

# STORMWATER MANAGEMENT PLAN

FOR

## Kessa's Coffee

Bonner Mall Way  
Parcel RP00000115000A  
PONDERAY, IDAHO

March 29, 2021

**PROJECT DESCRIPTION:** Kessa's Coffee has two locations for take-out, one in Ponderay and one in Sandpoint.

The Ponderay shop is presently located at 363 Bonner Mall Way within the Days Inn property and the building will be relocated to this newly acquired parcel. The existing location has been serving a large range of customers from private vehicles to commercial semis and plans to continue this service. The proposed accesses are designed to accommodate these uses.

The parcel will be developed in 2 Phases.

- Phase 1 will be site grading and construction of gravel travel ways for access to the relocated 8' x 10' building. Utilities will be installed at this time.
- Phase 2 will be the addition of a 25' x 15' coffee house that will include a bathroom and construction of the parking lot. The food trucks each have a footprint not to exceed 300 sf.

Kootenai Ponderay Sewer District will provide service from a pressure main near the east edge of Bonner Mall Way. It is anticipated that a single connection will be necessary for the proposed use.

Avista will provide power to the site.

The City of Sandpoint will provide water service. Their water main runs north and south along the eastern side of the Bonner Mall within the parking area. An existing 2" water line crosses Bonner Mall Way at approximately this parcel's northern boundary. The City is presently locating the line to define which lot(s) it can serve.

The site is depicted on County maps as being 1.072 acres. However, a recent survey and previous legal descriptions show the site to be 0.966 acres.

**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:** The City of 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.

The site presently drains to the west with a small portion having runoff to the south and into the railroad ditch system. Grassed Infiltration Areas (GIAs) are proposed to meet the City's

stormwater criteria. An existing catch basin east of the R.O.W. and part of the City's stormwater system, will be the major outfall for this property as outlined in DOC022521-02252021121547 (document provided by the City). Development of the properties will continue to route runoff as it has historically. To prevent runoff from the railroad system entering the City's system at this location, an approach culvert is not proposed at the southern entrance. The site is presently undeveloped. The attached plans show 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. Straw wattles are to be placed around the existing catch basin as a temporary measure. 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 graveled 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 owners of Kessa's Coffee will be responsible for maintenance of the system.

**CONSTRUCTION SCHEDULE:** Erosion control measures are to be installed in the Spring of 2021 followed by site grading, installation of some utilities, and construction of the travel ways. Phase 2 will begin the following year.

#### STORMWATER SYSTEM CALCULATIONS SUMMARY

The Rational Method with a 25-year return period was used for calculations in conjunction with the ITD intensity-duration-frequency curve.

##### Pre-Development Peak Flows

Area (A)= 0.966 ac

Ex. Natural Vegetation = 0.966 ac

Runoff Coefficient (C) = 0.20

Rainfall Intensity (I) = 1.7 in. /hr (25 yr – 16 minute return period)

Peak Flow = CIA= 0.328cfs

##### Post-Development Requirements-Includes Both Phases

Area (A)= 0.966 ac

Impervious Structures = 1,085 sf = 0.025 ac

Gravel Driveways = 12,731.33 sf = 0.292 ac

Impervious Area Total = 0.025 + 0.292 = 0.317 ac

Lawn, GIAs and Landscaping = 0.966 - 0.317 = 0.649 ac

Composite Runoff Coefficient (C) = [(0.025)(0.9)+( 0.292)(0.8)+(.649)(0.25)]/0.966

C = 0.433

Rainfall Intensity (I) = 1.75 in. /hr (25 yr -- 14 minute return period)

Peak Flow (CIA) = 0.732 cfs

Difference in Peak Flows =  $0.732 - 0.328 = 0.404$  cfs

Required Detention =  $0.404$  cfs X 14 min X 60 sec/min = 339.5 cf

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Post-Development Impermeable surfaces =  $1,085 + 12,732 = 13,817$  sf

Required Vol. to be treated (1<sup>st</sup> 1/2") =  $(13,817$  sf) X 0.5in X 1/12 ft/in = 575.7 c.f > 339.5 cf

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GIA Geometry

178' length, 3:1 side slopes, 8" depth, 3' base = 597.5 cf

Total detention = 597.5 cf > 575.7 cf

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

**CLEARWATER ENGINEERING**

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3/29/2021