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ENVIRONMENTAL
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Environmental Analysis

Washington Construction Company

Proposed Gravel Operation in the
S $\frac{1}{2}$ SW $\frac{1}{4}$ Section 9, Township 13 North, Range 19 West
Coal Mine Road Site
Missoula County, Montana

Prepared by
Montana Department of State Lands

June 1st, 1992

Environmental Analysis
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Proposed Gravel Operation
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PROPOSED ACTION

Washington Construction Company (WCC) has submitted an application pursuant to Title 82, Chapter 4, Part 4, MCA, which would, if approved, allow mining for sand and gravel on 35 acres in the S½SW¼ Section 9, Township 13 North, Range 19 West, M.P.M. that contains an estimated 1,500,000 cubic yards of reserves. See Attachments 1, 2 and 3.

In addition to excavation activities, WCC is also proposing the use of attendant crushing facilities to produce different size mineral, and an asphalt plant.

The Department of State Lands administers The Opencut Mining Act and must implement the Montana Environmental Policy Act which may require preparation of an environmental analysis (EA).

EXISTING ENVIRONMENT

TOPOGRAPHY

WCC is proposing to mine and process sand and gravel from a 35 acre tract of land that is currently a stream terrace of alluvial material formed by the Clark Fork River. The site is approximately 50' above the level of the river and is located one mile northeast of the present Clark Fork River channel. The surface area is relatively flat and has been modified and leveled by the previous lumber mill activities.

GEOLOGY

The broad Missoula Valley where the Clark Fork flows is a down-dropped fault block which was formed during the orogenic events that created the Montana Rockies. The source for much of the sand and gravel is Pre-Cambrian Belt Series sedimentary and meta-sedimentary siltstones, shales, quartzites, argillites, limestones, sandstones and other rocks. The modern commercial deposit is an aggregate composed of Quaternary aged alluvial sediments. These sediments are an unconsolidated, moderate to well bedded, inter-stratified assemblage of stream silts, sands, gravels, cobbles and boulders laid down and reworked by the Clark Fork River.

SOILS

The soil in the land to be affected (S.C.S. unit 72) is a Moiese gravelly loam. This deep, excessively drained soil is on terraces and fans above the flood plain of the Clark Fork River at about 3200 feet elevation. It formed in sandy and gravelly alluvium on a slope of 0 to 2 percent. The average annual rainfall is approximately 13 inches, the average annual air temperature is 44 degrees Fahrenheit, and there are approximately 120 frost free days.

The surface layer of this Moiese soil is grayish brown gravelly loam about 9 inches thick where undisturbed by previous activity. The subsoil is brown, very gravelly sandy loam about 12 inches thick. The substratum to a depth of 60 inches is light brownish gray and pale brown extremely gravelly loamy sand and extremely gravelly sand. Permeability is very rapid, and available water capacity is about 2½ inches. Runoff is slow, and the hazard of water erosion is slight. This soil is droughty because of the very low available water capacity. (see Attachment 4).

WATER

The nearest surface water is the Clark Fork River approximately 1 mile south of the proposed mine site. An unnamed ephemeral drainage is located north of the site. There is no apparent surface flow within the site boundary.

The depth to the water table is variable across the site. Two test wells were examined to determine the static water levels. One well near mid-point of the east perimeter encountered static water at 50 feet below the surface. The second well near the center of the site did not encounter any water to a depth of 120 feet.

A 135' well exists on the site and will be used to provide water for dust control, washing and other gravel source operations.

AIR

Missoula County has some of the poorest air quality in the State with respect to particulate loading. Many forest products industries are located in the community and the occurrences of inversions are frequent. Hydrogen sulfide, suspended sulfate, and mercaptan levels are also elevated due to a nearby pulp mill.

TERRESTRIAL, AVIAN, AND AQUATIC SPECIES AND HABITATS

Due to the industrial nature of the site and surrounding land uses, wildlife use is limited.

VEGETATION

The site is located on a former lumber mill and plant site which was once a log handling and storage area, and is no longer in use. The vegetation on this site has been impacted industrial use however, and the plant community types have been modified such that they are dominated by Russian Knapweed.

IMPACTS AND ALTERNATIVES

SOCIAL, ECONOMIC, POPULATION AND HOUSING

The operation would not require additional employees outside of the Missoula area. Therefore, there should not be an impact upon the social and economic structure, population, or housing.

HUMAN HEALTH AND SAFETY

The workers at the site would be protected by various state and federal laws which require protective equipment for workers and certain safety requirements on machinery.

There would be an increased risk of danger to children living in the neighborhood of the proposed pit and to other persons utilizing Coal Mine road and other roads being used by trucks hauling from the gravel pit. Children could be attracted to the operation and become injured by falling from equipment and by falling over the working pit face.

Persons with respiratory difficulties could have increased problems due to the airborne particulates generated from the crusher and other activities associated with the proposed operation.

MITIGATION

1. WCC will construct a new fence to extend the existing chain link fence to encompass the entire site perimeter. Locked gates will be installed at appropriate access points to prevent entry by children.
2. Incorporate the use of water bars on the crusher, dust suppressant on the hardstand area, seed topsoil stockpiles, and use effective means to control particulates from the asphalt plant.

COMMUNITY AND PERSONAL INCOME

There would be no change in the community or personal income as no additional employees would be hired by WCC.

EMPLOYMENT

The proposed operation would have no affect on the current employment level of the Missoula area.

TAX BASE

There is no evidence that this option would affect the taxable value of property. Taxable value would be modified only upon successful appeal to the tax appeal board. To this date taxes have not been lowered in Montana as a result of a nearby sand and gravel option.

GOVERNMENT SERVICES

There would be a small increase in government services due to the required inspection of the operation by government personnel. If problems continually develop, it would place an additional burden on government services.

HISTORICAL AND ARCHAEOLOGICAL

The proposed site has been substantially disturbed by previous industrial activity. No historical or archaeological values are anticipated on the surface.

AESTHETICS

There would be a negative impact on the aesthetics of the site until such time as the affected area is reclaimed. The gravel stockpiles, equipment and topsoil stockpiles would all distract from the existing visual perceptions. Reclamation will be done concurrently with mining as portions of the site are depleted. An earthen berm will be placed around the perimeter for reduction of sight and sound impacts. It must be noted, however, that areas surrounding the site in all directions except for the Interstate are currently industrial sites, cemeteries and an active sand and gravel operation.

MITIGATION

1. Conceal the objectionable view.
2. Soften the impact of newly introduced visuals.

WCC has proposed the construction of a 10 foot topsoil berm along the entire perimeter of the intended mine site. The berm will be seeded with a permanent grass cover.

NOISE

The operation would generate additional noise. The crusher, trucks, excavating equipment, asphalt plant, and back-up sirens would be responsible for the majority of the noise created. Table 1 compares a typical operation with other noise levels.

MITIGATION

1. Create noise barriers.
2. Locate the noise sources in areas removed from the receptors.
3. Ensure that proper noise reducing mufflers are functional.
4. Limit operating hours.

WCC's proposed Plan of Operation will construct a topsoil berm to absorb and deflect noise from the crusher, asphalt plant, and equipment.

TOPOGRAPHY

The proposed operation would lower elevations at the north end of the property by 40 feet, and the southern end would be reduced by 30 feet. The slopes would be reduced to a ratio of 3:1 or flatter (see cross sections, Attachments C-1, C-2 and C-3).

MITIGATION

1. The proposed post-mine contours meet the requirements of the Opencut Mining Act.

GEOLOGY

The morphology of the post-mine landscape will be permanently altered.

MITIGATION

None

SOILS

Soil structure and horizons would be altered to a certain extent as a result of soil salvage and re-distribution activities. Soil compaction may result from scraper lay-down of soil materials, and stockpiling of soils may result in a short term deterioration of soil quality due to a reduction in beneficial soil microfauna and microflora.

MITIGATION

The operator would be required, and has committed to evenly replacing all stockpiled soil materials over the entire affected area. All compacted areas would be ripped and disked prior to seeding. Soil microbes would re-invade and colonize the replaced soils.

VEGETATION

Vegetation on the affected area would be destroyed as soil is salvaged, however this would not occur on the entire proposed area at any one time.

MITIGATION

1. The operator has proposed, and is required to revegetate the entire affected area (see page 3, Plan of Operations). This would have a beneficial impact on the Noxious weed infestation problem on the site.

WATER

The proposed operation would be conducted well above the groundwater table. A spill of petroleum products in a significant amount could, under certain conditions, reach the groundwater. Burial or spillage of soluble pollutants or toxic waste could likewise enter the groundwater.

MITIGATION

1. Trash and refuse will be hauled off and disposed of in the nearby landfill. Petroleum products and toxic waste will be hauled off-site and disposed of in a proper manner.
2. All fuel and lubricants will be stored in approved tanks and containers with secondary containment as back-up in case of leakage or accidental spills.

AIR QUALITY

Air quality would deteriorate from fugitive dust and other particulate matter from the excavating, crushing, soil and gravel stockpiles, haul roads, and asphalt plant. Smaller amounts of volatile organic compounds would be emitted from asphalt handling and heating activities. Other gaseous pollutants (nitrogen oxides and carbon monoxide) would also be emitted from combustion sources associated with the asphalt plant and vehicle exhaust from mobile equipment.

MITIGATION

The operator must secure an air quality permit from the Missoula County Environmental Health Department to verify compliance with local, state, and federal air quality requirements. Applicable federal regulations which are implemented by the county are the Standards of Performance for New Stationary Sources, 40 CFR Part 60, Subpart I (Asphalt Concrete Plants) and Subpart 000 (Nonmetallic Mineral Processing Plants). Subpart I sets particulate and opacity limitations on emissions from the asphalt plant. The particulate limitation must be verified by performance (stack) testing. Subpart 000 sets an opacity limitation on fugitive dust emissions

from the gravel crushing and handling operations.

Measures proposed to minimize air pollutant emissions include: 1) a fabric filtration (baghouse) system to control particulate emissions from the asphalt plant; 2) place water spray bars on the crusher; 3) water haul roads and work areas with a water truck; and 4) vegetate the topsoil stockpiles.

ENVIRONMENTAL PLANS AND GOALS

WCC has submitted to the Department of State Lands an application for a contract and a plan of operations for the proposed opencut mining project as required by 82-4-431, MCA. The gravel pit, if approved, would operate under the provisions of the Opencut Mining Reclamation Act, 82-4-401, MCA and its adopted rules and regulations, 26.4.201 ARM (see Attachment #3).

In addition to the application for a Reclamation Contract with DSL, WCC will submit applications and contact the following government agencies which have jurisdiction for local and regional environmental goals:

1. Department of Health and Environmental Sciences (DHES)

a. Air Quality Bureau

The Air Quality Bureau administers the Clean Air Act of Montana (Title 75, Chapter 2, MCA). Any proposed project with potential to emit more than 25 tons per year of any pollutant must obtain an air quality permit prior to construction. The applicant must apply Best Available Control Technology (BACT) to each emission source. The applicant must also demonstrate that the project would not violate Montana or Federal Ambient Air Quality Standards.

2. Missoula County Environmental Health Department

The Missoula County Environmental Health Department has assumed the authority for regulating the air quality standards in the county. They will require dust abatement measures be undertaken, such as road dust control, water spray bars on crushing equipment, and wet scrubbers or fabric filtration equipment on asphalt plants.

3. Missoula Office Of Community Development

The Office of Community Development administers Missoula County's zoning requirements, and because this proposed site is located in an area that is zoned for Industrial use (C-I2), they may be placing restrictions on specific aspects of the proposed operation. Because of Statutory language, mining may not be prohibited by zoning requirements.

TRANSPORTATION NETWORKS AND TRAFFIC FLOWS

The months from May through October would receive the greatest amount of truck traffic. It is estimated that during those months there would be an average of 40 trips per day. Traffic on Coal Mine, Rogers, Raser, Grant Creek and Stock Yard Roads would increase. However, since WCC is currently operating adjacent to Reserve Street, it's count would decline as the permanent long-term operation shifts to the new site. Coal Mine, Rogers and Raser roads currently experience truck traffic that access the adjacent industrial areas. The 1989 daily vehicle count at Reserve Street and the Interstate averaged 11,860, with 7 % of those being trucks.

WCC, along with their customers using their own trucks, could cause considerable wear and tear on the roads, but must abide by posted weight restrictions.

MITIGATION

1. Abide by speed limits.
2. Not overload haul trucks.
3. Consult and cooperate with other competing businesses.

CONCLUSIONS AND RECOMMENDATIONS

In summary, approval of the proposed action, without implementing the mitigation measures proposed, could result in significant environmental harm. The Department has determined that an EIS is not required, however, as those measures will be implemented.

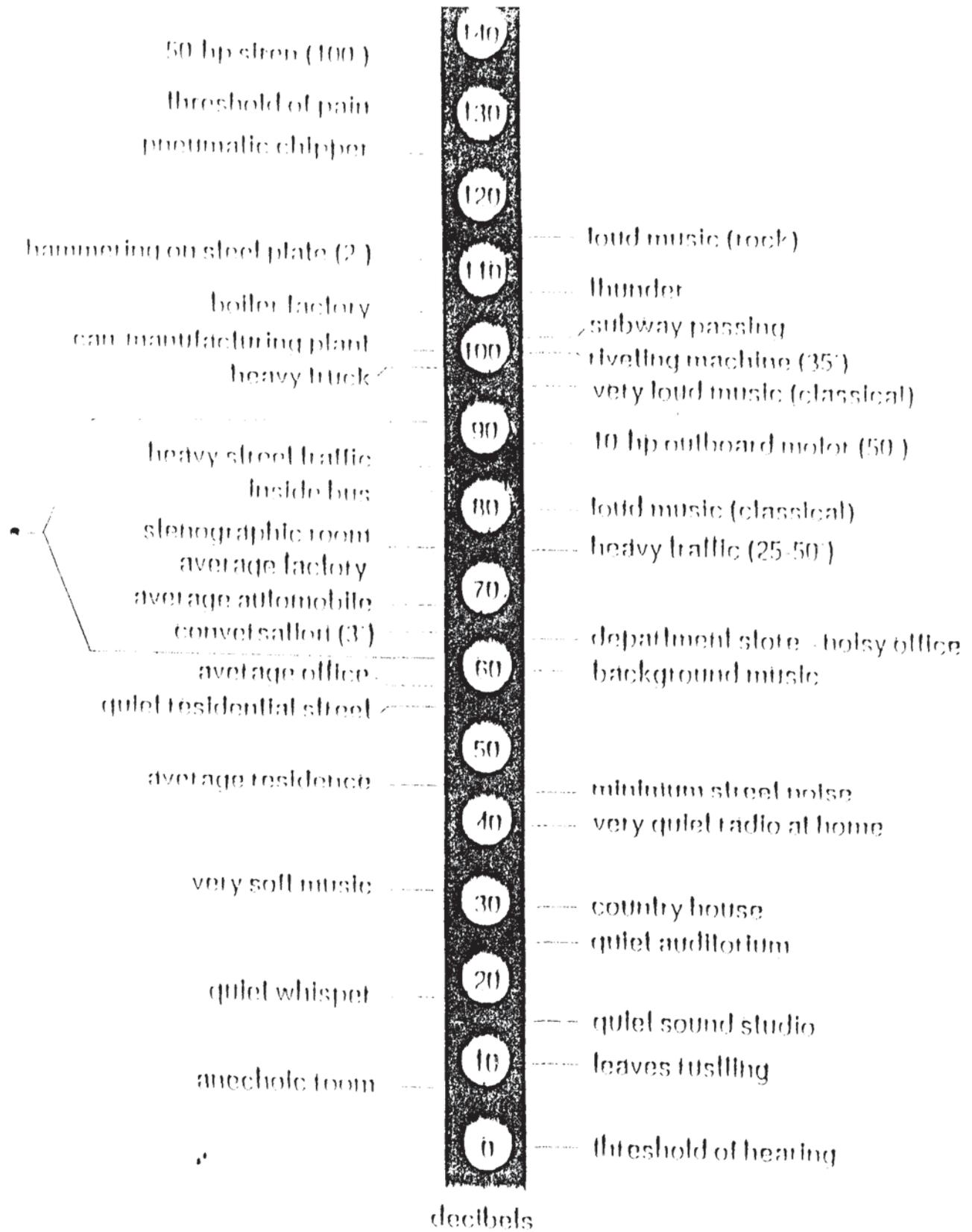
CONSULTATION AND COORDINATION

The following agencies have been contacted for information and assistance:

Department of Health and Environmental Sciences, Air Quality Bureau
Missoula County Environmental Health Department
Missoula Office of Community Development
State Historical Preservation Office (SHPO)
Missoula County Weed Board

Individuals responsible for preparation of this EA include:

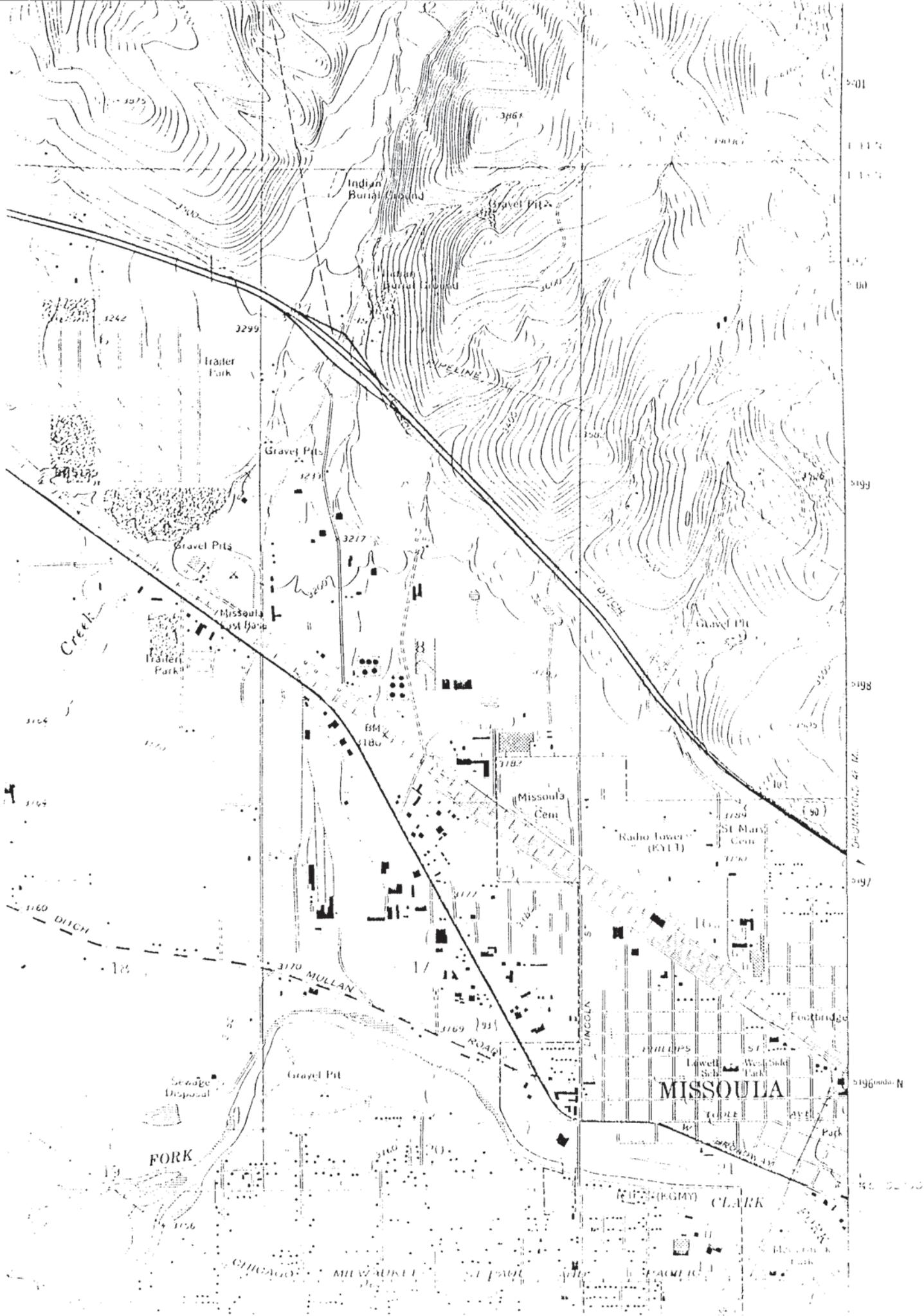
Jerry Burke, Reclamation Specialist
Rod Samdahl, Reclamation Specialist
Pat Driscoll, Environmental Specialist/Air Quality
Steve Welch, Chief, Opencut Mining Bureau



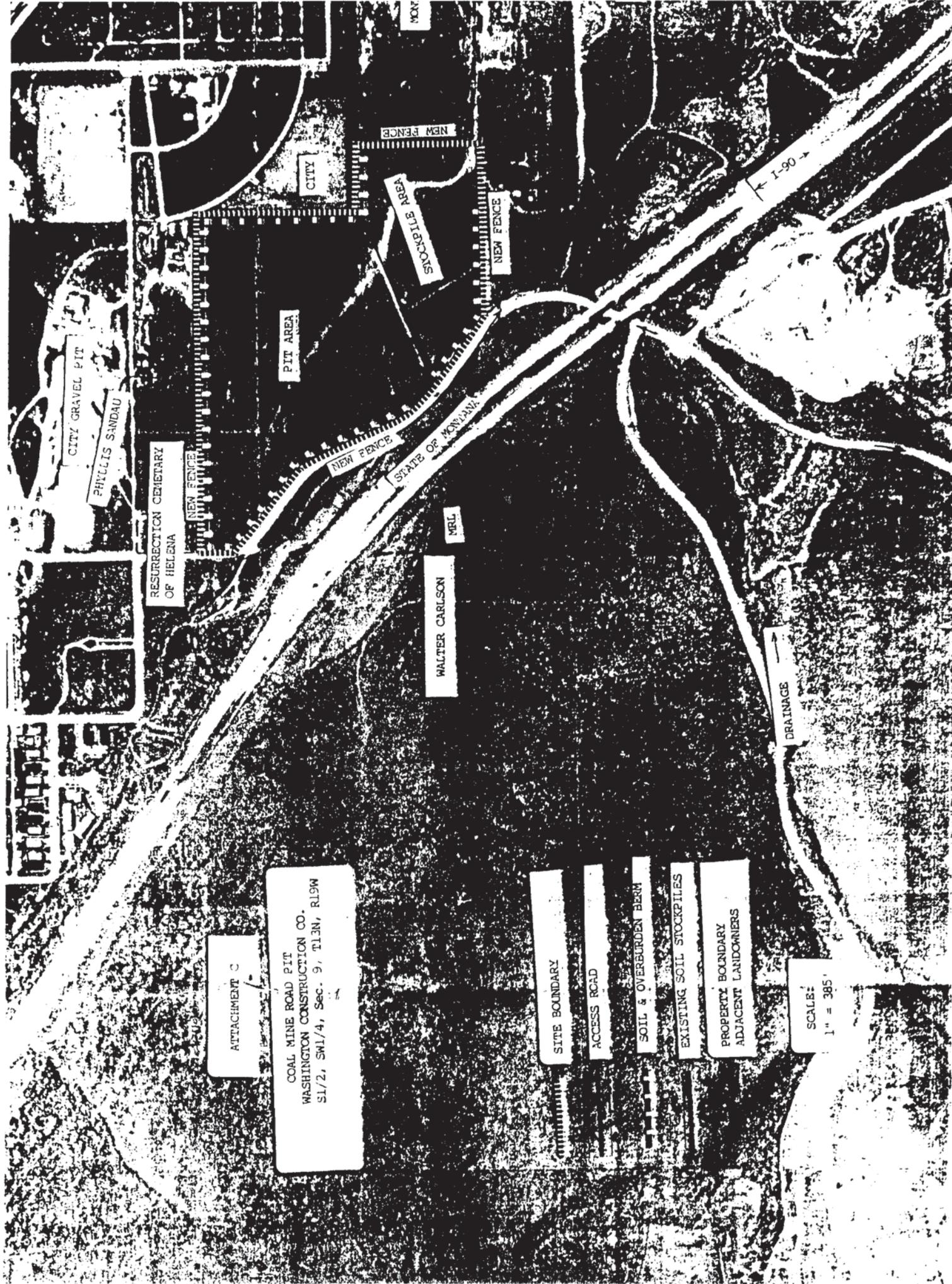
• GRAVEL PIT IN FULL OPERATION MEASURED ONSITE

TABLE 1

ATTACHMENT 1
AREA MAP



ATTACHMENT 2
APPLICATION MAPS



ATTACHMENT C

COAL MINE ROAD PIT
WASHINGTON CONSTRUCTION CO.
S1/2, SW1/4, Sec. 9, T13N, R19W

SITE BOUNDARY

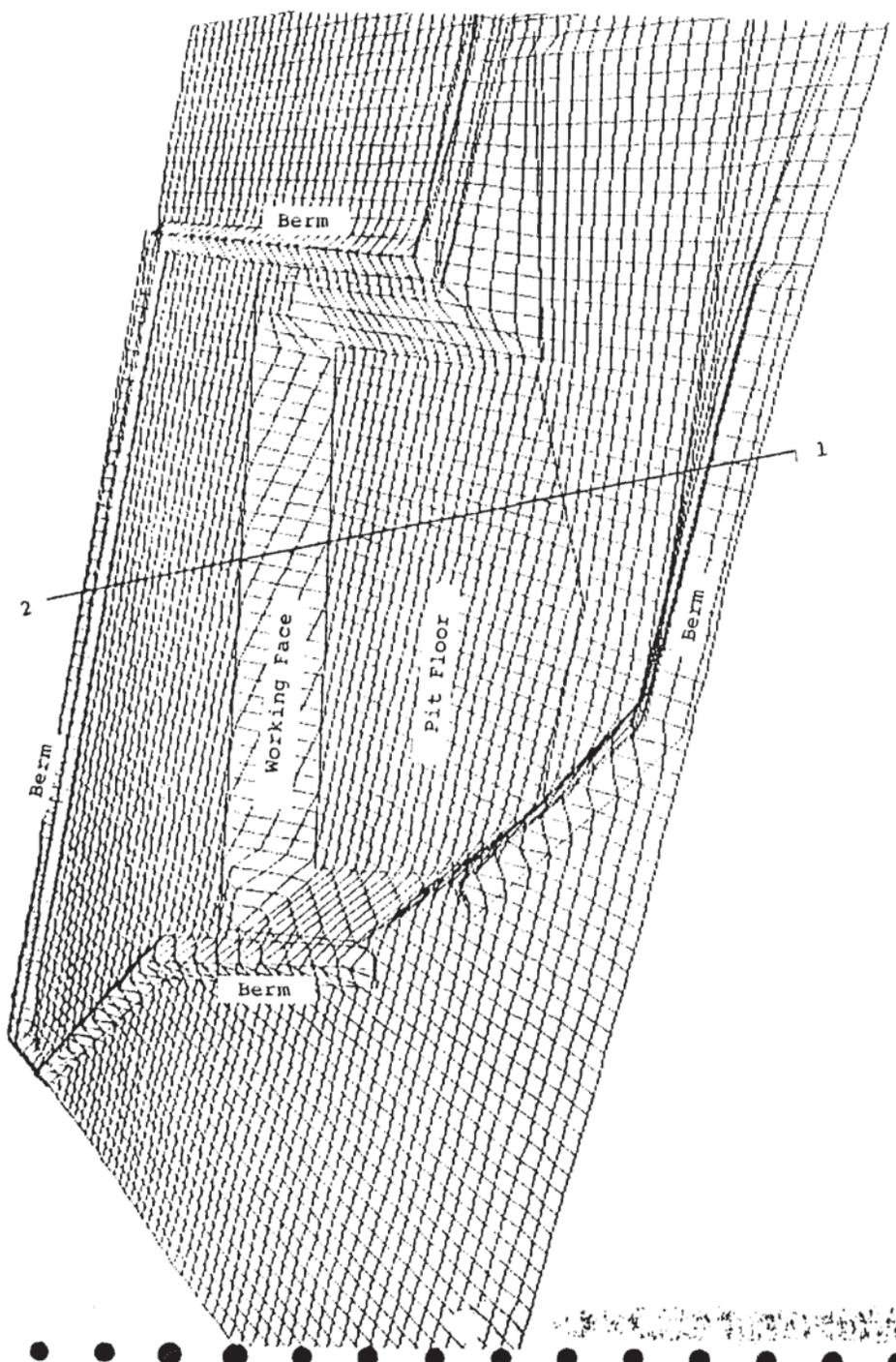
ACCESS ROAD

SOIL & OVERBURDEN BERM

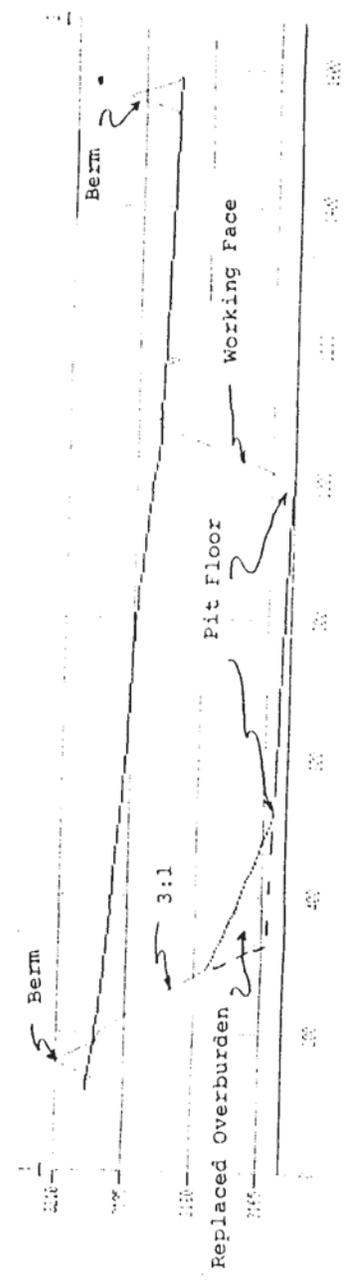
EXISTING SOIL STOCKPILES

PROPERTY BOUNDARY
ADJACENT LANDOWNERS

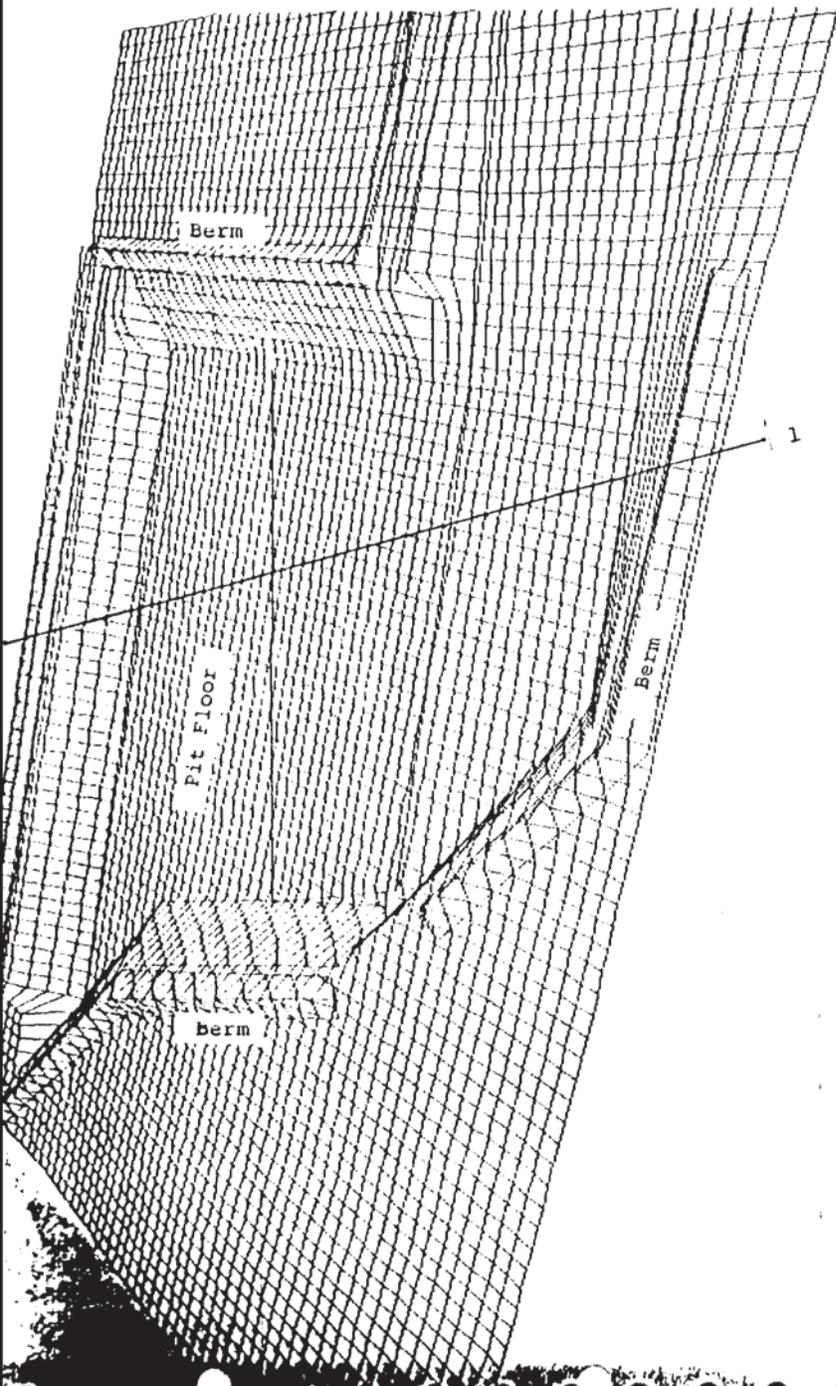
SCALE:
1" = 385'



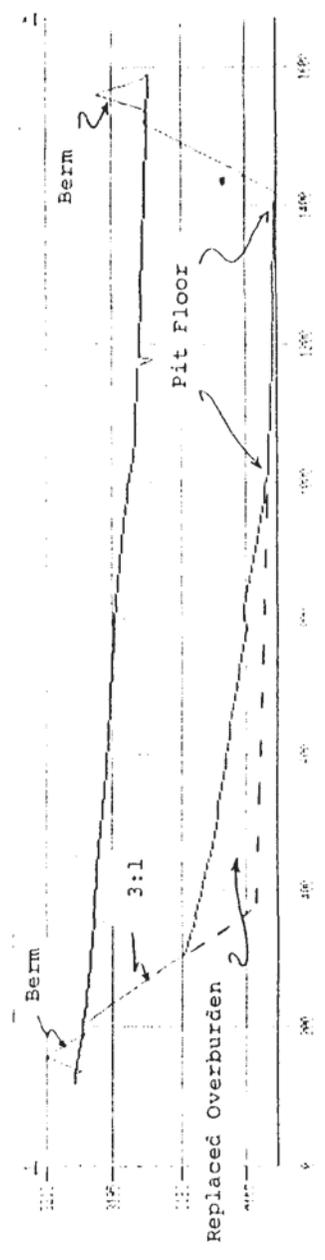
Coal Mine Road Pit
Projected 5 Year Plan



PROJECTED COAL MINE ROAD PIT
PROPOSED SCALE 1" = 20' HORIZONTALLY
VERTICAL SCALE 1" = 20' VERTICALLY



Coal Mine Road Pit
Projected 10 Year Plan

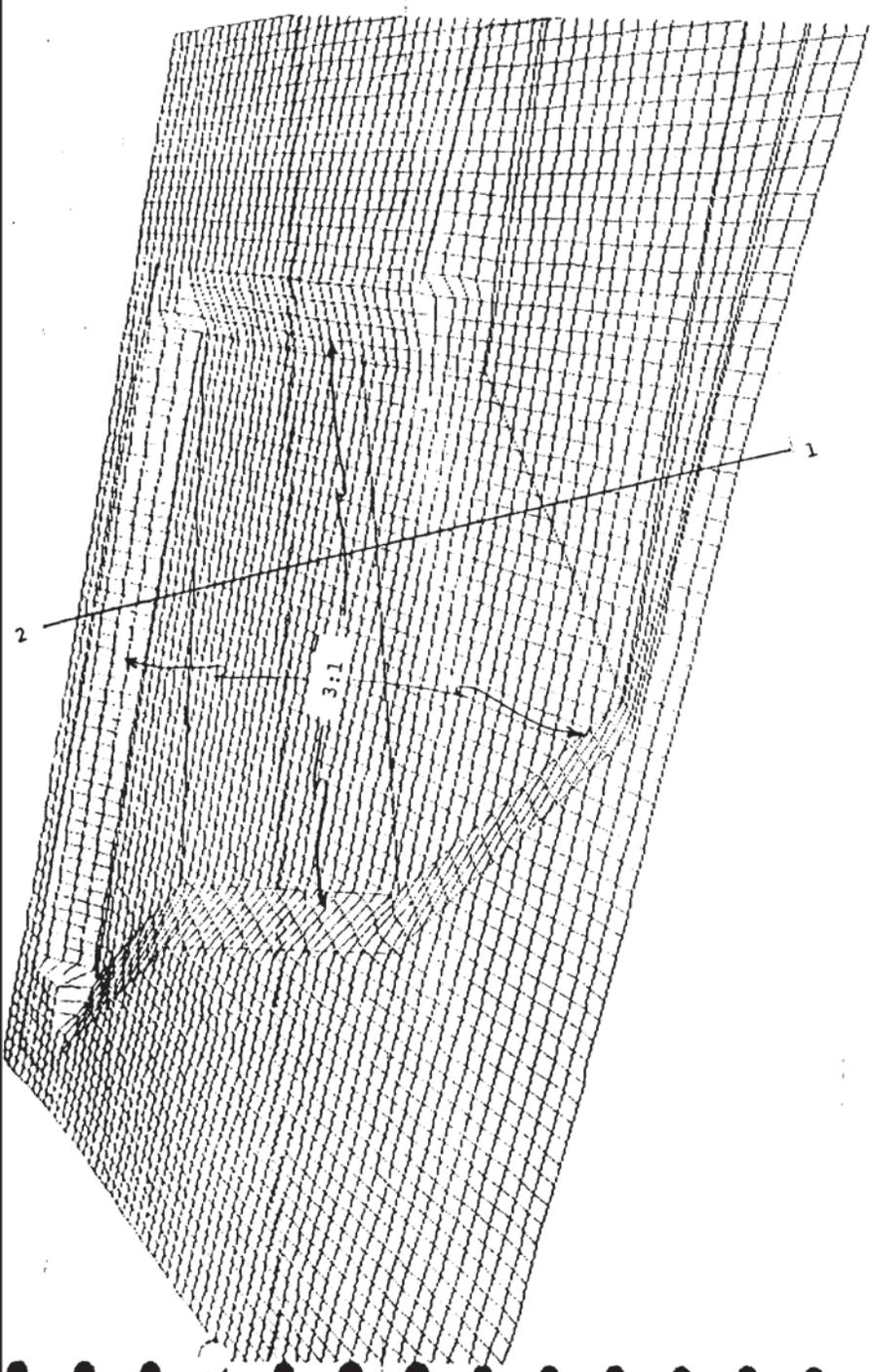


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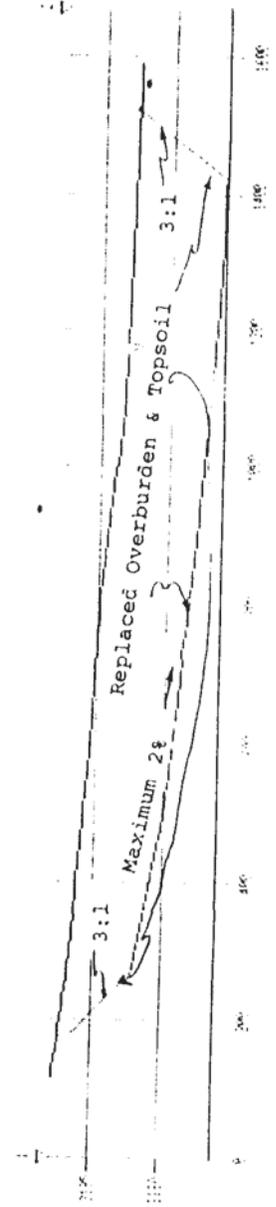
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Coal Mine Road Pit
Final Reclamation



ATTACHMENT 3
PLAN OF OPERATIONS

WASHINGTON CONSTRUCTION COMPANY

101 INTERNATIONAL WAY
POST OFFICE BOX 8989
MISSOULA, MONTANA 59807
TELEPHONE: (406) 523-1201
FAX: (406) 728-9265

May 22, 1992



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MAY 26 1992

STATE LANDS

Department of State Lands
Opencut Mining Bureau
1625 Eleventh Avenue
Helena, MT 59620

**RE: Application For Mine Land Reclamation Contract
Coal Mine Road Pit (Revised Plan of Operations)**

Dear Sir:

Enclosed is our revised Plan of Operations for the Coal Mine Road Pit. The revisions were made in response to telecommunication between Rod Samdal (DSL) and Tom Stewart (WCC).

The following revisions were made to the initial Plan of Operations:

1. Section II (3) - Additional sentence, "Access from Coal Mine Road may be used if gravel product needs dictate haul from this access point." This was added to the plan to provide the option of using Coal Mine Road as an access point to the 35-acre pit site. There is an existing access point to Coal Mine Road at this point.
2. Section II (6) - Final graded slope was changed from 2:1 to 3:1.
3. Section II (10) - Seeding method was changed from hydroseeding/hydromulching to drill seeding.
4. Section II (14) - Typographical error was corrected:

Mine Level 35 acres @ \$974/acre = \$34,090
5. Attachments C-1, C-2, and C-3 were added. Attachment C-1 presents the projected five-year plan for the gravel pit. Included is a computer generated three dimensional view and a cross-sectional view of the gravel pit after five years of development.

May 22, 1992

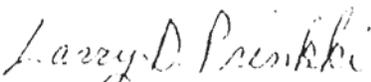
Attachment C-2 presents the projected 10-year plan or final excavation plan prior to final reclamation for the gravel pit. Included is a computer generated three dimensional view and a cross-sectional view of the gravel pit after 10 years or final excavation.

Attachment C-3 presents the final reclamation plan. Included is a computer generated three dimensional view and a cross-sectional view of the gravel pit after final reclamation.

If you have any questions regarding the revisions to the application, please contact Tom Stewart or Larry Prinkki at (406) 523-1201.

Thank you for your continued prompt attention and cooperation in this matter.

Sincerely,



Larry D. Prinkki
Staff Geologist

by Tom S.

/kah

Enclosures

WASHINGTON CONSTRUCTION CO.

Plan of Operation For Coal Mine Road Pit

Section I - Pre-Mining Conditions

- (1) Topography: The site is located on an upper alluvial terrace formed by the Clark Fork River. The site is approximately 50' above and approximately one mile northeast of the current Clark Fork River channel. The surface area is relatively flat; the original topography has been modified (leveled) by previous lumber mill activities.
- (2) Present land uses, and past mining disturbance, if any: The site is located on that portion of a former lumber mill and plant site which was used as a log handling and storage area. The site is currently not in use.
- (3) Estimated depth to the water table: The depth to the water table is variable. A test well near the center of the site did not encounter any water to a depth of 120'. A well near mid-point of the east perimeter encountered a static water level at 50'.
- (4) Locations, descriptions, and uses of surface water features: An unnamed ephemeral drainage is located north of the site. There is no apparent surface flow within the site boundary.
- (5) Locations, depths, and uses of water wells: A 135' well exists on the site and will be used to provide water for dust control, washing, and other gravel source operations.
- (6) Soil types to be disturbed: Much of the existing surface has been previously disturbed during lumber mill activities. The area has been graded to form a level surface for log handling and storage. The area is identified as soil units 72 and 73 on the SCS soil map for Missoula County. (See Attachment A.)
- (7) Dominant vegetation: The site is dominated by Russian Knapweed and does not appear to support a substantial native grass or plant community.
- (8) Use by wildlife: Use by wildlife is limited due to its urban location and lack of feed. However, it is occasionally used by deer and birds.
- (9) Other useful information: None.

Section II - Mining and Reclamation Plan (See Attachments B and C - Location Map and Site Plan, respectively)

- (1) Post-mining land uses: The postmining land uses of the site will be industrial or commercial use. The site is within an industrial zoned area.
- (2) Soil and overburden handling: More than adequate soil material will be stripped from the site and stockpiled in a berm around the site to provide the required six-inch topsoil depths for site reclamation. A 10' high berm will be constructed around the perimeter of the site to provide a noise barrier. Soil material will be salvaged and placed separately from overburden and protected from erosion and mining operations.
- (3) Road Construction: The existing access road will be upgraded to accommodate mining activity traffic. The access road will be constructed and maintained in a manner that will control erosion. The road will be 24' wide and surfaced with gravel. Access from Coal Mine Road may be used if gravel product needs dictate haul from this access point.
- (4) Water management: No sediment control or water containment structures, water treatment or drainage systems, or diversions are proposed. If it is determined that a structure, system, or diversion is needed, a description and diagram will be submitted for approval, then the structure, system, or diversion will be constructed.
- (5) Water protection: Surface and groundwater will be given appropriate protection from deterioration of water quality and quantity that could be caused by mining and reclamation activities.
- (6) Grading: The site will be excavated to a maximum depth of 30' to 40'. The pit slopes will be constructed at 1-1/2:1 slopes during the mining operations. Upon completion of the mining operations, the overburden will be spread evenly over the pit. The pit slopes will be final graded to 3:1 slopes. The pit floor will be graded to a minimum slope of two percent. Soil will be spread out over the final graded slopes. To the extent possible, all surfaces will be graded to conform to the surrounding topography. The pit floor will be at least 10' above seasonal high water table.
- (7) Road reclamation: The access road will not be abandoned since it will provide access for future industrial or commercial use. The graveled road will be final graded upon completion of mining activities.

- (8) Refuse disposal: Trash and refuse will be disposed of in the adjacent landfill. Petroleum and other toxic products will be taken off-site and disposed of in a proper manner. Any remaining non-marketable material will be utilized in constructing the final pit grading plan. These materials will be placed prior to spreading the overburden materials.
- (9) Mineral stockpiles: All gravel products should be used. If stockpiled gravel products remain, each product type (grade) will be consolidated in single stockpiles and left in a common area close to the access point. The stockpile areas will be reclaimed for commercial use.
- (10) Revegetation: Affected areas will be revegetated by (a) ripping all compacted areas to a depth of 12"; (b) replacing salvaged soil to a minimum depth of six inches on the pit slope; (c) broadcasting a fertilizer mix that yields 40 pounds of nitrogen (N) and 40 pounds of phosphorus (P O) per acre; (d) incorporating the fertilizer and preparing the seedbed by discing or harrowing; and, (e) the pure live seed mixture will be as follows:

<u>Grass Description</u>	<u>Pounds Pure Live Seed/Acre</u>
Slender Wheatgrass	2.0
Western Wheatgrass	6.0
Thickspike Wheatgrass	5.0
Beardless Wheatgrass	11.0
Yellow Sweetclover	<u>2.0</u>
TOTAL	26.0

Drill seeding will be used to seed slopes. Wood fiber will be used for hydromulching at an application of one ton per acre.

- (11) Weed control: All seed will be weed-free and noxious weeds will be controlled as prescribed in the county weed management plan. The site will be mowed during the first growing season when the weeds are high enough to compete with the seeded species.
- (12) Site protection and management: Existing chain link fencing borders the site along City property. Fencing will be extended to encompass the remainder of the site perimeters. Locked gates will be installed at appropriate access points.

- (13) Concurrent and final reclamation: The site is planned for long-term use. The berm constructed around the perimeter will be seeded the first year to establish a vegetative cover to control erosion. The recommended DSL seed mixture as noted in Item 10 will be used. Reclamation will be concurrent with mining operations as much as is feasible. The remaining overburden will be stripped and rolled over into previous excavated areas and reclamation will be completed one year after cessation of mining and related activities on any area of significant size. Final reclamation will be completed within one year after all mining and related activities are completed.
- (14) Reclamation costs: The estimated on-site, per acre costs of reclamation are:

<u>Description</u>	<u>Mine Level</u>	<u>Facility Level</u>
Finishing: Patrol/Dozer @ 1 hr	\$100	Minor
Reject Handling: 50 cy/acre X \$.55/yd	28	N/A
Overburden Handling: 200 cy/acre X \$.55/yd	110	N/A
Ripping: Dozer D9N \$102/hr @ 1 hr	N/A	\$102
Topsoiling: 800 cy/acre X \$.60/yd	480	N/A
Revegetation: Fert. @ \$30/acre	30	N/A
Seedbed Prep @ \$30/acre	30	N/A
Seeding @ \$96/acre	96	N/A
Site Preparation: Fencing - 100'/acre @ \$1/ft	<u>100</u>	<u>N/A</u>
TOTAL	\$974/acre	\$102/acre

Total Estimated Cost of Reclamation is:

Mine Level 35 acres @ \$974/acre =	\$34,090
Facility Level 5 acres @ \$102/acre =	<u>510</u>
TOTAL	\$34,600

Section III - Fire Prevention, Archaeological and Historical Value Protection, Annual Reports, and Subcontractors

- (1) Proper care will be taken to prevent wildfires.
- (2) Archaeological and historical values in the affected area will be given appropriate protection. Should significant archaeological or historical value be found, the operation will be routed around this site of discovery for a reasonable time until salvage can be made. The State Historic Preservation Office will be promptly notified.
- (3) Annual Progress Reports will be submitted as required by ARM 26.4.206.
- (4) All on-site workers will be familiar with the specifics of the Mining and Reclamation Plan.

I certify that the statements and information given apply to the Coal Mine Road site. This plan will be followed unless officially notified by the operator or the Department.

Larry D. Brinkbe
Signature
b.p. T. S.

5-22-92
Date

/ksh

ATTACHMENT 4
SOILS

\$1105A Moiese gravelly loam, 0 to 2 percent slopes. This deep, excessively drained soil is on terraces and fans above the flood plains of the Clark Fork and Bitterroot Rivers. It formed in sandy and gravelly alluvium. Slope is 0 to 2 percent. Elevation is 2,800 to 3,500 feet. The average annual precipitation is about 13 inches, the average annual air temperature is about 44 degrees F, and the average frost-free period is about 120 days. Where mapped outside the Missoula valley, this soil has a shorter frost-free period.

Included in this unit are small areas of Alberton, Bigarm, and Grantsdale soils. These included areas are not easily identified by unique landscape features.

Typically, the surface layer of this Moiese soil is grayish brown gravelly loam about 9 inches thick. The subsoil is brown very gravelly sandy loam about 12 inches thick. The substratum to a depth of 60 inches or more is light brownish gray and pale brown extremely gravelly loamy sand and extremely gravelly sand.

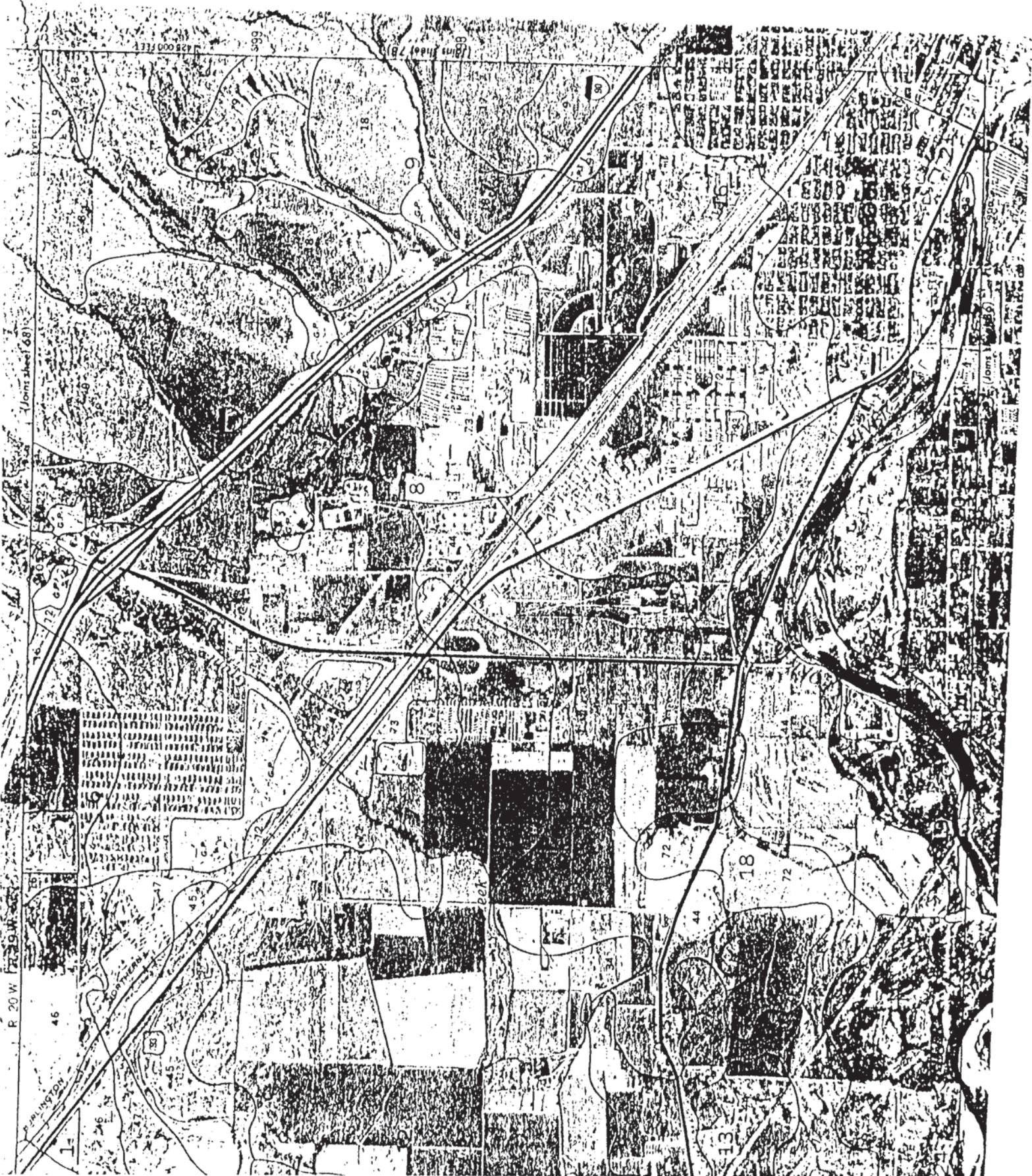
Permeability is very rapid, and available water capacity is about 2 1/2 inches. Runoff is slow, and the hazard of water erosion is slight. This soil is droughty because of the very low available water capacity.

This soil is used mainly for urban-related development and as irrigated cropland.

§101§T3Crop management.¶§T1If this soil is used for crops, it is limited by the very low available water capacity. The high content of rock fragments in the soil reduces the amount of moisture available for plant growth. Sprinkler irrigation is the most suitable method of applying water. Because the soil is droughty, light and frequent applications of irrigation water are needed.

§101§T3Homesite development.¶§T1If this soil is used for homesite development, it is limited mainly by very rapid permeability and cutbank instability. Effluent from septic tank absorption fields may contaminate ground water or nearby surface water. Alternative onsite disposal systems or offsite disposal should be considered. Cutbanks are not stable and are subject to slumping.

§101This map unit is in capability subclasses IVs, irrigated, and VI, nonirrigated.



ATTACHMENT 5
HISTORICAL & ARCHAEOLOGICAL

DEPARTMENT OF STATE LANDS



STAN STEPHENS, GOVERNOR

CAPITOL STATION

STATE OF MONTANA

(406) 444-2074

1625 ELEVENTH AVENUE
HELENA, MONTANA 59620

June 3, 1992

THE MISSOULIAN
500 South Higgins
Missoula, Montana 59801

Dear Sirs:

Please publish the following notice on the dates of June 5, 7, 10, and 11, 1992.

PUBLIC NOTICE

Washington Construction Company (WCC) has submitted to the Department of State Lands an application to conduct opencut sand and gravel mining operations (including crushing and possible asphalt production) on 35 acres of land in the S $\frac{1}{2}$ SW $\frac{1}{4}$, Sec. 9, T13N, R19W, M.P.M., just east of the old LP mill. Upon completion of mining, the affected land would be reclaimed to an Industrial/Commercial use. The Department has prepared an Environmental Assessment that is available for public review at the Forestry Division's 2705 Spurgin Road office. Documents will be available between the hours of 8am - 5pm, and written comments submitted through June 17, 1992, to: Opencut Mining Bureau, Capitol Station, Helena, Montana 59601.

Thanks, and please bill the Department at the address listed.

Sincerely,

Steve Welch, Chief
Opencut Mining Bureau
Reclamation Division

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