N.A.J.M Engineering Ltd

1 – 5345 Outer Drive,

Oldcastle, ON, N9G 0C4

Attention: City of Windsor
Engineering Department - Development

RE: 25156 670 – 690 North Talbot Road/Silverdale Dr Residential Development – Engineering Memo

Date: January 26, 2026

N.A.J.M Engineering Ltd has been retained by the owner of North Talbot/ Silverdale Dr Residential development to prepare an engineering memo for the proposed development at 670-690 North Talbot Road.

The subject property is 1.76ha. The site plan for the proposed development has been revised – dated Sep 16, 2025, and will comprise of 3 detached homes along North Talbot Road and two lots (Lot 1 and Lot 2) each comprising of 6 town homes. Lot 1 will have 28 units and Lot 2 will have 35 units. The access to the townhomes will be through the extension of the existing Silverdale drive. Refer to Appendix B for the revised site plan. This memo addresses the storm and sanitary functional servicing for the proposed development.

Storm:
Based on discussions with the City of Windsor, it was identified that there was an allowable storm release rate of 29L/s recommended by Baird AE Inc. This release rate was included in the modelling of the North Talbot Road storm sewer system, and it was confirmed that the 1350mm storm sewer along North Talbot Road has sufficient capacity to support the storm flows (29L/s) from the proposed development. Refer to Appendix B. A 3.0m storm sewer easement will be provided between the proposed detached homes S-2 and S-3 to install the conveyance storm sewer from the Townhomes to the 1350mm sewer along North Talbot Road. The overall release rate from the proposed development will be limited to 29 L/s.

Sanitary:
In discussion with the City of Windsor and the Client, it was identified that the sanitary flows from the proposed development were intended to be connected to the Silverdale Dr sanitary sewer. Baird AE Inc assessed the sanitary sewer system along Silverdale Dr and contributing upstream areas up to Manhole 7S3682 along Northwood Lakes Dr. The sanitary sewer along Northwood Lakes Dr conveys flows from the upstream areas to the North Talbot sanitary sewer. Refer to Appendix B for Baird AE Inc report.

Based on comments from the City of Windsor dated September 16, 2024, the sanitary sewer run between manholes 7S3682 (Northwood Lakes Dr) and 7S3769 (North Talbot Road) must be assessed to determine if these sewers have the capacity to support the proposed development.

NAJM Engineering Ltd has prepared a sanitary study design sheet for the downstream areas up to the manhole 7S3769 along North Talbot Road and can confirm that these sewers have sufficient capacity to

accommodate the additional sanitary flows from the proposed development. It is to be noted that the site plan has been revised to construct three detached homes along North Talbot Road. These detached homes will have their sanitary services connected directly to the North Talbot sanitary sewer. The Townhomes from Lot 1 and Lot 2 will convey their flows to the Silverdale Dr sanitary sewer. Refer to Appendix A for Sanitary Calculations.

We trust that this memo satisfies the requirements of the City of Windsor with respect to the subject development. Should you have any questions, please do not hesitate to contact the undersigned.



_____

Nadim Mrad, P. Eng.

Project Manager

APPENDIX A

SANITARY CALCULATIONS

NAJM ENGINEERING LTD.

1 - 5345 OUTER DRIVE, OLD CASTLE, ON N9G 0C4
PHONE : +1 519 737 7115
WEBSITE : najmengineeringltd.com

PARTNER / CONSULTANTS

ISSUED/REVISIONS

DATE	REASONS
JAN 26,2026	ZONING
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DATE:

SCALE: 1:1000

DRAWN BY: G.S. [X] SUBMISSION

CHECKED BY: G.S. [ ] CONSTRUCTION

APPROVED BY: N.M. [ ] RECORD

PROJECT TITLE: NORTH TALBOT/SILVERDALE RESIDENTIAL

WINDSOR, ON

SHEET TITLE: SANITARY SEWER ASSESSMENT

JOB NUMBER: 25156

SHEET NUMBER: 1

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2. THIS DRAWING IS THE INTELLECTUAL PROPERTY OF SERVICE, IS PROVIDED BY AND IS THE PROPERTY OF N.A.J.M ENGINEERING, LTD PLANNERS ARCHITECTS.
3. THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON SITE AND MUST NOTIFY N.A.J.M ENGINEERING, LTD. OF ANY VARIATION FROM THE SUPPLIED INFORMATION.
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5. CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
6. THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM THEIR WORK.

NAJM ENGINEERING LTD

SANITARY SEWER DESIGN SHEET

CITY OF WINDSOR

Northwood Lakes Dr Sanitary Sewer Assessment

STREET	SUBCATCHMENT ID	MH		Residential	Road (If applicable)	Cumulative Residential	Residential Population	Cumulative Resi. Population	Resi Avg	Ultimate Peaking	Residential Peak	Infiltration	Infiltration	TOTAL	SEWER DESIGN						
		From	To	Area	Area	Area			Day	Factor	Day	AREA	Flow	Peak Flow	Pipe Dia	Pipe Act Dia	Grade	Length	Capacity	Full Velocity	Percent Full
				(ha)	(ha)				(L/s)		(L/s)	(ha)	(L/s)	(L/s)	(mm)	(mm)	(%)	(m)	(L/s)	(m/s)	(%)
Northwood Lakes Dr	B11	7S3683	7S3682	0.178	0	15.52	9	776	3.26	6.00	19.56	15.52	2.42	21.98	250	250	0.40	29.00	37.61	0.77	58%
Northwood Lakes Dr	B12	7S3682	7S3681	0.3788	0	15.90	19	795	3.34	6.00	20.03	15.90	2.48	22.51	250	250	0.38	29.80	36.66	0.75	61%
Northwood Lakes Dr	B13	7S3681	7S3680	0.451	0	16.35	23	818	3.44	6.00	20.61	16.35	2.55	23.16	250	250	0.40	31.10	37.61	0.77	62%
Northwood Lakes Dr	B14	7S3680	7S3679	0.5591	0	16.91	28	846	3.55	6.00	21.32	16.91	2.64	23.96	250	250	0.38	36.50	36.80	0.75	65%
Northwood Lakes Dr	B15	7S3679	7S3678	0	0.0822	16.91	0	846	3.55	6.00	21.32	16.99	2.65	23.97	250	250	0.35	53.60	35.18	0.72	68%
Northwood Lakes Dr	B16	7S3678	7S3769	0	0.0589	16.91	0	846	3.55	6.00	21.32	17.05	2.66	23.98	250	250	1.50	24.10	72.83	1.48	33%

Domestic Sewage flow 362.88 L/c/d Average Daily Flow
Infiltration 0.156 L/s/ha
Residential Population Density per hectare 50.00 (Person/ha)

Designed By:	G.S.
Checked By:	G.S.
Approved By:	N.M.
Date:	Jan-26
Project No.:	25156

APPENDIX B

BACKGROUND INFORMATION


Wallace Ave
Dougall Ave
Dougall Ave
Howard Rd
Lunenburg Rd
Lunenburg Rd
Lunenburg

THE CITY OF WINDSOR
ONTARIO, CANADA

Office of the Commissioner of Infrastructure Services

Memo

Date: Monday, September 16, 2024

To: Planning Department

From: Engineering Department – Development

Subject: **FSR Comments on 670 & 690 North Talbot Road**
PC-064-24

We have reviewed the functional servicing report for the above-noted application ("NORTH TALBOT/ SILVERDALE TOWNHOUSES RESIDENTIAL DEVELOPMENT" dated May 21, 2024 by Baird AE). Our comments are as follows:

Overall, the report is not acceptable and would need to be revised to address the following comments:

Sanitary Sewer Servicing

The servicing strategy is supported, subject to a few minor changes to address the following comments:

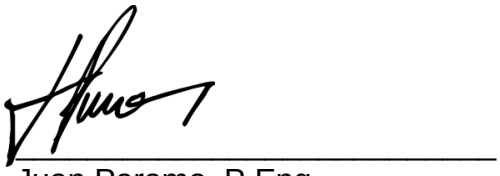
- The sanitary capacity assessment must encompass all lands within the entire catchment area. The sewer run between 7S3682 to 7S3769 must be assessed and include all residential properties with outlet to this sewer.

Storm Sewer Servicing

Baird AE has indicated that the existing storm sewer along Silverdale does not adequate capacity to accommodate the proposed development, as originally indented and designed. As a result, the City explored an alternative storm servicing strategy through the new North Talbot sewer.

The proposed development was integrated into the PCSWMM model for the Phase 1 North Talbot Sewer Improvements project to assess impacts of discharging storm flows into the new North talbot sewer. The analysis confirms that Baird's proposed allowable release of 29 L/s will not negatively impact the downstream sewer system or the Southwood Lake Ponds.

The updated Functional Servicing Study needs to include the servicing strategy mentioned above.



Juan Paramo, P.Eng.
Development Engineer

FUNCTIONAL SERVICING REPORT

NORTH TALBOT/ SILVERDALE TOWNHOUSES RESIDENTIAL DEVELOPMENT

670 - 690 NORTH TALBOT ROAD

WINDSOR, ONTARIO

PROJECT NO: 21-119

DATED: MAY 21, 2024

BAIRD|AE
architecture + engineering
27 Princess St., Unit 102
Leamington, ON N8H 2X8
519.326.6161 TF 1.844.842.9188
bairdAE.ca

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Appendix A – Background Information

Appendix B – Storm and Sanitary Design Sheets

Appendix C – Autodesk Hydrographs Results

Appendix D – Drawing Set

1. INTRODUCTION

Baird AE was retained to provide civil engineering services for the development of residential townhouse buildings at 670 - 690 North Talbot Road in the City of Windsor, Ontario. This report, along with the associated design, is prepared in accordance with the Windsor-Essex Regional Stormwater Management Standards Manual (WERSMSM) and the City of Windsor Development Manual to ensure compliance with local design standards and development regulations.

The subject property, 1.76Ha in size, is zoned residential and contains existing dwellings along North Talbot Road. The natural extension of Silverdale Drive would occur, creating 2 lots for the proposed development, as shown in Figure 1. The development is surrounded by existing residential development to the north, east and west, and North Talbot Road to the south.

As shown in Figure 2, the proposed development will include townhouse complexes, private driveways, and public roadway with the extension of Silverdale Drive. Vehicular Entrance Accesses would be off of North Talbot Road for Lot 1 and Silverdale Drive for Lot 2.

This report intends to summarize existing conditions, storm and sanitary servicing provisions, and potable water servicing provisions to support the proposed development.



Figure 1: Existing Conditions

2. EXISTING CONDITIONS

2.1. EXISTING DRAINAGE

A topographic survey of the subject property suggests no clear surface drainage patterns. Based on soil maps provided by ERCA, the underlying soil type is Brookston Clay Sand -Spot Phase, classified as belonging to Hydrological Soil Group D. Additional details regarding existing drainage conditions are provided in Appendix A of this report.

2.2 ALLOWABLE RELEASE RATE

The pre-development analysis of the site was completed in accordance with the WERSMSM, utilizing the Hydraflow Hydrographs Extension for Autodesk Civil 3D. The pre-development release rate for each lot is calculated separately, and the releases from the individual lots will be restricted to their respective pre-development release rates.

Using the rational method, the 5-year pre-development release rate for the two lots were determined as shown in Table 1 below. Storm and runoff hydrographs for the 5-year design storm are provided in Appendix C.

Table 1: Allowable Release Rate

Lot	Pre-Development Release Rate
Lot 1	15 l/s
Lot 2	14 l/s
Total Allowable Release Rate	29 l/s

2.2. EXISTING INFRASTRUCTURE

The following storm, sanitary, and watermain infrastructure exists adjacent to the subject property:

Silverdale Drive

- One existing 600mm diameter PVC storm sewer along Silverdale Drive.
- One existing 250mm diameter PVC sanitary sewer along Silverdale Drive.
- One existing watermain on Silverdale Drive.

North Talbot Road

- One existing 1350mm diameter RCP storm sewer along North Talbot Road.
- One existing 600mm RCP storm sewer on North Talbot Road which increases in size to 900mm.
- One existing 600mm concrete sanitary sewer on North Talbot Road.
- One existing 300mm watermain on North Talbot Road.

3. PROPOSED CONDITIONS

3.1. BUILDING AND PARKING LOT

The development will consist of 12 townhouse building complexes, collectively accommodating 86 townhouse condos, asphalt driveways and roadways, landscaped areas and access points on Silverdale Drive and North Talbot Road.

Table 2: Proposed Development

LOT/BUILDING INFO.						
TOTAL SITE AREA		17,635.23 m² (189,824.04 sq.ft) 1.76 ha (4.36 ac)				
LOT	LAND AREA	LAND USE	RESIDENTIAL DWELLING UNITS	BUILDING FOOTPRINT AREA	RESIDENTIAL BUILDING GFA	LENGTH OF CURBING
LOT 1	8,630.32 m² (92,895.99 sq.ft)	4 - 8 UNIT TOWNHOUSE COMPLEX 1 - 7 UNIT TOWNHOUSE COMPLEX 1 - 6 UNIT TOWNHOUSE COMPLEX	45 UNITS	59.30 m² (638.30 sq. ft) PER UNIT OF TOTAL 45 UNITS = 2,668.50 m² (28,723.50 sq. ft)	186.74 m² (2,010.05 sq. ft) PER UNIT OF TOTAL 45 UNITS = 8,403.30 m² (90,452.25 sq. ft)	343.88 m (1,128.21 ft)
LOT 2	7,708.99 m² (82,978.88 sq.ft)	2 - 8 UNIT TOWNHOUSE COMPLEX 1 - 7 UNIT TOWNHOUSE COMPLEX 3 - 6 UNIT TOWNHOUSE COMPLEX	41 UNITS	59.30 m² (638.30 sq. ft) PER UNIT OF TOTAL 41 UNITS = 2,431.30 m² (26,170.30 sq. ft)	186.74 m² (2,010.05 sq. ft) PER UNIT OF TOTAL 41 UNITS = 7,656.34 m² (82,412.05 sq. ft)	370.60 m (1,215.88 ft)
SILVERDALE DRIVE	1,295.92 m² (13,949.17 sq.ft)	RIGHT OF WAY	-	-	-	126.92 m (416.40 ft)
-		TOTAL	86 UNITS	5,099.80 m² (54,893.80 sq. ft)	16,059.64 m² (172,864.30 sq. ft)	841.40 m (2,760.49 ft)

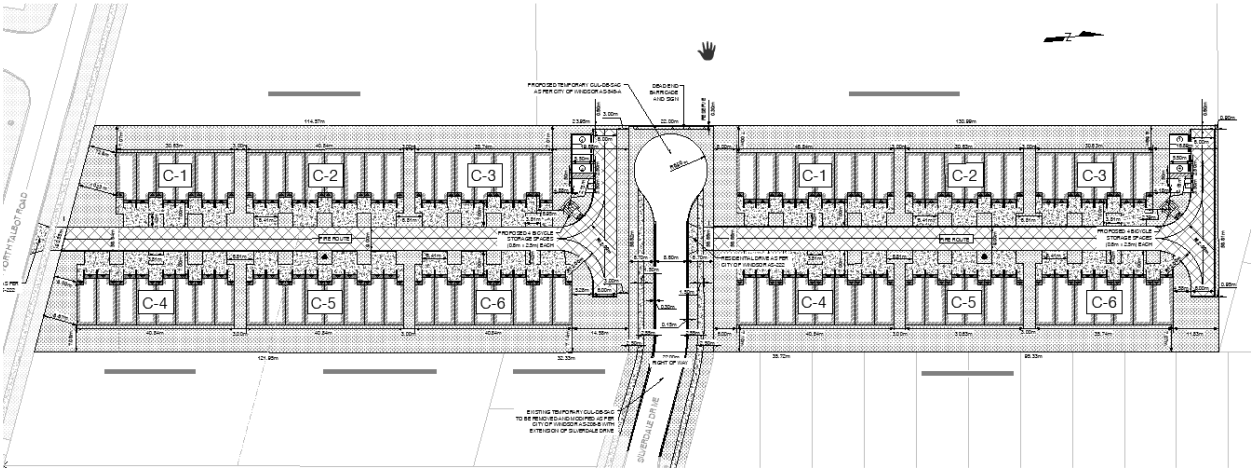


Figure 2: Proposed Development Layout

3.2. DRAINAGE

The following rainfall distributions will be used in the analyses to model the response of the proposed stormwater management facilities' design storm events.

Table 3: Design Storms

Storm Event	Storm Duration	Rainfall Depth
Water Quality Storm	4 hours	32.0 mm
Chicago 5-year	4 hours	49.5 mm
Chicago 100-year	4 hours	81.60mm
SCS Type II 100-year	24 hours	108.00 mm
Urban Stress Test	24 hours	150 mm

The Horton Infiltration method will be used to calculate infiltration losses to the soil. Table 4 below shows the proposed infiltration parameters, tailored to the characteristics of the underlying soil type. Normal infiltration parameters will be chosen over dry infiltration parameters to accommodate antecedent soil moisture. The proposed drainage conditions will be simulated using the dynamic wave routing method to account for both major and minor drainage systems.

Table 4: Horton Infiltration Parameters

Attribute		Brookston Clay Sand Spot Phase
Horton's Infiltration	Max. Infiltration Rate (mm/hr)	25
	Min. Infiltration Rate (mm/hr)	0.5
	Decay Constant (1/hr)	4
	Drying Time (days)	7

3.3 STORMWATER MANAGEMENT AND QUANTITY CONTROL

A 1998 stormwater management report prepared by Y. Haddad, P.Eng (Haddad, Morgan & Associates Ltd) assessed the subject property to the 600mm storm sewer at the western limit of Silverdale Drive (See Figure 3). In keeping with section 3.3.1.3 of the WERSMSM, a hydraulic analysis of all the downstream storm sewers was conducted all the way to the 1,200mm RCP storm sewer on the southern limit of

Northwood Lakes Drive. This analysis took into consideration all the upstream areas that contribute flow to the relevant storm sewers. See Appendix B for hydraulic analysis calculations and considered drainage areas.

From the analysis, it became evident that the existing sewers could not take on any additional flows for a variety of reasons, summarized below:

- A runoff coefficient (C) of 0.35 was used. This is significantly less than the minimum C value of 0.60 proposed in the WERSMSM.
- As-built pipe slopes appeared to be significantly lower than what was proposed in the SWM report. This adversely affects conveyance and pipe peak capacity.
- Minor errors in original calculations.

For these reasons, alternative outlet solutions were considered. There are 2 existing west-bound storm sewers south of the subject property, in the North Talbot Road Right-of-Way:

- A 1,350 RCP storm sewer which drains to the box culvert at the intersection of Howard Avenue and North Talbot Road, and ultimately drains to an open drain on the northern limit of Cousineau Road.
- A 900mm RCP storm sewer which drains to the 1,350mm RCP storm sewer in Southwood Lakes Boulevard. This ultimately drains to one of the 3 Southwood Lakes stormwater management ponds and raises concerns on the available capacity of the ponds.

While the subject development is included in the catchment areas for the 1,350mm sewer, it is not assessed to the 900mm sewer. In correspondence with the City, it was suggested that we initiate communications with Dillon Consulting to discuss the above alternatives which will enable the determination of a suitable storm outlet for the development, since they completed the Phase 1 North Talbot sewer improvements and stormwater management analysis.

In light of the foregoing, we will continue to engage with the City to confirm the acceptable stormwater outlet.

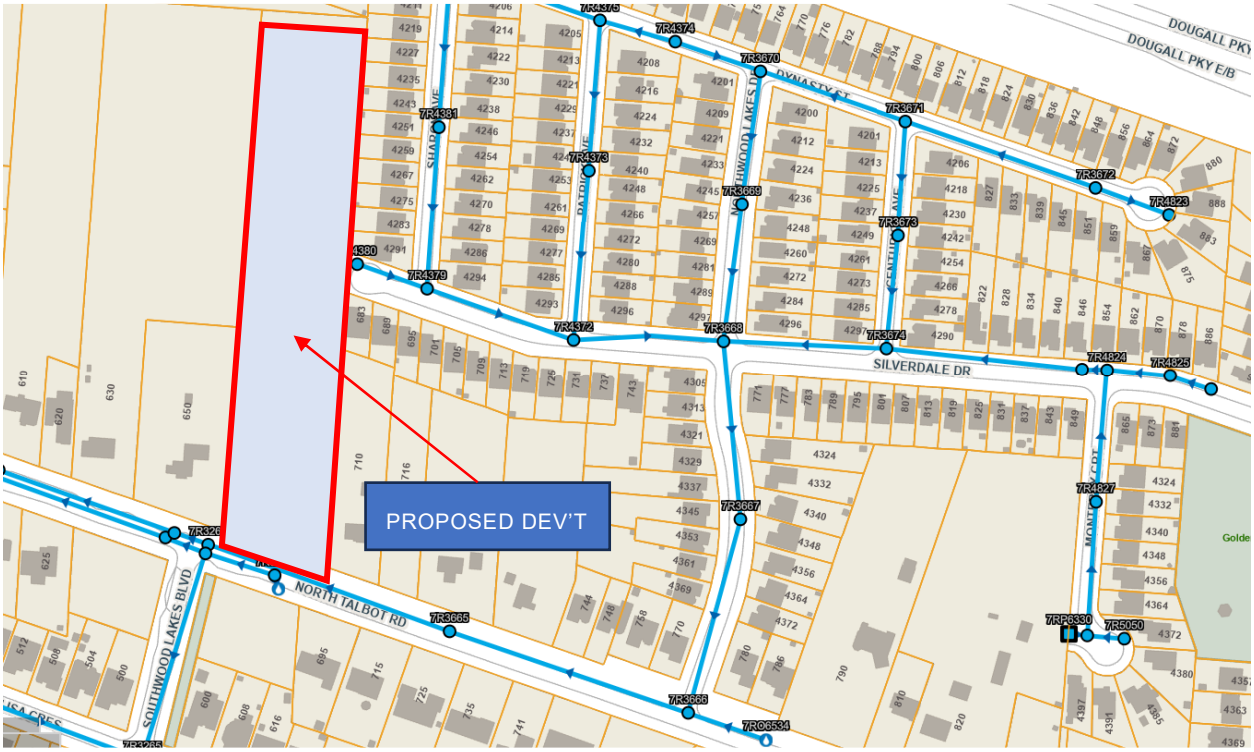


Figure 3: Existing Storm Sewers

3.4 SANITARY STUDY AND SERVICING

The sanitary servicing provisions for the development have been analyzed according to the criteria outlined in the Ministry of Environment Conservation and Parks (MECP) sewer design guidelines and the City of Windsor Standards. As mentioned in previous sections of this report, there exists a 250mm PVC sanitary sewer on Silverdale Drive and a 600mm concrete sanitary sewer on North Talbot Road. Sanitary waste from the proposed development will be connected to sanitary manhole 7S4371 ON Silverdale Drive, as illustrated in Figure 4 below.

A comprehensive sanitary study was undertaken to evaluate the capacity of the existing sanitary systems to accommodate the proposed development. This assessment encompassed the 250mm trunk sewer on Northwood Lakes Drive, situated south of Silverdale Drive between manholes 7S3683 and 7S3682. It was determined that the catchment area draining into this trunk sewer consisted of 15.5 hectares of residential developments as highlighted in Figure 5 below.

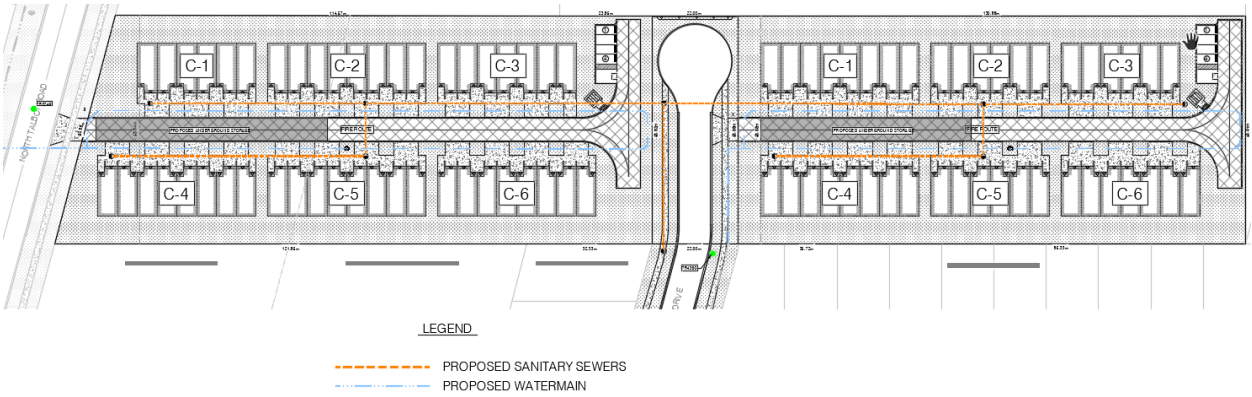


Figure 4: Proposed Sanitary Drainage Schematic

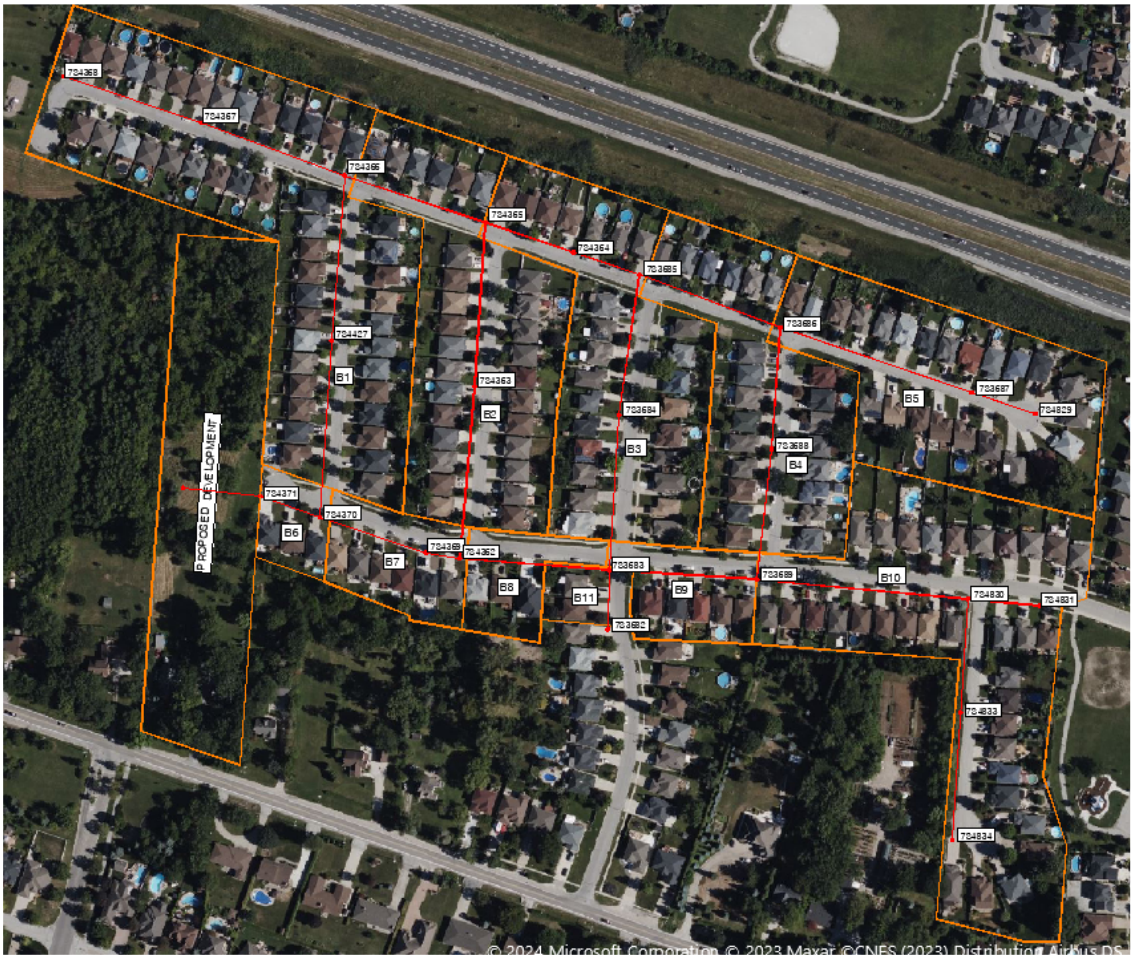


Figure 5: Sanitary Drainage Areas

Table 5: Sanitary Drainage Areas

Areas	Drainage Area (Ha)	Design Population (People)
B1	3.017	151
B2	1.864	93
B3	1.780	89
B4	1.456	73
B5	1.697	85
B6	0.227	11
B7	0.473	24
B8	0.336	17
B9	0.419	21
B10	2.637	132
B11	0.178	9

A population density of 50 persons/ha was assigned to the residential areas to determine design populations. The average per capita flow per day was assessed at 362.88 L/cap/day, and an infiltration factor of 0.156 L/s/ha was used to calculate the peak flow for the subject development.

The findings of the sanitary study are summarized below, with detailed calculations provided in Appendix B:

- The 250mm PVC sanitary sewer immediately downstream of the proposed development, between manholes 7S4371 and 7S4370 will flow at **8.7%** of its capacity.

- The 250mm PVC sanitary sewer on Northwood Lakes Drive, south of Silverdale Drive, between manholes 7S3683 and 7S3682 will flow at **58.4%** of its capacity post-development.

3.5 WATERMAINS

To meet the domestic and fire water supply needs of the proposed development, two 150mm water service connections are proposed: One 150mm water service connection to connect Lot 1 to the existing 300mm watermain on North Talbot Road, and one 150mm water service connection to connect Lot 2 to the existing 200mm watermain on Silverdale Drive.

We recommend the installation of 2 private fire hydrants, as shown on the attached site plan (refer to Appendix D), to comply with Ontario Building Code regulations. At present, no hydrant flow tests have been conducted. If necessary, tests will be carried out during the detailed design stage.

3.6 WATER QUALITY, EROSION AND SEDIMENT CONTROL

Discussions with ERCA and site characterization following MECP guidelines have resulted in the determination that this development should provide a “normal level” of protection capable of removing at least 70% of suspended solids. Water quality control for the two lots of the proposed development will be facilitated through water quality units (OGS) designed by Hydro International. These units will be designed to provide an overall Total Suspended Solids (TSS) removal efficiency of at least **70%** for the water quality storm peak flow. Detailed information on the water quality unit will be provided during the detailed design stage.

During the construction phase, erosion and sediment control measures for the site will include:

- A silt fence is to be erected before grading begins on the property to protect downstream areas from sediment migration in the overland flow;
- Filter fabric will be placed over drainage grates; and
- All disturbed areas will be stabilized by the restoration of vegetative ground cover as soon as possible. Detailed information on sediment control measures for the site will be provided in Appendix D of this report.

4. CONCLUSION

This report presents municipal servicing details, proposed servicing, and stormwater management requirements for the proposed residential development in the City of Windsor. Based on our investigations, we conclude and recommend the following:

Storm Servicing – Due to issues with the existing capacity of the storm pipes in Silverdale Drive, discussions are underway with the City to select one of the 2 storm sewers in North Talbot Road to service the proposed development.

However, all minor storm events will be serviced through the proposed storm sewers. Storms up to the 5-year Chicago storm will be designed so as not to result in any surface ponding above manhole rim elevations. During major storm events, the major drainage system and proposed storage chambers will provide temporary storage and attenuate storm outflows to the allowable release rate. The proposed design will ensure roadway ponding depths never exceed 0.3m and building finished floor elevations will be at least 0.3m above the governing 100-year storm's high-water level.

Sanitary Servicing – A new 250 mm diameter sanitary service will connect the proposed development to an existing 250mm municipal sanitary sewer on Silverdale Drive. Detailed calculations indicate that the proposed development will not have a negative impact on the existing sanitary drainage system. The downstream 250mm sanitary sewer will operate at 58.4% capacity at its peak post-development.

Water Servicing – The proposed development will be serviced via two 150mm water service connections off the 300mm watermain on North Talbot Road and the 200mm watermain on Silverdale Drive.

We trust the foregoing is satisfactory and will allow for the review and approval of the stormwater, sanitary, and watermain servicing design and engineering drawings for this development. If you have questions or require additional information, please contact Baird AE at your earliest convenience.

All of which is respectfully submitted.

BAIRD AE INC.

700 - 1350 PROVINCIAL ROAD,

N8W 5W1,

WINDSOR, ONTARIO.

Reviewed By:



Shurjeel Tunio, P.Eng.

Senior Civil Engineer

Prepared By:



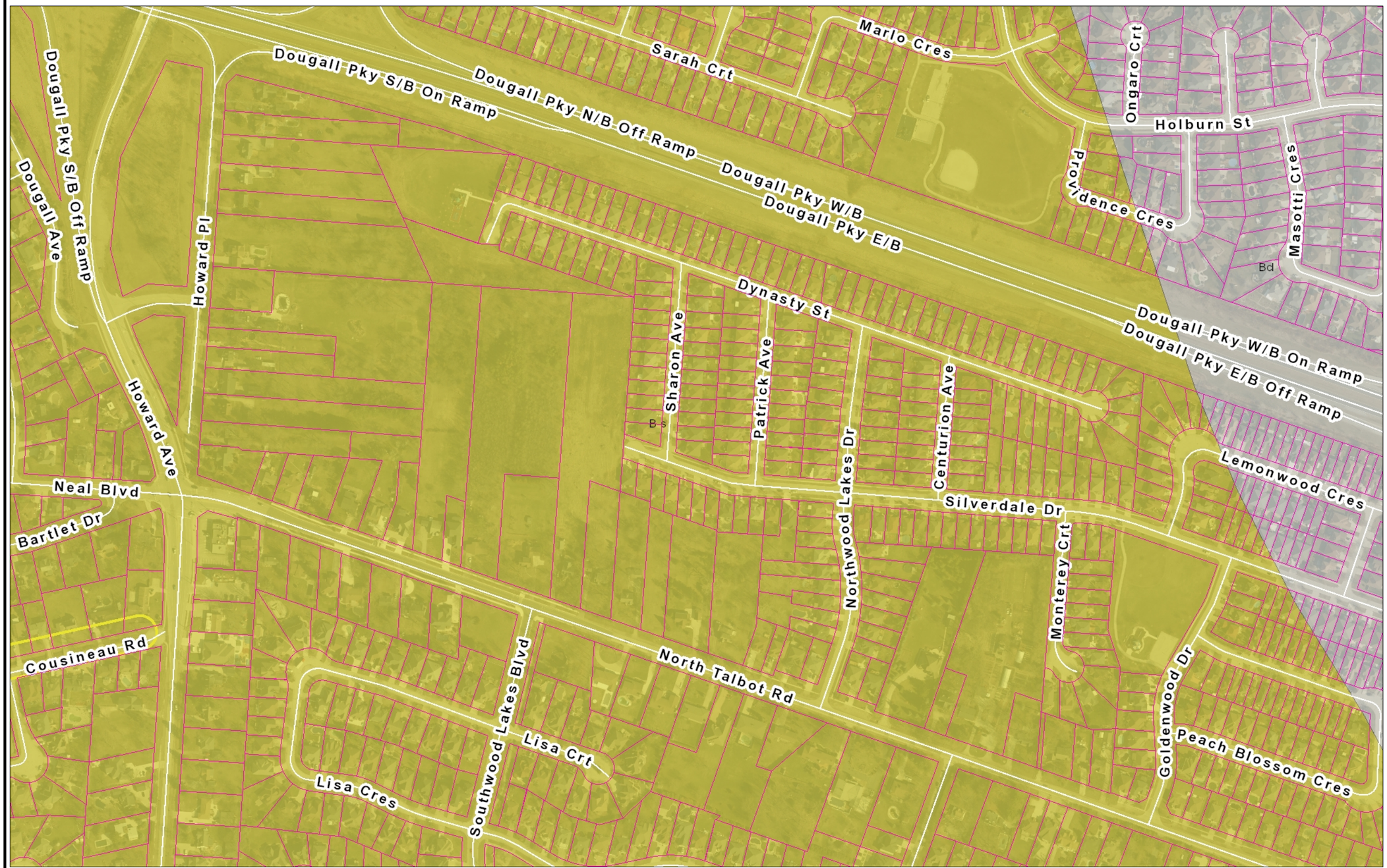
Nii Nartei Nartey, M.Eng., EIT

Civil Designer

Appendix A

BACKGROUND INFORMATION

ERCA Public Internet Mapping



Essex Region Conservation Authority

Public Interactive Mapping

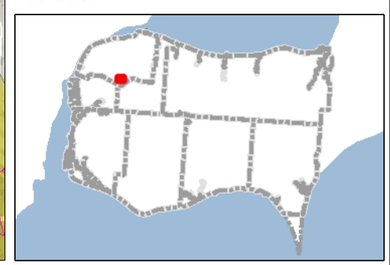
Legend

- Parcel Fabric - City
- Parcel Fabric - County

Essex Soils

- B-s
- B.L.
- Bc
- Bcl
- Bel
- Bes
- Bg
- Bg-s
- C-s
- Cac
- Cacl
- Cc
- Cdl
- Es
- Fl
- Fsl
- Gs
- Hl
- Hs
- Jc
- M
- Ma
- P-r
- Pc
- Pcl
- Pl
- Ps
- Tfs

Location



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Meters

1: 3,737

5/22/2024

ERCA Geomatics

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Notes

! Table 3.2.2.7 – Minimum C Values for Standard 5-Year Sewer Design

Land Use	C value
Asphalt, concrete, roof areas	0.95
Gravel	0.70
Grass – sandy soil	0.15
Grass – clay soil	0.20
Residential – Single family	0.60
Residential – Single family (lot size 500 m^2 or less)	0.70
Residential – Semi-detached	0.70
Residential – Townhouse / Row housing	0.80
Industrial / Commercial	0.90

Table 3.2.1.1 – IDF Curve Parameters

Parameters	Return Period (Years)					
	2	5	10	25	50	100
a	854	1259	1511	1851	2114	2375
b	7.0	8.8	9.5	10.2	10.6	11.0
c	0.818	0.838	0.845	0.852	0.858	0.861

! Table 3.7.4.1 – Typical Manning's Roughness Coefficients for Overland Flow

Surface	n
Smooth Asphalt/Concrete	0.013
Cultivated Soils - Residue Cover < 20%	0.06
Cultivated Soils - Residue Cover > 20%	0.17
Range (natural)	0.13
Grass - Short Prairie	0.15
Grass - Dense	0.24
Woods - Light Underbrush	0.40
Woods - Dense Underbrush	0.80

! Table 3.7.7.5 – Typical Horton Infiltration Parameters

Parameter	Hydrologic Group			
	A	B	C	D
fmax, dry (mm/hr)	250	200	125	75
fmax, normal (mm/hr)	250	80	50	25
fmin (mm/hr)				
clay	7.6	3.8	1.3	0.5
loam	9.5	5.7	2.5	1.0
sand	11.4	7.6	3.8	1.3
k (1/hr)	4	4	4	4

Table A-3.7.7 – Soil Types in Essex County

Texture	Symbol	Name	Acreage	Hydrologic Group
Clay Soils	Bc	Brookston Clay	250,000	D
	Toc	Toledo Clay	17,500	D
	Cc	Clyde Clay	2,500	D
	Jc	Jeddo Clay	3,500	D
	Cac	Caistor Clay	13,500	C
	Pc	Perth Clay	9,000	C
Clay Loams	Pcl	Perth Clay Loam	8,000	C
	Cacl	Caistor Clay Loam	2,500	C
	Bcl	Brookston Clay Loam	30,000	D
Silt Loam	Tos	Toledo Silt Loam	1,000	D
Loams	Bg	Burford Loam	3,700	A
	Bg-s	Burford Loam Shallow Phase	5,300	A
	Hl	Harrow Loam	4,000	A
	Fl	Farmington Loam	2,000	B
	Pl	Parkhill Loam	5,000	C
	P-r	Parkhill Loam Red Sand Spot Phase	5,000	C

5-YEAR DESIGN STORMS

CHICAGO 4-HOUR
Depth = 49.5 mm

Time h:mm	5min Rain mm/hr
0:00	2.44
0:05	2.58
0:10	2.73
0:15	2.91
0:20	3.12
0:25	3.36
0:30	3.65
0:35	3.99
0:40	4.41
0:45	4.92
0:50	5.59
0:55	6.46
1:00	7.66
1:05	9.42
1:10	12.20
1:15	17.18
1:20	28.20
1:25	64.52
1:30	139.58
1:35	60.83
1:40	35.06
1:45	23.95
1:50	17.96
1:55	14.28
2:00	11.81
2:05	10.06
2:10	8.75
2:15	7.74
2:20	6.94
2:25	6.29
2:30	5.76
2:35	5.30
2:40	4.92
2:45	4.59
2:50	4.30
2:55	4.05
3:00	3.83
3:05	3.63
3:10	3.45
3:15	3.29
3:20	3.14
3:25	3.01
3:30	2.89
3:35	2.78
3:40	2.67
3:45	2.58
3:50	2.49
3:55	2.41
4:00	0.00

Time h:mm	10min Rain mm/hr
0:00	2.51
0:10	2.82
0:20	3.24
0:30	3.82
0:40	4.67
0:50	6.02
1:00	8.54
1:10	14.69
1:20	38.85
1:30	107.72
1:40	29.51
1:50	16.12
2:00	10.93
2:10	8.25
2:20	6.62
2:30	5.53
2:40	4.76
2:50	4.18
3:00	3.73
3:10	3.37
3:20	3.08
3:30	2.83
3:40	2.63
3:50	2.45
4:00	0.00

Time h:mm	15min Rain mm/hr
0:00	2.58
0:15	3.13
0:30	4.02
0:45	5.66
1:00	9.76
1:15	26.72
1:30	88.40
1:45	18.73
2:00	10.21
2:15	6.99
2:30	5.33
2:45	4.31
3:00	3.64
3:15	3.15
3:30	2.78
3:45	2.49
4:00	0.00

Time h:mm	20min Rain mm/hr
0:00	2.66
0:20	3.53
0:40	5.34
1:00	11.61
1:20	75.35
1:40	20.75
2:00	9.59
2:20	6.07
2:40	4.47
3:00	3.55
3:20	2.95
3:40	2.54
4:00	0.00

Time h:mm	30min Rain mm/hr
0:00	2.86
0:30	4.84
1:00	13.11
1:30	58.69
2:00	8.60
2:30	4.82
3:00	3.39
3:30	2.64
4:00	0.00

100-YEAR DESIGN STORMS

CHICAGO 4-HOUR
Depth = 81.6 mm

Time h:mm	5min Rain mm/hr
0:00	3.71
0:05	3.94
0:10	4.20
0:15	4.50
0:20	4.85
0:25	5.25
0:30	5.73
0:35	6.31
0:40	7.03
0:45	7.92
0:50	9.07
0:55	10.59
1:00	12.72
1:05	15.84
1:10	20.81
1:15	29.71
1:20	49.12
1:25	108.91
1:30	218.23
1:35	103.42
1:40	60.97
1:45	41.72
1:50	31.11
1:55	24.53
2:00	20.12
2:05	16.98
2:10	14.65
2:15	12.86
2:20	11.44
2:25	10.30
2:30	9.36
2:35	8.58
2:40	7.91
2:45	7.34
2:50	6.85
2:55	6.42
3:00	6.04
3:05	5.70
3:10	5.40
3:15	5.13
3:20	4.88
3:25	4.66
3:30	4.46
3:35	4.27
3:40	4.10
3:45	3.95
3:50	3.80
3:55	3.67
4:00	0.00

Time h:mm	10min Rain mm/hr
0:00	3.83
0:10	4.35
0:20	5.05
0:30	6.02
0:40	7.47
0:50	9.83
1:00	14.28
1:10	25.26
1:20	67.16
1:30	172.68
1:40	51.34
1:50	27.82
2:00	18.55
2:10	13.75
2:20	10.87
2:30	8.97
2:40	7.63
2:50	6.63
3:00	5.87
3:10	5.26
3:20	4.77
3:30	4.37
3:40	4.03
3:50	3.74
4:00	0.00

Time h:mm	15min Rain mm/hr
0:00	3.95
0:15	4.87
0:30	6.36
0:45	9.19
1:00	16.45
1:15	46.45
1:30	143.67
1:45	32.45
2:00	17.25
2:15	11.53
2:30	8.62
2:45	6.87
3:00	5.71
3:15	4.89
3:30	4.28
3:45	3.81
4:00	0.00

Time h:mm	20min Rain mm/hr
0:00	4.09
0:20	5.54
0:40	8.65
1:00	19.77
1:20	123.48
1:40	36.02
2:00	16.15
2:20	9.92
2:40	7.13
3:00	5.56
3:20	4.57
3:40	3.88
4:00	0.00

Time h:mm	30min Rain mm/hr
0:00	4.41
0:30	7.78
1:00	22.45
1:30	97.06
2:00	14.39
2:30	7.74
3:00	5.30
3:30	4.04
4:00	0.00

SCS TYPE II 24-HOUR DESIGN STORMS

		Unit Rainfall Depth = 1 mm	100-Year Depth = 108 mm	Rural Stress Test Depth = 150 mm	5-Year Depth = 68.0 mm
Time h:mm	Rain %	2hour Rain mm/hr	2hour Rain mm/hr	2hour Rain mm/hr	2hour Rain mm/hr
0:00	0	0.000	0.00	0.00	0.00
2:00	2	0.010	1.08	1.50	0.68
4:00	3	0.015	1.62	2.25	1.02
6:00	3	0.015	1.62	2.25	1.02
8:00	4	0.020	2.16	3.00	1.36
10:00	6	0.030	3.24	4.50	2.04
12:00	48	0.240	25.92	36.00	16.32
14:00	16	0.080	8.64	12.00	5.44
16:00	4	0.030	3.24	4.50	2.04
18:00	3	0.020	2.16	3.00	1.36
20:00	3	0.015	1.62	2.25	1.02
22:00	2	0.015	1.62	2.25	1.02
0:00	0	0.010	1.08	1.50	0.68

URBAN STRESS TEST STORM

CHICAGO 100-YEAR 24-HOUR (108 mm) + UNIFORM DISTRIBUTION OF ADDITIONAL 42 mm Depth = 108 mm + 42 mm = 150 mm			
Time h:mm	**15min Rain mm/hr**	**Time h:mm**	**15min Rain mm/hr**
0:00	2.41	12:15	4.49
0:15	2.43	12:30	4.29
0:30	2.45	12:45	4.12
0:45	2.46	13:00	3.98
1:00	2.48	13:15	3.85
1:15	2.51	13:30	3.74
1:30	2.53	13:45	3.63
1:45	2.55	14:00	3.54
2:00	2.58	14:15	3.46
2:15	2.61	14:30	3.39
2:30	2.64	14:45	3.32
2:45	2.67	15:00	3.26
3:00	2.71	15:15	3.20
3:15	2.74	15:30	3.15
3:30	2.79	15:45	3.10
3:45	2.83	16:00	3.05
4:00	2.88	16:15	3.01
4:15	2.94	16:30	2.97
4:30	3.00	16:45	2.93
4:45	3.07	17:00	2.90
5:00	3.15	17:15	2.87
5:15	3.23	17:30	2.84
5:30	3.33	17:45	2.81
5:45	3.45	18:00	2.78
6:00	3.59	18:15	2.76
6:15	3.75	18:30	2.73
6:30	3.94	18:45	2.71
6:45	4.18	19:00	2.69
7:00	4.49	19:15	2.67
7:15	4.89	19:30	2.65
7:30	5.43	19:45	2.63
7:45	6.20	20:00	2.61
8:00	7.41	20:15	2.59
8:15	9.56	20:30	2.57
8:30	14.29	20:45	2.56
8:45	32.01	21:00	2.54
9:00	145.13	21:15	2.53
9:15	48.51	21:30	2.51
9:30	23.13	21:45	2.50
9:45	15.08	22:00	2.49
10:00	11.35	22:15	2.47
10:15	9.23	22:30	2.46
10:30	7.88	22:45	2.45
10:45	6.94	23:00	2.44
11:00	6.25	23:15	2.43
11:15	5.73	23:30	2.42
11:30	5.32	23:45	2.41
11:45	4.99	0:00	0.00
12:00	4.72		

idf_v2-2_2012_02_09_613_ON_6139525_WINDSOR_A.txt
Environment Canada/Environnement Canada

Short Duration Rainfall Intensity-Duration-Frequency Data
Données sur l'intensité, la durée et la fréquence des chutes de pluie de courte durée

Gumbel - Method of moments/Méthode des moments

2012/02/09

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WINDSOR A ON 6139525

Latitude: 42 17'N Longitude: 82 58'W Elevation/Altitude: 189 m

Years/Années : 1946 - 2007 # Years/Années : 60

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Table 1 : Annual Maximum (mm)/Maximum annuel (mm)

****

Year / Année	5 min	10 min	15 min	30 min	1 h	2 h	6 h	12 h	24 h
1946	10.7	14.2	15.0	22.6	29.0	42.7	46.2	49.3	54.9
1947	9.7	18.8	23.4	27.9	37.8	38.1	54.4	61.0	71.4
1948	7.1	7.9	9.9	11.7	15.0	16.0	30.7	40.1	44.2
1949	11.9	19.3	22.4	29.0	47.0	51.8	54.1	57.9	71.6
1951	5.8	8.9	13.2	18.5	26.9	34.3	38.1	44.7	53.8
1952	7.4	13.2	15.0	19.0	30.7	37.1	43.9	46.7	47.0
1953	20.1	20.8	21.1	32.5	40.6	51.1	52.3	54.9	55.1
1954	8.9	13.7	16.0	20.6	24.6	27.4	52.1	66.3	67.3
1955	8.4	9.4	12.4	18.8	21.3	34.0	41.7	41.9	60.2
1956	8.4	11.7	12.2	15.5	23.4	30.7	35.6	39.9	44.2
1957	10.9	19.8	26.7	46.5	52.8	57.4	96.8	100.3	100.3
1958	7.9	11.7	11.9	15.0	23.1	29.5	35.1	38.9	40.4
1959	11.7	16.3	17.5	21.3	21.6	34.0	40.6	60.5	65.5
1960	7.6	10.7	12.4	16.8	29.5	34.5	36.6	43.9	54.4
1961	11.7	17.3	22.6	35.8	38.1	43.2	43.2	43.2	45.7
1962	14.0	21.8	24.4	34.0	54.6	64.3	64.8	64.8	64.8
1963	13.0	20.1	27.2	40.9	43.9	45.0	45.0	45.0	56.9
1964	13.2	17.5	22.4	27.2	27.2	28.7	33.5	36.6	39.4
1965	7.9	12.7	13.7	15.7	22.6	27.2	32.8	55.1	58.9
1966	14.5	18.8	23.1	32.5	33.0	47.0	57.1	64.5	67.3
1967	13.7	20.1	21.8	24.9	26.4	26.4	41.1	62.2	72.6
1968	10.2	15.2	17.5	25.9	36.8	38.1	60.2	77.2	78.2
1969	11.2	19.0	20.8	27.7	27.7	36.1	57.1	57.1	57.1

1970	9.4	12.2	16.5	17.0	22.6	29.5	29.7	36.6	39.6
1971	9.4	17.8	25.7	35.1	35.1	35.1	43.9	43.9	43.9
1972	9.9	12.2	14.5	19.6	25.9	28.7	31.0	31.2	39.1
1973	12.7	18.0	22.6	27.9	30.0	30.2	33.5	37.8	40.4
1974	15.0	26.2	39.4	41.1	45.0	49.5	49.8	49.8	49.8
1975	8.4	14.2	21.1	24.9	25.1	31.7	40.6	44.7	52.8
1976	9.1	13.2	14.0	16.5	22.9	27.4	34.3	35.3	40.4
1977	7.1	10.9	14.0	16.5	25.4	29.2	29.2	31.7	41.4
1978	8.8	10.5	11.8	20.4	21.1	21.1	22.5	28.6	31.0
1979	10.4	16.6	24.9	32.0	48.3	52.6	55.3	60.8	61.2
1980	14.1	17.2	25.0	35.6	45.3	45.6	46.3	79.8	80.0
1981	-99.9	16.7	23.3	26.0	32.0	45.6	77.3	81.7	92.3
1982	7.7	10.7	13.2	18.9	27.3	28.3	28.3	40.4	49.9
1983	15.0	16.5	22.1	32.3	38.7	45.4	62.1	62.1	82.0
1984	6.0	8.8	11.3	17.5	17.7	21.0	32.6	34.9	37.2
1985	11.2	13.3	13.9	18.7	24.6	39.6	58.4	59.2	59.2
1986	8.0	12.7	18.0	19.4	20.7	32.0	37.7	47.7	88.6
1987	11.9	16.5	19.8	24.5	29.9	36.1	39.1	41.6	52.8
1988	7.0	8.8	12.5	12.7	12.9	14.4	28.0	32.3	33.0
1989	7.4	11.9	17.5	21.2	27.0	36.3	48.3	61.7	71.8
1990	11.4	16.0	18.8	20.5	22.4	26.4	41.9	52.2	70.6
1991	5.6	9.6	12.9	25.7	37.2	40.5	40.5	40.7	43.2
1992	6.5	9.8	12.0	16.9	25.7	29.8	34.4	34.4	45.8
1993	7.0	9.6	10.5	11.2	17.2	23.9	28.7	30.6	44.7
1994	8.3	11.3	14.6	23.8	30.0	43.2	51.3	51.5	80.7
1995	9.7	17.2	24.3	40.5	56.7	58.9	63.0	63.0	63.6
1996	13.5	15.4	16.8	18.7	18.7	19.1	40.2	40.4	46.3
1997	7.9	11.5	15.6	17.5	21.8	30.6	38.2	39.9	41.7
1998	7.3	12.7	13.9	15.7	16.4	26.8	31.4	36.2	57.4
1999	9.3	13.3	16.5	20.8	21.0	22.2	23.4	24.8	29.8
2000	7.6	11.2	13.1	20.4	26.4	31.0	51.8	89.0	94.6
2001	6.1	10.2	12.2	12.8	14.3	17.2	24.1	38.1	48.4
2002	6.9	9.1	10.8	14.4	17.2	17.4	29.6	31.7	43.2
2003	7.2	10.0	12.2	14.4	14.8	14.8	22.7	33.5	34.6
2004	13.3	15.7	18.6	20.4	22.1	33.2	35.8	37.3	53.7
2005	10.5	16.9	24.0	25.8	26.0	26.0	29.8	30.6	41.2
2006	10.6	18.3	23.6	26.6	35.7	51.3	53.1	53.3	66.9
2007	8.0	15.1	18.7	30.9	48.6	48.8	50.4	55.8	57.6
# Yrs.	60	61	61	61	61	61	61	61	61
Années									
Mean	9.9	14.4	17.9	23.5	29.2	34.7	42.8	48.8	56.1
Moyenne									
Std. Dev.	2.9	4.0	5.6	8.1	10.6	11.4	13.8	15.7	16.5
Écart-type									
Skew.	0.96	0.47	0.99	0.81	0.85	0.42	1.23	1.07	0.74
Dissymétrie									
Kurtosis	4.27	2.90	4.84	3.21	3.19	2.88	5.84	4.28	3.13

*-99.9 Indicates Missing Data/Données manquantes

Warning: annual maximum amount greater than 100-yr return period amount
Avertissement : la quantité maximale annuelle excède la quantité pour une période de retour de 100 ans

Year/Année	Duration/Durée	Data/Données	100-yr/ans
1953	5 min	20.1	18.9
1957	6 h	96.8	86.2
1957	12 h	100.3	98.0
1974	15 min	39.4	35.6

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Table 2a : Return Period Rainfall Amounts (mm)
Quantité de pluie (mm) par période de retour

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	9.4	11.9	13.6	15.8	17.4	18.9	60
10 min	13.7	17.2	19.5	22.5	24.6	26.8	61
15 min	17.0	22.0	25.3	29.5	32.5	35.6	61
30 min	22.2	29.4	34.1	40.1	44.6	49.0	61
1 h	27.5	36.9	43.1	50.9	56.7	62.5	61
2 h	32.8	42.9	49.6	58.1	64.3	70.6	61
6 h	40.5	52.8	60.8	71.1	78.6	86.2	61
12 h	46.2	60.1	69.2	80.8	89.4	98.0	61
24 h	53.4	68.0	77.6	89.8	98.9	107.9	61

****

Table 2b :

Return Period Rainfall Rates (mm/h) - 95% Confidence limits
Intensité de la pluie (mm/h) par période de retour - Limites de confiance de 95%

****

Duration/Durée	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans	#Years Années
5 min	112.5	143.2	163.5	189.2	208.2	227.1	60
	+/- 8.1	+/- 13.6	+/- 18.3	+/- 24.7	+/- 29.6	+/- 34.5	60
10 min	82.3	103.3	117.3	134.8	147.9	160.8	61
	+/- 5.5	+/- 9.2	+/- 12.5	+/- 16.8	+/- 20.1	+/- 23.4	61
15 min	68.0	87.9	101.1	117.8	130.2	142.5	61
	+/- 5.2	+/- 8.8	+/- 11.8	+/- 16.0	+/- 19.1	+/- 22.2	61
30 min	44.4	58.7	68.2	80.2	89.1	98.0	61
	+/- 3.7	+/- 6.3	+/- 8.5	+/- 11.5	+/- 13.7	+/- 16.0	61
1 h	27.5	36.9	43.1	50.9	56.7	62.5	61
	+/- 2.4	+/- 4.1	+/- 5.6	+/- 7.5	+/- 9.0	+/- 10.4	61
2 h	16.4	21.5	24.8	29.0	32.2	35.3	61
	+/- 1.3	+/- 2.2	+/- 3.0	+/- 4.0	+/- 4.8	+/- 5.6	61

6 h	6.8	8.8	10.1	11.8	13.1	14.4	61
	+/- 0.5	+/- 0.9	+/- 1.2	+/- 1.6	+/- 1.9	+/- 2.3	61
12 h	3.9	5.0	5.8	6.7	7.5	8.2	61
	+/- 0.3	+/- 0.5	+/- 0.7	+/- 0.9	+/- 1.1	+/- 1.3	61
24 h	2.2	2.8	3.2	3.7	4.1	4.5	61
	+/- 0.2	+/- 0.3	+/- 0.4	+/- 0.5	+/- 0.6	+/- 0.7	61

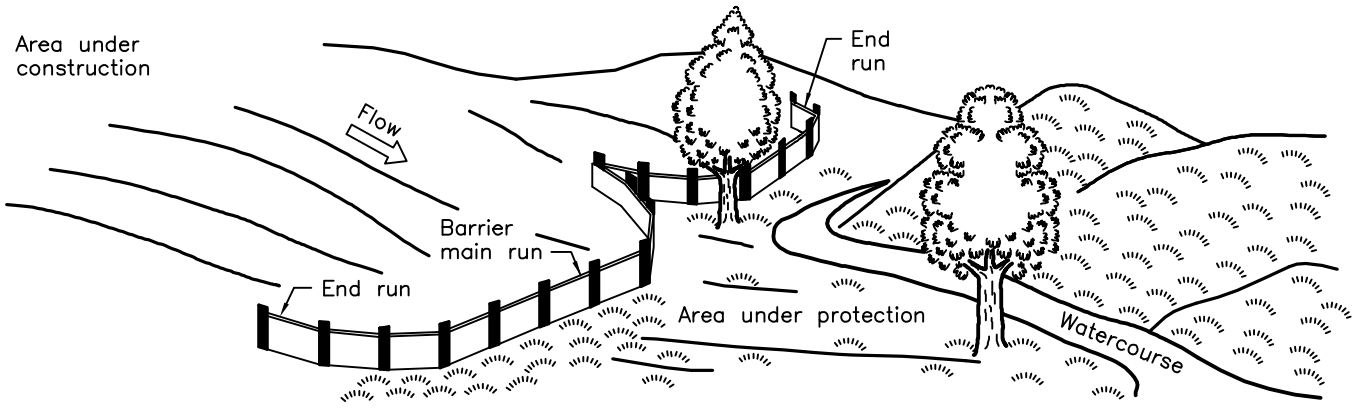
****

Table 3 : Interpolation Equation / Équation d'interpolation: R = A*T^B

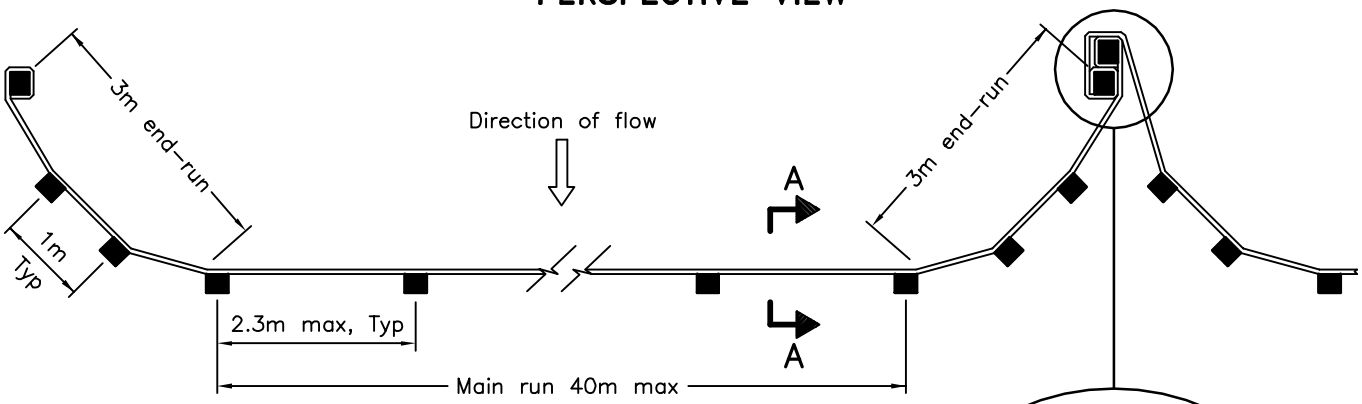
R = Interpolated Rainfall rate (mm/h)/Intensité interpolée de la pluie (mm/h)
RR = Rainfall rate (mm/h) / Intensité de la pluie (mm/h)
T = Rainfall duration (h) / Durée de la pluie (h)

****

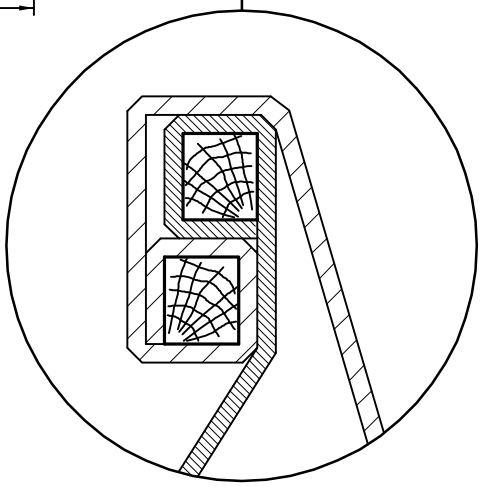
Statistics/Statistiques	2 yr/ans	5 yr/ans	10 yr/ans	25 yr/ans	50 yr/ans	100 yr/ans
Mean of RR/Moyenne de RR	40.4	52.0	59.7	69.4	76.6	83.7
Std. Dev. /Écart-type (RR)	39.4	49.9	56.9	65.8	72.3	78.9
Std. Error/Erreur-type	10.8	15.0	17.8	21.3	24.0	26.6
Coefficient (A)	24.0	31.0	35.7	41.7	46.0	50.4
Exponent/Exposant (B)	-0.710	-0.709	-0.708	-0.707	-0.707	-0.706
Mean % Error/% erreur moyenne	9.9	11.4	12.0	12.6	13.0	13.3



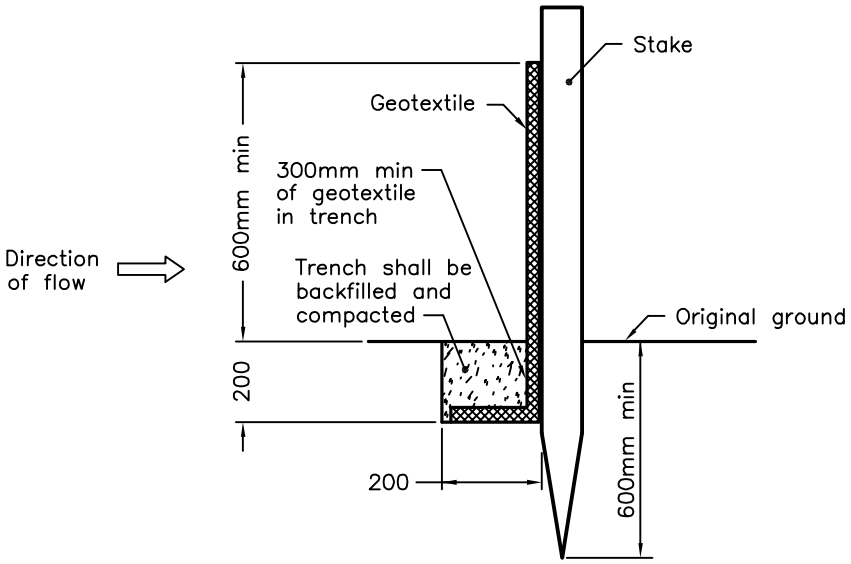
PERSPECTIVE VIEW



PLAN



JOINT DETAIL

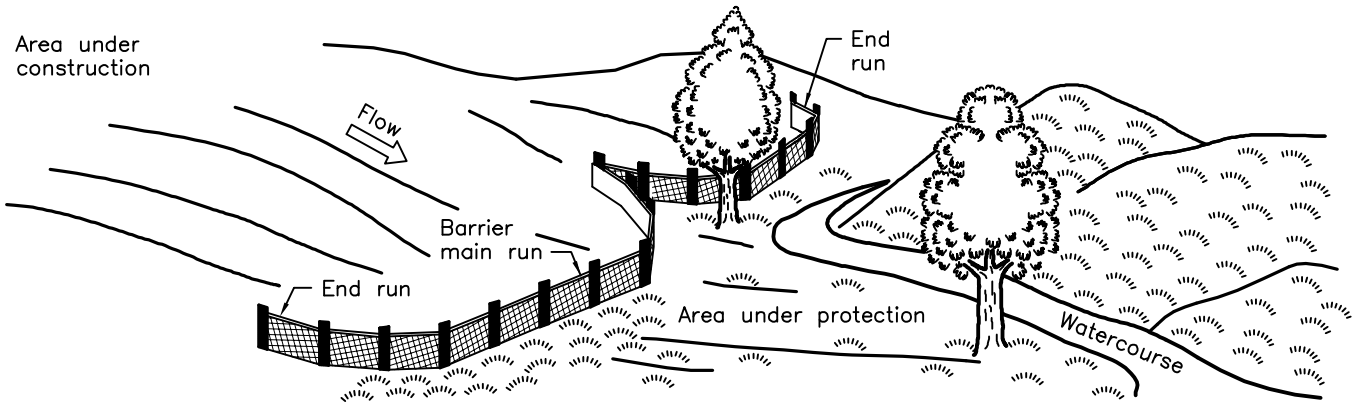


SECTION A–A

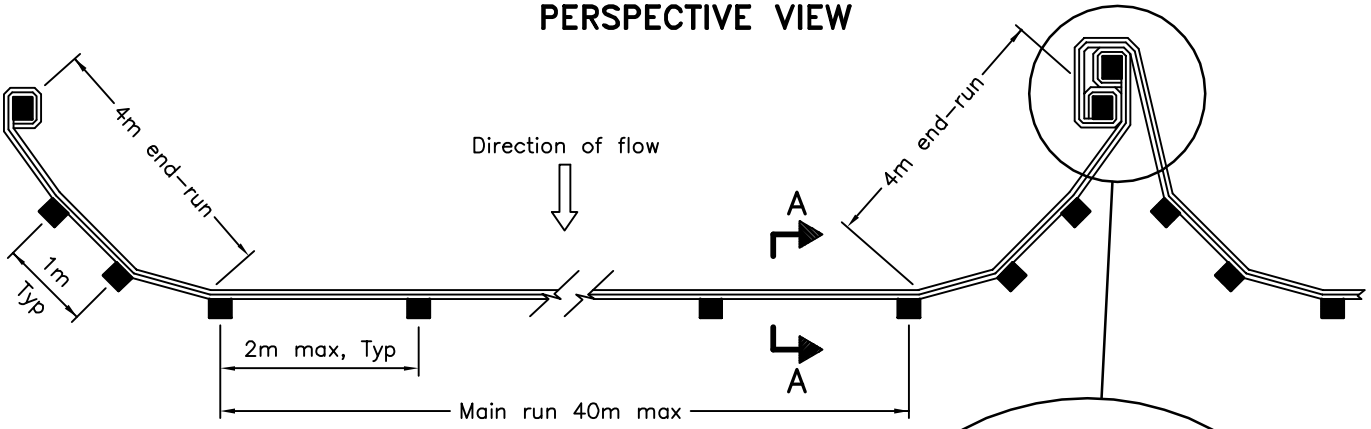
NOTE:

A All dimensions are in millimetres unless otherwise shown.

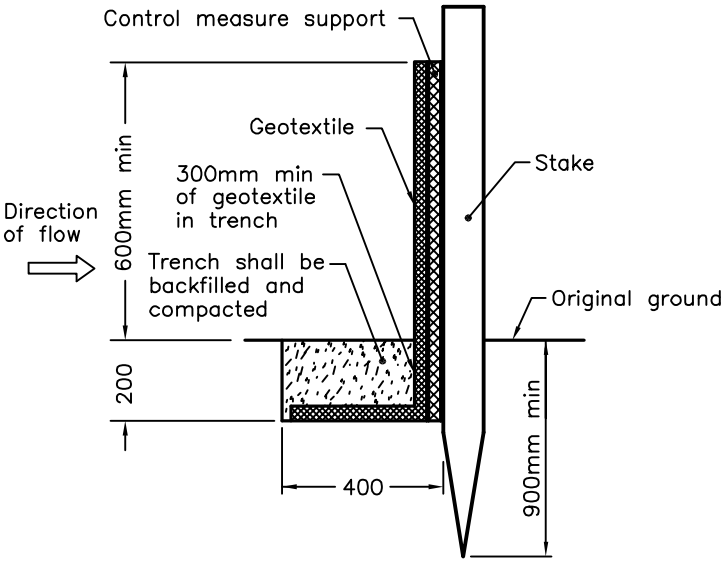
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev	2
LIGHT–DUTY SILT FENCE BARRIER			
	OPSD 219.110		



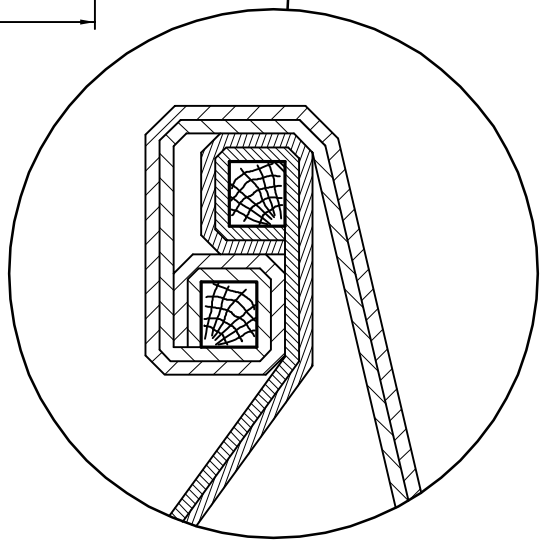
PERSPECTIVE VIEW



PLAN



SECTION A–A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev	2
HEAVY–DUTY SILT FENCE BARRIER			
	OPSD 219.130		

Appendix B

STORM AND SANITARY DESIGN SHEETS

STORM SEWER CAPACITY STUDY - NORTH TALBOT / SILVERDALE DRAINAGE AREA
EXISTING CONDITIONS

LOCATION				AREAS				FLOW							SEWER DATA									PROFILE			
Street	Area ID	From	To	Park (Ha)	Single/ Detached (Ha)	Undeveloped (Ha)	Total (Ha)	Indiv 2.78 AC	Accum 5 2.78AC	Time of Conc.	Design Storm	Rainfall Intensity	Peak Flow (L/sec)	Qtotal (L/s)	Dia. (m) Actual	Dia. (mm)	Type	Slope (%)	Length (m)	Capacity (L/s)	Velocity (m/s)	Flow Time (min)	Ratio Q/Q full	Upstream Elevation		Downstream Elevation	
		Node	Node	0.1	0.60	0.60																		Invert (m)	Ground (m)	Invert (m)	Ground (m)
Dynasty St.	A5	7R4374	7R4375		0.227		0.227	0.38	0.38	20.00	5	75.35	28.58	28.58	0.300	300	PVC	0.13	44.35	34.4	0.49	1.52	83%	186.591		186.453	
Dynasty St.	A4	7R4376	7R4375		0.494		0.494	0.82	0.82	15.00	5	88.40	72.86	72.86	0.300	300	PVC	0.28	86.80	50.7	0.72	2.02	144%	186.750		186.450	
Patrick Ave.	A7	7R4375	7R4373		0.733		0.733	1.22	2.43	21.52	5	72.17	175.08	175.08	0.375	375	PVC	0.25	84.00	88.2	0.80	1.75	199%	186.438		186.162	
Patrick Ave.	A9	7R4373	7R4372		0.706		0.706	1.18	3.60	23.27	5	68.84	248.14	248.14	0.525	525	PVC	0.12	94.65	147.3	0.68	2.32	168%	186.162		186.034	
										25.59																	
Dynasty St.	A1, A2	7R4378	7R4377	0.785	0.966		1.750	1.83	1.83	20.00	5	75.35	137.77	137.77	0.375	375	PVC	0.17	92.15	72.6	0.66	2.34	190%	187.105		186.918	
Dynasty St.	A3	7R4377	7R4376		0.612		0.612	1.02	2.85	22.34	5	70.58	201.14	201.14	0.450	450	PVC	0.16	91.90	114.2	0.72	2.13	176%	186.899		186.724	
Sharon Ave	A6	7R4376	7R4381		0.776		0.776	1.29	4.14	24.47	5	66.76	276.63	276.63	0.525	525	PVC	0.11	88.30	141.4	0.65	2.25	196%	186.353		186.235	
Sharon Ave	A8	7R4381	7R4379		0.671		0.671	1.12	5.26	26.72	5	63.20	332.53	332.53	0.600	600	PVC	0.09	90.15	184.0	0.65	2.31	181%	186.234		186.136	
										29.03																	
Silverdale Dr.	A10, A11	7R4380	7R4379		0.191		0.191	0.32	0.32	20.00	5	75.35	24.02	24.02	0.600	600	PVC	0.08	41.30	170.3	0.60	1.14	14%	186.213		186.129	
Silverdale Dr.	A12	7R4379	7R4372		0.612		0.612	1.02	6.60	29.03	5	59.95	395.74	395.74	0.825	825	PVC	0.09	86.55	432.4	0.81	1.78	92%	186.133		186.034	
Silverdale Dr.	A13	7R4372	7R3668		0.251		0.251	0.42	10.62	30.82	5	57.68	612.78	612.78	0.900	900	PVC	0.05	81.00	417.4	0.66	2.06	147%	186.034		185.976	
										32.87																	

Q = 2.78 AIR, where
Q= Peak Flow in Litres per Second (l/s)
A= Area in hectares (ha)
I= Rainfall Intensity (mm/hr)
R= Runoff Coefficient

I= A/(T+B)^C

A= 1259
B= 8.8
C= 0.838

BAIRD|AE architecture + engineering

Consultant:	Baird AE - Architects & Engineers
Date:	May 22, 2024
Design By:	Nii Nartei Nartey, M.Eng. EIT

Client:	Dwg. Reference:	Reviewed By:
North Talbot / Silverdale Townhouses	21-119	David Basilious, P.Eng.

NORTH TALBOT / SILVERDALE TOWNHOUSES
SANITARY SEWER DESIGN SHEET (Ultimate D.A. Design)

			DRAINAGE AREA (Ha)		DESIGN POPULATIONS (PPL)			MAXIMUM FLOW			SEWER DATA								
Area Included	From	To	Residential Area	Cummulative Total	Residential Population	Cummulative Population	Ult. Flow Factor	Infiltration (L/s)	Sewage (L/S)	Total (L/s)	Dia. (m) Actual	Dia. (mm)	Type	Manning's "n"	Slope	Length (m)	Capacity (L/s)	Velocity (m/s)	Ratio Q/Q full
	Node	Node																	
B1	7S4427	7S4370	3.017	3.017	151	151	6.00	0.471	3.80	4.27	0.250	250	PVC	0.013	0.37%	101.95	36.275	0.74	11.8%
B2	7S4363	7S4362	1.864	1.864	93	93	6.00	0.291	2.35	2.64	0.250	250	PVC	0.013	0.37%	98.90	36.177	0.74	7.3%
B3	7S3684	7S3683	1.780	1.780	89	89	6.00	0.278	2.24	2.52	0.250	250	PVC	0.013	0.36%	86.00	35.685	0.73	7.1%
B4, B5	7S3688	7S3689	2.823	2.823	141	141	6.00	0.440	3.56	4.00	0.250	250	PVC	0.013	0.39%	75.01	37.142	0.76	10.8%
PROPOSED DEVELOPMENT	SAN	7S4371	1.764	1.764	200	200	6.00	0.275	5.05	5.32	0.250	250	PVC	0.013	0.40%	45.60	37.615	0.77	14.2%
B6	7S4371	7S4370	0.227	1.991	11	100	6.00	0.311	2.51	2.82	0.250	250	PVC	0.013	0.30%	34.70	32.576	0.66	8.7%
B7	7S4369	7S4362	0.473	5.481	24	274	6.00	0.855	6.91	7.76	0.250	250	PVC	0.013	0.36%	16.00	35.809	0.73	21.7%
B8	7S4362	7S3683	0.336	7.681	17	384	6.00	1.198	9.68	10.88	0.250	250	PVC	0.013	0.25%	83.60	29.738	0.61	36.6%
B10	7S4830	7S3689	2.637	2.637	132	132	6.00	0.411	3.32	3.73	0.250	250	PVC	0.013	0.38%	117.80	36.615	0.75	10.2%
B9	7S3689	7S3683	0.419	5.879	21	294	6.00	0.917	7.41	8.32	0.250	250	PVC	0.013	0.40%	87.70	37.803	0.77	22.0%
B11	7S3683	7S3682	0.178	15.518	9	776	6.00	2.421	19.55	21.97	0.250	250	PVC	0.013	0.40%	29.00	37.615	0.77	58.4%

Average Flow per Person (l/day) =	362.88
Infiltration (l /s/ha) =	0.156
Residential Population Density (persons/ha)=	50
ppu=	2.33

BAIRD|AE architecture + engineering

Date	May 22, 2024
Project No.:	21-119
Dwg. Reference	North Talbot Rd. Devt.
Design By:	Nii Nartei Nartey, M.Eng., EIT
Reviewed By:	Shurjeel Tunio, P.Eng.

BAIRD | AE
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www.bairdae.ca
Local: 519-326-4161

PARTNER / CONSULTANTS

REVISIONS

Date	Revision
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LICENSED PROFESSIONAL ENGINEER
Feb 22, 2024
S. TUNIO
100125071
PROVINCE OF ONTARIO

DATE:	JUNE 07, 2023
SCALE:	#####
DRAWN BY: NNN	☐ PRELIMINARY
CHECKED BY: ST	☐ CONSTRUCTION
APPROVED BY: ----	☐ RECORD

PROJECT TITLE
NORTH TALBOT/SILVERDALE TOWNHOUSES
670 AND 690 NORTH TALBOT ROAD, CITY OF WINDSOR, ONTARIO

SHEET TITLE
DRAINAGE AREA PLAN - SANITARY STUDY

JOB NUMBER 21-119

SHEET NUMBER ----

DISCLAIMER
1. THIS DRAWING IS NOT TO BE SCALED.
2. THIS DRAWING, AS AN INSTRUMENT OF SERVICE, IS PROVIDED BY AND IS THE PROPERTY OF BAIRD AE ENGINEERS PLANNERS ARCHITECTS.
3. THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND MUST NOTIFY BAIRD AE OF ANY VARIATION FROM THE SUPPLIED INFORMATION.
4. THE CONTRACTOR MUST REVIEW AND ACCEPT RESPONSIBILITY FOR ALL SHOP DRAWINGS AND CONSTRUCTION OR INSTALLATION NOTES ON THIS DRAWING. REFER TO THE APPROPRIATE CONSULTANTS DRAWINGS BEFORE PROCEEDING WITH THE WORK.
5. CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
6. THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM THEIR WORK.

K:\2021 Projects\21-119 - North Talbot Rd Development (Windsor)\DRAWINGS\Production Drawings
May 23, 2024

Appendix C

AUTODESK HYDROGRAPHS RESULTS

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cms)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	------	-------	-------	-------	0.014	-------	-------	-------	-------	Pre-Development - Lot 2
2	Rational	------	-------	-------	-------	0.015	-------	-------	-------	-------	Pre-Development - Lot 1

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

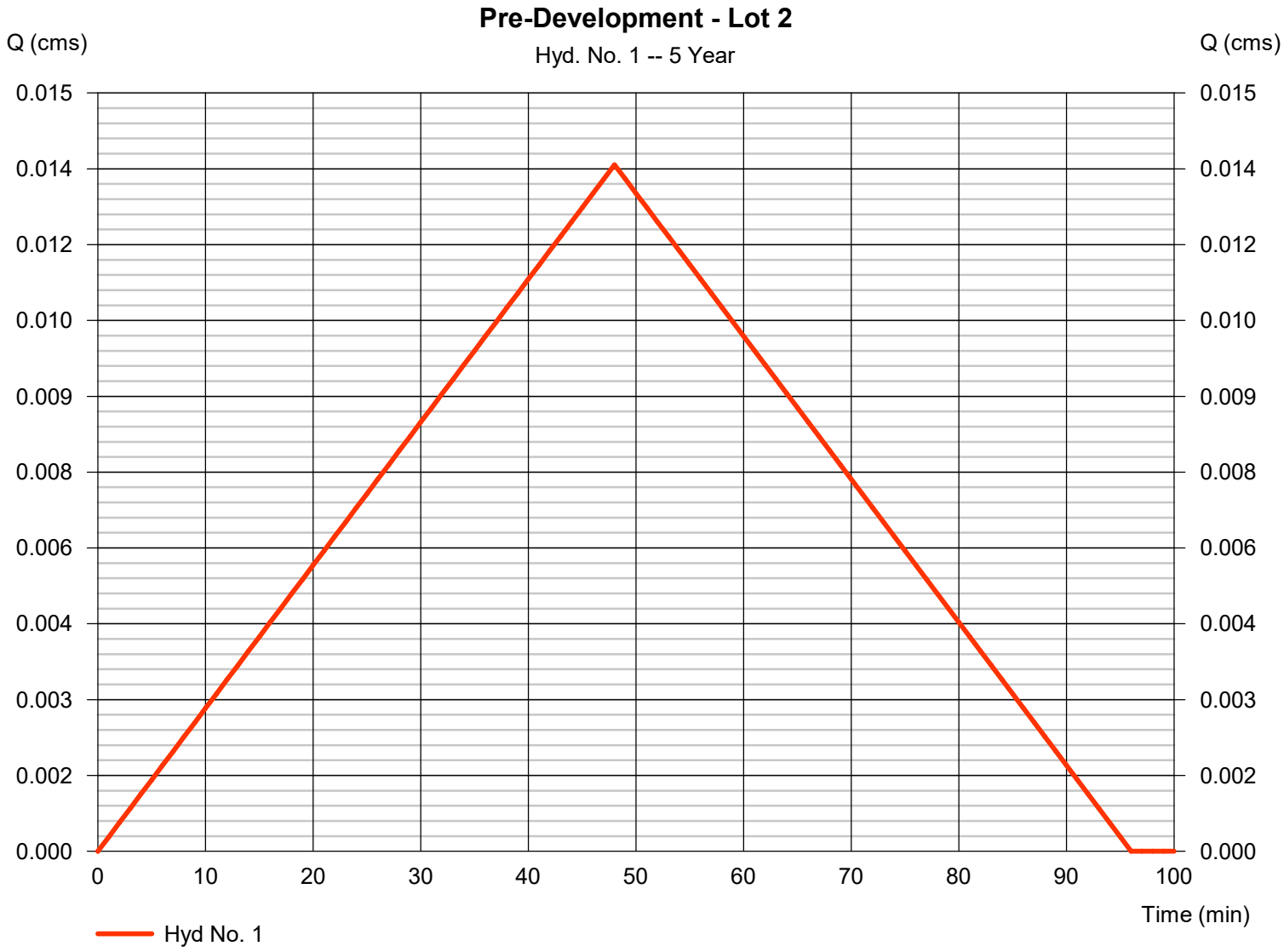
Hyd. No.	Hydrograph type (origin)	Peak flow (cms)	Time interval (min)	Time to Peak (min)	Hyd. volume (cum)	Inflow hyd(s)	Maximum elevation (m)	Total strge used (cum)	Hydrograph Description
1	Rational	0.014	1	48	39.1	------	------	------	Pre-Development - Lot 2
2	Rational	0.015	1	47	43.5	------	------	------	Pre-Development - Lot 1

Hydrograph Report

Hyd. No. 1

Pre-Development - Lot 2

Hydrograph type	= Rational	Peak discharge	= 0.014 cms
Storm frequency	= 5 yrs	Time to peak	= 48 min
Time interval	= 1 min	Hyd. volume	= 39.1 cum
Drainage area	= 0.771 hectare	Runoff coeff.	= 0.15
Intensity	= 42.636 mm/hr	Tc by FAA	= 48.00 min
IDF Curve	= WINDSOR A.IDF	Asc/Rec limb fact	= 1/1



FAA Formula Tc Worksheet

Hyd. No. 1

Pre-Development - Lot 2

Description

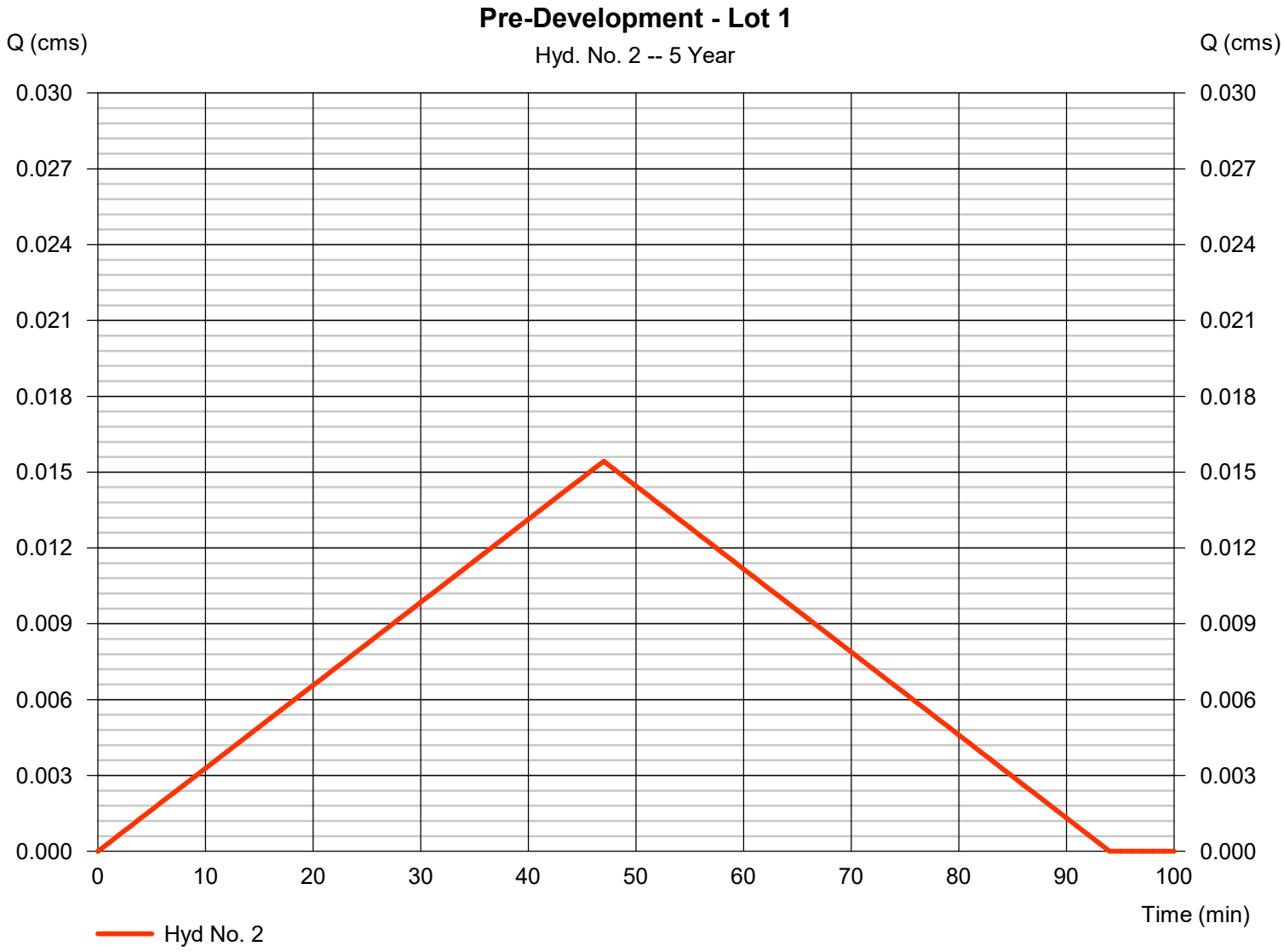
Flow length (m)	= 150.00
Watercourse slope (%)	= 0.50
Runoff coefficient (C)	= 0.15
Time of Conc. (min)	**= 48**

Hydrograph Report

Hyd. No. 2

Pre-Development - Lot 1

Hydrograph type	= Rational	Peak discharge	= 0.015 cms
Storm frequency	= 5 yrs	Time to peak	= 47 min
Time interval	= 1 min	Hyd. volume	= 43.5 cum
Drainage area	= 0.863 hectare	Runoff coeff.	= 0.15
Intensity	= 43.277 mm/hr	Tc by FAA	= 47.00 min
IDF Curve	= WINDSOR A.IDF	Asc/Rec limb fact	= 1/1



FAA Formula Tc Worksheet

Hyd. No. 2

Pre-Development - Lot 1

Description

Flow length (m)	= 145.00
Watercourse slope (%)	= 0.50
Runoff coefficient (C)	= 0.15
Time of Conc. (min)	**= 47**

Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	84.9450	17.7800	2.0745	--------
3	0.0000	0.0000	0.0000	--------
5	127.4621	22.6060	2.1355	--------
10	148.3482	23.8760	2.1354	--------
25	182.0652	25.6540	2.1545	--------
50	211.5120	26.9240	2.1797	--------
100	240.0359	28.1940	2.1925	--------

File name: WINDSOR A.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (mm/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0	0	0	0	0	0	0	0	0	0	0	0
2	112	84	68	58	50	44	40	37	34	31	29	27
3	0	0	0	0	0	0	0	0	0	0	0	0
5	139	108	88	75	66	59	53	48	45	41	39	36
10	158	123	101	86	76	68	61	56	52	48	45	42
25	182	143	118	101	89	80	72	66	61	56	53	49
50	200	158	131	112	99	88	80	73	67	62	58	55
100	218	173	144	124	109	97	88	80	74	69	64	60

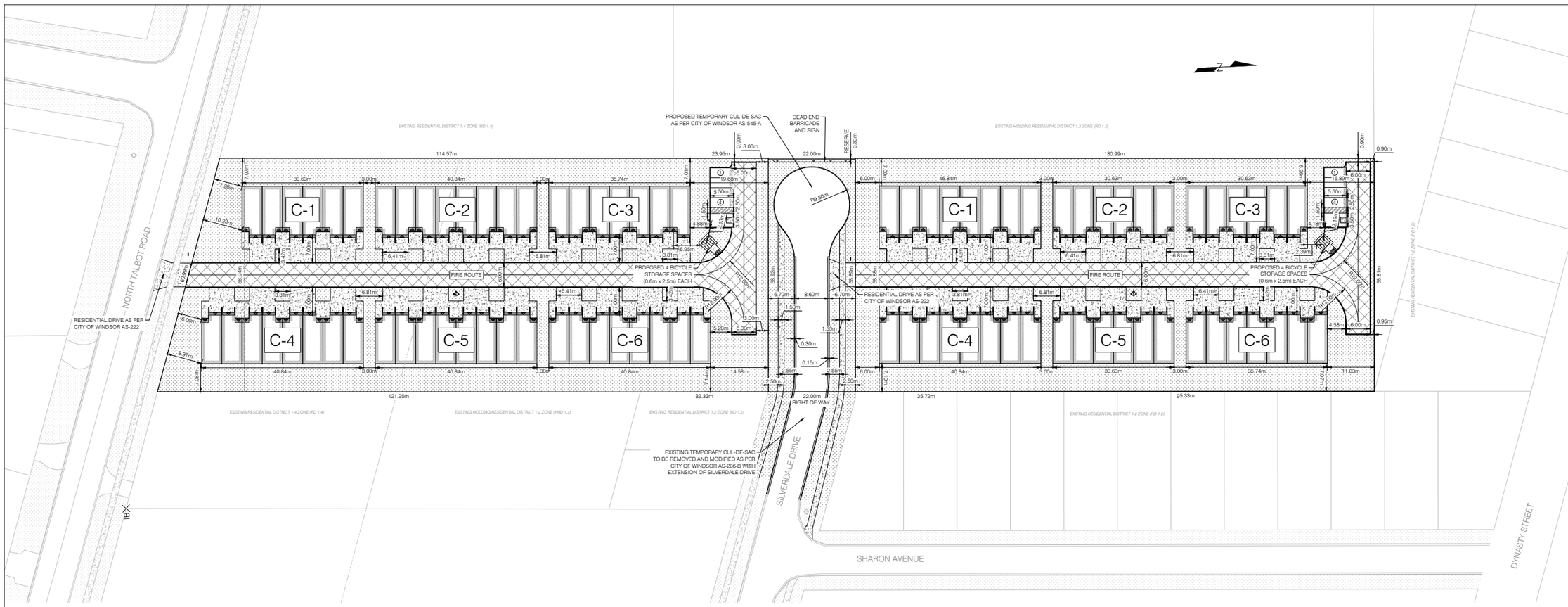
Tc = time in minutes. Values may exceed 60.

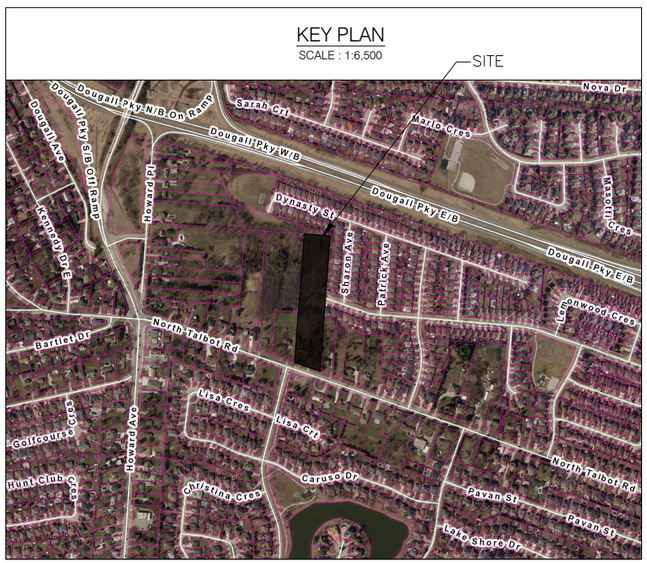
Precip. file name: P:\DropBox\Dropbox\Useful Design Tools\IDF Curves\C-K SCS.pcp

Storm Distribution	Rainfall Precipitation Table (mm)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0	63	0	82	95	111	124	136
SCS 6-Hr	0	51	0	67	77	90	100	110
Huff-1st	0	39	0	70	102	137	165	203
Huff-2nd	0	0	0	0	0	0	0	0
Huff-3rd	0	0	0	0	0	0	0	0
Huff-4th	0	0	0	0	0	0	0	0
Huff-Indy	0	0	0	0	0	0	0	0
Custom	0	45	0	49	99	133	152	82

Appendix D

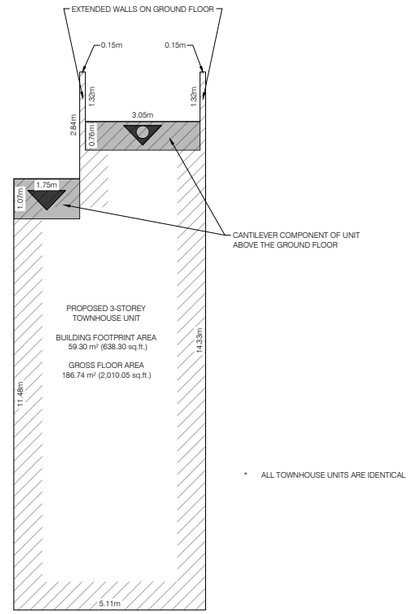
DRAWING SET





LOT/BUILDING INFO.						
TOTAL SITE AREA		17,635.23 m² (189,824.04 sq.ft) 1.76 ha (4.36 ac)				
LOT	LAND AREA	LAND USE	RESIDENTIAL DWELLING UNITS	BUILDING FOOTPRINT AREA	RESIDENTIAL BUILDING GFA	LENGTH OF CURBING
LOT 1	8,630.32 m² (92,895.99 sq.ft)	4 - 8 UNIT TOWNHOUSE COMPLEX 1 - 7 UNIT TOWNHOUSE COMPLEX 1 - 6 UNIT TOWNHOUSE COMPLEX	45 UNITS	59.30 m² (638.30 sq. ft) PER UNIT OF TOTAL 45 UNITS = 2,668.50 m² (28,723.50 sq. ft)	186.74 m² (2,010.05 sq. ft) PER UNIT OF TOTAL 45 UNITS = 8,403.30 m² (90,452.25 sq. ft)	343.88 m (1,128.21 ft)
LOT 2	7,708.99 m² (82,978.88 sq.ft)	2 - 8 UNIT TOWNHOUSE COMPLEX 1 - 7 UNIT TOWNHOUSE COMPLEX 3 - 6 UNIT TOWNHOUSE COMPLEX	41 UNITS	59.30 m² (638.30 sq. ft) PER UNIT OF TOTAL 41 UNITS = 2,431.30 m² (26,170.30 sq. ft)	186.74 m² (2,010.05 sq. ft) PER UNIT OF TOTAL 41 UNITS = 7,656.34 m² (82,412.05 sq. ft)	370.60 m (1,215.88 ft)
SILVERDALE DRIVE	1,295.92 m² (13,949.17 sq.ft)	RIGHT OF WAY	-	-	-	126.92 m (416.40 ft)
-		TOTAL	86 UNITS	5,099.80 m² (54,893.80 sq. ft)	16,059.64 m² (172,864.30 sq. ft)	841.40 m (2,760.49 ft)

LEGEND			
①	NUMBERED PARKING SPACES		PROPOSED FIRE ROUTE
RB-93	RB-93 (ACCESSIBLE PARKING) SIGN (Min. 3.5m x 5.4m (2.1.5m above ground))		ACCESSIBLE PARKING SPACE SYMBOL (Min. 1.80m x 1.80m ea. size)
	PROPOSED BUILDING FOOTPRINT		CANTILEVER COMPONENT OF THE BUILDING
	PRINCIPLE ENTRANCE		GARAGE ENTRANCE
RA-1	PROPOSED RA-1 STOP SIGN		CURB CUT RAMP
	PROPOSED SIDEWALK		EXISTING SIDEWALK
	PROPERTY LINE		PROPOSED ASPHALT
	PROPOSED LANDSCAPE OPEN SPACE		EXISTING LANDSCAPE OPEN SPACE
	PROPOSED FIRE HYDRANT		EXISTING FIRE HYDRANT
	LOT FRONTAGE		ZONING SEPARATION LINE



DETAILED TOWNHOUSE UNIT
SCALE : 1:75

* ALL TOWNHOUSE UNITS ARE IDENTICAL

BAIRD|AE architecture + engineering
27 Princess Street, Unit 102 Leamington ON N8H 2X8
1350 Provincial Road, Unit 700 Windsor ON N8W 5W1
519a256a7451 mail@bairdae.ca www.bairdae.ca

PARTNER / CONSULTANTS

REVISIONS

Date	Revision
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DATE:	JUNE 07, 2023
SCALE:	1:500
DRAWN BY: KP	PRELIMINARY
CHECKED BY: DB	CONSTRUCTION
APPROVED BY: ----	RECORD

PROJECT TITLE
NORTH TALBOT/SILVERDALE TOWNHOUSES
670 AND 690 NORTH TALBOT ROAD, CITY OF WINDSOR, ONTARIO

SHEET TITLE
OVERALL CONCEPT SITE PLAN - PRE-CONSULTATION

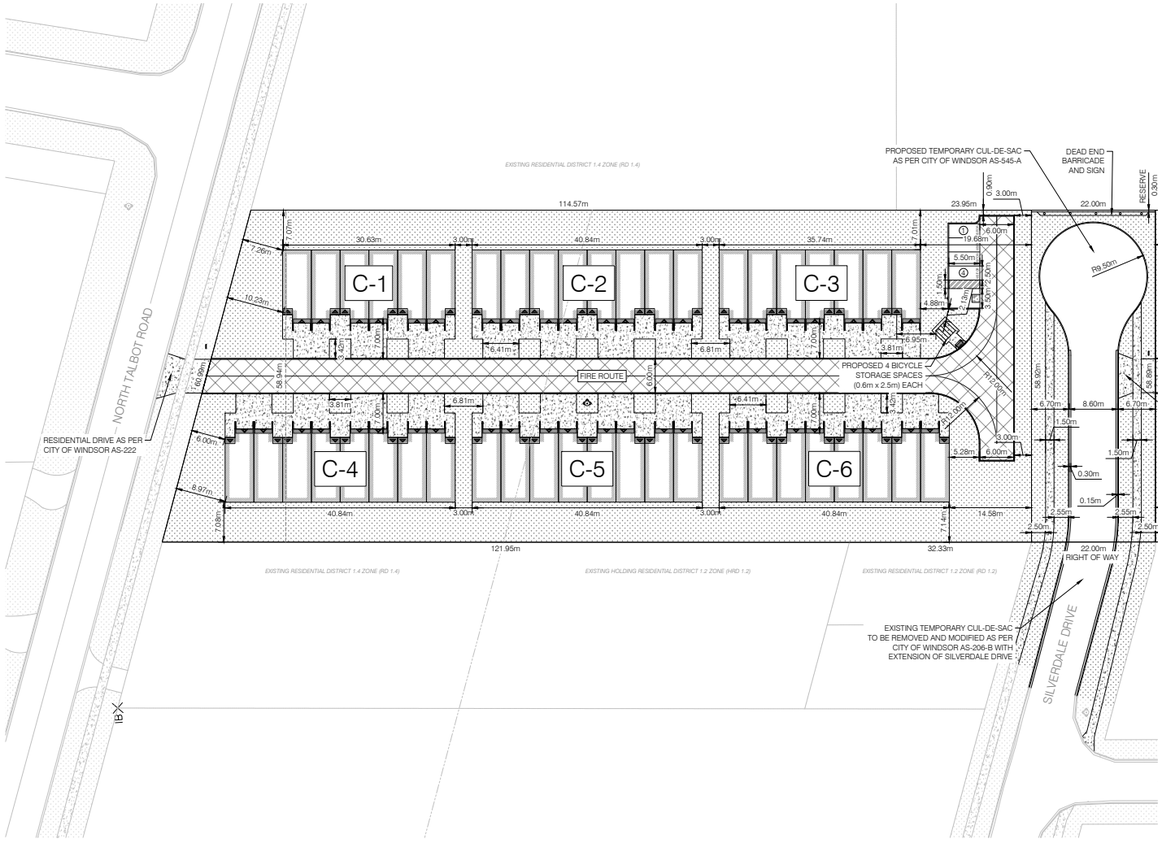
JOB NUMBER 21-119

SHEET NUMBER 01

May 23, 2024

A:\2021 Projects\21-119 - North Talbot Rd Development (Windsor)\Submissions\Consultation Drawings

DISCLAIMER
1. THIS DRAWING IS JUST TO BE SCALED.
2. THIS DRAWING, AS AN INSTRUMENT OF SERVICE, IS PROVIDED BY AND IS THE PROPERTY OF BAIRD AE ENGINEERS PLANNERS ARCHITECTS.
3. THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON SITE. BAIRD AE DOES NOT ASSUME ANY RESPONSIBILITY FOR ANY DEVIATIONS FROM THE SUPPLIED INFORMATION.
4. THE CONTRACTOR IS MOST HEREBY MADE RESPONSIBLE FOR THE ACCURACY OF SURVEY, AND ANY OTHER CONDITIONS INFORMATION SHOWN ON THIS DRAWING. REFER TO THE APPROPRIATE CONSULTANT'S DRAWING BEFORE PROCEEDING WITH THE WORK.
5. CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES, AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
6. THE CONTRACTOR WORKING FROM DRAWINGS NOT SPECIFICALLY MARKED FOR CONSTRUCTION MUST ASSUME FULL RESPONSIBILITY AND BEAR COSTS FOR ANY CORRECTIONS OR DAMAGES RESULTING FROM THEIR WORK.



SITE DATA:			
EXISTING SITE ZONING:	RESIDENTIAL DISTRICT 1.2 (HRD1.2) AND RESIDENTIAL DISTRICT 1.4 (RD1.4)		
PROPOSED SITE ZONING:	RESIDENTIAL DISTRICT 2.5 (RD2.5)		
PERMITTED USE:	TOWNHOME DWELLING, AMONGST OTHER USES PERMITTED WITHIN THE RD2.5 ZONE		
PROPOSED USE:	TOWNHOME DWELLING		
DESCRIPTION:	REQUIRED:	PROVIDED:	ZONING COMPLIANCE:
MIN. LOT AREA:	190 m^2 (2,045.14 ft^2) PER DWELLING UNIT OF TOTAL 45 UNITS = 8,550 m^2 (92,031.43 ft^2)	8,630.32 m^2 (92,895.99 ft^2) 0.86 ha (2.13 ac)	COMPLIES
MIN. FRONTAGE:	20 m (65.62 ft)	58.94 m (193.37 ft)	COMPLIES
MIN. INTERIOR YARD SETBACK (EAST YARD):	2.50 m (8.20 ft)	7.08 m (23.23 ft)	COMPLIES
MIN./MAX. FRONT YARD SETBACK (SOUTH YARD):	6 m (19.69 ft) / 7 m (22.97 ft)	6 m (19.69 ft)	COMPLIES
MIN. EXTERIOR REAR YARD SETBACK (NORTH YARD):	7.50 m (24.61 ft)	14.58 m (47.83 ft)	COMPLIES
MIN. INTERIOR YARD SETBACK (WEST YARD):	2.50 m (8.20 ft)	7.01 m (23 ft)	COMPLIES
LOT COVERAGE:	50 % MAX.	33.93 % (2,927.87 m^2, 31,515.34 sq. ft)	COMPLIES
LANDSCAPE OPEN SPACE:	N/A	37.42 % (3,229.12 m^2, 34,757.96 sq. ft)	COMPLIES
PARKING FOR TOWNHOUSE DWELLING UNIT:	1 SPACES PER UNIT OF TOTAL 45 UNITS = 45 SPACES	90 SPACES (45 SPACES ON DRIVEWAY, 45 SPACES WITHIN GARAGE)	COMPLIES
VISITOR PARKING FOR TOWNHOUSE DWELLING UNIT:	N/A	4 SPACES	COMPLIES
ACCESSIBLE PARKING:	1 TYPE A PARKING SPACE REQUIRED WHEN THERE ARE PARKING SPACES BETWEEN 1 TO 25 IN PARKING AREA	1 TYPE A SPACE	COMPLIES
LOCATION OF PARKING SPACES:	FOR TOWNHOME DWELLING UNIT PARKING IS PERMITTED IN A REQUIRED SIDE, FRONT OR REAR YARD.	EXTERIOR REAR YARD	COMPLIES
BICYCLE PARKING:	0 BICYCLE PARKING SPACE REQUIRED WHEN THERE ARE PARKING SPACES BETWEEN 1 TO 9 IN PARKING AREA	4 SPACES	COMPLIES
LOCATION OF BICYCLE PARKING SPACES:	MIN. 2 m (6.56 ft) AWAY FROM AN ACCESSIBLE PARKING SPACE OR A SIDEWALK, AND PROHIBITED IN A REQUIRED YARD.	2.13 m (6.99 ft)	COMPLIES
CARPORT/GARAGE:	WHEN A WALL OF GARAGE FACES AN EXTERIOR LOT LINE THE SAID WALL SHALL BE MIN. 6 m (19.69 ft) AWAY FROM SUCH EXTERIOR LOT LINE.	14.58 m (47.83 ft) FROM THE EXTERIOR REAR LOT LINE.	COMPLIES
PARKING AREA SEPARATION: FROM STREET LINE: (NORTH)	3 m (19.69 ft)	3 m (19.69 ft)	COMPLIES
PARKING AREA SEPARATION: FROM INTERIOR LOT LINE (WEST):	0.90 m (2.95 ft)	0.90 m (2.95 ft)	COMPLIES

LOT/BUILDING INFO.					
TOTAL LOT AREA:	8,630.32 m^2 (92,895.99 sq. ft) 0.86 ha (2.13 ac)				
PROPOSED BUILDING:	FOOTPRINT AREA	VERTICAL DOWNWARD PROJECTION OF ROOF	GROSS FLOOR AREA	HEIGHT / NO. OF STOREY	UNITS
TOWNHOUSE COMPLEX 1	355.80 m^2 (3,829.80 ft^2)	34.58 m^2 (372.22 ft^2)	1,120.44 m^2 (12,060.30 ft^2)	< 14 m (36.09 ft) / 3 STOREY	6 UNITS
TOWNHOUSE COMPLEX 2	474.40 m^2 (5,106.40 ft^2)	46.11 m^2 (496.32 ft^2)	1,493.92 m^2 (16,080.40 ft^2)	< 14 m (36.09 ft) / 3 STOREY	8 UNITS
TOWNHOUSE COMPLEX 3	415.10 m^2 (4,468.10 ft^2)	40.35 m^2 (434.32 ft^2)	1,307.18 m^2 (14,070.35 ft^2)	< 14 m (36.09 ft) / 3 STOREY	7 UNITS
TOWNHOUSE COMPLEX 4	474.40 m^2 (5,106.40 ft^2)	46.11 m^2 (496.32 ft^2)	1,493.92 m^2 (16,080.40 ft^2)	< 14 m (36.09 ft) / 3 STOREY	8 UNITS
TOWNHOUSE COMPLEX 5	474.40 m^2 (5,106.40 ft^2)	46.11 m^2 (496.32 ft^2)	1,493.92 m^2 (16,080.40 ft^2)	< 14 m (36.09 ft) / 3 STOREY	8 UNITS
TOWNHOUSE COMPLEX 6	474.40 m^2 (5,106.40 ft^2)	46.11 m^2 (496.32 ft^2)	1,493.92 m^2 (16,080.40 ft^2)	< 14 m (36.09 ft) / 3 STOREY	8 UNITS
TOTAL	2,668.50 m^2 (28,723.50 ft^2)	259.37 m^2 (2,791.84 ft^2)	8,403.30 m^2 (90,452.25 ft^2)	-	45 UNITS
TOTAL PARKING SPACES:	95 SPACES 4 STANDARD SURFACE PARKING SPACES 1 TYPE A ACCESSIBLE PARKING SPACE 45 STANDARD SURFACE PARKING SPACES FOR TOWNHOUSE ON DRIVEWAY 45 STANDARD SURFACE PARKING SPACES FOR TOWNHOUSE WITHIN GARAGE				
BUILDING USE AND OCCUPANCY:	RESIDENTIAL GROUP "C"				

NOTES:
1. ALL FIRE DEPARTMENT SIGNAGE TO BE COMPLETED AFTER CONSTRUCTION IN COORDINATION WITH FIRE DEPARTMENT.
2. ALL ACCESSIBLE PARKING SPACES TO HAVE RB-93 SIGNS INSTALLED.
3. ALL LIGHTING TO BE DARK SKY COMPLIANT.
4. FIRE ROUTE TO BE IN COMPLIANCE WITH OBC REQUIREMENTS.

DISCLAIMER
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BAIRD|AE architecture + engineering
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1350 Provincial Road, Unit 700 Windsor ON N8W 5W1
519.325.2433 info@bairdae.ca www.bairdae.ca

PARTNER / CONSULTANTS

REVISIONS

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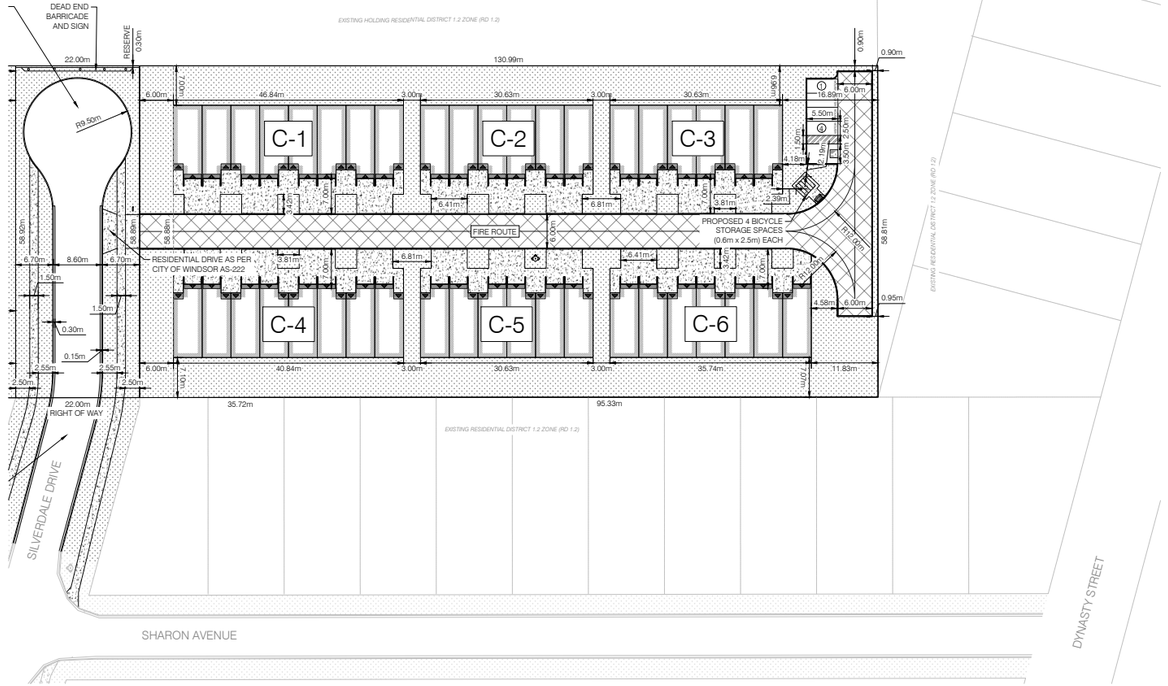
PROJECT TITLE
NORTH TALBOT/SILVERDALE TOWNHOUSES
670 AND 690 NORTH TALBOT ROAD, CITY OF WINDSOR, ONTARIO

SHEET TITLE
LOT 1 - CONCEPT SITE PLAN - PRE-CONSULTATION

JOB NUMBER 21-119
SHEET NUMBER 02

May 31, 2024

A:\21-119 Project\21-119 - North Talbot 4x Development (Windsor)\DWG\MISC\Production Drawings



SITE DATA:			
EXISTING SITE ZONING:	RESIDENTIAL DISTRICT 1.2 (HRD1.2)		
PROPOSED SITE ZONING:	RESIDENTIAL DISTRICT 2.5 (RD2.5)		
PERMITTED USE:	TOWNHOME DWELLING, AMONGST OTHER USES PERMITTED WITHIN THE RD2.5 ZONE		
PROPOSED USE:	TOWNHOME DWELLING		
DESCRIPTION:	REQUIRED:	PROVIDED:	ZONING COMPLIANCE:
MIN. LOT AREA:	190 m^2 (2,045.14 ft^2) PER DWELLING UNIT OF TOTAL 41 UNITS = 7,790 m^2 (83,850.86 ft^2)	7,708.99 m^2 (82,978.88 sq.ft) 0.77 ha (1.90 ac)	RELIEF REQUESTED
MIN. FRONTAGE:	20 m (65.62 ft)	58.88 m (193.18 ft)	COMPLIES
MIN. INTERIOR YARD SETBACK (EAST YARD):	2.50 m (8.20 ft)	7.07 m (23.20 ft)	COMPLIES
MIN./MAX. FRONT YARD SETBACK (SOUTH YARD):	6 m (19.69 ft) / 7 m (22.97 ft)	6 m (19.69 ft)	COMPLIES
MIN. REAR YARD SETBACK (NORTH YARD):	7.50 m (24.61 ft)	11.83 m (38.81 ft)	COMPLIES
MIN. INTERIOR YARD SETBACK (WEST YARD):	2.50 m (8.20 ft)	6.96 m (22.83 ft)	COMPLIES
LOT COVERAGE:	50 % MAX.	34.60 % (2,667.61 m^2, 28,713.92 sq. ft)	COMPLIES
LANDSCAPE OPEN SPACE:	N/A	35.81 % (2,760.73 m^2, 29,609.36 sq. ft)	COMPLIES
PARKING FOR TOWNHOUSE DWELLING UNIT:	1 SPACES PER UNIT OF TOTAL 41 UNITS = 41 SPACES	82 SPACES (41 SPACES ON DRIVEWAY, 41 SPACES WITHIN GARAGE)	COMPLIES
VISITOR PARKING FOR TOWNHOUSE DWELLING UNIT:	N/A	4 SPACES	COMPLIES
ACCESSIBLE PARKING:	1 TYPE A PARKING SPACE REQUIRED WHEN THERE ARE PARKING SPACES BETWEEN 1 TO 25 IN PARKING AREA	1 TYPE A SPACE	COMPLIES
LOCATION OF PARKING SPACES:	FOR TOWNHOME DWELLING UNIT PARKING IS PERMITTED IN A REQUIRED SIDE, FRONT OR REAR YARD.	REAR YARD	COMPLIES
BICYCLE PARKING:	0 BICYCLE PARKING SPACE REQUIRED WHEN THERE ARE PARKING SPACES BETWEEN 1 TO 9 IN PARKING AREA	4 SPACES	COMPLIES
LOCATION OF BICYCLE PARKING SPACES:	MIN. 2 m (6.56 ft) AWAY FROM AN ACCESSIBLE PARKING SPACE OR A SIDEWALK, AND PROHIBITED IN A REQUIRED YARD.	2.13 m (7.19 ft)	COMPLIES
PARKING AREA SEPARATION: (FROM INTERIOR LOT LINE)	0.90 m (2.95 ft)	0.90 m (2.95 ft)	COMPLIES

LOT/BUILDING INFO.					
TOTAL LOT AREA:	7,708.99 m^2 (82,978.88 sq.ft) 0.77 ha (1.90 ac)				
PROPOSED BUILDING:	FOOTPRINT AREA	VERTICAL DOWNWARD PROJECTION OF ROOF	GROSS FLOOR AREA	HEIGHT / NO. OF STOREY	UNITS
TOWNHOUSE COMPLEX 1	474.40 m^2 (5,106.40 ft^2)	46.11 m^2 (496.32 ft^2)	1,493.92 m^2 (16,080.40 ft^2)	< 14 m (36.09 ft) / 3 STOREY	8 UNITS
TOWNHOUSE COMPLEX 2	355.80 m^2 (3,829.80 ft^2)	34.58 m^2 (372.22 ft^2)	1,120.44 m^2 (12,060.30 ft^2)	< 14 m (36.09 ft) / 3 STOREY	6 UNITS
TOWNHOUSE COMPLEX 3	355.80 m^2 (3,829.80 ft^2)	34.58 m^2 (372.22 ft^2)	1,120.44 m^2 (12,060.30 ft^2)	< 14 m (36.09 ft) / 3 STOREY	6 UNITS
TOWNHOUSE COMPLEX 4	474.40 m^2 (5,106.40 ft^2)	46.11 m^2 (496.32 ft^2)	1,493.92 m^2 (16,080.40 ft^2)	< 14 m (36.09 ft) / 3 STOREY	8 UNITS
TOWNHOUSE COMPLEX 5	355.80 m^2 (3,829.80 ft^2)	34.58 m^2 (372.22 ft^2)	1,120.44 m^2 (12,060.30 ft^2)	< 14 m (36.09 ft) / 3 STOREY	6 UNITS
TOWNHOUSE COMPLEX 6	415.10 m^2 (4,468.10 ft^2)	40.35 m^2 (434.32 ft^2)	1,307.18 m^2 (14,070.35 ft^2)	< 14 m (36.09 ft) / 3 STOREY	7 UNITS
TOTAL	2,431.30 m^2 (26,170.30 ft^2)	236.31 m^2 (2,543.62 ft^2)	7,656.34 m^2 (82,412.05 ft^2)	-	41 UNITS
TOTAL PARKING SPACES:	87 SPACES 4 STANDARD SURFACE PARKING SPACES 1 TYPE A ACCESSIBLE PARKING SPACE 41 STANDARD SURFACE PARKING SPACES FOR TOWNHOUSE ON DRIVEWAY 41 STANDARD SURFACE PARKING SPACES FOR TOWNHOUSE WITHIN GARAGE				
BUILDING USE AND OCCUPANCY:	RESIDENTIAL GROUP "C"				

NOTES:
1. ALL FIRE DEPARTMENT SIGNAGE TO BE COMPLETED AFTER CONSTRUCTION IN COORDINATION WITH FIRE DEPARTMENT.
2. ALL ACCESSIBLE PARKING SPACES TO HAVE RB-93 SIGNS INSTALLED.
3. ALL LIGHTING TO BE DARK SKY COMPLIANT.
4. FIRE ROUTE TO BE IN COMPLIANCE WITH OBC REQUIREMENTS.

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3. THE CONTRACTOR MUST VERIFY ANY AND ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT ANY VARIATIONS FROM THE SUPPLIED INFORMATION.
4. THE CONTRACTOR MUST VERIFY ALL EXISTING UTILITY SERVICES, AND THEIR CONDITIONS AND LOCATIONS BEFORE THIS CONSTRUCTION. REFER TO THE APPROPRIATE CONSULTANT'S DRAWINGS BEFORE PROCEEDING WITH THE WORK.
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1350 Provincial Road, Unit 700 Windsor ON N8W 5W1
519.252.5161 mail@bairdae.ca www.bairdae.ca

PARTNER / CONSULTANTS

REVISIONS

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CONSTRUCTION
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PROJECT TITLE
NORTH TALBOT/SILVERDALE TOWNHOUSES
670 AND 690 NORTH TALBOT ROAD, CITY OF WINDSOR, ONTARIO

SHEET TITLE
LOT 2 - CONCEPT SITE PLAN - PRE-CONSULTATION

JOB NUMBER 21-119
SHEET NUMBER 03

May 23, 2024

X:\2021 Projects\21-119 - North Talbot Rd Development (Windsor)\Submissions\Preliminary Drawings

LEGEND

PROPOSED SANITARY SEWERS

PROPOSED WATERMAIN

BAIRD|AE architecture + engineering
27 Princess Street, Unit 102
Leamington ON N8H 2X8
1350 Provincial Road, Unit 700
Windsor ON N8W 5W1

PARTNER / CONSULTANTS

Date	Revision
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PROJECT TITLE
NORTH TALBOT/SILVERDALE TOWNHOUSES
670 AND 690 NORTH TALBOT ROAD, CITY OF WINDSOR, ONTARIO

SHEET TITLE
CONCEPT SITE SERVICING PLAN

JOB NUMBER **21-119**

SHEET NUMBER **----**

May 22, 2024

A:\2021 Projects\21-119 - North Talbot Rd Development (Windsor)\DWG\PDWG Production Drawings