SERVICING AND STORMWATER MANAGEMENT REPORT

Prepared for:
Mr. Andrew Unger

5 Single Detached Home
Residential Development

107 Ridge Road,
Aurora, ON L4G 0M3

December 12, 2025
Project No.: 24-009

SITEPLANTECH INC.
YOUR URBAN REDEVELOPMENT SOURCE

t. 416-270-7515
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APPENDICES

Submission History

Submission	Date	Issued For	Issued To
1	March 6, 2025	Lot Severance	Aurora
2	Dec. 12, 2025	Lot Severance	Aurora

1.0 INTRODUCTION

1.1 Purpose

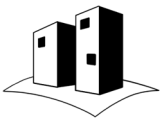
SITEPLANTECH was retained by Mr. Andrew Unger to prepare a Functional Servicing and Stormwater Management Report, in support of a Site Plan Application, to investigate water supply, sanitary sewerage and storm drainage for a proposed development located at 107 Ridge Road in Aurora, Ontario.

The purpose of this report is to provide site specific information for the municipality's review with respect to the adequacy of the existing infrastructure to support the proposed development.

1.2 Background Information

The following documents were requested and made available to SITEPLANTECH for our review and forms the basis of this report:

- Guido V. Consoli, OLS, Guido Papa Surveying (2023, September 17), Surveyor's Real Property Report, Part 1 – Plan Showing Part of Lot 20 Registered Plan 132, Town of Aurora (Project 23-18-596-00). [Technical drawing].
- Niousha Izadi, Battaglia Architect Inc., Proposed Subdivision 107 Ridge Rd. Aurora, ON., Project 24-107. [Technical drawing].
- T.R. Pickle, TSH Engineers Architects Planners (2007, Dec. 11), Proposed Road Reconstruction Allaura Boulevard, Town of Aurora, (Drawing 170.4, 170.5). [Technical drawing].
- J.D. McEwen, Town of Aurora Engineering Department (2004, November), Proposed Road Rehabilitation Ridge Road (Drawing 3290-4-1). [Technical drawing].
- J.D. McEwen, Town of Aurora Engineering Department (2004, November), Proposed Road Rehabilitation Ridge Road (Drawing 3290-4-2). [Technical drawing].
- Author Unknown, Town of Aurora Engineering Department (2015, August), Glensteeple Trail STA. 0+000 to STA. 0+225 (Drawing 501). [Technical drawing].
- Author Unknown, Town of Aurora Engineering Department (2015, August), Glensteeple Trail STA. 0+000 to STA. 0+225 (Drawing 503). [Technical drawing].
- Author unknown, Design Criteria Manual for Engineering Plans Town of Aurora Infrastructure and Environmental Services Department, revised November 2016.
- LSRCA Phosphorus Offsetting Policy, dated May 2023.
- LSRCA Water Balance Recharge Offsetting Policy, dated May 2023.
- LSRCA Technical Guidelines for Stormwater Management Submissions, dated April 2022.



1.3 Site Description

The subject site is approximately 3,891 square metres (0.389 hectares) and is currently occupied by various industrial buildings. The site is bounded by:

- A single-family dwelling to the north;
- Glensteeple Trail to the east;
- A residential subdivision to the south; and,
- A single-family dwelling to the west.

The site is located within the LSRCA'S West Holland sub-watershed and is not located within a regulated area.

1.4 Proposed Development

The proposed development will consist of 5 single-family dwellings. Two (2) homes will be accessed from Glensteeple Trail and three (3) homes will be accessed from Ridge Road. Please refer to the site plan and site statistics in **Appendix A** for additional information.

1.5 Easements and Land Conveyances

There are no existing shared access easements located within the site and the Town of Aurora has not requested land conveyances or road widenings.

However, a 3.0m wide easement around the proposed sanitary sewer will be necessary to develop this site and will be used for access and maintenance purposes.

2.0 SERVICING TERMS OF REFERENCE AND METHODOLOGY

2.1 Terms of Reference

This report was prepared in accordance with the Town of Aurora's design criteria as well as the Lake Simcoe Region Conservation Authority (LSRCA) Technical Guidelines for Stormwater Management Submissions, the specifics of which are outlined below:

2.2 Methodology: Stormwater Management

The modified rational method will be used to calculate runoff rates and target release rates from the site based on Intensity-Duration-Frequency (IDF) rainfall curves from Aurora's engineering design criteria, Section 4.1.

We will provide a detailed account of the pre- and post-development conditions and comment on opportunities to reduce peak flows in accordance with the LSRCA's requirements, the site-specific requirements of which are summarized as follows:

- Peak flow control: Control the 100-year post-development peak flows to the 2-year pre-development peak flows.
- Volume control: Post-construction run-off shall be captured and treated from a target of 25mm storm event.
- TSS removal: Long-term average of 80% TSS removal is required.
- Phosphorus loading: Demonstrate that post-development loading is at or below existing.
- Stream erosion: As the site is less than 2 hectares stream erosion control is not required.
- Erosion control: Shall be designed as per the Erosion and Sedimentation Control Guidelines for Urban Construction (2019).

Detailed servicing and grading plans will be prepared based on the recommendations of this report.

2.3 Methodology: Sanitary Drainage

The sanitary sewage discharge from the site will be determined using sanitary sewer design sheets that consider the land use and building statistics as supplied by the design team. The calculated values will provide peak sanitary flow discharge that considers infiltration.

The Town of Aurora's design criterion recommends using a population per unit (PPU) of 3.8 for single-family / detached developments. Design sheets for sizing sanitary sewers will be based on the criteria outlined in the Town's design standards Section 5.2.1, summarized in **Table 1** below:

Table 1: Design Sanitary Flow Criteria

Use	PPU	Flow
Townhouse	3.5	400 L/c/d
Detached	3.8	400 L/c/d

The existing and proposed site generated flows will be compared, and recommendations will be made to address capacity issues identified, if applicable.

2.4 Methodology: Water Supply

The existing and proposed domestic water demands from the site will be determined in accordance with the municipality's design criteria Section 6.1 summarized in **Table 2** below.

Table 2: Water Demands Criteria

Use	PPU	Flow
Townhouse	3.8	390 L/c/d

Fire suppression calculations, in accordance with the Fire Underwriters Survey (FUS) Guidelines, will be undertaken to determine the minimum flow required at 140 KPa for fire protection, the results of which will be compared to the hydrant flow test and the municipal requirements to confirm adequate supply.

3.0 STORMWATER MANAGEMENT

All calculations and figures pertaining to the information summarized in the following sections are found in **Appendix B**.

3.1 Existing Drainage System

The following storm sewer infrastructure is located within the vicinity of the subject site:

- An existing 300 mm PVC storm sewer is located near the west side of Glensteeple Trail and drains south before turning west to an existing stormwater management pond located approximately 20m south-west of the subject site.

Surface water from this property generally flows in a north-west direction towards Ridge Road, some of which passes through the adjacent private property on the way to Ridge Road. A ditch located just north of the property line carries water collected from a ditch inlet catch basin at the southeast corner of Glensteeple Trail and Ridge Road. This water flows through a cross-culvert beneath Glensteeple Trail and continues through another cross-culvert beneath Ridge Road, draining from the south side to the north side.

The existing house sits in a low area just south of this ditch and does not have proper grade to direct water to the ditch. There is an existing catch basin situated on the north side of the house which presumably collects this water. The existing driveway has positive uncontrolled drainage to Ridge Road, generally following the same north-west drainage pattern. Based on our site visit, photographs and the topographical information, it appears that the site accepts external drainage from two small areas just outside of the property line. A 0.006ha area at the south property line and a 0.004ha area at the east property line. Refer to the pre-development drainage area **Figure 201** for the existing site drainage details.

3.2 Existing Runoff

The pre-development runoff conditions were calculated based on the Town's criteria and will be used to determine net flow reduction from the site. The pre-development runoff from the site is summarized in **Table 3** below:

Table 3: Pre-Development Run-Off

ID OUTER + EXT1	Area (Ha)	Runoff C	I (mm/hr)	Rate (L/s)
2-year	0.134	0.300	64.39	7.2
5-year	0.134	0.300	88.70	9.9
100-year	0.134	0.300	158.27	17.7
ID 201 + EXT2 to Ridge Rd.	**Area (Ha)**	**Runoff C**	**I (mm/hr)**	**Rate (L/s)**
2-year	0.265	0.392	64.39	18.6
5-year	0.265	0.392	88.70	25.6
100-year	0.265	0.392	158.27	45.7

3.3 Allowable Release Rate

The allowable release rate from the site was derived from drainage areas reflecting the existing conditions noted on **Figure 201**. The flows to Ridge Road will be matched in the post development condition – event-to-event. The calculated allowable release rate is summarized in **Table 4** below:

Table 4: Allowable Release Rate

ID EXT3 + EXT1 (To Ridge Road)	Area (Ha)	Runoff C	Rate (L/s)
2-Year	0.134	0.300	7.2
5-Year	0.134	0.300	9.9
100-Year	0.134	0.300	17.7
ID 201 + EXT2 (To Ridge Road)	**Area (Ha)**	**Runoff C**	**Rate (L/s)**
2-Year	0.265	0.392	18.6
5-Year	0.265	0.392	25.6
100-Year	0.265	0.392	45.7

3.4 Proposed Drainage

It is proposed to leave the drainage pattern of area IDs EXT3 and EXT1 untouched as it is a heavily treed and vegetated area. The surface water from these areas generally flows in a north-west direction towards Ridge Road, some of which passes through the adjacent private property on the way to Ridge Road.

Area ID 220 will run uncontrolled to Ridge Road as well. In total, 3 post-development areas will outlet to Ridge Road (EXT3, EXT1, and Area ID 220). The drainage will be designed so that Area ID 210 will be overcontrolled to account for these uncontrolled areas. Runoff from Area ID 210, will be directed towards a trench that will be sized to infiltrate the flow generated from this catchment area.

Area ID 221, will outlet to Glensteeple Trail, ultimately draining into the adjacent stormwater management control pond located just beyond the south property line.

3.5 Quantity Control

As shown in **Table 5** below, the 2-, 5-, and 100-year post-development discharge rate from the subject development will be controlled such that the total release rate does not exceed the total pre-development release rate event-to-event. Refer to **Figure 202**.

Table 5: Post-Development Release Rates

Drainage to Ridge Road				
ID 210 (Controlled)	**Area (Ha)**	**Runoff C**	**Rate (L/s)**	**Storage Required (m^3)**
2-Year	0.149	0.51	10.8	2.6
5-Year	0.149	0.51	14.9	3.6
100-Year	0.149	0.64	17.3	22.3
ID 220 (Uncontrolled)	**Area (Ha)**	**Runoff C**	**Rate (L/s)**	
2-Year	0.059	0.73	7.8	0
5-Year	0.059	0.73	10.7	0
100-Year	0.059	0.92	23.9	0
ID EXT1 + EXT3 (Uncontrolled)	**Area (Ha)**	**Runoff C**	**Rate (L/s)**	
2-Year	0.134	0.30	7.2	0
5-Year	0.134	0.30	9.9	0
100-Year	0.134	0.38	22.1	0
Drainage to Glensteeple Trail				
ID 221 + EXT2 (Uncontrolled)	**Area (Ha)**	**Runoff C**	**Rate (L/s)**	
2-Year	0.057	0.68	7.4	0
5-Year	0.057	0.68	9.5	0
100-Year	0.057	0.85	21.3	0

In total, 22.3 m^3 of active storage is required to meet the allowable release rate. Quantity controls will be provided by infiltration trenches as per **Figure 401**. The 100-year storm event will be over-controlled (to account for uncontrolled flows) by directing all drainage from area ID 210 to infiltration trenches at the back of each property. The infiltration trenches will provide enough

storage such that peak flows from the 100-year post-development storm event are attenuated to the 100-year pre-development flows. Refer to the Infiltration Trench Design Calculations in **Appendix B** and **Figure 202** in **Appendix E**.

3.6 Infiltration Trench Sizing

The prevalent surficial geology can be classified as sand. Sand has an average percolation rate of up to 210mm/hr. The following table summarizes the infiltration trench sizing for drainage area ID 210 which is based on a 12 hour drawdown time and uses a factor of safety of 2.5:

Table 6: Infiltration Trench Sizing

ID	Vol. Req. (m^3)	Area (m^2)	Depth (m)
210	22.3	55.3	1.01

As per the Ontario Stormwater management plan and SWMP design (4.0), the infiltration trench will have a cover of 0.70m (refer to the soil cover diagram in **Appendix B**). The infiltration trench, will include 50mm diameter clear stone and non-woven filter fabric.

Please refer to the infiltration calculations in **Appendix B**.

3.7 Stream Erosion Control

As per LSRCA's Guidelines (Section 2.4) stream erosion control for the subject site is not required as the development site is less then 2.0 Ha.

3.8 Quality Control

Since infiltration trenches are proposed to capture the controlled runoff, quality control assessment is not required.

3.9 Phosphorus Loading

An analysis of the pre- and post-development phosphorous loading from the proposed development was prepared, in consideration with the current LSRCA's phosphorus loading criterion and offsetting policy, a summary of which follows.

3.9.1. Phosphorus Mitigation

The analysis was conducted using the MOE Phosphorous Budget Tool using agreed upon pre-development land-uses and considers a treatment-train approach, consisting of surface vegetation and infiltration.

In addition to the proposed treatment train approach, erosion and sediment control procedures will be implemented to reduce sediment transportation during construction. Refer to Section 7.0 below for additional details.

Considering the above, a net reduction in phosphorous loading for the proposed development is achieved; a summary of the Phosphorous Budget Tool results is outlined in **Table 9** below:

Table 9: Post Development P-Load Summary

Stage	P-Load (kg/yr)
Pre-development	0.05
Post-development	0.05
BMP credits	0.01
Post-Development P-Load	**0.04**

Based on the proposed development's treatment train approach and section 4.4.2 of the LSRCA's offsetting policies, our calculations demonstrate that the post-development phosphorus loading does not exceed the pre-development phosphorus loadings. the MOECP P-Load Development summary recommends approving the development as site specific appropriate. The full report is found in the appendices

3.9.2. Phosphorus Offsetting Fee Calculation

As post-development phosphorus loading from the development is reduced by 23%, the post-development conditions achieve the latest phosphorus loading criterion, therefore no offsetting contribution will be necessary.

3.10 Green Standards

In order to achieve the water Tier 2 Green Standards W1.2.4, rain barrels will be provided at the downspouts of the rain leaders to collect the uncontrolled roof water.

3.11 Storm Services

As the lots fronting Ridge Road do not have access to a storm sewer and since it is proposed to maximize infiltration, it is recommended to provide a sump pump for all lots. The sump should be designed to discharge to the infiltration trenches as per the typical detail included in the appendix of this report. Further details will be provided at the detailed design stage.

4.0 SANITARY DRAINAGE

All calculations and figures pertaining to the information summarized in the following sections are found in **Appendix C**.

4.1 Existing Sanitary Drainage System

The following sanitary sewer infrastructure is located within the vicinity of the subject site:

- An existing 200 mm PVC sanitary sewer is located on the east side of Glensteeple Trail and drains to the south.

4.2 Existing Sanitary Flows

For the purposes of this report, it is assumed that the site does not currently contribute sanitary flows to the existing infrastructure as there is an existing septic tank on the property.

4.3 Proposed Sanitary Flows

The proposed sanitary discharge flows from the site were calculated based on the criteria outlined in **Section 2.3** and site statistics. A total peak design flow of 0.4 L/s was calculated for the proposed development.

4.4 Proposed Sanitary Connection

Since there is no existing sanitary infrastructure along Ridge Road, the sanitary effluent from units 1 and 2 fronting Ridge Road will need to be pumped via a 50mm low-pressure forcemain up to the existing infrastructure on Glensteeple Trail. This infrastructure will be located within a 3.0m easement crossing the rear lots of unit 2 and unit 3. The forcemain will be connected to a control structure just inside of the east property line where it will then flow by gravity to a new 1200mm diameter manhole on Glensteeple Trail. The sanitary effluent from the units 3, 4 and 5 will flow by gravity via a service connection to the Glensteeple Trail sanitary infrastructure.

Refer to **Figure 101** in **Appendix E.**

5.0 WATER SUPPLY

All calculations and figures pertaining to the information summarized in the following sections are found in **Appendix D**.

5.1 Existing System

The following sanitary sewer infrastructure is located within the vicinity of the subject site:

- An existing 200 mm PVC watermain is located within the east boulevard of Glensteeple Trail.
- An existing 400 CPP watermain is located within the north boulevard of Ridge Road.

A hydrant flow test was performed by Watermark Environmental on the Glensteeple Trail infrastructure on June 18, 2024. The test results indicate the watermain is operating at a static pressure of approximately 579 KPa (84 PSI), and that the available flow at 150 KPa (20 PSI) is approximately 11,318 L/min (2,990 USPGM).

5.2 Existing Water Demands

The existing site is currently on well water and has been confirmed with the Ontario Well records, therefore it does not currently require any domestic water.

5.3 Proposed Water Supply Requirements

The estimated water consumption was calculated as per the criteria outlined in **Section 2.4** above. The proposed average day domestic water consumption rate is estimated to be 0.09 L/s (maximum day demand of approximately 13,338 L/d).

Water Supply for Public Fire Protection calculations, as per the Fire Underwriters Survey (FUS), were undertaken to determine the minimum requirement to provide adequate fire suppression. According to our calculations, a minimum fire suppression flow of approximately 5,270 L/min (1,392 USGPM) will be required for the subject development. According to the flow test referenced above, the Max Day + Fire Flow rate of approximately 5,281 L/min (1,395 USGPM) is available at a pressure which exceeds the minimum FUS requirements.

The municipal water system therefore has adequate flow and pressure to satisfy the water demands of the proposed development.

5.4 Proposed Water Connection

Units 1-3 which front Ridge Road, will be serviced via a 25mm diameter water line with curbstop at the property line and connect to the existing 400 CPP watermain on the north side of Ridge Road. Units 4 and 5 which front Glensteeple Road, will be serviced via a 25mm diameter water line with curbstop at the property line and connect to the existing 200mm diameter PVC watermain on the east side of Glensteeple Trail. Please refer to **Figure 101** found in **Appendix E**.

6.0 SITE GRADING

Please refer to **Figure 401** found in **Appendix E** for additional information pertaining to the grading details discussed below.

6.1 Existing Grades

The site is mostly covered by grass, trees and other vegetation, with the roof and driveway surfaces make up the hardscaped area. In general, surface drainage is directed overland toward Ridge Road in a north-westerly fashion, some of which spills onto adjacent private property to the west as indicated on the pre-development drainage area **Figure 201** found in **Appendix B**. The topography of the surrounding areas indicates that the subject site does receive a small amount of external surface runoff from just beyond the south and east property lines due to the irregular shape of the adjacent retaining walls.

The site's topography is such that there is an over 4.00m grade difference from high to low point and the grade of Ridge Road at the property boundary is steep, in the range of 8-9%.

6.2 Proposed Grades

Based on the development concept and the review of the perimeter site grades, the finished floor elevation of each house will vary. Due to the varied grades on site, the grade differences will be accommodated by using a combination of 3:1 slopes and retaining walls. All the houses will have split drainage whereas the front of the lots drain uncontrolled the adjacent streets and the rest drains towards the back.

A portion of the proposed site along east property line (along Glensteeple Trail), will be raised to have access to units 4 and 5 via Glensteeple Trail. This would also include a removal of approximately 55m of existing retaining wall along Glensteeple Trail to accommodate these new building frontages. The retaining wall along the public path leading the the SWM pond will remain in place to assist with match existing grades at the site's property line.

In order to maintain drainage along the south Ridge Road ditch, a new driveway culver will be required for Unit 3. Ditch drainage west of the unit 3 driveway is then conveyed to the north Ridge Road ditch which negates the need for a driveway culvert for units 1 and 2 as the boulevard will be regraded.

The proposed grading of the site perimeter will be compatible with the adjacent developments.

The development of this site will not adversely impact adjacent lands.

7.0 EROSION AND SEDIMENT CONTROL

To ensure stormwater runoff during the construction phase does not transport sediment to the existing municipal infrastructure, temporary catchbasin sediment control devices are proposed on Glensteeple trail along the site frontage. In addition, a temporary sediment control fence will be erected around the site perimeter and a temporary construction access (mud mat) will be built at the construction entrance on Ridge Road.

These measures will be designed and constructed in accordance to the "Erosion and Sediment Control Guideline for Urban Construction" document (December 2019). These measures, as well as any additional information pertaining to ESC Controls, are detailed on **Drawing 601** found in **Appendix E**. All reasonable measures will be taken to ensure sediment loading to the adjacent properties and municipal right-of-way is minimized both during and following construction.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This report is to be read in conjunction with the application submission material for the project proposal known as 107 Ridge Road. We conclude and recommend the following:

8.1 STORMWATER MANAGEMENT

Peak runoff rates for the proposed development were designed to match the pre-development flows, event-to-event. This will be achieved by implementing on-site infiltration trenches. A total storage volume of 22.3m^3 is required to meet quantity controls and water balance.

8.2 SANITARY DRAINAGE

The sanitary discharge from the proposed development will be directed to the Town's sanitary sewer located on Glensteeple Drive.

8.3 WATER SUPPLY

The existing watermain has adequate capacity to supply the Max Day + Fire Flow rate of approximately 5,281 L/min (1,395 USGPM) at 140 Kpa (20 PSI) required for the proposed development at the proposed hydrant.

8.4 SITE GRADING

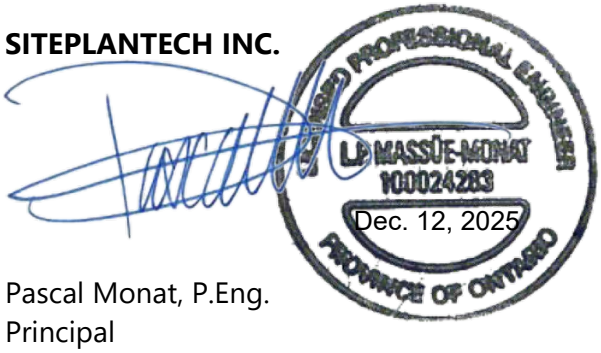
The proposed grading is compatible with existing elevations at the property limit, and will not adversely affect adjacent properties.

8.5 EROSION AND SEDIMENT CONTROL

ESC measures were designed as per the "Erosion and Sediment Control Guideline for Urban Construction" document (December 2019). Provided that these measures are well maintained during construction, these will be adequate to keep sediments from entering the municipal infrastructure during construction.

Respectfully submitted,

SITEPLANTECH INC.



Pascal Monat, P.Eng.
Principal

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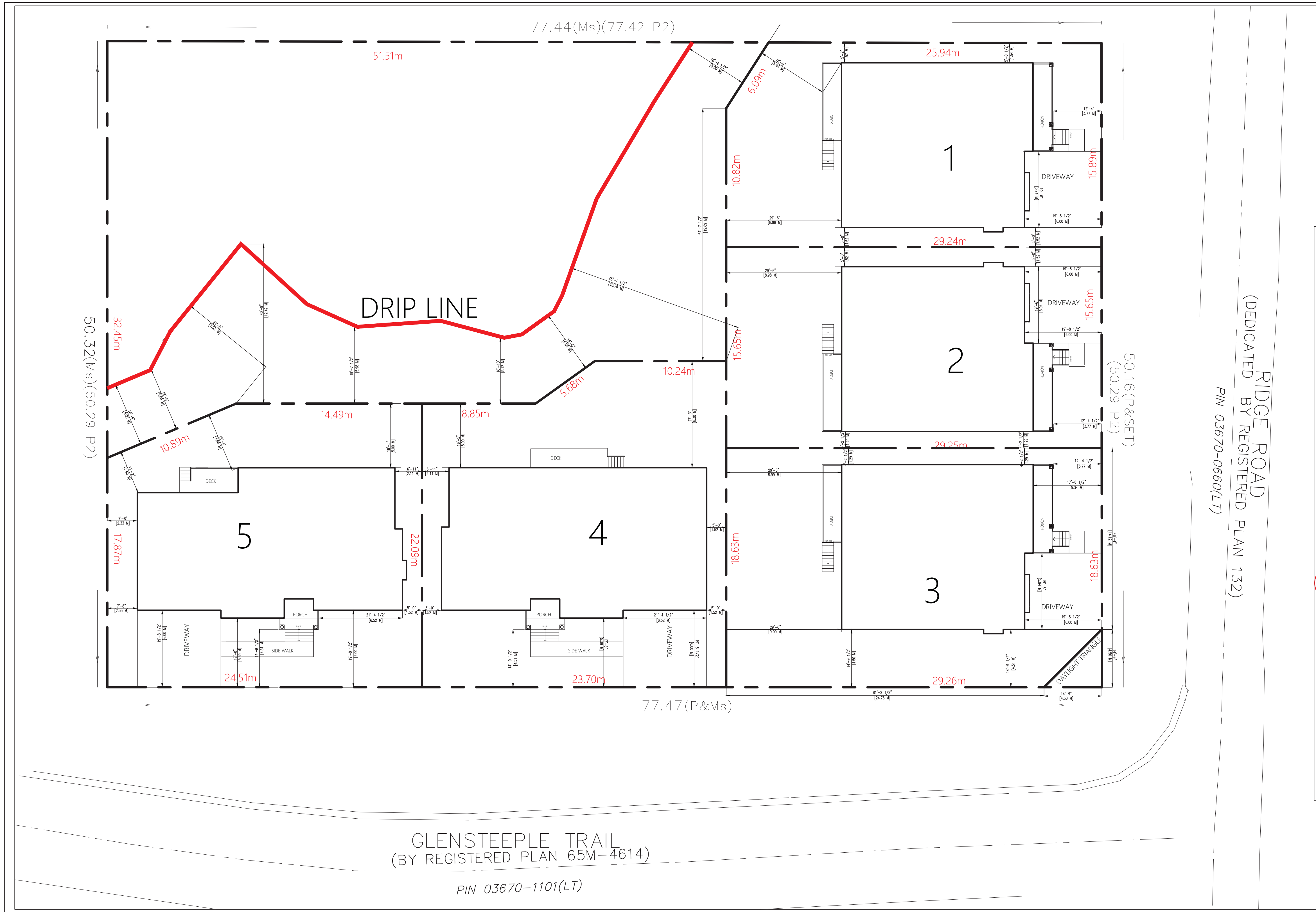
Appendix A

Background Information



SURVEYOR'S REAL PROPERTY REPORT
PART 1 - PLAN SHOWING
PART OF LOT 20
REGISTERED PLAN 132
GEOGRAPHIC TOWNSHIP OF KING
TOWN OF AURORA
REGIONAL MUNICIPALITY OF YORK

5 0 5 10 15 metres

GUIDO PAPA SURVEYING
A DIVISION OF J.D. BARNES

LOT AREA:		LOT FRONTAGE:	
LOT 1:	456.71 sq.m.	LOT 1:	15.89m.
LOT 2:	457.65 sq.m.	LOT 2:	15.65m.
LOT 3:	534.86 sq.m.	LOT 3:	18.63m. & 14.12
LOT 4:	563.03sq.m.	LOT 4:	23.70m.
LOT 5:	522.05 sq.m.	LOT 5:	24.51m.

FOOTPRINT		LOT COVERAGE:
LOT 1: 2018.33 sq.ft.	187.50 sq.m.	41.05%
LOT 2: 2018.33sq.ft.	187.50 sq.m.	40.97%
LOT 3: 2018.33 sq.ft.	187.50 sq.m.	34.97%
LOT 4: 2488.55 sq.ft.	231.19 sq.m.	41.06%
LOT 5: 2321.26 sq.ft.	215.65 sq.m.	41.30%

GROSS FLOOR AREA:	
LOT 1: 4072.20 sq.ft.	378.32 sq.m.
LOT 2: 4072.20sq.ft.	378.32 sq.m.
LOT 3: 4072.20 sq.ft.	378.32 sq.m.
LOT 4: 4105.00 sq.ft.	381.36 sq.m.
LOT 5: 3788.41.00 sq.ft.	351.95 sq.m.

NO	SITE PLAN REVISED UNIT 4 & 5	DATE
NO	ISSUE/REVISION	DATE

The contractor shall check and verify all dimensions and report all errors and omissions to the Architect before proceeding with the work. This drawing is the property of the Architect and must be returned on completion of the work. Do not scale drawings.

BATTAGLIA ARCHITECT INC.
Niousha Izadi

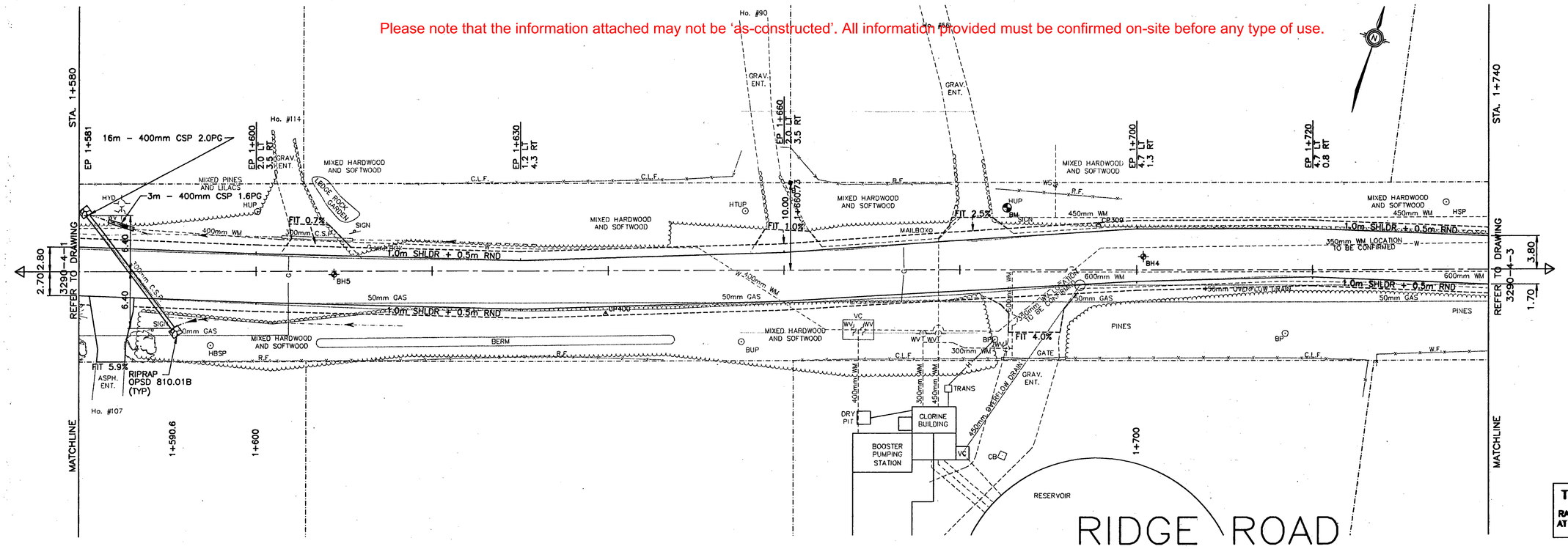
Project: **PROPOSED SUBDIVISION**
107 RIDGE RD.
AURORA, ON.

drawing: **CONCEPT PLAN**

date: SEP / 29 / 2025
scale: 1:150
Drawn by: NI
project no.: 24-107
drawing no.: A2

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD SERVICES & UTILITIES. THE VARIOUS UTILITIES CONCERNED SHALL BE GIVEN REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING, FOR STAKE OUT. THE TOWN ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING UTILITIES AS INDICATED ON THIS DRAWING.

Please note that the information attached may not be 'as-constructed'. All information provided must be confirmed on-site before any type of use.



TBM EL. 304.684
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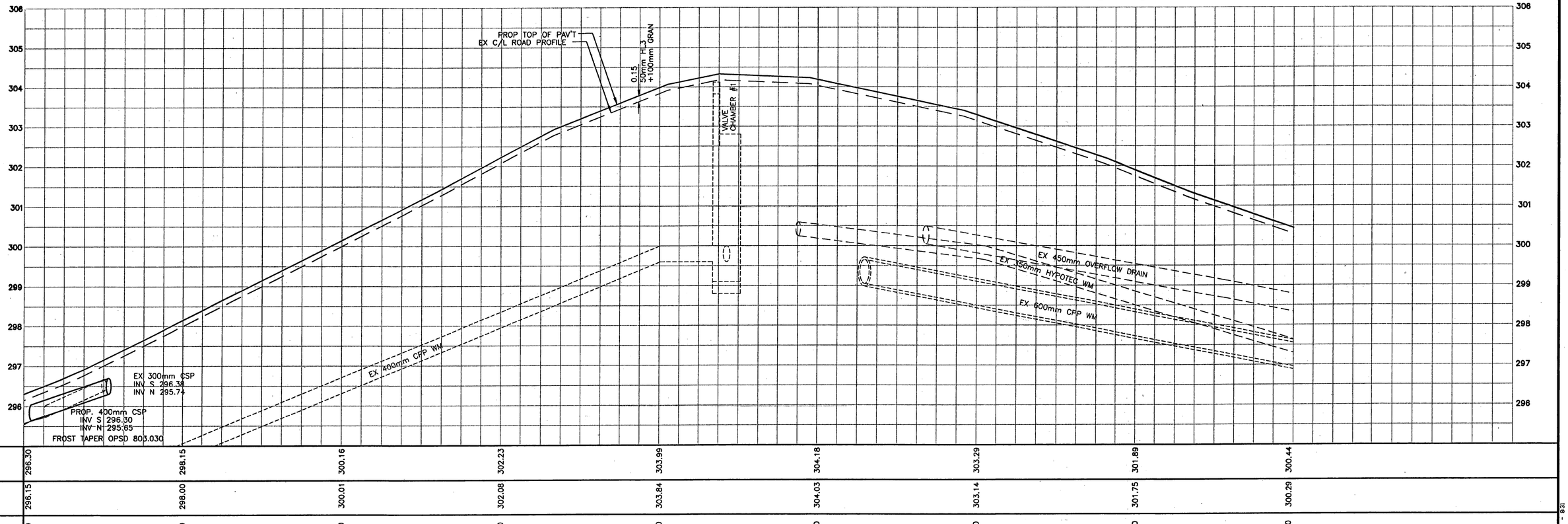
AT STA 1+685 LT



PROPOSED CROWN PAVEMENT	296.30	298.15	300.16	302.23	303.99	304.18	303.29	301.89	300.44
EXISTING C/L CROWN PAVEMENT	296.15	298.00	300.01	302.08	303.84	304.03	303.14	301.75	300.29
℄ ROW CHAINAGE	1+580	1+600	1+620	1+640	1+660	1+680	1+700	1+720	1+740

No.	REVISIONS	DATE	REVIEWED

TSH engineers architects planners

ROAD RECONSTRUCTION

JANUARY 2004 PROJECT No. 42-65031

L.D. McEWEN
NOV. 30

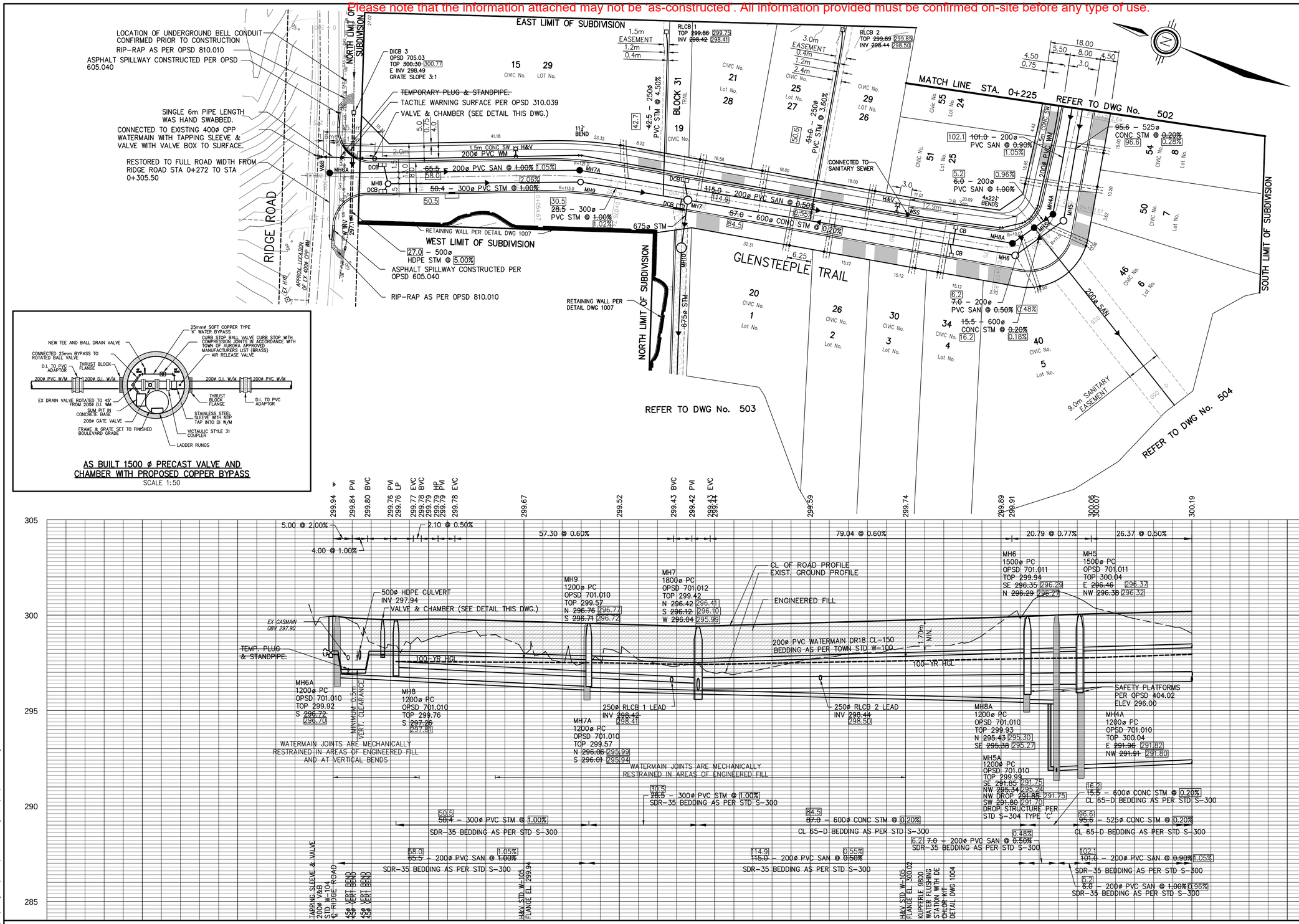
TOWN OF AURORA
REVIEWED
DATE April 6 2005
DIRECTOR OF PUBLIC WORKS

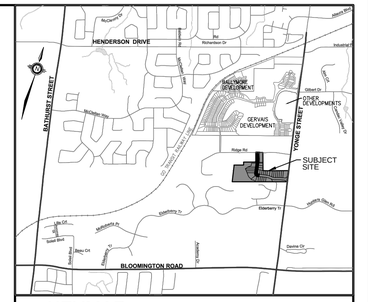
PROPOSED ROAD REHABILITATION
RIDGE ROAD
FROM STA 1+580
TO STA 1+740

TOWN OF AURORA
ENGINEERING DEPARTMENT

DESIGN	M.J.V.	SCALE	HOR. 1:250	VER. 1:50	
DRAWN	D.R.	REVIEWED	M.J.V.	DRAWING NO.	3290-4-2
DATE	NOV. 2004	SHEET NO.	3 OF 4	PROJECT No.	42-65031

65031-2-c1-5.dwg - 30 Nov 2004 - 9:31





KEYMAP N.T.S.

LEGEND:

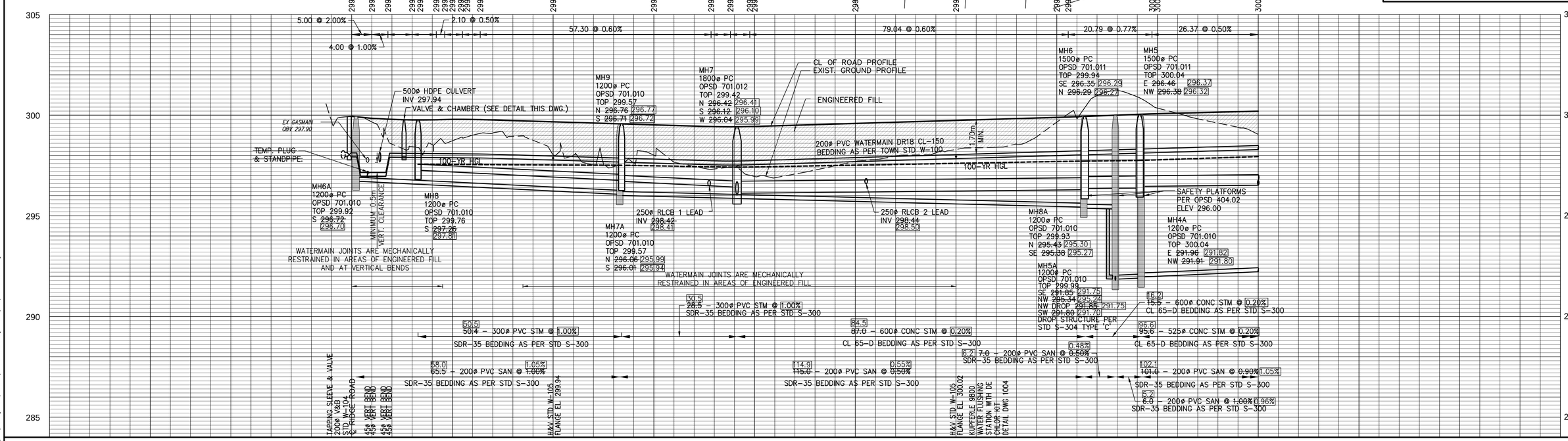
- STORM MANHOLE
- SANITARY MANHOLE
- CATCHBASIN
- DOUBLE CATCHBASIN
- HYDRANT AND VALVE
- VALVE AND BOX
- VALVE AND CHAMBER
- WATER SAMPLING STATION
- SERVICE CONNECTIONS (SEE DETAIL DWG 1002)
- PROPOSED ACOUSTIC FENCE (SEE DETAIL DWG 1007)
- PROPOSED DRIVEWAY
- PROPOSED RETAINING WALL (SEE DETAIL DWG 1007)

PAVEMENT STRUCTURE ON GLENSTEEPLE TRAIL TO CONSIST OF THE FOLLOWING COMPACTED LAYERS:

40 mm OF HL-3 ASPHALT
50 mm OF HL-8 ASPHALT
150 mm OF 19mm CRUSHER-RUN LIMESTONE
300 mm OF 50mm CRUSHER-RUN LIMESTONE

NOTE: ALL WATER SERVICES ARE FITTED WITH CLA-VAL MODEL CRD-L (OR EQUIVALENT) PRESSURE REDUCING VALVES IN BASEMENT.

AS BUILT 1500 ø PRECAST VALVE AND CHAMBER WITH PROPOSED COPPER BYPASS
SCALE 1:50



GENERAL NOTES

1. REFER TO INDEX SHEET FOR GENERAL NOTES AND BENCHMARK.
2. TOWN OF AURORA VERTICAL BENCHMARK NO. 2237, HAVING AN ELEVATION OF 264.780 METRES. REFER TO INDEX FOR COMPLETE DESCRIPTION.
3. ALL DIMENSIONS AND ELEVATIONS IN METRES UNLESS NOTED OTHERWISE. ALL PIPE SIZES IN MILLIMETRES.
4. ALL EXISTING UTILITIES SHOWN ON THE DRAWING ARE FOR REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES FOR UTILITY STAKEOUT. THE CONTRACTORS SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING UTILITIES DURING CONSTRUCTION.

No.	REVISIONS	DATE	REVIEWED
1.	AS-CONSTRUCTED	MAY/13/20	

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

FAIRGATE HOMES
OPUS HOMES

TOWN OF AURORA
REVIEWED
DATE _____ 2017
DIRECTOR OF INFRASTRUCTURE AND ENVIRONMENTAL SERVICES

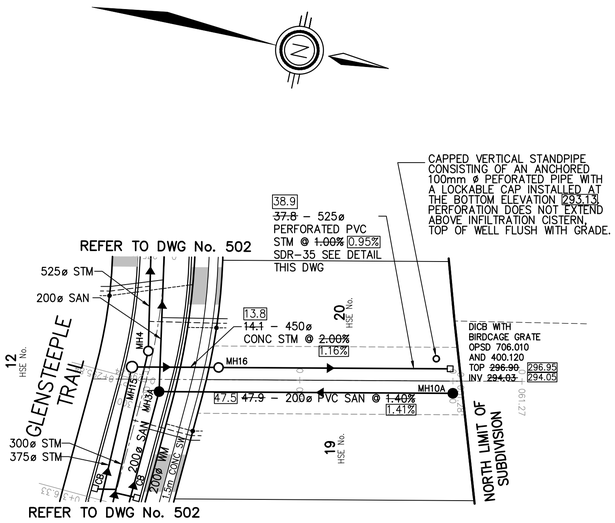
2457920 ONTARIO INC.
GLEN RIDGE ESTATES
D12-03-2A

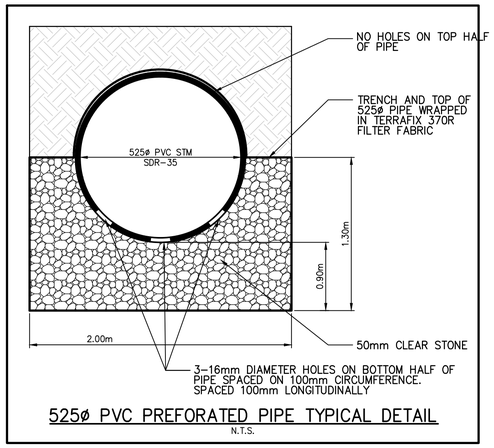
GLENSTEEPLE TRAIL
STA 0+000 TO STA 0+225

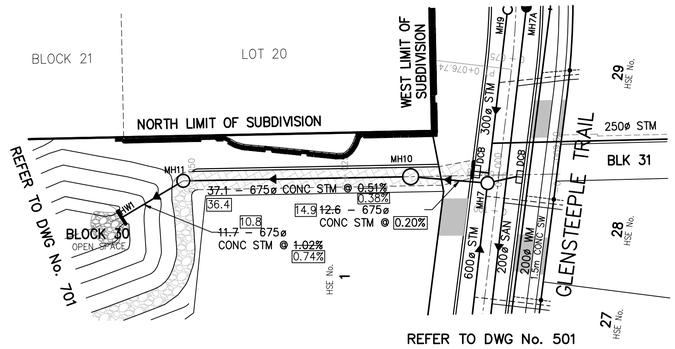
AURORA You're in good company
TOWN OF AURORA
ENGINEERING DEPARTMENT

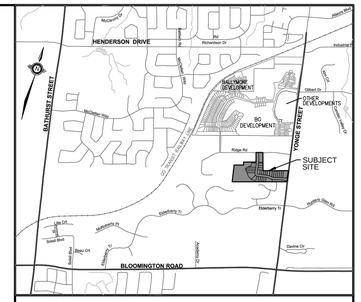
DESIGN AAG	SCALE HOR. 1:500	VERT. 1:100	
DRAWN SWS	REVIEWED WJL	DRAWING NO. 501	
DATE AUGUST 2015	SHEET NO.	PROJECT No. 15:341	

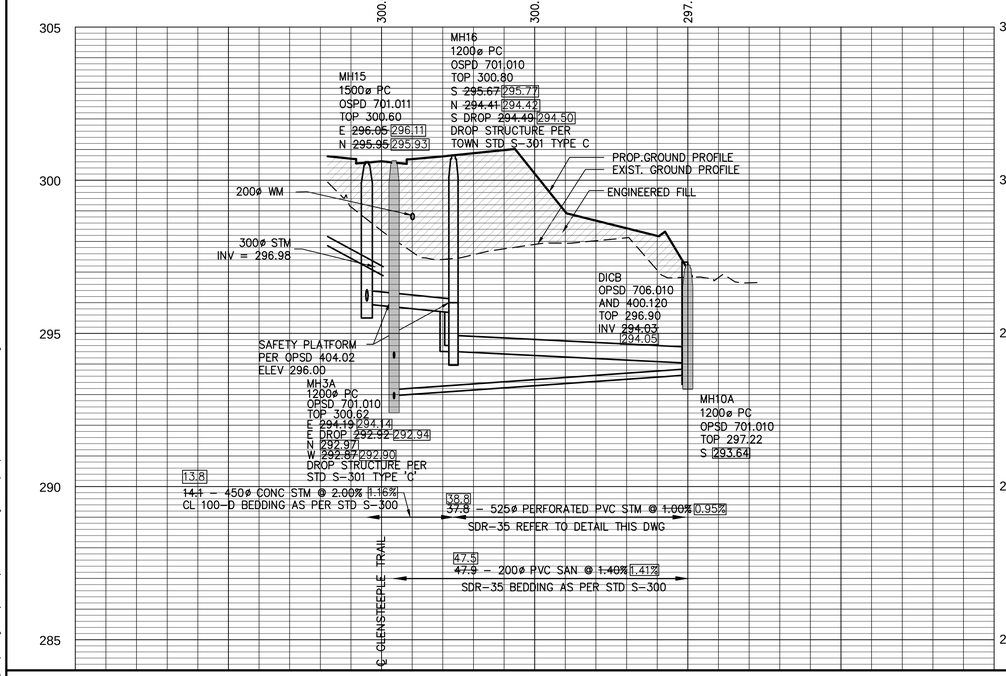
PLOT DATE: 24/05/17 PLOT TIME: 10:24:00 FILE: P:\15\341\Drawing Files\Phase 1\General & Drainage Plans\341_p501 Street A.dwg

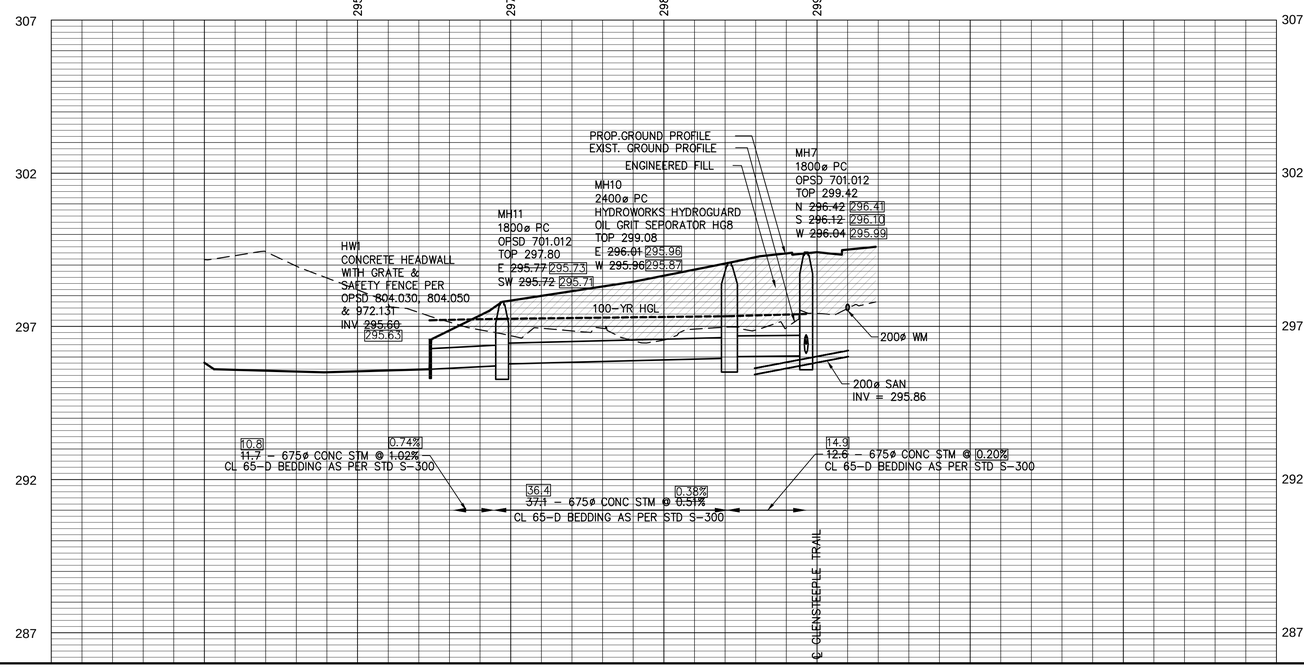












525ø PVC PREFORATED PIPE TYPICAL DETAIL
N.T.S.

KEYMAP N.T.S.

LEGEND:

- ○ STORM MANHOLE
- ● SANITARY MANHOLE
- □ CATCHBASIN
- ◫ DOUBLE CATCHBASIN
- HYDRANT AND VALVE
- ⋈ VALVE AND BOX
- ⊗ VALVE AND CHAMBER
- ◉ WATER SAMPLING STATION
- ¦ SERVICE CONNECTIONS (SEE DETAIL DWG 1002)
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No.	REVISIONS	DATE	REVIEWED
1.	AS–CONSTRUCTED	MAY/13/20	

SABOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

FAIRGATE HOMES
OPUS HOMES

TOWN OF AURORA
REVIEWED
DATE 2017
DIRECTOR OF INFRASTRUCTURE AND ENVIRONMENTAL SERVICES

2457920 ONTARIO INC.
GLEN RIDGE ESTATES
D12-03-2A

BLOCK 30
STORM/SANITARY EASEMENT

AURORA
You're in Good Company

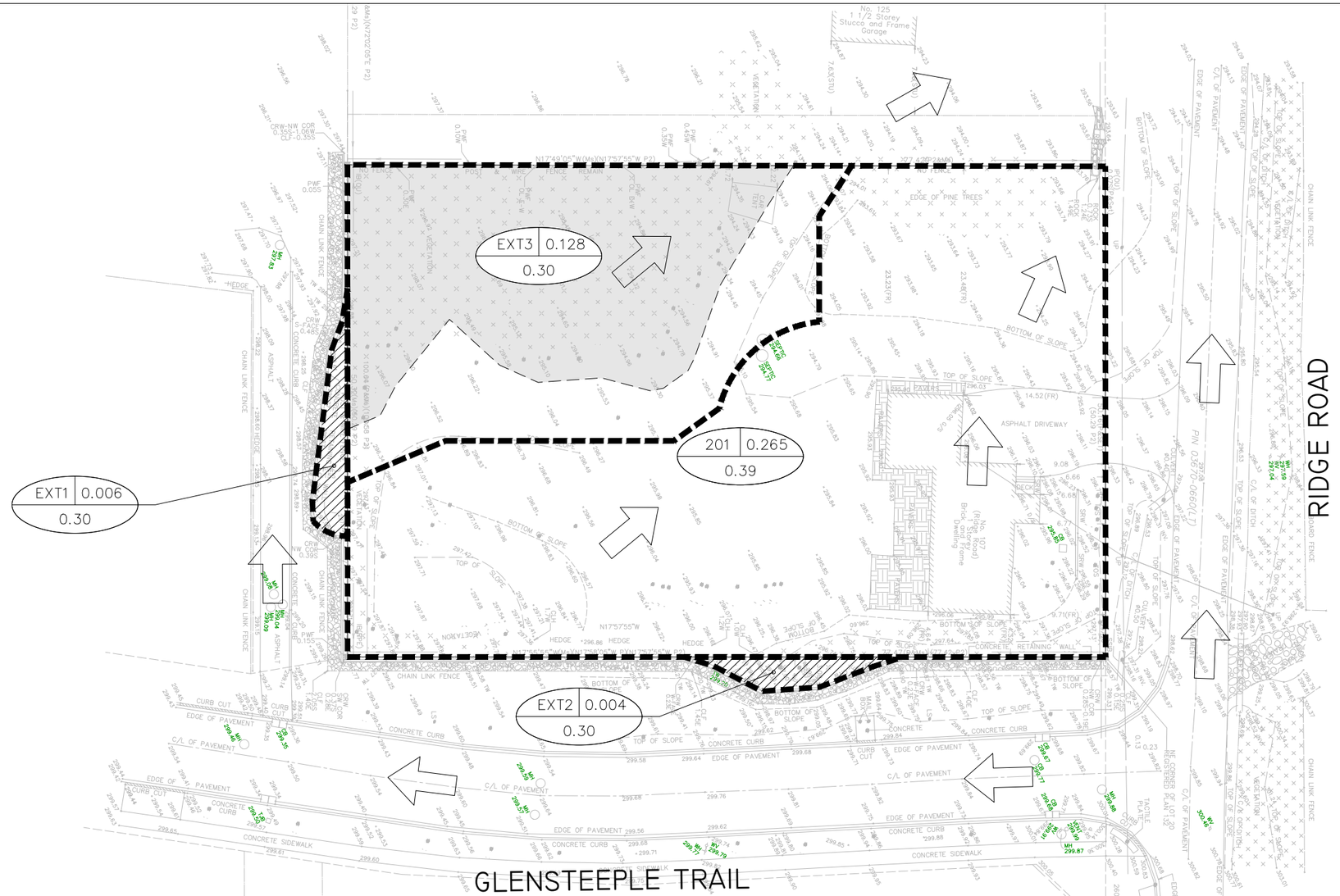
TOWN OF AURORA
ENGINEERING DEPARTMENT

DESIGN AAG	SCALE HOR. 1:500	VERT. 1:100	
DRAWN SWS	REVIEWED WJL	DRAWING NO. 503	
DATE AUGUST 2015	SHEET NO.	PROJECT No. 15:341	

PLOT DATE: 24/05/17 PLOT TIME: 10:33 CAD FILE: P:\15\341\Drawing Files\Phase 1\General & Drainage Plans\341 p503 Storm-San Easement.dwg

Appendix B

Storm Data



ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF AURORA BENCH MARK NO. DPW 246 HAVING A PUBLISHED ELEVATION OF 328.751M.

SITEPLANTECH INC. 50 ST. CLEMENTS AVE. TORONTO, ON M4R 1G9		2693642 ONTARIO INC. 107 RIDGE ROAD AURORA, ON

NO.	ISSUE	DATE
2	UPDATED SITE PLAN AND ADDRESSED COMMENTS	12/12/25
1	LOT SEVERANCE	03/06/25

PRE-DEVELOPMENT DRAINAGE PLAN

DRAWN:	LPM	DATE:	DEC. 2025
SCALE:	1:500	DWG:	201

ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF AURORA BENCH MARK NO. DPW 246 HAVING A PUBLISHED ELEVATION OF 328.751M.

SITEPLANTECH INC. 50 ST. CLEMENTS AVE. TORONTO, ON M4R 1G9		2693642 ONTARIO INC. 107 RIDGE ROAD AURORA, ON				POST-DEVELOPMENT DRAINAGE PLAN	
						DRAWN: LPM	DATE: DEC. 2025
			2	UPDATED SITE PLAN AND ADDRESSED COMMENTS	12/12/25	SCALE: 1:500	DWG: 202
			1	LOT SEVERANCE	03/06/25		
			NO.	ISSUE	DATE		

PRE-DEVELOPMENT
RUNOFF COEFFICIENT

Drainage Area EXT3 + EXT1 to Ridge Rd

Surface Type	C	A (Ha)	A*C
Grass	0.300	0.134	0.04
Composite C		0.134	0.30

Drainage Area 201 + EXT2 to Ridge Rd

Surface Type	C	A (Ha)	A*C
Roof/Hard Surfaces	0.900	0.041	0.04
Grass	0.300	0.224	0.07
Composite C		0.265	0.39

Summary

Drainage Area	C	A (Ha)	A*C
EXT3 + EXT1 to Ridge Rd	0.300	0.134	0.04
201 + EXT2 to Ridge Rd	0.392	0.265	0.10
TOTAL		0.399	0.36

PRE-DEVELOPMENT RUN-OF
CALCULATIONS

IDF set: Aurora

Return Period	*a*	T_c	*b*	*c*
2-Year	647.7	15	4.00	0.784
5-Year	929.8	15	4.00	0.798
100-Year	1770.0	15	4.00	0.820

Where: $I = \frac{a}{(t_c + b)^c}$ and: $Q = \frac{CIA}{360}$

Pre-Development Run-Off Volumes

EXT1+EXT3	Area (Ha)	Composite C	I (mm/hr)*	Q (L/s)
2-Year	0.134	0.300	64.39	7.2
5-Year	0.134	0.300	88.70	9.9
100-Year	0.134	0.300	158.27	17.7
201+EXT2	**Area (Ha)**	**Composite C**	**I (mm/hr)***	**Q (L/s)**
2-Year	0.265	0.392	64.39	18.6
5-Year	0.265	0.392	88.70	25.6
100-Year	0.265	0.392	158.27	45.7

Site Total

Total	Area (Ha)	Composite C	I (mm/hr)*	Q (L/s)
2-Year	0.399	0.361	64.39	25.8
5-Year	0.399	0.361	88.70	35.5
100-Year	0.399	0.361	158.27	63.3

POST-DEVELOPMENT
RUNOFF COEFFICIENT

Drainage Area (Controlled) 210

Surface Type	C	A (Ha)	A*C
Roof/Hard Surfaces	0.90	0.053	0.05
Grass	0.30	0.096	0.03
Composite C		0.149	0.51

Drainage Area (Uncontrolled Ridge Road) 220

Surface Type	C	A (Ha)	A*C
Roof/Hard Surfaces	0.90	0.043	0.04
Grass	0.30	0.017	0.00
Composite C		0.059	0.73

Drainage Area (Uncontrolled + EXT1) EXT3

Surface Type	C	A (Ha)	A*C
Grass	0.30	0.134	0.04
Composite C		0.134	0.30

Drainage Area (Uncontrolled to Glensteeple + EXT2) 221

Surface Type	C	A (Ha)	A*C
Asphalt	0.90	0.036	0.03
Grass	0.30	0.021	0.01
Composite C		0.057	0.68

Summary

Drainage Area	C	A (Ha)	A*C
210	0.51	0.149	0.08
220	0.73	0.059	0.04
EXT3	0.30	0.134	0.04
221	0.68	0.057	0.04
TOTAL		0.399	0.50

POST-DEVELOPMENT
RUN-OFF CALCULATIONS

IDF set: Aurora

Return Period	*a*	T_c	*b*	*c*
2-Year	647.7	15	4.00	0.784
5-Year	929.8	15	4.00	0.798
100-Year	1770.0	15	4.00	0.820

Where: $$I = \frac{a}{(t_c + b)^c}$$

Post Development Run-Off

ID 210	Area (Ha)	Composite C	I (mm/hr)*	Q (L/s)
2-Year	0.149	0.51	64.39	13.7
5-Year	0.149	0.51	88.70	18.9
100-Year	0.149	0.64	158.27	42.1
ID 220	**Area (Ha)**	**Composite C**	**I (mm/hr)***	**Q (L/s)**
2-Year	0.059	0.73	64.39	7.8
5-Year	0.059	0.73	88.70	10.7
100-Year	0.059	0.92	158.27	23.9

ID EXT1 + EXT3	Area (Ha)	Composite C	I (mm/hr)*	Q (L/s)
2-Year	0.134	0.30	64.39	7.2
5-Year	0.134	0.30	88.70	9.9
100-Year	0.134	0.38	158.27	22.1
ID 221 + EXT2	**Area (Ha)**	**Composite C**	**I (mm/hr)***	**Q (L/s)**
2-Year	0.057	0.68	64.39	7.4
5-Year	0.057	0.68	88.70	9.5
100-Year	0.057	0.85	158.27	21.3

MODIFIED RATIONAL METHOD
STORAGE CALCULATIONS

ID 210	
Area (Ha)	0.149
C	0.643
AC	0.10
T_c (min)	15.0
T incr. (min)	5
Q_1 (l/s)	17.3
Req. vol. (m^3)	22.3

Aurora	100-Year
a=	1770
b=	4
c=	0.820

Notes:

Stage Storage Summary

T (min)	I (mm/hr)	Q (l/s)	Total Vol.	Rel. Vol. (m^3)	Storage (m^3)
15	**158.3**	**42.1**	**37.9**	**15.6**	**22.3**
20	130.7	34.8	41.7	20.8	20.9
25	111.9	29.8	44.6	26.0	18.7
30	98.2	26.1	47.0	31.2	15.8
35	87.8	23.3	49.0	36.4	12.6
40	79.5	21.1	50.7	41.6	9.2
45	72.8	19.4	52.3	46.8	5.5
50	67.2	17.9	53.6	52.0	1.7
55	62.5	16.6	54.8	57.2	-
60	58.5	15.5	56.0	62.4	-
65	55.0	14.6	57.0	67.6	-
70	51.9	13.8	58.0	72.7	-
75	49.2	13.1	58.9	77.9	-
80	46.8	12.4	59.7	83.1	-
85	44.6	11.9	60.5	88.3	-
90	42.7	11.3	61.3	93.5	-
95	40.9	10.9	62.0	98.7	-
100	39.3	10.4	62.7	103.9	-
105	37.8	10.0	63.3	109.1	-
110	36.4	9.7	63.9	114.3	-
115	35.2	9.3	64.5	119.5	-
120	34.0	9.0	65.1	124.7	-
125	32.9	8.8	65.6	129.9	-
130	31.9	8.5	66.2	135.1	-

MODIFIED RATIONAL METHOD
STORAGE CALCULATIONS

ID 210	
Area (Ha)	0.149
C	0.515
AC	0.08
T_c (min)	15.0
T incr. (min)	5
Q_1 (l/s)	14.9
Req. vol. (m^3)	3.6

Aurora	5-Year
a=	929.8
b=	4
c=	0.798

Notes:

Stage Storage Summary

T (min)	I (mm/hr)	Q (l/s)	Total Vol.	Rel. Vol. (m^3)	Storage (m^3)
15	**88.7**	**18.9**	**17.0**	**13.4**	**3.6**
20	73.6	15.7	18.8	17.8	1.0
25	63.3	13.5	20.2	22.3	-
30	55.8	11.9	21.4	26.8	-
35	50.0	10.6	22.3	31.2	-
40	45.4	9.7	23.2	35.7	-
45	41.6	8.9	23.9	40.1	-
50	38.5	8.2	24.6	44.6	-
55	35.9	7.6	25.2	49.1	-
60	33.7	7.2	25.8	53.5	-
65	31.7	6.7	26.3	58.0	-
70	30.0	6.4	26.8	62.4	-
75	28.5	6.1	27.2	66.9	-
80	27.1	5.8	27.7	71.4	-
85	25.9	5.5	28.1	75.8	-
90	24.8	5.3	28.5	80.3	-
95	23.8	5.1	28.8	84.7	-
100	22.8	4.9	29.2	89.2	-
105	22.0	4.7	29.5	93.7	-
110	21.2	4.5	29.8	98.1	-
115	20.5	4.4	30.1	102.6	-
120	19.9	4.2	30.4	107.0	-
125	19.2	4.1	30.7	111.5	-
130	18.7	4.0	31.0	115.9	-

MODIFIED RATIONAL METHOD
STORAGE CALCULATIONS

ID 210	
Area (Ha)	0.149
C	0.515
AC	0.08
T_c (min)	15.0
T incr. (min)	5
Q_1 (l/s)	10.8
Req. vol. (m^3)	2.6

Aurora	2-Year
a=	647.7
b=	4
c=	0.784

Notes:

Stage Storage Summary

T (min)	I (mm/hr)	Q (l/s)	Total Vol.	Rel. Vol. (m^3)	Storage (m^3)
15	**64.4**	**13.7**	**12.3**	**9.7**	**2.6**
20	53.6	11.4	13.7	12.9	0.7
25	46.2	9.8	14.8	16.2	-
30	40.8	8.7	15.6	19.4	-
35	36.6	7.8	16.4	22.7	-
40	33.3	7.1	17.0	25.9	-
45	30.6	6.5	17.6	29.1	-
50	28.4	6.0	18.1	32.4	-
55	26.5	5.6	18.6	35.6	-
60	24.9	5.3	19.0	38.8	-
65	23.4	5.0	19.4	42.1	-
70	22.2	4.7	19.8	45.3	-
75	21.1	4.5	20.2	48.6	-
80	20.1	4.3	20.5	51.8	-
85	19.2	4.1	20.8	55.0	-
90	18.4	3.9	21.1	58.3	-
95	17.7	3.8	21.4	61.5	-
100	17.0	3.6	21.7	64.7	-
105	16.4	3.5	21.9	68.0	-
110	15.8	3.4	22.2	71.2	-
115	15.3	3.3	22.4	74.5	-
120	14.8	3.1	22.7	77.7	-
125	14.3	3.1	22.9	80.9	-
130	13.9	3.0	23.1	84.2	-

MODIFIED RATIONAL METHOD
STORAGE CALCULATIONS

ID 220	
Area (Ha)	0.059
C	0.92
AC	0.05
T_c (min)	15.0
T incr. (min)	5
Q_1 (l/s)	23.9
Req. vol. (m^3)	0.0

Aurora	100-Year
a=	1770
b=	4
c=	0.820

Notes:

Stage Storage Summary

T (min)	I (mm/hr)	Q (l/s)	Total Vol.	Rel. Vol. (m^3)	Storage (m^3)
15	**158.3**	**23.9**	**21.5**	**21.5**	**0.0**
20	130.7	19.8	23.7	28.7	-
25	111.9	16.9	25.4	35.9	-
30	98.2	14.8	26.7	43.0	-
35	87.8	13.3	27.9	50.2	-
40	79.5	12.0	28.8	57.4	-
45	72.8	11.0	29.7	64.5	-
50	67.2	10.2	30.5	71.7	-
55	62.5	9.4	31.2	78.9	-
60	58.5	8.8	31.8	86.1	-
65	55.0	8.3	32.4	93.2	-
70	51.9	7.8	33.0	100.4	-
75	49.2	7.4	33.5	107.6	-
80	46.8	7.1	33.9	114.7	-
85	44.6	6.7	34.4	121.9	-
90	42.7	6.4	34.8	129.1	-
95	40.9	6.2	35.2	136.3	-
100	39.3	5.9	35.6	143.4	-
105	37.8	5.7	36.0	150.6	-
110	36.4	5.5	36.3	157.8	-
115	35.2	5.3	36.7	164.9	-
120	34.0	5.1	37.0	172.1	-
125	32.9	5.0	37.3	179.3	-
130	31.9	4.8	37.6	186.5	-

MODIFIED RATIONAL METHOD
STORAGE CALCULATIONS

ID 220	
Area (Ha)	0.059
C	0.732
AC	0.04
T_c (min)	15.0
T incr. (min)	5
Q_1 (l/s)	10.7
Req. vol. (m^3)	0.0

Aurora	5-Year
a=	929.8
b=	4
c=	0.798

Notes:

Stage Storage Summary

T (min)	I (mm/hr)	Q (l/s)	Total Vol.	Rel. Vol. (m^3)	Storage (m^3)
15	**88.7**	**10.7**	**9.7**	**9.6**	**0.0**
20	73.6	8.9	10.7	12.9	-
25	63.3	7.7	11.5	16.1	-
30	55.8	6.7	12.1	19.3	-
35	50.0	6.0	12.7	22.5	-
40	45.4	5.5	13.2	25.7	-
45	41.6	5.0	13.6	28.9	-
50	38.5	4.7	14.0	32.2	-
55	35.9	4.3	14.3	35.4	-
60	33.7	4.1	14.7	38.6	-
65	31.7	3.8	14.9	41.8	-
70	30.0	3.6	15.2	45.0	-
75	28.5	3.4	15.5	48.2	-
80	27.1	3.3	15.7	51.4	-
85	25.9	3.1	16.0	54.7	-
90	24.8	3.0	16.2	57.9	-
95	23.8	2.9	16.4	61.1	-
100	22.8	2.8	16.6	64.3	-
105	22.0	2.7	16.8	67.5	-
110	21.2	2.6	16.9	70.7	-
115	20.5	2.5	17.1	74.0	-
120	19.9	2.4	17.3	77.2	-
125	19.2	2.3	17.4	80.4	-
130	18.7	2.3	17.6	83.6	-

MODIFIED RATIONAL METHOD
STORAGE CALCULATIONS

ID 220	
Area (Ha)	0.059
C	0.732
AC	0.04
T_c (min)	15.0
T incr. (min)	5
Q_1 (l/s)	7.8
Req. vol. (m^3)	0.0

Aurora	2-Year
a=	647.7
b=	4
c=	0.784

Notes:

Stage Storage Summary

T (min)	I (mm/hr)	Q (l/s)	Total Vol.	Rel. Vol. (m^3)	Storage (m^3)
15	**64.4**	**7.8**	**7.0**	**7.0**	**0.0**
20	53.6	6.5	7.8	9.3	-
25	46.2	5.6	8.4	11.7	-
30	40.8	4.9	8.9	14.0	-
35	36.6	4.4	9.3	16.3	-
40	33.3	4.0	9.7	18.7	-
45	30.6	3.7	10.0	21.0	-
50	28.4	3.4	10.3	23.3	-
55	26.5	3.2	10.6	25.7	-
60	24.9	3.0	10.8	28.0	-
65	23.4	2.8	11.0	30.3	-
70	22.2	2.7	11.3	32.7	-
75	21.1	2.5	11.5	35.0	-
80	20.1	2.4	11.7	37.3	-
85	19.2	2.3	11.8	39.7	-
90	18.4	2.2	12.0	42.0	-
95	17.7	2.1	12.2	44.3	-
100	17.0	2.1	12.3	46.7	-
105	16.4	2.0	12.5	49.0	-
110	15.8	1.9	12.6	51.4	-
115	15.3	1.8	12.8	53.7	-
120	14.8	1.8	12.9	56.0	-
125	14.3	1.7	13.0	58.4	-
130	13.9	1.7	13.1	60.7	-

INFILTRATION TRENCH
DIMENSION CALCULATION

Infiltration Trench Design Input

ID 210

Volume required	(V)	22.3	m^3
Percolation rate	(P)	84	mm/hr
Porosity	(n)	0.4	unitless
Drawdown time	(T)	12	hours

Soakaway Pit Dimensions (ID 210)

Trench area (m^2)

Where $A = \frac{1000V}{PnT}$

A = 55.3

Trench depth (m)

Where $D = \frac{PT}{1000}$

D = 1.01

* Refer to Ontario Stormwater Management Plan SWMP design Figure 4.4 for soil cover.

Table 4.4: Minimum Soil Percolation Rates

Soil Type	Percolation Rate (mm/h)
sand	210
loamy sand	60
sandy loam	25
loam	15

Figure 4.4: Soil Cover for Trenches

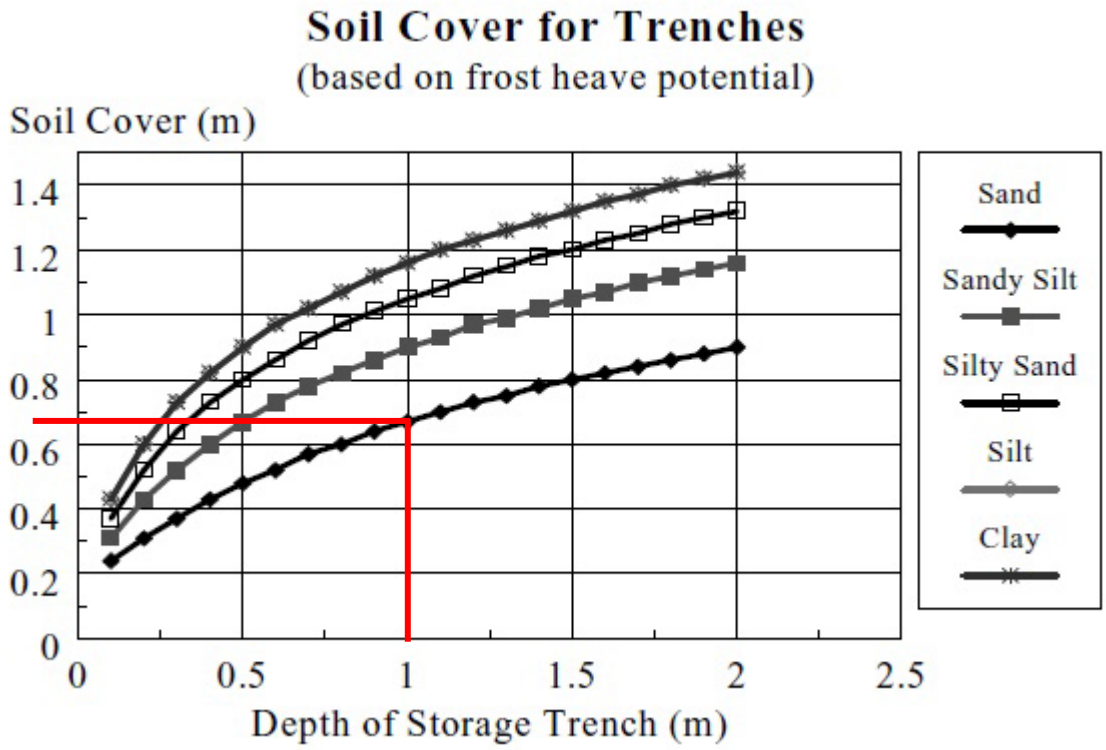
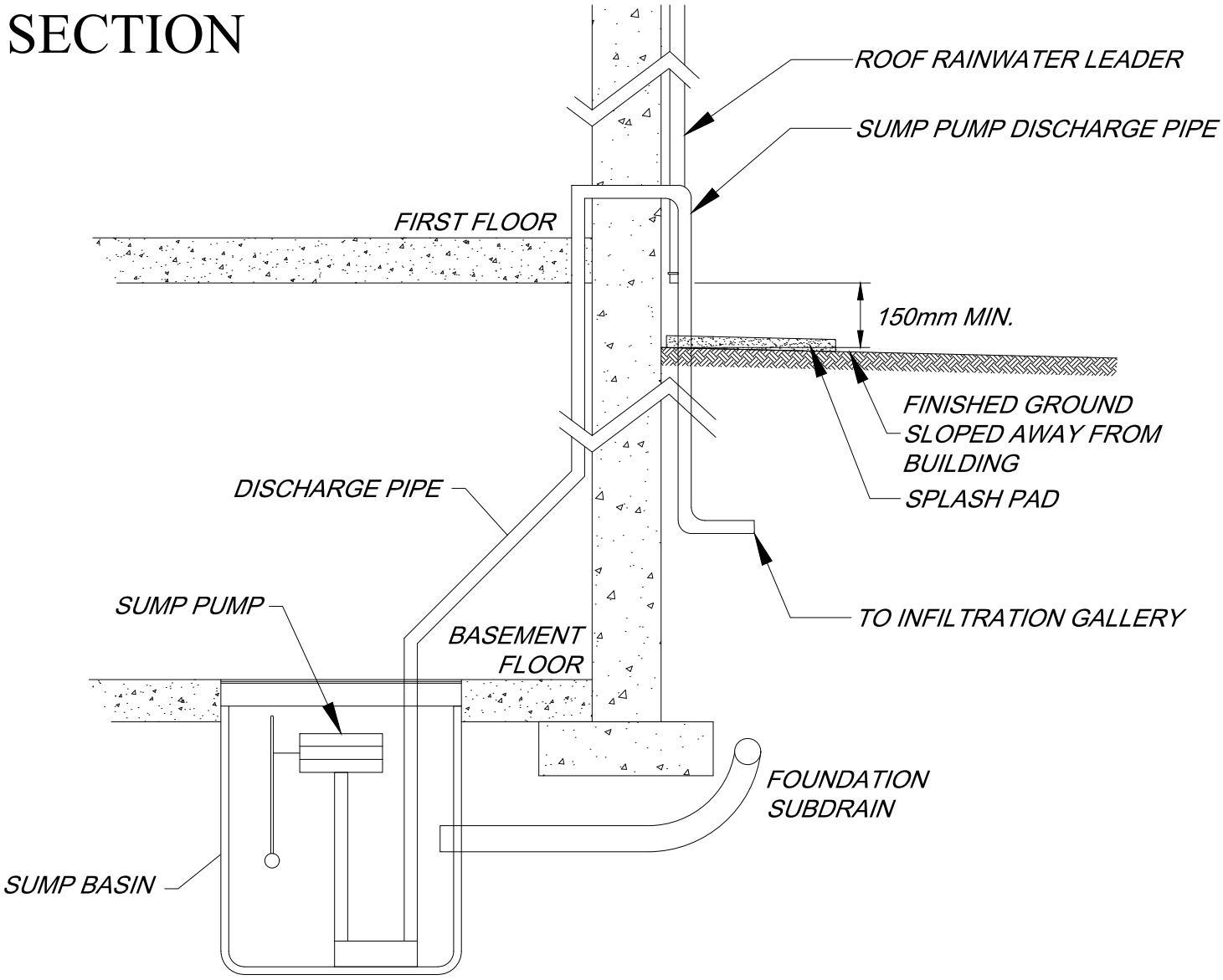


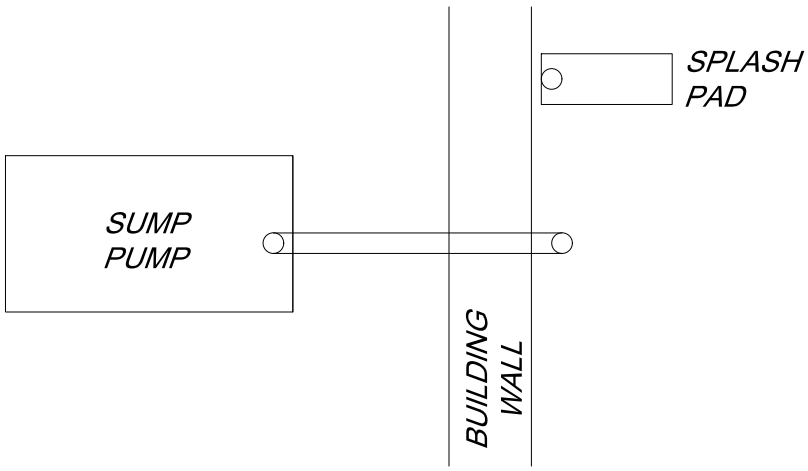
Table C2: Safety correction factors for calculating design infiltration rates

Ratio of Mean Measured Infiltration Rates[1]	Safety Correction Factor[2]
≤ 1	2.5
1.1 to 4.0	3.5
4.1 to 8.0	4.5
8.1 to 16.0	6.5
16.1 or greater	8.5

SECTION



PLAN



SCHEMATIC SUMP PUMP AND RAINWATER LEADER DETAIL

SCALE: N.T.S.

Appendix C

Sanitary Data

SANITARY FLOW
CALCULATIONS

Existing Flows			
Residential Flow Determination			
Unit Type	No. Of Units	PPU	
Single Family	0	4.0	0 persons
Average Residential Wastewater Flow			400 L/cap/day
Harmon Peaking Factor			4.0
Proposed Development - Total Peak Flow			0.0 L/s
Site Area			0.00 ha
Infiltration (0.2 L/s/ha)			0.00 L/s
Total Proposed Peak Flow			**0.0 L/s**

Proposed Flows			
Residential Flow Determination			
Unit Type	No. Of Units	PPU	
Single Family	5	3.8	19 persons
Average Residential Wastewater Flow			400 L/cap/day
Harmon Peaking Factor			4.0
Proposed Development - Total Peak Flow			0.4 L/s
Site Area			0.39 ha
Infiltration (0.2 L/s/ha)			0.08 L/s
Total Proposed Peak Flow			**0.4 L/s**

Ontario
MINISTRY OF THE ENVIRONMENT

Database Version: V 2.0 Release Update
Update Date: 30-Mar-12

Project DEVELOPMENT Summary

DEVELOPMENT: 107 Ridge Road
Subwatershed: East Holland

Total Pre-Development Area (ha):	**0.389**	Total Pre-Development Phosphorus Load (kg/yr):	**0.05**

Pre-Development Land Use	Area (ha)	P coeff. (kg/ha)	P Load (kg/yr)
Forest	0.134	0.10	0.01
Low Intensity Development	0.255	0.13	0.03

POST-DEVELOPMENT LOAD

Post-Development Land Use	Area (ha)	P coeff. (kg/ha)	Best Management Practice applied with P Removal Efficiency		P Load (kg/yr)
Forest	0.134	0.10	NONE	0%	0.01
			Refer to Plan 202.		
Low Intensity Development	0.14	0.13	Soakaways - Infiltration trenches	60%	0.01
			Refer to Plan 202 and 401.		
Low Intensity Development	0.116	0.13	NONE	0%	0.02
			Refer to Plan 202.		

		P Load (kg/yr)
Post-Development Area Altered:	**0.39**	
Total Pre-Development Area:	**0.39**	
Unaffected Area:	**0**	
Pre-Development:		**0.05**
Post-Development:		**0.05**
Change (Pre - Post):		**0.00**
0% Net Increase in Load		
Post-Development (with BMPs):		**0.04**
Change (Pre - Post):		**0.01**
23% Net Reduction in Load		

DEVELOPMENT: 107 Ridge Road
Subwatershed: East Holland

CONSTRUCTION PHASE LOAD

SUMMARY WITH IMPLEMENTATION OF BMPs	**P Load (kg/yr)**
Pre-Development:	**0.05**
Construction Phase Amortized Over 8 Years :	to be determined
Post-Development:	**0.04**
Post-Development + Amortized Construction:	**to be determined**
Pre-Development Load - Post-Development Load:	**0.01**
Conclusion:	**23% Reduction in Load**
Pre-Development Load - (Post-Development + Amortized Construction Load):	**to be determined**
Conclusion:	**to be determined**

Based on a comparison of Pre-Development and Post-Development loads, and in consideration of Construction Phase loads, the Ministry would encourage the Municipality to:

Appendix D

Water Data

PROPOSED DOMESTIC FLOW
CALCULATION WORKSHEET

Residential Use

Unit Type	No. of Units	PPU	L/c/d	Avg. Day (L/d)
Townhouse	5	3.8	390	7,410
Residential Use Avg. Day (L/d)				7,410

Peak Flows (Per Section 6.1 of Aurora Standards)

Criteria	Peaking Factor	Flow
Avg. day (L/s)	1.00	0.09
Min (L/s)	0.65	0.06
Max Hr (L/hr)	5.00	1,544
Max Day (L/d)	1.80	13,338

FIRE FLOW
CALCULATION WORKSHEET

PROJECT INFORMATION			
Address	107 Ridge Road	Notes:	Assumes ordinary construction
	Aurora, ON		
OBC Occupancy	Group C - Residential		
Total Building Area	189m^2 (Unit 2)		
No. of Storeys	2 storey		

BASE FLOW CALCULATION				CREDITS	CHARGES	Q (L/min)
A=	Effective area		378 m^2			
C=	Ordinary		1			
F=	Required fire flow	$F=220C\sqrt{A}$	4,277 L/min.			
"F" Rounded to nearest 1,000			4,000 L/min.			4,000

FLOW 'F' ADJUSTMENTS				CREDITS	CHARGES	Q (L/min)
Occupancy Adjustments (F')		%				
Limited combustible		-15%	-600	-600		3,400
Exposure Adjustments (E)						
Exposure	Sep. (m)	Charge				
N	50	0%				
E	2.6	25%				
S	11.5	15%				
W	2.3	25%				
E = Total Exposure Charge		65%	2,210		2,210	5,610
Sprinkler Adjusments (S)						
Sprinklered as per NFPA 13		No	0			5,610
Standard Water Supply		Yes	-340	-340		5,270
Fully supervised watersupply		No	0			5,270
REQUIRED FLOW (F"=F'+E+S)			**(L/min)**			**5,270**
			(USGPM)			**1,392**

MUNICIPAL SUPPLY
CALCULATION WORKSHEET

Hydrant Flow Test Input

Location	Ports	P_s (PSI)	P_r (PSI)	Q_r (USGPM)
107 Ridge Road	1	84	70	1,087
	2	84	58	1,838

Theoretical Flow Calculation

Location	Ports	P_f (PSI)	Q_f (USGPM)
107 Ridge Road	1	20	2,470
	2	20	2,989

Where $Q_f = Q_r \left[\frac{P_s - P_f}{P_s - P_r}\right]^{0.54}$

Max Day + Fire Check

Max Day (USGPM)	F'' (USGPM)	Max Day + F'' (USGPM)	Q_{20} (USGPM)	Check
2	1,392	1,395	2,989	**OK**

Ministry of the Environment
Ontario

The Ontario Water Resources Act 30 mile

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

(11) 6915368 MUNICIP. 69608 CON. YS W 01

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT 25-27
[redacted]	Town of Aurora	Conc # 1 YSW	part of 073

[redacted] idge Rd. Aurora.

DATE COMPLETED 03 48-53: DAY 27 MO mar YR 80

[redacted] 69660 RC 4 ELEVATION 0980 RC 4 BASIN CODE 22

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	sand	clay streaks	layered, fine	0	63
Brown	sand		course	63	93
Blue	clay	silty	dense	93	

p 132 sub 20

(31) 0063608057 4 | 0093610 | 0095305846 6

32

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0085-93	#5 untested (1 FRESH, 2 SALTY, 3 SULPHUR, 4 MINERAL)
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

(51) CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06"	☒ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	.188	+1	0090
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
012	05750 5 3/4 INCHES	03 FEET

MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN
Sta.St. wire wd.	0090 FEET

(61) PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

(71) PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0010 GPM	03 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
034 FEET	065 FEET	047 FEET	061 FEET	065 FEET	065 FEET

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: FEET

WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

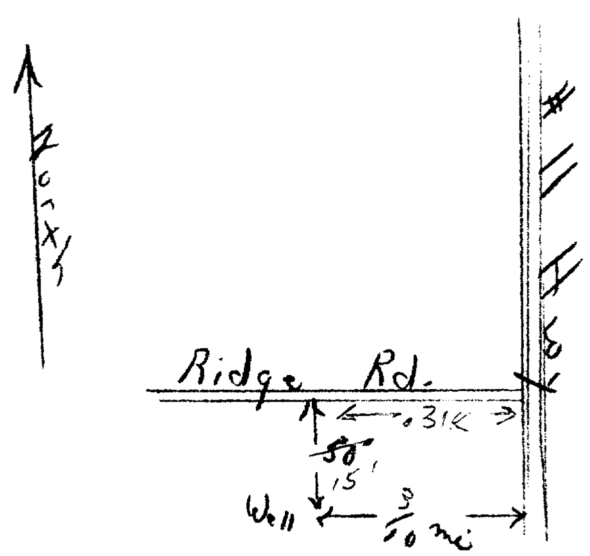
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

RECOMMENDED PUMP SETTING: 080 FEET

RECOMMENDED PUMPING RATE: 0010 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL 1

1 ☒ WATER SUPPLY
2 ☐ OBSERVATION WELL
3 ☐ TEST HOLE
4 ☐ RECHARGE WELL
5 ☐ ABANDONED, INSUFFICIENT SUPPLY
6 ☐ ABANDONED, POOR QUALITY
7 ☐ UNFINISHED

WATER USE 01

1 ☒ DOMESTIC
2 ☐ STOCK
3 ☐ IRRIGATION
4 ☐ INDUSTRIAL
☐ OTHER
5 ☐ COMMERCIAL
6 ☐ MUNICIPAL
7 ☐ PUBLIC SUPPLY
8 ☐ COOLING OR AIR CONDITIONING
9 ☐ NOT USED

METHOD OF DRILLING 1

1 ☒ CABLE TOOL
2 ☐ ROTARY (CONVENTIONAL)
3 ☐ ROTARY (REVERSE)
4 ☐ ROTARY (AIR)
5 ☐ AIR PERCUSSION
6 ☐ BORING
7 ☐ DIAMOND
8 ☐ JETTING
9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Northern Well Drilling Limited — LICENCE NUMBER: 3903

ADDRESS: P.O. Box 358 Unionville L3R 2V3

NAME OF DRILLER OR BORER: Graham Bridges — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Jerry W. Renwick — SUBMISSION DATE: DAY 27 MO Mar YR 80

OFFICE USE ONLY

DATA SOURCE: 1 — CONTRACTOR: 3903 — DATE RECEIVED: 140480

DATE OF INSPECTION: — INSPECTOR:

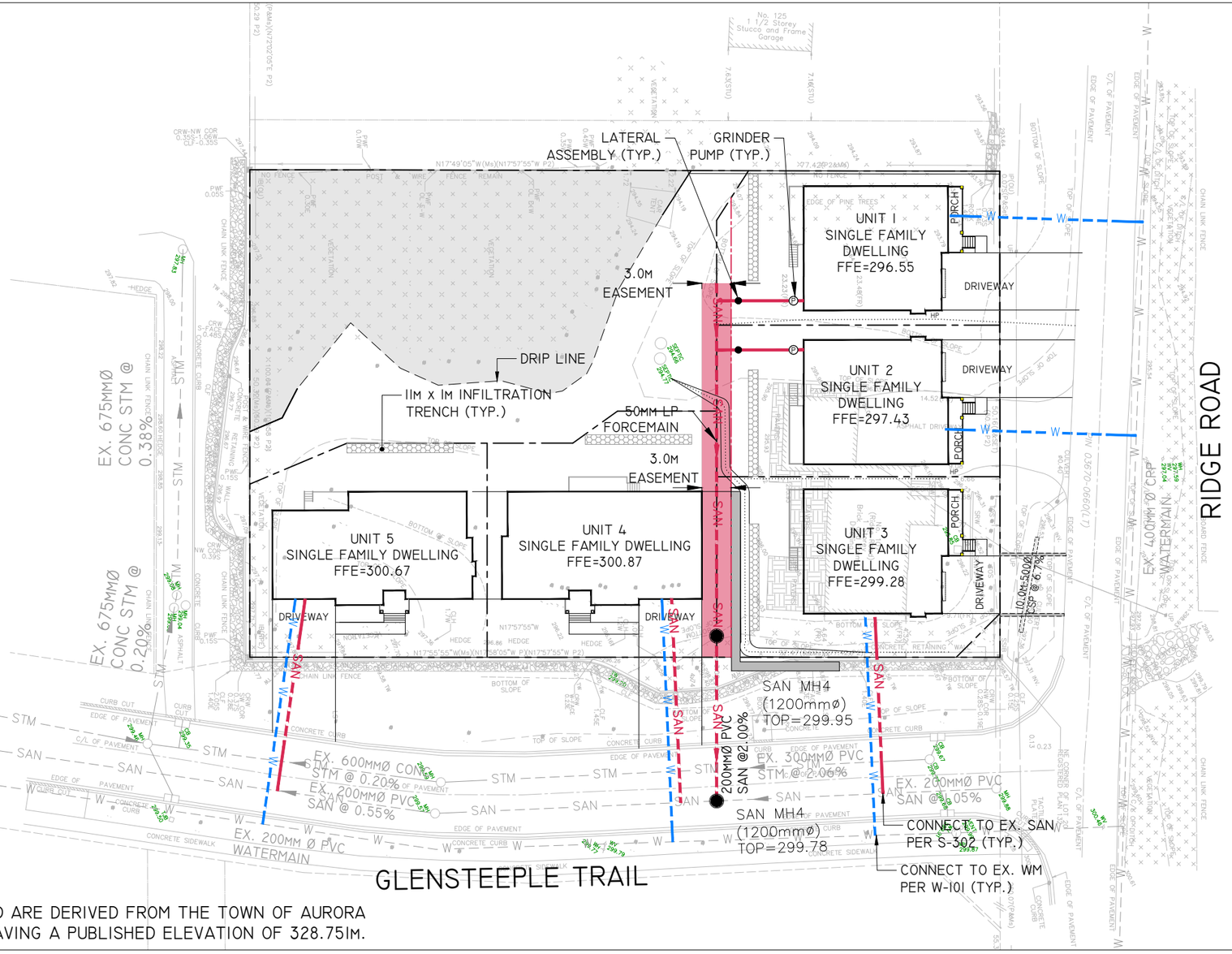
REMARKS: Loc only 09/8/88 S.S.

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-4-77

Appendix E

Engineering Drawings



ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF AURORA BENCH MARK NO. DPW 246 HAVING A PUBLISHED ELEVATION OF 328.751M.

SITEPLANTECH INC.
50 ST. CLEMENTS AVE.
TORONTO, ON
M4R 1G9

2693642 ONTARIO INC.
107 RIDGE ROAD
AURORA, ON

NO.	ISSUE	DATE
2	UPDATED SITE PLAN AND ADDRESSED COMMENTS	12/12/25
1	LOT SEVERANCE	03/06/25

RECOMMENDED SERVICING OPTION

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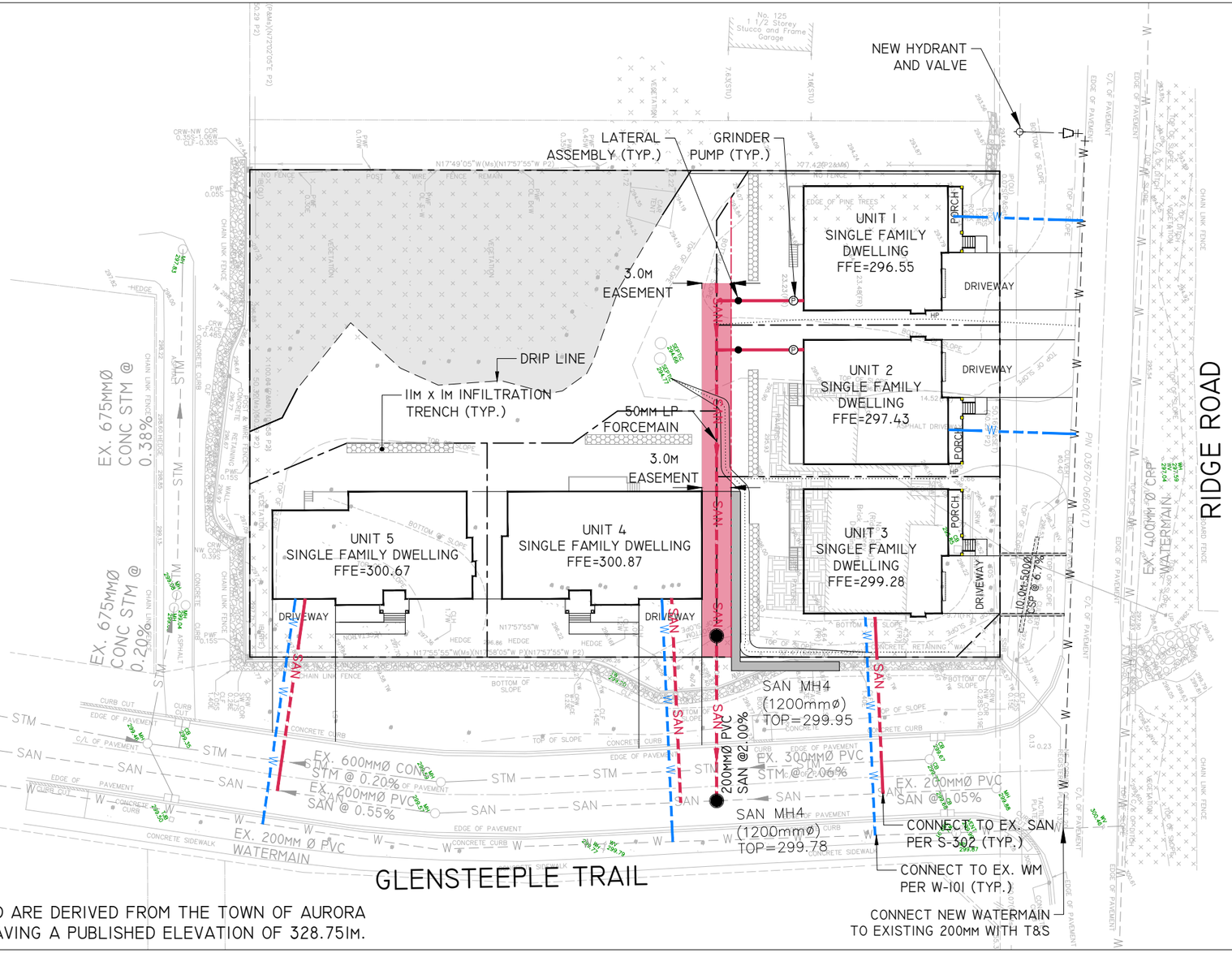
SCALE:	1:500	DWG:	101



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SITEPLANTECH INC.
50 ST. CLEMENTS AVE.
TORONTO, ON
M4R 1G9

2693642 ONTARIO INC.
107 RIDGE ROAD
AURORA, ON

NO.	ISSUE	DATE
2	UPDATED SITE PLAN AND ADDRESSED COMMENTS	12/12/25
1	LOT SEVERANCE	03/06/25

ALTERNATE SERVICING OPTION

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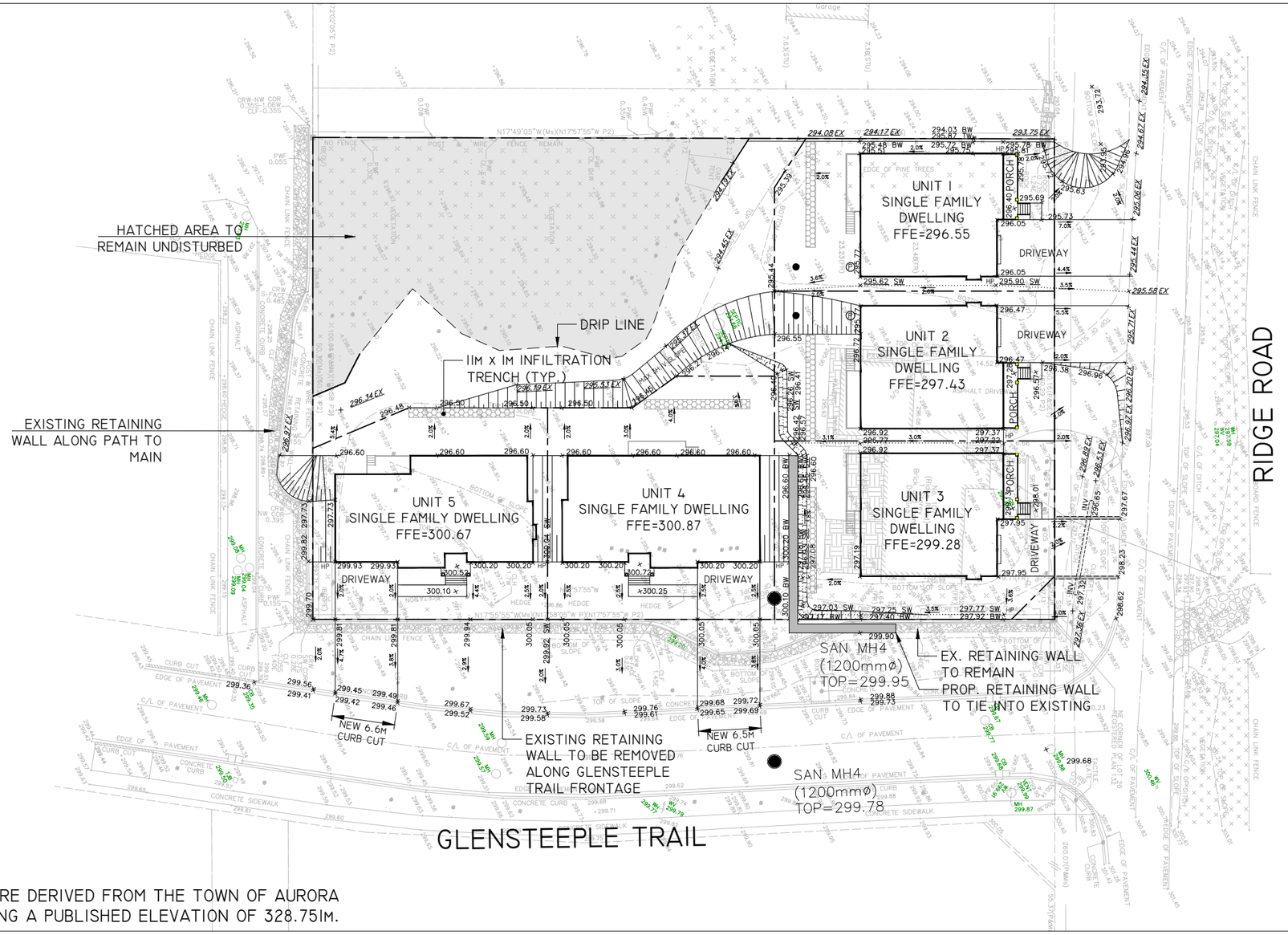

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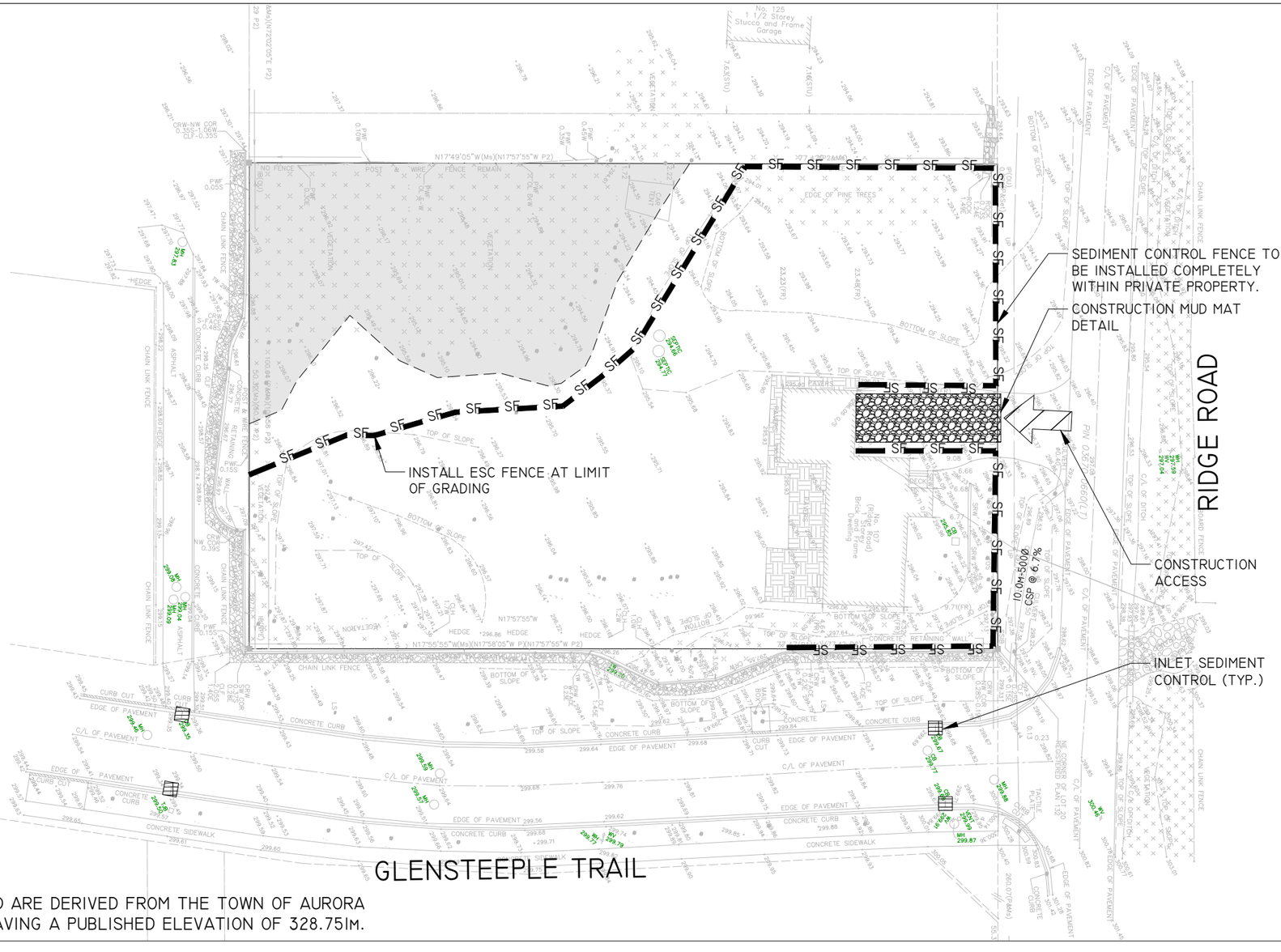
50 ST. CLEMENTS AVE.
TORONTO, ON
M4R 1G9

2693642 ONTARIO INC.
107 RIDGE ROAD
AURORA, ON

NO.	ISSUE	DATE
2	UPDATED SITE PLAN AND ADDRESSED COMMENTS	12/12/25
1	LOT SEVERANCE	03/06/25

GRADING PLAN

DRAWN:	LPM	DATE:	DEC. 2025
SCALE:	1:500	DWG:	401



ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM THE TOWN OF AURORA BENCH MARK NO. DPW 246 HAVING A PUBLISHED ELEVATION OF 328.751M.

SITEPLANTECH INC. 50 ST. CLEMENTS AVE. TORONTO, ON M4R 1G9		2693642 ONTARIO INC. 107 RIDGE ROAD AURORA, ON				EROSION AND SEDIMENT CONTROL PLAN
			2	UPDATED SITE PLAN AND ADDRESSED COMMENTS	12/12/25	
			1	LOT SEVERANCE	03/06/25	DRAWN: LPM / DATE: DEC. 2025
			NO.	ISSUE	DATE	SCALE: 1:500 / DWG: 601