



Lynndale Heights Residential Development

**Submission to Norfolk County for
Zoning By-Law Amendment**

Project #21-083

April 29, 2025



vallee

*Consulting Engineers,
Architects & Planners*



vallee

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Architects & Planners*

April 29, 2025

Norfolk County
Community Development Division
12 Gilbertson Drive, Simcoe ON, N3Y 3N3

Attention: Bohdan Wynnyckyj, Director of Planning

**Reference: Zoning By-Law Amendment
215 Victoria Street, Simcoe
(Roll # 40100926000)
2721733 Ontario Inc.
Our Project 21-083**

Please accept this package as our formal application for the following planning applications:

- Zoning By-Law Amendment

In response to Norfolk County's pre-consultation minutes issued December 6, 2023, relating to the pre-consultation meeting of December 6, 2023, we include the following documents as our complete application package:

1. This cover letter.
2. Draft summary notes for pre-submission meeting, to be scheduled by Norfolk County staff.
3. A copy of the Norfolk County minutes issued December 6, 2023, from the December 6, 2023 pre-consultation, signed by Lesley Hutton-Rhora on behalf of the proponent and G. Douglas Vallee Ltd.
4. Completed and executed Norfolk County Development Application Form.
5. Articles of Incorporation for proponent 2721733 Ontario Inc.
6. PIN Map & Parcel Registers:
 - PIN 50234-0108 - for Lot 29 on PL 1107 (subject lands owned by 2721733 Ontario Inc.)
 - PIN 50234-0109 - for Lot 47 on PL 1107 (0.3m reserve already owned by Norfolk County)
 - PIN 50234-0002 - for Lot 42 on PL 1107 (road widening already owned by Norfolk County)
7. Conceptual site plan for the proposed development prepared by G. Douglas Vallee Limited.
8. Conceptual elevations and floorplans for the proposed building prepared by G. Douglas Vallee Limited.
9. Planning Justification Report prepared by G. Douglas Vallee Limited.
10. Functional Servicing Report (FSR) prepared by G. Douglas Vallee Limited.
11. Stormwater Management Report (SWM) prepared by G. Douglas Vallee Limited.
12. Servicing plan prepared by G. Douglas Vallee Limited.
13. Traffic Impact Study for parking assessment prepared by RC Spencer Associates Inc.

The submission has been made electronically through the CityView Portal.

Should you have any questions or comments, please contact me immediately so that we can address your items in a timely manner.

Thank you in advance for your support of this project.

Respectfully submitted,



Lesley Hutton-Rhora

G. DOUGLAS VALLEE LIMITED

Consulting Engineers, Architect and Planners

- c. Shawn McGuire, Lunor Group
Danny Finoro, Finoro Homes
Peter Finoro, Finoro Homes
Sam Scicluna, Claysam Homes
John Vallee, P.Eng, G. Douglas Vallee Limited
John Iezzi, P.Eng, G. Douglas Vallee Limited
Eldon Darbyson, BES, MCIP, RPP, G. Douglas Vallee Limited

H:\Projects\2021\21-083 Lynndale Heights Towns\Agency\ZBA\Working Files\1. Cover Letter.docx

G. DOUGLAS VALLEE LIMITED
Consulting Engineers, Architects & Planners

MEETING MINUTES

Project #: 21-083
Project: Lynndale Heights Residential Development

Date: (to be scheduled by Norfolk County)
Category: Pre-Submission Meeting with County Staff for Official Plan & Zoning Amendment Application
Organizer: Norfolk County
Attendees: (to be confirmed by Norfolk County)
Shawn McGuire, John Iezzi, Eldon Darbyson, Lesley Hutton-Rhora

Agenda:

1. Confirm submission requirements for Official Plan & Zoning Amendment application.
2. Confirm application fees.

Notes:

Required:	Provided:	Comments:
Confirmation of Submission Requirements	Preliminary notes for the pre-submission meeting, to be scheduled by Norfolk County staff, are included in the submission.	
Pre-Consultation Minutes	A copy of the final minutes forwarded by County staff on December 6, 2023, for the pre-consultation meeting held on December 6, 2023, are included in the submission.	
Development Application Form	A development application form has been completed, signed & commissioned by the applicant and included in the submission.	
Articles of Incorporation	Articles of Incorporation for 2721733 Ontario Inc. are included in the submission.	
Proposed Site Plan / Drawing	The proposed site plan drawing is included in the submission.	
Typical Elevation Plan, Floor Plans and sections	The proposed elevations and floor plan drawings are included in the submission.	
Parking Assessment	A Traffic Impact Study prepared by RC Spencer Associates Inc. Consulting Engineers includes an assessment of parking requirements and is included in the submission.	
Planning Justification Report	A planning justification report has been prepared by G. Douglas Vallee in support of the proposed development and is included in the submission.	

Functional Servicing & Stormwater Management Report	A Functional Servicing and Stormwater Management Report (FSR) containing the anticipated flows and demands associated with the project has been prepared by G. Douglas Vallee Limited and is included in the submission.	
General Plan of Services	A General Plan of Services has been prepared by G. Douglas Vallee Limited and is included within the Functional Servicing and Stormwater Management Report (FSR).	
Water & Wastewater Modelling	Correspondence with Norfolk County Staff regarding the request for water & wastewater modelling is included with the application submission.	
Confirmation of a Legal & Adequate Inlet	Confirmation of a Legal & Adequate Inlet is included within the Functional Servicing and Stormwater Management Report (FSR).	
Traffic Impact Study	A traffic impact study has been prepared by RC Spencer Associates Inc. and is included in the submission.	

Action Items:				
Task	Assigned To	Dependencies	Status	Target
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				



Pre-Consultation Meeting Notes

Date: December 6, 2023

Description of Proposal: Proposed development of a 5-storey residential apartment building with up to 45 one and two-bedroom dwelling units

Property Location: 215 Victoria Street, Simcoe

Roll Number: 3310401009260000000

Please read all the information in this document on the requirements for future development planning applications. As a result of the information shared at the pre-consultation meeting dated December 6, 2023, the following applications and qualified professional documents/reports are required as part of a complete application. Please include all listed items with the application to ensure a complete application. The County reserves the right to change, reduce or add requirements for a complete application, particularly if the submission does not match the proposal as reviewed during the pre-submission consultation meeting.

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, more information is made public, additional applications, studies, reports, etc., may be required. The information in this document is applicable for a maximum of one (1) year from the meeting date.

Before you submit your application, please contact the assigned Planner to confirm submission requirements and the applicable fee. Fees will not be accepted until the submission has been reviewed and confirmed by the Planning Department.

As part of a complete application, a signed version of these meeting notes is required.

Proponent / Agent Name	Signature	Date
Shawn McGuire, Proponent		
Danny Finoro, Proponent		
Peter Finoro, Proponent		
Sam Scicluna, Proponent		
John Vallee, Agent		
John Iezzi, Agent		
Scott Puillandre, Agent		
Lesley Hutton-Rhora, Agent	<i>Lesley Hutton-Rhora</i>	2025.02.21

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Proposal Summary:

The applicant proposes the development of a 5-storey residential apartment building with up to 45 one and two-bedroom dwelling units. The ground level will feature access and shared amenity spaces in support of the residential units above.

List of Application Requirements* and General Comments

Planning Department

Planning application(s) required to proceed	Required
Official Plan Amendment Application	
Zoning By-law Amendment Application	X
Site Plan Application	X
Draft Plan of Subdivision Application	
Draft Plan of Condominium Application	
Part Lot Control Application	
Consent / Severance Application	
Minor Variance Application	

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Removal of Holding Application		
Temporary Use By-Law Application		
Other – Draft Plan of Condo exemption		X (TBD)
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 Site Plan Stage
Agricultural Impact Assessment		
Air Treatment Control Study		
Archeological Assessment		
Contaminated Site Study		
Dust, Noise and Vibration Study		
Typical Elevation Plan, Floor Plans and sections	X	X
Environmental Impact Study		
Geotechnical Study		
Heritage Impact Assessment		
Hydrogeological Study		
Landscaping Plan		X
Market Impact Analysis		
Minimum Distance Separation Schedule		
MOE D-Series Guidelines Analysis		
Neighbourhood Plan		
Odour Mitigation Plan		
Parking Assessment	X	X
Planning Justification Report/Impact Analysis	X	
Photometrics (Lighting) Plan		X
Record of Site Condition		
Restricted Land Use Screening Form		
Site Plan/Drawing	X	X
Topographical Study		
Other:		
Other:		
Additional Planning Requirements		Required
Development Agreement		X
Parkland Dedication/Cash-in-lieu of Parkland		X
Other: Appraisal		X

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* Any changes to a proposal may necessitate changes to Planning Department submission requirements. Reports and studies are subject to peer review.

Summary of Fees, Forms, and other information pertaining to the Planning process can found by visiting <https://www.norfolkcounty.ca/government/planning/>

See Appendix A for additional information

Planning Comments

The proposal is to erect a 5 storey block of condominiums with 45 units within the Neighbourhood Commercial Zone and Urban Residential OP designation of Simcoe. The land is located at the corner of Donly Drive South and Victoria Street.

The proposal will require a Zoning By-law Amendment to allow for the change of use of the land to R5 to allow for the construction of a 5 Storey condo development. This will also allow for the approval of any deficiencies which would need correction prior to the site plan stage including the deficient frontage onto Austin Crescent, the provision of parking in front of the building and rear yard setback which do not currently comply with Zoning provisions. Any other deficiencies to be approved as part of the ZBA are the responsibility of the applicant to highlight.

There is some concern about the access onto Donly Drive South that this would result in a 'cut through' this site from Austin Crescent and how this would be prevented, should form part of the required Planning Justification Report. Is this second vehicle access necessary? Emergency access is more logical with knock-down bollards installed.

Once the ZBA is ready to submit, please contact me to arrange for a pre-submission meeting to go through the required information and ensure your file is sufficiently complete to progress. Once this file has been determined and assuming an approval, then the Site Plan application can be submitted, ideally with a second pre-submission meeting unless all required information for both applications can be presented at the initial pre-submission meeting.

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 (Ministry of Environment, Conservation and Parks).

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: Andrew Wallace ext. 1059

Andrew.wallace@norfolkcounty.ca

Development Engineering – 215 Victoria Street, Simcoe – 45 unit, 5 story Apartment building (Paper Pre-con)

Development Engineering requirements to proceed The below requirements are to be submitted as part of the Formal Development Planning application.	Required at Zoning Stage	Required at Site Plan Stage	Potentially Required (See Notes Section)
General Requirements			
Concept Plan	X	X	
Lot Grading Plan		X ¹⁵	
Siltation and Erosion Control Plan		X ¹⁵	
General Plan of Services	X ⁸	X ¹⁵	
Utility Plan		X ¹⁶	
Geotechnical Report			X ²⁵
Functional Servicing Report	X ⁸		
Water Servicing Requirements– Section 10.0 Norfolk County Design Criteria and ISMP Section 4.0			
Disconnection of Water Service(s) to Main		X ¹³	
Water Modelling (County Consultant)	X ⁸	X	
Backflow Preventer (RPZ)		X ¹⁸	
Water Allocation	X ⁶	X	
Sanitary Servicing Requirements – Section 9.0 Norfolk County Design Criteria and ISMP Section 4.0			
Disconnection of Sanitary Service(s) to Main		X ¹³	
Sanitary Modelling (County Consultant)	X ⁸	X	
Property Line Inspection Maintenance Hole		X ¹⁹	
Storm Water Servicing Requirements – Section 7.0 and Section 8 Norfolk County Design Criteria and ISMP Section 4.0			
Storm Water Management Design Report (including calculations)	X ⁹	X ²⁰	
Storm Water Drainage Plan		X ²¹	
Establish/Confirm Legal and Adequate Outlet	X ¹⁰	X ²²	

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Anticipated Flow/Analysis to Receiving Collection System		X	
Property Line Inspection Maintenance Hole		X ¹⁹	
Transportation Requirements – Section 6.0 Norfolk County Design Criteria, ISMP Section 5.0, Section 6.0 and Appendix J			
Traffic Impact Study	X ¹¹	X	
Improvements to Existing Roads & Sidewalk (urbanization, pavement structure, widening sidewalk replacement, upgrades, extension and accessibility)	X ¹²	X ^{23, 24}	

General Notes:

1. In review of this proposal, Development Engineering has discovered that a 0.3m reserve exists along the property line of Victoria Street. The 0.3m reserve is inside of a 3.05m widening which needs to be confirmed as being transferred to Norfolk County. This is also shown on the mapping of By-law 17-S 86 where the current zoning was passed. This appears to be identified on the current proposal.
2. Any required infrastructure to facilitate the development will be at the developer's expense;
3. Securities in the form of a schedule will be required. 100% securities for any works completed within the municipal R.O.W. and 10% securities for any works completed within private property.
4. All reports are to adhere to Norfolk County's Design Criteria. All engineering drawings are to adhere to Norfolk County's Design Criteria. A copy of this criteria is available upon request.
5. Recommendations from all reports must be incorporated into the design. All reports and drawings are to be signed and sealed by a Professional Engineer (P.Eng.);
6. Water / Wastewater allocation will not be issued as part of the Zoning By-law amendment.
Water and Wastewater Allocation will not be issued until the end of the site plan application process. The applicant is to confirm capacities at the time of Site Plan application. At the time registration of agreement\approval allocation will be provided for the development, if available

Required at Zoning By-law Amendment Stage:

7. The following reports/studies will be required at time of Draft Plan or Zoning Amendment Submission:
 - Concept Plan;
 - Functional Servicing Report (as per Norfolk County Design Criteria);

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- Water / Sanitary Modelling;
 - Storm Water Management Report;
 - Traffic Impact Study (as per ISMP Appendix J – TIS Guidelines);
8. Sanitary and Water modelling will be required. This is to be completed by Norfolk County's third-party consultant. The cost to complete the modelling and any recommendations from reports are to be implemented into the design at the applicant's expense. The following information will be required to receive a quote and complete the modelling;
- a. General Plan of Services
The current Lot is serviced from Donly Drive. Please see attached As-built drawing "S-0627".
 - b. Functional Servicing Report;
 - i. Total Wastewater Design Flows;
 - ii. Total Domestic Water and Fire Flows as per Norfolk County Design Criteria Section 10.1.1

The Functional Servicing Report must include water /sanitary servicing and fire flow calculations. Fire Flow calculations are to be completed in accordance with "Water Supply for Public Fire Protection 2020" by Fire Underwriters Survey

Once the quote has been received, approval from the applicant will be required before proceeding.

9. Stormwater Management Report is to be completed as per Norfolk County Design Criteria Section 7.0.
- As a minimum Norfolk County will require Quantity to be restricted to a 5-year Predevelopment rate. Further restriction may be required if adequate capacity in the storm sewer is not available. Norfolk County will require confirmation that the original sewer design accounted for the proposed storm flows. If the original sewer was designed to be a 2yr event then this will become the limiting factor.
10. Establish/Confirm Legal and Adequate Outlet – According to the As-built data on file for this property, a 250mm Dia Storm PDC was installed and is assumed to be the legal outlet for the property. Adequacy will be confirmed through design.
11. As per Norfolk County's Integrated Sustainable Master Plan (ISMP) – Appendix J: Traffic Impact Study (TIS) Guidelines, a traffic impact study will be required. In addition to the ISMP Guidelines, Norfolk County recognizes that this development is only 1 block from an elementary school. In this case Development Engineering requests that pedestrian traffic, be assessed as part of the Traffic Impact Study.
12. Norfolk County will require the ROW widening along Victoria St be dedicated prior to approval of Zoning

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Required at Site Plan Stage:

All Site Plan submissions are to comply with Section 16 of the Norfolk County Design Criteria.

13. Both Donly and Victoria have been reconstructed. As built drawings are available upon request. Any modifications or additions which are required to facilitate development will be at the developer's expense. Any existing servicing which does not match the location in the proposals must be removed.
14. Any recommendations/upgrades from the modelling reports must be implemented at the time of Site Plan submission. Upgrades, if any, are to be completed at the Developer's expense.
15. Lot Grading Plan, Siltation and Erosion Control Plan, and General Plan of Services drawing can be shown on one engineering plan as long as it's legible for review.
16. A Utility Plan is required as per Section 4.4.07 of Norfolk County Design Criteria for all utilities to be installed in the Municipal ROW. An Electrical Services Plan as per Section 16.4.05 and 16.5.05 shall also be included with the Utility Plan.
17. As per Norfolk County By-Law 2013-65, only one domestic water service pipe shall be installed per lot.
18. Depending on eventual design of proposed water service and the proposed usage within the development a Backflow Preventer (RPZ) may be required. Approval from the Manager of Environmental Services must be obtained as per Norfolk County Design criteria. A Testable DCVA Backflow device may be required in a watertight chamber at property line.
19. A Sanitary Inspection manhole and Storm Inspection manhole will be required on Property line.
20. Stormwater Management Report is to be completed as per Section 7.0 and Section 8.0 in Norfolk County Design Criteria and Section 4.0 of Norfolk County's Integrated Sustainable Master Plan (ISMP).
21. A Storm Drainage area plan will be required as per Norfolk County Design Criteria and must identify any external overland flows tributary to this site.
22. Confirm Legal and Adequate outlet. As mentioned above the property is currently serviced by a 250mm Storm lateral. At this stage the Developer will be responsible to confirm anticipated flow to the existing storm system and ensure adequate capacity exists to accept the proposed development.
23. Development Engineering has reviewed the proposed entrance shown on Austin Crescent and have the following concerns:
 - Development Engineering is concerned the configuration may become a short cut for residents on Austin Cres to access Victoria Street and Donly Dr S. During Detailed design the design should consider measures to deter non site traffic from using the entrances
 - Typically, it is not desirable to put traffic from a High Res development on to a local Subdivision street when access to a Collector Road is available.

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During Detailed Engineering design consideration should be given to ways of reducing traffic onto Austin Cres.

24. Installation of new sidewalks along the frontage of Victoria St will be required as per the current version of the Norfolk County Sidewalk Policy.

Potentially Required Notes:

25. A Geotechnical Report will be required if infiltration galleries are proposed within the design.

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Agreements

A recommended condition of your planning application approval will 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 mortgages / 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

Annette.Helmig@norfolkcounty.ca

Building

Zoning Administrator:

1. Front lot line considered to be along Austin Crescent, minimum lot frontage does not meet required 30 meters
2. Rear lot line considered to be along Donly Drive South (furthest lot line from front lot line (2.93.2(c)), minimum rear yard setback does not meet required 9 meters
3. Parking to comply with section 4.0 of the Norfolk County Zoning Bylaw
 - Reduction in residential parking spaces is equal to proposed visitor parking space requirement
 - Parking lot not permitted between dwelling and street line (4.2.4(c))
 - 50% of front yard and exterior side yard to be maintained as landscaped area (4.2.5(b))

Hayley Stobbe
Zoning Administrator
Extension 1060
Hayley.stobbe@norfolkcounty.ca

Building Inspector:

The proposed construction is considered a Residential Group C type occupancy as defined

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by the Ontario Building Code (OBC). You will need to retain the services of an Architect and a Professional Engineer to complete the design documentation for this application.

The Designer will need to provide a Part 3 Building Code matrix. This matrix represents selected elements from your detailed code analysis and presents a quick overview to the municipal building official of the key OBC factors concerning your design. The matrix will identify OBC review items such as occupant loads, fire separations, project description, building size, building classification, fire alarms, type of construction, barrier free requirements, plumbing fixture requirements and spatial separations.

The Designer will need to include review of OBC Subsection 3.1.19. Above Ground Electrical Conductors, depending on the voltage, the clearances to the building will vary, Subsection 3.2.3. Spatial Separation and Exposure Protection including Sentence 3.2.3.6. Combustible Projections, Subsection 3.2.9. Standpipe Systems, Sentence 3.3.4.8. Protection of Openable Windows and Sentence 3.3.1.9. Corridors.

Signs proposed due to development will require a permit as part of Norfolk's Sign Bylaw and may need a Building Permit according to the OBC.

No Ontario Building Code review has been completed at this time and will be done at permit application stage.

Items for Site Plan

Site plan drawings need to have enough detail, to determine compliance with the code references listed.

1. Indicate location of access route and access route design [OBC 3.2.5.4 to 3.2.5.6], principal entrance to be identified.
2. Indicate location of existing and new fire department connections. Dimensions between hydrants and building entrances is required.
[OBC 3.2.5.16]
3. Location and specifications of exterior lighting. Lighting to be included in SB-10 report – energy efficiency
4. Indicate barrier free path of travel from parking area to building entrance. Construction of curb cuts and location of tactile attention indicators is required. [OBC 3.8.1.3, & 3.8.3.2]
5. Location of revised septic system (if required)
6. Provide building elevations and cross section, showing building massing, location of proposed entrances and exits, barrier free controls, exterior lighting locations, and exterior signage. [Planning Act 41(4).2]

Items for Building Permit

If you have any questions on the building permit process or plans required, please contact permits@norfolkcounty.ca or 226-NORFOLK (226-667-3655) ext. 6016

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Jonathan Weir
Building Inspector

Extension 1832
jonathan.weir@norfolkcounty.ca

Corporate Support Services – Realty Services

The County will require a postponement of any Charge(s)/Mortgage(s) on title to the County's Development Agreement. We recommend that you connect with your lender(s) and/or solicitor as early in the process to avoid any delays.

Alisha O'Brien
Corporate Generalist, Realty
Services
realty.services@norfolkcounty.ca

Fire Department

Norfolk County Fire Department have the following comments for this proposal:

- Access for fire department apparatus to be provided
- Ensure adequate water supply and hydrants
- All required fire separations and fire protection/detection systems to be designed in accordance with the Ontario Building Code and maintained to the Ontario Fire Code
- Fire Safety Plan to be developed and submitted for approval
-

Katie Ballantyne
Community Safety Officer
Katie.Ballantyne@norfolkcounty.ca

Haldimand-Norfolk Health and Social Services

Health and Social Services has a vested interest in new developments in Haldimand/Norfolk County from a number of perspectives that can impact the health of the community. Our comments for this proposal are as follows:

Built Environment & Active Transportation:

The Health Unit encourages developments that make it easier for people to choose active forms of transportation (walking, cycling and wheeling) for short trips.

Walkability, a measure of how easy, safe, and enjoyable it is to walk in a neighbourhood, can have a large impact on walking behaviour and willingness to use walking for transport and recreation. Key factors that influence walkability include access to amenities and destinations,

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residential density, positive walking experiences, street and sidewalk connectivity, and safety. Walkable communities encourage walking by investing in appropriate and safe infrastructure, which increases comfort and convenience of a route while also reducing the risk of collisions. A walkable community offers a safe and enjoyable walking experience for citizens of all ages and abilities.

The health unit also encourages the development of complete neighbourhoods and communities. Mixed-use land developments and complete neighbourhoods can have a great impact on health and well-being. Complete neighbourhoods are more convenient, socially engaging, and encourage regular physical activity. Most importantly, complete neighbourhoods provide easy access to the daily life necessities for people of all ages, abilities and backgrounds.

Specific to this development:

- This development adds residential density to the area - a key feature of a walkable community.
- This development would contribute to the creation of a complete neighbourhood due to its convenient location
 - The development is within 1km of two elementary schools and 1 post-secondary school.
 - The development is within 1km of leisure opportunities (e.g. Norfolk Sunrise Trail), and employment opportunities.
- Consider bicycle parking facilities for residents and visitors that is visible to apartment residents. Here is a link to the essentials of bike parking:
https://www.apbp.org/assets/docs/EssentialsofBikeParking_FINA.pdf
- Open greenspace is encouraged. Shared amenity space offers opportunities for social engagement and interaction and leisure. Consider pathways, rest areas that are in the shade (e.g., benches), gazebo etc. to enhance amenity space.
- The health unit encourages multi-unit dwellings which are 100% smoke-free. A no-smoking policy in the declaration prior to selling or renting any units is the simplest way forward. HNHU is able to support the applicant if interested. Learn more at [Home - Smoke Free Housing Ontario](#)

Alex Dobias

Health Promoter

alex.dobias@hnhss.ca

Appendix A: Planning Reference Materials

Following is a summary of some land use planning reference materials. It is the requirement of the applicant to ensure compliance with applicable legislation, policies and regulations.

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.

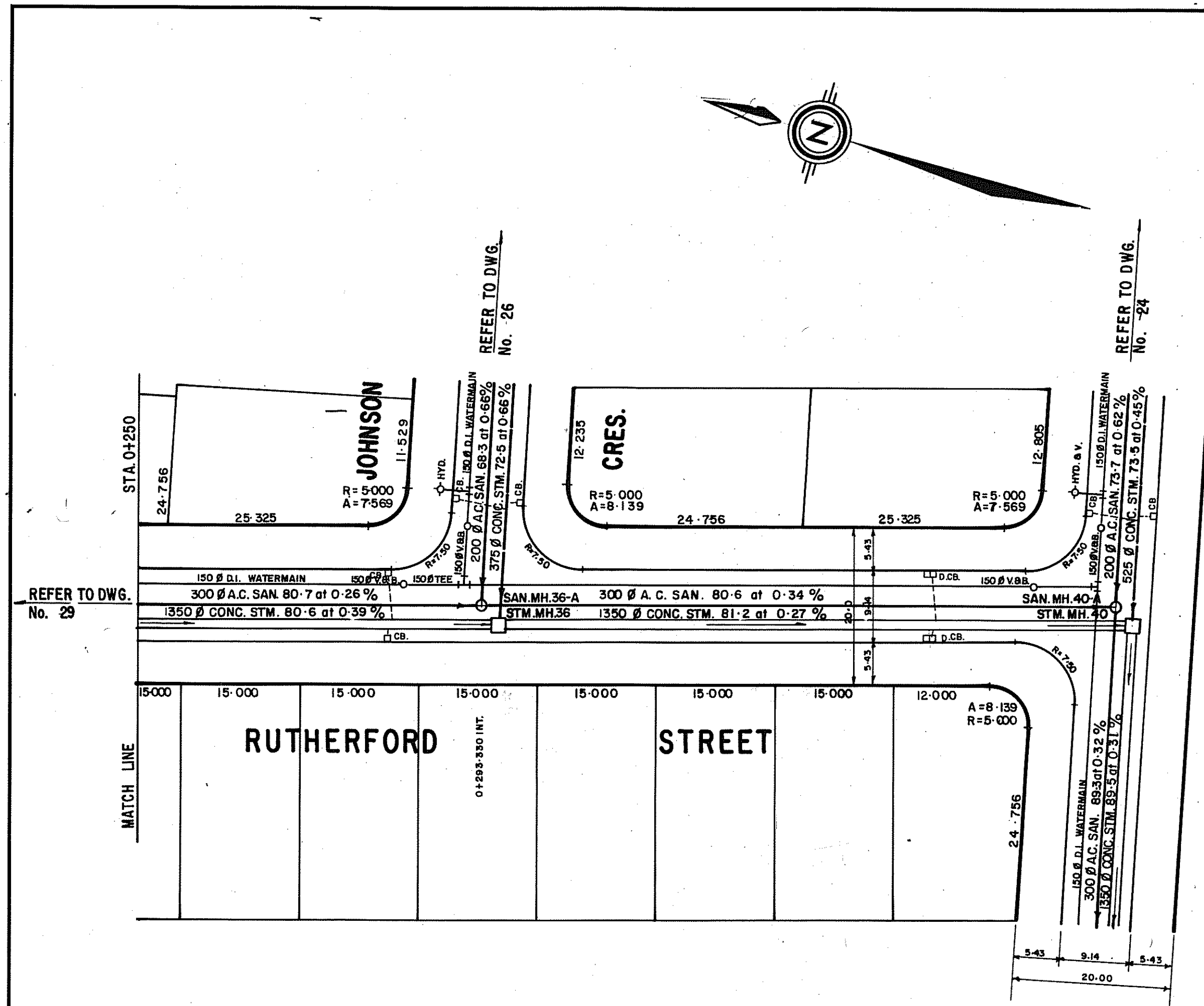
It is the responsibility of the proponent to review and ensure relevant Official Plan policies are addressed in any future development application.

Norfolk County Zoning By-Law 1-Z-2014

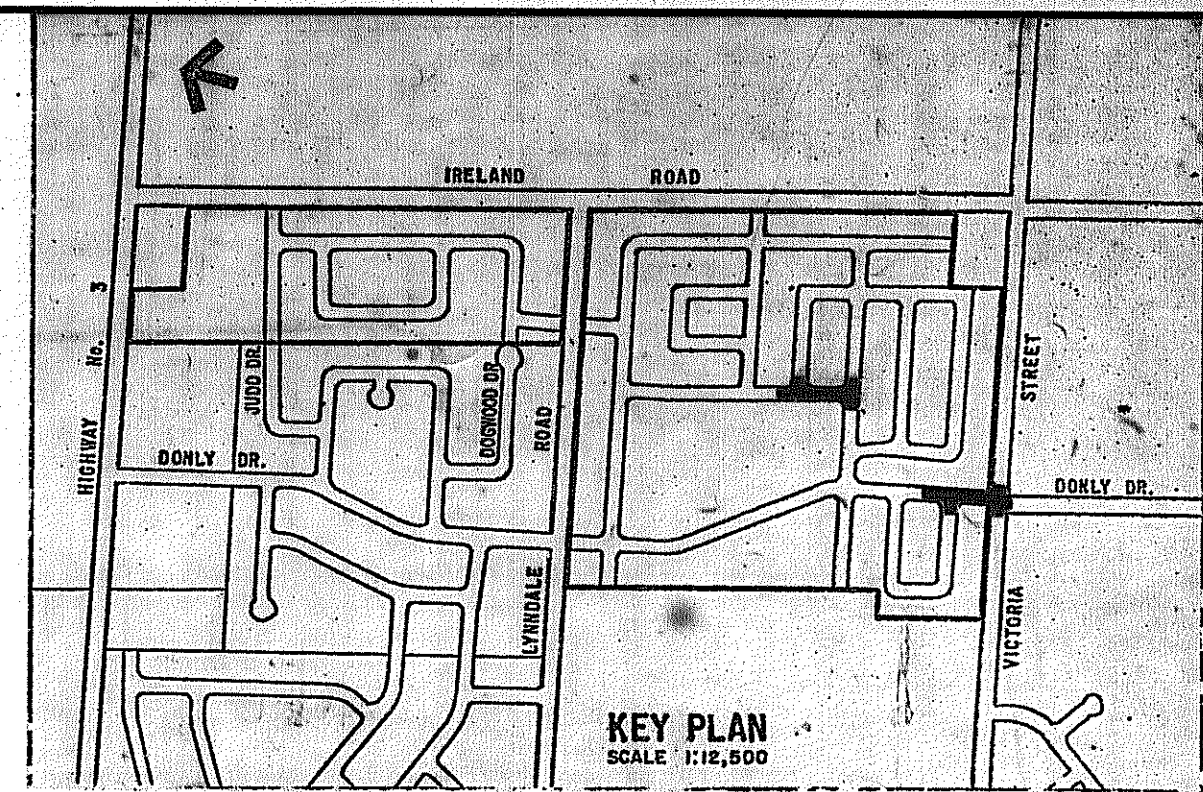
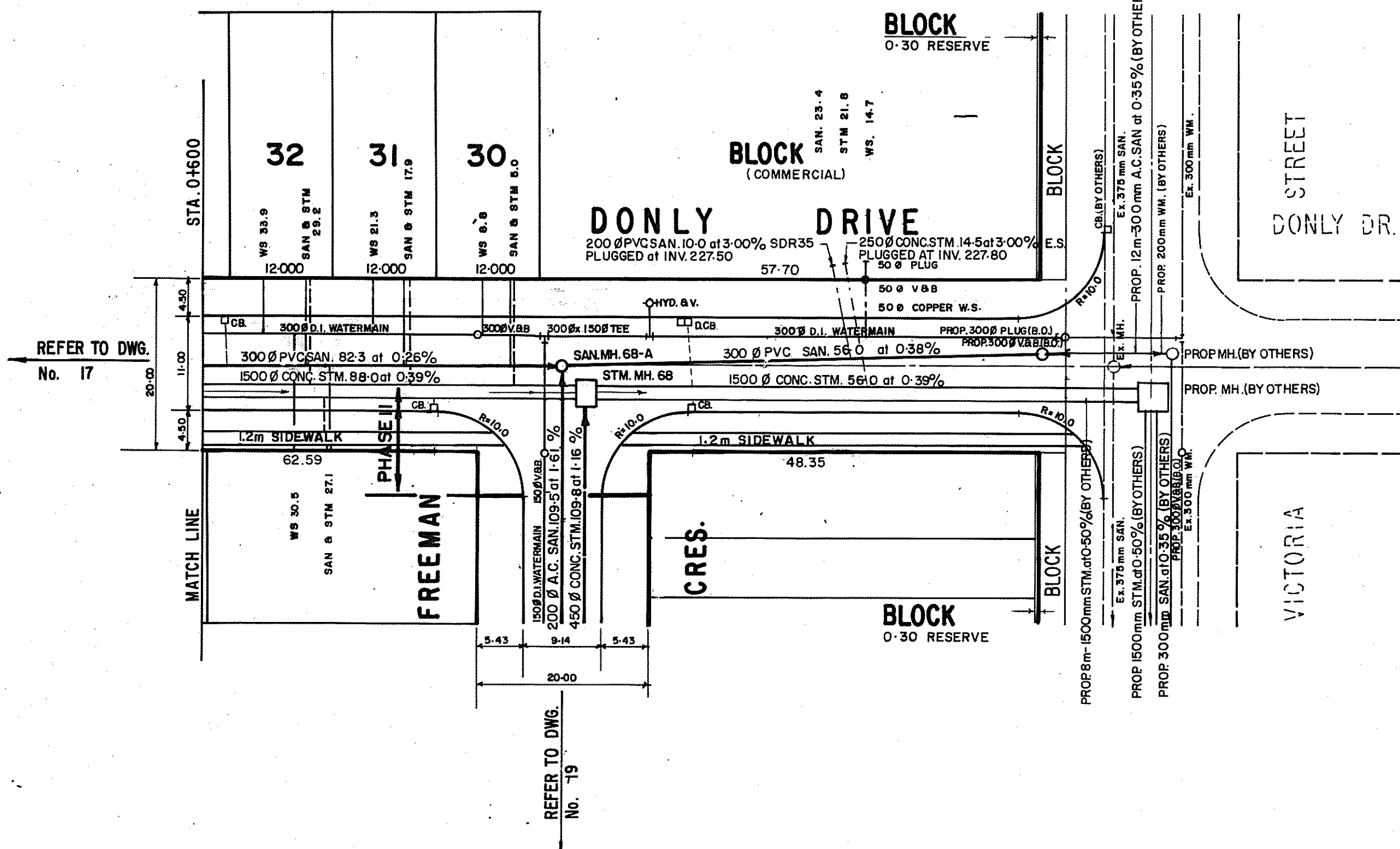
<https://www.norfolkcounty.ca/government/planning/new-zoning-by-law/>

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



YEAGER AVENUE



NOTES

- NON-REINFORCED CONCRETE SEWER PIPE SHALL COMPLY WITH A.S.T.M. SPECIFICATION C14 E.S. UNLESS OTHERWISE NOTED.
- REINFORCED CONCRETE SEWER PIPE SHALL COMPLY WITH A.S.T.M. SPECIFICATION C76 CL. II UNLESS OTHERWISE NOTED. RUBBER TYPE GASKET JOINTS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C443.
- ASBESTOS-CEMENT NON-PRESSURE SEWER PIPE SHALL COMPLY WITH A.S.T.M. SPECIFICATION C428 OR 633, COUPLINGS SHALL COMPLY WITH M.T.C. SPECIFICATION 1830-02-02, UNLESS OTHERWISE NOTED.
- ASBESTOS-CEMENT HOUSE CONNECTION PIPE SHALL COMPLY WITH C.G.S.B. SPECIFICATION 34-6P-2A. JOINTS SHALL BE "RING TITE" OR "SIMPLEX" OF APPROVED MANUFACTURERS.
- MANHOLE FRAMES AND COVERS SHALL BE AS MANUFACTURED BY CANADA IRON FOUNDRIES TYPE DS-579, UNPERFORATED, HEAVY DUTY.
- PRECAST MANHOLE SECTIONS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C478 AND SHALL BE TO THE DIMENSIONS SHOWN ON THE TOWN OF SIMCOE STANDARD DRAWINGS. RUBBER TYPE GASKET JOINTS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C443.
- SEWER BRICKS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C32, GRADE M.A.
- MANHOLE SAFETY LADDER RUNGS SHALL BE AS SHOWN ON DRAWING DD-02P, AND SHALL BE ALUMINUM.
- CORRUGATED METAL PIPE SHALL COMPLY WITH A.A.S.H.O. SPECIFICATION M-36, AND SHALL BE NOT LESS THAN 16 GAUGE. COUPLINGS SHALL BE STANDARD BAND WITH NEOPRENE GASKETS. PIPE SHALL BE ASPHALT COATED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- PIPE SHALL BE LAID AND JOINTED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS. BEDDING SHALL BE IN ACCORDANCE WITH STANDARD DRAWING DD-04B.
- PRECAST MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWINGS NO. 5: DD-02P, DD-02C AND DD-02P. IF CAST-IN-PLACE MANHOLES ARE REQUIRED THE CONSULTING ENGINEER SHALL SUBMIT DETAIL DESIGN FOR APPROVAL. SUCH DESIGNS SHOULD BE BASED ON HALDIMAND-NORFOLK REGION STANDARD DRAWINGS SS-2 AND SS-3.
- ALL CONCRETE USED FOR MANHOLES, BASES OR BEDDING IN STORM SEWER WORK SHALL BE 3000 P.S.I. AT 28 DAYS.
- PRECAST CATCH BASINS SHALL BE STANDARD, SQUARE AND REINFORCED, AS MANUFACTURED BY J.D. OAKES AND SONS LTD. OR APPROVED EQUAL. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING NO. DD-05A.
- CATCH BASIN FRAMES AND GRATES SHALL BE STANDARD M.T.C. AS SHOWN ON DRAWING NO. DD-713-B.

ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
PIPE SIZES ARE IN MILLIMETRES.

BENCH MARK

NORTH OUTLET OF FIRE HYDRANT SOUTH SIDE OF VICTORIA STREET, EAST OF DONLY DRIVE. (FRONT OF S.S. TUBING)
ELEVATION 232.695

LEGEND

48s DENOTES SEMI DETACHED LOTS.

REQUIRED ROAD BASE THICKNESS

25 mm DEPTH OF H.L.3. ASPHALT
50 mm DEPTH OF H.L.6 ASPHALT
150 mm DEPTH OF GRANULAR 'A'
225 mm DEPTH OF GRANULAR 'C'

No.	DESCRIPTION	DATE	BY
1	AS CONSTRUCTED	10 / 2 / 80	R.A.B.
2	SERVICE LOCATIONS ADDED AS CONSTRUCTED	SEPT / 85	J.D.V.
3	LYNDALDE HEIGHTS SUBDIVISION PHASE II		
4	G. DOUGLAS VALLEE LIMITED		
5	CONSULTING ENGINEERS AND ARCHITECT		

TOWN of SIMCOE

FOBASCO SUBDIVISION

PLAN AND PROFILE

RUTHERFORD ST. DONLY DRIVE

FROM STA. 0+250 TO STA. 0+373.460 FROM STA. 0+600 TO STA. 0+700

FRED SCHAEFFER & ASSOCIATES LTD.
URBAN PLANNERS AND CONSULTING ENGINEERS
465 WILSON AVE. DOWNSVIEW, ONTARIO L3Y 5A2

DESIGN BY: M.P.SINGH	CHECKED BY: M.JAIKOVIC	PROJECT No.
DRAWN BY: CESAR	CHECKED BY: A.R. STEEDMAN	78-ES-462
SCALES: HORIZ. 1"=500'	DATE: APRIL, 1980	DRAWING No.
VERT. 1"=100'		18

APPROVED _____ TOWN ENGINEER

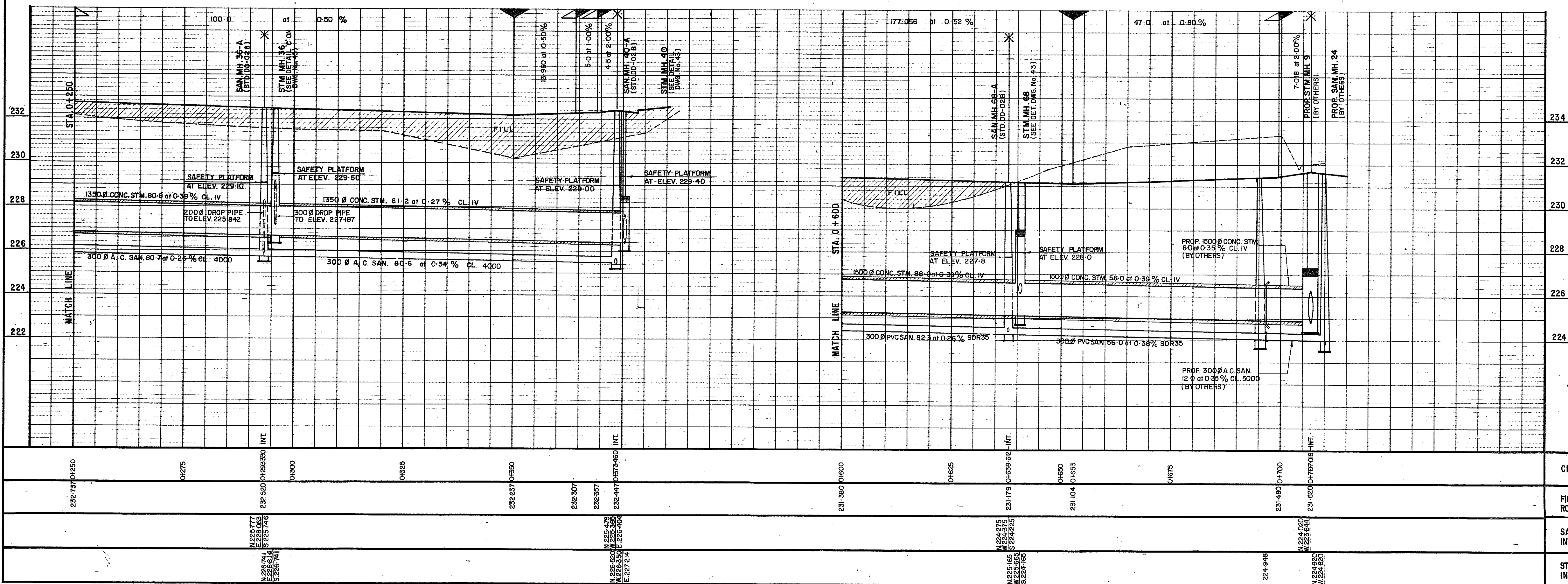
DATE: _____

NOTE

ALL SERVICE LOCATION DISTANCES MEASURED FROM DOWNSTREAM SANITARY MANHOLE.

FILL NOTE

FILL TO BE COMPACTED TO A DRY DENSITY NOT LESS THAN 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST A.S.T.M. DESIGNATION T-99 AFTER COMPACTION. SOIL DENSITY TESTS ARE TO BE MADE AND SUBMITTED TO THE TOWN ENGINEER BEFORE THE START OF CONSTRUCTION OF SERVICES. 98% STANDARD PROCTOR DENSITY UNDER PROPOSED ROADWAYS.



From: [Stephen Gradish](#)
To: cmorden@rcspencer.ca; ablata@rcspencer.ca; rcspencer@rcspencer.ca
Cc: [Andrew Wallace](#)
Subject: RE: Lynndale Heights Residential Development, Simcoe
Date: Thursday, September 19, 2024 2:14:25 PM
Attachments: [000009.pdf](#)
[000009.xls](#)
[00231A.pdf](#)
[00231A.xls](#)

Hello Cheryl, et All

Norfolk County Development Engineering has reviewed your proposal below and have the following comments.

- Given the proximity of Lynndale Heights Public School Norfolk County feels all traffic counts must be completed during school .
- Pedestrian counts should also be considered given this site is along a walking route for children in the residential subdivisions south of Victoria St.
- Given the proposed total Traffic Count Norfolk County agrees a Traffic Impact Brief is appropriate.
- Impacts of Traffic on the Victoria St and Donly Dr S intersection as well as the Donly Dr S and Yeager Ave/Anderson Ave intersection shall be assessed in the Traffic Impact Brief.
- Normally residential Developments have one entrance. When completing the TIB ALL traffic should be considered to enter and exit the Donly Dr entrance. The need for the 2nd entrance onto Austin Crescent will be determined during Site Plan submission as Norfolk County has concerns with local traffic using the site as a “Short cut” for residents of Austin Cres to get to Victoria Street and Donly Drive south. Norfolk County would also prefer to limit any new traffic into an existing subdivision.
- BACKGROUND - At the time of this email Development Engineering cannot advise of an approved development that has not yet been built which will effect this area. However, there is a tremendous amount of interest in this area with Vacant Industrial lands and future phases of residential subdivisions south along Donly Dr. Forecasted traffic growth is expected to far exceed 2% annually. The Traffic Impact Brief should identify whether there will be any concerns if the traffic increases 20% in the first 5 years after buildout.

Norfolk County is satisfied with your described scope of work below. Please incorporate the comments above prior to submission. As for recent traffic information Norfolk County staff offers the following information from our Spring traffic counts:

Here is the data from Spring of 2024 and the reports are also attached.

Count ID = 000009 Victoria Street east of Donly Drive
Spring 2024 AADT = 6376

Count ID – 00231A Donly Drive (Victoria – Lynndale)

Spring 2024 AADT = 4221

We do not have anything for intersection counts and there are no planned improvements to my knowledge.

If you have any questions, please do not hesitate to ask.

Regards,
Stephen

Stephen Gradish

Development Technologist
Gilbertson Administration Building
Engineering
Environmental and Infrastructure Services Division
12 Gilbertson Drive, Simcoe, Ontario, N3Y 4N5
519-426-5870 x8015 | 226-NORFOLK



Providing valued public services that are responsive to our community's needs

From: Andrew Wallace <Andrew.Wallace@norfolkcounty.ca>

Sent: Tuesday, September 3, 2024 7:42 AM

To: Stephen Gradish <Stephen.Gradish@norfolkcounty.ca>

Cc: cmorden@rcspencer.ca

Subject: FW: Lynndale Heights Residential Development, Simcoe

Good morning,

Thank you for your email. I have forwarded this to Development Engineering for their comments as they are best placed to advise on the requirements for the TIS.

Stephen, if you could come back to Cheryl and CC in the others in the email below with a quick response, that would be appreciated.

Kind regards,

Andrew

Andrew Wallace, MSc ArchCon, MScIP

Planner

Planning

Community Development Division

12 Gilberston Drive

Simcoe, Ontario, N3Y 3N3

[226-667-3655](tel:226-667-3655) x. 1059

Norfolk County logo.



Working together with our community

As of January 1, 2024, email applications will no longer be accepted (with the exception of Committee of Adjustment Applications which will be accepted until March 31, 2024). Please use the [Norfolk CityView Portal](#) or bring your application to our office in Simcoe at 185 Robinson Street, second floor.

Mr Andrew Wallace, MScIP, MScArchCon (he/him)

Planner

Gilbertson Administrative Building

Planning

Community Development Division

12 Gilbertson Drive, Simcoe, Ontario, Canada, N3Y 3N3

519-426-5870 x1059 | 226-NORFOLK



Providing valued public services that are responsive to our community's needs

From: cmorden@rcspencer.ca <cmorden@rcspencer.ca>

Sent: August 30, 2024 2:24 PM

To: Andrew Wallace <Andrew.wallace@norfolkcounty.ca>

Cc: ablata@rcspencer.ca; rcspencer@rcspencer.ca

Subject: FW: Lynndale Heights Residential Development, Simcoe

You don't often get email from cmorden@rcspencer.ca. [Learn why this is important](#)

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon, Andrew.

Trust you've had a good summer and enjoyed some time off. Could you please address the request below? We'd like to confirm our scope of work with the County and make sure we are addressing any concerns from the County.

If you could please respond or let us know who we should be contacting, we would appreciate it.

Thank you and have a great long weekend,

Cheryl Morden

Executive Assistant to Aaron D. Blata

RC SPENCER ASSOCIATES INC.

18 Talbot St. W. | Leamington, ON N8H 1M4

Office: (519) 324-0606 ext. 1143

From: cmorden@rcspencer.ca <cmorden@rcspencer.ca>

Sent: August 13, 2024 7:49 AM

To: 'Andrew.wallace@norfolkcounty.ca' <Andrew.wallace@norfolkcounty.ca>

Cc: 'ablata@rcspencer.ca' <ablata@rcspencer.ca>; 'rcspencer@rcspencer.ca' <rcspencer@rcspencer.ca>

Subject: FW: Lynndale Heights Residential Development, Simcoe

Good morning, Andrew.

Trust you are enjoying your summer. Just following up on the below email request regarding our Lynndale Heights residential project. Would you be able to respond, or forward the request to whoever can assist us if it is not you? We would like to move ahead on the brief for this small development.

Thank you so much,

Cheryl Morden

Executive Assistant to Aaron D. Blata

RC SPENCER ASSOCIATES INC.

18 Talbot St. W. | Leamington, ON N8H 1M4

Office: (519) 324-0606 ext. 1143

From: cmorden@rcspencer.ca <cmorden@rcspencer.ca>

Sent: Friday, August 2, 2024 11:18 AM

To: 'Andrew.wallace@norfolkcounty.ca' <Andrew.wallace@norfolkcounty.ca>

Cc: 'ablata@rcspencer.ca' <ablata@rcspencer.ca>; 'rcspencer@rcspencer.ca' <rcspencer@rcspencer.ca>

Subject: Lynndale Heights Residential Development, Simcoe

Good morning.

RC Spencer Associates Inc. has been retained to complete a Traffic Impact Brief / Parking Study for a proposed residential apartment building on the northeast corner of Victoria Street at Donly Drive South (215 Victoria Street). The site plan and the Pre-Consultation Meeting Notes are attached for your reference.

The estimated site generated traffic (attached) is anticipated to be 17 trips during the AM peak hour and 18 trips during the PM peak hour (less than one new trip every three minutes). We believe that a Traffic Impact / Parking Brief, including traffic data collection at the intersection of Victoria Street at Donly Drive South and the evaluation of this intersection and the site accesses, along with a parking study, should be sufficient to satisfy the County. Does the County concur with this proposed scope?

Additionally, does the County have any recent data for the subject intersection? If so, could you please provide it to us? If not, could you please advise us if August turning movement counts would be acceptable, or if you would prefer that the counts be collected in September, after school is in session and traffic patterns are more stable?

Thank you for your response,

Cheryl Morden

Executive Assistant to Aaron D. Blata

RC SPENCER ASSOCIATES INC.

18 Talbot St. W. | Leamington, ON N8H 1M4

Office: (519) 324-0606 ext. 1143



Virus-free. www.avg.com

Disclaimer: This e-mail and any attachments may contain personal information or information that is otherwise confidential and it's intended for the exclusive use of the intended recipient. If you are not the intended recipient, any use, disclosure or copying of any part of it is prohibited. Norfolk County accepts no liability for damage caused by any virus transmitted in this message. If this e-mail is received in error, please immediately reply and delete or destroy any copies of it. The transmission of e-mails between an employee or agent of Norfolk County and a third party does not constitute a binding contract without the express written consent of an authorized representative of The Corporation of Norfolk County.



REQUIRED INFORMATION

Name of Owner

Property Legal Description

Roll Number

PIN Number

Type and Number of Units

Single Detached

Semi-Detached

Duplex

Triplex

Four-plex

Street Townhouse

Stacked Townhouse

Apartment

Transfer Easements Block Number and Purpose

Transfer Block Number and Purpose

Geotechnical Report prepared for Lands	YES	NO	UNKNOWN
Lands are Within the Source Water Protection Area	YES	NO	UNKNOWN
Lands Contain any Contaminated or Impacted Soil	YES	NO	UNKNOWN
Lands Contain any Natural Watercourse	YES	NO	UNKNOWN
Lands Contain any Wetlands	YES	NO	UNKNOWN
Lands Contain any Archaeological Sites	YES	NO	UNKNOWN
Lands Contain an Existing Well and or Septic Field	YES	NO	UNKNOWN
Species at Risk Branch MECP Screening	YES	NO	UNKNOWN
Lands Contain any Endangered Species	YES	NO	UNKNOWN

OWNER INFORMATION

NAME AND CONTACT

ADDRESS WITH POSTAL CODE

PHONE NUMBER

EMAIL

AGENT INFORMATION

NAME AND CONTACT

ADDRESS WITH POSTAL CODE

PHONE NUMBER

EMAIL

ENGINEER INFORMATION

NAME AND CONTACT _____

ADDRESS WITH POSTAL CODE _____

PHONE NUMBER _____

EMAIL _____

LAWYER INFORMATION

NAME AND CONTACT _____

ADDRESS WITH POSTAL CODE _____

PHONE NUMBER _____

EMAIL _____

INSURANCE PROVIDER INFORMATION

NAME AND CONTACT _____

ADDRESS WITH POSTAL CODE _____

PHONE NUMBER _____

EMAIL _____

FINANCIAL INSTITUTION INFORMATION (IF APPLICABLE)

NAME AND CONTACT _____

ADDRESS WITH POSTAL CODE _____

PHONE NUMBER _____

EMAIL _____

MORTGAGEE INFORMATION (IF APPLICABLE)

NAME AND CONTACT _____

ADDRESS WITH POSTAL CODE _____

PHONE NUMBER _____

EMAIL _____

SPECIES AT RISK SCREENING

The Ontario Endangered Species Act inquiries and Species at Risk screening are now handled by the Ministry of the Environment, Conservation and Parks, specifically the "Species at Risk Branch" and the new e-mail address for handling these inquiries is now SAROntario@ontario.ca.

TRANSFERS, EASEMENTS AND POSTPONEMENT OF INTEREST

The owner acknowledges and agrees that, it is their solicitor's responsibility on behalf of the owner for the registration of all transfer(s) of land to the County, free and clear of any charges or encumbrances, and/or transfer(s) of easement in favour of the County and/or utilities at no cost to the County. In addition, 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 to the County's agreements.

INSURANCE CERTIFICATES

Prior to the execution of the development agreement, the owner shall at their expense obtain and keep in force, during the term of this development agreement, commercial general liability insurance coverage satisfactory to the County. The owner further acknowledges and agrees that he/she has authorized the County to discuss with their insurance provider the specific insurance requirements of the County for agreement purposes. In addition, the County will require any professionals hired to carry professional liability insurance to provide coverage for acts, errors and omissions arising from their professional services performed.

OWNER'S AUTHORIZATION

I/We _____ am/are the registered owner(s) of the lands that is the subject of this site plan agreement.

I/We authorize our Agent _____ to provide information on my/our behalf and to provide any of my/our personal information necessary for the processing of this site plan agreement. Moreover, this shall be your good and sufficient authorization for so doing.

I/We authorize the Agreement Administrator to provide and receive information on my/our behalf in connection to the insurance coverage, letter of credit and agreement registration of my/our development.

I/We acknowledge that if there are any new charges or mortgage holders on the property they will be added to the development agreement and will be required to postpone their interest on the property to the County's development conformity interest.

Owner Signature _____ Date _____

To start your agreement, please return the required supporting information and fees along with the first three pages of this document completed and signed. Provide your payments by the mail or courier to the address below or drop off at ServiceNorfolk customer service desk on the first floor 185 Robinson Street, Simcoe ON N3Y 5L6 Monday to Friday from 9 am to 4 pm. Please make your cheque payable to the Corporation of Norfolk County. If paying by credit card please contact ServiceNorfolk at 519 426-5870 Ext. 4636.

CONTACT FOR FURTHER INFORMATION AND QUESTIONS

Annette Helmig, Agreement and Development Coordinator
Norfolk County, Community Development Division, Planning Department, Agreement Services
185 Robinson Street Suite 200, Simcoe ON N3Y 5L6
226.777.1445
annette.helmig@norfolkcounty.ca

The information submitted on this form is collected under the authority of the *Freedom of Information and Protection of Privacy Act* (FIPPA) and *Municipal Freedom of Information and Protection of Privacy Act* (MFIPPA) for Norfolk County employees to use for the purpose of preparing and registering a development agreement. Questions about the collection of personal information through this form may be directed to the Agreement and Development Coordinator or Information and Privacy Coordinator, Corporation of Norfolk County, 50 Colborne Street South, Simcoe ON N3Y 4H3.

DOCUMENTATION AND FEES REQUIRED

Owner's agreement authorization

Postponement of interest from mortgagee / chargee (if applicable)

Current parcel register (property identifier or PIN printout)

Owner's commercial general liability certificate of insurance

Construction estimates (100% for external works and 10% of internal works)

Professional liability insurance for surveyor and / or engineer

Final reference plan for any easements and lands to be conveyed

Letter from owner requesting holding (H) symbol be removed from the subject lands

Letter of credit or certified cheque for performance securities

Current property taxes paid

User fees (according to the By-Law in effect at the time that payment is made). If time is of the essence, a certified cheque is requested otherwise it will take three weeks for the cheque to clear our financial institution.

\$2,780 for preparation of the site plan agreement

\$924 to remove the holding from the zoning on the property (if applicable)

\$447 for financial administration of this agreement

\$542 per tree cash-in-lieu of trees (if applicable)

2% or 5% land appraisal cash-in-lieu of parkland as per consolidated by-law 2016-126 (if applicable)

INSURANCE REQUIREMENTS

For the Engineer and/or Surveyor of the Owner Entering Into a Development Agreement

Prior to the execution of the Agreement, the Owner shall provide, a certificate of insurance to Norfolk County evidencing the insurance coverages required their Engineer and / or Surveyor who have prepared the Plans subject to the Agreement.

The issuance of such insurance policies as described in a certificate of insurance shall not be construed as relieving the Owner from responsibility for any claims in excess of such policy or policies, if any, for which the Owner may be held responsible. Such insurance policy or policies shall be in a form acceptable to Norfolk County and, without limiting the generality of the foregoing, shall be provided.

The Owner shall ensure that any Professionals hired shall provide for coverage for acts, errors and omissions arising from their professional services performed under the Agreement. The policy shall be underwritten by an insurer licensed to conduct business in the Province of Ontario and acceptable to Norfolk County. The Engineer and/or Surveyor shall provide:

1. A **Professional Liability** insurance certificate in the amount not less than two million dollars (\$2,000,000) per claim, with a four million dollars (\$4,000,000) aggregate limit
 - a. The policy self-insured retention or deductible shall not exceed one hundred thousand dollars (\$100,000) per claim
 - b. The policy shall be renewed for two years after contract termination
 - c. A certificate of insurance evidencing renewal is to be provided each and every year
 - d. If the policy is to be cancelled or non-renewed for any reason, 30 day notice of said cancellation or non-renewal must be provided to Norfolk County

Norfolk County has the right to request that an extended reporting endorsement be purchased by the Owner's professional at the Owner's professional's sole expense. Norfolk County reserves the right to request such higher limits of insurance or other types of policies appropriate to the Agreement as Norfolk County may reasonably require from time to time.

INSURANCE REQUIREMENTS

For the Owner Entering Into a Development Agreement

Prior to the execution of the Agreement, the Owner shall provide, at its expense, obtain and keep in force, until the end of the maintenance / guarantee period and return of all securities, a certificate of insurance to Norfolk County evidencing the insurance coverages required. The insurance certificate shall be in the Owner's name as shown on the property identification number.

The issuance of such insurance policies as described in a certificate of insurance shall not be construed as relieving the Owner from responsibility for any claims in excess of such policy or policies, if any, for which the Owner may be held responsible. Such insurance policy or policies shall be in a form acceptable to Norfolk County and, without limiting the generality of the foregoing, shall provide:

1. A **Commercial General Liability Policy** with a limit of not less than five million dollars (\$5,000,000.00) per occurrence; and include the following coverages:
 - a. The Corporation of Norfolk County 50 Colborne Street South, Simcoe ON N3Y 4H3 named as an additional insured
 - b. Non-owned Automobile coverage with a limit of at least two million dollars (\$2,000,000.00) per occurrence including contractual non-owned coverage
 - c. Cross Liability & Severability of Interest in respect of the named insured
 - d. Products and Completed Operations
 - e. Premises & Operations Liability
 - f. Contingent Employers Liability
 - g. Owners & Contractors Protective
 - h. Blanket Contractual
 - i. Thirty (30) days prior written notice of any alteration, cancellation or change in policy terms, which reduces coverage, and any such notice of cancellation shall be given in writing to Norfolk County

Norfolk County reserves the right to request such higher limits of insurance or other types of policies appropriate to the Agreement as Norfolk County may reasonably require from time to time.

Proof of Insurance

The Owner shall provide the certificate of insurance or certified copies of the above referred to policies, satisfactory to Norfolk County. Provided that if a certificate is provided, all requirements as above set forth must be shown on the said certificate and notwithstanding the provision of any certificate, Norfolk County may require that the Owner provide a certified copy of the policy, if required. Such certificates or policies shall be provided prior to the commencement of any work.

The Owner shall further provide evidence of the continuance of said insurance be filed at each policy renewal date for the duration of the Agreement until the end of maintenance period. In the event any renewal premium is not paid, Norfolk County, in order to prevent the lapse of such policy, may pay the renewal premium or premiums, and the Owner agrees to reimburse Norfolk County for the cost of such renewals within ten (10) days of the account therefore being rendered by Norfolk County. Further, prior to the commencement of the Agreement, the Owner shall cause its insurance broker to confirm in writing that it will accept any request from Norfolk County to renew such insurance and will extend the term of any such insurance policy held by the Owner in accordance with such request upon payment of the renewal premium(s) by Norfolk County.

Notice

Every party to the Agreement agrees to immediately notify all other parties of any occurrence, incident, or event, which may reasonably be expected to expose any of the parties to liability of any kind in relation to the development of the Lands.

Planning Department Development Application Form

Complete Application

A complete development application consists of the following:

1. A completed, signed, and notarized application form
2. Supporting information adequate to illustrate your proposal as indicated in **Section H** of this application form
3. Written authorization from the registered owner of the subject lands where the applicant is not the owner as per Section N
4. Cash, debit, credit or cheque payable to Norfolk County in the amount set out in the user fees By-Law that will be accepted and deposited once the application has been deemed complete.

Pre-Submission Consultation:

Norfolk County requires a Pre-Consultation Meeting for all applications; however, minor applications may be exempted depending on the nature of the proposal. The purpose of a Pre-Consultation Meeting is to provide the applicant with an opportunity to present the proposed application, discuss potential issues, and for the Norfolk County and Agency staff to identify the application requirements. Application requirements, as detailed in the Pre-Consultation Meeting Comments, are valid for one year after the meeting date.

Development Application Process

Once an application has been deemed complete by a Planner, Norfolk County staff will circulate the application to adjacent landowners, public agencies, and internal departments for comment. The time involved in application processing varies depending on its complexity, acceptability to the other agencies, and statutory Planning Act decision time-frames.

Payment is required once your application is deemed complete. Pre-payments will not be accepted.

Norfolk County collects personal information submitted through this form under the Municipal Freedom of Information and Protection Act's authority. Norfolk County will use this information for the purposes indicated or implied by this form. You can direct questions about collecting personal information to Norfolk GIS Services at NorfolkGIS@norfolkcounty.ca.

Additional studies required for the complete application shall be at the applicant's sole expense. Sometimes, peer reviews may be necessary to review particular studies at the applicant's expense. In these cases, Norfolk County staff will select the company to complete the peer review.

Norfolk County will refund the original fee if applicants withdraw their applications before circulation. If Norfolk County must recirculate your drawings, there will be an additional fee. If Norfolk County must do more than three reviews of engineering drawings due to revisions by the owner or failure to revise engineering drawings as requested, Norfolk County will charge an additional fee. Full refunds are only available before Norfolk County has circulated the application.

Notification Sign Requirements

For public notification, Norfolk County will provide you with a sign to indicate the intent and purpose of your development application. It is your responsibility to:

1. Post one sign per frontage in a conspicuous location on the subject lands.
2. Ensure one sign is posted at the front of the subject lands at least three feet above ground level and not on a tree.
3. Notify the Planner when the sign is in place.
4. Maintain the sign until the development application is finalized and, after that, remove it.

Contact Us

For additional information or assistance completing this application, please contact a Planner at 519-426-5870 or 519-875-4485 extension 1842 or planning@norfolkcounty.ca. Please submit the completed application and fees to the attention of the Planning Department at 185 Robinson Street, Suite 200, Simcoe, ON N3Y 5L6.

For Office Use Only:

File Number	_____	Public Notice Sign	_____
Related File Number	_____	Application Fee	_____
Pre-consultation Meeting	_____	Conservation Authority Fee	_____
Application Submitted	_____	Well & Septic Info Provided	_____
Complete Application	_____	Planner	_____

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, m² 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): Ground floor access and shared amenity spaces in support of residential units above.
Dedicated storage facilities will be provided in the lower level for all units

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

- | | |
|--|---|
| <input type="checkbox"/> Municipal piped water | <input type="checkbox"/> Communal wells |
| <input type="checkbox"/> Individual wells | <input type="checkbox"/> Other (describe below) |
-

Sewage Treatment

- | | |
|---|---|
| <input type="checkbox"/> Municipal sewers | <input type="checkbox"/> Communal system |
| <input type="checkbox"/> Septic tank and tile bed in good working order | <input type="checkbox"/> Other (describe below) |
-

Storm Drainage

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Storm sewers | <input type="checkbox"/> Open ditches |
| <input type="checkbox"/> Other (describe below) | |
-

2. Existing or proposed access to subject lands:

- | | |
|---|---|
| <input type="checkbox"/> Municipal road | <input type="checkbox"/> Provincial highway |
| <input type="checkbox"/> Unopened road | <input type="checkbox"/> 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.

N. Declaration

I, Danny Finio of Woodstock Ontario

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:

NORFOLK County


Owner/Applicant Signature

In Somerville

This 14th day of APRIL

A.D., 2025


A Commissioner, etc.

ELDON FRASER DARBYSON,
a Commissioner, etc., Province of Ontario,
for G. Douglas Vallee Limited.
Expires August 21, 2027.

J. Transfers, Easements and Postponement of Interest

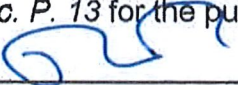
The owner acknowledges and agrees that if required, it is their solicitor's responsibility on behalf of the owner, to disclose the registration of all transfer(s) of land and/or easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's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


Owner/Applicant Signature

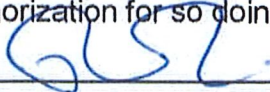
APRIL 11/25
Date

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 2721733 ONTARIO INC am/are the registered owner(s) of the lands that is the subject of this application.

I/We authorize G. Douglas Vallee Limited 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.


Owner

APRIL 11/25
Date

Owner

Date

N. Declaration

I, PETER FIWORO of DRAYTON ONT

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:

NORFOLK COUNTY

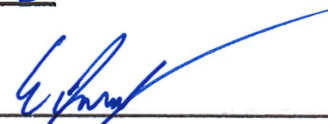


Owner/Applicant Signature

In DRAYTON

This 11 day of APRIL

A.D., 2025



A Commissioner, etc.

ELDON FRASER DARBYSON,
a Commissioner, etc., Province of Ontario,
for G. Douglas Vallee Limited.
Expires August 21, 2027.

J. Transfers, Easements and Postponement of Interest

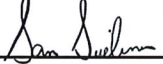
The owner acknowledges and agrees that if required, it is their solicitor's responsibility on behalf of the owner, to disclose the registration of all transfer(s) of land and/or easement in favour of the County and/or utilities. Also, the owner further acknowledges and agrees that it is their solicitor's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



Owner/Applicant Signature

04.13.2025

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 _____ am/are the registered owner(s) of the lands that is the subject of this application.

I/We authorize G. Douglas Vallee Limited 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.



Owner

04.13.2025

Date

Owner

Date

N. Declaration

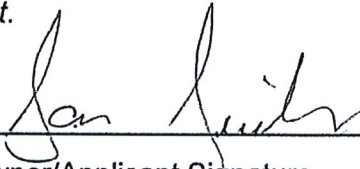
I, Sam Scicluna of Cambridge

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:

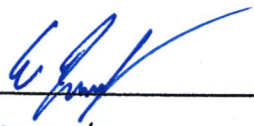
NORFOLK COUNTY


Owner/Applicant Signature

In SENIOR

This 14 day of APRIL

A.D., 2025


A Commissioner, etc.

ELDON FRASER DARBYSON,
a Commissioner, etc., Province of Ontario,
for G. Douglas Vallee Limited.
Expires August 21, 2027.

766268072 RT0001

Request ID: 023712769
Demande n°:
Transaction ID: 073372753
Transaction n°:
Category ID: CT
Catégorie:

Province of Ontario
Province de l'Ontario
Ministry of Government Services
Ministère des Services gouvernementaux

Date Report Produced: 2019/10/16
Document produit le:
Time Report Produced: 12:26:58
Imprimé à:

Certificate of Incorporation Certificat de constitution

This is to certify that

Ceci certifie que

2721733 ONTARIO INC.

Ontario Corporation No.

Numéro matricule de la personne morale en
Ontario

002721733

is a corporation incorporated,
under the laws of the Province of Ontario.

est une société constituée aux termes
des lois de la province de l'Ontario.

These articles of incorporation
are effective on

Les présents statuts constitutifs
entrent en vigueur le

OCTOBER 16 OCTOBRE, 2019



Director/Directrice
Business Corporations Act/Loi sur les sociétés par actions

Request ID / Demande n°
23712769

Ontario Corporation Number
Numéro de la compagnie en Ontario
2721733

FORM 1

FORMULE NUMÉRO 1

BUSINESS CORPORATIONS ACT

/

LOI SUR LES SOCIÉTÉS PAR ACTIONS

ARTICLES OF INCORPORATION
STATUTS CONSTITUTIFS

1. The name of the corporation is: *Dénomination sociale de la compagnie:*
2721733 ONTARIO INC.

2. The address of the registered office is: *Adresse du siège social:*

66 ARROW ROAD, UNIT 6B

(Street & Number, or R.R. Number & if Multi-Office Building give Room No.)
(Rue et numéro, ou numéro de la R.R. et, s'il s'agit édifice à bureau, numéro du bureau)
GUELPH ONTARIO
CANADA N1K 1T4
(Name of Municipality or Post Office) (Postal Code/Code postal)
(Nom de la municipalité ou du bureau de poste)

3. Number (or minimum and maximum number) of directors is: *Nombre (ou nombres minimal et maximal) d'administrateurs:*
Minimum 1 Maximum 10

4. The first director(s) is/are: *Premier(s) administrateur(s):*

First name, initials and surname *Resident Canadian State Yes or No*
Prénom, initiales et nom de famille Résident Canadien Oui/Non

Address for service, giving Street & No. *Domicile élu, y compris la rue et le*
or R.R. No., Municipality and Postal Code numéro, le numéro de la R.R., ou le nom
de la municipalité et le code postal

- * DANNY YES
FINORO
66 ARROW ROAD Suite 4

GUELPH ONTARIO
CANADA N1K 1S6

Request ID / Demande n°
23712769

Ontario Corporation Number
Numéro de la compagnie en Ontario
2721733

4. The first director(s) is/are:

Premier(s) administrateur(s):

First name, initials and surname
Prénom, initiales et nom de famille

Resident Canadian State Yes or No
Résident Canadien Oui/Non

Address for service, giving Street & No.
or R.R. No., Municipality and Postal Code

Domicile élu, y compris la rue et le
numéro, le numéro de la R.R., ou le nom
de la municipalité et le code postal

* PETER
FINORO

YES

66 ARROW ROAD Suite 4

GUELPH ONTARIO
CANADA N1K 1S6

* SAMUEL J
SCICLUNA

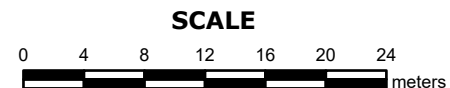
YES

66 ARROW ROAD, UNIT 6B

GUELPH ONTARIO
CANADA N1K 1T4



PRINTED ON 19 FEB, 2025 AT 16:33:00
FOR LHR



PROPERTY INDEX MAP
NORFOLK(No. 37)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	

THIS IS NOT A PLAN OF SURVEY

NOTES

**REVIEW THE TITLE RECORDS FOR COMPLETE
PROPERTY INFORMATION AS THIS MAP MAY
NOT REFLECT RECENT REGISTRATIONS**

THIS MAP WAS COMPILED FROM PLANS AND
DOCUMENTS RECORDED IN THE LAND
REGISTRATION SYSTEM AND HAS BEEN PREPARED
FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE
RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT
REFERENCE PLANS ARE NOT ILLUSTRATED



* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION:LT 29 PL 1107; NORFOLK COUNTY

PROPERTY REMARKS:

ESTATE/QUALIFIER:

FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:

FIRST CONVERSION FROM BOOK

PIN CREATION DATE:

2006/10/23

OWNERS' NAMES

2721733 ONTARIO INC.

CAPACITY

SHARE

ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED) **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2006/10/23 **						
NR440457	1987/03/11	AGR SUBDIVISION			HALDIMAND-NORFOLK AND TOWN OF SIMCOE	C
REMARKS: SKETCH ATTACHED.						
NK136969	2021/01/06	TRANSFER	\$375,000	4FREDS INC.	2721733 ONTARIO INC.	C
REMARKS: PLANNING ACT STATEMENTS.						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

LAND
REGISTRY
OFFICE #37

50234-0109 (LT)

PAGE 1 OF 1
PREPARED FOR Lhr
ON 2024/01/24 AT 13:28:00

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: LT 47 PL 1107; NORFOLK COUNTY

PROPERTY REMARKS:

ESTATE/QUALIFIER:

FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:

FIRST CONVERSION FROM BOOK

PIN CREATION DATE:

2006/10/23

OWNERS' NAMES

THE CORPORATION OF THE TOWN OF SIMCOE

CAPACITY SHARE

ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT	INCLUDES ALL	DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED)	**			
**SUBJECT,	ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:					
**	SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES	*				
**	AND ESCHEATS OR FORFEITURE TO THE CROWN.					
**	THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF					
**	IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY					
**	CONVENTION.					
**	ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.					
**DATE OF CONVERSION TO	LAND TITLES: 2006/10/23	**				
NR375330	1977/05/24	AGR SUBDIVISION			THE REGIONAL MUNICIPALITY OF HALDIMAND - NORFOLK THE CORPORATION OF THE TOWN OF SIMCOE	C
NR440457	1987/03/11	AGR SUBDIVISION			HALDIMAND-NORFOLK AND TOWN OF SIMCOE	C
	REMARKS: SKETCH	ATTACHED.				
NR442562	1987/06/05	TRANSFER	\$1		THE CORPORATION OF THE TOWN OF SIMCOE	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

LAND
REGISTRY
OFFICE #37

50234-0002 (LT)

PAGE 1 OF 1
PREPARED FOR LHR
ON 2024/09/25 AT 10:51:49

* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: RDAL BTN CON 5 & CON 6 WOODHOUSE; LT 42 PL 1107; LT 56 PL 1195 BEING VICTORIA ST BTN ONLY DR S & IRELAND RD; NORFOLK COUNTY

PROPERTY REMARKS:

ESTATE/QUALIFIER:

FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:

FIRST CONVERSION FROM BOOK

PIN CREATION DATE:

2006/10/23

OWNERS' NAMES

PUBLIC AUTHORITY HAVING JURISDICTION

CAPACITY SHARE

ROWN

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED) **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2006/10/23 **						
NR442562	1987/06/05	TRANSFER	\$1		THE CORPORATION OF THE TOWN OF SIMCOE	C
NR508598	1995/02/16	TRANSFER	\$2		THE CORPORATION OF THE TOWN OF SIMCOE	C
NR567909	2003/01/31	BYLAW				C

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NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

SITE STATISTIC & ZONING REQ.'S

PROPERTY LEGAL DESCRIPTION:
PLAN 1107, LOT 29, ROLL 4010092600
IN THE TOWN OF NORTH SIMCOE, IN THE DISTRICT OF NORFOLK COUNTY

ZONING:
IN ACCORDANCE W/ ZONING BY-LAW 1-Z-2014 NORFOLK COUNTY, CONSOLIDATED
JANUARY 1, 2021

PROVISION	LAND USE EXISTING
5.2	RESIDENTIAL ZONES
5.5	URBAN RESIDENTIAL TYPE 5 ZONE (R5)
5.5.1	PERMITTED USES In an R5 zone, no land, building or structure shall be used except in accordance with the following uses: a) duelling, apartment b) home occupation c) retirement home.

PROVISION	SETBACKS (m - METERS)	REQUIRED (m)	PROVIDED (m)
5.5.2a)	MIN. LOT FRONTAGE:	30	25.06 (EXISTING)
5.5.2b)	MIN. FRONT YARD:	3	34.6
5.5.2c)	MIN. EXTERIOR SIDE YARD:	3	3
5.5.2d)	MIN. INTERIOR SIDE YARD	3	24.1 MIN.
5.5.2e)	MIN. REAR YARD:	4	5.27
5.5.2f)	MAX. BLDG. HEIGHT	5 STOREYS	5 STOREYS
5.6.2g)	MAX. FLOOR AREA RATIO: i) 4 STOREY BLDG. ii) 5 STOREY BLDG.	0.12 0.19	N/A 0.02

"FLOOR AREA RATIO" shall mean the ratio of the usable floor area to the lot, determined by the calculation of: Floor area ratio = usable floor area / lot area.

GRAY HIGH-LIGHTED APPLICABLE
COORD. W/ ZONING BY-LAW FOR ALL OTHER ZONING REQ.'S

PROVISION	NUMBER OF PARKING SPACES	REQUIRED	PROVIDED
4.9b)	APARTMENT DWELLING (0-2-2011): 1.5 SPACES / DWELLING UNIT 1.5 SPACES x 45 DWELLING UNITS = 68 1 SPACE / (1) BEDROOM UNIT = 24 1.5 SPACES / (2) BEDROOM UNIT = 24	68 SPACE(S)	53 SPACE(S) TOTAL 20 SPACE(S) (1 SPACE PER (1) BEDROOM UNIT) 24 SPACE(S) (1.5 SPACES PER (2) BEDROOM UNIT)

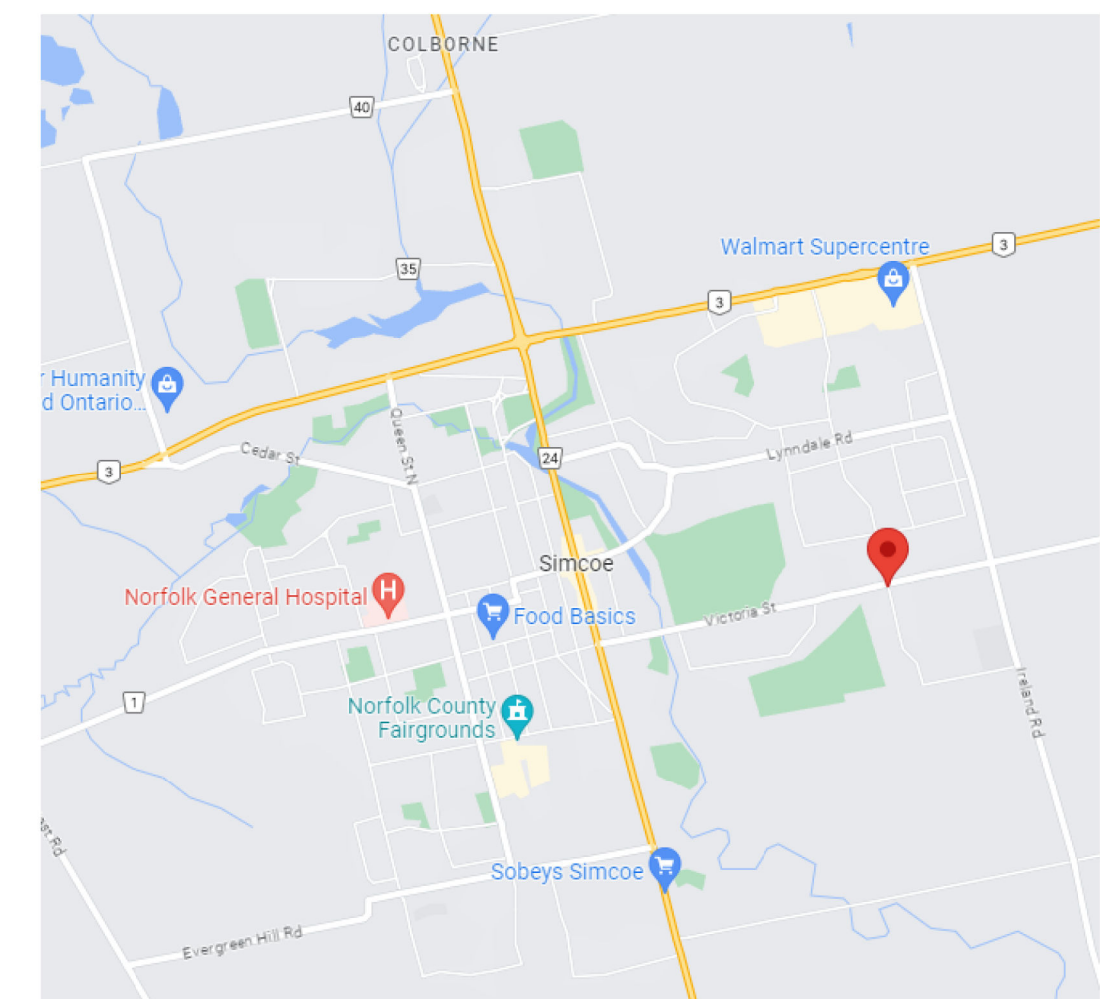
PROVISION	NUMBER OF PARKING SPACES	REQUIRED	PROVIDED
4.9f)	VISITOR PARKING: 1 SPACE / 3 DWELLING UNITS 1 SPACE x (45 / 3) = 15	15 SPACE(S)	15 SPACE(S)

PROVISION	NUMBER OF PARKING SPACES	REQUIRED	PROVIDED
4.9f)	TOTAL	83 SPACE(S)	68 SPACE(S)

PROVISION	NUMBER OF PARKING SPACES	REQUIRED	PROVIDED
4.3.3	BARRIER FREE PARKING REQ'D: 1.25 (VISITOR) PARKING SPACES = TYPE 'A' (3.4m WIDE) PLUS 1.5m AISLE TYPE 'B' (2.4m WIDE) PLUS 1.5m AISLE *Where an uneven number of accessible parking spaces are required, the extra type B space may be changed to a type A space.	1 SPACE(S) 0 SPACE(S)	1 SPACE(S) 0 SPACE(S)



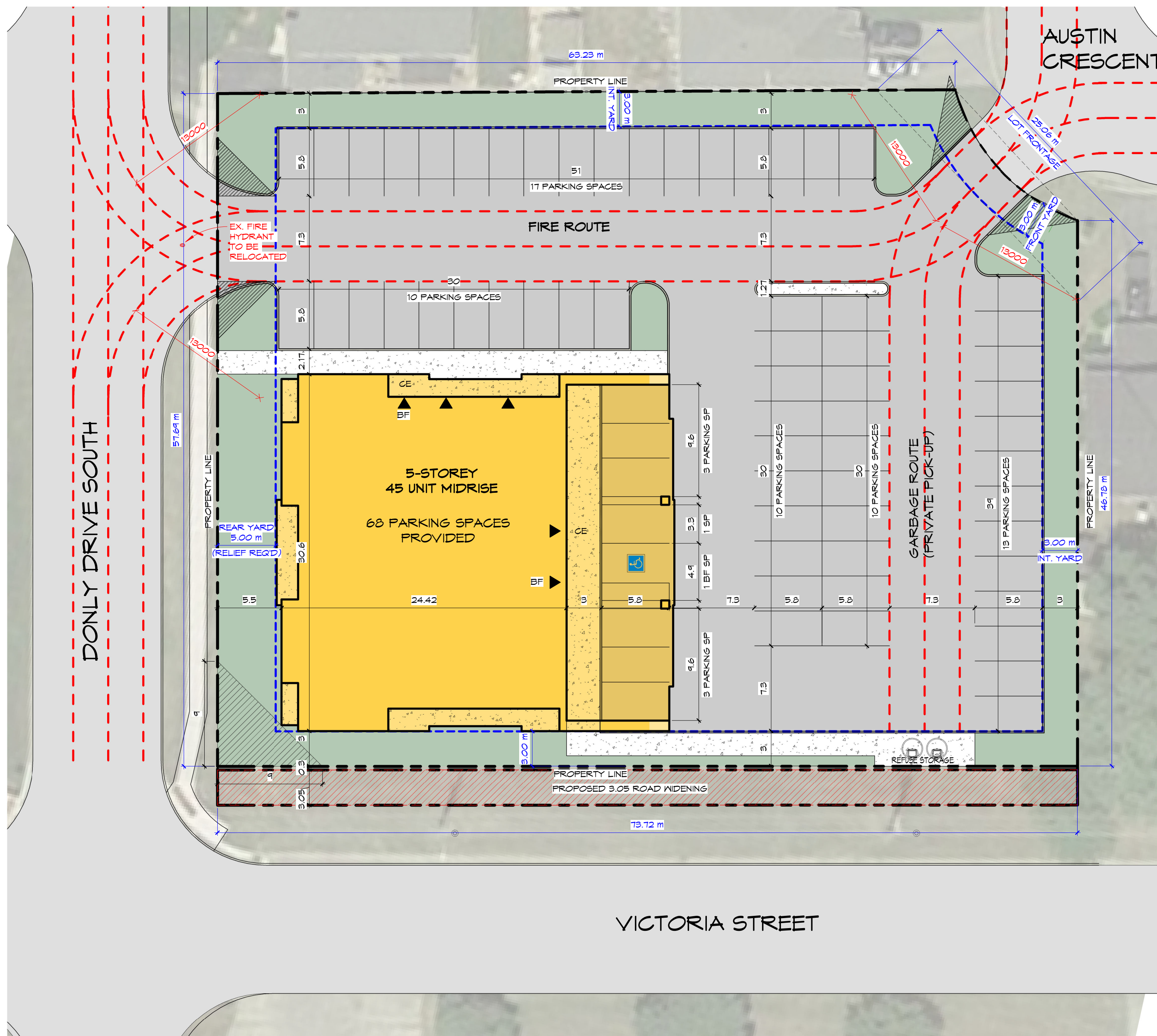
GROSS SITE - PRECON / ZONING
AMENDMENT
SCALE 1 : 500



KEY MAP
SCALE 1 : 100



SITE MAP
SCALE 1 : 100



SITE PLAN PRECON/ZONING AMENDMENT
SCALE 1 : 250

SITE PLAN LEGEND

- ENTRANCE / EXIT DOOR
- ENTRANCE / EXIT DOOR (BARRIER FREE OPERATOR)
- PROPERTY LINE
- SETBACKS
- FIRE ROUTE (6m WIDE / 12m CENTER RADIUS)
- COVERED ENTRANCE
- PAINTED GRAPHICS ON ASPHALT / CONG. (COORD. W/ THE CITY / TOWN HAVING JURISDICTION GUIDELINES)
- * WHEELCHAIR SIGN ON ASPHALT / CONG. (WHITE & BLUE COLOUR)
- * VEHICULAR STALL MARKINGS (YELLOW COLOUR)
- * DIAGONAL MARKINGS
- NEXI CONIFEROUS TREE
- NEXI DECIDUOUS TREE (~4500mm TREE RADIUS @ FULL GROWTH)

HATCH IDENTIFICATION LEGEND

- CONG. SIDEWALK / PAD / CROSSWALK / SIDEWALK / LANDWAY / STAIRS / ETC.
- AREA OF PARKING
- AREA OF ASPHALT
- LANDSCAPING
- NEXI BLDG. / ADDITION

PROJECT TITLE:
Lynndale Heights Midrise
DONLY DRIVE & VICTORIA ST.
SIMCOE, ONTARIO

DRAWING TITLE:
SITE PLAN PRE-CON / ZONING
AMENDMENT

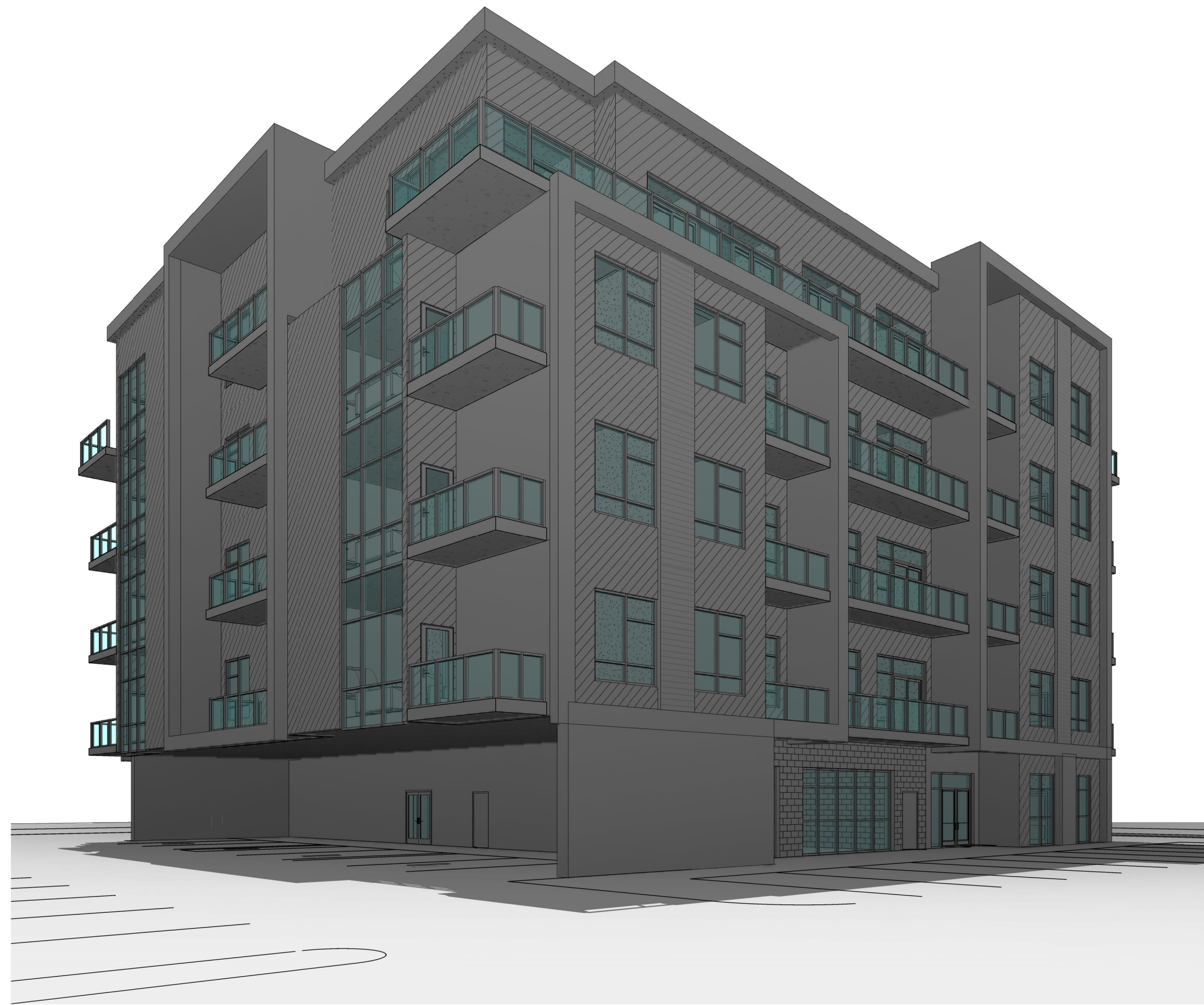
DRAWING SCALE:
As indicated

DATE ISSUED: 2025.02.18
DRAWING NO.:

PROJECT NO.: 21-083
PC/Z100



1 NORTHWEST ISOMETRIC
P000 SCALE



2 NORTHEAST ISOMETRIC
P000 SCALE



3 SOUTHWEST ISOMETRIC
P000 SCALE



4 SOUTHEAST ISOMETRIC
P000 SCALE

PROJECT TITLE:
Lynndale Heights Midrise
DONLY DRIVE & VICTORIA ST.
SIMCOE, ONTARIO

DRAWING TITLE:
PRESENTATION COVER PAGE

DRAWING SCALE:

DATE ISSUED: 2025.02.18
DRAWING NO.:

PROJECT NO.: 21-083

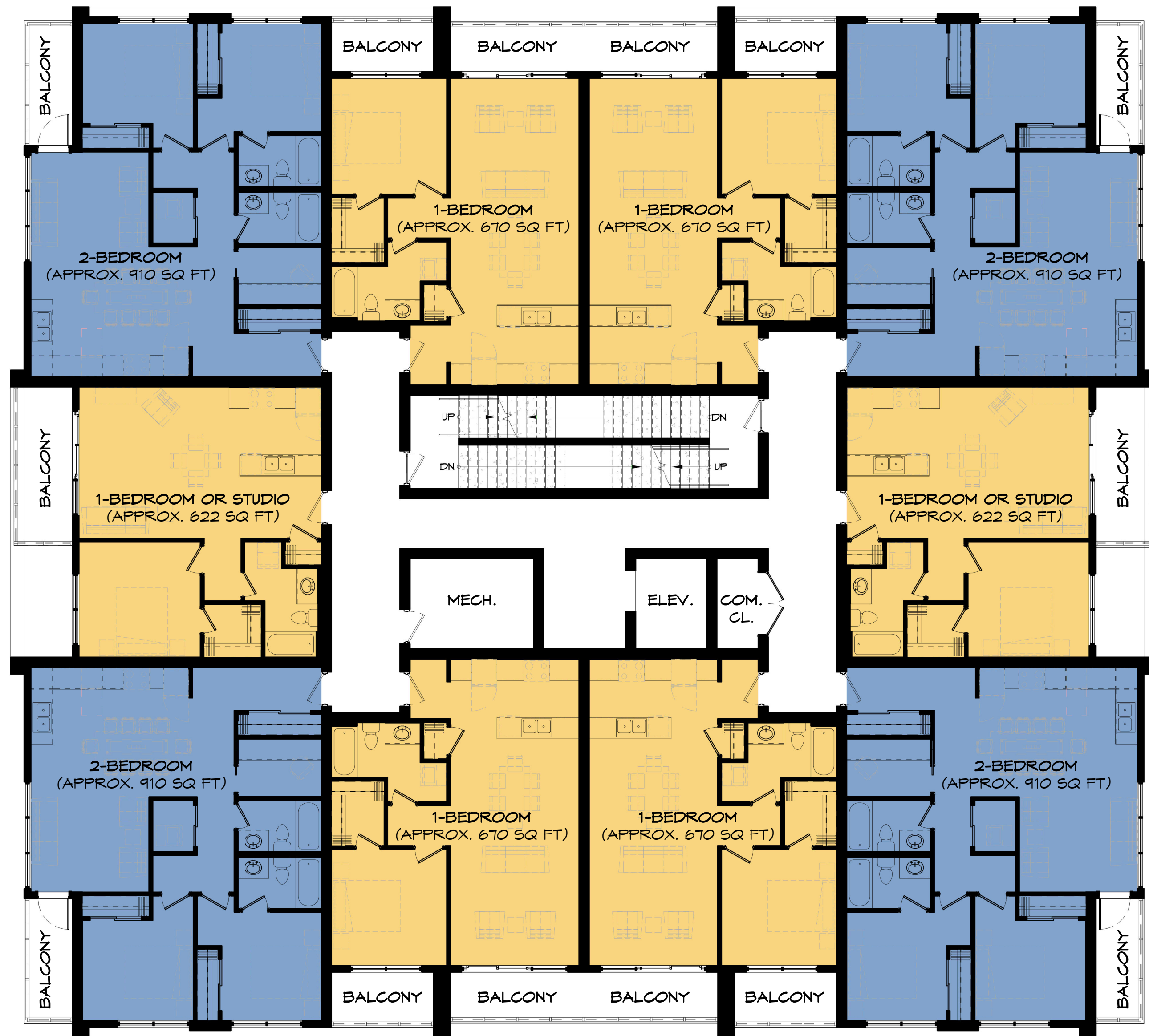
P000



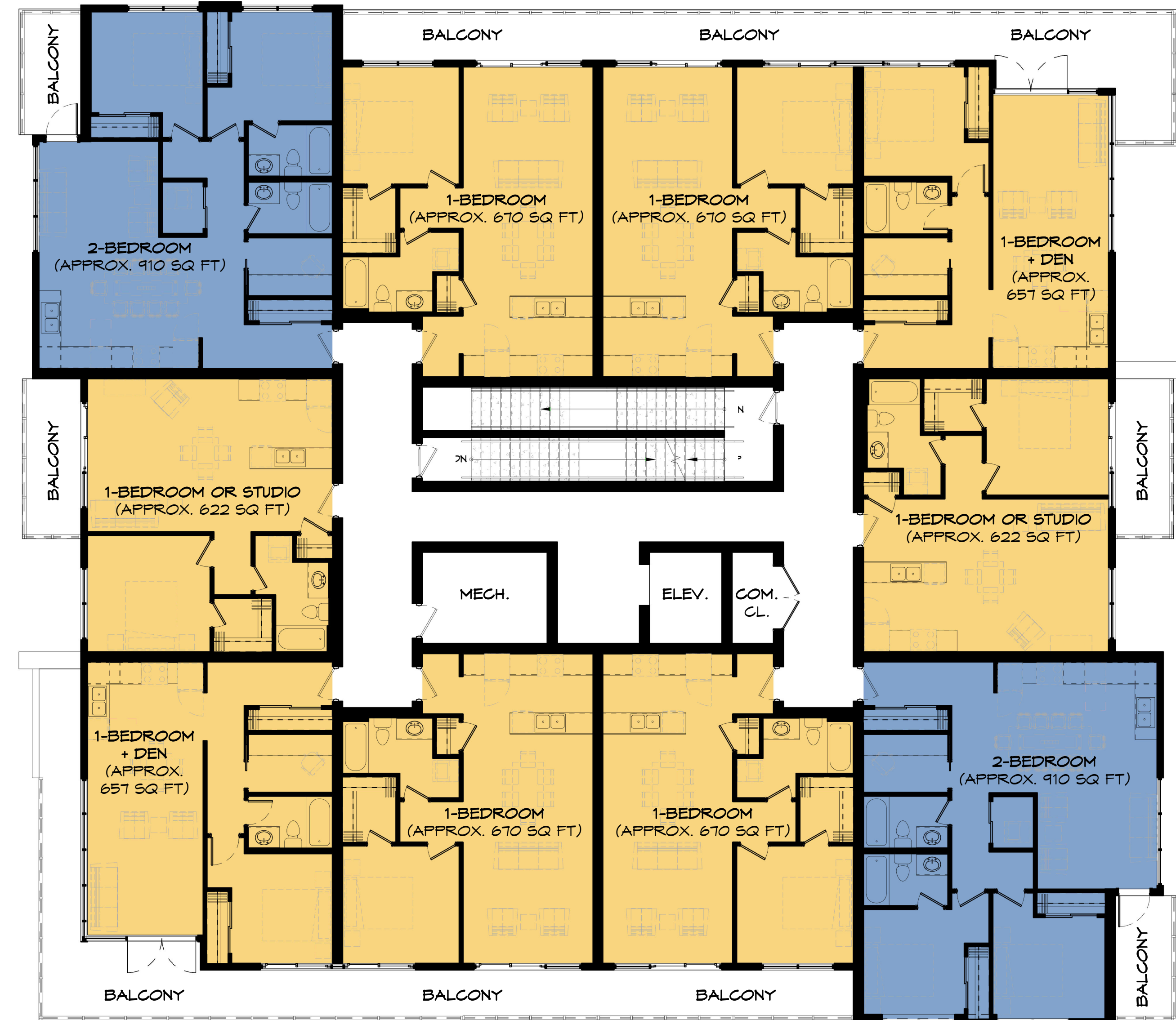
2 LEVEL 0 PLAN PRESENTATION
P201 SCALE 1 : 100



1 LEVEL 1 PLAN PRESENTATION
P201 SCALE 1 : 100



1 LEVELS 2 THROUGH 4 PLAN PRESENTATION
P202 SCALE 1 : 100



2 LEVEL 5 PLAN PRESENTATION
P202 SCALE 1 : 100

PROJECT TITLE:
Lynndale Heights Midrise
DONLY DRIVE & VICTORIA ST.
SIMCOE, ONTARIO

DRAWING TITLE:
PRESENTATION PLANS

DRAWING SCALE:
1 : 100

DATE ISSUED:
2025.02.18

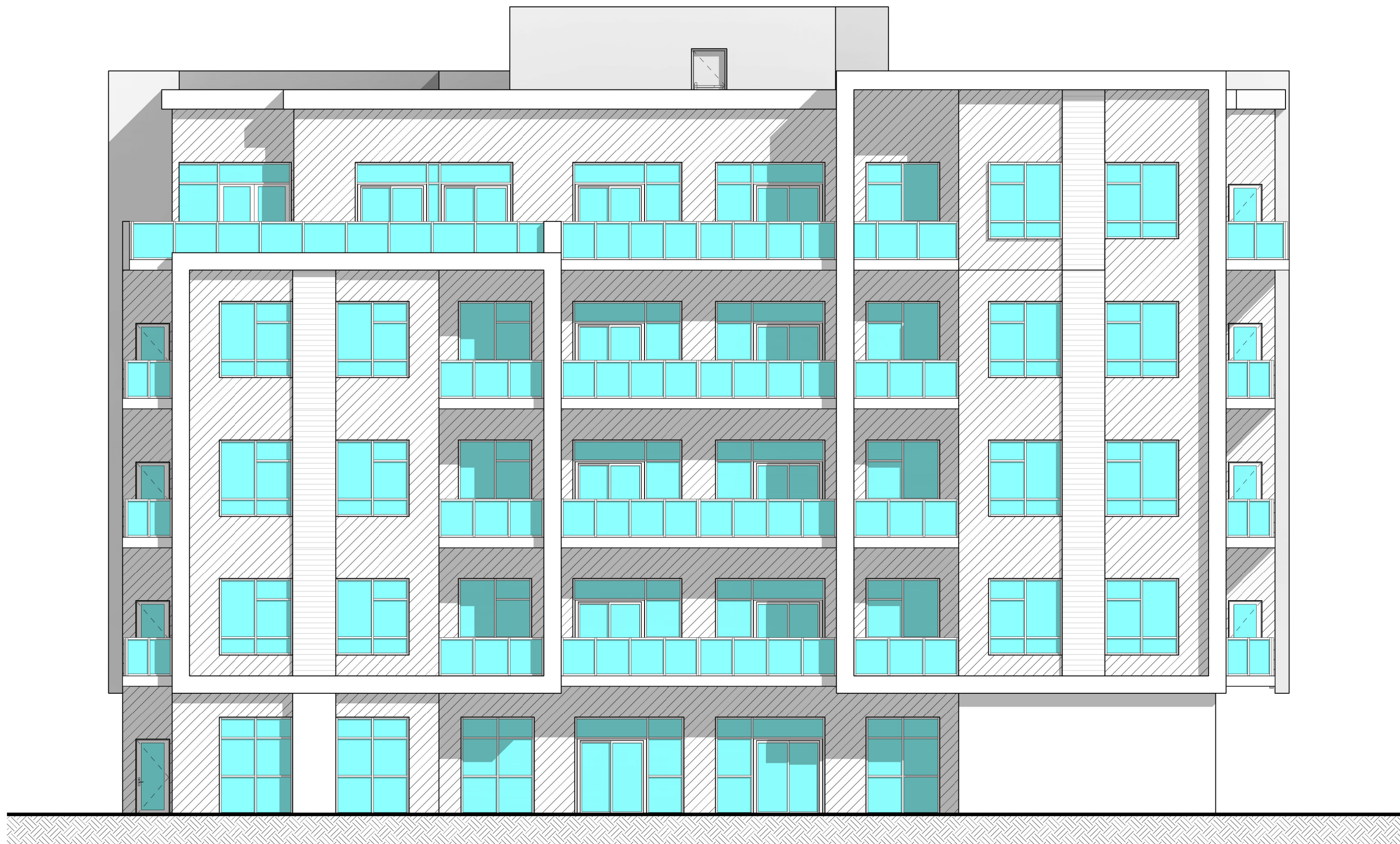
PROJECT NO.:
21-083



1 NORTH PRESENTATION ELEVATION
P301 SCALE 1 : 100



2 EAST PRESENTATION ELEVATION
P301 SCALE 1 : 100



3 SOUTH PRESENTATION ELEVATION
P301 SCALE 1 : 100



4 WEST PRESENTATION ELEVATION
P301 SCALE 1 : 100

PROJECT TITLE:
Lynndale Heights Midrise
DONLY DRIVE & VICTORIA ST.
SIMCOE, ONTARIO

DRAWING TITLE:
PRESENTATION ELEVATIONS

DRAWING SCALE:
1 : 100

DATE ISSUED: 2025.02.18
DRAWING NO.:

PROJECT NO.: 21-083



Zoning By-law Amendment

2721733 Ontario Inc.

Planning Justification Report

Project # 21-083

February 20, 2025



vallee

*Consulting Engineers,
Architects & Planners*

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Introduction

G. Douglas Vallee Limited was retained by 2721733 Ontario Inc. to apply for a Zoning Bylaw Amendment on a property located in the serviced urban area of Simcoe, Norfolk County. The zoning bylaw amendment is required to facilitate the development of a 5-storey mid-rise residential building as shown in Appendix A. As an infill development, the proposal would see the efficient use of a vacant and underutilized lot in the urban area.

The zoning bylaw amendment is required for the following reasons:

- To change the existing zoning of the property from Neighbourhood Commercial (CN) with special provision 14.729 to Urban Residential Type 5 (R5) with a special provision to permit:
 - A reduced minimum lot frontage.
 - A reduced minimum rear yard.
 - An increased maximum floor area ratio.
 - A reduced parking requirement.
 - Parking located between the dwelling & street line.
 - Proximity of parking to the proposed dwelling units.

A full zoning review is provided later in this report.

Approval of this application would provide much needed housing options to the residents of Norfolk County, including 45 one and two-bedroom apartments. At this time, the ownership structure of the building (rental vs condominium) is not yet known. However, the proposed development will help increase urban density while maintaining an aesthetically appealing streetscape along exterior streets.

The purpose of this planning justification report is to provide planning rationale to Norfolk County staff and Council for consideration of the application for a Zoning Bylaw amendment on the subject lands.

Site Description

The subject lands are 0.41ha in area and located at the northeast corner of the intersection of Donly Drive and Victoria Street in the urban area of Simcoe, Ontario. The property is currently known as 215 Victoria Street and is identified by municipal roll number 40100926000.

The property has been cleared of vegetation and there are no existing water features on site. The cumulative lands are currently vacant and have no predominant land use. The lands are not located within an identified wellhead protection area, and do not feature any designated natural heritage features.

In accordance with Schedule B-15 of the Norfolk County Official Plan, the lands are designated as Urban Residential. The lands are presently zoned Neighbourhood Commercial (CN) with special provision 14.729, as shown on Schedule A-26 of the Norfolk County Zoning Bylaw.

As shown in Schedule E-2 of the Official Plan, the subject lands are located along existing key transportation corridors, with Victoria Street servicing as an arterial road and Donly Drive South as a collector road. There is an existing Ride Norfolk bus stop at the southeast intersection of Donly Drive and Victoria Street providing weekly connection around Norfolk and the City of Brantford.

Figure 1 – Aerial View of Subject Lands

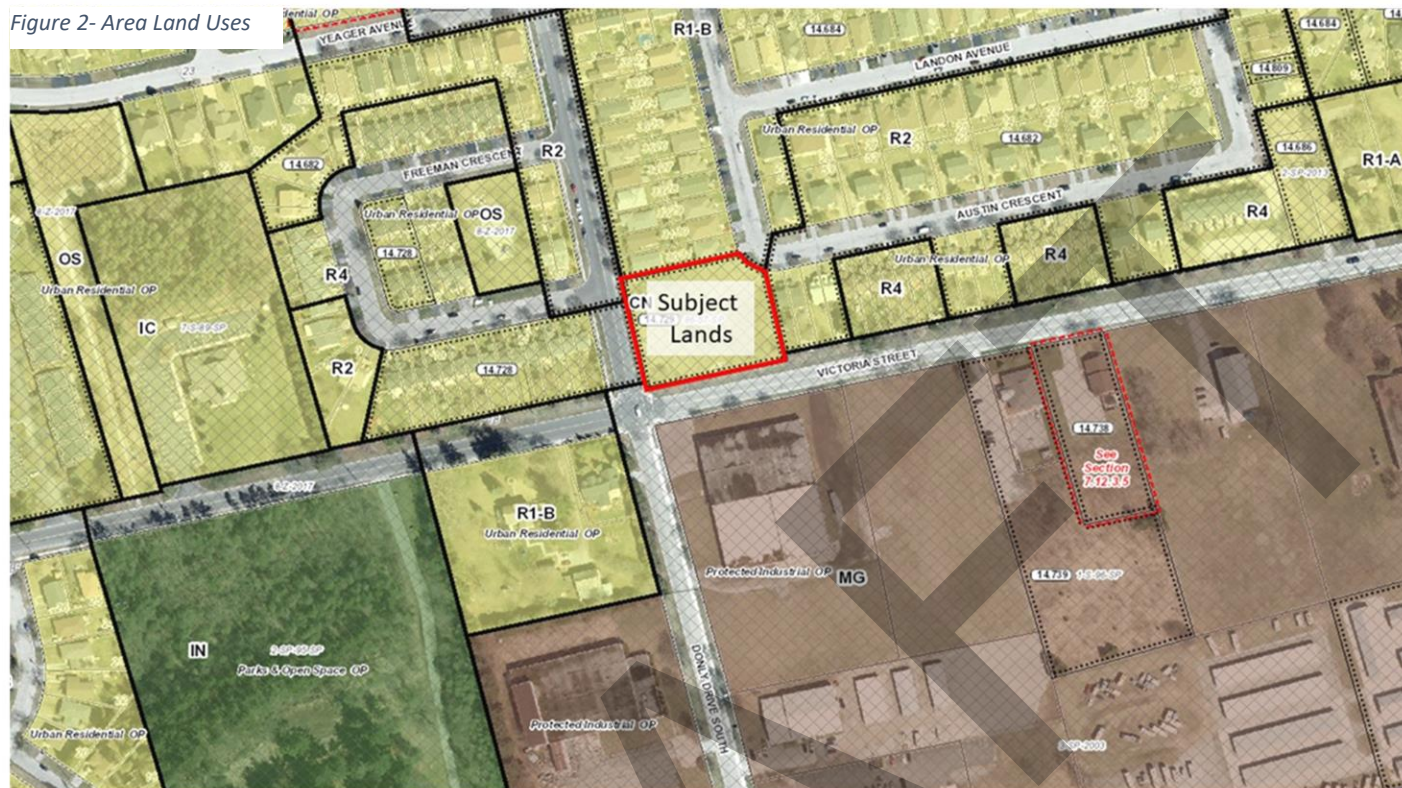


Surrounding Land Uses

The subject lands are surrounded by a variety of land uses, as shown in Figure 2:

- To the north
 - Low density residential development in the form of single detached and semi-detached dwellings along Donly Drive South.
- To the East
 - Low and medium density residential development in the form of single detached, semi-detached, duplex and street townhouse dwellings along Austin Crescent.
- To the South
 - Low intensity industrial uses in the form of warehousing and general offices along Donly Drive South and Victoria Street (Del-Bac Services Corporation, Mini Storage 101, Victoria Health Centre).
 - Low density residential uses in the form of a single detached dwelling along Victoria Street.
 - Parks and Open Space land uses along Victoria Street (Oakwood Cemetery).
- To the West
 - Low and medium density residential development in the form of semi-detached, duplex and street townhouse dwellings along Freeman Crescent.
 - Institutional land uses in the form of a religious institution (The Church of Jesus Christ of Latter-day Saints).

Figure 2- Area Land Uses



Proposal

The proposed development includes a 5-storey midrise containing up to 45 one and two-bedroom residential dwelling units. The proposed one-bedroom suites are intended to range in size from approximately 56 to 62 sq m (620 to 670 sq ft) per unit, while the two-bedroom suites are approximately 85 sq m (910 sq ft) per unit. Each apartment dwelling is intended to provide in suite laundry facilities and a private outdoor patio or balcony space.

A shared indoor amenity space is intended to be provided for residents on the ground floor, alongside a dedicated mail room and entry vestibule. The lower level is intended to include opportunities for storage space for residents adjacent to centralized mechanical and electrical spaces. At this time, it is unknown if these units will be rental, condominium, or a combination of both. However, the addition of these dwelling types will provide the residents with a modern, safe, and appealing housing type not readily available in Norfolk County.

The proposed design of the site includes a total of 68 parking spaces, including one Type 'A' barrier-free accessible parking space. Due to the unique configuration of the site, with three of five property line boundaries flanking existing municipal streets, the proposed conceptual design makes best use of the site by placing the proposed midrise immediately adjacent to the intersection of Donkey Drive and Victoria Street, while relegating parking to the north and east of the building. Refuse storage is intended to be provided via in-ground waste disposal bins installed adjacent to the outdoor parking area and accessed via a concrete sidewalk. A 9.0m sight triangle has been maintained within the proposed design at the intersection of Donkey Drive and Victoria Street.

Studies

Required supporting studies identified through the pre-consultation process with Norfolk County staff have been completed and are enclosed in support of the proposed development. These studies are summarized as follows:

- Proposed Site Plan (prepared by G. Douglas Vallee Ltd.)
- Functional Servicing & Stormwater Management Report (prepared by G. Douglas Vallee Ltd.)
- General Plan of Services (prepared by G. Douglas Vallee Ltd.)
- Traffic Impact Brief prepared by RC Spencer Associates Inc. dated October 2024

Development Review Summary

- Implements Section 2 of the Planning Act.
- Is consistent with the intent of the Provincial Policy.
- Implements the Goals and Objectives of the Norfolk County Official Plan.
- Traffic generation does not negatively impact the existing road network.
- Provides additional forms of housing encouraged by the Norfolk County Official Plan.
- Has no impact on industrial land uses or development potential on industrial lands.
- Is compatible with the surrounding neighbourhood.
- Represents good planning.

Appendices to this report include the following:

- Appendix A - Site Plan Concept
- Appendix B – Planning Act – Section 2 Compliance Review
- Appendix C – Provincial Planning Statement 2024 (PPS)
- Appendix D – Norfolk County Official Plan Policy Review
- Appendix E – Angular Plane

This application was submitted to include the information and material required under Section 34 (10.1) of the *Planning Act* as part of a complete application.

Existing Zoning

Under the current zoning category, the following uses are permitted:

- | | |
|--------------------------------------|--|
| a) clinic or doctors' offices | i) dwelling units in any permitted building – max. (2) |
| b) community centre | j) financial institution |
| c) convenience store | k) fruit and vegetable outlet |
| d) day care nursery | l) home occupation |
| e) dry cleaning distribution station | m) laundromat |
| f) dwelling, single detached | n) personal service shop |
| g) dwelling, semi-detached | o) restaurant, take-out, no drive through window |
| h) dwelling, duplex | p) video store. |

Under special provision 14.729, an automobile gas station is also be permitted in addition to the uses permitted in the CN zone.

While the current zoning permits a mix of commercial and residential land uses, the CN zone is primarily a commercial zone category. The proposed zoning amendment would bring the zoning in-line with the existing residential land use designation and enable more efficient use of the land by facilitating increased residential density and permitting alternative forms of housing.

Proposed Zoning By-law Amendment

This application proposes to change the existing zoning from Neighbourhood Commercial (CN) with special provision 14.729 to Urban Residential Type 5 (R5) with special provisions.

Proposed site-specific zoning provisions:

Provision:	Proposed:
5.5.2 a) minimum lot frontage: 30 metres	25 metres
5.5.2 b) minimum front yard: 3 metres	No change – 34.6m existing
5.5.2 c) minimum exterior side yard: 3 metres	No change – 3m
5.5.2 d) minimum interior side yard: 3 metres	No change – 24m
5.5.2 e) minimum rear yard: 9 metres	5 metres
5.5.2 f) maximum building height: five (5) storeys	5 storeys
5.5.2 g) maximum floor area ratio:	
i) four (4) storey building 0.72	Not Applicable
ii) five (5) storey building 0.79	0.82

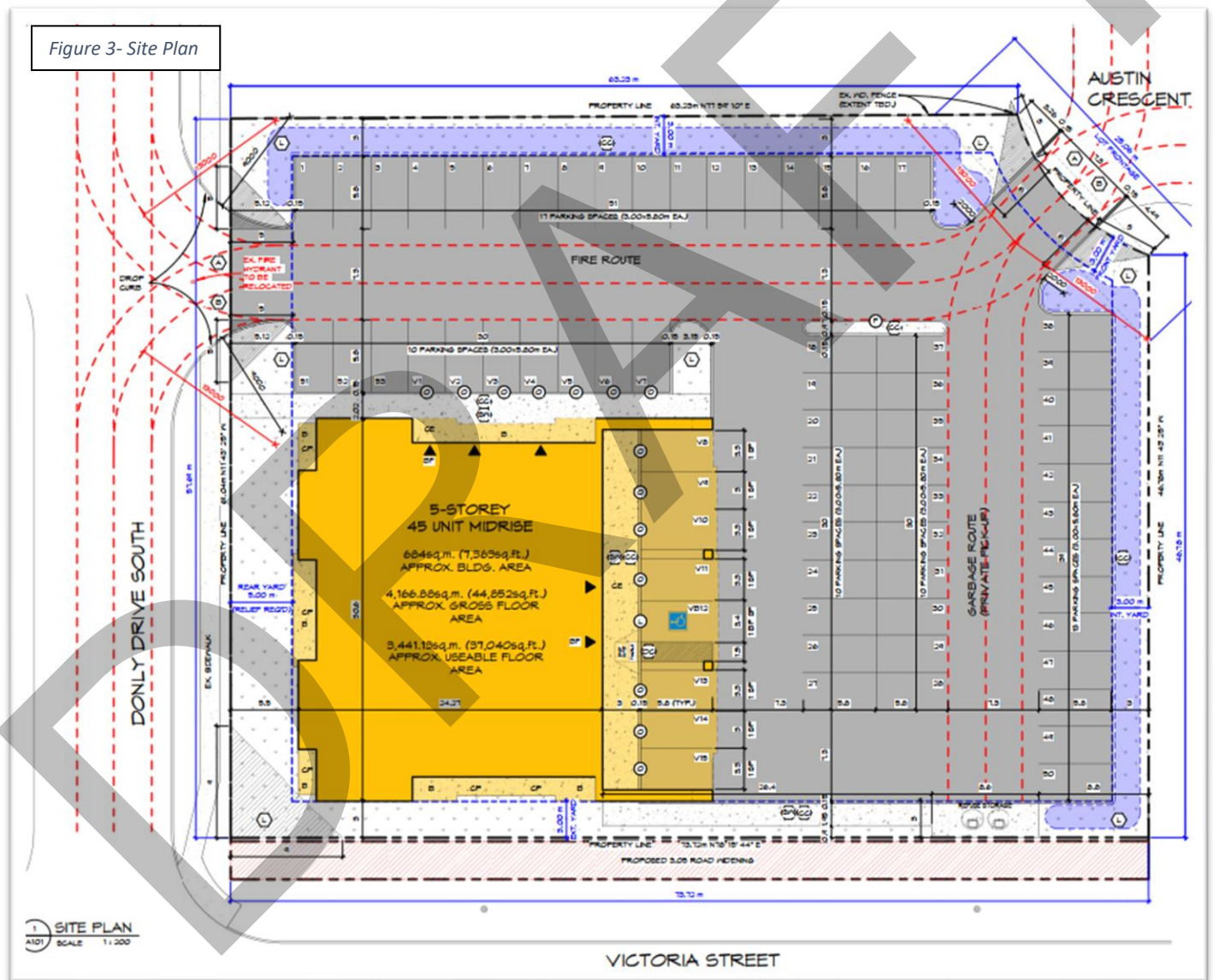
Proposed site-specific parking requirements:

Provision:	Proposed:
4.9 b) Resident Parking: 1.5 spaces per unit	1 space per one-bedroom unit (29 one-bedroom x 1 = 29 spaces) 1.5 spaces per two-bedroom unit (No Change) (16 two-bedroom x 1.5 = 24 spaces)
4.9 f) Visitor Parking: 1 spaces per 3 dwelling units	45/3 = 15 spaces required – Complies
4.2.4 b) for group townhouses and apartment dwellings, no parking lot shall be located closer than 3 metres from any dwelling on the lot or of any interior lot line abutting another residential Zone;	No parking lot shall be located closer than 2 metres of any dwelling on the lot. No parking lot shall be located closer than 3 metres of any interior lot line abutting another residential Zone.
4.2.4 c) for group townhouses and apartment dwellings, no parking lot or parking space shall be located between a dwelling and the street line, except for individual or tandem parking spaces leading directly to each townhouse dwelling unit;	Parking lot and/or parking spaces are permitted to be located between a dwelling and the front street line. No parking lot and/or parking space shall be located between a dwelling and the rear or exterior side street lines.

The unique configuration of the subject lands, with three of five property boundary lines directly flanking existing municipal streets, necessitates reasonable relief to provisions within section 4.2.4 of the zoning by-law related to the placement of parking on the site. The perceived intent of requirements described in 4.2.4 b) and c) is to encourage developments that complement streetscapes and preserve sightlines along existing municipal streets. The placement of the proposed building and parking facilities in this case best meet the intent of the provisions related to the placement of parking, by pulling the proposed building close to the more heavily trafficked intersection of Donly Drive and Victoria Street. While this placement results in parking placed between the dwelling units and a street line (that being Austin Crescent), it is notably less significant with impact on fewer local residents. In addition, the proposed siting of the building and adjacent parking areas enable larger setbacks from and improved compatibility with the existing residential development to the north and east.

In the pre-consultation minutes provided by Norfolk County, the Zoning Administrator noted a deficiency related to a requirement related to parking and landscaped space under section 4.2.5 of the Norfolk County Zoning By-Law. Upon review of the current consolidated version of the Zoning By-Law provided on Norfolk County's website, section 4.2.5 applies only to Urban Residential Zones R1 through R4, and is therefore not applicable to this proposal.

The proposed zoning bylaw amendment is required to apply the appropriate zone provisions to permit this form of development. The property is designated and intended for residential use under the Norfolk County Official plan, however, the existing zoning does not permit this type of use.



Planning Review

The proposed Zoning By-law amendment was prepared considering several planning documents including the *Planning Act*, Provincial Planning Statement, Norfolk County Official Plan, and the Norfolk County Zoning By-law 1-ZA-2014.

Planning Act

Section 2	Lists matters of provincial interest to have regard to.
Section 3	Requires that, in exercising any authority that affects a planning matter, planning authorities “shall be consistent with the policy statements” issued under the Act and “shall conform with the provincial plans that are in effect on that date, or shall not conflict with them, as the case may be”.
Section 34	Allows amendments to the Zoning By-law.

Provincial Interest

Section 2 of the Planning Act establishes matters of provincial interest. The Minister, the council of a municipality, a local board, a planning board, and the Tribunal, in carrying out their responsibilities under this Act, shall have regard to, among other matters, matters of provincial interest. These matters are reviewed in Appendix B.

It is noted that these provincial interests are from the highest level of policy being the *Planning Act*; however, the intent of the owner’s application meets these interests and are demonstrated in this report.

Section 3 of the *Planning Act* requires that, in exercising any authority that affects a planning matter, planning authorities “shall be consistent with the policy statements” issued under the Act and “shall conform with the provincial plans that are in effect on that date, or shall not conflict with them, as the case may be”.

Section 34 of the *Planning Act* allows for the consideration of amendments to the Zoning By-law.

The proposed Zoning Bylaw Amendment applications align with the framework and interests of the Planning Act by providing housing options on lands designated for residential development. The proposed zoning bylaw amendment will allow for a more efficient use of the land through an infill development introducing a higher density and housing options to the neighbourhood.

Through the site plan approval process, detailed design will take place for servicing, grading, stormwater management and other requirements as requested by the municipality. This process will ensure a well-designed, safe, and functional residential development.

Provincial Planning Statement 2024 (PPS)

The subject lands are within a Settlement Area (Simcoe) as defined by the Provincial Planning Statement, 2024 (PPS). The PPS is Ontario's key policy framework for guiding land use planning to promote efficient, sustainable, and equitable growth. It aims to encourage compact development, optimize the use of land and infrastructure, and create complete, inclusive communities with diverse housing, transportation, and employment options. The

PPS also seeks to protect natural resources, mitigate environmental impacts, and ensure public health and safety. Additionally, it supports economic growth by safeguarding employment lands and promoting land use compatibility to prevent conflicts. Ultimately, the PPS balances Ontario's growth needs with long-term environmental, social, and economic sustainability.

Based on the analysis provided, the proposed mid-rise residential development demonstrates strong alignment with the policies outlined in the Provincial Planning Statement (PPS) 2024. The development supports provincial goals of intensification within settlement areas, utilizing underutilized lands for higher-density residential use. It contributes to creating complete communities by improving housing diversity and accessibility near transit and essential services. The project efficiently uses existing infrastructure and promotes active transportation options, addressing key provincial objectives related to sustainable growth and community connectivity.

A decision by Council to approve the proposed Zoning Bylaw amendment is consistent with PPS, 2024. Full details describing the applicable Provincial policies and how the application is consistent with the PPS are included in Appendix C.

Norfolk County Official Plan

The Norfolk County Official Plan outlines a strategic vision for the County based on six key pillars. Four of the six pillars are applicable and include the following:

- Maintaining and enhancing the rural and small-town character;
- Maintaining a high quality of life,
- Upgrading and expanding crucial infrastructure;
- A well governed, well planned and sustainable County.

The analysis of the Norfolk County Official Plan reveals that the project aligns with key sections of the Official Plan as demonstrated in Appendix D. Specifically, the development supports the goals of enhancing housing supply and promoting efficient land use through infill and intensification, as outlined in sections 2.2 and 5.3. The proposal utilizes a vacant parcel in an established neighbourhood, aiming to integrate compact, efficient housing that contributes to Norfolk County's target of 25% residential growth through infill. The development will connect to existing municipal services, including water, wastewater, and public transit, and complies with local density requirements.

Additionally, the project considers the existing neighbourhood's character and ensures compatibility by designing a building that fits within the local context, with attention to street façades, parking, and landscaping. The application will adhere to Section 5.4, which focuses on community design, ensuring that new developments maintain the physical and aesthetic quality of the area. The proposed infill development is subject to site plan control, allowing for a detailed review of design elements, ensuring compliance with safety, accessibility, and environmental sustainability considerations.

In this instance, a decision of the Council to approve the proposed zoning by-law amendment, implements the general intent and purpose of the Official Plan.

Norfolk County Zoning By-law

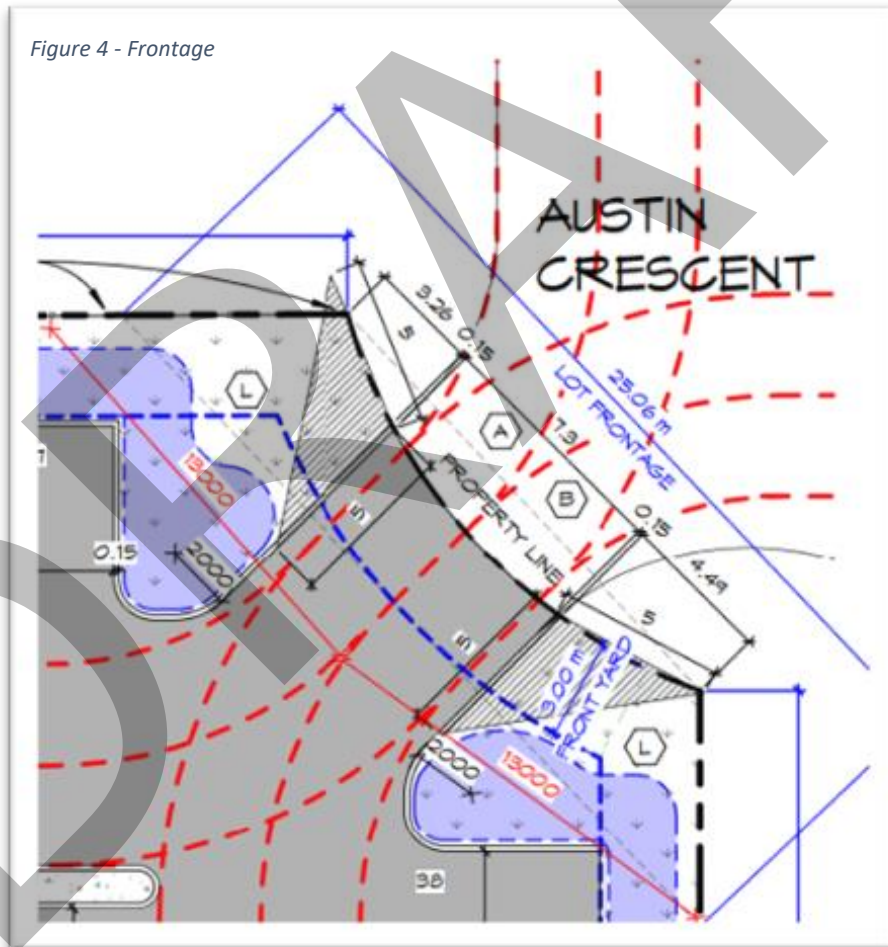
The subject lands are presently zoned Neighbourhood Commercial (CN). An existing special provision (14.729) also applies, which states:

“In addition to the uses permitted in the CN Zone, an automobile gas station shall also be permitted.”

As described previously in this report, there are site specific amendments to zone provisions necessary to implement the proposed design of the building. An assessment of these zone provisions is as follows:

Minimum Lot Frontage: The zoning by-law requires a minimum lot frontage of 30 metres. Three of the 5 sides of this property have direct frontage onto existing municipal streets. As defined in the zoning by-law, the lot frontage is measured along the shortest lot line abutting a street. As such, a special provision recognizing the existing lot frontage of approximately 25 metres (Austin Crescent) is required as shown in Figure 4, which does not create any impacts on adjacent properties. The site is appropriately designed to facilitate proper function of vehicles, landscaping areas and snow storage.

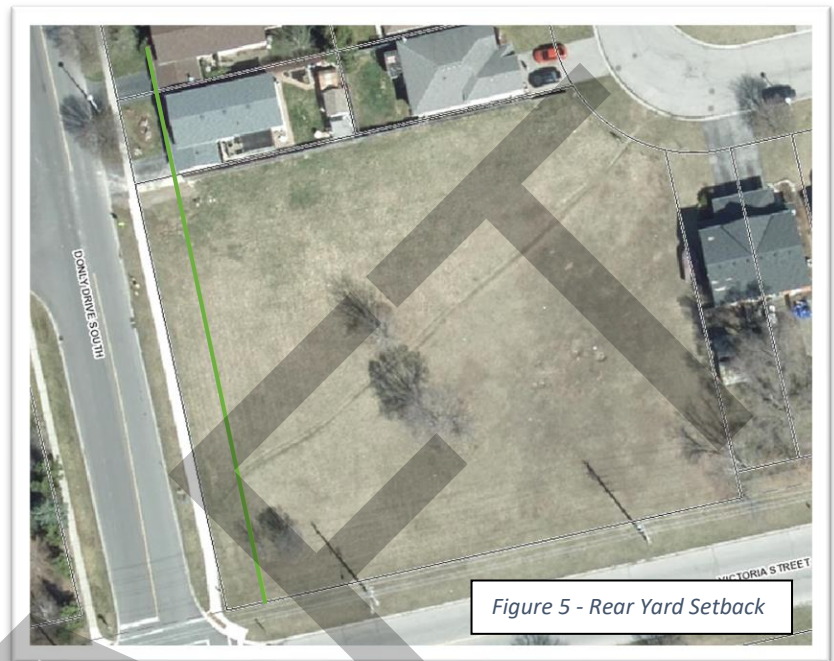
Figure 4 - Frontage



Rear yard setback: A special exception for a reduction of the 9 metre rear yard setback to 5 metres is required to facilitate the proposed development. This setback is intended to provide space and buffering between land uses including low density residential. However, since the rear yard is a municipal road (Donly Drive South), the rear yard setback of 9 metres does not serve its intended purpose.

The existing dwellings along Donly Drive have a 6-metre setback. This is represented by a green line extending from the garages of the two dwellings in the image to Victoria Street. The proposed 5 metre setback is necessary to permit a functional building design, parking area and setbacks. It will also complement the established building line along the street as it is similar to the existing street façade setback.

No impacts are anticipated from the requested reduction. Site triangles and areas for snow storage, parking and landscaping are made available through the site design.



Floor area ratio: The floor area ratio (FAR) is a provision to manage a number of building aspects in the context of the neighbourhood. Some of these aspects include:

- mass and density;
- design aspects such as light, air and open space to ensure that a building does not overwhelm the lot, leaving room for setbacks, open spaces, and landscaping;
- neighbourhood design aspects such as urban design and aesthetic goals.

In this instance, the physical building is being located as far away from existing residential and closer to the roadway for urban design and compatibility purposes.

Norfolk calculates FAR using useable floor area which excludes common areas such as shared corridors, exit stairs, lobby, etc. Therefore, by application this does not control massing as there could be unlimited common areas. The proposed design leverages creative space planning strategies to maximize unit count, while being cognizant of the size and configuration of the site. In this case, the proposed design employed scissor stair style exits, which use less space than segregated exit facilities, thereby reducing the proportion of "non-useable" floor area in comparison to the useable floor area.

More importantly, the difference between the zoning maximum of 0.79 and the proposed 0.82 ratios would result in the loss of approximately 2 dwelling units. There would be no meaningful impact on the overall massing. In this instance, it seems more appropriate to consider the design that reduces common spaces in lieu of an extra unit. The greater benefit is to provide more housing options to the County.

Parking: It is becoming increasingly necessary to consider reducing parking requirements for one-bedroom units as they are typically occupied by a single person or a small family with no children. There is a greater demand for public transportation, which is commonly encouraged in municipalities, thereby reducing the need for unnecessary parking spaces and the carbon footprint. The traffic impact brief prepared by RC Spencer Associates Inc. concludes that:

“The proposed on-site parking supply (of 68 spaces) should sufficiently accommodate the proposed development’s peak parking demand.”

The study confirms that the proposed amendment to permit 1 parking space per One-Bedroom unit is supported. Accordingly, a total of 68 parking spaces is sufficient to accommodate the development. The revised parking provision reduces the number of parking spaces from 83 spaces to 68, for a total reduction of 15 spaces. All required visitor parking spaces are provided.

Furthermore, the design requires parking to be located closest to the frontage and is appropriate in this instance.

Traffic Impact Brief

RC Spencer Associates Inc. was retained to analysis the proposed development in light of the existing road and traffic conditions of the area. The report concludes that:

“... based on the results of the technical work ... the proposed development will not adversely impact area traffic operations. Geometric and / or traffic control improvements are not required to support the proposed residential development.”

It is noted that County staff suggest that through traffic should be addressed. While it is necessary to provide through access for fire protection, signage can be incorporated into the design through the site plan process to deter potential through traffic.

Land Use Compatibility

The proposed mid-rise residential development at the northeast corner of Donly Drive and Victoria Street is compatible with surrounding land uses due to several factors.

Adjacent Residential Uses: To the north, east, and west of the subject lands are low and medium-density residential uses, including single detached, semi-detached, and street townhouse dwellings. The introduction of a mid-rise residential building complements the existing residential character by providing a housing type that increases density while maintaining compatibility with these surrounding forms of housing. Compatibility is further achieved by:

- a) ensuring the angular plane of 45 degrees as required by the R6 Zone category is achieved. Although angular plane is not required by the proposed R5 zone, it has been achieved as demonstrated in Appendix E.
- b) the building is setback significantly from the adjacent residential properties. In this instance, the building is setback 24 metres from the northerly property line and approximately 46 metres from the easterly property line.
- c) In support of a future site plan application to Norfolk County, the Proponent has engaged a qualified Landscape Architect to prepare a suitable landscape plan for the development that includes appropriate plantings within the northern and eastern interior side yards to provide privacy and screening between the development and the adjacent low-rise residential dwellings.”
- d) Existing fencing helps to create more physical separation between uses.



Institutional and Open Space: The place of worship to the west, and Oakwood Cemetery open space to the southwest further contribute to the compatibility of the development. The relatively quiet nature of these uses, combined with the proposed residential building, ensures that land use conflicts are minimized.

Buffering and Setbacks: The proposed reduction in the rear yard setback, given the rear lot abuts Donly Drive, will not result in adverse impacts on adjacent properties. The rear yard functions as a street-facing façade, and the design considerations, including parking and landscaping, ensure that the building integrates well with the surrounding road network, streetscape and existing neighbourhood.

Traffic and Infrastructure: The Traffic Impact Brief confirms that the development will not negatively impact the local road network. The presence of public transportation nearby (Ride Norfolk bus stop) further enhances the compatibility of the development by reducing reliance on private vehicles and promoting sustainable transportation options. Additionally, the existing infrastructure will sufficiently support the development without causing service disruptions.

The proposed development aligns with both the residential character of the surrounding area and the broader planning objectives outlined in the Norfolk County Official Plan, ensuring a harmonious integration with its urban context.

Conclusion

The proposed Zoning By-law Amendment for the development of a five-storey mid-rise residential building by 2721733 Ontario Inc. provides a valuable opportunity to enhance housing diversity within the urban area of Simcoe. This project will transform a vacant, underutilized lot into development that contributes to the residential community, offering much-needed one- and two-bedroom apartment units.

The development supports Norfolk County's objectives for infill and intensification by making efficient use of existing services and infrastructure. The accompanying studies and this analysis confirm that the proposal is compatible with surrounding land uses, poses no adverse impact on traffic, and aligns with provincial and municipal planning policies. Furthermore, the design and layout of the building ensure an appropriate fit within the existing streetscape, contributing positively to the local urban environment.

Approval of the proposed zoning by-law amendment will not only address the growing demand for housing but will also contribute to a more sustainable and inclusive community. By increasing urban density in a thoughtful manner, this development will strengthen the local economy, improve housing availability, and promote a well-planned urban landscape. For these reasons, the proposal represents good planning. In this instance, a decision by Norfolk County Council to approve the proposed amendment and special provisions is considered appropriate.

Report prepared by:

Eldon Darbyson, BES, MCIP, RPP

G. DOUGLAS VALLEE LIMITED

Consulting Engineers, Architects & Planners

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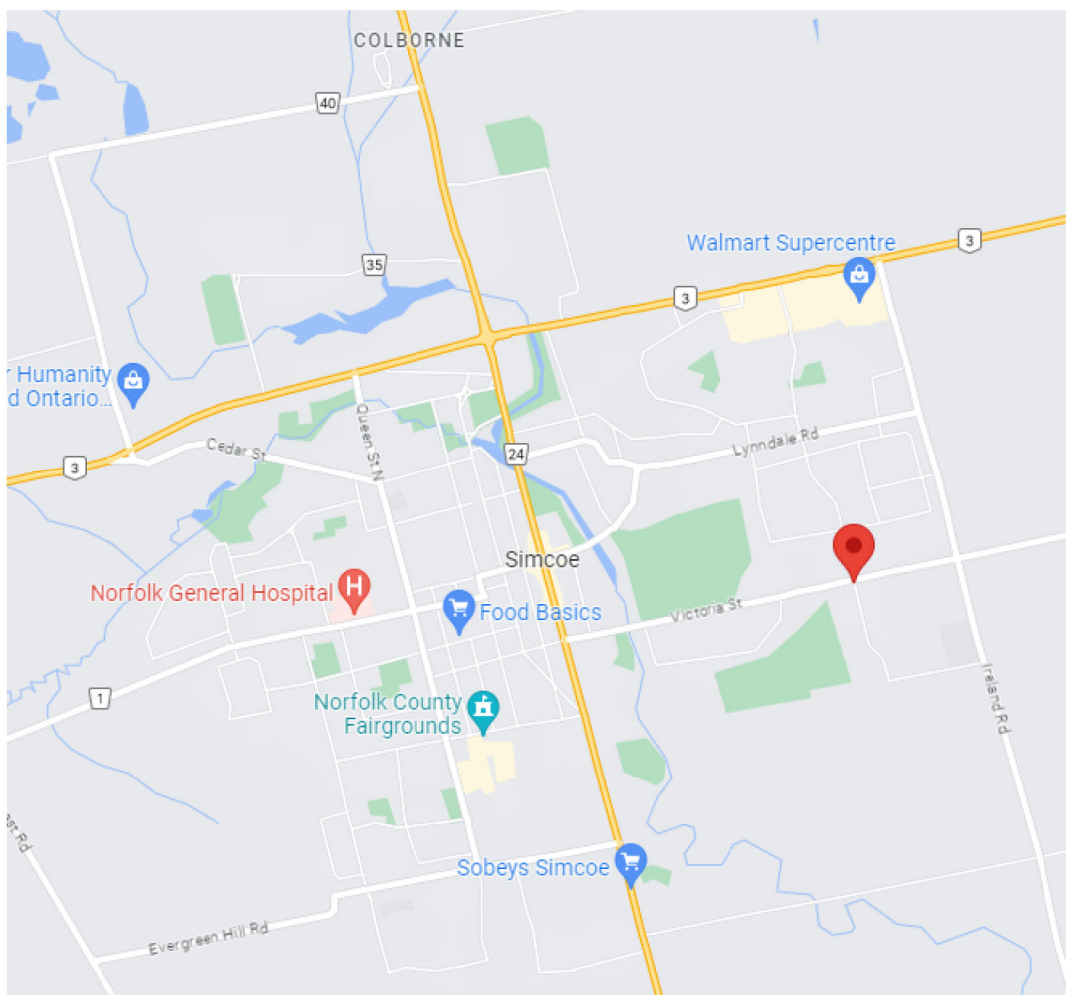


Appendices

Appendix A - Site Plan



2
GROSS SITE - PRECON / ZONING
AMENDMENT
SCALE 1:500

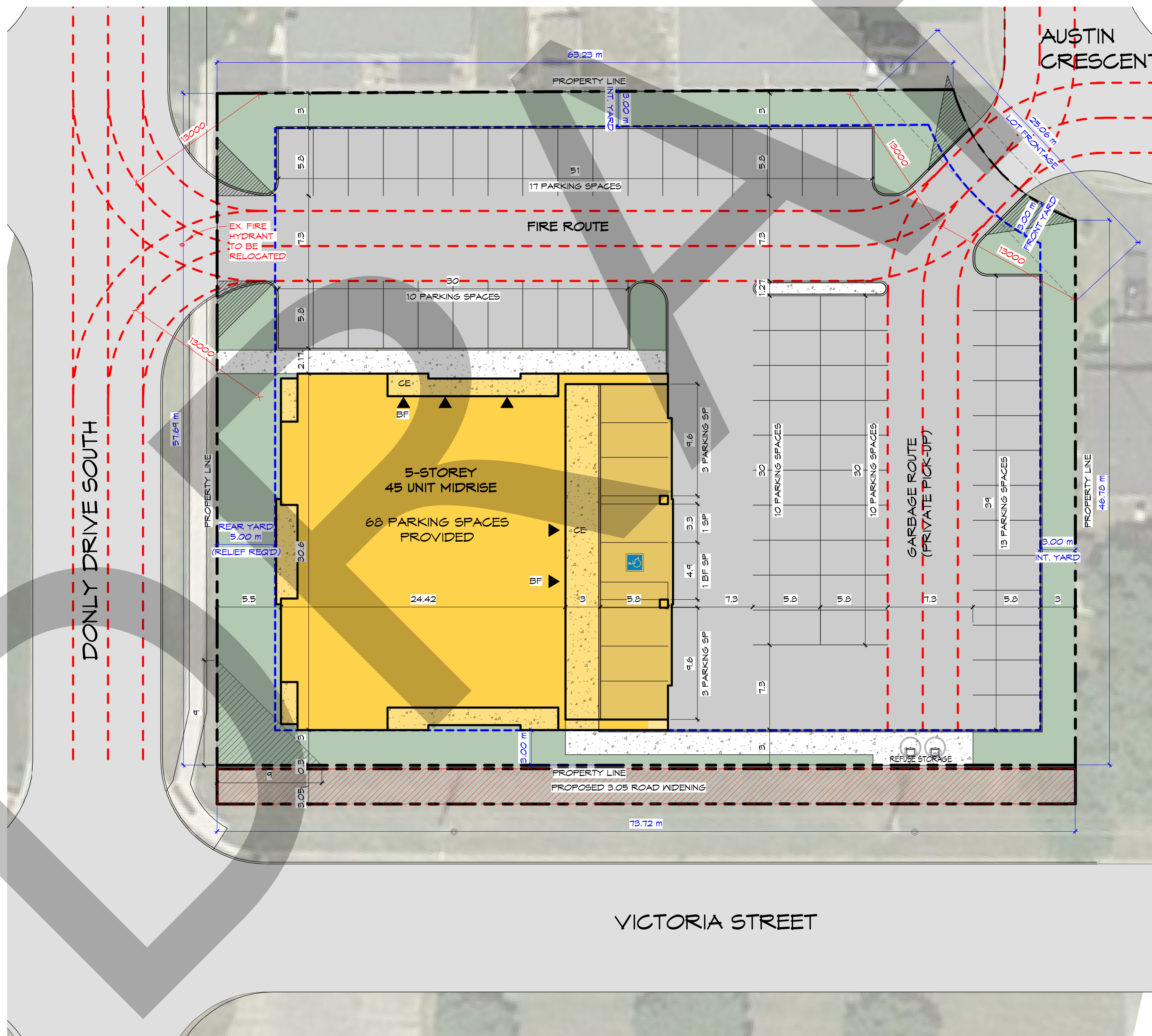


KEY MAP
SCALE 1:100



1
SITE MAP
SCALE 1:100

1
SITE PLAN PRECON/ZONING AMENDMENT
SCALE 1:250



SITE STATISTIC & ZONING REQ.'S

PROPERTY LEGAL DESCRIPTION:			
PLAN 1107, LOT 29, ROLL 4010092600 IN THE TOWN OF NORTH SIMCOE, IN THE DISTRICT OF NORFOLK COUNTY			
ZONING:			
IN ACCORDANCE W/ ZONING BY-LAW 1-Z-2014 NORFOLK COUNTY, CONSOLIDATED JANUARY 1, 2021			
PROVISION	LAND USE EXISTING		
5.2	RESIDENTIAL ZONES		
5.5	URBAN RESIDENTIAL TYPE 5 ZONE (R5)		
5.5.1	PERMITTED USES (in an R5 zone, no land, building or structure shall be used except in accordance with the following uses: a) duelling, apartment b) home occupation c) retirement home.		
PROVISION	SETBACKS (m - METERS):	REQUIRED (m)	PROVIDED (m)
5.5.2a)	MIN. LOT FRONTAGE:	30	25.06 (EXISTING)
5.5.2b)	MIN. FRONT YARD:	3	34.6
5.5.2c)	MIN. EXTERIOR SIDE YARD:	3	3
5.5.2d)	MIN. INTERIOR SIDE YARD	3	24.1 MIN.
5.5.2e)	MIN. REAR YARD:	4	5.27
5.5.2f)	MAX. BLDG. HEIGHT	5 STOREYS	5 STOREYS
5.6.2g)	MAX. FLOOR AREA RATIO: i) 4 STOREY BLDG. ii) 5 STOREY BLDG.	0.12 0.19	N/A 0.82
FLOOR AREA RATIO shall mean the ratio of the usable floor area to the lot, determined by the calculation of: Floor area ratio = usable floor area / lot area.			
GRAY HIGH-LIGHTED APPLICABLE			
COORD. W/ ZONING BY-LAW FOR ALL OTHER ZONING REQ.'S			

PARKING REQ.'D: RESIDENTIAL			
PROVISION	NUMBER OF PARKING SPACES	REQUIRED	PROVIDED
4.9b)	APARTMENT DWELLING (0-2-2011): 1.5 SPACES / DWELLING UNIT 1.5 SPACES x 45 DWELLING UNITS = 68 1 SPACE / (1) BEDROOM UNIT = 24 1.5 SPACES / (2) BEDROOM UNIT = 24	68 SPACE(S)	68 SPACE(S) TOTAL 24 SPACES (1) BEDROOM UNIT 24 SPACES (2) BEDROOM UNIT
PARKING REQ.'D: RESIDENTIAL - VISITOR:			
4.9f)	VISITOR PARKING: 1 SPACE / 3 DWELLING UNITS 1 SPACE x (45 / 3) = 15	15 SPACE(S)	15 SPACE(S)
PARKING REQ.'D: BARRIER FREE (PART OF REQ.'D VISITOR PARKING)			
4.3.3	BARRIER FREE PARKING REQ.'D: 1.25 (VISITOR) PARKING SPACES = TYPE 'A' (3.4m WIDE) PLUS 1.5m AISLE TYPE 'B' (2.4m WIDE) PLUS 1.5m AISLE *Where an uneven number of accessible parking spaces are required, the extra type B space may be changed to a type A space.	1 SPACE(S) 2 SPACE(S)	1 SPACE(S) 2 SPACE(S)
TOTAL:		83 SPACE(S)	83 SPACE(S)

SITE PLAN LEGEND

- ▲ ENTRANCE / EXIT DOOR
- BF ENTRANCE / EXIT DOOR (BARRIER FREE OPERATOR)
- PROPERTY LINE
- SETBACKS
- CE COVERED ENTRANCE
- PAINTED GRAPHICS ON ASPHALT / CONG. (COORD. W/ THE CITY / TOWN HAVING JURISDICTION GUIDELINES)
- WHEELCHAIR SIGN ON ASPHALT / CONG. (WHITE & BLUE COLOUR)
- VEHICULAR STALL MARKINGS (YELLOW COLOUR)
- DIAGONAL MARKINGS
- NEXT CONIFEROUS TREE
- NEXT DECIDUOUS TREE (~4500mm TREE RADIUS @ FULL GROWTH)

HATCH IDENTIFICATION LEGEND

- CONG. SIDEWALK / PAD / CROSSWALK / SIDEWALK / LANDWAY / STAIRS / ETC.
- AREA OF PARKING
- AREA OF ASPHALT
- LANDSCAPING
- NEXT BLDG. / ADDITION

PROJECT TITLE:
Lynndale Heights Midrise
DONLY DRIVE & VICTORIA ST.
SIMCOE, ONTARIO

DRAWING TITLE:
SITE PLAN PRE-CON / ZONING
AMENDMENT

DRAWING SCALE:
As indicated

DATE ISSUED: 2025.02.18
DRAWING NO.:

PROJECT NO.: 21-083
PC/Z100

Appendix B to Planning Justification Report – Section 2 Planning Act – Provincial Interest
Lynndale Heights - Simcoe

Section 2 Planning Act – Provincial Interest - Compliance Table

This appendix demonstrates how the proposed application is consistent with Section 2 of the Planning Act.

Matter	Comments	
a) the protection of ecological systems, including natural areas, features, and functions;	The proposed development is located in an established serviced urban area. There are no natural heritage features on the subject lands.	✓
b) the protection of the agricultural resources of the Province;	The proposed development is in an established urban area. There are no impacts on agricultural resources.	✓
c) the conservation and management of natural resources and the mineral resource base;	The proposed development is located in an established serviced urban area.	✓
d) the conservation of features of significant architectural, cultural, historical, archaeological, or scientific interest;	The proposed development is located in an established serviced urban area. The lands are currently vacant, and an archaeological assessment has not been requested as part of the application.	✓
e) the supply, efficient use, and conservation of energy and water;	As new construction, energy efficient structure will be built as required under the Ontario Building Code.	✓
f) the adequate provision and efficient use of communication, transportation, sewage and water services, and waste management systems;	The development will utilize existing municipal infrastructure in the area.	✓
g) the minimization of waste;	Recycling facilities will be explored during the site plan review process.	✓
h) the orderly development of safe and healthy communities; (h.1) the accessibility for persons with disabilities to all facilities, services, and matters to which this Act applies;	This development is taking place within an established area with a mix of uses. This application would result in the redevelopment of an infill lot within the settlement area. This development will require the construction of accessible parking spaces and will be required to meet accessibility requirements of the Ontario Building Code.	✓

Appendix B to Planning Justification Report – Section 2 Planning Act – Provincial Interest
Lynndale Heights - Simcoe

i) the adequate provision and distribution of educational, health, social, cultural, and recreational facilities;	This policy is mainly a requirement of the municipality. However, applicable agencies will be circulated to ensure adequate provision of these requirements.	✓
j) the adequate provision of a full range of housing, including affordable housing;	This application will result in an increase of much needed dwelling options for county residents. Mid-rise residential developments are not readily available in Norfolk County.	✓
k) the adequate provision of employment opportunities;	The proposed development will provide greater density and is in proximity to potential commercial and industrial type employment opportunities.	✓
l) the protection of the financial and economic well-being of the Province and its municipalities;	This development would provide increased tax revenue to the local and provincial governments.	✓
m) the co-ordination of planning activities of public bodies;	The applications will be circulated to all applicable public bodies and agencies for comments as determined by Norfolk County.	✓
n) the resolution of planning conflicts involving public and private interests;	This will be achieved through the planning approvals process.	✓
o) the protection of public health and safety;	The subject lands are not located within an area of natural hazard and will provide modern and safe housing options within Norfolk County.	✓
p) the appropriate location of growth and development;	As an infill development the subject lands are located within an established serviced urban area.	✓
q) the promotion of development that is designed to be sustainable, to support public transit, and to be oriented to pedestrians;	This development is located immediately adjacent to Ride Norfolk Stop S6c at the corner of Donly Drive South and Victoria Street.	✓
r) the promotion of built form that, (i) is well-designed, (ii) encourages a sense of place, and	These lands are located among existing residential lands uses. This infill development would result in the redevelopment of an underutilized parcel of land for residential purposes. As a new building, current building code and site plan requirements will ensure a well-designed built form.	✓

Appendix B to Planning Justification Report – Section 2 Planning Act – Provincial Interest
Lynndale Heights - Simcoe

(iii) provides for public spaces that are of high quality, safe, accessible, attractive, and vibrant;		
s) the mitigation of greenhouse gas emissions and adaptation to a changing climate.	This development will encourage active and transit-oriented transportation. The building will be designed and constructed to meet current Ontario Building Code standards.	✓

Section 3 of the *Planning Act* requires that, in exercising any authority that affects a planning matter, planning authorities “shall be consistent with the policy statements” issued under the Act and “shall conform with the provincial plans that are in effect on that date, or shall not conflict with them, as the case may be”. A review and conformity analysis is provided in this report.

Provincial Planning Statement 2024 – Policy Analysis Table

Appendix C demonstrates how the proposed application is consistent with applicable policies of the Provincial Planning Statement.

Section	Policy	Comments	
Chapter 2: Building Homes, Sustainable Strong and Competitive Communities			
2.1	Planning for People and Homes Summary: Section 2.1 outlines the planning framework for population and employment growth in Ontario, emphasizing that municipalities must base forecasts on provincial projections while ensuring adequate land availability for diverse housing and land use needs over a 20- to 30-year horizon. It promotes the creation of complete communities by supporting varied land uses, improving accessibility, and enhancing social equity to meet the needs of all residents.		
2.1.4	To provide for an appropriate range and mix of housing options and densities required to meet projected requirements of current and future residents of the regional market area, planning authorities shall:		
a)	maintain at all times the ability to accommodate residential growth for a minimum of 15 years	The application proposes the development of vacant underutilized lands for new residential units in the form of a mid-rise building supporting a higher density than the immediate neighbourhood.	✓
b)	Maintain at all times where new development is to occur, land with servicing capacity sufficient to provide at least a three-year supply	The proposed development is supported by existing infrastructure.	✓
2.1.6	Planning authorities should support the achievement of complete communities by:		
a)	accommodating an appropriate range and mix of land uses, housing options, transportation options with multimodal access, employment, public service facilities and other institutional uses	The application proposes the infilling of vacant lands for increased residential accommodations, near access to public transit and commercial employment opportunities.	✓
b)	improving accessibility for people of all ages and abilities by addressing land use barriers which restrict their full participation in society; and	The development will be designed to meet building code requirements and improve accessibility.	✓
c)	improving social equity and overall quality of life for people of all ages, abilities, and incomes, including equity-deserving groups.	It is intended that a variety of units be provided to accommodate people varying in age and income.	✓

Section	Policy	Comments	
Chapter 2: Building Homes, Sustainable Strong and Competitive Communities			
2.2	Housing Summary: Section 2.2 outlines guidelines for planning authorities to ensure a diverse range of housing options and densities that meet the projected needs of current and future residents. This includes setting minimum targets for affordable housing, facilitating various housing types to support community well-being, promoting land-efficient densities, and prioritizing transit-oriented development near transit corridors and stations.		
2.2.1	Planning authorities shall provide for an appropriate range and mix of housing options and densities to meet projected needs of current and future residents of the regional market area by:		
a)	establishing and implementing minimum targets for the provision of housing that is affordable to low and moderate income households	The application proposes to intensify and redevelop the lands to provide much needed housing accommodations. It is not considered affordable by definition, however, a mix of unit configurations will allow for a variety of pricing points.	✓
b)	permitting and facilitating: 1. all housing options required to meet the social, health, economic and wellbeing requirements of current and future residents 2. all types of residential intensification, including the development and redevelopment of underutilized commercial and institutional sites (e.g., shopping malls and plazas) for residential use, development and introduction of new housing options within previously developed areas, and redevelopment, which results in a net increase in residential units in accordance with policy 2.3.1.3;	Housing accommodations to be provided adding to the variety of available residential units and configurations in the area. (eg. 1 bedroom and 2 bedroom units) Represents intensification of underutilized lands for residential use within an established area.	✓
c)	promoting densities for new housing which efficiently use land, resources, infrastructure	The application will facilitate redevelopment that will efficiently use land, infrastructure and encourage active transportation which opportunities exist in close proximity to the subject lands.	✓

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
21-083 Lynndale Heights

	and public service facilities, and support the use of active transportation; and		
d)	requiring transit-supportive development and prioritizing intensification	The lands are near a public transportation route.	✓

Section	Policy	Comments	
Chapter 2: Building Homes, Sustainable Strong and Competitive Communities			
2.3	Settlement Areas and Settlement Area Boundary Expansions		
2.3.1	General Policies for Settlement Areas		
	Summary: Section 2.3 outlines that settlement areas should be the primary focus for growth and development, particularly in strategic areas like major transit stations. It emphasizes land use patterns that optimize resources and infrastructure while supporting active and transit-oriented transportation. Planning authorities must encourage intensification and redevelopment, establish minimum and density targets for growth areas, and implement phasing policies to ensure orderly development aligned with infrastructure needs.		
2.3.1.1	Settlement areas shall be the focus of growth and development. Within settlement areas, growth should be focused in, where applicable, strategic growth areas, including major transit station areas.	The lands are within a settlement area.	✓
2.3.1.2	Land use patterns within settlement areas should be based on densities and a mix of land uses which:		
a)	Efficiently use land and resources	This is an efficiently designed infill development on a unique parcel of land due to its frontage, configuration and access configurations.	✓
b)	Optimize existing and planned infrastructure and public service facilities;	The development will utilize existing services and are located near available public service facilities including schools, a park and places of worship.	✓
c)	Support active transportation	The existing sidewalk and road networks provide opportunities for active transportation.	✓
d)	Are transit-supportive	The area is supported by public transit. A bus stop is located on the corner of Victoria Street and Donly Dr South.	✓

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
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e)	Are freight supportive	The area is located on an arterial road, connected to other arterial roads leading to Highway 3, a Provincial Road. However, while these connections exist, it is unlikely that freight is required for residential development beyond construction activities.	✓
2.3.1.3	Planning authorities shall support general intensification and redevelopment to support the achievement of complete communities	The proposed application represents intensification of under utilized lands.	✓
2.3.1.4	Planning authorities shall establish and implement minimum targets for intensification and redevelopment within built-up areas, based on local conditions.	The County encourages that 25 percent of all development be through intensification, infill and redevelopment.	✓
2.3.1.5	Planning authorities are encouraged to establish density targets for designated growth areas, based on local conditions. Large and fast-growing municipalities are encouraged to plan for a target of 50 residents and jobs per gross hectare in designated growth areas.	Not applicable.	
2.3.1.6	Planning authorities should establish and implement phasing policies, where appropriate	Not applicable.	

Section	Policy	Comments	
Chapter 2: Building Homes, Sustainable Strong and Competitive Communities			
2.9	Energy Conservation, Air Quality and Climate Change Summary: Section 2.9 emphasizes the role of planning authorities in reducing greenhouse gas emissions and adapting to climate change. It advocates for the development of compact, transit-supportive communities, incorporates climate considerations into infrastructure planning, and promotes energy conservation, green infrastructure, and active transportation. The section also encourages additional measures to enhance community resilience and improve air quality.		
2.9.1	Planning authorities shall plan to reduce greenhouse gas emissions and prepare for the impacts of a changing climate through approaches that:		

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
21-083 Lynndale Heights

a)	support the achievement of compact, transit-supportive, and complete communities;	The proposed development is a compact infill development achieving 107 units per hectare. The lands are located within a short walk to a public transit stop across the street.	✓
b)	incorporate climate change considerations in planning for and the development of infrastructure, including stormwater management systems, and public service facilities;	The proposed development is supported by local infrastructure, and stormwater can be managed appropriately. Various public services including fire protection and a hospital are in the Simcoe area.	✓
c)	support energy conservation and efficiency;	At a minimum, those requirements of the Ontario Building Code will be achieved.	✓
d)	promote green infrastructure, low impact development, and active transportation, protect the environment and improve air quality; and	Active transportation is encouraged by virtue of the local sidewalk and road network linking the lands to near by commercial, institutional and open space opportunities. The proximity to a main supporting commercial destination on Highway 3 reduces air quality impacts by reducing the distance and reliance on gasoline fueled vehicles.	✓
e)	take into consideration any additional approaches that help reduce greenhouse gas emissions and build community resilience to the impacts of a changing climate.	Noted.	✓

Section	Policy	Comments	
Chapter 3: Infrastructure and Facilities			
3.5	Land Use Compatibility Summary: Section 3.5 emphasizes the need for careful planning to ensure compatibility between major facilities and sensitive land uses. Authorities must aim to avoid or mitigate adverse effects from odour, noise, and contaminants while protecting public health and safety and the viability of major facilities. When avoidance is not possible, the planning and development of adjacent sensitive land uses can only proceed if potential negative impacts on both the sensitive uses and the major facilities are minimized and mitigated according to provincial guidelines.		

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
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3.5.1	Major facilities and sensitive land uses shall be planned and developed to avoid, or minimize and mitigate any potential adverse effects from odour, noise, risk to public health and safety, and to ensure the long-term operational and economic viability	There is a protected industrial area to the south. However, the existing uses do not appear to be of any major manufacturing uses. Furthermore, there are existing residential uses that are considered sensitive land uses that line Victoria St. Therefore, any manufacturing use must ensure compliance with Ministry compatibility requirements. The addition of another residential use is along the same street is not anticipated to create incompatibility challenges.	✓
3.5.2	Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other major facilities that are vulnerable to encroachment	See comments above.	✓

Section	Policy	Comments	
Chapter 3: Infrastructure and Facilities			
3.6	Sewage, Water, and Stormwater Summary: Section 3.6 outlines planning requirements for sewage, water, and stormwater services. It prioritizes timely growth accommodation and optimization of existing municipal services, with municipal systems favored for settlement areas. Private communal services are alternatives when municipal options are unavailable, while individual on-site services are permitted under suitable conditions. Partial services may be allowed to address specific failures. For stormwater management, planning must minimize volumes and contaminants, promote green infrastructure, and align with comprehensive municipal plans.		
3.6.1	Planning for sewage and water services shall:		
a)	accommodate forecasted growth in a timely manner that promotes the efficient use and optimization of existing municipal services	The proposed application intends to connect to existing municipal services thereby improving the efficiency and optimization of these services.	✓
b)	ensure that these services are provided in a manner that:		

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
21-083 Lynndale Heights

	<p>1. can be sustained by the water resources upon which such services rely;</p> <p>2. is feasible and financially viable over their life cycle;</p> <p>3. protects human health and safety, and the natural environment, including the quality and quantity of water; and</p> <p>4. aligns with comprehensive municipal planning for these services, where applicable.</p>	<p>1. Water modelling demonstrates there is water available to service the proposed development.</p> <p>2. Not applicable to the proposed development.</p> <p>3. Municipal water supplied. Quality and quantity is ensured by municipal systems.</p> <p>4. This is an infill development that takes advantage of previous municipal service planning.</p>	✓
c)	Promote water and energy conservation and efficiency;	Dwellings will be constructed in accordance with the Ontario Building Code.	✓
d)	Integrate servicing and land use considerations	The proposed application facilitates infill development.	✓
e)	consider opportunities to allocate the unused system capacity of municipal water services and municipal sewage services	Modelling will be used to confirm capacity of municipal water and sanitary services.	✓
f)	be in accordance with the servicing options outlined through policies 3.6.2, 3.6.3, 3.6.4 and 3.6.5.	Complies with the hierarchy of servicing.	✓
3.6.2	Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas	This level of the servicing hierarchy is achieved.	✓
3.6.3	Where municipal services are not available, planned or feasible, private communal sewage services and private communal	Not applicable.	

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21-083 Lynndale Heights

	water services are the preferred form of servicing for multi-unit/lot development		
3.6.4	Where municipal sewage services and municipal water services or private communal sewage services and private communal water services are not available, planned or feasible, individual onsite sewage services and individual on-site water services may be used At the time of the official plan review or update, planning authorities should assess the long-term impacts of individual on-site sewage services and individual on-site water services	Not applicable.	
3.6.5	Partial services shall only be permitted in the following circumstances:	Section 3.6.5 is not applicable.	
3.6.8	Planning for stormwater management shall:		
a)	be integrated with planning for sewage and water services and ensure that systems are optimized, retrofitted as appropriate, feasible and financially viable over their full life cycle;	The functional servicing report does not identify any challenges with providing servicing to the development. Modelling is recommended.	✓
b)	minimize, or, where possible, prevent or reduce increases in stormwater volumes and contaminant loads;	The property will be designed to manage stormwater volumes both quantify and quality.	✓
c)	minimize erosion and changes in water balance through the use of green infrastructure;	All open spaces will be planted with grass and landscaping where not required for hard surfaces.	✓
d)	Mitigate risks to human health, safety, property and the environment	The development is designed to be safe including avoidance of placing structures within site triangles. The lands are vacant. Environmental challenges are not anticipated.	✓

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
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e)	Maximize the extent and function of vegetative and pervious surfaces	Landscaping will be maximized and pervious surfaces proposed where necessary.	✓
f)	promote best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development; and	The property will undergo detailed design during the site plan process.	✓
g)	align with any comprehensive municipal plans for stormwater management	The lands are within an existing neighbourhood where stormwater management exists. The proposed development will be required to connect to existing systems.	✓

Section	Policy	Comments	
Chapter 3: Infrastructure and Facilities			
3.9	Public Spaces, Recreation, Parks, Trails and Open Space Summary: Section 3.9 promotes the development of healthy, active, and inclusive communities by ensuring public streets and spaces are safe and accessible for all ages and abilities. It emphasizes the need for a diverse range of publicly accessible recreational settings, including parks, trails, and water-based resources, while encouraging public access to shorelines. The section also highlights the importance of recognizing and protecting provincial parks and conservation reserves from negative impacts.		
3.9.1	Healthy, active, and inclusive communities should be promoted by:		
a)	planning public streets, spaces and facilities to be safe, meet the needs of persons of all ages and abilities, including pedestrians, foster social interaction and facilitate active transportation and community connectivity;	This is an infill development within an existing neighbourhood. This policy does not apply. However, the sidewalk and road network facilitate the opportunity for active transportation.	✓
b)	planning and providing for the needs of persons of all ages and abilities in the distribution of a full range of publicly-accessible built and natural settings for	Simcoe provides a full range of publicly accessible built and natural recreation facilities.	✓

Appendix C to Planning Justification Report – Provincial Planning Statement 2024
21-083 Lynndale Heights

	recreation, including facilities, parklands, public spaces, open space areas, trails and linkages, and, where practical, water-based resources;		
c)	Providing opportunities for public access to shorelines; and	Not applicable to this development.	
d)	Recognizing provincial parks, conservation reserves, and other protected areas, and minimizing negative impacts on these areas	Not applicable to this development.	

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

Norfolk County Official Plan – Policy Analysis Table

This appendix demonstrates how the proposed application is consistent with applicable policies of the Norfolk County Official Plan.

Section	Policy	Comments	
Section 2.2 Goals & Objectives			
2.2	Goals and Objectives This section of the Official Plan sets out six “Goals and Objectives” to which the following four are applicable to the proposed residential development:		
2.2.1	Strong and Diversified Economy	The proposed application is not subject to Section 2.2.1	n/a
2.2.2	Protecting and Enhancing the Natural Environment	The proposed application is not subject to Section 2.2.2	n/a
2.2.3	Maintaining and Enhancing the Rural and Small Town Character	This application proposes to permit additional housing supply to the existing neighbourhood, in a compact and efficient form. The development will utilize a vacant parcel of land with a well designed building that will compliment the area.	✓
2.2.4	Maintaining a High Quality of Life	The proposed development implements the objectives of this policy by providing housing options to people through an infilling opportunity on vacant lands. The lands is designed to ensure resident safety in an aesthetically appropriate manner.	✓
2.2.5	Upgrading and Expanding Infrastructure	The proposed development will connect to the existing municipal water, waste water and storm water systems. The lands are on a public transportation route providing access to retail services on Highway 3 in Simcoe. The same retail services can be accessed within a 25 minute walk.	✓
2.2.6	A Well Governed, Well Planned and Sustainable County	The proposed application is subject to a public process to gain information from the neighbourhood in addition to commenting agencies. The lands are urban and are efficiently designed in a compact form, adding to the mix of residential units and types in Simcoe.	✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

Section	Policy	Comments	
Section 5.3 Housing			
5.3	<p>The provision of housing is an essential part of planning in Norfolk County. It is desirable to have close cooperation between all levels of government and the private sector in order to provide for sufficient and affordable housing, and a stable residential housing market.</p> <p>The County shall ensure that a full range of housing types and densities are provided to meet the anticipated demand and demographic change. All forms of housing required to meet the social, health and well-being of current and future residents, including those with special needs shall be encouraged.</p>		
c)	<p>The provision of housing that is affordable and accessible to low and moderate income households shall be a priority the County shall encourage the provision of affordable housing through:</p>		
	i) supporting increased residential densities in appropriate locations and a full range of housing types, adequate land supply, redevelopment and residential intensification, where practical;	The application proposes an increase in density, supported by a parking area.	✓
	iii) supporting the reduction of housing costs by streamlining the development approvals process;	It is anticipated that the County will review the application and go through a timely public process, achieving approvals in accordance with the Planning Act.	✓
	v) considering innovative and alternative residential development standards that facilitate affordable housing and more compact development form; and	The site plan and construction plans implement a cost saving design.	✓
h)	<p>The County shall develop zoning provisions that are sufficiently flexible to permit a broad and varied range of housing forms, types, sizes and tenures, including accessory apartments in houses, except in locations serviced by individual or communal waste water disposal systems.</p>		✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

Section	Policy	Comments	
Section 5.3.1 Residential Intensification			
5.3.1	The intensification of urban residential development reduces the need to use vacant designated land on the periphery of the Urban Areas. It also reduces the need for urban expansions encroaching into the Agricultural Area. Urban residential intensification, infilling and redevelopment of existing areas allows for the efficient provision of urban services thereby helping to minimize the costs of providing services while meeting an important component of the County's housing needs.		
a)	The following shall be the policy of the County:		
	ii) infill development and residential development of vacant land or underutilized land in existing neighbourhoods; and/or	The subject lands are a single vacant property within a developed area.	✓
b)	The County shall target that a minimum 25 percent of its annual residential growth be accommodated through infill, intensification and redevelopment within the existing built-up areas in the Urban Areas with full municipal services.	The application represents infilling and intensification of an existing area, with the ability to connect to existing municipal services.	✓
d)	On lands designated Urban Residential and located outside of the Built-Up areas of Simcoe, Port Dover, Delhi, Waterford and Port Rowan, the minimum overall density of residential development shall be 15 units per hectare of developable land area. Developable land shall not include Hazard Lands, Provincially Significant Wetlands and Significant Natural Areas.	The proposed application increases the density of the area.	✓
f)	The County shall consider applications for infill development, intensification and redevelopment of sites and buildings through intensification based on the following criteria:		
	i. the development proposal is within an Urban Area, and is appropriately located in the context of the residential intensification study;	The lands are located appropriately and on vacant lands. A study is not necessary.	✓
	ii. the existing water and sanitary sewer services can accommodate the additional development;	The development can be supported by existing municipal services.	✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

	iii. the road network can accommodate the traffic generated;	The development is supported by the existing road network.	✓
	iv. the proposed development is compatible with the existing development and physical character of the adjacent properties and surrounding neighbourhood; and	The development is designed to consider the existing residential context of the established neighbourhood, providing a suitable street façade to the adjacent intersection. Parking and landscaping provide physical separation from the two adjacent low density dwellings.	✓
	v. the proposed development is consistent with the policies of the appropriate Land Use Designation associated with the land.	The lands are designated residential.	✓
g)	The County shall monitor intensification activity and, through the development approvals and building permitting process, ensure that such proposals can be satisfactorily integrated with the physical characteristics of residential and commercial areas and proper health and safety standards are maintained. Land use compatibility and urban design assessments may be required as a component of the planning rationale report accompanying development applications, as outlined under Section 9.6.1 (Official Plan Amendments) of this Plan.	The development will be subject to site plan control.	✓
h)	Small scale intensification shall be permitted in all areas designated for urban residential use, except where infrastructure is inadequate or there are significant physical constraints	This policy encourages the proposed development.	✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

Section	Policy	Comments	
Section 5.4 Community Design			
5.4	Safe and attractive neighbourhoods contribute to the overall community health of the County. Excellence in community design is essential to creating a physical environment where people have the appropriate places to interact, live, work, recreate and learn. The following policies relate to the physical design of communities, including new applications within the County for development, such as plans of subdivision, infill development proposals, and site plans. The following shall be the policy of the County:		
a)	Through implementation of this Plan, the County shall seek to maintain and improve the physical design characteristics of the Urban Areas in the context of new and existing development and stress a generally high quality of settlement design throughout the County.	The development is subject to site plan control. The proposed building is located closer to the main intersection, with appropriate setbacks to add to the character of the area.	✓
b)	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;	The proposed building is not of the same type as the existing neighbourhood, however, it will be appropriately designed and reviewed through the site plan control processes to consider the existing area.	✓
	ii. shall promote efficient and cost-effective development design patterns that minimize land consumption;	The lands are vacant and underutilized within an existing residential neighbourhood minimizing land consumption.	✓
	iii. shall promote the improvement of the physical character, appearance and safety of streetscapes, civic spaces, and parks;	This will be subject to site plan review.	✓
	iv. shall encourage tree retention and tree replacement;	There are no trees on the lands. The site will be enhanced through proposed landscaped treatments.	✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

	v. shall ensure that design is sympathetic to the heritage character of an area, including the area's cultural heritage resources;	There are no identified cultural heritage resources in the area.	✓
	vi. shall strongly encourage design that considers and, wherever possible, continues existing and traditional street patterns and neighbourhood structure; and	The building will be designed to consider the existing context of the area.	✓
	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 guidelines may also be required to address related issues of residential streetscaping, landscaping, setbacks, sidewalks, signage, garage placement, and architectural treatment.	This has not been identified. However, the elements will be considered during site plan control.	✓
c)	Adequate measures shall be taken to ensure that the permitted uses have no adverse effects on adjacent land uses. Adequate buffering shall be provided between any uses where land use conflicts might be expected, and such buffering may include provisions for grass strips and appropriate planting of trees and shrubs, berms or fence screening, and other means as appropriate. Modifications to building orientation may also be appropriate buffering measures, but not in replacement of appropriate plantings.	These elements will be addressed during the site plan process.	✓
d)	Development design that establishes reverse lotting on Provincial Highways and County Roads will not be permitted. Development design that requires features such as noise	The unique location of this property faces 3 streets. The building will be appropriately designed to consider these unique circumstances.	✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
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	attenuation or privacy fencing will be discouraged. Wherever possible, new development will be oriented toward streets or parks.		
e)	The County shall require compatibly scaled and designed infill developments within areas designated as Downtown, which enhance the traditional character and economic viability of such centres.	The lands are not located in the Downtown area.	✓
f)	A high quality of architecture and site design for institutional uses such as schools, places of worship, libraries and other public service buildings is encouraged.	Not applicable.	
g)	Streetscaping that reflects the intended character of settlement areas is encouraged. In particular, traditional streetscaping in the Downtown Designations of the Urban Areas will be encouraged.	This will be considered during the site plan review process.	✓
h)	A high quality of park and open space design is strongly encouraged. The land for parkland dedication shall be carefully selected to facilitate their use as a central focal point for new or existing neighbourhoods.	Not applicable.	
i)	Public art in the County shall generally be encouraged to incorporate themes supporting and promoting local history, civic pride, businesses and technology. The provision of public art in the Downtown Designations shall be encouraged. The County may consider granting increases in height or density for a particular development proposal in exchange for the provision of public art, in accordance with Section 37 of the Planning Act.	Not applicable.	

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j)	The County may require the provision of certain pedestrian, cycling and trail linkages through the development approvals process.	The lands have access to existing sidewalks and the local road network.	✓
k)	The County, in consultation with a development proponent(s) and the Norfolk Heritage Committee, shall define a style of street furnishing that should include shared and accessible bicycle racks, garbage receptacles, benches and street lamps to be used in a new development.	Not applicable.	
l)	The County may undertake the preparation of urban design guidelines to achieve the policies of this Section for all or parts of the County.	Not applicable.	
m)	The County shall encourage development design considering the principles of Crime Prevention Through Environmental Design (CPTED). Specifically, the County shall encourage proponents of new development to use appropriate lighting to deter crime and to situate buildings on lots to maximize natural surveillance.	A single building is proposed. However, details can be considered during the site plan review process.	✓
n)	To promote environmental sustainable development, the County shall encourage the design of sustainable neighbourhoods in keeping with Leadership in Energy and Environmental Design – Neighbourhood Development (LEED) design principles in accordance with the policies under Section 11.8.2.1 Sustainable Neighbourhood Design of the Lakeshore Special Policy Area Secondary Plan.	To be considered at the detailed design phase.	✓
o)	The County shall review site plans and drawings submitted in accordance with Section 41 of the Planning Act and Section	To be considered at the detailed design phase and site plan control.	✓

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

	9.6.5 (Site Plan Control of this Plan) regarding accessibility for persons with disabilities including but not limited to areas of accessible parking, exterior paths of travel, lighting, ramps, entrances and street furniture.		
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Section	Policy	Comments	
Section 6.4 Urban Areas			
6.4	<p>The six Urban Areas within the County have historically functioned as the focal points for growth and development activity, as well as public and private sector investment. This role will continue in the future. The Urban Areas will accommodate the greatest amount of the targeted growth throughout the planning period, and will be the focus of residential, commercial, employment, government, institutional, office, entertainment, cultural, and health and social service activities</p> <p>The following shall be the policy of the County:</p>		
b)	It is the policy of this Plan that the Urban Areas will incorporate the following:		
	i. a full range of housing types, including affordable and special needs housing;	The proposed application adds to the type of housing available in the urban area.	✓
i.	Intensification, infill and redevelopment of designated and underutilized sites, and areas in transition in the Urban Areas will be encouraged. The intensification, infill and redevelopment of designated and underutilized sites that are contaminated, or suspected of contamination, shall be subject to the policies of Section 5.7 (Potentially Contaminated Sites). The County shall target 25 percent of its growth in the Urban Areas to be accommodated through infill, intensification and redevelopment.	The proposed application contributes to the County target of encouraging 25 percent of its growth in the Urban Areas through infill and intensification.	✓

Section	Policy	Comments	
Section 6.5.1 Simcoe Urban Area			
6.5.1	The County shall support and promote the continued development of Simcoe as a complete, balanced and sustainable urban community containing an efficient pattern of development. Simcoe plays an important role as a major employment and commercial node, and as an agricultural support centre.		
6.5.1.2	Urban Structure of Simcoe The following shall be the policy of the County:		
a)	The County shall promote Simcoe's function as the major service centre, providing a broad range of activities, goods and services, within a strong commercial structure focused on the Downtown Area of Simcoe, and in other appropriately located major commercial areas, as identified on Schedule "B", to meet the diverse needs of the County's residents, work force, business and institutional sectors, and visitors.	The development introduces additional housing types to Simcoe which brings residents that support the commercial functions of the urban area..	✓
b)	The urban structure of Simcoe and its image and identity as a community are influenced by the locational pattern of commercial functions carried out in the Urban Area. The Downtown Area, Secondary Centres and Queensway Corridor, as defined by this Plan, shall serve as the focal centres for commercial functions but are not necessarily areas exclusively devoted to commercial use.	This area is not located in the Downtown of Secondary Centre.	

Appendix D to Planning Justification Report – Official Plan Policy Analysis
Lynndale Heights - Simcoe

Section	Policy	Comments	
Section 7.7 Urban Residential Designation			
7.7	<p>The Urban Residential Designation applies to the Urban Areas of the County. The Urban Areas are expected to continue to accommodate attractive neighbourhoods which will provide for a variety of residential forms as well as neighbourhood facilities such as elementary schools, parks, places of worship and convenience commercial uses integral to and supportive of a residential environment.</p> <p>A variety of housing types are needed to meet the needs of a diverse population. Opportunities to provide housing for individuals or groups with special needs including the elderly and those with special physical, social or economic needs within the County will be encouraged.</p>		
7.7.1	Subject to the other policies of this Plan, the following policies shall apply in determining uses permitted on land designated Urban Residential on Schedule “B”.		
a)	The predominant use of land shall be a variety of urban dwelling types, including single detached dwellings, semi-detached dwellings, duplex dwellings and similar low-profile residential buildings not exceeding 2 dwelling units per lot.	Not applicable.	✓
c)	Medium density residential uses shall be permitted including triplex dwellings, fourplex dwellings, row or block townhouse dwellings, converted dwellings containing more than two dwelling units, walk-up apartments and similar medium profile residential buildings, subject to the policies of Section 7.7.2 (b) (Urban Residential Designation – Land Use Policies).	Not applicable.	✓
d)	High density residential uses in development forms greater than those described in Subsections (a) and (b) shall be permitted subject to the policies of Section 7.7.2 (c) (Urban Residential Designation – Land Use Policies), save and except for in the Courtland Urban Area where high density residential uses shall not be permitted.	The proposed application is to permit a high density residential development which comply with the intent of Section 7.7.2 (c).	✓

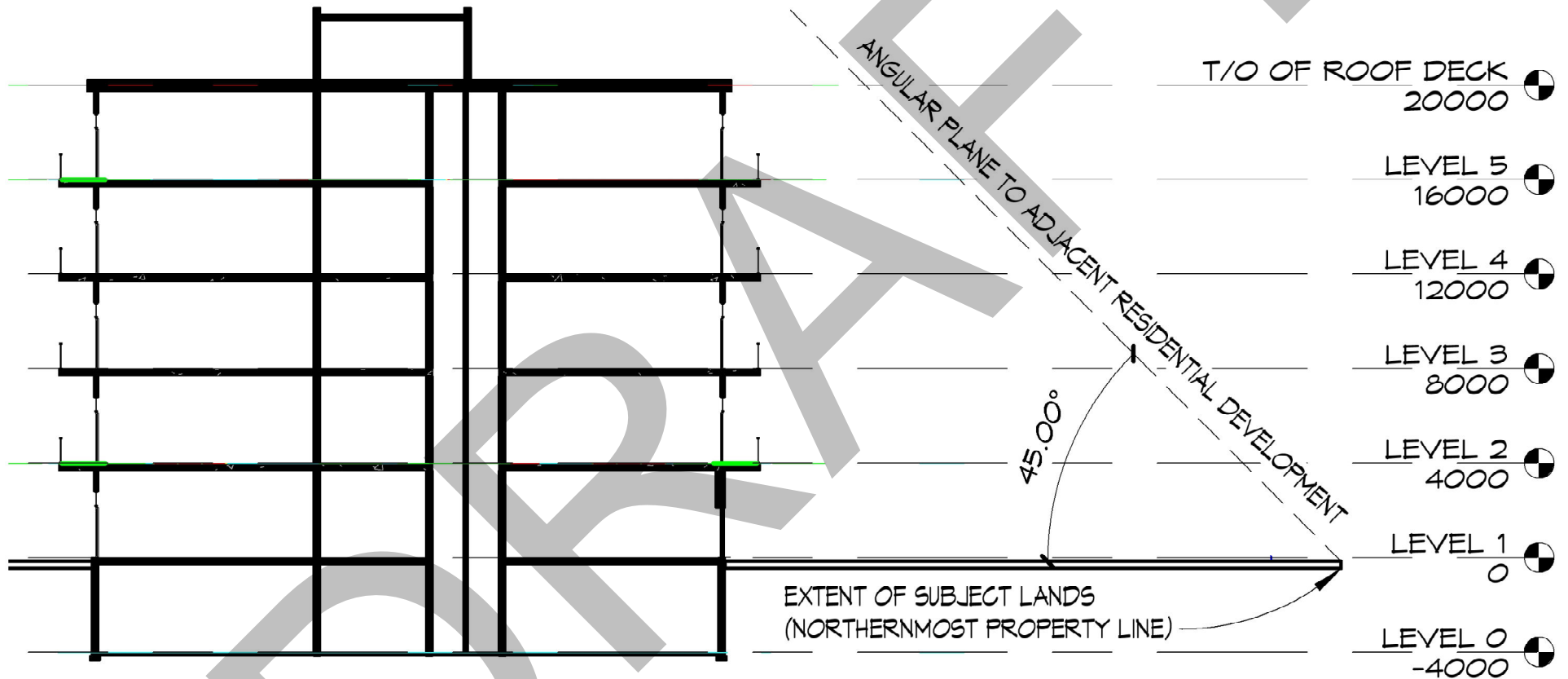
Appendix D to Planning Justification Report – Official Plan Policy Analysis
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7.7.2	Land Use Policies		
c)	High density residential uses, including apartment buildings and other forms of multiple housing of a similar density shall be carefully located. The following criteria shall be addressed in the consideration of such applications, especially in proximity to lower density residential development:		
	i) the density, height and character of the development shall be compatible with adjacent uses;	The proposed apartment is strategically located to maximize separation to adjacent low density uses. The height and character of the development is complimentary to the existing variety of dwelling unit types, and is located at the intersection of two main roads.	✓
	ii) the ability of the site to accommodate necessary facilities and amenities, such as garbage storage, parking and landscaped areas;	These elements are included and will be detailed during the site plan approval stage.	✓
	iii) the height, form and density of the proposed development is such that no undue adverse impacts in terms of overshadowing, increased traffic or loss of amenity area are created for surrounding residential uses;	The height and position of the proposed apartment reduces the impact of shadows. The density does not create adverse impacts to the neighbourhood or road network and is supported by a traffic impact brief.	✓
	iv) the relationship of the site to nearby lower density residential uses, in view of the desire to provide a gradual transition in height and density wherever possible;	While the transition is from low to a higher building form, it is proposed to be located with ample separation from the lower density uses.	✓
	v) the degree to which the site has access to significant open space amenities such as valley lands or major parks;	There are local open space areas within walking distance to the subject lands.	✓
	vi) municipal watermain and sanitary sewers shall be required and shall be capable of accommodating the development, or the proponent shall commit to extending services at no cost to the County;	The development can be supported by the existing municipal infrastructure.	✓
	vii) the proximity of the site to arterial or collector roads, and/or pedestrian accessibility to a Downtown Area or, in the	The lands are located on an arterial road. However, there is no direct access proposed onto the arterial road, also supported by the traffic impact brief.	✓

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Lynndale Heights - Simcoe

	case of the Simcoe Urban Area, a Secondary Centre, or other locations of supporting services and facilities;		
	viii) the adequacy of local services including schools and other community services. It is recognized that accessibility to such facilities, including health care services, may be particularly important to residents with special needs; and	Simcoe has a full compliment of local services available to its residents.	✓
	ix) the use shall be subject to site plan control, in accordance with the policies of Section 9.6.5 (Site Plan Control) of this Plan.	The use is subject to site plan control.	✓

Appendix E - Angular Plane





vallee

*Consulting Engineers,
Architects & Planners*

November 1, 2024

2721733 Ontario Inc.
66 Arrow Road, Unit 6B
Guelph ON
N1K 1T4

Attention: **Mr. Sam Scicluna**
 President, Lunor Group

Reference: **Functional Servicing Report**
 Lynndale Heights
 Simcoe – Norfolk County
 Project No. 21-083

Introduction

G. Douglas Vallee Limited has been retained by Lunor Group to prepare a Functional Servicing Report in support of a Zoning By-Law Amendment (ZBA) and subsequent Site Plan application for the Lynndale Heights Development. This development consists of the construction of a five storey 45-unit midrise residential building located at the northeast corner of the intersection of Donly Drive and Victoria Street in Simcoe, Norfolk County (the 'Site'). This report presents the functional servicing for the proposed Lynndale Heights, including sanitary servicing, storm servicing, domestic water servicing, and water supply for fire protection.

The 0.48 ha development site is currently vacant land, primarily comprised of a grass field but is defined as "Neighbourhood Commercial Zone (CN) under the Norfolk County Zoning By-Law 1-Z-2014. Refer to Figure 1 below.



Figure 1 - Site Location

The proposed development consists of the following construction:

- One five storey 45-unit midrise building.
- Parking infrastructure for the proposed building.
- Storm and sanitary infrastructure to support proposed construction.
- Water servicing and fire protection.
- Underground stormwater management chamber
- Curbs, sidewalks, swales, and other miscellaneous items to support proposed construction.

Sanitary Servicing

As-constructed drawings from Norfolk County indicate existing 300mm \varnothing sanitary gravity sewers along Donly Drive South and Victoria Street with a 200mm \varnothing stub entering the property from Donly Drive with a slope of 3.0%. It is proposed to use the existing stub to service the proposed building. The condition of the existing stub will be verified prior to connection during construction.

Sanitary design flows were calculated using the Norfolk County Design Criteria. Table 1 presents the design population for the development. Supporting calculations can be found in Appendix B.

Table 1 - Sanitary Design Flows	
Units	45
Population Density	2.75 persons/unit
Population	124
Per Capita Flow (L/person/day)	450 L/person/day
Peak Extraneous Flow Factor (L/sec/hectare)	4.217
Cumulative Area (ha)	0.4212
Infiltration Flow (L/s)	0.118
Average Sewage Flow (L/s)	0.65
Peak Design Flow (L/s)	2.84

As shown in Table 1, the proposed development will generate approximately 2.84 L/s of sanitary flow under peak conditions that outlet to the existing sanitary sewer on Donly Drive. The existing 200mm \varnothing stub at 3.0% has a capacity of 56.8 L/s. Therefore, the proposed development will use 5% of the capacity of the existing stub.

Storm Drainage and Stormwater Management

As-constructed drawings from Norfolk County indicate existing 1500mm \varnothing storm sewers along Donly Drive South and Victoria Street with a 250mm \varnothing stub entering the property from Donly Drive with a slope of 3.0%. The existing stub is not able to be used as the storm outlet for the site due to its proximity to the existing sanitary service and water service for the proposed building. It is proposed to construct a new storm outlet for the site which connects to the existing storm manhole at the intersection of Donly Drive South and Freeman Crescent.

Please refer to Stormwater Management Report dated June 20, 2024, included with this package for details on Stormwater Management design.

G. DOUGLAS VALLEE LIMITED
Consulting Engineers, Architects & Planners



Professional Engineers
Ontario

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to offer professional engineering services



Ontario Association
of Architects

Water Servicing

As-constructed drawings from Norfolk County indicate an existing 300mm \varnothing ductile iron watermain on Donly Drive south with 50mm \varnothing stub entering the west side of the property. The proposed development requires a larger water service than the existing stub. Therefore, a 100mm \varnothing water service will be connected to the existing watermain on Donly Drive South, south of the existing storm and sanitary stubs.

A review of the Simcoe watermain hydraulic model is requested to be completed by County consulting engineers to determine the proposed development's impact on the existing watermain network ensure adequate system flows and pressures during average day, peak hour, and fire flow scenarios.

Norfolk County's design criteria stipulate under normal operating conditions and fire flow conditions that watermain pressures maintain a minimum pressure of 280 kPa and 140 kPa, respectively.

Domestic Water Demand

Table 2 below summarizes the domestic water demand for the proposed development:

Table 2 - Domestic Water Demand	
Units	45
Population Density	2.75 persons/unit
Population	124
Average Daily Water Demand (L/person/day)	450 L/person/day
Average Daily Water Demand	0.65 L/s
Maximum Day Demand Factor (Residential)	2.25
Maximum Day Demand	1.45 L/s
Peak Hourly Demand Factor	4.00
Peak Hourly Demand	2.58 L/s

Figure 1 (Appendix C) of the Norfolk County ISMP indicates that the watermain pressure under peak hour demand at the intersection of Donly Drive South and Victoria Street is within the range of 275 to 350 kPa.

Fire Protection

As shown on the online County GIS mapping, there are two existing fire hydrants located near the proposed development. The hydrant locations were verified by topographic survey completed by G. Douglas Vallee Ltd. One hydrant is located at the northwest corner of the Site on Donly Drive South and the second hydrant is located on Victoria Street, south of the proposed development. Both hydrants are within 90m of the proposed building and can be used for fire protection. However, the Donly Drive hydrant conflicts with the proposed site entrance and will need to be removed. A new hydrant will be installed south of the site entrance on Donly Drive.

Typically, available fire flow during Maximum Day Demand is the crucial criteria when evaluating a watermain distribution system's ability to service a residential development. The estimated fire flow for Lynndale Heights has been determined using the recommendations of the Fire Underwriters Survey (FUS) – 2020. Using the FUS recommendations, the minimum required fire flow was calculated as 133.33 L/s. Supporting calculations and fire separation distances are detailed in Appendix B. Figure 2 (Appendix C) of the Norfolk County ISMP indicates that the available fire flow under maximum day demand at the intersection of Donly Drive South and Victoria Street is greater than 159 L/s.

It is recommended that Norfolk County's engineering consultant model the surrounding area to verify if the existing watermain network has adequate capacity to provide domestic water supply and fire protection to the proposed development. A water demand of 134.78 L/s (Max Day + Fire Flow) should be used for the proposed development in hydraulic model to verify conformance with Norfolk County minimum watermain pressures under fire flow conditions (min = 140 kPa).

Conclusions and Recommendations

This Functional Servicing Report for the proposed Lynndale Heights development can be summarized as follows:

- The proposed development will be serviced by a sanitary sewer which connects to the existing 200mmø stub from Donly Drive South.
- Peak sanitary design flows (2.84 L/s) use 5% of the existing stub's capacity.
- Stormwater management design to restrict post-development run-off to predevelopment levels is described in a separate Stormwater Management Report.
- The existing 300mmø watermain on Donly Drive South shall serve as the water supply for the proposed development through a new 100mmø stub.
- A review of the County's hydraulic model of the existing watermain network is recommended to determine the water servicing capacity and constraints caused by the development under average day demand, peak hour demand, and fire flow conditions.
- Domestic water flows have been calculated as 0.65 L/s, 1.45 L/s, and 2.58 L/s under average day, maximum day, and peak hour demands.
- The calculated fire flow for the proposed development (133.33 L/s) was less than the available fire flow (>159 L/s) (Norfolk County, ISMP 2016).

It is recommended that this report be provided to the Norfolk County and the Long Point Region Conservation Authority in support of the application for site plan approval of the proposed development.

We trust that this information is complete and sufficient for submission. Should you have any questions or require further information please do not hesitate to contact us.

Respectfully submitted,



Cameron Cluett, P.Eng.
G. DOUGLAS VALLEE LIMITED
Consulting Engineers, Architects and Planners

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CJC/



G. DOUGLAS VALLEE LIMITED
Consulting Engineers, Architects & Planners



Professional Engineers
Ontario

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to offer professional engineering services*



Ontario Association
of Architects

Encl.

Appendix A

- Lynndale Heights Drawing C101 (Rev 0) – Servicing Plan
(G. Douglas Vallee Limited, November 1, 2024)
- Fobasco Subdivision Drawing 18 (Rev 5) – Donly Drive South Plan and Profile
(Fred Schaeffer & Associates Ltd., August 1987)

Appendix B

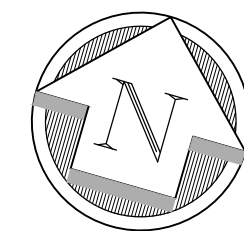
- Domestic Water Demand Calculations
- Sanitary Flow Calculations
- FUS Fire Flow Calculations



APPENDIX A

Lynndale Heights Drawing C101 (Rev 0) – Servicing Plan
(G. Douglas Vallee Ltd., November 1 2024)

Fobasco Subdivision Drawing 18 (Rev 5) - Donly Drive Plan and Profile
(Fred Schaeffer & Associates Ltd., August 1987)



1. PARKING AND AISLE PAVEMENT TO ADHERE TO PAVEMENT SPECIFICATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT AND NORFOLK COUNTY DESIGN CRITERIA:
 - LIGHT DUTY:
 - 40mm HL3
 - 50mm HL8
 - 150mm GRANULAR A
 - 300mm GRANULAR B
 - HEAVY DUTY:
 - 40mm HL3
 - 80mm HL8
 - 150mm GRANULAR A
 - 300mm GRANULAR B
2. GENERAL CONTRACTOR TO COORDINATE ALL WORK WITHIN THE SITE WITH THE COUNTY AND OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM LOCAL AUTHORITIES. EXECUTE ALL WORK AS PER NORFOLK COUNTY REQUIREMENTS.
3. GENERAL CONTRACTOR TO EXECUTE WORK TO CONSTRUCTION SITE ACCESS UNDER SUPERVISION OF THE ENGINEER. REFER TO ENTRANCE PERMIT REQUIREMENTS WHEREAS AVAILABLE. KENWAY ENTRANCE TO BE MODIFIED OR INSTALLATION OF NEW ENTRANCE AS PER NORFOLK COUNTY REQUIREMENTS. PROVIDE NEW CONC. ENTRANCE CURBS TO MATCH EXISTING AS REQUIRED.
4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL BENCHMARKS, ELEVATIONS, DIMENSIONS AND GRADES MUST BE CHECKED BY THE CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE ENGINEER.
5. AT LEAST TWO DIFFERENT BENCHMARKS MUST BE REFERRED TO AT ALL TIMES.
6. COORDINATE WITH SITE GRADING PLAN FOR PROPOSED FINAL FINISH GRADE ELEVATIONS AND DRAINAGE SLOPES.
7. TRAFFIC CONTROL SHALL BE IMPLEMENTED BY THE CONTRACTOR IN ACCORDANCE WITH OTM TEMPORARY CONDITIONS BOOK 7. APPROVAL FOR THE TRAFFIC CONTROL SHALL BE SOUGHT FROM THE MUNICIPALITY BY THE CONTRACTOR.

[illegible]

NOTE:
THE CONTRACTOR IS CAUTIONED THAT ALL OF THE EXISTING UTILITIES ARE NOT INDICATED ON THIS DRAWING. THE CONTRACTOR MUST ARRANGE FOR LOCATES FROM EACH AREA UTILITY COMPANY PRIOR TO ANY CONSTRUCTION OR EXCAVATION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES INCLUDING THOSE NOT INDICATED ON THIS DRAWING. G. DOUGLAS VALLEE LTD. CANNOT ACCEPT RESPONSIBILITY FOR DAMAGE TO ANY EXISTING UTILITY WHICH MAY OR MAY NOT BE INDICATED ON THIS DRAWING.

ALL WORK, MATERIALS AND PROCESSES TO ABIDE TO NORFOLK COUNTY STANDARDS AND SPECIFICATIONS

SURVEY INFORMATION

TOPOGRAPHIC SURVEY: DONE BY G DOUGLAS VALLEE LIMITED ON
MAY 6, 2024
LEGAL SURVEY: PLAN RP-1107, DATED APRIL 22, 1987

BENCHMARKS

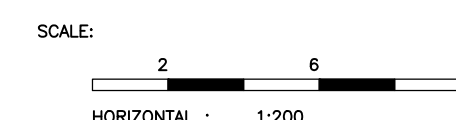
BM #1: TOP OF LARGE PUMPER NOZZLE OF FIRE HYDRANT
LOCATED ON SOUTH SIDE OF VICTORIA ST, IN FRONT OF
DEL-BAC SERVICES CORPORATION
ELEV. 232.61m

BM #2: SOUTH WEST CORNER OF THE HYDRO VAULT LOCATED ON THE NORTH SIDE OF AUSTIN CRESCENT IN FRONT OF DWELLING 39.
ELEV. 232.89m

DRAWING LIST

G. DOUGLAS VALLEE LIMITED DRAWINGS

21-083 C101 - SERVICING PLAN
21-083 C102 - GRADING PLAN
21-083 C103 - EROSION AND SEDIMENT CONTROL PLAN
21-083 C104 - STORM DRAINAGE AREAS
21-083 C105 - GENERAL NOTES & DETAILS



DO NOT SCALE DRAWINGS, CALL FOR ANY
CLARIFICATIONS THAT ARE REQUIRED, FIELD
VERIFY AT ALL BUILT CONDITIONS



G. DOUGLAS VALLEE LIMITED
2 TALBOT STREET NORTH
SIMCOE, ONTARIO N3Y 3W4
(519) 426-6270

Stamp

PRELIMINARY
NOT TO BE USED
FOR CONSTRUCTION

Project Title

LYNNDALE HEIGHTS

215 VICTORIA STREET

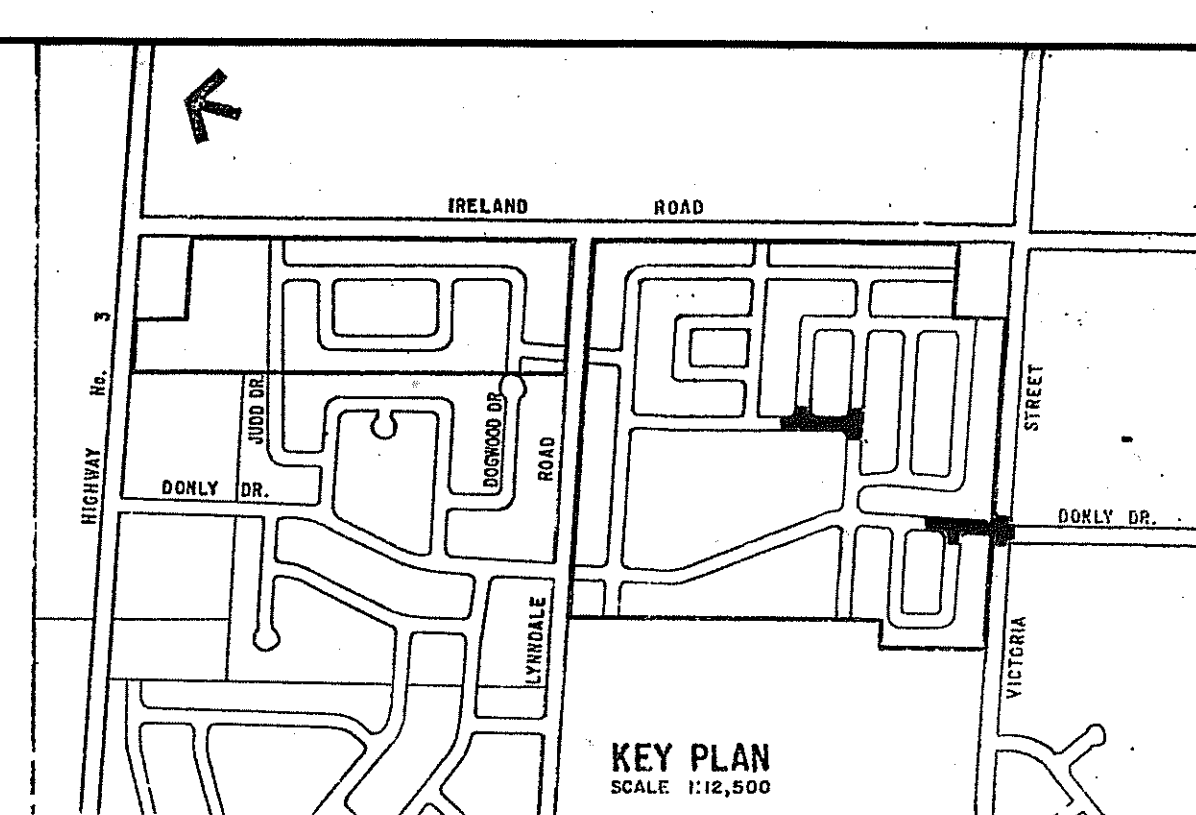
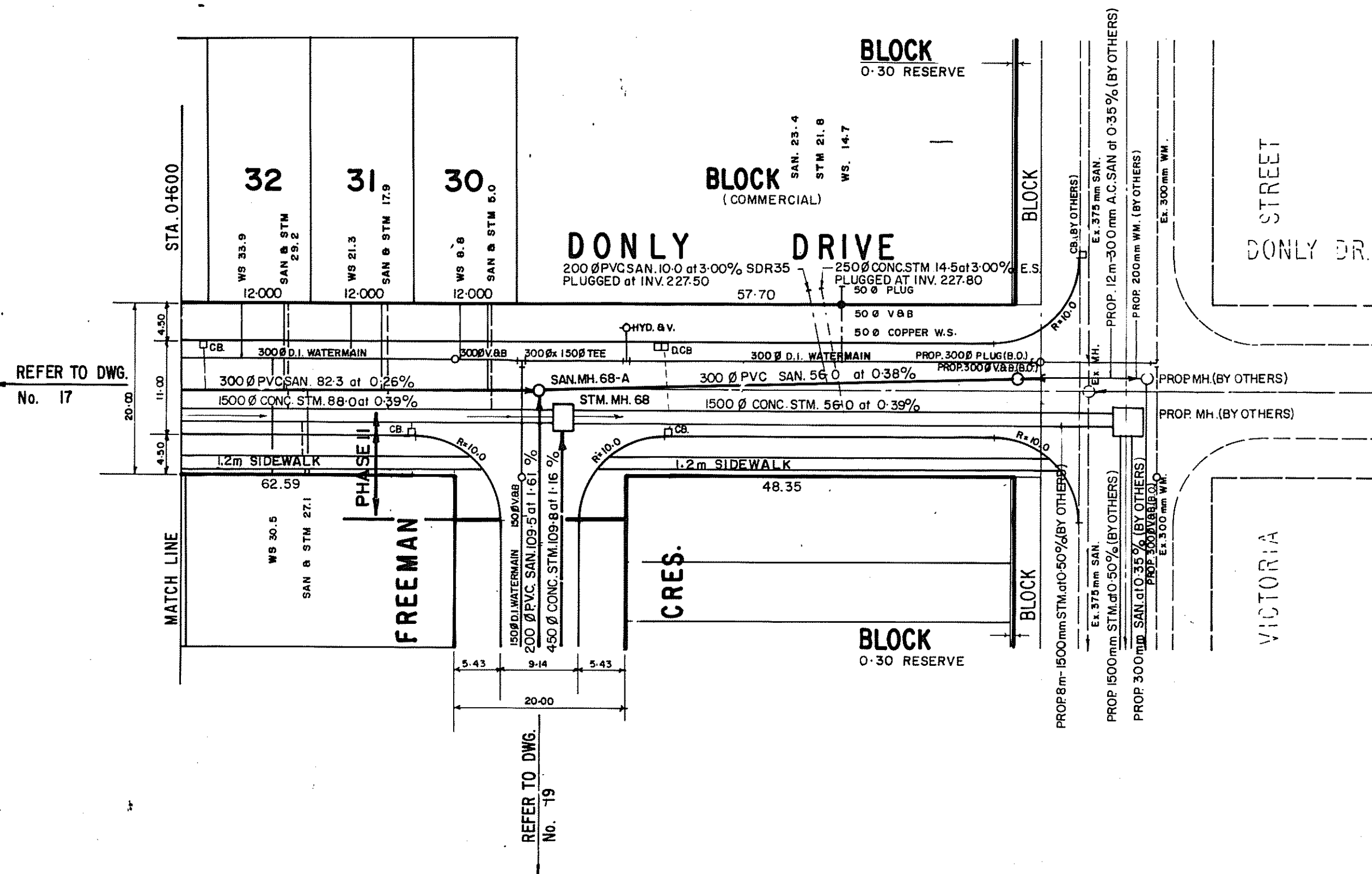
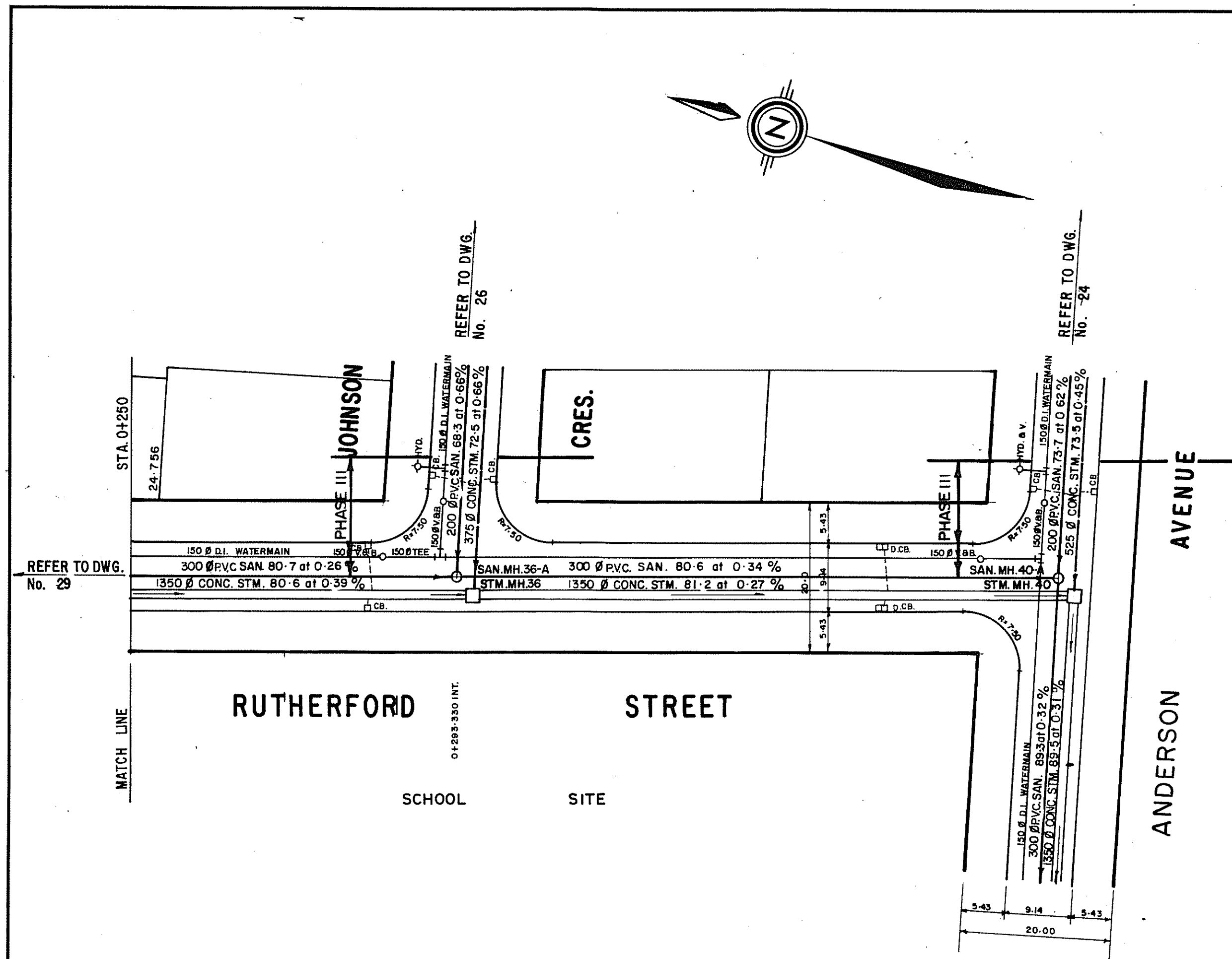
SIMCOE - NORFOLK COUNTY

Drawing Title	SERVICING PLAN
---------------	----------------

Designed by : NBN	Drawn By : NE
Checked by : JTI	Date Started : JAN 202

Drawing Scale : AS-NOTED	Drawing No. C101
Project No. 21-083	

1. PROPOSED SEWERS TO ADHERE TO THE FOLLOWING OPSD:
- | | |
|---|--------------|
| 1200mm MAINTENANCE HOLE STRUCTURE | OPSD 701.010 |
| 1200mm CATCH BASIN MAINTENANCE HOLE GRATE | OPSD 400.010 |
- ALL COMPONENTS OF THE PROPOSED STORM SEWERS ARE TO ADHERE TO DIVISION 700 OF THE OPSD.
2. RESTORE EXISTING COUNTY INFRASTRUCTURE TO COUNTY STANDARDS:
- REFER TO TRENCHING RESTORATION DETAIL ON DRAWING GN.
 - CONCRETE CURB TO MATCH EXISTING.
 - CONCRETE SIDEWALK TO MATCH EXISTING WIDTH.
 - CONSTRUCTION PER OPSS AND OPSD.
4. ALL WATERMAIN TO BE RESTRAINED AT ALL BENDS, TEES, REDUCERS, DEAD-ENDS, AND VALVES AS PER DETAILS ON DWG. GN.



NOTES

- A. NON-REINFORCED CONCRETE SEWER PIPE SHALL COMPLY WITH A.S.T.M. SPECIFICATION C14 E.S. UNLESS OTHERWISE NOTED.
 - B. REINFORCED CONCRETE SEWER PIPE SHALL COMPLY WITH A.S.T.M. SPECIFICATION C76 CL. II UNLESS OTHERWISE NOTED. RUBBER TYPE GASKET JOINTS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C443.
 - C. ASBESTOS-CEMENT NON-PRESSURE SEWER PIPE SHALL COMPLY WITH A.S.T.M. SPECIFICATION C428 OR C33, COUPLINGS SHALL COMPLY WITH M.T.C. SPECIFICATION 1830-02-02, UNLESS OTHERWISE NOTED.
 - D. ASBESTOS-CEMENT HOUSE CONNECTION PIPE SHALL COMPLY WITH C.G.S.B. SPECIFICATION 34-89-24. JOINTS SHALL BE "RING TITE" OR "SIMPLEX" OF APPROVED MANUFACTURERS.
 - E. MANHOLE FRAMES AND COVERS SHALL BE AS MANUFACTURED BY CANADA IRON FOUNDRIES TYPE DS-579, UNPERFORATED, HEAVY DUTY.
 - F. PRECAST MANHOLE SECTIONS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C478 AND SHALL BE TO THE DIMENSIONS SHOWN ON THE TOWN OF SIMCOE STANDARD DRAWINGS. RUBBER TYPE GASKET JOINTS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C443.
 - G. SEWER BRICKS SHALL COMPLY WITH A.S.T.M. SPECIFICATION C32, GRADE M.A.
 - H. MANHOLE SAFETY LADDER RUNGS SHALL BE AS SHOWN ON DRAWING DD-02P, AND SHALL BE ALUMINUM.
 - I. CORRUGATED METAL PIPE SHALL COMPLY WITH A.S.H.O. SPECIFICATION M-36, AND SHALL BE NOT LESS THAN 16 GAUGE. COUPLINGS SHALL BE STANDARD BAND WITH NEOPRENE GASKETS. PIPE SHALL BE ASPHALT COATED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - J. PIPE SHALL BE LAID AND JOINTED IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS. BEDDING SHALL BE IN ACCORDANCE WITH STANDARD DRAWING DD-045.
 - K. PRECAST MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWINGS No. DD-02B, DD-02C AND DD-02P. IF CAST-IN-PLACE MANHOLES ARE REQUIRED THE CONSULTING ENGINEER SHALL SUBMIT DETAIL DESIGN FOR APPROVAL. SUCH DESIGNS SHOULD BE BASED ON HALDIMAND-NORFOLK REGION STANDARD DRAWINGS SS-2 AND SS-3.
 - L. ALL CONCRETE USED FOR MANHOLES, BASES OR BEDDING IN STORM SEWER WORK SHALL BE 3000 P.S.I. AT 28 DAYS.
 - M. PRECAST CATCH BASINS SHALL BE STANDARD, SQUARE AND REINFORCED, AS MANUFACTURED BY J.D. OAKES AND SONS LTD. OR APPROVED EQUAL. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING No. DD-05A.
 - N. CATCH BASIN FRAMES AND GRATES SHALL BE STANDARD M.T.C. AS SHOWN ON DRAWING No. DD-713-B.
- ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
PIPE SIZES ARE IN MILLIMETRES.

BENCH MARK

NORTH OUTLET OF FIRE HYDRANT SOUTH SIDE OF VICTORIA STREET, EAST OF DONLY DRIVE. (FRONT OF S.S. TUBING)
ELEVATION 232.695

LEGEND

48s DENOTES SEMI DETACHED LOTS.

REQUIRED ROAD BASE THICKNESS

25 mm DEPTH OF H.L.3. ASPHALT
30 mm DEPTH OF H.L.6 ASPHALT
150 mm DEPTH OF GRANULAR 'A'
225 mm DEPTH OF GRANULAR 'C'

No.	DESCRIPTION	DATE	BY
1.	AS CONSTRUCTED	10/2/80	R.A.B.
2.	REVISIONS		
3.	REVISED TO SHOW PHASE III	AUG. / 87	G.R.B.
4.	AS CONSTRUCTED	JAN. / 87	G.R.B.
5.	SERVICE LOCATIONS ADDED AS CONSTRUCTED	SEPT. / 85	J.D.V.
6.	LYNDALDE HEIGHTS SUBDIVISION PHASE II		
7.	G. DOUGLAS VALLEE LIMITED		
8.	CONSULTING ENGINEERS AND ARCHITECT		

TOWN of SIMCOE

REGISTERED PROFESSIONAL ENGINEER
A.R. STEEDMAN
PROVINCE OF ONTARIO

FOBASCO SUBDIVISION
PLAN AND PROFILE
RUTHERFORD ST. DONLY DRIVE
FROM STA. 0+250 TO STA. 0+379+460 FROM STA. 0+600 TO STA. 0+710+431

FRED SCHAEFFER & ASSOCIATES LTD.
URBAN PLANNERS AND CONSULTING ENGINEERS
465 WILSON AVE. DOWNSVIEW, ONTARIO 635-5424

DESIGN BY: M.P. SINGH
DRAWN BY: CESAR
SCALE: VERT. 1" = 100'

CHECKED BY: M. JAKOVIC
DATE: APRIL, 1980

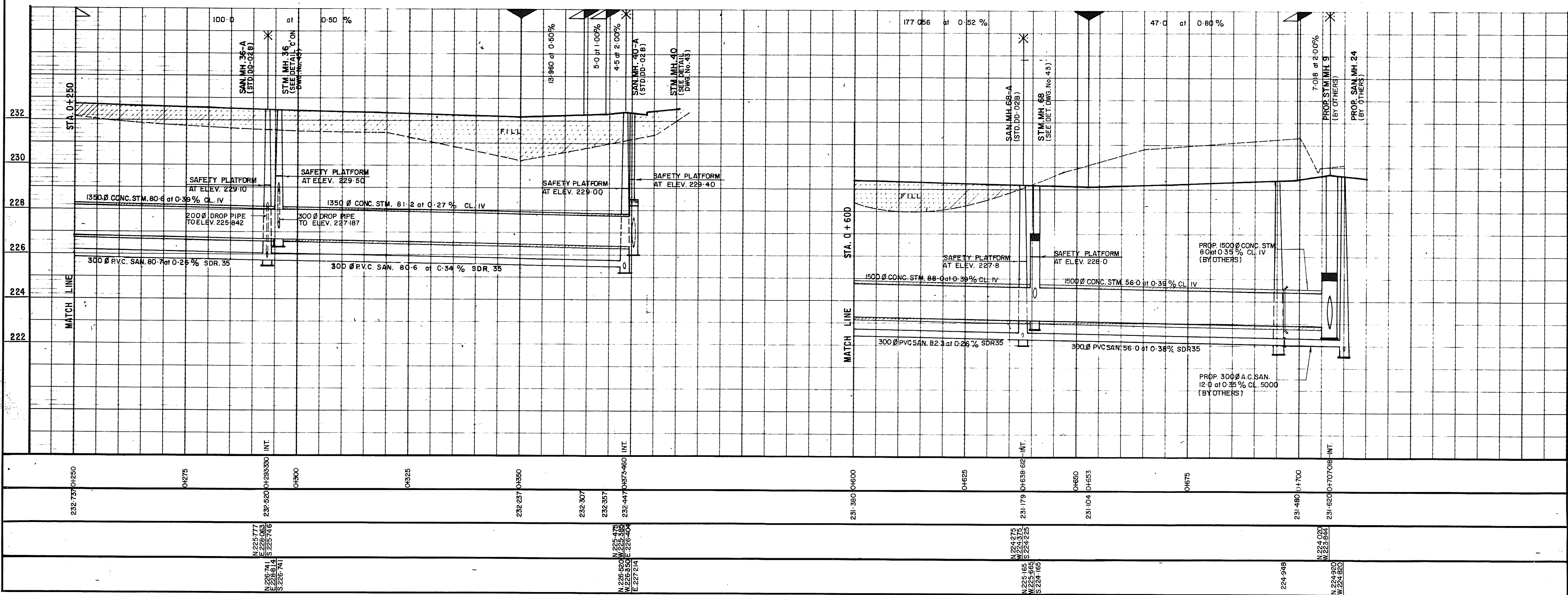
PROJECT NO.
78-ES-462
DRAWING NO.
18

NOTE

ALL SERVICE LOCATION DISTANCES MEASURED FROM DOWNSTREAM SANITARY MANHOLE.

FILL NOTE

FILL TO BE COMPACTED TO A DRY DENSITY NOT LESS THAN 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST A.S.T.M. DESIGNATION T-99 AFTER COMPACTION SOIL DENSITY TESTS ARE TO BE MADE AND SUBMITTED TO THE TOWN ENGINEER BEFORE THE START OF CONSTRUCTION OF SERVICES. 98% STANDARD PROCTOR DENSITY UNDER PROPOSED ROADWAYS.



APPENDIX B

Domestic Water Demand Calculations

Sanitary Flow Calculations

FUS Fire Flow Calculations

Norfolk County Design Criteria Section 9.2 - Sanitary Sewage Flow

9.2.01 Tributary Population

Residential Development:	2.75 persons/unit
Units:	45 Units
Number of Persons:	124 persons
Site Area	0.4212 ha

9.2.02 Sewage Flow

Residential Development:	0.45 m ³ /person/day
Average Sewage Flow:	0.65 L/s

9.2.03 Peak Sanitary Flow Factor

Residential Peaking Factor Formula:
 $M = 1 + (14 / (4 + [14 / \{4 + P^{(0.5)}\}]))$
 P =
 M =

0.124
4.217

9.2.04 Infiltration Allowance

Infiltration Allowance:	0.28 L/s/ha
Infiltration Allowance:	0.118 L/s

9.2.05 Design Flow

Design Flow:
 Design Flow = (Average Sewage Flow * Peak Sanitary Flow Factor) + Infil. Allowance

Design Flow =	2.84 L/s
---------------	----------

Domestic Water Demand

Total Number of Units	45 units
Zoning of Land	Residential
Equiv. Population Density	2.75 ppl/unit
Equiv. Population	124 persons

Average Daily Demand

Av. Daily Demand Per Capita	0.45 m ³ /capita/day
Average Daily Demand	55.80 m ³ /day
	0.65 l/s

Maximum Daily Demand

Maximum Daily Demand Peaking Factor	2.25
Maximum Daily Demand	125.55 m ³ /day
	1.45 l/s

Peak Hourly Demand

Peak Hourly Demand Peaking Factor	4
Peak Hourly Demand	9.30 m ³ /hour
	2.58 l/s

5 Storey Midrise

1) Fire Flow Requirement
(L/min)

$F_1 = 220C(A^{1/2})$

C = 0.8 Non Combustible Construction

A = 665 Floor Area (m²) = main floor area

A = 2658 Fire Area (m²) = main floor area + second floor area

F₁ = 9074 L/min

F₁ = 9000 L/min (Round to the nearest 1,000 l/min)

2) Occupancy

Occupancy Type: Limited Combustible Contents

Reduction: 15%

Surcharge: 0%

$F_2 = F_1 + (F_1 \times \text{Reduction/Surcharge})$ (L/min)

F₂ = 7650 L/min

3) Sprinkler System

Sprinkler System: Not Applicable (assumed no sprinkler system in service)

Reduction: 0%

$F_3 = F_2 \times \text{Reduction}$ (L/min)

F₃ = 0 L/min

4) Seperation

<u>Location</u>	<u>Direction</u>	<u>Distance (m)</u>	<u>Surcharge</u>	<u>Separation Surcharges</u>
Side	East	>30m	0%	0 to 3m 25%
Front	North	24.9	10%	3.1m to 10m 20%
Rear	South	> 30m	0%	10.1m to 20m 15%
Side	West	> 30m	0%	20.1 to 30m 10%
	Total:		10%	Greater than 0%

$F_4 = (\text{TOTAL}) \times F_2$ (L/min)

F₄ = 765 L/min

Total Fire Flow

$F = F_2 - F_3 + F_4$

= 8415 L/min

= **8000 L/min** (Round to the nearest 1,000 l/min)

= **133.3 L/s**

Notes: 1) All calculations and factors from Part 2 "Water Supply for Public Fire Protection" by the Fire Underwriters Survey, 2020



vallee

*Consulting Engineers,
Architects & Planners*

November 1, 2024

2721733 Ontario Inc.
66 Arrow Road, Unit 6B
Guelph ON
N1K 1T4

Attention: **Mr. Sam Scicluna**
 President, Lunor Group

Reference: **Stormwater Management Report**
 Lynndale Heights
 Simcoe – Norfolk County
 Project No. 21-083

Introduction

This Stormwater Management (SWM) Report has been prepared in support of a Zoning By-Law Amendment (ZBA) and subsequent Site Plan application for the Lynndale Heights Development. This development consists of the construction of a five storey 45-unit midrise residential building and a parking lot located at the northeast corner of the intersection of Donly Drive and Victoria Street in Simcoe, Norfolk County (the 'Site'). It is the intention to submit this report to Norfolk County and the Long Point Region Conservation Authority (LPRCA) for review and approval of the proposed site plan.

The subject property is located on the north side of Victoria Street, east of Donly Drive South in Simcoe – Norfolk County. The subject lands are bound by the aforementioned streets and residential units to the north and east, as shown in Figure 1.



Figure 1 - Site Location

Stormwater Management Design Criteria

The design criteria for the proposed development are as follows:

- Quantity Control: Reduce or control the post development peak flow rates from the site to levels that do not exceed the total runoff of all storm events up to and including the 100-year storm event.
- Quality Control: Per Norfolk County Design Criteria, stormwater shall be treated to an Enhanced Protection Level as defined in the Stormwater Management Planning and Design Manual (MOE, 2003).

A Visual OTTHYMO™ computer model (Version 6.2) has been used to simulate pre- and post-development drainage conditions. The simulations were conducted using a 4-hour Chicago Distribution Design Storm single-event analysis of the 2 through 100-year storm events. The Norfolk County rainfall IDF curve data was used for the storm analysis using the parameters in Table 1 below.

Table 1 Norfolk County Rainfall IDF Parameters			
Event	A	B	C
2-year	529.711	4.501	0.745
5-year	583.017	3.007	0.703
10-year	670.324	3.007	0.698
25-year	721.533	2.253	0.679
50-year	766.038	1.898	0.668
100-year	801.041	1.501	0.657

Pre-Development Conditions

Under existing conditions, the development site is primarily comprised of relatively flat grassed meadow. Runoff from the development site drains uncontrolled, overland in a westerly direction towards Donly Drive South, and ultimately releases to the existing Donly Drive South storm sewer. The pre-development drainage catchment has been defined as PRE in the Visual OTTHYMO™ model.

The pre-development catchment (PRE) has a total area of 0.46 ha, as shown on the Pre-Development Drainage Areas Plan in Appendix D. The Visual OTTHYMO™ computer model was used to simulate pre-development conditions for this area. The model uses a modified SCS procedure to estimate losses that occur naturally during a rainfall event such as evaporation and infiltration. Table 2 summarizes the input parameters for the model. Detailed information for model inputs is included in Appendix A.

Geotechnical investigation at the Site has not been completed at this time. Based on regional soil maps (OGSEarth), subsurface conditions are anticipated be comprised of glaciolacustrine deposits consisting of silt and clay, with trace to some sand. Using MTO Soil Classification Charts, the site was determined to be within the Hydrologic Soil Group BC and having a corresponding CN Value 71 (BC – Pasture & other unimproved land).

Table 2 Visual OTTHYMO™ Model Input – Pre-Development	
Parameter	PRE
Description	Drains to existing storm sewer on Donly Drive South
Area	0.458 ha
Soil Type	Assumed Silt Loam
Hydrologic Soil Group	BC
SCS Curve Number	71
Initial Abstraction	8.5 mm ($IA/S_{0.05} = 0.05$, with $S_{0.05} = 1.33 * S_{0.20}^{1.15}$ in inches , and $S_{0.20} = (1000/CN) - 10$)
Runoff Coefficient	0.25
Longest Flow Path	80 m
Average Slope	2.3%
Time of Concentration	18.83 minutes
Time to Peak ($0.6 * t_c$)	0.19 hours

Table 3 presents the pre-development design peak runoff rates from the existing catchment based on the drainage parameters identified in Table 2.

Table 3 Pre-Development Peak Runoff	
Rainfall Event	Pre-Development (m³/s)
2-year	0.006
5-year	0.012
10-year	0.018
25-year	0.026
50-year	0.032
100-year	0.039

Post-Development Conditions

The storm drainage outlet for the site will be provided by a proposed 300mmø storm sewer on the northwest limits of the Site, which will connect to the existing manhole at Freeman Crescent and flow south in the 1500mmø Donly Drive South storm sewer and eventually Lynn River. Development of the Site will alter the pre-development conditions from previous grassed meadow to predominantly impervious building and parking lot surfaces. Post-development conditions will generate increased stormwater runoff during rain events due to the significant increase in impervious material on the Site. Therefore, stormwater management controls are required to avoid impacting the capacity of the Donly Drive South storm sewer.

The overall stormwater management (SWM) strategy is to reduce post-development peak flow rates from the site to less than or equal to the pre-development peak flow rates for all storm events up to and including the 100-year storm event. To meet this quantity control target, runoff from the post-development site will be directed to an underground stormwater management chamber (SWM chamber) at the north side of the property and released at a restricted rate such that pre-development peak flows to the Donly Drive South storm sewer are not exceeded.

The post-development drainage areas are shown on the Post-Development Drainage Areas Drawing in Appendix D, and can generally be described as follows:

- Area POST: Entirety of the Site including building, parking lot, and landscaped areas.

Table 4 summarizes the post-development input parameters for the Visual OTTHYMO™ computer model with complete details included in Appendix A. The model uses a modified SCS procedure to estimate losses that occur naturally during a rainfall event such as evaporation and infiltration.

Table 4 Visual OTTHYMO™ Model Input – Post-Development	
Parameter	POST
Description	Run-off directed to SWM chamber, restricted outflow to Donly Drive South
Area	0.458
Total Impervious Percentage (TIMP)	80%
Directly Connected Impervious Percentage (XIMP)	80%

Underground Stormwater Management Chamber

Stormwater Quantity Storage will be provided by a proposed underground stormwater management chamber system by ADS Inc. (or approved equivalent). The underground chamber system utilizes 21 StormTech® MC-7200 chambers (ADS Inc.) with a 305mm stone reservoir above the chambers, resulting in a total storage volume of 223m³. The stone below the chambers has not been included as storage, due to the lack of geotechnical information at this stage. Preliminary drawings and specifications for the proposed StormTech® chamber facility can be found in Appendix C. The outlet of the underground chamber, located downstream of the chamber at STMH1, will be equipped with two orifices to control the release rate from the proposed facility. The 2, 5, and 10-year storms will be restricted by a 75mm orifice at an elevation of 228.30m. The 25, 50, and 100-year storms will be restricted by combined outflow from the 75mm orifice and a 115mm orifice at an elevation of 229.28. The following equation was used to estimate discharge, and corresponding calculations can be found in Appendix A.

$$Q = C * A * \sqrt{2 * g * h}$$

where:

Q = Discharge in m³/s

C = constant, 0.63

A = orifice area in m²

g = gravitational constant, 9.81 m/s²

h = height above orifice, m

Table 5 summarizes the peak post-development runoff rates from the Site using the Visual OTTHYMO™ model and compares them to the allowable release rate for each storm event up to and including the 100-year storm event. The utilized storage volumes in the StormTech® chamber facility and corresponding ponding elevations and drawdown times for each storm event are also presented in Table 5.

Table 5 Post-Development Peak Flow Rates, Storage Volumes & Ponding Elevations						
Event	Allowable Release Rate (m³/s)	Post-Development Discharge (m³/s)	Net Change (m³/s)	Utilized Storage Volume (m³)	Ponding Elevation (m)	Drawdown Time (hr)
2-year	0.006	0.009	+0.003	36	228.87	1.5
5-year	0.012	0.011	-0.001	69	229.13	2.6
10-year	0.018	0.016	-0.002	94	229.34	3.0
25-year	0.026	0.025	-0.001	112	229.50	3.3
50-year	0.032	0.030	-0.002	128	229.64	3.4
100-year	0.039	0.034	-0.005	142	229.78	3.6

As presented above in Table 5 the peak post development flow rates have been attenuated to less than or equal to the allowable release rate of each storm event up to and including the 100-year storm event, except for the 2-year storm. The 2-year storm is restricted by the recommended minimum orifice size of 75mmø at the outlet of the underground storage chamber. Further reducing the orifice to meet the 2-year pre-development peak flow requirement is not recommended because a smaller orifice will be prone to clogging. The post-development peak flow exceedance of 0.003m³/s is considered negligible. Visual OTTHYMO™ model input parameters and supporting calculations are shown in Appendix A. Detailed output results from the computer model are included in Appendix B.

Results for unrestricted runoff from the Site into the SWM Chamber are included on the graphs enclosed in Appendix B (Pg 1 to 4). Unrestricted run-off is shown to be 4x to 12x greater than pre-development levels without stormwater controls.

The proposed 300mmø storm sewer outlet from the Site has a capacity of 195 L/s (300mmø @ 4.08%). The 100-year discharge from the Site estimated from the Visual OTTHYMO™ model is 34 L/s or 17% capacity of the proposed storm sewer outlet from the Site. The downstream capacity of the Donly Drive South Sewer will not be impacted by the development of the proposed stormwater management facility.

Quality Control

The selection of the level of water quality treatment is based on the proposed outlet for a SWM facility. For this site, the proposed outlet is the Donly Drive South storm sewer, therefore Enhanced Protection has been selected in conformance with Norfolk County Design Criteria. The Ministry of the Environment Stormwater Management Planning and Design Manual defines an Enhanced Protection as the removal of 80% of the total suspended solids (TSS).

Quality control will be provided by the StormTech® Isolator PLUS Row, which is a row of standard StormTech® chambers surrounded by a woven geotextile (ADSPlus125) filter fabric. The isolator row creates a detention basin that allows water to egress through the surrounding filter fabric while sediment is trapped within. In addition, a flared end ramp is attached to the inlet pipe inside of the chamber end cap to provide a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance over time by distributing sediment and debris that would otherwise collect at the inlet. In large storm events, when the rate of runoff draining to the underground chamber exceeds the infiltration capacity of the Isolator PLUS row, water in the Isolator PLUS Row ponds until reaching the elevated manifolds which drain to the remaining 14 chambers of the MC-7200 chamber.

Each MC-7200 Isolator PLUS Row chamber has an ETV verified treated flow rate of 12.74 L/s corresponding to greater than 81% TSS removal. The proposed chamber facility features 7 isolator row chambers, which allows for a total treated inlet flow rate of approximately 89 L/s. The maximum flow rate entering the chambers during the Quality Control Storm Event was determined to be 57 L/s using a 25mm – 4-hour Chicago Storm in the Visual OTTHYMO™ model. Consequently, it can be concluded that the proposed chamber facility provides more than sufficient capacity to provide a normal level of water quality protection, corresponding to 80% TSS removal. The StormTech® Isolator PLUS Row Sizing Chart can be found in Appendix B.

Inspection and maintenance are fundamental to the long-term performance of any stormwater quality treatment device. StormTech® recommends that the chamber system be inspected annually at a minimum, and every six months for the first year of operation to determine the sediment accumulation rate. In subsequent years inspections can be based on observations or local requirements. The unit should be inspected immediately after an oil, fuel or chemical spill, and a licensed waste management company should remove oil and sediment for proper disposal.

Conclusions and Recommendations

Based on the review presented by this Stormwater Management Report, the stormwater management design for the proposed development can be summarized as follows:

- A combination of swales and storm sewers will convey stormwater from the subject site to the proposed underground SWM chamber facility located at the west side of the development under the parking lot.
- Runoff released from the SWM facility will be conveyed to the existing municipal 1500mmØ storm sewer along Donly Drive South.
- The underground storage chamber facility uses 21 StormTech® MC-7200 chambers and has a total storage volume of 199m³.
- The required storage volume in the chamber facility ranges between 36m³ to 142m³ for the 2-year and 100-year storm event, respectively.
- Discharge from the chamber facility is controlled by a 75mmØ orifice at an elevation of 228.30m and a second orifice of 115mmØ at an elevation of 229.28m.
- The proposed stormwater management facility has sufficient volume to detain runoff such that discharge associated with the post-development site is controlled to less than or equal to the allowable release rate of for all storm events up to and including the 100-year storm event.
- During events greater than the 100-year storm, runoff from the site will eventually surcharge the SWM facility, and flow overland towards to Donly Drive South as it does under pre-development conditions.
- The proposed StormTech® Isolator PLUS Row will provide Enhanced Protection as defined by MOE design guidelines for water quality protection, corresponding to 80% TSS removal.

It is recommended that this report be provided to the Norfolk County and the Long Point Region Conservation Authority in support of the application for site plan approval of the proposed development.

We trust that this information is complete and sufficient for submission. Should you have any questions or require further information please do not hesitate to contact us.

Respectfully submitted,



Cameron Cluett, P.Eng.
G. DOUGLAS VALLEE LIMITED
Consulting Engineers, Architects and Planners



H:\Projects\2021\21-083 Lynndale Heights Towns\Design\CIVIL\SWM\21083 SWM Report.docx
CJC/

G. DOUGLAS VALLEE LIMITED
Consulting Engineers, Architects & Planners

Encl.

Appendix A

- Pre-Development Parameters
- Post Development Parameters
- Storage Tank Rating Curve
- Initial to Post Flows and Ponding Depths

Appendix B

- Rational Method Outputs

Appendix C

- ADS StormTech® Chamber Drawings & Specifications
- ADS StormTech® Isolator Row Sizing Chart

Appendix D

- 21-083 Pre-Development Runoff Conditions
- 21-083 Post Development Runoff Conditions



APPENDIX A

Pre-Development Parameters

Post Development Parameters

Storage Rating Curve

Initial to Post Flows and Ponding Depths

SOIL PARAMETERS

Soil Group	BC
CN	71
Initial Abstraction	8.5 mm

NASH HYDROGRAPH CATCHMENT PARAMETERS

Drainage Area	Area (ha)	Runoff Coefficient Areas (ha)			Composite Runoff Coeff.	L (m)	Slope (%)	Time of Conc. (min)	Time to Peak (0.6*tc) (hr)
		0.25	0.75	0.95					
PRE	0.458	0.458	0.00	0.00	0.25	80	2.30	18.83	0.19

STANDARD HYDROGRAPH CATCHMENT PARAMETERS

Drainage Area	Control?	Area (ha)	Imperv. Area (ha)	Directly Connected Imperv. (ha)	TIMP (%)	XIMP (%)
		(1)	(2)	(3)	(2)/(1)	(3)/(1)
POST	Controlled	0.458	0.368	0.368	80%	80%

CHAMBER PARAMETERS

Model	MC-7200	
Number of Chambers	21	
Number of End Caps	6	
D of Stone Abv. Chamber	0.304 m	
D of Stone Bel. Chambers	0.229 m	
Base of Stone Elev.	228.47 m	
Base of Chamber Elev.	228.70 m	
Height of Chambers	1.524 m	
Top of Chamber Elev.	230.22 m	
Top of Stone Elev.	230.53 m	
Min. Cover (For Vehicles)	0.61 m	
Min Surface Elev.	230.83 m	(Base of Flexible Pvm)
Max. Cover	2.133 m	
Max Surface Elev.	232.36 m	(Top of Pvm/Unpaved)
System Footprint	160.60 m ²	
Impermeable liner?	No	

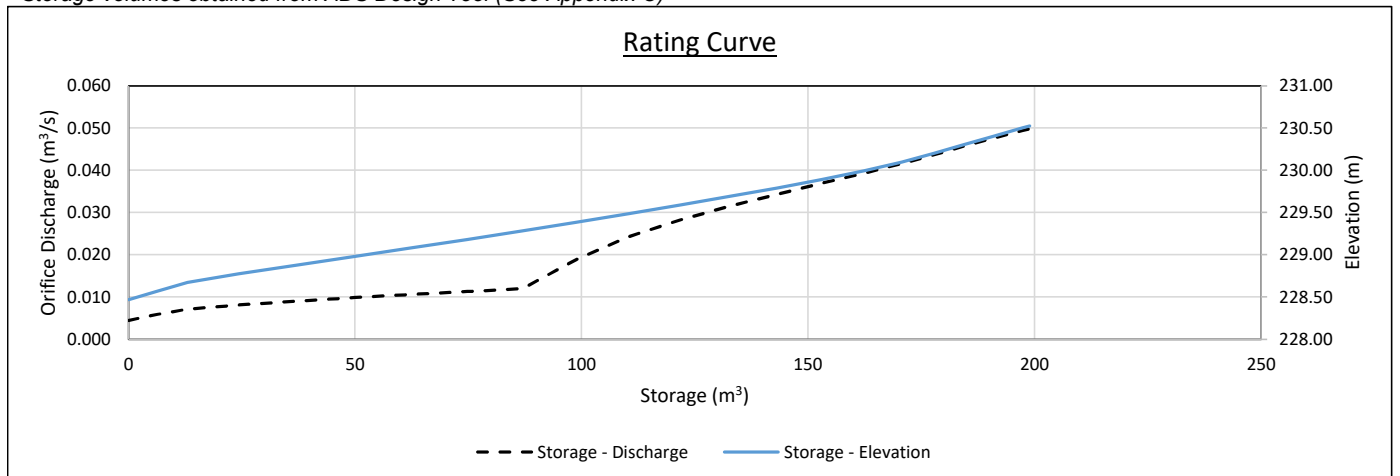
ORIFICE PARAMETERS

C=	0.63
Diameter	0.075 m
Area	0.0044 m ²
Invert Elev.	228.30 m
CL Elev.	228.34 m
Orifice #1	
$Q = CA\sqrt{2gh}$	
C=	0.63
Diameter	0.115 m
Area	0.0104 m ²
Invert Elev.	229.28 m
CL Elev.	229.34 m
Orifice #2	
$Q = CA\sqrt{2gh}$	

RATING CURVE

Description	Elevation (m)	Stage (mm)	Stage (m)	Volume (m ³)	Height Above Invert (m)	Q (m ³ /s) Orifice 1	Q (m ³ /s) Orifice 2	Q (m ³ /s) Total
Base of Stone (incl. Subdrain)	228.47	0	0	0.00	0.170	0.004	0.000	0.004
	228.57	102	0.102	6.52	0.272	0.006	0.000	0.006
	228.67	203	0.203	13.05	0.373	0.007	0.000	0.007
Base of Chamber	228.77	305	0.305	24.35	0.475	0.008	0.000	0.008
	228.88	406	0.406	37.16	0.576	0.009	0.000	0.009
	228.98	508	0.508	49.85	0.678	0.010	0.000	0.010
Orifice 2	229.08	610	0.610	62.40	0.780	0.011	0.000	0.011
	229.18	711	0.711	74.77	0.881	0.011	0.000	0.011
	229.28	813	0.813	86.93	0.983	0.012	0.000	0.012
	229.38	914	0.914	98.85	1.084	0.013	0.006	0.019
	229.49	1016	1.016	110.49	1.186	0.013	0.011	0.024
	229.59	1118	1.118	121.80	1.288	0.014	0.014	0.028
	229.69	1219	1.219	132.73	1.389	0.014	0.017	0.032
	229.79	1321	1.321	143.22	1.491	0.015	0.020	0.034
	229.89	1422	1.422	153.17	1.592	0.015	0.022	0.037
	229.99	1524	1.524	162.44	1.694	0.016	0.023	0.039
Top of Chamber	230.10	1626	1.626	170.68	1.796	0.016	0.025	0.042
	230.20	1727	1.727	177.69	1.897	0.017	0.027	0.044
	230.30	1829	1.829	184.24	1.999	0.017	0.028	0.046
	230.40	1930	1.930	190.76	2.100	0.018	0.030	0.048
Top of Stone Storage	230.50	2032	2.032	197.29	2.202	0.018	0.031	0.049
	230.53	2057	2.057	198.92	2.227	0.018	0.032	0.050

*Storage volumes obtained from ADS Design Tool (See Appendix C)



PRE TO POST DEVELOPMENT FLOWS (See Appendix B for detailed Visual Otthymo output results)

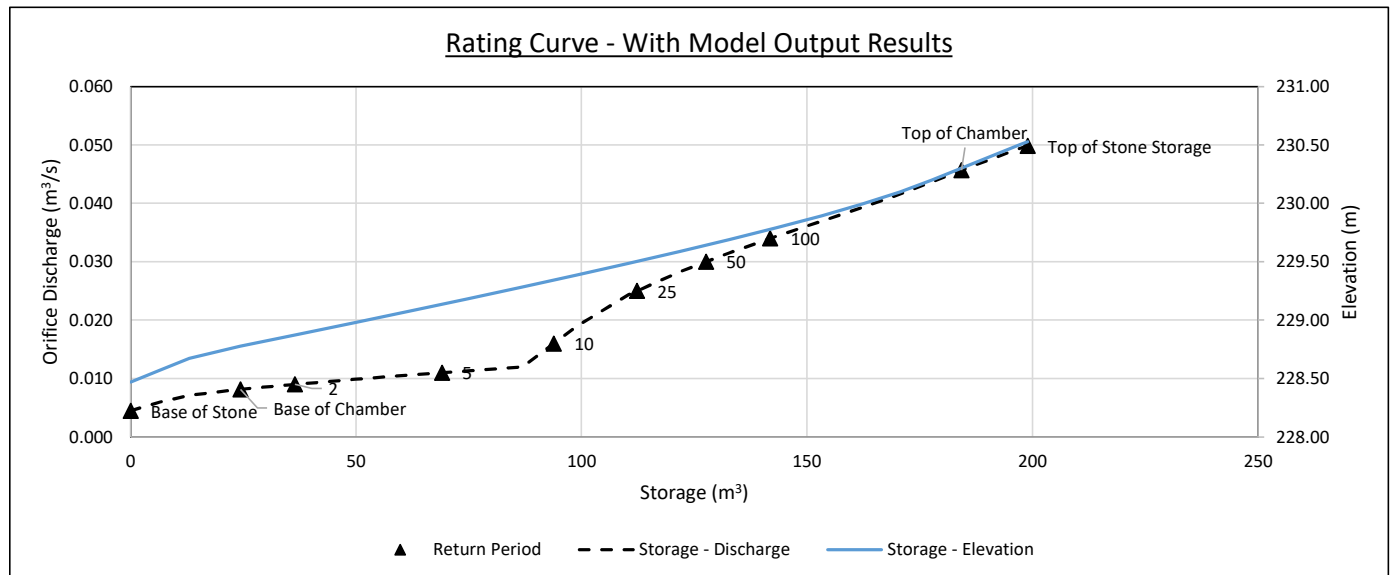
Return Period	Q (m ³ /s)			Check
	TOTAL PRE	TOTAL POST	NET	
2	0.006	0.009	0.003	!
5	0.012	0.011	-0.001	✓
10	0.018	0.016	-0.002	✓
25	0.026	0.025	-0.001	✓
50	0.032	0.030	-0.002	✓
100	0.039	0.034	-0.005	✓

Note:
Orifice 1 diameter (75mm) is at the recommended minimum size. Reducing its diameter to meet the 2-year pre-development peak flows is not recommended. The post-development 0.003m³/s exceedance of the pre-development condition for the 2-year storm is considered negligible.

STORAGE & PONDING DEPTHS

Return Period	Flow From Chambers (m ³ /s)	Maximum Storage (m ³)	Ponding Depth (m)	Elev. (m)
2	0.009	36	0.40	228.87
5	0.011	69	0.66	229.13
10	0.016	94	0.87	229.34
25	0.025	112	1.03	229.50
50	0.030	128	1.17	229.64
100	0.034	142	1.31	229.78

Rating Curve - With Model Output Results



Water Quality Control Provided by Stormtech Isolator Row


Inflow to Chambers During 25mm Quality Storm Event

0.057 m³/s
57 L/s

Chamber Type	MC-7200
Treated Flowrate / Isolator Row Chamber	12.74 L/s

Required Number of Isolator Row Chambers	4
Provided Number of Isolator Row Chambers	7

Provided Treated Flowrate 89 L/s



StormTech Isolator Row Sizing Chart

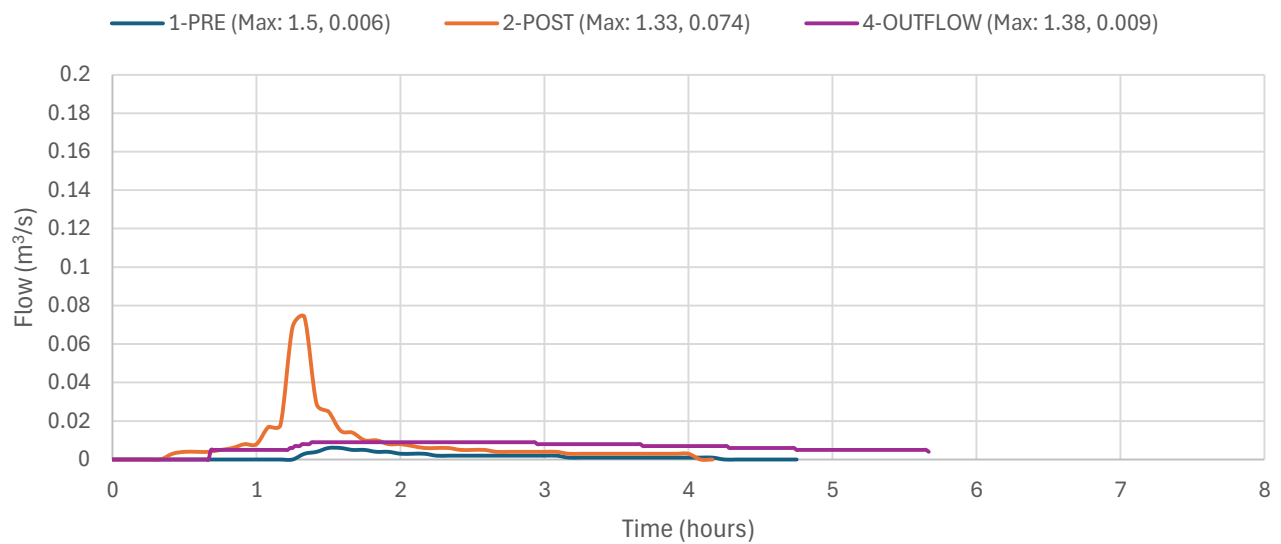
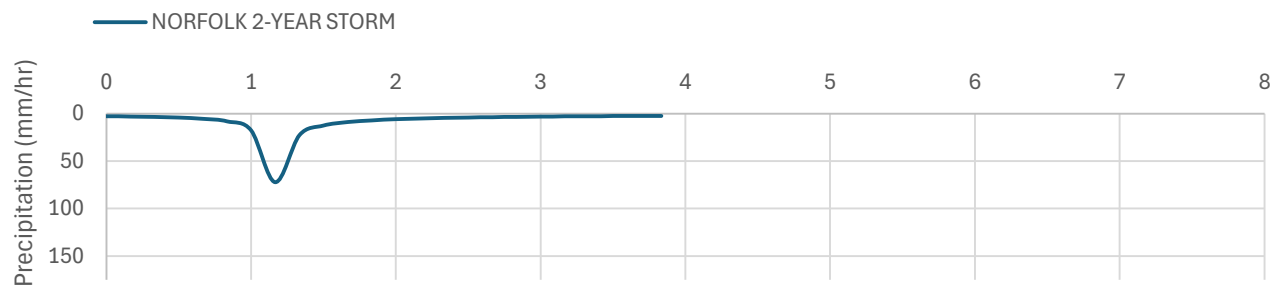
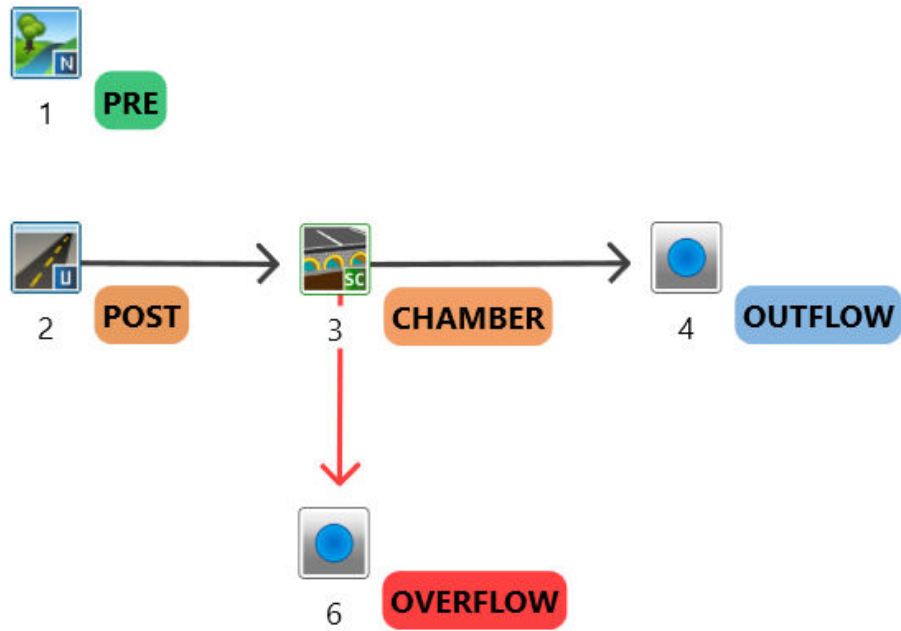
StormTech Isolator Row - Water Quality Flowrate for >81% TSS Removal							
	SC-160	SC-310	SC-740	DC-780	MC-3500	MC-4500	MC-7200
Chamber Bottom Area (m ²)	1.06	1.64	2.58	2.58	3.99	2.80	4.65
Treated Flowrate / Chamber (L/s)	2.97	4.62	7.25	7.25	11.19	7.84	12.74

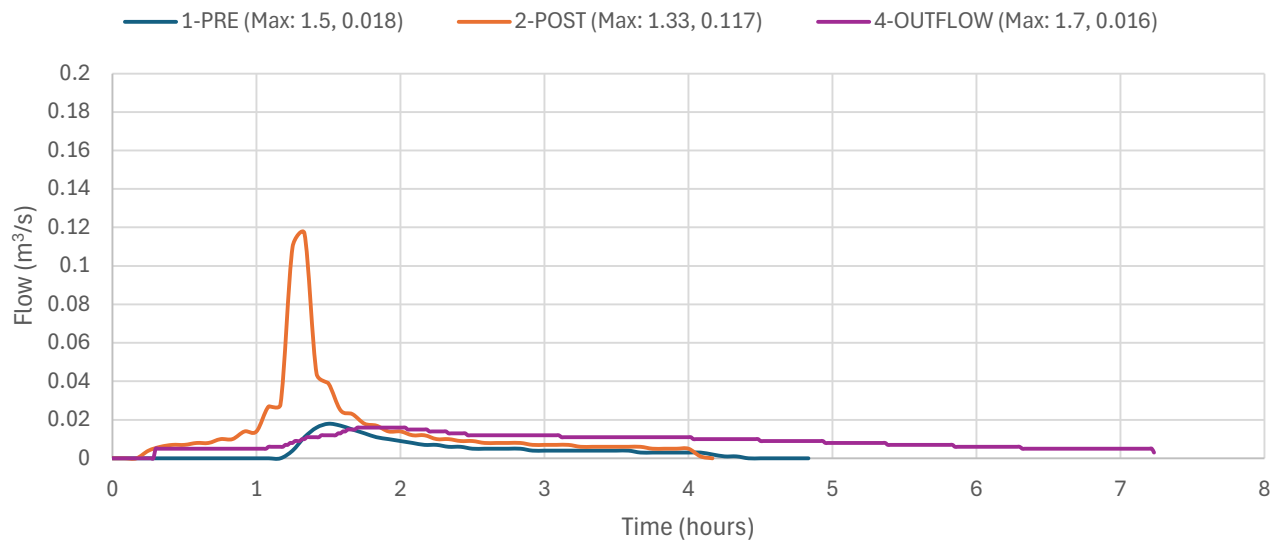
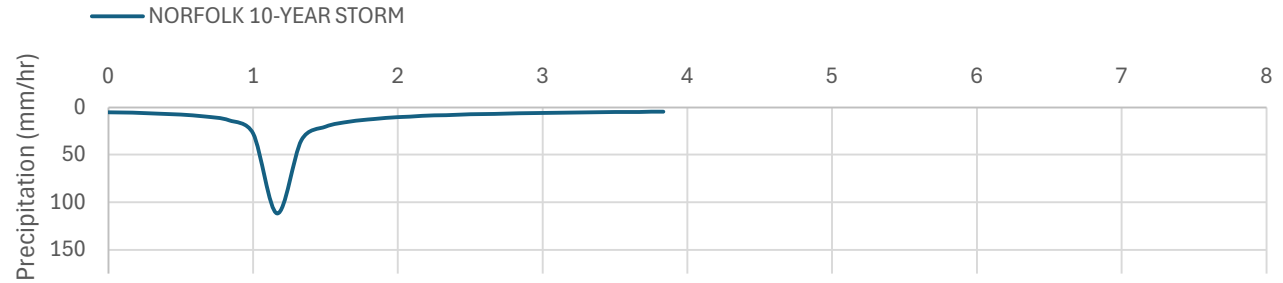
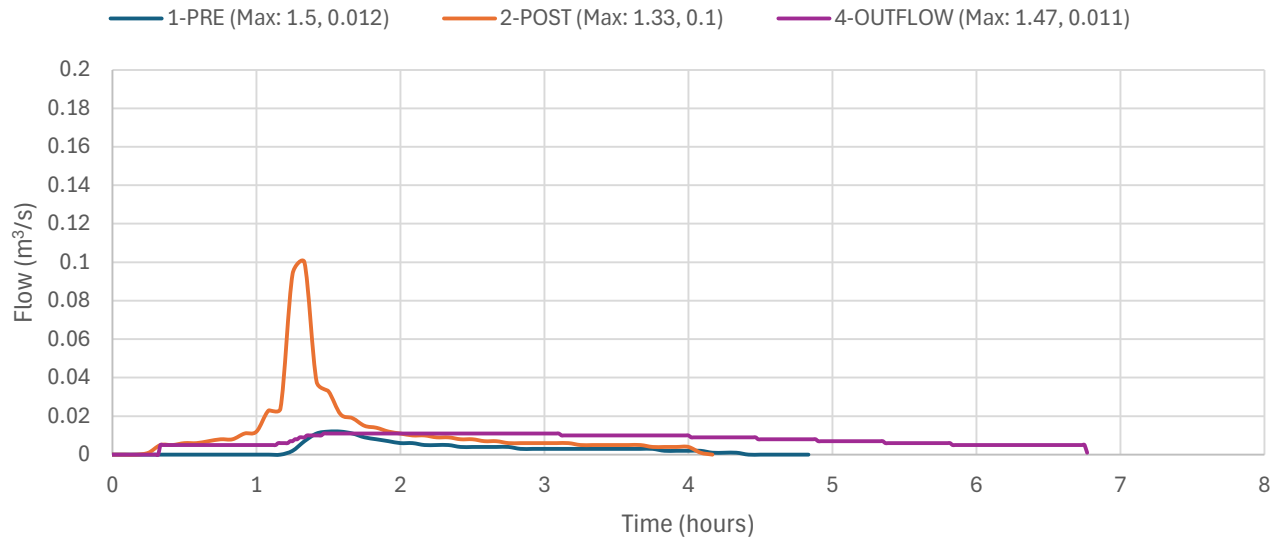
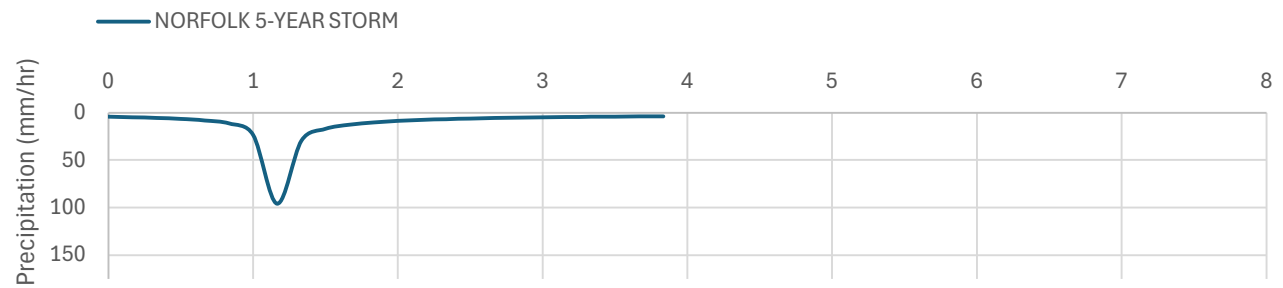
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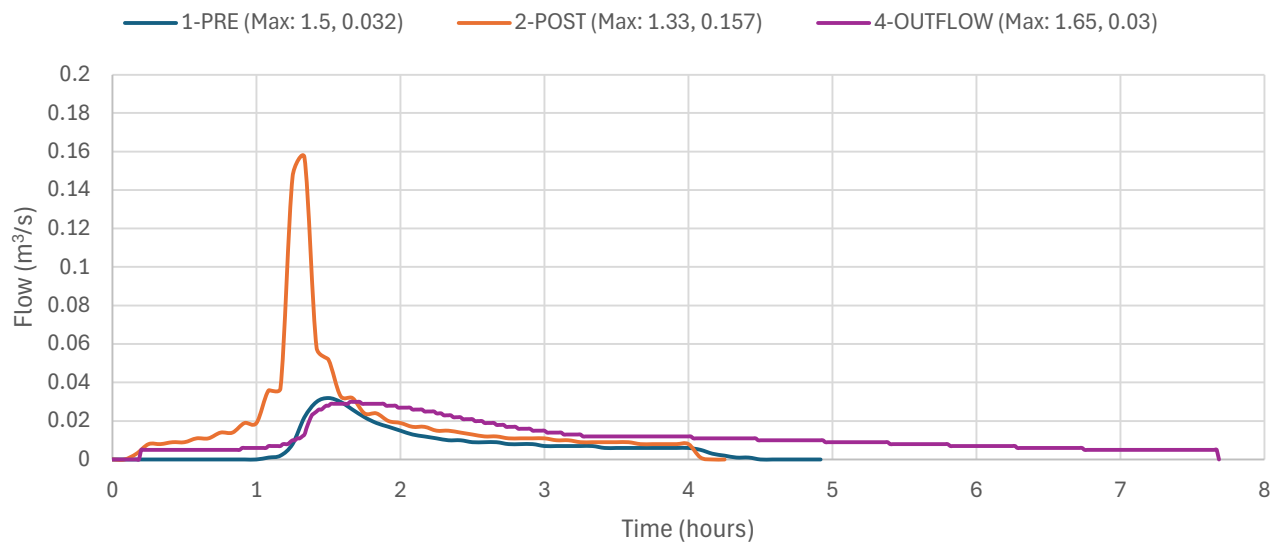
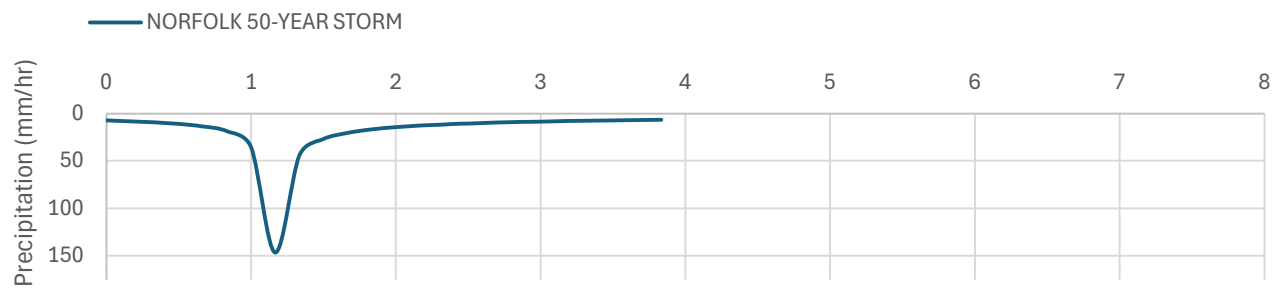
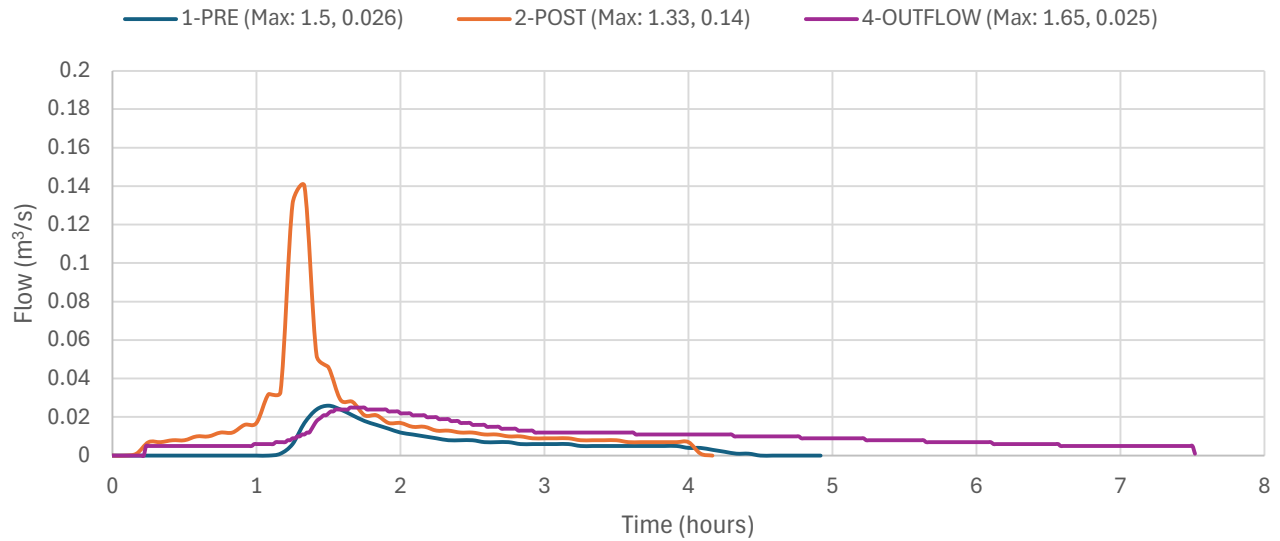
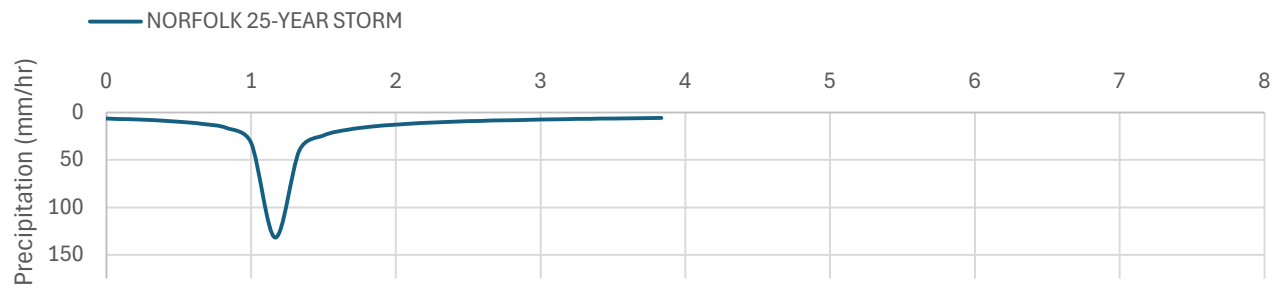
- Results per ETV verified results, independently verified by VerifiGlobal:
<https://www.verifiglobal.com/media/kunibei/verifiglobal-verification-statement-for-stormtech-isolator-row-plus-final-2020-10-27-for-posting.pdf>
- ETV verified treated flowrate = 4.13 GPM/ft² (2.80 L/s/m²)
- Above rates based on 81.2% removal of ETV/NJDEP particle size distribution.

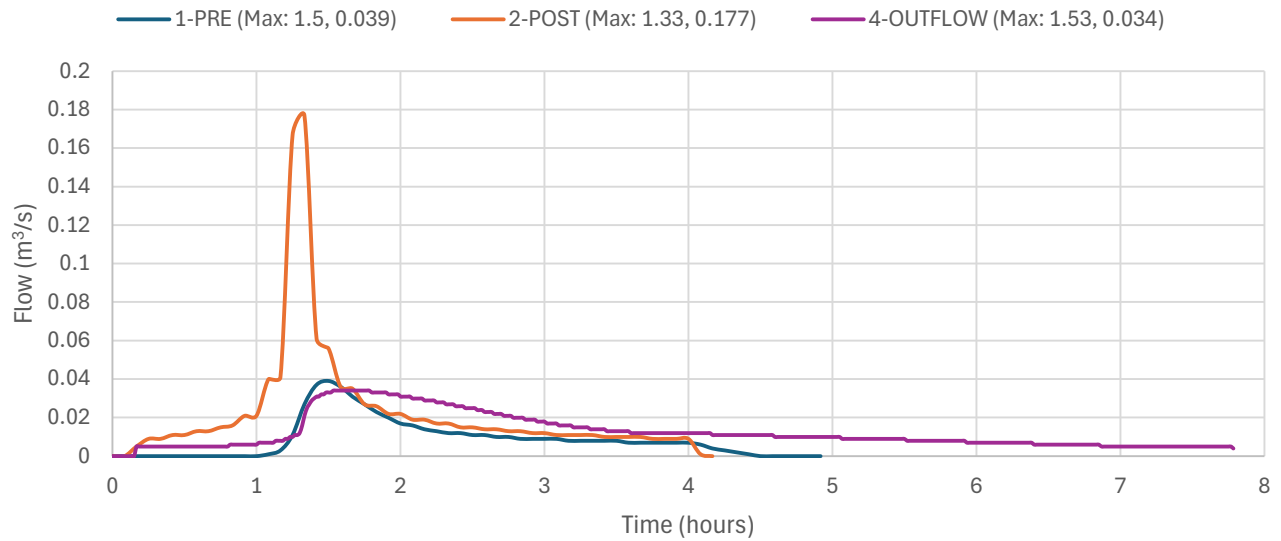
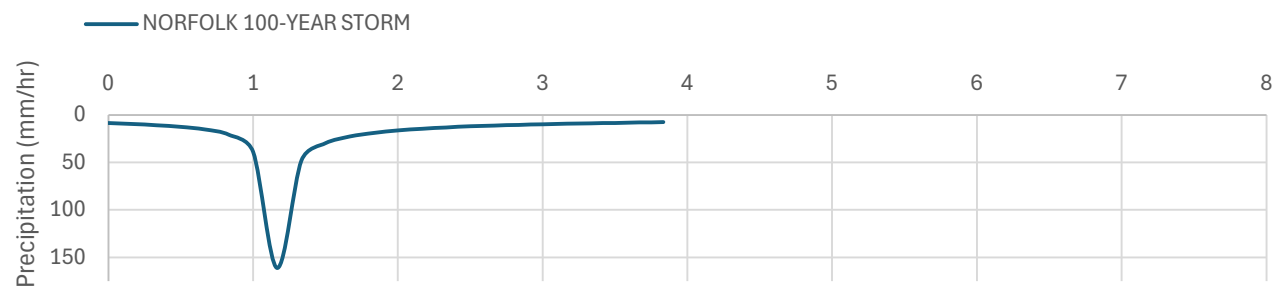
APPENDIX B

Visual OTTHYMO™ Output Summary









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V V I SSSSS U U A L (v 6.2.2017)

V V I SS U U A A L

V V I SS U U AAAAA L

V V I SS U U A A L

W I SSSSS UUUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM

0 0 T T H H Y Y MM MM 0 0

0 0 T T H H Y M M 0 0

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***** D E T A I L E D O U T P U T *****

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DATE: 07/10/2024 TIME: 03:30:27

USER:

COMMENTS: _____

** SIMULATION : 0 Norfolk 2-Year Storm **

CHICAGO STORM

Ptotal= 35.21 mm

IDF curve parameters: A= 529.711

B= 4.501

C= 0.745

APPENDIX B - 5 OF 40

21-083

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs

Storm time step = 10.00 min

Time to peak ratio = 0.33

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.68	1.00	17.69	2.00	5.90	3.00	3.14
0.17	3.04	1.17	72.24	2.17	5.09	3.17	2.94
0.33	3.53	1.33	22.78	2.33	4.50	3.33	2.76
0.50	4.26	1.50	12.62	2.50	4.04	3.50	2.60
0.67	5.49	1.67	8.98	2.67	3.68	3.67	2.47
0.83	8.02	1.83	7.08	2.83	3.39	3.83	2.35

CALIB

NASHYD (0001)

ID= 1 DT= 5.0 min

Area (ha)= 0.46

Ia (mm)= 8.50

U.H. Tp(hrs)= 0.19

Curve Number (CN)= 71.0

of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.68	1.083	17.69	2.083	5.90	3.08	3.14
0.167	2.68	1.167	17.69	2.167	5.90	3.17	3.14
0.250	3.04	1.250	72.24	2.250	5.09	3.25	2.94
0.333	3.04	1.333	72.24	2.333	5.09	3.33	2.94
0.417	3.53	1.417	22.78	2.417	4.50	3.42	2.76
0.500	3.53	1.500	22.78	2.500	4.50	3.50	2.76
0.583	4.26	1.583	12.62	2.583	4.04	3.58	2.60
0.667	4.26	1.667	12.62	2.667	4.04	3.67	2.60
0.750	5.49	1.750	8.98	2.750	3.68	3.75	2.47
0.833	5.49	1.833	8.98	2.833	3.68	3.83	2.47
0.917	8.02	1.917	7.08	2.917	3.39	3.92	2.35
1.000	8.02	2.000	7.08	3.000	3.39	4.00	2.35

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.006 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 5.455

TOTAL RAINFALL (mm)= 35.210

RUNOFF COEFFICIENT = 0.155

APPENDIX B - 6 OF 40

21-083

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

STANDHYD (0002)

ID= 1 DT= 5.0 min

Area (ha)= 0.46

Total Imp(%)= 80.00

Dir. Conn.(%)= 80.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.37 0.09

Dep. Storage (mm)= 1.00 8.50

Average Slope (%)= 1.00 2.00

Length (m)= 55.26 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.68	1.083	17.69	2.083	5.90	3.08	3.14
0.167	2.68	1.167	17.69	2.167	5.90	3.17	3.14
0.250	3.04	1.250	72.24	2.250	5.09	3.25	2.94
0.333	3.04	1.333	72.24	2.333	5.09	3.33	2.94
0.417	3.53	1.417	22.78	2.417	4.50	3.42	2.76
0.500	3.53	1.500	22.78	2.500	4.50	3.50	2.76
0.583	4.26	1.583	12.62	2.583	4.04	3.58	2.60
0.667	4.26	1.667	12.62	2.667	4.04	3.67	2.60
0.750	5.49	1.750	8.98	2.750	3.68	3.75	2.47
0.833	5.49	1.833	8.98	2.833	3.68	3.83	2.47
0.917	8.02	1.917	7.08	2.917	3.39	3.92	2.35
1.000	8.02	2.000	7.08	3.000	3.39	4.00	2.35

Max.Eff.Inten.(mm/hr)= 72.24 7.18

over (min)= 5.00 10.00

Storage Coeff. (min)= 2.04 (ii) 6.65 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.31 0.14

TOTALS

PEAK FLOW (cms)= 0.07 0.00 0.074 (iii)

TIME TO PEAK (hrs)= 1.33 1.42 1.33

RUNOFF VOLUME (mm)= 34.21 5.47 28.46

TOTAL RAINFALL (mm)= 35.21 35.21 35.21

RUNOFF COEFFICIENT = 0.97 0.16 0.81

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 71.0 Ia = Dep. Storage (Above)

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21-083

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHAMBER(0003)

IN= 2--> OUT= 3

DT= 1.0 min

OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF

CHAMBER:

MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH	STORAGE	DEPTH	STORAGE
(mm)	(cu.m.)	(mm)	(cu.m.)
0.00	0.00	1041.40	113.35
25.40	1.63	1066.80	116.19
50.80	3.26	1092.20	119.01
76.20	4.89	1117.60	121.80
101.60	6.52	1143.00	124.57
127.00	8.16	1168.40	127.32
152.40	9.79	1193.80	130.04
177.80	11.42	1219.20	132.73
203.20	13.05	1244.60	135.40
228.60	14.68	1270.00	138.04
254.00	17.91	1295.40	140.64
279.40	21.14	1320.80	143.22
304.80	24.35	1346.20	145.76
330.20	27.56	1371.60	148.27
355.60	30.77	1397.00	150.74
381.00	33.97	1422.40	153.17
406.40	37.16	1447.80	155.55
431.80	40.34	1473.20	157.90
457.20	43.52	1498.60	160.20
482.60	46.69	1524.00	162.44
508.00	49.85	1549.40	164.62
533.40	53.00	1574.80	166.74
558.80	56.14	1600.20	168.78
584.20	59.27	1625.60	170.68
609.60	62.40	1651.00	172.49
635.00	65.51	1676.40	174.25
660.40	68.61	1701.80	175.99
685.80	71.69	1727.20	177.69
711.20	74.77	1752.60	179.34
736.60	77.83	1778.00	180.98
762.00	80.88	1803.40	182.61
787.40	83.91	1828.80	184.24
812.80	86.93	1854.20	185.87
838.20	89.94	1879.60	187.50
863.60	92.93	1905.00	189.13
889.00	95.90	1930.40	190.76
914.40	98.85	1955.80	192.39
939.80	101.79	1981.20	194.02

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965.20	104.71		2006.60	195.66
990.60	107.61		2032.00	197.29
1016.00	110.49		2057.40	198.92

DEPTH (m)	DISCHARGE (cms)	DEPTH (m)	DISCHARGE (cms)
0.170	0.004	1.186	0.024
0.272	0.006	1.288	0.028
0.373	0.007	1.389	0.032
0.475	0.008	1.491	0.034
0.576	0.009	1.592	0.037
0.678	0.010	1.694	0.039
0.780	0.011	1.796	0.042
0.881	0.011	1.897	0.044
0.983	0.012	1.999	0.046
1.084	0.019	2.100	0.048

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW:ID= 2	0.46	0.074	1.33	28.45
OUTFLOW:ID= 1	0.46	0.009	1.85	27.59
OVERFLOW:ID= 3	0.00	0.000	0.00	0.00

Volume Reduction Rate[(RVin-RVout)/RVin](%)= 3.03
Time to reach Max storage (Hr)= 1.85
Volume of water for drawdown in LID (cu.m.)= 27.67
Volume of maximum water storage (cu.m.)= 63.34
Calculated Drawdown Time (Hr)= 1.47

| Junction Command(0006) |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 3(0003)	0.00	0.00	0.00	0.00
OUTFLOW: ID= 2(0006)	0.00	0.00	0.00	0.00

| Junction Command(0004) |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 1(0003)	0.46	0.01	1.85	27.59
OUTFLOW: ID= 2(0004)	0.46	0.01	1.85	27.59

APPENDIX B - 9 OF 40

21-083

used in: INTENSITY = $A / (t + B)^C$

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.20	1.00	23.22	2.00	8.64	3.00	4.87
0.17	4.72	1.17	96.03	2.17	7.56	3.17	4.58
0.33	5.42	1.33	29.33	2.33	6.76	3.33	4.32
0.50	6.44	1.50	17.13	2.50	6.13	3.50	4.10
0.67	8.09	1.67	12.62	2.67	5.63	3.67	3.90
0.83	11.39	1.83	10.19	2.83	5.22	3.83	3.72

CALIB	Area (ha)=	0.46	Curve Number (CN)=	71.0
NASHYD (0001)	Ia (mm)=	8.50	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.19		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.20	1.083	23.22	2.083	8.64	3.08	4.87
0.167	4.20	1.167	23.22	2.167	8.64	3.17	4.87
0.250	4.72	1.250	96.03	2.250	7.56	3.25	4.58
0.333	4.72	1.333	96.03	2.333	7.56	3.33	4.58
0.417	5.42	1.417	29.33	2.417	6.76	3.42	4.32
0.500	5.42	1.500	29.33	2.500	6.76	3.50	4.32
0.583	6.44	1.583	17.13	2.583	6.13	3.58	4.10
0.667	6.44	1.667	17.13	2.667	6.13	3.67	4.10
0.750	8.09	1.750	12.62	2.750	5.63	3.75	3.90
0.833	8.09	1.833	12.62	2.833	5.63	3.83	3.90
0.917	11.39	1.917	10.19	2.917	5.22	3.92	3.72
1.000	11.39	2.000	10.19	3.000	5.22	4.00	3.72

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.012 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 11.360
TOTAL RAINFALL (mm)= 49.033
RUNOFF COEFFICIENT = 0.232

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21-083

=====

V	V	I	SSSS	U	U	A	L	(v 6.2.2017)
V	V	I	SS	U	U	A	A	L
V	V	I	SS	U	U	AAAA	L	
V	V	I	SS	U	U	A	A	L
VV	I	SSSS	UUUU	A	A	LLLL		

000	TTTT	TTTT	H	H	Y	Y	M	M	000	TM	
0	0	T	T	H	H	Y	Y	MM	MM	0	0
0	0	T	T	H	H	Y	Y	M	M	0	0
000	T	T	H	H	Y	Y	M	M	000		

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
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995-37f1-4976-9760-47dc08eea0e3\scen

DATE: 07/10/2024

TIME: 03:30:27

USER:

COMMENTS: _____

** SIMULATION : 1_Norfolk 5-Year Storm **

CHICAGO STORM	IDF curve parameters: A= 583.017
Total= 49.03 mm	B= 3.007
	C= 0.703

APPENDIX B - 10 OF 40

21-083

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	0.46
STANDHYD (0002)	Total Imp(%)=	80.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	80.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.37	0.09
Dep. Storage (mm)=	1.00	8.50
Average Slope (%)=	1.00	2.00
Length (m)=	55.26	40.00
Mannings n	= 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.20	1.083	23.22	2.083	8.64	3.08	4.87
0.167	4.20	1.167	23.22	2.167	8.64	3.17	4.87
0.250	4.72	1.250	96.03	2.250	7.56	3.25	4.58
0.333	4.72	1.333	96.03	2.333	7.56	3.33	4.58
0.417	5.42	1.417	29.33	2.417	6.76	3.42	4.32
0.500	5.42	1.500	29.33	2.500	6.76	3.50	4.32
0.583	6.44	1.583	17.13	2.583	6.13	3.58	4.10
0.667	6.44	1.667	17.13	2.667	6.13	3.67	4.10
0.750	8.09	1.750	12.62	2.750	5.63	3.75	3.90
0.833	8.09	1.833	12.62	2.833	5.63	3.83	3.90
0.917	11.39	1.917	10.19	2.917	5.22	3.92	3.72
1.000	11.39	2.000	10.19	3.000	5.22	4.00	3.72

Max.Eff.Inten.(mm/hr)=	96.03	15.86
over (min)	5.00	10.00
Storage Coeff. (min)=	1.82 (ii)	5.94 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.32	0.15

PEAK FLOW (cms)=	0.10	0.00	*TOTALS*
TIME TO PEAK (hrs)=	1.33	1.42	0.100 (iii)
RUNOFF VOLUME (mm)=	48.03	11.39	40.70
TOTAL RAINFALL (mm)=	49.03	49.03	49.03
RUNOFF COEFFICIENT	= 0.98	0.23	0.83

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)

APPENDIX B - 12 OF 40

21-083

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

965.20	104.71	2006.60	195.66
990.60	107.61	2032.00	197.29
1016.00	110.49	2057.40	198.92

CHAMBER(0003) |
IN= 2--> OUT= 3 |
DT= 1.0 min |
OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF
CHAMBER:
MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH (mm)	STORAGE (cu.m.)	DEPTH (mm)	STORAGE (cu.m.)
0.00	0.00	1041.40	113.35
25.40	1.63	1066.80	116.19
50.80	3.26	1092.20	119.01
76.20	4.89	1117.60	121.80
101.60	6.52	1143.00	124.57
127.00	8.16	1168.40	127.32
152.40	9.79	1193.80	130.04
177.80	11.42	1219.20	132.73
203.20	13.05	1244.60	135.40
228.60	14.68	1270.00	138.04
254.00	17.91	1295.40	140.64
279.40	21.14	1320.80	143.22
304.80	24.35	1346.20	145.76
330.20	27.56	1371.60	148.27
355.60	30.77	1397.00	150.74
381.00	33.97	1422.40	153.17
406.40	37.16	1447.80	155.55
431.80	40.34	1473.20	157.90
457.20	43.52	1498.60	160.20
482.60	46.69	1524.00	162.44
508.00	49.85	1549.40	164.62
533.40	53.00	1574.80	166.74
558.80	56.14	1600.20	168.78
584.20	59.27	1625.60	170.68
609.60	62.40	1651.00	172.49
635.00	65.51	1676.40	174.25
660.40	68.61	1701.80	175.99
685.80	71.69	1727.20	177.69
711.20	74.77	1752.60	179.34
736.60	77.83	1778.00	180.98
762.00	80.88	1803.40	182.61
787.40	83.91	1828.80	184.24
812.80	86.93	1854.20	185.87
838.20	89.94	1879.60	187.50
863.60	92.93	1905.00	189.13
889.00	95.90	1930.40	190.76
914.40	98.85	1955.80	192.39
939.80	101.79	1981.20	194.02

DEPTH (m)	DISCHARGE (cms)	DEPTH (m)	DISCHARGE (cms)
0.170	0.004	1.186	0.024
0.272	0.006	1.288	0.028
0.373	0.007	1.389	0.032
0.475	0.008	1.491	0.034
0.576	0.009	1.592	0.037
0.678	0.010	1.694	0.039
0.780	0.011	1.796	0.042
0.881	0.011	1.897	0.044
0.983	0.012	1.999	0.046
1.084	0.019	2.100	0.048

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW:ID= 2 0.46 0.100 1.33 40.69
OUTFLOW:ID= 1 0.46 0.011 2.00 40.50
OVERFLOW:ID= 3 0.00 0.000 0.00 0.00
Volume Reduction Rate[(Rvin-Rvout)/Rvin](%)= 0.47
Time to reach Max storage (Hr)= 2.00
Volume of water for drawdown in LID (cu.m.)= 58.58
Volume of maximum water storage (cu.m.)= 94.36
Calculated Drawdown Time (Hr)= 2.57

Junction Command(0006) |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 3(0003)	0.00	0.00	0.00	0.00
OUTFLOW: ID= 2(0006)	0.00	0.00	0.00	0.00

Junction Command(0004) |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 1(0003)	0.46	0.01	2.00	40.50
OUTFLOW: ID= 2(0004)	0.46	0.01	2.00	40.50

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FINISH

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V V I SSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

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***** D E T A I L E D O U T P U T *****

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0b5-cf3f-42f1-8895-0631866b0c25\scen

DATE: 07/10/2024

TIME: 03:30:27

USER:

COMMENTS: _____

** SIMULATION : 2_Norfolk 10-Year Storm **

CHICAGO STORM
Ptotal= 57.94 mm

IDF curve parameters: A= 670.324
B= 3.007
C= 0.698
used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	5.04	1.00	27.43	2.00	10.30	3.00	5.84
0.17	5.66	1.17	111.84	2.17	9.03	3.17	5.49
0.33	6.49	1.33	34.58	2.33	8.07	3.33	5.18
0.50	7.70	1.50	20.31	2.50	7.33	3.50	4.92
0.67	9.66	1.67	15.00	2.67	6.74	3.67	4.68
0.83	13.55	1.83	12.13	2.83	6.25	3.83	4.47

CALIB
NASHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.46 Curve Number (CN)= 71.0
Ia (mm)= 8.50 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.04	1.083	27.43	2.083	10.30	3.08	5.84
0.167	5.04	1.167	27.43	2.167	10.30	3.17	5.84
0.250	5.66	1.250	111.84	2.250	9.03	3.25	5.49
0.333	5.66	1.333	111.84	2.333	9.03	3.33	5.49
0.417	6.49	1.417	34.58	2.417	8.07	3.42	5.18
0.500	6.49	1.500	34.58	2.500	8.07	3.50	5.18
0.583	7.70	1.583	20.31	2.583	7.33	3.58	4.92
0.667	7.70	1.667	20.31	2.667	7.33	3.67	4.92
0.750	9.66	1.750	15.00	2.750	6.74	3.75	4.68
0.833	9.66	1.833	15.00	2.833	6.74	3.83	4.68
0.917	13.55	1.917	12.13	2.917	6.25	3.92	4.47
1.000	13.55	2.000	12.13	3.000	6.25	4.00	4.47

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.018 (i)

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21-083

APPENDIX B - 16 OF 40

21-083

TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 15.921
TOTAL RAINFALL (mm)= 57.945
RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 0.46
Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.37 0.09
Dep. Storage (mm)= 1.00 8.50
Average Slope (%)= 1.00 2.00
Length (m)= 55.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 5.04 1.083 27.43 2.083 10.30 3.08 5.84
0.167 5.04 1.167 27.43 2.167 10.30 3.17 5.84
0.250 5.66 1.250 111.84 2.250 9.03 3.25 5.49
0.333 5.66 1.333 111.84 2.333 9.03 3.33 5.49
0.417 6.49 1.417 34.58 2.417 8.07 3.42 5.18
0.500 6.49 1.500 34.58 2.500 8.07 3.50 5.18
0.583 7.70 1.583 20.31 2.583 7.33 3.58 4.92
0.667 7.70 1.667 20.31 2.667 7.33 3.67 4.92
0.750 9.66 1.750 15.00 2.750 6.74 3.75 4.68
0.833 9.66 1.833 15.00 2.833 6.74 3.83 4.68
0.917 13.55 1.917 12.13 2.917 6.25 3.92 4.47
1.000 13.55 2.000 12.13 3.000 6.25 4.00 4.47

Max.Eff.Inten.(mm/hr)= 111.84 23.57
over (min) 5.00 10.00
Storage Coeff. (min)= 1.71 (ii) 5.59 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.16

PEAK FLOW (cms)= 0.11 0.01 *TOTALS*
TIME TO PEAK (hrs)= 1.33 1.42 0.117 (iii)
RUNOFF VOLUME (mm)= 56.94 15.96 48.74
TOTAL RAINFALL (mm)= 57.94 57.94 57.94
RUNOFF COEFFICIENT = 0.98 0.28 0.84

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838.20 89.94 1879.60 187.50
863.60 92.93 1905.00 189.13
889.00 95.90 1930.40 190.76
914.40 98.85 1955.80 192.39
939.80 101.79 1981.20 194.02
965.20 104.71 2006.60 195.66
990.60 107.61 2032.00 197.29
1016.00 110.49 2057.40 198.92

DEPTH DISCHARGE DEPTH DISCHARGE
(m) (cms) (m) (cms)
0.170 0.004 1.186 0.024
0.272 0.006 1.288 0.028
0.373 0.007 1.389 0.032
0.475 0.008 1.491 0.034
0.576 0.009 1.592 0.037
0.678 0.010 1.694 0.039
0.780 0.011 1.796 0.042
0.881 0.011 1.897 0.044
0.983 0.012 1.999 0.046
1.084 0.019 2.100 0.048

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW:ID= 2 0.46 0.117 1.33 48.73
OUTFLOW:ID= 1 0.46 0.016 1.85 48.48
OVERFLOW:ID= 3 0.00 0.000 0.00 0.00

Volume Reduction Rate[(RVin-RVout)/RVin](%)= 0.52
Time to reach Max storage (Hr)= 1.85
Volume of water for drawdown in LID (cu.m.)= 75.05
Volume of maximum water storage (cu.m.)= 112.75
Calculated Drawdown Time (Hr)= 3.03

Junction Command(0006)

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 3(0003) 0.00 0.00 0.00 0.00
OUTFLOW: ID= 2(0006) 0.00 0.00 0.00 0.00

Junction Command(0004)

AREA QPEAK TPEAK R.V.

APPENDIX B - 19 OF 40

21-083

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHAMBER(0003)
IN= 2-> OUT= 3
DT= 1.0 min

OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF
CHAMBER:
MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH STORAGE DEPTH STORAGE
(mm) (cu.m.) (mm) (cu.m.)
0.00 0.00 1041.40 113.35
25.40 1.63 1066.80 116.19
50.80 3.26 1092.20 119.01
76.20 4.89 1117.60 121.80
101.60 6.52 1143.00 124.57
127.00 8.16 1168.40 127.32
152.40 9.79 1193.80 130.04
177.80 11.42 1219.20 132.73
203.20 13.05 1244.60 135.40
228.60 14.68 1270.00 138.04
254.00 17.91 1295.40 140.64
279.40 21.14 1320.80 143.22
304.80 24.35 1346.20 145.76
330.20 27.56 1371.60 148.27
355.60 30.77 1397.00 150.74
381.00 33.97 1422.40 153.17
406.40 37.16 1447.80 155.55
431.80 40.34 1473.20 157.90
457.20 43.52 1498.60 160.20
482.60 46.69 1524.00 162.44
508.00 49.85 1549.40 164.62
533.40 53.00 1574.80 166.74
558.80 56.14 1600.20 168.78
584.20 59.27 1625.60 170.68
609.60 62.40 1651.00 172.49
635.00 65.51 1676.40 174.25
660.40 68.61 1701.80 175.99
685.80 71.69 1727.20 177.69
711.20 74.77 1752.60 179.34
736.60 77.83 1778.00 180.98
762.00 80.88 1803.40 182.61
787.40 83.91 1828.80 184.24
812.80 86.93 1854.20 185.87

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(ha) (cms) (hrs) (mm)
INFLOW : ID= 1(0003) 0.46 0.02 1.85 48.48
OUTFLOW: ID= 2(0004) 0.46 0.02 1.85 48.48

V V I SSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

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***** D E T A I L E D O U T P U T *****

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15a-be04-42a4-b263-0804573e9517\scen

DATE: 07/10/2024

TIME: 03:30:27

USER:

COMMENTS:

** SIMULATION : 3_Norfolk 25-Year Storm **

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21-083

CHICAGO STORM
Ptotal= 69.38 mm

IDF curve parameters: A= 721.533
B= 2.253
C= 0.679

used in: INTENSITY = $A / (t + B)^C$

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	6.34	1.00	31.84	2.00	12.58	3.00	7.30
0.17	7.08	1.17	131.63	2.17	11.08	3.17	6.87
0.33	8.07	1.33	39.74	2.33	9.96	3.33	6.50
0.50	9.51	1.50	23.97	2.50	9.08	3.50	6.18
0.67	11.82	1.67	17.98	2.67	8.38	3.67	5.90
0.83	16.33	1.83	14.70	2.83	7.79	3.83	5.64

CALIB
NASHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.46
Ia (mm)= 8.50
U.H. Tp(hrs)= 0.19
Curve Number (CN)= 71.0
of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.34	1.083	31.84	2.083	12.58	3.08	7.30
0.167	6.34	1.167	31.84	2.167	12.58	3.17	7.30
0.250	7.08	1.250	131.63	2.250	11.08	3.25	6.87
0.333	7.08	1.333	131.63	2.333	11.08	3.33	6.87
0.417	8.07	1.417	39.74	2.417	9.96	3.42	6.50
0.500	8.07	1.500	39.74	2.500	9.96	3.50	6.50
0.583	9.51	1.583	23.97	2.583	9.08	3.58	6.18
0.667	9.51	1.667	23.97	2.667	9.08	3.67	6.18
0.750	11.82	1.750	17.98	2.750	8.38	3.75	5.90
0.833	11.82	1.833	17.98	2.833	8.38	3.83	5.90
0.917	16.33	1.917	14.70	2.917	7.79	3.92	5.64
1.000	16.33	2.000	14.70	3.000	7.79	4.00	5.64

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.026 (i)

TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 22.460
TOTAL RAINFALL (mm)= 69.379
RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 0.46
Total Imp(%)= 80.00
Dir. Conn.(%)= 80.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.37 0.09
Dep. Storage (mm)= 1.00 8.50
Average Slope (%)= 1.00 2.00
Length (m)= 55.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.34	1.083	31.84	2.083	12.58	3.08	7.30
0.167	6.34	1.167	31.84	2.167	12.58	3.17	7.30
0.250	7.08	1.250	131.63	2.250	11.08	3.25	6.87
0.333	7.08	1.333	131.63	2.333	11.08	3.33	6.87
0.417	8.07	1.417	39.74	2.417	9.96	3.42	6.50
0.500	8.07	1.500	39.74	2.500	9.96	3.50	6.50
0.583	9.51	1.583	23.97	2.583	9.08	3.58	6.18
0.667	9.51	1.667	23.97	2.667	9.08	3.67	6.18
0.750	11.82	1.750	17.98	2.750	8.38	3.75	5.90
0.833	11.82	1.833	17.98	2.833	8.38	3.83	5.90
0.917	16.33	1.917	14.70	2.917	7.79	3.92	5.64
1.000	16.33	2.000	14.70	3.000	7.79	4.00	5.64

Max.Eff.Inten.(mm/hr)= 131.63 34.67
over (min)= 5.00 10.00
Storage Coeff. (min)= 1.60 (ii) 5.24 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.16

TOTALS
PEAK FLOW (cms)= 0.13 0.01 0.140 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 68.38 22.51 59.20
TOTAL RAINFALL (mm)= 69.38 69.38 69.38
RUNOFF COEFFICIENT = 0.99 0.32 0.85

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APPENDIX B - 22 OF 40

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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHAMBER(0003)
IN= 2--> OUT= 3
DT= 1.0 min

OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF
CHAMBER:
MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH (mm)	STORAGE (cu.m.)	DEPTH (mm)	STORAGE (cu.m.)
0.00	0.00	1041.40	113.35
25.40	1.63	1066.80	116.19
50.80	3.26	1092.20	119.01
76.20	4.89	1117.60	121.80
101.60	6.52	1143.00	124.57
127.00	8.16	1168.40	127.32
152.40	9.79	1193.80	130.04
177.80	11.42	1219.20	132.73
203.20	13.05	1244.60	135.40
228.60	14.68	1270.00	138.04
254.00	17.91	1295.40	140.64
279.40	21.14	1320.80	143.22
304.80	24.35	1346.20	145.76
330.20	27.56	1371.60	148.27
355.60	30.77	1397.00	150.74
381.00	33.97	1422.40	153.17
406.40	37.16	1447.80	155.55
431.80	40.34	1473.20	157.90
457.20	43.52	1498.60	160.20
482.60	46.69	1524.00	162.44
508.00	49.85	1549.40	164.62
533.40	53.00	1574.80	166.74
558.80	56.14	1600.20	168.78
584.20	59.27	1625.60	170.68
609.60	62.40	1651.00	172.49
635.00	65.51	1676.40	174.25
660.40	68.61	1701.80	175.99
685.80	71.69	1727.20	177.69
711.20	74.77	1752.60	179.34
736.60	77.83	1778.00	180.98
762.00	80.88	1803.40	182.61
787.40	83.91	1828.80	184.24
812.80	86.93	1854.20	185.87

838.20	89.94	1879.60	187.50
863.60	92.93	1905.00	189.13
889.00	95.90	1930.40	190.76
914.40	98.85	1955.80	192.39
939.80	101.79	1981.20	194.02
965.20	104.71	2006.60	195.66
990.60	107.61	2032.00	197.29
1016.00	110.49	2057.40	198.92

DEPTH (m)	DISCHARGE (cms)	DEPTH (m)	DISCHARGE (cms)
0.170	0.004	1.186	0.024
0.272	0.006	1.288	0.028
0.373	0.007	1.389	0.032
0.475	0.008	1.491	0.034
0.576	0.009	1.592	0.037
0.678	0.010	1.694	0.039
0.780	0.011	1.796	0.042
0.881	0.011	1.897	0.044
0.983	0.012	1.999	0.046
1.084	0.019	2.100	0.048

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW:ID= 2 0.46 0.140 1.33 59.19
OUTFLOW:ID= 1 0.46 0.025 1.70 59.04
OVERFLOW:ID= 3 0.00 0.000 0.00 0.00

Volume Reduction Rate[(Rvin-Rvout)/Rvin](%)= 0.25
Time to reach Max storage (Hr)= 1.70
Volume of water for drawdown in LID (cu.m.)= 85.51
Volume of maximum water storage (cu.m.)= 128.48
Calculated Drawdown Time (Hr)= 3.32

Junction Command(0006)

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 3(0003) 0.00 0.00 0.00 0.00
OUTFLOW: ID= 2(0006) 0.00 0.00 0.00 0.00

Junction Command(0004)

AREA QPEAK TPEAK R.V.

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APPENDIX B - 24 OF 40

21-083

INFLOW : ID= 1(0003) 0.46 0.02 1.70 59.04
OUTFLOW: ID= 2(0004) 0.46 0.02 1.70 59.04

CHICAGO STORM
Ptotal= 78.32 mm

IDF curve parameters: A= 766.038
B= 1.898
C= 0.668
used in: INTENSITY = $A / (t + B)^C$

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

V V I SSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

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***** D E T A I L E D O U T P U T *****

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01e-507e-4b26-87d0-d6969de58324\scen

DATE: 07/10/2024 TIME: 03:30:27

USER:

COMMENTS: _____

** SIMULATION : 4_Norfolk 50-Year Storm **

APPENDIX B - 25 OF 40

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TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 28.020
TOTAL RAINFALL (mm)= 78.320
RUNOFF COEFFICIENT = 0.358

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min
Area (ha)= 0.46
Total Imp(%)= 80.00
Dir. Conn.(%)= 80.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.37 0.09
Dep. Storage (mm)= 1.00 8.50
Average Slope (%)= 1.00 2.00
Length (m)= 55.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 7.35 1.083 35.40 2.083 14.38 3.08 8.44
0.167 7.35 1.167 35.40 2.167 14.38 3.17 8.44
0.250 8.19 1.250 146.50 2.250 12.71 3.25 7.96
0.333 8.19 1.333 146.50 2.333 12.71 3.33 7.96
0.417 9.32 1.417 43.93 2.417 11.45 3.42 7.55
0.500 9.32 1.500 43.93 2.500 11.45 3.50 7.55
0.583 10.95 1.583 26.91 2.583 10.46 3.58 7.18
0.667 10.95 1.667 26.91 2.667 10.46 3.67 7.18
0.750 13.53 1.750 20.36 2.750 9.66 3.75 6.85
0.833 13.53 1.833 20.36 2.833 9.66 3.83 6.85
0.917 18.53 1.917 16.73 2.917 9.00 3.92 6.56
1.000 18.53 2.000 16.73 3.000 9.00 4.00 6.56

Max.Eff.Inten.(mm/hr)= 146.50 44.06
over (min) 5.00 10.00
Storage Coeff. (min)= 1.54 (ii) 5.02 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.33 0.16

TOTALS
PEAK FLOW (cms)= 0.15 0.01 0.157 (iii)
TIME TO PEAK (hrs)= 1.33 1.42
RUNOFF VOLUME (mm)= 77.32 28.09 67.47
TOTAL RAINFALL (mm)= 78.32 78.32
RUNOFF COEFFICIENT = 0.99 0.36 0.86

CALIB
NASHYD (0001)
ID= 1 DT= 5.0 min
Area (ha)= 0.46
Ia (mm)= 8.50
U.H. Tp(hrs)= 0.19
Curve Number (CN)= 71.0
of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 7.35 1.083 35.40 2.083 14.38 3.08 8.44
0.167 7.35 1.167 35.40 2.167 14.38 3.17 8.44
0.250 8.19 1.250 146.50 2.250 12.71 3.25 7.96
0.333 8.19 1.333 146.50 2.333 12.71 3.33 7.96
0.417 9.32 1.417 43.93 2.417 11.45 3.42 7.55
0.500 9.32 1.500 43.93 2.500 11.45 3.50 7.55
0.583 10.95 1.583 26.91 2.583 10.46 3.58 7.18
0.667 10.95 1.667 26.91 2.667 10.46 3.67 7.18
0.750 13.53 1.750 20.36 2.750 9.66 3.75 6.85
0.833 13.53 1.833 20.36 2.833 9.66 3.83 6.85
0.917 18.53 1.917 16.73 2.917 9.00 3.92 6.56
1.000 18.53 2.000 16.73 3.000 9.00 4.00 6.56

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.032 (i)

APPENDIX B - 26 OF 40

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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHAMBER(0003)
IN= 2- -> OUT= 3
DT= 1.0 min
OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF
CHAMBER:
MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH STORAGE DEPTH STORAGE
(mm) (cu.m.) (mm) (cu.m.)
0.00 0.00 1041.40 113.35
25.40 1.63 1066.80 116.19
50.80 3.26 1092.20 119.01
76.20 4.89 1117.60 121.80
101.60 6.52 1143.00 124.57
127.00 8.16 1168.40 127.32
152.40 9.79 1193.80 130.04
177.80 11.42 1219.20 132.73
203.20 13.05 1244.60 135.40
228.60 14.68 1270.00 138.04
254.00 17.91 1295.40 140.64
279.40 21.14 1320.80 143.22
304.80 24.35 1346.20 145.76
330.20 27.56 1371.60 148.27
355.60 30.77 1397.00 150.74
381.00 33.97 1422.40 153.17
406.40 37.16 1447.80 155.55
431.80 40.34 1473.20 157.90
457.20 43.52 1498.60 160.20
482.60 46.69 1524.00 162.44
508.00 49.85 1549.40 164.62
533.40 53.00 1574.80 166.74
558.80 56.14 1600.20 168.78
584.20 59.27 1625.60 170.68
609.60 62.40 1651.00 172.49
635.00 65.51 1676.40 174.25
660.40 68.61 1701.80 175.99
685.80 71.69 1727.20 177.69
711.20 74.77 1752.60 179.34
736.60 77.83 1778.00 180.98
762.00 80.88 1803.40 182.61
787.40 83.91 1828.80 184.24
812.80 86.93 1854.20 185.87

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838.20	89.94	1879.60	187.50
863.60	92.93	1905.00	189.13
889.00	95.90	1930.40	190.76
914.40	98.85	1955.80	192.39
939.80	101.79	1981.20	194.02
965.20	104.71	2006.60	195.66
990.60	107.61	2032.00	197.29
1016.00	110.49	2057.40	198.92

DEPTH (m)	DISCHARGE (cms)	DEPTH (m)	DISCHARGE (cms)
0.170	0.004	1.186	0.024
0.272	0.006	1.288	0.028
0.373	0.007	1.389	0.032
0.475	0.008	1.491	0.034
0.576	0.009	1.592	0.037
0.678	0.010	1.694	0.039
0.780	0.011	1.796	0.042
0.881	0.011	1.897	0.044
0.983	0.012	1.999	0.046
1.084	0.019	2.100	0.048

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW:ID= 2	0.46	0.157	1.33	67.47
OUTFLOW:ID= 1	0.46	0.030	1.68	67.31
OVERFLOW:ID= 3	0.00	0.000	0.00	0.00

Volume Reduction Rate[(RVin-RVout)/RVin](%)= 0.23
Time to reach Max storage (Hr)= 1.68
Volume of water for drawdown in LID (cu.m.)= 88.60
Volume of maximum water storage (cu.m.)= 142.18
Calculated Drawdown Time (Hr)= 3.40

Junction Command(0006)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 3(0003)	0.00	0.00	0.00	0.00
OUTFLOW: ID= 2(0006)	0.00	0.00	0.00	0.00

Junction Command(0004)

AREA QPEAK TPEAK R.V.

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APPENDIX B - 30 OF 40

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CHICAGO STORM
Total= 87.09 mm

IDF curve parameters: A= 801.041
B= 1.501
C= 0.657
used in: INTENSITY = A / (t + B)^C
Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	8.40	1.00	38.70	2.00	16.17	3.00	9.61
0.17	9.34	1.17	160.97	2.17	14.33	3.17	9.08
0.33	10.59	1.33	47.72	2.33	12.95	3.33	8.61
0.50	12.39	1.50	29.71	2.50	11.86	3.50	8.20
0.67	15.24	1.67	22.67	2.67	10.97	3.67	7.84
0.83	20.69	1.83	18.74	2.83	10.24	3.83	7.51

CALIB
NASHYD (0001)
ID= 1 DT= 5.0 min

Area (ha)= 0.46
Ia (mm)= 8.50
U.H. Tp(hrs)= 0.19
Curve Number (CN)= 71.0
of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	8.40	1.083	38.70	2.083	16.17	3.08	9.61
0.167	8.40	1.167	38.70	2.167	16.17	3.17	9.61
0.250	9.34	1.250	160.97	2.250	14.33	3.25	9.08
0.333	9.34	1.333	160.97	2.333	14.33	3.33	9.08
0.417	10.59	1.417	47.72	2.417	12.95	3.42	8.61
0.500	10.59	1.500	47.72	2.500	12.95	3.50	8.61
0.583	12.39	1.583	29.71	2.583	11.86	3.58	8.20
0.667	12.39	1.667	29.71	2.667	11.86	3.67	8.20
0.750	15.24	1.750	22.67	2.750	10.97	3.75	7.84
0.833	15.24	1.833	22.67	2.833	10.97	3.83	7.84
0.917	20.69	1.917	18.74	2.917	10.24	3.92	7.51
1.000	20.69	2.000	18.74	3.000	10.24	4.00	7.51

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.039 (i)

INFLOW : ID= 1(0003) 0.46 0.03 1.68 67.31
OUTFLOW: ID= 2(0004) 0.46 0.03 1.68 67.31

V V I SSSSS U U A L (v 6.2.2017)
V V I SS U U A A L
V V I SS U U A A L
VV I SSSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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***** D E T A I L E D O U T P U T *****

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eed-a449-4594-b15e-8618f63d0b67\scen

DATE: 07/10/2024 TIME: 03:30:27

USER:

COMMENTS:

** SIMULATION : 5_Norfolk 100-Year Storm **

TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 33.793
TOTAL RAINFALL (mm)= 87.089
RUNOFF COEFFICIENT = 0.388

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min
Area (ha)= 0.46
Total Imp(%)= 80.00
Dir. Conn.(%)= 80.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.37 0.09
Dep. Storage (mm)= 1.00 8.50
Average Slope (%)= 1.00 2.00
Length (m)= 55.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	8.40	1.083	38.70	2.083	16.17	3.08	9.61
0.167	8.40	1.167	38.70	2.167	16.17	3.17	9.61
0.250	9.34	1.250	160.97	2.250	14.33	3.25	9.08
0.333	9.34	1.333	160.97	2.333	14.33	3.33	9.08
0.417	10.59	1.417	47.72	2.417	12.95	3.42	8.61
0.500	10.59	1.500	47.72	2.500	12.95	3.50	8.61
0.583	12.39	1.583	29.71	2.583	11.86	3.58	8.20
0.667	12.39	1.667	29.71	2.667	11.86	3.67	8.20
0.750	15.24	1.750	22.67	2.750	10.97	3.75	7.84
0.833	15.24	1.833	22.67	2.833	10.97	3.83	7.84
0.917	20.69	1.917	18.74	2.917	10.24	3.92	7.51
1.000	20.69	2.000	18.74	3.000	10.24	4.00	7.51

Max.Eff.Inten.(mm/hr)= 160.97 53.85
over (min)= 5.00 5.00
Storage Coeff. (min)= 1.48 (ii) 4.83 (ii)
Unit Hyd. Tpeak (min)= 5.00 5.00
Unit Hyd. peak (cms)= 0.33 0.22

TOTALS
PEAK FLOW (cms)= 0.16 0.01 0.177 (iii)
TIME TO PEAK (hrs)= 1.33 1.33 1.33
RUNOFF VOLUME (mm)= 86.09 33.87 75.64
TOTAL RAINFALL (mm)= 87.09 87.09 87.09
RUNOFF COEFFICIENT = 0.99 0.39 0.87

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APPENDIX B - 32 OF 40

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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

838.20	89.94	1879.60	187.50
863.60	92.93	1905.00	189.13
889.00	95.90	1930.40	190.76
914.40	98.85	1955.80	192.39
939.80	101.79	1981.20	194.02
965.20	104.71	2006.60	195.66
990.60	107.61	2032.00	197.29
1016.00	110.49	2057.40	198.92

CHAMBER(0003)
IN= 2--> OUT= 3
DT= 1.0 min
OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF
CHAMBER:
MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH (mm)	STORAGE (cu.m.)	DEPTH (mm)	STORAGE (cu.m.)
0.00	0.00	1041.40	113.35
25.40	1.63	1066.80	116.19
50.80	3.26	1092.20	119.01
76.20	4.89	1117.60	121.80
101.60	6.52	1143.00	124.57
127.00	8.16	1168.40	127.32
152.40	9.79	1193.80	130.04
177.80	11.42	1219.20	132.73
203.20	13.05	1244.60	135.40
228.60	14.68	1270.00	138.04
254.00	17.91	1295.40	140.64
279.40	21.14	1320.80	143.22
304.80	24.35	1346.20	145.76
330.20	27.56	1371.60	148.27
355.60	30.77	1397.00	150.74
381.00	33.97	1422.40	153.17
406.40	37.16	1447.80	155.55
431.80	40.34	1473.20	157.90
457.20	43.52	1498.60	160.20
482.60	46.69	1524.00	162.44
508.00	49.85	1549.40	164.62
533.40	53.00	1574.80	166.74
558.80	56.14	1600.20	168.78
584.20	59.27	1625.60	170.68
609.60	62.40	1651.00	172.49
635.00	65.51	1676.40	174.25
660.40	68.61	1701.80	175.99
685.80	71.69	1727.20	177.69
711.20	74.77	1752.60	179.34
736.60	77.83	1778.00	180.98
762.00	80.88	1803.40	182.61
787.40	83.91	1828.80	184.24
812.80	86.93	1854.20	185.87

DEPTH (m)	DISCHARGE (cms)	DEPTH (m)	DISCHARGE (cms)
0.170	0.004	1.186	0.024
0.272	0.006	1.288	0.028
0.373	0.007	1.389	0.032
0.475	0.008	1.491	0.034
0.576	0.009	1.592	0.037
0.678	0.010	1.694	0.039
0.780	0.011	1.796	0.042
0.881	0.011	1.897	0.044
0.983	0.012	1.999	0.046
1.084	0.019	2.100	0.048

INFLOW:ID= 2	0.46	0.177	1.33	75.64
OUTFLOW:ID= 1	0.46	0.034	1.67	75.51
OVERFLOW:ID= 3	0.00	0.000	0.00	0.00

Volume Reduction Rate[(RVin-RVout)/RVin](%)= 0.16
Time to reach Max storage (Hr)= 1.67
Volume of water for drawdown in LID (cu.m.)= 96.53
Volume of maximum water storage (cu.m.)= 156.66
Calculated Drawdown Time (Hr)= 3.58

Junction Command(0006) |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 3(0003)	0.00	0.00	0.00	0.00
OUTFLOW: ID= 2(0006)	0.00	0.00	0.00	0.00

Junction Command(0004) |

AREA QPEAK TPEAK R.V.

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	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 1(0003)	0.46	0.03	1.67	75.51
OUTFLOW: ID= 2(0004)	0.46	0.03	1.67	75.51

CHICAGO STORM
Ptotal= 25.04 mm

IDF curve parameters: A= 538.850
B= 6.331
C= 0.809
used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.53	1.00	13.51	2.00	3.79	3.00	1.83
0.17	1.76	1.17	56.25	2.17	3.19	3.17	1.70
0.33	2.09	1.33	17.85	2.33	2.77	3.33	1.58
0.50	2.60	1.50	9.19	2.50	2.45	3.50	1.48
0.67	3.49	1.67	6.19	2.67	2.20	3.67	1.39
0.83	5.43	1.83	4.69	2.83	2.00	3.83	1.32

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\Cameron\AppData\Local\Civica\XH5\4cc1c527-7ec9-41a8-b869-858929bdcace\9f0db
aca-9ff3-485c-8a23-8359975342b5\scen
Summary filename:
C:\Users\Cameron\AppData\Local\Civica\XH5\4cc1c527-7ec9-41a8-b869-858929bdcace\9f0db
aca-9ff3-485c-8a23-8359975342b5\scen

DATE: 07/10/2024

TIME: 03:30:27

USER:

COMMENTS: _____

** SIMULATION : 6_London 25mm Storm **

CALIB
NASHYD (0001)
ID= 1 DT= 5.0 min
U.H. Tp(hrs)= 0.19

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.53	1.083	13.51	2.083	3.79	3.08	1.83
0.167	1.53	1.167	13.51	2.167	3.79	3.17	1.83
0.250	1.76	1.250	56.25	2.250	3.19	3.25	1.70
0.333	1.76	1.333	56.25	2.333	3.19	3.33	1.70
0.417	2.09	1.417	17.85	2.417	2.77	3.42	1.58
0.500	2.09	1.500	17.85	2.500	2.77	3.50	1.58
0.583	2.60	1.583	9.19	2.583	2.45	3.58	1.48
0.667	2.60	1.667	9.19	2.667	2.45	3.67	1.48
0.750	3.49	1.750	6.19	2.750	2.20	3.75	1.39
0.833	3.49	1.833	6.19	2.833	2.20	3.83	1.39
0.917	5.43	1.917	4.69	2.917	2.00	3.92	1.32
1.000	5.43	2.000	4.69	3.000	2.00	4.00	1.32

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.002 (i)

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TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 2.268
TOTAL RAINFALL (mm)= 25.041
RUNOFF COEFFICIENT = 0.091

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD (0002)
ID= 1 DT= 5.0 min

Area (ha)= 0.46
Total Imp(%)= 80.00 Dir. Conn.(%)= 80.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.37 0.09
Dep. Storage (mm)= 1.00 8.50
Average Slope (%)= 1.00 2.00
Length (m)= 55.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.53 1.083 13.51 2.083 3.79 3.08 1.83
0.167 1.53 1.167 13.51 2.167 3.79 3.17 1.83
0.250 1.76 1.250 56.25 2.250 3.19 3.25 1.70
0.333 1.76 1.333 56.25 2.333 3.19 3.33 1.70
0.417 2.09 1.417 17.85 2.417 2.77 3.42 1.58
0.500 2.09 1.500 17.85 2.500 2.77 3.50 1.58
0.583 2.60 1.583 9.19 2.583 2.45 3.58 1.48
0.667 2.60 1.667 9.19 2.667 2.45 3.67 1.48
0.750 3.49 1.750 6.19 2.750 2.20 3.75 1.39
0.833 3.49 1.833 6.19 2.833 2.20 3.83 1.39
0.917 5.43 1.917 4.69 2.917 2.00 3.92 1.32
1.000 5.43 2.000 4.69 3.000 2.00 4.00 1.32

Max.Eff.Inten.(mm/hr)= 56.25 1.94
over (min) 5.00 40.00
Storage Coeff. (min)= 2.25 (ii) 36.45 (ii)
Unit Hyd. Tpeak (min)= 5.00 40.00
Unit Hyd. peak (cms)= 0.30 0.03

TOTALS
PEAK FLOW (cms)= 0.06 0.00 0.057 (iii)
TIME TO PEAK (hrs)= 1.33 2.17 1.33
RUNOFF VOLUME (mm)= 24.04 2.27 19.63
TOTAL RAINFALL (mm)= 25.04 25.04 25.04
RUNOFF COEFFICIENT = 0.96 0.09 0.78

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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CHAMBER(0003)
IN= 2-> OUT= 3
DT= 1.0 min

OUTFLOW: ON, UNDERDRAIN: OFF, INFIL: OFF
CHAMBER:
MAX STO VOL (cu.m.)= 198.92 Bottom Area(m2) = 196.20

DEPTH (mm)	STORAGE (cu.m.)	DEPTH (mm)	STORAGE (cu.m.)
0.00	0.00	1041.40	113.35
25.40	1.63	1066.80	116.19
50.80	3.26	1092.20	119.01
76.20	4.89	1117.60	121.80
101.60	6.52	1143.00	124.57
127.00	8.16	1168.40	127.32
152.40	9.79	1193.80	130.04
177.80	11.42	1219.20	132.73
203.20	13.05	1244.60	135.40
228.60	14.68	1270.00	138.04
254.00	17.91	1295.40	140.64
279.40	21.14	1320.80	143.22
304.80	24.35	1346.20	145.76
330.20	27.56	1371.60	148.27
355.60	30.77	1397.00	150.74
381.00	33.97	1422.40	153.17
406.40	37.16	1447.80	155.55
431.80	40.34	1473.20	157.90
457.20	43.52	1498.60	160.20
482.60	46.69	1524.00	162.44
508.00	49.85	1549.40	164.62
533.40	53.00	1574.80	166.74
558.80	56.14	1600.20	168.78
584.20	59.27	1625.60	170.68
609.60	62.40	1651.00	172.49
635.00	65.51	1676.40	174.25
660.40	68.61	1701.80	175.99
685.80	71.69	1727.20	177.69
711.20	74.77	1752.60	179.34
736.60	77.83	1778.00	180.98
762.00	80.88	1803.40	182.61
787.40	83.91	1828.80	184.24
812.80	86.93	1854.20	185.87

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838.20	89.94	1879.60	187.50
863.60	92.93	1905.00	189.13
889.00	95.90	1930.40	190.76
914.40	98.85	1955.80	192.39
939.80	101.79	1981.20	194.02
965.20	104.71	2006.60	195.66
990.60	107.61	2032.00	197.29
1016.00	110.49	2057.40	198.92

DEPTH (m)	DISCHARGE (cms)	DEPTH (m)	DISCHARGE (cms)
0.170	0.004	1.186	0.024
0.272	0.006	1.288	0.028
0.373	0.007	1.389	0.032
0.475	0.008	1.491	0.034
0.576	0.009	1.592	0.037
0.678	0.010	1.694	0.039
0.780	0.011	1.796	0.042
0.881	0.011	1.897	0.044
0.983	0.012	1.999	0.046
1.084	0.019	2.100	0.048

	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 1(0003)	0.46	0.01	1.70	18.91
OUTFLOW: ID= 2(0004)	0.46	0.01	1.70	18.91

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW:ID= 2	0.46	0.057	1.33	19.63
OUTFLOW:ID= 1	0.46	0.008	1.70	18.91
OVERFLOW:ID= 3	0.00	0.000	0.00	0.00

Volume Reduction Rate[(RVin-RVout)/RVin](%)= 3.64
Time to reach Max storage (Hr)= 1.70
Volume of water for drawdown in LID (cu.m.)= 8.03
Volume of maximum water storage (cu.m.)= 43.69
Calculated Drawdown Time (Hr)= 0.48

Junction Command(0006) |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 3(0003)	0.00	0.00	0.00	0.00
OUTFLOW: ID= 2(0006)	0.00	0.00	0.00	0.00

Junction Command(0004) |

	AREA	QPEAK	TPEAK	R.V.
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APPENDIX C

ADS StormTech® Chamber Drawings & Specifications

ADS StormTech® Isolator Row Sizing Chart

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



21-083 LYNNDALE HEIGHTS

SIMCOE, ON, CANADA

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B184, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES", AND MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 75 mm (3").
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 230 mm (9") SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 300 mm (12") INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE WELL GRADED BETWEEN ¾" AND 2" (20-50 mm).
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 300 mm (12") BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

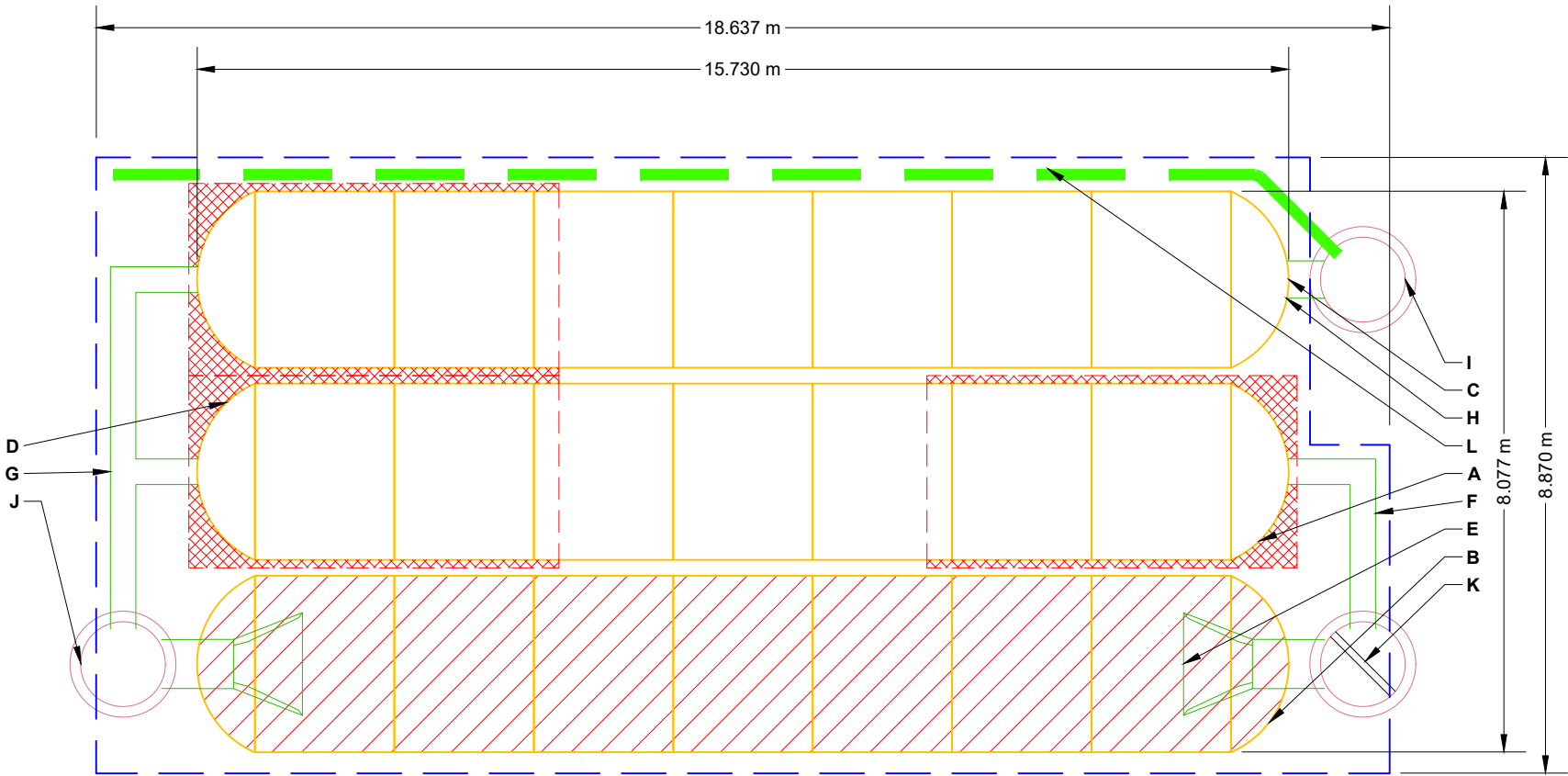
NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS:		*INVERT ABOVE BASE OF CHAMBER				
				PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
21	STORMTECH MC-7200 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	3.886	PREFABRICATED END CAP	A	300 mm BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP12B / TYP OF ALL 300 mm BOTTOM CONNECTIONS	39 mm	
6	STORMTECH MC-7200 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	2.515					
305	STONE ABOVE (mm)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	2.362	PREFABRICATED END CAP	B	600 mm BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP24B / TYP OF ALL 600 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	57 mm	
229	STONE BELOW (mm)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	2.362					
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	2.362	PREFABRICATED END CAP	C	450 mm BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP18B / TYP OF ALL 450 mm BOTTOM CONNECTIONS	50 mm	
198.9	INSTALLED SYSTEM VOLUME (m³) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	2.057					
		TOP OF MC-7200 CHAMBER:	1.753	PREFABRICATED END CAP	D	300 mm TOP PARTIAL CUT END CAP, PART#: MC7200IEPP12T / TYP OF ALL 300 mm TOP CONNECTIONS	907 mm	
		300 mm x 300 mm TOP MANIFOLD INVERT:	1.135					
		600 mm ISOLATOR ROW PLUS INVERT:	0.286					
160.6	SYSTEM AREA (m²)	600 mm ISOLATOR ROW PLUS INVERT:	0.286	FLAMP	E	INSTALL FLAMP ON 600 mm ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)		
55.0	SYSTEM PERIMETER (m)	450 mm BOTTOM CONNECTION INVERT:	0.279					
		300 mm x 300 mm BOTTOM MANIFOLD INVERT:	0.268	MANIFOLD	G	300 mm x 300 mm TOP MANIFOLD, ADS N-12	907 mm	
		BOTTOM OF MC-7200 CHAMBER:	0.229	PIPE CONNECTION	H	450 mm BOTTOM CONNECTION	50 mm	
		UNDERDRAIN INVERT:	0.000	CONCRETE STRUCTURE	I	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		113 L/s OUT
		BOTTOM OF STONE:	0.000	CONCRETE STRUCTURE	J	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		
				CONCRETE STRUCTURE W/WEIR	K	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		70 L/s IN
				UNDERDRAIN	L	150 mm ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		



ISOLATOR ROW PLUS
(SEE DETAIL)

PLACE MINIMUM 5.334 m OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

21-083 LYNNDAL HEIGHTS - V2.0

SIMCOE, ON, CANADA

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StormTech® Chamber System

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1-800-733-7473

SCALE = 1 : 100

SHEET

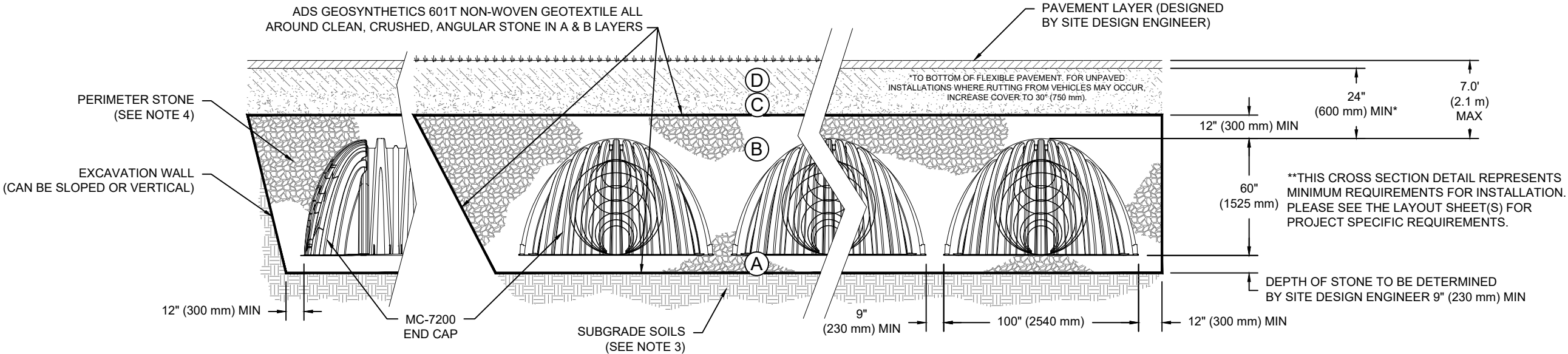
2 OF 5

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ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ⁵	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ⁵	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
 - WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
- MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

21-083 LYNNDAL HEIGHTS - V2.0

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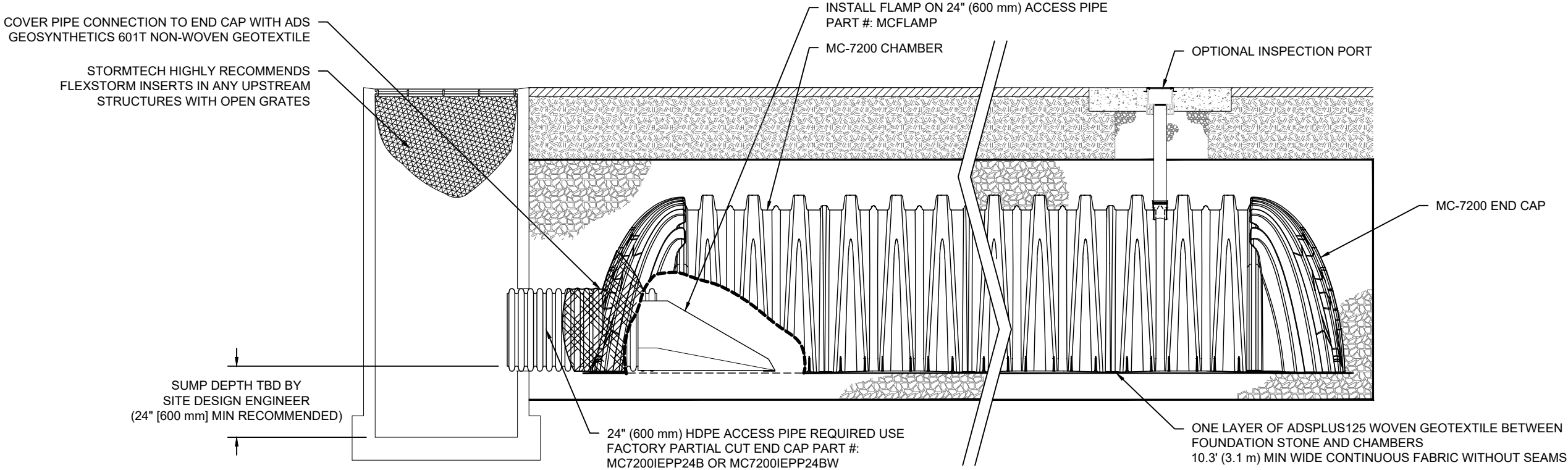
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SHEET
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MC-7200 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR PLUS ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

21-083 LYNNDAL HEIGHTS -
V2.0

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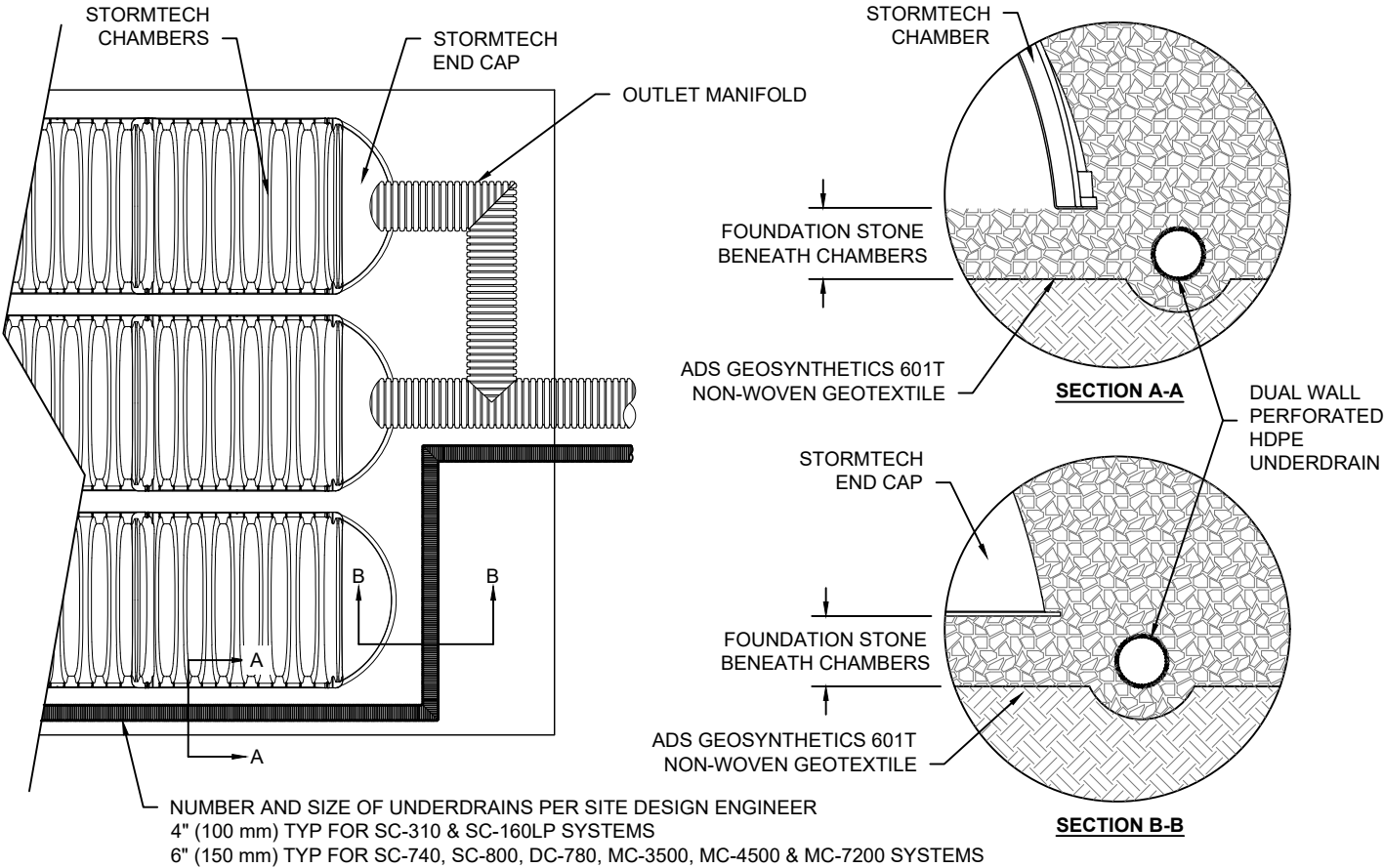
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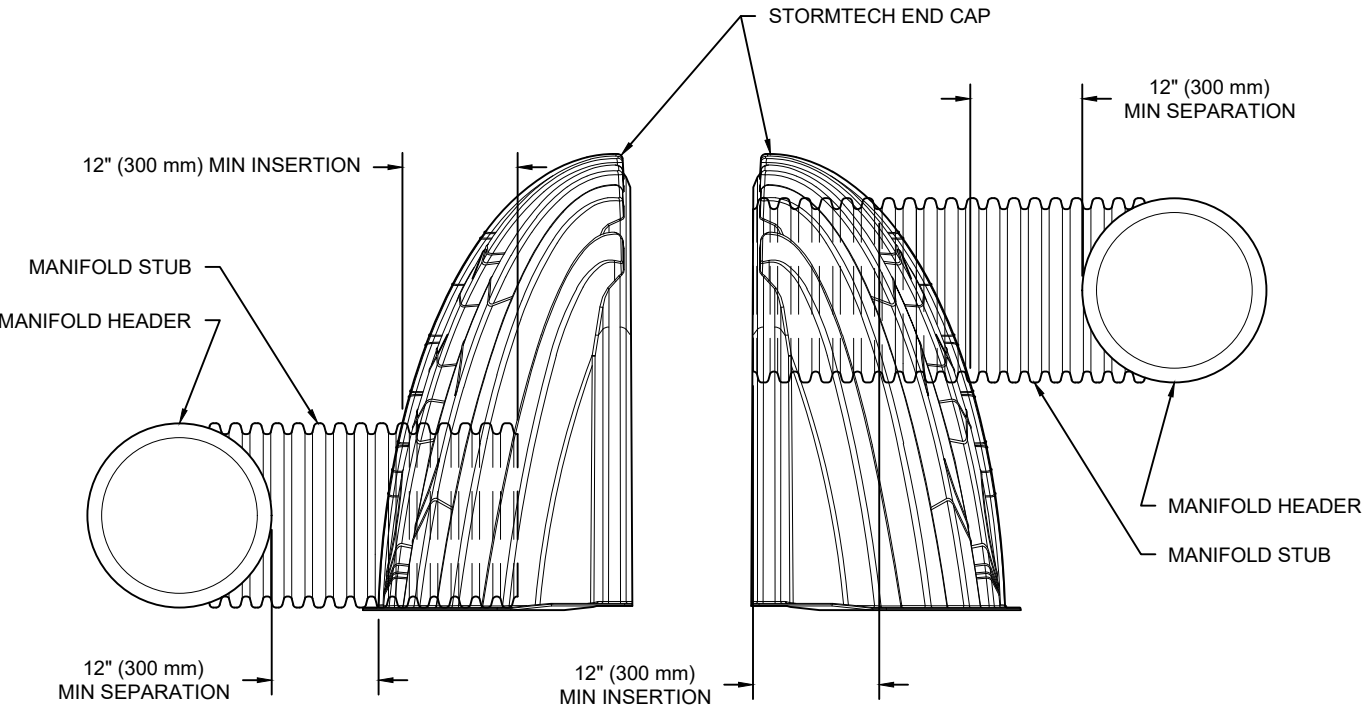
UNDERDRAIN DETAIL

NTS



MC-SERIES END CAP INSERTION DETAIL

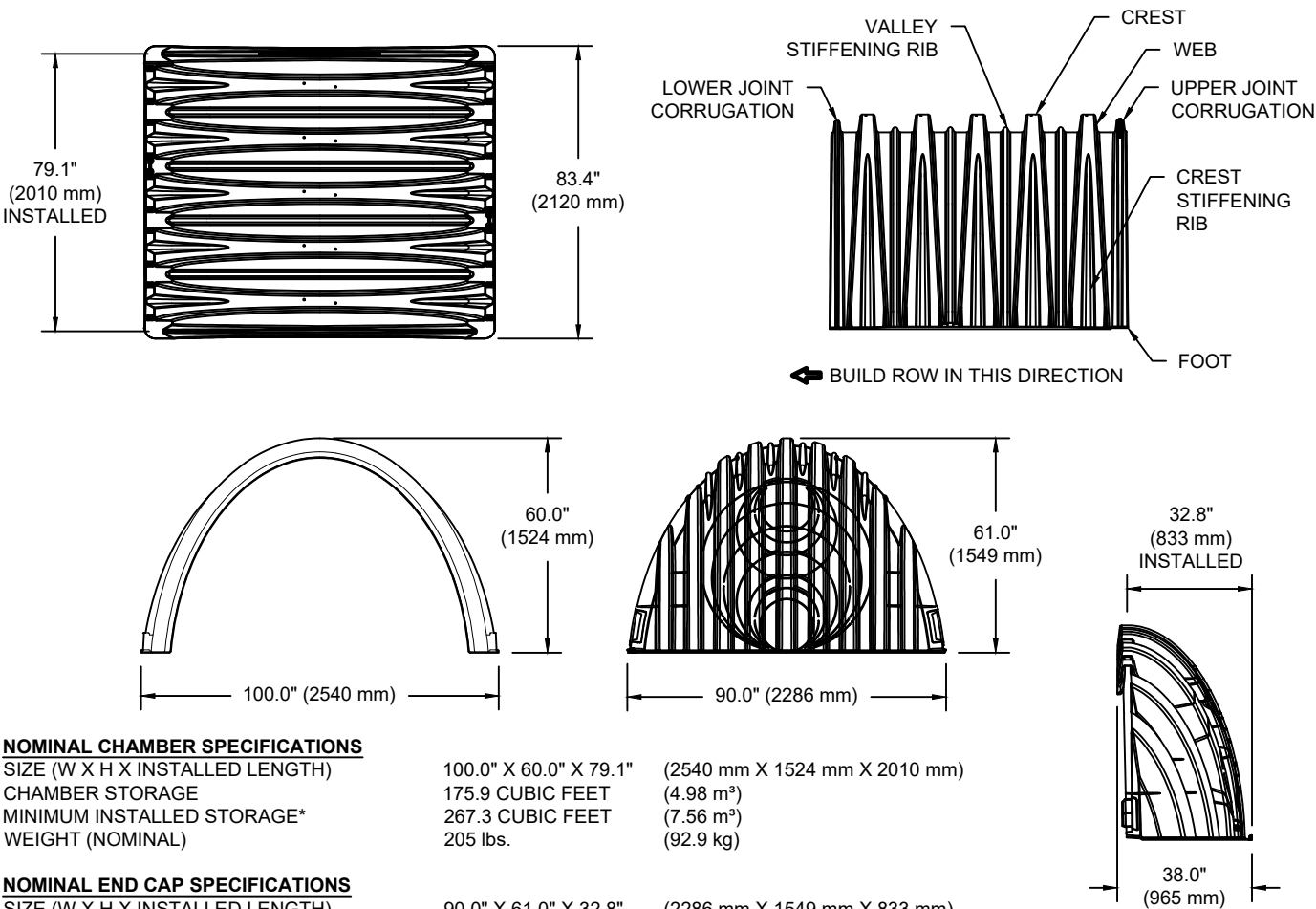
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NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-7200 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

NOMINAL END CAP SPECIFICATIONS

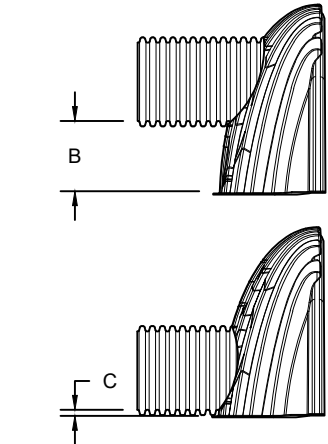
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW		---	1.97" (50 mm)
MC7200IEPP18B		---	---
MC7200IEPP18BW	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24T		---	2.26" (57 mm)
MC7200IEPP24TW		---	---
MC7200IEPP24B	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP24BW		---	3.25" (83 mm)
MC7200IEPP30BW		---	3.55" (90 mm)
MC7200IEPP36BW	36" (900 mm)	---	---
MC7200IEPP42BW	42" (1050 mm)	---	---

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

21-083 LYNNDAL HEIGHTS -

V2.0

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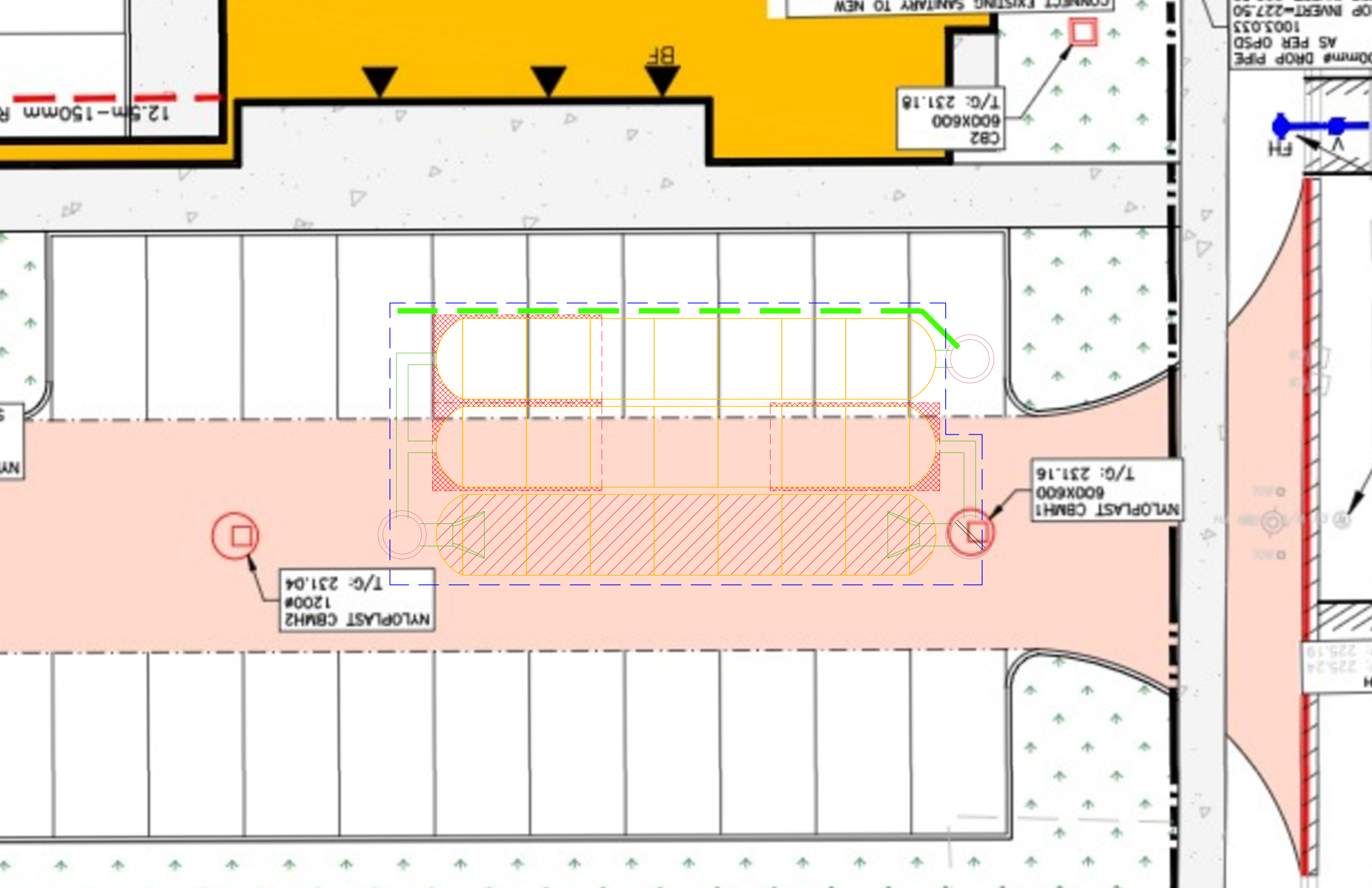
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Project: 21-083 Lynndale Heights



Chamber Model -	MC-7200
Units -	Metric
Number of Chambers -	21
Number of End Caps -	6
Voids in the stone (porosity) -	40
Base of Storage Elevation	228.47
Amount of Stone Above Chambers -	305
Amount of Stone Below Chambers -	229

☒ Include Perimeter Stone in Calculations

☐ Click for Stage Area Data

☒ Click to Invert Stage Area Data

[Click Here for Imperial](#)

Area of System- 160.5512656 sq.meters Min. Area - 135.79 sq.meters

StormTech requires a minimum of 229 mm of stone below the chambers. This table is for modeling purposes only. Please see the engineer's drawings for the actual amount of stone under the chambers.

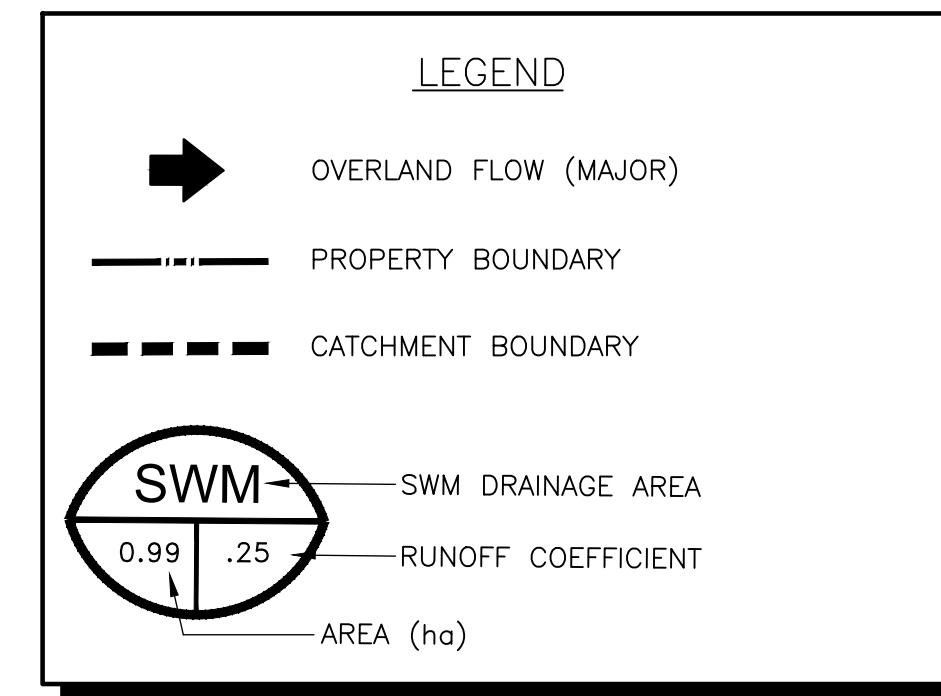
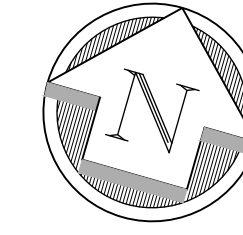
StormTech requires a minimum of 305 mm of stone above the chambers. This table is for modeling purposes only. Please see the engineer's drawings for the actual amount of stone under the chambers.

StormTech MC-7200 Cumulative Storage Volumes								
Height of System (mm)	Incremental Single Chamber (cubic meters)	Incremental Single End Cap (cubic meters)	Incremental Chambers (cubic meters)	Incremental End Cap (cubic meters)	Incremental Stone (cubic meters)	Incremental Ch, EC and Stone (cubic meters)	Cumulative System (cubic meters)	Elevation (meters)
2057	0.000	0.000	0.00	0.00	1.63	1.63	198.92	230.53
2032	0.000	0.000	0.00	0.00	1.63	1.63	197.29	230.50
2007	0.000	0.000	0.00	0.00	1.63	1.63	195.66	230.48
1981	0.000	0.000	0.00	0.00	1.63	1.63	194.02	230.45
1956	0.000	0.000	0.00	0.00	1.63	1.63	192.39	230.43
1930	0.000	0.000	0.00	0.00	1.63	1.63	190.76	230.40
1905	0.000	0.000	0.00	0.00	1.63	1.63	189.13	230.38
1880	0.000	0.000	0.00	0.00	1.63	1.63	187.50	230.35
1854	0.000	0.000	0.00	0.00	1.63	1.63	185.87	230.32
1829	0.000	0.000	0.00	0.00	1.63	1.63	184.24	230.30
1803	0.000	0.000	0.00	0.00	1.63	1.63	182.61	230.27
1778	0.000	0.000	0.00	0.00	1.63	1.63	180.98	230.25
1753	0.002	0.000	0.04	0.00	1.62	1.65	179.34	230.22
1727	0.005	0.001	0.11	0.01	1.58	1.70	177.69	230.20
1702	0.008	0.001	0.16	0.01	1.56	1.73	175.99	230.17
1676	0.010	0.002	0.21	0.01	1.54	1.77	174.25	230.15
1651	0.013	0.002	0.27	0.01	1.52	1.80	172.49	230.12
1626	0.021	0.003	0.44	0.02	1.45	1.91	170.68	230.10
1600	0.031	0.004	0.65	0.02	1.36	2.04	168.78	230.07
1575	0.037	0.005	0.78	0.03	1.31	2.12	166.74	230.04
1549	0.042	0.005	0.89	0.03	1.26	2.18	164.62	230.02
1524	0.047	0.006	0.98	0.04	1.22	2.24	162.44	229.99
1499	0.051	0.007	1.07	0.04	1.19	2.30	160.20	229.97
1473	0.054	0.008	1.14	0.05	1.16	2.34	157.90	229.94
1448	0.058	0.009	1.21	0.05	1.13	2.39	155.55	229.92
1422	0.061	0.009	1.28	0.06	1.10	2.43	153.17	229.89
1397	0.064	0.010	1.34	0.06	1.07	2.47	150.74	229.87
1372	0.066	0.011	1.39	0.07	1.05	2.51	148.27	229.84
1346	0.069	0.012	1.45	0.07	1.02	2.54	145.76	229.82
1321	0.071	0.012	1.50	0.07	1.00	2.57	143.22	229.79
1295	0.074	0.013	1.55	0.08	0.98	2.61	140.64	229.77
1270	0.076	0.014	1.59	0.08	0.96	2.64	138.04	229.74
1245	0.078	0.015	1.64	0.09	0.94	2.67	135.40	229.71
1219	0.080	0.015	1.68	0.09	0.92	2.69	132.73	229.69
1194	0.082	0.016	1.72	0.10	0.90	2.72	130.04	229.66
1168	0.084	0.017	1.76	0.10	0.89	2.75	127.32	229.64
1143	0.085	0.017	1.80	0.10	0.87	2.77	124.57	229.61
1118	0.087	0.018	1.83	0.11	0.86	2.79	121.80	229.59
1092	0.089	0.018	1.86	0.11	0.84	2.82	119.01	229.56
1067	0.090	0.019	1.90	0.12	0.83	2.84	116.19	229.54
1041	0.092	0.020	1.93	0.12	0.81	2.86	113.35	229.51
1016	0.093	0.020	1.96	0.12	0.80	2.88	110.49	229.49
991	0.095	0.021	1.99	0.13	0.78	2.90	107.61	229.46
965	0.096	0.022	2.02	0.13	0.77	2.92	104.71	229.44
940	0.097	0.022	2.04	0.13	0.76	2.94	101.79	229.41
914	0.099	0.023	2.07	0.14	0.75	2.96	98.85	229.38
889	0.100	0.023	2.10	0.14	0.74	2.97	95.90	229.36
864	0.101	0.024	2.12	0.14	0.73	2.99	92.93	229.33
838	0.102	0.024	2.14	0.14	0.72	3.00	89.94	229.31
813	0.103	0.024	2.17	0.15	0.71	3.02	86.93	229.28
787	0.104	0.025	2.19	0.15	0.70	3.03	83.91	229.26
762	0.105	0.026	2.21	0.15	0.69	3.05	80.88	229.23
737	0.106	0.026	2.23	0.16	0.68	3.06	77.83	229.21
711	0.107	0.026	2.25	0.16	0.67	3.07	74.77	229.18
686	0.108	0.027	2.27	0.16	0.66	3.09	71.69	229.16
660	0.109	0.027	2.28	0.16	0.65	3.10	68.61	229.13
635	0.110	0.027	2.30	0.16	0.64	3.11	65.51	229.11
610	0.110	0.028	2.32	0.17	0.64	3.12	62.40	229.08
584	0.111	0.027	2.33	0.16	0.63	3.13	59.27	229.05
559	0.112	0.028	2.35	0.17	0.62	3.14	56.14	229.03
533	0.112	0.029	2.36	0.17	0.62	3.15	53.00	229.00
508	0.113	0.029	2.38	0.17	0.61	3.16	49.85	228.98
483	0.114	0.029	2.39	0.18	0.61	3.17	46.69	228.95
457	0.114	0.029	2.40	0.18	0.60	3.18	43.52	228.93
432	0.115	0.030	2.41	0.18	0.60	3.18	40.34	228.90
406	0.115	0.030	2.42	0.18	0.59	3.19	37.16	228.88
381	0.116	0.030	2.43	0.18	0.59	3.20	33.97	228.85
356	0.116	0.030	2.44	0.18	0.58	3.20	30.77	228.83
330	0.117	0.030	2.45	0.18	0.58	3.21	27.56	228.80
305	0.117	0.031	2.46	0.18	0.57	3.22	24.35	228.77
279	0.118	0.031	2.47	0.18	0.57	3.22	21.14	228.75
254	0.118	0.031	2.48	0.19	0.56	3.23	17.91	228.72
229	0.000	0.000	0.00	0.00	1.63	1.63	14.68	228.70
203	0.000	0.000	0.00	0.00	1.63	1.63	13.05	228.67
178	0.000	0.000	0.00	0.00	1.63	1.63	11.42	228.65
152	0.000	0.000	0.00	0.00	1.63	1.63	9.79	228.62
127	0.000	0.000	0.00	0.00	1.63	1.63	8.16	228.60
102	0.000	0.000	0.00	0.00	1.63	1.63	6.52	228.57
76	0.000	0.000	0.00	0.00	1.63	1.63	4.89	228.55
51	0.000	0.000	0.00	0.00	1.63	1.63	3.26	228.52
25	0.000	0.000	0.00	0.00	1.63	1.63	1.63	228.50

APPENDIX D

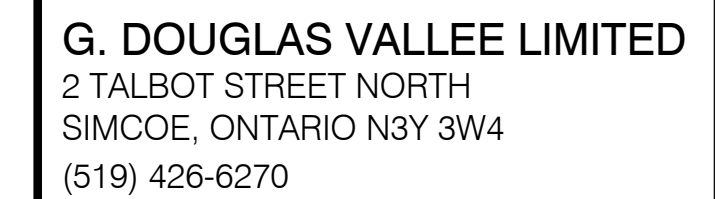
21-083 – Pre-Development Runoff Conditions

21-083 – Post-Development Runoff Conditions

[illegible]

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CLARIFICATIONS THAT ARE REQUIRED, FIELD
VERIFY AT ALL BUILT CONDITIONS

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Project Title

LYNNDALE HEIGHTS

215 VICTORIA STREET

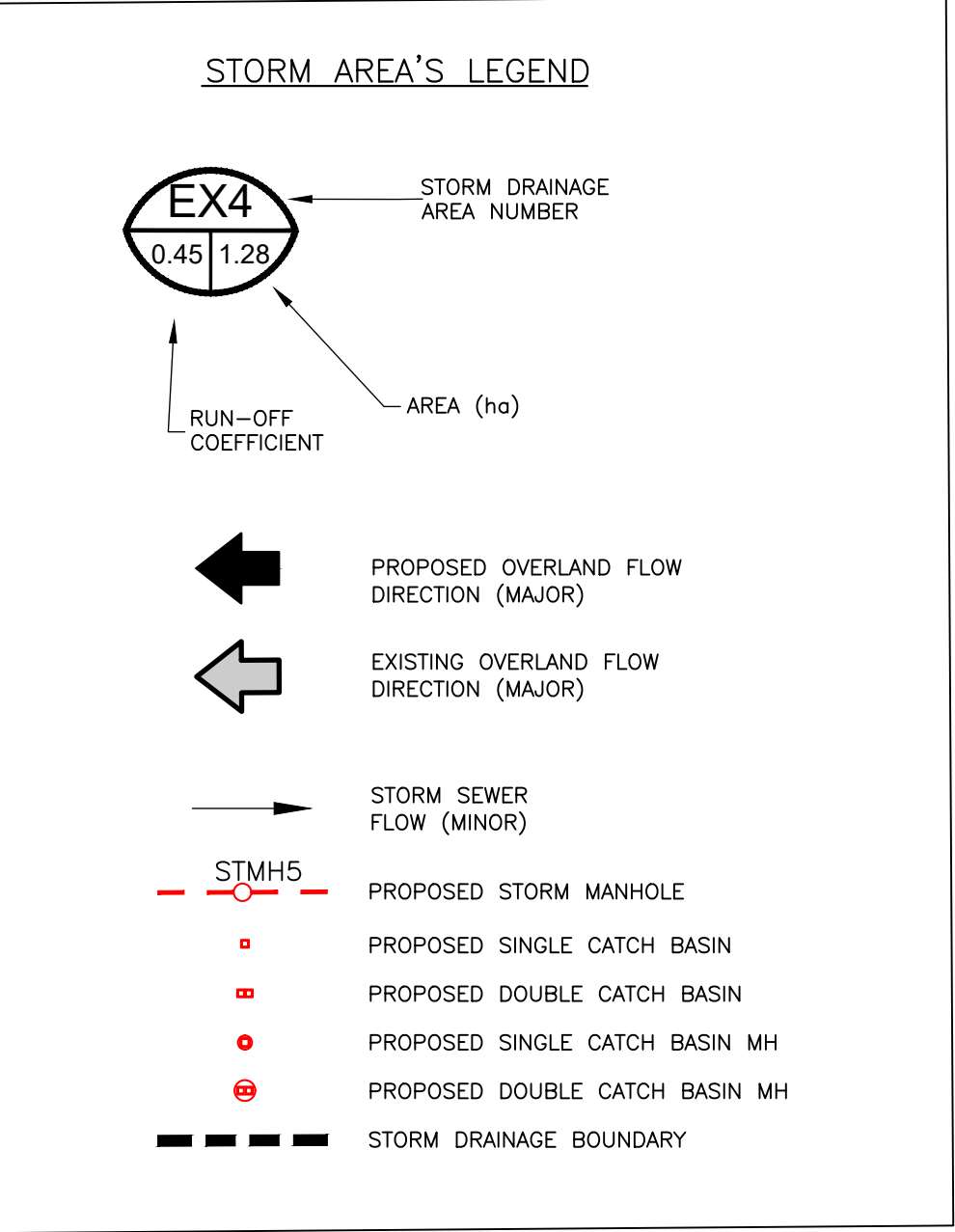
Drawing Title
PRE-DEVELOPMENT DRAINAGE AREAS

Designed by : CJC	Drawn By : CJC
--------------------------	-----------------------

Checked by : JTI	Date Started : JUN 2024
---------------------	----------------------------

Drawing Scale :	Drawing No.
1:250	DDF

Project No.	21-083
-------------	--------



Date: 11/1/2024

Project: 21-083 Lynndale Heights

Town/County: Simcoe/Norfolk County

Return:

A 100-year

B 801.041

C 1.501

0.657

Pipe Material: PVC<=450, Concrete >450

n 0.013

Inlet Time 5

Designed by: NBN

Checked by: CJC

Sheet: 1 of 1

Location			Area (Ha)			Individual Area	Cumulative	Individual	Cumulative	Time of Concentration	Rainfall	Flow	Size	Slope	Capacity	Sewer Design	Length	Time	Cap
Area	From	To	0.25	0.45	0.95	Ha	Ha	1.25 * C * A =	1.25 * C * A =	min	mm/hr	2.761*V^0.48 L/s	mm	%	L/s	Vel (ft/s) m/s	m	min	%
ST1	CB1	CBMH1	0.023		0.060	0.08	0.08	0.08	0.08	5.00	234.17	51.1	300	0.50%	68.4	0.97	21.3	0.37	75%
ST2	CBMH1	STMH2	0.014		0.163	0.18	0.26	0.20	0.28	5.37	225.87	173.5	375	1.00%	175.3	1.59	13.7	0.14	99%
-	STMH2	NYLOPLAST MH2				0.00	0.26	0.00	0.28	5.51	222.81	171.2	375	1.00%	175.3	1.59	16.3	0.17	98%
ST3	CB2	NYOPLAST CBMH1	0.036		0.005	0.04	0.04	0.02	0.02	5.00	234.17	11.2	300	0.50%	68.4	0.97	16.1	0.28	16%
ST4	DIRECT	NYLOPLAST CBMH1			0.024	0.02	0.02	0.03	0.03										
ST5	DIRECT	NYLOPLAST CBMH2	0.036		0.096	0.13	0.13	0.13	0.13										
-	NYLOPLAST CBMH	STMH1					0.46		0.45			33.0	300	4.70%	209.6	2.97	3.2	0.02	16%
	STMH1	EX STMH										33.0	300	4.08%	195.3	2.76	12.3	0.07	17%

[illegible]

NOTE: THE CONTRACTOR IS CAUTIONED THAT ALL OF THE EXISTING UTILITIES ARE NOT INDICATED ON THIS DRAWING. THE CONTRACTOR MUST ARRANGE FOR LOCATES FROM EACH UTILITY COMPANY PRIOR TO ANY CONSTRUCTION OR EXCAVATION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES INCLUDING THOSE NOT INDICATED ON THIS DRAWING. G. DOUGLAS VALLEE LTD. CANNOT ACCEPT RESPONSIBILITY FOR DAMAGE TO ANY EXISTING UTILITY WHICH MAY OR MAY NOT BE INDICATED ON THIS DRAWING.

ALL WORK, MATERIALS AND PROCESSES TO ABIDE TO NORFOLK COUNTY STANDARDS AND SPECIFICATIONS

SURVEY INFORMATION
 TOPOGRAPHIC SURVEY: DONE BY G DOUGLAS VALLEE LIMITED ON
 MAY 6, 2024
 LEGAL SURVEY: PLAN RP-1107, DATED APRIL 22, 1987

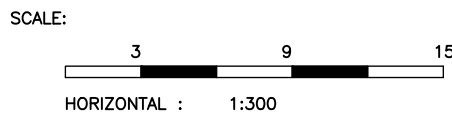
BENCHMARKS

BM #1: TOP OF LARGE PUMPER NOZZLE OF FIRE HYDRANT
LOCATED ON SOUTH SIDE OF VICTORIA ST. IN FRONT OF
DEL-BAC SERVICES CORPORATION
ELEV. 232.61m

BM #2: SOUTH WEST CORNER OF THE HYDRO VAULT LOCATED
ON THE NORTH SIDE OF AUSTIN CRESCENT IN FRONT OF
DWELLING 39.
ELEV. 232.89m

DRAWING LIST
G. DOUGLAS VALLEE LIMITED DRAWINGS

21-083 C101 - SERVICING PLAN
21-083 C102 - GRADING PLAN
21-083 C103 - EROSION AND SEDIMENT CONTROL PLAN
21-083 C104 - STORM DRAINAGE AREAS
21-083 C105 - GENERAL NOTES & DETAILS



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G. DOUGLAS VALLEE LIMITED
2 TALBOT STREET NORTH
SIMCOE, ONTARIO N3Y 3W4
(519) 426-6270

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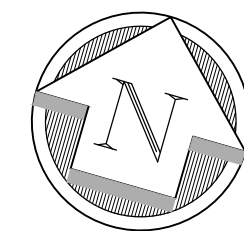
Project Title
<p>LYNNDALE HEIGHTS</p> <p>215 VICTORIA STREET</p> <p>SIMCOE - NORFOLK COUNTY</p>

Drawing Title

STORM DRAINAGE AREAS

Designed by : NBN	Drawn By : NBN
Checked by : JTI	Date Started : JAN 2023

Drawing Scale : AS-NOTED	Drawing No. POST
Project No. 21-083	



- NOTES:

1. PROPOSED SEWERS TO ADHERE TO THE FOLLOWING OPSD:
- | | |
|---|--------------|
| 1200mm MAINTENANCE HOLE STRUCTURE | OPSD 701.010 |
| 1200mm CATCH BASIN MAINTENANCE HOLE GRATE | OPSD 400.010 |
- ALL COMPONENTS OF THE PROPOSED STORM SEWERS ARE TO ADHERE TO DIVISION 700 OF THE OPSD.
2. RESTORE EXISTING COUNTY INFRASTRUCTURE TO COUNTY STANDARDS:
- REFER TO TRENCHING RESTORATION DETAIL ON DRAWING GN.
 - CONCRETE CURB TO MATCH EXISTING.
 - CONCRETE SIDEWALK TO MATCH EXISTING WIDTH.
 - CONSTRUCTION PER OPSS AND OPSD.
4. ALL WATERMAIN TO BE RESTRAINED AT ALL BENDS, TEES, REDUCERS, DEAD-ENDS, AND VALVES AS PER DETAILS ON DWG. GN.

NOTE:

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21-083 C101 - SERVICING PLAN
 21-083 C102 - GRADING PLAN
 21-083 C103 - EROSION AND SEDIMENT CONTROL PLAN
 21-083 C104 - STORM DRAINAGE AREAS
 21-083 C105 - GENERAL NOTES & DETAILS

SCALE:



HORIZONTAL : 1:200

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Project Title

LYNNDALE HEIGHTS

215 VICTORIA STREET

SIMCOE - NORFOLK COUNTY

Drawing Title
SERVICING PLAN

Designed by :	Drawn By :
NBN	NBN
Checked by :	Date Started :
JTI	JAN 2023
Drawing Scale :	Drawing No.
AS-NOTED	C101
Project No. 21-083	



Legend

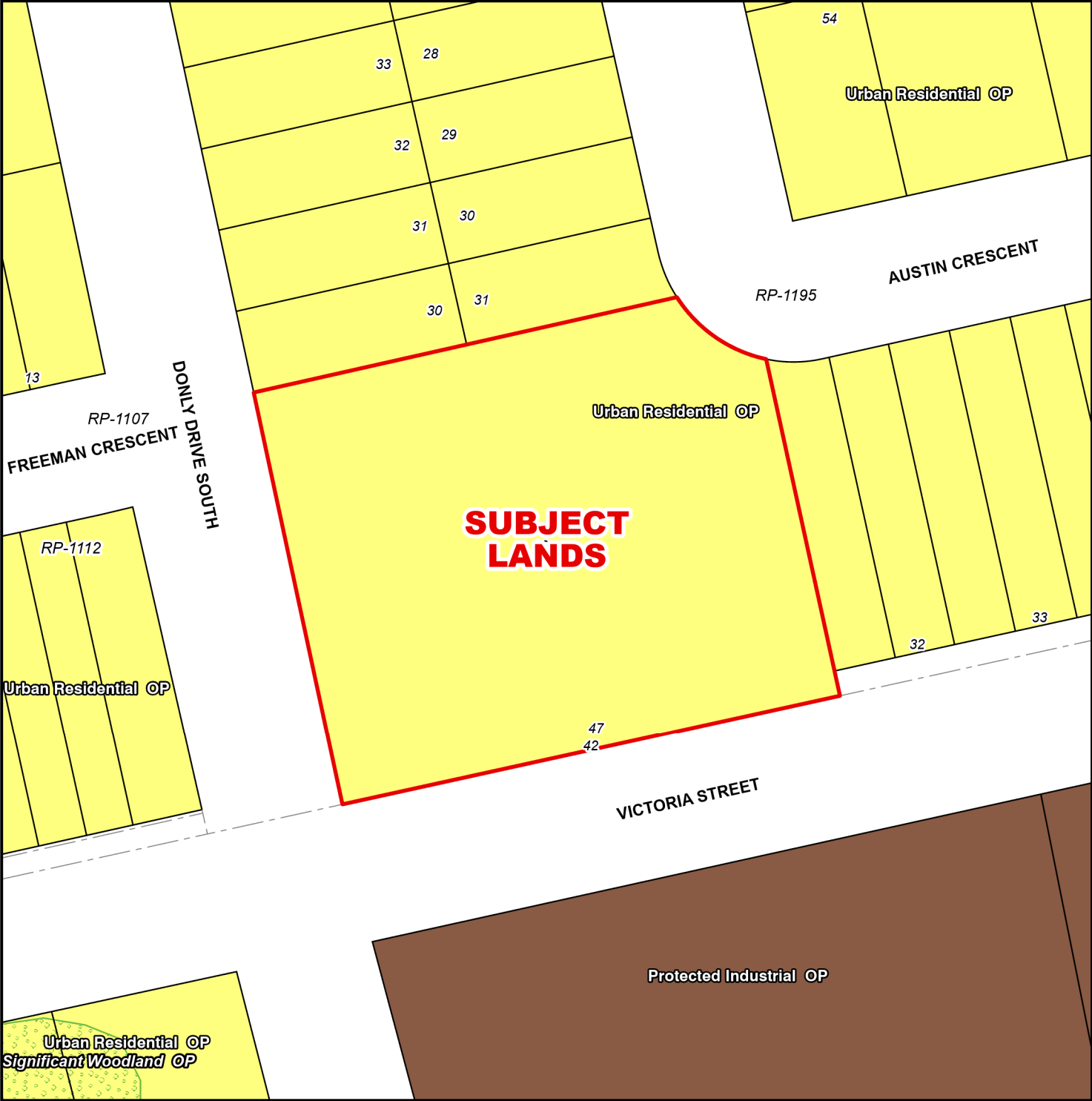
Subject Lands

2020 Air Photo

8/18/2025



10 5 0 10 20 30 40
 Meters



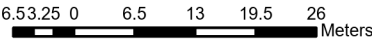
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Subject Lands

Official Plan Designations

- Urban Residential
- Protected Industrial
- Urban Area Boundary
- Significant Woodland

8/18/2025

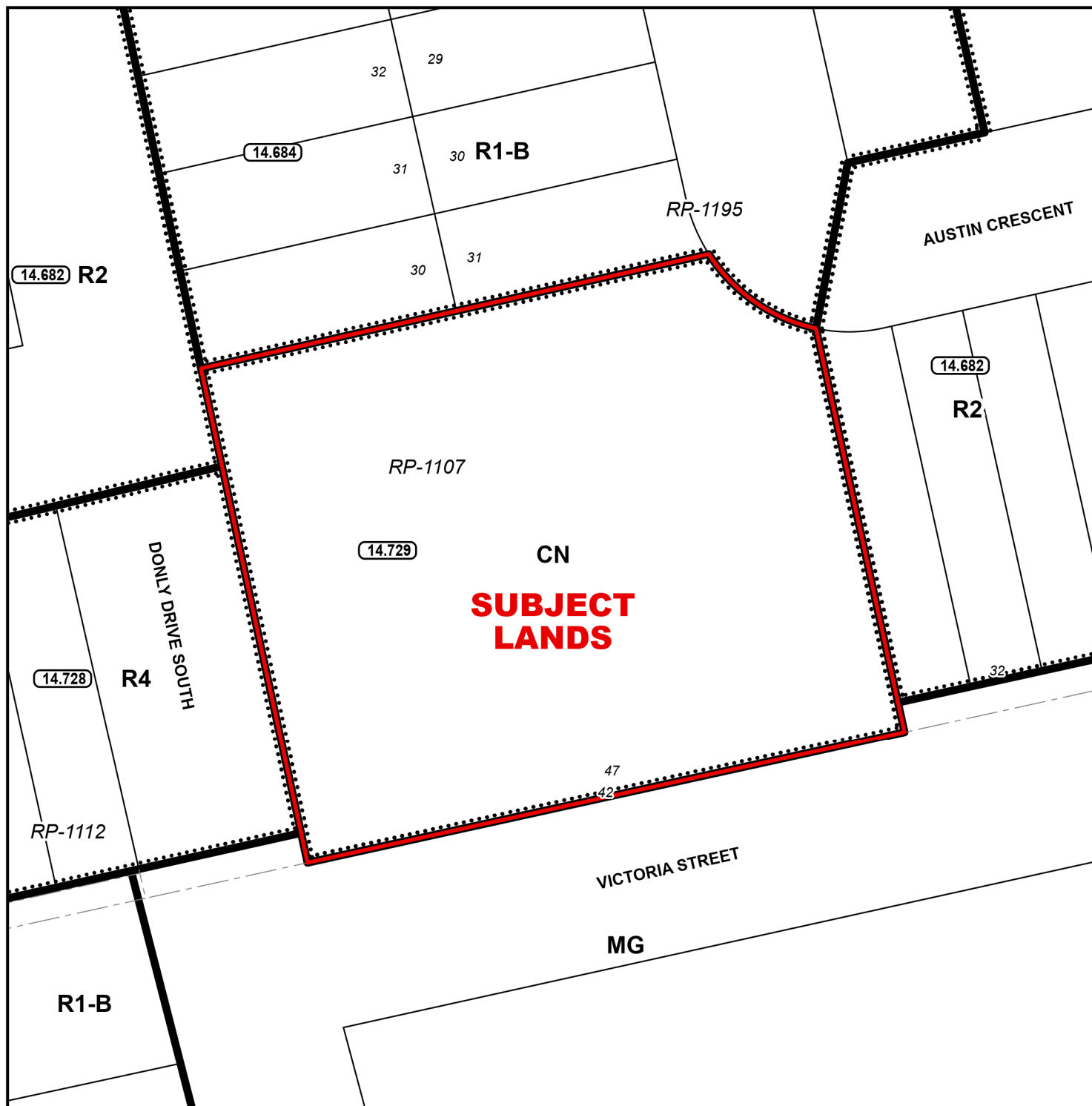


MAP C

ZNPL2025146

PROPOSED ZONING BY-LAW AMENDMENT MAP

Urban Area of SIMCOE



LEGEND

Subject Lands

ZONING BY-LAW 1-Z-2014

8/18/2025

(H) - Holding

CN - Neighbourhood Commercial Zone

MG - General Industrial Zone

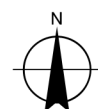
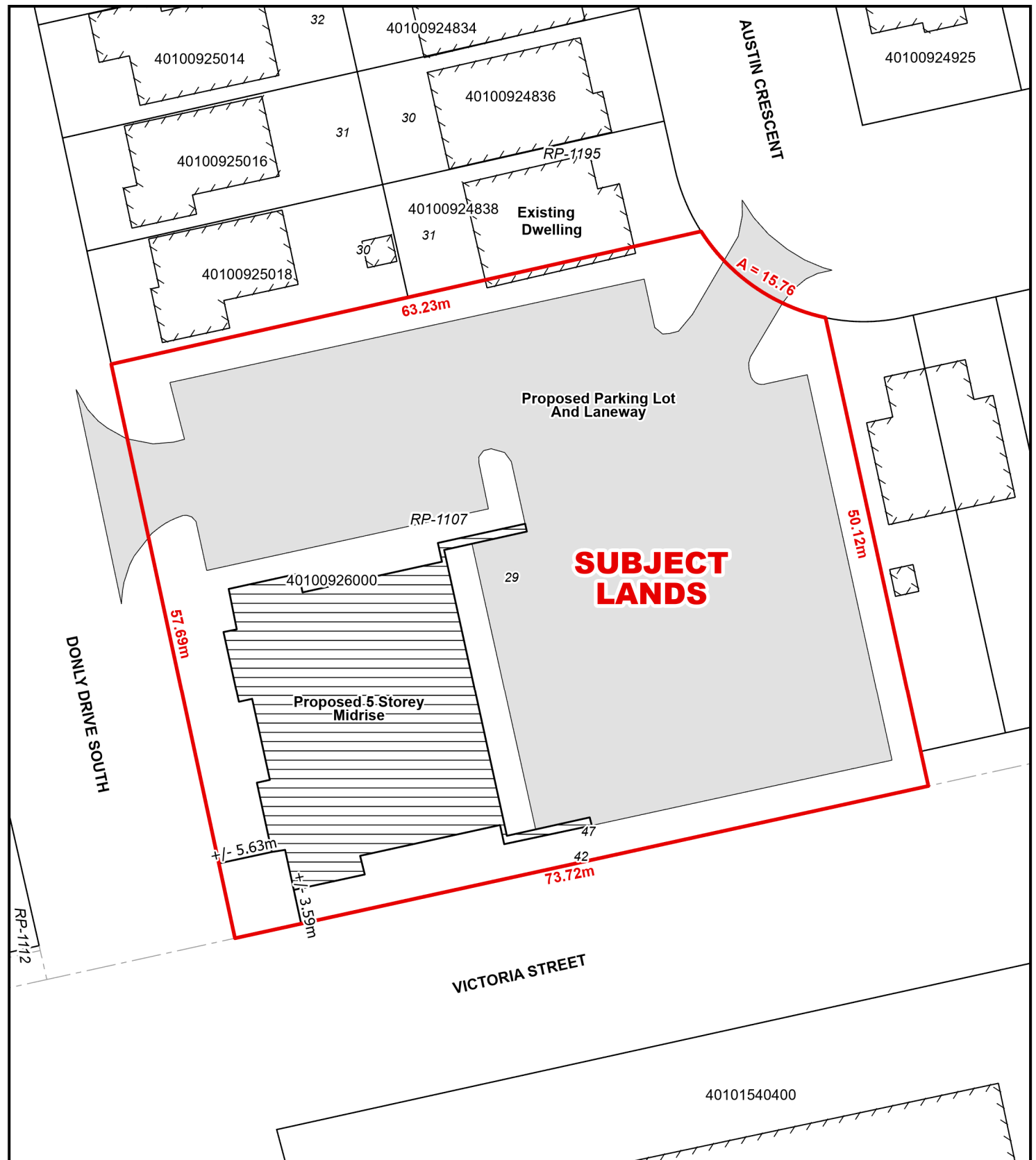
R1-B - Residential R1-B Zone

R2 - Residential R2 Zone

R4 - Residential R4 Zone

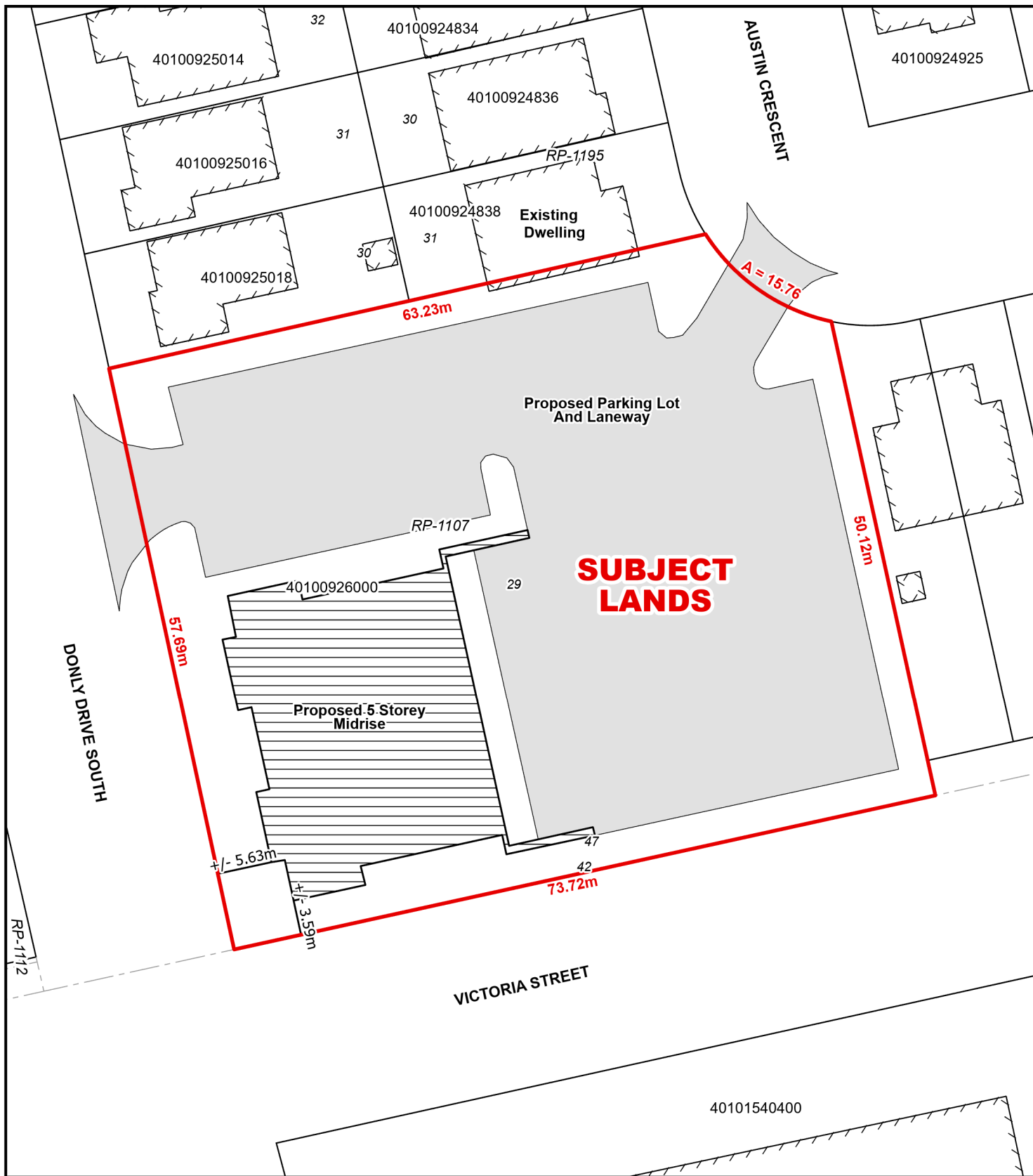


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CONCEPTUAL PLAN

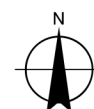
Urban Area of SIMCOE



Legend

Subject Lands

8/18/2025



4 2 0 4 8 12 16 Meters