

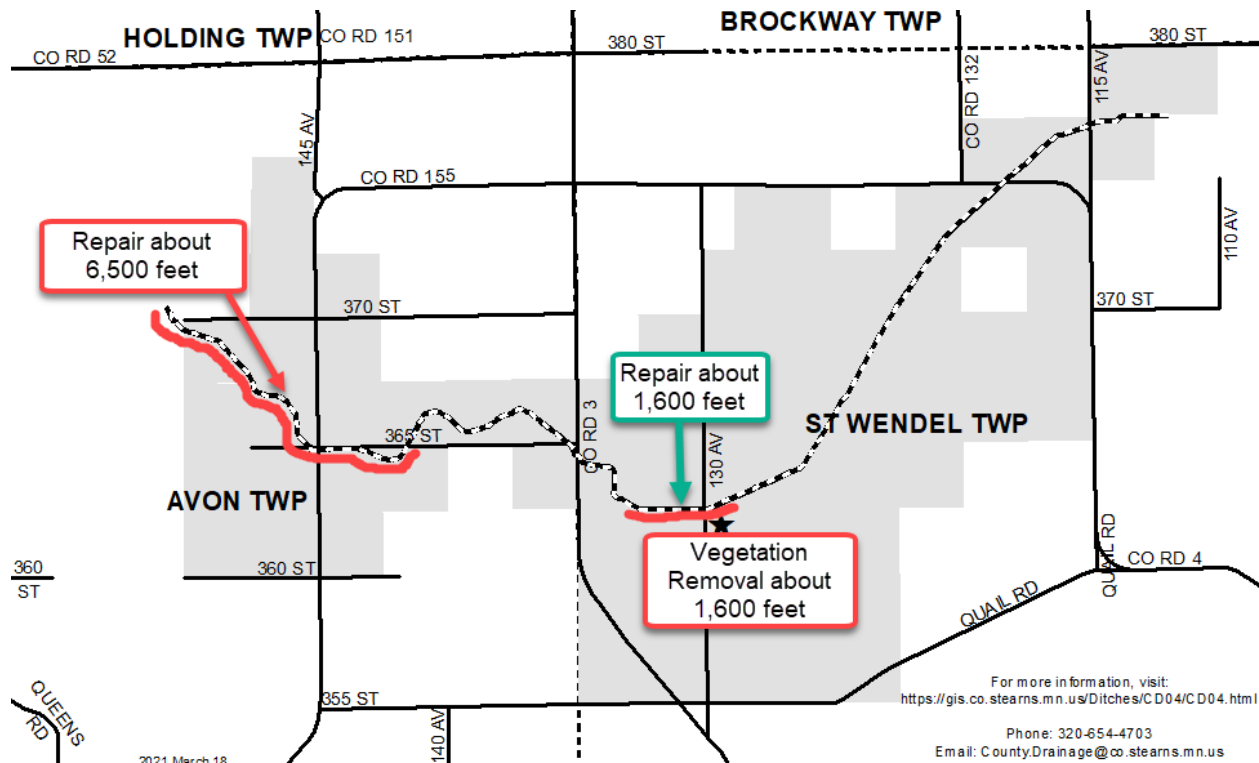
# Stearns County Ditch 04 Repair Proposal

April 22, 2022

## Introduction

The proposed project work includes about 1,600 feet of vegetation removal and ditch repair west of 130<sup>th</sup> Ave in St. Wendel Township and ditch repair of about 6,500 feet from 365<sup>th</sup> St to County Road 155 to ditch end in Avon Township. The culvert on 130<sup>th</sup> Ave is also considered to be obstructing County Ditch 04. Lowering the road culvert requires discussion with St. Wendel Township and may require additional investigation.

All Costs incurred by the Drainage System are paid for by the benefited property owners of County Ditch 4.



## Why is Stearns County Proposing these projects?

Drainage Authorities are the legal entities defined in Minnesota State Law that are created and responsible for the maintenance of public drainage systems. By law, the Drainage Authority is required to inspect and maintain drainage systems on behalf of the property owners who make up the drainage system.

As all benefitted landowners of the drainage system have a legal right to drainage, concerns from property owners are investigated and if issues are found, Stearns County staff explores possible solutions and weighs the costs incurred against the wishes of the property owners.

[130<sup>th</sup> Ave Project Site](#)

The area east of 130<sup>th</sup> Ave is known to hold water. The photo below is from April of 2022. While the water in the photo appears severe, frost was not out when this photo was taken which would contribute to excess pooling. This area is naturally low and the high ground to the north contributes water to the area. Two factors show opportunities for repair. The first being vegetation in the area on both sides of 130<sup>th</sup> Ave and the road culvert both visually holds water and plans developed during record reestablishment show the culvert to be high when compared to the legal ditch bottom elevation. Vegetation in the area has a limiting impact on the channels ability to move water. The purpose of the repair is to allow excess water to flow west as originally designed, which does not mean instances of flooding will not occur as shown in the photo below, but duration of flooding should be reduced.

*Area east of 130<sup>th</sup> Ave*



*From 130<sup>th</sup> Ave looking west at CD 04 Oct. 14, 2019*



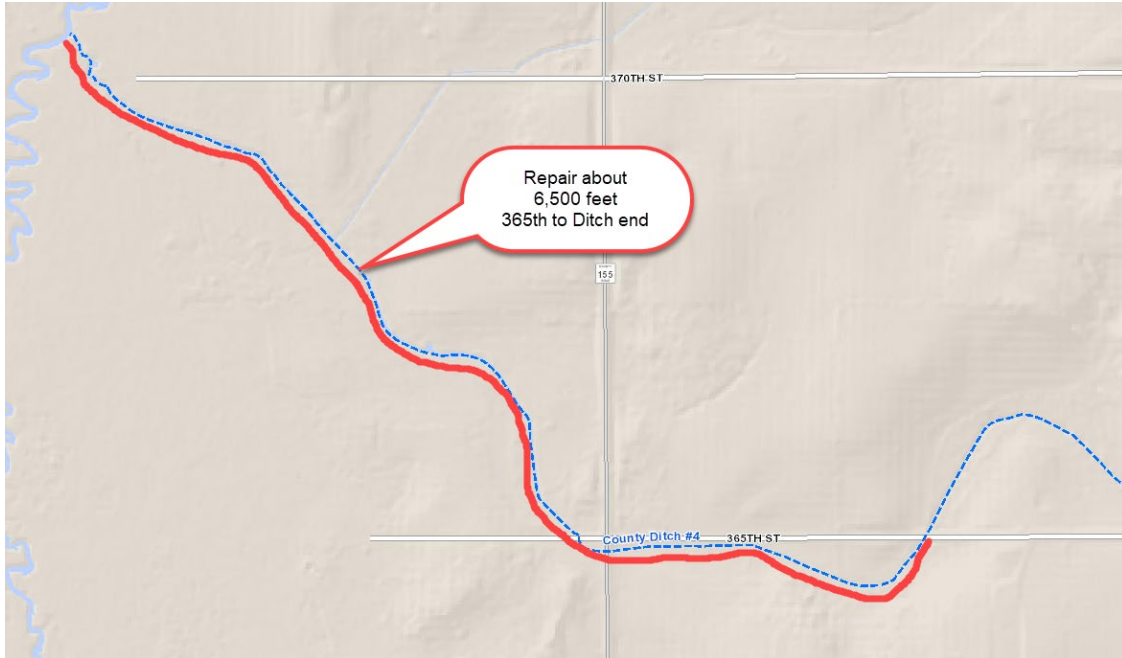
CR 155 Project Site

There have been concerns from property owners at the downstream end of the ditch regarding water being held in the area. The channel is overgrown, and the channel has both narrowed and filled with sediment since original ditch construction.



Ditch End to Co Rd 155 – approximately 6,500ft

The goal for this section of County Ditch 04 would be to restore the channel to its as constructed and subsequently improved condition (ACSIC) to restore capacity and move water within the channel banks, which is expected to limit excess water from saturating the area.



The original construction files show a ditch top width range of 10.18 feet to 4.2 feet across in the area of the Co Rd 155 to ditch end. The original constructed ditch bottom was predominantly 4 feet. Issues in this area include steep side slopes and thick vegetation which is restricting flow.

Source: St Wendel Avon Ditch 1898 Engineer's Report

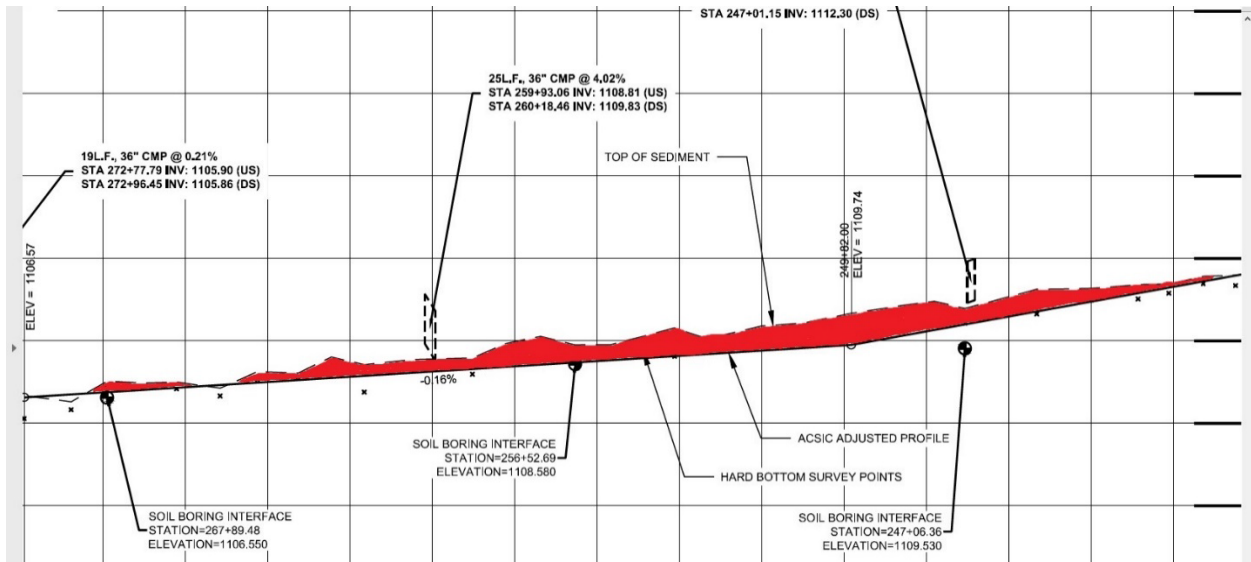
Section.	Town.	Range.	Station.	Grade of Bottom.	Cut.	Width at Top.	Width at Bottom.	Area of Cross Section.	Cubic Yards.	Estimated cost per cubic yard.	Total estimate Cost.
11	125	30	261	46.04	3.43	10.86	4ft	25.48	87.94	10	\$ 879
"	"	"	262	45.96	2.89	9.78	"	19.91	84.05	"	841
"	"	"	263	45.44	2.77	9.54	"	18.75	71.59	"	716
"	"	"	264	45.12	2.69	9.38	"	18.00	68.05	"	681
"	"	"	265	44.80	3.38	10.76	"	24.94	79.51	"	795
"	"	"	266	44.48	3.13	10.26	"	22.32	87.51	"	875
"	"	"	267	44.16	2.95	9.90	"	22.50	79.29	"	793
"	"	"	268	43.84	3.09	10.18	"	21.90	78.51	"	785
11	"	"	269	43.52	1.71	7.42	"	9.76	58.63	"	586
"	"	"	270	43.20	1.53	7.06	"	8.46	33.74	"	337
"	"	"	271	42.88	2.65	9.30	"	17.62	48.29	"	483

Section.	Town.	Range.	Station.	Grade of Bottom.	Cut.	Width at Top.	Width at Bottom.	Area of Cross Section.	Cubic Yards.	Estimated cost per cubic yard.	Total estimate Cost.
12	125	30	221	64.10	.18	2.26	2ft	.28	36.83	10	\$ 363
"	"	"	222	63.20	.25	2.50	"	.56	1.55	"	16
"	"	"	223	62.30	.63	3.26	"	1.66	4.11	"	41
"	"	"	224	61.40	3.01	8.02	"	15.08	31.00	"	310
"	"	"	225	60.50	1.85	5.70	"	9.12	41.11	"	411
"	"	"	226	59.60	.20	2.40	"	.44	14.00	"	140
"	"	"	227	58.70	.10	2.20	"	.21	1.20	"	12
"	"	"	228	57.80	.53	3.06	"	1.34	2.87	"	29
11	125	30	229	56.90	1.90	5.80	"	7.41	16.20	"	162
"	"	"	230	56.00	2.40	4.80	"	4.76	22.58	"	226
11	"	"	231	55.68	1.05	6.10	4ft	5.30	18.63	"	186
"	"	"	232	55.36	.79	5.58	"	3.78	16.81	"	168
"	"	"	233	55.04	.26	4.52	"	1.10	9.03	"	90
"	"	"	234	54.72	1.08	6.16	"	5.48	12.18	"	122
"	"	"	235	54.40	.82	5.64	"	3.90	17.46	"	175
"	"	"	236	54.08	.74	5.48	"	3.50	13.86	"	138
"	"	"	237	53.76	.26	4.52	"	4.10	8.51	"	85
"	"	"	238	53.44	0	0	"	0	2.04	"	20
"	"	"	239	53.12	.10	4.20	"	.41	.76	"	08
"	"	"	240	52.80	.24	4.48	"	1.02	2.64	"	26

While there is ample elevation fall in the ditch profile, the ACSIC profile showing the legal ditch bottom compared to the top of muck in the current ditch bottom, shows opportunities to address sediment in the channel. Excess sediment is shown in red shade below.

*Excerpt from Engineers Report on Reestablishment of Drainage Records*

*Near ditch end and Co Rd 155*



Area near 130<sup>th</sup> Ave – approximately 1,600 feet

Vegetation is the primary issue west of 130<sup>th</sup> Ave. Mature tree growth and dead fall accumulation in the channel are affecting the ability of water to flow. Stearns County staff performed a small clean up in the spring of 2021 and although the work was performed with only hand tools, the work completed had a visible positive effect. It should be expected that vegetation removal on a larger scale would not only restore drainage performance but enable access and result in fewer maintenance issues in the future.



As stated earlier, the goal of a repair in this area is not necessarily to repair to the legal ditch bottom elevation. To limit the scope and cost of any potential repair, in conjunction with vegetation removal, the repair would focus on shaping the channel and removing high spots of sediment accumulation to allow drainage in this flat area.

**Estimated costs**

Excavator vendor costs are estimated using \$2.00 per linear foot which is based on historical contracts. Vegetation costs are based on guidance from the engineer and preliminary discussions with vendors. These prices are subject to change as formal bids are requested.

Vegetation removal near 130 <sup>th</sup> Av – approximately 1,600 feet	\$6,400
Repair ditch end to 365th – approximately 6,500 feet	\$14,462
Repair near 130 <sup>th</sup> Av -approximately 1,600 feet	\$3,289

All Costs incurred by the Drainage System are paid for by the benefited property owners of County Ditch 4.