



FINAL

Review of Proposed Sewage Works

Lot 28, Concession 9, Wahwashkesh Lake, Municipality of Whitestone, ON

Prepared for:

Winterra Holdings Inc.

236 Walmer Road
Toronto, ON M5R 3R7

February 16, 2023

Pinchin File: 318638



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1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained by Winterra Holdings Inc. (Client) to review the proposed sewage works to be installed on Lot 28, Concession 9, Wahwashkesh Lake, Municipality of Whitestone, ON (Site).

2.0 OVERVIEW

It is Pinchin's understanding that a developer is planning to subdivide the Site (Lot 28) into 11 individual lots and install cottages, each equipped with its own class four sewage works.

The Client is concerned that there is insufficient space available on the subdivided lots and that the sewage works (septic tank and leaching beds) to be located within the 100-yr flood zone.

The Client has requested that Pinchin review the applicability of installing sewage works at the Site and comment on the installation of sewage works in a flood zone.

3.0 SCOPE OF WORK

In accordance with the Client's authorization, Pinchin has completed the following:

- Review all documents provided by the Client, including but not limited to:
 - *Environmental Impact Study, Part of Lot 28, Concession 9, Parcels 2740 & 2742, Municipality of Whitestone, District of Parry Sound*, dated August 2021 (Keene Report);
 - Map detailed flood elevations; and
 - *The Report to Whitestone Municipal Council*, dated October 17, 2022.
- Review the proposed development and assess which lots could have a sewage works installed on them and at what minimal elevation the sewage works should be installed.

4.0 PROPOSED DEVELOPMENT

It's Pinchin understanding that three (3) layouts/configurations exist for the proposed development. The proposed configurations include subdividing Lot 28 into the following:

- Eight (8) lots, and building eight (8) individual units;
- Six (6) lots, and building six (6) individual units; or
- Five (5) lots, and building five (5) individual units.

See Appendix I for the three (3) proposed layouts, as provided by the Client.



4.1 Flood Elevations

The Site is located on Wahwashkesh Lake. As provided by the Client, it is Pinchin's understanding that the annual seasonal flood elevation is 227.0 masl (meters above sea level) and the theoretical (regulatory) flood elevation is 229.57 masl.

4.2 Geology

A review of the Keene Report indicates that the majority of the Site is comprised of thin soils over bedrock with some locations having exposed bedrock.

Bedrock is expected to have a percolation time (T-Time) greater than 50 minutes/cm.

4.3 Whitestone Septic Policy

The Municipality of Whitestone has stated in their official policy that:

- The Ontario Building Code requires a clearance of 15 metres. However, for the purposes of mitigating against the potential of phosphorus loading of the waterbody, it is recommended that sewage disposal systems (either conventional septic tank tile field or Ontario Building Code approved filter beds, or tertiary treatment systems) be located at least 30 metres from the shoreline of the lake whenever possible.

4.4 Ontario Building Code

The Ontario Building Code (OBC) states that, a leaching bed shall not be located:

- a. In soil or leaching bed fill having a percolation time of less than one minute, or greater than 50 minutes for all other leaching beds, or
- b. In an area that is subject to flooding that may be expected to cause damage to the leaching bed or impair the operation of the leaching bed.

Furthermore, the OBC states that a leaching bed:

- a. Shall be located so that the bottom of the absorption trench is not less than 900 mm above the high ground water table, rock or soil with a percolation time of more than 50 minutes; and
- b. A leaching bed may be constructed in leaching bed fill, if unsaturated soil or leaching bed fill complying with Subclause 8.7.2.1.(1)(b)(ii) extends, at least 15 m beyond the outer distribution pipes in any direction in which the effluent entering the soil or leaching bed fill will move horizontally.



5.0 DISCUSSION

Based on the available information and the requirements of the OBC, the leaching beds (if built) should be constructed as raised beds such that the bottom of the absorption trench is at least 900mm above the higher of:

- i) The regulatory flood elevation (high water elevation); or
- ii) Soil with a t-time greater than 50 min/cm (bedrock)

Since the native soil (bedrock) has a t-time greater than 50 min/cm, a mantle extending 15m down gradient of the leaching bed is required. This mantle must also be above the high-water elevation.

This will also satisfy the requirements of the Table 8.2.1.6.B of OBC whereas distribution piping (leaching bed) must be setback a minimum of 15m mantle from a lake. It should be noted that the Whitestone Septic Policy recommends that a leaching bed be setback a minimum of 30m from the shoreline of the lake where possible.

See Appendix II for drawings delineating the flood elevations and required setbacks for the proposed sewage works.

See Appendix III for conceptual layouts for a three (3) bedroom and five (5) bedroom dwelling with associated sewage works.

6.0 SUMMARY AND RECOMMENDATIONS

Based on the provided and available information, Pinchin recommends that:

1. The sewage works only be construction in locations with a minimum starting elevation of 229.57masl and be setback from this elevation so that they,<the sewage works>, meet the minimum requirements of the OBC and the Whitestone Septic Policy. This will allow the sewage works to avoid the high-water level, thus meeting the requirements of the OBC, and maintain proper operation in the event of a flood; and
2. For all lots, determine the maximum footprint and occupancy (no. of bedrooms) of the proposed dwellings that will allow the sewage works to be installed such that they meet the requirements and setbacks of the OBC of the Whitestone Septic Policy.

7.0 STATEMENT OF LIMITATIONS

The purpose of this Sewage Works Review is to provide recommendations for the installation of sewage works for the proposed development at the Site.



These recommendations were undertaken in general compliance with currently acceptable practices for environmental investigations, specific Client requests, and the project budget, as applicable to this Site.

Pinchin accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report or in the design as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Pinchin cannot guarantee the completeness or accuracy of information supplied by a third party.

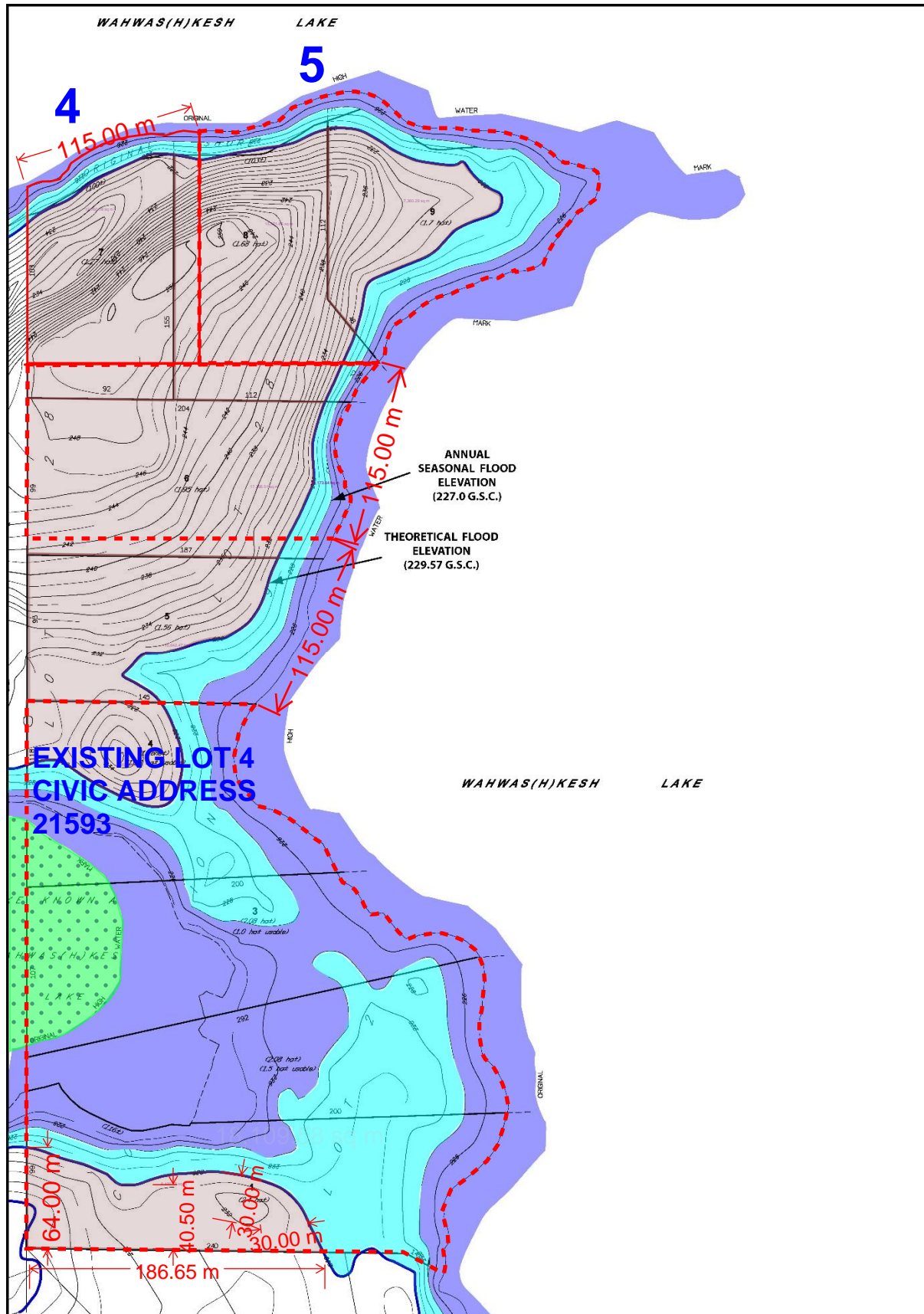
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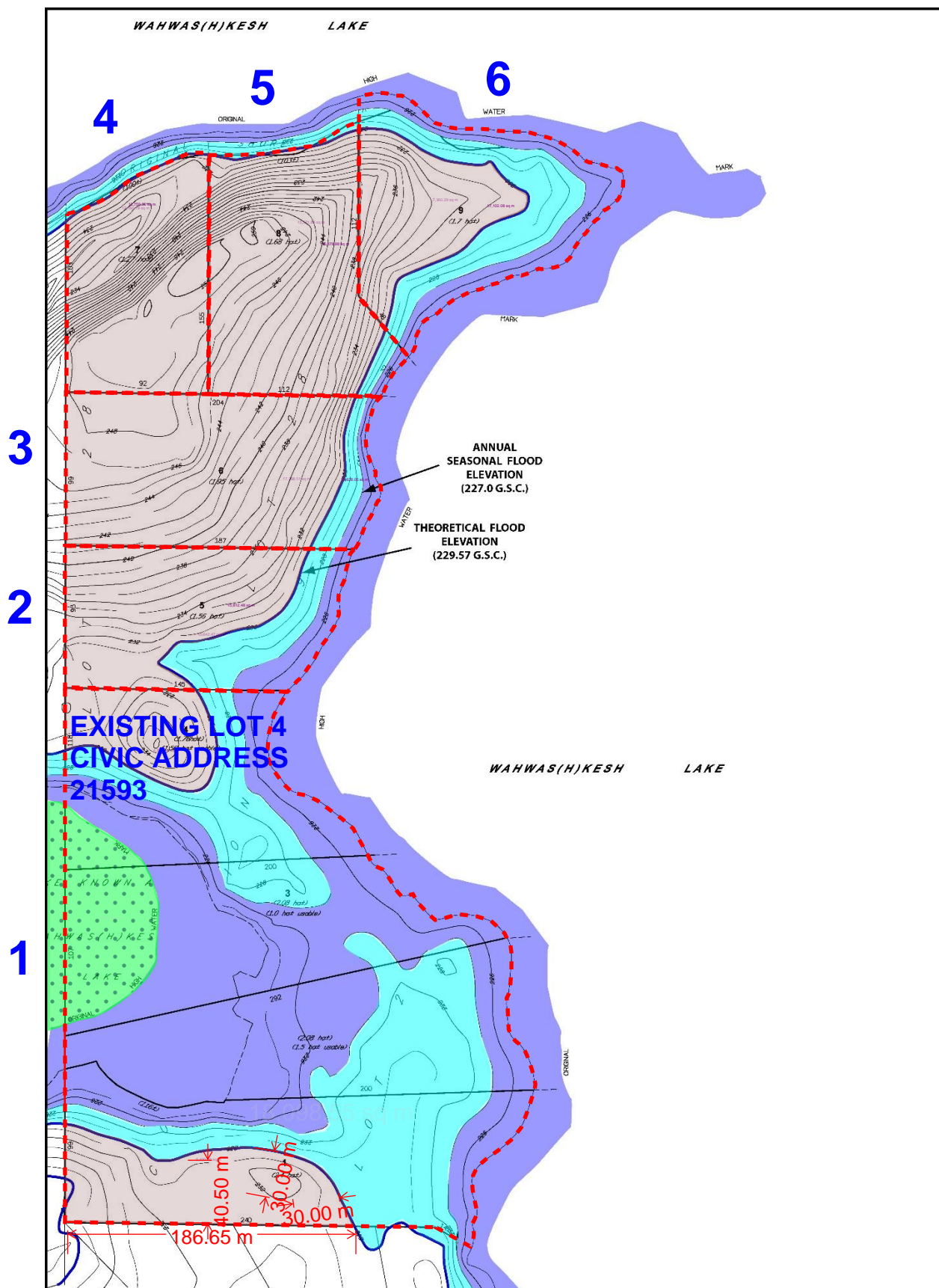
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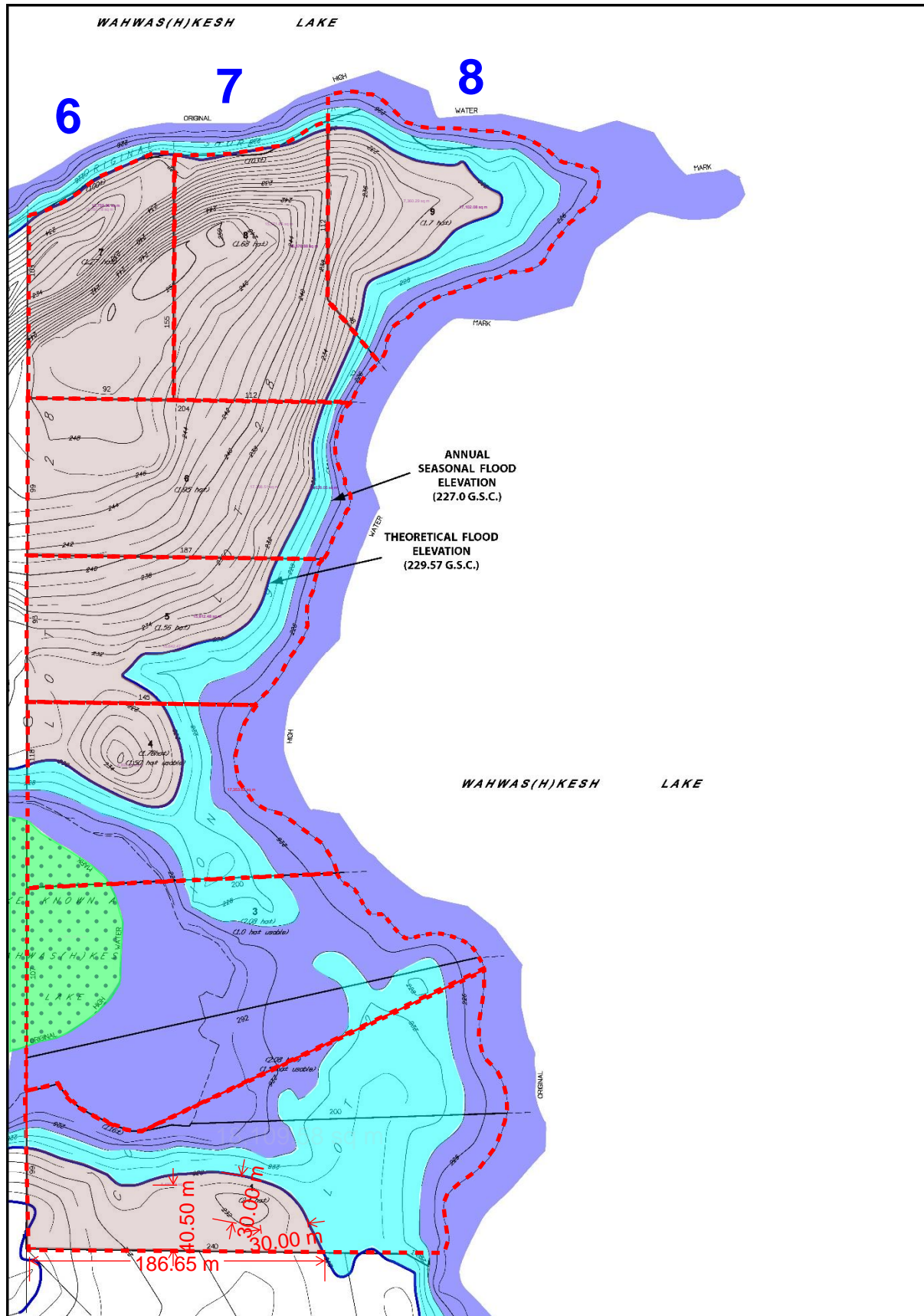
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Review Report Wahwashkesh Lake, Whitestone Winterra Feb 16, 2023.docx

APPENDIX I

PROPOSED SUBDIVISION LAYOUTS

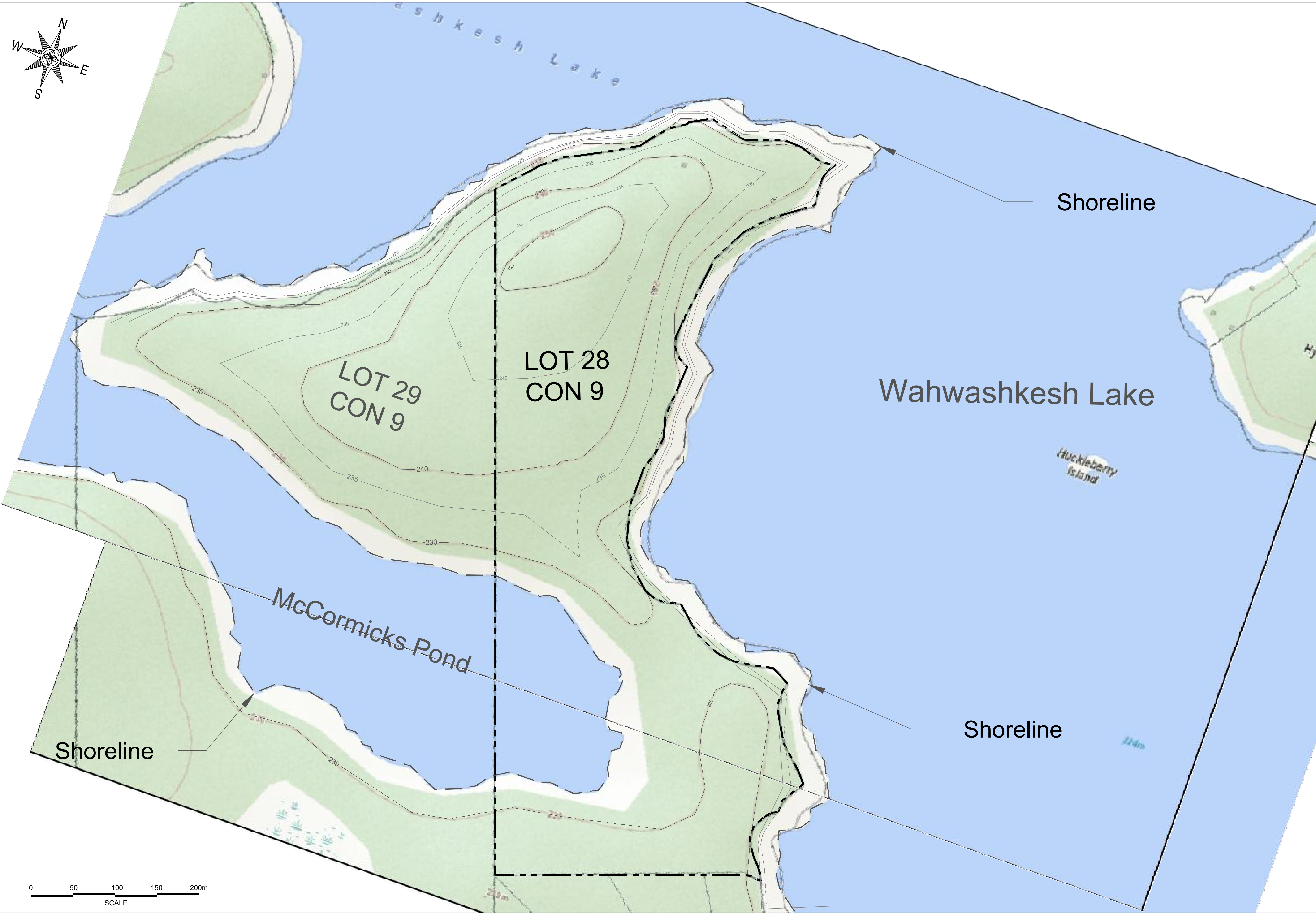






APPENDIX II

ELEVATIONS AND REGULATORY SETBACKS



LEGEND


----	Lot Border
- - - -	Shoreline
— — —	Contour Lines

DRAWING NOTES

1. All dimensions in meters unless otherwise noted.
2. All elevations are preliminary and to be confirmed.
3. Do not derive measurements from scaled drawings.
4. The Base Map is taken from Ontario Land Survey Website
5. Drawing to be printed in colour to indicate flood elevations.

0.0	02/16/2023	FOR CLIENT REVIEW
REV	DATE	DESCRIPTION

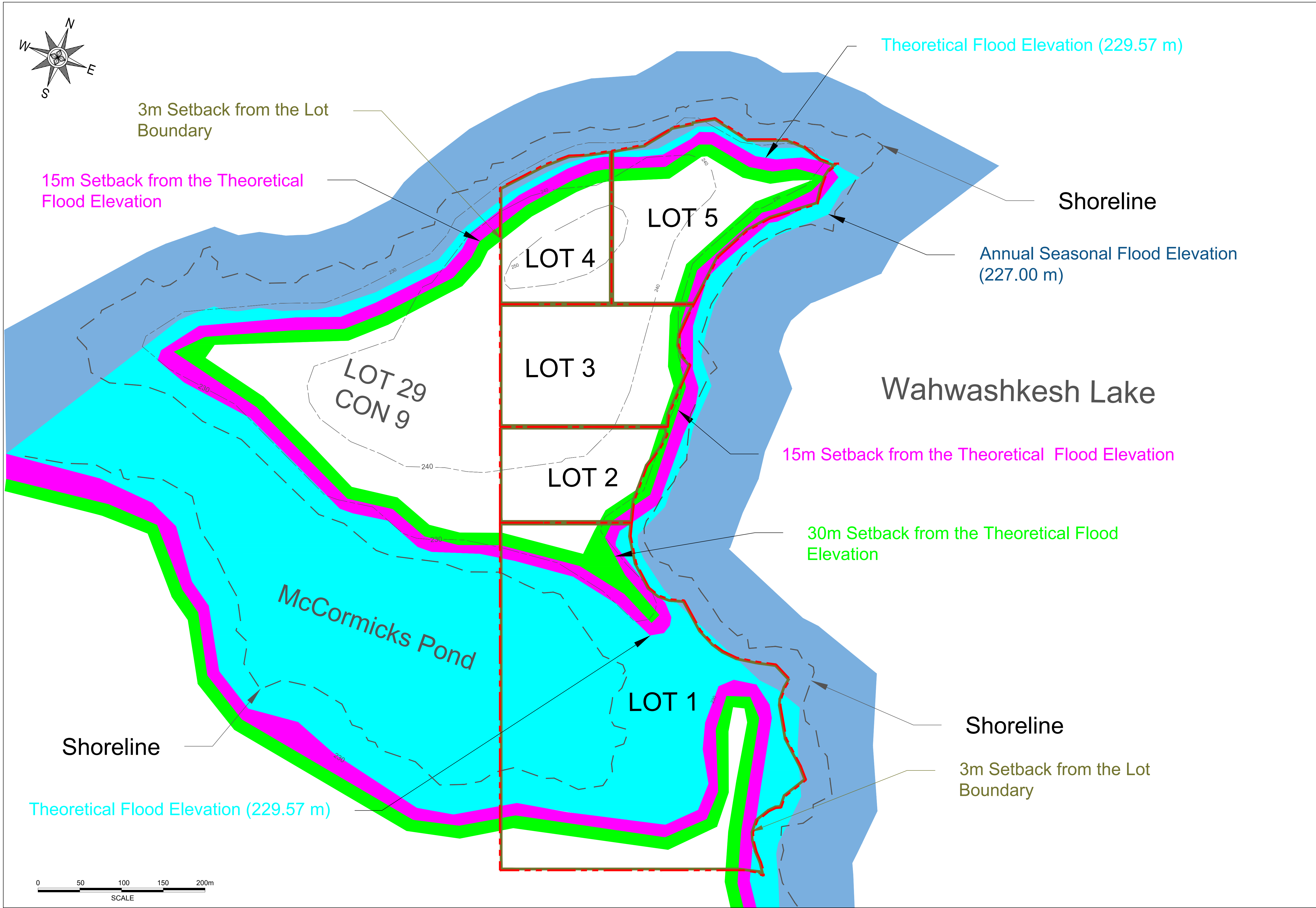
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2360 Meadowpine Blvd., Unit 2
Mississauga, Ontario
L5N 6S2

DRAWING NAME:
Site Wide Plan - Property Boundary

SCALE:	AS SHOWN	PROJECT NO:	318638
DATE:	02/16/2023	REVISION NO:	0.0
DRAWN BY:	AA	CHECKED BY:	C100
CHECKED BY:	IZH		



LEGEND

- Shoreline
- Lot Division Lines
- Elevation Contours
- Annual Seasonal Flood Elevation (227.0)
- Theoretical Flood Elevation (229.57)
- 15m Setback from the Theoretical Flood Elevation
- 30m Setback from the Theoretical Flood Elevation
- 3m Setback from Lot Boundary

DRAWING NOTES

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- Drawing to be printed in colour to indicate flood elevations.

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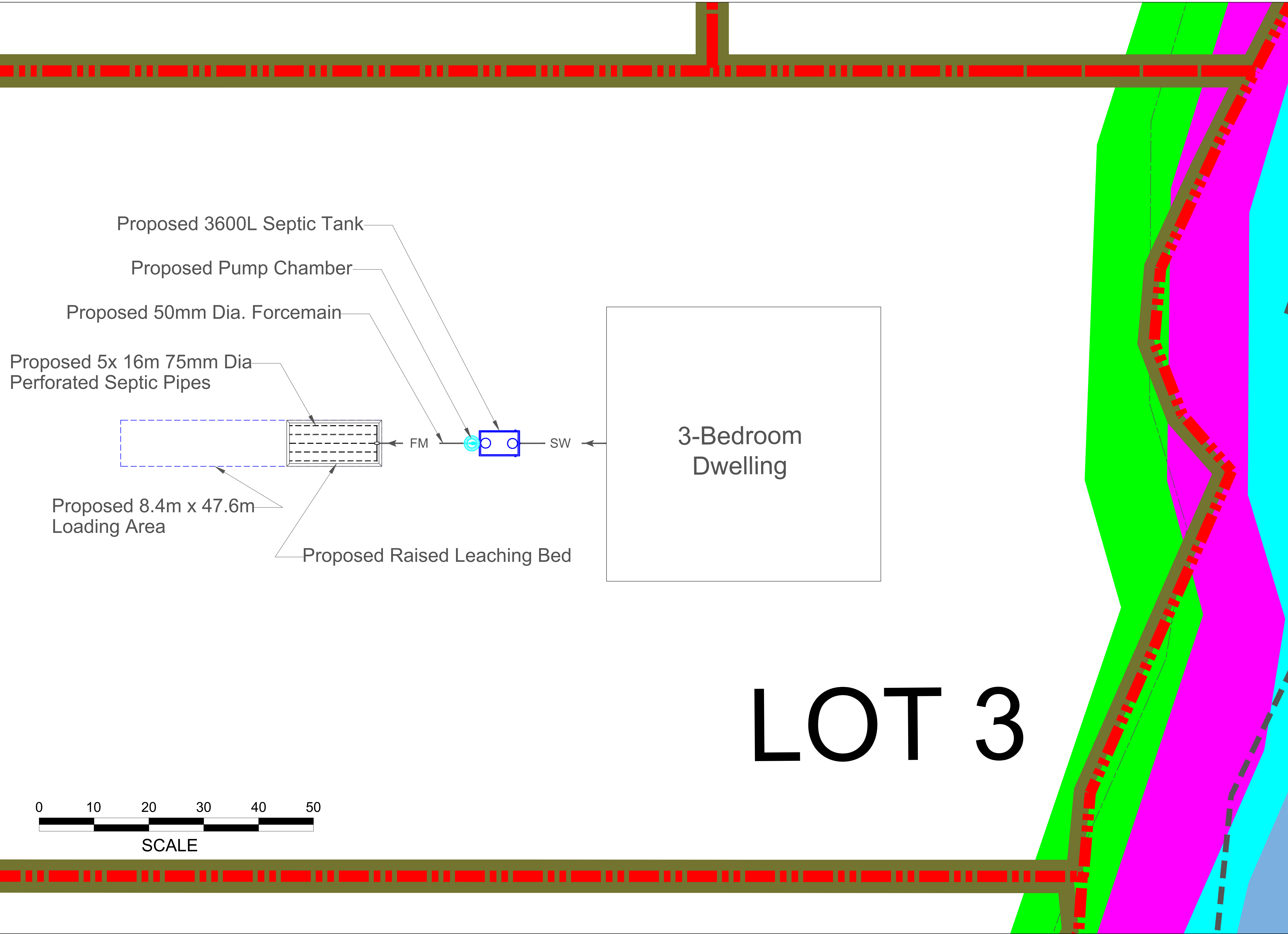
PROJECT NAME:
Lot 28, Concession 9, Wahwashkesh
Municipality of Whitestone, ON

DRAWING NAME:
Flood Elevations and Setbacks

SCALE:	AS SHOWN	PROJECT NO:	318638
DATE:	02/16/2023	REVISION NO:	0.0
DRAWN BY:	AA	CHECKED BY:	C200
CHECKED BY:	IZH		

APPENDIX III

CONCEPTUAL LAYOUTS FOR SEWAGE WORKS



LEGEND


- Shoreline
- Lot Division Lines
- Elevation Contours
- Annual Seasonal Flood Elevation (227.0)
- Theoretical Flood Elevation (229.57)
- 15m Setback from the Theoretical Flood Elevation
- 30m Setback from the Theoretical Flood Elevation
- 3m Setback from Lot Boundary
- SW Proposed Sewer Line
- FM Proposed Forcemain

DRAWING NOTES

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- Drawing to be printed in colour to indicate flood elevations.

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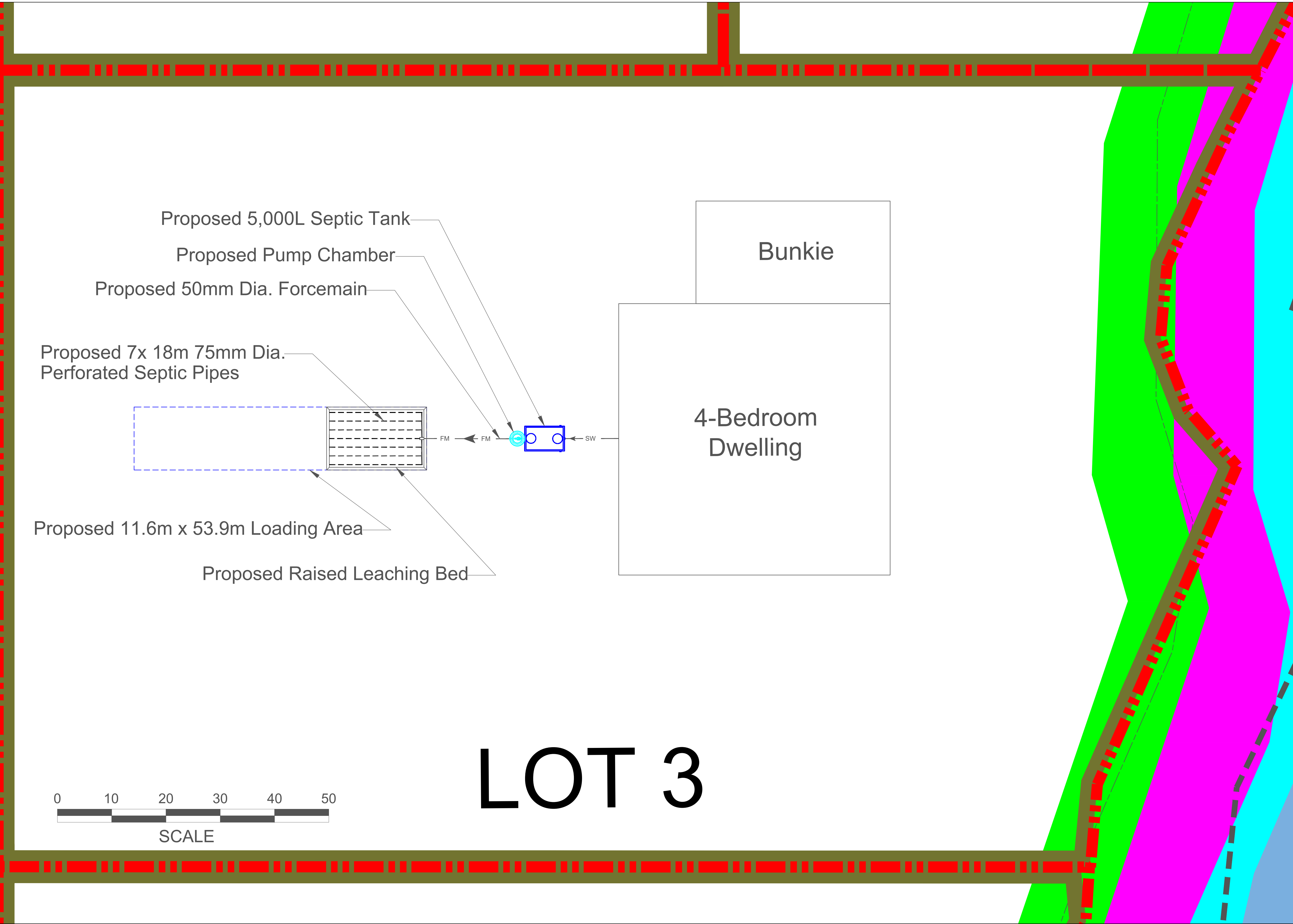


2360 Meadowpine Blvd., Unit 2
Mississauga, Ontario
L5N 6S2

PROJECT NAME:
Lot 28, Concession 9, Wahwashkesh
Municipality of Whitestone, ON

DRAWING NAME:
Conceptual Sewage Works for Lot 3 Serving
a 3-Bedroom Dwelling

SCALE:	AS SHOWN	PROJECT NO:	318638
DATE:	02/16/2023	REVISION NO:	0.0
DRAWN BY:	AA	CHECKED BY:	C300.1
CHECKED BY:	IZH		



LEGEND

- Shoreline
- Lot Division Lines
- Elevation Contours
- Annual Seasonal Flood Elevation (227.0)
- Theoretical Flood Elevation (229.57)
- 15m Setback from the Theoretical Flood Elevation
- 30m Setback from the Theoretical Flood Elevation
- 3m Setback from Lot Boundary
- SW Proposed Sewer Line
- FM Proposed Forcemain

DRAWING NOTES

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- The Base Map is taken from Ontario Land Survey Website
- Drawing to be printed in colour to indicate flood elevations.

0.0	02/16/2023	FOR CLIENT REVIEW
REV	DATE	DESCRIPTION

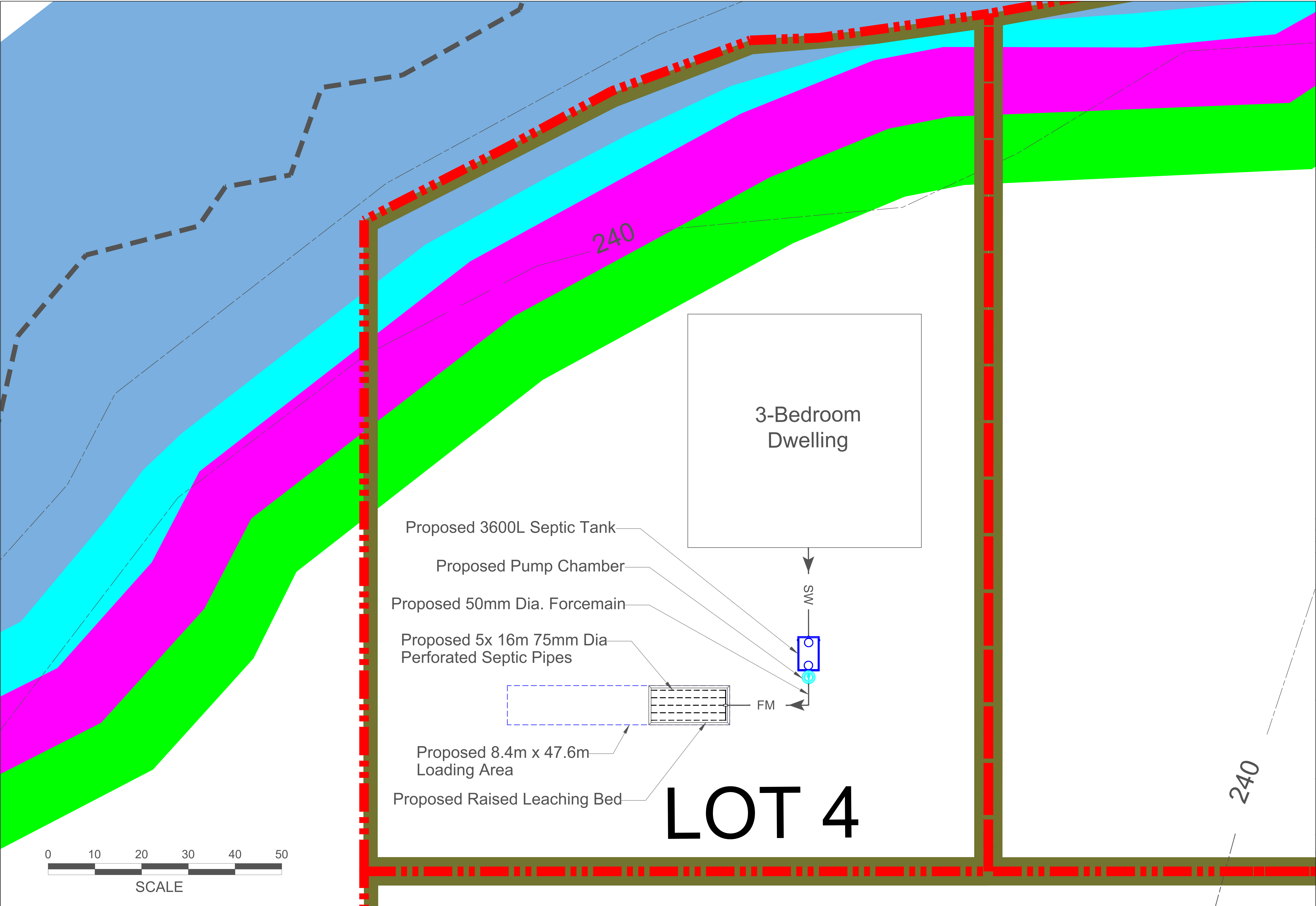
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L5N 6S2

PROJECT NAME:
Lot 28, Concession 9, Wahwashkesh
Municipality of Whitestone, ON

DRAWING NAME:
Conceptual Sewage Works for Lot 3 Serving
a 4-Bedroom Dwelling and a Bunkie

SCALE:	AS SHOWN	PROJECT NO:	318638
DATE:	02/16/2023	REVISION NO:	0.0
DRAWN BY:	AA	CHECKED BY:	C300.2
CHECKED BY:	IZH		



LEGEND


- Shoreline
- Lot Division Lines
- Elevation Contours
- Annual Seasonal Flood Elevation (227.0)
- Theoretical Flood Elevation (229.57)
- 15m Setback from the Theoretical Flood Elevation
- 30m Setback from the Theoretical Flood Elevation
- 3m Setback from Lot Boundary
- SW Proposed Sewer Line
- FM Proposed Forcemain

DRAWING NOTES

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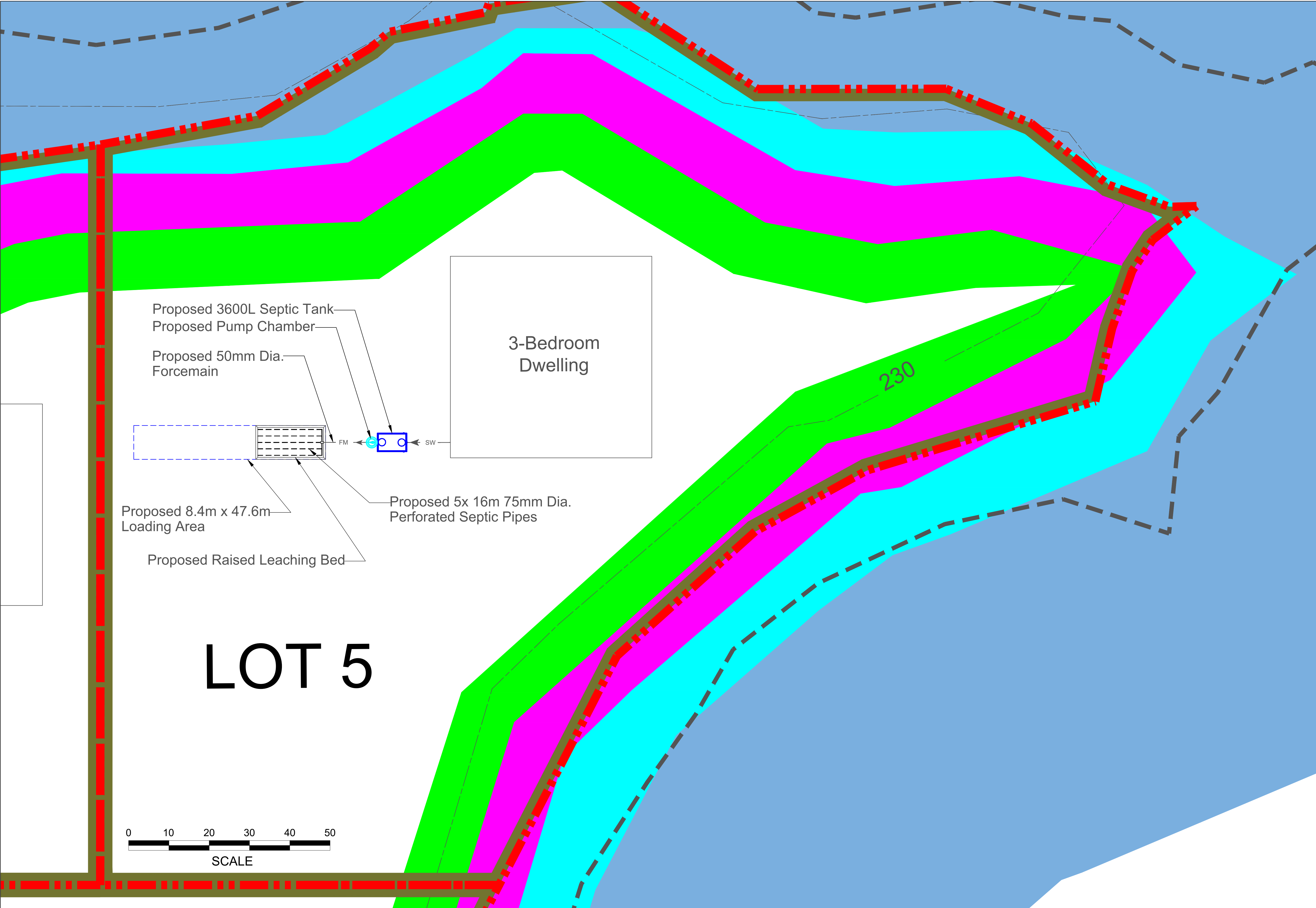


2360 Meadowpine Blvd., Unit 2
Mississauga, Ontario
L5N 6S2

PROJECT NAME:
Lot 28, Concession 9, Wahwashkesh
Municipality of Whitestone, ON

DRAWING NAME:
Conceptual Sewage Works for Lot 4 Serving
a 3-Bedroom Dwelling

SCALE:	AS SHOWN	PROJECT NO:	318638
DATE:	02/16/2023	REVISION NO:	0.0
DRAWN BY:	AA	CHECKED BY:	C300.3
CHECKED BY:	IZH		



LEGEND

- Shoreline
- Lot Division Lines
- Elevation Contours
- Annual Seasonal Flood Elevation (227.0)
- Theoretical Flood Elevation (229.57)
- 15m Setback from the Theoretical Flood Elevation
- 30m Setback from the Theoretical Flood Elevation
- 3m Setback from Lot Boundary
- SW Proposed Sewer Line
- FM Proposed Forcemain

DRAWING NOTES

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PROJECT NAME:
Lot 28, Concession 9, Wahwashkesh
Municipality of Whitestone, ON

DRAWING NAME:
Conceptual Sewage Works for Lot 5 Serving
a 3-Bedroom Dwelling

SCALE:	AS SHOWN	PROJECT NO:	318638
DATE:	02/16/2023	REVISION NO:	0.0
DRAWN BY:	AA	CHECKED BY:	C300.4
CHECKED BY:	IZH		