

DRAINAGE BLANK.

IN THE MATTER OF THE PETITION OF

Bru Swanson et al

AND OTHERS.

ENGINEER'S REPORT

Ditch No. *59*

Filed *July 9* 19*17*

A. H. Caswell
County Auditor.
by Carrie A. Caswell

Approved and adopted

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County Auditor.

In the Matter of the Petition of Adolph Tillong, Bennie Swanson and others
 for a Public Ditch in the County of Anoka
 State of Minnesota.

TO THE BOARD OF COUNTY COMMISSIONERS OF Anoka COUNTY, STATE OF MINNESOTA:

I, the undersigned civil engineer appointed by your order dated the 31st day
 of October 1916, to survey the route proposed in the petition of Adolph
 Tillong, Bennie Swanson and others, for a public
Ditch, respectfully report that, within the time specified in your said order,
 I did make a complete survey of the line of said proposed Public Ditch from its source
 to its outlet, and of the branches thereof; and did cause stakes to be set along said line, and along the
 branches thereof, numbered progressively down stream at each one hundred feet.

That in making said survey I did locate the source, outlet, and line of said Public Ditch
 as near the points of source, outlet, and line described in said petition therefor as practicable,
 and did consider and specify such branches of said Public Ditch as in my opinion are
 necessary to give the land owners likely to be assessed for its construction the full benefit thereof; and
 wherever the line of said Public Ditch is along established highways I did locate it at
 a sufficient distance from the center of said highways to admit of good roads along the central line
 thereof, and in such manner as to provide sufficient and suitable culverts and openings to drain
 away the surface water therefrom, and so as not to obstruct the flow of surface water therefrom in time
 of high water; and did, so far as practicable, locate said Public Ditch on division lines
 between lands owned by different persons, and did avoid, as far as practicable without sacrificing the
 general utility thereof, laying the line of said Public Ditch diagonally across lands
 owned by persons on or across which the said Public Ditch must pass.

I have caused a map of said survey to be made, showing the line and location of said
Public Ditch and of the branches thereof, the highways along which any part thereof
 runs, the stakes placed along the line thereof and along said branches thereof and the number of
 each stake, the separate tracts of land over or across which any part thereof and its branches pass,
 a description of each tract, the number of acres in each tract, the boundaries of each tract, and the
 name of the owner of each tract,

which said map is hereto attached and made a part hereof, marked "Exhibit 1."

I did further cause to be made in tabular form a statement, showing the number of cubic yards to
 be excavated between each of the one hundred feet stakes along the line of said Public Ditch
 and the branches thereof, the cost of excavating the same per cubic yard, the estimated cost of the
 removal of obstructions between each of said one hundred feet stakes, the estimated cost of all wood
 and masonry work, fences or bridges necessary between each of said one hundred feet stakes, the
 estimated cost of all underground work with tile or other material between each of the one hundred
 feet stakes, the total estimated number of cubic yards of earth to be excavated from said
Public Ditch and the branches thereof, the estimated preliminary expense and expense of
 inspection of the same until its completion, and the total estimated cost of said work complete to its
 completion; which said tabular statement is hereto attached and made a part hereof, marked
 "Exhibit 2."

I did further cause to be specified and set forth in tabular form the depth of cut, the width at the bottom, the width at the top, between each one hundred feet stakes of said Public Ditch the obstructions to be removed, the wood or masonry work, fences, bridges, or other structures, necessary to be constructed between each of said one hundred feet stakes, the underground work, with size and character of tile and other materials necessary to be constructed between each of said one hundred feet stakes, the manner in which the several kinds of work is to be done, and the time within which the work on each of said sections between said one hundred feet stakes is to be done; which said tabular statement is hereto attached and made a part hereof, marked "Exhibit 3."

I did further cause to be specified and set forth in tabular form a statement, showing the time occupied by me in making said survey and my compensation therefor; the names of the assistants and laborers employed in making said survey, the time each was employed, the amount per day of their compensation, and the total amount each is to be paid; and the other expenses of every kind and nature incurred by me in making said survey, and the amounts thereof; which said tabular statement is hereto attached and made a part hereof, marked "Exhibit 4."

Where said Public Ditch runs along or across, or drains, any public or corporate road or railroad, I did specify the use of suitable culverts to carry the water across said roadways

I did cause to be prepared, with the assistance of the County Attorney of said Quoka County, a form of contract under which the work of the construction of said Public Ditch is to be done, with complete specifications of the manner in which the work of said construction is to be done attached thereto, which said form of contract and said specifications is hereto attached and made a part hereof, marked "Exhibit 5."

I have specified the use of timber bridges treated with creosote because they not only are cheaper than reinforced concrete but will give very good service.

In deep cuts corrugated pipe would
not be used set on side.

There was a question of draining Mr.
Giffund's land into Hamer Lake but
that will be impossible on account
of the elevation of Lake.

The main ditch is the big expense,
giving little immediate benefit to
land adjoining on both sides.
It is the outlet however for larger
drainage area.

The total cost of construction should
give a very safe margin for bids.

F. J. Armstrong
Civil Engineer.

Dated this July 9 day of 1917 A. D. 190

State of Minnesota, } ss.
County of Anoka }

F. J. Armstrong, being duly sworn, on oath says that
he is the civil engineer who made the foregoing report and made the survey therein referred to; that
he has read the foregoing report and the exhibits thereto attached and knows the contents thereof,
and that the same are true and correct of his own knowledge.

Subscribed and sworn to before me this 9 day of July A. D. 1917
Corrie C. Peterson
Deputy

Engineer's total estimate. Ditch # 59.

Cost of excavation and construction	\$ 36485.10
Cost of preliminary survey and report	1500 00
Cost of Viewers report	800 00
Legal Publication	100 00
Posting Notices	50 00
Auditor's Compensation	350 00 ✓
Attorney's Compensation	350 00 ✓
Register of Deeds.	50 00
County Commissioners Meeting	150.00
Supervising Inspection	1000.00 ✓
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	\$ 40335.10

J. J. Armstrong
Per J. Chubb