934 Oxford Street West, London, ON

Sanitary Design Brief

Project Location:
934 Oxford Street West
London, Ontario N6H 1V3

Prepared For:
Forest City Repairs
934 Oxford Street West
London, ON, N6H 1V3

Prepared by:
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117 Regent Street, Stratford, Ontario

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PASSION, DETERMINATION, RESOLVE

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1.0 Introduction

GRIT Engineering Inc. (GRIT) was retained by Forest City Repairs to provide preliminary engineering consulting services for the proposed commercial residential development concept plan located at 934 Oxford Street West, London, Ontario. The scope of work includes the preparation of a sanitary design brief to support the zoning application submission.

The subject site (Site) is located at 934 Oxford Street West, between Juniper Street and Freele Street in northwest London in the City of London. The Site is approximately 0.10 hectares in size, and zoned Residential (R1-10). The site is bounded by Oxford Street West to the north, and properties zoned residential to the east, south and west. Refer to Figure 1 for a site location map.

This Sanitary Design Brief (Brief) provides background and proposed design information to address the rezoning approval requirements for the property.

2.0 Sanitary Servicing

2.1 Design Peak Flow Demand

The sanitary design flow requirements are based on the City of London *Design Specifications & Requirements Manual (March 2022)* (DSRM) and are:

- Average daily domestic sanitary flow of 230 litres per capita per day,
- Extraneous infiltration rate of 0.1 litres per second per hectare,
- 3 people per unit for single family residential,
- Harmon peaking factor with an uncertain development factor of 1.1,
- Minimum velocity of 0.6 meters per second and
- Maximum velocity of 4.5 meters per second.

The proposed rezoning will have one existing sanitary outlet to the existing 200 mm diameter sanitary sewer located in the Oxford Street West Right-of-Way (ROW). Based on the above criteria, the sanitary design peak flow from the proposed rezoned property is summarized in Table 2.1 below.

Table 2.1 Proposed Site Sanitary Flows

Sanitary Flows - Proposed										
Area (ha)	Number of People per Hectare	People Per Unit	Total Population	Per Hectare Flows (L/s/ha)	Peaking Factor	Infiltration (L/s/ha)	Total Peak Flow (L/s)	Total Peak Flow (m^3/d)	Total Average Flow (L/s)	Total Average Flow (m^3/day)
0.10	8	3	20	0.003	4.3	0.100	2.001	172.912	0.070	6.048

The existing 200 mm diameter sanitary service at 4.46% has a full flow capacity of 69.23 L/s, which is greater than the total peak flow of 2 L/s from the Site. The proposed sanitary service has a full-flow velocity of 2.20 m/s, which is greater than the minimum velocity from the DSRM. Refer to Appendix A for detailed sanitary demand calculations.

2.2 Existing Sanitary Capacity

The City provided GRIT with the As-Constructed drawing for the Oxford Street sanitary sewer from 36m West of Freele Street to 154m East of Freele Street, City Plan No. 19259R1 by Declan, dated November 2010. Please note that GRIT has not independently confirmed the length, size, and slope of the existing sanitary sewers or the catchment areas. Using this information provided, GRIT created a sanitary sewer design sheet using the DSRM. Table 2.2 below summarizes the existing flows at the Site.

Table 2.2 Existing Site Sanitary Flows

Sanitary Flows - Existing										
Area (ha)	Number of Units	People Per Unit	Total Population	Per Capita Flows (L/s/c)	Peaking Factor	Infiltration (L/s/cap)	Total Peak Flow (L/s)	Total Peak Flow (m^3/d)	Total Average Flow (L/s)	Total Average Flow (m^3/day)
0.10	1	3.00	3	0.003	4.4	0.100	0.301	26.035	0.019	1.642

Using a combination of the original design assumptions and the current City requirements, the existing sanitary sewer on Oxford Street West has a remaining capacity of approximately 58 L/s, which is greater than the proposed flow from the site of 2 L/s. See Appendix A for the Existing Sanitary Sewer Design Sheet.

2.3 Proposed Sanitary Capacity

GRIT used the proposed rezoning information for the Site to update the existing sanitary sewer design sheet to reflect the proposed flows in the sanitary sewer and remaining capacity. To establish the population for the Site, GRIT used the per unit population values and per hectare unit counts from Section 2.1. As demonstrated in Table 2.1, the existing sanitary sewers on Oxford Street West have a remaining capacity of 56 L/s under

the proposed conditions. Therefore, the sanitary sewer on Oxford Street West has sufficient capacity for rezoning of the Site. See Appendix A for the Proposed Sanitary Sewer Design Sheet.

3.0 Design Conclusions

The sanitary servicing requirements and sanitary capacity review of the Oxford Street West sanitary sewers are based on the City of London *Design Specifications & Requirements Manual* and are summarized in Sections 2.1, 2.2, and 2.3. The design and calculations in Section 2, along with the Figure and Appendix, demonstrate compliance with the above requirements. We trust this report satisfies the City's requirements. If there are any questions regarding the report, please do not hesitate to contact our office.

4.0 Statement of Conditions and Limitations

This document was prepared for *Zelinka Priamo Ltd.*, *Forest City Repairs* (the Client) and the *City of London* and has been prepared in a manner consistent with the level of care and skill ordinarily exercised by other members of the engineering profession currently practicing in the same or similar locality, under the same or similar conditions, subject to the time limits and financial, physical, or other constraints applicable to the Services.

The recommendations and conclusions provided in this document are applicable only to the specific site, development, design objectives, and purposes that are described in the text and are based on the information that was available and provided to GRIT Engineering Inc. at the time this document was prepared. This document is not intended to be exhaustive in scope and it shall be recognized that the passage of time may alter the opinions, recommendations, and conclusions that are contained in this document. The design is limited to the documents reference and any other drawings or documents prepared by GRIT Engineering Inc. provided separately. GRIT Engineering Inc. accepts no responsibility or liability for the accuracy of any information provided by others.

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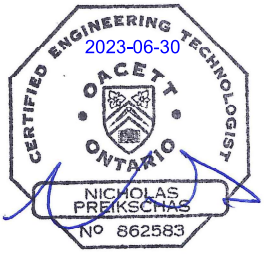

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Figure

Appendix A

Sanitary Sewer Design Sheets