

**Appendix B-8**

**ROUND 8 LAKE TAHOE RESTORATION PROJECTS  
ESTIMATED NECESSARY EXPENSES & KEY MILESTONE DATES**

Project Name: DCSID Reservoir Lining Project Agency: USACE (Phil Brozek)  
 Prepared by: Mary Ellen Halpin (JWA) Phone: 775-588-7178 EIP#: 16  
 SNPLMA Project#: \_\_\_\_\_

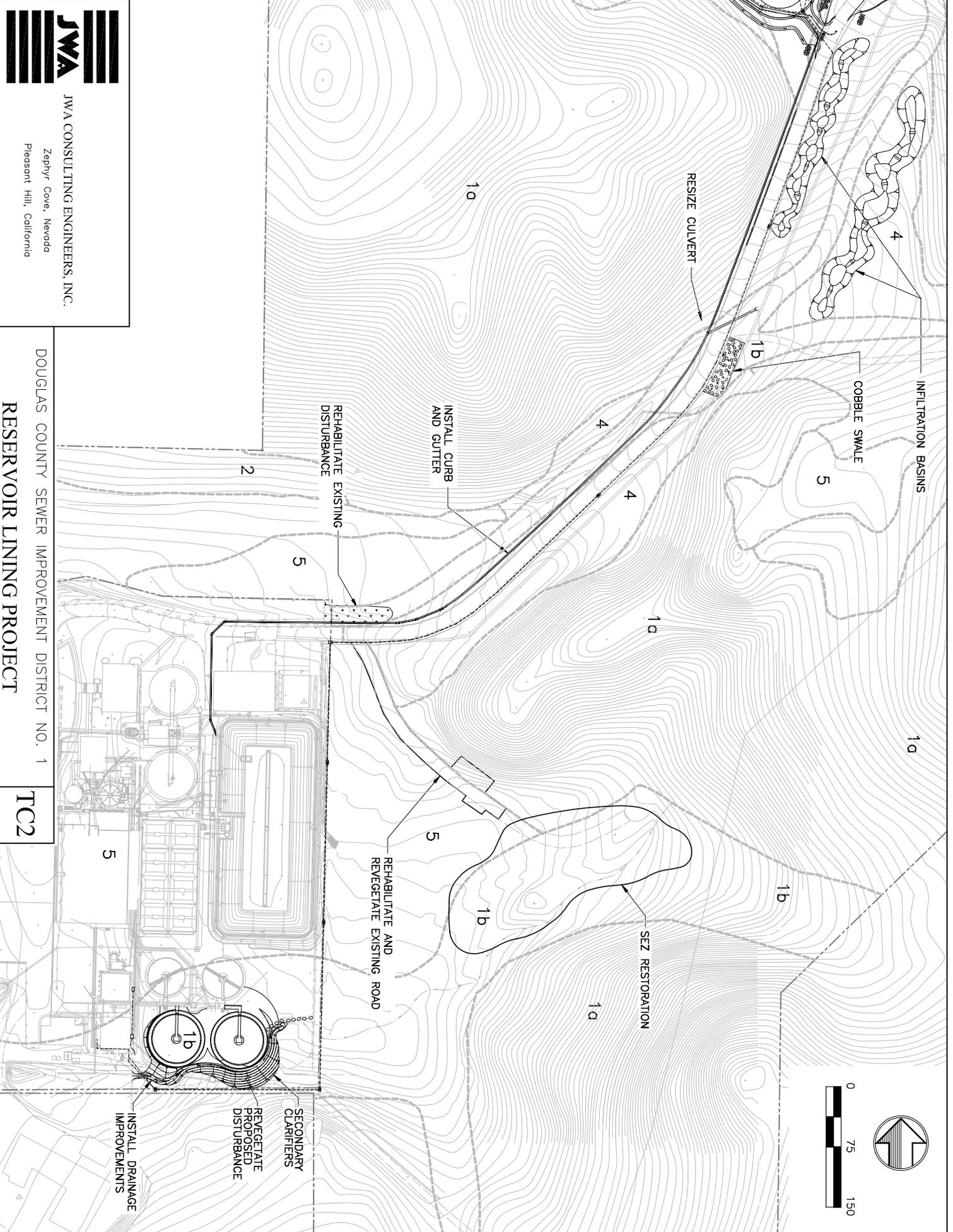
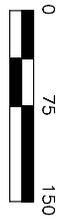
**Identify estimated costs of eligible reimbursement expenses:**

<b>1. Planning, Environmental Assessment and Research Costs</b> (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.)	\$ _____	_____ %
<b>2. FWS Consultation – Endangered Species Act</b>	_____	_____ %
<b>3. Direct Labor (Payroll) to Perform the Project</b>	\$ _____	_____ %
<b>4. Project Equipment</b> (tools, software, specialized equipment, etc.)	\$ _____	_____ %
<b>5. Travel</b> (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)	\$ _____	_____ %
<b>6. Official Vehicle Use</b> (pro rata cost for use of Official Vehicles when required to carry out project)	\$ _____	_____ %
<b>7. Cost of Contracts, Grants and/or Agreements to Perform the Project</b>	\$ <u>9.89 million</u>	<u>100</u> %
<b>8. Other Direct and Contracted Labor:</b> Agency payroll for the Contracting Officer to do project procurement, COR, Project Inspector, Sec. 106 Consultation if required, NEPA Lead, Project Manager, Project Supervisor, and subject experts to review contracted surveys, designs/drawings, plans, reports, etc.; Also covered is the cost to contract for a Project Manager and/or Project Supervisor if contracted separately from other project contracts)	\$ _____	_____ %
<b>9. Other Necessary Expenses</b> (See Appendix B-9)	_____	_____ %
<b>TOTAL:</b>	\$ <u>9.89 million</u>	<u>100</u> %

**Estimated Milestone Dates:**

Milestones/Deliverables	Date:
Phase III Construction (\$4.89 million)*	10/08
Phase IV Construction (\$5.00 million)*	10/10
Final Completion Date:	12/10

**COMMENTS:** \*Costs do not include construction administration, which will be performed by the USACE. Costs are based on the Engineer’s Opinion of Probable Cost for Phase III, and the Douglas County Sewer Improvement District No. 1 Development Plan. Development Plan costs are updated to include a yearly inflationary cost of 3.5% and the recently added costs associated with sludge removal.




**JWA CONSULTING ENGINEERS, INC.**  
 Zephyr Cove, Nevada  
 Pleasant Hill, California

DOUGLAS COUNTY SEWER IMPROVEMENT DISTRICT NO. 1  
**RESERVOIR LINING PROJECT**

**TC2**

0304-04-AMSS3.DWG PLOT = NOV 17, 2005 SAVED NOV 17, 2005  
 VW : TC2

## APPENDIX I

### ROUND 8 LAKE TAHOE CAPITAL PROJECT PROPOSAL

**Project Name:** DCSID Reservoir Lining Project

**Capital Focus Area** (select from Federal Vision Focus Areas): Watershed and Habitat Improvement (Water Quality Protection)

**EIP #:**16

**Lead Agency:** US Army Corps of Engineers

**Contact:** Phil Brozek

**Phone Number:** 916-557-7630

**Email Address:** [phillip.f.brozek@usace.army.mil](mailto:phillip.f.brozek@usace.army.mil)

**Threshold:** Water Quality

**Threshold Standard:** WQ1, WQ2, WQ3, WQ6

**Total Project Cost:** \$9.89 million

**Is this a multi-year Project?** Yes

(If “Yes”, describe in the Detailed Project Description below number of Years or phases and which year the Requested funding will cover)

**Funding Request in this Round:** \$4.89 million

**Project Summary (maximum 200 words):** The Douglas County Sewer Improvement District No. 1 (DCSID) owns and operates a wastewater treatment facility that serves the Douglas County portion of the Lake Tahoe Basin. The Treatment Facility is located approximately 1.5 miles from the Eastern shore of Lake Tahoe on a DCSID owned, 121 acre parcel. The DCSID will be undertaking a Best Management Practice (BMP) Retrofit project known as the Reservoir Lining Project. The project will construct a number of BMPs within the project area, including the lining of an existing effluent holding pond known as the Plant Reservoir. The project also includes Stream Environment Zone (SEZ) restoration and improvements, drainage improvements, sediment source protection, and construction of wastewater treatment components necessary to implement the lining construction.

**Detailed Project Description:** Unlined effluent holding ponds within the Lake Tahoe Basin, like the Plant Reservoir, pose a potential threat to the waters of the region. Effluent contains nutrient and sediment loads at levels that are unacceptable for groundwater discharge. Installing an impervious liner eliminates the potential infiltration of effluent, and its nutrient and sediment loads, into the groundwater. Additionally, site planning at the time of construction of the DCSID Treatment facilities in the 1960's did not employ BMPs to minimize environmental impacts created by its development. The Reservoir Lining Project proposes to address these issues, and thereby reduce the risk of

environmental impacts associated with DCSID facilities.

The Reservoir Lining Project is multi-phased, with earlier phases constructing additional facilities necessary to take the Reservoir out of service during lining and BMPs associated with the parcel outside of the reservoir area, and the final phase being the installation of a High Density Polyethylene liner. Phase II, which is currently under construction and scheduled for completion in May 2007, will construct two secondary clarifiers needed to produce an effluent that exceeds Nevada Division of Environmental Protection (NDEP) discharge standards. There will also be a SEZ restoration of 30,142 square feet in a highly disturbed swale located on the property. During Phase III, two effluent tanks will be built to function as a wet well during construction at the Reservoir. Phase III also includes modifications to the existing pumping system, and drainage improvements associated with the Reservoir access road.

Phase 4 will line the Reservoir, as well as install other BMPs. New and existing cut slopes in the area of the Reservoir and spillway will be stabilized. Infiltration basins will be built to infiltrate waters captured from the impervious surfaces of the project area. A guzzling tank for wildlife will capture water from the Reservoir's underdrain system. SEZs on the property will be enhanced by means of channel stabilization, revegetation, replacement and proper sizing of existing improvements, and the potential increase of groundwater flows in the SEZ from nearby infiltration facilities. Other disturbed areas on the parcel will undergo treatment, and further improvements will be added to the Reservoir access road.

**Describe the goals and objectives of the project:** The Reservoir Lining Project will install BMPs throughout the DCSID parcel, with a primary focus on reducing threats to groundwater from the Plant Reservoir. Proposed improvements from the project are designed to help achieve environmental threshold carrying capacities established by the TRPA and NDEP.

**Describe the anticipated project accomplishments:** The Reservoir Lining Project proposes to accomplish the following:

- Eliminate the potential infiltration of effluent to groundwater by lining the Plant Reservoir;
- Maintain treatment levels and plant operability during the construction of the lining;
- Remove threat to surface waters by installing stabilized drainage improvements on roadways;
- Improve quality of SEZ through restoration and rehabilitation efforts;
- Reduce erosion threats by revegetation efforts and source stabilization; and,

Retain the efficiency and effectiveness of the existing wastewater treatment.

**Describe the “readiness” of this project to move forward (urgency, capacity, capability, Environmental documentation etc.):** Phase II will be completed in May 2007. Phase III is currently at 90% design. Phases III and IV have received TRPA Governing Board approval, and the DCSID is currently completing TRPA-required Phase III permit conditions and on permitting for other agencies. Phase IV is currently at 90% design, and design and permitting will be addressed at a later date. The USACE is currently writing an Environmental Assessment for Phases III and IV.

**Describe partnerships for this project.\*\* (Include documentation):** The DCSID has signed a Project Cooperative Agreement (PCA) with the USACE for 75% of engineering and administrative costs associated with the Phase I of the project. The DCSID also has a PCA for Phase II of the project, although it has not yet been determined what the USACE contribution will be. The DCSID is not involved with any other partnership arrangement associated with the project.:

**Describe the project monitoring that will be implemented as part of this project including:**

**1) The questions the monitoring program is designed to answer**

Groundwater in the vicinity of the reservoir has undergone long-term monitoring to determine the effects of effluent storage in the Reservoir. Monitoring will continue at downstream wells from the Reservoir to determine if there are relevant changes to groundwater quality from the Reservoir Lining Project, as is required by the NDEP. There will be monitoring of the SEZ Restoration area, which is found in the Final Stream Environment Zone Restoration Plan. Monitoring of the SEZ will take place for a period of three to five years. There will be a maintenance plan created for other BMPs on the project.

**2) The monitoring approach**

Monitoring of the groundwater quality in the vicinity of the Reservoir will be in accordance with the conditions of the DCSID's NDEP permit and recommendations from an independent hydrogeological consultant. There is an established monitoring protocol for the SEZ Restoration created by a Basin-area revegetation specialist.

**3) Whether this project monitoring fits into a larger monitoring or research program?**

The NDEP requires that any wastewater reservoir be monitored for any potential leakage. The DCSID monitoring protocol for the Plant Reservoir will meet NDEP requirements.

**Describe how the project results will be communicated and made-available to the public:** The public has had ample opportunity for involvement in the project, including the permitting process with the TRPA, including Governing Board review and approval, and the environmental documentation process with the USACE. Additionally, as a public agency, all DCSID Board of Directors meetings are open to the public. As such, project results will be relayed to the public during Board meetings. Results specific to the NDEP required monitoring of the Reservoir will be part of the record at the DCSID, and can be obtained by any member of the general public.

**Include an 8 ½ X 11 map depicting the project.**

## **ROUND 8 SNPLMA CAPITAL PROJECT SUPPLEMENTAL INFORMATION**

Please ensure you integrate this information into your Round 8 project proposal.

**All projects must have the following minimum criteria to be considered (June 7, 2006 SNPLMA Implementation Agreement, p. 32):**

1. Qualify as an Environmental Improvement Program (EIP) project and be the responsibility of the federal government; and
2. Have a willing and ready federal sponsor;

**Projects must fit (be consistent with) into one of the focus areas and associated programs from the June 2006 Federal Vision (pp. 8-9):**

1. Watershed and Habitat Improvement
  - Threatened, Endangered and Sensitive Species
  - Watershed and Stream Environment Zone Restoration
  - Habitat Improvement
  - Water Quality Protection
  - Road and Trail Water Quality Retrofit
  - Facilities Water Quality Retrofit
2. Air Quality and Transportation\*
3. Forest Health
  - Vegetation Management
  - Fuels Management
4. Recreation and Scenic\*
  - Interpretation Services
  - Recreation

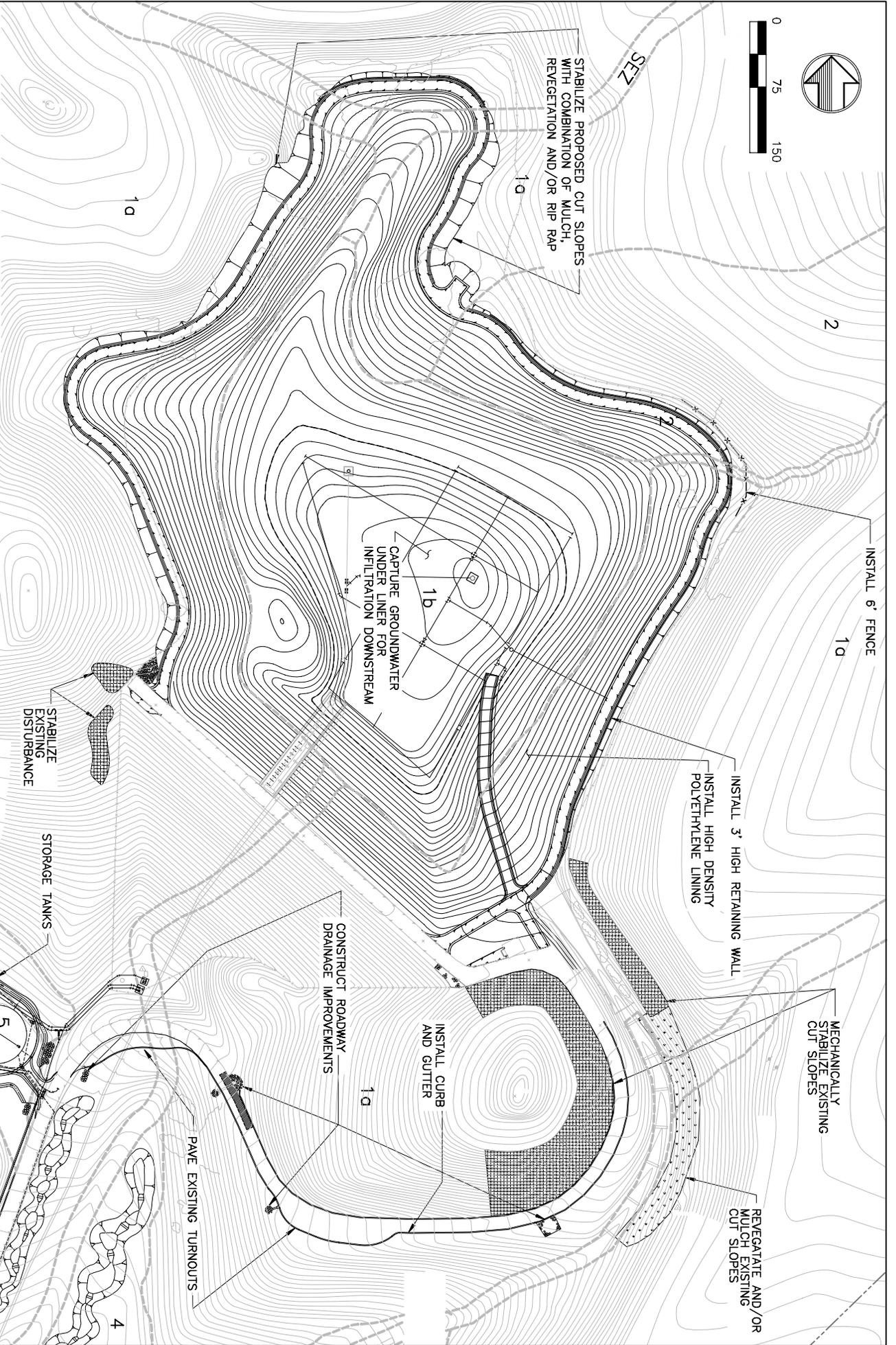
\* Projects from these two focus areas must demonstrate a primary resource benefit, such as water or air quality and habitat improvement.

### **Other Considerations:**

Projects that demonstrate a cumulative benefit because they are adjacent to, or enhanced by, other EIP projects.

Projects that include a cost-share component from State, local or private sources.

Projects that are continuing phases of previously approved SNPLMA projects.



INSTALL 6' FENCE  
10

MECHANICALLY  
STABILIZE EXISTING  
CUT SLOPES

REVEGETATE AND/OR  
MULCH EXISTING  
CUT SLOPES

INSTALL 3' HIGH RETAINING WALL  
INSTALL HIGH DENSITY  
POLYETHYLENE LINING

STABILIZE PROPOSED CUT SLOPES  
WITH COMBINATION OF MULCH,  
REVEGETATION AND/OR RIP RAP

CAPTURE GROUNDWATER  
UNDER LINER FOR  
INFILTRATION DOWNSTREAM

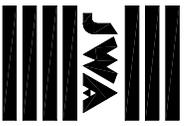
INSTALL CURB  
AND GUTTER

CONSTRUCT ROADWAY  
DRAINAGE IMPROVEMENTS

PAVE EXISTING TURNOUTS

STABILIZE  
EXISTING  
DISTURBANCE

STORAGE TANKS



JWA CONSULTING ENGINEERS, INC.

Zephyr Cove, Nevada  
Pleasant Hill, California

DOUGLAS COUNTY SEWER IMPROVEMENT DISTRICT NO. 1  
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TC3

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