

CASE FILE #PL201800206

ERICKSON

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DRAINAGE MEMO

Project: HOM Bloomington

To: Nick Johnson, City Planner, City of Bloomington

From: Todd A. Erickson, PE

Date: 07/18/2018

Re: Drainage Calculations

Dear Nick:

The HOM Bloomington project has been designed to accommodate the volume and water quality rule for the Nine Mile Watershed District with the proposed construction of an underground storage system and underground infiltration system.

The underground storage system will provide the necessary water quality for the majority of the site before flowing into the infiltration chambers. The remainder of the site will utilize a series of sump basins to remove sediment before being channeled to the infiltration chambers.

The chambers themselves accommodate for the 110,00 sq. ft. of volume or 10,083 cu. ft. of storage. This is accomplished utilizing a series of five 42 inch diameter pipes, 150 feet in length, with 22 foot end caps, that have the volume of 7,620 cu. ft.. The remainder of the needed volume will be held in the rock trench below the pipe farm system. The bottom layer of rock is proposed at 18" depth with a void ratio of 40%, netting 2,690 cu. ft. of additional storage needed. The total proposed storage is then 10,310 cu. ft. greater than the 10,083 cu. ft. required.

The total site's imperviousness will be reduced 0.25 acres, with the removal of existing asphalt and driveways on the north and with the buffer strip around the building on the north and east side being open for plantings, where asphalt before was paved right up to the building. This results in a overall decrease of rate of runoff from the site and no calculations are required to show this is the case.

We will be disturbing approximately 4.1 acres, requiring a MPCA Permit for storm water that will be applied for a minimum of 7 days prior to disturbing the site by the chosen contractor that will perform the work.

Hopefully this information provides you with the additional documentation as requested.

Please contact me if you have any questions.

Sincerely,
Erickson Civil

A handwritten signature in black ink, appearing to read 'Todd A. Erickson', is written over the printed name.

Todd A. Erickson, PE