

**DRAINAGE BLANK.**

IN THE MATTER OF THE PETITION OF

*H. A. Targent*

AND OTHERS.

**ENGINEER'S REPORT**

*Ditch No.*.....

*Filed*..... 190.....

*County Auditor.*

*Approved and adopted*.....

..... 190.....

*County Auditor.*

In the Matter of the Petition of H. A. Tangent,  
 \_\_\_\_\_ 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 4<sup>th</sup> day  
 of APRIL, 1910, to survey the route proposed in the petition of  
H. A. TANGENT, 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 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 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 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 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 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 DITCH, diagonally across lands  
 owned by persons on or across which the said DITCH must pass.

I have caused a map of said survey to be made, showing the line and location of said  
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 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  
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 --- D I T C H --- 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 --- D I T C H --- runs along or across, or drains, any public or corporate road or railroad, I did specify that the earth shall be taken from the ditch or its branches and spread on said highway to improve the same.

As the culverts at the crossings of the ditch and the public highways are small and the ditch will drain said roads and improve them I have left the fixing of the costs of the same to the Towns in which the same are located. In all cases tile culverts can be places in the ditch at a small cost to the said Towns.

I did cause to be prepared, with the assistance of the County Attorney of said --- A N O K A --- County, a form of contract under which the work of the construction of said --- D I T C H --- 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."

In this Public Ditch the main ditch and some of the branches pass from some small marshes through high valuable lands to the outlet of the same and I have prepared an estimate of cost of placing a cheap grade of Sewer Pipe in the ditch in the place of an open ditch or a line of regular drain pipe so that the small marshes can be drained and at the same time do away with the small open ditch which so quickly grows up to weeds and is filled with sands by the winds.

I should respectfully recommend that the drain pipe be used in the place of open ditch be used.

Dated this 24<sup>th</sup> day of June A. D. 1900  
J. E. Hill Civil Engineer.

State of Minnesota, }  
County of Anoka } ss.

J. E. Hill, 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 29<sup>th</sup> day of June A. D. 1900  
J. E. Hill

Arthur A. Cornell  
Auditor of Anoka Co. Minn

<sup>4</sup>  
EXHIBIT <sup>3</sup> OF ENGINEER'S REPORT IN DITCH PROCEEDINGS.

*Statement of Names of Laborers, Time Employed and Compensation Received, and of all other Expenses of Preliminary Survey.*

NAMES OF LABORERS AND ASSISTANTS	NO. OF DAYS EMPLOYED	AMOUNT PAID PER DAY	TOTAL AMOUNT PAID	OTHER EXPENSES, NATURE AND CHARACTER OF SAME	AMOUNTS OF OTHER EXPENSES BESIDES ASSISTANTS AND LABORERS	
					\$	Cts.
J. E. Hill Engr.	4	5 00	20 00	Board of Men. H. A. Tangent		7 25
W. L. Ridge Asst. Engr.	15	5 00	75 00	Teams. Geo. W. Merrill		5 00
S. N. LaPlant Rodman	3	2 00	6 00	Railroad Fare		3 00
Ross Cutter Chainman	5½	1 75	9 63			# 15 25
H. A. Tangent Axman	1½	1 50	2 25	Labor etc.		112 88
			# 112 88	Total of preliminary Survey.		# 128 13

Estimate of Ditch 52.

Anoka County Minnesota

1910.

Cu. Yds.	Excavation Preliminary		Total
	Cost.	Cost.	COST.
Main Line 8,617.99	\$ 861.799	\$ 305.52	\$ 1,167.269
Branch One 1,629.90	162.99	114	276.94
Branch Two 1,832.30	183.23	91.20	274.42
<u>12,080.19</u>	<u>\$ 1,208.019</u>	<u>\$ 510.72</u>	<u>\$ 1,718.629</u>

OR

Main line	\$ 1,167.269
Branch 1	276.94
Branch 2 with tile	290.78
	<u>1,734.989</u>

2255.99

Estimate of preliminary expense for Ditch No. 51

Auditor.....	\$ 100.00
Printing.....	25.00
Sherrif.....	60.00
Reguster of Deeds.....	5.00
Commissioners.....	100.00
Viewers..... 2 days	30.00
Engineer with Viewers..... 2 days	12.00
Five) 5) inspections of fineshed work.....	40.00
Survey.....	130.00
Total preliminary expenses	\$ 502.00
Number of stations in ditch and branches	111.
Preliminary expense per station	\$ 4.56

Estimate of the Main Line ditch No. 52.

No. of Sheet.	Cu. Yds.	Cost of excavation	Preliminary Cost	Total
No. 1	1296.02	\$ 129.602	\$ 86.64	\$ 216.242
No. 2	2539.07	253.907	91.20	345.107
No. 3	3623.57	362.357	91.20	453.530
No. 4	<u>1159.33</u>	<u>115.933</u>	<u>36.48</u>	<u>152.390</u>
	8617.99	\$ 861.799	\$ 305.52	\$ 1167.269



## EXHIBIT 2 OF ENGINEER'S REPORT IN DITCH PROCEEDINGS.

Showing Estimated Depth of Cut, Width, No. of Cubic Yards Removed and Cost of Same, in Mo. in Ditch No. 52.

SECTION	(1) DEPTH OF CUT	(2) WIDTH OF CUT AT BOTTOM	(3) WIDTH OF CUT AT TOP	(4) NO. OF CUBIC YARDS TO BE REMOVED	(5) Estimated Cost Per Cubic Yards		(6) Character of Other Expenses, Including Preliminary Expenses And Expense of Inspecting Work until Completed With Total Per Section				(7) Total Estimated Cost per Section		
					\$	CTS.	Estimated cost. per section.		\$	CTS.	\$	CTS.	
Between Stake No. 0 and Stake No. 1	3.01 3.36	2 2	8.02 8.72										
Between Stake No. 2 and Stake No. 3	3.04 3.14	2 2	8.08 8.28	61.11 58.15		10	6	111	4	56	10	671	
Between Stake No. 4 and Stake No. 5	3.04 3.14	2 2	8.08 8.28	61.85 58.15		10	6	185	4	56	10	745	
Between Stake No. 6 and Stake No. 7	3.00 2.92	2 2	8.00 7.84	57.57 54.44		10	5	757	4	56	10	317	
Between Stake No. 8 and Stake No. 9	3.15 3.08	2 2	8.30 8.16	56.67 58.90		10	5	667	4	56	10	227	
Between Stake No. 10 and Stake No. 11	3.01 3.10	2 2	8.02 8.20	56.80 57.20		10	5	890	4	56	10	450	
Between Stake No. 12 and Stake No. 13	3.01 3.10	2 2	8.02 8.20	56.80 57.20		10	5	680	4	56	10	240	
Between Stake No. 14 and Stake No. 15	3.10 3.40	2 2	8.20 8.80	57.20 63.33		10	5	720	4	56	10	280	
Between Stake No. 16 and Stake No. 17	3.40 3.52	2 2	8.80 9.04	63.33 70.00		10	6	333	4	56	10	893	
Between Stake No. 18 and Stake No. 19	3.52 4.52	2 2	9.04 11.04	70.00 90.50		10	7	000	4	56	10	560	
Between Stake No. 20 and Stake No. 21	4.52 3.48	2 2	11.04 8.96	90.50 90.00		10	9	050	4	56	13	610	
Between Stake No. 22 and Stake No. 23	3.48 3.80	2 2	8.96 9.60	90.00 76.11		10	9	000	4	56	12	171	
Between Stake No. 24 and Stake No. 25	3.80 4.16	2 2	9.60 10.32	76.11 76.10		10	7	611	4	56	12	170	
Between Stake No. 26 and Stake No. 27	4.16 3.49	2 2	10.32 8.98	76.10 82.96		10	7	610	4	56	12	856	
Between Stake No. 28 and Stake No. 29	3.49 3.56	2 2	8.98 9.02	82.96 72.10		10	8	296	4	56	11	770	
Between Stake No. 30 and Stake No. 31	3.56 3.67	2 2	9.02 9.34	72.10 75.19		10	7	210	4	56	12	079	
Between Stake No. 32 and Stake No. 33	3.67 3.68	2 2	9.34 9.36	75.19 77.04		10	7	519	4	56	12	264	
				Totals - 1296.02				\$129.602				86.64	216.242

Total Estimated Cost of Whole Work, \$-----

