

Petition Resolution and Engineering Report
Judicial Ditch 2

Petition to Transfer from Beltrami County
to the City of Bemidji

RESOLUTION NO. 6619

A RESOLUTION APPROVING PETITION TO TRANSFER BELTRAMI COUNTY JUDICIAL DITCH NO. 2 TO CITY OF BEMIDJI

WHEREAS, the City of Bemidji, as Petitioner, hereby petitions the Beltrami County Board of Commissioners, as Drainage Authority for Beltrami County Judicial Ditch No. 2 (JD2), to transfer JD2 to the City of Bemidji as a Water Management Authority; and

WHEREAS, such a transfer is necessary for the orderly management for storm surface or flood waters, including management for water quality purposes; and

WHEREAS, the transfer will not have an adverse impact on property utilizing the system; and

WHEREAS, attached to this Petition is an Engineering Report labeled Exhibit A, which describes the nature and extent of the drainage easement occupied by the drainage system, along with other relevant information, including maps and hydraulic information.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Bemidji, as Petitioner, hereby requests Beltrami County, as Drainage Authority for JD2, hold the necessary Transfer Hearing, pursuant to Minnesota Statutes Section 103E.812 for the purpose of transferring JD2 to the City of Bemidji.

The foregoing resolution was offered by Councilmember Thayer, who moved its adoption, and on due second by Councilmember Peterson, was passed by the following vote:

Yeas: Prince, Peterson, Dickinson, Rivera, Eaton, Thayer
Nays: None
Absent: Fiskevold Gould

Passed: May 19, 2025

ATTEST:


Michelle R. Miller, City Clerk

APPROVED:


Jorge S. Prince, Mayor



Engineer's Report – Transfer of a Drainage System

Beltrami County Judicial Ditch #2

**ENGINEERS REPORT FOR TRANSFER OF JUDICIAL
DITCH #2 IN BELTRAMI COUNTY TO THE CITY OF
BEMIDJI, MN**

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



Nathan Dalager, P.E.
License Number 25309

January 29, 2025

Date

HDR
213 LaBree Ave N, Suite 203
Thief River Falls, MN 56701

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Executive Summary

A petition has been submitted by the City of Bemidji to transfer the entirety of Beltrami County Judicial Ditch #2 (JD 2) to the City of Bemidji, Minnesota. The petition states that the transfer is necessary for the orderly management of storm, surface, and floodwaters, including management for water quality purposes (see Appendix A for the complete petition). HDR was directed to provide an Engineers Report under Minnesota Statute 103E.812 in order to evaluate and provide recommendations for the transfer.

The Engineer's Report addresses the nature and extent of the drainage easement occupied by the drainage system and the as-constructed or subsequently improved depth, grade and hydraulic capacity of the drainage system, together with other issues of importance in this matter. The Report also addresses any impact that a transfer would have on properties utilizing the drainage system for an outlet or otherwise benefitting from the existence of the drainage system. Figures 1-3 show the original typical ditch cross section, plat, and legal ditch profile. Figure 4 identifies the alignment and benefitted area and Figure 5 depicts a site map for the JD 2 area. The historical ditch record and file information is expected to be generally correct for documentation purposes.

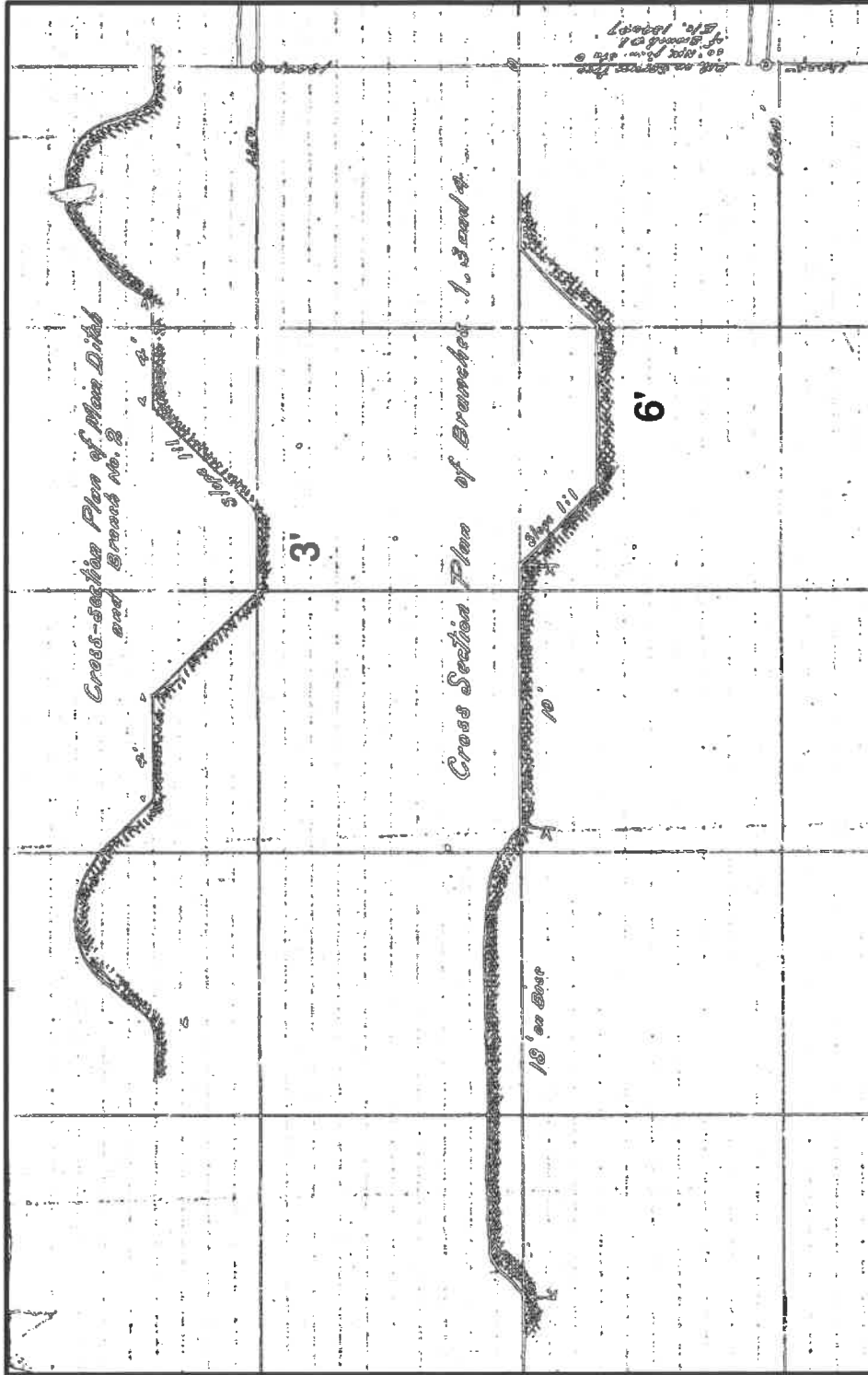


FIGURE 1: JD 2 ORIGINAL TYPICAL CROSS SECTIONS

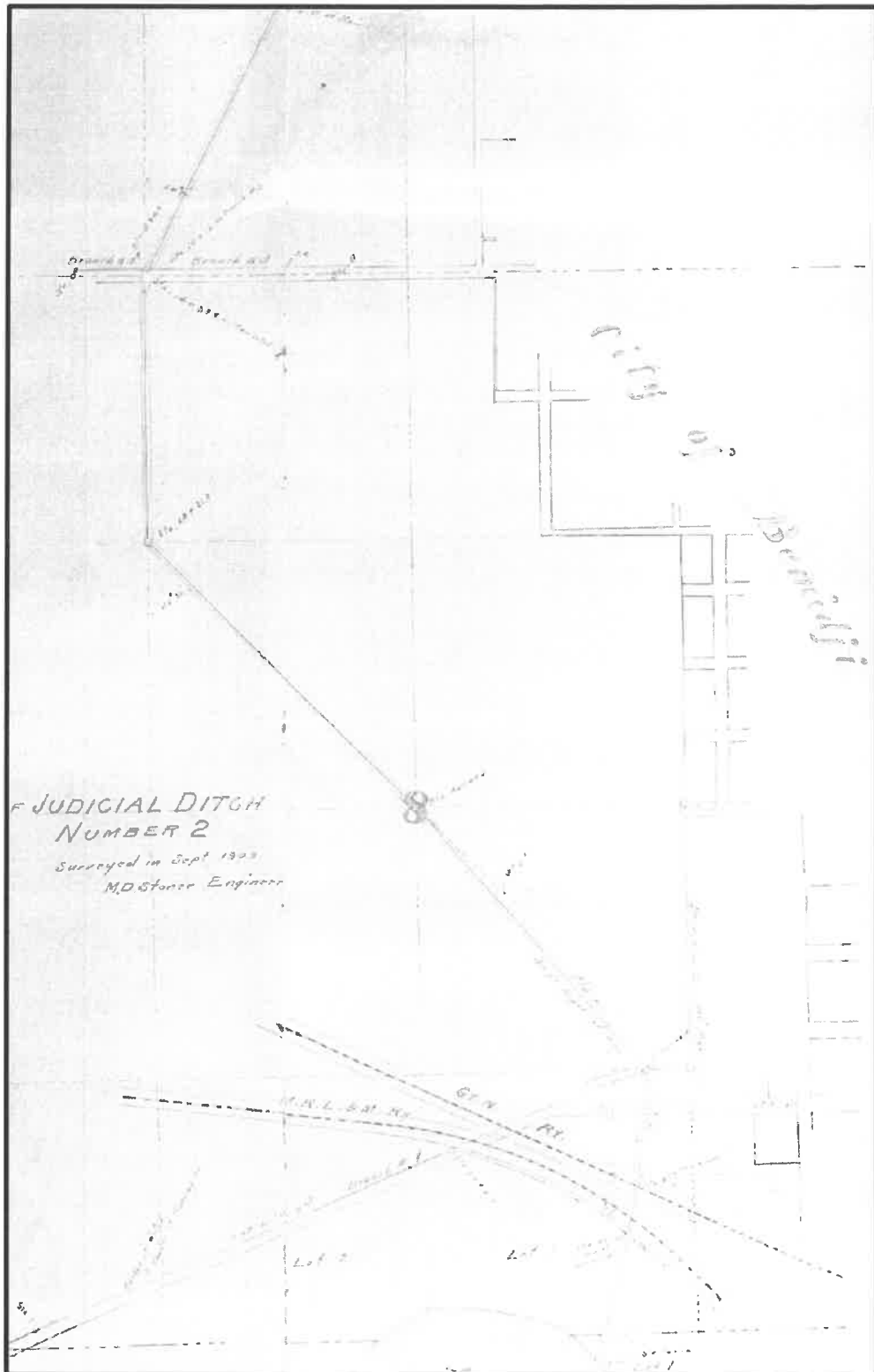


FIGURE 2: JD 2 PLAT

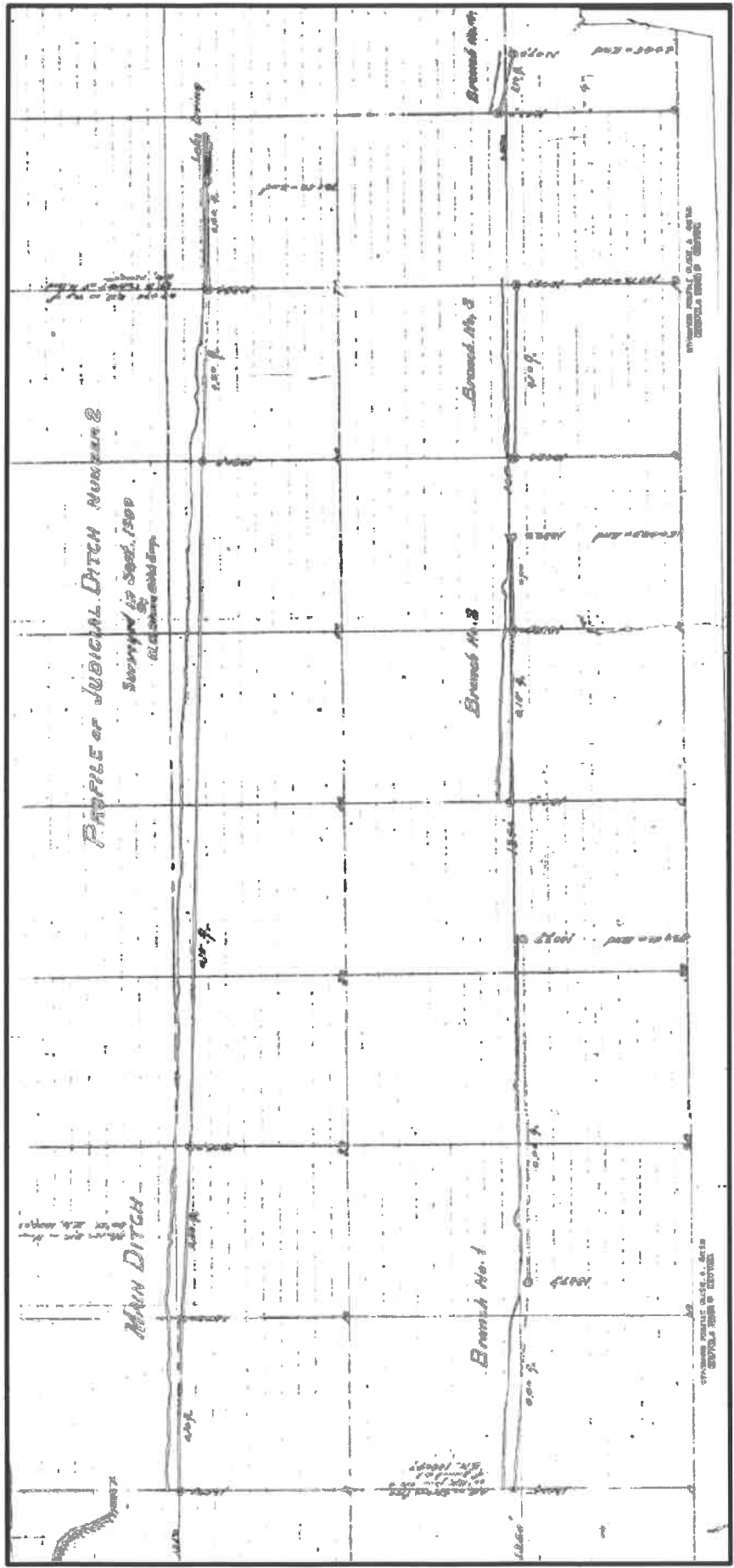


FIGURE 3: JD 2 LEGAL DITCH PROFILE (UNKNOWN DATUM)

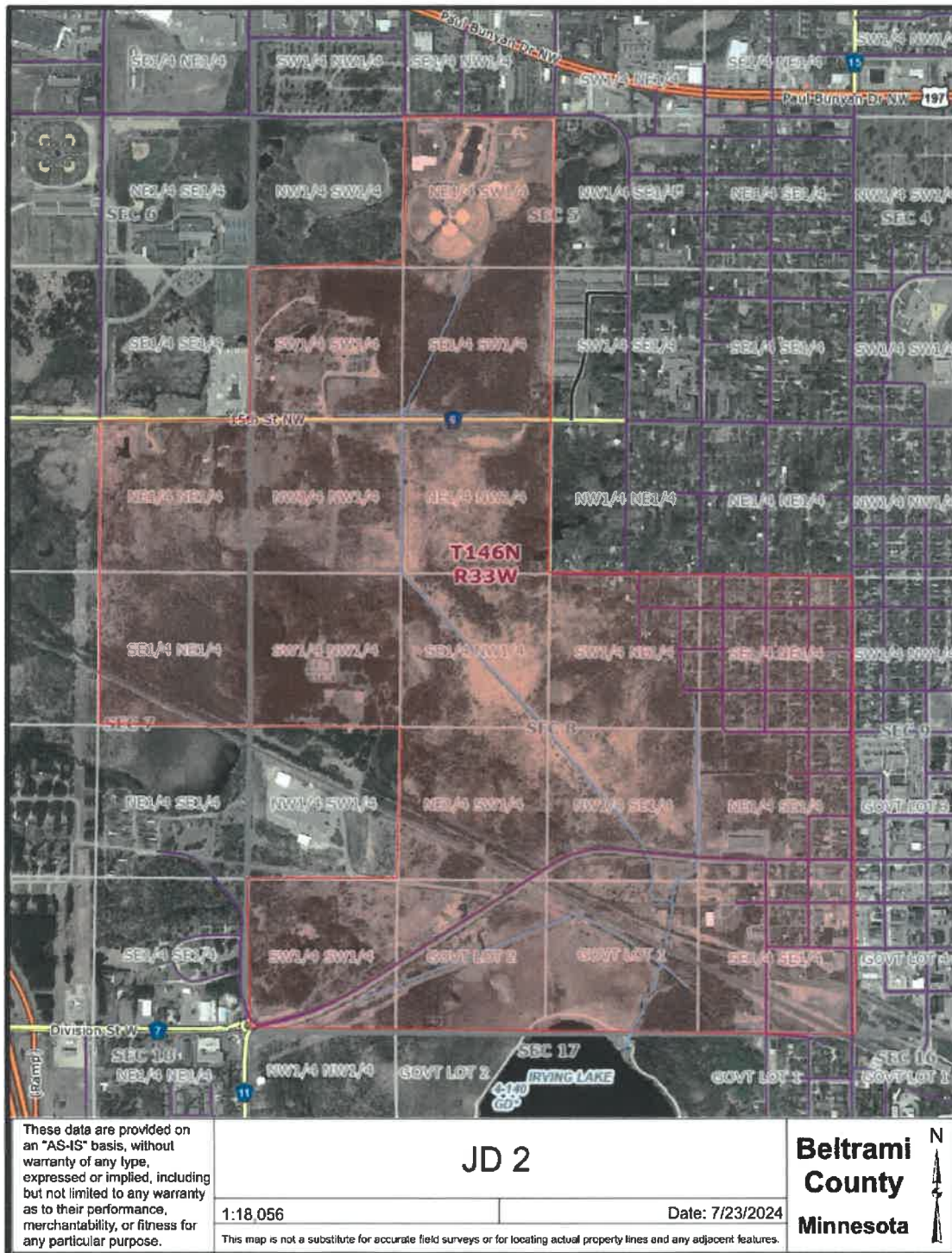


FIGURE 4: JD 2 EXTENTS, ALIGNMENT SHOWN IN BLUE, BENEFITTED AREA SHOWN IN RED

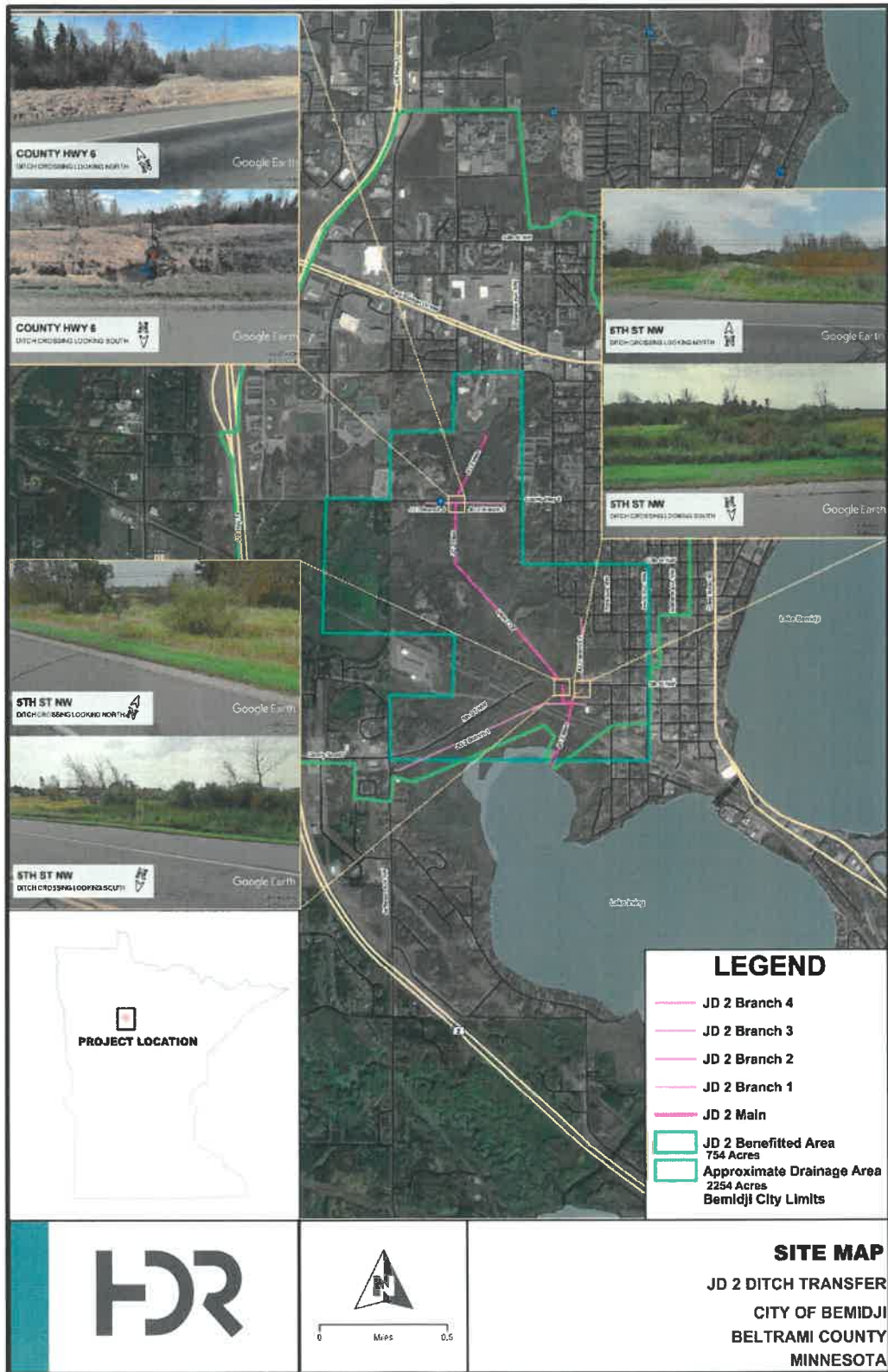


FIGURE 5: SITE MAP



Introduction

Location

The City of Bemidji is petitioning Beltrami County, pursuant to Minnesota Statutes 103E.812 to transfer all of Judicial Ditch 2, including its Branches to the City of Bemidji as the resulting Water Management Authority. Judicial Ditch 2 was established around 1910 to provide a storm water outlet to improve drainage to lands within Beltrami County, Bemidji, and the surrounding area. JD 2 Main begins in the NE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 5 in T146N, R33W and outlets into Lake Irving near the north line of Section 17 in T146N, R33W. A majority of the JD 2 watershed is located within the corporate limits of the City of Bemidji.

Current Conditions in the Watershed

At the time of early establishment, most of the JD 2 benefitted area / watershed is assumed to have been primarily undeveloped. A portion of the watershed affected by this petition has been subsequently developed. JD 2 serves as the primary drainage outlet for the portion of the city shown in Figure 6.

Upon full and complete transfer of the system, the City may perform upgrades on the system to increase the performance of the overall drainage system. Local, State, and Federal environmental permitting considerations must be followed prior to any system improvements.

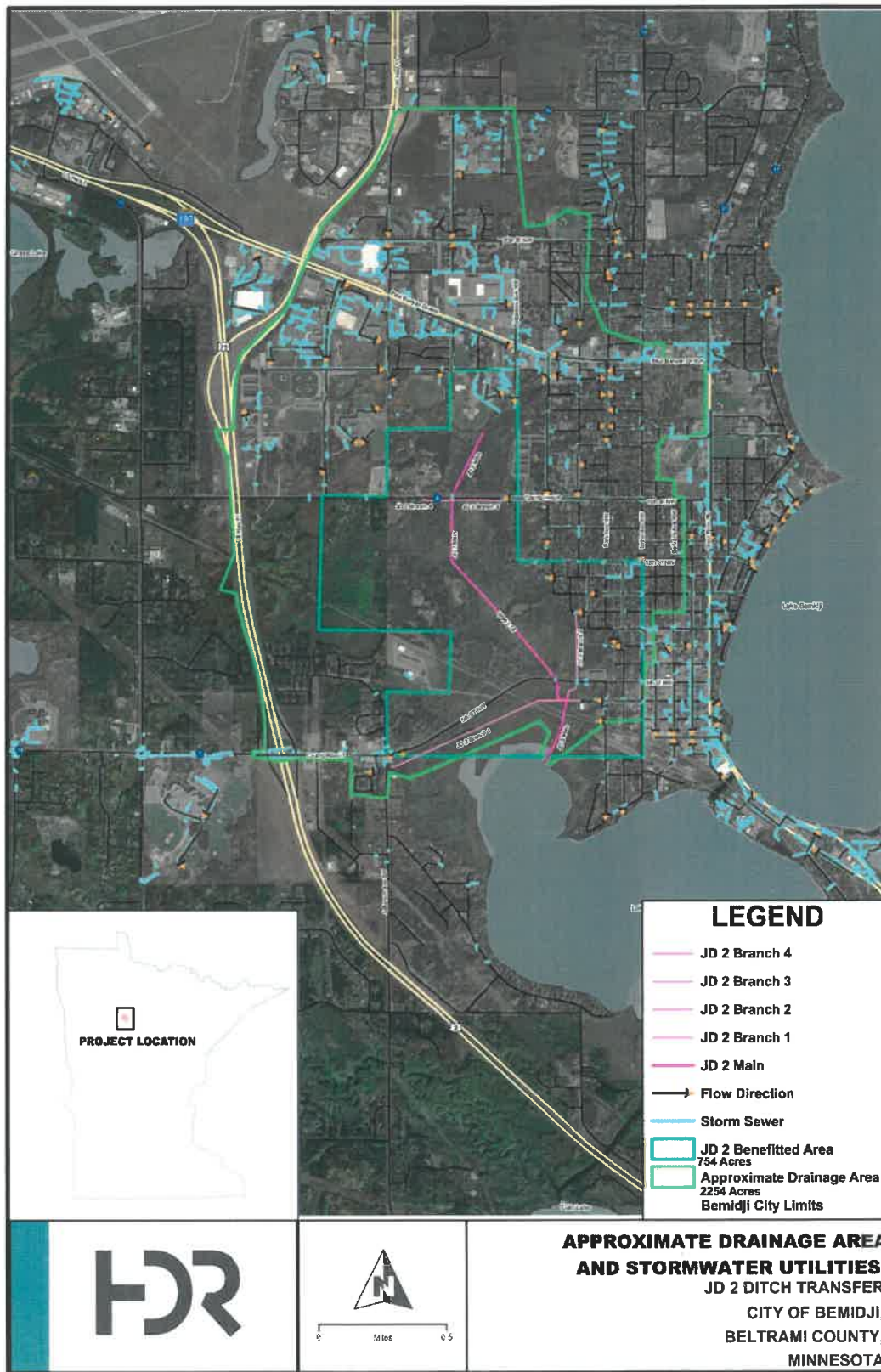


FIGURE 6: APPROXIMATE DRAINAGE AREA AND STORMWATER UTILITIES - BELTRAMI COUNTY JD 2



Project Investigation

Investigation of the ditch records reveals the cross section and ditch grade profile of JD 2 at an assumed survey datum. With respect to current day survey datums, a ditch system survey and datum conversion may be appropriate if ditch maintenance is ever considered. The legal ditch alignment, cross section, and grade are shown previously in Figures 1-3.

Alignment & Stationing

The alignment of JD 2 as outlined in the Petition is displayed in Figures 2, and 4-6. It is unclear whether or not all Branches were constructed in accordance with the original Plat but are presumed to be included in the JD 2 system in terms of legal ditch records and are considered part of this transfer.

Design

EXISTING CONDITIONS

A hydraulic analysis was performed to determine the original channel capacity. The existing ditch has not been maintained well and would appear to have less capacity in its current condition. Depending upon drainage problems, the system capacity would be improved with a good maintenance cleaning, presuming environmental permits can be obtained. The following section summarizes the original ditch specifications.

DITCH SIDE SLOPES

The side slopes of JD 2 are 1:1 (H:V)

DITCH BOTTOM WIDTH AND DITCH DEPTH

The bottom width of the JD 2 main channel and Branch 2 were constructed with 3 feet in bottom width and a 4 foot depth. Branches 1, 3, and 4 were constructed with 6 feet in bottom width and 3 feet in depth.

DITCH GRADE

The ditch profile varies as shown in Figure 3, and the grades are listed in Table 3.

HYDRAULIC STRUCTURE SIZING

The culverts in the JD 2 system are as follows and are included in Appendix C.

TABLE 1: CULVERT CROSSINGS AND SIZES

Description	Existing Culvert	Shape	Top El. (1988 Datum)
CSAH 6 Crossing	22" X 36" RCP Arch	Arch	1349.6' (N) 1348.9' (S)
5 th St. NW Crossing - West	42" RCP	Round	1344.7' (N) 1344.5' (S)
5 th St. NW Crossing - East	36" RCP	Round	1343.6' (N) 1343.5' (S)
4 th St	42" RCP With Steel Sleeve	Round	1344.9' (N) 1344.5' (S)
Trail Crossing	48" RCP With Steel Sleeve	Round	1345.8' (N) 1345.0' (S)
Railroad Crossing	42" RCP With Steel Sleeve	Round	1343.5' (N) 1343.3' (S)

Existing Right-of-Way

The existing right-of-way of JD 2 is 40 feet according to the Plat shown in Figure 2, typically 20 feet on either side of the ditch centerline. Table 2 summarizes the existing right-of-way along JD 2 and its location.

Since the statutory transfer process specifies that after transfer, the system ceases to be subject to regulation under the drainage statutes (103E.812 Subd. 8), it is important that the transferee acquire from the County all easements and rights necessary for the installation, operation and maintenance of the system. The petition for transfer requests that the County transfer all such easements, whether written or unwritten, associated with JD 2 from Beltrami County to the City of Bemidji.

TABLE 2: EXISTING RIGHT-OF-WAY

Ditch	Permanent R.O.W.
JD 2 Main	40'
JD 2 Branch 1	40'
JD 2 Branch 2	40'
JD 2 Branch 3	40'
JD 2 Branch 4	40'

Hydraulic Analysis

Based upon the ditch records of cross section and grade, the estimated capacity of the main ditch at the time of construction was around 50 cubic feet per second (cfs), assuming it was in good repair, with no backwater effects from Lake Irving or significant channel vegetation and brush or trees. In all likelihood, the ditch functions at a much lower capacity now due to its age and apparent state of disrepair.

TABLE 3: ORIGINAL CONSTRUCTED CAPACITY

Ditch	Grades %	Capacity (cfs)
JD 2 Main	.1 / .3 / .15 / .2 / 0	50
JD 2 Branch 1	.4 / 0	50
JD 2 Branch 2	.15 / 0	30
JD 2 Branch 3	.1	30
JD 2 Branch 4	1.1	50+

Additional Considerations

Utilities – Storm Sewer

The known stormwater utilities within the project area are shown in Figure 6. Locations of other utilities such as fiber optic, water, sewer, and gas and underground electric crossing the ditch are unknown. Consideration should be given to potential existing utility conflicts if the JD 2 drainage system is maintained in the future.

Benefitted Area and Drainage Area

Once the ditch is transferred, the benefitted area will likely be a relic of the ditch's history. The actual drainage area is larger and should be considered when future drainage maintenance or improvements are conducted.

Adequacy of Outlet

JD 2 passes through a large undeveloped wetland complex that provides substantial attenuation of floodwaters. JD 2 also discharges into Lake Irving, which is a significant body of water. When considering the ditch in the larger context of the watershed, the entire system which includes many acre-feet of temporary retention, essentially meters outflows quite well. Due to



the ditch's location and undeveloped condition, its potential for causing flood damages is low. Lake Irving is an adequate outlet for JD 2.

5th Street NW (Historical CSAH 7) Alterations

In the later 1970's, there were road improvements along CSAH 7. The road was subsequently placed under City of Bemidji jurisdiction and is now 5th Street NW. This project affected minor portions of the JD 2 ditch system, basically deepening of the ditch system along the road for a few hundred feet. A Hearing was held at the time, so it appears that the system alterations were done in accordance with drainage law, and that there are no presumed material considerations that need to be addressed upon transfer of the system.

Tile Laterals

The ditch record on file at Beltrami County includes a plat of JD 2 "tile locations" west of Branch 2, in between the JD 2 Main and Branch 2. It is unclear if these tile lines were ever installed, and there is no apparent evidence of improved drainage or vegetative change in this area. It is presumed that these tile lines are irrelevant, or at least non-functional, and are not materially relevant to the system once the system is transferred.

Recommendations

Findings and Conclusions

Based on available information, the original purpose of Judicial Ditch 2 was to provide drainage to the lands within the benefitted area; and considering that most of this drainage system is located wholly within the City of Bemidji, under Minnesota Statute 103E.812 Subd.2b The City of Bemidji may petition Beltrami County for transfer to the City.

Considering that Judicial Ditch 2 functions as one of the City's primary drainage systems, and the City desires to improve and/or maintain the system, the continued operation of the ditch as a public drainage system under County Jurisdiction by Minnesota Statute 103E is unnecessary. The operation of the system as City-owned public drainage infrastructure will provide increased efficiencies in the management, maintenance and function of the system.

Therefore, it is the conclusion of the Engineer that the City of Bemidji has historically enjoyed the drainage provided by JD 2, including the outlets of many storm sewer systems within the corporate limits as a part of the JD 2 system; and transfer of the entire JD 2 system, as petitioned by the City of Bemidji, to Beltrami County is reasonable, practical and necessary for



the orderly management of storm, surface and flood waters, including water quality management in this watershed.

The transfer will maintain the nature and extent of the drainage easement occupied by the drainage system and the as-constructed or subsequently improved depth, grade and hydraulic capacity of the drainage system. The transfer will have no impact on properties utilizing the drainage system for an outlet or otherwise benefitting from the existence of the drainage system.

The transfer of the JD 2 system from Beltrami County to the City of Bemidji is recommended by the Engineer without reservation.



Appendix A:

Petition for Transfer of Beltrami County Judicial Ditch #2



Petition to Transfer Beltrami County JD 2
Pursuant to Minnesota Statutes 103E.812

WHEREAS, the City of Bemidji, as Petitioner, hereby petitions the Beltrami County Board of Commissioners, as Drainage Authority for Beltrami County JD 2, to transfer JD 2 to the City of Bemidji as a Water Management Authority; and

WHEREAS, such a transfer is necessary for the orderly management for storm surface or flood waters, including management for water quality purposes; and

WHEREAS, the transfer will not have an adverse impact on property utilizing the system; and

WHEREAS, attached to this Petition is an Engineering Report labeled Exhibit A, which describes the nature and extent of the drainage easement occupied by the drainage system, along with other relevant information, including maps and hydraulic information.

NOW, THEREFORE, Petitioner hereby requests Beltrami County, as Drainage Authority for JD 2, hold the necessary Transfer Hearing, pursuant to Minnesota Statutes 103E.812 for the purpose of transferring JD 2 to the City of Bemidji.

Dated this __ day of _____ 2024.

CITY OF BEMIDJI

By _____
Jorge Prince, Mayor



Appendix B:

MN Statutes



Minnesota Statutes

103E.812 TRANSFER OF ALL OR PART OF DRAINAGE SYSTEM.

SUBDIVISION 1. Drainage lien payment period must expire. After the period originally fixed or subsequently extended to pay the assessment of the drainage lien expires, all or part of a drainage system may be transferred from the jurisdiction of the drainage authority to a water management authority as provided in this section.

SUBD. 2. PETITIONERS. (A) For drainage systems outside of the seven-county metropolitan area, and outside of the municipal boundaries of a statutory or home rule charter city, a petition must be signed by at least 51 percent of the owners of property assessed for the construction of the drainage system, or portion of the drainage system proposed to be transferred, or by the owners of not less than 51 percent of the area of the property assessed for the drainage system, or portion of the drainage system sought to be transferred. The water management authority to which the drainage system is to be transferred must join the petition.

(B) For drainage systems wholly or partially within the municipal boundaries of a statutory or home rule charter city, the city may petition for transfer if the drainage system or portion of the drainage system proposed to be transferred lies within the boundaries of the city. The water management authority to which the drainage system is to be transferred must join the petition.

(C) For drainage systems within the seven-county metropolitan area and within the jurisdictional boundaries of an existing water management authority, the water management authority may petition for transfer if the drainage system or portion of the drainage system proposed to be transferred lies within the boundaries of the water management authority.

(D) For the purpose of the petition, the county is the resident owner of all tax-forfeited property held by the state, under chapter 282, and assessed benefits for the drainage system, and the board may execute the petition for the county as an owner. This paragraph does not apply to lands acquired by the state under chapter 84A.

SUBD. 3. PETITION. (A) The petition must designate the drainage system, or portion thereof, proposed to be transferred and show that the transfer is necessary for the orderly management of storm, surface, or flood waters, including management for water quality purposes.



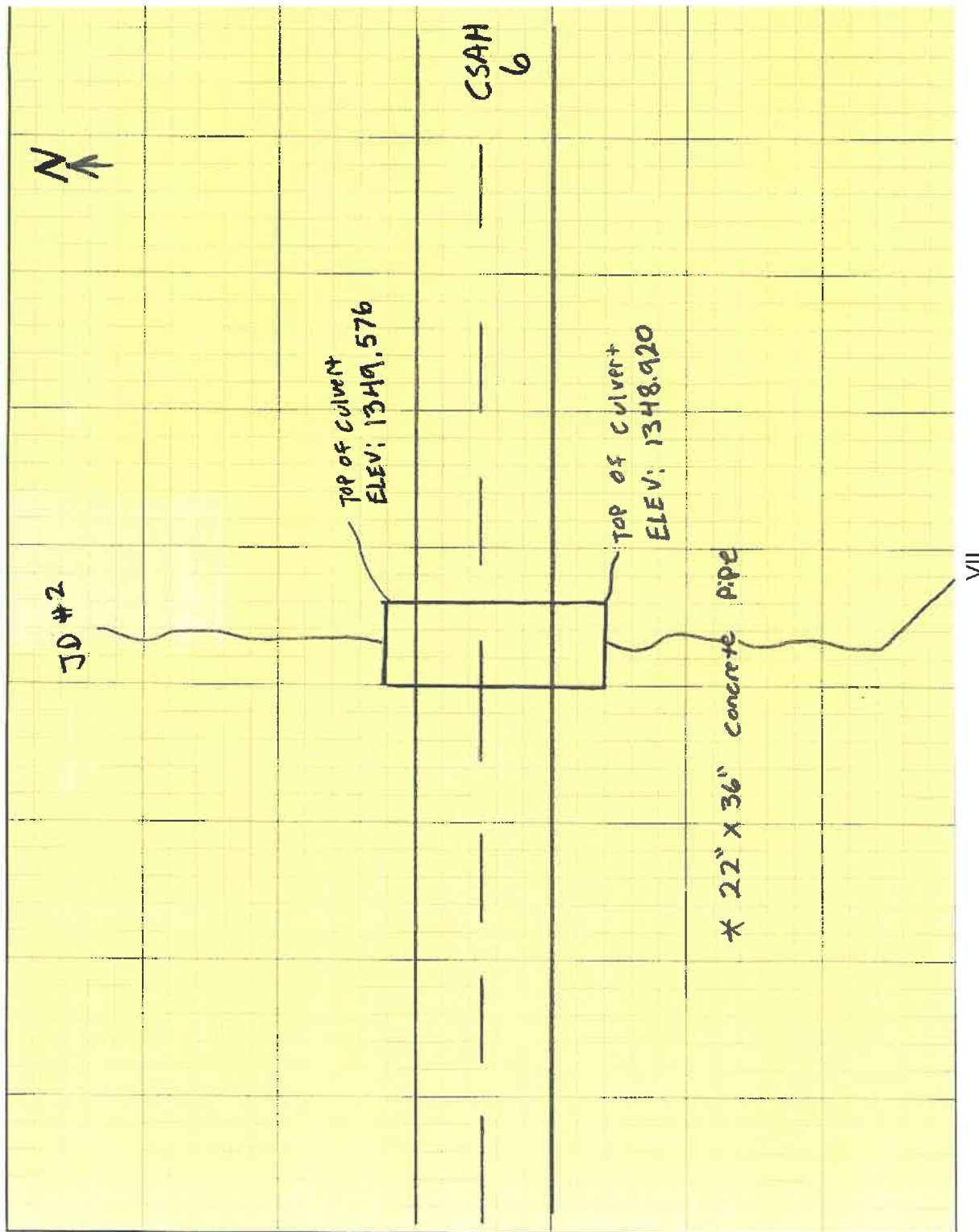
B) The petition must indicate the impact, if any, that the transfer will have on properties utilizing the drainage system for an outlet or otherwise benefiting from the existence of the drainage system.

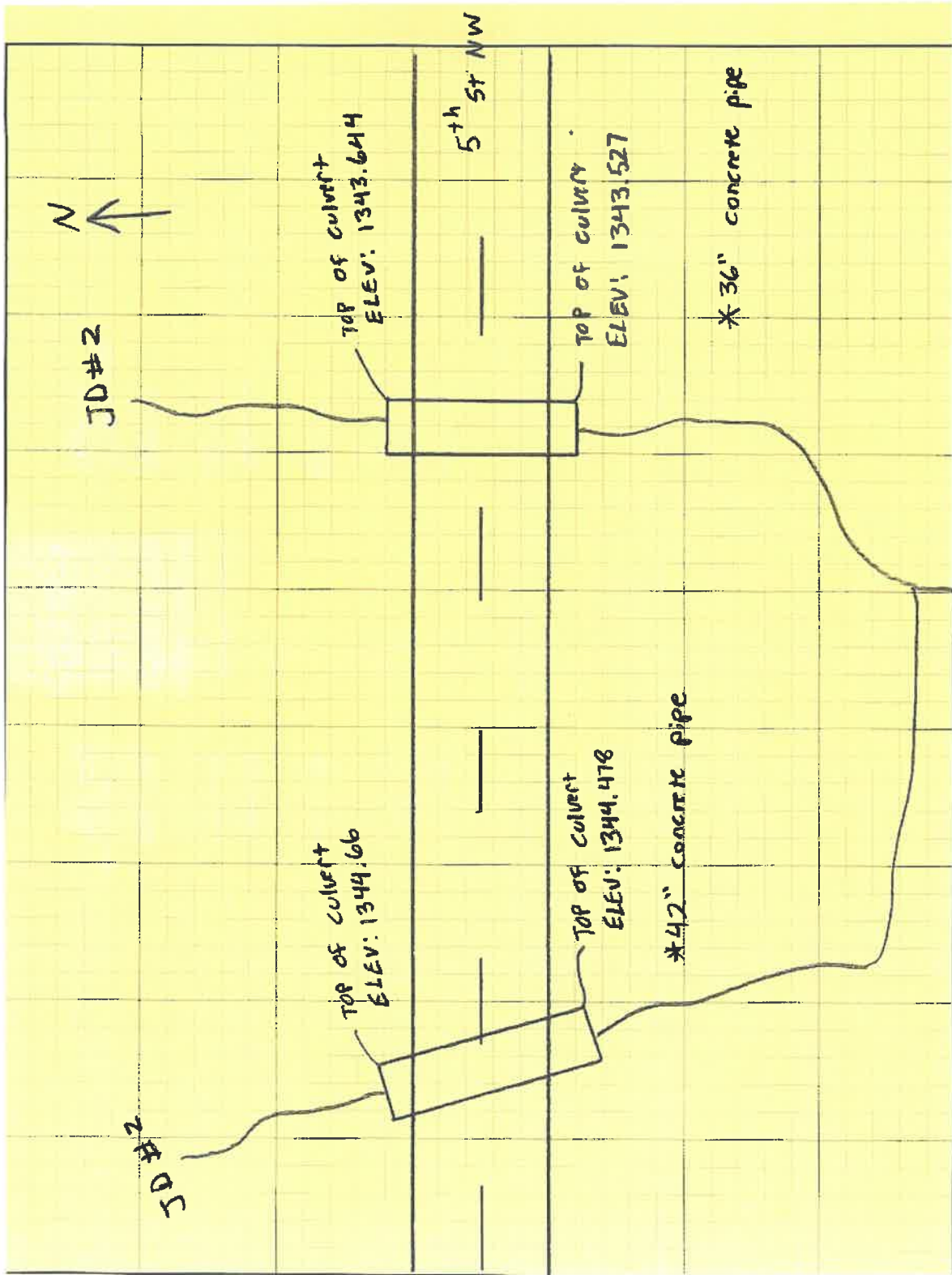
(C) The petition must include an engineering report, prepared by the transferee water management authority, establishing for the record, the nature and extent of the drainage easement occupied by the drainage system, and the as-constructed, or subsequently improved depth, grade, and hydraulic capacity of the drainage system.

SUBD. 4. Filing petition; jurisdiction. (a) If the drainage system is administered by a county or joint county drainage authority and if all properly assessed for benefits in the drainage system is in one county, the petition must be filed with the auditor unless the petition is signed by the board. in which case the petition must be made to the district court of the county where the drainage system is located and filed with the court administrator. If the board, acting as the drainage authority, is also the petitioning water management authority, the petition must be made to the district court of the county where the drainage system is located and filed with the court administrator. If property assessed for benefits is in two or more counties, the petition must be filed with the auditor or court administrator of either (1) the county where the portion of the drainage system sought to be transferred exists; (2) the county not petitioning for the transfer; or (3) the county where the majority of the drainage system sought to be transferred exists.



Appendix C: Culvert Sketches





VIII

