

DRAFT

ENVIRONMENTAL ASSESSMENT

**Clark Canyon Reservoir
and
Barretts Diversion Dam**

Resource Management Plan

August 2004

Reclamation Office Contact:

**Clark Canyon RMP
Great Plains Region
Montana Area Office
2900 4th Avenue North, Suite 501
P.O. Box 30137
Billings, MT 59107-0137**

**Prepared with Assistance from
Franson Noble Engineering**

Table of Contents

Cover Sheet	
Table of Contents	
Location Map	
Site Map	
	Page
Chapter 1 – Introduction and Background	
1.1 Executive Summary	1-1
1.2 Introduction.....	1-3
1.3 Authority.....	1-3
1.4 Purpose and Need	1-5
1.5 Location and Background.....	1-5
1.6 Scoping and Issues.....	1-6
1.7 Related Actions and Activities (i.e. BLM Resource Plan)	1-7
Chapter 2 – Alternatives	
2.1 Alternatives Development	2-1
2.2 Alternatives Considered in Detail.....	2-13
2.2.1 No Action Alternative.....	2-13
2.2.2 Alternative A – Moderate Level Alternative	2-13
2.2.2.1 Recreation Resources.....	2-13
2.2.2.2 Land Resources.....	2-16
2.2.2.3 Cultural Resources.....	2-17
2.2.3 Alternative B – Maximum Level Alternative	2-17
2.2.3.1 Recreation Resources.....	2-17
2.2.3.2 Land Resources.....	2-20
2.2.3.3 Cultural Resources.....	2-20

2.3 Alternatives Eliminated from Consideration 2-20

Chapter 3 – Affected Environment and Environmental Consequences

3.1 Geology and Soils 3-1

3.1.1 Affected Environment 3-1

3.1.1.1 Geology 3-1

3.1.1.2 Mineral Resources 3-2

3.1.1.3 Soils 3-2

3.1.2 Environmental Consequences 3-3

3.1.2.1 No Action Alternative 3-4

3.1.2.2 Alternative A - Impacts and Mitigation 3-4

3.1.2.3 Alternative B - Impacts and Mitigation 3-5

3.2 Air Quality 3-5

3.2.1 Affected Environment 3-5

3.2.1.1 Climate 3-5

3.2.1.2 Regional and Local Air Quality 3-6

3.2.1.3 Air Quality Regulations 3-7

3.2.2 Environmental Consequences 3-7

3.2.2.1 No Action Alternative 3-7

3.2.2.2 Alternative A - Impacts and Mitigation 3-8

3.2.2.3 Alternative B - Impacts and Mitigation 3-8

3.3 Water Quantity and Water Quality 3-9

3.3.1 Affected Environment 3-9

3.3.1.1 Water Quantity 3-9

3.3.1.2 Water Quality 3-13

3.3.2 Environmental Consequences 3-14

3.3.2.1 No Action Alternative 3-14

3.3.2.2 Alternative A - Impacts and Mitigation 3-14

3.3.2.3 Alternative B - Impacts and Mitigation 3-15

3.4 Vegetation 3-16

3.4.1 Affected Environment 3-16

3.4.1.1	Vegetation Types	3-16
3.4.1.2	Riparian Vegetation and Wetlands	3-17
3.4.1.3	Noxious Weeds	3-17
3.4.1.4	Noxious Weed Management	3-19
3.4.2	Environmental Consequences	3-22
3.4.2.1	No Action Alternative	3-22
3.4.2.2	Alternative A – Vegetation Impacts and Mitigation	3-22
3.4.2.3	Alternative B – Vegetation Impacts and Mitigation	3-23
3.5	Fish and Wildlife Resources	3-24
3.5.1	Affected Environment	3-24
3.5.1.1	Wildlife	3-24
3.5.1.2	Fish	3-25
3.5.2	Environmental Consequences	3-26
3.5.2.1	No Action Alternative	3-26
3.5.2.2	Alternative A - Impacts and Mitigation	3-26
3.5.2.3	Alternative B – Fish and Wildlife Impacts and Mitigation	3-27
3.6	Threatened and Endangered Species	3-27
3.6.1	Affected Environment	3-28
3.6.2	Environmental Consequences	3-28
3.6.2.1	No Action Alternative	3-28
3.6.2.2	Alternative A - Impacts and Mitigation	3-29
3.6.2.3	Alternative B – Impacts and Mitigation	3-30
3.7	Cultural Resources	3-31
3.7.1	Affected Environment	3-31
3.7.1.1	Background	3-31
3.7.1.2	Indian Trust Assets	3-33
3.7.1.3	Indian Sacred Sites	3-33
3.7.2	Environmental Consequences	3-33
3.7.2.1	No Action Alternative	3-33
3.7.2.2	Alternative A - Cultural Resources Impacts and Mitigation	3-33
3.7.2.3	Alternative B – Cultural Resources Impacts and Mitigation	3-34
3.8	Land Use and Management	3-34

3.8.1	Affected Environment.....	3-34
3.8.2	Environmental Consequences.....	3-38
3.8.2.1	No Action Alternative.....	3-38
3.8.2.2	Alternative A - Impacts and Mitigation.....	3-38
3.8.2.3	Alternative B - Impacts and Mitigation.....	3-39
3.9	Recreation Resources.....	3-40
3.9.1	Affected Environment.....	3-40
3.9.1.1	Fishing.....	3-41
3.9.1.2	Boating.....	3-41
3.9.1.3	Off-Road Vehicle (ORV) Use.....	3-41
3.9.1.4	Hiking.....	3-41
3.9.1.5	Recreation Sites and Facilities.....	3-42
3.9.2	Environmental Consequences.....	3-44
3.9.2.1	No Action Alternative.....	3-44
3.9.2.2	Alternative A – Recreation Impacts and Mitigation.....	3-45
3.9.2.3	Alternative B – Recreation Impacts and Mitigation.....	3-46
3.10	Visual Resources.....	3-47
3.10.1	Affected Environment.....	3-47
3.10.1.1	Description of Project Area.....	3-47
3.10.1.2	Clark Canyon Reservoir.....	3-48
3.10.1.3	Barretts Diversion Dam.....	3-48
3.10.1.4	Recreational Facilities.....	3-49
3.10.1.5	Wildlife Viewing Areas.....	3-49
3.10.1.6	Scenic Byways.....	3-49
3.10.1.7	Wild and Scenic Rivers.....	3-50
3.10.2	Environmental Consequences.....	3-50
3.10.2.1	No Action Alternative.....	3-50
3.10.2.2	Alternative A – Visual Resources Impacts and Mitigation.....	3-50
3.10.2.3	Alternative B – Visual Resources Impacts and Mitigation.....	3-51
3.11	Noise.....	3-51
3.11.1	Affected Environment.....	3-52
3.11.1.1	Noise Sources.....	3-52

3.11.1.2 Sensitive Receptors.....	3-53
3.11.2 Environmental Consequences.....	3-53
3.11.2.1 No Action Alternative.....	3-53
3.11.2.2 Alternative A – Noise Impacts and Mitigation.....	3-54
3.11.2.3 Alternative B – Noise Impacts and Mitigation.....	3-55
3.12 Transportation and Access.....	3-55
3.12.1 Affected Environment.....	3-55
3.12.1.1 Interstate 15 (I-15).....	3-55
3.12.1.2 State Route 324.....	3-56
3.12.1.3 County Road 188 (Horse Prairie Cut-across Road).....	3-56
3.12.1.4 Recreation Facility Access Roads.....	3-56
3.12.1.5 Planned Improvements.....	3-57
3.12.1.6 Access to East Side Lands.....	13-57
3.12.1.7 Other Area Roads.....	3-57
3.12.1.8 Airports.....	3-58
3.12.1.9 Railroads.....	3-58
3.12.2 Environmental Consequences.....	3-58
3.12.2.1 No Action Alternative.....	3-59
3.12.2.2 Alternative A - Impacts and Mitigation Measures.....	3-59
3.12.2.3 Alternative B - Impacts and Mitigation Measures.....	3-60
3.13 Public Services and Utilities.....	3-61
3.13.1 Affected Environment.....	3-61
3.13.1.1 Beaverhead County Police Protection.....	3-61
3.13.1.2 Emergency Medical Services.....	3-62
3.13.1.3 Medical Facilities.....	3-62
3.13.1.4 Volunteer Fire Districts and Companies.....	3-62
3.13.1.5 Solid Waste.....	3-63
3.13.1.6 Electric Utilities.....	3-63
3.13.2 Environmental Consequences.....	3-63
3.13.2.1 No Action Alternative.....	3-63
3.13.2.2 Alternative A - Impacts and Mitigation.....	3-64
3.13.2.3 Alternative B - Impacts and Mitigation.....	3-65

3.14 Socioeconomic Factors (Environmental Justice).....	3-65
3.14.1 Affected Environment.....	3-65
3.14.1.1 Regional Setting.....	3-65
3.14.1.2 Population	3-66
3.14.1.3 Income.....	3-68
3.14.2 Environmental Consequences.....	3-73
3.14.2.1 No Action Alternative.....	3-73
3.14.2.2 Alternative A - Impacts and Mitigation	3-74
3.14.2.3 Alternative B - Impacts and Mitigation	3-76
3.15 Cumulative Impacts	3-76
3.16 Unavoidable Adverse Impacts	3-80

Chapter 4 – Consultation and Coordination

4.1 Agency Coordination.....	4-1
4.2 Indian Trust Assets	4-2
4.3 Indian Sacred Sites.....	4-2
4.4 Identification of Stakeholders.....	4-2
4.5 Public Noticing	4-3
4.6 Public Scoping Meetings	4-3
4.7 Public Comment Period	4-4

Chapter 5 – List of Preparers **5-1**

Chapter 6 – Distribution List **6-1**

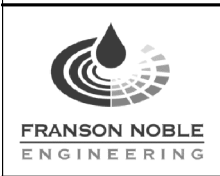
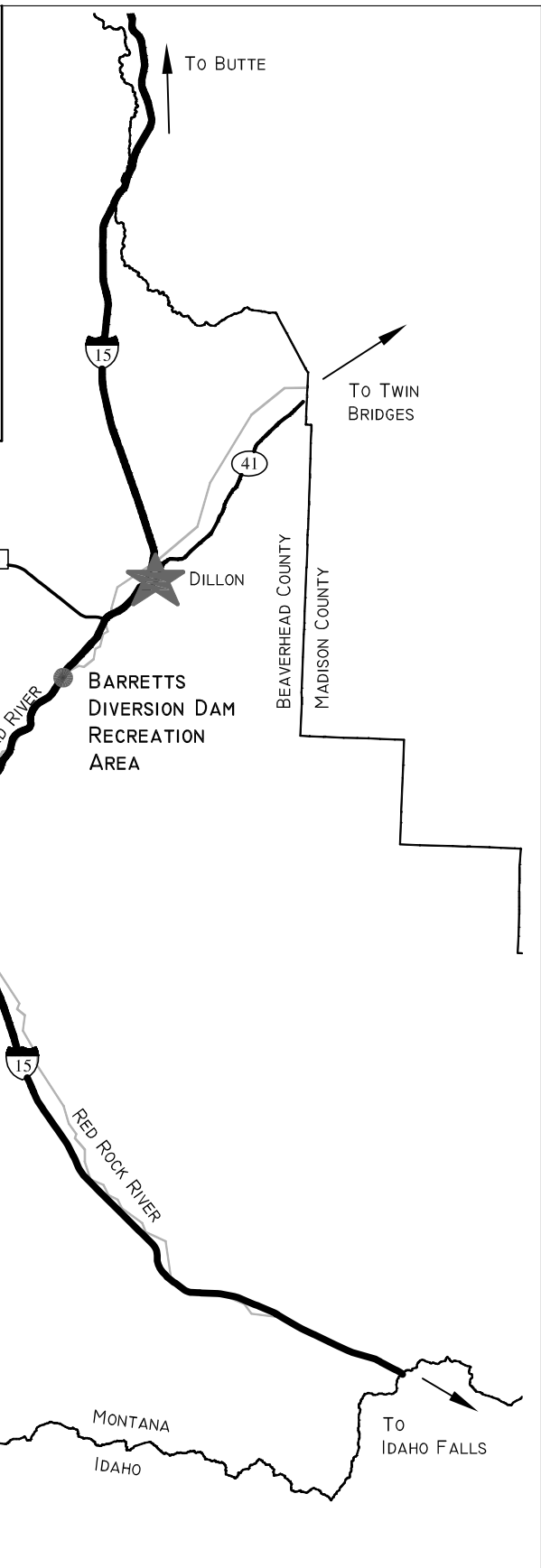
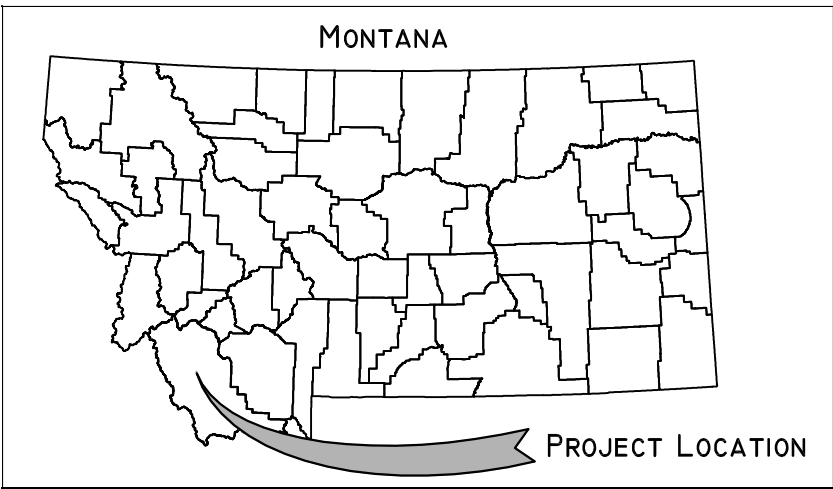
Chapter 7 – References Consulted **7-1**

List of Tables

Table No.	Table Title	Page
Table 2.1-1	Clark Canyon Reservoir and Barretts Diversion Dam Resource Management Plan Summary of Alternatives	2-3
Table 3.3-1	Clark Canyon Reservoir Historical Monthly Flows	3-10
Table 3.3-2	Clark Canyon Reservoir Elevation Summary Table.....	3-11
Table 3.3-3	Clark Canyon Reservoir Monthly Discharge Flow Rates.....	3-12
Table 3.4-1	Noxious Weed List in Beaverhead County.....	3-21
Table 3.6-1	TES Wildlife Species Known or Expected to Occur in the Vicinity of the Project.....	3-30
Table 3.6-2	TES Plant Species Known or Expected to Occur in the Vicinity of the Project	3-32
Table 3.8-1	Land Ownership/Administration in Beaverhead County.....	3-35
Table 3.14-1	Estimated Driving Distances and Driving Time to Clark Canyon Reservoir from Selected Cities.....	3-65
Table 3.14-2	Population of Selected Counties and Cities	3-66
Table 3.14-3	Earnings by Industry for 1999	3-67
Table 3.14-4	Employment by Industry for 1999	3-68
Table 3.14-5	Unemployment Rates.....	3-68
Table 3.14-6	Poverty Rates	3-69
Table 3.14.7	Poverty Levels	3-69
Table 3.14-8	Recreation Contribution to the Local Economy	3-71
Table 3.14-9	Racial Composition of Beaverhead County.....	3-72
Table 3.16-1	Summary of Mitigation Measures	3-81

List of Figures

Figure No.	Figure Title	Page
Location Map	ix
Site Map	x
Figure 1.0-1	Barretts Diversion Dam	1-4
Figure 2-1	Lone Tree Campground - Alternative B – Improvements	2-22
Figure 3.8-1	Ownership Map.....	3-36



DATE: AUGUST 2004

SCALE: 1" = 10 MILES

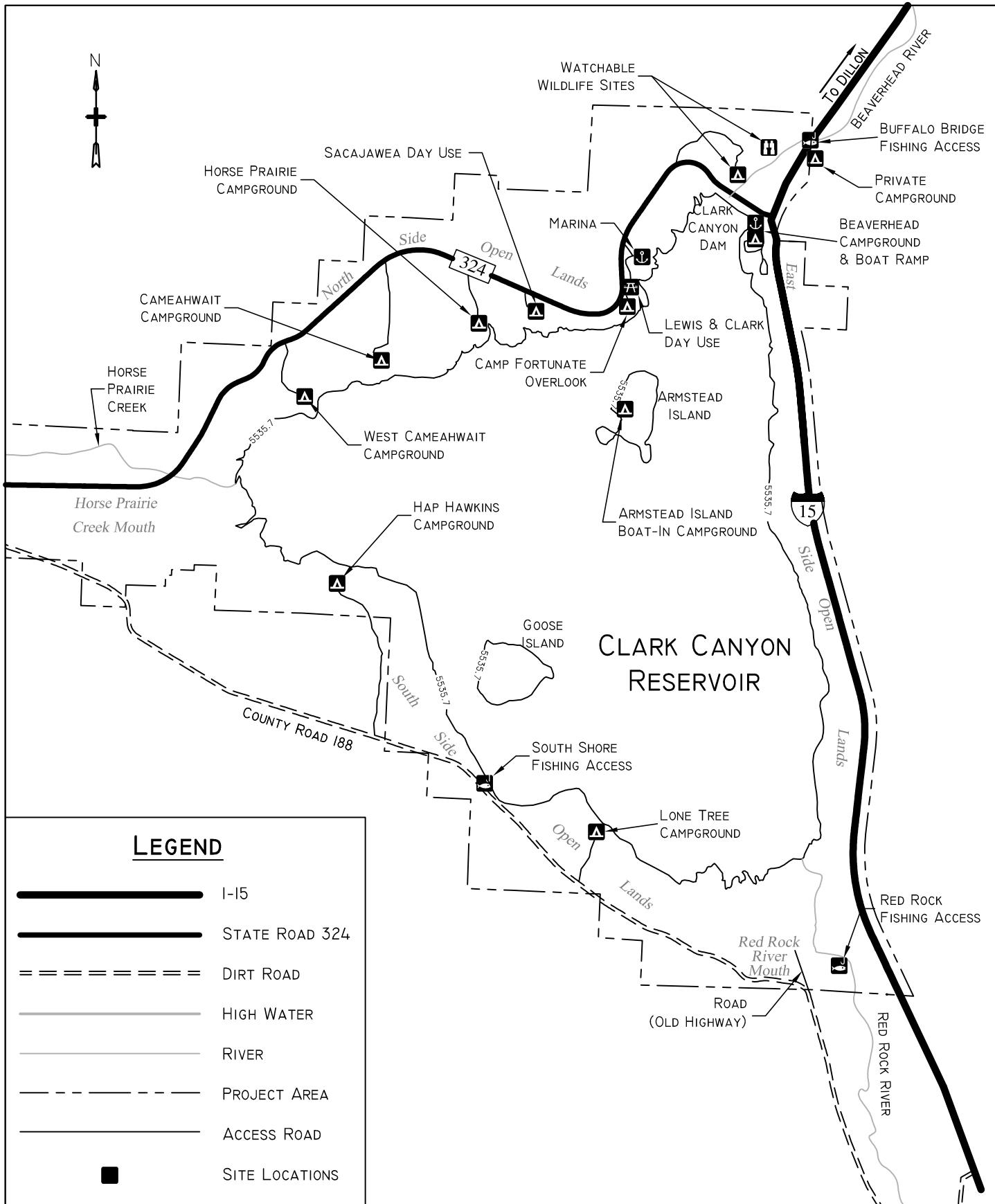
Vicinity.dwg

Client/5/1-Projects/Clark Canyon/
6-Maps & Figures/drawings
Layout 1



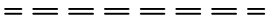



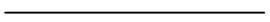

BUREAU OF RECLAMATION

CLARK CANYON RESERVOIR

LOCATION MAP



LEGEND

-  I-15
-  STATE ROAD 324
-  DIRT ROAD
-  HIGH WATER
-  RIVER
-  PROJECT AREA
-  ACCESS ROAD
-  SITE LOCATIONS



DATE: AUGUST 2004
 SCALE: 1" = 3/4 MILE
 Project Map.dwg
 H:\Client\5-USBR Area\1-Projects\Clark Canyon-MT\6-Maps & Figures\Drawings\Reservoir

BUREAU OF RECLAMATION
 CLARK CANYON RESERVOIR

SITE MAP