

Construction Specification 200 – Irrigation Land Leveling

1. Scope

The work shall consist of excavating, transporting, and spreading earth materials to precision grades within fields as shown on the cut/fill design sheet.

2. Site Preparation

All lands to be leveled shall be cleared of brush, crop residue, trash, and excessive vegetative material to the extent that such material will not inhibit earth moving operations. The land must be smoothed or floated to firm the soil and permit an accurate design survey.

Except as shown on drawings, trash and brush materials shall be removed from the site and disposed of in a manner as approved by the NRCS Inspector. Other waste materials may be disposed of onsite as approved by NRCS Inspector.

3. Excavation and Fill Materials

Earth materials used for fill shall be obtained from areas within the field or other designated borrow areas marked as cut and placed in areas within the field marked as fill. Fill material shall contain no heavy sod, large rocks or other objectionable material.

4. Construction and Finish

- a) The land shall be leveled to the designated grades shown on the APPROVED cut/fill sheet prior to construction.
- b) Excavation and fill material for, or obtained from such structures as drainage ditches, irrigation ditches, and roadways will be planned and obtained as part of the overall leveling job, and the appropriate yardage included when balancing cuts and fills.
- c) For design slopes of 0.0 to 0.4 percent, maximum deviation from design cuts or fill shall be + or – 0.1 foot with no reverse grades. For design slopes over 0.4 percent, maximum deviation from design cuts or fill shall be + or – 0.2 foot with no reverse grades.
- d) Fills shall be placed in layers not more than six inches thick.
- e) Leveling operations shall not be performed under wet or frozen soil conditions that will result in excessive compaction or destruction of soil structure.
- f) Leveling shall be accomplished to the extent that water will not be ponded more than 0.10 foot in depth at any place.
- g) If an adjustment to the plane or field boundary is needed, then a revised cut/fill sheet must be submitted to the NRCS representative and approved.
- h) Ditches constructed around zero grade fields shall be constructed with a depth no greater than 2' and side slopes no steeper than 2:1 with a bottom 0 ft – 6 ft. Excavation material from ditch should be used in the construction of the field border unless calculations have been done and written approval has been obtained from an NRCS Engineer for this yardage to be used in the balancing of the cut/fill of the field. See Arkansas Supplement of Chapter 6 of Part 652 of the National Engineering Handbook Irrigation Guide.

5. Approval and Checkout

- a) After cuts and fills have been complete, the land shall be plowed or disked, and the entire area smoothed by land levers, graders or similar equipment to remove minor irregularities.
- b) A final cut/fill sheet is to be submitted to the NRCS representative for check out and certification.

6. Environmental Concerns

Construction must be completed in a manner that will minimize erosion and/or air and water pollution.