Preliminary Engineer's Report

County Ditch No. 138 Branch B Improvement

24X.138825.000

Renville County, Minnesota

May 2026

BOLTON & MENK

Real People. Real Solutions.

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Certification

Engineer's Report

For

County Ditch No. 138 Branch B Improvement

In

Renville County, Minnesota

24X.138825.000
May 2026

PROFESSIONAL ENGINEER
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: Bill L Helget
Typed or Printed Name: Bill L. Helget
Date: 5/7/2026 License Number: 42046

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Appendix

STATE OF MINNESOTA

RENVILLE COUNTY

IN THE MATTER OF THE PETITION FOR IMPROVEMENT OF COUNTY DITCH NO. 138 WITHIN RENVILLE COUNTY:

In January 2026, Renville County, acting as the Drainage Authority for County Ditch No 138 Branch B (CD 138 Br B) in Renville County, in accordance with Minnesota Statute 103E.215, accepted a petition for the Improvement of portions of CD 138. Subsequent to that authorization, field surveys were performed to obtain elevations and establish an alignment for the proposed drain tile improvements, as well as to evaluate the outlet for the system.

This Preliminary Engineer's Report summarizes the findings of the research, surveys, and analysis for the Improvement and is submitted for consideration by the Ditch Authority.

I. LOCATION AND SCOPE OF THE IMPROVEMENT

County Ditch No 138 Branch B (CD 138 Br B) lies within and provides drainage to a large watershed in the north-west portion of Renville County. The proposed project location lies within Section 25, 26, 35, and 36 of Ericson Township. The system consists of 18,950' of drainage tile. The outlet for CD 138 Branch B is CD 138 Main Open Ditch in section 35 of Ericson Township in Renville County. The project is located about 3.4 miles northwest of Renville, Minnesota. The total estimated watershed for the system based on Lidar contour data, is 533 acres.

The proposed project for County Ditch No 138 Branch B includes the construction of two WASCOBs and drainage pipe. Exhibit 1 shows the general location of CD 138 and the proposed project.

Field survey information was collected by Bolton & Menk, Inc. in January of 2026. The survey included GPS locations and elevations for the outlet of the tile and for private and public intakes on the system. The tile system design utilizes Lidar data, provided by the Minnesota Department of Natural Resources. This data, obtained from an aerial flight, results in contours of equal elevation at 2' vertical intervals.

II. EXISTING DITCH SYSTEM

Public records regarding County Ditch No 138 Branch B were reviewed from Renville County. CD 138 was petitioned for establishment on March of 1960. Current benefits for the CD 138 system are $8,013,576.

III. CONDITION OF THE EXISTING DRAINAGE SYSTEM

The petitioners have requested ditch system improvements because the existing tile infrastructure is in poor condition, exhibits inadequate hydraulic capacity, and is undersized relative to current drainage demands. The portion of the CD 138 system proposed to be improved consists of underground tiles. This Improvement will replace an existing tile system that currently has broken tile, quarter cracks, longitudinal cracks, offset joints, and sags. These broken tiles, cracks, and offset joints have allowed for roots and broken tile pieces to obstruct flow within the system.

Renville County televised a portion of CD 138 Main B and Branch 6B. Images from the televising

report are shown in below.

Image 1: Br Main B 8" half full of mud. Parcel Number 11-00370-00

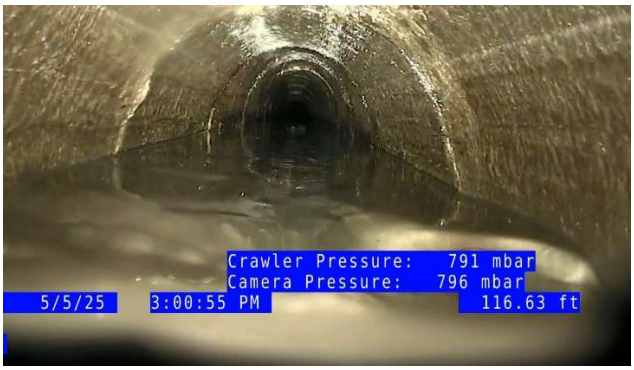


Image 2: Br Main B 14" filled with sand. Parcel Number 11-00390-00

Table 1 below shows the existing capacity for the CD 138 Br B Tiles proposed to be improved. As a way of evaluating the capacity of the existing tile system, an analysis has been performed of the existing system using standard engineering methods. The capacity of the existing tile has been estimated using the Mannings equation, assuming the original hydraulic efficiency of the system as constructed and subsequently improved. Estimated tile sizes and grades are based on the original design plans supplemented with limited field data collected through tile intakes and general surface grades. The amount of drainage which is needed for modern crop production has been compared to the 1/2 of an inch of runoff per day standards that is recommended by Natural Resource Conservation Service (NRCS). The watershed areas have been estimated using DNR Lidar maps.

Table 1: Existing System Capacity

CD 138 Branch	Location	Total Drainage Area (Acres)	Existing Tile Size (Inches)	Existing Grade (%)	Calculated Capacity (CFS) n=0.013	Calculated Coefficient (In. Per Day)
7-B	EOP to 740' North of 850th Ave	11	5	0.70	0.29	0.63
7-B	740' to 860' North of 850th Ave	22	6	0.20	0.25	0.27
7-B	860' to 1590' North of 850th Ave	49	8	0.10	0.38	0..19
7-B	1590' North of 850th Ave to 6-B	60	9	0.12	0.57	0.23
6-B	EOP to 2560' East of 210th Street	11	5	0.20	0.15	0.33
6-B	2560' East of 210th Street to Br 7-B	18	6	0.20	0.25	0.33
6-B	Br 7-B to Br Main B	98	9	0.28	0.88	0.21

Table 1: Existing System Capacity						
CD 138 Branch	Location	Total Drainage Area (Acres)	Existing Tile Size (Inches)	Existing Grade (%)	Calculated Capacity (CFS) n=0.013	Calculated Coefficient (In. Per Day)
3-B	520' North to 850th Ave	34	7	0.10	0.27	0.19
3-B	850th Ave to Br 4-B	37	8	0.10	0.38	0.25
3-B	Br 4-B to Br Main B	77	9	0.22	0.78	0.24
Main B	3050' to 2270' North of 850th Ave	59	7	0.14	0.32	0.13
Main B	2270' North of 850th Avenue to 6-B	71	8	0.10	0.38	0.13
Main B	6-B to 760' East of 210th Street	200	14	0.10	1.70	0.20
Main B	760' East to 210th Street	297	14	0.10	1.70	0.14
Main B	210th Street to Br 5-B	307	14	0.10	1.70	0.13
Main B	Br 5-B to Br 3-B	321	16	0.10	2.43	0.18
Main B	Br 3-B to Br 2-B	399	18	0.12	3.65	0.22
Main B	Br 2-B to Br 1-B	506	22	0.07	4.76	0.22
Main B	Br 1-B to Open Ditch	533	22	0.07	4.76	0.21

As can be seen from Table 1 above, the system is unable to drain the watershed even if it was in good repair. When compared to the NRCS recommended standard of 1/2" per day. The tile main outlet is only delivering about 42% of the recommended flow, based on the estimated tile size and grade. Portions of the Main tile are only delivering 26% of the recommended flow. Therefore, there is inadequate capacity in the existing drainage system to provide for the efficient production of row crops. The result of this insufficient capacity is extended ponding in the low areas of the watershed and inadequate drainage of the tile lines which drain into the ditch system, thus resulting in crop stress and crop loss. Since there is evidence that the pipe system is in poor repair, allowing sediment to enter joints and partially plug the tile, the system is likely delivering even less flow than has been calculated.

IV. DISCUSSION OF THE IMPROVEMENT

As discussed earlier, the petitioners for the improvement of CD 138 Branch B have requested consideration for the construction of an improved tile system to increase the capacity to provide an adequate outlet. The proposed construction would consist of a drain tile reconstruction and improvement. A preliminary survey and the hydrologic and hydraulic analysis of such a drainage system was performed to establish preliminary grades and depths for the tile system. They were also used to determine quantities for construction of such a system, to determine the size of proposed tile lines, and analyze the outlet. General observations and results of the analysis are summarized as follows:

A. DESCRIPTION

As shown in Exhibit 1, the proposed Improvement consists of 6-inch to 30-inch diameter tile to replace the function of the existing CD 138 Branch B tile from the outlet to the upper end. The township road crossings would be made by open trench methods, and the road surface restored with class 5 gravel. The new tile will be constructed at a lower elevation than the existing tile in order to allow all existing tiles to be connected to the new tile to accommodate adequate drainage, to accommodate current farming practices and to provide more ground cover over the new tile to reduce the probability of crushing.

B. DESIGN DATA – TILE IMPROVEMENT

The proposed drain tile Improvement is shown in Exhibit 1. The type of pipe to be used for construction will be bid with a contractor option as follows:

1. Dual Wall or Triple Wall Polypropylene Drain Tile meeting the requirements of the American Society for Testing Materials F2376. Pipe will be bedded in granular foundation rock.

2. Dual Wall Polyethylene Drain Tile meeting the requirements of the American Society for Testing Materials F 2648. Pipe will be bedded in granular foundation rock as shown on Exhibit 1. Non-perforated pipe will be used in most areas (see Exhibit 1). The perforated pipe will include micro perforations/slots to avoid granular infiltration into the pipe. An option would be provided for the contractor to shape the bottom of the trench to conform to the pipe and reduce some of the granular bedding if the pipe manufacturer would warrant the material installation.

3. Reinforced concrete pipe meeting the requirements of MnDOT Specification 2501, with the joints being covered with geotextile fabric or gasketed.

As can be seen in Table 2, the tile capacity for the Improvement System reflects a drainage coefficient of 1/2-inches/day. This is within the recommended drainage capacity from the Natural Resource Conservation Service of 1/2-inches/day.

Table 2: Proposed System Capacity

CD 138 Branch	Location	Total Drainage Area (Acres)	Proposed Tile Size (Inches)	Proposed Grade (%)	Calculated Capacity (CFS) n=0.013	Calculated Coefficient (In. Per Day)
7-B	EOP to 740' North of 850th Ave	11	6	0.65	0.49	1.06
7-B	740' to 860' North of 850th Ave	22	8	0.83	0.83	0.90
7-B	860' to 1590' North of 850th Ave	49	10	0.30	1.30	0.63
7-B	1590' North of 850th Ave to 6-B	60	10	0.30	1.30	0.52
6-B	EOP to 2560' East of 210th Street	11	6	0.50	0.43	0.93
6-B	2560' East of 210th Street to Br 7-B	18	6	0.50	0.43	0.57
6-B	Br 7-B to Br Main B	98	12	0.30	2.12	0.51
3-B	520' North to 850th Ave	34	8	0.40	0.83	0.58
3-B	850th Ave to Br 4-B	37	8	0.40	0.83	0.53
3-B	Br 4-B to Br Main B	77	12	0.25	1.94	0.60
Main B	3050' North of 850th Avenue to 6-B	71	12	0.15	1.50	0.50
Main B	6-B to 760' East of 210th Street	200	18	0.14	4.27	0.51
Main B	760' East of 210th Street to Br 3-B	321	24	0.10	7.77	0.58
Main B	Br 3-B to Open Ditch	533	30	0.07	11.79	0.53

Also included, as part of the project, there will be provisions to strip and replace the topsoil on the trench area, to provide rip rap as erosion protection at the outlet, and to construct several intakes on the system. It is proposed to use short intake covers for the larger intakes, use wyes at the tile connections, and the outlet pipe is proposed to be angled downstream.

The existing tile that is proposed to be improved will be abandoned and decommissioned at intervals of 200 feet along the tile alignment. Specifically, there will be plugs installed where the proposed alignment crosses the existing tile (due to utility conflicts) and the outlet to the open ditch will be removed.

C. DESIGN DATA – WASCOB

Exhibit 1 shows the location for proposed water and sediment control basin (WASCOB). The WASCOB will be designed to NRCS practice standards. Select borrow material will be sourced from the adjacent farmland. From the Agricultural Best Management Practices Handbook for Minnesota, "WASCOBs consist of an embankment across the slope of a field or minor waterway to temporarily detain and release water through a piped outlet or through infiltration. They are constructed perpendicular to the flow direction. The key benefit of WASCOBs is detaining water from contributing areas, inducing sedimentation, and controlling the release of water, thereby reducing the erosive power of the water downstream."

The proposed basins will temporarily store overland runoff from the watershed. The basins are proposed to be constructed by installing a berm across the natural draw in the land. The slopes on the berms in the agricultural field will be at 1V:30H or flatter so that the berm can still be farmed. The top width of the berm will be 30 feet wide so that it can be easily navigated. The material used to construct this berm will be sourced onsite if there is an appropriate source or will be hauled in from offsite. This berm will create storage for runoff and will reduce the peak overland flows discharged to the CD 138 Main Open Ditch.

Table 3: Proposed Storage Summary

System	Upstream Landowner	Height (feet)	Ponding Time (hr)	Storage Created (Acre-feet)	Total Ponding Area (Acres)	Total Watershed Area (Acres)	Design Storm
WASCOB – 1	Robert Swanson	1.5	16	0.9	1.6	9	2-year
WASCOB – 2	Stephen Schneider	1.5	12	4.4	5.5	96	2-year

D. TILE SYSTEM DEPTH

Exhibit 1 shows profile views for the proposed tile system. The minimum and maximum depths of cut to the flow line of the pipes are shown on Table 4.

Table 4: Change in Outlet Capacity

Tile Branch	Minimum Depth	Maximum Depth
Main	6.1'	14.4'
3-B	8.0'	12.1'
6-B	7.3'	9.9'
7-B	8.5'	11.0'

V. ALTERNATE SOLUTIONS

A. "DO NOTHING ALTERNATIVE"

The "Do Nothing" Alternative has been discussed. However, the petitioners have experienced poor drainage throughout the drainage system for many years with the excess

surface water damaging crops and resulting in frequent crop stress or crop loss. This loss of production equates to an economic loss for Renville County and the State of Minnesota. The loss results in a reduced property value for the wet acres, thus affecting the taxing capacity of the County and State. In addition, the ability of the landowners to receive a reasonable return on their investment is diminished because of this inadequate drainage.

As stated previously, the existing pipe is in poor repair. It is our recommendation, from the observations of the landowners and Renville County staff, that the system is in need of replacement due to the condition of the tile. Mainly that the joints are offset causing additional debris build up, and thereby plugging the tile.

For these reasons, the "Do Nothing" alternative has been dismissed. The economic question of the cost of the Improvement versus the benefits derived still needs to be evaluated. However, the "Do Nothing" alternative is not viewed as solving the drainage problem in the watershed.

B. REPAIR

Separable Maintenance for this project is estimated at $895,350. A repair would only work as well as was discussed in Section III of this report. Repairing the system to its as constructed system, would not account for changing rainfall patterns or for additional waters being discharged into the system. Current design standards for rural drainage and as recommended by the NRCS are for a drainage coefficient of 1/2 inch/day. From Section III the current tile is approximately 42% efficient for a 1/2 inch/day coefficient. Therefore, we do not recommend going with a repair option, since the repaired system would not meet the NRCS recommended drainage coefficient of a 1/2 inch/day.

C. WETLAND RESTORATION

Another alternative would be to restore the typically flooded areas of the watershed to wetland use. This alternative would provide storage in the watershed depressional areas for the water that is currently accumulating in these areas and drowning out agricultural crops. The proposal would also have added benefits for wildlife and possibly water quality.

Currently wetland locations have not been identified due to the lack of interest within the watershed. For wetlands to be a viable option, finding willing landowners is the most important step in the design process. Without willing landowners' general locations within the watershed can be discussed, but design work and modeling will not be pursued.

To be effective, this alternative would need to restore sufficient acres to wetland use so that the existing ditch system could convey the excess runoff. Utilizing NRCS data, about 38 acre feet of water cannot be discharged from the CD 138 watershed through the existing drainage systems in a 48-hour period for a 5-year rain event. If sufficient wetland acres were available to store this runoff at a maximum depth of 1.5 feet, approximately 25 acres of wetland restoration would be needed to provide sufficient storage capacity for the excess runoff.

To convert the 25 acres to wetlands, at least twice this many acres would need to be acquired. This is due to multiple factors including irregular wetland shapes, marginal damp soils, and squaring off land for modern farming practices. Thus, about 50 acres of land would be needed. This acquisition would likely involve several properties, whose owners would voluntarily need to agree to the reversion. The estimated cost of acquisition plus reconstructing tile lines for wetland conversion would likely be about $18,000 per acre, resulting in a total cost of about $900,000, note that this cost only accounts for land acquisition, minor grading work, and seeding. Additional costs would be required for

additional depth, repairing the existing tile, and to provide an outlet. Wetland restoration with a Repair to the system is about 1.8 times the estimated cost of the Improvement.

The system does not currently contain locations where water naturally pools to a depth greater than a foot and half. Therefore, if a depth of 4.5 feet were pursued it would cost approximately $33,000 per acre-foot of construction and acquisition costs. So, if a wetland at a depth of 4.5 feet would be created, 17 acres of property would need to be required, and an additional 3 feet of excavation would need to take place over the area. The total cost of this wetland creation route would be $405,000. The cost of a deeper wetland creation and the cost to Repair the tile system is roughly 1.3 times the estimated cost of the Improvement.

Wetland restoration by itself is not a viable option for providing an improvement to the system. Due to the existing tile being in poor repair the cost to repair should be included when discussing this option in terms of cost.

To be a benefit to the system it is important that the wetlands being created are in the upper part of the watershed and outside of the existing groundwater table. Finding willing landowners to participate in a restoration project and locating sufficient funding would be critical to make this option viable. Copies of this Report will be provided to the SWCD and NRCS so that early coordination can occur for potential funding and technical assistance toward this option.

VI. OTHER CONSIDERATIONS

A. PERMIT REQUIREMENTS

A permit from the Minnesota Pollution Control Agency for stormwater and erosion control for the project would be necessary. This permit requirement, which applies to any construction which disturbs more than one acre of land, requires that the contractor and owner secure a permit for the work. The permit process will also require erosion control measures to be taken during construction. Typical erosion control measures include placing of riprap and grass stabilization of the ditch bank and inlet protection around installed inlet areas. The fee for this permit is currently $400.00. This permit will be applied for shortly before construction is scheduled so the contractor can sign the permit application.

A permit from Renville County Highway Department will also be necessary for the crossings of CR 61 (210th Street). This permit will be applied for after the Final Hearing.

B. WETLANDS

National Wetland Inventory (NWI) Maps have been reviewed to locate potential wetlands subject to regulations. No wetlands are shown on the NWI maps near the Improvement alignment. If wetlands are identified all piping running directly through must be nonperforated. Along with this, all intakes that are within the wetland can be reinstalled at the same nominal size.

Impacts of the potential drainage system on individual land parcels will be evaluated by the Natural Resources Conservation Service upon filing of a Form AD 1026 by landowners. This NRCS process will identify any wetlands and measures which need to be taken in order for the drainage project to avoid impact to these wetlands. Because of federal data privacy requirements, it is not possible for non-landowners to obtain this information. Thus, the obligation for filling out these forms and doing this investigation will rest with individual landowners.

Drainage of non-directly impacted wetlands will be controlled by supplemental drainage systems installed by private owners. Owners are advised that such supplemental drainage may not be permitted under State Wetland Conservation Act, US Army Corps of Engineers and NRCS rules and may affect US Department of Agriculture program eligibility.

C. PUBLIC AND PRIVATE BENEFITS AND COSTS

The estimated cost of the proposed Improvement to CD 138 Branch B is shown in Exhibit 2 of this report. Benefits for the Improvement, both public and private, will be established by the viewers and a report will be available at the final hearing.

Landowners certainly have other costs associated with construction and maintenance of their individual drainage systems. The proposed Improvement would only serve as an outlet or collector of runoff and drainage flow from the lands within the watershed. Each landowner is responsible to construct and maintain their own drainage system in order to adequately drain their farmlands. Individual benefits for an adequate drainage system are in increased crop production from farmlands.

The estimated cost of the proposed Improvement is included in this report. The public and private benefits and damages will be available at the final hearing.

D. AGRICULTURAL EFFECTS

Once installed, the lands within the improved watershed will be largely dependent on this drainage system for both surface and subsurface drainage flows. Thus it is imperative that the proposed system have adequate capacity in order to allow for modern farming operations.

It should be noted that many of the established ditch systems in Minnesota are now 70 to 100 years old. These systems are approaching the need for complete repair or replacement if the farmland is to remain productive. When feasible, it is economically imperative that these drainage systems be improved to become compatible with present day farming techniques and they be continually maintained. If properly maintained during normal growing seasons, portions of the agricultural lands in the watershed are some of the most productive in the State of Minnesota.

E. ALTERNATIVE MEASURES

Alternative measures, including those identified in the Renville County Water Management Plan, have been considered in conjunction with this project. Specific proposals as part of the project to incorporate these measures include:

1. Measures to conserve, allocate and use drainage waters include the use of non-perforated tiles for the deeper installations so that groundwater is preserved for crop use and the continued infiltration which will occur in depressional areas of the watershed.

2. Measures to reduce downstream peak flows and flooding include the use of hickenbottom risers on intakes which limit the flow capacity of tile intakes, limiting the capacity of the proposed tiles to the minimum recommended standard of the NRCS to limit downstream flows, and construction of the proposed water and sediment control basin.

3. Measures to provide adequate drainage system capacity are being accomplished by designing the size of the tile system to meet the recommended standards of the NRCS.

4. Measures to reduce erosion and sedimentation include the use of hickenbottom risers on the tile intakes which result in reduced discharge of suspended solids, the restoration of the tile trench as soon as possible so that surface erosion of the disturbed soil is reduced, the use of inlet protection during the construction so that the discharge of suspended solids is reduced and the use of a rock filter at the outlet during construction so that suspended solids are captured. Straw mulch will also be utilized to temporarily stabilize the disturbed areas until they can be turned back over to agricultural production. The WASCOBs will reduce sedimentation into the CD 138 open ditch.

F. FISH AND WILDLIFE

The threatened or endangered species having the potential to be in Renville County at the time of this report are the northern long-eared bat, and the prairie bush clover. According to the Minnesota DNR, there are no known northern long-eared bat roost trees or hibernacula in Renville County. Additionally, there are no trees to be removed as a part of the improvement, so there is no anticipated impact to the northern long-eared bat. The prairie bush clover is found within native prairie on well drained soils. The project will take place within agricultural fields, so no impact to the prairie bush clover is anticipated. Bald eagles are present in Renville County, and are protected under the Bald and Golden Eagle Protection Act. Again, there are no trees to be removed as a part of the improvement, so there is no impact to the bald eagle.

Field investigation has revealed that the only permanent wildlife habitat in the area of the Improvement is along the road ditches and building sites. These areas will not be impacted by the improvement.

Current wet areas within the project watershed do provide for transitory stop over locations for migratory waterfowl. However, these areas currently dry up following wet periods and are then under cultivation and production. It is anticipated that some of these temporary ponding areas will still exist after the construction of the Improvement although ponding times will likely be reduced. Therefore, the provisions for adequate drainage of these lands will not be of a detrimental nature to local wildlife resources.

G. GROUNDWATER

The purpose of an agricultural drainage system is to maintain the elevation of the shallow groundwater table sufficiently below the surface to provide for efficient production of crops. The level at which the groundwater will be maintained has been and will be determined by the depth of the tile system and private tiles in the area. Although the proposed Improvement is somewhat deeper than the existing tiles in the areas, the depth increase is not significant or unusual for drainage systems. Additionally, tiles that have a depth of 6 feet or greater to the invert of the pipe will be non-perforated. Therefore, no change in the availability, distribution or use of the shallow groundwater beyond that necessary for the sufficient production of crops within the watershed is anticipated by this construction.

H. ENVIRONMENTAL IMPACT

The adverse effects of the proposed Improvement are of a temporary nature and are listed as follows:

1. Disturbing the ground surface during construction could result in the loss of one crop within the construction limits.

2. The restored trench area will be less productive for the first few years following

construction and will require more fertilizer to be as productive as the undisturbed adjoining farmland. The topsoil in this area will be removed and replaced in an effort to maintain the soil productivity.

3. Temporary noise and dust generation can be expected from the construction operations. These impacts are not viewed as significant since there are few residences near the proposed construction route.

4. Temporary erosion of soil may occur in the construction area until permanent ground cover and ground stabilization occurs. Although these effects need to be considered, they are probably not significantly different than the current topsoil loss that occurs annually from erosion of topsoil due to overland flow in the watershed. This construction erosion will be minimized using inlet protection, riprap and rapid establishment of permanent grass cover.

Numerous beneficial effects are anticipated from the proposed Improvement. Most of these benefits are directly attributable to increased crop production from lands presently damaged through period flooding and ponding. Among the most obvious benefits are:

1. Increased personal farm income.

2. Increased value of benefited farmland.

3. Contribution to the local economy through additional purchases, farm modernization and expansion.

4. Construction of the WASCOBs will reduce peak flows and sedimentation into the CD 138 open ditch.

I. LAND USE

The present use of the land in the CD 138 Branch B watershed is largely agricultural. It is expected that the land will continue to be used for agricultural purposes in the future.

J. GUIDANCE TO VIEWERS REGARDING IMPROVEMENT BENEFITS

Discussions with the landowners in the CD 138 Branch B system has provided evidence of the condition of the existing tile systems. Previous repairs on the tile have shown that the existing tile is out of repair. In addition, years of use and settlement of sections of the tile have reduced the hydraulic capacity of the tile. Even if CD 138 Branch B had not been petitioned for improvement, a repair is warranted.

Another way to describe this is related to the benefit of avoiding inevitable repair/reconstruction costs on the ditch. Since repair of the system, as required by Minnesota Statue 103E.705, would otherwise be paid for by the entire drainage system in order to restore the system to its as constructed, and subsequently improved, hydraulic efficiency, the cost of repair may be used to offset a portion of the improvement cost. Thus, the cost of the new tiles may be added as benefit since it avoids costs otherwise required to repair the system. With this information, it is the intent of the Improvement to replace the existing tile. Thus, a portion of the cost of the new CD 138 Branch B tiles should be allocated as a Repair cost. The application of this principle is known as Separable Benefits under the ditch statutes.

The amount of the Improvement which can be allocated to Separable Benefits is shown in Exhibit 3 as $895,350. It is recommended that the Board apply these Separable Benefits to the Improvement in the further ditch proceedings.

VII. ADEQUACY OF THE OUTLET

A. GENERAL INFORMATION

As mentioned earlier, the outlet for Branch Main B is into the open ditch of CD 138 in Section 35 of Ericson Township. The Main open ditch of CD 138 then becomes Sacred Heart Creek in Section 2 of Sacred Heart North Township. Then it ultimately flows into the Minnesota River at the border of Renville and Redwood County.

B. ADEQUACY OF THE OUTLET

The adequacy of County Ditch 138 to accept the additional flow resulting from the Improvement has been evaluated as required by the ditch statutes. This evaluation has been performed in the following manner:

1. The watershed contributing flow to the open ditch portion of CD 138 has been delineated using the US Geological Survey "StreamStats" program and 3-meter Lidar information retrieved from the DNR. The StreamStats program has been used to generate peak flow rates for 2 to 100-year storm events.
2. The proposed and existing conditions were modeled in HydroCAD. It is worth noting that HydroCAD often overestimates the discharge rates compared to other models and calculation methods.
3. Rainfall data was retrieved from NOAA Atlas 14 by using Renville, Minnesota as the data center point.

The change in outlet discharge can be seen in the table below. The modeled outlet for the system is the CD 138 Open Ditch field crossing upstream of 840th Avenue. The reason that the field crossing was chosen was due to a more accurate representation of the change in flows within the open ditch. Taking the first crossing downstream also limits the impact of additional waters being added to the ditch.

Table 5: Change in Outlet Capacity

Storm Event	Existing Discharge Rate (cfs)	Proposed Discharge Rate (cfs)	Change in Discharge Rate (cfs)
5-year	150	165	+ 15
10-year	188	199	+ 11
25-year	279	269	- 10
50-year	377	377	+ 0
100-year	377	377	+ 0

As can be seen from Table 5, the construction of the new lateral will increase the flows in CD 138 for the 5-year and 10-year storm event. There will be a decrease in flow of the CD 138 for the 25-year event. For both the 50-year and 100-year events there will be no change. Table 6 shown below shows the change in headwater elevation for the field crossing.

Table 6: Change in Headwater Elevation

Storm Event	Existing Headwater Elevation (ft)	Proposed Headwater Elevation (ft)	Change in Headwater Elevation (ft)
5-year	1050.8	1050.9	+ 0.1
10-year	1051.0	1051.1	+ 0.1
25-year	1051.6	1051.5	- 0.1
50-year	1052.1	1052.1	+ 0.0
100-year	1053.0	1053.0	+ 0.0

There is no overtopping requirement at this location due to it being a private crossing. There is a slight increase to the Headwater for the 5-year and 10-year event, and a small decrease for the 25-year event. All other events at this location will not change the headwater elevation.

VIII. EFFECT ON DOWNSTREAM WATERS

During the feasibility phase we were requested to complete a more extensive analysis of the CD 138 system. Per this request the next two crossings were analyzed as a part of our HydroCAD model.

Table 7 shows the 840th Avenue crossing information for the change in peak discharge at the culvert. Note that immediately upstream of the 840th Avenue crossing another ditch discharges into the system causing the increase in peak flows when comparing Table 6 and Table 7.

Table 7: Change in Outlet Capacity			
Storm Event	Existing Discharge Rate (cfs)	Proposed Discharge Rate (cfs)	Change in Discharge Rate (cfs)
5-year	321	321	+ 0
10-year	342	342	+ 0
25-year	371	371	+ 0
50-year	588	588	+ 0
100-year	960	960	+ 0

Table 8 shows the Private Driveway crossing immediately downstream of the 840th Avenue crossing. Note that the Private Driveway crossing shown below has a slightly smaller culvert than the crossing immediately upstream. This is what causes the decrease in peak flows when comparing Table 7 and Table 8.

Table 8: Change in Outlet Capacity			
Storm Event	Existing Discharge Rate (cfs)	Proposed Discharge Rate (cfs)	Change in Discharge Rate (cfs)
5-year	264	263	- 1
10-year	319	318	- 1
25-year	355	355	+ 0
50-year	488	488	+ 0
100-year	708	708	+ 0

As can be seen in Table 7 and 8 downstream waters will see no change in flow rate for most events within the open ditch. This is due to large amounts of water draining from elsewhere in the system rather than our proposed project. It is also due to the fact that the open ditch has a near 0% slope within our modeled area, causing very small flow events in the open channel.

Both the 840th and Private drive crossing have back slopes on their pipes. So, their natural flow direction is pointed upstream instead of downstream. Both crossings should be slopped the correct direction to have a proper 1" NRCS drainage coefficient.

With the existing conditions of the open ditch this area acts as a pond with a metered outlet at the Private Drive Crossing. Additionally, the increases for the 5-year & 10-year events at the first downstream crossing change to decreases in flows at the private crossing. With these changes being present it is our opinion that the outlet is adequate.

IX. WATER QUALITY

The watershed to be captured and treated by the WASCOBs total to 105 acres out of the 533 total acres. This is due in part because the land overtop Branch 1-B channels the watershed directly into the open and bypasses WASCOB – 1.

The water and sediment control basins will settle out sediment and sediment-bound pollutants. The proposed WASCOB will collect the overland flow from the watershed, which is currently directly discharging into the CD 138 open ditch. The total pollution reductions can be seen in the table below, these values were calculated using the MPCA Watershed Pollutant Load Reduction Calculator (Yellow Medicine Watershed, Sacred Heart Creek Huc 12).

Table 9: Erosion Reduction

System	Nitrogen (estimated reduction) lbs./yr.	Phosphorous (estimated reduction) lbs./yr.	Sediment (TSS) T/yr.
WASCOB – 1	10.8	1.4	0.2
WASCOB – 2	114.8	15.0	2.2
Total	125.6	16.4	2.4

As a requirement of the MPCA Erosion Control Permit, the establishment of an erosion control plan is anticipated. Incorporation of such devices as inlet protection, riprap at the outlets and permanent grasses as soon as possible following the construction are anticipated. All of these measures will help to reduce erosion and maintain water quality during the construction of the project.

During the feasibility phase the DNR noted in their Natural Resource Assessment that the outlet for this system is approximately 1.5 miles east/southeast of a Drinking Water Protection Area. The area noted is for ground water protection. This improvement will not have a significant impact on the ground water table north of the City of Renville. Our recommendation for drain tile is to not have perforated pipe deeper than 6-feet (measured from top of ground to flow line of pipe). The drain tile also discharges to a surface water with a total pollutant reduction shown in Table 9 when compared to existing conditions.

X. ESTIMATE OF COST

The Improvement cost estimate to construct the proposed Improvement, as described in this report, is shown in Exhibit 2. The total estimated cost for the Improvement is $977,171. That price includes the cost of administration and engineering fees.

Included in the estimate are the approximate 28.76 acres of agricultural land which will be temporarily taken out of production by construction. The individual landowners will be compensated for this loss through the damage process of further ditch proceedings.

XI. RECOMMENDATIONS

The proposed Improvement of CD 138 Branch B in Renville County, as described in this report, is feasible, practical and necessary to provide drainage for the cultivation of crops within the watershed area. The existing tile system is in need of an Improvement to provide proper drainage for current agricultural practices.

It is our recommendation to proceed with the Improvement as outlined in this report and that the

Engineer's Preliminary Engineer's Report be approved. If there are adequate funds, we recommend the Drainage Authority order the Improvement.

Exhibit 1: Preliminary Plans and Profiles

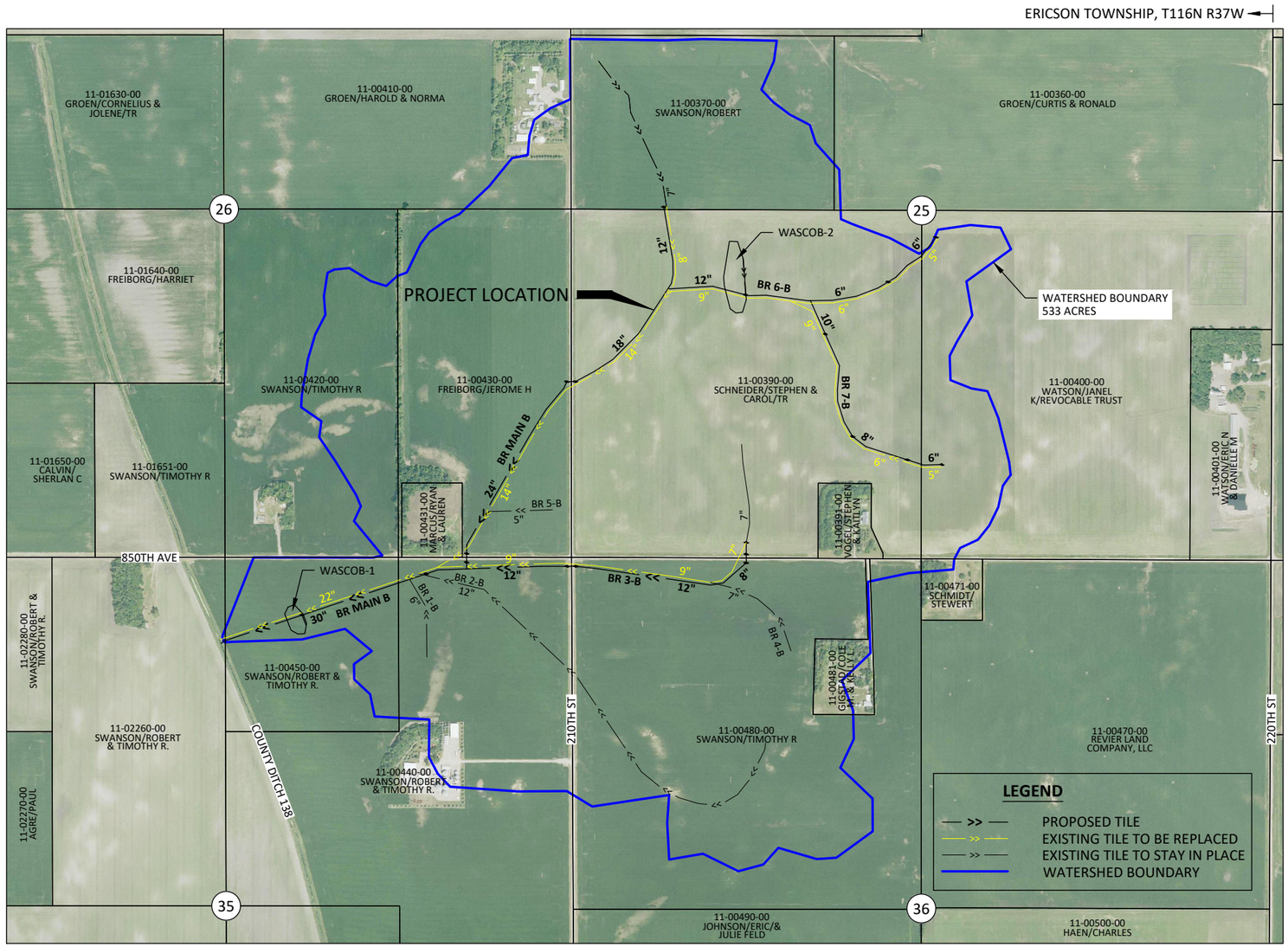
RENVILLE COUNTY, MINNESOTA

PRELIMINARY PLANS FOR

COUNTY DITCH NO. 138 BRANCH B

DRAIN TILE, SURFACE INTAKES, WASCOBS AND EROSION CONTROL

MAY, 2026



SHEET NUMBER	SHEET TITLE
GENERAL	
G0.01 - G0.02	TITLE SHEET, LEGEND
CIVIL	
C1.01 - C1.02	TABLES, DETAILS, TYPICAL SECTIONS, PHASING PLAN
C2.01 - C2.XX	EROSION CONTROL PLAN, SWPPP
C3.01 - C3.02	GRADING PLAN
C5.01 - C5.02	DRAIN TILE PLAN & PROFILE - BRANCH B MAIN
C5.03	DRAIN TILE PLAN & PROFILE - BRANCH 3-B
C5.04	DRAIN TILE PLAN & PROFILE - BRANCH 6-B
C5.05	DRAIN TILE PLAN & PROFILE - BRANCH 7-B

THIS PLAN SET CONTAINS 12 SHEETS.

PARTIAL MAP OF
RENVILLE COUNTY, MN

0 500 1000
SCALE FEET

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

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 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."

⌖ BM=1069.411
DYSB MNDT ALUMINUM ROD
GSID STATION #25831
19.7-FT WEST-SOUTHWEST OF A WITNESS POST.

PROJECT DATUM: RENVILLE CO COORDINATES
HORIZONTAL: NAD83 (2011)
VERTICAL: NAD88

RECORD DRAWING INFORMATION
OBSERVER:
CONTRACTOR:
DATE:

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~~

BILL G. HEEGER, P.E.
LIC. NO. 42046 DATE MM/DD/YYYY

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Email: SleepyEye@bolton-menk.com
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DESIGNED	NO.	ISSUED FOR	DATE
JGB			
DRAWN			
JGB			
CHECKED			
BLH			
CLIENT PROJ. NO.			
25X.138825.000			

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
TITLE SHEET

SHEET G0.01

EXISTING TOPOGRAPHIC SYMBOLS

- ACCESS GRATE
- AIR CONDITION UNIT
- ANTENNA
- AUTO SPRINKLER CONNECTION
- BARRICADE PERMANENT
- BASKETBALL POST
- BENCH
- BIRD FEEDER
- BOLLARD
- BUSH
- CATCH BASIN RECTANGULAR CASTING
- CATCH BASIN CIRCULAR CASTING
- CURB STOP
- CLEAN OUT
- CULVERT END
- DRINKING FOUNTAIN
- DOWN SPOUT
- ELECTRIC CAR CHARGE STATION
- FILL PIPE
- FIRE HYDRANT
- FLAG POLE
- FLARED END / APRON
- FUEL PUMP
- GRILL
- GUY WIRE ANCHOR
- HANDHOLE
- HANDICAP SPACE
- IRRIGATION SPRINKLER HEAD
- IRRIGATION VALVE BOX
- LIFT STATION CONTROL PANEL
- LIFT STATION
- LIGHT POLE
- MAILBOX
- MANHOLE-COMMUNICATION
- MANHOLE-ELECTRIC
- MANHOLE-GAS
- MANHOLE-HEAT
- MANHOLE-RECLAIMED WATER
- MANHOLE-SANITARY SEWER
- MANHOLE-STORM SEWER
- MANHOLE-UTILITY
- MANHOLE-WATER
- METER
- DRIVE-THRU MICROPHONE
- PARKING METER
- PAVEMENT MARKING
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- PEDESTRIAN PUSH BUTTON
- PICNIC TABLE
- POLE-UTILITY
- POST
- RAILROAD SIGNAL POLE
- REGULATION STATION GAS
- SATELLITE DISH
- SIGN TRAFFIC
- SIGNAL CONTROL CABINET
- SOIL BORING
- SIREN
- TELEPHONE BOOTH
- TILE INLET
- TILE OUTLET
- TILE RISER
- TRANSFORMER-ELECTRIC
- TREE-CONIFEROUS
- TREE-DEAD
- TREE-DECIDUOUS
- TREE STUMP
- TRAFFIC ARM BARRIER
- TRAFFIC SIGNAL
- TRASH CAN
- UTILITY MARKER
- VALVE
- VALVE POST INDICATOR
- VALVE VAULT
- VAULT
- VENT PIPE
- WATER SPIGOT
- WELL
- WETLAND DELINEATED MARKER
- WETLAND
- WET WELL
- YARD HYDRANT

PROPOSED TOPOGRAPHIC SYMBOLS

- CLEANOUT
- MANHOLE
- LIFT STATION
- STORM SEWER CIRCULAR CASTING
- STORM SEWER RECTANGULAR CASTING
- STORM SEWER FLARED END / APRON
- STORM SEWER OUTLET STRUCTURE
- STORM SEWER OVERFLOW STRUCTURE
- CURB BOX
- FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- WATER BEND
- WATER TEE
- WATER CROSS
- WATER SLEEVE
- WATER CAP / PLUG
- RIP RAP
- DRAINAGE FLOW
- TRAFFIC SIGNS

SURVEY SYMBOLS

- BENCHMARK LOCATION
- CONTROL POINT
- MONUMENT FOUND
- CAST IRON MONUMENT
- STONE MONUMENT

EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE
- FENCE-DECORATIVE
- GUARD RAIL
- TREE LINE
- BUSH LINE

SURVEY LINES

- CONTROLLED ACCESS
- BOUNDARY
- CENTERLINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- SETBACK LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- TEMPORARY EASEMENT

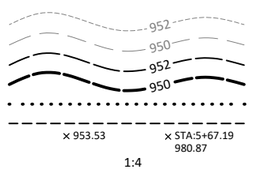
EXISTING UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- RECLAIMED WATER

PROPOSED UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- PIPE CASING
- TRENCHLESS PIPE (PLAN VIEW)
- TRENCHLESS PIPE (PROFILE VIEW)

GRADING INFORMATION



- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED GRADING LIMITS / SLOPE LIMITS
- PROJECT LIMITS
- PROPOSED SPOT ELEVATION
- RISE:RUN (SLOPE)

HATCH PATTERNS

- BITUMINOUS
- GRAVEL
- CONCRETE

EXISTING PRIVATE UTILITY LINES

NOTE:
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- UNDERGROUND FIBER OPTIC
- UNDERGROUND ELECTRIC
- UNDERGROUND GAS
- UNDERGROUND COMMUNICATION
- OVERHEAD ELECTRIC
- OVERHEAD COMMUNICATION
- OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL :

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL
EXAMPLE: G-A G-A UNDERGROUND GAS, QUALITY LEVEL A
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-22.

UTILITY QUALITY LEVELS:

QUALITY LEVEL D: PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.

QUALITY LEVEL C: INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. INCLUDES QUALITY LEVEL D ACTIVITIES.

QUALITY LEVEL B: INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND COLLECTING THE INFORMATION THROUGH A SURVEY METHOD. INCLUDES QUALITY LEVEL C AND D TASKS.

QUALITY LEVEL A: PROVIDES THE HIGHEST LEVEL OF ACCURACY. IT INVOLVES LOCATING OR POTHOLING UTILITIES AS WELL AS ACTIVITIES IN QUALITY LEVELS B, C, AND D. THE LOCATED FACILITY INFORMATION IS SURVEYED AND MAPPED AND THE DATA PROVIDES PRECISE PLAN AND PROFILE INFORMATION.

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RSC	RIGID STEEL CONDUIT
ADJ	ADJUST	GU	GUTTER	RT	RIGHT
ALT	ALTERNATE	GV	GATE VALVE	SAN	SANITARY SEWER
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SCH	SCHEDULE
BIT	BITUMINOUS	HH	HANDHOLE	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL.	CLASS	MAX	MAXIMUM	TYP	TYPICAL
CLVT	CULVERT	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
DIA	DIAMETER	NWL	NORMAL WATER LEVEL		
DIP	DUCTILE IRON PIPE	OHW	ORDINARY HIGH WATER LEVEL		
DWY	DRIVEWAY	PC	POINT OF CURVE	AC	ACRES
E	EXTERNAL CURVE DISTANCE	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ELEV	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	EA	EACH
ER	END RADIUS	PERM	PERMANENT	EV	EXCAVATED VOLUME
ESMT	EASEMENT	PI	POINT OF INTERSECTION	LB	POUND
EX	EXISTING	PL	PROPERTY LINE	LF	LINEAR FEET
FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
F-F	FACE TO FACE	PT	POINT OF TANGENT	LV	LOOSE VOLUME
FF	FINISHED FLOOR	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
F&I	FURNISH AND INSTALL	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
FM	FORCEMAIN	R	RADIUS	SY	SQUARE YARD
FO	FIBER OPTIC	R/W	RIGHT-OF-WAY		
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE		
GRAN	GRANULAR	RET	RETAINING		

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~~PRELIMINARY NOT FOR CONSTRUCTION~~

BILL L. HEILGER, P.E.
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Email: SleepyEye@bolton-menk.com
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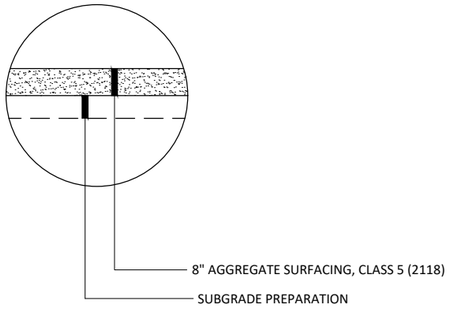
DESIGNED	NO.	ISSUED FOR	DATE
JGB			
DRAWN			
JGB			
CHECKED			
BLH			
CLIENT PROJ. NO.			
25X.138825.000			

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
LEGEND

SHEET G0.02

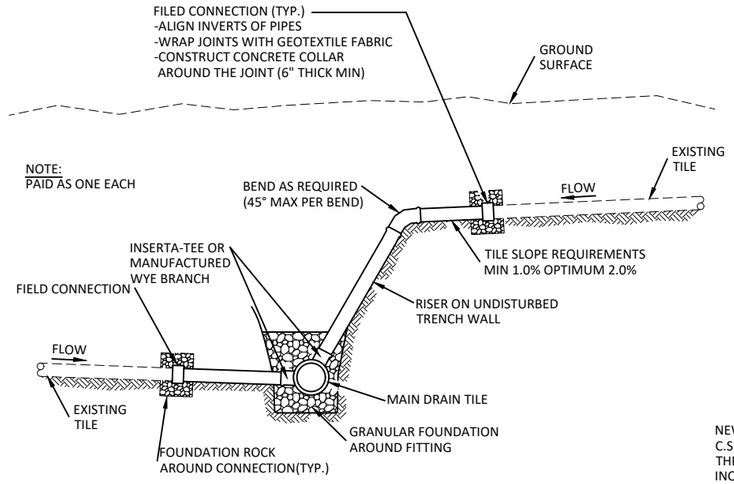


GRAVEL ROAD RESTORATION - TYPICAL SECTION

NOT TO SCALE

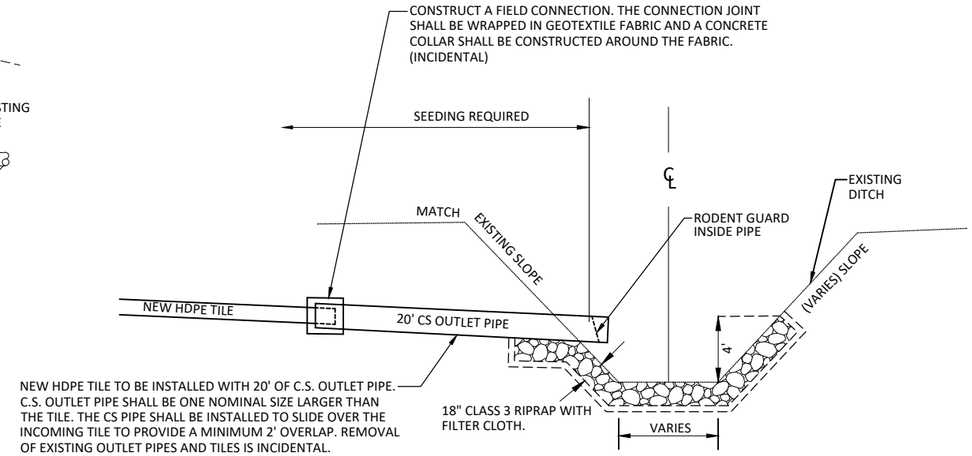
GRANULAR MATERIAL DEPTH TO INVERT TABLE (ASTM F2648)	
TILE SIZE (IN)	MAX PIPE DEPTH (FT)
4	21
6	21
8	21
10	21
12	21
15	21
18	21
24	19
30	19
36	18
42	18
48	18
60	17

NOTE: THIS TABLE IS FOR REFERENCE PURPOSES ONLY. ACTUAL MAXIMUM AND MINIMUM DEPTHS SHALL BE DETERMINED IN CONJUNCTION WITH MANUFACTURER AND TESTING AGENCIES.



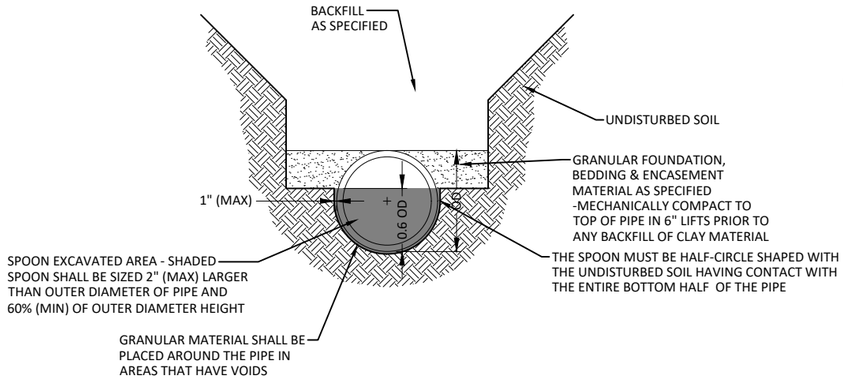
DRAIN TILE CONNECTION

NOT TO SCALE



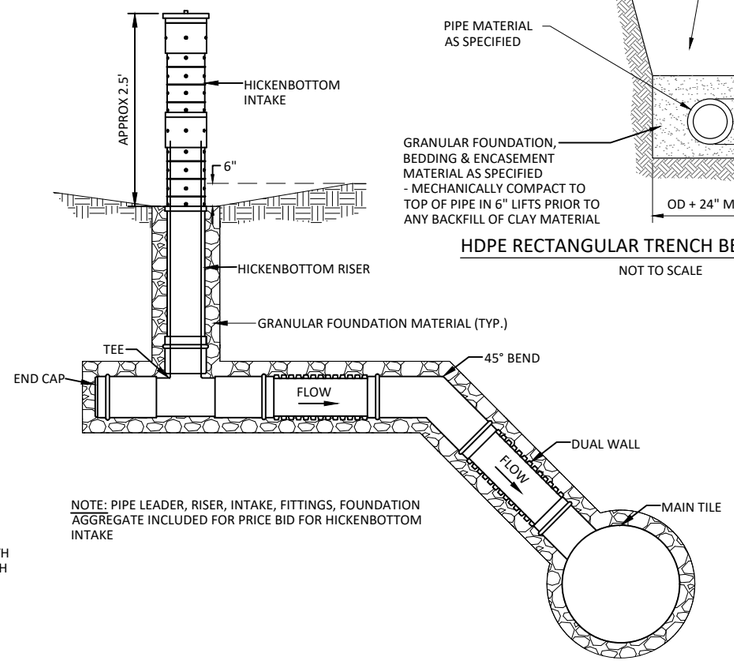
TYPICAL SECTION AT OPEN DITCH FOR HDPE TILE

NOT TO SCALE



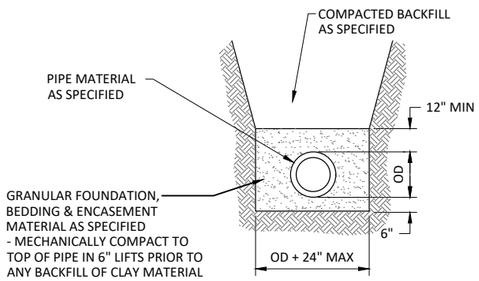
HDPE "SPOON" TRENCH BEDDING DETAIL

NOT TO SCALE



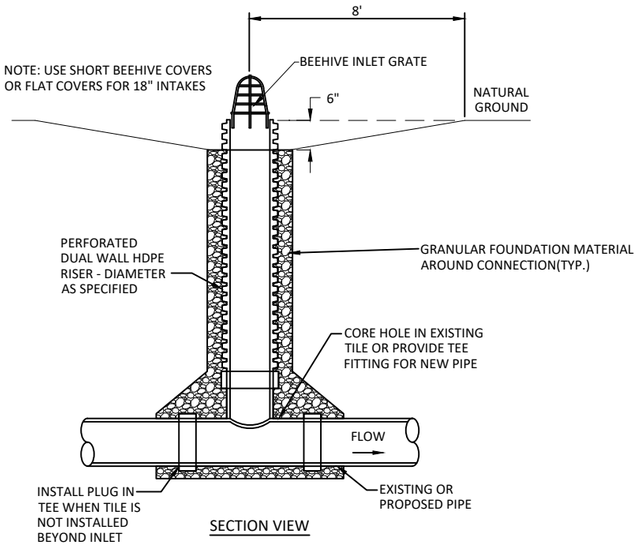
HICKENBOTTOM INTAKE - IN ROADSIDE DITCHES

NOT TO SCALE



HDPE RECTANGULAR TRENCH BEDDING DETAIL

NOT TO SCALE



SECTION VIEW

FIELD INTAKE - IN FIELDS

NOT TO SCALE

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BILL L. HEGERT, P.E.
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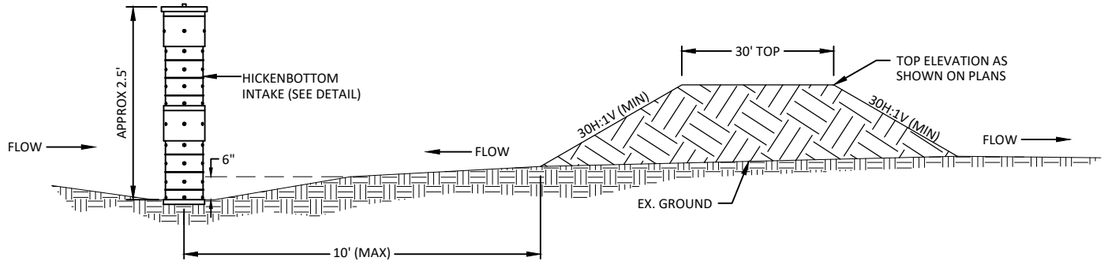
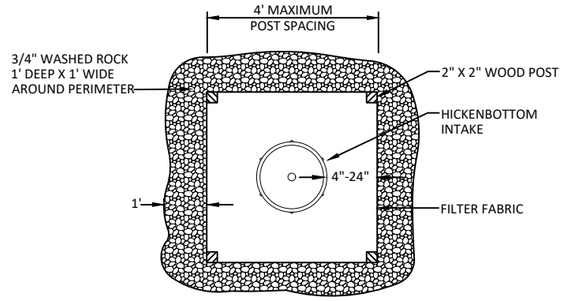
NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DETAILS
DRAIN TILE DETAILS

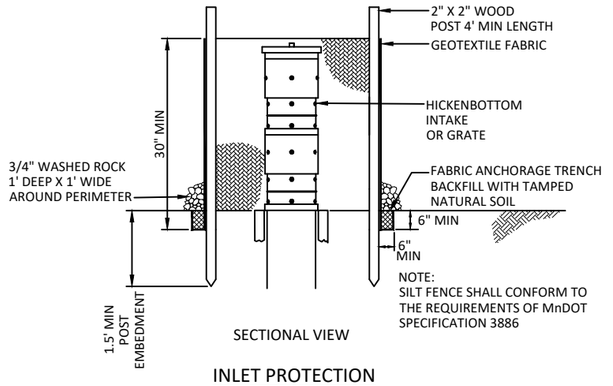
SHEET
C1.01



WATER SEDIMENT CONTROL BASIN (WASCOB)
NOT TO SCALE

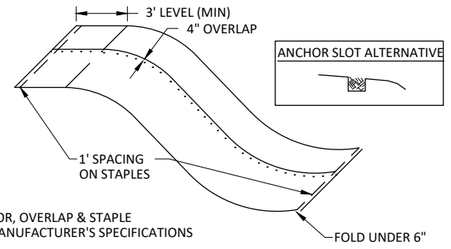


PLAN VIEW
NOT TO SCALE



SECTIONAL VIEW

INLET PROTECTION
PREASSEMBLED SILT FENCE
NOT TO SCALE



NOTE:
ANCHOR, OVERLAP & STAPLE
PER MANUFACTURER'S SPECIFICATIONS

BOLTON & MENK

EROSION CONTROL
BLANKET INSTALLATION
NOT TO SCALE

LAST REVISION:
04-2021

PLATE NO.
3-200

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CHECKED	BLH
CLIENT PROJ. NO.	25X.138825.000

NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DETAILS
EROSION CONTROL DETAILS

SHEET
C1.02

11-01630-00
GROEN/CORNELIUS
& JOLENE/TR

11-00410-00
GROEN/HAROLD &
NORMA

11-00370-00
SWANSON/ROBERT

11-00360-00
GROEN/CURTIS &
RONALD

26

25

11-01640-00
FREIBORG/
HARRIET

11-00430-00
FREIBORG/JEROME H

11-00420-00
SWANSON/TIMOTHY R

11-00390-00
SCHNEIDER/STEPHEN
& CAROL/TR

11-00400-00
WATSON/JANEL
K/REVOCABLE TRUST

11-01651-00
SWANSON/
TIMOTHY R

11-00431-00
MARCUS/RYAN &
LAUREN

11-00391-00
VOGEL/STEPHEN &
KAITLYN

850TH AVE

11-02260-00
SWANSON/ROBERT
& TIMOTHY R.

11-00440-00
SWANSON/ROBERT
& TIMOTHY R.

210TH ST

11-00480-00
SWANSON/TIMOTHY R

11-00450-00
SWANSON/ROBERT &
TIMOTHY R.

11-00481-00
GIGSTAD/COLE M.
& KELLY L.

EROSION CONTROL LEGEND

- MS — MACHINE SLICED SILT FENCE
- INLET PROTECTION
- EXISTING/PROPOSED DRAINAGE FLOW
- STABILIZED CONSTRUCTION EXIT (TO BE MARKED ON PLANS BY CONTRACTOR)
- RAPID STABILIZATION, METHOD 4
- HYDRAULIC MULCH MATRIX MnDOT 3884.2.8.2 @ 2500 LB/ACRE

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~~

BILL L. HEEGER, P.E.
LIC. NO. 42046 DATE MM/DD/YYYY

BOLTON & MENK
1243 CEDAR STREET NE
SLEEPY EYE, MN 56085
Phone: (507) 810-4184
Email: SleepyEye@bolton-menk.com
www.bolton-menk.com

DESIGNED	NO.	ISSUED FOR	DATE
JGB			
DRAWN			
JGB			
CHECKED			
BLH			
CLIENT PROJ. NO.			
25X.138825.000			

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
STORMWATER POLLUTION PREVENTION PLAN
EROSION CONTROL PLAN

SHEET
C2.04

WASCOB - 1
DESIGN STORM = 2 YEAR
DRAW DOWN TIME = 32 HR
WATER STORED = 0.9 ACRE-FEET
WATER SURFACE AREA = 1.6 ACRES

F&I:
450 CY - COMMON EMBANKMENT

CONSTRUCT INTAKE AS SHOWN ON PLANS
AND GRADE AREA TO DRAIN TO INTAKE

1055
1054
1053
1052

30" TILE

EX 22" TILE

BRANCH MAIN B

80 LF - 4" SINGLE WALL PERF TILE

30:1

30:1

30' TOP

I = 1049.5

11-00450-00
SWANSON/ROBERT &
TIMOTHY R.

HORZ. 0 25 50
SCALE FEET

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.

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BILL L. HELGET, P.E.
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DESIGNED	JGB
DRAWN	JGB
CHECKED	BLH
CLIENT PROJ. NO.	25X.138825.000

NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
GRADING PLAN
WASCOB - 1

SHEET
C3.01

WASCOB - 2
DESIGN STORM = 5 YEAR
DRAW DOWN TIME = 12 HR
WATER STORED = 4.4 ACRE-FEET
WATER SURFACE AREA = 5.5 ACRES

F&I:
1650 CY - COMMON EMBANKMENT

11-00390-00
SCHNEIDER/STEPHEN
& CAROL/TR

CONSTRUCT INTAKE AS SHOWN ON PLANS
AND GRADE AREA TO DRAIN TO INTAKE

280 LF - 4" SINGLE WALL PERF TILE

I = 1055.5

30:1

TOP

30:1

30:1

12" TILE

EX 9" TILE

BRANCH 6-B

1062
1060
1061
1061
1060
1059
1062
1058

0 25 50
HORZ. SCALE FEET

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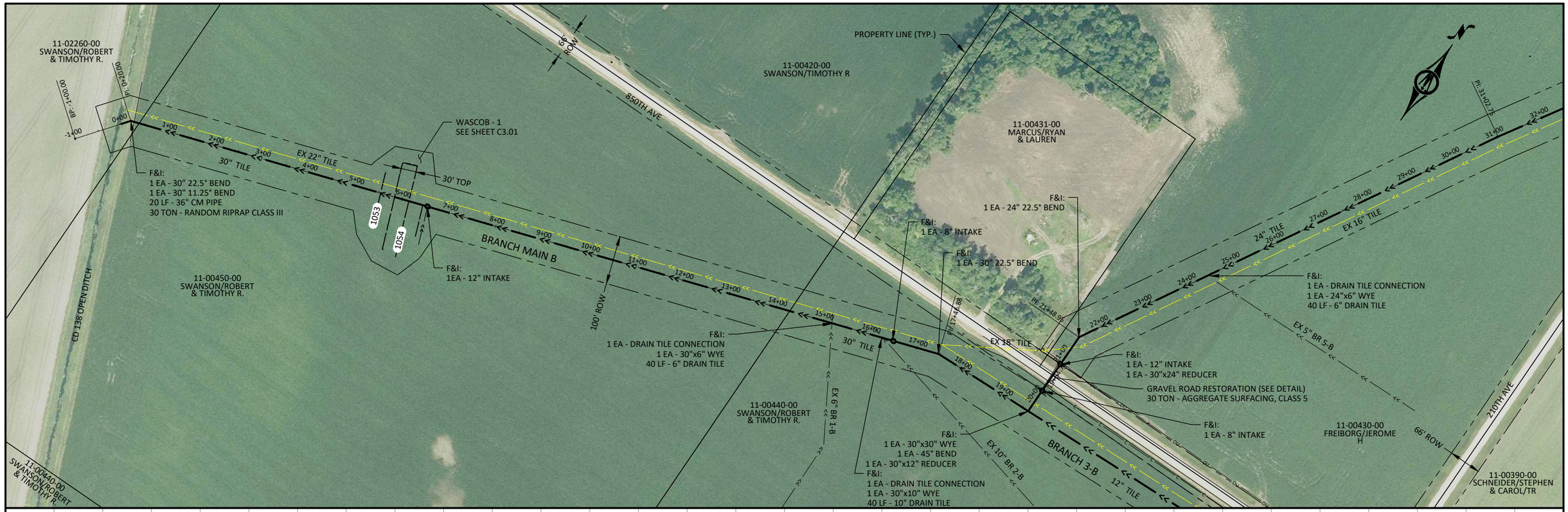
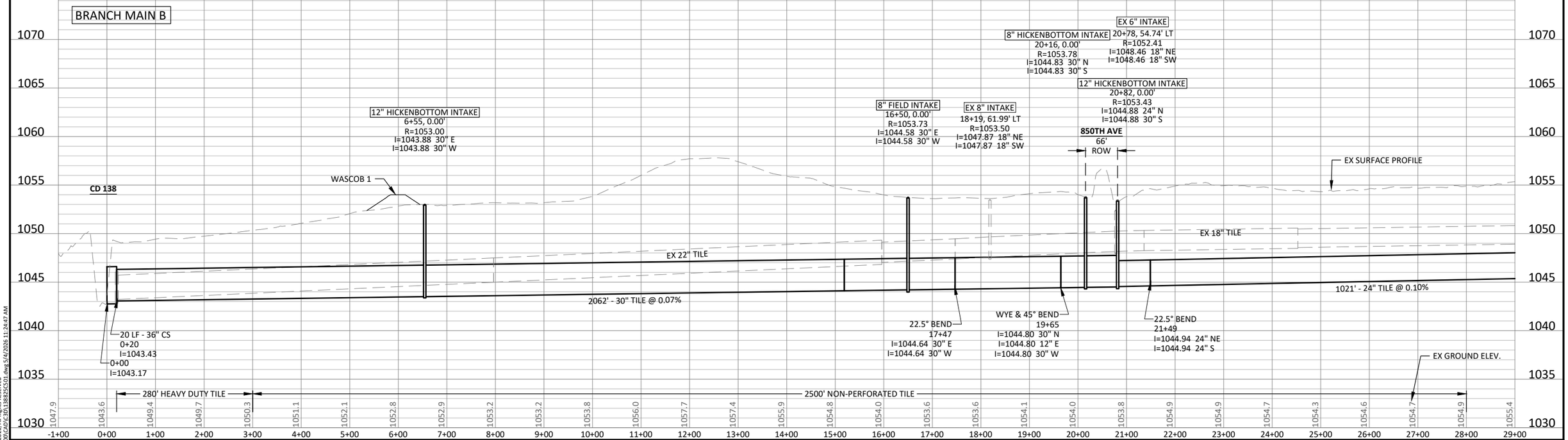
JGB			
DRAWN			
JGB			
CHECKED			
BLH			
CLIENT PROJ. NO.			
25X.138825.000			

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
GRADING PLAN
WASCOB - 2

SHEET
C3.02





HORZ. SCALE 0 100 200 FEET
VERT. SCALE 0 5 10 FEET

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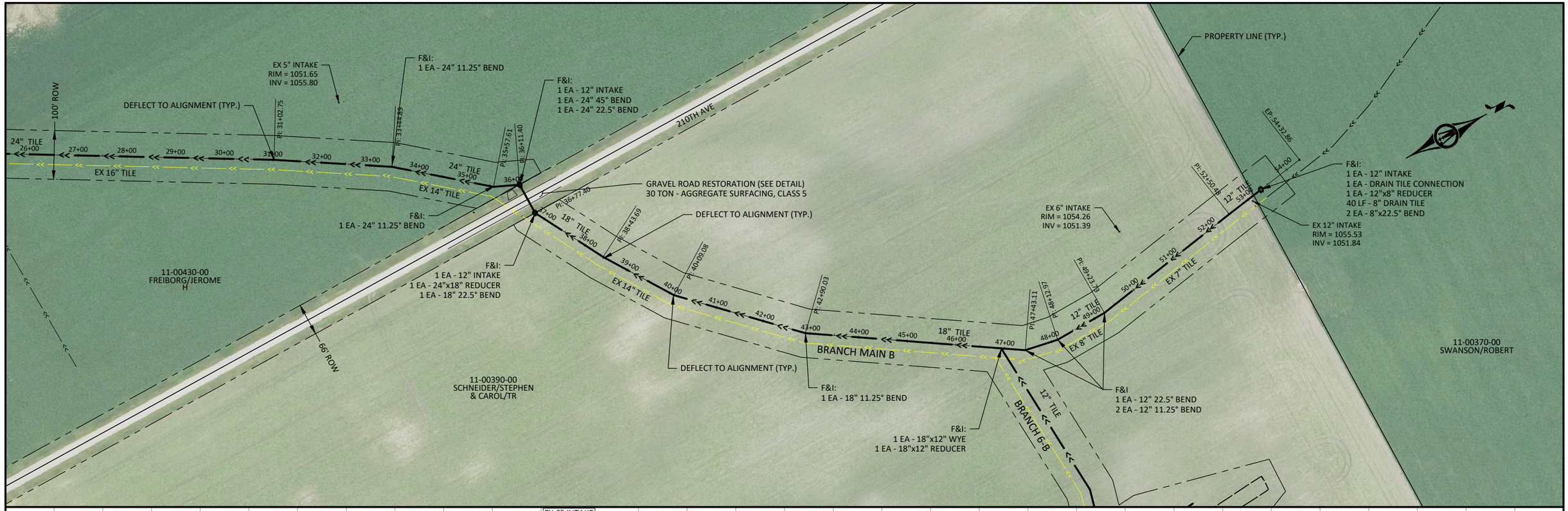
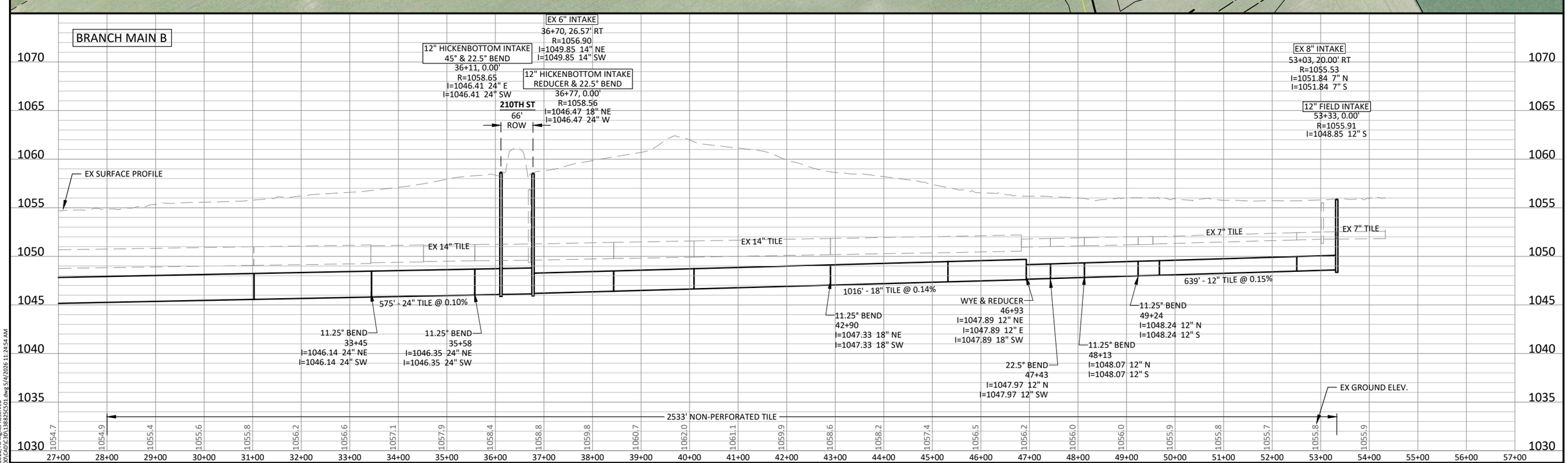
DRAWN	JGB
CHECKED	BLH
CLIENT PROJ. NO.	25X.138825.000

NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DRAIN TILE PLAN - BRANCH MAIN B
STA -1+00 TO 29+00

SHEET C5.01





HORZ. SCALE 0 100 200 FEET
VERT. SCALE 0 5 10 FEET

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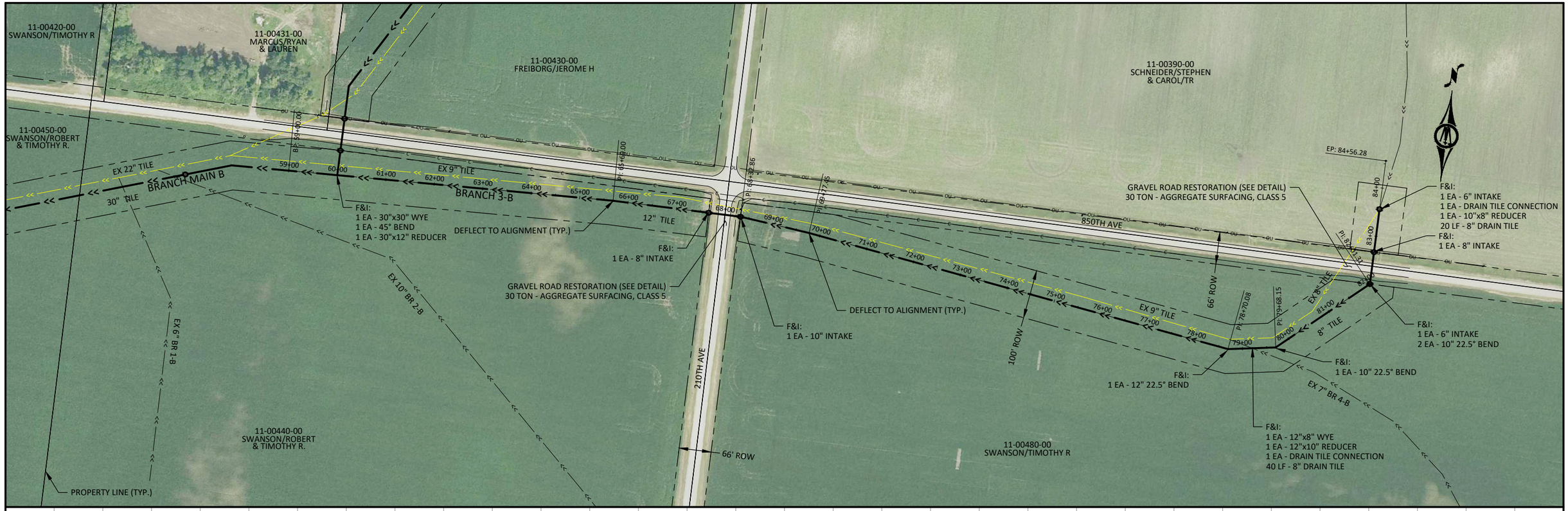
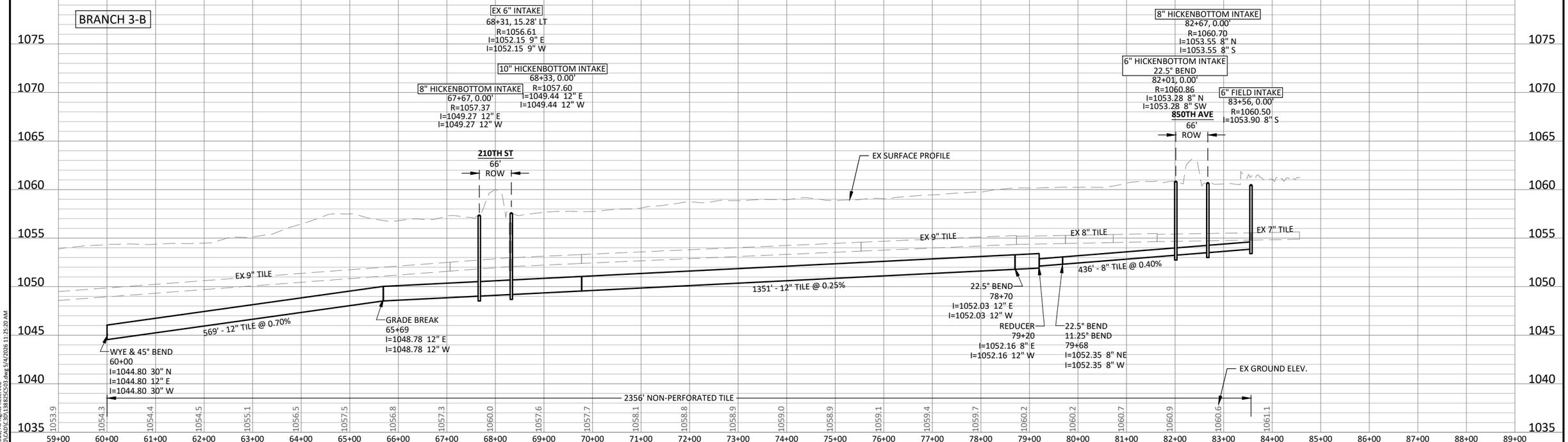
CHECKED	BLH
CLIENT PROJ. NO.	25X.138825.000

NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DRAIN TILE PLAN - BRANCH MAIN B
STA 27+00 TO 57+00

SHEET C5.02





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VERT. SCALE 0 5 10 FEET

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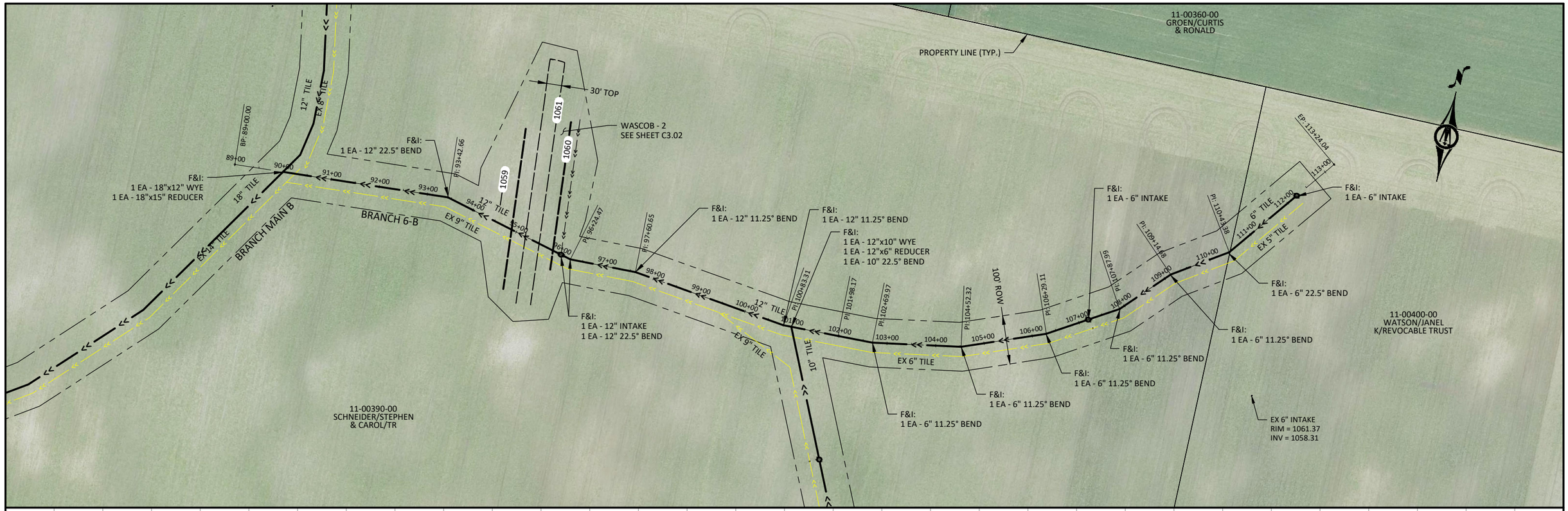
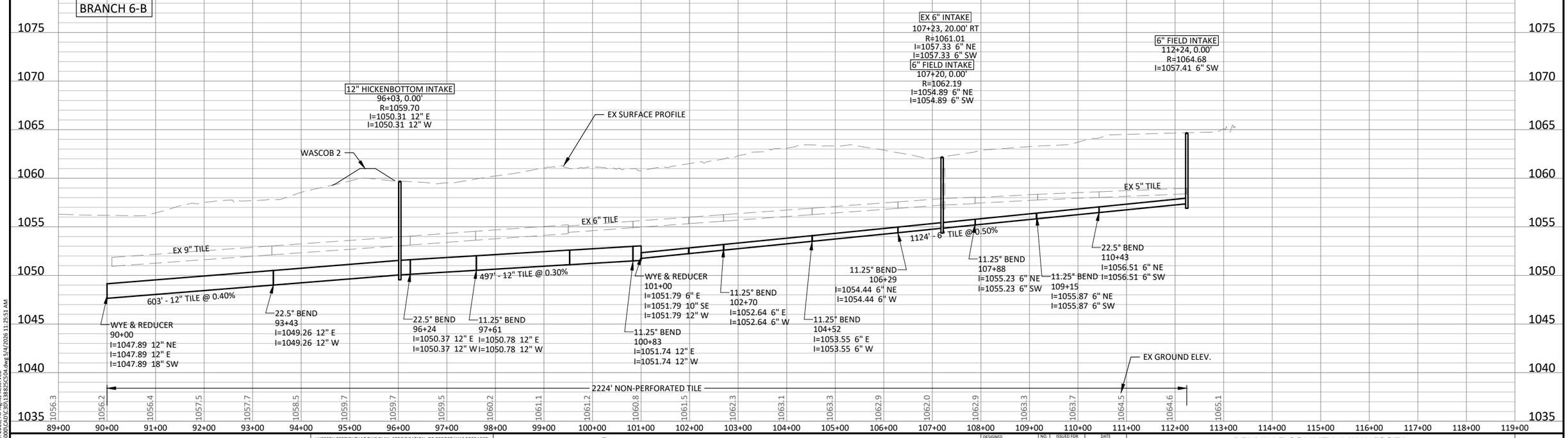
DRAWN	JGB
CHECKED	BLH
CLIENT PROJ. NO.	25X.138825.000

NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DRAIN TILE PLAN - BANCH 3-B
STA 59+00 TO 89+00

SHEET C5.03





BRANCH 6-B

HORZ. SCALE 0 100 200 FEET

VERT. SCALE 0 5 10 FEET

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PRELIMINARY NOT FOR CONSTRUCTION

BILL L. HELGET, P.E.
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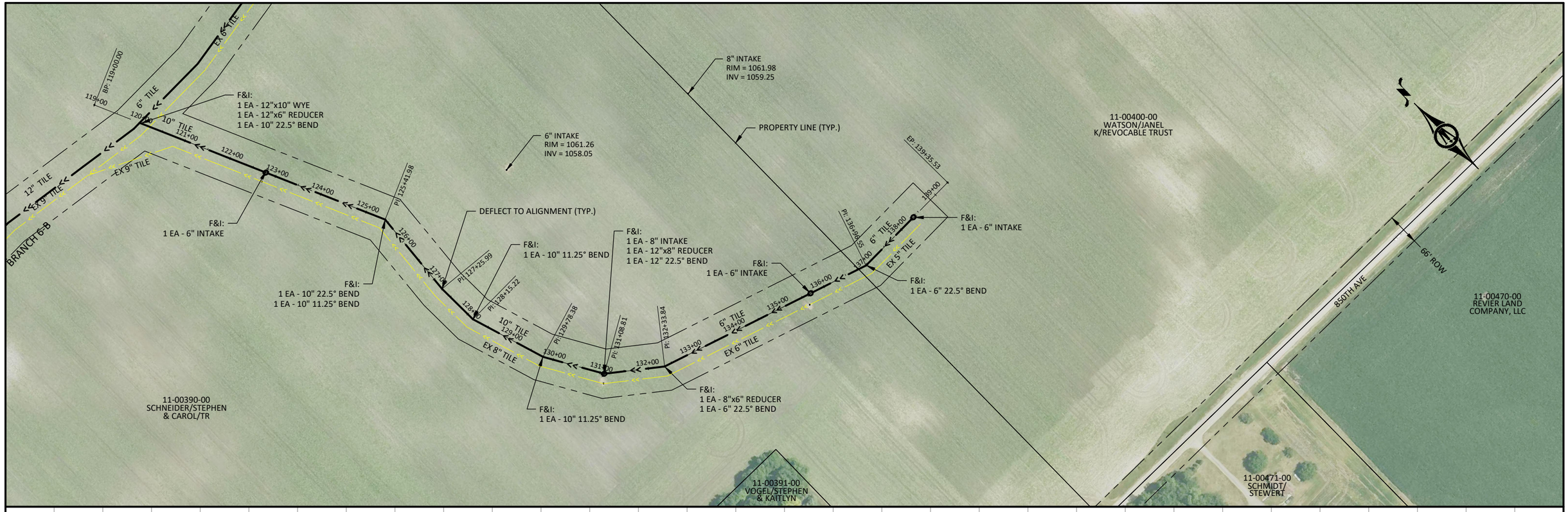
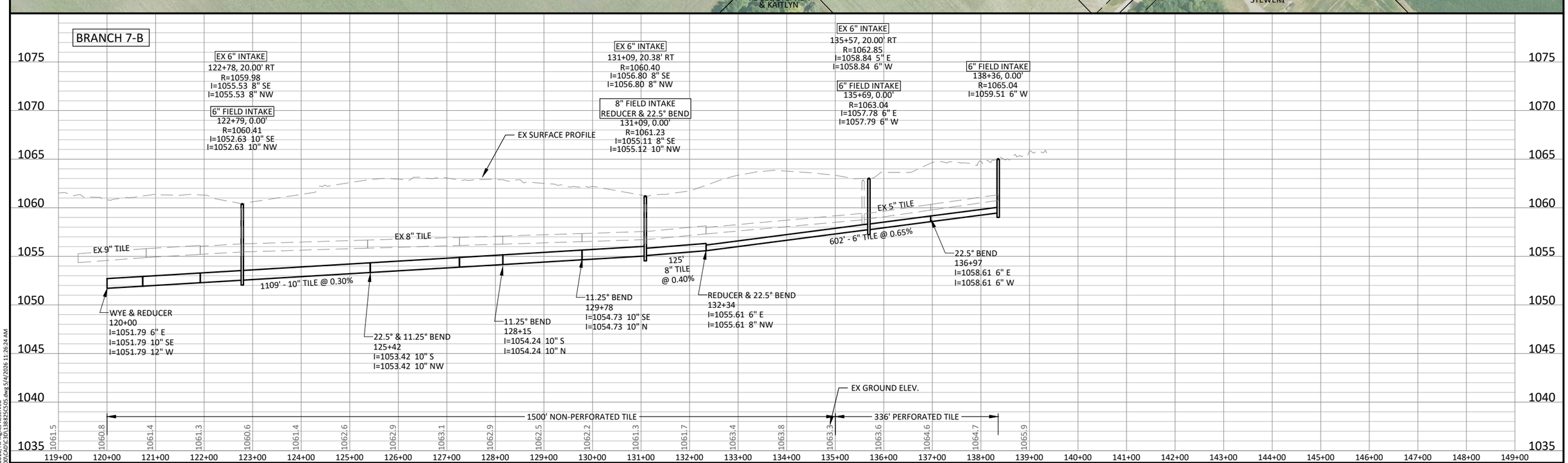
NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DRAIN TILE PLAN - BRANCH 6-B
STA 89+00 TO 119+00

SHEET C5.04





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VERT. SCALE 0 5 10 FEET

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DRAWN	JGB
CHECKED	BLH
CLIENT PROJ. NO.	25X.138825.000

NO.	ISSUED FOR	DATE

RENVILLE COUNTY, MINNESOTA
COUNTY DITCH NO. 138 BRANCH B IMPROVEMENT
DRAIN TILE PLAN - BRANCH 7-B
STA 119+00 TO 149+00

SHEET C5.05

Exhibit 2: Preliminary Cost Estimate

ENGINEER'S ESTIMATE

County Ditch 138 Branch B
Renville County
24X.138825.000

BOLTON & MENK
Real People. Real Solutions.

Date: 5/4/2026

Item No.	Item	Estimated Quantity	Unit	Unit Price	Total Amount
BASE BID					
1	MOBILIZATION	1	LUMP SUM	$40,000.00	$40,000.00
2	COMMON EMBANKMENT (CV, P)	2100	CU YD	$20.00	$42,000.00
3	AGGREGATE SURFACING CLASS 5	120	TON	$35.00	$4,200.00
4	EXPLORATORY EXCAVATION	70	HOUR	$300.00	$21,000.00
5	CONNECT TO EXISTING DRAIN TILE (12" OR LESS)	60	EACH	$600.00	$36,000.00
6	GRANULAR FOUNDATION ROCK	12000	LIN FT	$5.00	$60,000.00
7	TRENCH FOUNDATION ROCK	990	TON	$40.00	$39,600.00
8	6" FIELD INTAKE	6	EACH	$500.00	$3,000.00
9	6" HICKENBOTTOM INTAKE	1	EACH	$650.00	$650.00
10	8" FIELD INTAKE	2	EACH	$650.00	$1,300.00
11	8" HICKENBOTTOM INTAKE	3	EACH	$800.00	$2,400.00
12	10" HICKENBOTTOM INTAKE	1	EACH	$1,000.00	$1,000.00
13	12" FIELD INTAKE	1	EACH	$1,000.00	$1,000.00
14	12" HICKENBOTTOM INTAKE	5	EACH	$1,200.00	$6,000.00
15	4" SINGLE WALL PERFORATED TILE	360	LIN FT	$15.00	$5,400.00
16	6" NON-PERFORATED TILE	1500	LIN FT	$16.00	$24,000.00
17	6" PERFORATED TILE	340	LIN FT	$16.00	$5,440.00
18	8" NON-PERFORATED TILE	620	LIN FT	$20.00	$12,400.00
19	10" NON-PERFORATED TILE	40	LIN FT	$22.00	$880.00
20	12" NON-PERFORATED TILE	4780	LIN FT	$24.00	$114,720.00
21	18" NON-PERFORATED TILE	1020	LIN FT	$31.00	$31,620.00
22	24" NON-PERFORATED TILE	1600	LIN FT	$42.00	$67,200.00
23	30" NON-PERFORATED TILE	1800	LIN FT	$52.00	$93,600.00
24	30" HEAVY DUTY TILE	280	LIN FT	$80.00	$22,400.00
25	36" CM TILE	20	LIN FT	$150.00	$3,000.00
26	RANDOM RIPRAP, CLASS 3	30	TON	$110.00	$3,300.00
27	INLET PROTECTION	25	EACH	$100.00	$2,500.00
28	MULCH TYPE 1	57	TON	$175.00	$9,975.00
29	RAPID STABILIZATION METHOD 4	1900	SQ YD	$2.50	$4,750.00
30	STABILIZED CONSTRUCTION EXIT	1	LUMP SUM	$2,000.00	$2,000.00
				ESTIMATED BASE BID TOTAL:	**$661,335.00**
	TEMPORARY ROW DAMAGES	28.76	ACRES	$600.00	$17,256.00
				SUBTOTAL:	$678,591.00
				20% CONTINGENCY:	$135,718.00
				TOTAL ESTIMATED CONSTRUCTION COST:	**$814,309.00**
				DESIGN, ADMINISTRATION AND CONSTRUCTION ENGINEERING:	$162,862.00
				TOTAL ESTIMATED PROJECT COST:	**$977,171.00**

ENGINEER'S ESTIMATE

County Ditch 138 Branch B
Renville County
24X.138825.000

BOLTON & MENK
Real People. Real Solutions.

Date: 5/4/2026

Item No.	Item	Estimated Quantity	Unit	Unit Price	Total Amount	BRANCH MAIN B		BRANCH 3-B		BRANCH 6-B		BRANCH MAIN 7-B	
						Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost
BASE BID													
1	MOBILIZATION	1.00	LUMP SUM	$40,000.00	$40,000.00	0.58	$23,200.00	0.15	$6,000.00	0.17	$6,800.00	0.10	$4,000.00
2	COMMON EMBANKMENT (CV, P)	2100	CU YD	$20.00	$42,000.00	450	$9,000.00			1,650	$33,000.00		
3	AGGREGATE SURFACING CLASS 5	120	TON	$35.00	$4,200.00	60	$2,100.00	60	$2,100.00				
4	EXPLORATORY EXCAVATION	70	HOUR	$300.00	$21,000.00	32	$9,600.00	14	$4,200.00	12	$3,600.00	12	$3,600.00
5	CONNECT TO EXISTING DRAIN TILE (12" OR LESS)	60	EACH	$600.00	$36,000.00	25	$15,000.00	12	$7,200.00	11	$6,600.00	12	$7,200.00
6	GRANULAR FOUNDATION ROCK	12000	LIN FT	$5.00	$60,000.00	5,520	$27,600.00	2,360	$11,800.00	2,240	$11,200.00	1,880	$9,400.00
7	TRENCH FOUNDATION ROCK	990	TON	$40.00	$39,600.00	450	$18,000.00	210	$8,400.00	180	$7,200.00	150	$6,000.00
8	6" FIELD INTAKE	6	EACH	$500.00	$3,000.00			1	$500.00	2	$1,000.00	3	$1,500.00
9	6" HICKENBOTTOM INTAKE	1	EACH	$650.00	$650.00			1	$650.00				
10	8" FIELD INTAKE	2	EACH	$650.00	$1,300.00	1	$650.00					1	$650.00
11	8" HICKENBOTTOM INTAKE	3	EACH	$800.00	$2,400.00	1	$800.00	2	$1,600.00				
12	10" HICKENBOTTOM INTAKE	1	EACH	$1,000.00	$1,000.00			1	$1,000.00				
13	12" FIELD INTAKE	1	EACH	$1,000.00	$1,000.00	1	$1,000.00						
14	12" HICKENBOTTOM INTAKE	5	EACH	$1,200.00	$6,000.00	4	$4,800.00			1	$1,200.00		
15	4" SINGLE WALL PERFORATED TILE	360	LIN FT	$15.00	$5,400.00	80	$1,200.00			280	$4,200.00		
16	6" NON-PERFORATED TILE	1500	LIN FT	$16.00	$24,000.00	80	$1,280.00			1,140	$18,240.00	280	$4,480.00
17	6" PERFORATED TILE	340	LIN FT	$16.00	$5,440.00							340	$5,440.00
18	8" NON-PERFORATED TILE	620	LIN FT	$20.00	$12,400.00	40	$800.00	440	$8,800.00			140	$2,800.00
19	10" NON-PERFORATED TILE	40	LIN FT	$22.00	$880.00	40	$880.00						
20	12" NON-PERFORATED TILE	4780	LIN FT	$24.00	$114,720.00	640	$15,360.00	1,920	$46,080.00	1,100	$26,400.00	1,120	$26,880.00
21	18" NON-PERFORATED TILE	1020	LIN FT	$31.00	$31,620.00	1,020	$31,620.00						
22	24" NON-PERFORATED TILE	1600	LIN FT	$42.00	$67,200.00	1,600	$67,200.00						
23	30" NON-PERFORATED TILE	1800	LIN FT	$52.00	$93,600.00	1,800	$93,600.00						
24	30" HEAVY DUTY TILE	280	LIN FT	$80.00	$22,400.00	280	$22,400.00						
25	36" CM TILE	20	LIN FT	$150.00	$3,000.00	20	$3,000.00						
26	RANDOM RIPRAP, CLASS 3	30	TON	$110.00	$3,300.00	30	$3,300.00						
27	INLET PROTECTION	25	EACH	$100.00	$2,500.00	9	$900.00	6	$600.00	4	$400.00	6	$600.00
28	MULCH TYPE 1	57	TON	$175.00	$9,975.00	25	$4,375.00	10	$1,750.00	14	$2,450.00	8	$1,400.00
29	RAPID STABILIZATION METHOD 4	1900	SQ YD	$2.50	$4,750.00	1,100	$2,750.00	800	$2,000.00				
30	STABILIZED CONSTRUCTION EXIT	1.00	LUMP SUM	$2,000.00	$2,000.00	0.58	$1,160.00	0.15	$300.00	0.17	$340.00	0.10	$200.00
				ESTIMATED BASE BID TOTAL:	**$661,335.00**		**$361,575.00**		**$102,980.00**		**$122,630.00**		**$74,150.00**
	TEMPORARY ROW DAMAGES	28.76	ACRES	$600.00	$17,256.00	12.49	$7,494.00	5.10	$3,060.00	6.96	$4,176.00	4.21	$2,526.00
				SUBTOTAL:	$678,591.00		$369,069.00		$106,040.00		$126,806.00		$76,676.00
				20% CONTINGENCY:	$135,718.00		$73,814.00		$21,208.00		$25,361.00		$15,335.00
				TOTAL ESTIMATED CONSTRUCTION COST:	**$814,309.00**		**$442,883.00**		**$127,248.00**		**$152,167.00**		**$92,011.00**
				DESIGN, ADMINISTRATION AND CONSTRUCTION ENGINEERING:	$162,862.00		$88,577.00		$25,450.00		$30,433.00		$18,402.00
				TOTAL ESTIMATED PROJECT COST:	**$977,171.00**		**$531,460.00**		**$152,698.00**		**$182,600.00**		**$110,413.00**

Exhibit 3: Separable Maintenance

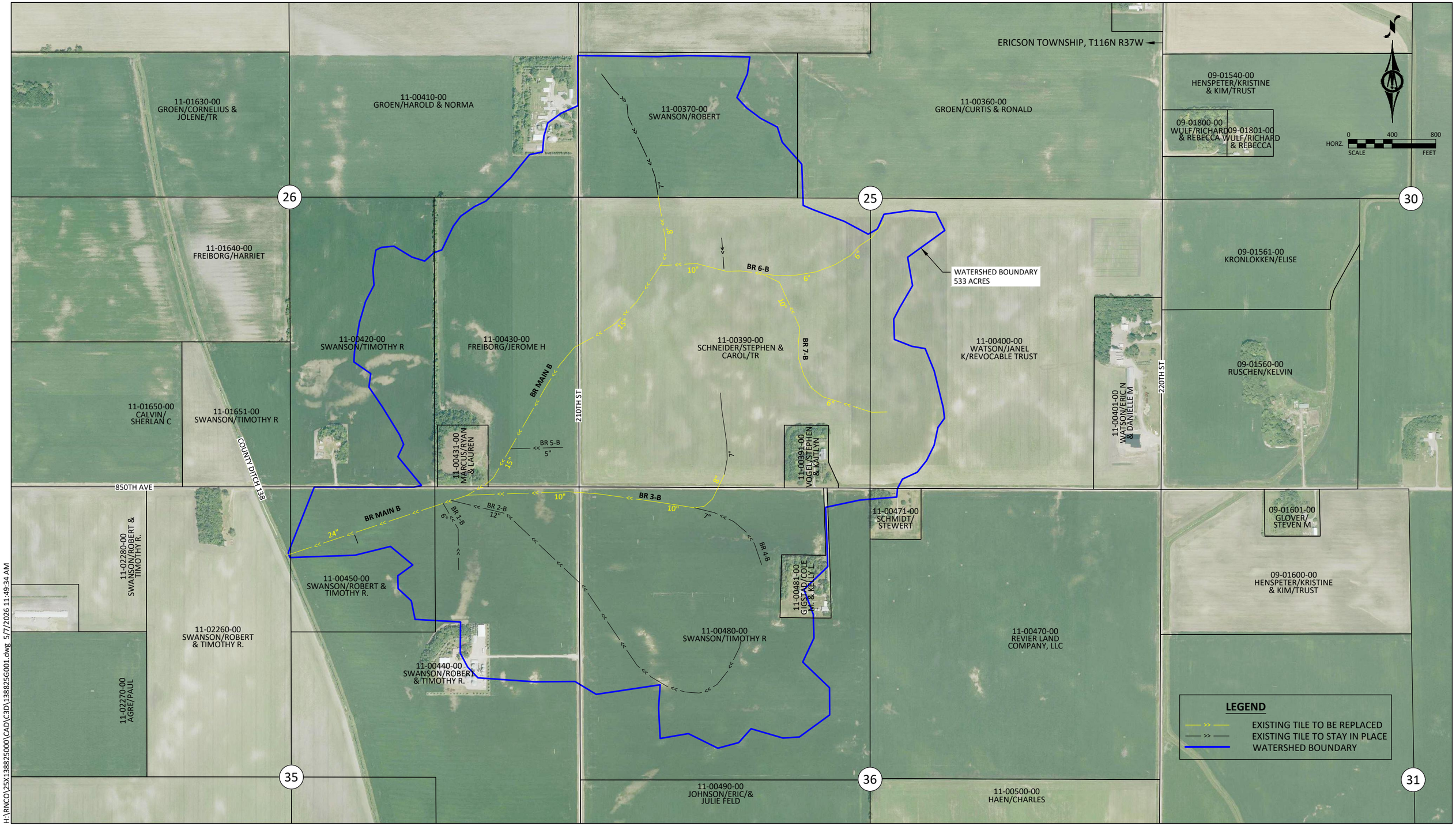
COUNTY DITCH NO. 138 BRANCH B

RENVILLE, MINNESOTA

SEPARABLE MAINTENANCE

MAY 2026

BOLTON & MENK



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SEPARABLE MAINTENANCE

County Ditch 138 Branch B
Renville County
24X.138825.000

BOLTON & MENK
Real People. Real Solutions.

Date: 5/4/2026

Item No.	Item	Estimated Quantity	Unit	Unit Price	Total Amount	BRANCH MAIN B		BRANCH 3-B		BRANCH 6-B		BRANCH MAIN 7-B	
						Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost
BASE BID													
1	MOBILIZATION	1.00	LUMP SUM	$40,000.00	$40,000.00	0.58	$23,200.00	0.15	$6,000.00	0.17	$6,800.00	0.10	$4,000.00
2	AGGREGATE SURFACING CLASS 5	120	TON	$354.00	$42,480.00	60	$21,240.00	60	$21,240.00				
3	EXPLORATORY EXCAVATION	70	HOUR	$300.00	$21,000.00	32	$9,600.00	14	$4,200.00	12	$3,600.00	12	$3,600.00
4	CONNECT TO EXISTING DRAIN TILE (12" OR LESS)	60	EACH	$600.00	$36,000.00	25	$15,000.00	12	$7,200.00	11	$6,600.00	12	$7,200.00
5	GRANULAR FOUNDATION ROCK	13040	LIN FT	$5.00	$65,200.00	6,180	$30,900.00	2,660	$13,300.00	2,240	$11,200.00	1,960	$9,800.00
6	TRENCH FOUNDATION ROCK	990	TON	$40.00	$39,600.00	450	$18,000.00	210	$8,400.00	180	$7,200.00	150	$6,000.00
7	6" INTAKE	13	EACH	$500.00	$6,500.00	4	$2,000.00	4	$2,000.00	2	$1,000.00	3	$1,500.00
8	8" INTAKE	3	EACH	$650.00	$1,950.00	2	$1,300.00					1	$650.00
9	6" HDPE TILE	1960	LIN FT	$16.00	$31,360.00	80	$1,280.00			1280	$20,480.00	600	$9,600.00
10	8" HDPE TILE	2300	LIN FT	$20.00	$46,000.00	700	$14,000.00	560	$11,200.00			1040	$20,800.00
11	10" HDPE TILE	3420	LIN FT	$22.00	$75,240.00	40	$880.00	2100	$46,200.00	960	$21,120.00	320	$7,040.00
12	15" HDPE TILE	3040	LIN FT	$26.00	$79,040.00	3040	$79,040.00						
13	18" HDPE TILE	820	LIN FT	$31.00	$25,420.00	820	$25,420.00						
14	24" HDPE TILE	1200	LIN FT	$42.00	$50,400.00	1200	$50,400.00						
15	24" HEAVY DUTY TILE	280	LIN FT	$70.00	$19,600.00	280	$19,600.00						
16	30" CM TILE	20	LIN FT	$125.00	$2,500.00	20	$2,500.00						
17	RANDOM RIPRAP, CLASS 3	30	TON	$110.00	$3,300.00	30	$3,300.00						
18	INLET PROTECTION	22	EACH	$100.00	$2,200.00	8	$800.00	5	$500.00	3	$300.00	6	$600.00
19	MULCH TYPE 1	57	TON	$175.00	$9,975.00	25	$4,375.00	10	$1,750.00	14	$2,450.00	8	$1,400.00
20	RAPID STABILIZATION METHOD 4	1900	SQ YD	$2.50	$4,750.00	1100	$2,750.00	800	$2,000.00				
21	STABILIZED CONSTRUCTION EXIT	1.00	LUMP SUM	$2,000.00	$2,000.00	0.58	$1,160.00	0.15	$300.00	0.17	$340.00	0.10	$200.00
				ESTIMATED BASE BID TOTAL:	**$604,515.00**		**$326,745.00**		**$124,290.00**		**$81,090.00**		**$72,390.00**
	TEMPORARY ROW DAMAGES	28.76	ACRES	$600.00	$17,256.00	12.49	$7,494.00	5.10	$3,060.00	6.96	$4,176.00	4.21	$2,526.00
				SUBTOTAL:	$621,771.00		$334,239.00		$127,350.00		$85,266.00		$74,916.00
				20% CONTINGENCY:	$124,354.00		$66,848.00		$25,470.00		$17,053.00		$14,983.00
				TOTAL ESTIMATED CONSTRUCTION COST:	**$746,125.00**		**$401,087.00**		**$152,820.00**		**$102,319.00**		**$89,899.00**
				DESIGN, ADMINISTRATION AND CONSTRUCTION ENGINEERING:	$149,225.00		$80,217.00		$30,564.00		$20,464.00		$17,980.00
				TOTAL ESTIMATED PROJECT COST:	**$895,350.00**		**$481,304.00**		**$183,384.00**		**$122,783.00**		**$107,879.00**

Exhibit 4: Right-of-Way Table

County Ditch 138 Br B Improvement

Renville County, MN

Right-of-way Table

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Date: 5/1/2026

Parcel No.	Property Owner	Legal Description	Repair Right-of-Way					Temporary
			Station to Station		Length	Width	Area (Acres)	$600
Branch Main B								
11-02260-00	SWANSON/ROBERT & TIMOTH R.	NE 1/4, NE 1/4	0+23	0+38	15	100	0.03	$18.00
11-00450-00	SWANSON/ROBERT & TIMOTH R.	NW 1/4, NE 1/4	0+38	14+27	1389	100	3.19	$1,914.00
		WASCOB-1	5+10	6+72	162	N/A	0.49	$294.00
11-00440-00	SWANSON/ROBERT & TIMOTH R.	NE 1/4, NE 1/4	14+27	20+15	588	100	1.35	$810.00
11-00430-00	FREIBORG/JEROME H	SE 1/4, SE 1/4	20+82	36+11	1529	100	3.51	$2,106.00
11-00390-00	SCHNEIDER/STEPHEN & CAROL/TR	NW 1/4, SW 1/4	36+77	53+14	1637	100	3.76	$2,256.00
11-00370-00	SWANSON/ROBERT	SW 1/4, NW 1/4	53+14	53+83	69	100	0.16	$96.00
Branch 3-B								
11-00440-00	SWANSON/ROBERT & TIMOTH R.	NE 1/4, NE 1/4	60+50	67+66	716	100	1.64	$984.00
11-00480-00	SWANSON/ROBERT & TIMOTH R.	NW 1/4, NW 1/4	68+33	82+01	1368	100	3.14	$1,884.00
11-00390-00	SCHNEIDER/STEPHEN & CAROL/TR	SW 1/4, SW 1/4	82+67	84+06	139	100	0.32	$192.00
Branch 6-B								
11-00390-00	SCHNEIDER/STEPHEN & CAROL/TR	NW 1/4, SW 1/4	90+40	96+24	584	100	1.34	$804.00
		WASCOB-2	94+15	96+24	209	N/A	1.86	$1,116.00
		NE 1/4, SW 1/4	96+24	110+46	1422	100	3.26	$1,956.00
11-00400-00	WATSON/JANEL K/REVOCABLE TRUST	NW 1/4, SE 1/4	110+46	112+64	218	100	0.50	$300.00
Branch 7-B								
11-00390-00	SCHNEIDER/STEPHEN & CAROL/TR	NE 1/4, SW 1/4	120+50	127+30	680	100	1.56	$936.00
		SE 1/4, SW 1/4	127+30	136+79	949	100	2.18	$1,308.00
11-00400-00	WATSON/JANEL K/REVOCABLE TRUST	SW 1/4, SE 1/4	136+79	138+85	206	100	0.47	$282.00
TOTAL					**Total Branch B Improvement Right-of-Way Damages =**			**$17,238.00**

H:\RNCO\25X138825000\2_Preliminary\A_Calculations\[138825_ROW.xlsx]Sheet1

Exhibit 5: Televising Images

Renville COUNTY
Service · Stewardship · Shared Responsibility

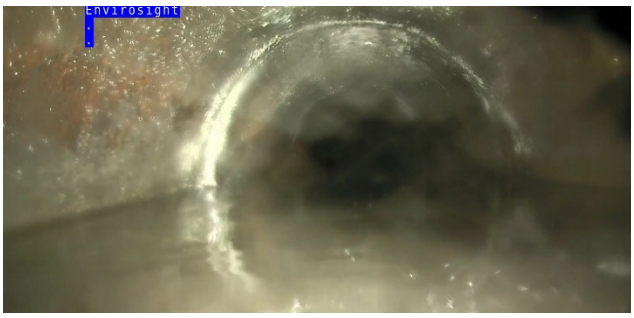
Drainage Department
Shane Bruns - Drainage Technician
Renville County Government Services Center
105 South 5th Street · Suite 319 · Olivia, MN 56277
Office: 320-523-3712 · Cell: 320-522-4774
Email: shane.bruns@renvillecountymn.gov
www.renvillecountymn.gov

Tile Conditions

- CD 138 Br – 6B was televised and revealed offset joints in several sections of the main (see picture below)
- CD 138 Br – Main B was found to be out of repair in spots
    - In Parcel Number 11-00450-00 & 11-00440-00 the tile line has been repaired in multiple locations
    - Sand was found in the tile in multiple locations in these same parcels
    - In Parcel Number 11-00430-00 the tile line has settled in spots throughout the parcel causing sags in the tile up to 7 inches
    - In Parcel Number 11-00390-00 the tile line was repaired in multiple locations as well as taking on dirt close to where Br – 6B outlets in to Br – Main B

Br – Main B 8” half full of mud

Parcel Number 11-00370-00



Br – 6B 9”

Parcel Number 11-00390-00

Br – Main B 14” filled with sand

Parcel Number 11-00390-00

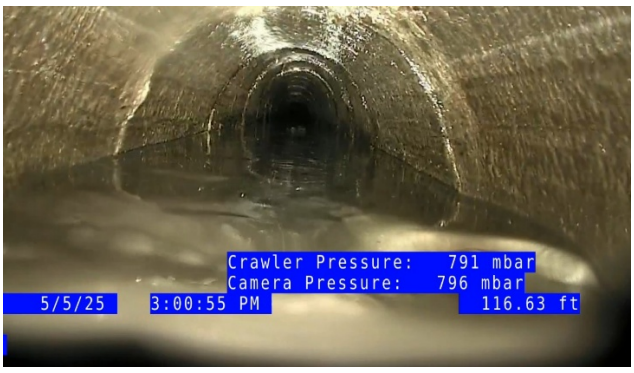


Exhibit 6: Petition for Improvement

PETITION FOR IMPROVEMENT OF DRAINAGE SYSTEM FOR RENVILLE COUNTY DITCH NO. 138

TO: RENVILLE COUNTY BOARD OF COMMISSIONERS AS THE DRAINAGE AUTHORITY FOR RENVILLE COUNTY DITCH NO. 138

Petitioners respectfully represent, state and request the following:

1. Jurisdiction.

The undersigned Petitioners constitute: (1) at least 26% of the owners of the property affected by the proposed improvement; (2) at least 26% of the owners of property that the proposed improvement passes over; (3) the owners of at least 26% of the property area affected by the proposed improvement; or (4) the owners of at least 26% of the property area that the proposed improvement passes over.

2. Designation of Drainage System.

This Petition requests the improvement of the drainage system known and designated as County Ditch No. 138 ("CD 138") located in Ericson Township, Renville County, Minnesota.

3. Need for Improvement.

The existing drainage system has insufficient capacity or needs enlarging or extending to furnish sufficient capacity or a better outlet. The proposed improvements are necessary because the existing drainage system does not have sufficient capacity to adequately drain agricultural land for modern farming practices. The drainage system is out of repair and the improvement petitioned for herein is for a separable portion of the drainage system. Therefore, a portion of the cost may be assessed as a repair.

4. Description of Proposed Improvement.

The proposed improvement would consist of improving and enlarging Branch B of CD 138, together with lateral branches Branch 3B, 6B, and 7B.

Branch B would be improved from its outlet into the open ditch portion of CD 138 in the NE ¼ of the NW ¼ Section 35 of Ericson Township and continue along its length to the southern boundary of the SW ¼ of the NW ¼ Section 25.

Branch 3B would be improved from its outlet into Branch B in the NE ¼ of the NE ¼ Section 35 and continue along its length to the southern boundary of the SW ¼ Section 25.

Branch 6B would be improved from its outlet into Branch B in the NW ¼ of the SW ¼ Section 25 and continue along its length to its terminus in the NW ¼ of the SE ¼ Section 25.

Branch 7B would be improved from its outlet into Branch 6B in the NE ¼ of the SW ¼ Section 25 and continue along its length to its terminus in the SW ¼ of the SE ¼ Section 25.

The portions of the drainage system subject to this petition consist of buried tile. Branches B, 3B, 6B, and 7B would be enlarged and capacity increased where necessary to meet the NRCS recommended standard ½ inch per day drainage coefficient. The location of the proposed improvements, subject to any alterations deemed prudent or necessary by the project engineer, are depicted on the map attached hereto as **Exhibit A** and is located in Ericson Township in Renville County.

Set forth below is a list of the 40-acre tracts or government lots that the proposed improvement would pass over, together with the names and addresses of the owners of those tracts; to wit:

	Owner	Address	PID	Description	Sec	Twp	Rge	County
1	Robert Swanson and Timothy R. Swanson, Trustees of Family Share Trust	84709 210th St Renville, MN 56284	11-02260-00	NE ¼ NW ¼	35	116N	37W	Renville
2	Robert Swanson and Timothy R. Swanson, Trustees of Family Share Trust	84709 210th St Renville, MN 56284	11-00450-00	NW ¼ NE ¼	35	116N	37W	Renville
3	Robert Swanson and Timothy R. Swanson, Trustees of Family Share Trust	84709 210th St Renville, MN 56284	11-00440-00	NE ¼ NE ¼	35	116N	37W	Renville
4	Timothy R. Swanson	84709 210th St Renville, MN 56284	11-00480-00	NW ¼ NW ¼	36	116N	37W	Renville
5	Jerome H. Freiborg	PO Box 327 Renville, MN 56284	11-00430-00	SE ¼ SE ¼	26	116N	37W	Renville
6	Stephen L. & Carol J. Schneider Living Trust (c/o Hertz Farm Management)	151 St. Andrews Court #1310 Mankato, MN 56001	11-00390-00	SW ¼ SW ¼	25	116N	37W	Renville
7	Stephen L. & Carol J. Schneider Living Trust (c/o Hertz Farm Management)	151 St. Andrews Court #1310 Mankato, MN 56001	11-00390-00	SE ¼ SW ¼	25	116N	37W	Renville
8	Stephen L. & Carol J. Schneider Living Trust (c/o Hertz Farm Management)	151 St. Andrews Court #1310 Mankato, MN 56001	11-00390-00	NW ¼ SW ¼	25	116N	37W	Renville

	Owner	Address	PID	Description	Sec	Twp	Rge	County
9	Stephen L. & Carol J. Schneider Living Trust (c/o Hertz Farm Management)	151 St. Andrews Court #1310 Mankato, MN 56001	11-00390-00	NE ¼ SW ¼	25	116N	37W	Renville
10	Janel K. Watson Revocable Trust & Curtis J. Watson Revocable Trust	306 Cedar Ave Prinsburg, MN 56281	11-00400-00	NW ¼ SE ¼	25	116N	37W	Renville
11	Janel K. Watson Revocable Trust & Curtis J. Watson Revocable Trust	306 Cedar Ave Prinsburg, MN 56281	11-00400-00	SW ¼ SE ¼	25	116N	37W	Renville
12	Robert Swanson	PO Box 653 Renville, MN 56284	11-00370-00	SW ¼ NW ¼	25	116N	37W	Renville

5. Public Utility and Health.

The proposed improvement will be of public utility and will promote the public health.

6. Agreement by Petitioners.

The undersigned Petitioners have been informed and understand that they may not withdraw as a petitioner at any time after this Petition is accepted by the drainage authority, except with the written consent of all other Petitioners on the filed Petition. Also, the undersigned Petitioners acknowledge and agree that they will pay all costs and expenses that may be incurred if the improvement proceedings are dismissed.

7. Cost Bond.

One or more petitioners shall cause a bond to be filed or a check to be delivered in the amount of at least $10,000.00 payable to the drainage authority. The bond or payment will be conditioned to pay the costs incurred if the proceedings are dismissed or if a contract is not awarded to construct the proposed improvement described in the petition.

WHEREFORE, the Petitioners respectfully request the following:

a. That the drainage authority accept this Petition, review it and determine that it is legally adequate; and

b. That the drainage authority appoint an engineer for purposes of the proposed improvement and direct the engineer to prepare an engineer's preliminary report for the purposed improvement, including allowing the engineer to analyze other potential routes for the proposed improvement and whether separable maintenance may be employed. Petitioners request Bill L. Helget, P.E., Bolton & Menk, be appointed as project engineer.

Dated: December 10, 2025.

Dean M. Zimmerli #0396791
dzimmerli@gislason.com
GISLASON & HUNTER LLP
Attorney for Petitioners
2700 South Broadway
P.O. Box 458
New Ulm, MN 56073-0458
Phone: 507-354-3111
Fax: 507-354-8447

[Signature pages to follow]

SIGNATURE PAGES FOR
PETITION FOR IMPROVEMENT OF DRAINAGE SYSTEM
FOR RENVILLE COUNTY DITCH NO. 138

Name of Petitioner(s) (please print or type):

Janel K. Watson as Janel Watson Revocable Trust & Curtis J. Watson Revocable Trust.

Ownership (check one):

_____ Individual
_____ Co-Owners (# of co-owners: _____)
_____ Parter (name of partnership: _____)
_____ Corporation or limited liability company (name of corporation or LLC: _____)
X Trust (complete name of trust: Janel K Watson Revocable Trust & Curtis J Watson Revocable Trust)
_____ Other (explanation: _____)

Statement of Authority:

The undersigned states and represents that if he or she is executing in a representative capacity, he or she has the authority to execute on behalf of the respective partnership, corporation, limited liability company, trust or other such entity.

The above-named Petitioner(s) owns the following tract(s) which the proposed improvement will pass over or which is affected by the proposed improvement.

Tract Description	Section	Township	Range	County
11-00400-00	25	116N	37W	Renville
11-00400-00	25	116N	37W	Renville

Dated: 10-23-25

Janel K. Watson for Janel K Watson Revocable Trust & Curtis J. Watson Revocable Trust
(signature)

Dated: 10-23-25

Janel K. Watson for Janel Watson Revocable Trust & Curtis J. Watson Revocable Trust
(signature)

Dated: _____

_____
(signature)

SIGNATURE PAGES FOR
PETITION FOR IMPROVEMENT OF DRAINAGE SYSTEM
FOR RENVILLE COUNTY DITCH NO. 138

Name of Petitioner(s) (please print or type):

Stephen L. Schneider, as Trustee of the Stephen L. & Carol J. Schneider Living Trust

Ownership (check one):

_____ Individual
_____ Co-Owners (# of co-owners: _____)
_____ Parter (name of partnership: _____)
_____ Corporation or limited liability company (name of corporation or LLC: _____)
X Trust (complete name of trust: Stephen L. & Carol J. Schneider Living Trust)
_____ Other (explanation: _____)

Statement of Authority:

The undersigned states and represents that if he or she is executing in a representative capacity, he or she has the authority to execute on behalf of the respective partnership, corporation, limited liability company, trust or other such entity.

The above-named Petitioner(s) owns the following tract(s) which the proposed improvement will pass over or which is affected by the proposed improvement.

Tract Description	Section	Township	Range	County
SW 1/4	25	116N	37W	Renville

Dated: _____ Stephen L. Schneider
(signature)

Dated: _____ _____
(signature)

Dated: _____ _____
(signature)

EXHIBIT A

County Ditch 138 Branch B
Renville County

Proposed Conditions
May 2025

BOLTON & MENK

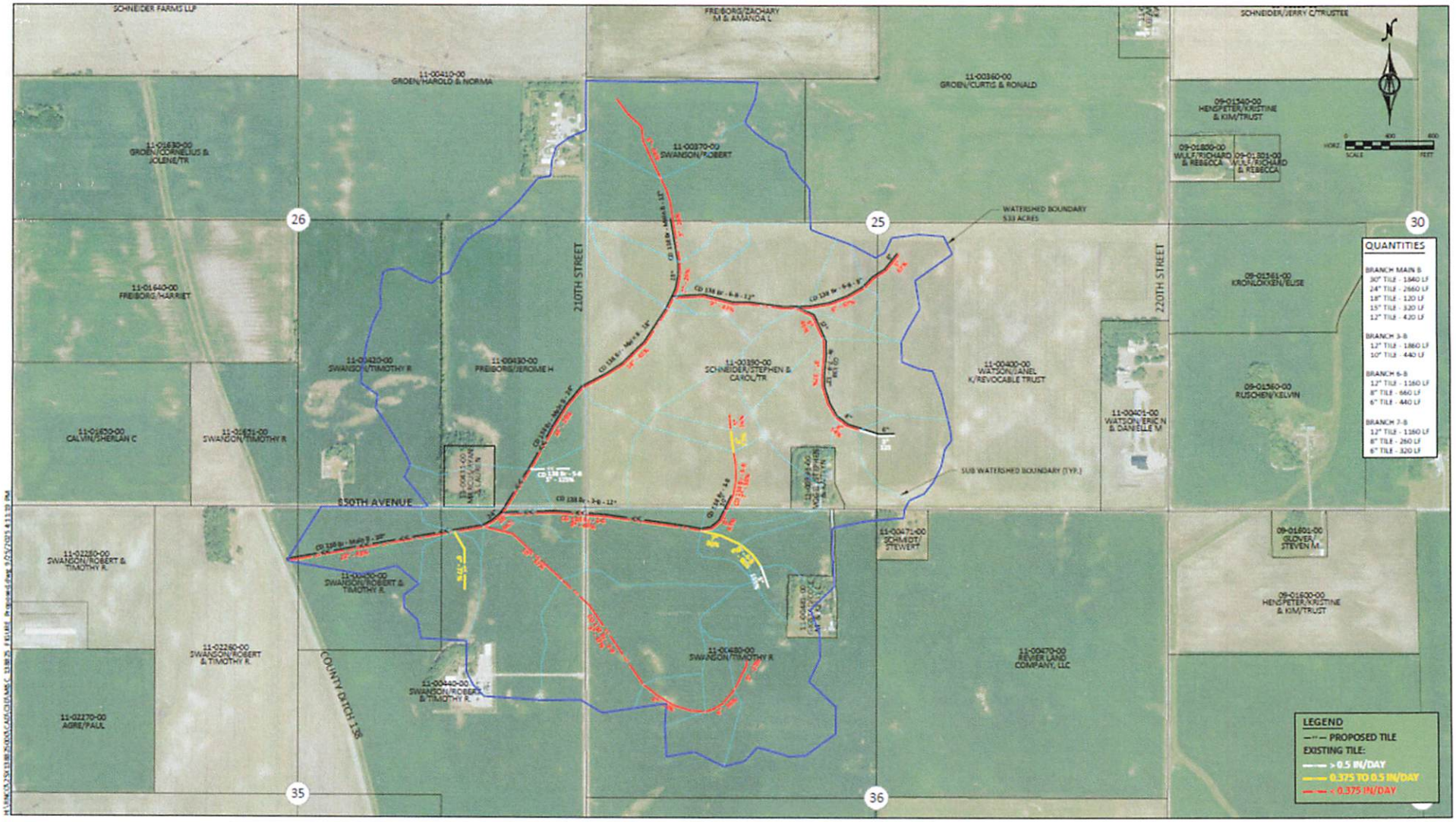


Exhibit 7: Tile Type Map

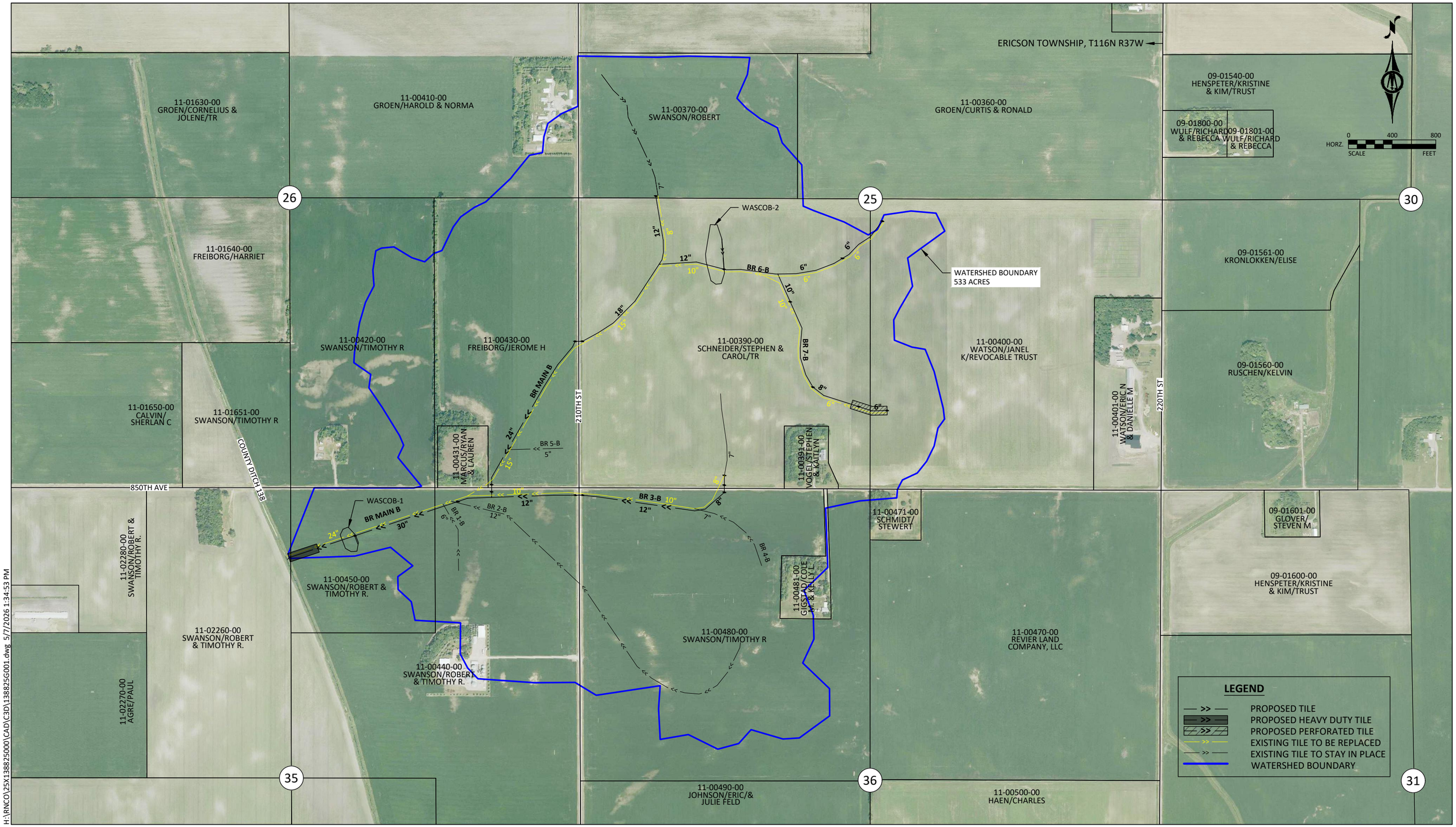
COUNTY DITCH NO. 138 BRANCH B

RENVILLE, MINNESOTA

TILE TYPE MAP

MAY 2026

BOLTON & MENK



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