

SOIL CONSERVATION SERVICE
Idaho

RECEIVED

JAN 11 1994

WATER RESOURCES
WESTERN REGION

CONSTRUCTION SPECIFICATIONS
FOR
STRUCTURES FOR WATER CONTROL
(REINFORCED CONCRETE)

Lower Payette Canal
(Owner/Operator)

Flow Measuring Flume
(Project Title)

.1 GENERAL

Installation shall be in accordance with an approved design and plan. Details of construction shown on the drawings but not included herein shall be considered as part of this specification.

.2 FOUNDATION PREPARATION

The foundation area of the structures shall be cleared of all trees, roots, stumps, brush, boulders, sod, and debris.

.3 EXCAVATION

The cut-off trench and wing wall trench will be excavated to the lines and grades shown on the plans or as staked in the field. Where practical, the excavated trench walls may be used as a concrete form. Any over-excavation will be backfilled with selected material and compacted to the density of surrounding undisturbed earth.

.4 STRUCTURAL CONSTRUCTION

The structure will be placed on a firm foundation to the lines and grades as shown in the plans or as staked in the field.

.5 CONCRETE

Concrete used in structures shall have a consistency such that it can be worked readily into corners and angles of forms and around reinforcements, but without permitting the materials to segregate or excess free water to collect.

.5.1 Cement used shall be low alkali Portland Cement, Type II or Type IIA, unless otherwise specified for the job.

.5.2 Air-entrainment of six percent plus or minus one percent conforming to the requirements of ASTM C-260 shall be required. If Type IIA air-entraining cement is used, any additional air-entraining admixture shall be of the same type as that in the original cement.

.5.3 Water used in mixing concrete shall be clean and free of harmful amounts of acid, alkali, oil, salt or organic matter.

.5.4 Aggregates shall conform to the specifications for concrete aggregates ASTM Designation C-33, Size numbers 57, 67 or 7. Pit run aggregates may be used provided they are tested for impurities, gradation determined, and approved prior to use.

.5.5 The concrete strength shall be 4000 psi at 28 days. Concrete shall have the following proportions or the contractor may submit a proposed mix for approval prior to placement.

The concrete shall be proportioned to include not less than 6 sacks of cement per cubic yard of concrete.

.5.6 Most ready-mixed concrete suppliers have pre-certified their 4000 psi mix and have designated an SCS mix number. When available, a pre-certified mix shall be used and the mix number

moistened canvas, cloth mats, straw, earth or other approved material. For formed surfaces, the protection may be accomplished by leaving the forms in place and keeping them wet for the entire curing period.

In lieu of water curing, the concrete shall be cured by spraying with an approved sealing compound. The sealing compound shall be applied in an approved manner as soon as practicable after the concrete is finished. All surfaces shall be kept moist until the compound is applied.

.12 CONCRETING IN COLD WEATHER

Before any concrete is placed, all ice, snow, and frost shall be completely removed from all surfaces to be in contact with the new concrete and the temperature of these surfaces shall be raised to as close as practical to the temperature of the new concrete that is to be placed thereon. No concrete shall be placed on a frozen subgrade or on one that contains frozen materials.

Concrete shall not be mixed or placed when the daily minimum atmospheric temperature is less than 40°F, unless facilities are provided to ensure the adequate protection of the concrete.

The temperature of the concrete at the time of placing shall not be less than 50°F nor more than 90°F. The temperature of all aggregates and mixing water shall be not more than 100°F when introduced into the mixer.

When the daily minimum temperature is less than 40°F, the structures must be insulated or housed and heated for the placement and curing period, and the temperature of the concrete and air within the enclosure shall be maintained at not less than 50°F nor more than 90°F. When dry heat is used, the relative humidity of the air shall be

maintained at no less than 40 percent unless all exposed concrete surfaces are coated with a sealing compound.

The use of accelerators or antifreeze compounds will not be allowed.

.13 WOOD ITEMS

All timber and lumber used in construction shall conform to the requirements of the job. In any case, the grade of materials shall not be less than select merchantable boards, construction grade beams or timbers.

Preservation Treatment - All wood components except redwood or cedar, where location and exposure are such that it is subjected to alternate wetting and drying, will be of treated quality either by an approved cold soak or pressure treatment process. If, after treatment, timber is cut or damaged, these areas shall be treated with hot creosote oil and/or covered with a coat of hot asphalt or coal tar pitch.

.14 METAL ITEMS

All metal items with exception of aluminum or galvanized metal shall be painted with 2 coats of a synthetic primer paint and 1 coat of aluminum paint or an approved equal coating.

.15 BACKFILL

.15.1 Materials - Backfill material shall be free from rocks, stones, roots, sod, and other deleterious materials. The maximum particle size within 1 foot of the structure shall be 3 inches. The excavated materials shall be used for backfill to the extent that they are suitable.

.15.2 Placement - The fill shall be placed so that the distribution of materials will be to the limits shown on the drawings and shall be free from lenses,

.17 SPECIAL SPECIFICATIONS

Recommend that 2"x2"x1/4" angle iron be used at the edges of the crest for proper surface elevation control. The crest shall be formed and poured at elevation 76.90 and shall have an allowable tolerance of 1/8" \pm .

Drain fill for sidewall drains shall be coarse concrete aggregate, without sand, surrounded by a non-woven geotextile filter cloth.

The 4" drain pipe shall be placed at elevation 75.4. The pipe shall be 4" diameter perforated corrugated PE drainage tubing.

A gage plate (0.00 to 3.33 ft.) shall be mounted on a wood 2x4 attached to the upstream wingwall as specified by the ditch rider.

Riprap shall be available field rock with maximum rock size of 10" diameter with 50% rock particles of 5" diameter or greater.