VALLEY WAY STACKED TOWNHOUSE DEVELOPMENT
6009-6017 VALLEY WAY, NIAGARA FALLS

FUNCTIONAL SERVICING DESIGN BRIEF
NEW STORM, SANITARY AND WATER SERVICES

REV 1 – November 12, 2025

PREPARED BY:

HALLEX PROJECT #250208

HALLEX NIAGARA
4999 VICTORIA AVENUE
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TABLE OF CONTENTS

1. INTRODUCTION

The proposed Valley Way stacked townhouse development consists of the construction of six townhouse blocks (99 units), asphalt laneway and parking areas, concrete walk areas and grass areas. This development is located at 6009-6017 Valley Way, which is west of the Valley Way and Portage Road intersection in the City of Niagara Falls, ON.

The purpose of the service assessment is to determine the functional sizing of the proposed storm, sanitary and water services in addition to the post-development flows from the site to determine the impact on the existing municipal infrastructure.

2. EXISTING MUNICIPAL INFRASTRUCTURE

2.1 EXISTING SITE DRAINAGE

The drainage for the subject property is included in the existing municipal storm sewer draining within an easement through the property as shown in the Outlet-Ont. Hydro Drop Shaft at Valley Way Storm Sewer Drainage Area plan, File# 84-CA-64, dated March 1984 and the associated Storm Sewer Design Computation Sheet, File# T1, Sheet 2 of 5, dated January 22, 1985.

2.2 STORM SEWER

The existing site is not currently serviced with a storm lateral connection as it is a vacant area of the existing property to be severed. The existing drainage infrastructure at Shirley Avenue consists of a 900mm concrete municipal storm sewer which drains within an easement through the subject property to the 1200mm concrete municipal storm sewer at Portage Road.

2.3 SANITARY SEWER

The existing site is not currently serviced with a sanitary lateral connection as it is a vacant area of the existing property to be severed. The existing drainage infrastructure at Shirley Avenue consists of a 300mm concrete municipal sanitary sewer increasing to a 375mm concrete municipal sanitary sewer. This sewer drains within an easement through the subject property to the 375mm concrete municipal sanitary sewer at Portage Road.

2.4 WATERMAIN

The existing site is not currently serviced with a water service connection as it is a vacant area of the existing property to be severed. The existing watermain infrastructure at Shirley Avenue consists of a 150mm cast iron municipal watermain.

3. STORM SEWER SYSTEM

3.1 ALLOWABLE SITE FLOW

The total drainage area for the subject development is 1.086 hectares with an allowable runoff coefficient of 0.40 based on the Outlet-Ont. Hydro Drop Shaft at Valley Way Storm Sewer Drainage Area plan, File# 84-CA-64, dated March 1984 and the associated Storm Sewer Design Computation Sheet, File# T1, Sheet 2 of 5, dated January 22, 1985. The catchment area plan for the pre-development site condition is provided on Hallex Sketch CSK1, attached.

Utilizing the rationale method (Q = CiA/360) and the minimum recommended time of concentration of 10 minutes, the allowable peak flow for the pre-development site is as follows:

Storm Event	**Allowable Storm Flow**
5-year Storm	101.4 L/s

These flows are calculated using the City of Niagara Falls intensity-duration-frequency curves. The allowable flows for the proposed development are provided in Exhibit #1 for the five-year storm at the end of the design brief.

3.2 POST-DEVELOPMENT SITE FLOW

The proposed development includes six townhouse blocks (99 units), asphalt laneway and parking areas, concrete walk areas and grass areas. The grading for the site will ensure drainage through the proposed storm sewer system for storm water quantity and quality controls.

The total drainage for the site consists of 1.086 hectares with a calculated runoff coefficient of 0.66 based on the proposed roof, asphalt, concrete and grass surfaces. The proposed storm sewer system for the site will then discharge to the existing 900mm concrete municipal storm sewer draining within an easement through the subject property. The catchment area plan for the post-development site condition is provided on Hallex Sketch CSK2, attached.
Utilizing the rationale method (Q = CiA/360) and the minimum recommended time of concentration of 10 minutes, the calculated peak flow for the post-development site is as follows:

Storm Event	**Post-Development Storm Flow**
5-year Storm	168.0 L/s

These flows are calculated using the City of Niagara Falls intensity-duration-frequency curves. The post-development flows for the proposed development are provided in Exhibit #2 for the five-year storm at the end of the design brief.

3.3 STORMWATER QUANTITY CONTROL

The post-development storm water runoff for the subject site will increase by 66.6 L/s for the five-year storm from the maximum allowable flow from the site. As such, storm water detention will be required for the proposed development.

Stormwater quantity controls for the site can be achieved by utilizing an orifice plate within a maintenance hole prior to discharging to the existing 900mm concrete municipal storm sewer draining within an easement through the subject property.

The orifice plate will ensure the combined post development runoff is controlled to the allowable runoff rate for the five-year storm event. The resulting 79.0 m^3 volume generated for the five-year storm event can be stored within a proposed underground storage chamber system and/or a storm sewer system consisting of oversized storm sewers, catchbasins / maintenance holes prior to discharging to the existing 900mm concrete municipal storm sewer draining within an easement through the subject property.

3.4 STORMWATER QUALITY CONTROL

Stormwater quality controls for the site can be achieved by utilizing a HydroStorm HS8 prior to draining to the existing 900mm concrete municipal storm sewer draining within an easement through the subject property. This will achieve a total suspended solids removal of at least 75% based on the above post-development site conditions. This value is greater than the required 'Normal' treatment of 70% as indicated in the MOE Stormwater Management Planning and Design Manual, dated March 2003 (refer to Chapter 3: Environmental Design Criteria, Section 3.3.1.1. Level of Protection).

4. SANITARY SEWER SYSTEM

Given the subject site is currently vacant, a new sanitary sewer system shall be proposed onsite to service each of the stacked townhouse blocks and shall discharge to the existing 375mm concrete municipal sanitary sewer draining within an easement through the subject property.

The stacked townhouse development is currently in the concept phase; therefore, the following assumptions based on the architectural drawings are made in carrying out the calculations:

- The average daily design flow is based on the recommendation in Section 5.5.2.1 Domestic Sewage Flows of the Ministry of the Environment Design Guidelines for Sewage Works 2008 and Section 3 - Sanitary Drainage Systems of the City of Niagara Falls Engineering Design Guidelines Manual.
- The six-block stacked townhouse development consists of 99 two-bedroom townhouse units. Each townhouse is assumed to have a maximum of 2 persons per bedroom.

The peak dry weather design flow for the proposed Valley Way stacked townhouse development is determined to be 9.281 L/s and the peak wet weather design flow is determined to be 9.585 L/s. These calculations are based on the Post-Development Sanitary Catchment Area Plan CSK3 and the Post-Development Sanitary Sewer Design sheet provided in Exhibit #3, attached.

Based on the above, Hallex recommends a minimum 200mm sanitary sewer @ 1.0% to be installed to convey sanitary flows from the proposed stacked townhouse development to the existing 375mm concrete municipal sanitary sewer draining within an easement through the subject property. A minimum 100mm sanitary lateral @ 1.0% shall be proposed from each stack of townhouse units to the sanitary sewer system to be proposed within the development.

5. WATER DISTRIBUTION SYSTEM

Given the subject site is currently vacant, a new water distribution system shall be proposed onsite to service each of the stacked townhouse blocks and shall connect to the existing 150mm cast iron municipal watermain at Shirley Avenue.

The stacked townhouse development is currently in the concept phase; therefore, the following assumptions based on the architectural drawings are made in carrying out the calculations:

- The average daily water demand is based on Section 3.4.2. Domestic Water Demands of the Ministry of the Environment Design Guidelines for Drinking-Water Systems 2008.
- The peaking factors are based on the recommendation in Table 3-3: Peaking Factors for Drinking-Water Systems Serving Fewer than 500 People of the Ministry of the Environment Design Guidelines for Drinking-Water Systems 2008.
- The six-block stacked townhouse development consists of 99 two-bedroom townhouse units. Each townhouse is assumed to have a maximum of 2 persons per bedroom.
- Each stacked townhouse block is assumed to be three-stories, of wood-frame construction and will not have sprinklers installed throughout the building.

The domestic water demand for the proposed development is calculated as shown in Exhibit #4, attached, and are summarized as follows:

Site	Average Day Water Demand	Maximum Day Water Demand	Peak Hour Water Demand
Area.1	178.2 m^3/day	573.1 m^3/day	9.95 L/s

Using the calculations provided in the Fire Underwriters Survey – 2020 Water Supply for Public Fire Protection, the minimum water supply flow rate for fire protection for each stacked townhouse block is determined based on the above assumptions as shown in Exhibits #5-9, attached, and are summarized as follows:

- Townhouse Block A 14,000 L/min
- Townhouse Block B 14,000 L/min
- Townhouse Block C 16,000 L/min
- Townhouse Block D 16,000 L/min
- Townhouse Block E 16,000 L/min
- Townhouse Block F 14,000 L/min

There are two existing municipal fire hydrants located near the site. The first is approximately 85.1m north of the property on the east side of Shirley Avenue. The second is approximately 97.2m northwest of the property on the north side of Stevens Street.

The resulting domestic flow head losses for the development are determined to be 41.46 kPa (6.01 psi). The resulting combined domestic flow and fire flow head losses for the development are determined to be 241.66 kPa (35.05 psi). As such, the minimum working pressure within the existing municipal watermain is required to be 55.05 psi to ensure a minimum normal operating pressure of 40 psi (domestic) and 20 psi (domestic & fire) within the municipal watermain. These calculations are based on the Water Demand Design sheet provided in Exhibit #4, attached.

Based on the above, Hallex recommends the existing 150mm cast iron municipal watermain at Shirley Avenue to be upgraded to a 200mm PVC municipal watermain. The proposed watermain replacement shall be from the Shirley Avenue and Stevens Street intersection and extend to the subject property in accordance with Ontario Building Code requirements. A 200mm fire water service and a minimum 100mm domestic water service are recommended to be installed to provide water supply to the proposed development from this municipal watermain replacement. A minimum 25mm water service shall be proposed from each stack of townhouse units to the water distribution system to be proposed within the development. The new water distribution system shall pass through a water meter and backflow preventer chamber at the property line to monitor the developments water usage.

6. CONCLUSION

The aforementioned calculations and recommendations for the storm, sanitary and water services are based on the current design for the site as of writing this report. A final sealed report, complete with updates to the recommendations made in this report, may be required based on the final site design.

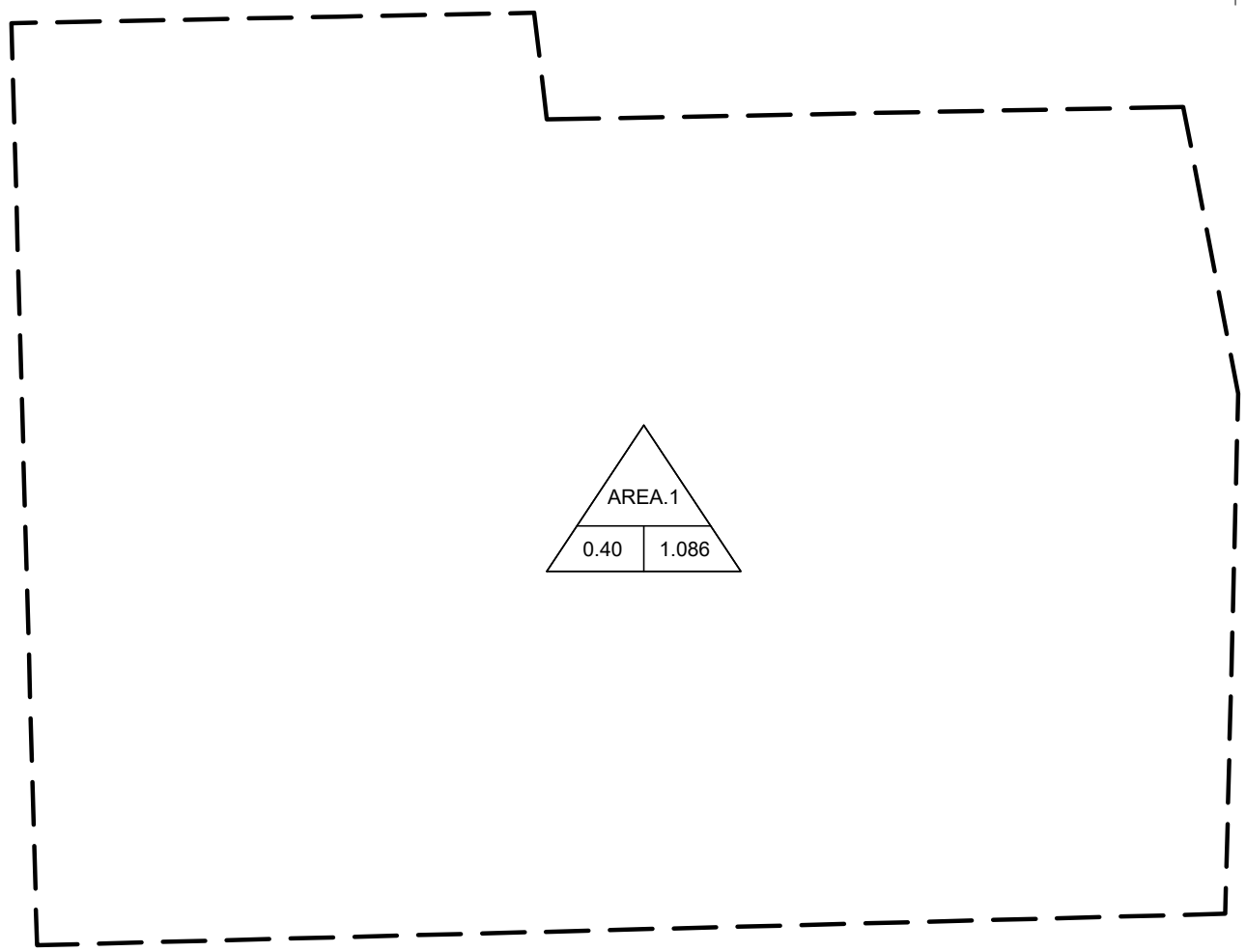
We trust this report meets your approval. Please contact the undersigned should you have any questions or comments.

Yours truly,
HALLEX ENGINEERING LTD

Jim Halucha P.Eng
Partner, Civil/Structural Engin eer

Anthony Infurna, C.E.T., rcji
Partner, Project Manager

SHIRLEY AVENUE



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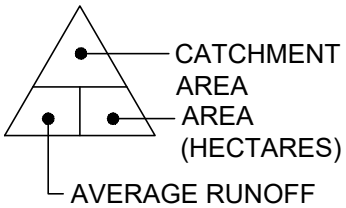

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PROJECT:
VALLEY WAY STACKED TOWNHOUSES
6009-6017 VALLEY WAY, NF

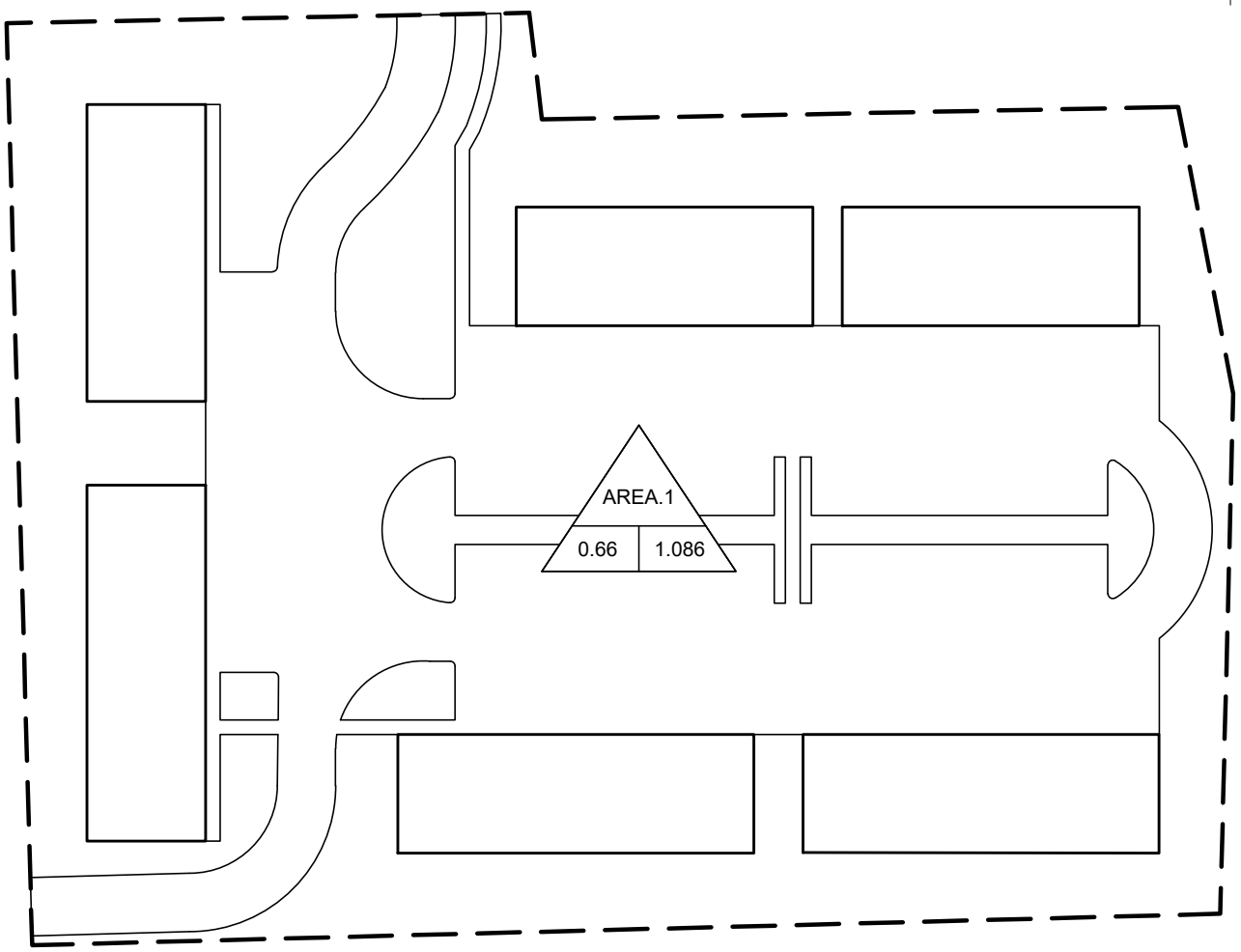
SHEET TITLE:
PRE-DEVELOPMENT
CATCHMENT AREA PLAN

SCALE: 1:750
DATE: 2025/11/11
DRAWN BY: MA
DESIGNED BY: JS
CHECKED BY: AI/JH

JOB NUMBER: 250208
ISSUED FOR: OPA / ZBA

DWG CSK1

REV. 1



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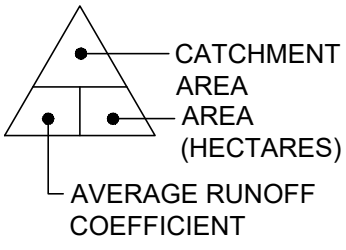

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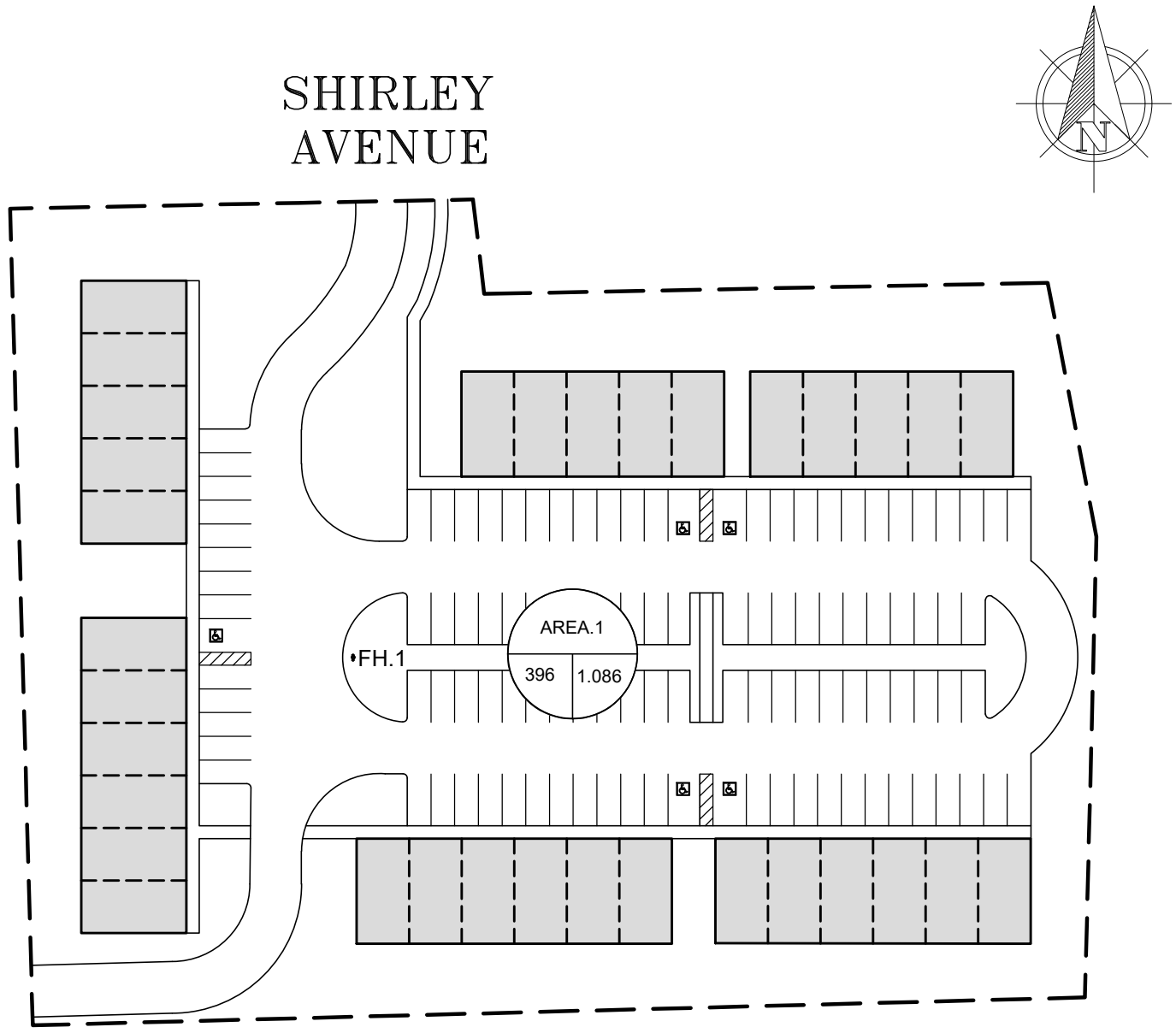
PROJECT: VALLEY WAY STACKED TOWNHOUSES 6009-6017 VALLEY WAY, NF	SCALE: 1:750	JOB NUMBER: 250208	
	DATE: 2025/11/12	ISSUED FOR: OPA / ZBA	
	DRAWN BY: MA	DWG	REV.
SHEET TITLE: POST-DEVELOPMENT CATCHMENT AREA PLAN	DESIGNED BY: JS	CSK2	1
	CHECKED BY: AI/JH		



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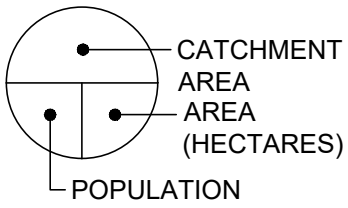

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PROJECT: VALLEY WAY STACKED TOWNHOUSES 6009-6017 VALLEY WAY, NF	SCALE: 1:750	JOB NUMBER: 250208	
	DATE: 2025/11/12	ISSUED FOR: OPA / ZBA	
	DRAWN BY: MA	DWG	REV.
SHEET TITLE: POST-DEVELOPMENT SANITARY CATCHMENT AREA PLAN	DESIGNED BY: JS	CSK3	1
	CHECKED BY: AI/JH		

Valley Way Stacked Townhouses
Exhibit #1 - 5 Year Pre - Development Calculations

2025-11-12
Job: 250208

MUNICIPALITY: **Niagara Falls**

manning's n = 0.013 Conc Pipe
0.013 PVC Pipe
0.024 Corr. Stl Pipe

Rainfall Intensity Values = A= 719.500
B= 6.340
C= 0.769

Location			Length of Pipe	Area		Flow Time		Rainfall Intensity	Unit rate of Runoff	Design Flows	
Pipe	From Node	To Node		Incre-ment	Cum Total	To Upper	In Sectio			Cum Flow	Cum Flow
			(m)	(ha)	(ha)	(min)	(min)	mm/hr	m^3/ha*day	(m^3/d)	(m^3/s)
1	**Area.1**	**Street**	**N/A**	**1.086**	**1.086**	**10.00**	**N/A**	**84**	**62514**	**8760.0**	**0.1014**
Site Avg	-	-	-	1.086	-	-	-	-	8066.3	8760.0	-

Run-off Coefficients Used:

Site Average C = 0.40

Velocity Range:

Minimum Velocity = 0.80 m/s
Maximum Velocity = 6.00 m/s

Time of Concentration = 10 min

HALLEX CIVIL ENGINEERING LTD.

Valley Way Stacked Townhouses
Exhibit #2 - 5 Year Post - Development Calculations

2025-11-12
Job: 250208

MUNICIPALITY: **Niagara Falls**

Rainfall Intensity Values = A= 719.500
B= 6.340
C= 0.769

Location			Length of Pipe	Area		Flow Time		Rainfall Intensity	Unit rate of Runoff	Design Flows		Flow Control
Pipe	From Node	To Node		Incre-ment	Cum Total	To Upper	In Section			Cum Flow	Cum Flow	
			(m)	(ha)	(ha)	(min)	(min)	mm/hr	m^3/ha*day	(m^3/d)	(m^3/s)	(m^3/s)
1	**Area 1**	**Easm't.**	**N/A**	**1.086**	**1.086**	**10.00**	**N/A**	**84**	**42348**	**14517.4**	**0.1680**	**0.1680**
Roof	-	-	-	0.245	-	-	-	-	19157.5	4693.6	-	-
Paved	-	-	-	0.426	-	-	-	-	18149.2	7731.6	-	-
Grass	-	-	-	0.415	-	-	-	-	5041.4	2092.2	-	-

Run-off Coefficients Used:

Roof Structure	C =	0.95
Paved Surface	C =	0.90
Grass Surface	C =	0.25

Velocity Range:

Minimum Velocity = 0.80 m/s
Maximum Velocity = 6.00 m/s

Time of Concentration:

Time of Concentration = 10 min

4999 Victoria Avenue
Niagara Falls, ON L2E 4C9

745 South Service Road, Unit 205
Stoney Creek, ON L8E 5Z2

Valley Way Stacked Townhouses
Exhibit #3 - Post-Development Sanitary Sewer Design

2025-11-12
Job: 250208

Niagara Falls

manning's n = 0.013 PVC Pipe
0.013 Conc Pipe
0.024 Corr. Stl Pipe

Location			Length	INDIVIDUAL		CUMULATIVE		M	Q (p)	Q (i)	Q	Sewer Design			
Pipe	From Node	To Node		Resid'l Populat'n	Resid'l Area	Resid'l Populat'n	Resid'l Area					Slope	Capacity Full	Velocity Full	Dia- meter
			(m)		(ha)		(ha)		(L/s)	(L/s)	(L/s)	(m/m)	(L/s)	(m/s)	(m)
1	Area. 1	Easm't.	N/A	396	1.086	396	1.086	4.50	9.281	0.304	9.585	0.0100	32.798	1.044	0.200

Calculations:

M = domestic peaking factor — $M = \frac{5}{P_r^{0.2}}$ where P=population in 1000's; Min M=2.0 and Max M=4.5

Q (p) = peak population flow (L/s) — $Q(p) = \frac{P_r * q_r * M}{86.4}$ where P=population and A=area in 1000's

Q (i) = peak extraneous flow (L/s) — $Q(i) = I * A_r$ (L/s) where A = area in hectares

Q = peak design flow (L/s) — $Q = Q(p)+Q(i)$ (L/s)

q_d = domestic sewage flow 450 L/cap.d — P_r = residential population

I = infiltration allowance 0.280 L/ha.s — A_r = residential area (hectares)

Velocity Range:

Minimum Velocity = 0.60 m/s

Maximum Velocity = 3.00 m/s

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745 South Service Road, Unit 205
Stoney Creek, ON L8E 5Z2

Valley Way Stacked Townhouses
Exhibit #4 - Water Demand Design

Roughness Coefficient = 100 for 100mm & 150mm pipe
110 for 200mm & 250mm pipe

Location			Length	Pop.	Area	Area Type	Water Demand by			Fire Flow	Watermain Design						
Pipe	From Node	To Node					Average Day	Maximum Day	Peak Hour		Dia-meter	Dom. Head Loss	Domestic Pressure Loss		Fire & Dom. HL	Fire & Domestic Pressure Loss	
			(m)		(ha)		m^3/day	m^3/day	L/s	(L/s)	(m)	(m)	(kPa)	(psi)	(m)	(kPa)	(psi)
1	FH 1	Street	60.0	396	1.086	Residential	178.2	573.1	9.95	266.67	0.200	0.052	0.51	0.07	24.659	241.66	35.05
2	Area. 1	FH 1	140.0	396	1.086	Residential	178.2	573.1	9.95	0.00	0.100	4.230	41.46	6.01	0.000	0.00	0.00

Calculations:

Avg Daily Water Demand (Domestic)	0.450 m^3/cap./day	Max Day Factor	3.22
Fluid Specific Weight	9.8 kN/m^3	Max Hourly Peaking Factor	4.82

Valley Way Stacked Townhouses
Exhibit #5 - Fire Water Demand
Townhouse Block A

FIRE WATER SUPPLY

Building Type: No Fire Protection

Floor Area		Reduct.	
First Floor	371.8 m^2	1.00	371.8 m^2
Second Floor	371.8 m^2	1.00	371.8 m^2
Third Floor	371.8 m^2	1.00	371.8 m^2
			1115.4 m^2

Construction Type: Wood Frame Construction

Construction Coefficient: 1.5

1st Preliminary Fire Flow = 11000 L/min

Fire Hazard: Limited Combustible

Fire Hazard Factor: -0.15

Net Decrease = -1650 L/min

2nd Preliminary Fire Flow = 9350 L/min

Sprinkler System: No System

Sprinkler System Factor: 0.0

No Change = 0 L/min

Separation Factor

North	10.7 m	0.15
South	42.0 m	0.05
West	31.9 m	0.05
East	3.0 m	0.25
		0.50

Net Increase = 4675 L/min

FINAL FIRE FLOW = 14000.0 L/min

Minimum Water Supply Flow Rate for Fire Protection as determined by the Water Supply For Public Fire Protection, dated 2020, by the Fire Underwriter's Survey

Valley Way Stacked Townhouses
Exhibit #6 - Fire Water Demand
Townhouse Block B

FIRE WATER SUPPLY

Building Type: No Fire Protection

Floor Area		Reduct.	
First Floor	371.8 m^2	1.00	371.8 m^2
Second Floor	371.8 m^2	1.00	371.8 m^2
Third Floor	371.8 m^2	1.00	371.8 m^2
			1115.4 m^2

Construction Type: Wood Frame Construction

Construction Coefficient: 1.5

1st Preliminary Fire Flow = 11000 L/min

Fire Hazard: Limited Combustible

Fire Hazard Factor: -0.15

Net Decrease = -1650 L/min

2nd Preliminary Fire Flow = 9350 L/min

Sprinkler System: No System

Sprinkler System Factor: 0.0

No Change = 0 L/min

Separation Factor

North	36.2 m	0.05
South	42.0 m	0.05
West	3.0 m	0.25
East	18.7 m	0.15
		0.50

Net Increase = 4675 L/min

FINAL FIRE FLOW = 14000.0 L/min

Minimum Water Supply Flow Rate for Fire Protection as determined by the Water Supply For Public Fire Protection, dated 2020, by the Fire Underwriter's Survey

Valley Way Stacked Townhouses
Exhibit #7 - Fire Water Demand
Townhouse Block C

FIRE WATER SUPPLY

Building Type: No Fire Protection

Floor Area		Reduct.	
First Floor	444.5 m^2	1.00	444.5 m^2
Second Floor	444.5 m^2	1.00	444.5 m^2
Third Floor	444.5 m^2	1.00	444.5 m^2
			1333.4 m^2

Construction Type: Wood Frame Construction

Construction Coefficient: 1.5

1st Preliminary Fire Flow = 12000 L/min

Fire Hazard: Limited Combustible

Fire Hazard Factor: -0.15

Net Decrease = -1800 L/min

2nd Preliminary Fire Flow = 10200 L/min

Sprinkler System: No System

Sprinkler System Factor: 0.0

No Change = 0 L/min

Separation Factor

North	42 m	0.05
South	14.3 m	0.15
West	5.0 m	0.20
East	10.9 m	0.15
		0.55

Net Increase = 5610 L/min

FINAL FIRE FLOW = 16000.0 L/min

Minimum Water Supply Flow Rate for Fire Protection as determined by the Water Supply For Public Fire Protection, dated 2020, by the Fire Underwriter's Survey

Valley Way Stacked Townhouses
Exhibit #8 - Fire Water Demand
Townhouse Block D

2025-11-12
Job: 250208

FIRE WATER SUPPLY

Building Type: No Fire Protection

Floor Area		Reduct.	
First Floor	446.1 m^2	1.00	446.1 m^2
Second Floor	446.1 m^2	1.00	446.1 m^2
Third Floor	446.1 m^2	1.00	446.1 m^2
			1338.2 m^2

Construction Type: Wood Frame Construction

Construction Coefficient: 1.5

1st Preliminary Fire Flow = 12000 L/min

Fire Hazard: Limited Combustible

Fire Hazard Factor: -0.15

Net Decrease = -1800 L/min

2nd Preliminary Fire Flow = 10200 L/min

Sprinkler System: No System

Sprinkler System Factor: 0.0

No Change = 0 L/min

Separation Factor

North	42 m	0.05
South	18.2 m	0.15
West	19.8 m	0.15
East	5.0 m	0.20
		0.55

Net Increase = 5610 L/min

FINAL FIRE FLOW = 16000.0 L/min

Minimum Water Supply Flow Rate for Fire Protection as determined by the Water Supply For Public Fire Protection, dated 2020, by the Fire Underwriter's Survey

FIRE WATER SUPPLY

Building Type: No Fire Protection

Floor Area		Reduct.	
First Floor	445.9 m^2	1.00	445.9 m^2
Second Floor	445.9 m^2	1.00	445.9 m^2
Third Floor	445.9 m^2	1.00	445.9 m^2
			1337.7 m^2

Construction Type: Wood Frame Construction

Construction Coefficient: 1.5

1st Preliminary Fire Flow = 12000 L/min

Fire Hazard: Limited Combustible

Fire Hazard Factor: -0.15

Net Decrease = -1800 L/min

2nd Preliminary Fire Flow = 10200 L/min

Sprinkler System: No System

Sprinkler System Factor: 0.0

No Change = 0 L/min

Separation Factor

North	8.6 m	0.20
South	20.1 m	0.10
West	23.0 m	0.10
East	19.8 m	0.15
		0.55

Net Increase = 5610 L/min

FINAL FIRE FLOW = 16000.0 L/min

Minimum Water Supply Flow Rate for Fire Protection as determined by the Water Supply For Public Fire Protection, dated 2020, by the Fire Underwriter's Survey

Valley Way Stacked Townhouses
Exhibit #10 - Fire Water Demand
Townhouse Block F

FIRE WATER SUPPLY

Building Type: No Fire Protection

Floor Area		Reduct.	
First Floor	371.8 m^2	1.00	371.8 m^2
Second Floor	371.8 m^2	1.00	371.8 m^2
Third Floor	371.8 m^2	1.00	371.8 m^2
			1115.4 m^2

Construction Type: Wood Frame Construction

Construction Coefficient: 1.5

1st Preliminary Fire Flow = 11000 L/min

Fire Hazard: Limited Combustible

Fire Hazard Factor: -0.15

Net Decrease = -1650 L/min

2nd Preliminary Fire Flow = 9350 L/min

Sprinkler System: No System

Sprinkler System Factor: 0.0

No Change = 0 L/min

Separation Factor

North	10.9 m	0.15
South	8.6 m	0.20
West	13.6 m	0.15
East	31.9 m	0.05
		0.55

Net Increase = 5142.5 L/min

FINAL FIRE FLOW = 14000.0 L/min

Minimum Water Supply Flow Rate for Fire Protection as determined by the Water Supply For Public Fire Protection, dated 2020, by the Fire Underwriter's Survey