To: KayLeigh Miller

From Ian Ehrsam, MS 7B Engineering

CC: Justin Shaw, PE, CFM and Brandt Souvenir,

Date: July 09, 2024

Subject Response to HMH Comments on SM24-105 Phil McNearney

We have reviewed the comments provided in the City of Ponderay's review memo dated June 24, 2024, for the SM24-105 project. Below are our responses to each of the points raised by Justin Shaw, PE, CFM, and Brandt Souvenir, EI.

1. Driveway Culverts:

- **Verification of Driveway Culvert:**
  - The culvert is an underdrain or storm network it's not in the roadway. The top is a rock infiltration ditch designed to handle 3.93 cfs. The storm network is adequately sized, with the capacity of the 6" underdrain being approximately 0.57 cfs. The drainage from the front of Basin A and Colville Lane generates about 0.35 cfs, and when including Republic Lane, it totals 0.53 cfs during a 25-year, 24-hour event. Since 0.57 cfs > 0.53 cfs, the system is sufficient. Note that pavement updates are being considered as most of the subdivision plans to pave Colville Lane. I have adjusted the rock infiltration channel to act as a treatment method which is capable of handling the 25 yr storm event.
  - Drainage from Republic Lane will enter a gravel valley gutter or alley road section. The ditch line is being adjusted to address ponding in the corner. See commit below
- **Clarification on Drainage Area Size:**
  - A high point was causing some ponding in the hammerhead. The drainage ditch for Republic Lane will be connected (regraded) into to a gravel valley gutter (alley road section) to facilitate sheet flow towards the stormwater treatment (wet pond) on the south end of the property. The south half of Republic Lane will be directed into the alley, hence included in Basin B calculations. Adjustments have been made to the basin as per your concern, ensuring all drainage is collected above the underdrain or culvert. Calculations have been provided showing that if Republic Lane drainage is connected to that underdrain, it can handle the flows.
- **Elevation:**
  - Catch basin S-1 has been lowered to the treatment storm elevation to collect drainage but is over the 25 yr event. There is an underdrain connecting the existing east half of the building 1 to the proposed wet pond at the back. This underdrain is about 1.5 feet below the surface, complying with traffic rating H-25 requirements for pipes under 48". The lowest FG above the underdrain is about 2134.1' (pipe invert out is 2132), providing about 1.5 feet of cover. At the high point catch basin, FG is about 2144.88, and pipe invert is about 2132.80. The catch basin is about 1.5' off of the building so vehicles aren't driving over it. The existing driveway has an

alley or gravel valley gutter, and additional calculations show that it can direct the drainage towards the rock infiltration channel.

2. Parking:

- **Existing Front Parking Lot:**
  - The existing front parking lot was approved in the original plan (SM22-086) dated March 2022. Adjustments were made during construction to strengthen the turn-in for easier access for heavy vehicles (snowplows and etc.) The parking layout remains the same with additional space between it and the building (before there was about 4 ft now there is about 6.5 ft. There should be no issues with parking spots 3 and 6 backing into Colville; I did perform turning analysis with autoturn to demonstrate that spot 6 will not hit the building. Its tight but if more room is needed, we could adjust spot 4 into a compact space which would allow an additional 1.5' (8 ft in total between space 6 and the building). Spot 3 the driver can pull through I don't see any issue with that space.
- **Existing Driveway Approach:**
  - The driveway approach is existing and is shown as it was built. It is a gravel parking lot without marked spaces. The spaces are only shown only to indicate that the buildings have sufficient parking for their intended use. The extra space makes it easier for the snow plow equipment or heavy vehicles associated with the building. There is no need to adjust this.
- **Republic Lane's Easement:**
  - The easement ends at the south end of the hammerhead as shown on the plan. The east parking lot edge has been adjusted 2 feet west. Phil should stay away from utilities that Lawson Tate has constructed on the property line.

3. Stormwater:

- **Basin extents**
  - Refer to "Verification of Driveway Culvert Comment".
  - Drainage from Republic Lane will enter a gravel valley gutter or alley road section. The ditch line is being adjusted by this plan to address ponding in the corner.
- **Clarification on Utility Easement:**
  - The existing easement is a stormwater and utility easement as per the McNearney Mill Plans, and should allow for stormwater infrastructure as we intend on handling additional drainage from the private roads.
- **Ditch and Culvert Verification:**
  - The ditch and culvert running through the center of the lot were abandoned/removed per the approved plan (SM22-086) dated 03/22 for McNearney Shop before Building 1 was constructed. The existing culvert was under the mill site back in the 2000s and was not used in the McNearney Mill subdivision as it was about 3 ft under the ground. This culvert was used to collect drainage from the green building (own by Zachary Betz currently) and dispose drainage in the existing ditch. The existing swale was designed with an overflow which was a valley gutter over Marble's back entrance.

- **Drainage System Connection and Ponding Issues:**
    - Catch basin S-1 has been lowered to the treatment storm elevation to connect drainage. The rock infiltration ditch will direct drainage to the back. I have adjusted the calculations to show that the rock infiltration ditch can store and treat the additional road areas.
- **½-IN impervious runoff analysis is no longer required by code.**
    - The ½ in impervious (rational method) was used on the existing swale that is being removed with the proposed improvements. We performed the ½-in impervious runoff analysis to compare to the proposed stormwater facilities. This analysis was removed to clear some confusion.
- **Traffic-Rated Catch Basins:**
    - Basin S-4 collects roof drainage only and is next to the building under the roof, thus not subject to traffic. S-1 is behind utilities in the rock infiltration trench, outside of the parking lot and right-of-way. Phil could construct some concrete bollards to protect the building and basin S-4 but I don't see a need for it to be traffic rated.
- **Plan Changes Wet Pond Overflow:**
    - The bypass ditch was not constructed as per the plans for Los Enterprises LLC (Monarch Marble). After several flooding incidents, the ditch has rerouted onto Noidanat LLC (Lakes North Property Boundary). The drainage head towards the east ditch of McNearney Road, similar to the existing ditch that was filled in by Monarch Marble. If it backs up, heads east towards a natural drainage following McGhees' west property towards the drainage behind Vermeer
    - Plans have been changed. The primary discharge will be a connection to the existing ditch which was rerouted per the city approved plan for "SP18-045" by others for Monarch Marble on the southwest corner of the property. This bypass ditch should be constructed by others as enforced by the City of Ponderay per the approved plan. The pond will also have one emergency overflow into the existing drainage ditch that has routed itself.
- **Stormwater discharges :**
    - The predeveloped (before any construction) discharge about 1.33 cfs from the site. Existing condition for the industrial site was closer to 1.54 cfs from the site only. However, for the entire Mill use to discharge into the existing ditch before it was filled in.
    - The analysis now shows that after treatment the post develop drainage will discharge about 1.19 cfs from the site into the bypass ditch which if built per the approved plans has a capacity of 1.77 cfs before it overflows onto Lakes Concrete. The emergency overflow is set at the 25 yr- 24 hr peak storm event.

4. Stormwater Swale:

- **Maintaining Wet Pond Water Levels:**
    - See comments above regarding stormwater. Plans have shifted to rerouting the existing stormwater ditch. Treatment – Top of Permanent Pool are the same the elevation show on the plan match the approved plans for SP 18-045. HydroCAD calculations have been updated. The additional 1.5 ft of fill was to provide additional storage for a 50 yr event was removed. Per your review letter we only

need to size for a 25-yr event so the additional fill is not needed. Stormwater calculations for the wet pond assume the pond is completely full.
    - There is an existing fence on the south property. The wet pond is now about 2 feet deep. The slopes near the parking lot, overflows, property line and east side of the building are flatter than 3:1. The slope behind the building (2) is 2:1 into the pond. Fencing is not necessary.
- **Added Fill Along South Property Line:**
    - No additional fill is planned. Some encroachment may occur to clean up or reconnect the existing drainage ditch but most of the disturbance will occur about 4-5 ft off the property lines.

5. Setbacks:

- **Verification of East Setback Dimensions:**
    - Building 1 is existing with an approved variance under the approved plans (SM22-086) for McNearney Shop dated 03/22.

6. Additional Comments:

- **Roof Area Discrepancies:**
    - The model has been revised. The model rounded up the half roof areas to the nearest foot. Sheet 2 has been corrected to match the model and calculations.

Sincerely,

Ian C Ehrsam, M.S

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