No. 319, dated 1962, entitled, "The Humphres Method of Granular Soils."

304.07A Added Subsection. Acceptance of aggregate (gradation and sand equivalent). Acceptance of aggregate material is subject to the determination of pay factors and price adjustments as follows:

- (a) Materials meeting specification (within the acceptable deviation permitted in Table 304-1 following for a pay factor of 1.00) will be paid for at the contract unit price.
- (b) Materials that do not meet the specification but are in substantial compliance will be accepted for payment at an adjusted unit price. This material is represented in Table 304-1 following by a pay factor of less than 1.00 but at least 0.70.

For the purpose of determining the pay factor to be used for adjusting the contract unit price for a lot, only the lowest single pay factor for aggregate gradation, or sand equivalent will be used. This pay factor, provided it is 0.70 or more, will be multiplied by the contract unit bid price to establish the adjusted unit price to be paid for the lot represented and accepted.

- (c) Materials that do not meet the specifications (paragraph (a) above) or are not in substantial compliance (paragraph (b) above) will not be accepted and shall be removed from the work, including all portions of the work in which such non-conforming material has been incorporated, unless (1) there is a written request by the Contractor for acceptance of the material under Clause 10(b) of Standard Form 23-A of the contract at a reduced price, and (2) there is a determination by the COAR that the non-conforming material be accepted and permitted to be used or to remain in the completed work. If the COAR accepts the non-conforming material, payment for the material in the lot accepted and used in the work will be made at an adjusted unit price using a pay factor of 0.40. Under the provisions of (2) above the COAR's decisions shall be final and conclusive.



TABLE NO. 304-1.  
ACCEPTANCE SCHEDULE - INTERMEDIATE SIEVE SIZES & SAND EQUIVALENT  
Crushed Aggregate Base

Sieve Designation	Pay Factor	Deviation of the MEAN from the TARGET VALUE				
		1 TEST	2 TESTS	3 TESTS	4 TESTS	5 TESTS
* Maximum Size - (See Table 703-3A)						
1 inch	1.00	0-14.0	0-13.0	0-12.0	0-11.0	0-10.0
	0.95	14.1-15.0	13.1-14.0	12.1-13.0	11.1-12.0	10.1-11.0
	0.90	15.1-16.5	14.1-15.0	13.1-14.0	12.1-13.0	11.1-12.0
	0.70	16.6-18.0	15.1-16.5	14.1-15.0	13.1-14.0	12.1-13.0
3/4 inch	1.00	0-11.0	0-10.1	0- 9.0	1- 8.0	0- 7.0
	0.95	11.1-12.0	10.1-11.0	9.1-10.0	8.1- 9.0	7.1- 8.0
	0.90	12.1-13.0	11.1-12.0	10.1-11.0	9.1-10.0	8.1- 9.0
	0.70	13.1-15.0	12.1-13.0	11.1-12.0	10.1-11.0	9.1-10.0
No. 4	1.00	0-10.0	0- 9.0	0- 8.4	0- 7.7	0- 7.0
	0.95	10.1-11.0	9.1-10.0	8.5- 9.0	7.8- 8.4	7.1- 7.7
	0.90	11.1-12.0	10.1-11.0	9.1-10.0	8.5- 9.0	7.8- 8.4
	0.70	12.1-14.0	11.1-12.0	10.1-11.0	9.1-10.0	8.5- 9.0
No. 40	1.00	0- 8.5	0- 7.8	0- 7.2	0- 6.6	0- 6.0
	0.95	8.6- 9.2	7.9- 8.5	7.3- 7.8	6.7- 7.2	6.1- 6.6
	0.90	9.3-10.3	8.6- 9.2	7.9- 8.5	7.3- 7.8	6.7- 7.2
	0.70	10.4-12.0	9.3-10.0	8.6- 9.2	7.9- 8.5	7.3- 7.8
No. 200	1.00	0- 3.0	0- 2.4	0- 2.0	0- 1.8	0- 1.7
	0.95	3.1- 4.0	2.5- 2.7	2.1- 2.2	1.9- 2.0	1.8- 1.9
	0.90	---	2.8- 3.0	2.3- 2.4	2.1- 2.2	2.0- 2.1
	0.70	4.1- 5.0	3.1- 3.6	2.5- 3.0	2.3- 2.6	2.2- 2.5
SAND EQUIVALENT	1.00	When no single test value is less than 35.**				
	0.90	When the mean of the tests is 35 or above and one or more individual test value is less than 35. **				

\* Maximum Size. Up to 5 percent of the particles may be retained on the maximum size sieve for a pay factor of 1.00. If the mean is greater than 5 percent, the COAR may order the removal of any or all of the aggregates of that lot from the work except that when the COAR determines the non-specification material is not detrimental to the work, it will be permitted to remain in place and will be accepted and paid for using a pay factor of 0.70. (See Table 703-3A.)

\*\* Includes adjusted values permitted in accordance with Subsection 703.06, paragraph (c).

304.07B Added Subsection. Acceptance of Compaction. Acceptance of compaction will be based on adherence to an approved roller pattern developed as set forth in Section 212.

Method of Measurement

304.08 Delete the second paragraph and substitute the following:

Scale weights of material shall be adjusted to deduct the average moisture content in excess of one percent over the percentage ordered by the COAR. Average moisture content will be determined on a lot basis.

Basis of Payment

304.09 Add the following:

When any pay factor for a lot of aggregate is less than 1.00, as determined under Subsection 304.07A, payment for the material in that lot will be made at a reduced price arrived at by multiplying the contract price per unit by that pay factor. In no case will the reduced price be less than 40 percent of the contract unit price for any material allowed to remain in place.

Section 408. - PRIME COAT

Construction Requirements

408.05 Equipment. Add the following:

Equipment shall also include blade grader broom dragging equipment.

408.07 Application of Bituminous Material. Add the following:

Bituminous material shall be applied at the rate or rates directed by the COAR, which will usually be from 0.3 to 0.5 gallon per square yard.

Until the surface course is placed, the Contractor shall protect the prime coat for damage.

408.08 Application of Blotter Material. Add the following:

The primed surface shall be allowed to cure for a period of not less than 48 hours before covering it with surfacing or the next course, unless a shorter period is approved in writing by the COAR. During this period, and until succeeding layer or course is placed, the surface shall be maintained and kept free of corrugations by broom dragging and rolling. When bleeding occurs, or when directed by the COAR, blotter material shall be spread at the rate directed. Any holes that develop shall be patched with bituminous and blotter materials. All excess blotter material, dirt or other objectionable materials shall be removed by sweeping prior to placing the surface or next course.

cBasis of Payment

408.10 Revise pay item as follows:

Pay item	Pay unit
408(2) Asphalt Grade MC-250, Prime Coat	Ton

Section 410. - BITUMINOUS SURFACE TREATMENT

Materials

410.02 Bituminous Material. Delete the last sentence under this subsection and substitute the following:

Application temperatures of bituminous materials shall conform to Subsection 702.03.

410.03 Aggregates. Add the following:

The requirement that tests for acceptability be made before incorporation of the material in the work will be at the crusher for roadside production, or at the crushing plant or stockpile for commercially produced aggregate.

Samples for acceptance shall be taken as prescribed in Section 304. The entire quantity for each grading of aggregate required shall constitute the lot for payment of the applicable item and shall be tested as set for below:

The COAR will select one of the samples and test it for acceptance. If the tested sample meets the gradation requirements of the specification the material will be assigned a pay factor of 1.00 and further testing will not be required. If the sample tested fails to meet the gradation specification in any regard the remaining samples will be tested. If the average of all samples tested is within the specification limits a pay factor of 1.00 will be assigned.

Material that is not assigned a pay factor of 1.00 will be considered to be in substantial compliance provided the average of each fine aggregate sieve fraction does not exceed the specification by more than 2 percent, and no single value is more than 5 percent beyond the specification. Materials that are in substantial compliance may be accepted at an adjusted unit price based on a pay factor of 0.70.

Materials that fail the above tolerances will be rejected.

Construction Requirements

410.05 Application of Bituminous Material. Add the following:

When the first operation provides for spreading aggregate, the COAR may direct that a portion of the first application of bituminous material be applied prior to the spreading of any aggregate.

410.06 Application of Aggregate. Delete the last sentence under this subsection and substitute the following:

The Contractor shall furnish a pilot car and driver to conduct traffic-over completed surface treatments at a maximum speed of 25 miles per hour for the first 24 hours after aggregate is applied.

Basis of Payment

410.08 Add the following:

Payment for aggregates and bituminous material will be subject to the pay factors determined as provided in Subsection 410.03.

Section 702. - BITUMINOUS MATERIALS

702.03 Emulsified Asphalts. Add the following:

The sieve test specified under AASHTO M 140 and M 208 will not be required.

The temperature of the emulsified asphalt shall not exceed 140° F. Temperature range for application shall be from 80° F. to 125° F.

702.04 Acceptance Procedures for Bituminous Materials. Add the following:

Acceptance of asphalt cements, cut-back asphalts, and emulsions shall be in accordance with (c) Alternate acceptance procedures for asphalt materials set forth below.

- (c) Alternate acceptance procedures for asphalt materials.  
Delete the text under this heading and substitute the following:

The Contractor shall provide delivery tickets and certifications as set out in (a), above.

Acceptance samples of bituminous materials shall be obtained in accordance with AASHTO T 40, Sampling Bituminous Materials, at the applicable point of acceptance as defined herein:

1. Bituminous materials used in direct application on the road. Acceptance samples shall be obtained under the supervision of the COAR from the conveyances containing the bituminous material at the point of delivery. Single samples shall be taken of each separate tank load of bituminous material delivered, at the time of discharge, into distributors or other conveyances on the project.
2. Bituminous materials initially discharge into storage tanks on the project. Acceptance samples shall be obtained from the line between the storage tank and the distributor or the bituminous mixing plant after each delivery. A single acceptance sample shall be taken after a sufficient period of circulation of such bituminous material has taken place to insure samples representative of the total material then in the storage tank.

As soon after sampling as practicable, the acceptance sample shall be delivered by the COAR to the nearest authorized laboratory for tests to determine compliance.

Final acceptance of bituminous materials shall be in accordance with Section 105.03, Conformity with Plans and Specifications.

Section 703. - AGGREGATES

703.06 Aggregate for Untreated Base or Surface Courses. Delete the text under this subsection and substitute the following:

Aggregates for untreated base courses shall be crushed stone, crushed slag, or crushed gravel which conforms to the following quality requirements:

- (a) The aggregate shall show a durability factor not less than 35 (coarse and fine) as determined by AASHTO T 210 (production of Plastic Fines in Aggregates).
- (b) Coarse aggregate shall have a percentage of wear of not more than 35 at 500 revolutions as determined by AASHTO Method T 96, (Los Angeles Rattler Test).
- (c) The filler (portion passing No. 4 sieve) shall have a sand equivalent of not less than 35 as determined by AASHTO Method T 176, Alternate Method No. 2, except that when the filler exhibits a sand equivalent of less than 35 the aggregate will be accepted and considered to be 35 if it complies with the additional requirements as follows:

Sand Equivalent AASHTO T 176 Minimum	Liquid Limit AASHTO T 89 Maximum	Plasticity Index AASHTO T 90 Maximum	Percentage Passing No. 200 Sieve AASHTO T 27 Maximum
34	25	5	9
33	25	4	8
32	25	3	7
31	25	2	6
30	25	NP	5
N/A	25	NP	4

- (d) When aggregate is produced from gravel not less than 50 percent by weight of the particles retained on the No. 4 sieve shall have at least one fractured face.

Aggregates shall be uniformly graded from coarse to fine. Target values for the intermediate sieve sizes shall be established within the limits shown in Table 703-3A for the gradings shown in the bid schedule. Allowable deviations from the established target values are stipulated in Section 304. The Contractor shall submit the proposed target values in writing to the COAR for approval. Target values shall be set during the first eight hours of operation. The Contractor may adjust target values occasionally within the acceptable ranges stipulated in Table 703-3A except no adjustment will be permitted during the span of a lot.

TABLE NO. 703-3A  
 RANGE OF GRADATION TARGET VALUES  
 PERCENTAGE BY WEIGHT PASSING SQUARE MESH SIEVES, AASHTO T 11 & T 27

Sieve Designation	Range-Intermediate Sizes-Gradings				
	A	B	C	D	E
2 inch		100 *	-	-	
1 1.2 inch		-	100 *	-	
1 inch		60 - 76	-	100 *	
3/4 inch		-	61 - 73	-	100 *
No. 4		27 - 39	31 - 43	37 - 49	51 - 63
No. 40		12 - 18	14 - 20	17 - 23	18 - 24
No. 200		4 - 8	4 - 8	4 - 8	4 - 8

\* Maximum Size. Up to 5 percent of the particles may be retained on the maximum sieve size for each gradation of aggregate.

If fine aggregate or filler in addition to that naturally present in the base course material is necessary in order to meet the grading requirements, it shall be uniformly blended with the base course materials at the screening and crushing plant. The material for such purpose shall be obtained from sources approved by the COAR and shall be free from hard lumps.

703.13 Aggregate for Cover Coats, Surface Treatments and Bituminous Preservative Treatment. Delete the last sentence of the second paragraph of this subsection and substitute the following:

Aggregates shall meet the following quality requirements:

Aggregates shall consist of clean, tough, durable fragments, free from an excess of flat, elongated, soft or disintegrated pieces, clay balls, and adherent films of clay or other material that would prevent thorough coating with bituminous material.

When tested in accordance with AASHTO T 96, aggregate shall have a percentage of wear of not more than 35 at 500 revolutions.

When tested in accordance with AASHTO T 210, aggregate shall show a durability factor not less than 35 (coarse).



Delete Table 703.8 and substitute Table 703.8A below;

TABLE 703.8A  
GRADATION REQUIREMENTS FOR BITUMINOUS SURFACE TREATMENTS

Sieve Designation	Percentage by weight passing square mesh sieves AASHTO T 11 and T 27			
	Grading A	Grading C	Grading D	Grading E
3/4 inch		100	-	
1.2 inch		90 - 100	100	
3/8 inch		-	85 - 100	100
No. 4		0 - 15	0 - 15	85 - 100
No. 10		-	-	0 - 20
No. 200		0 - 2	0 - 2	0 - 2

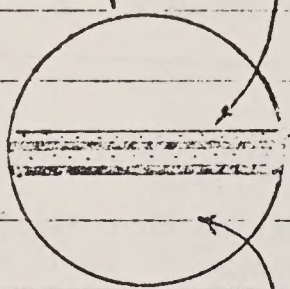
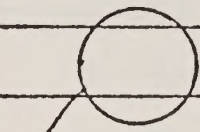
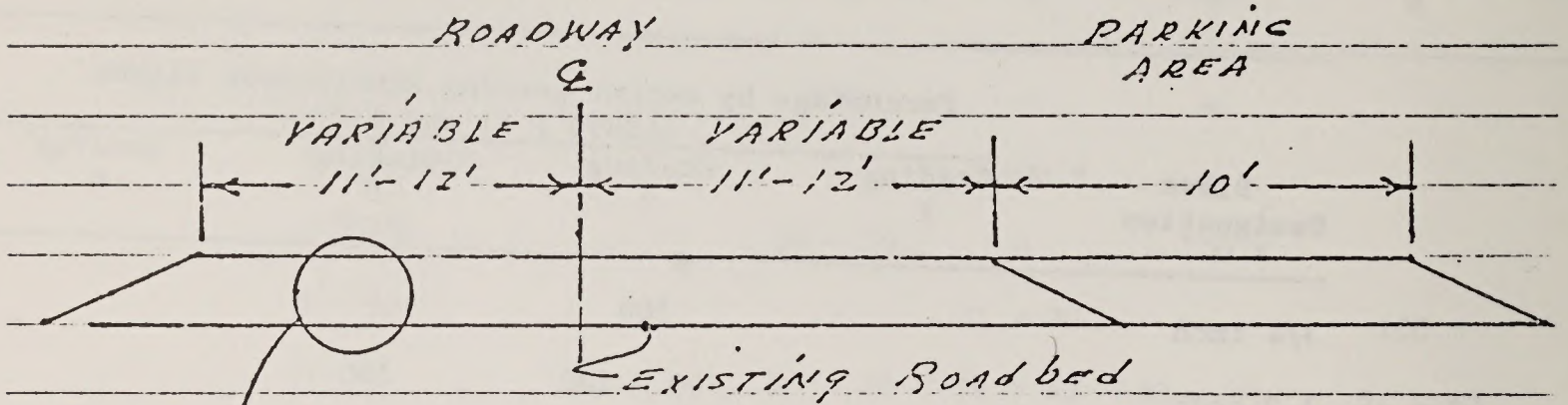
703.14 Blotter. Delete this paragraph and substitute the following:

Blotter material shall be of such gradation that all particles will pass a sieve with  $\frac{1}{2}$  inch square openings, it shall be free from vegetable matter and clay balls, and it shall be non-plastic or shall have a liquid limit of not more than 25 and a plasticity index of not more than 6 as determined by AASHTO T 89 and T 90, respectively.

DESCHUTES RIVER PLD ROAD  
BLM PROJECT NO. 0932-2A  
SURFACING

TYPICAL SECTION

MP. 0.00 - MP. 17.80



ITEM 410(2) Aggregate, Designation E-3;  
BITUMINOUS Surface Treatment;

ITEM 410(8) Emulsified Asphalt, Grade  
CRS-2, Designation E-35,  
BITUMINOUS Surface Treatment;

ITEM 408(8) Blotter Aggregate, GRAD. E,  
PRIME COAT

ITEM 408(2) PRIME COAT, Asphalt  
GRADE MC-250

ITEM 304(4) Crushed Aggregate Base,  
GRADING E.

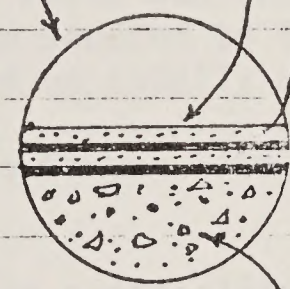
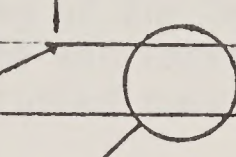
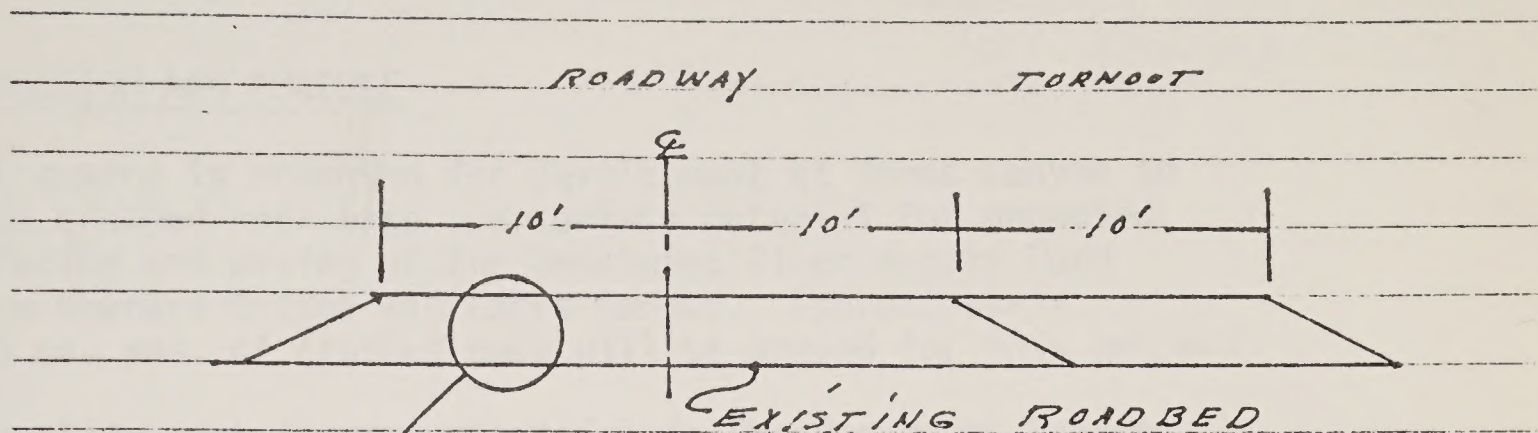
Crushed Aggregate Base shall be placed in layers not  
exceeding four inches (4") compacted depth.

Place crushed aggregate base on parking areas  
as directed by the COAK.

BEAVER TAIL CAMPGROUND  
SPUR ROAD

TYPICAL SECTION

MP. 0.00 - MP. 1.00



ITEM 410(4) Aggregate, Designation E-35  
BITUMINOUS Surface Treatment

ITEM 410(8) Emulsified Asphalt, Grade  
CRS-2, Designation E-35,  
BITUMINOUS Surface Treatment.

ITEM 408(8) Blotter Aggregate, GRAD. E,  
PRIME COAT

ITEM 408(2) PRIME COAT, Asphalt  
GRADE MC-250

ITEM 304(4) Crushed Aggregate  
BASE, GRADING E



MINING AND RECLAMATION PLAN FOR  
JONES CANYON QUARRY

INTRODUCTION AND PURPOSE

A rock quarry is proposed for development at Jones Canyon to provide crushed rock base and surface material for proposed resurfacing and paving of the Deschutes River Access Road between Sherars Bridge and Blacks Canyon. Approximately 50,000 cu. yds. of crushed rock will be needed for this project.

Good quality rock is very plentiful in the Deschutes Canyon. However, most of the accessible rock areas are along the access road and river. Development of such area would cause serious impacts on riverside environment, especially to visual aspects. The Deschutes River is a very popular recreation area with this segment of the river receiving over 20,000 visitors during the 6 month prime recreation season. The development and use of a quarry along the river and the remaining intrusion on the landscape would be exposed to the large number of recreationists and would be totally unacceptable.

Selection of the Jones Canyon Site was based on the following criteria:

1. Quantity and suitability of material.
2. Close proximity to the surfacing job.
3. Location out of the general visual area of the Deschutes River and access road.
4. Environmental factors such as minor impacts, vegetation, wildlife, etc.

Development of the quarry is directly related to the proposed road surfacing project. However, the following development plan recognizes a periodic but continuing need for crushed rock material in the area for such possible future uses as road and recreation site maintenance and road resurfacing in future years. As proposed, the quarry plan allows for removal of approximately 100,000 cu. yds., 50,000 cu. yds. more than the immediate requirements.

Development of the quarry and rock crushing site has been carefully analyzed from the engineering, geologic and safety aspects. Environmental impacts have been thoroughly analyzed in the Environmental Assessment Record, Deschutes River Road Paving, prepared by an interdisciplinary team of resource management specialists.

### LOCATION

The proposed site is located in the E $\frac{1}{2}$ SE $\frac{1}{4}$  of Section 17, T. 3 S., R. 15 E., W. M., Sherman County, Oregon. The site is on land administered by the Bureau of Land Management. Accompanying maps and photographs show more detail of the site location.

### MINING PLAN

Details of the mining and development plan are pictorially represented on accompanying photographs and drawings. The plan considers three basic components:

1. The quarry face or pit area is located on the hillside northeasterly of Jones Canyon Creek (an intermittent stream). Two rock outcrops will provide much of the material.
2. The rock crusher plant site is located on a large flat adjacent to the creek and below the quarry face. The creek channel is southwesterly of this site. The flat is a deposit of boulders and heavy gravel with a vegetative cover of sagebrush and grass. The area is subject to flooding from heavy runoff during storms - the last flooding occurring in 1969. Such storms normally occur only once every 25 years.
3. The rock hauling and access road begins at the mouth of Jones Canyon and is located on the same (northerly) side of the creek as the crusher and quarry sites. Part of this road now exists.

Development plans call for reconstruction and extension of the haul road to the crusher site. The road would be constructed to a 16 foot width with turnouts and may be lightly surfaced. A lockable gate will be placed at the beginning of the road to prevent public vehicle traffic into the area.

The crusher area will be cleared of vegetation and graded to provide a flat, fairly smooth work and rock stockpile area. Minor creek rechanneling and/or protection may be required. This stream only runs in the early spring or during storms. Normally it appears only as a dry gravel stream watercourse.

The quarry face will be developed from the top of the selected site on the hillside. To start development, a rough "cat" road will be bulldozed to and along the top of the site. Quarrying activity will start from this road and work down the hillside. The actual working face will be developed in a series of steep slopes and intermittent benches or steps. Drilling and blasting will be the primary means of excavating the rock material. The plan considers safety regulations administered by the Mining Enforcement and Safety Administration (MESA).

The total quarry development is expected to utilize about 5 to 6 acres of land, 2 acres in the quarry face, 2 to 3 acres in the crusher site and 1 acre in the haul road.

#### RECLAMATION AND RESTORATION

The proposed quarry is being developed to meet both present and future needs for crushed rock. However, after completing the initial road projects, actual quarrying and crushing activities should not be needed for another 5 to 10 years.

The quarry face will be located in the rocky hillside that is nearly devoid of vegetation. Attempts to revegetate the site after use is totally impractical. The developed area will consist of steep slopes and benches. This area will be left as is. Safety measures such as scaling of loose rock and construction of burms (curbs) on the benches will be required.

The quarry access road will be subject to periodic administrative or construction travel. No reclamation is planned. However, the road will not be regularly maintained and natural revegetation with annual grasses and sagebrush will be allowed.

The crusher plant site will be partially reclaimed. A stockpile of crushed rock will be left at the site for future maintenance work. The stockpile will be located near the end of the haul road. The remaining crusher area will be reclaimed by the following measures:

1. The creek channel will be cleared of any artificial obstructions.
2. Construction debris will be removed.
3. The area will be reshaped to more natural contours and scarified.
4. Revegetation will be encouraged through seeding with native grasses and brush.

PUBLIC SAFETY

Development of the quarry face will be strictly monitored to meet all applicable mining safety standards. The quarry face will be left as a series of steep rock slopes and benches. The benches are designed to catch falling rocks. This configuration should present no more hazard to the public than present rocky slopes and outcrops prevalent throughout the Deschutes Canyon.

TERMINATION OF QUARRY USE

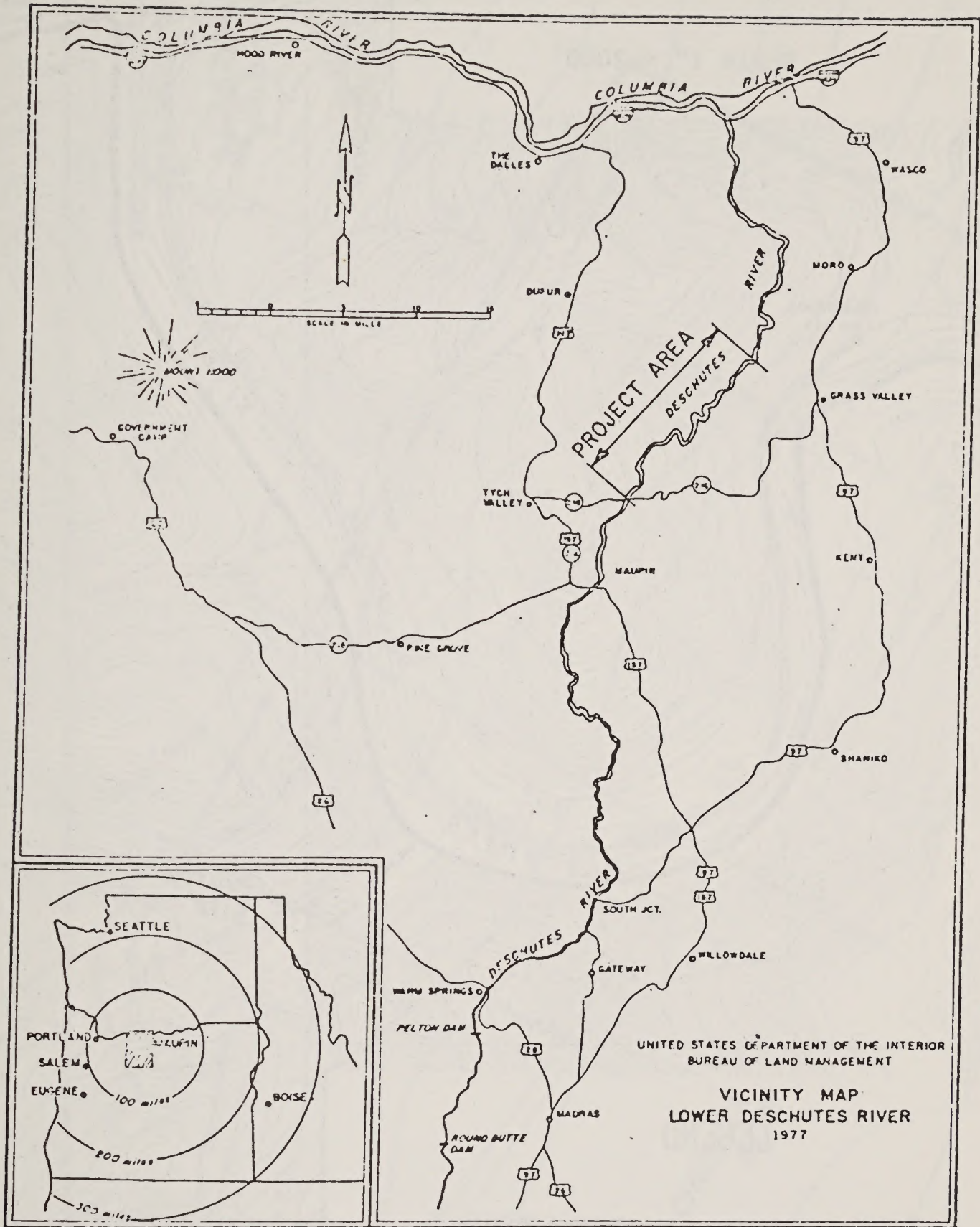
At such time the quarry area is no longer needed, the remaining work areas at the crusher site and the quarry road will be reshaped, scarified and revegetated.

PREPARED BY Milton L. Rogers  
District Engineer

APPROVED BY Andrew B. Ryan  
Area Manager

Paul W. Crosswith 4/22/77  
District Manager



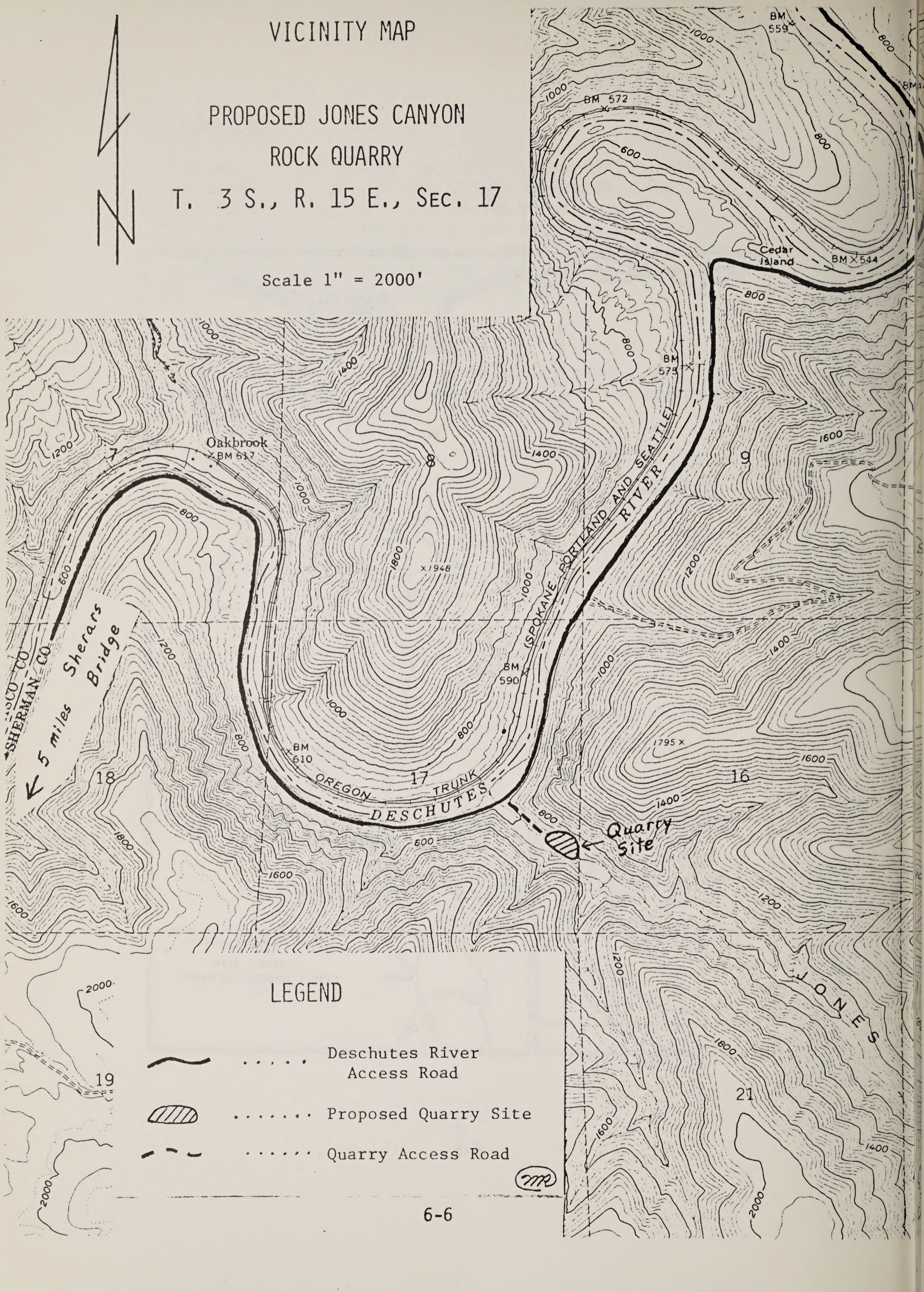
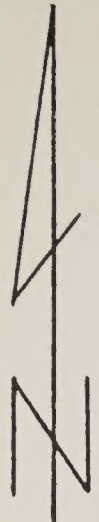


# VICINITY MAP


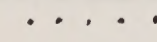
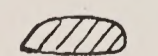

## PROPOSED JONES CANYON ROCK QUARRY

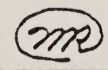
T. 3 S., R. 15 E., SEC. 17

Scale 1" = 2000'

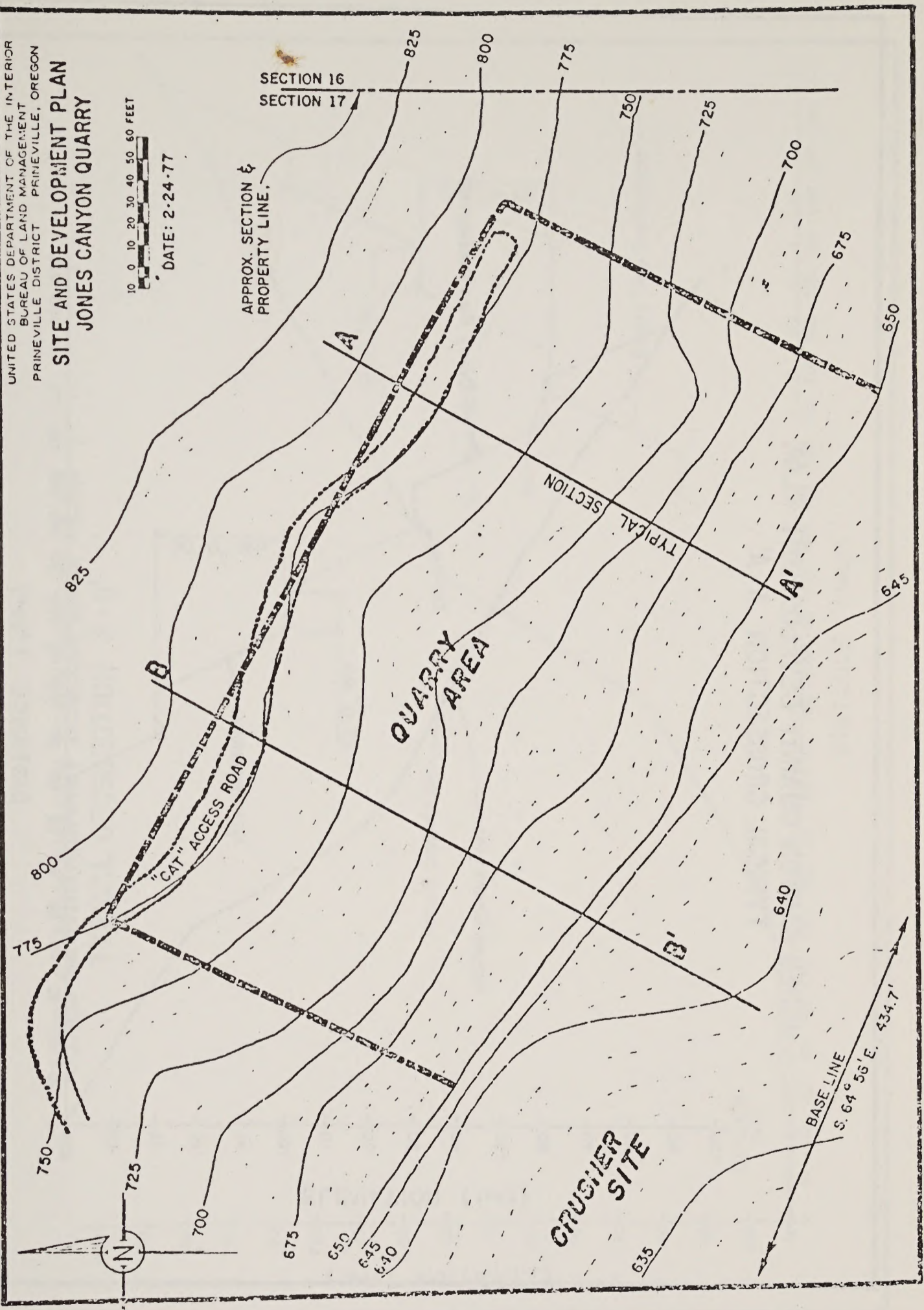
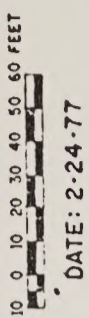


### LEGEND

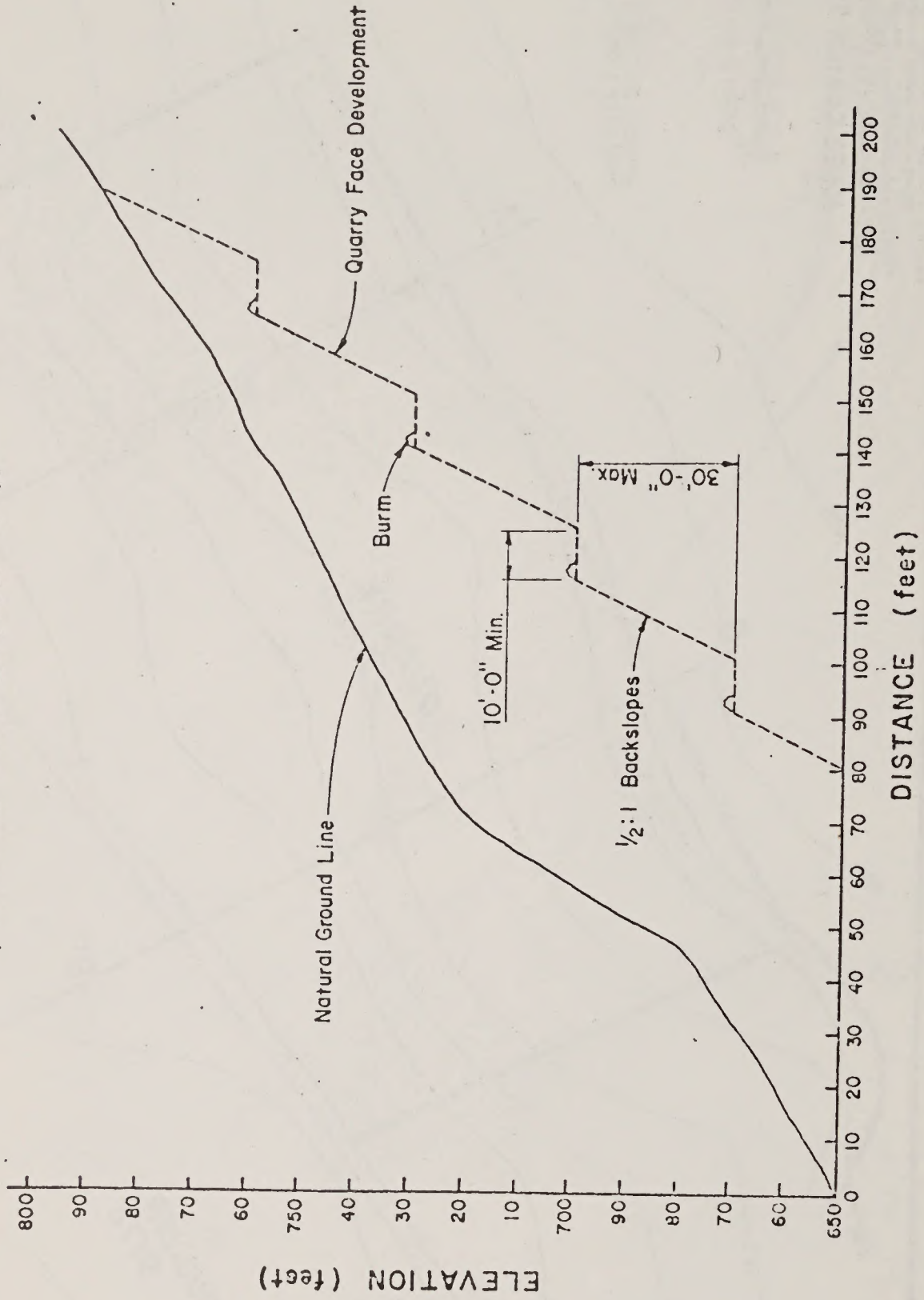
-  ..... Deschutes River
-  ..... Access Road
-  ..... Proposed Quarry Site
-  ..... Quarry Access Road



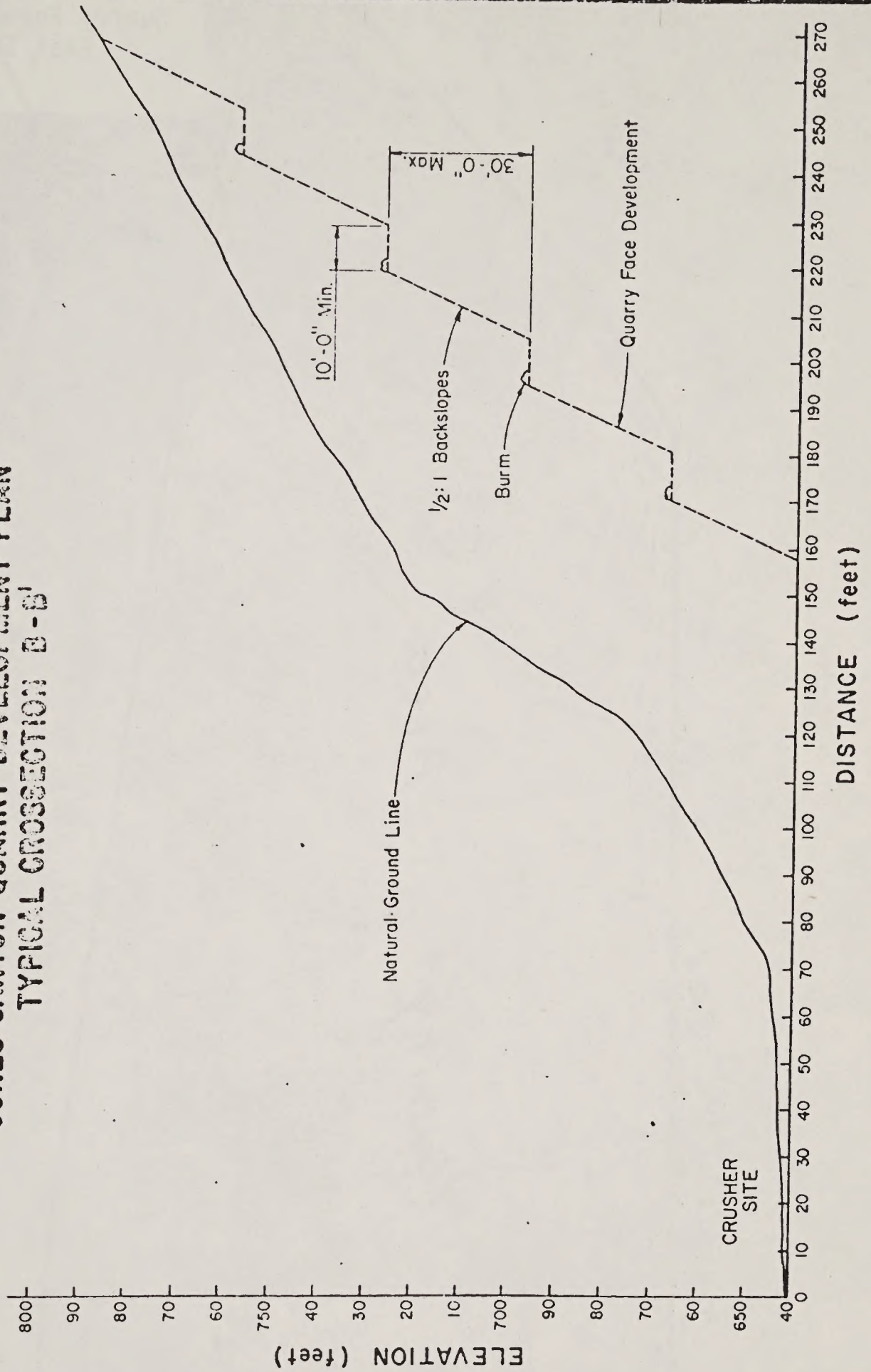
UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
PRINEVILLE DISTRICT PRINEVILLE, OREGON  
**SITE AND DEVELOPMENT PLAN  
JONES CANYON QUARRY**



**JONES CANYON QUARRY DEVELOPMENT PLAN  
TYPICAL CROSSSECTION A-A'**



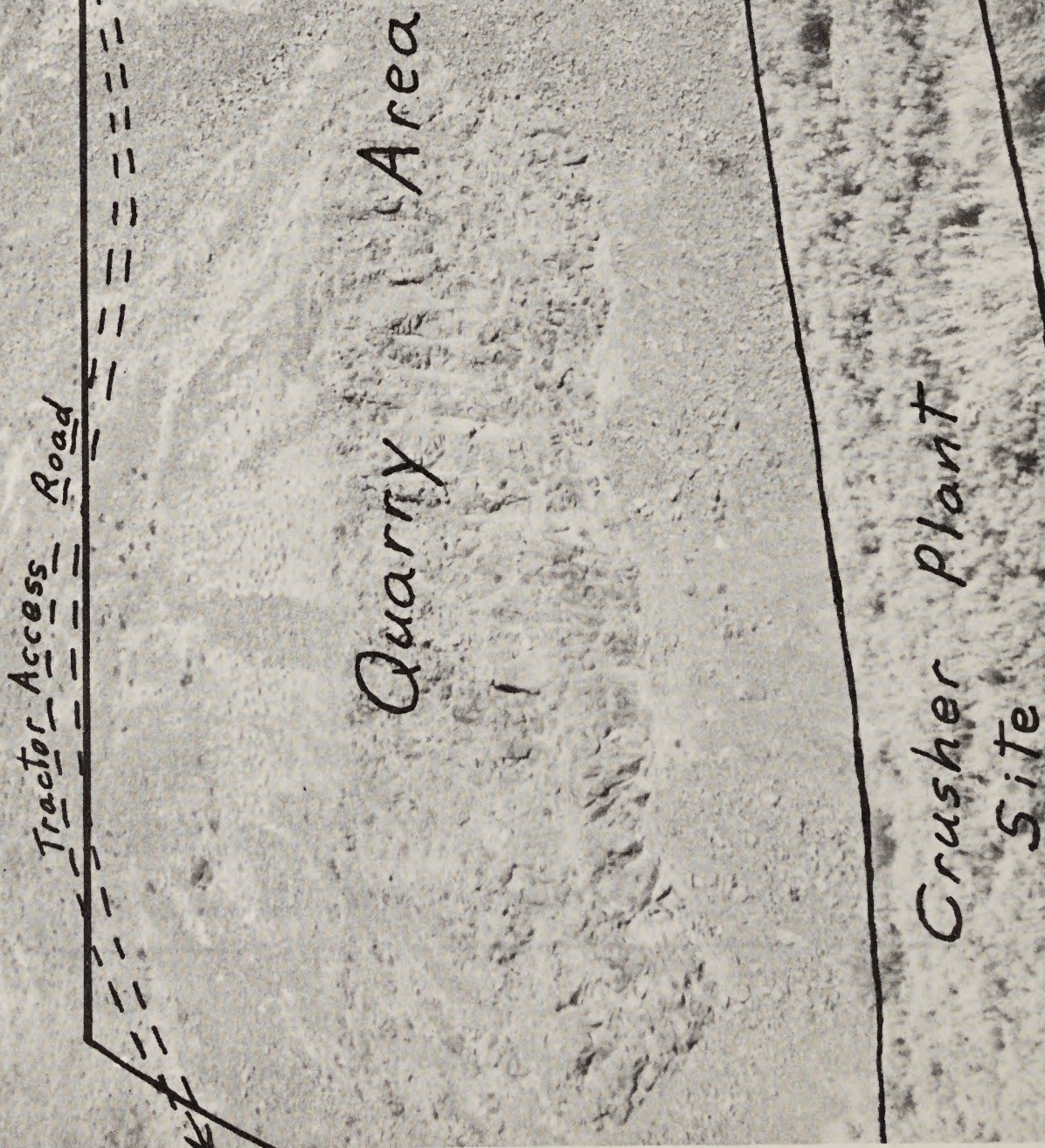
**JONES CANYON QUARRY DEVELOPMENT PLAN  
TYPICAL CROSSSECTION B-B'**



JONES CANYON QUARRY DEVELOPMENT PLAN

Photo Plan Number 1

Quarry Face and Crusher Site  
East End of Quarry



JONES CANYON QUARRY DEVELOPMENT PLAN

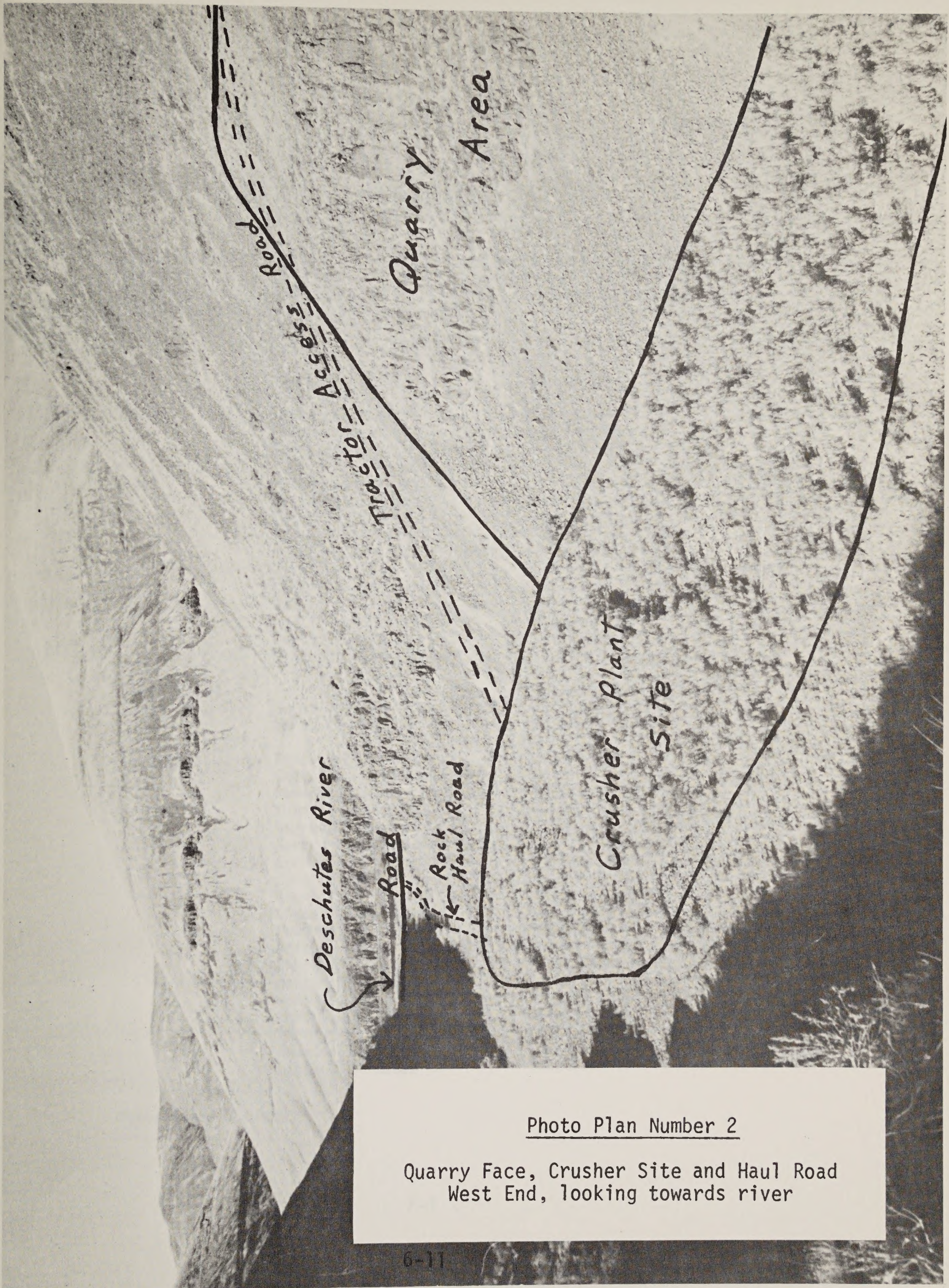


Photo Plan Number 2

Quarry Face, Crusher Site and Haul Road  
West End, looking towards river





WILDLIFE LIST

Wildlife species known or thought to occur in the area. A complete list by species, season of use, relative abundance, and habitats is available in the Prineville District Office. The size of this document prohibited its inclusion in the appendix.

MAMMALS

	<u>Scientific Name</u>	<u>Common Name</u>
Shrews	Sorex palustris*	Water Shrew
	Sorex vagrans	Vagrant Shrew
	Sorex merriami*	Merriams Shrew
Bats	Antrozous pallidus	Pallid Bat
	Lasiurus cinereus	Hoary Bat (migrant)
	Eptesicus fuscus	Big Brown Bat
	Pipistrellus hesperus	Western Pipistrelle
	Lasiorycteris noctivagans*	Silver Haired Bat
	Myotis evotis	Long-eared Myotis (Low numbers)
	Myotis californicus	California Myotis
	Myotis subulatus	Small-footed Myotis
	Myotis yumanensis	Yuma Myotis
	Myotis lucifugus	Little Brown Myotis
Plecotus townsendii	Townsend big-eared Bat	
Rabbits and Hares	Sylvilagus nuttalli	Mountain Cottontail
	Lepus californicus	Blacktail Hare
	Lepus townsendii*	Whitetail Hare
Rodents	Erethizon dorsatum	Porcupine
	Castor canadensis	Beaver
	Marmota flaviventris	Yellowbelly Marmot
	Eutamias amoenus	Yellow Pine Chipmunk
	Spermophilus lateralis	Golden-mantled Ground Squirrel
	Spermophilus beechey	California Ground Squirrel
	Spermophilus townsendi	Townsend Ground Squirrel
	Spermophilus balding	Belding Ground Squirrel
	Thomomys talpoides	Northern Pocket Gopher
	Dipodomys ordii	Ord Kangaroo Rat
	Perognathus parvus	Great Basin Pocket Mouse
	Reithrodontomys megalotis	Western Harvest Mouse
	Onychomys leucogaster	Grasshopper Mouse
	Neotoma cinerea	Bushytail Woodrat
	Peromyscus crinitus	Canyon Mouse
	Peromyscus maniculatus	Deer Mouse
	Peromyscus truei	Pinon Mouse
	Ondatra zibethica	Muskrat
	Lagurus curtatus	Sagebrush Vole

\*Questioned Occurance

ANIMALS (Cont)

	<u>Scientific Name</u>	<u>Common Name</u>
	Microtus longicaudus	Longtail Vole
	Microtus montanus	Montane Vole
	Mus musculus	House Mouse
	Zapus princeps*	Jumping Mouse
Carnivores	Lynx rufus	Bobcat
	Felis concolor*	Mountain Lion
	Canis latrans	Coyote
	Procyon lotor	Raccoon
	Mephitis mephitis	Striped Skunk
	Spilogale putorius	Spotted Skunk
	Taxidea taxus	Badger
	Mustela vison	Mink
	Lutra canadensis	River Otter
	Mustela frenata	Longtail Weasel
Deer	Odocoileus hemionus hemionus	Rocky Mtn. Mule Deer

Partial List of Birds which utilize the Lower Deschutes. The list is not inclusive as some rare migrants and occasional visitors have been omitted.

	<u>Scientific Name</u>	<u>Common Name</u>
Grebes	<i>Aechmophorus occidentalis</i>	Western Grebe
	<i>Podiceps caspicus</i>	Eared Grebe
Heron	<i>Ardea Herodias</i>	Great Blue Heron
Geese and Ducks	<i>Granta canadensis</i>	Canada Goose
	<i>Anas platyrhynchos</i>	Mallard
	<i>Anas acuta</i>	Pintail
	<i>Mareca americana</i>	American widgeon
	<i>Anas strepera</i>	Gadwall
	<i>Aix sponsa</i>	Wood Duck
	<i>Spatula clypeata</i>	Shoveler
	<i>Anas carolinensis</i>	Green-winged teal
	<i>Anas discors</i>	Blue-winged teal
	<i>Aythya americana</i>	Redhead
	<i>Aythya affinis</i>	Scaup
	<i>Aythya valisineria</i>	Canvasback
	<i>Aythya collaris</i>	Ringnecked duck
	<i>Bucephala clangula</i>	Common goldeneye
	<i>Oxyura jamaicensis</i>	Ruddy duck
<i>Mergus merganser</i>	Common merganser	
<i>Lophodytes cucullatus</i>	Hooded merganser	
Hawks, Owls, Eagles, Vultures	<i>Carthartes aura</i>	Turkey vulture
	<i>Aquila chrysaetos</i>	Golden Eagle
	<i>Haliaeetus leucocephalus</i>	Bald Eagle
	<i>Pandion haliaetus</i>	Osprey
	<i>Accipiter cooperii</i>	Cooper's Hawk
	<i>Accipiter striatus</i>	Sharp-shinned hawk
	<i>Buteo swainsoni</i>	Swainson's hawk
	<i>Buteo regalis</i>	Ferruginous hawk
	<i>Buteo lagopus</i>	Rough-legged hawk
	<i>Buteo jamaicensis</i>	Red-tailed hawk
	<i>Circus cyaneus</i>	Marsh hawk
	<i>Falco mexicanus</i>	Prairie falcon
	<i>Falco sparverius</i>	Sparrow hawk
	<i>Bubo virginianus</i>	Great horned owl
	<i>Tyto alba</i>	Barn owl
<i>Otus asio</i>	Screech owl	
<i>Speotyto cunicularia</i>	Burrowing owl	
<i>Asio flammeus</i>	Short-eared owl	

BIRDS (cont)

	<u>Scientific Name</u>	<u>Common Name</u>
Upland Game Birds	Phasianus colchicus Alectoris graeca Lophortyx californicus Perdix perdix	Ring-necked pheasant Chukar Valley quail Hungarian partridge
Shorebirds	Charadrius vociferus Fulica americana	Killdeer American coot
Gulls	Larus glaucescens Larus occidentalis * Larus californicus Larus argentatus	Glaucous winged gull Western gull California gull Herring gull
Doves, Pigeons	Zenaidura macroura Columba livia	Mourning dove Rock dove (Domestic Pigeon)
Swifts, Nighthawk, Poorwill	Phalaenoptilus nuttallii Chordeiles minor	Poorwill Common nighthawk
Hummingbird	Selasphorus rufus	Rufous hummingbird
Kingfisher	Megaceryle alcyon	Belted Kingfisher
Woodpecker and Flicker	Colaptes auratus Asyndesmus lewis Sphyrapicus varius Dendrocopus villosus • Dendrocopus nufescens	American flicker Lewis' woodpecker Yellow-bellied sapsucker Hairy woodpecker Downy woodpecker
Flycatcher, Lark	Tyrannus verticalis Empidonax wrightii Empidonax difficilis Muttallornis borealis Contopus sordidulus Erenophila alpestris	Western Kingbird Gray flycatcher Western flycatcher Olive-sided flycatcher Western wood peewee Horned lark
Swallows	Tachycineta thalassina Iridoprocne bicolor Hirundo rustica Petrochelidon pyrrhonata	Violet-green swallow Tree swallow Barn swallow Cliff swallow

	<u>Scientific Name</u>	<u>Common Name</u>
Jays, Crows, Magpie	<i>Cyanocitta stelleri</i>	Steller's jay
	<i>Perisoreus canadensis</i>	Gray jay
	<i>Pica pica</i>	Black-billed magpie
	<i>Corvus corax</i>	Common raven
	<i>Corvus brachyrhynchos</i>	Common crow
Chicadee, Nuthatch, Dipper, Wren	<i>Parus atricapillus</i>	Black-capped chickadee
	<i>Psaltriparus minimus</i>	Common bushtit
	<i>Sitta canadensis</i>	Red-breasted nuthatch
	<i>Cinclus mexicanus</i>	Dipper
	<i>Troglodytes aedon</i>	House wren
Thrushes, Bluebirds, Kinglet	<i>Turdus migratorius</i>	Robin
	<i>Hylocichla guttata</i>	Hermit thrush
	<i>Sialia mexicana</i>	Western bluebird
	<i>Sialia currucoides</i>	Mountain bluebird
	<i>Regulus satrapa</i>	Golden-crowned kinglet
Shrikes and Starling	<i>Lanius excubitor</i>	Northern shrike
	<i>Lanius ludovicianus</i>	Loggerhead shrike
	<i>Sturnus vulgaris</i>	Starling
Warbler, Blackbirds, Finchs, Sparrows	<i>Dendroica nigrescens</i>	Black-throated gray warbler
	<i>Passer domesticus</i>	House sparrow
	<i>Sturnella neglecta</i>	Western meadowlark
	<i>Agelaius phoeniceus</i>	Red-winged blackbird
	<i>Icterus bullockii</i>	Bullock's oriole
	<i>Euphagus cyanocephalus</i>	Brewer's blackbirds
	<i>Molothrus ater</i>	Brown-headed cowbird
	<i>Carpodacus mexicanus</i>	House finch
	<i>Spinus tristis</i>	American goldfinch
	<i>Pipilo erythrophthalmus</i>	Rufous-sided towhee
	<i>Passerculus sandwichensis</i>	Savannah sparrow
	<i>Amphispiza belli</i>	Sage sparrow
	<i>Junco oreganus</i>	Oregon junco
	<i>Spizella arborea</i>	Chipping sparrow
	<i>Spizella breweri</i>	Brewer's sparrow
	<i>Zonotrichia leucophrys</i>	White-crowned sparrow
	<i>Zonotrichia atricapilla</i>	Golden-crowned sparrow
<i>Passerella iliaca</i>	Fox sparrow	
<i>Melospiza melodia</i>	Song sparrow	

Partial List of the Reptiles and Amphibians Which Utilize the Lower Deschutes

	<u>Scientific Name</u>	<u>Common Name</u>
Frogs and Toads	<i>Scaphiopus intermontanus</i>	Great Basin Spadefoot
	<i>Bufo boreas</i>	Western Toad
	<i>Hyla regilla</i>	Pacific Treefrog
Salamanders	<i>Ambystoma macrodactylum</i>	Long-toed Salamander
Lizards and Skinks	<i>Eumeces skiltonianus</i>	Western Skink
	<i>Sceloporus graciosus</i>	Sagebrush Lizard
	<i>Sceloporus occidentalis</i>	Western Fence Lizard
	<i>Uta stansburiana</i>	Side-blotched Lizard
	<i>Phrynosoma douglassi douglassi</i>	Pinyon Horned Lizard
Snakes	<i>Charina bottae</i>	Rubber Boa
	<i>Coluber constrictor mormon</i>	Yellow-bellied Racer
	<i>Pituophis melanoleucus</i>	Gopher Snake
	<i>Thamnophis sirtalis fitchi</i>	Common Garter Snake
	<i>Thamnophis elegans vargans</i>	Wandering Garter Snake
	<i>Masticophis taeniatus</i>	Striped Whipsnake
	<i>Hypsiglena torquata</i> deserticola*	Night Snake
	<i>Crotalus viridis oregonus</i>	Pacific Rattlesnake

FISH

(Partial Listing)

	<u>Scientific Name</u>	<u>Common Name</u>
Salmon, Trout, Whitefish	Oncorhynchus tshawytscha	Chinook Salmon
	Oncorhynchus kisutch (Limited)	Coho Salmon
	Oncorhynchus nerka (limited)	Sockeye Salmon
	Salmo gairdneri	Steelhead Trout
	Salmo gairdneri	Rainbow Trout
	Prosopium williamsoni	Mountain Whitefish
Minnows, Carp, Dace, Chub	Cyprinus carpio(Limited)	Carp
	Ptychocheilus oregonensis	Squawfish
	Acrocheilus alutaceus	Chiselmouth Chub
	Richardsonius balteatus balteatus	Redside shiner
	Rhinichthys spp.	Dace
	Mylocheilus cavrinus	Peanouth
Suckers	Catostomus columbianus	Bridgelip sucker
	Catostomus macrocheilus	Largescale sucker
Sculpins	Cottus spp.	Sculpins
Lamprey	Lampetra tridentata	Pacific Lamprey





# Visual Contrast Rating

## ANTICIPATED VISUAL IMPACTS ON LANDSCAPE

Manual Reference 6320

Project Name Deschutes River Road Activity 3100  
 Planning Unit Deschutes Date Feb., 1977  
 VRY Management Class (Step III MFP) II Date Feb., 1977  
 Project Description: (Brief) Hard surfacing of existing  
gravel surface road adjacent to Deschutes River.

Characteristic Landscape (Extract Pertinent Info. from URA Step 3)

Land  
 Form Steep, rugged canyon  
 Line Skyline canyon rim  
 Color Blue water, gray-brown soil & rock  
 Texture Smooth to irregular  
 Vegetation  
 Form vertical trees  
 Line irregular  
 Color Gray green  
 Texture Brushy  
 Structures  
 Form Road, buildings  
 Line Straight and square  
 Color Varied  
 Texture Rustic (rough)

PROPOSED ACTIVITY DESCRIPTION - BRIEFLY  
 Describe in Terms of F,L,C,T, Introduced

FORM None  
 LINE Will accent line of road edge  
 COLOR Black  
 TEXTURE Smooth

Proposed Action vs. Existing Site  
 Condition 3-Strong:2-Moderate:1-Weak

Land	Form	4	x	0	=	0	8
	Line	3	x	1	=	3	6
	Color	2	x	2	=	4	4
	Texture	1	x	2	=	2	2
						10	10
	Total						

Vegetation

Form	4	x	=	
Line	3	x	=	
Color	2	x	=	
Texture	1	x	=	
Total				

Structures

Form	4	x	=	
Line	3	x	=	
Color	2	x	=	
Texture	1	x	=	
Total				

Visual Contrast Rating



## VISUAL RESOURCE MANAGEMENT OBJECTIVE CLASSES DEFINITION

Each visual quality objective class describes a different degree of modification allowed in the basic elements of the landscape.

- A. Class I.- This class provides primarily for natural ecological changes only. It is applied to primitive areas, some natural areas, and other similar situations where management activities are to be restricted.
- B. Class II Changes in any of the basic elements (form, line, color or texture) caused by a management activity should not be evidence in the characteristic landscape.
- C. Class III Changes in the basic elements, (form, line, color, texture) caused by a management activity may be evident in the characteristic landscape. However, the changes should remain subordinate to the visual strength of the existing character.
- D. Class IV. Changes may subordinate the original composition and character but must reflect what could be a natural occurrence within the characteristic landscape.
- E. Class V. Change is needed. This class applies to areas where the naturalistic character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding countryside. This class would apply to areas identified in the scenery evaluation where the quality class has been reduced because of unacceptable intrusions. It should be considered an interim short term classification until one of the other objectives can be reached through rehabilitation or enhancement. The desired visual quality objective should be identified.



THE DALLAS CHAPTER of HOOD RIVER FISHERMEN September Newsletter  
1976

FISHIN --- FISHIN --- FISHIN --- COOPS (that was not too sharp that one)

anyhow the BIG FISHIN IS SUNDAY SEPTEMBER 18th and 19th. (that is not too sharp either) SATURDAY THE 18th and Sunday the 19th at Beavertail Campground about five miles upstream from Mack's Canyon. OUR SUPER POT LUCK DINNER will start about 1 p.m. -- on Sunday --

FALASH ?? - this year we will have roast beef provided by the Baffle committee so come prepared to chow down. (now conservation minded: support the Wasco County beef growers by having beef at a FISHIN)

anyhow bring your own eating tools, and bring plenty of YUMMY EATS. there will be some of our brave heroes out beating the DESCHUTES to a lather both Saturday and Sunday, but any member or friend can get lots to eat Sunday.

We hope to have some of the Hood River chapter members as guests. It is also very timely as the business meeting will be after the cats and Beavertail is now the center of a real problem. The BLM is getting ready to PAVE THE ACCESS ROAD. We need that paved like we need more cat nets in the Columbia.

The old timers have fought for years to prevent the BLM from paving the DESCHUTES CANYON FROM WARM SPRINGS TO THE MOUTH. No, that is not crazy. Most of it would have been paved a long time ago if the BLM had it's way. So far protests from fishing groups and others have kept most of the pavement out.

At the executive board meeting, it was felt that if there is spare money to be spent, the best use would be to install modern rest room facilities. There is a lot of use of the canyon already and pavement or not the chances are that there will be more. STILL PEOPLE HAVE TO GO AND WHERE THERE ARE NO FACILITIES, THE RESULTS ARE NOT GOOD.

We hope the chapter will act as a body, but we also need letters from individuals to : MR. PAUL SMITH,  
AREA MANAGER FOR BLM  
PRINEVILLE, OREGON, 97754.

If the access road is paved there will be many times more traffic on that road which not only means three fishermen on every rock but ALSO VERY HEAVY FISHING ON UPPER DOWNSTREAM SNOLTS ALL SPRING. this could well be the straw that breaks the back of the steelhead runs.

Along with this happy news is the announcement that there will be a meeting of the Indian Policy Review Board of the Department of Interior at the BIA auditorium in the Lloyd Center BIA building on Saturday Sept 25th. Testimony will be taken but only from previously arranged depositions. (Phone is 202-225-184)

On Sunday September 26 the Jeff City Rod and Gun Club will have a merchandise shoot near Madras 10-1 worship of the Jeff City steelhead/

This is getting to be time for suggestions to the Fish and Wildlife Commission for changes in the regulations. Think what you think should be done. Come



The Dalles, Oregon

September 10, 1976

	(X)	ACTION	INFO
		D.M.	
		RES. MGMT.	
		OPERATIONS	
		ADMIN.	
		CENTRAL RECORDS	
		DISSEMINATION	
		READING	FILE

Mr. Paul Arras Smith, District Manager  
B.L.M. Office  
Prineville, Oregon

Dear Mr. Smith:

I have just recently learned of the plan of the BLM to pave the access road along the Deschutes River from Buck Hollow for several miles, until the allotted funds have been used.

We wish to voice our opposition to this road work on this particular area. AT the present time, the traffic is exceedingly heavy and people are camped at all points on the River. Rather than improve the road, we believe consideration should be given to proper sanitation facilities at various points other than the two Campgrounds. There are trailers, campers, tents, etc. along the river not on designated camping areas and the sanitation has become extremely critical. By paving this road, you are adding to all of these problems because additional Portland residents will come and we now have a heavy load from that area. We believe this should be brought before a Public Hearing for suggestions as to the environmental effects this proposal would bring. We are also concerned as to the early spring fishing and the catching of young fish returning downstream during migration.

We ask that you postpone any definite action until a Public Hearing is set for this matter.

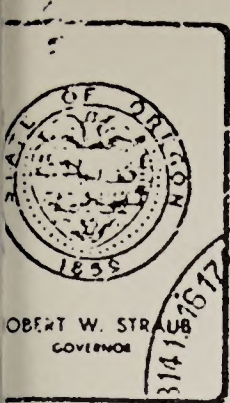
We will appreciate knowing your thoughts on this matter.

Yours very truly,

ROGER C. BROER

BETTY K. BROER

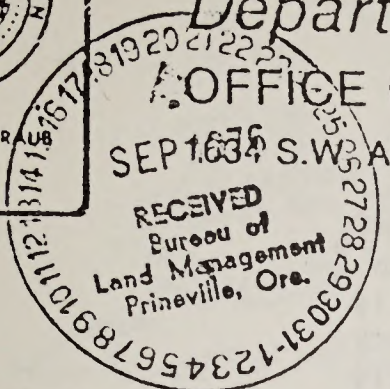
918 E. 15th Place  
The Dalles, Oregon 97058



Department of Fish and Wildlife

OFFICE OF THE DIRECTOR

3192021225  
SEP 16 1976 S.W. ALDER STREET, PORTLAND, OREGON 97208



September 16, 1976

Mr. Murl W. Storms  
Oregon-Washington State Director  
Bureau of Land Management  
P.O. Box 2965  
Portland, Oregon 97208

(X)	ACTION	INFO	(Y)
	D.M.		MA
①	RES. MGMT.		MA
③	OPERATIONS		MA
	ADMIN.		
	CENTRAL OREGON		
②	DESCHUTES		MA
	READING	FILE	④

EAR Fi

Dear Mr. Storms:

Our department is very concerned over the Bureau of Land Management proposal to pave the road paralleling the Deschutes River from Buckhollow Creek to Macks Canyon. From the standpoint of fish and wildlife values, we feel that this road improvement project is detrimental and should not be undertaken. The following points form the basis for our concern:

1. The Deschutes River is one of the last major streams in Oregon to support a significant population of wild steelhead. A summer steelhead research study initiated in 1969 determined that the annual steelhead run in the Deschutes River averages about 30,000 fish of which half are of wild stock. Statistical sampling programs at major access points in the lower Deschutes indicated that in recent years approximately 50 percent of the total run is being harvested. Any increase in this harvest rate could jeopardize the future of the wild steelhead run in the river. The primary concern is that a paved road will attract more use over a longer period of the fishing season.
2. Steelhead angler use along Macks Canyon Road has increased rapidly from 2,522 angler days in 1966 to 11,141 angler days in 1973. Use apparently has stabilized in the last three years; ranging from 11,141 in 1973 to 10,793 in 1974 and 8,068 in 1975. Steelhead catch along the road increased in direct relation to the angling pressure. The steelhead catch has ranged from 404 in 1966 to a high of 3,992 in 1974.
3. Increased pressure along Macks Canyon Road would most certainly result in an increase in the adult steelhead catch. It became evident during the progress of the summer steelhead study that a significant number of wild steelhead congregate for a considerable time in the river from Sherars Falls to Macks Canyon. Apparently these fish linger in this area until shortly before maturation, when they proceed to upstream spawning areas. For this reason, increased harvest of steelhead in this area could have a profound impact on the river's wild steelhead population.

Mr. Murl W. Storms

September 16, 1976

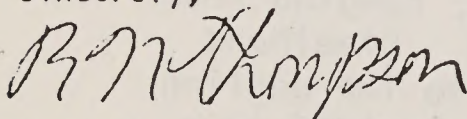
Page 2

4. Trout angler use along Macks Canyon Road has been increasing in recent years. If this trend continues during the early portion of the general trout season, these anglers could unintentionally harvest large numbers of juvenile steelhead of wild and hatchery origin. This section of the Deschutes River is managed strictly for anadromous fish production and migration.
5. In many areas campers have cut trees, burned trees and indiscriminately built fires adjacent to the river. The BLM Campgrounds at Beavertail and Macks Canyon began charging for camping in 1976. This will probably encourage people to camp in other non-fee locations adjacent to the river. Increased use along Macks Canyon Road can only mean continued deterioration of the river's valuable riparian vegetation.
6. Chukar and valley quail brood inventories are conducted annually from Maupin to Macks Canyon and Maupin to North Junction. In comparing data from area to area and year to year, sharp declines in numbers of broods have been noted below the Portland-Deschutes Club locked gate, thus indicating that the present increase in vehicle use has already had an effect on the chukar and valley quail populations.
7. It is believed that vehicle traffic will not only increase during the hunting and fishing seasons, but will also increase during the remainder of the year. Therefore, from the wildlife standpoint, increased vehicle traffic and subsequent increased human harassment will only lessen the chances for good populations of game and non-game species.

We understand that the project is being justified from a maintenance cost standpoint. It has been estimated that the paving project will cost in excess of \$500,000. It appears to us that if this funding were prorated for minimal maintenance of the present road, these services could be provided for many years.

At the present time a public road parallels the Deschutes for thirty-five miles from Macks Canyon to the Portland Deschutes Club locked gate. These thirty-five miles of road can be placed into three categories based upon the state of repairs: unimproved, 7 miles, Improved (gravel), 18 miles and paved, 10 miles. This provides a variety of road conditions for the desires of the different users. We urge you to keep it that way.

Sincerely,



for JOHN R. DONALDSON  
DIRECTOR

cc Paul Arrosmith, BLM District Manager, Prineville ✓  
Wayne Elmore, BLM Wildlife Biologist, Prineville





ROBERT B. NEIGHBOR  
3930 S. W. WAPATO AVENUE  
PORTLAND, OREGON 97201

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BUREAU OF LAND MANAGEMENT  
PRINEVILLE DISTRICT OFFICE  
185 EAST FOURTH ST.  
PRINEVILLE, OREGON

GENTLEMEN:

IT IS MY UNDERSTANDING  
THAT YOU INTEND TO  
INCREASE THE PRESSURE ON  
THE DESCHUTES RIVER FISHERY  
BY PAVING THE ROAD FROM  
SHERARS BRIDGE NORTH TO  
MACKS CANYON.

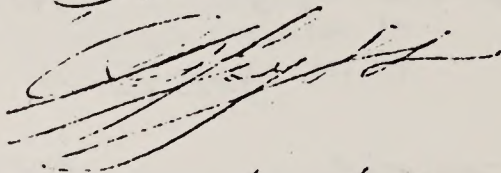
IF THIS IS SO, AND  
YOU REALLY DO INTEND TO  
PAVE THAT ROAD, WHERE  
IS THE PUBLIC HEARING TO  
BE HELD AND AT WHAT  
TIME. SECONDLY, WHERE MAY  
A COPY OF THE ENVIRON-  
MENTAL IMPACT STATEMENT  
BE OBTAINED.  
NO ONE CAN TRULY  
BELIEVE THAT PAVING ANY  
ROAD PARALLEL TO THE DESCHUTES  
WILL NOT PUT MORE PRESSURE ON  
THE FISHERY.

10-5

OPEN

FOR THIS REASON, I OPPOSE  
IMPROVEMENT OF ROADS  
PARALLEL TO THE LOWER  
RESOURCES, AND ASK THAT  
ENVIRONMENTAL COMPARISON  
OF ROADS PERPENDICULAR  
TO THE RIVER BE INCLUDED  
IN YOUR IMPACT STATEMENT.

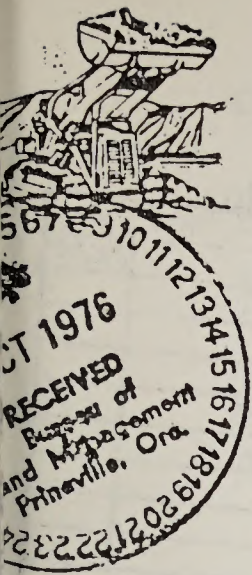
SINCERELY



2/21/76

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10-6



# ELLETT CONSTRUCTION CO.

ROUTE 4 BOX 69-B PHONE 296-6649

THE DALLES, OR. 97058

September 29, 1976

BLM  
Prineville,  
Oregon 97754

<input checked="" type="checkbox"/>	ACTION	INFO
<input checked="" type="checkbox"/>	D.M.	<i>AK</i>
	RES. MGMT.	
	OPERATIONS	
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	ADMIN.	
	CENTRAL OREGON	
<input checked="" type="checkbox"/>	DESCHUTES	<i>AK</i>
	READING	FILE <input checked="" type="checkbox"/>

EAR F.

Gentlemen:

As expressed numerous times in the past, both by letter and in person, at numerous occasions when BLM has been working at making an urban area, paved from one end to the other, of our very lovely Deschutes River, we are still in opposition. If BLM has monies which must be spent on the Deschutes at this time we encourage them to use the money to purchase more public lands on the river. The Deschutes is well used now, we do not need to pave any more access roads to encourage greater use of the river.

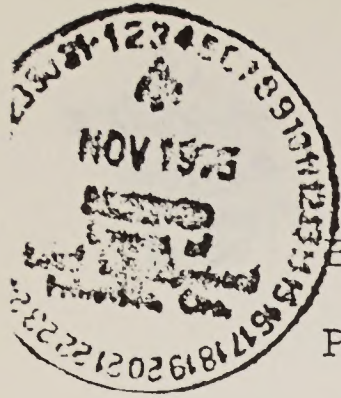
Sincerely,

*The Elletts*

Loretta, Jim, Vance, Victor, Vandl, Vickie Ellett

(all legal voters and tax payers).

November 1, 1976



Bureau of Land Management

P. O. Box 550

Prineville, Oregon 97754

Atten: Mr. Paul W. Arrasmith

W	ACTION	INS	12/1
	D.M.		
	RES. MGMT.		
	OPERATIONS		
	AD. IN.		
	CENTRAL OREGON		
	DESCHUTES		
	READING	FILE	

Dear Mr. Arrasmith:

Re. 6123 Deschutes River-

Thank you for your answer on Oct. 13 concerning the planned road project, Sherar's Falls to Mack's Canyon.

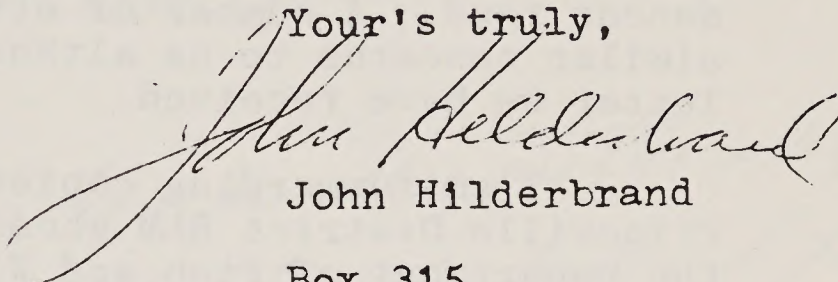
It may help you to know something of my background so you may evaluate my views. I have lived all my life on a ranch in Sherman County. Have been a member of the Sherman County Road Committee for many years. This was set up by the county court to advise it on which roads should be fixed up and how. These recommendations have been followed to the letter and as a result have not since had a road levy defeat.

It is my opinion that this road can only properly be repaired with a hard surface. With as many people using this road who do not know how to drive on a gravel road it is a wonder someone has not been killed. In 3 years I have punctured 3 oil pans on this road. This road is an extreme hardship on campers, trailers, etc. Hard surfacing is the only way to stop the dust problem.

One cannot estimate a good roads impact on the increased use. If there should be too much fishing pressure in this area the State could stop the jet boats from using this area. I think this will be a problem even if the road is not improved.

I hope my views will be of some help. If I can be of further help please let me know.

Your's truly,

A handwritten signature in cursive script, appearing to read "John Hilderbrand".

John Hilderbrand

Box 315

Wasco, Oregon 97065



ROBERT W. STRAUB  
GOVERNOR

Department of Transportation  
**PARKS AND RECREATION BRANCH**

525 TRADE STREET S.E., SALEM, OREGON 97310

December 2, 1976

(X)	ACTION	INFO	(S)
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<input type="checkbox"/>	CENTRAL OREGON		
<input type="checkbox"/>	DESCHUTES		
<input type="checkbox"/>	READING	<input type="checkbox"/>	FILE



Mr. Frederick C. Goeth  
218 Morgan Building  
Portland, OR 97205

Dear Mr. Goeth:

Thank you for writing to express your concern about the proposed paving of the lower Deschutes access road. A number of others have expressed similar concerns to us although yours is the first letter we have received.

I am forwarding copies of your letter to the Prineville District BLM whose plan this is, and to the Department of Fish and Wildlife and the Governor's office.

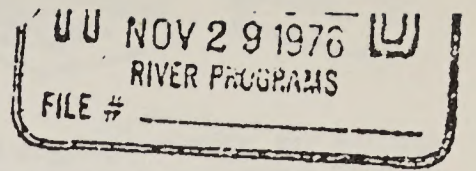
Sincerely,

Robert K. Potter, Administrator  
River Programs

RKP:lb

cc: Bob Mace, Fish & Wildlife w/att.  
Janet McLennan, Governor's Office w/att.  
Paul Arrasmith, Prineville BLM w/att.

FREDERICK C. GOETH  
215 755 MORGAN BUILDING  
PORTLAND, OREGON 97205  
(503) 227-0633



Nov 23, 1976

Dear Mr. Potter -

I understand that you are the appropriate state official to contact concerning any proposed extension of the fishing access road pavement on the Deschutes from Sheras Bridge further north.

I have no position in this matter except that of a dedicated trout and steelhead fisherman interested in maintaining the high quality of this river. Quality, as you know, is compounded of many things among them are solitude, size and fighting quality of fish, ratio of native fish, remoteness, cleanliness of water and banks, and natural standing of plant life along the stream. Other used statistical criteria such as number of fish caught or number of anglers served are not always valid statistics. It is simple to count large quantities of trout but not to give a taste of water

10-11

FREDERICK C. GOETH  
218 225 MORGAN BUILDING  
PORTLAND, OREGON 97205  
1503) 227-0833

and thus increase its numerical attributes.

I have fished avidly for years in the Deschutes below Warm Springs. I go in by foot, boat or automobile. I find, without question, that true quality of fishing declines as access is improved. For the angler wishing to put himself out a bit, the fishing in many parts of the Deschutes is truly remarkable and is a great heritage that deserves our protection. Making it easier for more people to reach can only result in poorer fishing. Most streams in Oregon are easily accessible to those who cannot or do not care to go into remote areas. Let us not spoil the few good sections remaining.

I heartily recommend that the fishing access road on the Deschutes River below Shuart Bridge not be paved.

Sincerely

10-12

11 4 71



# The people's own corner



big business. Instead of restricting it, oversize loads should be allowed to move at night and get out of the way — with proper lighting and pilot cars.

6. Distractions to a not-so-careful trucker — miniskirts, a sudden view of our beautiful city, trying to pour coffee while driving, talking on the C.B. radio.

With bolder, more adequate warning to truckers, and a slight speed reduction at the bad curve spots, a bit of forethought and courtesy by both auto and truck driver, in conjunction with equitable and sensible law enforcement, the accidents would be greatly reduced.

VICTOR M. GALLEGOS,  
2665 SE Meadowlark Drive,  
Hillsboro.

## 'Friend in need'

To the Editor: A friend in need is a friend in deed. A nine-month-old child found such a friend when her hitchhiking mother decided her child was a burden and gave her away on a Tacoma street corner to a man who said he was sure his wife would love to have her. (The Oregonian, Jan. 1).

Days later, when the mother changed her mind, the police found the child in the couple's home, apparently happy and wearing new clothes. Talk about cruelty to animals, the police, presumably under court order, took the child away from the caring couple and placed her in a state receiving home.

Let us leave aside the matter of rewarding a compassionate couple who willingly accepted the burden of the child from a mother who willingly gave her away. The primary interest to be served is that of the child. The law should not have deprived that child from her "friend in need," even for an instant.

REUBEN LENSKE,  
7243 SE 34th Ave.

## Rates protested

To the Editor: At last the utility companies have a friend in the state Capitol. I refer to the Public Utility Commissioner appointed by our governor. Our state Constitution states that the Public Utility Commissioner is supposed to protect the public against unfair practices of the utility companies.

Instead, the Public Utility Commissioner continues to grant to the utility companies increase after increase, first 16.5 per cent, now 24 per cent. This is after a report that says Portland General Electric and Pacific Power and Light companies are among the most profitable utility companies in the United States.

The average middle-income and lower-income taxpayers cannot continue to afford to submit to these forced rate increases.

Let our elected officials and their appointed friends know that we are fed up with these increases shoved down our throats. We need to force these officials to represent us as we want to be governed.

HENRY C. GOFF,  
1009 NE 126th Ave.

## Bring own rocks

To the Editor: This is to express my concern regarding the paving project from the mouth of Buck Hollow, 18 miles downstream toward Macks Canyon on the Deschutes River. This is a project of the Bureau of Land Management at a cost in the neighborhood of \$500,000.

My concerns are that this project was put into action without any public hearing or input regarding the impact on the fishery in the Deschutes River. It is also my understanding that this \$500,000 is surplus money that had to be spent during this fiscal year and the Deschutes access road project was chosen just to cut down the cost of maintaining a graveled road without regard for impact on the fishery.

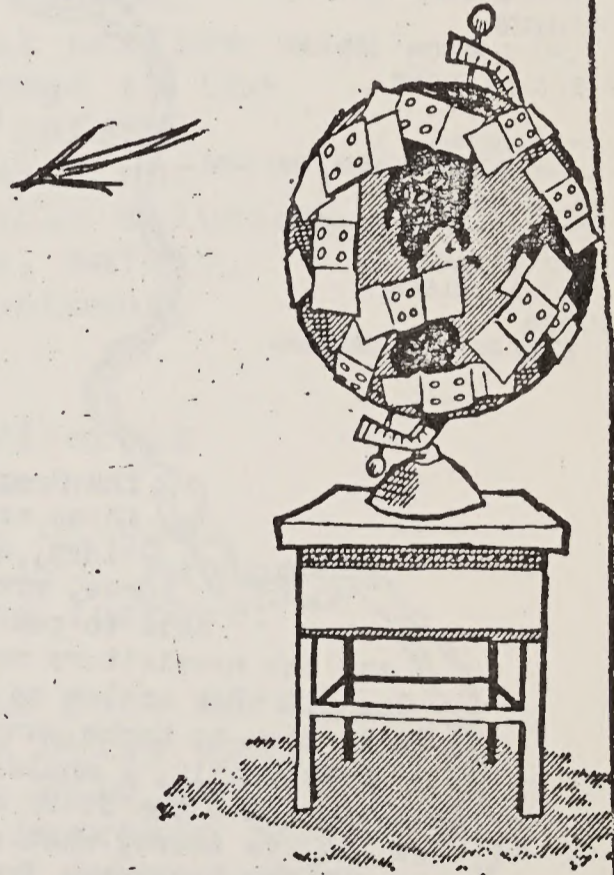
Now just what is the impact of a paved road on a fishery? It is a simple fact of numbers. The road will be used by all makes and models of cars that normally would not travel the road in all kinds of weather. This can only mean more anglers on the bank throughout the year. With this in-

creased angling pressure, the existing runs of steelhead and spring Chinook can only decrease rapidly. Many old timers and other anglers are already complaining how hard it is to find a vacant rock to stand on while they are fishing. If this road gets a paved surface, it might well mean you would have to bring your own rock with you.

Another concern is a fact of sanitation. There are no plans in this project for rest room stations. It's a paved road to nowhere but along the bank. Maybe the Prineville office of the BLM thinks this will reduce the fishing pressure because there will be no place to walk.

It is my opinion that this large sum of money could be better spent on projects to improve the habitat along this river and its tributaries. Such items are fencing, riprapping, planting grass and trees that bring about better bank stabilization. It is time we think of the fish rather than plus facilities for anglers.

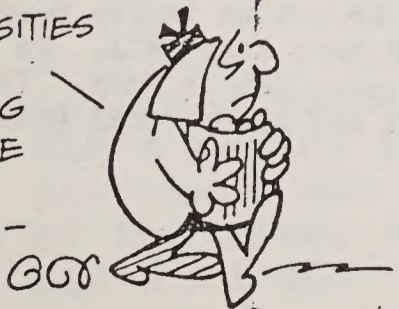
R. LARRY LaRUE,  
Rte. 3, Box 94,  
The Dalles.



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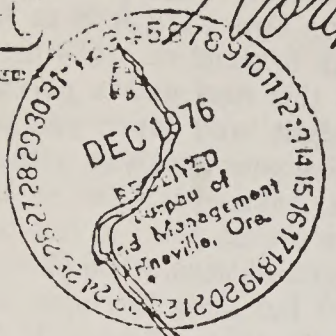
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wright THE PROVIDENCE  
JOURNAL-BULLETIN

Oregonian 1/5/77

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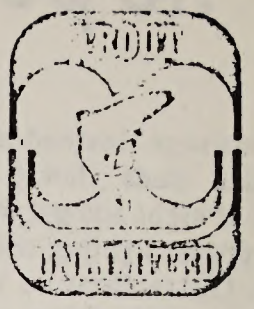


# DESCHUTES CHAPTER

## Northwest Steelheaders Council

### OF TROUT UNLIMITED

INFO	(4)
PLS. TIGHT.	
EDITIONS	
CENTRAL OREGON	
DESCHUTES	



#### CHAPTER OFFICERS

- PRESIDENT  
CAL ELSHOFF - 389-4566
- PRESIDENT-ELECT  
BOB NADEAU - 382-7597
- SECRETARY-TREASURER  
JACK ALLISON - 382-6247
- LEGISLATION  
DEAN MASTERTSON - 382-5606
- MEMBERSHIP  
BILL FULLER - 389-5655
- ODFW ADVISOR  
MIKE GOLDEN - 389-5974
- USFS ADVISOR  
JACK CAPP - 382-6922
- PROGRAMS  
WALT WOLFE - 548-4208  
BRIAN O'KEEFE - 382-4211
- PROJECTS  
CURT CARLSON - 389-6397
- PUBLIC RELATIONS
- WAYS & MEANS  
JOHN STEINBRECHER - 389-5088
- DESCHUTES RIVER  
CAL ELSHOFF - 389-4566
- CROOKED RIVER  
DUDLEY NELSON
- EDITOR  
JERRY DEIBERT - 382-0640

NEXT MEETING:

Tuesday, December 17, 1976 7:30 PM

PLACE:

City Hall, Bend

*Beach Rd EAR*

PROGRAM:

Dean Dowd, a Redmond dentist, will show pictures and give a talk on backpacking and fishing in the Seven Devils Mountains of Idaho. If you've ever wanted to see some of the rugged mountains of the Rockies, this is one session to see.

For the second portion of the program Sherwood Nicholas, of Redmond, a board member for SPAV (Stop Poaching and Vand-alism), will explain this organization new to central Oregon and its success in Klamath County. If you are the least bit concerned about these problems in our area come hear what might improve the situation for sportsmen and wildlife.

RAFFLE:

Some of those big prizes have been finding their way into the raffle for the last two months and more are on the way. Some mighty happy people have been walking away with some pretty good equipment so be sure to come down and try your luck.

#### PRESIDENT'S MESSAGE

The Oregon TU council meeting in Tillamook last week was attended by three members from the Deschutes Chapter; Dean Mastertson, Mike Golden, and myself. I felt it was worthwhile to share the concerns, ideas, projects, etc., with other Chapters. It is also nice to be able to put a name with a face, in reading material from Council officer and the newsletters we exchange with various other chapters. One local issue the Council took action on is the prospective paving of the access road below Shearar Falls down to Macks canyon. The Council will oppose it.

Personally, I would have rather heard some discussion on the inclusion of the Deschutes into the State and National designation of the Wild and Scenic Rivers bill. The bill is there, what we have to do is to get our representors to introduce a bill to get the Deschutes included.

The Beaverton Chapter has invit offering and freezeout in Tillam 10-14 chutes Chapter to the annual Oakie ebruary. We got an invite despite the fact we were negligent in: them over here last fall. We can go with about 12 members, so if this interests you, let us know. The Beaverton Chapter will arrange a place to eat and sleep, will have

*10-14*

PWA  
2/27/77

ROXBIRE, WIS., CHAIRMAN  
N. ALA.  
JOHN A. WILLIAMS, JR., N.J.  
THOMAS J. MCINTYRE, N.H.  
ALAN CRANSTON, CALIF.  
ADLAI E. STEVENSON, ILL.  
JOSEPH R. BIDEN, JR., DEL.  
ROBERT MORGAN, N.C.  
JOHN TOWER, TEX.  
EDWARD W. BROOKE, MASS.  
BOB PACKWOOD, OREG.  
JESSE HELMS, N.C.  
JAKE GARN, UTAH

# United States Senate

COMMITTEE ON BANKING, HOUSING AND URBAN AFFAIRS  
WASHINGTON, D.C. 20510

KENNETH A. MCLEAN, STAFF DIRECTOR  
ANTHONY T. CLUFF, MINORITY STAFF DIRECTOR  
MARY FRANCES DE LA PAVA, CHIEF CLERK

January 17, 1977

Mr. Murl Storms  
State Director  
Bureau of Land Management  
Oregon State Office  
P.O. Box 2965  
Portland, OR 97208

Dear Murl:

It's our understanding that the Bureau of Land Management plans to pave the Deschutes River road between Sherars Falls and Macks Canyon. You indicate the road's present gravel surface has essentially been lost causing damage to the road base and creating an increasing safety problem. You further indicate that hard surfacing appears to be the most reasonable solution considering investment, expected life, safety, protection of an initial capital investment, and present levels of use.

This section of the Deschutes River is already heavily used by campers, fishermen, and river floaters. The present rate of use is increasing 10 to 15 percent annually. Paving the road may cause the use to increase further.

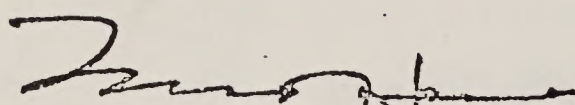
This section of the Deschutes is part of a larger segment of the River currently being considered for inclusion in the National Wild and Scenic River System. The additional increase in use fostered by paving this road could irrevocably change the unique character of the Deschutes corridor. While we do not quarrel with the need for road maintenance, we urge you to postpone the BLM's paving plans until an Environmental Impact Statement can be completed, or the final status of the River is known with regard to proposals for Wild and Scenic River System designation.

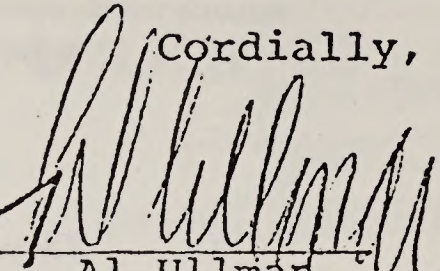
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STATE OFFICE  
PORTLAND, OREGON

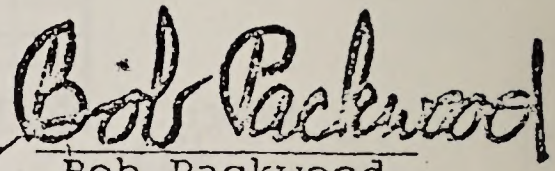
Mr. Storn  
Page 2  
January 17, 1977

Thanks Murl for your consideration.

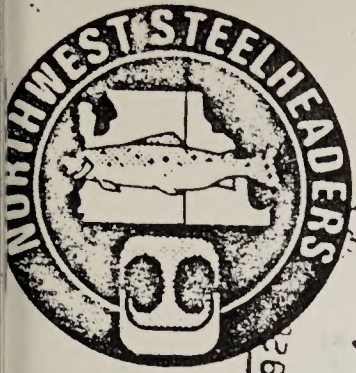
Cordially,

  
Mark O. Hatfield

  
Al Ullman

  
Bob Packwood

RECEIVED  
BUREAU OF  
MANAGEMENT  
JAN 24 10 00 AM '77  
STATE OFFICE  
PORTLAND, OREGON



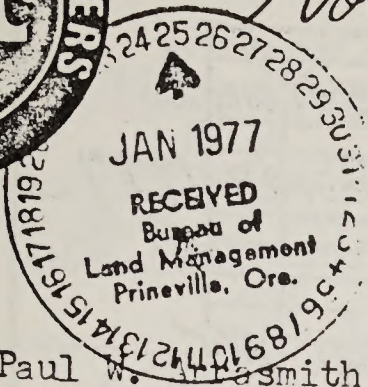
**DESCHUTES CHAPTER**

*Northwest Steelheader's Council*

**OF TROUT UNLIMITED**

POST OFFICE BOX 845  
BEND, OREGON 97701

January 22, 1977



Mr. Paul W. Arrasmith  
District Office, B.L.M.  
P.O. Box 550  
Prineville, Oregon

∞	ACTION	INFO	(1)
✓	D.M.		
✓	RES. MGMT.		
	OPERATIONS		
	ADMIN.		
	DEPT. OF ORGON		
	DESCHUTES		
	READING	FILE	

Dear Mr. Arrasmith:

The Deschutes Chapter of the NW Steelheaders Council would like to go on record as opposing the paving of the Deschutes river access road from Sherars bridge to Macks canyon.

In our opinion, the paving of the road would encourage a much greater use of the area, particularly making the summer run steelhead much more vulnerable. To maintain a wild steelhead fishery in the lower river, access should be discouraged.

In fact, if the road was to be closed to vehicular traffic from Sherars bridge on down, this Chapter would be pleased. Since there are at present from 10-15,000 people using the area now, you know that this would increase five-fold according to your own figures on the use of the river above Sherars bridge. Paving then would also mean five times more toilets, picnic tables, and parking.

We also understand that if the road is paved, a gate would be put in, which seems rather contradictory to encourage access by paving and then limit access with a manned gate.

Paving and campsite improvement might also affect that section of the river when the Deschutes is to be considered at the Federal level for inclusion in the Wild and Scenic Rivers Act.

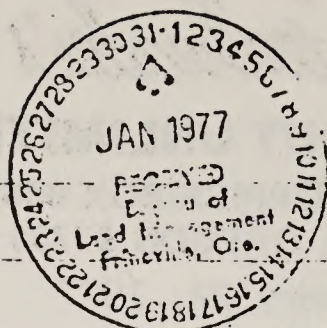
Thank you for any consideration given to this letter.

Sincerely,

Cal Elshoff, Pres.

10-17

c.c.: M. Storms, Director B.L.M.  
J.R. Donaldson, Director O.D.F.W.



DATE	ACTION	INITIALS
	D.M.	
	PLS. 1	S. 5 Ranch
	OPERATIONS	Jan 27 1977
	ADMIN.	
<input checked="" type="checkbox"/>	CENTRAL GREGON	
<input checked="" type="checkbox"/>	DESCHUTES	
	READING	FILE

Marvin R. Bagley  
B.L.M.  
Prineville, Ore.

Dear Sir: —

I need to change my address as we moved it to a Route closer to The Ranch.

I have also been wondering about the paving project for the Deschutes River. If you are not in charge of this or have "higher-ups" you might send this on.

You know — one of the main concerns now days is "save the environment" — and B.L.M. should be one of the first to see to this. Why they are going to pave this road, I will never understand. People, who fish & work for untouched outdoors recreation will certainly not benefit. It is not supervised now and what a change there is down here. Boats crashing up & down the river — target practise and no fishing anymore.

Let's take care of what we have in this State (like other States are doing). We hope there are some dedicated people who will pull this way. I am enclosing a clipping from The Oregonian —

which was in the paper a short time ago; I do not know this party. There are many people, who I talk to that feel the same way about this project.

The ruggedness of this canyon should not be disturbed by progress in reverse. Why not spend the money to get access to the rock of the river to the Columbia. Even if only a walking trail and take the boats off.

There are always excesses so don't suppose this will do any good but if I have one thought there are ten others like me and that can build up.

Oregon is a wonderful State, so let's keep it that way.

Yours truly,  
Eliot Martin

Deschutes River

The proposed Deschutes Wild & Scenic River legislation, which has the concurrence of the Warm Springs Confederated Tribes, is currently waiting introduction into the legislative process. The recently completed Deschutes River Visitor Use Study indicated that 397,580 visitor days of recreation use occurred between April 23 and September 26, 1976 on that portion of the Deschutes River currently awaiting Wild & Scenic River legislative action.

This current and projected level of Deschutes River recreation use and its attendant impact on high value resources is of major public and governmental concern. The problems resulting from heavy public use include user conflicts and environmental changes which threaten identified Wild & Scenic River values. The problems are in the form of:

- 1) Depreciation of the recreation experience due to poor user distribution.
- 2) Visitor hazards and safety problems due to the lack of public contact and enforcement.
- 3) Resource damage, including high value wildlife and cultural values, due to lack of management.
- 4) Lack of compliance with commercial river use permit requirements due to inadequate management capability.

Hard surfacing of the Deschutes River road between Sherars Falls and Macks Canyon is deemed necessary for several reasons, including: (1) the road's presently deteriorated condition and the resultant safety problems, (2) the level of existing investments in the area, (3) the present level of public use, and (4) project economic factors.

The Bureau's Oregon State Multiple Use Advisory Board and the O&C Multiple Use Advisory Board, in a joint meeting held on November 23-24, 1976 adopted the following resolution:

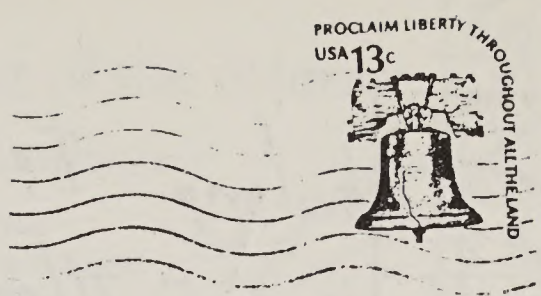
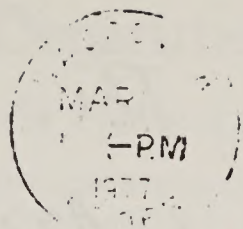
"That the road from Sherars Bridge to Macks Canyon be black-topped to preserve and protect environmental values in the Deschutes Canyon."

The potential for increased public use, and its attendant impact on high value resources, which could result from road resurfacing, is of major public concern. A recreation management planning effort has been initiated for that segment of the Deschutes River between Sherars Falls and Macks Canyon in order to establish a visitor and resource management program for the current and projected level of public use. It is our belief that proper protection of the high value resources on the Deschutes can only be accomplished through implementation of a sound recreation visitor management program.

The Prineville District personnel are in the process of preparing an EAR for the road surfacing project. Because of broad interest in the project it will be widely circulated for comment.



K3 RANCHES  
Star Route  
Wasco, Oreg. 97065



BIM office  
Prineville, Oregon

March 27

ADITH.
CENTRAL
DESCHUT
READING

Dear Sirs:

I'm writing this note to cast a  
 no vote on any plan to pave the  
 road from Shearer Grade to the mouth of  
 Macke Canyon. - A paved road will  
 hurt fish population greatly - create a  
 jam of people that don't belong - cause  
 more fire danger for farmers in above  
 areas of farm land. This road if  
 paved will cause pressure to get the  
 rest of the Deschutes River RR grade  
 paved a that nobody needs.

Please do reconsider your motives  
 about paving the road.

No Road —

10-21

-over-

Yours  
 Lee C. Kuehry

County

belong To The Sherman  
Cattlemen's Assn & They  
want no Road paved - also

The Sherman Soil & Water Conservation  
District Feels That an oiled Road  
would cause harm to the Terrain.  
(To many people)

Lee

# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

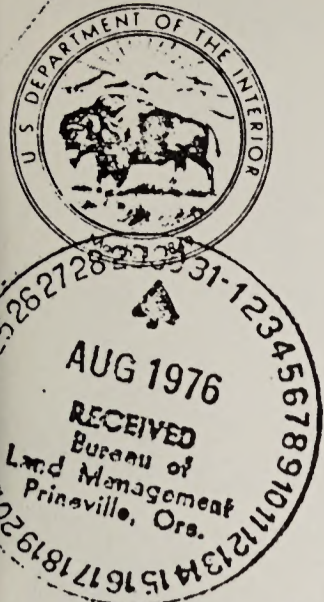
OREGON STATE OFFICE  
P.O. Box 2965 (729 N.E. Oregon Street)  
Portland, Oregon 97208

CO	ACTION	INDEX	(V)
<input checked="" type="checkbox"/>	D.M.		
<input checked="" type="checkbox"/>	9173 (947)		
<input checked="" type="checkbox"/>	PRIN		
<input checked="" type="checkbox"/>	OPERATIONS		
<input type="checkbox"/>	ADMIN.		
<input type="checkbox"/>	CENTRAL OREGON		
<input type="checkbox"/>	DESCHUTES		
<input type="checkbox"/>	READING		
<input type="checkbox"/>	FILE		<input checked="" type="checkbox"/>

*Get 81905  
up*

AUG 25 1976

*Proposed  
Logst.  
Proj*



Memorandum

To: District Manager, Prineville  
From: Chief, Branch of Road Engineering  
Subject: Deschutes River Road Surfacing Project

Recently we received a call from Mrs. Carol Sanders of The Dalles, Oregon, complaining about the current condition of the Deschutes River Road from Sherars Bridge to Macks Canyon. It appears that the road was in such a rough condition that it caused \$50.00 damage to their motor home. She suggested that we post signs warning the public as to the condition of this segment of road.

Additionally, she did not understand how a road facility constructed and maintained at the taxpayer's expense could be allowed to degrade to such a condition.

We are sure that there are many other users of this road facility who feel the same way as Mrs. Sanders and, if the facts were known, would overwhelmingly support the proposed FY 1977 surfacing project.

*W. F. Fenette*

Acting



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