35 24 00 – DREDGING AND DISPOSAL OF DEBRIS

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REVISION INDEX

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PART 1 - GENERAL

1.1 SUMMARY

A. This specification describes the requirements for dredging, transporting and disposal of dredged materials.as specified in this Section and set out in the Drawings.

B. At the time of preparation of this specification, the FERC and other agencies requirements are being further negotiated and are not available to be included in this specification. At a later date, the requirements of this specification may be updated accordingly.

1.2 REFERENCE DOCUMENTATION AND STANDARDS

A. U.S. Army Corps of Engineers (USACE):

1. Engineering Manual, EM 1110-2-5025, Dredging and Dredged Material Management.
2. Engineering Manual, EM 1110-2-1003, Hydrographic Surveys.

B. California Stormwater Quality Association:

1. California Stormwater BMP Handbook – Construction.

C. U.S. Bureau of Reclamation (USBR):

1. Pacific Northwest Underwater Inspection Team, Dive Report dated April 2010.

D. Best Practices in Hydrographic Surveying, Living Quick Users Guide for Hydrographic Survey Equipment, Version 1.0, September 2019.

1.3 DEFINITIONS

A. **Open-Water Disposal** – Disposal of material from a barge within a reservoir area that is defined by a coordinate system and shown on the Drawings. Also defined as an unconfined disposal area in open water within the reservoir.

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1.4 SUBMITTALS

A. Items listed in this section are to be submitted to the Engineer for information prior to the start of any Works. Allow at least two weeks after the Engineer's review and approval for DSOD review and approval.

B. Undertake a pre-dredging hydrographic survey of existing conditions including the existing underwater contours and features in the area upstream from the dam, as shown on the Drawings.

1. The survey must be referenced to the horizontal and vertical datum references as shown on the Drawings, and hydrographic positioning requirements shall be in accordance with the USACE EM-1110-2-1003, Hydrographic Surveys.
2. Water depths and contour lines shall be determined. The water depth measurements must be as accurate as possible considering the equipment employed and the site availability of a real-time network connection to GPS. Refer to the USBR Manual and Standards Report: “Best Practices in Hydrographic Surveying, Living Quick Users Guide for Hydrographic Survey Equipment, Version 1.0,” dated September 2019.
3. Reservoir level at the time of the survey shall be determined from onsite water level gages, supported with at least six photographs of water level relative to the spillway crest or gate piers, taken from the reservoir.
4. The hydrographic survey report and supporting data files shall include a description of the equipment and procedures employed during the survey, contour and water depth maps, identification of locations for debris removal including depths, and initial estimation of quantities of material to be dredged.

C. Dredging Detailed Schedule, including mobilization, execution, and demobilization. The Main Contractor shall arrange access to Mallard Cove/Keaton Cove boat ramps and parking areas with the following restrictions:

1. Dredging Contractor shall be allowed to utilize one-third (1/3) of the parking area for staging of equipment and materials for the duration of the dredging activities.
2. Dredging Contractor shall be allowed to close the boat ramp(s) for up to 3 days consecutively for mobilization and demobilization.

D. Dredging Contractor’s Traffic Plan for transporting dredging and material disposal equipment to the boat ramps.

E. Dredging Contractor’s Health and Safety Plan: The plan shall include the placement of lighted buoys to indicate the location of the Open-Water Disposal area, including entrance/exit lanes. Warnings to recreational boaters shall also be placed at the boat ramps and the barge transport lanes.

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F. Dredging Execution Plan, incorporating the following:

1. Organization and contact information of the dredging, including licenses and certifications.
2. Work plan for mobilizing and erecting the floating plant and equipment, specifically including the loading, and unloading of the crane to/from the barge.
3. Open-water dredging method and equipment.
4. Names and identification numbers of vessels and principal equipment, along with their annual certification of the crane and wire capacities.
5. Bin and barge capacities.
6. Control method for determining the vertical and horizontal location of the dredge and barges during dredging and disposal operations.
7. Dredging dates and locations.
8. Dredged material transport and disposal method statement.
9. Barge displacement tables for each specific barge, to be utilized to verify tons of material removed.
10. Engineering drawings and calculations showing the stability of the proposed barge and crane configurations. The full range of lifting loads and crane reach shall be considered. The drawings shall be stamped by a licensed State of California Professional Engineer.
11. Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP): including water placement procedure to reduce turbidity and spill prevention, control, and containment response plan for all dredging and dredge material placement work and Drawings showing the proposed layout of the containment boom at both the dredging site and disposal site.

G. Post-Dredging Hydrographic Survey, including the following:

1. The survey must be referenced to the horizontal and vertical datum references as shown on the Drawings, and hydrographic positioning requirements shall be in accordance with the USACE EM-1110-2-1003, Hydrographic Surveys.
2. The water depth measurements must be accurate to +/-1.0 feet. Water depths and contour lines shall be determined. Reservoir level at the time of the survey shall be determined from onsite water level gages, supported with photographs of water level relative to the spillway crest and gate piers, taken from the reservoir.
3. The hydrographic surveys shall utilize the lengths of the approach channels established in the pre-dredge survey, based on the elevations and geometry shown on the Drawings, as updated after the pre-dredge hydrographic survey. Any identified high spots shall be removed.
4. The hydrographic survey report and supporting data files shall include a description of the equipment and procedures employed during the survey, the contour and water depth maps, etc. for the post-dredging condition.

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PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Dredging equipment shall be the responsibility of the Dredging Contractor. It is anticipated that a barge-mounted mechanical dredge will be employed.

B. Equipment used in transporting debris to the disposal site is the responsibility of the Dredging Contractor. For the purposes of this specification, it is anticipated that dredged debris will be transported to the disposal area in flat-top barges.

PART 3 - EXECUTION

3.1 GENERAL

A. Comply with Federal, State, and local safety requirements, with particular attention to Section 29 CFR Part 1926 (Part 1926-Safety and Health Regulations for Construction).

B. Dredging is planned between June 1 and October 15 of any year, yet to be defined. The dates of the hydrographic surveys will be prior to and after the dredging operations, and, thusly, are yet to be defined.

C. The Dredging Contractor will perform work within the reservoir with regulated outflows, and the reservoir level is expected to fluctuate. The elevation of the spillway crest and historic average monthly water levels are shown on the Drawings. Certain flow and reservoir elevation data are available form the USGS and other sources. It is the responsibility of the Dredging Contractor to monitor the flows and levels so as to provide safe operations.

D. Dredging and Disposal of Dredged Debris will comprise dredging of materials as indicated on the Drawings, placing the dredged materials on a transport flat-top barge and disposing the materials in the open-water disposal area as indicated on the Drawings or other project disposal site.

E. Dredging activities shall avoid striking the existing structures. Confined dredging procedures shall be employed when dredging is required directly adjacent to existing structures.

F. Dredging and disposal activities shall avoid interference with recreational boater activities on the water and at the boat ramps.

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G. The debris transport barge shall employ a non-watertight barrier system around the flat-top barge perimeter using K-rail or a similar containment system to contain the dredged material on the top of the barge.

3.2 SEDIMENT CONTROL

A. The dredging contractor will propose and be responsible for best management practices (BMP) for sediment control during dredging, transport of the dredged material and disposal of the dredged material.

B. A floating absorptive containment boom, consisting of a silt curtain deployed at the dredging site. The silt curtain shall fully surround the storage barges, active work zones, bucket's path of travel from the dredging zone to the sediment storage barge, and the dredge barge.

C. A floating containment boom shall be deployed around the transport barge when it is offloading the dredged material.

END OF SECTION 35 24 00