

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name: Missile Pond Dam Breach	Proposed Implementation Date: Winter 2013
Proponent: Montana DNRC, Trust Land Management Division	
<p>Type and Purpose of Action: The Missile Pond Reservoir is a high hazard dam located ~ 2000 feet upstream of US Highway 191, 1 mile north of the Town of Judith Gap. The dam was constructed in 1964 with soils excavated from the neighboring US Air Force facility. The dam has been inspected by the DNRC dam safety program and found to be structurally unsound and in danger of failure. The DNRC dam safety program has ordered the Trust Land Management Division to remove, breach or repair the dam by March 1, 2013. The dam provides a public fishery which will be lost as a result of dam breaching.</p> <p>The planned breach will consist of the removal of a portion of the existing embankment. The side slopes of the breach will be excavated to a stable grade given the soil type (2:1 or flatter). Riprap will be used to armor portions of the breach as necessary. It is expected that springs in the reservoir bed will maintain some amount of pooled water post breach.</p> <p>(A design Plan and Profile sheet is attached)</p>	
Location: 11N, 16E Section 20	County: Fergus County

I. PROJECT DEVELOPMENT

<p>1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED: Provide a brief chronology of the scoping and ongoing involvement for this project.</p>	<p>DNRC—surface owner DFWP—regarding rehabilitation of the dam State land lessee US Air Force Fergus County Commission</p>
<p>2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:</p>	<p>DEQ 318 Permit DNRC High Hazard Dam Construction Permit</p>
<p>3. ALTERNATIVES CONSIDERED:</p>	<p>No Action: No Action may result in dam failure and an unacceptable threat to human health and safety.</p> <p>Rehabilitate the dam: The state land lessee was contacted regarding the origin and use of the dam and reservoir. The lessee disclaims ownership of the dam and attributes its creation to the construction of the adjacent Air Force facility and its primary use to public recreation. The Department of Fish Wildlife and Parks was contacted regarding reconstructing the dam. DFWP has no interest in becoming responsible for a high hazard dam and did not have funding for dam repair. DNRC and the state land lessee also have no interest in repairing and maintaining a high hazard dam.</p>

II. IMPACTS ON THE PHYSICAL ENVIRONMENT

<p>4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are fragile, compactible or unstable soils present? Are there unusual geological features? Are there special reclamation considerations?</p>	<p>[N]</p> <p>Excavated slopes will be 2:1 or flatter and fertilizer will be added to the reclamation seed mix.</p>
<p>5. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?</p>	<p>[N] There will be some short term turbidity when the standing pool of the reservoir is drained and discharged to the ephemeral drainage downstream of the reservoir.</p>
<p>6. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[N]The project is located within a Class II airshed. Minimal, short-term dust and particulate matter is expected during construction.</p>
<p>7. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present?</p>	<p>[N]Vegetation will be disturbed during excavation and spoil activities. Spoil areas will be reseeded with native species. There are no plant species of concern or potential species of concern noted on the NRIS survey.</p>
<p>8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N]The reservoir provides a water source used by waterfowl, shorebirds and other typical prairie wildlife. The reservoir is stocked with rainbow trout. The reservoir provides habitat common to the area. Storage of water in the reservoir will be lost.</p>
<p>9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Sensitive Species or Species of special concern?</p>	<p>[N]A review of Natural Heritage data through NRIS revealed no species of concern or potential species of concern. No wetlands will receive fill as a result of the proposed action. Some amount of seasonal ponding of water is expected to remain after breaching.</p>
<p>10. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archeological, or paleontological resources present?</p>	<p>[N]The dam embankment is by definition a disturbed area with no cultural resources.</p>
<p>11. AESTHETICS: Is the project on a prominent topographical feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?</p>	<p>[N]The project is in a relatively remote area. The breached dam will be visible from Highway 191. Another aesthetic impact likely from the proposal is the creation of a dry lake bed.</p>

II. IMPACTS ON THE PHYSICAL ENVIRONMENT

12.	DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?	[N]The demand on environmental resources such as land, water, air, or energy will not be affected by the proposed project. The stored water is currently not being beneficially used. The proposed project will not consume resources that are limited in the area. There are no other projects in the area that will affect the proposed project.
13.	OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA: Are there other studies, plans or projects on this tract?	[N]There are no other environmental documents pertinent to the area.

III. IMPACTS ON THE HUMAN POPULATION

14.	HUMAN HEALTH AND SAFETY: Will this project add to health and safety risk in the area?	[N] The primary reason for breaching the reservoir is to eliminate the threat of an uncontrolled breach of the failing dam structure. An uncontrolled breach would likely over top state highway 191 by several feet and damage the adjacent railroad bed through saturation of the soils.
15.	INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[N]The proposed project will not add to or alter the listed activities. The stored water is currently not being used.
16.	QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[N]The proposed action will have no impact on the quantity and distribution of employment.
17.	LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[N]The project will neither create nor eliminate any tax revenue.
18.	DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N]This project will decrease the demand for government services by elimination of a regulated high hazard dam.
19.	LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc., zoning or management plans in effect?	[N]The proposed project will comply with all Federal, State, and County laws. No other management plans are in effect for the area.

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION



STEVE BULLOCK
GOVERNOR

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PO BOX 201601
HELENA, MONTANA 59620-1601

Wednesday, January 16, 2013

Scott Blossom, P.E.
DNRC Trust Lands Management Division
1424 9th Avenue
Helena, MT 59620

RE: Missile Silo Pond Dam

Dear Scott:

The purpose of this letter is to document my concerns with the Missile Silo Pond Dam (Fergus County). I visited the site on September 26th, 2012. I found several potentially serious deficiencies:

1. Numerous rodent holes are present on the upstream face of the dam that appear to extend far into the embankment. Rodent holes shorten the seepage path through a dam and have been known to cause dam failures.
2. There is evidence of a buried penetration through the dam at the maximum cross section. If indeed present, it most likely is made of corrugated metal. Corrugated metal pipe corrodes and has a 30 to 50 year design life. Deterioration of corrugated metal pipe is the number one cause of dam failure in Montana.
3. Seepage is extensive at the toe of the dam and ponding water appears high on the left abutment. There are also numerous recent downstream slope failures. Widespread slope instability and excessive foundation seepage is a concern.

Failure of this dam would overtop Highway 191 by several feet of water. Although the flood surge would be brief, it is likely that the State highway would be seriously damaged. It would be difficult for the high speed traffic on Highway 191 to avoid the damaged portion of the highway, especially if dam failure occurs at night. Dam failure could also compromise an active downstream railroad embankment.

Due to the potential for loss of life from dam failure and the presence of serious deficiencies, it is my professional opinion that the Missile Silo dam should not be allowed to fill this next spring. Steps should be taken immediately to rehabilitate or decommission the dam.

Sincerely,

Michele Lemieux, P.E.
Montana Dam Safety Section Supervisor

enclosure

Montana Topographic Map Finder

The map is 6.11 miles wide.

If you make a map less than three miles wide, you may choose to view aerial photographs instead of topographic maps.

Select a Map Control, then click on the map

Map Controls

- ZoomIn Zoom Factor
- ZoomOut 2 
- New Center

Map Center Coordinates at Red +

Datum: NAD83 NAD27

Decimal Degrees

Lat 46.6963 Long -109.7369

State Plane

E 581890 N 271870

UTM Zone 12

E 596570 N 5172200

US National Grid

12T WS 9657 7220

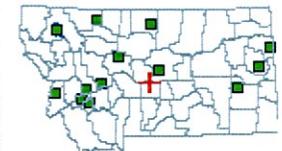
TRS T11N R16E S20

Hydrologic Unit 10040103
Judith River

Download 24K quadrangle: [Elephant Rocks](#)

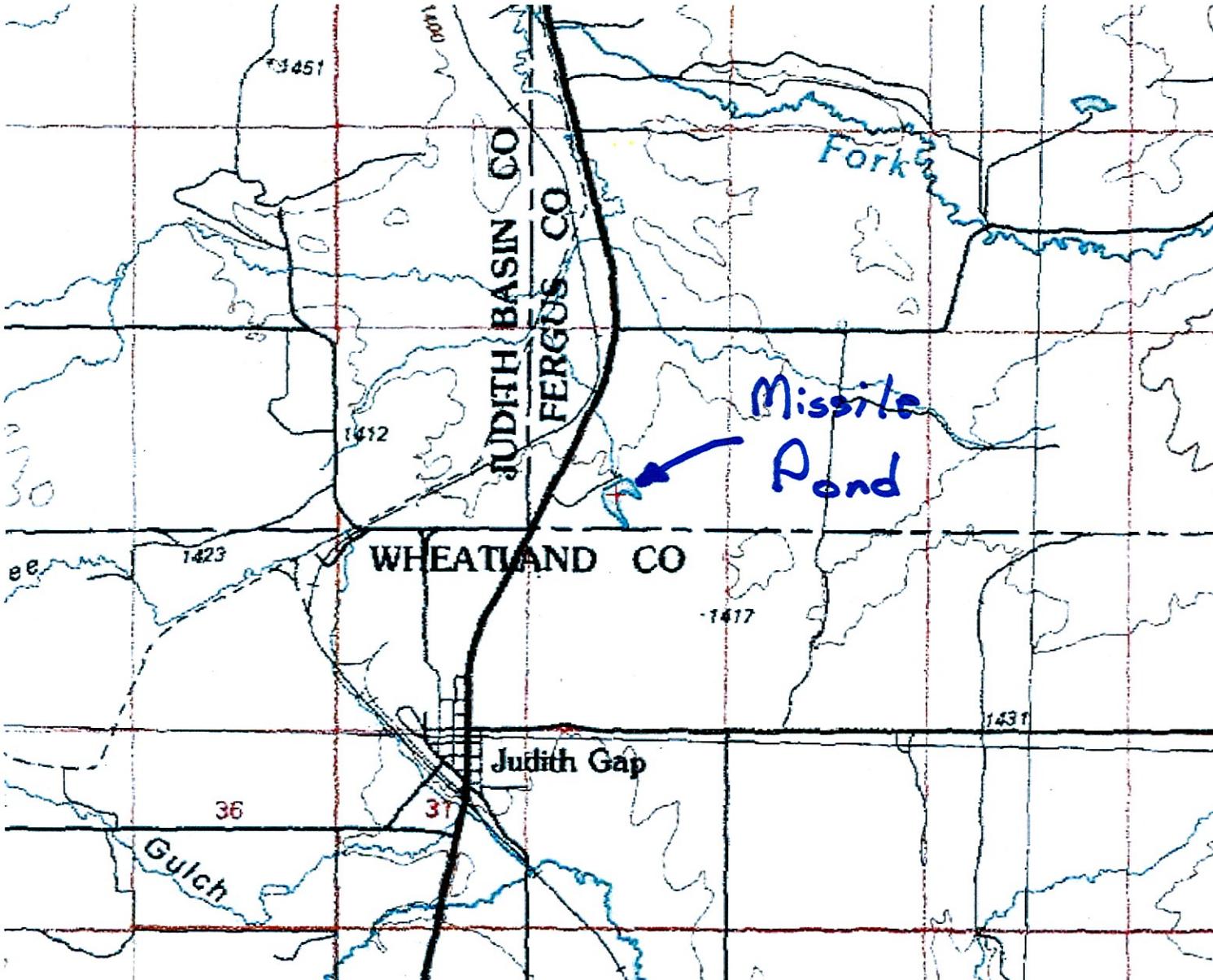
Download 100K quadrangle: [Big Snow Mountains](#)

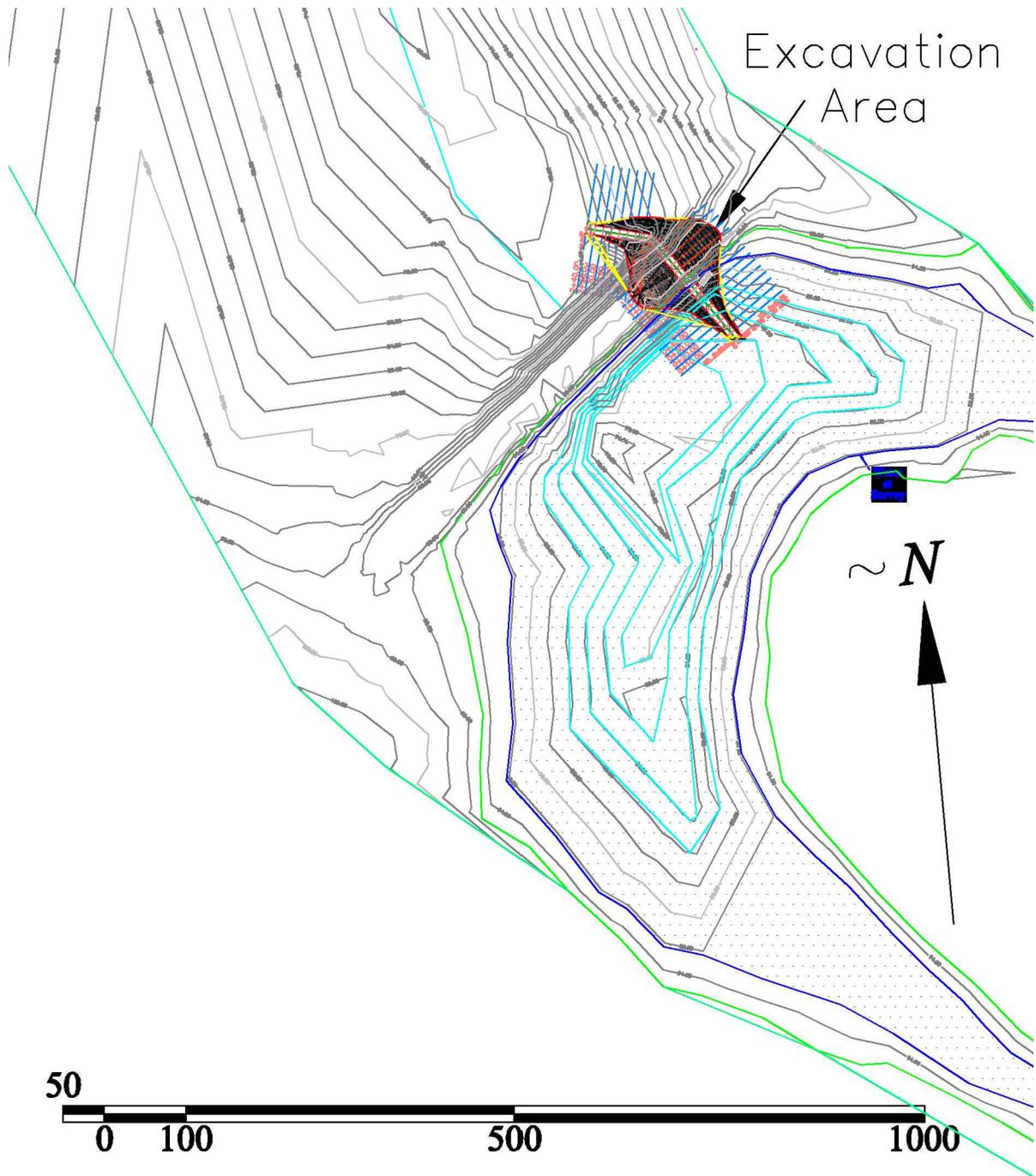
Click the small map to move the main map center.



Green squares show areas where 2004 hi-resolution color photos are available.

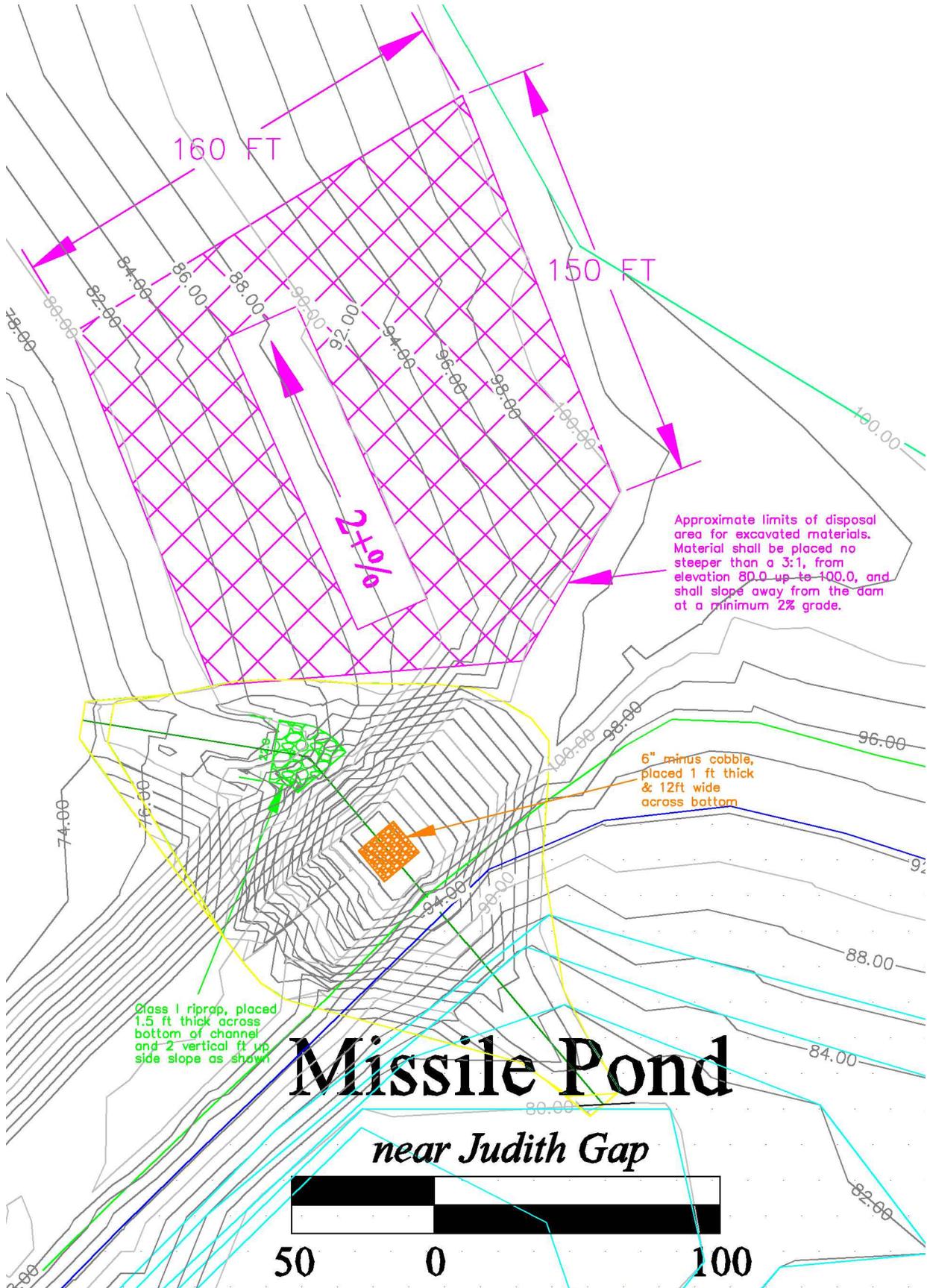
[Legend](#) | [Help](#)





Missile Pond

near Judith Gap



160 FT

150 FT

2%

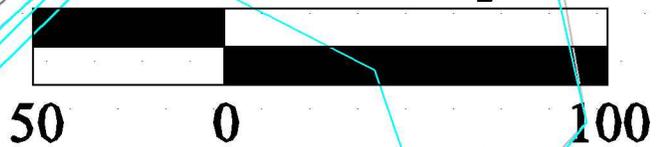
Approximate limits of disposal area for excavated materials. Material shall be placed no steeper than a 3:1, from elevation 80.0 up to 100.0, and shall slope away from the dam at a minimum 2% grade.

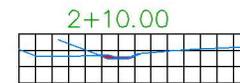
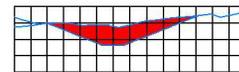
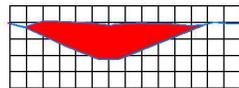
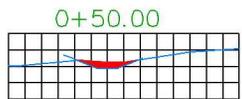
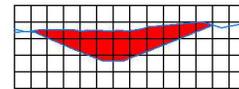
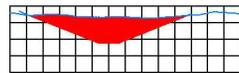
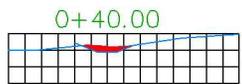
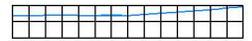
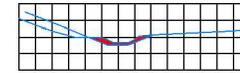
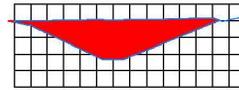
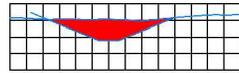
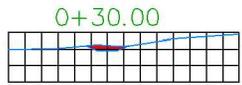
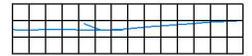
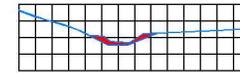
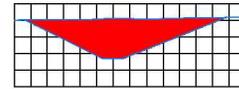
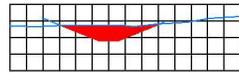
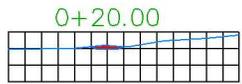
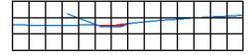
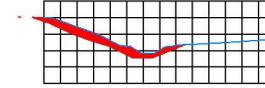
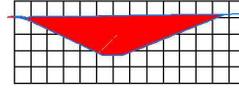
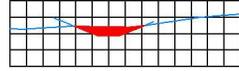
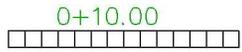
6" minus cobble, placed 1 ft thick & 12ft wide across bottom

Class 1 riprap, placed 1.5 ft thick across bottom of channel and 2 vertical ft up side slope as shown

Missile Pond

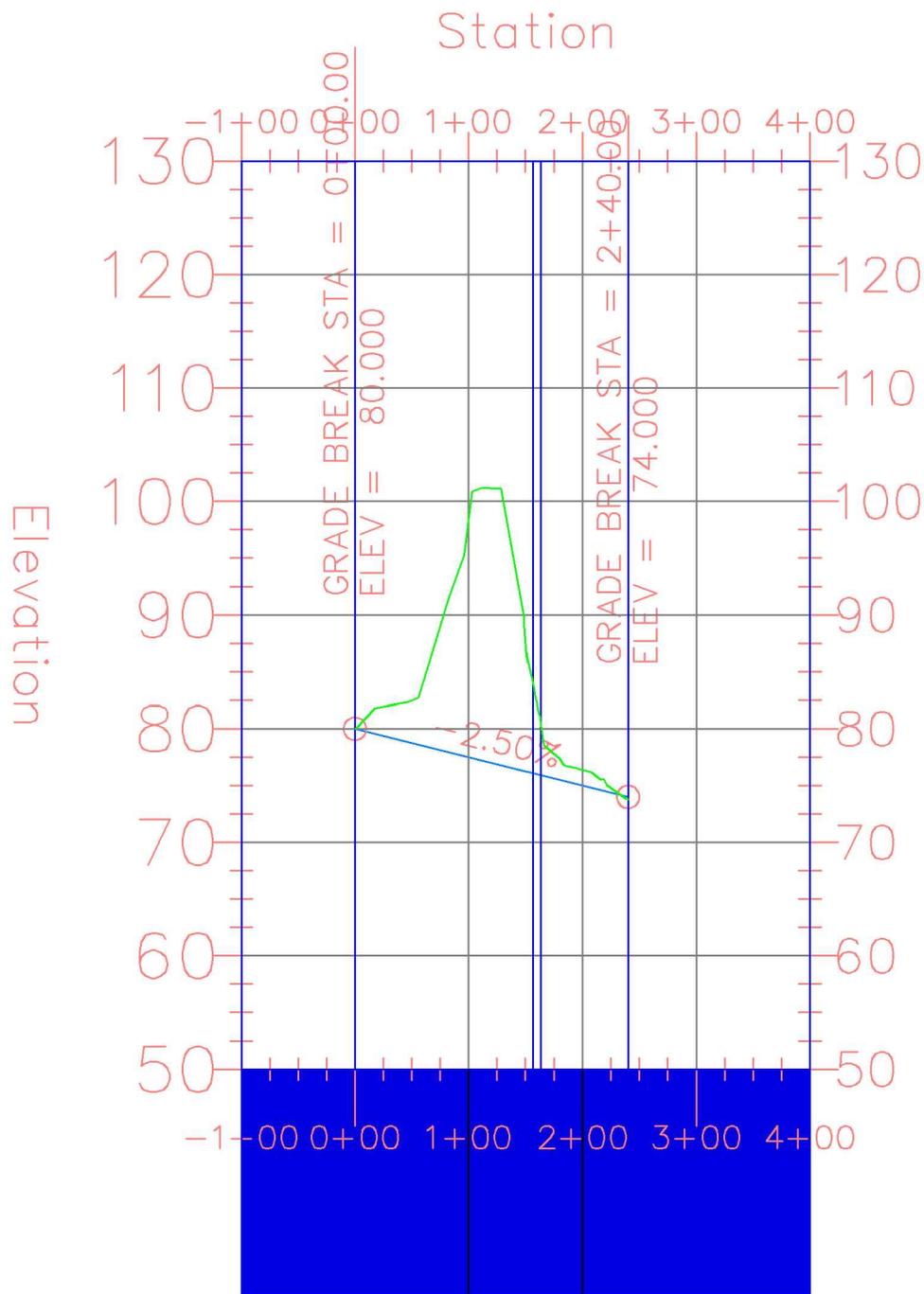
near Judith Gap





Missile Pond
near Judith Gap

Alignment – (1)Spillway Notch PROFILE



Missile Pond
near Judith Gap