

## **Annex N**

### **Cultural Resources Protection Plan**

Table N1	Classification of Cultural Resource Sites
Figure N1	High Range Protection
Figure N2	Medium Range Protection
Figure N3	Low Range Protection

# Annex N: Cultural Resources Protection Plan

## N.1 General

Federal agencies have the responsibility to protect and preserve cultural properties. During a drawdown scenario, the Corps would comply with applicable cultural resources laws, such as the National Historic Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archeological Resources Protection Act (ARPA). The proposed drawdown of the lower Snake River reservoirs would require a comprehensive effort to identify cultural resources in the newly exposed reservoir lands, evaluate sites for their eligibility for nomination to National Register of Historic Places (NRHP), monitor ongoing effects to sites and coordinate with consulting parties on needed mitigative and/or protective measures. This would be conducted under a Cultural Resources Management Plan direction designed to address the special issues related to reservoir drawdowns. Because of the potential future knowledge that archaeological sites might be able to provide and the ongoing values they hold, the preference is to protect them in place if feasible. All site protection work undertaken as a result of reservoir drawdown, will be done in compliance with applicable cultural resources laws and regulations. This will include coordination and consultation with the appropriate State Historic Preservation Office and other interested parties such as Tribes and local governments. The Advisory Council on Historic Preservation would also be involved, as appropriate. [See the Cultural Resources Appendix for additional resource management discussions.]

Known cultural resources in the Columbia Basin include archaeological sites as well as traditional cultural properties. Historical settlements by Euro-Americans, Asians, and other non-native peoples are also present. The vast majority of recorded cultural properties are prehistoric sites such as open sites, lithic scatters, rock shelters, pithouses and other depression features, burials, fishing stations, and middens. Prehistoric sites can be classified into five general types—campsites, rock shelters, cemeteries, village sites, and rock art.

Returning the river to near natural levels would completely or partially expose sites that are currently inundated. A total of 360 cultural resources sites are recorded within the four lower Snake River reservoirs. Of this number, 263 are partially or totally inundated and would be directly impacted by drawdown alternatives.

Potential effects on sites exposed by drawdown include vandalism, theft, visual and aesthetic impacts, wind and sheet erosion, animal wallows, animal trampling and burrowing, wet and dry cycles, lateral displacement, wave erosion, slumping, scouring, terracing, and chemical change. Sites would be exposed to these potential impacts year round.

The following discussion is directed towards archaeological sites located on the lower Snake River which at present are either completely or partially inundated. Most of the information on these sites was generated over 25 years ago prior to construction of the dams and reservoirs. It must be understood that this information is both limited in its scope as well as dated. Further, it should also be recognized that conditions may be far different today than what they were at the time site information was generated. As a result, site protection estimates based on this data may not reflect actual needs.

### **N.1.1 Approach**

Since disclosure of cultural resources site locations is not allowed, this discussion of sites and treatments must be done on a generic basis. For this evaluation, the sites were categorized in three ways. First, the known sites were grouped by reservoir, such as Ice Harbor Reservoir, Lower Monumental Reservoir, and so forth. Next, sites in each reservoir were further categorized by type, such as campsites, villages, rock shelters, and cemeteries. Finally, these subgroups were categorized by the extent of protection they required (i.e., high, medium, low, or no protection). A generic treatment method was formulated for each protection measure. Archaeological site protection measures include data recovery and monitoring. However, for purposes of this discussion, these specific options were considered outside the scope of this study and, therefore, not evaluated.

### **N.1.2 Definition of Sites**

The four types of sites considered for protection measures in this study are campsites, village sites, rock shelters, and cemeteries. Rock art sites would not be protected by measures in this plan and therefore are not included. (**NOTE:** The estimated site areas provided below are based on taking the average of the sum of the total area for each site type for which information was available. However, if there is a drawdown, the actual number and size of sites could change substantially after cultural resources surveys are completed.)

Campsites are areas where people stayed temporarily, without constructing long-term shelter. These sites were usually task oriented and were temporary bases from which to carry out some subsistence task. Examples are hunting camps, gathering camps (camas, berries, couse, etc.), and fishing camps. They are assigned an estimated average area of 100 square meters (m<sup>2</sup>) (1,076 square feet [sq ft]).

Villages are long-term habitation sites. They could be permanent or seasonal (often winter) habitation and contained substantial shelters. They were gathering areas for people who may have traveled in smaller groups during part of the year. This provided an average total area for village sites of 300 m<sup>2</sup> (3,229 sq ft).

Rock shelters are natural shelters of various sizes that have been used for food storage, temporary camps, and long-term habitation. Rock shelters were assigned an estimated average area of 20 m<sup>2</sup> (215 sq ft).

Cemeteries are sites where human remains have been intentionally interred or otherwise disposed of. They characteristically hold special cultural significance. Cemeteries are assigned an estimated average area of 100 m<sup>2</sup> (1,076 sq ft).

The percentage of each site type was determined by a count of recorded sites in the four lower Snake River projects. Of the 375 sites potentially affected by the drawdown, the percentages of recorded site types and treatment areas are shown in Table N1. The total site area to be protected is 35,300 m<sup>2</sup> (380,000 sq ft).

**Table N1.** Classification of Cultural Resource Sites

Site	Percent by Type	Total Sites	Total Area of Sites
Campsites	50	132	at 100 m <sup>2</sup> each = 13,200 m <sup>2</sup>
Village Sites	25	65	at 300 m <sup>2</sup> each = 19,500 m <sup>2</sup>
Rockshelters/Caves	9	25	at 20 m <sup>2</sup> each = 500 m <sup>2</sup>
Cemeteries	8	21	at 100 m <sup>2</sup> each = 2,100 m <sup>2</sup>
Rock Art	8 (not averaged)	20	
<b>Totals</b>	<b>100</b>	<b>263</b>	<b>35,300 m<sup>2</sup></b>

### N.1.3 Distribution of Sites by Reservoir

There are approximately 375 known archaeological sites located within the four lower Snake run-of-river reservoirs (Lower Granite—136; Little Goose—76; Lower Monumental—103; and Ice Harbor—57). This number reflects the geographic information system database of the Walla Walla District and changes periodically when sites are discovered and recorded. Cultural resources will continue to be discovered well into the future as much of the Corps land in the lower Snake River has not been systematically surveyed.

### N.1.4 Protection Level Options

The proposed protection options are divided into three ranges that relate to the extent of physical protection. The three ranges generally correlate with expense of implementation. It is difficult to determine the level of protection that would be required by individual cultural sites exposed by a lower Snake River drawdown without an on-the-ground evaluation of the sites. Another problem is that, prior to inundation, no meaningful sample of the inundated sites was evaluated as to eligibility for the National Register of Historic Places. (The National Register is a listing of significant cultural properties from throughout the country.) However, if we assume an eligibility rate for the inundated sites similar to exposed/evaluated sites, workable estimates can be produced. For the purposes of this plan, the study team assumed the following distribution of protection levels:

- 20 percent of total area to be protected would require a high-range protection
- 30 percent would require a medium-range protection
- 30 percent would require a low-range protection
- 20 percent would require no physical protection measures because of sediment covering, natural revegetation, inaccessibility, etc.

It should be noted that even with the above distribution of protection levels, site-specific evaluation will have to be completed prior to any site protection work being done as discussed below. Evaluation work (e.g., surveying, mapping, testing) will determine National Register eligibility, site condition, and level of needed/required site protection.

## High-Range Protection

This level of protection is intended to protect existing cultural properties against all probable impacts for an indefinite period. This is to be considered a permanent protective measure. Figure N1 illustrates the extent of high-range protection measures.

Example: A site is exposed by drawdown with no vegetation cover and cultural material is exposed on the surface. The site is adjacent to the new water level and will likely be affected by wave action, scouring, and slumping. The upland portion of the site is exposed to wind and sheet erosion, vandalism, and animal activity.

Possible measures available for high-range protection are as follows:

- Pre-place rock material at or near the site. Possible methods include barge or truck delivery.
- Mobilize loader, materials, personnel, and equipment to site.
- Prepare the site to provide a stable platform for protective structures. Slope cut-banks as necessary to facilitate placement of bank protection material.
- Install a geomembrane filter layer over the entire site.
- Place a shotrock layer over the filter layer.
- Place a riprap or gabion bank protection and groins to protect the slope and prevent back cutting of the armored slope.
- Cover the upland portion of the site with 51 millimeters (2 inches) of gravel to protect from equipment movement and provide a horizon to indicate the original surface, for sites with truck access.
- Place fill over the upland portion to establish vegetation.
- Revegetate the area to protect against wind and rain erosion.

## Medium-Range Protection

There are many measures that can be considered mid-level protection. The archaeological nature of the site, its geography, its geology, and most probable impacts will determine the most appropriate protective measures to use. However, while representing a mid-point in protective effectiveness and cost, mid-level protection measures may not be representative of the actual cost effectiveness of the measure in protecting the cultural property. Figure N2 illustrates the extent of medium-range protection measures.

Example A: A site is exposed by drawdown that is located on nearly level ground. The site has exposed cultural material on the surface and is likely to be affected by wind and rain erosion and vandalism, as well as inadvertent impacts from recreation activities.

Example B: A small site is exposed by drawdown. The site has high significance and cultural sensitivity. The site has received some siltation so there are no cultural properties exposed on the surface. The site is very likely to be affected by vandalism as well as inadvertent damage.

Possible measures to be taken for mid-range protection are as follows:

- Pre-place rock material at or near the site. Possible methods include barge or truck delivery.

- Mobilize loader, materials, personnel, and equipment to site.
- Prepare the site to provide a stable platform for protective structures. Slope cut-banks as necessary to facilitate placement of bank protection material.
- Install a geomembrane filter layer over the entire site.
- Place 305 millimeters (12 inches) of fill over the upland portion to establish vegetation.
- Revegetate the area to protect against wind and rain erosion.

### **Low-Range Protection Measure**

This level of protection is intended to meet the need of temporarily protecting cultural properties from immediate impacts until appropriate permanent protective measures are determined. Figure N3 illustrates the extent of low-range protection measures.

Example: A site is exposed on a level terrace that has received several feet of silt deposit during inundation.

The measures to be taken for low-range protection are as follows:

- Mobilize materials, personnel, and equipment to site.
- Manually grade the site to provide a stable platform for protective structures.
- Establish vegetation over the site.

## **N.1.5 Implementation Issues**

### **Site Survey**

At this time, it is not possible to know the condition of inundated archaeological sites. Furthermore, the process and aftermath of drawdown may reveal the existence of many more sites. While protection activity proceeds for the known sites, it will be necessary to perform a comprehensive survey of each reservoir to identify any additional sites that need protection.

### **Site Access**

The study team assumed that access to the majority of the sites will be possible by land vehicle. A network of county and state highways cross the region. Numerous secondary and unimproved roads provide access to more remote areas. In certain circumstances, some minor overland travel to a site may be possible where no roadway exists. These access points would be minimal and structured so that there are no long-term traces of such access. In some cases the railroad may be a convenient method to attain access to sites. This would require coordination with the appropriate railroad. After the reservoirs are lowered, numerous roadbeds and railroad beds would be available for access to the sites. However, these access ways may not be functional for some months after drawdown.

The study team also assumed for this plan that a few sites will not be accessible by overland vehicle or via the railroad. These sites would be accessed by boat and by helicopter. The protection measures would be modified in these cases to minimize the importation of materials and the use of equipment. It is

assumed that equipment would be flown in by helicopter, and materials and personnel would be transported to the site by boat.

### **Rock Sources**

Several rock types are used in constructing these protection measures. Riprap would be used for bank stabilization and groin construction. Smaller shotrock, the waste from riprap production, would be used for the protective layers overlying the geomembrane filters. Highway roadbase material would be used for the interface layers. A very large production and transportation program is included in the work associated with stabilizing the railroad embankments, stabilizing the drainage structures, and constructing the channelization levees. Rock for these operations would be produced at one or more quarry locations with the rock transported by barge, prior to drawdown of the reservoirs, to the specific construction areas along the 225-kilometer (140-mile) river reach. The riprap and shotrock required for cultural resources site protection would be supplied in the same manner during that time. This means that barges would transport and deposit a small quantity of material at the designated location so that equipment can retrieve the material and place it as needed. For sites accessible by road or railroad, centralized material stockpiles would be made. For the remote sites, site-specific rock deposits would be made. Highway roadbase materials would only be used at sites where vehicle access is possible.

### **Other Materials and Equipment**

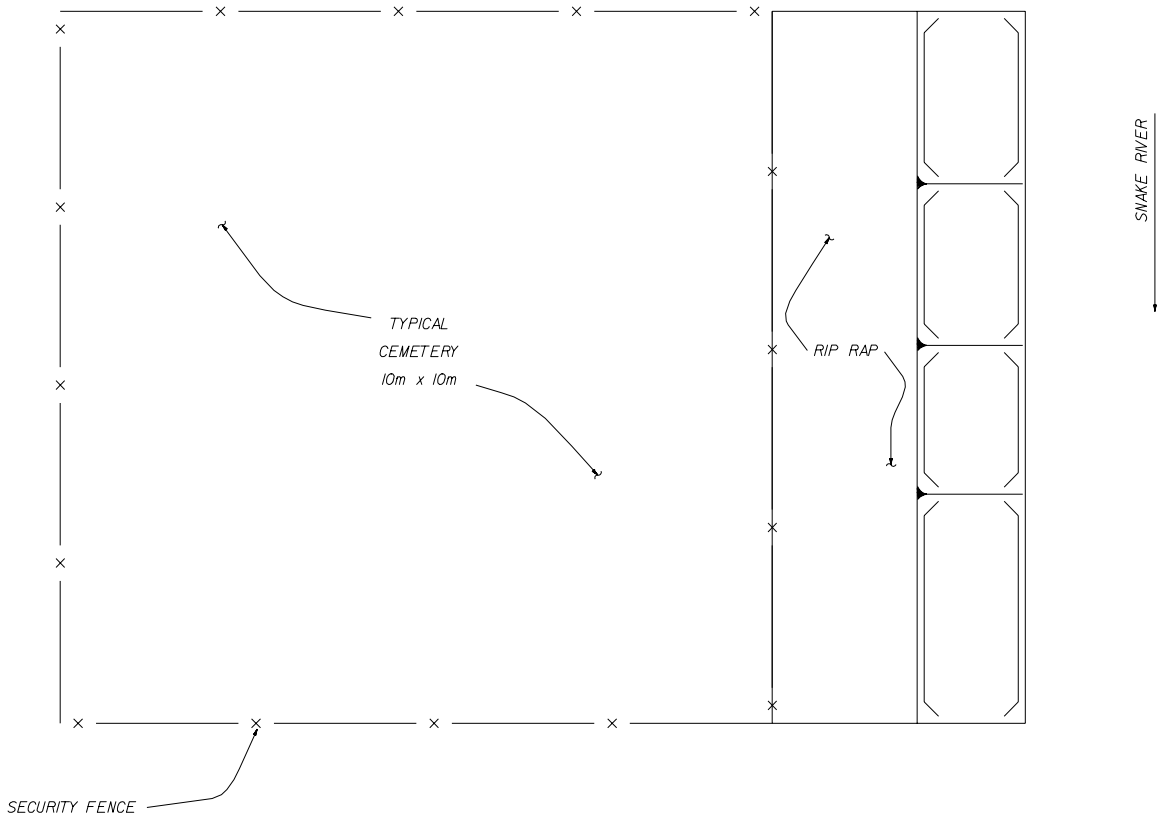
The individual site requirements for other construction materials are relatively minor and do not pose a major logistical effort. The work at each site would require only gross handling of materials. Site grading, excavation, and rock placement would be possible with a small front-end loader similar to a CAT 950. While this piece of equipment would not be most convenient for all operations, this is the best choice if all site work were limited to only one piece of equipment. For remote sites requiring helicopter transportation, the preferred piece of equipment is a small bobcat. This equipment allows lower helicopter rates in exchange for extended production periods on site.

### **Labor Source**

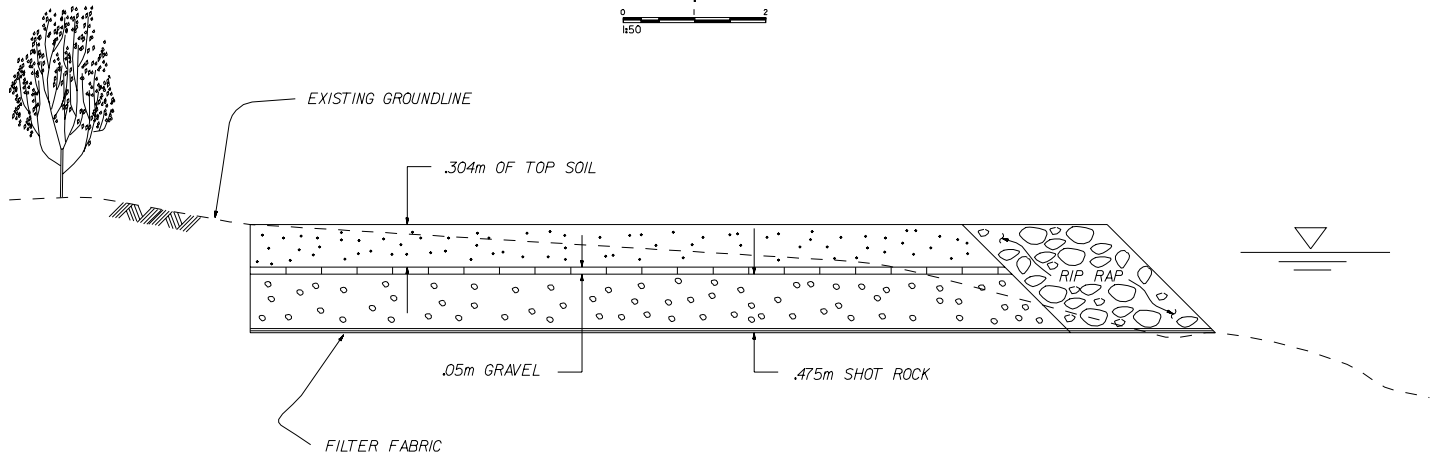
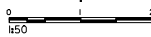
Cost for performing the work was based on utilization of standard contracting processes and regional contractors, regional materials, and prevailing wage and standard equipment rates.

### **Schedule**

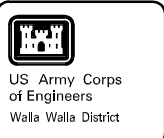
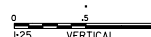
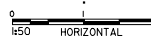
Following drawdown and after cultural resources site assessments, work can commence on installing protection measures at identified sites. Although some sites will need immediate work, the time frame for this work could span a period of approximately 10 years. The first year, just prior to the actual drawdown of the reservoirs, would be devoted to developing contract documents to perform the work. Concurrent work would be the pre-placement of rock materials at the various sites under other contracts.



PLAN - CEMETERY



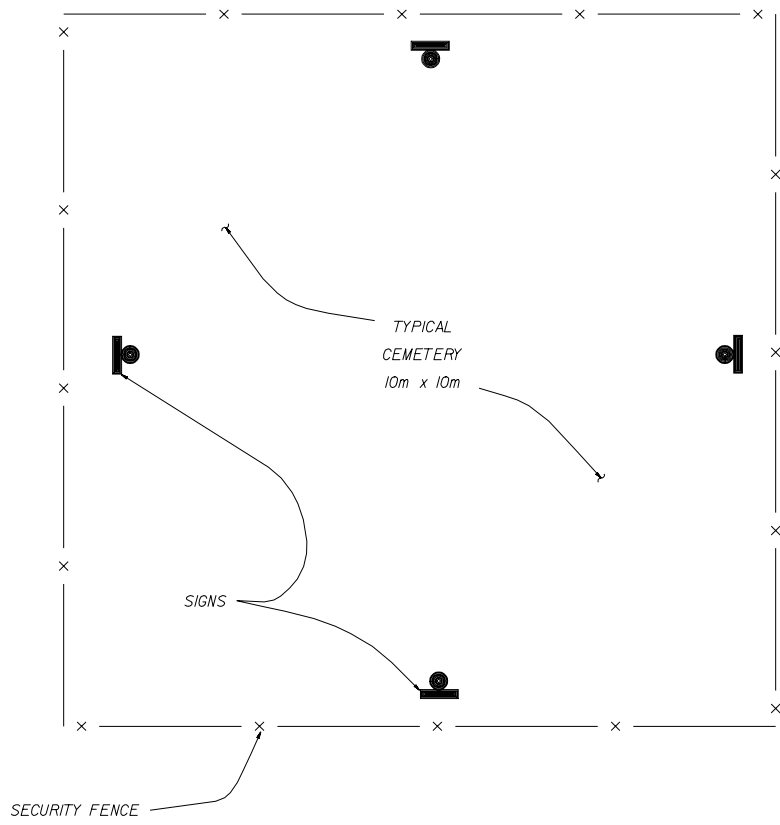
SECTION - CEMETERY



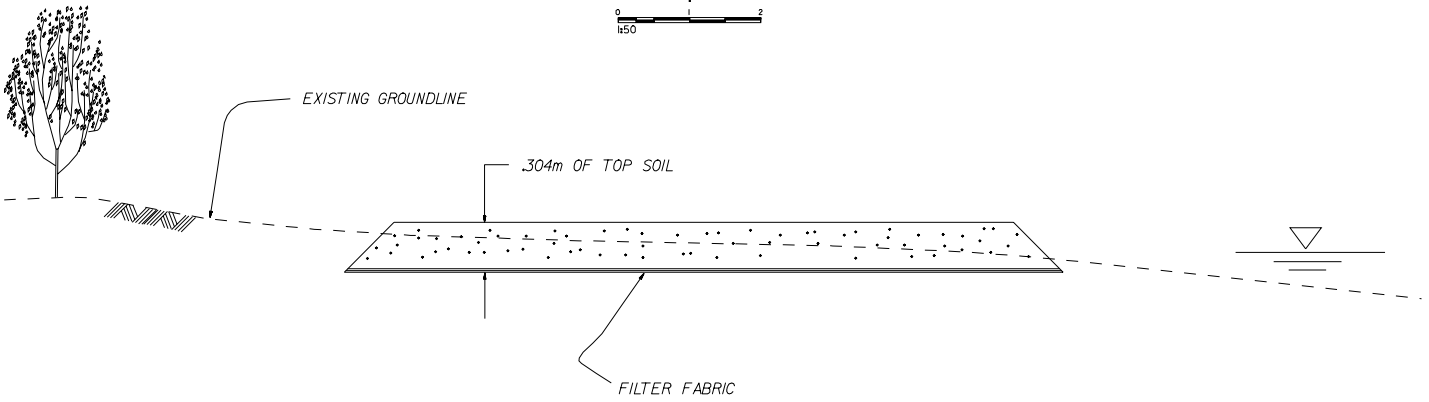
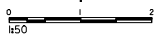
LOWER SNAKE RIVER JUVENILE SALMON MIGRATION FEASIBILITY STUDY  
 CULTURAL RESOURCES PROTECTION PLAN  
 HIGH RANGE PROTECTION

Plate:  
**N1**

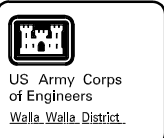
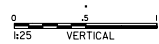




PLAN - CEMETERY

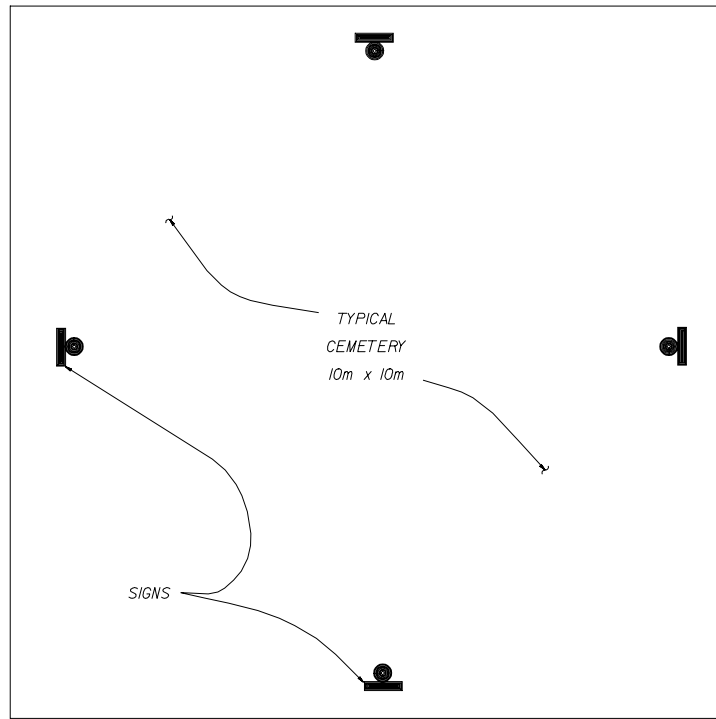


SECTION - CEMETERY



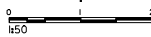
LOWER SNAKE RIVER JUVENILE SALMON MIGRATION FEASIBILITY STUDY  
CULTURAL RESOURCES PROTECTION PLAN  
MIDDLE RANGE PROTECTION

Plate:  
N2



SWAKE RIVER

PLAN - CEMETERY

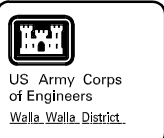
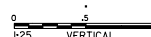
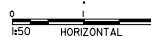


EXISTING GROUNDLINE



LEVEL AND GRADE

SECTION - CEMETERY



LOWER SNAKE RIVER JUVENILE SALMON MIGRATION FEASIBILITY STUDY  
 CULTURAL RESOURCES PROTECTION PLAN  
 LOW RANGE PROTECTION

Plate:  
 N3