Memo

To:	Julian Novick, Wastell Developments
From:	Nick Emery, Dillon Consulting Limited (Dillon) Harry Goossens, Dillon
cc:	File
Date:	July 15, 2022
Subject:	4980 Sunset Drive, Stormwater Concept Plan
Our File:	22-4356

Introduction

A stormwater concept plan was developed in accordance with Section 3.3.2 of the Municipality of Central Elgin's Official Plan (2013), to support the proposed development at 4980 Sunset Drive in Port Stanley, Ontario. The purpose of the stormwater concept plan is to present design requirements to:

- Mitigate the impact of the proposed development on the downstream environment and existing stormwater flows
- Control erosion, sedimentation and pollution from the proposed development
- Reduce on-site and downstream surface ponding and flooding
- Protect and enhance water quality and base flow in receiving watercourses
- Protect groundwater recharge/discharge areas
- Reduce the total cost of the stormwater drainage system and its related works
- Achieve effective stormwater management within the local subcatchment.

Existing Conditions

As shown on Figure 1, the existing 0.75 hectare site is currently undeveloped vacant land bounded by Sunset Drive to the north, vacant undeveloped lands to the east, rural residential lands to the south, and existing commercial development to the west. The existing drainage catchments are described below:

Catchment 101 – Includes the subject site limits.

Catchment EXT 1 – Upstream external drainage area that contributes runoff to the subject site.

The existing site topography slopes from south to north with an average grade of approximately 5%. Runoff from both the subject site and the eternal drainage area located to the south travels as shallow surface flow to the Sunset Drive right-of-way. An existing concrete box culvert carries the site stormwater northward to an unnamed tributary, which then conveys it approximately 1.2 km westward to Kettle Creek.

The information presented in the Elgin County Sourcewater Protection Plan does not suggest that the subject site is located within a significant groundwater recharge or discharge area.

Based on the information presented in the site Geotechnical Investigation (LDS, 2022), the site soils are generally comprised of a 75 to 200 mm thick layer of topsoil underlain by sand. The borehole data also suggests the presence of silt sand fill to a depth of approximately 2.9 m on the eastern portion of the site. Water level measurements from two monitoring wells suggests that the local groundwater elevations are approximately 4.4 m below the local ground surface, though they likely fluctuate seasonally.

Proposed Conditions

As shown on the attached Conceptual Development Plan, the proposed development includes four proposed commercial buildings and associated parking. Access to Sunset Drive is provided by the existing driveway located near the western site limit. Stormwater from the proposed site will be released to the Sunset Drive roadside ditch and conveyed to Kettle Creek by the downstream tributary.

A summary of the proposed stormwater management control requirements to limit the impact of the proposed site development on the downstream Kettle Creek tributary is provided below.

Quantity Control

Stormwater quantity control measures are required to mitigate the risk of downstream flooding and erosion caused by the proposed site development. The proposed stormwater management strategy shall provide sufficient storage to reduce the post-development peak discharges to existing conditions magnitudes for all design events up to and including the 100-year storm.

The required stormwater storage volume may be provided by a combination of measures, including:

- Rooftop storage
- Underground storage
- Temporary parking lot ponding
- Stormwater infiltration measures.

Water Quality

Water quality control measures are required to protect the downstream tributary. The proposed stormwater management strategy shall provide treatment to achieve Enhanced Protection Level water quality control to remove 80 percent of total suspended solids (TSS) from the site runoff. Furthermore, given the substantial parking area shown on the preliminary site concept, the proposed SWM strategy will incorporate measures to capture and retain oil and floatable debris from the site runoff.

External Site Drainage

Stormwater from the external drainage areas will either need to be conveyed around the site perimeter to an appropriate outlet or accommodated in the proposed site SWM design.

Erosion and Sediment Control

The proposed site construction drawings shall include an erosion and sediment control plan to protect the downstream tributary during construction.

SWM Control Ownership and Maintenance

The proposed stormwater management measures will be privately owned on-site controls. All maintenance will be performed by the site owner.

Conclusion

A stormwater management strategy will be prepared during detailed design to control the runoff from the proposed development. The site SWM control criteria include:

- Quantity control to reduce the post-development peak discharges to pre-conditions magnitudes for all design events up to and including the 100-year storm
- Water quality treatment to provide 80% average long term TSS removal from the proposed site runoff
- Capture and retention of oil and floatable debris from the site runoff.

The final stormwater management strategy will be documented in a Servicing Report to demonstrate how the recommendations of the Stormwater Management Concept Plan will be implemented.

An Environmental Impact Study (EIS) will be completed under separate cover and will identify measures to mitigate the impact of the proposed development on the adjacent natural heritage system. Any relevant recommendations will be integrated into the proposed SWM strategy during detailed design.

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Attachment 1

Figure 1 – Existing Drainage Conditions

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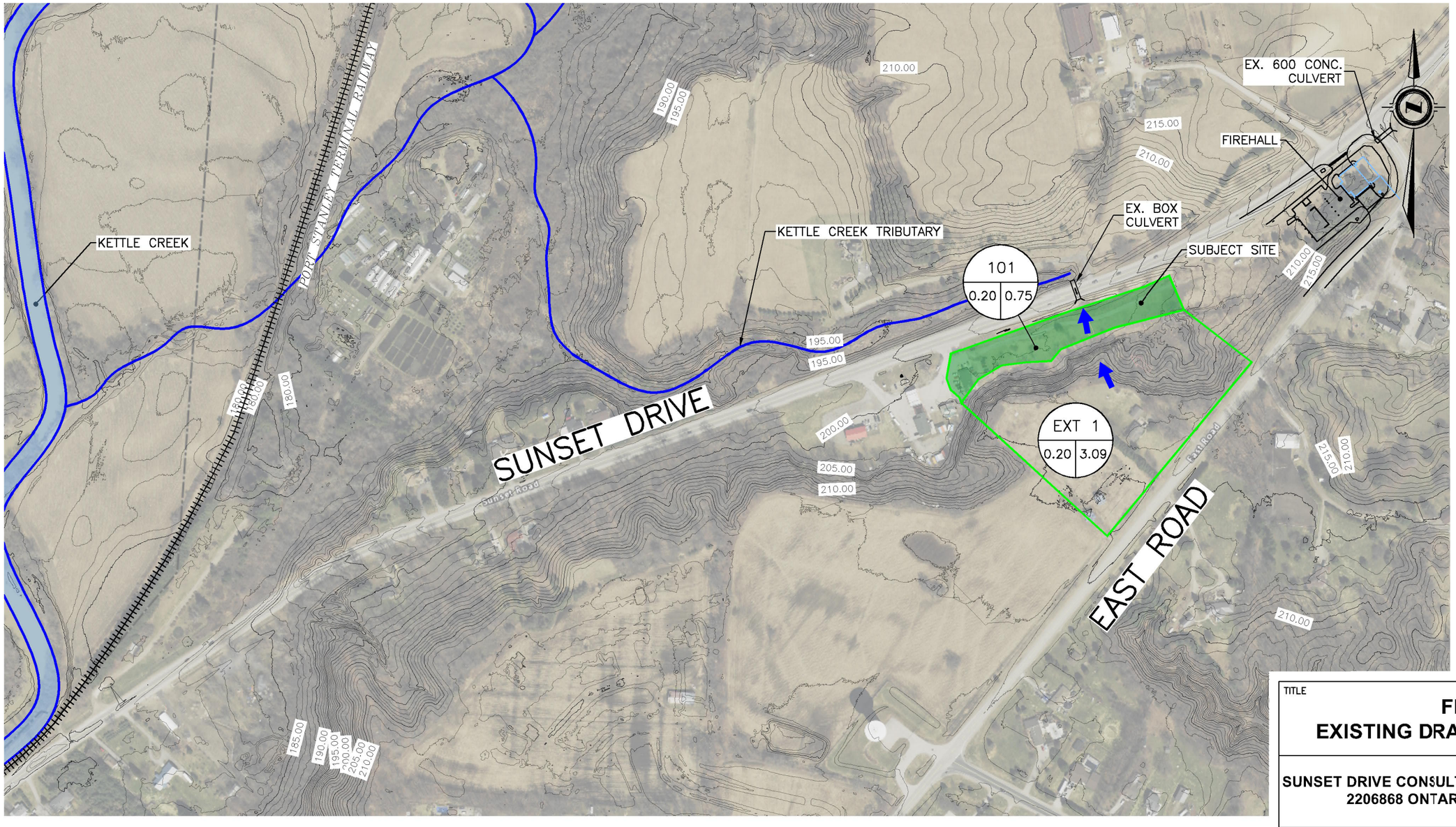

LEGEND

- 00 — CATCHMENT ID
- 0.50 | 1.00 — AREA (ha) | RUNOFF COEFFICIENT
- DRAINAGE BOUNDARY
- FLOW DIRECTION

TITLE

FIGURE 1
EXISTING DRAINAGE CONDITIONS

SUNSET DRIVE CONSULTING SERVICES
2206868 ONTARIO INC

DILLON CONSULTING

SCALE – 1 : 4000	DRAWN BY	DATE
40 0 80m	CD	2022-06-28

2022-07-06 C:\nw_Working_Directory\projects_2022\dillon_10pd\dms32332\324366-00_STM_FIG.dwg

Attachment 2

Conceptual Development Plan

DILLON
CONSULTING

Conceptual allocation of parking spaces subject to exact floor area & building use.

SUBJECT LANDS
AREA = 7536m²

SUNSET DRIVE

EX. GUARD RAIL

parking ratio 1/20m²

parking ratio 1/8m²
(including stacking spaces)

parking ratio 1/16m²

222.8

Part 1
Shared Access

Part 2

Part 3

Part 4

Part 5
Sanitary sewer

conc. swk

Building A
1 Storey
Commercial
350m²

12.0
24.6

drive-thru entry

parking (including staking) ratio 1/7m²

fireroute

conc. swk

Building B
1 Storey
Restaurant (drive thru)
250m²
pick up

19.0
13.0

Building C
1 Storey
Commercial
300m²

25.1
12.2

Building D
1 Storey
Commercial
470m²

18.4
25.7

conc. swk

27.3

6.7

6.0

3.0

1.0

4.8

1.7

ASPHALT

GAS CANOPY

REMOVE EX. BUILDING 160m²

SHELL SNACK SHOP

CAR WASH

VACANT

VEGETATED SLOPE

PRELIMINARY

FOR DISCUSSION PURPOSES ONLY
ALL LIMITS ARE APPROXIMATE

Nov 29, 2021

Monteith+Brown planning consultants

Conceptual Development
4980 Sunset Drive, Port Stanley
Wastell Homes

07-

1: 300 (11x17)

0 3 6 9m