Report
Project: 147743-6.4.3

4816 BANK STREET
SERVICING BRIEF

Prepared for Phoenix Homes
by ARCADIS

June 2026

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1 INTRODUCTION

4816 Bank Street is located near the South-West intersection of Bank Street and Miikana Road in Ottawa, Ontario. This site is partially severed by the existing commercial property at 4810 Bank Street to the North, an existing residential property at 4806-4820 Bank Street to the South and abuts Findlay Creek subdivision to the West, Miikana Road to the North, Bank Street to the East and undeveloped land to the South. Vehicle access to the site will be provided on Miikana Road. Pedestrian access will be provided from Miikana Road, the existing asphalt pathway connecting to Cedar Creek Drive and to Bank Street post-road widening works. A parkette is proposed between Miikana Road and the residential lands on what was previously a city ROW parcel. There is also potential for a future 24-unit residential building on the southeast corner of the site pending land acquisition, which has been taken into account for the proposed design. Arcadis Professional Services (Canada) Inc. (formerly IBI Group) has been retained by Phoenix Homes to provide professional engineering services for 4816 Bank Street. The subject site is approximately 2.64 ha and consists of 132 apartment units, 24 back-to-back 3-storey townhomes and 72 3-story apartment buildings to be completed in one phase. Refer to key plan on **Figure 1.1** for Site location.

Figure 1.1 Site Location



The proposed servicing design conforms to current City of Ottawa and MECP design criteria.

1.1 Guidelines and Standards

This evaluation takes into consideration the City of Ottawa Sewer Design Guidelines (OSDG) (October 2012), and the February 2014 Technical Bulletin ISDTB-2014-01, the September 2016 Technical Bulletin PIEDTB-2016-01, the June 2018 Technical Bulletin ISTB-2018-04, October 2019 Technical Bulletin 2019-01, and the July Technical Bulletin 2019-02.

It also considers the City of Ottawa Water Distribution Design Guidelines (OWDDG), and the 2010 Technical Bulletin 2010-02, the 2014 Technical Bulletin 2014-02, the 2018 Technical Bulletin 2018-02 and the 2020 Technical Bulletin 2020-02.

All specifications are as per current City of Ottawa standards and specifications, and Province of Ontario (OPSS/D) standards, specifications and drawings.

1.2 Pre-Consultation Meeting

The City of Ottawa hosted a pre-consultation meeting on October 30th, 2024. There were no major engineering concerns flagged in this meeting.

1.3 Geotechnical Concerns

A geotechnical report entitled “Geotechnical Investigation – Proposed Residential Development – 4816 Bank Street – Ottawa, Ontario” Report PG7169-1 dated July 2, 2024 by Paterson Group Inc. has been prepared for the subject site.

The objective of the investigation report include:

- Determination of the subsoil and groundwater conditions;
- Provision of geotechnical recommendations pertaining to the design and development of the subject site including construction considerations.

Among other items, the report comments on the following:

- Site grading;
- Foundation design;
- Pavement structure;
- Infrastructure construction;
- Groundwater control;

The report concludes that the subject site is considered suitable for the proposed development.

2 WATER DISTRIBUTION

2.1 Existing Conditions

4816 Bank Street will be serviced with potable water from the City of Ottawa's existing watermains. There is an existing 203 mm diameter PVC watermain on Miikana Road and a 406mm diameter ductile iron watermain on Bank Street.

2.2 Design Criteria

2.2.1 Water Demands

The proposed development consists of 228 apartment units and 24 townhomes. In order to calculate water demand rates, the per unit population density and consumption rates are taken from Tables 4.1 and 4.2 of the Ottawa Design Guidelines – Water Distribution were used and are summarized as follows:

- Apartment 1.8 person per average apartment
- Townhouse 2.4 person per average townhome in Findlay Creek

- Average Day Demand 280 l/cap/day
- Peak Daily Demand 700 l/cap/day
- Peak Hour Demand 1,540 l/cap/day

A water demand calculation sheet is included in **Appendix B** and the total water demands are summarized as follows:

- Average Day 1.52 l/s
- Maximum Day 3.79 l/s
- Peak Hour 8.34 l/s

2.2.2 System Pressures

The 2010 City of Ottawa Water Distribution Guidelines states that the preferred practice for the design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 552 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi).
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 150 kPa (21 psi) during a fire flow event.

Maximum Pressure	Maximum pressure at any point in the distribution system in unoccupied areas shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code the maximum pressure should not exceed 552 kPa (80 psi) in occupied areas. Pressure reduction controls may be required for buildings when it is not possible/feasible to maintain the system pressure below 552 kPa.

2.2.3 Fire Flow Rate

The Fire Underwriters Survey was used to determine the fireflow for the site. The calculations result in a fire flow of 13,000 L/min (216.7 L/s) based on wood frame building construction. A copy of the FUS calculation is included in **Appendix B**.

2.2.4 Boundary Conditions

The City of Ottawa has provided a hydraulic boundary condition at the connection locations off Miikana Road and Bank Street. The boundary conditions were provided for a slightly smaller proposed population and a slightly higher fire flow. The differences are minor, however updated boundary conditions will be sought should the city request. A copy of the boundary condition received September 26, 2024 is included in **Appendix B** and is summarized as follows:

BOUNDARY CONDITIONS		
SCENARIO	Connection 1 HGL (m)	Connection 2 HGL (m)
Existing Condition (Pre-SUC Pressure Zone Reconfiguration)		
Average Day	154.6	154.6
Peak Hour	143.4	143.4
Max Day + Fire Flow (250.0 l/s)	113.8	119.2
Future Condition (Post-SUC Pressure Zone Reconfiguration)		
Average Day	147.3	147.3
Peak Hour	144.9	144.9
Max Day + Fire Flow (250.0 l/s)	132.0	137.1

2.3 Proposed Water Plan

The site will be serviced by a connection to the existing 200 mm watermain on Miikana Road and 400 mm watermain on Bank Street. There are four hydrants proposed on site. Boundary conditions were received for both Pre- and Post-SUC Pressure Zone Reconfigurations. Since the Existing Pre-SUC conditions are more restrictive, it will be this data set considered for the proposed design.

A computer model has been created for the subject site using the InfoWater 12.4 program. The model includes the hydraulic boundary condition and the existing mains on Miikana Road and Bank Street. The hydraulic model was run under basic day, maximum day with fire flows and under peak hour conditions, watermains are sized to provide sufficient pressure and to deliver the required fire flow. Proposed watermains on site are a mixture of 300mm, 200mm, 150mm, and 50mm diameter in order to provide the required pressures. Results of the hydraulic analysis for the site is included in **Appendix B** and is summarized as follows:

SCENARIO	Pressure (kPa)
Basic Day (Max HGL) Pressure (kPa)	560.5-584.5
Maximum Day plus Fire Flow Design Fire Flow of 15,000 l/min @ 150 kPa (kPa)	168.6-222.6
Peak Hour Pressure (kPa)	450.6-474.8

A comparison of the results and design criteria is summarized as follows:

Maximum Pressure	Under Basic Day all nodes have pressure that exceeds 552 kPa (80 psi), therefore pressure reducing control is required for the buildings. There is no area where the pressure exceeds the maximum level of 689 kPa (100 psi) in unoccupied areas.
Minimum Pressure	The lowest minimum pressure during peak hour conditions is 454.6 kPa which exceeds the minimum 276 kPa (40 psi) requirement.
Fire Flow	The minimum design fireflow under maximum day conditions with minimum system pressure of 150 kPa (21psi) is 404.3 l/s which exceeds the requirement of 250.0 l/s.

3 WASTEWATER

3.1 Existing Conditions

The proposed site at 4816 Bank Street is located within the City of Ottawa where sanitary flows ultimately to the pumping station on Findlay Creek Drive. There is an existing 200mm sanitary sewer bulkhead (SAN80974) in Miikana Road adjacent to the subject site. The bulkhead was previously installed as part of Findlay Creek Phase Stage 2 Phase 4C in anticipation of development on the subject site. The sanitary sewer in Miikana is directed through the various Findlay Creek subdivision phases, then through Findlay Creek Drive to the pumping station located to the North of the commercial property at Findlay Creek Drive and Bank Street.

3.2 Proposed Sewers

All on-site sewers have been designed to City of Ottawa and MECP design criteria which include but are not limited to the below listed criteria. The detailed sanitary sewer design sheet which is included in **Appendix C** illustrates the population densities and sewers which provide the necessary outlets. The design wastewater criteria for this analysis area:

3.2.1 Design Flow:

Average Residential Flow	-	280 l/cap/day
Peak Residential Factor	-	Modified Harmon Formula
Infiltration Allowance	-	0.33 l/sec/Ha
Minimum Pipe Size	-	200mm diameter

3.2.2 Population Density:

Apartments	-	1.8 people per unit
Townhouse/Semi-Detached	-	2.4 people per unit
Single Family Home	-	3.2 people per unit

4 SITE STORMWATER MANAGEMENT

4.1 Existing Conditions

The subject site is currently undeveloped with no known stormwater management control measures. Stormwater currently flows overland to the existing road-side ditch on Bank Street.

An existing 825mm storm sewer bulkhead (STM108254) is located in Miikana Road connecting to Findlay Creek Stage 2 Phase 4C. This bulkhead was designed and installed in anticipation of this proposed site plan.

4.2 Design Criteria

The stormwater system for the subdivision was designed following the principles of dual drainage, making accommodations for both major and minor flow.

Some of the key criteria include the following:

- Design Storm — 1:2-year return (Ottawa)
- Rational Method Sewer Sizing
- Initial Time of Concentration — 10 minutes
- Runoff Coefficients
  - Softscape Areas — C = 0.20
  - Hardscape Areas — C = 0.90
- Pipe Velocities — 0.80 m/s to 3.0 m/s
- Minimum Pipe Size — 250 mm diameter

4.3 Stormwater Management

The subject site is identified on the City of Ottawa's official Plan (OP) Schedule C15, classified as lands within the urban boundary and is subject to development. This site is designed the have minimal impact on adjacent properties grading, drainage, access, circulation, and privacy. This will be achieved by means of Water Quantity Controls.

4.3.1 Water Quantity Control

Per the IBI Group Design Brief Report 34249 Findlay Creek Village Stage 2 Phase 4C, the subject site will be limited to a maximum minor system release rate of 629.00 L/s during a 5-year storm and 707.00 L/s during a 100-year storm (see excerpt of design brief and storm drainage plan in **Appendix D**). This will be achieved through a combination of inlet control devices (ICD's), underground storage and surface storage where possible.

Surface flows in excess of the site's allowable release rate will be stored on site and gradually released into the minor system to respect the site's allowable release rate. The surface flows and ponding allocated to this site plan are shown in the ponding plan located in **Appendix D** and grading plan located in **Appendix E**.

Along the perimeter of the site, the opportunity to capture and store runoff is limited due to grading constraints and building geometry. These areas will discharge uncontrolled to Bank Street and a very minor area at the parkette flowing to Miikana Road. These areas are located at the perimeter of the site where it is necessary to tie into public boulevards and adjacent properties or in areas where ponding stormwater is undesirable.

Based on the proposed site plan, the total uncontrolled area has been calculated to be 0.11 Ha. The runoff calculations for these uncontrolled areas have been calculated and provided in **Appendix D**. For the detailed storm drainage area plan for the site, refer to Drawing 500 in **Appendix D**.

Due to the expected future widening of Bank Street along the East of the site, including future pedestrian infrastructure in the ROW, the area adjacent to Bank Street has been graded to anticipate future accessible pedestrian connections from the private site to Bank Street. Road widening grading plans were not provided as they are not advanced enough, however it was anticipated that ultimate grading in this area would be comparable to existing Bank Street asphalt grades.

Based on a 1:100-year event, the flow from the 0.11 Ha uncontrolled areas can be determined as:

$\mathbf{Q_{uncontrolled}}$ = **2.78** x $\mathbf{C_{100yr}}$ x $\mathbf{i_{100yr}}$ x **A** where:

C = Average runoff coefficient (100-year C-value, max 1.00)

$\mathbf{i_{100yr}}$ = Intensity of 100-year storm event (mm/hr)

= $1735.688 \times (T_c + 6.014)^{0.820}$ =178.56 mm/hr; where T_c = 10 minutes

A = Uncontrolled Area

Therefore, the uncontrolled release rates can be determined as:

$\mathbf{Q_{uncontrolled1}}$ = **2.78** x $\mathbf{C_{100yr}}$ x $\mathbf{i_{100yr}}$ x **A**
= 2.78 x 0.80 x 178.56 x 0.03
= 11.91 L/s

$\mathbf{Q_{uncontrolled2}}$ = **2.78** x $\mathbf{C_{100yr}}$ x $\mathbf{i_{100yr}}$ x **A**
= 2.78 x 0.4375 x 178.56 x 0.04
= 8.69 L/s

$\mathbf{Q_{uncontrolled3}}$ = **2.78** x $\mathbf{C_{100yr}}$ x $\mathbf{i_{100yr}}$ x **A**
= 2.78 x 0.8125 x 178.56 x 0.04
= 16.13 L/s

The Maximum allowable release rate from the site can be determined by subtracting the Uncontrolled release rate from the minor system restricted flow rate.

$Q_{max} = Q_{restricted} - Q_{uncontrolled1} - Q_{uncontrolled2} - Q_{uncontrolled3}$

Q_{max} = 629.00 L/s – 11.91 L/s – 8.69 L/s – 16.13 L/s

Q_{max} = 592.27 L/s

Therefore, the total restricted flow rate through the minor system will be the design flow rate of **592.27 L/s**. This will be achieved using Inlet Control Devices. A summary of the ICD's, their corresponding storage requirements, storage availability, and associated drainage areas has been provided below.

Drainage Area	ICD Restricted Flow (L/s)	100 Year Storage Required (m3)	2 Yr Storage Required (m3)	Storage Provided
ECB4	6.00	2.10	0.00	0.51
CB9	24.00	28.45	0.00	42.39
CB10	23.00	26.85	0.00	33.11
CB17	33.00	22.86	0.00	9.39
CB11	20.00	23.29	0.00	37.17
CB12	52.00	15.57	0.00	15.77
CB14	30.00	10.29	0.00	6.10
CB15	12.00	2.47	0.00	6.94
CB13	17.00	16.47	0.00	17.05
CB16	39.50	5.25	0.00	5.37
CB19	9.00	5.21	0.00	5.37
CB20	11.50	5.16	0.00	5.37
CB6	6.00	2.00	0.00	8.27
CB1	13.50	15.20	0.00	37.58
CB7	41.00	48.91	0.00	99.40
CB8	23.50	27.12	0.00	25.24
CB4	34.50	29.84	0.00	37.17
CB5	70.00	28.59	0.00	17.05
TCB2	40.50	4.86	0.00	16.40
CB2	7.50	4.44	0.00	4.57
CB3	8.00	4.14	0.00	4.42
TOTAL	**521.50**	**329.07**	**0.00**	**434.64**

Detailed stormwater management calculations for the 2-year event, 100-year event, and stress test (100-year plus 20%) event can be found in **Appendix D**.

There will be no surface ponding for the 2-year storm event per the rational method calculations, noting that a minimum concentration time of 10 min was considered for 2-year ponding. A 0.3m freeboard from downstream high points/maximum ponding elevations to first floor building openings is maintained in all scenarios including emergency overflow conditions.

Refer to geotechnical report for information regarding foundation drainage. Foundation drainage systems are to be independent and connected to the storm service downstream of any stormwater management control device.

5 SEDIMENT AND EROSION CONTROL PLAN

5.1 General

During construction, existing stream and conveyance systems can be exposed to significant sediment loadings. Although construction is only a temporary situation, it is proposed to introduce a number of mitigative construction techniques to reduce unnecessary construction sediment loadings. These will include:

- groundwater in trench will be pumped into a filter mechanism prior to release to the environment;
- bulkhead barriers will be installed at the nearest downstream manhole in each sewer which connects to an existing downstream sewer;
- seepage barriers will be constructed in any temporary drainage ditches; and
- silt sacks will remain on open surface structure such as manholes and catchbasins until these structures are commissioned and put into use.

5.2 Trench Dewatering

During construction of municipal services, any trench dewatering using pumps will be discharged into a filter trap made up of geotextile filters and straw bales similar in design to the OPSD 219.240 Dewatering Trap. These will be constructed in a bowl shape with the fabric forming the bottom and the straw bales forming the sides. Any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filters as needed including sediment removal and disposal and material replacement as needed.

5.3 Bulkhead Barriers

At the first manhole constructed immediately upstream of an existing sewer, a ½ diameter bulkhead will be constructed over the lower half of the outletting sewer. This bulkhead will trap any sediment carrying flows, thus preventing any construction –related contamination of existing sewers. The bulkheads will be inspected and maintained including periodic sediment removal as needed.

5.4 Seepage Barriers

These barriers will consist of both the Light Duty Straw Bale Barrier as per OPSD 219.100 or the Light Duty Silt Fence Barrier as per OPSD 219.110 and will be installed in accordance with the sediment and erosion control drawing. The barriers are typically made of layers of straw bales or geotextile fabric staked in place. All seepage barriers will be inspected and maintained as needed.

5.5 Surface Structure Filters

All catchbasins, and to a lesser degree manholes, convey surface water to sewers. However, until the surrounding surface has been completed these structures will be covered to prevent sediment from entering the minor storm sewer system. Until rear yards are sodded or until streets are asphalted and curbed, all catchbasins and manholes will be equipped with geotextile filter socks. These will stay in place and be maintained during construction and build until it is appropriate to remove them.

6 CONCLUSIONS & RECOMMENDATIONS

6.1 Conclusions

This report and the accompanying working drawings clearly indicate that the proposed development meets the requirements of the stakeholder regulators, including the City of Ottawa. The proposed development is also in general conformance with the recommendations made by the 2019 Assessment of Adequacy and Pre-consultation Meeting Notes.

There is a reliable water supply available adjacent to the proposed development; a wastewater outlet is available adjacent to the site and local storm sewers have been installed adjacent to the site.

6.2 Recommendations

It is recommended that the regulators review this submission with an aim of providing the requisite approvals to permit the owners to proceed to the construction stage of the subject site.

Report prepared by:

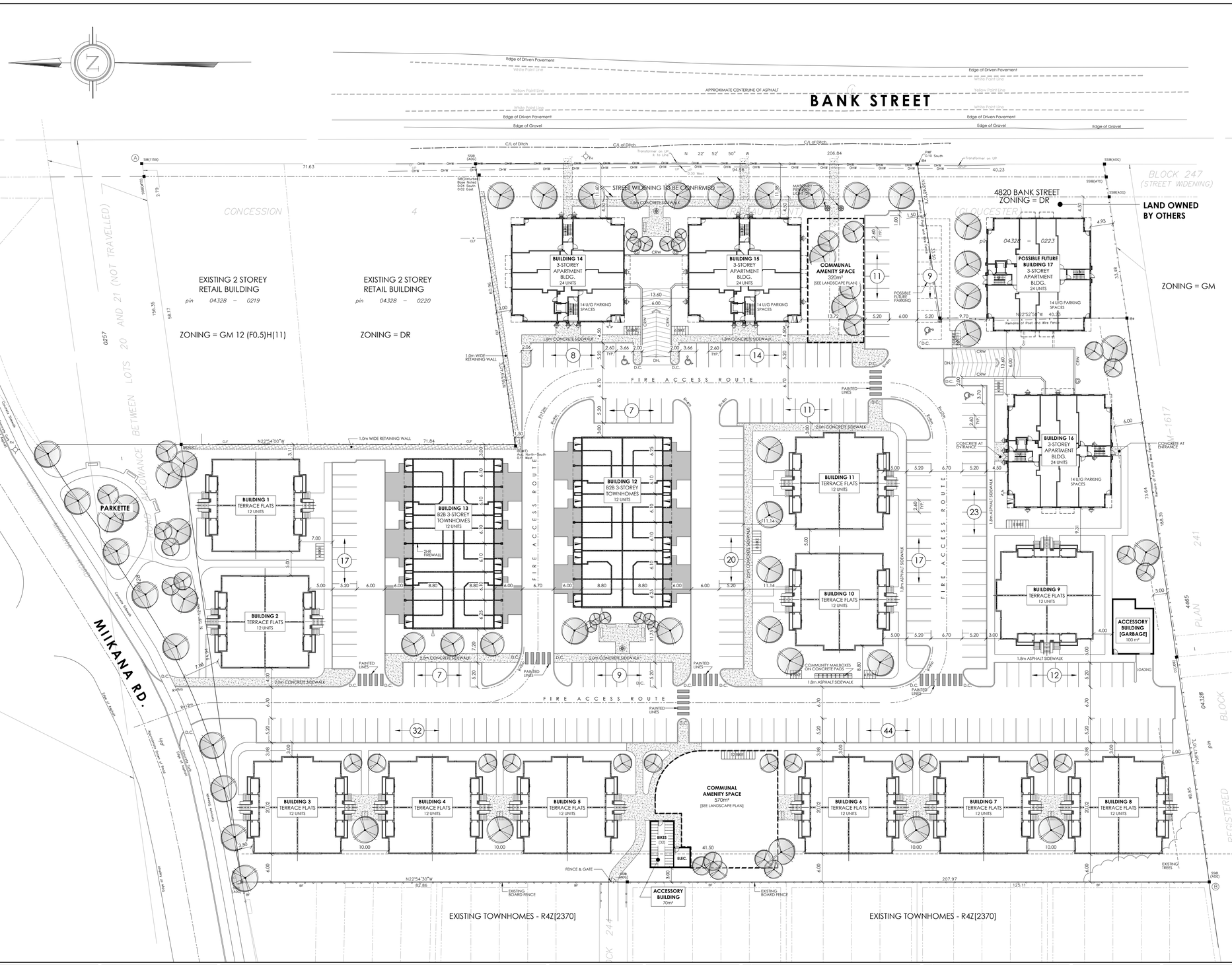
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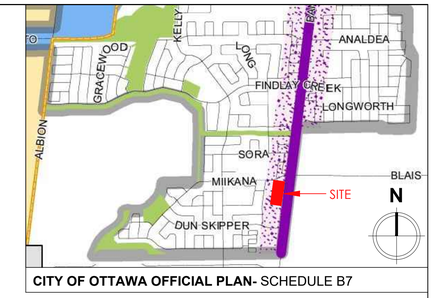


Samantha E. Labadie, P. Eng
Civil Engineer

Matt Anderson Petitpas
Engineering Technologist

Appendix A





SITE INFORMATION:

SITE AREA = 2.6352ha (6.51 Acres.) NOT INCLUDING 4820 BANK ST.
ZONING: DR

UNIT COUNTS:

		B/B TERRACE FLATS	B2B TOWNS	APARTMENTS	
BUILDING 1=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 2=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 3=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 4=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 5=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 6=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 7=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 8=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 9=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 10=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 11=	B2B STACKED TERRACE FLATS	12 UNITS			
BUILDING 12=	B2B 3-STOREY TOWNHOMES		12 UNITS		
BUILDING 13=	B2B 3-STOREY TOWNHOMES		12 UNITS		
BUILDING 14=	3-STOREY APARTMENT BUILDING			24 UNITS	
BUILDING 15=	3-STOREY APARTMENT BUILDING			24 UNITS	
BUILDING 16=	3-STOREY APARTMENT BUILDING			24 UNITS	
BUILDING 17=	3-STOREY APARTMENT BUILDING (POSSIBLE FUTURE)			24 UNITS	(NOT INCLUDED)
TOTAL =		132 UNITS	24 UNITS	72 UNITS	

TOTAL ALL UNITS = 228 UNITS
(NOT INCLUDING POSSIBLE FUTURE UNITS)

PARKING REQUIREMENTS: SCHEDULE 1A AREA 'C'

BUILDINGS 1-11 : B2B STACKED TERRACE HOMES [132 UNITS]
PARKING REQUIRED= 1.2/d.u. + 0.2/d.u. VISITORS = 158 + 26 = 184 SPACES
PARKING PROVIDED = 184 SPACES (SURFACE)
1.4 SPACES/ D.U.

BUILDINGS 12-13 : B2B 3-STOREY TOWNHOMES [24 UNITS]
PARKING REQUIRED= 1.0/d.u. + 0.2/d.u. VISITORS = 28 + 6 = 34 SPACES
PARKING PROVIDED = 48 SPACES (DRIVEWAY & GARAGE)

BUILDINGS 14-16 : 3-STOREY APARTMENT BUILDINGS [72 UNITS]
PARKING REQUIRED 1.2/d.u. + 0.2/d.u. VISITORS = 86 + 14 = 100 SPACES
PARKING PROVIDED = 90 SPACES (42 U/G + 48 SURFACE)
1.25 SPACES/ D.U.
(NOT INCLUDING POSSIBLE FUTURE)

ALL PARKING SPACES ARE 2.60m X 5.20m UNLESS NOTED OTHERWISE.
ALL BARRIER-FREE PARKING SPACES ARE 3.66m X 5.20m UNLESS NOTED OTHERWISE.

BICYCLE PARKING REQUIREMENTS:

BICYCLE PARKING REQUIRED= 0.5/d.u. x 204 d.u. = 102 SPACES
BICYCLE PARKING PROVIDED = 102 SPACES (32 INDOOR + 70 SURFACE)

ALL EXTERIOR BIKE SPACES ARE 0.60m X 1.80m HORIZONTAL w/ MIN. 1.50m ACCESS ISLE.
ALL INTERIOR BIKE SPACES ARE 0.50m X 1.50m VERTICAL w/ MIN. 1.50m ACCESS ISLE.
PROVIDE FIXED PARKING RACKS FOR ALL BIKE SPACES.

AMENITY SPACE REQUIREMENTS:

AMENITY SPACE REQUIRED = 6m²/ d.u. x 204 d.u. = 1,224m²
50% COMMUNAL AMENITY AREA REQUIRED = 612m²
COMMUNAL AMENITY AREA PROVIDED = 890m²
PRIVATE AMENITY AREA PROVIDED = 816m² (4m²/BALCONY/d.u.)
TOTAL AMENITY AREA PROVIDED = 1,706m²

SITE PLAN TO BE READ IN CONJUNCTION WITH:

- SITE SERVICING AND GRADING PLAN PREPARED BY:
- LANDSCAPING PLAN PREPARED BY: JAMES B. LENNOX AND ASSOCIATES INC.
- COMPOSITE UTILITY PLAN PREPARED BY:

LEGEND/ ABREVIATIONS:

D.C. DEPRESSED CURB
CRW CONCRETE RETAINING WALL
W.I. WROUGHT IRON
TWSI TACTILE WALKING SURFACE INDICATOR
CONC. CONCRETE
ASPH. ASPHALT
HYD. HYDRO [METER LOCATION]

GAS METERS LOCATION
WATER/ SANITARY CONNECTION
STORM CONNECTION
SIAMESE CONNECTIONS
FIRE HYDRANT
TWSI

LIGHT STANDARD
WALL MOUNTED LIGHT FIXTURE
POLE LIGHT
TRANSFORMER

SCALE 0 10m 30m 50m

SITE BOUNDARIES DERIVED FROM:
PLAN OF SURVEY OF

PART OF LOT 21
CONCESSION 4
(RIDEAU FRONT) (GLOUCESTER)
CITY OF OTTAWA
SURVEYED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
DATED: AUGUST 26, 2024.

M. David Blakely Architect Inc.
2200 Prince of Wales Dr. Suite 101 Ottawa, Ontario
Phone (613) 226-8811 Fax (613) 226-7942 k2E 6Z9

GENERAL NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS, ANY DISCREPANCY MUST BE REPORTED TO M. DAVID BLAKELY ARCHITECT INC.
2. ALL WORK AND MATERIALS TO BE IN COMPLIANCE WITH ALL CODES, REGULATIONS, & BY-LAWS
3. ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST THE PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE PLANS IN CONTRACT DOCUMENTS
4. DO NOT SCALE DRAWINGS.
5. THIS DRAWING SHALL NOT BE USED OR COPIED WITHOUT THE AUTHORIZATION OF THE ARCHITECT
6. THIS DRAWING SHALL NOT BE USED FOR PERMIT OR CONSTRUCTION UNLESS THE DRAWING BEARS THE ARCHITECT'S SEAL AND SIGNATURE

OWNER: PHOENIX HOMES, 18A BENTLEY AVE. OTTAWA, ON K2E 6T8 (613) 723-9227
ARCHITECT: M. DAVID BLAKELY ARCHITECT INC., 2200 PRINCE OF WALES DR., SUITE 101 OTTAWA, ON K2E 6Z9 (613) 226-8811
CIVIL ENGINEER: ARCADIS, 333 PRESTON STREET #400 OTTAWA, ON K1S 5N4 (613) 225-1311
LANDSCAPE ARCHITECT: JAMES B. LENNOX AND ASSOCIATES INC., 3332 CARLING AVE. NEPEAN, ON K2H 5A8 (613) 722-5168
SURVEYOR: ANNIS O'SULLIVAN VOLLEBEKK LTD., 14 CONCOURSE GATE, SUITE 500 NEPEAN, ON K2E 7S6 (613) 727-0850

SEAL

No.	DATE	DESCRIPTION	INIT.
12.			
11.			
10.			
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6.			
5.			
4.			
3.	16/07/25	REVISED AS PER CLIENT/ FOR REVIEW	MB
2.	28/01/25	REVISED AS PER CITY COMMENTS/ DCR PHOENIX	MB
1.	04/09/24	FOR REVIEW	KB

REVISIONS

No.	DATE	DESCRIPTION	INIT.
24.			
23.			
22.			
21.			
20.			
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REVISIONS

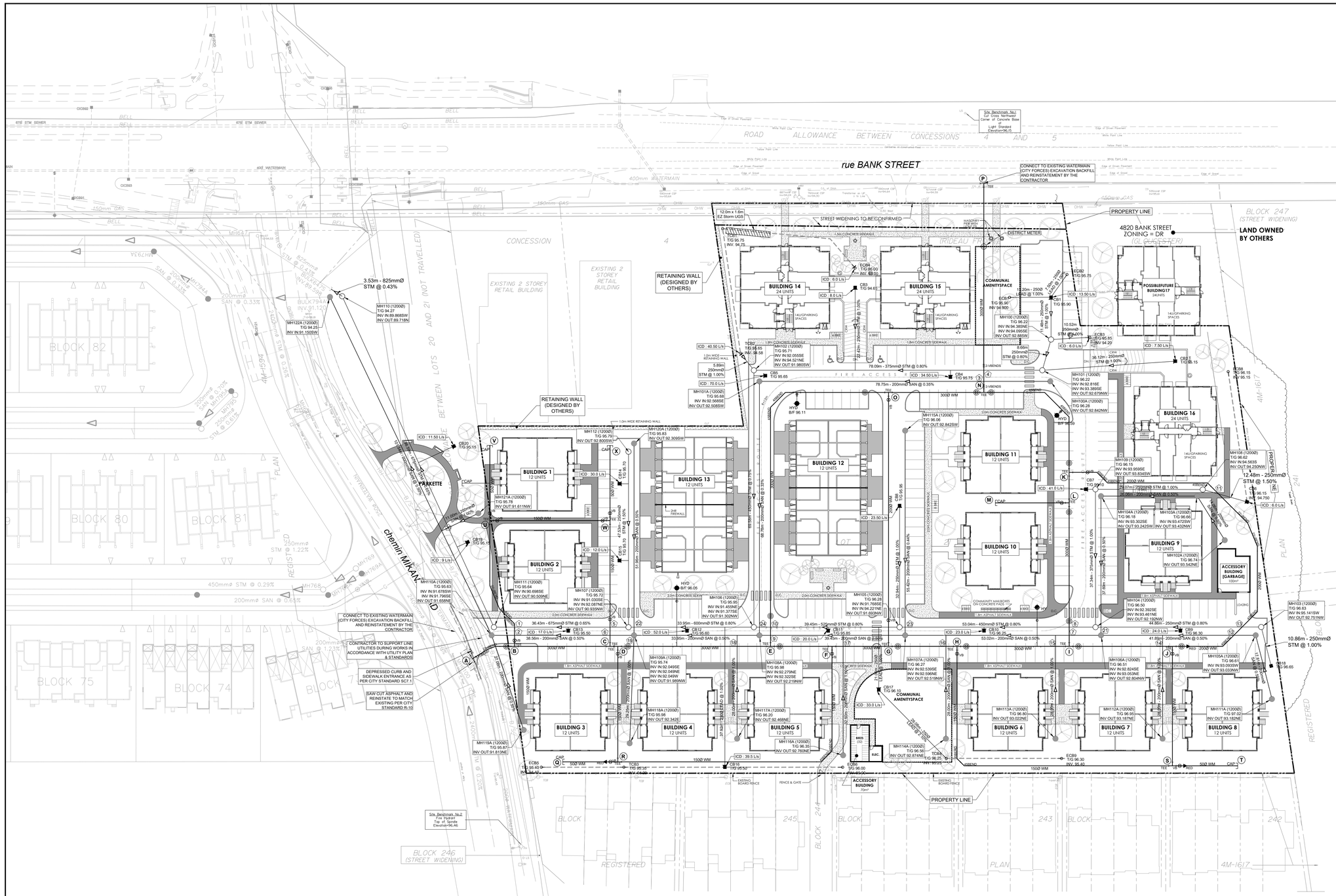
A - DETAIL NUMBER
B - SHEET NUMBER (DETAIL REQUIRED)
C - SHEET NUMBER (DETAIL LOCATION)

PROJECT: 4816 BANK STREET
PLANNED UNIT DEVELOPMENT
OTTAWA, ONTARIO

CLIENT: PHOENIX HOMES
18A Bentley Ave Ottawa, ON K2E 6T8

DRAWING TITLE: SITE PLAN

DATE: SEPT. 2024
SCALE: 1 : 400
DRAWN BY: KB
CHECKED: MDB
SHEET No.: SP1


rue BANK STREET
ROAD ALLOWANCE BETWEEN CONCESSIONS 4 AND 5
CONCESSION 4
BETWEEN LOTS 20 AND 21 (NOT TRAVELLED)
RETAINING WALL (DESIGNED BY OTHERS)
EXISTING 2 STOREY RETAIL BUILDING
EXISTING 2 STOREY RETAIL BUILDING
STREET WIDENING TO BE CONFIRMED
PROPERTY LINE
4820 BANK STREET
ZONING = DR
LAND OWNED BY OTHERS
BLOCK 247 (STREET WIDENING)
CONNECT TO EXISTING WATERMAIN (CITY FORCES) EXCAVATION BACKFILL AND REINSTATEMENT BY THE CONTRACTOR
12.0m x 1.6m EZ Storm UGS
DISTRICT METER
BUILDING 14 24 UNITS
BUILDING 15 24 UNITS
COMMUNAL AMENITYSPACE
POSSIBLEFUTURE BUILDING17 24UNITS
BUILDING 16 24 UNITS
BUILDING 1 12 UNITS
BUILDING 2 12 UNITS
BUILDING 13 12 UNITS
BUILDING 12 12 UNITS
BUILDING 11 12 UNITS
BUILDING 10 12 UNITS
BUILDING 9 12 UNITS
ACCESSORY BUILDING [GARBAGE] 100m²
BUILDING 3 12 UNITS
BUILDING 4 12 UNITS
BUILDING 5 12 UNITS
BUILDING 6 12 UNITS
BUILDING 7 12 UNITS
BUILDING 8 12 UNITS
COMMUNAL AMENITYSPACE
ACCESSORY BUILDING 70m²
PROPERTY LINE
PARKETTE
chemin MIKAN
3.53m - 825mmØ STM @ 0.43%
MH10 (1200Ø) T/G 94.27 INV IN:89.868SW INV OUT:89.718N
MH122A (1200Ø) T/G 94.25 INV IN:91.150SW
MH10A (1200Ø) T/G 95.63 INV IN:91.678SW INV IN:91.798SE INV OUT 91.658NE
MH119A (1200Ø) T/G 95.87 INV OUT 91.813NE
MH12 (1200Ø) T/G 95.79 INV OUT:92.800SW
MH120A (1200Ø) T/G 95.83 INV OUT:92.309SW
MH121A (1200Ø) T/G 95.78 INV OUT:91.611NW
MH11 (1200Ø) T/G 95.64 INV IN:90.698SE INV OUT 90.509NE
MH107 (1200Ø) T/G 95.72 INV IN:91.030SE INV IN:92.087NE INV OUT 90.935NW
MH106 (1200Ø) T/G 95.90 INV IN:91.455NE INV IN:91.377SE INV OUT:91.302NW
MH105 (1200Ø) T/G 96.28 INV IN:91.788E INV IN:94.221NE INV OUT:91.693NW
MH100 (1200Ø) T/G 96.22 INV IN:94.385NE INV IN:94.095SE INV OUT 92.856W
MH101 (1200Ø) T/G 96.22 INV IN:92.816E INV IN:93.385SE INV OUT:92.679NW
MH100A (1200Ø) T/G 96.28 INV OUT: 92.842NW
MH115A (1200Ø) T/G 96.06 INV OUT:92.842SW
MH108 (1200Ø) T/G 96.62 INV IN:94.563S INV OUT 94.250NW
MH109 (1200Ø) T/G 96.15 INV IN:93.959SE INV OUT 93.834SW
MH104A (1200Ø) T/G 96.18 INV IN:93.302SE INV OUT:93.242SW
MH103A (1200Ø) T/G 96.66 INV IN:93.472SW INV OUT:93.432NW
MH102A (1200Ø) T/G 96.74 INV OUT 93.542NE
MH104 (1200Ø) T/G 96.50 INV IN:92.392SE INV IN:93.461NE INV OUT:92.192NW
MH103 (1200Ø) T/G 96.49 INV IN:95.141SW INV OUT:92.751NW
MH102 (1200Ø) T/G 96.65
MH105A (1200Ø) T/G 96.98 INV IN:92.279NE INV IN:92.322SE INV OUT:92.219NW
MH108A (1200Ø) T/G 95.98 INV IN:92.049SE INV IN:92.049NE INV IN:92.049W INV OUT:91.969NW
MH107A (1200Ø) T/G 96.27 INV IN:92.539SE INV IN:92.556NE INV OUT:92.518NW
MH106A (1200Ø) T/G 96.51 INV IN:92.524SE INV IN:93.053NE INV OUT:92.804NW
MH105A (1200Ø) T/G 96.61 INV IN:93.093W INV OUT:93.033NW
MH118A (1200Ø) T/G 95.98 INV OUT:92.342E
MH117A (1200Ø) T/G 96.20 INV OUT:92.468NE
MH116A (1200Ø) T/G 96.35 INV OUT:92.760NE
MH113A (1200Ø) T/G 96.80 INV OUT:93.022NE
MH112A (1200Ø) T/G 96.95 INV OUT:93.187NE
MH111A (1200Ø) T/G 97.02 INV OUT:93.182NE
MH114A (1200Ø) T/G 96.56 INV OUT:92.874NE
MH101A (1200Ø) T/G 95.68 INV IN:92.568SE INV OUT:92.508SW
MH102 (1200Ø) T/G 95.71 INV IN:92.055SE INV IN:94.321NE INV OUT:91.980SW
78.09m - 375mmØ STM @ 0.80%
78.75m - 200mmØ SAN @ 0.35%
36.43m - 675mmØ STM @ 0.65%
38.56m - 200mmØ SAN @ 0.50%
33.95m - 600mmØ STM @ 0.80%
33.95m - 200mmØ SAN @ 0.50%
39.45m - 525mmØ STM @ 0.80%
39.45m - 200mmØ SAN @ 0.50%
53.04m - 450mmØ STM @ 0.80%
53.02m - 200mmØ SAN @ 0.50%
44.86m - 250mmØ STM @ 0.80%
41.86m - 200mmØ SAN @ 0.50%
12.48m - 250mmØ STM @ 1.50%
10.86m - 250mmØ STM @ 1.00%
CONTRACTOR TO SUPPORT LINE UTILITIES DURING WORKS IN ACCORDANCE WITH UTILITY PLAN & STANDARDS
DEPRESSED CURB AND SIDEWALK ENTRANCE AS PER CITY STANDARD SCF.1
SAW-CUT ASPHALT AND REINSTATE TO MATCH EXISTING PER CITY STANDARD R.-10
Site Benchmark No.1 Cut Cross Northwest Corner of Concrete Base Light Standard Elevation=96.75
Site Benchmark No.2 Fire Hydrant Top of Spindle Elevation=96.46
BLOCK 82
BLOCK 80
BLOCK 81
BLOCK 75
BLOCK 74
BLOCK 73
BLOCK 246 (STREET WIDENING)
BLOCK 245
BLOCK 244
BLOCK 243
BLOCK 242
REGISTERED PLAN 4M-1617
REGISTERED PLAN 4M-1594
REGISTERED PLAN 4M-1611
REGISTERED PLAN 4M-1612
REGISTERED PLAN 4M-1613
REGISTERED PLAN 4M-1614
REGISTERED PLAN 4M-1615
REGISTERED PLAN 4M-1616
REGISTERED PLAN 4M-1617
REGISTERED PLAN 241
REGISTERED PLAN 4M-1610
REGISTERED PLAN 4M-1609
REGISTERED PLAN 4M-1608
REGISTERED PLAN 4M-1607
REGISTERED PLAN 4M-1606
REGISTERED PLAN 4M-1605
REGISTERED PLAN 4M-1604
REGISTERED PLAN 4M-1603
REGISTERED PLAN 4M-1602
REGISTERED PLAN 4M-1601
REGISTERED PLAN 4M-1600
REGISTERED PLAN 4M-1599
REGISTERED PLAN 4M-1598
REGISTERED PLAN

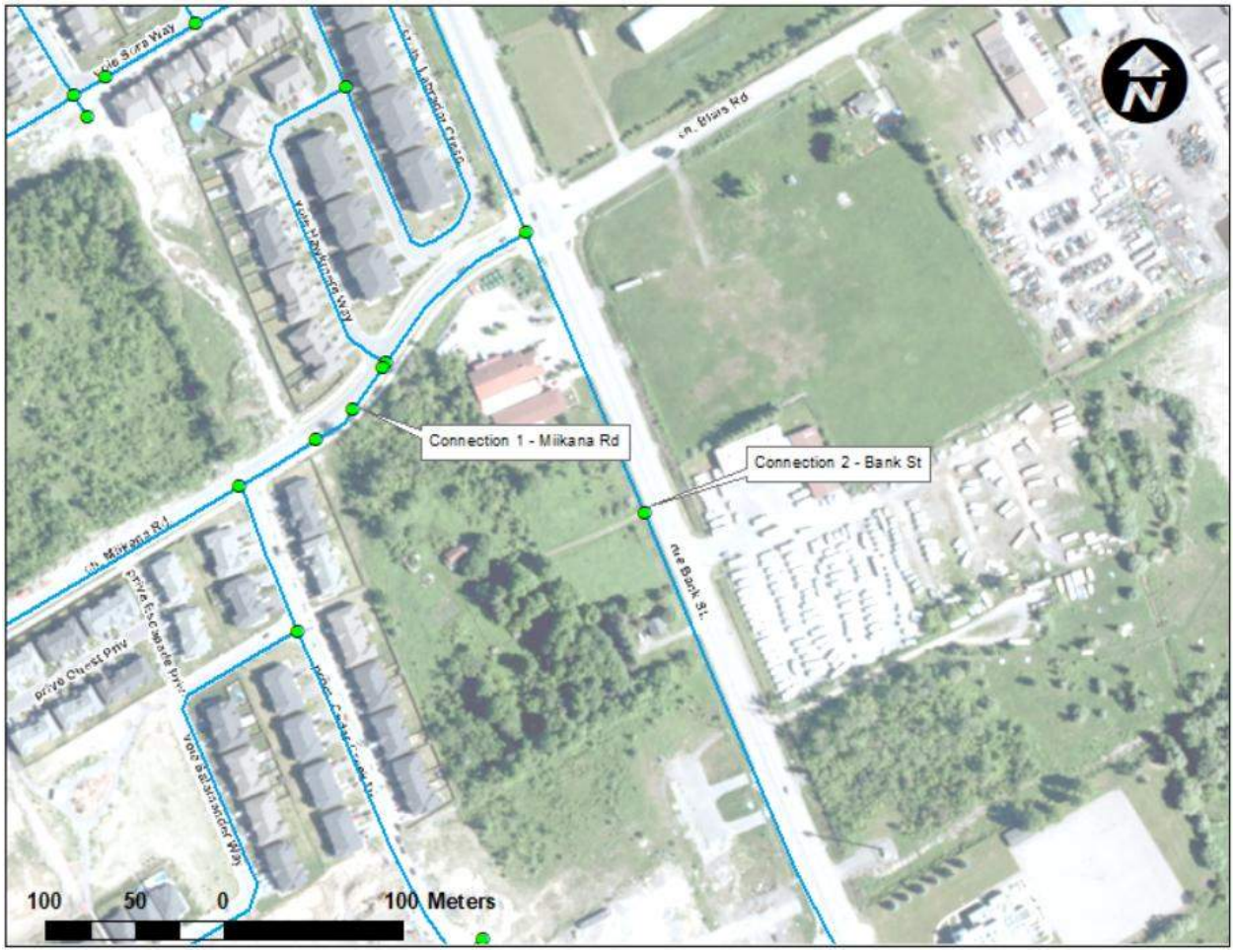
Appendix B

Boundary Conditions
4816 Bank St

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	74	1.23
Maximum Daily Demand	184	3.06
Peak Hour	404	6.74
Fire Flow Demand #1	15,000	250.00

Location



Results

Existing Condition (Pre- SUC Pressure Zone Reconfiguration)

Connection 1 - Miikana Rd

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	154.6	85.1
Peak Hour	143.4	69.1
Max Day plus Fire Flow 1	113.8	27.0
[1] Ground Elevation =	94.8	m

Connection 2 - Bank St

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	154.6	82.4
Peak Hour	143.4	66.4
Max Day plus Fire Flow 1	119.2	32.1
[1] Ground Elevation =	96.7	m

Future Condition (Post- SUC Pressure Zone Reconfiguration)

Connection 1 - Miikana Rd

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.3	74.7
Peak Hour	144.9	71.2
Max Day plus Fire Flow 1	132.0	53.0
[1] Ground Elevation =	94.8	m

Connection 2 - Bank St

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.3	72.0
Peak Hour	144.8	68.4
Max Day plus Fire Flow 1	137.1	57.5
[1] Ground Elevation =	96.7	m

Notes

1. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
    - If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
    - Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.

2. Any connections to a watermain 400 mm or larger should be approved by Drinking Water Service as per the Water Design Guidelines.

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

ARCADIS IBI GROUP
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
arcadis.com

WATERMAIN DEMAND CALCULATION SHEET

WATERMAIN DEMAND CALCULATION SHEET

Sparta | DCR Phoenix
147743 -6.0 | Rev #3 | 2025-09-18
Prepared By: SL | Checked By: DY

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	SINGLE FAMILY UNITS	FREEHOLD TOWNHOUSE UNITS	STACKED MED DENSITY UNITS	POPULATION	INDUST. (ha)	COMM. (m2)	INSTIT. (pp)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
Residential		24	228	468.0				1.52		1.52	3.79		3.79	8.34		8.34	15,000

POPULATION DENSITY

Single Family	3.2	persons/unit
Townhouse	2.4	persons/unit
Medium Density	1.8	persons/unit

WATER DEMAND RATES

Residential	280	l/cap/day
Commercial Shopping Center	2,500	L/(1000m2)/day
Institutional	75	l/cap/day

PEAKING FACTORS

Maximum Daily		
Residential	2.5	x avg. day
Commercial	1.5	x avg. day
Maximum Hourly		
Residential	2.2	x avg. day
Commercial	1.8	x avg. day

FIRE DEMANDS

Single Family	
Semi Detached & Townhouse	15,000 l/min (250 l/s)
Medium Density	15,000 l/min (250 l/s)

ARCADIS PROFESSIONAL SERVICES (CANADA) INC.
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
arcadis.com

FIRE UNDERWRITERS SURVEY
Sparta | DCR Phoenix
147743 -6.0 | Rev #3 | 2025-09-18
Prepared By: SL | Checked By: DY

STEP	Contents	Description		Adjustment Factor		Result	
1	**Building 15** 3-storey residential **Total Effective Floor Area**	Floor Area	515	Floors	3	1545 **1545**	m2 m2
2	**Type of Construction**	**Type V** Wood Frame **Type III** Ordinary Construction **Type II** Noncombustible Construction **Type I** Fire Resistive Construction	1.5 1.0 0.8 0.6	Type V Wood Frame	1.5		
3	**Required Fire Flow**	RFF = 220C√A, rounded to nearest 1000 L/min				**13000**	L/min
4	**Occupancy and Contents**	Noncombustible Contents Limited Conbustible Contents Combustible Contents Free Burning Contents Rapid Burning Contents	-25% -15% 0% 15% 25%	Limited Conbustible Contents	-15%	-1950	L/min
	Fire Flow					**11050**	L/min
5	**Automatic Sprinkler Protection**	Automatic Sprinkler Conforming to NFPA 13 Standard Water Supply for both the system and Fire Department Hose Lines Fully Supervised System	-30% -10% -10%	No No No		0 0	L/min L/min
	Total Sprinkler Adjustment					**0**	L/min
6	**Exposure Adjustment**	Based on **Table 6** Exposure Adjustement Charges for Subject Building					
	North	Separation (m) Length X Height Factor (m.storeys) Construction Type	13.9 66 Type V	With unprotected opening	13%	1437	L/min
	South	Separation (m) Length X Height Factor (m.storeys) Construction Type	>30		0%	0	L/min
	East	Separation (m) Length X Height Factor (m.storeys) Construction Type	>30		0%	0	L/min
	West	Separation (m) Length X Height Factor (m.storeys) Construction Type	23.9 57 Type V	With unprotected opening	4%	442	L/min
	Total Exposure Adjustment					**1879**	L/min
7	**Total Required Fire Flow**					**12929**	L/min
		Rounded to Nearest 1000 L/min				**13000**	L/min
						217	L/s

Notes 1. Fire flow calculation are based on Fire Underwriters Survey version 2020.

2. If any vertical opening in the building are unprotected (e.g. interconnected floor spaces, elevators etc.), consider the two largest adjoining floor area plus 50% of all floors immediately above them up to a maximum of eight.

ARCADIS PROFESSIONAL SERVICES (CANADA) INC.
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Ottawa, Ontario K1S 5N4 Canada
arcadis.com

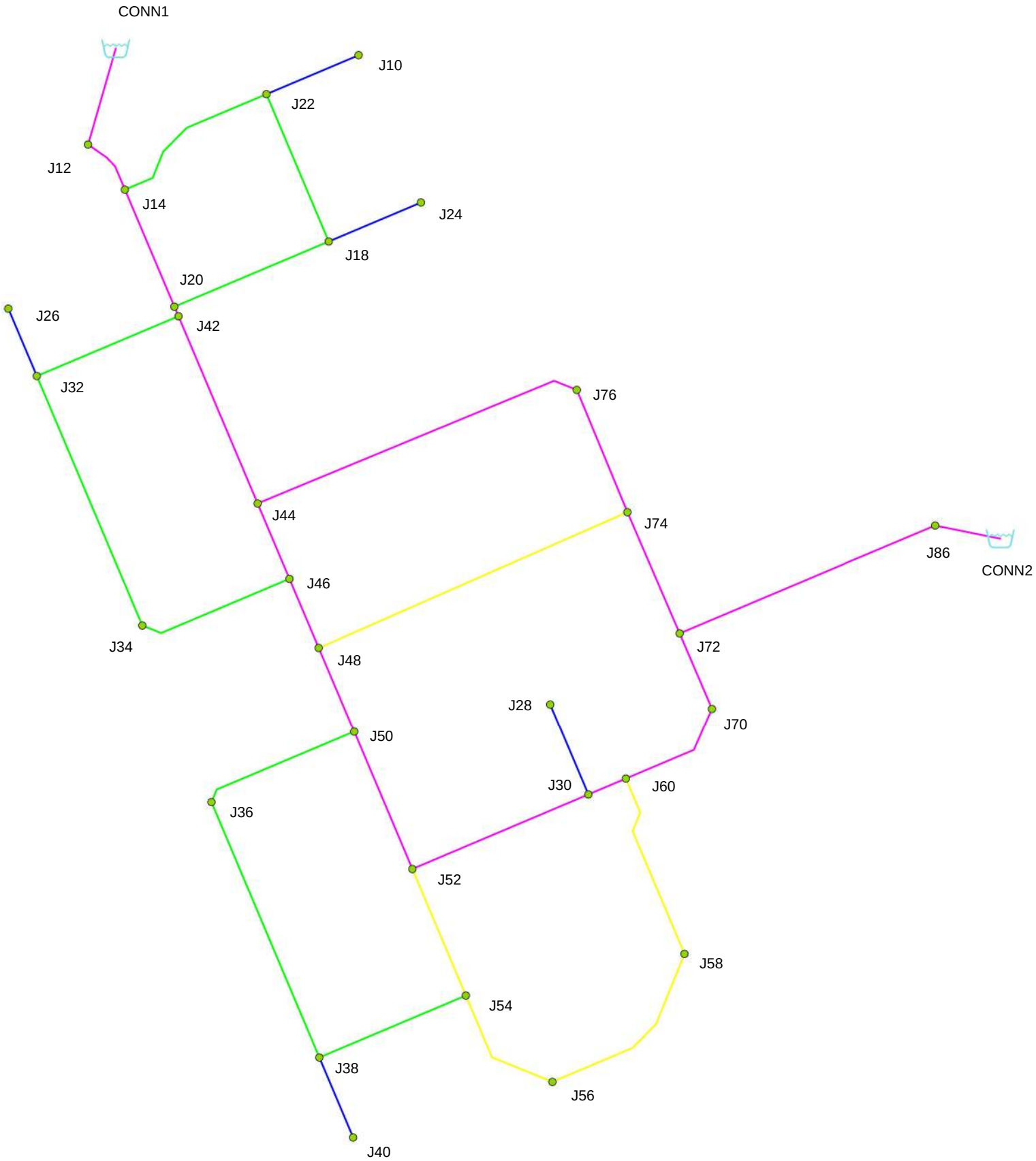
FIRE UNDERWRITERS SURVEY
Sparta | DCR Phoenix
147743 -6.0 | Rev #3 | 2025-09-18
Prepared By: SL | Checked By: DY

STEP	Contents	Description		Adjustment Factor		Result	
1	**Building 10** 3-storey residential **Total Effective Floor Area**	Floor Area	350	Floors	3	1050 **1050**	m2 m2
2	**Type of Construction**	**Type V** Wood Frame **Type III** Ordinary Construction **Type II** Noncombustible Construction **Type I** Fire Resistive Construction	1.5 1.0 0.8 0.6	Type V Wood Frame	1.5		
3	**Required Fire Flow**	RFF = 220C√A, rounded to nearest 1000 L/min				**11000**	L/min
4	**Occupancy and Contents**	Noncombustible Contents Limited Conbustible Contents Combustible Contents Free Burning Contents Rapid Burning Contents	-25% -15% 0% 15% 25%	Limited Conbustible Contents	-15%	-1650	L/min
	Fire Flow					**9350**	L/min
5	**Automatic Sprinkler Protection**	Automatic Sprinkler Conforming to NFPA 13 Standard Water Supply for both the system and Fire Department Hose Lines Fully Supervised System	-30% -10% -10%	No No No		0 0	L/min L/min
	Total Sprinkler Adjustment					**0**	L/min
6	**Exposure Adjustment**	Based on **Table 6** Exposure Adjustement Charges for Subject Building					
	North	Separation (m) Length X Height Factor (m.storeys) Construction Type	28.6 111 Type V	With unprotected opening	10%	935	L/min
	South	Separation (m) Length X Height Factor (m.storeys) Construction Type	24 57 Type V	With unprotected opening	4%	374	L/min
	East	Separation (m) Length X Height Factor (m.storeys) Construction Type	5.2 57 Type V	With unprotected opening	17%	1590	L/min
	West	Separation (m) Length X Height Factor (m.storeys) Construction Type	22.8 57 Type V	With unprotected opening	4%	374	L/min
	Total Exposure Adjustment					**3273**	L/min
7	**Total Required Fire Flow**					**12623**	L/min
		Rounded to Nearest 1000 L/min				**13000**	L/min
						217	L/s

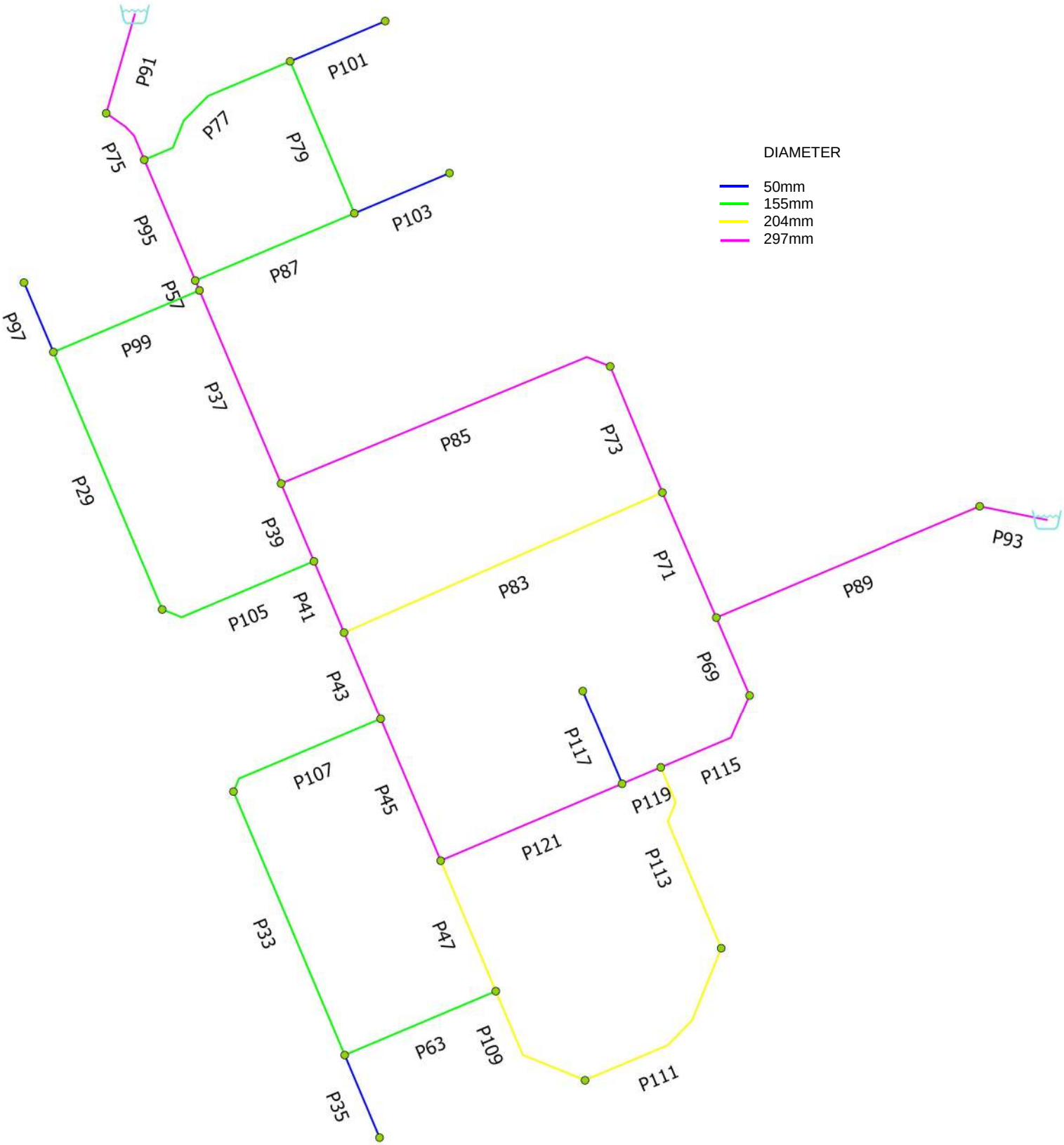
Notes 1. Fire flow calculation are based on Fire Underwriters Survey version 2020.

2. If any vertical opening in the building are unprotected (e.g. interconnected floor spaces, elevators etc.), consider the two largest adjoining floor area plus 50% of all floors immediately above them up to a maximum of eight.

NODE ID'S

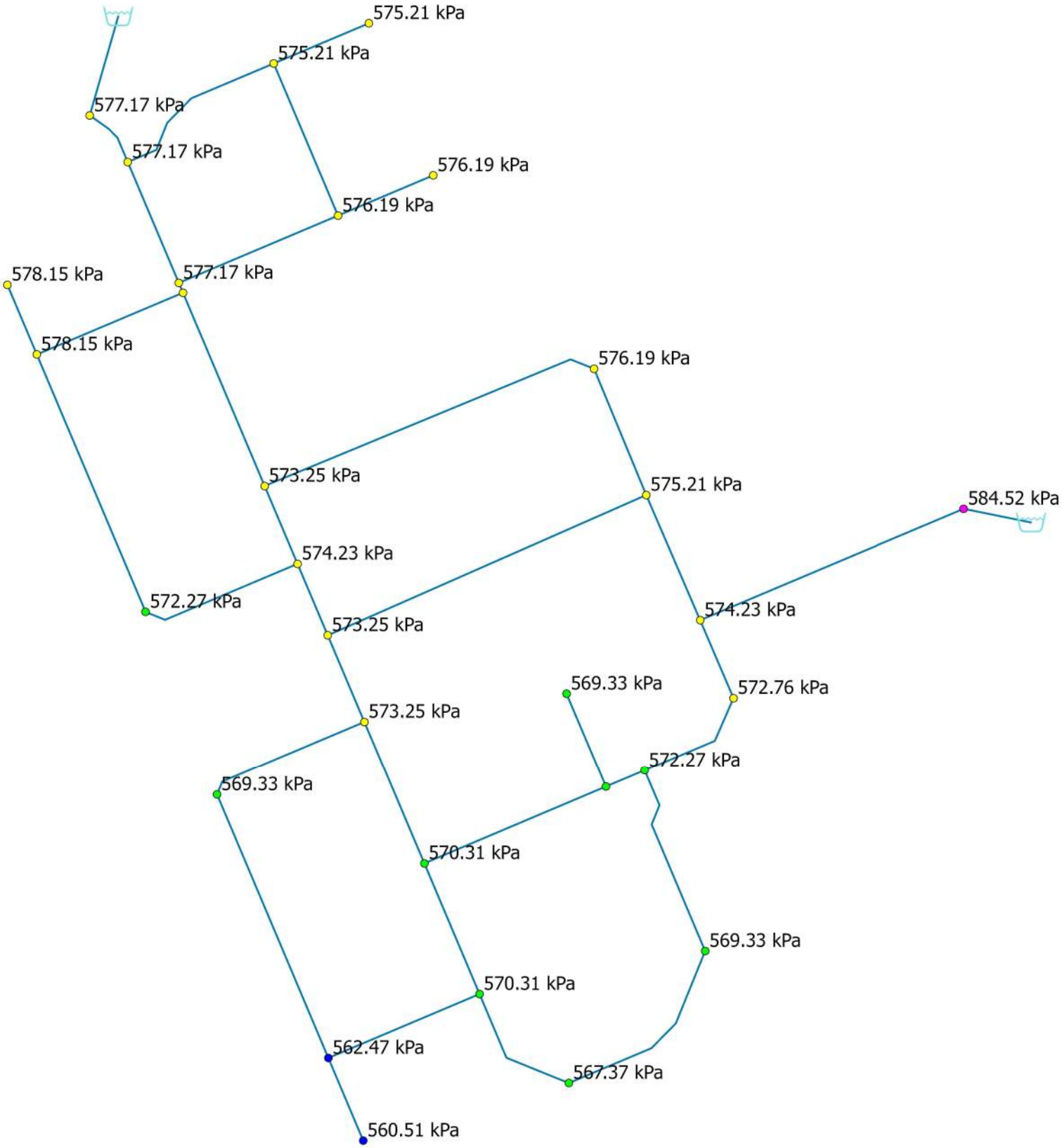

CONN1
J10
J22
J12
J14
J24
J18
J20
J26
J42
J32
J76
J44
J74
J86
CONN2
J46
J34
J72
J48
J28
J70
J50
J30
J60
J36
J52
J58
J54
J38
J56
J40

PIPE ID'S


DIAMETER
50mm
155mm
204mm
297mm
P91
P101
P77
P79
P75
P103
P95
P87
P57
P97
P99
P37
P85
P73
P29
P39
P93
P71
P83
P89
P105
P41
P43
P69
P117
P107
P45
P115
P119
P121
P113
P33
P47
P63
P109
P111
P35

Avg Day

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	☐	J10	0.00	95.90	154.60	575.21
2	☐	J12	0.00	95.70	154.60	577.17
3	☐	J14	0.00	95.70	154.60	577.17
4	☐	J18	0.09	95.80	154.60	576.19
5	☐	J20	0.00	95.70	154.60	577.17
6	☐	J22	0.05	95.90	154.60	575.21
7	☐	J24	0.00	95.80	154.60	576.19
8	☐	J26	0.05	95.60	154.60	578.15
9	☐	J28	0.00	96.50	154.60	569.33
10	☐	J30	0.00	96.20	154.60	572.27
11	☐	J32	0.09	95.60	154.60	578.15
12	☐	J34	0.09	96.20	154.60	572.27
13	☐	J36	0.09	96.50	154.60	569.33
14	☐	J38	0.05	97.20	154.60	562.47
15	☐	J40	0.05	97.40	154.60	560.51
16	☐	J42	0.00	95.70	154.60	577.17
17	☐	J44	0.05	96.10	154.60	573.25
18	☐	J46	0.00	96.00	154.60	574.23
19	☐	J48	0.07	96.10	154.60	573.25
20	☐	J50	0.00	96.10	154.60	573.25
21	☐	J52	0.00	96.40	154.60	570.31
22	☐	J54	0.02	96.40	154.60	570.31
23	☐	J56	0.05	96.70	154.60	567.37
24	☐	J58	0.02	96.50	154.60	569.33
25	☐	J60	0.19	96.20	154.60	572.27
26	☐	J70	0.14	96.15	154.60	572.76
27	☐	J72	0.16	96.00	154.60	574.23
28	☐	J74	0.02	95.90	154.60	575.21
29	☐	J76	0.19	95.80	154.60	576.19
30	☐	J86	0.00	94.95	154.60	584.52


575.21 kPa
575.21 kPa
577.17 kPa
577.17 kPa
576.19 kPa
576.19 kPa
578.15 kPa
577.17 kPa
578.15 kPa
576.19 kPa
573.25 kPa
575.21 kPa
584.52 kPa
574.23 kPa
572.27 kPa
573.25 kPa
574.23 kPa
569.33 kPa
572.76 kPa
573.25 kPa
572.27 kPa
569.33 kPa
570.31 kPa
569.33 kPa
570.31 kPa
562.47 kPa
567.37 kPa
560.51 kPa

Fire Flow - 15,000 L/min

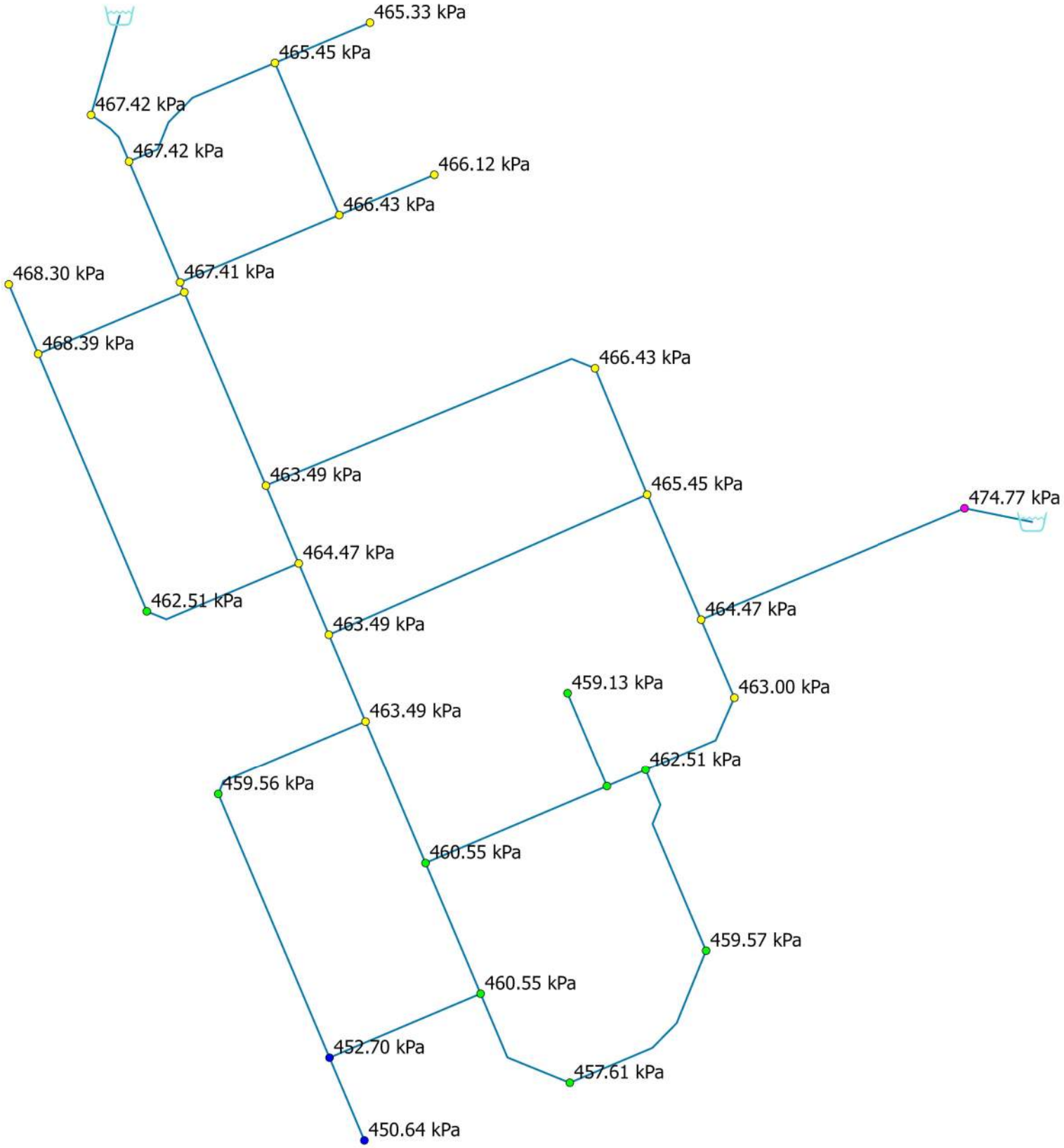
		ID	Static Demand (L/s)	Static Pressure (kPa)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (kPa)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (kPa)
1	☐	J12	0.00	182.79	114.35	250.00	177.06	731.16	149.96
2	☐	J14	0.00	186.06	114.69	250.00	177.04	635.93	149.96
3	☐	J20	0.18	192.14	115.31	250.00	177.24	568.45	149.96
4	☐	J30	0.00	203.52	116.97	250.00	171.14	418.73	149.96
5	☐	J42	0.00	192.70	115.37	250.00	177.26	565.25	149.96
6	☐	J44	0.20	198.26	116.33	250.00	173.93	526.02	149.96
7	☐	J46	0.00	200.33	116.44	250.00	174.40	497.77	149.96
8	☐	J48	0.06	200.71	116.58	250.00	173.27	473.22	149.96
9	☐	J50	0.18	201.67	116.68	250.00	172.11	440.67	149.96
10	☐	J52	0.00	200.12	116.82	250.00	168.58	404.34	149.96
11	☐	J60	0.35	203.82	117.00	250.00	172.12	431.80	149.96
12	☐	J70	0.35	205.61	117.13	250.00	175.16	485.53	149.96
13	☐	J72	0.44	207.98	117.22	250.00	179.65	585.67	149.96
14	☐	J74	0.06	206.21	116.94	250.00	177.22	503.38	149.96
15	☐	J76	0.47	205.52	116.77	250.00	175.30	463.77	149.96
16	☐	J86	0.00	233.89	118.82	250.00	222.58	1,259.50	149.97

RESIDUAL PRESSURES DURING FIRE FLOW



Peak Hour

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	☐	J10	0.19	95.90	143.39	465.33
2	☐	J12	0.00	95.70	143.40	467.42
3	☐	J14	0.00	95.70	143.40	467.42
4	☐	J18	0.32	95.80	143.40	466.43
5	☐	J20	0.39	95.70	143.40	467.41
6	☐	J22	0.19	95.90	143.40	465.45
7	☐	J24	0.32	95.80	143.37	466.12
8	☐	J26	0.19	95.60	143.39	468.30
9	☐	J28	0.39	96.50	143.35	459.13
10	☐	J30	0.00	96.20	143.40	462.51
11	☐	J32	0.19	95.60	143.40	468.39
12	☐	J34	0.19	96.20	143.40	462.51
13	☐	J36	0.19	96.50	143.40	459.56
14	☐	J38	0.19	97.20	143.40	452.70
15	☐	J40	0.19	97.40	143.39	450.64
16	☐	J42	0.00	95.70	143.40	467.41
17	☐	J44	0.45	96.10	143.40	463.49
18	☐	J46	0.00	96.00	143.40	464.47
19	☐	J48	0.13	96.10	143.40	463.49
20	☐	J50	0.39	96.10	143.40	463.49
21	☐	J52	0.00	96.40	143.40	460.55
22	☐	J54	0.58	96.40	143.40	460.55
23	☐	J56	0.00	96.70	143.40	457.61
24	☐	J58	0.19	96.50	143.40	459.57
25	☐	J60	0.77	96.20	143.40	462.51
26	☐	J70	0.77	96.15	143.40	463.00
27	☐	J72	0.96	96.00	143.40	464.47
28	☐	J74	0.13	95.90	143.40	465.45
29	☐	J76	1.03	95.80	143.40	466.43
30	☐	J86	0.00	94.95	143.40	474.77


465.33 kPa
465.45 kPa
467.42 kPa
467.42 kPa
466.12 kPa
466.43 kPa
468.30 kPa
467.41 kPa
468.39 kPa
466.43 kPa
463.49 kPa
465.45 kPa
474.77 kPa
464.47 kPa
462.51 kPa
463.49 kPa
464.47 kPa
459.13 kPa
463.00 kPa
463.49 kPa
462.51 kPa
459.56 kPa
460.55 kPa
459.57 kPa
460.55 kPa
452.70 kPa
457.61 kPa
450.64 kPa

Peak Hour - Pipe Report

		ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (L/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
1		P101	J10	J22	20.36	50.00	100.00	-0.19	0.10	0.01	0.59	Open	0
2		P103	J24	J18	20.36	50.00	100.00	-0.32	0.16	0.03	1.54	Open	0
3		P105	J34	J46	32.48	155.00	100.00	-0.12	0.01	0.00	0.00	Open	0
4		P107	J50	J36	33.16	155.00	100.00	0.32	0.02	0.00	0.01	Open	0
5		P109	J54	J56	26.89	204.00	110.00	-0.22	0.01	0.00	0.00	Open	0
6		P111	J56	J58	39.90	204.00	110.00	-0.22	0.01	0.00	0.00	Open	0
7		P113	J58	J60	38.68	204.00	110.00	-0.41	0.01	0.00	0.00	Open	0
8		P115	J70	J60	24.24	297.00	120.00	1.45	0.02	0.00	0.00	Open	0
9		P117	J28	J30	19.96	50.00	100.00	-0.39	0.20	0.04	2.23	Open	0
10		P119	J60	J30	8.27	297.00	120.00	0.27	0.00	0.00	0.00	Open	0
11		P121	J30	J52	38.88	297.00	120.00	-0.12	0.00	0.00	0.00	Open	0
12		P29	J32	J34	55.08	155.00	100.00	0.07	0.00	0.00	0.00	Open	0
13		P33	J36	J38	56.35	155.00	100.00	0.13	0.01	0.00	0.00	Open	0
14		P35	J38	J40	17.67	50.00	100.00	0.19	0.10	0.01	0.59	Open	0
15		P37	J42	J44	41.35	297.00	120.00	2.37	0.03	0.00	0.01	Open	0
16		P39	J44	J46	16.65	297.00	120.00	1.41	0.02	0.00	0.00	Open	0
17		P41	J46	J48	15.30	297.00	120.00	1.30	0.02	0.00	0.00	Open	0
18		P43	J48	J50	18.54	297.00	120.00	1.44	0.02	0.00	0.00	Open	0
19		P45	J50	J52	30.37	297.00	120.00	0.73	0.01	0.00	0.00	Open	0
20		P47	J52	J54	27.94	204.00	110.00	0.61	0.02	0.00	0.00	Open	0
21		P57	J20	J42	2.10	297.00	120.00	2.82	0.04	0.00	0.01	Open	0
22		P63	J38	J54	32.35	155.00	100.00	-0.25	0.01	0.00	0.00	Open	0
23		P69	J70	J72	16.71	297.00	120.00	-2.22	0.03	0.00	0.01	Open	0
24		P71	J72	J74	26.86	297.00	120.00	0.93	0.01	0.00	0.00	Open	0
25		P73	J74	J76	26.91	297.00	120.00	0.53	0.01	0.00	0.00	Open	0
26		P75	J12	J14	12.24	297.00	120.00	4.23	0.06	0.00	0.02	Open	0
27		P77	J14	J22	36.29	155.00	100.00	0.59	0.03	0.00	0.02	Open	0
28		P79	J22	J18	32.54	155.00	100.00	0.21	0.01	0.00	0.00	Open	0
29		P83	J48	J74	68.60	204.00	110.00	-0.27	0.01	0.00	0.00	Open	0
30		P85	J44	J76	70.24	297.00	120.00	0.50	0.01	0.00	0.00	Open	0
31		P87	J18	J20	34.07	155.00	100.00	-0.43	0.02	0.00	0.01	Open	0
32		P89	J72	J86	56.49	297.00	120.00	-4.11	0.06	0.00	0.02	Open	0
33		P91	J12	CONN1	20.33	297.00	120.00	-4.23	0.06	0.00	0.02	Open	0
34		P93	J86	CONN2	13.52	297.00	120.00	-4.11	0.06	0.00	0.02	Open	0
35		P95	J14	J20	25.86	297.00	120.00	3.64	0.05	0.00	0.02	Open	0

		ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (L/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/k-m)	Status	Flow Reversal Count
36	☐	P97	J26	J32	14.91	50.00	100.00	-0.19	0.10	0.01	0.59	Open	0
37	☐	P99	J32	J42	31.27	155.00	100.00	-0.45	0.02	0.00	0.01	Open	0

Appendix C

ARCADIS
500-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
arcadis.com

SANITARY SEWER DESIGN SHEET

147743 - 4816 Bank Street
Phoenix Homes
CITY OF OTTAWA

LOCATION				RESIDENTIAL										ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA	UNIT TYPES				AREA	POPULATION		RES	PEAK	AREA (Ha)						ICI	PEAK	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY	AVAILABLE CAPACITY	
STREET	AREA ID	FROM MH	TO MH	w/ Units (Ha)	SF	TH/SD	APT		w/o Units (Ha)	IND	CUM	PEAK FACTOR	FLOW (L/s)	INSTITUTIONAL IND	INSTITUTIONAL CUM	COMMERCIAL IND	COMMERCIAL CUM	INDUSTRIAL IND	INDUSTRIAL CUM	PEAK FACTOR	FLOW (L/s)	IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(full) (m/s)	L/s	(%)
4816 BANK STREET																																		
	MH100A, FUT	MH100A	MH101A	0.57			72			129.6	129.6	3.57	1.50	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.57	0.6	0.19	0.00	0.0	1.69	20.18	78.75	200	0.35	0.622	18.50	91.64%
	MH101A	MH101A	MH108A	0.19		12				28.8	158.4	3.55	1.82	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.19	0.8	0.25	0.00	0.0	2.07	19.75	68.78	200	0.33	0.609	17.67	89.51%
	MH102A	MH102A	MH103A	0.06			6			10.8	10.8	3.73	0.13	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.06	0.1	0.02	0.00	0.0	0.15	24.19	14.06	200	0.50	0.746	24.04	99.38%
	MH103A	MH103A	MH104A	0.03						0.0	10.8	3.73	0.13	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.03	0.1	0.03	0.00	0.0	0.16	24.19	26.06	200	0.50	0.746	24.03	99.34%
	MH104A	MH104A	MH106A	0.37			18			32.4	43.2	3.66	0.51	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.37	0.5	0.15	0.00	0.0	0.66	24.19	37.69	200	0.50	0.746	23.53	97.25%
	MH111A	MH111A	MH105A	0.06			6			10.8	10.8	3.73	0.13	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.06	0.1	0.02	0.00	0.0	0.15	24.19	17.81	200	0.50	0.746	24.04	99.38%
	MH112A	MH112A	SAN	0.09			12			21.6	21.6	3.70	0.26	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.09	0.1	0.03	0.00	0.0	0.29	34.22	28.00	200	1.00	1.055	33.93	99.16%
	MH105A	MH105A	MH106A	0.08						0.0	32.4	3.68	0.39	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.08	0.2	0.08	0.00	0.0	0.46	24.12	41.89	200	0.50	0.744	23.66	98.08%
	MH113A	MH113A	SAN	0.09			12			21.6	21.6	3.70	0.26	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.09	0.1	0.03	0.00	0.0	0.29	34.22	28.00	200	1.00	1.055	33.93	99.16%
	MH114A	MH114A	SAN	0.09			6			10.8	10.8	3.73	0.13	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.09	0.1	0.03	0.00	0.0	0.16	34.22	28.00	200	1.00	1.055	34.06	99.53%
	MH106A	MH106A	MH107A	0.06						0.0	64.8	3.63	0.76	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.06	0.5	0.16	0.00	0.0	0.92	24.19	53.02	200	0.50	0.746	23.28	96.21%
	MH115A	MH115A	MH107A	0.23		6	12			36.0	36.0	3.67	0.43	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.23	0.2	0.08	0.00	0.0	0.50	22.80	55.42	200	0.44	0.703	22.30	97.79%
	MH116A	MH116A	SAN	0.11			6			10.8	10.8	3.73	0.13	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.11	0.1	0.04	0.00	0.0	0.17	34.22	32.50	200	1.00	1.055	34.05	99.51%
	MH107A	MH107A	MH108A	0.06						0.0	111.6	3.58	1.30	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.06	0.9	0.29	0.00	0.0	1.58	24.19	39.45	200	0.50	0.746	22.61	93.46%
	MH117A	MH117A	SAN	0.09			12			21.6	21.6	3.70	0.26	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.09	0.1	0.03	0.00	0.0	0.29	34.13	28.00	200	1.00	1.052	33.84	99.15%
	MH108A	MH108A	MH109A	0.04						0.0	291.6	3.47	3.28	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.04	1.8	0.58	0.00	0.0	3.86	24.19	33.95	200	0.50	0.746	20.34	84.06%
	MH120A	MH120A	MH109A	0.21		6	12			36.0	36.0	3.67	0.43	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.21	0.2	0.07	0.00	0.0	0.50	24.19	51.96	200	0.50	0.746	23.70	97.94%
	MH118A	MH118A	MH109A	0.09			12			21.6	21.6	3.70	0.26	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.09	0.1	0.03	0.00	0.0	0.29	34.22	29.25	200	1.00	1.055	33.93	99.16%
	MH109A	MH109A	MH110A	0.04						0.0	349.2	3.44	3.89	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.04	2.1	0.69	0.00	0.0	4.59	24.24	38.56	200	0.50	0.748	19.66	81.09%
	MH119A	MH119A	MH110A	0.05			6			10.8	10.8	3.73	0.13	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.05	0.1	0.02	0.00	0.0	0.15	24.19	27.08	200	0.50	0.746	24.05	99.39%
	MH121A	MH121A	SAN	0.16			12			21.6	21.6	3.70	0.26	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.16	0.2	0.05	0.00	0.0	0.31	34.22	11.00	200	1.00	1.055	33.90	99.09%
		MH110A	MH122A							0.0	381.6	3.43	4.24	0.00	0.0	0.00	0.0	0.00	0.0	1.00	0.00	0.00	2.3	0.76	0.00	0.0	5.00	24.19	101.54	200	0.50	0.746	19.20	79.34%
																														200				

Design Parameters:

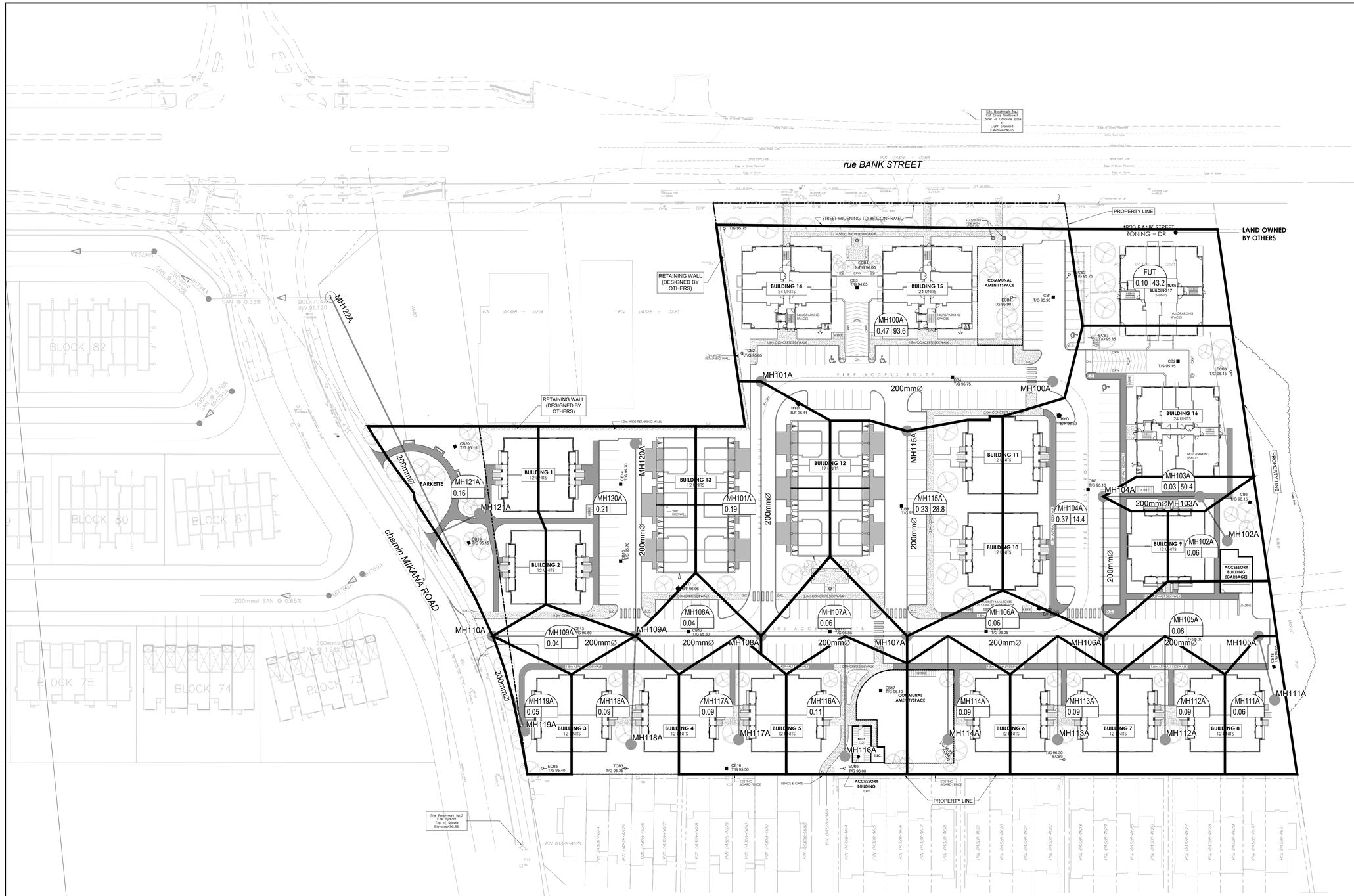
Residential			ICI Areas			
SF	3.2	p/p/u				
TH/SD	2.4	p/p/u	INST	28,000	L/Ha/day	
APT	1.8	p/p/u	COM	28,000	L/Ha/day	
			IND	35,000	L/Ha/day	MOE Chart
Other	60	p/p/Ha		17000	L/Ha/day	

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day 200 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
Harmon Formula = 1+(14/(4+(P/1000)^0.5))0.8
where K = 0.8 Correction Factor
5. Commercial and Institutional Peak Factors based on total area, 1.5 if greater than 20%, otherwise 1.0

Designed: MAP
Checked: SEL
Dwg. Reference: 147743-400

No.	Revision	Date
1.	Servicing Brief - Submission No. 1	2025-05-14
2.	Servicing Brief - Submission No. 1 to City	2025-09-17

File Reference: 147743-6.04.04
Date: 2025-09-17
Sheet No: 1 of 1



LEGEND

MH102A
0.06
- AREA IDENTIFICATION
- POPULATION
- AREA IN HECTARES

CLIENT

PHOENIX HOMES
18A Bentley Ave Ottawa, ON K2E 6T8

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Arcadis Professional Services (Canada) Inc.
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ISSUES

No.	DESCRIPTION	DATE
1	SUBMISSION 1 ISSUED FOR SPA	2025-05-14
2	SUBMISSION No. 1 TO CITY	2025-09-18

NOT FOR CONSTRUCTION

SEE 010 FOR NOTES, LEGEND, CB TABLE AND DETAILS



CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-09-18
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
4816 BANK STREET

PROJECT NO: 147743

DRAWN BY:	CHECKED BY:
D.D.	**M.P.**
PROJECT MGR:	APPROVED BY:
S.E.L.	**S.E.L.**

SHEET TITLE
SANITARY DRAINAGE PLAN

SHEET NUMBER	ISSUE
C-400	2

SCALE CHECK: 1 in | 1cm | XXXXX

File Location: C:\Users\ddored5754\DC\ACCDocs\Arcadis ACC US\ACA-0014774\4816Bank Street Sparta\Project Files\10_WIP\04_CIVIL\Sheets\C-400 SANITARY DRAINAGE PLAN.dwg Last Saved: August 17, 2025, by ddored5754 Plotted: September 18, 2025 4:47:57 PM by Dore, Denis

D07-XX-XX-XXXX

Appendix D


ROAD ALLOWANCE BETWEEN CONCESSIONS 4 AND 5
TRANSFERRED TO THE REGIONAL MUNICIPALITY OF OTTAWA CARLETON BY ORDER IN COUNCIL 830/97 (DIST. NTS4453)
Site Benchmark No.1
Cut cross Northwest Corner of Concrete Base
Light Standard
Elevation=96.45
CONCESSION 4
(RIDEAU FRONT)
(GLOUCESTER)
BLOCK 247
(STREET WIDENING)
EXISTING 2 STOREY RETAIL BUILDING
EXISTING 2 STOREY RETAIL BUILDING
ROAD ALLOWANCE BETWEEN LOTS 20 AND 21 (NOT TRAVELLED)
LOT 21
BLOCK 244
BLOCK 245
BLOCK 246
(STREET WIDENING)
BLOCK 243
BLOCK 242
4M-1594
4M-1617
REGISTERED PLAN
Site Benchmark No.2
Fire Hydrant
Top Nut Centre
Elevation=96.46
EASEMENTS
SUBJECT TO
PART 1 PLAN 4R-32750
PART 2 PLAN 4R-32750
PART 1 PLAN 4R-32753
PART 2 PLAN 4R-32753
PART 1 PLAN 4R-32754
PART 2 PLAN 4R-32754
PART 1 PLAN 4R-32755
PART 2 PLAN 4R-32755
PART 1 PLAN 4R-32756
PART 2 PLAN 4R-32756
PART 1 PLAN 4R-32757
PART 2 PLAN 4R-32757
PART 1 PLAN

Drainage Area		Downstream Segment ID	MH	XPSWMM Node ID	IMP Ratio (%)	Segment Length (m)	Subcatchment Width (m)	Road ROW Cross Section	Max. Storage Available (m^3)	Minor System Restriction		
Segment ID	Area (ha)									5 Year Modeled Flow (l/s)*	5 Year ICD Flow (l/s)†	100 Year ICD Flow (l/s)£
FR774A	0.27	R770B	773A	S774	46	57	114	Swale	N/A	33	39	39
FR648	0.15	T648	648	S648	60	70	70	Swale	N/A	30	39	39
COM	3.41	T637	647	S647	79	384	767	N/A	275.0	629	629	707

Notes: *The segments in italic were originally modeled as part of Stage 2 Phase 4B Sora Way whose drainage area has been slightly adjusted to tie in with Phase 4C areas. The ICD size for these areas has remained as per the Phase 4B submission.*
***** 5 year modeled flow is from the DDSWMM output file 34249-SORA-3CHI5-NOICD.out presented on the CD in **Appendix E**.
† 5 year ICD flow is from the DDSWMM output file 34249-SORA-3CHI5.out presented on the CD in **Appendix E**.
£ 100 year modeled flow is from the DDSWMM output file 34249-SORA-3CHI100.out presented on the CD in **Appendix E**.

The size of the inlet control devices (ICDs) for the subject site was optimized using DDSWMM. ICDs are incorporated into the stormwater management design to protect the minor system from surcharge during infrequent storm events. Flow and head for ICD sizing is provided on **Drawings 100F and 701-4C** and custom ICD sizes are presented in **Appendix E.**

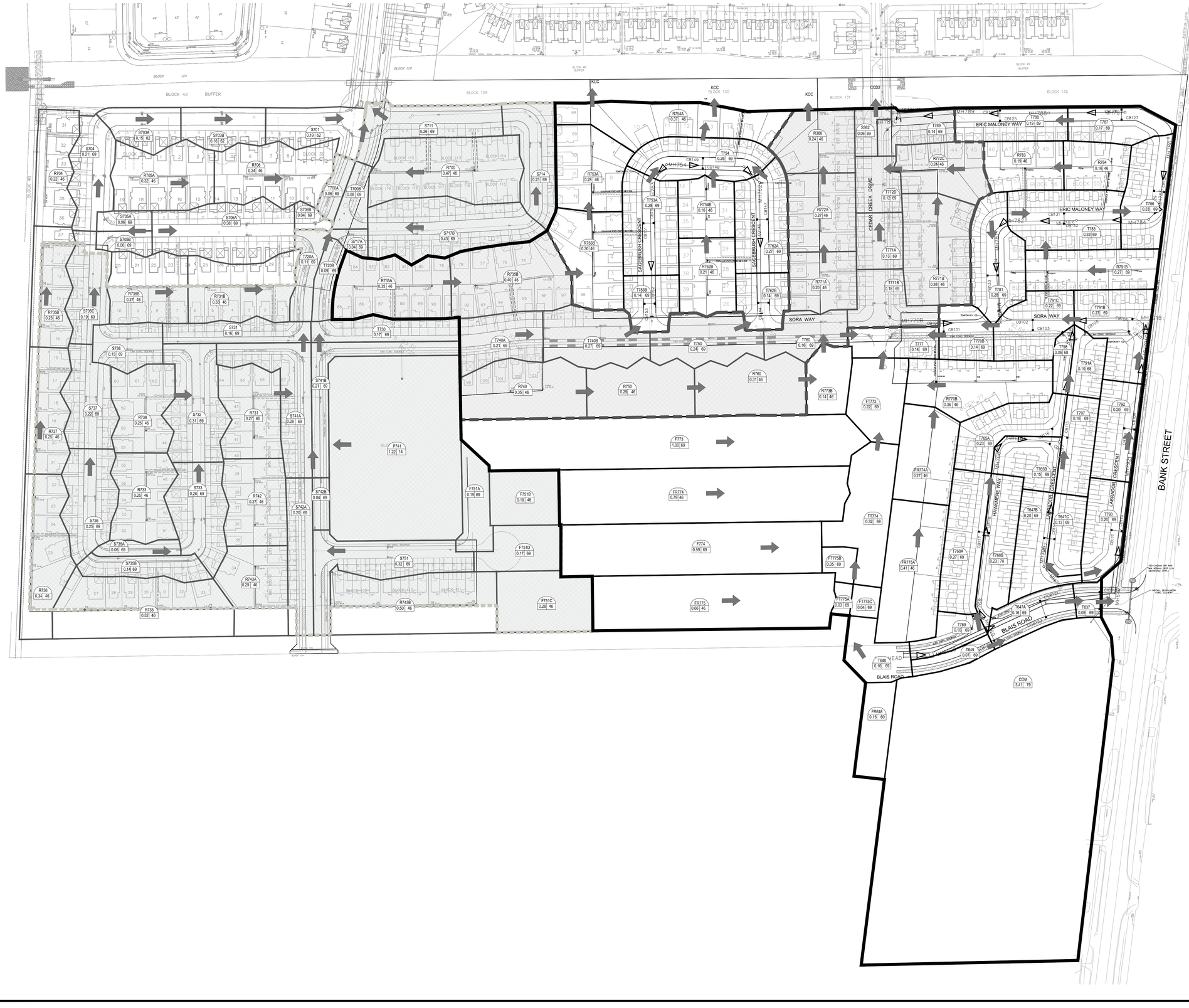
4.8.3 Simulation Results

Minor system hydrographs generated in DDSWMM were downloaded to the XPSWMM model for hydraulic grade line analysis (refer to **Section 4.9**).

The maximum static storage available on-site, maximum storage used and total duration of ponding for the 5 year, 100 year and July 1, 1979 historical storm events are presented in **Table 4.2** for the subject site. The ponding plan for the subject site is presented on **Drawing 701-4C**. The DDSWMM output files are presented in **Appendix E**.

Table 4.2 Summary of On-Site Storage and Duration of Ponding
(DDSWMM Output File Names listed below)

Major System Segment ID	Maximum Available Static Storage (m^3)	5 year 3 hour Chicago¶		100 year 3 hour Chicago†		July 1, 1979 Historical‡	
		Max. Storage Used (m^3)	Total Duration of Ponding (min)	Max. Storage Used (m^3)	Total Duration of Ponding (min)	Max. Storage Used (m^3)	Total Duration of Ponding (min)
Findlay Creek Village Stage 2 Phase 4C							
T788	22.2	22.2	60	22.2	70	22.2	75
T753B	7.6	7.6	40	7.6	50	7.6	90
T753A	13.6	13.6	40	13.6	50	13.6	65
T754	38.4	38.4	70	38.4	70	38.4	80
T762B	7.8	7.8	30	7.8	50	7.8	60
T762A	13.6	13.6	40	13.6	50	13.6	60
T787	20.6	20.6	60	20.6	70	20.6	75
T783	10.7	10.7	30	10.7	40	10.7	55
T786	8.4	8.4	40	8.4	40	8.4	60
T781	10.0	7.0	20	10.0	30	10.0	40
T648	0.5	0.5	20	0.5	20	0.5	30
T777	2.8	2.8	10	2.8	40	2.8	35
T768A	5.9	5.9	30	5.9	30	5.9	40
T768B	5.8	4.6	20	5.8	30	5.8	40
T765A	8.5	8.5	30	8.5	40	8.5	45
T765B	8.5	3.7	30	8.5	40	8.5	50


BLOCK 42
BUFFER
BLOCK 129
BLOCK 130
BLOCK 131
BLOCK 132
BLOCK 45 BUFFER
BLOCK 46 BUFFER
KCC
DCD2
ERIC MALONEY WAY
SAGEBRUSH CRESCENT
CEDAR CREEK DRIVE
SORA WAY
BANK STREET
BLAIS ROAD
RAYMERE WAY
LABRADOR CRESCENT
S703A 0.15 62
S703B 0.16 62
S701 0.19 62
S704 0.21 69
R706 0.34 46
R704 0.21 46
R705A 0.32 46
T700A 0.06 69
T700B 0.08 69
S706B 0.04 69
S705A 0.06 69
S706A 0.38 69
S705B 0.06 69
S711 0.26 69
R700 0.47 46
S714 0.23 69
S717B 0.43 69
S717A 0.04 69
T720A 0.11 69
T720B 0.09 69
R735A 0.35 46
R738B 0.27 46
R731B 0.33 46
R705B 0.23 46
S705C 0.19 69
S731 0.16 69
T730 0.17 69
R735B 0.40 46
S738 0.15 69
S737 0.21 69
R737 0.25 46
R738 0.25 46
S732 0.31 69
S741B 0.21 69
S741A 0.28 69
R731 0.27 46
R733 0.25 46
S733 0.26 69
R742 0.27 46
S742B 0.04 69
S742A 0.20 69
S736 0.25 69
S735A 0.06 69
S735B 0.14 69
R743A 0.29 46
R736 0.34 46
R730 0.52 46
R743B 0.50 46
F751C 0.28 46
F751D 0.17 69
F751A 0.15 69
F751B 0.19 46
S751 0.32 69
P741 1.22 14
R754A 0.37 46
T754 0.26 69
R753A 0.28 46
R754B 0.16 46
T753A 0.28 69
R753B 0.30 46
T753B 0.14 69
R762B 0.21 46
T762B 0.14 69
T762A 0.27 69
R771A 0.20 46
R740 0.35 46
R750 0.29 46
T740A 0.24 69
T740B 0.27 69
T750 0.24 69
T780 0.16 69
R760 0.31 46
R773B 0.14 46
F773 1.00 69
F774 0.79 46
F774 0.59 69
F773A 0.22 69
F774A 0.32 69
F775B 0.05 69
F775A 0.03 69
F775C 0.04 69
F775 0.66 46
FR775A 0.41 46
T362 0.06 69
R772C 0.24 46
T772D 0.12 69
R772A 0.27 46
T771A 0.13 69
T771B 0.18 69
R771B 0.38 46
T781 0.28 69
T789 0.14 69
T788 0.19 69
T787 0.17 69
R783 0.19 46
R784 0.16 46
T783 0.33 69
T789 0.23 69
R791B 0.27 69
T791C 0.22 69
T791B 0.27 69
T791A 0.10 69
T792 0.20 69
T797 0.16 69
T798 0.06 69
T777 0.14 69
T770B 0.14 69
R770B 0.36 46
T765A 0.23 69
T765B 0.15 69
T768A 0.27 69
T768B 0.23 70
T641B 0.20 69
T647B 0.20 69
T647C 0.13 69
T793 0.20 69
T647A 0.16 69
T637 0.05 69
T769 0.10 69
T649 0.07 69
T648 0.16 69
COM 3.41 79
FR648 0.15 60
MH754
MH755
MH756
MH757
MH758
MH759
MH760
MH761
MH762
MH763
MH764
MH765
MH766
MH767
MH768
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MH789
MH790
MH791
MH792
MH793

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STORM SEWER DESIGN SHEET

4816 Bank Street
Phoenix Homes
City of Ottawa

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW														SEWER DATA									
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.35	C= 0.38	C= 0.45	C= 0.50	C= 0.54	C= 0.75	C= 0.80	C= 0.85	C= 0.90	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW IND	FIXED FLOW CUM	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm) DIA	PIPE SIZE (mm) W	PIPE SIZE (mm) H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (2yr) (L/s)	AVAIL CAP (2yr) (%)
4816 BANK STREET																																					
	CB1, ECB1, ECB2	CB1	MH100	0.01			0.05					0.04		0.16	0.16	10.00	0.16	10.16	76.81	104.19	122.14	178.56	12.49	16.94	19.86	29.04	0.00	0.00	16.94	62.04	11.48	250			1.00	1.224	45.09	72.69%
	ECB6, FUT	MH100	MH101	0.02					0.11					0.18	0.34	10.16	0.13	10.29	76.21	103.37	121.18	177.14	25.83	35.03	41.06	60.03	0.00	0.00	35.03	55.39	8.66	250			0.80	1.093	20.35	36.75%
	CB2	CB2	MH101										0.03	0.08	0.08	10.00	0.49	10.49	76.81	104.19	122.14	178.56	5.76	7.82	9.17	13.40	0.00	0.00	7.82	61.95	36.12	250			1.00	1.223	54.12	87.37%
	CB4	CB4	STM								0.20			0.44	0.44	10.00	0.03	10.03	76.81	104.19	122.14	178.56	34.16	46.35	54.33	79.42	0.00	0.00	46.35	62.04	1.85	250			1.00	1.224	15.69	25.30%
	CB3	CB3	STM										0.03	0.08	0.08	10.00	0.31	10.31	76.81	104.19	122.14	178.56	5.76	7.82	9.17	13.40	0.00	0.00	7.82	62.04	22.42	250			1.00	1.224	54.22	87.39%
		MH101	MH102											0.00	0.93	10.49	0.91	11.40	74.96	101.66	119.16	174.18	70.00	94.93	111.27	162.65	0.00	0.00	94.93	163.60	78.09	375			0.80	1.435	68.67	41.97%
	CB5	CB5	STM								0.24			0.53	0.53	10.00	0.03	10.03	76.81	104.19	122.14	178.56	41.00	55.61	65.19	95.31	0.00	0.00	55.61	87.74	3.14	250			2.00	1.731	32.12	36.61%
	TCB2	MH102	MH106						0.08					0.12	1.59	11.40	0.74	12.14	71.82	97.34	114.07	166.70	114.02	154.54	181.11	264.67	0.00	0.00	154.54	258.27	69.58	450			0.75	1.573	103.73	40.16%
	ECB4	CB18	MH103					0.03						0.04	0.04	10.00	0.15	10.15	76.81	104.19	122.14	178.56	3.20	4.34	5.09	7.45	0.00	0.00	4.34	62.07	10.86	250			1.00	1.225	57.72	93.00%
	CB9	CB9	STM								0.14			0.31	0.31	10.00	0.01	10.01	76.81	104.19	122.14	178.56	23.91	32.44	38.03	55.60	0.00	0.00	32.44	62.07	1.00	250			1.00	1.225	29.63	47.73%
		MH103	MH104											0.00	0.35	10.15	0.68	10.83	76.24	103.42	121.23	177.22	26.92	36.51	42.80	62.57	0.00	0.00	36.51	55.49	44.86	250			0.80	1.095	18.98	34.20%
	CB6	CB6	MH108					0.14						0.19	0.19	10.00	0.14	10.14	76.81	104.19	122.14	178.56	14.95	20.28	23.77	34.75	0.00	0.00	20.28	75.98	12.48	250			1.50	1.500	55.71	73.31%
		MH108	MH109											0.00	0.19	10.14	0.40	10.53	76.28	103.47	121.29	177.30	14.84	20.13	23.60	34.50	0.00	0.00	20.13	62.04	29.07	250			1.00	1.224	41.90	67.55%
	CB7	CB7	MH109								0.24			0.53	0.53	10.00	0.01	10.01	76.81	104.19	122.14	178.56	41.00	55.61	65.19	95.31	0.00	0.00	55.61	87.74	1.50	250			2.00	1.731	32.12	36.61%
		MH109	MH104											0.00	0.73	10.53	0.39	10.92	74.81	101.45	118.91	173.82	54.49	73.89	86.61	126.60	0.00	0.00	73.89	182.91	37.34	375			1.00	1.604	109.02	59.60%
	CB10	CB10	STM							0.14				0.29	0.29	10.00	0.01	10.01	76.81	104.19	122.14	178.56	22.42	30.41	35.65	52.12	0.00	0.00	30.41	62.01	1.00	250			1.00	1.224	31.59	50.95%
		MH104	MH105											0.00	1.37	10.92	0.55	11.47	73.44	99.56	116.69	170.55	100.85	136.73	160.25	234.21	0.00	0.00	136.73	266.03	53.04	450			0.80	1.620	129.30	48.60%
	CB8	CB8	MH105							0.15				0.31	0.31	10.00	0.45	10.45	76.81	104.19	122.14	178.56	24.02	32.59	38.20	55.84	0.00	0.00	32.59	62.04	32.94	250			1.00	1.224	29.45	47.47%
	CB17	CB17	STM					0.24						0.33	0.33	10.00	0.29	10.29	76.81	104.19	122.14	178.56	25.62	34.76	40.75	59.57	0.00	0.00	34.76	62.04	21.00	250			1.00	1.224	27.28	43.97%
	CB11	CB11	STM							0.12				0.25	0.25	10.00	0.01	10.01	76.81	104.19	122.14	178.56	19.22	26.07	30.56	44.68	0.00	0.00	26.07	62.04	1.00	250			1.00	1.224	35.97	57.98%
		MH105	MH106											0.00	2.27	11.47	0.37	11.83	71.59	97.03	113.71	166.17	162.51	220.25	258.10	377.18	0.00	0.00	220.25	401.29	39.45	525			0.80	1.796	181.05	45.12%
	CB16	CB16	STM						0.13					0.20	0.20	10.00	0.52	10.52	76.81	104.19	122.14	178.56	14.99	20.33	23.84	34.85	0.00	0.00	20.33	62.04	37.92	250			1.00	1.224	41.70	67.22%
	CB12	CB12	STM							0.16				0.33	0.33	10.00	0.01	10.01	76.81	104.19	122.14	178.56	25.62	34.76	40.75	59.57	0.00	0.00	34.76	62.04	1.00	250			1.00	1.224	27.28	43.97%
		MH106	MH107											0.00	4.39	12.14	0.29	12.42	69.47	94.12	110.28	161.13	304.72	412.82	483.70	706.77	0.00	0.00	412.82	573.65	33.95	600			0.80	1.965	160.83	28.04%
	CB14	CB14	STM							0.10				0.21	0.21	10.00	0.03	10.03	76.81	104.19	122.14	178.56	16.01	21.72	25.47	37.23	0.00	0.00	21.72	62.04	2.50	250			1.00	1.224	40.31	64.98%
	CB15	CB15	STM								0.07			0.16	0.16	10.00	0.03	10.03	76.81	104.19	122.14	178.56	11.96	16.22	19.02	27.80	0.00	0.00	16.22	62.04	2.50	250			1.00	1.224	45.82	73.85%
		MH112	MH107											0.00	0.36	10.00	0.53	10.53	76.81	104.19	122.14	178.56	27.97	37.95	44.48	65.03	0.00	0.00	37.95	75.98	47.53	250			1.50	1.500	38.04	50.06%
	CB13	CB13	STM								0.09			0.20	0.20	10.00	0.01	10.01	76.81	104.19	122.14	178.56	15.37	20.86	24.45	35.74	0.00	0.00	20.86	62.04	1.00	250			1.00	1.224	41.18	66.38%
		MH107	MH111											0.00	4.95	12.42	0.32	12.74	68.60	92.92	108.87	159.07	339.61	460.02	538.97	787.48	0.00	0.00	460.02	707.01	36.43	675			0.65	1.914	246.99	34.93%
	CB19	CB19	STM						0.05					0.08	0.08	10.00	0.04	10.04	76.81	104.19	122.14	178.56	5.76	7.82	9.17	13.40	0.00	0.00	7.82	62.04	3.19	250			1.00	1.224	54.22	87.39%
	CB20	CB20	STM						0.06					0.09	0.09	10.00	0.14	10.14	76.81	104.19	122.14	178.56	6.92	9.38	11.00	16.08	0.00	0.00	9.38	62.04	10.60	250			1.00	1.224	52.65	84.87%
		MH111	MH110											0.00	5.12	12.74	0.86	13.60	67.67	91.64	107.36	156.86	346.17	468.82	549.25	802.44	0.00	0.00	468.82	707.01	98.59	675			0.65	1.914	238.19	33.69%
		MH110	CAP											0.00	5.12	12.74	0.03	12.77	67.67	91.64	107.36	156.86	346.17	468.82	549.25	802.44	0.00	0.00	468.82	981.98	3.53	825			0.43	1.780	513.16	52.26%
														5.12																	825						

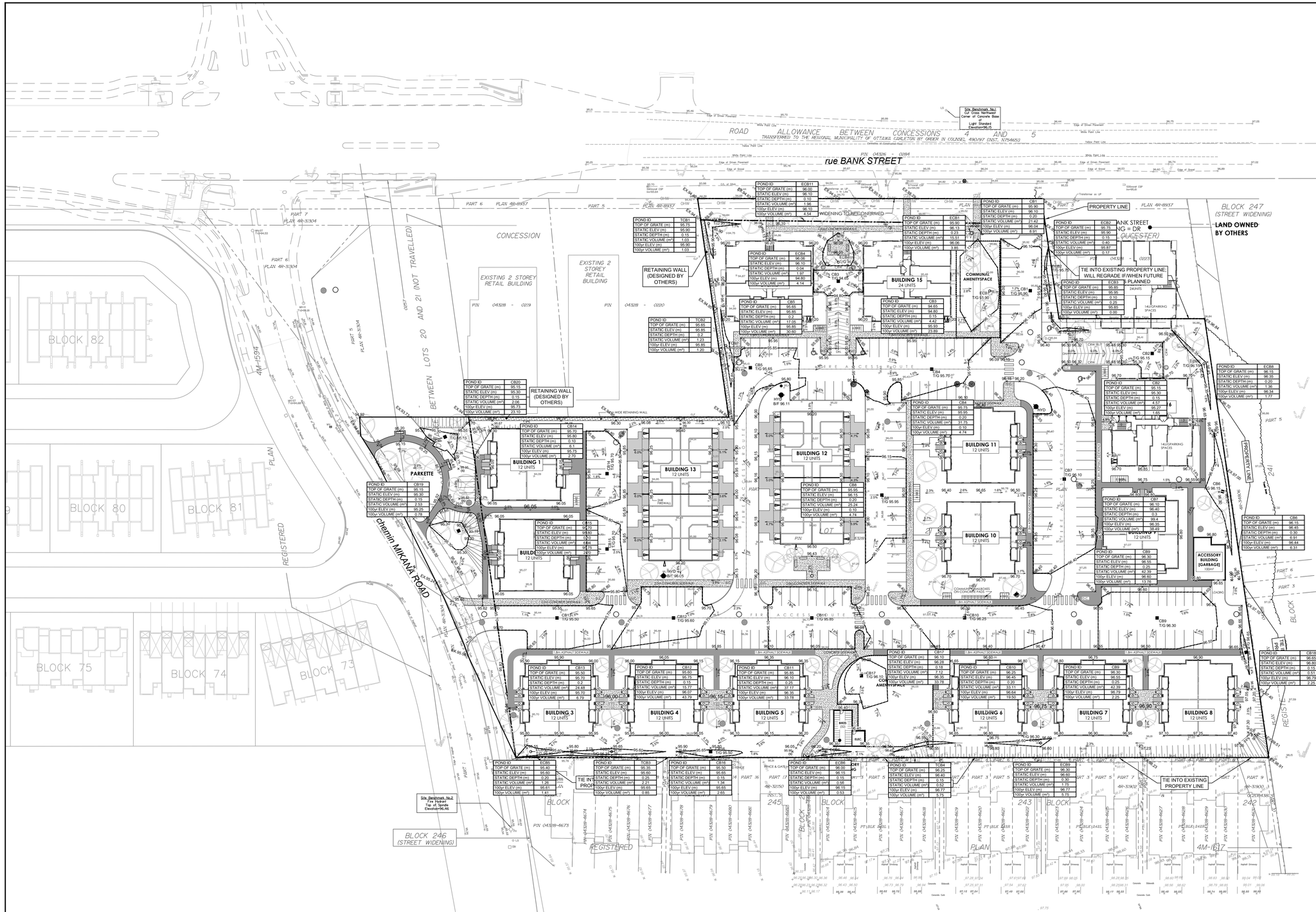
Definitions:
Q = 2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (Ha)
i = Rainfall intensity in millimeters per hour (mm/hr)
[i = 732.951 / (TC+6.199)^0.810] 2 YEAR
[i = 998.071 / (TC+6.053)^0.814] 5 YEAR
[i = 1174.184 / (TC+6.014)^0.816] 10 YEAR
[i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

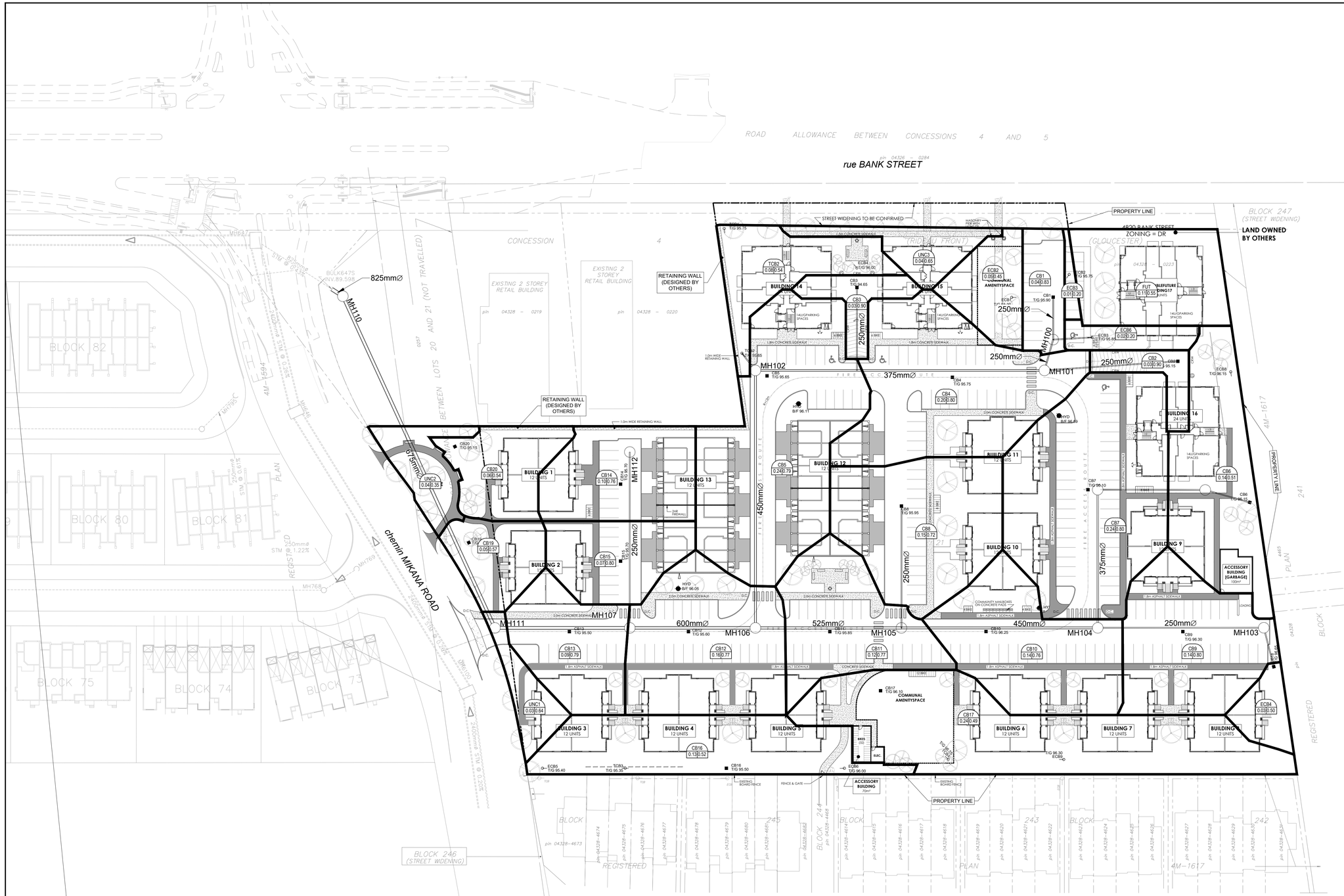
Notes:
1. Mannings coefficient (n) = 0.013

Designed: MAP
Checked: SEL
Dwg. Reference: 147743-500

No.	Revision	Date
1.	Servicing Brief - Submission No. 1	2025-05-14
2.	Servicing Brief - Submission No. 1 to City	2025-09-17

File Reference: 147743-6.04.04
Date: 2025-09-17
Sheet No: 1 of 1


ROAD ALLOWANCE BETWEEN CONCESSIONS 4 AND 5
TRANSFERRED TO THE REGIONAL MUNICIPALITY OF OTTAWA CARLETON BY ORDER IN COUNCIL 490/97 (INST. N754653)
rue BANK STREET
PIN 043526 - 0284
Site Benchmark No1
Cut Cross Northwest
Corner of Concrete Base
Light Standard
Elevation=96.75
CONCESSION
EXISTING 2 STOREY RETAIL BUILDING
PIN 043528 - 0219
EXISTING 2 STOREY RETAIL BUILDING
PIN 043528 - 0220
RETAINING WALL (DESIGNED BY OTHERS)
RETAINING WALL (DESIGNED BY OTHERS)
WIDENING TO BE CONFIRMED
PROPERTY LINE
BLOCK 247
(STREET WIDENING)
LAND OWNED BY OTHERS
TIE INTO EXISTING PROPERTY LINE: WILL REGRADE IF/WHEN FUTURE
BUILDING 15
24 UNITS
COMMUNAL AMENITY SPACE
BUILDING 1
12 UNITS
BUILDING 2
12 UNITS
BUILDING 3
12 UNITS
BUILDING 4
12 UNITS
BUILDING 5
12 UNITS
BUILDING 6
12 UNITS
BUILDING 7
12 UNITS
BUILDING 8
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BUILDING 9
12 UNITS
BUILDING 10
12 UNITS
BUILDING 11
12 UNITS
BUILDING 12
12 UNITS
BUILDING 13
12 UNITS
PARKETTE
ACCESSORY BUILDING [GARBAGE]
100m²
FIRE ACCESS ROUTE
Chemin MIKANA ROAD
BLOCK 82
BLOCK 81
BLOCK 80
BLOCK 75
BLOCK 74
BLOCK 73
BLOCK 246
(STREET WIDENING)
REGISTERED PLAN
4M-1594
4M-1617
4M-1618
4M-1619
4M-1620
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4M-1655
4M-1656



CLIENT

PHOENIX HOMES
18A Bentley Ave Ottawa, ON K2E 6T8

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Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc

ISSUES

No.	DESCRIPTION	DATE
1	SUBMISSION 1 ISSUED FOR SPA	2025-05-14
2	SUBMISSION No. 1 TO CITY	2025-09-18

NOT FOR CONSTRUCTION

SEE 010 FOR NOTES, LEGEND, CB TABLE AND DETAILS

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-09-18
PROVINCE OF ONTARIO

PRIME CONSULTANT

ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
4816 BANK STREET

PROJECT NO: 147743

DRAWN BY:	CHECKED BY:
D.D.	**M.P.**
PROJECT MGR: **S.E.L.**	APPROVED BY: **S.E.L.**

SHEET TITLE
STORM DRAINAGE PLAN

SHEET NUMBER	ISSUE
C-500	2

SCALE CHECK 1 in XXXXX 10mm

File Location: C:\DATA\ocl\Jobs\2\ocl04495\96\48a\8f\99607\075\c224bc63\ade6f6e\b.39a14de5-b1da-419b-ac1a-f7417229d50a\Project Files\10_WIP\04_CIVIL\Sheets\C-500 STORM DRAINAGE PLAN.dwg Last Saved: September 18, 2025, by dorocd5754 Plotted: Thursday, September 18, 2025 7:27:46 PM by acesuser

D07-XX-XX-XXXX

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arcadis.com

STORMWATER MANAGEMENT
4816 Bank Street | Phoenix Homes
147743-6.0 | Rev #2 | 2025-09-18
Prepared By: MP | Checked By: SL

Formulas and Descriptions

i_{2yr} = 1:2 year Intensity = 732.951 / $(T_c+6.199)^{0.810}$
i_{5yr} = 1:5 year Intensity = 998.071 / $(T_c+6.053)^{0.814}$
i_{100yr} = 1:100 year Intensity = 1735.688 / $(T_c+6.014)^{0.820}$
T_c = Time of Concentration (min)
C = Average Runoff Coefficient
A = Area (Ha)
Q = Flow = 2.78CiA (L/s)

Maximum Allowable Release Rate

Restricted Flowrate (to reflect 5-yr storm under existing conditions)

Per IBI GROUP Design Brief Report 34249 Findlay Creek Village Stage 2 Phase 4C dated 17 October 2016
5yr Restricted = 629.00 L/s
100yr Restricted = 707.00 L/s

$Q_{restricted}$ = 629.00 L/s

Uncontrolled Release ($Q_{uncontrolled} = 2.78*C*i_{100yr}*A_{uncontrolled}$) for 100-yr storm event

UNC1
C_{100} = 0.80
T_c = 10 min
i_{100yr} = 178.56 mm/hr
$A_{uncontrolled}$ = 0.03 Ha
$Q_{softunc}$ = 11.91 L/s

PARKETTE (UNC2)
C_{100} = 0.44
T_c = 10 min
i_{100yr} = 178.56 mm/hr
$A_{uncontrolled}$ = 0.04 Ha
$Q_{softunc}$ = 8.69 L/s

UNC3
C_{100} = 0.81
T_c = 10 min
i_{100yr} = 178.56 mm/hr
$A_{uncontrolled}$ = 0.04 Ha
$Q_{softunc}$ = 16.13 L/s

Total Uncontrolled
$Q_{uncontrolled}$ = 36.73 L/s

Maximum Allowable Release Rate ($Q_{max\ allowable} = Q_{restricted} - Q_{uncontrolled}$)

$Q_{max\ allowable}$ = 592.27 L/s

MODIFIED RATIONAL METHOD (100-Year, 5-Year & 2-Year Ponding)

Drainage Area ECB4

Area (Ha) = 0.03 | Restricted Flow ICD $_{Actual}$ (L/s)= 6.00
C = 0.63 | Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)= 6.00 | 50% reduction if sub-surface storage

100-Year Ponding

T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{100yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)
-2	555.31	28.95	6.00	22.95	-2.75
3	286.05	14.91	6.00	8.91	1.60
8	199.20	10.38	6.00	4.38	**2.10**
13	155.11	8.08	6.00	2.08	1.63
18	128.08	6.68	6.00	0.68	0.73

100-Year +20% Ponding

100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
12.46	6.46	**3.10**

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	2.10	0.51	0	1.59
		convert to flow with peak Tc (L/s)		3.32

100+20

Overflow	Required	Balance
0.00	3.10	2.59
convert to flow with peak Tc (L/s)		5.40

overflows to: CB9

Drainage Area ECB4

Area (Ha) = 0.03
C = 0.50 | Restricted Flow Q_r (L/s)= 6.00

2-Year Ponding

T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{2yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
8	85.46	3.56	6.00	-2.44	-1.17
9	80.87	3.37	6.00	-2.63	-1.42
10	76.81	3.20	6.00	-2.80	**-1.68**
11	73.17	3.05	6.00	-2.95	-1.95
12	69.89	2.91	6.00	-3.09	-2.22

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	-1.68	0.51	0	0.00

overflows to: CB9

Drainage Area CB9

Area (Ha) = 0.14 | Restricted Flow ICD $_{Actual}$ (L/s)= 24.00
C = 1.00 | Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)= 24.00 | 50% reduction if sub-surface storage

100-Year Ponding

T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{100yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)
5	242.70	94.46	24.00	70.46	21.14
10	178.56	69.50	24.00	45.50	27.30
15	142.89	55.61	24.00	31.61	**28.45**
20	119.95	46.68	24.00	22.68	27.22
25	103.85	40.42	24.00	16.42	24.63

100-Year +20% Ponding

100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
66.74	42.74	**38.46**

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
1.59	30.05	42.39	0	0.00
		convert to flow with peak Tc (L/s)		0.00

100+20

Overflow	Required	Balance
0.00	38.46	0.00
convert to flow with peak Tc (L/s)		0.00

overflows to: CB10

Drainage Area CB9

Area (Ha) = 0.14
C = 0.80 | Restricted Flow Q_r (L/s)= 24.00

2-Year Ponding

T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{2yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
8	85.46	26.61	24.00	2.61	1.25
9	80.87	25.18	24.00	1.18	0.64
10	76.81	23.91	24.00	-0.09	**-0.05**
11	73.17	22.78	24.00	-1.22	-0.80
12	69.89	21.76	24.00	-2.24	-1.61

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.05	42.39	0	0.00

overflows to: CB10

Drainage Area CB10

Area (Ha) = 0.14 | Restricted Flow ICD $_{Actual}$ (L/s)= 23.00
C = 0.95 | Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)= 23.00 | 50% reduction if sub-surface storage

100-Year Ponding

T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{100yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)
5	242.70	89.74	23.00	66.74	20.02
10	178.56	66.02	23.00	43.02	25.81
15	142.89	52.83	23.00	29.83	**26.85**
20	119.95	44.35	23.00	21.35	25.62
25	103.85	38.40	23.00	15.40	23.09

100-Year +20% Ponding

100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
63.40	40.40	**36.36**

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	26.85	33.11	0	0.00
		convert to flow with peak Tc (L/s)		0.00

100+20

Overflow	Required	Balance
0.00	36.36	3.25
convert to flow with peak Tc (L/s)		3.61

overflows to: CB11

Drainage Area CB10

Area (Ha) = 0.14
C = 0.76 | Restricted Flow Q_r (L/s)= 23.00

2-Year Ponding

T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{2yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
8	85.46	25.28	23.00	2.28	1.09
9	80.87	23.92	23.00	0.92	0.50
10	76.81	22.72	23.00	-0.28	**-0.17**
11	73.17	21.64	23.00	-1.36	-0.90
12	69.89	20.67	23.00	-2.33	-1.67

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.17	33.11	0	0.00

overflows to:

Drainage Area CB17

TCB4, ECB9

Area (Ha) = 0.24 | Restricted Flow ICD $_{Actual}$ (L/s)= 33.00
C = 0.61 | Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)= 33.00 | 50% reduction if sub-surface storage

100-Year Ponding

T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{100yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 100yr (m^3)
5	242.70	99.18	33.00	66.18	19.86
10	178.56	72.97	33.00	39.97	23.98
15	142.89	58.40	33.00	25.40	**22.86**
20	119.95	49.02	33.00	16.02	19.22
25	103.85	42.44	33.00	9.44	14.16

100-Year +20% Ponding

100YRQ_p 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
70.07	37.07	**33.37**

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	22.86	9.39	0	13.47
		convert to flow with peak Tc (L/s)		14.96

100+20

Overflow	Required	Balance
0.00	33.37	23.98
convert to flow with peak Tc (L/s)		26.64

overflows to: CB11

Drainage Area CB17

Area (Ha) = 0.24
C = 0.49 | Restricted Flow Q_r (L/s)= 33.00

2-Year Ponding

T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow Q_p =2.78xCi_{2yr} A (L/s)	Q_r (L/s)	Q_p-Q_r (L/s)	Volume 2yr (m^3)
8	85.46	27.94	33.00	-5.06	-2.43
9	80.87	26.44	33.00	-6.56	-3.54
10	76.81	25.11	33.00	-7.89	**-4.73**
11	73.17	23.92	33.00	-9.08	-5.99
12	69.89	22.85	33.00	-10.15	-7.31

Storage (m^3)

Overflow	Required	Surface	Sub-surface	Balance
0.00	-4.73	9.39	0	0.00

overflows to:

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STORMWATER MANAGEMENT
4816 Bank Street | Phoenix Homes
147743-6.0 | Rev #2 | 2025-09-18
Prepared By: MP | Checked By: SL

Drainage Area	CB11									
Area (Ha)	0.12	Restricted Flow ICD $_{Actual}$ (L/s)=	20.00							
C =	0.96	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	20.00	50% reduction if sub-surface storage						
100-Year Ponding						100-Year +20% Ponding				
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)		
5	242.70	77.93	20.00	57.93	17.38					
10	178.56	57.33	20.00	37.33	22.40					
15	142.89	45.88	20.00	25.88	**23.29**	55.06	35.06	**31.55**		
20	119.95	38.51	20.00	18.51	22.22					
25	103.85	33.34	20.00	13.34	20.02					

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
13.47	36.76	37.17	0	0.00	0.00	31.55	0.00
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		0.00

overflows to: CB12

Drainage Area	CB11					
Area (Ha)	0.12					
C =	0.77	Restricted Flow Q_r (L/s)=	20.00			
2-Year Ponding						
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)	
8	85.46	21.95	20.00	1.95	0.94	
9	80.87	20.77	20.00	0.77	0.42	
10	76.81	19.73	20.00	-0.27	**-0.16**	
11	73.17	18.79	20.00	-1.21	-0.80	
12	69.89	17.95	20.00	-2.05	-1.47	

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.16	37.17	0	0.00

overflows to: CB12

Drainage Area	CB12									
Area (Ha)	0.16	Restricted Flow ICD $_{Actual}$ (L/s)=	52.00							
C =	0.96	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	52.00	50% reduction if sub-surface storage						
100-Year Ponding						100-Year +20% Ponding				
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)		
-5	1716.01	734.66	52.00	682.66	-204.80					
0	398.62	170.66	52.00	118.66	0.00					
5	242.70	103.91	52.00	51.91	**15.57**	124.69	72.69	**21.81**		
10	178.56	76.44	52.00	24.44	14.67					
15	142.89	61.18	52.00	9.18	8.26					

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	15.57	15.77	0	0.00	2.59	24.40	8.63
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		28.76

overflows to: CB13

Drainage Area	CB12					
Area (Ha)	0.16					
C =	0.77	Restricted Flow Q_r (L/s)=	52.00			
2-Year Ponding						
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)	
8	85.46	29.27	52.00	-22.73	-10.91	
9	80.87	27.70	52.00	-24.30	-13.12	
10	76.81	26.31	52.00	-25.69	**-15.42**	
11	73.17	25.06	52.00	-26.94	-17.78	
12	69.89	23.94	52.00	-28.06	-20.20	

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-15.42	15.77	0	0.00

overflows to: CB13

Drainage Area	CB14									
Area (Ha)	0.10	Restricted Flow ICD $_{Actual}$ (L/s)=	30.00							
C =	0.95	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	30.00	50% reduction if sub-surface storage						
100-Year Ponding						100-Year +20% Ponding				
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)		
0	398.62	105.28	30.00	75.28	0.00					
5	242.70	64.10	30.00	34.10	10.23					
10	178.56	47.16	30.00	17.16	**10.29**	56.59	26.59	**15.95**		
15	142.89	37.74	30.00	7.74	6.96					
20	119.95	31.68	30.00	1.68	2.01					

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	10.29	6.10	0	4.19	5.84	21.79	15.69
		convert to flow with peak Tc (L/s)		6.99	convert to flow with peak Tc (L/s)		26.16

overflows to: CB15

Drainage Area	CB14					
Area (Ha)	0.10					
C =	0.76	Restricted Flow Q_r (L/s)=	30.00			
2-Year Ponding						
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)	
8	85.46	18.06	30.00	-11.94	-5.73	
9	80.87	17.09	30.00	-12.91	-6.97	
10	76.81	16.23	30.00	-13.77	**-8.26**	
11	73.17	15.46	30.00	-14.54	-9.60	
12	69.89	14.77	30.00	-15.23	-10.97	

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-8.26	6.10	0	0.00

overflows to:

Drainage Area	CB15									
Area (Ha)	0.03	Restricted Flow ICD $_{Actual}$ (L/s)=	12.00							
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	12.00	50% reduction if sub-surface storage						
100-Year Ponding						100-Year +20% Ponding				
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)		
-5	1716.01	143.12	12.00	131.12	-39.33					
0	398.62	33.24	12.00	21.24	0.00					
5	242.70	20.24	12.00	8.24	**2.47**	24.29	12.29	**3.69**		
10	178.56	14.89	12.00	2.89	1.74					
15	142.89	11.92	12.00	-0.08	-0.07					

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
4.19	6.67	6.94	0	0.00	0.00	3.69	0.00
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		0.00

overflows to: CB13

Drainage Area	CB15					
Area (Ha)	0.07					
C =	0.80	Restricted Flow Q_r (L/s)=	12.00			
2-Year Ponding						
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)	
8	85.46	13.30	12.00	1.30	0.63	
9	80.87	12.59	12.00	0.59	0.32	
10	76.81	11.96	12.00	-0.04	**-0.03**	
11	73.17	11.39	12.00	-0.61	-0.40	
12	69.89	10.88	12.00	-1.12	-0.81	

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.03	6.94	0	0.00

overflows to: CB13

Drainage Area	CB13									
Area (Ha)	0.09	Restricted Flow ICD $_{Actual}$ (L/s)=	17.00							
C =	0.99	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	17.00	50% reduction if sub-surface storage						
100-Year Ponding						100-Year +20% Ponding				
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)		
5	242.70	59.97	17.00	42.97	12.89					
10	178.56	44.12	17.00	27.12	16.27					
15	142.89	35.31	17.00	18.31	**16.47**	42.37	25.37	**22.83**		
20	119.95	29.64	17.00	12.64	15.16					
25	103.85	25.66	17.00	8.66	12.99					

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	16.47	17.05	0	0.00	0.00	22.83	5.78
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		6.42

overflows to: OFFSITE

Drainage Area	CB13					
Area (Ha)	0.09					
C =	0.79	Restricted Flow Q_r (L/s)=	17.00			
2-Year Ponding						
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)	
8	85.46	16.89	17.00	-0.11	-0.05	
9	80.87	15.99	17.00	-1.01	-0.55	
10	76.81	15.18	17.00	-1.82	**-1.09**	
11	73.17	14.46	17.00	-2.54	-1.68	
12	69.89	13.81	17.00	-3.19	-2.29	

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-1.09	50.63	0	0.00

overflows to: OFFSITE

Drainage Area	CB16	ECB5, TCB3, ECB6								
Area (Ha)	0.13	Restricted Flow ICD $_{Actual}$ (L/s)=	39.50							
C =	0.65	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	39.50	50% reduction if sub-surface storage						
100-Year Ponding						100-Year +20% Ponding				
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)		
-5	1716.01	403.11	39.50	363.61	-109.08					
0	398.62	93.64	39.50	54.14	0.00					
5	242.70	57.01	39.50	17.51	**5.25**	68.42	28.92	**8.67**		
10	178.56	41.95	39.50	2.45	1.47					
15	142.89	33.57	39.50	-5.93	-5.34					

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	5.25	5.37	0	0.00	0.00	8.67	3.30
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		11.02

overflows to: OFFSITE

Drainage Area	CB16					
Area (Ha)	0.13					
C =	0.52	Restricted Flow Q_r (L/s)=	39.50			
2-Year Ponding						
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)	
8	85.46	16.06	39.50	-23.44	-11.25	
9	80.87	15.20	39.50	-24.30	-13.12	
10	76.81	14.43	39.50	-25.07	**-15.04**	
11	73.17	13.75	39.50	-25.75	-16.99	
12	69.89	13.13	39.50	-26.37	-18.98	

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-15.04	5.37	0	0.00

overflows to: OFFSITE

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4816 Bank Street | Phoenix Homes
147743-6.0 | Rev #2 | 2025-09-18
Prepared By: MP | Checked By: SL

Drainage Area	CB19								
Area (Ha)	0.05	Restricted Flow ICD $_{Actual}$ (L/s)=	9.00						
C =	0.71	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	9.00	50% reduction if sub-surface storage					
100-Year Ponding						100-Year +20% Ponding			
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)	
0	398.62	39.48	9.00	30.48	0.00				
5	242.70	24.04	9.00	15.04	4.51				
10	178.56	17.68	9.00	8.68	**5.21**	21.22	12.22	**7.33**	
15	142.89	14.15	9.00	5.15	4.64				
20	119.95	11.88	9.00	2.88	3.46				

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	5.21	5.37	0	0.00	11.53	18.86	13.49
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		22.48

overflows to: OFFSITE

Drainage Area	CB19				
Area (Ha)	0.05				
C =	0.57	Restricted Flow Q_r (L/s)=	9.00		
2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	6.77	9.00	-2.23	-1.07
9	80.87	6.41	9.00	-2.59	-1.40
10	76.81	6.09	9.00	-2.91	**-1.75**
11	73.17	5.80	9.00	-3.20	-2.11
12	69.89	5.54	9.00	-3.46	-2.49

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-1.75	5.37	0	0.00

overflows to: OFFSITE

Drainage Area	CB20								
Area (Ha)	0.06	Restricted Flow ICD $_{Actual}$ (L/s)=	11.50						
C =	0.68	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	11.50	50% reduction if sub-surface storage					
100-Year Ponding						100-Year +20% Ponding			
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)	
0	398.62	44.88	11.50	33.38	0.00				
5	242.70	27.33	11.50	15.83	4.75				
10	178.56	20.10	11.50	8.60	**5.16**	24.12	12.62	**7.57**	
15	142.89	16.09	11.50	4.59	4.13				
20	119.95	13.51	11.50	2.01	2.41				

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	5.16	5.37	0	0.00	22.59	30.16	24.79
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		41.32

overflows to: OFFSITE

Drainage Area	CB20				
Area (Ha)	0.06				
C =	0.54	Restricted Flow Q_r (L/s)=	11.50		
2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	7.70	11.50	-3.80	-1.83
9	80.87	7.28	11.50	-4.22	-2.28
10	76.81	6.92	11.50	-4.58	**-2.75**
11	73.17	6.59	11.50	-4.91	-3.24
12	69.89	6.30	11.50	-5.20	-3.75

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-2.75	5.37	0	0.00

overflows to: OFFSITE

Drainage Area	CB6	ECB8							
Area (Ha)	0.03	Restricted Flow ICD $_{Actual}$ (L/s)=	6.00						
C =	0.63	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	6.00	50% reduction if sub-surface storage					
100-Year Ponding						100-Year +20% Ponding			
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)	
-5	1716.01	89.45	6.00	83.45	-25.03				
0	398.62	20.78	6.00	14.78	0.00				
5	242.70	12.65	6.00	6.65	**2.00**	15.18	9.18	**2.75**	
10	178.56	9.31	6.00	3.31	1.98				
15	142.89	7.45	6.00	1.45	1.30				

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	2.00	8.27	0	0.00	0.00	2.75	0.00
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		0.00

overflows to: ECB8

Drainage Area	CB6				
Area (Ha)	0.03				
C =	0.50	Restricted Flow Q_r (L/s)=	6.00		
2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	3.56	6.00	-2.44	-1.17
9	80.87	3.37	6.00	-2.63	-1.42
10	76.81	3.20	6.00	-2.80	**-1.68**
11	73.17	3.05	6.00	-2.95	-1.95
12	69.89	2.91	6.00	-3.09	-2.22

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-1.68	8.27	0	0.00

overflows to: ECB8

Drainage Area	CB1	ECB8, ECB3, ECB2							
Area (Ha)	0.12	Restricted Flow ICD $_{Actual}$ (L/s)=	13.50						
C =	0.64	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	13.50	50% reduction if sub-surface storage					
100-Year Ponding						100-Year +20% Ponding			
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)	
5	242.70	51.62	13.50	38.12	11.43				
10	178.56	37.97	13.50	24.47	14.68				
15	142.89	30.39	13.50	16.89	**15.20**	36.47	22.97	**20.67**	
20	119.95	25.51	13.50	12.01	14.41				
25	103.85	22.09	13.50	8.59	12.88				

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	15.20	37.58	0	0.00	21.47	42.14	4.56
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		5.07

overflows to: CB4

Drainage Area	CB1				
Area (Ha)	0.12				
C =	0.51	Restricted Flow Q_r (L/s)=	13.50		
2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	14.54	13.50	1.04	0.50
9	80.87	13.76	13.50	0.26	0.14
10	76.81	13.07	13.50	-0.43	**-0.26**
11	73.17	12.45	13.50	-1.05	-0.69
12	69.89	11.89	13.50	-1.61	-1.16

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.26	37.58	0	0.00

overflows to: CB4

Drainage Area	CB7								
Area (Ha)	0.24	Restricted Flow ICD $_{Actual}$ (L/s)=	41.00						
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	41.00	50% reduction if sub-surface storage					
100-Year Ponding						100-Year +20% Ponding			
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)	
5	242.70	161.93	41.00	120.93	36.28				
10	178.56	119.13	41.00	78.13	46.88				
15	142.89	95.34	41.00	54.34	**48.91**	114.41	73.41	**66.07**	
20	119.95	80.03	41.00	39.03	46.84				
25	103.85	69.29	41.00	28.29	42.43				

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	48.91	99.40	0	0.00	4.56	70.63	0.00
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		0.00

overflows to: CB4

Drainage Area	CB7				
Area (Ha)	0.24				
C =	0.80	Restricted Flow Q_r (L/s)=	41.00		
2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	45.61	41.00	4.61	2.21
9	80.87	43.17	41.00	2.17	1.17
10	76.81	41.00	41.00	0.00	**0.00**
11	73.17	39.05	41.00	-1.95	-1.28
12	69.89	37.31	41.00	-3.69	-2.66

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	0.00	99.40	0	0.00

overflows to: CB4

Drainage Area	CB8								
Area (Ha)	0.15	Restricted Flow ICD $_{Actual}$ (L/s)=	23.50	43					
C =	0.90	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	23.50	50% reduction if sub-surface storage					
100-Year Ponding						100-Year +20% Ponding			
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)	
5	242.70	91.09	23.50	67.59	20.28				
10	178.56	67.01	23.50	43.51	26.11				
15	142.89	53.63	23.50	30.13	**27.12**	64.35	40.85	**36.77**	
20	119.95	45.02	23.50	21.52	25.82				
25	103.85	38.97	23.50	15.47	23.21				

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	27.12	25.24	0	1.88	0.00	36.77	11.53
		convert to flow with peak Tc (L/s)		2.08	convert to flow with peak Tc (L/s)		12.81

overflows to: CB4

Drainage Area	CB8				
Area (Ha)	0.15				
C =	0.72	Restricted Flow Q_r (L/s)=	23.50		
2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	25.66	23.50	2.16	1.04
9	80.87	24.28	23.50	0.78	0.42
10	76.81	23.06	23.50	-0.44	**-0.26**
11	73.17	21.97	23.50	-1.53	-1.01
12	69.89	20.98	23.50	-2.52	-1.81

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.26	25.24	0	0.00

overflows to: CB4

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STORMWATER MANAGEMENT
4816 Bank Street | Phoenix Homes
147743-6.0 | Rev #2 | 2025-09-18
Prepared By: MP | Checked By: SL

Drainage Area	CB4		
Area (Ha)	0.20	Restricted Flow ICD $_{Actual}$ (L/s)=	34.50
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	34.50

50% reduction if sub-surface storage

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
20	119.95	66.69	34.50	32.19	38.63			
25	103.85	57.74	34.50	23.24	34.86			
30	91.87	51.08	34.50	16.58	**29.84**	61.29	26.79	**48.23**
35	82.58	45.91	34.50	11.41	23.97			
40	75.15	41.78	34.50	7.28	17.47			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
1.88	31.72	37.17	0	0.00	11.53	59.76	22.59
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		12.55

overflows to: CB5

Drainage Area	CB4		
Area (Ha)	0.20		
C =	0.80	Restricted Flow Q_r (L/s)=	34.50

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	38.01	34.50	3.51	1.69
9	80.87	35.97	34.50	1.47	0.80
10	76.81	34.16	34.50	-0.34	**-0.20**
11	73.17	32.54	34.50	-1.96	-1.29
12	69.89	31.09	34.50	-3.41	-2.46

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-0.20	37.17	0	0.00

overflows to: CB5

Drainage Area	CB5		
Area (Ha)	0.24	Restricted Flow ICD $_{Actual}$ (L/s)=	70.00
C =	0.99	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	70.00

50% reduction if sub-surface storage

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
0	398.62	262.63	70.00	192.63	0.00			
5	242.70	159.91	70.00	89.91	26.97			
10	178.56	117.65	70.00	47.65	**28.59**	141.17	71.17	**42.70**
15	142.89	94.15	70.00	24.15	21.73			
20	119.95	79.03	70.00	9.03	10.84			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	28.59	17.05	0	11.54	22.59	65.29	48.24
		convert to flow with peak Tc (L/s)		19.23	convert to flow with peak Tc (L/s)		80.41

overflows to: TCB2

Drainage Area	CB5		
Area (Ha)	0.24		
C =	0.79	Restricted Flow Q_r (L/s)=	70.00

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	45.04	70.00	-24.96	-11.98
9	80.87	42.63	70.00	-27.37	-14.78
10	76.81	40.48	70.00	-29.52	**-17.71**
11	73.17	38.57	70.00	-31.43	-20.75
12	69.89	36.84	70.00	-33.16	-23.88

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-17.71	17.05	0	0.00

overflows to: TCB2

Drainage Area	TCB2		
Area (Ha)	0.08	Restricted Flow ICD $_{Actual}$ (L/s)=	40.50
C =	0.68	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	20.25

50% reduction if sub-surface storage

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
-5	1716.01	257.61	20.25	237.36	-71.21			
0	398.62	59.84	20.25	39.59	0.00			
5	242.70	36.43	20.25	16.18	**4.86**	43.72	23.47	**7.04**
10	178.56	26.81	20.25	6.56	3.93			
15	142.89	21.45	20.25	1.20	1.08			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
11.54	16.39	4.23	12.17	0.00	0.00	7.04	0.00
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		0.00

overflows to: OFFSITE

Drainage Area	TCB2		
Area (Ha)	0.08		
C =	0.54	Restricted Flow Q_r (L/s)=	20.25

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	10.26	20.25	-9.99	-4.79
9	80.87	9.71	20.25	-10.54	-5.69
10	76.81	9.22	20.25	-11.03	**-6.62**
11	73.17	8.79	20.25	-11.46	-7.57
12	69.89	8.39	20.25	-11.86	-8.54

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-6.62	4.23	12.17	0.00

overflows to: OFFSITE

Drainage Area	CB2		
Area (Ha)	0.03	Restricted Flow ICD $_{Actual}$ (L/s)=	7.50
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	7.50

50% reduction if sub-surface storage

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
0	398.62	33.24	7.50	25.74	0.00			
5	242.70	20.24	7.50	12.74	3.82			
10	178.56	14.89	7.50	7.39	**4.44**	17.87	10.37	**6.22**
15	142.89	11.92	7.50	4.42	3.98			
20	119.95	10.00	7.50	2.50	3.00			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	4.44	4.57	0	0.00	0.00	6.22	1.65
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		2.75

overflows to: UG PARKING

Drainage Area	CB2		
Area (Ha)	0.03		
C =	0.90	Restricted Flow Q_r (L/s)=	7.50

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	6.41	7.50	-1.09	-0.52
9	80.87	6.07	7.50	-1.43	-0.77
10	76.81	5.76	7.50	-1.74	**-1.04**
11	73.17	5.49	7.50	-2.01	-1.33
12	69.89	5.25	7.50	-2.25	-1.62

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-1.04	4.57	0	0.00

overflows to: UG PARKING

Drainage Area	CB3		
Area (Ha)	0.03	Restricted Flow ICD $_{Actual}$ (L/s)=	8.00
C =	1.00	Restricted Flow $Q_{r\ for\ swm\ calc}$ (L/s)=	8.00

50% reduction if sub-surface storage

100-Year Ponding						100-Year +20% Ponding		
T_c Variable (min)	i_{100yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{100yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 100yr (m^3)	$100YRQ_p$ 20% (L/s)	Qp - Qr (L/s)	Volume 100+20 (m^3)
0	398.62	33.24	8.00	25.24	0.00			
5	242.70	20.24	8.00	12.24	3.67			
10	178.56	14.89	8.00	6.89	**4.14**	17.87	9.87	**5.92**
15	142.89	11.92	8.00	3.92	3.53			
20	119.95	10.00	8.00	2.00	2.40			

Storage (m^3)					100+20		
Overflow	Required	Surface	Sub-surface	Balance	Overflow	Required	Balance
0.00	4.14	4.42	0	0.00	0.00	5.92	1.50
		convert to flow with peak Tc (L/s)		0.00	convert to flow with peak Tc (L/s)		2.50

overflows to: UG PARKING

Drainage Area	CB3		
Area (Ha)	0.03		
C =	0.90	Restricted Flow Q_r (L/s)=	8.00

2-Year Ponding					
T_c Variable (min)	i_{2yr} (mm/hour)	Peak Flow $Q_p = 2.78xCi_{2yr}A$ (L/s)	Q_r (L/s)	$Q_p - Q_r$ (L/s)	Volume 2yr (m^3)
8	85.46	6.41	8.00	-1.59	-0.76
9	80.87	6.07	8.00	-1.93	-1.04
10	76.81	5.76	8.00	-2.24	**-1.34**
11	73.17	5.49	8.00	-2.51	-1.66
12	69.89	5.25	8.00	-2.75	-1.98

Storage (m^3)				
Overflow	Required	Surface	Sub-surface	Balance
0.00	-1.34	4.42	0	0.00

overflows to: UG PARKING

Stormwater Management Summary Table

Drainage Area	ICD Restricted Flow (L/s)	100 Year Storage Required (m3)	2 Yr Storage Required (m3)	Storage Provided
ECB4	6.00	2.10	0.00	0.51
CB9	24.00	28.45	0.00	42.39
CB10	23.00	26.85	0.00	33.11
CB17	33.00	22.86	0.00	9.39
CB11	20.00	23.29	0.00	37.17
CB12	52.00	15.57	0.00	15.77
CB14	30.00	10.29	0.00	6.10
CB15	12.00	2.47	0.00	6.94
CB13	17.00	16.47	0.00	17.05
CB16	39.50	5.25	0.00	5.37
CB19	9.00	5.21	0.00	5.37
CB20	11.50	5.16	0.00	5.37
CB6	6.00	2.00	0.00	8.27
CB1	13.50	15.20	0.00	37.58
CB7	41.00	48.91	0.00	99.40
CB8	23.50	27.12	0.00	25.24
CB4	34.50	29.84	0.00	37.17
CB5	70.00	28.59	0.00	17.05
TCB2	40.50	4.86	0.00	16.40
CB2	7.50	4.44	0.00	4.57
CB3	8.00	4.14	0.00	4.42
TOTAL	**521.50**	**329.07**	**0.00**	**434.64**

5-yr Max Allowable: **592.27 L/s**

100-yr Overflow: **0.00 L/s**
100-yr Total Release Rate: **558.23 L/s**

RUNOFF COEFFICIENT CALCULATION SHEET

RESTRICTED

CB1	Area (m^2)	C
Softscape	37.5	0.20
Hardscape	340.1	0.90
Total	377.6	**0.83**

ECB2	Area (m^2)	C
Softscape	318.5	0.20
Hardscape	180.1	0.90
Total	498.6	**0.45**

ECB3	Area (m^2)	C
Softscape	64.1	0.20
Hardscape	0.0	0.90
Total	64.1	**0.20**

ECB6	Area (m^2)	C
Softscape	242.8	0.20
Hardscape	0.0	0.90
Total	242.8	**0.20**

CB2	Area (m^2)	C
Softscape	0.0	0.20
Hardscape	256.6	0.90
Total	256.6	**0.90**

CB3	Area (m^2)	C
Softscape	0.0	0.20
Hardscape	300.1	0.90
Total	300.1	**0.90**

CB4	Area (m^2)	C
Softscape	291.0	0.20
Hardscape	1706.8	0.90
Total	1997.8	**0.80**

CB5	Area (m^2)	C
Softscape	369.3	0.20
Hardscape	2043.0	0.90
Total	2412.3	**0.79**

CB6	Area (m^2)	C
Softscape	776.7	0.20
Hardscape	620.1	0.90
Total	1396.8	**0.51**

CB7	Area (m^2)	C
Softscape	359.5	0.20
Hardscape	2050.4	0.90
Total	2410.0	**0.80**

GROUPED DRAINAGE AREAS

CB1	Area (m^2)	C
CB1	377.6	0.83
ECB2	498.6	0.45
ECB3	64.1	0.20
ECB6	242.8	0.20
Total	1183.1	**0.51**

CB8	Area (m^2)	C
Softscape	399.4	0.20
Hardscape	1141.7	0.90
Total	1541.1	**0.72**

CB9	Area (m^2)	C
Softscape	190.9	0.20
Hardscape	1191.7	0.90
Total	1382.6	**0.80**

CB10	Area (m^2)	C
Softscape	283.0	0.20
Hardscape	1152.1	0.90
Total	1435.1	**0.76**

CB11	Area (m^2)	C
Softscape	208.6	0.20
Hardscape	956.3	0.90
Total	1164.9	**0.77**

CB12	Area (m^2)	C
Softscape	305.3	0.20
Hardscape	1287.4	0.90
Total	1592.7	**0.77**

CB13	Area (m^2)	C
Softscape	145.9	0.20
Hardscape	745.5	0.90
Total	891.4	**0.79**

CB10	Area (m^2)	C
Softscape	211.0	0.20
Hardscape	876.5	0.90
Total	1087.5	**0.76**

CB14	Area (m^2)	C
Softscape	195.5	0.20
Hardscape	814.5	0.90
Total	1010.0	**0.76**

CB15	Area (m^2)	C
Softscape	106.5	0.20
Hardscape	632.0	0.90
Total	738.5	**0.80**

CB16 (ECB5, TCB3, ECB6)	Area (m^2)	C
Softscape	724.2	0.20
Hardscape	608.1	0.90
Total	1332.4	**0.52**

CB17 (TCB4, ECB9)	Area (m^2)	C
Softscape	1370.53	0.20
Hardscape	992.98	0.90
Total	2363.51	**0.49**

ECB4	Area (m^2)	C
Softscape	145.67	0.20
Hardscape	111.31	0.90
Total	256.98	**0.50**

CB19	Area (m^2)	C
Softscape	245.5	0.20
Hardscape	271.4	0.90
Total	516.9	**0.57**

CB20	Area (m^2)	C
Softscape	327.2	0.20
Hardscape	317.2	0.90
Total	644.4	**0.54**

UNC1	Area (m^2)	C
Softscape	114.8	0.20
Hardscape	191.4	0.90
Total	306.1	**0.64**

UNC2	Area (m^2)	C
Softscape	330.9	0.20
Hardscape	87.5	0.90
Total	418.4	**0.35**

UNC3	Area (m^2)	C
Softscape	143.5	0.20
Hardscape	253.4	0.90
Total	396.9	**0.65**

FUT	Area (m^2)	C
Softscape	530.1	0.20
Hardscape	520.3	0.90
Total	1050.4	**0.55**

EZstorm system overview

Project details :

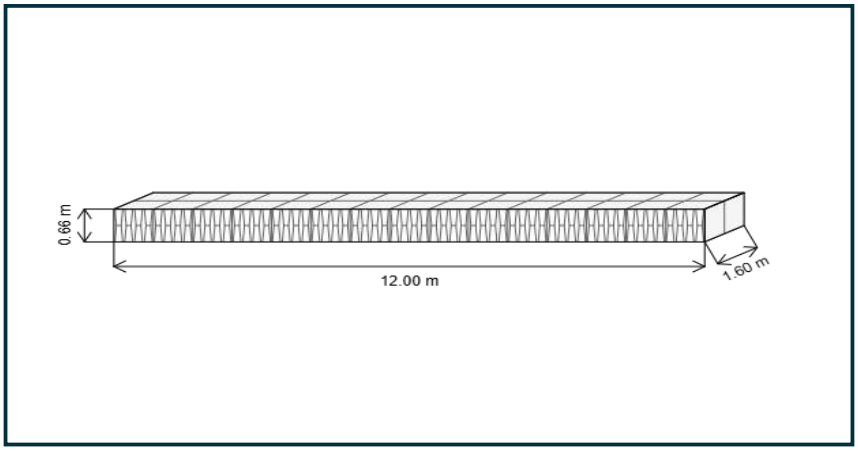
Project description :	4816 Bank Street
Date :	5/5/2025
Location :	Ottawa, Ontario

Client details :

Contact:	
E-mail :	

EZstorm configuration	
EZstorm application	Retention / Detention
Load type	No traffic
Height	0.66 m
Length	12.00 m
Width	1.60 m
EZstorm storage volume	12.17 m³
Total storage volume	12.17 m³

Fill materiel	
Fill materiel	3/4'' clear stone
Storage in stone	No
Stone porosity	-
Stone above system	-
Perimeter stone	-
Stone below system	-
Storage in stone	-



Summary

Total storage volume provided :	12.17 m³
EZstorm storage volume	12.17 m³
Storage in stone	-
Stone quantity (fill) required for this project :	N/A

450 73 - 82622
info@nextinfras.com
1305 Hill Ave, West Palm Beach, FL 33407

EZstorm system accessories

Inlet

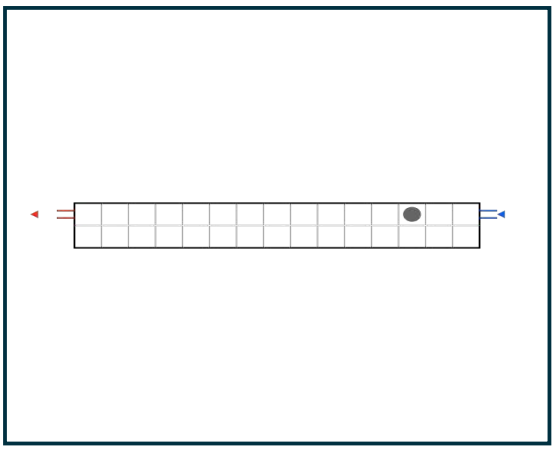
Inlet with HDS

Outlet

Inspection port

Pretreatment row

EZaccess manhole

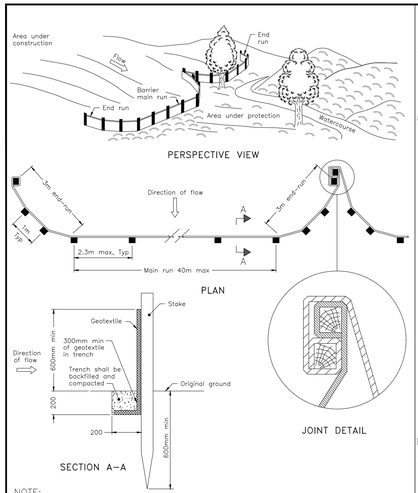


Material list

EZstorm material list	Qty
 EZstorm half blocs	0
 EZstorm lateral side grid	34
 EZstorm access chimney (frame and cover included)	1
 EZaccess (frame and cover included)	0
 Geotextile surface area required	202.87
 Geomembrane surface area required	61.99

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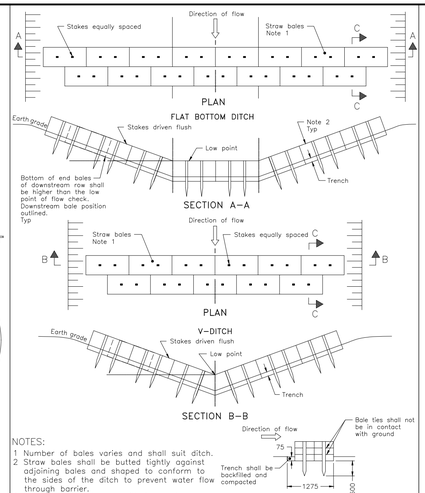
Appendix E



ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2021 | Rev 3

LIGHT–DUTY
SILT FENCE BARRIER

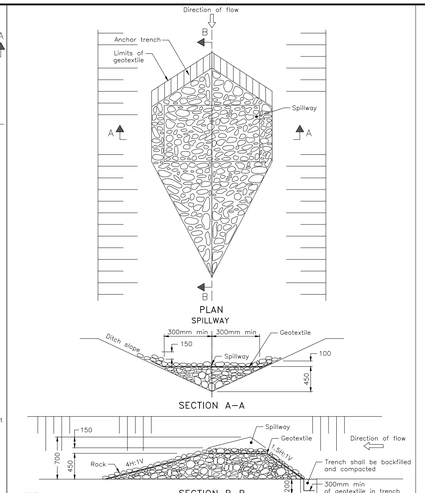
OPSD 219.110



ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2021 | Rev 3

STRAW BALE FLOW CHECK DAM

OPSD 219.180



ONTARIO PROVINCIAL STANDARD DRAWING | Nov 2022 | Rev 3

TEMPORARY
ROCK FLOW CHECK DAM
V–DITCH

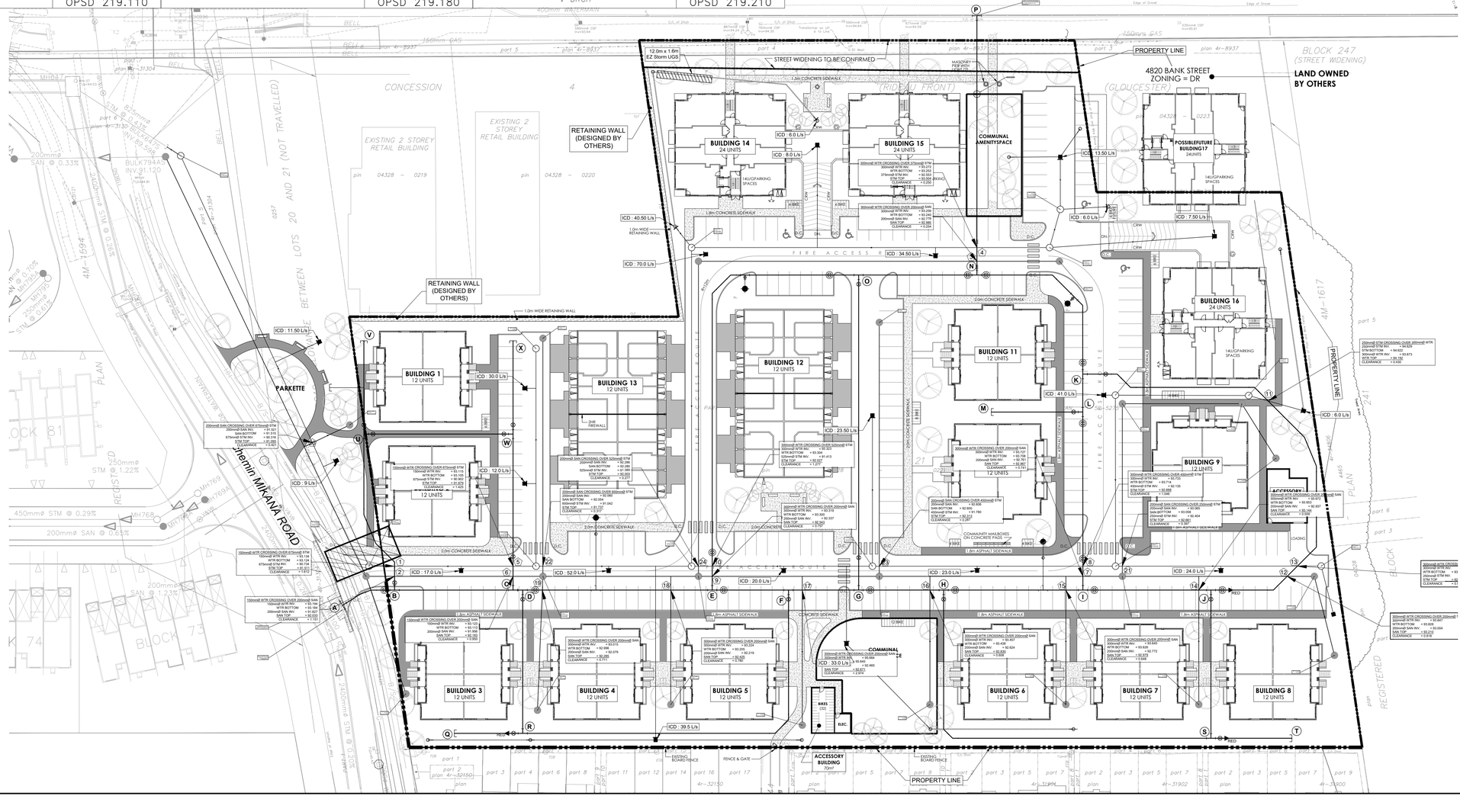
OPSD 219.210

NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
2. SILT FENCE TO BE ERECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL START OF SUBSEQUENT PHASE.
3. STRAW BALE SEDIMENT TRAPS TO BE CONSTRUCTED IN EXISTING ROAD SIDE DITCHES. TRAPS TO REMAIN AND BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED.
4. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
5. CONTRACTOR TO PROVIDE DETAILS ON LOCATION(S) AND DESIGN OF DEWATERING TRAP(S) PRIOR TO COMMENCING WORK. CONTRACTOR ALSO RESPONSIBLE FOR MAINTAINING TRAP(S) AND ADJUSTING SIZE(S) IF DEEMED REQUIRED BY THE ENGINEER DURING CONSTRUCTION.
6. CONTRACTOR TO PROTECT EXISTING CATCHBASINS WITH FILTER CLOTH UNDER THE COVERS TO TRAP SEDIMENTATION. REFER TO IDENTIFIED STRUCTURES.
7. WORKS NOTED ABOVE ARE TO BE INSTALLED, INSPECTED, MAINTAINED AND ULTIMATELY REMOVED BY SERVICING CONTRACTOR.
8. THIS IS A "LIVING DOCUMENT" AND MAY BE MODIFIED IN THE EVENT THE PROPOSED CONTROL MEASURES ARE INSUFFICIENT.

LEGEND:

- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
- SNOW FENCE
- STRAW BALE CHECK DAM AS PER OPSD-219.180
- ROCK CHECK DAM AS PER OPSD-219.210
- SILT SACK PLACED UNDER EXISTING CB COVER
- TEMPORARY MUD MAT 0.15m THICK 50mm CLEAR STONE ON NON WOVEN FILTER CLOTH



CLIENT

PHOENIX HOMES
18A Bentley Ave Ottawa, ON K2E 6T8

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Arcadis Professional Services (Canada) Inc.
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ISSUES

No.	DESCRIPTION	DATE
1	SUBMISSION 1 ISSUED FOR SPA	2025-05-14
2	SUBMISSION No. 1 TO CITY	2025-09-18

NOT FOR CONSTRUCTION

SEE 010 FOR NOTES, LEGEND, CB TABLE AND DETAILS



CONFIRM **CONSULTANTS** BOX

1:2500 0 25 50 75 125m

SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-09-18
PROVINCE OF ONTARIO

CONFIRM PRIME CONSULTANT

ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
4816 BANK STREET

PROJECT NO:
147743

DRAWN BY:	CHECKED BY:
D.D.	**M.P.**
PROJECT MGR:	APPROVED BY:
S.E.L.	**S.E.L.**

SHEET TITLE
EROSION - SEDIMENT PLAN

SHEET NUMBER
C-900

ISSUE
2

SCALE CHECK 1 in XXXXX 20mm

File Location: C:\DATA\cdJobs\2cc044f9396f4a8f89907075a224b0c8\adsf6feb.b39a14d45-b16a-419b-ac1a-f7417229d450a\Project Files\10_WIP\04_CIVIL\Sheets\C-900 EROSION - SEDIMENT PLAN.dwg Last Saved: September 18, 2025, by dcrev5754 Plotted: Thursday, September 18, 2025 7:27:59 PM by acesuser

D07-XX-XX-XXXX

GENERAL LEGEND

- LIMIT OF CONSTRUCTION
- PHASING LINE
- BARRIER CURB
- MOUNTABLE CURB
- DEPRESSED BARRIER CURB
- CONCRETE SIDEWALK
- ASPHALT SIDEWALK / PATHWAY
- BUS STOP CONCRETE / ASPHALT
- TREES
- COMMUNITY MAILBOXES ON CONCRETE PADS

SERVICING LEGEND

- MH118A — SANITARY MANHOLE
- 200mmØ SAN — SANITARY SEWER
- MH109 / MH118 — STORM MANHOLE
- 825mmØ STM — STORM SEWER - LESS THAN 900Ø
- 900mmØ STM — STORM SEWER - 900Ø AND GREATER
- 200Ø WATERMAIN — WATERMAIN
- CB100, T/G 104.10 — STREET CATCHBASIN C/W TOP OF GRATE
- CICB101, G/G 104.25 — CURB INLET CATCHBASIN C/W GUTTER GRADE
- DCB100, T/G 104.10 — DOUBLE CATCHBASIN C/W TOP OF GRATE
- DCICB101, G/G 104.25 — DOUBLE CURB INLET CATCHBASIN C/W GUTTER GRADE
- DI101, T/G 103.59 — DITCH INLET MANHOLE C/W TOP OF GRATE
- CBMH101, T/G 103.59 — CATCHBASIN MANHOLE C/W TOP OF GRATE
- RYCB, T/G 104.35 — REAR YARD CATCHBASIN IN ROAD CONNECTING STRUCTURE C/W SOLID GRATE
- T/G 104.35, INV. 103.35 — REAR YARD "TEE" CATCHBASIN (300Ø) C/W TOP OF GRATE AND INVERT OUT
- T/G 104.50, INV. 103.50 — REAR YARD "END" CATCHBASIN (300Ø) C/W TOP OF GRATE AND INVERT OUT
- T/G 104.35, INV. 103.35 — REAR YARD "CUSTOM ANGLED " CATCHBASIN (450Ø) C/W TOP OF GRATE AND INVERT OUT
- T/G 104.35, INV. 103.35 — REAR YARD "THREE WAY" CATCHBASIN (450Ø) C/W TOP OF GRATE AND INVERT OUT
- PERFORATED REAR YARD SUBDRAIN
- 300mmØ CSP — CSP CULVERT C/W DIAMETER
- VB — VALVE AND VALVE BOX
- VC — VALVE AND VALVE CHAMBER
- PARK VALVE CHAMBER C/W SERVICE POST
- HYD, B/F 104.35 — FIRE HYDRANT C/W BOTTOM OF FLANGE ELEVATION
- 200Ø WM — RED — 150Ø WM — WATERMAIN REDUCER
- 2 VBENDS — VERTICAL BEND LOCATION
- SIAMESE CONNECTION (IF REQUIRED)
- M — METER (IF REQUIRED)
- RM — REMOTE METER (IF REQUIRED)
- A — WATERMAIN IDENTIFICATION (IF REQUIRED)
- 1 — PIPE CROSSING IDENTIFICATION (IF REQUIRED)
- FOUNDATION STORM CONNECTION LOCATION
- WATER/SANITARY CONNECTION LOCATION
- BH 19, 100.00 — INFERRED REFUSAL (SEE GEOTECHNICAL REPORT)
- HGL, 101.79 — 100 YEAR STORM HYDRAULIC GRADE LINE AT MANHOLE
- USF, 101.79 — UNDERSIDE OF FOOTING ELEVATION
- CLAY SEAL IN SEWER / WATERMAIN TRENCH

WATERMAIN SCHEDULE

	Station	Description	Finished Grade	Top of Waterain	As Built Waterain
A	0+000.00	TEE	95.530	93.130	
	0+004.55	11.25 BEND	95.766	93.366	
	0+007.05	22.5 BEND	95.765	93.365	
	0+010.01	V&VC	95.818	93.418	
B	0+012.24	TEE	95.837	93.437	
C	0+038.09	TEE	95.694	93.294	
D	0+040.20	TEE	95.717	93.317	
	0+042.94	V&VC	95.739	93.339	
	0+056.16	HYDRANT TEE	95.693	93.293	
E	0+081.54	TEE	96.033	93.633	
	0+084.04	V&VC	96.084	93.684	
F	0+098.19	TEE	95.950	93.550	
G	0+113.49	TEE	96.119	93.719	
	0+115.99	V&VC	96.176	93.776	
H	0+132.04	TEE	96.394	93.994	
	0+134.54	V&VC	96.360	93.960	
	0+153.73	HYDRANT TEE	96.380	93.980	
I	0+162.41	TEE	96.438	94.038	
	0+164.91	V&VC	96.458	94.058	
J	0+190.35	TEE	96.401	94.001	
	0+192.85	V&VC	96.409	94.009	
	0+195.15	REDUCER	96.422	94.022	
	0+203.97	45 BEND	96.475	94.075	
	0+217.24	45 BEND	96.759	94.359	
	0+234.92	22.5 BEND	96.498	94.098	
	0+241.76	22.5 BEND	96.411	94.011	
	0+257.14	45 BEND	96.660	94.260	
	0+284.21	45 BEND	96.227	93.827	
	0+288.30	45 BEND	96.197	93.797	
	0+290.80	VB	96.157	93.757	
K	0+295.82	TEE	96.205	93.805	
E	0+000.00	TEE	96.033	93.633	
	0+008.22	V&VC	96.048	93.648	
	0+064.76	45 BEND	95.881	93.481	
	0+070.45	45 BEND	95.833	93.433	
	0+073.57	HYDRANT TEE	95.977	93.577	
	0+092.00	V&VC	95.943	93.543	
O	0+098.37	TEE	95.920	93.520	
	0+122.17	V&VC	95.946	93.546	
N	0+124.17	TEE	95.963	93.563	
	0+126.17	V&VC	95.994	93.594	
	0+140.64	45 BEND	96.395	93.995	
	0+147.37	HYDRANT TEE	96.516	94.116	
	0+149.99	45 BEND	96.470	94.070	
	0+162.51	V&VC	96.219	93.819	
K	0+165.01	TEE	96.205	93.805	
L	0+173.28	TEE	96.193	93.793	
	0+175.78	V&VC	96.213	93.813	
	0+205.38	V&VC	96.456	94.056	
I	0+212.16	TEE	96.438	94.038	
B	0+000.00	TEE	95.837	93.437	
	0+001.62	VB	95.793	93.393	
	0+006.13	45 BEND	95.668	93.268	
	0+011.88	22.5 BEND	95.885	93.485	
	0+018.68	22,5 BEND	95.833	93.433	
U	0+036.29	TEE	95.806	93.406	
	0+038.29	VB	95.803	93.403	
	0+046.42	TEE	95.790	93.390	
V	0+056.65	CAP	95.775	93.375	
D	0+000.00	TEE	95.703	93.303	
	0+002.00	VB	95.725	93.325	
R	0+031.27	TEE	95.717	93.317	
Q	0+000.00	CAP	95.722	93.322	
	0+010.97	REDUCER	95.751	93.351	
	0+012.91	VB	95.727	93.327	
R	0+014.91	TEE	95.702	93.302	
	0+069.98	45 BEND	96.115	93.715	
	0+074.12	45 BEND	96.278	93.878	
	0+100.46	VB	95.996	93.596	
F	0+102.46	TEE	95.950	93.550	
H	0+000.00	TEE	96.394	93.994	
	0+002.00	VB	96.415	94.015	
	0+030.39	45 BEND	96.324	93.924	
	0+033.16	45 BEND	96.762	94.362	
S	0+089.51	TEE	97.604	95.204	
	0+091.50	VB	97.637	95.237	
	0+093.46	REDUCER	97.669	95.269	
T	0+107.19	CAP	97.912	95.512	
J	0+000.00	TEE	96.401	94.001	
	0+002.00	VB	94.046	91.646	
S	0+032.35	TEE	97.604	95.204	
C	0+000.00	TEE	95.694	93.294	
	0+007.32	VB	95.667	93.267	
W	0+034.07	TEE	95.812	93.412	
	0+036.07	VB	95.788	93.388	
X	0+054.42	CAP	95.789		
U	0+000.00	TEE	95.935	93.535	
	0+002.00	VB	95.993	93.593	
	0+030.54	VB	95.804	93.404	
X	0+032.54	TEE	95.812	93.412	
N	0+000.00	TEE	95.963	93.563	
	0+001.50	VBEND	95.941	93.541	
	0+002.00	VBEND	95.935	93.560	
	0+007.00	VBEND	95.909	93.534	
	0+007.50	VBEND	95.897	93.497	
	0+011.91		95.931	93.531	
	0+015.59		96.151	93.751	
	0+039.50	DISTRICT METER	96.170	93.770	
P	0+056.60	TEE	95.339	92.939	

Date 2025-09-18

UTILITY NOTES :

1. ALL MATERIALS AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE CURRENT CITY OF OTTAWA STANDARD DRAWINGS & SPECIFICATIONS OR OPSD/OPSS IF CITY DRAWINGS AND SPECIFICATIONS DO NOT APPLY.
2. THE POSITION OF UNDERGROUND AND ABOVEGROUND SERVICE, UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH SERVICE, UTILITIES AND STRUCTURES IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL REPORT ALL CONFLICTS, DISCOVERIES OF ERROR AND DISCREPANCIES TO THE ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER OR NOT SHOW ON THESE DRAWINGS.
5. THESE DRAWINGS ARE NOT TO BE SCALED OR USED FOR LAYOUT PURPOSES.
6. THE COMPOSITE UTILITY PLAN HAS BEEN REVIEWED BY ARCADIS FOR CONFORMITY TO THE DESIGN CONCEPT FOR THE DEVELOPMENT AND FOR GENERAL ARRANGEMENT ONLY AND AS SUCH SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN EITHER LAYOUT OR WORKMANSHIP.
7. THIS DRAWING IS A COMPILATION OF OTHER UTILITY DESIGNS AND DOES NOT INDICATE IN ANY WAY THAT THE PARTY SIGNING THIS DRAWING HAS DESIGNED OR APPROVED THE RESPECTIVE UTILITY PLANTS INDICATED ON THIS DRAWING. THE DRAWING WAS PREPARED TO BE USED AS REFERENCE ONLY AS PER REQUIREMENTS OF THE CITY OF OTTAWA. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE IT HAS REVIEWED THE CURRENT AND EXISTING DESIGNS BY HYDRO, STREET LIGHTING, BELL, CANADA POST, O.C. TRANSPO, CABLE TV AND ANY OTHER PARTIES INCLUDED BUT NOT MENTIONED AND COMPLETE THE INSTALLATION IN ACCORDANCE WITH THE REQUIREMENTS OF THE STAKEHOLDER UTILITY DESIGNS.
8. CONTRACTOR TO ADVISE ENGINEER IN WRITING OF ANY DISCREPANCIES IN THE HYDRO, BELL, ROGERS, ENBRIDGE, AND STREETLIGHT DRAWINGS, AND THE CUP AHEAD OF INSTALLATION.
9. HYDRO INSPECTOR IS TO BE NOTIFIED AND PRESENT AHEAD OF HYDRO INSTALLATION
10. BELL AND ROGERS VAULT EASEMENT SIZE AND LOCATION ARE AS SHOWN ON THE CUP. ANY LOCATION DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER IN WRITING AHEAD OF INSTALLATION.
11. BELL AND ROGERS VAULTS ARE TO BE PLACED TO THE EXTENT POSSIBLE IN THE RIGHT OF WAY RESPECTING THE REQUIRED CLEARANCES FROM DUCTS IN THE JOINT UTILITY TRENCH. IF VAULTS ARE ON PRIVATE PROPERTY THEY MUST BE PLACED WITHIN THE EASEMENT. VERIFY VAULT CORNERS PRIOR TO FINAL INSTALLATION AND FIBRE LINE PLACEMENT. VAULTS INSTALLED IN THE WRONG LOCATION OR OUTSIDE THE EASEMENTS WILL BE RELOCATED AT THE COST OF BELL AND ROGERS.
12. UTILITY EASEMENTS ARE TO BE STAKED - ALL 4 CORNERS WITH PROPOSED FINAL GRADES MARKED ON THE STAKES.
13. STREETLIGHTS ARE TO BE INSTALLED AT THE OFFSETS FROM FACE OF CURB SHOWN ON THE APPROVED ROAD SECTIONS FOR THE PROJECT.
14. CAD FILES OF THE CUP PROVIDED BY THE ENGINEER ARE AS A COURTESY ONLY TO ASSIST THE CONTRACTOR. LAYOUT OF THE UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR AND LEGAL SURVEYOR.

Pipe Interference Table

Crossing No.	PIPE 1	PIPE 2	Clearance
1	WTR Bottom 93.124	STM Top 91.511	1.612
2	WTR Bottom 93.184	SAN Top 92.033	1.151
3	WTR Bottom 93.235	SAN Top 92.985	0.250
4	WTR Bottom 93.254	STM Top 93.004	0.250
5	WTR Bottom 93.105	STM Top 91.679	1.425
6	WTR Bottom 93.113	SAN Top 92.163	0.950
7	WTR Bottom 93.708	SAN Top 92.967	0.741
8	WTR Bottom 93.714	STM Top 92.668	1.046
9	WTR Bottom 93.300	SAN Top 92.543	0.757
10	WTR Bottom 93.304	STM Top 92.027	1.277
11	STM Bottom 94.622	WTR Top 94.192	0.430
12	WTR Bottom 93.828	SAN Top 93.210	0.618
13	WTR Bottom 93.896	STM Top 92.967	0.929
14	WTR Bottom 93.653	SAN Top 93.144	0.509
15	WTR Bottom 93.626	SAN Top 92.979	0.648
16	WTR Bottom 93.438	SAN Top 92.830	0.608
17	WTR Bottom 95.645	SAN Top 92.671	2.974
18	WTR Bottom 93.205	SAN Top 92.425	0.780
19	WTR Bottom 92.996	SAN Top 92.285	0.711
20	SAN Bottom 91.515	STM Top 91.093	0.421
21	SAN Bottom 93.058	STM Top 92.661	0.397
22	SAN Bottom 92.054	STM Top 91.737	0.317
23	SAN Bottom 92.600	STM Top 92.313	0.287
24	SAN Bottom 92.280	STM Top 92.003	0.277

NOTES :

1. ALL MATERIALS AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE CURRENT CITY OF OTTAWA STANDARD DRAWINGS & SPECIFICATIONS OR OPSD/OPSS IF CITY DRAWINGS AND SPECIFICATIONS DO NOT APPLY.
2. THE POSITION OF UNDERGROUND AND ABOVE GROUND SERVICE, UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH SERVICE, UTILITIES AND STRUCTURES IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL REPORT ALL CONFLICTS, DISCOVERIES OF ERROR AND DISCREPANCIES TO THE ENGINEER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER OR NOT SHOW ON THESE DRAWINGS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL LANDS BEYOND THE SITE LIMITS. ANY AREAS BEYOND THE SITE LIMITS, WHICH ARE DISTURBED DURING CONSTRUCTION, SHALL BE REPAIRED AND RESTORED TO ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE ADJACENT LAND OWNER, THE OWNER, THE OWNERS REPRESENTATIVES AND/OR THE AUTHORITY HAVING JURISDICTION AT THE EXPENSE OF THE CONTRACTOR.
6. WHERE NECESSARY, THE CONTRACTOR SHALL IMPLEMENT A TRAFFIC MANAGEMENT PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE LATEST VERSION OF THE M.T.O. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL TEMPORARY TRAFFIC CONTROL MEASURES MUST BE REMOVED UPON THE COMPLETION OF THE WORKS.
7. SHOULD ANY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER TO CONTACT THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATE, AND WORK WITHIN THE AREA SHALL BE CEASED UNTIL FURTHER NOTICE.
8. FOR GEOTECHNICAL INFORMATION REFER TO GEOTECHNICAL REPORT **PG7469-1** PREPARED BY **PATERSON GROUP DATED JULY 02, 2024**.

Table 3 – Recommended Asphalt Pavement Structure – local roadways

Thickness (mm)	Material Description
40	**Wear Course** – Superpave 12.5 Asphaltic Concrete
50	**Binder Course** – Superpave 19.0 Asphaltic Concrete
150	**BASE** – OPSS Granular A Crushed Stone
450	**SUBBASE** – OPSS Granular B Type II
SUBGRADE – Either fill, in situ soils or OPSS Granular B Type I or II material placed over in situ soil or bedrock.	

Table 2 – Recommended Asphalt Pavement Structure – driveways

Thickness (mm)	Material Description
50	**Wear Course** – SuperDpreave 12.5 Asphaltic Concrete
150	**BASE** – OPSS Granular A Crushed Stone
300	**SUBBASE** – OPSS Granular B Type II
SUBGRADE – Either fill, in situ soils or OPSS Granular B Type I or II material placed over in situ soil or bedrock.	

9. FOR GEODETIC **BENCHMARK** AND GEOMETRIC LAYOUT OF STREET AND LOTS, REFER TO TOPOGRAPHICAL SURVEY AND PLAN OF SUBDIVISION PREPARED BY **ANNIS O'SULLIVAN VOLLEBEKK LTD**, BENCHMARK BASED ON CAN--NET VIRTUAL REFERENCE SYSTEM NETWORK.
10. FOR SITE PLAN INFORMATION, REFER TO SITE PLAN PREPARED BY **M. DAVID BLAKELY ARCHITECT INC.**
11. THESE DRAWINGS ARE NOT TO BE SCALED OR USED FOR LAYOUT PURPOSES
12. ROADWAY SECTIONS REQUIRING GRADE RAISE TO PROPOSED SUB GRADE LEVEL TO BE FILLED WITH ACCEPTABLE NATIVE EARTH BORROW OR IMPORTED OPSS SELECTED SUBGRADE MATERIAL IF NATIVE MATERIAL IS DEFICIENT AS PER RECOMMENDATION OF GEOTECHNICAL ENGINEER.
13. IN AREAS WHERE EXISTING GROUND IS BELOW THE PROPOSED ELEVATION OF SEWER AND WATERMAINS, GRADE RAISING AND FILLING IS TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT. AS PER CITY GUIDELINES ALL WATERMAINS IN FILL AREAS ARE TO BE TIED WITH RESTRAINING JOINTS AND THRUST BLOCKS.
14. THE CONTRACTOR SHALL IMPLEMENT THE EROSION AND SEDIMENT CONTROL PLAN PRIOR TO THE COMMENCEMENT OF ANY SITE CONSTRUCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE ENGINEER, OR ANY REGULATORY AGENCY. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE START OF A SUBSEQUENT PHASE.
15. CONTRACTORS SHALL BE RESPONSIBLE FOR KEEPING CLEAN ALL ROADS WHICH BECOME COVERED IN DUST, DEBRIS AND/OR MUD AS A RESULT OF ITS CONSTRUCTION OPERATIONS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE SHOULD THE MAXIMUM OPSD TRENCH WIDTH BE EXCEEDED.
17. ALL PIPE, CULVERTS, STRUCTURES REFER TO NOMINAL INSIDE DIMENSIONS.
18. SHOULD CLAY SEALS BE REQUIRED, THEY SHALL BE INSTALLED AS PER THE RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT.
19. UNLESS SPECIFICALLY NOTED OTHERWISE, PIPE MATERIALS SHALL BE AS FOLLOWS;
    -WATERMAINS TO BE PVC DR18
    -SANITARY SEWER TO BE PVC DR35
    -PERFORATED STORM SEWERS IN REAR YARDS AND LANDSCAPE AREAS TO BE 250mm HDPE
    -STORM SEWERS 375mm DIAMETER AND LESS TO BE PVC DR35
    -STORM SEWERS 450mm DIAMETER AND GREATER TO BE CONCRETE, CLASS AS PER OPSD 807.010 OR 807.030, OR HIGHER
    FOR SHALLOW SEWERS, REFER TO CITY STANDARD S35.
20. ALL CONNECTIONS TO EXISTING WATERMAINS ARE TO BE COMPLETED BY CITY FORCES. CONTRACTOR IS TO EXCAVATE, BACKFILL, COMPACT AND REINSTATE.
21. ANY WATERMAIN WITH LESS THAN 2.4m AND ANY SEWER WITH LESS THAN 2.0m DEPTH OF COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22 OR AS APPROVED BY THE ENGINEER.
22. ALL FIRE HYDRANTS AS PER CITY STANDARD W19, c/w 150mmØ LEAD UNLESS OTHERWISE SPECIFIED.
23. ALL STUBBED SEWERS SHALL HAVE PRE-MANUFACTURED CAPS INSTALLED.
24. ALL CATCHBASINS SHALL HAVE A 600mm SUMP. ALL CATCHBASIN MANHOLES, AND ALL STORM MANHOLES WITH OUTLETTING PIPE SIZES LESS THAN 900mm, SHALL HAVE A 300mm SUMP.
25. ALL SANITARY MANHOLES IN PONDING AREAS SHALL BE EQUIPPED WITH A WATERTIGHT COVER.
26. ALL LEADS FOR STREET CATCHBASIN'S AND CURB INLET CATCHBASIN'S CONNECTED TO MAIN SHALL BE 200mmØ PVC DR35 @ MIN 2% SLOPE UNLESS NOTED OTHERWISE. ALL LEADS FOR RYCB'S CONNECTED TO MAIN SHALL BE 200mmØ PVC DR35 @ MIN 1% SLOPE UNLESS NOTED OTHERWISE.
27. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL STREET CATCHBASINS SHALL BE INSTALLED WITH TWO - 3.0m MINIMUM SUBDRAINS INSTALLED LONGITUDINALLY, PARALLEL WITH THE CURB. ALL CATCHBASINS IN ASPHALT AREAS, NOT ADJACENT TO A CURB, SHALL BE INSTALLED WITH FOUR - 3.0m MINIMUM SUBDRAINS INSTALLED ORTHOGONALLY.
28. INLET CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMPLETING THE ROAD BASE (GRANULAR A).
29. ALL SEWER SERVICE LATERALS WITH MAINLINE CONNECTIONS DEEPER THAN 5.0m REQUIRE A CONTROLLED SETTLEMENT JOINT.
30. EACH BUILDING SHALL BE EQUIPPED WITH A SANITARY AND STORM SEWER BACKWATER VALVE AND CLEAN-OUT ON ITS PRIMARY SERVICE, IF REQUIRED BY ONTARIO BUILDING CODE (DETERMINED BY OTHERS).
31. THE SUBGRADE OF ALL STRUCTURES, PIPE, ROADS, SIDEWALKS, WALKWAYS, AND BUILDINGS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
32. TOP COURSE ASPHALT SHALL NOT BE PLACED UNTIL THE FINAL CCTV INSPECTION AND NECESSARY REPAIRS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA.
33. ALL RETAINING WALLS GREATER THAN 1.0m IN HEIGHT SHALL BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER.
34. ALL RETAINING WALLS GREATER THAN 0.6m IN HEIGHT REQUIRE A GUARD. ANY GUARD ON A RETAINING WALL GREATER THAN 1.0m IN HEIGHT SHALL BE DESIGNED BY THE QUALIFIED STRUCTURAL ENGINEER RESPONSIBLE FOR THE WALL DESIGN.
35. UPON COMPLETION OF THE RETAINING WALL, THE CONTRACTOR SHALL REQUEST A CONFORMANCE CERTIFICATE FROM THE QUALIFIED ENGINEER RESPONSIBLE FOR THE WALL DESIGN.

CLIENT

PHOENIX HOMES
18A Bentley Ave Ottawa, ON K2E 6T8

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Arcadis Professional Services (Canada) Inc.
formerly IBI Group Professional Services (Canada) Inc.

ISSUES

No.	DESCRIPTION	DATE
1	SUBMISSION 1 ISSUED FOR SPA	2025-05-14
2	SUBMISSION No. 1 TO CITY	2025-09-18

NOT FOR CONSTRUCTION

SEE 010 FOR NOTES, LEGEND, CB TABLE AND DETAILS



SEAL

LICENSED PROFESSIONAL ENGINEER
S. E. LABADIE
100214983
2025-09-18
PROVINCE OF ONTARIO

ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
4816 BANK STREET

PROJECT NO: 147743

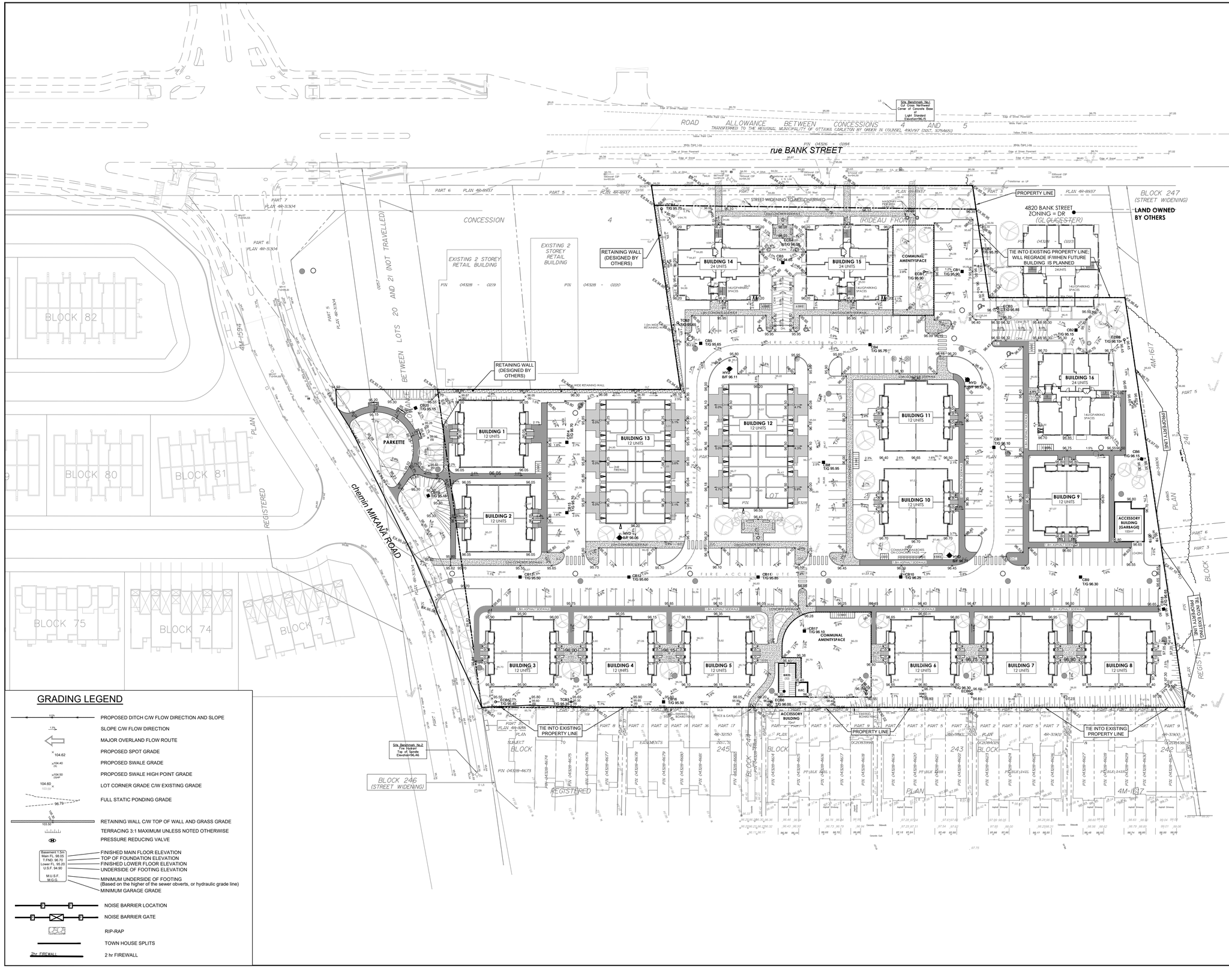
DRAWN BY:	CHECKED BY:
D.D.	M.P.
PROJECT MGR: S.E.L.	APPROVED BY: S.E.L.

SHEET TITLE
NOTES & LEGEND

SHEET NUMBER C-010 | ISSUE 2

SCALE CHECK: 1in = 10mm

File Location: C:\DATA\cc\Jobs\2cc04\4f93f964e8f99907975c22bc6\3ad4f\esb.39a14de5-bf0a-419b-ac1a-f7417229d50a\Project Files\10_WIP\04_CIV\LSheets\C-010 NOTES-LEGEND.dwg Last Saved: September 18, 2025, 7:27:29 PM by acesuser
Plotted: Thursday, September 18, 2025 7:27:29 PM by acesuser
D07-xx-xx-xxxx


rue BANK STREET
ROAD ALLOWANCE BETWEEN CONCESSIONS 4 AND 5
TRANSFERRED TO THE REGIONAL MUNICIPALITY OF OTTAWA CARLETON BY ORDER IN COUNCIL 490/97 (INST. N754453)
Site Benchmark No.1
Cut Cross Northwest Corner of Concrete Base
Light Standard
Elevation=96.75
PIN 04328 - 0284
PROPERTY LINE
4820 BANK STREET
ZONING = DR
(GLOUCESTER)
LAND OWNED BY OTHERS
BLOCK 247
(STREET WIDENING)
STREET WIDENING TO BE CONFIRMED
RETAINING WALL (DESIGNED BY OTHERS)
EXISTING 2 STOREY RETAIL BUILDING
PIN 04328 - 0219
EXISTING 2 STOREY RETAIL BUILDING
PIN 04328 - 0220
CONCESSION 4
BETWEEN LOTS 20 AND 21 (NOT TRAVELLED)
TIE INTO EXISTING PROPERTY LINE: WILL REGRADE IF/WHEN FUTURE BUILDING IS PLANNED
BUILDING 1 12 UNITS
BUILDING 2 12 UNITS
BUILDING 3 12 UNITS
BUILDING 4 12 UNITS
BUILDING 5 12 UNITS
BUILDING 6 12 UNITS
BUILDING 7 12 UNITS
BUILDING 8 12 UNITS
BUILDING 9 12 UNITS
BUILDING 10 12 UNITS
BUILDING 11 12 UNITS
BUILDING 12 12 UNITS
BUILDING 13 12 UNITS
BUILDING 14 24 UNITS
BUILDING 15 24 UNITS
BUILDING 16 24 UNITS
14U/GPARKING SPACES
COMMUNAL AMENITYSPACE
ACCESSORY BUILDING [GARBAGE] 10m²
PARKETTE
FIRE ACCESS ROUTE
TIE INTO EXISTING PROPERTY LINE
PROPERTY LINE
Site Benchmark No.2
Fire Hydrant
Top of Spindle
Elevation=96.46
BLOCK 246
(STREET WIDENING)
chemin MIKANA ROAD
REGISTERED PLAN 4M-1594
REGISTERED PLAN 4M-1617
BLOCK 82
BLOCK 80
BLOCK 81
BLOCK 75
BLOCK 74
BLOCK 73
SUBJECT BLOCK
EASEMENTS
LOT 245
LOT 243
LOT 242
PART 1 PLAN 4R-32150
PART 2 PLAN 4R-32150
PART 3 PLAN 4R-32150
PART 4 PLAN 4R-32150
PART 5 PLAN 4R-32150
PART 6 PLAN 4R-32150
PART 7 PLAN 4R-32150
PART 8 PLAN 4R-32150
PART 9 PLAN 4R-32150
PART 10 PLAN 4R-32150
PART