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)

A successful application that will allow for the Proposed 99 Unit Self Storage + 1 Washroom Unit Facility that includes either a site specific zoning or minor variance for relief of the minimum interior side yard setback requirement, rear yard setback requirement, and number of parking spaces required on site

Property Assessment Roll Number: 3310492006201050000

A. Applicant Information

Name of Owner 2566899 Ontario Inc. - Jeremy Dekoninck

Address 160 Highway 59, R.R.#2

Town and Postal Code Delhi, Ontario

Phone Number

Cell Number 519-861-0683

Email jdekoninck@nor.del.com

Name of Applicant

Address

Town and Postal Code

Phone Number

Cell Number

Email

Name of Agent 2478153 Ontario Inc. o/a Girard Engineering - Tom Sprague

Address 682 Peel Street

Town and Postal Code Woodstock, Ontario N4S 1L3

Phone Number 519-879-6875

Cell Number

Email tsprague@girardengineering.ca

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:

No mortgage on this property

B. Location, Legal Description and Property Information

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

   Part of Lot 23, Concession 2, Township of Windham, Delhi, Ontario

   Municipal Civic Address: 15 Industrial Road, Delhi, Ontario

   Present Official Plan Designation(s): Urban Area

   Present Zoning: MG - General Industrial

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:

   Vacant Land

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:

   Remains of a Single Family Detached Dwelling and a Free Standing Sign both to be demolished

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.

   N/A

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:

   99 Sea-cans for individual storage units in multiple blocks + 1 Sea-can for washrooms & utility room

   see Site Plan attached

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:
   Unknown

9. Existing use of abutting properties:
   Industrial Use

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:
   Add 99 Sea-cans for individual storage units in multiple blocks + 1 Sea-can for washrooms & utility room

2. Please explain why it is not possible to comply with the provision(s) of the Zoning By-law/and or Official Plan: To make the project feesable, this is the minimum number of storage units required to be present on site. With driveways and fire routes required between units, it is not possible to keep units within the setback limits - therefore a minor variance is required for relief of interior side yard, rear yard setbacks, and number of parking spaces

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

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

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

_____

_____

_____

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

_____

Description of land intended to be retained in metric units:
Frontage: _____
Depth: _____
Width: _____
Lot Area: _____
Present Use: _____
Proposed Use: _____
Buildings on retained land: _____

7. Description of proposed right-of-way/easement:
Frontage: _____
Depth: _____
Width: _____
Area: _____
Proposed use: _____

8. Name of person(s), if known, to whom lands or interest in lands to be transferred, leased or charged (if known):

_____

9. **Site Information**	**Zoning**	**Proposed**
Please indicate unit of measurement, for example: m, m^2 or %		
Lot frontage	20m	52.606m
Lot depth		
Lot width		
Lot area	1855m2	4007.26m2
Lot coverage		37.14%
Front yard	6.0m	6.0m
Rear yard	9.0m	1.0m
Left Interior side yard		
Right Interior side yard	3.0m	1.0m
Exterior side yard (corner lot)	6.0m	6.35m
Landscaped open space		
Entrance access width		11.0m
Exit access width		11.0m
Size of fencing or screening		
Type of fencing		

10. Building Size

Number of storeys		1
Building height		2.44m
Total ground floor area		1488.40m2
Total gross floor area		
Total useable floor area		1488.40m2

11. Off Street Parking and Loading Facilities

Number of off street parking spaces	9 stalls	7 stalls
Number of visitor parking spaces		
Number of accessible parking spaces	1	1
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: 0

Number of buildings proposed: 100 sea can units in 4 seperate blocks

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):

Washroom / Utility Room - 14.884m2

Storage Units - 99 @ 14.884m2 each

Seating Capacity (for assembly halls or similar): _____

Total number of fixed seats: _____

Describe the type of business(es) proposed: Self-Storage Units

Total number of staff proposed initially: 1 (off-site)

Total number of staff proposed in five years: 1 (off-site)

Maximum number of staff on the largest shift: 1

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):
   Farm implement sales
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:
   General Knowledge
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:
   No screening done as there are no trees or water sources on the site currently that would provide a habitat for any species and there was a previous industrial occupancy on this site previously

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:

   No screening done as there is a lesser potential for contaminents compared to the previous use of the site

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

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

   Livestock facility or stockyard (submit MDS Calculation with application)

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

   Wooded area

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

   Municipal Landfill

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

   Sewage treatment plant or waste stabilization plant

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

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

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

   Floodplain

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

   Rehabilitated mine site

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

   Non-operating mine site within one kilometre

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

   Active mine site within one kilometre

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

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

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

   Active railway line

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

   Seasonal wetness of lands

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

   Erosion

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

   Abandoned gas wells

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

F. Servicing and Access

1. Indicate what services are available or proposed:

Water Supply

☑ Municipal piped water
☐ Communal wells
☐ Individual wells
☐ Other (describe below)

Sewage Treatment

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

Storm Drainage

☐ Storm sewers
☐ Open ditches
☑ Other (describe below)

Proposed on-site infiltration galleries

2. Existing or proposed access to subject lands:

☑ Municipal road
☐ Provincial highway
☐ Unopened road
☐ Other (describe below)

Name of road/street: Industrial Road and Tobacco Road (Windham 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.

Owner/Applicant Signature	September 8th, 2025 Date

M. Owner's Authorization

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

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

I/We authorize _____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, Jeremy Dekoninck of Delhi, Ontario

solemnly declare that:

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

Declared before me at:

160 Hwy 59

Owner/Applicant Signature

In Delhi, ON

This 8th day of September

A.D., 20 25

A Commissioner, etc.

Norfolk County Pre-Consultation Checklist

Please select the type of application required:

☐ Official Plan Amendment

☐ Zoning By-law Amendment

☐ Draft Plan of Subdivision

☐ Draft Plan of Condominium

☒ Site Plan

Please read all the information in this document on the requirements for future development planning applications. As a result of the information shared at the pre-consultation meeting dated October 9, 2024, the following applications and qualified professional documents/reports are required as part of a complete application. Please include all listed items with the application to ensure a complete application. The County reserves the right to change, reduce or add requirements for a complete application, particularly if the submission does not match the proposal as reviewed during the pre-submission consultation meeting.

Please note that various fees are associated with each application, and there are also costs for qualified professionals retained to complete various documents/reports. All requirements identified are minimum and determined as of the date of the pre- consultation meeting, with the information available at that time. As the proposal proceeds, more information is made public, additional applications, studies, reports, etc., may be required**. The information in this document is applicable for a maximum of one (1) year from the meeting date.**

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

1. Property Information and Proposal Summary

Registered owner: Jeremy & Jessica Dekoninck
Applicant/agent (if different than owner):

Property address: 15 Industrial Road Delhi
Roll Number: 3310492006201050000

Current Official Plan designation Protected Industrial and Zoning General Industrial Zone (MG)
Proposal: To create a storage facility

2. Assigned File Planner

Name and Title: Fabian Serra, Planner

Phone Number: 519-426-5870 x8046 | 226-NORFOLK

E-mail: fabian.serra@norfolkcounty.ca

3. Required Studies and Plans for Complete Application

Submission Materials	Required?	Notes:
Planning Requirements		
Completed Application Form	☑	
Concept Plan	☑	
Draft Plan of Subdivision	☐	
Building Elevations	☐	
Building Floor Plans and Roof Plans	☐	
Landscaping Plan	☑	
Minimum Distance Separation Schedule	☐	
vehicle maneuvering diagram	☑	
Site Plan and Site Plan Details	☑	
Survey/Legal Plan	☑	
Topographical Survey	☑	
Agricultural Impact Assessment	☐	
Air Treatment Control Study	☐	
Archeological Assessment	☑	Stage 1 Required Stage 2 required per findings of stage 1 etc.
Marine Archeological Assessment	☐	
Draft Official Plan Amendment	☐	
Draft Zoning By-law Amendment	☐	

Submission Materials	Required?	Notes:
Dust, Noise and Vibration Study	☐	Note for Applicants: This report shall be peer reviewed at the owner's expense.
Environmental Impact Study	☐	Note for Applicants: This report shall be peer reviewed at the owner's expense.
Environmental Site Assessment and Record of Site Condition	☐	RSC not required for first submission for a draft plan of subdivision but will be required as a condition of approval
Farm Business Registration		
Heritage Impact Assessment	☐	
Land Use Compatibility Study	☐	Note for Applicants: This report shall be peer reviewed at the owner's expense.
Market Impact Analysis	☐	Note for Applicants: This report shall be peer reviewed at the owner's expense.
On-Site Sewage Evaluation	☐	
Parking Plan	☐	
Planning Justification Report		Not Required for site plan applications or standard draft plan of condominium
Planning Justification Brief/Letter		For minor applications.
Restricted Land Use Screening Form	☐	
Shadow Study	☐	
Urban Design Brief	☐	
Other:	☐	
Engineering Requirements		

Development Engineering requirements to proceed The below requirements are to be submitted as part of the Formal Development Planning application.	**Required at OPA/ Zoning Stage**	**Required at Site Plan Stage**	**Potentially Required (See Notes Section)**
General Requirements			
Concept Plan		X	
Lot Grading Plan		X	
Siltation and Erosion Control Plan		X	

General Plan of Services		X	
Geotechnical Report			X
Functional Servicing Report		X	
Water Servicing Requirements– Section 10.0 Norfolk County Design Criteria and ISMP Section 4.0			
Disconnection of Water Service(s) to Property Line		X	
Disconnection of Water Service(s) to Main			X
Water Modelling (County Consultant)		X	
Backflow Preventer (RPZ)			X
Sanitary Servicing Requirements – Section 9.0 Norfolk County Design Criteria and ISMP Section 4.0			
Disconnection of Sanitary Service(s) to Property Line		X	
Disconnection of Sanitary Service(s) to Main			X
Sanitary Modelling (County Consultant)		X	
Property Line Inspection Maintenance Hole		X	
Storm Water Servicing Requirements – Section 7.0 and Section 8 Norfolk County Design Criteria and ISMP Section 4.0			
Storm Water Management Design Report (including calculations)		X	
Establish/Confirm Legal and Adequate Outlet		X	
Anticipated Flow/Analysis to Receiving Collection System		X	
Municipal Drainage		X	
Transportation Requirements – Section 6.0 Norfolk County Design Criteria, ISMP Section 5.0, Section 6.0 and Appendix J			
Traffic Impact Brief		X	

Improvements to Existing Roads & Sidewalk (urbanization, pavement structure, widening sidewalk replacement, upgrades, extension and accessibility)		X	

4. Detailed Comments Pertinent to the Application:

i. Norfolk County Planning and Agreement

Name and Title: Fabian Serra, Planner

Phone Number: 519-426-5870 x8046 | 226-NORFOLK

E-mail: fabian.serra@norfolkcounty.ca

The subject lands are designated protected industrial and are zoned General Industrial (MG) zone on the Norfolk County Official Plan and zoning by-law.

As the site is vacant a landscaping plan will be required. An Archeological assessment is also required. The necessity for a phase 2 study will be determined from the findings of phase 1.

Show the fire safety route, vehicle turning radius and the vehicular moving diagram be shown on the site plan.

To facilitate the proposal a Site Plan application is required. On the site plan please provide the following details:

Site Plan Control:
The proposed development is subject to site plan control under Site Plan Control By- Law 2014-97, and as per the definition of 'development' under section-41 of the Planning Act. A site plan application is required. The following are basic information to be included in a site plan.

Site Statistics: A basic site statistics should be included with the site plan.

Drawing Requirements:
- All measurements must be in metric
- All drawings must be to a standard scale to suit project requirements:
- Surveyed property limits (including bearings and dimensions)
- Location and extent of road widening, daylight triangles, easements and road reserves
- location of existing tree cover
- Indicate existing land uses along property lines

Title Block Information

• Key plan (showing location of subject lands and surroundings)
• North arrow
• Consultant's name and contact information (address, telephone, email)
• Professional stamp, signed and dated
• Date of plan preparation, Revision column (numbered and dated)
• Project name
• Municipal address and legal description and Site Plan File number (once assigned)
• Scale of drawing

Site Plan Details: The following features and elements to be included as appropriate on site plan:

Site Features:

• Label materials on the plan and/or provide legend (i.e. paving, curbing, sidewalks, depressed curbs, retaining walls, acoustic structures, fencing, signage signs, landscape areas, snow storage areas, etc.)
• Location and details of existing and proposed fencing, including acoustic fencing requirements
• Location of community mailbox locations (approval of Canada Post required)
• Location of garbage collection areas
• Location of on-site snow storage areas

Utilities:

• Location of fire hydrants and transformers
• Location of hydro & gas meters,
• Location of all proposed street signs

Streetscape:

• Location of sidewalks (if any)
• Existing and proposed trees, SOD areas

Vehicular Network

• Curve radii of curbs at all street access points and driveway intersections
• Location of proposed curbing. Provide Ontario Provincial Standard Drawing (OPSD) curb
detail
• Location and dimension of designated fire routes (indicate centre-line, road width and centre-
line turning radii)
• Location of garbage collection area (if applicable)
• Location of driveways with dimensions and materials.

Parking area

• Layout of parking spaces with dimensions
• "No parking/fire route" and "accessible parking signs"

Accessibility

- Location of accessible spaces complete with signage for each space
- Location of depressed curbs for each accessible space/ group of accessible spaces as appropriate and required
- Accessible routes to accommodate barrier-free paths of travel

Agreements Comments:

A condition of your site plan approval will be to enter into a development agreement with the County. The agreement will be registered on title at the owner's expense. The County will also collect and hold onto performance securities for the infrastructure and landscaping works until the end of the maintenance period. The owner will also be required to secure and keep in force commercial general liability insurance coverage, prior to and during the duration of construction until after a successful site inspection and release of the performance securities. Contact the undersigned when you are ready to start your agreement or if you have any questions. The attached information sheet will assist you with a complete submission.
All the best on your development. I look forward to assisting you with your agreement registration.
Annette Helmig, Agreement and Development Coordinator
Annette.helmig@norfolkcounty.ca

ii.Norfolk County Building

Contact Name(s) and Title(s): Lisa Jennings, Building Inspector II
Email: lisa.jennings@norfolkcounty.ca
Comments:

The proposed storage facility is considered and F2 Occupancy.
The proposed site and buildings would need to comply with The Ontario Building Code Section 3.10. (Comments based on Ontario Building Code (OBC) 2012, New Ontario Building Code in effect in 2025.)
Note: Sanitary facilities will be required in a building on the property and connected to the municipal services. Privies will not be accepted for this site.

3.10.2.7. Sanitary Facilities

(1) Except as provided in Sentence (2), the requirements in Subsection 3.7.4. shall apply.
(2) Except as permitted in Sentences 3.7.4.1.(2) and (3), two washrooms, each containing a water closet and a lavatory, shall be provided within one of the buildings on the property.

3.7.4. Plumbing Facilities

3.7.4.1. Plumbing and Drainage Systems
(1) Except as permitted in Sentence (3), each *building* situated on property that abuts on a *street* in which a public or municipal water main is located shall be provided with or have accessible to its occupants a *plumbing system* including a *potable* water supply, a *sanitary drainage system* and *plumbing fixtures.*
(2) When the installation of a *sanitary drainage system* is not possible because of the absence of a water supply, sanitary privies, chemical closets or other means for the disposal of human waste shall be provided.
(3) *Plumbing fixtures* need not be provided in a *building* that is not normally occupied by persons where such installations are impractical and other *fixtures* are available in nearby *buildings* when the subject *building* is in use.

3.10.3.4. Provisions for Firefighting

(1) Except as provided in Sentences (2) and (3), the requirements in Subsection 3.2.5. shall apply.

(2) Access routes for fire department vehicles shall be provided and shall be not less than 9 m wide.

(3) Hydrants shall be located in the access routes required in Sentence (2) so that,

(a) for a *building* provided with a fire department connection for a standpipe system or a sprinkler system,

(i) a fire department pumper vehicle can be located adjacent to a hydrant, and

(ii) the unobstructed path of travel for the firefighter from the vehicle to the fire department connection is not more than 45 m, and

(b) for a *building* that is not *sprinklered*, a fire department pumper vehicle can be located in the access route so that the unobstructed path of travel for the firefighter is not more than,
(i) 45 m from the hydrant to the vehicle, and
(ii) 45 m from the vehicle to every opening in the *building*.

3.10.4. Additional Requirements for 1 Storey Buildings
3.10.4.1. Application
(1) The requirements in this Subsection apply to 1 *storey buildings* that do not contain a *basement* or *mezzanine*.

3.10.4.2. Building Area
(1) For the purposes of Subsection 3.2.2., *building area* means,
(a) the *building area* of each *building*,
(b) the total of the *building areas* of all *buildings* as a group, or

(c) the total of the *building areas* of any number or group of *buildings*.

3.10.4.3. Spatial Separations
(1) Except as provided in Sentences (2) to (4), the requirements in Subsection 3.2.3. shall apply.
(2) Where the *building area* conforms to Clause 3.10.4.2.(1)(b), the *limiting distance* requirements shall not apply between individual *buildings*.
(3) Where the *building area* conforms to Clause 3.10.4.2.(1)(c),
(a) the *limiting distance* requirements shall apply between each group of *buildings*, but not between individual *buildings* within a group, and
(b) the distance between each group of *buildings* shall be not less than 9 m.
(4) The distance between individual *buildings* within a group shall be not less than 6 m.

3.10.4.4. Fire Alarm Systems
(1) Except as provided in Sentence (2), the requirements in Subsection 3.2.4. shall not apply.
(2) The requirements for *smoke alarms* in Article 3.2.4.22. shall apply to a *dwelling unit*.
3.10.4.5. Provisions for Firefighting
(1) Except as provided in Sentences (2) to (7), the requirements in Subsection 3.2.5. shall not apply.
(2) Access routes for fire department vehicles shall be provided and shall be not less than 9 m wide.
(3) Hydrants shall be located in the access routes required in Sentence (2) so that the locations conform to Sentence 3.10.3.4.(3).
(4) The access routes required in Sentence (2) shall conform to the requirements in Sentence 3.2.5.6.(1).
(5) An adequate water supply for firefighting shall be provided for every *building*.
(6) Where a sprinkler system is installed, the system shall conform to the requirements in Articles 3.2.5.13., 3.2.5.16. and 3.2.5.18.
(7) Where *combustible* sprinkler piping is installed, it shall conform to the requirements in Article 3.2.5.14.

No Building Code review has been completed at this time.

Demolition permit required for the existing building(s).

*Please see the attached link (below in blue) to the Norfolk County Fence Bylaw. For fence bylaw questions please speak to the Norfolk County Bylaw Department
2015-131 (norfolkcounty.ca)

iii. Norfolk County Zoning

Contact Name(s) and Title(s): Troy Scriven, Zoning Administrator
Email: troy.scriven@norfolkcounty.ca
Comments:

- Storage is permitted in the General Industrial Zone
- Shipping containers are permitted in the General Industrial Zone
- Shipping containers are considered a structure and would be required to conform to all provisions set out in 7.1 of the zoning by-law
- The front lot line runs along Tobacco Road
- The exterior side lot line runs along Industrial Road
- Minimum front yard: 6 metres
- Minimum exterior side yard: 6 metres
- Minimum interior side yard: 3 metres
- Minimum rear yard: 9 metres
- Parking space requirements are to comply with 4.0 of the zoning by-law
- The number of parking spaces shall be calculated as per section 4.9 tt) - 1 parking space for every 180 m2 of useable floor area
- Parking space sizes shall conform to section 4.1.3

iv. Norfolk County Engineering and Infrastructure Services

Contact Name and Title: Robert Bardaloo, Development Engineering Technologist
Email:robert.bardaloo@norfolkcounty.ca

Comments:

Development Engineering requirements to proceed The below requirements are to be submitted as part of the Formal Development Planning application.	**Required at OPA/ Zoning Stage**	**Required at Site Plan Stage**	**Potentially Required (See Notes Section)**
General Requirements			
Concept Plan		X	
Lot Grading Plan		X	
Siltation and Erosion Control Plan		X	
General Plan of Services		X	
Geotechnical Report			X
Functional Servicing Report		X	
Water Servicing Requirements– Section 10.0 Norfolk County Design Criteria and ISMP Section 4.0			
Disconnection of Water Service(s) to Property Line		X	

Disconnection of Water Service(s) to Main			X
Water Modelling (County Consultant)		X	
Backflow Preventer (RPZ)			X
Sanitary Servicing Requirements – Section 9.0 Norfolk County Design Criteria and ISMP Section 4.0			
Disconnection of Sanitary Service(s) to Property Line		X	
Disconnection of Sanitary Service(s) to Main			X
Sanitary Modelling (County Consultant)		X	
Property Line Inspection Maintenance Hole		X	
Storm Water Servicing Requirements – Section 7.0 and Section 8 Norfolk County Design Criteria and ISMP Section 4.0			
Storm Water Management Design Report (including calculations)		X	
Establish/Confirm Legal and Adequate Outlet		X	
Anticipated Flow/Analysis to Receiving Collection System		X	
Municipal Drainage		X	
Transportation Requirements – Section 6.0 Norfolk County Design Criteria, ISMP Section 5.0, Section 6.0 and Appendix J			
Traffic Impact Brief		X	
Improvements to Existing Roads & Sidewalk (urbanization, pavement structure, widening sidewalk replacement, upgrades, extension and accessibility)		X	

General Notes:

0. Two entrances are allowed in industrial area
1. Securities are to be provided in the amount of 10% of site works and 100% of works within the right-of-way. This is to be provided in a security schedule. A copy of Norfolk County's template can be provided. This can be provided at time of Site Plan.

2. All reports and drawings are to be signed and stamped by a Professional Engineer (P. Eng) and adhere to Norfolk County's Design Criteria and Integrated Sustainable Master Plan (ISMP). A copy of these criteria is available upon request.
3. Recommendations from all reports (FSR, SWM, TIS, Modelling, etc.) must be incorporated into the design and be constructed at the developer's expense.
4. All applicable permits and inspections to be issued by Public Works
5. As per Norfolk County By-Law 2013-65, only one domestic water service pipe and one water meter shall be installed per lot.

Required at Site Plan Stage:

6. **Concept Plan**;
7. **Lot Grading Plan, Siltation and Erosion Control Plan, and General Plan of Services** drawing can be shown on one engineering plan as long as it's legible for review.
8. **A Functional Servicing Report will be required.** The FSR will explain the type of sanitary and water services required for this development and explain how each service will meet the Norfolk County Water and Wastewater requirements. The Functional Servicing Report must include water /sanitary servicing and fire flow calculations. Fire Flow calculations are to be completed in accordance with "Water Supply for Public Fire Protection 2020" by Fire Underwriters Survey.

9. **Stormwater Management Report** is to be completed as per Norfolk County Design Criteria Section 7.0, 8.0 and Section 4.0 of the ISMP. The Stormwater Report should include the following:
   - Site Area (existing and proposed)
   - Impervious Area (existing and proposed)
   - Pre and Post runoff coefficients
   - Estimated peak runoff for five-year storm
   - **Confirmation of Legal and Adequate outlet**
   - Conclusions and recommendations, if any.

   The development design should consider infiltration-based controls as described in the Province of Ontario's Stormwater management plan and SWMP design (ie. Grass swales, reduced grading to allow greater ponding, directing roof leaders to rear yard ponding areas, soak away pits and/ or cisterns), if possible

   The ultimate handling of all Storm water discharge shall be identified in the Stormwater Management Report, including all overland discharges from site.

10. The property in this proposal is currently part of the Argyle Avenue Municipal Drain with the *storm pond on argyle avenue drain having exceeded its design capacity.* Additional consultation with Norfolk County's Drainage Department may be required. This may be necessary prior to completing the determination of the legal and adequate outlet.

11. Sanitary and Water modelling will be required. This will be determined after submission of the Functional Servicing Report. The concerns will be around any increases to Domestic Water and Wastewater use, there will also need to be an assessment of the Fire Flow requirements once calculations have been submitted as per Fire Underwriters Survey. During this assessment if Norfolk County determines Water/Wastewater Modelling is required the following criteria will be followed:

    This is to be completed by Norfolk County's third-party consultant. The cost to complete the modelling and any recommendations from reports are to be implemented into the design at the applicant's expense. The following information will be required to receive a quote and complete the modelling.

    a. General Plan of Services
    b. Functional Servicing Report.

    The Functional Servicing Report must include water /sanitary servicing and fire flow calculations. All municipal servicing is to be designed as per Norfolk County Design Criteria. All fire flows requirements are to be completed as per Fire Underwriters Survey (FUS)

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

12. Prior to demolition of the building the existing Water and Sanitary services on private property must be decommissioned and disconnected as per Norfolk County standards. The process includes applying for a disconnection permit with Norfolk County's Environmental Services department. In consultation with the Environmental Services Department

13. Disconnection of existing water services will be required prior to installation of the new water service. Permits are required prior to any work being completed. It should be assumed that disconnection will probably be required earlier at the Demolition stage.

14. All entrances must be paved within Municipal ROW and meet Norfolk County design criteria of 9 meters. Other driveway improvements such as confirmation of adequate width and proper radius returns must be reviewed. It is to be noted as per Zoning By-law 16.5.02 that 2-way traffic isles are to be a minimum of 7.3 meters

15. **A Stormwater Management Brief (SWM)** is to be completed as per Norfolk County Design Criteria Section 7.0 and comply with Section 4.0 of the ISMP. The overall SWM shall include confirmation of Legal and Adequate outlet.

16. **A Traffic Impact Study should be required with every planning application. However, as this development is small in nature, ask that you complete a Traffic Impact Brief**. Hence, as per Norfolk County's ISMP Appendix J - TIS

Guidelines, a Traffic Impact Brief can be prepared based on the following sections of the Appendix J - TIS Guidelines:

a. Section A1.3 – Existing Conditions;
b. Section A1.4 – Study Area;
c. Section A1.5 – Development Land Use Type & Site Plan;
d. Analysis:

i. Sightlines;

e. Conclusions and Recommendations

Potentially Required Notes:

1. A Geotechnical report must be submitted if Storm water management practices involving infiltration are proposed.
2. Depending on eventual design of proposed water service and the proposed usage within the development a Backflow Preventer (RPZ) may be required. Approval from the Manager of Environmental Services must be obtained as per Norfolk County Design criteria. A Testable DCVA Backflow device may be required in a watertight chamber at property line.

v. Norfolk County Realty Services

Contact Name and Title: Alisha O'Brien, Corporate Services Generalist
Email: realty.services@norfolkcounty.ca
Comments:

The County will require postponements of any charges/mortgages on title to the County's Development Agreement. We recommend that you connect with your Lender(s) (if any) and/or your solicitors as early in the process as possible to avoid any delays.

vi. Haldimand Norfolk Health Unit

Contact Name and Title: Alex Dobias, Health Promoter
Email: alex.dobias@hnhss.ca
Comments:

HNHSS has no comments for this proposal.

vii. Mississaugas of the Credit First Nation

Contact Name and Title: Abby Lee LaForme, Consultation Coordinator
Email: abby.laforme@mncfn.ca
Comments:

The Mississaugas of the Credit First Nation (MCFN), Department of Consultation and Accommodation (DOCA) submit the following comments:

The Mississaugas of the Credit First Nation hereby notify you that we are the Treaty Holders of the land on which the development of storage container units will be taking place. This project is located on the Between the Lakes No. 3, of 1792.

Therefore, the MCFN Department of Consultation and Accommodation (DOCA) will waive the Stage 1 Archaeological requirements due to the previous ground disturbance. Please keep in mind that if any archaeological resources are uncovered, all ground disruption construction must stop immediately, and MCFN DOCA must be contacted at your earliest convenience.

Thank you

5. Notes and Clauses:

1. The purpose of this document is to identify the information required to commence processing a complete application as set out in the Planning Act, R.S.O. 1990, CHAPTER P.13, as amended and the County's Official Plan.
2. Pre-consultation does not imply or suggest any decision whatsoever on behalf of staff or the County to either support or refuse the application.
3. The application should be aware that the information provided is accurate as of the date of the pre-consultation meeting. Should an application not be submitted within a year, and should other policies, by-laws or procedures be approved by the Province, County, or other agencies prior to the submission of a formal application, the applicant will be subject to any new policies, by-laws or procedures that are in effect at the time of the submission of a formal application. **If an application is not submitted within one (1) year, another pre-consultation meeting shall be required, unless an exception is granted in writing by the Director of Planning**
4. It is hereby understood that during the review of the application additional studies or information may be required as a result of issues arising during the processing of the application or the review of the submitted studies.
5. If the County does not have sufficient expertise to review and determine that a study is acceptable, the County may require a peer review. The terms of reference for a peer review is determined by the County and paid for by the applicant.
6. Please note if performance securities are required by the County to secure any internal and external development works, a recommended condition for your planning application approval will be to enter into a development agreement with the County. The agreement will be registered on title to the

subject lands, at the owner's expense. The additional requirements for an agreement could include, but are not limited to the following:

- Engineering drawing review
- Engineer's schedule of costs for the works
- Clearance letter and supporting documentation to support condition clearance
- User fees and performance securities
- Current property identification number (PIN printout)
- Owner's commercial general liability insurance certificate
- Professional liability insurance certificate
- Postponement of interest
- Transfers and / or transfer easements along with registered reference plan

6. Signatures

Staff Signatures

County Planning Staff : Date:

Planning Staff Signature:

Applicant/Owner Signature

Owner Name (print): Applicant Name (Print):

Owner Signature: Applicant Signature:

Date:

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

Provincial Policy Statement, 2020
https://www.ontario.ca/page/provincial-policy-statement-2020

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

Section 9.6.1 outlines requirements in relation to requests to amend the Official Plan. Section 9.6.2 outlines requirements in relation to requests to amend the Zoning By-law.

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

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

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

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

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

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

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

Norfolk County Engineering Design Standards

All applicants must adhere to Norfolk County’s Design Criteria when undertaking a development project. Please contact Engineering and Infrastructure Services directly for a copy of Norfolk County’s Design Criteria .

REQUIRED INFORMATION

Name of Owner_____

Property Legal Description_____

Roll Number_____

PIN Number_____

Type and Number of Units

Single Detached_____

Semi-Detached_____

Duplex _____

Triplex _____

Four-plex_____

Street Townhouse_____

Stacked Townhouse_____

Apartment_____

Transfer Easements Block Number and Purpose_____

Transfer Block Number and Purpose_____

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

OWNER INFORMATION

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL _____

AGENT INFORMATION

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL _____

ENGINEER INFORMATION

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL _____

LAWYER INFORMATION

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL_____

INSURANCE PROVIDER INFORMATION

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL_____

FINANCIAL INSTITUTION INFORMATION (IF APPLICABLE)

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL_____

MORTGAGEE INFORMATION (IF APPLICABLE)

NAME AND CONTACT_____

ADDRESS WITH POSTAL CODE_____

PHONE NUMBER_____

EMAIL _____

SPECIES AT RISK SCREENING

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

TRANSFERS, EASEMENTS AND POSTPONEMENT OF INTEREST

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

INSURANCE CERTIFICATES

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

OWNER'S AUTHORIZATION

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

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

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

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

_____

Owner Signature Date

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

CONTACT FOR FURTHER INFORMATION AND QUESTIONS

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

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

DOCUMENTATION AND FEES REQUIRED

- ☐ Owner's agreement authorization
- ☐ Postponement of interest from mortgagee / chargee (if applicable)
- ☐ Current parcel register (property identifier or PIN printout)
- ☐ Owner's commercial general liability certificate of insurance
- ☐ Construction estimates (100% for external works and landscaping with 10% of internal works)
- ☐ Professional liability insurance for surveyor and / or engineer
- ☐ Final reference plan for any easements and lands to be conveyed
- ☐ Letter from owner requesting holding (H) symbol be removed from the subject lands
- ☐ Letter of credit or certified cheque for performance securities
- ☐ Current property taxes paid
- ☐ User fees (according to the By-Law in effect at the time that payment is made). If time is of the essence, a certified cheque is requested otherwise it will take three weeks for the cheque to clear our financial institution.

  $2,919 for preparation of the site plan agreement
  $971 to remove the holding from the zoning on the property (if applicable)
  $470 for financial administration of this agreement
  $570 per tree cash-in-lieu of trees (if applicable)
  2% or 5% land appraisal cash-in-lieu of parkland as per consolidated by-law 2016-126 (if applicable)

LEGEND & NOTES:

SIB DENOTES STANDARD IRON BAR.
IB " IRON BAR.
IBØ " ROUND IRON BAR.
CC " CUT CROSS.
WIT " WITNESS.
(SU) " SOURCE UNKNOWN
■ " MONUMENT FOUND.
□ " MONUMENT SET.
CPIN " CONCRETE PIN
UP " UTILITY POLE
OU " OVERHEAD UTILITY CABLE
GW " GUY WIRE
FH " FIRE HYDRANT
MHSTM " STORM MANHOLE
CB " CATCH BASIN
WV " WATER VALVE
P.I. " POINT OF INTERSECTION
——— " CHAIN LINK FENCE

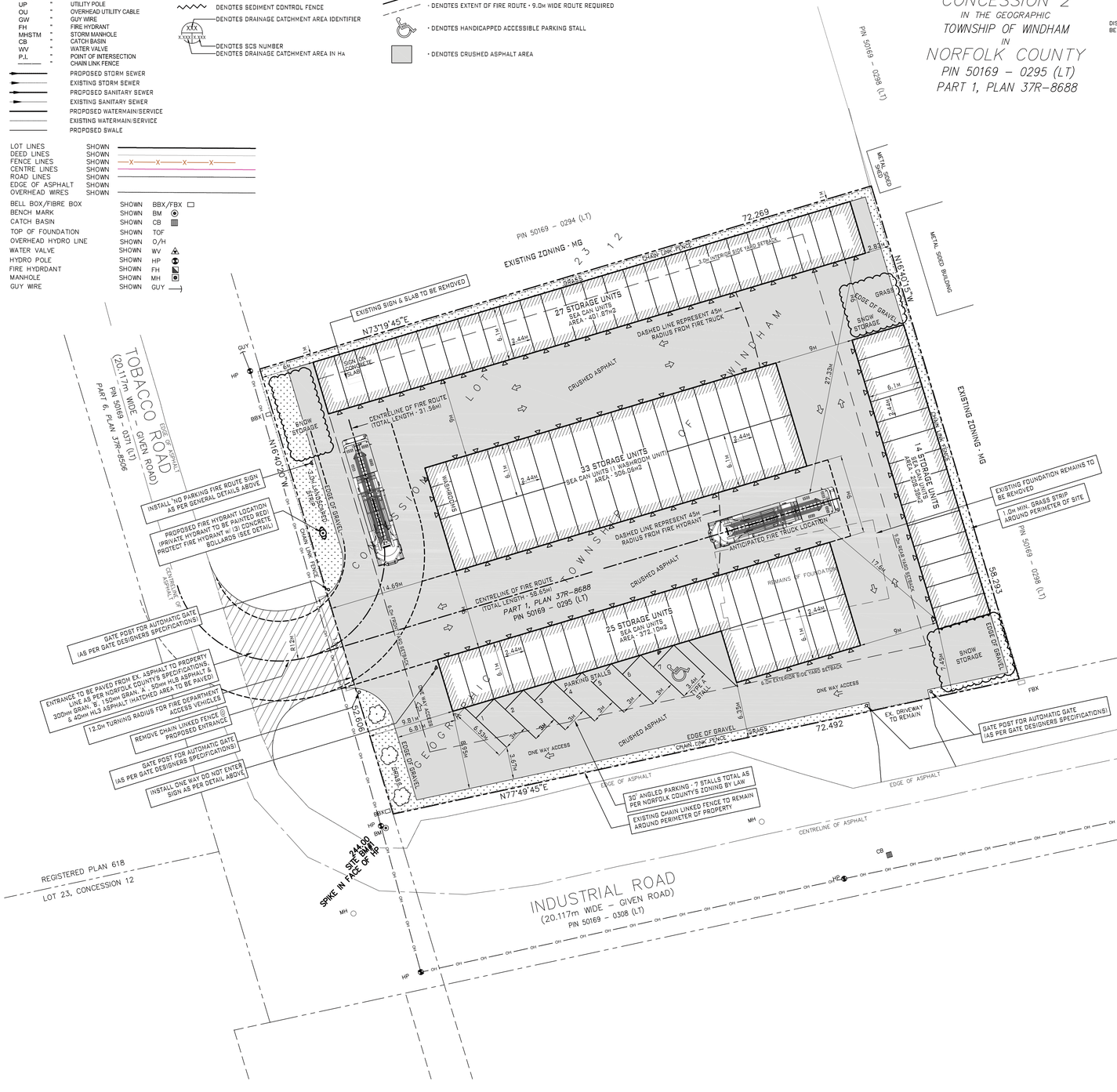
PROPOSED STORM SEWER
EXISTING STORM SEWER
PROPOSED SANITARY SEWER
EXISTING SANITARY SEWER
PROPOSED WATERMAIN/SERVICE
EXISTING WATERMAIN/SERVICE
PROPOSED SWALE

DESIGN ELEVATION
DESIGN ELEVATION AT BUILDING FACE
18.17 DENOTES EXISTING ELEVATIONS AS PER JEWITT & DIXON ONTARIO LAND SURVEYORS
X.XX% DENOTES OVERLAND FLOW DIRECTION & GRADIENT
DENOTES SHEET OVERLAND FLOW DIRECTION
DENOTES SEDIMENT CONTROL FENCE
XXX DENOTES DRAINAGE CATCHMENT AREA IDENTIFIER
X.XX/X.XX
DENOTES SCS NUMBER
DENOTES DRAINAGE CATCHMENT AREA IN Ha

· DENOTES TRAFFIC FLOW DIRECTION
· DENOTES BUILDING ENTRANCES TO SEA CANS
· DENOTES REQUIRED ASPHALT PAVING
· DENOTES CENTERLINE OF FIRE ROUTE · 12.0M RADIUS
· DENOTES EXTENT OF FIRE ROUTE · 9.0M WIDE ROUTE REQUIRED
· DENOTES HANDICAPPED ACCESSIBLE PARKING STALL
· DENOTES CRUSHED ASPHALT AREA

PROPOSED CRUSHED ASPHALT DETAIL
· 125-150MM CRUSHED ASPAHLT
· 200MM THICK GRANULAR 'A'

LOT LINES	SHOWN	
DEED LINES	SHOWN	
FENCE LINES	SHOWN	—X—X—X—X—
CENTRE LINES	SHOWN	
ROAD LINES	SHOWN	
EDGE OF ASPHALT	SHOWN	
OVERHEAD WIRES	SHOWN	
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	SHOWN	HP
FIRE HYDRDANT	SHOWN	FH
MANHOLE	SHOWN	MH
GUY WIRE	SHOWN	GUY



TOPOGRAPHIC SITE PLAN
OF PART OF
LOT 23
CONCESSION 2
IN THE GEOGRAPHIC
TOWNSHIP OF WINDHAM
IN
NORFOLK COUNTY
PIN 50169 - 0295 (LT)
PART 1, PLAN 37R-8688

SITE B.M.#1
SPIKE IN FACE OF WOOD HYDRO POLE
ELEV = 244.00
(GEODETIC)

SITE B.M.#2
TOP OF MAIN OUTLET OF FIRE HYDRANT
ELEV = 243.63
(GEODETIC)

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

MAP NORFOLK - Community Web Map

KEY MAP - N.T.S.

ZONING DATA TABLE & SITE STATISTICS:

EXISTING USE: MG - GENERAL INDUSTRIAL - FARM IMPLEMENT DEALERSHIP
PROPOSED BUILDING USE: MINI STORAGE UNITS (SEA CANS)
EXISTING ZONE: MG - GENERAL INDUSTRIAL
TOTAL BUILDING AREA - 99 SEA CANS STORAGE UNITS @ 14.884M2 = 1473.52M2

ZONE REGULATION	REQUIRED	PROVIDED	NOTES:
LOT AREA - MINIMUM	1855M2	4007.26M2	
LOT FRONTAGE - MINIMUM	20.0M	52.606M	
FRONT YARD DEPTH - MINIMUM	6.00M	6.0M	
EXTERIOR SIDE YARD - MINIMUM	6.00M	6.35M	
INTERIOR SIDE YARD - MINIMUM	3.00M	1.0M	- MINOR VARIANCE REQUIRED
REAR YARD DEPTH - MINIMUM	9.00M	1.0M	- MINOR VARIANCE REQUIRED
HEIGHT OF BUILDING - MAXIMUM	45DEG ANGULAR PLANE	2.59M	
OUTDOOR STORAGE PROHIBITED IN ANY FRONT OR EXTERIOR SIDE YARDS			
SITE STATISTICS			
BUILDING AREA	NO PROVISION	1488.40M2 - 37.14%	
GRANULAR AREA	NO PROVISION	3701.58M2 - 92.37%	
GRASS AREA	NO PROVISION	305.68M2 - 7.63%	
PARKING SPACE REQUIREMENTS	RATE	PROVIDED	
WAREHOUSE OR WHOLESALE ESTABLISHMENT	1/180M2 9 STALLS 1 TYPE A STALL REQUIRED	7 STALLS 1 TYPE A STALL	- MINOR VARIANCE REQUIRED

** - WHERE AN EVEN NUMBER OF ACCESSIBLE PARKING SPACES ARE REQUIRED AN EQUAL NUMBER OF TYPE A AND TYPE B SPACES MUST BE PROVIDED. WHERE AN ODD NUMBER OF TOTAL ACCESSIBLE PARKING SPACES ARE REQUIRED THE ADDITIONAL SPACE MAY BE A TYPE B SPACE

GARBAGE / RECYCLING STORAGE:

GARBAGE / RECYCLING WILL BE STORED INTERNALLY AND WILL BE COLLECTED PRIVATELY

SNOW STORAGE

ALL SNOW TO BE PLOWED TO & COLLECTED IN DESIGNATED AREAS. IF DESIGNATED AREAS AREAS BECOME FULL THEN THE SNOW IS TO BE TRUCKED OFF SITE.

FIRE ROUTE SIGN DETAIL

VAN ACCESSIBLE SIGN DETAIL

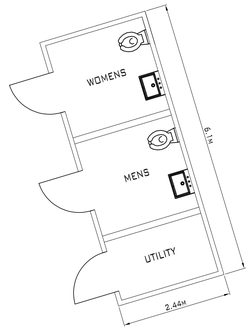
ONE WAY ACCESS SIGN

GENERAL DETAILS:
NOT TO SCALE

NOTE: SIGNAGE TO CONFORM TO APPLICABLE SIGN BY-LAW. EXACT SIZES TO BE CONFIRMED BY SUPPLIER. MOUNTING OPTIONAL TO STEEL POLE OR BUILDING. ENSURE ALL SIGNAGE IS VISIBLE @ ALL TIMES.

WASHROOM BUILDING
SCALE: N.T.S.

EACH WASHROOM TO BE EQUIPPED W/ 1 WATER CLOSET & 1 LAVATORY



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3	ISSUED FOR SITE PLAN APPROVAL	TS	AUG. 25, 2025

ORIGINAL SURVEY COMPLETED BY:

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A Division of Kim Husted Surveying Ltd.
650 Ireland Rd., Simcoe, ON N3Y 4K2
www.jdbarnes.com
SURVEYING MAPPING GIS

DESIGNED BY:

girard ENGINEERING
2478153 ONTARIO INC.
WOODSTOCK OTTERVILLE
TEL: 1-519-879-6875
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PROFESSIONAL ENGINEER
M. K. VASANTHA
100715168
August 26, 2025
PROVINCE OF ONTARIO

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DESIGNED FOR:

2566899 ONTARIO INC.
JEREMY DEKONINCK
160 HIGHWAY 59, R.R.#2
DELHI, ONTARIO, N4B 2A4
TEL: 1-519-861-0683
EMAIL: JDEKONINCK@NOR.DEL.COM

MINI STORAGE FACILITY
15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

SITE PLAN

SCALE:	1:250		
DATE:	MAY 2025	DRAWING NO:	100
DRAWING BY:	T. SPRAGUE		
DESIGNED BY:	T. SPRAGUE		
CHECKED BY:	M. VASANTHA		
PROJECT NO:	25-055		

LEGEND & NOTES:

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UP " UTILITY POLE
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FH " FIRE HYDRANT
MHSTM " STORM MANHOLE
CB " CATCH BASIN
WV " WATER VALVE
P.I. " POINT OF INTERSECTION
-x-x-x- " CHAIN LINK FENCE

PROPOSED STORM SEWER
EXISTING STORM SEWER
PROPOSED SANITARY SEWER
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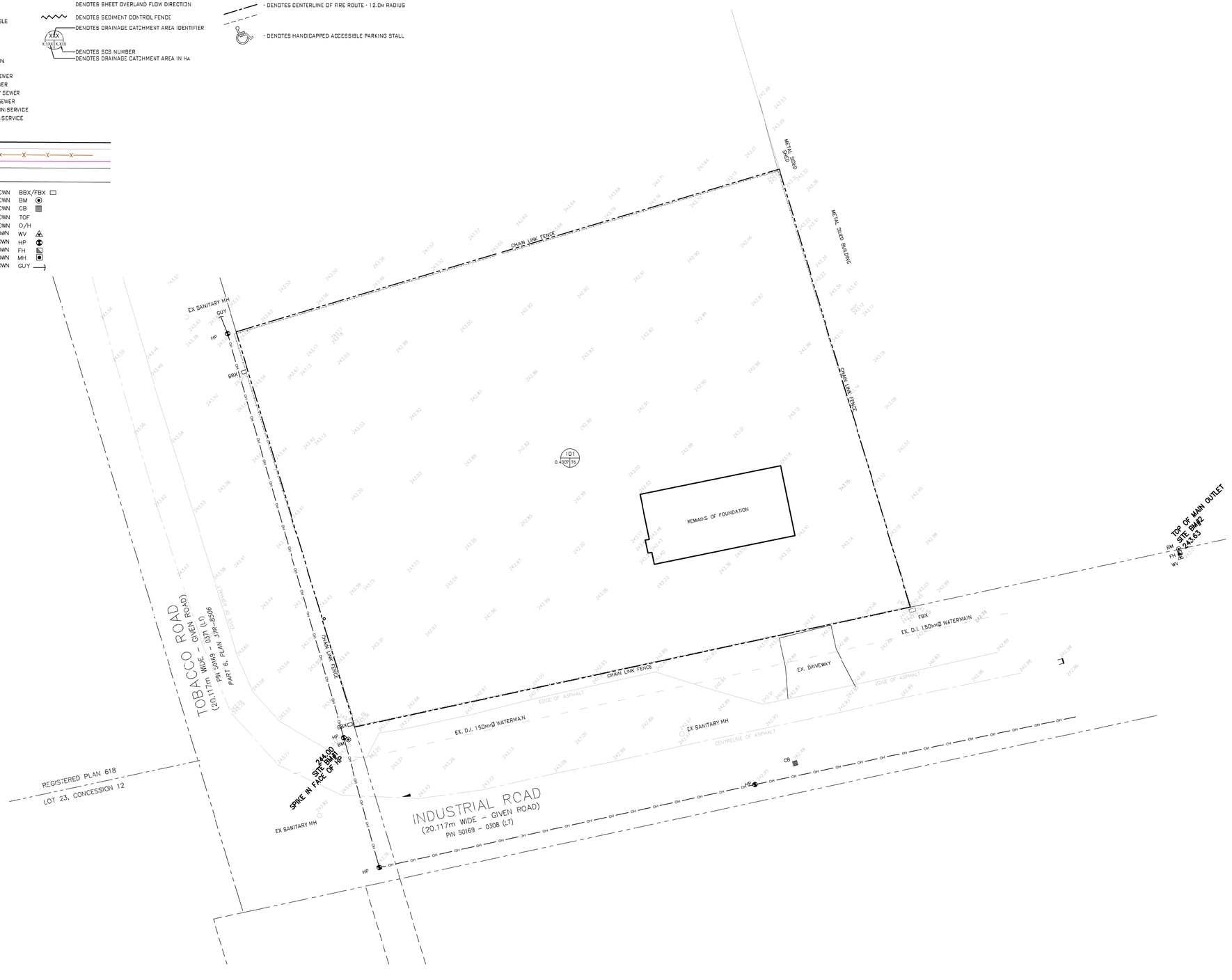

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TEL: 1-519-879-6875
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PROFESSIONAL ENGINEER
M. K. VASANTHA
100756
August 26, 2025
PROVINCE OF ONTARIO

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DESIGNED FOR:

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160 HIGHWAY 59, R.R.#2
DELHI, ONTARIO, N4B 2A4
TEL: 1-519-861-0683
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MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

PRE-DEVELOPMENT PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SPRAGUE
DESIGNED BY:	T. SPRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-035

DRAWING NO: 200

LEGEND & NOTES:

SIB	DENOTES	STANDARD IRON BAR.
IB	"	IRON BAR.
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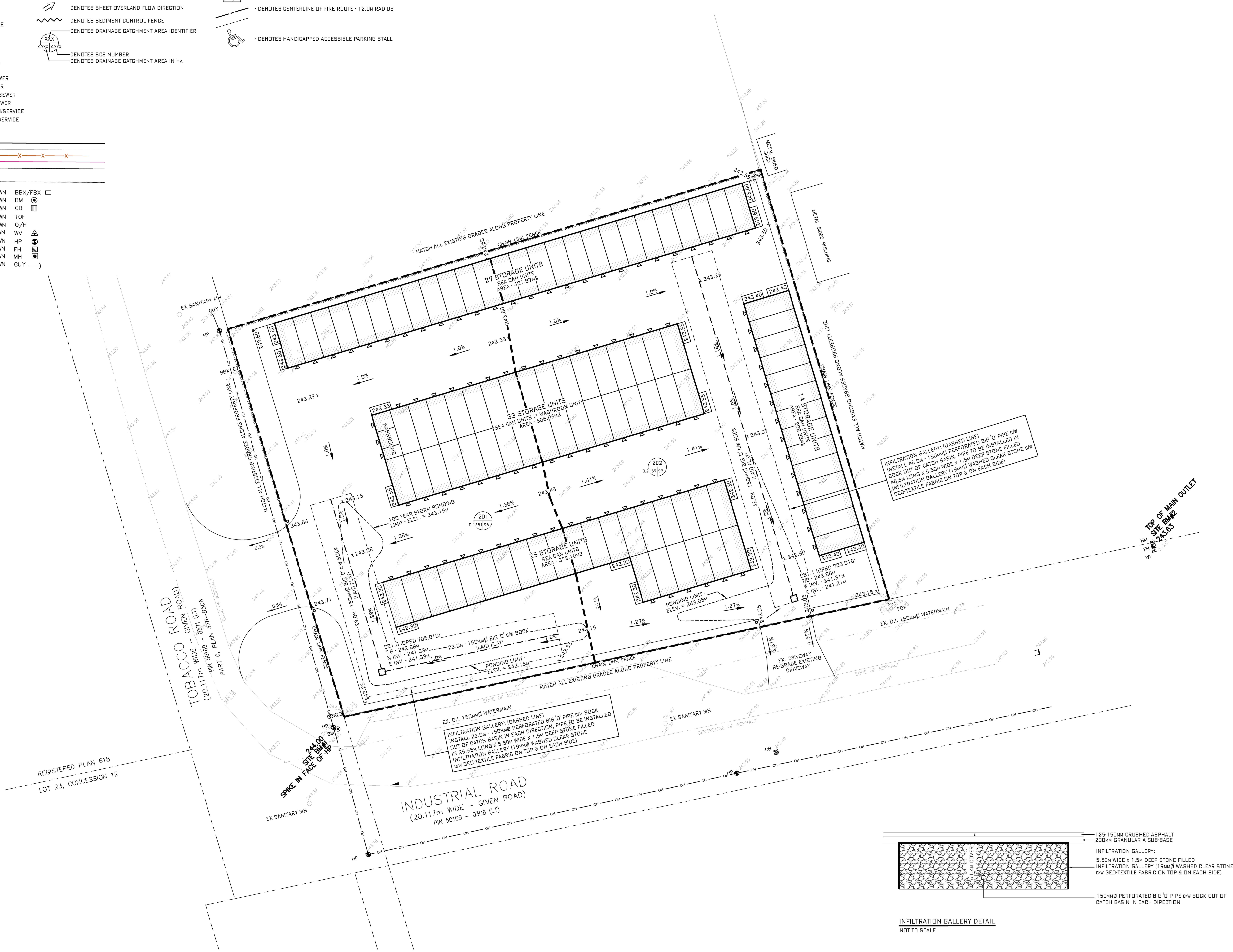

INFILTRATION GALLERY DETAIL
NOT TO SCALE

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MINI STORAGE FACILITY
15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

GRADING & STORM WATER MANAGEMENT PLAN

SCALE:	1:250	
DATE:	MAY 2025	DRAWING NO:
DRAWING BY:	T. SPRAGUE	201
DESIGNED BY:	T. SPRAGUE	
CHECKED BY:	M. VASANTHA	
PROJECT NO:	25-055	

LEGEND & NOTES:

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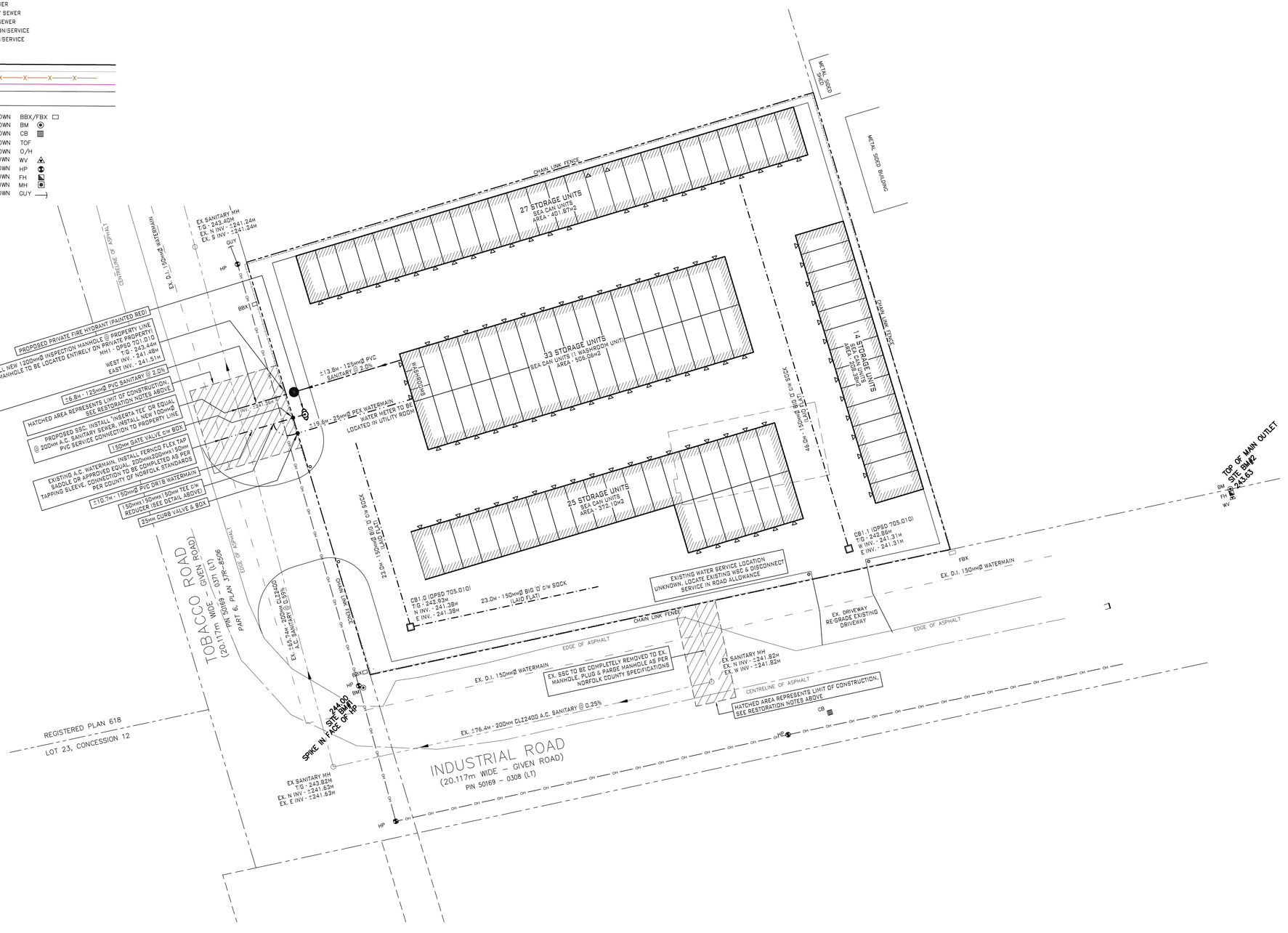
GUY WIRE	SHOWN	GUY

SITE RESTORATION NOTES:

- ALL ASPHALT TO BE SAWCUT @ LIMIT OF CONSTRUCTION, ASPHALT TO REMOVED AND DISPOSED OFF SITE BY CONTRACTOR @ OWNERS EXPENSE.
- ASPHALT TO BE REPLACED AS PER NORFOLK COUNTYS SPECIFICATIONS (AS FOLLOWS):
  - 40MM HL3 SURFACE ASPHALT
  - 50MM HL8 BASE ASPHALT
  - 150MM GRANULAR A
  - 300MM GRANULAR B
- BOULEVARD RESTORATION:
  - MINIMUM 100MMSCREENED TOPSOIL c/w APPROVED GROUND COVER
  - APPROVED NATIVE SOIL SUB-GRADE



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REGISTERED PROFESSIONAL ENGINEER
T. V. VASANTHA
100751J43
August 26, 2025
PROVINCE OF ONTARIO

DESIGNED FOR:

2566899 ONTARIO INC.
JEREMY DEKONINCK
160 HIGHWAY 59, R.R.#2
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EMAIL: JDEKONINCK@NOR.DEL.COM

MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

SITE SERVICING PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SPRAGUE
DESIGNED BY:	T. SPRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-055

DRAWING NO:
300

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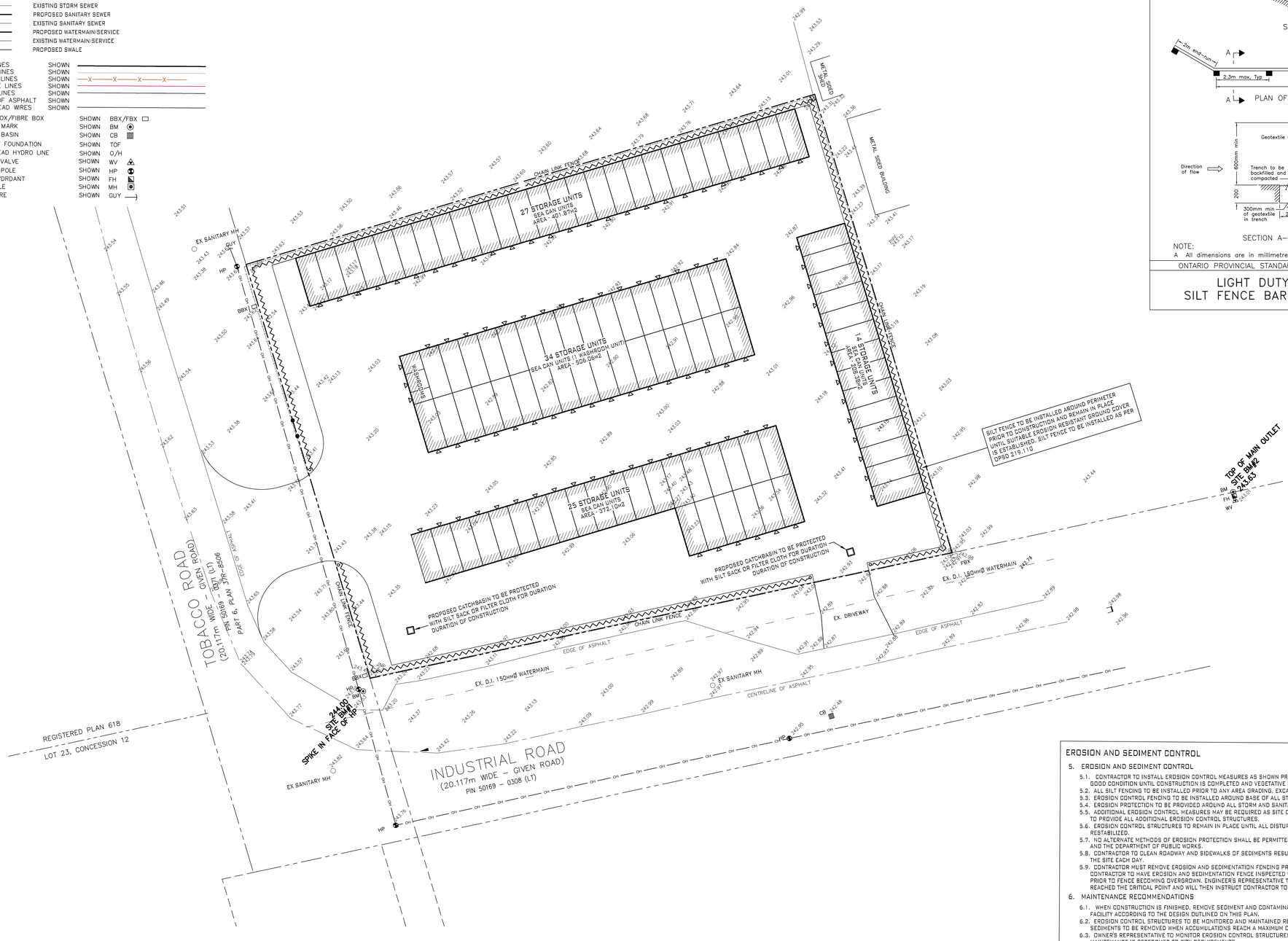

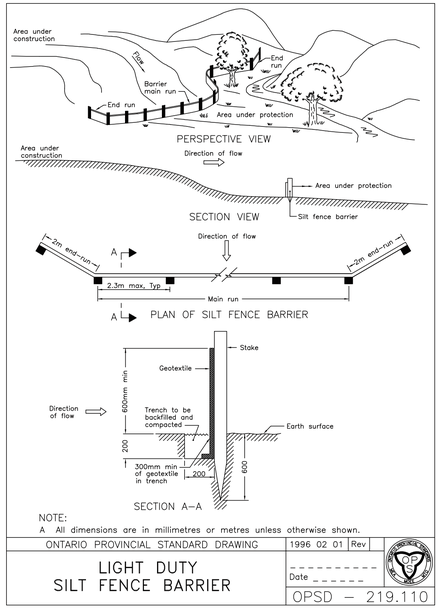

NOTE:
A All dimensions are in millimetres or metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	1996 02 01	Rev
LIGHT DUTY SILT FENCE BARRIER	Date	OPSD – 219.110

EROSION AND SEDIMENT CONTROL

5. EROSION AND SEDIMENT CONTROL
   - 5.1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND VEGETATIVE COVER IS ESTABLISHED.
   - 5.2. ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.
   - 5.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES.
   - 5.4. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.
   - 5.5. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
   - 5.6. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.
   - 5.7. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE DEPARTMENT OF PUBLIC WORKS.
   - 5.8. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.
   - 5.9. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.
6. MAINTENANCE RECOMMENDATIONS
   - 6.1. WHEN CONSTRUCTION IS FINISHED, REMOVE SEDIMENT AND CONTAMINANTS AND REINSTATE STORMWATER MANAGEMENT FACILITY ACCORDING TO THE DESIGN OUTLINED ON THIS PLAN.
   - 6.2. EROSION CONTROL STRUCTURES TO BE MONITORED AND MAINTAINED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.
   - 6.3. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

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PROFESSIONAL ENGINEER
M. R. K. VASANTHA
100175548
August 26, 2025
PROVINCE OF ONTARIO

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MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
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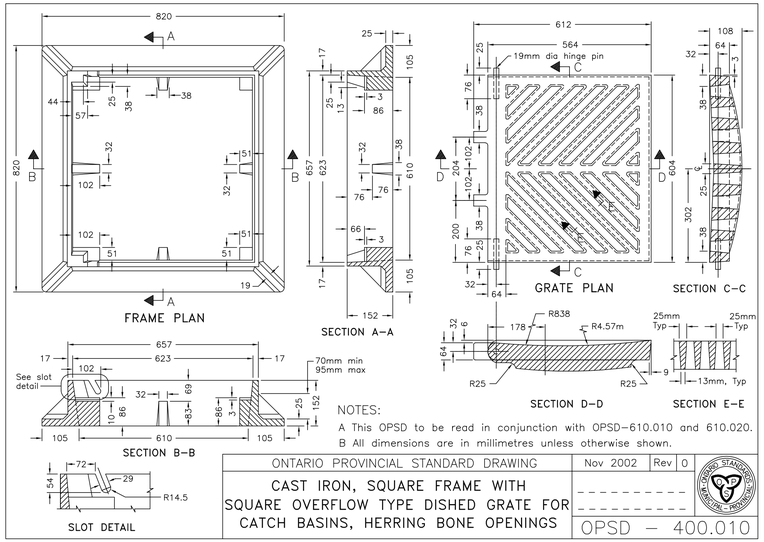
SEDIMENT & EROSION PLAN

SCALE:	1:250	DRAWING NO:	400
DATE:	MAY 2025		
DRAWING BY:	T. SPRAGUE		
DESIGNED BY:	T. SPRAGUE		
CHECKED BY:	M. VASANTHA		
PROJECT NO:	25-055		

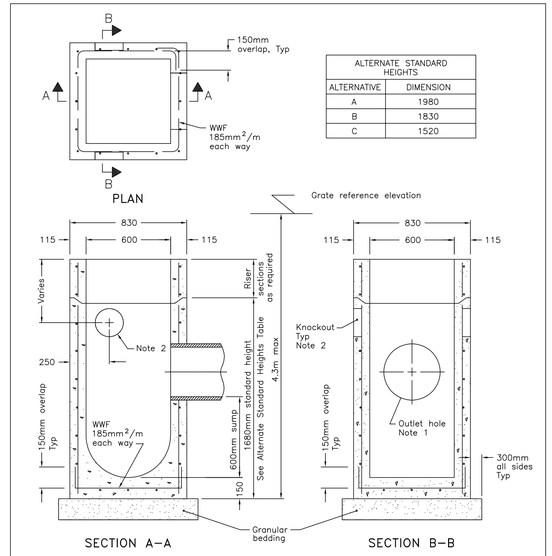


NOTES:

A This OPSD to be read in conjunction with OPSD-610.010 and 610.020.

B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2002	Rev	0
CAST IRON, SQUARE FRAME WITH SQUARE OVERFLOW TYPE DISHED GRATE FOR CATCH BASINS, HERRING BONE OPENINGS			
	OPSD – 400.010		



ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1520

NOTES:

1 Outlet hole size 525mm diameter maximum, location as required.

2 200mm diameter knockout to accommodate subdrain. Knockout to be 60mm deep.

A Centre reinforcing in base slab and walls ±20mm.

B Granular backfill to be placed to a minimum thickness of 300mm all around the catch basin.

C Frame, grate, and adjustment units shall be installed according to OPSD-704.010.

D Pipe support according to OPSD-708.020.

E All dimensions are nominal.

F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2004	Rev	1
PRECAST CONCRETE CATCH BASIN 600x600mm			
	OPSD – 705.010		

CONSTRUCTION NOTES AND SPECIFICATIONS

1. GENERAL
   - 1.1. THIS PLAN NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY NORFOLK COUNTY.
   - 1.2. THIS PLAN IS TO BE USED FOR SERVICING AND GRADING ONLY; ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THIS PLAN MUST NOT BE USED TO SITE THE PROPOSED BUILDINGS.
   - 1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
   - 1.4. THIS PLAN IS NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF GIRARD ENGINEERING.
   - 1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:
     - 1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.
     - 1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.
     - 1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.
     - 1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.
   - 1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO EXISTING WORKS.
   - 1.7. ALL WORKS ON A MUNICIPAL RIGHT-OF-WAY WILL BE INSTALLED BY CONTRACTOR THE OWNERS EXPENSE. THE CONTRACTOR IS TO MAKE CONNECTION TO THE SERVICES AND RESTORE ALL AFFECTED PROPERTIES TO ORIGINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL BOULEVARD AREAS.
   - 1.8. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND IN COMPLIANCE WITH LOCAL APPLICABLE CODES AND REGULATIONS; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.
   - 1.9. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2. GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
   - 1.10. PLAN TO BE READ IN CONJUNCTION WITH SWM REPORT PREPARED BY GIRARD ENGINEERING
   - 1.11. SITE PLAN INFORMATION TAKEN FROM PLAN PREPARED BY JEWITT & DIXON - ONTARIO LAND SURVEYORS.
   - 1.12. EXISTING TOPOGRAPHIC AND LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY JEWITT & DIXON - ONTARIO LAND SURVEYORS. GIRARD ENGINEERING ASSUMES THAT ALL TOPOGRAPHICAL INFORMATION IS AN ACCURATE REPRESENTATION OF CURRENT CONDITIONS.
   - 1.13. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1.0 METER FROM FOUNDATION WALL.
   - 1.14. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUIVALENT.
   - 1.15. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND COVER.
   - 1.16. ALL MATERIALS, INSTALLATION, AND WORK MUST MEET NORFOLK STANDARDS AND SPECIFICATIONS.
   - 1.17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF NORFOLK COUNTY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
   - 1.18. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
   - 1.19. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN ALL SEWER AND SERVICE TRENCHES.
   - 1.20. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.
2. STORM SEWERS
   - 2.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS 'B' AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. 'A'. TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300MM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - 2.2. STORM SEWERS 150MM SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN RIGHT-OF-WAY.
   - 2.3. CATCHBASINS TO BE 600MM SQUARE PRECAST AS PER OPSD 705.010.
   - 2.4. CATCHBASINS TO HAVE A MINIMUM 600MM DEEP SUMP. WHEN THE STRUCTURE INCLUDES THE INSTALLATION OF A SNOUT (OR APPROVED EQUIVALENT) THE SUMP DEPTH TO BE MIN 2.5 TIMES THE OUTLET PIPE DIAMETER SIZE.
   - 2.5. CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.
   - 2.6. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.4M COVER TO TOP OF PIPE, WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR 'SEWER PIPE INSULATION DETAIL'.
   - 2.7. UNDER NO CIRCUMSTANCES SHALL THE BUILDING FOUNDATION DRAINS BE CONNECTED DIRECTLY TO THE STORM SEWER SYSTEM.
3. SANITARY SEWERS
   - 3.1. PIPE BEDDING FOR ALL PIPE TO BE AS PER NORFOLK COUNTY STANDARDS AND SPECIFICATIONS. TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300MM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - 3.2. SANITARY SEWERS 150MM AND SMALLER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.
   - 3.3. SANITARY SEWERS AND SERVICES TO HAVE MINIMUM 1.4M COVER TO TOP OF PIPE, WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR 'SEWER PIPE INSULATION DETAIL'.
   - 3.4. CONTRACTOR RESPONSIBLE FOR TESTING OF SANITARY SEWERS IN ACCORDANCE WITH OPSS 410.
4. WATERMAINS
   - 4.1. PIPE BEDDING FOR ALL PIPE TO BE AS PER NORFOLK COUNTY STANDARDS AND SPECIFICATIONS. TRENCH TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300MM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - 4.2. WATER SERVICE CONNECTIONS 50MM AND SMALLER, SHALL BE BLACK POLY - SERIES 160 OR MUNICIPEX.
   - 4.3. ALL METALLIC FITTINGS (EXCLUDING CURB/MAIN STOP AND BRASS FITTINGS) AND APPURTENANCES INCLUDING SADDLES, VALVES, TEES, BENDS ETC ARE TO BE WRAPPED WITH AN APPROVED PETROLATUM SYSTEM CONSISTING OF PASTE, MASTIC AND TAPE. CONTRACTOR TO REFER TO THE MOST RECENT EDITION OF AREA MUNICIPALITIES DESIGN GUIDELINES AND SUPPLEMENTAL SPECIFICATIONS FOR MUNICIPAL SERVICES FOR WRAPPING DETAILS.
   - 4.4. WATERMAIN VALVES, 100MM AND LARGER, SHALL BE AS PER AWWA C509 - MUELLER A2360-23 OR APPROVED EQUIVALENT (OPEN CLOCKWISE) INCLUDING VALVE BOX.
   - 4.5. PVC WATER SERVICE SHALL HAVE TWU STRANDED COPPER, AWG8 TRACER WIRE STRAPPED TO TOP AT 5 METRE INTERVALS.
   - 4.6. WATER CONNECTIONS MAYBE PLACED IN THE SAME TRENCH WITH A STORM OR SANITARY CONNECTION ONLY IF A MINIMUM VERTICAL SEPARATION OF 500MM IS MAINTAINED BETWEEN THE WATER SERVICE AND ANY OTHER PIPE, IN ACCORDANCE WITH SECTION 7.3.5.7.(2)A(II) OF THE ONTARIO BUILDING CODE
   - 4.7. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 1.7M COVER ON TOP OF PIPE, WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR 'WATER PIPE INSULATION DETAIL'.
   - 4.8. OWNER TO SUPPLY 2" WATER METER (OMNI SENSUS 2" T2 DR E2 FLANGED). FULL PORT SHUT OFF VALVES TO BE INSTALLED ON EACH SIDE OF THE METER. CONTRACTOR TO INSTALL CHAMBER, METER, ALL VALVES, PIPING AND REMOTE METER READOUT IN BUILDING MECHANICAL ROOM.
   - 4.9. RPZ BACKFLOW PREVENTOR TO BE INSTALLED ON THE DOMESTIC SERVICE INSIDE THE BUILDING AFTER METER AND FULL PORT SHUTOFF VALVE.
   - 4.10. WATER SERVICE FROM MAIN TO CURB STOP MUST BE LAID PERPENDICULAR TO MAIN AND CURB STOP.
   - 4.11. ALL COUPLINGS MUST BE CAMBRIDGE BRASS, FORD OR MUELLER COMPRESSION FITTINGS. NO LEAD STAMP. ALL COUPLING TO BE MIN. 2.5M FROM ANY SANITARY SEWER SERVICE.

ACTUAL NORTH

BOTH THE CLIENT AND THE CONTRACTOR, INCLUDING ALL SUB-TRADES, SHALL REVIEW ALL DRAWINGS AND VERIFY ALL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CLIENT AND THE CONTRACTOR TO REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

THESE DRAWINGS ARE TO BE READ AND NOT TO BE SCALED.

NO:	REVISION:	BY:	DATE:
1	ISSUED FOR PRELIMINARY REVIEWS	TS	JUNE 11, 2025

ORIGINAL SURVEY COMPLETED BY:

JEWITT AND DIXON ONTARIO LAND SURVEYORS
SURVEYING MAPPING GIS
A Division of Kim Husted Surveying Ltd.
650 Ireland Rd., Simcoe, ON N3Y 4K2
www.jdbarnes.com

DESIGNED BY:

girard ENGINEERING
2478153 ONTARIO INC.
WOODSTOCK OTTERVILLE
TEL: 1-519-879-6875
EMAIL: INFO@GIRARDENGINEERING.CA

REGISTERED PROFESSIONAL ENGINEER M. A. VASANTHA 100175148 August 26, 2025 PROVINCE OF ONTARIO

DESIGNED FOR:

2566899 ONTARIO INC.
JEREMY DEKONINCK
160 HIGHWAY 59, R.R.#2
DELHI, ONTARIO, N4B 2A4
TEL: 1-519-861-0683
EMAIL: JDEKONINCK@NOR.DEL.COM

MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

GENERAL NOTES & DETAILS

SCALE:	1:250	DRAWING NO:	500
DATE:	MAY 2025		
DRAWING BY:	T. SPRAGUE		
DESIGNED BY:	T. SPRAGUE		
CHECKED BY:	M. VASANTHA		
PROJECT NO:	25-055		

FUNCTIONAL SERVICING REPORT

FOR

2566899 ONTARIO INC.
C/O JEREMY DEKONINCK

FOR

15 INDUSTRIAL ROAD
DELHI, ON N4B 2Z2

SUBMITTED: AUGUST 25, 2025

BY

682 PEEL STREET
WOODSTOCK, ON N4S 1L3
TEL: 519-879-6875
EMAIL: INFO@GIRARDENGINEERING.CA

JOB NUMBER: 25-055

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List of Abbreviations

LPRCA	Long Point Region Conservation Authority
MOECC	Ministry of the Environment and Climate Change

MTO	Ministry of Transportation – Ontario
MECP	Ministry of the Environment, Conservation, and Parks - Ontario
SWM	Storm Water Management
OBC	Ontario Building Code

1.0 Background

Girard Engineering has been retained by 2566899 Ontario Inc. c/o Jeremy Dekoninck to prepare a Functional Servicing and Storm Water Management (SWM) Report and subsequent designs in support of the site plan application for the 99 Unit Self Storage Facility planned to be constructed at 15 Industrial Road in Delhi, Ontario. The purpose of this report is to analyze, assess and address the Sanitary, Water, and Storm Water Management requirements for the proposed development according to the criteria established by Norfolk County, the Long Point Region Conservation Authority (LPRCA), the Ministry of Transportation (MTO) – Ontario, the Ministry of Environment and Climate Change (MOECC) – Ontario, and the Ministry of Environment, Conservation, and Parks (MECP) - Ontario. Details of the design are illustrated in this report and drawings have been attached accordingly.

1.1 Existing (Pre-Development) Conditions

The site (Figure 1) is located on the North East corner of the Industrial Road and Tobacco Road (Windham Street) intersection, South of Argyle Avenue. The legal description of the property is Part of Lot 23 Concession 2 in the Geographic Township of Windham in Norfolk County with PIN 50169-0295(LT) Part 1, Plan 37R-8688. It is a General Industrial Zone (MG) zoned property that is currently vacant with the exception of the remains of a former residence and a free standing sign. The site is a 4,007.26m^2 (0.4007Ha) site which is bordered by Industrial Road to the South, Tobacco Road (Windham Street) to the West, and industrial lands to the East and North. Under the pre-development conditions, the subject site is predominantly open green space. The site drains into itself from all sides. All site features noted above, as well as current grading and

drainage patterns are shown on the Pre-Development Plan (200) drawing as prepared by Girard Engineering and submitted as Appendix B of this report. The pre-development hard surface area (C=0.95) is equal to 167.195m^2, the gravel area (C=0.60) is equal to 81.991m^2, and the open green space area (C=0.15) is equal to 3,758.076m^2. The run-off coefficient of this site is therefore calculated to be C=0.26.

Figure 1. Site location (Source: Google Maps)

1.2 Proposed (Post-Development) Conditions

The General Industrial MG zoning is consistent with the requirements of the post-developed site. Under the post-development conditions, the subject site will include a 99-Unit Self Storage Facility with onsite driveways and parking areas. These site features, as well as proposed grading and drainage patterns are shown on the Site Plan (100), Grading & SWM Plan (201), and Site Servicing Plan (300) drawings as prepared by Girard Engineering and submitted as Appendix

B of this report. The post-development hard surface area (C=0.95) is equal to 3,701.532m^2 and the open green space area (C=0.22) is equal to 305.714m^2. The coefficient of this site is therefore calculated to be C=0.89.

2.0 Sanitary Design

A 200mm diameter municipal sanitary sewer is currently located under Tobacco Road and is available to address the sanitary servicing design needs of the proposed development.

2.1 Sanitary System Summary

The proposed development consists of a 99-Unit Self-Storage Facility which will also include Washroom / Utility Room Unit. The proposed new sanitary service will exit the building, run through an inspection manhole at the property line, before being connected to the trunk municipal sanitary sewer under Tobacco Road. It should be noted that an existing sanitary service is being provided to the site off of Industrial Road that is to be abandoned and removed as it is not conducive to use this service for the proposed development. Details about decommissioning the existing service and the new proposed sanitary service is as shown on the Site Servicing Plan (300) drawing as prepared by Girard Engineering and submitted as Appendix B of this report.

2.2 Sanitary System Design

All sanitary sewer systems including sanitary mains, services, manholes and other appurtenances shall be designed and installed to the following – Ontario Building Code and the Ministry of Environment Design Guidelines for Sanitary Sewers. The sanitary system parameters for this site are as follows:

- To generate the daily sewage flow for this site, Table 8.2.1.3.B. of the 2024 Ontario Building Code was used. Using a 'Warehouse' designation and looking at the daily sewage flow volume of 950 Litres / Day per water closet would give a total daily sewage flow of 3,900 Litres / Day.

- The new proposed sanitary service is to be a 125mm diameter service that will be extended to the building with an inspection manhole being installed at the property line.

- It is anticipated that the current Municipal services have capacity to accommodate the additional load for both regular demand and peak flows.

3.0 Water Design

A 150mm diameter municipal water main is currently located under Tobacco Road and is available to address the water servicing design needs of the proposed development.

3.1 Water System Summary

The proposed development consists of a 99-Unit Self-Storage Facility which will also include Washroom / Utility Room Unit. The proposed new water service will be metered before exiting the building, where it will be teed off of the fire service line just outside of the property line, before being connected to the municipal water main under Tobacco Road. The fire service line will run just inside the property line where a new proposed on-site fire hydrant is to be installed. It should be noted that there may still be an existing water service is being provided to the site off of Industrial Road that is to be abandoned and removed as it is not conducive to use

this service for the proposed development. Details about decommissioning the existing service and the new proposed water service is as shown on the Site Servicing Plan (300) drawing as prepared by Girard Engineering and submitted as Appendix B of this report.

3.2 Water System Design

All water distribution systems including water mains, services, private water mains and appurtenances shall be designed and installed to the following – Ontario Building Code, the Ministry of Environment Design Guidelines for Drinking Water Systems, and Regulations 435/93, 170/03 and any other regulations under the Safe Drinking Water Act and the Ontario Water Resources Act. The water system parameters for this site are as follows:

- Section 3.4.4. (Industrial Water Demands) of the MECP Design Guidelines Industrial states that water demands are often expressed in terms of water requirements per gross hectare of industrial development when the type of industry is unknown. These demands will vary greatly with the type of industry, but common allowances for industrial areas range from 35 m3/(ha·d) [3740 USgal/(acre·d)] for light industry to 55m3/(ha·d) [5880 USgal/ (acre·d)] for heavy industry. These are average daily demands and as such 35 m3/(ha·d) [3740 USgal/(acre·d)] is being considered as adequate for the proposed use of this development.

- Section 3.4.4. (Industrial Water Demands) of the MECP Design Guidelines Industrial also states that peak usage rates will generally be 2 to 4 times the average rate depending on factors such as the type of industry and production schedule. As there is no process water required and only two washrooms provided the peak rate of 2 times is being

considered for a total peak demand of 70 m3/(ha·d) [7480 USgal/(acre·d)].

- It is anticipated that the current Municipal services have capacity to accommodate the additional load for regular demand, peak hourly flows, and fire flows.

- The water distribution system is as shown on the Site Servicing Plan (300) drawing as prepared by Girard Engineering and submitted as Appendix B of this report.

4.0 Storm Design

As municipal Storm Sewers are not available to service this site, overland flow routes, swales, and infiltration galleries will be implemented to address the storm design needs of the proposed development.

4.1 Existing Drainage Conditions

In the sites pre-developed condition, there are no existing storm sewers on site. The existing site which is planned to be further developed can be characterized as largely undeveloped with only the remains of a single family residence and a free standing sign on the property. There is a grassed over gravel driveway that lead to the remains of the residence from Industrial Road. Drainage, as it exists right now, flows from the extents of the residence foundation out into the property on all sides with the remainder of the property flowing uncontrolled into itself with no apparent overland outlet off-site. It should be noted that there are low lying areas throughout the site that allows all of the overland flow to pool and dissipate.

4.2 Proposed Drainage Conditions

The post developed site run-off is proposed to be collected and discharged through infiltration. The site has been considered as having a single catchment area (Area 101) as a Pre-Developed Site and two catchment areas (Area 201 & 202) as a Post Developed Site and thus has been designed to provide storage for runoff during major storm events (1/100yr IDF). The drainage is designed to convey minor and major storm flows from the crushed recycled asphalt and grassed areas through the sites overland flow routes and swales where it is collected and stored in an underground system before being infiltrated into the ground as shown on the Grading & SWM Plan (201) and Site Servicing Plan (300) drawings as prepared by Girard Engineering and submitted as Appendix B of this report. Soil testing was completed on the site, with a test pit dug in approximately the center of the site to determine the viability of the infiltration galleries. It was found that the native soils of the property are conducive to infiltration with a percolation rate of 5 mins/cm. The Soil Grain Size Analysis for each test pit has been submitted as Appendix C of this report.

4.3 Quantity Control

The Storm Water Management design criteria was established with the use of the Norfolk County's Grading and Drainage By-Law and the Ministry of Environment Storm Water Management Planning and Design Manual. Within the Design Manual it suggests that the following IDF parameters be used for a 3 hour Chicago Rainfall Distribution:

Table 1. IDF Curve Parameters for 15 Industrial Road, Delhi, ON – Norfolk County

Return Period (Years)	a	b	c
2	411.82	0.68	0.7009
5	544.16	0.093	0.7015
10	620.90	0.010	0.6978
25	739.78	0.085	0.7012
50	820.46	0.085	0.7008
100	895.32	0.043	0.7000

Values in table above from MIDUSS IDF Curve Fit Tool

The Chicago distribution listed within Table 1 was derived from the Intensity Duration Frequency (IDF) Parameters obtained from the MTO IDF Curve Lookup online tool and is provided in Appendix D. The intensities provided within the MTO IDF Curve Lookup has been inputted into the MIDUSS IDF Curve Fit Tool to produce the values shown in Table 1 above. The overall quantity control of this development will be achieved through infiltration by way of underground storage areas which are discussed further in Section 4.5 of this report.

4.4 Quality Control

Storm Water Management quality control has not been considered for this development as the use of conventional mechanical control requires a storm sewer system. As there are no storm sewers, quality control measures such as an Oil/Grit Seperator will not be employed on this site. The majority of the sites run-off is generated from roof tops and the driveway and parking areas, with a moderate portion generated by grass areas, all of which will be directed to the on-site catch basins. Since this site is self-service and there is to be no vehicular storage, the presence of vehicles on site that could potentially add contaminants to the SWM run-off will be very minimal day to day. In this instance, quality control of the SWM run-off will happen as the

run-off filters through underground stone galleries and then subsequently through the sandy sub-soils.

4.5 Hydrologic Model

To determine the pre-development and post-development run-off volume discharge, the hydrologic modeling software MIDUSS was used. A summary of the run-off volumes are presented in Tables 2-4 and detailed MIDUSS model outputs have provided in Appendix E.

Table 2. Summary of Pre-Development Run-off Volumes

Return Period (Years)	Pre-Development Runoff Volume (m^3) – Area 101
2	26.47
5	46.35
10	61.72
25	82.08
50	98.81
100	115.54

Table 3. Summary of Post-Development Run-off Volumes

Return Period (Years)	Post-Development Runoff Volume (m^3) – Area 201	Post-Development Runoff Volume (m^3) – Area 202
2	46.08	55.43
5	64.04	76.90
10	76.23	91.39
25	91.02	108.96
50	102.37	122.44
100	113.20	135.31

Table 4. Summary of Pre-Development vs. Post-Development Run-off Volumes

Return Period (Years)	Total Pre-Development Runoff Volume (m^3)	Total Post-Development Runoff Volume (m^3)	Differential Runoff Volume (m^3)
2	26.47	101.51	Increase of 75.04
5	46.35	140.94	Increase of 94.59
10	61.72	167.62	Increase of 105.90
25	82.08	199.98	Increase of 117.90
50	98.81	224.81	Increase of 126.00
100	115.54	248.51	Increase of 132.97

As indicated in Table 4 above, the minimum underground storage volumes required by area are as per the following:

- Area 201 is to be 113.20m^3. With the native sub-soils being free draining sand, there is very little risk of overloading the underground storage area so no additional storage volume has been provided. As the method of storage will be through the use of a stone filled infiltration gallery, the void space within the stone gallery shall be considered at 30 percent. Therefore, the actual volume that is required to be provided is 379.50m^3 minimum.

- Area 202 is to be 135.31m^3. With the native sub-soils being free draining sand, there is very little risk of overloading the underground storage area so no additional storage volume has been provided. As the method of storage will be through the use of a stone filled infiltration gallery, the void space within the stone gallery shall be considered at 30

percent. Therefore, the actual volume that is required to be provided is 451.50m^3 minimum.

- An article authored by CONTECH Engineered Solutions (as Sourced: Cashatt, J.C. (2020), Viability of Stone Void Space in Underground Detention/Retention Systems, Proceedings of EWRI 2020, Henderson, NV, American Society of Civil Engineers) on the examination of stone void space has been submitted as Appendix F of this report. The article indicates that a 40 percent void space is considered average but only has a reliability factor of 60%. The article further states that in order to achieve 96% reliability in stone voids, a 36 percent stone void storage should be considered. As 30 percent stone void storage was considered when designing the infiltration galleries, and according to the chart provided within the article, a 99% or better reliability would be achieved.

- All of the above noted storage areas are as shown on the Grading & SWM Plan (201) and Site Servicing Plan (300) drawing as prepared by Girard Engineering and submitted as Appendix B of this report.

By providing the underground storage volumes noted above for the proposed drainage areas, it will ensure that the post developed run-off volumes from the hard surface and grassed areas are able to be adequately stored until such time the run-off is able to dissipate into the surrounding ground.

5.0 Sediment & Erosion Control Measures

In addition to the site servicing and grading designs, sediment & erosion control notes and details have been included. These are meant to alleviate the off-site mitigation of sediments by setting in place a series of best management practises and control measures. Sediment & erosion control measures may include, but are not limited to, silt fencing, silt sacks, tree preservation fencing, and erosion control blankets. Suitable measures and precautions should be considered, used, maintained, and monitored during the construction phase. The following is a list of control measures to be implemented on site, however, the contractor is encouraged to include additional measures that may not be included should the site warrant:

- Protect all exposed surfaces and control all runoff during construction.

- Contractor to install erosion control measures as shown prior to construction and maintain in good condition until construction is completed and vegetative cover is established.

- All silt fencing to be installed prior to any area grading, excavating or demolition commencing.

- Erosion control fencing to be installed around base of all stockpiles. All stockpiles to be kept a minimum of 2.50m from all property lines.

- Erosion protection to be provided around all Storm and Sanitary MH’s and CB’s.

- Protect all catch basins, maintenance holes, and pipe ends from sediment intrusion with filter cloth, silt sacks, or approved alternate methods. All structure sumps to be kept clean during construction.

- Additional erosion control measures may be required as site development progresses. Contractor to provide all additional erosion control structures.

- Erosion control structures to be monitored regularly by Engineer and any damage repaired immediately. Sediments to be removed when accumulations reach a maximum of one third (1/3) the height of the silt fencing.

- No alternate methods of erosion protection shall be permitted unless approved by the Engineer and Norfolk County Engineering Department.

- Contractor to clean roadway and sidewalks of sediments resulting from construction traffic from the site each day.

- Contractor must remove erosion and sedimentation fencing prior to completion of project. Contractor to have erosion and sedimentation fence inspected when vegetation has established, but prior to fence becoming overgrown. Engineer's representative to determine if vegetation has reached the critical point and will then instruct contractor to remove fencing.

The above noted items are included on the General Notes & Details Plan (500) and the Sediment & Erosion Control Plan (400) drawings as prepared by Girard Engineering and submitted as Appendix B of this report.

6.0 Limitations

This report has been prepared for use by 2566899 Ontario Inc. and Norfolk County. It is based on the existing site conditions and the reports or plans provided by qualified professionals.

When field reviewing existing conditions, especially when not completely exposing all elements, it cannot completely eliminate the possibility of surmising or obtaining some or all relevant information. In some cases, professional judgment and field experience was used in gathering and analyzing the information that was used to determine an adequate design for the proposed works noted within this report. As professionals providing designs, we do not act as absolute insurers of the designs provided, but do commit ourselves to the care and competence when completing these designs and instructing property owners on how to bring these designs to fruition. No warranty, whether expressed or implied, is included or intended in this report.

This report is not to be used in any other context, situation, or for a location other than that of the property in which this report is addressed for. Written authorization is to be obtained from Girard Engineering prior to use by any other entities not listed above, or any future use of the information contained within. Any use, reliance, or decision which a third party or non-authorized user makes based on this report is done so at the responsibility of that party. Girard

Engineering accepts no responsibility for damages, losses, etc., if any, suffered by any third party or non-authorized user as a result of decisions made or actions taken based on the information within this report.

7.0 Conclusion

It can be concluded that based on the information presented in this report, the proposed development meets the requirements of Norfolk County and the Ontario Building Code from a Storm Water Management and Functional Servicing perspective. We trust this report will meet the satisfaction of all governing bodies. Should any questions arise or further information is required, please feel free to contact us at any time.

Submitted By:
Madana Vasantha, P.Eng
2478153 Ontario Inc. o/a Girard Engineering

Appendix A – Zoning Map

Schedule A-22

Revision Date: January 01, 2021

Appendix B – Detailed Design Drawings

LEGEND & NOTES:

SIB	DENOTES	STANDARD IRON BAR.
IB	"	IRON BAR.
IBØ	"	ROUND IRON BAR.
CC	"	CUT CROSS.
WIT	"	WITNESS.
(SU)	"	SOURCE UNKNOWN
■	"	MONUMENT FOUND.
□	"	MONUMENT SET.
CPIN	"	CONCRETE PIN
UP	"	UTILITY POLE
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GW	"	GUY WIRE
FH	"	FIRE HYDRANT
MHSTM	"	STORM MANHOLE
CB	"	CATCH BASIN
WV	"	WATER VALVE
P.I.	"	POINT OF INTERSECTION
———	"	CHAIN LINK FENCE

- DESIGN ELEVATION
- DESIGN ELEVATION AT BUILDING FACE
- 118.17 — DENOTES EXISTING ELEVATIONS AS PER JEWITT & DIXON ONTARIO LAND SURVEYORS
- X.XX% — DENOTES OVERLAND FLOW DIRECTION & GRADIENT
- DENOTES SHEET OVERLAND FLOW DIRECTION
- DENOTES SEDIMENT CONTROL FENCE
- DENOTES DRAINAGE CATCHMENT AREA IDENTIFIER
- X.XX DENOTES SCS NUMBER; X.XX HA — DENOTES DRAINAGE CATCHMENT AREA IN Ha

- DENOTES TRAFFIC FLOW DIRECTION
- DENOTES BUILDING ENTRANCES TO SEA CANS
- DENOTES REQUIRED ASPHALT PAVING
- DENOTES CENTERLINE OF FIRE ROUTE • 12.0m RADIUS
- DENOTES EXTENT OF FIRE ROUTE • 9.0m WIDE ROUTE REQUIRED
- DENOTES HANDICAPPED ACCESSIBLE PARKING STALL
- DENOTES CRUSHED ASPHALT AREA

PROPOSED CRUSHED ASPHALT DETAIL
- 125-150mm CRUSHED ASPHALT
- 200mm THICK GRANULAR 'A'

- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN/SERVICE
- EXISTING WATERMAIN/SERVICE
- PROPOSED SWALE

LOT LINES	SHOWN	
DEED LINES	SHOWN	
FENCE LINES	SHOWN	-X-X-X-X-
CENTRE LINES	SHOWN	
ROAD LINES	SHOWN	
EDGE OF ASPHALT	SHOWN	
OVERHEAD WIRES	SHOWN	

BELL BOX/FIBRE BOX	SHOWN	BBX/FBX
BENCH MARK	SHOWN	BM
CATCH BASIN	SHOWN	CB
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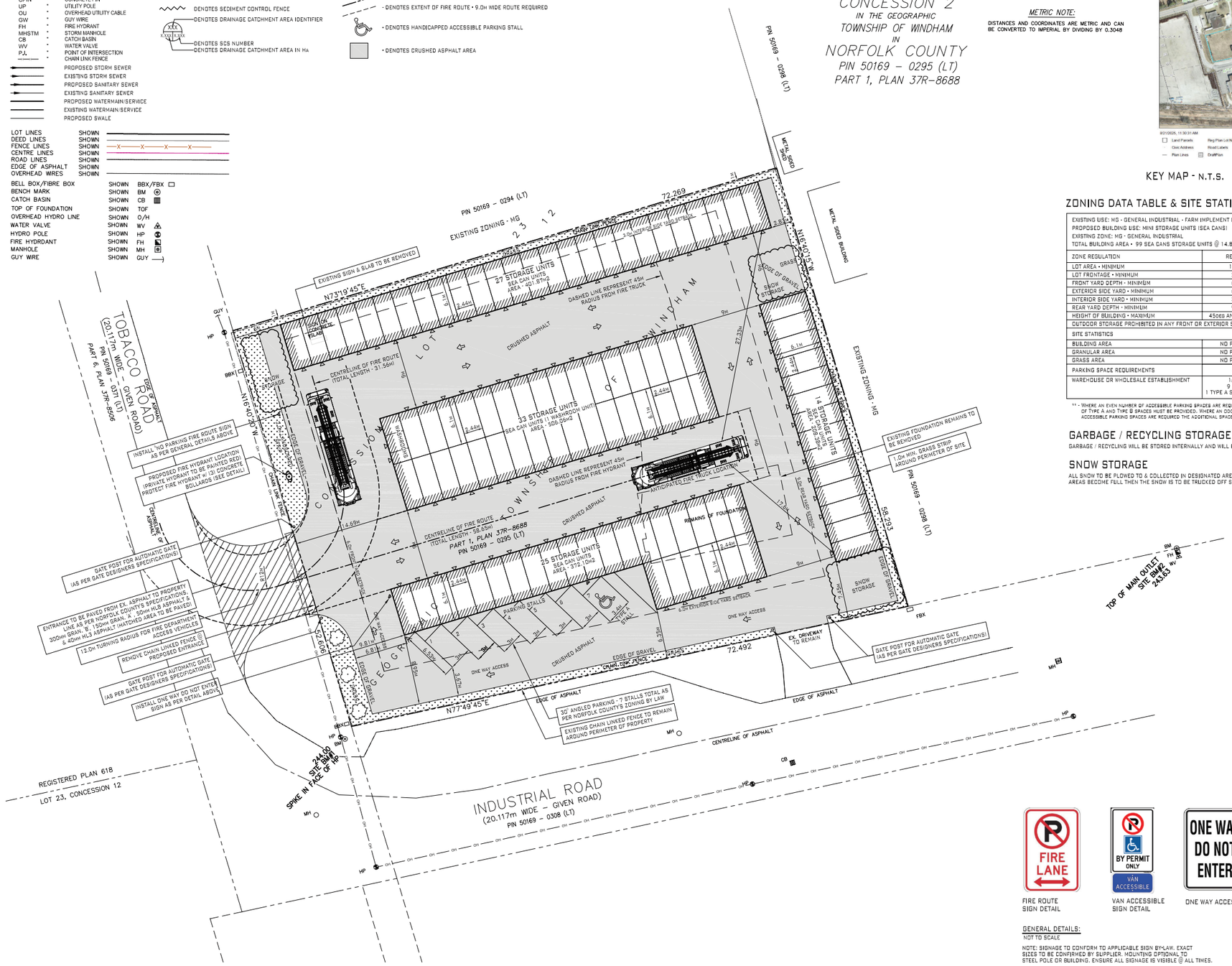
WATER VALVE	SHOWN	WV
HYDRO POLE	SHOWN	HP
FIRE HYDRANT	SHOWN	FH
MANHOLE	SHOWN	MH
GUY WIRE	SHOWN	GUY

TOPOGRAPHIC SITE PLAN OF PART OF LOT 23 CONCESSION 2 IN THE GEOGRAPHIC TOWNSHIP OF WINDHAM IN NORFOLK COUNTY

PIN 50169 – 0295 (LT)
PART 1, PLAN 37R–8688



SITE B.M.#1
SPIKE IN FACE OF WOOD HYDRO POLE
ELEV = 244.00
(GEODETIC)

SITE B.M.#2
TOP OF MAIN OUTLET OF FIRE HYDRANT
ELEV = 243.63
(GEODETIC)

METRIC NOTE:

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

MAP NORFOLK - Community Web Map

KEY MAP - N.T.S.

ZONING DATA TABLE & SITE STATISTICS:

EXISTING USE: MG - GENERAL INDUSTRIAL - FARM IMPLEMENT DEALERSHIP
PROPOSED BUILDING USE: MINI STORAGE UNITS (SEA CANS)
EXISTING ZONE: MG - GENERAL INDUSTRIAL
TOTAL BUILDING AREA • 99 SEA CANS STORAGE UNITS @ 14.884m2 = 1473.52m2

ZONE REGULATION	REQUIRED	PROVIDED	NOTES:
LOT AREA • MINIMUM	1855m2	4007.26m2	
LOT FRONTAGE • MINIMUM	20.0m	52.606m	
FRONT YARD DEPTH • MINIMUM	6.00m	6.0m	
EXTERIOR SIDE YARD • MINIMUM	6.00m	6.35m	
INTERIOR SIDE YARD • MINIMUM	3.00m	1.0m	• MINOR VARIANCE REQUIRED
REAR YARD DEPTH • MINIMUM	9.00m	1.0m	• MINOR VARIANCE REQUIRED
HEIGHT OF BUILDING • MAXIMUM	45deg ANGULAR PLANE	2.59m	
OUTDOOR STORAGE PROHIBITED IN ANY FRONT OR EXTERIOR SIDE YARDS			
SITE STATISTICS			
BUILDING AREA	NO PROVISION	1488.40m2 • 37.14%	
GRANULAR AREA	NO PROVISION	3701.58m2 • 92.37%	
GRASS AREA	NO PROVISION	305.68m2 • 7.63%	
PARKING SPACE REQUIREMENTS	RATE	PROVIDED	
WAREHOUSE OR WHOLESALE ESTABLISHMENT	1/180m2 9 STALLS 1 TYPE A STALL REQUIRED	9 STALLS 1 TYPE A STALL	• MINOR VARIANCE REQUIRED

** - WHERE AN EVEN NUMBER OF ACCESSIBLE PARKING SPACES ARE REQUIRED AN EQUAL NUMBER OF TYPE A AND TYPE B SPACES MUST BE PROVIDED. WHERE AN ODD NUMBER OF TOTAL ACCESSIBLE PARKING SPACES ARE REQUIRED THE ADDITIONAL SPACE MAY BE A TYPE B SPACE

GARBAGE / RECYCLING STORAGE:

GARBAGE / RECYCLING WILL BE STORED INTERNALLY AND WILL BE COLLECTED PRIVATELY

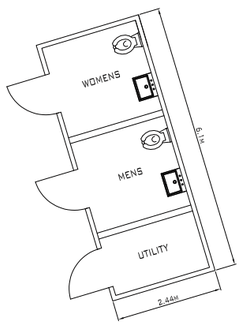
SNOW STORAGE

ALL SNOW TO BE PLOWED TO & COLLECTED IN DESIGNATED AREAS, IF DESIGNATED AREAS BECOME FULL THEN THE SNOW IS TO BE TRUCKED OFF SITE.

WASHROOM BUILDING

SCALE: N.T.S.

EACH WASHROOM TO BE EQUIPPED W/ 1 WATER CLOSET & 1 LAVATORY



FIRE ROUTE SIGN DETAIL

VAN ACCESSIBLE SIGN DETAIL

ONE WAY ACCESS SIGN

GENERAL DETAILS:
NOT TO SCALE

NOTE: SIGNAGE TO CONFORM TO APPLICABLE SIGN BY-LAW. EXACT SIZES TO BE CONFIRMED BY SUPPLIER. MOUNTING OPTIONAL TO STEEL POLE OR BUILDING. ENSURE ALL SIGNAGE IS VISIBLE @ ALL TIMES.

ACTUAL NORTH

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DESIGNED BY:

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2478153 ONTARIO INC.
WOODSTOCK OTTERVILLE
TEL: 1-519-879-6875
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JEREMY DEKONINCK
160 HIGHWAY 59, R.R.#2
DELHI, ONTARIO, N4B 2A4
TEL: 1-519-861-0683
EMAIL: JDEKONINCK@NOR.DEL.COM

MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

SITE PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SPRAGUE
DESIGNED BY:	T. SPRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-055

DRAWING NO: 100

LEGEND & NOTES:

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IB	"	IRON BAR.
IBØ	"	ROUND IRON BAR.
CC	"	CUT CROSS.
WIT	"	WITNESS.
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P.I.	"	POINT OF INTERSECTION
-x-x-	"	CHAIN LINK FENCE

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18.17 DENOTES DESIGN ELEVATION

DESIGN ELEVATION AT BUILDING FACE

DENOTES EXISTING ELEVATIONS AS PER JEWITT & DIXON ONTARIO LAND SURVEYORS

XX% DENOTES OVERLAND FLOW DIRECTION & GRADIENT

DENOTES SHEET O/ERLAND FLOW DIRECTION

DENOTES SEDIMENT CONTROL FENCE

DENOTES DRAINAGE CATCHMENT AREA IDENTIFIER

DENOTES SCS NUMBER

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- DENOTES REQUIRED ASPHALT PAVING
- DENOTES CENTERLINE OF FIRE ROUTE - 12.0m RADIUS
- DENOTES HANDICAPPED ACCESSIBLE PARKING STALL

LOT LINES	SHOWN	
DEED LINES	SHOWN	
FENCE LINES	SHOWN	-x-x-:-x-
CENTRE LINES	SHOWN	
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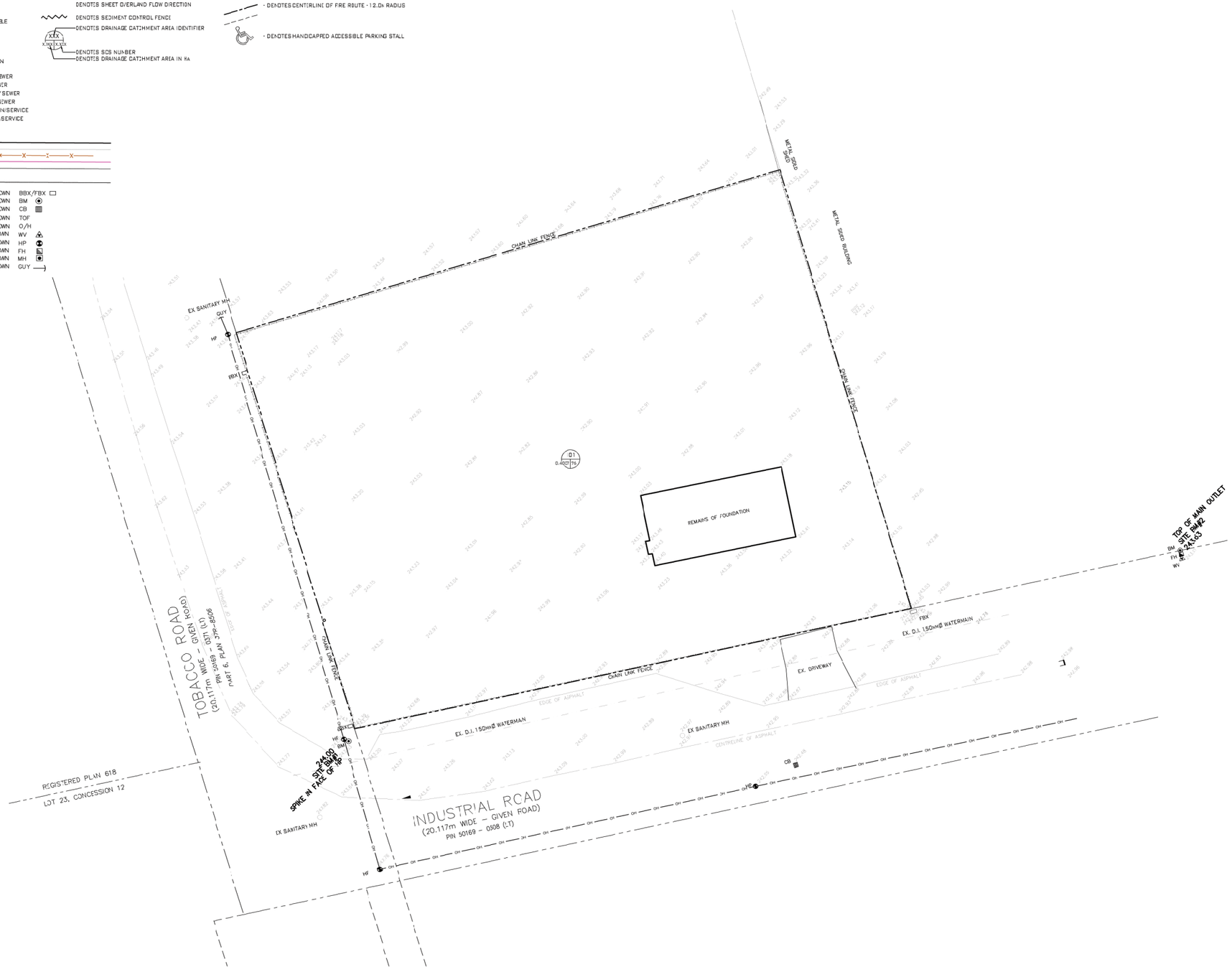

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DESIGNED BY:

girard ENGINEERING
2476153 ONTARIO INC.
WOODSTOCK OTTERVILLE
TEL: 1-519-875-6875
EMAIL: INFO@GIRARDENGINEERING.CA

M. K. VASANTHA
100756
August 26, 2025
PROVINCE OF ONTARIO

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JEREMY DEKONINCK
160 HIGHWAY 55, R.R.#2
DELHI, ONTARIO, N4E 2A4
TEL: 1-519-861-0683
EMAIL: JDEKONINCK@NOR.DEL.COM

MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4E 2Z2

PRE-DEVELOPMENT PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SIRAGUE
DESIGNED BY:	T. SIRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-015

DRAWING NO:

200

LEGEND & NOTES:

SIB	DENOTES	STANDARD IRON BAR.
IB	"	IRON BAR.
IBØ	"	ROUND IRON BAR.
CC	"	CUT CROSS.
WIT	"	WITNESS.
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P.I.	"	POINT OF INTERSECTION
-x-x-	"	CHAIN LINK FENCE

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EXISTING STORM SEWER
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DESIGN ELEVATION AT BUILDING FACE
XXX% DENOTES EXISTING ELEVATIONS AS PER JEWITT & DIXON ONTARIC LANC SURVEYORS
DENOTES OVERLAND FLOW DIRECTION & GRADIENT
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DENOTES SEDIMENT CONTROL FENCE
DENOTES DRAINAGE CATCHMENT AREA IDENTIFIER
DENOTES SCS NUMBER
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· DENOTES REQUIRED ASPHALT PAVING
· DENOTES CENTERLINE OF FIRE ROUTE - 12.0m RADIUS
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LOT LINES	SHOWN	
DEED LINES	SHOWN	
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CENTRE LINES	SHOWN	
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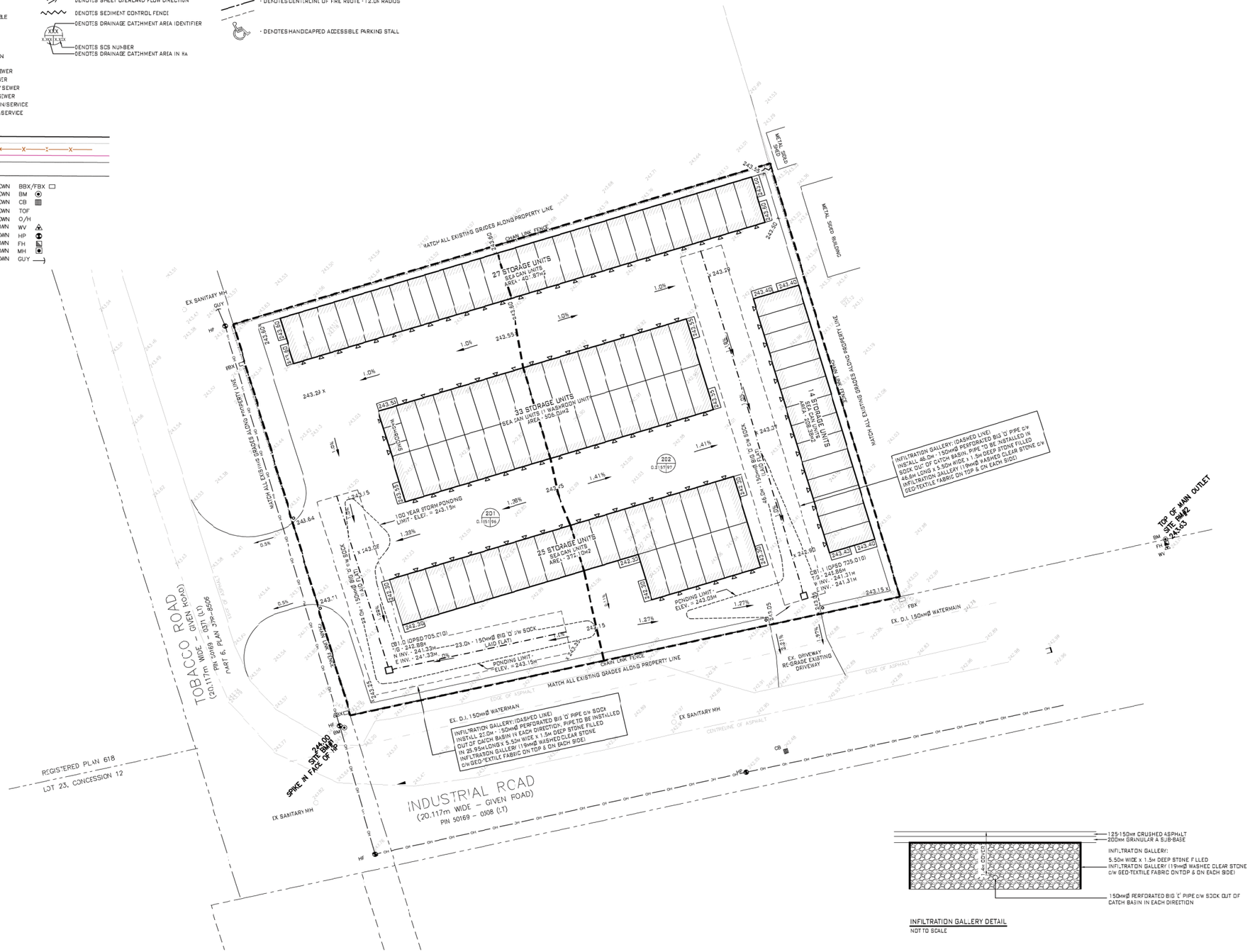

INFILTRATION GALLERY DETAIL
NOT TO SCALE

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MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4E 2Z2

GRADING & STORM WATER MANAGEMENT PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SIRAGUE
DESIGNED BY:	T. SIRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-015

DRAWING NO:
201

LEGEND & NOTES:

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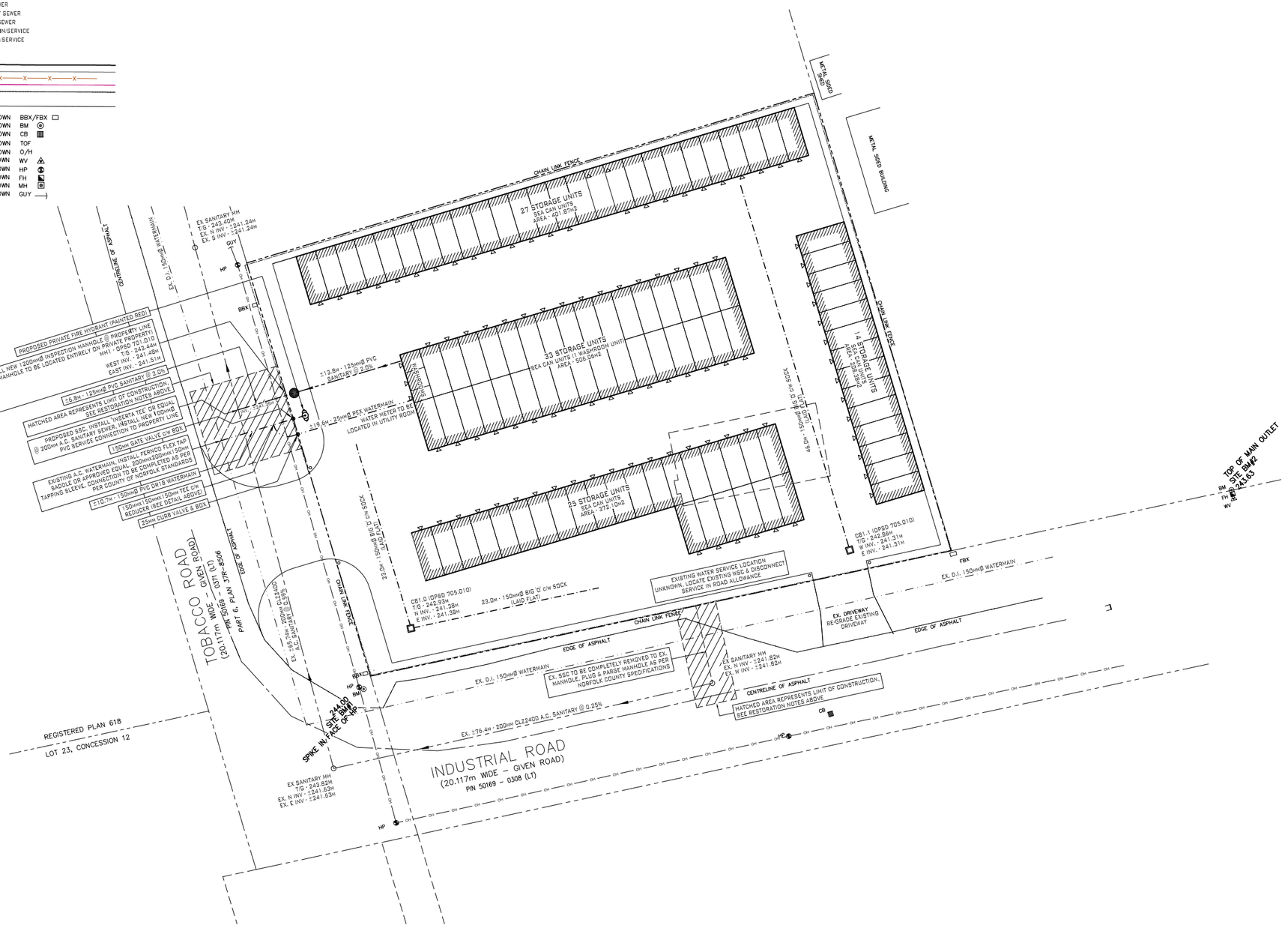
FIRE HYDRDANT	SHOWN	FH
MANHOLE	SHOWN	MH
GUY WIRE	SHOWN	GUY

SITE RESTORATION NOTES:

- ALL ASPHALT TO BE SAWCUT @ LIMIT OF CONSTRUCTION. ASPHALT TO REMOVED AND DISPOSED OFF SITE BY CONTRACTOR @ OWNERS EXPENSE.
- ASPHALT TO BE REPLACED AS PER NORFOLK COUNTYS SPECIFICATIONS (AS FOLLOWS):
  - 40MM HL3 SURFACE ASPHALT
  - 50MM HL8 BASE ASPHALT
  - 150MM GRANULAR A
  - 300MM GRANULAR B
- BOULEVARD RESTORATION:
  - MINIMUM 100MMSCREENED TOPSOIL C/W APPROVED GROUND COVER
  - APPROVED NATIVE SOIL SUB-GRADE



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WOODSTOCK OTTERVILLE
TEL: 1-519-879-6875
EMAIL: INFO@GIRARDENGINEERING.CA

PROFESSIONAL ENGINEER — M. K. VASANTHA — 100756 — August 26, 2025 — PROVINCE OF ONTARIO

DESIGNED FOR:

2566899 ONTARIO INC.
JEREMY DEKONINCK
160 HIGHWAY 59, R.R.#2
DELHI, ONTARIO, N4B 2A4
TEL: 1-519-861-0683
EMAIL: JDEKONINCK@NOR.DEL.COM

MINI STORAGE FACILITY

15 INDUSTRIAL ROAD
DELHI, ONTARIO, N4B 2Z2

SITE SERVICING PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SPRAGUE
DESIGNED BY:	T. SPRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-055

DRAWING NO: 300

LEGEND & NOTES:

SIB	DENOTES	STANDARD IRON BAR.
IB	"	IRON BAR.
IBØ	"	ROUND IRON BAR.
CC	"	CUT CROSS.
WIT	"	WITNESS.
(SU)	"	SOURCE UNKNOWN
■	"	MONUMENT FOUND.
□	"	MONUMENT SET.
CPIN	"	CONCRETE PIN
UP	"	UTILITY POLE
OU	"	OVERHEAD UTILITY CABLE
GW	"	GUY WIRE
FH	"	FIRE HYDRANT
MHSTM	"	STORM MANHOLE
CB	"	CATCH BASIN
WV	"	WATER VALVE
P.I.	"	POINT OF INTERSECTION
—x—x—	"	CHAIN LINK FENCE

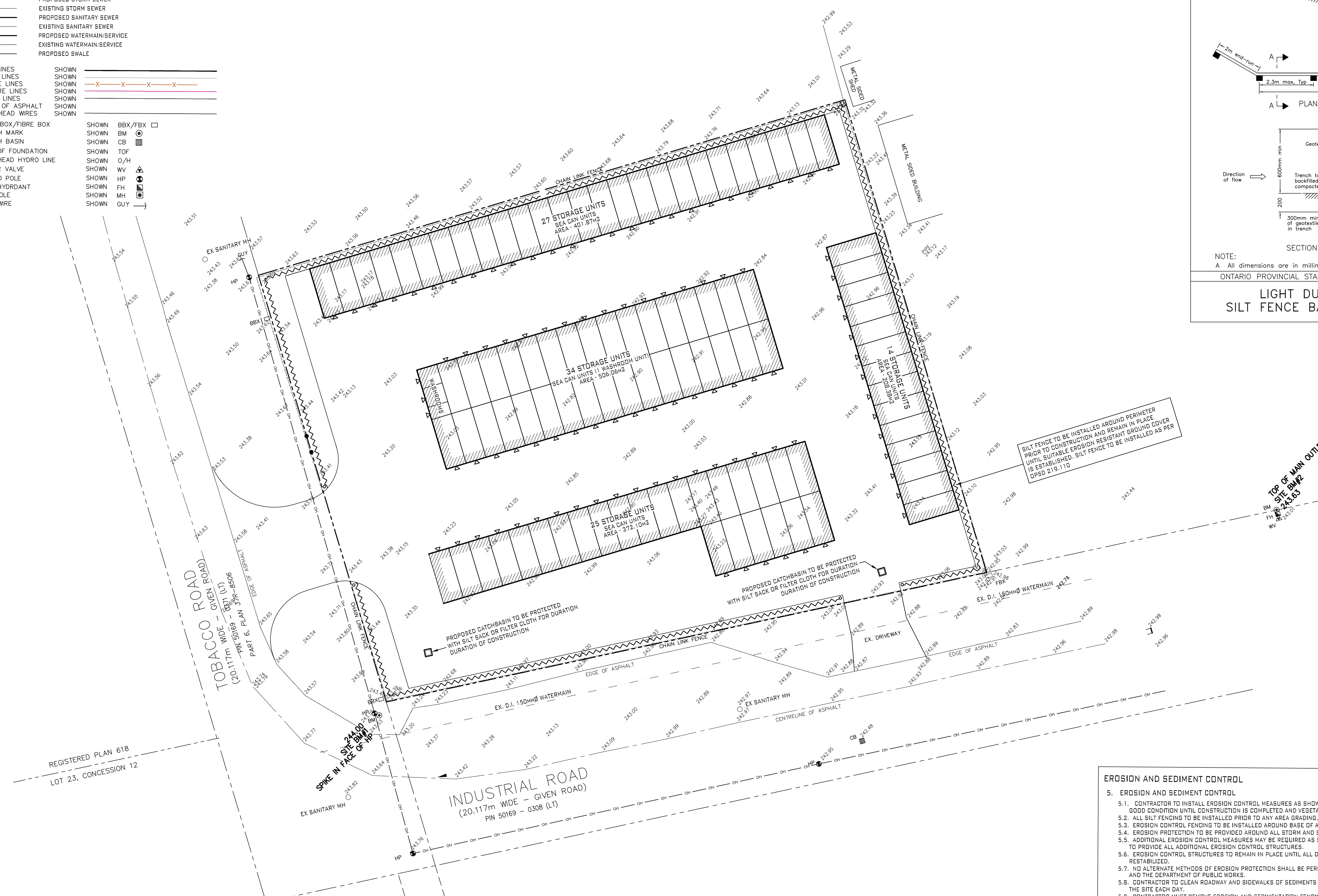
PROPOSED STORM SEWER
EXISTING STORM SEWER
PROPOSED SANITARY SEWER
EXISTING SANITARY SEWER
PROPOSED WATERMAIN/SERVICE
EXISTING WATERMAIN/SERVICE
PROPOSED SWALE

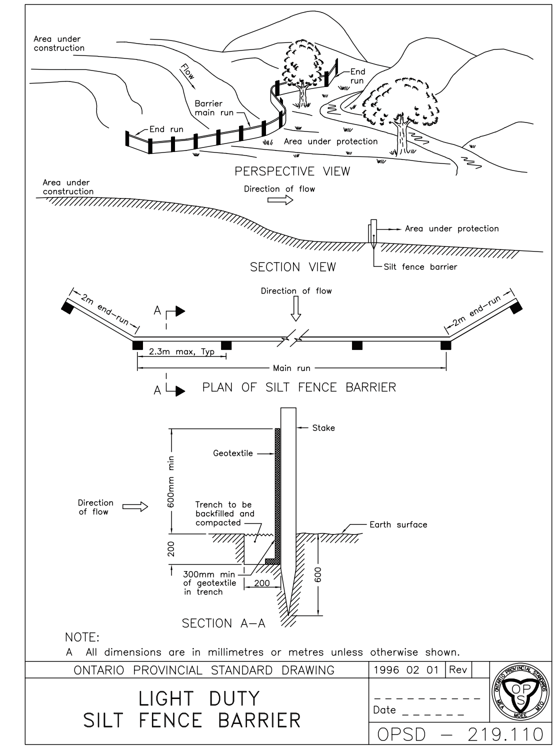
LOT LINES	SHOWN
DEED LINES	SHOWN
FENCE LINES	SHOWN
CENTRE LINES	SHOWN
ROAD LINES	SHOWN
EDGE OF ASPHALT	SHOWN
OVERHEAD WIRES	SHOWN

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	SHOWN	HP
FIRE HYDRDANT	SHOWN	FH
MANHOLE	SHOWN	MH
GUY WIRE	SHOWN	GUY

DESIGN ELEVATION
DESIGN ELEVATION AT BUILDING FACE
18.17 DENOTES EXISTING ELEVATIONS AS PER JEWITT & DIXON ONTARIO LAND SURVEYORS
X.XX% DENOTES OVERLAND FLOW DIRECTION & GRADIENT
DENOTES SHEET OVERLAND FLOW DIRECTION
DENOTES SEDIMENT CONTROL FENCE
DENOTES DRAINAGE CATCHMENT AREA IDENTIFIER
DENOTES SCS NUMBER
DENOTES DRAINAGE CATCHMENT AREA IN HA

- DENOTES TRAFFIC FLOW DIRECTION
- DENOTES BUILDING ENTRANCES TO SEA CANS
- DENOTES REQUIRED ASPHALT PAVING
- DENOTES CENTERLINE OF FIRE ROUTE - 12.0M RADIUS
- DENOTES HANDICAPPED ACCESSIBLE PARKING STALL





EROSION AND SEDIMENT CONTROL

5. EROSION AND SEDIMENT CONTROL
   - 5.1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND VEGETATIVE COVER IS ESTABLISHED.
   - 5.2. ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.
   - 5.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES.
   - 5.4. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.
   - 5.5. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
   - 5.6. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.
   - 5.7. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE DEPARTMENT OF PUBLIC WORKS.
   - 5.8. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.
   - 5.9. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.
6. MAINTENANCE RECOMMENDATIONS
   - 6.1. WHEN CONSTRUCTION IS FINISHED, REMOVE SEDIMENT AND CONTAMINANTS AND REINSTATE STORMWATER MANAGEMENT FACILITY ACCORDING TO THE DESIGN OUTLINED ON THIS PLAN.
   - 6.2. EROSION CONTROL STRUCTURES TO BE MONITORED AND MAINTAINED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.
   - 6.3. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

ACTUAL NORTH

BOTH THE CLIENT AND THE CONTRACTOR, INCLUDING ALL SUB-TRADES, SHALL REVIEW ALL DRAWINGS AND VERIFY ALL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CLIENT AND THE CONTRACTOR TO REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

THESE DRAWINGS ARE TO BE READ AND NOT TO BE SCALED.

No:	Revision:	By:	Date:
1	ISSUED FOR PRELIMINARY REVIEWS	TS	JUNE 11, 2025

ORIGINAL SURVEY COMPLETED BY:

JEWITT AND DIXON
ONTARIO LAND SURVEYORS
SURVEYING MAPPING GIS
A Division of Kim Husted Surveying Ltd.
650 Ireland Rd., Simcoe, ON N3Y 4K2
www.jdbarnes.com

DESIGNED BY:

girard ENGINEERING
2478153 ONTARIO INC.
WOODSTOCK OTTERVILLE
TEL: 1-519-879-6875
EMAIL: INFO@GIRARDENGINEERING.CA

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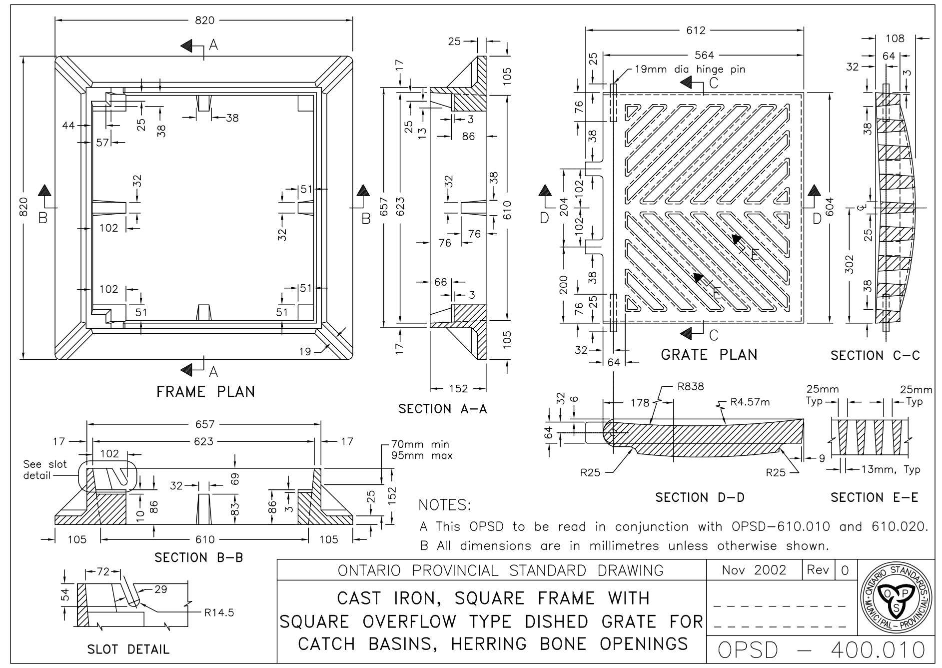
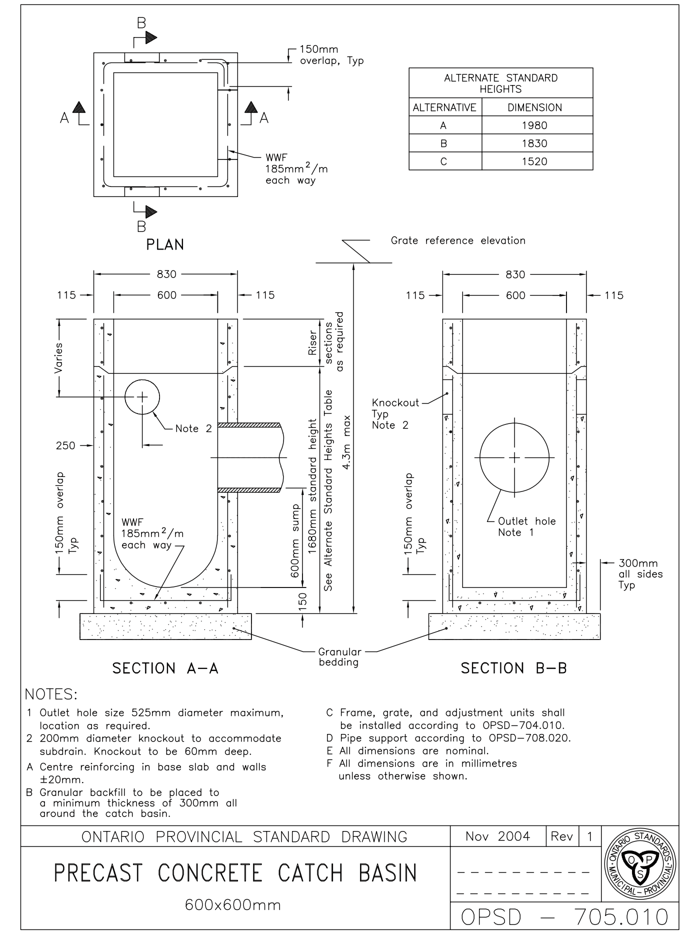
SEDIMENT & EROSION PLAN

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SPRAGUE
DESIGNED BY:	T. SPRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-055
DRAWING NO:	400





CONSTRUCTION NOTES AND SPECIFICATIONS

1. GENERAL
   - 1.1. THIS PLAN NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY NORFOLK COUNTY.
   - 1.2. THIS PLAN IS TO BE USED FOR SERVICING AND GRADING ONLY; ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THIS PLAN MUST NOT BE USED TO SITE THE PROPOSED BUILDINGS.
   - 1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
   - 1.4. THIS PLAN IS NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF GIRARD ENGINEERING.
   - 1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:
     - 1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.
     - 1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.
     - 1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.
     - 1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.
   - 1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO EXISTING WORKS.
   - 1.7. ALL WORKS ON A MUNICIPAL RIGHT-OF-WAY WILL BE INSTALLED BY CONTRACTOR THE OWNERS EXPENSE. THE CONTRACTOR IS TO MAKE CONNECTION TO THE SERVICES AND RESTORE ALL AFFECTED PROPERTIES TO ORIGINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL BOULEVARD ARES.
   - 1.8. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND IN COMPLIANCE WITH LOCAL APPLICABLE CODES AND REGULATIONS; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.
   - 1.9. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
   - 1.10. PLAN TO BE READ IN CONJUNCTION WITH SWM REPORT PREPARED BY GIRARD ENGINEERING
   - 1.11. SITE PLAN INFORMATION TAKEN FROM PLAN PREPARED BY JEWITT & DIXON - ONTARIO LAND SURVEYORS.
   - 1.12. EXISTING TOPOGRAPHIC AND LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY JEWITT & DIXON - ONTARIO LAND SURVEYORS, GIRARD ENGINEERING ASSUMES THAT ALL TOPOGRAPHICAL INFORMATION IS AN ACCURATE REPRESENTATION OF CURRENT CONDITIONS.
   - 1.13. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1.0 METER FROM FOUNDATION WALL.
   - 1.14. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUIVALENT.
   - 1.15. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND COVER.
   - 1.16. ALL MATERIALS, INSTALLATION, AND WORK MUST MEET NORFOLK STANDARDS AND SPECIFICATIONS.
   - 1.17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF NORFOLK COUNTY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
   - 1.18. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
   - 1.19. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN ALL SEWER AND SERVICE TRENCHES.
   - 1.20. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.

2. STORM SEWERS
   - 2.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300MM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - 2.2. STORM SEWERS 150MM SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN-RIGHT-OF-WAY.
   - 2.3. CATCHBASINS TO BE 600MM SQUARE PRECAST AS PER OPSD 705.010.
   - 2.4. CATCHBASINS TO HAVE A MINIMUM 600MM DEEP SUMP. WHEN THE STRUCTURE INCLUDES THE INSTALLATION OF A SNOUT (OR APPROVED EQUIVALENT) THE SUMP DEPTH TO BE MIN 2.5 TIMES THE OUTLET PIPE DIAMETER SIZE.
   - 2.5. CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.
   - 2.6. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.4M COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR "SEWER PIPE INSULATION DETAIL".
   - 2.7. UNDER NO CIRCUMSTANCES SHALL THE BUILDING FOUNDATION DRAINS BE CONNECTED DIRECTLY TO THE STORM SEWER SYSTEM.

3. SANITARY SEWERS
   - 3.1. PIPE BEDDING FOR ALL PIPE TO BE AS PER NORFOLK COUNTY STANDARDS AND SPECIFICATIONS. TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300MM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - 3.2. SANITARY SEWERS 150MM AND SMALLER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.
   - 3.3. SANITARY SEWERS AND SERVICES TO HAVE MINIMUM 1.4M COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR "SEWER PIPE INSULATION DETAIL".
   - 3.4. CONTRACTOR RESPONSIBLE FOR TESTING OF SANITARY SEWERS IN ACCORDANCE WITH OPSS 410.

4. WATERMAINS
   - 4.1. PIPE BEDDING FOR ALL PIPE TO BE AS PER NORFOLK COUNTY STANDARDS AND SPECIFICATIONS. TRENCH TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300MM LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
   - 4.2. WATER SERVICE CONNECTIONS 50MM AND SMALLER, SHALL BE BLACK POLY - SERIES 160 OR MUNICIPEX.
   - 4.3. ALL METALLIC FITTINGS (EXCLUDING CURB/MAIN STOP AND BRASS FITTINGS) AND APPURTENANCES INCLUDING SADDLES, VALVES, TEES, BENDS ETC ARE TO BE WRAPPED WITH AN APPROVED PETROLATUM SYSTEM CONSISTING OF PASTE, MASTIC AND TAPE.
     CONTRACTOR TO REFER TO THE MOST RECENT EDITION OF AREA MUNICIPALITIES DESIGN GUIDELINES AND SUPPLEMENTAL SPECIFICATIONS FOR MUNICIPAL SERVICES FOR WRAPPING DETAILS.
   - 4.4. WATERMAIN VALVES, 100MM AND LARGER, SHALL BE AS PER AWWA C509 - MUELLER A2360-23 OR APPROVED EQUIVALENT (OPEN CLOCKWISE) INCLUDING VALVE BOX.
   - 4.5. PVC WATER SERVICE SHALL HAVE TWU STRANDED COPPER, AWG8 TRACER WIRE STRAPPED TO TOP AT 5 METRE INTERVALS.
   - 4.6. WATER CONNECTIONS MAYBE PLACED IN THE SAME TRENCH WITH A STORM OR SANITARY CONNECTION ONLY IF A MINIMUM VERTICAL SEPARATION OF 500MM IS MAINTAINED BETWEEN THE WATER SERVICE AND ANY OTHER PIPE, IN ACCORDANCE WITH SECTION 7.3.5.7.(2)(A)(I) OF THE ONTARIO BUILDING CODE
   - 4.7. ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 1.7M COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR "WATER PIPE INSULATION DETAIL".
   - 4.8. OWNER TO SUPPLY 2" WATER METER (OMNI SENSUS 2" T2 OR C2 FLANGED). FULL PORT SHUT OFF VALVES TO BE INSTALLED ON EACH SIDE OF THE METER. CONTRACTOR TO INSTALL CHAMBER, METER, ALL VALVES, PIPING AND REMOTE METER READOUT IN BUILDING MECHANICAL ROOM.
   - 4.9. RPZ BACKFLOW PREVENTOR TO BE INSTALLED ON THE DOMESTIC SERVICE INSIDE THE BUILDING AFTER METER AND FULL PORT SHUTOFF VALVE.
   - 4.10. WATER SERVICE FROM MAIN TO CURB STOP MUST BE LAID PERPENDICULAR TO MAIN AND CURB STOP.
   - 4.11. ALL COUPLINGS MUST BE CAMBRIDGE BRASS, FORD OR MUELLER COMPRESSION FITTINGS. NO LEAD STAMP. ALL COUPLING TO BE MIN. 2.5M FROM ANY SANITARY SEWER SERVICE.

ACTUAL NORTH

BOTH THE CLIENT AND THE CONTRACTOR, INCLUDING ALL SUB-TRADES, SHALL REVIEW ALL DRAWINGS AND VERIFY ALL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CLIENT AND THE CONTRACTOR TO REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

THESE DRAWINGS ARE TO BE READ AND NOT TO BE SCALED.

NO:	REVISION:	BY:	DATE:
1	ISSUED FOR PRELIMINARY REVIEWS	TS	JUNE 11, 2025

ORIGINAL SURVEY COMPLETED BY:

JEWITT AND DIXON
ONTARIO LAND SURVEYORS
A Division of Kim Husted Surveying Ltd.
SURVEYING MAPPING GIS
650 Ireland Rd., Simcoe, ON N3Y 4K2
www.jdbarnes.com

DESIGNED BY:

girard ENGINEERING
2478153 ONTARIO INC.
WOODSTOCK OTTERVILLE
TEL: 1-519-879-6875
EMAIL: INFO@GIRARDENGINEERING.CA

M. K. VASANTHA
100175148
August 26, 2025
PROVINCE OF ONTARIO

NOTE: THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEER AND ARE NOT VALID UNLESS SEALED IN RED INK. THESE DRAWINGS ARE NOT TO BE REPRODUCED UNLESS AUTHORIZED BY THE ENGINEER.

DESIGNED FOR:

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JEREMY DEKONINCK
160 HIGHWAY 59, R.R.#2
DELHI, ONTARIO, N4B 2A4
TEL: 1-519-861-0683
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GENERAL NOTES & DETAILS

SCALE:	1:250
DATE:	MAY 2025
DRAWING BY:	T. SPRAGUE
DESIGNED BY:	T. SPRAGUE
CHECKED BY:	M. VASANTHA
PROJECT NO:	25-055
DRAWING NO:	500

Appendix C – Infiltration Assessment

May 6, 2025

2568699 Ontario Inc.
160 Hwy 59, RR2
Delhi, ON N4B 2W5

Subject: **Infiltration Assessment**
15 Industrial Road, Delhi, Ontario
Englobe reference: OC04-02504210.000-TU-L-0001-00

Mr Jeremey Dekoninck

Englobe Corp. is pleased to submit this letter which provides the results of a particle size distribution analyses and hydraulic conductivity assessment for a sample of soil submitted to our laboratory on April 25, 2025. It is understood that the sample was collected at the above noted property; however, we are unable to confirm the sample location. Additionally, the soil sample submitted cannot be confirmed to be the predominant soil type.

The results of the particle size distribution analyses are presented on Figure 1, appended, and indicate that the sample contain 0% gravel, 99% sand and 1% fines. The hydraulic conductivities of the grain size distribution sample was assessed using those of the 15 available methods implemented in the spreadsheet "HydrogeoSieveXL ver. 2.2", J.F. Devlin, University of Kansas, 2015, for which the samples in question met acceptance criteria. The calculated hydraulic conductivity of the sample is 2.2×10^{-1} cm/sec, corresponding to a factored infiltration rate of 100 mm/hr.

The estimated design infiltration rate is based on recommendations found in "Low Impact Development Stormwater Management Planning and Design Guide, Appendix C" published by the Toronto and Region Conservation Authority (TRCA) and the Credit Valley Conservation Authority (CVC), and the approximate relationship between hydraulic conductivity and infiltration rate. It should be noted that hydraulic conductivity and infiltration rate are distinct concepts and such, unit conversion does not apply.

In addition to gradation, the hydraulic conductivity of the soil is dependent on many on-site factors that were not considered as part of this assessment, such as density, structure and moisture content. It is the responsibility of the designer to consider these factors prior to choosing an infiltration rate suitable for design, and to carry out field inspections at the time of installation to confirm that the soil and groundwater conditions are consistent with the design assumptions.

We trust that this letter is suitable for your present requirements. If you have any questions, please do not hesitate to contact our office.

Yours very truly,

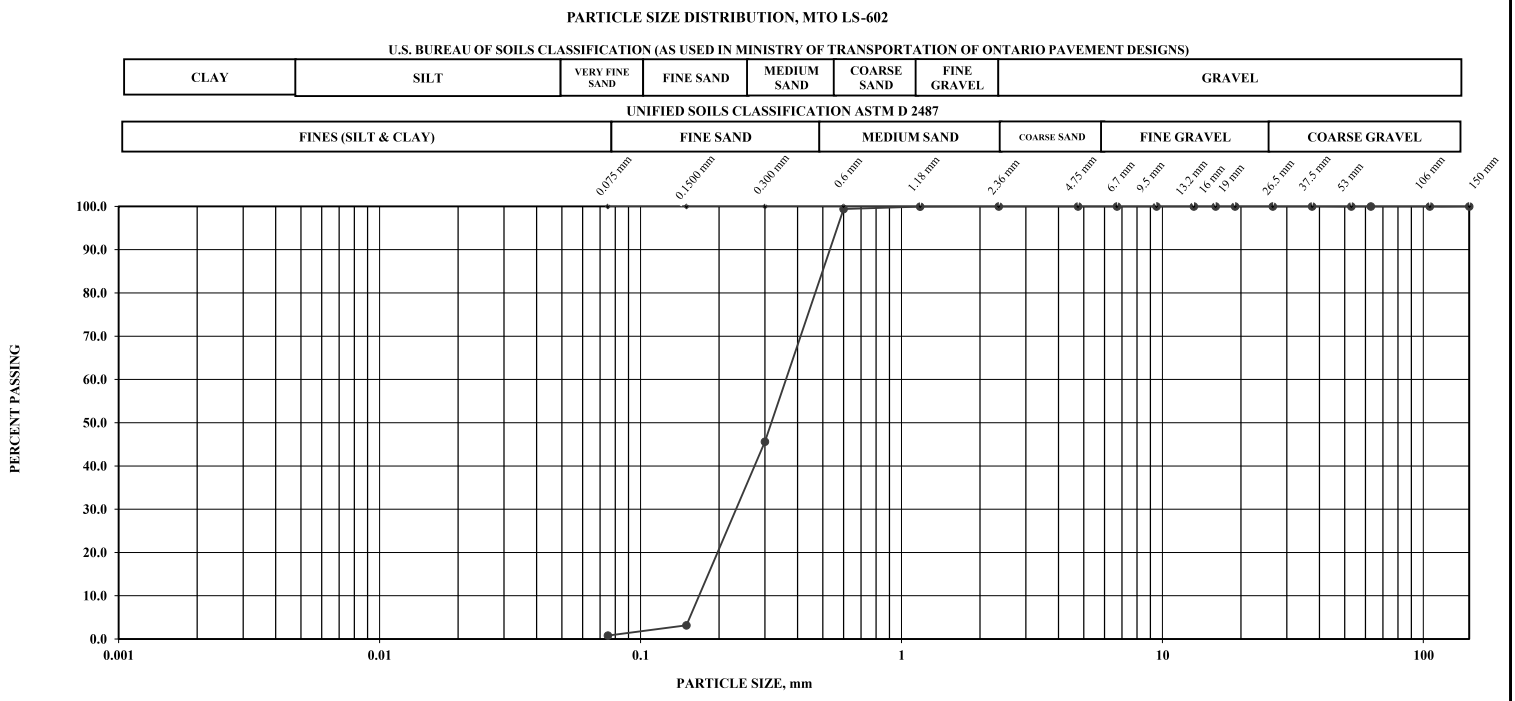
Englobe Corp.

Thom Staples, C.E.T.
Senior Project Manager

Encl. Figure 1– Particle Size Analysis

SIEVE ANALYSIS OF AGGREGATES
LS-602

Project Number:	02504210.000	Project Name:	Infiltration Analysis	Client:	2568699 Ontario Inc.
ROS:	16615	Sample ID:	15 Industrial Road, Delhi	Depth:	-
Sampled By:	Client	Date Received:	April 25, 2025	Date Completed:	April 29, 2025
File Number:	04-02504210.000.MT-GR-001-00			Englobe Laboratory:	Kitchener



Coefficients									
D60	0.380	D30	0.245	D10	0.174	Cc	0.905	Cu	2.18

Sieve Size, mm	% Passing
150	100.0
106	100.0
53	100.0
37.5	100.0
26.5	100.0
19	100.0
16	100.0
13.2	100.0
9.5	100.0
6.7	100.0
4.75	100.00
2.36	100.0
1.18	100.0
0.6	99.4
0.3	45.6
0.15	3.2
0.075	0.80

Gran Size Porportions, %			
% Gravel (> 4.75 mm):		% Coarse Aggregate	
% Sand (75 µm to 4.75 mm):	99.2	% Fine Aggregate	100.0
% Silt (2 µm to 75 µm):	0.8		
Group Symbol / Soil Description	SP	SAND, trace Silt	

Remarks

Coefficient of Permeability: 10-1 to 10-3 cm/sec

Estimated 'T' Time: 5 mins/cm

- The percolation time of the soil is dependent on many on-site factors that were not considered as part of this assessment, such as density, structure and moisture content. It is the responsibility of the sewage system designer to consider these factors prior to choosing a percolation time suitable for design, and carry out field inspections at the time of sewage system installation to confirm that the soil and groundwater conditions are consistent with the design assumptions.

Figure: 1.

TESTED BY: Yuwei Gu, Laboratory Technician

Reviewed By: David McBay, CET. -Laboratory Supervisor

Date: May 2, 2025

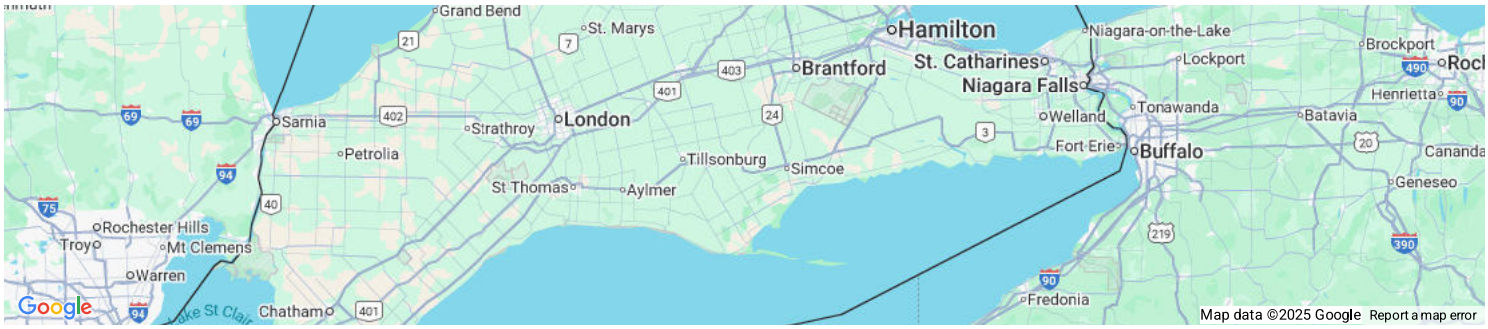
Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of test results is provided only on written request.

Appendix D – IDF Curve Lookup

Active coordinate

42° 50' 45" N, 80° 28' 45" W (42.845833,-80.479167)

Retrieved: Wed, 20 Aug 2025 19:53:03 GMT



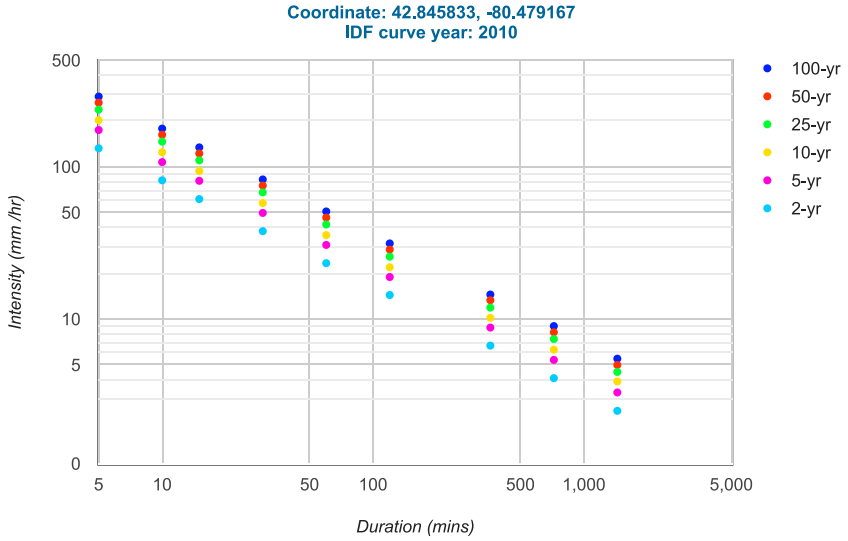
Location summary

These are the locations in the selection.

IDF Curve: 42° 50' 45" N, 80° 28' 45" W (42.845833,-80.479167)

Results

An IDF curve was found.



Coefficient summary

IDF Curve: 42° 50' 45" N, 80° 28' 45" W (42.845833,-80.479167)

Retrieved: Wed, 20 Aug 2025 19:53:03 GMT

Data year: 2010
IDF curve year: 2010

Return period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
A	23.3	30.7	35.6	41.8	46.4	50.9
B	-0.699	-0.699	-0.699	-0.699	-0.699	-0.699

Statistics

Rainfall intensity (mm hr^{-1})

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	132.3	81.5	61.4	37.8	23.3	14.4	6.7	4.1	2.5
5-yr	174.4	107.4	80.9	49.8	30.7	18.9	8.8	5.4	3.3
10-yr	202.2	124.6	93.8	57.8	35.6	21.9	10.2	6.3	3.9
25-yr	237.4	146.3	110.2	67.9	41.8	25.7	11.9	7.4	4.5
50-yr	263.6	162.3	122.3	75.3	46.4	28.6	13.3	8.2	5.0
100-yr	289.1	178.1	134.1	82.6	50.9	31.4	14.5	9.0	5.5

Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	11.0	13.6	15.4	18.9	23.3	28.7	40.0	49.2	60.6
5-yr	14.5	17.9	20.2	24.9	30.7	37.8	52.6	64.9	79.9
10-yr	16.9	20.8	23.5	28.9	35.6	43.9	61.0	75.2	92.7
25-yr	19.8	24.4	27.5	33.9	41.8	51.5	71.7	88.3	108.8
50-yr	22.0	27.1	30.6	37.7	46.4	57.2	79.6	98.0	120.8
100-yr	24.1	29.7	33.5	41.3	50.9	62.7	87.3	107.5	132.5

Terms of Use

Appendix E – MIDUSS Output Files

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                            101 2 Year Pre.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                        "
"                Date & Time last used:                  8/21/2025 at 6:52:29 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      411.820   Coefficient A"
"        0.680   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           121.895    mm/hr"
"             Total depth                  32.356    mm"
"            6   002hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 101"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          101   101 - 2Yr Pre"
"        6.220   % Impervious"
"        0.401   Total Area"
"       55.450   Flow length"
"        2.000   Overland Slope"
"        0.376   Pervious Area"
"       55.450   Pervious length"
"        2.000   Pervious slope"
"        0.025   Impervious Area"
"       55.450   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.162   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.834   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.005     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 101          Pervious   Impervious Total Area "
"             Surface Area           0.376      0.025      0.401      hectare"
"             Time of concentration  38.026     3.068      29.142     minutes"
"             Time to Centroid       156.888    94.734     141.092    minutes"
"             Rainfall depth         32.356     32.356     32.356     mm"
"             Rainfall volume        121.59     8.06       129.65     c.m"
"             Rainfall losses        27.103     5.368      25.751     mm"
"             Runoff depth           5.253      26.989     6.605      mm"
"             Runoff volume          19.74      6.73       26.47      c.m"
"             Runoff coefficient     0.162      0.834      0.204      "
"             Maximum flow           0.003      0.005      0.005      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.005     0.005     0.000     0.000"
" 38          START/RE-START TOTALS 101"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.401    hectare"
"             Total Impervious area                   0.025    hectare"
"             Total % impervious                      6.220"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                            101 5 Year Pre.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                        "
"                Date & Time last used:                  8/21/2025 at 7:07:23 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      544.160   Coefficient A"
"        0.093   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          173.694    mm/hr"
"             Total depth                 42.719    mm"
"            6   005hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 101"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          101   101 - 5Yr Pre"
"        6.220   % Impervious"
"        0.401   Total Area"
"       55.450   Flow length"
"        2.000   Overland Slope"
"        0.376   Pervious Area"
"       55.450   Pervious length"
"        2.000   Pervious slope"
"        0.025   Impervious Area"
"       55.450   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.231   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.872   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.009     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 101          Pervious   Impervious Total Area "
"             Surface Area           0.376      0.025      0.401      hectare"
"             Time of concentration  26.662     2.631      21.847     minutes"
"             Time to Centroid       141.821    92.896     132.018    minutes"
"             Rainfall depth         42.719     42.719     42.719     mm"
"             Rainfall volume        160.53     10.65      171.17     c.m"
"             Rainfall losses        32.856     5.463      31.152     mm"
"             Runoff depth           9.862      37.256     11.566     mm"
"             Runoff volume          37.06      9.29       46.35      c.m"
"             Runoff coefficient     0.231      0.872      0.271      "
"             Maximum flow           0.008      0.007      0.009      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                   0.009     0.009     0.000     0.000"
" 38          START/RE-START TOTALS 101"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.401    hectare"
"             Total Impervious area                   0.025    hectare"
"             Total % impervious                      6.220"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           101 10 Year Pre.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                        "
"                Date & Time last used:                  8/21/2025 at 7:09:01 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      620.900   Coefficient A"
"        0.010   Constant B"
"        0.698   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           201.686    mm/hr"
"             Total depth                  49.705    mm"
"            6   010hyd   Hydrograph extension used in this file"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      620.900   Coefficient A"
"        0.010   Constant B"
"        0.698   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           201.686    mm/hr"
"             Total depth                  49.705    mm"
"            6   010hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 101"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          101   101 - 10Yr Pre"
"        6.220   % Impervious"
"        0.401   Total Area"
"       55.450   Flow length"
"        2.000   Overland Slope"
"        0.376   Pervious Area"
"       55.450   Pervious length"
"        2.000   Pervious slope"
"        0.025   Impervious Area"
"       55.450   Impervious length"
"        2.000   Impervious slope"
```

```
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.272   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.889   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.015     0.000     0.000     0.000 c.m/sec"
"             Catchment 101          Pervious   Impervious Total Area "
"             Surface Area           0.376      0.025      0.401      hectare"
"             Time of concentration  23.020     2.466      19.355     minutes"
"             Time to Centroid       136.236    92.203     128.384    minutes"
"             Rainfall depth         49.705     49.705     49.705     mm"
"             Rainfall volume        186.78     12.39      199.17     c.m"
"             Rainfall losses        36.208     5.542      34.301     mm"
"             Runoff depth           13.497     44.163     15.404     mm"
"             Runoff volume          50.72      11.01      61.72      c.m"
"             Runoff coefficient     0.272      0.889      0.310      "
"             Maximum flow           0.013      0.009      0.015      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                     0.015     0.015     0.000     0.000"
" 38          START/RE-START TOTALS 101"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                     0.401    hectare"
"             Total Impervious area                    0.025    hectare"
"             Total % impervious                       6.220"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           101 25 Year Pre.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:10:39 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      739.780   Coefficient A"
"        0.085   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          236.511    mm/hr"
"             Total depth                 58.168    mm"
"            6   025hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 101"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          101   101 - 25Yr Pre"
"        6.220   % Impervious"
"        0.401   Total Area"
"       55.450   Flow length"
"        2.000   Overland Slope"
"        0.376   Pervious Area"
"       55.450   Pervious length"
"        2.000   Pervious slope"
"        0.025   Impervious Area"
"       55.450   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.316   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.903   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.022     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 101          Pervious   Impervious Total Area "
"             Surface Area           0.376      0.025      0.401      hectare"
"             Time of concentration  19.987     2.304      17.168     minutes"
"             Time to Centroid       130.917    91.416     124.620    minutes"
"             Rainfall depth         58.168     58.168     58.168     mm"
"             Rainfall volume        218.58     14.50      233.08     c.m"
"             Rainfall losses        39.807     5.668      37.684     mm"
"             Runoff depth           18.361     52.500     20.484     mm"
"             Runoff volume          68.99      13.08      82.08      c.m"
"             Runoff coefficient     0.316      0.903      0.352      "
"             Maximum flow           0.020      0.011      0.022      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                   0.022     0.022     0.000     0.000"
" 38          START/RE-START TOTALS 101"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.401    hectare"
"             Total Impervious area                   0.025    hectare"
"             Total % impervious                      6.220"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           101 50 Year Pre.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:12:19 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      820.460   Coefficient A"
"        0.085   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          262.475    mm/hr"
"             Total depth                 64.646    mm"
"            6   050hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 101"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          101   101 - 50Yr Pre"
"        6.220   % Impervious"
"        0.401   Total Area"
"       55.450   Flow length"
"        2.000   Overland Slope"
"        0.376   Pervious Area"
"       55.450   Pervious length"
"        2.000   Pervious slope"
"        0.025   Impervious Area"
"       55.450   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.346   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.911   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.028     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 101          Pervious   Impervious Total Area "
"             Surface Area           0.376      0.025      0.401      hectare"
"             Time of concentration  18.306     2.205      15.915     minutes"
"             Time to Centroid       127.945    91.015     122.460    minutes"
"             Rainfall depth         64.646     64.646     64.646     mm"
"             Rainfall volume        242.92     16.11      259.04     c.m"
"             Rainfall losses        42.257     5.770      39.987     mm"
"             Runoff depth           22.389     58.876     24.658     mm"
"             Runoff volume          84.13      14.67      98.81      c.m"
"             Runoff coefficient     0.346      0.911      0.381      "
"             Maximum flow           0.026      0.012      0.028      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.028     0.028     0.000     0.000"
" 38          START/RE-START TOTALS 101"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.401    hectare"
"             Total Impervious area                   0.025    hectare"
"             Total % impervious                      6.220"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          101 100 Year Pre.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:13:35 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      895.320   Coefficient A"
"        0.043   Constant B"
"        0.700   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           288.467    mm/hr"
"             Total depth                  70.849    mm"
"            6   100hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 101"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          101   101 - 100Yr Pre"
"        6.220   % Impervious"
"        0.401   Total Area"
"       55.450   Flow length"
"        2.000   Overland Slope"
"        0.376   Pervious Area"
"       55.450   Pervious length"
"        2.000   Pervious slope"
"        0.025   Impervious Area"
"       55.450   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.373   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.917   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.036     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 101          Pervious   Impervious Total Area "
"             Surface Area           0.376      0.025      0.401      hectare"
"             Time of concentration  16.989     2.120      14.906     minutes"
"             Time to Centroid       125.595    90.672     120.703    minutes"
"             Rainfall depth         70.849     70.849     70.849     mm"
"             Rainfall volume        266.24     17.66      283.89     c.m"
"             Rainfall losses        44.409     5.909      42.014     mm"
"             Runoff depth           26.441     64.941     28.835     mm"
"             Runoff volume          99.36      16.19      115.54     c.m"
"             Runoff coefficient     0.373      0.917      0.407      "
"             Maximum flow           0.034      0.014      0.036      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.036     0.036     0.000     0.000"
" 38          START/RE-START TOTALS 101"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.401    hectare"
"             Total Impervious area                   0.025    hectare"
"             Total % impervious                      6.220"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           201 2 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:17:04 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      411.800   Coefficient A"
"        0.680   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          121.889    mm/hr"
"             Total depth                 32.355    mm"
"            6   002hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   201 - 2Yr Post"
"       90.260   % Impervious"
"        0.185   Total Area"
"       53.920   Flow length"
"        2.000   Overland Slope"
"        0.018   Pervious Area"
"       53.920   Pervious length"
"        2.000   Pervious slope"
"        0.167   Impervious Area"
"       53.920   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.162   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.835   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.033     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.018      0.167      0.185      hectare"
"             Time of concentration  37.395     3.017      3.724      minutes"
"             Time to Centroid       156.068    94.651     95.914     minutes"
"             Rainfall depth         32.355     32.355     32.355     mm"
"             Rainfall volume        5.83       54.06      59.89      c.m"
"             Rainfall losses        27.100     5.341      7.460      mm"
"             Runoff depth           5.255      27.014     24.895     mm"
"             Runoff volume          0.95       45.13      46.08      c.m"
"             Runoff coefficient     0.162      0.835      0.769      "
"             Maximum flow           0.000      0.033      0.033      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.033     0.033     0.000     0.000"
" 38          START/RE-START TOTALS 201"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                      0.185    hectare"
"             Total Impervious area                     0.167    hectare"
"             Total % impervious                       90.260"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           201 5 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:19:01 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      544.160   Coefficient A"
"        0.093   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          173.694    mm/hr"
"             Total depth                 42.719    mm"
"            6   005hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   201 - 5Yr Post"
"       90.260   % Impervious"
"        0.185   Total Area"
"       53.920   Flow length"
"        2.000   Overland Slope"
"        0.018   Pervious Area"
"       53.920   Pervious length"
"        2.000   Pervious slope"
"        0.167   Impervious Area"
"       53.920   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.231   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.872   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.050     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.018      0.167      0.185      hectare"
"             Time of concentration  26.218     2.587      3.243      minutes"
"             Time to Centroid       141.195    92.815     94.157     minutes"
"             Rainfall depth         42.719     42.719     42.719     mm"
"             Rainfall volume        7.70       71.37      79.07      c.m"
"             Rainfall losses        32.859     5.451      8.121      mm"
"             Runoff depth           9.860      37.267     34.598     mm"
"             Runoff volume          1.78       62.26      64.04      c.m"
"             Runoff coefficient     0.231      0.872      0.810      "
"             Maximum flow           0.000      0.050      0.050      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.050     0.050     0.000     0.000"
" 38          START/RE-START TOTALS 201"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.185    hectare"
"             Total Impervious area                   0.167    hectare"
"             Total % impervious                     90.260"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          201 10 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:20:30 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      620.900   Coefficient A"
"        0.010   Constant B"
"        0.698   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          201.686    mm/hr"
"             Total depth                 49.705    mm"
"            6   010hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   201 - 10Yr Post"
"       90.260   % Impervious"
"        0.185   Total Area"
"       53.920   Flow length"
"        2.000   Overland Slope"
"        0.018   Pervious Area"
"       53.920   Pervious length"
"        2.000   Pervious slope"
"        0.167   Impervious Area"
"       53.920   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.271   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.889   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.060     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.018      0.167      0.185      hectare"
"             Time of concentration  22.637     2.425      3.069      minutes"
"             Time to Centroid       135.689    92.131     93.521     minutes"
"             Rainfall depth         49.705     49.705     49.705     mm"
"             Rainfall volume        8.96       83.04      92.00      c.m"
"             Rainfall losses        36.218     5.531      8.520      mm"
"             Runoff depth           13.487     44.173     41.184     mm"
"             Runoff volume          2.43       73.80      76.23      c.m"
"             Runoff coefficient     0.271      0.889      0.829      "
"             Maximum flow           0.001      0.060      0.060      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.060     0.060     0.000     0.000"
" 38          START/RE-START TOTALS 201"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.185    hectare"
"             Total Impervious area                   0.167    hectare"
"             Total % impervious                     90.260"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          201 25 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:21:51 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      739.780   Coefficient A"
"        0.085   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          236.511    mm/hr"
"             Total depth                 58.168    mm"
"            6   025hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   201 - 25Yr Post"
"       90.260   % Impervious"
"        0.185   Total Area"
"       53.920   Flow length"
"        2.000   Overland Slope"
"        0.018   Pervious Area"
"       53.920   Pervious length"
"        2.000   Pervious slope"
"        0.167   Impervious Area"
"       53.920   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.316   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.903   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.074     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.018      0.167      0.185      hectare"
"             Time of concentration  19.654     2.266      2.898      minutes"
"             Time to Centroid       130.439    91.367     92.787     minutes"
"             Rainfall depth         58.168     58.168     58.168     mm"
"             Rainfall volume        10.49      97.18      107.67     c.m"
"             Rainfall losses        39.814     5.666      8.992      mm"
"             Runoff depth           18.354     52.501     49.175     mm"
"             Runoff volume          3.31       87.71      91.02      c.m"
"             Runoff coefficient     0.316      0.903      0.845      "
"             Maximum flow           0.001      0.073      0.074      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.074     0.074     0.000     0.000"
" 38          START/RE-START TOTALS 201"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.185    hectare"
"             Total Impervious area                   0.167    hectare"
"             Total % impervious                     90.260"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          201 50 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:23:17 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      820.460   Coefficient A"
"        0.085   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           262.475    mm/hr"
"             Total depth                  64.646    mm"
"            6   050hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   201 - 50Yr Post"
"       90.260   % Impervious"
"        0.185   Total Area"
"       53.920   Flow length"
"        2.000   Overland Slope"
"        0.018   Pervious Area"
"       53.920   Pervious length"
"        2.000   Pervious slope"
"        0.167   Impervious Area"
"       53.920   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.346   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.910   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.083     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.018      0.167      0.185      hectare"
"             Time of concentration  18.001     2.168      2.793      minutes"
"             Time to Centroid       127.484    90.965     92.405     minutes"
"             Rainfall depth         64.646     64.646     64.646     mm"
"             Rainfall volume        11.65      108.00     119.66     c.m"
"             Rainfall losses        42.253     5.787      9.339      mm"
"             Runoff depth           22.393     58.859     55.307     mm"
"             Runoff volume          4.04       98.34      102.37     c.m"
"             Runoff coefficient     0.346      0.910      0.856      "
"             Maximum flow           0.001      0.083      0.083      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.083     0.083     0.000     0.000"
" 38          START/RE-START TOTALS 201"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.185    hectare"
"             Total Impervious area                   0.167    hectare"
"             Total % impervious                     90.260"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                         201 100 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:24:37 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      895.320   Coefficient A"
"        0.043   Constant B"
"        0.700   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           288.467    mm/hr"
"             Total depth                  70.849    mm"
"            6   100hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 201"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          201   201 - 100Yr Post"
"       90.260   % Impervious"
"        0.185   Total Area"
"       53.920   Flow length"
"        2.000   Overland Slope"
"        0.018   Pervious Area"
"       53.920   Pervious length"
"        2.000   Pervious slope"
"        0.167   Impervious Area"
"       53.920   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.373   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.916   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.093     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 201          Pervious   Impervious Total Area "
"             Surface Area           0.018      0.167      0.185      hectare"
"             Time of concentration  16.706     2.085      2.700      minutes"
"             Time to Centroid       125.177    90.620     92.074     minutes"
"             Rainfall depth         70.849     70.849     70.849     mm"
"             Rainfall volume        12.77      118.37     131.14     c.m"
"             Rainfall losses        44.426     5.943      9.691      mm"
"             Runoff depth           26.424     64.907     61.159     mm"
"             Runoff volume          4.76       108.44     113.20     c.m"
"             Runoff coefficient     0.373      0.916      0.863      "
"             Maximum flow           0.002      0.093      0.093      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.093     0.093     0.000     0.000"
" 38          START/RE-START TOTALS 201"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.185    hectare"
"             Total Impervious area                   0.167    hectare"
"             Total % impervious                     90.260"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           202 2 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:27:23 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      411.820   Coefficient A"
"        0.680   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          121.895    mm/hr"
"             Total depth                 32.356    mm"
"            6   002hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   202 - 2Yr Post"
"       94.180   % Impervious"
"        0.216   Total Area"
"       56.770   Flow length"
"        2.000   Overland Slope"
"        0.013   Pervious Area"
"       56.770   Pervious length"
"        2.000   Pervious slope"
"        0.203   Impervious Area"
"       56.770   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.162   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.833   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.039     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.203      0.216      hectare"
"             Time of concentration  38.566     3.112      3.534      minutes"
"             Time to Centroid       157.589    94.811     95.558     minutes"
"             Rainfall depth         32.356     32.356     32.356     mm"
"             Rainfall volume        4.06       65.73      69.79      c.m"
"             Rainfall losses        27.101     5.394      6.658      mm"
"             Runoff depth           5.255      26.962     25.699     mm"
"             Runoff volume          0.66       54.77      55.43      c.m"
"             Runoff coefficient     0.162      0.833      0.794      "
"             Maximum flow           0.000      0.039      0.039      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.039     0.039     0.000     0.000"
" 38          START/RE-START TOTALS 202"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.216    hectare"
"             Total Impervious area                   0.203    hectare"
"             Total % impervious                     94.180"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                           202 5 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:28:42 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      544.160   Coefficient A"
"        0.093   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          173.694    mm/hr"
"             Total depth                 42.719    mm"
"            6   005hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   202 - 5Yr Post"
"       94.180   % Impervious"
"        0.216   Total Area"
"       56.770   Flow length"
"        2.000   Overland Slope"
"        0.013   Pervious Area"
"       56.770   Pervious length"
"        2.000   Pervious slope"
"        0.203   Impervious Area"
"       56.770   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.231   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.872   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.060     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.203      0.216      hectare"
"             Time of concentration  27.041     2.668      3.061      minutes"
"             Time to Centroid       142.354    92.972     93.767     minutes"
"             Rainfall depth         42.719     42.719     42.719     mm"
"             Rainfall volume        5.36       86.78      92.14      c.m"
"             Rainfall losses        32.856     5.476      7.069      mm"
"             Runoff depth           9.862      37.243     35.649     mm"
"             Runoff volume          1.24       75.66      76.90      c.m"
"             Runoff coefficient     0.231      0.872      0.835      "
"             Maximum flow           0.000      0.060      0.060      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                   0.060     0.060     0.000     0.000"
" 38          START/RE-START TOTALS 202"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                      0.216    hectare"
"             Total Impervious area                     0.203    hectare"
"             Total % impervious                       94.180"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          202 10 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:30:03 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      620.900   Coefficient A"
"        0.010   Constant B"
"        0.698   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          201.686    mm/hr"
"             Total depth                 49.705    mm"
"            6   010hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   202 - 10Yr Post"
"       94.180   % Impervious"
"        0.216   Total Area"
"       56.770   Flow length"
"        2.000   Overland Slope"
"        0.013   Pervious Area"
"       56.770   Pervious length"
"        2.000   Pervious slope"
"        0.203   Impervious Area"
"       56.770   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.272   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.888   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.073     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.203      0.216      hectare"
"             Time of concentration  23.348     2.501      2.887      minutes"
"             Time to Centroid       136.704    92.273     93.097     minutes"
"             Rainfall depth         49.705     49.705     49.705     mm"
"             Rainfall volume        6.24       100.97     107.21     c.m"
"             Rainfall losses        36.204     5.552      7.336      mm"
"             Runoff depth           13.500     44.152     42.368     mm"
"             Runoff volume          1.69       89.69      91.39      c.m"
"             Runoff coefficient     0.272      0.888      0.852      "
"             Maximum flow           0.000      0.073      0.073      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.073     0.073     0.000     0.000"
" 38          START/RE-START TOTALS 202"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                      0.216    hectare"
"             Total Impervious area                     0.203    hectare"
"             Total % impervious                       94.180"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          202 25 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:31:28 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      739.780   Coefficient A"
"        0.085   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity          236.511    mm/hr"
"             Total depth                 58.168    mm"
"            6   025hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   202 - 25Yr Post"
"       94.180   % Impervious"
"        0.216   Total Area"
"       56.770   Flow length"
"        2.000   Overland Slope"
"        0.013   Pervious Area"
"       56.770   Pervious length"
"        2.000   Pervious slope"
"        0.203   Impervious Area"
"       56.770   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.316   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.903   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.088     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.203      0.216      hectare"
"             Time of concentration  20.271     2.337      2.717      minutes"
"             Time to Centroid       131.334    91.465     92.309     minutes"
"             Rainfall depth         58.168     58.168     58.168     mm"
"             Rainfall volume        7.30       118.17     125.47     c.m"
"             Rainfall losses        39.797     5.664      7.651      mm"
"             Runoff depth           18.371     52.503     50.517     mm"
"             Runoff volume          2.31       106.66     108.96     c.m"
"             Runoff coefficient     0.316      0.903      0.868      "
"             Maximum flow           0.001      0.088      0.088      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.088     0.088     0.000     0.000"
" 38          START/RE-START TOTALS 202"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                      0.216    hectare"
"             Total Impervious area                     0.203    hectare"
"             Total % impervious                       94.180"
" 19          EXIT"
```

```
"                MIDUSS Output ----------------------------------------------->"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                          202 50 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:32:48 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      820.460   Coefficient A"
"        0.085   Constant B"
"        0.701   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           262.475    mm/hr"
"             Total depth                  64.646    mm"
"            6   050hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   202 - 50Yr Post"
"       94.180   % Impervious"
"        0.216   Total Area"
"       56.770   Flow length"
"        2.000   Overland Slope"
"        0.013   Pervious Area"
"       56.770   Pervious length"
"        2.000   Pervious slope"
"        0.203   Impervious Area"
"       56.770   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.346   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.911   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.100     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.203      0.216      hectare"
"             Time of concentration  18.566     2.237      2.611      minutes"
"             Time to Centroid       128.344    91.058     91.914     minutes"
"             Rainfall depth         64.646     64.646     64.646     mm"
"             Rainfall volume        8.12       131.33     139.44     c.m"
"             Rainfall losses        42.260     5.759      7.884      mm"
"             Runoff depth           22.385     58.886     56.762     mm"
"             Runoff volume          2.81       119.63     122.44     c.m"
"             Runoff coefficient     0.346      0.911      0.878      "
"             Maximum flow           0.001      0.100      0.100      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.100     0.100     0.000     0.000"
" 38          START/RE-START TOTALS 202"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.216    hectare"
"             Total Impervious area                   0.203    hectare"
"             Total % impervious                     94.180"
" 19          EXIT"
```

```
"                MIDUSS Output ------------------------------------------------>"
"                MIDUSS version                            Version 2.25  rev. 473"
"                MIDUSS created                          Sunday, February 7, 2010"
"           10   Units used:                                          ie METRIC"
"                Job folder:                             C:\Users\Cathy\Desktop"
"                Output filename:                         202 100 Year Post.out"
"                Licensee name:                                Drew Fallowfield"
"                Company                                                       "
"                Date & Time last used:                  8/21/2025 at 7:34:06 AM"
" 31          TIME PARAMETERS"
"        5.000   Time Step"
"      180.000   Max. Storm length"
"     1500.000   Max. Hydrograph"
" 32          STORM Chicago storm"
"            1   Chicago storm"
"      895.320   Coefficient A"
"        0.043   Constant B"
"        0.700   Exponent C"
"        0.400   Fraction R"
"      180.000   Duration"
"        1.000   Time step multiplier"
"             Maximum intensity           288.467    mm/hr"
"             Total depth                  70.849    mm"
"            6   100hyd   Hydrograph extension used in this file"
" 33          CATCHMENT 202"
"            1   Triangular SCS"
"            1   Equal length"
"            1   SCS method"
"          202   202 - 100Yr Post"
"       94.180   % Impervious"
"        0.216   Total Area"
"       56.770   Flow length"
"        2.000   Overland Slope"
"        0.013   Pervious Area"
"       56.770   Pervious length"
"        2.000   Pervious slope"
"        0.203   Impervious Area"
"       56.770   Impervious length"
"        2.000   Impervious slope"
"        0.250   Pervious Manning 'n'"
"       75.000   Pervious SCS Curve No."
"        0.373   Pervious Runoff coefficient"
"        0.100   Pervious Ia/S coefficient"
"        8.467   Pervious Initial abstraction"
"        0.015   Impervious Manning 'n'"
"       98.000   Impervious SCS Curve No."
"        0.917   Impervious Runoff coefficient"
"        0.100   Impervious Ia/S coefficient"
"        0.518   Impervious Initial abstraction"
"                     0.112     0.000     0.000     0.000 c.m/sec"
```

```
"             Catchment 202          Pervious   Impervious Total Area "
"             Surface Area           0.013      0.203      0.216      hectare"
"             Time of concentration  17.230     2.150      2.520      minutes"
"             Time to Centroid       125.951    90.718     91.583     minutes"
"             Rainfall depth         70.849     70.849     70.849     mm"
"             Rainfall volume        8.89       143.93     152.82     c.m"
"             Rainfall losses        44.401     5.876      8.118      mm"
"             Runoff depth           26.448     64.974     62.731     mm"
"             Runoff volume          3.32       131.99     135.31     c.m"
"             Runoff coefficient     0.373      0.917      0.885      "
"             Maximum flow           0.001      0.112      0.112      c.m/sec"
" 40          HYDROGRAPH Add Runoff "
"            4   Add Runoff "
"                  0.112     0.112     0.000     0.000"
" 38          START/RE-START TOTALS 202"
"            3   Runoff Totals on EXIT"
"             Total Catchment area                    0.216    hectare"
"             Total Impervious area                   0.203    hectare"
"             Total % impervious                     94.180"
" 19          EXIT"
```

Appendix F – CONTECH Engineered Solutions Stone Void Space Article

Examining Stone Void Space Part 1: Is 40% a Reliable Number?

By: **Robert Chapman** September-14-2020

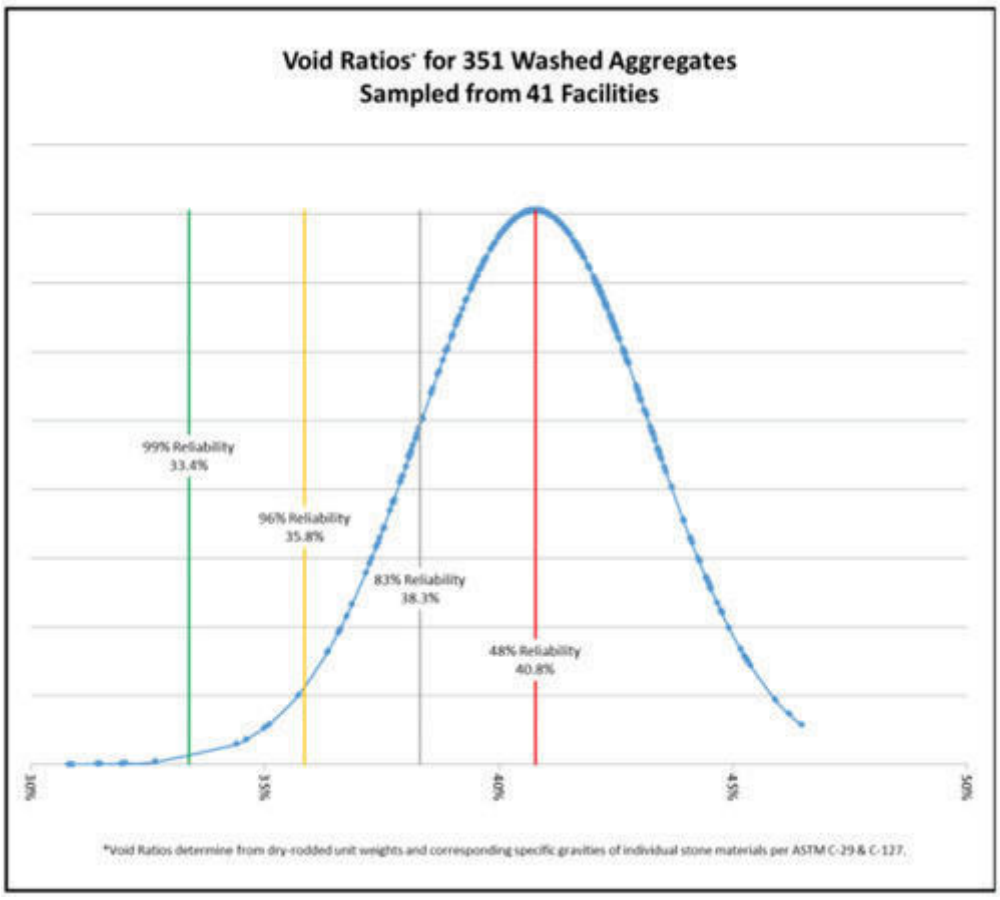
Is 40% Void Space Accurate? What Engineers Should Know About Stone Storage

Stormwater detention systems often include a large portion of the sto
of the backfill material. Depending on the underground structure desig

within the stone voids can vary between 25-60% of the overall storage for the project. The generally accepted number has been 40% stone void space. However, there have been few national studies to prove the 40% void space is reliable. Engineers need to ask if this number is indeed accurate, and if not, what is the implication on designs?

A recent study[1] with 300+ washed aggregates from 41 facilities within the United States sought to address the 40% assumption. The findings were surprising:

- 40% void space is an average, not a given truth. It is an average communicated based on very few studies. In fact, it's only about 60% reliable.
- The same aggregates were found to have variation throughout various geographies within the same quarry company.
- To obtain a 96% reliability in stone voids, 36% stone void storage should be considered in the design.



Compounding this issue is that stone void space will most often decline over time. One reason for this is that on-site erosion & insufficient sediment controls can lead to sediment buildup and can compromise a design before site stabilization even occurs. If you have ever been to a construction site, you know what I mean. Unfortunately, improper erosion and sediment controls at a construction site are not uncommon, and one month without proper erosion and sediment management during construction can do more damage than years of

paved surface, and can present a compounding downstream flooding risk each year with long term accumulation.

It's important to remember that there is no going back when it comes to the occlusion of stone voids; once they are filled, the storage capacity is permanently lost. Therefore, the end goal for engineers should be to minimize the reliance on stone voids for storage, and by doing so, you maintain as much of the storage design as possible, reducing downstream concerns. How do you do that? We'll address that in our next post.

1 Source: Cashatt, J.C. (2020), Viability of Stone Void Space in Underground Detention/Retention Systems, Proceedings of EWRI 2020, Henderson, NV, American Society of Civil Engineers.

CATEGORIES

2566899 Ontario Inc. c/o Jeremy Dekoninck

Mini Storage Facilty - 15 Industrial Road, Delhi, Ontario

COST ESTIMATE FOR WORK ON ROAD ALLOWANCE - COUNTY OF NORFOLK

Item	Description	Unit	Quantity	Unit Price	Total Cost	10% Maintenance	100% Performance
A	**SANITARY SEWERS**						
A1	Existing Sanitary Service Connection						
	Locate existing sanitary service connection & remove completely to ex. manhole - includes removal and disposal	EA	1.00	$ 1,000.00	$ 1,000.00	$ -	$ 1,000.00
A2	Proposed Sanitary Service Connection						
	Locate existing A.C. saniatry serwer, install "inserta tee" or approved equal, including connection & fitting	EA	1.00	$ 750.00	$ 750.00	$ -	$ 750.00
	Supply & Install 125mm dia. Sanitary PDC PVC SDR28	m	6.80	$ 75.00	$ 510.00	$ -	$ 510.00
A3	Supply & Install 1200mm dia. Sanitary Inspection Manhole	EA	1.00	$ 4,500.00	$ 4,500.00	$ -	$ 4,500.00
B	**WATERMAIN**						
B1	Existing Water Service Connection						
	Locate existing water service connection & remove completely to ex. mainstop - includes removal and disposal	EA	1.00	$ 1,000.00	$ 1,000.00	$ -	$ 1,000.00
B2	Proposed Watermain connection						
	Locate existing ductile iron watermain, tap watermain as per county specifications	EA	1.00	$ 750.00	$ 750.00	$ -	$ 750.00
	Supply & Install 25mm municipex service complete, including curb box, 12 gauge tracer wire	EA	1.00	$ 1,000.00	$ 1,000.00	$ -	$ 1,000.00
C	**ROAD / BOULEVARD RESTORATION**						
C1	Road Restoration at existing SSC - 55m2						
	Sawcut existing asphalt at limit of construction - +/- 5.0mx11.0m	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
	Supply and compact 300mm Granular B	TONNE	41.25	$ 40.00	$ 1,650.00	$ -	$ 1,650.00
	Supply and compact 150mm Granular A	TONNE	20.60	$ 54.50	$ 1,122.70	$ -	$ 1,122.70
	Supply and compact 50mm HL8 Asphalt	TONNE	6.90	$ 255.00	$ 1,759.50	$ -	$ 1,759.50
	Supply and compact 40mm HL3 Asphalt	TONNE	5.50	$ 325.00	$ 1,787.50	$ -	$ 1,787.50
C2	Road Restoration at existing WSC - 18m2						
	Sawcut existing asphalt at limit of construction - +/- 3.0mx6.0m	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
	Supply and compact 300mm Granular B	TONNE	13.75	$ 40.00	$ 550.00	$ -	$ 550.00
	Supply and compact 150mm Granular A	TONNE	7.00	$ 54.50	$ 381.50	$ -	$ 381.50
	Supply and compact 50mm HL8 Asphalt	TONNE	2.30	$ 255.00	$ 586.50	$ -	$ 586.50
	Supply and compact 40mm HL3 Asphalt	TONNE	1.85	$ 325.00	$ 601.25	$ -	$ 601.25
C3	Boulevard Restoration at existing SSC - +/-8.25m2						
	Supply and Place 150mmTopsoil	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
	Supply and place grass seed	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
C4	Boulevard Restoration at existing WSC - +/-8.25m2						
	Supply and Place 150mmTopsoil	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
	Supply and place grass seed	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
C5	Boulevard Restoration at Proposed Serice connection - +/-118m2						
	Supply and Place 150mmTopsoil	LS	1.00	$ 500.00	$ 500.00	$ -	$ 500.00
	Supply and place grass seed	LS	1.00	$ 250.00	$ 250.00	$ -	$ 250.00
	Total Construction on Road Allowance				**$ 20,198.95**	**$ -**	**$ 20,198.95**
D	**SUMMARY**						
	Sanitary Sewer				$ 6,760.00	$ -	$ 6,760.00
	Watermain				$ 2,750.00	$ -	$ 2,750.00
	Road / Boulevard Restoration				$ 10,688.95	$ -	$ 10,688.95
	Sub-Total						$ 20,198.95
	HST (1.76%)						$ 355.50
	Total Performance + Maintenance Security Required						**$ 20,554.45**