



July 30, 2026

Ms. Monica Plecker
Yellowstone County Public Works
P.O. Box 35024
Billings, MT 59107

Reference: Durham Road Plans, Echo Canyon Subdivision – Review Comments

Dear Monica:

On June 12, 2026, Sanbell received a hard-copy plan submittal from Yellowstone County Public Works Director Monica Plecker for the proposed construction of Durham Road within the Echo Canyon Subdivision. The submittal included full-size construction plans, a geotechnical report, and a cover letter requesting consideration of a deviation from the County's standard 5:1 roadside slopes. The plans and cover letter were prepared by Marshall Phil of Blueline Consulting, while the geotechnical report was prepared by Rimrock Engineering.

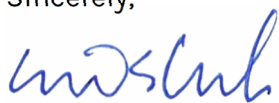
We have completed a detailed review of the submitted materials for conformance with Yellowstone County standards and accepted engineering practices. Based on our review, the submittal is incomplete and lacks sufficient documentation and supporting information to adequately evaluate the proposed improvements or determine their constructability. A more comprehensive plan set will be required before a complete technical review can be completed. In addition to the deficiencies in the submitted documentation, we have substantial concerns regarding the technical adequacy of the proposed design and its ability to satisfy accepted engineering practices and County standards. The following comments identify deficiencies and questions associated with the current submittal and should be considered in conjunction with the attached redline plan comments. Given the number of missing or incomplete elements, Sanbell, via Yellowstone County, reserves the right to provide additional comments as future revisions and supporting documentation are submitted.

1. The proposed roadway requires significant excavation into the existing hillside and rock face. In several locations, the proposed cuts appear to extend approximately 30 feet horizontally and exceed 40 feet vertically at very steep slopes. While the cover letter references proposed cut slopes as steep as 1:1 and 0.5:1, the construction plans do not identify the proposed cut slopes or describe the anticipated excavation methods. Additional documentation should be provided describing the proposed excavation techniques, including whether blasting will be required and the measures that will be implemented to protect adjacent residences, cisterns, drain fields, and other nearby improvements.
2. The submitted geotechnical report specifically states that a slope stability analysis was not performed. Given the magnitude and steepness of the proposed rock cuts, additional geotechnical evaluation is warranted. The geotechnical engineer should provide recommendations regarding the long-term stability of the proposed cut slopes and identify any design or construction measures necessary to ensure their stability.

3. The proposed roadway profile includes longitudinal grades approaching 12 percent over extended lengths. Grades of this magnitude present significant operational concerns during winter conditions and may adversely affect vehicle maneuverability, particularly for heavy vehicles and emergency response equipment. In addition, accepted engineering practice generally requires the use of vertical curves where algebraic grade differences exceed approximately 1 percent to provide an appropriate transition between grades. The proposed plans do not include vertical curves at locations where grade breaks substantially exceed this threshold, with some approaching 5 percent. The absence of appropriate vertical curve transitions may result in vehicles to bottom out.
4. The proposed roadway grades also have the potential to generate concentrated runoff velocities during precipitation events and rapid snowmelt, increasing the risk of erosion within roadside ditches and disturbed areas. The plans should include appropriate erosion and sediment control measures, as well as drainage design features, to demonstrate that runoff can be safely conveyed without causing erosion or damage to the proposed improvements or adjacent properties.
5. The cover letter indicates that a 3:1 fill slope is proposed between Stations 4+00 and 5+25 as a requested deviation from County standards. However, the cross sections indicate that the proposed fill slope ties directly into the existing hillside, effectively extending the overall slope beyond the proposed 3:1 embankment. Because 3:1 slopes are classified as “unrecoverable”, additional information is required to evaluate roadside safety. A clear zone analysis should be provided for the entire project corridor, including supporting documentation demonstrating compliance with accepted roadway design guidance or justification for any proposed deviations.
6. The proposed guardrail layout is not clearly shown on the construction plans. Although the cover letter states that guardrail is proposed between Stations 5+25 and 8+91, the corresponding guardrail is not identified in the plan views. Similarly, the cover letter describes a 2:1 cut slope within the cul-de-sac but does not discuss the need for guardrail, while the cross sections appear to depict guardrail in various segments of this area. The plans should clearly identify the proposed guardrail limits, terminal treatments, and the basis for guardrail installation throughout the project.
7. Please refer to the attached redlined plan set for additional review comments and requested revisions.

Please review the above comments and let me know if you have any questions. I would be happy to discuss these comments in greater detail or participate in a meeting to review them as needed. Thank you!

Sincerely,



Erin S. Claunch, PE, PTOE
Associate Principal | Director of Public Infrastructure Division