

Riverside South Development Corporation

Assessment of Adequacy of Public Services

**980 Earl Armstrong Road & 4700 Limebank Road,
Riverside South**

September 2023

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Prepared By:

Arcadis Canada Inc.
333 Preston Street, Suite 500
Ottawa, Ontario K1S 5N4
Canada
Phone: 613 225 1311

Prepared For:

Riverside South Development Corporation

Our Ref: 144320



Meghan Black, P. Eng,
Associate | Manager, Water/Wastewater



Lance Erion, P. Eng,
Associate

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1 Introduction

1.1 Purpose

The purpose of this report is to investigate and confirm the adequacy of public services for the proposed site. This report will review major municipal infrastructure including water supply, wastewater collection and disposal and management of stormwater. This report will also include a Sedimentation and Erosion Control Plan. A review of traffic components will be the subject of a separate report.

This report is being prepared as a technical document in support of the draft plan submission for the subject site and was prepared in accordance with the November 2009 “Servicing Study Guidelines for Development Applications” in the City of Ottawa. **Appendix A** contains a customized copy of those guidelines which can be used as a quick reference for the location of each of the guideline items within the study report.

1.2 Background

The Riverside South Community, formerly known as South Urban Community (SUC), is a part of the former City of Gloucester. The Council of the City of Gloucester adopted the first Official Plan for the community in September 1990. The original concept plan for the community served as the basis for both a Gloucester and a Regional OPA. A Master Drainage Plan (MDP) for the community was formulated in June 1992 based on the preliminary land use plan prepared by J. Bousfields and Associates Ltd. in December 1991.

The South Urban Community became a part of the City of Ottawa through amalgamation in 2001 and the new Official Plan of the City of Ottawa designated the areas as “General Urban Area” and “Employment Area” with some adjustments to the urban boundaries. In 2003, the City of Ottawa initiated a Community Design Plan (CDP) for the Riverside South area. The basis of the CDP is the land use plan for the community, which has evolved over the time and has changed significantly since the original plan prepared in early 1990’s.

The South Urban Community River Ridge Master Infrastructure Plan (SUC RR MIP) prepared by Ainley Graham and Associates in 1994 presented a preferred servicing strategy for potable water, sanitary and storm infrastructure in the Riverside South community. The Riverside South Infrastructure Servicing Study Update (ISSU) was issued in 2008 as an update to the SUC RR MIP, to account for modifications to the MDP and CDP since 1994.

There have been significant revisions to the CDP, MDP and City of Ottawa Design Guidelines since 2008 so in June 2017, Stantec helped the City of Ottawa complete an update to the 2008 ISSU for a portion of the Riverside Community called Rideau River Area and which includes the lands proposed to be tributary to Pond 5. The 2017 Riverside South Community Infrastructure Servicing Study Update – Rideau River Area (2017 ISSU) report recognized the approved 2016 CDP which considers changes in land use planning and development densities in accordance with Official Plan objectives. For reference a copy of the Riverside South Secondary Plan Schedule A Designation Plan is included in **Appendix A**. The infrastructure analyses also accounted for existing sewer and infrastructure and the stormwater management pond within the study area.

1.3 Previous Studies

Since the South Urban Community and Riverside South Community have been planned and developed for over twenty five years, there have been numerous background studies dealing with major municipal infrastructure. The subject site was most recently addressed in the Riverside South Community Infrastructure Servicing Study Update Phase 1 Mosquito Creek Study Area (Phase 1 ISSU), prepared by IBI Group 2023.

1.4 Subject Property

The site is bounded by Earl Armstrong Road to the north, Limebank Road to the east, Portico Way to the west and undeveloped land to the south as shown on **Figure 1.1** in **Appendix A**. Total site area is approximately 52 hectares consisting of mixed use residential and commercial development with a district park, a parkette and a school site. The current draft plan of subdivision for the subject property is shown on **Figure 1.2** which is included in **Appendix A**. The site is bisected by a BRT/LRT transit corridor running from east to west with the LRT Limebank Station located adjacent to Limebank Road, the station is currently under construction, bus traffic connecting Earl Armstrong Road to the station will travel through the site along Main Street (Street No.3). With the transit corridor bisecting the site the northern section will be developed in advance of the southern portion.

1.5 Existing Infrastructure

Figure 1.3 in **Appendix A** shows the location of existing infrastructure in the vicinity of the subject development. There are 600 mm sanitary sewers located on Earl Armstrong Road and Limebank Road adjacent to the site and a 525 mm sanitary sewer on Portico Way. There is a 1950 mm storm sewer stub on Earl Armstrong Road at Main Street (Street No. 3) that will serve as the storm outlet for the northern portion of the site, the stub is connected to sewers on Earl Armstrong and Limebank Roads which outlets to the existing stormwater management Pond 2 located north of the site. There is a 406 mm watermain on Earl Armstrong Road, a 305 mm watermain on Portico Way and a 610 mm watermain on Limebank Road adjacent to the site. A 152 mm watermain connection and hydrant has been constructed for the LRT Limebank Station from the Limebank 610 mm main.

1.6 Pre-Consultation

There was a pre-consultation meeting with the City of Ottawa on September 8, 2022. The meeting notes can be found in **Appendix A**. The following are some of the topics reviewed and discussed:

- Zoning information
- Official plan
- Infrastructure/Servicing
- Geotechnical
- Planning Comments
- Parks

1.7 Geotechnical Considerations

The subject lands are covered under the following geotechnical investigation report which has been prepared by Paterson Group Associates.

- Report No. PG4958-1 Revision 3 Preliminary Geotechnical Investigation Existing Conditions Report, Riverside South Community MDP Update, Mosquito Creek Study Area, Ottawa, Ontario, December 9, 2019.

In general, the subsurface profile includes topsoil, underlain by a silty clay deposit overlying glacial till. The bedrock surface is expected to be about 10 to 15 meters in depth for the majority of the site but is known to rise to the south. A permissible grade raise of up to 2 meters is allowed for the site per the Initial Permissible Grade Raise Limits Plan drawing no. PG4958-3 from the geotechnical report, a copy of the drawing is included in **Appendix A**.

2 Water Supply

2.1 Existing Conditions

As noted in Section 1.5 there is an existing 406 mm watermain on Earl Armstrong Road, a 305 mm watermain and a 610 mm watermain on Limebank Road, connections to all of these watermains are proposed to service the site. **Figure 1.3** in **Appendix A** shows the location of the existing watermains.

2.2 Riverside South Community Infrastructure Servicing Study Update Phase 1 Mosquito Creek Study Area (2023 IBI Group)

The Infrastructure Servicing Study Update provided a macro level water servicing plan for the Phase 1 lands of the Mosquito Creek Study Area (Phase 1 ISSU). Major watermains in the Phase 1 lands are shown on Figure 3-2 Potable Water Servicing Plan, a copy is included in **Appendix B**. The figure shows the extension south of the 305 mm watermain on Portico Way and the 610 mm watermain on Limebank Road in the vicinity of the 980 Earl Armstrong & 4700 Limebank Road development.

2.3 Design Criteria

2.3.1 Water Demands

Water demands have been calculated for the site based on per unit population density and consumption rates taken from Tables 4.1 and 4.2 of the City of Ottawa Design Guidelines – Water Distribution and are summarized as follows:

- Single Family 3.4 person per unit
- Townhouse and Semi-Detached 2.7 person per unit
- Average Apartment 1.8 person per unit
- Residential Average Day Demand 280 l/cap/day
- Residential Peak Daily Demand 700 l/cap/day
- Residential Peak Hour Demand 1,540 l/cap/day
- ICI Average Day Demand 28,000 l/ha/day
- ICI Peak Daily Demand 42,000 l/ha/day
- ICI Peak Hour Demand 75,600 l/ha/day
- Employment Average Day Demand 35,000 l/ha/day
- Employment Peak Daily Demand 52,500 l/ha/day
- Employment Peak Hour Demand 94,500 l/ha/day

A water demand was calculated using the Draft Plan per **Figure 1.3** in **Appendix A**. The land use for Blocks 1 to 4, 6, 11, 13 and 14 is designated Town Center with a residential population of 122.4 persons per hectare and an

employment sanitary flow rate of 35,000 l/ha/day per **Table 3-1** in **Section 3.3**. Block 7, District Park and Block 13, School use the institutional rate of 28,000 l/ha/day. The water demands are as follows;

- Average Day 24.51 l/s
- Maximum Day 46.52 l/s
- Peak Hour 93.53 l/s

2.3.2 System Pressure

The Ottawa Design Guidelines – Water Distribution (WDG001), July 2010, City of Ottawa, Clause 4.2.2 states that the preferred practice for 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 Clause 4.2.2 of 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 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	Maximum pressure at any point in the distribution system 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). Pressure reduction controls will be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

2.3.3 Fire Flow Rates

There are no building designs for this development at this time so that a fire flow calculation using the Underwriters Survey (FUS) method cannot be done at this time. Boundary conditions have been provided for a 13,000 l/min fire flow which was the fire flow used in the Phase 1 ISSU water analysis. A boundary condition with a 10,000 l/min fire flow has also been provided as non-combustible and fire resistant multi-storey buildings with protected vertical openings typically have fire flow rates less than 10,00 l/min.

2.3.4 Boundary Conditions

The City of Ottawa has provided four boundary conditions at the watermain connection locations at Portico Way (Connection1), two connections on Earl Armstrong (Connections 2 and 3) and at Limebank Road (Connection 4). Boundary conditions are provided for the existing pressure zone and for the SUC Zone Reconstruction. A copy of the boundary condition is included in **Appendix B** and summarized as follows;

Table 2-1 Water Supply Boundary Conditions

	Max HGL (Basic Day)	Peak Hour	Max Day + Fire (10,000 l/min Fire Flow)	Max Day + Fire (13,000 l/min Fire Flow)
Connection 1 Existing Conditions	132.1 m	124.9 m	124.9 m	123.3 m
Connection 1 Future SUC Zone	146.8 m	143.5 m	142.4 m	140.6 m
Connection 2 Existing Conditions	132.1 m	124.9 m	124.9 m	124.8 m
Connection 2 Future SUC Zone	146.8 m	143.5 m	143.3 m	142.1 m
Connection 3 Existing Conditions	132.1 m	124.9 m	124.9 m	123.4 m
Connection 3 Future SUC Zone	146.8 m	143.4 m	142.4 m	140.8 m
Connection 4 Existing Conditions	132.1 m	124.9 m	124.1 m	121.5 m
Connection 4 Future SUC Zone	146.8 m	143.4 m	141.3 m	138.9 m

2.3.5 Hydraulic Model

A computer model has been created for the subject site using the InfoWater 12.4 program. The model includes the hydraulic boundary conditions at the connections to existing watermains.

2.4 Proposed Water Plan

2.4.1 Modeling Results

The hydraulic model was run under basic day, maximum day with fire flows and under peak hour conditions. Water pipes are sized to provide sufficient pressure and to deliver the required fire flows.

Results of the hydraulic model are included in **Appendix B** and summarized as follows:

Table 2-2 Hydraulic model results

Scenario	Existing Zone	SUC Zone Reconfiguration
Basic Day (Max HGL) Pressure Range	358.5 to 391.0 kPa	502.6 to 535.0 kPa
Peak Hour Pressure Range	286.5 to 320.4 kPa	468.0 to 502.6 kPa
Max Day + 9,000 l/min Fire Flow Residual Pressure	138.1 to 261.0 kPa	308.5 to 431.3 kPa

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

- Maximum Pressure All nodes under both pressure zone scenarios have basic day pressures under 552 kPa (80 psi), pressure reducing control is not required for this development.
- Minimum Pressure All nodes under both scenarios pressure zone scenarios exceed the minimum value of 276 kPa (40 psi).
- Fire Flow Under the existing pressure zone condition with a 13,000 l/min fire there is one node that has a residual pressure of 138.1 kPa which is just under the minimum required pressure of 140 kPa (20 psi). Under the Post SUC Zone Reconfirmation the residual pressure increases to 308.5 kPa for the 13,000 l/min fire. With one exception all nodes can accommodate a 13,000 l/min fire flow, the required fire flow will be determined when building layouts are available.

2.4.2 Watermain Layout

Figure 2.1 in Appendix B shows the proposed Conceptual Water Plan for the proposed development.

As per the Phase 1 ISSU a 305mm watermain is extended south on Portico Way crossing the transit corridor and along Street No. 8 to Street No. 7. At Street No. 7 the 305 mm is extended east to Limebank Road where the 610 mm watermain will be extended south from the existing to Street No. 7. These mains along with the existing 406 mm main on Earl Armstrong Road watermain create a loop around the 980 Earl Armstrong & 4700 Limebank Road development. A 250 mm main is proposed on Main Street (Street No. 3) for the district park as per item 29 b) in the pre-consultation meeting as discussed in Section 1.6. All other watermains in the development are proposed to be 204 mm diameter.

As mentioned in Section 1.4 the northern portion of the development will be developed in advance of the southern portion which will result un-looped mains on Main Street and Portico Way. For Main Street (Street No. 3) a connection to the existing watermain servicing the LRT Limebank Station can be constructed as shown on Figure 2.1. The 305 mm watermain on Portico Way will not need to be extended until the southern portion of the site is developed, should Portico Way be constructed in advance of the southern development the watermain can be installed but not commissioned until it extended south across the transit corridor.

3 Wastewater Collection

3.1 Existing Conditions

As noted in Section 1.5, there are existing 600 mm sanitary sewers located on Earl Armstrong Road and Limebank Road adjacent to the site and a 525 mm sanitary sewer on Portico Way. **Figure 1.3** in **Appendix A** shows the location of the existing sanitary sewers.

3.2 Riverside South Community Infrastructure Servicing Study Update Phase 1 Mosquito Creek Study Area (2023 IBI Group)

The Infrastructure Servicing Study Update provided a macro level wastewater servicing plan for the Phase 1 lands of the Mosquito Creek Study Area (Phase 1 ISSU). Major sanitary sewers in the Phase 1 lands are shown on Figure 400 Sanitary Drainage Area Plan, a copy of the drainage plan and the Sanitary Sewer Design Sheet is included in **Appendix C** with the 980 Earl Armstrong and 4700 Limebank Road areas highlighted on the design sheet. The northern 980 Earl Armstrong development is represented by Areas 507A and 520A in the Phase 1 ISSU, the site outlets to the existing 600 mm sanitary sewer on Earl Armstrong Road via a 375 mm sanitary sewer. The southern 4700 Limebank Road development is represented by Areas 445A and 450A in the Phase 1 ISSU, the site outlets to the existing 525 mm sanitary sewer on Portico Way.

3.3 Design Criteria

The estimated wastewater flows from the subject site are based on the revised City of Ottawa design criteria. Among other items, these include:

- Average residential flow = 280 l/c/d
- Peak residential flow factor = (Harmon Formula) x 0.80
- Average commercial flow = 28,000 l/s/ha
- Average institutional flow = 28,000 l/s/ha
- Peak ICI flow factor
 - = 1.5 if ICI area is ≤ 20% total area
 - = 1.0 if ICI area is > 20% total area
- Inflow and Infiltration Rate = 0.33 l/s/ha
- Minimum Full Flow Velocity = 0.60 m/s
- Maximum Full Flow Velocity = 3.0 m/s
- Minimum Pipe Size = 200 mm diameter

In accordance with the City of Ottawa Sewer Design Guidelines table 4.2, the following density rates are estimated for the subject site:

- Single units = 3.4
- Townhouse and Semi units = 2.7
- Apartment units = 1.8

Per the Phase 1 ISSU the neighbourhood residential land shown on the 2016 Riverside South Community Design Plan in **Appendix A** include low density (LD), medium density (MD), high density (HD1 and HD2) and Town Centre (TC), which is a mix of residential and employment. Table 3-1 summarizes the residential land use densities used in the Phase 1 ISSU report. The land use for 980 Earl Armstrong and 4700 Limebank Road development consists of seven Town Center blocks along with the school and park blocks.

Table 3-1 Residential Sanitary Densities Phase 1 ISSU

Land Use	Unit Density Net Hectares	Area Reduction Gross to Net	Unit Density Gross Hectares	Person per Unit	Population Density Gross Hectares
LD	25	70%	17.5	3.4	59.5
MD	38	70%	26.6	2.7	71.8
HD1	60	90%	54.0	1.8	97.2
HD2	120	90%	108.0	1.8	194.4
TC ⁽¹⁾	68	100%	68.0	1.8	122.4

(1) An employment demand of 35,000 l/ha/day is applied to the TC land use

3.4 Recommended Sanitary Plan

Figure 3.1 in **Appendix C** shows the proposed Conceptual Sanitary Plan for the proposed development.

The sanitary outlet for the northern portion of the development is the existing 300 mm stub off the existing 600 mm sanitary sewer on Earl Armstrong at Street No.1, the Phase 1 ISSU showed this connection at Main Street (Street No, 3) however the existing 600 mm sewer on Earl Armstrong flows east to west so that the connection at Street No. 1 is downstream of a connection at Main Street. For the southern portion of the development and all development lands west of Limebank Road the sanitary outlet is the 525 mm sanitary sewer on Portico Way. All pipe sizes shown on **Figure 3.1** will be confirmed during detailed design.

In the Phase 1 ISSU sanitary design sheet in **Appendix C** the peak flow for the northern portion of the site is 29.15 l/s from areas 507A and 520A, for the southern portion the peak flow is 32.91 l/s from areas 445A and 450A. The draft plan for this development closely matches the land use in the Riverside South Secondary Plan, a copy is in **Appendix A**. Using the same densities as the Phase 1 ISSU the peak flow from the northern portion is 27.37 l/s and 30.51 l/s for the southern portion, both flows are slightly lower than the Phase 1 ISSU peak flows.

4 Stormwater Management

4.1 Existing Conditions

There are currently no existing municipal services, including storm sewers, within the subject site. Adjacent Earl Armstrong Road and Limebank Road are each provided with trunk storm sewers (2100 mm diameter and 2700 mm diameter, respectively). A 1950 mm diameter storm stub extends south from Earl Armstrong Road at future Main Street (Street No. 3). The stub is connected to sewers on Earl Armstrong and Limebank Roads which outlet to the existing stormwater management Pond 2 located north of the site. There are no existing municipal drains, watercourses or recognized drainage features located on the subject lands.

4.2 Riverside South Community Infrastructure Servicing Study Update Phase 1 Mosquito Creek Study Area (IBI Group, 2023)

The Infrastructure Servicing Study Update provided a macro level stormwater servicing plan for the Phase 1 lands of the Mosquito Creek Study Area (Phase 1 ISSU). Major storm sewers in the Phase 1 lands are shown on Figure 500 Storm Drainage Area Plan, a copy of the drainage plan and the Storm Sewer Design Sheet are included in **Appendix D** with the 980 Earl Armstrong and 4700 Limebank Road areas highlighted on the design sheet.

For the portion of the subject site north of the LRT/BRT, the Phase 1 ISSU recommends that minor runoff be directed to the 1950 mm diameter storm stub on future Main Street, which drains to Pond 2. The exception to this is Portico Way, which is to drain west to the existing Phase 13 storm sewer, tributary to Pond 1.

The Phase 1 ISSU recommends that a secondary storm sewer be introduced on Limebank Road, west of the existing 2700 mm diameter sewer, extending from Earl Armstrong Road to the Pond 2 inlet structure. Runoff from west of Limebank Road, including the subject lands draining to the 1950 mm diameter stub at future Main Street, would drain to the new secondary Limebank Road storm sewer.

Major flow routing from the subject site north of the LRT/BRT is to be directed west to the Thomas Gamble Municipal Drain.

For the portion of the subject site south of the LRT/BRT, the Phase 1 ISSU recommends that minor runoff be directed to the future Pond 2A. Major flow is also directed to the pond, save for Main Street and the development block adjacent to Limebank Road, emergency flow routing from which is to be directed towards Limebank Road.

4.3 Minor Storm Design Criteria

The minor system storm sewers for the subject site are proposed to be sized based on the rational method, applying standards of both the City of Ottawa and MECP. Some of the key criteria for this site include the following:

- Sewer Sizing: Rational Method
- Design Return Period: 1:2 year (local streets)
1:5 year (collector streets)

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- Initial Time of Concentration 1:10 year (arterial road) 10 minutes
- Manning's: 0.013
- Minimum Velocity: 0.80 m/s
- Maximum Velocity: 3.00 m/s

Table 4-1 Storm sewers minimum pipe slopes

Pipe Diameter (mm)	Slope (%)
250	0.43
300	0.34
375	0.25
450	0.20
525	0.16
600	0.13
675	0.11
750 and larger	0.10

Per the Phase 1 ISSU the neighbourhood residential land shown on the Riverside South Secondary Plan Schedule A Designation Plan in **Appendix A** include low density (LD), medium density (MD), high density (HD1 and HD2), school (EC/EP/FC/FP) and Town Centre (TC), which is a mix of residential and employment. The below table summarizes the runoff coefficients used in the Phase 1 ISSU report for each land use.

Table 4-2 Typical Runoff Coefficients

Land Use Type		Imperviousness (%)
ESD	ESD - Employment and Special District	0.85
BRT	BRT - Bus Rapid Transit	0.67
TC	TC - Town Centre	0.85
CP	CP - Park - Community	0.45
DP	DP - Park - District	0.45
EC	FC / FP / EC / EP - Schools - Secondary - Elementary	0.60

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Land Use Type		Imperviousness (%)
EP	FC / FP / EC / EP - Schools - Secondary - Elementary	0.60
FC	FC / FP / EC / EP - Schools - Secondary - Elementary	0.60
FP	FC / FP / EC / EP - Schools - Secondary - Elementary	0.60
UC	H - Hydro	0.20
HD1	HD1 - Neighbourhood - High Density 1	0.85
HD2	HD2 - Neighbourhood - High Density 2	0.85
I/F	I/F - Institutional / Firehall	0.90
LC	LC - Commercial - Local	0.85
LD	LD - Neighbourhood - Low Density	0.60
LRT	LRT - Light Rail Transit	0.67
MD	MD - Neighbourhood - Medium Density	0.85
NC	NC - Commercial - Neighbourhood	0.85
NEA	NEA - Natural Environment Area	0
NP	NP - Park - Neighbourhood	0.30
OS	OS - Passive Open Space	0.20
UC	P - Pipeline	0.20
P&R	P&R - Park and Ride	0.90
RD	Roads	0.70
SP	SP - Park - Parkette	0.30
SWM	SWM - Stormwater Management Facility	0
UC	UC - Utility Corridor	0
OS	OS - Passive Open Space	0
UNF	UNF - Urban Natural Feature	0.20

4.4 Recommended Minor Storm Plan

The recommended minor storm plan for the overall Phase 1 Mosquito Creek Study Area, as presented in the 2023 Phase 1 ISSU, is included in **Appendix D**. Drawing 500, Storm Drainage Area Plan, shows a preferred minor storm sewer layout for not only the subject site but for adjacent lands in the development area. As noted in **Section 4.2** above, for the subject site north of the LRT/BRT, the Phase 1 ISSU recommends that minor runoff from the subject site be directed to the 1950 mm diameter storm stub on future Main Street (Street No. 3), which drains to Pond 2. The exception to this is Portico Way, which is to drain west to the existing Phase 13 storm sewer, tributary to Pond 1. **Figure 4.1** in **Appendix D** shows a preliminary minor storm plan for the subject property. At the detailed design stage, the opportunity to direct runoff from Portico Way to the storm sewers on Street No. 2 and to Pond 2 can be explored.

Further, the Phase 1 ISSU recommends the introduction of a secondary 2100 mm diameter storm sewer on Limebank Road extending from Earl Armstrong to Pond 2 that will twin the existing 2700 mm diameter storm sewer that outlets to Pond 2. The additional sewer is required to support the ultimate build out of the Pond 2 drainage area as outlined in the ISSU, by intercepting the existing and proposed drainage on Earl Armstrong Road west of Limebank Road, including the north portion of the subject site. It is anticipated the secondary sewer will be required once the tributary development area matches the tributary development area assigned to the existing 2700 mm diameter storm sewer in the Phase 1 ISSU. As shown on the ISSU design sheet in **Appendix D** the 2700 mm diameter storm sewer has a 2 year 2.78A x C of 126.58, 5 year of 12.16, 10 year of 20.61 and 100 year of 9.76 at the Pond 2 outlet. Comparing the 2 year 2.78A x C which represents the development areas rather than collector and arterial roads and the LRT lands, then the current developments at 1424 and 1423 Earl Armstrong Road have a 2.78A x C of 22.66 which leaves a remaining 2.78A x C of 103.92 in the existing 2700 mm diameter Limebank Road storm sewer. As the 2.78A x C for the northern portion of the subject site is 44.52 from the Phase 1 ISSU it is therefore not proposed to introduce the secondary storm sewer on Limebank Road to support the 980 Earl Armstrong Road development.

For the portion of the subject site south of the LRT/BRT, the proposed minor storm servicing remains consistent with that outlined in the Phase 1 ISSU, with drainage being conveyed to future Pond 2A.

4.5 Dual Drainage

Development of the subject site will include a stormwater strategy using the dual drainage system. The system features a combination of on-site detention (surface ponding) with inlet control devices (ICDs) and direct conveyance with no ponding. It accommodates both minor and major stormwater runoff. During frequent storms the effective runoff collected by catchment areas is directly released via catch basin inlets into the network of storm sewers, called the minor system. During less frequent storms, the balance of the flow (in excess of the minor flow) is accommodated by a system of rear yard swales and street segments (or other forms of underground storage or surface storage such as dry ponds). The main advantage of this arrangement is its ability to adjust the rate of total inflow into the minor system to satisfy the required level of service. The required total inflow is typically maintained by the restriction of the capacity and the density of the inlets directly connected into this system. As noted, during less frequent storms, the balance of the flow is accommodated by the major system. Typically, this accommodation is achieved by the attenuation on catchment surfaces called on-site detention and/or direct conveyance of the flow to a recipient.

Major flow routing from the subject site north of the LRT/BRT is to be directed west to the Thomas Gamble Municipal Drain along Street No. 2 to existing Portico Way. For the portion of the subject site south of the LRT/BRT, major flow routing is to be directed to the future Pond 2A located west of Street No. 8. A Macro Grading Plan is provided in **Figure 5.1** in **Appendix A**. On the Macro Grading Plan there are LRT grades taken from the SNC Lavalin TransitNEXT design drawings for the Limebank Station. The design drawings indicate that at the intersection of Main Street (Street No. 3) and the transit road adjacent to the station platform there is a centerline grade of 92.4 m with a corresponding catch basin top of grate elevation of 92.25 m. The path to route this low area with a maximum

Assessment of Adequacy of Public Services

980 Earl Armstrong Road & 4700 Limebank Road, Riverside South

ponding depth of 0.35m cannot be east to Limebank Road as the LRT grades would result in ponding of depth of 0.8m; it cannot go north on Main Street and west on Street No. 2 as the existing grade at Portico and Street No. 2 is 92.62 m; and it cannot go south as the existing grade is rising in that direction. To the west is the proposed BRT, for which there are centerline profiles in the corresponding Environmental Assessment (refer to the 2013 “Barrhaven – Riverside South Rapid Transit Environmental Project Report”); however, they no longer apply to this area as they preceded the LRT design. As part of the detailed design of the BRT, the low area may be routed west to Thomas Gamble Municipal Drain, which may require a portion of the LRT be rebuilt and raised where it will connect to the BRT. The area of potential reconstruction would be relatively small, approximately 70 by 70 meters and would not affect the train platform.

5 Erosion and Sedimentation Control Plan

During construction, existing conveyance systems and water courses can be exposed to sediment loading. In order to prevent site generated sediments from entering the environment, an Erosion and Sedimentation Control Plan (ESCD) will be implemented prior to development. Although a generic ESCP can be developed as part of this report and subsequent Design Briefs, the final plan will be developed and implemented by the Owner's general contractor.

The erosion and sedimentation control strategy for the subject site could include erection of silt fences, straw bale barriers and rock check dams. These measures will ensure protection of both adjacent developments and the natural environment adjacent to and downstream of the site.

A copy of a potential Erosion and Sedimentation Control Plan (ESCP) is shown on **Figure 6.1**, which is included in **Appendix E**.

6 Approvals and Permit Requirements

6.1 City of Ottawa

The City of Ottawa will review all development documents including final working drawings and related reports. Upon completion, the City will approve the local watermains, under Permit No. 008-202; submit the sewer extension MECP application to the province and eventually issue a Commence Work Notification.

6.2 Province of Ontario

The Ministry of Environment, Conservation and Parks (MECP) will approve the local sewers under Section 53 of the Ontario Water Resources Act and issue an Environmental Compliance Approval. A Permit To Take Water may also need to be issued by the MECP.

6.3 Conservation Authority

At this time, it is understood that there are no required permits, authorizations or approvals needed expressly for this development from the Conservation Authority; however, this will be confirmed through a subsequent pre-consultation with the RVCA.

6.4 Federal Government

At this time, it is understood that there are no required permits, authorizations or approvals needed expressly for this development from the Federal Government; however, this will be confirmed through subsequent consultation with Parks Canada as a minimum.

7 Conclusions and Recommendations

7.1 Conclusions

All infrastructure which is needed to help service the subject site already exists. The development plan will include connections to the infrastructure to adequately service the site with water supply, wastewater collection and disposal and management of stormwater runoff. The extension of the existing watermains through the subject site will provide a reliable source of both drinking water and fire flows. The ultimate wastewater outlet and stormwater outlet are already in place. Therefore, there are suitable public services in place to service the subject site.

7.2 Recommendation

From an assessment of major municipal infrastructure perspective, it is recommended that the development application for the Riverside South Development Corporation property known as 980 Earl Armstrong Road & 4700 Limebank Road be accepted and that the development of the property move forward.

Appendix A

A Background Information and Figures

- **City of Ottawa Servicing Study Guidelines Checklist**
- **Riverside South Secondary Plan Schedule A Designation Plan**
- **Figure 1.1 – Location Plan**
- **Figure 1.2 – Draft Plan**
- **Figure 1.3 – Location of Existing Infrastructure**
- **Figure 5.1 – Proposed Macro Grading Plan**
- **September 8, 2022, Pre-Consultation Meeting Notes**
- **Drawing PG4958-3 Initial Permissible Grade Raise Limits, Paterson Group**

Development Servicing Study Checklist

The following table is a customized copy of the current City of Ottawa's Development Servicing Study Checklist. It is meant to be a quick reference for location of each of the items included on the list. The list contains the various item description and the study section in which the topic is contained.

GENERAL CONTENT

	ITEM DESCRIPTION	LOCATION
	Executive Summary (for larger reports only)	N/A
√	Date and revision number of the report	Front Cover
√	Location Map and plan showing municipal address, boundary, and layout of proposed development.	Figure 1.1
√	Plan showing the site and location of all existing services.	Figure 1.3
√	Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	Figure 1.2
√	Summary of Pre-consultation Meeting with City and other approval agencies.	Section 1.6
√	Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defensible design criteria.	Section 1.3
√	Statement of objectives and servicing criteria	Section 1.1, 2.3, 3.3 & 4.3
√	Identification of existing and proposed infrastructure available in the immediate area.	Figure 1.3 Section 1.5
√	Identification of Environmentally Significant Areas, Watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	N/A
√	<u>Concept level master grading plan</u> to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	Figure 5.1 Detail Design
√	Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	N/A
	Proposed phasing of the development, if applicable.	N/A
√	Reference to geotechnical studies and recommendations concerning servicing.	Section 1.7

√	<p>All preliminary and formal site plan submissions should have the following information:</p> <ul style="list-style-type: none"> • Metric scale • North arrow (including construction North) • Key plan • Name and contact information of applicant and property owner • Property limits including bearings and dimensions • Existing and proposed structures and parking areas • Easements, road widening and rights-of-way • Adjacent street names 	Noted
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DEVELOPMENT SERVICING REPORT: WATER

ITEM DESCRIPTION		LOCATION
√	Confirm consistency with Master Servicing Study, if available	N/A
√	Availability of public infrastructure to service proposed development	Section 2.1
√	Identification of system constraints – external water needed	Sections 2.2
√	Identify boundary conditions	Section 2.3.4
√	Confirmation of adequate domestic supply and pressure	Section 2.4.1 & Appendix B
√	Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter’s Survey. Output should show available fire flow at locations throughout the development.	Section 2.4.1
√	Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	Section 2.4.1 Appendix B
	Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defining phases of the project including the ultimate design.	Section 2.4.2
	Address reliability requirements such as appropriate location of shut-off valves.	Detail Design
√	Check on the necessity of a pressure zone boundary modification.	N/A
√	Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range.	Section 2.4.1 Appendix B
√	Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	Detail Design
√	Description of off-site required feeder mains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities and timing of implementation.	N/A
√	Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Section 2.3.1
√	Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	Detailed Design

DEVELOPMENT SERVICING REPORT: WASTEWATER

ITEM DESCRIPTION		LOCATION
√	Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	Section 3.3
√	Confirm consistency with Master Servicing Study and/or justifications for deviations.	Section 3.4
√	Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age condition of sewers.	Detail Design
√	Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 3.2, Appendix C
√	Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Section 3.2 Appendix C
	Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix "C") format.	Section 3.3 & Detail Design
√	Description of proposed sewer network including sewers, pumping stations and forcemains.	Section 3.1, 3.4 & Figure 3.1 in Appendix C
√	Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A
√	Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
√	Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
√	Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
√	Special considerations such as contamination, corrosive environment etc.	Detail Design

DEVELOPMENT SERVICING REPORT: STORMWATER CHECKLIST

ITEM DESCRIPTION		LOCATION
√	Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 4.1, 4.4 Appendix D
√	Analysis of available capacity in existing public infrastructure.	Section 4.1, 4.2, Appendix D
√	A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	Appendix D

√	Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Section 4.6
√	Water quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 4.2
√	Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 4.1, 4.2, 4.4
√	Set-back from private sewage disposal systems.	N/A
√	Watercourse and hazard lands setbacks.	N/A
√	Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	Section 1.6
√	Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	Section 4.2
√	Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).	Section 4.5 Detail Design
√	Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A
	Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Detail Design
√	Any proposed diversion of drainage catchment areas from one outlet to another.	N/A
√	Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Section 4.2, 4.4, Appendix D
	If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	N/A
√	Identification of potential impacts to receiving watercourses	N/A
√	Identification of municipal drains and related approval requirements.	N/A
√	Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 4.5 Detail Design
√	100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Section 4.6 Detail Design
	Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A
√	Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Section 5
√	Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
√	Identification of fill constraints related to floodplain and geotechnical investigation.	Section 1.7,

APPROVAL AND PERMIT REQUIREMENTS: CHECKLIST

ITEM DESCRIPTION		LOCATION
√	Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.	Section 1.6
	Application for Certification of Approval (CofA) under the Ontario Water resources Act.	Section 1.6 Detail Design
√	Changes to Municipal Drains	N/A
√	Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	Section 6

CONCLUSION CHECKLIST

ITEM DESCRIPTION		LOCATION
√	Clearly stated conclusions and recommendations	Section 7.1 & 7.2
	Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	Detail Design
√	All draft and final reports shall be signed and stamped by professional Engineer registered in Ontario.	Completed

Riverside South / Riverside-sud

SECONDARY PLAN - VOLUME 2

Schedule A - Designation Plan

PLAN SECONDAIRE - VOLUME 2

Annexe A - Plan de désignation



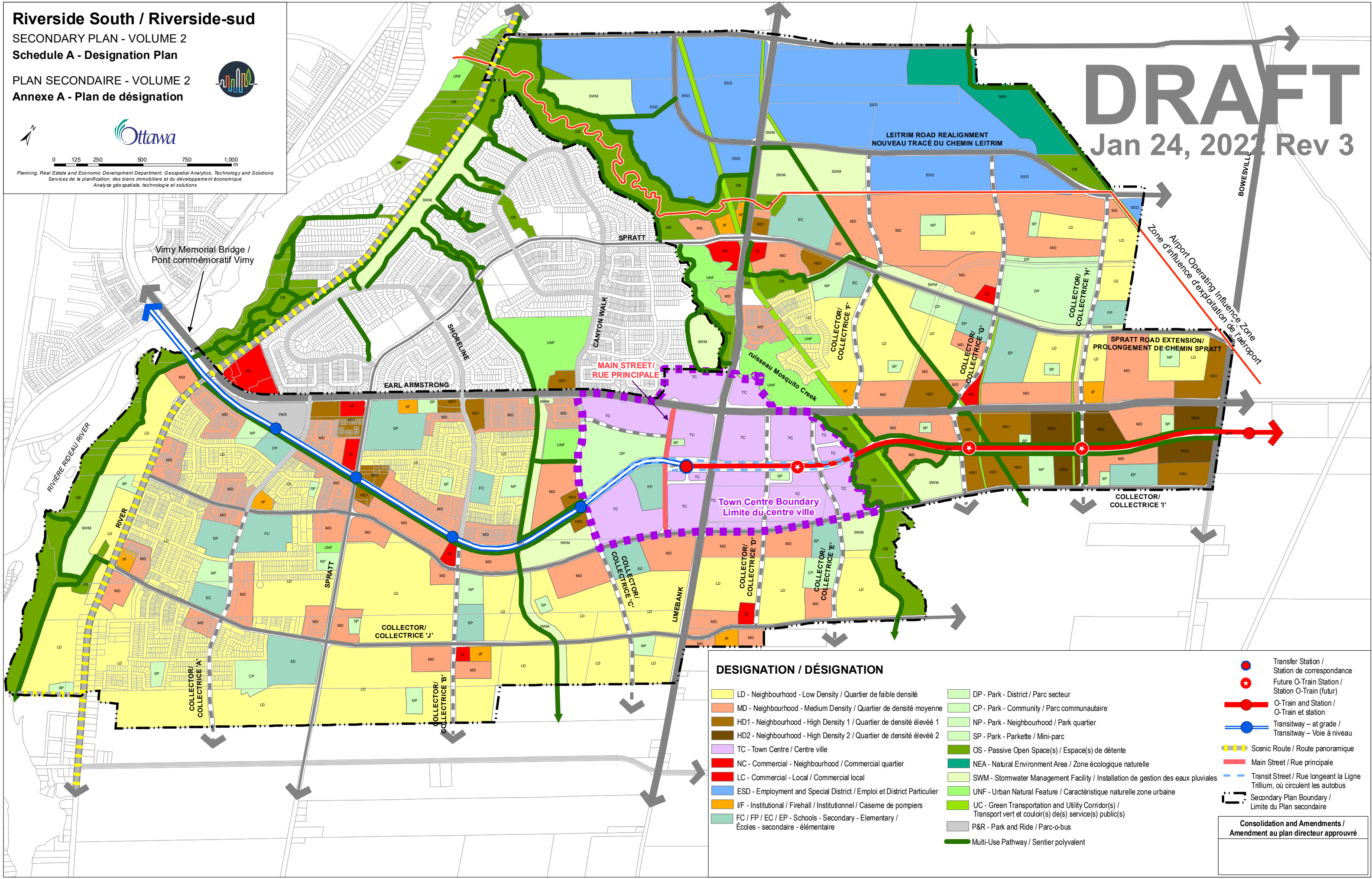
Ottawa

0 125 250 500 750 1,000 m

Planning, Real Estate and Economic Development Department, Geospatial Analytics, Technology and Solutions
Services de la planification, des biens immobiliers et du développement économique
Analyse géospatiale, technologie et solutions

DRAFT

Jan 24, 2022 Rev 3



DESIGNATION / DÉSIGNATION

- | | | |
|--|--|---|
| LD - Neighbourhood - Low Density / Quartier de faible densité | DP - Park - District / Parc secteur | Transfer Station / Station de correspondance |
| MD - Neighbourhood - Medium Density / Quartier de densité moyenne | CP - Park - Community / Parc communautaire | Future O-Train Station / Station O-Train (futur) |
| HD1 - Neighbourhood - High Density 1 / Quartier de densité élevée 1 | NP - Park - Neighbourhood / Parc quartier | O-Train and Station / O-Train et station |
| HD2 - Neighbourhood - High Density 2 / Quartier de densité élevée 2 | SP - Park - Parkette / Mini-parc | Transitway - at grade / Transitway - Voie à niveau |
| TC - Town Centre / Centre ville | OS - Passive Open Space(s) / Espace(s) de détente | Scenic Route / Route panoramique |
| NC - Commercial - Neighbourhood / Commercial quartier | NEA - Natural Environment Area / Zone écologique naturelle | Main Street / Rue principale |
| LC - Commercial - Local / Commercial local | SWM - Stormwater Management Facility / Installation de gestion des eaux pluviales | Transit Street / Rue longeant la Ligne Trillium, où circulent les autobus |
| ESD - Employment and Special District / Emploi et District Particulier | UNF - Urban Natural Feature / Caractéristique naturelle zone urbaine | Secondary Plan Boundary / Limite du Plan secondaire |
| IF - Institutional / Firehall / Institutionnel / Caserne de pompiers | UC - Green Transportation and Utility Corridor(s) / Transport vert et couloir(s) de service(s) public(s) | |
| FC / FP / EC / EP - Schools - Secondary - Elementary / Écoles - secondaire - élémentaire | P&R - Park and Ride / Parc-o-bus | |
| | Multi-Use Pathway / Sentier polyvalent | |

Consolidation and Amendments /
Amendement au plan directeur approuvé

J:\144320_Riverside\7.0_Production\7.03_Design\04_Civil\Land\APSR\Sheet_Set\FIGURE1.1_LOCATION_PLAN.dwg Last Saved By: Chris.Cormier Last Saved At: Sep. 25, 23



Project Title

980 EARL ARMSTRONG & 4700 LIMEBANK ROAD
RIVERSIDE SOUTH PHASE 7

Drawing Title

LOCATION PLAN

Sheet No.

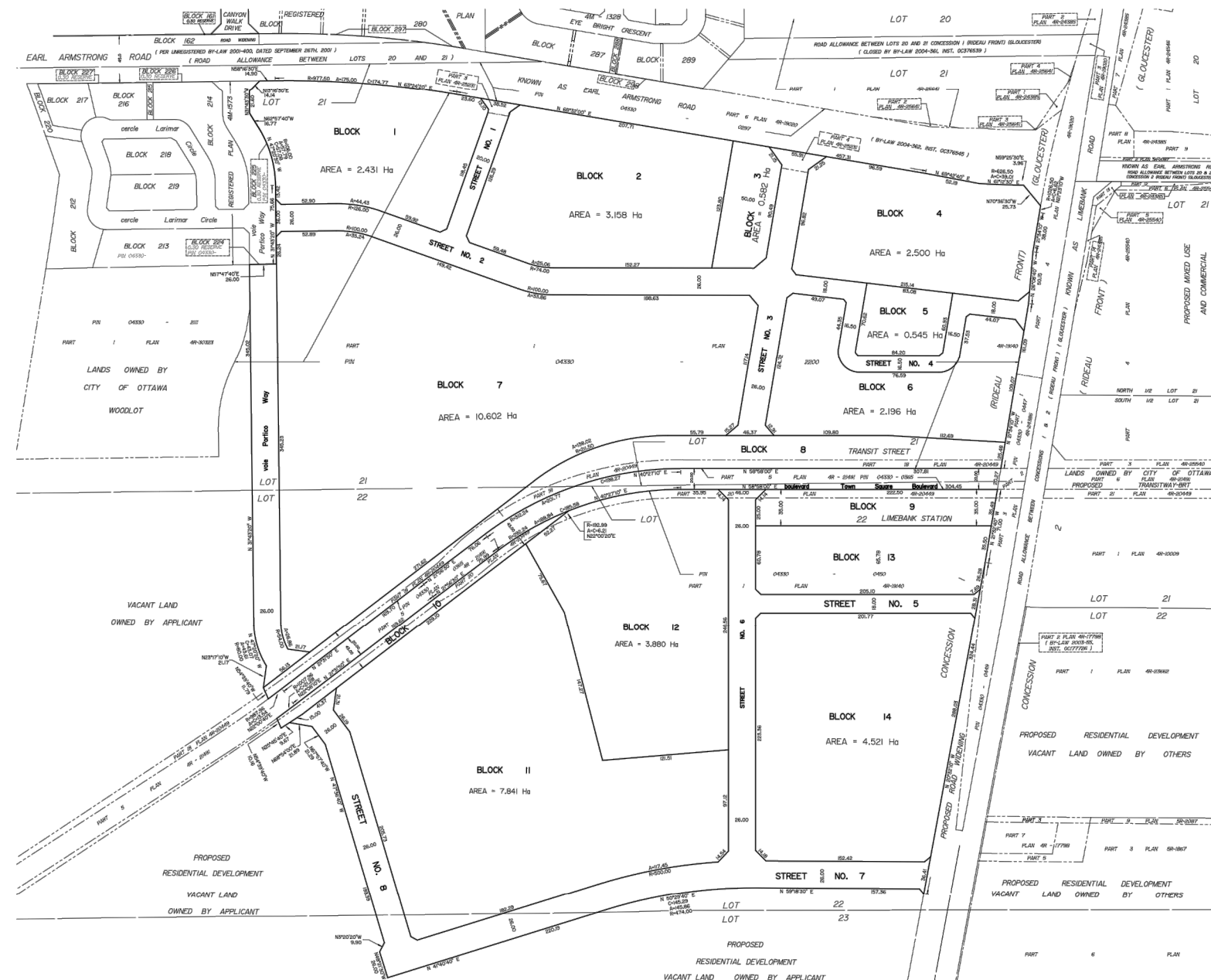
FIG 1.1
2023-09-29



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OPTION 2
DRAFT PLAN OF SUBDIVISION OF
PART OF LOTS 21 and 22
CONCESSION 1 (RIDEAU FRONT)
Geographic Township of Gloucester
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebek Ltd.

Scale 1:1500
Metric
DIMENSIONS SHOWN ON THIS PLAN ARE IN METRES AND
CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048



KEY MAP
NOT TO SCALE

REVISION SCHEDULE			
NO.	REVISION	DATE	BY
1	REVISED LOC. OF SCHOOL BLOCK	SEPT. 23, 2019	H
2	REVISIONS	MAY 4, 2019	H
3	REVISIONS	APR. 27, 2019	H
4	REVISIONS	APR. 26, 2019	H
5	REVISIONS	APR. 16, 2019	H
6	REVISIONS	JUNE 7, 2019	H
7	REVISIONS	APR. 16, 2019	H
8	REVISIONS	APR. 16, 2019	H
9	DISCUSSION	MAR. 29, 2019	H
10	DISCUSSION	JAN. 4, 2019	H
11	DISCUSSION	DEC. 19, 2018	H
12	DISCUSSION	DEC. 19, 2018	H

ANNIS, O'SULLIVAN, VOLLEBEK LTD.
1400 GERRARD ST. E. SUITE 200
OTTAWA, ONTARIO K1K 1X5
Phone: (613) 737-2277 Fax: (613) 737-1079
www.anniso.com
Land Services

Project Title

980 EARL ARMSTRONG & 4700 LIMEBANK ROAD
RIVERSIDE SOUTH PHASE 7

Drawing Title

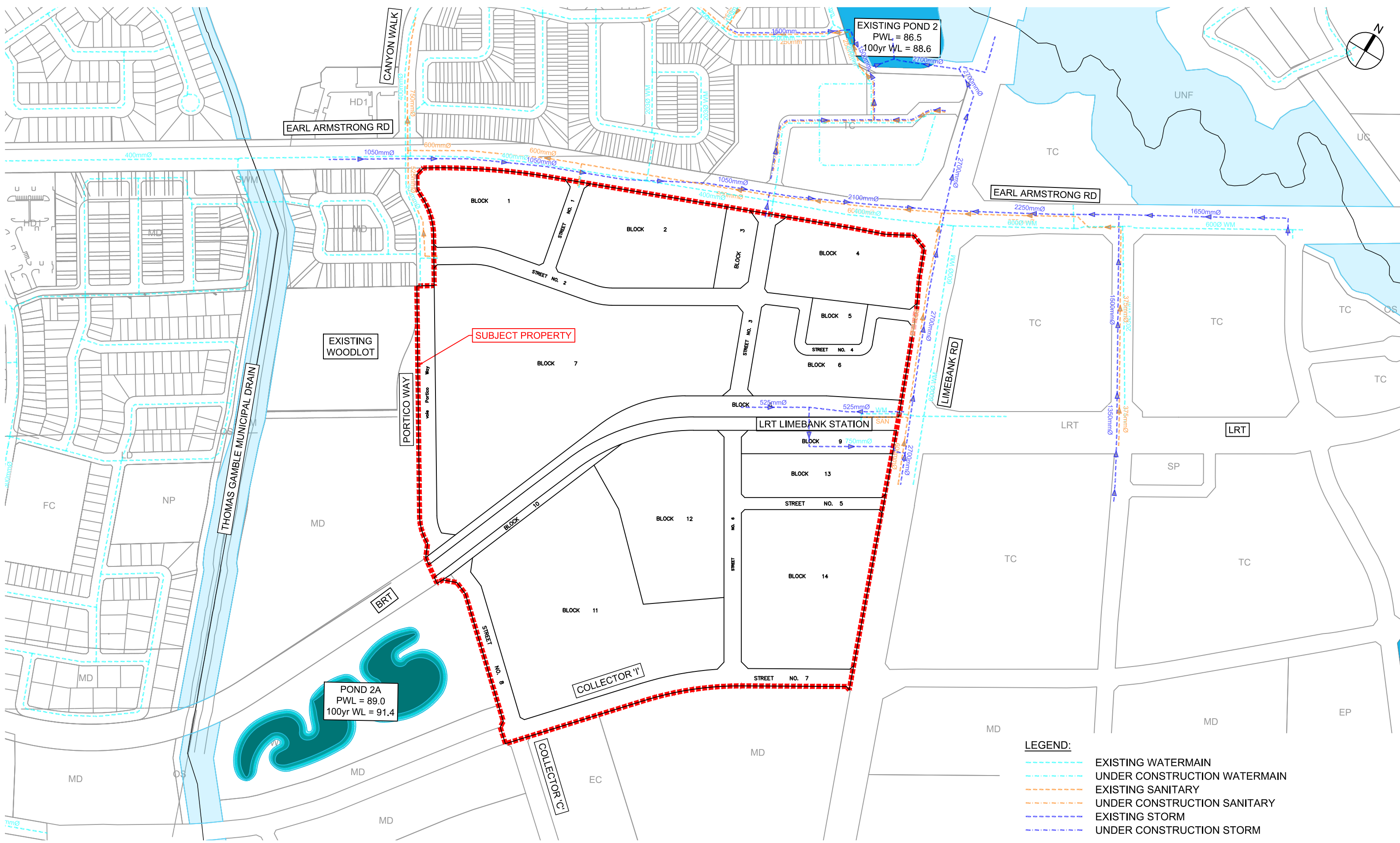
DRAFT PLAN

Sheet No.

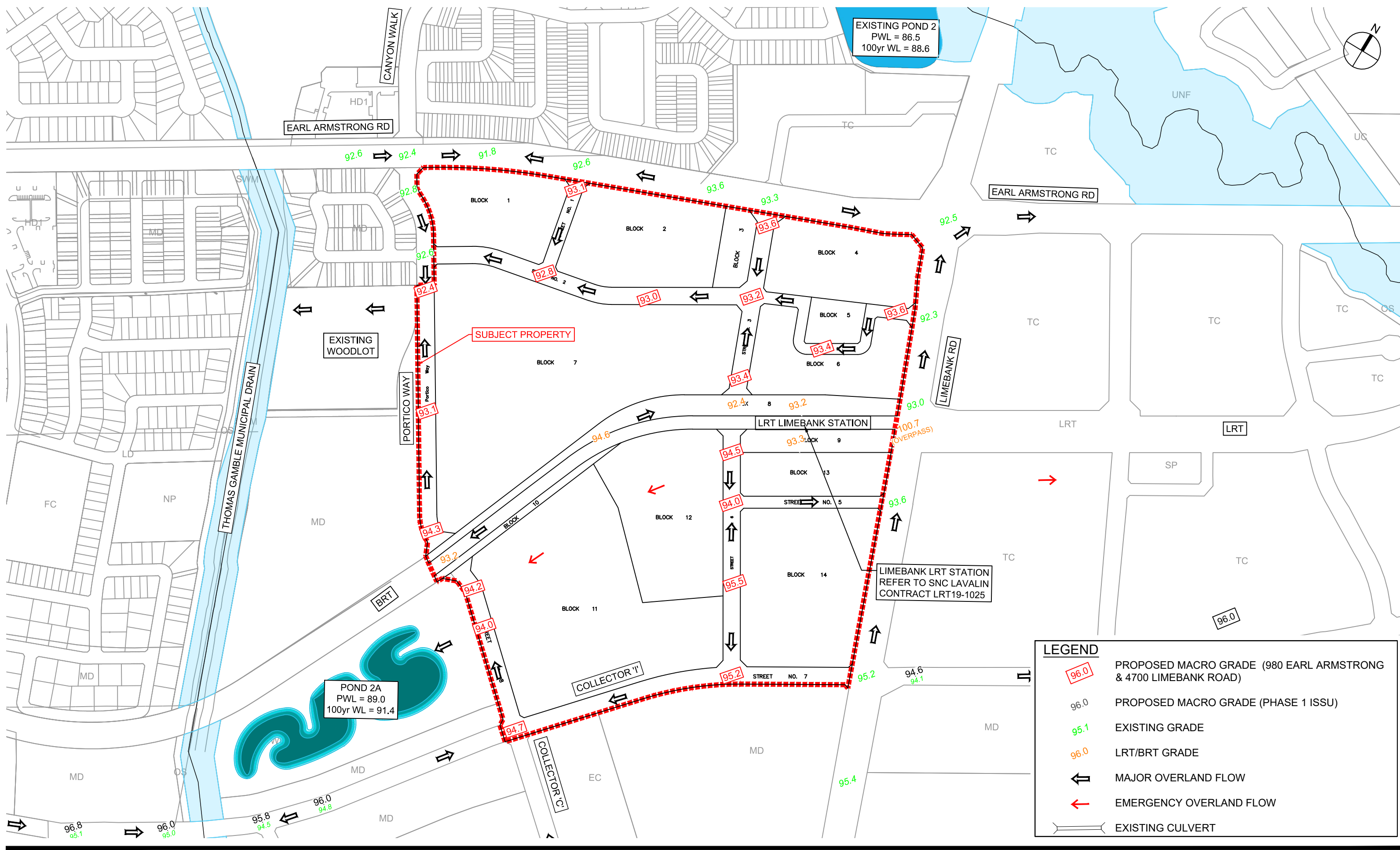
FIG 1.2
2023-09-29



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J:\144320_Riverside\7.0_Production\7.03_Design\04_Civil\Land\APSR\Sheet Set\FIGURE5.1_GRADING PLAN.dwg Last Saved At: Sep. 25, 23
 Chris Cormier Last Saved By: Chris Cormier



Project Title: 980 EARL ARMSTRONG & 4700 LIMEBANK ROAD RIVERSIDE SOUTH PHASE 7
 Drawing Title: PROPOSED MACRO GRADING PLAN
 Sheet No.: FIG 5.1



980 EARL ARMSTRONG & 4700 LIMEBANK ROAD
 RIVERSIDE SOUTH PHASE 7

PROPOSED MACRO GRADING PLAN

FIG 5.1
 2023-09-29

Part of 980 Earl Armstrong, 4700 Limebak Rds

Meeting Summary Notes

Sept 8, 2022, Teams online meeting

Attendees:

- Marcel Denomme, RSDC, Applicant
- Christa Jones, Urbandale

- John Sevigny, Project Manager, City of Ottawa
- Ann O'Connor, Urban Designer, City of Ottawa
- Burl Walker, Parks Planner, City of Ottawa
- Michael Crofts
- Max Walker
- Mark Richardson, Planning Forester
- Jocelyn Cadieux
- Robin van de Lande
- Matthew Hayley, Environmental Planner, City of Ottawa
- Tracey Scaramozzino, File Lead, Planner, City of Ottawa

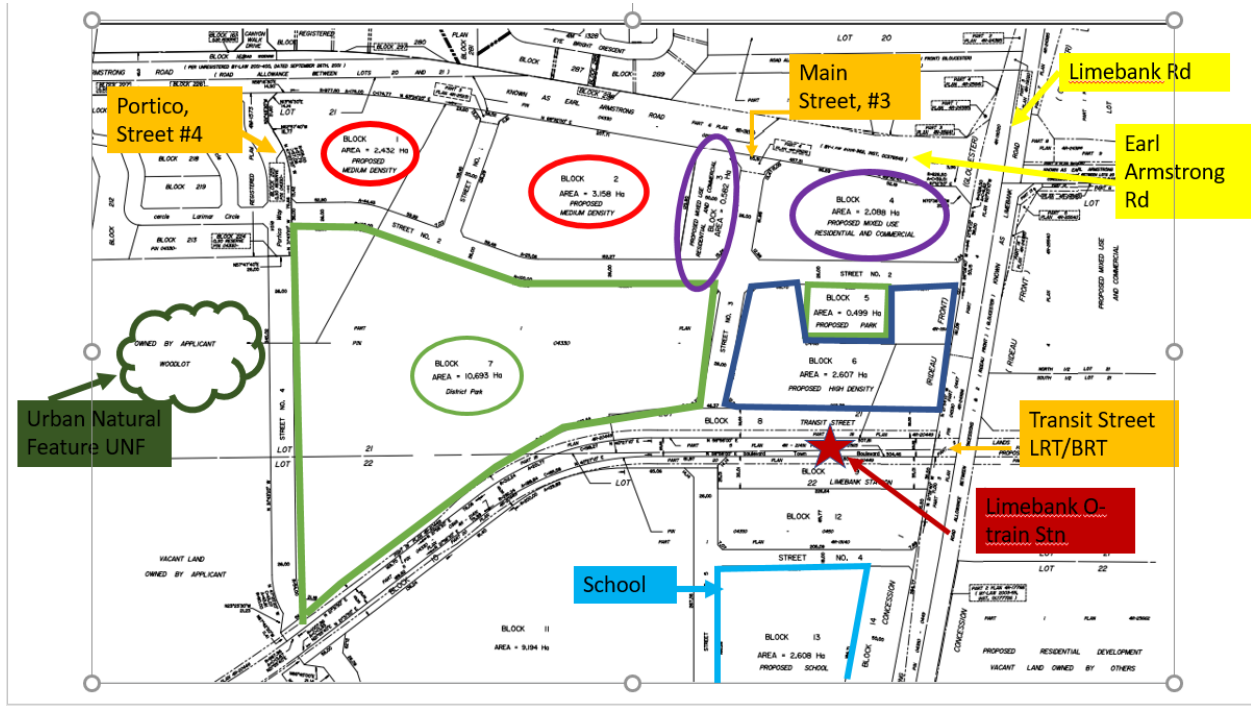
Not in Attendance:

- Frank McKinney
- Nick Stow, Natural Systems
- Jamie Batchelor, Planner, RVCA
- Wally Dubyk, Transportation Project Manager, City of Ottawa

Issue of Discussion:

- Phase 7a of the RSS Subdivision will be resubmitted as a revision to the original approval in 2014 (the development of which was delayed due to LRT issues)
- Phase 7a is active again with plans for numerous large blocks with medium density residential, multi-use commercial, district park, future school
- As of the date of the review of this file, the RSS Secondary Plan is on hold. This file will be reviewed, at this time, based on the Official Plans and RSS CDP, draft RSS SP and other applicable guidelines.

Proposed Draft Plan of Subdivision, Submitted by Urbandale, Sept 2022

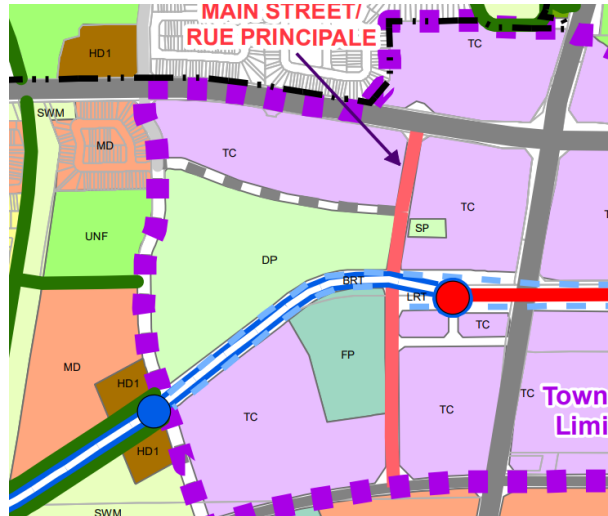


1. **Official Plan** - designated General Urban
2. **Draft Official Plan** – Suburban Transect, Evolving n’hood, Hub, Town Centre, O-train station; Protected Major Transit Station Area (PMTSA); Design Priority Area
3. **Zoning Information:**
 - a. Western portion – abutting the Woodlot: R5Z [1869] S269
 - b. North-eastern portion – abutting Earl Armstrong and Limebank: GM28 S269
 - c. Southern Portion – south of the transit road: LC [2349] S269



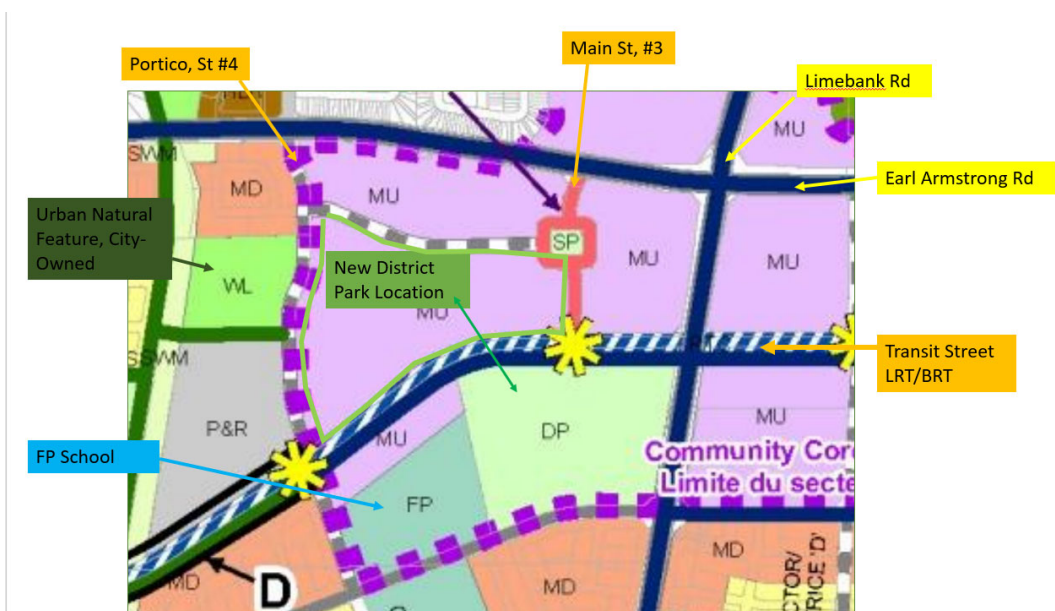
4. RSS Draft Secondary Plan - 2022

- a. Currently on hold, due to ongoing policy discussions for lands to the east of Limebank Rd
- b. Policies/plans for the Town Centre were agreed to by the City and land-owners – as per image below.



4. RSS CDP - 2016

- a. The park and ride lands have already been re-zoned for residential development
- b. The mixed-use area on the north side of the transit street has already been re-designated as the District Park – but will still need the zoning to be revised. (and the park shown south of the transit street will need to be rezoned for development)



5. Infrastructure/Servicing (John Sevigny):

General Notes:

- This site is in the Mosquito Creek watershed Area
- An update to the previously approved Master Drainage Plans and Master Servicing Plans from 2008 (by Stantec) were required and commenced in 2017.
- A master drainage plan update for Mosquito Creek was completed in June 2021 and directs how stormwater management is to be achieved for this area. IBI Group were the consultants that completed the report and a copy of the Master Drainage Plan can be requested from either IBI Group directly or from to the City.
- The master servicing plan for Mosquito Creek is currently being prepared by IBI Group and is anticipated to be submitted to the City and relevant stakeholders in the near future. Once approved, this report will direct how the future trunk sanitary sewers, storm sewers, LIDs and watermain will be addressed.
- In the meeting we discussed the timing for proceeding with the development and its' relation to the currently ongoing MSS update for Mosquito Creek. It is understood that the MDP is complete for mosquito creek however, details for the future LIDs were to be contained in the MSS update. Therefore, it's imperative that the MSS update be at a satisfactory state prior to development of this site.

Design Brief:

- An update to the previously submitted design brief that supported the original draft approval is required.
- Prior to submitting the servicing report the consultant should contact me and request boundary conditions for the watermain design. The consultant will need to provide the type of development, fire flow required (including the FUS calculations), average day demand, maximum day demand and maximum hour demand as well as a location plan showing the points of connection to the public system.
- The storm water management design should be designed as identified in the approved Riverside South Community Master Drainage Plan Update Mosquito Creek Study Area prepared by IBI Group dated April 30, 2021 and the future Master Servicing Study update for Mosquito Creek.
- LID's are to be incorporated into the design based on the recommendations contained in the Master Drainage Plan and future Master Servicing Plan for Mosquito Creek.

Geotechnical Study:

- An update to the previously submitted report that supported the original draft approval is required.
- Containing detailed information on geotechnical matters and recommendations (i.e. pavement, foundation, bedding construction etc.).

- Sensitive Marine Clay (SMC) is widely found across Ontario – geotechnical reports should include Atterberg Limits, consolidation testing, sensitivity values, and vane shear test results (at a minimum) with a discussion for proposals in areas containing SMC; If SMC exists then the tree planting restrictions are to be discussed and follow the City’s most current tree planting guidelines.

Engineering Drawings:

- The following are the minimum engineering plans that are required with the submission. The link below outlines the requirements for the plans <https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans>
 - Macro Site Servicing Plan
 - Macro Grading and Drainage Plan

Hydrogeological Assessment:

- Addressing the impacts to existing wells in the vicinity of the development.
- This report shall include at a minimum the following items:
 - Basic hydrogeology for the area
 - Risk to existing wells during construction and from the long term development of the site (e.g. quantity/quality, recharge, water budget)
 - Monitoring program for existing wells.

A couple items to make note of are:

- All reports should follow the City’s Guides for Preparing Studies and plans – these guides can be found at standard for <https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#standards-policies-and-guidelines>
- Also, depending on the final design, an Environmental Compliance Approval (ECA) may be required. The consultant determines if an approval for sewage works under Section 53 of OWRA is required. The consultant then determines what type of application is required and the City’s project manager confirms.

6. Initial Planning Comments (Tracey Scaramozzino):

- The file will be a Revision to Draft Plan of Subdivision – that was extended in 2021 and expires in Nov 2022
- Some of the lands will also need rezoning (district park was shifted, etc.)
- Why were some of the other land use locations changed? (small park, French public school). School and District park were always meant to be together.
- Why is Portico Way/Street #4 straightened and what are the plans for the remnant 0.4ha parcel that is not part of the UNF? City does not support the use of these lands for development.

- City will possibly need to acquire lands through the plan of subdivision for lands to the west of the transit station for the future BRT
- East-west collector street may be too close to intersection of Limebank and Earl Armstrong Rds
- Follow guidance in the CDP and in the draft SP.
- What does RSDC think about the Agora Plateau in Gatineau – pictured below – which the City of Ottawa sees as a great example of town centre in a suburban context?



7. Design Comments (Ann O'Connor):

- For a Plan of Subdivision application alone, no Design Brief is required.
- If a Zoning By-law Amendment application is going to be applied for concurrently with the Plan of Subdivision, a Design Brief is required. A Terms of Reference can be provided by Design staff if this is considered.
- If a Zoning By-law Amendment application is going to be applied for, the project will be subject to review by the Urban Design Review Panel. It is recommended that this project come to the UDRP for an Informal Review to get feedback early on in the process. Please contact the UDRP coordinator to be placed on an agenda.
- All policies in the Riverside South Community Design Plan and draft Riverside South Secondary Plan should be adhered to, where possible. Provide a clear explanation for any changes/variations from the most recent draft Riverside South Secondary Plan Designation Plan.
- Consider the safety of the proximity of the extension of Street No. 2 to the intersection of Earl of Armstrong Road and Limebank Road. The new proposed intersection of St No. 2 and Limebank St is currently shown to be 38m from the intersection of Armstrong Rd and Limebank Rd. in the draft plan of subdivision. Consider a pedestrian linkage (as opposed to a vehicular road) at this location, connecting Street No. 3 (Main Street) to Limebank Rd.
- When determining the location of the parkette, consider how the surrounding built form and roads/pedestrian connections will impact the success of the parkette. Consider that Parks requires frontage on at least two public streets, and it is preferred to have at least one frontage along Main Street. The chosen location can help keep the options open for programming in the future.
- Consider at this time (at the time of road and lot configuration), providing adequate space for street trees.
- As the design of the lots move forward, consider pedestrian connectivity throughout. In particular, consider desire lines to-and-from the transit station.
- Consider the Riverside South Core Area Urban Design Guidelines document prepared by Bousfields Inc.

8. Parks (Burl Walker)

Riverside South Community Centre, Library Branch and Core District Park (Riverside South Park 24)

1. The preliminary draft plan revised June 7, 2022, includes a 10.7 ha park block for the Riverside South Core District Park, which is referred to as Riverside South Park 24 in the draft Riverside South Modified Area Parks Plan. The park block has increased in size from approximately 10.1 ha as shown on the 2021 preliminary draft plan of subdivision, and is now consistent with the planned park area as identified in the Riverside South CDP, the draft Riverside South Modified Area Parks Plan and the draft Riverside South Secondary Plan. The park frontage on Main Street also appears to have increased slightly compared to the 2021 draft plan. The park block location is generally consistent with the "District

Park” designation shown in the 2021 Interim Update to the Riverside South CDP and the draft Riverside South Secondary Plan.

2. For reference, attached is an excerpt from the draft Riverside South MAPP including a proposed amenity list, a facility fit plan and cost estimate for Park 24. Note that the facility fit plan is based on a former site for the Core District Park located to the south of Transit Street.
3. For background, we have also attached a concept site plan prepared by Moriyama & Teshima Architects for the former Core District Park site located south of Transit Street. The plan was prepared as part of a design study for the Riverside South Community Centre and Library Branch project.
4. Amenities currently contemplated for the Core District Park include the following:
 - Community centre (21,500 sq. ft.)
 - Library branch (15,000 sq. ft.)
 - Sports fields including potentially 1 senior baseball diamond (with field lighting and irrigation system), 1 full-size soccer field, and 1 additional soccer field or 1 Ultimate field
 - Skateboard park
 - Playground
 - Splash pad
 - Outdoor fitness equipment
 - Shade structure
 - Permanent boarded rink/multi-use court with rink bunker
 - 4 tennis/pickleball courts
 - Full-size basketball court
 - Parking lot(s)
 - Potential naturalization/reforestation area
5. Staff prepared the attached preliminary facility fit plan for the Core District Park based on the new location for the Core District Park on the north side of Transit Street as shown on the 2021 preliminary draft plan of subdivision.
6. We would like to request that RSDC submit the current version of the preliminary draft plan in CAD format as soon as possible. This will enable staff to update the facility fit plan and confirm if the proposed park block is acceptable.
7. The Core District Park will be designed and constructed through the City-built park development process.
8. City Council approved \$16.434M of funding for the Riverside South Community Centre and Core District Park project in the 2019 City Budget. This funding is dependent on the City receiving a \$2.9M funding contribution from RSDC as contemplated in a draft 2016 Memorandum of Understanding between the City and RSDC. The \$2.9M funding contribution from RSDC must be addressed to proceed with the implementation of the project. How does RSDC plan to move forward with the funding contribution?

9. Additional City funding will be required for the design and construction of the Community Centre and the Core District Park given the cost escalation since 2019.
10. On June 14, 2022, the Ottawa Public Library Board approved the development of a 15,000 sq. ft. Riverside South library branch in partnership with the City. The Riverside South Community Centre and Library Branch are intended to be developed within a shared facility and located within the Core District Park.
11. The City is considering potentially adding an indoor aquatic facility with a 6-lane, 25m lap pool and a therapeutic pool to the scope of the Riverside South Community Centre, Library Branch and Core District Park project. City Council approved \$2.5M of funding in the 2022 City Budget for the design of the Riverside South Indoor Aquatic Facility.
12. Staff are awaiting the advancement of the following prior to proceeding with the Riverside South Community Centre, Library Branch and Core District Park project:
 - a) Resolution of the \$2.9M funding contribution from RSDC;
 - b) Progression of the Phase 7 subdivision revision application including the formal submission, circulation and delegated authority report approval, and preferably the advancement of early servicing and registration of Phase 1 including the block for the Core District Park;
 - c) Zoning of the Core District Park to permit the proposed uses; and
 - d) Completion of the Request for Proposal process for the Ottawa Aquatic Sports Centre project, which is proposed to include a new 10-lane, Olympic-sized 50m pool and an associated 8-lane, 25m leisure/warm down pool, as the location for this facility affects whether an indoor aquatic facility will be added to the scope of Riverside South Community Centre, Library Branch and Core District Park project.

West Public Square (Riverside South Park 22)

13. The location, size and concept design for the West Public Square (referred to as Riverside South Park 22 in the draft Riverside South MAPP) within the Phase 7 subdivision have evolved over the years, as summarized below:
 - a) 2006 Riverside South Core Area Urban Design Guidelines (Bousfields Inc.): 0.5 ha park located south of Transit Street and east of Main Street (see attached Concept Plan)
 - b) 2014 draft approved plan of subdivision: 0.5 ha park located south of Transit Street and east of Main Street (Block 7 on draft plan)
 - c) 2015 West Public Square Concept Plan (FD Fountain Landscape Architecture): 0.5 ha park located south of Transit Street and east of Main Street (see attached concept plan)

- d) 2016 Riverside South CDP: 0.3 ha park located at the intersection of Main Street and Street No. 2
 - e) Draft 2016 Riverside South Modified Area Parks Plan (J. Wright Urban Design and FD Fountain Landscape Architecture): 0.3 ha park located at the intersection of Main Street and Street No. 2 (see attached excerpt from the MAPP)
 - f) 2021 preliminary draft plan: 1.0 ha park located at the southeast corner of Main Street and Street No. 2
 - g) 2022 preliminary draft plan: 0.5 ha park located south side of Street No. 2, midway between Main Street and Limebank Road
14. The final park location, area, and configuration of the West Public Square will need to be acceptable to Parks and Facilities Planning. The Urban Design Review Panel may also provide comments on the park location and configuration through the site plan application for the adjacent High-density Block 6.
 15. We understand that Hobin Architecture and CSW are developing a proposal for the West Public Square. Could RSDC arrange a meeting with staff and RSDC's consulting team to discuss the potential options for the location of the West Public Square at an early stage in the design process?
 16. Further information on the proposed built form for High-density Block 6 is needed before staff can provide comments on the suitability of Park Block 5 for the West Public Square. Concerns with the proposed park block location including the potential shadow and wind impacts on the park from the high-density buildings that would be located to the east, south and west of the park block. Further, from the pre-consultation meeting we understand that Street 2 may be developed as a private street between Main Street and Limebank Road. As parkland needs to have frontage on a public street, the park block shown on the current draft plan would not be acceptable. In addition, the approved conditions of draft plan approval require that the West Public Square have 100% street frontage. Park Block 5 only has street frontage on one side of the park. It is also noted that the Riverside South Core Area Urban Design Guidelines are based on locating the West Public Square adjacent to Main Street and Transit Street.
 17. If the applicant pursues a location for the West Public Square immediately adjacent to High-density Block 6, one option would be to convey the park block to the City at the time of the site plan agreement registration rather than through the subdivision agreement. This would allow greater flexibility in locating and configuring the park block in coordination with the site plan application for High-density Block 6.
 18. The draft Riverside South MAPP sets out the following preliminary program for the West Public Square (referred to as an Urban Square in the draft MAPP):
 - Pathway
 - Streetscaping
 - Water feature / splash pad

- Rink
- Bunker
- Seating area
- Landscaping for shade, visual interest and to create spaces and structure
- Sculptural plat feature

19. The West Public Square is intended to be funded, designed and constructed through the developer-built park development process.

20. A facility fit plan and a Class “D” cost estimate will be required for the West Public Square prior to the revised draft plan approval.

Parkland Dedication By-law

21. The City’s new Parkland Dedication By-law No. 2022-280 came into force and took effect on September 1, 2022. Under the transition provisions, please note that an application for Plan of Subdivision that has received draft plan approval as of the enactment of the By-law 2022-280 shall be required to comply with the provisions of the By-law if an extension is sought. According to the correspondence in our file, the draft approval for the RSDC Phase 7 subdivision was extended to November 12, 2022. The provisions of the new Parkland Dedication By-law will apply to the subdivision application through either an extension, revised approval or new draft plan approval.

22. It should be noted that the new Parkland Dedication By-law No. 2022-280 has different parkland dedication requirements for low-rise apartments, mid-rise apartments, high-rise apartments and for dwelling units within a mixed-use building compared to the previous Parkland Dedication By-law No. 2009-95. The applicant should refer to the new Parkland Dedication By-law for the parkland dedication rates.

Planning Rationale

23. The Planning Rationale should include the following:

- a) development statistics for the residential and non-residential components of the full Phase 7 subdivision including a description of the number of proposed dwellings by dwelling type and the gross floor areas of the residential and commercial components of mixed-used buildings, preferably broken down by development block
- b) calculation of the parkland dedication requirements for the full Phase 7 subdivision based on the provisions of Parkland Dedication By-law No. 2022-280
- c) description of the proposed parkland to be conveyed to the City including park size, type, location and street frontage
- d) rationale for the proposed size, location, and street frontage for the West Public Square

- e) description of the proposed use or disposition of the +/- 0.28 ha remnant block that would be created between the existing City-owned woodlot and the new alignment of Portico Way
- f) description of how the proposed development complies with the applicable park-related policies and guidelines in the existing Official Plan, new Official Plan, Riverside South CDP, the draft Riverside South Secondary Plan, and the Riverside South Core Area Urban Design Guidelines
- g) description of the proposed zoning for the Core District Park and the West Public Square

24. The land to be conveyed to the City for parkland shall be:

- Be free of encumbrances above and below ground (including the underground parking garage);
- Be of a usable shape, topography and size that reflects its intended use;
- Meet applicable provincial soil regulations; and
- Meet the minimum standards for drainage, grading and general condition.

Public Realm

25. The parks will form part of the overall public realm for the Hub designation for the Riverside South Town Centre as designated on Schedule B6, Suburban (Southwest) Transect, to the New Official Plan. The design of the buildings and landscape surrounding the parks should be informed by the following policies in the New Official Plan regarding the public realm:

Policy 6.1.1

(3) Development within a Hub:

(e) Shall create a high-quality, comfortable public realm throughout the Hub that prioritizes the needs of pedestrians, cyclists and transit users;

(f) Shall establish buildings that:

- (i) Edge, define, address and enhance the public realm through building placement, entrances, fenestration, signage and building facade design;
- (ii) Place principal entrances so as to prioritize convenient pedestrian access to the transit station and the public realm; and
- (ii) Place parking, loading, vehicle access, service entrances and similar facilities so as to minimize their impact on the public realm.

Zoning

26. We understand that the Riverside South Secondary Plan and companion Zoning By-law Amendment are currently on hold in part due to a disagreement between RSDC and the Planning, Real Estate and Economic Development Department on some of the proposed Secondary Plan policies. If the disagreement is not

resolved, the applicant will need to submit a Zoning By-law Amendment application to rezone the Core District Park and West Public Square.

27. The Core District Park should be rezoned to a site-specific “L2” (Leisure and Community Facility) Zone as contemplated in the companion Zoning By-law Amendment to the Riverside South Secondary Plan. Please note that Parks and Facilities Planning provided detailed comments on the proposed zoning to Max Walker on June 2, 2022. These comments should be considered in developing the details of recommended zoning.
28. The West Public Square should be rezoned to an “O1” (Parks and Open Space) Zone. Alternatively, a park could be added as a permitted use to the “MCXX1[xxx2] S269-h” Zone that was proposed as part of the companion Zoning By-law Amendment for the Riverside South Secondary Plan.

Development Servicing Report / Servicing Brief

29. The Development Servicing Report / Servicing Brief should address the servicing issues and requirements for the park blocks. The following is a preliminary indication of the servicing requirements:

Core District Park (Riverside South Park 24)

Unless otherwise specified the Owner shall provide the following services and utilities to the Core District Park Block:

- a) A 300mm diameter storm sewer and CB/MH at 2m inside the park property line (**Note: due to the large size of the Core District Park, the civil engineering consultant should provide recommendations for additional storm sewer outlets and/or a larger diameter storm sewer to adequately service the park block.**)
- b) A 250mm diameter watermain with a valve and box or chamber inside the park lot line to service a building to be located adjacent to Main Street (**Note: this is a preliminary estimate of the watermain size required for the proposed building and is based on the Francois Dupuis Recreation Centre project. The final size requirement will be confirmed later by the future consulting team for the Riverside South Community Centre, Library Branch and Core District Park project.**)
- c) 200mm diameter sanitary sewer and MH at 2m inside the park property line to service a building to be located adjacent to Main Street (**Note: this is a preliminary estimate of the sanitary sewer size based on the Francois Dupuis Recreation Centre, Richcraft Recreation Complex Kanata and Minto Recreation Complex Barrhaven projects. The final size requirement will be confirmed later by the future consulting team for the Riverside South Community Centre, Library Branch and Core District Park project.**)
- d) A 600 volt, 3-phase electrical service at 2m inside the park property line with a pad mounted electrical transformer or electrical kiosk for a building to be located adjacent to Main Street, to the satisfaction of the General

Manager, Recreation, Cultural and Facility Services (**Note: this is a preliminary estimate of the electrical servicing requirements for the proposed building. The final electrical service requirement will be confirmed later by the future consulting team for the Riverside South Community Centre, Library Branch and Core District Park project**). The Owner is responsible for making all arrangements and coordinating the connection of the new hydro (electrical) service, including costs and inspections, with the respective hydro (electricity) agencies. The Owner is also responsible to ensure the park electricity service(s) is included on the approved CUP drawings.

West Public Square (Riverside South Park 22)

Unless otherwise specified the Owner shall provide the following services and utilities to the West Public Square:

- a) A 300mm diameter storm sewer and CB/MH at 2m inside the park property line.
 - b) A 50mm diameter water line complete with standpost at 2m inside the park property line. A city standard park water vault chamber, standard detail W31.1 latest version, must also be installed as part of parks water works. The park water vault will be funded from the park budget. Co-ordination of all park water works including water vault and meter installation is an Owner responsibility.
 - c) 150mm diameter sanitary sewer and MH at 2m inside the park property line.
 - d) A 120/240 volt, 200 amperes single phase hydro service at 2m inside the park property line. The Owner is responsible for making all arrangements and coordinating the connection of the new hydro (electrical) service, including costs and inspections, with the respective hydro (electricity) agencies. The Owner is also responsible to ensure the park electricity service(s) is included on the approved CUP drawings.
30. The depth of the sanitary sewer system for the subdivision should be designed to accommodate the potential development of an indoor aquatic facility at the Core District Park. An adequate depth for the sanitary sewer system should be provided to accommodate the discharge from the deep end of a 25m lap pool.
31. Additional services may be needed to support a Community Centre and Library Branch such as natural gas, telecom or cable.

Phase I and II Environmental Site Assessment

32. The Phase I and II Environmental Site Assessments were prepared in 2009 and will need to be updated.

Geotechnical Investigation

33. The Preliminary Geotechnical Investigation prepared by Golder Associates dated September 2009 for the subdivision does not contain any boreholes for the new site for the Core District Park. The preliminary geotechnical investigation will need to be updated to include borehole testing within the Core District Park site. The preliminary geotechnical investigation should also be updated to include recommendations for the proposed Community Centre and Library Branch building with potential indoor aquatic facility and other park features such as the parking lot.

Environmental Impact Statement

34. An update to the EIS may be needed to reflect the revision to the Phase 7 subdivision boundaries and any updates to the EIS Guidelines and the species at risk list since the EIS was prepared in 2011.

Attach (see end of this letter):

1. Park 24 (Core District Park) excerpt from the draft Riverside South MAPP prepared by J. Wright Urban Design and FD Fountain Landscape Architecture
2. Core District Park concept site plan prepared by Moriyama & Teshima Architects
3. Preliminary fit plan for the Core District Park prepared by Parks and Facilities Planning
4. West Public Square Concept Plan prepared by Bousfields Inc.
5. West Public Square Concept Plan prepared by FD Fountain Landscape Architecture
6. Park 22 (Urban Square) excerpt from the draft Riverside South MAPP prepared by J. Wright Urban Design and FD Fountain Landscape Architecture

9. Trees (Mark Richardson)

CR requirements:

1. a Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
 - a. an approved TCR is a requirement of approval.
 - b. The TCR may be combined with the EIS
2. Any removal of privately-owned trees 10cm or larger in diameter, or city-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340)
3. The Planning Forester from Planning and Growth Management as well as foresters from Forestry Services will review the submitted TCR

- a. If tree removal is required, both municipal and privately-owned trees will be addressed in a single permit issued through the Planning Forester
 - b. Compensation may be required for city owned trees – if so, it will need to be paid prior to the release of the tree permit
4. The TCR must contain 2 separate plans:
 - a. Plan/Map 1 - show existing conditions with tree cover information
 - b. Plan/Map 2 - show proposed development with tree cover information
 - c. Please ensure retained trees are shown on the landscape plan
5. Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)
6. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained
7. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at [Tree Protection Specification](#) or by searching Ottawa.ca
 - a. the location of tree protection fencing must be shown on the plan
8. the City encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.
9. For more information on the process or help with tree retention options, contact Mark Richardson mark.richardson@ottawa.ca or on [City of Ottawa](#)

City-owned woodlot

1. Please identify boundary in such a way that the woodlot limits are discernable during a site visit
2. The City will not allow vegetation removal within the woodlot for development purposes; however, the City may request the removal of any dead/dying/hazardous trees within one tree length of the woodlot edge
3. Any grading, including ditching or infrastructure of any kind, will be set back to the dripline of the trees as an absolute minimum.
4. There must be no discharge of additional surface water or groundwater to City property. Any additional run-off or groundwater seepage must be intercepted, stored, and conveyed on Urbandale's property. There will be no conveyance of additional stormwater through the woodlot as either increased minor or major flows.

LP tree planting requirements:

For additional information on the following please contact tracy.smith@Ottawa.ca

Minimum Setbacks

- Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
- Maintain 2.5m from curb

- Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.
- Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

Tree specifications

- Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
- Maximize the use of large deciduous species wherever possible to maximize future canopy coverage
- Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and include watering and warranty as described in the specification (can be provided by Forestry Services).
- Plant native trees whenever possible
- No root barriers, dead-man anchor systems, or planters are permitted.
- No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

Hard surface planting

- Curb style planter is highly recommended
- No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
- Trees are to be planted at grade

Soil Volume

- Please document on the LP that adequate soil volumes can be met:

Tree Type/Size	Single Tree Soil Volume (m3)	Multiple Tree Soil Volume (m3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

*Please note that these soil volumes are not applicable in cases with Sensitive Marine Clay.

Sensitive Marine Clay

- Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines

Tree Canopy Cover

- The landscape plan shall show how the proposed tree planting will replace and increase canopy cover on the site over time, to support the City's 40% urban forest canopy cover target.
- At a site level, efforts shall be made to provide as much canopy cover as possible, through tree planting and tree retention, with an aim of 40% canopy cover at 40 years, as appropriate.
- Indicate on the plan the projected future canopy cover at 40 years for the site.

10. Environment (Matthew Hayley):

- Look at the environmental conditions for the draft approval
- Up-dated EIS to address impacts on the UNF from the changes, in particular the drainage into and out off the woodlot.
- Species at Risk, address butternut and other species (e.g., bats) - be cognisant of timing windows for bats as they are different then birds (e.g., end of September).
- Future Site Plans
 - Please add features that reduce the urban heat island effect (see OP 10.3.3) produced by the parking lot and a building footprint. For example, this impact can be reduced by adding large canopy trees, green roofs or vegetation walls, or constructing the parking lot or building differently.
 - Any mid to high rise residential and/or other uses, will need to review and incorporate bird safe design elements. Some of the risk factors include glass and related design traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here: https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf

11. Natural Systems (Nick Stow):

- Regarding proposed lots on the west side of a straightened Portico Way that are proposed to back onto the City-Owned woodlot:
 - There will be no vegetation removal on City property.
 - There will be no grade change on City property. All grade raises and landscaping must be on Urbandale's property.

- Any grading, including ditching or infrastructure of any kind, will be set back to the dripline of the trees as an absolute minimum.
- There must be no discharge of additional surface water or groundwater to City property. Any additional run-off or groundwater seepage must be intercepted, stored, and conveyed on Urbandale's property. There will be no conveyance of additional stormwater through the woodlot as either increased minor or major flows.

12. RVCA (Jamie Batchelor)

- a. comments are outstanding at this time

13. Transportation (Wally Dubyk)

- a. an updated TIA report is required.
- b. Additional comments will be provided once the TIA is received and reviewed.

14. Process/Required Applications

- a. Draft Plan of Subdivision
- b. Zoning By-Law Amendment

15. General Information

- a. Ensure that all plans and studies are prepared as per City guidelines – as available online...

<https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans>

Park Attachments (Burl Walker):

1. Park 24 (Core District Park) excerpt from the draft Riverside South MAPP, by J Wright Urban Design and FD Fountain Landscape Architecture



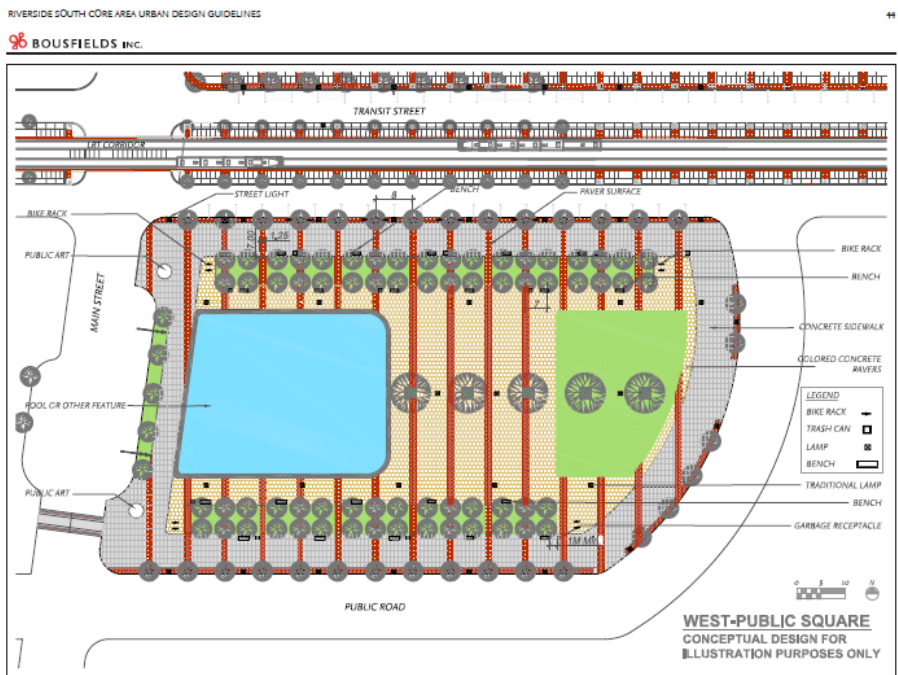
2. Core District Park Concept Site Plan, by Moriyama & Teshima



3- Preliminary Fit Plan for the Core District Park, prepared by Parks and Facilities Planning, April 2022



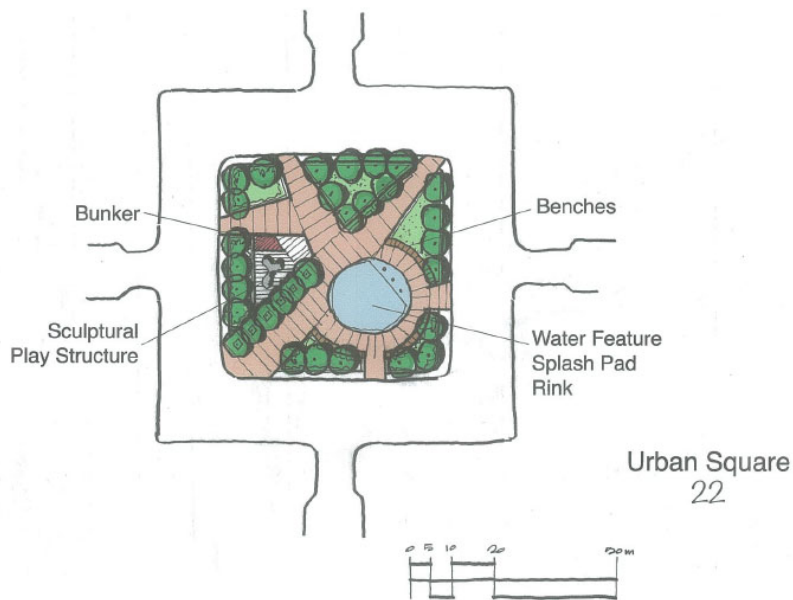
4 - West Public Square, by Bousfields



5- West Public Square Concept Plan, prepared by FD Fountain Landscape Architecture



6-Park 22 (Urban Square) Excerpt from draft RSS MAPP, prepared by J.Wright Urban Design and FD Fountain Landscape Architecture



Park No. 22

type: Urban Plaza

size: 0.3 ha

Pathway

Streetscaping

Water feature/ splash pad

Rink

Bunker

Seating area

Landscaping for shade, visual interest and to create spaces and structure

Sculptural Play Feature

lighting (suggestion)

irrigation suggestion)

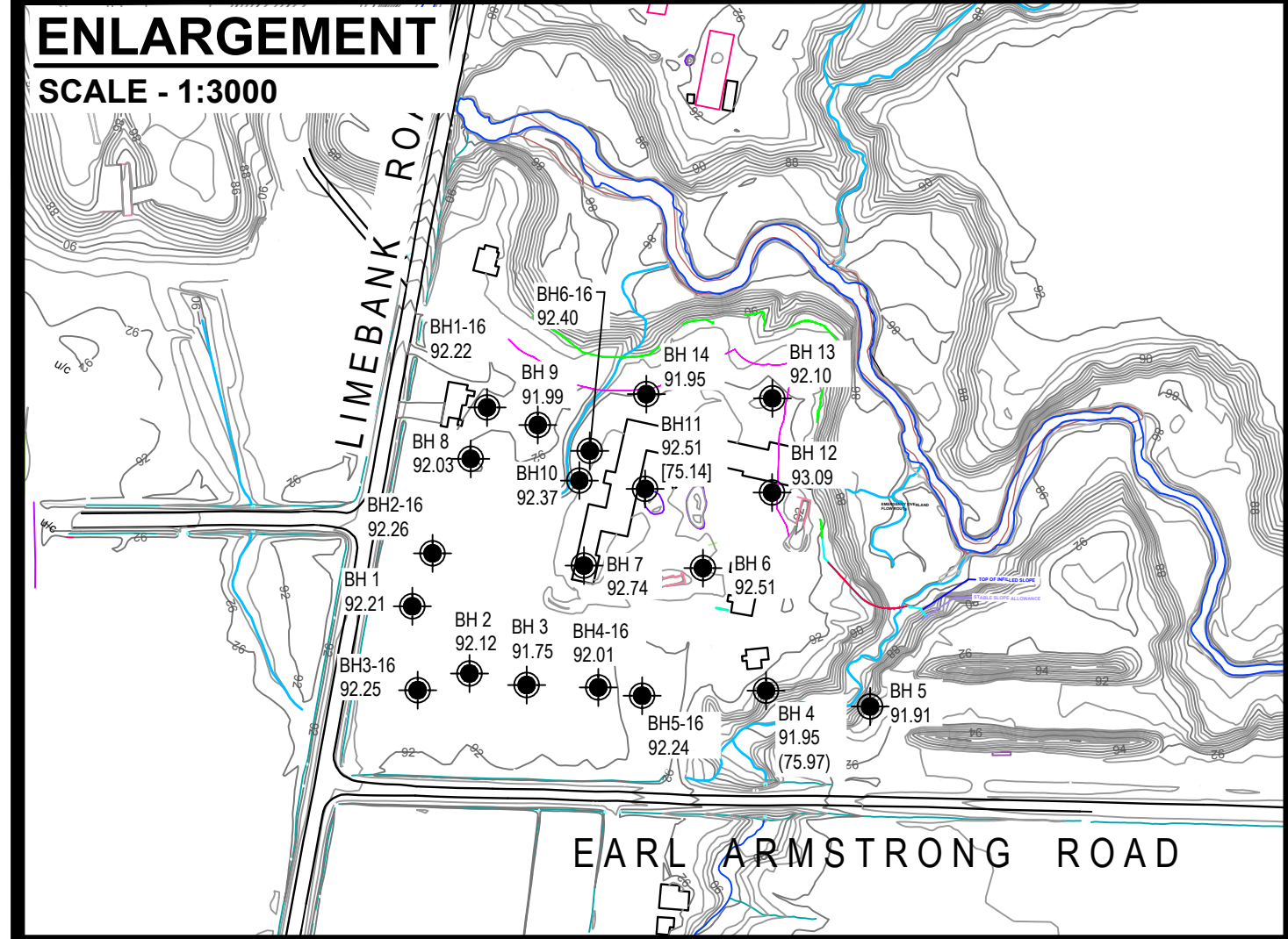
public art (suggestion)

There are large mature trees on this parcel which will not be possible to preserve, given the anticipated bulk grading around this small site and the associated change to ground water.

This design standard and budget for this urban square is to be determined separately from the standard park design standards and yardstick costs. The intent is for it to establish a landmark and facilitate both daily use and special events in the pedestrian oriented section of the mixed-use main street. The square is located about 250m north of the South District Park (No. 24) and should have a direct axial relationship with the Community Building in that park.

The square is expected to be used on a daily basis as a short-cut or short term sitting place to sit and have a coffee, people watch, eat lunch, allow children to play on a unique playstructure or splash pad. It requires a significant percentage of hard pavement to facilitate larger numbers of people for programmed special events such as performances, festivals, craft or farmers markets and the like, that might be organized by the local merchants or BIA, as an attraction to the town core.

Materials should be chosen to be durable and easily cleaned and be of a standard similar to Piazza Dante on Rochester Street or the Lansdowne Commons Park. Soft landscape areas should be protected with a curb and pavements should be coloured concrete or a large format paver. Care should be taken in the detailing to discourage skateboarding. Irrigation and perennial flower beds along with deciduous shade trees should define the edges and will require a higher level of maintenance even than the district parks.

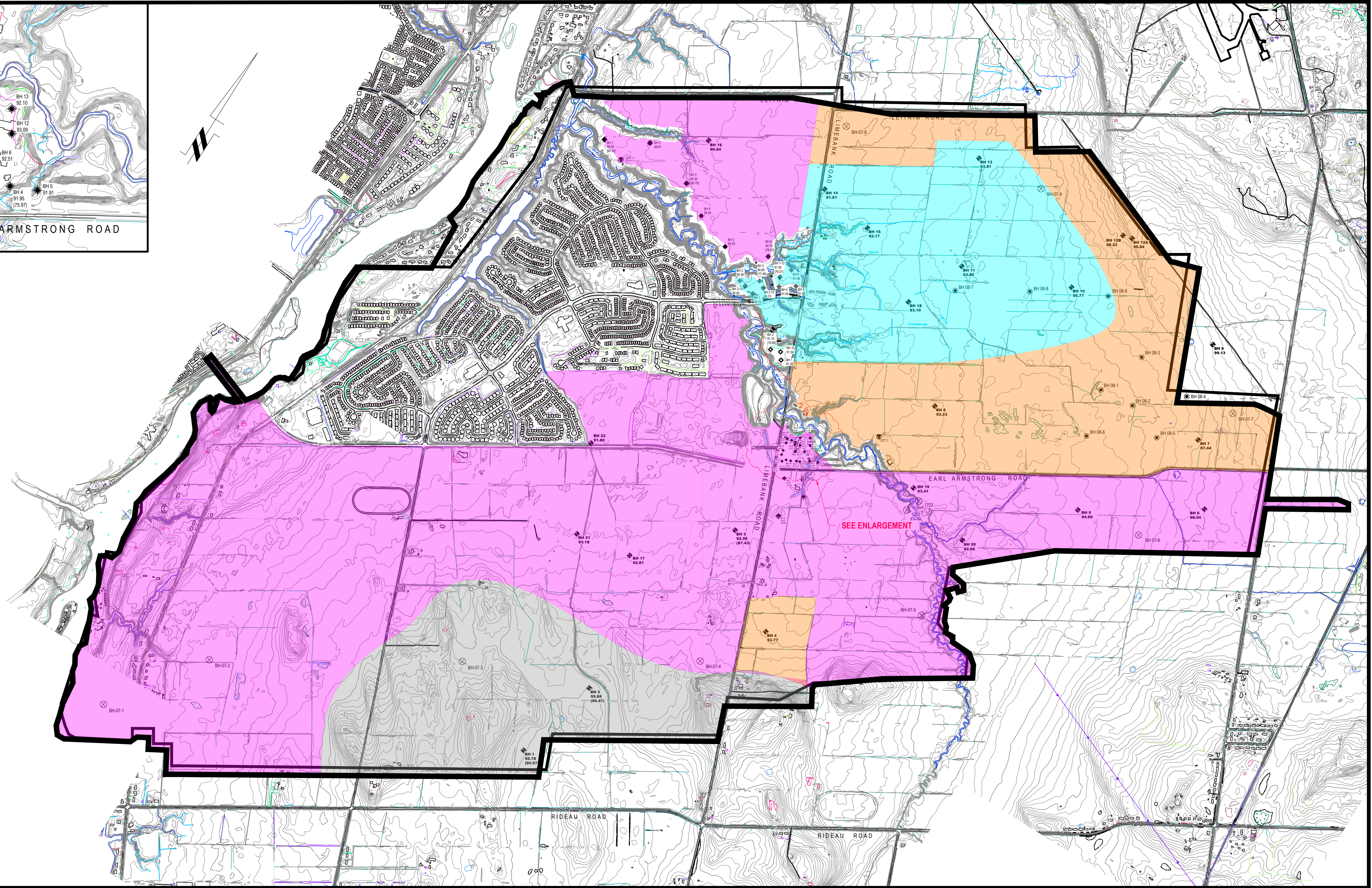


- PERMISSIBLE GRADE RAISE:**
- UP TO 1.2m
 - UP TO 1.5m
 - UP TO 2.0m
 - NO GRADE RAISE RESTRICTIONS

- LEGEND:**
- BOREHOLE LOCATION
 - BOREHOLE LOCATION, PREVIOUS INVESTIGATION (PG0718, 05/2006)
 - BOREHOLE LOCATION, PREVIOUS INVESTIGATION (PG1958, 05/2014)
 - BOREHOLE LOCATION, PREVIOUS INVESTIGATION (PG1958, 2012)
 - BOREHOLE LOCATION PREVIOUS INVESTIGATION (PG2776, 04/2016)
 - BOREHOLE LOCATION, PREVIOUS INVESTIGATION (PG2692, 07/2016)
 - BOREHOLE LOCATION, PREVIOUS INVESTIGATION, (PG2744, 01/2013)
 - BOREHOLE LOCATION BY OTHERS (GOLDER, 2008)
 - BOREHOLE LOCATION BY OTHERS (GOLDER, 2007)
 - BOREHOLE LOCATION BY OTHERS (GOLDER, 2005)
 - CONE PENETRATION TEST LOCATION
 - 91.10 GROUND SURFACE ELEVATION(m)
 - [69.78] BEDROCK SURFACE ELEVATION(m)
 - (79.85) PRACTICAL REFUSAL TO AUGERING / DCPT ELEVATION (m)

BASEPLAN ACQUIRED FROM CITY OF OTTAWA
2K TOPOGRAPHICAL MAPPING

SCALE: 1:10000



paterson group
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

NO.	REVISIONS	DATE	INITIAL

IBI GROUP

**RIVERSIDE SOUTH COMMUNITY MASTER DRAINAGE PLAN UPDATE
MOSQUITO CREEK STUDY AREA - EXISTING CONDITIONS REPORT**

Title: **INITIAL PERMISSIBLE GRADE RAISE LIMITS PLAN**

Stamp:	Scale: 1:10000	Report No.: PG4958-1
Drawn by: RCG	Checked by: RG	Drawing No.:
Approved by: DJG	Date: 07/2019	PG4958-3
		Revision No.:

Paterson Group Inc. 2019/07/20 10:00 AM PG4958-3.dwg

Appendix B

B Water Supply Supporting Information

- **Figure 3-2 Potable Water Servicing Plan (RSCISSU-Phase1 Mosquito Creek Area)**
- **Figure 2.1 Conceptual Water Plan**
- **City of Ottawa Boundary Conditions**
- **Watermain Demand Calculation Sheet**
- **Modeling Output Files**

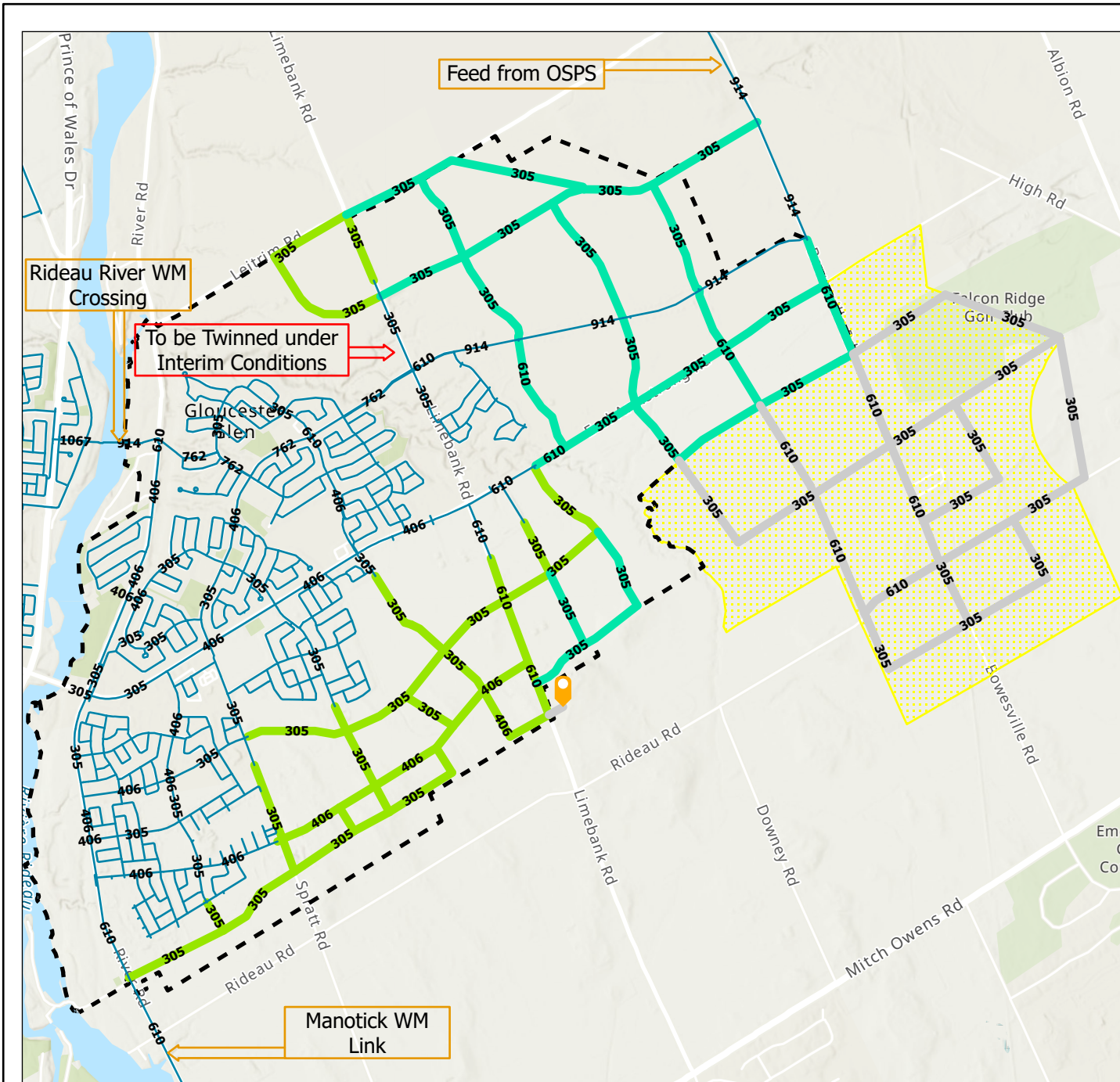
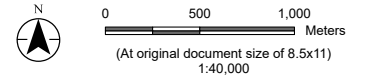


Figure No.
3-2
 Title
Potable Water Servicing Plan

Client/Project
 Riverside South Development Corporation
 Riverside South ISSU Update
 Potable Water Servicing

Project Location
 Riverside South
 Ottawa, Ontario



- Legend**
- Riverside South CDP Lands
 - Expansion Lands
 - Proposed Riverside South Elevated Tank
 - Existing Watermain
 - Proposed Watermain - Phase 1
 - Proposed Watermain - Phase 2
 - Proposed Watermain - Other



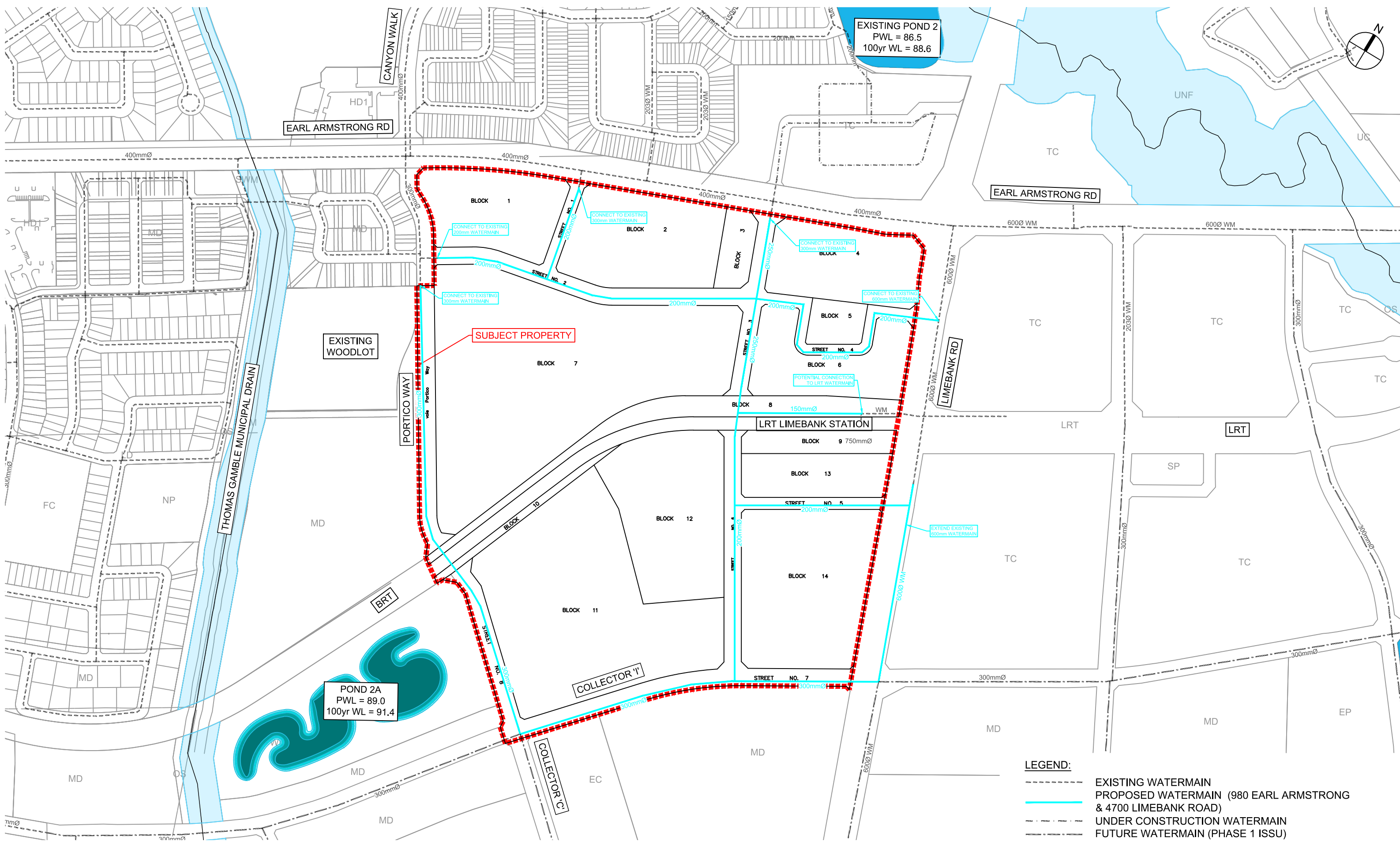
Notes

1. Coordinate System: NAD 1983 CSRS MTM 9
2. Watermain layout east of Bowesville Rd based on highlevel indications provided by Novatech.



Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

J:\144320_Riverside\7.0_Production\7.03_Design\04_Civil\Land\APSR\Sheet Set\FIGURE2.1_CONCEPTUAL WATER.dwg Last Saved At: Sep. 25, 23



Boundary Conditions Riverside South Town Center

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	640	10.66
Maximum Daily Demand	1,551	25.85
Peak Hour	3,383	56.38
Fire Flow Demand #1	10,000	166.67
Fire Flow Demand #2	13,000	216.67

Location



Results

Existing Condition (Pre- SUC Pressure Zone Reconfiguration)

Connection 1 – Portico Way

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	132.1	57.2
Peak Hour	124.9	47.0
Max Day plus Fire Flow #1	124.9	47.0
Max Day plus Fire Flow #2	123.3	44.6

¹ Ground Elevation = 91.9 m

Connection 2 – Earl Armstrong Road West

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	132.1	56.6
Peak Hour	124.9	46.4
Max Day plus Fire Flow #1	124.9	46.4
Max Day plus Fire Flow #2	124.8	46.2

¹ Ground Elevation = 92.3 m

Connection 3 – Earl Armstrong Road East

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	132.1	55.1
Peak Hour	124.9	44.9
Max Day plus Fire Flow #1	124.9	44.9
Max Day plus Fire Flow #2	123.4	42.8

¹ Ground Elevation = 93.3 m

Connection 4 – Limebank Road

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	132.1	55.4
Peak Hour	124.9	45.1
Max Day plus Fire Flow #1	124.1	44.0
Max Day plus Fire Flow #2	121.5	40.4

¹ Ground Elevation = 93.1 m

Future Condition (Post- SUC Pressure Zone Reconfiguration)**Connection 1 – Portico Way**

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	146.8	78.1
Peak Hour	143.5	73.4
Max Day plus Fire Flow #1	142.4	71.8
Max Day plus Fire Flow #2	140.6	69.3

¹ Ground Elevation = 91.9 m

Connection 2 – Earl Armstrong Road West

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	146.8	77.6
Peak Hour	143.5	72.8
Max Day plus Fire Flow #1	143.3	72.5
Max Day plus Fire Flow #2	142.1	70.9

¹ Ground Elevation = 92.3 m

Connection 3 – Earl Armstrong Road East

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	146.8	76.1
Peak Hour	143.4	71.3
Max Day plus Fire Flow #1	142.4	69.8
Max Day plus Fire Flow #2	140.8	67.5

¹ Ground Elevation = 93.3 m

Connection 4 – Limebank Road

Demand Scenario	Head (m)	Pressure ¹ (psi)
Maximum HGL	146.8	76.3
Peak Hour	143.4	71.5
Max Day plus Fire Flow #1	141.3	68.4
Max Day plus Fire Flow #2	138.9	65.1

¹ Ground Elevation = 93.1 m

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.



IBI GROUP
333 PRESTON STREET
OTTAWA, ON
K1S 5N4

WATERMAIN DEMAND CALCULATION SHEET

PROJECT : RSS TOWN CENTER
LOCATION : CITY OF OTTAWA
DEVELOPER : RIVERSIDE SOUTH DEVELOPMENT CORPORATION

FILE: 144320
DATE PRINTED: 25-Sep-23
DESIGN: LE
PAGE: 1 OF 1

NODE	RESIDENTIAL					NON-RESIDENTIAL			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	UNITS				POP'N	INDTRL (ha.)	EMP (ha.)	INST. (ha.)	Res.	Non-res.	Total	Res.	Non-res.	Total	Res.	Non-res.	Total	
	SF	SD & TH	APT	TC (ha)														
C05				0.58	71		0.58		0.23	0.23	0.46	0.58	0.35	0.93	1.27	0.63	1.90	13,000
C12				1.25	153		1.25		0.50	0.51	1.01	1.24	0.76	2.00	2.73	1.37	4.10	13,000
C14				1.25	153		1.25		0.50	0.51	1.01	1.24	0.76	2.00	2.73	1.37	4.10	13,000
C16				2.46	301		2.46		0.98	1.00	1.98	2.44	1.49	3.93	5.37	2.69	8.06	13,000
C18				1.58	193		1.58	5.30	0.63	2.36	2.99	1.57	3.54	5.11	3.45	6.37	9.82	13,000
C22							0.00	5.30	0.00	1.72	1.72	0.00	2.58	2.58	0.00	4.64	4.64	13,000
C26				1.22	149		1.22		0.48	0.49	0.97	1.21	0.74	1.95	2.66	1.33	3.99	13,000
C32				2.80	343		2.80		1.11	1.13	2.24	2.78	1.70	4.48	6.11	3.06	9.17	13,000
C42				3.90	477		3.90		1.55	1.58	3.13	3.87	2.37	6.24	8.51	4.27	12.78	13,000
C48				3.90	477		3.90		1.55	1.58	3.13	3.87	2.37	6.24	8.51	4.27	12.78	13,000
C52				3.90	477		3.90	1.94	1.55	2.21	3.76	3.87	3.31	7.18	8.51	5.96	14.47	13,000
C54				1.84	225		1.84		0.73	0.75	1.48	1.82	1.12	2.94	4.01	2.01	6.02	13,000
C58							0.00	1.94	0.00	0.63	0.63	0.00	0.94	0.94	0.00	1.70	1.70	13,000
TOTALS				24.68	3,021		24.68	14.48			24.51			46.52			93.53	

ASSUMPTIONS

RESIDENTIAL DENSITIES

- Single Family (SF) 3.4 p / p / u
- Semi Detached (SD) & Townhouse (TH) 2.7 p / p / u
- Apartment (APT) 1.8 p / p / u
- Town Centre Area (TC) 122.4 p / p / ha

AVG. DAILY DEMAND

- Residential 280 l / cap / day
 - Employment 35,000 l / ha / day
 - INST 28,000 l / ha / day
- MAX. DAILY DEMAND**
- Residential 700 l / cap / day
 - Employment 52,500 l / ha / day
 - INST 42,000 l / ha / day

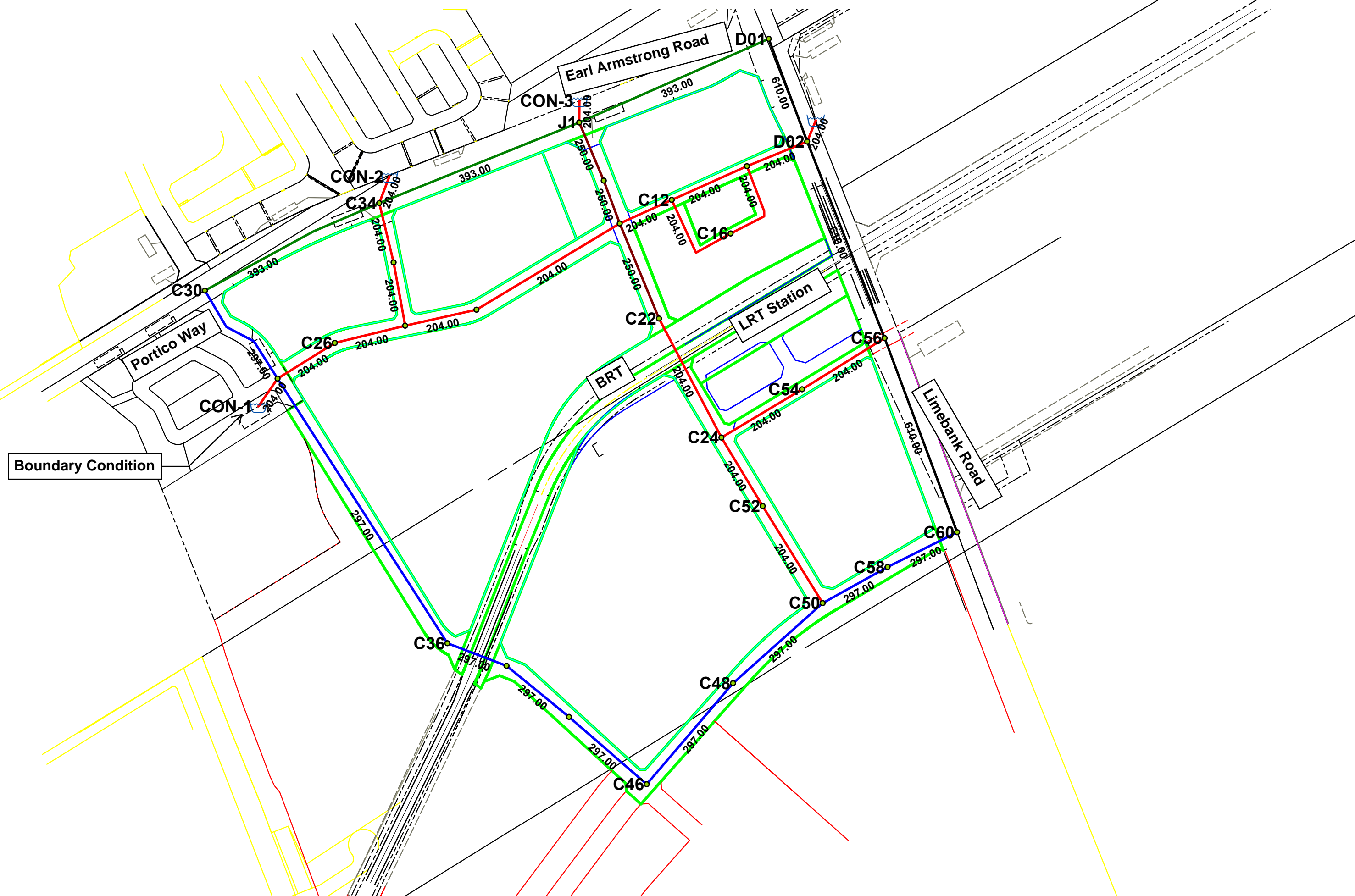
MAX. HOURLY DEMAND

- Residential 1,540 l / cap / day
- Employment 94,500 l / ha / day
- INST 75,600 l / ha / day

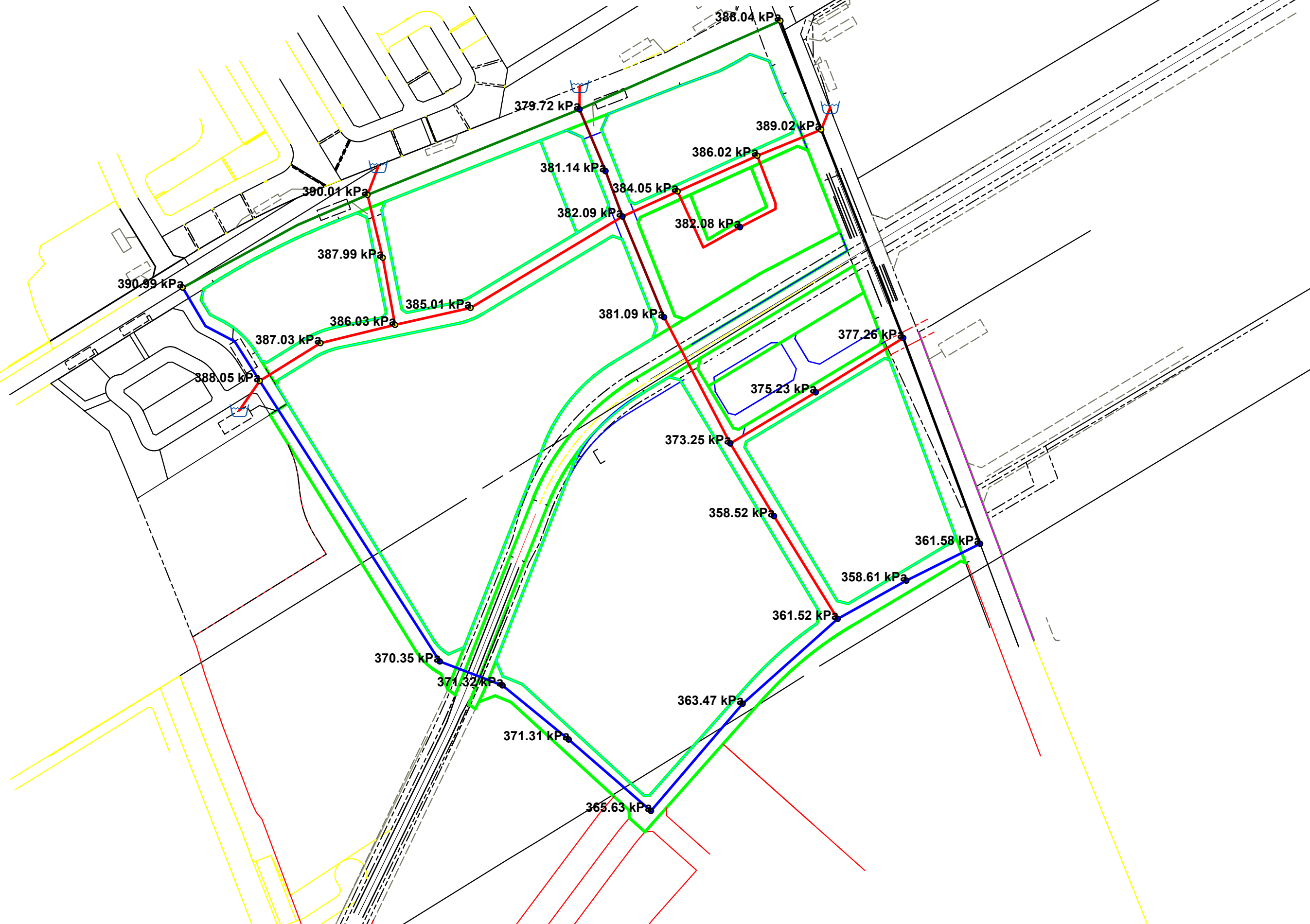
FIRE FLOW

- SF, SD, TH & ST 10,000 l / min
- ICI 13,000 l / min

980 EARL ARMSTRONG & 4700 LIMEBANK ROAD WATER MODEL



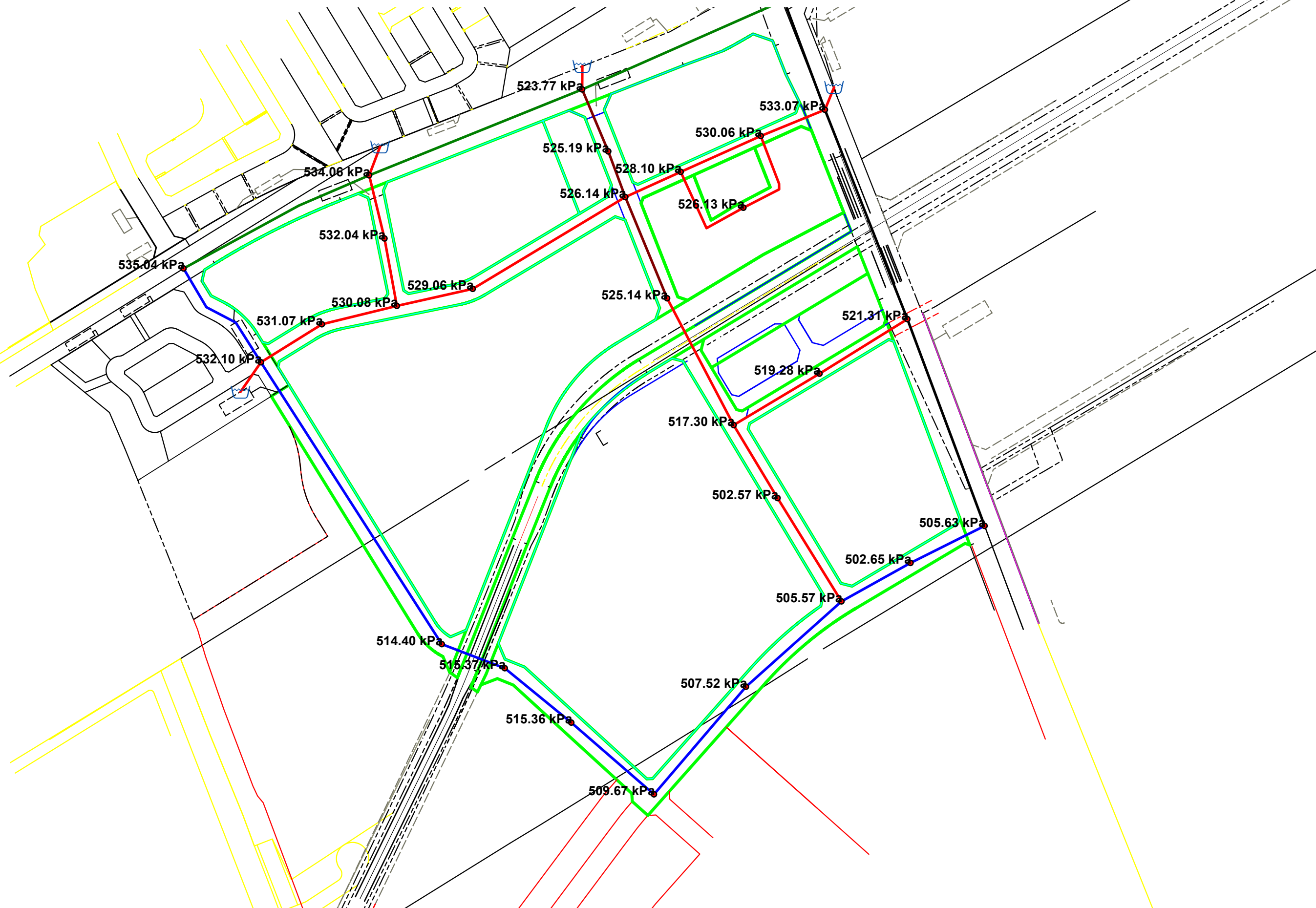
BASIC DAY (MAX HGL) PRESSURES - EXISTING CONDITIONS



Basic Day (Max HGL) Existing Conditions - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	C05	0.42	93.20	132.09	381.14
2	<input type="checkbox"/>	C10	0.00	93.10	132.09	382.09
3	<input type="checkbox"/>	C12	0.91	92.90	132.09	384.05
4	<input type="checkbox"/>	C14	0.91	92.70	132.09	386.02
5	<input type="checkbox"/>	C16	1.78	93.10	132.09	382.08
6	<input type="checkbox"/>	C18	2.86	92.80	132.09	385.01
7	<input type="checkbox"/>	C20	0.00	92.70	132.09	386.03
8	<input type="checkbox"/>	C22	1.72	93.20	132.09	381.09
9	<input type="checkbox"/>	C24	0.00	94.00	132.09	373.25
10	<input type="checkbox"/>	C26	0.88	92.60	132.10	387.03
11	<input type="checkbox"/>	C28	0.00	92.50	132.10	388.05
12	<input type="checkbox"/>	C30	0.00	92.20	132.10	390.99
13	<input type="checkbox"/>	C32	2.02	92.50	132.09	387.99
14	<input type="checkbox"/>	C34	0.00	92.30	132.10	390.01
15	<input type="checkbox"/>	C36	0.00	94.30	132.09	370.35
16	<input type="checkbox"/>	C40	0.00	94.20	132.09	371.32
17	<input type="checkbox"/>	C42	2.81	94.20	132.09	371.31
18	<input type="checkbox"/>	C46	0.00	94.78	132.09	365.63
19	<input type="checkbox"/>	C48	2.81	95.00	132.09	363.47
20	<input type="checkbox"/>	C50	0.00	95.20	132.09	361.52
21	<input type="checkbox"/>	C52	3.55	95.50	132.09	358.52
22	<input type="checkbox"/>	C54	1.05	93.80	132.09	375.23
23	<input type="checkbox"/>	C56	0.00	93.60	132.10	377.26
24	<input type="checkbox"/>	C58	0.73	95.50	132.10	358.61
25	<input type="checkbox"/>	C60	0.00	95.20	132.10	361.58
26	<input type="checkbox"/>	D01	0.00	92.50	132.10	388.04
27	<input type="checkbox"/>	D02	0.00	92.40	132.10	389.02
28	<input type="checkbox"/>	J1	0.00	93.35	132.10	379.72

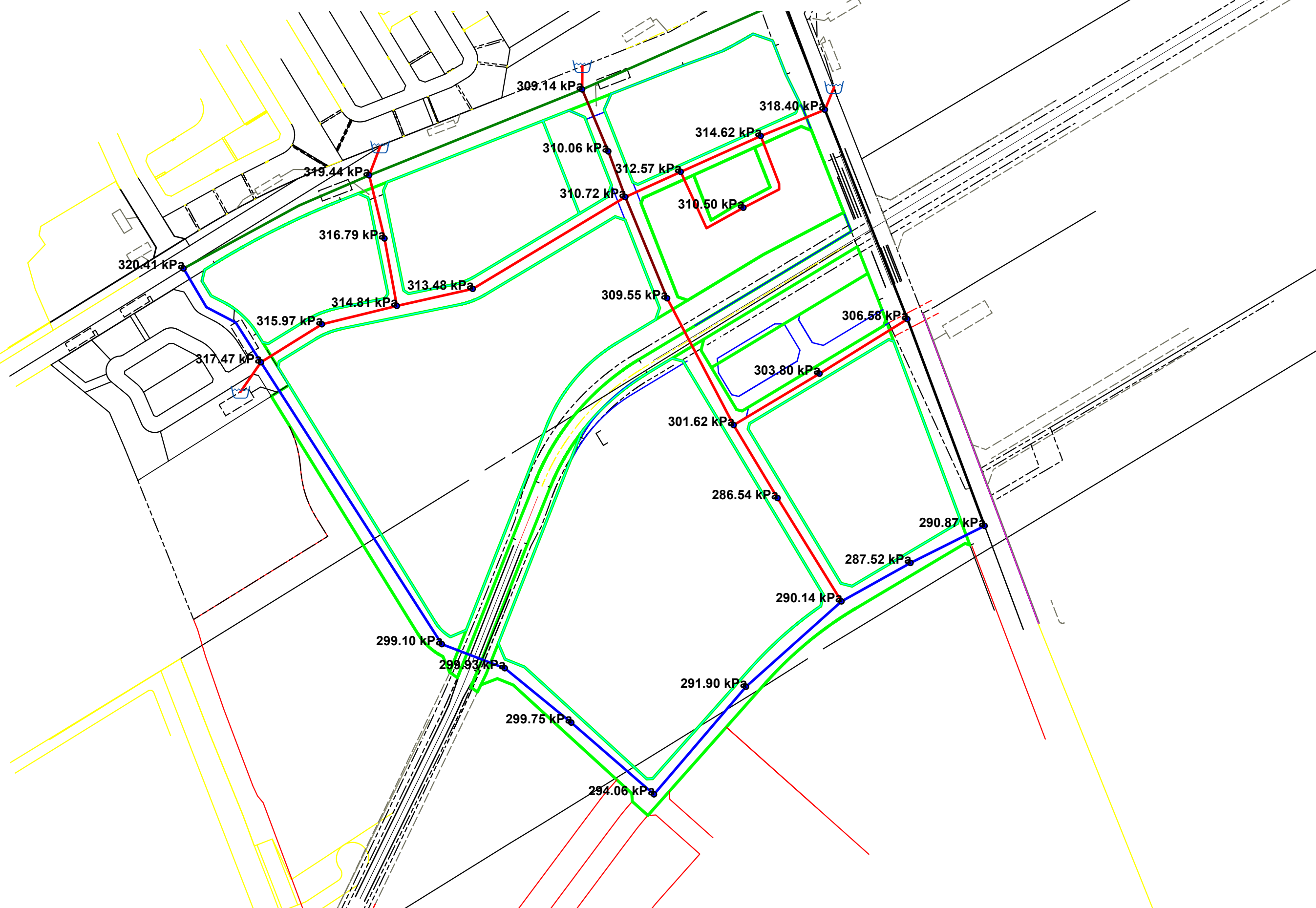
BASIC DAY (MAX HGL) PRESSURES - SUC ZONE RECONFIGURATION



Basic Day (Max HGL) SUC Zone - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	C05	0.42	93.20	146.79	525.19
2	<input type="checkbox"/>	C10	0.00	93.10	146.79	526.14
3	<input type="checkbox"/>	C12	0.91	92.90	146.79	528.10
4	<input type="checkbox"/>	C14	0.91	92.70	146.79	530.06
5	<input type="checkbox"/>	C16	1.78	93.10	146.79	526.13
6	<input type="checkbox"/>	C18	2.86	92.80	146.79	529.06
7	<input type="checkbox"/>	C20	0.00	92.70	146.79	530.08
8	<input type="checkbox"/>	C22	1.72	93.20	146.79	525.14
9	<input type="checkbox"/>	C24	0.00	94.00	146.79	517.30
10	<input type="checkbox"/>	C26	0.88	92.60	146.80	531.07
11	<input type="checkbox"/>	C28	0.00	92.50	146.80	532.10
12	<input type="checkbox"/>	C30	0.00	92.20	146.80	535.04
13	<input type="checkbox"/>	C32	2.02	92.50	146.79	532.04
14	<input type="checkbox"/>	C34	0.00	92.30	146.80	534.06
15	<input type="checkbox"/>	C36	0.00	94.30	146.79	514.40
16	<input type="checkbox"/>	C40	0.00	94.20	146.79	515.37
17	<input type="checkbox"/>	C42	2.81	94.20	146.79	515.36
18	<input type="checkbox"/>	C46	0.00	94.78	146.79	509.67
19	<input type="checkbox"/>	C48	2.81	95.00	146.79	507.52
20	<input type="checkbox"/>	C50	0.00	95.20	146.79	505.57
21	<input type="checkbox"/>	C52	3.55	95.50	146.79	502.57
22	<input type="checkbox"/>	C54	1.05	93.80	146.79	519.28
23	<input type="checkbox"/>	C56	0.00	93.60	146.80	521.31
24	<input type="checkbox"/>	C58	0.73	95.50	146.80	502.65
25	<input type="checkbox"/>	C60	0.00	95.20	146.80	505.63
26	<input type="checkbox"/>	D01	0.00	92.50	146.80	532.09
27	<input type="checkbox"/>	D02	0.00	92.40	146.80	533.07
28	<input type="checkbox"/>	J1	0.00	93.35	146.80	523.77

PEAK HOUR PRESSURES - EXISTING CONDITIONS



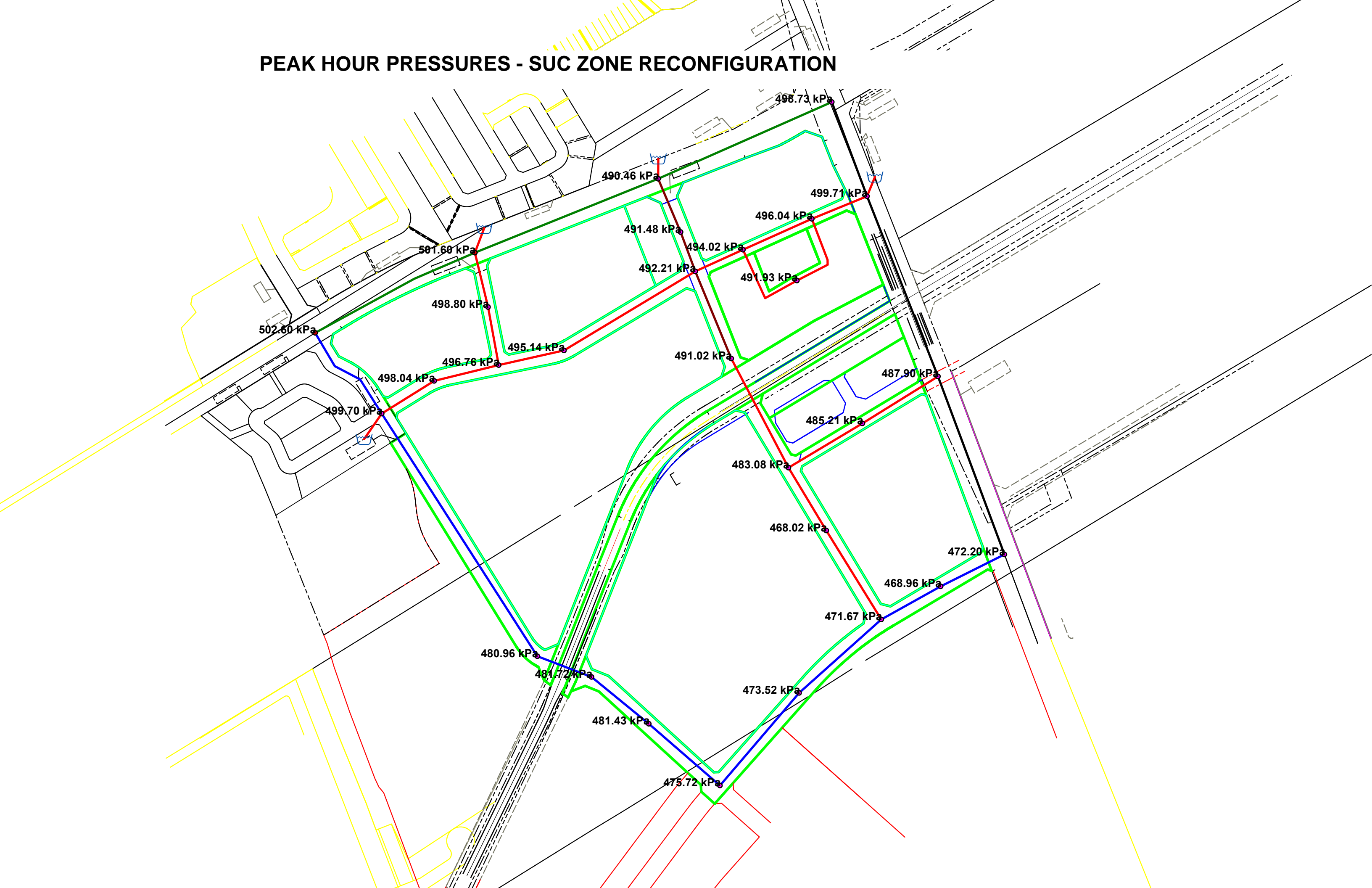
Peak Hour Existing Conditions - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	C05	1.78	93.20	124.84	310.06
2	<input type="checkbox"/>	C10	0.00	93.10	124.81	310.72
3	<input type="checkbox"/>	C12	3.82	92.90	124.80	312.57
4	<input type="checkbox"/>	C14	3.82	92.70	124.81	314.62
5	<input type="checkbox"/>	C16	7.52	93.10	124.79	310.50
6	<input type="checkbox"/>	C18	9.47	92.80	124.79	313.48
7	<input type="checkbox"/>	C20	0.00	92.70	124.83	314.81
8	<input type="checkbox"/>	C22	4.64	93.20	124.79	309.55
9	<input type="checkbox"/>	C24	0.00	94.00	124.78	301.62
10	<input type="checkbox"/>	C26	3.73	92.60	124.84	315.97
11	<input type="checkbox"/>	C28	0.00	92.50	124.90	317.47
12	<input type="checkbox"/>	C30	0.00	92.20	124.90	320.41
13	<input type="checkbox"/>	C32	8.56	92.50	124.83	316.79
14	<input type="checkbox"/>	C34	0.00	92.30	124.90	319.44
15	<input type="checkbox"/>	C36	0.00	94.30	124.82	299.10
16	<input type="checkbox"/>	C40	0.00	94.20	124.81	299.93
17	<input type="checkbox"/>	C42	11.92	94.20	124.79	299.75
18	<input type="checkbox"/>	C46	0.00	94.78	124.79	294.06
19	<input type="checkbox"/>	C48	11.92	95.00	124.79	291.90
20	<input type="checkbox"/>	C50	0.00	95.20	124.81	290.14
21	<input type="checkbox"/>	C52	13.90	95.50	124.74	286.54
22	<input type="checkbox"/>	C54	4.47	93.80	124.80	303.80
23	<input type="checkbox"/>	C56	0.00	93.60	124.89	306.58
24	<input type="checkbox"/>	C58	1.98	95.50	124.84	287.52
25	<input type="checkbox"/>	C60	0.00	95.20	124.88	290.87
26	<input type="checkbox"/>	D01	0.00	92.50	124.89	317.43
27	<input type="checkbox"/>	D02	0.00	92.40	124.89	318.40
28	<input type="checkbox"/>	J1	0.00	93.35	124.90	309.14

Peak Hour existing Conditions - 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	<input type="checkbox"/>	P101	C34	C32	80.60	204.00	110.00	10.38	0.32	0.07	0.86	Open	0
2	<input type="checkbox"/>	P103	C32	C20	85.01	204.00	110.00	1.82	0.06	0.00	0.03	Open	0
3	<input type="checkbox"/>	P105	C28	CON-1	1.00	204.00	110.00	-19.63	0.60	0.00	2.81	Open	0
4	<input type="checkbox"/>	P107	C34	CON-2	1.00	204.00	110.00	-15.41	0.47	0.00	1.80	Open	0
5	<input type="checkbox"/>	P109	D02	CON-4	1.00	204.00	110.00	-32.95	1.01	0.01	7.34	Open	0
6	<input type="checkbox"/>	P111	C28	C36	415.26	297.00	120.00	12.99	0.19	0.07	0.18	Open	0
7	<input type="checkbox"/>	P115	C40	C36	83.70	297.00	120.00	-12.99	0.19	0.01	0.18	Open	0
8	<input type="checkbox"/>	P117	C40	C42	106.73	297.00	120.00	12.99	0.19	0.02	0.18	Open	0
9	<input type="checkbox"/>	P119	C42	C46	135.80	297.00	120.00	1.07	0.02	0.00	0.00	Open	0
10	<input type="checkbox"/>	P121	C46	C48	175.63	297.00	120.00	1.07	0.02	0.00	0.00	Open	0
11	<input type="checkbox"/>	P123	C48	C50	158.91	297.00	120.00	-10.85	0.16	0.02	0.13	Open	0
12	<input type="checkbox"/>	P125	C50	C52	150.66	204.00	110.00	7.30	0.22	0.07	0.45	Open	0
13	<input type="checkbox"/>	P127	C52	C24	105.70	204.00	110.00	-6.60	0.20	0.04	0.37	Open	0
14	<input type="checkbox"/>	P129	C24	C54	124.21	204.00	110.00	-4.43	0.14	0.02	0.18	Open	0
15	<input type="checkbox"/>	P131	C54	C56	128.39	204.00	110.00	-8.90	0.27	0.08	0.65	Open	0
16	<input type="checkbox"/>	P133	C56	C60	273.72	610.00	120.00	20.13	0.07	0.00	0.01	Open	0
17	<input type="checkbox"/>	P135	C60	C58	102.86	297.00	120.00	20.13	0.29	0.04	0.40	Open	0
18	<input type="checkbox"/>	P137	C58	C50	98.07	297.00	120.00	18.15	0.26	0.03	0.33	Open	0
19	<input type="checkbox"/>	P139	C56	D02	279.05	610.00	120.00	-29.04	0.10	0.01	0.02	Open	0
20	<input type="checkbox"/>	P31	CON-3	J1	1.00	204.00	110.00	19.54	0.60	0.00	2.79	Open	0
21	<input type="checkbox"/>	P65	J1	C05	83.34	250.00	110.00	15.48	0.32	0.06	0.67	Open	0
22	<input type="checkbox"/>	P67	C05	C10	60.45	250.00	110.00	13.70	0.28	0.03	0.54	Open	0
23	<input type="checkbox"/>	P69	C10	C22	135.78	250.00	110.00	6.81	0.14	0.02	0.15	Open	0
24	<input type="checkbox"/>	P71	C22	C24	177.53	204.00	110.00	2.17	0.07	0.01	0.05	Open	0
25	<input type="checkbox"/>	P73	C10	C12	75.55	204.00	110.00	3.96	0.12	0.01	0.14	Open	0
26	<input type="checkbox"/>	P75	C12	C14	108.96	204.00	110.00	-2.97	0.09	0.01	0.09	Open	0
27	<input type="checkbox"/>	P77	C14	D02	86.01	204.00	110.00	-11.20	0.34	0.09	0.99	Open	0
28	<input type="checkbox"/>	P79	C14	C16	120.17	204.00	110.00	4.41	0.13	0.02	0.18	Open	0
29	<input type="checkbox"/>	P81	C12	C16	129.17	204.00	110.00	3.11	0.10	0.01	0.09	Open	0
30	<input type="checkbox"/>	P83	D02	D01	144.86	610.00	120.00	-7.28	0.02	0.00	0.00	Open	0
31	<input type="checkbox"/>	P85	D01	J1	273.80	393.00	120.00	-7.28	0.06	0.00	0.02	Open	0
32	<input type="checkbox"/>	P87	C10	C18	220.98	204.00	110.00	2.94	0.09	0.02	0.08	Open	0
33	<input type="checkbox"/>	P89	C18	C20	96.54	204.00	110.00	-6.53	0.20	0.04	0.37	Open	0
34	<input type="checkbox"/>	P91	C20	C26	95.87	204.00	110.00	-4.71	0.14	0.02	0.20	Open	0
35	<input type="checkbox"/>	P93	C26	C28	89.13	204.00	110.00	-8.44	0.26	0.05	0.59	Open	0
36	<input type="checkbox"/>	P95	C28	C30	155.23	297.00	120.00	-1.80	0.03	0.00	0.00	Open	0
37	<input type="checkbox"/>	P97	C30	C34	258.01	393.00	120.00	-1.80	0.01	0.00	0.00	Open	0
38	<input type="checkbox"/>	P99	C34	J1	285.12	393.00	120.00	3.23	0.03	0.00	0.00	Open	0

PEAK HOUR PRESSURES - SUC ZONE RECONFIGURATION



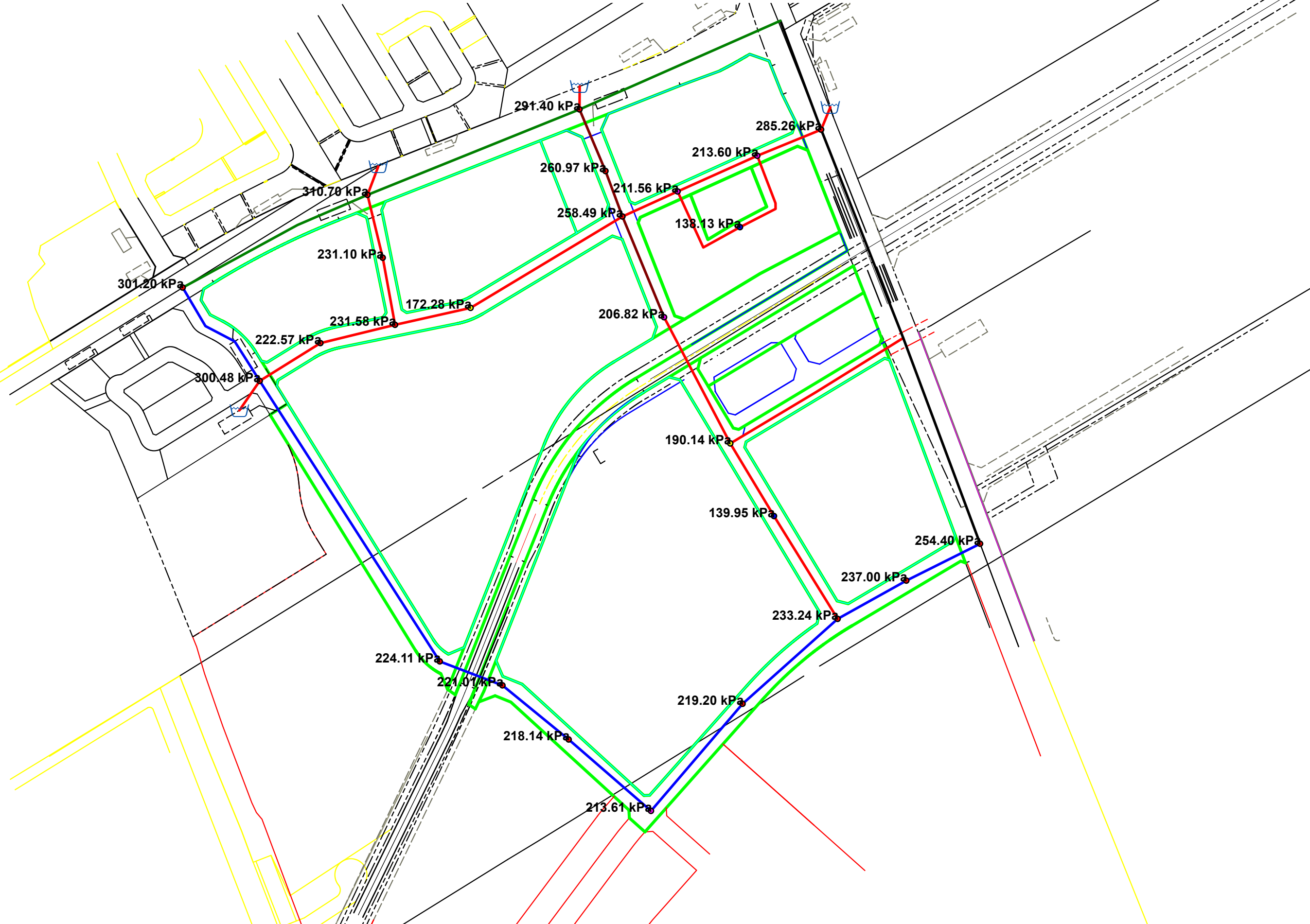
Peak Hour SUC Zone - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	C05	1.78	93.20	143.36	491.48
2	<input type="checkbox"/>	C10	0.00	93.10	143.33	492.21
3	<input type="checkbox"/>	C12	3.82	92.90	143.31	494.02
4	<input type="checkbox"/>	C14	3.82	92.70	143.32	496.04
5	<input type="checkbox"/>	C16	7.52	93.10	143.30	491.93
6	<input type="checkbox"/>	C18	9.47	92.80	143.33	495.14
7	<input type="checkbox"/>	C20	0.00	92.70	143.39	496.76
8	<input type="checkbox"/>	C22	4.64	93.20	143.31	491.02
9	<input type="checkbox"/>	C24	0.00	94.00	143.30	483.08
10	<input type="checkbox"/>	C26	3.73	92.60	143.42	498.04
11	<input type="checkbox"/>	C28	0.00	92.50	143.49	499.70
12	<input type="checkbox"/>	C30	0.00	92.20	143.49	502.60
13	<input type="checkbox"/>	C32	8.56	92.50	143.40	498.80
14	<input type="checkbox"/>	C34	0.00	92.30	143.49	501.60
15	<input type="checkbox"/>	C36	0.00	94.30	143.38	480.96
16	<input type="checkbox"/>	C40	0.00	94.20	143.36	481.72
17	<input type="checkbox"/>	C42	11.92	94.20	143.33	481.43
18	<input type="checkbox"/>	C46	0.00	94.78	143.33	475.72
19	<input type="checkbox"/>	C48	11.92	95.00	143.32	473.52
20	<input type="checkbox"/>	C50	0.00	95.20	143.33	471.67
21	<input type="checkbox"/>	C52	13.90	95.50	143.26	468.02
22	<input type="checkbox"/>	C54	4.47	93.80	143.32	485.21
23	<input type="checkbox"/>	C56	0.00	93.60	143.39	487.90
24	<input type="checkbox"/>	C58	1.98	95.50	143.36	468.96
25	<input type="checkbox"/>	C60	0.00	95.20	143.39	472.20
26	<input type="checkbox"/>	D01	0.00	92.50	143.40	498.73
27	<input type="checkbox"/>	D02	0.00	92.40	143.39	499.71
28	<input type="checkbox"/>	J1	0.00	93.35	143.40	490.46

Peak Hour SUC Zone - 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	<input type="checkbox"/>	P101	C34	C32	80.60	204.00	110.00	11.63	0.36	0.09	1.07	Open	0
2	<input type="checkbox"/>	P103	C32	C20	85.01	204.00	110.00	3.07	0.09	0.01	0.09	Open	0
3	<input type="checkbox"/>	P105	C28	CON-1	1.00	204.00	110.00	-30.59	0.94	0.01	6.39	Open	0
4	<input type="checkbox"/>	P107	C34	CON-2	1.00	204.00	110.00	-43.18	1.32	0.01	12.10	Open	0
5	<input type="checkbox"/>	P109	D02	CON-4	1.00	204.00	110.00	-27.12	0.83	0.01	5.12	Open	0
6	<input type="checkbox"/>	P111	C28	C36	415.26	297.00	120.00	16.24	0.23	0.11	0.27	Open	0
7	<input type="checkbox"/>	P115	C40	C36	83.70	297.00	120.00	-16.24	0.23	0.02	0.27	Open	0
8	<input type="checkbox"/>	P117	C40	C42	106.73	297.00	120.00	16.24	0.23	0.03	0.27	Open	0
9	<input type="checkbox"/>	P119	C42	C46	135.80	297.00	120.00	4.32	0.06	0.00	0.02	Open	0
10	<input type="checkbox"/>	P121	C46	C48	175.63	297.00	120.00	4.32	0.06	0.00	0.02	Open	0
11	<input type="checkbox"/>	P123	C48	C50	158.91	297.00	120.00	-7.60	0.11	0.01	0.07	Open	0
12	<input type="checkbox"/>	P125	C50	C52	150.66	204.00	110.00	7.56	0.23	0.07	0.48	Open	0
13	<input type="checkbox"/>	P127	C52	C24	105.70	204.00	110.00	-6.34	0.19	0.04	0.35	Open	0
14	<input type="checkbox"/>	P129	C24	C54	124.21	204.00	110.00	-3.91	0.12	0.02	0.14	Open	0
15	<input type="checkbox"/>	P131	C54	C56	128.39	204.00	110.00	-8.38	0.26	0.07	0.58	Open	0
16	<input type="checkbox"/>	P133	C56	C60	273.72	610.00	120.00	17.14	0.06	0.00	0.01	Open	0
17	<input type="checkbox"/>	P135	C60	C58	102.86	297.00	120.00	17.14	0.25	0.03	0.30	Open	0
18	<input type="checkbox"/>	P137	C58	C50	98.07	297.00	120.00	15.16	0.22	0.02	0.24	Open	0
19	<input type="checkbox"/>	P139	C56	D02	279.05	610.00	120.00	-25.52	0.09	0.01	0.02	Open	0
20	<input type="checkbox"/>	P31	CON-3	J1	1.00	204.00	110.00	-13.36	0.41	0.00	1.38	Open	0
21	<input type="checkbox"/>	P65	J1	C05	83.34	250.00	110.00	13.94	0.28	0.05	0.55	Open	0
22	<input type="checkbox"/>	P67	C05	C10	60.45	250.00	110.00	12.16	0.25	0.03	0.43	Open	0
23	<input type="checkbox"/>	P69	C10	C22	135.78	250.00	110.00	7.07	0.14	0.02	0.16	Open	0
24	<input type="checkbox"/>	P71	C22	C24	177.53	204.00	110.00	2.43	0.07	0.01	0.06	Open	0
25	<input type="checkbox"/>	P73	C10	C12	75.55	204.00	110.00	4.74	0.15	0.02	0.20	Open	0
26	<input type="checkbox"/>	P75	C12	C14	108.96	204.00	110.00	-2.38	0.07	0.01	0.06	Open	0
27	<input type="checkbox"/>	P77	C14	D02	86.01	204.00	110.00	-10.42	0.32	0.07	0.87	Open	0
28	<input type="checkbox"/>	P79	C14	C16	120.17	204.00	110.00	4.22	0.13	0.02	0.16	Open	0
29	<input type="checkbox"/>	P81	C12	C16	129.17	204.00	110.00	3.30	0.10	0.01	0.10	Open	0
30	<input type="checkbox"/>	P83	D02	D01	144.86	610.00	120.00	-8.82	0.03	0.00	0.00	Open	0
31	<input type="checkbox"/>	P85	D01	J1	273.80	393.00	120.00	-8.82	0.07	0.01	0.02	Open	0
32	<input type="checkbox"/>	P87	C10	C18	220.98	204.00	110.00	0.36	0.01	0.00	0.00	Open	0
33	<input type="checkbox"/>	P89	C18	C20	96.54	204.00	110.00	-9.11	0.28	0.07	0.68	Open	0
34	<input type="checkbox"/>	P91	C20	C26	95.87	204.00	110.00	-6.05	0.18	0.03	0.32	Open	0
35	<input type="checkbox"/>	P93	C26	C28	89.13	204.00	110.00	-9.78	0.30	0.07	0.77	Open	0
36	<input type="checkbox"/>	P95	C28	C30	155.23	297.00	120.00	4.57	0.07	0.00	0.03	Open	0
37	<input type="checkbox"/>	P97	C30	C34	258.01	393.00	120.00	4.57	0.04	0.00	0.01	Open	0
38	<input type="checkbox"/>	P99	C34	J1	285.12	393.00	120.00	36.12	0.30	0.09	0.30	Open	0

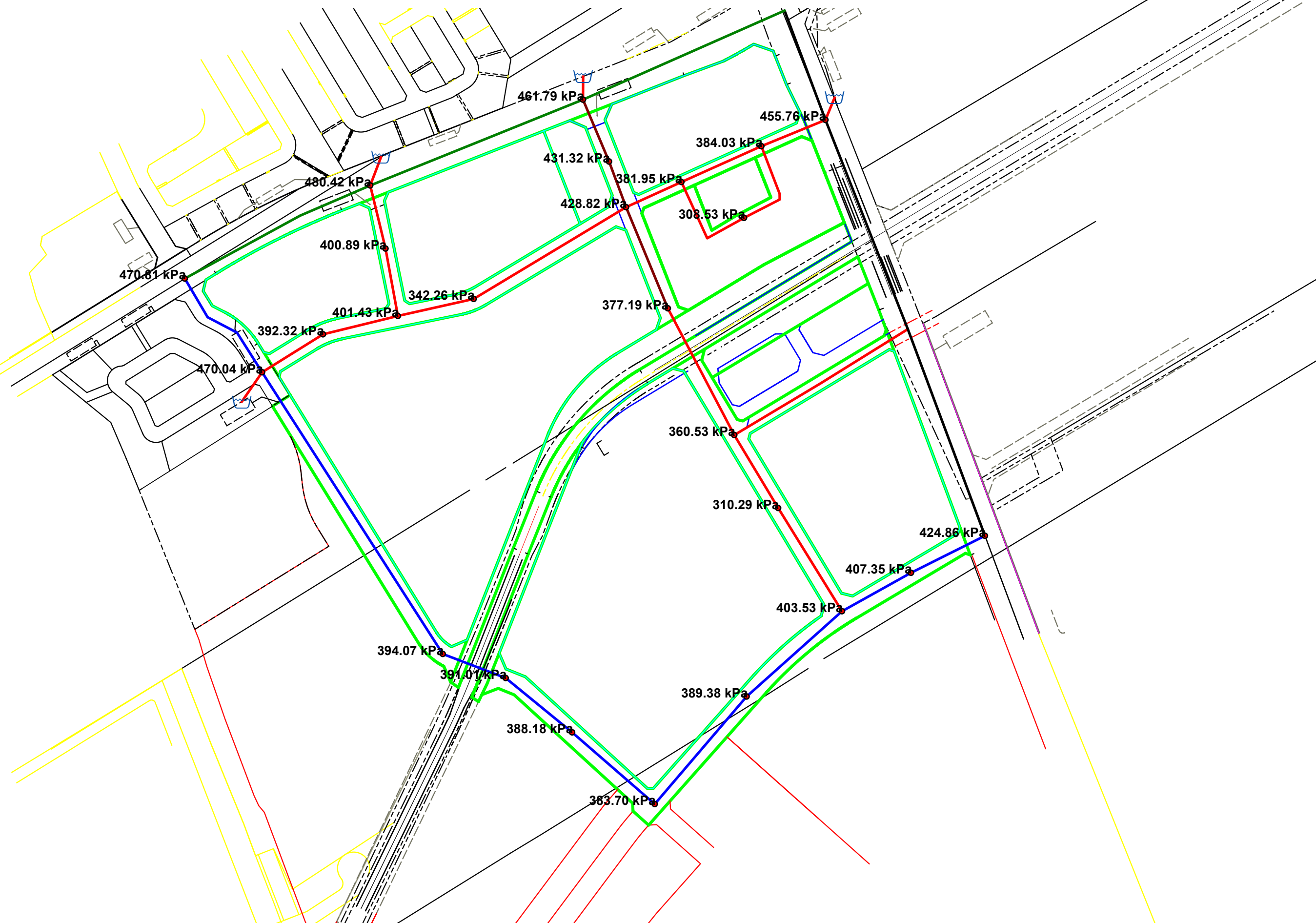
MAX DAY + FIRE (13,000 l/min) RESIDUAL PRESSURES - EXISTING CONDITIONS



Max Day + Fire (13,000 l/min) Existing Conditions - Fireflow Design Report

		ID	Total Demand (L/s)	Available Flow at Hydrant (L/s)	Critical Node ID	Critical Node Pressure (kPa)	Critical Node Head (m)	Design Flow (L/s)	Design Pressure (kPa)	Design Fire Node Pressure (kPa)
1	<input type="checkbox"/>	C05	217.53	536.87	C05	139.96	107.48	536.87	139.96	140.00
2	<input type="checkbox"/>	C10	216.67	519.61	C10	139.96	107.38	519.61	139.96	140.04
3	<input type="checkbox"/>	C12	218.52	314.98	C12	139.96	107.18	314.98	139.96	139.97
4	<input type="checkbox"/>	C14	218.52	319.81	C14	139.96	106.98	319.80	139.96	139.96
5	<input type="checkbox"/>	C16	220.31	218.80	C16	139.96	107.38	218.80	139.96	139.94
6	<input type="checkbox"/>	C18	221.58	251.04	C18	139.96	107.08	251.04	139.96	140.24
7	<input type="checkbox"/>	C20	216.67	346.09	C20	139.96	106.98	346.09	139.96	139.96
8	<input type="checkbox"/>	C22	219.25	306.12	C22	139.96	107.48	306.12	139.96	139.96
9	<input type="checkbox"/>	C24	216.67	281.44	C24	139.96	108.28	281.44	139.96	139.98
10	<input type="checkbox"/>	C26	218.47	322.70	C26	139.96	106.88	322.70	139.96	139.96
11	<input type="checkbox"/>	C28	216.67	2,696.65	C28	139.99	106.79	2,696.89	139.96	139.95
12	<input type="checkbox"/>	C30	216.67	1,052.43	C30	139.97	106.48	1,052.44	139.96	139.96
13	<input type="checkbox"/>	C32	220.81	340.75	C32	139.96	106.78	340.75	139.96	139.97
14	<input type="checkbox"/>	C34	216.67	3,263.18	C34	140.00	106.59	3,263.59	139.96	139.87
15	<input type="checkbox"/>	C36	216.67	366.27	C36	139.96	108.58	366.27	139.96	139.98
16	<input type="checkbox"/>	C40	216.67	354.84	C40	139.96	108.48	354.84	139.96	139.98
17	<input type="checkbox"/>	C42	222.44	353.31	C42	139.96	108.48	353.31	139.96	139.96
18	<input type="checkbox"/>	C46	216.67	345.21	C46	139.96	109.06	345.21	139.96	139.98
19	<input type="checkbox"/>	C48	222.44	382.37	C48	139.96	109.28	382.37	139.96	139.97
20	<input type="checkbox"/>	C50	216.67	481.83	C50	139.96	109.48	481.83	139.96	139.97
21	<input type="checkbox"/>	C52	223.53	223.51	C52	139.96	109.78	223.51	139.96	139.96
22	<input type="checkbox"/>	C58	217.77	560.24	C58	139.96	109.78	560.24	139.96	139.93
23	<input type="checkbox"/>	C60	216.67	1,185.87	C60	139.97	109.48	1,185.90	139.96	139.96
24	<input type="checkbox"/>	D02	216.67	2,870.98	C60	115.61	107.00	2,602.93	139.96	164.84
25	<input type="checkbox"/>	J1	216.67	3,352.46	J1	140.00	107.64	3,352.96	139.96	139.96

MAX DAY + FIRE (13,000 l/min) RESIDUAL PRESSURES - SUC ZONE RECONFIGURATION



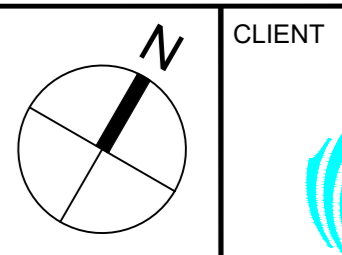
Max Day + Fire (13,000 l/min) SUC Zone - Fireflow Design Report

		ID	Total Demand (L/s)	Available Flow at Hydrant (L/s)	Critical Node ID	Critical Node Pressure (kPa)	Critical Node Head (m)	Design Flow (L/s)	Design Pressure (kPa)	Design Fire Node Pressure (kPa)
1	<input type="checkbox"/>	C05	217.53	811.56	C05	139.96	107.48	811.56	139.96	140.08
2	<input type="checkbox"/>	C10	216.67	787.65	C10	139.96	107.38	787.65	139.96	140.10
3	<input type="checkbox"/>	C12	218.52	479.15	C12	139.96	107.18	479.15	139.96	139.98
4	<input type="checkbox"/>	C14	218.52	485.92	C14	139.96	106.98	485.92	139.96	139.96
5	<input type="checkbox"/>	C16	220.31	334.14	C16	139.96	107.38	334.14	139.96	139.96
6	<input type="checkbox"/>	C18	221.58	373.13	C18	139.96	107.08	373.13	139.96	139.96
7	<input type="checkbox"/>	C20	216.67	513.54	C20	139.96	106.98	513.55	139.96	139.99
8	<input type="checkbox"/>	C22	219.25	465.78	C22	139.96	107.48	465.78	139.96	139.97
9	<input type="checkbox"/>	C24	216.67	441.97	C24	139.96	108.28	441.97	139.96	139.95
10	<input type="checkbox"/>	C26	218.47	476.87	C26	139.96	106.88	476.87	139.96	139.97
11	<input type="checkbox"/>	C28	216.67	3,974.13	C28	140.02	106.79	3,974.51	139.96	139.92
12	<input type="checkbox"/>	C30	216.67	1,531.90	C30	139.97	106.48	1,531.92	139.96	140.27
13	<input type="checkbox"/>	C32	220.81	500.02	C32	139.96	106.78	500.02	139.96	139.98
14	<input type="checkbox"/>	C34	216.67	4,734.30	C34	140.05	106.59	4,734.93	139.96	139.96
15	<input type="checkbox"/>	C36	216.67	569.32	C36	139.96	108.58	569.32	139.96	140.03
16	<input type="checkbox"/>	C40	216.67	551.85	C40	139.96	108.48	551.85	139.96	140.03
17	<input type="checkbox"/>	C42	222.44	548.19	C42	139.96	108.48	548.19	139.96	139.97
18	<input type="checkbox"/>	C46	216.67	547.32	C46	139.96	109.06	547.32	139.96	140.02
19	<input type="checkbox"/>	C48	222.44	608.46	C48	139.96	109.28	608.46	139.96	139.97
20	<input type="checkbox"/>	C50	216.67	775.45	C50	139.96	109.48	775.45	139.96	140.00
21	<input type="checkbox"/>	C52	223.53	361.51	C52	139.96	109.78	361.51	139.96	139.97
22	<input type="checkbox"/>	C58	217.77	907.27	C58	139.97	109.78	907.27	139.96	139.94
23	<input type="checkbox"/>	C60	216.67	1,901.87	C60	139.98	109.48	1,901.91	139.96	139.55
24	<input type="checkbox"/>	D02	216.67	4,328.23	C60	119.12	107.36	4,170.30	139.96	161.31
25	<input type="checkbox"/>	J1	216.67	5,029.71	J1	140.06	107.64	5,030.50	139.96	139.96

Appendix C

C Wastewater Collection Supporting Information

- **Drawing 400 Sanitary Drainage Area Plan (RSCISSU-Phase1 Mosquito Creek Area)**
- **Sanitary Sewer Design Sheet (RSCISSU-Phase1 Mosquito Creek Area)**
- **Figure 3.1 Conceptual Sanitary Plan**

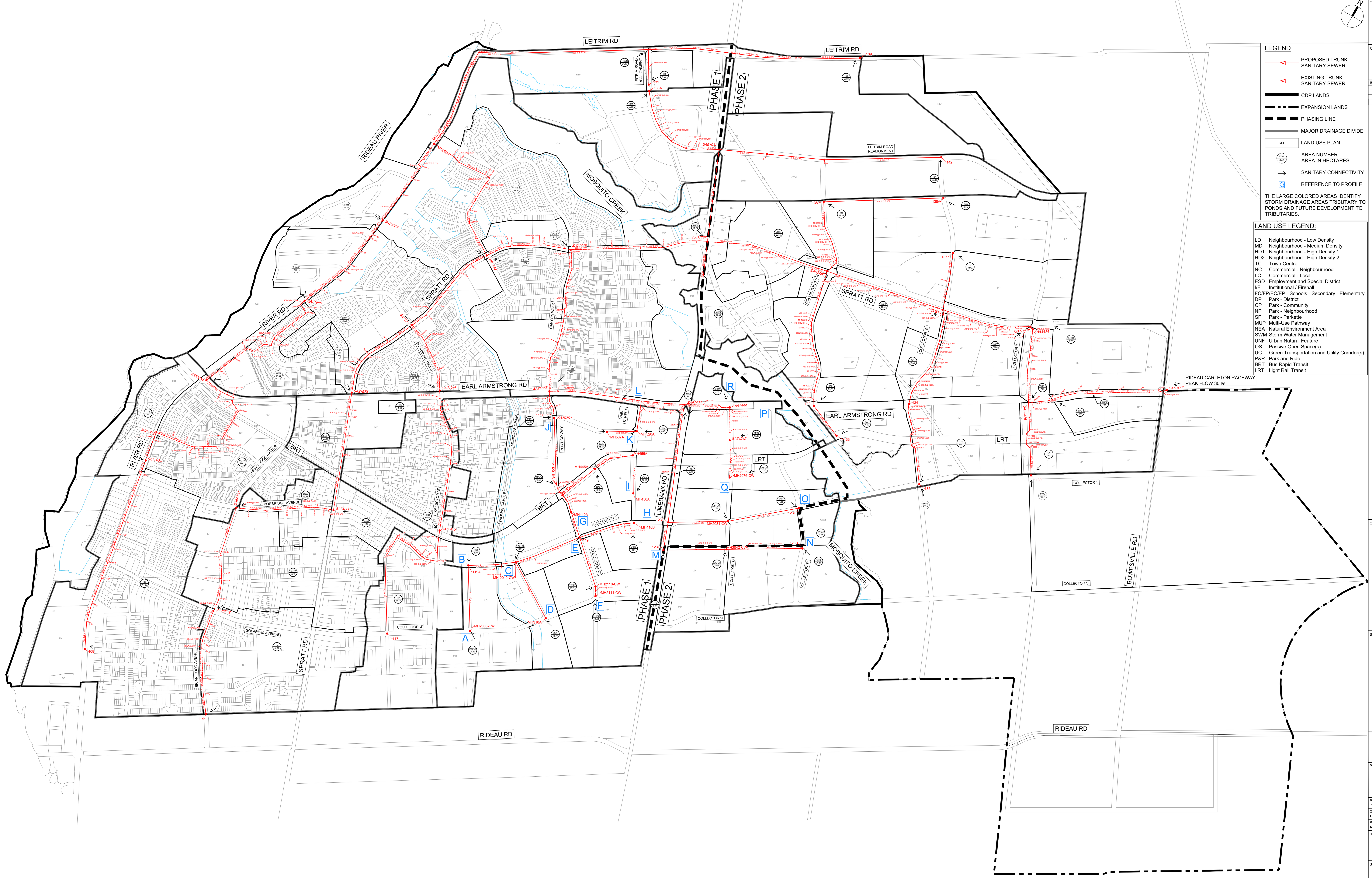


ISSUE	No.	DESCRIPTION	DATE
1	ISSU PH 1 SUBMISSION 1		2022-12-02
2	ISSU PH 1 SUBMISSION 2		2023-01-24
3	ISSU PH 1 SUBMISSION 3		2023-05-18

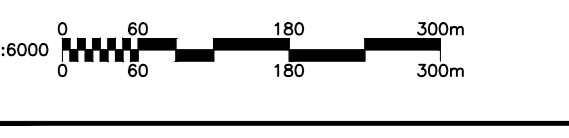
- LEGEND**
- PROPOSED TRUNK SANITARY SEWER
 - EXISTING TRUNK SANITARY SEWER
 - CDP LANDS
 - EXPANSION LANDS
 - PHASING LINE
 - MAJOR DRAINAGE DIVIDE
 - LAND USE PLAN
 - AREA NUMBER
 - AREA IN HECTARES
 - SANITARY CONNECTIVITY
 - REFERENCE TO PROFILE

THE LARGE COLORED AREAS IDENTIFY STORM DRAINAGE AREAS TRIBUTARY TO PONDS AND FUTURE DEVELOPMENT TO TRIBUTARIES.

- LAND USE LEGEND:**
- LD Neighbourhood - Low Density
 - MD Neighbourhood - Medium Density
 - HD1 Neighbourhood - High Density 1
 - HD2 Neighbourhood - High Density 2
 - TC Town Centre
 - NC Commercial - Neighbourhood
 - LC Commercial - Local
 - ESD Employment and Special District
 - IF Institutional / Firehall
 - FC/FP/EC/EP - Schools - Elementary
 - DP Park - District
 - CP Park - Community
 - NP Park - Neighbourhood
 - SP Park - Parkette
 - MUP Multi-Use Pathway
 - NEA Natural Environment Area
 - SWM Storm Water Management
 - UNF Urban Natural Feature
 - OS Passive Open Space(s)
 - UC Green Transportation and Utility Corridor(s)
 - P&R Park and Ride
 - BRT Bus Rapid Transit
 - LRT Light Rail Transit



CONSULTANTS



SEAL



IBI GROUP
300 - 350 Preston Street
Ottawa ON K1S 0K6 Canada
Tel 613 225 1311 Fax 613 225 9868
ibi@ibi.com

PROJECT
RIVERSIDE SOUTH COMMUNITY
INFRASTRUCTURE SERVICING
STUDY UPDATE PHASE 1
MOSQUITO CREEK STUDY AREA

PROJECT NO:
125127

DRAWN BY:
C.C.

PROJECT MGR:
M.B.

CHECKED BY:
L.E.

APPROVED BY:
R.W.

SHEET TITLE
SANITARY DRAINAGE AREA
PLAN

SHEET NUMBER
400

ISSUE
3



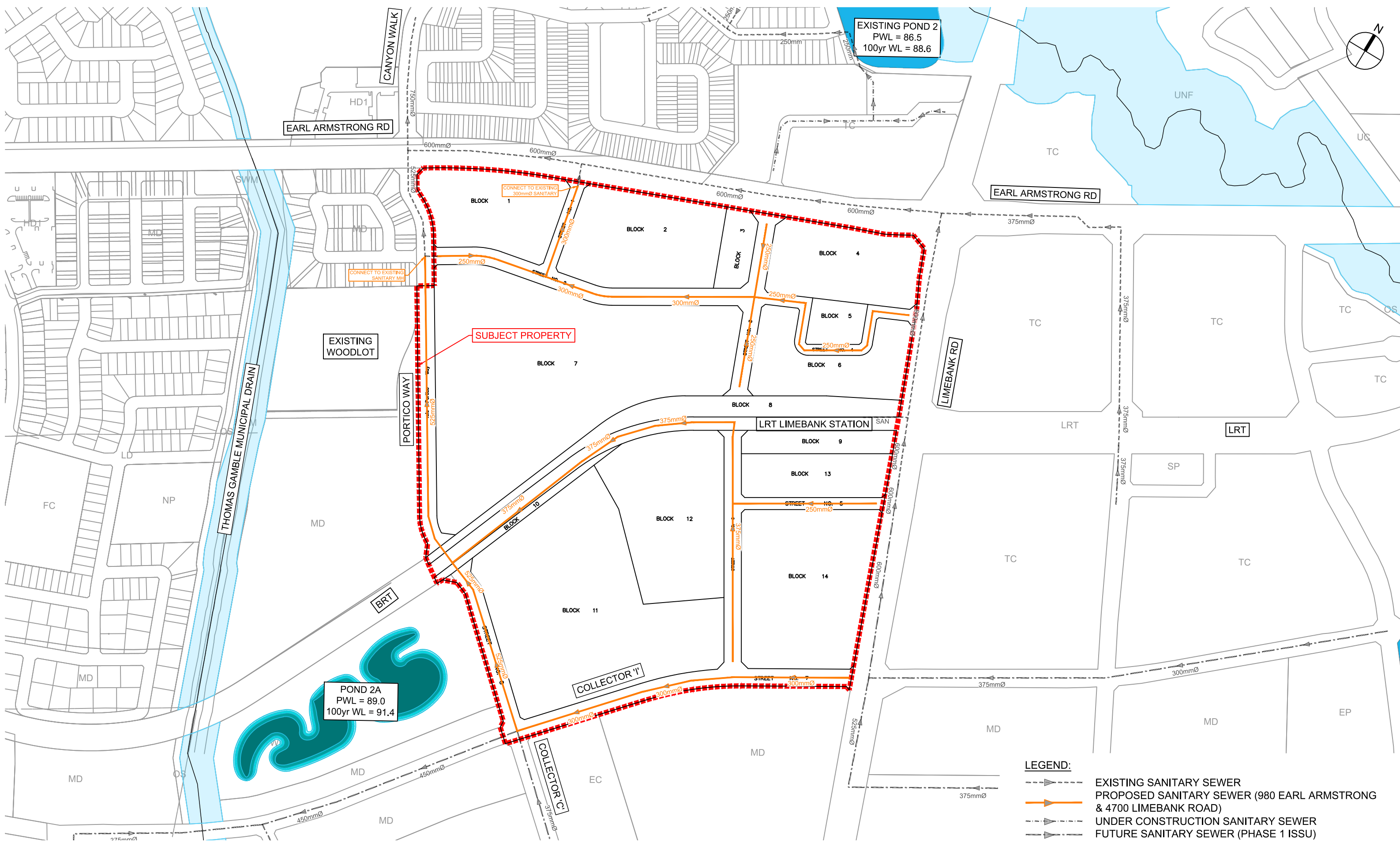
IBI GROUP
400-333 Preston Street
Ottawa, Ontario K1S 5N4 Canada
tel 613 225 1311 fax 613 225 9868
ibigroup.com

SANITARY SEWER DESIGN SHEET

RSS ISSU Phase 1 Mosquito Creek Study Area - With Expansion Lands
City of Ottawa

LOCATION		RESIDENTIAL										ICI AREAS										INFILTRATION ALLOWANCE		TOTAL FLOW		PROPOSED SEWER DESIGN					AVAILABLE CAPACITY										
STREET	AREA ID	FROM MH	TO MH	LD	MD	DENSITIES (POP/Ha)				UNIT TYPE			POPULATION		RES PEAK FACTOR	K FACTOR	PEAK FLOW (L/s)	INSTITUTIONAL		AREA (Ha)		EMPLOYMENT		ICI PEAK FACTOR	PEAK FLOW (L/s)	ROAD LRT/BRT (Ha)	PARK O/S (Ha)	AREA (Ha)		FLOW		FIXED FLOW (L/s)		TOTAL FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	DIA (mm)	SLOPE (%)	VELOCITY (ft/s)	L/s	%
						97.2	194.4	TC	EXP	SF	TH/SD	APT	AREA (Ha)	IND				CUM	IND	CUM	IND	CUM	IND					CUM	IND	CUM	IND	CUM	IND								
		SA70790	SA70789														0.00	7.67	0.00	1.51	0.00	14.53	1.00	8.86			0.00	174.55	57.60	0.00	0.00	139.51	191.87	49.21	525	0.18	0.859	52.36	27.29%		
		SA70789	SA21883														0.00	7.67	0.00	1.51	0.00	14.53	1.00	8.86			0.00	174.55	57.60	0.00	0.00	139.51	255.60	61.62	525	0.32	1.144	116.08	45.42%		
Canyon Walk	21883	SA21883	SA61177					6.15		289	644	151	42	3,746.0	21,983.1	2.29	0.80	162.45	0.00	11.77	0.00	2.58	6.15	74.94	1.50	37.33	6.93	14.90	70.09	395.58	130.54	0.00	0.00	330.32	434.88	92.72	750	0.14	0.954	104.56	24.04%
		SA61177	SA21885														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	421.98	68.18	750	0.13	0.925	91.65	21.72%		
		SA21885	SA21886														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	550.98	39.99	750	0.23	1.208	220.66	40.05%		
		SA21886	SA21882														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	451.19	53.01	750	0.15	0.989	120.86	26.79%		
		SA21882	SA21881														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	568.43	91.84	750	0.24	1.246	238.11	41.89%		
		SA21881	SA21880														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	449.99	86.60	750	0.15	0.987	119.67	26.59%		
		SA21880	SA21877														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	424.35	74.91	750	0.13	0.931	94.03	22.16%		
		SA21877	SA21816														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	498.34	70.61	750	0.18	1.093	168.02	33.72%		
		SA21816	SA21876														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	442.52	55.11	750	0.15	0.970	112.20	25.35%		
		SA21876	SA21878														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	451.91	105.68	750	0.15	0.991	121.59	26.91%		
		SA21878	SA21879														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	475.34	101.49	750	0.17	1.042	145.02	30.51%		
		SA21879	SA21749														0.00	11.77	0.00	2.58	0.00	74.94	1.50	37.33			0.00	395.58	130.54	0.00	0.00	330.32	266.21	21.70	675	0.09	0.721	-64.11	-24.08%		
		SA21749	SA21754														0.00	44.38	0.00	8.41	0.00	159.64	1.50	90.33	1.75	2.61	8.43	887.67	292.93	0.00	30.00	683.57	1,168.87	154.44	1050	0.17	1.308	485.30	41.52%		
		SA21754	SA21755														0.00	44.38	0.00	8.41	0.00	159.64	1.50	90.33			0.00	887.67	292.93	0.00	30.00	683.57	1,107.35	66.18	1050	0.15	1.239	423.78	38.27%		
		SA21755	SA48176														0.00	44.38	0.00	8.41	0.00	159.64	1.50	90.33			0.00	887.67	292.93	0.00	30.00	683.57	1,144.06	124.01	1050	0.16	1.280	460.49	40.25%		
		SA48176	SA48177														0.00	44.38	0.00	8.41	0.00	159.64	1.50	90.33			0.00	887.67	292.93	0.00	30.00	683.57	979.53	50.75	1050	0.12	1.096	295.95	30.21%		
		SA48177	SA01314														0.00	44.38	0.00	8.41	0.00	159.64	1.50	90.33			0.00	887.67	292.93	0.00	30.00	683.57	974.82	119.56	1050	0.12	1.091	291.25	29.88%		
Brian Good Avenue	114	114	MH1213	23.68						137	173		15	2,341.9	2,341.9	3.03	0.80	22.96	7.63	7.63	0.00	0.00	0.00	1.00	2.47	2.08	3.28	51.88	51.88	17.12	0.00	0.00	42.55	100.18	128.68	375	0.30	0.879	57.63	57.53%	
		MH1213	SA76534														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	100.18	89.52	375	0.30	0.879	57.63	57.53%	
		SA76534	SA76535														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	105.15	80.01	450	0.12	0.640	62.60	59.53%	
		SA76535	SA75844														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	104.52	80.99	450	0.12	0.637	61.96	59.29%	
		SA75844	SA75845														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	100.31	35.17	450	0.11	0.611	57.76	57.58%	
		SA75845	SA86158														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	104.91	40.19	450	0.12	0.639	62.36	59.44%	
		SA86158	SA75847														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	103.59	82.44	450	0.12	0.631	61.04	58.92%	
		SA75847	SA75772														0.00	7.63	0.00	0.00	0.00	0.00	0.00	1.00	2.47			0.00	51.88	17.12	0.00	0.00	42.55	102.11	84.85	450	0.12	0.622	59.55	58.33%	
		SA75772	SA75773	6.00						259	508		33	2,609.2	4,951.1	2.80	0.80	44.91	12.42	20.05	0.00	0.00	0.00	1.00	6.50	1.40	3.62	56.48	108.36	35.76	0.00	0.00	87.17	104.05	73.54	450	0.12	0.634	16.88	16.22%	
		SA75773	SA75774														0.00	20.05	0.00	0.00	0.00	0.00	0.00	1.00	6.50			0.00	108.36	35.76	0.00	0.00	87.17	103.11	108.17	450	0.12	0.628	15.94	15.46%	
		SA75774	SA75266														0.00	20.05	0.00	0.00	0.00	0.00	0.00	1.00	6.50			0.00	108.36	35.76	0.00	0.00	87.17	105.61	39.66	450	0.13	0.643	18.44	17.46%	
		SA75266	SA75267														0.00	20.05	0.00	0.00	0.00	0.00	0.00	1.00	6.50			0.00	108.36	35.76	0.00	0.00	87.17	101.59	120.00	450	0.12	0.619	14.42	14.20%	
		SA75267	SA85421														0.00	20.05	0.00	0.00	0.00	0.00	0.00	1.00	6.50			0.00	108.36	35.76	0.00	0.00	87.17	138.31	10.52	525	0.10	0.619	51.14	36.98%	
		SA85421	SA64333		2.09												0.00	20.05	0.00	0.00	0.00	0.00	0.00	1.00	6.50																

J:\144320_Riverside\7.0_Production\7.03_Design\04_Civil\Land\APSR\Sheet Set\FIGURE3.1_CONCEPTUAL SANITARY.dwg Last Saved By: Chris.Cormier Last Saved At: Sep. 25, 23



Appendix D

D Stormwater Management Supporting Information

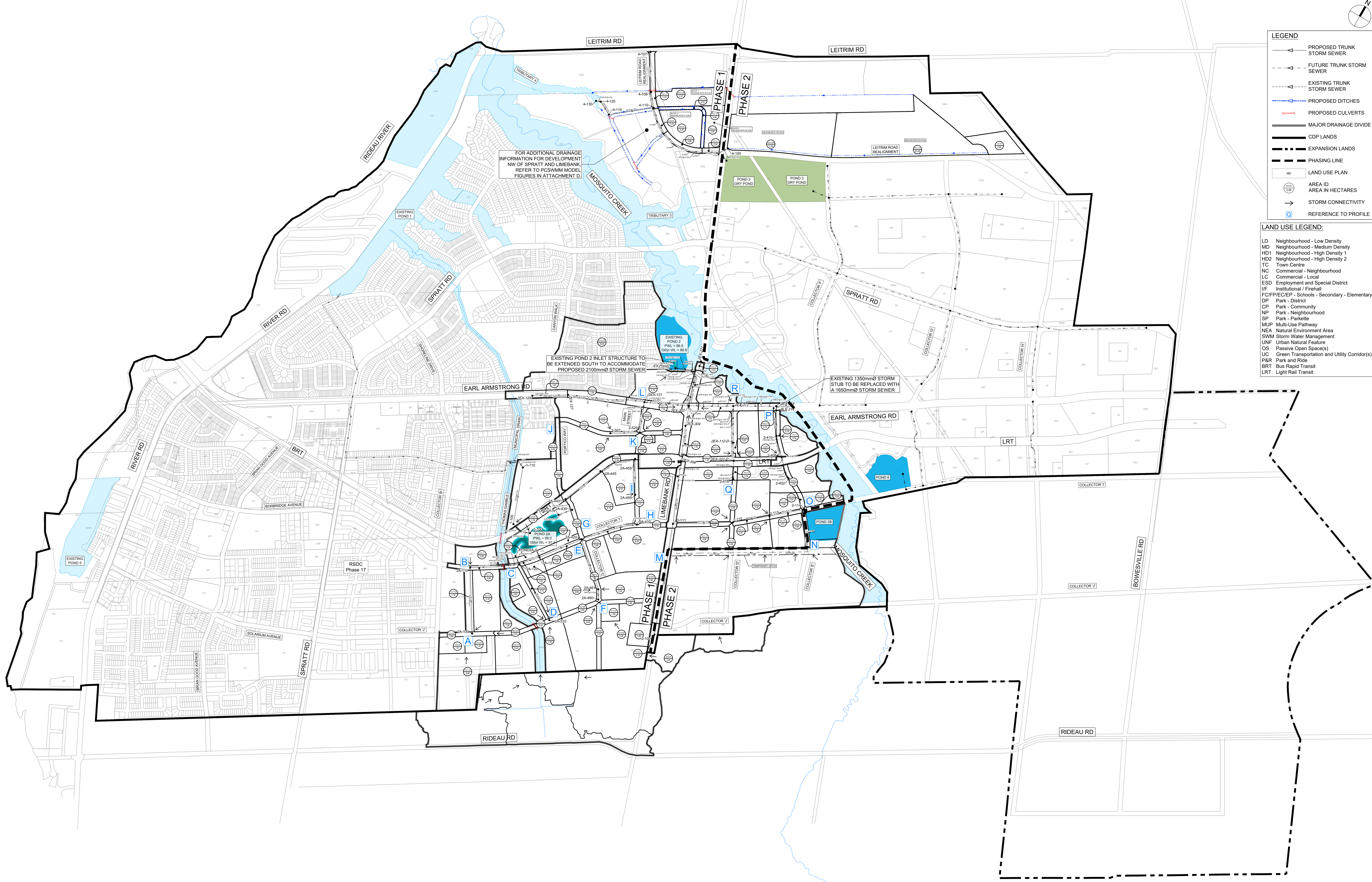
- **Drawing 500 Storm Drainage Area Plan (RSCISSU-Phase1 Mosquito Creek Area)**
- **Storm Sewer Design Sheet (RSCISSU-Phase1 Mosquito Creek Area)**
- **Figure 4.1 Conceptual Minor Storm Plan**

LEGEND

- PROPOSED TRUNK STORM SEWER
- FUTURE TRUNK STORM SEWER
- EXISTING TRUNK STORM SEWER
- PROPOSED DITCHES
- PROPOSED CULVERTS
- MAJOR DRAINAGE DIVIDE
- CDP LANDS
- EXPANSION LANDS
- PHASING LINE
- LAND USE PLAN
- AREA ID AREA IN HECTARES
- STORM CONNECTIVITY
- REFERENCE TO PROFILE

LAND USE LEGEND:

- LD Neighbourhood - Low Density
- MD Neighbourhood - Medium Density
- HD1 Neighbourhood - High Density 1
- HD2 Neighbourhood - High Density 2
- TC Town Centre
- NC Commercial - Neighbourhood
- LC Commercial - Local
- ESD Employment and Special District
- IF Institutional / Firehall
- FC/FP/EC/EP - Schools - Elementary
- DP Park - District
- CP Park - Community
- NP Park - Neighbourhood
- SP Park - Parkette
- MUP Multi-Use Pathway
- NEA Natural Environment Area
- SWM Storm Water Management
- UNF Urban Natural Feature
- OS Passive Open Space(s)
- UC Green Transportation and Utility Corridor(s)
- P&R Park and Ride
- BRT Bus Rapid Transit
- LRT Light Rail Transit

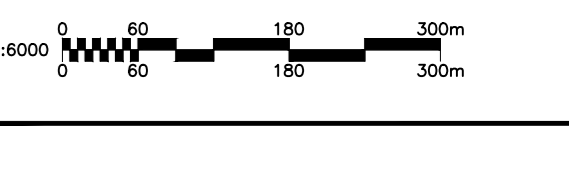


FOR ADDITIONAL DRAINAGE INFORMATION FOR DEVELOPMENT NW OF SPRATT AND LIMEBANK REFER TO PCSWMM MODEL FIGURES IN ATTACHMENT D.

EXISTING POND 2 INLET STRUCTURE TO BE EXTENDED SOUTH TO ACCOMMODATE PROPOSED 2100mmØ STORM SEWER

EXISTING 1350mmØ STORM STUB TO BE REPLACED WITH A 1650mmØ STORM SEWER

CONSULTANTS



SEAL

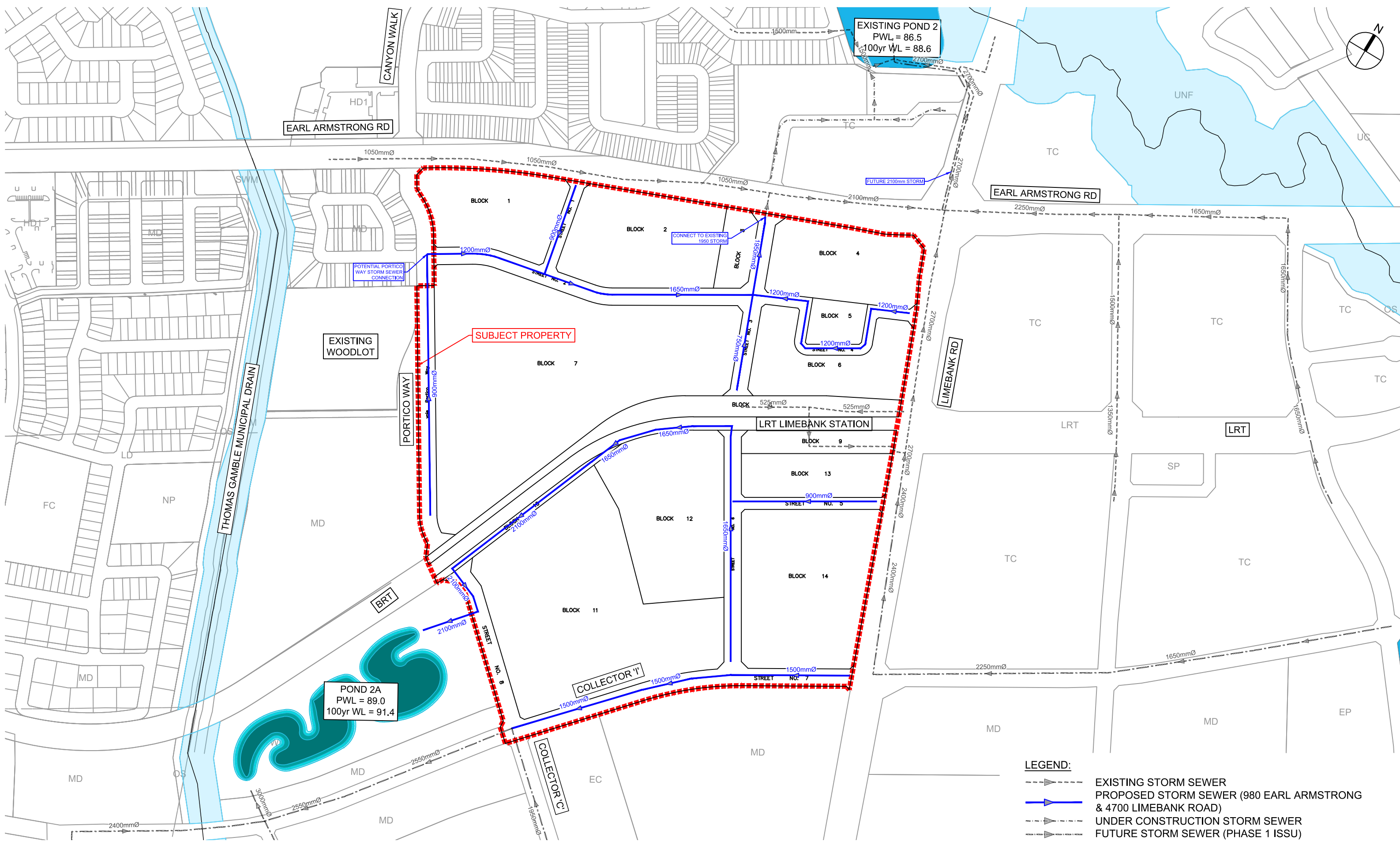
IBI GROUP
 500 - 355 Preston Street
 Ottawa, ON K1S 8M4, Canada
 Tel: 613 225 1311 Fax: 613 225 9868
 ibigroup.com

PROJECT
 RIVERSIDE SOUTH COMMUNITY INFRASTRUCTURE SERVICING STUDY UPDATE PHASE 1 MOSQUITO CREEK STUDY AREA

PROJECT NO: 125127
DRAWN BY: C.C. **CHECKED BY:** L.E.
PROJECT MGR: M.B. **APPROVED BY:** R.W.

SHEET TITLE
 STORM DRAINAGE AREA PLAN

j:\144320_Riverside\7.0_Production\7.03_Design\04_Civil\Land\APSR\Sheet Set\FIGURE4.1_CONCEPTUAL STORM.dwg Last Saved At: Sep. 25, 23



LEGEND:

	EXISTING STORM SEWER
	PROPOSED STORM SEWER (980 EARL ARMSTRONG & 4700 LIMEBANK ROAD)
	UNDER CONSTRUCTION STORM SEWER
	FUTURE STORM SEWER (PHASE 1 ISSU)

Appendix E

E Erosion and Sedimentation Control Plan

- **Figure 6.1 Erosion and Sediment Control Plan**

J:\144320_Riverside\7.0_Production\7.03_Design\04_Civil\Land\APSR\Sheet_Set\FIGURE6.1_EROSION&SEDIMENTATION.dwg Last Saved By: Chris.Cormier Last Saved At: Sep. 25, 23

