

FINAL ENGINEERS REPORT

REPAIR & IMPROVEMENT OF COUNTY DITCH NO. J27 FREEBORN COUNTY, MN

PREPARED FOR:
Turtle Creek Watershed District
1408 21st Ave NW
Austin, MN 55912

PREPARED BY:
Jones, Haugh & Smith Inc.
515 South Washington Ave
Albert Lea, MN 56007
507-373-4876



**JONES
HAUGH
SMITH**
Engineers + Surveyors

SIGNATURE SHEET

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR 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.



STEVEN J. PENKAVA

LIC. NO. 43895

DATE: October 21, 2025

PREPARED BY:

JONES, HAUGH & SMITH INC.

515 S WASHINGTON AVE

ALBERT LEA, MN 56007

REPAIR & IMPROVEMENT TO FREEBORN COUNTY DITCH NO. J27

PROJECT NUMBER: 16-107

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COUNTY DITCH NO. J27
FREEBORN COUNTY, MINNESOTA

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IN THE MATTER OF REPAIR AND IMPROVEMENT OF COUNTY DITCH NO. J27
FREEBORN COUNTY, MINNESOTA

1.0 EXECUTIVE SUMMARY

This Final Engineers Report (FER) details the proposed repair and improvement of a separable portion of County Ditch No. J27 (CD J27) in Freeborn County, Minnesota. The FER addresses drainage deficiencies in a 1,374-acre watershed characterized by rolling agricultural terrain with numerous landlocked depressional areas. Investigations revealed aging infrastructure, including undersized and deteriorating tile segments with drainage coefficients as low as 0.11 inches per day (below NRCS recommendations of 0.50 inches per day), frequent bank failures along the main open ditch due to elevated culvert flowlines at Bridge 89286, and issues such as cracked pipes, misaligned joints, and blockages from debris and roots. These conditions have led to extended ponding, reduced agricultural productivity, and erosion, impacting landowners in Sections 18, 19, and 30 of Newry Township.

The recommended improvements include installing non-perforated dual-wall HDPE tile ranging from 8 to 24 inches in diameter to replace Branches B, D, D-1, and D-2 tiles, replacing all open tile inlets with alternative inlets, and downsizing Bridge 89286 to a single 12' x 6' reinforced concrete box culvert. This design creates 5.2 acre-feet of upstream storage, reduces peak flows, and lowers bridge replacement costs by \$93,075 (24%) compared to the existing structure.

2.0 PETITION

The Petition filed requests that the Main Open Ditch, Branch B Open Ditch and Tile, Branch D Tile, Branch D-1 and Branch D-2 Tile of County Ditch No. J27 be repaired and improved to provide adequate capacity and a better outlet.

3.0 INVESTIGATION AND FINDINGS

3.1 Topographic Survey and Watershed Overview

A comprehensive investigation of County Ditch No. J27 (CD J27), was conducted using historical records, field surveys and maps and profiles to determine the As Constructed and Subsequently Improved Condition (ACSIC) of the system. A detailed topographic survey of the petitioned watershed area was performed, utilizing high-resolution aerial photography, Light Detection and Ranging (LiDAR) data, U.S. Geological Survey (USGS) contour maps for broader terrain context, as-built construction plans where available, and county soils surveys. Benchmark elevations are listed on the accompanying plans.

The watershed's topography is characterized by gently rolling hills interspersed with numerous landlocked depressional areas. These depressions, scattered across the landscape, have historically contributed to localized ponding and inefficient drainage, prompting the original system's reliance on subsurface tile to provide both surface and subsurface outlets. No original plans or profiles were available for the CD J27 tile segments north of the center of Section 19, Newry Township; consequently, these sections were located in the field to document pipe sizes, materials, grades, and overall condition. The total watershed encompasses approximately 1,374 acres, including an additional 42 acres that drain into the system via tile from the north half of the southwest quarter of Section 18, Newry Township.

3.2 Main Open Ditch

Bridge 89286 is the outlet of CD J27 and consists of a double line of 8-foot x 8-foot reinforced concrete box culverts (RCB) with a waterway opening of 124 square feet. The culvert flowline is approximately 2 feet above the existing ditch bottom which prevents the ditch from fully draining. This elevation discrepancy results in constant saturation of the lower 2 feet of the ditch banks, creating instability and recurrent bank failures, sloughing, and erosion. Recent maintenance efforts have included cleaning the channel and flattening the side slopes to enhance stability, but these measures address symptoms rather than the underlying hydraulic issue. The bridge is currently scheduled for replacement, presenting an opportunity to integrate improvements that align with the overall project goals.

3.3 Branch B Open Ditch and Tile

The Branch B open ditch and tile system was examined starting at the junction with the main open ditch in the SW $\frac{1}{4}$ of Section 19, Newry Township, extending northerly across the west half of Section 19 and concluding at 310th Street on the north line of the NW $\frac{1}{4}$ of Section 19, Newry Township. The open ditch remains stable and in good overall condition, with no significant erosion or sediment buildup observed. Investigation of the tile revealed the as-built grades are flatter in isolated areas compared to those indicated on the original plans, reducing the tiles capacity.

The lower end of Branch B tile was televised from the open ditch upstream to the Butler-DeBeau property line. This inspection confirmed that the tile in this segment is in good condition, with minimal defects or obstructions. Additional televising attempts further upstream near the Butler building site were unsuccessful due to blockages from accumulated debris and tree roots.

3.4 Branch D Tile

The investigation of Branch D tile commenced at the junction with the main open ditch in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 19, Newry Township and coursed in a northerly direction through Section 19 before terminating in the SE $\frac{1}{4}$ Section 18, Newry Township. The tile was located and visually inspected, which uncovered multiple deficiencies: cracked pipe sections, misaligned joints, sags in the pipe alignment causing sediment traps and reduced flow, and numerous patched areas indicating prior repairs. In low-lying areas along the alignment, organic soils have subsided over time, resulting in shallow tile depths vulnerable to damage from agricultural equipment. The lower 400 feet of the tile was replaced in 2014 in an attempt to correct some of the deficiencies.

3.5 Branch D-1 Tile

The Branch D-1 tile investigation commenced at the junction with the Branch D tile in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 19, Newry Township and coursed in a northerly direction terminating at 310th Street. The tile was located and found to be shallow with misaligned joints and having longitudinal cracks.

3.6 Branch D-2 Tile

The Branch D-2 tile investigation commenced at the junction with the Branch D tile in the NE ¼ NE ¼ Section 19, Newry Township and coursed in an easterly direction through the NE ¼ Section 19, Newry Township. Similar to Branch D-1, the tile exhibits shallow depths in low areas, misaligned joints, and longitudinal cracks that suggest ongoing deterioration.

The drainage coefficient—defined as the depth of water removed from the contributing watershed over a 24-hour period—serves as a key metric for evaluating system performance. Natural Resources Conservation Service (NRCS) guidelines recommend a minimum of 0.50 inches per day for the project watershed.

Table 1 below summarizes the approximate existing drainage coefficients for key tile segments, with values below the NRCS threshold highlighted for emphasis. These calculations assume the tile operates As Constructed and Subsequently Improved Condition (ACSIC); however, actual capacities are likely lower due to observed defects, repairs, and degradation, as evidenced by field inspections and televising results. These findings indicate the ditch is not operating as originally designed and improvements are required to restore functionality.

Tile	Location	Length (ft)	Size (in)	Grade (%)	Existing Drainage Coefficient (in/day)
Branch D	0+00 to 3+30	330	18	0.56	0.28
Branch D	3+30 to 4+40	110	18	3.26	0.68
Branch D	4+40 to 20+58	1,618	18	0.82	0.34
Branch D	20+58 to 25+25	467	20	0.29	0.28
Branch D	25+25 to 44+78	1,953	16	0.19	0.12
Branch D	44+78 to 50+42	564	16	0.11	0.18
Branch D	50+42 to 57+00	628	16	0.65	0.43
Branch D	57+00 to 71+57	1,457	12	0.52	0.23
Branch D	71+57 to 84+16	1,259	12	0.16	0.13
Branch D-1	0+00 to 4+23	423	6	0.10	0.11
Branch D-1	4+23 to 7+14	291	6	0.55	0.25
Branch D-1	7+14 to 9+39	225	6	1.27	0.37
Branch D-1	9+39 to 15+00	561	6	1.60	0.89
Branch D-2	0+00 to 5+00	500	12	0.31	0.24
Branch D-2	5+00 to 10+68	568	12	0.55	0.32
Branch D-2	10+68 to 13+86	318	12	0.35	0.25
Branch D-2	13+86 to 15+32	146	12	0.12	0.15
Branch B	0+00 to 5+00	500	16	0.63	0.66
Branch B	5+00 to 14+00	900	18	0.63	0.91
Branch B	14+00 to 16+00	200	18	0.40	0.76
Branch B	16+00 to 20+00	400	12	0.40	0.26

Branch B	20+00 to 26+00	600	16	0.21	0.62
Branch B	26+00 to 28+00	200	16	0.12	0.47
Branch B	28+00 to 31+00	300	16	0.30	0.74
Branch B	31+00 to 33+00	200	16	0.15	0.52
Branch B	33+00 to 36+00	300	16	0.22	0.63

Table 1: Existing CD J27 Tile Summary.

4.0 PROPOSED SOLUTION

The proposed improvements for County Ditch No. J27 (CD J27) are designed to address the deficiencies identified in the investigation and accomplish the results envisioned by the Petitioners. Key factors considered include design requirements, landowner input, compatibility with the Cedar-Wapsipinicon Comprehensive Watershed Management Plan, and economic feasibility. A runoff coefficient of 0.50 inches per day was used for the project watershed. The proposed improvements consist of constructing a replacement tile ranging in size from 8-inches to 24-inches in diameter. General project design requirements are listed below, and a detailed description of each tile follows.

- The proposed tile will serve as the single outlet for the watershed, replacing the existing tile except for a few small segments which will be connected to the proposed tile.
- The proposed tile will be non-perforated dual wall high-density polyethylene tile (HDPE) with watertight joints. All road crossings will be made with non-perforated dual wall polypropylene tile (DWPP).
- Township road crossings will be made by open trench methods.
- Private tiles encountered during construction will be connected to the proposed tile. Landowners are encouraged to furnish the Engineer with private tile maps and provide input when staking for construction.
- All existing open tile inlets will be replaced with alternative tile inlets. No open inlets are planned as part of this project.
- Tile inspection inlets will be installed at property boundaries, constructed approximately 4 feet above natural grade and capped to prevent surface water inflow, ensuring accessibility for future maintenance.

4.1 Main Open Ditch

The proposed replacement structure for Bridge 89286 has been modified based on concerns from the Freeborn County Highway Department and landowners about potential maintenance issues. The modification eliminates the 24-inch reinforced concrete pipe (RCP) from the design, as it may become clogged with debris, leading to frequent maintenance. The proposed 12' x 6' reinforced concrete box (RCB) culvert remains unchanged, but the flowline is lowered one foot to elevation 1201. The proposed structure reduces the crossing area by 44 percent from 126 square feet to 70 square feet. Cost estimates to replace the Bridge, detailed in Appendix 3, indicate a 24 percent reduction (\$93,075) in total cost compared to replacing the existing double culvert.

Freeborn County has participated in the bridge design process and intends to secure funding for the proposed structure through the Local Bridge Replacement Program, contingent upon approval of the project by the Turtle Creek Watershed District. A letter from the Freeborn County Highway Department is attached in Appendix 3. If the Improvement project is not approved, Freeborn County plans to replace the structure with a double line of 8' x 8' RCB culverts to match the existing conditions.

4.2 Branch B Tile

Construct a replacement Branch B tile beginning near the west line of the SE ¼ NW ¼ Section 19, Newry Township (station 14+25) and course in a northerly direction across the E ½ NW ¼ Section 19.

Construction will terminate on the north side of 310th Street. The tile will generally follow the same alignment as the existing tile through the Butler building site and consist of approximately 2,215 linear feet of 15-inch tile.

4.3 Branch D Tile

Construct a replacement Branch D tile beginning at the junction with the main open ditch and course in a northerly direction across Section 19 and the SE ¼ Section 18, Newry Township. Construction will terminate on the north line of the SE ¼ Section 18, Newry Township. The proposed tile will generally parallel the course of the existing tile and consist of approximately 5,000 linear feet of 24-inch tile, 2,500 linear feet of 18-inch tile and 800 linear feet of 15-inch tile.

4.4 Branch D-1 Tile

Construct a replacement Branch D-1 tile beginning at the junction with the Branch D tile and course in a northerly direction across the NE ¼ NE ¼ Section 19. Construction will terminate on the north side of 310th Street in the SE ¼ SE ¼ Section 18, Newry Township. The lower 560 feet of the Branch D-1 tile has been upsized to accommodate the proposed realignment of the Branch D-2 tile. The proposed tile will generally parallel the course of the existing tile and consist of approximately 560 linear feet of 15-inch tile, 40 linear feet of 12-inch tile and 920 linear feet of 8-inch tile.

4.5 Branch D-2 Tile

Construct a replacement Branch D-2 tile beginning at the junction with the proposed Branch D-1 tile and course in an easterly direction terminating in the west road ditch of 860th Avenue in the NE ¼ NE ¼ Section 19, Newry Township. The Branch D-2 tile running north, parallel to 860th Avenue has been eliminated from the project. The proposed tile will consist of approximately 967 linear feet of 15-inch tile.

Drainage coefficients of the proposed tile are shown in Table 2. The proposed drainage coefficient exceeds design coefficient in some locations; however, the capacity of tile is controlled by the outlet.

Tile	Location	Length (ft)	Size (in)	Grade (%)	Proposed Drainage Coefficient (in/day)
Branch D	0+00 to 5+00	500	24	0.35	0.52
Branch D	5+00 to 6+00	100	24	2.15	1.29
Branch D	6+00 to 20+00	1,400	24	0.65	0.71
Branch D	20+00 to 39+00	1,900	24	0.30	0.50
Branch D	39+00 to 41+00	200	24	0.30	0.55
Branch D	41+00 to 50+00	900	24	0.10	0.54
Branch D	50+00 to 57+00	700	18	0.70	0.67
Branch D	57+00 to 65+00	800	15	0.70	0.52
Branch D	65+00 to 83+00	1,800	18	0.30	0.58
Branch D-1	0+00 to 5+60	560	15	0.55	0.51
Branch D-1	5+60 to 15+20	960	8	1.30	0.57
Branch D-2	0+00 to 9+67	967	15	0.50	0.60
Branch B	14+25 to 36+40	2,215	15	0.40	0.51

Table 2: Proposed CD J27 Tile Summary.

5.0 ABANDONMENT OF EXISTING TILE

The proposed tile will replace the existing CD J27 Branch B, D, D-1 and D-2 Tiles. We recommend the existing tile be abandoned and no longer maintained by the Drainage Authority.

6.0 SEPARABLE MAINTENANCE

When a portion of the drainage system being improved needs repair, Minnesota Statute 103E.215 Subdivision 6 allows the separation of the cost of the repair from the cost of the improvements. Separable maintenance can be applied to the portions of the existing system that will be replaced or improved by the proposed project. Detailed cost estimates for the repair and improvement costs are included in the Appendix. We estimate the separable maintenance cost allocation for the project to be 67.8%. Engineering, legal, administrative, bonding and interest cost could be allocated similarly.

7.0 OUTLET ANALYSIS

The Turtle Creek Watershed District's policy is to replace existing bridges or culverts with structures that match the capacity of the original structure. While this ensures consistency with historical infrastructure, oversized structures cannot be downsized and undersized structures cannot be upsized.

After severe flooding in the Cedar and Turtle Creek Watersheds in 2004, an ad-hoc committee consisting of the Turtle Creek Watershed District, Mower County, Mower County SWCD and the City of Austin was formed to develop a Surface Water Management Plan (SWMP) for the Upper Cedar River Watershed.

The SWMP goal was to reduce the 100-year flood discharge rate of the Cedar River at the Austin USGS gauging station by 20 percent. The plan recommended reducing the size of existing culverts or bridges throughout the Cedar and Turtle Creek watersheds creating 104 regional detention basins. Flow rate reductions at each location varied and ranged from no flow reduction up to an 86 percent reduction. The proposed culvert restrictions were estimated to reduce total flows by 17.5 percent at the Austin USGS gauging station.

The Cedar-Wapsipinicon Comprehensive Watershed Management Plan incorporated the goals of the SWMP and recommends additional studies to establish subwatershed specific peak flow reduction goals. The plan understood that a blanket flow reduction at all locations is not feasible due to topography, existing infrastructure and flood protection goals at each location.

The CD J27 watershed is located near the headwaters of the Mud Creek Branch to JCD J24. The area is identified as a storage priority area, sediment load reduction area and Level 3 Implementation Area in the Cedar-Wapsipinicon Comprehensive Watershed Management Plan. Given these designations, along with the Improvement Petition, upcoming bridge replacement and the support of willing landowners the site presents an opportunity to implement the goals and recommendations of the SWMP and the Cedar-Wapsipinicon Comprehensive Watershed Management Plan. The project proposes to replace the existing double line of 8' x 8' reinforced concrete box (RCB) culverts with a 12' x 6' reinforced concrete box (RCB) culvert.

Flow rates for the current conditions at Bridge 89286 were determined using the U.S. Geological Survey's "StreamStats" program. The proposed condition flows were calculated by adding the additional flow generated by the Improvement to the existing flow rates. This approach assumes that the peak flow from the Improvement coincides with the peak flow in the ditch. Table 3 provides a comparison of flow rates before and after the proposed changes.

Flood Frequency	Existing Flow (CFS)	Proposed Flow (CFS)
1.5-Year	57	63.1
2-Year	82	88.1
5-year	161	167.1
10-year	227	233.1
25-year	325	331.1
50-year	410	416.1
100-year	506	512.1

Table 3: Existing and Proposed Flows at Bridge 89286.

The existing and proposed structures for Bridge 89286 were modeled, with results summarized in Table 4. The table shows the upstream water surface elevations and culvert outlet velocities under current and proposed conditions for various storm events. Proposed water surface elevations are lower or unchanged for the 1.5 to 10-year storm events and increase for the 25, 50 and 100-year storm events, with the largest rise being 0.4 feet for the 100-year storm event.

Proposed culvert outlet velocities are unchanged or lower for the 2 to 10-year storm events and increase slightly for larger storm events. The maximum proposed velocity is 7.1 feet per second for the 100-year storm event, up from 6.0 feet per second under current conditions. The proposed velocity is well within the range allowed by MnDOT for vegetative channels, the culvert inlet and outlet will be stabilized using a combination of Class 3 and Class 4 riprap and downstream erosion is not anticipated.

Flood Frequency	Existing Upstream Water Elevation	Proposed Upstream Water Elevation	Existing Crossing Outlet Velocity (Feet/Second)	Proposed Crossing Outlet Velocity (Feet/Second)
1.5-Year	1203.3	1202.6	6.2	4.7
2-Year	1203.6	1203.1	6.9	4.4
5-year	1204.5	1204.4	5.3	4.8
10-year	1205.3	1205.3	5.2	5.2
25-year	1206.3	1206.4	5.5	5.9
50-year	1207.5	1207.7	5.0	5.8
100-year	1208.0	1208.4	6.0	7.1

Table 4: Existing and Proposed Water Surface Elevations.

Low-lying areas adjacent to CD J27 currently experience flooding when water levels reach or exceed an elevation of 1206. This flooding will persist post-project; however, the depth of flooding will increase. The proposed 12' x 6' RCB culvert will reduce the 100-year discharge by approximately 10 percent and provide an additional 5.2 acre-feet of water storage. Table 5 presents a comparison of the existing and proposed flooded areas for the 50 and 100-year storm events, while a map showing the inundation area during the 100-year event is included in Appendix 3.

Flood Frequency	Existing Area Flooded (AC)	Proposed Area Flooded (AC)	Additional Land Inundated (AC)
50-year	19.1	32.0	12.9
100-year	31.9	45.0	13.1

Table 5: Existing and Proposed Flooded Area Comparison.

The overtopping elevation of CSAH 30 is 1211.8. A 500-year storm event was modeled and the highwater elevation was forecast to reach elevation 1210.4 which is 1.4 feet below the low point of the roadway. The proposed structure will not increase the overtopping frequency of CSAH 30.

The proposed 12'x6' RCB is estimated to reduce the total cost of the bridge replacement by \$93,075 as shown in the detailed cost estimates in Appendix 3.

The CD J27 Improvement project presents an opportunity to implement the flow reduction goals of the Cedar-Wapsipinicon Comprehensive Watershed Management Plan and improve upstream drainage. The project reduces the cost of bridge construction, protects the roadway, and reduces downstream flooding. It is the opinion of the Engineer that the outlet is adequate for the proposed improvements.

8.0 ENVIRONMENTAL CRITERIA

Pursuant to the requirements of Minnesota Statutes 103E.015, Subdivision 1 with respect to environmental land use and multipurpose water management criteria, the following information is herewith submitted relative to the above referenced project:

8.1 Subd. 1a. Investigating potential use of external sources of funding and technical assistance

There are outside sources of funding available to assist in financing water quality and quantity projects. Below is a list of possible sources of funding that may be available.

The Cedar-Wapsipinicon River 1W1P Grant program is a potential source of external funding. The program funds eligible practices such as grade stabilization structures, grass waterways, water and sediment control basins, controlled drainage, saturated buffers, denitrifying bioreactors and cover crops.

A potential source of external funding is provided by the Board of Water and Soil Resources Clean Water Fund through the Multipurpose Drainage Management Grant. The program funds practices which have been shown to reduce erosion and sedimentation, reduce peak flows and flooding and improve water quality. Eligible practices include grade stabilization structures, grass waterways, water and sediment control basins, open tile inlet replacement, controlled drainage, saturated buffers, and denitrifying bioreactors.

The Environmental Quality Incentives Program (EQIP) provided by the Natural Resources Conservation Service is a voluntary conservation program that helps agricultural producers in a manner that promotes agricultural production and environmental quality. Numerous areas within the CD J27 watershed are suitable for Best Management Practices (BMP's) which would qualify for funding through EQIP. Typical practices include those mentioned above in addition to cover crops. The EQIP program can fund practices throughout the watershed and landowners are encouraged to contact the local NRCS office for more details.

The Freeborn County Highway Department is working through the Local Bridge Replacement Program to secure the funds to replace Bridge 89286. It is our understanding that funding is available for the project.

The Final Engineers Report was provided to the Freeborn County Soil and Water Conservation District on July 9, 2025, to determine if portions of the project are eligible for funding. At the time of the review no outside funding sources were available for the project.

MINNESOTA STATUTE 103E.015, SUBD 1: Environmental land use and multipurpose water management criteria:

8.2 Private and public benefits and costs of the proposed drainage project

The proposed construction will enhance the existing water quality practices in the watershed and provide landowners with a suitable outlet for additional practices. Project benefits include more manageable fields, timely cropping procedures, reduced compaction and improved crop yields. Additional benefits will be derived from increased farm revenue and improved tax base within the watershed.

Public benefits include reducing peak flows, increasing water storage, protecting County State Aid Highway 30 from overtopping and saving tax dollars by reducing replacement costs by 24 percent (\$93,075). Replacing existing surface water inlets with alternative inlets will improve water quality. Additional Public and Private benefits for the project will be established by the Viewers.

8.3 Alternative measures, including measures identified in applicable state-approved and locally adopted water management plans, to: (i) conserve, allocate, and use drainage waters for agriculture, stream flow augmentation, or other beneficial uses; (ii) reduce downstream peak flows and flooding; (iii) provide adequate drainage system capacity; (iv) reduce erosion and sedimentation; and (v) protect or improve water quality

Our team met with landowners in the project watershed to explore a range of conservation practices designed to improve water management, reduce runoff, and protect soil health, as illustrated on Map 1. These practices include restoring wetlands and creating water storage sites, installing water and sediment control basins (commonly known as WASCObS), and implementing saturated buffers and woodchip bioreactors. We also discussed controlled drainage systems, grassed waterways, two-stage ditches, in-channel sediment basins, and the use of cover crops. Each approach offers unique benefits for managing water and enhancing the watershed's resilience. Participation in these practices is voluntary, and landowners can access potential funding through programs like those offered by the USDA or state conservation initiatives.

The Do Nothing alternate has been discussed but the Petitioners have experienced poor drainage in the project watershed and crop loss occurs on a frequent basis due to lack of adequate drainage. The frequent crop loss results in lower property values for wet acres and landowners do not receive a reasonable return on their investment.

Another alternative is to restore typically flooded areas of the watershed to wetlands. The alternative provides storage in depressional areas to temporarily hold runoff until the existing drainage system can convey the flows. Two potential wetland restorations were investigated as part of this project and are shown on Maps 2 and 3. A second potential wetland restoration basin, shown on Map 2, is located in the NE ¼ Section 19, Newry Township on the Steensma property. It appears a 16-acre basin with an approximate depth of two feet could be restored. Branch D and D-1 tiles could be modified to outlet into the basin, but the Branch D-2 tile would be below the permanent water level and require re-routing around the basin. We estimate a total easement area of approximately 85 acres would be required for the restoration. The estimated cost of land acquisition, re-routing existing private tile and restoration costs is estimated at \$10,000 per acre, bringing the total estimated restoration cost to approximately \$850,000. Restoration costs would be offset by eliminating tile within the basin and downsizing of the lower end of Branch D and D-1 tiles for an estimated savings of \$80,000. The net restoration cost is estimated at \$770,000 plus the upstream and downstream tile improvements.

A potential wetland restoration basin, shown on Map 3, is located in the SW ¼ of Section 17, Newry Township on the Hinrichs property. It appears an 18-acre basin could be restored with an approximate water elevation of 1250. The basin's irregular shape requires a 115-acre easement. To prevent off-site flooding, fill must be placed on adjacent property and along 310th Street. Due to flat surrounding topography, existing drainage tiles must be re-routed around the basin. Estimated costs for land acquisition, tile re-routing, and restoration are \$10,000 per acre, totaling \$1,150,000.

Another alternative involves restricting flow at culvert locations by replacing Bridge 89286 with a downsized culvert, as recommended in Section 3.9.2.1 of the Cedar-Wapsipinicon Watershed Management Plan. The plan recommends downsizing roadway culverts to create short term storage to reduce peak flows. Replacing Bridge 89286 with the proposed culvert meets this goal.

Landowner participation in the proposed conservation practices is voluntary, with potential funding available from external sources, such as USDA or state conservation programs. Currently, landowners are not interested in pursuing wetland restoration due to high costs and extensive easement requirements. They strongly support replacing Bridge 89286 with a downsized culvert to reduce peak flows, as outlined in Section 3.9.2.1 of the Cedar-Wapsipinicon Comprehensive Watershed Management Plan. We recommend continuing outreach to explore conservation practices and funding opportunities while advancing the culvert modification project.

8.4 The present and anticipated land use within the drainage project or system, including compatibility of the project with local land use plans

Land use within the watershed varies and is comprised of prime farmland, pasture, building sites, roads, restored wetlands and natural areas. All the agricultural lands in the project watershed are used for growing diversified crops. Anticipated future use remains agricultural, with the upgraded system supporting sustainable farming practices like cover crops, as encouraged in the CWMP to reduce nutrient runoff and maintain soil health.

8.5 Current and potential flooding characteristics of property in the drainage project or system and downstream for 5-, 10-, 25-, and 50-year flood events, including adequacy of the outlet for the drainage project:

The proposed project meets the goals and recommendations of the Surface Water Management Plan and the Cedar-Wapsipinicon Comprehensive Watershed Management Plan, protects the roadway and upstream property, reduces structure replacement costs and peak discharges. See the Outlet Analysis section of the report for more detailed information regarding flooding and outlet adequacy.

8.6 The effects of the proposed drainage project on wetlands

National Wetland Inventory Maps of the project area were reviewed and the location of mapped but not delineated wetlands are shown in Figure 1. Potential impacts to the wetlands near the Branch D tile in the NW ¼ SE ¼ Section 18, Newry Township (stations 65+00 to 80+00) will be mitigated by use of non-perforated tile with watertight joints.

To ensure compliance with federal wetland regulations, we encourage landowners to contact the Natural Resources Conservation Service (NRCS) and complete Form AD 1026. This form enables the NRCS to assess each parcel for wetlands and recommend measures to avoid impacts. Due to federal data privacy regulations, the responsibility for completing this form lies with individual landowners.

Freeborn County and the Turtle Creek Watershed District strongly support wetland restoration initiatives. Even after the project is established, both entities will continue to promote wetland restoration efforts. The proposed project is designed to avoid negative impacts on existing wetlands, ensuring alignment with conservation goals.

The project proposes replacing all existing open tile inlets with alternative tile inlets, each serving an average drainage area of 10 acres. According to the Cedar-Wapsipinicon Comprehensive Watershed Management Plan, these alternative tile inlets are expected to reduce nitrogen and phosphorus by 27 percent and sediment by 45 percent. Based on these efficiencies, the proposed inlets will remove approximately 593 pounds of nitrogen, 7 pounds of phosphorus, and 124 pounds of sediment from the watershed each year. This reduction will significantly improve water quality by limiting the transport of pollutants downstream.

Portions of Turtle Creek downstream from the project outlet are impaired for total suspended solids (TSS). By reducing peak discharges, the project will decrease the likelihood of bank erosion, a key contributor to sediment in the creek. The installation of alternative tile inlets will further reduce sediment transport, directly addressing the TSS impairment.

Proposed culvert outlet velocities are comparable to the existing structure and downstream erosion is not anticipated. Additional water quality practices within the watershed are shown on Map 1. The potential conservation practices were shared and discussed with landowners during project meetings. The local Soil and Water Conservation Districts are available to support landowners by providing technical assistance and funding opportunities for practices that fall outside the scope of the Turtle Creek Watershed District's jurisdiction. Implementation of the proposed construction will maintain or improve the quality of water leaving the project watershed.

8.8 The effects of the proposed drainage project on fish and wildlife resources

Aerial photographs were reviewed, and a cursory visual inspection of the watershed conducted. Wildlife habitat areas within the watershed typically consist of CRP, farm groves, fence lines and road ditches. Wildlife habitat will not be substantially reduced by the proposed construction. There may be some temporary disruption of upland wildlife habitat during construction. The extent and duration of habitat disturbance will be similar to that experienced during normal agricultural cropping practices. During the field survey for this project, the wildlife observed was common to that of other similar drainage systems in the general area, which have been properly repaired and maintained in the past. All planned erosion control materials are MNDOT approved and made of natural products.

8.9 Effects of the proposed drainage project on shallow groundwater availability, distribution, and use

No change in availability, distribution, or use of the ground water as a result of this project is anticipated.

8.10 The overall environmental impact of all the above criteria

Adverse effects of the proposed project will be temporary in nature and are as follows:

- Temporary disruption of normal cropping practices and potential for reduced yields within the project construction limits. After construction, the trench area will be restored and salvaged topsoil re-spread, however said area may lack in productivity for a period of time. Over time we anticipate crop production to return to pre-construction conditions.
- Temporary noise and dust will be generated during construction. The impacts will be like those experienced during the normal course of farming activities and are not viewed as significant.
- Temporary soil erosion within the construction limits may occur until permanent stabilization is achieved. Potential soil erosion will be addressed as required by the MPCA erosion control permit.

Project benefits of the proposed project are the following:

- The proposed project will improve the drainage capabilities of lands and provide property owners with the availability of normal agricultural cropping programs.
- The project will provide manageable fields, reduced compaction and improved crop yields. Additional benefits will be derived from increased farm revenue and an improved tax base within the watershed.
- Replacing the existing open tile inlets with alternative tile inlets will improve water quality and are estimated to remove approximately 593 pounds of nitrogen, 7 pounds of phosphorus, and 124 pounds of sediment from the watershed annually.
- Replacing and downsizing Bridge 89286 will create upstream storage and reduce peak flows. This modification aligns with the goals of the Cedar-Wapsipinicon Comprehensive Watershed Management Plan, which emphasizes using road crossings to control flow and reduce flooding risks.
- Downsizing the bridge will lower structure replacement costs by 24 percent, providing economic benefits alongside environmental improvements.

During project discussions, we shared additional water quality practices with landowners, as illustrated on the maps attached to this report. These voluntary conservation measures, such as wetland restoration or cover crops, can further enhance the watershed's health. Landowners were informed about external funding opportunities, including programs from the USDA or state conservation initiatives, that may support these practices. If landowners request, we can incorporate additional conservation measures into the project to complement the proposed construction, further improving water quality and watershed resilience.

9.0 RESPONSE TO DNR COMMENTS

The following is a response to the advisory comments provided by the Minnesota Department of Natural Resources (DNR) in their letter dated February 11, 2022, regarding the Preliminary Engineer's Report (PER) for the Repair and Improvement of County Ditch No. J27 (CD J27) in Freeborn County, Minnesota. The responses follow the format of the DNR letter.

Consistency with Plans and Overall Impact

We dispute the assertion that the project will eliminate soil and wetland storage, thereby increasing total runoff volumes. Research demonstrates that well-drained soils, such as those enhanced by tile drainage, reduce overland runoff, thereby decreasing erosion, sediment loss, and the export of soil-bound nutrients. Well-drained soil also lowers peak runoff rates, with total flow volumes (surface and subsurface) remaining comparable to those on undrained land over time.

The Cedar-Wapsipinicon Comprehensive Watershed Management Plan (CWMP) targets a 0.25-inch increase in watershed storage to reduce flooding and improve water quality. The DNR's calculation of 333 acre-feet for this project watershed appears to be a mathematical error. Correctly applied, the 0.25-inch goal equates to approximately 27.7 acre-feet of storage (calculated as: $1,332 \text{ acres} \times 0.25 \text{ inches} / 12 \text{ inches per foot} = 27.7 \text{ acre-feet}$). The project creates approximately 5.2 acre-feet of additional storage through the culvert downsizing. This represents a partial contribution (approximately 19%) toward the CWMP goal within this subwatershed. While not fully achieving the 0.25-inch target, the project avoids net storage loss. Full mitigation to 27.7 acre-feet would require extensive additional measures (e.g., constructed wetlands or basins), which were evaluated but deemed not feasible due to topographic constraints, landowner preferences, and cost.

The project replaces nine existing open tile inlets with alternative tile inlets. The inlets will filter the water entering the tile system and are estimated to remove approximately 593 pounds of nitrogen, 124 pounds of sediment and 7 pounds of phosphorus from the project watershed per year. The replacement of tile inlets outside of the CD J27 right-of-way is beyond the scope of this project but encouraged by the Turtle Creek Watershed District.

Hydraulics and Modeling

Additional information is provided regarding culvert outlet velocities, stage increase, reduction in peak flow and potential road impacts as a result of the culvert downsizing. The downstream channel has adequate capacity to convey additional tile flows and culvert velocities will not be detrimental to the channel stability. Reducing the culvert size by 44 percent will reduce peak flows and downstream flooding. It is our opinion the modeling provided is sufficient for the project.

The proposed tile will serve as the single outlet for the watershed. The existing tile will be destroyed except for a few small segments which will be connected to the proposed tile.

The low flow culvert proposed in the PER has been eliminated at the request of the Highway Department and Petitioners due to maintenance concerns.

Potential Wetland Impacts

See Item 5 under Environmental Criteria section of this report for more information regarding potential wetland impacts.

Fish & Wildlife

All proposed erosion control products have been changed to biodegradable and wildlife friendly as recommended by MNDOT specifications. Proposed culvert outlet velocities are unchanged or lower for the 2 to 10-year storm events and increase to 7.1 feet/second for the 100-year storm event, up from 6.0 feet/second under current conditions. Outlet velocities are within the range (0 to 12 fps) recommended by MNDOT to be stabilized with rip rap and an increase in scour or outlet erosion is not anticipated. Potential fish passage should not be impacted and may improve with the lower outlet velocities for smaller storm events.

Cost & Benefits

Cost estimates for construction of the existing and proposed culverts are included in this report. The project reduces the total bridge replacement cost by 24 percent or \$93,075 which will be a benefit to all taxpayers. The cost estimates have been provided to the Viewers.

Conclusion

We have advised the Petitioners of the potential voluntary water quality practices, such as cover crops and bioreactors that could be implemented in the watershed. It is our understanding that the Petitioners are not interested in pursuing additional voluntary practices at this time. If directed, additional conservation and water quality practices can be implemented as part of the project.

10.0 RIGHT-OF-WAY REQUIRED

No permanent right-of-way is required for construction of the proposed tile. Viewers should consider damages and/or flowage easements for lands upstream of Bridge 89286 which are temporarily impacted by the proposed culvert. The approximate area of additional lands impacted on each 40-acre tract for the 100-year storm event because of the culvert construction is shown in Table 6.

LANDOWNER	PIN	LOCATION		Area (Ac)
Thomas Butler	16.030.0030	NE NW	Section 30	1.0
Thomas Butler	16.019.0040	SE SW	Section 19	6.1
Thomas Butler	16.019.0021	NE SW	Section 19	0.6
Michael DeBeau	16.019.0060	SW SW	Section 19	2.7
Michael DeBeau	16.019.0060	W ½ NW SW	Section 19	1.9
Michael DeBeau	16.019.0010	E ½ NW SW	Section 19	0.8

Table 6: Lands upstream of Bridge 89286 impacted during 100-year storm.

The affected landowners, Thomas Butler and Michael DeBeau, have reviewed the proposed flowage easements attached in Appendix 6 and have agreed to sign them contingent upon project approval. These easements cover the portions of their properties lying within the floodplain adjacent to and contiguous with the channel of CD J27 below elevation 1208.4 feet (NAVD 1988). The easements grant the Drainage Authority permanent rights to flow waters from the CD J27 system onto these lands and include access and compliance inspection rights, running with the land in perpetuity.

11.0 EXHIBITS AND APPENDICES

Appendix 1: Opinion of Probable Cost: Estimates total project costs, including tile replacement and Bridge 89286 modification.

Appendix 2: Separable Maintenance: Apportionment of Repair Cost Estimates of the project.

Appendix 3: Hydraulic Summary: Estimates of costs to replace Bridge 89286, a Risk Assessment for Encroachment Design for the proposed structure, a letter from the Freeborn County Engineer and map showing the existing and proposed area to be inundated for the 100-year storm event.

Appendix 4: Potential Conservation Practices and Potential Wetland Restoration Sites: Identifies voluntary conservation practices in the watershed.

Appendix 5: Branch B tile televising report.

Appendix 6: Flowage Easement and Agreements.

Plan & Profile Sheets: Show the location, sizes, grades and depths of the proposed drains.

12.0 RECOMMENDATIONS

The plans, profiles and narrative outlined herein provide sufficient details for the landowners and the Ditch Authority to evaluate the project. It is the opinion of the Engineer that for the best type of construction and a system that will function adequately for the longest period, the design as shown on the plans attached to this report should be followed.

Estimated construction costs are consistent with those of similar projects; however, if there are significant delays in the proceedings, these estimates may need to be revised to reflect changes in construction costs. The current trend in rising construction costs adds a degree of uncertainty to future projections.

Hearings should be held to determine whether any additions to or deletions from the construction proposed herein and shown in the attached plans to this report should be made. It is important for landowners to familiarize themselves with the proposal, understanding that only the construction specified in the Engineer's Report, as amended during the proceedings and formalized in the Ditch Authority's Final Order, will be implemented. The Engineer does not have the authority to make changes to the Final Report once approved by the Ditch Authority.

The General Conditions of the Contract, Supplemental General Conditions, Special Provisions for the project and the Notice of Letting, Instructions to Bidders, Bid Proposal Form and other contract documents will be prepared upon establishment of the ditch by Order of the Drainage Authority.

It is believed that the benefits derived from construction will exceed the costs and that the project is practical, necessary, and feasible. Therefore, it is recommended that said project be ordered and constructed.

APPENDIX 1
OPINION OF PROBABLE COST

ENGINEER'S FINAL REPORT
 IMPROVEMENT OF COUNTY DITCH NO. J27, FREEBORN COUNTY, MN
OPINION OF PROBABLE COST

BRANCH D TILE				
Item No.	Description	Est. Qty.	Unit Price	Amount
1.	30" CMP Tile Outlet	20 LF	\$ 120.00	\$ 2,400.00
2.	24" Tile	4,980 LF	40.00	199,200.00
3.	18" Tile	2,460 LF	30.00	73,800.00
4.	15" Tile	800 LF	25.00	20,000.00
5.	18" HP Storm Tile @ 310th Street	40 LF	130.00	5,200.00
6.	Alternative Tile Inlets	3 EA	1,800.00	5,400.00
7.	Tile Inspection Inlets	2 EA	1,400.00	2,800.00
8.	Connect existing tile	30 EA	500.00	15,000.00
9.	Crushed rock for pipe foundation in poor soil	800 TON	25.00	20,000.00
10.	Riprap	20 TON	60.00	1,200.00
11.	Erosion Control	1 LS	1,500.00	1,500.00
SUBTOTAL TILE:				346,500.00

BRANCH D-1 TILE				
1.	15" Tile	560 LF	25.00	14,000.00
2.	8" Tile	920 LF	15.00	13,800.00
3.	12" HP Storm Tile @ 310th Street	40 LF	110.00	4,400.00
4.	Connect existing tile	6 EA	500.00	3,000.00
5.	Alternative Tile Inlets	2 EA	1,800.00	3,600.00
6.	Crushed rock for pipe foundation in poor soil	150 TON	25.00	3,750.00
7.	Erosion Control	1 LS	1,200.00	1,200.00
SUBTOTAL TILE:				43,750.00

BRANCH D-2 TILE				
1.	15" Tile	967 LF	25.00	24,175.00
2.	Alternative Tile Inlets	1 EA	1,800.00	1,800.00
3.	Connect existing tile	4 EA	500.00	2,000.00
4.	Crushed rock for pipe foundation in poor soil	50 TON	25.00	1,250.00
5.	Erosion Control	1 LS	500.00	500.00
SUBTOTAL TILE:				29,725.00

ENGINEER'S FINAL REPORT
 IMPROVEMENT OF COUNTY DITCH NO. J27, FREEBORN COUNTY, MN
OPINION OF PROBABLE COST

BRANCH B TILE					
Item No.	Description	Est. Qty.	Unit Price	Unit Price	Amount
1.	15" Tile	2,175 LF	25.00		54,375.00
2.	15" HP Storm Tile @ 310th Street	40 LF	120.00		4,800.00
3.	Alternative Tile Inlets	3 EA	1,800.00		5,400.00
4.	Tile Inspection Inlets	2 EA	1,400.00		2,800.00
5.	Connect existing tile	6 EA	500.00		3,000.00
6.	Crushed rock for pipe foundation in poor soil	300 TON	25.00		7,500.00
7.	Erosion Control	1 LS	5,500.00		5,500.00
SUBTOTAL TILE:					83,375.00

SUMMARY	
BRANCH D TILE	346,500.00
BRANCH D-1 TILE	43,750.00
BRANCH D-2 TILE	29,725.00
BRANCH B TILE	83,375.00
SUBTOTAL:	\$ 503,350.00
+ Contingencies (20%)	101,060.00
Total Estimated Construction Costs:	\$ 604,410.00
+ Engineering, Legal, Viewing & Administrative:	166,300.00
TOTAL ESTIMATED COST:	\$ 770,710.00

APPENDIX 2
SEPARABLE MAINTENANCE

ENGINEER'S FINAL REPORT
 IMPROVEMENT OF COUNTY DITCH NO. J27, FREEBORN COUNTY, MN
SEPARABLE MAINTENANCE

BRANCH D TILE				
Item No.	Description	Est. Qty.	Unit Price	Amount
1.	24" Tile	467 LF	\$ 40.00	\$ 18,680.00
2.	18" Tile	1,758 LF	28.00	49,224.00
3.	15" Tile	3105 LF	23.00	71,415.00
4.	12" Tile	2716 LF	21.00	57,036.00
5.	15" HP Storm Tile @ 310th Street	40 LF	120.00	4,800.00
6.	Alternative Tile Inlets	1 EA	1,800.00	1,800.00
7.	Tile Inspection Inlets	2 EA	1,400.00	2,800.00
8.	Connect existing tile	30 EA	500.00	15,000.00
9.	Crushed rock for pipe foundation in poor soil	600 TON	25.00	15,000.00
10.	Erosion Control	1 LS	1,500.00	1,500.00
SUBTOTAL TILE:				237,255.00

BRANCH D-1 TILE				
1.	6" Tile	1,460 LF	8.00	11,680.00
2.	6" HP Storm Tile @ 310th Street	40 LF	80.00	3,200.00
3.	Connect existing tile	6 EA	500.00	3,000.00
4.	Alternative Tile Inlets	1 EA	1,800.00	1,800.00
5.	Crushed rock for pipe foundation in poor soil	100 TON	25.00	2,500.00
6.	Erosion Control	1 LS	1,200.00	1,200.00
SUBTOTAL TILE:				23,380.00

BRANCH D-2 TILE				
1.	12" Tile	1,532 LF	21.00	32,172.00
2.	Alternative Tile Inlets	1 EA	1,800.00	1,800.00
3.	Connect existing tile	4 EA	500.00	2,000.00
4.	Crushed rock for pipe foundation in poor soil	50 TON	25.00	1,250.00
5.	Erosion Control	1 LS	500.00	500.00
SUBTOTAL TILE:				37,722.00

ENGINEER'S FINAL REPORT
 IMPROVEMENT OF COUNTY DITCH NO. J27, FREEBORN COUNTY, MN
SEPARABLE MAINTENANCE

BRANCH B TILE					
Item No.	Description	Est. Qty.	Unit Price	Unit Price	Amount
1.	18" Tile	1,775 LF	28.00		49,700.00
2.	12" Tile	360 LF	21.00		7,560.00
3.	12" HP Storm Tile @ 310th Street	40 LF	110.00		4,400.00
4.	Alternative Tile Inlets	1 EA	1,800.00		1,800.00
5.	Tile Inspection Inlets	1 EA	1,400.00		1,400.00
6.	Connect existing tile	6 EA	500.00		3,000.00
7.	Crushed rock for pipe foundation in poor soil	200 TON	25.00		5,000.00
8.	Erosion Control	1 LS	5,500.00		5,500.00
SUBTOTAL TILE:					78,360.00

SUMMARY	
BRANCH D TILE	237,255.00
BRANCH D-1 TILE	23,380.00
BRANCH D-2 TILE	37,722.00
BRANCH B TILE	78,360.00
SUBTOTAL:	\$ 376,717.00
+ Contingencies	56,600.00
Total Estimated Construction Costs:	\$ 433,317.00
+ Engineering, Legal, Viewing & Administrative:	88,900.00
TOTAL ESTIMATED COST:	\$ 522,217.00
SEPARABLE MAINTENANCE COST ALLOCATION:	67.8%

APPENDIX 3

FREEBORN COUNTY SUPPORT LETTER, EXISTING AND PROPOSED FLOODING MAP, ESTIMATES
OF COST AND RISK ASSESSMENT FOR ENCROACHMENT DESIGN



Philip B. Wacholz, County Engineer
3300 Bridge Avenue, Albert Lea, Minnesota 56007

507 / 377-5188
Fax 507 / 377-5189
E-mail: philip.wacholz@co.freeborn.mn.us

October 6, 2025

Turtle Creek Watershed District
1408 21st Avenue NW
Austin, MN 55912

RE: Replacement of Freeborn County Bridge 89286 on CSAH 30

Dear Board Members,

Freeborn County bridge 89286 is due for replacement. The bridge serves County Ditch No. J27 and conveys water under CSAH 30. The existing structure is a double line of 8'x8' concrete boxes. Jones, Haugh & Smith has recommended the replacement structure be a 12' x 6' precast box culvert.

The County supports the proposed replacement structure as presented in the Engineer's Final Report. The project reduces peak flows, protects the roadway and reduces replacement costs by \$93,075 saving valuable tax dollars.

The Highway Department is ready to submit the bridge for funding approval through the Local Bridge Replacement Program as soon as the project is approved by the Watershed District.

We encourage the Watershed District to act quickly so project funding can be secured. At this time, there is no required cost share from the ditch system. If circumstances change and this is no longer the case, we will have to adjust the project timeline and wait for more funding to be allocated.

Sincerely,

A handwritten signature in blue ink that reads "Philip Wacholz". The signature is written in a cursive, flowing style.

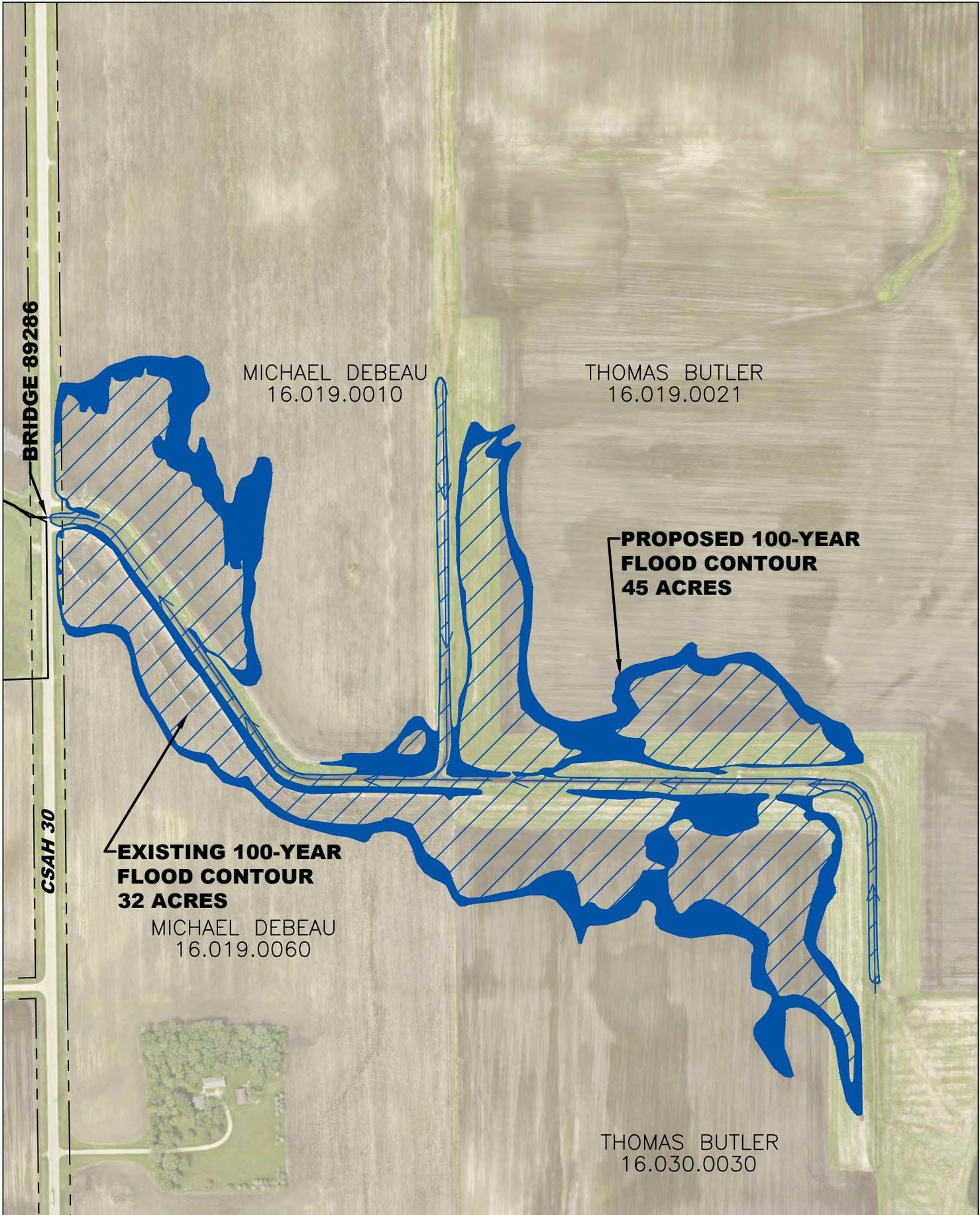
Philip Wacholz, P.E.
County Engineer and Director of Public Works
Freeborn County, Minnesota

ENGINEER'S FINAL REPORT
 IMPROVEMENT OF COUNTY DITCH NO. J27, FREEBORN COUNTY, MN
BRIDGE 89286 OPINION OF PROBABLE COST

BRIDGE 89286 2-8' X 8' RCB CULVERTS				
Item No.	Description	Est. Qty.	Unit Price	Amount
1.	Common Borrow (LV)	350 CY	\$ 30.00	\$ 10,500.00
2.	Stabilizing Aggregate	95 TON	40.00	3,800.00
3.	2.0 (Cubic Yard) Shovel	10 HR	200.00	2,000.00
4.	Dozer, Low Ground Pressure	10 HR	180.00	1,800.00
5.	8'x8' RCB PIPE	112 LF	2,000.00	224,000.00
6.	8'x8' RCB PIPE APRON	4 EA	25,000.00	100,000.00
7.	Remove Old Bridge	1 LS	15,000.00	15,000.00
8.	Aggregate Backfill (LV)	75 CY	40.00	3,000.00
9.	Random Riprap Class III	170 TON	65.00	11,050.00
10.	Bioroll Ditch Check Type 2	270 LF	5.50	1,485.00
11.	Silt Fence, Type Machine Sliced	200 LF	3.00	600.00
12.	Turf Establishment	1 LS	3,500.00	3,500.00
13.	Rapid Stabilization	3 MGAL	1,000.00	3,000.00
14.	Traffic Control	1 LS	5,000.00	5,000.00
SUBTOTAL 2-8'x8' RCB CULVERTS:				\$ 384,735.00

BRIDGE 89286 12' X 6' RCB CULVERT				
Item No.	Description	Est. Qty.	Unit Price	Amount
1.	Common Borrow (LV)	350 CY	\$ 30.00	\$ 10,500.00
2.	Stabilizing Aggregate	95 TON	40.00	3,800.00
3.	2.0 (Cubic Yard) Shovel	10 HR	200.00	2,000.00
4.	Dozer, Low Ground Pressure	10 HR	180.00	1,800.00
5.	12'x6' RCB PIPE	68 LF	2,400.00	163,200.00
6.	12'x6' RCB PIPE APRON	2 EA	35,000.00	70,000.00
7.	Remove Old Bridge	1 LS	15,000.00	15,000.00
8.	Aggregate Backfill (LV)	75 CY	40.00	3,000.00
9.	Random Riprap Class III	135 TON	65.00	8,775.00
10.	Bioroll Ditch Check Type 2	270 LF	5.50	1,485.00
11.	Silt Fence, Type Machine Sliced	200 LF	3.00	600.00
12.	Turf Establishment	1 LS	3,500.00	3,500.00
13.	Rapid Stabilization	3 MGAL	1,000.00	3,000.00
14.	Traffic Control	1 LS	5,000.00	5,000.00
SUBTOTAL 12'x6' RCB CULVERT:				\$ 291,660.00

SUMMARY	
BRIDGE 89286 2-8' X 8' RCB CULVERTS	\$ 384,735.00
BRIDGE 89286 12' X 6' RCB CULVERT	\$ 291,660.00
TOTAL ESTIMATED COST SAVINGS:	\$ 93,075.00



NOT TO
SCALE



**JONES
HAUGH
SMITH**
Engineers + Surveyors

515 South Washington Ave.
Albert Lea, MN 56007
507-373-4876
415 West North Street
Owatonna, MN 55060
507-451-4998

DESIGNED:	
DRAWN:	SJP
CHECKED:	
DATE:	DEC 2023
FILE NO:	16-107.DWG

FREEBORN COUNTY, MN
REPAIR & IMPROVEMENT TO COUNTY
DITCH NO. J27 POTENTIAL WETLAND
100-YEAR PRE VS POST FLOODING

RISK ASSESSMENT FOR ENCROACHMENT DESIGN

Date: 10-7-25

District: 6 County: Freeborn Vicinity of: West Line SW ¼ 19-T104N-R19W

DATA REQUIREMENTS

1. Location of Crossing: CSAH 30 C.S. M.P.
Sec. 19 T 104 R 19

2. Name of Stream: County Ditch J27 Bridge No. Old: 89286 New:

3. Current ADT: 210 (2017) Projected ADT:

4. Practicable detour available Yes No

If no is checked, please explain:

If there is no practicable detour available, then the use of the road must be analyzed. Considerations such as emergency vehicle access, emergency supply and evacuation route, and the need for school bus, milk and mail routes should be studied. Factors to consider for this analysis include design frequency, depth, duration, and frequency of inundation if appropriate, and available funding.

5. Hydraulic Data: (Fill in as appropriate)

Elevation Datum: NAVD88

Q ₂ = 88 cfs	HW ₂ Elevation 1203.08 ft
Q ₅ = 167 cfs	HW ₅ Elevation 1204.39 ft
Q ₁₀ = 233 cfs	HW ₁₀ Elevation 1205.29 ft
Q ₂₅ = 331 cfs	HW ₂₅ Elevation 1206.42 ft
Q ₅₀ = 416 cfs	HW ₅₀ Elevation 1207.74 ft
Q ₁₀₀ = 512 cfs	HW ₁₀₀ Elevation 1208.35 ft
Q ₅₀₀ = 768 cfs	HW ₅₀₀ Elevation 1210.41 ft

Approximate Flowline Elevation: 1201.0 Ft

Design Frequency Event: 100-yr 50-yr 25-yr 10-yr

Reasons for selecting Design Frequency: Prevent overtopping

6. Magnitude and Frequency of the smaller of "Overtopping" or "500 yr." (Greatest) flood: 768 cfs 500-year

7. Low member elevation: 1207.0

8. Minimum roadway overflow elevation if appropriate: 1211.80

9. Elevation of high risk property, i.e. residences: 1232
Other buildings 1232

10. Horizontal location of overflow:
 At Structure (See 12) Not At Structure:

11. Type of proposed structure:
 Bridge (See 12) Culvert(s) 12'x6' RCB Culvert

12 If the proposed structure is a bridge with the sag point located on the bridge and there is ice and debris potential, strong consideration should be given to using Q₅₀ as design discharge with 3' of clearance between the 50 year tailwater stage and low member.

<p>1. BACKWATER DAMAGE - Major flood damage in this context refers to shopping centers, hospitals, chemical plants, power plants, housing developments, etc.</p> <p>1a. Is the overtopping flood greater than the 100 yr. flood? <input checked="" type="checkbox"/> Yes (Go to 1b) <input type="checkbox"/> No (Go to 1e)</p> <p>1b. Is the overtopping flood greater than the "greatest" flood (500 yr. Frequency)? <input checked="" type="checkbox"/> Yes (Go to 1d) <input type="checkbox"/> No (Go to 1c)</p> <p>1c. Is there major flood damage potential for the overtopping flood? <input type="checkbox"/> No (Go to 1e)</p> <p>1d. Is there major flood damage potential for the greatest flood (500 year frequency)? <input checked="" type="checkbox"/> No (Go to 1e)</p> <p>1e. Will there be flood damage potential to residence(s) or other buildings during a 100 yr. flood? <input type="checkbox"/> Yes (Go to 1f) <input checked="" type="checkbox"/> No (Go to 2)</p> <p>1f. Could this flood damage occur even if the roadway crossing wasn't there? <input type="checkbox"/> Yes (Go to 1g) <input type="checkbox"/> No (Go to 1h)</p> <p>1g. Could this flood damage be significantly increased by the backwater caused by the proposed crossing? <input type="checkbox"/> Yes (Go to 1h) <input type="checkbox"/> No (Go to 2)</p> <p>1h. Could the stream crossing be designed in such a manner so as to minimize this potential flood damage? <input type="checkbox"/> Yes (Go to 1i) <input type="checkbox"/> No (Go to 2)</p> <p>1i. Does the value of the building(s) and/or its contents have sufficient value to justify further evaluation of risk and potential flood damage? <input type="checkbox"/> No (Go to 2)</p>	<p>LTEC Design</p> <p><input type="checkbox"/> Yes (Go to 1e)</p> <p><input type="checkbox"/> Yes (Go to 1e)</p> <p><input type="checkbox"/> Yes (Go to 2)</p>
<p>2. TRAFFIC RELATED LOSSES</p> <p>2a. Is the overtopping flood greater than the "greatest" flood (500 yr. frequency)? <input checked="" type="checkbox"/> Yes (Go to 3) <input type="checkbox"/> No (Go to 2b)</p> <p>2b. Does the ADT exceed 50 vehicles per day? <input type="checkbox"/> Yes (Go to 2c) <input type="checkbox"/> No (Go to 3)</p> <p>2c. Would the (duration of road closure in days) multiplied by the (length of detour minus the length of normal route in miles) exceed 20? <input type="checkbox"/> Yes (Go to 2d) <input type="checkbox"/> No (Go to 3)</p> <p>2d. Does the annual risk cost for traffic related costs exceed 10% of the annual capital costs? <input type="checkbox"/> No (Go to 3) (See figures A and B – Appendix A(2) - for Assistance)</p>	<p><input type="checkbox"/> Yes (Go to 3)</p>
<p>3. ROADWAY AND/OR STRUCTURE REPAIR COSTS</p>	

<p>3a. Is the overtopping flood less than a 100 year frequency flood? <input type="checkbox"/> Yes (Go to 3b) <input checked="" type="checkbox"/> No (Go to 3i)</p> <p>3b. Compare the Tailwater (TW) elevation with the roadway sag point elevation for the overtopping flood. Check the appropriate category. <input type="checkbox"/> When TW is above the sag point (Go to 4) <input type="checkbox"/> TW is between 0 and 0.5' below sag point (Go to 3c) <input type="checkbox"/> TW is between 0.5' and 1.0' below sag point (Go to 3d) <input type="checkbox"/> When TW is 1.0' and 2.0' below sag point (Go to 3e) <input type="checkbox"/> When TW is more than 2.0' below sag point (Go to 3g)</p> <p>3c. Does the embankment have a good erosion resistant vegetative cover? <input type="checkbox"/> Yes (Go to 3i) <input type="checkbox"/> No (Go to 3d)</p> <p>3d. Is the shoulder constructed from erosion resistant material such as paved, coarse gravel, or clay type soil? <input type="checkbox"/> Yes (Go to 3i) <input type="checkbox"/> No (Go to 3e)</p> <p>3e. Will the duration of overtopping for the 25-year flood exceed 1 hour? <input type="checkbox"/> Yes (Go to 3f) <input type="checkbox"/> No (Go to 3i)</p> <p>3f. Is the embankment constructed from erosion resistant material such as a clay type soil? <input type="checkbox"/> Yes (Go to 3i) <input type="checkbox"/> No (Go to 3g)</p> <p>3g. Is the overtopping flood less than a 25-year frequency flood? <input type="checkbox"/> Yes (Go to 3h) <input type="checkbox"/> No (Go to 3i)</p> <p>3h. Will the cost of protecting the roadway and/or embankment from severe damage caused by overtopping exceed the cost of providing additional culvert or bridge capacity? <input type="checkbox"/> No (Go to 3i);</p> <p>3i. Is there damage potential to the structure caused by scour, ice, debris or other means during the lesser of the overtopping flood or the 100 year flood? <input type="checkbox"/> Yes (Go to 3j) <input checked="" type="checkbox"/> No (Go to 4)</p> <p>3j. Will the cost of protecting the structure from damage exceed the cost of providing additional culvert or bridge water capacity? <input type="checkbox"/> No (Go to 4); protecting abutments from scour by riprap.</p>	<p><input type="checkbox"/> Yes (Go to 3i)</p> <p><input type="checkbox"/> Yes (Go to 3i)</p> <p><input type="checkbox"/> Yes (Go to 4)</p>
<p>4. Will the capital cost of the structure exceed \$1,000,000? <input checked="" type="checkbox"/> No (Go to 5);</p> <p>5. In your opinion, are there any other factors that you feel should require further study through a risk analysis? <input checked="" type="checkbox"/> No (Go to 6);</p>	<p><input type="checkbox"/> Yes (Go to 5)</p> <p><input type="checkbox"/> Yes (Indicate)</p>
<p>6. If there are no ✓'s in the LTEC Design column on the right, proceed with the design, selecting the lowest acceptable grade line and the smallest waterway opening consistent</p>	

with the constraints imposed on the project. The risk assessment has demonstrated that potential flood damage costs, traffic related costs, roadway and/or structure repair costs are minor and therefore disregarded for this project.

One or more ✓'s in the LTEC Design column indicates further analysis in the category checked may be required utilizing the LTEC design process or justification (below) why it is not required.

JUSTIFICATION:

I hereby certify that this plan, specification, or 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:

Signature: 

Steven J Penkava

License Number: 43895

Date: 10-7-25

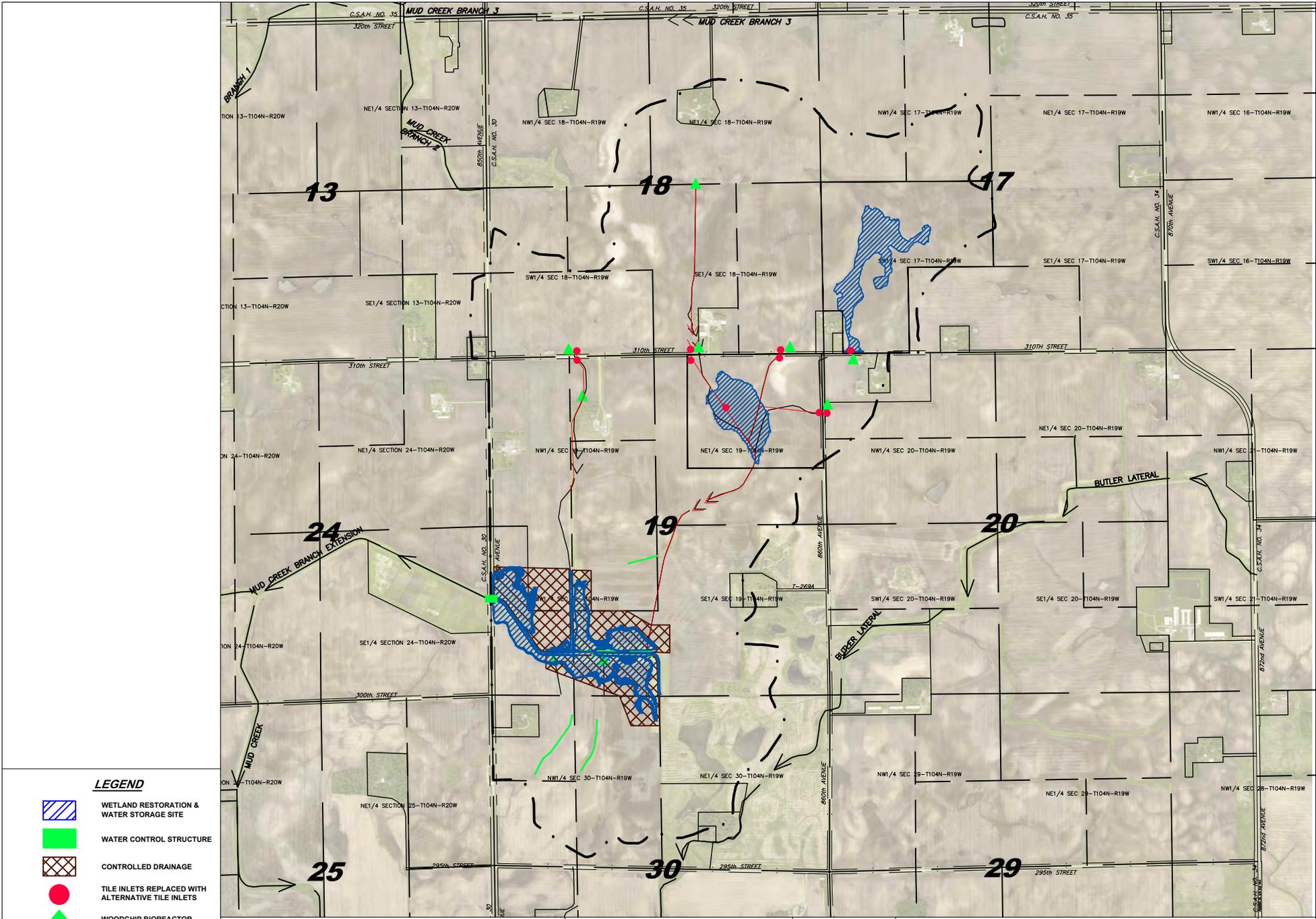
BR 89286 Culvert Hydraulic Data			
	Vertical Datum	NAVD 88	
*	Stream Name	County Ditch No. J27	
	Drainage area	2.08	mi ²
	Flood of record	Unknown	ft ³ /s
	Maximum observed highwater elevation	Unknown	ft
*	Design flood (10-year frequency)	233	ft ³ /s
	Road sag point elevation	1211.80	ft
	Design stage	1204.61	ft
	Total stage increase	0.68	ft
*	Headwater elevation	1205.29	ft
	Stage increase of the inplace condition	0.65	ft
	Mean velocity through structure	5.24	ft/s
	Main channel velocity	2.78	ft/s
*	Greatest flood (500-year frequency)	768	ft ³ /s
	Road sag point elevation	1211.80	ft
	Stage	1207.61	ft
	Total stage increase	2.80	ft
*	Headwater elevation	1210.41	ft
	Stage increase of the inplace condition	1.67	ft
	Mean velocity through structure	10.67	ft/s
	Main channel velocity	1.36	ft/s
*	Basic flood (100-year frequency)	512	ft ³ /s
	Stage	1207.10	ft
	Total stage increase	1.25	ft
*	Headwater elevation	1208.35	ft
	Stage increase of the inplace condition	0.88	ft
	Mean velocity through structure	7.11	ft/s
	Main channel velocity	1.51	ft/s
**	2- year flood frequency	88	ft ³ /s
**	Average velocity through structure	4.43	ft/s
**	Main channel velocity	2.17	ft/s
1	Approximate flowline elevation	Upstream 1201.0 Downstream 1200.9	ft
	Skew	0	°

* Items to be shown on grading plan

** 2-year peak flow may be required for fish considerations

¹ Inlet Invert Elevation

APPENDIX 4
POTENTIAL CONSERVATION PRACTICES AND WETLAND RESTORATION SITES



LEGEND

-  WETLAND RESTORATION & WATER STORAGE SITE
-  WATER CONTROL STRUCTURE
-  CONTROLLED DRAINAGE
-  TILE INLETS REPLACED WITH ALTERNATIVE TILE INLETS
-  WOODCHIP BIOREACTOR
-  TWO-STAGE DITCH & IN-CHANNEL SEDIMENT BASIN
-  GRASSED WATERWAY
-  SATURATED BUFFER
-  TERRACES

NOT TO SCALE

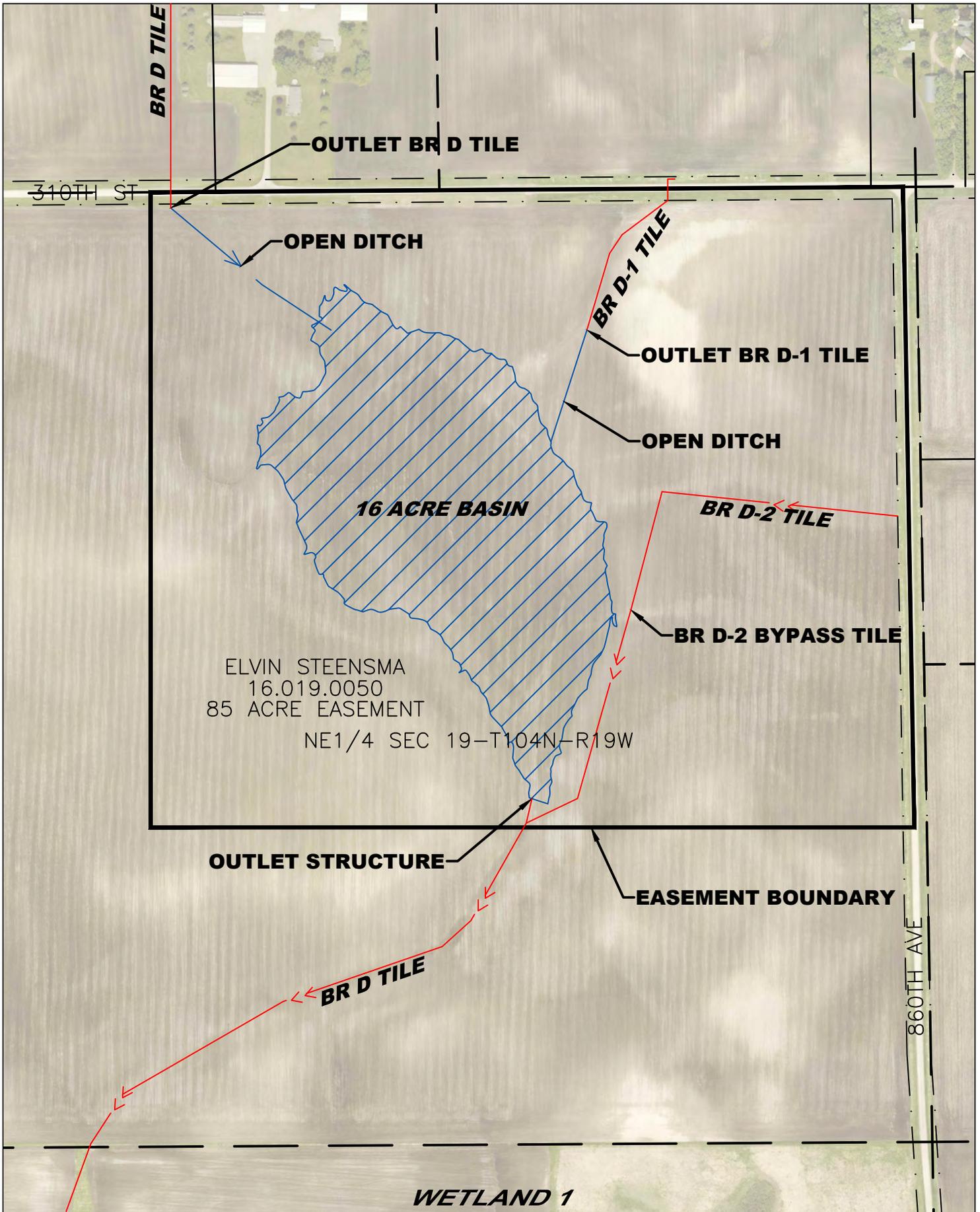


JONES HAUGH SMITH
 Engineers + Surveyors
 515 South Washington Ave,
 Albert Lea, MN 56007
 507-373-4876
 415 West North Street
 Owatonna, MN 55060
 507-451-4598

DESIGNED:	
DRAWN:	SJP
CHECKED:	
DATE:	NOV 2024
FILE NO:	16-127.DWG

**FREEBORN COUNTY, MN
 REPAIR & IMPROVEMENT TO
 COUNTY DITCH NO. J27
 POTENTIAL CONSERVATION PRACTICES**

**MAP
 1**



ELVIN STEENSMA
 16.019.0050
 85 ACRE EASEMENT
 NE1/4 SEC 19-T104N-R19W

NOT TO
 SCALE

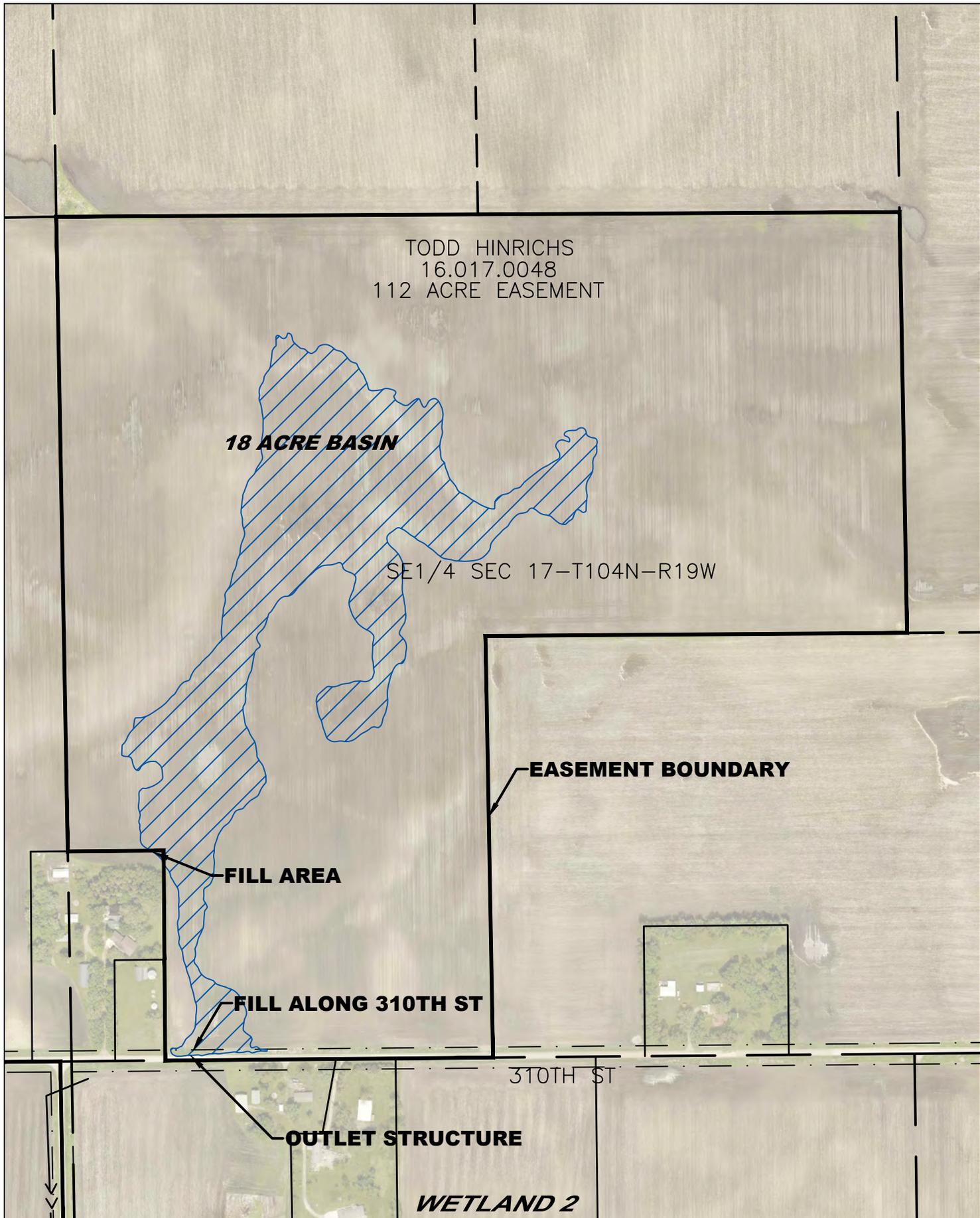


**JONES
 HAUGH
 SMITH**
 Engineers + Surveyors
 515 South Washington Ave.
 Albert Lea, MN 56007
 507-373-4876
 415 West North Street
 Owatonna, MN 55060
 507-451-4998

DESIGNED:	
DRAWN:	SJP
CHECKED:	
DATE:	NOV 2024
FILE NO:	16-107.DWG

**FREEBORN COUNTY, MN
 REPAIR & IMPROVEMENT TO COUNTY
 DITCH NO. J27 POTENTIAL WETLAND
 RESTORATION SITE**

**MAP
 2**



NOT TO
SCALE



**JONES
HAUGH
SMITH**
Engineers + Surveyors

515 South Washington Ave.
Albert Lea, MN 56007
507-373-4876
415 West North Street
Owatonna, MN 55060
507-451-4998

DESIGNED:	
DRAWN:	SJP
CHECKED:	
DATE:	NOV 2024
FILE NO:	16-107.DWG

**FREEBORN COUNTY, MN
REPAIR & IMPROVEMENT TO COUNTY
DITCH NO. J27 POTENTIAL WETLAND
RESTORATION SITE**

**MAP
3**

APPENDIX 5

EMPIRE PIPE SERVICE, TELEVISIONING REPORT DATED JULY 19, 2024



Table of Contents

Project Aries 4230 CD J27 Freeborn County 2024_07_19		7/19/2024
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Legend of Classification (Section)	P-1
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Section: 2; EXP 3-EXP 2	4
Section: 3; EXP 4-EXP 3	8
Section: 4; Unknown-EXP 4	10



Legend of Classification (Section)

Project
Aries 4230 CD J27 Freeborn County 2024_07_19

7/19/2024

1: Excellent Condition

Minor Defects- Failure unlikely in the foreseeable future

2: Good Condition

Defects that have not begun to deteriorate- Pipe unlikely to fail for at least 20 years.

3: Fair Condition

Moderate defects that will continue to deteriorate- Pipe may fail in 10-20 years.

4: Poor Condition

Severe Defects that will become Grade 5 defects within the foreseeable future- Pipe will probably fail in 5-10 years

5: Immediate Attention

Defects require immediate attention- Pipe has failed or will likely fail within the next 5 years or sooner.



Section Profile

Project
Aries 4230 CD J27 Freeborn County 2024_07_19

No.	Street	Upstream MH	Downstream MH		Material	Total Length	Length Surveyed
3	CD J27	EXP 4	EXP 3	7/19/2024	CP	165.90	165.90
4	CD J27	Unknown	EXP 4	7/19/2024	CP	16.90	16.90

16 Circular = 182.80 Total Length (2 Inspections, 182.80 Length Surveyed)

No.	Street	Upstream MH	Downstream MH		Material	Total Length	Length Surveyed
1	CD J27	EXP 2	Ditch outlet 1	7/19/2024	CP	1,171.90	1,171.90
2	CD J27	EXP 3	EXP 2	7/19/2024	CP	180.00	130.00
2	CD J27	EXP 3	EXP 2	7/19/2024	CP	180.00	180.00

18 Circular = 1351.90 Total Length (3 Inspections, 1481.90 Length Surveyed)

1534.70 Total Length (5 Inspections, 1664.70 Length Surveyed)



Inspection report

Date: 7/19/2024	Work Order: 4230	Weather: Dry	Surveyed By: Rick F	Certificate Number: U-105-1683	Section Number: 1
Year laid:	Pre-cleaning: No Pre-Cleaning	Direction: Downstream	Total Length: 1171.9'	Length Surveyed: 1171.9'	Pipe Segment Ref.: EXP 2-Ditch outlet 1

City: Bancroft TWP Freeborn County	Drainage Area:	Upstream MH: EXP 2
Street: CD J27	Media Label:	Up Rim to Invert: 0.0
Location Code: Other	Flow Control: Not Controlled	Downstream MH: Ditch outlet 1
Location Details: Section 7	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Stormwater Pipe	Total gallons used: 0.0
Pipe size: 18"	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Post Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: Freeborn County	

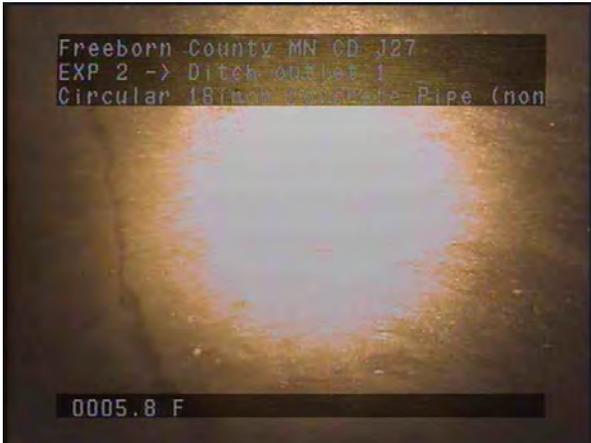
Additional Info:

1:8845	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AZ	Access Point Other / Excavated Pit 2	00:00:17				
	0.0	MWL	Water Level, 15% of the vertical dimension	00:00:32				
	5.8	FL	Fracture Longitudinal at 11 o'clock, within 8 inch	00:01:11	1	S3		
	10.1	TB	Tap Break-in/Hammer at 10 o'clock, dia/height: 8inch, within 8 inch / Inlet from SE	00:01:46	2			
	10.1	S01 FL	Fracture Longitudinal at 12 o'clock, within 8 inch, Start	00:02:08	3			
	66.4	F01 FL	Fracture Longitudinal at 12 o'clock, within 8 inch, Finish	00:03:31		S3		
	874.9	TBI	Tap Break-In Intruding at 10 o'clock, dia/height: 6inch, intruding: 4inch, within 8 inch	00:26:47	4	M4		
	965.6	S02 FL	Fracture Longitudinal at 12 o'clock, within 8 inch, Start	00:29:15	5			
	1092.2	TB	Tap Break-in/Hammer at 10 o'clock, dia/height: 10inch, within 8 inch / Inlet from the East	00:33:26				
	1171.9	F02 FL	Fracture Longitudinal at 12 o'clock, within 8 inch, Finish	00:36:51		S3		
	1171.9	MSA	Miscellaneous Survey Abandoned / End Inspection Camera will not pull	00:36:55				
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3100	4100	4131	159.0	4.0	163.0	3.0	4.0	3.0



Section Pictures - 7/19/2024 - EXP 2-Ditch outlet 1

City	Street	Date	Lateral Segment Reference	Section No.
Bancroft TWP Freeborn	CD J27	7/19/2024	EXP 2-Ditch outlet 1	1



1, 00:01:11, 5.80ft
Fracture Longitudinal at 11 o'clock, within 8 inch



2, 00:01:46, 10.10ft
Tap Break-in/Hammer at 10 o'clock, dia/height: 8inch, within 8 inch / Inlet from SE



3, 00:02:08, 10.10ft
Fracture Longitudinal at 12 o'clock, within 8 inch, Start



4, 00:26:47, 874.90ft
Tap Break-In Intruding at 10 o'clock, dia/height: 6inch, intruding: 4inch, within 8 inch



Section Pictures - 7/19/2024 - EXP 2-Ditch outlet 1

City	Street	Date	Lateral Segment Reference	Section No.
Bancroft TWP Freeborn	CD J27	7/19/2024	EXP 2-Ditch outlet 1	1



5, 00:29:15, 965.60ft
Fracture Longitudinal at 12 o'clock, within 8 inch, Start



Inspection report

Date: 7/19/2024	Work Order: 4230	Weather: Dry	Surveyed By: Rick F	Certificate Number: U-105-1683	Section Number: 2
Year laid:	Pre-cleaning: No Pre-Cleaning	Direction: Downstream	Total Length: 180.0'	Length Surveyed: 130.0'	Pipe Segment Ref.: EXP 3-EXP 2

City: Freeborn County MN	Drainage Area:	Upstream MH: EXP 3
Street: CD J27	Media Label:	Up Rim to Invert: 0.0
Location Code: Other	Flow Control: Not Controlled	Downstream MH: EXP 2
Location Details: Excavated pit in Ditch next to field	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Stormwater Pipe	Total gallons used: 0.0
Pipe size: 18"	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Post Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: Freeborn County	

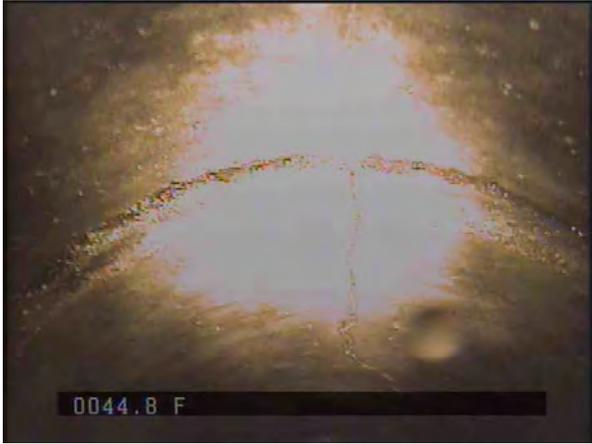
Additional Info:

1:1359	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AZ	Access Point Other / Excavated Pit 3	00:00:17				
	0.0	MWL	Water Level, 15% of the vertical dimension	00:00:23				
	44.2	S01 FL	Fracture Longitudinal at 12 o'clock, within 8 inch, Start	00:01:31	1			
	85.0	F01 FL	Fracture Longitudinal at 12 o'clock, within 8 inch, Finish	00:02:39		S3		
	127.8	MSC	Miscellaneous Shape or Size Change, dia/height: 12inch	00:03:50				
	130.0	MSA	Miscellaneous Survey Abandoned / MSC there is too much debris in the line to run smaller tires we cannot get to the section of smaller pipe until the crops are out of the field	00:04:04				
	180.0		End of pipe					
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3800	0000	3800	24.0	0.0	24.0	3.0	0.0	3.0



Section Pictures - 7/19/2024 - EXP 3-EXP 2

City Freeborn County MN	Street CD J27	7/19/2024	Lateral Segment Reference EXP 3-EXP 2	Section No. 2
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1, 00:01:31, 44.20ft
Fracture Longitudinal at 12 o'clock, within 8 inch, Start



Inspection report

Date: 7/19/2024	Work Order: 4230	Weather: Dry	Surveyed By: Rick F	Certificate Number: U-105-1683	Section Number: 2
Year laid:	Pre-cleaning: No Pre-Cleaning	Direction: Upstream	Total Length: 180.0'	Length Surveyed: 180.0'	Pipe Segment Ref.: EXP 3-EXP 2

City: Freeborn County MN	Drainage Area:	Upstream MH: EXP 3
Street: CD J27	Media Label:	Up Rim to Invert: 0.0
Location Code: Other	Flow Control: Not Controlled	Downstream MH: EXP 2
Location Details: Excavated pit in Ditch next to field	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Stormwater Pipe	Total gallons used: 0.0
Pipe size: 18"	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Post Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: Freeborn County	

Additional Info:

1:1359	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AZ	Access Point Other / Excavated Pit 2	00:00:14				
	0.0	MWL	Water Level, 15% of the vertical dimension	00:00:20				
	21.3	TB	Tap Break-in/Hammer at 2 o'clock, dia/height: 8inch, within 8 inch / Inlet from East	00:01:02				
	37.8	TB	Tap Break-in/Hammer at 2 o'clock, dia/height: 6inch, within 8 inch / Inlet from East	00:01:29				
	39.0	S01	FL	Fracture Longitudinal at 1 o'clock, within 8 inch, Start	00:01:50			
	53.8	TBA	Tap Break-in Activity at 10 o'clock, dia/height: 8inch, within 8 inch / Inlet from the West	00:02:23				
	100.7	TBA	Tap Break-in Activity at 2 o'clock, dia/height: 6inch, within 8 inch / Inlet from the East	00:04:45				
	120.2	TBA	Tap Break-in Activity at 9 o'clock, dia/height: 8inch, within 8 inch / Inlet from the West	00:05:26	1			
	178.9	MSC	Miscellaneous Shape or Size Change, dia/height: 16inch	00:06:57				
	180.0	F01	FL	Fracture Longitudinal at 1 o'clock, within 8 inch, Finish	00:07:15		S3	
180.0	MSA	MSA	Miscellaneous Survey Abandoned / MSC crawler will not make it with the wheel setup and there is too much sediment to make it with the smaller wheels	00:07:22				
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
3D00	0000	3D00	84.0	0.0	84.0	3.0	0.0	3.0



Section Pictures - 7/19/2024 - EXP 3-EXP 2

City Freeborn County MN	Street CD J27	7/19/2024	Lateral Segment Reference EXP 3-EXP 2	Section No. 2
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1, 00:05:26, 120.20ft
Tap Break-in Activity at 9 o'clock, dia/height: 8inch, within 8
inch / Inlet from the West



Inspection report

Date: 7/19/2024	Work Order: 4230	Weather: Dry	Surveyed By: Rick F	Certificate Number: U-105-1683	Section Number: 3
Year laid:	Pre-cleaning: No Pre-Cleaning	Direction: Upstream	Total Length: 165.9'	Length Surveyed: 165.9'	Pipe Segment Ref.: EXP 4-EXP 3

City: Freeborn County MN	Drainage Area:	Upstream MH: EXP 4
Street: CD J27	Media Label:	Up Rim to Invert: 0.0
Location Code: Other	Flow Control: Not Controlled	Downstream MH: EXP 3
Location Details: Excavated pit in Ditch next to field	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Stormwater Pipe	Total gallons used: 0.0
Pipe size: 16"	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Post Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: Freeborn County	

Additional Info:

1:1253	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AZ	Access Point Other / Excavated Pit 3	00:00:18				
	0.0	MWL	Water Level, 15% of the vertical dimension	00:00:24				
	119.2	S01	FH4	Fracture Longitudinal Hinge, 4 from 12 o'clock to 12 o'clock, within 8 inch, Start	00:03:19			
	119.3	S02	MWLS	Miscellaneous Water Level, Sag, 40% of the vertical dimension, Start	00:03:25			
	142.6	F01	FH4	Fracture Longitudinal Hinge, 4 from 12 o'clock to 12 o'clock, within 8 inch, Finish	00:04:05	S4		
	150.9	F02	MWLS	Miscellaneous Water Level, Sag, 70% of the vertical dimension, Finish	00:04:09	S3		
	162.6		TBI	Tap Break-In Intruding at 2 o'clock, dia/height: 6inch, intruding: 5inch, within 8 inch	00:05:04	M5		
	165.8		OBZ	Obstruction Other, 20% of cross sectional area from 4 o'clock to 8 o'clock, within 8 inch / Debris in pipe cannot pass Rocks and other material	00:06:00	1	M3	
	165.9		MSA	Miscellaneous Survey Abandoned / OBZ cannot pass over debris in pipe	00:06:35	2		
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
4536	5131	5145	38.0	8.0	46.0	3.5	4.0	3.5



Section Pictures - 7/19/2024 - EXP 4-EXP 3

City Freeborn County MN	Street CD J27	7/19/2024	Lateral Segment Reference EXP 4-EXP 3	Section No. 3
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1, 00:06:00, 165.80ft
Obstruction Other, 20% of cross sectional area from 4 o'clock to 8 o'clock, within 8 inch / Debris in pipe cannot pass Rocks and other material



2, 00:06:35, 165.90ft
Miscellaneous Survey Abandoned / OBZ cannot pass over debris in pipe



Inspection report

Date: 7/19/2024	Work Order: 4230	Weather: Dry	Surveyed By: Rick F	Certificate Number: U-105-1683	Section Number: 4
Year laid:	Pre-cleaning: No Pre-Cleaning	Direction: Upstream	Total Length: 16.9'	Length Surveyed: 16.9'	Pipe Segment Ref.: Unknown-EXP 4

City: Freeborn County MN	Drainage Area:	Upstream MH: Unknown
Street: CD J27	Media Label:	Up Rim to Invert: 0.0
Location Code: Other	Flow Control: Not Controlled	Downstream MH: EXP 4
Location Details: Excavated pit in Ditch next to field	Sheet Number:	Down Rim to Invert: 0.0
Pipe shape: Circular	Sewer Use: Stormwater Pipe	Total gallons used: 0.0
Pipe size: 16"	Sewer Category: SEC	Joints passed: 0
Pipe material: Concrete Pipe (non-reinforced)	Purpose: Post Rehabilitation Survey	Joints failed: 0
Lining Method:	Owner: Freeborn County	

Additional Info:

1:128	Distance	Code	Observation	Counter	Photo	Grade		
	0.0	AZ	Access Point Other / Excavated Pit 4	00:00:15				
	0.0	MWL	Water Level, 15% of the vertical dimension	00:00:21				
	16.8	TB	Tap Break-in/Hammer at 2 o'clock, dia/height: 6inch, within 8 inch / Inlet from The East	00:01:29				
	16.9	MSA	Miscellaneous Survey Abandoned / Unknown obstruction looks like the bottom of the pipe is broke and came up into the flow line	00:03:58				
QSR	QMR	QOR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0000	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX 6
FLOWAGE EASEMENT AND AGREEMENTS

FLOWAGE EASEMENT & AGREEMENT

This FLOWAGE EASEMENT & AGREEMENT (“**Agreement**”) is made and entered into this ____ day of _____, 2025, by and between Grantors Thomas W. Butler, as Trustee of the Thomas W. Butler Revocable Living Trust Agreement dated June 4, 2012 and Christine M. Butler, as Trustee of the Christine M. Butler Revocable Living Trust Agreement dated June 4, 2012 (the “**Grantors**”) and Grantee the Turtle Creek Watershed District Board of Managers in its capacity under Minnesota Statutes, chapter 103E, as the public drainage authority for Freeborn County Ditch J27 (the “**Grantee**” or “**Drainage Authority**”), (Grantors and Grantee or the Drainage Authority are collectively the “**Parties**”).

RECITALS

A. Grantors are the owners of real property located in Freeborn County, Minnesota, identified as parcel numbers 16.019.0021, 16.019.0040, and 16.030.0030, hereinafter referred to as the “**Grantors’ Property**,” legally described in **Exhibit A**.

B. Grantee is the public drainage authority under Minnesota Statutes, chapter 103E authorized to access, inspect, and repair Freeborn County Ditch J27 (“CD J27”) on behalf of all owners of property benefited by CD J27 and holds all necessary property interests to do so.

C. As part of an improvement of CD J27, the appointed project engineer documented potential flowage damages and recommended acquisition of a flowage easement and payment of damages to affected parties.

D. Grantors have agreed to convey to Grantee a permanent easement, as more specifically described below, to permit Grantee to flow waters from the CD J27 drainage system on to Grantors’ Property below elevations 1208.4 feet (NAVD 1988) as described in the CD J27 improvement plans and as depicted in **Exhibit B** attached hereto, as well as granting access and compliance inspection rights to Grantee subject to the terms and conditions contained in this Agreement.

In consideration of the promises and the mutual obligations contained in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which the Parties acknowledge, the Parties agree as follows:

FLOWAGE EASEMENT & AGREEMENT

1. Recitals Incorporated. The foregoing Recitals are incorporated into this agreement.

2. Flowage Easement and Easement Area. Grantors, for itself, its heirs, successors, and assigns, grant, and convey to the Drainage Authority, for public purposes related to the function of CD J27, a permanent easement in, on, over, through, and across that portion of Grantors' Property lying within the flood plain adjacent to and contiguous with the channel of CD J27 below elevation 1208.4 (NAVD 1988) (Easement Area).

3. Agreement Runs with the Land. This Agreement shall be for the benefit of the CD J27 drainage system as administered by the Drainage Authority or its successor. This Agreement shall be deemed to be perpetual and shall run with the land and shall be binding upon the Parties' heirs, successors, and assigns.

4. Parties' Covenants. The Parties specifically covenant with each other that:

- a. Grantors may continue to use the Property for agricultural and other purposes that do not interfere with the flowage of water below elevation 1208.4 feet (NAVD 1988);
- b. Grantors own Grantors' Property free of encumbrance that would prevent the conveyance of the Easement herein;
- c. Each Party has full and good lawful authority to enter into this Agreement;
- d. Grantors have full and good lawful authority to convey the Flowage Easement as set forth in this Agreement; and
- e. Each Party covenants to warrant and defend this Agreement and the Flowage Easement contained herein against claims of all persons whomsoever.

5. Drainage Authority May Transfer Agreement. The Drainage Authority may transfer this Agreement to another drainage authority or other water management entity duly formed and authorized under the State of Minnesota or as authorized by Minnesota law.

6. Drainage Authority Rights and Powers. Nothing in this Agreement shall be construed to modify, limit, or prevent the Drainage Authority from exercising the rights, responsibilities, or powers granted or imposed by Minnesota Statutes, chapter 103E.

7. Taxes. With regard to the Grantors' Property, Grantors are solely responsible for paying all taxes and special assessments or assessments for special improvements due, levied or assessed for all taxes and assessments. Grantee will not be responsible for payment of any taxes or assessments regarding the Grantors' Property at any time.

8. Risk of Loss. Grantors shall remain responsible for all taxes, mortgage payments, insurance premiums and bear the risk of loss with respect to general liability, liability for personal

injury, and any damage or casualty loss with respect to the Grantors' Property, resulting from the use, occupancy and maintenance of the Grantors' Property.

9. Recording. This Agreement shall be recorded with the Freeborn County Recorder on the Grantors' Property at the expense of Grantee.

10. Counterparts. This Agreement may be executed in parts which, when all original signatures are compiled, shall constitute a full and complete Agreement.

11. Governing Law. This Agreement shall be governed by the laws of Minnesota.

12. Legal Representation. Rinke Noonan, Ltd.'s attorneys represent the Drainage Authority regarding this Agreement. The other Parties are hereby advised to seek independent legal advice prior to execution of this Agreement.

13. Severability. If one provision of this Agreement is held invalid, that shall not affect any other provision of this Agreement.

14. Enforceability. This Agreement's provisions are for the benefit of the Parties. No third parties shall have any rights to enforce or be deemed a beneficiary of any provisions of this Agreement.

[signature pages to follow]

**SIGNATURE PAGE TO
FLOWAGE EASEMENT & AGREEMENT**

GRANTOR:

THOMAS W. BUTLER REVOCABLE
LIVING TRUST AGREEMENT DATED
JUNE 4, 2012

By _____
Thomas W. Butler, Trustee

STATE OF MINNESOTA)
) SS
COUNTY OF _____)

On this _____ day of _____, 2025, before me, a Notary Public for this County, personally appeared Thomas W. Butler, Trustee of the Thomas W. Butler Revocable Living Trust Agreement dated June 4, 2012.

Notary Public
My Commission Expires: _____

**SIGNATURE PAGE TO
FLOWAGE EASEMENT & AGREEMENT**

GRANTOR:

CHRISTINE M. BUTLER REVOCABLE
LIVING TRUST AGREEMENT DATED
JUNE 4, 2012

By _____
Christine M. Butler, Trustee

STATE OF MINNESOTA)
) SS
COUNTY OF _____)

On this _____ day of _____, 2025, before me, a Notary Public for this County, personally appeared Christine M. Butler, Trustee of the Christine M. Butler Revocable Living Trust Agreement dated June 4, 2012.

Notary Public
My Commission Expires: _____

**Exhibit A
(Grantors' Property)**

Real property in Freeborn County, Minnesota, described as follows:

Parcel 5: 16.019.0021

The Southeast Quarter of the Northwest Quarter and the Northeast Quarter of the Southwest Quarter of Section 19, Township 104 North, Range 19 West, Freeborn County, Minnesota.

(PID 16.019.0021)

Parcel 7:

The Southeast Quarter of the Southwest Quarter; also the Southeast Quarter, except that part thereof described as:

Beginning at a point 46.5 feet North of the center of the SE 1/4; thence east 32 rods; thence North 24 rods; thence North 60° West 16 rods; thence West 18 rods; thence South 32 rods to point of beginning;

also except that part of the NE 1/4 SE 1/4 described as follows:

Beginning at a point 17 rods 13 1/2 feet North and 32 rods East of the center of the SE 1/4; thence east 48 rods to the East line of said NE 1/4 SE 1/4; thence North 2 rods; thence West 48 rods; thence South 2 rods to the point of beginning;

also except that part of the NW 1/4 SE 1/4 of Section 19, Township 104 North, Range 19 West, described as follows:

Commencing at the center of the SE 1/4 of said Section 19; thence North 00°00'00" East, assumed bearing, 46.5 feet along the east line of the NW 1/4 SE 1/4 to the point of beginning; thence continuing North 00°00'00" West 525.61 feet; thence North 89°24'07" West 200.00 feet parallel with the South line of the N 1/2 SE 1/4; thence South 00°00'00" East 525.61 feet; thence South 89°24'07" East 200.00 feet to the point of beginning, all lying and being in Section 19, Township 104 North, Range 19 West, Freeborn County, Minnesota.

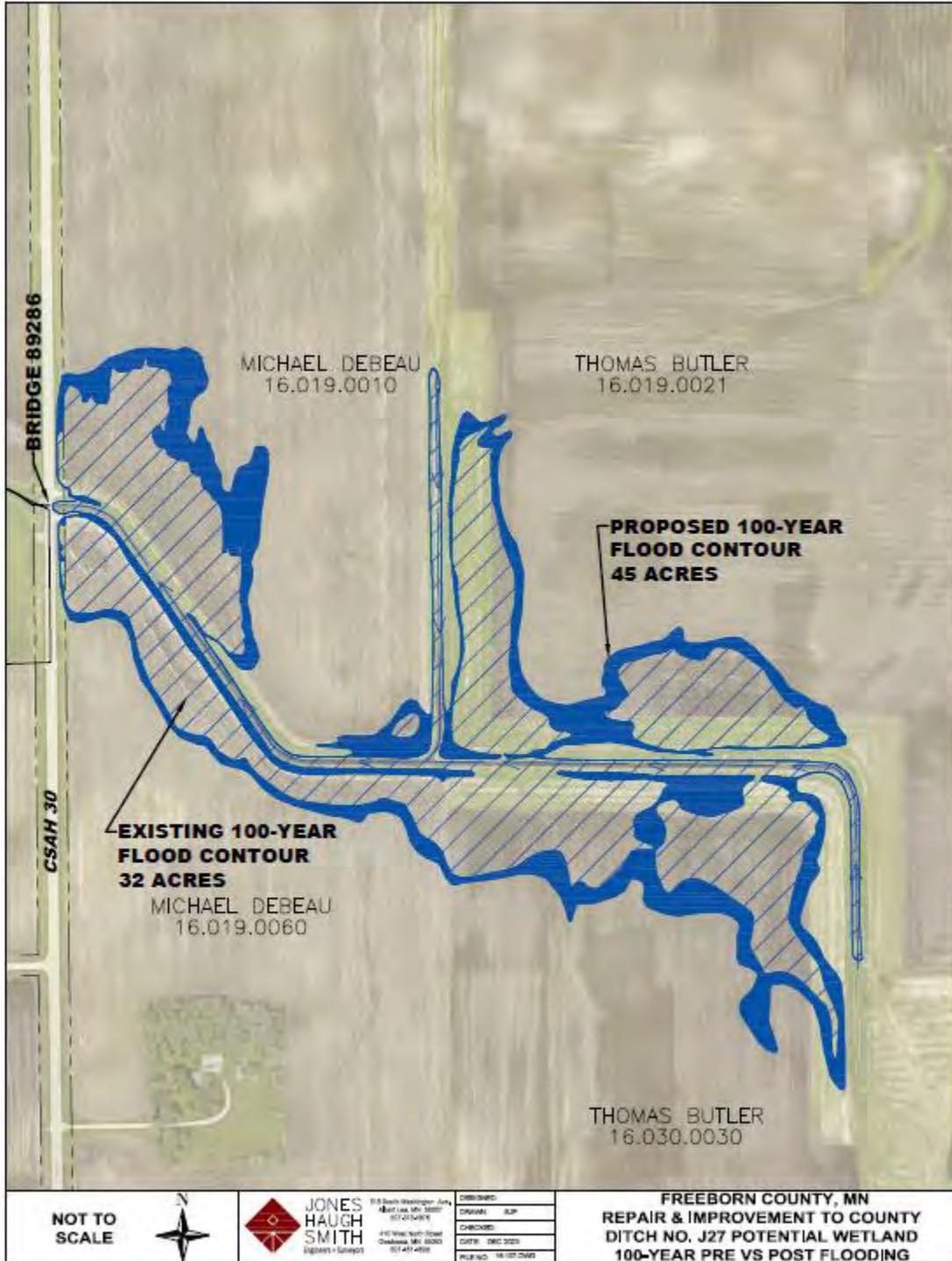
(PID 16.019.0040)

Parcel 6: 16.030.0030

The East Half of the Northwest Quarter of Section 30, Township 104 North, Range 19 West, Freeborn County, Minnesota.

(PID 16.030.0030)

Exhibit B



FLOWAGE EASEMENT & AGREEMENT

This FLOWAGE EASEMENT & AGREEMENT (“**Agreement**”) is made and entered into this ____ day of _____, 2025, by and between Grantors Michael DeBeau and Nancy DeBeau, a married couple (the “**Grantors**”) and Grantee the Turtle Creek Watershed District Board of Managers in its capacity under Minnesota Statutes, chapter 103E, as the public drainage authority for Freeborn County Ditch J27 (the “**Grantee**” or “**Drainage Authority**”), (Grantors and Grantee or the Drainage Authority are collectively the “**Parties**”).

RECITALS

A. Grantors are the owners of real property located in Freeborn County, Minnesota, identified as parcel numbers 16.019.0010 and 16.019.0060, hereinafter referred to as the “**Grantors’ Property**,” legally described in **Exhibit A**.

B. Grantee is the public drainage authority under Minnesota Statutes, chapter 103E authorized to access, inspect, and repair Freeborn County Ditch J27 (“**CD J27**”) on behalf of all owners of property benefited by CD J27 and holds all necessary property interests to do so.

C. As part of an improvement of CD J27, the appointed project engineer documented potential flowage damages and recommended acquisition of a flowage easement and payment of damages to affected parties.

D. Grantors have agreed to convey to Grantee a permanent easement, as more specifically described below, to permit Grantee to flow waters from the CD J27 drainage system on to Grantors’ Property below elevations 1208.4 feet (NAVD 1988) as described in the CD J27 improvement plans and depicted in **Exhibit B** attached hereto, as well as granting access and compliance inspection rights to Grantee subject to the terms and conditions contained in this Agreement.

In consideration of the promises and the mutual obligations contained in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which the Parties acknowledge, the Parties agree as follows:

FLOWAGE EASEMENT & AGREEMENT

1. Recitals Incorporated. The foregoing Recitals are incorporated into this agreement.

2. Flowage Easement and Easement Area. Grantors, for themselves, their heirs, successors, and assigns, grant, and convey to the Drainage Authority, for public purposes related to the function of CD J27, a permanent easement in, on, over, through, and across that portion of Grantors' Property lying within the flood plain adjacent to and contiguous with the channel of CD J27 below elevation 1208.4 (NAVD 1988) (Easement Area).

3. Agreement Runs with the Land. This Agreement shall be for the benefit of the CD J27 drainage system as administered by the Drainage Authority or its successor. This Agreement shall be deemed to be perpetual and shall run with the land and shall be binding upon the Parties' heirs, successors, and assigns.

4. Parties' Covenants. The Parties specifically covenant with each other that:

- a. Grantors may continue to use the Property for agricultural and other purposes that do not interfere with the flowage of water below elevation 1208.4 feet (NAVD 1988);
- b. Grantors own Grantors' Property free of encumbrance that would prevent the conveyance of the Easement herein;
- c. Each Party has full and good lawful authority to enter into this Agreement;
- d. Grantors have full and good lawful authority to convey the Flowage Easement as set forth in this Agreement; and
- e. Each Party covenants to warrant and defend this Agreement and the Flowage Easement contained herein against claims of all persons whomsoever.

5. Drainage Authority May Transfer Agreement. The Drainage Authority may transfer this Agreement to another drainage authority or other water management entity duly formed and authorized under the State of Minnesota or as authorized by Minnesota law.

6. Drainage Authority Rights and Powers. Nothing in this Agreement shall be construed to modify, limit, or prevent the Drainage Authority from exercising the rights, responsibilities, or powers granted or imposed by Minnesota Statutes, chapter 103E.

7. Taxes. With regard to the Grantors' Property, Grantors are solely responsible for paying all taxes and special assessments or assessments for special improvements due, levied or assessed for all taxes and assessments. Grantee will not be responsible for payment of any taxes or assessments regarding the Grantors' Property at any time.

8. Risk of Loss. Grantors shall remain responsible for all taxes, mortgage payments, insurance premiums and bear the risk of loss with respect to general liability, liability for personal

injury, and any damage or casualty loss with respect to the Grantors' Property, resulting from the use, occupancy and maintenance of the Grantors' Property.

9. Recording. This Agreement shall be recorded with the Freeborn County Recorder on the Grantors' Property at the expense of Grantee.

10. Counterparts. This Agreement may be executed in parts which, when all original signatures are compiled, shall constitute a full and complete Agreement.

11. Governing Law. This Agreement shall be governed by the laws of Minnesota.

12. Legal Representation. Rinke Noonan, Ltd.'s attorneys represent the Drainage Authority regarding this Agreement. The other Parties are hereby advised to seek independent legal advice prior to execution of this Agreement.

13. Severability. If one provision of this Agreement is held invalid, that shall not affect any other provision of this Agreement.

14. Enforceability. This Agreement's provisions are for the benefit of the Parties. No third parties shall have any rights to enforce or be deemed a beneficiary of any provisions of this Agreement.

[signature pages to follow]

**SIGNATURE PAGE TO
FLOWAGE EASEMENT & AGREEMENT**

GRANTORS

Michael DeBeau

Nancy DeBeau

STATE OF MINNESOTA)
) SS
COUNTY OF _____)

On this _____ day of _____, 2025, before me, a Notary Public for this County, personally appeared Michael DeBeau, married to Nancy DeBeau, who I know to be the person described in the foregoing instrument, and who acknowledged that he executed that instrument as his free act and deed.

Notary Public, State of _____
My Commission Expires:

STATE OF MINNESOTA)
) SS
COUNTY OF _____)

On this _____ day of _____, 2025, before me, a Notary Public for this County, personally appeared Nancy DeBeau, married to Michael DeBeau, who I know to be the person described in the foregoing instrument, and who acknowledged that she executed that instrument as her free act and deed.

Notary Public, State of _____
My Commission Expires:

Exhibit A
(Grantors' Property)

Real property in Freeborn County, Minnesota, described as follows:

16-19-0010

Tract 4. West Half (W $\frac{1}{2}$) of the Northwest Quarter (NW $\frac{1}{4}$) and Lot "A" Subdivision of the Northwest Quarter (NW $\frac{1}{4}$) of the Southwest Quarter (SW $\frac{1}{4}$) of Section Nineteen (19), Township 104 North, Range 19 West, Freeborn County, Minnesota.

(PID 16.019.0010)

AND

THE SW 1/4 SW 1/4 IN SECTION 19, TOWNSHIP 104 NORTH, RANGE 19 WEST OF THE 5TH P.M., FREEBORN COUNTY, MINNESOTA

ALSO

THE WEST 17.35 ACRES OF THE NW 1/4 SW 1/4, ALSO CALLED LOT "B" SUBDIVISION OF THE NW 1/4 SW 1/4 OF SECTION 19, TOWNSHIP 104 NORTH, RANGE 19 WEST OF THE 5TH P.M., FREEBORN COUNTY, MINNESOTA.

(PID 16.019.0060)

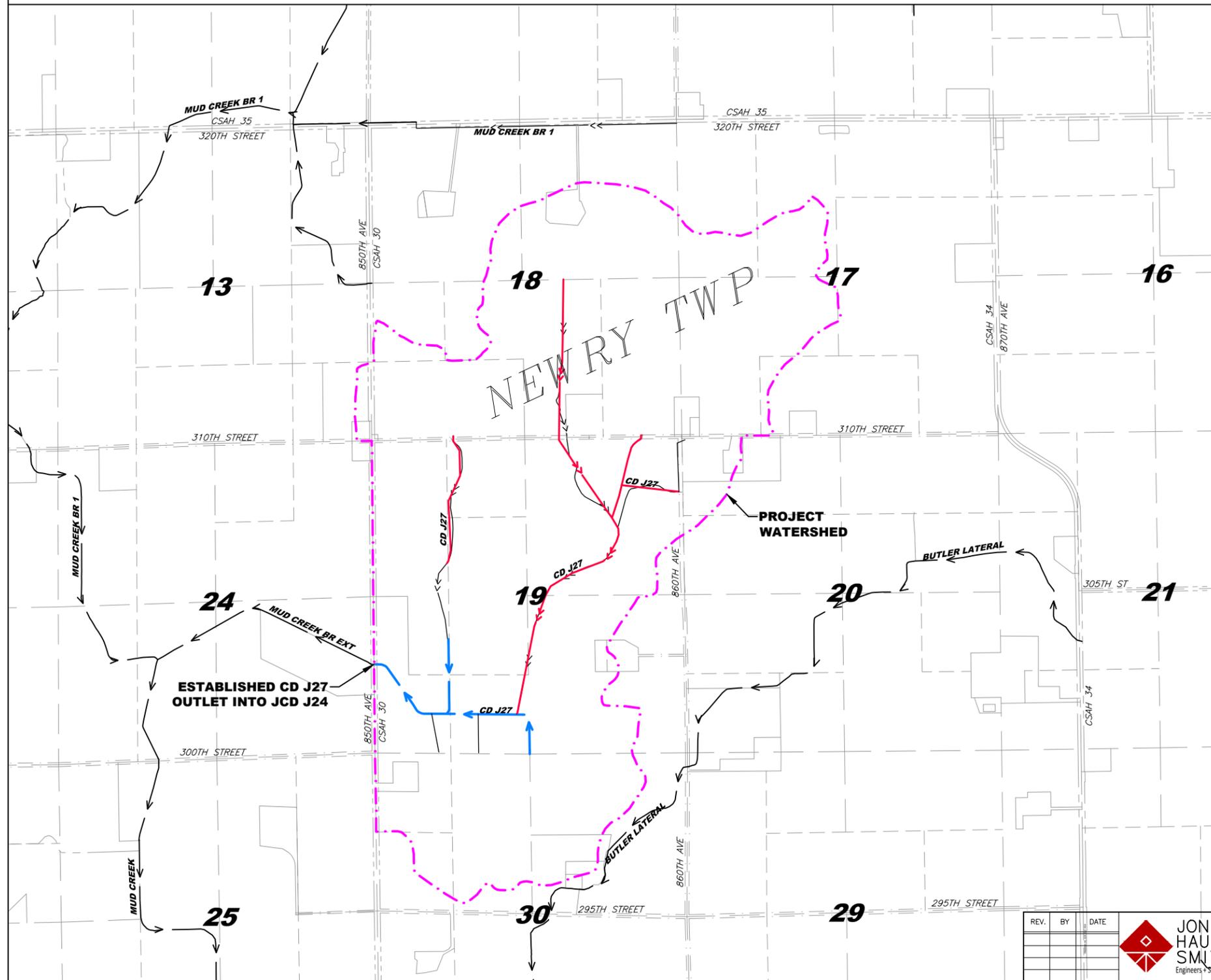
Exhibit B



APPENDIX 7
FINAL PLANS

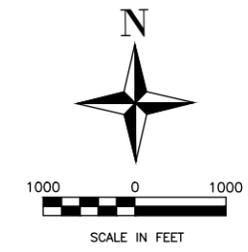
FREEBORN COUNTY, MN

PETITION FOR IMPROVEMENT TO COUNTY DITCH NO. J27



INDEX TO SHEETS

SHEET	SUBJECT
1	TITLE SHEET
2	WATERSHED MAP
3-5	BR D TILE PLAN & PROFILES
6	BR D-1 TILE PLAN & PROFILES
7	BR D-2 TILE PLAN & PROFILES
8-9	BR B TILE PLAN & PROFILES
10	CD J27 OUTLET
11-15	SWPPP & STANDARD DRAINAGE STRUCTURES



SCALE
 11X17 HORIZ: 1"=2000'
 22X34 HORIZ: 1"=1000'

ABBREVIATIONS

JD = JUDICIAL DITCH
 CD = COUNTY DITCH
 JCD = JOINT COUNTY DITCH
 MOD = MAIN OPEN DITCH
 LAT = LATERAL
 BR = BRANCH
 PVT = PRIVATE
 POD = PRIVATE OPEN DITCH
 LW = LOW-WATER
 XG = CROSSING
 OL = OUTLET

LEGEND

APPROXIMATE PROJECT WATERSHED	--- (Pink dashed line)
APPROXIMATE INTERIOR WATERSHED	--- (Black dashed line)
APPROXIMATE EXTERIOR WATERSHED	--- (Black dotted line)
OPEN DITCH (Project)	--- (Blue solid line)
LEGAL OPEN DITCH (Not Project)	--- (Black solid line)
PRIVATE OPEN DITCH	--- (Red solid line)
TILE DITCH (Project)	--- (Red dashed line)
LEGAL TILE DITCH (Not Project)	--- (Black dashed line)
PRIVATE TILE	--- (Black solid line)
PRIVATE WATERWAY	--- (Black solid line)
NATURAL STREAM	--- (Blue wavy line)
GAS LINE	--- (Orange dashed line)
OVERHEAD ELECTRIC	--- (Black dashed line)
UNDERGROUND ELECTRIC	--- (Black dashed line)
UNDERGROUND TELEPHONE	--- (Black dashed line)
CITY LIMITS	--- (Black dashed line)
FENCE LINE	--- (Black dashed line)
ALTERNATIVE TILE INLET	--- (Black dashed line)
TILE INSPECTION INLET	--- (Black dashed line)
OVERHEAD TELEPHONE	--- (Black dashed line)
FIBER-OPTICS	--- (Black dashed line)
UNDERGROUND ELECTRIC	--- (Black dashed line)
LIGHT POLE	--- (Black dashed line)
POWER POLE	--- (Black dashed line)

NO RESPONSIBILITY IS ACCEPTED FOR THE LOCATIONS OF UTILITIES SHOWN HEREON. VERIFICATION OF ACTUAL LOCATIONS SHOULD BE REQUESTED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OR THE TAKING OF ANY OTHER ACTION RELYING ON THE ACTUAL LOCATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATION FROM PLAN.

LOCATIONS OF ALL UTILITIES SHOWN ARE APPROXIMATE.
 GOPHER STATE ONE-CALL: 1-800-252-1166

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH WORK.

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR 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.

**PRELIMINARY NOT
FOR CONSTRUCTION**

BENCHMARK ELEVATION = 1207.91

MNDOT GEODETIC CONTROL STATION #100260, DALE, LOCATED 0.2 MILE WEST OF MAPLE ISLAND, 0.2 MILE WEST ALONG TRUNK HIGHWAY 251 FROM THE JUNCTION OF TRUNK HIGHWAY 251 AND BALLPARK ROAD IN MAPLE ISLAND, AT TRUNK HIGHWAY 251 MILEPOINT 7.8, 66.0 FEET SOUTH OF TRUNK HIGHWAY 251, 24.7 FEET WEST OF COUNTY ROAD 30 (850TH AVENUE), 1.5 FEET EAST OF A WITNESS POST.

NOTE: THIS IS A COLOR PLAN SET. IF THIS TEXT DOES NOT APPEAR IN COLOR, THIS IS NOT AN ORIGINAL PLAN SET AND MAY RESULT IN MISINTERPRETATION.

REV.	BY	DATE



515 South Washington Ave.
 Albert Lea, MN 56007
 507-373-4876

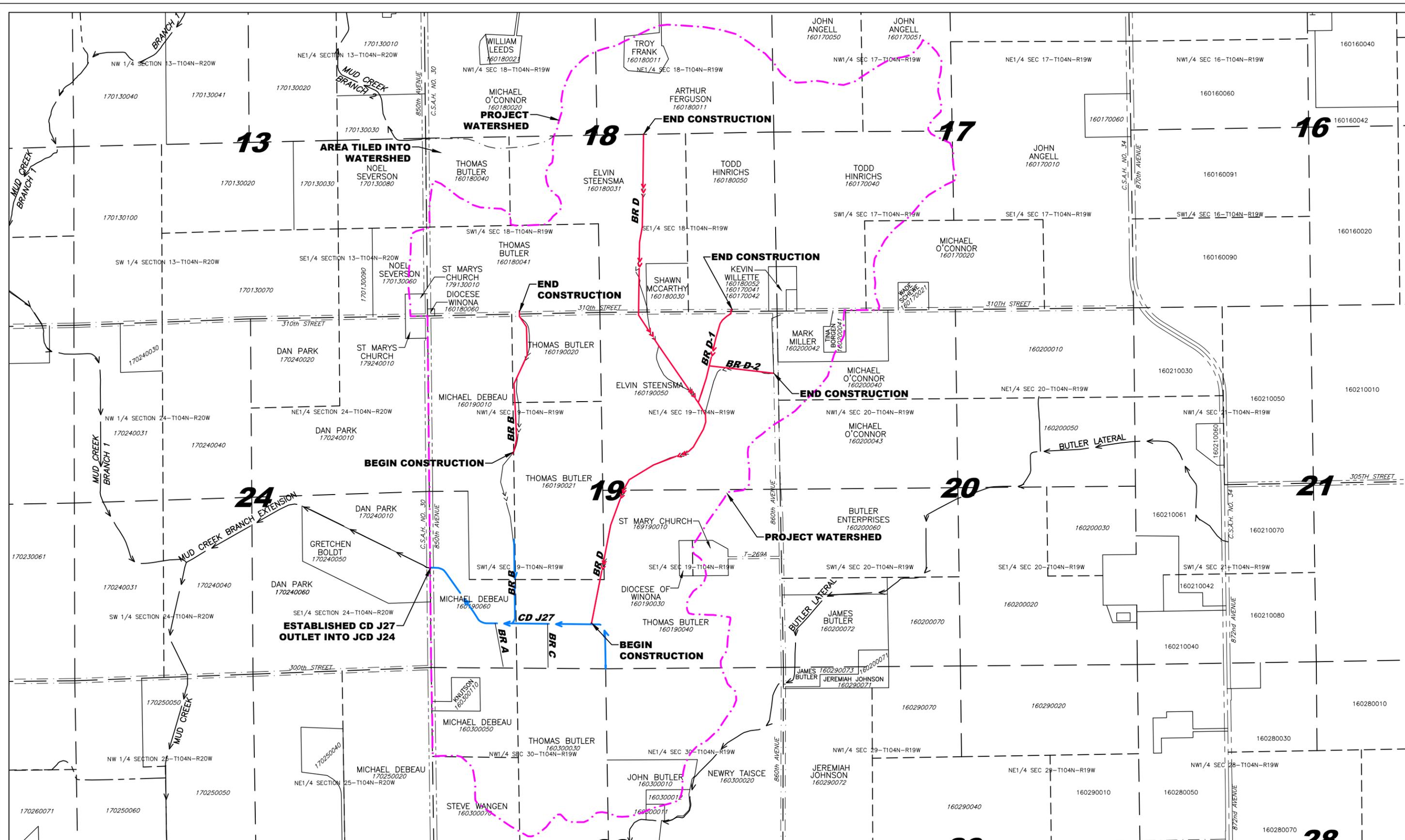
415 West North Street
 Owatonna, MN 55060
 507-451-4598

DESIGNED: SJP
 DRAWN: SJP
 CHECKED: SJP
 DATE: 10-21-25
 FILE NO: 16-107.DWG

FINAL REPORT

**FREEBORN COUNTY, MN
 PETITION FOR IMPROVEMENT TO
 COUNTY DITCH NO. J27
 TITLE SHEET**

SHEET
 1
 OF
 15



SCALE
11X17 HORIZ: 1"=1,320'
22X34 HORIZ: 1"=660'



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No responsibility is accepted for the locations of
utilities shown hereon. Verification of actual locations
should be requested prior to the commencement of
construction or the taking of any other action relying
on the actual locations.
GOPHER STATE ONE—CALL: 1-800-252-1166

REV.	BY	DATE



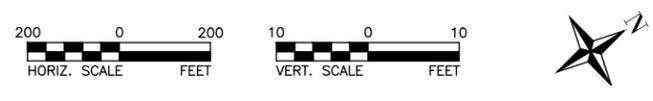
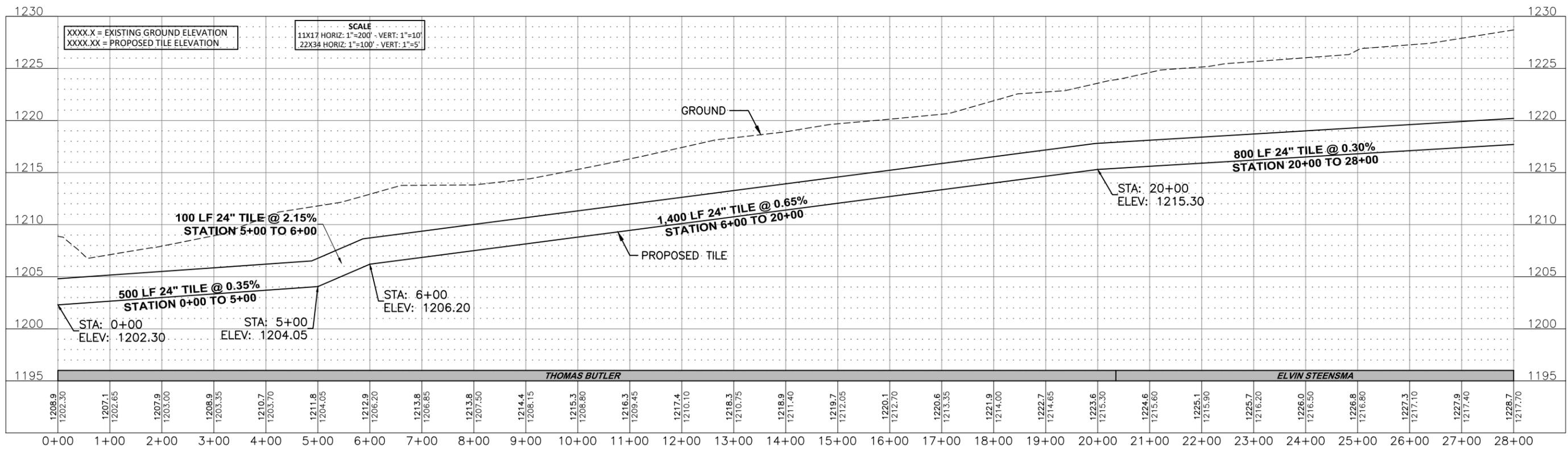
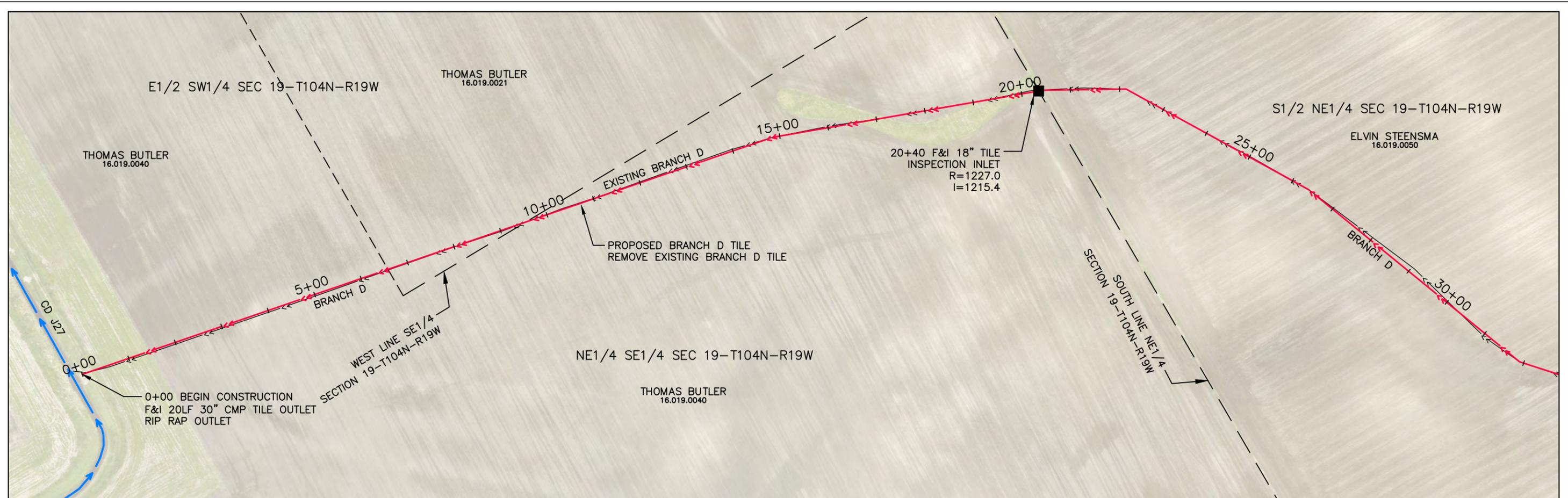
515 South Washington Ave.
Albert Lea, MN 56007
507-373-4876
415 West North Street
Owatonna, MN 55960
507-451-4598

DESIGNED: SJP
DRAWN: SJP
CHECKED: SJP
DATE: 10-21-25
FILE NO: 16-107.DWG

I hereby certify that this plan, specification, or report was
prepared by me or under my direct supervision and that I
am a duly Licensed Professional Engineer in the State of Minnesota.
PRELIMINARY NOT FOR CONSTRUCTION
Steven J. Beckwith
Lic. No. 43895 Date:

**FREEBORN COUNTY, MN
IMPROVEMENT OF
COUNTY DITCH NO. J27
WATERSHED MAP**

SHEET
2
OF
15



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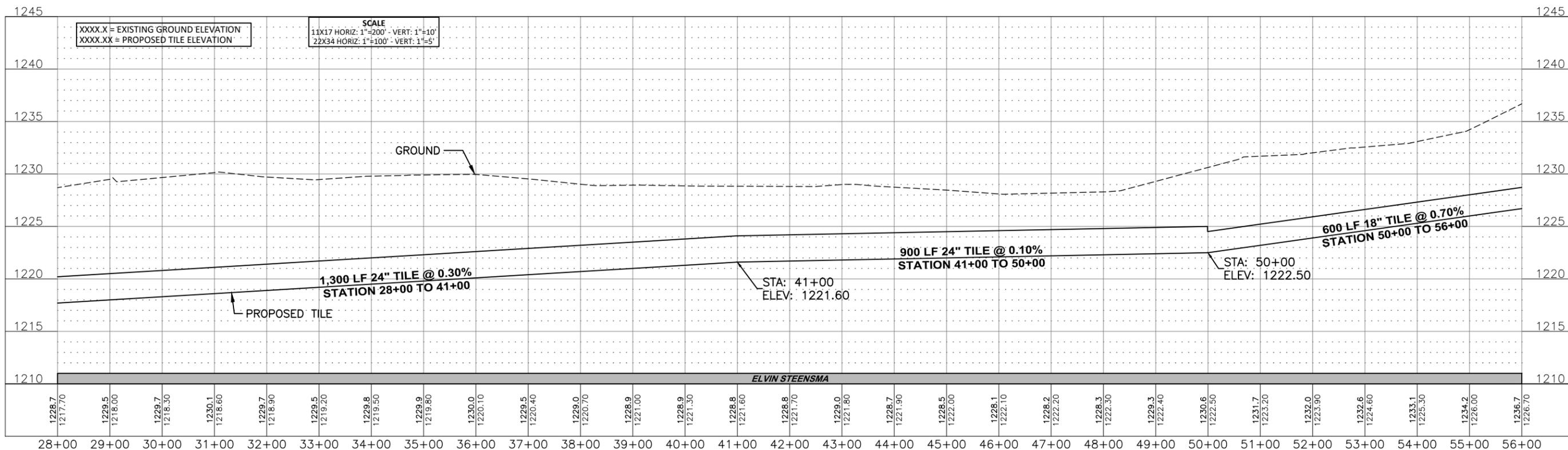
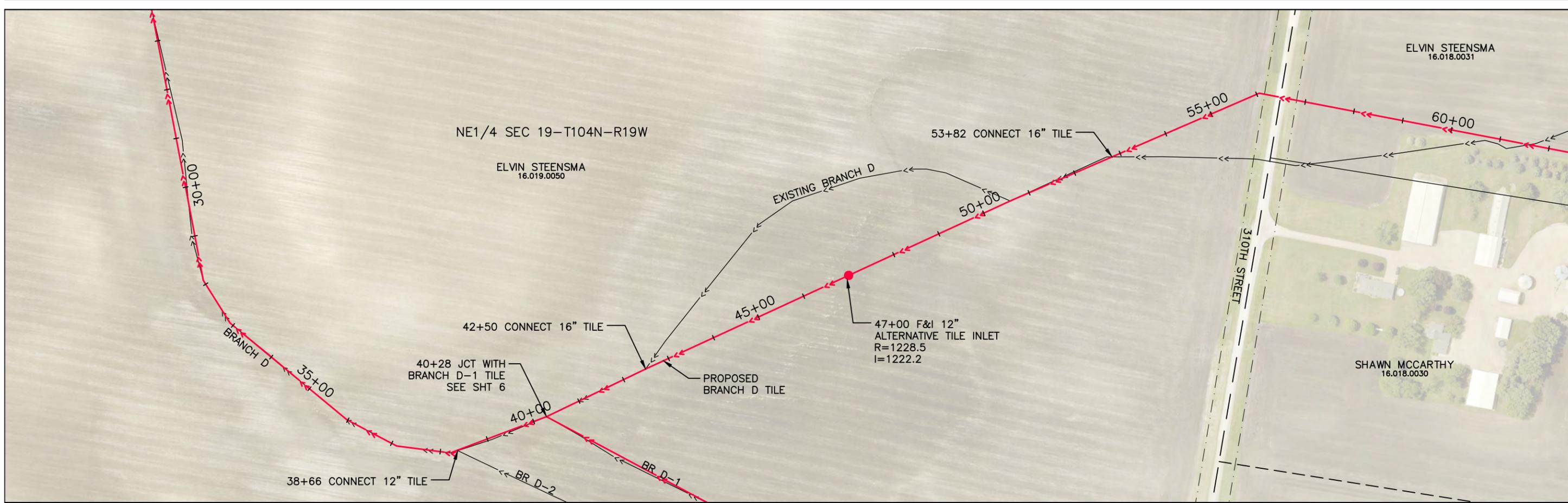
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utilities shown hereon. Verification of actual locations
should be requested prior to the commencement of
construction or the taking of any other action relying
on the actual locations.
GOPHER STATE ONE-CALL: 1-800-252-1166

REV.	BY	DATE

JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave.
Albert Lea, MN 56007
507-373-4876
415 West North Street
Owatonna, MN 55960
507-451-4598

DESIGNED: SJP
DRAWN: SJP
CHECKED: SJP
DATE: 10-21-25
FILE NO: 16-107.DWG
I hereby certify that this plan, specification, or report was
prepared by me or under my direct supervision and that I
am a duly Licensed Professional Engineer in the State of Minnesota.
PRELIMINARY NOT FOR CONSTRUCTION
Steven J. Beckwith
Lic. No. 43895 Date:

FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH D TILE
PLAN & PROFILE
STATION 0+00 TO 28+00



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should be requested prior to the commencement of
construction or the taking of any other action relying
on the actual locations.

GOPHER STATE ONE-CALL: 1-800-252-1166

REV.	BY	DATE



515 South Washington Ave.
Albert Lea, MN 56007
507-373-4876

415 West North Street
Owatonna, MN 55960
507-451-4598

DESIGNED: SJP
DRAWN: SJP
CHECKED: SJP
DATE: 10-21-25
FILE NO: 16-107.DWG

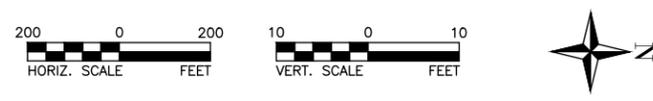
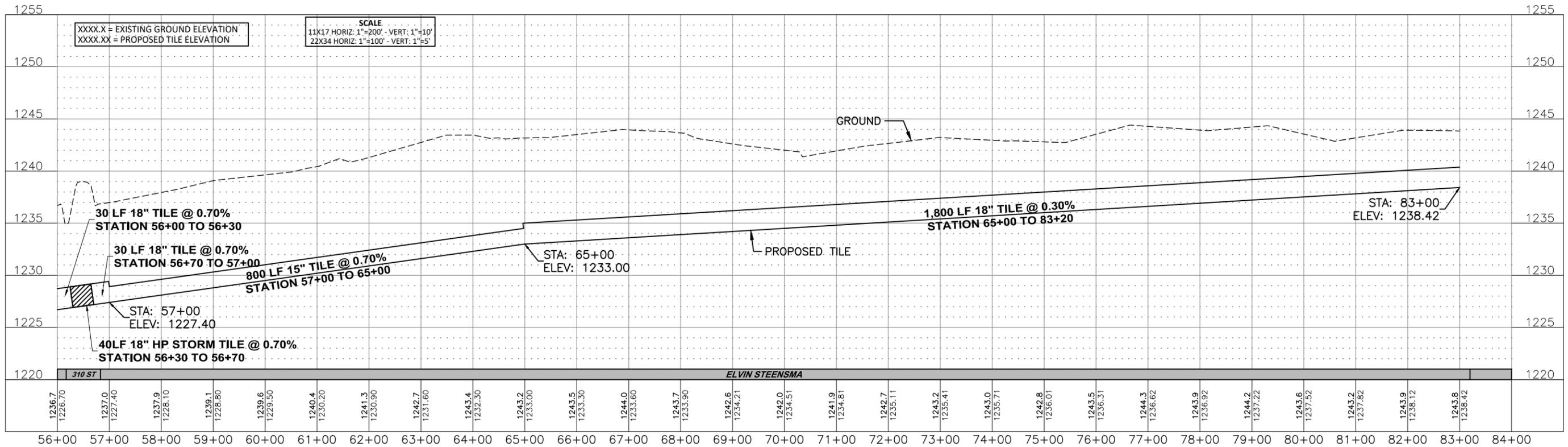
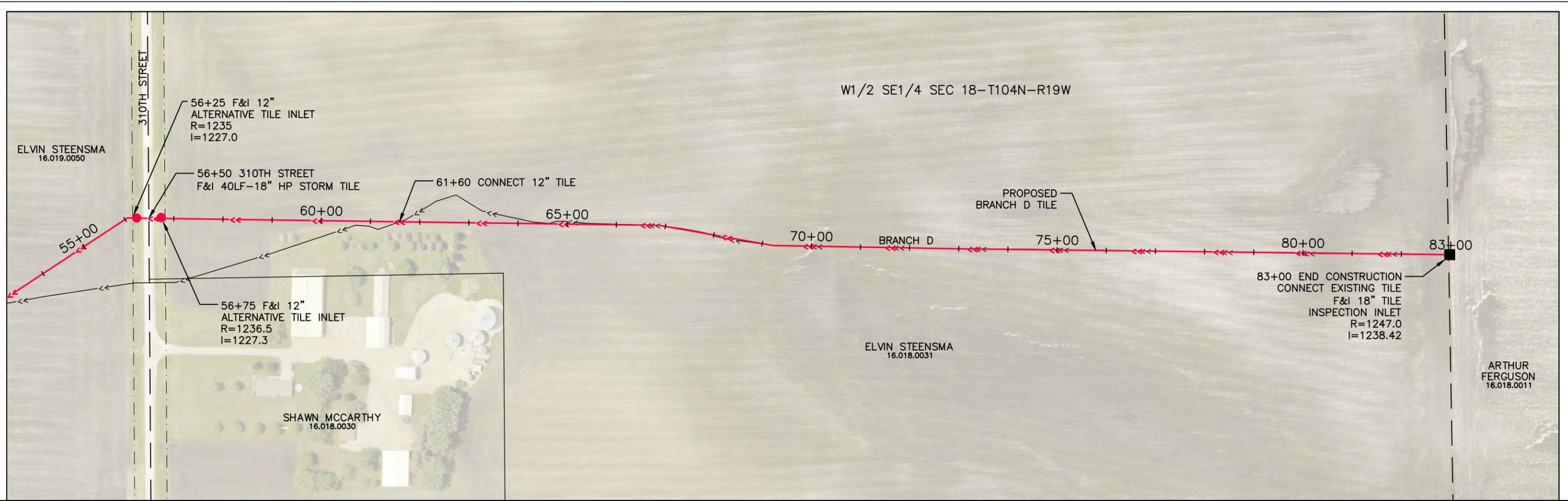
I hereby certify that this plan, specification, or report was
prepared by me or under my direct supervision and that I
am a duly licensed Professional Engineer under the laws
of the State of Minnesota.

**PRELIMINARY NOT
FOR CONSTRUCTION**

Shawn J. Decker
Lic. No. 43895 Date:

FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH D TILE
PLAN & PROFILE
STATION 28+00 TO 56+00

SHEET
4
OF
15



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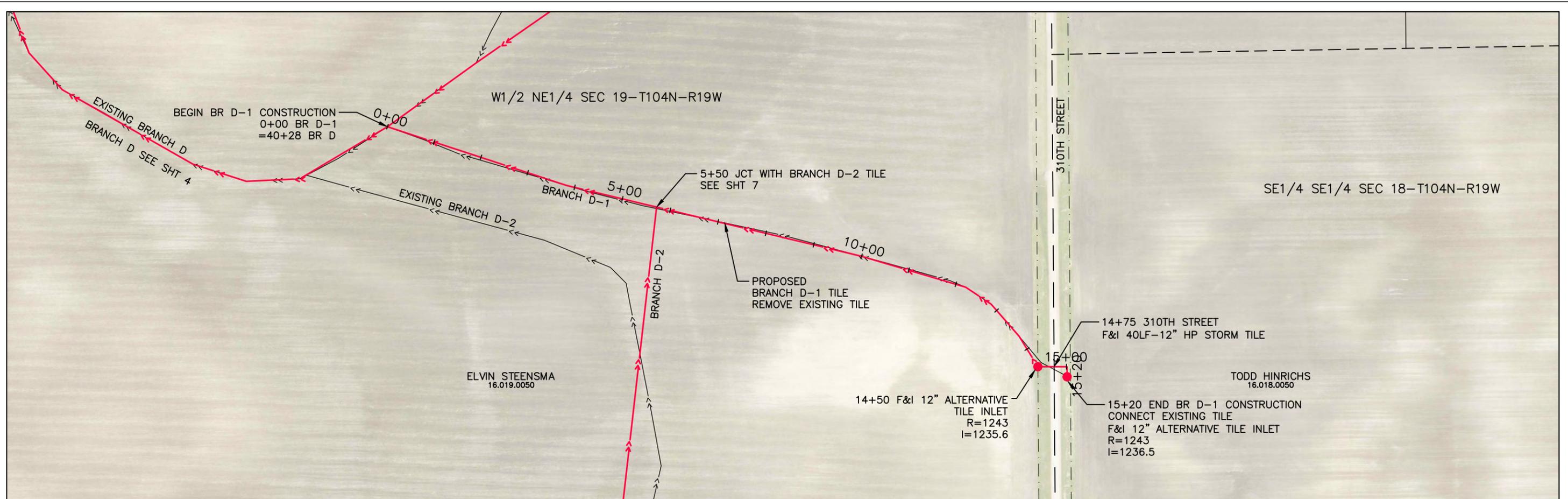
REV.	BY	DATE

JONES HAUGH SMITH
Engineers + Surveyors
515 South Washington Ave.
Albert Lea, MN 55007
507-373-4876
415 West North Street
Owatonna, MN 55060
507-451-4598

DESIGNED: SJP
DRAWN: SJP
CHECKED: SJP
DATE: 10-21-25
FILE NO: 16-107.DWG

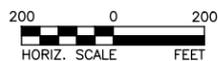
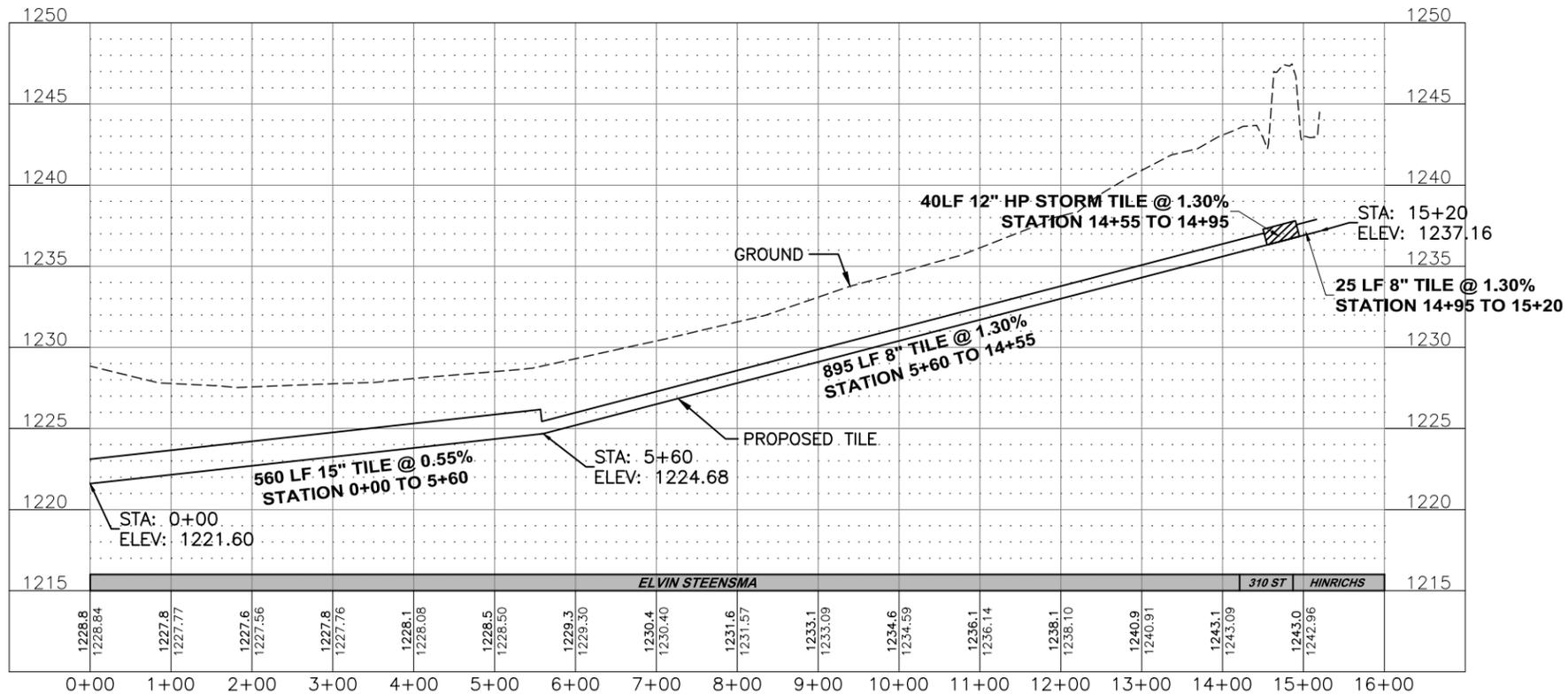
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PRELIMINARY NOT FOR CONSTRUCTION
Steven J. Beckwith
Lic. No. 43895 Date:

FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH D TILE
PLAN & PROFILE
STATION 56+00 TO 83+00



XXXX.X = EXISTING GROUND ELEVATION
 XXXX.XX = PROPOSED TILE ELEVATION

SCALE
 11X17 HORIZ: 1"=200' - VERT: 1"=10'
 22X34 HORIZ: 1"=100' - VERT: 1"=5'



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 GOPHER STATE ONE-CALL: 1-800-252-1166

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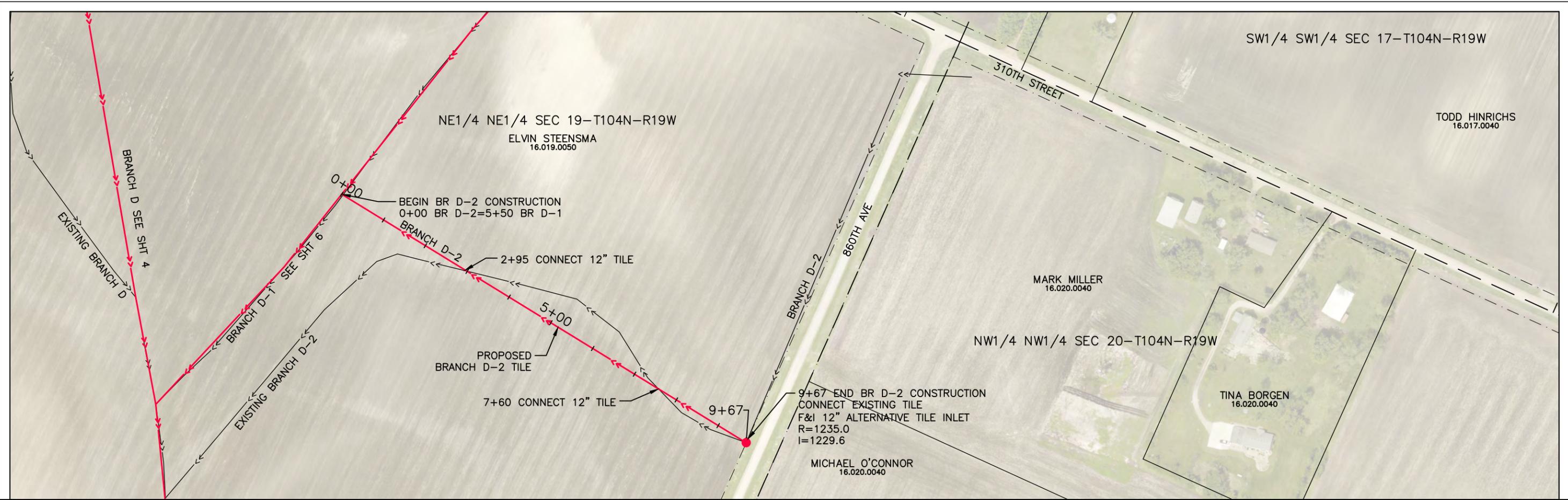
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 HAUGH
 SMITH
 Engineers + Surveyors
 515 South Washington Ave.
 Albert Lea, MN 56007
 507-373-4876
 415 West North Street
 Owatonna, MN 55960
 507-451-4598

DESIGNED: SJP
 DRAWN: SJP
 CHECKED: SJP
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FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH D-1 TILE
 PLAN & PROFILE
 STATION 0+00 TO 15+20

SHEET
 6
 OF
 15



SW1/4 SW1/4 SEC 17-T104N-R19W

TODD HINRICHS
16.017.0040

NE1/4 NE1/4 SEC 19-T104N-R19W
ELVIN STEENSMA
16.019.0050

MARK MILLER
16.020.0040

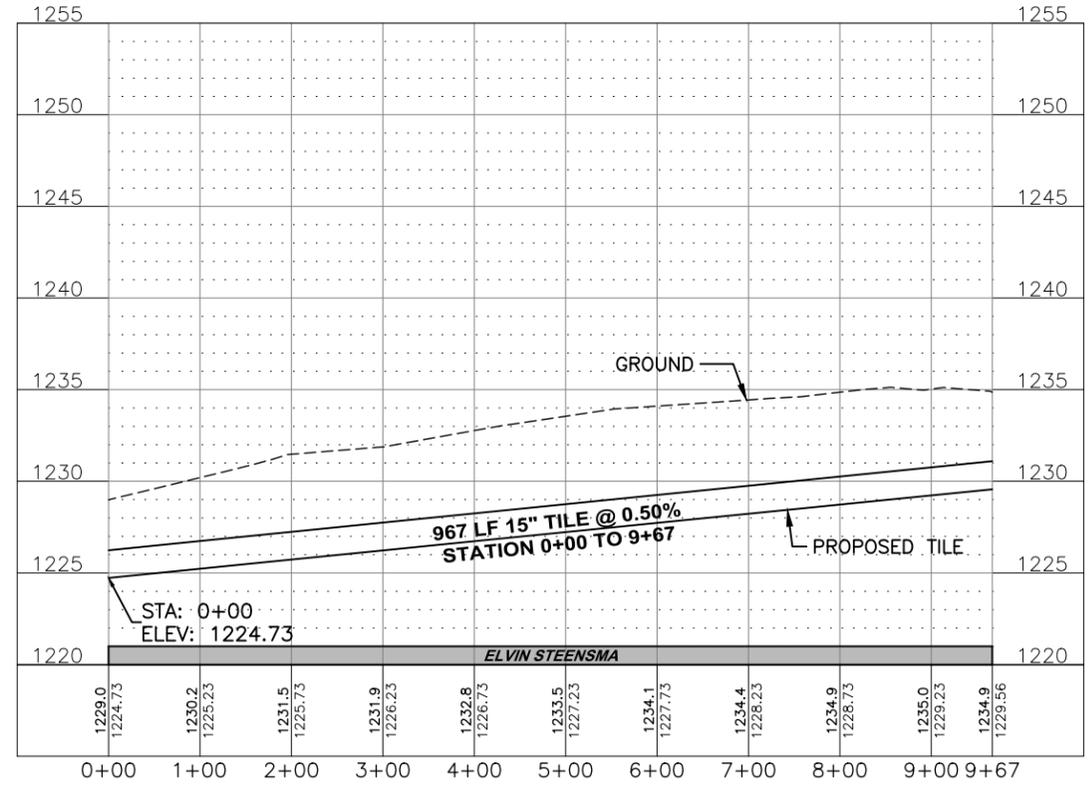
NW1/4 NW1/4 SEC 20-T104N-R19W

TINA BORGEN
16.020.0040

MICHAEL O'CONNOR
16.020.0040

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XXXX.XX = PROPOSED TILE ELEVATION

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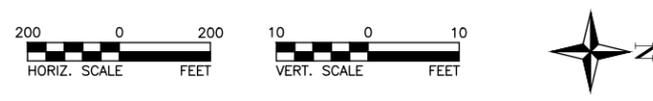
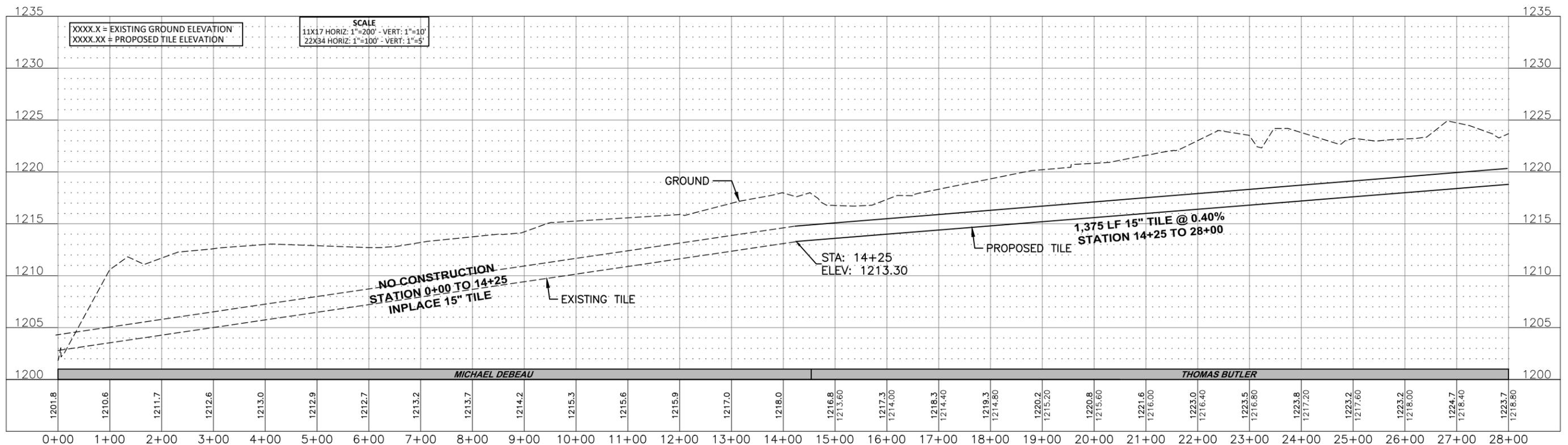
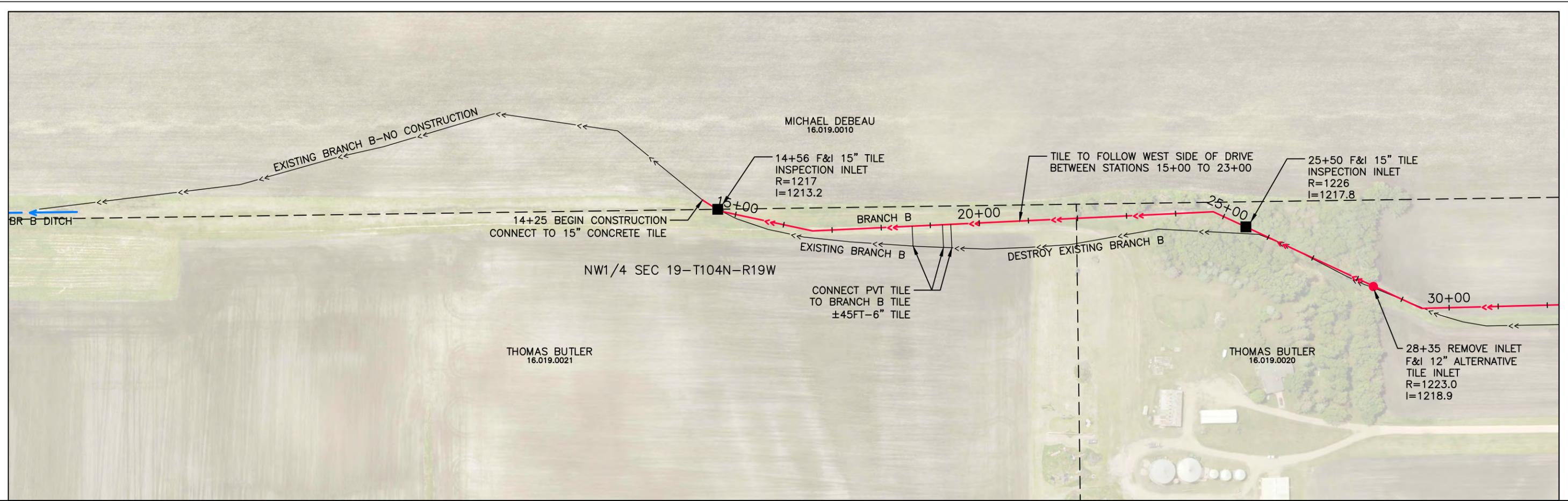
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415 West North Street
Owatonna, MN 55960
507-451-4598

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Steven J. Baskin
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FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH D-2 TILE
PLAN & PROFILE
STATION 0+00 TO 9+67

SHEET
7
OF
15



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Engineers + Surveyors

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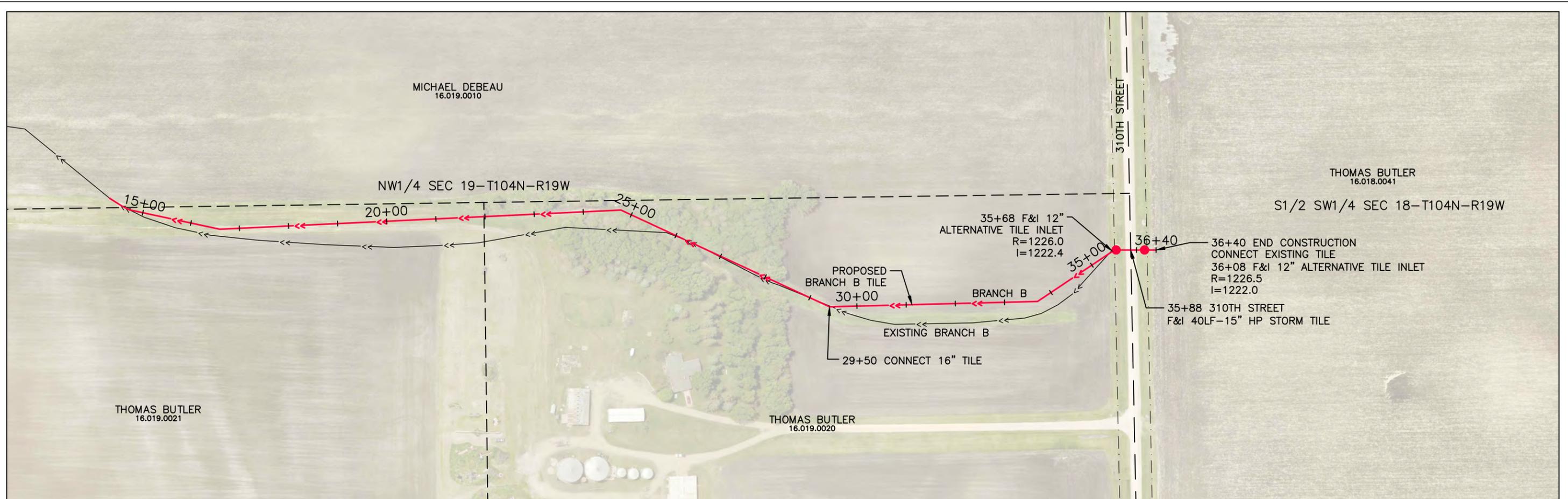
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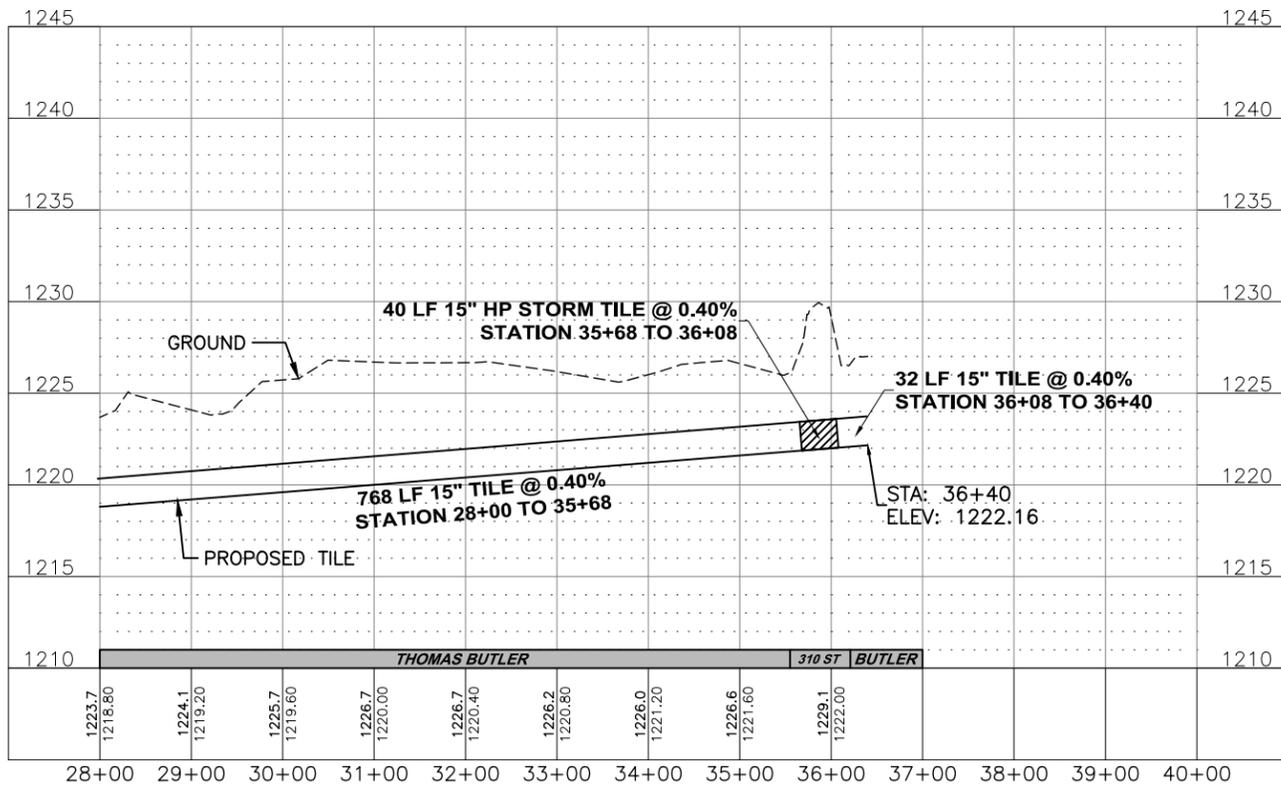
Steven J. Beckwith
Lic. No. 43895 Date:

FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH B TILE
PLAN & PROFILE
STATION 0+00 TO 28+00



XXXX.X = EXISTING GROUND ELEVATION
 XXXX.XX = PROPOSED TILE ELEVATION

SCALE
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 22X34 HORIZ: 1"=100' - VERT: 1"=5'



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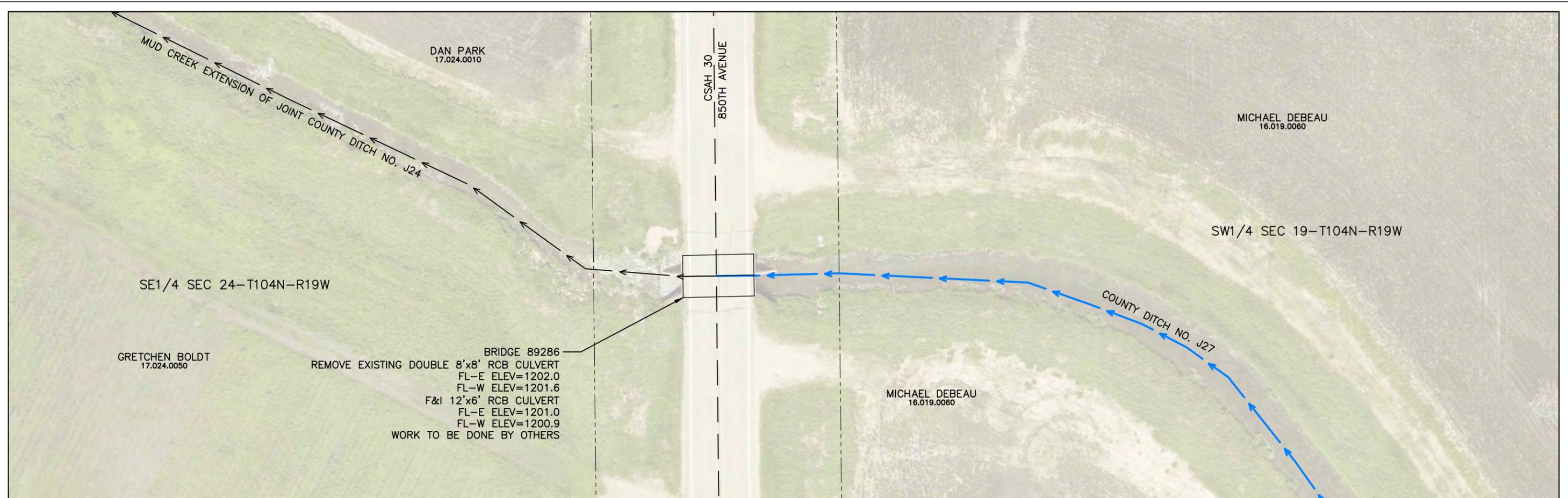
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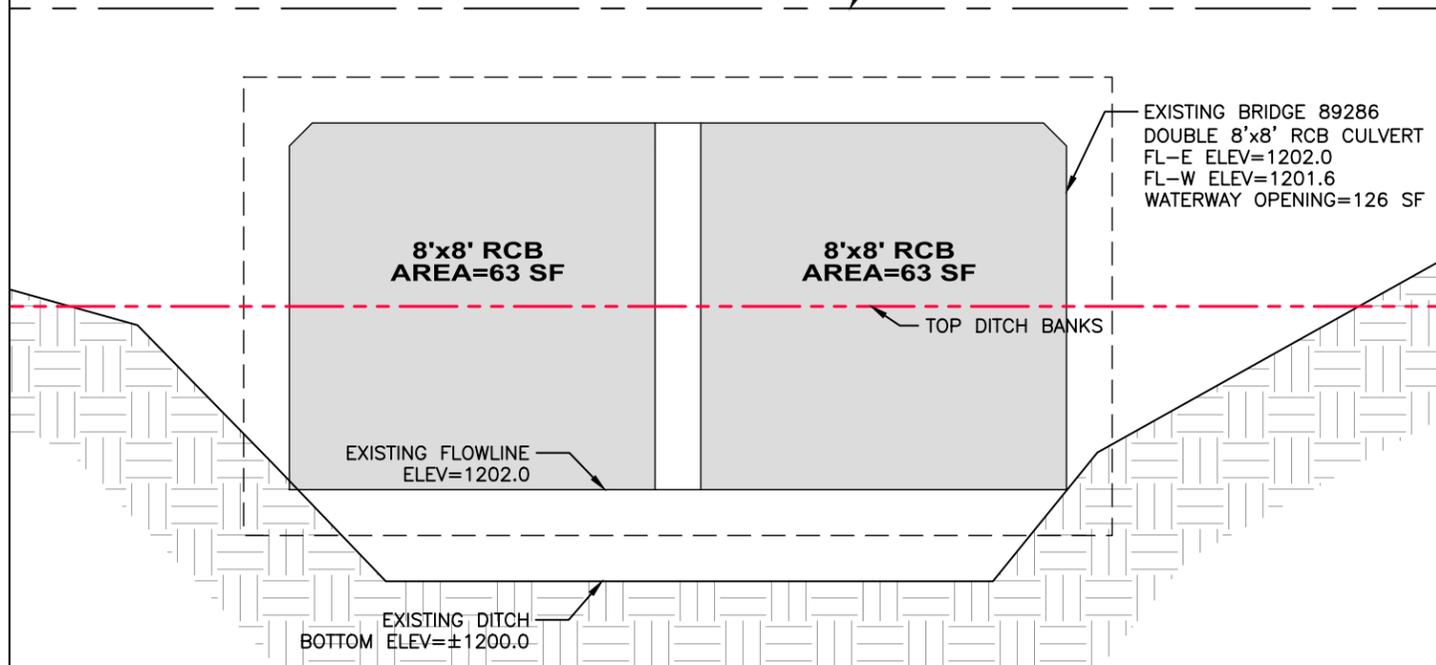
FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
BRANCH B TILE
 PLAN & PROFILE
 STATION 28+00 TO 36+40

SHEET
 9
 OF
 15



EXISTING CULVERT

CENTERLINE CSAH 30 AT BR 89286
ELEV=±1212.5

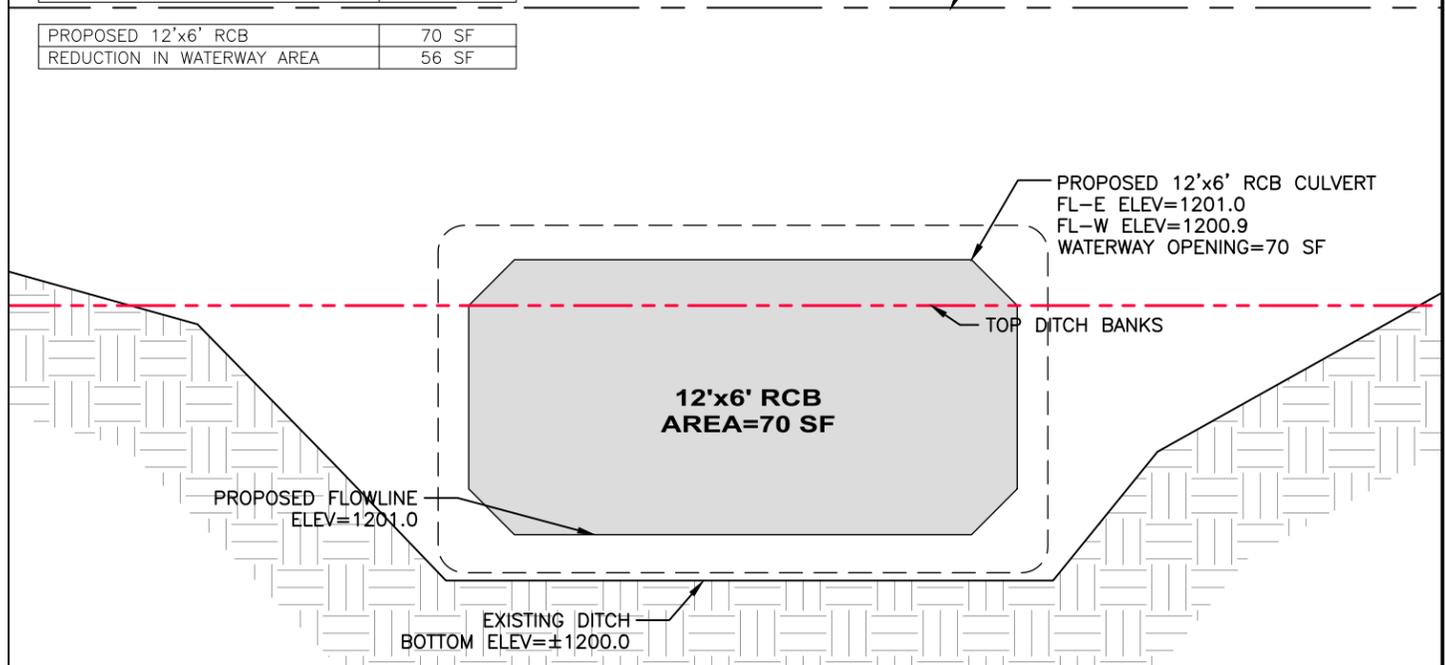


CULVERT COMPARISON PROPOSED CULVERT

CENTERLINE CSAH 30 AT BR 89286
ELEV=±1212.5

EXISTING 2-8'x8' RCB	126 SF
TOTAL EXISTING WATERWAY AREA	126 SF

PROPOSED 12'x6' RCB	70 SF
REDUCTION IN WATERWAY AREA	56 SF



SCALE
11X17 HORIZ: 1"=40' - VERT: 1"=4'
22X34 HORIZ: 1"=20' - VERT: 1"=2'



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Steven J. Beckwith
Lic. No. 43895 Date:

FREEBORN COUNTY, MN
IMPROVEMENT TO COUNTY DITCH NO. J27
CD J27 OUTLET
WEST LINE OF THE SW1/4 SECTION 19-T104N-R19W

SHEET
10
OF
15

CONSTRUCTION ACTIVITY INFORMATION

CONSTRUCTION ACTIVITY INFORMATION

PROJECT NARRATIVE: THE PROJECT CONSISTS OF THE CONSTRUCTION TO COUNTY DITCH NO. J27. THE PROJECT IS LOCATED APPROXIMATELY 2 MILES NORTHEAST OF THE CITY OF HOLLANDALE, MN; IN SECTIONS 18, 19 AND 20, NEWRY TOWNSHIP, FREEBORN COUNTY, MN. THE PROJECT INCLUDES INSTALLATION OF 13,002 FEET OF TILE, SEEDING AND ASSOCIATED EROSION CONTROL.

PROJECT NAME: REPAIR & IMPROVEMENT TO COUNTY DITCH NO. J27

PROJECT LOCATION: SECTIONS 18, 19 AND 20, NEWRY TOWNSHIP, FREEBORN COUNTY, MN

PROJECT AREAS:
 TOTAL ESTIMATED PROJECT SIZE: 15 ACRES DISTURBED
 EXISTING IMPERVIOUS SURFACE AREA = 0.00 ACRES
 POST CONSTRUCTION IMPERVIOUS SURFACE AREA = 0.00 ACRES
 TOTAL NEW IMPERVIOUS SURFACE AREA = 0.00 ACRES

PROJECT TYPE: AGRICULTURAL DRAINAGE

SOIL TYPES:

27B	DICKINSON FINE SANDY LOAM, 2 TO 6 PERCENT SLOPES
62	BARRINGTON SILT LOAM, 1 TO 3 PERCENT SLOPES
129	CYLINDER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES
134	OKOBOJI SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES
136	MADIELIA SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES
140	SPIECER SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES
156B	FAIRHAVEN LOAM, 2 TO 6 PERCENT SLOPES
160	FIELDON LOAM, 0 TO 2 PERCENT SLOPES
253	MAXCREEK SILTY CLAY LOAM
259B	GRAYS SILT LOAM, 1 TO 6 PERCENT SLOPES
382B	BLOOMING SILE LOAM, 2 TO 6 PERCENT SLOPES
386	WACOUSTA MUCKY SILE LOAM
414	HAMEL LOAM, 0 TO 2 PERCENT SLOPES
944B	LESTER-ESTHERVILLE COMPLEX, 2 TO 6 PERCENT SLOPES
PL78A	CANISTEO CLAY LOAM, 0 TO 2 PERCENT SLOPES
L84A	GLENCOE CLAY LOAM, 0 TO 2 PERCENT SLOPES

RECEIVING WATERS:
 MUD CREEK BRANCH EXTENSION TO JOINT COUNTY DITCH J24
 IN NE ¼ SE ¼ SECTION 24, GENEVA TOWNSHIP
 RECEIVING WATER IS NOT IDENTIFIED AS A "SPECIAL OR IMPAIRED" WATER
 NO ADDITIONAL BMP'S ARE REQUIRED

DATES OF CONSTRUCTION: 2026

A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER CONSTRUCTION PERMIT MUST BE SECURED FROM THE MPCA AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION.

GENERAL SITE INFORMATION

IMMEDIATELY FOLLOWING GRADING OF SLOPES OF 3:1 OR GREATER WHICH DRAIN TO WATERS OF THE STATE, SLOPES WILL BE STABILIZED WITH EROSION BLANKET OR HYDROSEEDING OVER A MINIMUM OF 6" OF TOPSOIL.

ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION UNTIL THE SITE HAS BEEN RE-VEGETATED. THE CONTRACTOR MAY REMOVE NECESSARY SILT FENCING TO CONSTRUCT ROADWAYS WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREAS.

SUFFICIENT TOPSOIL SHALL BE STOCKPILED TO ALLOW FOR THE REPLACEMENT OF A MINIMUM OF 6" OF TOPSOIL FOR DISTURBED AREAS TO BE RE-VEGETATED. STOCKPILES WILL BE STABILIZED WITH TARPS OR SEEDED WITH OATS OR WINTER WHEAT WITHIN 7 DAYS OF COMPLETION, WITH SILT FENCE RINGS IN PLACE PRIOR TO STOCKPILE CONSTRUCTION.

CONTRACTOR WILL SCHEDULE SITE GRADING, UTILITY INSTALLATION, AND GRAVEL SURFACE CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE.

DISTURBED AREAS SHALL BE STABILIZED WITHIN 7 DAYS OF CESSATION OF DISTURBANCE. STABILIZATION ACTIVITIES WILL BEGIN IMMEDIATELY AND BE COMPLETED WITHIN 7 DAYS. STABILIZATION WILL BE COMPLETED WITHIN 7 DAYS FOR SLOPES 3:1 AND STEEPER OR WHEN IDENTIFIED AS IMPAIRED.

SILT FENCES WILL BE CHECKED AFTER EACH RAIN EVENT AND DAILY DURING A PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING MEASURES AND REPORT IN LOG BOOK. REMOVE SEDIMENT DEPOSITS FROM SILT FENCE AND BALE CHECKS WHEN SEDIMENT REACHES APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.

BARRIERS WILL BE REPLACED WHEN THEY DECOMPOSE OR BECOME INEFFECTIVE BEFORE THE BARRIERS ARE NO LONGER NECESSARY. ANY SEDIMENT REMAINING IN-PLACE AFTER THE BARRIERS ARE NO LONGER NECESSARY WILL BE DRESSED TO CONFORM TO EXISTING GRADE, AND PREPARED AND SEEDED WITH THE APPROPRIATE SEED MIX, AS DIRECTED BY THE ENGINEER.

IN THOSE AREAS WHERE WOOD FIBER BLANKET OR OTHER SLOPE STABILIZATION METHODS HAVE FAILED, THE SLOPE SHALL BE REESTABLISHED, SEED AND TOPSOIL REPLACED, AND ADDITIONAL SLOPE TREATMENT INSTALLED AS DIRECTED BY THE ENGINEER.

BARRIERS WILL BE REMOVED WHEN FINAL STABILIZATION OF THE SLOPES HAS BEEN COMPLETED AS DETERMINED BY THE ENGINEER.

NO STORMWATER MITIGATION MEASURES WERE REQUIRED AS A PART OF ENVIRONMENTAL, ARCHAEOLOGICAL OR OTHER REQUIRED LOCAL, STATE, OR FEDERAL REVIEW OF THIS PROJECT.

THIS PROJECT IS NOT LOCATED IN A KARST AREA NECESSITATING MEASURES TO PROTECT DRINKING WATER SUPPLY.

EROSION PREVENTION PRACTICES

APPROPRIATE CONSTRUCTION PRACTICES WILL BE USED TO MINIMIZE EROSION. AREAS OF NON-DISTURBANCE WILL BE DELINEATED (FLAGGED, ETC.) ON THE SITE BEFORE WORK BEGINS.

CONTRACTOR SHALL PHASE CONSTRUCTION, MAINTAIN VEGETATIVE BUFFER STRIPS, AND PROVIDE HORIZONTAL SLOPE STAKING IN ORDER TO MINIMIZE EROSION. SUGGESTED CONSTRUCTION SEQUENCING TO MINIMIZE EXPOSED AREAS SUBJECT TO EROSION HAS BEEN SHOWN, BUT ULTIMATE SEQUENCING IS UP TO THE CONTRACTOR. THE SWPPP ON-SITE WILL BE RED-LINED BY THE CONTRACTOR TO INDICATE FINAL SEQUENCING.

DOWNSTREAM SILT FENCE AND INLET PROTECTION DEVICES WILL BE INSTALLED PRIOR TO EARTH MOVING ACTIVITIES.

SLOPES SHALL BE "CAT-TRACKED" WHEN COMPLETE SUCH THAT THE TRACK DEPRESSIONS ARE PERPENDICULAR TO DRAINAGE FLOW.

SILT FENCE SHALL BE INSTALLED BEFORE WORK BEGINS. SILT FENCE LIMITS SHALL COINCIDE WITH DOWNGRADE GRADING LIMITS UNLESS OTHERWISE NOTED.

SILT FENCE USED ON SLOPES SHALL BE PLACED SUCH THAT 100 LINEAL FEET OF SILT FENCE STABILIZES APPROXIMATELY 0.25 ACRES OF DRAINAGE.

THE WETTED PERIMETER OF DRAINAGE SWALES WILL BE STABILIZED WITH RAPID STABILIZATION MEASURES WITHIN 200' OF THE SITE BOUNDARY LINE WITHIN 24 HOURS.

PIPE OUTLETS WILL BE PROVIDED WITH ENERGY DISSIPATION (RIP RAP) WITHIN 24 HOURS OF CONNECTION TO WATERS OF THE STATE.

IF NOT SHOWN ON THE PLAN: ALL EXPOSED SOIL AREAS WITHIN 200' OF SURFACE WATER OR A STORMWATER CONVEYANCE WHICH HAVE CONTINUOUS POSITIVE SLOPES WILL HAVE TEMPORARY EROSION PROTECTION OR PERMANENT COVER FOR THE EXPOSED SOILS YEAR-ROUND, ACCORDING TO THE FOLLOWING TABLE OF SLOPES AND TIME FRAMES:

GRADE OF SLOPE	TIME (MAX.)	BMP
STEEPER THAN 3:1	7 DAYS	RAPID STABILIZATION METHOD 4
4:1 TO 3:1	7 DAYS	RAPID STABILIZATION METHOD 2
FLATTER THAN 4:1	7 DAYS	TYPE 1 DISC ANCHORED MULCH

STABILIZATION WILL COMMENCE IMMEDIATELY UPON COMPLETION OF GRADING AND BE COMPLETE WITHIN THE STATED TIMEFRAME UNLESS FURTHER GRADING ACTIVITIES WILL COMMENCE PRIOR TO COMPLETION DATE. FROZEN GROUND IS CONSIDERED STABILIZED.

CUT AREAS WHERE NO GRADING HAS OCCURRED WITHIN 7 DAYS WILL BE STABILIZED USING BIO-ROLLS A MINIMUM OF EVERY 20 LINEAL FEET IN ORDER TO PREVENT EROSION.

FILL SLOPES WHICH DRAIN TO WATERS OF THE STATE OR OFFSITE SHALL BE STABILIZED IMMEDIATELY UPON CESSATION OF GRADING ACTIVITIES. THUS, IF SLOPES ARE BROUGHT TO SUBGRADE ELEVATION AND WILL CEASE BEING WORKED ON UNTIL TOPSOIL RE-SPREADING, THEY WILL BE STABILIZED IN THE INTERIM. STABILIZE SLOPES WITH INTERIM LINES OF SILT FENCE OR BIO-ROLLS EVERY 20 LINEAL FEET.

SOIL STOCKPILES WHICH REMAIN UNWORKED FOR MORE THAN 7 DAYS WILL BE STABILIZED WITH SEED AND MULCH OR TARPS WITH SILT FENCE RINGS IN PLACE PRIOR TO STOCKPILE CONSTRUCTION. DO NOT LOCATE STOCKPILES IN BUFFERS OR SURFACE WATERS.

THE WETTED PERIMETER OF THE LAST 200' OF DRAINAGE SWALES WILL BE STABILIZED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR PROPERTY LINE. DO NOT USE MULCH, TACKIFIER OR SIMILAR EROSION PREVENTION MEASURES IF THE SLOPES OF SWALES ARE GREATER THAN 2%.

SEDIMENT CONTROL PRACTICES

CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN: SEDIMENT CONTROLS FOR TEMPORARY AND PERMANENT DRAINAGE BASINS AND DRAINAGE DITCHES THAT ARE A PART OF THIS DESIGN, AND UPGRADIENT OF ANY BUFFER ZONES, INCLUDING:

- CHECK DAMS AND/OR WOOD FIBER BLANKETS TO ENSURE SHEET FLOW AND PREVENT RILLS FOR SLOPE LENGTHS GREATER THAN 75' WITH A SLOPE OF 3:1 OR GREATER (SEE NOTES ON BIO-ROLLS SPACED EVERY 20' ABOVE)
- SILT FENCE AT ALL DOWN GRADIENT PERIMETERS INSTALLED PRIOR TO ALL LAND DISTURBING ACTIVITIES
- INLET PROTECTION AT ALL EXISTING AND PROPOSED INLETS.
- SILT FENCING AROUND TEMPORARY SOIL STOCKPILES
- ROCK OR WOOD CHIP CONSTRUCTION SITE ENTRANCES
- DAILY STREET SWEEPING OF TRACKED SEDIMENT ONTO ROADWAYS
- CONCRETE TRUCKS SHALL PERFORM WASHOUT ACTIVITIES OFFSITE

TYPICALLY, UTILIZE THE PERMANENT STORMWATER PONDS FOR TEMPORARY SEDIMENTATION. IF AN AREA GREATER THAN 5 ACRES IS DESIGNED TO EVENTUALLY DRAIN TO A FILTRATION OR INFILTRATION BASIN, CONSTRUCT A TEMPORARY SEDIMENTATION BASIN UPSTREAM OF ULTIMATE BASIN.

CLEAN OUT TEMPORARY BASINS WHEN SEDIMENT DEPTH REACHES ¼ VOLUME WITHIN 72 HOURS OF DISCOVERY.

IF SURFACE WATER IS TO DISCHARGE OFFSITE BEFORE TREATMENT, DIRECT TO VEGETATED AREAS.

ESTIMATED QTY'S*

DESCRIPTION	EST QTY
INLET PROTECTION	16 EA
ROCK CONSTRUCTION ENTRANCE	2 EA
SILT FENCE—HEAVY DUTY	100 LF
CULVERT END CONTROLS	4 EA
SEEDMIX 25-142 & CAT 3 BLANKET	310 SY
SEEDMIX 25-142 & TYPE 1 MULCH	1500 SY
RIPRAP, CL 2 & 3	50 TON

*ESTIMATES NOT FOR BIDDING PURPOSES AND ARE TO BE USED AS A GUIDE ONLY. SEE SPECIAL PROVISION AND BID DOCUMENTS FOR MORE INFORMATION. BIDDERS ARE PRESUMED TO HAVE VIEWED THE PROJECT TO FAMILIARIZE THEMSELVES AS TO THE EXTENT OF THE BMP'S REQUIRED AND SHALL PERFORM THEIR OWN TAKEOFFS FOR BIDDING.

DEWATERING AND BASIN DRAINING

CONTRACTOR SHALL PROVIDE PERMITS FOR ALL DEWATERING ACTIVITIES. ALL DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY SEDIMENTATION BASIN OR DEWATERING BASIN CONSTRUCTED NEAR OR PART OF THE PERMANENT STORMWATER BASIN.

THE DEWATERING OR TEMPORARY SEDIMENT BASINS WILL BE PUMPED THROUGH A FILTRATION SYSTEM CONSTRUCTED BY THE CONTRACTOR PRIOR TO DISCHARGE. NO BACKWASHING OF FILTERS ON-SITE.

DEWATERING CHANNELS WHICH ARE OVER LAND SHALL BE PROTECTED FROM EROSION. PLACE END OF HOSE ON FABRIC OR PLASTIC TO PREVENT EROSION.

CLEAN OUT TEMPORARY SEDIMENT BASINS TO DESIGN VOLUME AFTER SEDIMENT REACHES 1/2 DESIGN VOLUME.

CONSTRUCT DEWATERING ACTIVITIES SUCH THAT THEY WILL NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR ON DOWN SLOPE PROPERTIES OR ADVERSELY AFFECT WETLANDS.

ADDITIONAL BMP'S FOR SPECIAL WATERS

THIS PROJECT DOES NOT DISCHARGE TO SPECIAL WATERS OR HAVE SIGNIFICANT IMPACTS TO WETLANDS.

ADDITIONAL MEASURES HAVE BEEN INCLUDED AS RELATED TO IMPAIRMENTS OF MUD CREEK WHICH IS WITHIN 1 MILE OF THE DISCHARGE POINT. ITEMS 23.9 AND 23.10 OF THE NPDES GENERAL STORMWATER PERMIT ARE INCLUDED.

INSPECTIONS AND MAINTENANCE

CONTRACTOR SHALL INSPECT AND MAINTAIN MEASURES AT MINIMUM ONCE EVERY (7) DAYS DURING ACTIVE CONSTRUCTION, AND WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5" IN 24 HOURS. ALSO INSPECT AREAS ADJACENT TO THE SITE FOR ROGUE EROSION OR SEDIMENT.

DEWATERING DISCHARGE POINTS WILL BE PHOTOGRAPHED DAILY WITH RECORDS MAINTAINED IF DISCHARGE REACHES A SURFACE WATER.

INSPECTIONS WILL INCLUDE STABILIZED AREAS, EROSION PREVENTION AND SEDIMENT CONTROLS, AGGREGATE SURFACES, DISCHARGE CHANNELS AND DEVICES, PERMANENT STORMWATER BMP'S AND RECEIVING STORM SEWER FACILITIES.

STABILIZED AREAS WILL BE INSPECTED ONCE PER MONTH. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTIONS AND MAINTENANCE WILL TAKE PLACE AS SOON AS FIRST RUNOFF OCCURS AT THE SITE OR PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

CONSTRUCTION SITE VEHICLE ENTRANCES WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT BEING TRACKED ONTO PAVED SURFACES DAILY. TRACKED SEDIMENT MUST BE REMOVED FROM ALL OFF-SITE PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

THE INSPECTION LOG MUST INCLUDE THE: DATE AND TIME, NAME OF INSPECTOR, FINDINGS INCLUDING SPECIFIC LOCATIONS OF CORRECTIONS REQUIRED, CORRECTIVE ACTIONS TAKEN WITH DATE AND TIME, RAINFALL AMOUNTS AND DATES VIA RAIN GAUGE OR WEATHER STATION WITHIN 1 MILE, DOCUMENTATION OF SEDIMENT DISCHARGE FROM SITE WITH PHOTOGRAPHS.

REPAIR ALL NONFUNCTIONAL BMP'S BY THE END OF THE NEXT BUSINESS DAY OR AS SOON AS FIELD CONDITIONS ALLOW.

RECORDS RETENTION

CONTRACTOR SHALL MAINTAIN RECORDS OF THE SEDIMENT RETENTION PROCEDURES ON-SITE. RECORDS WILL INCLUDE: COPY OF THE SWPPP AND ANY CHANGES, INSPECTION AND MAINTENANCE RECORDS, PERMANENT OPERATION AND MAINTENANCE AGREEMENTS, CALCULATIONS FOR THE DESIGN OF TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

POLLUTION PREVENTION MANAGEMENT MEASURES

SOLID WASTE:
 COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS. SIGNED SEPARATE DISPOSAL BINS WITH A SIGN REQUIRING USE OF SAID BINS WILL BE INSTALLED AND UTILIZED.

CONCRETE AND OTHER WASHOUTS:
 PERFORM ALL CONCRETE TRUCK WASHOUTS OFFSITE.

SOLID AND LIQUID WASHOUT WASTE FROM OTHER MATERIALS (STUCCO, PAINT, FORM RELEASE OILS CURING COMPOUNDS ETC.) WILL BE DISPOSED OF IN A PROPERLY DESIGNATED LANDFILL.

PERFORM ALL HANDTOOLS WASHOUTS IN A LEAKPROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. DEBRIS/SEDIMENT WILL NOT CONTACT THE GROUND SURFACE. A SIGN REQUIRING USE OF PROPER WASHOUT FACILITIES WILL BE INSTALLED ADJACENT TO SAID FACILITIES.

HAZARDOUS MATERIALS:
 OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES WILL BEE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS WILL BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE WILL BE IN COMPLIANCE WITH MPCA REGULATIONS.

PLASTIC SHEETING UNDER AN ABSORBENT MATERIAL WILL BE PLACED ON THE GROUND NEAR FUEL STORAGE TANKS TO PREVENT SPILLS WHEN LOADING OR UNLOADING THE TANKS. SPILL KITS WILL BE PROVIDED NEAR STORAGE.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES IS NOT ALLOWED ON-SITE. NO ENGINE DEGREASING IS ALLOWED ON SITE.

NO FLOCCULENTS ARE BEING UTILIZED TO ENHANCE SEDIMENTATION IN RETENTION FACILITIES.

PORTABLE TOILETS WILL BE SECURED.

SWPPP IMPLEMENTATION CHAIN OF RESPONSIBILITY

THE GENERAL CONTRACTOR SHALL PROVIDE A TRAINED, CERTIFIED, KNOWLEDGEABLE PERSON WHO SHALL SERVE AS THE SITE'S EROSION CONTROL INSPECTOR. THIS PERSON SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S, AND SHALL MAINTAIN THE INSPECTION LOG AT THE PROJECT SITE.

EACH SUBCONTRACTOR ON-SITE WILL DESIGNATE AN EMPLOYEE AS ITS PROJECT SWPPP OFFICER. A LIST OF THESE OFFICERS WITH CONTACT INFORMATION WILL BE AVAILABLE ON-SITE. IT WILL BE SOLELY THE SWPPP OFFICERS' RESPONSIBILITY TO ENSURE THAT ALL ON-SITE ACTIVITIES PERFORMED BY ITS COMPANY COMPLY WITH THE SWPPP. THE GENERAL CONTRACTOR'S SWPPP INSPECTOR WILL HAVE AUTHORITY OVER ALL SUBCONTRACTOR'S SWPPP OFFICERS FOR WORK PERTAINING TO COMPLIANCE.

NOTE THE PERSONS RESPONSIBLE FOR EACH CONTRACTOR IN THE SWPPP.

SHOULD A SWPPP OFFICER FAIL TO ENSURE COMPLIANCE, THAT OFFICER'S FOREMAN OR DIRECT SUPERVISOR WILL ASSUME ALL RESPONSIBILITY.

SHOULD A SUBCONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE GENERAL CONTRACTOR WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SHOULD THE GENERAL CONTRACTOR FAIL TO COMPLY WITH THE SWPPP, THE OWNER WILL ASSUME ALL RESPONSIBILITY FOR COMPLIANCE.

SWPPP AMENDMENTS

THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING CHANGES TO THE SWPPP VIA MARKUPS ON THE ON-SITE SWPPP DOCUMENTS. SHOULD ADDITIONAL MEASURES BE NEEDED BEYOND THE CAPABILITY OF THE CONTRACTOR, THE CONTRACTOR WILL CONTACT THE SWPPP DESIGNER FOR ASSISTANCE.

PERMIT TERMINATION CONDITIONS

THE CONTRACTOR WILL BE A CO-PERMITTEE DURING THE CONSTRUCTION OF THE PROJECT. AFTER DESIGNATED SURFACING OF THE PROJECT HAS BEEN COMPLETED, 70% PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED OVER THE PVIOUS AREAS OF THE SITE, THE PERMANENT STORMWATER TREATMENT FACILITIES ARE OPERATING AS DESIGNED AND HAVE BEEN RETURNED TO DESIGN CAPACITY, ANY SEDIMENT HAS BEEN REMOVED FROM STORMWATER CHANNELS, TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN REMOVED, DATED PHOTOGRAPHS OF THE SITE SHOWING FINAL STABILIZATION HAVE BEEN SUBMITTED TO THE OWNER, THE OWNER WILL, WITHIN 30 DAYS, SUBMIT THE NOTICE OF TERMINATION (NOT) AND DATED PHOTOGRAPHS TO THE MPCA.

NOTIFICATION OF THE MPCA IN CASE OF POLLUTION

IT IS THE DUTY OF THE CONTRACTOR TO NOTIFY THE MPCA IMMEDIATELY OF ANY DISCHARGE, ACCIDENTAL OR OTHERWISE, OF ANY SUBSTANCE OR MATERIAL UNDER HIS CONTROL WHICH, IF NOT RECOVERED, MAY CAUSE POLLUTION OF WATERS OF THE STATE, AND THE CONTRACTOR SHALL RECOVER AS RAPIDLY AND THOROUGHLY AS POSSIBLE SUCH SUBSTANCE OR MATERIAL AND TAKE IMMEDIATELY SUCH OTHER ACTION AS MAY BE REASONABLY POSSIBLE TO MINIMIZE OR ABATE POLLUTION OF WATERS OF THE STATE CAUSED THEREBY. SEDIMENT LEAVING THE CONSTRUCTION SITE AND ENTERING A PUBLIC WATER IS CAUSE FOR NOTIFICATION. PETROLEUM SPILLS LARGER THAN 5 GALLONS MUST BE REPORTED.

MINNESOTA DUTY OFFICER: 800-422-0798

QUALIFIED SWPPP PERSONNEL INFORMATION

CERTIFIED SWPPP DESIGNER:

JOHN H. SCHULTE V, PE
 JONES HAUGH & SMITH, INC.
 515 SOUTH WASHINGTON AVE
 ALBERT LEA, MN 56007
 (507) 451-4598

DATES OF LAST TRAINING: 1/15/24 Expires 2027
 CONTENT: U of M DESIGN OF CONSTRUCTION SWPPP

CERTIFIED EROSION CONTROL SUPERVISOR:

NAME: _____

FIRM: _____

ADDRESS: _____

PHONE: _____

DATES OF LAST TRAINING: _____

CONTENT: _____

CERTIFIED SWPPP INSTALLER:

NAME: _____

FIRM: _____

ADDRESS: _____

PHONE: _____

DATES OF LAST TRAINING: _____

CONTENT: _____

CERTIFIED SWPPP INSPECTOR:

NAME: _____

FIRM: _____

ADDRESS: _____

PHONE: _____

DATES OF LAST TRAINING: _____

CONTENT: _____

CONTRACTOR:

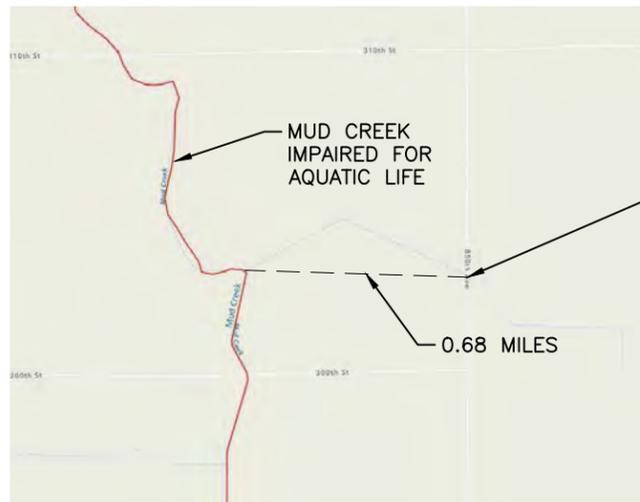
NAME: _____

FIRM: _____

ADDRESS: _____

PHONE: _____

MAP OF SURFACE WATERS



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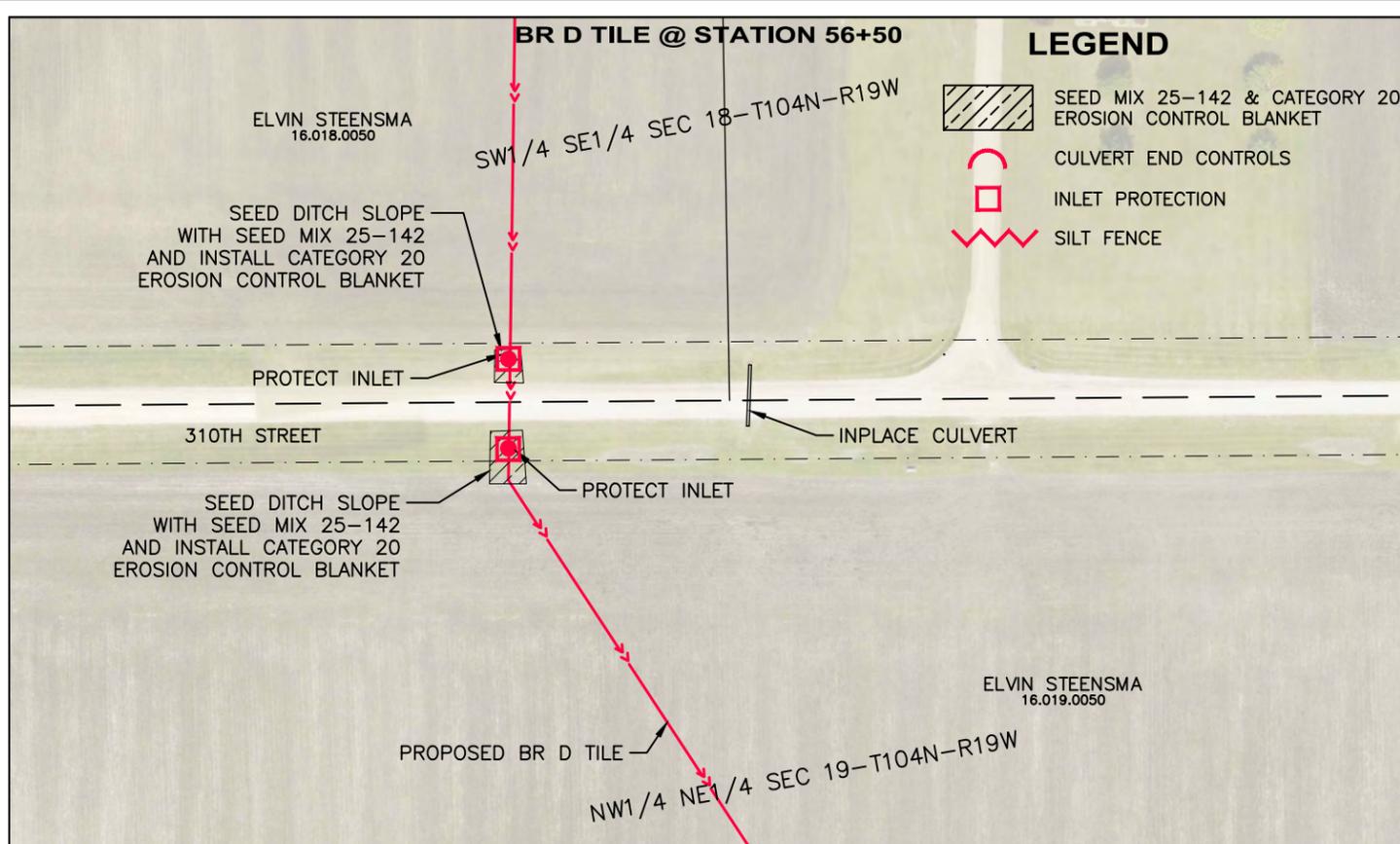
515 South Washington Ave.
 Albert Lea, MN 56007
 507-373-4876
 415 West North Street
 Owatonna, MN 55960
 507-451-4598

DESIGNED: SJP
 DRAWN: SJP
 CHECKED: SJP
 DATE: 10-21-25
 DWG: 16-107.DWG

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PRELIMINARY NOT FOR CONSTRUCTION
 Steven J. Brackley
 Lic. No. 43895 Date: 2023

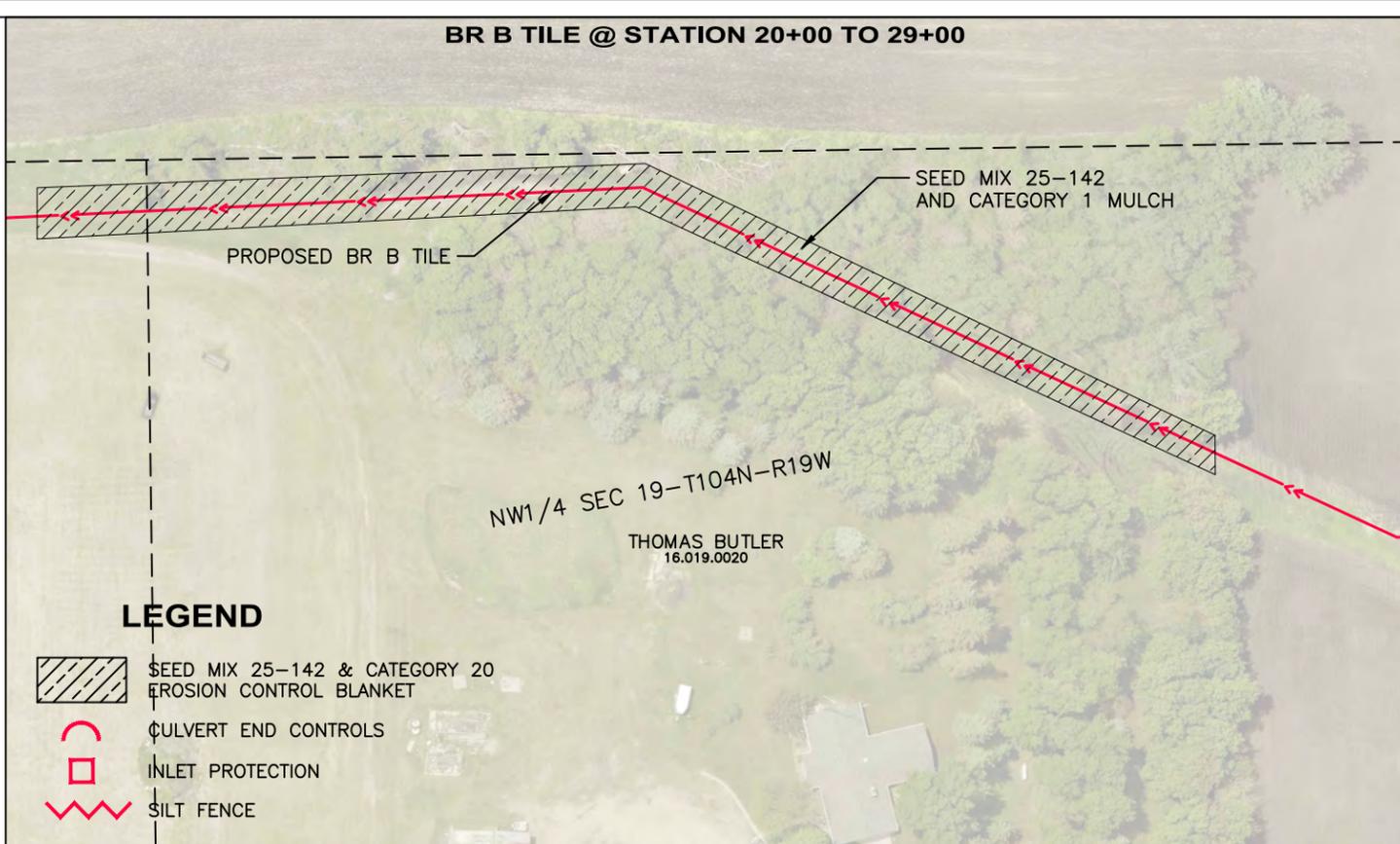
**FREEBORN COUNTY, MN
 PETITION FOR IMPROVEMENT TO
 COUNTY DITCH NO. J27
 SWPPP NARRATIVE**

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 OF
 15



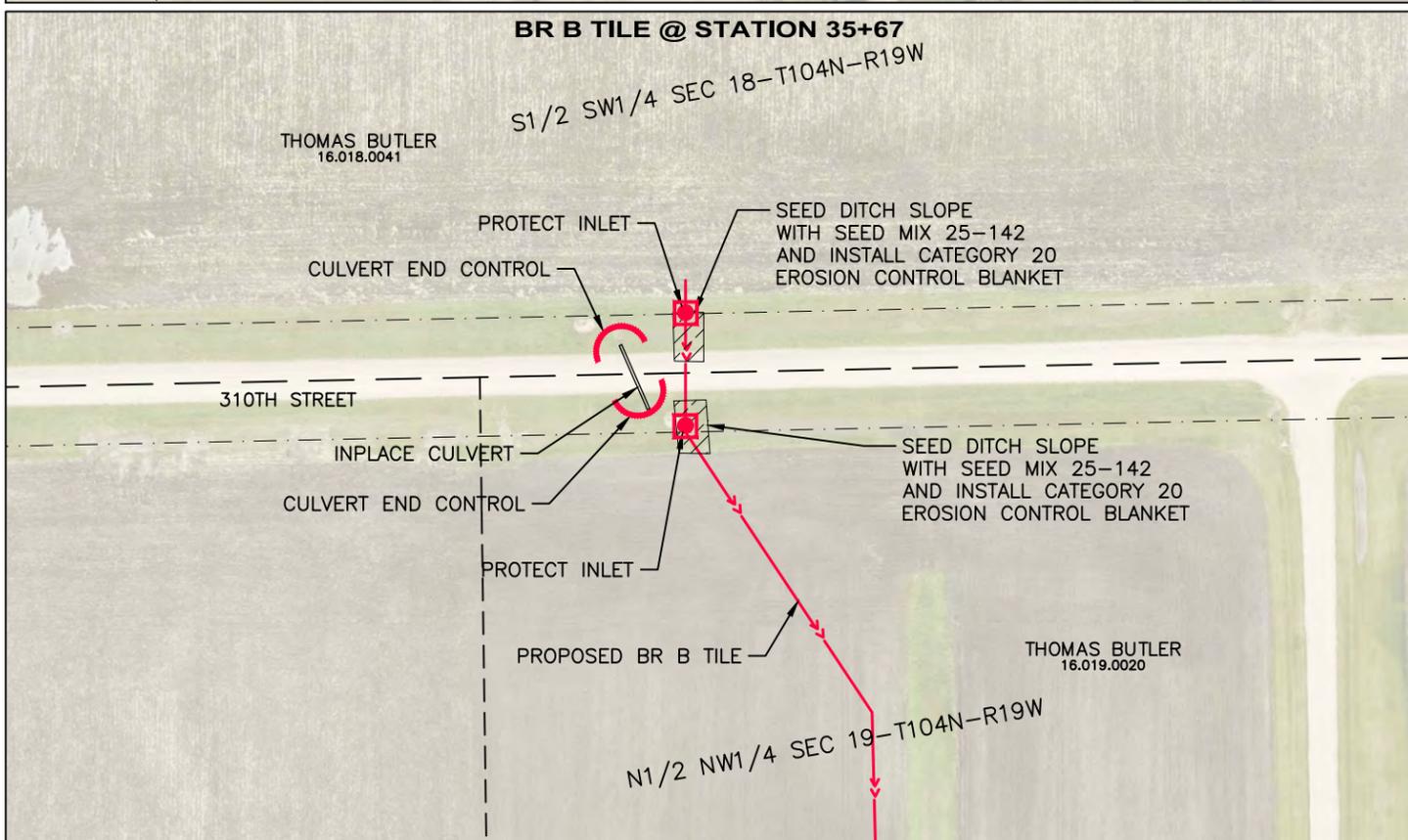
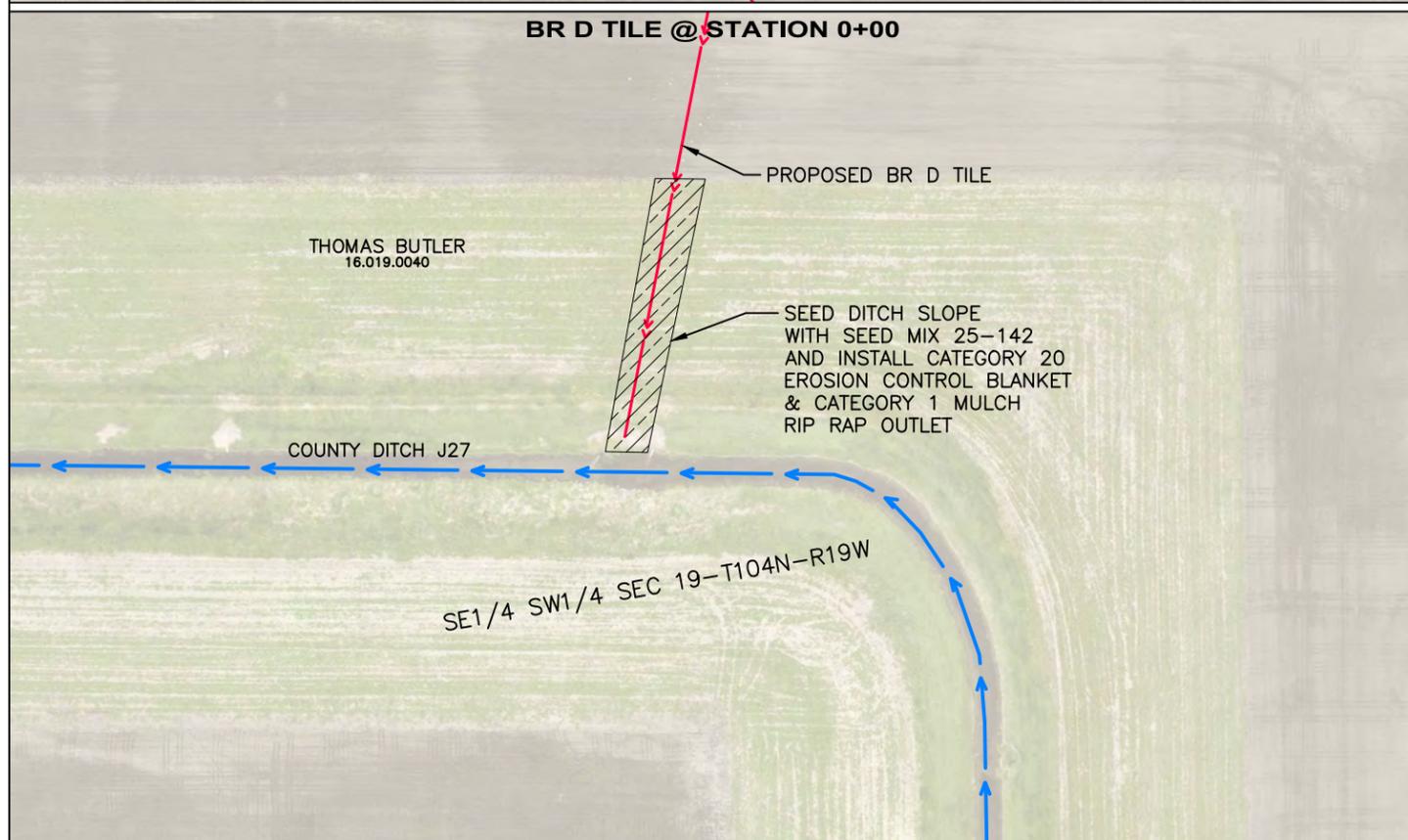
LEGEND

- SEED MIX 25-142 & CATEGORY 20 EROSION CONTROL BLANKET
- CULVERT END CONTROLS
- INLET PROTECTION
- SILT FENCE



LEGEND

- SEED MIX 25-142 & CATEGORY 20 EROSION CONTROL BLANKET
- CULVERT END CONTROLS
- INLET PROTECTION
- SILT FENCE



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GOPHER STATE ONE-CALL: 1-800-252-1166

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DESIGNED: SJP
 DRAWN: SJP
 CHECKED: SJP
 DATE: 10-21-25
 FILE NO: 16-107.DWG

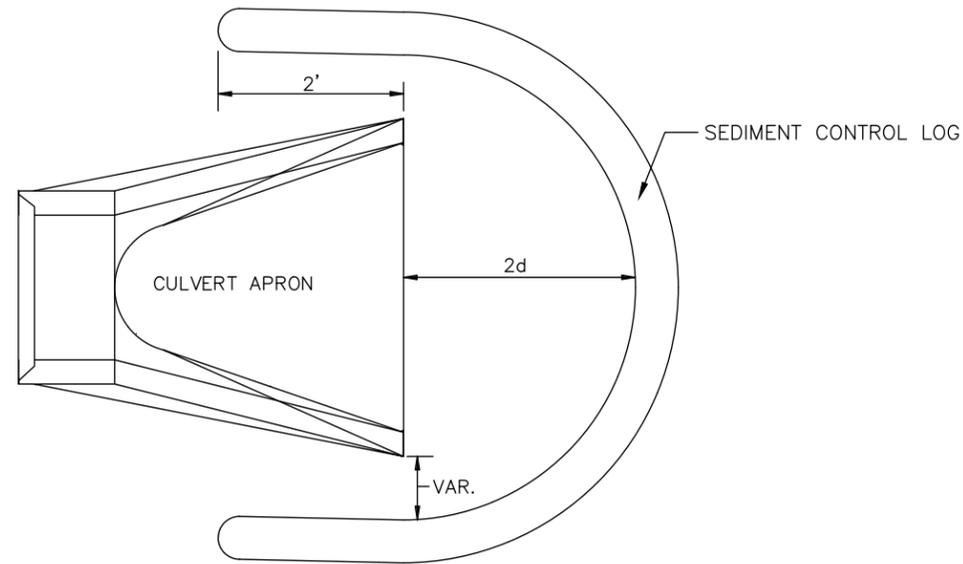
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Steven J. Beckwith
 Lic. No. 43895 Date:

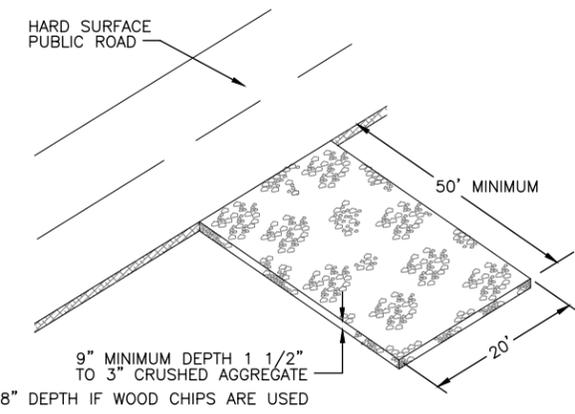
**FREEBORN COUNTY, MN
 PETITION FOR IMPROVEMENT TO
 COUNTY DITCH NO. J27
 SWPPP DETAILS**

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 12
 OF
 15



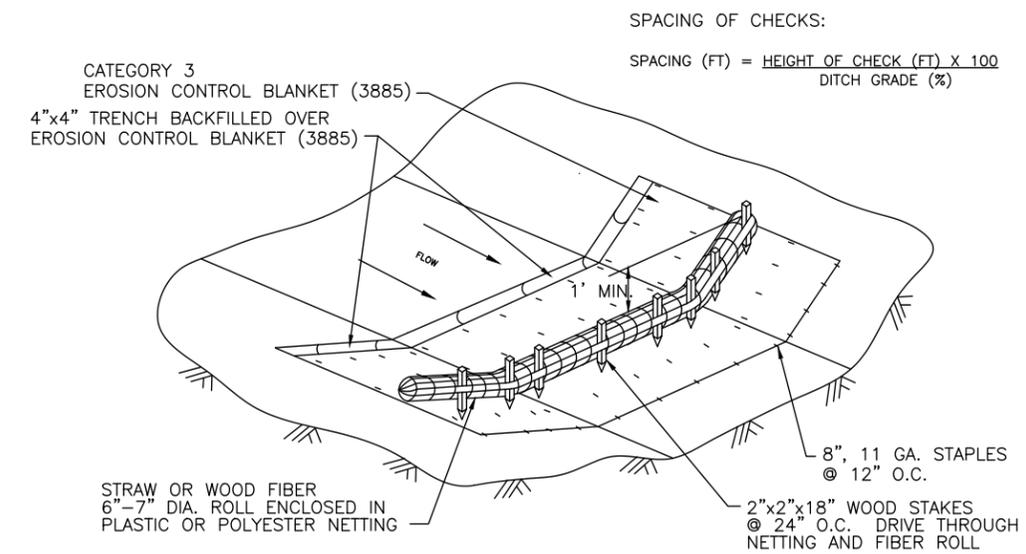
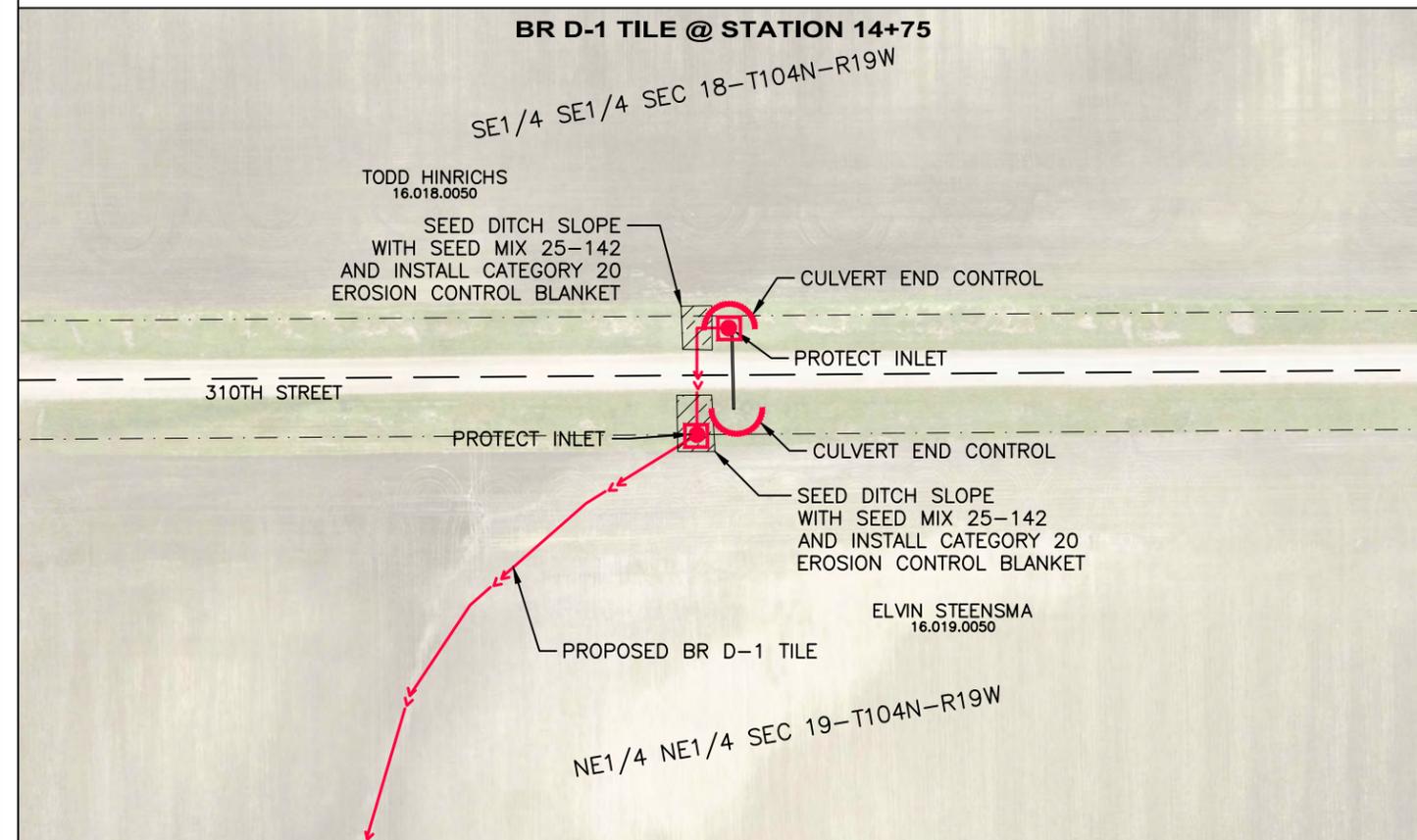
SEDIMENT CONTROL LOG
(COMPOST, WOOD CHIP OR ROCK)
d = CULVERT SIZE: 12" TO 36"

CULVERT END CONTROLS



- NOTES:
1. FILTER FABRIC SHALL BE PLACED UNDER ROCK TO STOP MIGRATION OF MUD THROUGH ROCK.
 2. WOOD CHIPS USED FOR CONSTRUCTION ENTRANCES MUST BE 80% NOT LESS THAN 2 INCHES AND NOT MORE THAN 5 INCHES. NO CHIPPED UP MANUFACTURED WOOD AND/OR CHEMICALLY TREATED WOOD IS ALLOWED.
 3. ENTRANCE MUST BE REGULARLY MAINTAINED TO PREVENT SEDIMENTATION ON PUBLIC ROADWAYS. FUGITIVE ROCK OR WOOD CHIPS WILL BE REMOVED FROM ADJACENT ROADWAYS DAILY OR MORE FREQUENTLY AS NECESSARY.

EROSION CONTROL PROTECTION AT CONSTRUCTION ACCESS



BIO-ROLL BLANKET DITCH CHECK



SCALE
11X17 HORIZ: 1"=100'
22X34 HORIZ: 1"=50'



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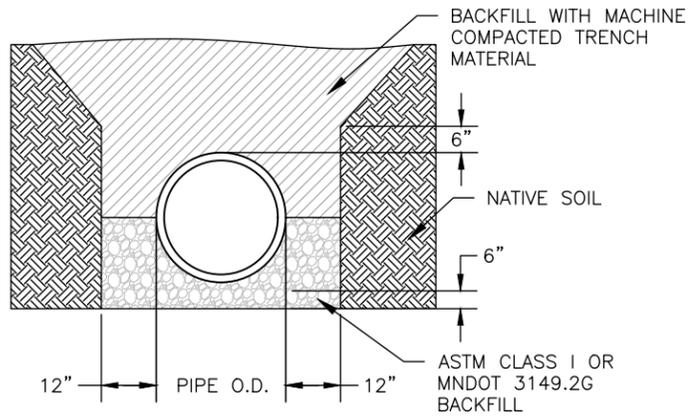
515 South Washington Ave.
Albert Lea, MN 56007
507-373-4876
415 West North Street
Owatonna, MN 55960
507-451-4598

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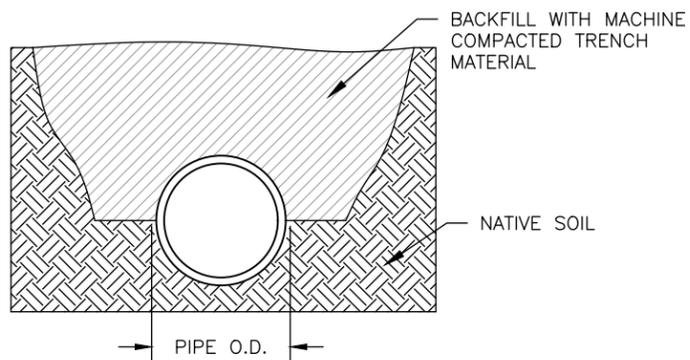
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**FREEBORN COUNTY, MN
PETITION FOR IMPROVEMENT TO
COUNTY DITCH NO. J27
SWPPP DETAILS**

SHEET
13
OF
15

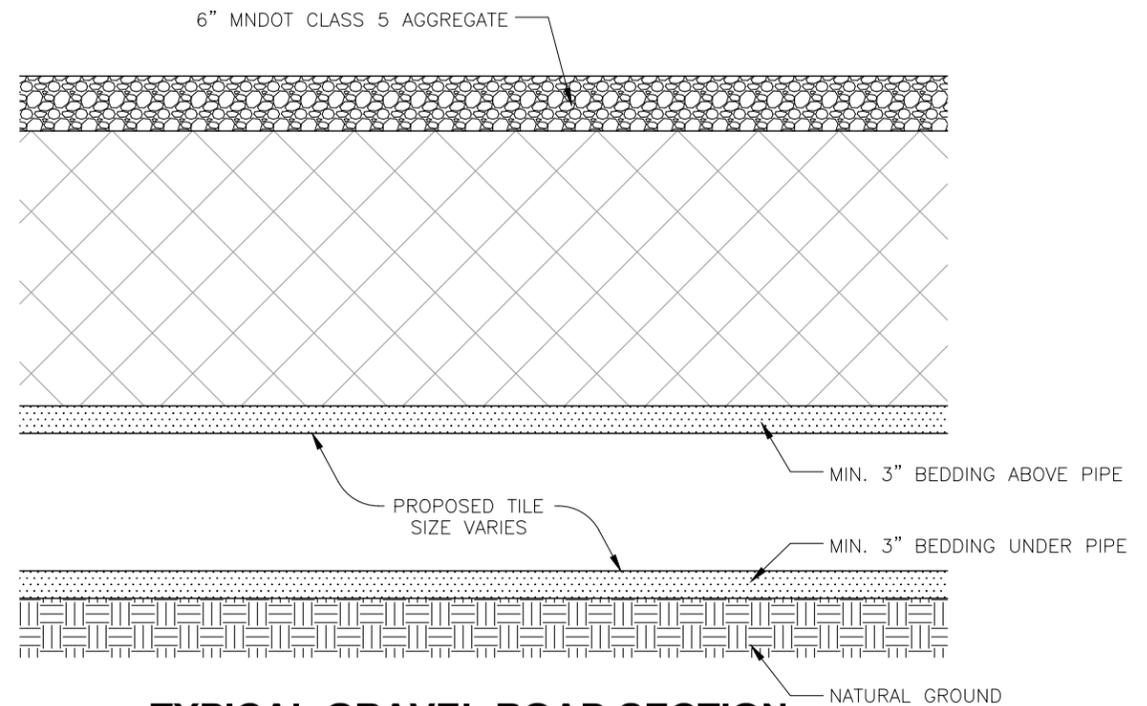


- NOTES:
1. PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
 2. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL.
 3. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. MINIMUM BEDDING THICKNESS SHALL BE 6".
 4. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

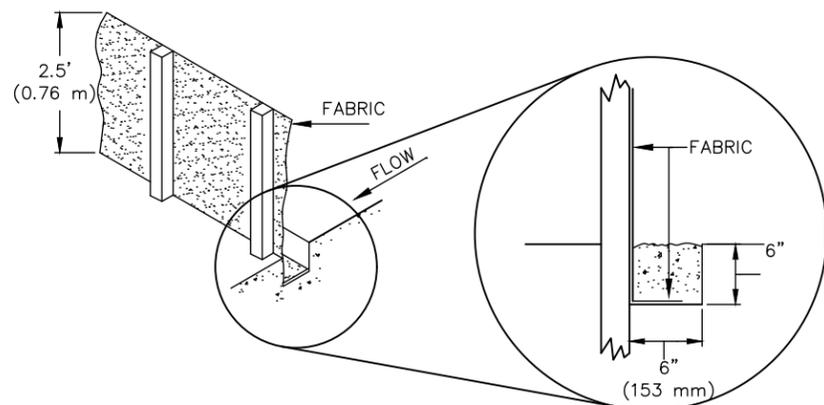


- NOTES:
1. NATIVE SOIL: SUITABLE IN-SITU MATERIAL SHALL BE OF ADEQUATE STRENGTH TO WITHSTAND TRENCHING OPERATIONS AND MAINTAIN THE FINAL TRENCH SHAPE. IF ANY PART OF THE TRENCH SIDEWALL SLOUGHS OFF DURING EXCAVATION, REMOVE MATERIAL FROM TRENCH AND REPLACE WITH SUITABLE MATERIAL.
 2. SHAPED TRENCH: THE TRENCH SHALL BE CUT TO A DEPTH SUCH THAT THE TOP OF THE SHAPED TRENCH BOTTOM EXTENDS TO PIPE SPRINGLINE, OR HIGHER.
 3. FILL MATERIAL: AFTER PLACEMENT OF THE PIPE IN THE SHAPED TRENCH, FILL MATERIAL MEETING A CLASS I, II, III OR IV MAY BE PLACED AND COMPACTED AROUND THE PIPE.

HDPE TILE INSTALLATION & BEDDING DETAIL

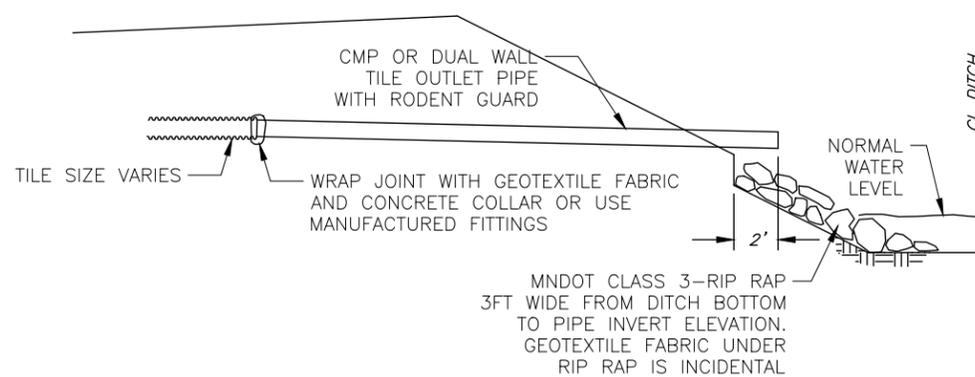


TYPICAL GRAVEL ROAD SECTION



- NOTES:
- PLACE BOTTOM EDGE OF FENCE INTO 6" (153 mm) DEEP
 - POSTS SHALL BE:
 - 4' (1.22 m) ON CENTER
 - 2" (50.8 mm) X 2" (50.8 mm) HARDWOOD, PINE OR STANDARD STEEL FENCE POSTS
 - DRIVEN 2' (0.61 m) INTO THE GROUND.

EROSION CONTROL FENCE



TYPICAL TILE OUTLET PIPE INSTALLATION

- NOTES:
1. OUTLET PIPES SHALL BE ONE SIZE LARGER THAN TILE.
 2. JOINT BETWEEN TILE AND OUTLET PIPE SHALL BE MANUFACTURED FITTING OR THE OUTLET PIPE SHALL BE SLID OVER THE EXISTING TILE AND THE JOINT WRAPPED IN GEOTEXTILE FABRIC.
 3. OUTLET PIPES 12" IN DIAMETER ARE GREATER SHALL BE RIVETED CMP, PIPES SMALLER THAN 12" IN DIAMETER SHALL BE DUAL WALL TILE.
 4. AT THE TIME OF CONSTRUCTION THE ENGINEER WILL DESIGNATE OUTLETS TO BE REPLACED. EXISTING OUTLETS IN GOOD CONDITION SHALL BE ARMORED WITH RIP RAP.
 5. TILE OUTLET PIPES SHALL BE PAID FOR AS A LUMP SUM PER SPECIFICATIONS.
 6. RODENT GUARDS SHALL BE INSTALLED ON ALL TILE OUTLET PIPES LESS THAN 15" IN DIAMETER AS PER SPECIFICATIONS.
 7. SLOPE PIPE TO TERMINATE APPROXIMATELY 2 FT ABOVE NORMAL WATER LEVEL EXCEPT AS REQUIRED BY GRADE AND ELEVATION, OR AS OTHERWISE DIRECTED BY ENGINEER.

NOT TO SCALE

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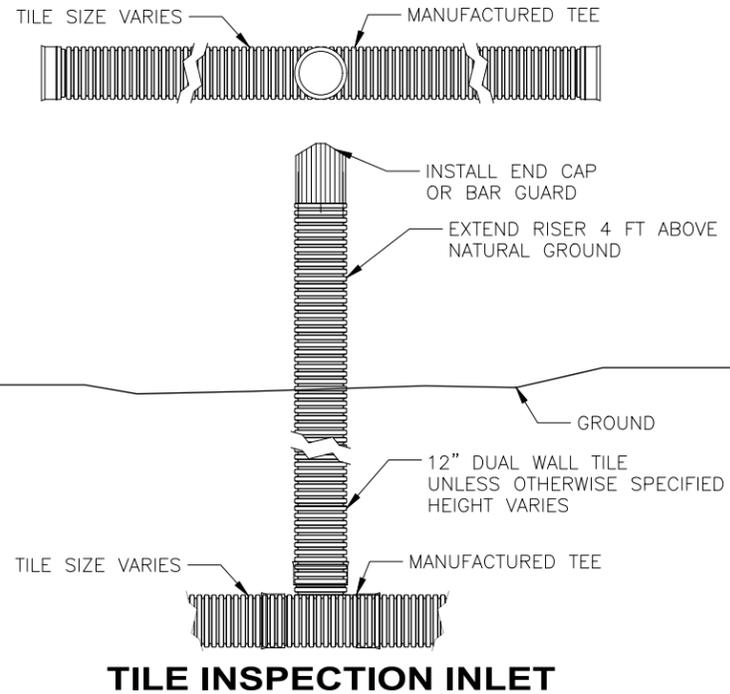
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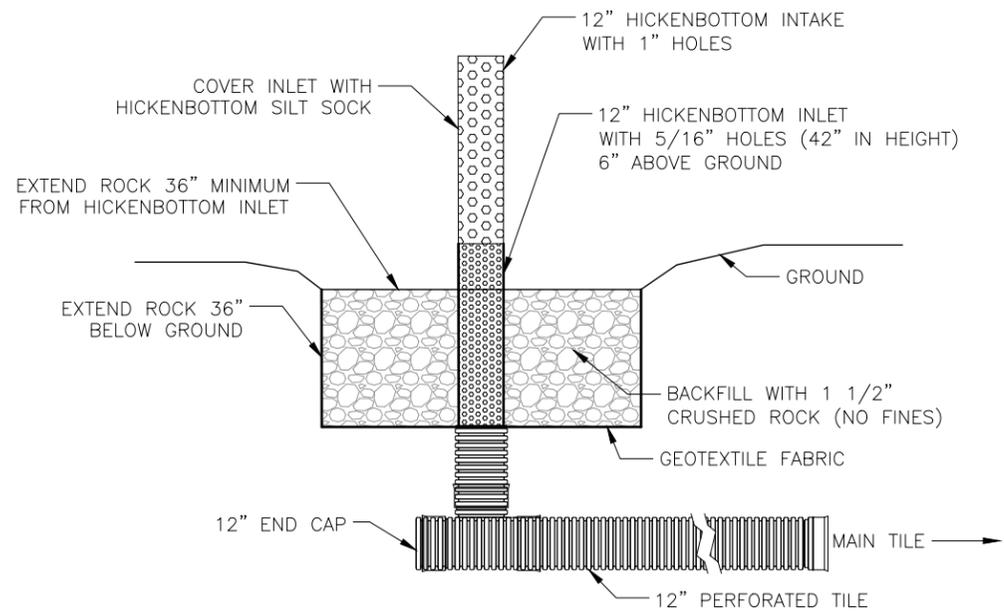
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COUNTY DITCH NO. J27
SWPPP & STANDARD
DRAINAGE DETAILS**

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OF
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- NOTES:
1. EXTEND VERTICAL RISER A MINIMUM OF 4 FT ABOVE NATURAL GROUND SURFACE AND INSTALL END CAP OR BAR GUARD.
 2. ALL CONNECTIONS SHALL BE MADE WITH MANUFACTURED FITTINGS WHENEVER POSSIBLE.
 3. TILE INSPECTION INLETS SHALL BE PAID FOR AS A LUMP SUM PER SPECIFICATIONS. ALL FITTINGS AND BAR GUARD ARE INCIDENTAL TO TILE INSPECTION INLET CONSTRUCTION.

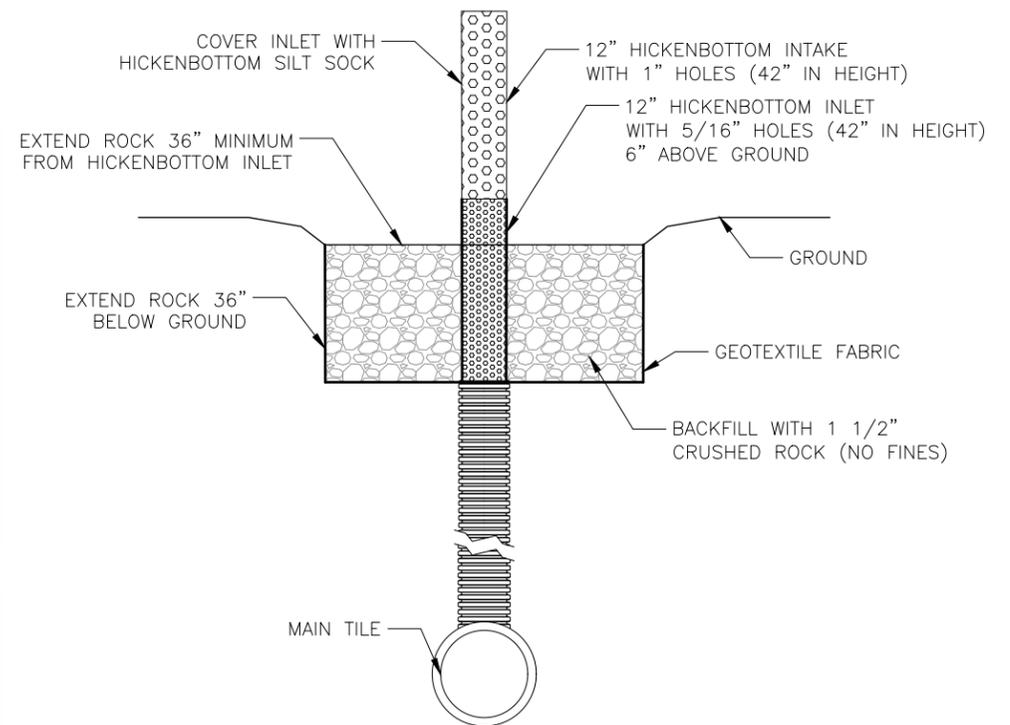
TILE INSPECTION INLET



- NOTES:
1. ALL HICKENBOTTOM INLET SECTIONS SHALL BE 12" IN DIAMETER AND 42" IN HEIGHT.
 2. ALL CRUSHED ROCK AGGREGATE BACKFILL SHALL BE CLEAN OF FINES AND DEBRIS.
 3. CRUSHED ROCK AGGREGATE SHALL EXTEND A MINIMUM OF 36" FROM CENTER OF HICKENBOTTOM INLET.
 4. CRUSHED ROCK AGGREGATE SHALL EXTEND A MINIMUM OF 36" BELOW GROUND.
 5. ALL CONNECTIONS SHALL BE MADE WITH MANUFACTURED FITTINGS WHENEVER POSSIBLE.
 6. ALTERNATIVE TILE INLETS SHALL BE PAID FOR AS A LUMP SUM PER SPECIFICATIONS AND INCLUDE ALL FITTINGS AND AGGREGATE MATERIAL.
 7. OFFSET ALTERNATIVE TILE INLETS SHALL BE PAID FOR AS A LUMP SUM PER SPECIFICATIONS AND INCLUDE ALL FITTINGS AND AGGREGATE MATERIAL. BID QUANTITY BASED ON 20LF OF PIPE. ADDITIONAL PIPE TO BE PAID FOR PER SPECIFICATIONS.

NOTE: PROPOSED TILE TO BE TELEVISED AS PER SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS TO TILE FOR TELEVISION. INLETS MAY BE UPSIZED TO ACCOMMODATE TELEVISION EQUIPMENT AT NO COST TO OWNER. IF INLETS ARE UNDERSIZED FOR TELEVISION THE CONTRACTOR MUST EXCAVATE TILE TO PROVIDE ACCESS. NO EXTRA COMPENSATION WILL BE PROVIDED TO EXCAVATE AND REPAIR TILE.

OFFSET ALTERNATIVE TILE INLET (OATI)



ALTERNATIVE TILE INLET (ATI)

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15
OF
15