

Reclamation District 799

*PO Box 353 Bethel Island Rd.
Bethel Island, CA 94511*



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Board of Trustees:

Chairwoman – Jane Lorie, D.V.M.

& Trustees: Dale Wong, David Dal Porto, Diane Shipway and Joseph Spotts

January 10, 2011

DISTRICT ENGINEER REPAIR MEMO – TREE STUMP REMOVAL

Subject: Tree Stump Removal within Levee Prism and Placement of Levee Embankment Fill Material Requirements

This material and compaction specification is intended for the removal of tree stumps and the repair of localized voids caused by root-ball removal. Conditions of use are as follows:

- Contractor shall contact USA at (800) 227-2600 prior to excavation activities to verify the presence of utilities.
- All tree and tree stump removal within the levee prism are subject to these requirements.
- The area where the tree stump is removed shall be excavated the minimum required to remove deleterious material and to construct benching as required in accordance with levee standard Figure LR-3.
- Wet holes (including boils) and dry holes that appear to be caused by leaking pipes should be brought to the attention of the district engineer immediately.
- Tree stumps including root-ball shall be removed within 15 days of tree cutting.
- Chase down and remove all tree roots such that remaining roots do not exceed 1-1/2” in diameter.
- Reuse of root-ball spoils as levee embankment fill material is not allowed.
- The loose material in the interior root-ball excavation shall be compacted to the density of the adjacent undisturbed consolidated embankment material.

Stump and root-ball excavation shall be observed by district representative prior to the placement of fill material. Repaired stump excavation shall be observed by district representative prior to the placement of rock slope protection. Rock slope protection shall be placed per district standard Figure RS-1 or RS-2 as appropriate. Where tree removal occurs on the levee crown, promptly cover fill site with erosion control treatment to the satisfaction of the district representative. For any fill placement, the following is required:

Physical Address: 6325 Bethel Island Rd. Bethel Island, CA 94511

1) Compaction

- a) Backfill materials for excavation within the levee section and within 10 feet of the levee toe shall be placed in 8 inch compacted layers, moisture conditioned between 0 and 3% above optimum moisture content, and compacted to a minimum 85% relative density as measured by ASTM Method D-698 (testing by others).
- b) Fill material shall be tied into existing levee embankment (benched) with 8 inch vertical by 8 inch minimum horizontal steps.
- c) Independent compaction testing of placed fill material, using nuclear methods, shall be performed once every two vertical feet of fill placed when required by the district engineer. A minimum of 1 compaction test is required for each tree removed.
- d) Perform work at low tide or dewater site as required to remove any standing water prior to fill placement.

2) Levee Embankment Fill Material

- a) Fill material shall have at least 20% fines (material passing the No. 200 sieve), a maximum particle size of 2 inches, a maximum liquid limit of 45, a plasticity index of between 5 and 40, and no visible organics or deleterious substances. All fill materials shall be thoroughly mixed to avoid uneven concentrations of sand, clay, etc.
- b) Before placing fill material, all vegetation shall be stripped from the site.

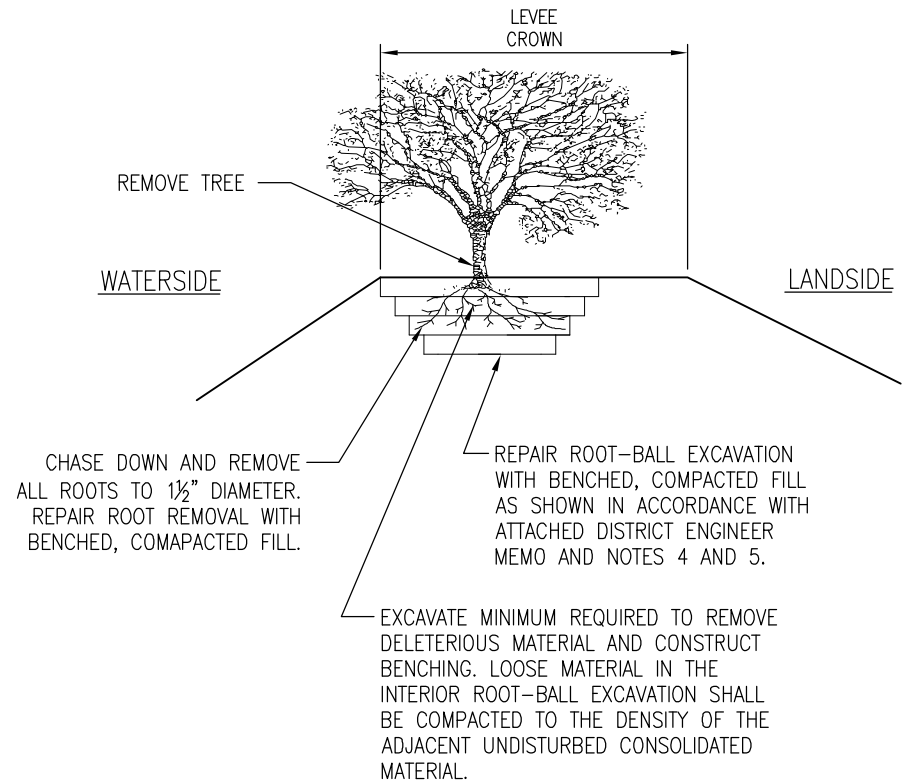
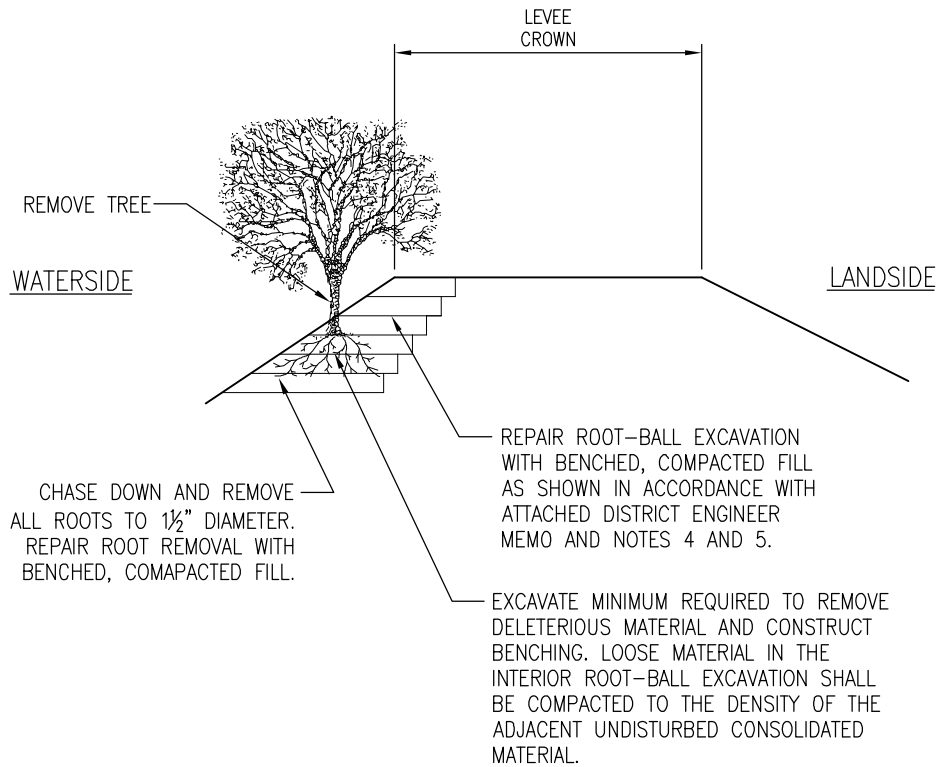
If you have any questions, please feel free to contact myself or Blake Johnson.

Sincerely,



Keith De Lapp, P.E.
HDR Engineering, Inc.
Reclamation District 799 Engineer





NOTES:

1. STRIP ALL VEGETATION AND ORGANIC MATERIAL AWAY FROM REPAIR AREA.
2. DO NOT REUSE ROOT-BALL SPOILS AS LEVEE EMBANKMENT FILL MATERIAL.
3. PLACE ROCK SLOPE PROTECTION ON WATERSIDE LEVEE SLOPE IN ACCORDANCE WITH APPROPRIATE STANDARD FIGURE RS-1 OR RS-2.
4. COMPACT FILL TO A MINIMUM 85% RELATIVE DENSITY PER ASTM D-698.
5. PROVIDE COMPACTION TEST REPORT TO DISTRICT.

TREE STUMP REMOVAL FILL PLACEMENT	DATE: JANUARY 2011
	FIGURE: LR-3

RECLAMATION DISTRICT 799