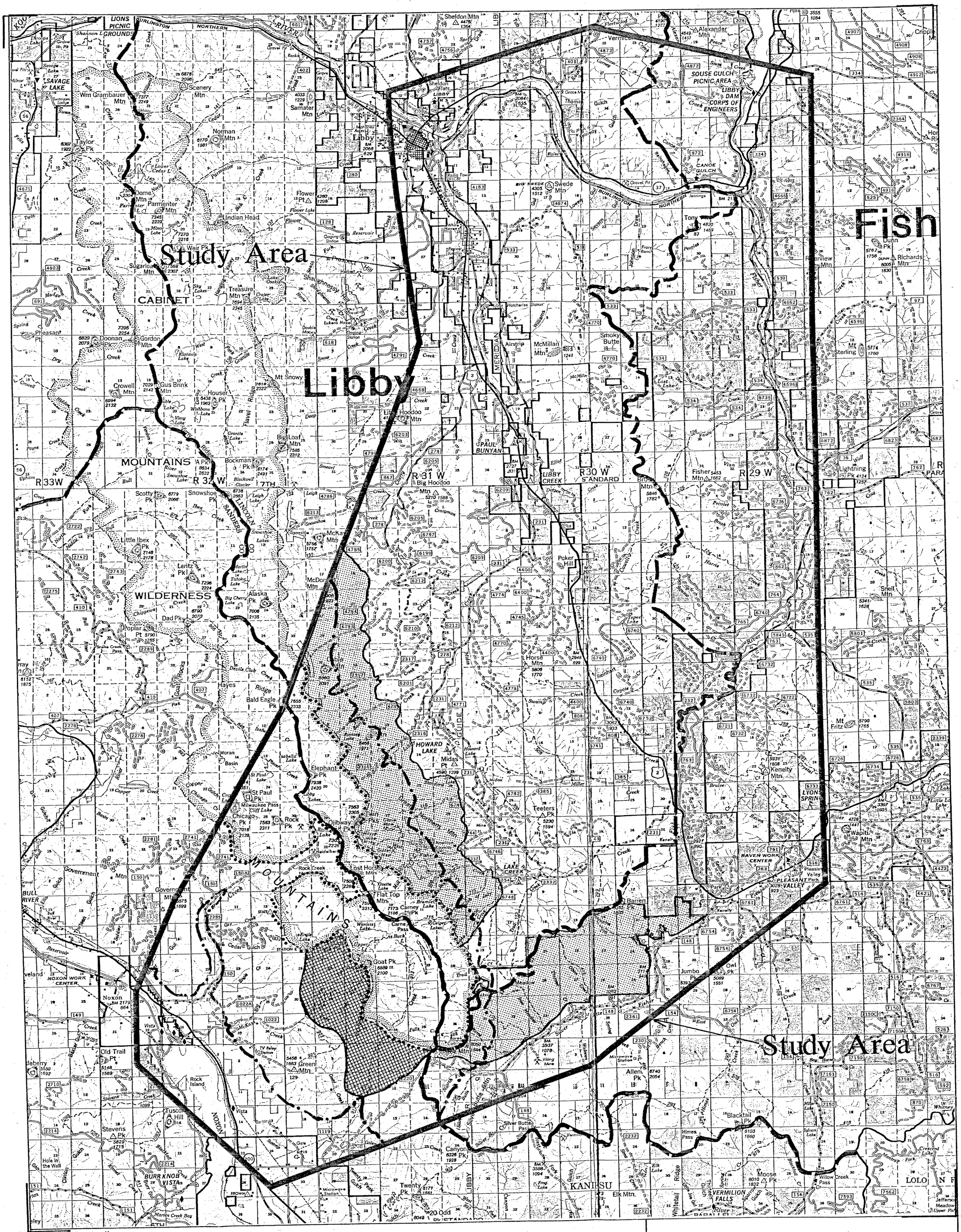
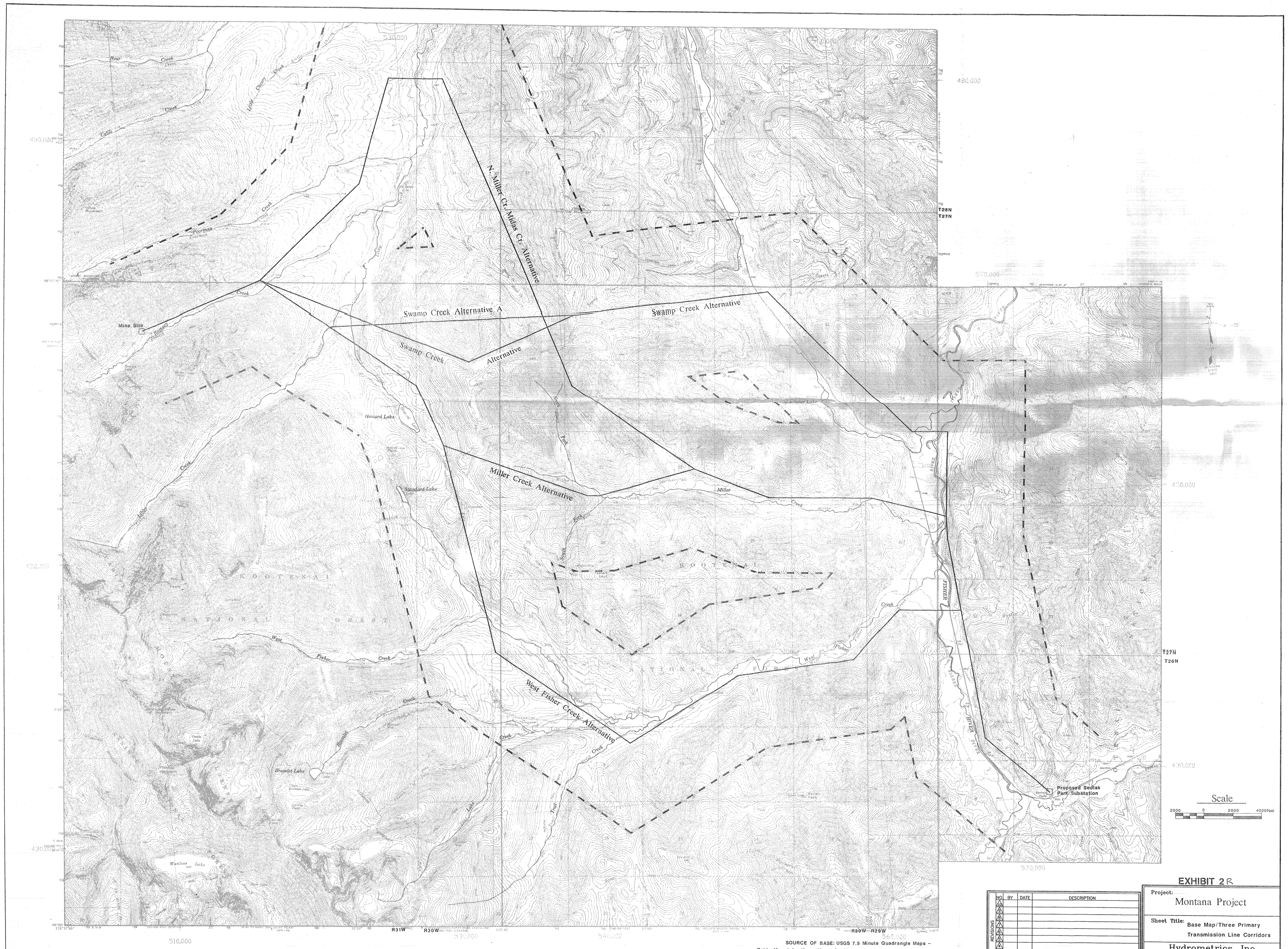

Study Area
Libby
Fish
Study Area
LIONS PICNIC GROUNDS
SAVAGE LAKE
SOUSE GULCH PICNIC AREA
LIBBY DAM CORPS OF ENGINEERS
CANOE GULCH
CABINET MOUNTAINS WILDERNESS
SCENIC
PAUL BUNYAN
HOWARD LAKE
LAKE CREEK
PLEASANT VALLEY
RAVEN WORK CENTER
NOXON WORK CENTER
BURR KNOB VISTA
VERMILION FALLS
KANISU
R33W
R32W
R31W
R30W
R29W
7TH
STANDARD
BURLINGTON NORTHERN
LIBBY CREEK
Sheldon Mtn
Alexander Mtn
Scenery Mtn
Wm Grambauer Mtn
Samater Mtn
Norman Mtn
Taylor Pk
Dome Mtn
Parmenter Mtn
Flower Pt
Indian Head
Weir Pk
Sugarloaf Mtn
Treasure Mtn
Swede Mtn
Tony
Dunn Pk
Richards Mtn
Riverview Mtn
Smoky Butte
McMillan Mtn
Airstrip
Mt Sterling
Crowell Mtn
Gus Brink Mtn
Houser Pk
Mt Snowy
Big Loaf Mtn
Bockman Pk
Big Hoodoo Mtn
Fisher Mtn
Lightning Pk
Scotty Pk
Snowshoe Pk
Little Ibex Pk
Leritz Pk
McKay Mtn
McDonald Mtn
Alaska Pk
Dad Pk
Poplar Pt
Poker Hill
Horse Mtn
Brush Mtn
Snell Mtn
Gordon Mtn
Doonan Pk
Pheasant Pt
Hayes Ridge
Bald Eagle Pk
Elephant Pk
St Paul Pk
Chicago Pk
Rock Pk
Ojibway Pk
Government Mtn
Flat Top Mtn
Carney Pk
Goat Pk
Green Mtn
Old Trail Pt
Noxon
Rock Island
Tuscor Hill
Stevens Pk
Midas Pt
Teeters Pk
Barren Pk
Jumbo Pk
Owl Pk
Allen Pk
Mt Fritz
Kenelty Mtn
Wapiti Mtn
Blacktail Pk
Moose Pk
Willow Creek Pass
Himes Pass
Silver Butte Pass
Canyon Pk
Twenty Pk
Elk Mtn
Scale: 1/2" = 1 mile
NORTH
Reconnaissance Level – Sensitive Areas / Areas Of Concern Overlay
Wilderness Area Boundary
Steep / Rugged Area Boundary
Managed As Roadless Area By USFS – Southern Area Is Checkerboarded With Private Land
Considered For Inclusion To National Wilderness System
Source: U.S. Forest Service
MONTANA PROJECT
Drawn: SD
Checked: JE
Approved: DP
Date: 6/13/89
Study Area, Sensitive Areas and Areas of Concern
EXHIBIT
1
Hydrometrics, Inc.
Consulting Scientists and Engineers
Helena, Montana



SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps – Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 2R

REVISIONS NO	BY	DATE	DESCRIPTION
10			
9			
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2			
1		11/89	

Project: Montana Project

Sheet Title: Base Map/Three Primary Transmission Line Corridors

Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150

USFS Management Prescriptions

2	LARGE AND SMALL AREAS OFFERING ROADLESS RECREATION OPPORTUNITIES IN A NON-PRIMITIVE SETTING. TIMBER HARVEST MAY BE COMPATIBLE WITH ROADLESS MANAGEMENT GOAL. TIMBER HARVEST IS NOT PERMITTED.
6	SMALL AREAS CONTAINING CAMPGROUNDS, PICNIC AREAS, SKI AREAS, ETC., PROVIDING DEVELOPED RECREATION OPPORTUNITIES.
10	AREAS GENERALLY BELOW 4000 FEET ELEVATION ON FAVORABLE TOPOGRAPHY WHERE TIMBER MANAGEMENT IS THE PRIMARY OBJECTIVE. ALL OTHER ARE REASONABLE EFFORTS TO PROVIDE FOR TIMBER RESOURCE OF LOW PRODUCTIVITY OR DIFFICULT ENVIRONMENTAL PROBLEMS.
11	SAME AS MANAGEMENT AREA 10 EXCEPT THAT PRODUCTIVE FOREST LANDS ARE USUALLY WATER AND PROVIDE BOTH WILDLIFE AND TIMBER INTENTS.
12	PRODUCTIVE FOREST LANDS CONTAINING WATER OR WET HABITAT TYPES AT ELEVATIONS ABOVE 4000 FEET. HUNGER TO PROTECT MOOSE, ELDER AND SECURITY FOR BIG GAME BY USUALLY COMPATIBLE TIMBER AND ROAD MANAGEMENT PRESCRIPTIONS.
13	SMALL AREAS GENERALLY BELOW 5000 FEET ELEVATION PROVIDING SPECIAL HABITAT NEEDS FOR OLD GROWTH TIMBER DEPENDENT SPECIES. TIMBER HARVEST IS NOT PERMITTED.
14	PRODUCTIVE FOREST LANDS IDENTIFIED AS BEING ESSENTIAL FOR THE RECOVERY OF THE GRIZZLY BEAR. MANAGEMENT TO PROVIDE HIDING COVER AND SECURITY BY USUALLY COMPATIBLE TIMBER AND ROAD MANAGEMENT PRESCRIPTIONS.
15	PRODUCTIVE FOREST LANDS THAT WILL BE MANAGED FOR MEDIA TIMBER YIELDS WHILE PROTECTING WATERSHED, SOILS, FISHERIES AND THE WILDLIFE RESOURCES.
16	SAME AS MANAGEMENT AREA 15 BUT PROVIDING FOR A HIGHER LEVEL OF PROTECTION FOR THE WILDLIFE RESOURCE.
17	PRODUCTIVE FOREST LANDS THAT ARE LOCATED WITHIN SENSITIVE VIEWING AREAS. TIMBER AND OTHER RESOURCE MANAGEMENT MUST BE COORDINATED TO PROVIDE A HARMONIOUS APPEARING LANDSCAPE.
18	SMALL PRODUCTIVE FOREST AREAS THAT CONTAIN CERTAIN HABITAT TYPES THAT ARE IMPORTANT TO WILDLIFE. TIMBER HARVEST MUST BE COMPATIBLE WITH ROADMANAGEMENT GOALS.
19	SMALL PRODUCTIVE FOREST AREAS THAT ARE ON VERY STEEP, SLIDES OR TOO HIGH TO BE EASILY AND COSTLY TO ROAD. TIMBER HARVEST MUST BE COMPATIBLE WITH SOIL AND WATERSHED PROTECTION GOALS.
23	AN AREA IDENTIFIED AS BEING IMPORTANT FOR POWERLINE TRANSMISSION PURPOSES. TIMBER HARVEST MUST BE COMPATIBLE WITH THE CORRIDOR OBJECTIVES.
24	SMALL AREAS OF NONPRODUCTIVE FOREST LAND. MANAGE TO PROTECT SOIL, WATERSHED, FISHERIES AND VEGETATION.

State Lands
U.S. Forest Service
Champion
B.N.-Plum Creek
Other Private Land
U.S. Forest Service Recreation Area

Scale
2000 0 2000 4000 feet

Swamp Creek Alternative A
Swamp Creek Alternative
Miller Creek Alternative
West Fisher Creek Alternative
N. Miller Cr. Midas Cr. Alternatives
Mine Site
Proposed Sedlak Park Substation
Howard Lake
Standard Lake
Bramlet Lake
Wanless Lake
Scrieber Lake
Poorman Creek
Little Cherry Creek
Cable Creek
Baree Creek
Ramsey Creek
Libby Creek
Swamp Creek
North Fork
South Fork
Miller Creek
West Fisher Creek
Fisher Creek
Bramlet Creek
Trail Creek
Lake Creek
Pinkham Creek
Trail

T28N
T27N
T26N
R31W
R31W | R30W
R30W | R29W

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps –
Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

REVISIONS	NO	BY	DATE	DESCRIPTION
	3		12/11/90	
	2		11/89	
	1			

EXHIBIT 3

Project:
Montana Project

Sheet Title:
Land Ownership &
U.S.F.S. Management Units

Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150

LEGEND

Designation	Slope
0	0 to 10 Percent
1	11 to 20 Percent
2	21 to 40 Percent
3	41 to 55 Percent
4	Greater Than 55 Percent

Recent Floodplain

Perennial Stream Reaches In The Study Area

▲ 100 Year Flood Flow Calculated

Note: The portions of Fisher River and Libby Creek within the study area have been designated as Class I streams by the Montana Department of Fish, Wildlife and Parks

Scale

2000 0 2000 4000 feet

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps – Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 4

REVISIONS NO	BY	DATE	DESCRIPTION
6			
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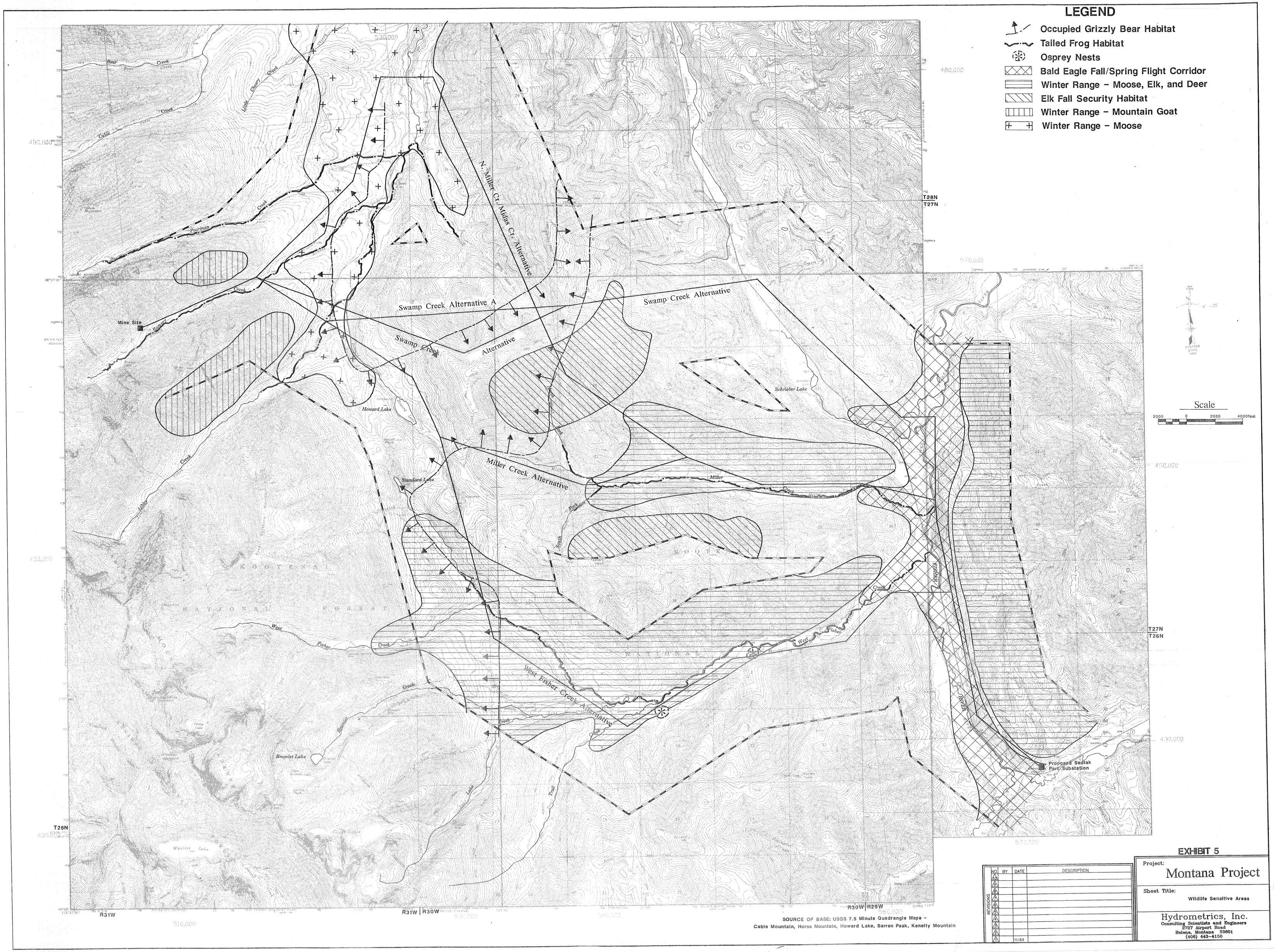
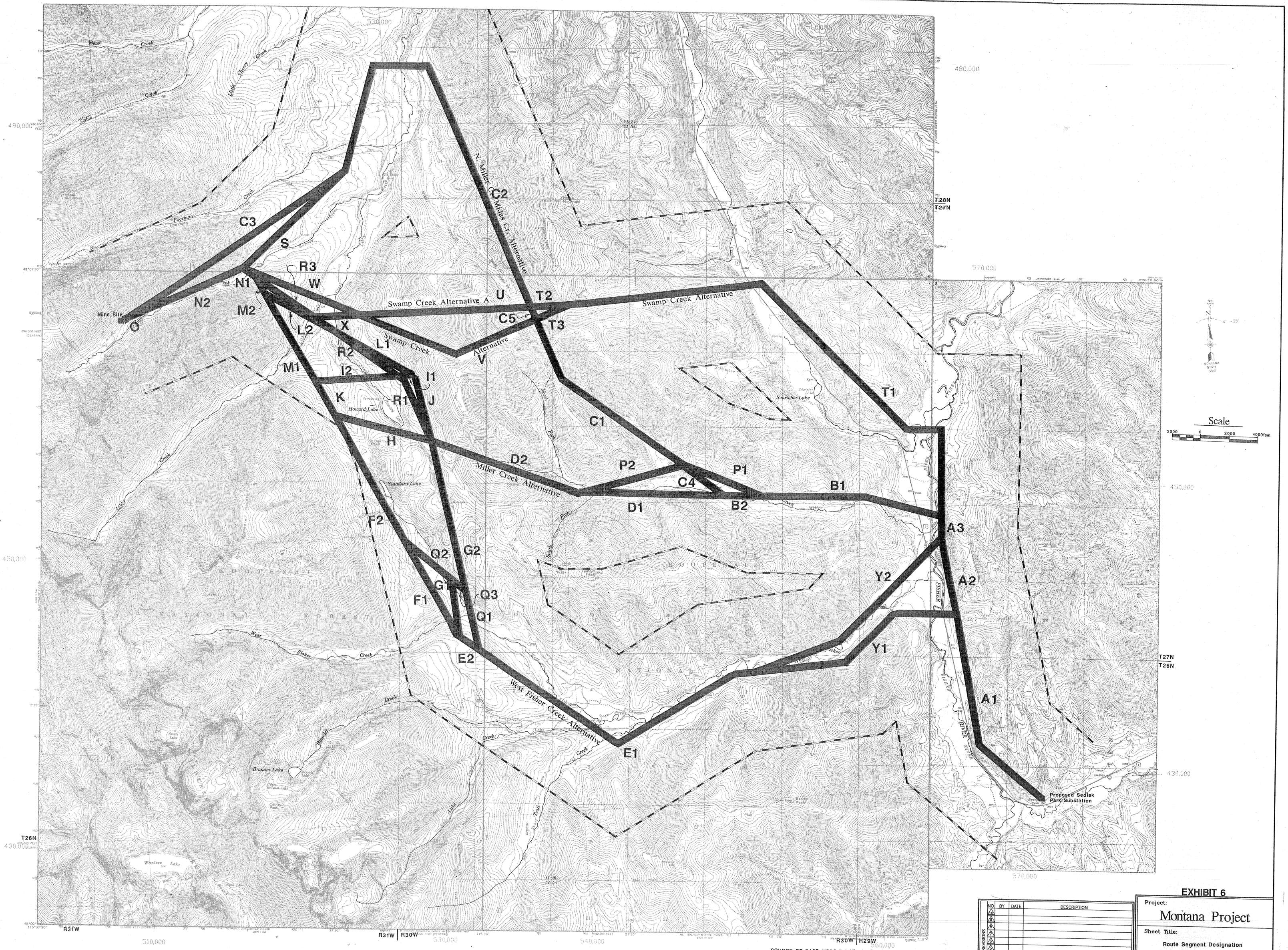
0		11/89	

Project: Montana Project

Sheet Title: 100 Year Floodplains, Perennial Streams and Slopes

Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150


LEGEND
Occupied Grizzly Bear Habitat
Tailed Frog Habitat
Osprey Nests
Bald Eagle Fall/Spring Flight Corridor
Winter Range - Moose, Elk, and Deer
Elk Fall Security Habitat
Winter Range - Mountain Goat
Winter Range - Moose
Scale
2000 0 2000 4000feet
N. Miller Cr./Midas Cr. Alternative
Swamp Creek Alternative A
Swamp Creek Alternative
Swamp Creek Alternative
Miller Creek Alternative
West Fisher Creek Alternative
Mine Site
Howard Lake
Standard Lake
Schrieber Lake
Bramlet Lake
Proposed Sediak Park Substation
T28N
T27N
T26N
R31W
R31W | R30W
R30W | R29W
KOOTENAI NATIONAL FOREST
SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps - Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain
EXHIBIT 5
Project: Montana Project
Sheet Title: Wildlife Sensitive Areas
Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150
REVISIONS
NO BY DATE DESCRIPTION
11/89



SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps –
Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

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EXHIBIT 6

Project:
Montana Project

Sheet Title:
Route Segment Designation

Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150

VEGETATION TYPES LEGEND

1) CLEARCUT OR SELECTIVE HARVEST LESS THAN 15 YEARS OLD
2) RIPARIAN CONIFER / COTTONWOOD
3) WESTERN RED CEDAR / WESTERN HEMLOCK
3a) WESTERN RED CEDAR / WESTERN HEMLOCK (OLD GROWTH)
4) WESTERN LARCH / LODGEPOLE PINE / DOUGLAS-FIR
4a) WESTERN LARCH / LODGEPOLE PINE / DOUGLAS-FIR (OLD GROWTH)
5) DOUGLAS-FIR / SNOWBERRY
6) WETLAND
7) LODGEPOLE PINE / SUBALPINE FIR
7a) LODGEPOLE PINE / SUBALPINE FIR (OLD GROWTH)
8) SUBALPINE FIR/ HUCKLEBERRY/ ROCK
9) WESTERN LARCH / LODGEPOLE PINE
9a) WESTERN LARCH / LODGEPOLE PINE (OLD GROWTH)
10) WESTERN LARCH / LODGEPOLE PINE/ GRAND FIR
10a) WESTERN LARCH / LODGEPOLE PINE/ GRAND FIR (OLD GROWTH)
11) WESTERN LARCH / LODGEPOLE PINE/ WESTERN RED CEDAR
12) AGRICULTURAL LAND

Scale
2000 0 2000 4000 feet

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps –
Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 7

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Project:
Montana Project

Sheet Title:
Vegetation Type Map

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Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150

LEGEND

- Recreational Areas
- Irrigated Areas
- * Potable Water Supply

Roads

- Open All Year
- Year Long Road Closures
- Seasonal Road Closures
- U.S.F.S. Gates Or Barriers
- Roads Which May Require Upgrading
- Active Logging Area

Mine Site

Swamp Creek Alternative A

Swamp Creek Alternative

Miller Creek Alternative

Miller Ck. Mitigation Cr. Alternative

West Fisher Creek Alternative

Proposed Sedlak Park Substation

Howard Lake

Standard Lake

Bramlet Lake

Wanless Lake

Schrieber Lake

T28N
T27N
T27N
T26N

R31W R30W R30W R29W

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps –
Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

Scale
2000 0 2000 4000 feet

EXHIBIT 8

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Project:
Montana Project

Sheet Title:
Land Use and Access

Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150

USFS Landtype Descriptions

101	Recent Alluvium
102	Silty Lacustrine Terrace, Moist
103	Alluvial Terraces, Well-Drained
105	Alluvial Lands, Poorly Drained: Marshes, Bogs
106	Glacial Outwash Terraces, Moist
108	Mixed Lacustrine and Alluvial
112	Clayey Lacustrine Terraces
251	Rocky, Very Steep, Northerly
252	Very Steep, Northerly
301	Deep Glacial Till, Southerly, Concave
302	Moderately Deep Till, Linear
303	Scoured Ridge Tops and Ridge Noses
322	Clayey Glacial Till with Loess Deposit
323	Clayey Glacial Till
351	Deeply Incised, Parallel Drainages
352	Deep Glacial Till with Loess Deposit
353	Glacially Scoured Ridge Tops, Shallow
355	Glacially Scoured Side Slopes
360	Strongly Scoured Lands, >50% Rock
381	Shallow Incised, Parallel Drainages
401	Alpine Glacial Walls
403	Alpine Cirque Headwalls
404	Deep Alpine Till on Mountain Slopes
405	Strongly Frost-Churned Alpine Ridges
407	Deep Alpine Valley Till, Concave
408	Very Steep Glaciated Spurs

NOTE: Landtype descriptions are from the Kootenai National Forest Area Land System Inventory

Potential Impacts

- Water Erosion Risk
- Mass Movement Potential
- Avalanche Areas
- Severe Reclamation Constraints
- High Sediment Contribution Potential

Scale: 2000 0 2000 4000 feet

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps – Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 9

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REVISIONS

Project: Montana Project

Sheet Title: Potential Soils Impact

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Helena, Montana 59601
(406) 443-4150

VISUAL ABSORPTION CAPABILITY

HIGH – AREAS 1 AND 5

MODERATE-HIGH – AREAS 3, 4, AND 7

MODERATE – AREA 6

LOW – AREA 2

Swamp Creek Alternative A

Swamp Creek Alternative

Swamp Creek Alternative

Miller Creek Alternative

Miller Cr./Midas Cr. Alternative

West Fisher Creek Alternative

Mine Site

Proposed Sediak Park Substation

Scale

2000 0 2000 4000 feet

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps – Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 10

REVISIONS NO	BY	DATE	DESCRIPTION
1		11/89	

Project: Montana Project

Sheet Title: VISUAL ABSORPTION CAPABILITY

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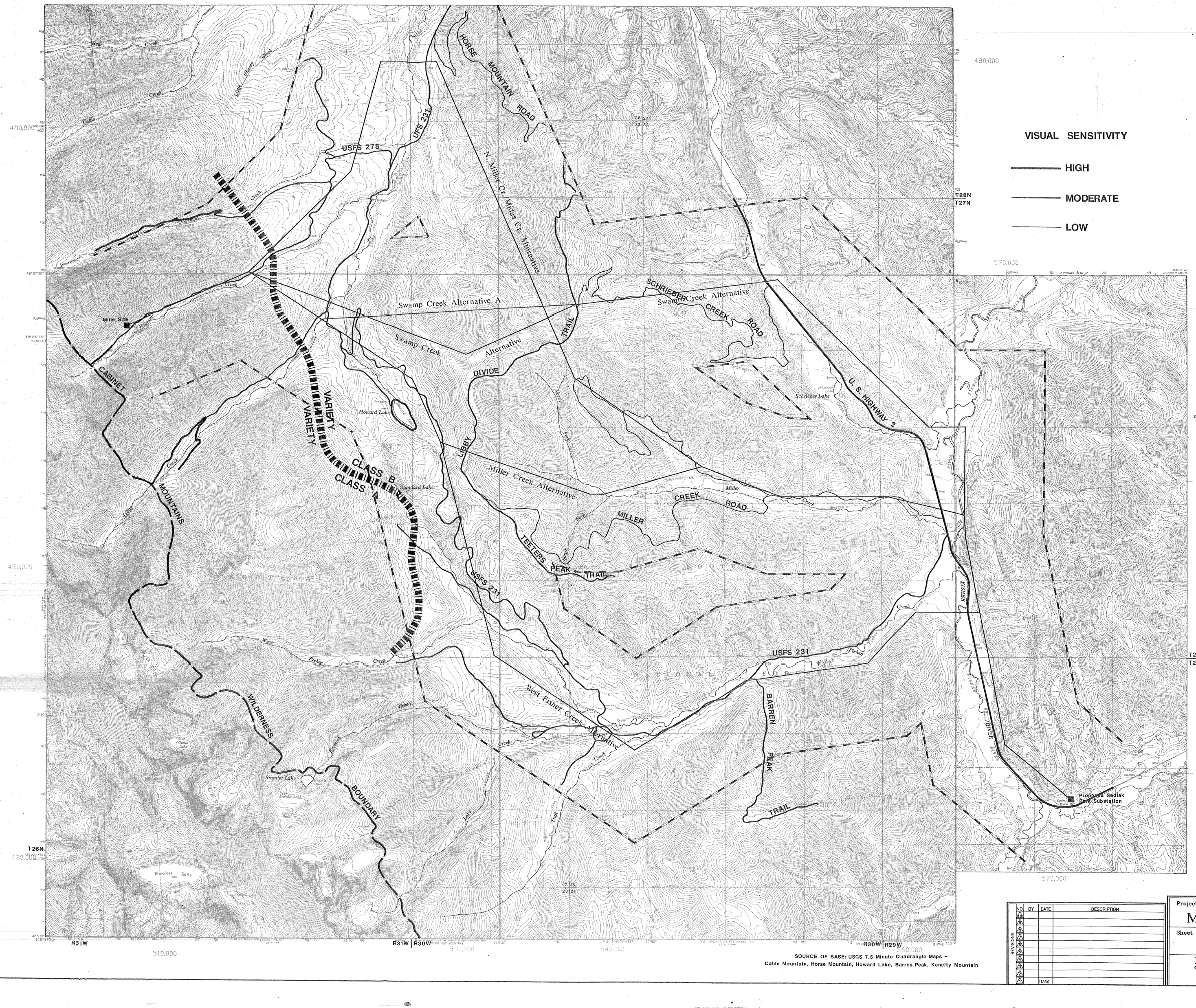

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps –
Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

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EXHIBIT 11

Project:

Montana Project

Sheet Title:

Visual Sensitivity

Hydrometrics, Inc.
Consulting Scientists and Engineers
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Helena, Montana 59601
(406) 443-4150

SNOWSHOE PEAK
(CABINET MTNS WILDERNESS)

BALD EGLE PEAK
(CABINET MTNS WILDERNESS)

ELEPHANT PEAK
(CABINET MTNS WILDERNESS)

LIBBY LAKES
(CABINET MTNS WILDERNESS)

GREAT NORTHERN MTN

USFS 231

USFS 231

USFS 231
NORTH VISTA POINT

USFS 231
SOUTH VISTA POINT

N. Miller Cr. Middle Cr. Alternative

LIBBY DIVIDE TRAIL
AT HORSE MTN

LIBBY DIVIDE TRAIL

MILLER RIDGE TRAIL

TEETERS PEAK TRAIL

USFS ROAD 231 AT
BARREN PEAK TRAILHEAD

BARREN PEAK TRAIL

DIVIDE TRAIL
(CABINET MTNS WILDERNESS)

U.S. HIGHWAY 2

Swamp Creek Alternative A

Swamp Creek Alternative

Swamp Creek Alternative

Miller Creek Alternative

West Fisher Creek Alternative

Mine Site

HOWARD LAKE
Howard Lake

Standard Lake

Schrieber Lake

Bramlet Lake

Wanless Lake

Proposed Sedlak
Park Substation

T28N
T27N

T27N
T26N

T26N

R31W

R31W R30W

R30W R29W

480,000

510,000

540,000

570,000

450,000

430,000

KEY

- HIGH
- MODERATE
- LOW
- MINIMAL
- KEY OBSERVATION POINT

Scale
2000 0 2000 4000 feet

SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps –
Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 12

REVISIONS NO	BY	DATE	DESCRIPTION
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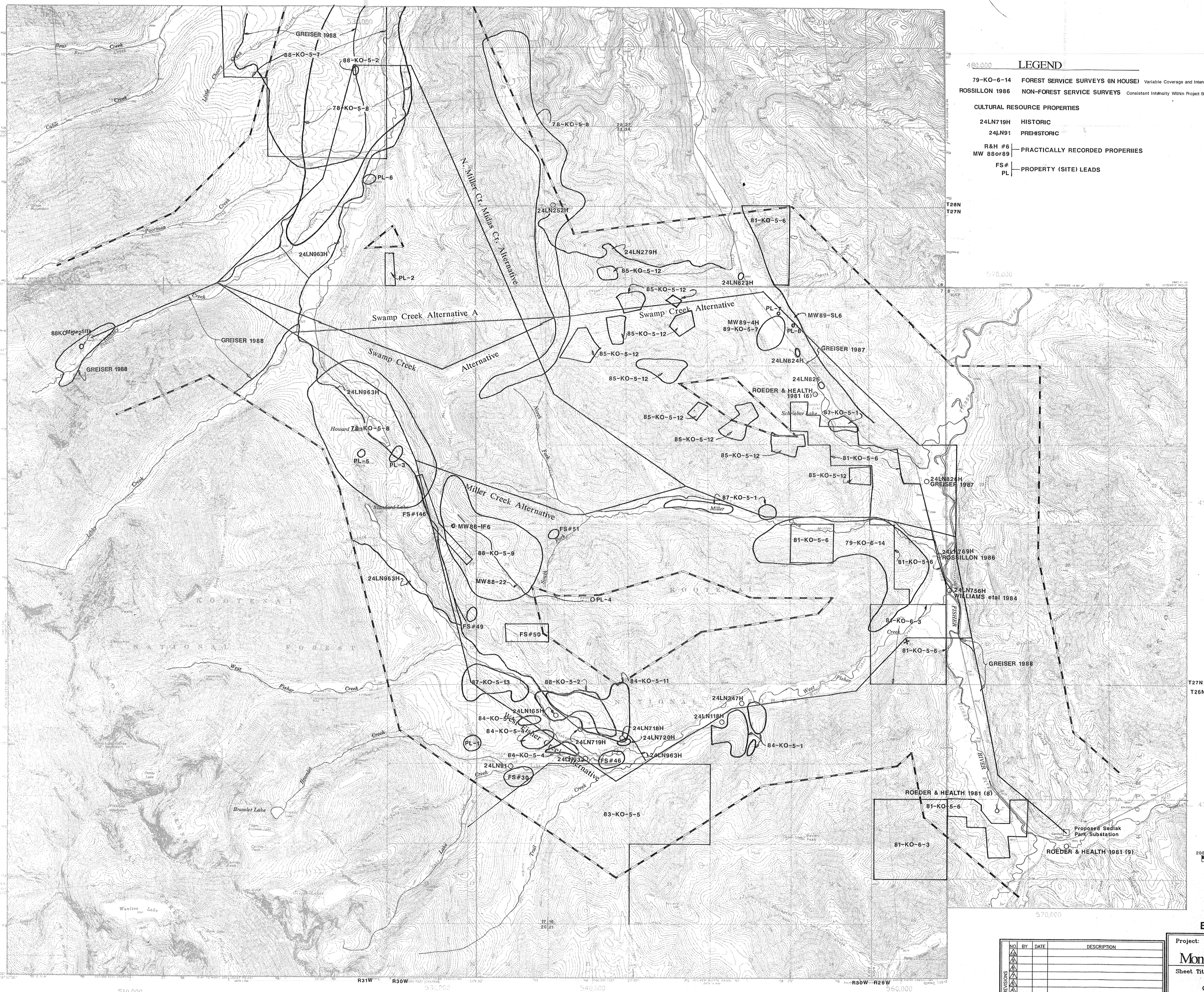
Project:
Montana Project

Sheet Title:
VISUAL RESOURCES
IMPACT ASSESSMENT AND
KEY OBSERVATION POINTS

Hydrometrics, Inc.
Consulting Scientists and Engineers
2727 Airport Road
Helena, Montana 59601
(406) 443-4150



SOURCE OF BASE: USGS 7.5 Minute Quadrangle Maps - Cable Mountain, Horse Mountain, Howard Lake, Barren Peak, Kenelty Mountain

EXHIBIT 13

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Project:

Montana Project

Sheet Title:

Cultural Resources

Hydrometrics, Inc.
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