Servicing and Stormwater Management
Design Brief

552 Piper Street

Ayr, Township of North Dumfries, Ontario

July 6, 2022

Project Reference Number 22-195

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Table of Contents

Introduction

This Servicing and Stormwater Management Design Brief provides details on the servicing and stormwater management design for the proposed development at 552 Piper Street in the Township of North Dumfries, Ontario. The property is currently developed with one building and asphalt and gravel areas. It is proposed to construct a warehouse addition with a concrete pad for loading docks as well as a second building to function as a washbay facility.

This report presents the existing and proposed stormwater drainage conditions on the 2.839 ha part of the property on which the development is proposed.

Background Information

The property is located on the west side of Piper St, south of Gladstone Rd and east of Trussler Rd. It is surrounded by agricultural areas on the north and west of the property. There is a residential area south of the property and the Nith River east of the property on the east side of Piper St.

The location of the subject lands is shown in **Error! Reference source not found.**.

Figure 1: Location of 552 Piper Street, Township of North Dumfries (Region of Waterloo Mapping)

It is proposed to construct a 688 m^2 warehouse addition and concrete pad loading dock on the west side of the existing building. A 464 m^2 new washbay facility is proposed to be located in the north west corner of the site. The proposed development areas are currently gravel.

Existing Sanitary and Water Servicing

The existing building is serviced by two on site septic systems and a private well. One septic system consisting of a septic tank and disposal bed is located just north of the existing building. The second septic system consists of a septic tank and pump chamber located north of the existing building. Septic effluent is pumped to an existing septic bed, located north of the Part 2 Boundary.

Existing Site Drainage Conditions

The existing site drainage is managed through overland flow directed toward Piper Street. Runoff is collected by a road ditch at Piper Street and conveyed to the east side of Piper Street through existing culverts. Runoff is then directed to the Nith River, located on the east side of Piper Street.

Proposed Sanitary and Water Servicing

The existing septic systems and well will continue to serve the existing building and warehouse addition. The new facility will be serviced by a septic tank and pump chamber that will pump the septic effluent to the existing septic bed located north of the Part 2 Boundary.

The washbay wastewater will be directed to a water recycling system where it will be reused within the washbay.

The existing well will continue to provide water supply to the existing and proposed facilities.

A fire reservoir will be constructed on site to provide 81,000 L of storage capacity for fire fighting purposes.

Proposed Site Drainage Conditions

The proposed building addition, concrete pad and new washbay facility will be constructed within the area that is currently hard surfaced with gravel or asphalt. The areas of the proposed work will be graded to match existing grades and maintain existing drainage patterns.

The new warehouse loading docks will be graded to drain toward two catchbasins. These catchbasins will be directed to an internal pump that will discharge at grade on the south side of the warehouse addition. Stormwater will then flow overland as per existing drainage patterns.

The existing asphalt area north of the proposed addition will be graded to drain overland south of the new concrete pad and then east toward Piper Street, as per existing drainage patterns.

Since the new buildings and concrete pad are located in areas that are currently hard-surfaced, there will be no change to the quantity of runoff from the property. Therefore, no additional stormwater management measures are required.

Conclusions

The proposed development include a warehouse addition to the existing building and a new washbay facility.

The existing septic systems and well will continue to provide sanitary and water servicing to the existing and proposed facilities.

The washbay wastewater will be treated and re-used using a water recycling system.

The proposed buildings are located in areas that are currently hard surfaced. As such, there will be no increase in stormwater runoff from the property. The site will continue to drain overland toward Piper Street where stormwater will be directed to the east side of Piper Street through two existing road culverts. Stormwater will ultimately discharge to the Nith River.

All of which is respectfully submitted:

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