

Meeting: Board of Managers Meeting date: 10/9/2025 Agenda Item #: 10.1

Item type: Permit

Title: Permit 25-381: 4685 and 4735 West Branch Road Culverts

Applicants: Ryan Ortlip (4685 West Branch Rd)

Clarke Reed (4735 West Branch Rd)

Prepared by: Maggie Menden

mmenden@minnehahacreek.org

Recommended Permit Conditions

Staff recommends approval of the permit for construction in accordance with the approved plans, and with the following conditions to be met in order for the permit to issue:

- Each co-applicant must submit a maintenance declaration for the culvert to be installed on their parcel for District approval, and provide a copy showing filing in the county property records
- Applicants to provide contractor name, email, and phone number for inspection correspondence
- Payment of permit fees

Summary

The property owners of 4735 (Clarke Reed) and 4685 (Ryan Ortlip) West Branch Road (Applicants), Orono, are seeking approval for a joint permit application for the replacement of an existing culvert and the construction of a new culvert, respectively (Project). While the project is occurring on two separate parcels, given the proximity of the two crossings, hydraulic modeling was conducted to encompass both projects and has been reviewed as such.

This permit is being brought before the Minnehaha Creek Watershed District (MCWD) Board of Managers due to a neighboring resident's interest, and a past variance application (MCWD Permit #24-460).

This Project triggers the District's <u>Floodplain Alteration</u> and <u>Waterbody Crossings & Structures</u> Rules. Staff and the District Engineer recommend approval with conditions, as the Project meets the applicable rules.

Project Location, History, and Proposed Scope

Location

4735 and 4685 West Branch Road are located in the City of Orono. Mr. Reed is the owner of 4735 West Branch Road (Lot 2, Block 1 of West Branch Acres), which is currently undeveloped aside from an existing driveway. Mr. Ortlip is the owner of 4685 West Branch Road (Lot 2, Block 1 of West Branch Hill), which is fully undeveloped.



Figure 1. Project Parcels (4735 and 4685 West Branch Road)

Hydrology

The Project is located within the Lake Minnetonka subwatershed, just northwest of Forest Lake.

The drainage area that flows from the west, into the site, encompasses 318 acres of land. As shown in the figure below, runoff flows under County Road 19, then under West Branch Road, and into a Manage 2 wetland. This wetland drains downstream via a second order stream, which flows through an existing 40.8-foot long, 48-inch diameter, corrugated metal pipe (CMP) culvert under the driveway at 4735 West Branch Road. Water then disperses into a downstream Preserve wetland before flowing into Forest Lake entering Lake Minnetonka.

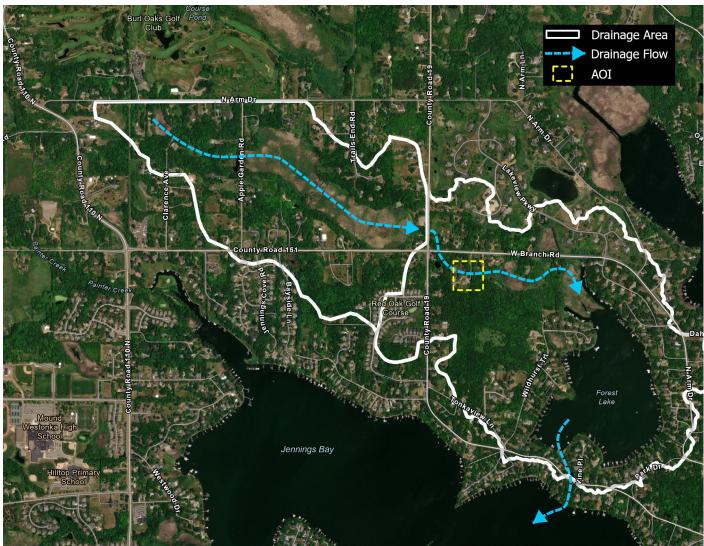


Figure 2. Drainage Area and Flows Through Project Area

<u>History</u>

The City of Orono's City Code limits the use of a shared driveway to a maximum of two parcels. Given that the 4735 driveway already services 4735 and 4701 West Branch Road, 4685 is not allowed to utilize the existing driveway and must provide their own access.

In 2023, Mr. Ortlip applied for and received an MCWD permit (23-290) for a driveway along the northwestern edge of 4685 West Branch Road and the associated stream crossing. The design included an extension of the existing culvert. Before construction commenced, it was discovered that the neighboring property did not consent to the proposed culvert connection due to concerns about shared maintenance, and therefore no driveway or culvert work occurred.

In 2024, Mr. Ortlip brought forward a design that was solely on his property. This proposal consisted of two 48-inch culverts beneath the proposed driveway. Hydrologic and Hydraulic (H&H) modeling showed that this design would increase the upstream flood stage and result in an increase in the 100-year flood elevation upstream by 0.04 ft on the 4701 parcel. This project was brought before the MCWD Board of Managers for a Variance, which the Board ultimately denied.

MCWD staff continued to coordinate with Mr. Ortlip, the former neighboring property owner, and the City of Orono to discuss the potential for a public road rather than a private shared driveway. It was discussed that if the City were to pursue a public road project, the benefiting properties would be assessed. At this time, a public road has not been pursued further.

MCWD then hosted a meeting between the two property owners to further discuss the local hydrology and potential paths forward. After this meeting, it was agreed that the two property owners were to continue the discussion and coordinate on coming to an agreeable design.

The 4735 property was sold in late 2024 and is now owned by Mr. Reed. Mr. Ortlip and Mr. Reed have coordinated with each other to address their property needs and are now proposing a joint project.

Project Purpose and Scope

The purpose of this project is twofold. First, an existing 48-inch corrugated metal pipe (CMP) culvert spans the 4701 and 4735 West Branch Road properties. The culvert is 40.8 feet long, with 19 feet located on the 4701 property, which will remain in place. At the 4701/4735 property line, the existing culvert will be saw cut, and the portion beneath the driveway on 4735 will be removed and replaced with a 48-inch high-density polyethylene (HDPE) culvert.

Second, at 4685 West Branch Road, a new driveway is proposed to the east of the existing 4735 driveway. Beneath this proposed driveway, a 48-inch HDPE culvert will be installed to continue the stream flow. Both culverts are necessary for property access and have been designed together to meet MCWD's regulatory standards.

The proposed single family home construction on 4735 is being reviewed as a separate permit under the Erosion Control Rule. The remaining work on 4685 is being reviewed as a separate permit under the Erosion Control and Wetland Protection Rules. Applicable permits must be approved and permitted before work may begin.

MCWD Rule Analysis

Floodplain Alteration

Due to the proposed work below the 100-year floodplain elevation of the on-site stream, the Floodplain Alteration Rule is applicable.

For the culvert replacement on 4735, the only work below the 100-year elevation will be from removing soil around the existing culvert to remove it, and then setting in the new culvert and restabilizing to existing conditions, resulting in no change to floodplain storage.

For the 4685 driveway, a total of 63 cubic yards of fill within the floodplain is proposed downstream of the existing driveway, within the 100-year floodplain elevation of the stream. This fill is proposed to provide structural support for the driveway crossing and culvert stability. To offset this fill, Mr. Ortlip is proposing to excavate 64 cubic yards of soil within the floodplain (see Attachment B), resulting in a 1 cubic yard increase of floodplain storage.

No impervious surface will be placed below the 10-year floodplain, thereby meeting the 4(c)1 criterion of this Rule.

Modeling of the proposed work has been reviewed and found to meet the No-Rise Standard by not increasing upstream or downstream floodstage. This modeling is analyzed further in the Waterbody Crossings & Structures section.

Staff and the District Engineer have reviewed the proposal against the applicable criteria and have confirmed that it meets the District's Floodplain Alteration rule requirements.

Waterbody Crossings & Structures

Because the Applicants propose to enclose a portion of the onsite watercourse within a pipe and construct a crossing, the District's Waterbody Crossings & Structures Rule is applicable.

Both segments of the culvert proposal demonstrate a specific need, as crossing this stream is the only way to access both properties.

The existing culvert does not provide any navigational capacity, as the pipe diameter is 48-inches. The proposed replacement and new culvert will not impact this non-existent navigational capacity.

In terms of aquatic and upland wildlife passage along the banks, the culvert replacement will preserve this passage ability. The proposed additional driveway and culvert have been designed to maintain existing conditions for aquatic and upland wildlife movement. Aquatic organisms will be able to move freely through the culverts as they do under the existing driveway, and the banks and adjacent areas are preserved to allow continued passage for terrestrial wildlife. Because the new crossing replicates the connectivity and access present at the existing culvert, overall wildlife passage along and within the waterbody will be preserved. Occasional passage of vehicles along the proposed downstream driveway will not disrupt wildlife movement.

Both structures have been designed to not promote erosion or scour. The culverts will be constructed per construction standards and will incorporate upstream and downstream riprap to dissipate flow energies.

The Applicants have considered alternatives to address our minimal impact requirement. Alternatives, such as no-build and over-build designs, have been evaluated against the proposed design. A no-build scenario would mean that there would be no crossing on the 4685 parcel, rendering it unbuildable. Over-build configurations consist of up to six culverts under the proposed driveway, which would require additional impacts to the bed and bank of the stream. Therefore, the proposed design is the minimal impact solution to address the project purpose of ingress and egress to private properties.

Given the proximity of these two crossings, the combined installation was modeled using a version of the District's H&H modeling (XP-SWMM software). In the 100-year storm event, this area would receive 7.4 inches of rain over a 24-hour time period. Existing conditions show the upstream 100-year High Water Level (HWL) being 943.131 feet and downstream being 939.616 ft. With the proposed changes to both culverts, the 100-year HWLs are reduced both upstream and downstream, therefore meeting the rule.

As the upstream and downstream proposed culverts will not be physically connected, there will be a gap between the two, which will allow for any water that accumulates between the driveways to continue flowing downstream.

Culvert configurations are shown in Attachment A and outlined below.

Table 1. Existing Culvert Configuration

| | Material | Length | Diameter | Upstream Invert Elevation | Downstream Invert Elevation |
|---------------------------------|----------|---------|----------|------------------------------|--------------------------------|
| Upstream (4701 & 4735 W Branch) | CMP | 40.8 ft | 48 in | 936.8 ft | 936.6 ft |
| Downstream (4685 W Branch) | - | - | - | - | - |

Table 2. Proposed Culvert Configuration

| | Material | Length | Diameter | Upstream Invert Elevation | Downstream Invert Elevation |
|----------------------------|----------|--------|----------|------------------------------|--------------------------------|
| Upstream (4701 W Branch) | CMP | 19 ft | 48 in | 936.8 ft | 936.72 ft |
| Upstream (4735 W Branch)* | HDPE | 20 ft | 48 in | 936.72 ft | 936.6 ft |
| Downstream (4685 W Branch) | HDPE | 22 ft | 48 in | 936.4 ft | 936.2 ft |

^{*}Upstream HDPE is to be connected to upstream CMP via coupler

Table 3. 100-Year High Water Levels

| | Upstream Wetland | Downstream of New Driveway | Downstream Wetland | Wetland to Forest Lake |
|----------------------|---------------------|-------------------------------|--------------------|---------------------------|
| Existing | 943.131 ft | 939.616 ft | 939.452 ft | 939.168 ft |
| Proposed | 943.094 ft | 939.608 ft | 939.446 ft | 939.163 ft |
| Change in Floodstage | -0.037 ft | -0.008 ft | -0.006 ft | -0.005 ft |

Public Comments

MCWD sent out the public notice for the proposed project on September 5th to all properties within 600 feet of the project site.

During this time, the District was contacted by the owner of 4701 West Branch Road, who expressed his concerns for the project. Through phone calls between Staff and the concerned resident, as well as an in-person meeting with the District Engineer and Administrator, MCWD understands the neighbor's concerns as the following:

Communications and Level of Involvement

The resident expressed concern that he was not included in design discussions between the applicants, as he has an access and maintenance agreement with 4735 West Branch Road. This agreement allows him to use the 4735 driveway to reach his property and requires him to share in maintenance costs. He indicated that, given his shared use of the driveway, he would have preferred to be part of the design process. District counsel reviewed the maintenance agreement and advised that the resident does not have a legal right with respect to the culvert replacement, and the resident did not assert otherwise.

While MCWD understands that the resident wanted to be involved in earlier design conversations, it is not MCWD policy to engage nearby residents in design conversations regarding projects that are not on their property. The typical point of engagement on a project is through the public notice process. Per Section 6 of the District's Procedures Rule, a public notice was issued to all property owners within 600 feet of the proposed work. The notice stated that the District was reviewing the project for compliance with its rules, and that interested parties could contact Staff or request that the permit be heard before the MCWD Board of Managers. The nearby property owner received this notice and subsequently engaged with Staff. After multiple conversations, Staff requested an in-person meeting with the resident, the District Engineer, and the Administrator to better understand his concerns and clarify the District's regulatory role.

Project Design

The resident also raised concerns about both the pipe material and size. He expressed a preference that the culvert at 4735 remain metal, consistent with the existing condition, and that it be upsized to provide additional capacity. He also expressed concern that the existing gravel driveway may be converted to pavement, noting that he operates heavy trucks and does not want to assume responsibility for maintaining pavement under the shared maintenance agreement.

While the District does not prescribe specific design elements such as culvert material, size, or driveway surface, the comments were passed along to the Applicants for their consideration. Culvert design elements such as material, size, length, and inverts are involved in MCWD's regulatory review, but in the capacity that the District reviews projects to ensure that changes to these design elements will still allow the proposal to comply with applicable rules. In this case, Staff and the District Engineer evaluated the proposed culverts under the Floodplain Alteration and Waterbody Crossings & Structures Rules, focusing on whether the designs would affect upstream or downstream flood elevations. As discussed in the Rule Analysis section, the Project was found to meet all requirements.

Hydraulic Modeling

The resident expressed concern regarding the accuracy of the hydrologic and hydraulic (H&H) modeling, including questions about the 100-year high-water levels and flow rates.

To evaluate the proposed culvert configuration, the applicants used the District's XP-SWMM model to model hydrologic conditions for both existing conditions and the proposed configuration. District Staff and the District Engineer reviewed the model inputs, assumptions, and outputs to confirm that the modeling appropriately represents site conditions and is technically sound. The results show that during the 100-year storm event (7.4 inches of rainfall over 24 hours), upstream and downstream high-water levels are slightly reduced compared to existing conditions (see Table 3). This demonstrates that the proposed project is not expected to increase flood elevations on any properties and meets the District's No-Rise standard. The permit is being issued as a single permit to ensure that both culvert sections are installed together, in accordance with the modeled scenario. Regarding concerns about drainage between the existing and proposed driveways, Staff and the District Engineer reviewed this issue as part of the model assessment. Given the size of the contributing watershed (318 acres) and the existing drainage patterns from the hill to the south, the impact of the downstream driveway and culvert on local drainage is expected to be negligible. The separation of the upstream and downstream culverts allows the ditch between the two driveways to drain through the new downstream HDPE culvert.

The resident also questioned whether the existing culvert can adequately handle existing flow conditions. The proposed replacement is expected to improve hydraulic performance because HDPE pipe is smoother and more hydraulically efficient than the existing CMP, allowing it to more effectively convey flows downstream.

Conclusion

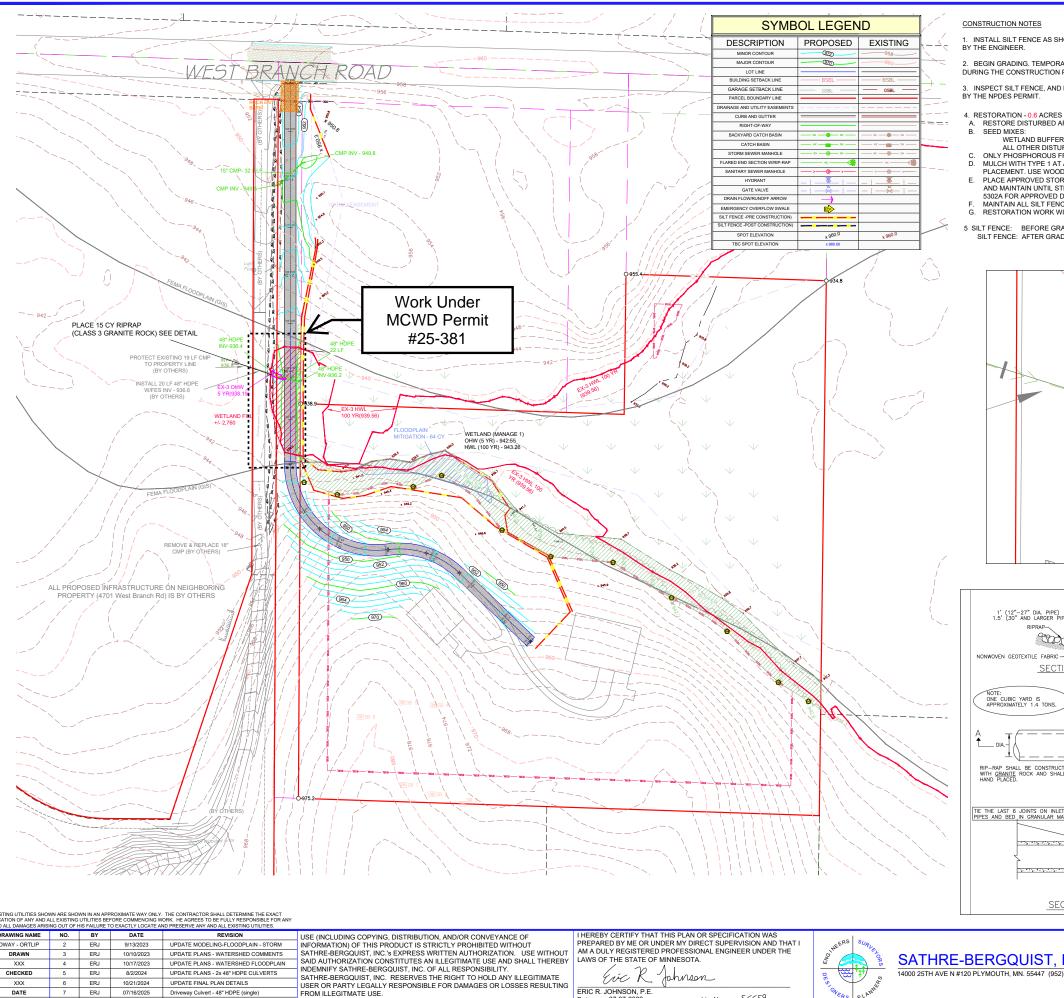
The proposed Project consists of two components: replacing the existing culvert at 4735 West Branch Road and constructing a new culvert at 4685 West Branch Road. Both activities occur within the floodplain and involve stream crossings, which trigger the District's Floodplain Alteration and Waterbody Crossings & Structures Rules.

Staff and the District Engineer have reviewed the application and find that the Project meets all requirements of the Floodplain Alteration and Waterbody Crossings & Structures Rules. Staff therefore recommends that the Board of Managers approve the permit, subject to the conditions outlined in this report.

Attachments

- A. Plans
- B. Floodplain Mitigation
- C. Modeling Exports
- D. Neighbor Comments

Attachment A: Plans



8 ERJ 09/29/2025 ADD 4701 West Branch Rd Plan Info

- INSTALL SILT FENCE AS SHOWN ON PLAN, AS REQUIRED BY THE CITY OF ORONO OR DIRECTED
- BEGIN GRADING. TEMPORARY DRAINAGE PIPE SHALL BE USED FOR INTERMEDIATE DRAINAGE DURING THE CONSTRUCTION PERIOD AS NECESSARY AND DIRECTED BY THE ENGINEER.
- 3. INSPECT SILT FENCE, AND ROCK ENTRANCE BERM AFTER ALL RAINFALL EVENTS AS REQUIRED
- RESTORE DISTURBED AREAS WITH 6" OF TOPSOIL, OR EXISTING ON-SITE ORGANIC MTRL.
- WETLAND BUFFER AREAS WITH MN/DOT 35-241
- ALL OTHER DISTURBED AREAS WITH MN/DOT 25-141.

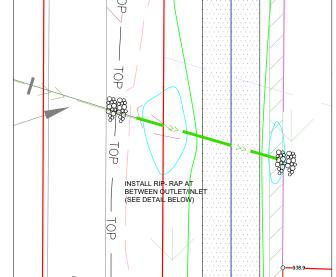
 ONLY PHOSPHOROUS FREE FERTILIZER IS TO BE USED ON SITE.
- D. MULCH WITH TYPE 1 AT A RATE OF 2 TONS/ACRE AND DISC ANCHOR IMMEDIATELY AFTER
- PLACEMENT. USE WOODFIBER BLANKET ON ALL SLOPES 3:1 (FT) OR GREATER.
 PLACE APPROVED STORM SEWER INLET PROTECTION IN OR AROUND ALL STORM SEWER INLETS
 AND MAINTAIN UNTIL STREET CONSTRUCTION IS COMPLETED. REFER TO CITY DETAILS 5302 &
- 5302A FOR APPROVED DEVICES.

 F. MAINTAIN ALL SILT FENCE UNTIL TURF HAS BEEN ESTABLISHED.

 G. RESTORATION WORK WILL BE COMPLETED WITHIN 72 HOURS OF GRADING COMPLETION.

5 SILT FENCE: BEFORE GRADING - 1,285 LF SILT FENCE: AFTER GRADING - XXX LF

*NOTE - SIGNIFICANT TREES GREATER THAN 36" IN DIAMETER SHALL REMAIN IN PLACE. CLEARING OF TREES/AREA WILL BE COMPLETED AS NECESSARY FOR THE GRADING/INSTALLATION OF THE STORM



INLET/OUTLET RIP-RAP (1"=10')

MACHINE SLICE 8"-12" DEPTH (PLUS 6" FLAP) SILT FENCE

ROCK ENTRANCE BERM

---- POST GRADING SILT FENCE

CONCRETE WASHOUT

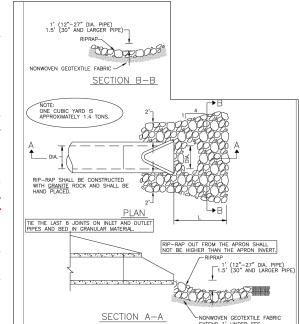
INLET PROTECTION

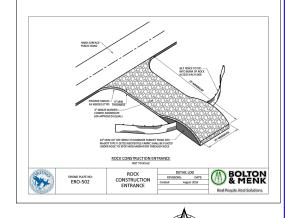
EROSION BLANKET

SILT FENCE

ROCK DITCH CHECK

BIO-ROLL





Eic R Johnson ERIC R. JOHNSON, P.E. Lic. No. 56659

SATHRE-BERGQUIST, INC. 14000 25TH AVE N #120 PLYMOUTH, MN, 55447 (952) 476-6000

ORONO, MINNESOTA

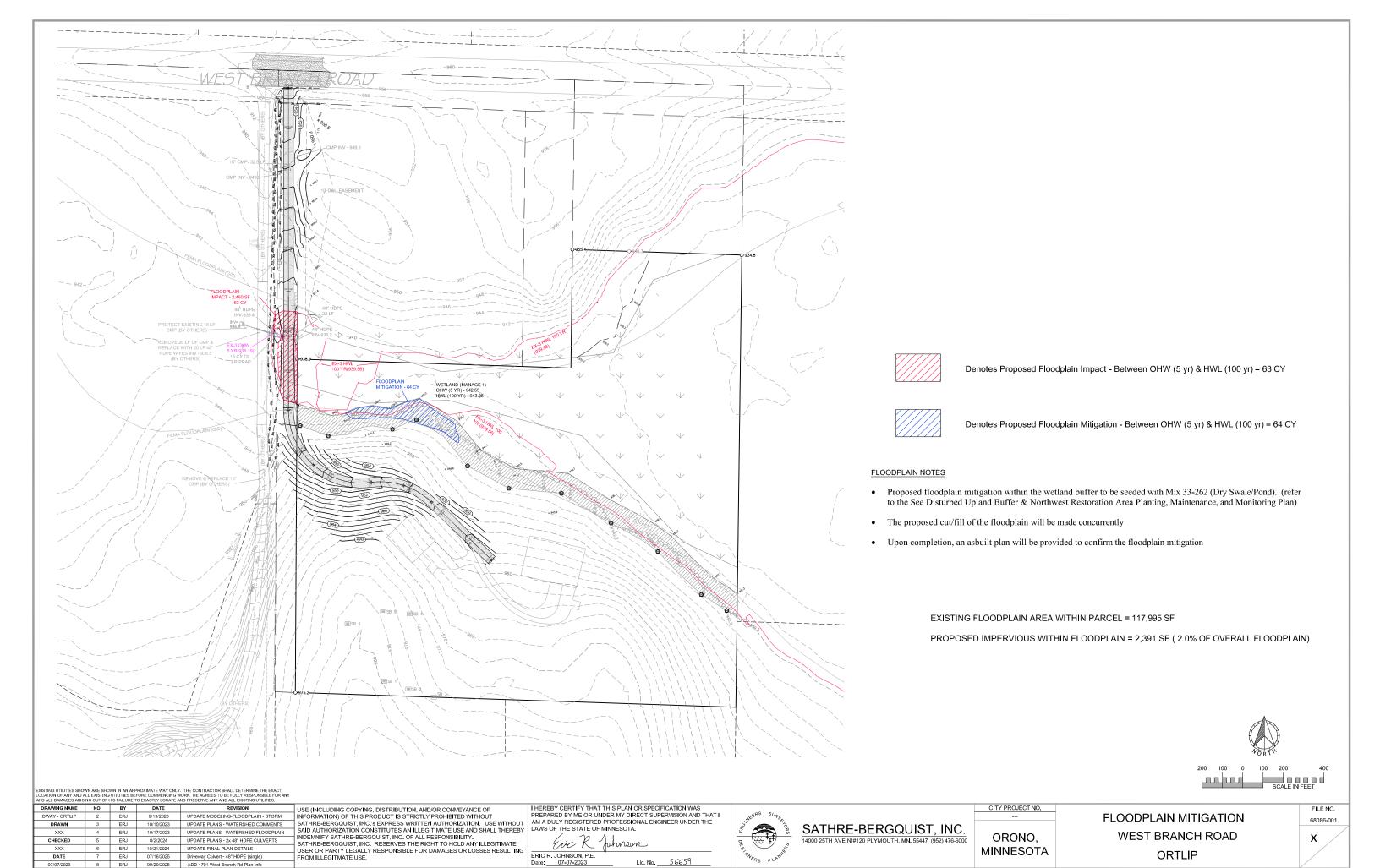
CITY PROJECT NO.

DRIVEWAY PLAN WEST BRANCH ROAD **ORTLIP**

FILE NO. 68086-001

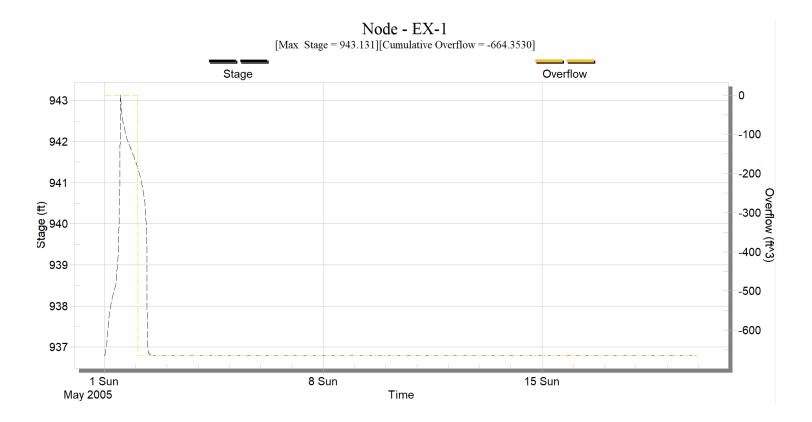
D1

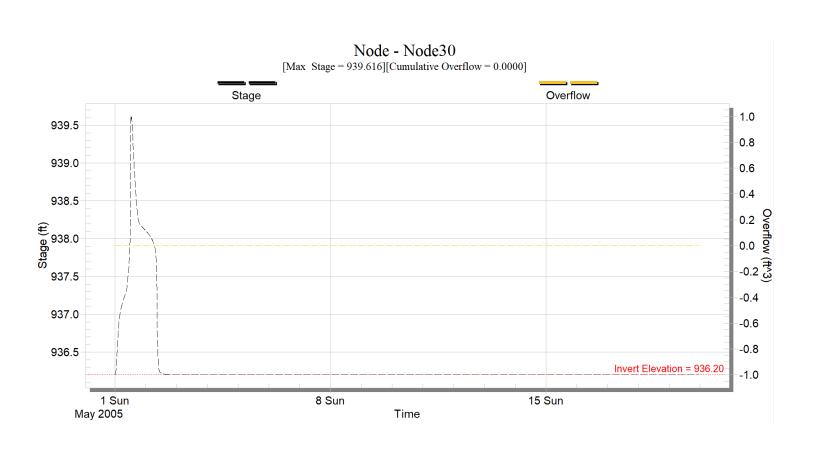
Attachment B: Floodplain Mitigation



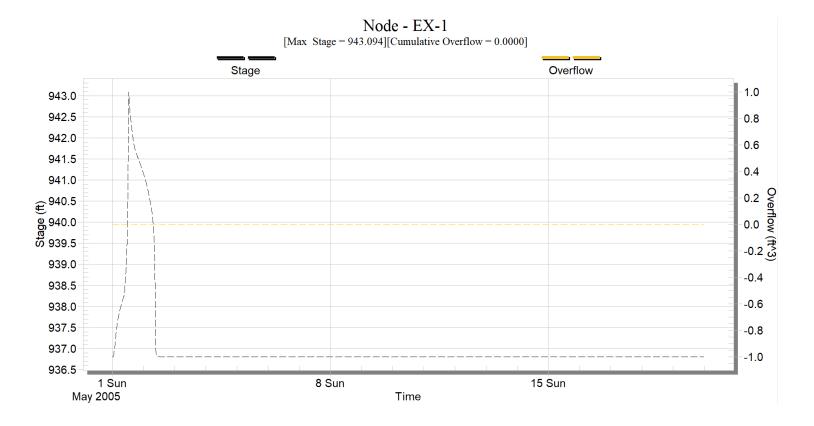
Attachment C: Modeling Results

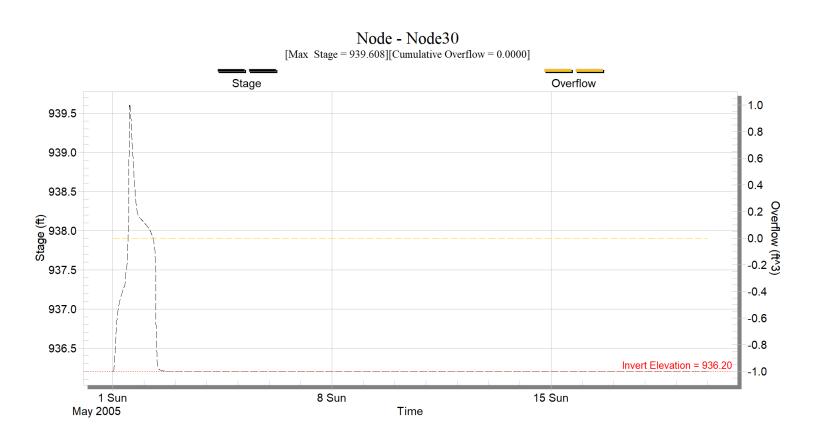
Existing





Proposed





Attachment D: Neighbor Comments

To: Westavohed District Aususton 9-19-25 Ryan has decared and Hed in Past Causing luge Problems.
Major Concern's with cultert design Ca ryans driveway (instifficient drainage) will cause more bankup rise in water than before, Provide All Techial duta b watershed during out of discussions D There is a driveway agreement that I have to maniforme driveway I wooded to be Involved... I Both you & Clark and not include me IN any discussions I was told nothing happing at all or driveway was astring Dimmer was told nothing happenings mark the birther told me he would keep me in loop on anything did not hear mything from him galler Mark did not say anything about Cutting colvert inhalf and conting metal to Partie or anything about of Paving Ariveway. I can not have Pared drive My Bus of year 800 Any Time

Page 2 D Need all modeling designs 949-25
reviewed Ryan Selis Data designs reviewed Ryan Stay's there is 50 differt ways he total and only one works... I want to see [I will hold All porties involved Response for langes D Need missiminates of 40 to colvert Hight Both West and East side I I need to talk to Atlaney to know my rights . --1) Placement of Silt Ferces Ryans + clarks (many applear to be missing) sontine Low avers with no protection of Anen needs to be Protected theres praininge. 1) Drainage datch from west Branch to hill the whole way (missing) Rygnis 4 foot colvert will take on much more water then my 4 foot and more water added from driveway Serface

Page 3 949-25 L Ryanis driveway design will ouve higher water level for sure... Ryalis Culvert Will take on Lots more water

D Request AN flow from. O Both driveway serfaces OH ST Word from Albatson/Clark 15" Culvert from upper south from Sage hill 1 Extra water from south curve of Ryans Priveway D Ryans 48" Evlvat] max. hight of Lowest part of discovery High wide mark , your Englusor said (2000) Max Flow rate's of culverts (recmended)

48" x 40' 15" x 20' 48 x 20 recmended)

Steel / POLY

Page 4 9-19-25 DI want large copy's of 100 year high worter
Ryans driveway and clarks drive way
plans o I I want to know date's of meeting with ryan or Clark(mark) and any discussion and what talked about ... Maggie said she would have Flow Rates and Recembed flow for colverts and Modeling for meding for us on 9-17-25 you did not have any avabile 1) Normal water levels and max levels 1) At this time without data I can not Aprove kyan or clark designs of have huge designs concerns ...
with both driveways ... I I needed to be included in both David Albertson