

**NATURAL RESOURCES CONSERVATION SERVICE  
MISSOURI CONSTRUCTION SPECIFICATION**

**WASTE STORAGE FACILITY  
(EARTHEN BASIN)**

**CODE 313-B**

**GENERAL**

Construction operations shall be carried out in such a manner and sequence that erosion and air and water pollution will be minimized and held within legal limits. **A land disturbance permit from the Missouri Department of Natural Resources may be needed if the disturbed area is greater than one (1) acre in size.**

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used.

**FOUNDATION PREPARATION**

The foundation area shall be cleared of trees, logs, stumps, roots, brush, boulders, sod, and rubbish. A minimum of 3 inches of topsoil and sod shall be stripped from foundation area. The topsoil and sod are to be stockpiled.

Existing stream channels crossing the foundation area shall be sloped 2:1 or flatter and deepened and widened as necessary to remove unconsolidated sediments, stumps, roots, and other objectionable material and to accommodate compaction equipment.

After stripping, the foundation area will be prepared to assure bonding with the fill by removing loose dry material, scarifying, diking, adjusting moisture, and compacting as necessary.

**FILL PLACEMENT**

The material placed in the fill shall be free of detrimental amounts of sod, roots, frozen soil, stones over 6 inches in diameter (except for rock fills), and other objectionable material. To the extent they are suitable, excavated materials are to be used as fill material. The distribution and gradation of materials shall be such that there will be no lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material. Where it is necessary to use material of varying texture and gradation, the more plastic material shall be placed in the center and upstream portions of the fill. Foundation areas and cutoff trenches shall be kept free of standing water when fill is being placed on them.

The placing and spreading of the fill shall be started at the lowest point of the foundation and the fill shall be brought up in approximately horizontal layers not to exceed 9 inches in thickness. Each layer shall be spread, processed, and shall be compacted by two passes of standard tamping type roller over the entire area to be compacted. Complete coverage by the treads of loaded hauling equipment is considered equivalent to two (2) passes of tamping roller. Each lift shall not exceed 9 inches in thickness.

The tamping-type roller shall have tampers or feet projecting not less than six (6) inches from the surface of the drum and shall have a minimum static load on each tamper of 250 pounds per square inch of tamping area. Tamping rollers with minimum static load on each tamper of 125

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pounds per square inch of tamping area may be used if the number of passes is increased to four (4) or the thickness of lifts is reduced to four (4) inches. (Sheepsfoot or wedgefoot drum rollers are considered tamping rollers.)

**MOISTURE CONTROL**

The minimum moisture content of the fill material and foundation shall be such that, when kneaded in the hand, the fill material will form a ball which does not readily separate. The maximum moisture content is when conditions are too wet for efficient use of the hauling and compaction equipment.

**BORROW AREAS**

All borrow areas outside the pool area shall be graded and left so they are well drained, protected from erosion, and may be seeded. Borrow areas inside the pool area shall have side slopes of 2:1 or flatter.

**PLACEMENT OF TOPSOIL**

Available topsoil should be placed on the auxiliary spillway, the inside slope, top, exposed surface of the inside slope of the embankment, and any other disturbed areas.

**VEGETATION**

Refer to JS-AGRON-25 for seeding and mulching recommendations or equivalent.

**Additional Details:** \_\_\_\_\_  
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**NATURAL RESOURCES CONSERVATION SERVICE  
MISSOURI OPERATION AND MAINTENANCE**

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**OPERATION AND MAINTENANCE**

Proper operation and timely maintenance of this system will minimize pollution and extend its useful life. The following recommendations should be followed.

- Keep trash and bedding out of the settling basin to prevent clogging of the outlet system.
- Remove stored runoff as soon after each major storm as conditions permit to restore the original capacity. In November of each year, the holding pond must be empty to provide storage for the expected winter runoff.
- Remove accumulated solids from the settling basin as often as conditions permit to restore its effectiveness. These wastes should be spread on a suitable land area at a rate of approximately 10 tons per acre per year.
- Do not apply waste material in frozen ground or on snow.
- Do not apply waste material immediately after a rain or within 12 hours of a forecasted rain.
- Do not apply liquid at a rate exceeding approximately 0.5 inches per hour.
- Do not apply more liquid at one time than can be applied without producing runoff. No more than 3.0 inches should be applied at any one time.
- Disposal of waste that produces offensive odors must be made on areas and at times that will minimize the inconvenience to nearby residences.
- As animal waste and associated runoff contain nitrogen, phosphorus, potassium, and organic matter, adequate soils testing should be performed to guide in the addition of supplemental commercial fertilizer and to prevent the application of these waste materials at a rate that may be toxic to plants and animals.

**Additional Details:** \_\_\_\_\_  
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