

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):

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.

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.

BS

Owner/Applicant Signature

Date

M. Owner's Authorization

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

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

I/We authorize _____ 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

Date

Owner

Date

N. Declaration

I, Brandon Sloan of Norfolk County

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:

Simcoe

Bef.

Owner/Applicant Signature

In Norfolk County

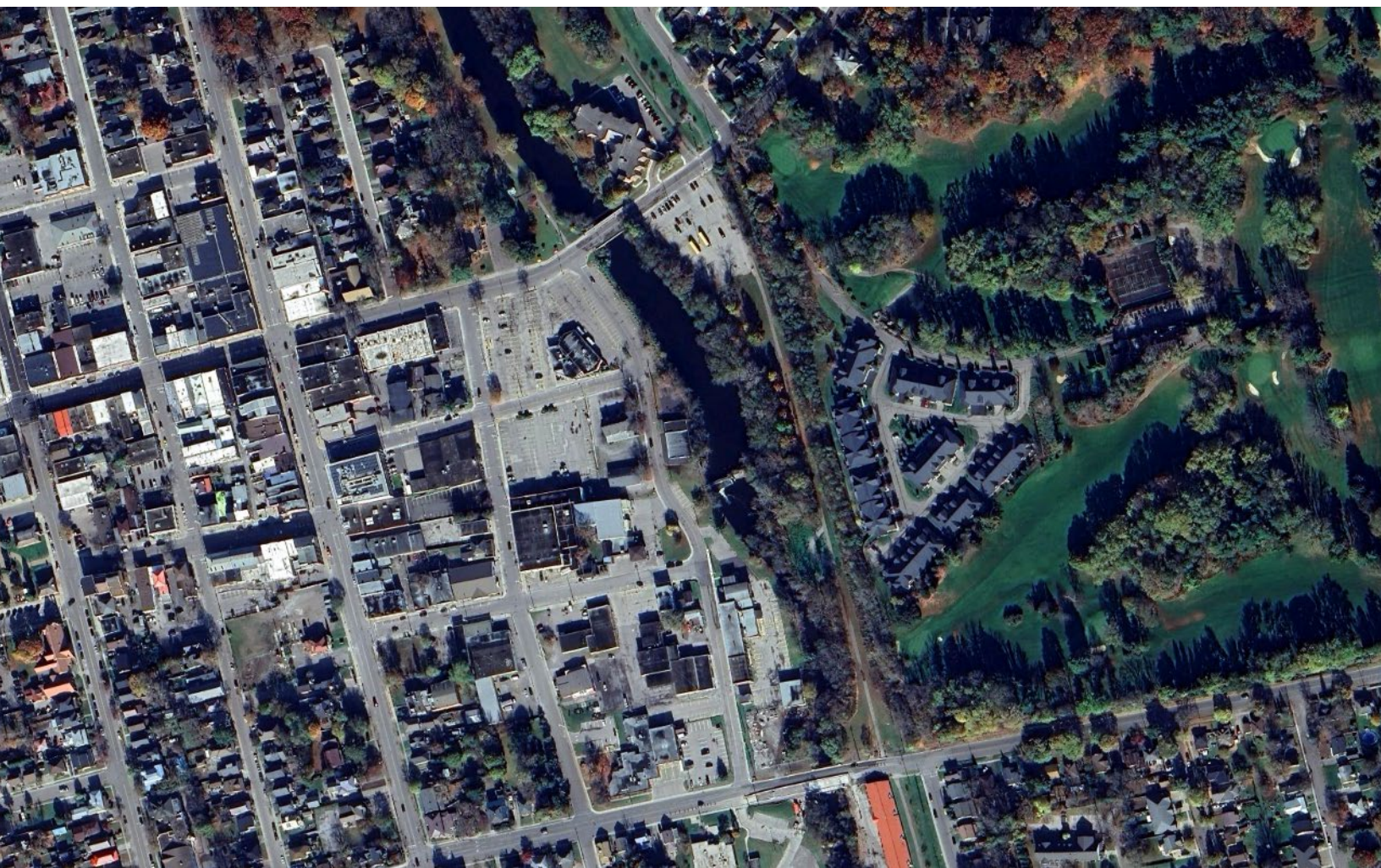
This 12 day of December

A.D., 2024

Olivia Davies

A Commissioner, etc.

Olivia Catherine Davies, a
Commissioner, etc., Province of Ontario,
for the Corporation of Norfolk County.
Expires May 23, 2027.



Simcoe Lands

Planning Justification Report
Official Plan and Zoning By-law Amendment
November 15, 2024



Prepared for Norfolk County

Prepared by Fotenn Planning + Design
304-174 Spadina Avenue
Toronto, ON M5T 2C2

November 2024

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1.0

Introduction

1

Fotenn Planning + Design has been retained by the County of Norfolk to provide this Planning Justification Report (PJR) for the Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) applications for the lands municipally known as 73 Victoria St, 87-129 Pond St, the existing parking area with no municipal address, and 86 Argyle St in Simcoe, Ontario ("the subject lands").

The proposal seeks to redesignate and/or rezone several parcels of land in Simcoe. The subject lands located at Argyle Street, Pond Street, and Victoria Street are municipally known as:

- / 73 Victoria Street;
- / 87, 89, 95, 97, and 129 Pond Street;
- / No Municipal Address (the parcel north of 87 Pond Street, north-east of Water Street and Pond Street); and,
- / 86 Argyle Street.



Figure 1: Aerial Image of the Subject Lands

1.1 Application Overview

Applications for an Official Plan Amendment and Zoning By-law Amendment are required for the subject lands on behalf of the County of Norfolk. The applications seek to permit a range of uses, and to enable new residential and mixed-uses for the subject lands. The subject lands consist of municipally-owned riverfront properties located in Downtown Simcoe.

The properties at Pond Street and Victoria Street are designated as Hazard Lands in the Norfolk County Official Plan (referred to as the "OP"). The aim of the OPA is to introduce special policies that would allow a variety of uses within the

existing buildings. Additionally, these majority of the lands are zoned as Open Space (OS) in the Zoning By-law, with portions zoned Hazard Lands (HL) along the river. The Zoning By-law Amendment (ZBA) seeks to establish special provisions permitting a range of non-residential uses within the existing structures, as well as to permit the existing parking areas at the properties.

The property at 86 Argyle Street is currently designated as Open Space and Hazard Lands (HL) in the Official Plan. The proposed Official Plan Amendment (OPA) seeks to redesignate the site to Urban Residential. Similarly, the property is currently zoned Open Space (OS) and Hazard Land (HL) under the Zoning By-law, and the Zoning By-law Amendment (ZBA) aims to rezone the Open Space area to an Urban Residential Type 6 (R6) Zone, with special provisions.

To illustrate the development potential of the Argyle Street property, two conceptual designs were created. The first demonstrates a six-storey residential building with 47 units, while the second demonstrates a five-storey mixed-use building featuring 37 residential units and ground-floor commercial space. These concepts offer a visual representation of the possible future development of the site and are included in Appendix A.

Based on a review of the proposal, it is our professional opinion that the proposed applications are generally consistent with the relevant policies of the Provincial Planning Statement (2024). The proposal also conforms with the general intent of the Norfolk County Official Plan and Zoning By-law 1-Z-2014. Accordingly, it is our opinion that the proposed applications for the Official Plan Amendment and Zoning By-law Amendment should be approved, subject to the site-specific provisions as outlined herein.

2.0

Subject Lands and Surrounding Context

2.1 Subject Lands

The Pond and Victoria Street properties are located in Downtown Simcoe, comprising irregularly shaped parcels at the intersection of Pond Street and Victoria Street. Bounded by the Lynn River to the east and Argyle Street to the north, the site features approximately 188 metres of frontage along Pond Street on its western side and around 239 metres of frontage along the Lynn River on its eastern side.

Historically, the properties have served various purposes, including as a municipal parking lot, a former senior's care center, a maintenance yard, and an operations yard. The building is designated as a heritage property. One of the buildings on the property is actively leasing space, which includes a theatre space. To the north, the land is bordered by a single-storey commercial building, while the south faces Victoria Street.



Figure 2: Pond and Victoria Street Site Photos

The 86 Argyle Street property is situated to the east of the Lynn River and fronts the southern side of Argyle Street. Currently, this area serves as a municipal parking lot. It features approximately 63 metres of frontage on Argyle Street and 79 metres along the Lynn River. To the east, the lot adjoins the Norfolk Sunrise Trail, which is a walking and cycling path that runs through Simcoe. The southern boundary of the parcel is adjacent to open space.



Figure 3: Argyle Street Property Site Photos

2.2 Surrounding Context

The surrounding area is characterized by a mix of residential and commercial zones, enhanced by parks and open spaces. The Lynn River acts as a natural boundary: to the east, the area is mostly residential, enhanced with parks and a golf club. In contrast, the western side is largely commercial, featuring the Downtown and Central Business District (CBD) directly next to the site, along with surrounding residential neighborhoods. To the north, Queensway East (Highway 3), a provincial highway, is lined with commercial establishments. Meanwhile, the southern area is predominantly residential, with parks and hazard lands interspersed throughout.

The subject lands are served by Norfolk public transit buses, specifically stops S7, which stops at the intersection of Argyle Street and Pond Street, and S6f, located near Pond Street and Water Street. Additionally, there are sidewalks along Argyle Street, while Pond Street features intermittent sidewalks that connect and disconnect at various points. The Norfolk Sunrise Trail runs north to south, parallel to the Lynn River and to the subject lands.

Surrounding land uses include:

North: Single detached residential homes.

East: Open Space, Golf Club, and Single detached residential homes.

South: One-storey commercial uses with single detached residential homes throughout.

West: Simcoe downtown area and Central Business District. Norfolk St S lies to the west of the site, which is lined with stores and restaurants.

The subject lands are located within an established neighbourhood comprise of low and medium density residential/ commercial/ employment uses. The Simcoe Composite School is approximately 300 metres from the subject lands. There are multiple places of worship near the site, as well as Norfolk General Hospital just over 1 kilometre from the subject lands.

3.0 Policy & Regulatory Review

3.1 Provincial Planning Statement, 2024

The 2024 Provincial Planning Statement (PPS) provides high-level land use policy direction on matters of Provincial Interest as they relate to land use planning in Ontario municipalities. The Provincial vision for land use planning centres around increasing the supply and mix of housing options while strengthening a competitive economy, ensuring that residents have the support for long-term prosperity through a comprehensive design of communities. Decisions of municipal councils must be consistent with the PPS, which outlines key objectives such as building strong healthy communities, wise use and management of resources, and protecting public health and safety.

The proposed OPA and ZBA applications are consistent with a number of key directions to develop healthy liveable and safe communities as set out in Section 2.1.6 of the PPS. The intention of the OPA and ZBA is to allow future residential development on underutilized lands, while incorporating an adaptive re-use of existing buildings to complement the nearby downtown area and Central Business District. The proposed application will support the achievement of complete communities by allowing future development of a range of housing options, employment opportunities, and other public service facilities. By proposing an efficient and intensified use of the lands, this proposal integrates growth management, and intensification and infrastructure planning to achieve cost-effective development patterns.

Section 2.2.1 states that planning authorities shall provide for an appropriate range and mix of housing options and densities to meet projected needs of current and future residents [...]. The proposed amendment will allow for future mixed-use residential development on an underutilized lot. The site located at Argyle Street proposes residential development, which promotes intensification on under utilized land, efficiently using land, resources, infrastructure and public service facilities. Additionally, the subject lands on Pond and Victoria Street may be able to accommodate residential units with the second-storey.

Section 2.3.1 discusses Settlement Areas and the intent of how they should be the focus of growth and development. The subject lands are located within the Settlement Area of Norfolk County. The proposed amendment applications aim to permit a range of new uses and development at the subject lands in order to promote growth and development in the forms of the future possibility of development of residential, public service facilities, and employment opportunities. Section 2.4.1 discusses Strategic Growth Areas' goal to create complete communities through a range of housing options, intensification, and more mixed-use development. The OPA and ZBA applications support this goal through the intensification of underutilized land into a mixed-use development with a range of housing options, and the special provisions to allow a range of non-residential uses into existing buildings.

Section 2.8.1 discusses promoting economic development. Through the rezoning and resignation of the subject lands, there is opportunity for future employment and businesses within the existing building located on Pond Street and Victoria Street. The subject lands on Argyle Street proposes to allow a mixed-use development and a hotel, which will contribute to the economic vitality of downtown Simcoe and Norfolk County.

Section 3.6.1 discusses planning for sewage and water services. The subject lands will use municipal services, thereby optimizing existing municipal sewage services and municipal water services. Section 3.6.8 discusses stormwater management. The proposed application seeks to ensure adequate stormwater management is in place for future developments.

Section 4.6 discusses protecting cultural heritage. The subject lands contain heritage buildings, which will be conserved and reused for a range of uses. Development and site alteration are not proposed on subject lands that contain heritage properties, the OPA and ZBA intends to conserve the existing heritage buildings while efficiently reusing them for a range of uses.

Chapter 5 of the PPS discusses Natural Hazards and protecting public health and safety. The abutting Lynn River may be considered a natural hazard due to flood risks. The proposed OPA and ZBA applications seek to introduce a range of uses within existing buildings, and do not pose additional natural hazard risk. Further, new development at the Argyle Street property is demonstrated as being located outside of the floodplain, and would be subject to additional plans and studies prior to approval.

The proposal represents a significant intensification within a settlement area and the built-up area of the City. It proposes to efficiently use existing municipal infrastructure and services, will provide for increased densities within proximity to existing transit services, and is within walking distance of three elementary schools and parks, places of worship, and commercial areas on Norfolk Street.

It is our planning opinion that the proposed amendments to support the development and redevelopment of the subject lands are consistent with the policies and objectives of the Provincial Policy Statement 2024.

3.2 Norfolk County Official Plan

The Norfolk Official Plan ("the OP") offers vital resources for steering future growth, development, and transformation within the County, aligning with the visions of Norfolk's residents. It establishes a clear planning framework and processes, ensuring that Norfolk County continues to thrive as a healthy, safe, and prosperous community with a strong agricultural foundation, robust economy, diverse natural environment, and an exceptional quality of life. The Plan serves as a guide for Council in fulfilling its responsibilities while providing clarity and direction for the citizens and businesses of Norfolk County.

As per Section 2.2, the relevant strategic goals from the Official Plan are as follows:

2.2.1 Strong and Diversified Economy

2.2.1.1 Goal

Create a planning framework that promotes a flexible and adaptable economic environment that encourages investment and a broad range of employment opportunities, supports the growth of tourism in the County, protects the vitality and growth of the agricultural industry, and revitalizes Downtown Areas while recognizing retail trends and community needs

2.2.2. Protecting and Enhancing the Natural Environment

2.2.2.1 Goal

Protect and enhance the quality of the natural environment through a planning framework that conserves and enhances the diversity and connectivity of the natural forms, features and functions of Norfolk's natural heritage, surface water and ground water resources, and that minimizes and mitigates impacts on air quality

2.2.3 Maintaining and Enhancing the Rural and Small Town Character

2.2.3.1 Goal

Protect the unique character of Norfolk's cultural landscapes, Urban Areas, Hamlet Areas and Agricultural Area through heritage conservation, community design and redevelopment policies that promote community health, safety and broad aesthetic appeal.

2.2.4 Maintaining a High Quality of Life

2.2.4.1 Goal

Reinforce Norfolk's strong sense of community through the provision of public services, the development of safe and attractive communities and the celebration of Norfolk's unique cultural and natural heritage, by involving residents in making decisions on planning matters and by promoting a healthy community through active lifestyles.

2.2.6 A Well Governed, Well Planned and Sustainable County

2.2.6.1 Goal

Support an open and responsive municipal government that actively builds public and private sector partnerships in the pursuit of the responsible and efficient use of land, resources, and services, while ensuring community and financial sustainability.

Section 3 of the OP, Sustainable Natural Heritage, discusses protecting and improving the Natural Environment. In partnership with Long Point Region Conservation Authority (LPRCA), the Grand River Conservation Authority (GRCA) and the Province, the county strives to protect the natural environment.

The proposed amendments comply with the County's goals of protecting the natural environment through the efficient use of land. The proposed amendments will allow for future residential and mixed-use intensification, inhibiting sprawl. The proposed OPA and ZBA's will not have negative effect on the natural environments and seeks to highlight the Lynn River and other natural features in the community.

Section 4 of the OP, Ensuring Economic Vitality, discusses how the County envisions to create and maintain a strong and diversified economy. The proposed OPA and ZBA seek to allow new permitted uses within the subject lands, which will diversify economic and employment opportunities.

4.2 Link to Economic Development

a) This Plan provides links to Norfolk County's Tourism and Economic Development Strategy to foster emerging economic development opportunities within the existing planning policy framework. Specifically, the policies of this Plan shall support the objectives of the Tourism and Economic Development Strategy which include:

- i) enhancing the profile of the County and its Urban Areas as investment opportunities;*
- ii) identifying growth sectors and new economic opportunities for the County in the land use policies of this Plan;*
- iv) strengthening the County's economic base through a greater diversification of available business and employment land;*
- v) improving opportunities for local industries and businesses, especially small businesses within the County;*
- vi) addressing the role of tourism in the County's economic base;*
- vii) promoting the County as a destination for tourists;*
- viii) acknowledging the role of the Urban Areas in influencing the County's economy;*

The subject lands are located within the Urban Areas boundary and are adjacent to the downtown area. The proposed OPA and ZBA will permit a range of new uses that will foster the expansion of economic development within the Urban Area. The proposed OPA and ZBA will permit uses that will create investment opportunities within Norfolk County by allowing for new businesses and employment within the downtown urban area, fostering economic growth and creating new spaces for employment and businesses. The proposal aims to create new opportunities for local industries and businesses through permitted new uses in the subject lands.

The proposed OPA and ZBA will enhance the role of tourism's contribution to the County's economic base by permitting a mix of uses, including new shops, restaurants, hotels, and other amenities. These establishments will be allowed to open on suitable lands near the Lynn River and downtown area, providing an ideal setting for tourists and visitors.

Section 4.3 of the OP addresses the geographical aspects of economic activity, emphasizing that certain types of economic endeavors have specific locational requirements. Meeting these requirements is essential for creating an successful economic environment.

- c) Commercial and office employment uses shall be encouraged in the Downtown Areas to create strong central business district environments.*
- e) Tourism uses shall be encouraged in close proximity to areas of natural and recreational amenity, areas of natural heritage appreciation, the Lakeshore Area, the Downtown Areas and waterfronts of Urban Areas, where appropriate.*

The subject lands are situated next to the Downtown Area. The proposed OPA and ZBA permitted uses include business and employment opportunities, which will contribute to enhancing the vitality of the adjacent Downtown and CBD. Additionally, the subject lands are situated along the scenic Lynn River and the Norfolk Sunrise Trail, a well-frequented route for walking and cycling. This proposal aims to expand the range of permitted uses in underutilized buildings and lots within the Urban Area, ultimately boosting tourism and enhancing the area's appeal.

Section 4.5 of the County's OP seeks to improve and strengthen tourism, particularly within Urban Areas.

- b) The County recognizes and supports the development of tourism uses within the Urban Areas and specifically the Downtowns that will encourage visitor stops, provided such uses do not detract from the principal functions and uses of these areas. Such initiatives may include support for:*
 - i) tourist-recreational activities along the Lynn River in Simcoe, including initiatives to enhance the Downtown in conjunction with increased retail development east of Norfolk Street;*
 - ii) promotion of a multi-purpose trails system connecting Norfolk's Urban Areas and natural amenities, including Simcoe as a destination on the recreational trail/utility corridor linking Simcoe and Port Dover, a waterfront trail linking Port Dover to Long Point, the Trans Canada Trail, the Simcoe-Waterford-Brantford trail and the Delhi-Simcoe-Brantford trail;*
 - iii) new and existing tourism related attractions such as craft markets, farmer's markets, summer theatre and outdoor festivals, arts and culture programs and activities, particularly if such uses are located to encourage interaction with the major activity nodes in the Downtowns;*
 - v) tourism related projects as a component in the redevelopment or conversion of older buildings and underutilized sites in and around the Downtowns;*

The proposed OPA and ZBA aim to expand the range of permitted uses on the subject lands along the Lynn River in Simcoe. This includes uses for hotels, restaurants, museums, brew-your-own establishments, shops, and more. These uses are anticipated to boost tourism and invigorate the downtown area. For the Argyle lands, potential new development could promote connections the Norfolk Sunrise Trail. For the Pond and Victoria Street Lands, the proposal aims to revitalize an underutilized heritage building located near Simcoe's downtown and Central Business District. It includes a range of permitted uses designed to attract and enhance tourism. Specifically, the site on Argyle Street is proposed for a mixed-use residential development or a hotel, both of which would contribute to the vibrancy and tourism appeal of Simcoe's downtown area.

Section 5 of the Official Plan discusses maintaining healthy communities, in turn, maintaining a high quality of life. The county aims to provide land to ensure there is higher-order educational and skills facilities. The proposal seeks to include college and trade school as a permitted use in the subject lands at Pond Street and Victoria Street.

Section 5.3 contains policies related to Housing, which state:

- a) At all times, the County shall maintain the ability to accommodate residential growth for a minimum of 10 years through land which is designated and available for residential development. Additionally, the County shall ensure that where new development is to occur, land with servicing capacity sufficient to provide at least a 3-year supply of residential units in draft approved and registered plans, or in cases of residential intensification and redevelopment, land appropriately zoned in the Zoning By-law and available for development or redevelopment.*

b) 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. The County shall target that 15 percent of all new housing built in Norfolk County be Mult residential dwellings and 15 percent be semi-detached and townhouse dwellings.

e) The County shall encourage innovative and appropriate housing development that exhibits design and adaptability characteristics, and may represent nontraditional additions to the County's housing stock.

g) The County shall encourage that housing be considered when opportunities for redevelopment become available. This includes the redevelopment of existing single-use and underutilized areas with full municipal services, such as shopping plazas, business and employment sites and older commercial and residential areas, especially where the land is in close proximity to human services. Special attention shall be given to the design of buildings, the landscaping treatment and features of the site to ensure that the proposed redevelopment is physically compatible with the adjacent uses.

The proposal seeks to rezone and redesignate lands in the Simcoe Area to enable new residential development, addressing housing needs and supporting at least 10 years of anticipated growth. The proposed OPA and ZBA aim to incorporate residential and mixed-use development, enhancing the variety and diversity of housing options available in the county.

The conceptual development at 86 Argyle Street demonstrates that innovative and suitable housing options can be achieved on the site. This type of development seeks to revitalize underutilized land by encouraging appropriate residential intensification. With full municipal services readily available, the site is well-equipped to support this redevelopment and enhance its overall community value.

Section 5.3.1 discusses Residential Intensification:

a) Housing shall, in part, be provided through urban residential intensification, which may include any of the following:

ii) infill development and residential development of vacant land or underutilized land in existing neighbourhoods; and/or,

iii) redevelopment which includes either the replacement of existing residential uses with compatible new residential developments at a high density or the replacement of non-residential uses with compatible residential or mixed use development with a residential component.

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 [...]

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;

ii) the existing water and sanitary sewer services can accommodate the additional development;

iii) the road network can accommodate the traffic generated;

iv) the proposed development is compatible with the existing development and physical character of the adjacent properties and surrounding neighbourhood; and

v) the proposed development is consistent with the policies of the appropriate Land Use Designation associated with the land.

The proposed conceptual development located at 86 Argyle Street will contribute to the infill residential development of vacant land, which is currently a municipal parking lot. The proposal will contribute to the County's goal of a minimum of

25% of its annual residential growth be accommodated through infill, intensification, and adaptive reuse within the existing built-up area. The subject lands are located within the Simcoe Urban Area, and while the residential development is preliminary and conceptual at this point, further studies will be required through the Site Plan Control process.

Section 5.4 of the Official Plan discusses Community Design, specifically how safe and attractive neighbourhoods contribute to the overall community health of the County. The proposed OPA and ZBA will ensure that development is consistent with the existing traditional image of the Urban Area, utilizing existing buildings. The proposed conceptual development shows that residential intensification can be achieved while developing a mixed-use development that fits in with the downtown and surrounding image. The character and economic vitality of the surrounding areas will be complemented and supported through the OPA and ZBA.

Section 5.7 of the OP discusses the importance of preserving the County's cultural heritage resources, including significant buildings. The subject lands at 87-129 Pond Street are designated as heritage, originally serving as the Simcoe Gas and Water Company, constructed in 1891 with later additions completed in 1928. The proposed initiative will introduce a variety of permitted uses within the building, aimed at revitalizing the space while preserving its historical integrity. Importantly, no alterations to the structure itself are planned. The OPA and ZBA will support enhancing and rehabilitating this valuable heritage asset.

Section 6 of the Official Plan outlines growth projections for Norfolk County, designating Simcoe as a key settlement area. By 2036, the population is projected to reach 17,210, the number of households is anticipated to increase to 7,600, and employment is anticipated to rise to 10,290. Section 6.4 discusses the six Urban Areas within the County, which includes Simcoe.

- 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;*
 - ii) business opportunities at appropriate locations to provide a wide range of employment and services to residents, businesses and visitors;*
- c) The County shall ensure through its planning activities that each Urban Area develops with efficient land use patterns that minimize the extension of municipal services and infrastructure and will sustain the community and financial wellbeing of the County over the long-term.*
- h) 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 proposal aims to redesignate and rezone the subject lands at Argyle Street to facilitate the future development of a mixed-use or residential use. Additionally, it seeks to expand the range of permitted uses for the subject lands at Pond Street and Victoria Street, promoting employment and business opportunities. This initiative will enhance the diversity of commercial opportunities and economic prospects within Simcoe's Urban Area. The proposal seeks to ensure that an efficient land use is practiced within Simcoe's Urban Area. The proposal will allow for new uses to locate within the Urban Area, facilitating the adaptive re-use of existing buildings and lands in a prime location. The proposal will ensure that municipal services and infrastructure are not over extended, as the subject lands are central to Simcoe's Urban Area.

Section 6.5 contains policies for the Simcoe Urban Area. Simcoe is designated as a Specific Urban Area within Norfolk County's Official Plan, as outlined on Schedule "A". According to Policy 6.5.1.2, the Urban Structure of Simcoe is designed to enhance its role as the primary service center, offering a diverse array of activities, goods, and services, with

a strong commercial focus on the Downtown Area. This proposal aims to strengthen Simcoe's Urban Area by expanding the range of permitted uses and facilitating residential development on currently underutilized land.

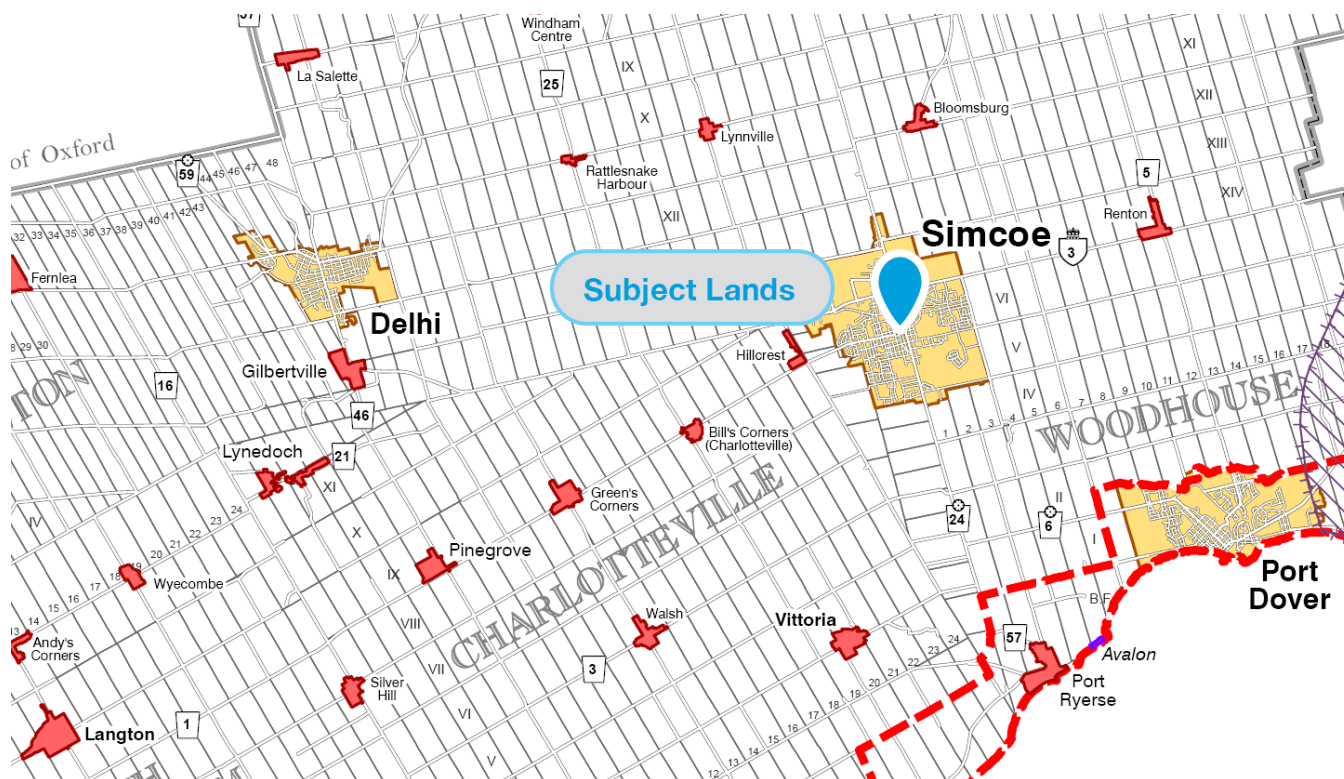


Figure 4: Schedule A-1 Community Structure, Norfolk County Official Plan

Section 6.5.1.3 contains policies for the Simcoe's Downtown Area. The subject lands on Pond Street and Victoria Street are adjacent to the Downtown Area. The intent of the proposal is to support Simcoe's Downtown Area and to meet the diverse needs of the County's residents, work force, business and visitors.

Section 7 of the OP addresses land use management as outlined in Schedule "B." Currently, the lands at 86 Argyle Street are designated as Open Space (OS) and Hazard Lands (HL). The proposal seeks to amend only the portion of the subject land designated as OS, reclassifying it to Urban Residential to allow for residential development. Additionally, the OPA aims to incorporate permitted uses for lands located at 73 Victoria Street and 87-129 Pond Street, which remain designated as Hazard HL. Section 7.3 of the OP discusses the Hazard Land designation:

Hazard lands are lands that have inherent environmental hazards such as flood susceptibility, erosion susceptibility, instability and other physical conditions which are severe enough, if developed upon, to pose a risk to occupants of loss of life, property damage and social disruption.

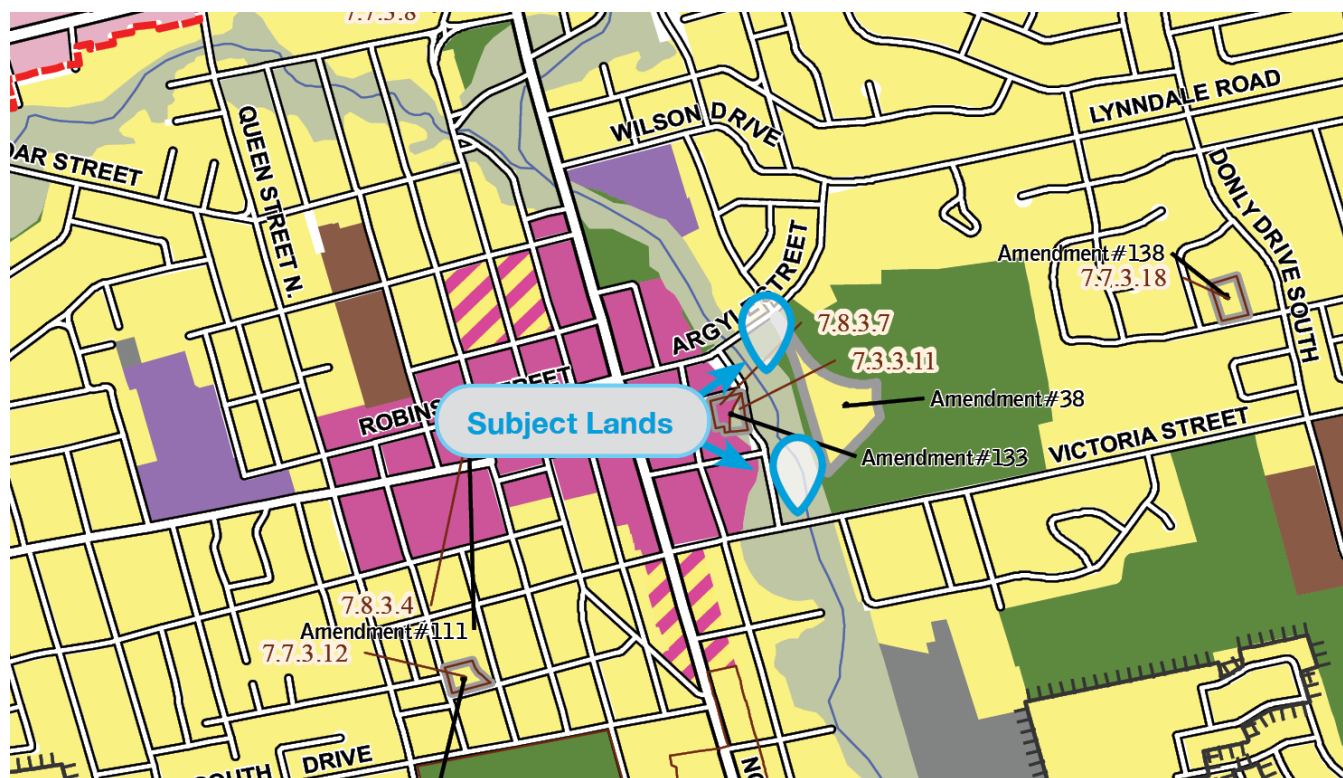


Figure 5: Schedule B-15, Simcoe Land Use, Norfolk County Official Plan

The subject lands are designated as Hazard Lands due to the Lynn River which is adjacent to the lands. Currently, the permitted uses in HL do not include employment or residential uses. The proposal seeks to include a wider range of permitted uses site specific to the subject lands. Any future new development will be subject to additional detailed plans and studies which will more specifically address the Hazard Lands.

The OPA seeks to redesignate the subject site located at 86 Argyle Street from OS to Urban Residential. Relevant permitted uses in the Urban Residential designation include:

b) 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).

l) Small scale neighbourhood convenience commercial and personal service uses to serve the daily shopping needs of a neighbourhood shall be permitted, subject to the policies of Section 7.7.2 (d) (Urban Residential Designation – Land Use Policies).

The proposed OPA and ZBA will allow for a residential or mixed-use development. The proposed conceptual development includes two concept plans, one with retail space at grade and one without. The OPA and ZBA seeks to permit small scale neighbourhood convenience commercial and personal service uses to serve the daily shopping needs of the neighbourhood, in the retail space of the mixed-use development. The subject site at Argyle Street is approximately 0.5 Hectares. The proposal includes conceptual development plans ranging from 38 to 47 units, which would make the proposed conceptual development a high density residential use.

Section 7.7.2 (c) of the OP discusses land use policies for high density residential uses.

- i) the density, height and character of the development shall be compatible with adjacent uses;*
- ii) the ability of the site to accommodate necessary facilities and amenities, such as garbage storage, parking and landscaped areas;*
- 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;*
- 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;*
- v) the degree to which the site has access to significant open space amenities such as valley lands or major parks;*
- vi) municipal watermains 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;*
- vii) the proximity of the site to arterial or collector roads, and/or pedestrian accessibility to a Downtown Area or, in the 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*
- 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 proposed conceptual development demonstrates the feasibility of a high-density mixed-use residential project on the subject lands, fully aligning with relevant policies for such developments. This multi storey residential design promotes efficient land use while mitigating potential adverse impacts related to height, overshadowing, traffic increase, and loss of amenity spaces. Additionally, this development will enhance the vibrancy of the urban area by incorporating retail spaces, contributing positively to the local economy and community.

d) In evaluating applications for neighbourhood commercial uses in the Urban Residential Designation, the following criteria shall be met:

- i) no more than one commercial structure or building shall be permitted on any site, and the gross floor area of the commercial use shall generally not exceed 300 square metres;*
- ii) building height shall be limited to one storey unless residential apartments are located on the upper floor(s), in which case the maximum building height shall be subject to the surrounding residential density provisions;*
- iii) landscaping, fencing, berms and other forms of visual screening, as may be necessary, shall be provided adjacent to residential land uses;*
- iv) all required parking shall be provided on the site, and cash-in-lieu of required parking in accordance with the policies of Section 8.2.3 (Parking) of this Plan, shall not be accepted by the County;*
- v) driveway access shall be approved by the County;*
- vi) the facility shall be located at or in proximity to the intersection of arterial or collector roads, and shall not be located mid-block within a residential area; and*
- vii) 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 proposed development features an option with 460 square metres of retail space on the ground floor. This one-storey retail area will incorporate landscaped elements, and all necessary parking will be available on-site.

Section 7.15 of the Official Plan addresses lands designated as Parks and Open Space. The subject land on Argyle Street is currently designated as Open Space, which does not permit the proposed residential multi-storey development. The current permitted uses for Open Space lands are as follows:

- a) Large-scale recreational facilities, arenas, community centres, cemeteries, fairs or exhibition grounds, golf courses, community parks, major parks and other public park uses shall be permitted, subject to the policies of*

Section 5.6.1 (Parks). While driving ranges shall be permitted in association with a golf course, stand-alone driving ranges are not permitted in the Parks and Open Space Designation.

b) The conservation and enhancement of land and/or environment, as well as the provision of active and passive outdoor recreational and educational opportunities shall be permitted, particularly on land exhibiting environmental sensitivity or containing Natural Heritage Features.

c) Commemorative structures and public art may be permitted except on lands identified as hazard lands.

d) Uses accessory to any of the permitted uses in the Parks and Open Space Designation are permitted, subject to the policies of Section 5.6.1 (Parks).

Since the range of permitted uses in Open Space areas is limited, an Official Plan Amendment (OPA) is required to allow for future use and development of the subject lands.

Section 8 outlines the general framework for the provision and extension of municipal services to new development. All new development will be required to connect to full municipal services, including sanitary, water, stormwater management, solid waste management, electrical power, and transportation networks. Supporting studies have demonstrated adequate servicing capacities at the subject lands, while the proposed land uses are generally supported from a transportation perspective, with some of the uses requiring further study depending on future proposals.

3.3 Assessment of the Official Plan Amendment

3.3.1 General Overview

The OPA for the lands at Pond Street and Victoria Street aims to expand the range of permitted uses within areas designated as Hazard Lands. This amendment is necessary to support the adaptive re-use of an existing building, promoting residential, tourism, and employment uses near the CBD and Downtown Area, as well as to permit parking associated with adjacent lands.

The proposed Official Plan Amendment seeks to redesignate subject lands at 86 Argyle Street from Open Space to Urban Residential to permit the development of a mixed-use or residential development. Additionally, the Official Plan Amendment seeks to include permitted uses in subject lands located at Pond Street and Victoria Street to include a broader range of uses within the existing Hazard Land zoning. The proposed conceptual development for Argyle Street includes a five or six storey building that includes 38 and 47 units, respectively. Both proposed concept plans will include 81 parking spaces, ensuring that residential, retail and public parking needs are met. The proposed OPA will redesignate the subject land from Open Space to Urban Residential, with site specific provisions.

The applicant's development proposal to introduce a wider range of permitted uses in underutilized lot in Simcoe's Urban Area aligns with the OP's strategic goal of strengthening tourism in Simcoe and introducing a range of housing densities. The conceptual proposal to develop a residential development with retail at grade represents an appropriate use of land that is aligned with the OP's policy for the built-up area. Intensification projects are encouraged throughout the built-up area, particularly near a mix of uses, amenities and transit. The subject lands are within 200 metres of transit facilities, schools, places of worship, and shopping centres.

With regards to housing objectives, the introduction of housing units will contribute positively towards the provisions of efficient use of land to create housing in the County. The proposal also conforms with policies that direct higher density residential development in proximity to transit, open spaces and other public amenities to optimize investments in public infrastructure.

The proposed Official Plan Amendments align with the urban strategic goal of promoting compact and attractive development in urban areas. By expanding the range of permitted uses on the subject lands within the Simcoe Urban Area, it supports the County's objectives to enhance economic growth, tourism, and a balanced mix of residential and employment opportunities.

3.4 Zoning By-law 1-Z-2014

3.4.1 Argyle Street

The Argyle Street property is currently zoned Open Space (OS) under Zoning By-law 1-Z-2014. The proposed Zoning By-law Amendment seeks to rezone the lands on Argyle Street to Urban Residential Type 6 (R6 - ##), incorporating site-specific provisions. These provisions would allow for a range of non-residential uses on the ground floor of a mixed-use building, including a daycare nursery, laundromat, merchandise service shop, personal services shop, restaurant, and hotel. Additional provisions, including a reduced visitor parking rate and setback amendments are further proposed based on the concept plans prepared for the property.



Figure 6: Zoning Map for 86 Argyle Street, Simcoe, ON.

The below table provides an overview of the proposed R6-## zoning, overall compliance to the provisions, and highlights where site specific provisions are required.

Provision	Reference	Required	Provided	Compliance
Urban Residential Type 6 Zone (R6) – Section 5.6				
Permitted Uses	5.6.1	Dwelling, apartment Home occupation Retirement home	Residential Mixed-use *special ground floor non-residential use permission for day care nursery,	No

Provision	Reference	Required	Provided	Compliance
			laundromat, merchandise service shop, personal service shop, restaurant. *special provision to add hotel as permitted use	
Minimum Lot Frontage	5.6.2 a)	30 metres	62.8 metres	Yes
Minimum Front Yard	5.6.2 b)	3 metres	3 metres	Yes
Minimum Exterior Side Yard	5.6.2 c)	3 metres	n/a	
Minimum Interior Side Yard	5.6.2 d)	5 metres	3.1 metres (east), 29.93 metres (west)	No
Minimum Rear Yard	5.6.2 e)	9 metres	66.75 metres	Yes
Maximum Building Height	5.6.2 f)	Eight (8) storeys	Five (5) to six (6) storeys	Yes
Maximum Floor Area Ratio	5.6.2 g)	i) four (4) storey building 0.72 ii) five (5) storey building 0.79 iii) six (6) storey building 0.86 iv) seven (7) storey building 0.93 v) eight (8) storey building 1	Proposed Amendment: Maximum 1.0 for any building up to eight (8) storeys Concept 1 (5st) 0.71 gross, 0.61 (net) Concept 2 (6st) 0.81 (gross), 0.69 (net)	No
Step Back of Upper Floors	5.6.3	The exterior wall of each floor of a building facing a street and located above four (4) storeys shall be stepped back 2 metres from the exterior wall of the 4th storey and each floor above six (6) storeys shall be setback an additional 2	2 metres above the 4 th storey	Yes

Provision	Reference	Required	Provided	Compliance
		metres from the exterior wall facing a street.		
Other Provisions				
Parking Requirements	4.9 a) and b)	Single detached, semi-detached, duplex, tri-plex, four-plex, townhouse dwellings: 2 parking spaces / unit Apartment dwelling: 1.5 parking spaces / unit	1.5 spaces / unit (including 0.25 spaces / unit visitor)	Yes
Visitor Parking Requirements (residential)	4.9 f)	Apartment dwellings, duplex dwellings, tri-plex dwellings, four-plex dwellings, townhouse dwellings: 1 visitor parking space / 3 units	0.25 spaces/unit (combined with above)	No
Visitor Parking Requirements (non-residential)	4.9 oo)	Retail store or merchandise service shop 1 parking space for every 30 square metres of usable floor area	14	Yes
Location of Parking	4.2	For tri-plex dwellings, duplex dwellings, four-plex dwellings, street townhouses, stacked townhouses, required parking spaces shall be prohibited within the required front yard or required exterior side yard 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 will be located in the rear yard.	Yes

Provision	Reference	Required	Provided	Compliance
		parking spaces leading directly to each townhouse dwelling unit.		
Parking and Landscaped Area	4.2.5	In the case of a corner lot, a minimum of 50 percent of each of the front yard and exterior side yard shall be maintained as landscaped area	Minimum of 50 percent of the front yard and exterior side yard will be landscaped	Yes
Hazard Land Zone (HL) – Section 11.1				
Permitted Uses	11.1.1	No buildings or structures, except for: c) parking lot or any similar non-structural use accessory to a permitted use or accessory to a permitted use in an adjacent Zone but on same lot	Parking lot	Yes

3.4.2 Pond Street and Victoria Street

The Pond Street and Victoria Street properties are primarily zoned “Open Space” (OS), under Zoning By-law 1-Z-2014, with portions of the property abutting the Lynn River zoned “Hazard Lands” (HL). The proposed Zoning By-law Amendment seeks to maintain this zoning, however, introduces a range of permitted uses which align with the nearby Central Business District zoning, as described in the table below. Further, a site specific provision is proposed which will allow for the existing parking lot use to continue within the OS zone.

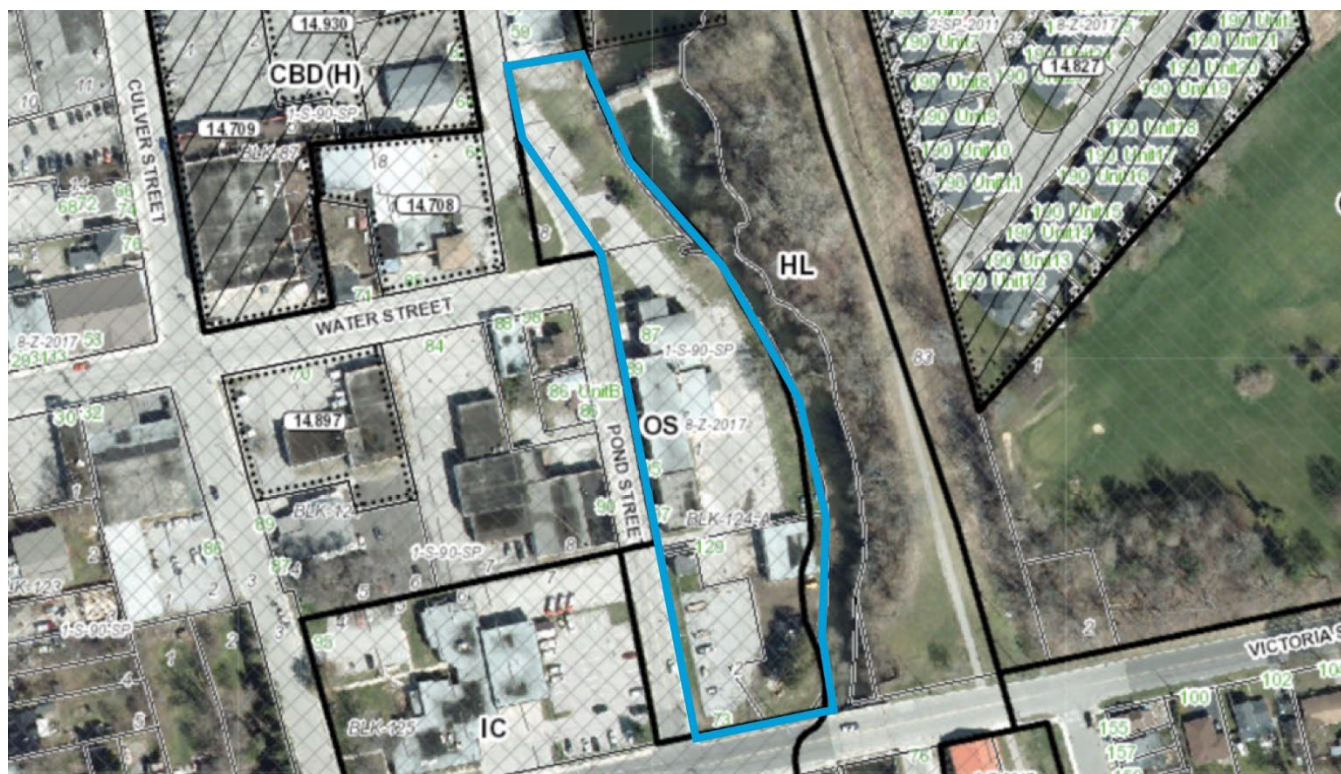


Figure 7: Zoning Map for Pond and Argyle Street properties, Simcoe, ON.

The below table provides an overview of the proposed Zoning By-law Amendments to the OS and HL zones, demonstrating where site specific provisions are required.

Provision	Reference	Required	Provided	Compliance
Open Space (OS) – Section 9.1				
Permitted Uses	9.1.1	<p>In an OS Zone, no land, building or structure shall be used except in accordance with the following uses:</p> <ul style="list-style-type: none"> a) campground b) dwelling, single detached c) dwelling unit in any permitted non-residential building – maximum one (1) d) fairground e) golf course f) golf driving range g) home occupation h) park 	<p>For 73 Victoria Street and 87, 89, 95, and 129 Pond Street The following permitted uses shall be added:</p> <ul style="list-style-type: none"> • Antique shop • Art gallery • Auction centre • Bar or night club • Boarding or lodging house • Boutique • Brew-your-own • Clinic or doctors office • College or trade school • Contractor supply / service shop • Convenience store 	No

Provision	Reference	Required	Provided	Compliance
		<p>i) place of recreation ancillary to a golf course but excluding an arena</p> <p>j) place of sports and recreation.</p>	<ul style="list-style-type: none"> • Deli and specialty food sop • Department store• Equipment rental • Farmers market • Financial institution • Florist shop • Fruit and veg outlet • Hardware store • Hotel or hostel • Library • Lumber yard & building supply • Merchandise service shop • Museum • Office, all types • Parking lot • Personal service shop • Pharmacy • Photo studio or shop • Place of entertainment • Place of sports and recreation • Printing & publishing establishment • Private club • Radio, TV studio • Restaurant, all types • Retail store • Supermarket • Training & rehab centre • Video store • Wholesale outlet <p>Storage shall be permitted to be located in the lower-level of the existing building, and shall accessory to the permitted uses.</p> <p>For the lands along Pond Street north-east of Water Street</p> <p>The following permitted uses shall be added:</p> <ul style="list-style-type: none"> • a parking lot or any similar non-structural use accessory to a permitted use or accessory to a permitted use may be used in association with permitted uses on lands municipally known as 87-97 Pond St. 	

Official Plan and Zoning By-law Amendments

4.1 Pond and Victoria Street Proposed Amendments

4.1.1 Proposed Official Plan Amendment

The proposed Official Plan Amendment application seeks text amendments to the County of Norfolk Official Plan to introduce a policy that allow a variety of uses within the existing buildings, and to allow for the continued uses of the existing associated parking lot use.

A site specific Official Plan Amendment is proposed as follows:

- / Despite Section 7.3.1 and 7.3.2.(g), a range of non-residential uses and existing parking facilities may be permitted within the existing buildings and structures at the lands municipally known as 73 Victoria Street; 87, 89, 95, 97, and 129 Pond Street; and the parcel north of 87 Pond Street (with no municipal address), provided that the use will not pose additional risk to life or property and the requirements of the appropriate Conservation Authority have been satisfied.

It is Fotenn's opinion that the proposed Official Plan Amendment applicable to the subject lands above are appropriate in allowing for the continued and future use existing underutilized buildings within Simcoe's downtown area. The proposed amendment seeks to allow for a range of non-residential uses and adaptive reuse of the underutilized buildings and lots which have historically contained similar uses.

4.1.2 Proposed Zoning By-law Amendment

The proposed Zoning By-law Amendment application seeks text and map amendments to Zoning By-law 1-Z-2014 to permit a range of non-residential uses in the Open Space (OS) zone within the existing Pond and Victoria Street buildings, and to permit the existing parking lot use. The proposed permitted uses are consistent with the uses permitted in the nearby Central Business District zone.

A site specific Zoning By-law Amendment (OS-##) is proposed as follows:

- / Despite the provisions in 9.1.1., the following uses are permitted within the existing buildings and structures at the lands municipally known as 73 Victoria Street; 87, 89, 95, 97, and 129 Pond Street;
 - o Antique shop, Art gallery, Auction centre, Bar or night club, Boutique, Brew-your-own, Clinic or doctors office, College or trade school, Contractor supply / service shop, Convenience store, Deli and specialty food shop, Department store, Equipment rental, Farmers market, Financial institution, Florist shop, Fruit and veg outlet, Hardware store, Library, Lumber yard & building supply, Merchandise service shop, Museum, Office (all types), Parking lot, Personal service shop, Pharmacy, Photo studio or shop, Place of entertainment, Place of sports and recreation, Printing & publishing establishment, Private club, Radio, TV studio, Restaurant (all types), Retail store, Supermarket, Training & rehab centre, Video store, Wholesale outlet.
 - o Storage shall be permitted to be located in the lower-level of the existing building, and shall accessory to the permitted uses.
- / Despite the provisions in 9.1.1., a parking lot is a permitted use at the parcel north of 87 Pond Street (with no municipal address) and may be used in association with permitted uses on lands municipally known as 87-97 Pond St.

It is Fotenn's opinion that the proposed Zoning By-law Amendment is appropriate for the subject lands, as it will allow for the continued and future use existing underutilized buildings within Simcoe's downtown area. The proposed amendment seeks to allow for a range of non-residential uses consistent with those permitted in the nearby Central Business District (CBD) zone, and will allow for the adaptive reuse of the underutilized

buildings in downtown Simcoe. The proposed uses are appropriate to be accommodated at the existing buildings and parcels and will not cause undue negative impacts on the surrounding lands.

4.2 Argyle Street Proposed Amendments

4.2.1 Proposed Official Plan Amendment

The proposed Official Plan Amendment application seeks text and map amendments to the County of Norfolk Official Plan to redesignate the portion of 86 Argyle Street from Parks and Open Space to Urban Residential from a policy that allow a variety of uses within the existing buildings, and to allow for the continued uses of the existing associated parking lot use.

A site specific Official Plan Amendment is proposed as follows:

- / Amend Schedule “B” of the Official Plan to redesignate the portion of 86 Argyle Street from “Parks and Open Space” to “Urban Residential”; and,
- / To apply Site Specific Policy Area 7.7.3.X on Schedule “B” at 86 Argyle Street with the following policy:
 - o On lands designated Urban Residential – Site Specific Policy Area 7.7.3.X on Schedule “B” to this Plan, in addition to the uses permitted, a hotel shall also be permitted.

It is Fotenn’s opinion that the proposed Official Plan Amendment application is appropriate for the subject lands. The subject lands are currently split into two zones: Hazard Lands and Parks and Open Space. The OPA is seeking to redesignate the Parks and Open Space portion to Urban Residential to facilitate the future residential or mixed-use development of the site while maintaining the Hazard Land designation in the western portion of the property along the Lynn River. As demonstrated by the conceptual plans prepared for the subject lands, the residential uses can be situated outside of the Hazard Land designation, and it is not expected that future development would have undue negative impacts on this area. Any new development at the subject lands would be subject to a future Site Plan Control application, in where detailed plans and studies would be required to demonstrate no negative impacts or risks relative to the Hazard Lands. Additionally, the Official Plan permits a mix of uses to be located at the subject property as small scale neighbourhood convenience commercial and personal service uses, which may be achieved within a mixed-use built form.

4.2.2 Proposed Zoning By-law Amendment

The proposed Zoning By-law Amendment application seeks text and map amendments to Zoning By-law 1-Z-2014 to rezone a portion of the subject lands from Open Space (OS) to Urban Residential 6 (R6). Additionally, special provisions would permit ground floor non-residential uses in a mixed-use building, such as day care nursery, laundromat, merchandise service shop, personal services shop, and restaurant, as well as permitting a hotel use at the property.

To illustrate potential development, two concept plans were created. The first Concept Plan demonstrates a five-storey mixed-use building with ground-floor retail space, while the second Concept Plan demonstrates a six-storey residential building. Both concept plans demonstrate surface parking located within the Hazard Land zone, as well as ten parking space retained as public parking. The concept plans demonstrate site specific provisions required such as permitting limited non-residential uses, a reduced exterior side yard setback, and a reduced visitor parking requirement.

As such, rezoning the property and including a site specific Zoning By-law Amendment (R6-##) is proposed as follows:

- / Amend Zoning By-law 1-Z-2014 to rezone a portion of the property at 86 Argyle Street from Open Space (OS) to Urban Residential 6 (R6); and,
- / Add site-specific provisions (R6-##) to permit the following non-residential uses:
 - o Despite 5.6.1, a hotel and hostel are permitted uses;

- Despite 5.6.1, a daycare nursery, laundromat, merchandise service shop, personal service shop, and restaurant are permitted to be located within the ground floor of a mixed-use building;
- Despite 5.6.1, a boarding or lodging house, or emergency shelter are permitted in accordance with the provisions of the R6 zone;
- Despite 5.6.2.(c), the minimum interior side yard setback is 3 metres;
- Despite 5.6.2.(g), the maximum FSI shall be 1.0 for any building up to eight (8) storeys; and,
- Despite Section 4.9, vehicle parking is required at a rate of 1.5 spaces / dwelling unit for residential and visitor spaces combined.
 - In addition to the provision above, ten (10) vehicle parking spaces shall be provided and maintained for public use.

It is Fotenn's opinion that the proposed Zoning By-law Amendment is appropriate to support a viable future use at the subject lands. The subject lands are currently used as a municipal parking lot, with the Zoning By-law Amendment proposing a new residential or mix of uses near Simcoe's downtown. The proposed Zoning By-law Amendments are intended to support efficient development that aligns with the goals of the County of Norfolk and enhances the Simcoe Downtown Area. The Zoning By-law Amendment and Concept Plans demonstrate the site's potential to contribute to downtown Simcoe's intensification while providing valuable services to the community.

The proposed site specific amendments to permit non-residential uses are appropriate in allowing for a range of uses to locate at the property. The Official Plan permits a mix of uses to be located at the subject property as small scale neighbourhood convenience commercial and personal service uses, which may be achieved within a mixed-use built form. Additionally, the Official Plan permits group homes, hostels, temporary shelters, emergency shelters and other similar forms of special needs housing, subject to the policies of Section 5.3.2.

The proposed interior side yard setback reduction is appropriate to accommodate a built form outside of the Hazard Land zone and maintain adequate separation from the Lynn River. Finally, the proposed slight reduction to the required parking is appropriate in facilitating both the new residential development while maintaining ten (10) parking spaces on the subject lands for public use.

5.0 Supporting Studies

5.1 Preliminary Functional Servicing and Stormwater Management Report

A Preliminary Functional Servicing and Stormwater Management Report was prepared by LandSmith Engineering & Consulting Ltd. for the subject lands, dated November 2024. The report provides supporting documentation and analysis related to the planning applications and intention for the subject lands. The report provides a review of water and wastewater servicing, and stormwater management considerations for each of the properties. The existing buildings located on Pond and Victoria Streets have available existing municipal infrastructure within Pond Street and are already serviced for water and sanitary. Future confirmation of the adequacy of water-service sizes can be completed through the Building Department depending on the ultimate use of the existing spaces. The Argyle Street property and proposed building concepts can be serviced by existing and adjacent water and wastewater infrastructure. Water calculations, preliminary design and recommendations for on-site stormwater management are included in the report, while recommendations on the final design for stormwater management can be completed through the Site Plan Control process. Additional stormwater recommendations are included in the report for the Pond and Victoria Street properties should surface level development of parking areas take place, to be implemented through a future Site Plan Control process.

5.2 Transportation Brief

A Transportation Brief was prepared by CGH Transportation for the subject lands, dated November 2024. The Transportation Brief provides detailed analysis on the existing conditions, future background conditions, planned network improvements, and trip generation relative to the proposed planning applications and concept plans for the subject lands. The transportation brief has determined that further investigation may be required relative to the several of the proposed land uses and their potential gross floor areas at the Pond and Victoria Street properties, while the proposed parking lot use at the property with no municipal address is not expected to generate additional transportation impacts. Finally, the transportation increases contemplated based on the proposed concept plans is expected to be negligible, however ground floor non-residential land uses may require further investigation as the proposed land uses are susceptible to exceeding trip generation thresholds. The report recommends that the proposed applications proceed, with respect to the potential need for a further investigation at subsequent development application stages by future proponents of development applications on each parcel. Should a proposed land use exceeds the TIS trip generation threshold, the report recommends that a full study be required.

Conclusion

It is Fotenn's opinion that the proposed Official Plan Amendments and Zoning By-law Amendments at the subject lands is consistent with Provincial policies and the purpose and intent of the Norfolk County Official Plan.

The proposed Official Plan Amendment is appropriate in allowing for the continued and future use existing underutilized buildings within Simcoe's downtown area, as well as the future use and development of municipally owned lands near to the downtown. Permitting a range of residential and non-residential uses amongst the properties will both allow the adaptive reuse of a heritage building, and permit uses and development to locate in an area which contains similar existing uses and built forms. complementary uses. in the proposed OPA seeks to introduce adaptive re-use of the underutilized buildings and lots which have historically contained similar uses. through a range of permitted uses that include commercial and residential uses.

The proposed Zoning By-law Amendments are appropriate for the subject lands in that it will establish rights for a range of non-residential uses consistent with those permitted in the nearby Central Business District (CBD) zone, and will allow for the adaptive reuse of the underutilized buildings in downtown Simcoe. The proposed uses are appropriate to be accommodated at the existing buildings and parcels and will not cause undue negative impacts on the surrounding lands. Further, the Zoning By-law Amendment will establish a residential zone and permit both a limited mix of uses and supports the viable future use and development of the subject lands. As demonstrated by the conceptual plans prepared for the subject lands, proposed uses and forms can be situated outside of the Hazard Land designation, and it is not expected that future development would have undue negative impacts on this area. Any new development at the subject lands would be subject to a future Site Plan Control application, in where detailed plans and studies would be required to demonstrate no negative impacts or risks relative to the Hazard Lands.

Overall, it is our professional land use planning opinion that the applications are appropriate to support the future and continued use of the subject lands and should be approved.

Sincerely,



Nathan Petryshyn, MCIP RPP
Senior Planner



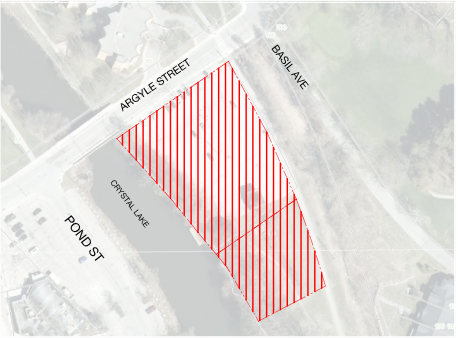
Michael Keene, MCIP RPP
Principal, Planning and Development

APPENDIX A

CONCEPT PLANS FOR ARGYLE STREET



86 ARGYLE STREET SIMCOE Concept Plan



DEVELOPMENT STATISTICS

SITE AREA	5,356m ²	
BUILDING FOOTPRINT:	800m ²	
GFA (GROSS)	Retail 420m ²	Residential 3,356m ²

RESIDENTIAL UNITS
Apartment: 38
Assumes an 85% efficiency, 75m²/unit (807ft²/unit)

PARKING PROVIDED:	81-spaces
Residential (1.5 spaces/unit)	57-spaces
Retail (1 space/30 sm)	14-spaces
Public Parking (Retained)	10-spaces

NOTES

- Assumes typical Residential floor height of 3.0m. Assumes Retail Ground floor height of 4.5m.
- Assumes 85% efficiency and 70m² (754ft²) unit size is used to calculate approximate total number of units.
- Assumes 1.5 spaces / unit (including 0.25 spaces / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade). 10 public parking spaces provided/retained.
- The base plan (lot lines, existing roads and surrounding areas) is based on the topographic survey (23-3682) and aerial images (Norfolk County Web Map). The site area is approximate and all dimensions need to be confirmed by a legal survey.

1	CONCEPT PLAN	2024.10.23	ET
No.	REVISION	DATE	BY

CLIENT
NORFOLK COUNTY

FOTENN
Planning + Design

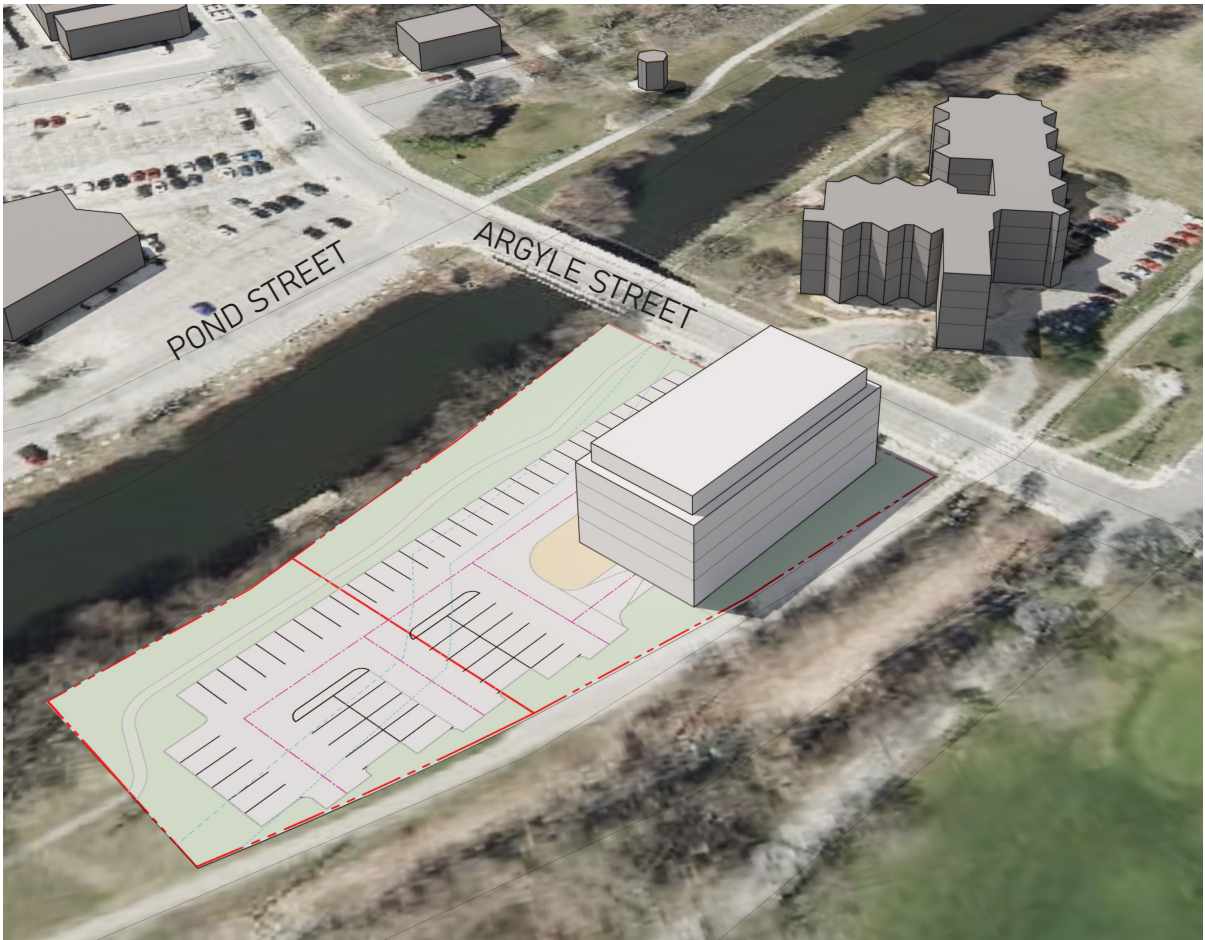
OTTAWA: 396 Cooper Street, Suite 300, Ottawa ON K2P 2H7 613.730.5709	KINGSTON: 4 Cataract St., Suite 315, Kingston ON K7K 1Z7 613.542.5454	TORONTO: 174 Spadina Ave., Suite 304, Toronto ON M5T 2C2 416.789.4530
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REVIEWED	ET
DATE	2024.10.23

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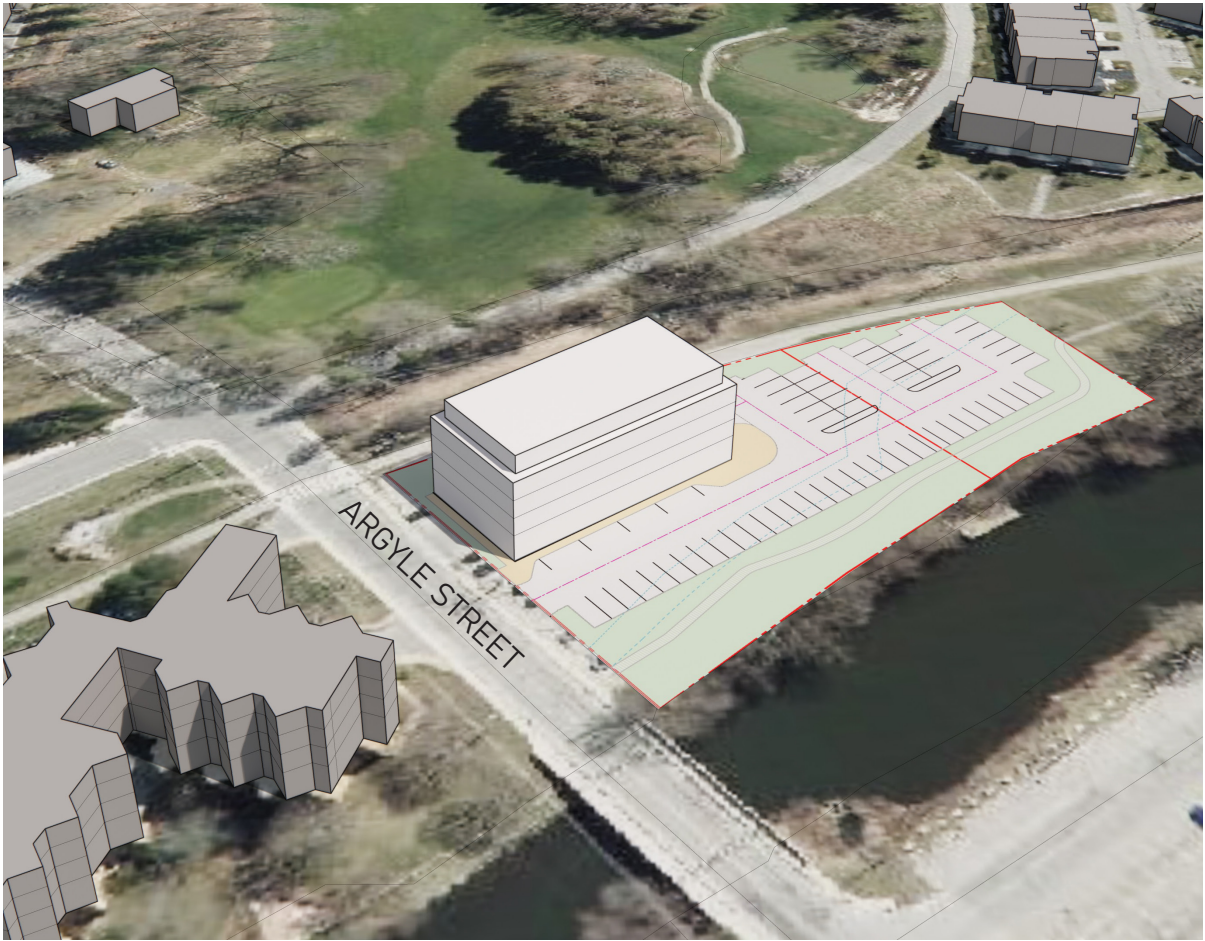
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VIEW LOOKING SOUTHWEST



VIEW LOOKING SOUTHEAST

86 ARGYLE STREET

SIMCOE, ON
NORFOLK COUNTY



86 ARGYLE STREET SIMCOE Concept Plan



DEVELOPMENT STATISTICS

SITE AREA	5,356m ²	
BUILDING FOOTPRINT:	800m ²	
GFA (GROSS)	Retail 0m ²	Residential 4,352m ²

RESIDENTIAL UNITS	
Apartment:	47
Assumes an 85% efficiency, 78m ² /unit (840f ² /unit)	

PARKING PROVIDED:	81-spaces
Residential (1.5 spaces/unit)	71-spaces
Retail (1 space/30 sm)	0-spaces
Public Parking (Retained)	10-spaces

NOTES

- Assumes typical Residential floor height of 3.0m. Assumes Retail Ground floor height of 4.5m.
- Assumes 85% efficiency and 74m² (800f²) unit size is used to calculate approximate total number of units.
- Assumes 1.5 spaces / unit (including 0.25 space / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade).
- Assumes 1.5 spaces / unit (including 0.25 spaces / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade). 10 public parking spaces provided/retained.
- The base plan (lot lines, existing roads and surrounding areas) is based on the topographic survey (23-3682) and aerial images (Norfolk County Web Map). The site area is approximate and all dimensions need to be confirmed by a legal survey.

1	CONCEPT PLAN	2024.10.23	ET
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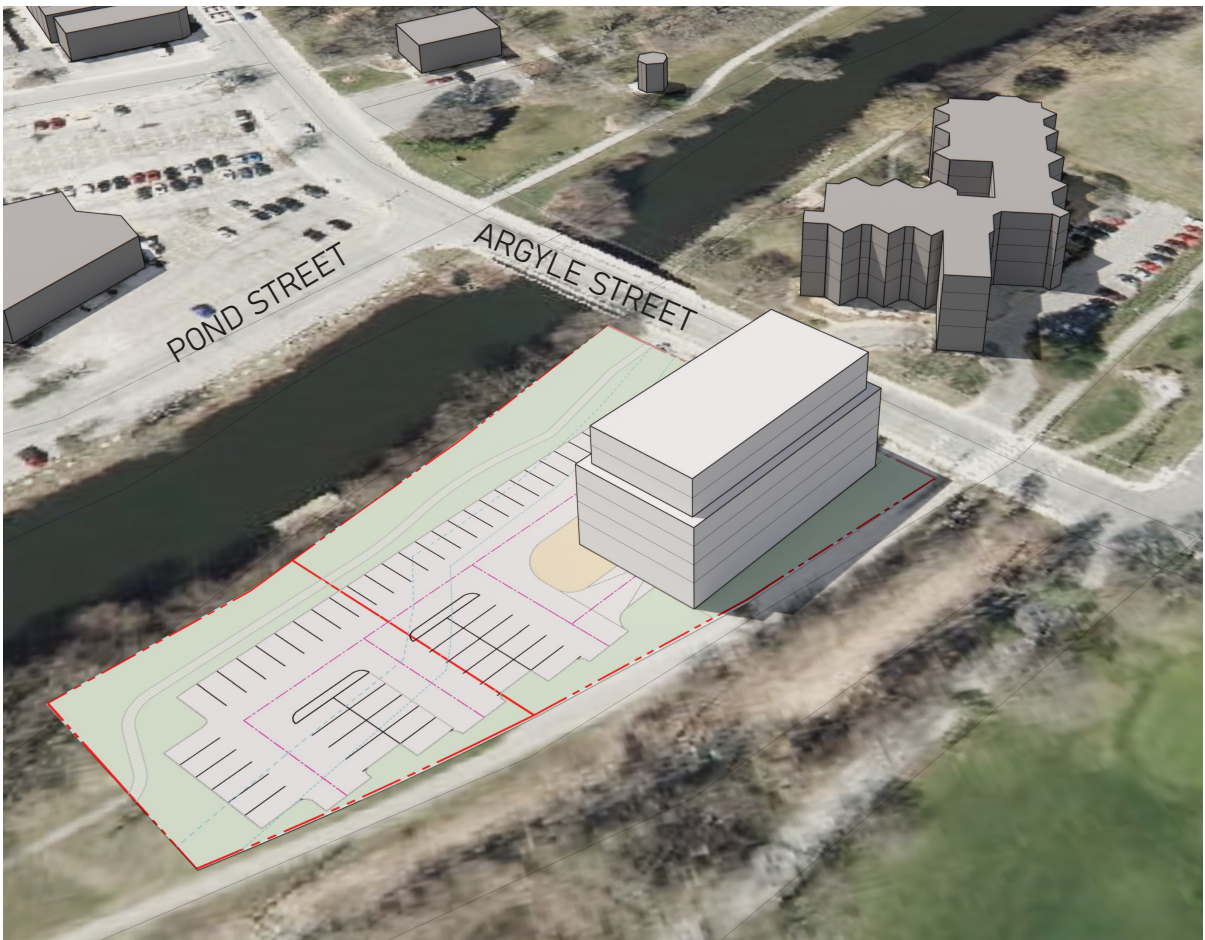
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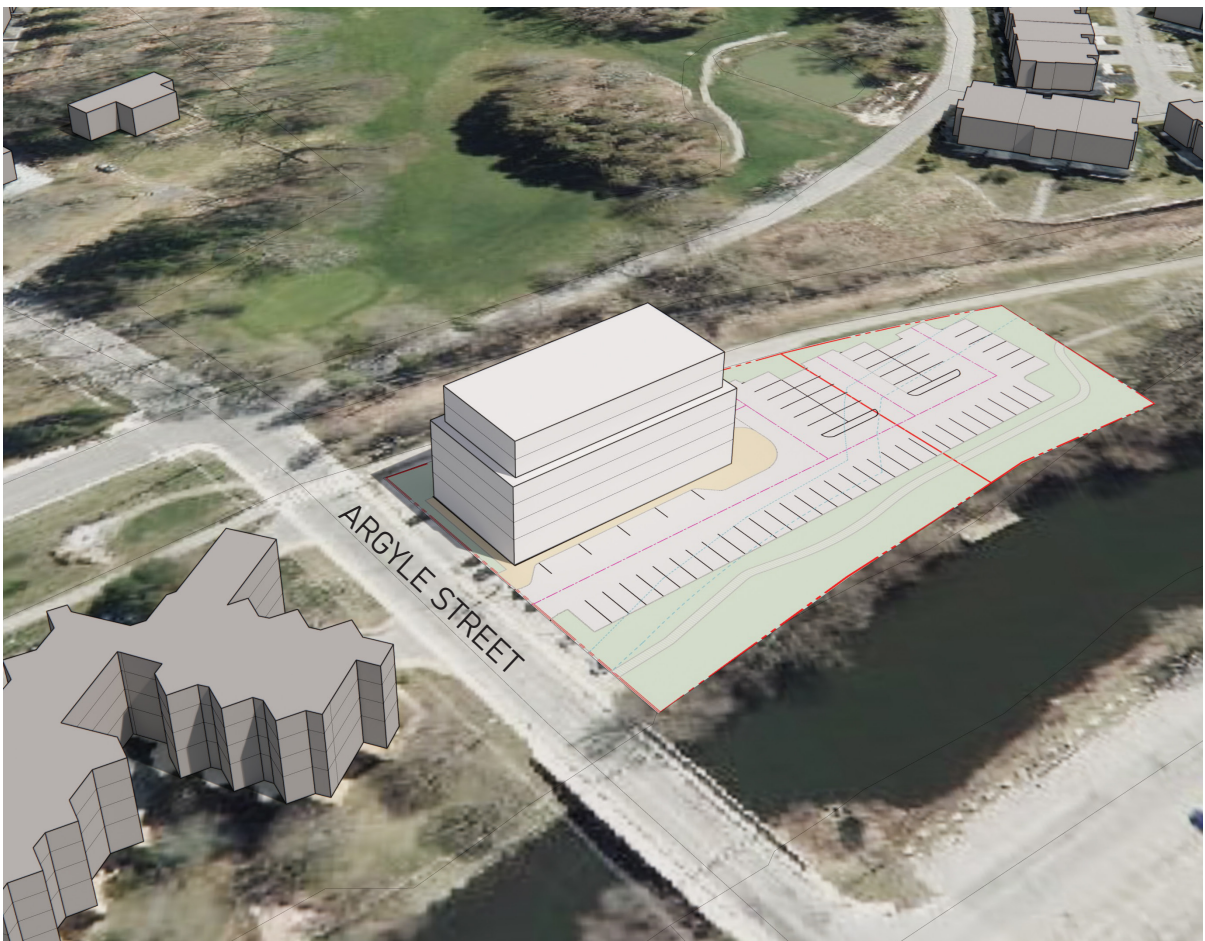
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VIEW LOOKING SOUTHEAST

86 ARGYLE STREET

SIMCOE, ON
NORFOLK COUNTY

FUNCTIONAL SERVICING &
STORMWATER MANAGEMENT REPORT

SIMCOE
RIVERFRONT
LANDS

NOVEMBER 15, 2024

Norfolk County



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1. Introduction

1.1. Background

LandSmith Engineering & Consulting Ltd. was retained by Norfolk County through Fotenn Planning + Design for the completion of a Functional Servicing & Stormwater Management Report for lands known as the 'Riverfront Lands' in the community of Simcoe in Norfolk County. The purpose of this report is to provide supporting documentation and analysis for development applications being completed on behalf of Norfolk County for County owned lands located along the Lynn River in the community of Simcoe.

A *Terms of Reference* for the reports required to support these development applications was prepared by the County and provided to the various consultants for review prior to beginning their work. The following report is intended to fulfill the requirements outlined by the County in the noted terms of reference and to provide engineering support and information relating to water, wastewater and stormwater management for the various forms of re-development which are proposed for the five parcels of land in question.

1.2. Site Location & Topography

As noted in the previous section, the subject lands are located in the community of Simcoe in Norfolk County and are located adjacent to the Lynn River. There are five separate areas of land to be studied and they have been identified by the County by letter as Parcels A, B, C, D, and E. All the properties are located between Argyll Street and Victoria Street. Parcels A through D are located to the west of the Lynn River, east of Pond Street, and downstream (south) of the Quance Dam, while Parcel E is located to the east of the river and upstream of the Quance Dam immediately to the south of Argyll Street. The Site Location Plan on the following page provides a further description of the location of the lands to be studied.

No topographic survey was provided for review by LandSmith for the completion of this report, however a walkthrough / site assessment was completed on October 10th in which the topography was reviewed. This, together with a desktop review of available contour information, forms the basis of our description of the existing topography. All the parcels, save and except Parcel D are sloped towards the Lynn River, and would discharge runoff under rainfall events directly to the river. Parcel D as the exception, is primarily sloped towards Pond Street where runoff under rainfall events enters street catch-basins before discharging to storm sewers which drain to the Lynn River. Some of the parcels, including C, D and E, contain stormwater infrastructure. This will be discussed further within this report under the headings for each Parcel.

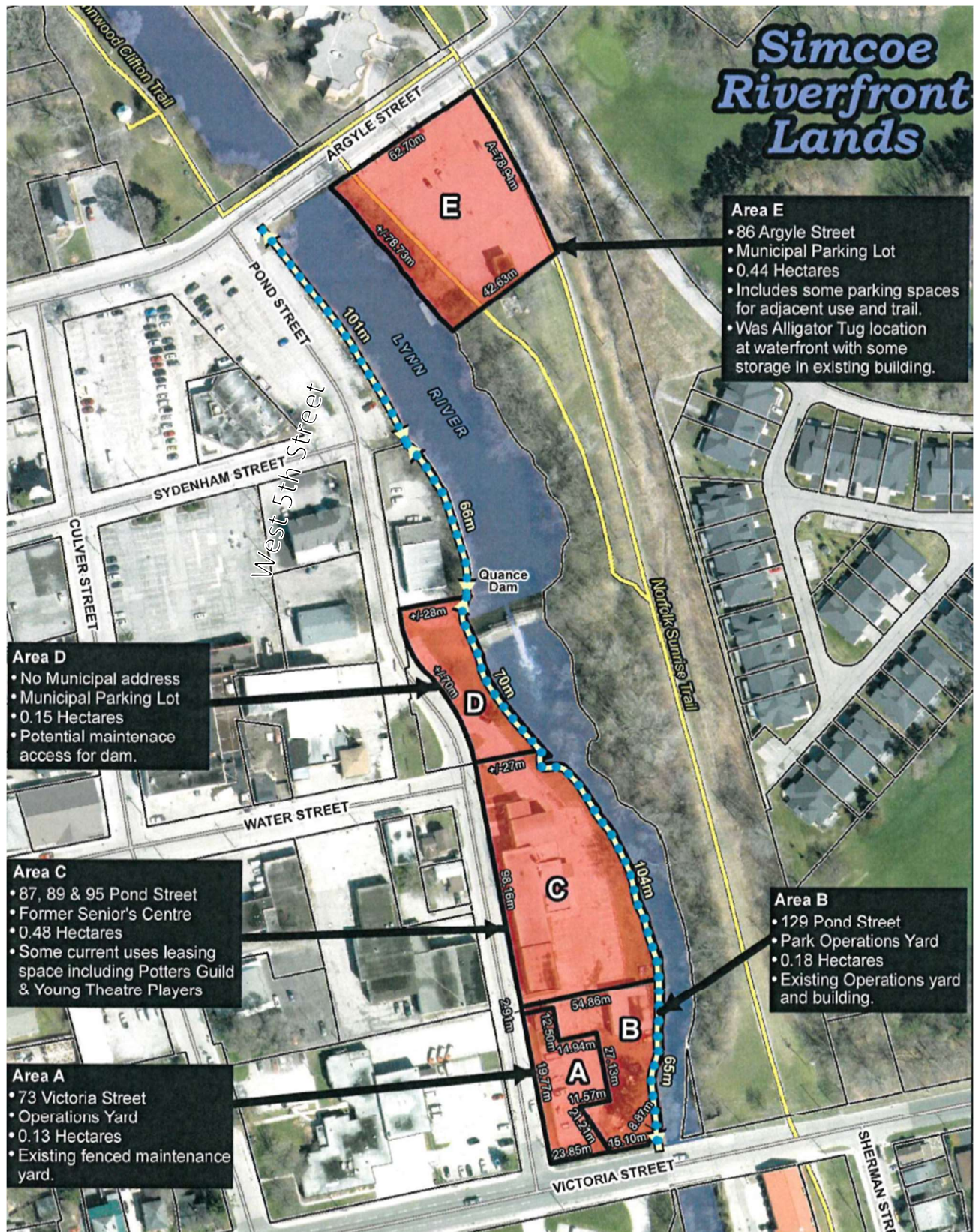


Figure 1: Site Location Plan

1.3. Proposed Development

The proposed forms of development for the various parcels are noted by the County in the provided terms of reference. The applications to be completed on behalf of the County are Official Plan Amendments and Zoning Bylaw Amendments as follows:

Parcels A-C: Redesignation and rezoning from Hazard Lands designation and Open Space zoning to add a special policy and add special provisions to allow a list of permitted uses within the existing buildings only (with the proviso of only accessory storage in the basement) that aligns with many of the existing non-residential uses within the CBD Zone. The list of uses excludes residential or other uses for health and safety due to floodplain and other site-contextual reasons.

Parcel D: Redesignation and rezoning to add special policy and provision to the existing Hazard Lands designation and Open Space zoning to allow parking, including that which may be associated with adjacent lands.

Parcel E: Redesignation and rezoning from Parks & Open Space designation and Open Space zoning to Urban Residential designation and Residential Six (R6) zoning with special provisions to allow a limited range of non-residential uses on the ground floor of a mixed-use building, including day care nursery, laundromat, merchandise service shop, personal services shop, restaurant and to also permit hotel.

The list of permitted uses for Parcels A-C are included in Appendix 'A' together with the original *Terms of Reference* as provided by the County.

To support the re-designation and re-zoning as described above, the following report will provide high-level servicing information describing the implications of the re-designations and additional uses from a water, wastewater and stormwater management perspective. Specific focus will be given to Parcel E, as the proposal for this parcel will entail permissions for the construction of a new building thereby creating greater servicing implications than with the other parcels for which no new construction is proposed.

This report will address each parcel separately within the following sections and provide commentary and analysis pertaining to water, wastewater and stormwater management (SWM) for each. This report will reference the Norfolk County Engineering Design Criteria and is completed in conjunction with review of the Norfolk County Integrated Sustainable Master Plan (ISMP).

2. SERVICING ANALYSIS

2.1. PARCEL A

2.1.1 - Parcel Description

Parcel A consists of vacant lands located at 73 Victoria Street. The exact limit of the lands are described on the Registered Plan provided by Jewitt and Dixon Ltd. which is provided in Appendix 'A' for reference. This parcel has frontage on both Pond Street and Victoria Street, there is a driveway access to the parcel from Victoria Avenue, however it is not directly on the frontage of Parcel A. There is one abandoned building located on Parcel A. Plans illustrating the existing and available municipal sewers and services for this parcel are included within Appendix B of this report for reference. Based on review of the available infrastructure drawings for the adjacent streets as provided by the County this building appears to be un-serviced and may contain electrical equipment as part of a former transformer station located on these lands. See image below.



Figure 2: Parcel A, Existing Building

2.1.2 – Water Servicing Review

There is a 150mm diameter watermain along the frontage of the Parcel within Pond Street, and a 300mm diameter watermain located along the frontage of the Parcel within Victoria Street. Review of the Norfolk County Integrated Sustainable Master Plan (ISMP), Appendix C ‘Water Distribution System Model Outputs’ indicates that there is good available water pressure and fire-flow within the adjacent watermains even up to the 2041 ‘Maximum Day’ projected scenario. The pages from Appendix ‘C’ relating to the community of Simcoe water model are included in Appendix B of this report for reference.

Fire-flow servicing has not been considered, as this is an existing building. Domestic water flow requirements would be dependent upon the requested use from among the permitted uses contemplated as part of the current development applications. Were a tenant for the existing building to arise, co-ordination with the Building Department should be carried out to review the expected domestic water demand requirements and to ensure an appropriately size water service for the building is provided.

2.1.2 – Wastewater Servicing Review

There is an existing 750mm diameter trunk watermain located within Pond Street along the frontage of Parcel A. Review of the Norfolk County ISMP, ‘Appendix F’ – Wastewater Figures, indicates that there are no current capacity constraints within the local trunk sewer, downstream to the Simcoe Wastewater Treatment Plan.

Should a tenant arise for the existing building it is not expected that the sanitary generation, based on the list of permitted uses, would exceed the available capacity within the downstream sanitary system. Were the future development of the Parcel to take place for re-use of the existing building detailed sanitary calculations could be provided to the County under site-plan control requirements. As noted above, the existing structure is not serviced and so a new sanitary service connection would be required to be provided were the building to be put to use in the future.

2.1.3 – Stormwater Review & Considerations

It appears to be no internal storm sewers within Block A. There are storm sewers within Pond Street adjacent to the parcel. These sewers drain to the Lynn River via a 525mm storm sewer which passes beside the building within Parcel C to an outfall to the Lynn River. Stormwater for the subject lands sheets easterly onto and across Parcel B and then continues easterly to the Lynn River. Were the lands to be developed as an asphalt parking area Stormwater Management would be required. A general section describing typical stormwater management requirements and recommendations has been attached to this report for reference purposes within Appendix D.

PARCEL B

2.2.1 - Parcel Description

Parcel B consists of vacant lands located at 129 Pond Street. The exact limit of the lands are described on the Registered Plan provided by Jewitt and Dixon Ltd. which is provided in Appendix A for reference. This parcel has frontage primarily on Victoria Street, however there is a 2.91m space of frontage on Pond Street as well. Driveway access to the parcel is available via an existing curb-cut on Victoria Street.

There is a single existing building on Parcel B. This structure was formerly used as a garage for the storage of Norfolk County Public Works vehicles. Based on the records provided by Norfolk County it appears that the building is un-serviced for sanitary, however it is possible that a water service is present (see following section) this should be reviewed with the County.

Plans illustrating the existing and available municipal sewers and services for this parcel are included within the Appendices of this report for reference.

2.2.2 - Water Servicing Review

There is a 150mm diameter watermain along the frontage of the Parcel within Pond Street, and a 300mm diameter watermain located along the frontage of the Parcel within Victoria Street. Review of the Norfolk County ISMP, Appendix C 'Water Distribution System Model Outputs' indicates that there is good available water pressure and fire-flow within the adjacent watermains even up to the 2041 'Maximum Day' projected scenario. The pages from Appendix C relating to the community of Simcoe water model are included in Appendix C of this report for reference.

Fire-flow servicing has not been considered, as this is an existing building. Domestic water flow requirements would be dependent upon the requested use from among the permitted uses contemplated as part of the current development applications. Were a tenant for the existing building to arise, co-ordination with the Building Department should be carried out to review the expected domestic water demand requirements and to ensure an appropriately size water service for the building is provided.

It should be noted that the plans provided by the County do not illustrate any existing services to the building, however based on the site review it does appear that there is an existing water service which was brought to the building. It may be possible to re-use this existing service, subject to review of the size.



Figure 3: Parcel B, Existing Building Water Service

2.2.3 – Wastewater Servicing Review

There is an existing 750mm diameter trunk watermain located within Pond Street along the frontage of Parcel A. Review of the Norfolk County ISMP, Appendix F – Wastewater Figures, indicates that there are no current capacity constraints within the local trunk sewer, downstream to the Simcoe Wastewater Treatment Plan.

Should a tenant arise for the existing building it is not expected that the sanitary generation, based on the list of permitted uses, would exceed the available capacity within the downstream sanitary system. Were the future development of the Parcel to take place for re-use of the existing building detailed sanitary calculations could be provided to the County under site-plan control requirements.

As noted above, the existing structure is not serviced for sanitary, and so a new sanitary service connection would be required to be provided were the building to be used in the future.

2.2.4 – Stormwater Management Review & Considerations

There appears to be no internal storm sewers within Block B. There are storm sewers within Pond Street adjacent to the parcel. These sewers drain to the Lynn River via a 525mm storm sewer which passes between the building on Parcel B and Parcel C to an outfall to the Lynn River. Stormwater for the subject lands sheets easterly onto and across Parcel B and then continue easterly to the Lynn River. Were the subject lands to be developed as an asphalt parking area Stormwater Management would be required to be provided. A general section describing typical stormwater management requirements and recommendations has been attached to this report for reference purposes.

2.2. PARCEL C

2.3.1 - Parcel Description

Parcel C is occupied by an existing 2-storey flat-roofed brick building with municipal addresses including 87, 89, 95 and 97 Pond Street. Together with the building the Parcel encompasses existing asphalt parking areas to the rear (east) of the building. The exact limit of the lands are described on the Registered Plan provided by Jewitt and Dixon Ltd. which is provided in Appendix A for reference.

This parcel has frontage on Pond Street, and there appears to be multiple sanitary and water services to the structure, based on the multiple addresses. Driveway access to the parcel is available via an existing curb-cut on Pond Street within Parcel C, and a separate driveway entrance to the north which crosses into Parcel D.

This building has numerous units and some are currently occupied, while others remain empty. The servicing of the existing building will be discussed in the following sections. Plans illustrating the existing and available municipal sewers and services for this parcel have been provided by the County are included within Appendix B of this report for reference.

2.3.2 – Water Servicing Review

Norfolk County plans illustrate a 150mm water service to the main southern area of the existing building at 95 Pond Street. In addition, there appears to be a second water service of 50mm diameter which extends to the northern portion of the building at 87 Pond Street.

There is an existing 150mm diameter watermain on Pond Street along the frontage of the entire building face. As in the cases of Parcels A and B, the Norfolk County ISMP illustrates adequate pressures and fire-flow availability from this watermain for the servicing of the building under existing conditions.

The addition of the permitted uses listed by the County are not expected to impact the local water system or the ability to continue to provide domestic and fire-flows from the municipal mains.

Fire-flow considerations are not included herein as the building is an existing structure and the level of service to the building would remain the same regardless of the tenancy. Domestic water flow requirements would be dependent upon the requested use from among the permitted uses contemplated as part of the current development applications. Were a tenant for the existing building to arise, co-ordination with the Building Department should be carried out to review the expected domestic water demand requirements and to ensure an appropriately sized water service for the building is provided if not already available.

2.3.3 – Wastewater Servicing Review

There is an existing 750mm diameter trunk watermain located within Pond Street along the frontage of Parcel C. Review of the Norfolk County ISMP, Appendix F – Wastewater Figures, indicates that there are no current capacity constraints within the local trunk sewer, downstream to the Simcoe Wastewater Treatment Plant.

Should a tenant arise for the existing building it is not expected that the sanitary generation, based on the list of permitted uses would exceed the available capacity within the downstream sanitary system.

2.3.3 – Stormwater Review & Considerations

There are no storm sewers within Pond Street immediately at the frontage of the building, however there are storm sewers to the south of the existing building and there are two outfalls which pass through the Parcel C property to the Lynn River. The 525mm pipe mentioned above, which runs along the south limit, and a 975mm pipe which services a significant area of the Simcoe downtown passes along the north of the building to an outfall to the Lynn River.

There is an internal catchbasin network within the parking area at the rear of the building, and most (if not all) of the asphalt parking area is captured by these internal catchbasins before being discharged to the Lynn River via one of the outfalls. It does not appear that any stormwater controls are in place to provide stormwater quality treatment. Were it the case that the parking area was to be re-developed by the County with new curbs and asphalt stormwater quality control measures should be included with the design. This would be subject to review by City Development Engineering staff and their review of future Site Plan applications.

A general section describing typically applicable stormwater management requirements and recommendations has been attached to this report for reference purposes.

2.3. PARCEL D

2.4.1 - Parcel Description

Parcel D is not occupied by any buildings under existing conditions. The exact extents of the Parcel are described on the Registered Plan provided by Jewitt and Dixon Ltd. which is provided in Appendix A for reference.

The property does not have a municipal address, it contains an existing parking area that is immediately adjacent to the travelled way of Pond Street, and includes an entrance to the parking area located behind Parcel C.

2.4.2 – Water Servicing Review

As noted in the County's terms of reference for this project, there are no existing buildings on the site, and the proposed development applications will not contain consideration for any uses which would involve the construction of new structures.

2.4.3 – Wastewater Servicing Review

As noted in the County's terms of reference for this project, there are no existing buildings on the site, and the proposed development applications will not contain consideration for any uses which would involve the construction of new structures.

2.4.4 – Stormwater Review & Considerations

Storm drainage for the existing parking area enters the catchbasins within Pond Street and discharges to the 975mm drainage pipe which extends from Water Street easterly to the Lynn River adjacent to the building on Parcel C. There do not appear to be any water quality control measures currently in place to service the parking area. Were re-development of the parcel to be completed for the expansion / improvement of the parking areas stormwater quality measures should be included in the design to protect the downstream receiving Lynn River drainage system.

A general section describing typically applicable stormwater management requirements and recommendations has been attached to this report for reference purposes.

2.4. PARCEL E

2.5.1 - Parcel Description

Parcel E is located on the opposite side of the Lynn River from the other parcels already discussed within this report. This Parcel consists of an existing municipal parking lot, some landscaped and treed areas adjacent to the Lynn River, walking trails and grassed areas to the south of the main parking area. The municipal address of these lands is 86 Argyll Street. Figure 4: Site Location, Parcel E can be found below and illustrates further the site area via the Norfolk County aerial mapping. The exact limits of the Parcel area are described in the Registered Plan prepared by Jewett & Dixon which is included in Appendix A for reference purposes.



Figure 4: Site Location, Parcel E

2.5.2 – Proposed Development

In the case of this parcel, the proposed OPA and Re-zoning will not only add uses but will also include provision for new construction of the highest and best use for the lands. Development planning work by FOTENN Planning + Design in conjunction with County staff has determined a development concept and site layout which represents the best use for the property. Two concept plans are provided, P1 and P2, and these plans are included in Appendix C for reference.

As can be seen, the proposals are for either a 5-storey mixed use building (P1) with 420 square meters of retail space, and 38 apartment units, or a 6-storey building (P2) with 47 apartment units. Both concepts provide surface level parking surrounding the proposed building. These provided Concept Plans P1 and P2 form the basis of the provide the basis for the provided engineering analysis in the following sections.

2.5.3 – Water Servicing Review

Water Service Assessment

The Ontario Building Code has been utilized to calculate the expected maximum hydraulic load and associated flow rate for the proposed building with the Fixture Unit Method, per OBC Table 7.6.3.2.A. These calculations have been based on the Concept Plans provided by Fotenn Planning + Design which are attached to this letter report for reference purposes.

Concept Plan P1:

As per Concept Plan P1, the proposed building is to have a total of 38 residential units and one ground floor commercial unit. It was assumed that each residential unit will contain: one three-piece bathroom, one powder room, dishwasher, clothes washer, and kitchen sink. The commercial unit was assumed to have two public bathrooms.

Based on the fixture units method the building in Concept P1 will have a total of 328 fixture units. This is equivalent to a maximum hydraulic load for the building of 6.96 L/s. The supporting calculations describing how this value was determined have been attached to this report within Appendix C for reference purpose.

Concept Plan P2:

As per Concept Plan P2, the proposed building is to have a total of 47 residential units. It was assumed that each residential unit will contain: one three-piece bathroom, one powder room, dishwasher, clothes washer, and kitchen sink.

Based on the fixture units method the building in Concept P2 will have a total of 503 fixture units. This is equivalent to a maximum hydraulic load for the building of 8.74 L/s. The supporting calculations describing how this value was determined have been attached to this report within Appendix C for reference purpose.

In addition to domestic flow calculations, the fire-flows for the proposed building were calculated using both the Fire-Underwriters Survey (FUS) method which is used by Norfolk County, and also via the Ontario Fire Marshall's Method as per Part 3 of the Ontario Building Code for comparison purposes. These calculations are contained within Appendix C for reference, together with a Fire-Protection Plan which illustrates the proximity of the nearest buildings.

As can be seen through review of the provided methods, the FUS calculation reveals a needed fire-flow for the building of 105 L/s while the OFM Method also results in a needed fire-flow of 105 L/s.

There is a 250mm watermain located within Argyll Street on the site frontage which can be used for the servicing of the proposed building. Based on the information about the existing water system found within the Norfolk County ISMP the adjacent watermain ranges in pressure from 350 – 550 kPa and can provide a fire-flow of more than 159 L/s. Therefore, based on this information the proposed building can be serviced for water – with a peak demand of 114 L/s including both domestic and fire-flow requirements – from the adjacent watermain.

At the time of development under site-plan control these calculations should be verified and the available pressure and fire-flow can be reviewed through private hydrant flow tests from the nearest adjacent fire hydrant.

2.5.4 – Wastewater Servicing Review

Wastewater Assessment

Concept Plan P1:

Concept Plan P1 proposes a 5-storey mixed use building which includes a ground floor commercial area of 420 square metres and 38 residential units covering 3,356 square metres. Based on the Norfolk County Sanitary Design Criteria, the calculation for expected generation of sanitary effluent based on the proposed building is as follows:

Tributary Population:

Residential = 2.75 persons/unit x 38 units = 105 persons

Commercial = 90 persons/ha x 0.042 ha = 4 persons

Site Total = 109 persons

Sewage Flows:

$$\text{Residential} = 450 \text{ L/person/day} \times 105 \text{ persons} = 47,250 \text{ L/day} = 0.547 \text{ L/s}$$

$$\text{Commercial} = 40,000 \text{ L/ha/day} \times 0.042 \text{ ha} = 1,680 \text{ L/day} = 0.019 \text{ L/s}$$

$$\text{Total Wastewater Generation} = 0.547 + 0.019 = 0.566 \text{ L/s}$$

$$\text{Peaking Factor (Modified Harmon)} = 5.0$$

$$\text{Infiltration Allowance} = 0.28 \text{ L/s/ha} \times 0.536 \text{ ha} = 0.150 \text{ L/s}$$

$$\text{Estimated Peak Design Flow} = (0.566 \times 5.0) + 0.150 = 2.98 \text{ L/s}$$

Concept Plan P2:

Concept Plan P2 proposes a 6-storey residential building which includes 47 units covering 4,352 square metres. Based on the Norfolk County Sanitary Design Criteria, the calculation for expected generation of sanitary effluent based on the proposed building is as follows:

Tributary Population:

$$\text{Residential} = 2.75 \text{ persons/unit} \times 47 \text{ units} = 130 \text{ persons}$$

Sewage Flows:

$$\text{Residential} = 450 \text{ L/person/day} \times 130 \text{ persons} = 58,500 \text{ L/day} = 0.677 \text{ L/s}$$

$$\text{Peaking Factor (Harmon)} = 5.0$$

$$\text{Infiltration Allowance} = 0.28 \text{ L/s/ha} \times 0.536 \text{ ha} = 0.150 \text{ L/s}$$

$$\text{Estimated Peak Design Flow} = (0.677 \times 5.0) + 0.150 = 3.54 \text{ L/s}$$

The County's 900mm diameter trunk sanitary sewer crosses the subject lands and will provide an outlet for sanitary flows from the site. Based on information in the ISMP there are no current capacity constraints on this pipe between the subject lands and the Simcoe Waste-water Treatment Plant. Projected sanitary flows for the site can be input to the County's sanitary model for confirmation of available capacity prior to the development of the property under Site Plan control.

2.5.5- Stormwater Management (SWM) Review

2.5.5.1 -Existing Conditions

The topography of the existing site has been described above in Section 1.2. The existing parking lot drains westerly towards the Lynn River, and there are several outfalls along the riverbanks where the internal catch-basin network for the existing parking areas are discharging. Further to the south runoff from the landscaped areas sheet flow directly to the Lynn River. Based on our visual assessment during the site visit of October 10th, and available contour information *Figure 2 – Existing Drainage Conditions* was created which described the existing drainage pattern of the site. This figure is contained within Appendix C for reference purposes. As can be seen, the existing parcel is 0.537 hectares, with 58.3% imperviousness.

2.5.5.2 - Stormwater Criteria

As per Norfolk County Design Criteria for SWM and drainage, peak flows from the site shall not increase compared to the existing conditions as a result of the proposed development for the 2 through 100-year return period storm events. In addition, stormwater quality control must be provided to MECP Level 1 “Enhanced” protection with 80% long term total suspended solids (TSS) removal.

The following sections provide high-level design guidance illustrating how the lands can be serviced for stormwater based on the Norfolk County Design Criteria.

2.5.5.3 - Preliminary Stormwater Management Design

SWM Quantity Controls:

Figure 3 - Post-Development Drainage Area Plan attached in Appendix ‘C’ illustrates the drainage area for the proposed development. The development includes a 6-storey residential building and an asphalt parking lot providing a total of 81 parking spaces. The imperviousness of the site increases to 65.1% under the post-development condition. As in the existing condition, all post-development site drainage will continue to be conveyed to the adjacent Lynn River.

Peak flows and runoff volumes for the pre- and post-development areas were found using MIDUSS v2 and the 3-Hour Chicago design storm distribution. Norfolk County IDF Curve Values were used for the 5, 25, and 100-year storm events. Table 1 below summarizes and compares the peak flows and runoff volumes for the pre- and post-development conditions. MIDUSS Output files can be found within Appendix ‘C’ for reference purposes.

Based on the post-development peak flows for the site increasing from the pre-development conditions, on-site stormwater storage will be required. The storage volume required in order to control the post-development flows to the pre-development levels for each return period are also indicated in Table 1 below.

Return Period (Year)	Peak Runoff (m ³ /s)			Runoff Volume (m ³)			Post-Dev. Storage Volume Required to limit flows to Pre-Dev. levels (m ³)
	Pre-Dev.	Post-Dev.	% Increase	Pre-Dev.	Post-Dev.	% Increase	
5	0.083	0.092	10.8%	146.93	157.21	7.0%	8.7
25	0.119	0.131	10.1%	226.91	239.95	5.7%	13.0
100	0.149	0.164	10.1%	298.39	313.23	5.0%	17.0

Table 1: Pre- and Post-Development Hydrologic Analysis Summary

Various means can be used to provide the necessary level of storage to limit post-development flows to the pre-development levels. CULTEC underground polyethylene storage tanks are a product that is frequently used and provide an economic means for provision of stormwater controls that can be installed below parking areas. Alternatively, the grading for the site could be designed such that surface storage is used within the parking areas with flow limiters on the future catchbasins in order to limit flows to pre-development levels.

A combination of these means or other measures can be utilized at the time of the development of the site under Site Plan control. The developer should expect that at minimum 17 cubic meters of storage would be required for development of the site in accordance with the provided Concept Plans. Should alternative designs be pursued at the time of Site Plan stormwater management storage requirements may differ.

SWM Quality Controls:

To address quality control requirements for the development a treatment train approach should be utilized. Some measures which are frequently used on similar development sites are as follows:

- Oil-grit separator (OGS) units constructed within the site area, through which site runoff must flow before entering the receiving watercourse. Can provide water quality improvement up to 50% TSS removal, based on ETV verification and subject to the model selected.
- Separator Row to be incorporated into the CULTEC storage tank. The separator row is an ETV verified technology that can provide up to 80% TSS removal as a stand-alone measure.

- Installation of CB Shield devices within all site catchbasins. CB Shields are also an ETV verified technology which can provide up to 50% TSS removal at the inlet catchbasins, subject to contributing areas and imperviousness.

Documentation regarding these various means of provision of stormwater quality control is contained within Appendix C for reference. A preliminary OGS sizing report is also included, which indicates that a HydroDome HD6 oil-grit separation chamber can provide up to 83% TSS removal as a stand-alone measure.

In addition to these measures, which are associated with the construction of infrastructure items expected to be used on site in the development, the inclusion of Low-Impact Development (LID) measures should be considered as part of the design of the site under future Site Plan control.

LID measures include features such as:

- Bioswales
- Infiltration Galleries / Soak away Pits
- Permeable Pavers
- Green Roofs
- Rainwater Harvesting

Use of these measures is subject to site conditions, including ground-water elevations and underlying soil conditions. Further details regarding each of LID measures including design guidance can be found via the Sustainable Technologies online information portal found here:

<https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-stormwater-management-planning-and-design-guide/>

Consideration should be given for the inclusion of LID features to supplement the on-site stormwater quality control at the time of the development of the site under Site Plan Control.

3. Conclusions

In conclusion, based on the foregoing analysis we recommend that the applications for Official Plan Amendments, and Re-Zoning of Parcels A, B, C, D and E can be supported from the existing municipal infrastructure as follows:

1. Existing buildings on Parcels A, B and C have available existing municipal infrastructure within Pond Street. Parcel C is already serviced for water and sanitary, future confirmation of the adequacy of water-service sizes can be completed through the Building Department depending on the tenant and use of the existing spaces.
2. Stormwater recommendations are included in Appendix D. Should surface level development of parking areas for Parcels A, B, C or D take place in the future stormwater management can be implemented through future Site Plan control applications in accordance with these recommendations.
3. Parcel E and the proposed building concepts can be serviced by existing and adjacent water and wastewater infrastructure. Calculations of water demands, and wastewater generation are contained in Section 2.5. Preliminary design and recommendations for on-site stormwater management are also included in Section 2.5.5. Final design for SWM can be completed at the time of future development under Site Plan control.

Thank you for your consideration of the above Functional Servicing and Stormwater Management Report. Should you have any questions or require clarification with respect to any part of the above please do not hesitate to contact the undersigned.

Respectfully submitted,



Andrew Smith, P. Eng.
Principal & Director
289-775-9374
andrew@landsmithec.com



Atticus Francisci, E.I.T.
Junior Engineer

Attachments:

Appendix A – Background Information

Norfolk County Terms of Reference & Supporting Documentation
Plan of Survey – Parcels A, B, C & D
Plan of Survey – Parcel E
Long Point Region Conservation Authority – Regulated Areas Mapping

Appendix B – Existing Infrastructure Drawings

Norfolk County Local Infrastructure Plans:
Pond Street
Argyll Street

Norfolk County Integrated Sustainable Master Plan:
Water Figures
Wastewater Figures

Appendix C – Parcel E, Servicing Analysis

Parcel E – Site Development Concept Plans & Rendering
Domestic Water Usage Calculations
Figure 1 – Fire Protection Plan
Fire-Flow Calculations:
Fire Underwriters Survey Method
Ontario Fire Marshall Method

Pre-Development Drainage Area Plan
Post-Development Drainage Area Plan

MIDUSS v2 Output Files

Preliminary Water Quality Provision Options Documentation

Appendix D – SWM Recommendations, Parcels A, B, C, D

Stormwater Management Best Practices and Recommendations

APPENDIX A – Background Information

Norfolk County Terms of Reference & Supporting Documentation

Plan of Survey – Parcels A, B, C & D

Plan of Survey – Parcel E

Long Point Region Conservation Authority – Regulated Areas Mapping

August 19, 2024

Dear Recipient,

**RE: Consultant Services:
Development Applications – County-owned Land, Simcoe**

Norfolk County requires the services of a qualified planning and design professional to undertake development applications for County-owned land on behalf of Norfolk. As one of the County's Planning Consultant firms on our roster we are looking for a response and quote on the following scope of work.

General Scope:

1. The Subject Lands include County-owned riverfront lands in the Downtown Simcoe area. See attached map of Parcels A-E, which includes 73 Victoria St, 87-129 Pond St inclusive and 86 Argyle St. (see attached map)
2. Prepare, submit and complete Official Plan Amendment (OPA) and Zoning Bylaw Amendment (ZBA) applications and supporting materials for the Subject Lands.
3. Supporting materials are expected to include:
 - a. Planning Justification Report (all sites)
 - b. Functional Servicing Report (all sites). Input to County's water and wastewater modelling.
 - c. Transportation Impact Study (all sites)
 - d. Stormwater Management Report (all sites)
 - e. Items b.) to e.) would be scoped to be high level information and justification for the land use amendment changes with more detailed study at any subsequent site plan stage. Maximum proposed zoning permissions (use and density) and concept plan would be used to input to technical reports at this stage.
 - f. Concept Plans (2) and Conceptual 3-D Visualizations (2) for 86 Argyle St (Parcel E) potential development scenario
4. The OPA & ZBA would have the following initial parameters:
 - a. Parcels A-C – Redesignation and rezoning from Hazard Lands designation and Open Space zoning to add a special policy and add special provisions to allow a list of permitted uses within the existing buildings only (with the proviso of only accessory storage in the basement) that aligns with many of the existing non-residential uses within the CBD Zone (see attached for preliminary list). The list of uses

- excludes residential or other uses for health and safety due to floodplain and other site contextual reasons and has been preliminarily vetted through the Long Point Region Conservation Authority.
- b. Parcel D – Redesignation and rezoning to add special policy and provision to the existing Hazard Lands designation and Open Space zoning to allow parking, including that which may be associated with adjacent lands.
 - c. Parcel E – Redesignation and rezoning from Parks & Open Space designation and Open Space zoning to Urban Residential designation and Residential Six (R6) zoning with special provisions to allow a limited range of non-residential uses on the ground floor of a mixed-use building, including day care nursery, laundromat, merchandise service shop, personal services shop, restaurant and to also permit hotel.
5. The process would include:
- a. Regular check-ins with the County's Project Lead (expect ½ hr biweekly call).
 - b. Preparing and submitting the development applications and supporting materials to Norfolk County's complete application standards.
 - c. Reviewing and responding to any technical and planning comments received on the applications, as appropriate and subject to confirmation through the County's Project Lead. This may include issue resolution as required.
 - d. Presentation of the proposal and assistance with answering questions at one (1) Public Hearing Committee meeting (of Council), which is the Statutory Public Meeting for development applications.
 - e. Attendance (no presentation) at one (1) Council decision meeting.

County's Role:

The County will undertake a preliminary pre-consultation type meeting with affected departments and agencies to determine the list of requirements for a complete application. Norfolk will cover the submission cost of the development applications. Norfolk Planning staff will complete typical tasks associated with development review, including but not limited to notification of the applications, submission and application review, staff reports and notice of decision.

The County's Project Lead will be Brandon Sloan, GM Community Development with back-up through the Economic Development Department via John Regan, Director, Strategic Innovation and Economic Development with support from other internal staff related to County-owned land (Realty, Operations-Facilities, etc.). The County will provide background information and documents as needed (including survey/draft reference plan of the properties), mapping and guidance. The County has undertaken preliminary work with the Long Point Region Conservation Authority regarding floodplain implications and potential future uses of the parcels. A preliminary list of

permitted uses from the existing Central Business District Zone vetted with the LPRCA is provided in the attachment. The County has supporting materials for the sites which may be used confidentially, in support of and potentially some in public – including survey/draft reference plan, Phase 1 and 2 Environmental Site Assessments, Building Condition Assessment, Heritage Designation Bylaw, etc. The County will prepare public communications (potentially including media release and social media) around the time of the notice of applications and public hearing committee going public along with contact with the Downtown Simcoe BIA.

Deliverables

1. Complete Development Application – including submission form completion and supporting material studies/drawings.
2. Response to comments / issue resolution.
3. Presentation at Public Hearing Committee and response to questions.
4. Any updated materials or responses for Council meeting report/decision.

Timeline

Ideally the coordinated timing would target:

1. Submission of complete application by approximately Oct. 25, 2024.
2. Public Hearing Committee on Jan. 7, 2025 (or Feb 4)
3. Council Meeting (Decision) on February (19th TBD), 2025 or by March (25th TBD)

Budget

Please include the following in the quote:

1. An overall cost estimate with a general work breakdown structure and schedule.
2. Hourly rates of staff involved.
3. Identify HST, incidentals and contingency as separate line items.
4. Estimated breakdown of any subconsultants for supporting materials and project support.
5. Note: travelling to view the site once is expected. Attendance at the PHC and Council meeting may be virtual or in person.

Any invoicing/payments shall be directed through the County Project Lead. The consultant shall have any necessary insurance as required, not indemnify the County and shall maintain safety while providing the services.

Please submit a response and quote for the above requested consultant services to brandon.sloan@norfolkcounty.ca and john.regan@norfolkcounty.ca no later than September 6, 2024.

Thank you,



Brandon Sloan
General Manager, Community Development

cc. John Regan, Director, Strategic Innovation and Economic Development
Marie Steiner, Division Coordinator, Community Development

Attachments:

Overview Map of Subject Lands
Preliminary Land Use Amendment Proposed List

Simcoe Riverfront Lands

Area E

- 86 Argyle Street
- Municipal Parking Lot
- 0.44 Hectares
- Includes some parking spaces for adjacent use and trail.
- Was Alligator Tug location at waterfront with some storage in existing building.

Area D

- No Municipal address
- Municipal Parking Lot
- 0.15 Hectares
- Potential maintenance access for dam.

Area C

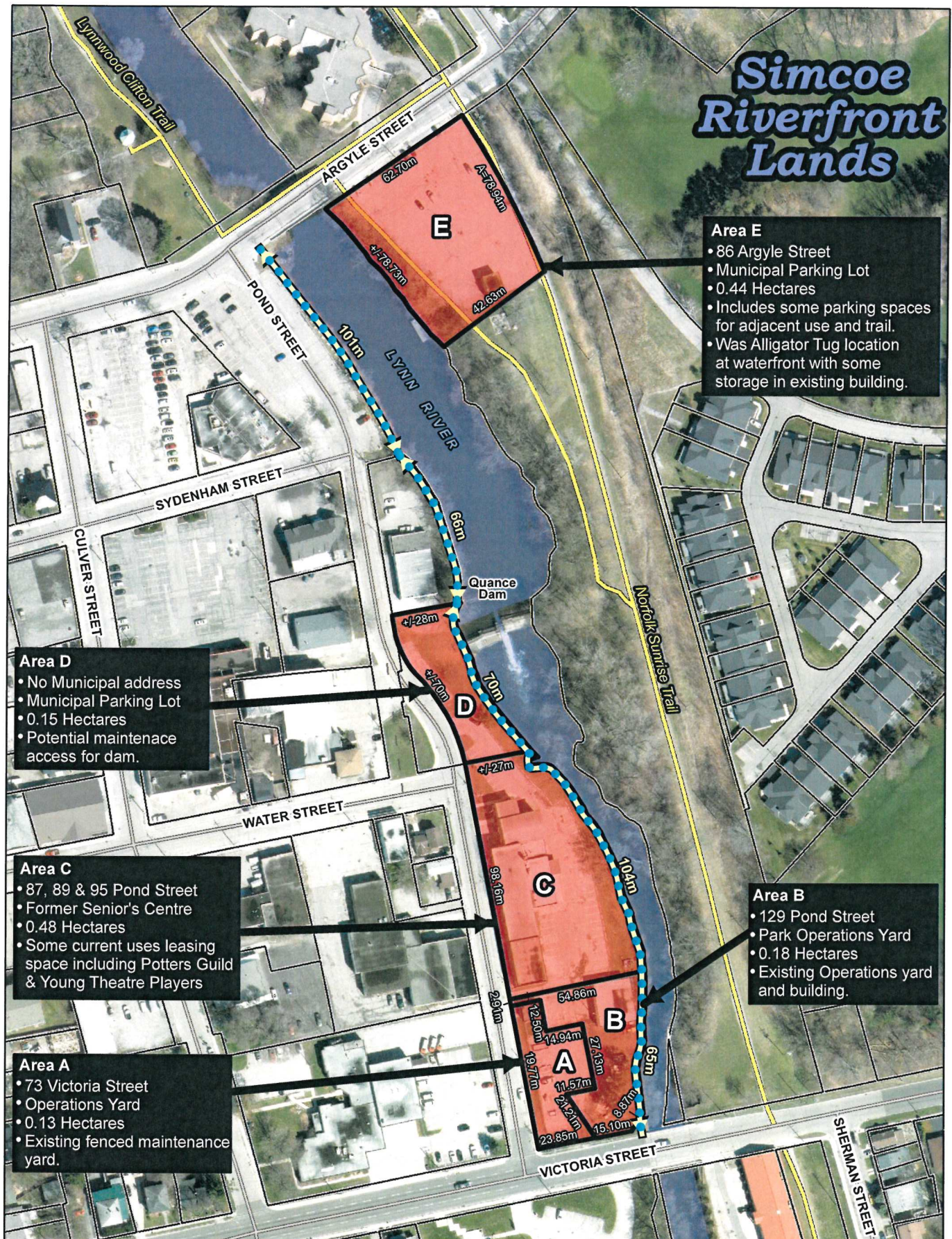
- 87, 89 & 95 Pond Street
- Former Senior's Centre
- 0.48 Hectares
- Some current uses leasing space including Potters Guild & Young Theatre Players

Area A

- 73 Victoria Street
- Operations Yard
- 0.13 Hectares
- Existing fenced maintenance yard.

Area B

- 129 Pond Street
- Park Operations Yard
- 0.18 Hectares
- Existing Operations yard and building.



DTS Riverfront Lands

OPA & ZBA

Pond/Victoria St Sites – Existing Buildings/Uses

- OPA: Hazard Lands – to add special policy to allow range of uses within existing buildings
- ZBA: Open Space – to add special provisions to allow range of uses within existing buildings
- Add uses from the CBD Zone:
 - Antique shop
 - Art gallery
 - Auction centre
 - Bar or night club
 - Boutique
 - Brew-your-own
 - Clinic or doctors office?
 - College or trade school?
 - Contractor supply / service shop
 - Convenience store
 - Deli and specialty food shop
 - Department store
 - Equipment rental
 - Farmers market
 - Financial institution
 - Florist shop
 - Fruit and veg outlet
 - Hardware store
 - Library
 - Lumber yard & building supply
 - Merchandise service shop
 - Museum
 - Office, all types
 - Parking lot
 - Personal service shop
 - Pharmacy
 - Photo studio or shop
 - Place of entertainment
 - Place of sports and recreation
 - Printing & publishing establishment
 - Private club
 - Radio, TV studio
 - Restaurant, all types
 - Retail store
 - Supermarket
 - Training & rehab centre
 - Video store
 - Wholesale outlet

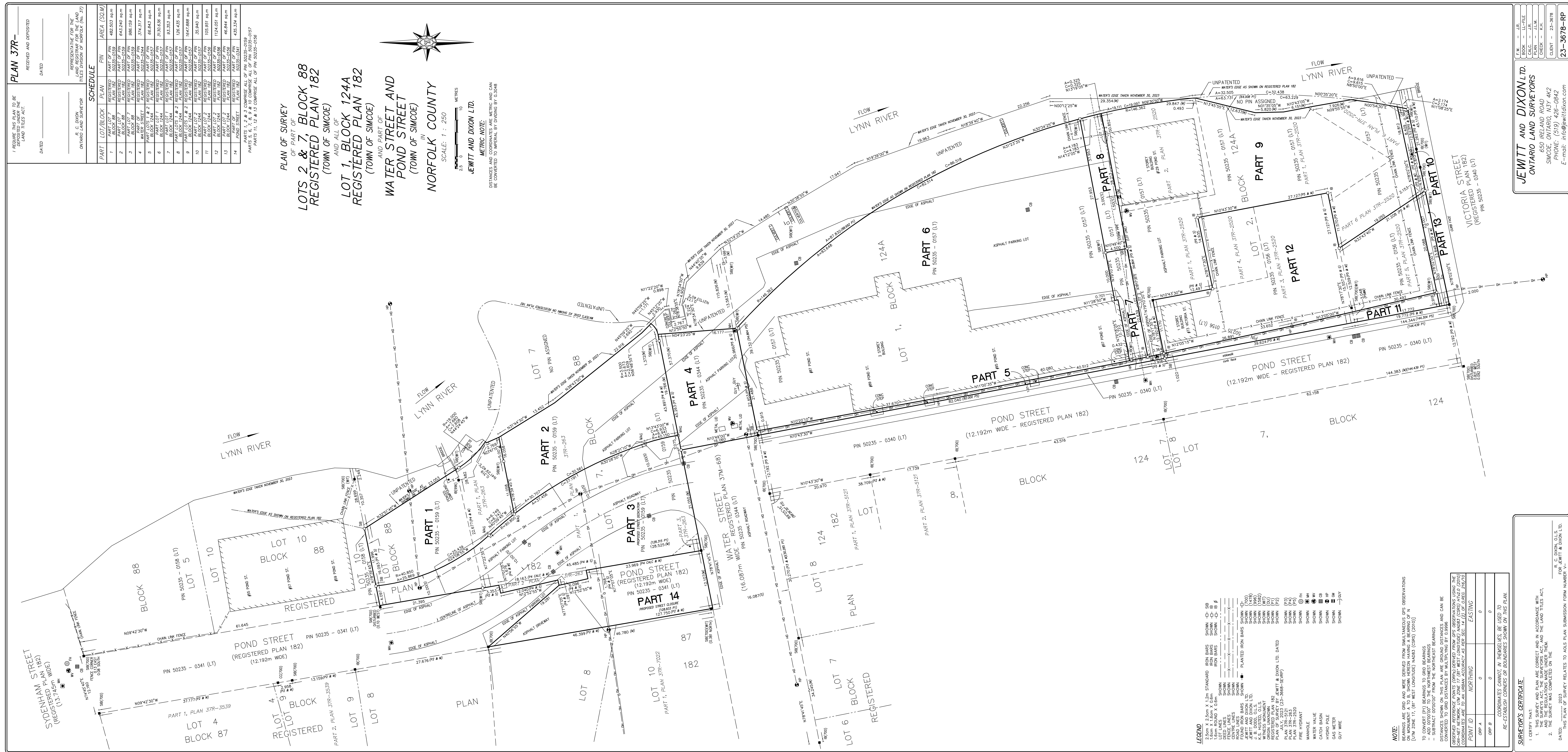
Argyle St

- OPA from Open Space to Urban Residential
- ZBA from Open Space to R6 with special provision for:
 - ground floor non-residential uses in a mixed use building: day care nursery, laundromat , merchandise service shop, personal services shop, restaurant.
 - Add hotel as a permitted use
 - Increase the maximum floor area ratio to 2.0
 - Intent is to not take away from CBD space/uses but support new development and complement downtown.

Supporting Materials

1. Planning Justification Report (all sites)
2. Preliminary Functional Servicing Report (all sites)*
3. Transportation Impact Study (all sites)*
4. SWM Report (all sites)*
5. Concept Plan(s) and Visualization of potential development scenario (Argyle St site)

*Phased/scoped for high level justification of land use amendments with detailed study further completed at any subsequent site plan stage



NOTE: BEARINGS ARE GRID AND WERE DERIVED FROM SIMULTANEOUS GPS OBSERVATIONS ON MONUMENT A TO B, SHOWING HEREON HAVING A BEARING OF N 17° 17' 17" E (UTM ZONE 17, (81° WEST LONGITUDE) NAD83 (CSRS) (2010))

TO CONVERT (P1) BEARINGS TO GRID BEARINGS
 - ADD 0070'00" TO THE NORTHWEST BEARINGS
 - SUBTRACT 0070'00" FROM THE NORTHEAST BEARINGS

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES AND CAN BE

POINT ID	NORTHING	EASTING
----------	----------	---------

ORP A	0	0
ORP B	0	0

COORDINATES CANNOT IN THEMSELVES BE USED TO

RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

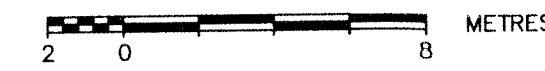
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, AND THE LAND TITLES ACT, AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE

DATED: 2023
THIS PLAN OF SURVEY RELATES TO ADO'S PLAN SUBMISSION FORM NUMBER

[illegible]

PLAN OF SURVEY
OF PART OF
RAILWAY LOT E
BLOCK 83
REGISTERED PLAN 182
(TOWN OF SIMCOE)
IN
NORFOLK COUNTY

SCALE: 1 : 200



JEWITT AND DIXON LTD.

METRIC NOTE:

DISTANCES AND COORDINATES ARE METRIC AND CAN
BE CONVERTED TO IMPERIAL BY DIVIDING BY 0.3048

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

DATED NOVEMBER 7, 2023

RECEIVED AND DEPOSITED
DATED
JEWITT AND DIXON LTD.
LAND REGISTRATION AND TITLES DIVISION OF NORFOLK (No. 37)

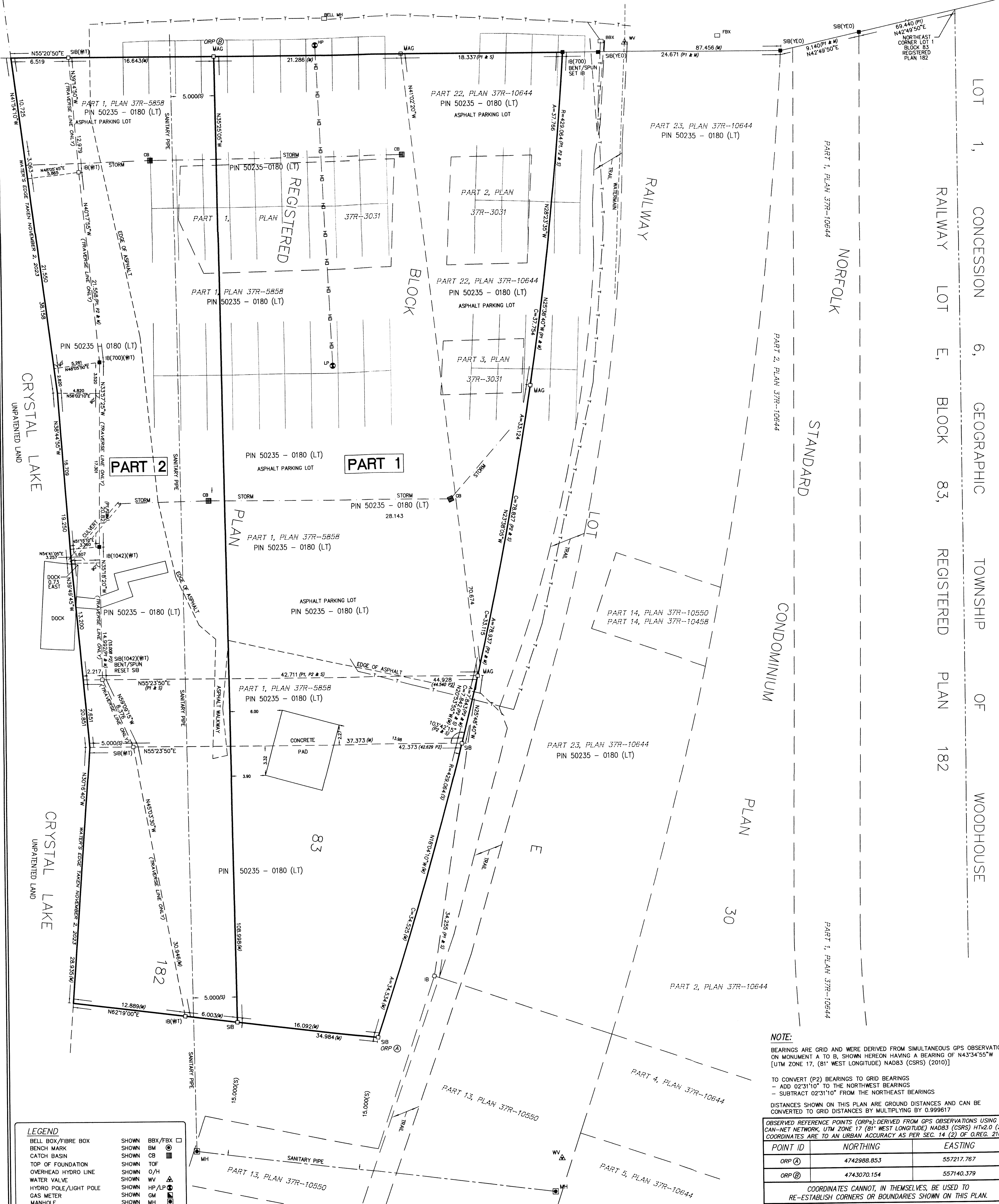
R. C. DIXON
ONTARIO LAND SURVEYOR

SCHEDULE

PART	LOT/BLOCK	PLAN	PIN	AREA(sq.m)
1	PART RAILWAY LOT E, BLOCK 83	REGISTERED PLAN 182	PART OF PIN 50235-0180	3349.807 sq.m
2	PART RAILWAY LOT E, BLOCK 83	REGISTERED PLAN 182	PART OF PIN 50235-0180	2022.754 sq.m

PARTS 1 & 2 COMPRISE PART OF PIN 50235-0180 (LT)
PIN 50235-0180 IS FOR SURFACE RIGHTS ONLY

ARGYLE STREET
(20.117m WIDE - REGISTERED PLAN 182)
PIN 50229 - 0002 (LT)



NOTE:

BEARINGS ARE GRID AND WERE DERIVED FROM SIMULTANEOUS GPS OBSERVATIONS
ON MONUMENT A TO B, SHOWN HEREON HAVING A BEARING OF N43°34'55"W
[UTM ZONE 17, (81° WEST LONGITUDE) NAD83 (CSRS) (2010)]

TO CONVERT (P2) BEARINGS TO GRID BEARINGS
- ADD 02°31'10" TO THE NORTHWEST BEARINGS
- SUBTRACT 02°31'10" FROM THE NORTHEAST BEARINGS

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES AND CAN BE
CONVERTED TO GRID DISTANCES BY MULTIPLYING BY 0.999617

OBSERVED REFERENCE POINTS (ORPs) DERIVED FROM GPS OBSERVATIONS USING THE
CAN-NET NETWORK, UTM ZONE 17 (81° WEST LONGITUDE) NAD83 (CSRS) HTV2.0 (2010)
COORDINATES ARE TO AN URBAN ACCURACY AS PER SEC. 14 (2) OF O.REG. 216/10

POINT ID	NORTHING	EASTING
ORP (A)	4742988.853	557217.767
ORP (B)	4743070.154	557140.379

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

LEGEND

BELL BOX/FIBRE BOX	SHOWN	BBX/FBX	□
BENCH MARK	SHOWN	BM	⊙
CATCH BASIN	SHOWN	CB	■
TOP OF FOUNDATION	SHOWN	TOF	■
OVERHEAD HYDRO LINE	SHOWN	O/H	—
WATER VALVE	SHOWN	WV	⊙
HYDRO POLE/LIGHT POLE	SHOWN	HP/LP	⊙
GAS METER	SHOWN	GM	⊙
MANHOLE	SHOWN	MH	⊙

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH
THE SURVEYS ACT, THE SURVEYORS ACT, AND THE LAND TITLES ACT,
AND THE REGULATIONS MADE UNDER THEM.
- THE SURVEY WAS COMPLETED ON THE 2ND DAY OF NOVEMBER, 2023

DATED: NOVEMBER 7, 2023

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER V-56360

LEGEND

2.5cm X 2.5cm X 1.2m STANDARD	IRON BARS	SHOWN	—	SIB
1.6cm X 1.6cm X 0.6m	IRON BARS	SHOWN	—	IB
1.6cm ROUND X 0.6m	IRON BARS	SHOWN	—	IB Ø
LOT LINES	SHOWN	—	—	—
DEED LINES	SHOWN	—	—	—
FENCE LINES	SHOWN	—	—	—
CENTRE LINES	SHOWN	—	—	—
ROAD LINES	SHOWN	—	—	—
FOUND IRON BARS	SHOWN	—	—	—

B. K. EDWARDS, O.L.S. SHOWN (1042)
JEWITT AND DIXON LTD. SHOWN (700)
M. YEO, O.L.S. SHOWN (YEO)
J. B. DODD, O.L.S. SHOWN (996)
WITNESS MONUMENT SHOWN (WT)
ORIGIN UNKNOWN SHOWN (OU)
PLAN 37R-10644 SHOWN (P1)
PLAN 37R-5858 SHOWN (P2)

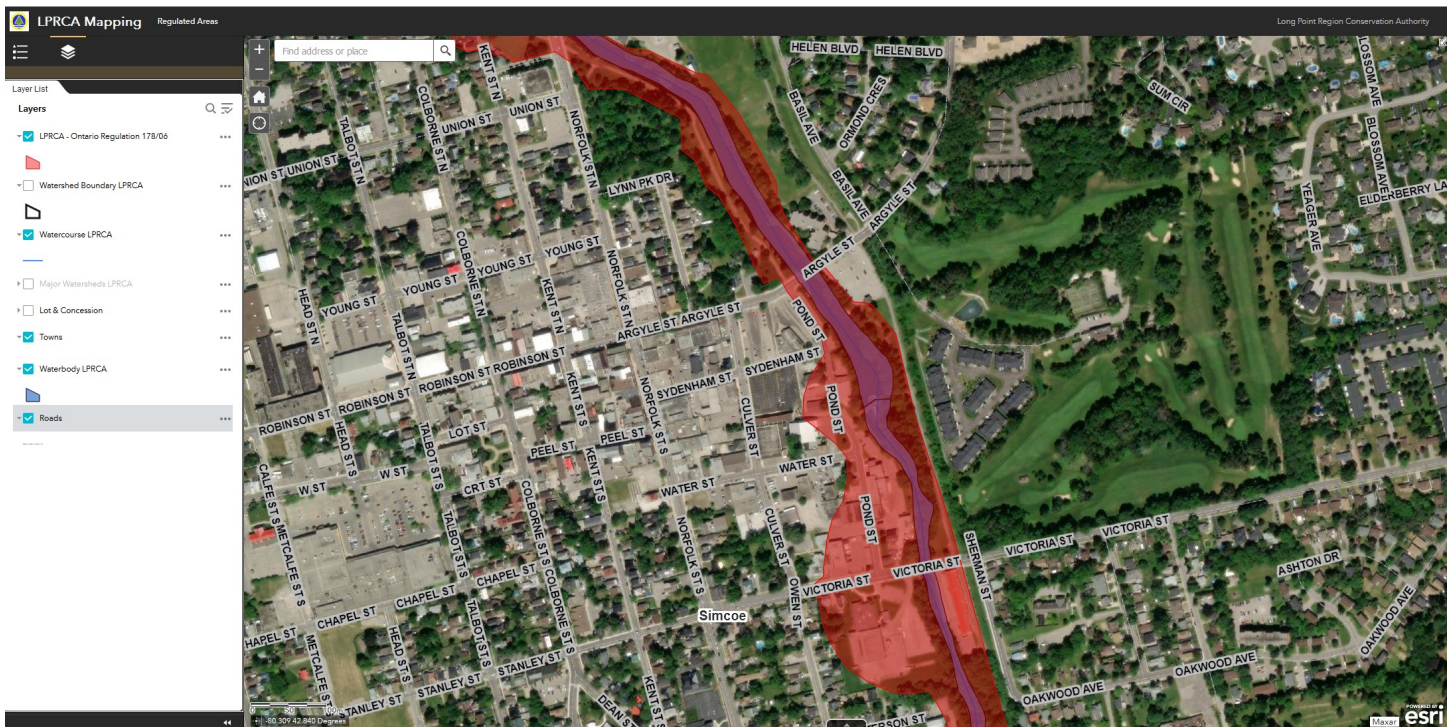
JEWITT AND DIXON LTD.
ONTARIO LAND SURVEYORS

650 IRELAND ROAD
SIMCOE, ONTARIO, N3Y 4K2
PHONE: (519) 426-0842
E-mail: info@jewittanddixon.com

F.W. — J.R.-YEO
BOOK — LL-FILE
CALC. — J.L.M.
PLAN — J.L.M.
CHECK — K.H.

CLIENT — NORFOLK

23-3682-RP



APPENDIX B – Existing Infrastructure Drawings

Norfolk County Local Infrastructure Plans:

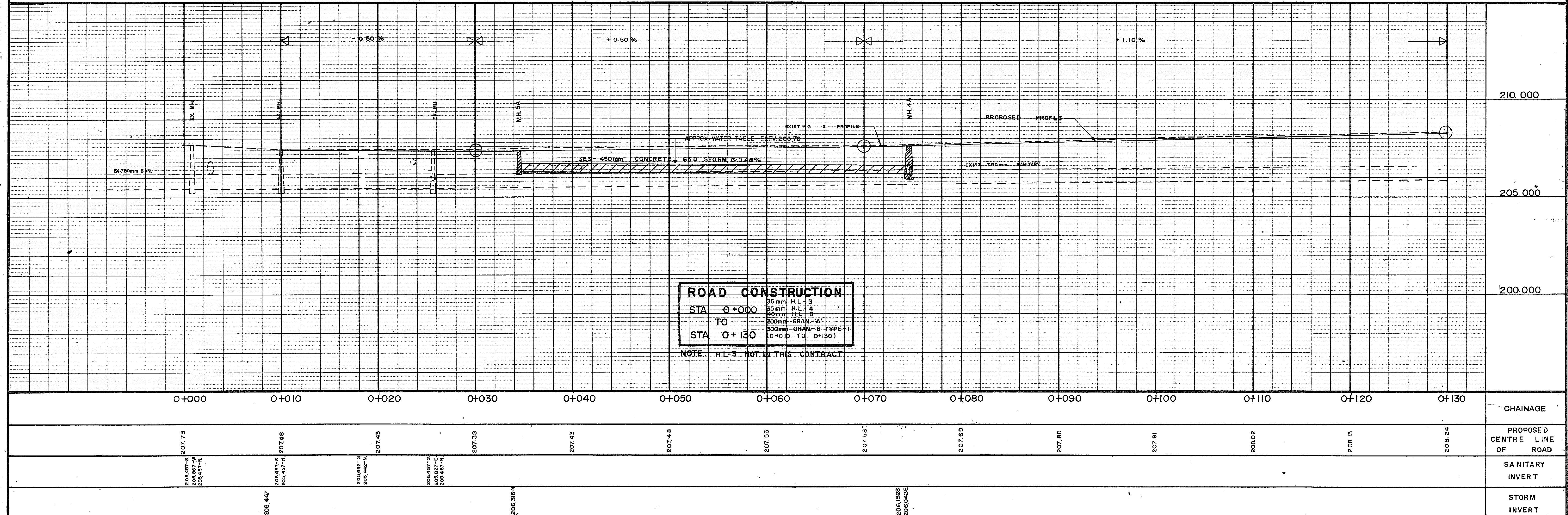
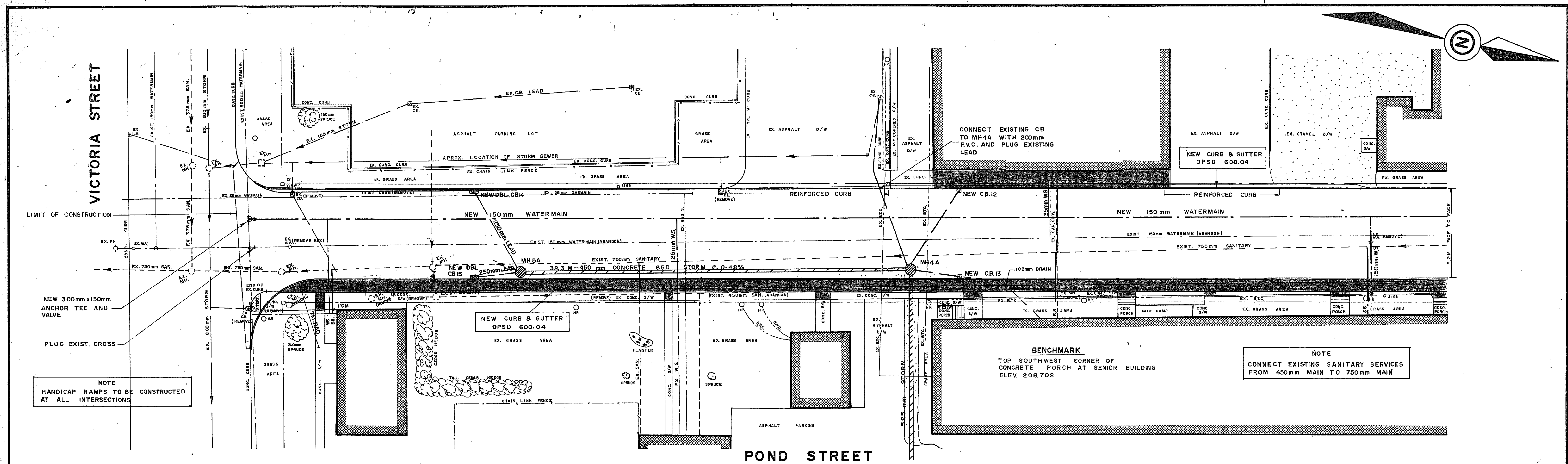
Pond Street

Argyll Street

Norfolk County Integrated Sustainable Master Plan:

Water Figures

Wastewater Figures



NOTES:

HORIZ. 1" = 200'

VERT. 1" = 100'

SCALES

DATE	REVISIONS
OCT 30, 1991	MOVED CATCH BASINS 14 & 15
OCT 15, 1992	AS - CONSTRUCTED

TOWN OF SIMCOE

PUBLIC WORKS PROJECT NO. 83 - 2 62

REGIONAL MUNICIPALITY OF HALDIMAND - NORFOLK

PLAN AND PROFILE

STA. 0+000 TO STA. 0+130

DRAWN BY: G. R. B.

CHECKED BY: J. D. V.

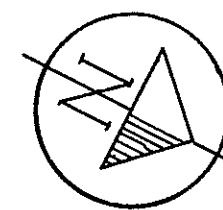
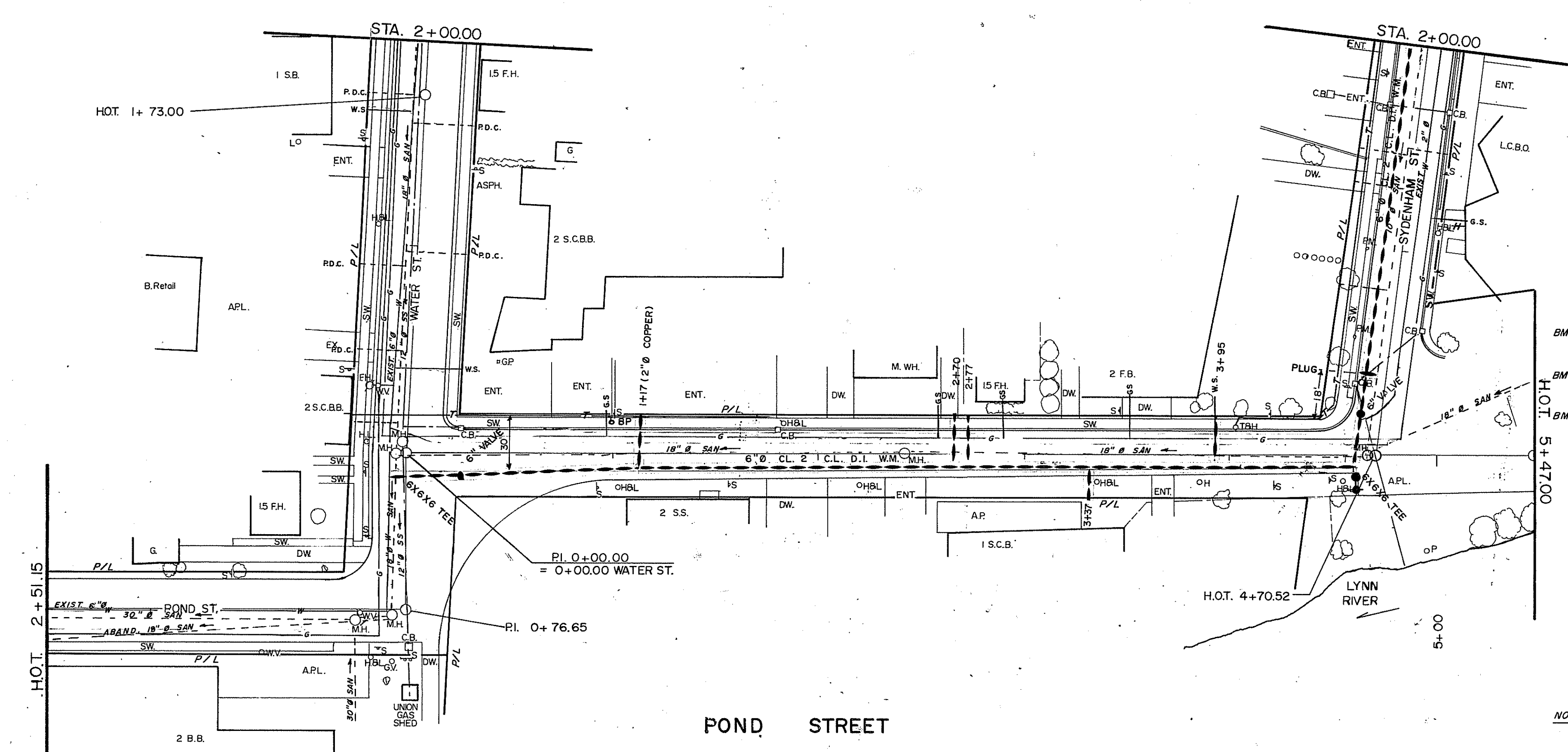
DESIGNED BY: G. D. V.

CHECKED BY: J. D. V.

G. DOUGLAS VALLEE LIMITED
CONSULTING ENGINEERS AND ARCHITECT
51 PARK ROAD
R.R. 1, SIMCOE, ONTARIO N3Y 4J9
(519) 426-6270

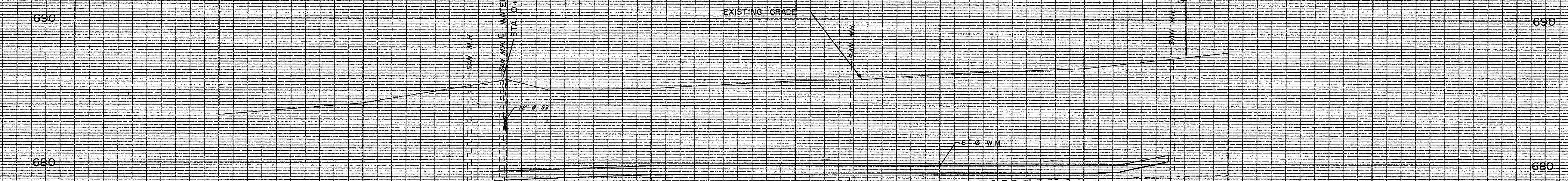
DATE: APRIL 20, 1992

DRAWING NO. **91040-5**



- BENCH MARKS**
- BM 1 ARMY, NAVY, & AIR FORCE VETERANS BUILDING ON N-W CORNER OF CULVER ST & WATER ST. - TABLET IN S. FOUNDATION (G.B.M.) ELEV. 691.86.
 - BM 2 TOP TURN-OFF SPINDLE TOP OF HYDRANT LOCATED ON S. SIDE OF WATER ST AT POND ST. ELEV. 689.56
 - BM 3 TOP S-W CORNER CONCRETE STOOP AT BLUE DOOR, SOUTH SIDE OF LIQUOR STORE, 20' RT. @ STA. 1+09 SYDENHAM ST. ELEV. 689.90.

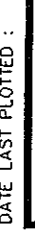
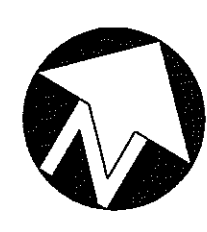
NOTES: ALL LOCATIONS ARE APPROXIMATE
- ALL SERVICES TO BE RECONNECTED.
- MIN. COVER OVER PIPE 5'-6"



REGIONAL MUNICIPALITY OF HALDIMAND-NORFOLK
ENGINEERING DEPARTMENT
WATER, SEWER & SOLID WASTES DIVISION
WATER MAIN RELOCATION
POND STREET-WATER ST. TO SYDENHAM ST.
SIMCOE

VERTICAL SCALE	HORIZONTAL SCALE	APPROVED BY
1" = 10'	1" = 40'	
DRAWN BY	DATE	DIRECTOR OF ENGINEERING
	MARCH 17, 1977	

S-356



Notes :

SCALE:

051015

HORIZONTAL : 1 : 200

0123

VERTICAL : 1 : 50

DATE	REVISION
MAY 17, 2002	ISSUED FOR TENDER
MAR 26/04	AS-CONSTRUCTED

LICENCED PROFESSIONAL ENGINEER

G. D. VALLEE

PROVINCE OF ONTARIO

LICENCED PROFESSIONAL ENGINEER

J. D. VALLEE

PROVINCE OF ONTARIO

Project Title

ARGYLE STREET BRIDGE- NORFOLK COUNTY
SIMCOE, ONTARIO

G. DOUGLAS VALLEE LIMITED

CONSULTING ENGINEERS AND ARCHITECT

51 PARK ROAD

R.R.1, SIMCOE, ONTARIO N3Y 4J9

(519) 426-6270

Drawing Title

SITE PLAN AND PROFILE

Drawn By :
D.BENNETT

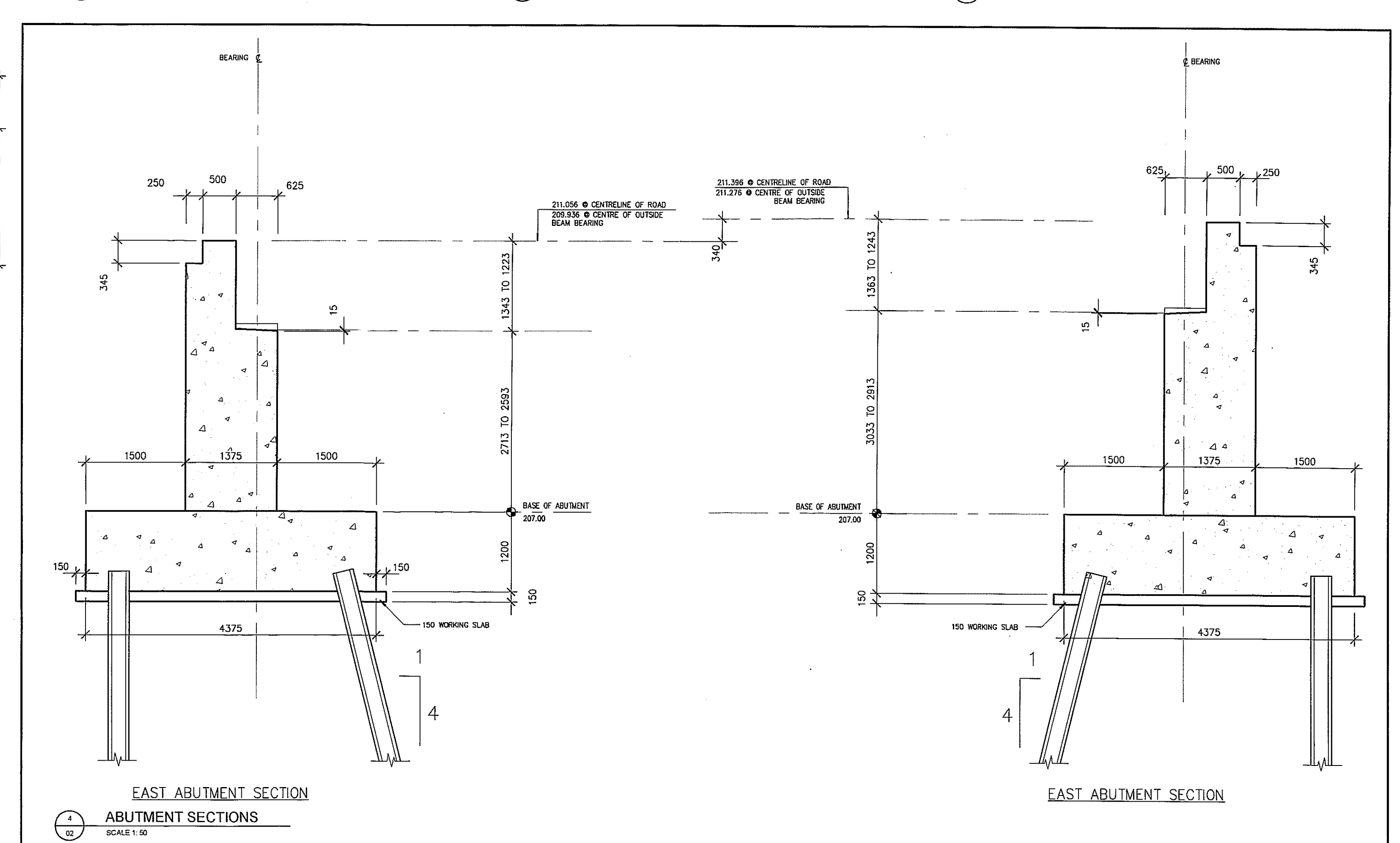
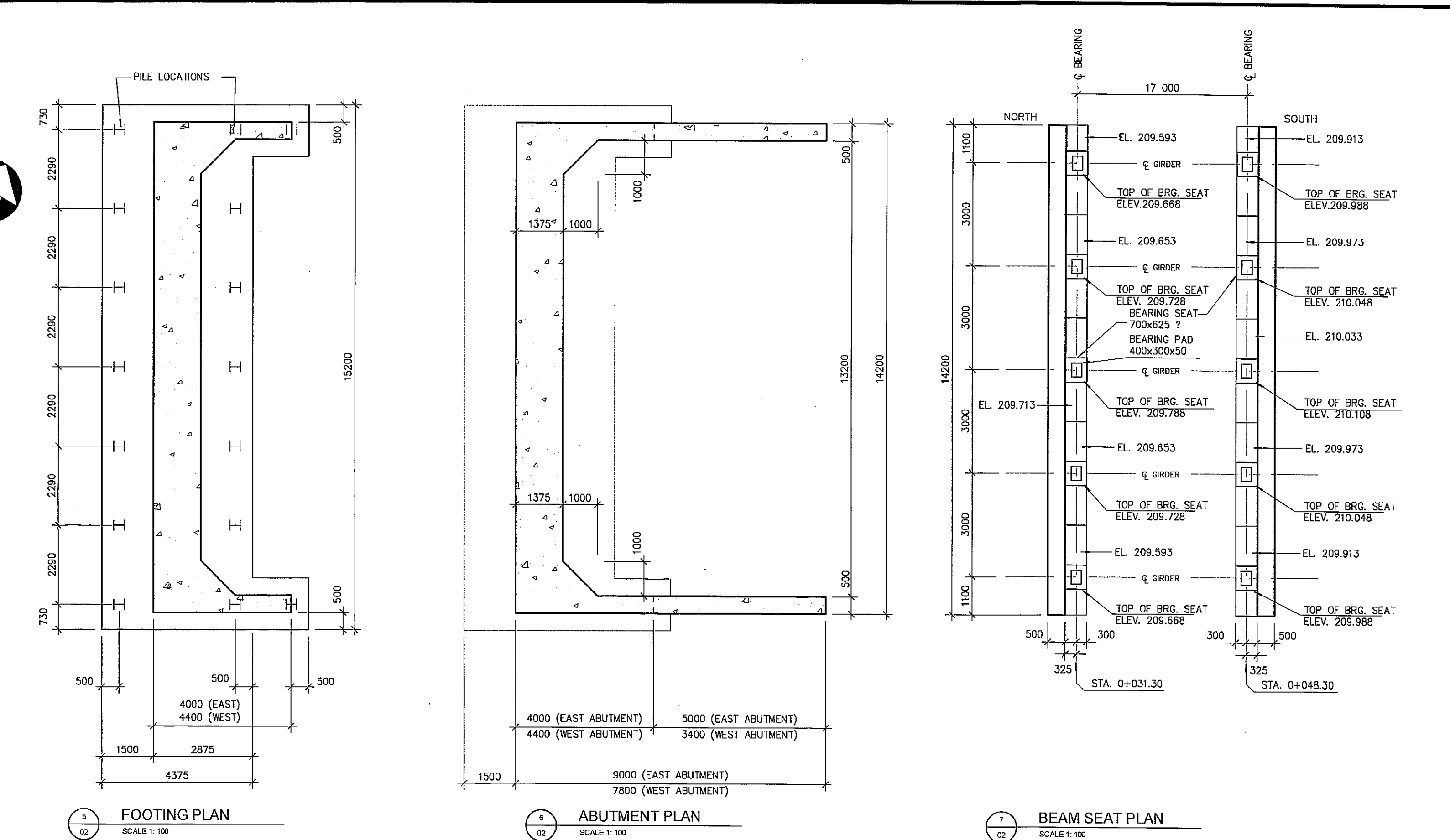
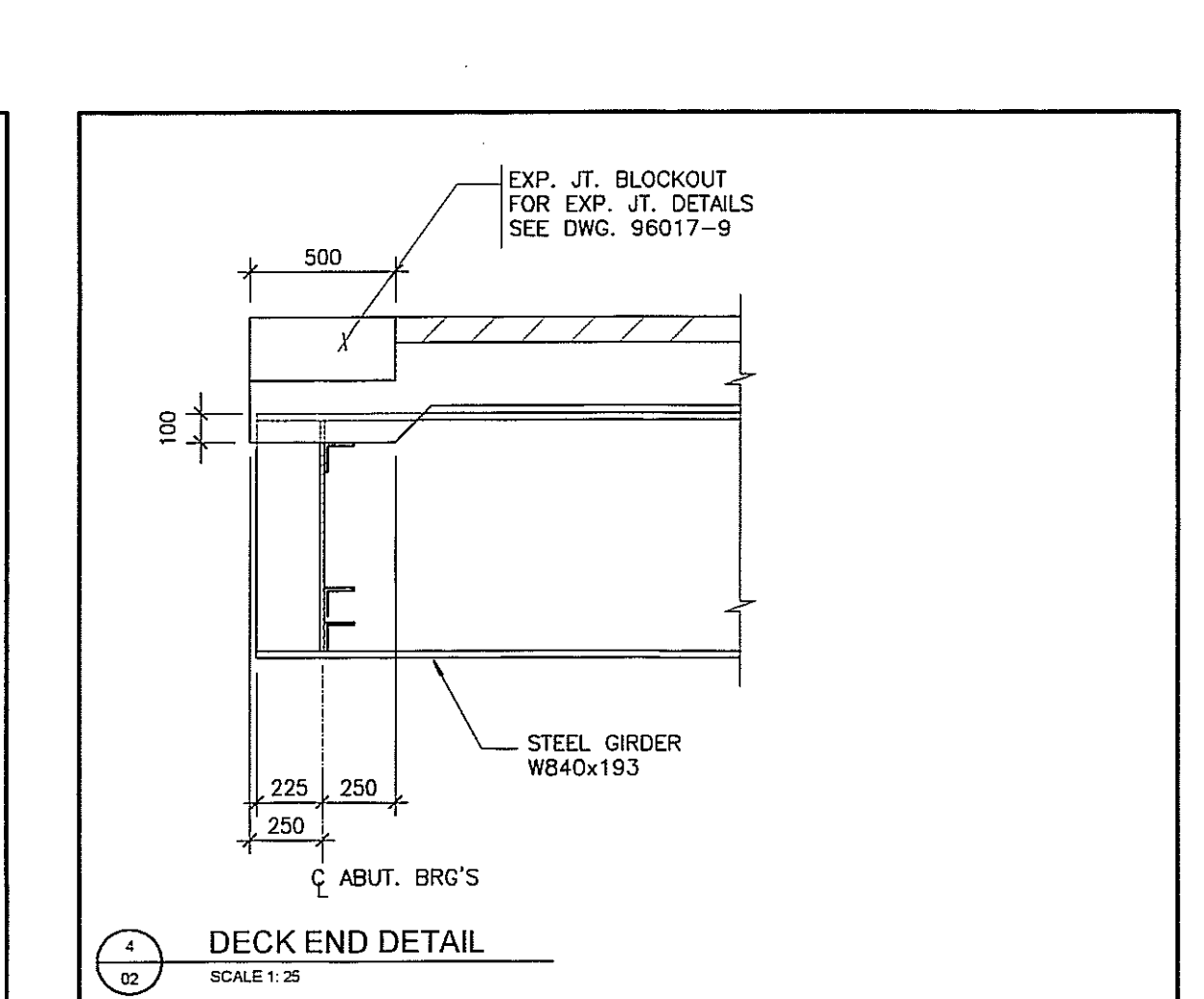
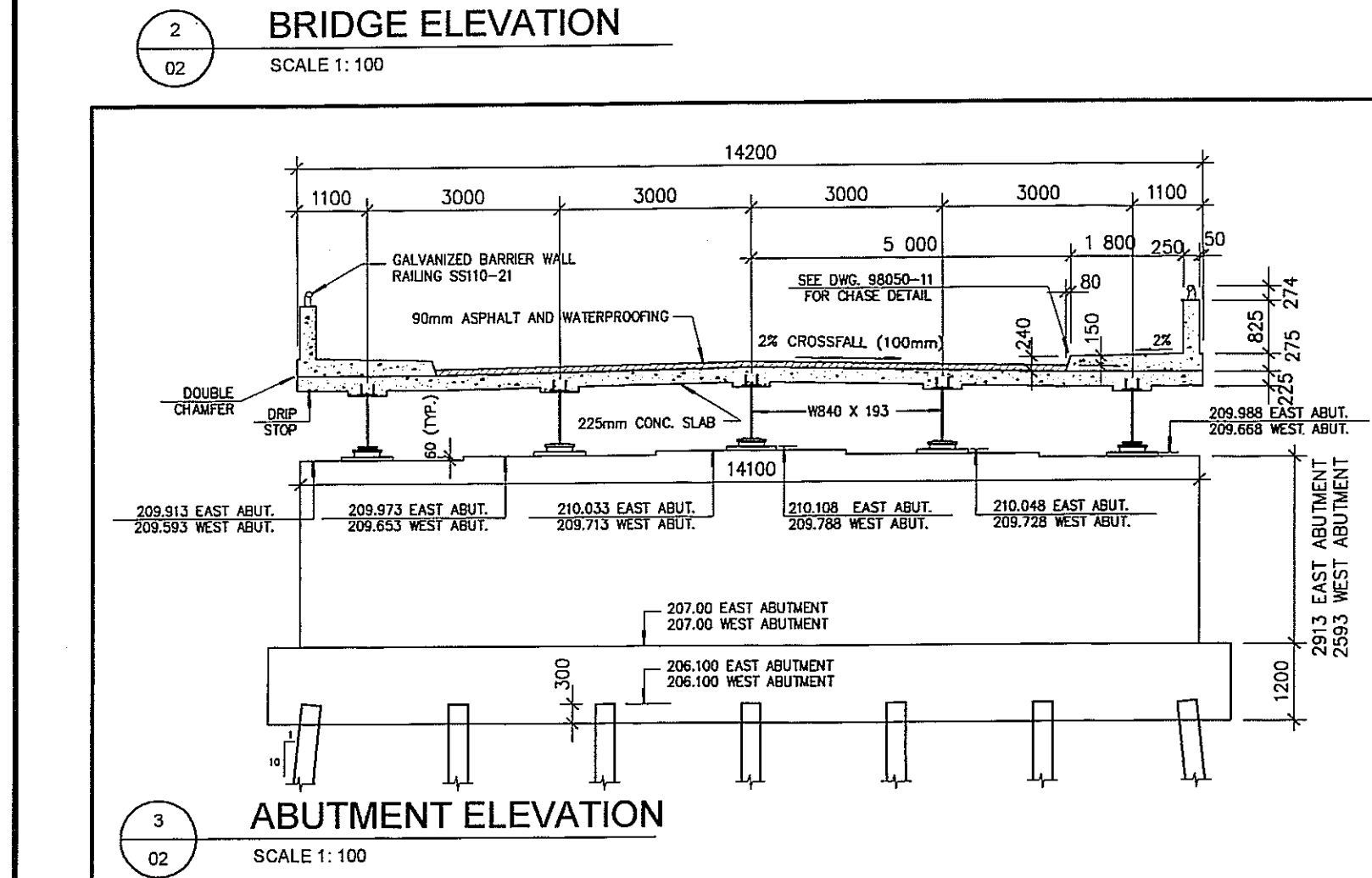
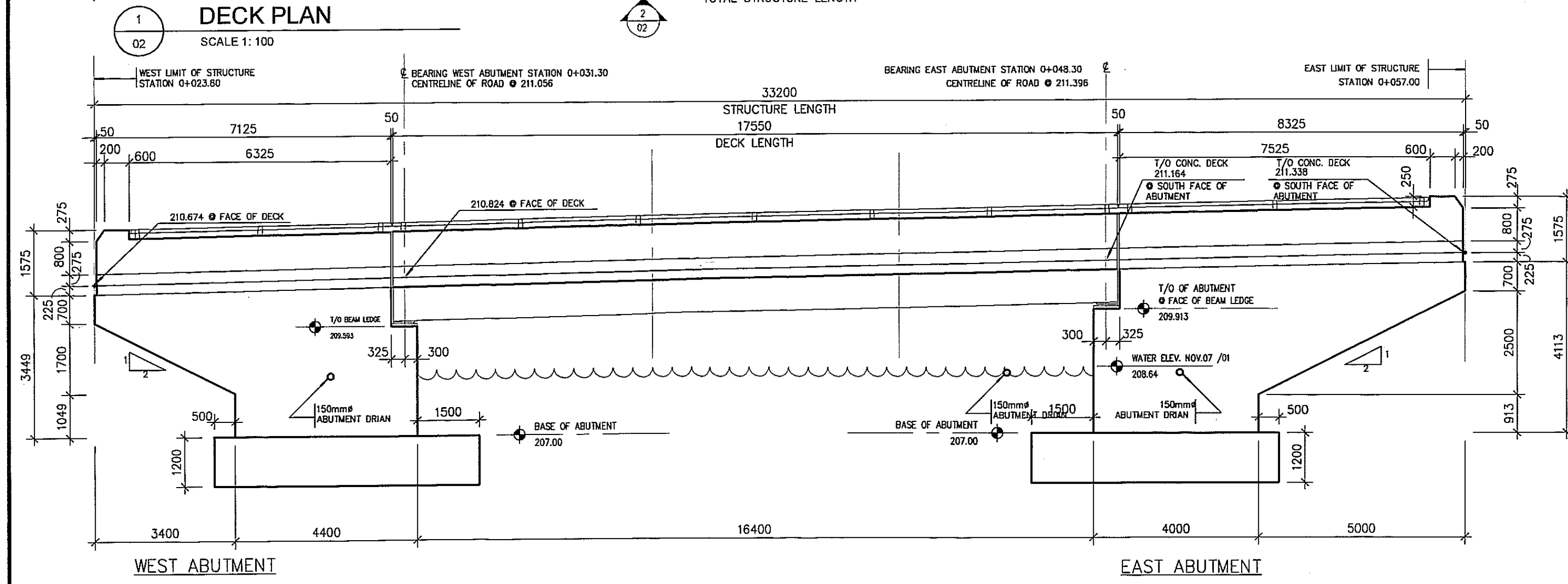
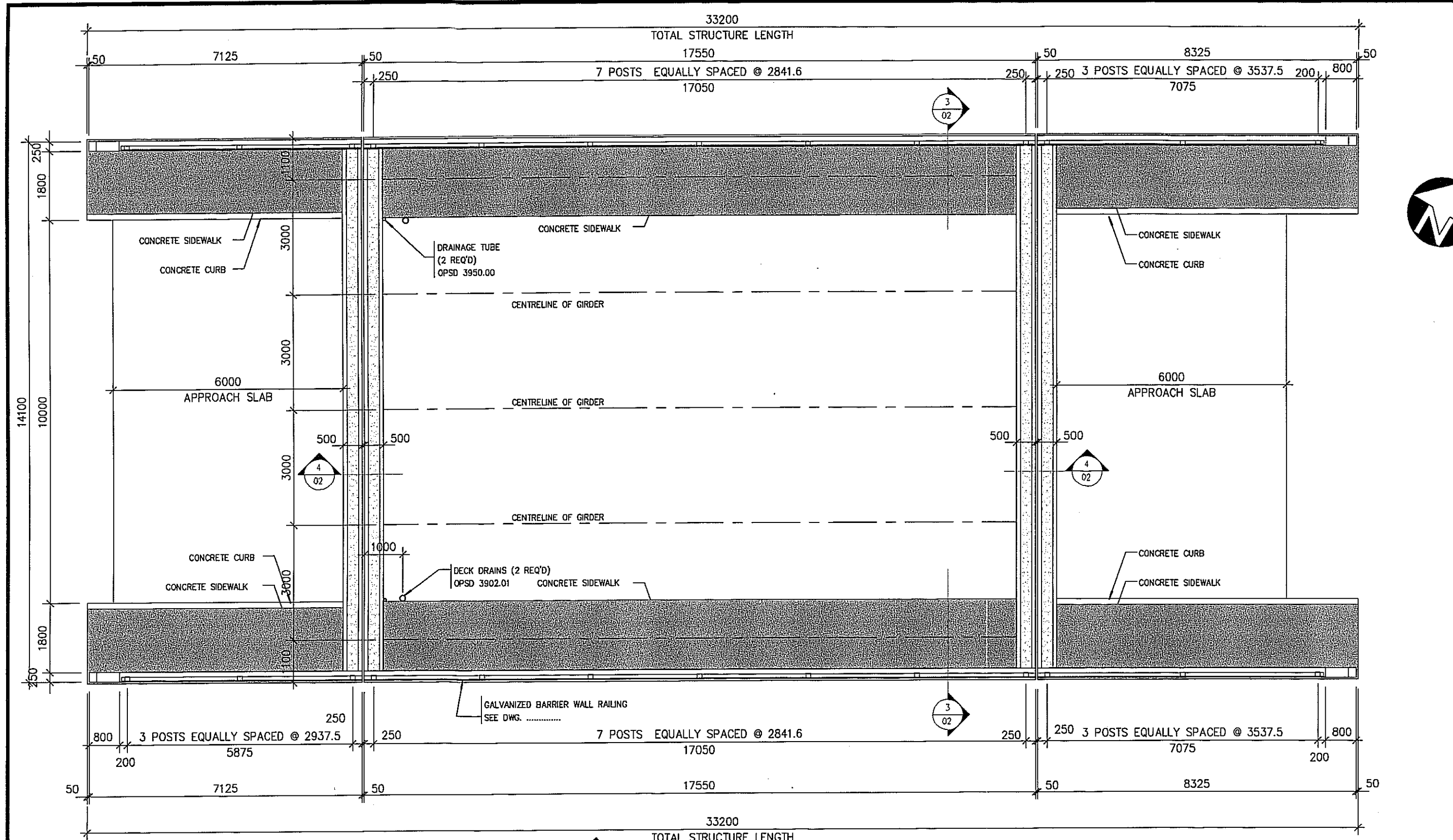
Designed By :
G.D.VALLEE

DATE
MAY, 2004

Checked by :
G.D.VALLEE

Project No.
01-073

Drawing No.
01 of 7



Notes :

DATE: MAY 17, 2002
REVISION: ISSUED FOR TENDER

DATE: MAR 26, 2004
REVISION: AS-CONSTRUCTED

Stamps

G. D. VALLEE
J. D. VALLEE

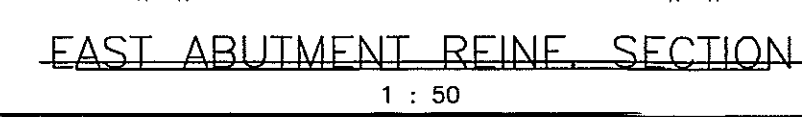
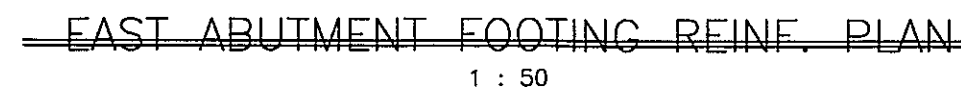
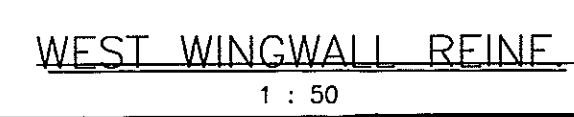
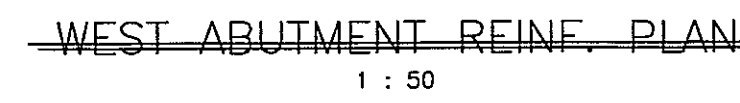
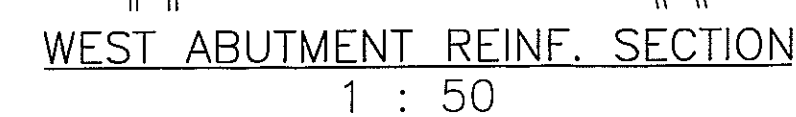
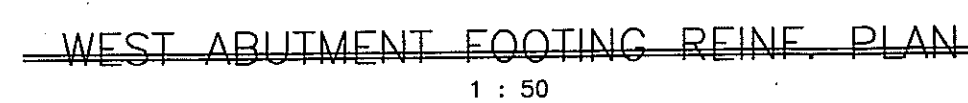
Project Title: ARGYLE STREET BRIDGE- NORFOLK COUNTY
SIMCOE, ONTARIO

G. DOUGLAS VALLEE LIMITED
CONSULTING ENGINEERS AND ARCHITECT
51 PARK ROAD
R.R.1, SIMCOE, ONTARIO N3Y 4J9
(519) 426-6270

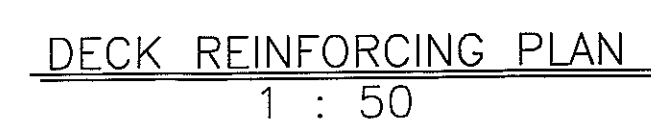
Brawing Title: BRIDGE ELEVATIONS AND DECK PLAN

Drawn By: D.BENNETT
Designed By: G.D.VALLEE
Checked by: G.D.VALLEE

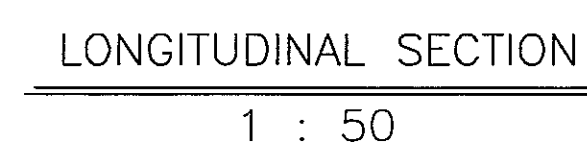
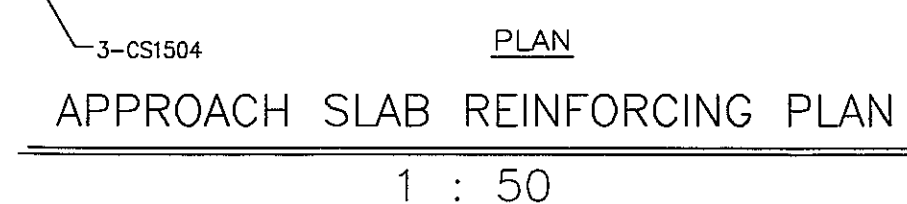
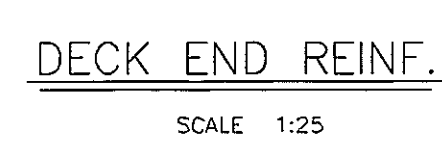
DATE: MAY, 2002
Project No.: 01-073
Drawing No.: 02 of 7



03 of 7



DECK REINF. SECTION
1 : 50



NOTES:

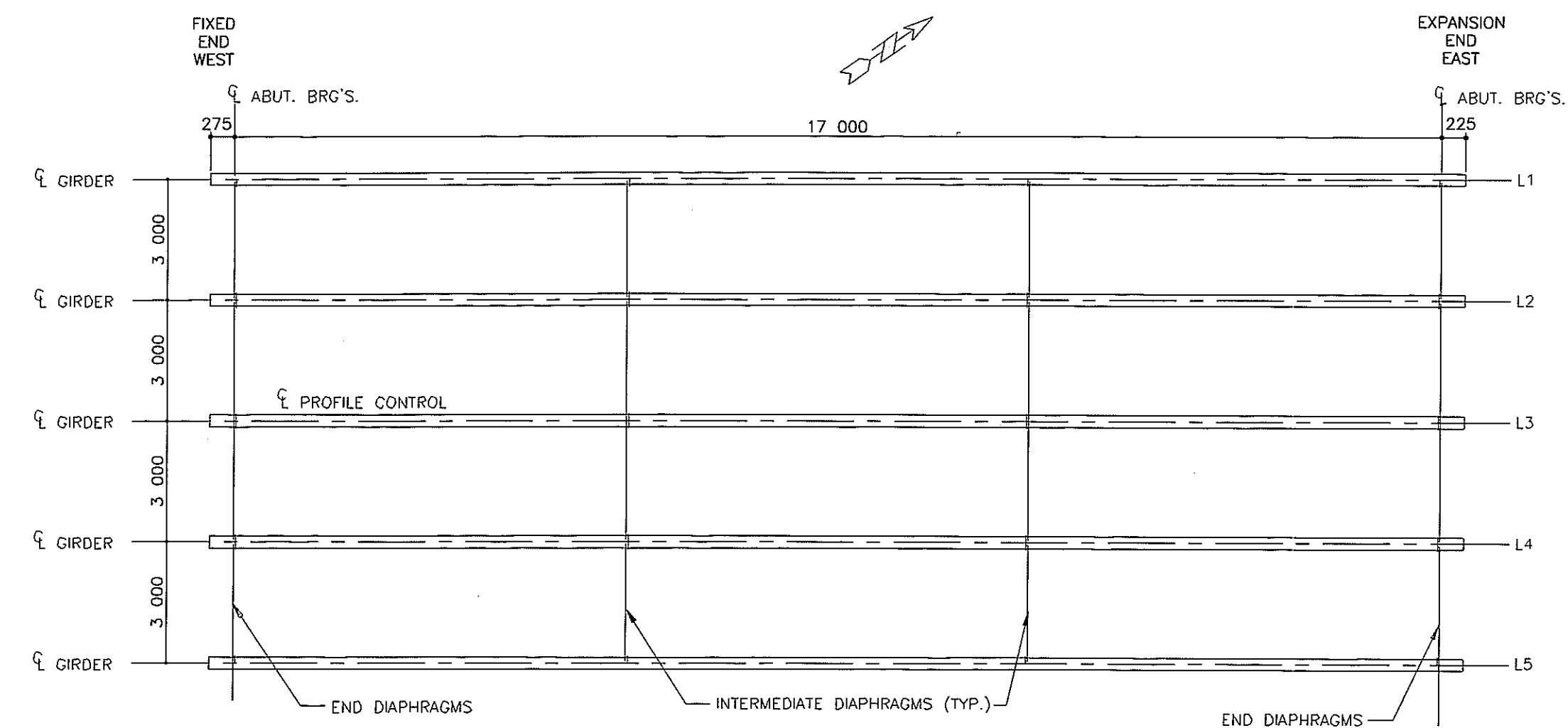
1. CLEAR COVER TO REINFORCING STEEL 70±20mm EXCEPT AS NOTED.
2. WATERPROOFING AT JOINT BETWEEN BRIDGE AND APPROACH SLAB TO BE IN ACCORDANCE WITH OPSD 3906.02.

ARGYLE STREET BRIDGE- NORFOLK COUNTY
SIMCOE, ONTARIO

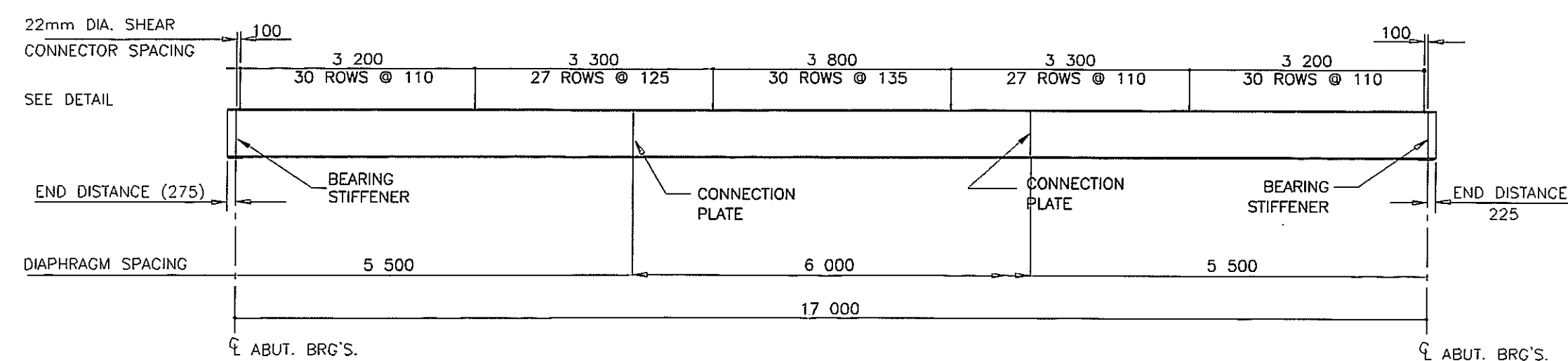
G. DOUGLAS VALLEE LIMITED
CONSULTING ENGINEERS AND ARCHITECT
51 PARK ROAD
R.R.1, SIMCOE, ONTARIO N3Y 4J9
(519) 426-6270

Drawing Title		
DECK STEEL DETAILS AND APPROACH SLAB		
Drawn By : D.BENNETT	Designed By : G.D.VALLEE	DATE MAY, 2002
Checked by : G.D.VALLEE	Project No. 01-073	Drawing No. 04 of 7

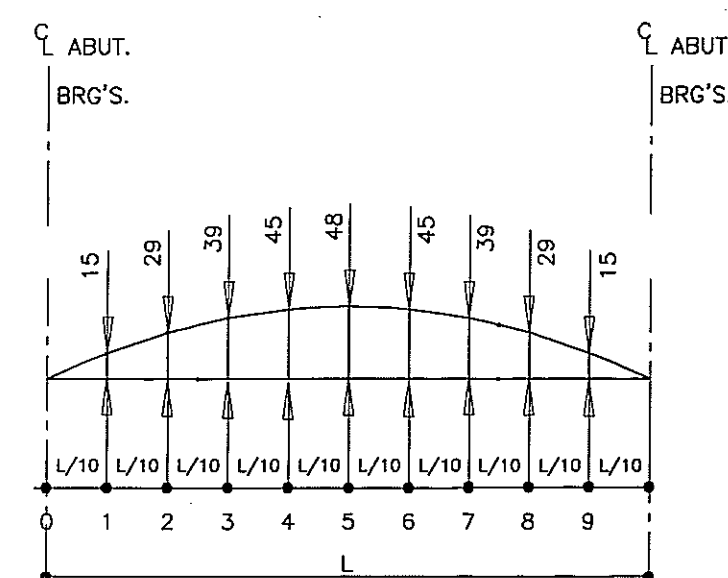
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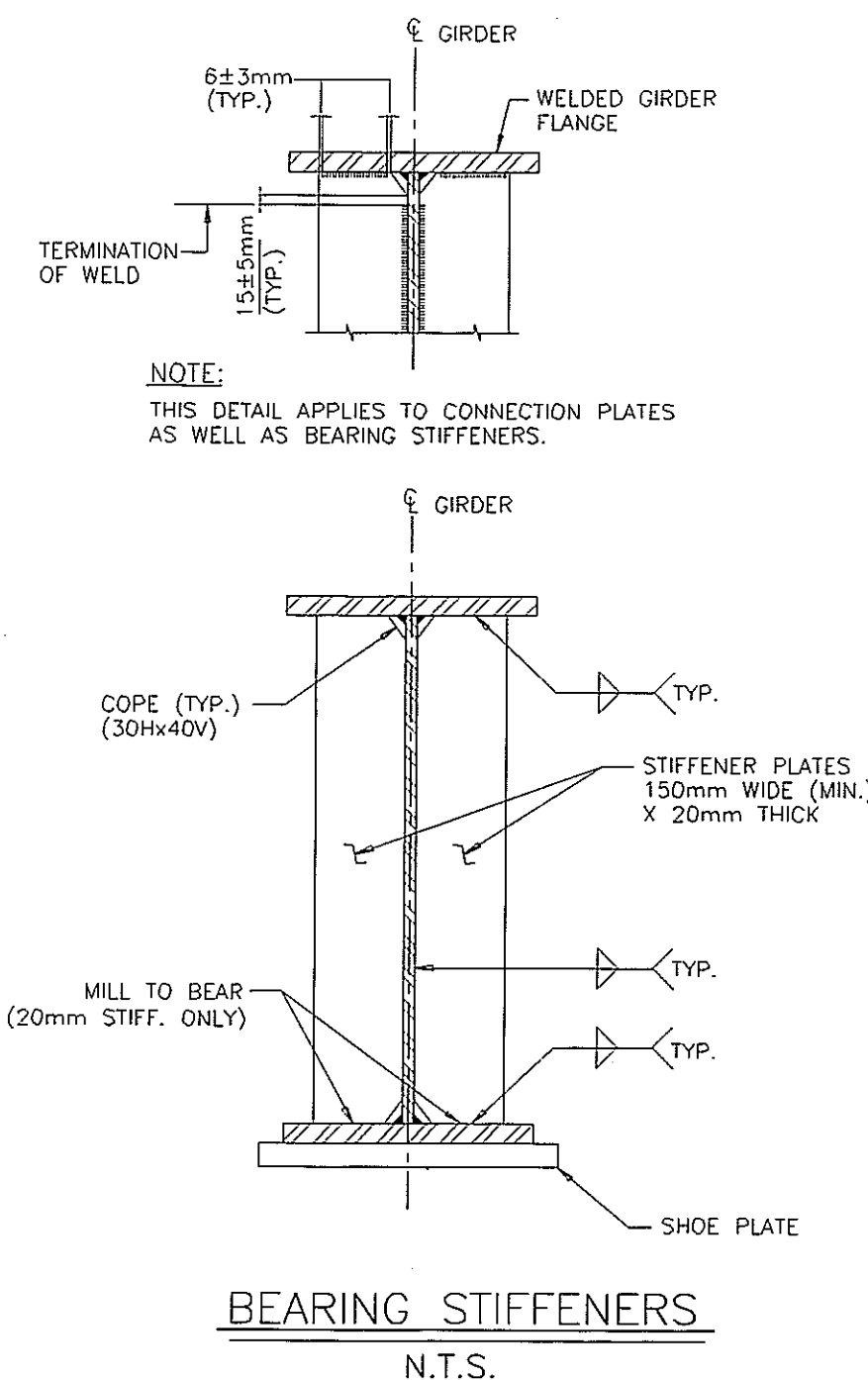
PLAN - GIRDERS
N.T.S.



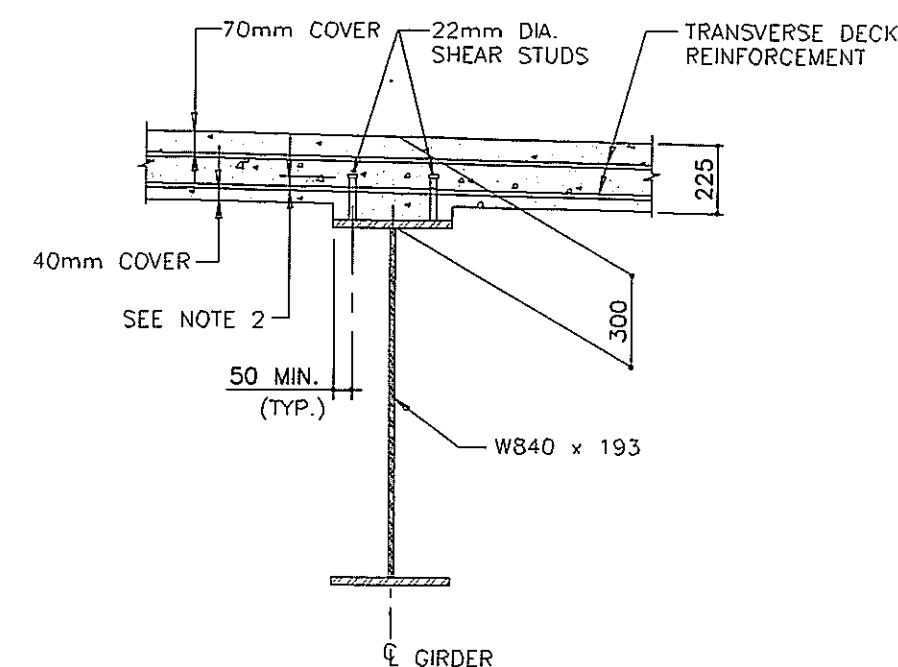
GIRDER ELEVATION
N.T.S.



BEAM CAMBER DIAGRAM
N.T.S.
(TO BE VERIFIED)

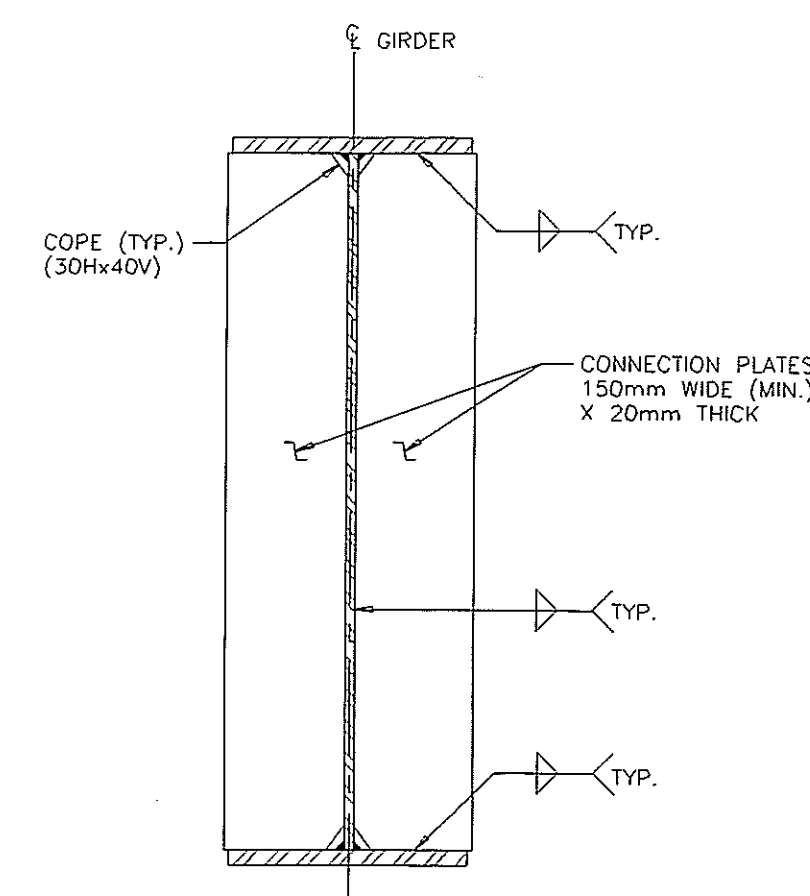


BEARING STIFFENERS
N.T.S.



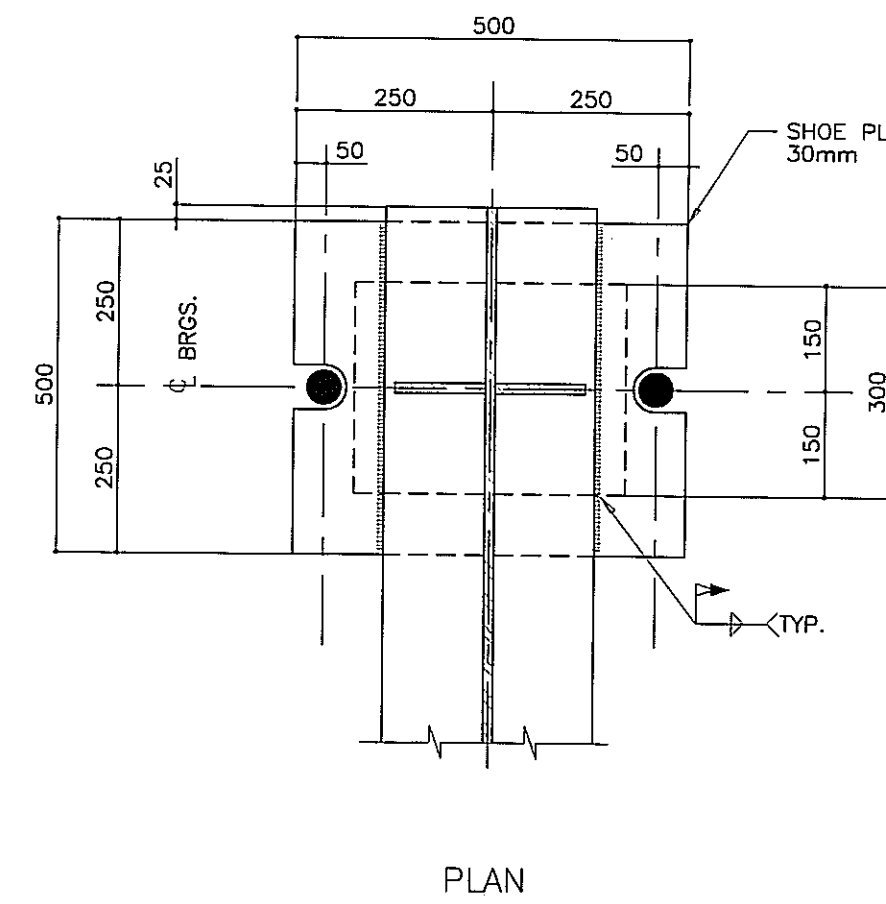
- NOTES:
1. SEE "GIRDER ELEVATION" FOR LONGITUDINAL SPACING OF ROWS OF STUDS. THE SPACING INFORMATION GIVEN IS FOR TWO (2) STUDS PER ROW.
 2. SHEAR CONNECTOR SHALL EXTEND INTO THE DECK SUCH THAT THE CLEAR DISTANCE FROM THE UNDERSIDE OF THE HEAD TO THE TOP OF THE BOTTOM TRANSVERSE REINFORCEMENT SHALL BE AT LEAST 25mm.

SHEAR CONNECTOR DETAILS
N.T.S.

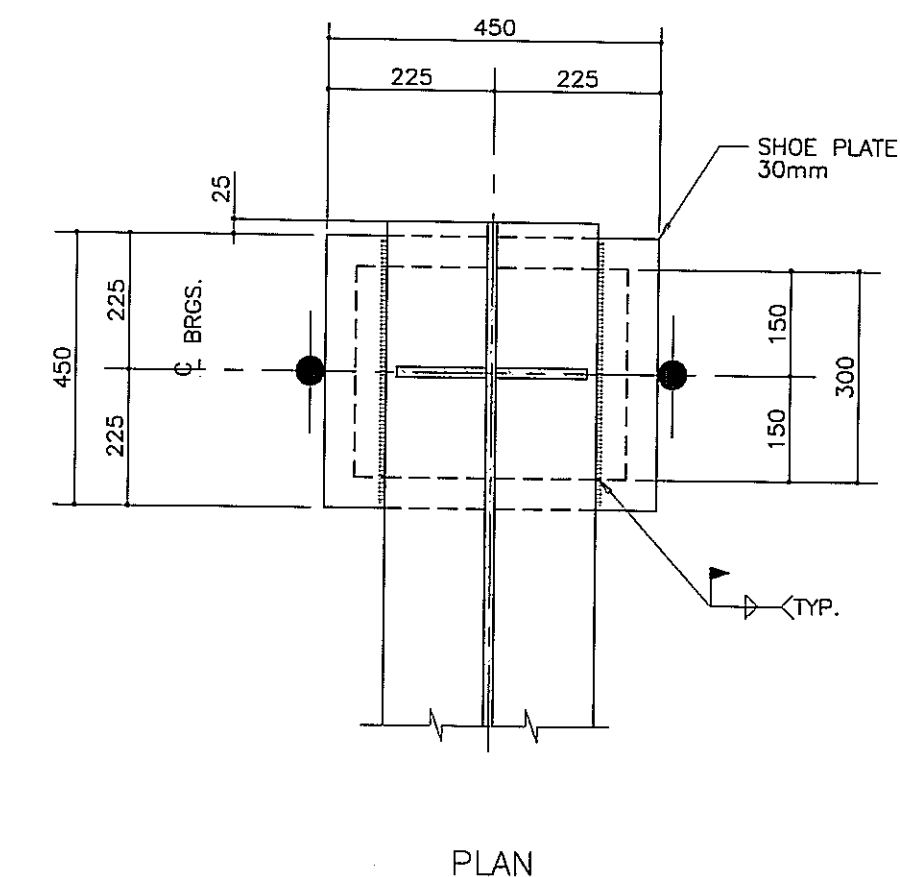


- NOTES:
1. MINIMUM EDGE DISTANCES MUST BE MAINTAINED.
 2. EXTERIOR GIRDERS REQUIRE A CONNECTION PLATE ON THE INTERIOR SIDE OF THE WEB ONLY.
 3. WELD SIZE TO BE 15mm MIN.

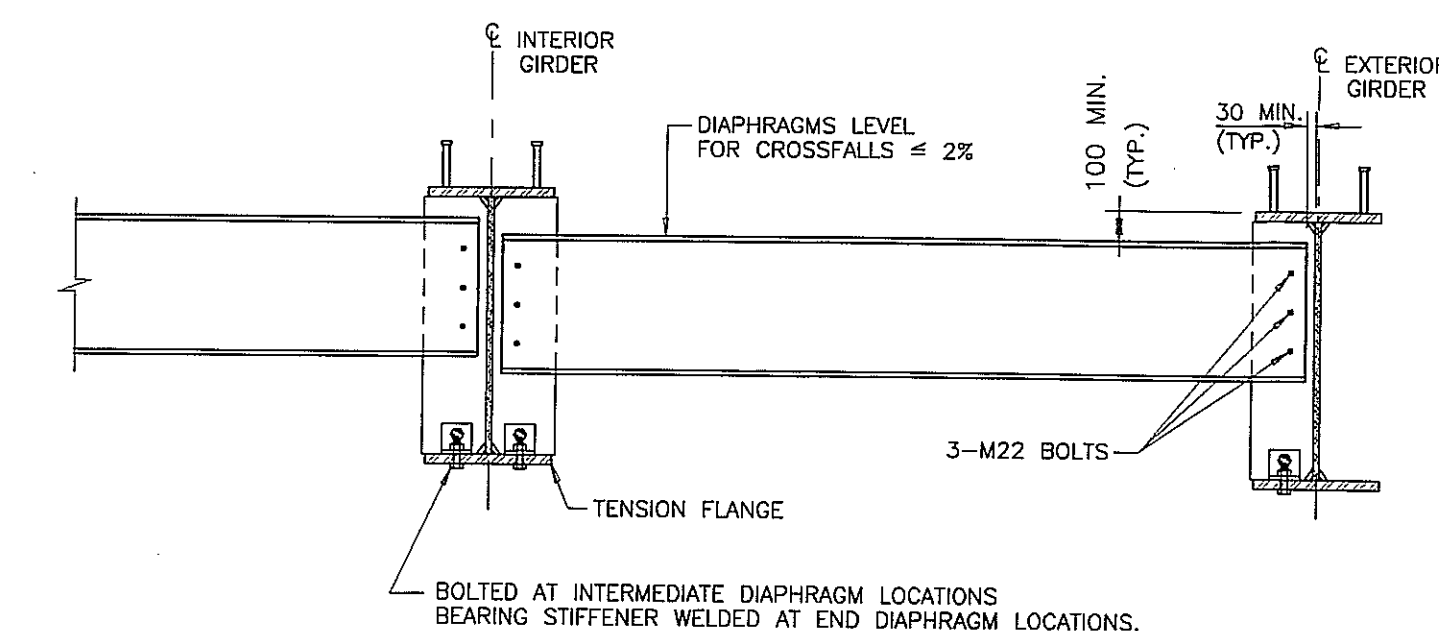
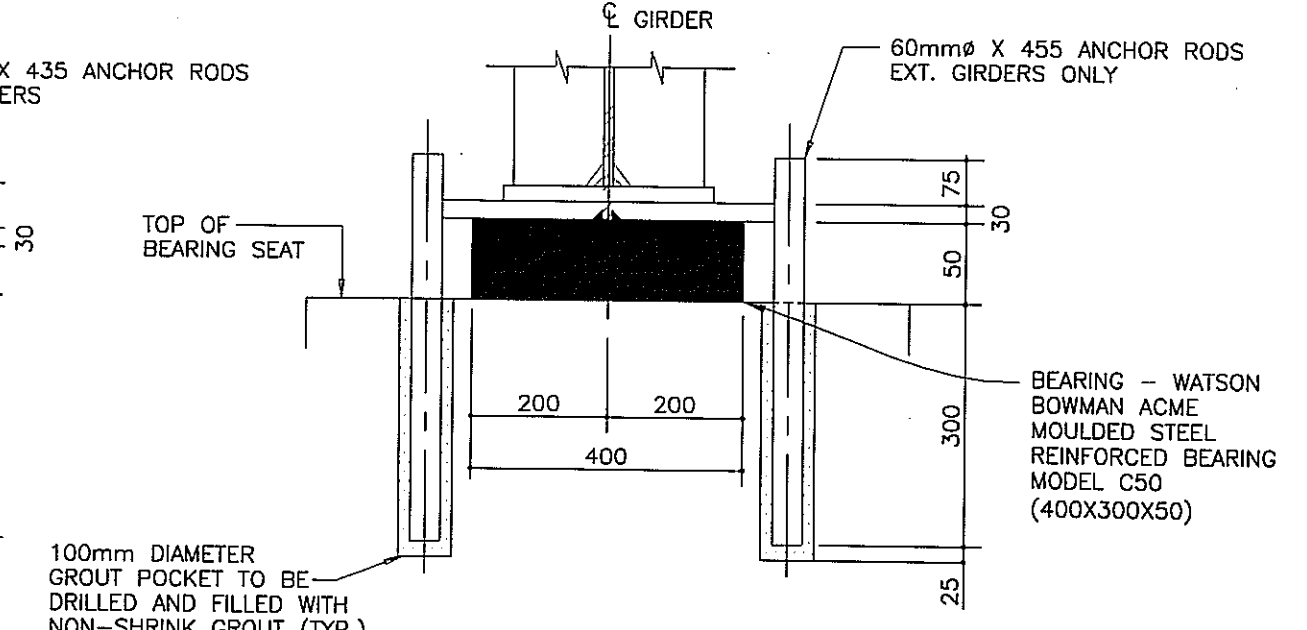
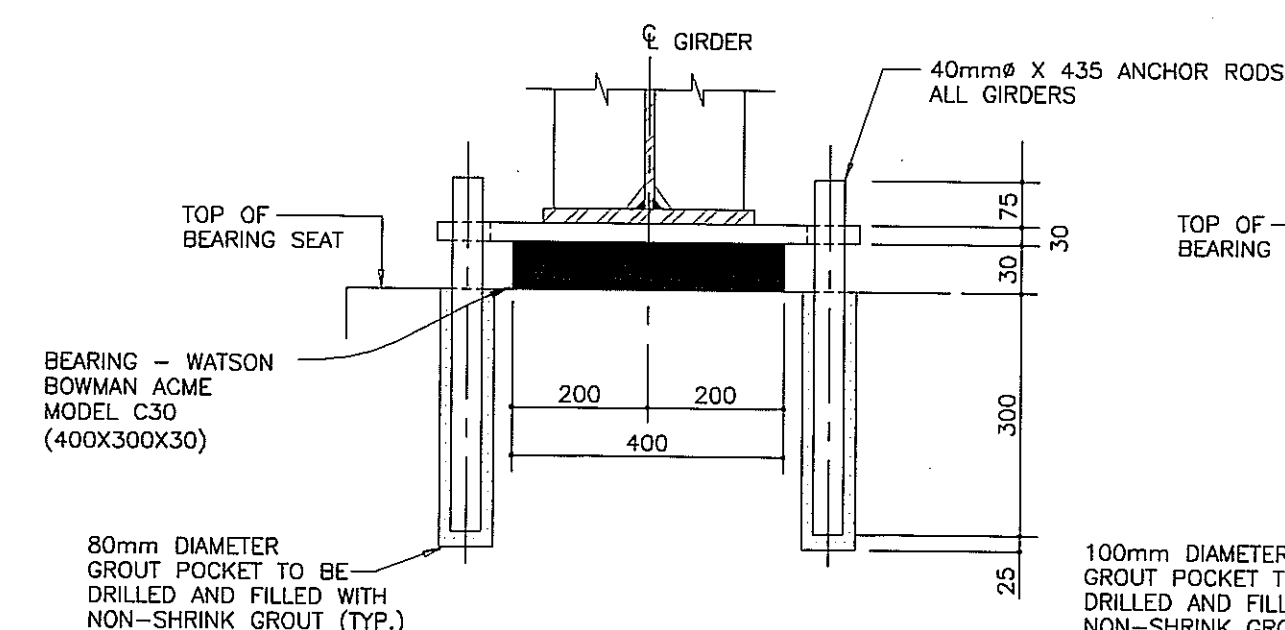
CONNECTION PLATES (INTERMEDIATE DIAPHRAGMS)
N.T.S.



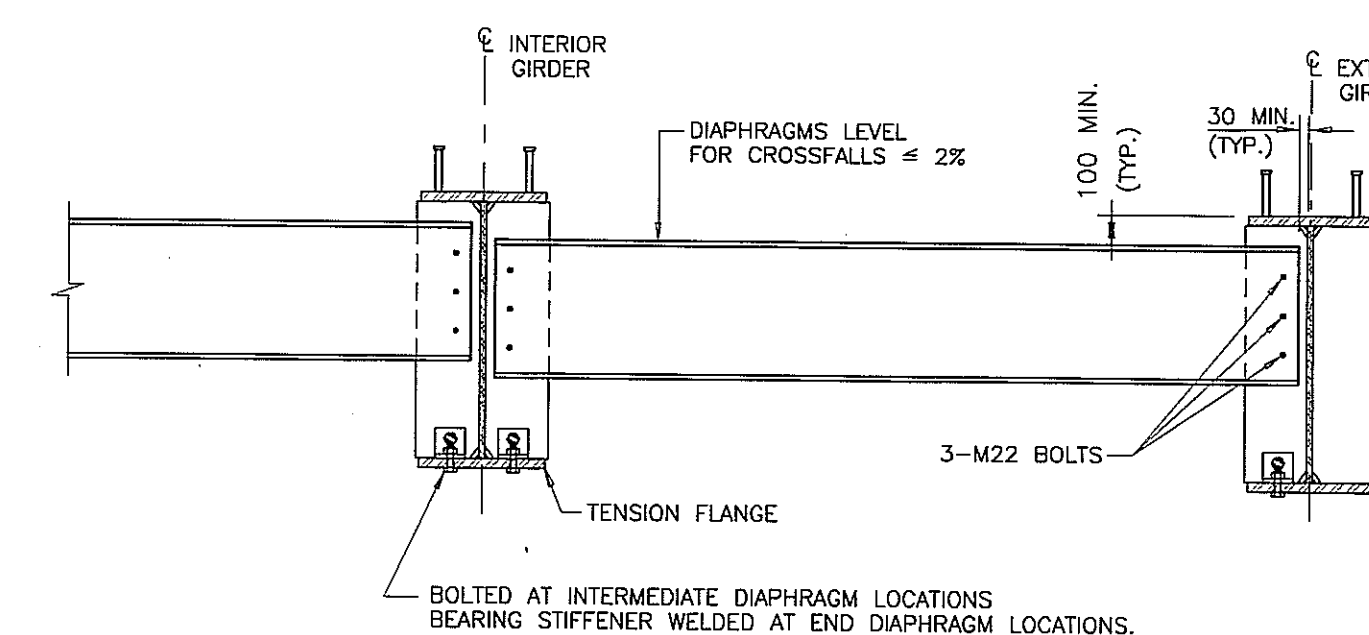
WEST
FIXED BEARING DETAILS
N.T.S.



EAST
EXPANSION BEARING DETAILS
N.T.S.



END DIAPHRAGMS
N.T.S.

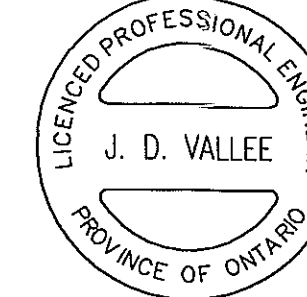


INTERMEDIATE DIAPHRAGMS
N.T.S.

Notes :

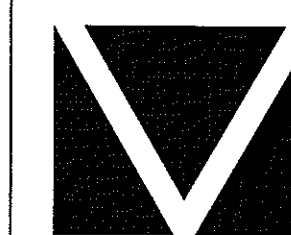
DATE	REVISION
MAY 17, 2002	ISSUED FOR TENDER
MAR. 26, 2004	AS-CONSTRUCTED

Stamps



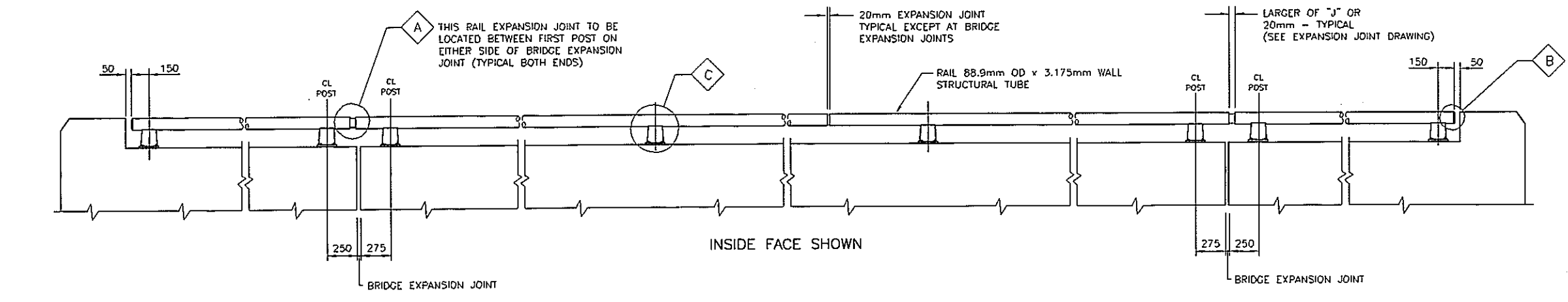
Project Title

ARGYLE STREET BRIDGE- NORFOLK COUNTY
SIMCOE, ONTARIO

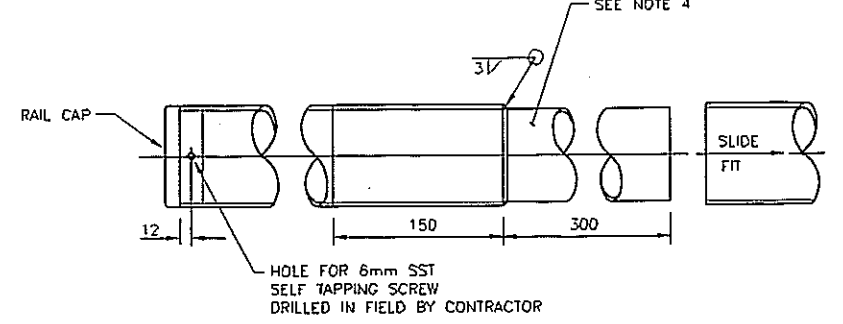


G. DOUGLAS VALLEE LIMITED
CONSULTING ENGINEERS AND ARCHITECT
51 PARK ROAD
R.R.1, SIMCOE, ONTARIO N3Y 4J9
(519) 426-6270

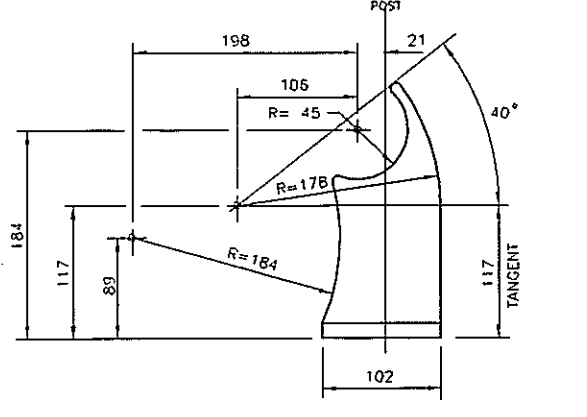
Drawing Title		
STRUCTURAL STEEL DETAILS		
Drawn By :	Designed By :	DATE
D.BENNETT	G.D.VALLEE	MAY, 2002
Checked by :	Project No.	Drawing No.
G.D.VALLEE	01-073	05 of 7



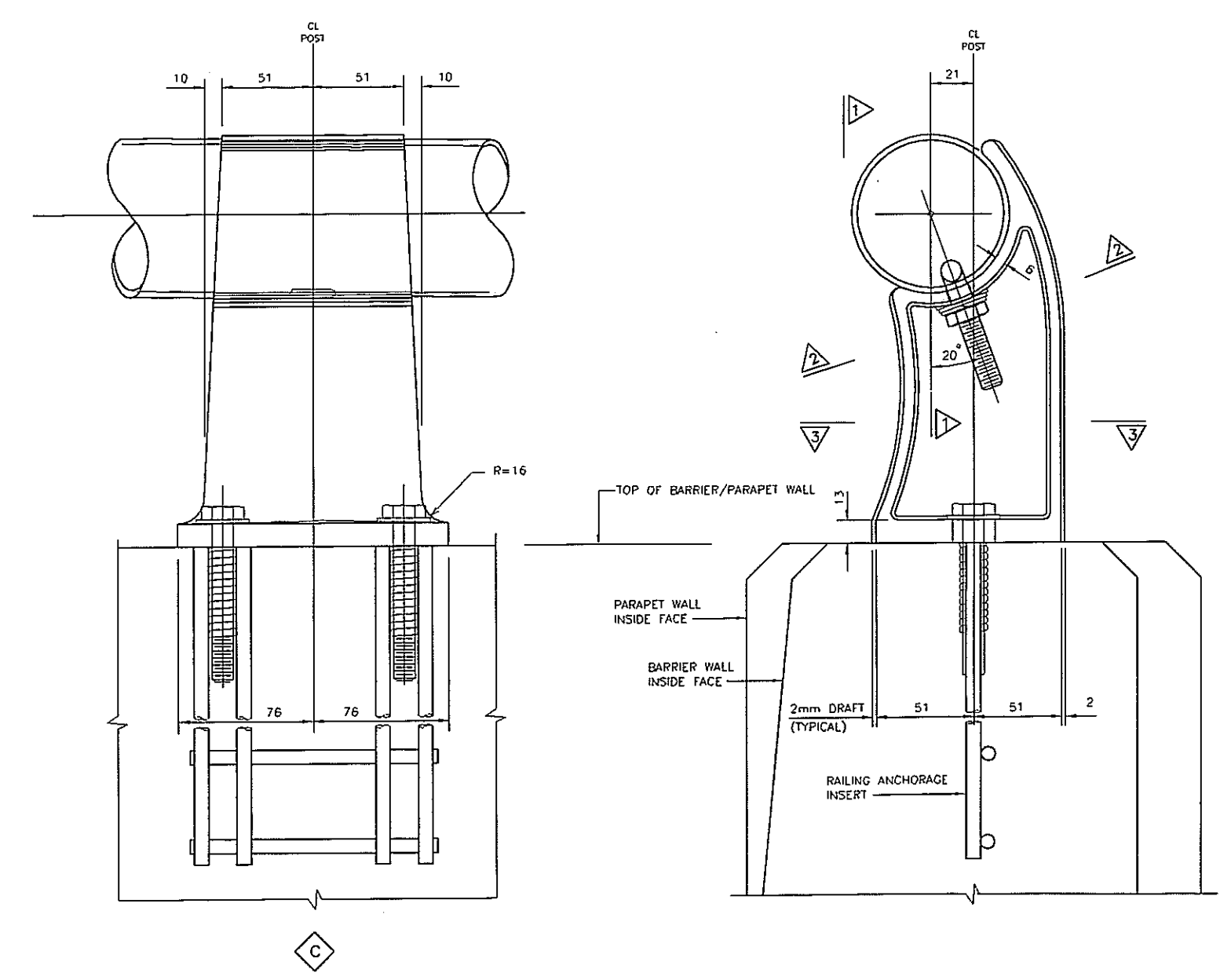
ELEVATION



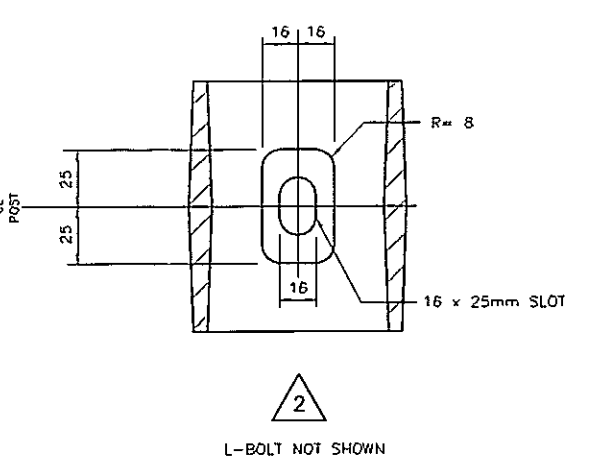
RAIL CAP



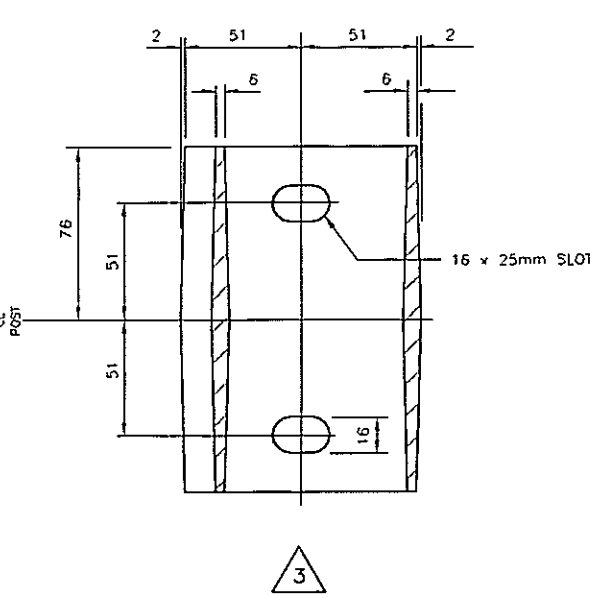
POST DETAILS



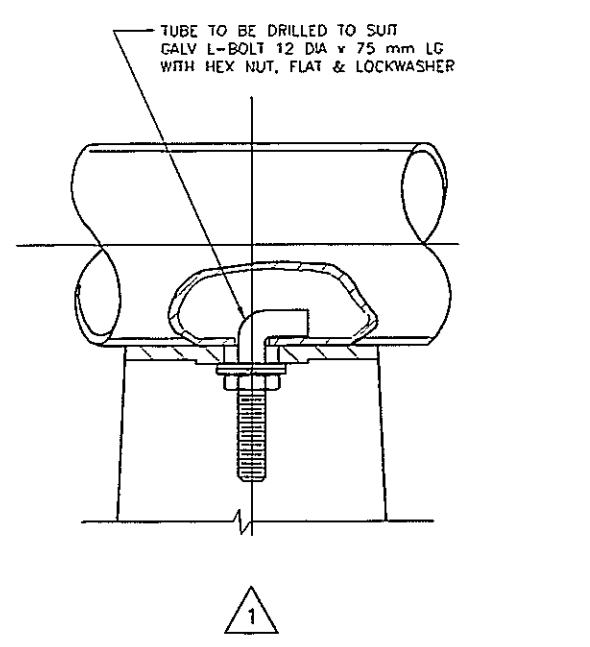
TYPICAL SECTION



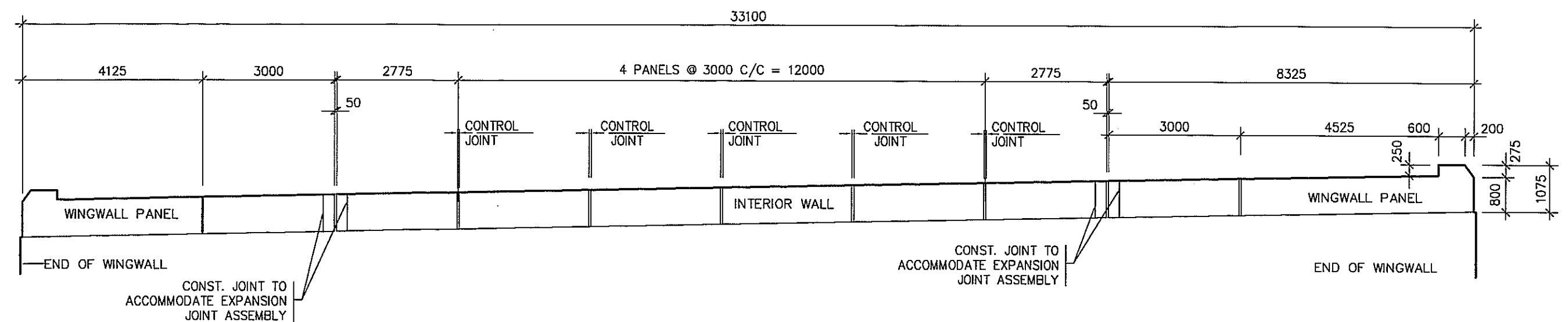
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RAIL POST

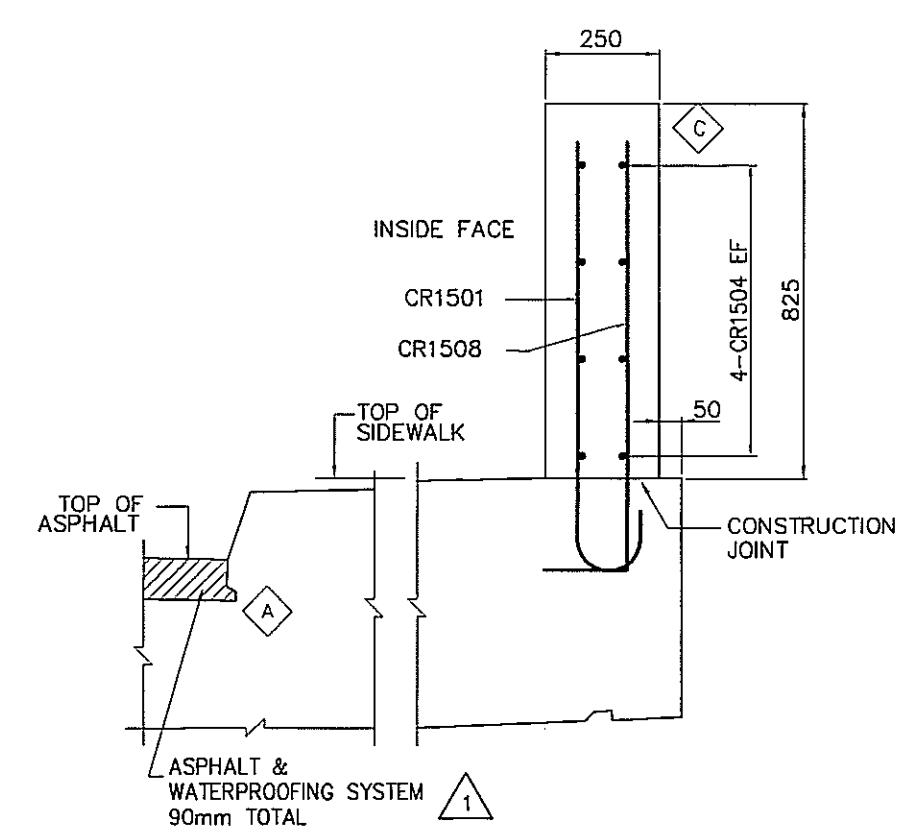


RAIL POST



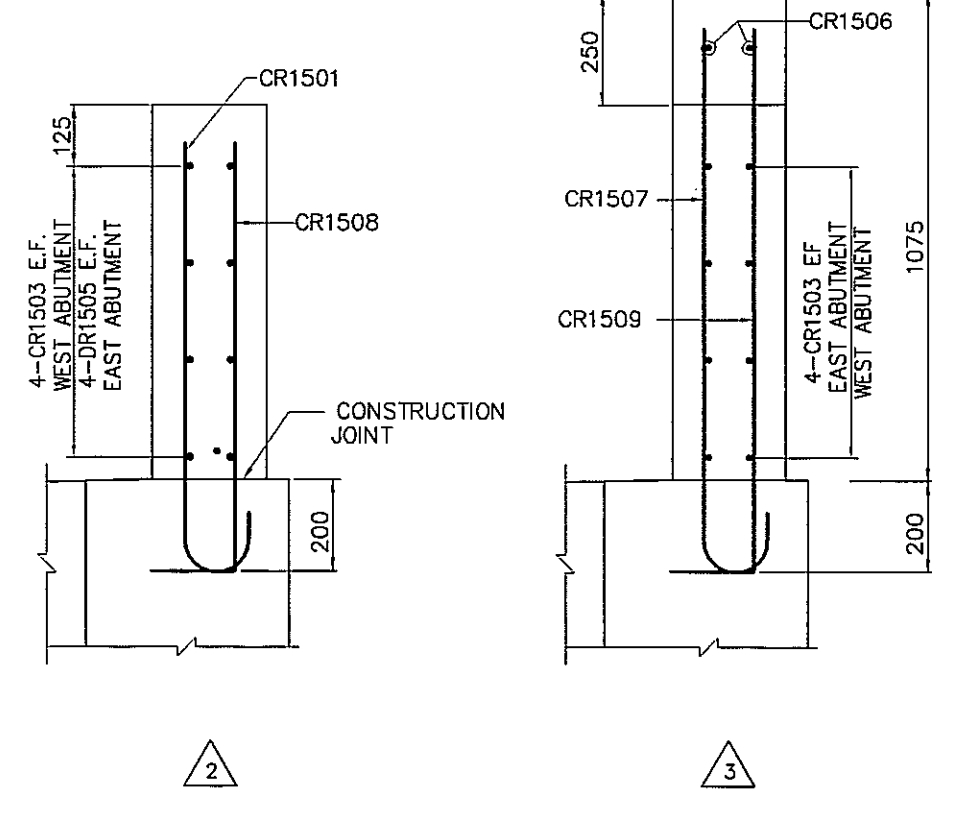
ELEVATION

1: 100



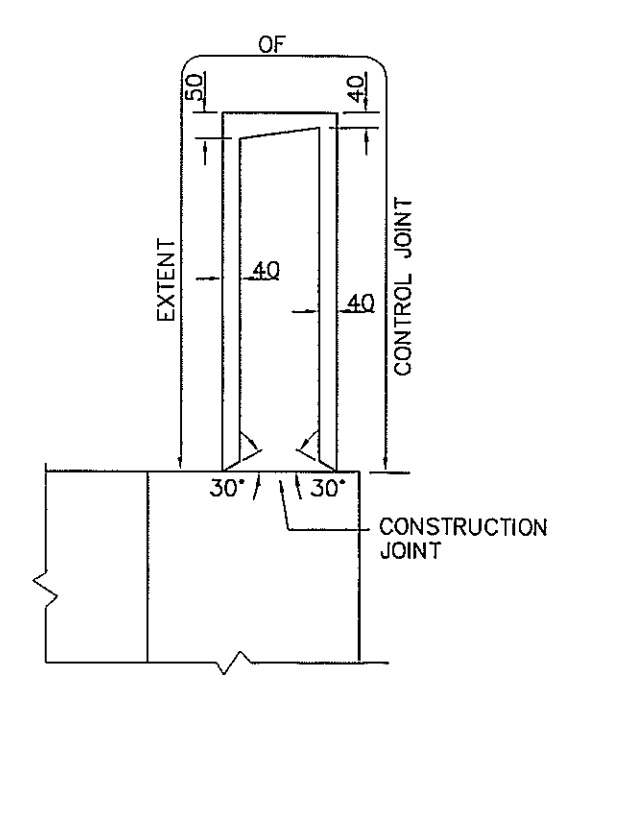
CONCRETE PARAPET ON DECK

TYPICAL DIMENSIONS (FOR BAR NUMBERS SEE A)

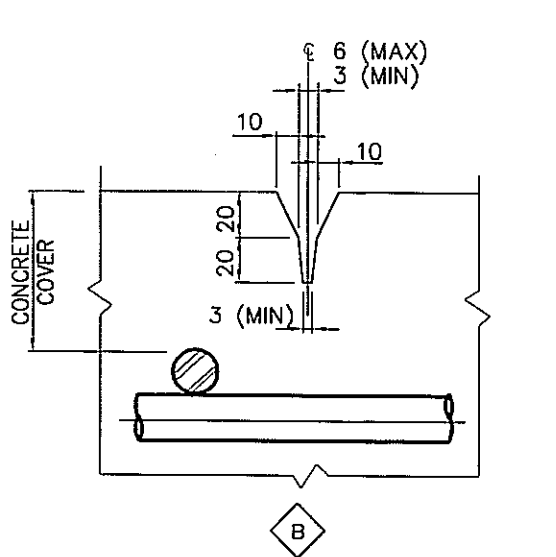


CONCRETE PARAPET ON WINGWALL

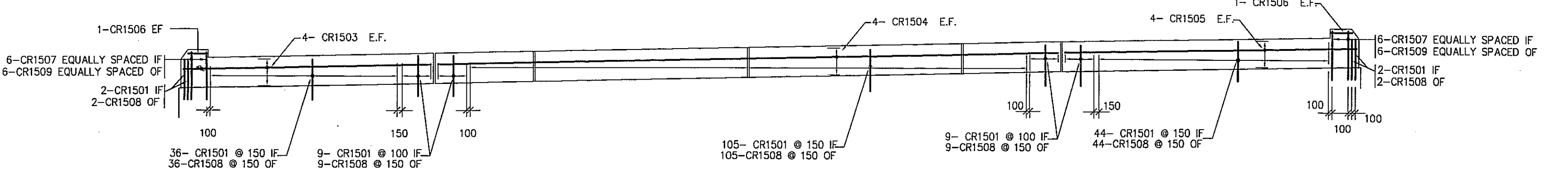
TYPICAL REIN.



CONTROL JOINT IN PARAPET WALL

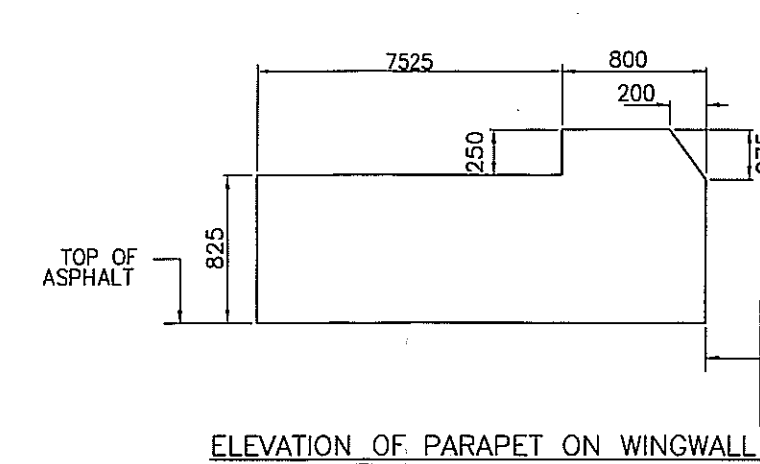


CONTROL JOINT DETAIL

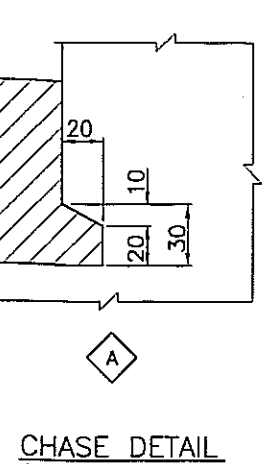


REINFORCING ARRANGEMENT

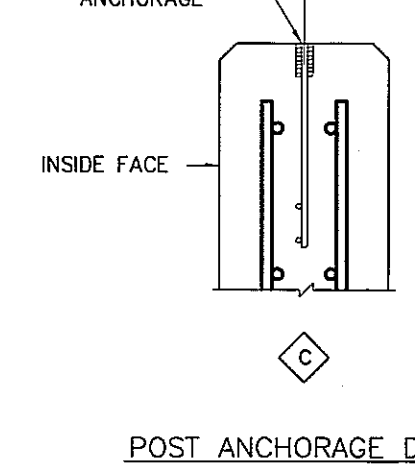
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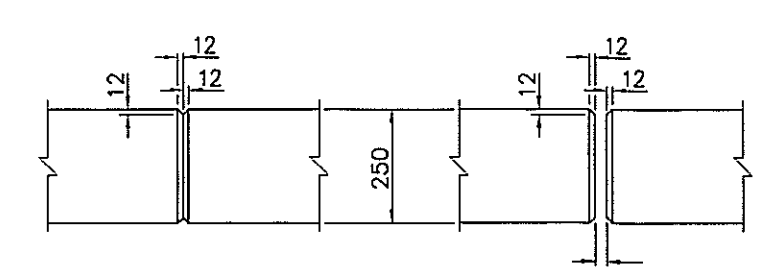
ELEVATION OF PARAPET ON WINGWALL



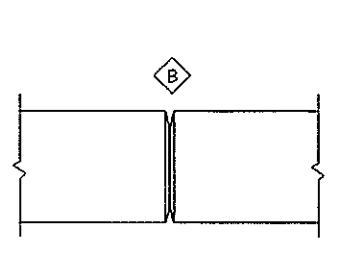
CHASE DETAIL



POST ANCHORAGE DETAIL



TYP. CONSTRUCTION JOINT



TYP. EXPANSION JOINT



TYP. CONTROL JOINT

PARAPET WALL WITH SIDEWALK & RAILING

DO NOT SCALE

- NOTES:
- CHASE REQUIRED ON HIGH AND LOW SIDE OF CROSSFALL.
 - CONCRETE COVER TO REINFORCING STEEL TO ± 20 mm.
 - BAR LAP SPICE FOR HORIZONTAL REINFORCEMENT MUST NOT LAP THROUGH CONTROL JOINT.
 - MINIMUM BAR LAP SPICE TO BE 600mm.
 - LENGTH OF HORIZONTAL BAR TO SUIT CONTRACTOR'S OPERATIONS. BAR LENGTHS NEED NOT MATCH DISTANCE BETWEEN CONTROL JOINTS.
 - CONTROL JOINT TO BE FORMED.
 - SAWCUTS NOT PERMITTED.
 - CONTROL JOINT FORM HARDWARE NOT TO BE LEFT IN PLACE.
 - OPTIONAL CONSTRUCTION JOINTS TO BE LOCATED WITHIN LIMITS OF CONCRETE DAMS ON DECK OR BALLAST WALL.
 - LEGEND

EF DENOTES EACH FACE
IF DENOTES INSIDE FACE
OF DENOTES OUTSIDE FACE

- NOTES:
- RAIL ELEMENTS SHALL BE STRUCTURAL TUBING SUPPLIED IN ACCORDANCE WITH CSA G40.21-M82 GRADE 350.
 - STEEL IN POSTS SHALL BE CAST STEEL SUPPLIED IN ACCORDANCE WITH ASTM A27-60 GRADE 65-35.
 - RAIL SHALL BE SUPPLIED WITH SPLICE IN LENGTHS OF 600mm (EXCLUDING SPLICE) EXCEPT AS NOTED.
 - GALVANIZED RAIL TUBING MATING SURFACES TO HAVE A 2 ± 0.5 mm GAP ALL AROUND TO ENSURE A SLIDE FIT.
 - POSTS AND RAILS SHALL BE GALVANIZED IN ACCORDANCE WITH CSA G164-M. ALL GALVANIZING SHALL BE DONE AFTER FABRICATION.
 - ELECTRODES SHALL BE A LOW HYDROGEN SPECIFICATION E7015, E7016 OR E7018.
 - POST AND ANCHORAGE TO INCLUDE ALL BOLTS AND WASHERS.
 - END CAP TO INCLUDE SST SELF TAPPING FASTENERS.
 - L-BOLT, NUT AND WASHERS FOR FASTENING STEEL TUBING TO POSTS SHALL BE GALVANIZED (CSA G164-M).
 - ALTERNATE RAIL CAPS MAY BE USED WITH APPROVAL OF ENGINEER.
 - RAIL SHALL BE PRESENT TO FOLLOW ROAD CURVATURE WHERE RADIUS IS LESS THAN 150m.
 - RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE.
 - WHERE LAYOUT OF POSTS IS NOT SHOWN, POST LOCATION SHALL BE DETERMINED BY THE CONTRACTOR.
 - RAIL MAY BE CUT AS REQUIRED IN FIELD WITH PIPE CUTTERS. CUT TO BE SURFACE TREATED WITH ZINC RICH PAINT.
 - WHEN CONNECTING TO EXISTING RAILING, RAIL MUST BE MADE CONTINUOUS AND POST SPACING DETERMINED WITH REFERENCE TO EXISTING POSTS.
 - ALTERNATE ALUMINUM RAIL AND POST DESIGNS WILL BE PERMITTED SUBJECT TO PRIOR APPROVAL BY MTO. THE RAIL SHALL BE 6061 ALLOY T-6 HEAT TREATED. WHEN AN EXTRUDED POST IS USED, THE ALLOY AND HEAT TREATMENT SHALL BE THE SAME AS SPECIFIED FOR THE RAIL. ALUMINUM DESIGNS SHALL BE EQUIVALENT IN STRENGTH TO THE DESIGN SHOWN ON THIS DRAWING, WITH A CONFIGURATION TO PERMIT COMPLETE INTERCHANGEABILITY WITH GALVANIZED STEEL POSTS AND RAILS.
 - LENGTH FOR 88.9 mm OD PIPE WITH SPLICE GIVEN IN TABLE DOES NOT INCLUDE 300 mm PROTRUSION OF SPLICE TUBE.
 - SPLICING OF RAIL TUBES MAY BE DONE BY WELDING ON OF SPLICE PIECE OR BY SNEEDING OF RAIL END.
 - RAILING ANCHORAGE INSERT TO BE PLACED PRIOR TO CONCRETING.

RAILING FOR PARAPET WALL

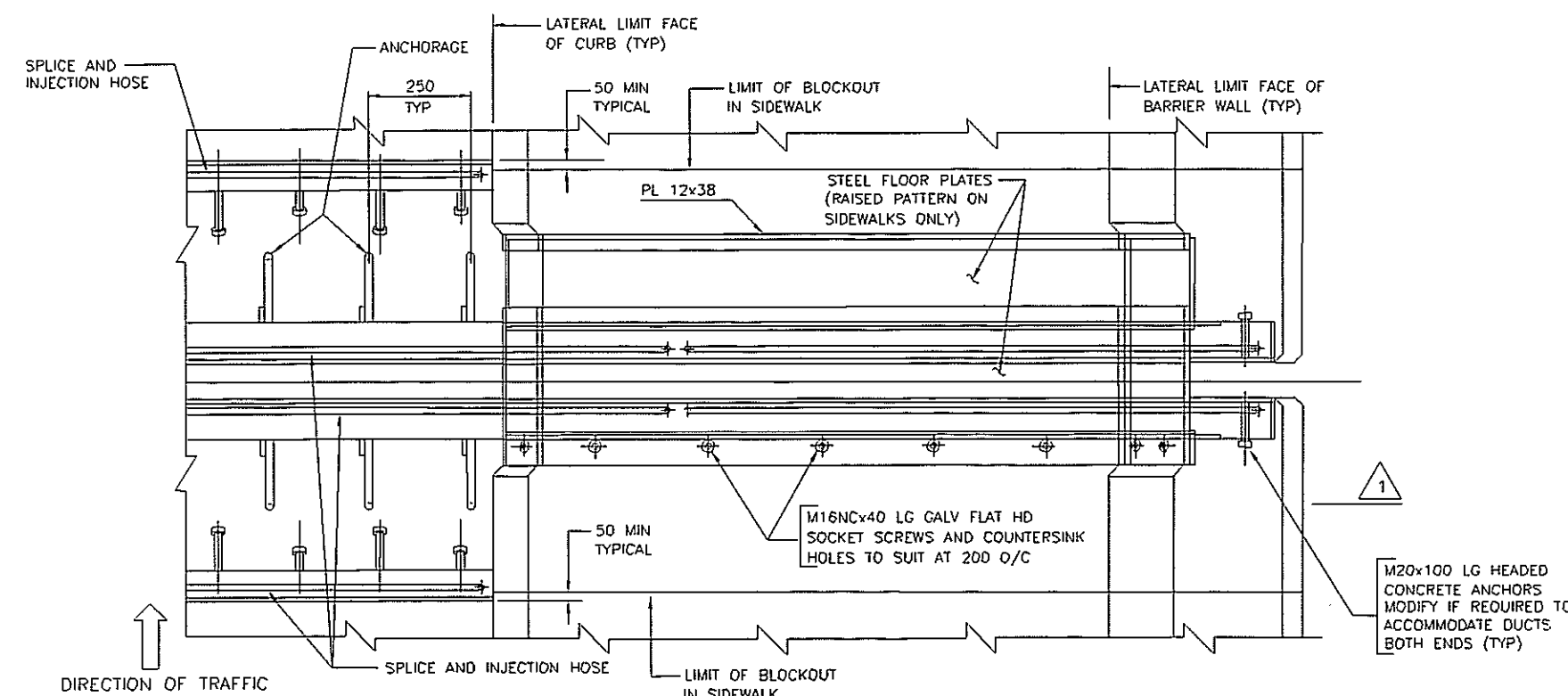
DO NOT SCALE

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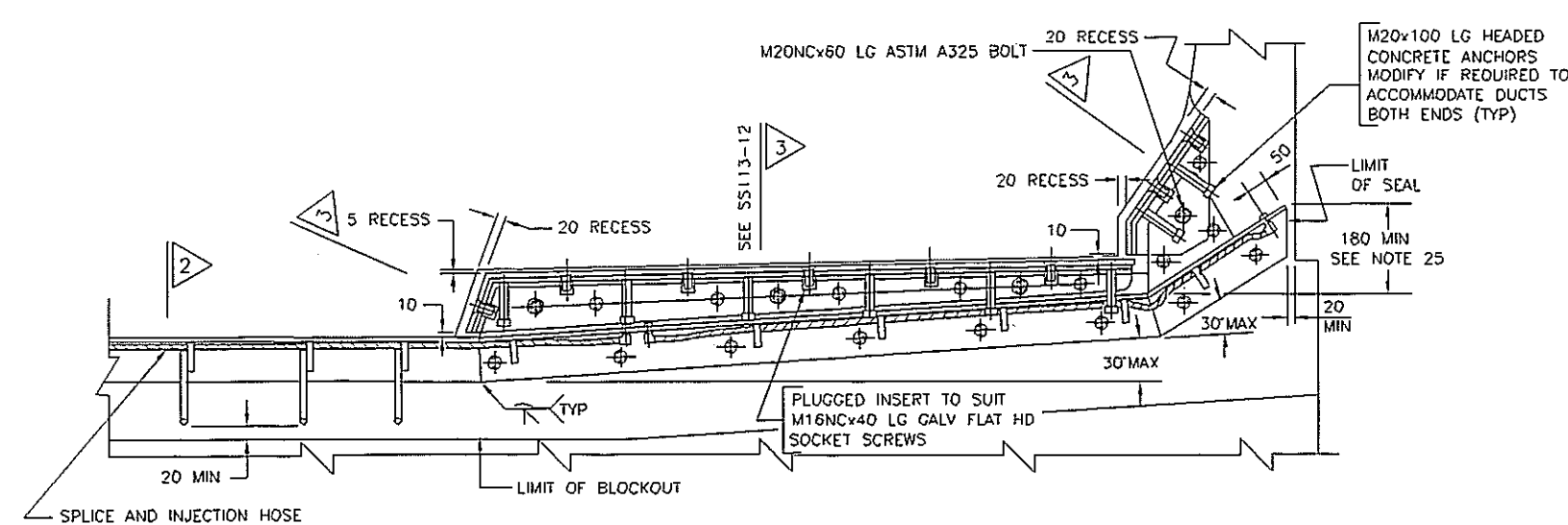
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MAY 17, 2002	ISSUED FOR TENDER	
MAR. 26, 2004	AS-CONSTRUCTED	

Project Title ARGYLE STREET BRIDGE- NORFOLK COUNTY SIMCOE, ONTARIO		
Drawing Title RAILING DETAILS		
Drawn By : D.BENNETT	Designed By : G.D.VALLEE	DATE MAY , 2002
Checked by : G.D.VALLEE	Project No. 01-073	Drawing No. 06 of 7

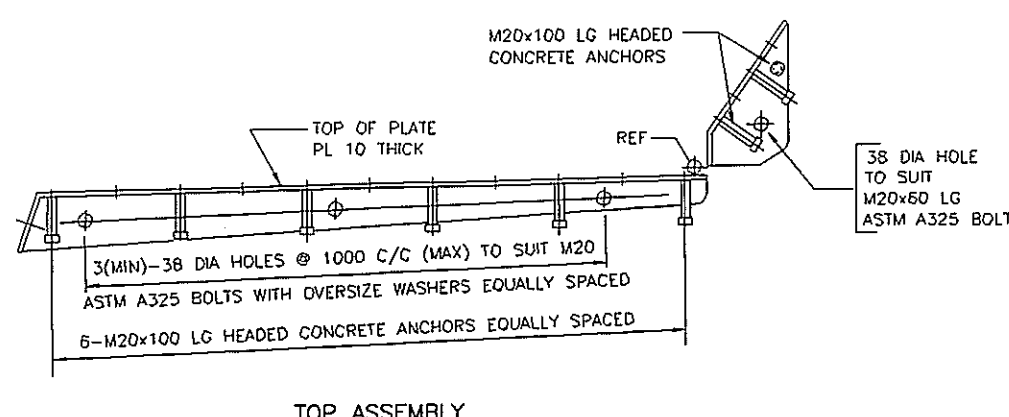
G. DOUGLAS VALLEE LIMITED
CONSULTING ENGINEERS AND ARCHITECT
51 PARK ROAD
R.R.1, SIMCOE, ONTARIO N3Y 4J9
(519) 426-6270



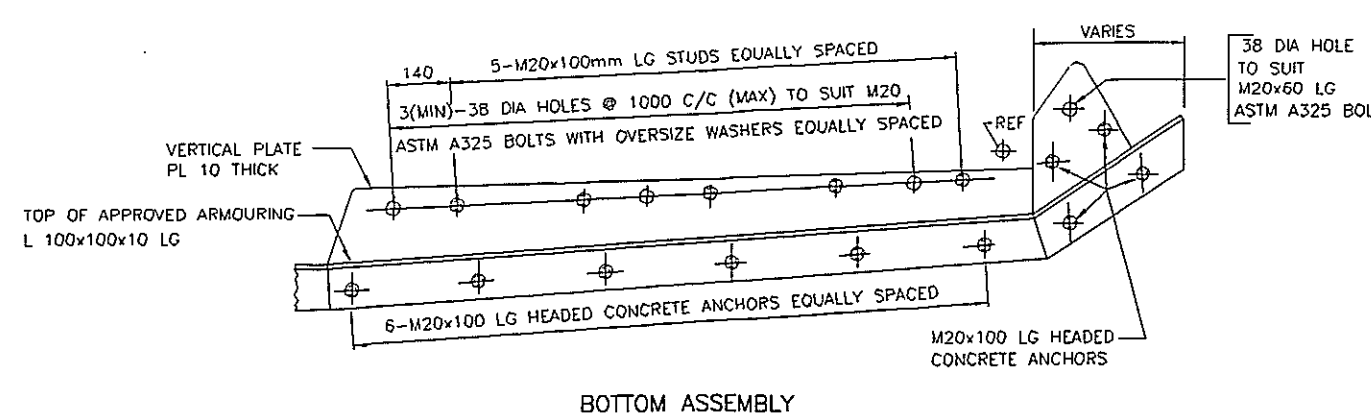
PLAN OF JOINT AT SIDEWALK



SECTION THRU JOINT AT SIDEWALK

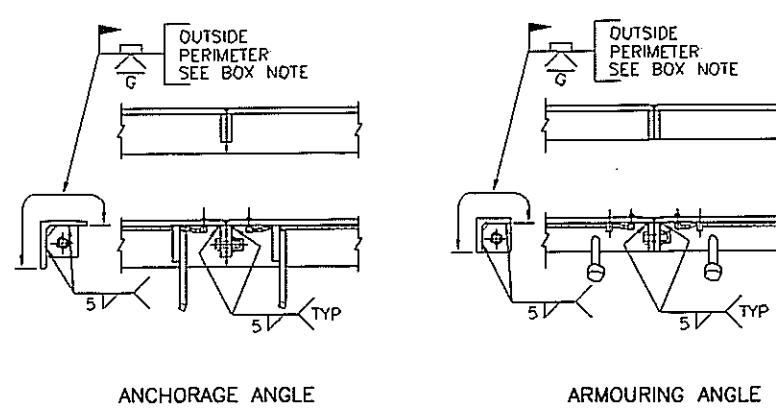


TOP ASSEMBLY



BOTTOM ASSEMBLY

DETAIL OF ARMOURING AT SIDEWALK

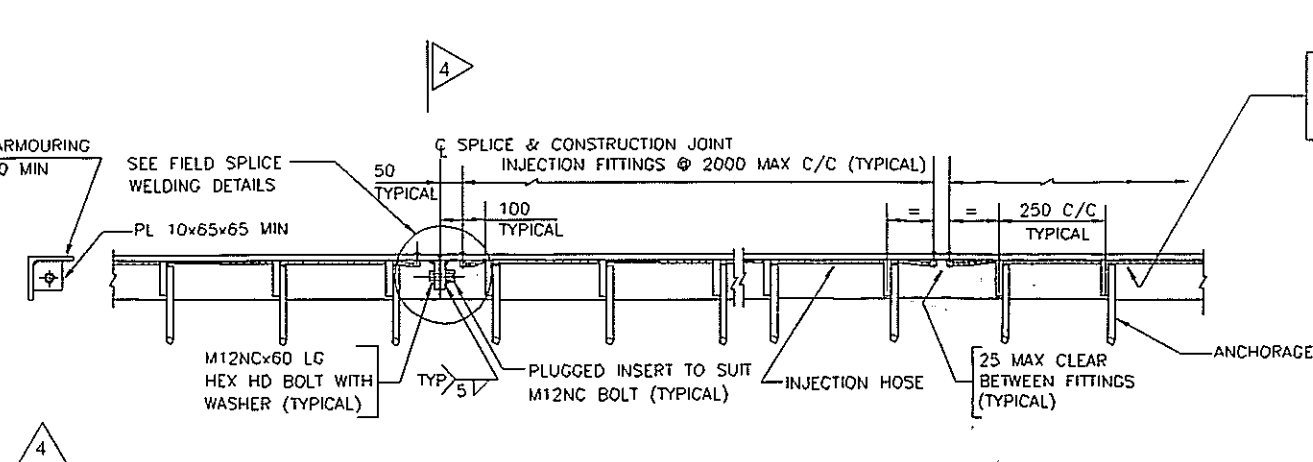


ANCHORAGE ANGLE

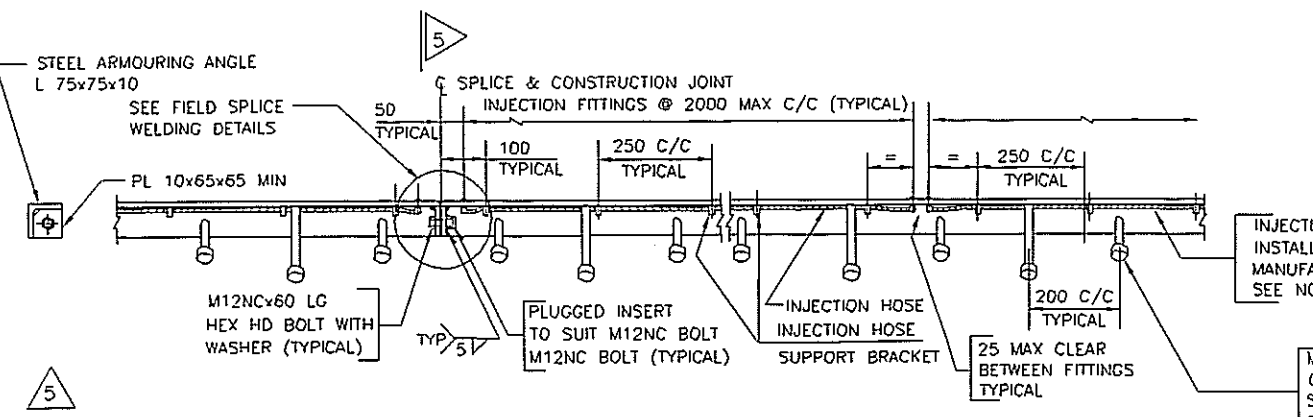
ARMOURING ANGLE

FIELD SPICE WELDING DETAILS

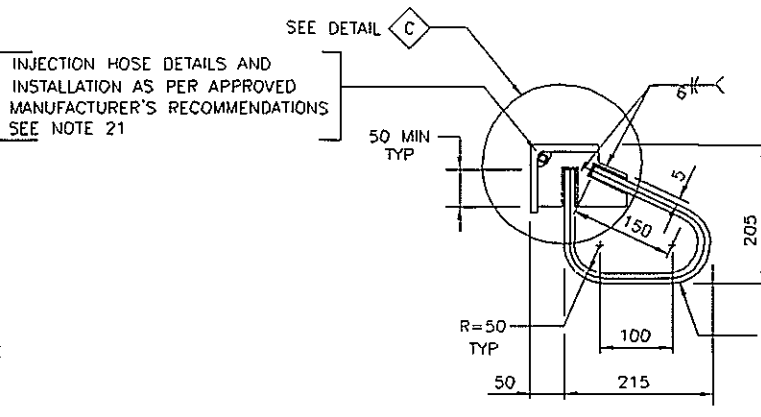
NOTE:
PROTECT PRESSURE HOSE AND FITTINGS ADJACENT TO
FIELD SPICE DURING WELDING AND REMOVE PROTECTION
PRIOR TO PLACING OF CONCRETE IN BLOCKOUT.



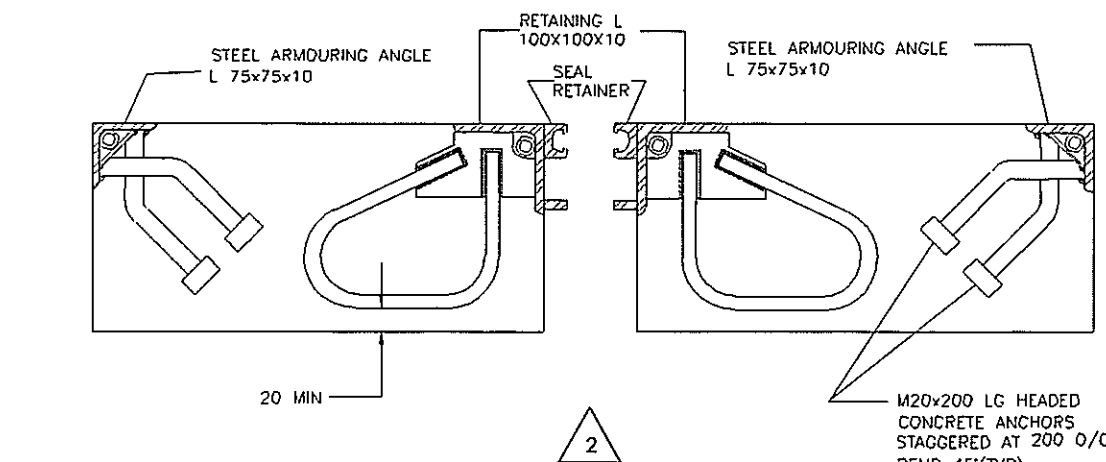
SPICE AND INJECTION HOSE DETAILS FOR ANCHORAGE



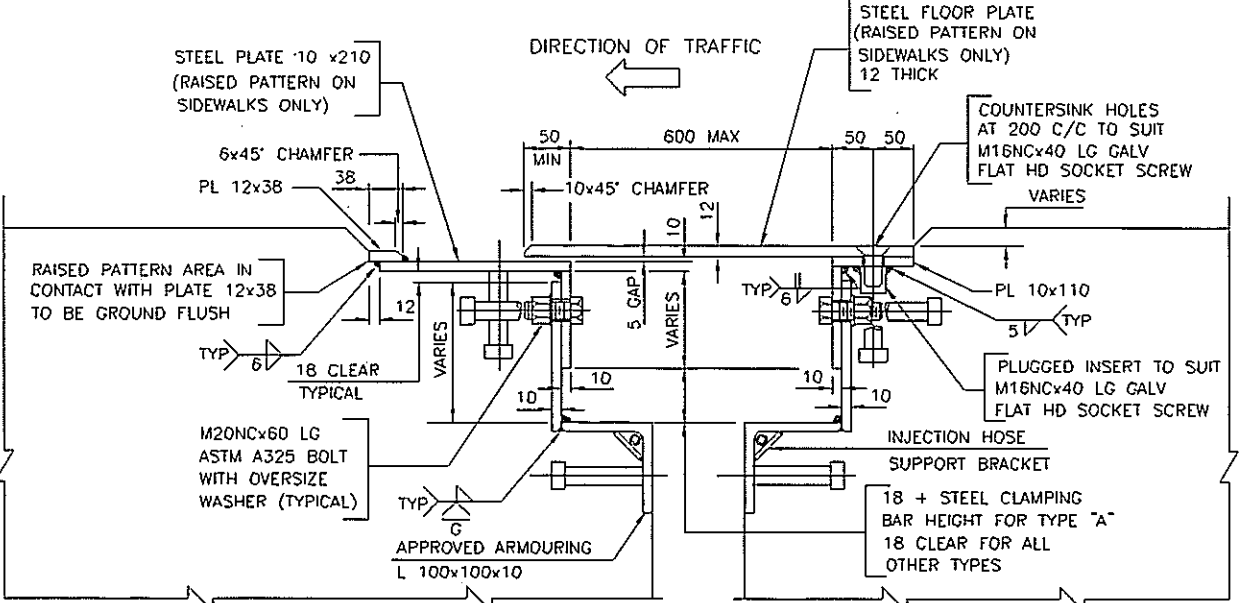
SPICE AND INJECTION HOSE DETAILS FOR ARMOURING



ANCHORAGE DETAIL



INJECTION HOSE SUPPORT BRACKET DETAIL



DETAIL OF ARMOURING AT SIDEWALK

- NOTES:
- EXPANSION JOINT SHALL BE IN ACCORDANCE WITH THE DESIGNATED SOURCE FOR MATERIALS LIST DSM 9.40. TYPE. DETAILS SHOWN FOR OTHER TYPES ARE NOT APPLICABLE.
 - FABRICATORS OF EXPANSION JOINT ASSEMBLIES SHALL BE CERTIFIED IN ACCORDANCE WITH CSA STANDARD W17.1, DIVISION 2.1.
 - STEEL SHALL BE IN ACCORDANCE WITH CSA STANDARD CAN3-440.21-M82 GRADE 300W.
 - STEEL FLOOR PLATES (BASED PATTERN) SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH CSA STANDARD G164-M. ALL OTHER STEEL SURFACES OF JOINT ASSEMBLY SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH CSA STANDARD G164-M OR ZINC METALLIZED AFTER FABRICATION IN ACCORDANCE WITH CSA STANDARD G169. ALL DAMAGED GALVANIZED SURFACES SHALL BE COATED WITH TWO COATS OF ZINC RICH PAINT.
 - REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CSA STANDARD G30.18-M82 GRADE 400W.
 - STEEL PLATE 10mm THICK UNLESS OTHERWISE NOTED.
 - HEADED CONCRETE ANCHORS SHALL BE IN ACCORDANCE WITH DSM 9.10.75 USING FUSION WELD PROCESS.
 - WELDING SHALL BE OF A LOW HYDROGEN CLASSIFICATION AND IN ACCORDANCE WITH CSA STANDARD W58-M189 (E480XX ELECTRODES).
 - JOINT ASSEMBLIES SHALL BE COMPLETELY SHOP ASSEMBLED (EXCEPT FOR SEALS) AND PRESET TO DIMENSION "J" FOR 15°C AND ADJUSTED IN THE FIELD TO SUIT INSTALLATION TEMPERATURE.
 - SEALS SHALL BE PREFORMED NEOPRENE SEALS IN ACCORDANCE WITH OPS-1210 AND SHALL BE INSTALLED IN ONE CONTINUOUS REECE. SEALS SHALL NOT BE BENT MORE THAN 30° AT ANY ONE LOCATION. SEALS SHALL HAVE MINIMUM THICKNESS OF 5mm OR AS PER DSM.
 - SEALS SHALL BE INSTALLED AFTER JOINT ASSEMBLY HAS BEEN CAST IN PLACE AND STYROFOAM OR FILLER BETWEEN DECK AND BALLAST WALL REMOVED AND EXPANSION GAP PROPERLY CLEANED.
 - THE "J" DIMENSIONS SHOWN ON SHOP DRAWINGS ARE TO BE USED FOR CONSTRUCTION.
 - JOINT ASSEMBLY SHALL BE INSTALLED TO MATCH ELEVATION AND GRADE OF CONCRETE END DAMS USING CONCRETE BLOCKOUT METHOD.
 - FINAL WIDTH ADJUSTMENT ("J" DIM "J") SHALL BE MADE, AND SETTING DEVICES TIGHTENED JUST PRIOR TO PLACING 30 MPa CONCRETE IN BLOCKOUTS.
 - INSTALLATION TEMPERATURE SHALL BE TAKEN AS MEAN SHADE AIR TEMPERATURE AT STRUCTURE PRIOR TO JOINT INSTALLATION AS FOLLOWS:
- FOR CONCRETE STRUCTURES - 48 HOURS
- FOR STEEL STRUCTURES - 24 HOURS
 - ALL STEEL SURFACES IN CONTACT WITH NEOPRENE SEAL SHALL BE CLEANED PRIOR TO INSTALLATION OF THE SEAL AND PROTECTED DURING PLACING OF CONCRETE.
 - FOR SKEWED STRUCTURE, DETAILS SHALL BE ADJUSTED TO SUIT GEOMETRY OF STRUCTURE.
 - BOLT THREADS AND UNDERSIDE OF HEADS SHALL BE LIBERALLY COATED WITH ANTISEIZE COMPOUND MEETING U.S. MILITARY SPECIFICATION MIL-A-9070 JUST PRIOR TO SEAL INSTALLATION.
 - FIELD SPICES IN ASSEMBLY ARE NOT PERMITTED, UNLESS SHOWN ON CONTRACT DRAWINGS.
 - SETTING ANGLES TO BE FLAME CUT NOT LATER THAN 4 HOURS AFTER PLACING OF CONCRETE IN BLOCKOUTS. BOLTED BACK-TO-BACK SETTING ANGLES WITH RELEASE SYSTEM MAY BE SUBSTITUTED.
 - AFTER CURING OF THE CONCRETE FOR A MINIMUM OF 7 DAYS, THE SETTING DEVICES MAY BE REMOVED. THE VOIDS UNDER THE ARMOURING SHALL BE PRESSURE INJECTED WITH AN INJECTION HOSE SYSTEM BY AN ACCEPTABLE SYSTEM IDENTIFIED IN DSM 9.40.18. INJECTION METHODS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. CHECK FOR REMAINING VOIDS AND DRILL HOLES IN ARMOURING WHERE NECESSARY. THE SETTING ANGLE BOLT HOLES SHALL BE DRILLED OUT TO A DEPTH OF 20mm AND THEN CLEANED OUT USING OIL-FREE AIR. INJECTION PORTS SHALL BE REMOVED AND ALL HOLES AND REMAINING VOIDS SHALL BE PRESSURE INJECTED WITH AN EPOXY AS USED IN DSM 9.40.18.
 - RAISED MEDANS ON STRUCTURES SHALL BE PROVIDED WITH SLIDING PLATES.
 - HEADED CONCRETE ANCHORS SHALL BE AT 200mm O/C.
 - STEEL EXTRUSIONS SHALL BE AS SHOWN ON MANUFACTURER'S APPROVED FABRICATION DRAWINGS. ALL SPICES TO BE SHOWN ON FABRICATION DRAWINGS.
 - FOR PRESTRESSED CONCRETE BRIDGES, JOINT ASSEMBLY NOT TO BE INSTALLED PRIOR TO 14 DAYS AFTER COMPLETION OF POST-TENSIONING OPERATIONS.
 - ALTERNATIVE METHODS OF ACHIEVING 180mm MINIMUM UPLIFT AT BARRIER/PHANPET WALL SHALL BE SHOWN ON THE PRODUCT DRAWINGS.
 - THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING SS113-12.

JOINT ANCHORAGE AND ARMOURING DETAILS (INJECTION HOSE SYSTEM)

TABLE OF DESIGN REQUIREMENTS

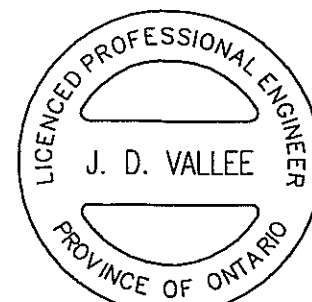
EXP JOINT LOCATION	MTO GAP RATING (mm)	DESIGN MOVEMENT	* "J" " AT INSTALLATION TEMPERATURE(°C)							
			-5	0	5	10	15	20	25	30
EAST	38	75	18	53	52	51	50	49	48	47
WEST	38	75		50	50	50	50	50	50	50

* DIMENSION "J" MEASURED PERPENDICULAR TO CENTRELINE EXPANSION JOINT, WHERE MIN. AND MAX. FOR JOINT SUPPLIED DIFFER FROM THOSE SHOWN IN TABLE, "J" DIMENSIONS SHALL BE ADVISED BY CONTRACTOR AND SHOWN ON SHOP DRAWINGS.

Notes :

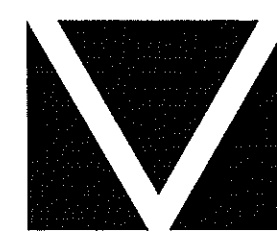
DATE	REVISION
MAY 17, 2002	ISSUED FOR TENDER
MAR. 26, 2004	AS-CONSTRUCTED

Stamps



Project Title

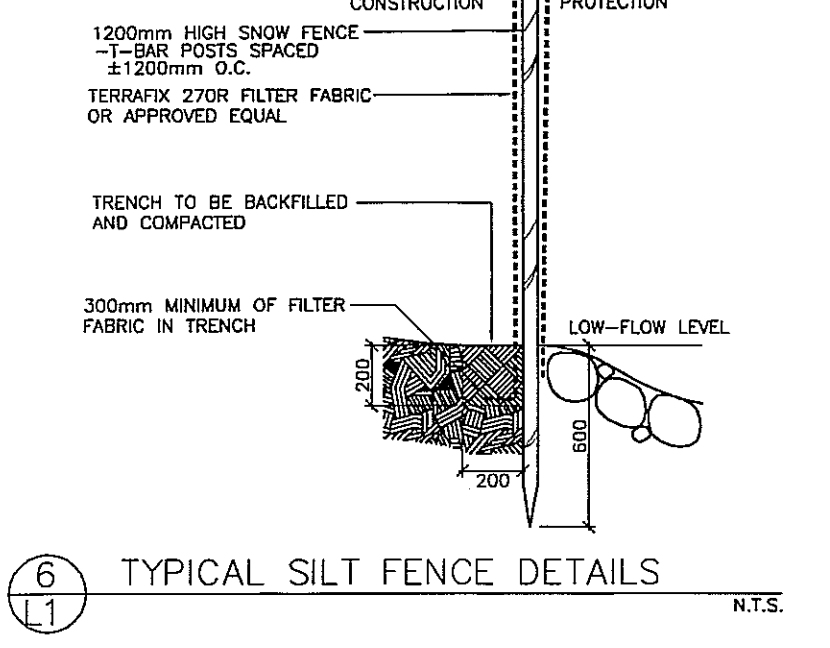
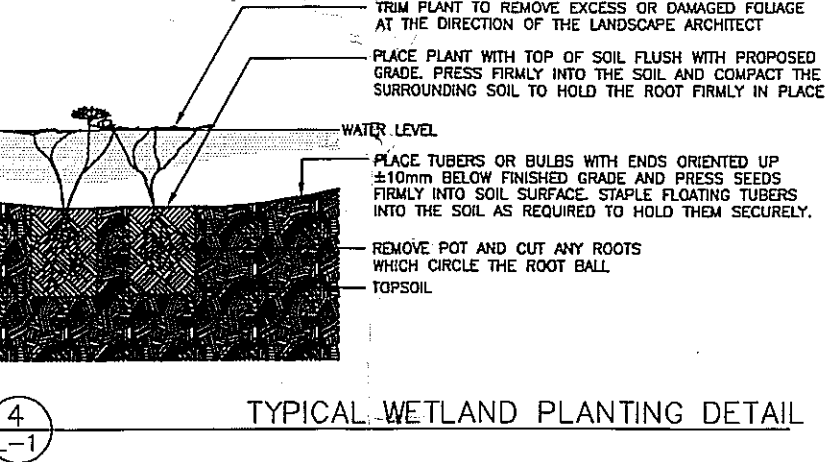
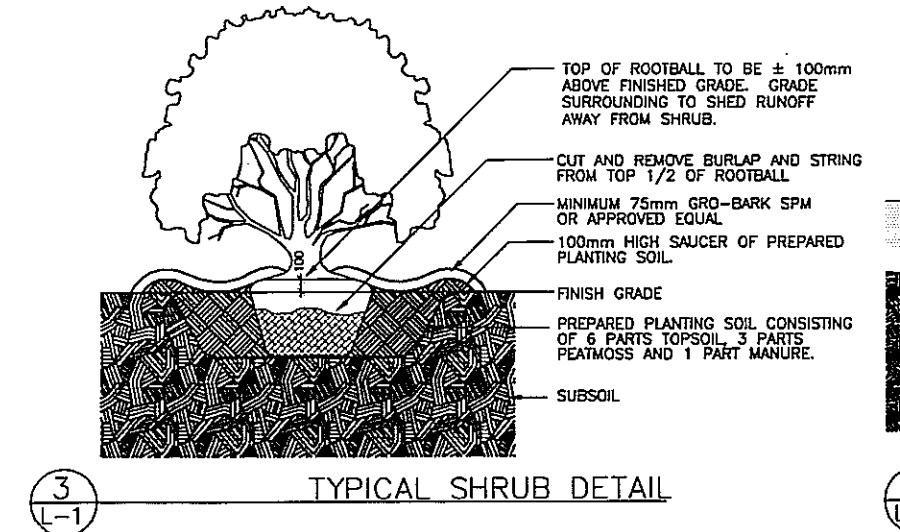
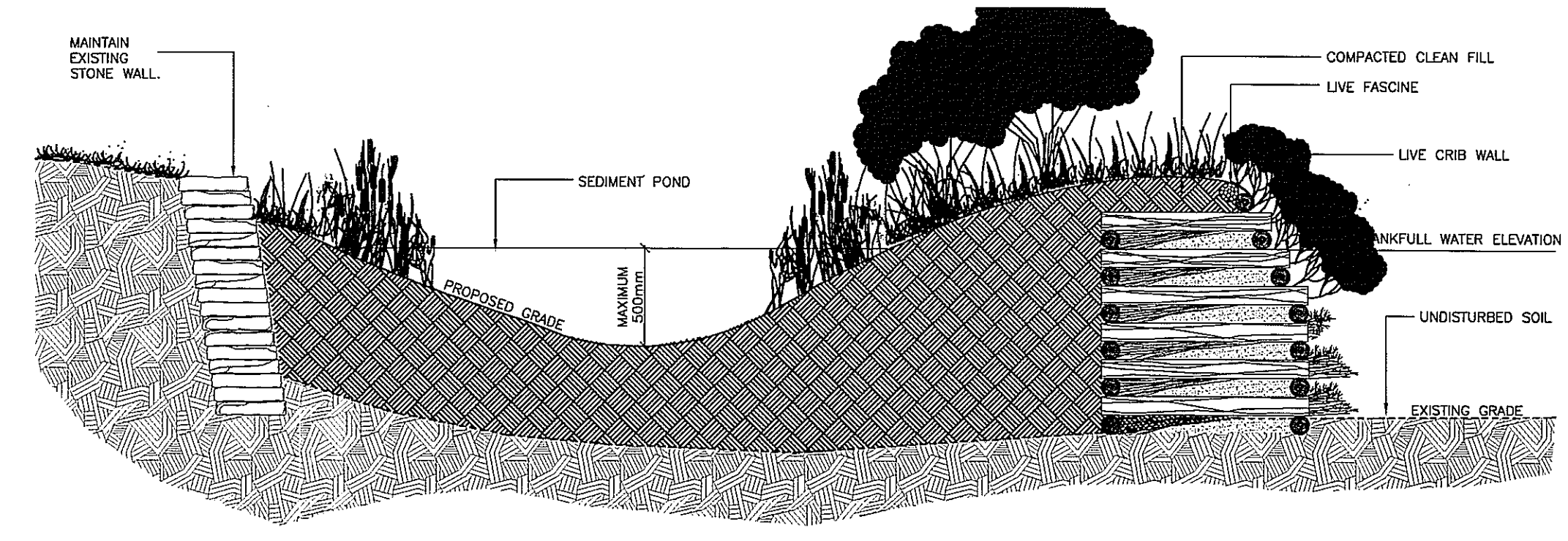
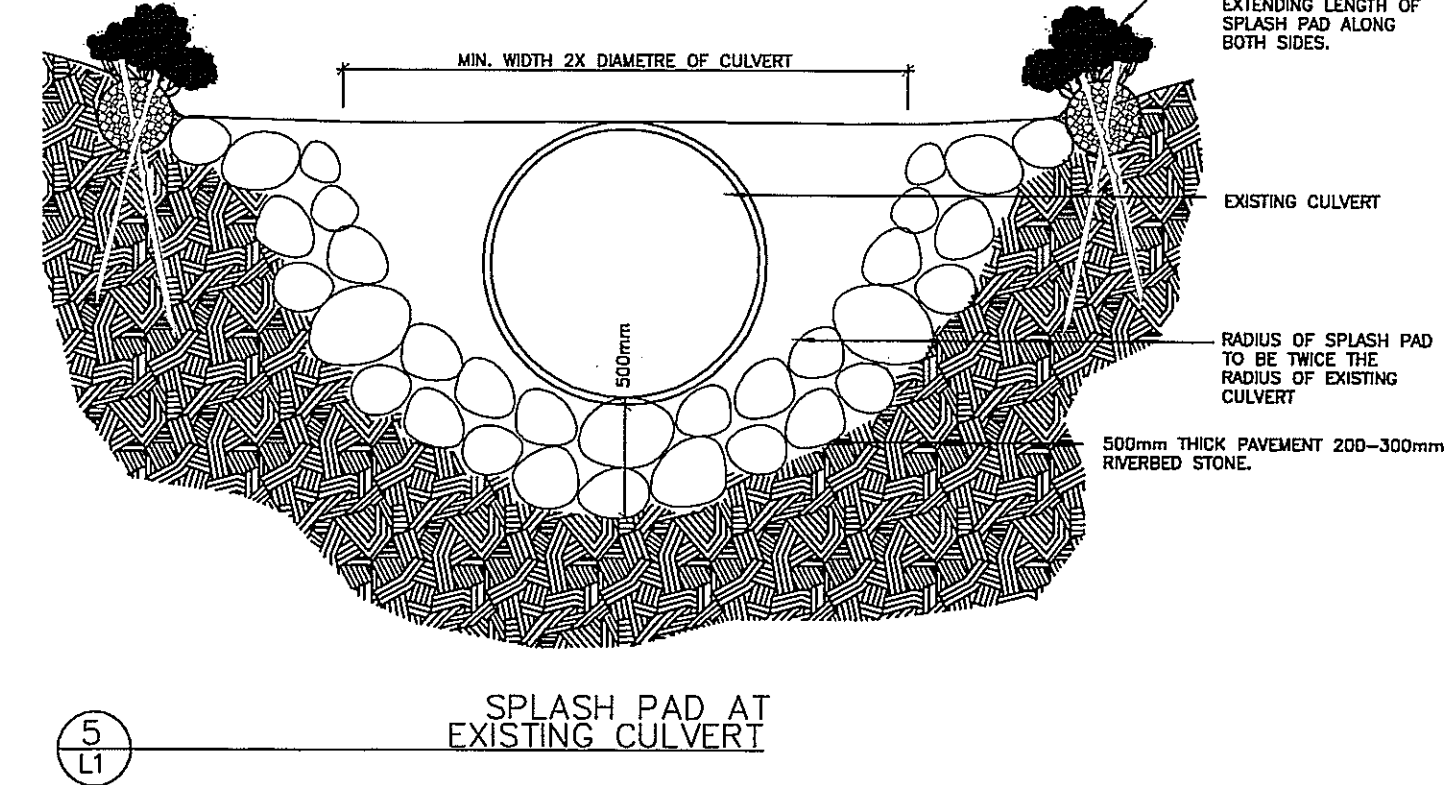
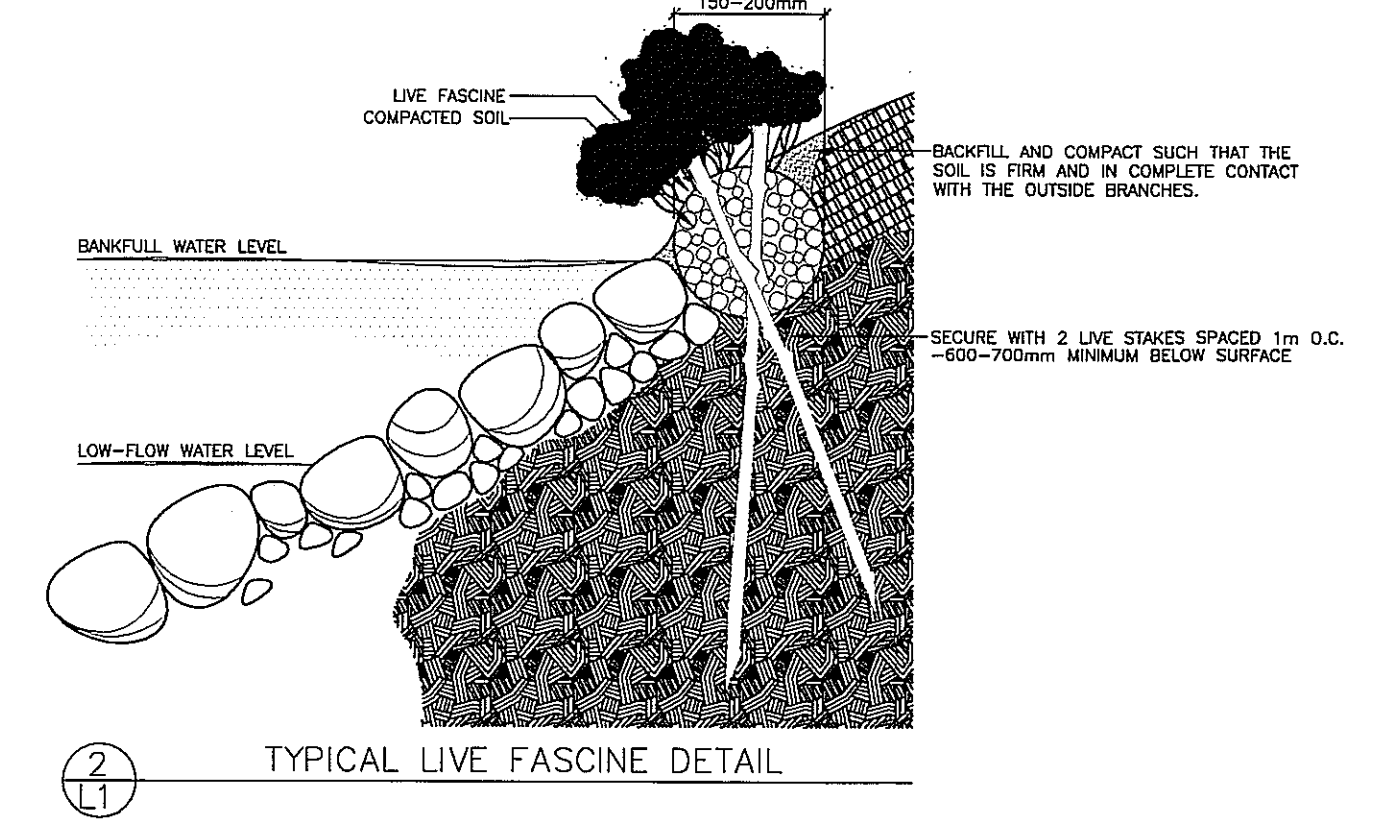
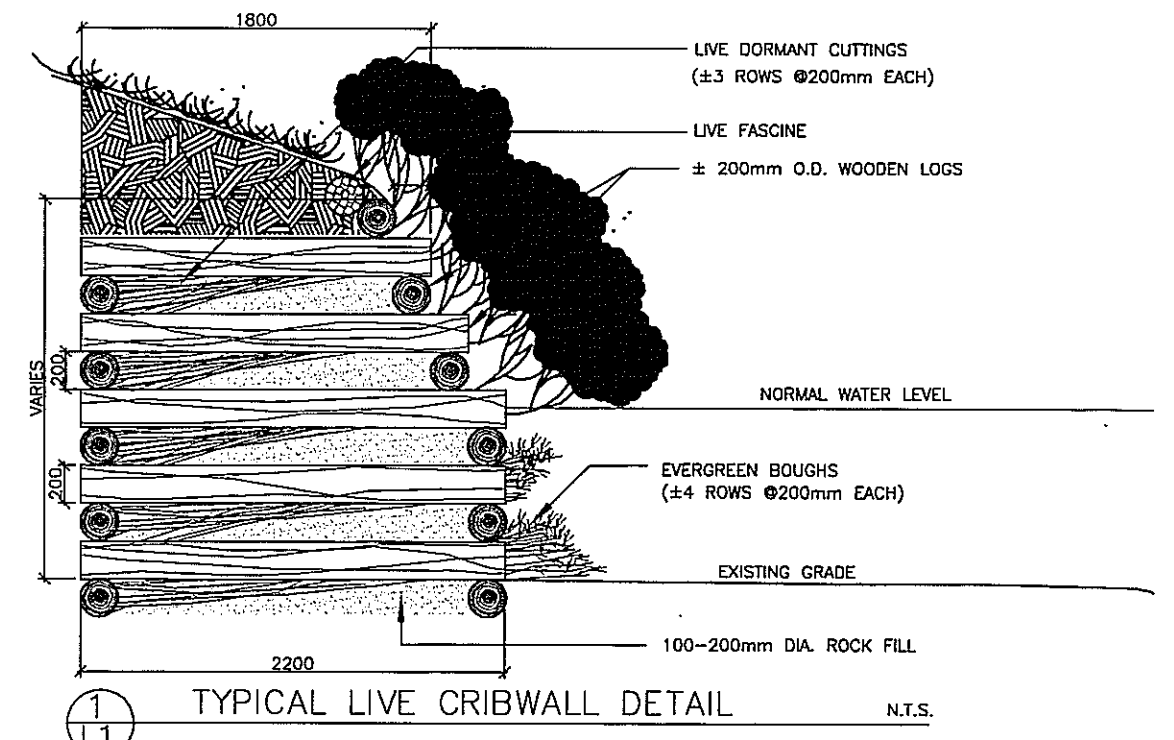
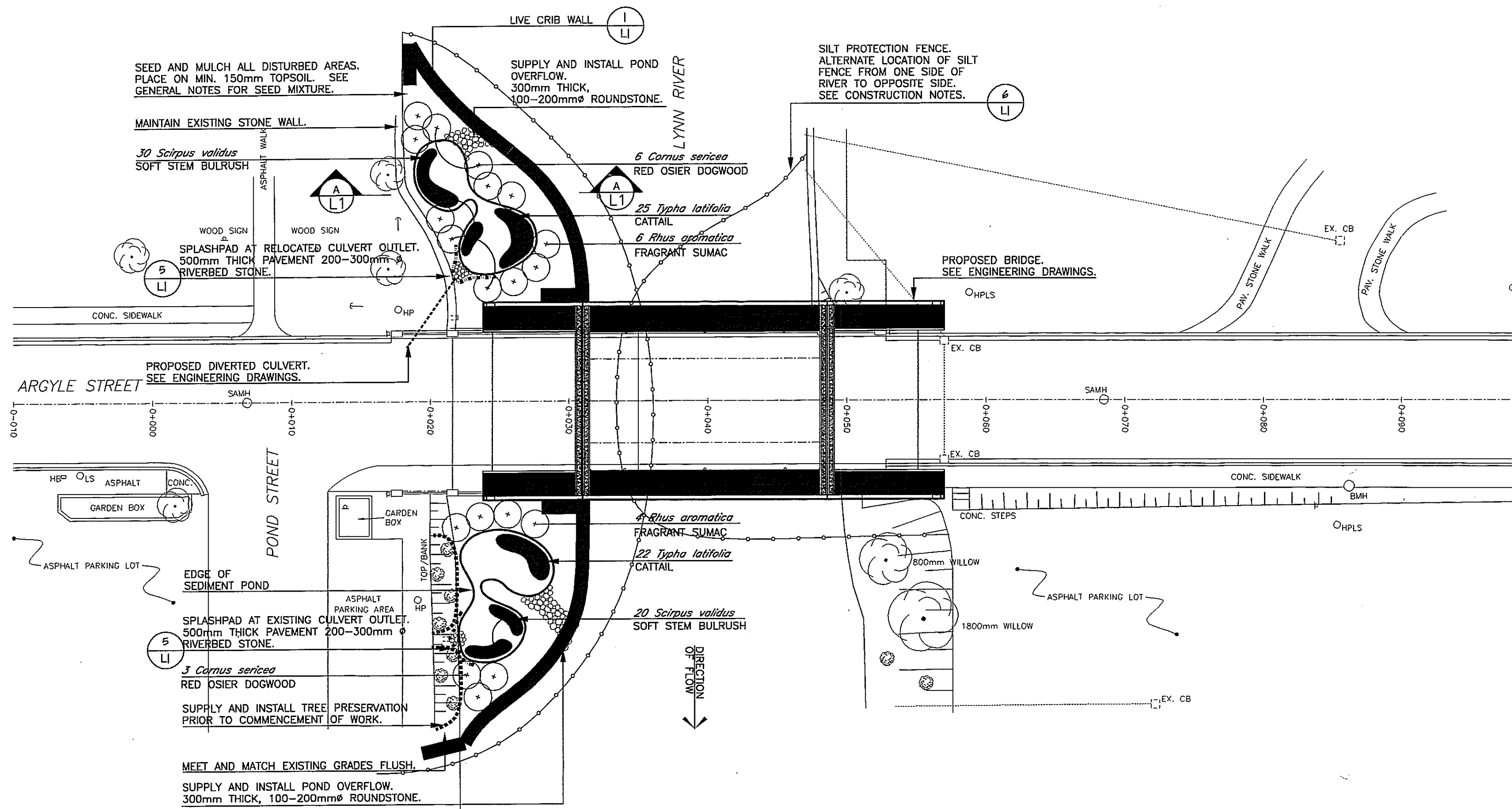
ARGYLE STREET BRIDGE- NORFOLK COUNTY
SIMCOE, ONTARIO



G. DOUGLAS VALLEE LIMITED
CONSULTING ENGINEERS AND ARCHITECT
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Drawing Title
EXPANSION JOINT DETAILS

Drawn By :	Designed By :	DATE
D.BENNETT	G.D.VALLEE	MAY , 2002
Checked by :	Project No.	Drawing No.
G.D.VALLEE	01-073	07 of 7



NOTES

1. SURVEY INFORMATION TAKEN FROM PLANS PREPARED BY G. DOUGLAS VALLEE LIMITED, CONSULTING ENGINEERS AND ARCHITECT, NOV.12/01
2. THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE LANDSCAPE ARCHITECT.
3. DRAWINGS ARE THE PROPERTY OF THE LANDSCAPE ARCHITECT AND MUST BE RETURNED UPON REQUEST.
4. REPORT DISCREPANCIES BETWEEN DRAWINGS AND EXISTING CONDITIONS TO LANDSCAPE ARCHITECT PRIOR TO COMMENCEMENT OF SITE WORK.
5. LOCATE EXISTING SITE SERVICES PRIOR TO COMMENCEMENT OF SITE WORK. HAND DIG NEAR ALL UNDERGROUND SERVICES OF SITE WORK. HAND DIG NEAR ALL UNDERGROUND SERVICES
6. ALL SPOT ELEVATIONS ARE IN METRIC
7. OBTAIN NECESSARY PERMITS PRIOR TO COMMENCEMENT OF WORK.
8. MAKE GOOD ALL DAMAGE RESULTING FROM WORK CARRIED OUT UNDER THIS CONTRACT AT NO EXTRA COST TO THE OWNER.
9. DO NOT PRUNE TREE EXCEPT FOR DEAD OR DAMAGED BRANCHES. MAINTAIN NORMAL SHAPE OF PLANT. DO NOT CUT LEADER.
10. TREES SHALL MEET REQUIREMENTS OF THE LATEST EDITION OF THE NURSERY TRADES ASSOCIATION GUIDE SPECIFICATION FOR NURSERY STOCK UNLESS OTHERWISE SPECIFIED.
11. STAKES SHALL EXTEND A MIN. OF 300mm DEEPER THAN ROOTBALL.
12. DO NOT PLANT TREES WITHIN 400mm OF THE BOTTOM OF SWALES.
13. SEED ALL DISTURBED AREAS WITH MIXTURE OF 60% BUCKWHEAT AND 40% ANNUAL RYE BY WEIGHT. PLACE ON MINIMUM 100mm TOPSOIL SALVAGED FROM SITE.

TREE PRESERVATION NOTES

1. ALL EXISTING TREES WHICH ARE TO REMAIN SHALL BE FULLY PROTECTED WITH HOARDING ERECTED BEYOND THE DRIP LINE TO THE SATISFACTION OF THE MUNICIPALITY PRIOR TO THE ISSUANCE OF THE BUILDING PERMIT. GROUPS OF TREES AND OTHER EXISTING VEGETATION TO BE PROTECTED WITH HOARDING AROUND THE ENTIRE AREA AREAS WITHIN THE PROTECTIVE FENCING SHALL REMAIN UNDISTURBED AND SHALL NOT BE USED FOR THE STORAGE OF BUILDING MATERIALS OR EQUIPMENT. PROTECTIVE SNOW FENCING MAY BE REMOVED BRIEFLY DURING CONSTRUCTION OPERATIONS TO ACCOMMODATE NEW WORK WITHIN THE DRIP LINE AND THEN REPLACED IMMEDIATELY AFTER. HAND DIG AROUND ROOT ZONE. DO NOT STORE MATERIALS OR EQUIPMENT ON ROOTS OF VEGETATION.
2. NO RIGGING CABLES SHALL BE WRAPPED AROUND OR INSTALLED IN THE TREES AND SURPLUS SOIL, EQUIPMENT, DEBRIS OR MATERIALS SHALL NOT BE PLACED OVER THE ROOT SYSTEMS OF THE TREES WITHIN THE PROTECTIVE FENCING. NO CONTAMINANTS WILL BE DUMPED OR FLUSHED WHERE FEEDER ROOTS OF TREES EXIST.
3. WHERE LIMBS OR PORTIONS OF TREES ARE REMOVED TO ACCOMMODATE CONSTRUCTION, THEY WILL BE REMOVED IN ACCORDANCE WITH ACCEPTED ARBORICULTURAL PRACTICE.
4. WHERE ROOT SYSTEMS OF PROTECTED TREES ADJACENT TO CONSTRUCTION ARE EXPOSED OR DAMAGED, THEY SHALL BE NEATLY TRIMMED AND THE AREA BACKFILLED WITH APPROPRIATE MATERIAL TO PREVENT DESICCATION.

GENERAL CONSTRUCTION NOTES

1. CONSTRUCTION WILL OCCUR IN ACCORDANCE WITH THE TIMING GUIDELINES FOR IN-STREAM WORKS STIPULATED BY OMNR.
2. INSTREAM WORK TO BE COMPLETED 'IN THE DRY'.
3. SILT FENCE AND CONSTRUCTION SITE FENCING: FENCING SHALL BE INSTALLED AS PER LANDSCAPE ARCHITECT'S DIRECTION.
4. IN THE EVENT OF A STORM EVENT PRODUCING HIGHER FLOWS, THE CONSTRUCTION OPERATION MUST STOP. ALL EQUIPMENT REMOVED FROM THE FLOOD WAY AND ALL DISTURBED AREAS PROTECTED WITH STRAW MULCH, STONE LINING AND SILT FENCE.
5. ALL DISTURBED AREAS TO BE RESTORED TO THE SATISFACTION OF THE ENGINEER/LANDSCAPE ARCHITECT.
6. STOCK PILED MATERIAL TO BE LOCATED WITHIN THE CONSTRUCTION LIMITS AND TO BE PROTECTED WITH SILT FENCING.
7. ONLY CLEAN MATERIALS FREE OF SILT AND CLAY WILL BE PLACED IN THE WATER.
8. ALL VEHICLE MAINTENANCE AND REFUELING WILL BE DONE IN A SAFE AND DISTANT LOCATION FROM THE WATERCOURSE.

CONSTRUCTION SEQUENCING

1. ACCESS TO SITE TO BE LIMITED TO DESIGNATED ROUTES.
2. ISOLATE WORK AREA ON ONE SIDE OF RIVER WITH SILT FENCE DIVERTING FLOW OF RIVER TO OPPOSITE SIDE OF RIVER, AWAY FROM THE WORK AREA.
3. PERFORM REMOVALS ON DRY, ISOLATED SIDE OF RIVER AS REQUIRED.
4. REMOVE EXCESS MATERIAL FROM THE SITE.
5. INSTALL BIOENGINEERING, CRIB WALLS, FILL, PLANTINGS, PLACE TOPSOIL AND FINE GRADE.
6. SEED AND MULCH ALL DISTURBED AREAS.
7. REMOVE SILT FENCE AND RE-INSTALL TO ISOLATE WORK AREA ON OPPOSITE SIDE OF RIVER. PERFORM REMOVALS AND RESTORATION WORK AS NOTED ABOVE ON ISOLATED SIDE OF RIVER.
8. REMOVE SILT FENCE ON COMPLETION OF WORK.

6
1
TYPICAL SILT FENCE DETAILS N.T.S.

PLANT LIST

QUANTITY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	CALIPER	CONDITION	REMARKS
SHRUBS							
9	<i>Cornus sericea</i>	RED OSIER DOGWOOD	500	500	-	3 GAL.	
10	<i>Rhus aromatica</i>	FRAGRANT SUMAC	600	600	-	3 GAL.	
WETLAND PLANTS							
50	<i>Scirpus validus</i>	SOFT STEM BULRUSH	-	-	-	10cm POT	500mm O/C
47	<i>Typha latifolia</i>	CATTAIL	-	-	-	10cm POT	500mm O/C

- LEGEND
- TREE PRESERVATION FENCING
 - SILT FENCING
 - EXISTING VEGETATION
 - EXISTING SPOT ELEVATION
 - EXISTING CREEK ALIGNMENT
 - PROPOSED SHRUB PLANTING
 - PROPOSED LIVE FASCINE
 - PROPOSED EDGE OF WETLAND

No.	Description	Date
AS-CONSTRUCTED		MAR 26/04

Revisions

North

Professional Seal

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CONSULTING ENGINEERS AND ARCHITECT
61 PETER ROAD, UNIT 100, SCARBOROUGH, ONTARIO M1S 4B8-6B70

Client

NORFOLK COUNTY

Project Title

ARGYLE STREET BRIDGE

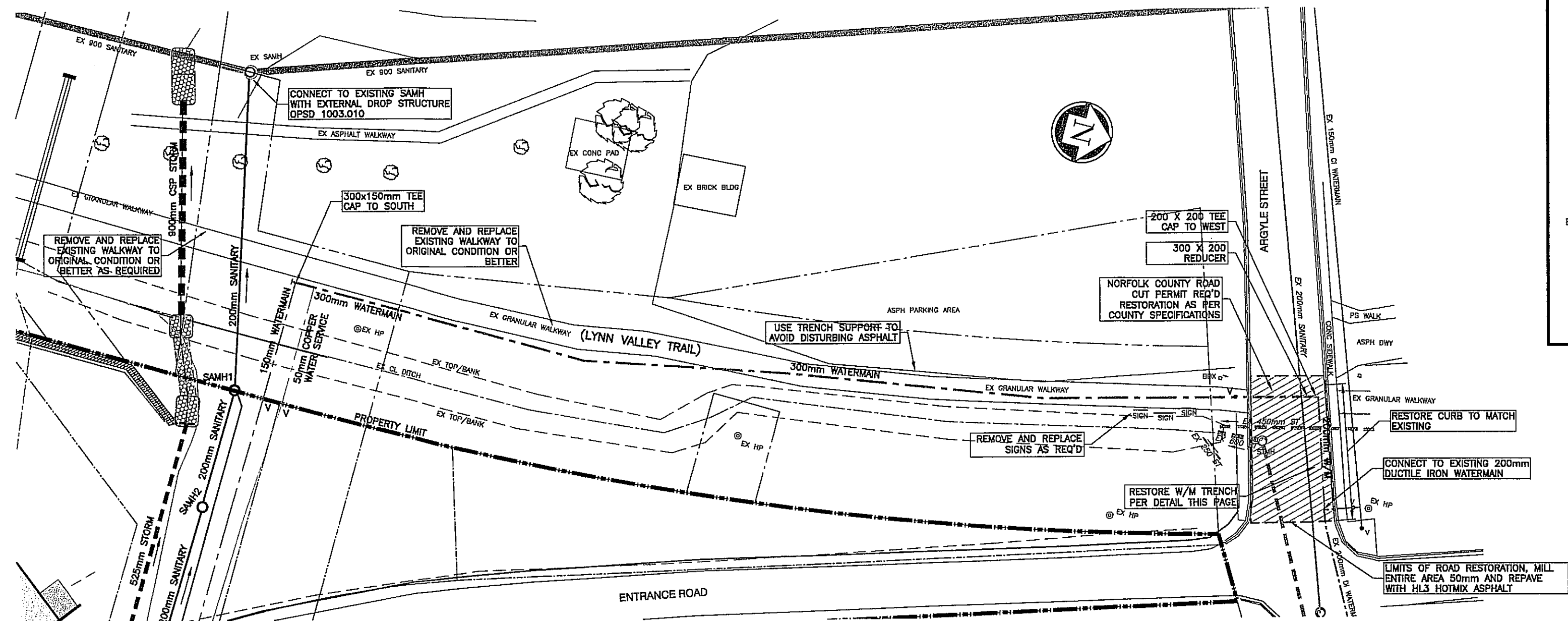
NORFOLK COUNTY, SIMCOE

Sheet Title

MITIGATION PLAN

Drawing Status	PRELIMINARY FOR REVIEW	Project Number	02-09
Scale	1:250	Drawing Number	L1 OF L1
Designed	G.H.	Checked	G.H.
Drawn	A.B.		

DATE LAST PLOTTED :



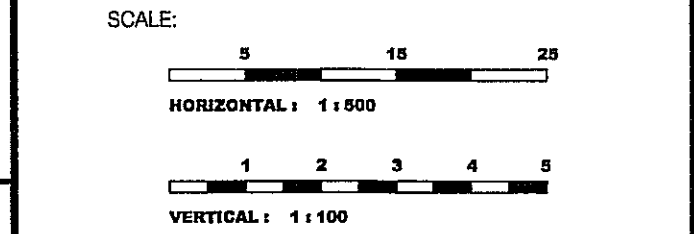
ROADWAY RESTORATION NOTES:

- 1) CONTRACTOR TO OBTAIN ALL NECESSARY ROAD CUT PERMITS PRIOR TO CONSTRUCTION.
- 2) CONTRACTOR TO MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC AT ALL TIMES. IF TEMPORARY ROAD CLOSURES ARE NECESSARY, THEN CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH HALDIMAND COUNTY.
- 3) CONTRACTOR SHALL LOCATE AND PROTECT ALL UTILITIES.
- 4) ALL CUTS TO EXISTING ASPHALT AND CONCRETE SHALL BE CLEAN SAW CUTS ONLY.
- 5) BACKFILL FOR ALL SERVICE TRENCHES WITHIN ROADWAY SHALL BE AS PER DETAIL THIS SHEET.
- 6) BACKFILL FOR ALL SERVICE TRENCHES FROM EDGE OF ASPHALT TO BACK OF SIDEWALK SHALL BE GRANULAR 'B' MATERIAL.
- 7) BACKFILL FOR ALL SERVICE TRENCHES FROM BACK OF SIDEWALK TO STREET LINE SHALL BE SELECT NATIVE MATERIAL.
- 8) ALL BEDDING AND BACKFILL SHALL BE COMPACTED TO MIN 98% SPD.
- 9) ROADWAY RESTORATION SHALL BE AS PER DETAIL THIS SHEET.
- 10) CURBS AND SUBDRAINS SHALL BE RESTORED TO MATCH EXISTING CONDITIONS TO THE SATISFACTION OF HALDIMAND COUNTY.
- 11) BOULEVARDS SHALL BE RESTORED WITH No.1 NURSERY SOD ON MINIMUM 100mm TOPSOIL TO THE SATISFACTION OF HALDIMAND COUNTY.
- 12) ROADSIDE DITCHES AND CULVERTS TO BE RESTORED TO PREVIOUS CONDITION.

LAP JOINT/TRENCH RESTORATION DETAIL

ITS

REV. No.	DATE	REVISION
0	NOV 8/11	SUBMITTED FOR SITE PLAN APPROVAL
1	JAN 16/12	REVISED PER COUNTY COMMENTS
2	MAR 6/12	REVISED PER COUNTY AND LPRCA
3	MAR 12/12	REVISED ROAD GRADES
4	JAN 17/13	REVISED UNIT SIZES/LOCATION
5	JAN 25/13	REVISED UNIT SIZES/LOCATION
6	FEB 07/13	REVISE RET WALL, SERVING AND GRADING BEHIND UNITS 1-3
7	JUNE 12/13	RECORD DRAWING



vallee

Consulting Engineers,
Architects & Planners

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

Stamp

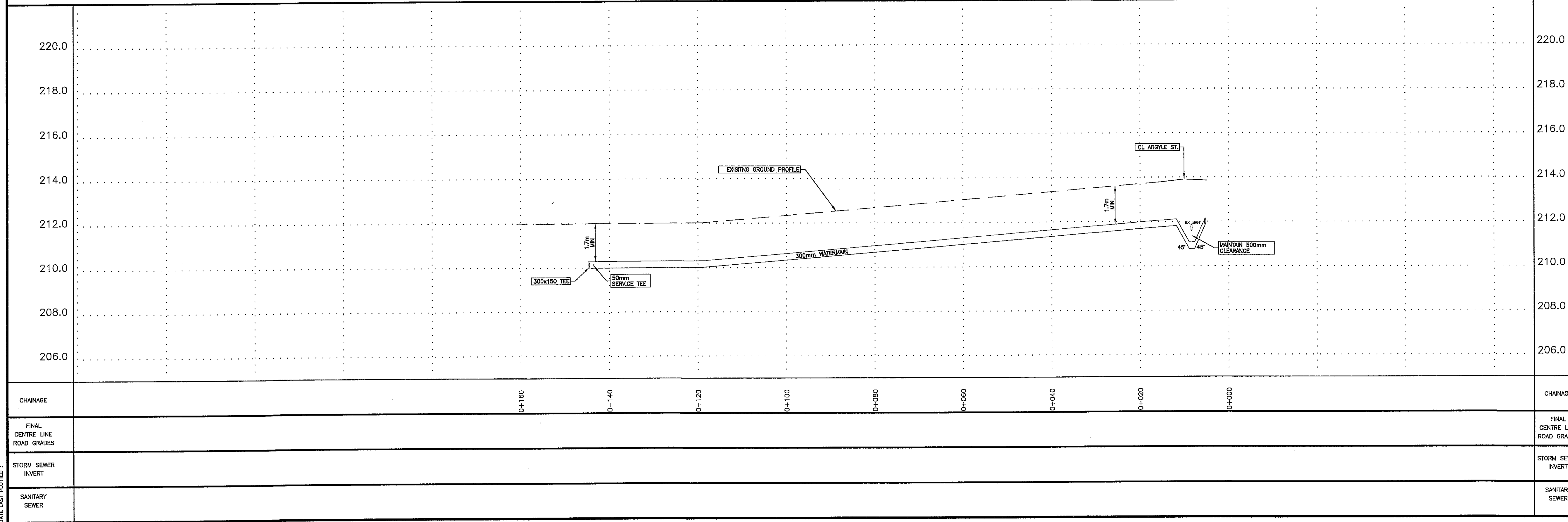
RECORD DRAWING

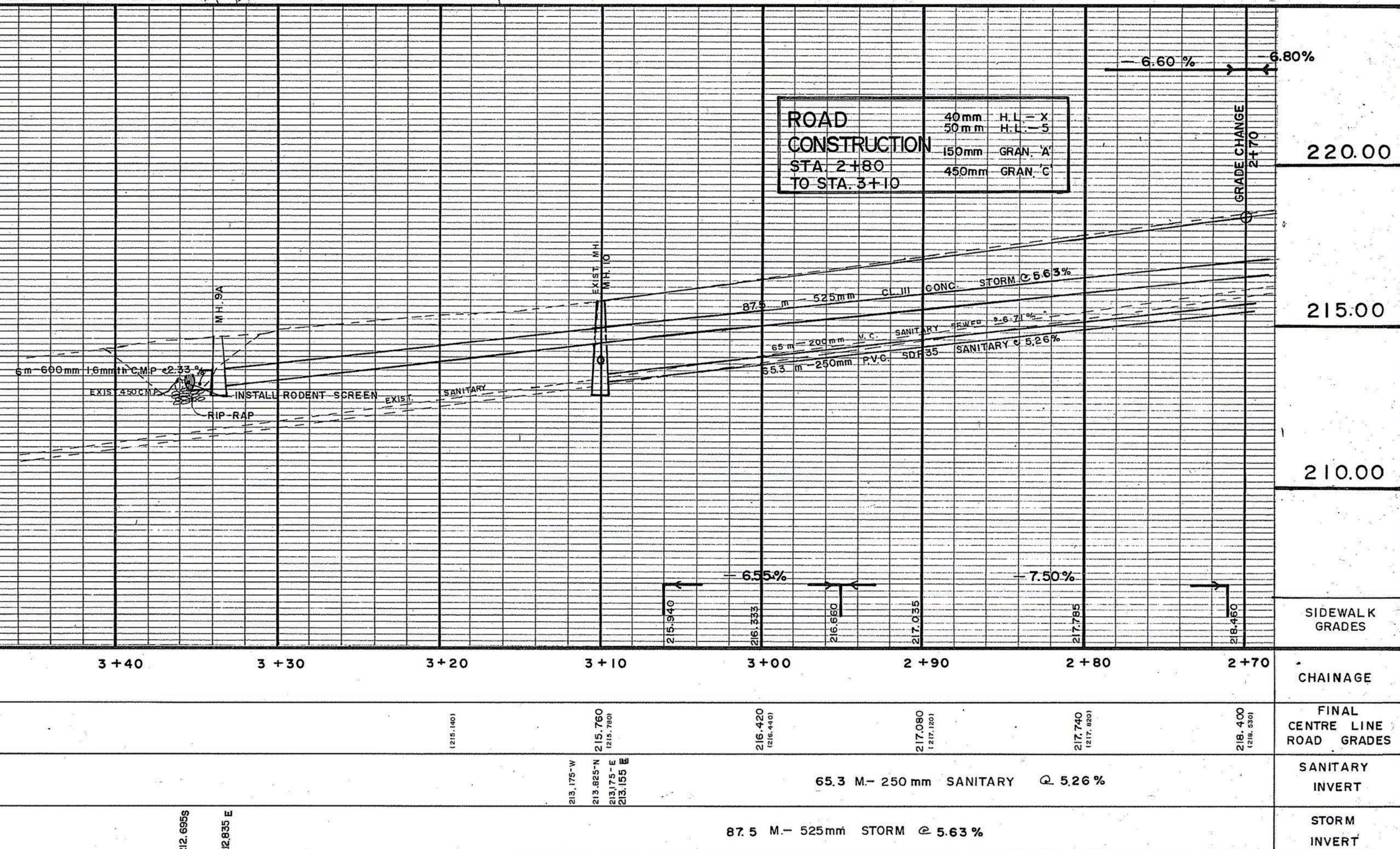
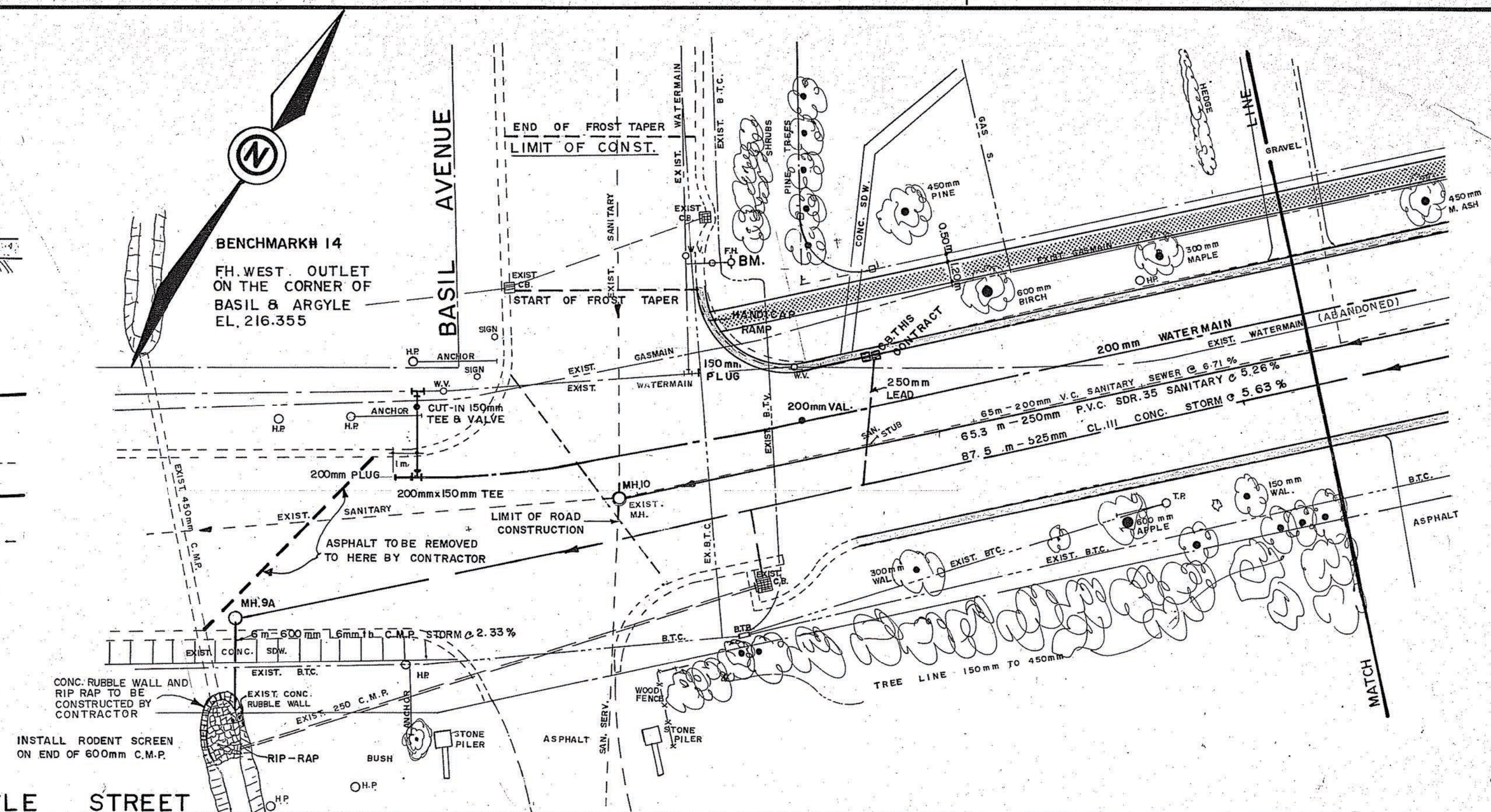
THIS DRAWING REPRESENTS A RECORD OF THE CONSTRUCTION. FOR DESIGN INFORMATION REFERENCE IS MADE TO THE DRAWING SET SEALED JAN 21, 2013 AND SITE PLAN APPROVED FEB 5, 2013.

Project Title

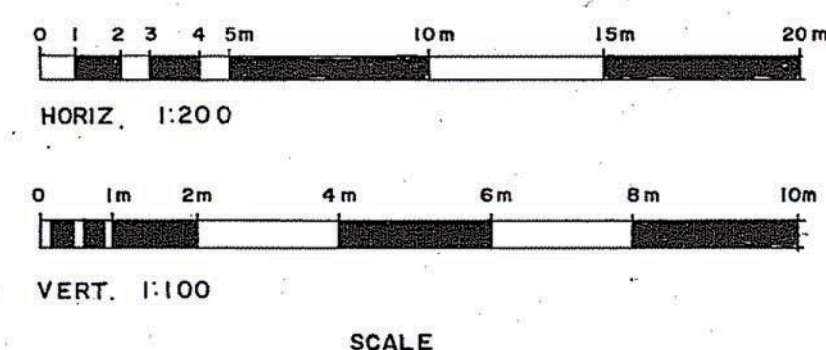
ARGYLE GLEN CONDOMINIUMS
NORFOLK COUNTY - SIMCOE

Drawing Title	
WATERMAIN TO ARGLE ST	
Designed by :	Drawn By :
TGS	TJC
Checked by :	Date Started :
TGS	AUGUST 2011
Drawing Scale :	Drawing No.
AS NOTED	05AC
Project No.	09-079





- EXISTING SANITARY SEWERS, MANHOLES ETC. SHALL BE REMOVED BY CONTRACTOR DURING INSTALLATION OF NEW SANITARY SEWER SYSTEM.
- LOCATION OF EXISTING SANITARY & WATER SERVICES ARE FROM OFFICE RECORDS ONLY & ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.



DATE	REVISIONS
7-28-82	AS — CONSTRUCTED



PUBLIC WORKS PROJECT NO. 82-244
PLAN & PROFILE STA. 2+70 TO STA. 3+10

REGIONAL MUNICIPALITY OF
HALDIMAND - NORFOLK

TOWN OF SIMCOE

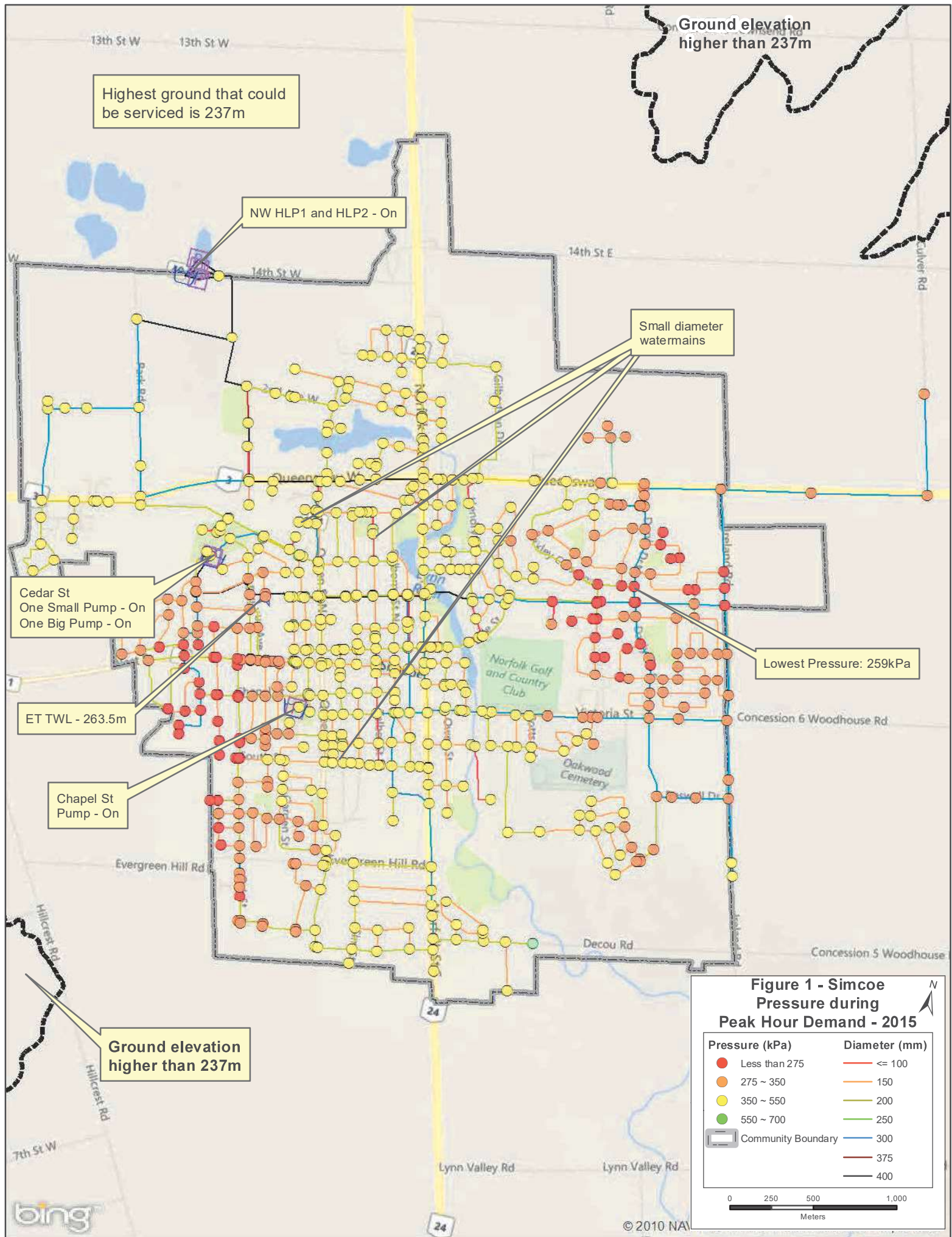
DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
G.R.B.	G.D.V.	G.D.V.	G.D.V

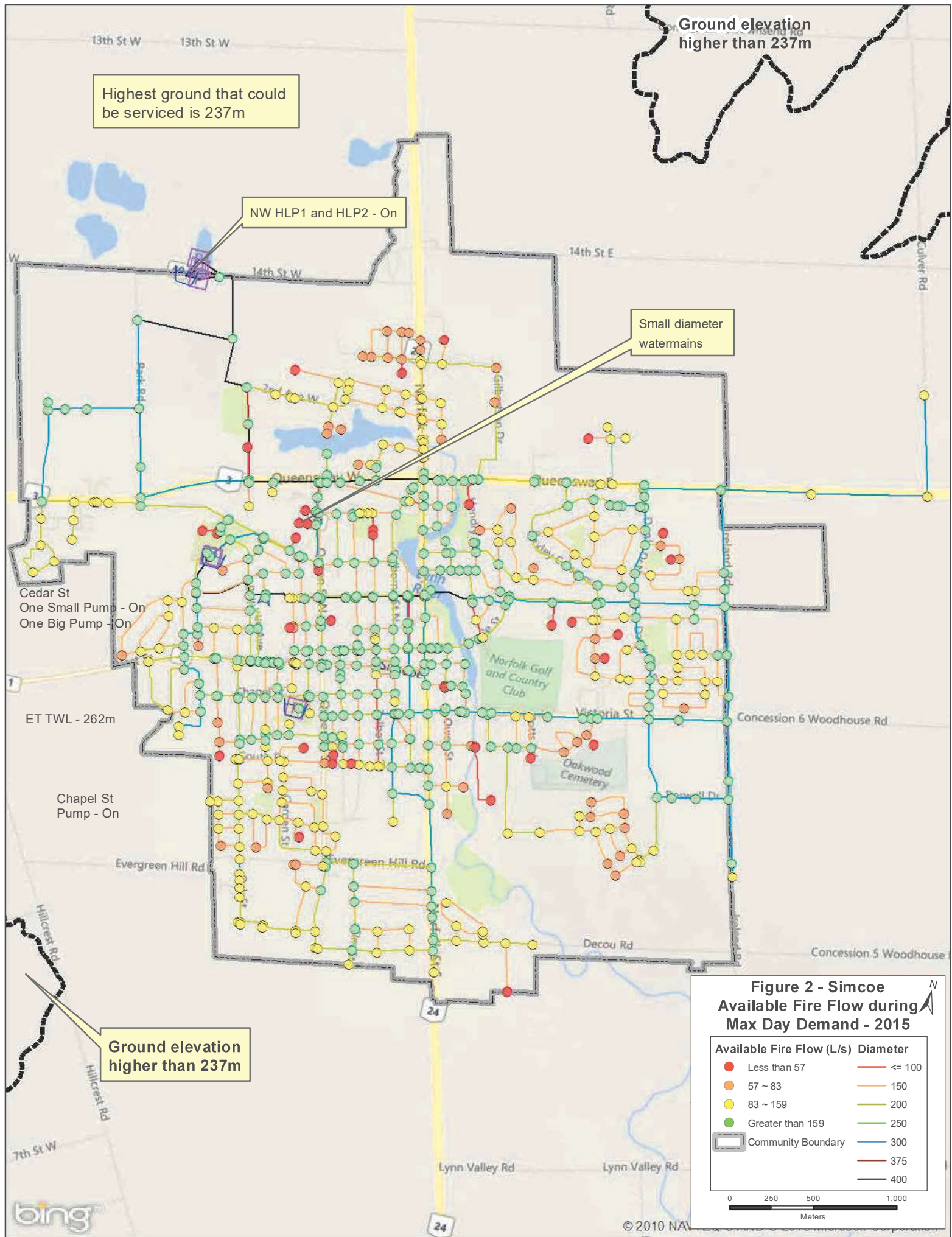
ARGYLE STREET

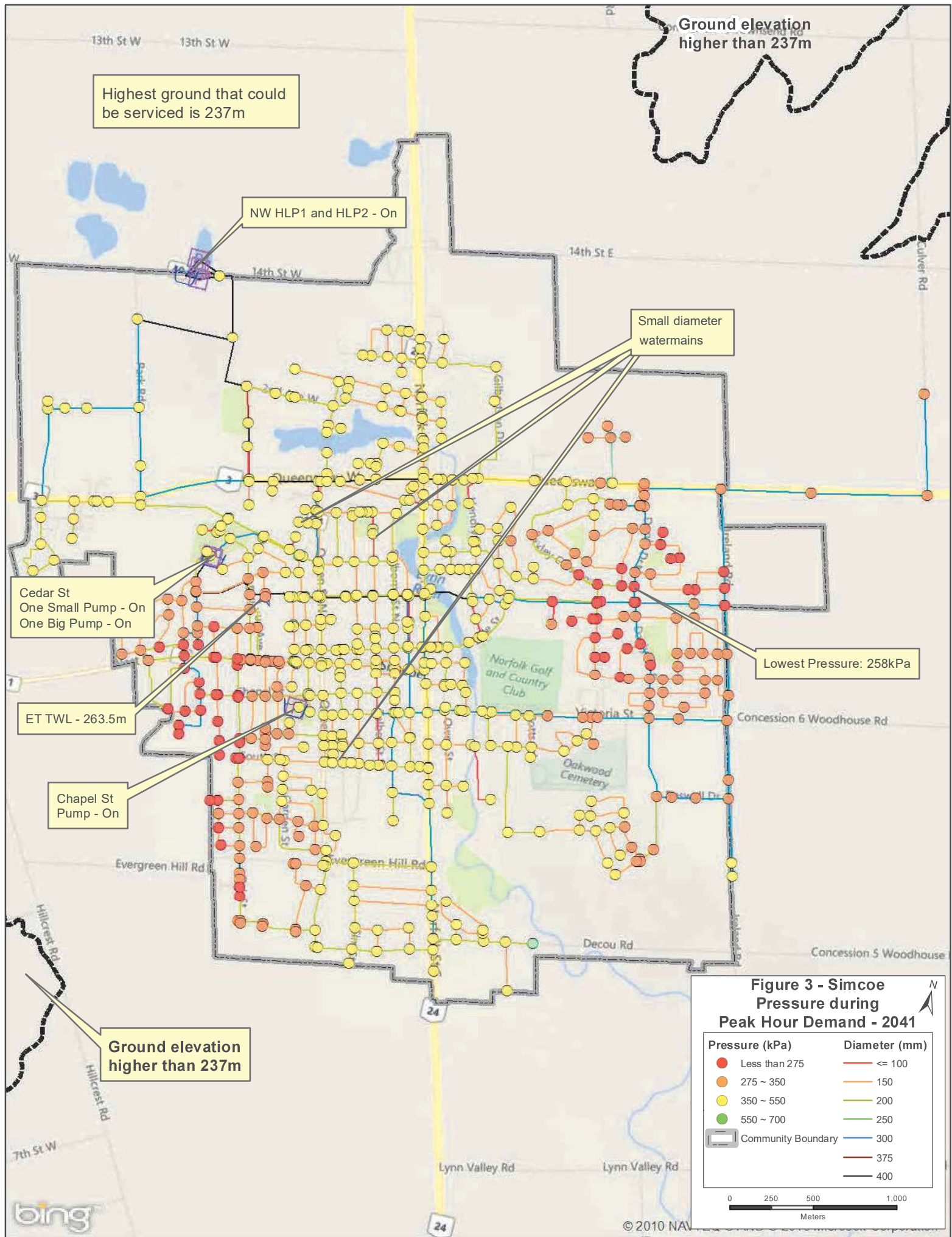


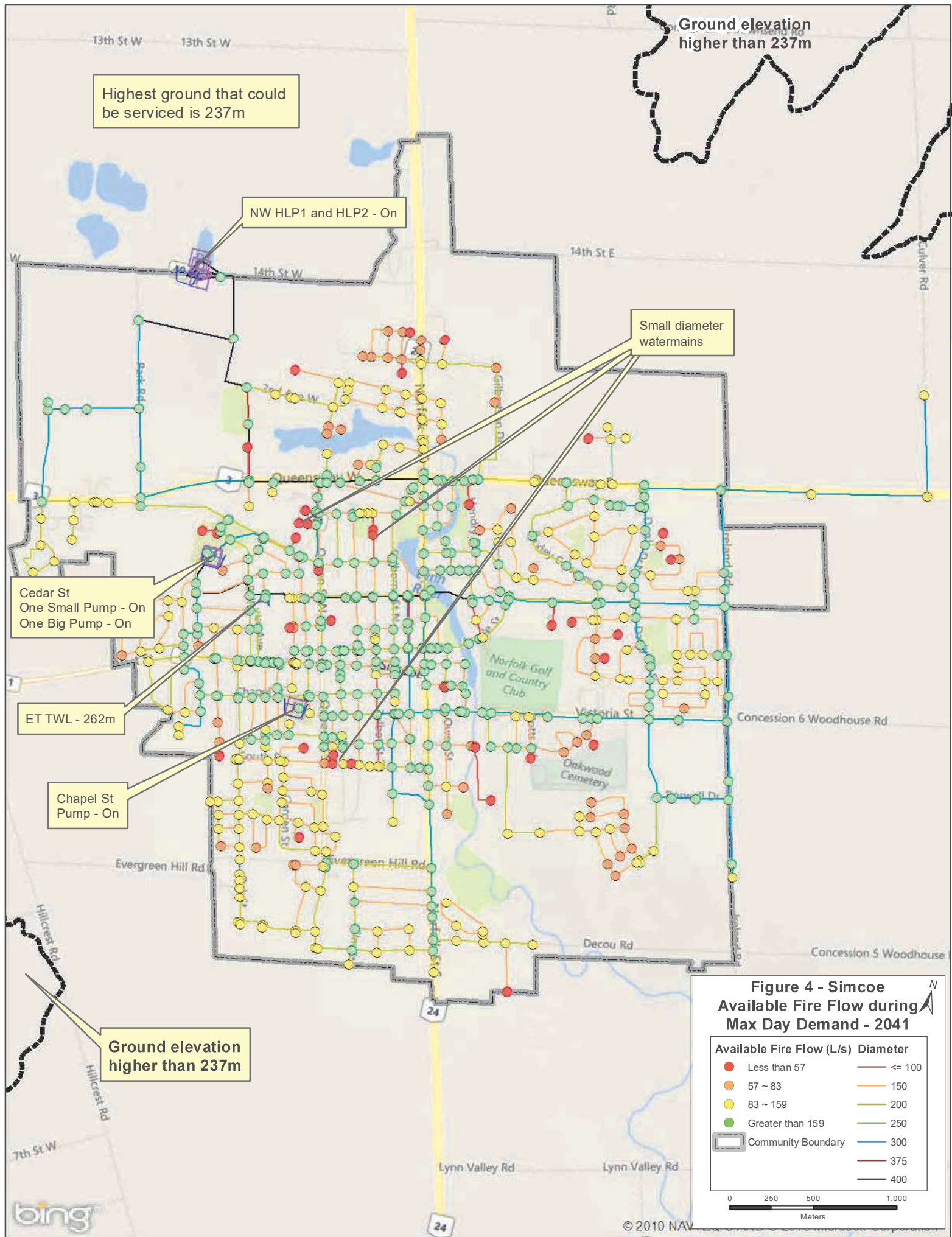
G. DOUGLAS VALLEE LTD.
CONSULTING ENGINEERS
90 KENT ST. SOUTH
SIMCOE, ONTARIO

DATE
FEB. 24 1982
DRAWING NO.
8134-3









Norfolk Integrated Sustainable Master Plan

April 2016



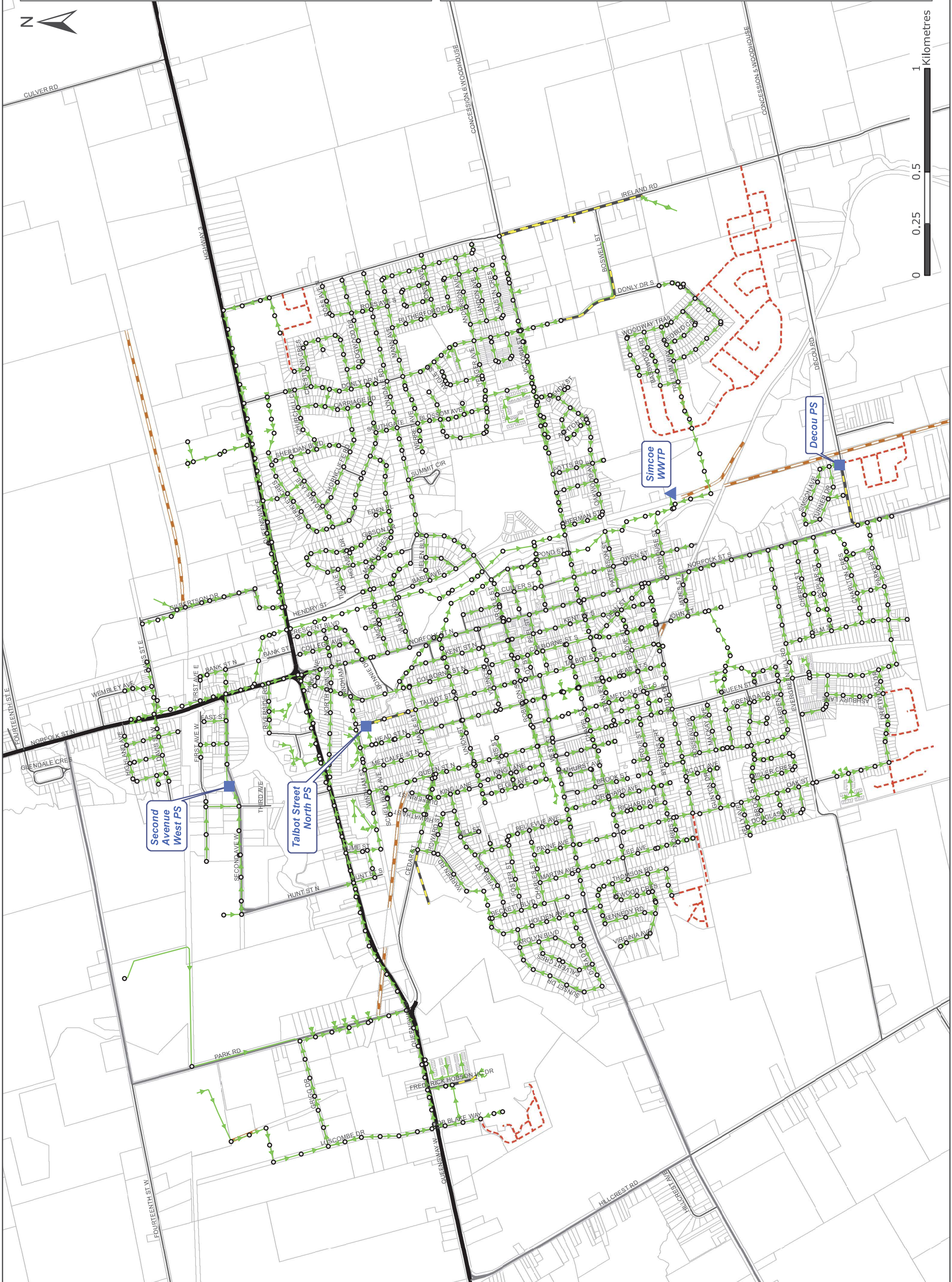
Map

4.45

Simcoe
Sanitary Sewer
System

Legend

- Sanitary Manholes
- Sanitary Sewers
- Force mains
- Provincial Highway
- County Road
- Local Road
- Future Road
- Abandoned Railway
- Active Railway
- Parcel Property
- Watercourse
- Simcoe WWTP
- Pumping Stations



APPENDIX C – Parcel E Servicing Analysis

Parcel E – Site Development Concept Plans & Rendering

Domestic Water Usage Calculations

Figure 1 – Fire Protection Plan

Fire-Flow Calculations: Fire Underwriters Survey Method

Ontario Fire Marshall Method

Pre-Development Drainage Area Plan

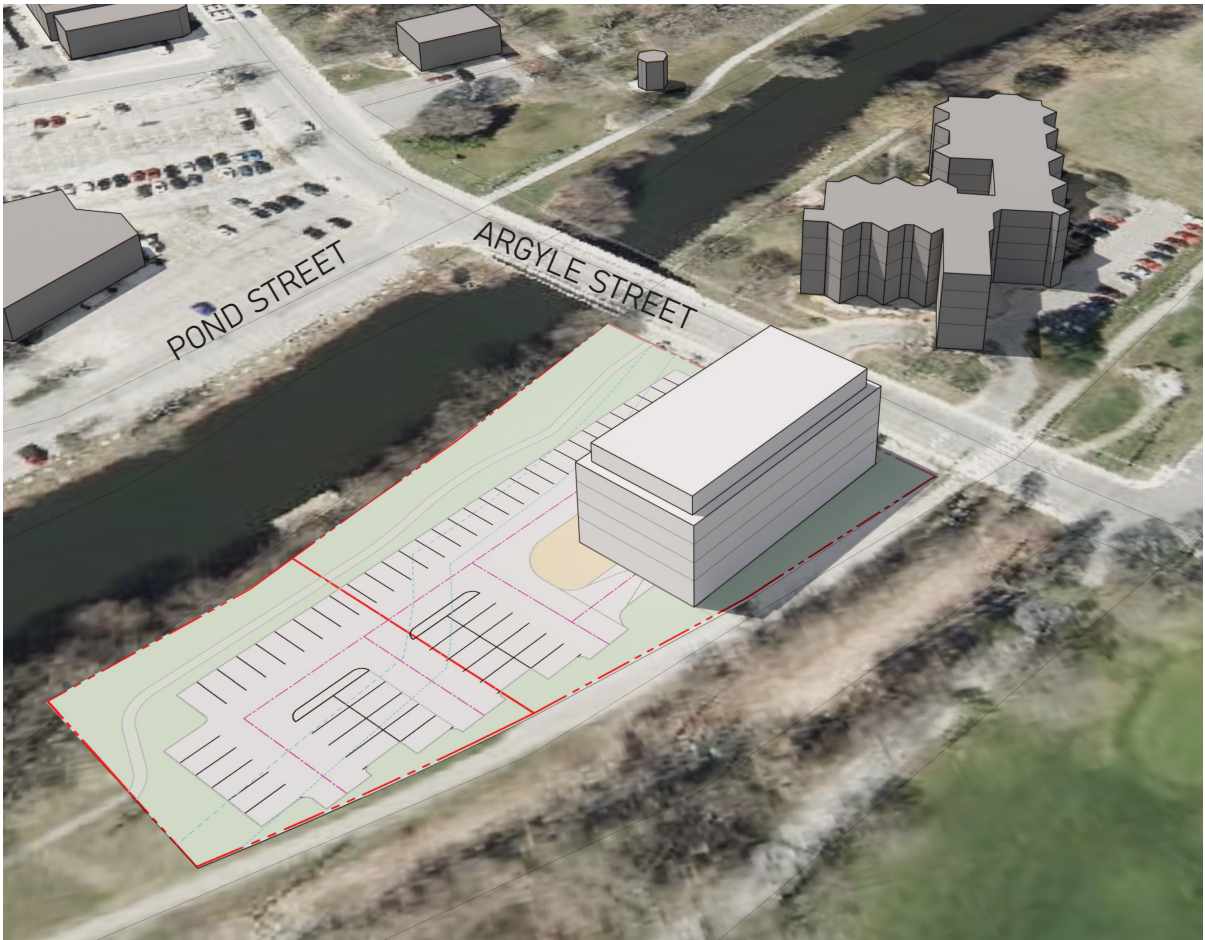
Post-Development Drainage Area Plan

MIDUSS v2 Output Files

Preliminary Water Quality Provision Options



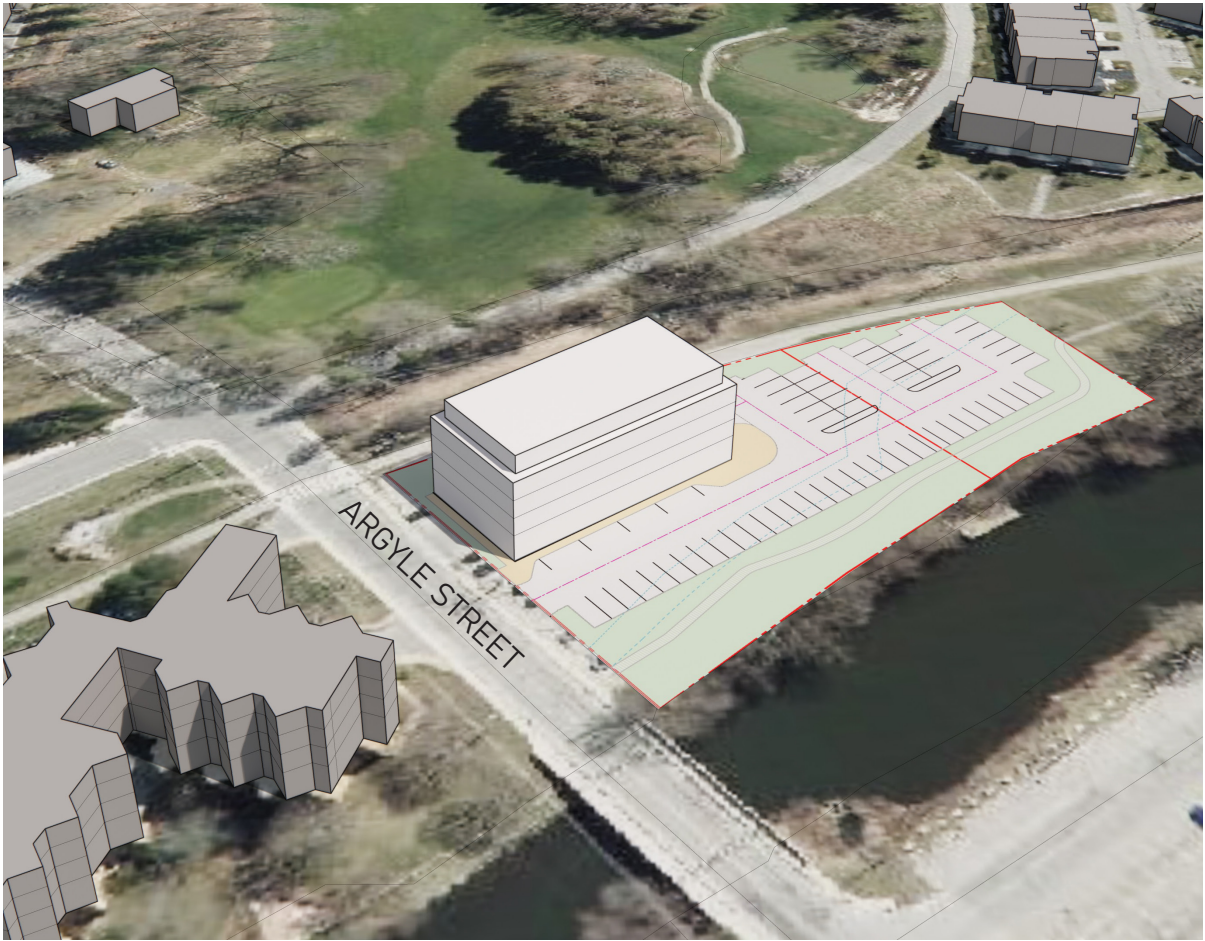
VIEW LOOKING NORTHEAST



VIEW LOOKING NORTHWEST



VIEW LOOKING SOUTHWEST



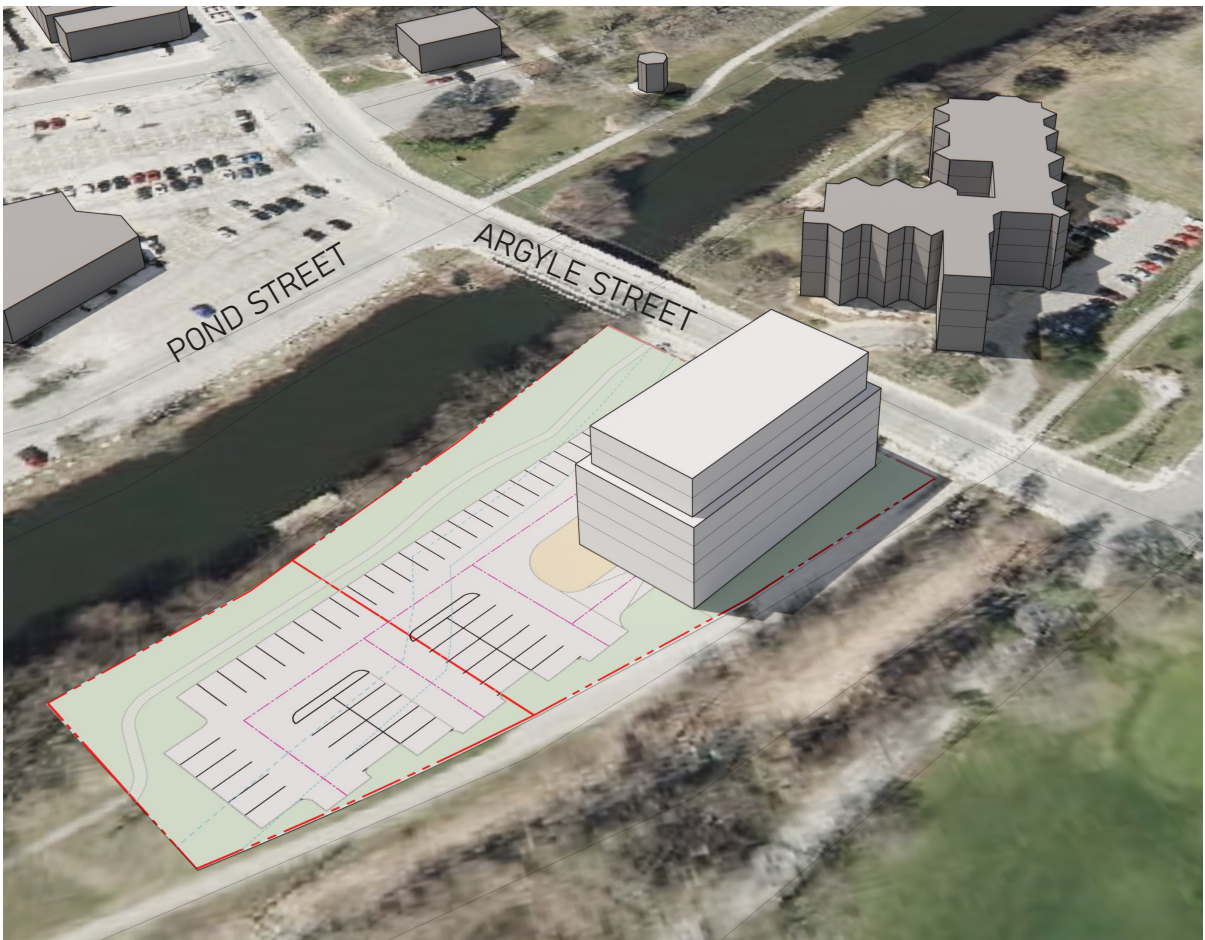
VIEW LOOKING SOUTHEAST

86 ARGYLE STREET

SIMCOE, ON
NORFOLK COUNTY



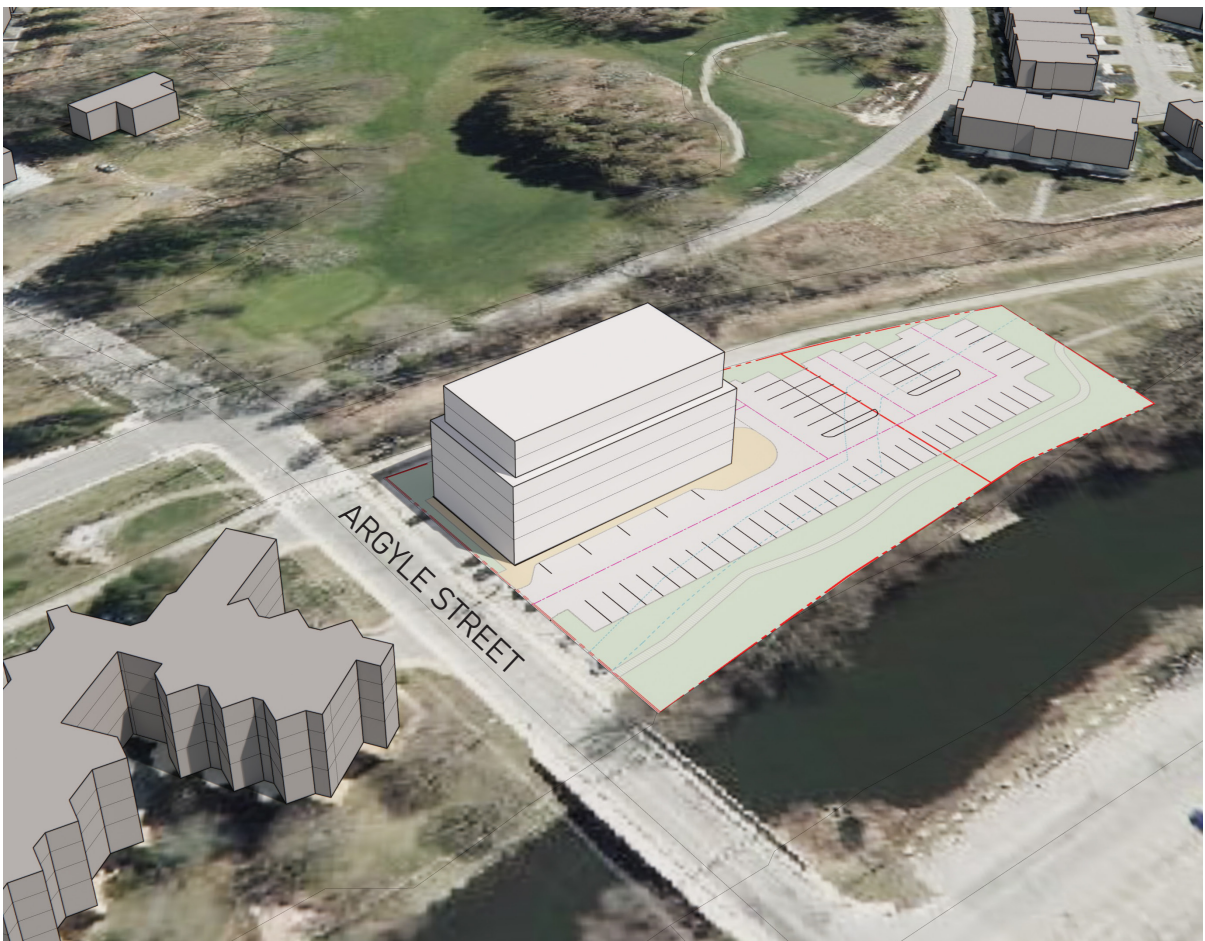
VIEW LOOKING NORTHEAST



VIEW LOOKING NORTHWEST



VIEW LOOKING SOUTHWEST



VIEW LOOKING SOUTHEAST

86 ARGYLE STREET

SIMCOE, ON
NORFOLK COUNTY



86 ARGYLE STREET SIMCOE

Concept Plan



DEVELOPMENT STATISTICS

SITE AREA	5,356m ²	
BUILDING FOOTPRINT:	800m ²	
GFA (GROSS)	Retail 420m ²	Residential 3,356m ²

RESIDENTIAL UNITS
Apartment: 38
Assumes an 85% efficiency, 75m²/unit (807ft²/unit)

PARKING PROVIDED:	81-spaces
Residential (1.5 spaces/unit)	57-spaces
Retail (1 space/30 sm)	14-spaces
Public Parking (Retained)	10-spaces

NOTES

- Assumes typical Residential floor height of 3.0m. Assumes Retail Ground floor height of 4.5m.
- Assumes 85% efficiency and 70m² (754ft²) unit size is used to calculate approximate total number of units.
- Assumes 1.5 spaces / unit (including 0.25 spaces / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade). 10 public parking spaces provided/retained.
- The base plan (lot lines, existing roads and surrounding areas) is based on the topographic survey (23-3682) and aerial images (Norfolk County Web Map). The site area is approximate and all dimensions need to be confirmed by a legal survey.

1	CONCEPT PLAN	2024.10.23	ET
No.	REVISION	DATE	BY

CLIENT
NORFOLK COUNTY

FOTENN

Planning + Design

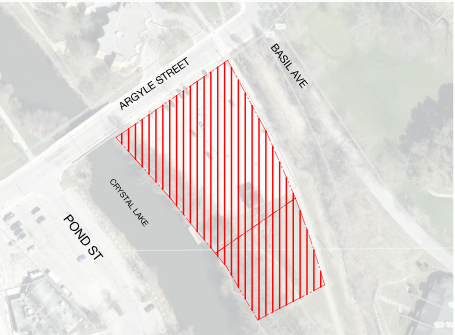
OTTAWA: 396 Cooper Street, Suite 300, Ottawa ON K2P 2H7 613.730.5709	KINGSTON: 4 Cataract St., Suite 315, Kingston ON K7K 1Z7 613.542.5454	TORONTO: 174 Spadina Ave., Suite 304, Toronto ON M5T 2C2 416.789.4530
--	---	---

DESIGNED	ET
REVIEWED	ET
DATE	2024.10.23

P1



86 ARGYLE STREET SIMCOE Concept Plan



DEVELOPMENT STATISTICS

SITE AREA	5,356m ²	
BUILDING FOOTPRINT:	800m ²	
GFA (GROSS)	Retail 0m ²	Residential 4,352m ²

RESIDENTIAL UNITS	
Apartment:	47
Assumes an 85% efficiency, 78m ² /unit (840ft ² /unit)	

PARKING PROVIDED:	81-spaces
Residential (1.5 spaces/unit)	71-spaces
Retail (1 space/30 sm)	0-spaces
Public Parking (Retained)	10-spaces

NOTES

- Assumes typical Residential floor height of 3.0m. Assumes Retail Ground floor height of 4.5m.
- Assumes 85% efficiency and 74m² (800ft²) unit size is used to calculate approximate total number of units.
- Assumes 1.5 spaces / unit (including 0.25 space / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade).
- Assumes 1.5 spaces / unit (including 0.25 spaces / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade). 10 public parking spaces provided/retained.
- The base plan (lot lines, existing roads and surrounding areas) is based on the topographic survey (23-3682) and aerial images (Norfolk County Web Map). The site area is approximate and all dimensions need to be confirmed by a legal survey.

1	CONCEPT PLAN	2024.10.23	ET
No.	REVISION	DATE	BY

CLIENT
NORFOLK COUNTY

FOTENN
Planning + Design

OTTAWA: 396 Cooper Street, Suite 300, Ottawa ON K2P 2H7 613.730.5709 www.fotenn.com	KINGSTON: 4 Cataragui St, Suite 315, Kingston ON K7K 1Z7 613.542.5454	TORONTO: 174 Spadina Ave, Suite 304, Toronto ON M5T 2C2 416.789.4530
--	---	--

DESIGNED	ET
REVIEWED	ET
DATE	2024.10.23

P2

DOMESTIC WATER USEAGE REQUIREMENTS

Project: 86 Argyle Street, Simcoe (CONCEPT P1)
Method: Fixture Unit Method, Per OBC Table 7.6.3.2.A

Fixtures: The number of fixtures was estimated based on the Concept Plan P1 provided by Fotenn Planning + Design dated 2024-10-23.

<u>Amount</u>	<u>Fixture Type</u>	<u>Fixture Units Per</u>	<u>Total</u>
2	Public Bathroom Group	2.2	4.4
38	Private Bathroom Group	3.6	136.8
38	Dishwasher	1.4	53.2
38	Kitchen Sink	1.4	53.2
38	Clothes Washer	1.4	53.2
38	Lavatory	0.7	26.6
	Total:		327.4

1 - Reference Table 7.6.3.2.A, Ontario Building Code

Hydraulic Load: Fixture units are then transferred to Hydraulic Load based on Ontario Building Code Table 7.4.10.5.

Column 1	Column 2	Column 3	Column 4
<i>Fixture Units in service</i>	<i>Max Drainage Rate (Gal/m)</i>		
	Col. 1	Col. 1 × 10	Col. 1 × 100
100	53	174	900
90	51	164	835
80	49	153	750
70	47	140	680
60	44	128	600
50	41	115	520
40	38	102	435
30	33	88	350
20	27	72	262
10	21	53	174

Maximum hydraulic load is estimated to be 91.92 Imperial Gallons / Minute

328 Fixture Units = 91.92 Imp Gal/min = 6.96 L/s

The estimated maximum hydraulic load for the proposed building (Concept P1) is 6.96 Liters per second.

DOMESTIC WATER USEAGE REQUIREMENTS

Project: 86 Argyle Street, Simcoe (CONCEPT P2)
Method: Fixture Unit Method, Per OBC Table 7.6.3.2.A

Fixtures: The number of fixtures was estimated based on the Concept Plan P2 provided by Fotenn Planning + Design dated 2024-10-23.

<u>Amount</u>	<u>Fixture Type</u>	<u>Fixture Units Per</u>	<u>Total</u>
47	Private Bathroom Group	3.6	169.2
47	Dishwasher	1.4	65.8
47	Kitchen Sink	1.4	65.8
47	Clothes Washer	1.4	65.8
47	Water Closet	2.2	103.4
47	Lavatory	0.7	32.9
	Total:		502.9

1 - Reference Table 7.6.3.2.A, Ontario Building Code

Hydraulic Load: Fixture units are then transferred to Hydraulic Load based on Ontario Building Code Table 7.4.10.5.

Column 1	Column 2	Column 3	Column 4
<i>Fixture Units in service</i>	<i>Max Drainage Rate (Gal/m)</i>		
	Col. 1	Col. 1 × 10	Col. 1 × 100
100	53	174	900
90	51	164	835
80	49	153	750
70	47	140	680
60	44	128	600
50	41	115	520
40	38	102	435
30	33	88	350
20	27	72	262
10	21	53	174

Maximum hydraulic load is estimated to be 115.39 Imperial Gallons / Minute

503 Fixture Units = 115.39 Imp Gal/min = 8.74 L/s

The estimated maximum hydraulic load for the proposed building (Concept P2) is 8.74 Liters per second.



FIRE FLOW DEMAND REQUIREMENTS

Project: 86 Argyle Street, Simcoe

Method: OFM-TG-03-1999

FIRE PROTECTION WATER SUPPLY GUIDELINE FOR PART 3 IN THE ONTARIO BUILDING CODE

<http://www.mcscs.jus.gov.on.ca/english/FireMarshal/Legislation/TechnicalGuidelinesandReports/TG-1999-03.html>

Formula:

$$Q = K \times V \times S_{Tot}$$

Where:

Q = minimum supply of water in litres

K = water supply coefficient (Table 1)

V = total building volume in cubic meters

S_{Tot} = total of spacial coefficient tables

Volume (V)

Ground Floor Area: 800 (sq.m)

Height: 18 (m)

Building Volume: 14400.00 (cu.m)

Water Supply Coefficient (K)

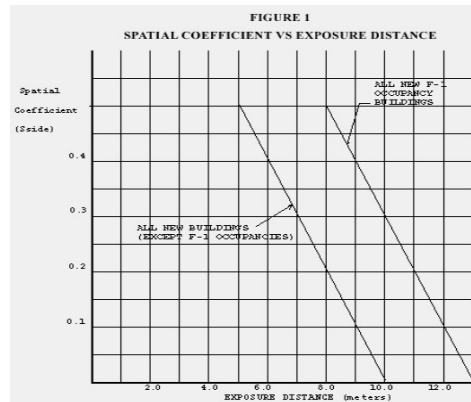
K: 18

OBC Part: C (Residential)

Construction Type: *Building is of combustible construction with fire separations and fire-resistance ratings provided in accordance with Subsection 3.2.2. of the OBC, including loadbearing walls, columns and arches. Noncombustible construction may be used in lieu of fire-resistance rating where permitted in Subsection 3.2.2. of the OBC.*

Spacial Coefficients (S)

	Distance	
S_1	0	33.8 (North)
S_2	0	100+ (East)
S_3	0	100+ (South)
S_4	0	103 (West)
$S_{Tot} = 1.0 + S_1 + S_2 + S_3 + S_4 = 1$		



Q = 259,200

Required Flow Rate = 6,300 L / Min
105 L / Sec

Table 2: Minimum Water Supply Flow Rates	
Building Code, Part 3 Buildings	Required Minimum Water Supply Flow Rate (L/min.)
One-storey building with building area not exceeding 600m ² (excluding F-1 occupancies)	1800
All other buildings	2700 (If $Q \leq 108,000L^{(1)}$) 3600 (If $Q > 108,000L$ and $\leq 135,000L^{(1)}$) 4500 (If $Q > 135,000L$ and $\leq 162,000L^{(1)}$) 5400 (If $Q > 162,000L$ and $\leq 190,000L^{(1)}$) 6300 (If $Q > 190,000L$ and $\leq 270,000L^{(1)}$) 9000 (If $Q > 270,000L^{(1)}$)

FIRE FLOW DEMAND REQUIREMENTS

Project: Simcoe Riverfront Lands, Parcel E - 86 Argyll Street
Method: Fire Underwriter's Survey: "Water Supply for Public Protection" (1999)

Formula:

$$F = 220C\sqrt{A}$$

Where: C= construction coefficient related to the type of construction
A= total floor area in square meters for the building being considered
F = Fire-flow in liters per minute
Together with various reductions and adjustments noted on FUS pages 17-20 as per the below

AREA (A)

Ground Floor Area: 800
Stories: 6
Total Area: 4800

Construction Coefficient (C)

C: 1

- 1.5 For wood frame construction (structure essentially all combustible)
- 1 For ordinary construction (brick or masonry walls, combustible floor / interior)
- 0.8 For non-combustible construction (unprotected metal structural components, masonry or metal walls)
- 0.6 For fire-resistive construction (fully protected frame, floors, roof)

Fire Flow (F)

L/min 6222.54
L/min 6000 (Rounded)
L/s 100

Occupancy Adjustment

Percentage (+/-) 0%
Adjusted Fire-Flow 6000 L/Min

Non-Combustible -25%
Limited Combustible -15%
Combustible No change
Free Burning 15%
Rapid Burning 25%

Exposure Adjustment

Percentage (+/-) 5%
Adjusted Fire-Flow 6300 L/min

0-3m 25%
3.1 - 10m 20%
10.1 - 20m 15%
20.1 - 30m 10%
30.1 - 45m 5%
45+m 0%

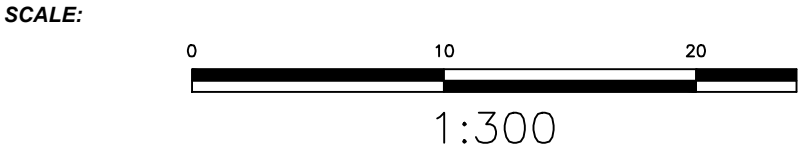
Distance	% Change
North 33.8	5%
South 45+	0%
East 45+	0%
West 45+	0%
Total:	5%

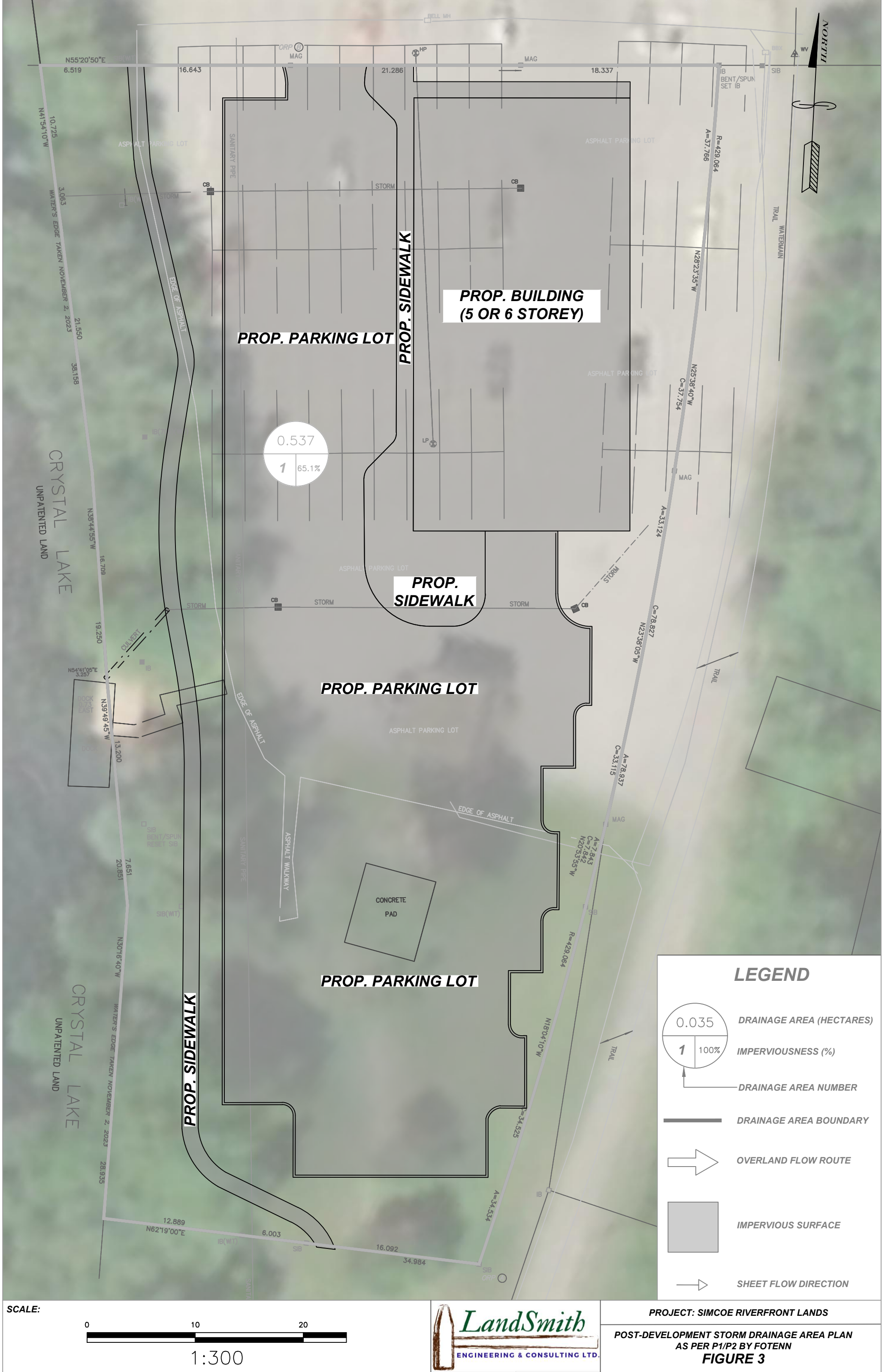
Sprinkler Adjustment

Percentage (+/-) 0%
Adjusted Fire-flow 6300 L/min

Fully Supervised 50%
NFPA13 System 30%
Municipal standard water supply +10%

FINAL REQUIRED FIRE-FLOW: 105 L/S





PRE-DEVELOPMENT - 5-YEAR STORM:

```

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" 0.871 Impervious Runoff coefficient"
" 0.100 Impervious Ia/S coefficient"
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" Rainfall volume 100.55 140.58 241.14 c.m"
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" Runoff depth 10.950 39.100 27.362 mm"
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PRE-DEVELOPMENT - 25-YEAR STORM:

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" Rainfall volume 141.41 197.71 339.12 c.m"
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PRE-DEVELOPMENT - 100-YEAR STORM:

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" 0.100 Pervious Ia/S coefficient"
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" Time to Centroid 133.286 100.259 108.159 minutes"
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" Rainfall losses 46.958 6.318 23.265 mm"
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POST-DEVELOPMENT - 5-YEAR STORM:

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POST-DEVELOPMENT - 25-YEAR STORM:

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" 2.000 Impervious slope"
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POST-DEVELOPMENT - 100-YEAR STORM:

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" 1.501 Constant B"
" 0.657 Exponent C"
" 0.500 Fraction R"
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" 1.000 Time step multiplier"
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" Total depth 78.830 mm"
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" 1 SCS method"
" 101 No description"
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" 0.350 Impervious Area"
" 48.000 Impervious length"
" 2.000 Impervious slope"
" 0.250 Pervious Manning 'n'"
" 75.000 Pervious SCS Curve No."
" 0.404 Pervious Runoff coefficient"
" 0.100 Pervious Ia/S coefficient"
" 8.467 Pervious Initial abstraction"
" 0.015 Impervious Manning 'n'"
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" 0.100 Impervious Ia/S coefficient"
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" Time to Centroid 133.286 100.259 106.558 minutes"
" Rainfall depth 78.830 78.830 78.830 mm"
" Rainfall volume 147.74 275.58 423.32 c.m"
" Rainfall losses 46.958 6.318 20.501 mm"
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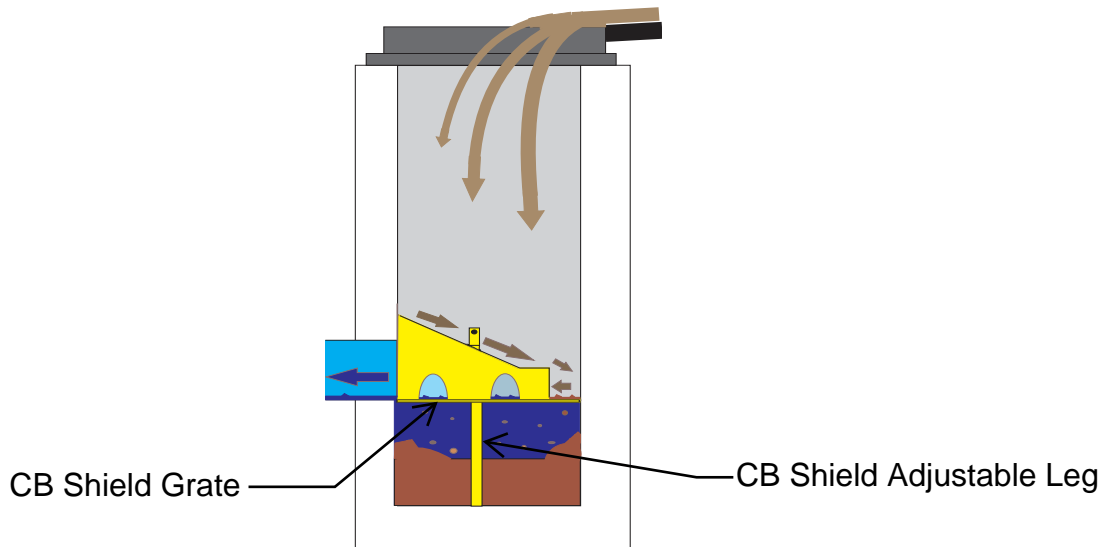

CB Shield Operations Manual

Installing CB Shield

It is important the catch basin frame and cover is aligned properly with the catch basin below

If it is misaligned it may be difficult to install the CB Shield insert

Determine the depth of the sump (i.e. the distance from the invert of the outlet pipe to the bottom of the catch basin). If the catch basin is in service the sump depth will be the depth of the water. The grate section of the CB Shield insert should be the same elevation as the water depth in the sump.



Adjust the leg of the CB Shield to achieve the appropriate elevation

The CB Shield is lowered into place with the rope attached to the top of the leg. The high side of the sloped plate should face the wall with the outlet pipe. (The incoming water should be directed to the wall furthest from the outlet)

The flexible plastic skirt around the outer edges of the CB Shield insert may interfere with some misaligned frame and grates. If so a slice can be cut into the skirt with a utility knife at the point of interference.

Make sure the grate is at the desired level or remove CB Shield and re-adjust the leg length.

Inspecting a CB Shield Enhanced Catch Basin

Open grate

A lifting rope is attached to the top of the centered leg of the CB Shield insert. Lift and remove the insert. Inspect CB Shield for any possible damage. Quite often leaves will accumulate on the grate. This can actually improve the Shield's ability to capture sediment and assist in preventing leave litter from being washed down stream.

Use a Sludge Judge to measure the sediment depth in 4 - 6 locations of the sump.

If the sediment depth is 300mm – 600mm deep it is recommended that the unit be cleaned.

Cleaning a CB Shield Enhanced Catch Basin

Open grate and remove CB Shield with lift rope.

Clean catch basin as usual with a Vacuum truck.

Clean CB Shield (if needed) and re-install into catch basin.

If there is any significant damage to a CB Shield please send a picture and its location to CB Shield Inc. (info@cbshield.com).

**Average Annual Sediment Removal Rates (%) using a CB Shield
(based on ETV Sediment - 1 to 1000 micron Particle Size Distribution)**

Area to CB (ha)	Imperviousness ¹ (%)					
	20%	35%	50%	65%	80%	100%
0.02	57%	57%	57%	57%	56%	56%
0.05	56%	56%	56%	55%	55%	54%
0.10	56%	55%	54%	53%	52%	51%
0.20	54%	53%	51%	49%	48%	46%
0.30	53%	50%	48%	46%	45%	43%
0.40	51%	48%	46%	44%	42%	40%
0.50	50%	47%	44%	42%	40%	38%
0.60	49%	45%	43%	40%	39%	36%

Notes:

1. Runoff Coefficient 'C' is approximately equal to $0.05 + 0.9 \times \text{Impervious Fraction}$.
2. Above chart is based on long term continuous hydrologic analysis of Toronto, Ontario (Bloor St) rainfall data.
3. Assumes 0.6 m sump in CB and that maintenance is performed (i.e. CB cleaning) when required by sediment/pollutant build-up or otherwise.
4. See accompanying chart for suggested maintenance scheduling - AND - get CB Shield Inc. to monitor it for you in field.
5. Sediment/Pollutant removal rates based on third party certified laboratory testing using ETV sediment (PSD analysis available on request).
6. See additional discussion regarding scour protection from CB Shield during more infrequent runoff events.

VERIFICATION STATEMENT

GLOBE Performance Solutions

Verifies the performance of

CB Shield[®] Stormwater Quality Device

Developed by CB Shield Inc.
Oakville, Ontario, Canada

Registration: **GPS-ETV_VR2022-10-31**

In accordance with

ISO 14034:2016

**Environmental Management —
Environmental Technology Verification (ETV)**



John D. Wiebe, PhD
Executive Chairman
GLOBE Performance Solutions

October 31, 2022
Vancouver, BC, Canada



Verification Body
GLOBE Performance Solutions
404 – 999 Canada Place | Vancouver, B.C | Canada | V6C 3E2

Technology description and application

The CB Shield® technology provides an environmental benefit of controlling sediment wash off at upstream locations. A standard catch basin has a 1.2 m waterfall inflow that churns up sediment in the sump below causing a very poor rate of sediment retention. The CB Shield is a flow deflection device that is inserted into a standard catch basin. It contains a sloped plate to direct runoff to the back wall of the catch basin, thereby dissipating the energy of stormwater inflows. The dissipation of inflow energy allows time for settling of sediment in stormwater runoff, increasing capture and reducing scour/ re-suspension of previously deposited sediment. Installation involves lowering the unit into a standard sized catch basin, and adjusting the height of the unit to the height of the permanent pool in the sump. The unit is manufactured with durable fiberglass requiring little maintenance and is estimated to be operated on the same cleanout schedule set for the catch basin. Due to high rates of scour in a standard catch basin, they are seldom filled beyond 40% of sump capacity. Clean out routines and expenses are optimized when the CB Shield captures and retains more sediment within the sump.

In an urban setting, there are typically approximately 5 catch basins installed per hectare. Assuming an equal distribution of overland flow, the tested flow rates for the scour and capture tests are meaningful in the context of 78 L/s per hectare and 42 L/s per hectare, respectively. The CB Shield's scour prevention performance has been evaluated in a laboratory setting relative to a standard unshielded catch basin for flows of 1.2 to 15.6 L/s. The device's sediment capture performance was evaluated for flows of 0.24 to 8.4 L/s. Hydraulically, the CB Shield has been tested to pass flows up to 60 L/s without any negative impacts (i.e., surcharging).

Performance conditions

Claim 1: Capture test

The capture test is carried out in a laboratory with a constructed simulated street scape (1 % slope along its 2.4 m (96 inch) length, 2 % slope along its 1.2 m (48 inch) width). The catch basin was clean of any litter or debris. Capture performance was tested by comparing the mass of retained sediment with the influent sediment mass for each of six inflow rates: 0.24, 0.48, 1.20, 2.40, 6.00, and 8.40 L/s. The test sediment consisted of ground silica (1 – 1000 micron) with a specific gravity of 2.65, uniformly mixed to meet the particle size distribution specified in the *Procedure for Laboratory Testing of Oil Grit Separators* (TRCA, 2014). Sediment was injected onto the street scape at a point just upstream of the catch basin to allow mixing prior to discharge while avoiding excessive buildup of sediment on the street scape. The sediment feed rate was adjusted for each flow rate to keep the influent concentrations consistent at 200 mg/L. The tests were conducted with a false floor set at 300 mm below the outlet invert simulating a catch basin that is filled to 50% of the manufacturer's recommended maximum sediment storage.

Claim 2: Scour test

The scour test was carried out in a laboratory on catch basins with and without the CB Shield® insert with a constructed simulated street scape (1 % slope along its 2.4 m (96 inch) length, 2 % slope along its 1.2 m (48 inch) width) and the catch basins clean of any litter or debris. A false floor was set in the catch basins at 254 mm below the outlet invert and preloaded with the test sediment (1- 1000 micron silica blend) test up to 150 mm below the outlet invert simulating a catch basin that is ¾ full of sediment. Water was filled to the effluent pipe and sediments were allowed to settle for 12-24 hours. Flows of 1.2, 4.8, 8.4, 12, and 15.6 L/s were tested on a continuous run with flow rates maintained at 5 minutes and a one minute transition time between flow rates. A minimum effluent grab sample of 500 mL was collected in 1000 mL jars by holding it under the entire effluent stream. A sample was taken at 30 seconds during the flow transitions to account for scour during the transition. Background samples were also taken at least once

every flow rate and effluent concentrations were corrected accordingly. Effluent flow was filtered using a 10µm filter and was recycled during the continuous 30 min test.

Performance claim(s)

Claim 1: Capture test

During the sediment capture test, for a catch basin with a false floor set to 50% of the manufacturer's recommended maximum sediment storage depth and a constant influent sediment concentration of 200 mg/L, the catch basin with a CB Shield® insert removed 64, 59.9, 52.4, 42.6, 25.2, and 26.7 percent of influent test sediment by mass at inflow rates of 0.24, 0.48, 1.20, 2.40, 6.00, and 8.40 L/s, respectively.

Claim 2: Scour test

For a catch basin filled to three quarters of the manufacturer's recommended maximum sediment storage depth, with the CB Shield® insert, scouring of test sediment is at most 8% of the control catch basin during a continuous 30 minute scour test run with 5 minute duration inflows of 1.2, 4.8, 8.4, 12.0, and 15.6 L/s.

Performance results

The test sediment used to evaluate the CB Shield® technology was the same as that required by CETV for the evaluation of Oil Grit Separators. The comparison of the average test sediment PSD to the CETV specified PSD in Figure 1 indicates that the test sediment was finer than the specified PSD, with a median particle size of approximately 50 microns.

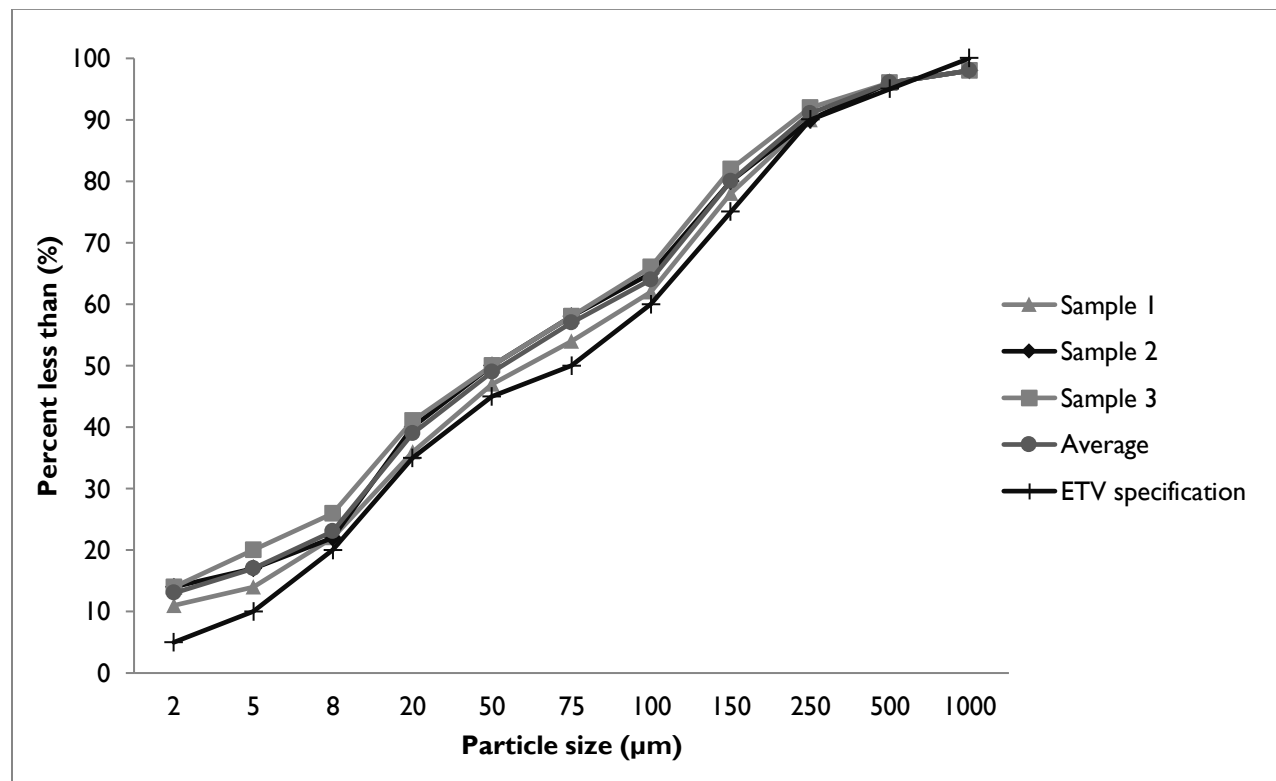


Figure 1. Test sediment particle size distribution (PSD) in relation to specified PSD.

The capacity of the device to retain sediment was determined at six surface loading rates using the modified mass balance method (see TRCA, 2014). During each of the tested flow rates, a known quantity

of sediment was injected at a constant rate onto a simulated street scape just upstream of the catch basin containing the CB Shield® technology. Based on these results, removal efficiencies were determined for each of the tested surface loading rates (Table 1).

Table 1. Removal efficiencies (%) based on modified mass balance results at specified surface loading rates.

Flow rate	(L/s)	0.24	0.48	1.20	2.40	6.00	8.40
Surface loading rate	(L/min/m²)	40	80	200	400	1000	1400
Total mass added	(kg)	1.217	2.302	5.072	5.150	4.921	4.812
Total mass captured	(kg)	0.778	1.378	2.659	2.196	1.238	1.287
Removal efficiency	(%)	64.0	59.9	52.4	42.6	25.2	26.7

Table 2 shows the results of the sediment scour and re-suspension test. This test involved preloading fresh test sediment into the sedimentation area of two catch basins with and without the CB Shield technology, as described in Performance Conditions section above. Effluent samples were collected at one-minute sampling intervals and analyzed for Suspended Sediment Concentration (SSC). The mean sediment scour load of the catch basin with the CB shield insert was shown to be only 5% that of the control catch basin.

Table 2. Scour test effluent sediment concentration and loads.

Run	Flow rates (L/sec)	Surface loading rate (L/min/m ²)	CB Shield®			Control			
			Run time (min)	Effluent suspended sediment concentration (mg/L)	Sediment load (g)	Run time (min)	Effluent suspended sediment concentration (mg/L)	Sediment load (g)	
1	1.2	200	1:00	17.7	1.3	1:00	129.2	9.7	
			2:00	6.5	0.47	2:00	185.3	13.9	
			3:00	2.7	0.19	3:00	206.0	15.5	
			4:00	3.1	0.22	4:00	176.0	13.2	
			5:00	4.6	0.33	5:00	523.6	39.4	
			6:00	0.6	0.04	6:00	495.7	41.8	
			Sum			2.6	Sum		
2	4.8	800	7:00	8.2	2.4	7:00	7164.0	2069.0	
			8:00	4	1.2	8:00	8094.0	2338.0	
			9:00	0.6	0.2	9:00	6762.0	1950.0	
			10:00	0.6	0.2	10:00	4842.0	1393.0	
			11:00	1.7	0.5	11:00	5266.0	1517.0	
			12:00	0.6	0.2	12:00	4768.0	1457.0	
			Sum			4.7	Sum		
3	8.4	1400	13:00	5.4	2.7	13:00	5429.0	2725.0	
			14:00	10.0	5.0	14:00	6648.0	3332.0	
			15:00	9.5	4.8	15:00	5025.0	2528.0	
			16:00	10.0	5.0	16:00	5859.0	2939.0	
			17:00	8.4	4.2	17:00	5019.0	2515.0	
			18:00	8.2	4.1	18:00	3249.0	1628.0	
			Sum			25.8	Sum		
4	12	2000	19:00	38.4	27.6	25:30	1886.0	1347.0	
			20:00	79.4	57.2	26:30	1432.0	1027.0	
			21:00	113.0	81.3	27:30	1167.0	844.0	
			22:00	103.0	74.2	28:30	1508.0	1089.0	
			23:00	114.0	82.1	29:30	1100.0	795.0	
			24:00	92.3	66.5	30:30	708.0	512.0	
			Sum			388.9	Sum		
5	15.6	2600	25:00	117.4	166.0	52:30	386.9	364.8	
			26:00	211.6	198.1	53:30	252.7	237.8	
			27:00	220.3	206.2	54:30	372.5	349.6	
			28:00	187.8	175.8	55:30	332.4	311.7	
			29:00	224.4	210.0	56:30	279.8	262.6	
			30:00	199.2	186.5	57:30	310.2	290.9	
			Sum			1142.6	Sum		
Total load					1564.6				33956.0

Potential sources of error

1. Background concentrations during the scour test were measured to be generally under 5 mg/L for both CB Shield® and Control treatments. However, background concentrations for the Control treatment at flow rates of 12.0 L/s and 15.6 L/s were substantially higher than the expected threshold of 20 mg/L as a result of inefficient recycling of water in the laboratory. Effluent samples were corrected based on the measured background concentrations since it was assumed that background sediments consisted of fine particles that were not captured in the device and flowed through as effluent concentration. If instead, some of the background sediments settled, the correction for all background sediments would bias against the relative performance of the CB Shield and therefore result in a more conservative evaluation of the CB Shield technology performance.
2. The reduction in scour at higher flow rates for the Control treatment suggested that the amount of preloaded sediment (10.2 cm depth) may have been insufficient to provide a continuous supply of fine particles for scour throughout the test. A similar decrease in scour at high flow rates was not observed for the CB Shield® treatment. This interpretation of the data implies that preloading both catch basins with additional sediment would likely have shown increased relative scour for the Control treatment, particularly at high flow rates. Although further testing would be required to verify this interpretation, it is reasonable to suggest that the test as conducted may have produced a smaller relative difference, resulting in a more conservative claim for the CB Shield technology.

Verification

This verification was first completed in October, 2016 and is considered valid for subsequent renewal periods every three (3) years thereafter. Data and information provided by CB Shield Inc. to support the performance claim included the following: Performance test report prepared by Good Harbour Laboratories of Mississauga, Ontario, dated 24 August 2016; the report was based on testing completed in accordance with the Procedure for Laboratory Testing of Oil-Grit Separators (Version 3.0, June 2014).

The original verification was completed by the Toronto and Region Conservation Authority, contracted by GLOBE Performance Solutions, using the Canadian ETV Program's General Verification Protocol (June 2012) and taking into account ISO/FDIS 14034:2015(E). This ETV renewal is considered to meet the equivalency of an ETV verification completed using the International Standard **ISO 14034:2016 Environmental management – Environmental technology verification (ETV)**.

What is ISO 14034:2016 Environmental management – Environmental technology verification (ETV)?

ISO 14034:2016 specifies principles, procedures and requirements for environmental technology verification (ETV) and was developed and published by the *International Organization for Standardization (ISO)*. The objective of ETV is to provide credible, reliable and independent verification of the performance of environmental technologies. An environmental technology is a technology that either results in an environmental added value or measures parameters that indicate an environmental impact. Such technologies have an increasingly important role in addressing environmental challenges and achieving sustainable development.

**For more information on the CB Shield®
Stormwater Quality Device please contact:**

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39 Uplands Drive
Brantford, ON
N3R 6H5 Canada
Tel: 519-212-9161
info@cbshield.com
www.cbshield.com

**For more information on ISO 14034:2016 / ETV
please contact:**

GLOBE Performance Solutions
404 – 999 Canada Place
Vancouver, BC
V6C 3E2 Canada
Tel: 604-695-5018 / Toll Free: 1-855-695-5018
etv@globepformance.com
www.globepformance.com

Limitation of verification - Registration: GPS-ETV_VR2022-10-31

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VERIFICATION STATEMENT

GLOBE Performance Solutions

Verifies the performance of

Cultec Separator™ Row Filtration System

Developed by Cultec, Inc.
Brookfield, Connecticut, USA

Registration: GPS-ETV_VR2021-03-31_v2

In accordance with

ISO 14034:2016

**Environmental Management —
Environmental Technology Verification (ETV)**



John D. Wiebe, PhD
Executive Chairman
GLOBE Performance Solutions

March 31, 2021
Vancouver, BC, Canada



Verification Body
GLOBE Performance Solutions
404 – 999 Canada Place | Vancouver, B.C | Canada | V6C 3E2

Technology description and application

Cultec Recharger and Contactor chambers are used for infiltration, detention and/or retention of stormwater underground. The system is comprised of thermoplastic arch-shaped chambers surrounded by clear crushed stone. Water enters the system through a Separator row and then flows through the stone and into a Chamber row prior to exiting. The Cultec stormwater system is sized based on the volume of stormwater which is stored in the voids created by the chamber and the voids in the clear stone surround, with a void ratio of 40%. The entire system is wrapped in a non-woven geotextile and/or impermeable geomembrane. In order to minimize fine particles and silts from blinding the voids in the clear stone surround, a single chamber row is wrapped in non-woven geotextile and placed on a woven geotextile. This row is connected to the inlet pipe of the Cultec system providing a filtration function as the surface stormwater run-off passes through the geotextile wrapped inlet row. Sediment is trapped within the Cultec Separator™ Row and may be removed through back flushing of this row. A typical system installation is illustrated in Figure 1 and Figure 2 below.

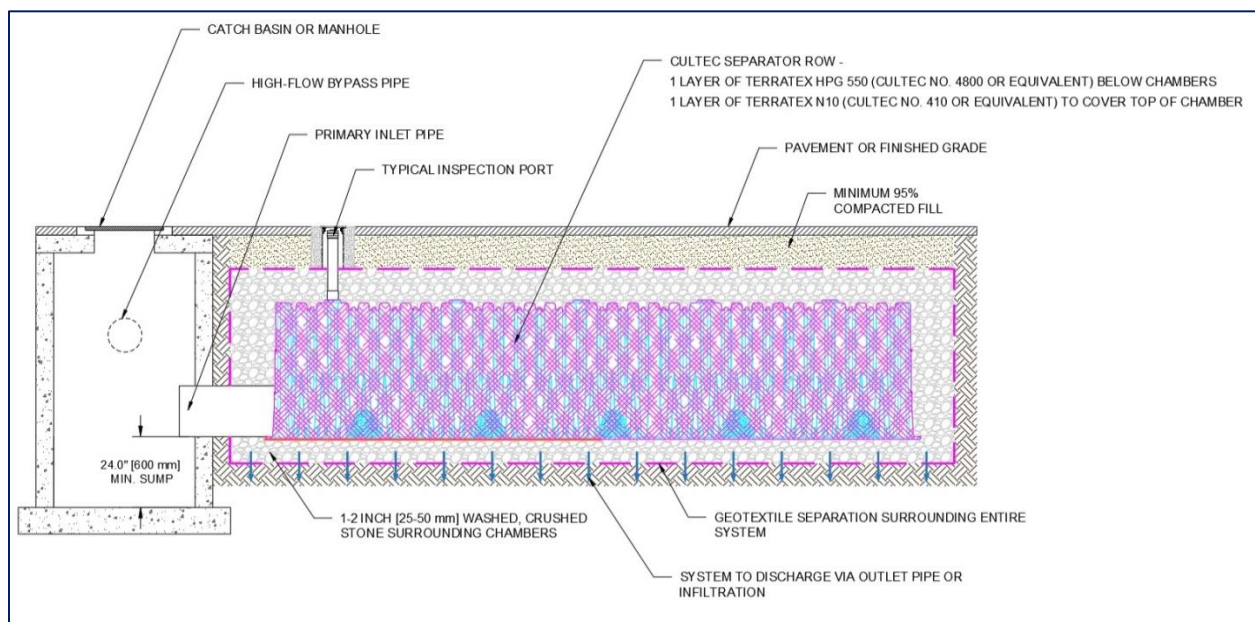


Figure 1: Cultec Separator™ Row Filtration System – Cross-Sectional View

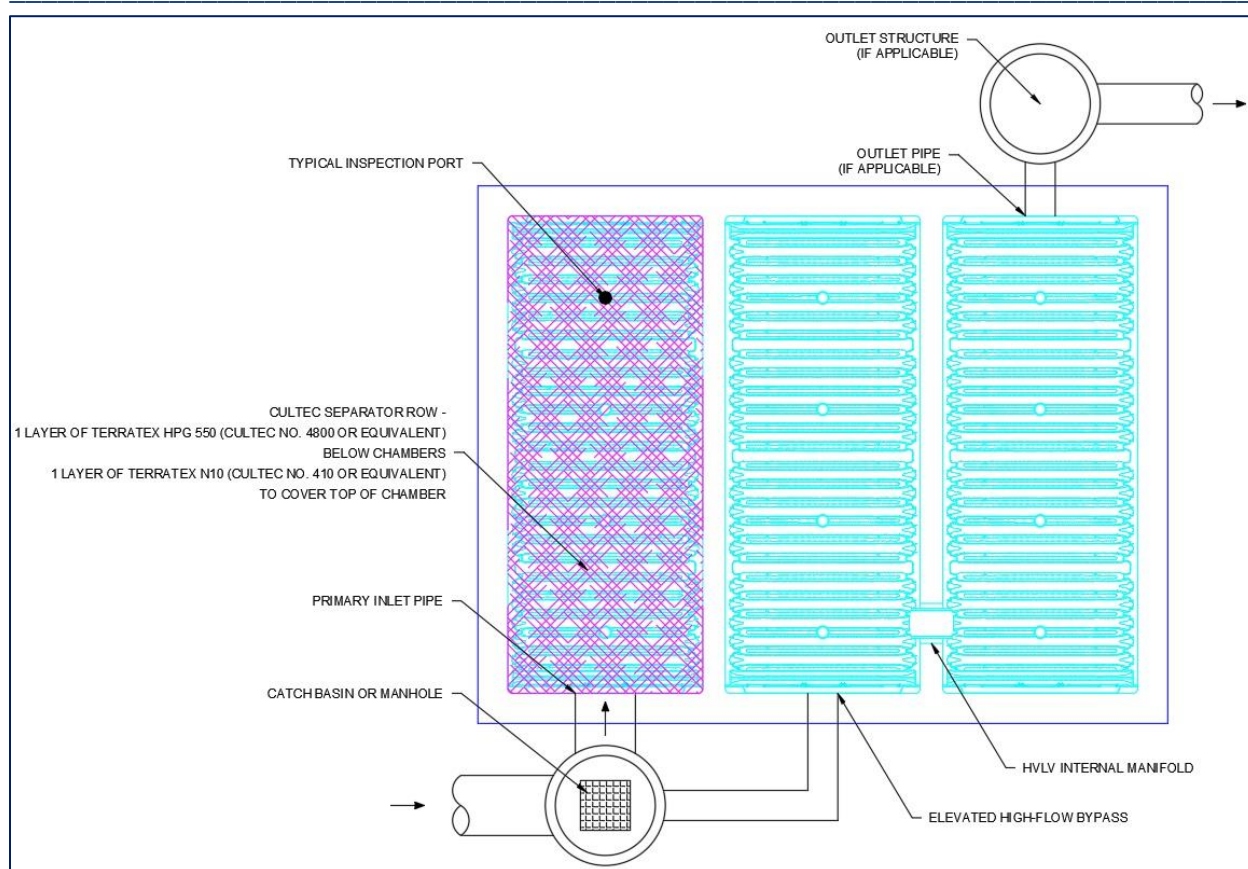


Figure 2: Cultec Separator™ Row Filtration System – Plan View

Performance & testing conditions

The data and results published in this Verification Statement were obtained from the testing program conducted on the Cultec Separator™ Row in accordance with a technology specific test plan (TSTP) developed and approved by the client and test lab (Good Harbour Laboratories, Mississauga, Ontario), and reviewed by Verification Expert and Verifying Organization, in compliance with ISO/IEC 14034.

The device tested was a Cultec Recharger I50XLHD R chamber with a base width of 838 mm (33") and height of 470 mm (18.5").

Test Setup

Two chambers were used for this study, a receiving chamber and a separation chamber. The two chambers were housed in a containment cell constructed out of wood, lined with an impermeable membrane. The dimensions of the test cell were 142" X 71" X 23.5" (3.58 m X 1.80 m X 0.60 m, L X W X H). The chambers were set up in the test cell in a manner consistent with a normal installation. The floor of the cell was covered with approximately 76 mm (3") of washed, crushed, clear stone¹ which in turn was covered by one layer of woven geotextile fabric as required for the installation of the system. The two chambers sat next to each other, in parallel. Washed crushed stone filled in the space around the test units up to a height of approximately 51 mm (2") from the base.² The test set-up is illustrated in Figure 3.

The geotextiles used for this study were:

Woven: Terratex HPG 550
Nonwoven: Terratex N10

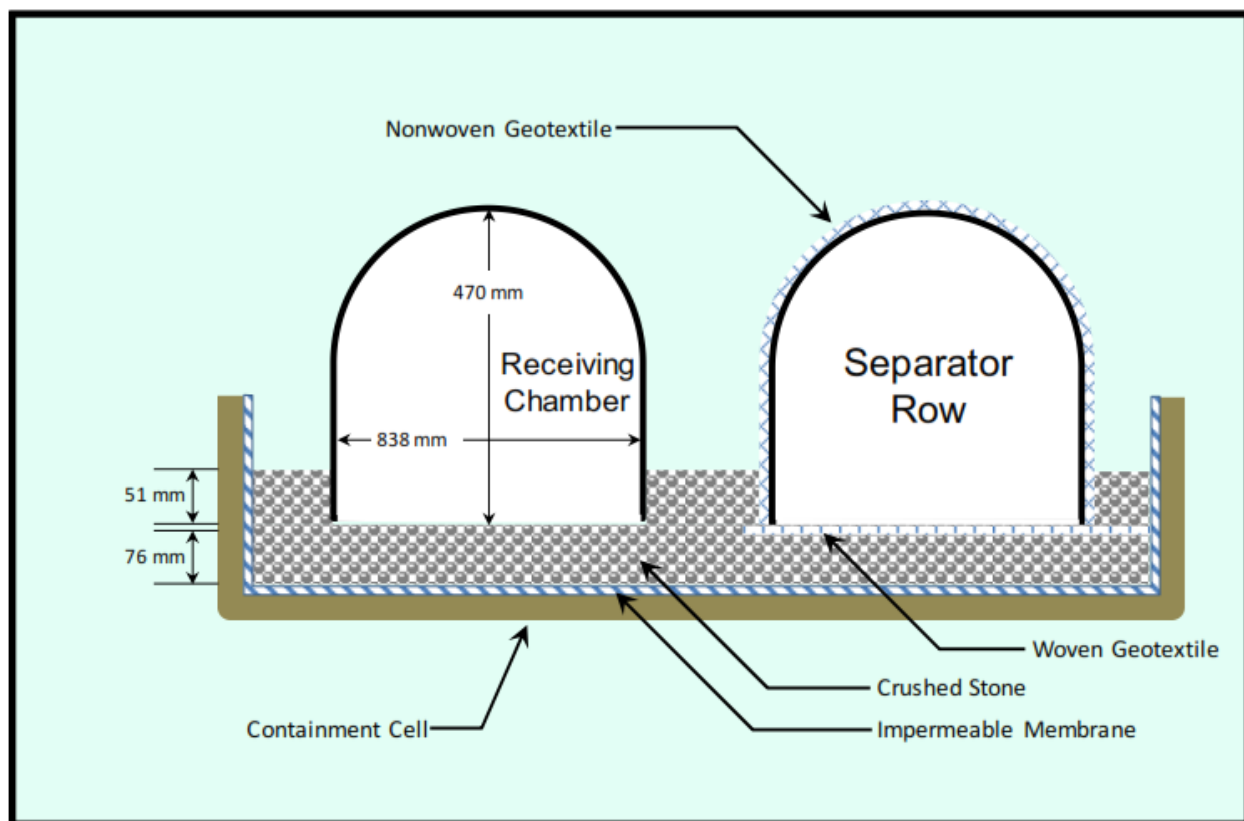


Figure 3: Test Cell Cross-Section for Model Recharger® I50XLHD R

¹ A normal installation would typically have a crushed stone depth of 150 mm (6").

² For a normal installation, the stone completely fills the column between chamber rows and up to a minimum of 6" above the top of the crown of the chamber.

The laboratory test set-up was a water flow loop, capable of moving water at a rate of up to 900 L/min. The loop was comprised of water reservoirs, pumps, stand pipe, receiving tank and a flow meter, in addition to the test cell.

Fresh water was pumped from the storage tank through a flow meter to the stand pipe, and from there it flowed by gravity through an inlet pipe to the separation chamber in the test cell. Sediment was added at an addition port in the inlet pipe upstream of the separation chamber.

From the water supply tanks, water was pumped by a centrifugal pump. Flow measurement was done using an electromagnetic type flow meter with an accuracy of $\pm 0.5\%$ of reading (1 – 200 gpm). The data logger was configured to record a flow measurement once every minute.

The influent pipe was 100 mm (4 inches) in diameter and sediment addition was done through a port at the crown of the influent pipe, 4 pipe diameters (406 mm) upstream of the containment cell. The sediment feeder was a volumetric screw feeder with vibratory hopper.

Water flow exited the receiving chamber and terminated with a free-fall into the Receiving Tank. Water was pumped from the Receiving Tank back to the storage tanks to complete the flow loop.

Sample Collection & Parameter Measurement

Background water samples were collected in 1 L jars from the standpipe. The sample was taken by submerging the jar below the surface of the water until full.

Effluent samples were also grabbed by hand. The effluent pipe drained freely into the Receiving Tank and the effluent sample was taken at that point. The sampling technique was to take the grab sample by sweeping a wide-mouth 1 L jar through the stream of effluent flow such that the jar was full after a single pass.

Effluent water temperature was taken using a data logger submerged into the receiving tank during each run and configured to take a temperature reading once every minute. Run and sampling times were measured using NIST traceable stopwatches. The sediment feed samples that were taken during the run were collected in 500 mL jars and weighed on an analytical balance.

Test Sediment

The final test sediment particle size distribution (PSD) met the required tolerances of the Canada ETV Procedure for Laboratory Testing of Oil-Grit Separators (Rev. June 6, 2014 – Ver. 3.0). Three replicate samples of the test sediment blend were sent to a qualified 3rd party analytical laboratory for analysis of the sediment PSD in a manner consistent with ASTM method D422-63 (Reapproved 2007), “Standard Test Method for Particle-Size Analysis of Soils”. The samples were composite samples created by taking samples throughout the blending process and in various positions within the blending drum.

Removal Efficiency Testing

The objective of this study was to establish a baseline for treatment performance (removal efficiency) over a range of flow rates up to 125% of the maximum treatment flow rate (MTFR) with an influent suspended sediment concentration (SSC) of 200 mg/L. Sediment removal efficiency testing was conducted at 25%, 50%, 75%, 100% and 125% MTFR. The sediment feed rate had a coefficient of variance (COV) ≤ 0.10 and the influent sediment concentration was maintained within ± 20 mg/L of target, based on the average sediment feed rate and water flow rate for the run. The water flow rates were held within 10% of target with a COV of 0.03 and water temperatures were maintained below 25°C.

A minimum of eight influent background samples were taken at regular intervals. A minimum of 15 effluent samples were collected during each test run. The first sample was collected after a minimum of 3 detention times (DT), at which time a constant flow and sediment feed were established. The interval between sequential effluent samples was evenly spaced; however, when the test sediment feed was interrupted for measurement, the next effluent sample was collected after waiting at least 3 DT to re-establish equilibrium conditions.

The system detention time was determined empirically by measuring the height of water in the containment cell during clean water flow at the chosen flow rate. The wet volume of the system was calculated and the approximate volume of the stones was subtracted. The remaining volume was the estimated water volume in the containment cell, which was divided by the flow rate to give detention time.

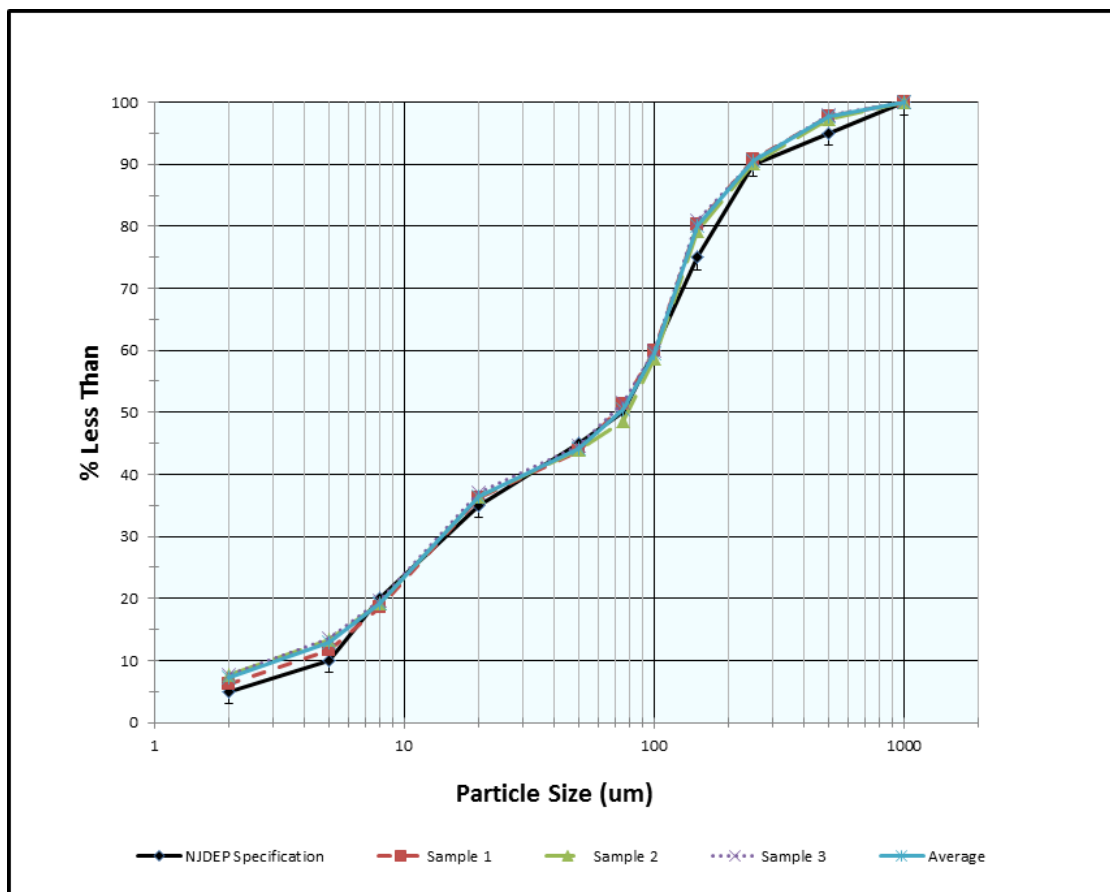
The sediment feed rate was checked using six calibration samples taken at evenly spaced intervals over the duration of each test run. Each sample was collected over an interval timed to the nearest 0.01 second and was a minimum of 0.1 liters, or the collection interval did not exceed one minute, whichever came first. The COV of the samples was < 0.10. The feed rate samples were also used to calculate an influent concentration in order to double check the concentration calculated by mass balance.

Performance claims

When installed with Terratex HPG 550 and Terratex N10 geotextiles, and tested with silica sediment having a particle size distribution conforming to the *Canadian Environmental Technology Verification Program Procedure for Laboratory Testing of Oil-Grit Separators*, the Cultec Recharger® 150XLHD Separator Row™ will remove at least the following fractions of suspended sediment at the corresponding flow rates: 80% at 24 gpm, 77% at 49 gpm, 73% at 73 gpm, 70% at 97 gpm, and 65% at 121 gpm. These performance claims are verified statistically at a 95% level of confidence.

Performance results

TEST SEDIMENT PARTICLE SIZE DISTRIBUTION IN RELATION TO SPECIFIED PSD



SUSPENDED SEDIMENT REMOVAL EFFICIENCY AT A FLOW RATE OF 24 GPM

	Suspended Sediment Concentration (mg/L)														
Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Effluent	39.6	38.7	39.2	39.8	39.1	39.5	41.7	41.9	41.1	42.4	43.2	41.6	40.8	41.1	41.6
Background	2		2		2		2		2		2		2		2
Adjusted Effluent	37.6	36.7	37.2	37.8	37.1	37.5	39.7	39.9	39.1	40.4	41.2	39.6	38.8	39.1	39.6
Average Adjusted Effluent Concentration					38.8 mg/L					Removal Efficiency					80.2%

SUSPENDED SEDIMENT REMOVAL EFFICIENCY AT A FLOW RATE OF 48 GPM

	Suspended Sediment Concentration (mg/L)														
Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Effluent	47.1	47.0	47.1	46.8	47.3	47.3	49.0	50.1	49.5	50.4	49.1	50.2	52.2	49.7	51.8
Background	2		2		2		2		2		2		2		2
Adjusted Effluent	45.1	45.0	45.1	44.8	45.3	45.3	47.0	48.1	47.5	48.4	47.1	48.2	50.2	47.7	49.8
Average Adjusted Effluent Concentration					47.0 mg/L					Removal Efficiency					76.9%

SUSPENDED SEDIMENT REMOVAL EFFICIENCY AT A FLOW RATE OF 73 GPM

	Suspended Sediment Concentration (mg/L)														
Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Effluent	54.3	55.2	53.3	53.8	55.8	55.8	55.3	54.5	53.5	56.2	56.4	56.5	58.4	56.8	57.7
Background	2		2		2		2		2		2		2		2
Adjusted Effluent	52.3	53.2	51.3	51.8	53.8	53.8	53.3	52.5	51.5	54.2	54.4	54.5	56.4	54.8	55.7
Average Adjusted Effluent Concentration					53.6 mg/L					Removal Efficiency					73.3%

SUSPENDED SEDIMENT REMOVAL EFFICIENCY AT A FLOW RATE OF 97 GPM

	Suspended Sediment Concentration (mg/L)														
Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Effluent	58.4	59.4	59.0	61.2	61.6	61.1	58.9	60.4	59.9	63.9	63.3	62.5	61.9	61.0	61.0
Background	2		2		2		2		2		2		2		2
Adjusted Effluent	56.4	57.4	57.0	59.2	59.6	59.1	56.9	58.4	57.9	61.9	61.3	60.5	59.9	59.0	59.0
Average Adjusted Effluent Concentration					58.9 mg/L					Removal Efficiency					70.0 %

SUSPENDED SEDIMENT REMOVAL EFFICIENCY AT A FLOW RATE OF 121 GPM

	Suspended Sediment Concentration (mg/L)														
Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Effluent	72.0	72.8	71.7	72.1	70.1	72.1	69.3	72.3	77.2	71.0	70.7	72.7	71.1	70.4	73.0
Background	2		2		2		2		2		2		2		2
Adjusted Effluent	70.0	70.8	69.7	70.1	68.1	70.1	67.3	70.3	75.2*	69.0	68.7	70.7	69.1	68.4	71.0
Average Adjusted Effluent Concentration					69.9 mg/L					Removal Efficiency					65.3%

*Note: This data point was considered to be a significant outlier and was therefore omitted as part of the overall statistical calculations to verify performance at a 95% level of confidence.

Verification

This verification was completed by the Verification Expert, the Centre for Advancement of Water and Wastewater Technologies (“CAWT”), contracted by GLOBE Performance Solutions, using the International Standard **ISO 14034:2016 Environmental Management – Environmental Technology Verification (ETV)**. Data and information provided by Cultec, Inc. to support the performance claim included the final test report prepared by Good Harbour Laboratories of Mississauga, Ontario and dated November 9, 2017. The test report is based on testing completed in compliance with the requirements of ISO/IEC 17025.

What is ISO 14034:2016 Environmental Management – Environmental Technology Verification (ETV)?

ISO 14034:2016 specifies principles, procedures and requirements for environmental technology verification (ETV), and was developed and published by the *International Organization for Standardization (ISO)*. The objective of ETV is to provide credible, reliable and independent verification of the performance of environmental technologies. An environmental technology is a technology that either results in an environmental added value or measures parameters that indicate an environmental impact. Such technologies have an increasingly important role in addressing environmental challenges and achieving sustainable development.

For more information on the Cultec Separator™ Row Filtration System please contact:

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www.cultec.com

For more information on ISO 14034:2016 / ETV please contact:

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Limitation of verification: Registration: GPS-ETV_VR2021-03-31_v2

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Hydroworks Sizing Summary

86 Argyle Street, Simcoe

Preliminary OGS Sizing

11-05-2024

Recommended Size: HydroDome HD 6

Hydroworks Sizing Program Version 5.8.5

A HydroDome HD 6 is recommended to provide 80 % annual TSS removal based on a drainage area of .54 (ha) with an imperviousness of 65.1 % and Hamilton Airport, Ontario rainfall for the ETV particle size distribution.

The recommended HydroDome HD 6 treats 100 % of the annual runoff and provides 83 % annual TSS removal for the Hamilton Airport rainfall records and ETV particle size distribution.

The HydroDome has a siphon which creates a discontinuity in headloss. The given peak flow of .15 (m³/s) is less than the full pipe flow of .25 (m³/s) indicating free flow in the pipe during the peak flow assuming no tailwater condition. Partial pipe flow was assumed for the headloss calculations. The headloss was calculated to be 323 (mm) above the crown of the 375 (mm) outlet pipe.

This summary report provides the main parameters that were used for sizing. These parameters are shown on the summary tables and graphs provided in this report.

If you have any questions regarding this sizing summary please do not hesitate to contact Hydroworks at 888-290-7900 or email us at support@hydroworks.com.

The sizing program is for sizing purposes only and does not address any site specific parameters such as hydraulic gradeline, tailwater submergence, groundwater, soils bearing capacity, etc. Headloss calculations are not a hydraulic gradeline calculation since this requires a starting water level and an analysis of the entire system downstream of the HydroDome .

TSS Removal Sizing Summary

Hydroworks Siphon Separator Sizing Program - HydroDome

File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

Site Parameters
 Area (ha) .54
 Imperviousness (%) 65.1

Units
☐ U.S.
☒ Metric

Rainfall Station
 Hamilton Airport Ontario
 1970 To 2006 Rainfall Timestep = 60 min.

Project Title
 (2 lines) 86 Argyle Street, Simcoe
 Preliminary OGS Sizing

Outlet Pipe
 Diam. (mm) 375 Peak Design Flow (m3/s) .15
 Slope (%) 2

Lab Sizing Results ☐ Post Treatment Recharge

HydroDome Annual Sizing Results

Model #	Qlow (m3/s)	Qtot (m3/s)	Flow Capture (%)	TSS Removal (%)
Unavailable	.15	.15	100 %	65 %
HD 4	.15	.15	100 %	72 %
HD 5	.15	.15	100 %	78 %
HD 6	.15	.15	100 %	83 %
Unavailable	.15	.15	100 %	86 %
HD 8	.15	.15	100 %	89 %
HD 10	.15	.15	100 %	93 %
HD 12	.15	.15	100 %	96 %

Particle Size Distribution

Size (um)	%	SG
1	5	2.65
4	5	2.65
6	5	2.65
7	5	2.65
18	15	2.65
45	10	2.65
70	5	2.65
90	10	2.65
125	15	2.65
200	15	2.65

Note: Results vary significantly based on particle size distribution

Simulate

TSS Particle Size Distribution

Hydroworks Siphon Separator Sizing Program - HydroDome

File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

TSS Particle Size Distribution

Size (um)	%	SG
1	5	2.65
4	5	2.65
6	5	2.65
7	5	2.65
18	15	2.65
45	10	2.65
70	5	2.65
90	10	2.65
125	15	2.65
200	15	2.65
400	5	2.65
850	5	2.65
*		

Notes:

1. To change data just click a cell and type in the new value(s)
2. To add a row just go to the bottom of the table and start typing.
3. To delete a row, select the row by clicking on the first pointer column, then press delete
4. To sort the table click on one of the column headings

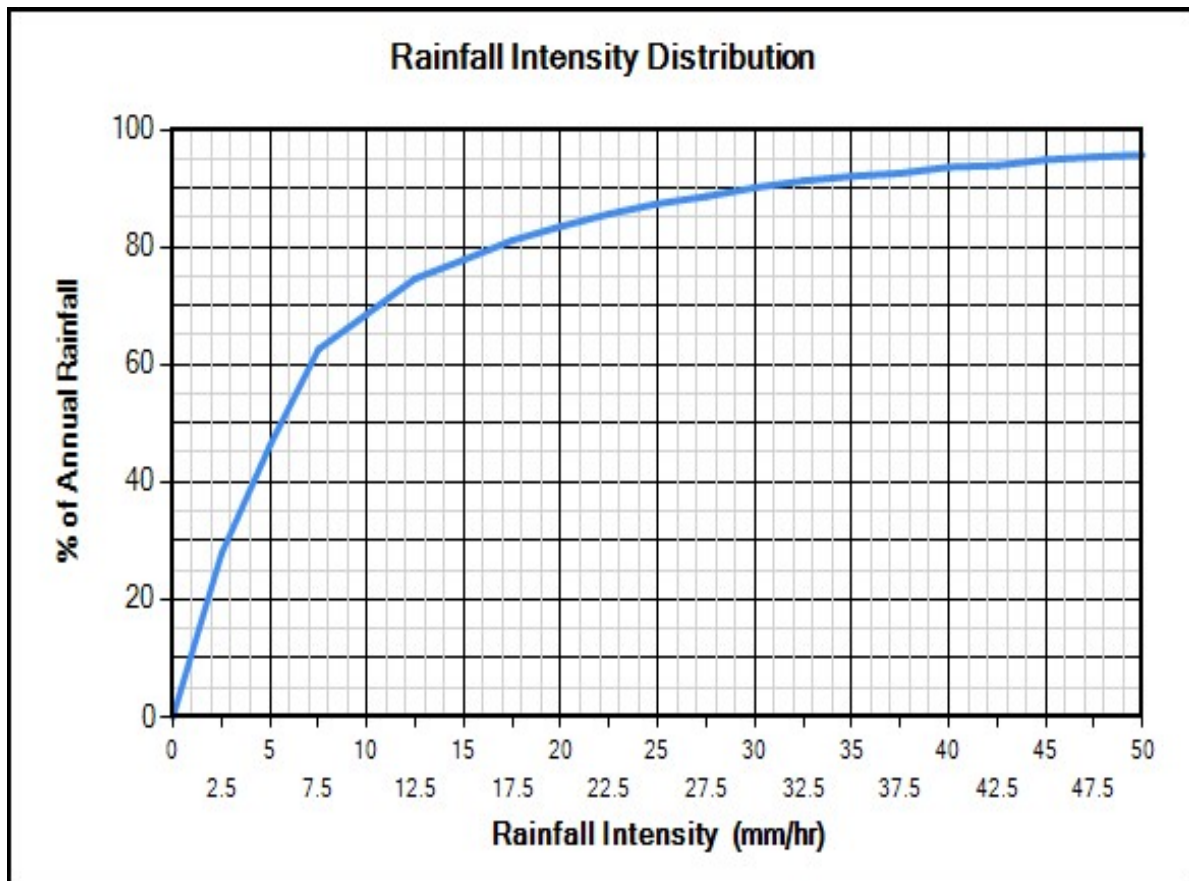
TSS Distributions

- ☒ ETV Canada
- ☐ Standard HDS Design
- ☐ Alden Laboratory
- ☐ OK110
- ☐ Toronto
- ☐ Ontario Fine
- ☐ ETV Canada (Calgary)
- ☐ Calgary Forebay
- ☐ Kitchener
- ☐ User Defined

Clear

You must select a particle size distribution for TSS to simulate TSS removal

Water Temp (C) 20



Site Physical Characteristics

Hydroworks Siphon Separator Sizing Program - HydroDome

File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

Catchment Parameters

Width (m) Imperv. Mannings n Maintenance Frequency (months)

Perv Mannings n

Slope (%) Imp. Depress. Storage (mm)

Perv. Depress. Storage (mm)

Daily Evaporation (mm/day)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	2.54	2.54	3.81	3.81	3.81	2.54	2.54	0	0

Infiltration

Max. Infiltration Rate (mm/hr)

Min. Infiltration Rate (mm/hr)

Infiltration Decay Rate (1/s)

Infiltration Regen. Rate (1/s)

Catch Basins

of Catch basins

Constant Baseflow

Roof Runoff (m3/s)

Resets all parameters excluding input catchment width.

Dimensions And Capacities

Hydroworks Siphon Separator Sizing Program - HydroDome

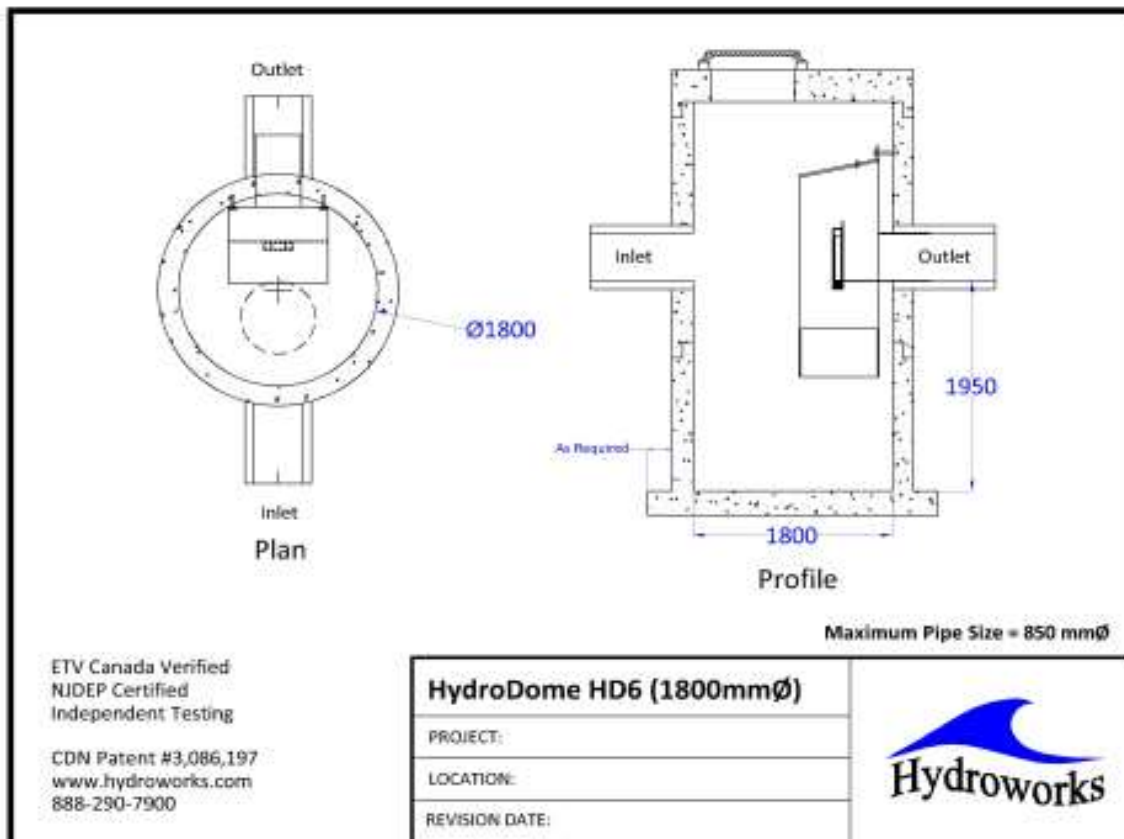
File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

Dimensions and Capacities					
Model	Diam. (m)	Depth (m)	Float. Vol. (L)	Sediment Vol. (m3)	Total Vol. (m3)
Unavailable	0.91	1.22	122	0.5	0.8
HD 4	1.22	1.37	267	0.9	1.6
HD 5	1.52	1.68	481	1.7	3
HD 6	1.83	1.98	804	2.9	5.2
HD 7	2.13	2.29	1220	4.6	8.2
HD 8	2.44	2.59	1865	6.8	12.1
HD 10	3.05	3.2	3621	13	23.4
HD 12	3.66	3.81	6233	22.2	40.1

Depth = Depth from outlet invert to inside bottom of tank

Generic HD 6 CAD Drawing



TSS Buildup And Washoff

Hydroworks Siphon Separator Sizing Program - HydroDome

File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

TSS Buildup

☐ Power Linear
☒ Exponential
☐ Michaelis-Menton
☐ No Buildup Required

TSS Washoff

☒ Power-Exponential
☐ Rating Curve (no upper limit)
☐ Rating Curve (limited to buildup)
☐ Event Mean Concentration

Street Sweeping

Efficiency (%)
Start Month
Stop Month
Frequency (days)
Available Fraction

Soil Erosion

☐ Add Erosion to TSS

Reset to Default Values

TSS Buildup Parameters

Limit (kg/ha)
Coeff (kg/ha)
Exponent

TSS Washoff Parameters

Coefficient
Exponent

TSS Buildup

☒ Based on Area
☐ Based on Curb Length

Upstream Quantity Storage

Hydroworks Siphon Separator Sizing Program - HydroDome

File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

Quantity Control Storage

	Storage (m3)	Discharge (m3/s)
▶	0	0
✱		

Clear

Other Parameters

Hydroworks Siphon Separator Sizing Program - HydroDome

File Product Units CAD Video Help

Main Dimensions Rainfall Site TSS PSD TSS Load Site Storage By-Pass Custom CAD Video Other

Scaling Law

- ☐ Peclet Scaling based on diameter x depth
- ☒ Peclet Scaling based on surface area (diameter x diameter)

HydroDome Design

- ☒ High Flow Weir
- ☐ Flow Control (parking lot storage)
Must add Quantity Storage Table

TSS Removal Extrapolation

- ☒ Extrapolate TSS Removal for flows lower than tested
- ☐ No TSS Removal extrapolation for flows lower than tested
- ☐ No TSS Removal extrapolation for lower flows or inter-event periods

Lab Testing

- ☐ Use NJDEP Lab Testing Results
- ☒ Use ETV Canada Lab Testing Results

TSS Removal Results

- ☒ Required TSS Removal
- ☐ Choose Model #

TSS Removal Required

TSS Removal (%) 80.0 Enter required TSS Removal (%)

Flagged Issues

If there is underground detention storage upstream of the HydroDome please contact Hydroworks to ensure it has been modeled correctly.

Hydroworks Sizing Program - Version 5.8.5

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1-800-290-7900

www.hydroworks.com



Hydroworks® HydroDome

Operations & Maintenance Manual

Version 1.0

Please call Hydroworks at 888-290-7900 or email us at support@hydroworks.com if you have any questions regarding the Inspection Checklist. Please email a copy of the completed checklist to Hydroworks at support@hydroworks.com for our records.

Introduction

The HydroDome (Figure 1) is a state-of-the-art hydrodynamic separator. HydroDome can be used for water quality and quantity flow control if desired.

Hydrodynamic separators remove solids, debris and lighter than water (oil, trash, floating debris) pollutants from stormwater. Hydrodynamic separators and other water quality measures are mandated by regulatory agencies (Town/City, State, Federal Government) to protect storm water quality from pollution generated by urban development (traffic, people) as part of new development permitting requirements.

As storm water treatment structures fill up with pollutants they become less and less effective in removing new pollution. Therefore, it is important that storm water treatment structures be maintained on a regular basis to ensure that they are operating at optimum performance. The HydroDome is no different in this regard and this manual has been assembled to provide the owner/operator with the necessary information to inspect and coordinate maintenance of their HydroDome.

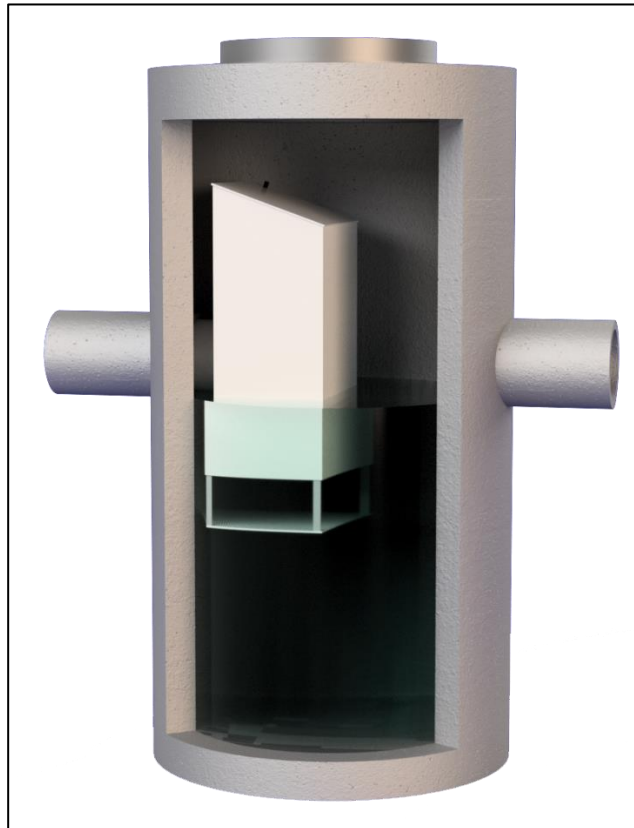


Figure 1. Hydroworks HydroDome

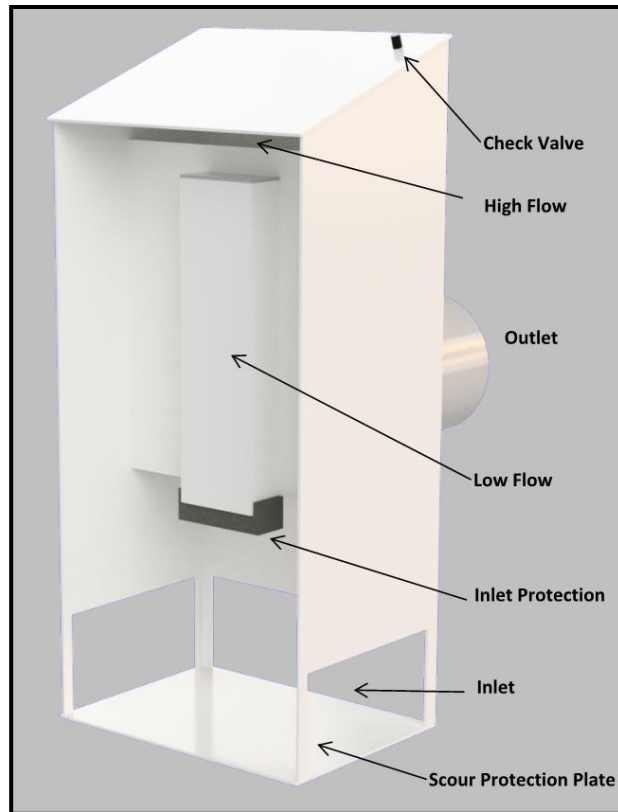


Figure 2 HydroDome Internal Components

Inspection

Procedure

Floatables

A visual inspection can be conducted for floatables by removing the cover/grate and looking down into the separator.

TSS/Sediment

Inspection for TSS build-up can be conducted using a Sludge Judge®, Core Pro®, AccuSludge® or equivalent sampling device that allows the measurement of the depth of TSS/sediment in the unit. These devices typically have a ball valve at the bottom of the tube that allows water and TSS to flow into the tube when lowering the tube into the unit. Once the unit touches the bottom of the device, it is quickly pulled upward such that the water and TSS in the tube forces the ball valve closed allowing the user to see a full core of water/TSS in the unit. Several readings (2 or 3) should be made at different locations of the structure to ensure that an accurate TSS depth measurement is recorded.

Operation

The water level during periods without rain should be near the outlet invert of the structure. If the water level remains near the top of the HydroDome this may suggest that there is an obstruction downstream of the HydroDome or that the inlet protection at the HydroDome may need to be cleaned.

Frequency

Construction Period

The HydroDome separator should be inspected every four weeks and after every large storm (over 0.5" (12.5 mm) of rain) during the construction period.

Post-Construction Period

The Hydroworks HydroDome separator should be inspected during the first year of operation for normal stabilized sites (grassed or paved areas). If the unit is subject to oil spills or runoff from unstabilized areas (storage piles, exposed soils), the HydroDome separator should be inspected more frequently (4 times per year). The initial annual inspection will indicate the required frequency of inspection and maintenance if the unit was maintained after the construction period.

Reporting

Reports should be prepared as part of each inspection and include the following information:

1. Date of inspection
2. GPS coordinates of Hydroworks unit
3. Time since last rainfall
4. Date of last inspection
5. Installation deficiencies (missing parts, incorrect installation of parts)
6. Structural deficiencies (concrete cracks, broken parts)
7. Operational deficiencies (leaks, elevated water level)
8. Presence of oil sheen or depth of oil layer
9. Estimate of depth/volume of floatables (trash, leaves) captured
10. Sediment depth measured
11. Recommendations for any repairs and/or maintenance for the unit
12. Estimation of time before maintenance is required if not required at time of inspection

A sample inspection checklist is provided at the end of this manual.



Maintenance

Procedure

The Hydroworks HydroDome unit is typically maintained using a vacuum truck. There are numerous companies that can maintain the HydroDome separator. Maintenance with a vacuum truck involves removing all of the water and sediment together. The water is then separated from the sediment on the truck or at the disposal facility.

The area around the HydroDome provides clear access to the bottom of the structure (Figure 3). This is the area where a vacuum hose would be lowered to clean the unit.

In instances where a vacuum truck is not available other maintenance methods (i.e. clamshell bucket) can be used, but they will be less effective. If a clamshell bucket is used the water must be decanted prior to cleaning since the sediment is under water and typically fine in nature.

The local municipality should be consulted for the allowable disposal options for both water and sediments prior to any maintenance operation. Once the water is decanted the sediment can be removed with the clamshell bucket.

Maintenance of a Hydroworks HydroDome unit will typically take 1 to 2 hours depending on size of unit and using a vacuum truck. Cleaning may take longer for other cleaning methods (i.e. clamshell bucket).

Inlet protection (Figure 2) in the form of a coarse foam screen is located at the inlet to the siphon opening in the HydroDome to ensure the opening does not become clogged. Although it is not anticipated that the inlet protection will have to be replaced on a regular basis since the inlet protection is protected by the submerged entrance to the HydroDome and is backflushed by the siphon after each storm, the inlet protection should be checked each time the HydroDome is inspected or maintained. The inlet protection is removable and should be rinsed with water to ensure any debris caught on the protection is discarded. Unless damaged, the inlet protection can be reinstalled. A replacement piece can be bought through Hydroworks and/or retail stores. Hydroworks can provide information on the inlet protection and where it can be bought. A sign that the inlet protection needs cleaning/replacement would be a water level near the crown of the outlet pipe in the structure during periods with no flow (i.e. unit does not drain down to the pipe invert).



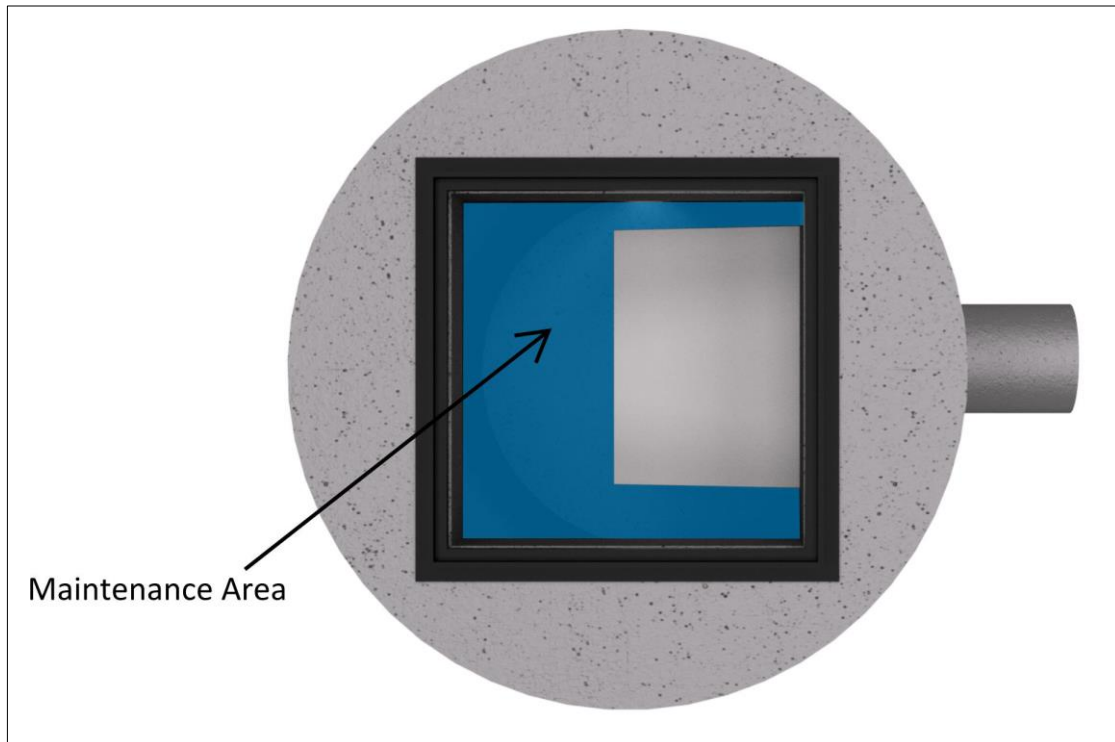


Figure 3. HydroDome Maintenance Access

Frequency

Construction Period

A HydroDome separator can fill with construction sediment quickly during the construction period. The HydroDome must be maintained during the construction period when the depth of TSS/sediment reaches 24" (600 mm). It must also be maintained during the construction period if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the area of the separator

The HydroDome separator should be maintained at the end of the construction period, prior to operation for the post-construction period.

Post-Construction Period

The maintenance for sediment accumulation is required if the depth of sediment is 1 ft or greater in separators with standard water (sump) depths (Table 1).

There will be designs with increased sediment storage based on specifications or site-specific criteria. Please contact Hydroworks at 888-290-7900 to inquire whether your HydroDome was designed with extra sump depth to extend the frequency of maintenance.



The HydroDome separator must also be maintained if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 75% of the water surface of the separator.

Table 1 Standard Dimensions for Hydroworks HydroDome Models

Model	Diameter ft (mm)	Maintenance Sediment Depth in (mm)
HD 3	3 (900)	12 (300)
HD 4	4 (1200)	12 (300)
HD 5	5 (1500)	12 (300)
HD 6	6 (1800)	12 (300)
HD 7	7 (2100)	12 (300)
HD 8	8 (2400)	12 (300)
HD 10	10 (3000)	12 (300)
HD 12	12 (3600)	12 (300)



HYDRODOME INSPECTION SHEET

Date _____
Date of Last Inspection _____

Site _____
City _____
State _____
Owner _____

GPS Coordinates _____

Date of last rainfall _____

Site Characteristics

	Yes	No
Soil erosion evident	<input type="checkbox"/>	<input type="checkbox"/>
Exposed material storage on site	<input type="checkbox"/>	<input type="checkbox"/>
Large exposure to leaf litter (lots of trees)	<input type="checkbox"/>	<input type="checkbox"/>
High traffic (vehicle) area	<input type="checkbox"/>	<input type="checkbox"/>

HydroDome

	Yes	No
Obstructions in the inlet	<input type="checkbox"/> *	<input type="checkbox"/>
Damage to HydroDome (cracked, broken, loose pieces)	<input type="checkbox"/> **	<input type="checkbox"/>
Improperly installed outlet pipe	<input type="checkbox"/> ***	<input type="checkbox"/>
Internal component damage (cracked, broken, loose pieces)	<input type="checkbox"/> **	<input type="checkbox"/>
Floating debris in the separator (oil, leaves, trash)	<input type="checkbox"/>	<input type="checkbox"/>
Large debris visible in the separator	<input type="checkbox"/> *	<input type="checkbox"/>
Concrete cracks/deficiencies	<input type="checkbox"/> ***	<input type="checkbox"/>
Exposed rebar	<input type="checkbox"/> **	<input type="checkbox"/>
Raised water level (water level close to top of HydroDome)	<input type="checkbox"/> ***	<input type="checkbox"/>
Water seepage (water level not at outlet pipe invert)	<input type="checkbox"/> ***	<input type="checkbox"/>
Water level depth below outlet pipe invert _____"		

Routine Measurements

Floating debris depth	< 0.5" (13mm)	<input type="checkbox"/>	>0.5" 13mm)	<input type="checkbox"/> *
Floating debris coverage	< 75% of surface area	<input type="checkbox"/>	> 75% surface area	<input type="checkbox"/> *
Sludge depth	< 12" (300mm)	<input type="checkbox"/>	> 12" (300mm)	<input type="checkbox"/> *

* Maintenance required
** Repairs required
*** Further investigation is required

Note: Inspections should not be made within 24 hours of a storm to allow the water to drain from the structure to assess a raised water level or water level seepage



Other Comments: _____

[illegible]



Hydroworks® HydroDome

One Year Limited Warranty

Hydroworks, LLC warrants, to the purchaser and subsequent owner(s) during the warranty period subject to the terms and conditions hereof, the Hydroworks HydroDome to be free from defects in material and workmanship under normal use and service, when properly installed, used, inspected and maintained in accordance with Hydroworks written instructions, for the period of the warranty. The standard warranty period is 1 year.

The warranty period begins once the separator has been manufactured and is available for delivery. Any components determined to be defective, either by failure or by inspection, in material and workmanship will be repaired, replaced or remanufactured at Hydroworks' option provided, however, that by doing so Hydroworks, LLC will not be obligated to replace an entire insert or concrete section, or the complete unit. This warranty does not cover shipping charges, damages, labor, any costs incurred to obtain access to the unit, any costs to repair/replace any surface treatment/cover after repair/replacement, or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to any material that has been disassembled or modified without prior approval of Hydroworks, LLC, that has been subjected to misuse, misapplication, neglect, alteration, accident or act of God, or that has not been installed, inspected, operated or maintained in accordance with Hydroworks, LLC instructions and is in lieu of all other warranties expressed or implied. Hydroworks, LLC does not authorize any representative or other person to expand or otherwise modify this limited warranty.

The owner shall provide Hydroworks, LLC with written notice of any alleged defect in material or workmanship including a detailed description of the alleged defect upon discovery of the defect. Hydroworks, LLC should be contacted at 136 Central Ave., Clark, NJ 07066 or any other address as supplied by Hydroworks, LLC. (888-290-7900).

This limited warranty is exclusive. There are no other warranties, express or implied, or merchantability or fitness for a particular purpose and none shall be created whether under the uniform commercial code, custom or usage in the industry or the course of dealings between the parties. Hydroworks, LLC will replace any goods that are defective under this warranty as the sole and exclusive remedy for breach of this warranty.

Subject to the foregoing, all conditions, warranties, terms, undertakings or liabilities (including liability as to negligence), expressed or implied, and howsoever arising, as to the condition, suitability, fitness, safety, or title to the Hydroworks HydroDome are hereby negated and excluded and Hydroworks, LLC gives and makes no such representation, warranty or undertaking except as expressly set forth herein. Under no circumstances shall Hydroworks, LLC be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the HydroDome, or the cost of other goods or services related to the purchase and installation of the HydroDome. For this Limited Warranty to apply, the HydroDome must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Hydroworks' written installation instructions.

Hydroworks, LLC expressly disclaims liability for special, consequential or incidental damages (even if it has been advised of the possibility of the same) or breach of expressed or implied warranty. Hydroworks, LLC shall not be liable for penalties or liquidated damages, including loss of production and profits; labor and materials; overhead costs; or other loss or expense incurred by the purchaser or any third party. Specifically excluded from limited warranty coverage are damages to the HydroDome arising from ordinary wear and tear; alteration, accident, misuse, abuse or neglect; improper maintenance, failure of the product due to improper installation of the concrete sections or improper sizing; or any other event not caused by Hydroworks, LLC. This limited warranty represents Hydroworks' sole liability to the purchaser for claims related to the HydroDome, whether the claim is based upon contract, tort, or other legal basis.

Verification Statement



Hydroworks HydroDome HD3 Oil-Grit Separator

Registration number: (V-2021-09-02)

Date of re-issue: 2023-05-17

Technology type	Oil-Grit Separator		
Application	Technology to remove oil, sediment, trash and debris from storm-water and snowmelt runoff as well as other pollutants that attach to sediment particles, such as nutrients and metals.		
Company	Hydroworks, LLC.		
Address	257 Cox St., Roselle, NJ 07203 USA	Phone	+1-888-290-7900
Website	https://hydroworks.com	E-mail	gbryant@hydroworks.com

Verified Performance Claims

The Hydroworks HydroDome HD3 Oil-Grit Separator (OGS) was tested by Alden Research Laboratory, Holden, Massachusetts, USA in 2021. The performance test results were verified by 'The Sir Sandford Fleming College of Applied Arts and Technology's Centre for Advancement of Water and Wastewater Technologies' (CAWT) following the requirements of ISO 14034:2016 and the VerifiGlobal Performance Verification Protocol. The following performance claims were verified:

Sediment removal test: The Hydroworks HydroDome HD3 OGS device, with a false floor set to 50% of the manufacturer's recommended maximum sediment storage depth and a constant influent test sediment concentration of 200 mg/L and particle size distribution of 1-1000 µm, removed 83.9, 77.6, 68.4, 66.9, 59.4, 52.4, and 46.0 percent of influent sediment by mass at surface loading rates of 40, 80, 200, 400, 600, 1000, and 1400 L/min/m² respectively.

Scour test: The Hydroworks HydroDome HD3 OGS device with 15.2 cm (6 inch) of test sediment preloaded onto a false floor reaching 50% of the manufacturer's recommended maximum sediment sump storage depth, generated corrected effluent sediment concentrations on average of 0.54, 0.70, 0.0, 0.0, and 0.11 mg/L at 5-min duration surface loading rates of 200, 800, 1400, 2000, and 2600 L/min/m², respectively.

Light liquid re-entrainment test: The Hydroworks HydroDome HD3 OGS with surrogate low-density polyethylene beads preloaded within the inner chamber, representing a floating light-liquid volume equal to a depth of 50.8 mm (2 inch) over the sedimentation area, retained 100, 100, 100, 100, and 99.7 percent of loaded beads by mass during the 5-minute duration surface loading rates of 200, 800, 1400, 2000, and 2600 L/min/m², respectively.

The above verified claims can be applied to other units smaller or larger than the tested unit, provided that the untested units meet the scaling rule specified in the Procedure for Laboratory Testing of Oil Grit Separators (Version 3.0, June 2014)

Hydroworks HydroDome HD3 Oil Grit Separator Verification Statement

Technology Application

HydroDome is a hydrodynamic separator that provides benefits for both water quality and water quantity (i.e., flow control). HydroDome combines the function of separator, hood, and flow control with active storage to provide a multi-purpose stormwater management solution in one structure. HydroDome also functions as an oil separator due to the submerged inlet design and the fact that the design raises the water level with flow to maximize the distance between any floatables (oil, trash) and the discharge entrance to the HydroDome.

Technology Description

HydroDome comes complete and slides into the outlet pipe from a drainage structure and is secured to the wall with anchor bolts. It consists of a siphon with flow control, that regulates the water level in the structure and the flow rate in the outflow, and an optional high flow weir. A schematic of the Hydroworks HydroDome OGS is shown in Figure 1.

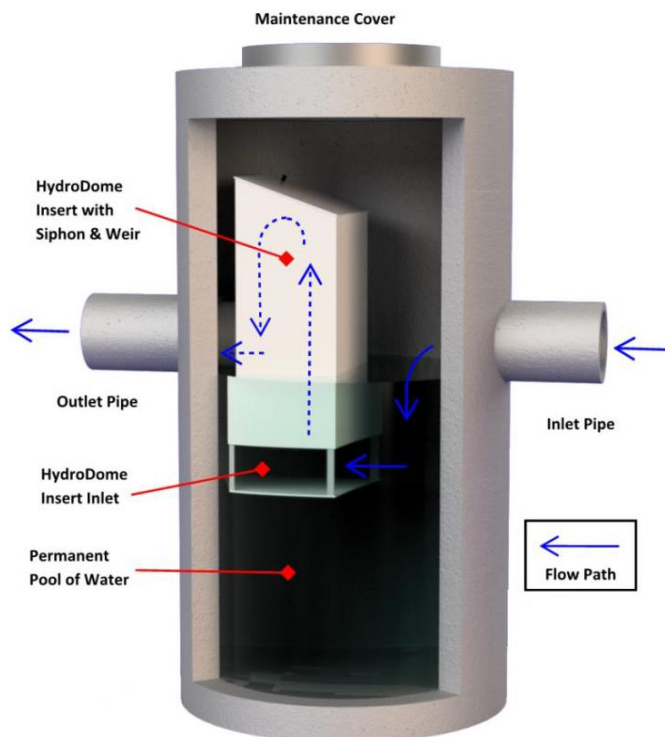


Figure 1: Schematic of the Hydroworks HydroDome Oil-Grit Separator

The siphon raises the water level to a pre-determined level without allowing water to exit the structure. The raised water level provides:

- Greater time for initial total suspended solids (TSS) removal and for floatables to prevent re-entrainment in the flow,
- Additional dilution to reduce effluent concentrations of any pollutants, and
- A greater volume, or buffer, of water to prevent scour of previously settled solids.

Water flows into the device through horizontal openings at the bottom of the HydroDome. Water then must travel upwards through the siphon. A coarse foam screen is located at the entrance to the siphon inlet to provide secondary protection from its clogging (the outer housing of the HydroDome and submerged inlet provide primary protection). Once the water level reaches a pre-determined height, the siphon begins to engage, and water flows out of the structure downstream. The siphon flow is controlled by an orifice, whose size can be changed to provide the desired flow control. The water level continues to rise or begins to lower depending on the rate of flow from the orifice compared to the inflow of water to the structure.

Hydroworks HydroDome HD3 Oil Grit Separator Verification Statement

An optional weir above the siphon provides a high flow path to prevent the system from surcharging. In cases where parking lot storage is desired, there would not be a high flow weir. A scour protection plate minimizes scour by preventing upward velocities/flow from the structure floor during periods of peak flow. Therefore, HydroDome combines the function of separator, hood, and flow control with active storage to provide a multi-purpose stormwater management solution in one structure.

Description of Test Procedure

For the purposes of this verification, a Hydroworks HydroDome 3-ft diameter (HD3) stormwater treatment unit was tested. The HD3 test unit was a full-scale 3 ft (0.91 m) diameter tank with an internal treatment hood that included a high flow weir. The test tank was fabricated from plastic and included 18-inch (457 mm) diameter inlet and outlet pipes, oriented along the center-line of the tank. The pipe inverts were located 48 inches (1.22 m) above the sump floor and were set with 1% slopes. The 100% and 50% sediment sump storage depths were 12 inches (0.305 m) and 6 inches (0.152 m), respectively. The effective treatment sedimentation area was 7.07 ft² (0.656 m²).

The test data and results for this verification were obtained from independent testing conducted at Alden Research Laboratory in accordance with the *Procedure for Laboratory Testing of Oil-Grit Separators (Version 3.0, June 2014)*¹. Use of this procedure is intended to ensure that technologies in this category are subjected to stringent requirements in generating verifiable performance test data.

The verification plan was followed with one minor variance from the *Procedure*. This variance includes the required minimum amount of test sediment to be fed into the test unit for each tested surface loading rate (SLR). Although the *Procedure* requires a minimum of 11.3 kg of test sediment, during the 40 L/min/m² SLR test, only 6.45 kg was fed into the unit, which is 4.85 kg less than the specified minimum. This variance to the *Procedure* was agreed to by Toronto and Region Conservation Authority (TRCA), the author of the *Procedure*, based on previous conversations with Alden Labs, noting that the length of time to conduct the test with 11.3 kg of sediment at 40 L/min/m² would be over 36 hours.

Verification Results

CAWT verified the performance test data and other information pertaining to the HydroDome HD3 Oil-Grit Separator. A Verification Plan was prepared to guide the verification process based on the requirements of ISO 14034:2016 and the VerifiGlobal Performance Verification Protocol.

The test sediment consisted of ground silica (1 – 1000 micron) with a specific gravity of 2.65, uniformly mixed to meet the particle size distribution specified in the testing procedure.

The “*Procedure for Laboratory Testing of Oil Grit Separators*” (TRCA, 2014) requires that the three-sample average of the test sediment particle size distribution (PSD) meet the specified PSD. The allowable tolerance of 6% variation from the specified PSD curve was met at each discrete particle size tested and the d50 was finer than 75 µm.

Comparison of the individual sample and average test sediment PSD to the specified PSD is shown in Figure 2. This figure indicates that the test sediment used for the removal and scour tests met the above-mentioned criteria. The median particle size was 64 µm.

Samples from test sediment batches used for each run met the specified PSD within the required tolerance thresholds.

The capacity of the HydroDome HD3 device to retain sediment was determined at seven surface loading rates using the modified mass balance method. This method involved measuring the mass and particle size distribution of the injected and retained sediment for each test run.

¹ The *Procedure for Laboratory Testing of Oil-Grit Separators (Version 3.0, June 2014)* was originally prepared by the Toronto and Region Conservation Authority (TRCA) in association with a 31 member advisory committee from various stakeholder groups.

Hydroworks HydroDome HD3 Oil Grit Separator Verification Statement

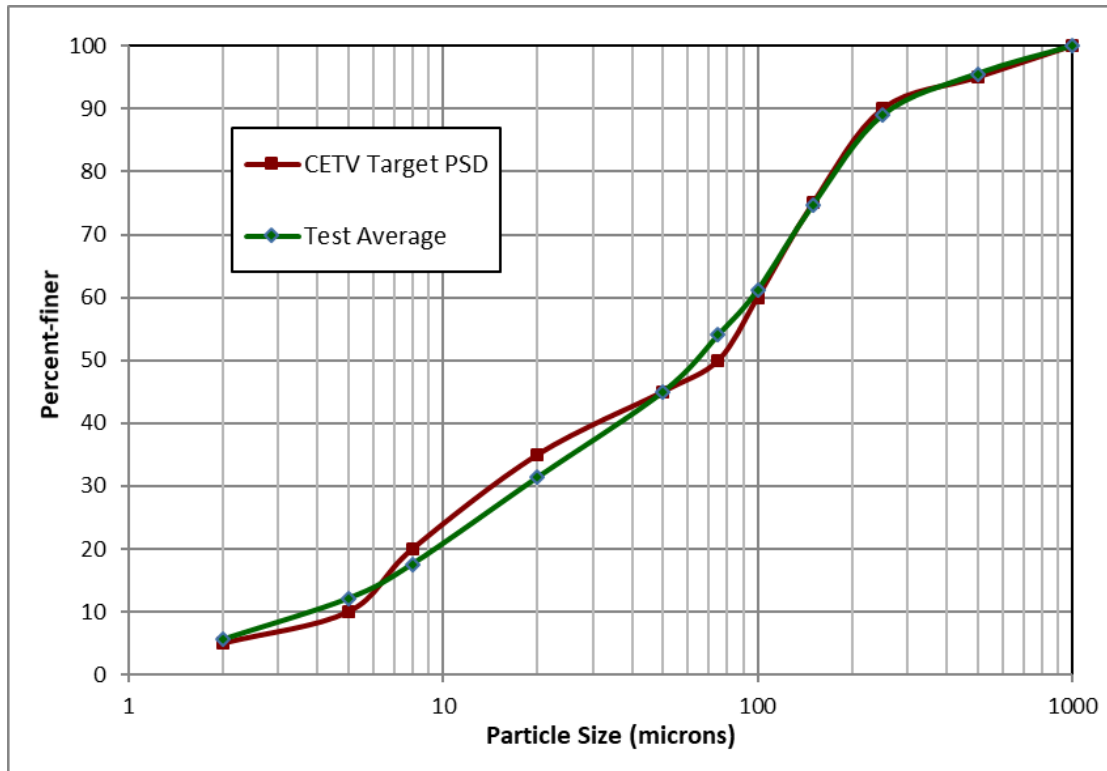


Figure 2 - Average particle size distribution (PSD) of the test sediment used for the sediment removal and scour test compared to the specified PSD

Performance was evaluated with a false floor simulating the technology filled to 50% of the manufacturer's recommended maximum sediment storage depth. The test was carried out with clean water that maintained a sediment concentration below 20 mg/L. Based on these conditions, removal efficiencies for individual particle size classes and for the test sediment, as a whole, were determined for each of the tested surface loading rates (Table 1).

In some instances, the removal efficiencies were above 100% for certain particle size fractions. These discrepancies are not unique to any one test laboratory and are attributed to errors relating to the blending of sediment, collection of representative samples for laboratory submission, and laboratory analysis of PSD. Due to these errors, caution should be exercised in applying the removal efficiencies by particle size fraction for the purposes of sizing the tested device (see Bulletin # CETV 2016-11-0001).

Particle Range (μm)	40 L/min/m ²	80 L/min/m ²	200 L/min/m ²	400 L/min/m ²	600 L/min/m ²	1000 L/min/m ²	1400 L/min/m ²	Average
>500	100%	125%	140%	140%	200%	200%	180%	155%
250-500	114%	129%	150%	143%	143%	183%	217%	154%
150-250	150%	136%	157%	153%	179%	221%	220%	174%
100-150	116%	126%	129%	148%	157%	162%	139%	140%
75-100	136%	155%	178%	190%	180%	170%	133%	163%
50-75	91%	100%	128%	270%	126%	82%	75%	125%
20-50	111%	97%	93%	51%	58%	42%	73%	75%
8-20	75%	79%	38%	34%	29%	17%	26%	42%
5-8	53%	34%	16%	7%	0%	0%	23%	19%
2-5	37%	29%	14%	0%	0%	0%	1%	12%

Table 1 - Removal efficiencies (%) of the HydroDome HD3 Oil-Grit Separator for individual particle size classes at specified surface loading rates

Hydroworks HydroDome HD3 Oil Grit Separator Verification Statement

Figure 3 compares the particle size distribution (PSD) of the three-sample average of the test sediment to the PSD of the sediment retained by the HydroDome HD3 OGS device at each of the tested surface loading rates. As expected, the capture efficiency for fine particles was generally found to decrease as surface loading rates increased, particularly in the 400 to 1400 L/min/m² range.

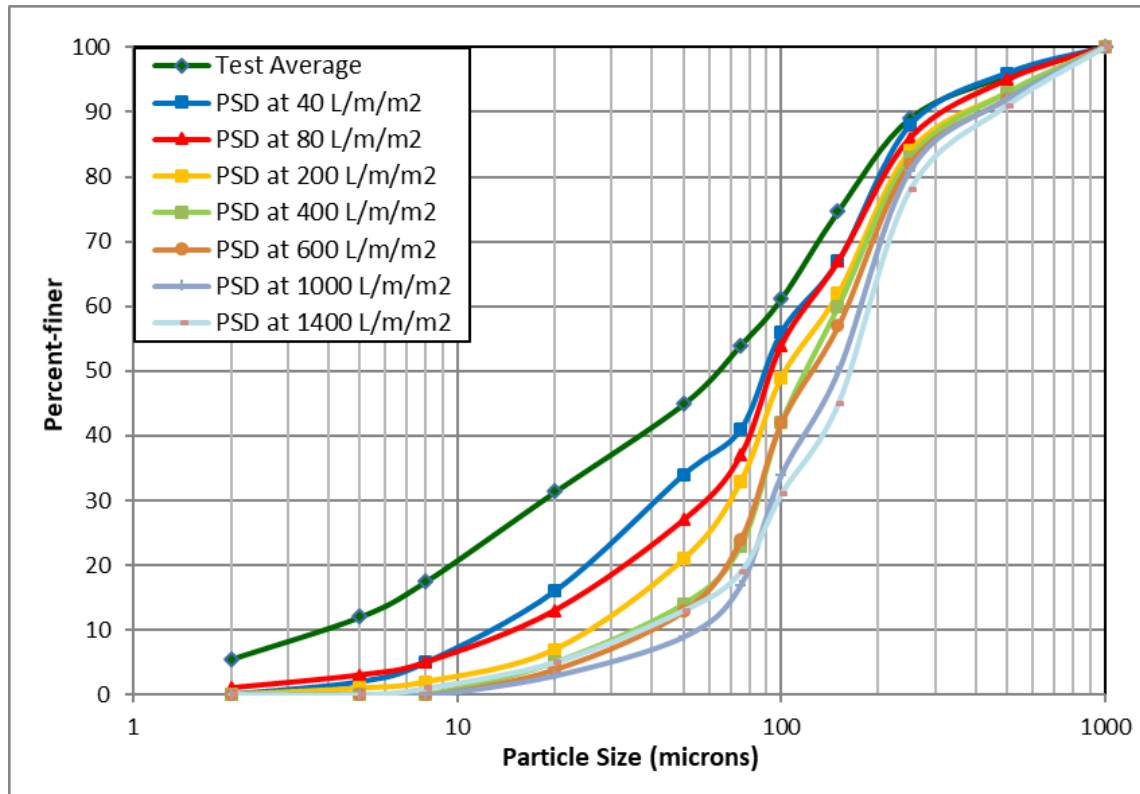


Figure 3 - Particle size distribution of sediment retained in the HydroDome HD3 Oil-Grit Separator in relation to the injected test sediment average

Table 2 shows the results of the sediment scour and re-suspension test for the HydroDome HD3 Oil-Grit Separator unit. The scour test involved preloading 15.2 cm (6 inches) of fresh test sediment into the sedimentation sump of the device. The sediment was placed on a false floor to mimic a device filled to 50% of the maximum recommended sediment storage depth.

Measured Concentration at Each surface Loading Rate					
Effluent Sample No.	200 L/min/m ²	800 L/min/m ²	1400 L/min/m ²	2000 L/min/m ²	2600 L/min/m ²
1	1.2	0.3	0.0	0.0	0.0
2	0.7	0.0	0.0	0.0	0.0
3	0.5	0.0	0.0	0.0	0.5
4	0.1	3.2	0.0	0.0	0.0
5	0.3	0.0	0.0	0.0	0.0
Average	0.5	0.7	0.0	0.0	0.1

Table 2 - Scour test adjusted effluent sediment concentration at each surface loading rate

Hydroworks HydroDome HD3 Oil Grit Separator Verification Statement

Clean water was run through the device at five surface loading rates over a 30-minute period. Each flow rate was maintained for 5 minutes with a one-minute transition time between flow rates. Effluent samples were collected at one minute sampling intervals and analyzed for suspended solids concentration (SSC) and PSD by recognized methods. The effluent samples were subsequently adjusted based on the background concentration of the influent water.

Results showed average adjusted effluent sediment concentrations below 0.7 mg/L at all surface loading rates. The magnitude of scour is dependent on the internal flow patterns (velocity and turbulence) and water volume within the unit, which is related to the depth below the inlet and outlet. The HD3 possessed a large water volume in the sump and consequently, low velocity, which prevented incipient motion of the sediment of sufficient magnitude for scour to occur.

The average measured effluent scour sediment concentrations (adjusted for background) for each tested SLR were not adjusted for particle size based on the D5 of particles captured for the 40 L/min/m² removal efficiency test since there was negligible scour.

The capacity of the device to retain light liquid was determined at five surface loading rates in a range between 200 and 2600 L/min/m² using low-density polyethylene beads, Dow Chemical Dowlex™ 2517, with a density of 0.917 g/cm³. This material was specified as the acceptable surrogate to represent floating liquid for a qualitative assessment of liquid behaviour during operation.

Performance was evaluated with a total of 32.8 litres (18.94 kg) of pellets preloaded into the treatment vault by introducing them into the crown of the influent pipe, to a volume equal to a depth of 50.8 mm (2 inch) over the sedimentation area of 0.66 m². The effluent was collected in flow-designated nets to allow for quantification of any re-entrained pellets for each test SLR. The collected pellets were dried and the mass of collected pellets was quantified for each SLR, as well as the overall test.

The recorded average flow data, as well as quantified volume and mass of collected pellets for each target SLR and overall test, is shown in Table 3. The maximum re-entrainment of 0.3% occurred at 2600 L/min/m². The total retention rate was 99.7%.

Light-liquid Re-Suspension Data					Starting Volume	(Liters)	Starting Mass	(grams)
						32.8		18938
Action	Time Stamp (minutes)	Meter	Target Flow (L/min/m ²)	Recorded Flow (L/min/m ²)	COV	Collected Mass (grams)	Retained Mass	
Start D.A. Recording	0.0							
Flow set	1.0	4"	200	207	0.057	0	100.0%	
Stop Collection	6.0			3.4%				
Flow set	7.0	4"	800	826	0.008	0	100.0%	
Stop Collection	12.0			3.2%				
Flow set	13.0	6"	1400	1407	0.009	0	100.0%	
Stop Collection	18.0			0.5%				
Flow set	19.0	6"	2000	2022	0.004	0.3	100.0%	
Stop Collection	24.0			1.1%				
Flow set	25.0	6"	2600	2599	0.003	54.9	99.7%	
Stop Collection	30.0			-0.1%				
Hydroworks HD 3					Interim Collection Net		1.3	
					Total		56.5	99.7%

Table 3 - Light-liquid recorded flow and re-entrainment data

Quality assurance

Performance testing and verification of the HydroDome HD3 Oil Grit Separator were performed in accordance with the requirements of ISO 14034:2016 and the VerifiGlobal Performance Verification Protocol. The verifier, CAWT, has confirmed that quality assurance requirements were addressed throughout the performance testing process and in the generation of performance test results. This includes reviewing all data sheets and data downloads, as well as overall management of the test system, quality control and data integrity.

In addition, QA/QC measures are documented in the “*Procedure for Laboratory Testing of Oil-Grit Separators*” (TRCA, 2014) to ensure results are accurate and precise, and that testing conducted by multiple vendors of the same category of technology are employing the same test method. The QA/QC measures include the use of certified laboratories, established test methods, calibration of equipment, tolerance limits for results variation, data checks during testing, and stringent documentation requirements.

Table 4 provides a summary of the acceptance criteria for particle size distribution, solids concentration in test water, water temperature, flow measurement equipment, flow rate variation, sediment feed, sediment moisture content, and sample analysis.

QC Parameter	Acceptance Criteria
Particle Size Distribution	Analyzed by a certified laboratory in accordance with ASTM D422-63(2007)e1. Percentages for size ranges vary by <6%, median < 75 um. PSD in water determined by ASTM D422-63(2007)e1 upon prior drying in designated pre-weighed nonferrous trays in compliance with ASTM D4959-07.
Solids concentration in test water	Suspended solids concentration (SSC) concentration of test water of less than 20 mg/L.
Water temperature	Temperature of water less than 25°C.
Flow measurement equipment	Equipment calibration reports submitted to confirm that reported flow rate match actual flow rate. Flow rates from calibrated flow instruments recorded at no longer than 30 second intervals over the duration of the test.
Flow rate variation	Flow rates have COV < 0.04; maintained with $\pm 10\%$ of target flow rate.
Sediment feed	TSS concentration target = 200 mg/L with a tolerance limit of ± 25 mg/L. Injection location is 5 pipe diameters upstream of the inlet to the device, as per the <i>Procedure</i> . Six calibration samples taken over duration of each test run. The allowed Coefficient of Variance (COV) for the measured samples was 0.10.
Sediment moisture content	Determined by ASTM D4959-07 “Standard Test Method for Determination of Water (Moisture) Content of Soil By Direct Heating”.
Sample analysis	Conducted by qualified laboratories using standard methods and meeting the requirements of ISO.

Table 4. Validation of QA/QC procedures

Summary of Verification Results and Verified Performance Claim for Hydroworks HydroDome HD3 Oil-Grit Separator (OGS)

In summary, the HydroDome HD3 Oil Grit Separator is designed to remove oil, sediment, trash and debris from stormwater and snowmelt runoff as well as other pollutants that attach to sediment particles, such as nutrients and metals. Verification of performance claims for the Hydroworks HydroDome HD3 Oil Grit Separator was conducted by CAWT based on independent third-party performance test results provided by Alden Research Laboratory, as well as additional information provided by Hydroworks.

Table 5 summarizes the verification results in relation to the technology performance parameters that were identified to determine the efficacy of the HydroDome HD3 Oil Grit Separator. The claims stated in Table 5 were verified using the modified mass balance method for sediment removal by measuring the total mass of sediment entering the unit and retained by the unit at prescribed surface loading rates. Effluent sampling was conducted every minute over a 30-minute duration for the scour test, using approved sampling methods as per the verification procedure. The light liquid re-entrainment test was conducted using a mass balance methodology which accounted for all the beads input, captured, and scoured from the separator.

Parameters	Verified Claims	Accuracy
Sediment Removal	During the sediment removal test, the Hydroworks HydroDome HD3 OGS device, with a false floor set to 50% of the manufacturer's recommended maximum sediment storage depth and a constant influent test sediment concentration of 200 mg/L and particle size distribution of 1-1000 µm, removed 83.9, 77.6, 68.4, 66.9, 59.4, 52.4, and 46.0 percent of influent sediment by mass at surface loading rates of 40, 80, 200, 400, 600, 1000, and 1400 L/min/m ² respectively	The sediment removal characteristics were quantified at various surface loading rates (SLRs), including particle size fractions, using a modified mass balance methodology. Performance results are presented as the true values.
Sediment Scour	During the scour test, the Hydroworks HydroDome HD3 OGS device with 15.2 cm (6 inch) of test sediment preloaded onto a false floor reaching 50% of the manufacturer's recommended maximum sediment sump storage depth, generated corrected effluent sediment concentrations on average of 0.54, 0.70, 0.0, 0.0, and 0.11 mg/L at 5-min duration surface loading rates of 200, 800, 1400, 2000, and 2600 L/min/m ² , respectively.	5 samples analyzed for sediment (n=5) at each flow rate There was negligible scour once corrected for background concentrations.
Light Liquid Re-entrainment	During the light-liquid re-entrainment test, the Hydroworks HydroDome HD3 OGS with surrogate low-density polyethylene beads preloaded within the inner chamber, representing a floating light-liquid volume equal to a depth of 50.8 mm (2 inch) over the sedimentation area, retained 100, 100, 100, 100, and 99.7 percent of loaded beads by mass during the 5-minute duration surface loading rates of 200, 800, 1400, 2000, and 2600 L/min/m ² , respectively.	Performance results are presented as the true values. Under the "Procedure for Laboratory Testing of Oil-Grit Separators" (TRCA, 2014), the light-liquid re-entrainment test is also not amenable to statistical analysis as the tests were only conducted once at various flow rates following a mass balance procedure.


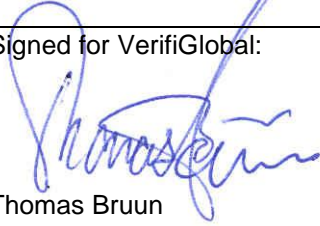

Table 5. Verified performance claims

What is ISO 14034?

The purpose of environmental technology verification is to provide a credible and impartial account of the performance of environmental technologies. Environmental technology verification is based on a number of principles to ensure that verifications are performed and reported accurately, clearly, unambiguously and objectively. The International Organization for Standardization (ISO) standard for environmental technology verification (ETV) is ISO 14034, which was published in November 2016.

Benefits of ETV

ETV contributes to protection and conservation of the environment by promoting and facilitating market uptake of innovative environmental technologies, especially those that perform better than relevant alternatives. ETV is particularly applicable to those environmental technologies whose innovative features or performance cannot be fully assessed using existing standards. Through the provision of objective evidence, ETV provides an independent and impartial confirmation of the performance of an environmental technology based on reliable test data. ETV aims to strengthen the credibility of new, innovative technologies by supporting informed decision-making among interested parties.

For more information on the HydroDome Oil Grit Separator, contact:	For more information on VerifiGlobal, contact:
Hydroworks LLC. 257 Cox St., Roselle, NJ 07203 USA T: +1-888-290-7900 E: gbryant@hydroworks.com W: https://hydroworks.com	VerifiGlobal c/o ETA-Danmark A/S Göteborg Plads 1, DK-2150 Nordhaven T: +45 7224 5900 E: info@verifiglobal.com W: www.verifiglobal.com
Signed for Hydroworks:  Graham Bryant Owner	Signed for VerifiGlobal:  Thomas Bruun Managing Director  John Neate Managing Director

NOTICE: Verifications are based on an evaluation of technology performance under specific, predetermined operational conditions and parameters and the appropriate quality assurance procedures. VerifiGlobal and the Verification Expert, CAWT, make no expressed or implied warranties as to the performance of the technology and do not certify that a technology will always operate as verified. The end user is solely responsible for complying with any and all applicable regulatory requirements. Mention of commercial product names does not imply endorsement.

VerifiGlobal and the Verification Expert, CAWT, provide the verification services solely on the basis of the information supplied by the applicant or vendor and assume no liability thereafter. The responsibility for the information supplied remains solely with the applicant or vendor and the liability for the purchase, installation, and operation (whether consequential or otherwise) is not transferred to any other party as a result of the verification.

APPENDIX D – SWM Recommendations Parcels A, B, C, D

Stormwater Management Best Practices and Recommendations

Future SWM Recommendations Parcels A, B, C, D

Stormwater runoff generally increases with the addition of impervious surfaces to a given area as rainfall is no longer able to infiltrate the native soils directly but will run overland towards whatever outlet point is lowest. Due to the decrease in infiltration to the soil both peak runoff rates, and runoff volumes typically increase with the introduction of impervious surfaces such as asphalt or concrete.

In addition, increases in impervious surfaces tend to degrade stormwater quality as oils and chemicals (often from vehicles) sit on the surface of the impervious areas and are washed off towards the receiving outlet during rainfall events.

To mitigate the increases in peak runoff rates and volume, and to counter the degradation of water quality stormwater management measures are usually necessary to be implemented together with site improvements that increase imperviousness.

In the case of Parcels A, B, C and D, as noted within the body of the report, there is potential for use / re-use of areas of these parcels as parking. Although they are all functional areas which can be used for parking under existing conditions, with the increased tenancy of the local buildings it is likely that in the future improvements to the parking areas, such as the implementation of curbs and asphalt may be contemplated.

Several documents are available for reference for the future engineers who will be designing the adjacent parking areas, including:

- Norfolk County Design Criteria
- MECP Stormwater Management Planning and Design Manual
- Long Point Region Conservation Authority Policies and Guidelines
- MECP Low Impact Development Stormwater Management Guidance Manual (Draft)

Note that the Ministry of the Environment, Conservation and Parks LID Stormwater management guidance Manual is still under review by the MECP, however the draft manual contains helpful information and guidance.

Additional resources relating to the use of sustainable low-impact development stormwater management measures can also be found via the “Sustainable Technologies” web portal found here → <https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/>

It is expected that any parking areas improvements would be subject to Norfolk County’s Site Plan process. At that time feedback from the County and the Long Point Region Conservation Authority can be provided to the proponent / developer.

Stormwater management should be provided including stormwater quantity control, to limit peak runoff rates and volumes to pre-development levels; and stormwater quality controls to provide Enhanced level quality protection with 80% long term total suspended solids removal.

Consideration should be given to low-impact development (LID) stormwater features, subject to site constraints including space restrictions, underlying soil types and economic feasibility.

FOTENN Norfolk County Transportation Brief



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PN: 2024-115

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Appendix A – Email Correspondence – Traffic Data

Appendix B – Preliminary List of Permitted Uses

1 Introduction

CGH Transportation has been retained to undertake transportation consulting services to support the Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) for the proposed development lands on five parcels of land designated as Areas A to E. The scope of this Transportation Brief has been confirmed with the County of Norfolk.

The subject lands are currently vacant and owned by the County. Area A (73 Victoria Street) is currently an operations yard with a small storage building located on the northeast corner of Victoria Street at Pond Street. Area B (129 Pond Street) is a park operations yard with a storage building. Area C (71, 87, 89, 95, & 97 Pond Street) was a former senior's centre that was also previously leased out to various recreational uses, and now vacant since November 2021. Area D is a municipal public parking lot with no municipal address. Area E (86 Argyle Street) is a municipal parking lot with a small storage building. These areas are currently zoned as Hazard Lands & Open Space (Area A to D) and Parks & Open Space (Area E).

The proposed changes include a rezoning of Areas A to C to the Central Business District (CBD) Non-Residential Uses, with Area D serving as parking for those areas. The existing accesses and gross floor area (GFA) will be maintained. Area E will be rezoned as a Mixed-Use, Urban Residential, and Residential Six (R6). There are two proposed concept plans for either a mixed-use residential with ground floor commercial, or an exclusively residential development. The existing access will be relocated approximately 16 metres to the west (measured from the centreline of the access) to better align with the west access of 85 Argyle Street. The site access will form a future four-legged intersection on Argyle Street.

For the Area E parcel, there will be a OPA from Open Space to Urban Residential, and a ZBA from Open Space to Residential 6 (R6). The ZBA will also include special provisions for ground-floor non-residential uses (including day care nursery, laundromat, merchandise service shop, personal services shop, and restaurant) and hotel. The mixed-use concept for Area E, Plan 1 (P1), consists of a five-storey mixed-use building with 38 apartment units and 420 square meters (4,521 square feet) of ground floor retail. The concept plan for P1 indicates a parking supply of 81 spaces, which are allocated as 57 residential spaces, 14 retail spaces, and 10 public parking spaces. The residential only concept for Area E, Plan 2 (P2), consists of a six-storey residential building with 47 apartment units. The concept plan for P2 indicates a parking supply of 81 spaces, which are allocated as 71 residential spaces and 10 public parking spaces. In both concepts P1 and P2, 61 parking spaces will be provided at-grade and 20 spaces of the parking supply will be provided below-grade.

Figure 1 illustrates the study area context. Figure 2 illustrates concept plan one for Area E. Figure 3 illustrates concept plan two for Area E.

Figure 1: Site Context



Excerpt from Norfolk County Community Web Map at (<https://opendata.norfolkcounty.ca/>) Accessed on: October 22nd, 2024

Figure 2: Area E Concept Plan One (P1)



86 ARGYLE STREET SIMCOE Concept Plan



DEVELOPMENT STATISTICS

SITE AREA	5,356m ²	
BUILDING FOOTPRINT:	800m ²	
GFA (GROSS)	Retail 420m ²	Residential 3,356m ²

RESIDENTIAL UNITS
Apartment: 38
Assumes an 85% efficiency, 75m²/unit (807ft²/unit)

PARKING PROVIDED:	81-spaces
Residential (1.5 spaces/unit)	57-spaces
Retail (1 space/30 sm)	14-spaces
Public Parking (Retained)	10-spaces

NOTES

- Assumes typical Residential floor height of 3.0m. Assumes Retail Ground floor height of 4.5m.
- Assumes 85% efficiency and 70m² (754ft²) unit size is used to calculate approximate total number of units.
- Assumes 1.5 spaces / unit (including 0.25 spaces / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade). 10 public parking spaces provided/retained.
- The base plan (lot lines, existing roads and surrounding areas) is based on the topographic survey (23-3682) and aerial images (Norfolk County Web Map). The site area is approximate and all dimensions need to be confirmed by a legal survey.

1	CONCEPT PLAN	2024.10.23	ET
No.	REVISION	DATE	BY

CLIENT
NORFOLK COUNTY

FOTENN

Planning + Design

OTTAWA: 396 Cooper Street, Suite 300, Ottawa ON K2P 2H7 613.730.5709	KINGSTON: 4 Cataract St., Suite 315, Kingston ON K7K 1Z7 613.542.5454	TORONTO: 174 Spadina Ave., Suite 304, Toronto ON M5T 2C2 416.789.4530
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DESIGNED	ET
REVIEWED	ET
DATE	2024.10.23

P1

Figure 3: Area E Concept Plan Two (P2)



86 ARGYLE STREET SIMCOE Concept Plan



DEVELOPMENT STATISTICS

SITE AREA	5,356m ²	
BUILDING FOOTPRINT:	800m ²	
GFA (GROSS)	Retail 0m ²	Residential 4,352m ²

RESIDENTIAL UNITS
Apartment: 47
Assumes an 85% efficiency, 78m ² /unit (840ft ² /unit)

PARKING PROVIDED:	81-spaces
Residential (1.5 spaces/unit)	71-spaces
Retail (1 space/30 sm)	0-spaces
Public Parking (Retained)	10-spaces

NOTES

- Assumes typical Residential floor height of 3.0m. Assumes Retail Ground floor height of 4.5m.
- Assumes 85% efficiency and 74m² (800ft²) unit size is used to calculate approximate total number of units.
- Assumes 1.5 spaces / unit (including 0.25 space / unit visitors). Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade).
- Assumes 1.5 spaces / unit (including 0.25 spaces / unit visitors). Assumes 1 space / 30m² retail. Approximately 81-spaces (provided), (61-spaces above-grade, 20-spaces below-grade). 10 public parking spaces provided/retained.
- The base plan (lot lines, existing roads and surrounding areas) is based on the topographic survey (23-3682) and aerial images (Norfolk County Web Map). The site area is approximate and all dimensions need to be confirmed by a legal survey.

1	CONCEPT PLAN	2024.10.23	ET
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DESIGNED	ET
REVIEWED	ET
DATE	2024.10.23

P2

2 Existing Conditions

2.1.1 Area Road Network

Pond Street

Pond Street is a north-south local road with an urban two-lane cross section. There are sidewalks provided on the east side of the road. No cycling facilities are provided. An assumed unposted speed limit of 50 km/h applies. The Norfolk County Official Plan (2023) protects for a 20-metre right-of-way for local roads, subject to consideration in the Downtown Areas.

Victoria Street

Victoria Street is an east-west arterial road with an urban four-lane cross section west of Pond Street, and an urban two-lane cross section east of Pond Street. There are sidewalks provided on both sides of the road. No cycling facilities are provided. An assumed unposted speed limit of 50 km/h applies. The Norfolk County Official Plan (2023) protects for a 36-metre right-of-way for arterial roads, subject to consideration in the Downtown Areas.

Argyle Street

Argyle Street is an east-west arterial road with an urban two-lane cross section. There are sidewalks provided on both sides of the road. No cycling facilities are provided. An assumed unposted speed limit of 50 km/h applies. The Norfolk County Official Plan (2023) protects for a 36-metre right-of-way for arterial roads, subject to consideration in the Downtown Areas.

Basil Avenue

Basil Avenue is a north-south arterial road with an urban two-lane cross section. There are sidewalks provided on the east side of the road. No cycling facilities are provided. An assumed unposted speed limit of 50 km/h applies. The Norfolk County Official Plan (2023) protects for a 36-metre right-of-way for arterial roads, subject to consideration in the Downtown Areas.

Norfolk Street

Norfolk Street, also known as Norfolk County Highway 24, is a north-south Norfolk arterial road with an urban two-lane cross section. There are sidewalks provided on both sides of the road. No cycling facilities are provided. The posted speed limit is 50 km/h. On-street parking is provided on both sides of the road via painted spaces between Water Street and Union Street. Signage is provided to indicate the parking hours and restrictions. The Norfolk County Official Plan 2023 also notes that the road is also under the jurisdiction of the Ministry of Transportation Ontario (MTO). The protected right-of-way is determined by the MTO.

2.1.2 Existing Intersections

The existing area intersections have been summarized below:

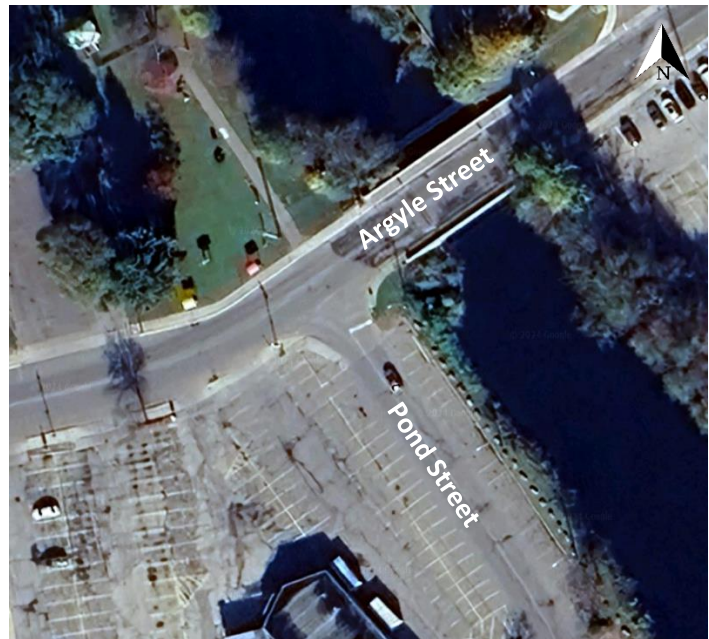
Argyle Street at Basil Avenue/Private Access

The intersection of Argyle Street at Basil Avenue is a four-legged unsignalized intersection with minor stop control. The northbound approach consists of a shared left-turn/through/right-turn lane. The southbound approach consists of a shared left-turn/through/right-turn lane. The eastbound approach consists of a shared left-turn/through/right-turn lane. The westbound approach consists of a shared left-turn/through/right-turn lane. A painted pedestrian crossover is provided on the west leg approximately 25 metres west of the intersection. No turn restrictions are noted. The private access on the south leg leads into a residential development under construction.



Argyle Street at Pond Street

The intersection of Argyle Street at Pond Street is a three-legged unsignalized intersection with minor stop control. The northbound approach consists of a shared left-turn/right-turn lane. The eastbound approach consists of a shared through/right-turn lane. The westbound approach consists of a shared left-turn/through lane. A painted crosswalk is provided on the south leg of the intersection. No turn restrictions are noted.

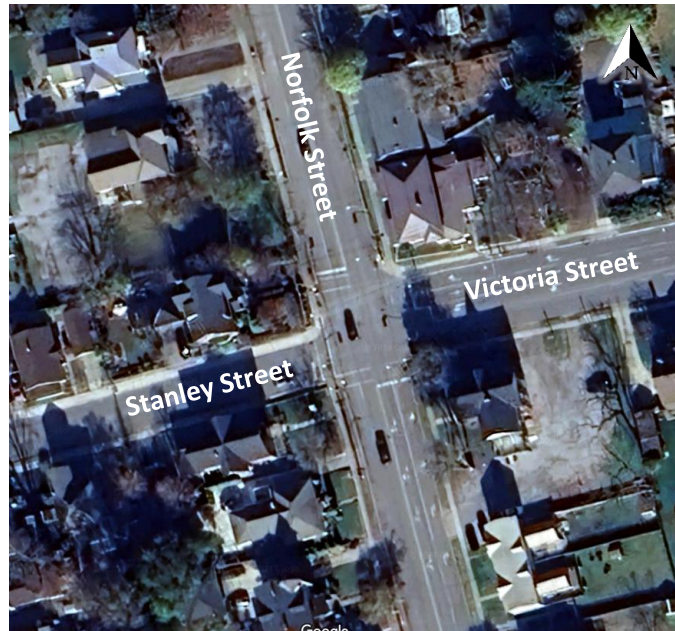


Argyle Street/Robinson Street at Norfolk Street

The intersection of Argyle Street and Robinson Street at Norfolk Street is a four-legged signalized intersection. The northbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The southbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The westbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. Paved pedestrian crosswalks and signal heads are provided on all legs of the intersection. No turn restrictions are noted.

*Victoria Street/Stanley Street at Norfolk Street*

The intersection of Victoria Street and Stanley Street at Norfolk Street is a four-legged signalized intersection. The northbound approach consists of a shared left-turn/through lane and a right-turn lane. The southbound approach consists of a shared left-turn/through lane and a right-turn lane. The eastbound approach consists of a shared left-turn/through/right-turn lane. The westbound approach consists of an auxiliary left-turn lane, a through lane, and a right-turn lane. Painted pedestrian crosswalks and pedestrian signal heads are provided on all legs. No turn restrictions are noted.



Victoria Street at Pond Street

The intersection of Victoria Street at Pond Street is a three-legged unsignalized intersection. The southbound approach consists of a shared left-turn/right-turn lane. The eastbound approach consists of a shared left-turn/through lane and a through lane. The westbound approach consists of a shared through/right-turn lane. No turn restrictions are noted. Latest satellite imagery (May 2023) indicates that there is active construction on road improvements at this development.



2.1.3 Existing Cycling and Pedestrian Facilities

Sidewalks are provided on both sides of the road Victoria Street, Argyle Street, and Norfolk Street. There is a sidewalk provided on one side of the road for Pond Street and Basil Street. There are trail connections on Argyle Street and Victoria Street, for both cyclists and pedestrians. These trails include Lynnwood Clifton Trail, Norfolk Sunrise Trail, and Lynn Valley Trail. Figure 4 illustrates an excerpt of the Norfolk Trails Mapping GIS, highlighting the trails in the study area.

Figure 4: Study Area Trails

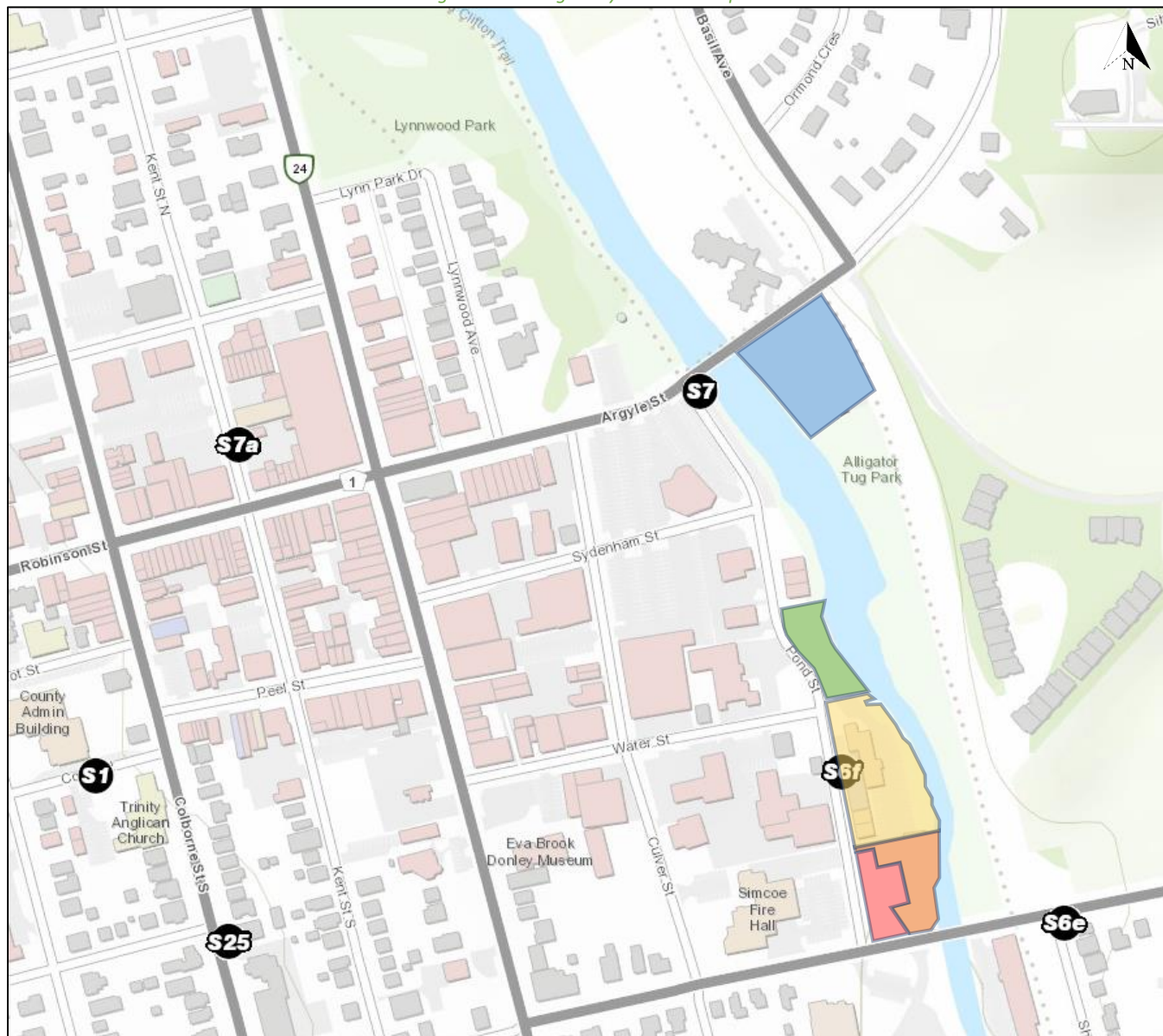


Note: Excerpt from Norfolk Trails Mapping GIS accessed at: <https://www.norfolkcounty.ca/visiting/norfolk-maps/online-interactive-maps/> Accessed: October 31st, 2024

2.1.4 Existing Transit

Ride Norfolk provides accessible, on-demand transit service on weekdays from 7:30 AM to 6:00 PM with no fixed local routes or schedules. Bus stops S6e, S6f, and S7 are located within a 5-minute walking distance. Figure 4 illustrates the transit stops in the study area.

Figure 5: Existing Study Area Bus Stops



Note: Excerpt from Norfolk County Online Map – accessed at: <https://www.norfolkcounty.ca/transit/> Accessed: October 31st, 2024

2.1.5 Existing Peak Hour Travel Demand

To understand the existing traffic volumes, the average annual daily traffic (AADT) counts have been provided by Norfolk County for road segments near the study area. The road segments of interest that will be used for the purposes of analysis are Argyle Street between Basil Avenue and Lynndale Road in addition to Argyle Street between Basil Avenue and Helen Boulevard.

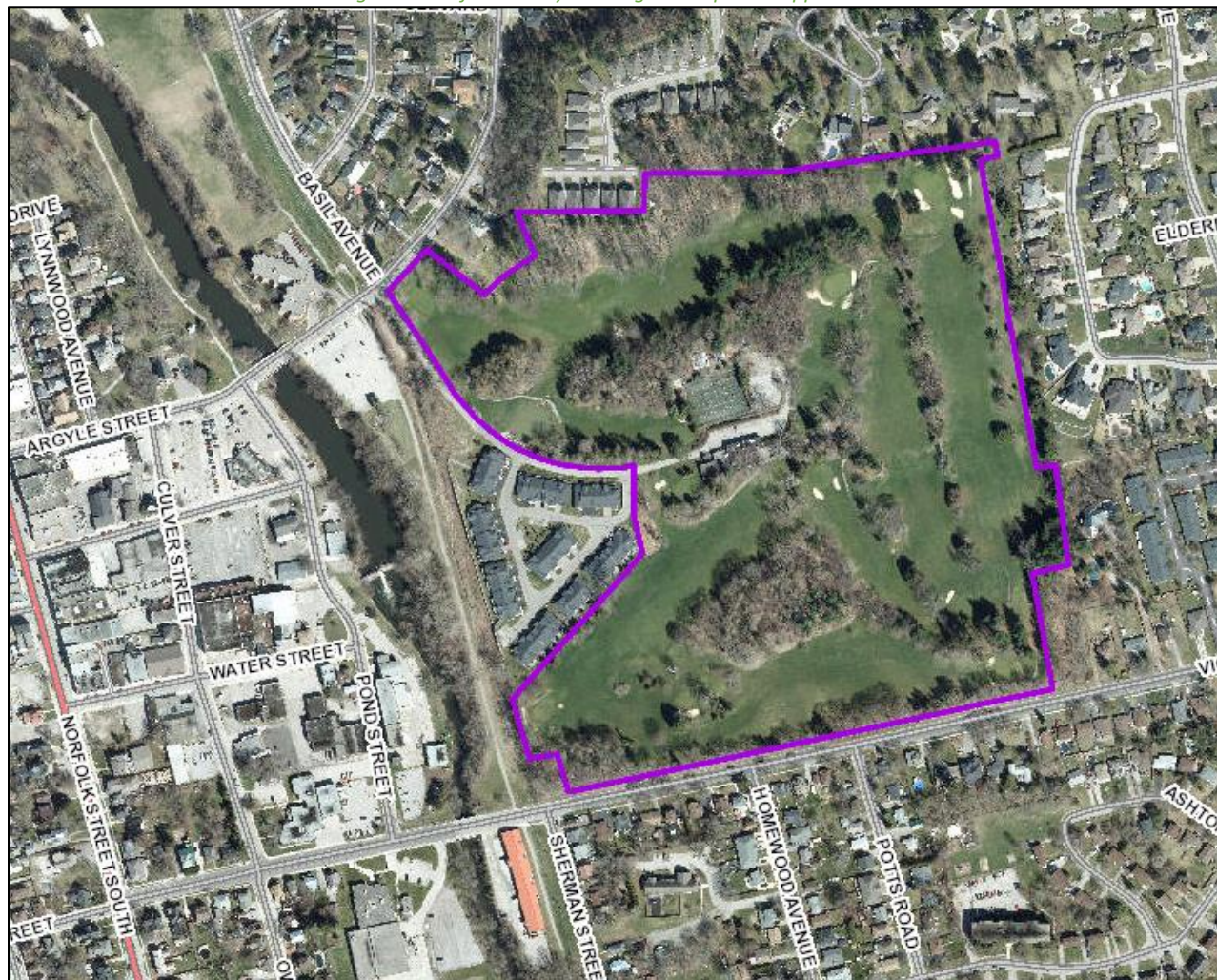
The most recent AADT count is the Spring 2024 count for Argyle Street between Basil Avenue and Helen Boulevard, at 3135 vehicles. To translate this into a peak hour traffic count, the AADT value is representative of ten (10) times the PM peak hour volumes. This would equate to approximately 314 bi-directional PM peak hour trips in the existing conditions. The email correspondence regarding the traffic counts is provided in Appendix A.

3 Future Background Conditions

3.1 Background Developments

According to the Norfolk County Pending Development Applications GIS, there are no major background developments within the study area. The online map does note that the greenfield parcel to the east of the Lynn River will be severed to be added to the residential parcel immediately to the left as a boundary adjustment. This is expected to result in an increase in the residential block in that area once completed. The boundary of the existing greenfield parcel is outlined in Figure 6 below.

Figure 6: Norfolk County Pending Development Applications



Note: Excerpt from Norfolk County Pending Developments Map – accessed at: <https://www.norfolkcounty.ca/visiting/norfolk-maps/online-interactive-maps/> Accessed: October 31st, 2024

3.2 Planned Network Improvements

There are no noted major roadway changes according to the Norfolk County Official Plan (2023) Schedule E2. There are also no noted road reconstruction or asphalt resurfacing projects in the study area according to the Norfolk Trails Mapping GIS.

4 Area A to Area D Trip Generation

4.1 Trip Generation Threshold

According to the *Norfolk County Integrated Sustainable Master Plan (2016) Appendix J*, the trip generation threshold that would trigger a Transportation Impact Study (TIS) is 75 peak hour two-way vehicle trips. This is because it was found that 75 peak hour two-way vehicle trips would constitute a development having an impact on the surrounding road network. For the purposes of this analysis, the worst-case trip generation of the proposed land uses will be compared to the worst-case trip generation of the existing allowable land uses, to see which proposed land uses exceed this threshold and would thereby require a full TIS.

4.2 Existing Land Uses

The trip generation of the existing and permitted uses in Area A to Area D will be analyzed to determine the potential change to traffic caused by the changes in zoning. The “worst case” trip generation of the existing and most recent land uses on each property will be compared to the CBD permitted land uses to be added. The site statistics including the most recent land use and gross floor area (GFA) are outlined in Table 1 below.

Table 1: Existing and Most Recent Land Uses

Area	Address	Current Use / Previous Occupant	Related ITE Land Use(s)	GFA (m ²)
A	73 Victoria St	Operations Yard	Industrial Park	50
		Storage Building	Warehousing	
B	129 Pond St	Park Operations Yard	Industrial Park	260
		Storage Building w/ Mezzanine	Warehousing	
C	71 Pond St	Vacant	N/A	2569
C	87 Pond St	Young Theatre Players and Lynn Valley District Scout Headquarters	Recreational Community Centre	
C	89 Pond St	Simcoe Senior's Centre	Recreational Community Centre	
C	95 Pond St	Artist Workshop	Recreational Community Centre	
C	97 Pond St	Norfolk Potters Guild	Recreational Community Centre	
D	N/A	Municipal Parking Lot	N/A	N/A
Total				2879

The Table above identifies three (3) different land uses spread across the subject lands. The highest trip generator of the land uses will be applied to the total GFA of 2879 square metres (30,989 square feet) to determine the overall trip generation to be compared to the CBD land uses to be added.

The *Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition* has been reviewed to determine the trip generation rates. The trip generation will be determined for the AM and PM peak hours. A summary of the related ITE Land Uses, ITE Land Use Codes (LUCs) and the respective trip generation rates per 1000 square feet (ft²) GFA for the previous occupant land uses is provided in Table 2 below.

Table 2: Worst-Case ITE Trip Generation of Existing and Most Recent Land Uses

ITE Land Use	ITE LUC	GFA (ft ²)	Trip Generation Rates		Trips Generated		
			AM Peak	PM Peak	AM Peak	PM Peak	Total
Industrial Park	130	30,989	$T = 0.34(X)$	$T = 0.34(X)$	11	11	22
Warehousing	150		$T = 0.12(X) + 23.62$	$T = 0.12(X) + 26.48$	27	30	57
Recreational Community Centre	495		$T = 1.91(X)$	$\ln(T) = 0.71\ln(X) + 2.31$	59	115	174

Note: Average rate method used for trip generation when fitted curve equation method unavailable. T = Trip Ends, X = 1000 square feet

As shown in the Table above, the highest trip generator is the Recreational Community Centre land use, which generates 59 AM and 115 PM peak hour two-way vehicle trips.

4.3 Proposed Land Uses

The proposed Central Business District (CBD) Non-Residential land uses will be analyzed to determine the change in trip generation under the new zoning. The preliminary list of permitted uses from the existing Central Business District Zone which has been approved by the Long Point Region Conservation Authority (LPRCA) is included in Appendix B.

The *Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition* has been reviewed to determine the trip generation rates. The trip generation will be determined for the AM and PM peak hours. A summary of the related ITE Land Uses, ITE Land Use Codes (LUCs) and the respective trip generation rates per 1000 square feet (ft²) GFA for the proposed land uses is provided in Table 3 below. The land uses are assigned with consideration to the ITE descriptions and the definitions located in the Norfolk County Zoning By-Law (1-Z-2014). In some cases, a proposed CBD land use will have multiple applicable ITE land uses and are all considered for a conservative analysis of the worst-case trip generation.

Table 3: ITE Trip Generation Rates of Proposed CBD Land Uses

Proposed Land Use	Related ITE Land Use(s)	ITE LUC	Trip Generation Rates	
			AM Peak	PM Peak
Antique Shop	Variety Store	814	$T = 3.04(X)$	$T = 6.70(X)$
	Discount Home Furnishing Superstore	869	$T = 0.57(X)$	$T = 1.57(X)$
	Department Store	875	$T = 0.58(X)$	$T = 1.95(X)$
	Furniture Store	890	$T = 0.24(X) + 0.94$	$\ln(T) = 0.85 \ln(X) - 0.18$
Art Gallery	Museum	580	$T = 0.28(X)$	$T = 0.18(X)$
Auction Centre	Wine Tasting Room	970	$T = 2.07(X)$	$T = 7.31(X)$
Bar or Night Club	Adult Cabaret	440	-	$T = 2.93(X)$
	Drinking Place	975	-	$T = 11.36(X)$
Boutique	Department Store	875	$T = 0.58(X)$	$T = 1.95(X)$
	Apparel Store	876	$T = 1.00(X)$	$T = 4.12(X)$
Brew-Your-Own	Brewery Tap Room	971	$T = 0.68(X)$	$T = 9.83(X)$
	Drinking Place	975	-	$T = 11.36(X)$
Clinic or Doctors Office	Clinic	630	$T = 2.75(X)$	$T = 3.69(X)$
	Medical-Dental Office Building	720	$\ln(T) = 0.90 \ln(X) + 1.34$	$T = 4.07(X) - 3.17$
Contractor Supply / Service Shop	Specialty Trade Contractor	180	$T = 1.66(X)$	$T = 1.93(X)$
	Nursery (Wholesale)	818	$T = 2.41(X)$	$T = 5.24(X)$
Convenience Store	Convenience Store	851	$T = 62.54(X)$	$T = 49.11(X)$

Proposed Land Use	Related ITE Land Use(s)	ITE LUC	Trip Generation Rates	
			AM Peak	PM Peak
Deli and Specialty Food Shop	Supermarket	850	$T = 2.86(X)$	$\ln(T) = 0.81 \ln(X) + 2.92$
	Farmers Market	858	$T = 4.02(X)$	$T = 4.13(X)$
Department Store	Department Store	875	$T = 0.58(X)$	$T = 1.95(X)$
Equipment Rental	Construction Equipment Rental	811	-	$T = 0.99(X)$
	Medical Equipment Store	897	$T = 1.17(X)$	$T = 1.24(X)$
Farmers Market	Farmers Market	858	$T = 4.02(X)$	$T = 4.13(X)$
Financial Institution	Walk-in Bank	911	-	$T = 26.40(X)$
	Drive-in Bank	912	$T = 9.95(X)$	$T = 21.01(X)$
Florist Shop	Nursery (Garden Center)	817	$T = 2.43(X)$	$T = 6.94(X)$
Fruit and Veg Outlet	Supermarket	850	$T = 2.86(X)$	$\ln(T) = 0.81 \ln(X) + 2.92$
	Farmers Market	858	$T = 4.02(X)$	$T = 4.13(X)$
Hardware Store	Hardware/Paint Store	816	$T = 0.92(X)$	$T = 2.98(X)$
Library	Library	590	$T = 1.75(X) - 14.59$	$T = 8.16(X)$
Lumber Yard & Building Supply	Building Materials and Lumber Store	812	$T = 1.59(X)$	$T = 2.25(X)$
	Home Improvement Superstore	862	$T = 1.51(X)$	$T = 2.29(X)$
Merchandise Service Shop	Specialty Trade Contractor	180	$T = 1.66(X)$	$T = 1.93(X)$
Museum	Museum	580	$T = 0.28(X)$	$T = 0.18(X)$
Office, All Types	General Office Building	710	$\ln(T) = 0.86 \ln(X) + 1.16$	$\ln(T) = 0.83 \ln(X) + 1.29$
	Small Office Building	712	$T = 1.67(X)$	$T = 2.16(X)$
	Corporate Headquarters Building	714	$\ln(T) = 0.89 \ln(X) + 0.91$	$\ln(T) = 0.94 \ln(X) + 0.58$
	Single Tenant Office Building	715	$T = 1.89(X) - 7.67$	$T = 1.72(X) + 7.89$
	Government Office Building	730	$T = 3.34(X)$	$T = 1.71(X)$
Personal Service Shop	Hair Salon	918	$T = 1.21(X)$	$T = 1.45(X)$
Pharmacy	Pharmacy/Drugstore with Drive Through	880	$T = 2.94(X)$	$T = 8.51(X)$
	Pharmacy/Drugstore without Drive Through	881	$T = 3.74(X)$	$T = 10.25(X)$
Photo Studio or Shop	Electronic Superstore	863	$T = 0.34(X)$	$T = 7.79(X) - 129.79$
	Copy, Print, and Express Ship Store	920	$T = 2.78(X)$	$T = 7.42(X)$
Place of Entertainment	Multipurpose Recreational Facility	435	-	$T = 3.58(X)$
	Bowling Alley	437	$T = 0.81(X)$	$T = 1.01(X) + 4.92$
	Movie Theater	445	-	$T = 6.17(X)$
	Rock Climbing Gym	434	$T = 1.40(X)$	$T = 1.64(X)$
Place of Sports and Recreation	Multipurpose Recreational Facility	435	-	$T = 3.58(X)$
	Ice Skating Rink	465	-	$T = 45.17(X)$
	Racquet / Tennis Club	491	$T = 1.47(X)$	$T = 1.97(X)$
	Health/Fitness Club	492	$T = 1.31(X)$	$T = 3.45(X)$
	Athletic Club	493	$T = 3.16(X)$	$T = 6.29(X)$
	Recreational Community Center	495	$T = 1.91(X)$	$\ln(T) = 0.71 \ln(X) + 2.31$
Printing & Publishing Establishment	Copy, Print, and Express Ship Store	920	$T = 2.78(X)$	$T = 7.42(X)$

Proposed Land Use	Related ITE Land Use(s)	ITE LUC	Trip Generation Rates	
			AM Peak	PM Peak
Private Club	Health/Fitness Club	492	$T = 1.31(X)$	$T = 3.45(X)$
	Athletic Club	493	$T = 3.16(X)$	$T = 6.29(X)$
	Recreational Community Center	495	$T = 1.91(X)$	$T = 2.50(X)$
Radio, TV Studio	Utility	170	$T = 2.33(X)$	$T = 2.16(X)$
	Electronic Superstore	863	$T = 0.34(X)$	$T = 7.79(X) - 129.79$
Restaurant, All Types	Fast Casual Restaurant	930	$T = 1.43(X)$	$T = 12.55(X)$
	Fine Dining Restaurant	931	$T = 0.73(X)$	$T = 7.80(X)$
	High-Turnover (Sit-Down) Restaurant	932	$T = 9.57(X)$	$T = 9.05(X)$
	Fast-Food Restaurant without Drive-Through	933	$T = 43.18(X)$	$T = 33.21(X)$
	Fast Food Restaurant with Drive-Through	934	$T = 44.61(X)$	$T = 33.03(X)$
	Coffee/Donut Shop without Drive-Through	936	$T = 93.08(X)$	$T = 32.29(X)$
	Coffee/Donut Shop with Drive-Through	937	$T = 85.88(X)$	$T = 38.99(X)$
Retail Store	Variety Store	814	$T = 3.04(X)$	$T = 6.70(X)$
	Hardware / Paint Store	816	$T = 0.92(X)$	$T = 2.98(X)$
	Sporting Goods Superstore	861	$T = 0.48(X)$	$T = 2.14(X)$
	Home Improvement Superstore	862	$T = 1.51(X)$	$T = 2.29(X)$
	Electronic Superstore	863	$T = 0.34(X)$	$T = 7.79(X) - 129.79$
	Toy / Children's Superstore	864	-	$T = 5.00(X)$
	Baby Superstore	865	-	$T = 1.82(X)$
	Pet Supply Superstore	866	-	$T = 3.55(X)$
	Office Supply Superstore	867	-	$T = 2.77(X)$
	Book Superstore	868	$T = 1.27(X)$	$T = 15.83(X)$
	Bed and Linen Superstore	872	-	$T = 2.22(X)$
	Apparel Store	876	$T = 1.00(X)$	$T = 4.12(X)$
	Arts and Crafts Store	879	-	$T = 6.21(X)$
	Furniture Store	890	$T = 0.24(X) + 0.94$	$\ln(T) = 0.85$ $\ln(X) - 0.18$
	Liquor Store	899	$T = 0.59(X)$	$T = 16.62(X)$
Supermarket	Supermarket	850	$T = 2.86(X)$	$\ln(T) = 0.81$ $\ln(X) + 2.92$
Training & Rehab Centre	Adult Detention Facility	571	$T = 0.68(X)$	$T = 0.48(X)$
	Clinic	630	$T = 2.75(X)$	$T = 3.69(X)$
Video Store	Electronic Superstore	863	$T = 0.34(X)$	$T = 7.79(X) - 129.79$
	Book Superstore	868	$T = 1.27(X)$	$T = 15.83(X)$
Wholesale Outlet	Nursery (Wholesale)	818	$T = 2.41(X)$	$T = 5.24(X)$
	Wholesale Market	860	$T = 0.55(X)$	$T = 1.76(X)$

Note: Average rate method used for trip generation when fitted curve equation method unavailable. T = Trip Ends, X = 1000 square feet

Based on the Tables above, the two-way trip generation of the proposed CBD land uses can be determined for the subject lands. As there are no proposed changes to the buildings, the trip generation rates will be applied for the entire GFA of the development for a conservative comparison. The trip generation of the existing worst-case land use, Recreational Community Centre (LUC 495), is 59 AM and 115 PM two-way vehicle trips. The trip generation of only the CBD land uses that exceed the trip generation by 75 trips in either the AM or PM peak hour is provided in Table 4 below. The maximum GFA for each land use such that the trips generated do not exceed the 75 peak hour two-way trip threshold is provided in Table 5 below.

Table 4: Worst-Case ITE Trip Generation of Proposed CBD Land Uses

ITE Land Use	ITE LUC	GFA (ft ²)	Trip Generation Rates		Trips Generated		
			AM Peak	PM Peak	AM Peak	PM Peak	Total
Coffee/Donut Shop without Drive-Through	936	30,989	T = 93.08(X)	T = 32.29(X)	2884	1001	3885
Coffee/Donut Shop with Drive-Through	937	30,989	T = 85.88(X)	T = 38.99(X)	2661	1208	3869
Convenience Store	851	30,989	T = 62.54(X)	T = 49.11(X)	1938	1522	3460
Fast Food Restaurant with Drive-Through	934	30,989	T = 44.61(X)	T = 33.03(X)	1382	1024	2406
Fast-Food Restaurant without Drive-Through	933	30,989	T = 43.18(X)	T = 33.21(X)	1338	1029	2367
Ice Skating Rink	465	30,989	-	T = 45.17(X)	-	1400	1400
Drive-in Bank	912	30,989	T = 9.95(X)	T = 21.01(X)	308	651	959
Walk-in Bank	911	30,989	-	T = 26.4(X)	-	818	818
High-Turnover (Sit-Down) Restaurant	932	30,989	T = 9.57(X)	T = 9.05(X)	297	280	577
Liquor Store	899	30,989	T = 0.59(X)	T = 16.62(X)	18	515	533
Book Superstore	868	30,989	T = 1.27(X)	T = 15.83(X)	39	491	530
Pharmacy/Drugstore with Drive Through	881	30,989	T = 3.74(X)	T = 10.25(X)	116	318	434
Fast Casual Restaurant	930	30,989	T = 1.43(X)	T = 12.55(X)	44	389	433
Supermarket	850	30,989	T = 2.86(X)	Ln(T) = 0.81 Ln(X) + 2.92	89	299	388
Pharmacy/Drugstore without Drive Through	880	30,989	T = 2.94(X)	T = 8.51(X)	91	264	355
Drinking Place	975	30,989	-	T = 11.36(X)	-	352	352
Brewery Tap Room	971	30,989	T = 0.68(X)	T = 9.83(X)	21	305	326
Copy, Print, and Express Ship Store	920	30,989	T = 2.78(X)	T = 7.42(X)	86	230	316
Variety Store	814	30,989	T = 3.04(X)	T = 6.7(X)	94	208	302
Athletic Club	493	30,989	T = 3.16(X)	T = 6.29(X)	98	195	293
Library	590	30,989	T = 1.75(X) - 14.59	T = 8.16(X)	40	253	293
Wine Tasting Room	970	30,989	T = 2.07(X)	T = 7.31(X)	64	227	291
Nursery (Garden Center)	817	30,989	T = 2.43(X)	T = 6.94(X)	75	215	290
Fine Dining Restaurant	931	30,989	T = 0.73(X)	T = 7.8(X)	23	242	265
Arts and Crafts Store	879	30,989	-	T = 6.21(X)	-	192	192
Movie Theater	445	30,989	-	T = 6.17(X)	-	191	191

Note: Average rate method used for trip generation when fitted curve equation method unavailable. T = Trip Ends, X = 1000 square feet

Table 5: Maximum GFA for Proposed CBD Land Uses

ITE Land Use	ITE LUC	GFA (ft ²)	Trip Generation Rates		Trips Generated		
			AM Peak	PM Peak	AM Peak	PM Peak	Total
Coffee/Donut Shop without Drive-Through	936	634	T = 93.08(X)	T = 32.29(X)	59	20	79
Coffee/Donut Shop with Drive-Through	937	687	T = 85.88(X)	T = 38.99(X)	59	27	86
Convenience Store	851	943	T = 62.54(X)	T = 49.11(X)	59	46	105
Fast Food Restaurant with Drive-Through	934	1323	T = 44.61(X)	T = 33.03(X)	59	44	103
Fast-Food Restaurant without Drive-Through	933	1366	T = 43.18(X)	T = 33.21(X)	59	45	104
Ice Skating Rink	465	2546	-	T = 45.17(X)	-	115	115
Drive-in Bank	912	5474	T = 9.95(X)	T = 21.01(X)	54	115	169
Walk-in Bank	911	4356	-	T = 26.4(X)	-	115	115
High-Turnover (Sit-Down) Restaurant	932	6165	T = 9.57(X)	T = 9.05(X)	59	56	115
Liquor Store	899	6919	T = 0.59(X)	T = 16.62(X)	4	115	119
Book Superstore	868	7265	T = 1.27(X)	T = 15.83(X)	9	115	124
Pharmacy/Drugstore w/ Drive-Thru	881	11,220	T = 3.74(X)	T = 10.25(X)	42	115	157
Fast Casual Restaurant	930	9163	T = 1.43(X)	T = 12.55(X)	13	115	128
Supermarket	850	20,629	T = 2.86(X)	Ln(T) = 0.81 Ln(X) + 2.92	59	-	59
Pharmacy/Drugstore w/o Drive-Thru	880	13,514	T = 2.94(X)	T = 8.51(X)	40	115	155
Drinking Place	975	10,123	-	T = 11.36(X)	-	115	115
Brewery Tap Room	971	11,699	T = 0.68(X)	T = 9.83(X)	8	115	123
Copy, Print, and Express Ship Store	920	15,499	T = 2.78(X)	T = 7.42(X)	43	115	158
Variety Store	814	17,164	T = 3.04(X)	T = 6.7(X)	52	115	167
Athletic Club	493	18,283	T = 3.16(X)	T = 6.29(X)	58	115	173
Library	590	14,093	T = 1.75(X) - 14.59	T = 8.16(X)	-	115	115
Wine Tasting Room	970	15,732	T = 2.07(X)	T = 7.31(X)	33	115	148
Nursery (Garden Center)	817	16,571	T = 2.43(X)	T = 6.94(X)	40	115	155
Fine Dining Restaurant	931	14,744	T = 0.73(X)	T = 7.8(X)	11	115	126
Arts and Crafts Store	879	18,519	-	T = 6.21(X)	-	115	115
Movie Theater	445	18,639	-	T = 6.17(X)	-	115	115

Note: Average rate method used for trip generation when fitted curve equation method unavailable. T = Trip Ends, X = 1000 square feet

As shown in the Tables above, 26 out of the 66 CBD land uses would add 75 or more trips to either the AM or PM peak hour and trigger the TIS trip generation threshold. The largest trip generator is the Coffee/Donut Shop Without Drive-Through land use. It is not expected that the entire GFA of the subject lands will be one land use as shown in Table 4, and will realistically be a mix of land uses. If these land uses were to be utilized by the subject lands in ranges beyond that of Table 5, further investigation would be required as the TIS threshold of 75 peak hour two-way vehicle trips would be exceeded.

In addition to the land uses listed above, the “College or Trade School” CBD land use has an equivalent ITE Land Use with a trip generation rate not calculated by square footage. The ITE Land Use “Junior / Community College” is based on the number of students. This information is summarized in Table 6 below. Additionally, while it is outside of the scope of this report to determine the square footage of an institutional establishment relative to the number of students, the number of students that would generate the 75 peak hour two-way vehicle trips that trigger the TIS threshold is provided in Table 7 below.

Table 6: ITE Trip Generation Rates – College/Trade School

Proposed Land Use	Related ITE Land Use(s)	ITE LUC	Trip Generation Rates	
			AM Peak	PM Peak
College or Trade School	Junior / Community College	540	$\ln(T) = 0.68$ $\ln(X) + 0.81$	$\ln(T) = 0.63$ $\ln(X) + 1.30$

Note: T = Trip Ends, X = Number of Students

Table 7: Maximum Students for Junior/Community College Land Use

ITE Land Use	ITE LUC	Students	Trip Generation Rates		Trips Generated		
			AM Peak	PM Peak	AM Peak	PM Peak	Total
Junior / Community College	540	406	$\ln(T) = 0.68$ $\ln(X) + 0.81$	$\ln(T) = 0.63$ $\ln(X) + 1.30$	134	161	295

Note: T = Trip Ends, X = Number of Students

As shown in the Table above, there is a student capacity of 406 if trips generated are intended to not exceed the 75 peak hour two-way vehicle trip threshold. This land use could potentially generate more trips and depending on the scale of the development could warrant further investigation and a full TIS.

Another CBD land use that is excluded from the tables above is the “Parking Lot” land use. This land use is not expected to generate primary trips and will be utilized by Area D to support the land uses of the adjacent subject lands.

5 Area E Trip Generation

The Area E parcel currently has no existing land uses and serves as a municipal parking lot. The proposed residential zoning designation will potentially add either a fully residential or mixed-use residential development. This will then be compared to the adjacent street traffic volumes based on the traffic data provided by Norfolk County. As noted in Section 2.1.5, the AADT counts for Argyle Street between Basil Avenue and Helen Boulevard result in approximately 314 bi-directional PM peak hour trips. This will be compared to the trip generation of the land uses outlined in the two (2) concept plans. The mixed-use concept for Area E, Plan 1 (P1), consists of a five-storey mixed-use building with 38 apartment units and 420 square meters (4,521 square feet) of ground floor retail. The residential only concept for Area E, Plan 2 (P2), consists of a six-storey residential building with 47 apartment units.

The *Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition* has been reviewed to determine the trip generation rates. The trip generation will be determined for the AM and PM peak hours. A summary of the related ITE Land Uses, ITE Land Use Codes (LUCs) and the respective trip generation rates per 1000 square feet (ft²) GFA for the land uses in P1 and P2 is provided in Table 8 and Table 9 below, respectively.

Table 8: Plan 1 (P1) ITE Trip Generation

ITE Land Use	ITE LUC	Units / GFA	Trip Generation Rates		Trips Generated		
			AM Peak	PM Peak	AM Peak	PM Peak	Total
Multifamily Housing (Mid-Rise)	221	38	$T = 0.44(X) - 11.61$	$T = 0.39(X) + 0.34$	5	15	20
Strip Retail Plaza (<40k)	822	4521 ft ²	$T = 2.36(X)$	$\ln(T) = 0.71 \ln(X) + 2.72$	11	44	55
Total					16	59	75

Note: Average rate method used for trip generation when fitted curve equation method unavailable. T = Trip Ends, X = 1000 square feet

Table 9: Plan 2 (P2) ITE Trip Generation

ITE Land Use	ITE LUC	Units	Trip Generation Rates		Trips Generated		
			AM Peak	PM Peak	AM Peak	PM Peak	Total
Multifamily Housing (Mid-Rise)	221	47	$T = 0.44(X) - 11.61$	$T = 0.39(X) + 0.34$	9	19	28
Total					9	19	28

Note: T = Trip Ends, X = 1000 square feet

As shown in the Tables above, the mixed-use development is projected to generate 16 AM and 59 PM peak hour two-way trips, and the residential-only development is projected to generate 9 AM and 19 PM peak hour two-way trips. In both concept plans, most trips occur during the PM peak hour. When being compared to the existing conditions baseline of 314 PM peak hour trips, P1 results in an increase of approximately 18.79% and P2 results in an increase of 6.05%. In both cases, the increase in trips is negligible as they do not exceed the 75 peak hour two-way vehicle trip threshold and would not warrant further investigation.

Aside from the concept plans provided, the ZBA also included special provision for additional land uses. This includes the hotel land use and ground floor non-residential land uses (including day care nursery, laundromat, merchandise service shop, personal services shop, and restaurant). Without a concept plan or existing building area, the trips generated by these land uses are unable to be projected. The corresponding ITE Land Uses and the respective trip generation rates are provided in Table 10 below.

Table 10: Zoning By-Law Amendment Special Provision Land Use ITE Trip Generation Rates

Proposed Land Use	Related ITE Land Use(s)	ITE LUC	Trip Generation Rates	
			AM Peak	PM Peak
Day Care Nursery	Day Care Center	565	$T = 11.00(X)$	$T = 11.12(X)$
Laundromat	Specialty Trade Contractor	180	$T = 1.66(X)$	$T = 1.93(X)$
Merchandise Service Shop	Specialty Trade Contractor	180	$T = 1.66(X)$	$T = 1.93(X)$
Personal Services Shop	Hair Salon	918	$T = 1.21(X)$	$T = 1.45(X)$
Hotel	Hotel	310	$T = 0.50(Y) - 7.45$	$T = 0.74(Y) - 27.89$
Restaurant, All Types	Fast Casual Restaurant	930	$T = 1.43(X)$	$T = 12.55(X)$
	Fine Dining Restaurant	931	$T = 0.73(X)$	$T = 7.80(X)$
	High-Turnover (Sit-Down) Restaurant	932	$T = 9.57(X)$	$T = 9.05(X)$
	Fast-Food Restaurant without Drive-Through	933	$T = 43.18(X)$	$T = 33.21(X)$
	Fast Food Restaurant with Drive-Through	934	$T = 44.61(X)$	$T = 33.03(X)$
	Coffee/Donut Shop without Drive-Through	936	$T = 93.08(X)$	$T = 32.29(X)$
	Coffee/Donut Shop with Drive-Through	937	$T = 85.88(X)$	$T = 38.99(X)$

Note: T = Trip Ends, X = 1000 square feet, Y = Number of Hotel Rooms

As shown in the Table above, the laundromat, merchandise service shop, and personal services shop land uses would not generate more trips than the mixed-use retail in P1. The other proposed uses including day care nursery, hotel, and restaurant may require further investigation depending on the designated GFA. The largest potential trip generator would be the Coffee/Donut Shop Without Drive-Through land use.

6 Findings and Recommendations

This Transportation Brief has examined the trip generation of the subject lands at Area A (73 Victoria Street), Area B (129 Pond Street), Area C (71, 87, 89, 95, & 97 Pond Street), Area D, and Area E (86 Argyle Street). The TIS has found the following:

- a) The subject lands are comprised of five (5) parcels designated A to E and are subject to an Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA).
- b) There are no major background developments or roadway improvements in the study area.
- c) Areas A to C will be rezoned via the OPA and ZBA to Central Business District (CBD) Non-Residential Uses, with Area D serving as parking for those areas.
- d) There will be no changes to the existing building and gross floor area of Areas A to C.
- e) Based on the Spring 2024 AADT counts, there are 314 PM peak hour two-way trips on Argyle Street.
- f) The existing and most recent land uses have been compared to the CBD land uses under the worst-case scenario whereby the entire GFA is occupied by the land use with the largest trip generation.
- g) According to the *Norfolk County Integrated Sustainable Master Plan (2016) Appendix J*, the trip generation threshold that triggers a full Transportation Impact Study (TIS) is 75 peak hour two-way vehicle trips.
- h) The largest trip generator in the existing land uses is the Recreational Community Center projected to generate 59 AM and 115 PM peak hour trips in the worst-case scenario.
- i) For Areas A to C, 26 out of 66 CBD land uses would generate greater than 75 peak hour two-way vehicle trips compared to the existing worst-case scenario, with the Coffee/Donut Shop without Drive-Through land use generating the most trips. If any of the 26 land uses are implemented, further investigation may be required as they are susceptible to exceeding the threshold given the existing GFA.
- j) For Areas A to C, the Junior / Community College land use will generate trips based on the number of students, with an upper limit of 406 students to avoid exceeding the 75 peak hour two-way vehicle trip threshold.
- k) For Area D, the Parking Lot land use is not expected to generate primary trips and should be implemented in support of adjacent lands.
- l) Area E will undergo an OPA from Open Space to Urban Residential, and a ZBA from Open Space to Residential 6 (R6) with special provisions for ground-floor non-residential uses.
- m) Area E has a mixed-use concept, Plan 1 (P1), and a residential-only concept, Plan 2 (P2).
- n) P1 consists of a five-storey mixed-use building with 38 apartment units and 420 square meters (4,521 square feet) of ground floor retail. The concept plan for P1 indicates a parking supply of 81 spaces, which are allocated as 57 residential spaces, 14 retail spaces, and 10 public parking spaces.
- o) P1 is projected to generate 16 AM and 59 PM peak hour two-way trips. This is an approximate increase of 18.79% in the PM peak hour, which is a negligible increase as the 75 peak hour two-way vehicle trip threshold is not exceeded.
- p) P2 consists of a six-storey residential building with 47 apartment units. The concept plan for P2 indicates a parking supply of 81 spaces, which are allocated as 71 residential spaces and 10 public parking spaces.

- q) P2 is projected to generate 9 AM and 19 PM peak hour two-way trips. This is an approximate increase of 6.05% in the PM peak hour, which is a negligible increase as the 75 peak hour two-way vehicle trip threshold is not exceeded.
- r) For Area E, the ground-floor non-residential land uses that will be included as part of the special provision may require further investigation for the day care nursery, hotel, and restaurant land uses as they are susceptible to exceeding the TIS trip generation threshold.

The proposed OPA and ZBA will have a small impact on the study area road network. It is recommended that, from a transportation perspective, the proposed applications proceed, with respect to the potential need for a further investigation at subsequent development application stages by future proponents of development applications on each parcel. If a land use exceeds the TIS trip generation threshold, then a full study will be required.

If you have any comments or questions regarding the findings of this transportation brief, please do not hesitate to contact the undersigned.

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Appendix A

Email Correspondence – Traffic Data

Johnson Ly

From: Mark Crockford
Sent: October 2, 2024 3:17 PM
To: Johnson Ly
Cc: Robin Marinac
Subject: FW: Simcoe Lands - Traffic Count Data
Attachments: TrafficCounts.xls

Follow Up Flag: Follow up
Flag Status: Flagged

FYI for the Norfolk County job.

Mark



Mark Crockford, P.Eng.
CGH Transportation Inc.
P:905-251-4070
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From: Michael Keene <keene@fotenn.com>
Sent: October 2, 2024 1:41 PM
To: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: FW: Simcoe Lands - Traffic Count Data

Traffic data from the County.

Michael Keene, MCIP RPP
Principal, Planning + Development
T 416.789.4530 ext. 121

From: Brandon Sloan <Brandon.Sloan@norfolkcounty.ca>
Sent: October 1, 2024 4:53 PM
To: Michael Keene <keene@fotenn.com>
Subject: Simcoe Lands - Traffic Count Data

CAUTION: This email is from an external sender. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Michael,

Traffic Count Data from our GIS layer - attached table of the location indicated in the map below.
Not all years have data but may provide some info and trends.

The 2024 updated data so far is for these three locations:

- Norfolk Street (Water – Victoria) Spring 2024 AADT = 10,160
- Argyle Street (Basil – Helen) Spring 2024 AADT = 3,135
- Victoria Street (Oakwood – Donly) Spring 2024 AADT = 6,376

Hope this assists.

The screenshot displays a web application interface for traffic counts. On the left, a sidebar titled "Traffic Counts (8)" lists eight locations, each with a star icon, a right arrow, and a three-dot menu icon. The locations are: Donly Dr S, Victoria St, Norfolk St S, Water St, Norfolk St S, Colbourne St, Wilson St, and Argyle St. A yellow banner at the top of the sidebar states "1 result(s) added to 'Identify Results'". The main area shows an aerial map of a city grid with red stars marking the locations of the traffic counts. A blue button at the top right says "I want to...". At the bottom, there is a navigation bar with icons for Home, Layers, and Traffic Counts, along with a scale bar (0 to 100m) and a "2020_Air..." label.

Brandon Sloan

General Manager
Administration
Community Development Division

Gilbertson Administration Building
12 Gilbertson Drive, Simcoe, Ontario, Canada, N3Y 3N3
519-426-5870 x8166 | 226-NORFOLK



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

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Appendix B

Preliminary List of Permitted Uses

Pond/Victoria St Sites – Existing Buildings/Uses

- OPA: Hazard Lands – to add special policy to allow range of uses within existing buildings
- ZBA: Open Space – to add special provisions to allow range of uses within existing buildings
- Add uses from the CBD Zone:
 - Antique shop
 - Art gallery
 - Auction centre
 - Bar or night club
 - Boutique
 - Brew-your-own
 - Clinic or doctors office?
 - College or trade school?
 - Contractor supply / service shop
 - Convenience store
 - Deli and specialty food shop
 - Department store
 - Equipment rental
 - Farmers market
 - Financial institution
 - Florist shop
 - Fruit and veg outlet
 - Hardware store
 - Library
 - Lumber yard & building supply
 - Merchandise service shop
 - Museum
 - Office, all types
 - Parking lot
 - Personal service shop
 - Pharmacy
 - Photo studio or shop
 - Place of entertainment
 - Place of sports and recreation
 - Printing & publishing establishment
 - Private club
 - Radio, TV studio
 - Restaurant, all types
 - Retail store
 - Supermarket
 - Training & rehab centre
 - Video store
 - Wholesale outlet

Argyle St

- OPA from Open Space to Urban Residential
- ZBA from Open Space to R6 with special provision for:
 - ground floor non-residential uses in a mixed use building: day care nursery, laundromat , merchandise service shop, personal services shop, restaurant.
 - Add hotel as a permitted use
 - Increase the maximum floor area ratio to 2.0
 - Intent is to not take away from CBD space/uses but support new development and complement downtown.

RIVERFRONT LANDS

POND AND ARGYLE STREETS

EXPRESSION OF INTEREST
REIMAGINING THE RIVERFRONT IN DOWNTOWN SIMCOE, NORFOLK



SEPTEMBER 2021

Norfolk
COUNTY



WELCOME TO NORFOLK

We are a mixed rural and urban single-tier municipality located in southern Ontario on beautiful Lake Erie. With its milder climate, strong manufacturing, agriculture and tourism industries, and close proximity to major urban and technology centres, Norfolk County combines the best of urban and rural life. Consisting of 6 urban centres, 42 rural hamlets and 2 resort areas, Norfolk County is a quickly diversifying region that is attractive to new residents and investors alike. Widely recognized as one of the leading agricultural regions in Canada, Norfolk County also offers a range of lifestyle options for residents, from the beaches of Port Dover and Turkey Point to the natural settings and recognized eco-diversity in Long Point, to small town charms and character areas along with the urban, park-setting of Simcoe.

REIMAGING

The Corporation of Norfolk County (herein referred to as “Norfolk”) is seeking proposals for potential purchase, adaptive reuse and (re)development of several riverfront parcels located on the eastern edge of downtown Simcoe. Development proposals to be submitted and considered through this Expression of Interest (EOI) will:

- Be at the forefront of re-imagining Downtown Simcoe
- Deliver much needed housing options and a range of uses to help support the economic and socio-cultural fabric of the community
- Provide public waterfront access and a memorable sense of place and character
- Achieve key objectives within the Guiding Principles
- Provide a landmark development project in Norfolk
- Take these sites at the location of the early formation of the town and help write the next chapter in the story and evolution of Simcoe

Norfolk is looking for an experienced proponent with whom the County can negotiate and formalize a land transaction. The ideal proponent will have a proven track record of successfully delivering outstanding developments, familiarity with dealing with challenging but opportunistic redevelopment sites, and a willingness and ability to demonstrate creativity on a project that has the potential to bring significant benefits to the community. The proponent may wish to partner with other interested groups and consider Norfolk’s role in order to realize a new vision for this exciting opportunity.

THE NORFOLK ADVANTAGE



Strategically located within Canada and North America, less than 90 minutes to Toronto and the US Border and surrounded by major economic hubs in Hamilton (Hamilton International Airport is less than 45 minutes away), London, and the technology-rich Waterloo Region, Norfolk County is a unique location, offering benefits to residents, businesses and visitors alike.

Based on Statistics Canada estimates, Norfolk County had 70,028 inhabitants in 2020. Over the past several years the area is experiencing increased growth and with a recent decision to invest in major infrastructure, Norfolk is poised well into the future for capitalizing on the movement of residents and jobs to our beautiful and strategically-located area.



Quality of Life

- Parks, Forests, Beaches, Trails
- Cost of Living 18% lower
- Crime Rate 15% lower
- Small town feel
- Festivals, theatres, small and cultural shops along with larger retail stores



Access

- Highways 3, 6, and 24
- To many urban centres (Hamilton, KW-C, London, Niagara), including <30 min. to Hwy 403
- To the lake, waterways, natural environment
- To countless fresh farm markets, brewpubs, wineries, experiences



Incentives

- Downtown Development Charges Waiver
- Community Improvement Plans (brownfield, adaptive reuse, application costs)
- Contiguous parcels on prime river amenity

Nearly \$1B

As of 2019, the amount of international manufacturing exports from Norfolk with our close proximity to major markets, low cost of doing business, local labour force and work ethic. About 2,500 employees in total.

About \$700M

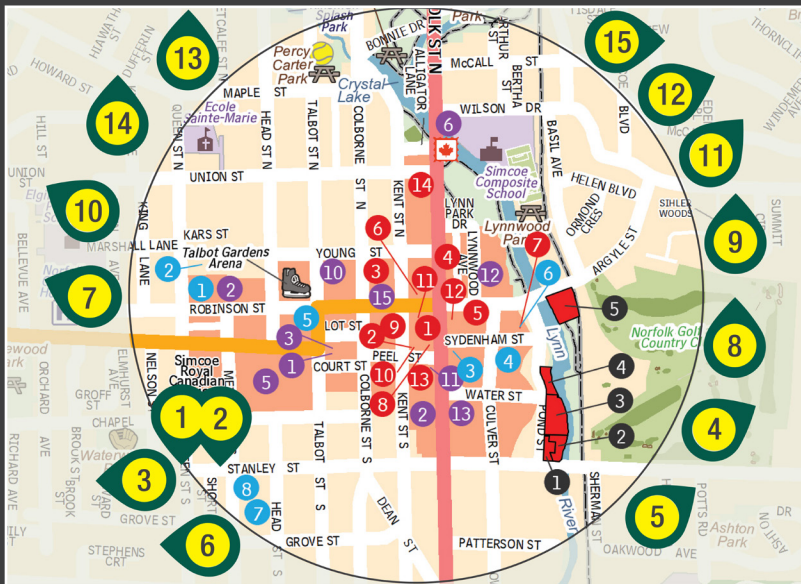
The amount of exports from the agricultural and resource industry with our fertile lands, Carolinian climate and innovation have established Norfolk as one of the leading growing regions in Canada. Employing nearly 3,000 workers, Norfolk is #1 in Canada/Ontario in many fruits and vegetables.

THE LOCATION

At nearly 1.4 hectares (3.5 acres) in total size, this exciting opportunity is located along approximately 315 metres (>1000 feet!) of river frontage, nearly 300 metres of street frontage and almost 80m directly beside a premier trail that connects Simcoe to Port Dover, Delhi, Waterford and Brantford along with the natural and rural environment.

Simcoe is the largest population centre in Norfolk County functioning as the shopping, employment, residential, post-secondary and government administration hub and supported through a network of nearby urban centres and hamlets. With a population of over 14,000 residents, Simcoe is connected to the 3 major cities of Hamilton, Kitchener and London. From its large-scale industrial employers such as Unilever (Canada's largest ice cream plant) and the Toyota auto parts plant, to its experienced entrepreneurs and innovative small and medium sized businesses in various creative industries, Simcoe has seen a recent unprecedented growth in residential demand as residents from major urban cores discover a community that offers a new quality of life that people desire.

Overall Simcoe is home to a lush park system, many heritage sites, restaurants, small shops and large retail outlets, businesses and professional services, museums/galleries, coworking offices, several hotels, a full-service hospital, local theatre, and local media.



Pond Street Building to:

1. Food Basics - 800m
2. Simcoe Town Centre Mall - 800m
3. Sobeys - 1.5km
4. Canadian Tire - 2.2km
5. Walmart - 2.4km
6. Port Dover Beach - 13km
7. Turkey Point Provincial Park - 21.3km
8. 403 Highway - 38km
9. Brantford - 42km
10. Long Point Provincial Park - 47 km
11. 401 Highway - 61km
12. Hamilton - 66km
13. Kitchener - 77km
14. London - 101km
15. Niagara Falls - 109km

Simcoe's downtown is a large area comprising approximately 37 hectares of land. with most of that area benefitting from a minimum of 50/10 Mbps internet speeds. There is a mix of commercial, office and residential uses. The downtown parks provide a wonderful greenspace system bordering the downtown that connects to many destinations and provides attractive vistas.



Simcoe Riverfront Lands

Area E

- 86 Argyle Street
- Municipal Parking Lot
- 0.44 Hectares
- Includes some parking spaces for adjacent use and trail.
- Was Alligator Tug location at waterfront with some storage in existing building.

Area D

- No Municipal address
- Municipal Parking Lot
- 0.15 Hectares
- Potential maintenance access for dam.

Area C

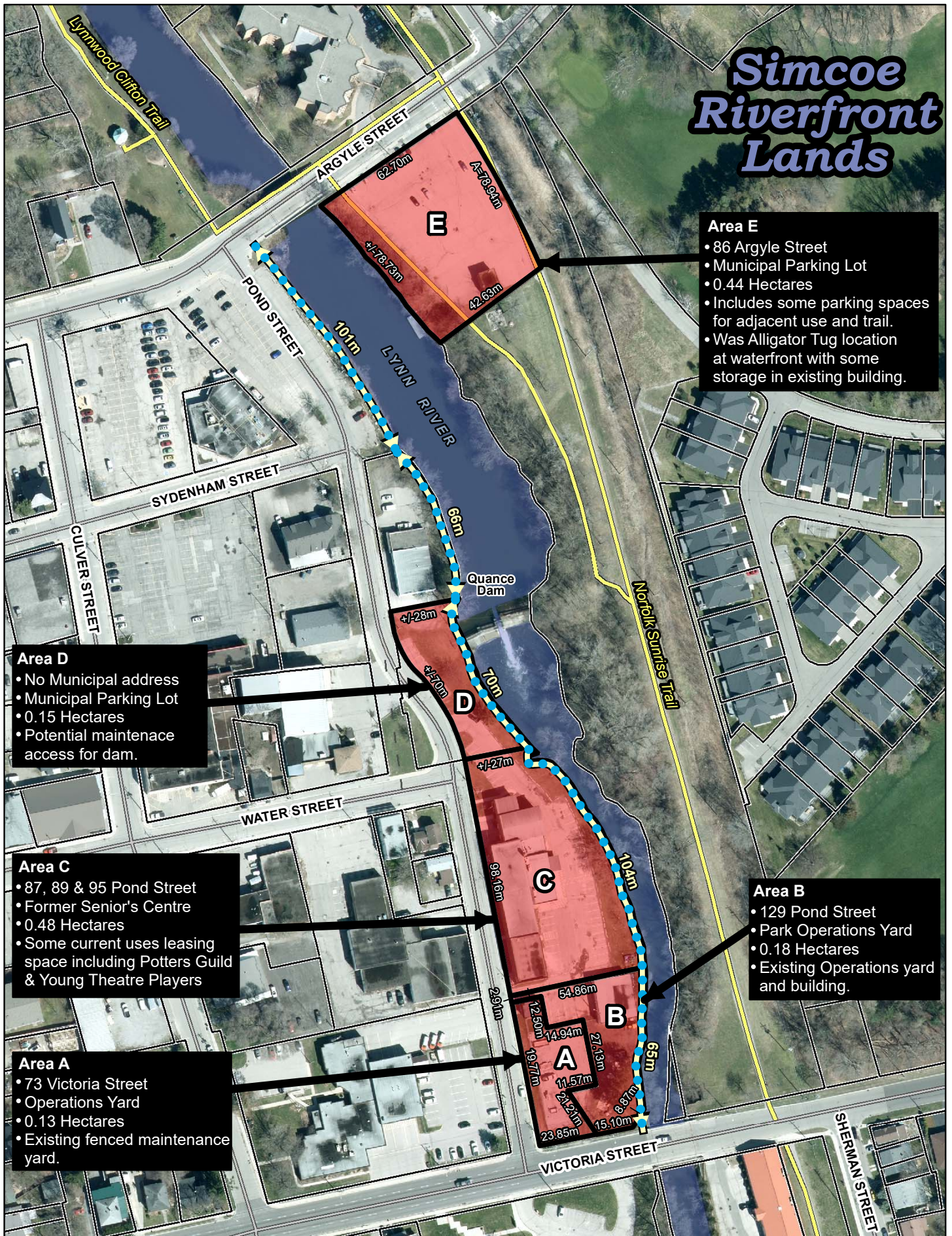
- 87, 89 & 95 Pond Street
- Former Senior's Centre
- 0.48 Hectares
- Some current uses leasing space including Potters Guild & Young Theatre Players

Area A

- 73 Victoria Street
- Operations Yard
- 0.13 Hectares
- Existing fenced maintenance yard.

Area B

- 129 Pond Street
- Park Operations Yard
- 0.18 Hectares
- Existing Operations yard and building.



THE CONTEXT

Norfolk is seeing record levels of demand for housing. With the onset of the COVID-19 pandemic (which has increased acceptance of remote working technologies), the south-western Ontario region has seen migration of talent from Ontario's Major Urban Centres into mixed urban-rural communities such as Norfolk – communities with the internet infrastructure that is required and the recreational amenities that are desired. During this time, the County is experiencing some of its highest levels of building permit activity, showing the strong demand for development.



>\$100M = Norfolk's recent Inter-Urban Water Supply system investment
\$115M* = Value of construction underway in the last 3 years just in Simcoe
*does not include proposed/pending

~50% = Recent Increase in Building Permit Activity
< 2.5% = Vacancy rate in Norfolk

This site is connected to Simcoe's history, including the early part of its modern growth. Early contemporary settlement occurred along the river and what is now 89 Pond Street once was the thriving Mitt and Glove Co. as part of a broader textile network in the County. Many Simcoe / Norfolk residents have fond memories of the building and its uses over the years, including operating as the Adult Community Centre and most recently various creative industries have occupied the site. On the other side of the river, the Argyle Street property has connections to the former location of the famed, locally built Alligator Tug and original rail station.



Given the former industrial nature of this historic building and sites along the river, the condition of the building and lands requires investment and repurposing. Norfolk has shifted the older adult centre use to the nearby Simcoe Recreation Centre and thus is deeming the lands surplus to municipal needs. The land use framework currently in place reflects the influence of the river and the County would consider and work with local agencies on proposals to reposition the land for adaptive reuse and new development. The condition of the existing building and sites will be factored into proposals and, in part, the Argyle Street property represents a significant new build opportunity as part of this package.

THE OPPORTUNITY

How will you write the next chapters in the Pond Street story?

With the recent growth in Norfolk County, downtown Simcoe is poised to be a unique urban centre in Southwestern Ontario. Implementation of a project such as this will not only attract new businesses and increase the population of permanent residents but will also stimulate additional new investment. In other words, a major catalyst for downtown Simcoe, while creating exciting prospects for a legacy project for the right developer who would like to participate early in the re-imagining and coming growth of Downtown Simcoe.

Character buildings and riverfront land is hard to find – especially in easy walking and biking distance to so many amenities. We've seen transformations of former industrial sites in other communities (Lang Tannery in Kitchener and Gaslight in Cambridge for example) and with the Alice Street adaptive reuse underway in Waterford, now is Simcoe's time for repurposing a landmark site.



Recent municipal and community investments in public arts murals, patio program, entrepreneurship, shop local, tourism visits, post-secondary connections, live entertainment enablers and other economic development incentives are starting to transform buildings and support a vibrant social scene in the downtown area along with numerous authentic food establishments. Working together with the Downtown Simcoe BIA and community stakeholders, Norfolk County has committed to preparing a collaborative plan - Downtown Simcoe: Reimagined - in Fall 2021 to mid-2022. The successful proponent for these lands can help be at the forefront of this new visioning and direction.



The successful reuse of the property will no doubt contribute to the transformation of the surrounding area. Work together with Norfolk and partners to “Re-imagine Downtown Simcoe”.

IMAGINE THE POSSIBILITIES!

THE GUIDING PRINCIPLES

In collaboration with the Downtown Simcoe Business Improvement Area (BIA) subcommittee of representatives, some of the key principles for the future of the Riverfront lands includes:

Cultural Space & Economy

- Uses that generate jobs and economic activity are preferred
- Provide or incorporate marquee, shared cultural amenity space
- Artisans, events and performances, commercial businesses

Public Realm

- Retain publicly accessible space to and along the waterfront
- Provide or retain outdoor publicly accessible space (artisan market, green space) opposite end of Water Street adjacent to river

Multi-Unit Housing

- Contribute to needed housing in Downtown and Norfolk
- In locations where residential can be provided, incorporate minimum targets for affordability and range of unit sizes

Conservation

- Conserve significant parts of Pond Street building as appropriate
- Incorporate sustainability and green techniques
- Achieve on-site stormwater management and climate adaptation

Strong Connections

- To the downtown core
- Along the waterfront, to trails and potentially across the river
- To other redevelopment sites in the area

Contextual Urban Design

- Set the stage for the future of downtown (landmark buildings)
- Provide height and density at a pedestrian scale
- Do not block the river but present uses / activity to showcase it



THE PROCESS

Interested proponents are directed to the full Expression of Interest document for additional details, information, site visit availability, process steps and proposal requirements. There is somewhat limited documentation about the land parcels; however, a list of existing information and studies is provided and certain aspects can be made available. This includes the Official Plan and zoning framework for the lands, development process, heritage designation by-law and process, property information/ infrastructure and any existing easements, building condition assessment information, limited geotechnical work, etc. Proponents may be responsible for additional study and/or identification of project requirements for any purchase and sale agreement. Norfolk may receive proposals that involve the municipality in taking additional steps regarding the land (further documentation, land use changes and public process, confirmation of details, etc). Proposals that do not include all of the parcels should provide some explanation. Any potential consortiums or partnerships should be clearly identified; although preference may be for as simple a transaction as possible.



The Norfolk team – including staff representing Community Development (Economic Development and Planning), Corporate Services Realty and Finance, Environmental & Infrastructure Services and Operations – will be reviewing proposals through a variety of lenses as outlined in the full EOI document. This includes, but not limited to:

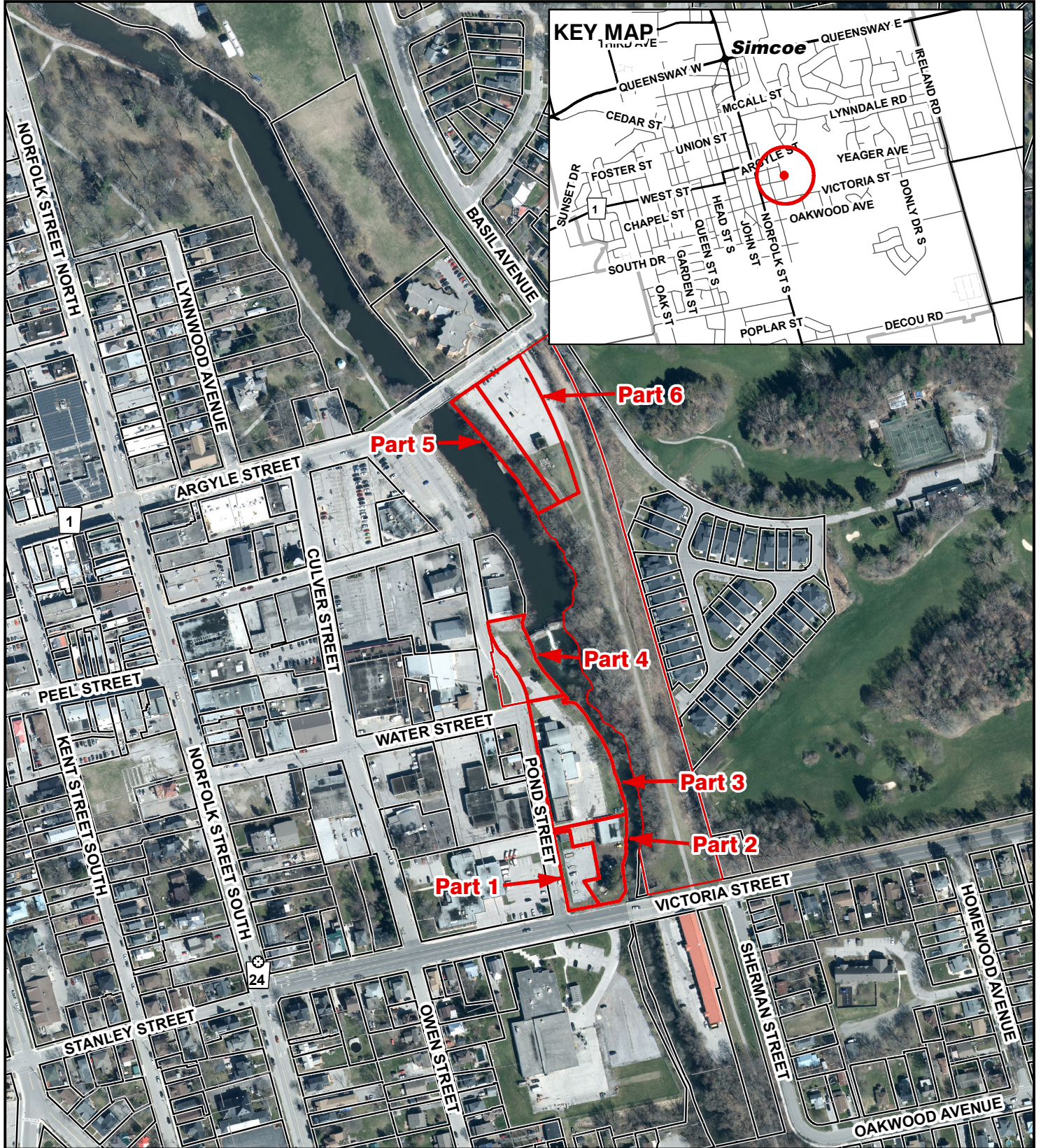
- How the proposal can achieve the guiding principles and benefit the community (including waterfront access)
- The generation of housing, employment and placemaking
- The degree to which the proposal is actionable and the potential timing
- The cost benefit to the municipality
- How much may be required of the municipality to bring the proposal to fruition
- The compatibility and character of the proposed uses and development
- The potential for a catalytic, landmark project for Simcoe / Norfolk



RIVERFRONT LANDS

Pond and Argyle Streets

For Additional Information on Proposal Submissions
Please Refer to Expression of Interest No.: CD-ED-21-04

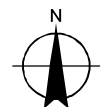


Legend

- Subject Lands
- Lands Owned

2020 Air Photo

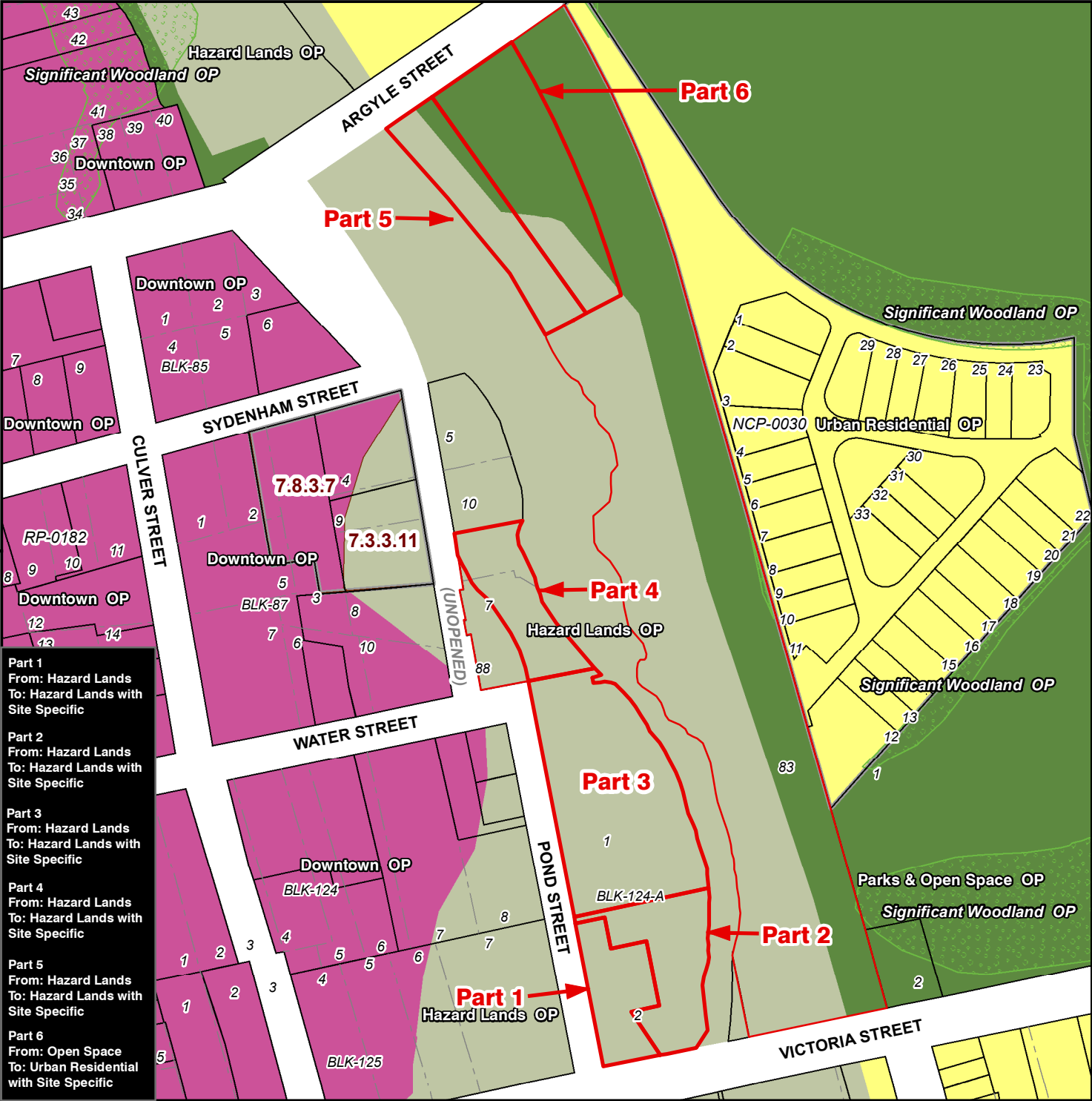
1/3/2025



30 15 0 30 60 90 120 Meters

MAP B
PROPOSED OFFICIAL PLAN AMENDMENT MAP
Urban Area of SIMCOE

OPNPL2024400
ZNPL2024398



Legend

Subject Lands

Lands Owned

Hazard Lands

Urban Residential

Downtown

Parks & Open Space

Urban Area Boundary

Significant Woodland

Official Plan Designations

1/3/2025

Hazard Lands

Parks & Open Space

Urban Residential

Urban Area Boundary

Downtown

Significant Woodland

105 0 10 20 30 40 Meters

N

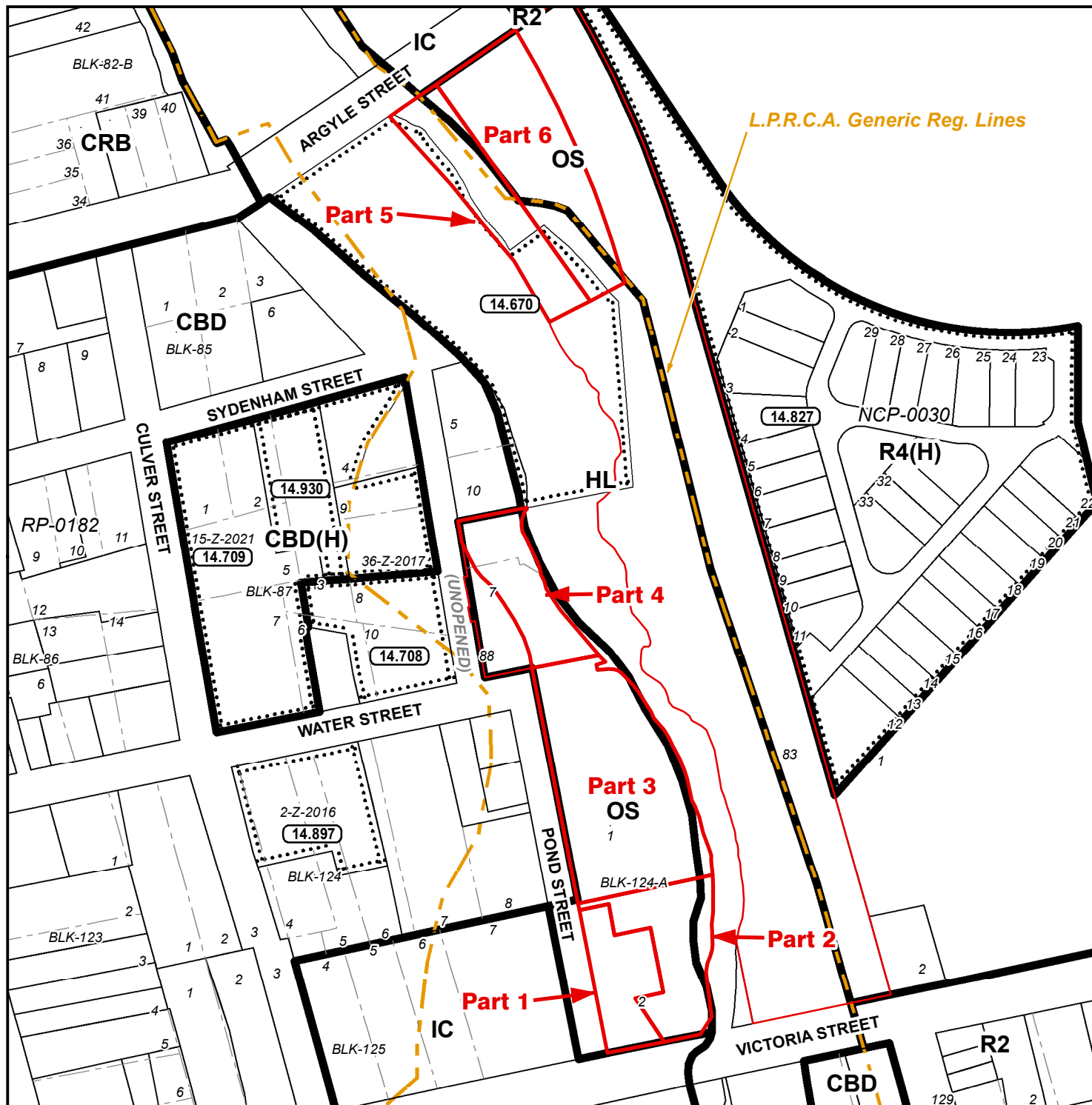
MAP C

PROPOSED ZONING BY-LAW AMENDMENT MAP

Urban Area of SIMCOE

OPNPL2024400

ZNPL2024398



LEGEND

- Subject Lands
- Lands Owned
- LPRCA Generic RegLines

Part 1
From: OS
To: OS with
Special Provision

Part 2
From: OS
To: OS with
Special Provision

Part 3
From: OS
To: OS with
Special Provision

Part 4
From: OS
To: OS with
Special Provision

Part 5
From: HL
To: HL with
Special Provision

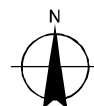
Part 6
From: OS
To: R6 with
Special Provision

ZONING BY-LAW 1-Z-2014

1/3/2025

- (H) - Holding
- CBD - Central Business District Zone
- CRB - Residential Commercial Business Zone
- IC - Community Institutional Zone
- HL - Hazard Land Zone
- OS - Open Space Zone
- R2 - Residential R2 Zone
- R4 - Residential R4 Zone

10 5 0 10 20 30 40
Meters



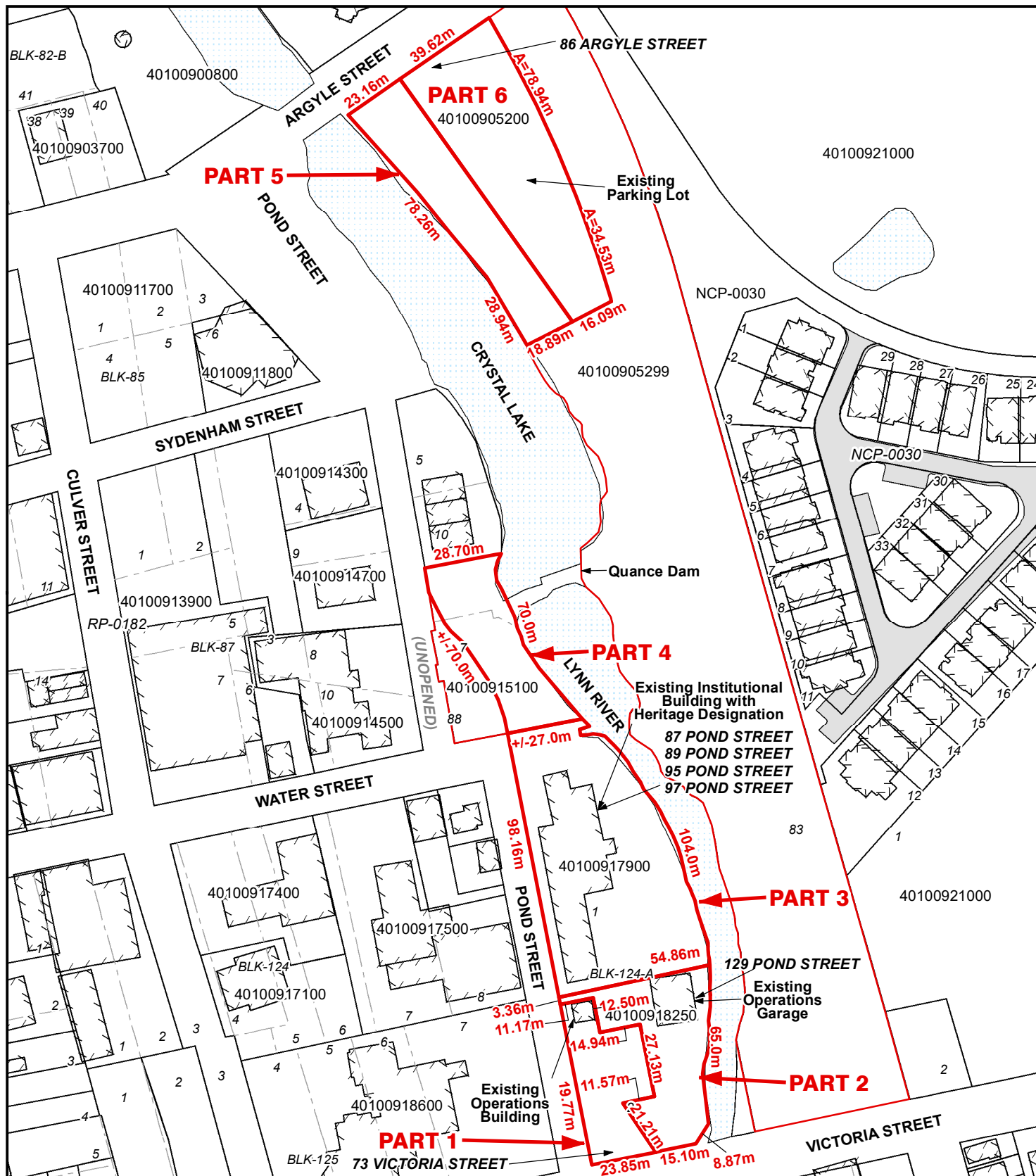
MAP D

CONCEPTUAL PLAN

Urban Area of SIMCOE

OPNPL2024400

ZNPL2024398



Legend

- Subject Lands
- Lands Owned



1/3/2025

10 5 0 10 20 30 40
Meters