

STATE OF COLORADO
DEPARTMENT OF WATER RESOURCES
Office of State Engineer

Standard Plans, Drawings
and
SPECIFICATIONS
Including
RULES AND REGULATIONS
Pertaining to
THE FILING OF APPLICATIONS
for
THE APPROVAL
of
LIVESTOCK WATER TANKS



PURSUANT TO H.B. No. 750
SESSION LAWS OF 1941
DENVER, COLORADO, MAY 1, 1941

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APPLICATION FOR APPROVAL OF LIVESTOCK WATER TANK

This application and Statement is made in conformity with provisions of the Livestock Water Tank Act of Colorado.

This application must be accompanied by a filing fee of one dollar, payable to the State Engineer of Colorado. 5385

Name of Owner G. S. Davison Motor Rte #3, Colo. Spgs, Colo.
P. O. Address
Location of Tank SW 1/4 Section 7, Township 11 50, Range 65 W 6th P.M.
Name of water course on which tank is located Trib. to East Cherry Creek
Is water course normally dry Yes
Approximate area of drainage basin above tank 50 acres.
Nature of vegetative cover over drainage basin above tank Grass, Farmland

Character of topography of drainage basin (steep, medium or flat) Medium

Character of surface formation of drainage basin (rock, rocky soil, or soil) Soil

Approximate elevation of drainage basin above sea level 7470 feet.

Is water course subject to floods at times No

Height of top of dam above bottom of water course 9.0 feet.

Height of bottom of spillway above bottom of water course 5.0 feet.

Approximate capacity of tank 0.12 1.35 acre feet.

Location of spillway with respect to dam Around right side facing downstream

Bottom width of spillway at narrowest point 23 feet.

Distance of lower end of spillway below dam 400 feet.

Kind of formations in which spillway is located (rock, shale, clay, earth or mixture of soil and rock) Earth

Width of top of dam 8.0 feet.

Length of top of dam 194 feet.

Slope of upstream face of dam 3:1

Slope of downstream face of dam 2:1

Nature of riprap or other protection to be placed over water face of dam

Is the reservoir to be provided with an outlet pipe No
If so, give kind and size of pipe

Give location by section, township and range, and size of every other stock tank now constructed in drainage basin in which this tank will be located

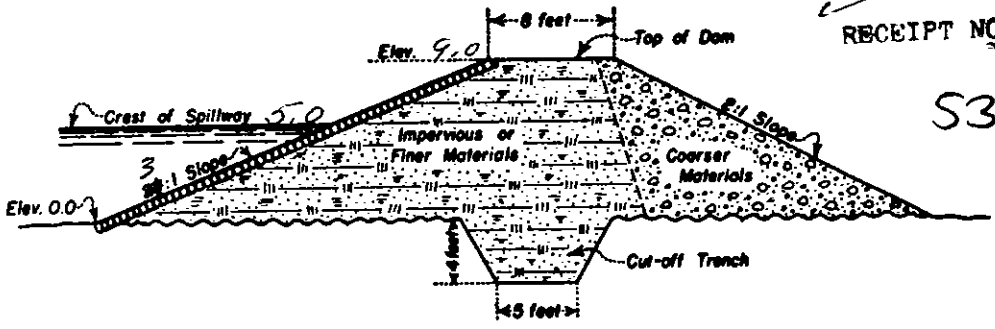
NOTE—Remainder of statements to be furnished by State Engineer's office.
Date of receipt of application by State Engineer DEC 17 '57, 19
Date of notice from applicant of completion of tank, 19
Tank or site inspected by, 19
Recommendation of Inspector
Date of return of plans and specifications to applicant for correction or revision

Reasons therefor

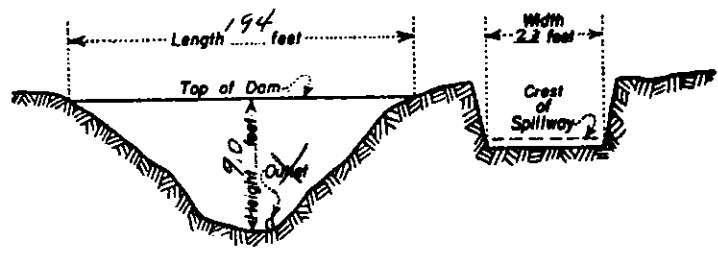
Filing Fee Paid DEC 17 '57, 19
Application approved this 27 day of December, 19 57
Number assigned this stock tank is

By J. E. Whitten
State Engineer
G. C. Marshall
Deputy

5385



MAXIMUM CROSS-SECTION OF DAM



CROSS-SECTION OF DAM SITE AND SPILLWAY
Show length and height of dam and width of spillway on drawing

STATEMENT BY OWNER

Know all men by these presents: That the undersigned G. W. S. DAVISSON, whose postoffice address is Moxey, P. O. 2, S. Ia. Spgs has caused to be located this Stock Water Tank, the essential features of which are shown by this map and plans, which together with the accompanying application and statements are hereby filed with the State Engineer pursuant to the provisions of law.

First: Height of dam above bottom of water-course is 9.0 feet.

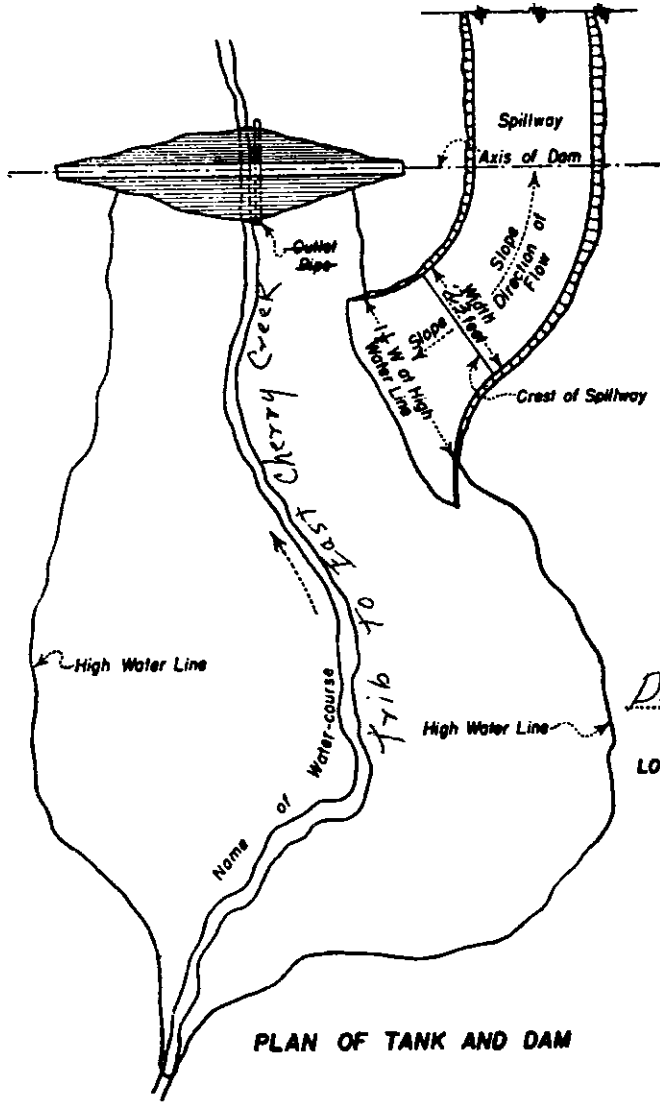
Second: Height of spillway above bottom of water-course is 5.0 feet.

Third: Total capacity of said Stock Water Tank is 1.35 acre feet.

Fourth: The source of supply for said Stock Water Tank is (name of stream) Trib. to East Cherry Creek

Fifth: Filing of this map and accompanying statements with the State Engineer was made on the 10 day of Dec., 1957

G. W. Davison
Owner



PLAN OF TANK AND DAM

MAP AND PLANS

FOR

Davisson STOCK WATER TANK AND DAM

LOCATED IN SECTION 7 TWP. 11^S RANGE 65^W OF 6TH P.M.

El. Paso COUNTY D

DRAINAGE AREA ABOVE DAM 50 ACRES

Approved this 27th day of December, 1957

J. E. Whitten
State Engineer
By G. A. [Signature]
Deputy

5385

STATE OF COLORADO
DEPARTMENT OF WATER RESOURCES
OFFICE OF STATE ENGINEER

**SPECIFICATIONS TO GOVERN THE CONSTRUCTION OF A LIVESTOCK WATER TANK
 IN COLORADO CONSTRUCTED AFTER APRIL 17, 1941**

The following specifications and attached general plans shall be followed in the construction of stock water tank No. _____, located in Sec. 7, Township 11 S, Range 6.5 W 6th P.M. for which the undersigned on December 10, 1947 filed an application with the State Engineer, as required by law.

Preparation of Foundation for Dam—All vegetable matter of every description, including roots to a depth of two feet, shall be removed from the entire area upon which the dam will rest, following which the top six-inch layer of soil, together with boggy or unstable materials shall be removed and deposited outside the toes of the dam. The banks of the stream channel shall be dressed to a slope of about 1½:1. A bonding trench, with sloping sides and a bottom width of not less than 5 feet and depth of 4 feet, shall then be excavated beneath the center line of the dam the full length thereof, which trench shall be refilled with the most impervious materials available. The foundation of the dam shall then be lightly plowed lengthwise of the dam, to provide proper contact between the foundation and the dam embankment.

Placing of Dam Embankment—The materials shall be placed in the bonding trench and in the embankment of the dam in layers not exceeding 6 inches in thickness, after which each layer shall be thoroughly compacted by a heavily loaded disc cultivator, a corrugated or sheep's foot roller, the treads of a caterpillar or trucks, or by livestock used in the construction. During the construction period, the top of the embankment shall be maintained as a horizontal plane the full width and length thereof, and no side dumping of materials shall be permitted. The materials shall at all times contain just sufficient moisture to provide proper compaction. Puddling of material with water shall not be permitted. No frozen material or large clods or stones shall be incorporated in the dam. The upstream face of the dam shall be constructed with a slope not steeper than 2½:1, and the downstream face on a slope not steeper than 2:1. The crest or top of the finished dam shall be not less than 8 feet in width.

The upstream two-thirds of the dam shall be constructed of the most impervious materials, such as clay loam, or a mixture of clay and sand, and the downstream one third of more pervious material, such as sand or gravel. The upstream face of the dam shall be adequately protected against wave action by stone riprap, or other suitable materials.

Outlet—Should the state engineer so require, there shall be located beneath the dam a galvanized, corrugated steel pipe of No. 14 gauge and not less than 8 inches in diameter, equipped with a suitable control valve attached to the upstream end of the pipe, together with suitable mechanism for operating the valve. Such outlet pipe, when required, shall be provided with concrete collars enclosing each joint of the pipe. The pipe shall be placed in a trench bottomed in stable formations, and shall be completely surrounded with well compacted impervious materials.

Spillway—For the protection of the dam, an adequate spillway or channel shall be constructed around one or both ends of the dam, of sufficient width to provide a capacity to carry the entire discharge from the drainage basin above the dam during periods of unusual runoff. The spillway shall be located in stable formations not easily eroded, and shall extend to a point well downstream from the dam. The following table shall be used to determine the necessary depth and width of spillway to meet the above requirements. The top of the dam at all points shall be not less than 4 feet above the bottom of the spillway.

Table Showing Required Freeboard, Widths and slopes of Spillways for small Earth Dams, with Drainage Areas above the Same as Shown, Based upon a maximum Peak Runoff of 640 Second Feet per Square Mile, or 1 Second Foot per Acre, with an Allowance of a Minimum Freeboard between the Maximum High Water Line and Top of Dam, of 2.3 Feet, and Maximum Velocities of 3.5 Feet per Second of Time.

AREA OF DRAINAGE BASIN ABOVE DAM IN ACRES	PEAK RUNOFF IN CU. FT. PER SECOND	ASSUMED VELOCITY THROUGH SPILLWAY IN FEET PER SECOND	REQUIRED WIDTH OF SPILLWAY "W" AT NARROWEST POINT IN FEET	DEPTH OF SPILLWAY IN FEET	SLOPE OF SPILLWAY IN FEET PER 100 FEET OF LENGTH
100	100	3.0	22	1.5	0.25
200	200	3.0	44	1.5	0.25
300	300	3.0	66	1.5	0.25
400	400	3.0	88	1.5	0.25
500	500	3.0	110	1.5	0.25
600	600	3.0	132	1.5	0.25
700	700	3.0	155	1.5	0.25
800	800	3.0	177	1.5	0.25
900	900	3.0	200	1.5	0.25
1000	1000	3.0	222	1.5	0.25
1100	1100	3.0	244	1.6	0.25
1200	1200	3.2	266	1.7	0.25
1300	1300	3.3	288	1.7	0.25
1400	1400	3.4	310	1.7	0.25
1500	1500	3.4	332	1.7	0.25
1600	1600	3.5	354	1.7	0.25
1700	1700	3.5	376	1.7	0.25
1800	1800	3.5	398	1.7	0.25
1900	1900	3.5	420	1.7	0.25
2000	2000	3.5	442	1.7	0.25

The above spillway widths may be reduced at a point 50 feet below intake, by 25 per cent, where the spillway is located the full length thereof in hard clay or shale, and by 50 per cent when located in hard rock formations, if the slope or grade of the bottom is increased accordingly. The grade for clay and shale formations should be 0.30 foot per 100 feet, and for rock formations 0.9 foot per 100 feet. The width of the entrance to the spillway must in all cases be one-third wider than shown in the Table, and the bottom should slope from the lower end of the funnel section, toward the reservoir 1.0 foot in the distance of 50 feet.

Borrow Pits—Borrow pits, from which materials are taken to build the dam, shall be cleared of all vegetable matter, and no material shall be borrowed within a distance of 50 feet of any part of the dam. Materials excavated from the spillway, when suitable, are to be used in building the dam.

Date 12-10-57

Gus Dawson ✓
 Owner
 P. 3 Colo. Dept. of Water Resources
 Post Office Address