

STORMWATER MANAGEMENT PLAN

FOR
Hotel Ruby – Site Expansion
477255 Highway 95
PONDERAY, IDAHO

February 5, 2019

PROJECT DESCRIPTION: GVD Commercial Properties, Inc. owns and operates Hotel Ruby. The company is making improvements to the business by adding more parking stalls and extending the north/south travel way up to the property's northern boundary. GVD, also, owns the parcel to the north and will connect the two parcels in the future by this extension. The extension will require eliminating 3 stalls but the project will have an overall increase of 25 stalls.

SOIL TYPE: The Soil Conservation Service's Soil Survey of the Bonner County Area lists soils in this area as Mission Silt Loam. This soil type is generally mildly sloping with somewhat poorly draining soils.

STORMWATER CRITERIA: Ponderay requires that stormwater not leave any site faster than the pre-development peak flow rate for a 25-year storm event. The first ½" of runoff from new impermeable surfaces must, also, be treated. Existing impermeable surface square footage was included in pre-development flow rates to better depict the change in runoff.

Grassed Infiltration Areas (GIAs) were initially constructed on site during the building of the Microtel Motel in 1996. The addition of a spa to the hotel in 2014 required the GIA to the northeast to expand. Development of the property will continue to route runoff as it has historically to the two most northern GIAs. The attached New Site Plan shows the relationship of the new impervious surfaces to the stormwater features.

EROSION/SEDIMENTATION: Temporary erosion and sedimentation control will be accomplished through the use of silt fencing constructed and maintained before the point of discharge as described on the plans. All barriers will be installed prior to construction, placed perpendicular to the line of flow and inspected and maintained by the contractor until vegetation has been reestablished and the stormwater system is in place. All disturbed areas will be vegetated or paved according to the plans.

OPERATION AND MAINTENANCE PLAN: To keep erosion to a minimum, areas to be vegetated will be seeded and mulched upon final grading. Newly planted areas will be inspected after large storms for erosion until well established. Eroded areas will be replaced. Inspection schedule and timing: At a minimum, inspection is to take place once every 7 days, within 24 hours of an anticipated storm event of 0.5 inches or greater, and within 24 hours of the end of a storm event of 0.5 inches or greater. The owner, GVD Commercial Properties, Inc., will be responsible for maintenance of the system.

CONSTRUCTION SCHEDULE: Erosion control measures are to be installed in the Spring of 2019 followed by construction of the extended travel way and new parking areas.

STORMWATER SYSTEM CALCULATIONS SUMMARY
The Rational Method with a 25-year 2-hour return period was used for calculations in conjunction with the ITD intensity-duration-frequency curve.

Pre-Development Peak Flows

Ex. Pavement, Concrete and Building = 60,566 sf = 1.39 ac
Ex. Lawn, GIAs and Landscaping = 1.03 ac
Area (A)= 2.42 ac
Composite Runoff Coefficient (C) = [(1.39)(0.9)+(1.03)(0.25)]/2.42
C= 0.623
Rainfall Intensity (I) = 0.51 in. /hr (25 yr – 2 hour return period)
Peak Flow = CIA= 0.769 cfs

Post-Development Requirements

Ex. Pavement, Concrete and Building = 60,566 sf = 1.39 ac
Additional Impervious Surface (pavement) = 8,064 sf = 0.19 ac
New Impervious Area = 1.39 + 0.19 = 1.58 ac
Lawn, GIAs and Landscaping = 0.84 ac
Area = 2.42 ac
Composite Runoff Coefficient (C) = [(1.58)(0.9)+(0.84)(0.25)]/2.42
C = 0.674
Rainfall Intensity (I) = 0.51 in. /hr (25 yr – 2 hour return period)
Peak Flow = 0.832 cfs

Required Detention = 0.832 cfs X 2 hr X 3600 sec/hr = 5,990 cf
Volume of existing NE GIA = 1,237cf
Volume of revised NW GIA (within property boundaries) =7,133 cf
Volume of revised W GIA (shared with restaurant parcel but within property boundaries) = 425 cf
Total remaining detention = 1,237 + 7,133 + 425 = 8,795 cf > 5,990 cf

Post-Development Impermeable surfaces = 60,566 + 8,064 = 68,630 sf
Required Volume to be treated (1st 1/2") = (68,630 sf) X 0.5in X 1/12 ft/in = 2,860 c.f < 8,795 cf

The attached plan and this document were prepared by the undersigned, whose seal as a licensed professional engineer, is affixed below.

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