Fees:
$17,965.00 +
$75.00 / lot = 75.00 * 24 lots=
$1800.00
= $19,765

For Office Use Only:

File Number	ZNPL2023298	Public Notice Sign	
Related File Number	28TPL2023297	Application Fee	Paid
Pre-consultation Meeting	Aug. 10. 2022	Conservation Authority Fee	N/A
Application Submitted	Aug.15.2023	Well & Septic Info Provided	-
Complete Application	Sep.13.2023	Planner	Hanne Yager

Check the type of planning application(s) you are submitting.

- ☐ Official Plan Amendment
- ☒ Zoning By-Law Amendment
- ☐ Temporary Use By-law
- ☒ Draft Plan of Subdivision/Vacant Land Condominium
- ☐ Condominium Exemption
- ☐ Site Plan Application
- ☐ Extension of a Temporary Use By-law
- ☐ Part Lot Control
- ☐ Cash-in-Lieu of Parking
- ☐ Renewable Energy Project or Radio Communication Tower

Please summarize the desired result of this application (for example, a special zoning provision on the subject lands to include additional use(s), changing the zone or official plan designation of the subject lands, creating a certain number of lots, or similar)

_____
_____
_____
_____
_____
_____
_____

Property Assessment Roll Number: _____

A. Applicant Information

Name of Owner _____

Address _____

Town and Postal Code _____

Phone Number _____

Cell Number _____

Email _____

Name of Applicant _____

Address _____

Town and Postal Code _____

Phone Number _____

Cell Number _____

Email _____

Name of Agent _____

Address _____

Town and Postal Code _____

Phone Number _____

Cell Number _____

Email _____

Unless otherwise directed, Norfolk County will forward all correspondence and notices regarding this application to both owner and agent noted above.

☐ Owner ☐ Agent ☐ Applicant

Names and addresses of any holder of any mortgagees, charges or other encumbrances on the subject lands:

_____

_____

B. Location, Legal Description and Property Information

1. Legal Description (include Geographic Township, Concession Number, Lot Number, Block Number and Urban Area or Hamlet):

   _____

   _____

   Municipal Civic Address: _____

   Present Official Plan Designation(s): _____

   Present Zoning: _____

2. Is there a special provision or site specific zone on the subject lands?

   ☐ Yes ☐ No If yes, please specify corresponding number:

   _____

3. Present use of the subject lands:

   _____

   _____

4. Please describe **all existing** buildings or structures on the subject lands and whether they will be retained, demolished or removed. If retaining the buildings or structures, please describe the type of buildings or structures, and illustrate the setback, in metric units, from the front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application:

   _____

   _____

   _____

5. If an addition to an existing building is being proposed, please explain what it will be used for (for example: bedroom, kitchen, or bathroom). If new fixtures are proposed, please describe.

   _____

   _____

   _____

6. Please describe **all proposed** buildings or structures/additions on the subject lands. Describe the type of buildings or structures/additions, and illustrate the setback, in metric units, from front, rear and side lot lines, ground floor area, gross floor area, lot coverage, number of storeys, width, length, and height on your attached sketch which must be included with your application:

   _____

   _____

   _____

7. Are any existing buildings on the subject lands designated under the *Ontario Heritage Act* as being architecturally and/or historically significant? Yes ☐ No ☐

   If yes, identify and provide details of the building:

   _____

   _____

8. If known, the length of time the existing uses have continued on the subject lands:

   _____

9. Existing use of abutting properties:

   _____

10. Are there any easements or restrictive covenants affecting the subject lands?

    ☐ Yes ☐ No If yes, describe the easement or restrictive covenant and its effect:

    _____

C. Purpose of Development Application

Note: Please complete all that apply.

1. Please explain what you propose to do on the subject lands/premises which makes this development application necessary:

   _____

   _____

   _____

   _____

2. Please explain why it is not possible to comply with the provision(s) of the Zoning By-law/and or Official Plan:

   _____

   _____

   _____

3. Does the requested amendment alter all or any part of the boundary of an area of settlement in the municipality or implement a new area of settlement in the municipality? ☐ Yes ☐ No If yes, describe its effect:

   _____

   _____

   _____

4. Does the requested amendment remove the subject land from an area of employment? ☐ Yes ☐ No If yes, describe its effect:

   _____

   _____

   _____

5. Does the requested amendment alter, replace, or delete a policy of the Official Plan? ☐ Yes ☐ No If yes, identify the policy, and also include a proposed text of the policy amendment (if additional space is required, please attach a separate sheet):

   _____

   _____

   _____

6. Description of land intended to be severed in metric units:
   Frontage: _____
   Depth: _____
   Width: _____
   Lot Area: _____
   Present Use: _____
   Proposed Use: _____
   Proposed final lot size (if boundary adjustment): _____
   If a boundary adjustment, identify the assessment roll number and property owner of the lands to which the parcel will be added: _____

   _____

   Description of land intended to be retained in metric units:
   Frontage: _____
   Depth: _____
   Width: _____
   Lot Area: _____
   Present Use: _____
   Proposed Use: _____
   Buildings on retained land: _____
7. Description of proposed right-of-way/easement:
   Frontage: _____
   Depth: _____
   Width: _____
   Area: _____
   Proposed use: _____
8. Name of person(s), if known, to whom lands or interest in lands to be transferred, leased or charged (if known):

   _____

9. **Site Information**	**Zoning**	**Proposed**
Please indicate unit of measurement, for example: m, m^2 or %		
Lot frontage	_____	_____
Lot depth	_____	_____
Lot width	_____	_____
Lot area	_____	_____
Lot coverage	_____	_____
Front yard	_____	_____
Rear yard	_____	_____
Left Interior side yard	_____	_____
Right Interior side yard	_____	_____
Exterior side yard (corner lot)	_____	_____
Landscaped open space	_____	_____
Entrance access width	_____	_____
Exit access width	_____	_____
Size of fencing or screening	_____	_____
Type of fencing	_____	_____
10. Building Size		
Number of storeys	_____	_____
Building height	_____	_____
Total ground floor area	_____	_____
Total gross floor area	_____	_____
Total useable floor area	_____	_____
11. Off Street Parking and Loading Facilities		
Number of off street parking spaces	_____	_____
Number of visitor parking spaces	_____	_____
Number of accessible parking spaces	_____	_____
Number of off street loading facilities	_____	_____

12. Residential (if applicable)

Number of buildings existing: _____

Number of buildings proposed: _____

Is this a conversion or addition to an existing building? ☐ Yes ☐ No

If yes, describe: _____

Type	**Number of Units**	**Floor Area per Unit in m2**
Single Detached	_____	_____
Semi-Detached	_____	_____
Duplex	_____	_____
Triplex	_____	_____
Four-plex	_____	_____
Street Townhouse	_____	_____
Stacked Townhouse	_____	_____
Apartment - Bachelor	_____	_____
Apartment - One bedroom	_____	_____
Apartment - Two bedroom	_____	_____
Apartment - Three bedroom	_____	_____

Other facilities provided (for example: play facilities, underground parking, games room, or swimming pool):

13. Commercial/Industrial Uses (if applicable)

Number of buildings existing: _____

Number of buildings proposed: _____

Is this a conversion or addition to an existing building? ☐ Yes ☐ No

If yes, describe:

_____

Indicate the gross floor area by the type of use (for example: office, retail, or storage):

_____

_____

_____

Seating Capacity (for assembly halls or similar): _____

Total number of fixed seats: _____

Describe the type of business(es) proposed: _____

Total number of staff proposed initially: _____

Total number of staff proposed in five years: _____

Maximum number of staff on the largest shift: _____

Is open storage required: ☐ Yes ☐ No

Is a residential use proposed as part of, or accessory to commercial/industrial use?

☐ Yes ☐ No If yes please describe:

_____

_____

14. Institutional (if applicable)

Describe the type of use proposed: _____

Seating capacity (if applicable): _____

Number of beds (if applicable): _____

Total number of staff proposed initially: _____

Total number of staff proposed in five years: _____

Maximum number of staff on the largest shift: _____

Indicate the gross floor area by the type of use (for example: office, retail, or storage):

_____

_____

_____

15. Describe Recreational or Other Use(s) (if applicable)

_____

_____

_____

_____

_____

D. Previous Use of the Property

1. Has there been an industrial or commercial use on the subject lands or adjacent lands? ☐ Yes ☐ No ☐ Unknown
   If yes, specify the uses (for example: gas station or petroleum storage):

   _____

   _____
2. Is there reason to believe the subject lands may have been contaminated by former uses on the site or adjacent sites?☐ Yes ☐ No ☐ Unknown
3. Provide the information you used to determine the answers to the above questions:

   _____

   _____

   _____
4. If you answered yes to any of the above questions in Section D, a previous use inventory showing all known former uses of the subject lands, or if appropriate, the adjacent lands, is needed. Is the previous use inventory attached? ☐ Yes ☐ No

E. Provincial Policy

1. Is the requested amendment consistent with the provincial policy statements issued under subsection 3(1) of the *Planning Act, R.S.O. 1990, c. P. 13*? ☐ Yes ☐ No

   If no, please explain:

   _____

   _____

   _____
2. It is owner's responsibility to be aware of and comply with all relevant federal or provincial legislation, municipal by-laws or other agency approvals, including the Endangered Species Act, 2007. Have the subject lands been screened to ensure that development or site alteration will not have any impact on the habitat for endangered or threatened species further to the provincial policy statement subsection 2.1.7? ☐ Yes ☐ No

   If no, please explain:

   _____

   _____

   _____

3. Have the subject lands been screened to ensure that development or site alteration will not have any impact on source water protection? ☐ Yes ☐ No

   If no, please explain:

   _____

   _____

   Note: If in an area of source water Wellhead Protection Area (WHPA) A, B or C please attach relevant information and approved mitigation measures from the Risk Manager Official.

4. Are any of the following uses or features on the subject lands or within 500 metres of the subject lands, unless otherwise specified? Please check boxes, if applicable.

   Livestock facility or stockyard (submit MDS Calculation with application)

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Wooded area

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Municipal Landfill

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Sewage treatment plant or waste stabilization plant

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Provincially significant wetland (class 1, 2 or 3) or other environmental feature

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Floodplain

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Rehabilitated mine site

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Non-operating mine site within one kilometre

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Active mine site within one kilometre

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Industrial or commercial use (specify the use(s))

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Active railway line

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Seasonal wetness of lands

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Erosion

   ☐ On the subject lands or ☐ within 500 meters – distance _____

   Abandoned gas wells

   ☐ On the subject lands or ☐ within 500 meters – distance _____

F. Servicing and Access

1. Indicate what services are available or proposed:
   Water Supply
   - ☐ Municipal piped water
   - ☐ Communal wells
   - ☐ Individual wells
   - ☐ Other (describe below)

   _____

   Sewage Treatment
   - ☐ Municipal sewers
   - ☐ Communal system
   - ☐ Septic tank and tile bed in good working order
   - ☐ Other (describe below)

   _____

   Storm Drainage
   - ☐ Storm sewers
   - ☐ Open ditches
   - ☐ Other (describe below)

   _____

2. Existing or proposed access to subject lands:
   - ☐ Municipal road
   - ☐ Provincial highway
   - ☐ Unopened road
   - ☐ Other (describe below)

   Name of road/street: _____

G. Other Information

1. Does the application involve a local business? ☐ Yes ☐ No
   If yes, how many people are employed on the subject lands?
   _____
2. Is there any other information that you think may be useful in the review of this application? If so, explain below or attach on a separate page.
   _____
   _____
   _____
   _____

H. Supporting Material to be submitted by Applicant

In order for your application to be considered complete, **folded** hard copies (number of paper copies as directed by the planner) and an **electronic version (PDF) of the properly named site plan drawings, additional plans, studies and reports** will be required, including but not limited to the following details:

1. Concept/Layout Plan
2. All measurements in metric
3. Key map
4. Scale, legend and north arrow
5. Legal description and municipal address
6. Development name
7. Drawing title, number, original date and revision dates
8. Owner's name, address and telephone number
9. Engineer's name, address and telephone number
10. Professional engineer's stamp
11. Existing and proposed easements and right of ways
12. Zoning compliance table – required versus proposed
13. Parking space totals – required and proposed
14. All entrances to parking areas marked with directional arrows
15. Loading spaces, facilities and routes (for commercial developments)
16. All dimensions of the subject lands
17. Dimensions and setbacks of all buildings and structures
18. Location and setbacks of septic system and well from all existing and proposed lot lines, and all existing and proposed structures
19. Gross, ground and useable floor area
20. Lot coverage
21. Floor area ratio
22. Building entrances, building type, height, grades and extent of overhangs
23. Names, dimensions and location of adjacent streets including daylighting triangles
24. Driveways, curbs, drop curbs, pavement markings, widths, radii and traffic directional signs
25. All exterior stairways and ramps with dimensions and setbacks
26. Retaining walls including materials proposed
27. Fire access and routes
28. Location, dimensions and number of parking spaces (including visitor and accessible) and drive aisles
29. Location of mechanical room, and other building services (e.g. A/C, HRV)
30. Refuse disposal and storage areas including any related screening (if indoors, need notation on site plan)
31. Winter snow storage location

32. Landscape areas with dimensions
33. Natural features, watercourses and trees
34. Fire hydrants and utilities location
35. Fencing, screening and buffering – size, type and location
36. All hard surface materials
37. Light standards and wall mounted lights (plus a note on the site plan that all outdoor lighting is to be dark sky compliant)
38. Business signs (make sure they are not in sight lines)
39. Sidewalks and walkways with dimensions
40. Pedestrian access routes into site and around site
41. Bicycle parking
42. Architectural elevations of all building sides
43. All other requirements as per the pre-consultation meeting

In addition, the following additional plans, studies and reports, including but not limited to, **may** also be required as part of the complete application submission:

☐ Zoning Deficiency Form

☐ On-Site Sewage Disposal System Evaluation Form (to verify location and condition)

☐ Architectural Plan

☐ Buildings Elevation Plan

☐ Cut and Fill Plan

☐ Erosion and Sediment Control Plan

☐ Grading and Drainage Control Plan (around perimeter and within site) (existing and proposed)

☐ Landscape Plan

☐ Photometric (Lighting) Plan

☐ Plan and Profile Drawings

☐ Site Servicing Plan

☐ Storm water Management Plan

☐ Street Sign and Traffic Plan

☐ Street Tree Planting Plan

☐ Tree Preservation Plan

☐ Archaeological Assessment

☐ Environmental Impact Study

☐ Functional Servicing Report

☐ Geotechnical Study / Hydrogeological Review

☐ Minimum Distance Separation Schedule

☐ Noise or Vibration Study

☐ Record of Site Condition

☐ Storm water Management Report

☐ Traffic Impact Study – please contact the Planner to verify the scope required

Site Plan applications will require the following supporting materials:

1. Two (2) complete sets of the site plan drawings folded to 8½ x 11 and an electronic version in PDF format
2. Letter requesting that the Holding be removed (if applicable)
3. A cost estimate prepared by the applicant's engineer
4. An estimate for Parkland dedication by a certified land appraiser
5. Property Identification Number (PIN) printout

Standard condominium exemptions will require the following supporting materials:

☐ Plan of standard condominium (2 paper copies and 1 electronic copy)

☐ Draft condominium declaration

☐ Property Identification Number (PIN) printout

Your development approval might also be dependent on other relevant federal or provincial legislation, municipal by-laws or other agency approvals.

All final plans must include the owner's signature as well as the engineer's signature and seal.

I. Development Agreements

A development agreement may be required prior to site plan approval, subdivision and condominium applications. Should this be necessary for your development, you will be contacted by the agreement administrator with further details of the requirements including but not limited to insurance coverage, professional liability for your engineer, additional fees and securities.

J. Transfers, Easements and Postponement of Interest

The owner acknowledges and agrees that if required, it is their solicitor's responsibility on behalf of the owner, to disclose the registration of all transfer(s) of land and/or easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's responsibility on behalf of the owner for the registration of postponements of any charges in favour of the County.

K. Permission to Enter Subject Lands

Permission is hereby granted to Norfolk County officers, employees or agents, to enter the premises subject to this application for the purposes of making inspections associated with this application, during normal and reasonable working hours.

L. Freedom of Information

For the purposes of the *Municipal Freedom of Information and Protection of Privacy Act*, I authorize and consent to the use by or the disclosure to any person or public body any information that is collected under the authority of the *Planning Act, R.S.O. 1990, c. P. 13* for the purposes of processing this application.

Tony Dodaro — Aug 10, 2023

Owner/Applicant Signature — Date

M. Owner's Authorization

If the applicant/agent is not the registered owner of the lands that is the subject of this application, the owner(s) must complete the authorization set out below.

I/We 453997 Ontario Limited am/are the registered owner(s) of the lands that is the subject of this application.

I/We authorize Cyril J. Demeyere Limited - (Trevor Benjamins) to make this application on my/our behalf and to provide any of my/our personal information necessary for the processing of this application. Moreover, this shall be your good and sufficient authorization for so doing.

Tony Dodaro — Aug 10, 2023

Owner — Date

Owner — Date

N. Declaration

I, Trevor Benjamins of Cyril J. Demeyere Limited

solemnly declare that:

all of the above statements and the statements contained in all of the exhibits transmitted herewith are true and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of *The Canada Evidence Act*.

Declared before me at:

TOWN OF TILLSONBURG

In COUNTY OF OXFORD

This 14th day of AUGUST

A.D., 20 23

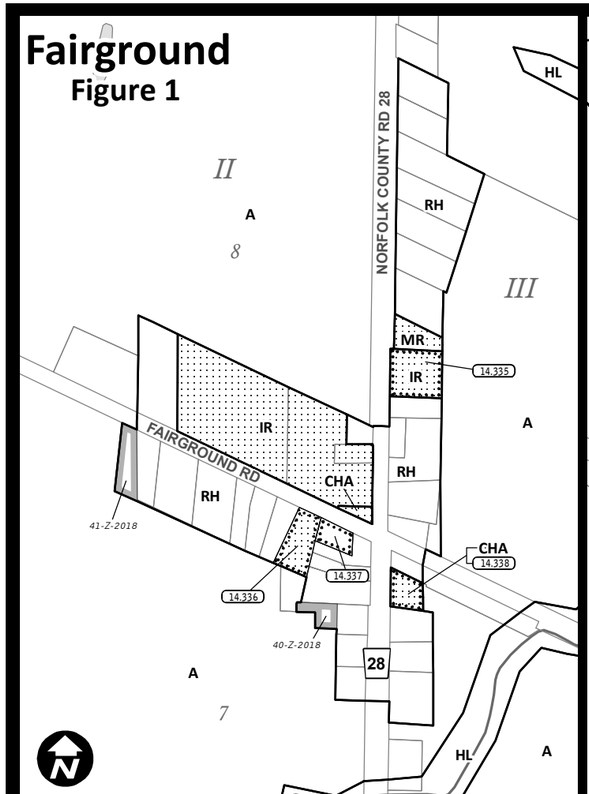
Owner/Applicant Signature

JANET PATRICIA WEAVER,
a Commissioner, etc.,
Province of Ontario, for the
Corporation of the Town of
Tillsonburg. Expires April 22, 2026.

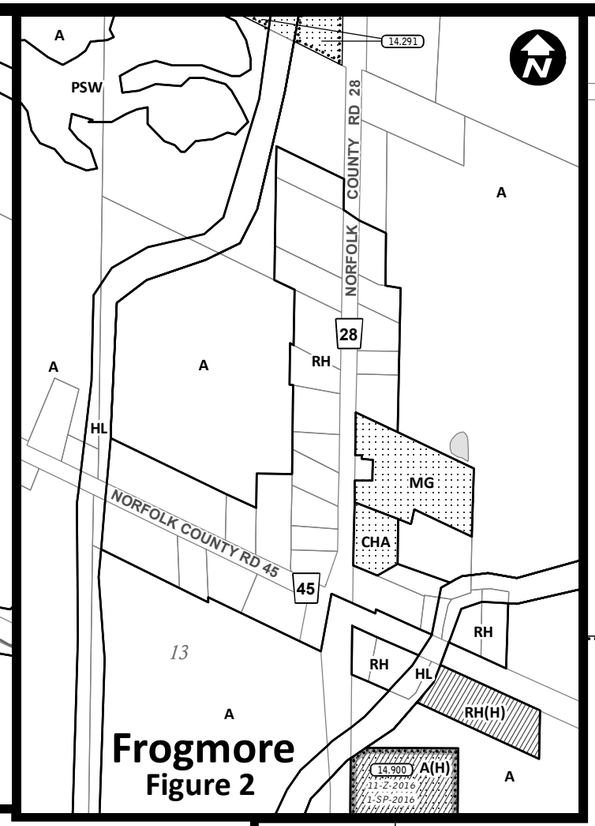
A Commissioner, etc.

Schedule A-42

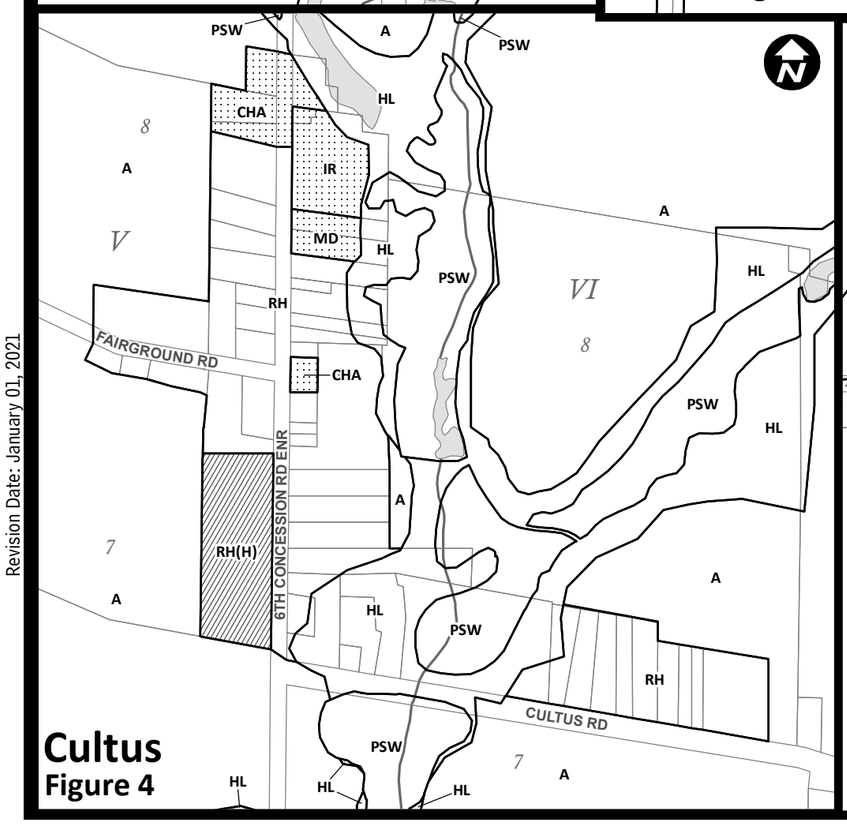
Fairground
Figure 1



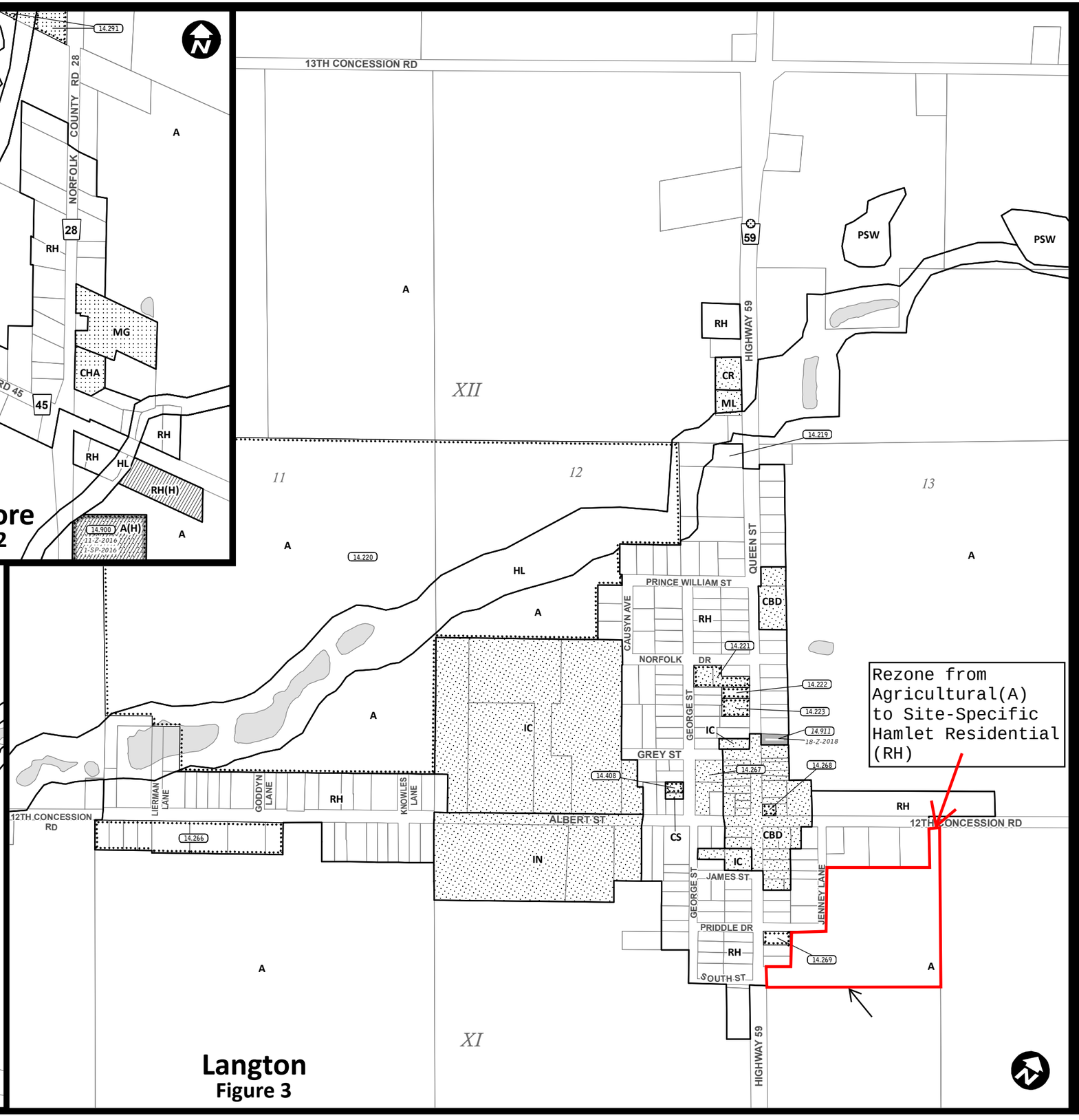
Frogmore
Figure 2



Cultus
Figure 4



Langton
Figure 3



Rezone from Agricultural(A) to Site-Specific Hamlet Residential (RH)

Revision Date: January 01, 2021

0 50 100 200 300 400 500 Meters

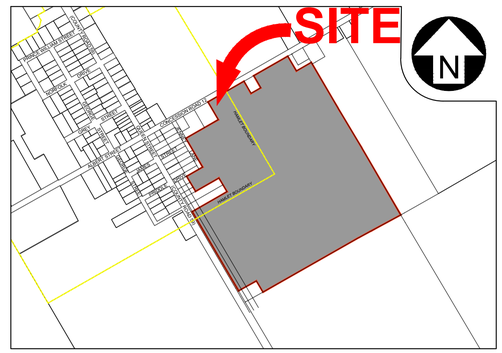
DRAFT PLAN OF SUBDIVISION

PART OF LOTS 12 AND 13 AND PART OF
THE ROAD ALLOWANCE BETWEEN LOTS 12 AND 13
(CLOSED BY BY-LAW PASSED MAY 13TH 1873 REGISTERED AS INSTRUMENT 40778 APRIL 20TH 1876)
CONCESSION 11
GEOGRAPHIC TOWNSHIP OF NORTH WALSINGHAM NORFOLK COUNTY

INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT RSO 1990

(A) ON PLAN
(B) ON PLAN
(C) ON PLAN
(D) LOTS 1 TO 24 – SINGLE DETACHED RESIDENTIAL,
DEDICATED STREETS – STREET 'A'
BLOCK 25 – STORM WATER MANAGEMENT
BLOCK 26 – ROAD WIDENING
BLOCK 27 – FUTURE RESIDENTIAL
BLOCK 28 – AGRICULTURAL,
(E) NORTH – EXISTING RESIDENTIAL/AGRICULTURAL,
WEST – EXISTING RESIDENTIAL/AGRICULTURAL,
EAST – EXISTING AGRICULTURAL
SOUTH – EXISTING AGRICULTURAL
(F) ON PLAN
(G) ON PLAN
(H) PRIVATE WELLS TO BE INSTALLED BY HOME OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF NORFOLK COUNTY
(I) SAND
(J) ON PLAN
(K) STORM SEWERS, TELEPHONE, GAS, T.V.CABLE
(L) NORFOLK COUNTY OFFICIAL PLAN AND ZONING BY–LAWS

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.



KEY PLAN
SCALE: 1:10,000

AREA SUMMARY

	DESCRIPTION	AREA (ha)
LOTS 1–24	SINGLE DETACHED RESIDENTIAL	4.94
DEDICATED STREETS	STREET 'A'	1.15
BLOCK 25	STORM WATER MANAGEMENT	0.20
BLOCK 26	5.0m WIDE ROAD WIDENING	0.06
BLOCK 27	FUTURE RESIDENTIAL	0.28
BLOCK 28	AGRICULTURAL	31.54
TOTAL		38.17

OWNER'S CERTIFICATE

453997 ONTARIO LIMITED, THE REGISTERED OWNER OF THE LANDS TO BE SUBDIVIDED HEREBY AUTHORIZES CYRIL J. DEMEYERE LIMITED TO SUBMIT THIS DRAFT PLAN FOR APPROVAL.

DATE

TERRY DEVOS
453997 ONTARIO LIMITED

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE REMAINING LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN ON THIS PLAN.

DATE

KIM HUSTED. ONTARIO LAND SURVEYOR

SCALE 1:1500

0 20 50 100 METRE 200

NOTE: ORIGINAL CONTOURS SHOWN FROM 2021 SURVEY BY KIM HUSTED SURVEYING LTD.

PLAN PREPARED BY:

CJDL Consulting Engineers
Cyril J. Demeyere Limited
P.O. Box 460, 261 Broadway
Tillsonburg, Ontario, N4G 4H8
Tel: 519-688-1000
866-302-9886
Fax: 519-842-3235
cjdl@cjdleng.com

JOB No. 21032

DATE: 9 AUG 2023

Pre-Submission Consultation Meeting Minutes

Date: August 10, 2022

Description of Proposal: Draft Plan of Subdivision to create 15 lots

Property Location: 1100 12th Concession Rd., Langton

Roll Number: 54202037700

As a result of the information shared at the pre-consultation meeting dated August 10, 2022, the following applications and qualified professional documents / reports are required as part of the development review process.

Please note that various fees are associated with each application and there are also costs for qualified professionals retained to complete various documents / reports. All requirements identified are minimum and determined as of the date of the pre-consultation meeting with the information available at that time. As the proposal proceeds and more information is made available, additional applications, studies, reports, etc. may be required.

This summary including checklists, comments and requests are applicable for a period of one (1) year from the date of meeting. If an application is not received within that time frame, a subsequent pre-consultation meeting may be required due to changes in policies and technical requirements.

Before you submit your application, please contact the assigned Planner to confirm submission requirements and the applicable fee

Attendance List

Proponent	453997 Ontario Ltd.
Community Development – Planning and Agreement	Tricia Givens, Director, Planning (Chair) Mohammad Alam, Senior Planner Fabian Serra, Planner Nicole Goodbrand, Senior Planner Annette Helmig, Agreement and Development Coordinator
Community Development – Building and Zoning	Scott Northcott, Senior Building Inspector Devon Staley, Building Inspector Roxanne Lambrecht, Zoning Administrator Hayley Stobbe, Zoning Administrator
Environment & Infrastructure Services – Development Engineering	Tim Dickhout, Project Manager, Development Stephen Gradish, Development Technologist Zeel Joshi, Junior Development Technologist
Community Services – Fire	Katie Ballantyne, Community Safety Officer
Community Development – Economic Development	Chris Garwood, Economic Development Supervisor
Paramedic Services	Stuart Burnett, Deputy Chief
Operations – Forestry	Adam Biddle, Supervisor of Forestry
Operations – Parks and Facilities	Todd Shoemaker, Director, Parks
Corporate Support Services – Realty Services	Lydia Harrison, Specialist, Realty Services Kelly Darbishire, Specialist, Realty Services
Corporate Support Services – Accessibility	Sam McFarlane, Manager, Accessibility and Special Projects
Haldimand Norfolk Health Unit	Emily Kichler, Community Health Dietician
Long Point Regional Conservation Authority	Leigh-Anne Mauthe, Supervisor of Planning Services Isabel Johnson, Resource Planner
Community Development – Heritage and Culture	Melissa Collver, Director Heritage and Culture
Community Development – Recreation	Nikki Slote, Director Recreation

Table of Contents

Proposal Summary
A 15 lot subdivision is proposed through a Plan of Subdivision in two phases. The first phase is proposed with seven lots fronting the existing public streets. The remaining eight lots are proposed in phase-two along a new 200 m long road extension from Priddle Drive. The revised version of the subdivision incorporated 32 lots with an internal road connecting Concession Rd 12 and Highway 59. 7 lots are facing Jenney Lane.

List of Application Requirements

Planning Department

Planning application(s) required to proceed	**Required**
Official Plan Amendment Application Choose an item.	
Zoning By-law Amendment Application Choose an item.	X
Site Plan Application Choose an item.	
Draft Plan of Subdivision Application	X
Draft Plan of Condominium Application	
Part Lot Control Application	
Consent / Severance Application	
Minor Variance Application	
Removal of Holding Application	
Temporary Use By-Law Application	
Other - Click here to enter text.	

Planning requirements for a complete application The items below are to be submitted as part of the identified Planning Application(s). ** electronic/PDF copies of all plans, studies and reports are required**	**Required at OPA/ Zoning Stage**	**Required at Draft Plan Stage**
Proposed Site Plan / Drawing	X	X
Planning Impact Analysis Report / Justification Report	X	X
Environmental Impact Study Choose an item.		
Neighbourhood Plan (TOR must be approved by the County)		
Agricultural Impact Assessment Report		
Archaeological Assessment		

Heritage Impact Assessment		
Market Impact Analysis		
Dust, Noise and/or Vibration Study		
MOE D-Series Guidelines Analysis		
Tree Plantation Plan		X
Elevation Plan		X
Photometrics (Lighting) Plan		
Shadow Analysis Report		
Record of Site Condition		
Contaminated Site Study		
Minimum Distance Separation Schedule		
Parking Assessment		
Hydrogeological Study		
Restricted Land Use Screening Form		
Topographical Survey Drawing		X
Additional Planning requirements		**Required**
Development Agreement		X
Parkland Dedication/Cash-in-lieu of Parkland		X

*the list of requirements is based on the information submitted and as presented for this specific pre-consultation meeting. Any changes to a proposal may necessitate changes to Planning Department submission requirements.

*Community Development fees, applications, and helpful resources can be found can be found by visiting https://www.norfolkcounty.ca/government/planning/

Planning Comments

Official Plan

The subject lands are designated as 'Hamlet' in the Official Plan. Low density residential dwellings on lots suitably sized to accommodate private servicing systems shall be the main permitted use. An Official Plan amendment will not be required for the proposed subdivision.

Applications for approval of a draft plan of subdivision shall be considered on the basis of the underlying land use designation and the associated policies, particularly section 9.6.4 of the Official Plan that identifies criteria for plans of subdivision:

- The review of plans of subdivision shall also be based in part on the consideration of the community design policies included in Section 5.4 (Community Design) of the Official Plan.

- Plans of subdivision shall be appropriately phased to ensure orderly and staged development.

- All plans of subdivision shall be subject to a subdivision agreement between the County and the development proponent.

- Parkland dedication or cash-on-lieu shall be provided pursuant to Section 9.10.5 (Parkland Dedication) of this Plan. Land to be dedicated for park purposes must be acceptable to the County. Under no circumstances shall the County be obligated to accept parkland being offered in a proposed plan of subdivision.

Zoning By-Law

The subject lands are designated as 'Agricultural' in the Official Plan. The subject lands are within the Hamlet Boundary and designated as Hamlet in the Official Plan, therefore, Staff would support a residential development by changing the zoning from 'Agricultural' to 'Hamlet Residential'.

A zoning by-law amendment application with potential relief of some zoning provisions may be required.

Conceptual Layout Considerations

- Staff do not support a cul-de-sac outside of Hamlet Boundary within an 'Agricultural' Land; Staff would support a road connection between Highway 59 and 12th Concession Road;
- Staff recommends more uniform size of lots avoiding too linear or wider lots to keep a consistency of size and shape of all proposed lots.
- Supported by a geotechnical report, smaller lot size may be acceptable through the zoning by-law amendment.
- A tree plantation plan would be required on public right-of-way.
- Staff do not support any stormwater management facilities on Agricultural land.
- Staff do not support any developments outside the Hamlet boundary.

Endangered and threatened species and their habitat are protected under the provinces Endangered Species Act, 2007 (ESA), O. Reg. 242/08 & O. Reg. 830/21. The Act prohibits development or site alteration within areas of significant habitat for endangered or threatened species without demonstrating that no negative impacts will occur. The Ministry of Environment, Conservation and Parks provides the service of responding to species at risk information requests and project screenings. The proponent is responsible for discussing the proposed activity and having their project screened with MECP.

Please be advised that it is the owner's responsibility to be aware of and comply with all relevant federal or provincial legislation, municipal by-laws or other agency approvals.

Assigned Planner:
Mohammad Alam
Senior Planner
Extension 1828
Mohammad.Alam@norfolkcounty.ca

Agreements

A recommended condition of your planning application approval could be to enter into a development agreement with the County that will be registered on title to the subject lands, at the Owner's expense. The additional requirements for a development agreement could include, but are not limited to the following:

- Engineering drawing review
- Engineer's schedule of costs for the works
- Clearance letter and supporting documentation to support condition clearance
- User fees and performance securities
- Current property identification number (PIN printout) (can be obtained by visiting https://help.onland.ca/en/home/)
- Owner's commercial general liability insurance to be obtained and kept in force during the terms of the agreement
- Postponement of interest. If there are mortgagees / charges on your property identifier, your legal representative will be required to obtain a postponement from your bank or financial institution to the terms outlined in your development agreement
- Transfers and / or transfer easements along with registered reference plan

Annette Helmig
Agreement and Development Coordinator
Extension 8053
Annette.Helmig@norfolkcounty.ca

Development Engineering

Stephen Gradish
Development Technologist
Extension 1702
Stephen.Gradish@norfolkcounty.ca

Conservation Authority

Long Point Regional Conservation Authority

Conservation Authority Requirements to Proceed: The below requirements are to be submitted as part of the proposal for development.	**May be Required**	**Required**
Stormwater Management Report		X
Other		

Notes:

Site Characteristics

The subject property is not subject to natural hazards. Therefore, LPRCA staff have no objection to the concept of development.

Ontario Regulation 178/06

The subject lands are not regulated by Long Point Region Conservation Authority under Ontario Regulation 178/06. No permits from this office are required.

LPRCA and Norfolk County's Memorandum of Understanding for Plan Review Services

Based on LPRCA and Norfolk County's Memorandum of Understanding for Plan Review Services, LPRCA staff can provide the following comments with regard to Stormwater Management:

Stormwater Management

LPRCA will review the final stormwater management design using the 2003 MECP Stormwater Management Planning and Design Manual, MTO Drainage Manual, LID Stormwater Management Manual, the sustainable technologies STEP website https://sustainabletechnologies.ca/, and the Municipal SWM guidelines.

Based on the site and receiving watercourse, an enhanced level of treatment as per the 2003 MECP Stormwater Management Planning and Design Manual is required for the proposed development.

LPRCA requires the following be included and addressed in the design of stormwater management:

- Minimize, or, where possible, prevent increases in contaminant loads.
- Minimize, erosion and changes in water balance, and prepare for the impacts of a changing climate through the effective management of stormwater, including the use of green infrastructure.
- Mitigate risks to human health, safety, property and the environment.
- Maximize the extent and function of vegetative and pervious surfaces.
- Implement stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development, for end of pipe facilities 24-48hr drawdown times to be targeted in all case.

- Provide adequate and legal outlet for major, minor, and all flow conditions from the site be provided.

In addition to the above requirements, the following must be clearly shown on the submitted design drawings:

- Major flow systems are delineated on the drawing. Overland flow paths and depths from surcharged storm sewer systems and the stormwater treatment facility during a 100-year storm must not increase the flood risk to life, property and the environment.
- Minor overland flow systems and paths are to be delineated and shown on the drawings.
- Erosion and sedimentation control during construction.
- Adequate erosion control on inlets and outlets.

Current Planning Application Fees (2022)
Pre-consultation Fee - $339
Draft Plan of Subdivision including associated OPA and ZBA- $1,380.00 + $100/lot + HST (Max $15,000.00 +HST)

*LPRCA fees, applications, and helpful resources can be found can be found by visiting https://lprca.on.ca/planning-permits/planning-fees/

Isabel Johnson
Resource Planner
519-842-4242 ext. 229.
ijohnson@lprca.on.ca

County Departmental Comments & Requirements

Building

Zoning Administrator:

Assuming lots to be zoned RH

- Lot frontage of 3m min is required, some lots do not have the min frontage
- Lots required to be a min area of 0.4 hectares or 4000sqm
- Lot 7 will have an exterior side yard along Street A with a setback of 6m, may want to ask for additional relief of this exterior side yard during this process

Roxanne Lambrecht
Zoning Administrator
Extension 1839
Roxanne.Lambrecht@norfolkcounty.ca

Building Inspector:

The proposed construction is considered a Residential Group C as defined by the Ontario Building Code (OBC). You will need to retain the services of a qualified individual with BCIN House, HVAC House, an Architect and/or a Professional Engineer to complete the design documentation for this application.
The Designer will need to review the OBC Subsection 9.10.15. for spatial separations of houses and ensure septic systems will comply with all clearances within Part 8 of the OBC.

Items for Building Permit

"New Residential" and "Septic Systems" Step by Step Guides have been attached to the minutes herein, they contain information on drawing requirements, designers, forms, contact information for Building Department etc.
If you have any questions on the building permit process or plans required, please check out our website www.norfolkcounty.ca/business/building or call 519-426-5870 ext. 6016

Jonathan Weir,
Building Official III
Extension 1832
Jonathan.weir@norfolkcounty.ca

Fire Department

Norfolk County Fire does not have any concerns with this proposal at this time.

Katie Ballantyne
Community Safety Officer
Extension 2423
Katie.ballantyne@norfolkcounty.ca

Appendix A: Summary of Applicable Planning Legislation, Policy and Zoning

Following is a summary of key items related to the proposal as presented; noting these documents are meant to be read in their entirety with relevant policies to be applied in each situation. This is not an exhaustive list and only in response to the information submitted for the pre-consultation. This feedback is subject to change pending full submission of a development application and any changes or additional information provided therein.

Provincial Policy Statement, 2020

https://www.ontario.ca/page/provincial-policy-statement-2020

Norfolk County Official Plan
https://www.norfolkcounty.ca/government/planning/official-plan/

Section 9.6.1 outlines requirements in relation to requests to amend the Official Plan.

Section 9.6.2 outlines requirements in relation to requests to amend the Zoning By-law.

It is the responsibility of the proponent to review and ensure relevant Official Plan policies are addressed in any future development application.

Norfolk County Zoning By-Law 1-Z-2014
https://www.norfolkcounty.ca/government/planning/new-zoning-by-law/

The provisions of the Norfolk County Zoning By-Law shall apply to all lands within the boundaries of Norfolk County. No land, building or structure shall be used, erected or altered in whole or in part except in conformity with the provisions of this By-Law. No land, building or structure shall be used or occupied except for uses that are specifically identified in the By-Law as permitted uses by the relevant zoning category.

It is the responsibility of the proponent to review and ensure relevant Zoning By-law provisions are addressed in any future development application

Site Plan Control:

Click here to enter text.

PLANNING JUSTIFICATION REPORT

PROPOSED RESIDENTIAL
DEVELOPMENT

SOUTHEAST
LANGTON, ONTARIO

CJDL
Consulting Engineers

21032
14 August 2023

PLANNING JUSTIFICATION REPORT

PROPOSED RESIDENTIAL DEVELOPMENT

SOUTHEAST LANGTON, ONTARIO

TABLE OF CONTENTS

CJDL
Consulting Engineers

CYRIL J. DEMEYERE LIMITED
John D. Wiebe, P. Eng. | Andrew Gilvesy, P. Eng.
Peter J. Penner, P. Eng. | Deren Lyle, P. Eng.

261 Broadway, P.O. Box 460, Tillsonburg, ON N4G 4H8 T: 519-688-1000 F: 519-842-3235 www.cjdleng.com

21032
14 August 2023

PLANNING JUSTIFICATION REPORT

PROPOSED RESIDENTIAL DEVELOPMENT

SOUTHEAST LANGTON, ONTARIO

1.0 INTRODUCTION

This report provides planning impact analysis regarding the proposal of 453997 Ontario Limited for the creation of 24 lots for single detached residential development on lands which it owns located on the east side of Highway 59 in the southeast portion of Langton, Norfolk County, Ontario and referred to herein as the "**subject property**". The lots will be created through the draft plan of subdivision process (see Figure 1 herein) under Section 51 of the Planning Act and would make efficient use of individual on-site private septic systems and individual on-site private water wells. The subject property is partially designated as a Hamlet Area by the Norfolk County Official Plan ("**OP**") for the area located within the Settlement Area of Langton. The area of the subject property that is located outside of the settlement boundary is designated as Agricultural. The subject property is zoned as an Agricultural zone (A) by Norfolk County Zoning By-law No. 1 -Z-2014, as amended, ("**ZB**") for the area within the Hamlet of Langton (see Appendices A and B) and zoned as Hazard Lands (HL) in the southeast corner of the subject property. The proposal requires a zoning bylaw amendment ("**ZBA**") for the area located within the settlement area of Langton (i.e., the "**draft plan area**") which is the area of the proposed development as well as a site-specific amendment to the lot area of the remaining portion of the property. All information identified as required to support the draft plan of subdivision and zoning by-law amendment applications to Norfolk County will accompany the application.

2.0 SUBJECT PROPERTY

As noted, the subject property is located on the east side of Highway 59 and south of 12th Concession Road. The legal description of the subject property is: Part of Lots 12 and 13 and part of the road allowance between Lots 12 and 13, (closed by by-law passed May 13th, 1873, registered as instrument 40778 April 20th 1876) Concession 11, Geographic Township of North Walsingham in Norfolk County. A formal pre-consultation meeting with Norfolk County took place on August 10th, 2021, outlining planning submission requirements (see Appendix C for Pre-Application Consultation Meeting Notes).

The subject property has 325 metres frontage on Highway 59 and 286 meters frontage on Concession Road 12 comprising an approximate area of 94.3 acres or 38.17 hectares. The subject property and surrounding land uses are shown in further detail on Figure 2 herein which also identifies the draft plan area for the proposed subdivision in further detail. The draft plan area is not within the regulation limits of the Long Point Region Conservation Authority (LPRCA), although there is a small LPRCA regulated area in the southeast corner of the subject property at a considerable distance from the draft plan area.

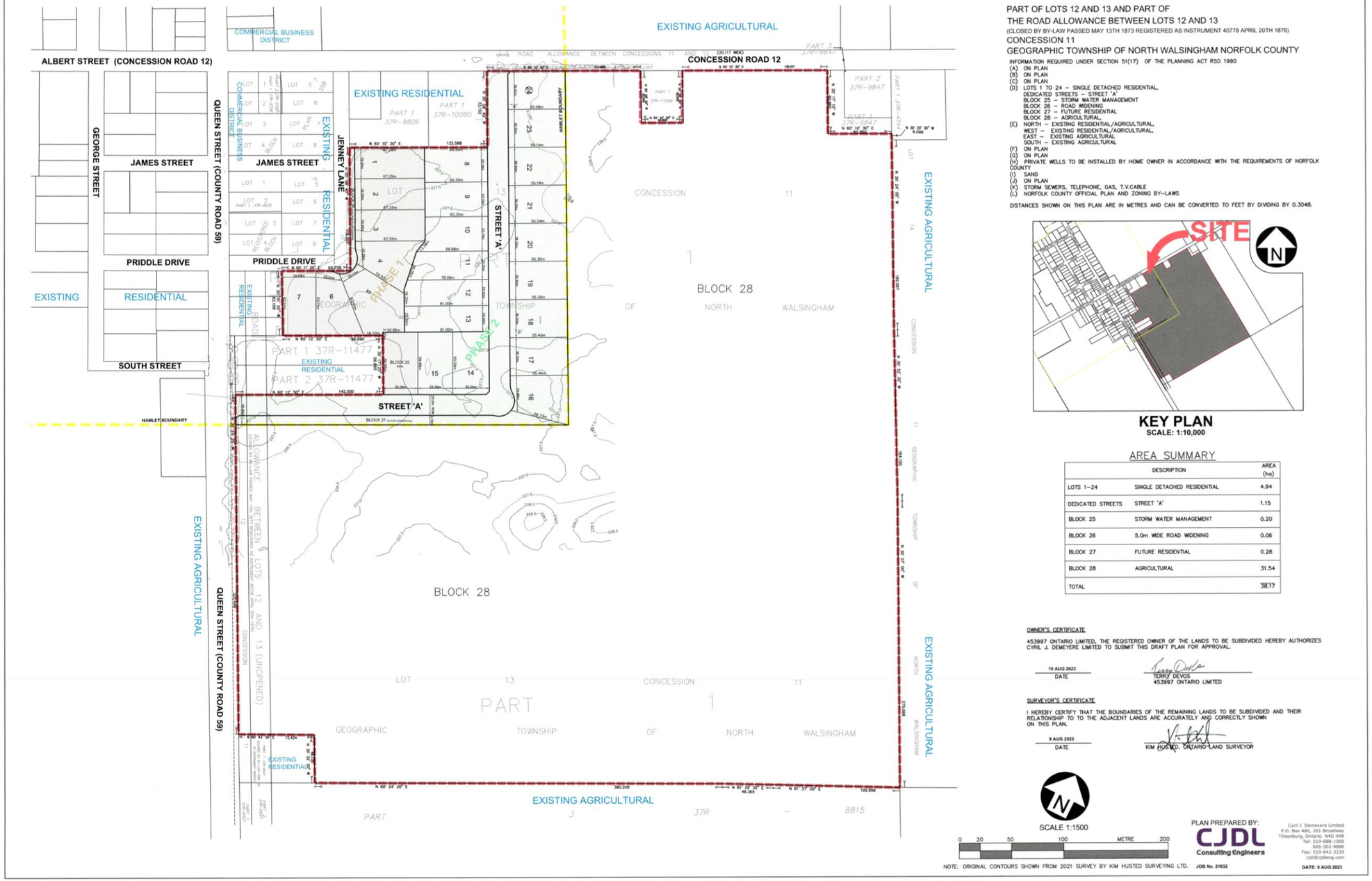


Figure 1: Draft Plan of Subdivision

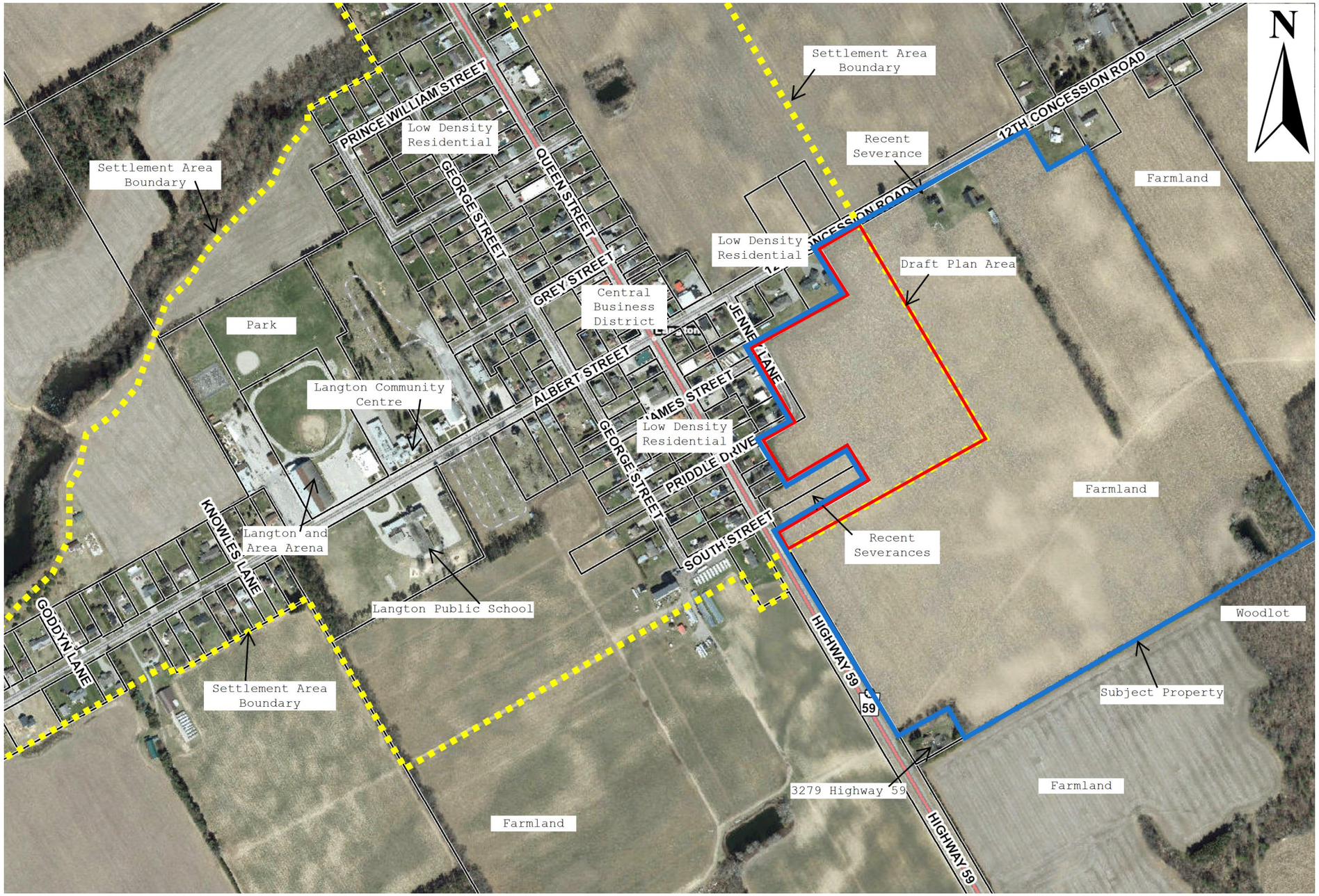


Figure 2: Subject Property and Surrounding Land Uses

The subject property is flat and is currently used as cropland for agricultural use. The draft plan area and majority of the subject property contains very few trees but no trees are proposed to be removed outside of the Hamlet Area. The subject property does have Hazard Lands reflective of the regulated area and a Significant Woodland located in the southeast corner of the subject property. However, this woodlot is located well outside the draft plan area at a distance from the area of the proposed development. As mentioned, the draft plan area is designated as a Hamlet Area on OP Schedule "A-1" and designated as a Hamlet by OP Schedule "B-9" (refer to Appendix A). The subject property is currently zoned as Agricultural (A) and Hazard Lands (HL) zone in the ZB (refer to Appendix B).

The subject property is depicted by the following photographs:

Looking southeast at the subject property from Priddle Drive
Photo: Trevor Benjamins, 25 November 2022

Looking east at the previously severed properties from Highway 59
Photo: Trevor Benjamins, 25 November 2022

Looking northeast at subject property from Highway 59
Photo: Trevor Benjamins, 25 November 2022

3.0 SURROUNDING LAND USES

Langton, Ontario is a hamlet located in the County of Norfolk which provides a unique small-town character for residents. Langton has a number of small businesses as well as low-density single detached residential lots to the immediate west and north of the subject property on a scale suitable to the limitation of no municipal services being available.

Directly north of the subject property are low density single detached dwellings located at 968, 970, 985, and 989 12th Concession Road all of which have direct frontage on 12th Concession Road. Each of these properties is zoned as Hamlet Residential Zone (RH) in the ZB. Further north beyond 12th Concession Road is agricultural farmland that is zoned Agricultural in the ZB, a part of which is located inside the settlement area limits for Langton.

South of the subject property is a single detached dwelling located at 3279 Highway 59. The large majority of land uses south of the subject property are agricultural associated with crop production and outside of the settlement area of Langton. Southeast is woodlot zoned as Hazard Lands (HL) in the ZB.

East of the subject property is agricultural cropland with a number of single detached dwellings located along 12th Concession Road. A recent surplus farm dwelling severance located at 1026 12th Concession Road just east of the proposed development, followed by more single detached dwellings located at 1036, 1047, 1048 and 1054 12th Concession Road respectively. Each of these is zoned as Agricultural in the ZB.

Directly west of the subject property are low-density single detached dwellings, a large portion of which have frontage onto Highway 59, Jenney Lane or George Street. At the main intersection in Langton are a variety of commercial buildings zoned as Central Business District Zone (CBD) in the ZB. Further west of this commercial cluster is Langton Community Centre and Langton and Area Arena designated as Parks and Open Space and zoned as Community Institutional (IC); Langton Public School is also located further west of the subject property and zoned as Neighborhood Institutional (IN). Across the road is also a Catholic School and Church which is zoned IC.

Two previous severances took place from the subject property in advance of the proposed draft plan of subdivision which contain single detached dwellings and located west of the subject property fronting onto Highway 59. These two lots created by previous severance are shown on Figure 2.

The surrounding land uses are depicted on the following photographs:

Looking north at residential single detached dwellings on the north side of Concession Road 12
Photo: Trevor Benjamins, 25 November 2022

Looking northwest from the intersection of Concession Road 12 and Highway 59
Photo: Trevor Benjamins, 25 November 2022

Looking east at existing single detached dwellings from Highway 59
Photo: Trevor Benjamins, 25 November 2022

4.0 PROPOSED DEVELOPMENT

4.1 Proposed Plan of Subdivision

The proposed Draft Plan of subdivision as depicted on the Figure 1 draft plan of subdivision contemplates the creation of the following:

1. 24 single detached new lots that would have frontage on new streets “A”, and existing streets Priddle Drive and Jenny Lane;
2. One (1) stormwater management block to adequately control stormwater quantity and quality; (Block 25)
3. One (1) road widening block to widen the Right-of-Way of Jenny Lane for road improvements; (Block 26)
4. One (1) Future Residential Block for possible future expansion of the settlement area boundary of Langton; (Block 27)
5. One (1) Agricultural block to remain in Agricultural farmland associated with crop production, (Block 28).

The proposed development would be done in two separate phases. Phase one would be the development of single detached dwellings on lots fronting onto existing streets (Priddle Drive and Jenny Lane). Phase one would also include the development of a stormwater management pond (Block 25). Phase two would be the development of single detached dwellings on the proposed Street ‘A’ and the construction of this street. Figure 1 in this report shows Phase 1 in a brown colour and Phase 2 in a green colour.

The proposed single detached dwellings would be a combination of both one and two-storeys based on buyer preference and the sizing of each lot. Cash-in-lieu of parkland dedication would be desirable for the proposed development as there is an existing park located further west of the subject property beyond the Central Business District and core of Langton (see Section 3.0 herein).

4.2 Proposed Zoning By-law Amendment ("ZBA")

The subject property is currently zoned on Schedule A-42 and A-7 of the ZB as Agricultural (A) and Hazard Lands (HL) (see Appendix B). A portion of the subject property will be rezoned to site-specific Hamlet Residential reflective of the proposed draft plan of subdivision. The area located outside of the settlement area boundary of Langton will remain zoned as Agricultural (A) and Hazard Lands (HL). As a result of a recent surplus farm dwelling severance on the subject property, ZB **14.29** applies to the entire property which prohibits single detached dwellings. The proposed ZBA would remove ZB subsection **14.29** for the draft plan area only which is the area located within the Hamlet of Langton.

The requested amendments from the standard RH zone include the following proposed zoning for the draft plan area:

14.XXX In lieu of the corresponding provisions of the RH Zone, the following shall apply:
- *a) minimum lot area – 2000 square metres;*
- *b) minimum lot frontage:*
  - *i. interior lot – 25 metres;*
  - *ii. corner lot – 25 metres;*
- *c) minimum exterior side yard – 4.0 metres.*

Subsection 14.29 shall not apply

In addition to the site-specific amendment requested above for the draft plan area, the portion of the property located outside the draft plan area (and outside of the Langton boundary) requires site-specific A zoning due to the area which would result once the proposed draft plan has final approval at 31.5 hectares which is under the ZB Section **12.1.2** minimum lot area of 40 hectares. ZB Section **14.29** would continue to apply. The requested amendment to the area of the subject property located outside the proposed area for development is as follows:

14. XXX In lieu of the corresponding provisions in the Agricultural (A) Zone, the following shall apply:
- *a) minimum lot area – 31.5 hectares;*

5.0 PLANNING IMPACT ANALYSIS

5.1 Provincial Policy Statement (PPS)

The PPS 2020 came into effect 1 May 2020 and provides policy direction on matters of provincial interest related to land use planning and development within the Province of Ontario under the Planning Act. Decisions of municipalities regarding a plan of subdivision and proposed ZBAs are required to be consistent with the applicable policy under Planning Act legislative authority. The proposed draft plan of subdivision to create 24 new lots under Section 51 of the Planning Act and associated ZBA would be consistent with the PPS as follows:

- The community of Langton does not have municipal services; therefore, the proposed development would make use of individual wells and private septic systems. Given that full or partial services are not available, the proposed residential development would be single detached dwellings which are an appropriate residential type for the Hamlet of Langton further to PPS Section **1.1.1 b).**

- The Functional Servicing Report (FSR) prepared by CJDL Consulting Engineers outlines how the proposed development would be connected to individual on-site septic systems and wells. The report also outlines how Stormwater management would be controlled through a proposed storm sewer and stormwater management pond which avoids development that may cause environmental or public health concerns further to PPS Section **1.1.1 c).**

- Langton is one of the primary, Hamlet settlement areas of Norfolk County intended to be the focus of growth and development and the proposed development would be an enhancement to its vitality and regeneration further to PPS Section **1.1.3.** and **1.1.3.1**.

- As there are no municipal services available in Langton, the proposed low density residential development on suitably sized lots is appropriate and would use land and resources as efficiently as possible further to PPS Section **1.1.3.2 a) and b).**

- The proposed development is within walking distance to Langton's downtown core which provides pedestrian/active transportation opportunities further to **PPS 1.1.3.2. e).**

- The Hamlet of Langton is a rural settlement area (Hamlet Area) within Norfolk County which constitutes a Rural Area as defined by the PPS. Under PPS Section **1.1.4.2,** areas such as Langton shall be the focus of growth and development. The proposed development would build upon the rural character of Langton and the single detached dwellings would be appropriate to the rural character of Langton, compatible with the existing low-density residential west and north of the subject property with an appropriate level of servicing being provided further to PPS Section **1.1.4.1 a) and 1.1.4.3.**

- The proposed development would add to the housing supply in Norfolk County and Langton to meet the needs of current and future residents through the development of lands that are designated as Hamlet Area and available for residential development further to PPS Section **1.4.1 a).**

- The proposed low density, single detached residential development would be serviced by private individual on-site wells and individual on-site septic systems. The proposed development would constitute minor rounding out of existing development in Langton as it consists of 24 lots adjacent to existing residential development and the draft plan area is already designated as a Hamlet Area in the OP further to PPS Section **1.6.6.4.**

- The draft plan area does not contain any areas of natural heritage which ensures natural heritage features are protected further to PPS Section **2.1.1**

Conclusion: Based on the foregoing analysis, the proposed development would be consistent with the PPS.

5.2 Norfolk County Official Plan ("OP")

The OP was adopted by Norfolk County Council on May 9th, 2006 and was approved by the Ministry of Municipal Affairs and Housing on December 23rd, 2008. The OP was updated by OPA No. 132 which was approved by the Norfolk County Council on July 21st, 2020. Langton is one of the 42 Hamlet Areas of Norfolk County. The draft plan area is designated as Hamlet Area on OP Schedule "A-1" Community Structure as well as a Hamlet on Schedule "B-9" Land use (see Appendix A).

The proposed area for development is located within the Hamlet Area of Langton and would not be detrimental to the rural character of Langton based on the size of the proposed development relative to existing development. The property would have private servicing including individual on-site septic systems and wells to ensure no adverse environmental consequences. The proposed development would maintain the rural character of Langton and would have a positive impact on the financial sustainability of Norfolk County as a whole conforming with OP Section **6.6 Hamlet Areas.**

The proposed development would consist of low-density single detached dwellings with lots sizes larger than 2000 square metres to ensure a suitable area for private servicing systems conforming with OP Section **7.5.1 a).**

OP Section **7.5.2 b)** states, *"Designation of a Hamlet Area does not mean that the Hamlet Area is suitable for further development. The following criteria shall be addressed in the review of development applications within designated Hamlet Area boundaries:*

The following policies apply to land designated Hamlet:

i) availability of potable water;

- The Hydrogeological Assessment completed by Ian D. Wilson Associates Limited tested a collection of potable water from a nearby existing water source and confirmed no detectable total coliform or E. Coli bacteria, and a low and acceptable level of background bacteria. All chemical parameters were acceptable levels under the Ontario Drinking Water Quality Standards conforming with OP Section **7.5.2 b) i).** The conclusions of the Hydrogeological Assessment are found in Section 6.1 of this report.

ii) a servicing feasibility study has been completed in accordance with the Ministry of the Environment and Climate Change guidelines which demonstrates that the proposal's impact on ground and surface water will be within acceptable limits;

- CJDL has prepared a Functional Services Report (FSR) to stipulate how the proposed development would be serviced and control stormwater for both quality and quantity. The conclusions of the FSR are found within Section 6.4 of this report conforming with OP Section **7.5.2 b) ii).**

iii) the proposed servicing will be appropriate for the proposed densities and land uses;

- Given the lack of full municipal services, it has been demonstrated that private on-site wells and individual on-site septic systems would effectively service the proposed residential development conforming with OP Section **7.5.2 b) iii).**

iv) the pattern of new development will be a logical extension of the existing built-up area;

- The proposed draft plan is a logical extension of the existing built-up area of Langton as it would round out the development to the settlement boundary limits conforming with OP Section **7.5.2 b) iv).**

v) *the available community facilities, such as community centres, schools, convenience commercial, recreation or cultural facilities can accommodate the proposed development;*

- The proposed development is located within walking distance to the Central Business District (CBD) within Langton which ensures the proposed development would have nearby access to the existing commercial features conforming with OP Section **7.5.2 b) v).** There are also schools and recreational facilities located on the west side of Langton relatively close to the subject property as mentioned in Section 3 of this report.

vi) the area of the proposed development shall not be permitted in Provincially Significant Features or Hazard Lands, identified on Schedules "B" of this Plan;

- The draft plan area is not located within any Provincially Significant Features or Hazard Lands as shown on Schedule B of the OP (see Appendix A) conforming with OP Section **7.5.2 b) vi).**

vii) *the area of the proposed development shall not be permitted in or on adjacent land to the Natural Heritage Features identified on Schedule "C" and/or Tables 1 and 2 or on Schedule "G" and Table 6 of the Lakeshore Special Policy Area Secondary Plan, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, in accordance with the policies of Section 3.5 (Natural Heritage Systems) and Section 11 (Lakeshore Special Policy Area Secondary Plan) of this Plan;*

- The draft plan area is not located on or in adjacent land to the Natural Heritage Feature identified on Schedule "C-4" (see appendix A). The subject property is also not located within the Lakeshore Special Policy Area and is, therefore, not included on Tables 1 and 2 or on Schedule "G" and Table 6 conforming with OP Section **7.5.2 b) vii).**

viii) *the area of the proposed development shall not be located within, and will not have a negative impact on, a Natural Resource Area identified on Schedule "J" to this Plan.*

- The proposed draft plan area does not contain any Aggregate Resource, Petroleum Resource or Waste Management Site areas as identified on Schedule "J-4" (refer to Appendix A") conforming with OP Section **7.5.2 b) viii).**

The proposed development would be an alternative form of infilling or in-depth development. The proposed development would have safe ingress and egress onto each new lot through existing streets and a proposed "Street A" with access to both 12th Concession Road and Highway 59 which are the main roads going through the Hamlet of Langton conforming with OP Section **7.5.2 d).**

As previously stated, the proposed residential development conforms with OP Section **6.6** and therefore conforms with OP Section **7.5.2 f).**

The proposed development would be implemented via a site-specific ZBA as discussed in sections 4.2 and 5.3 of this report conforming with OP Section **9.6.2.**

OP Section **9.6.4** contains policy relating to the Draft Plan of Subdivision process under Section 51 of the Planning Act. The following policies are addressed below relative to the proposed development:

a) The provisions of the Planning Act relating to subdivision control, including subdivision agreements, shall be used by Council to ensure that the land use designations and policies of this Plan are complied with, and that a high standard of design is maintained in all development.

- The draft plan area is designated as Hamlet Area in the OP and the developer will enter into a subdivision agreement with Norfolk County to ensure a high standard of design is maintained during the development process conforming with OP Section **9.6.4 a);**

b) Prior to approval of an application for plan of subdivision or plan of condominium, the County shall confirm the availability of adequate servicing infrastructure and allocation in accordance with Section 8.9.3 (Servicing Allocation and Phasing), waste collection and disposal services, and roads.

- The proposed lots would be adequately sized for private services, there were no concerns with drinking water on private wells and the site is suitable for septic systems as outlined in the Hydrogeological Assessment which is addressed in Section 6.1 of this report conforming with OP Section **9.6.4 b);**

c) Applications for plan of subdivision or plan of condominium approval shall be considered premature if appropriate services and servicing capacity is not available. Additionally, Council may consider other criteria as reason to deem an application for plan of subdivision or plan of condominium approval to be premature.

- The submission for the proposed development includes a complete list of studies as outlined in the pre-consultation meeting minutes Norfolk County provided (refer to Appendix C). In addition, the Hydrogeological Assessment addresses the proposed private septic system and drinking water feasibility to ensure adequate private servicing to service the development conforming with OP Section **9.6.4 c);**

d) The review of plans of subdivision or plan of condominium shall be based in part on the consideration of the community design policies included in Section 5.4 (Community Design) and Section 11.8 (Community Design Strategy) of the Lakeshore Special Policy Area Secondary Plan of this Plan.

- As indicated, the proposed development is located outside the Lakeshore Special Policy Area Secondary Plan.

OP Section **5.4 b)** of the Community Design policies states*, "through the review of development applications, including plans of subdivision, site plans and other development proposals, the County:*

i) *shall ensure that new development is designed in keeping with the traditional character of the Urban Areas, in a manner that both preserves the traditional image of the Urban Areas and*

enhances the sense of place within the County while maintaining the community image of existing settlement areas;

- Even though Langton is a Hamlet Area rather than an Urban Area of the County, this policy is relevant and the proposed development would be an enhancement to the character of Langton and be comprised of low-density single detached dwellings compatible with Langton's existing character.

ii) *shall promote efficient and cost-effective development design patterns that minimize land consumption;*

- The proposed development comprises a compact lot design that effectively minimizes land consumption yet is large enough for private on-site services. Seven (7) new lots will also be created on existing roads (Jenny Lane and Priddle Drive) to ensure cost-effective development which would be successfully integrated into the existing urban landscape.

iii) *shall promote the improvement of the physical character, appearance and safety of streetscapes, civic spaces, and parks;*

- The proposed development would be an improvement to the physical character of Langton utilizing new and enhanced building materials where possible. The proposed development would be a mix of 1 and 2 storey single detached dwellings depending on the buyers' preference and would provide housing options beyond what already exists.

iv) *shall encourage tree retention and tree replacement;*

- The draft plan area is currently an agricultural field with very few trees existing in the area for development, if any.

v) *shall ensure that design is sympathetic to the heritage character of an area, including the area's cultural heritage resources;*

- Single detached dwellings are proposed and match what is currently existing within the Hamlet Area of Langton.

vi) *shall strongly encourage design that considers and, wherever possible, continues existing and traditional street patterns and neighbourhood structure; and*

- Single detached dwellings compatible with what is currently existing within the Hamlet Area of Langton. Additional enhancements of street design can be included in the draft plan conditions or a subdivision agreement if approved.

vii) *may require, at the County's sole discretion, that proponents submit design guidelines with development applications, establishing how the policies of this Section have been considered and addressed. Such may also be required to address related issues of residential streetscaping, landscaping, setbacks, sidewalks, signage, garage placement, and architectural treatment.*

- Urban design guidelines were not identified during consultation as required to support the

proposed development. If required, landscaping, signage and streetscaping can be addressed through a future subdivision agreement.

e) *All lots within a plan of subdivision shall have frontage on a public road maintained on a year-round basis, constructed to an acceptable County standard. Plans of condominium shall have access to a public road maintained on a year-round basis, however, it is recognized that development within the condominium plan may occur on private roads.*

- Each lot would have frontage onto existing roads (Priddle Drive and Jenny Lane) and/or the new proposed road "Street A" which would be constructed to County Standards as shown on Figure 1 conforming with OP Section **9.6.4 e);**

f) *Provincially Significant Features and Natural Heritage Features shall be protected and preserved in the design of any plan of subdivision or condominium.*

- The proposed draft plan area is not located within any Provincially Significant or Natural Heritage Features conforming with OP Section **9.6.4 f);**

g) *Plans of subdivision or condominium shall be appropriately phased to ensure orderly and staged development.*

- The proposed development would be done in two separate phases. Phase 1 on the draft plan would be the lots fronting onto Priddle Drive and Jenny Lane. Phase 2 would be the construction of the proposed "Street A" and lots fronting onto this new street conforming with OP Section **9.6.4 g);**

h) *All plans of subdivision shall be subject to a subdivision agreement between the County and the development proponent.*

- The developer will enter a subdivision agreement with the County of Norfolk conforming with OP Section **9.6.4 h);**

i) *Parkland dedication shall be provided pursuant to Section 9.10.5 (Parkland Dedication) of this Plan. Land to be dedicated for park purposes must be acceptable to the County. Under no circumstances shall the County be obligated to accept parkland being offered in a proposed plan of subdivision.*

- Cash-in-lieu of parkland dedication is appropriate to the proposed development given the proximity of existing open space conforming with OP Section **9.6.4 i);**

j) *The County shall consult with the appropriate Conservation Authority and the Province, as well as other relevant agencies, in considering an application for approval of a plan of subdivision or condominium.*

- The developer is aware of the circulation of the required reports, plans and studies by Norfolk County to various commenting agencies as required including the LPRCA conforming with OP Section **9.6.4 j).**

Conclusion: Based on the foregoing analysis, the proposed development would be in conformity with the Norfolk County Official Plan.

5.3 Norfolk County Zoning Bylaw 1-Z-2014 ("ZB")

The ZB was passed by the County of Norfolk on July 14, 2014. The subject property is currently zoned as an Agricultural Zone (A) and Hazard Lands (HL) on schedule A-42 and Schedule A-7 (Appendix B) of the ZB. ZB Section **12.1.1 Permitted Uses** contains the 'A' Regulations:

In an A Zone, no land, building or structure shall be used except in accordance with the following uses:

a) animal kennel, subject to Subsection 12.1.4
b) bed & breakfast, subject to Subsection 3.4
c) bunk house
d) Cannabis Production and Processing, subject to General Provisions 3.21 [25-Z-2018]
e) dwelling, single detached
f) farm
g) farm brewery, subject to Subsection 12.2.3 [34-Z-2019]
h) farm distillery, subject to Subsection 12.2.3 [34-Z-2019]
i) farm experience activity, subject to Subsection 12.2.2
j) farm processing, accessory to a farm
k) farm processing-value added, subject to Subsection 12.2.1
l) farm produce outlet, accessory to a farm
m) farm winery, subject to Subsection 12.2.3
n) home industry
o) home occupation
p) on-farm diversified use, subject to Subsection 12.3 [34-Z-2019]
q) seasonal storage of recreational vehicles and recreational equipment as a secondary use to a farm.
r) accessory residential dwelling unit, subject to Subsection 3.2.3 [7-Z-2020]

The current zoning provisions intend the primary use of the Agricultural (A) zoned lot to be for agricultural purposes. Since the proposed draft plan of subdivision is for primarily single detached residential use, a ZBA to rezone the draft plan area on the subject property to a residential zone is required. A site-specific Hamlet Residential zoning is appropriate for the proposed residential development since it is located within the Hamlet Area of Langton and the proposed development is residential in nature.

ZB Section **5.7.1 Permitted Uses** within the RH Zone include single detached dwelling as proposed as follows:

In an RH Zone, no land, building or structure shall be used except in accordance with the following uses:

a) dwelling, single detached
b) bed & breakfast, subject to Subsection 3.4
c) day care nursery
d) home industry
e) home occupation
f) accessory residential dwelling unit, subject to Subsection 3.2.3 [7-Z-2020]

RH Zone Requirements are as follows per ZB Section **5.7.2 a), b), c), d), e), f) and g):**

Standard Provision of the RH Zone		Proposed Zoning
Minimum Lot Area	0.4 hectares	**2000m²** **(Requested site-specific provision)**
Minimum Lot Frontage	Interior Lot 30.0m Corner Lot 30.0m	**Interior Lot 25m / Exterior Lot 25m** **(Requested site-specific provision)**
Minimum Front Yard	6.0m	6.0m
Minimum Exterior Yard	6.0m	**4.0m** **(Requested site-specific provision)**
Minimum Interior Side Yard	1.2m	1.2m
Minimum Rear Yard	9.0m	9.0m
Maximum Building Height	11.0m	11.0m

As described in Section 4.2, the proposed amendments from the standard RH zone regulations include the following:

14.XXX In lieu of the corresponding provisions of the RH Zone, the following shall apply:
a) minimum lot area – 2000 square metres;
b) minimum lot frontage:
i. interior lot – 25 metres;
ii. corner lot – 25 metres;
c) minimum exterior side yard – 4.0 metres.

Subsection 14.29 shall not apply.

The proposed site-specific provisions from ZB Section **5.7.2 a), b) and d)** are appropriate as the size of the lots support private services as stipulated in the Hydrogeological Assessment prepared by Ian D. Wilson and Associates referenced in Section 6.1 of this report. The proposed development would have adequate off-street parking at every single detached dwelling unit and garbage bins stored on each property. As previously mentioned, the subject property was part of a previous surplus farm dwelling severance and, therefore, ZB subsection **14.29** prohibitive of single detached dwelling applies. The proposed site-specific ZBA would remove this clause by site-specific RH zone provision for the area inside the Hamlet of Langton only and the remaining portion of the property located outside the Hamlet of Langton would continue to be subject to ZB Subsection **14.29**.

As previously mentioned in Section 4.2 of this report, the area of the lot that is located outside the boundary of Langton would also require an amendment for the minimum lot area from 40 hectares to 31.5 hectares. The requested amendment to the area of the subject property located outside the proposed area for development is as follows:

14. XXX In lieu of the corresponding provisions in the Agricultural (A) Zone, the following shall apply:
a) minimum lot area – 31.5 hectares;

The area zoned as Hazard Lands (HL) would not be impacted by the proposed ZBA and ZB Section **1.4.3 a)** stipulates that this area may be used in the calculation of the required lot area within the A zone.

Conclusion: Based on the foregoing analysis, the proposed development would be in conformity with the Norfolk County ZB subject to the proposed rezoning.

6.0 TECHNICAL STUDIES

6.1 Hydrogeological Assessment

Ian D Wilson and Associates Ltd. prepared the Hydrogeological Assessment report as required by Norfolk County for this proposed development. The report includes hydrogeological study test spits including soil sampling for percolation rate analyses and identification of shallow groundwater conditions. The purpose of the hydrogeological study was to establish appropriate sewage system development density for individual septic systems for each single detached dwelling. The study also collected samples of potable water for a nearby existing drinking water source to confirm the drinking water quality for the proposed development.

The water tested had no detectable Coliform or E. Coli Bacteria with a low and acceptable level of background bacteria. The water was moderately hard which was typical for the groundwater in Langton. All chemical parameters determined were at acceptable levels and the Ontario Drinking Water Quality Standards. The report concludes that the quality of water from wells on an adjacent property was acceptable.

The report also addresses private individual on-site septic systems with the result that 19 of the lots would be required to utilize nitrate reduction technology. The report concludes that there is a sufficient area (250 square metres) for both a primary sewage disposal contact area and a reserve disposal contact area on 2000 square metre lots. Additional recommendations on septic system design requirements are provided. Overall, the report concludes that the development of the subject lands as proposed is viable, subject to the conclusions, limitations and recommendations of the report. Given the limitations of high groundwater, it is assumed that raised septic beds for septic systems may be required, and individual soil samples will be required at the time of building permit application.

6.2 Geotechnical Investigation

MTE Consultants prepared a Geotechnical Investigation report as required by Norfolk County for this proposed development. The report indicates that 3 boreholes and 2 monitoring wells were installed to review soil samples and groundwater depths. Soil conditions encountered at the site include native granular deposits of silt and sand or silt and clay seams. The report concludes there were high

groundwater levels measured which has some overall impact on bedding, backfilling, foundations and basement designs for the subject property. It was recommended in the report to implement a grade raise across the site to ensure foundation depths stay above the groundwater table. Basement designs must also be kept 0.5 metres above the groundwater table. Please refer to the geotechnical investigation for more information on specific recommendations for the grading, design and construction of the proposed development.

6.3 Traffic Impact Assessment

F.R. Berry and Associates has prepared a Traffic Impact Assessment for the proposed development issued in March 2023. The report summary is that the proposed development as a whole would generate 29 vehicular trips in the peak morning hour and 36 vehicle trips in the peak afternoon hour. These trips would have no significant impact on the surrounding intersections and also concludes that no street improvements would be required.

6.4 Functional Servicing Report

Cyril J. Demeyere Limited Consulting Engineers has prepared its Functional Servicing Report for the proposed development issued in August 2023. As mentioned throughout this report, the proposed development will be serviced by individual on-site private wells, septic systems and stormwater management summarized below.

Sanitary Servicing

It is proposed to service each lot with subsurface sewage disposal systems. The lots are 0.2 Ha or 2,000m² which will require a zoning by-law amendment to revise the minimum required lot area requirements. At this size, they are of sufficient area to support private septic systems including a full reserve area, accessory buildings, and a private well.

The grading plan design will allow for gravity sewage flows from all above ground main floor; sewage from basements must be pumped. Septic system design requirements, including length of distribution tile etc., shall conform to the latest amendments of the Ontario Building Code based on proposed occupancy. Individual lot soils analysis shall be submitted to Norfolk County and a certificate of approval obtained for each septic system, prior to installing any pipe.

Based on the Hydrogeological Assessment completed by Wilson Associates (16 June 2023), a typical 3-bedroom or 4-bedroom home will require an area of approximately 200m² or 250m² for a fill-based septic system which is based on a design flow of 1,600 l/day or 2,000 l/day respectively. Therefore, a minimum primary sewage disposal contact area of 250m^2 and reserve sewage disposal contact area of 250m^2 will need to be provided.

Septic beds will need to maintain a minimum offset of 15m from domestic supply water wells and a 30m setback from bored/sandpoint wells. (section 3.0 of FSR)

Based on the foregoing analysis, the proposed development would be adequately serviced by individual on-site septic systems.

Water Supply

A review of the MECP's well records for the vicinity of the proposed development indicated that wells average 14' (4.3m) to 30' (9.1m) in depth with flow rates ranging from 14 to 20 gpm (63.6 to 90.0 litres/min.). This average yield significantly exceeds maximum water demands of a typical 4-bedroom home, specified by MECP at 18 litres/min.

Therefore, it is anticipated that wells installed on the proposed severances will provide sufficient water supply to meet the typical domestic water demands. . (section 4.0 of FSR)

Based on the foregoing analysis, the proposed development would be adequately serviced with on-site potable water wells.

Stormwater Management

Post-development drainage from the development will be conveyed to a stormwater management pond (Block 25) through a proposed storm sewer system that will be sized to the 5-year design storm. The stormwater management pond will have a tributary area that includes Phase 1 rear years, Phase 2, rear yards to 2 previously severed County Road 59 fronting lots, and external lands to the east of Phase 2.

The stormwater management pond will act as an infiltration basin during Phase 1 of the development with only Phase 1 rear yards draining to it. An outlet control structure, Street 'A' storm sewers, and outlet storm sewers connecting to the Langton #2 Municipal Drain will be constructed during Phase 2 of the development. The connection to the municipal drain will include crossing County Road 59 as shown on the General Plan of Services (SR-1) enclosed in Appendix A of the FSR. (Section 5.2 of FSR)

Based on the foregoing analysis, the proposed development would adequately control stormwater quality and quantity.

7.0 SUMMARY AND CONCLUSIONS

Based on the foregoing information and analysis, the proposed draft plan of subdivision and ZBA would be consistent with the PPS and in conformity with the Norfolk County OP and ZB as follows:

- The draft plan area is within the Hamlet Area of Langton which is permissive of low density single detached dwellings.
- The draft plan area is currently an underutilized vacant residential area with constraints of no municipal services effectively limiting development to low-density residential, i.e., single detached dwellings.
- The proposed development is located away well from any Natural Heritage features or Provincially Significant Wetlands which ensures that these are protected.
- The draft plan area is in a prime location for development within Langton. The proposed development would be serviced via on-site private services and stormwater management as reflected in the Functional Servicing Report addressed in Section 6.4 of this report.
- It would be compatible with existing single detached residential uses as well and potentially walkable to the services and amenities of Langton.
- The single-detached units would support the growth that is expected within Langton and add additional housing options to this area of Norfolk County.
- The proposed development would be an enhancement to the character of Langton, utilizing existing roads and private services.
- Representative of sound land use planning.

8.0 REFERENCES – STUDIES

1. Hydrogeological Assessment, Wilson Associates Ltd., June 2023
2. Geotechnical Investigation, MTE Consultants, August 2023
3. Traffic Impact Assessment, Frank Berry, March 2023
4. Functional Servicing Report, Cyril J. Demeyere Limited, August 2023

** ** **

All of which is respectfully submitted by,

Trevor Benjamins
CPT, Planner
OPPI Pre-Candidate
Cyril J. Demeyere Limited.

Reviewed by,

Barbara G. Rosser, RPP, MCIP
Professional Land Use Planner
Associate to Cyril J. Demeyere Limited.

TB/kc

APPENDIX 'A'

NORFOLK COUNTY OFFICIAL PLAN:
SCHEDULE 'A-1' COMMUNITY STRUCTURE

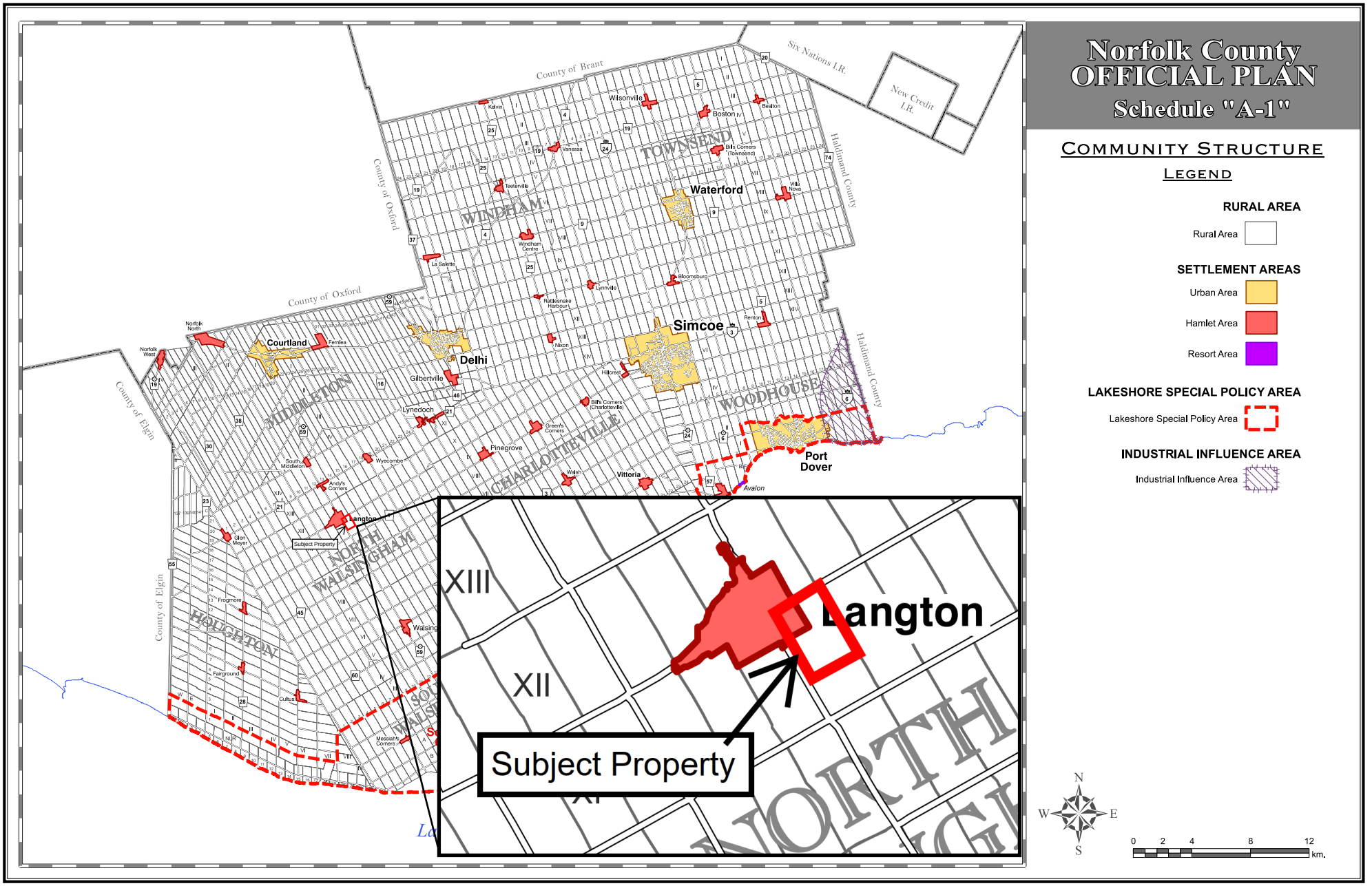
NORFOLK COUNTY OFFICIAL PLAN:
SCHEDULE 'B-9' LAND USE

NORFOLK COUNTY OFFICIAL PLAN:
SCHEDULE 'C-4' NATURAL HERITAGE

NORFOLK COUNTY OFFICIAL PLAN:
SCHEDULE 'E-1' TRANSPORTATION

NORFOLK COUNTY OFFICIAL PLAN:
SCHEDULE 'I-1' ACTIVE TRANSPORTATION

NORFOLK COUNTY OFFICIAL PLAN:
SCHEDULE 'J-4' NATURAL RESOURCES


Norfolk County
OFFICIAL PLAN
Schedule "A-1"
COMMUNITY STRUCTURE
LEGEND
RURAL AREA
Rural Area
SETTLEMENT AREAS
Urban Area
Hamlet Area
Resort Area
LAKESHORE SPECIAL POLICY AREA
Lakeshore Special Policy Area
INDUSTRIAL INFLUENCE AREA
Industrial Influence Area
County of Brant
Six Nations I.R.
New Credit I.R.
County of Oxford
County of Elgin
Haldimand County
TOWNSEND
WINDHAM
MIDDLETON
CHARLOTTEVILLE
WOODHOUSE
NORTH WALSINGHAM
HOUGHTON
Waterford
Simcoe
Delhi
Courtland
Port Dover
Langton
Subject Property
XIII
XII
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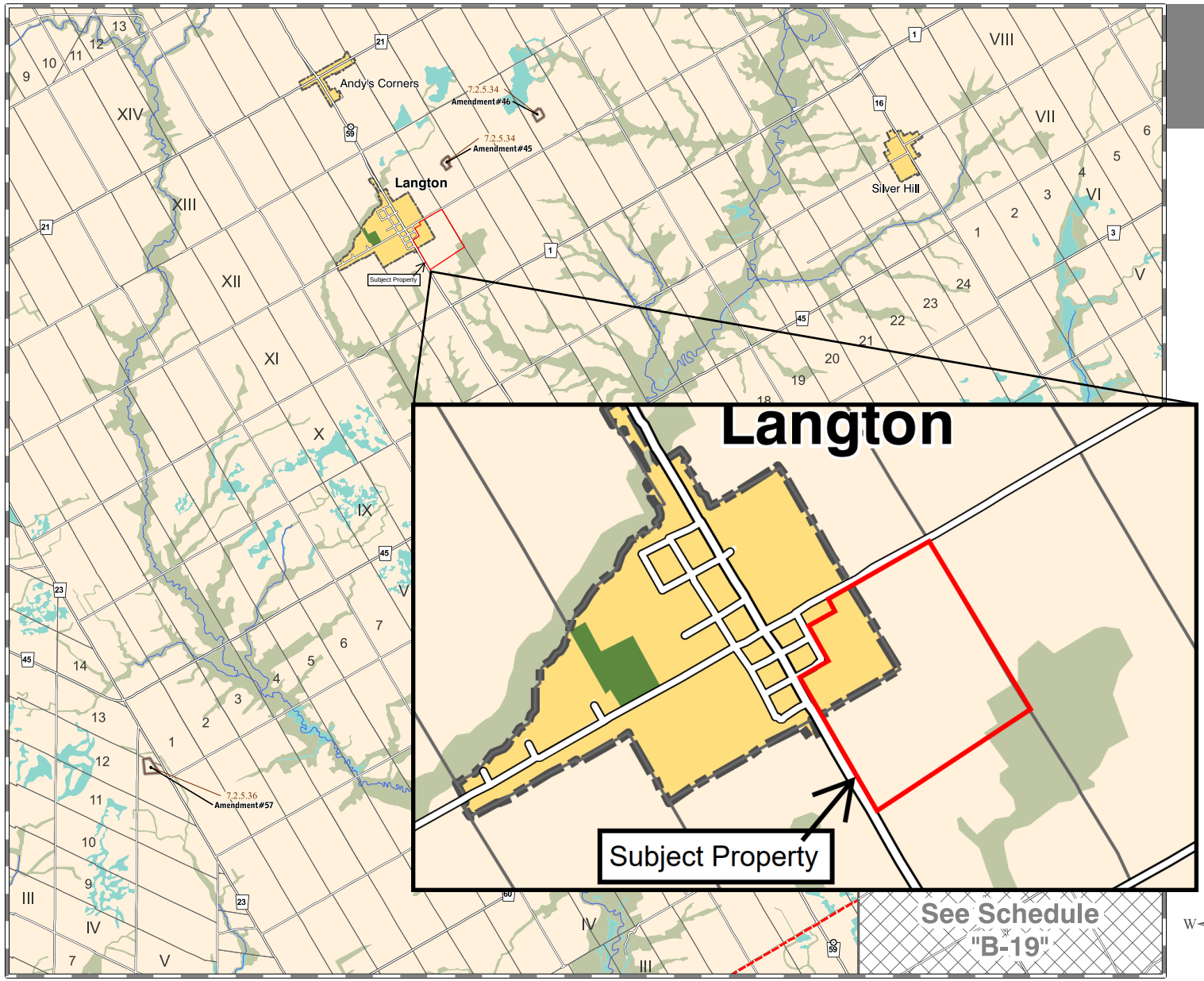
km.
Revision Date: October 5, 2018

Norfolk County OFFICIAL PLAN
Schedule "B-9"



Land Use Legend

- Agricultural
- Hazard Lands
- Provincially Significant Wetland
- Hamlet
- Resort Residential
- Urban Residential
- Mixed Residential\Commercial
- Downtown
- Shopping Centre Commercial
- Commercial
- Protected Industrial
- Industrial
- Major Public Infrastructure
- Major Institutional
- Parks & Open Space
- Urban Waterfront
- Built Boundary
- Special Policy Area
- Site Specific Policy Area
- Industrial Influence
- Marine Use in Hazard Lands (Section 7.3.1(g)(iii))
- Urban Area Boundary
- Hamlet Area Boundary
- Resort Area Boundary

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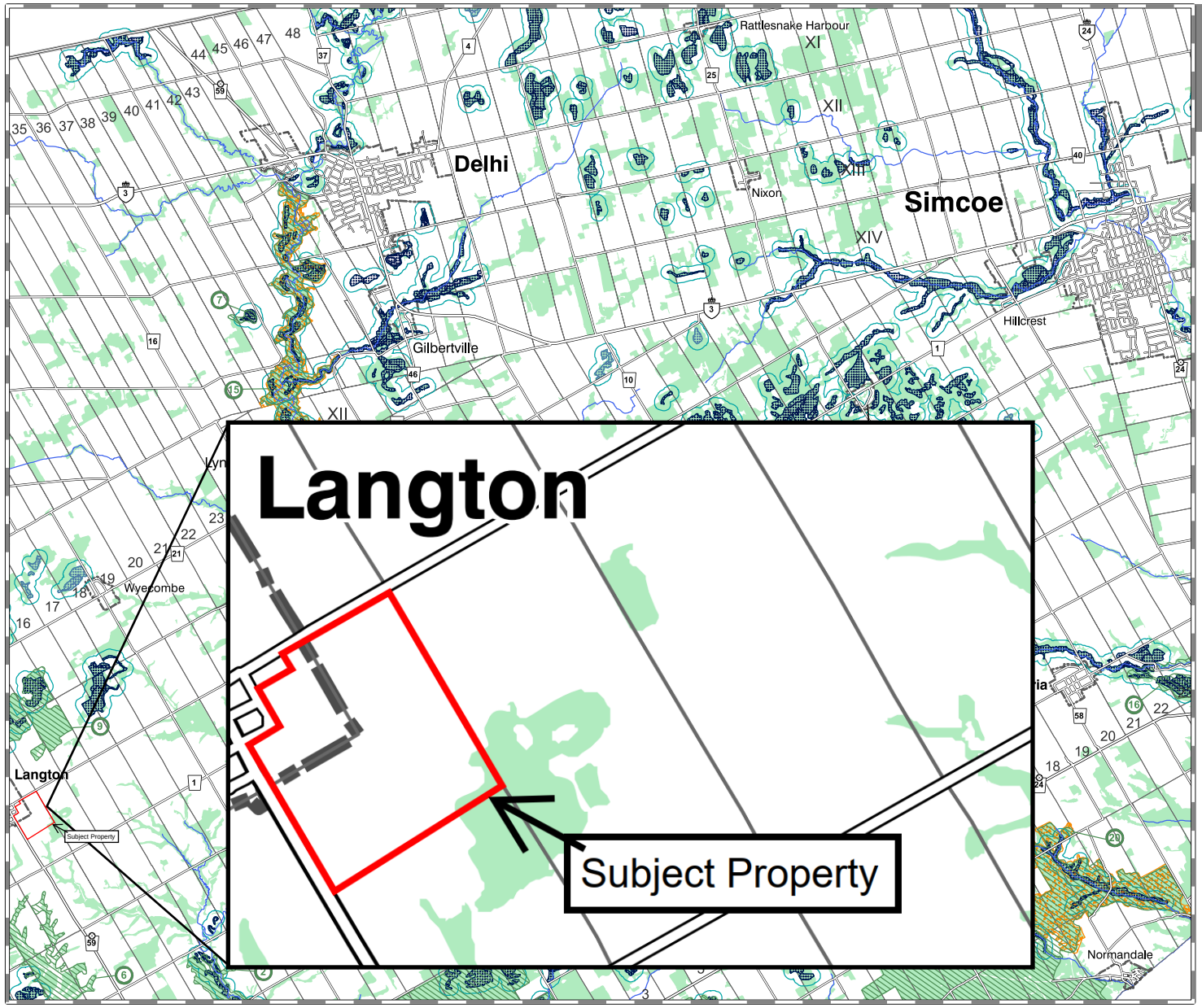
Revision Date: January 1, 2022



Norfolk County OFFICIAL PLAN
Schedule "C-4"

NATURAL HERITAGE
LEGEND

NATURAL HERITAGE (Section 3.0)

- Provincially Significant Wetland
- Locally Significant Wetland
- Adjacent Land
- Significant Woodland
- Significant Natural Area (See Appendix A)
- Areas of Natural Scientific Interest: Life Science (ANSI)
- Areas of Natural Scientific Interest: Earth Science (ANSI)
- Long Point Biosphere Reserve (Core Area)
- Long Point Biosphere Reserve (Buffer Area)

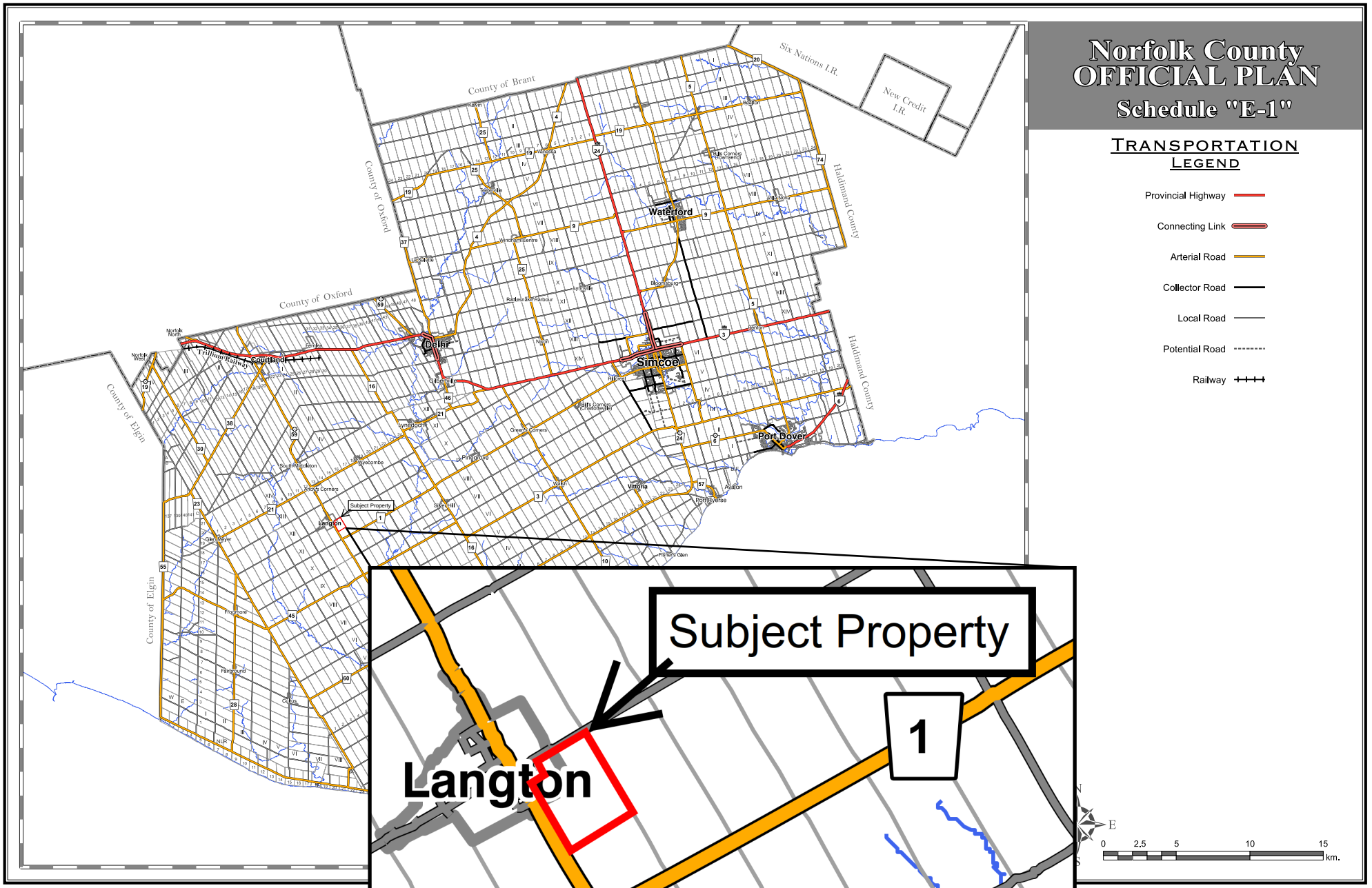
LOOKOUT POINT (Section 4.5)

- Existing Lookout Point
- Proposed Lookout Point
- Urban Area Boundary
- Hamlet Area Boundary
- Resort Area Boundary

N W E S

0 1 2 4 6 km.

Revision Date: October 5, 2018


Norfolk County
OFFICIAL PLAN
Schedule "E-1"
TRANSPORTATION
LEGEND
Provincial Highway
Connecting Link
Arterial Road
Collector Road
Local Road
Potential Road
Railway
Six Nations I.R.
New Credit I.R.
County of Brant
County of Oxford
County of Elgin
Haldimand County
Waterford
Delhi
Simcoe
Port Dover
Courtland
Langton
Subject Property
1
Revision Date: October 5, 2018
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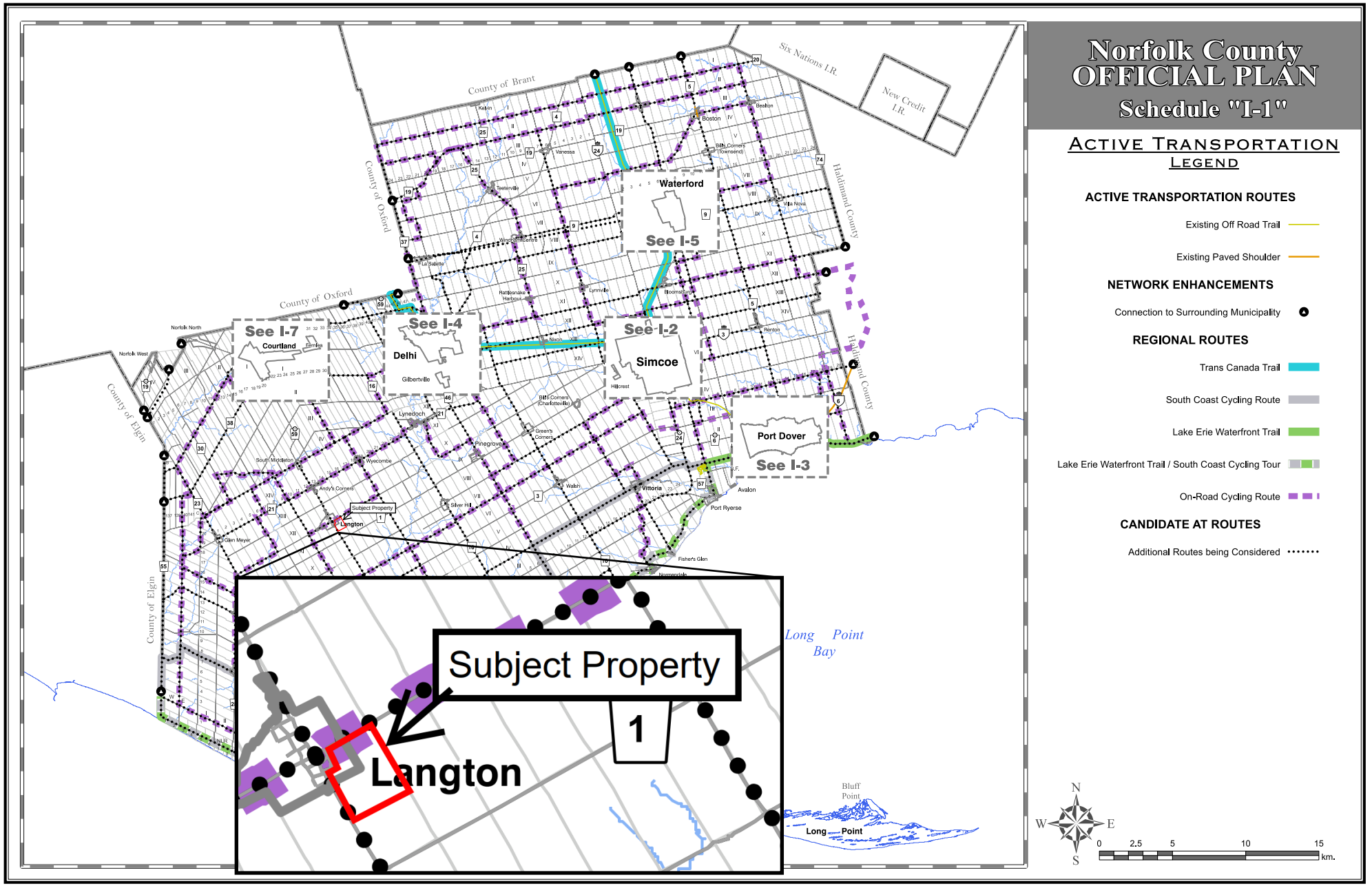
km.


Norfolk County
OFFICIAL PLAN
Schedule "I-1"
Active Transportation
Legend
ACTIVE TRANSPORTATION ROUTES
Existing Off Road Trail
Existing Paved Shoulder
NETWORK ENHANCEMENTS
Connection to Surrounding Municipality
REGIONAL ROUTES
Trans Canada Trail
South Coast Cycling Route
Lake Erie Waterfront Trail
Lake Erie Waterfront Trail / South Coast Cycling Tour
On-Road Cycling Route
CANDIDATE AT ROUTES
Additional Routes being Considered
Six Nations I.R.
New Credit I.R.
County of Brant
County of Oxford
County of Elgin
Haldimand County
See I-1
See I-2
See I-3
See I-4
See I-5
See I-7
Waterford
Simcoe
Delhi
Courtland
Port Dover
Langton
Subject Property
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Long Point Bay
Bluff Point
Long Point
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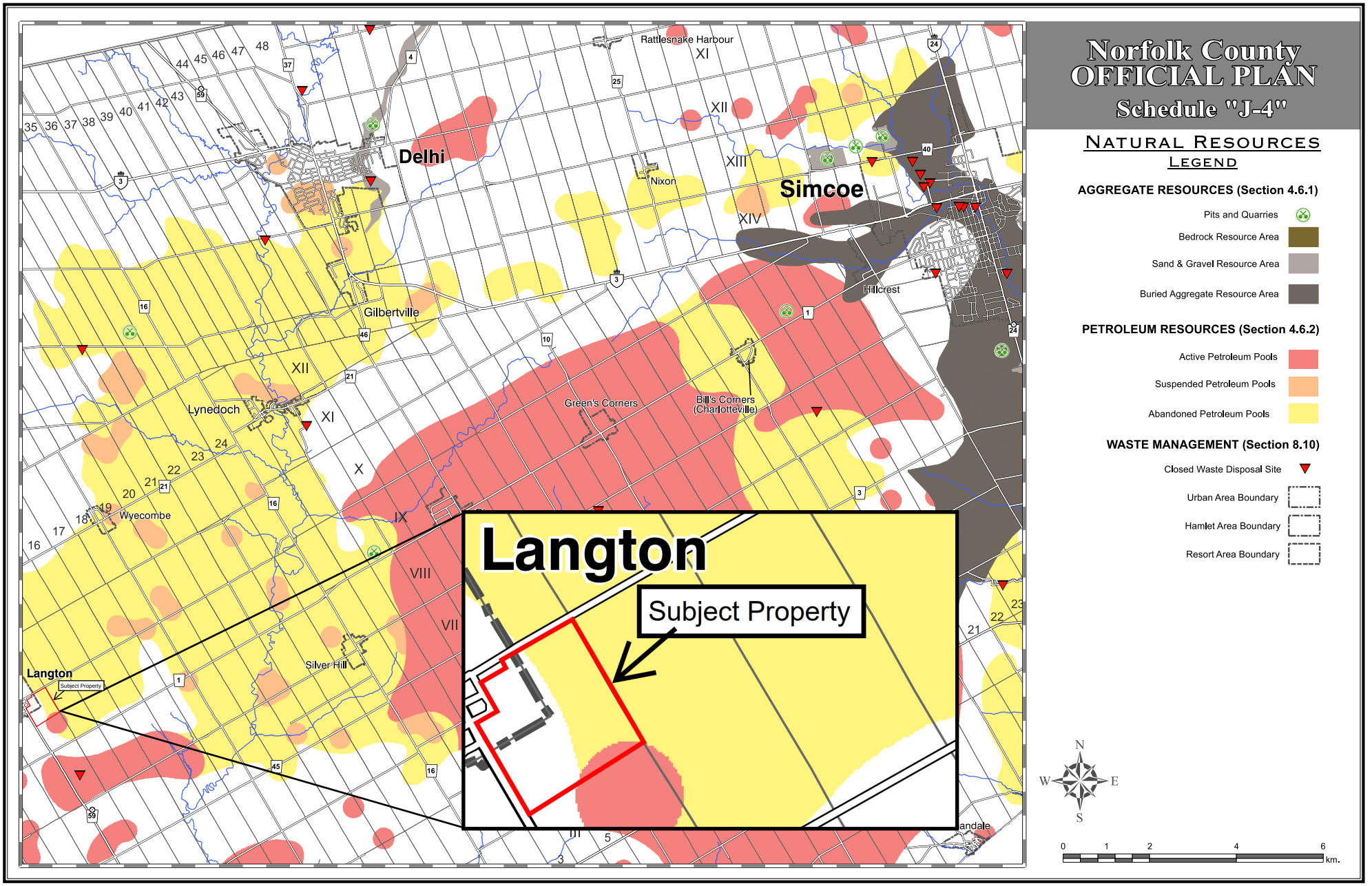
Revision Date: October 5, 2018


Norfolk County
OFFICIAL PLAN
Schedule "J-4"
NATURAL RESOURCES
LEGEND
AGGREGATE RESOURCES (Section 4.6.1)
Pits and Quarries
Bedrock Resource Area
Sand & Gravel Resource Area
Buried Aggregate Resource Area
PETROLEUM RESOURCES (Section 4.6.2)
Active Petroleum Pools
Suspended Petroleum Pools
Abandoned Petroleum Pools
WASTE MANAGEMENT (Section 8.10)
Closed Waste Disposal Site
Urban Area Boundary
Hamlet Area Boundary
Resort Area Boundary
Delhi
Simcoe
Rattlesnake Harbour
Nixon
Hillcrest
Gilbertville
Lynedoch
Wyecombe
Green's Corners
Bill's Corners (Charlotteville)
Silver Hill
Langton
Subject Property
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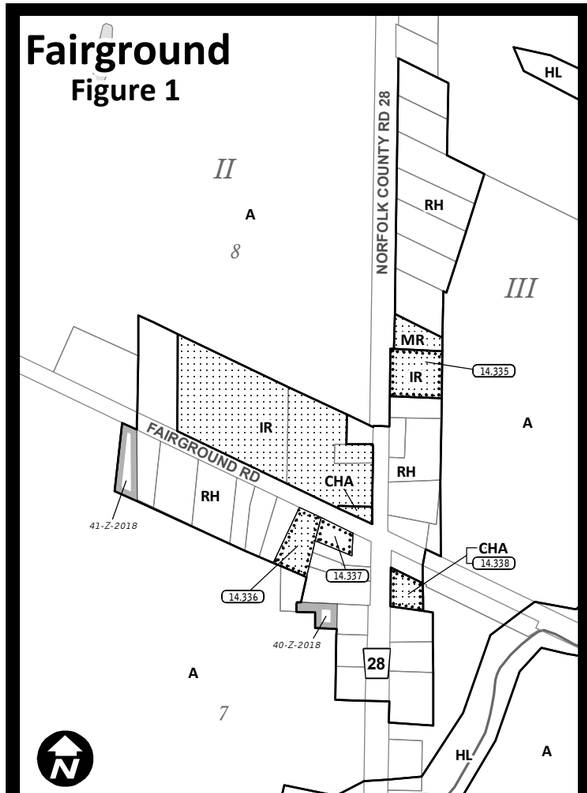
Revision Date: October 5, 2018

APPENDIX 'B'

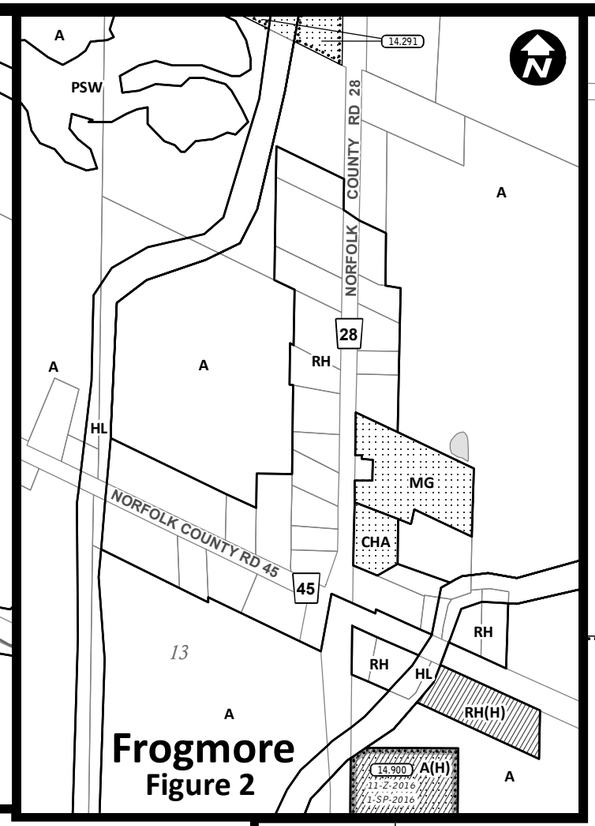
NORFOLK COUNTY ZONING BYLAW:
SCHEDULE 'A-42'

Schedule A-42

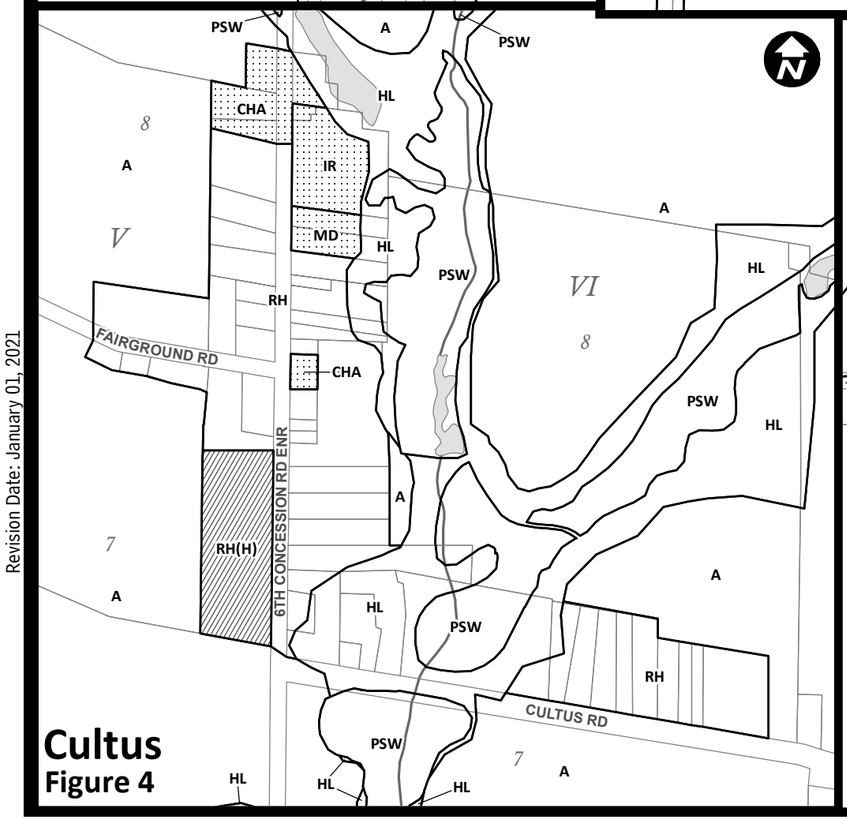
Fairground
Figure 1



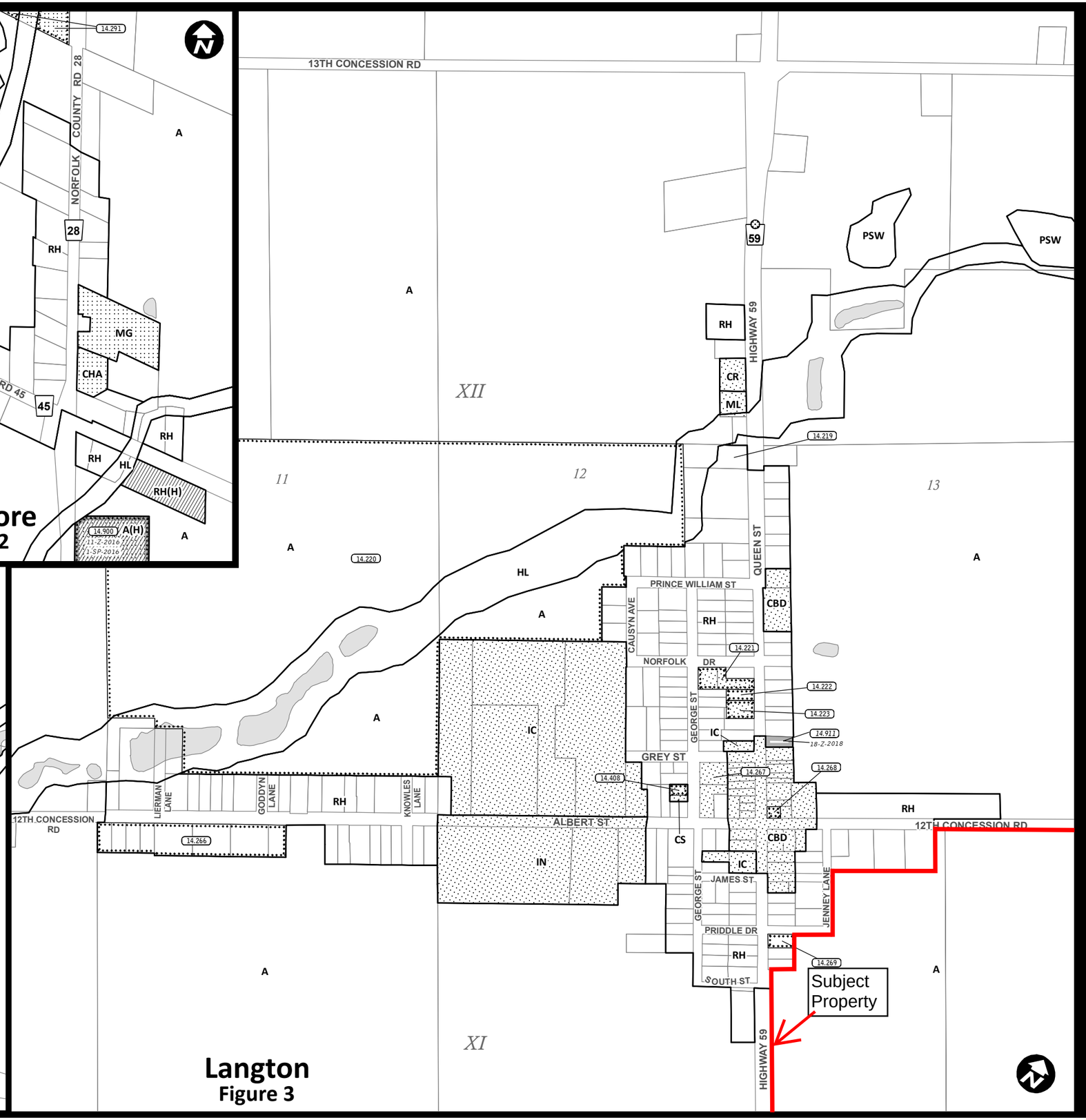
Frogmore
Figure 2



Cultus
Figure 4



Langton
Figure 3



Revision Date: January 01, 2021

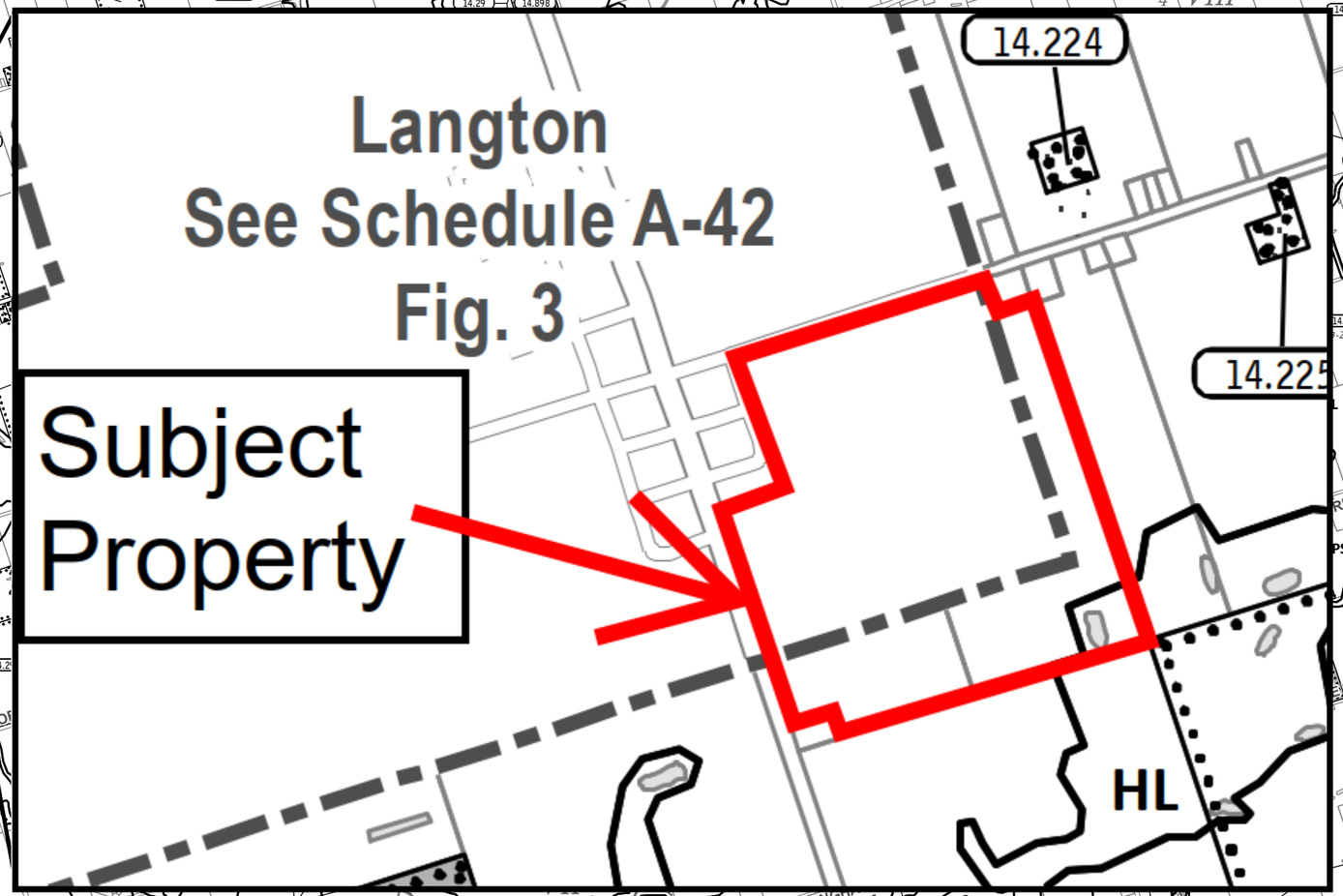
0 50 100 200 300 400 500 Meters

Schedule A-7

Revision Date: January 01, 2021

Langton
See Schedule A-42
Fig. 3

Subject Property



Andy's Corners
See Schedule A-39
Fig. 4

South Middleton
See Schedule A-41 Fig. 4

Wyecombe
See Schedule A-41 Fig. 2

Lynedoch
See Schedule A-41 Fig. 5

Pinegrove
See Schedule A-41 Fig. 3

Langton
See Schedule A-42 Fig. 3

0 250 500 1,000 1,500 2,000 2,500 Meters

APPENDIX 'C'

MUNICIPAL FORMAL PRE-APPLICATION CONSULTATION RESPONSE

Pre-Submission Consultation Meeting Minutes

Date: August 10, 2022

Description of Proposal: Draft Plan of Subdivision to create 15 lots

Property Location: 1100 12th Concession Rd., Langton

Roll Number: 54202037700

As a result of the information shared at the pre-consultation meeting dated August 10, 2022, the following applications and qualified professional documents / reports are required as part of the development review process.

Please note that various fees are associated with each application and there are also costs for qualified professionals retained to complete various documents / reports. All requirements identified are minimum and determined as of the date of the pre-consultation meeting with the information available at that time. As the proposal proceeds and more information is made available, additional applications, studies, reports, etc. may be required.

This summary including checklists, comments and requests are applicable for a period of one (1) year from the date of meeting. If an application is not received within that time frame, a subsequent pre-consultation meeting may be required due to changes in policies and technical requirements.

Before you submit your application, please contact the assigned Planner to confirm submission requirements and the applicable fee

Attendance List

Proponent	453997 Ontario Ltd.
Community Development – Planning and Agreement	Tricia Givens, Director, Planning (Chair) Mohammad Alam, Senior Planner Fabian Serra, Planner Nicole Goodbrand, Senior Planner Annette Helmig, Agreement and Development Coordinator
Community Development – Building and Zoning	Scott Northcott, Senior Building Inspector Devon Staley, Building Inspector Roxanne Lambrecht, Zoning Administrator Hayley Stobbe, Zoning Administrator
Environment & Infrastructure Services – Development Engineering	Tim Dickhout, Project Manager, Development Stephen Gradish, Development Technologist Zeel Joshi, Junior Development Technologist
Community Services – Fire	Katie Ballantyne, Community Safety Officer
Community Development – Economic Development	Chris Garwood, Economic Development Supervisor
Paramedic Services	Stuart Burnett, Deputy Chief
Operations – Forestry	Adam Biddle, Supervisor of Forestry
Operations – Parks and Facilities	Todd Shoemaker, Director, Parks
Corporate Support Services – Realty Services	Lydia Harrison, Specialist, Realty Services Kelly Darbishire, Specialist, Realty Services
Corporate Support Services – Accessibility	Sam McFarlane, Manager, Accessibility and Special Projects
Haldimand Norfolk Health Unit	Emily Kichler, Community Health Dietician
Long Point Regional Conservation Authority	Leigh-Anne Mauthe, Supervisor of Planning Services Isabel Johnson, Resource Planner
Community Development – Heritage and Culture	Melissa Collver, Director Heritage and Culture
Community Development – Recreation	Nikki Slote, Director Recreation

Table of Contents

Proposal Summary
A 15 lot subdivision is proposed through a Plan of Subdivision in two phases. The first phase is proposed with seven lots fronting the existing public streets. The remaining eight lots are proposed in phase-two along a new 200 m long road extension from Priddle Drive. The revised version of the subdivision incorporated 32 lots with an internal road connecting Concession Rd 12 and Highway 59. 7 lots are facing Jenney Lane.

List of Application Requirements

Planning Department

Planning application(s) required to proceed	**Required**
Official Plan Amendment Application Choose an item.	
Zoning By-law Amendment Application Choose an item.	X
Site Plan Application Choose an item.	
Draft Plan of Subdivision Application	X
Draft Plan of Condominium Application	
Part Lot Control Application	
Consent / Severance Application	
Minor Variance Application	
Removal of Holding Application	
Temporary Use By-Law Application	
Other - Click here to enter text.	

Planning requirements for a complete application The items below are to be submitted as part of the identified Planning Application(s). ** electronic/PDF copies of all plans, studies and reports are required**	**Required at OPA/ Zoning Stage**	**Required at Draft Plan Stage**
Proposed Site Plan / Drawing	X	X
Planning Impact Analysis Report / Justification Report	X	X
Environmental Impact Study Choose an item.		
Neighbourhood Plan (TOR must be approved by the County)		
Agricultural Impact Assessment Report		
Archaeological Assessment		

Heritage Impact Assessment		
Market Impact Analysis		
Dust, Noise and/or Vibration Study		
MOE D-Series Guidelines Analysis		
Tree Plantation Plan		X
Elevation Plan		X
Photometrics (Lighting) Plan		
Shadow Analysis Report		
Record of Site Condition		
Contaminated Site Study		
Minimum Distance Separation Schedule		
Parking Assessment		
Hydrogeological Study		
Restricted Land Use Screening Form		
Topographical Survey Drawing		X
Additional Planning requirements		**Required**
Development Agreement		X
Parkland Dedication/Cash-in-lieu of Parkland		X

*the list of requirements is based on the information submitted and as presented for this specific pre-consultation meeting. Any changes to a proposal may necessitate changes to Planning Department submission requirements.

*Community Development fees, applications, and helpful resources can be found can be found by visiting https://www.norfolkcounty.ca/government/planning/

Planning Comments

Official Plan

The subject lands are designated as 'Hamlet' in the Official Plan. Low density residential dwellings on lots suitably sized to accommodate private servicing systems shall be the main permitted use. An Official Plan amendment will not be required for the proposed subdivision.

Applications for approval of a draft plan of subdivision shall be considered on the basis of the underlying land use designation and the associated policies, particularly section 9.6.4 of the Official Plan that identifies criteria for plans of subdivision:

- The review of plans of subdivision shall also be based in part on the consideration of the community design policies included in Section 5.4 (Community Design) of the Official Plan.

- Plans of subdivision shall be appropriately phased to ensure orderly and staged development.

- All plans of subdivision shall be subject to a subdivision agreement between the County and the development proponent.

- Parkland dedication or cash-on-lieu shall be provided pursuant to Section 9.10.5 (Parkland Dedication) of this Plan. Land to be dedicated for park purposes must be acceptable to the County. Under no circumstances shall the County be obligated to accept parkland being offered in a proposed plan of subdivision.

Zoning By-Law

The subject lands are designated as 'Agricultural' in the Official Plan. The subject lands are within the Hamlet Boundary and designated as Hamlet in the Official Plan, therefore, Staff would support a residential development by changing the zoning from 'Agricultural' to 'Hamlet Residential'.

A zoning by-law amendment application with potential relief of some zoning provisions may be required.

Conceptual Layout Considerations

- Staff do not support a cul-de-sac outside of Hamlet Boundary within an 'Agricultural' Land; Staff would support a road connection between Highway 59 and 12th Concession Road;
- Staff recommends more uniform size of lots avoiding too linear or wider lots to keep a consistency of size and shape of all proposed lots.
- Supported by a geotechnical report, smaller lot size may be acceptable through the zoning by-law amendment.
- A tree plantation plan would be required on public right-of-way.
- Staff do not support any stormwater management facilities on Agricultural land.
- Staff do not support any developments outside the Hamlet boundary.

Endangered and threatened species and their habitat are protected under the provinces Endangered Species Act, 2007 (ESA), O. Reg. 242/08 & O. Reg. 830/21. The Act prohibits development or site alteration within areas of significant habitat for endangered or threatened species without demonstrating that no negative impacts will occur. The Ministry of Environment, Conservation and Parks provides the service of responding to species at risk information requests and project screenings. The proponent is responsible for discussing the proposed activity and having their project screened with MECP.

Please be advised that it is the owner's responsibility to be aware of and comply with all relevant federal or provincial legislation, municipal by-laws or other agency approvals.

Assigned Planner:
Mohammad Alam
Senior Planner
Extension 1828
Mohammad.Alam@norfolkcounty.ca

Agreements

A recommended condition of your planning application approval could be to enter into a development agreement with the County that will be registered on title to the subject lands, at the Owner's expense. The additional requirements for a development agreement could include, but are not limited to the following:

- Engineering drawing review
- Engineer's schedule of costs for the works
- Clearance letter and supporting documentation to support condition clearance
- User fees and performance securities
- Current property identification number (PIN printout) (can be obtained by visiting https://help.onland.ca/en/home/)
- Owner's commercial general liability insurance to be obtained and kept in force during the terms of the agreement
- Postponement of interest. If there are mortgagees / charges on your property identifier, your legal representative will be required to obtain a postponement from your bank or financial institution to the terms outlined in your development agreement
- Transfers and / or transfer easements along with registered reference plan

Annette Helmig
Agreement and Development Coordinator
Extension 8053
Annette.Helmig@norfolkcounty.ca

Development Engineering

Stephen Gradish
Development Technologist
Extension 1702
Stephen.Gradish@norfolkcounty.ca

Conservation Authority

Long Point Regional Conservation Authority

Conservation Authority Requirements to Proceed: The below requirements are to be submitted as part of the proposal for development.	**May be Required**	**Required**
Stormwater Management Report		X
Other		

Notes:

Site Characteristics

The subject property is not subject to natural hazards. Therefore, LPRCA staff have no objection to the concept of development.

Ontario Regulation 178/06

The subject lands are not regulated by Long Point Region Conservation Authority under Ontario Regulation 178/06. No permits from this office are required.

LPRCA and Norfolk County's Memorandum of Understanding for Plan Review Services

Based on LPRCA and Norfolk County's Memorandum of Understanding for Plan Review Services, LPRCA staff can provide the following comments with regard to Stormwater Management:

Stormwater Management

LPRCA will review the final stormwater management design using the 2003 MECP Stormwater Management Planning and Design Manual, MTO Drainage Manual, LID Stormwater Management Manual, the sustainable technologies STEP website https://sustainabletechnologies.ca/, and the Municipal SWM guidelines.

Based on the site and receiving watercourse, an enhanced level of treatment as per the 2003 MECP Stormwater Management Planning and Design Manual is required for the proposed development.

LPRCA requires the following be included and addressed in the design of stormwater management:

- Minimize, or, where possible, prevent increases in contaminant loads.
- Minimize, erosion and changes in water balance, and prepare for the impacts of a changing climate through the effective management of stormwater, including the use of green infrastructure.
- Mitigate risks to human health, safety, property and the environment.
- Maximize the extent and function of vegetative and pervious surfaces.
- Implement stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development, for end of pipe facilities 24-48hr drawdown times to be targeted in all case.

- Provide adequate and legal outlet for major, minor, and all flow conditions from the site be provided.

In addition to the above requirements, the following must be clearly shown on the submitted design drawings:

- Major flow systems are delineated on the drawing. Overland flow paths and depths from surcharged storm sewer systems and the stormwater treatment facility during a 100-year storm must not increase the flood risk to life, property and the environment.
- Minor overland flow systems and paths are to be delineated and shown on the drawings.
- Erosion and sedimentation control during construction.
- Adequate erosion control on inlets and outlets.

Current Planning Application Fees (2022)
Pre-consultation Fee - $339
Draft Plan of Subdivision including associated OPA and ZBA- $1,380.00 + $100/lot + HST (Max $15,000.00 +HST)

*LPRCA fees, applications, and helpful resources can be found can be found by visiting https://lprca.on.ca/planning-permits/planning-fees/

Isabel Johnson
Resource Planner
519-842-4242 ext. 229.
ijohnson@lprca.on.ca

County Departmental Comments & Requirements

Building

Zoning Administrator:

Assuming lots to be zoned RH

- Lot frontage of 3m min is required, some lots do not have the min frontage
- Lots required to be a min area of 0.4 hectares or 4000sqm
- Lot 7 will have an exterior side yard along Street A with a setback of 6m, may want to ask for additional relief of this exterior side yard during this process

Roxanne Lambrecht
Zoning Administrator
Extension 1839
Roxanne.Lambrecht@norfolkcounty.ca

Building Inspector:

The proposed construction is considered a Residential Group C as defined by the Ontario Building Code (OBC). You will need to retain the services of a qualified individual with BCIN House, HVAC House, an Architect and/or a Professional Engineer to complete the design documentation for this application.
The Designer will need to review the OBC Subsection 9.10.15. for spatial separations of houses and ensure septic systems will comply with all clearances within Part 8 of the OBC.

Items for Building Permit

"New Residential" and "Septic Systems" Step by Step Guides have been attached to the minutes herein, they contain information on drawing requirements, designers, forms, contact information for Building Department etc.
If you have any questions on the building permit process or plans required, please check out our website www.norfolkcounty.ca/business/building or call 519-426-5870 ext. 6016

Jonathan Weir,
Building Official III
Extension 1832
Jonathan.weir@norfolkcounty.ca

Fire Department

Norfolk County Fire does not have any concerns with this proposal at this time.

Katie Ballantyne
Community Safety Officer
Extension 2423
Katie.ballantyne@norfolkcounty.ca

Appendix A: Summary of Applicable Planning Legislation, Policy and Zoning

Following is a summary of key items related to the proposal as presented; noting these documents are meant to be read in their entirety with relevant policies to be applied in each situation. This is not an exhaustive list and only in response to the information submitted for the pre-consultation. This feedback is subject to change pending full submission of a development application and any changes or additional information provided therein.

Provincial Policy Statement, 2020

https://www.ontario.ca/page/provincial-policy-statement-2020

Norfolk County Official Plan
https://www.norfolkcounty.ca/government/planning/official-plan/

Section 9.6.1 outlines requirements in relation to requests to amend the Official Plan.

Section 9.6.2 outlines requirements in relation to requests to amend the Zoning By-law.

It is the responsibility of the proponent to review and ensure relevant Official Plan policies are addressed in any future development application.

Norfolk County Zoning By-Law 1-Z-2014
https://www.norfolkcounty.ca/government/planning/new-zoning-by-law/

The provisions of the Norfolk County Zoning By-Law shall apply to all lands within the boundaries of Norfolk County. No land, building or structure shall be used, erected or altered in whole or in part except in conformity with the provisions of this By-Law. No land, building or structure shall be used or occupied except for uses that are specifically identified in the By-Law as permitted uses by the relevant zoning category.

It is the responsibility of the proponent to review and ensure relevant Zoning By-law provisions are addressed in any future development application

Site Plan Control:

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DEVOS SUBDIVISION

FUNCTIONAL SERVICING REPORT

LANGTON

NORFOLK COUNTY

CJDL
Consulting Engineers

21032
10 August 2023

DEVOS SUBDIVISION

FUNCTIONAL SERVICING REPORT

LANGTON

NORFOLK COUNTY

TABLE OF CONTENTS

CJDL Consulting Engineers

CYRIL J. DEMEYERE LIMITED
John D. Wiebe, P. Eng. | Andrew Gilvesy, P. Eng.
Peter J. Penner, P. Eng. | Deren Lyle, P. Eng.

261 Broadway, P.O. Box 460, Tillsonburg, ON N4G 4H8 T: 519-688-1000 F: 519-842-3235 www.cjdleng.com

10 August 2023 21032

DEVOS SUBDIVISION

FUNCTIONAL SERVICING REPORT

LANGTON

NORFOLK COUNTY

1.0 INTRODUCTION

This Functional Servicing Report has been prepared to support the Devos Subdivision application for the creation of twenty-four (24) residential dwelling lots on 6.60 ha of existing agricultural land on the east side Highway 59 and within the Settlement Boundary of the community of Langton, Norfolk County, ON.

The subject land owned by 453997 Ontario Ltd and is legally described as Part of Lots 12 and 13 and Part of the Road Allowance Between Lots 12 and 13 (Closed by By-Law Passed May 13th 1873 Registered as Instrument 40779 April 20th 1876), Concession 11 in the Geographic Township of North Walsingham, in Norfolk County. The subject land is comprised of 38.17ha of agricultural land, 6.60 ha of which is within the Langon Settlement Boundary.

2.0 DEVELOPMENT PROPOSAL

The proposed subdivision consists of twenty-four (24) residential lots fronting Priddle Drive/Jenny Lane or a proposed right-of-way connecting HWY 59 to Concession Road 12. The entirety of the site within the settlement boundary has an area of 6.60 Ha and drains overland to the south and west, ultimately outletting to the Langton #2 Municipal Drain.

It is proposed to direct drainage from the proposed lots to a stormwater management block (Block 25) which will outlet to the Langon #2 Municipal Drain.

Access to each lot will be provided by private driveways of up to 7.0m width that connect to the proposed Street 'A' or existing Priddle Drive/Jenney Lane. Municipal services are not locally available therefore, sanitary services and water supply will be managed internally to each proposed lot.

The seven (7) lots fronting Priddle Drive/Jenny Lane will be constructed as part of Phase 1 of the subdivision. The remaining seventeen (17) lots fronting Street 'A' will be constructed as part of Phase 2 of the subdivision. Block 27 (Future Development) borders the Langton Hamlet Boundary. In the event the Hamlet Boundary is adjusted, there is potential to add 9 residential lots fronting Street 'A' which consists of Block 27 lands and additional required agricultural lands to the south located in Block 28.

Stormwater management design, septic design, and private well water supply design has been completed to account for the proposed 24 lots and potential for additional 9 lots from Block 27/28.

It is proposed to include the SWM Block (Block 25) in Phase 1 to be constructed as an infiltration basin. The storm sewer outlet and connection to the Langton #2 Municipal Drain is proposed in Phase 2 when the remaining lots and associated Street 'A' roadwork is constructed.

3.0 SANITARY SERVICING

Sanitary sewers are not locally available in Langton. It is proposed to service each lot with subsurface sewage disposal systems. The lots are 0.2 Ha or 2,000m² which will require a zoning by-law amendment to meet the minimum required lot area requirements. Lot sizes were recommended by Norfolk County planning staff. At this size, they are of sufficient area to support private septic systems including a full reserve area, accessory buildings, and a private well.

The grading plan design will allow for gravity sewage flows from all above ground main floor; sewage from basements must be pumped. Septic system design requirements, including length of distribution tile etc., shall conform to the latest amendments of the Ontario Building Code based on proposed occupancy. Individual lot soils analysis shall be submitted to Norfolk County and a certificate of approval obtained for each septic system, prior to installing any pipe.

Based on the Hydrogeological Assessment completed by Wilson Associates (16 June 2023), a typical 3-bedroom or 4-bedroom home will require an area of approximately 200m² or 250m² for a fill-based septic system which is based on a design flow of 1,600 l/day or 2,000 l/day respectively. Therefore, a minimum primary sewage disposal contact area of 250m^2 and reserve sewage disposal contact area of 250m^2 will need to be provided.

Septic beds will need to maintain a minimum offset of 15m from domestic supply water wells and a 30m setback from bored/sandpoint wells.

4.0 WATER SUPPLY

A review of the MECP's well records for the vicinity of the proposed development indicated that wells average 14' (4.3m) to 30' (9.1m) in depth with flow rates ranging from 14 to 20 gpm (63.6 to 90.0 litres/min.).

This average yield significantly exceeds maximum water demands of a typical 4-bedroom home, specified by MECP at 18 litres/min.

Therefore, it is anticipated that wells installed on the proposed severances will provide sufficient water supply to meet the typical domestic water demands.

Domestic supply wells will need to maintain a minimum offset of 15m from on-site septic systems and bored/sandpoint wells will need to maintain a 30m setback from septic beds.

5.0 STORMWATER DRAINAGE

5.1 Pre-Development Conditions

The Langton #2 Municipal Drain was constructed in 1986 and provides a legal outlet for approximately 72.49ha of land south and east of Langton. The subject lands are located entirely within the Langton #2 Drain tributary area. Post-development surface drainage peak flows from the development will be restricted to pre-development peaks to ensure the development does not impact the performance of the drain.

5.2 Post-Development Conditions

Post-development drainage from the development will be conveyed to a stormwater management pond (Block 25) through a proposed storm sewer system that is sized to the 5-year design storm. The stormwater management pond will have a tributary area that includes Phase 1 rear years, Phase 2, rear yards to 2 previously severed County Road 59 fronting lots, and external lands to the east of Phase 2.

The stormwater management pond will act as an infiltration basin during Phase 1 of the development with only Phase 1 rear yards draining to it. An outlet control structure, Street 'A' storm sewers, and outlet storm sewers connecting to the Langton #2 Municipal Drain will be constructed during Phase 2 of the development. The connection to the municipal drain will include crossing County Road 59 as shown on the General Plan of Services (SR-1) enclosed in Appendix A.

6.0 STORMWATER MANAGEMENT

6.1 Constraint Review

The subject lands are located within the jurisdiction of the Long Point Region Conservation Authority but not located within a regulated area of the conservation authority.

The Long Point Region Conservation Authority (LPRCA) typically identifies the following requirements:

- Retain run-off from a 25.4mm (1") quality storm for 24 hours;
- Attenuate post-development run-off to pre-development levels up to a 100-year storm event; and
- Ensure soil conservation by erosion and sedimentation control included during construction.

Norfolk County Design Guidelines require the following:

- Peak flows discharged from the site shall not increase as a result of a proposed development for the 2 through 100-year storm events;
- Quality Control to provide 'Enhanced' Level of protection in accordance with the MOE Stormwater Management Planning and Design Manual (2003);
- The volume of run-off discharged from the site during the 25mm storm shall not increase as a result of the proposed development.

The MOE Stormwater Management Planning and Design Manual (2003) states that if retaining run-off from a 25.4mm quality storm for 24 hours conflicts with minimum orifice size, run-off is to be retained for 12 hours.

On other recent subdivisions, LPRCA identified the following additional requirements that are applicable to this site:

- Maintain and encourage rear-yard infiltration;
- Maximize infiltration from Stormwater Management Pond; and
- Minimize erosion concerns over pond outlet.

Controls are not required to restrict regional storms. However, the design will allow for minor ponding to occur during some major storm events within local street right-of-way and storm easements with depths of less than 300mm with no flooding of any existing or proposed buildings.

The SWM Pond side slopes are not to exceed 4:1 (H:V) maximum. Flooding of adjacent lots is to be avoided. The SWM Block has direct access to the Street 'A' Right-of-way, which will allow easy access for maintenance from either road.

The Ministry of the Environment, Conservation and Parks (MECP) generally requires that the Outlet Control Structure (OCS) be relatively maintenance free and placed in an accessible location on the pond bank. Section 3.4.3 of MOE's 2003 Stormwater Management Practices, Planning and Design Manual, stipulates that a minimum quality control orifice size of 75 mm is acceptable where the orifice is protected by a perforated standpipe inlet.

The Low Impact Development (LID) Stormwater Management Planning and Design Guide Published in 2010 by the Credit Valley Conservation and Toronto and Region Conservation Authorities provides guidelines and recommendations on the implementation of LID techniques for stormwater management. The guide identifies the following requirements for Enhanced Grass Swales-Geometry and Site Layout:

- Bottom width between 0.75 to 3.0 m;
- Longitudinal slope between 0.5% to 4.0%;
- Check dams should be incorporated on slopes greater than 3.0%;
- Length-Equal to parallel length to road;
- Maximum flow depth of 100mm is recommended during 4 hour, 25mm Chicago storm event; and
- 4:1 side slope is preferred.

6.2 Best Stormwater Management Plan (SWMP) Selection

Early in the design process, after consideration of various SWMP's and review of the aforementioned constraints, it became clear that a SWM Dry Pond would be the most practical SWMP for the Devos Subdivision due to the permeable nature of the subsurface soil which will promote infiltration.

6.3 Design of Pond and Storm Drainage System

The Stormwater Quality Best Management Practices Manual published in June 1991 by the MOE (MECP), Page 91, states that *criteria and preferences of the differing reviewing agencies can be summarized as follows:*

MECP

- Ponds should act as a sedimentation basin (top draw).

MNR

- Ponds should minimize thermal impact (bottom draw), extended detention ponds may be more suitable.

CA

- Ponds must provide peak flow and erosion control.

MUN

- Ponds must provide peak flow control. Maintenance must be addressed.

The Stormwater Management Planning and Design Manual published in March 2003 by the MOE (MECP) further expands criteria and terminology.

The normal operating levels on the ponds are a function of pond area and depth to free outlet available. The outlets and emergency overflow spillways should be sized to carry the 100-year flows from the design tributary area.

Criteria as described under Section 6.2 and at the opening of this section will be satisfied during detailed design as follows:

i. The passive storage in the Dry Pond will provide quality control for the streambank erosion/quality storm event.

ii. Dry Ponds are only able to provide Basic Protection (60% TSS removal). If Enhanced Protection is required, an Oil Grit Separator or Wet Pond will need to be included in the design.

iii. The SWM Pond OCS is designed as a top draw for all storm events. All structures are designed to be relatively maintenance free.

iv. The Dry Pond provides post to pre-development attenuation for the 2 to 100-year quantity flow.

v. Recommended slopes of 4H:1V re proposed and will be relatively maintenance free. A chain link fence is proposed around the perimeter of the SWM Pond as an added safety measure.

vi. Grass swales and rear yards will encourage infiltration in porous native soil when present.

6.4 Stormwater Management Pond Preliminary Design

A detailed design of the Stormwater Management Pond will be prepared following draft plan approval of the Devos Subdivision. The detailed design will include analysis using hydraulic modelling software to verify design constrains are achieved. The hydraulic modelling will include the following characteristics:

- Single event analysis;
- Quality/Streambank Erosion Storm - Chicago Storm Distribution (4-HR)
- 2 to 100-Year Storm – Chicago Storm Distribution (3Hr)
- Subbasin Hydrograph Method – EPA SWMM
- Infiltration Method – SCS Curve Number
- Link Routing Method – Hydrodynamic.
- Total Drainage Area – 8.3ha approx. (including Future development of 9 lots fronting Street 'A' in Blocks 27/28)
- Pre-Development SCS Curve Number (CN) – 67, row crops, straight row, Hydrologic Soil Group 'A'
- Post-Development SCS Curve Number (CN) – 54, ½ acre lots, Hydrologic Soil Group 'A'
- Post-Development Imperviousness – 40%

Based on Table 3.2 of the MOE 2003 Stormwater Management Planning and Design Manual, a Dry Pond is required to have a storage volume of 872m^3 to provide Basic Protection (60% TSS Removal). Due to the rural setting of the subject lands, Basic Protection is sufficient for the Stormwater Management Design.

7.0 ROADWORK

The proposed street within the development will be designated as a local urban street with a right-of-way width of 20.0m. The proposed subdivision streets will be constructed with an 8.88m back of curb to back of curb (8.00m wide asphalt cross-section with mountable curb and gutter), based on Norfolk County Service Locate Standard Drawing (20m ROW) – Revision 2 – 20 May 2011. A 1.5m sidewalk will be provided along one side of the street through the development.

All internal roadwork will conform to the current Norfolk County Design Guidelines. A proposed cross-section is shown on the General Plan of Services Drawing enclosed in Appendix 'A'.

8.0 EROSION AND SEDIMENTATION CONTROL

8.1 Subdivision/SWM Design

The road surfaces will be hot-mix asphalt with concrete curb and gutter to prevent erosion in the roadway areas. The SWM pond inlet will be protected from erosion by the use of a reinforced concrete headwall and cable concrete matting. The pond outlet chamber's will be reinforced concrete also protected by cable concrete matting and graded to blend with the surrounding slopes. The pond and surrounding area will be restored with topsoil and seed. Catchbasins will contain 600 mm minimum deep sumps which will collect sediment.

Quantity control provided by the SWM pond ensures erosion protection to the receiving Langton #2 Municipal Drain. Vegetative plantings along the pond banks and bottoms will be placed to provide scouring protection and further erosion protection.

8.2 Construction Practices

Topsoil stripping and bulk grading will be completed prior to underground servicing. Areas that do not have active housing construction will be seeded and allowed to re-vegetate. Silt fence will be placed at surface runoff locations and across drainage courses. As servicing progresses, silt fence (with straw bales, if required) will be placed across all drainage swales at 100 m maximum intervals, including catchbasins and piped outlets and/or as directed on site. Erosion and sedimentation control during construction will include a sedimentation basin located in the proposed stormwater management area.

Topsoil piles will be located for suitable access but will be removed as far as practical from drainage courses and the stormwater management area. Topsoil stockpiles will be shaped to allow for easy maintenance (mowing) by the Developer. Site access during construction will be restricted as much as possible.

Storm sewers and initial granular roadbase will be installed by a General Contractor. In addition to the silt fence, the Contractor will place geotextile under all catchbasin and manhole castings to prevent the flow of construction silt into the storm sewers and to the receiving water courses. The Contractor will also place silt fence around the stormwater management pond inlets and outlets.

All silt will be removed as accumulated and/or as directed by the Engineer on site. Catchbasins will be cleaned by the Contractor during construction to remove any silt which may accumulate.

All finished earth surfaces will be topsoiled and seeded. Areas susceptible to erosion will be protected by sod, staked sod, riprap and/or cable concrete as conditions warrant. The Contractor will be required to return within the guaranteed maintenance period to remedy any areas of erosion which develop.

Access to the SWM pond will be provided from Street 'A'.

8.3 Maintenance

Erosion and sedimentation control during construction will include a sedimentation basin located in the proposed stormwater management area.

The storm sewers and technical aspects of the stormwater management pond area will be maintained by Norfolk County, upon final inspection and acceptance.

Accumulation of sediment in the pond will be monitored by Norfolk county and removed on an as-needed basis, with disposal to appropriate sites after testing of the material to be removed. Catchbasin sumps shall also be cleaned by Norfolk County on a regular basis to remove any accumulated sediment.

9.0 ELECTRICAL AND UTILITIES

It is anticipated that Hydro One, Execulink/Bell, and Enbridge Gas will have adequate capacity available on Highway 59 for connection/extension of utilities to service the proposed severances. Contact with the various utility companies will be initiated following submission of the consent application.

10.0 GRADING AND GEOTECHNICAL

Existing contours of the site show flat terrain less than 2±%. Proposed Street 'A' centreline road grades are anticipated to fall within the 0.5 - 1.5% range. Road grades may be set, as required, to suit proposed drainage areas. Pre-development major flow paths to the south are generally required to be maintained in post-development conditions.

Lot grading will be designed to minimize the number of rear-yard catchbasins, where practical to encourage infiltration and lot level controls. Earth grading will raise boulevards and rear property lines to grade prior to sewer servicing. Surplus fill stripped from high points will be placed in low lying areas where it can be accommodated.

A Geotechnical Engineering Report has been completed by MTE (16 June 2023), which revealed topsoil overlying granular deposits interlayered with silt and sand layers. Groundwater depths were measured at 1.1 to 1.5m below ground surface.

The high groundwater table has the potential to cause difficulties during construction if not properly managed. Refer to the MTE report for recommendations pertaining to the development with a high groundwater table.

*** *** ***

Respectfully submitted by,

Cameron Cluett, P.Eng.
Design Engineer

Andrew Gilvesy, P. Eng
Project Manager

CJC/

APPENDIX A

DRAWINGS

- SR-1 – General Plan of Services
- Municipal Drain Drawings
    - Langton 2 Municipal Drain

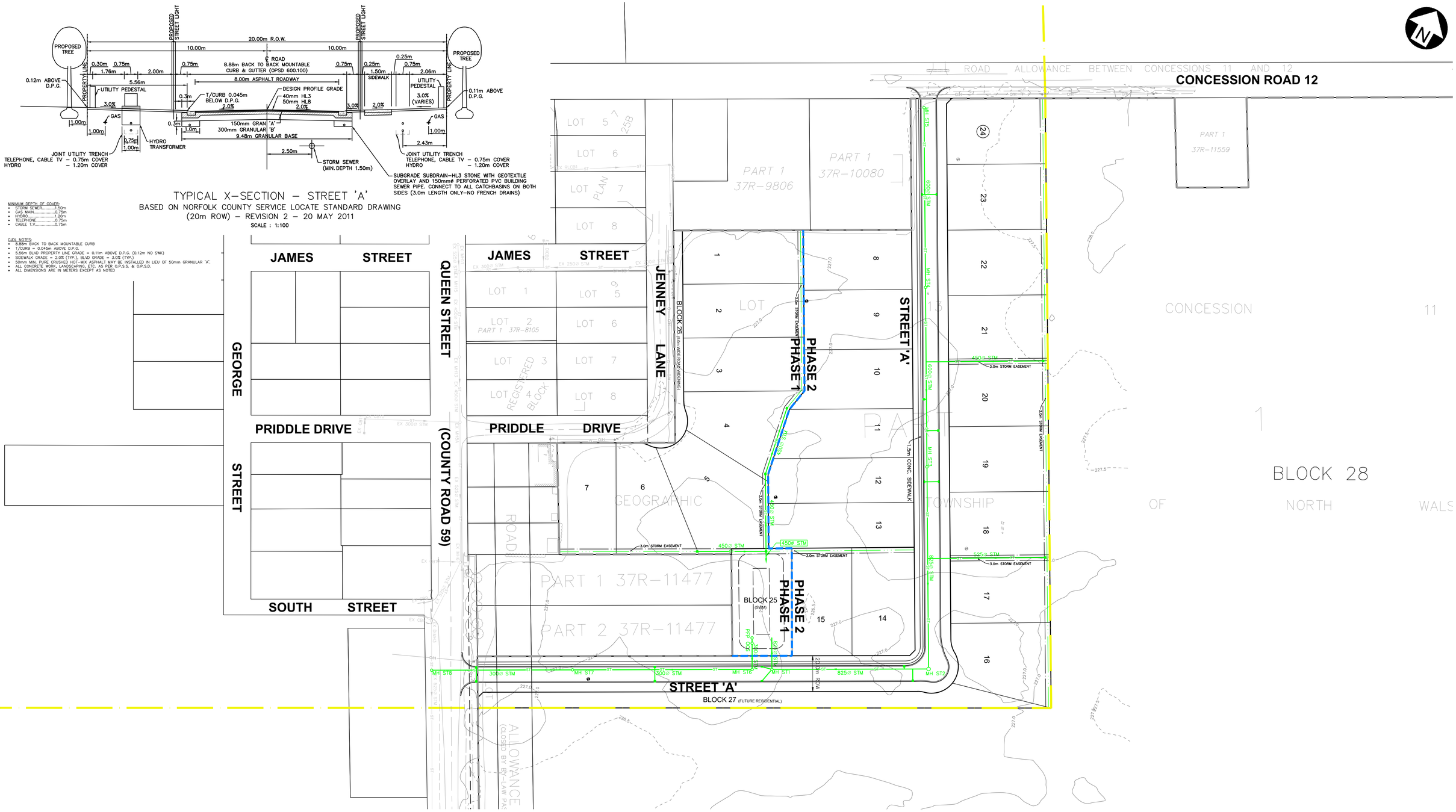
TYPICAL X–SECTION – STREET 'A'

BASED ON NORFOLK COUNTY SERVICE LOCATE STANDARD DRAWING (20m ROW) – REVISION 2 – 20 MAY 2011

SCALE : 1:100

MINIMUM DEPTH OF COVER:
- STORM SEWER.....1.50m
- GAS MAIN.....0.75m
- HYDRO.....1.20m
- TELEPHONE.....0.75m
- CABLE T.V.....0.75m

CJDL NOTES:
- 8.88m BACK TO BACK MOUNTABLE CURB
- T/CURB = 0.045m ABOVE D.P.G.
- 5.56m BLVD PROPERTY LINE GRADE = 0.11m ABOVE D.P.G. (0.12m NO SWK)
- SIDEWALK GRADE = 2.0% (TYP.), BLVD GRADE = 3.0% (TYP.)
- 50mm MIN. PURE CRUSHED HOT–MIX ASPHALT MAY BE INSTALLED IN LIEU OF 50mm GRANULAR 'A'.
- ALL CONCRETE WORK, LANDSCAPING, ETC. AS PER O.P.S.S. & O.P.S.D.
- ALL DIMENSIONS ARE IN METERS EXCEPT AS NOTED



LEGEND

- PHASE LIMIT
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- FUTURE STORM SEWER
- SUBDIVISION BOUNDARY
- HAMLET BOUNDARY
- SWALE
- MAINTENANCE HOLE
- CATCH BASIN
- WATER VALVE
- WATER SERVICE CURB STOP
- HYDRANT

STAMP:

LICENCED PROFESSIONAL ENGINEER C. CLUETT 100214735 PROVINCE OF ONTARIO

LICENCED PROFESSIONAL ENGINEER A. GILVESY PROVINCE OF ONTARIO

METRIC SCALE 1:1000

No.	REVISION	DATE	BY
1	ISSUED FOR DRAFT PLAN APPLICATION	19 JULY 2023	CJC

NORFOLK COUNTY

CJDL Consulting Engineers
Cyril J. Demeyere Limited
P.O. Box 460, 261 Broadway
Tillsonburg, Ontario. N4G 4H8
Tel: 519-688-1000
866-302-9886
Fax: 519-842-3235
cjdl@cjdleng.com

DESIGN BY: CJC | DRAWN BY: TTA | CHECKED BY: AG

PROJECT NO. 21032 | SURVEY BY: HUSTED | DATE: 19 JULY 2023

DEVOS SUBDIVISION
37M-????
453997 ONTARIO LTD.

GENERAL PLAN OF SERVICES

DRAWING No. SR-1

I:\ACAD Projects\2021\21032\04-Layouts\21032_General Plan of Services.dwg, 2023-07-19 8:54:19 AM, CJDLPC34, 1:25.4


LOT 11
LOT 12
LOT 13
LOT 14
GEORGE ST.
QUEEN ST.
ALBERT ST.
JAMES ST.
ELIZABETH ST.
SOUTH ST.
JOHN ST.
HENRY ST.
HIGHWAY No. 59
M.H. 1
M.H. 3
M.H. 6
M.H. 8
M.H. 8A
M.H. 13
M.H. 15
PLAN Scale: 1cm = 15m (1:1,500)
KEY PLAN Scale: 1cm = 100m (1:10,000)
LANGTON
CON 12
CON 11
0+173 TILE OUTLET
PLAN LEGEND
LIMIT OF WATERSHED AREA
PROPOSED DRAINAGE WORKS
INTERIOR WATERSHED
EXISTING DRAIN
LOT LEGEND
ROLL No.
OWNER
SOUTH ST.
ELIZABETH ST.
JAMES ST.
NOTE: FOR GEODETIC ELEVATIONS ADD 174.75 TO ELEVATIONS ON THIS DRAWING.
OFFICE COPY
ALL TILE AND CONC. PIPE TO BE LAID ON 19MM MAX SIZE CRUSHED STONE BEDDING USING BACKHOE AND LOADER.
600MM DIA. (24") CONC. FIELD TILE
525MM DIA. (21") CONC. FIELD TILE
MAIN DRAIN
QUEEN ST. BRANCH
AS CONSTRUCTED OCT. 17, 1986
GENERAL NOTES
1) MUNICIPAL DRAIN STANDARD SPECIFICATIONS (REVISED JAN/83) AND STORM DRAINS AND APPURTENANCES SHALL APPLY TO ALL CONSTRUCTION.
2) ALL E.S. AND CL III CONC. PIPE TO HAVE RUBBER GASKETS.
3) CONTRACTOR TO INVESTIGATE EXACT LOCATION OF UTILITIES BEFORE COMMENCING WORK ON ANY ROADWAY (GAS, TELEPHONE ETC.)
4) NEW DRAIN TO BE CONSTRUCTED IN SAME ALIGNMENT AS THE EXISTING DRAIN IN THE FOLLOWING PLACES: M.H. 1 TO M.H. 2, M.H. 3 TO M.H. 15 AND C.B. 2 TO C.B. 4. EXISTING CONC. PIPE IN THESE LOCATIONS TO BE REMOVED AND DISPOSED OF.
5) ALL FIELD TILE AND CONC. PIPE TO BE LAID ON 19MM MAX SIZE CRUSHED LIMESTONE BEDDING USING BACKHOE AND LOADER. ALL FIELD TILE JOINTS TO BE COMPLETELY WRAPPED WITH FILTER CLOTH. ALL CONC. PIPE TO HAVE RUBBER GASKETS. (APPROX. 800 TONNES STONE REQUIRED)
6) STA. 0+175 TO 0+740 TOPSOIL TO BE REMOVED WITH BACKHOE, FOR A WIDTH WIDE ENOUGH TO INSTALL TILE, AND PILED BEYOND EXCAVATED MATERIAL FOR REDISTRIBUTION BY DOZER UPON BACKFILLING TILE. SEE ALSO NOTE 7 FOR HIGHWAY DITCH STA. 0+543 TO 0+740.
7) ALL GRASSED DITCHES TO BE LEVELLED AND SEEDED WITH AN APPROVED MIXTURE. ALL LAWN AREAS TO BE RESTORED WITH 100MM TOPSOIL AND SEEDED WITH AN APPROVED MIXTURE.
8) BACKFILL ON TOWNSHIP STREETS TO BE NATIVE MATERIAL COMPACTED TO 90% STD. PROCTOR DENSITY. TOP 300MM TO BE GRANULAR "A". REPAVING OF ALL TOWNSHIP ROADS AND EXISTING PAVED SHOULDERS TO BE BY TOWNSHIP.
9) M.H. 3 TO M.H. 15 BACKFILL TO BE M.T.C. GRANULAR A - TYPE II MATERIAL FROM TOP OF BEDDING TO FINAL GRADE COMPACTED TO 100% STD. PROCTER DENSITY. EXCAVATED MATERIAL TO BE DISPOSED OF BY CONTRACTOR. ASPHALT HIGHWAY AND SHOULDERS TO BE RESTORED BY CONTRACTOR TO ORIGINAL DEPTH WITH H.L. 3 ASPHALTIC CONCRETE. SEE TENDER FORM.
10) M.H. 6 & 8A TO HAVE FRAME AND COVER M.T.C. TYPE DD-704-B. ALL CATCHBASINS TO HAVE M.T.C. TYPE DD-713-B. ALL OTHER STRUCTURES TO USE EXISTING COVERS.
11) NEW DRAIN TO BE CONNECTED TO EXIST. M.H.s Nos 1,3,8,13 & 15. MH 6 TO BE REMOVED AND REINSTALLED TO GRADE WITH 300MM SUMP. EXTEND AS NECESSARY.
12) M.H. 8A TO BE PRECAST TO A.S.T.M. C-478 SPECIFICATION AND HAVE A 300MM SUMP.
13) SURPLUS EXCAVATED MATERIAL FROM SEWER CONSTRUCTION ON TOWNSHIP ROADS TO BE DISPOSED OF BY CONTRACTOR OFF RIGHT OF WAY.
TRAFFIC NOTES:
ONE LANE OF FLAGGED TRAFFIC TO BE MAINTAINED DURING WORKING HOURS. TWO LANES OF TRAFFIC TO BE PROVIDED DURING NON-WORKING HOURS. REFER TO M.T.C. TRAFFIC CONTROL MANUAL FOR ROADWAY WORK OPERATIONS.
PROFILES SCALE
Hor. 1cm = 25m (1:2,500)
Vert. 1cm = 0.5m (1:50)
APPROXIMATE AMOUNT OF EXCAVATION
LANGTON DRAIN No. 2
TOWNSHIP OF NORFOLK
Scale: METRIC
Date: MAR. 18, 1986
Approved By: F.B. B-77
JOB NO. 85075
Drawn By: J. N. H.
Revised: APR. 9, 1986 FOR TENDERS
PLANS & PROFILES
SPRIET ASSOCIATES CONSULTING ENGINEERS
LONDON SUDBURY
Drawing Number 1

1000 12th Concession Rd Proposed Development

Geotechnical Investigation

Project Location:
1000 12th Concession Road,
Norfolk County, ON

Prepared for:
Cyril J. Demeyere Limited
261 Broadway PO Box 460
Tillsonburg, ON, N6G 4H8

Prepared by:
MTE Consultants
123 St. George Street
London, ON N6A 3A1

August 14, 2023

MTE File No.: 53216-100

Engineers, Scientists, Surveyors.

Contents

Tables

Appendices

1.0 Introduction

MTE Consultants Inc. (MTE) was retained by Cyril J Demeyere Limited (CJDL) for the proposed development at 1000 12th Concession Road in Norfolk County, Ontario, as shown on Figure 1 in Appendix A. The site is currently an agricultural field with residential dwellings surrounding the adjacent properties. The site is approximately 16.3 acres (6.6 hectares) in area.

The ground surface of the site is generally flat between the borehole locations with the site sloping from north to south. The borehole locations and ground surface elevations were surveyed by MTE.

The purpose of this geotechnical investigation is to determine the soil and groundwater conditions at the site and provide geotechnical engineering recommendations pertaining to the property; including site grading, site servicing, foundation design, basements, slab on-grade construction, pavement design and sub-drainage, and infiltration rates of native soils.

2.0 Field and Laboratory Program

The fieldwork for this investigation was carried out on April 11, 2023 and involved the drilling of five boreholes (Boreholes MW101-23 to BH105-23) to depths of 3.5 to 5.0 m. The location of the boreholes are shown on the Site Plan, Figure 1 in Appendix A.

Private and public utility companies were contacted prior to the start of drilling activities in order to isolate underground utilities near the boring locations.

The boreholes were advanced with a Dietrich D50T track mounted drill rig equipped with continuous flight hollow stem augers, supplied and operated by London Soil Test Ltd.

Representative soil samples were recovered throughout the depths explored. Standard Penetration Tests (SPT) were carried out during sampling operations in the boreholes using conventional split spoon equipment. The SPT N-values recorded are plotted on the borehole logs in Appendix B.

Two 50 mm diameter PVC monitoring wells were installed in Boreholes MW101-23 and MW104-23 to allow measurement of stabilized groundwater levels and groundwater sampling and testing, if required. The installations comprised 1.5 m filtered screen and bentonite seals above the screen. Stabilized water level measurements were taken by MTE on May 1 and 17, 2023. Details of the installation, groundwater observations and measurements are provided on the appended borehole logs.

The monitoring wells were installed in accordance to Ontario Regulation 468/10. A licensed well technician must properly decommission all wells before construction. The construction, maintenance and abandonment of the wells are regulated under the province's Water Resources Act.

The remaining boreholes were backfilled with soil cuttings and bentonite in accordance with Ontario Regulation 468/10 (formerly O. Reg. 903) under the provinces Water Resources Act.

The fieldwork was monitored throughout by a member of our geotechnical engineering staff, who directed the drilling procedures; conducted SPT tests; documented the soil stratigraphy; monitored the groundwater conditions; and transported the recovered soil samples back to our office for further classification.

The coordinates and ground surface elevations at the borehole locations were surveyed by MTE using a Trimble R10 GNSS rover referenced to UTM 17N grid.

All of the soil samples collected were submitted for moisture content testing and three soil samples were submitted for particle size distribution analyses. The results of the laboratory tests are provided in Appendix C. The remaining soil samples will be stored for a period of 1 month and will be discarded of at that time without prior request from the client to extend storage time.

3.0 Soil Conditions

Reference is provided to the appended borehole logs for soil stratigraphy details, SPT N-values, moisture content profiles, and groundwater observations. Soil conditions encountered at the site typically include topsoil overlying native granular deposits interlayered with silt and sand or silt and clay seams.

3.1 Topsoil

Topsoil was encountered at the ground surface in all boreholes and was 250 to 310 mm thick (average thickness = 270 mm). The topsoil is dark brown in colour and comprises of silty sand topsoil. The topsoil was determined through visual observation and no nutrient testing for applicable plant growth was performed as part of the scope of work for this project. The topsoil was noted as very moist at the time of field work.

3.2 Sandy Silt, Silty Sand and Silt Layers

Layers of clayey sandy silt and silty sand were encountered underlying the topsoil in all five boreholes and extended to a depth of about 1.1 to 1.2 m when fully penetrated. The layers were brown and/or grey in colour and contained pockets of topsoil and rootlets typically found in the upper portion of native soils from agricultural practises. Layers of silt, sandy silt and silty sand were encountered at various depths in BH102-23, BH103-23, and BH105-23. The layers were noted as loose to dense in compactness with wet to saturated conditions.

3.3 Sand Deposits

Layers of sand were encountered underlying the topsoil and/or silt layers in all boreholes and extended to the termination depths in MW101-23 and MW104-23. The sand layers were brown to orange-brown in colour and typically range and contained seams/layers of silt, and silty clay. The results of three particle size distribution analyses conducted on the granular deposits are provided in Appendix C and summarized in the following table;

Table 1 - Results of Granular Deposits Particle Size Distribution Analyses

Borehole Number	Sample Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
MW101-23	2.3 - 2.7	0	92	5	3
BH102-23	1.5 - 2.0	0	86	11	3
MW104-23	3.0 - 3.5	0	94	3	3

SPT N-values measured in the granular soils range from 3 to 30 blows per 300 mm penetration of the split spoon sampler indicating very loose to dense conditions. It is noted the loose conditions were encountered within the upper portions of native soils. Insitu moisture contents in the granulars ranged from 15 to 24% indicating moist to saturated conditions.

4.0 Groundwater Conditions

Groundwater observations were carried out in the open boreholes at the time of drilling and are summarized on the borehole logs. Groundwater was noted within the granular deposits in all the boreholes at depths of 1.1 to 1.5 m below the ground surface.

Groundwater levels were measured in MW101-23 and MW104-23 on May 1 and 17, 2023 at depths of 0.9 to 1.2 m beneath the ground surface or Elevations 226.5 to 226.0 m. The results of the measured groundwater levels are summarized in the table below:

Table 2 - Groundwater Measurements

Borehole	Ground Surface Elevation (m)	Measured Groundwater Level on May 1, 2023		Measured Groundwater Level on May 17, 2023	
		Depth (m)	Elevation (m)	Depth (m)	Elevation (m)
MW101-23	227.4	0.9	226.5	1.1	226.3
MW104-23	227.2	1.1	226.1	1.2	226.0

It should be noted that the groundwater levels can vary and are subject to seasonal fluctuations and local variations.

5.0 Discussion and Recommendations

5.1 General

The site is currently an agricultural field located at 1000 12th Concession Road in Norfolk County, Ontario, as shown on Figure 1 in Appendix A. The proposed development plan consists of twenty-five lots to be severed from the existing property and zoned for residential/industrial use. The development will be serviced with private septic systems and wells.

The subsurface stratigraphy at the site typically comprises topsoil overlying granular deposits interlayered with silt and sand or silt and clay layers. Groundwater observations were carried out in the open boreholes at the time of drilling with encountered water levels noted within the native granular deposits at depths of 1.1 to 1.5 m below the ground surface. Groundwater levels were measured in the installed monitoring wells, MW101-23 and MW104-23 on May 1 and 17, 2023 at depths of 0.9 to 1.2 m beneath the ground surface or Elevations 226.5 and 226.0 m.

Based on the results of this geotechnical investigation, the high groundwater encountered onsite will cause difficulties during construction if not properly managed. The following subsections of this report contain geotechnical recommendations pertaining to development of the property; including site grading, site servicing, foundation design, basements, slab on-grade construction, pavement design and sub-drainage, and infiltration rates of native soils.

5.2 Site Preparation

The first construction activity that will be required for the proposed development will be grading. Prior to carrying out any cutting and engineering fill operations, the topsoil and any deleterious materials must be removed and stockpiled. The average topsoil thickness measured in the boreholes was about 270 mm thick. It is recommended that the average thickness across the site be increased by 50 mm for removal/stripping calculations to account for variations at the site. Additionally, reworked native soils from agricultural practices were noted in the upper

portion of native soils in Boreholes MW101-23, BH102-23 and BH105-23 to depths of 1.1 to 1.2 m. Further stripping of the deleterious materials will be required and should be accounted for in these regions.

The subgrade should be inspected, and proof rolled in the presence of qualified geotechnical personnel to verify if the subgrade will provide support as intended in the original design. The primary purpose of the inspection is to identify poorly performing areas which should be sub-excavated.

A grade raise for the entire site should be considered to assist with the shallow groundwater conditions. The fill material used for the grade raise should be constructed as engineered/structural fill.

The majority of the native soils above the groundwater table are suitable for reuse as engineered fill provided they are close to optimum water content for compaction purposes, if engineered fill is required. All fill should be placed in maximum 300 mm thick lifts and compacted to the following percentages;

Table 3 - Engineered Fill Requirements

Fill Use	Minimum Compaction Required
Structural fill to support buildings	100% SPMDD
Subgrade fill beneath pavements or services	95% SPMDD
Bulk fill in landscape area	90% SPMDD

The subgrade soils are susceptible to disturbance and it is recommended that construction traffic on the subgrade be minimized.

Structural fill used for raising grades beneath the buildings should comprise granular material such as OPSS Granular 'A' or 'B'. Subgrade fill material beneath the proposed pavement areas and services should meet the requirements of OPSS Select Subgrade Material (SSM). Any imported fill should be tested and verified by a geotechnical engineer prior to placement.

Structural fill pads should extend a minimum 0.3 m beyond the edge of the footing envelope of any building and down to subgrade at an angle of 45 degrees to the horizontal. Full time testing by geotechnical personnel is recommended during fill placement and compaction to monitor material quality, lift thickness, and verify the compaction by insitu density testing.

In order to minimize the effects of weather and groundwater, fill operations onsite should be carried out in the dry summer months.

5.3 Site Servicing

5.3.1 Excavations and Dewatering

The development will be serviced with private wells and septic beds. The well and septic bed design and installations shall be left to the discretion of the contractor.

Temporary excavations to conventional depths for installation of underground pipes at this site must comply with the Ontario Occupational Health and Safety Act and Regulations for Construction Projects. The topsoil and native soils encountered in the boreholes would be classified as Type 3 soils (O. Reg. 213/91, s. 226 (4)). Temporary side slopes must be cut at an inclination of 1.0 horizontal to 1.0 vertical or less from the base of the excavation for open cut pipe installation, exclusive of groundwater effects.

Trench side slopes must be continuously inspected especially after periods of heavy rainfall or snow melt to identify areas of instability. Surface water should be directed away from entering the trench.

Significant groundwater inflow should be expected where excavations extend about 1.1 to 1.5 m below the ground surface. Based on the encountered soil and groundwater conditions proactive dewatering in the form of vacuum well points or the like would be required to handle the groundwater infiltration in this area. It will be necessary to flatten the excavation side slopes where groundwater seepage is occurring, potentially 3.0 to 4.0 horizontal to 1.0 vertical or greater to ensure stability. Every excavation that a worker may be required to enter shall be kept reasonably free of water (O. Reg. 213/91, s. 230).

It should be noted that an Environmental Activity and Sector Registry (EASR) or Permit to Take Water (PTTW), issued by the Ministry of Environment, Conservation and Parks, will be required if the dewatering system/sumps result in a water taking of more than 50,000 L/day to 400,000 L/day, respectively. The design of the dewatering system should be left to the contractor's discretion to control groundwater at least 0.5 m below the invert level in order to provide stable excavation base. The contractor should notify the prime consultant in the event that he feels that an EASR/PTTW will be needed.

5.3.2 Bedding

Bearing problems may be encountered for septic tanks or pipes founded on the loose near surface subsoil due to relatively low blow counts in the upper region, combined with the shallow groundwater present. The septic bed design should be designed and constructed in accordance with Section 8 of the Ontario Building Code.

The bedding material may need to be thickened in regions where sub-excavation encounters soft or spongy soil from the base of the excavation. A grade raise would be beneficial in providing additional separation from the shallow groundwater table to help in the design of the septic systems.

A well-graded clear stone such as Coarse Aggregate for HL4 Asphaltic Concrete (OPSS 1003) should be used in the sewer trenches as bedding below the spring line of the pipe to facilitate sump pump dewatering, where groundwater seepage is encountered. The clear stone should be compacted with a plate tamper and fully wrapped with a non-woven filter cloth.

5.3.3 Backfilling

To minimize potential problems, backfilling operations should follow closely after excavations. Care should be taken to protect side slopes of excavations by diverting surface run-off away from the excavations. If construction extends into the winter, then additional steps should be taken to minimize frost and ensure that frozen material is not used as backfill.

All materials and construction services required for the work should be in accordance with the relevant sections of the Ontario Building Code.

5.4 Pavements

It is understood pavements may be constructed at the site. The pavement subgrade soils will comprise native inorganic soils or imported structural fill.

The pavement component thicknesses in the following table are recommended based on the proposed pavement usage, the frost-susceptibility and strength of the subgrade soils, and the Benkelman beam spring rebound coefficient for granular soils;

Table 4 - Pavement Design

Pavement Component	Light Duty	Heavy Duty
Asphalt Hot Mix	90 mm	120 mm
OPSS 1010 Granular ‘A’ Base	150 mm	150 mm
OPSS 1010 Granular ‘B’ Subbase	300 mm	400 mm

Heavy duty pavements should be used for main access ways to the development and where large vehicles will frequently travel, such as garbage and fire trucks.

Samples of aggregates should be checked for conformance to OPSS 1010 prior to utilization on site and during construction. The Granular 'B' subbase and Granular 'A' base courses must be compacted to 100% SPMDD, as verified by insitu density testing.

The asphaltic concrete paving materials should conform to the requirements of OPSS 1150. The asphalt should be placed and compacted in accordance with OPSS 310. The Performance Graded Asphalt Cement designation for the asphaltic concrete is 58-28.

The asphaltic concrete should comprise 40 mm of HL3 surface over 50 mm of HL8 binder for the light duty pavement option and 50 mm of HL3 surface over 70 mm of HL8 binder for the heavy duty pavement option.

The pavement design is based on the assumption that construction will be carried out during the drier time of the year and that the subgrade soil is stable as determined by proof-rolling inspected by a geotechnical engineer. If the subgrade is wet and unstable, additional granular subbase will be required.

All materials and construction services required for the work should be in accordance with the relevant sections of the Ontario Provincial Standard Specifications.

It is strongly recommended to install subdrains beneath the low areas of pavement and connected to catch basins. The purpose of the subdrains is to remove excess subsurface water in order to improve overall pavement serviceability and increase the pavement life. Consideration should be given to providing continuous subdrains along the perimeter edges of the new roadways to promote drainage of the granular materials.

The work of subdrain installation shall be in accordance with OPSS 405 and OPSD 216.021. The subdrain shall be 100 or 150 mm diameter perforated pipe conforming to OPSS 1801 or 1840, and wrapped with geotextile conforming to OPSS 1860.

5.5 Curbs, Gutters and Sidewalks

The concrete for curbs, gutters and sidewalks should be proportioned, mixed, placed and cured in accordance with the requirements of OPSS 353, and OPSS 1350 and shall meet the following specific requirements (OPSS 353.05.01):

- Minimum compressive strength = 30 MPa at 28 days
- Coarse aggregate = 19.0 mm nominal max. size
- Maximum slump = 60 mm for curb and gutter, 70 mm for sidewalks
- Air entrainment = 6.5 ± 1.5%

During cold weather any freshly placed concrete must be covered with insulating blankets to protect against freezing as per OPSS 904. Three cylinders from each day’s pour should be

taken for compressive strength testing. Air entrainment, temperature and slump tests should be conducted on the same batch of concrete from the test cylinders made.

5.6 Foundation Design

It is understood that the proposed building design may be constructed with slab-on-grade floors or with full basements.

In general, the undisturbed compact native soils or approved structural fill is considered suitable to support building foundations. The upper 0.8 to 1.2 m of loose soils encountered in the boreholes are not suitable to support foundations due to low internal strength.

Building footings constructed on the undisturbed native granular soils with a minimum of 7 blows or approved structural fill may be designed for a factored geotechnical bearing resistance at Ultimate Limit States (ULS) of 115 to 150 kPa, and soil bearing resistance for 25 mm of settlement at Serviceability Limit States (SLS) of 75 to 100 kPa depending on founding depths.

The founding materials are susceptible to disturbance by construction activity, especially during wet weather and care should be taken to preserve the integrity of the material as bearing strata.

The soil in trenches beneath footings for sewer and watermain services, if applicable, shall be compacted by tamping up to the level of the footing base, or shall be filled with concrete having a strength not less than 10 MPa, to support the footing.

The footing areas must be inspected by a geotechnical engineer to ensure that the soil conditions encountered at the time of construction are suitable to support the design resistances prior to pouring concrete. Any loose, disturbed, organic and deleterious material identified during the inspection should be removed from the footing areas and replaced with structural fill or concrete.

It is recommended to implement a grade raise across the site to ensure foundation depths stay above the groundwater table. Significant dewatering will be required if excavations extend beyond the groundwater table and reduced bearing capacities should be expected from heaving saturated sands.

Due to the potential saturation of the native granular soils and backfill materials, buildings, tanks and other structures must be able to resist the uplifting forces associated with the hydrostatic pressures of the seasonal high groundwater levels. Resisting forces resulting from the friction between well compacted backfill and the concrete foundation walls should be calculated using a coefficient of friction of 0.58 and submerged unit weight of 1.1 tonne per cubic meter. If sufficient resistance with a suitable factor of safety is not available from dead load and skin friction, additional capacity may be achieved by extending the base slab beyond the exterior limits of the foundation walls, mobilizing additional overlying backfill to provide greater resisting forces.

All exterior floor slabs and footings in unheated areas must be provided with a minimum 1.2 m of earth cover after final grading in order to minimize the potential of damage due to frost action, as per Ontario Provincial Standard Drawing, OPSD 3090.101, dated November 2010. If construction is undertaken during the winter, the subgrade soil and concrete should be protected from freezing.

Where spread footings are constructed at different elevations, the difference in elevation in the individual footing should not be greater than one half of the clear distance between the footings. The lower footing should be constructed first so that if it is necessary to construct the lower footings at a greater depth than anticipated, the elevation of the upper footings can be adjusted accordingly. Stepped strip footings should be constructed in accordance with OBC Section 9.15.3.8.

A Site Classification ‘D’ should be used for earthquake load and effects in accordance with Table 4.1.8.4.A. of the 2012 Ontario Building Code. All excavations at the site should be carried out in conformance with the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

5.6.1 Basement Recommendations

It is understood that basements may be installed for the proposed buildings at the site. Basement construction at the site may be problematic if a grade raise is not employed. The basement excavations will encounter groundwater conditions in the granular soils at a depth of about 1.1 to 1.2 m below the ground surface. We recommend the basement floor levels be designed a minimum 0.5 m above the seasonal high groundwater elevations.

Basements at this site must be provided with perimeter weeping tile systems as per the Ontario Building Code (Section 9.14). The drain tile or pipe should be laid on undisturbed or well compacted soil so that the top of the tile or pipe (minimum 100 mm diameter) is below the bottom of the basement floor slab. The top and sides of the drain tile or pipe shall be surrounded with not less than 150 mm of crushed stone or other clean coarse granular material containing no more than 10% of material that will pass the 4 mm sieve. The crushed stone should be wrapped with filter cloth. The weeping tile must drain to a suitable frost-free outlet or sump equipped with an automatic pump that will discharge water into a storm sewer service or other frost free outlet.

The portion of the exterior basement wall and floor slab below finished ground level must be waterproofed as per the Ontario Building Code (Subsection 9.13.3). Free-draining sand materials should be used for basement wall backfill. The basement wall backfill should be graded to allow drainage away from the foundation.

The basement walls should be designed to resist the lateral earth pressure. For calculating the lateral earth pressure, the coefficient of earth pressure (K) may be assumed as 0.50 for cohesionless sandy soils and 1.0 for silt and clay (Section 24.12.3.3 Canadian Foundation Engineering Manual). The bulk unit weight of the retained backfill may be taken as 21 kN/m3 for well-compacted soil. An appropriate factor of safety should be employed.

The subgrade for the basement floor slabs should comprise undisturbed compact native soil or well compacted fill. A minimum 100 mm thick layer of coarse clean granular material containing not more than 10% material that will pass a 4 mm sieve shall be placed beneath slabs in houses as per Subsection 9.16.2 of the Ontario Building Code. If the subgrade soil is wet, we strongly recommend that subfloor weeping tiles be placed and connected to the sump pit.

If a moisture-sensitive floor finish is to be applied to the slab, then we recommend that a 15 mil polyethylene moisture vapour barrier be installed directly beneath the slab as per Article 9.13.2.7 of the Ontario Building Code. The purpose of the vapour barrier is to reduce moisture transfer by diffusion as per Article 5.5.1.2 of the Ontario Building Code. Joints in the vapour barrier should be lapped not less than 100 mm.

Concrete testing should be performed onsite to determine the slump, temperature, and air entrainment; and concrete cylinders should be cast for compressive strength testing.

5.7 Concrete Slab-on-Grade

It is understood that conventional concrete slab-on-grade techniques may be used in the proposed development, following removal of any topsoil, and inspecting the subgrade soils.

Any additional material required to raise grades below the floor slab should be comprised of granular soil and be compacted to 98% SPMDD. A minimum 150 mm thick layer of Granular 'A'

material uniformly compacted to 100% SPMDD should be provided directly beneath the slab for leveling and support purposes.

A modulus of subgrade reaction of 15 to 20 MPa/m should be used in the design of the floor slab.

No special underfloor drains are required, provided the exterior grades are lower than the floor slab and positively sloped away from the building.

If a moisture-sensitive floor finish is to be applied to the slab, then we recommend that a 15 mil polyethylene moisture vapour barrier be installed directly beneath the slab as per Article 9.13.2.7 of the Ontario Building Code. The purpose of the vapour barrier is to reduce moisture transfer by diffusion as per Article 5.5.1.2 of the Ontario Building Code. Joints in the vapour barrier should be lapped not less than 100 mm.

The water to cement ratio and slump of the concrete utilized in the floor slab should be strictly controlled to minimize shrinkage of the slab. Control joints should be sawed into the slabs at regular intervals within 12 hours of initial concrete placement in order to prelocate shrinkage cracks.

Concrete testing should be performed onsite to determine the slump, temperature, and air entrainment; and concrete cylinders should be cast for compressive strength testing.

5.8 Infiltration Rates of Native Soils

It is understood that the development will be serviced with private septic beds. Leaching beds require soils with a minimum percolation rate of 30 mm/hr and at least 0.9 m above the seasonal high ground water table. Three particle size distribution analyses were carried out on the native soils encountered at the site and are plotted on Table 101 in Appendix C.

The estimated vertical hydraulic conductivity (k) is derived from an empirical formula by Hazen and Kozeny-Carman. The estimated design infiltration rate is based on recommendations found in the Low Impact Development Stormwater Management Planning and Design Guide, Appendix C, Version 1.0, 2011, published by the Toronto and Region (TRCA) and the Credit Valley (CVC) Conservation Authority, and the approximate relationship between hydraulic conductivity and infiltration rate. A Factor of Safety of 2.5 has been applied to the calculated infiltration rates.

Table 5 - Infiltration Rates for Native Soils

Borehole Number	Sample Depth (m)	Borehole Elevation (m)	Soil Type	Estimated K-Value (m/sec)	Infiltration Rate (mm/hr)
MW101-23	2.3 - 2.7	227.4	Sand	1.7E-4	73
BH102-23	1.5 - 2.0	227.0	Sand	2.4E-4	23
MW104-23	3.0 - 3.5	227.2	Sand	1.7E-4	73

Based on the estimated infiltration rates for three samples of the native sand, leaching beds may be suitable. However, based on the measured groundwater levels and the encountered soil conditions (silty sand and/or clayey sandy silt) within the upper 1.2 metres at each borehole, a grade raise will be required. The leaching beds should be designed and constructed as per Section 8 of the Ontario Building Code.

5.9 Construction Inspection and Testing

MTE recommends that geotechnical inspection and testing procedures be conducted throughout the various phases of the project.

Engineer site visits should be conducted to confirm geotechnical bearing resistances for footings. Soil compaction testing should be carried out on structural fill beneath the residential building, foundation wall backfill, and trench backfill. Laboratory and field testing of the pavement structure components (granulars and asphaltic concrete) should be conducted, as well as concrete testing for foundations.

MTE offers soil compaction, concrete, and asphalt testing as well as soil inspection services through our London office.

6.0 Limitations of Report

Services performed by MTE Consultants Inc. (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Geotechnical Engineering & Consulting profession practicing under similar conditions in the same geographic area were the services are provided. No other warranty or representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of the Client. This report is not intended to be exhaustive in scope or to imply a risk-free site. As such, this report may not deal with all issues potentially applicable to the site and may omit aspects which are or may be of interest to the reader.

In addition, it should be recognized that a soil sample result represents one distinct portion of a site at the time it is collected, and that the findings of this report are based on conditions as they existed during the time period of the investigation. The material in the report reflects our best judgment using the information available at the time the report was written. The soil and groundwater conditions between and beyond the test holes may differ from those encountered in the test holes. Should subsurface conditions arise that are different from those in the test holes MTE should be notified to determine whether or not changes should be made as a result of these conditions.

It should be recognized that the passage of time may affect the views, conclusions and recommendations (if any) provided in this report because groundwater conditions of a property can change, along with regulatory requirements. All design details were not known at the time of submission of this report and it is recommended MTE should be retained to review the final design documents prior to construction to confirm they are consistent with our report recommendations. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may determine whether it affects the contents of this report.

Any use which another party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by another party as a result of decisions made or actions taken, based upon this report. Others with interest in the site should undertake their own investigations and studies to determine how or if the condition affects them or their plans. The contractors bidding on this project or undertaking the construction should make their own interpretation of the factual information and draw their own conclusions as to how subsurface conditions may affect their work.

The benchmark and elevations provided in this report are primarily established to identify differences between the test hole locations and should not be used for other purposes such as, planning, development, grading, and excavation.

All of which is respectfully submitted,

MTE Consultants Inc.

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BXT:bem:rxa:vlf
M:\53216\100\Reports\August 14 2023-Final\53216-100_05-29-2023_1000 12th Concession Rd_GeoRprt_Final.docx

Appendix A

Figures

Figure 1 - Site Plan

KEY PLAN (nts)

LEGEND

PROJECT AREA

BOREHOLE

BOREHOLE/MONITORING WELL

(227.3) ELEVATION (m AMSL)

REFERENCES

SOUTHWESTERN ONTARIO ORTHOPHOTOGRAPHY PROJECT (2020), SOURCE: DATA PROVIDED BY ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY, © COPYRIGHT: 2023 QUEEN'S PRINTER OF ONTARIO, ALL RIGHTS RESERVED;
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NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES

0 30 60m

1:1,500

MTE
Engineers, Scientists, Surveyors

PROJECT

GEOTECHNICAL INVESTIGATION
1000 12th CONCESSION ROAD
LANGTON, NORFOLK COUNTY, ONTARIO

TITLE

SITE PLAN

Drawn	DCH	Scale	AS SHOWN
Checked		Project No.	53216-100
Date	May 1/23	Rev No.	0

FIGURE 1

Appendix B

Borehole Logs

Abbreviations and Symbols

Boreholes MW101-23 and BH105-23

The following are abbreviations and symbols commonly used on borehole logs, figures and reports.

Sample Types

AS	Auger Sample
CS	Chunk Sample
BS	Bulk Sample
GS	Grab Sample
WS	Wash Sample
SS	Split Spoon
RC	Rock Core
SC	Soil Core
TW	Thinwall, Open
TP	Thinwall, Piston

Soil Tests

PP	Pocket Penetrometer
FV	Field Vane
SPT	Standard Penetration Test
CPT	Cone Penetration Test
WC	Water Content
WL	Water Level

Penetration Resistance

Standard Penetration Test, N (ASTM D1586)	The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) open spilt spoon sampler for a distance of 300 mm (12 in.).
Dynamic Cone Penetration Resistance	The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive an uncased 50 mm (2 in.) diameter, 60o cone attached to “A” size drill rods for a distance of 300 mm (12 in.).

Soil Description

Cohesive Soils	Undrained Shear Strength (Cu)	
Consistency	kPa	psf
Very Soft	0 to 12	0 to 250
Soft	12 to 25	250 to 500
Firm	25 to 50	500 to 1,000
Stiff	50 to 100	1,000 to 2,000
Very Stiff	100 to 200	2,000 to 4,000
Hard	Above 200	Above 4,000

Cohesionless Soils	
Relative Density	SPT N Value
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	Above 50

WH	Sampler advanced by static weight of hammer
WR	Sampler advanced by static weight of drilling rods
PH	Sampler advanced by hydraulic force
PM	Sampler advanced by manual force

DTPL	Drier than Plastic Limit
APL	About Plastic Limit
WTPL	Wetter than Plastic Limit
mbgs	Metres below Ground Surface

ID No.: MW101-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

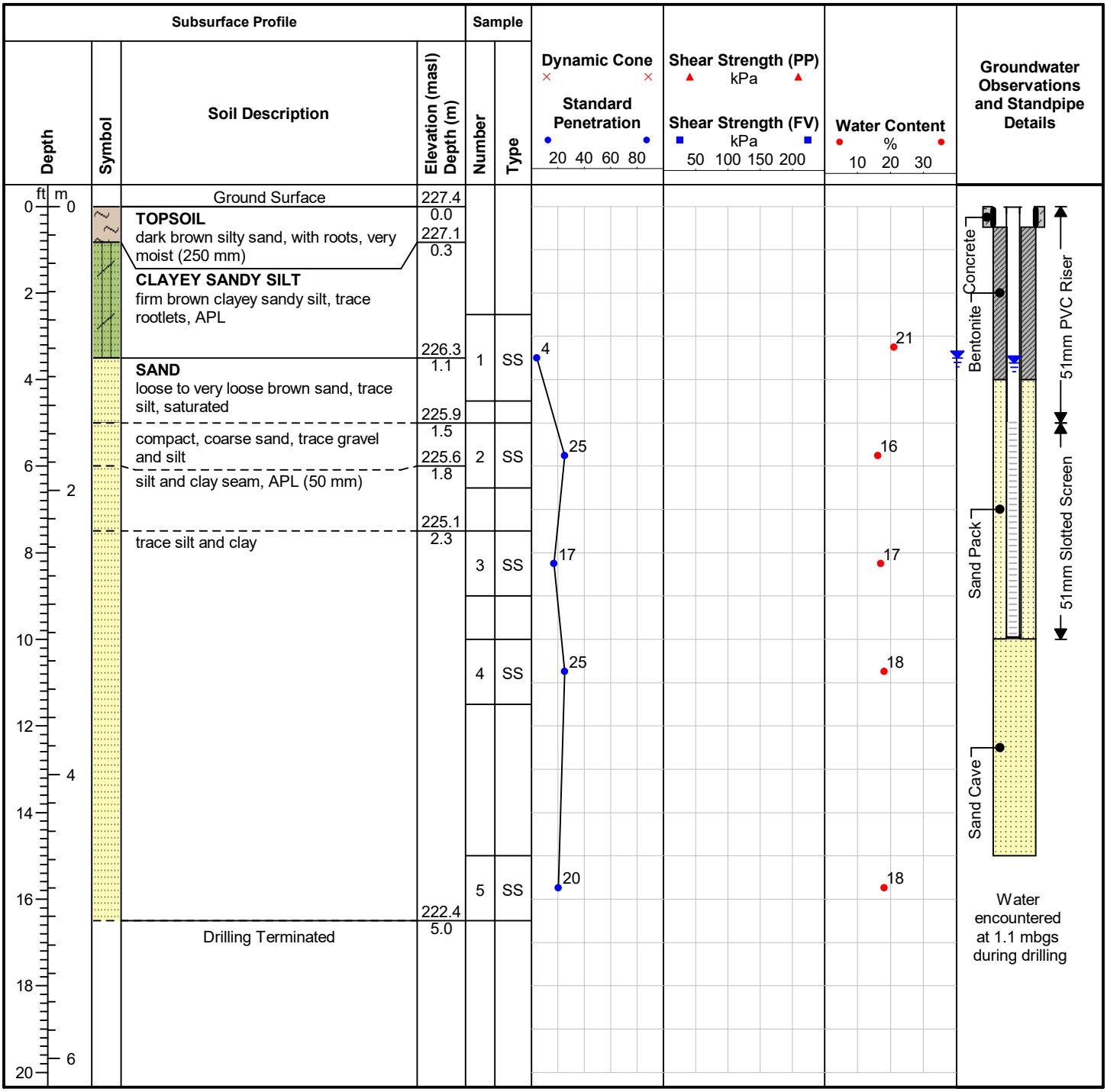
Date Completed: 4/11/2023

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover: Monument



Field Technician: B. Ehgoetz

Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

Sheet: 1 of 1

Water level measured at 0.9 m bgs (Elevation: 226.5 m) on May 1, 2023 and at 1.1 m bgs (Elevation: 226.3 m) on May 17, 2023

ID No.: BH102-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

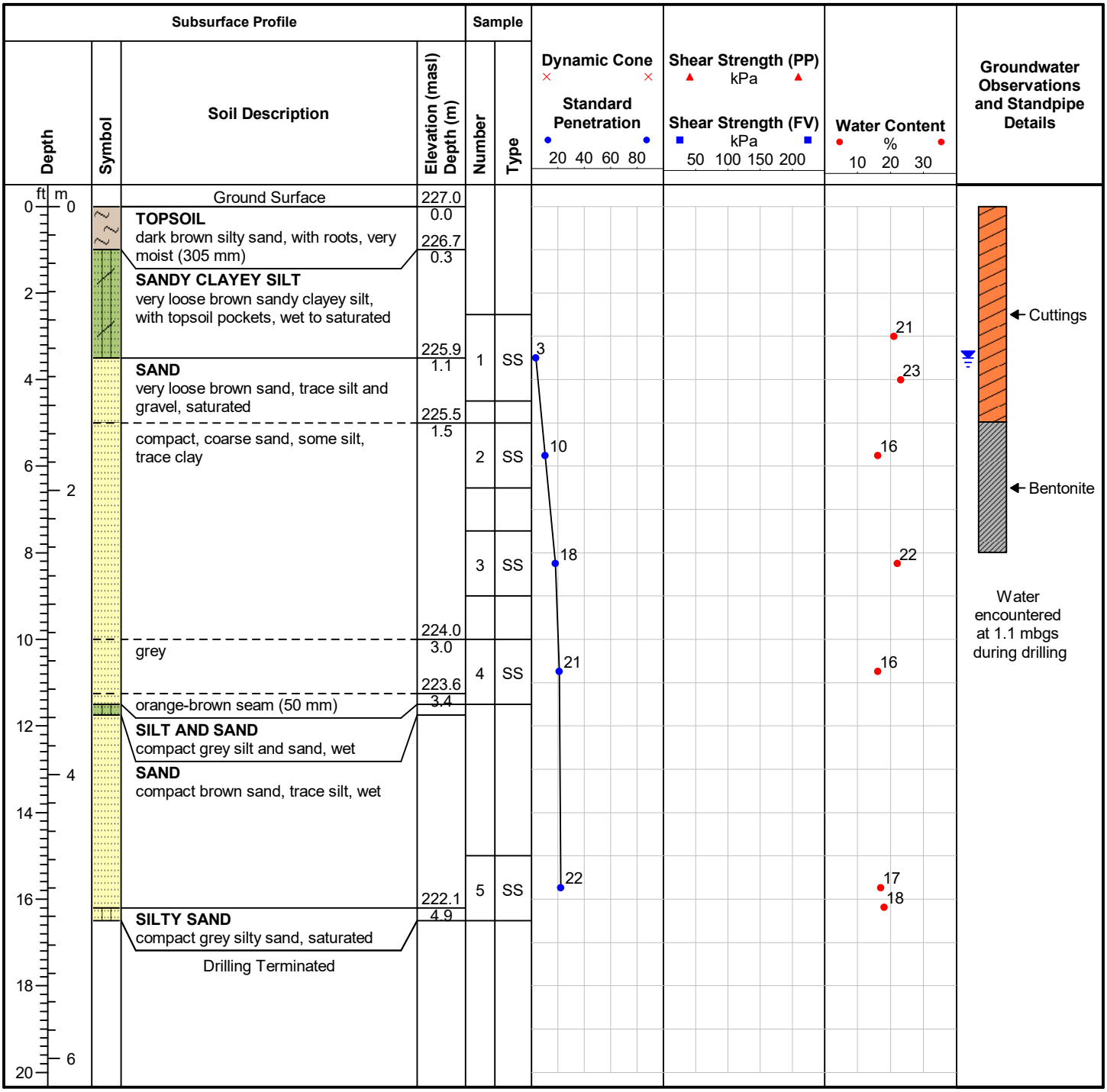
Date Completed: 4/11/2023

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover:



Field Technician: B. Ehgoetz

Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

Sheet: 1 of 1

ID No.: BH103-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

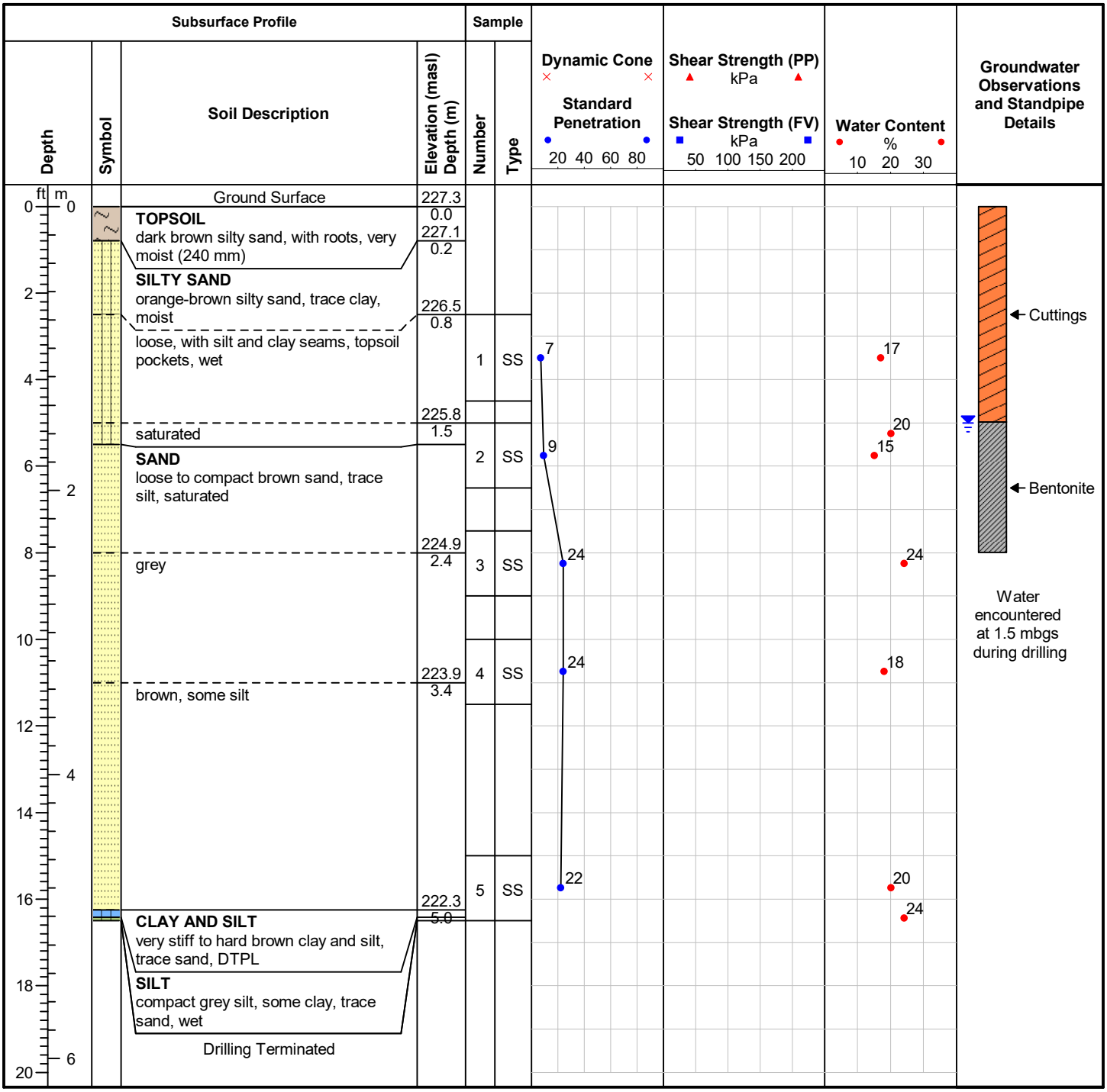
Date Completed: 4/11/2023

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover:



Field Technician: B. Ehgoetz

Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

MTE

Sheet: 1 of 1

ID No.: MW104-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

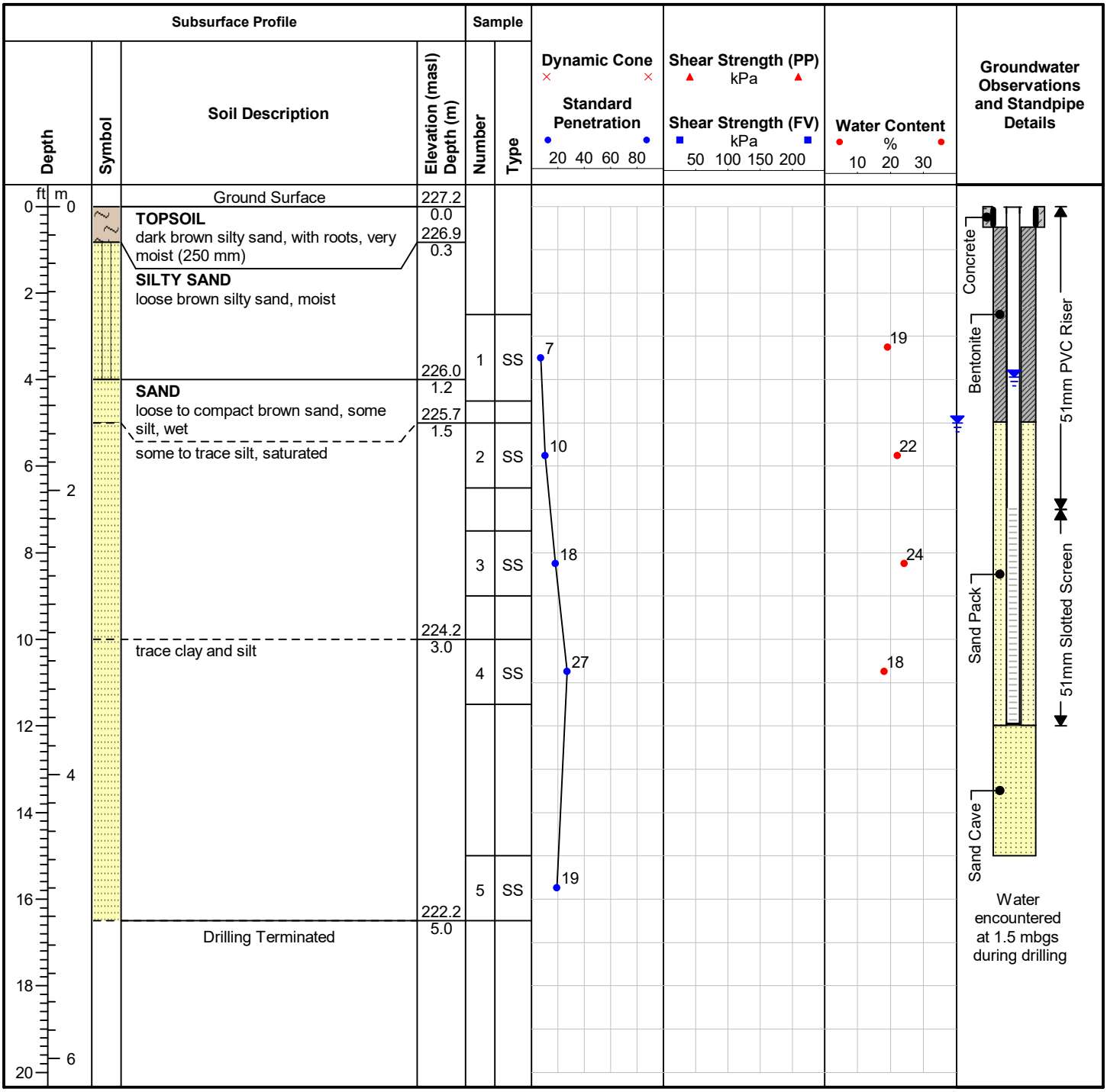
Date Completed: 4/11/2023

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover: Monument



Field Technician: B. Ehgoetz

Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

Sheet: 1 of 1

Water level measured at 1.1 m bgs (Elevation: 226.1 m) on May 1, 2023 and at 1.2 m bgs (Elevation: 226.0 m) on May 17, 2023

ID No.: BH105-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

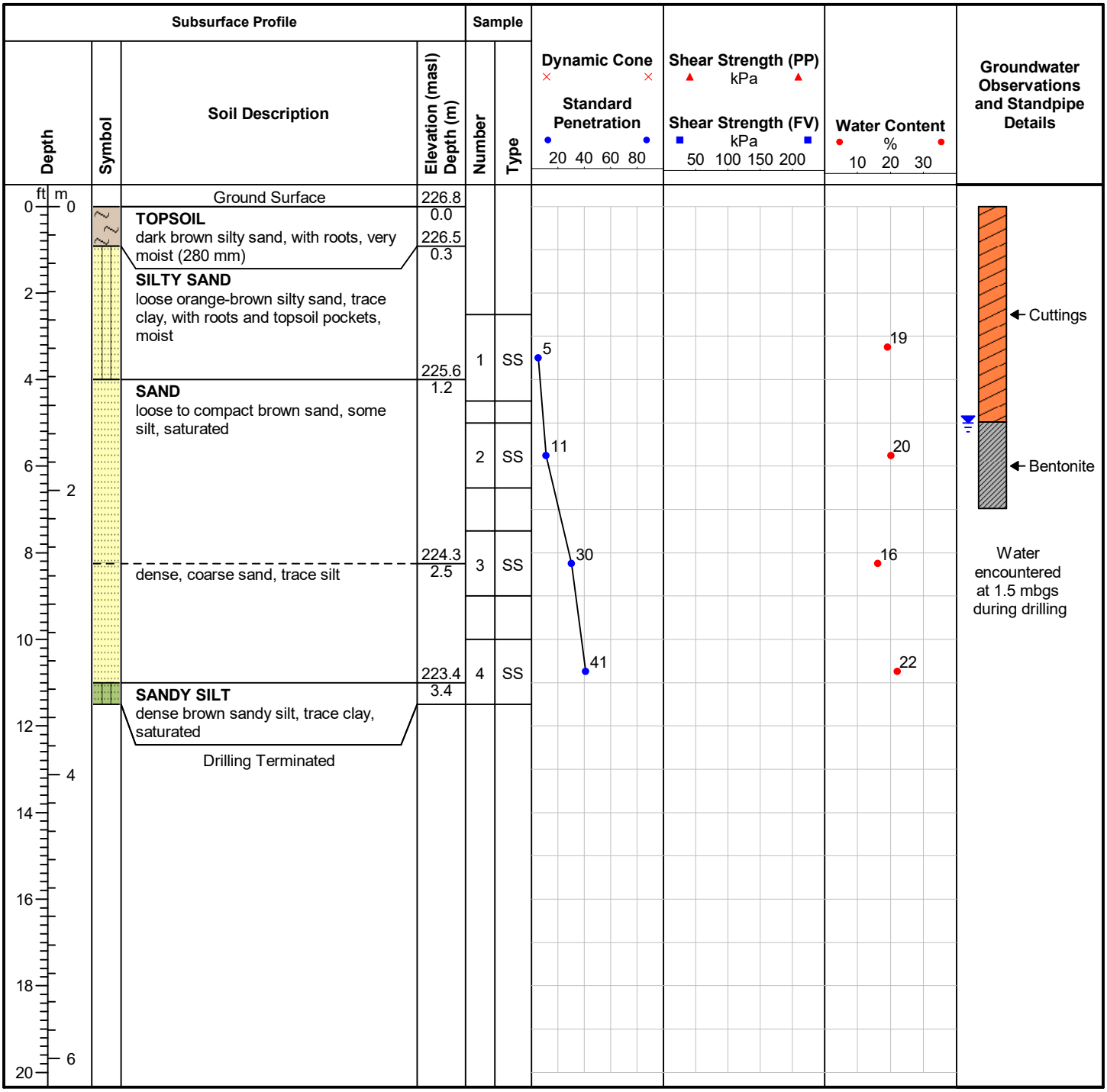
Date Completed: 4/11/2023

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover:



Field Technician: B. Ehgoetz

Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

Sheet: 1 of 1

Appendix C

Laboratory Test Result

Table 101

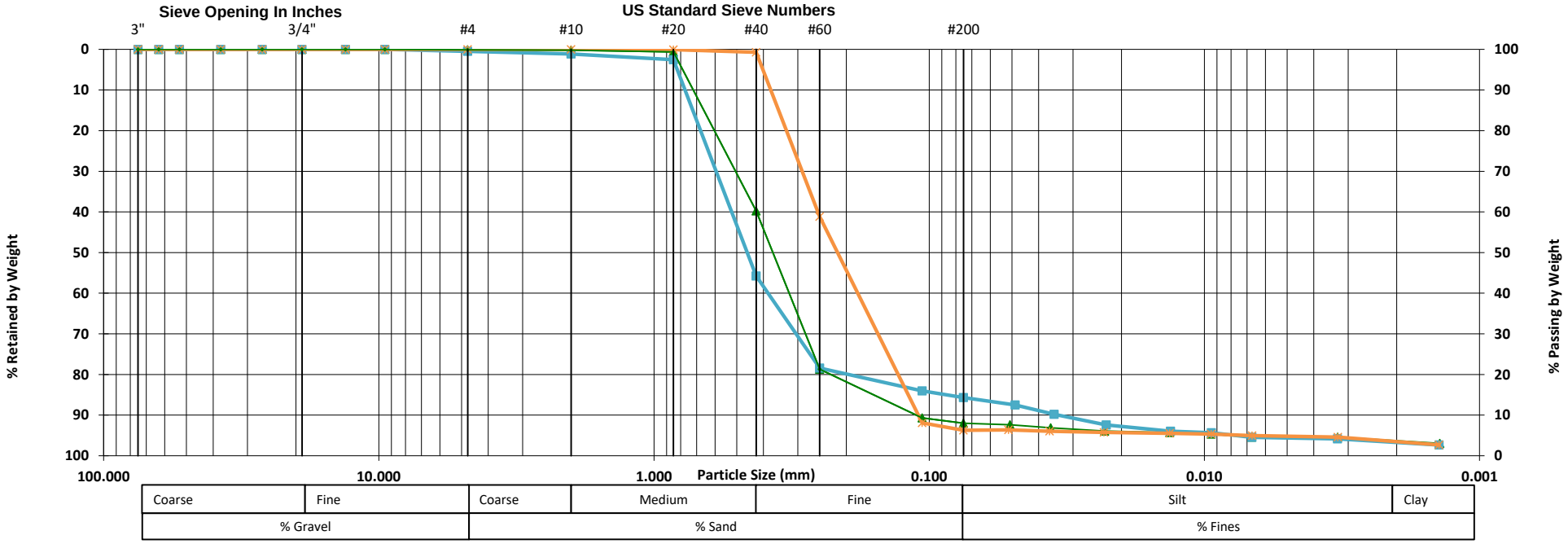
Particle Size Distribution Analysis Test Results

Project Name: Langton Development
Client: Cyril J. Demeyere Limited
Project Location: 1000 12th Concession Road, Langton, ON

Date Sampled: April 11, 2023
Date Tested: April 28, 2023

MTE File No.: 53216-100
Table No: 101

Unified Soil Classification



Symbol	Borehole ID	Sample #	Sample Depth	Description
▲	MW101-23	SS-3	2.3-2.7 mbgs	SAND, trace Silt and Clay
■	BH102-23	SS-2	1.5-2.0 mbgs	SAND, some Silt, trace Clay
✳	MW104-23	SS-4	3.0-3.5 mbgs	SAND, trace Clay and Silt

CERTIFIED BY CCIL
Canadian Council of Independent Laboratories
For specific tests as listed on www.ccil.com

NOTES:

Ian D. Wilson Associates Ltd.
since 1974

Tel: 519.233.3500
Fax: 519.233.3501

P. O. Box 299
Clinton, Ontario
N0M 1L0

Wilson Associates

Consulting Hydrogeologists

October 15, 2021
Revised June 16, 2023

Mr. Cameron Cluett, P.Eng.
Cyril J. Demeyere Limited
Consulting Engineers
261 Broadway
P.O. Box 460
Tillsonburg, ON
N4G 4H8

Dear Mr. Cluett:

Re: Hydrogeological Assessment
Proposed Matt Devos Residential Lots and Subdivision
Community of Langton, County of Norfolk

It is proposed to develop a 24-lot subdivision on the ±6.6ha northwesterly portion of a 38.17ha parcel at the southeastern periphery of Langton. An additional 9 lots (for a total of 33 lots) may be proposed within a larger ±9.1ha development area, subject to future community boundary adjustments. This report addresses the potential 33 lot/±9.1ha proposal. The attached sketch shows the layout of the site.

It is proposed to service the subdivision with individual drilled water wells and individual subsurface sewage disposal systems.

To support the development proposal, a hydrogeological study was conducted involving the following:

- Exploratory test pits were completed throughout the full development area to collect representative soil samples for percolation rate analyses and to identify shallow groundwater conditions.
- Sewage system development density assessment under current Ministry of the Environment, Conservation and Parks (MECP) Procedure D-5-4 "Technical Guideline For Individual On-Site Sewage Systems : Water Quality Impact Risk Assessment", commonly known as the "nitrate guideline".
- Collection of a sample of potable water from a nearby existing water source to confirm probable drinking water quality.

The June 15, 2021 functional servicing report prepared by Cyril J. Demeyere Limited provides an assessment of water well yield potential.

As directed August 19, 2021, the above hydrogeologic investigative requirements were addressed through a test pit and groundwater sampling program conducted September 9, 2021 and a subsequent background hydrogeologic analysis. This report provides a summary of

background hydrogeologic information, upper aquifer water quality, the results of the soils suitability study and comment regarding sewage impact potential.

This report revision incorporates peak seasonal watertable information from the May 29, 2023 MTE Consultants Inc. (MTE) Geotechnical Investigation report.

SITE SETTING, GEOLOGY AND HYDROGEOLOGY

The proposed development is located within the southeastern periphery of the Community of Langton, south of Concession Road 12, east of Jenney Lane and Queen Street (County Road 59) (see attached sketch). The subject lands are in active agricultural use. The site exhibits an overall flat relief, with a slight overall slope to the south and southwest. Lands to the west and north are generally in residential use. Lands to the south and east are in agricultural use.

No surface water bodies are located on or in the close vicinity of the site, the closest being the headwaters of Deer Creek and Horse Creek situated 500 to 600m to the southwest and southeast.

The site is located within the Norfolk Sand Plain physiographic region of southern Ontario. According to Ontario Geological Survey Map P.2624 "Quaternary Geology of the Port Burwell Area", the upper overburden in the vicinity of the site consists of glaciolacustrine shallow water deposits of sand. Local well records indicate that the upper sands are approximately 11m deep, although the majority of local wells are completed in these sands to a depth of less than about 8m. According to Ontario Geological Survey Map P.2583 "Bedrock Topography of the Port Burwell Area", the overburden is approximately 75m deep. Regionally the lower overburden typically consists of fine-grained deposits.

The bedrock beneath the site consists of limestone and dolostone of the Dundee Formation and the Detroit River Group.

The majority of local groundwater supplies are obtained from the granular deposits of the upper 6m to 11m of the overburden. The lower overburden typically provides little to no potential for groundwater supply due to its fine-grained character, and the bedrock is less often utilized due to the expense of deep drilling and the potential of obtaining aesthetically poor-quality water.

Shallow groundwater on the site will follow local drainage patterns, with a possibly very slight gradient to the south or southwest.

WELL POTENTIAL ANALYSIS

The June 15, 2021 functional servicing report prepared by Cyril J. Demeyere Limited provides an assessment of water well yield potential.

WATER QUALITY

To identify probable potable groundwater quality at the proposed development, a sample of untreated groundwater was collected from the water supply well at the existing adjacent property (980 Concession Road 12) on September 9, 2021, and submitted to Bureau Veritas Laboratories for bacteriological and general chemistry analysis. The well supplying the house at 980 Concession Road 12 is indicated to be a 12.2m deep drilled well (see attached Well Record No. A249212). The sample was collected in laboratory-supplied bottles, stored in an ice-packed cooler and submitted to the laboratory under chain of custody. The laboratory analytical report is attached.

The laboratory reported that the water from the adjacent well contained no detectable Total Coliform or E.Coli bacteria, and a low and acceptable level of background bacteria.

The water from the adjacent well is slightly alkaline, with a pH value of 7.99. The water from the well is moderately hard, with a hardness value of 320 mg/L as $CaCO_3$, which is typical of groundwater in the region.

All chemical parameters determined were at acceptable levels under the Ontario Drinking Water Quality Standards.

SOILS INVESTIGATION

Test Pits:

Seven exploratory test pits were excavated using a backhoe throughout the subject lands on September 9, 2021. The test pits were each completed to depths of 1.5m to 2.1m, the soil profile was logged in each pit and representative soil samples were collected from each identified soil horizon for subsequent classification, analysis and storage. The attached diagram shows the approximate test pit locations. The following table provides a summary of the analytical results for representative soil samples.

Table 1 : Summary of Soil Analytical Data

Test Pit/ Sample	Depth (m)	Grain-Size Distribution				"k" (cm/sec)	T-Time (min/cm)
		Clay %	Silt %	Sand %	Gravel %		
TP1 S1	0.5	10	31	58	1	$8x10^{-5}$	25
TP2 S2	1.0	18	65	17	0	$6x10^{-6}$	40
TP3 S3	0.5	0	10	90	0	$1x10^{-3}$	10
TP5 S4	0.5	0	29	69	2	$4x10^{-4}$	15
TP6 S5	0.5	10	12	76	2	$4x10^{-4}$	20

TP6 S6	1.2	17	24	59	0	$1x10^{-5}$	35

Note: The above coefficient of permeability ("k" values) and T-time (percolation rates) are estimates based on field observation, laboratory grain-size analysis, experience with similar soils and guidelines of the Ontario Building Code.

In summary, the soil profile at the test pits typically consisted of loose fine sand with some silt to silty fine sand, which exhibits a percolation rate in the range of 10 to 25 minutes/cm, overlying a silty sand to sandy silt till, which exhibits a percolation rate in the range of 35 to 40 minutes/cm. Some deeper sand lenses were encountered (at TP1, TP2, TP4, TP6).

The grain-size analysis curves are attached.

The following provides a summary of the test pit logs:

TEST PIT 1

Depth (m)	Material
0 - 0.2	dark brown sandy TOPSOIL
0.2 - 0.9	red-brown, loose, dry silty fine SAND with some clay and traces of gravel
0.9 - 1.1	grey-brown, compact, dry SILT with some sand and clay
1.1 - 2.1	brown, loose, dry SAND with traces of silt

TEST PIT 2

Depth (m)	Material
0 - 0.3	dark brown sandy TOPSOIL
0.3 - 0.8	red-brown, loose, dry silty fine SAND with some clay and traces of gravel
0.8 - 1.4	grey-brown, compact, dry SILT with some sand and clay
1.4 - 1.8	brown, loose, dry SAND with traces of silt

TEST PIT 3

Depth (m)	Material
0 - 0.3	dark brown sandy TOPSOIL
0.3 - 0.8	light brown, loose, dry fine SAND with some silt
0.8 - 1.8	light brown, compact, dry SILT with some sand and clay

TEST PIT 4

Depth (m)	Material
0 - 0.2	dark brown sandy TOPSOIL
0.2 - 0.7	red-brown, loose, dry silty fine SAND with some clay and traces of gravel
0.7 - 1.5	grey, compact, dry SILT with some sand and clay
1.5 - 1.7	brown, loose, dry SAND with traces of silt

TEST PIT 5

Depth (m)	Material
0 - 0.3	dark brown sandy TOPSOIL
0.3 - 0.9	red-brown, loose, dry silty fine SAND with traces of gravel

0.9 - 1.5	grey-brown, compact, dry silty SAND with some clay

TEST PIT 6

Depth (m)	Material
0 - 0.3	dark brown sandy TOPSOIL
0.3 - 0.7	red-brown, loose, dry silty fine SAND with traces of gravel
0.7 - 1.0	grey-brown, compact, dry silty SAND with some clay
1.0 - 1.2	brown, loose, dry SAND with traces of silt
1.0 - 1.5	grey-brown, compact, dry silty SAND with some clay

TEST PIT 7

Depth (m)	Material
0 - 0.3	dark brown sandy TOPSOIL
0.3 - 0.8	red-brown, loose, dry silty fine SAND with traces of gravel
0.8 - 1.7	grey-brown, compact, dry silty SAND with some clay

Shallow Groundwater Conditions:

No emergent groundwater or evidence of seasonally elevated watertable conditions (i.e. soil discolouration and/or mottling) was observed in the seven test pits on September 9, 2021.

According to spring season (May 1, 2023) water level observations in two on-site geotechnical monitoring wells installed by MTE on April 11, 2023, seasonal peak watertable levels may approach 0.9m to 1.1m below grade. Excerpts from the May 29, 2023 MTE report are attached for reference.

Septic System Design:

Under the Ontario Building Code, for a Class 4 sewage disposal system to operate effectively, the leaching bed must be located in soil with a percolation rate (T-time) of between 1 and 50 minutes per centimetre and the base of the absorption trenches must be situated at least 0.9m above the high ground water table, bedrock or a soil with a permeability of greater than 50 minutes per centimetre. To achieve a normal, in-ground installation, the high groundwater table, rock or soil with a permeability of greater than 50 min/cm must be situated at least 1.5 to 1.8 metres below grade.

Due to peak seasonal watertable levels observed by MTE during May 2023, the bases of tile trenches should be anticipated to be set approximately at current grade. Based on the identified upper soil conditions, a native soil design percolation rate of 25min/cm is recommended for preliminary design purposes at all lots. Site-specific test pits are recommended at actual sewage system approval stage.

Due to peak seasonal watertable levels observed by MTE, partially raised, fill-based sewage systems will be required. Assuming a native soil design percolation rate of 25min/cm, a contact area loading rate of 8L/m^2/day is recommended. A fill based sewage disposal system will require a contact area of about 200m^2 for a standard 3-bedroom home (with a design sewage flow of 1,600L/day), or about 250m^2 for a standard 4-bedroom home (with a design sewage

flow of 2,000L/day).

It is understood that the County typically requires that a full sewage system reserve area be utilized in lot design. As the lots will each be approximately 2,000m^2 in area, sufficient area is available for a 250m^2 primary sewage disposal contact area and 250m^2 reserve sewage disposal contact area. Lot/subdivision design will need to address setbacks to house envelopes and any on-site and nearby drilled wells (15m) or bored/sandpoint wells (30m).

SEWAGE SYSTEM IMPACT ASSESSMENT

Under the current MECP "Technical Guideline For Individual On-Site Sewage Systems : Water Quality Impact Risk Assessment" (Procedure D-5-4, also known as the "nitrate guideline"), each proposed development of five lots or greater utilizing individual on-site sewage systems requires an assessment of groundwater impact potential. The purpose of the assessment is to ensure that the discharge from the individual on-site sewage systems will have a minimal effect on groundwater and the present or potential use of adjacent properties. The assessment involves a three-step process, with the need to advance to the next step dependant on the requirements of the previous step. Where the background nitrate content of shallow groundwater exceeds 10 mg/L, additional development cannot normally be supported.

The water sample collected from the adjacent-site well had a nitrate content of 5.87mg/L. As the subject lands are proposed to be converted from agricultural use to residential, the nitrate content of shallow groundwater should decline due to the decrease of nutrient applications, a background nitrate content of 2.9mg/L (50% of 5.87mg/L) is assumed in the calculation below for the subject lands.

Under Step 1 of the guideline, for developments where the lot size for each private residence within the development is one hectare or larger (with no lots being less than 0.8ha in area), the risk that the limits imposed by the guideline may be exceeded is considered acceptable with no additional hydrogeologic assessment. Step 1 of the guideline is not applicable.

Step 2 of the guideline is applicable where groundwater resources can be confidently demonstrated to be hydraulically isolated from potential sewage pathways. As the primary water supply aquifer is the upper sands, groundwater resources are not hydraulically isolated from potential sewage pathways, and Step 2 of the guideline does not apply.

Under Step 3 of the guideline, a mass-balance calculation is used to determine the number of lots viable on the ±9.1ha development area. Under the current MECP guideline only infiltrating precipitation and the volume of water contained in the sewage may be considered as dilutants for the nitrate contained in septic effluent. To establish the infiltration rate, the percentage of the local water surplus which may infiltrate is calculated using the Rational Method approach. According to the soil evaluation, the soil profile consists of sand (infiltration factor 40%), the overall relief is flat (infiltration factor 30%) and the cover is cleared (infiltration factor 10%), all resulting in an infiltration factor of 80%. According to the 2009 Long Point Region, Kettle Creek and Catfish Creek Integrated Water Budget Final Report, the water surplus for the area is in the range of 430mm per year (Big Creek sub-watershed above Walsingham, precipitation 995mm/year, evapotranspiration 565mm/year). As such, the annual infiltration rate will be

344mm (80% of 460mm), representing 35% of average annual precipitation in the sub-watershed.

The following mass-balance formula is used to calculate the maximum density of the proposed development (total area of parcel = 9.1ha) under the MECP guideline:

$$Q_T C_T = Q_S C_S + Q_P C_P$$

Where:

Q_T = Sum of Q_S and Q_P
C_T = Nitrate concentration (10mg/L, maximum permitted under the guideline)
Q_S = Volume of sewage (1000 L/day/lot, per MECP guideline)
C_S = Nitrate content of sewage (40 mg/L)
Q_P = Infiltration (344mm/year x 9.1ha x 10,000L/mm/ha = 3.13×10^7L/yr)
C_P = Nitrate content of shallow groundwater (2.9mg/L assumed, see above)

Therefore:

$(Q_S + 3.13 \times 10^7 \text{L/yr}) \times 10\text{mg/L} = (Q_S \times 40\text{mg/L}) + (3.13 \times 10^7 \text{L/yr} \times 2.9\text{mg/L})$
$Q_S = 7.41 \times 10^6$L/year

Number of Lots = 7.41×10^6L/yr ÷ 1,000 L/day/lot ÷ 365 days/yr = 20.3 Lots

Based on the MECP-specified daily volume of sewage for the purposes of the Procedure D-5-4 assessment, and an infiltration rate of 344mm/year, the maximum number of lots on the 9.1ha parcel under the MECP guideline is 20 using conventional sewage disposal systems.

The above assessment approach, conducted in accordance with MECP guidelines, does not consider sewage dilution by groundwater flow-through nor does it consider denitrification processes in the subsurface. As such, the assessment will over-estimate the actual degree of groundwater impact of the proposed lots, this considered a safety factor.

For 33 lots to be viable on the ±9.1ha parcel under the guideline, a portion of the lots will be required to utilize an individual subsurface sewage disposal system equipped with tertiary treatment capable of nitrate reduction. The use of such systems is not contemplated for this purpose (or any other purpose) in the MECP guidelines due to the age of the guidelines (*ca.* 1996), however nitrate reducing treatment systems are now commonly used in the Province under CAN/BNQ 3680-600 Certified Treatment Technologies for total nitrogen reduction. The systems are commonly capable of a nitrate reduction in the order of 50%, or 20mg/L. The above mass-balance formula is revised to determine the nitrate-reduction technology required to achieve a nitrate impact of 10mg/L.

$$Q_T C_T = Q_S C_S + Q_P C_P$$

Where:

Q_T = Sum of Q_S and Q_P
C_T = Nitrate impact
Q_S = Volume of sewage (1,000 L/day/lot x 33 lots x 365 days = 1.21×10^7L/yr)

C_S = Nitrate content of sewage (40mg/L for 14 lots and 20mg/L for 19 lots, or 28.5mg/L average)
Q_P = Infiltration ($3.13x10^7$L/yr)
C_P = Nitrate content of groundwater (2.9mg/L assumed, see above)

Therefore:

$(1.21x10^7L/yr + 3.13x10^7L/yr) \times C_T = (1.21x10^7L/yr \times 28.5mg/L) + (3.13x10^7L/yr \times 2.9mg/L)$

C_T = 10.0mg/L (maximum acceptable)

Based on the above, the sewage systems on 19 of the 33 lots will be required to utilize nitrate reduction technology capable of an average nitrate reduction of at least 50% (i.e. 20mg/L nitrate). Commercially-available sewage treatment systems (meeting CAN/BNQ 3680-600 Certified Treatment Technologies for total nitrogen reduction) are typically demonstrated to be capable of a nitrate reduction of 50% (or 20mg/L nitrate), and are capable of higher rates of reduction with additional treatment measures. Municipal support and long-term maintenance agreements for individual sewage treatment units are required.

CONCLUSIONS AND RECOMMENDATIONS

1. The quality of water from the representative adjacent property well was acceptable. Similar water quality should be anticipated from properly-constructed wells completed on the proposed lots. The June 15, 2021 functional servicing report prepared by Cyril J. Demeyere Limited provides an assessment of water well yield potential.

2. Due to peak seasonal watertable levels observed by MTE during May 2023, the bases of tile trenches should be anticipated to be set approximately at current grade. Based on the identified upper soil conditions, a native soil design percolation rate of 25min/cm is recommended for preliminary design purposes at all lots. Site-specific test pits are recommended at actual sewage system approval stage.

3. Assuming a native soil design percolation rate of 25min/cm, a contact area loading rate of $8L/m^2$/day is recommended. A fill based sewage disposal system will require a contact area of about $200m^2$ for a standard 3-bedroom home (with a design sewage flow of 1,600L/day), or about $250m^2$ for a standard 4-bedroom home (with a design sewage flow of 2,000L/day).

4. Sufficient area is available for a $250m^2$ primary sewage disposal contact area and $250m^2$ reserve sewage disposal contact area.

5. Under MECP Procedure D-5-4 the maximum number of lots on the ±9.1ha parcel under is 20 using conventional sewage disposal systems.

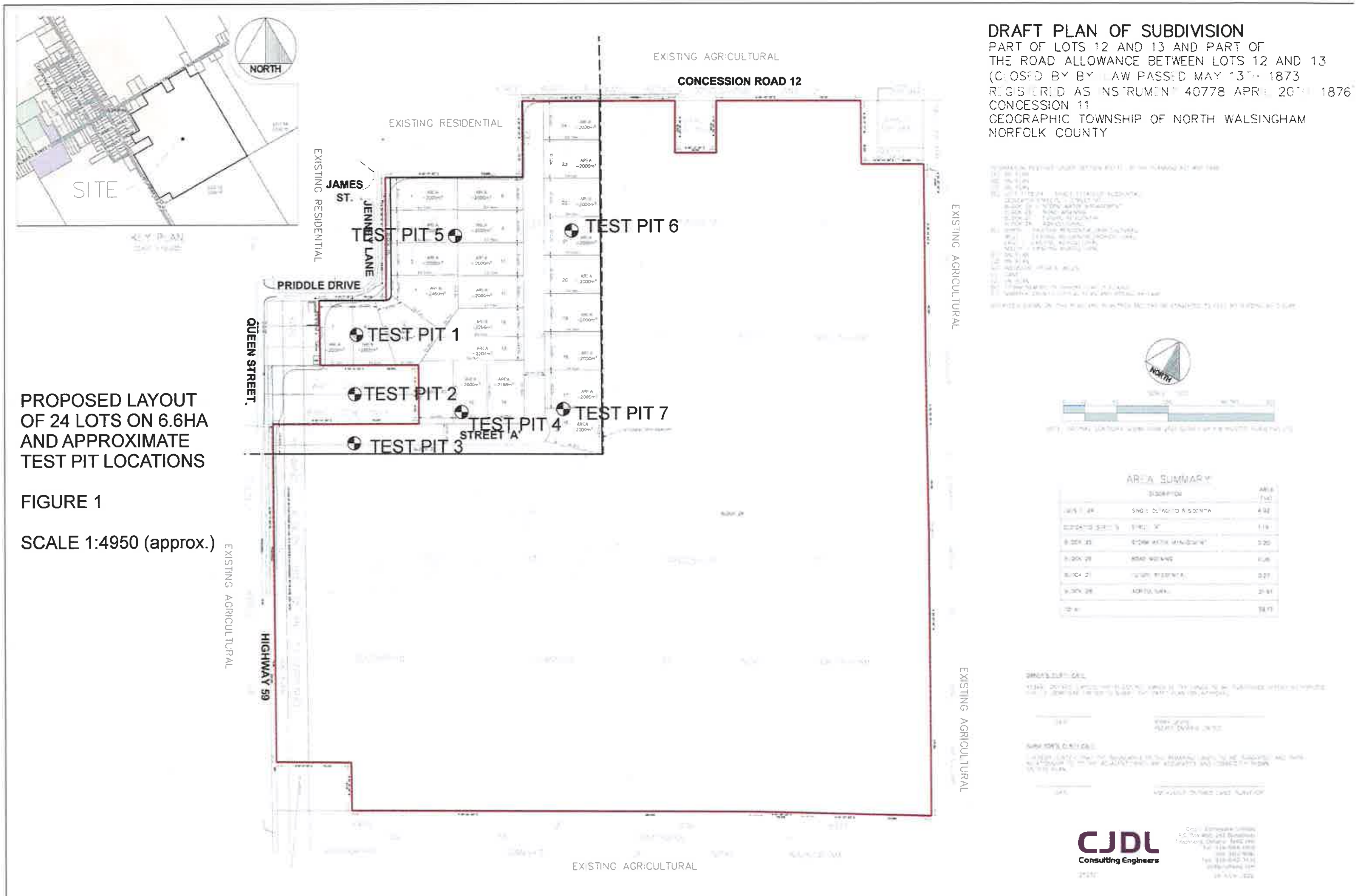
6. For the proposed 33 lots to be viable on ±9.1ha, 19 of the 33 lots will be required to utilize an individual subsurface sewage disposal system equipped with tertiary treatment capable of nitrate reduction.

7. Based on the findings of the preceding analysis, development of the subject lands as residential lots serviced by private sewage disposal systems is considered viable, subject to the conclusions, limitations and recommendations outlined in this report.

Should there be any questions regarding the above information and discussion, please do not hesitate to contact this office.

IAN D. WILSON ASSOCIATES LIMITED

Geoffrey Rether, B.Sc., P.Geo.


DRAFT PLAN OF SUBDIVISION
PART OF LOTS 12 AND 13 AND PART OF
THE ROAD ALLOWANCE BETWEEN LOTS 12 AND 13
CONCESSION 11
GEOGRAPHIC TOWNSHIP OF NORTH WALSINGHAM
NORFOLK COUNTY
NORTH
SITE
CONCESSION ROAD 12
EXISTING AGRICULTURAL
EXISTING RESIDENTIAL
JAMES ST.
JENNEY LANE
PRIDDLE DRIVE
QUEEN STREET
HIGHWAY 59
STREET 'A'
TEST PIT 1
TEST PIT 2
TEST PIT 3
TEST PIT 4
TEST PIT 5
TEST PIT 6
TEST PIT 7
AREA SUMMARY
CJDL
Consulting Engineers

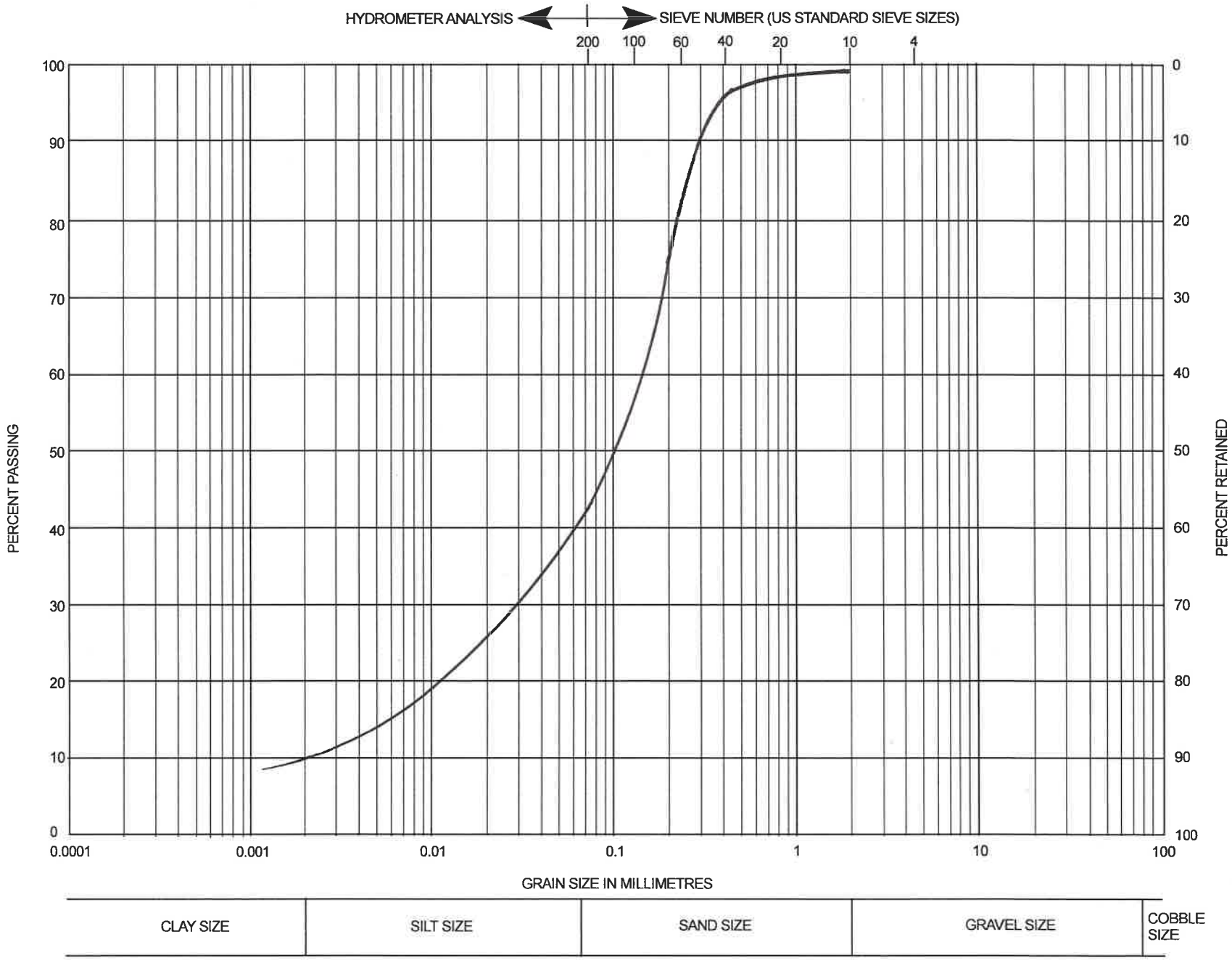
PROPOSED LAYOUT OF 24 LOTS ON 6.6HA AND APPROXIMATE TEST PIT LOCATIONS

FIGURE 1

SCALE 1:4950 (approx.)

GRAIN SIZE DISTRIBUTION CHART

PROJECT / SAMPLE: Matt Devos Residential Lots and Subdivision - Test Pit 1, Sample 1



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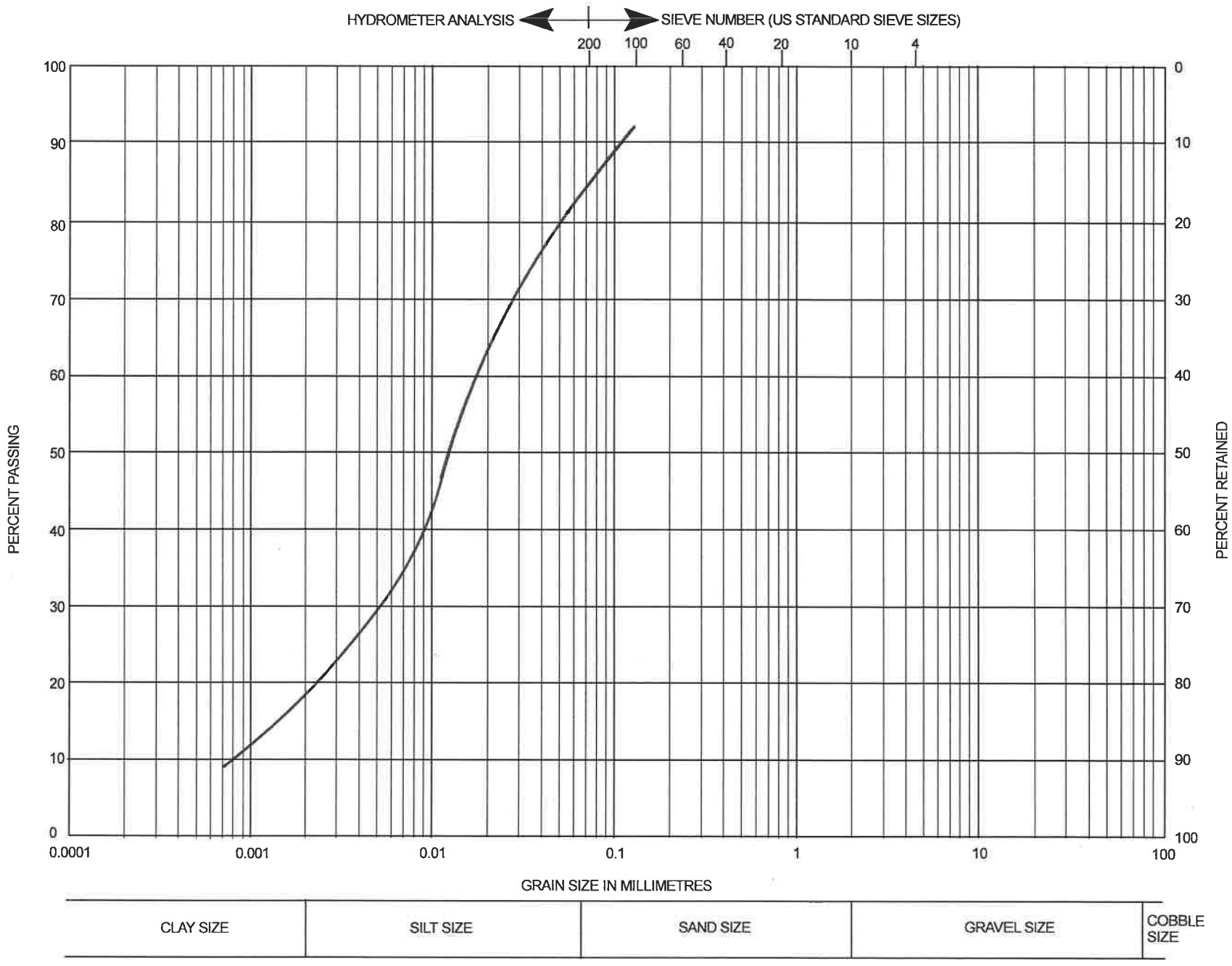
GRAIN SIZE DISTRIBUTION CHART

PROJECT / SAMPLE: Matt Devos Residential Lots and Subdivision - Test Pit 2, Sample 2



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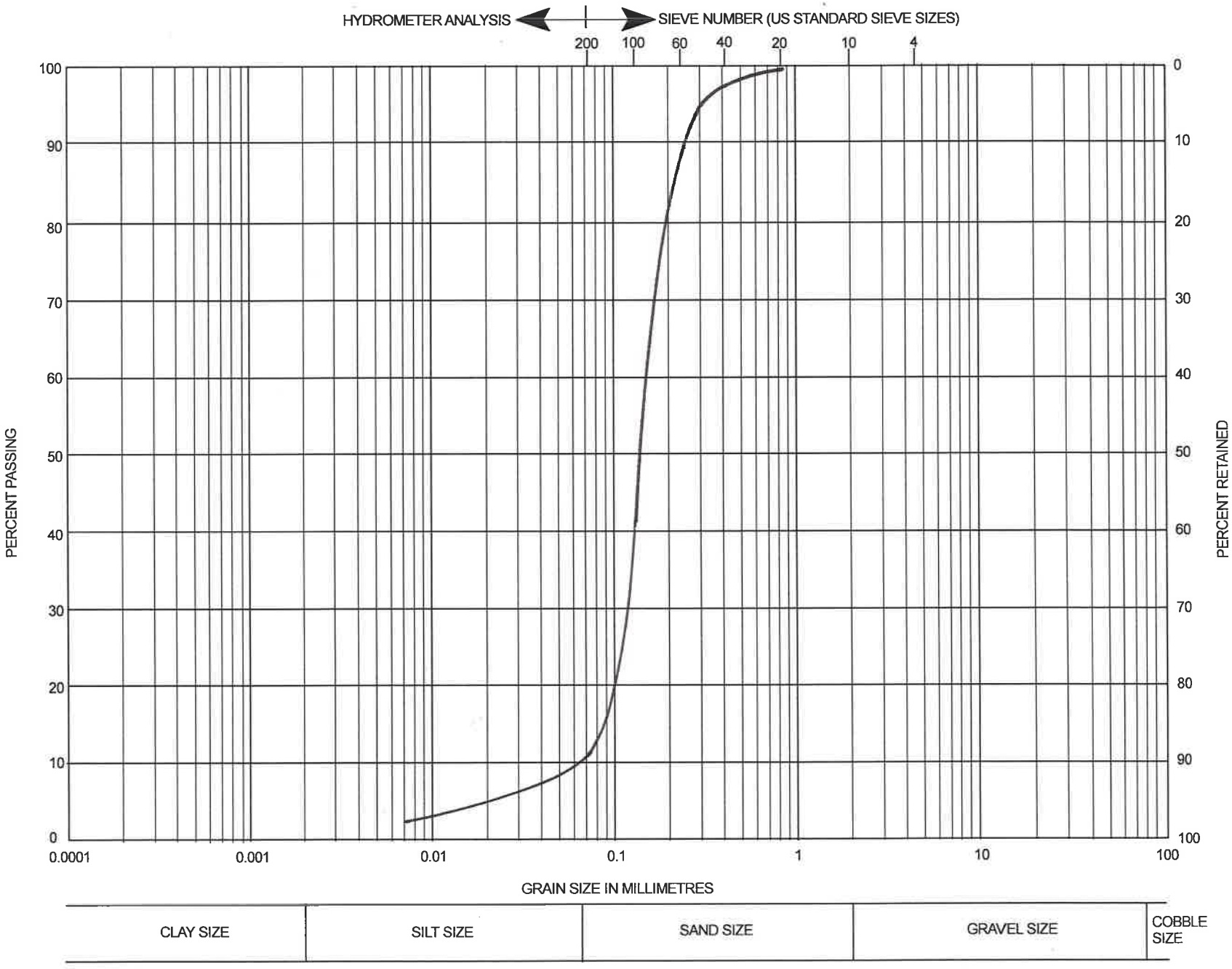
GRAIN SIZE DISTRIBUTION CHART

PROJECT / SAMPLE: Matt Devos Residential Lots and Subdivision - Test Pit 3, Sample 3



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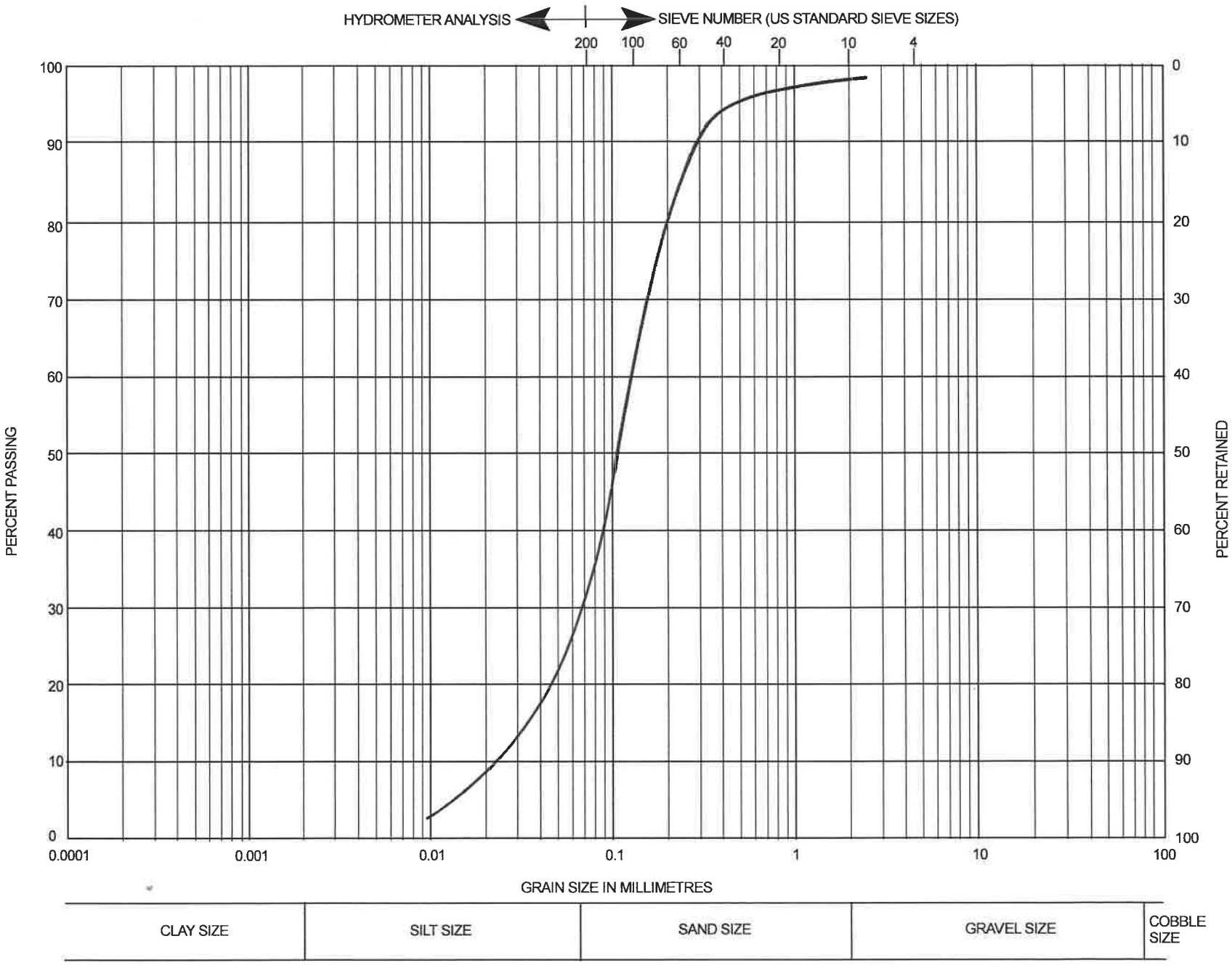
GRAIN SIZE DISTRIBUTION CHART

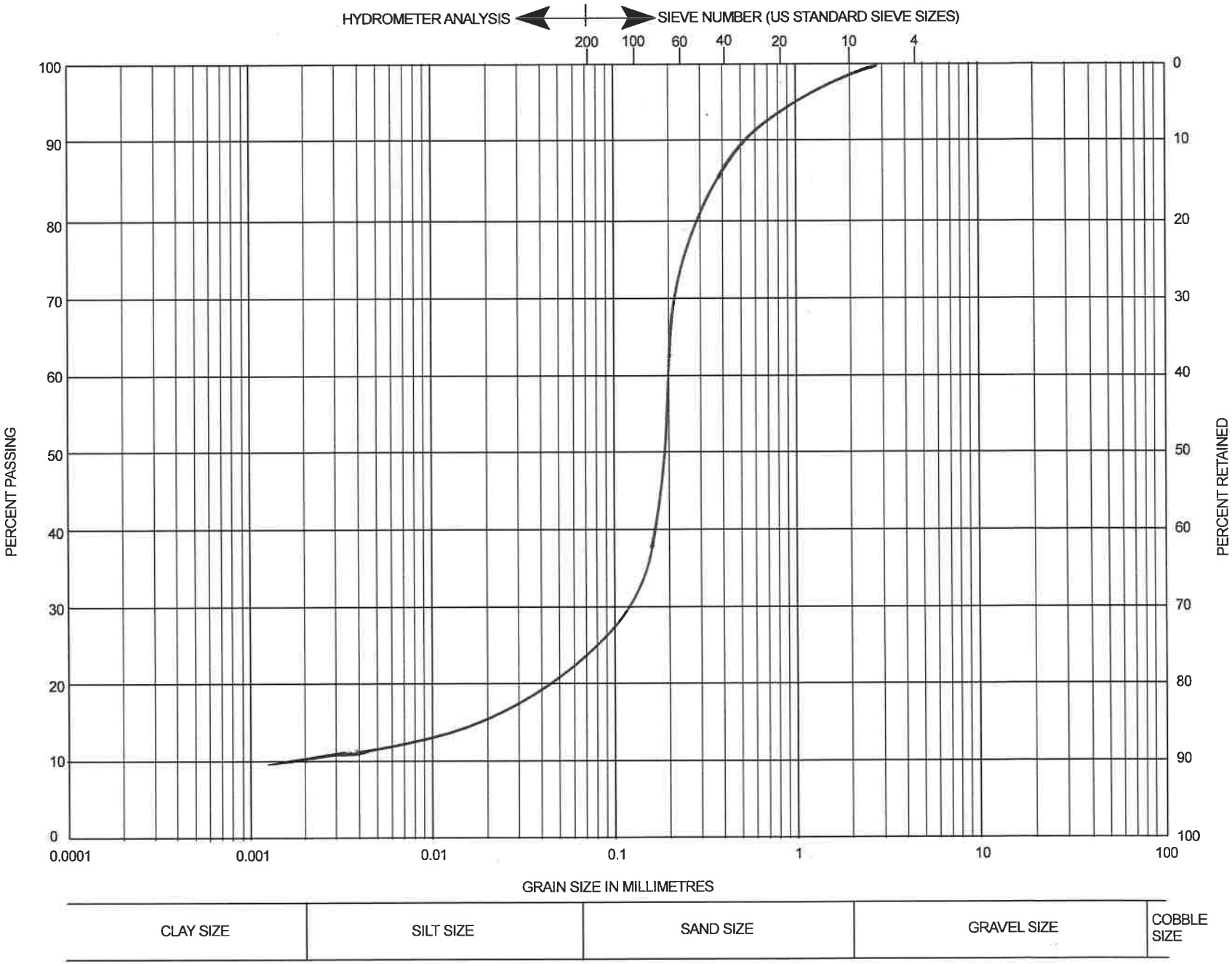
PROJECT / SAMPLE: Matt Devos Residential Lots and Subdivision - Test Pit 5, Sample 4



IAN D. WILSON ASSOCIATES LIMITED

GRAIN SIZE DISTRIBUTION CHART

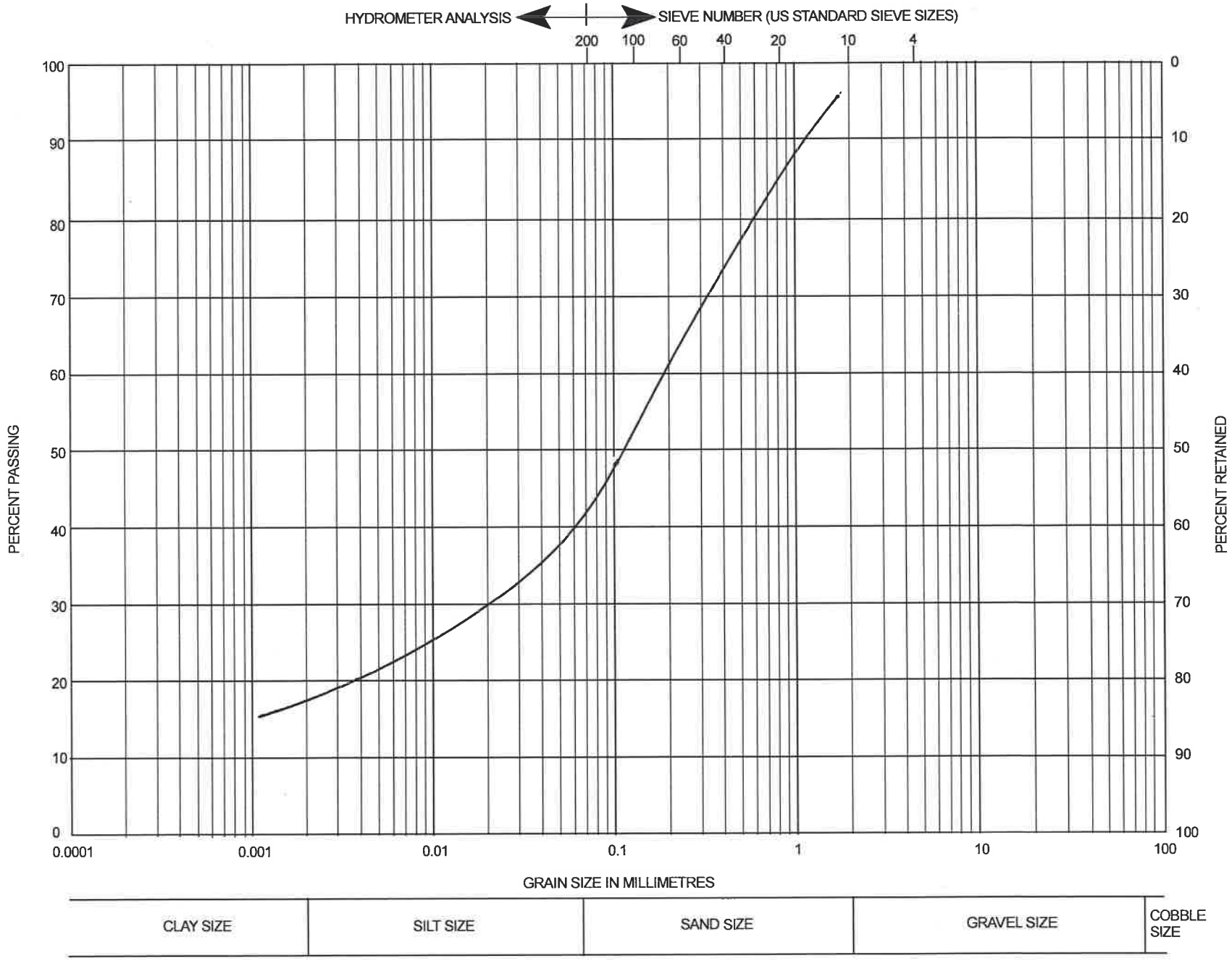
PROJECT / SAMPLE: Matt Devos Residential Lots and Subdivision - Test Pit 6, Sample 5



IAN D. WILSON ASSOCIATES LIMITED

GRAIN SIZE DISTRIBUTION CHART

PROJECT / SAMPLE: Matt Devos Residential Lots and Subdivision - Test Pit 6, Sample 6



IAN D. WILSON ASSOCIATES LIMITED

Your Project #: LANGTON
Your C.O.C. #: n/a

Attention: Geoff Rether

Ian D Wilson Associates Ltd
PO Box 299
76722 Airport Rd
Clinton, ON
CANADA N0M 1L0

Report Date: 2021/09/16
Report #: R6813662
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1P9180
Received: 2021/09/09, 11:46

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	1	N/A	2021/09/13	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	1	N/A	2021/09/14	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A	2021/09/13	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	1	N/A	2021/09/13	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2021/09/13	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	1	N/A	2021/09/13	CAM SOP 00102/00408/00447	SM 2340 B
Metals Analysis by ICPMS (as received) (2)	1	N/A	2021/09/13	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	1	N/A	2021/09/14		
Anion and Cation Sum	1	N/A	2021/09/14		
Total Coliforms/ E. coli, CFU/100mL	1	N/A	2021/09/09	CAM SOP-00551	MOE E3407
Total Ammonia-N	1	N/A	2021/09/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	1	N/A	2021/09/12	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	1	2021/09/10	2021/09/13	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	1	N/A	2021/09/13	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	1	N/A	2021/09/14		Auto Calc
Sat. pH and Langelier Index (@ 4C)	1	N/A	2021/09/14		Auto Calc
Sulphate by Automated Colourimetry	1	N/A	2021/09/13	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	1	N/A	2021/09/14		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or

Your Project #: LANGTON
Your C.O.C. #: n/a

Attention: Geoff Rether

Ian D Wilson Associates Ltd
PO Box 299
76722 Airport Rd
Clinton, ON
CANADA N0M 1L0

Report Date: 2021/09/16
Report #: R6813662
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1P9180
Received: 2021/09/09, 11:46

implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Metals analysis was performed on the sample 'as received'.
(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Encryption Key

Bureau Veritas
16 Sep 2021 16:04:14

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Zunaira Allem, Project Manager Assistant
Email: Zunaira.Allem@bureauveritas.com
Phone# (905) 817-5700

==========

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RCAP - COMPREHENSIVE (DRINKING WATER)

BV Labs ID		QPK728		
Sampling Date		2021/09/09 09:15		
COC Number		n/a		
	UNITS	980	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	6.29	N/A	7566934
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	220	1.0	7566926
Calculated TDS	mg/L	350	1.0	7566916
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.1	1.0	7566926
Cation Sum	me/L	6.50	N/A	7566934
Hardness (CaCO3)	mg/L	320	1.0	7566927
Ion Balance (% Difference)	%	1.60	N/A	7566933
Langelier Index (@ 20C)	N/A	0.906		7566914
Langelier Index (@ 4C)	N/A	0.657		7566915
Saturation pH (@ 20C)	N/A	7.08		7566914
Saturation pH (@ 4C)	N/A	7.33		7566915
Inorganics				
Total Ammonia-N	mg/L	ND	0.050	7576526
Conductivity	umho/cm	580	1.0	7570854
Dissolved Organic Carbon	mg/L	0.51	0.40	7572482
Orthophosphate (P)	mg/L	ND	0.010	7571154
pH	pH	7.99		7570857
Dissolved Sulphate (SO4)	mg/L	41	1.0	7571150
Alkalinity (Total as CaCO3)	mg/L	230	1.0	7570839
Dissolved Chloride (Cl-)	mg/L	18	1.0	7571146
Nitrite (N)	mg/L	ND	0.010	7571123
Nitrate (N)	mg/L	5.87	0.10	7571123
Metals				
Aluminum (Al)	ug/L	ND	4.9	7571156
Antimony (Sb)	ug/L	ND	0.50	7571156
Arsenic (As)	ug/L	ND	1.0	7571156
Barium (Ba)	ug/L	22	2.0	7571156
Beryllium (Be)	ug/L	ND	0.40	7571156
Boron (B)	ug/L	10	10	7571156
Cadmium (Cd)	ug/L	ND	0.090	7571156
Calcium (Ca)	ug/L	99000	200	7571156
Chromium (Cr)	ug/L	ND	5.0	7571156
Cobalt (Co)	ug/L	ND	0.50	7571156
Copper (Cu)	ug/L	4.9	0.90	7571156

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
ND = Not detected

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RCAP - COMPREHENSIVE (DRINKING WATER)

BV Labs ID		QPK728		
Sampling Date		2021/09/09 09:15		
COC Number		n/a		
	UNITS	980	RDL	QC Batch
Iron (Fe)	ug/L	120	100	7571156
Lead (Pb)	ug/L	ND	0.50	7571156
Magnesium (Mg)	ug/L	18000	50	7571156
Manganese (Mn)	ug/L	17	2.0	7571156
Molybdenum (Mo)	ug/L	ND	0.50	7571156
Nickel (Ni)	ug/L	ND	1.0	7571156
Phosphorus (P)	ug/L	ND	100	7571156
Potassium (K)	ug/L	550	200	7571156
Selenium (Se)	ug/L	ND	2.0	7571156
Silicon (Si)	ug/L	5300	50	7571156
Silver (Ag)	ug/L	ND	0.090	7571156
Sodium (Na)	ug/L	2400	100	7571156
Strontium (Sr)	ug/L	140	1.0	7571156
Thallium (Tl)	ug/L	ND	0.050	7571156
Titanium (Ti)	ug/L	ND	5.0	7571156
Uranium (U)	ug/L	0.37	0.10	7571156
Vanadium (V)	ug/L	ND	0.50	7571156
Zinc (Zn)	ug/L	18	5.0	7571156

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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MICROBIOLOGY (WATER)

BV Labs ID		QPK728	
Sampling Date		2021/09/09 09:15	
COC Number		n/a	
	UNITS	**980**	**QC Batch**
Microbiological			
Background	CFU/100mL	51	7568985
Total Coliforms	CFU/100mL	0	7568985
Escherichia coli	CFU/100mL	0	7568985
QC Batch = Quality Control Batch			

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BV Labs Job #: C1P9180
Report Date: 2021/09/16

Ian D Wilson Associates Ltd
Client Project #: LANGTON

TEST SUMMARY

BV Labs ID: QPK728
Sample ID: 980
Matrix: Water

Collected: 2021/09/09
Shipped:
Received: 2021/09/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	7570839	N/A	2021/09/13	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	7566926	N/A	2021/09/14	Automated Statchk
Chloride by Automated Colourimetry	KONE	7571146	N/A	2021/09/13	Alina Dobreanu
Conductivity	AT	7570854	N/A	2021/09/13	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	7572482	N/A	2021/09/13	Julianna Castiglione
Hardness (calculated as CaCO3)		7566927	N/A	2021/09/13	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	7571156	N/A	2021/09/13	Arefa Dabhad
Ion Balance (% Difference)	CALC	7566933	N/A	2021/09/14	Automated Statchk
Anion and Cation Sum	CALC	7566934	N/A	2021/09/14	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	7568985	N/A	2021/09/09	Soham Patel
Total Ammonia-N	LACH/NH4	7576526	N/A	2021/09/16	Viorica Rotaru
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	7571123	N/A	2021/09/12	Amanpreet Sappal
pH	AT	7570857	2021/09/10	2021/09/13	Surinder Rai
Orthophosphate	KONE	7571154	N/A	2021/09/13	Avneet Kour Sudan
Sat. pH and Langelier Index (@ 20C)	CALC	7566914	N/A	2021/09/14	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	7566915	N/A	2021/09/14	Automated Statchk
Sulphate by Automated Colourimetry	KONE	7571150	N/A	2021/09/13	Avneet Kour Sudan
Total Dissolved Solids (TDS calc)	CALC	7566916	N/A	2021/09/14	Automated Statchk

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7570839	SAU	Spiked Blank	Alkalinity (Total as CaCO3)	2021/09/13		97	%	85 - 115
7570839	SAU	Method Blank	Alkalinity (Total as CaCO3)	2021/09/13	ND, RDL=1.0		mg/L	
7570839	SAU	RPD	Alkalinity (Total as CaCO3)	2021/09/13	0.014		%	20
7570854	SAU	Spiked Blank	Conductivity	2021/09/13		101	%	85 - 115
7570854	SAU	Method Blank	Conductivity	2021/09/13	ND, RDL=1.0		umho/cm	
7570854	SAU	RPD	Conductivity	2021/09/13	0.33		%	25
7570857	SAU	Spiked Blank	pH	2021/09/13		101	%	98 - 103
7570857	SAU	RPD	pH	2021/09/13	0.95		%	N/A
7571123	ASP	Matrix Spike	Nitrite (N)	2021/09/12		101	%	80 - 120
			Nitrate (N)	2021/09/12		105	%	80 - 120
7571123	ASP	Spiked Blank	Nitrite (N)	2021/09/12		106	%	80 - 120
			Nitrate (N)	2021/09/12		112	%	80 - 120
7571123	ASP	Method Blank	Nitrite (N)	2021/09/12	ND, RDL=0.010		mg/L	
			Nitrate (N)	2021/09/12	ND, RDL=0.10		mg/L	
7571123	ASP	RPD	Nitrite (N)	2021/09/12	NC		%	20
			Nitrate (N)	2021/09/12	0.073		%	20
7571146	ADB	Matrix Spike	Dissolved Chloride (Cl-)	2021/09/13		NC	%	80 - 120
7571146	ADB	Spiked Blank	Dissolved Chloride (Cl-)	2021/09/13		105	%	80 - 120
7571146	ADB	Method Blank	Dissolved Chloride (Cl-)	2021/09/13	ND, RDL=1.0		mg/L	
7571146	ADB	RPD	Dissolved Chloride (Cl-)	2021/09/13	1.1		%	20
7571150	AKD	Matrix Spike	Dissolved Sulphate (SO4)	2021/09/13		NC	%	75 - 125
7571150	AKD	Spiked Blank	Dissolved Sulphate (SO4)	2021/09/13		104	%	80 - 120
7571150	AKD	Method Blank	Dissolved Sulphate (SO4)	2021/09/13	ND, RDL=1.0		mg/L	
7571150	AKD	RPD	Dissolved Sulphate (SO4)	2021/09/13	2.3		%	20
7571154	AKD	Matrix Spike	Orthophosphate (P)	2021/09/13		116	%	75 - 125
7571154	AKD	Spiked Blank	Orthophosphate (P)	2021/09/13		99	%	80 - 120
7571154	AKD	Method Blank	Orthophosphate (P)	2021/09/13	ND, RDL=0.010		mg/L	
7571154	AKD	RPD	Orthophosphate (P)	2021/09/13	NC		%	25
7571156	ADA	Matrix Spike	Aluminum (Al)	2021/09/13		103	%	80 - 120
			Antimony (Sb)	2021/09/13		106	%	80 - 120
			Arsenic (As)	2021/09/13		103	%	80 - 120
			Barium (Ba)	2021/09/13		99	%	80 - 120
			Beryllium (Be)	2021/09/13		97	%	80 - 120
			Boron (B)	2021/09/13		96	%	80 - 120
			Cadmium (Cd)	2021/09/13		102	%	80 - 120
			Calcium (Ca)	2021/09/13		NC	%	80 - 120
			Chromium (Cr)	2021/09/13		98	%	80 - 120
			Cobalt (Co)	2021/09/13		105	%	80 - 120
			Copper (Cu)	2021/09/13		102	%	80 - 120
			Iron (Fe)	2021/09/13		103	%	80 - 120
			Lead (Pb)	2021/09/13		100	%	80 - 120
			Magnesium (Mg)	2021/09/13		99	%	80 - 120
			Manganese (Mn)	2021/09/13		101	%	80 - 120
			Molybdenum (Mo)	2021/09/13		100	%	80 - 120
			Nickel (Ni)	2021/09/13		99	%	80 - 120
			Phosphorus (P)	2021/09/13		97	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Potassium (K)	2021/09/13		104	%	80 - 120
			Selenium (Se)	2021/09/13		105	%	80 - 120
			Silicon (Si)	2021/09/13		100	%	80 - 120
			Silver (Ag)	2021/09/13		99	%	80 - 120
			Sodium (Na)	2021/09/13		NC	%	80 - 120
			Strontium (Sr)	2021/09/13		100	%	80 - 120
			Thallium (Tl)	2021/09/13		104	%	80 - 120
			Titanium (Ti)	2021/09/13		102	%	80 - 120
			Uranium (U)	2021/09/13		102	%	80 - 120
			Vanadium (V)	2021/09/13		99	%	80 - 120
			Zinc (Zn)	2021/09/13		99	%	80 - 120
7571156	ADA	Spiked Blank	Aluminum (Al)	2021/09/13		101	%	80 - 120
			Antimony (Sb)	2021/09/13		104	%	80 - 120
			Arsenic (As)	2021/09/13		103	%	80 - 120
			Barium (Ba)	2021/09/13		100	%	80 - 120
			Beryllium (Be)	2021/09/13		110	%	80 - 120
			Boron (B)	2021/09/13		109	%	80 - 120
			Cadmium (Cd)	2021/09/13		102	%	80 - 120
			Calcium (Ca)	2021/09/13		100	%	80 - 120
			Chromium (Cr)	2021/09/13		98	%	80 - 120
			Cobalt (Co)	2021/09/13		103	%	80 - 120
			Copper (Cu)	2021/09/13		103	%	80 - 120
			Iron (Fe)	2021/09/13		103	%	80 - 120
			Lead (Pb)	2021/09/13		102	%	80 - 120
			Magnesium (Mg)	2021/09/13		103	%	80 - 120
			Manganese (Mn)	2021/09/13		100	%	80 - 120
			Molybdenum (Mo)	2021/09/13		98	%	80 - 120
			Nickel (Ni)	2021/09/13		100	%	80 - 120
			Phosphorus (P)	2021/09/13		107	%	80 - 120
			Potassium (K)	2021/09/13		105	%	80 - 120
			Selenium (Se)	2021/09/13		103	%	80 - 120
			Silicon (Si)	2021/09/13		99	%	80 - 120
			Silver (Ag)	2021/09/13		99	%	80 - 120
			Sodium (Na)	2021/09/13		105	%	80 - 120
			Strontium (Sr)	2021/09/13		99	%	80 - 120
			Thallium (Tl)	2021/09/13		102	%	80 - 120
			Titanium (Ti)	2021/09/13		99	%	80 - 120
			Uranium (U)	2021/09/13		102	%	80 - 120
			Vanadium (V)	2021/09/13		98	%	80 - 120
			Zinc (Zn)	2021/09/13		100	%	80 - 120
7571156	ADA	Method Blank	Aluminum (Al)	2021/09/13	ND, RDL=4.9		ug/L	
			Antimony (Sb)	2021/09/13	ND, RDL=0.50		ug/L	
			Arsenic (As)	2021/09/13	ND, RDL=1.0		ug/L	
			Barium (Ba)	2021/09/13	ND, RDL=2.0		ug/L	
			Beryllium (Be)	2021/09/13	ND, RDL=0.40		ug/L	
			Boron (B)	2021/09/13	ND, RDL=10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Cadmium (Cd)	2021/09/13	ND, RDL=0.090		ug/L	
			Calcium (Ca)	2021/09/13	ND, RDL=200		ug/L	
			Chromium (Cr)	2021/09/13	ND, RDL=5.0		ug/L	
			Cobalt (Co)	2021/09/13	ND, RDL=0.50		ug/L	
			Copper (Cu)	2021/09/13	ND, RDL=0.90		ug/L	
			Iron (Fe)	2021/09/13	ND, RDL=100		ug/L	
			Lead (Pb)	2021/09/13	ND, RDL=0.50		ug/L	
			Magnesium (Mg)	2021/09/13	ND, RDL=50		ug/L	
			Manganese (Mn)	2021/09/13	ND, RDL=2.0		ug/L	
			Molybdenum (Mo)	2021/09/13	ND, RDL=0.50		ug/L	
			Nickel (Ni)	2021/09/13	ND, RDL=1.0		ug/L	
			Phosphorus (P)	2021/09/13	ND, RDL=100		ug/L	
			Potassium (K)	2021/09/13	ND, RDL=200		ug/L	
			Selenium (Se)	2021/09/13	ND, RDL=2.0		ug/L	
			Silicon (Si)	2021/09/13	ND, RDL=50		ug/L	
			Silver (Ag)	2021/09/13	ND, RDL=0.090		ug/L	
			Sodium (Na)	2021/09/13	ND, RDL=100		ug/L	
			Strontium (Sr)	2021/09/13	ND, RDL=1.0		ug/L	
			Thallium (Tl)	2021/09/13	ND, RDL=0.050		ug/L	
			Titanium (Ti)	2021/09/13	ND, RDL=5.0		ug/L	
			Uranium (U)	2021/09/13	ND, RDL=0.10		ug/L	
			Vanadium (V)	2021/09/13	ND, RDL=0.50		ug/L	
			Zinc (Zn)	2021/09/13	ND, RDL=5.0		ug/L	
7571156	ADA	RPD	Aluminum (Al)	2021/09/13	3.5		%	20
			Antimony (Sb)	2021/09/13	NC		%	20
			Arsenic (As)	2021/09/13	NC		%	20
			Barium (Ba)	2021/09/13	0.57		%	20
			Beryllium (Be)	2021/09/13	NC		%	20
			Boron (B)	2021/09/13	0.90		%	20
			Cadmium (Cd)	2021/09/13	NC		%	20
			Calcium (Ca)	2021/09/13	1.7		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chromium (Cr)	2021/09/13	NC		%	20
			Cobalt (Co)	2021/09/13	NC		%	20
			Copper (Cu)	2021/09/13	0.12		%	20
			Iron (Fe)	2021/09/13	NC		%	20
			Lead (Pb)	2021/09/13	NC		%	20
			Magnesium (Mg)	2021/09/13	4.5		%	20
			Manganese (Mn)	2021/09/13	2.1		%	20
			Molybdenum (Mo)	2021/09/13	7.8		%	20
			Nickel (Ni)	2021/09/13	NC		%	20
			Phosphorus (P)	2021/09/13	NC		%	20
			Potassium (K)	2021/09/13	0.59		%	20
			Selenium (Se)	2021/09/13	NC		%	20
			Silicon (Si)	2021/09/13	2.0		%	20
			Silver (Ag)	2021/09/13	NC		%	20
			Sodium (Na)	2021/09/13	0.58		%	20
			Strontium (Sr)	2021/09/13	1.6		%	20
			Thallium (Tl)	2021/09/13	NC		%	20
			Titanium (Ti)	2021/09/13	NC		%	20
			Uranium (U)	2021/09/13	17		%	20
			Vanadium (V)	2021/09/13	NC		%	20
			Zinc (Zn)	2021/09/13	1.6		%	20
7572482	JUC	Matrix Spike	Dissolved Organic Carbon	2021/09/13		96	%	80 - 120
7572482	JUC	Spiked Blank	Dissolved Organic Carbon	2021/09/13		96	%	80 - 120
7572482	JUC	Method Blank	Dissolved Organic Carbon	2021/09/13	ND, RDL=0.40		mg/L	
7572482	JUC	RPD	Dissolved Organic Carbon	2021/09/13	2.1		%	20
7576526	VRO	Matrix Spike	Total Ammonia-N	2021/09/16		78	%	75 - 125
7576526	VRO	Spiked Blank	Total Ammonia-N	2021/09/16		99	%	80 - 120
7576526	VRO	Method Blank	Total Ammonia-N	2021/09/16	ND, RDL=0.050		mg/L	
7576526	VRO	RPD	Total Ammonia-N	2021/09/16	1.4		%	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Soham Patel, Analyst 2

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Ontario

Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the Open Data catalogue (https://data.ontario.ca/dataset/well-records).

Go Back to Map ()

Well ID

Well ID Number: 7318547
Well Audit Number: *Z288609*
Well Tag Number: *A249212*
This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location	980 CONCESSION RD 12
Township	NORTH WALSINGHAM TOWNSHIP
Lot	013
Concession	CON 11
County/District/Municipality	NORFOLK
City/Town/Village	LANGTON
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 17 Easting: 534769.00 Northing: 4732323.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BLCK	LOAM	LOAM		0 ft	2 ft
BRWN	SAND			2 ft	29 ft
GREY	SAND			29 ft	39 ft
GREY	CLAY			39 ft	45 ft

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 ft	23 ft	BENTONITE	
23 ft	45 ft	SILICA SAND	

Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Convent.)	
	Domestic

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
6 inch	STEEL	-2 ft	28 ft
6 inch	STEEL	40 ft	45 ft

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
6 inch	STAINLESS STEEL	28 ft	40 ft

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7090

Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	43 ft
Pumping Rate	10 GPM
Duration of Pumping	1 h:45 m
Final water level	10.583 ft
If flowing give rate	
Recommended pump depth	42 ft
Recommended pump rate	12 GPM
Well Production	
Disinfected?	Y

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL	7 ft		
1	8.1 ft	1	9.2 ft
2	9 ft	2	8.33 ft
3	9.583 ft	3	7.667 ft
4	9.917 ft	4	7.167 ft
5	10.167 ft	5	7 ft
10	10.583 ft	10	7 ft
15	10.583 ft	15	7 ft
20	10.583 ft	20	7 ft
25	10.583 ft	25	7 ft

30	10.583 ft	30	7 ft
40	10.583 ft	40	7 ft
45		45	
50	10.583 ft	50	7 ft
60	10.583 ft	60	7 ft

Water Details

Water Found at Depth	Kind
28 ft	Untested
29 ft	Untested

Hole Diameter

Depth From	Depth To	Diameter
0 ft	45 ft	12 inch

Audit Number: Z288609

Date Well Completed: August 23, 2018

Date Well Record Received by MOE: September 13, 2018

Updated: October 12, 2021
Published: April 16, 2021

Related

How to use a Ministry of the Environment map (/page/how-use-ministry-environment-map#wells)

Technical documentation: Metadata record (https://data.ontario.ca/dataset/well-records/resource/3031344e-e3f2-48d5-888c-c1deadfd2f77)

EXCERPTS FROM MAY 29, 2023 MTE CONSULTANTS INC. REPORT

ID No.: MW101-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

Date Completed: 4/11/2023

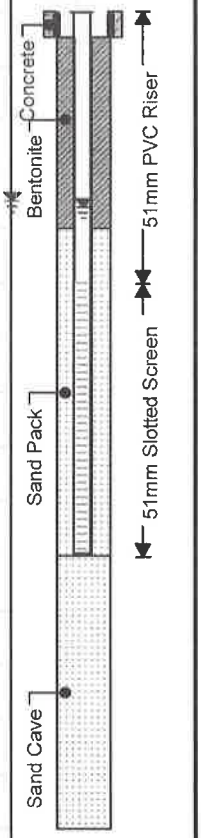
Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover: Monument

Subsurface Profile				Sample		Dynamic Cone Standard Penetration (20 40 60 80)	Shear Strength (PP) ▲ kPa ▲ / Shear Strength (FV) ■ kPa ■ (50 100 150 200)	Water Content ● % ● (10 20 30)	Groundwater Observations and Standpipe Details
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type				
0 / 0		Ground Surface	227.4						
		TOPSOIL dark brown silty sand, with roots, very moist (250 mm)	227.1 / 0.0 / 0.3						
2		**CLAYEY SANDY SILT** firm brown clayey sandy silt, trace rootlets, APL							
			226.3 / 1.1	1	SS	4		21	
4		**SAND** loose to very loose brown sand, trace silt, saturated							
			225.9 / 1.5						
		compact, coarse sand, trace gravel and silt	225.6 / 1.8	2	SS	25		16	
6 / 2		silt and clay seam, APL (50 mm)							
			225.1 / 2.3						
8		trace silt and clay		3	SS	17		17	
10				4	SS	25		18	
12 / 4									
14				5	SS	20		18	
16			222.4 / 5.0						
		Drilling Terminated							
18									
20 / 6									



Water encountered at 1.1 mbgs during drilling

Field Technician: B. Ehgoetz

Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

Sheet: 1 of 1

Water level measured at 0.9 m bgs (Elevation: 226.5 m) on May 1, 2023 and at 1.1 m bgs (Elevation: 226.3 m) on May 17, 2023

ID No.: MW104-23

Project Name: Langton Development

MTE File No.: 53216-100

Client: Cyrill J. Demeyere Limited (CJDL)

Site Location: 1000 12th Concession Road, Norfolk County

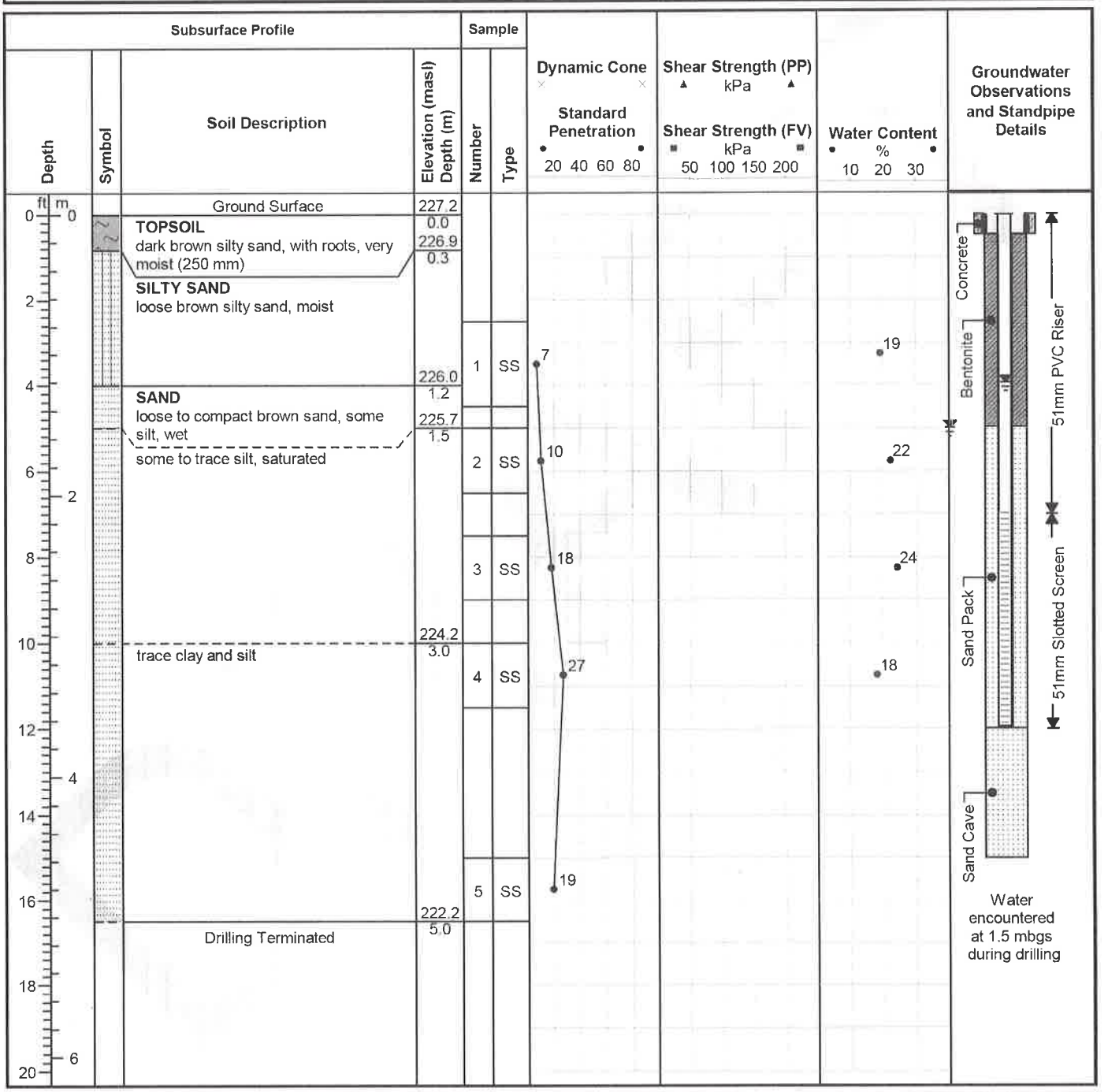
Date Completed: 4/11/2023

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T Track Mount

Drill Method: Hollow Stem Auger

Protective Cover: Monument



Field Technician: B. Ehgoetz

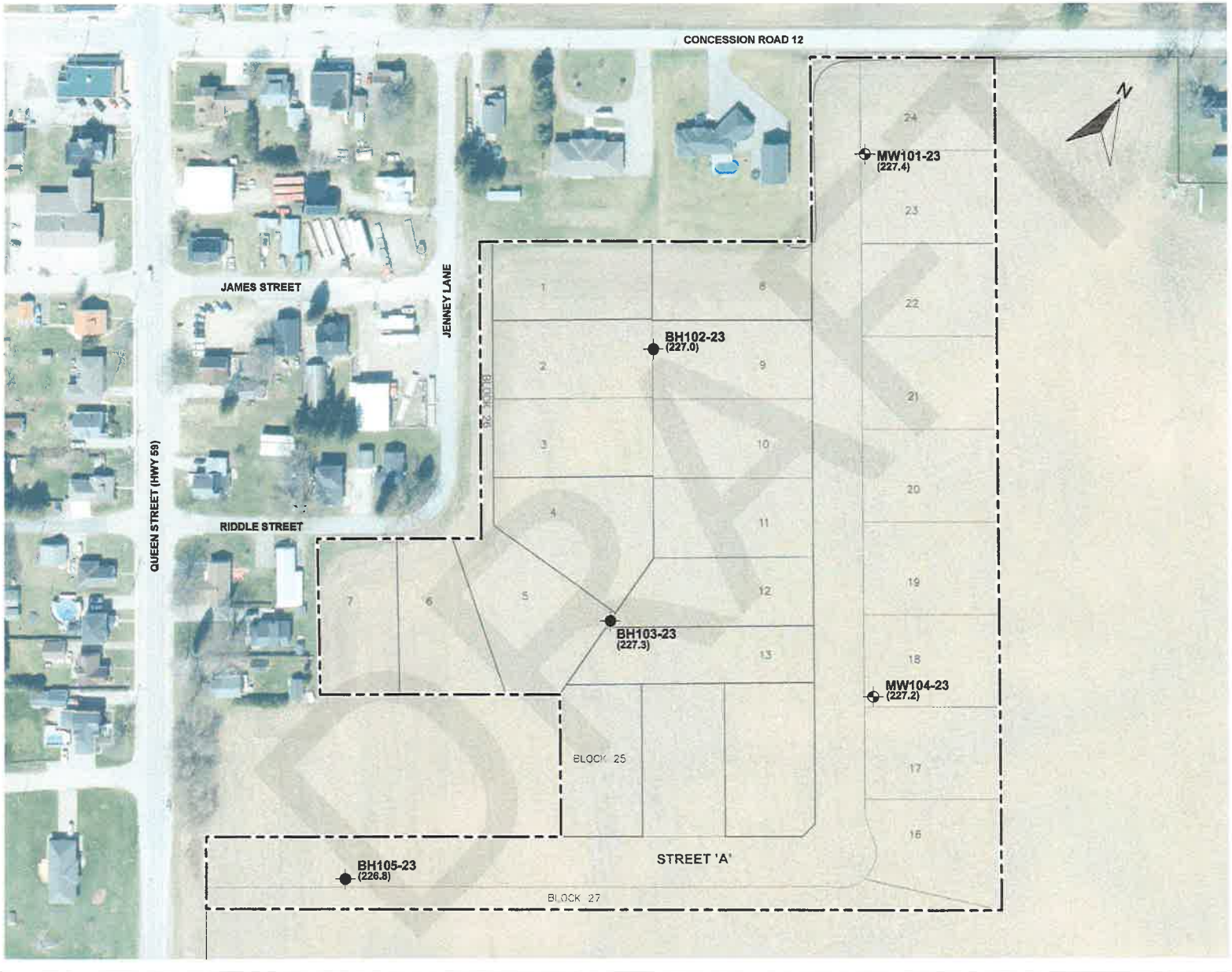
Drafted by: B. Ehgoetz

Reviewed by: B. Thorner

MTE

Sheet: 1 of 1

Water level measured at 1.1 m bgs (Elevation: 226.1 m) on May 1, 2023 and at 1.2 m bgs (Elevation: 226.0 m) on May 17, 2023



KEY PLAN (nts)

LEGEND

PROJECT AREA

BOREHOLE

BOREHOLE/MONITORING WELL

(227.3) ELEVATION (m AMSL)

REFERENCES

SOUTHWESTERN ONTARIO ORTHOPHOTOGRAPHY PROJECT (2020), SOURCE: DATA PROVIDED BY ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY, © COPYRIGHT: 2023 QUEEN'S PRINTER OF ONTARIO, ALL RIGHTS RESERVED;
CJDL CONSULTING ENGINEERS, DRAFT PLAN OF SUBDIVISION, NOV. 24 - 2022; AND LAND INFORMATION ONTARIO, ROAD AND WATER NETWORK © QUEEN'S PRINTER FOR ONTARIO, 2023 (key plan).

NOTES

THIS FIGURE IS SCHEMATIC ONLY AND TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

SCALE IN METRES

0 30 60m

1:1,500

MTE
Engineers, Scientists, Surveyors

PROJECT
GEOTECHNICAL INVESTIGATION
1000 12th CONCESSION ROAD
LANGTON, NORFOLK COUNTY, ONTARIO

TITLE
SITE PLAN

Drawn	Scale
DCH	AS SHOWN
Checked	Project No.
	53216-100
Date	Rev No.
May 1/23	0

FIGURE 1

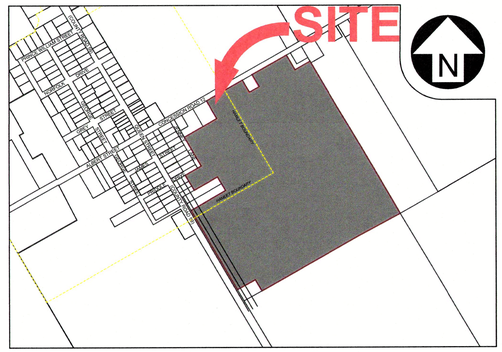
DRAFT PLAN OF SUBDIVISION

PART OF LOTS 12 AND 13 AND PART OF
THE ROAD ALLOWANCE BETWEEN LOTS 12 AND 13
(CLOSED BY BY-LAW PASSED MAY 13TH 1873 REGISTERED AS INSTRUMENT 40778 APRIL 20TH 1876)
CONCESSION 11
GEOGRAPHIC TOWNSHIP OF NORTH WALSINGHAM NORFOLK COUNTY

INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT RSO 1990

(A) ON PLAN
(B) ON PLAN
(C) ON PLAN
(D) LOTS 1 TO 24 – SINGLE DETACHED RESIDENTIAL,
DEDICATED STREETS – STREET 'A'
BLOCK 25 – STORM WATER MANAGEMENT
BLOCK 26 – ROAD WIDENING
BLOCK 27 – FUTURE RESIDENTIAL
BLOCK 28 – AGRICULTURAL,
(E) NORTH – EXISTING RESIDENTIAL/AGRICULTURAL,
WEST – EXISTING RESIDENTIAL/AGRICULTURAL,
EAST – EXISTING AGRICULTURAL
SOUTH – EXISTING AGRICULTURAL
(F) ON PLAN
(G) ON PLAN
(H) PRIVATE WELLS TO BE INSTALLED BY HOME OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF NORFOLK COUNTY
(I) SAND
(J) ON PLAN
(K) STORM SEWERS, TELEPHONE, GAS, T.V.CABLE
(L) NORFOLK COUNTY OFFICIAL PLAN AND ZONING BY-LAWS

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.



KEY PLAN
SCALE: 1:10,000

AREA SUMMARY

DESCRIPTION		AREA (ha)
LOTS 1–24	SINGLE DETACHED RESIDENTIAL	4.94
DEDICATED STREETS	STREET 'A'	1.15
BLOCK 25	STORM WATER MANAGEMENT	0.20
BLOCK 26	5.0m WIDE ROAD WIDENING	0.06
BLOCK 27	FUTURE RESIDENTIAL	0.28
BLOCK 28	AGRICULTURAL	31.54
TOTAL		38.17

OWNER'S CERTIFICATE

453997 ONTARIO LIMITED, THE REGISTERED OWNER OF THE LANDS TO BE SUBDIVIDED HEREBY AUTHORIZES CYRIL J. DEMEYERE LIMITED TO SUBMIT THIS DRAFT PLAN FOR APPROVAL.

10 AUG 2023
DATE

TERRY DEVOS
453997 ONTARIO LIMITED

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE REMAINING LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN ON THIS PLAN.

9 AUG 2023
DATE

KIM HUSTED, ONTARIO LAND SURVEYOR

SCALE 1:1500

0 20 50 100 METRE 200

NOTE: ORIGINAL CONTOURS SHOWN FROM 2021 SURVEY BY KIM HUSTED SURVEYING LTD.

JOB No. 21032

DATE: 9 AUG 2023

PLAN PREPARED BY:

CJDL Consulting Engineers
Cyril J. Demeyere Limited
P.O. Box 460, 261 Broadway
Tillsonburg, Ontario. N4G 4H8
Tel: 519-688-1000
866-302-9886
Fax: 519-842-3235
cjdl@cjdleng.com

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT

DATE NOVEMBER 23, 2022

K. S. HUSTED O.L.S.

PLAN 37R-11621

RECEIVED AND DEPOSITED

DATE March 31, 2023

"K. EPP"

REPRESENTATIVE FOR THE LAND REGISTRAR FOR THE LAND TITLES DIVISION OF NORFOLK (No. 37)

PART SCHEDULE

PART	LOT	CONCESSION	P.I.N.	AREA
1	PART OF 12 AND 13 PART OF ROAD ALLOWANCE BETWEEN LOTS 12 AND 13	11	ALL OF 50132–0272	38.18 HECTARES

PART 1 COMPRISES ALL OF P.I.N. 50132–0272

PLAN OF SURVEY OF

PART OF LOTS 12 AND 13 AND PART OF THE ROAD ALLOWANCE BETWEEN LOTS 12 AND 13 (UNOPENED)

(CLOSED BY BY-LAW PASSED MAY 13th 1873 REGISTERED AS INSTRUMENT 40778 APRIL 20th 1876)

CONCESSION 11

GEOGRAPHIC TOWNSHIP OF NORTH WALSINGHAM IN

NORFOLK COUNTY

SCALE 1:1200 0 30 60 METRES 90

METRIC DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

KIM HUSTED SURVEYING LTD.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT

(1) – THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM

(2) – THIS SURVEY WAS COMPLETED ON THE 17th DAY OF NOVEMBER, 2022

NOVEMBER 23, 2022
DATE

K. S. HUSTED
ONTARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER V-50488.

NOTES

(1) – BEARINGS ARE GRID, DERIVED ON GPS OBSERVATIONS ON MONUMENTS "A" AND "B" SHOWN HEREON HAVING A GRID BEARING OF N 30° 08' 40" W (UTM, ZONE 17, NAD83 CSRS)

(2) – TO CONVERT (P2) BEARINGS TO GRID BEARINGS
- ADD 00° 18' 50" TO THE NORTHWEST BEARINGS
- SUBTRACT 00° 18' 50" FROM THE NORTHEAST BEARINGS

(3) – DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY 0.999589573

COORDINATE SCHEDULE

ALL COORDINATES ARE IN METRES AND WERE DERIVED FROM GPS OBSERVATIONS USING THE CAN-NET WORK, UTM, ZONE 17 (81° WEST LONGITUDE) NAD83 (CSRS) (2010)

COORDINATE VALUES ARE TO URBAN ACCURACY AS PER SEC. 14 (2) OF O. REG. 216/10

POINT	NORTHING	EASTING
A	4732235.859	534584.880
B	4732016.822	534712.078

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN

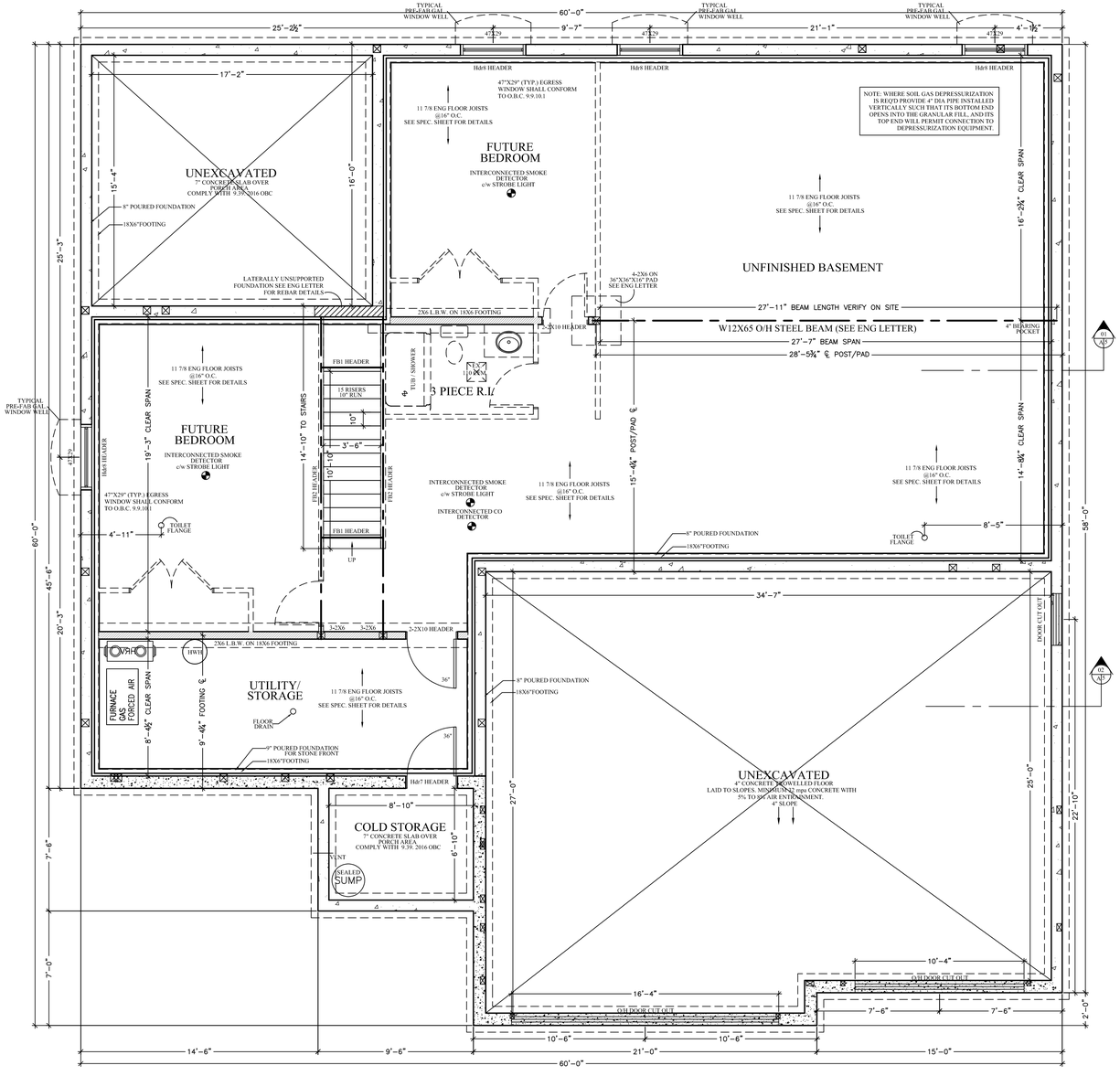
LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
IB	DENOTES	IRON BAR
RIB	DENOTES	ROUND IRON BAR
(WIT.)	DENOTES	WITNESS
(P1)	DENOTES	REGISTERED PLAN 25B
(P2)	DENOTES	DEPOSITED PLAN 37R-6527
(P3)	DENOTES	DEPOSITED PLAN 37R-10080
(P4)	DENOTES	PLAN OF SURVEY BY H.V. JEWITT O.L.S. DATED NOVEMBER 11, 1977 FILE No. WA 23-56
(P5)	DENOTES	DEPOSITED PLAN 37R-8815
(P6)	DENOTES	DEPOSITED PLAN 37R-9847
(P7)	DENOTES	REGISTERED PLAN 484
(P8)	DENOTES	FIELD NOTES BY H.V. JEWITT O.L.S. DATED JULY 14, 1959 FILE No. WA 4-52
(P9)	DENOTES	PLAN OF SURVEY BY H.V. JEWITT O.L.S. DATED JULY 15, 1959 FILE No. WA 4-52
(P10)	DENOTES	DEPOSITED PLAN 37R-11559
(P11)	DENOTES	DEPOSITED PLAN 37R-11477
(D1)	DENOTES	INSTRUMENT NR470380 P.I.N. 50132-0125
(D2)	DENOTES	INSTRUMENT NR409908 P.I.N. 50132-0126
(D3)	DENOTES	INSTRUMENT NR282449 P.I.N. 50132-0127
(D4)	DENOTES	INSTRUMENT NR207030 P.I.N. 50132-0239
(1582)	DENOTES	KIM HUSTED SURVEYING LTD.
(700)	DENOTES	H.V. JEWITT O.L.S.
(MTO)	DENOTES	MINISTRY TRANSPORTATION ONTARIO
(CM)	DENOTES	CONCRETE MONUMENT
(SU)	DENOTES	SOURCE UNKNOWN
(M)	DENOTES	MEASURED
(S)	DENOTES	SET
P.I.N.	DENOTES	PROPERTY IDENTIFIER NUMBER

KIM HUSTED SURVEYING LTD.
ONTARIO LAND SURVEYOR
30 HARVEY STREET, TILLSONBURG ONTARIO, N4G 3J8
PHONE:519-842-3638 FAX: 519-842-3639

PROJECT: 21-16806LT | MATT DEVOS | REF: HF1 | DWG. GES | CKD. JGD

E:\OSOFT141\Wayne\Greg's Dwg's\21-16806LT.dwg



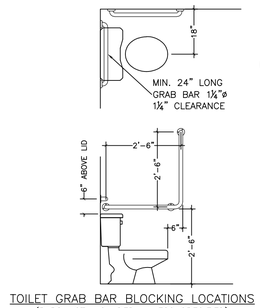
FOUNDATION PLAN

Scale 1/4"-1'-0"

GIRDER POST SUPPORTS				
BUILT-UP COLUMN SELECTION TABLE NAILED BUILT-UP 2 x 4				
	S-P-F No.1 / No.2			
WALL HT.	2 PLY	3 PLY	4 PLY	5 PLY
8'	3,442 lbf	9,652 lbf	15,342 lbf	19,177 lbf
9'	2,645 lbf	8,390 lbf	12,291 lbf	15,363 lbf
10'	2,063 lbf	6,996 lbf	9,860 lbf	12,325 lbf
11'	1,628 lbf	5,911 lbf	7,946 lbf	9,939 lbf
12'	1,299 lbf	4,810 lbf	6,366 lbf	7,911 lbf
BUILT-UP COLUMN SELECTION TABLE NAILED BUILT-UP 2 x 6				
	S-P-F No.1 / No.2			
WALL HT.	2 PLY	3 PLY	4 PLY	5 PLY
8'	5,279 lbf	14,932 lbf	25,382 lbf	33,951 lbf
9'	4,098 lbf	12,973 lbf	22,947 lbf	32,030 lbf
10'	3,207 lbf	10,868 lbf	20,895 lbf	30,000 lbf
17'	N/A	3,215 lbf	9,014 lbf	18,808 lbf
18'	N/A	3,013 lbf	7,957 lbf	13,870 lbf

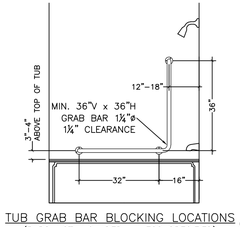
NOTES

* PROVIDE SOLID BEARING BELOW ALL BEAMS AND GIRDER TRUSSES (i.e.. 2 PLY TRUSS REQUIRES MINIMUM 2 STUDS FOR BEARING).
* ALL LUMBER IN THE DESIGNS ABOVE ARE SPF #2 OR BETTER
* BUILT-UP COLUMNS ARE TO BE MAILED OR BOLTED AS PER ONTARIO BUILDING CODE AND CSA-086.1-94 REQUIREMENTS.
* THESE CHARTS ARE MEANT TO BE USED AS A DESIGN GUIDELINE ONLY. ALL ITEMS NOT CONFORMING TO THE ONTARIO BUILDING CODE PART 9 ARE TO BE REVIEWED AND CERTIFIED BY A STRUCTURAL ENGINEER.

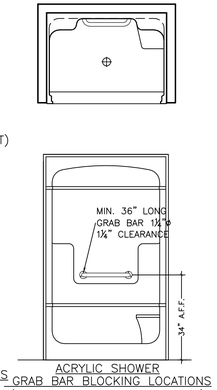


TOILET GRAB BAR BLOCKING LOCATIONS
(BARS NOT INCLUDED UNLESS SPECIFIED)

SUGGESTED GRAB BAR BLOCKING LOCATIONS
(CONDITIONS MAY VARY WITH LAYOUT)



TUB GRAB BAR BLOCKING LOCATIONS
(BARS NOT INCLUDED UNLESS SPECIFIED)

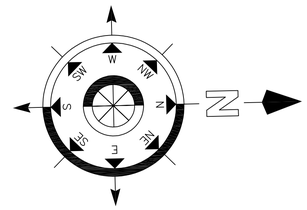


ACRYLIC SHOWER GRAB BAR BLOCKING LOCATIONS
(BARS NOT INCLUDED UNLESS SPECIFIED)

GENERAL NOTES:

FOUNDATION PLAN NOTES:

1. ALL DIMENSIONS TO EXTERIOR FOUNDATION WALLS
2. ALL FOOTINGS SHALL BEAR DIRECTLY ON UNDISTURBED SOIL. (ASSUMED SOIL BEARING CAPACITY- 2500 P.S.F.)
3. APPROVED GRANULAR FILL SHALL BE COMPACTED IN 6" LAYERS TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
4. ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM 4'-0" BELOW FINISHED GRADE TO PROTECT FROM FROST ACTION.
5. CONCRETE FOR FLOOR SLABS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa. ALL OTHER CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa UNLESS OTHERWISE SPECIFIED. (6% AIR / 4" SLUMP)
6. REINFORCING STEEL TO HAVE MINIMUM 1 1/2" COVER, MAXIMUM 2" COVER AT BOTTOM OF SLAB.



I review and take responsibility for the design work on behalf of a firm registered under subsection 2.17.4. of the O.B.C.
I am qualified, and the firm is registered, in the appropriate classes/categories

Tony Wall
BCIN : 22052

	SQUARE FOOTAGE
MAIN FLOOR	1978 SQ.FT.
GARAGE	959 SQ.FT.

REV.#	DATE:	DESCRIPTION:
4		
3		
2		
1	03/22	PERMIT ISSUE

PROPERTY OF VIEW-IT DESIGN

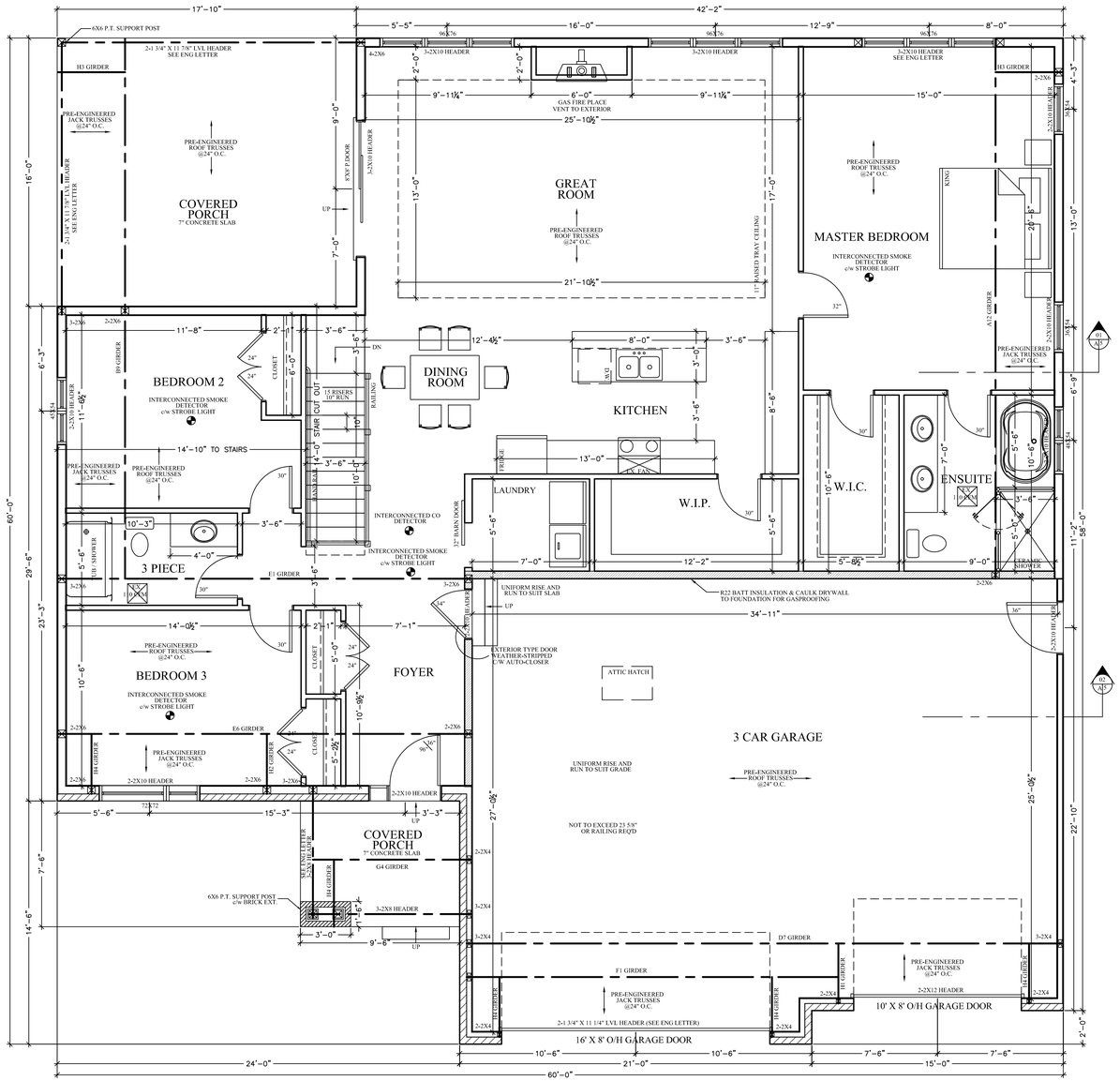
VIEW-IT DESIGN
RR# 1 PORT BURWELL
OFFICE: 519-851-1173
FAX: 519-874-4087

HIEBERT RESIDENCE
LOT 2 HIGHWAY 59
LANGTON, ON

PROPOSED HOUSE PLANS

FOUNDATION PLAN

DRAWN BY: TONY WALL	SCALE: SEE DWG
BCIN: 29620 PO# 2277	A1
DATE: MARCH 2022	
SHEET NO. 1 OF 6	



MAIN FLOOR PLAN

Scale 1/4"-1'-0"

GIRDER POST SUPPORTS				
BUILT-UP COLUMN SELECTION TABLE NAILED BUILT-UP 2 x 4				
	S-P-F No.1 / No.2			
WALL HT.	2 PLY	3 PLY	4 PLY	5 PLY
8'	3,442 lbf	9,652 lbf	15,342 lbf	19,177 lbf
9'	2,645 lbf	8,390 lbf	12,291 lbf	15,363 lbf
10'	2,063 lbf	6,996 lbf	9,860 lbf	12,325 lbf
11'	1,628 lbf	5,911 lbf	7,946 lbf	9,939 lbf
12'	1,299 lbf	4,810 lbf	6,366 lbf	7,911 lbf
BUILT-UP COLUMN SELECTION TABLE NAILED BUILT-UP 2 x 6				
	S-P-F No.1 / No.2			
WALL HT.	2 PLY	3 PLY	4 PLY	5 PLY
8'	5,279 lbf	14,932 lbf	25,382 lbf	33,951 lbf
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10'	3,207 lbf	10,868 lbf	20,895 lbf	30,000 lbf
17'	N/A	3,215 lbf	9,014 lbf	18,808 lbf
18'	N/A	3,013 lbf	7,957 lbf	13,870 lbf

NOTES

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SUGGESTED GRAB BAR BLOCKING LOCATIONS

(CONDITIONS MAY VARY WITH LAYOUT)

TOILET GRAB BAR BLOCKING LOCATIONS

(BARS NOT INCLUDED UNLESS SPECIFIED)

TUB GRAB BAR BLOCKING LOCATIONS

(BARS NOT INCLUDED UNLESS SPECIFIED)

ACRYLIC SHOWER GRAB BAR BLOCKING LOCATIONS

(BARS NOT INCLUDED UNLESS SPECIFIED)

GENERAL NOTES:

FOUNDATION PLAN NOTES:

1. ALL DIMENSIONS TO EXTERIOR FOUNDATION WALLS
2. ALL FOOTINGS SHALL BEAR DIRECTLY ON UNDISTURBED SOIL. (ASSUMED SOIL BEARING CAPACITY- 2500 P.S.F.)
3. APPROVED GRANULAR FILL SHALL BE COMPACTED IN 6" LAYERS TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
4. ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM 4'-0" BELOW FINISHED GRADE TO PROTECT FROM FROST ACTION.
5. CONCRETE FOR FLOOR SLABS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa. ALL OTHER CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 25 MPa UNLESS OTHERWISE SPECIFIED. (6% AIR / 4" SLUMP)
6. REINFORCING STEEL TO HAVE MINIMUM 1 1/2" COVER, MAXIMUM 2" COVER AT BOTTOM OF SLAB.

I review and take responsibility for the design work on behalf of a firm registered under subsection 2.17.4. of the O.B.C.
I am qualified, and the firm is registered, in the appropriate classes/categories

Tony Wall
BCIN : 22052

	SQUARE FOOTAGE
MAIN FLOOR	1978 SQ.FT.
GARAGE	959 SQ.FT.

REV.#	DATE:	DESCRIPTION:
4		
3		
2		
1	03/22	PERMIT ISSUE

PROPERTY OF VIEW-IT DESIGN

VIEW-IT DESIGN
RR# 1 PORT BURWELL
OFFICE: 519-851-1173
FAX: 519-874-4087

HIEBERT RESIDENCE
LOT 2 HIGHWAY 59
LANGTON, ON

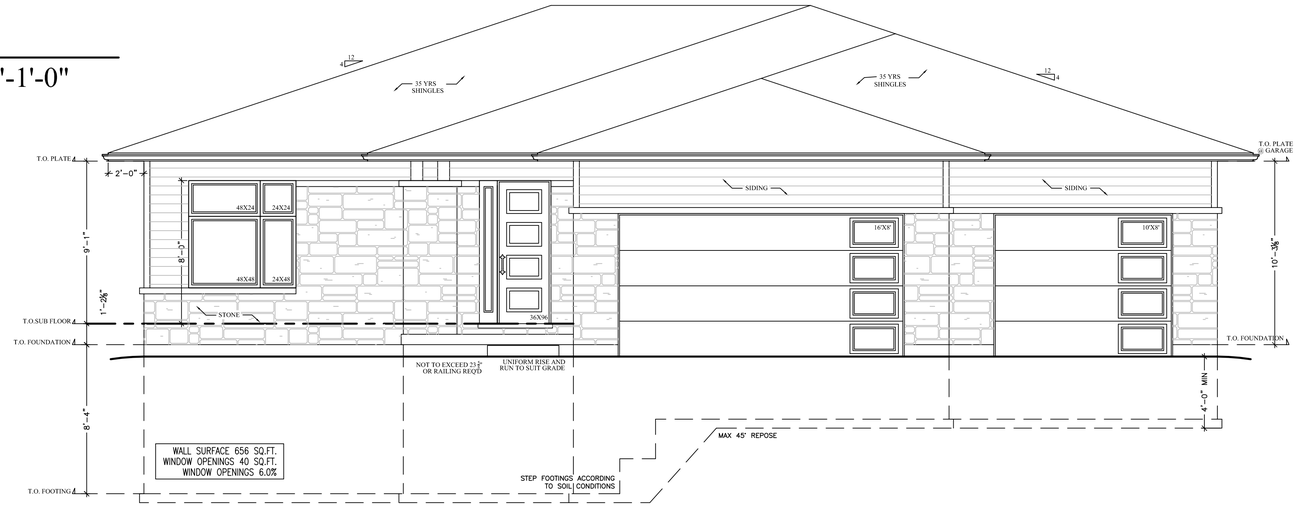
PROPOSED HOUSE PLANS

MAIN FLOOR PLAN

DRAWN BY: TONY WALL	SCALE: SEE DWG
BCIN: 29620 PO# 2277	A2
DATE: MARCH 2022	
SHEET NO. 2 OF 6	

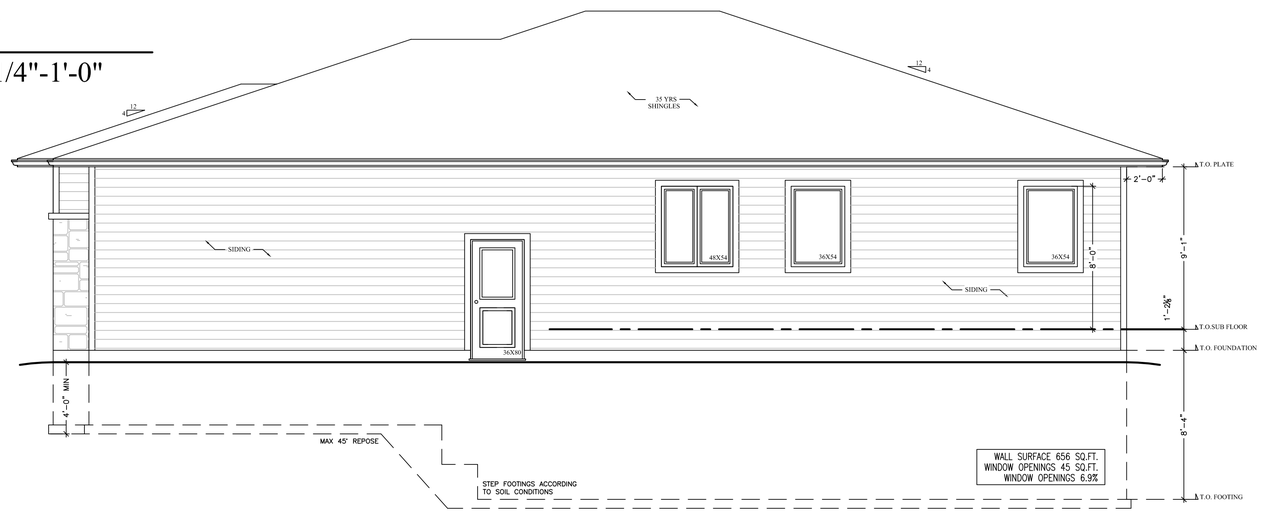
EAST ELEVATION

Scale 1/4"-1'-0"



SOUTH ELEVATION

Scale 1/4"-1'-0"



GENERAL NOTES:

FOUNDATION PLAN NOTES:

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I am qualified, and the firm is registered, in the appropriate classes/categories

Tony Wall
BCIN : 22052

	SQUARE FOOTAGE
MAIN FLOOR	1978 SQ.FT.
GARAGE	959 SQ.FT.

REV.#	DATE:	DESCRIPTION:
4		
3		
2		
1	03/22	PERMIT ISSUE

VIEW-IT DESIGN
RR# 1 PORT BURWELL
OFFICE: 519-851-1173
FAX: 519-874-4087

HIEBERT RESIDENCE
LOT 2 HIGHWAY 59
LANGTON, ON

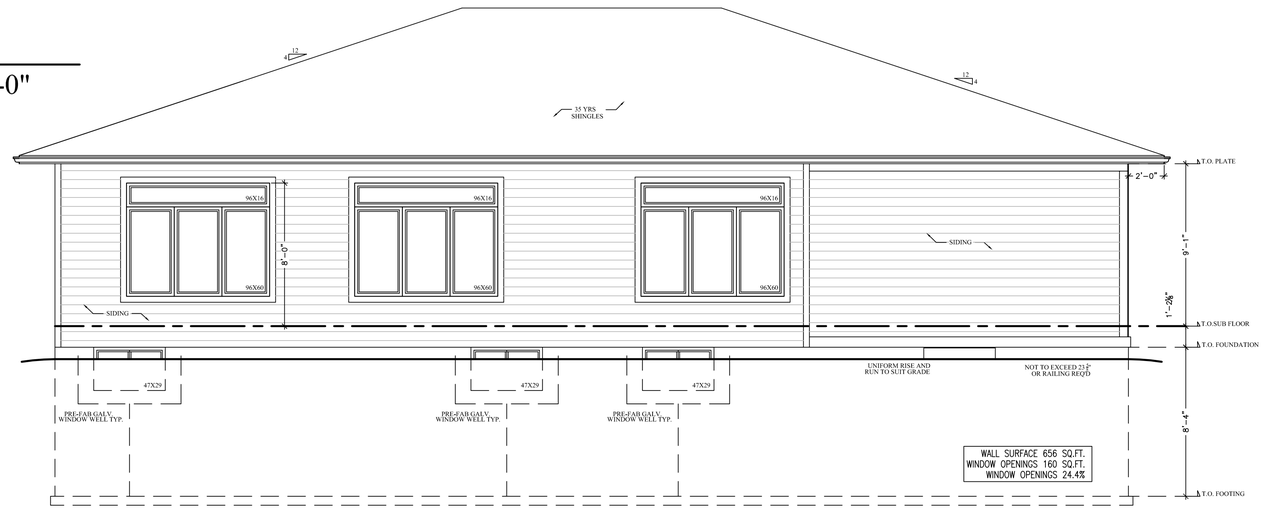
PROPOSED HOUSE PLANS

ELEVATIONS

DRAWN BY: TONY WALL	SCALE: SEE DWG
BCIN: 29620 PO# 2277	A3
DATE: MARCH 2022	
SHEET NO. 3 OF 6	

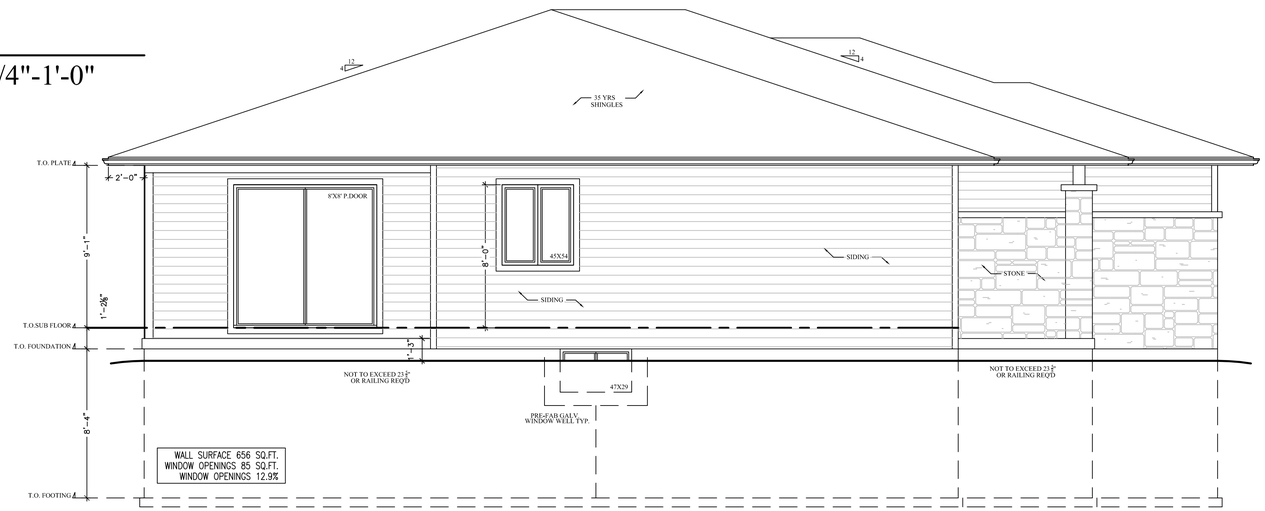
WEST ELEVATION

Scale 1/4"-1'-0"



NORTH ELEVATION

Scale 1/4"-1'-0"



GENERAL NOTES:

FOUNDATION PLAN NOTES:

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2. ALL FOOTINGS SHALL BEAR DIRECTLY ON UNDISTURBED SOIL. (ASSUMED SOIL BEARING CAPACITY- 2500 P.S.F.)
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I am qualified, and the firm is registered, in the appropriate classes/categories

Tony Wall
BCIN : 22052

	SQUARE FOOTAGE
MAIN FLOOR	1978 SQ.FT.
GARAGE	959 SQ.FT.

REV.#	DATE:	DESCRIPTION:
4		
3		
2		
1	03/22	PERMIT ISSUE

PROPERTY OF VIEW-IT DESIGN

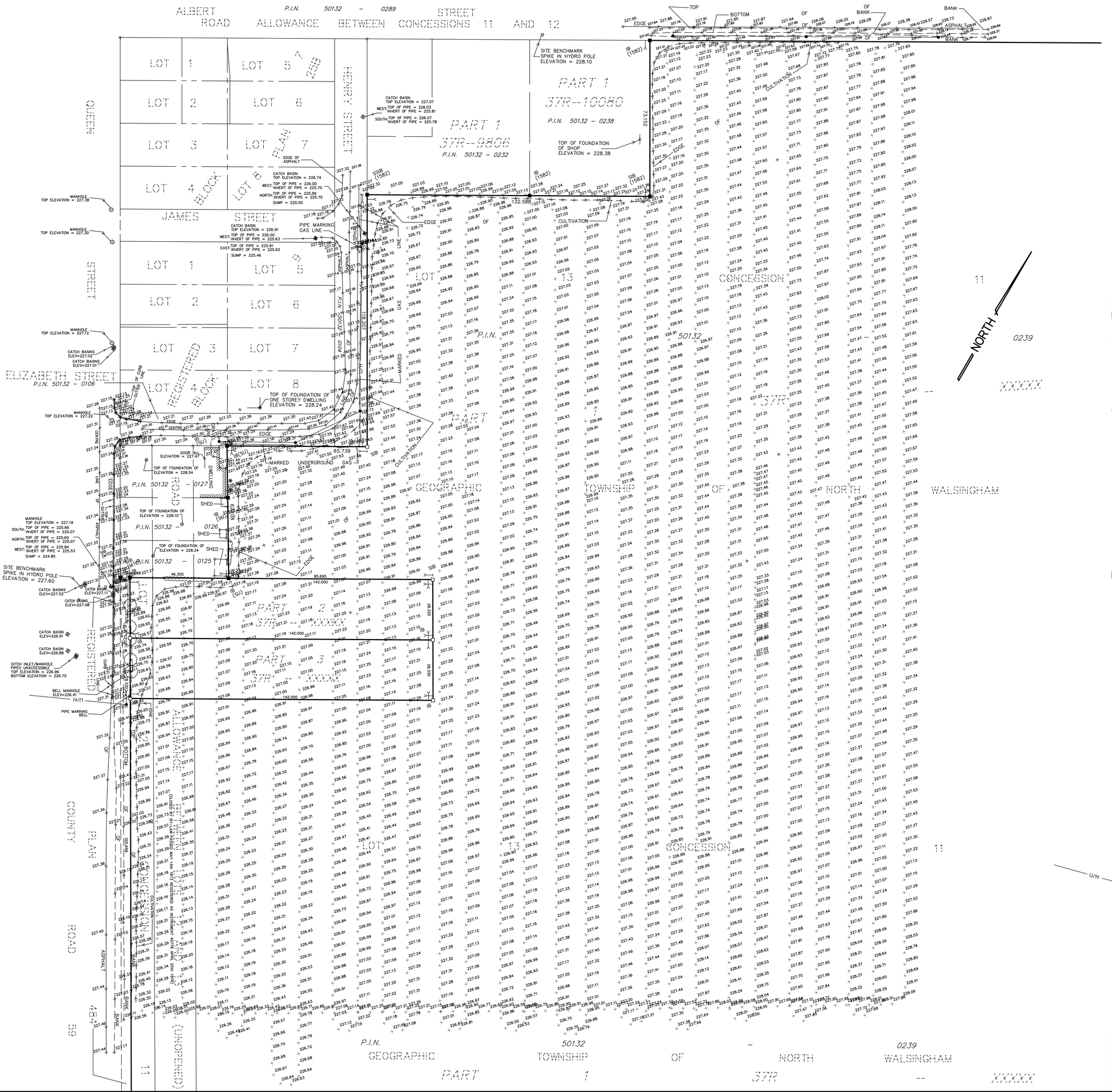
VIEW-IT DESIGN
RR# 1 PORT BURWELL
OFFICE: 519-851-1173
FAX: 519-874-4087

HIEBERT RESIDENCE
LOT 2 HIGHWAY 59
LANGTON, ON

PROPOSED HOUSE PLANS

ELEVATIONS

DRAWN BY: TONY WALL	SCALE: SEE DWG
BCIN: 29620 PO# 2277	A4
DATE: MARCH 2022	
SHEET NO. 4 OF 6	



TOPOGRAPHIC SURVEY

PREPARED FOR:
MATT DEVOS

SCALE – 1: 750

0 10 20 30 40 50 METRES

METRIC DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

KIM HUSTED SURVEYING LTD.
UPDATED SEPTEMBER 24, 2021

CAUTION

- THIS IS NOT A PLAN OF SURVEY OR SURVEYOR'S REPORT AND SHALL NOT BE USED FOR TRANSACTION OR FINANCING PURPOSES
- DO NOT CONVEY FROM THIS PLAN
- THE PROPOSED BUILDING AND IT'S LOCATION SHOWN HEREON MAY BE SUBJECT TO CHANGES PRIOR TO CONSTRUCTION. THIS SKETCH SHOULD NOT BE RELIED UPON AS CERTIFICATION THAT THE DWELLING WAS ACTUALLY CONSTRUCTED AS SHOWN.
- ELEVATION OF EXISTING GROUND WATER TABLE AND SOIL CONDITIONS NOT DETERMINED

NOTES

(1) – A SURVEY OF THE SUBJECT PROPERTY HAS NOT BEEN MADE AVAILABLE

(2) – PROPOSED BUILDING POSITIONED BY CALCULATIONS, NOT BY ACTUAL SURVEY

(3) – PROPOSED FINAL GRADES ARE SHOWN (237.86) AND ARE IN METERS

(4) – T.F.W. DENOTES TOP OF FOUNDATION WALL

(5) – U.S.F. DENOTES UNDERSIDE OF FOOTING

(6) – SITE BENCHMARK SPIKE SET IN HYDRO POLE NORTH WEST OF THE SUBJECT PROPERTY HAVING A GEODETIC ELEVATION OF 228.10 METERS
– ELEVATIONS ARE REFERRED TO THE CGVD 1928 VERTICAL DATUM

(7) – IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATION OF THE UPPER LIMIT OF THE GROUND WATER TABLE, SOIL BEARING CAPACITY AND THE ELEVATION OF THE UNDER SIDE OF FOOTING PRIOR TO EXCAVATION.

(8) – SEPTIC SYSTEM TO BE DESIGNED BY OTHERS ELEVATIONS TO BE REVISED WHERE REQUIRED.

(9) – IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SITE BENCH MARK PRIOR TO EXCAVATION

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
IB	DENOTES	IRON BAR
RIB	DENOTES	ROUND IRON BAR
(WIT.)	DENOTES	WITNESS
(MTO)	DENOTES	MINISTRY TRANSPORTATION OF ONTARIO
(1582)	DENOTES	KIM HUSTED SURVEYING LIMITED
(SU)	DENOTES	SOURCE UNKNOWN
	DENOTES	TREE
	DENOTES	HEDGE
	DENOTES	FENCE POST
	DENOTES	HYDRO POLE
U/H	DENOTES	OVERHEAD HYDRO

PROPERTY DESCRIPTION
PART OF LOTS 12 AND 13 AND PART OF THE ROAD ALLOWANCE BETWEEN LOTS 12 AND 13
(CLOSED BY BY–LAW PASSED MAY 13th 1873 REGISTERED AS INSTRUMENT 40778 APRIL 20th 1876)
CONCESSION 11
GEOGRAPHIC TOWNSHIP OF NORTH WALSINGHAM
IN
NORFOLK COUNTY

"THIS IS NOT AN ORIGINAL COPY UNLESS EMBOSSED WITH SEAL"

KIM HUSTED SURVEYING LTD.
ONTARIO LAND SURVEYOR
30 HARVEY STREET, TILLSONBURG ONTARIO, N4G 3J8
PHONE:519–842–3638 FAX: 519–842–3639

PROJECT:21-16806TOPO REFERENCE: HF1

PROPOSED RESIDENTIAL DEVELOPMENT
LANGTON, COUNTY OF NORFOLK

TRAFFIC IMPACT ASSESSMENT

F. R. Berry & Associates
March 2023

PROPOSED RESIDENTIAL DEVELOPMENT
LANGTON, COUNTY OF NORFOLK

TRAFFIC IMPACT ASSESSMENT

1. INTRODUCTION AND BACKGROUND

453997 Ontario Limited has proposed the development of a 33 lot residential subdivision in the community of Langton, County of Norfolk. The location of the site is shown in **Figure 1**. Access to seven of the lots will be via Priddle Drive and Jenney Lane. The remainder of the lots will be serviced from a new street linking Queen Street and Albert Street.

The purpose of this report is to estimate the potential vehicle trip generation of the proposed development and to assess the impact of these trips on traffic operation and safety on adjacent streets.

2. EXISTING CONDITIONS

Queen Street, Norfolk County Road 59, is a two lane arterial road with a posted speed limit through the community of Langton of 50km/h. From Albert Street to a point south of Priddle Drive, Queen Street has an urban cross-section with curbs and gutters and parking lanes on both sides of the street. There is a sidewalk on the west side of the street.

Albert Street, Concession Road 12, is a rural two lane road. Between Queen Street and Jenney Lane, the street is wide enough to accommodate parking on both sides. East of Jenney Lane, there are minimal shoulders and drainage swales on both sides.

The intersection of Queen Street and Albert Street is controlled by stop signs on the Albert Street approaches. There are no turning lanes on any of the approaches.

Jenney Lane and Priddle Drive east of Queen Street are local streets. Neither street has curbs and gutters or sidewalks. Both are paved. Sight distance is not an issue at either of the intersections with Queen Street and Albert Street.

The proposed Street A will intersect Queen Street approximately 140 metres south of Priddle Drive and approximately 55 metres south of the existing intersection with South Street. Street A will intersect Albert Street approximately 125 metres east of the intersection with Jenney Lane. There are no sight distance restrictions at either of the proposed intersections.

For the purposes of this study, a traffic count was made at the intersection of Queen Street and Albert Street on Tuesday, August 17, 2021. Peak hour turning volumes derived from this count are shown in **Figure 2**. Traffic count reports are contained in Appendix A. Although traffic patterns were affected by the Covid-19 pandemic, observations indicated they had returned to normal levels, particularly in the afternoon peak hours, by the late summer of 2021.

3. PROPOSED DEVELOPMENT

The site plan for the proposed development is shown in **Figure 3.** Seven single family lots are proposed fronting on Priddle Drive and Jenney Lane. 26 single family lots are proposed for Street A. It should be noted that the eight lots on the south side of Street A are currently outside the hamlet boundary. It is understood that the developer has submitted a request to the County to include these lots in the proposed subdivision.

Based on regression equations contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual, Eleventh Edition, for ITE Land Use 210, Single-Family Detached Housing, vehicle trip generation for the proposed subdivision was estimated as shown in **Table 1**.

Figure 4 shows the assignment of site generated trips to Queen Street and Albert Street. The assignment was based on the ease of access to either street and on the existing directional flows on Queen Street and Albert Street. No traffic was assigned to the east and west on Albert Street.

4. PROJECTED TRAFFIC

Full build-out of the proposed development was assumed to be in 2024. Existing peak hour traffic volumes were projected to 2029, five years beyond build-out as shown in **Figure 5**. An annual growth rate of one percent was assumed.

Figure 6 shows projected total peak hour traffic in 2029. The turning movements shown in **Figure 6** were obtained by adding site generated traffic from **Figure 4** to background traffic from **Figure 5**.

5. ANALYSIS

Peak hour traffic demand at the intersection of Queen Street and Albert Street was analyzed for volume to capacity (v/c) ratios, delays and queue lengths using the Synchro 11 analysis program. The results of the analysis are summarized in **Table 2**. The analysis report is contained in Appendix B.

The intersections of Queen Street with Priddle Drive and Street A and Albert Street with Jenney Lane and Street A were not analyzed. The existing traffic demand on the side streets is very light and the proposed development would add less than 12 vehicles to the turning movements at each intersection. As noted above, sight distance is not an issue at these intersections. The posted speed limit on the through streets is 50km/h.

Given the low volumes on all three side streets, the spacing between Priddle Drive, South Street and Street A is acceptable. There is not likely to be any congestion between conflicting turning movements.

Level of service is a measure of how well an intersection operates under prevailing traffic conditions. It is expressed on a scale of A to F, where A is the highest level of service and F indicates unacceptable congestion and delay. Level of service is measured in terms of average delay to all vehicles passing through the intersection in the peak hour.

The analysis of projected total traffic in 2029 at the intersection of Queen Street and Albert Street shows that the intersection will continue to operate at a high level of service. Average delays to vehicles subject to stop control on the Albert Street approaches would range from 9.8 to 12.3 seconds. This includes the time required to slow down to a stop, check for oncoming traffic and then proceed. Average delays on the Queen Street approaches would be less than one second, reflecting the delay caused by left turning vehicles waiting for a gap in approaching traffic. Queue lengths would ne negligible while average delays to all vehicles passing through the intersection would be 2.5 seconds in the morning peak hour and 3.1 seconds in the afternoon peak hour.

6. SUMMARY AND CONCLUSIONS

The proposed residential development would generate a total of 29 vehicle trips in the morning peak hour and 36 vehicle trips in the afternoon peak hour. These trips would have no significant impact on the operation of the intersection of Queen Street and Albert Street or on the existing intersections of Queen Street with Priddle Drive and Albert Street with Jenney Lane. There would be no significant impact at either of the two proposed intersections with Street A. No street improvements would be required.

ITE Land Use		AM Peak Hour				PM Peak Hour			
		Rate	total	in	out	Rate	total	in	out
210	Priddle Drive and Jenney Lane 7du	eq'n	7	2	5	eq'n	8	5	3
210	Street A 26du	eq'n	22	5	17	eq'n	28	18	10
	Total		29	7	22		36	23	13

Table 1

Vehicle Trip Generation

Intersection	AM Peak Hour				PM Peak Hour			
	v/c	Del.	LofS	Q	v/c	Del.	LofS	Q
Eastbound LTR	0.056	10.1	B	0.2	0.112	12.3	B	0.4
Westbound LTR	0.033	9.8	A	0.1	0.059	10.9	B	0.2
Northbound LTR	0.004	0.4	A	0.0	0.010	0.7	A	0.0
Southbound LTR	0.005	0.5	A	0.0	0.022	1.0	A	0.1
Intersection Delay	2.5sec				3.1sec			
LofS	A				A			

Note: Del. - ave. delay (secs.)

LofS - level of service

v/c - volume to capacity ratio

ICU - intersection capacity utilization

Q - maximum queue length (veh)
(95th percentile)

Table 2

Level of Service
Queen Street
and Albert Street
Total Traffic 2029

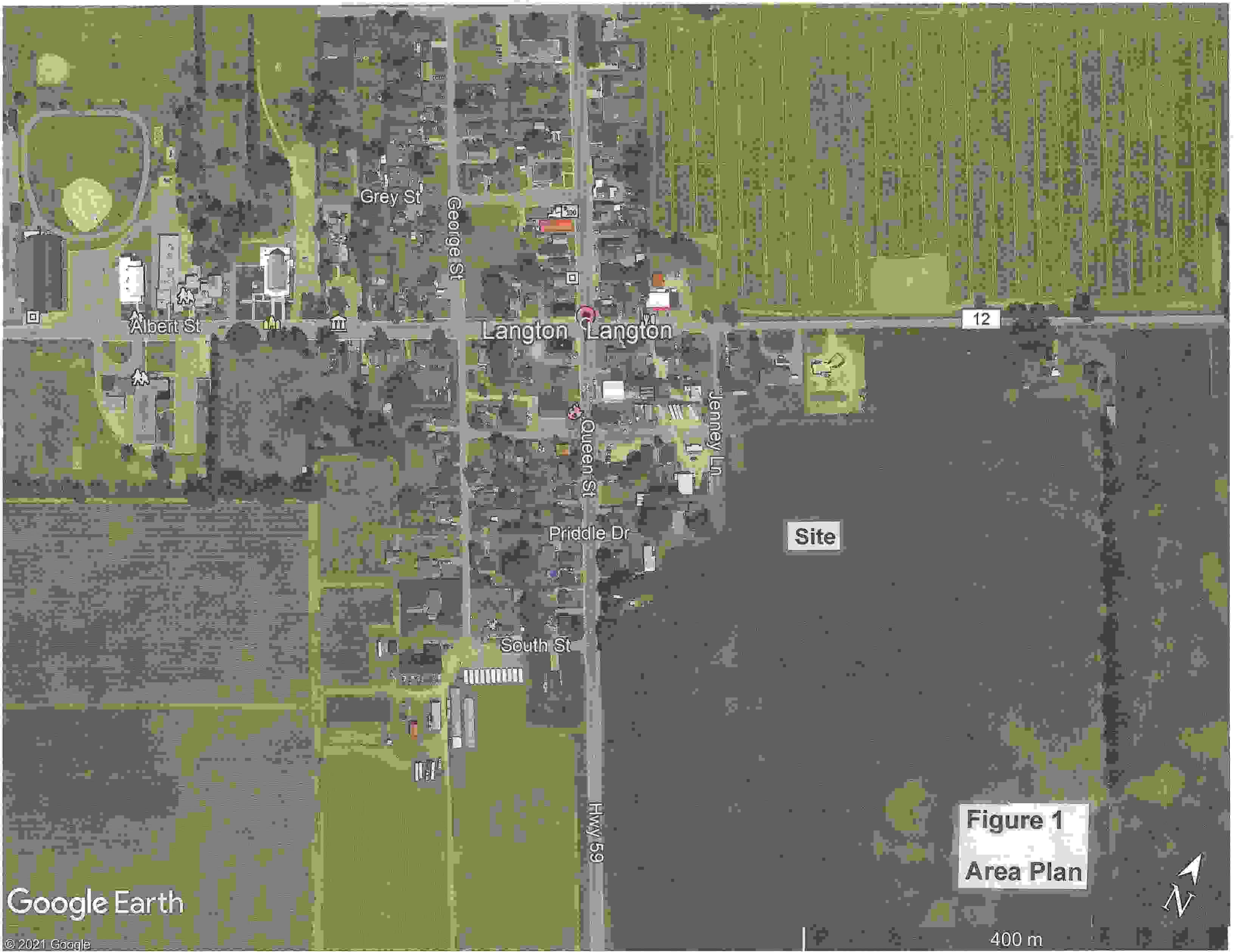
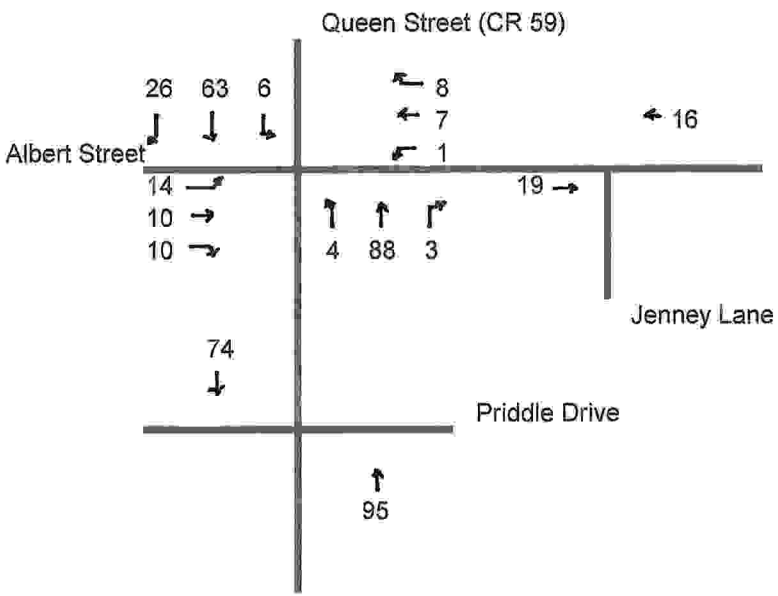
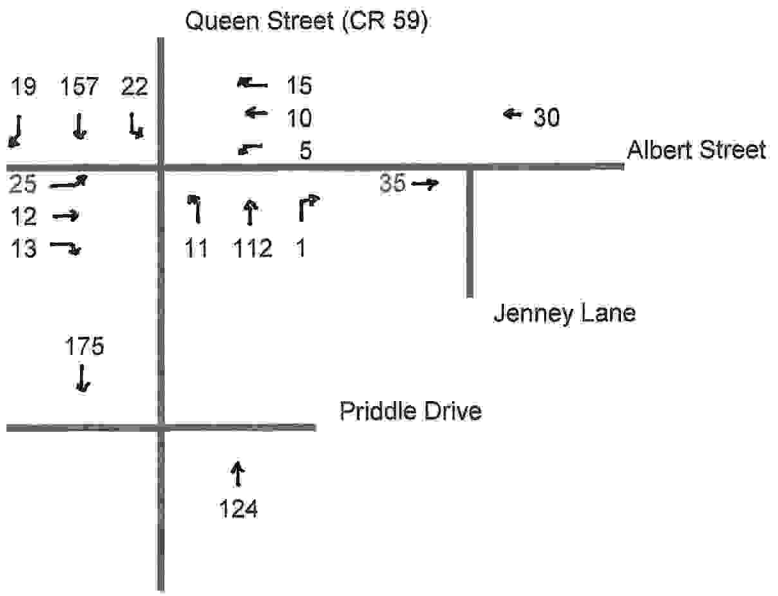


Figure 1

Area Plan



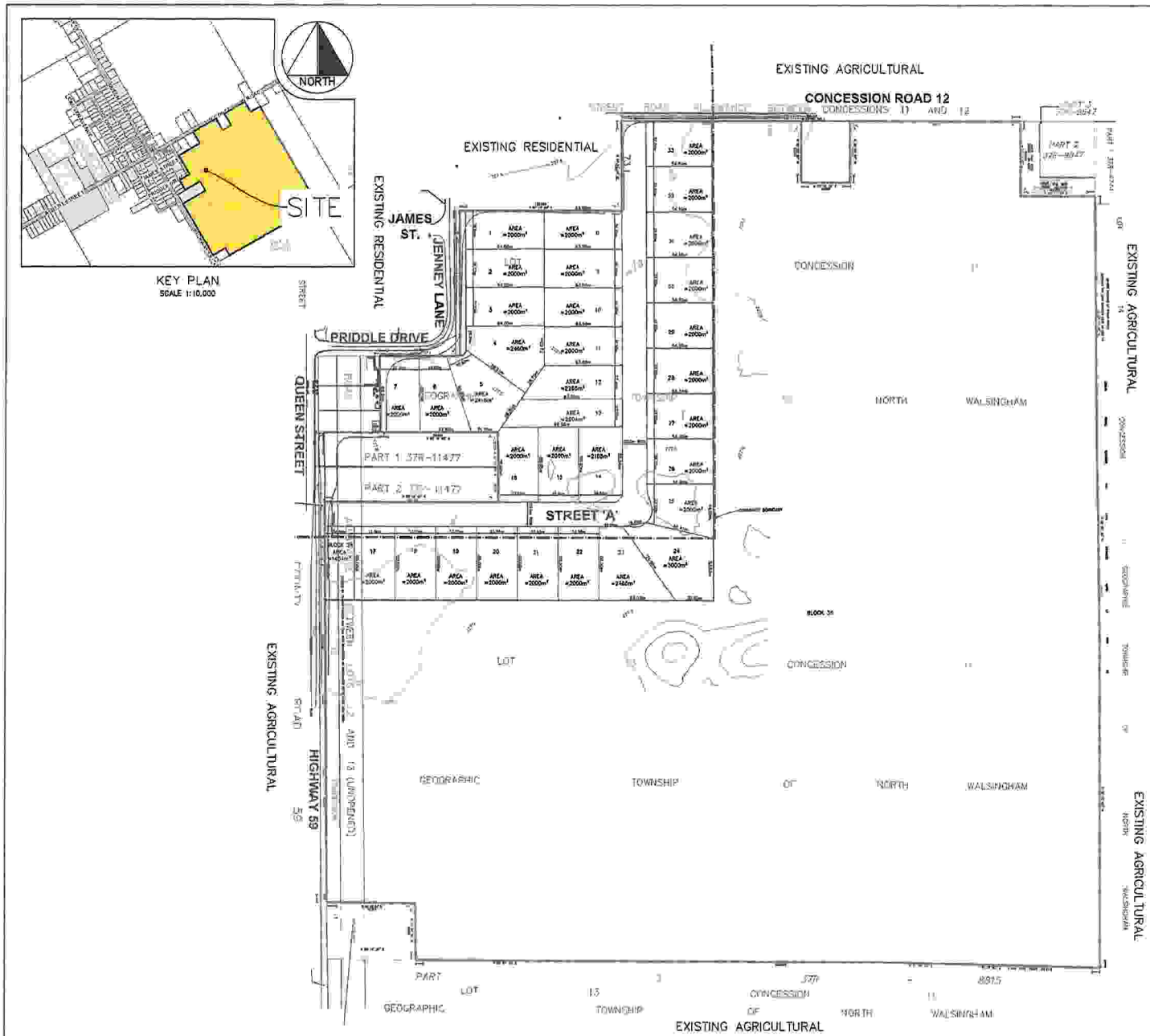
AM Peak Hour



PM Peak Hour

Figure 2

Existing Traffic 2021



DRAFT PLAN OF SUBDIVISION

PART OF LOTS 12 AND 13 AND PART OF
THE ROAD ALLOWANCE BETWEEN LOTS 12 AND 13
(CLOSED BY BY-LAW PASSED MAY 13TH 1873
REGISTERED AS INSTRUMENT 40778 APRIL 20TH 1876)
CONCESSION 11
GEOGRAPHIC TOWNSHIP OF NORTH WALSINGHAM
NORFOLK COUNTY

INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT RSO 1990
(A) ON PLAN
(B) ON PLAN
(C) ON PLAN
(D) LOTS 1 TO 15 – SINGLE DETACHED RESIDENTIAL
DEDICATED STREETS – STREET 'A'
BLOCK 16 – STORM WATER MANAGEMENT
BLOCK 17 FUTURE LOT SEVERANCE
BLOCK 18 FUTURE DEVELOPMENT
(E) NORTH – EXISTING RESIDENTIAL/AGRICULTURAL.
WEST – EXISTING RESIDENTIAL/AGRICULTURAL.
EAST – EXISTING AGRICULTURAL
SOUTH – EXISTING AGRICULTURAL
(F) ON PLAN
(G) ON PLAN
(H) INDIVIDUAL PRIVATE WELLS
(I) SAND
(J) ON PLAN
(K) STORM SEWERS, TELEPHONE, GAS, T.V.CABLE
(L) NORFOLK COUNTY OFFICIAL PLAN AND ZONING BY-LAWS

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NORTH

SCALE 1:1500

0 20 50 100 METRE 200

NOTE: ORIGINAL CONTOURS SHOWN FROM 2021 SURVEY BY KIM HUSTED SURVEYING LTD

AREA SUMMARY

DESCRIPTION		AREA (ha)
LOTS 1-15	SINGLE DETACHED RESIDENTIAL	6.14
DEDICATED STREETS	STREET 'A'	0.48
BLOCK 16	STORM WATER MANAGEMENT	0.83
BLOCK 17	FUTURE DEVELOPMENT	31.25
TOTAL		37.98

OWNER'S CERTIFICATE

453997 ONTARIO LIMITED, THE REGISTERED OWNER OF THE LANDS TO BE SUBDIVIDED HEREBY AUTHORIZES CYRIL J. DEMEYERE LIMITED TO SUBMIT THIS DRAFT PLAN FOR APPROVAL.

DATE

TERRY DEVOS
453997 ONTARIO LIMITED

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE REMAINING LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN ON THIS PLAN.

DATE

KIM HUSTED, ONTARIO LAND SURVEYOR

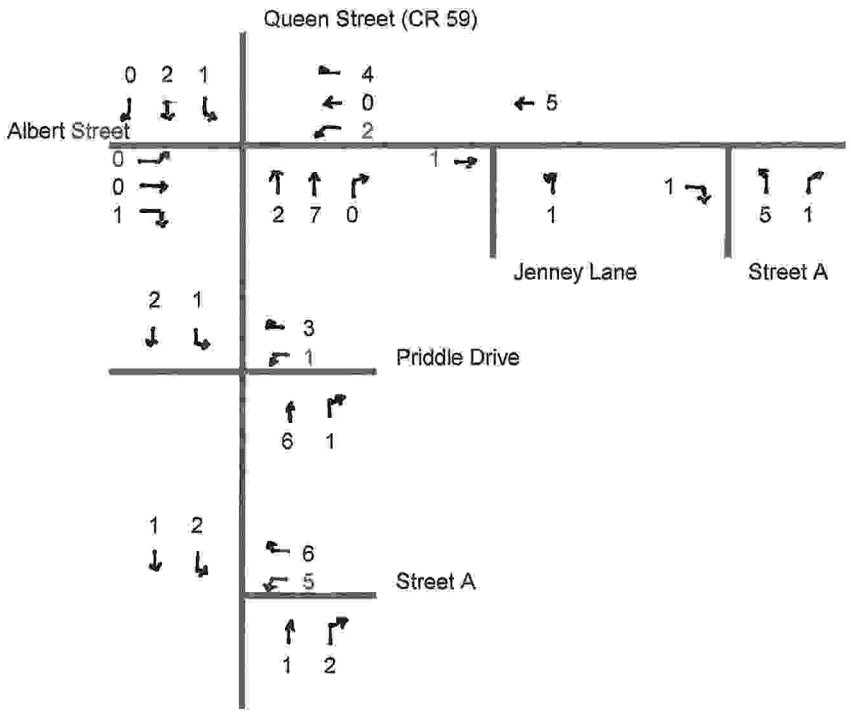
CJDL Consulting Engineers

21032

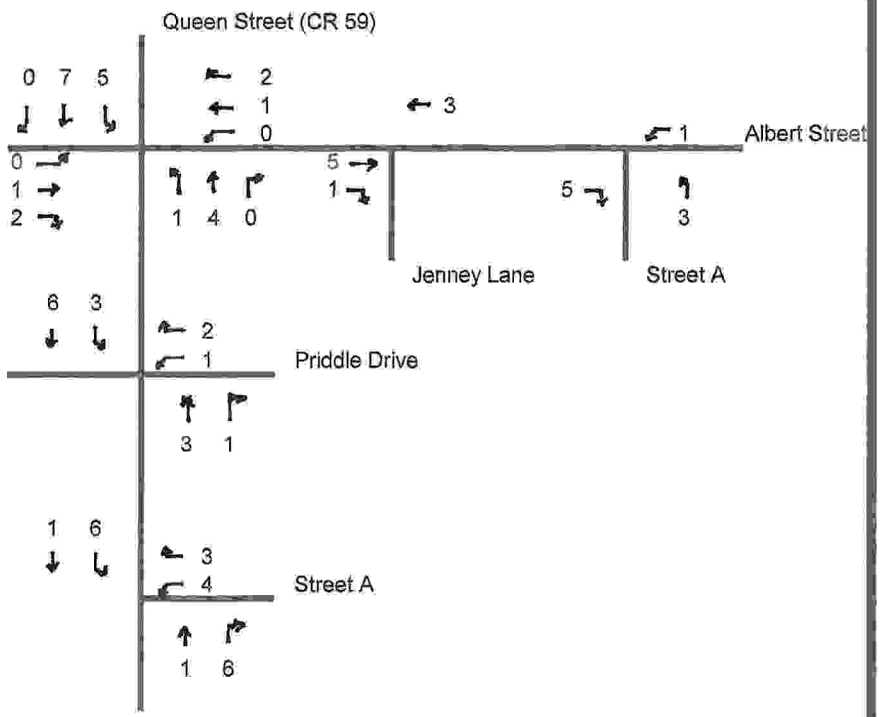
30 JUNE 2022

Figure 3

Site Plan



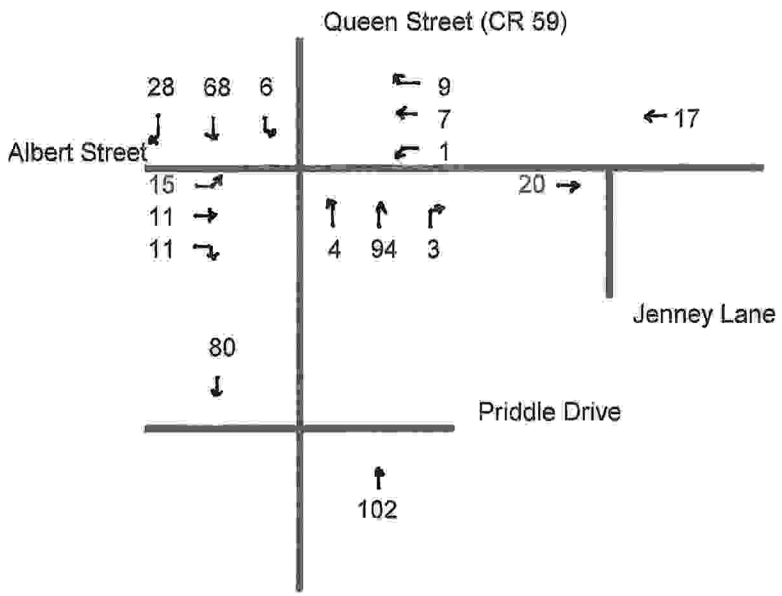
AM Peak Hour



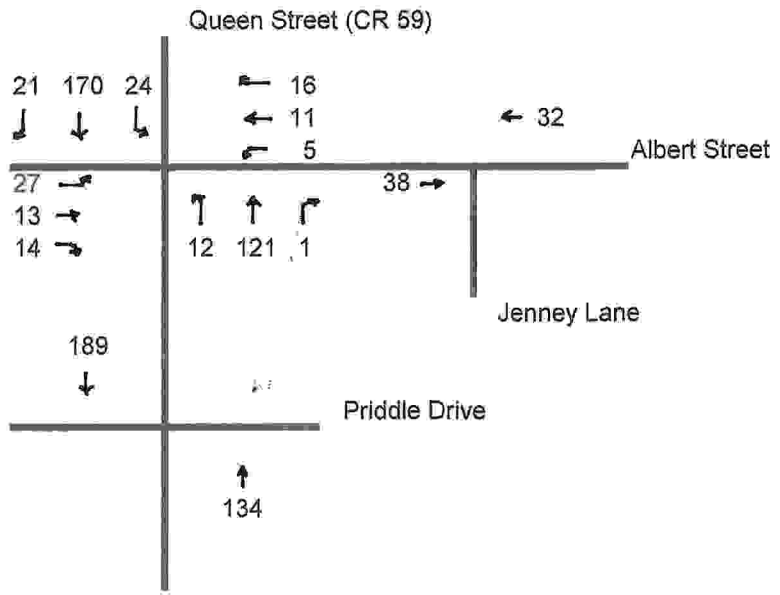
PM Peak Hour

Figure 4

Site Generated Traffic



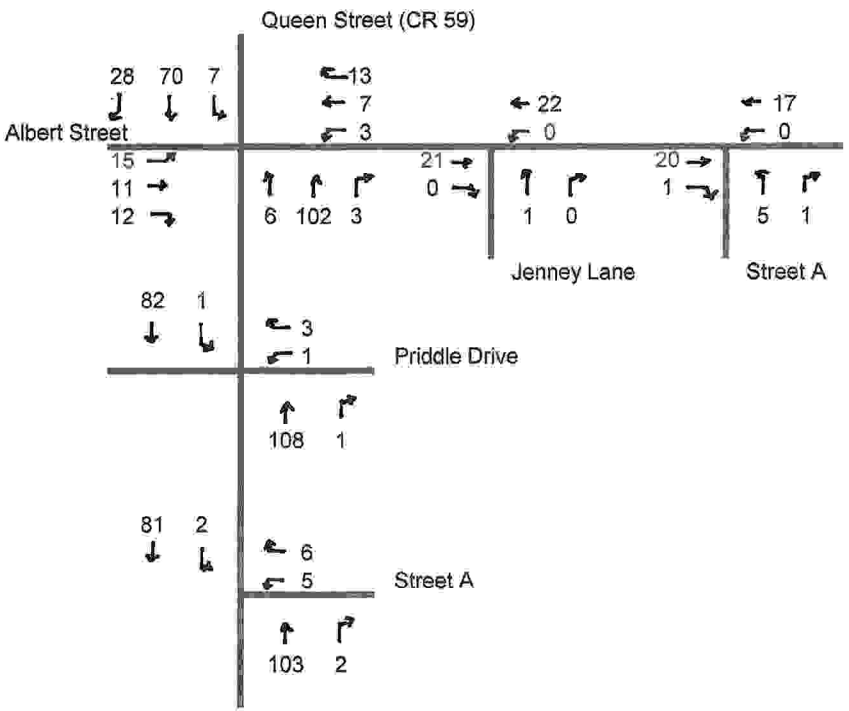
AM Peak Hour



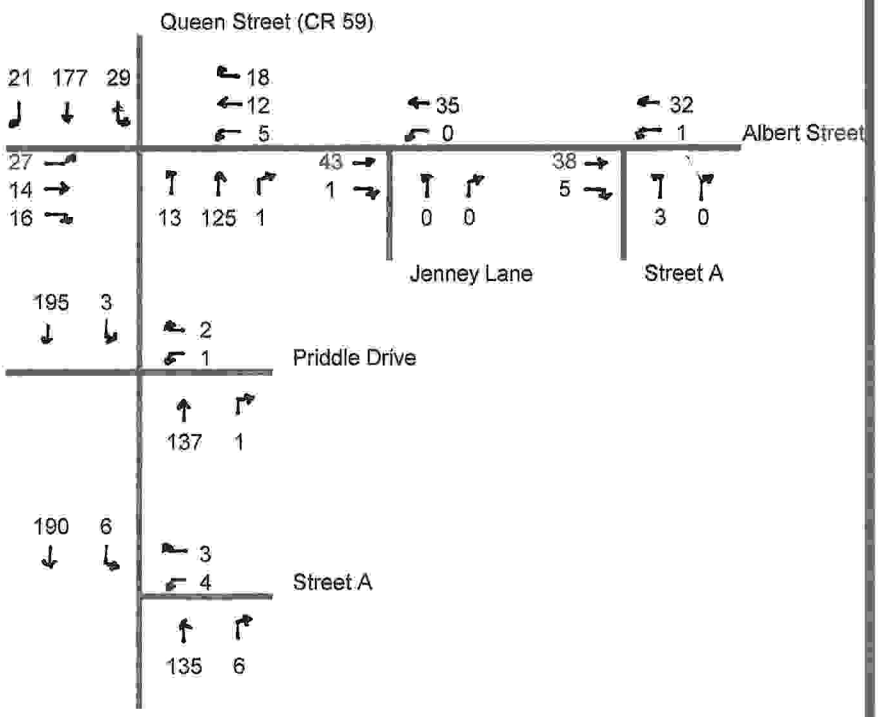
PM Peak Hour

Figure 5

Background Traffic 2029



AM Peak Hour



PM Peak Hour

Figure 6

Total Traffic 2029

APPENDIX A

TRAFFIC COUNTS

Queen St (CR 59) @ Albert St (Conc 12)

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Langton
Site #: 0000000002
Intersection: Queen St & Albert St
TFR File #: 2
Count date: 17-Aug-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Queen St runs N/S

North Leg Total: 205
North Entering: 95
North Peds: 3
Peds Cross: ⋈

Heavys	0	7	0	7
Trucks	3	2	0	5
Cars	23	54	6	83
Totals	26	63	6	

Heavys	11
Trucks	4
Cars	95
Totals	110

East Leg Total: 35
East Entering: 16
East Peds: 2
Peds Cross: ⋈

Heavys	Trucks	Cars	Totals
0	3	34	37

Queen St

Cars	Trucks	Heavys	Totals
6	1	1	8
7	0	0	7
1	0	0	1
14	1	1	

Albert St

N
W E
S

Heavys	Trucks	Cars	Totals
1	0	13	14
0	0	10	10
0	0	10	10
1	0	33	

Albert St

Cars	Trucks	Heavys	Totals
18	1	0	19

Queen St

Peds Cross: ⋈
West Peds: 4
West Entering: 34
West Leg Total: 71

Cars	65			
Trucks	2			
Heavys	7			
Totals	74			

Cars	4	76	2	82
Trucks	0	3	1	4
Heavys	0	9	0	9
Totals	4	88	3	

Peds Cross: ⋈
South Peds: 2
South Entering: 95
South Leg Total: 169

Comments

Queen St (CR 59) @ Albert St (Conc 12)

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

Municipality: Langton
Site #: 0000000002
Intersection: Queen St & Albert St
TFR File #: 2
Count date: 17-Aug-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Queen St runs N/S

North Leg Total: 256
North Entering: 134
North Peds: 3
Peds Cross: ⋈

Heavys	1	7	0	8
Trucks	1	1	0	2
Cars	14	94	16	124
Totals	16	102	16	

Heavys	6
Trucks	3
Cars	113
Totals	122

East Leg Total: 57
East Entering: 24
East Peds: 1
Peds Cross: ⋈

Queen St

Heavys	Trucks	Cars	Totals
1	2	23	26

	Cars	Trucks	Heavys	Totals
	12	0	0	12
	6	0	0	6
	6	0	0	6
	24	0	0	

Albert St

N
W E
S

Heavys	Trucks	Cars	Totals
1	1	15	17
0	0	9	9
0	0	7	7
1	1	31	

Albert St

Cars	Trucks	Heavys	Totals
32	1	0	33

Queen St

Peds Cross: ⋈
West Peds: 5
West Entering: 33
West Leg Total: 59

Cars	107
Trucks	1
Heavys	7
Totals	115

Cars	3	86	7	96
Trucks	1	2	1	4
Heavys	0	5	0	5
Totals	4	93	8	

Peds Cross: ⋈
South Peds: 5
South Entering: 105
South Leg Total: 220

Comments

Queen St (CR 59) @ Albert St (Conc 12)

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Langton
Site #: 0000000002
Intersection: Queen St & Albert St
TFR File #: 2
Count date: 17-Aug-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Queen St runs N/S

North Leg Total:	350
North Entering:	198
North Peds:	2
Peds Cross:	⋈

Heavys	0	3	0	3
Trucks	0	2	1	3
Cars	19	152	21	192
Totals	19	157	22	

Heavys	4
Trucks	4
Cars	144
Totals	152

East Leg Total:	65
East Entering:	30
East Peds:	0
Peds Cross:	⧖

Queen St

Heavys	Trucks	Cars	Totals
0	0	40	40

Cars	Trucks	Heavys	Totals
15	0	0	15
10	0	0	10
5	0	0	5
30	0	0	

Albert St

N
W E
S

Heavys	Trucks	Cars	Totals
0	1	24	25
0	0	12	12
0	0	13	13
0	1	49	

Albert St

Cars	Trucks	Heavys	Totals
34	1	0	35

Queen St

Peds Cross:	⧖
West Peds:	1
West Entering:	50
West Leg Total:	90

Cars	170
Trucks	2
Heavys	3
Totals	175

Cars	11	105	1	117
Trucks	0	3	0	3
Heavys	0	4	0	4
Totals	11	112	1	

Peds Cross:	⋈
South Peds:	1
South Entering:	124
South Leg Total:	299

Comments

Queen St (CR 59) @ Albert St (Conc 12)

Total Count Diagram

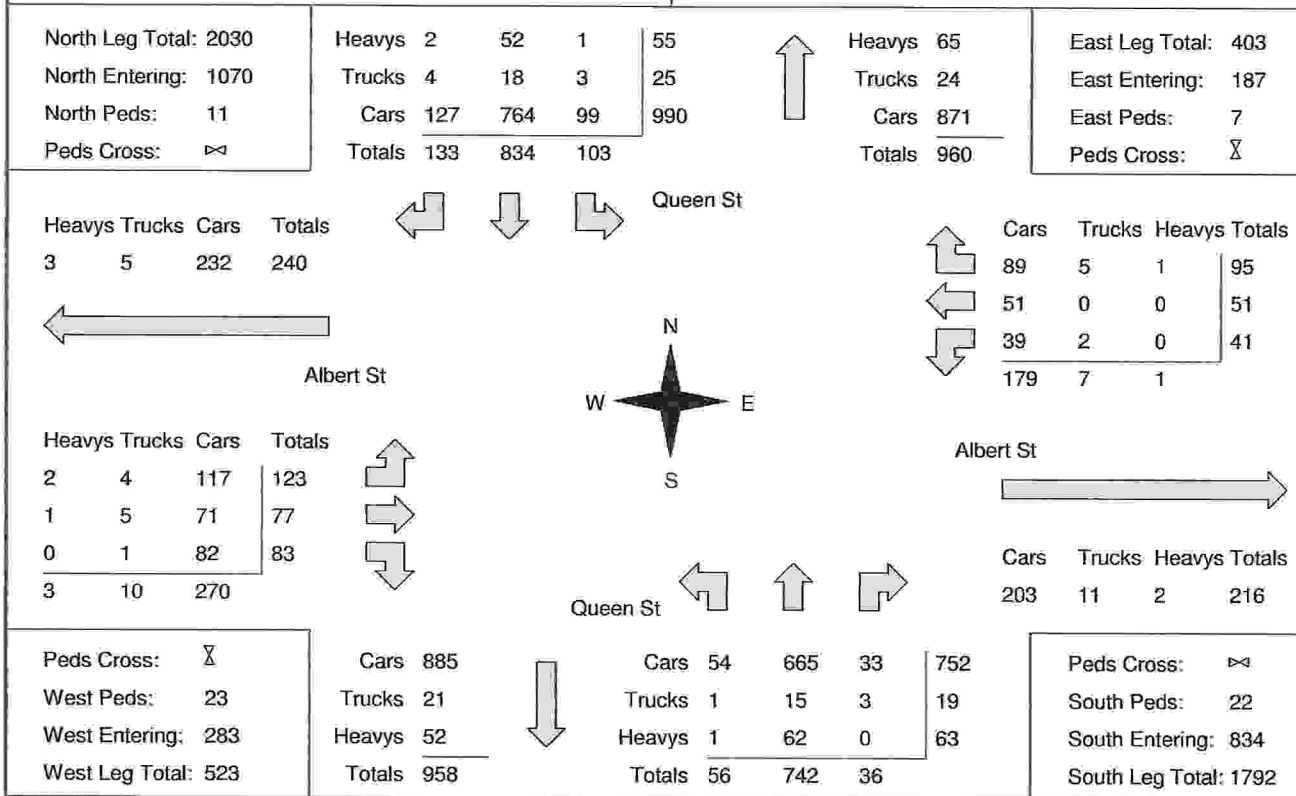
Municipality: Langton
Site #: 0000000002
Intersection: Queen St & Albert St
TFR File #: 2
Count date: 17-Aug-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Queen St runs N/S



Comments

Queen St (CR 59) @ Albert St (Conc 12)

Municipality: Langton
Major Road: Queen St
Minor Road: Albert St

Date: Aug 17, 2021

Major Road Runs: North/South
Weather Conditions: Cloudy/Dry
Person No. 1 Cam
Person No. 2

Period	North Approach							East Approach							South Approach							West Approach							Veh. Summary	
	Cars			Trucks			Ped.	Cars			Trucks			Ped.	Cars			Trucks			Ped.	Cars			Trucks			Ped.		
Ending	Left	Thru	Right	Left	Thru	Right	Cross.	Left	Thru	Right	Left	Thru	Right	Cross.	Left	Thru	Right	Left	Thru	Right	Cross.	Left	Thru	Right	Left	Thru	Right	Cross.	15	60
7:15	0	4	2	0	3	0	0	0	0	2	0	0	0	0	1	11	0	0	0	0	1	4	1	2	0	0	0	0	30	
7:30	1	13	4	0	2	0	0	0	0	3	0	0	0	0	1	22	0	0	0	0	0	2	2	1	0	1	0	0	52	
7:45	0	24	3	0	0	0	0	0	0	2	0	0	0	0	2	13	0	0	4	0	0	2	0	3	0	0	0	0	53	
8:00	2	13	5	0	4	0	0	0	2	1	0	0	1	0	0	21	0	0	2	0	1	4	4	3	0	0	0	1	62	197
8:15	2	19	4	0	2	1	2	0	1	3	0	0	1	2	0	18	1	0	2	0	0	2	2	2	1	0	0	0	61	228
8:30	2	16	8	0	3	0	0	0	2	2	0	0	0	0	3	13	0	0	3	1	1	5	1	4	0	0	0	1	63	239
8:45	0	6	6	0	0	2	1	1	2	0	0	0	0	0	1	24	1	0	5	0	0	2	3	1	0	0	0	2	54	240
9:00	2	12	5	0	2	0	0	0	3	4	0	0	1	0	3	11	2	0	1	0	0	2	3	4	0	1	0	3	56	234
11:15	3	18	0	1	2	0	0	1	3	7	0	0	0	1	0	14	2	0	7	0	0	4	3	3	0	0	0	0	68	
11:30	3	30	2	0	4	1	0	0	1	6	0	0	0	0	1	19	2	1	1	0	0	5	2	2	1	0	0	0	81	
11:45	2	25	5	0	0	0	1	2	0	0	0	0	0	1	2	24	3	0	5	0	2	5	1	2	0	0	0	1	76	
12:00	5	19	4	0	1	1	2	2	3	4	0	0	0	0	0	18	1	0	0	0	3	1	3	2	1	0	0	4	65	290
12:15	6	20	3	0	3	0	0	2	2	2	0	0	0	0	0	25	1	0	1	1	0	4	3	1	0	0	0	0	74	296
12:30	6	16	4	0	4	0	0	2	0	3	0	0	0	0	3	19	0	0	5	0	0	0	1	1	0	0	0	0	64	279
12:45	3	17	2	0	2	0	2	0	1	2	0	0	0	0	3	17	0	0	4	0	0	1	2	1	0	0	0	0	55	258
13:00	3	25	1	0	0	0	0	2	2	2	0	0	0	0	1	19	1	0	2	0	0	4	2	9	0	0	0	0	73	266
13:15	3	30	1	0	3	0	0	2	0	5	0	0	0	0	0	16	3	0	1	0	0	5	1	3	0	1	0	0	74	266
13:30	3	23	1	1	2	1	0	0	1	3	0	0	0	2	0	18	2	0	2	0	0	3	0	1	0	0	0	0	61	263
13:45	2	23	2	0	4	0	0	0	0	2	0	0	0	1	1	23	1	0	3	0	2	5	1	5	0	0	0	0	72	280
14:00	0	20	2	0	7	0	0	1	1	4	1	0	0	0	3	18	2	0	4	0	3	6	1	2	0	1	1	2	74	281
15:15	1	21	3	0	2	0	0	2	3	2	0	0	0	0	2	21	2	0	3	0	0	3	0	1	0	2	0	0	68	
15:30	0	32	2	0	5	0	1	3	3	2	0	0	1	0	1	25	0	1	2	0	2	2	4	4	0	0	0	2	87	
15:45	4	43	2	0	2	0	0	1	4	4	1	0	0	0	3	26	1	0	1	0	1	4	5	1	0	0	0	1	102	
16:00	2	22	4	0	3	0	0	5	2	1	0	0	0	0	3	17	2	0	3	1	1	5	3	7	0	0	0	1	80	337
16:15	3	27	4	0	1	0	0	1	0	1	0	0	0	0	3	23	1	0	2	0	0	1	3	1	0	0	0	0	71	340
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17:15	2	30	5	0	1	0	1	1	6	4	0	0	0	0	0	23	0	0	2	0	1	3	0	3	0	0	0	0	80	395
17:30	5	46	3	1	2	0	1	1	2	1	0	0	0	0	5	32	0	0	3	0	0	10	4	2	0	0	0	0	117	391
17:45	6	41	3	0	1	0	0	1	0	4	0	0	0	0	3	24	1	0	1	0	0	6	2	6	1	0	0	0	100	402
18:00	8	26	12	0	0	0	0	1	2	4	0	0	0	0	2	21	1	0	5	0	4	2	1	1	0	0	0	1	86	383

APPENDIX B

LEVEL OF SERVICE ANALYSIS

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	15	11	12	3	7	13	6	102	3	7	70	28
Future Vol, veh/h	15	11	12	3	7	13	6	102	3	7	70	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	0	0	0	0	25	0	14	33	0	14	12
Mvmt Flow	16	12	13	3	8	14	7	111	3	8	76	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	245	235	91	247	249	113	106	0	0	114	0	0
Stage 1	107	107	-	127	127	-	-	-	-	-	-	-
Stage 2	138	128	-	120	122	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.5	6.2	7.1	6.5	6.45	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4	3.3	3.5	4	3.525	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	698	669	972	711	657	881	1498	-	-	1488	-	-
Stage 1	886	811	-	882	795	-	-	-	-	-	-	-
Stage 2	853	794	-	889	799	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	675	662	972	686	650	881	1498	-	-	1488	-	-
Mov Cap-2 Maneuver	675	662	-	686	650	-	-	-	-	-	-	-
Stage 1	882	806	-	878	791	-	-	-	-	-	-	-
Stage 2	827	790	-	859	794	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	9.8	0.4	0.5
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	742	769	1488	-	-
HCM Lane V/C Ratio	0.004	-	-	0.056	0.033	0.005	-	-
HCM Control Delay (s)	7.4	0	-	10.1	9.8	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	27	14	16	5	12	18	13	125	1	29	177	21
Future Vol, veh/h	27	14	16	5	12	18	13	125	1	29	177	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	0	0	0	0	0	0	6	0	5	3	0
Mvmt Flow	29	15	17	5	13	20	14	136	1	32	192	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	449	433	204	449	444	137	215	0	0	137	0	0
Stage 1	268	268	-	165	165	-	-	-	-	-	-	-
Stage 2	181	165	-	284	279	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.14	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4	3.3	3.5	4	3.3	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	517	519	842	524	511	917	1367	-	-	1429	-	-
Stage 1	733	691	-	842	766	-	-	-	-	-	-	-
Stage 2	816	766	-	727	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	482	500	842	487	492	917	1367	-	-	1429	-	-
Mov Cap-2 Maneuver	482	500	-	487	492	-	-	-	-	-	-	-
Stage 1	725	673	-	833	758	-	-	-	-	-	-	-
Stage 2	776	758	-	678	665	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	10.9	0.7	1
HCM LOS	B	B		

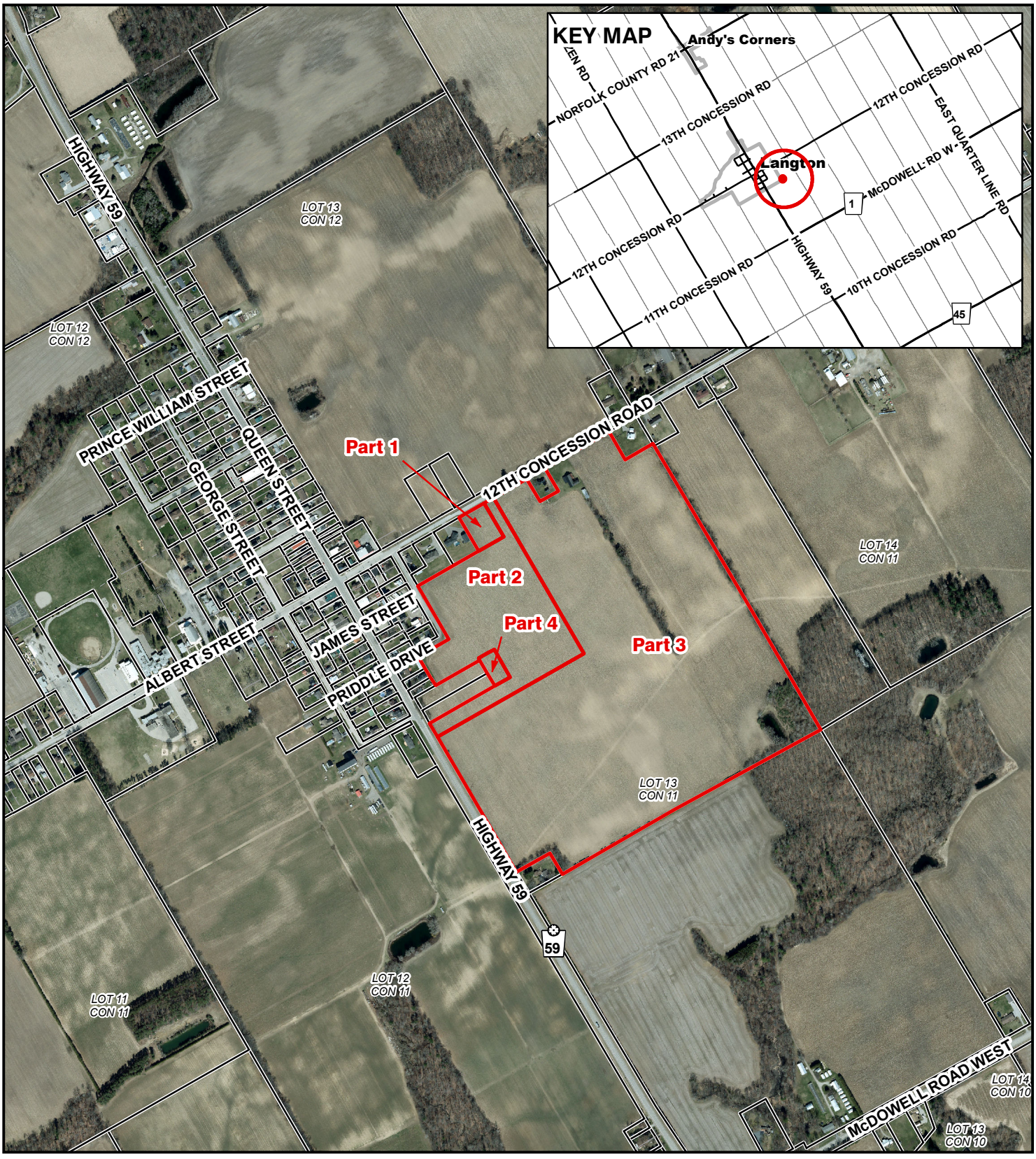
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1367	-	-	553	645	1429	-	-
HCM Lane V/C Ratio	0.01	-	-	0.112	0.059	0.022	-	-
HCM Control Delay (s)	7.7	0	-	12.3	10.9	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.1	-	-

MAP A

CONTEXT MAP

Geographic Township of NORTH WALSINGHAM

28TPL2023297
ZNPL2023298



Legend

Subject Lands

2020 Air Photo

9/19/2023

N

80 40 0 80 160 240 320 Meters

MAP B

OFFICIAL PLAN MAP

Geographic Township of NORTH WALSINGHAM

28TPL2023297
ZNPL2023298

Legend

Subject Lands

Official Plan Designations

- Agricultural
- Hazard Lands
- Hamlet
- Hamlet Area Boundary
- Significant Woodland

9/19/2023

N

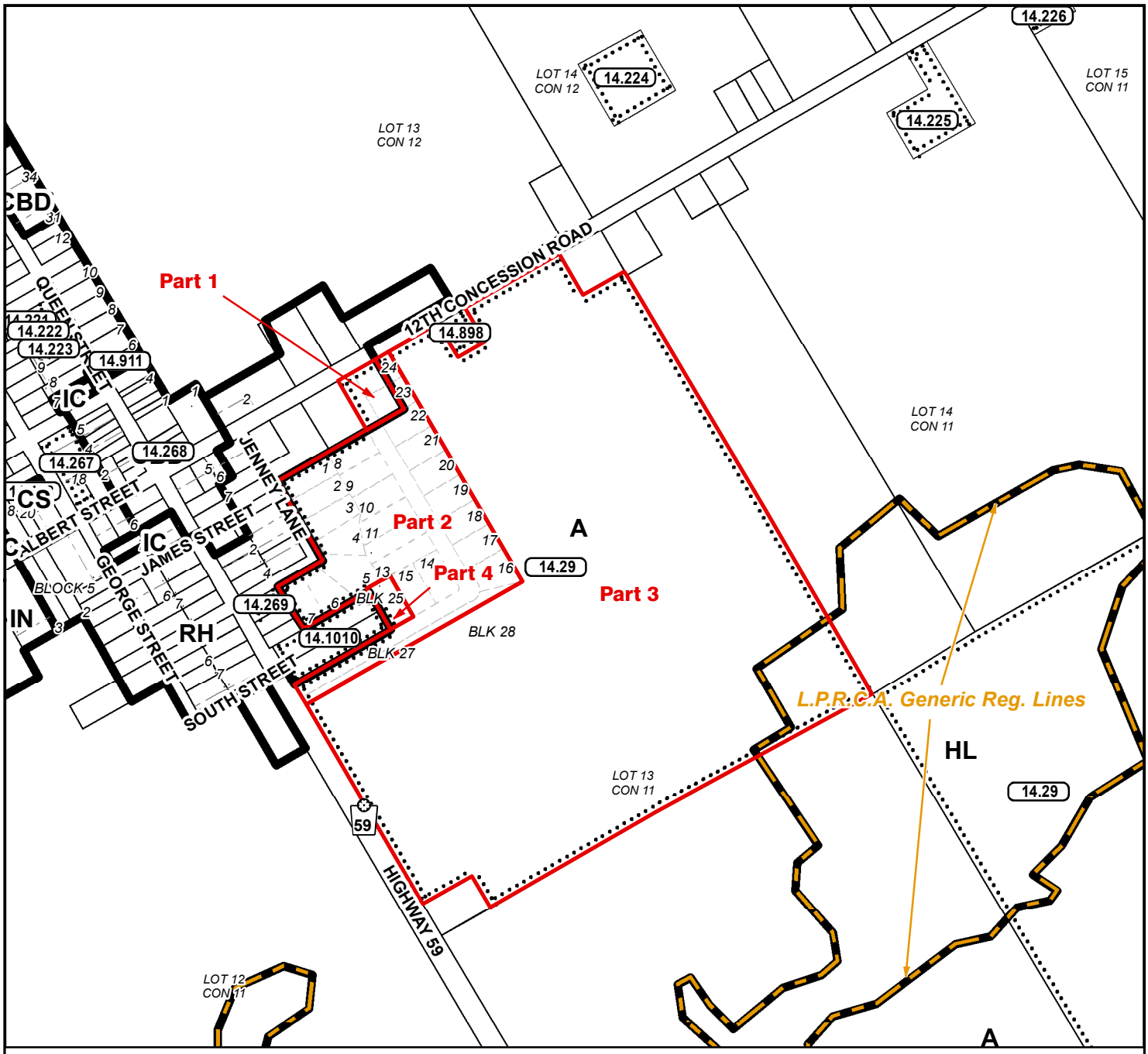
60 30 0 60 120 180 240 Meters

MAP C

PROPOSED ZONING BY-LAW AMENDMENT MAP

Geographic Township of NORTH WALSINGHAM

28TPL2023297
ZNPL2023298



Part 1	Part 2	Part 3	Part 4
From: RH with Special Provision 14.29	From: A with Special Provision 14.29	From: A with Special Provision 14.29	From: A with Special Provision 14.29
To: RH with Special Provision	To: RH with Special Provision	To: A with Special Provision	To: OS

LEGEND

- Subject Lands
- LPRCA Generic RegLines

ZONING BY-LAW 1-Z-2014

- (H) - Holding
- A - Agricultural Zone
- CBD - Central Business District Zone
- CS - Service Commercial Zone
- IC - Community Institutional Zone
- RH - Hamlet Residential Zone
- HL - Hazard Land Zone
- IN - Neighbourhood Institutional Zone

9/19/2023

N

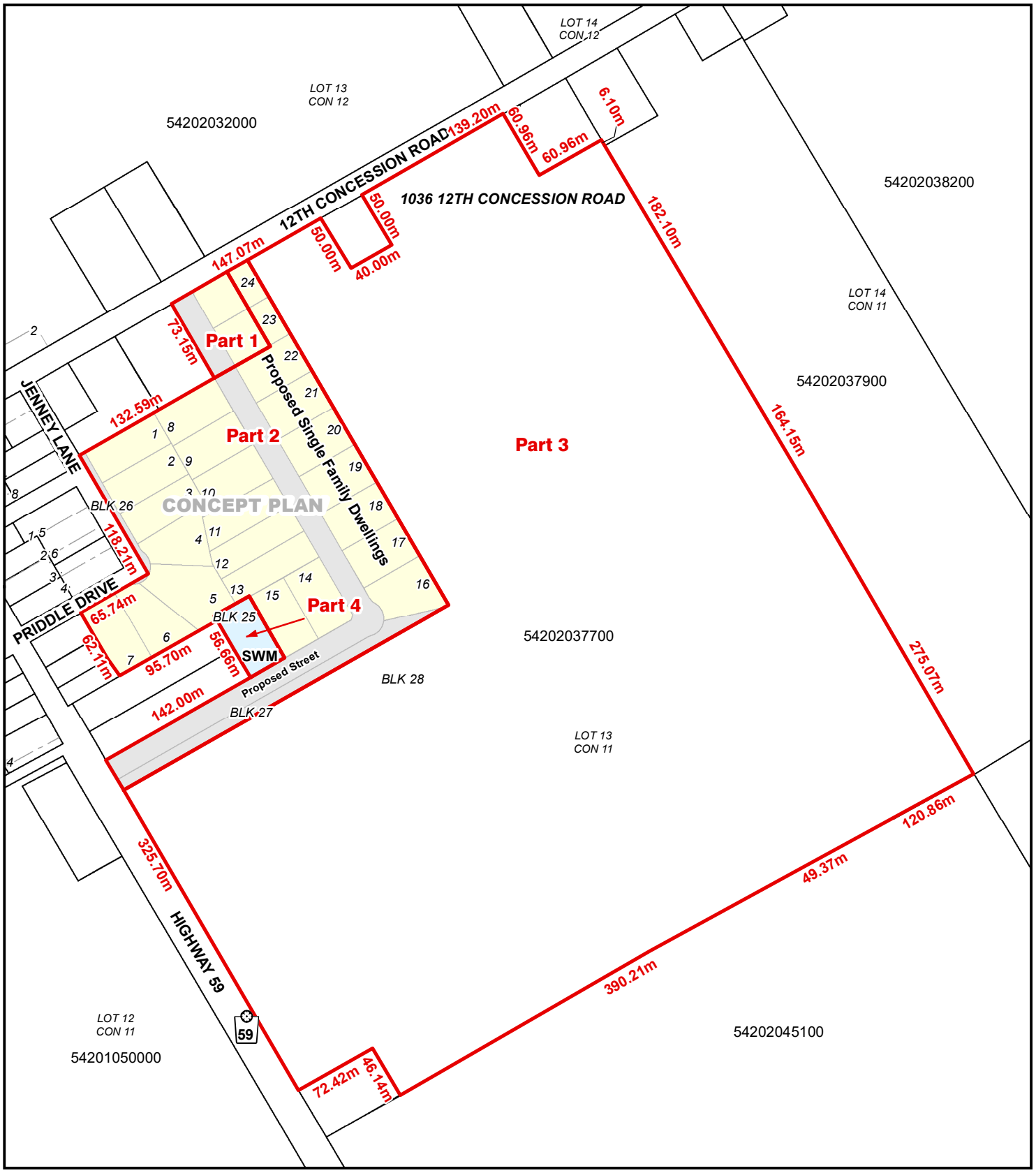
60 30 0 60 120 180 240 Meters

MAP D

CONCEPTUAL PLAN

Geographic Township of NORTH WALSINGHAM

28TPL2023297
ZNPL2023298



Legend

Subject Lands

9/19/2023

N

30 15 0 30 60 90 120 Meters