

January 4, 2016
#14080

STORM DRAINAGE REPORT
Aspen Ridge Subdivision, 2nd Filing
Yellowstone County, Montana

The proposed subdivision is approximately 28.977 acres, of which 19.077 acres will be exempt from review due to this area remaining un-developed at this time. The proposed subdivision is located in an area with pre-construction conditions consisting of open, poor condition range land with slopes ranging from 1.5% to 10%. The proposed development would consist of constructing an internal road, driveways and single-family homes on a roughly ½ acre lot. The area to be developed will have an average area of imperviousness of 25%.

The 2-year, 24-hour return period storm for Billings, MT has a rainfall depth of 1.57 inches. Pre-development conditions produce 0.457 inches of runoff (0.69 acre-ft). Post-development conditions produce 0.291 inches of runoff (0.44 acre-ft). The increase in impervious area due to construction of the building and asphalt drive combined with the installation of lawns on each lot to improve infiltration results in a net decrease in peak-flow and runoff amount.

To handle runoff generated from the portion of the subdivision that will be developed at a later time, stormwater ponds will be constructed to hold the additional runoff generated by the subdivision. Runoff will generally flow from south to north and will be captured either by drainage swale or pond. This flow will be directed to the northern retention pond. Driveway culverts may need to be larger than the Yellowstone County standard of 15" CMP to handle the conveyance of the stormwater runoff towards the northern pond.