REPORT
PROJECT: 135856-6.4.3

DESIGN BRIEF
4624 SPRATT ROAD
CLARIDGE HOMES
RIVERSIDE SOUTH COMMUNITY

Prepared for CLARIDGE HOMES
by IBI GROUP

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1 INTRODUCTION

1.1 Purpose

The purpose of this Design Brief is to provide stakeholder regulators with the project background together with the design philosophy and criteria incorporated in the site plan design. This report will provide a logical framework to assist reviewers with evaluation of the design of the development.

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. For reference, a copy of the 2016 Riverside South Community Design Plan – Land Use Plan is included in **Appendix A**.

1.3 Previous Studies

The following report has been referenced prior to completing this assessment:

- **Assessment of Adequacy of Public Services**, Claridge Homes Phase 3 Lands – 4623 Spratt Road, Claridge Homes (Spratt Road) Inc. – Riverside South Community (IBI September 2020).
- **Riverside South Development Corporation (RSDC) Riverside South Community Phase 9 Design Report** (J.L. Richards & Associates Limited, 2012). This report provides details on the proposed water supply, waste water disposal, major and minor storm systems with proposed connections for the subject lands.
- **Riverside South Community Infrastructure Servicing Study Update (RSCISSU)**, Stantec Consulting Ltd., September 30, 2008

1.4 Subject Property

The property covers about 2.4 ha. It is located to the north of the future BRT corridor and west of Spratt Road and east of the RSDC Phase 9 community as shown in **Figure 1.1**. The current draft plan of subdivision for the subject property is included in **Appendix A**.

The proposed development includes 10 stacked townhouses block and a total of 120 units.

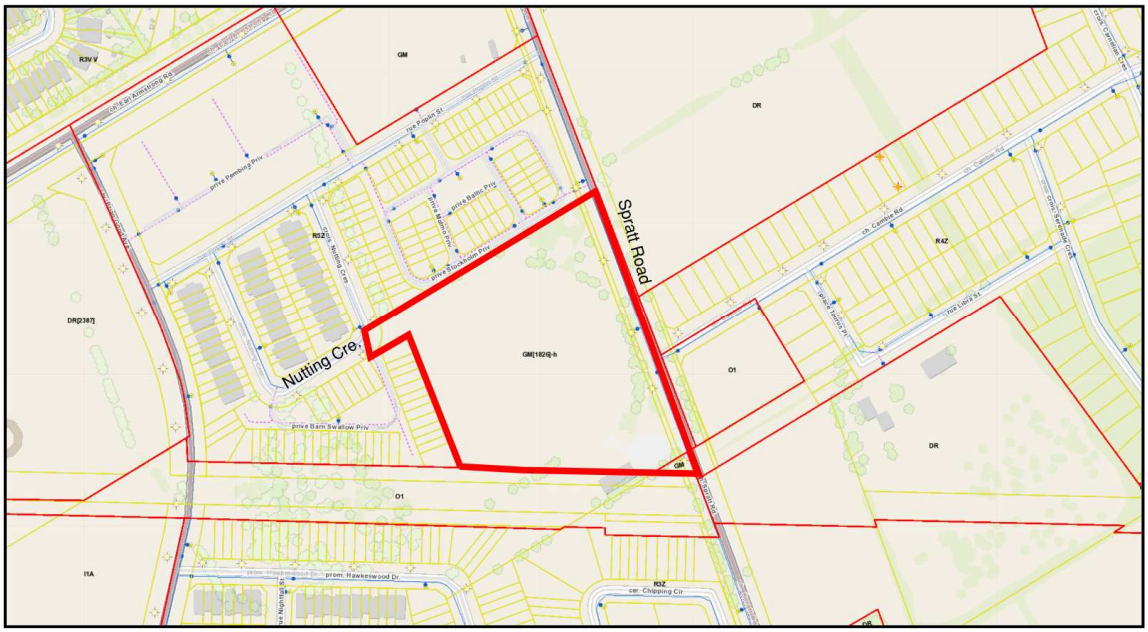


Figure 1.1 Site Location Map

1.5 Existing Infrastructure

Figure 3.1 Water Servicing Plan, **Figure 4.1** Sanitary Servicing Plan and **Figure 5.1** Storm Servicing Plan from **Riverside South Community Phase 9 Design Report** shows the location of existing major municipal infrastructure in the vicinity of the 4624 Spratt development. During construction of the subdivision development, RSDS's Phase 9, servicing stubs for storm and sanitary services were left at the servicing corridor of the subject land along Nutting Crescent in order to service the subject site.

1.6 Pre-Consultation

There was a pre-consultation meeting with the City of Ottawa on September 29, 2020. The meeting notes can be found in **Appendix A**. The following are some of the topics reviewed and discussed:

- Zoning information
- Official plan
- Infrastructure
- Park Requirements
- Noise Study needed
- Traffic Study needed
- Geotechnical Conditions

It should be noted that consultation with the Rideau Valley Conservation Authority will be scheduled forthwith.

1.7 Existing Topography

The property is generally flat throughout the site, with a slightly higher southeast corner. Contours for the site are approximately at the 91 - 92 m elevation. A 3-4m high stockpile of fill exists in the north-central portion of the site.

1.8 Geotechnical Considerations

The following geotechnical investigation report has been prepared by Paterson Group

- Report No. PG5641-1 dated February 23rd, 2021 for the subject property.

Among other items, the reports comments on the following:

- Site Grading
- Foundation Design
- Pavement Design
- Sub-Surface Conditions
- Groundwater Control
- Seismic Design
- Corrosion Potential
- Trees
- Site Services

In general, the subsurface profile encountered topsoil, underlain by sandy silt. Underlying the sandy silt, silty clay to clayed silt and glacial till deposit was encountered.

1.9 Watercourses and Setbacks

There are no identified Municipal Drains or watercourses within proximity to this subject development.

2 WATER SUPPLY

2.1 Existing Conditions

There is an existing 300 mm diameter watermain along Spratt Road and an existing 200mm watermain on Nutting Crescent. **Figure 3.1** included in **Appendix B** shows the location of the proposed watermains for Riverside South Community Phase 9.

2.2 Design Criteria

2.2.1 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/gross ha/day
- ICI peak Daily Demand 42,000 l/gross ha/day
- ICI Peak Hour Demand 50,400 l/gross ha/day

Residential units in the subject site consists of stacked townhouses. A watermain demand calculation sheet is included in **Appendix B.** The total water demands are summarized as follows:

- Average Day 0.92 l/s
- Maximum Day 2.30 l/s
- Peak Hour 5.05 l/s

2.2.2 System Pressure

The 2010 City of Ottawa Design Guidelines – Water Distribution, 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 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 in unoccupied areas shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code the maximum pressure should not exceed 552 kPa (80 psi) in occupied areas. Pressure reduction controls may be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

2.2.3 Fire Flow Rates

The site consists of 10 stacked townhouse blocks. Fire Underwriters Survey (FUS) calculations have been done for Building B, E and H which are the larger stacked townhouse blocks with the most exposures to adjacent buildings. An additional FUS calculation has been done for Building F, which is a smaller stacked townhouse but has the most exposures to adjacent buildings. The calculations result in a maximum fire flow requirement of 14,000 l/min for Building B and E; a copy of the FUS calculation is included in **Appendix B**.

2.2.4 Boundary Conditions

The City of Ottawa has provided two boundary conditions on Spratt Road and Nutting Crescent for this development. There are pre and post configuration values provided with the pre-configuration values considerably lower than the post SUC Zone. As the re-configuration of the pressure area, scheduled for the end of 2022, is expected to occur while this site is developed. Therefore, the water analysis is carried out for SUC Zone Reconfiguration. A copy of the Boundary Condition is included in **Appendix A** and summarized as follows:

CRITERIA	HYDRAULIC HEAD	
	Spratt Road	Nutting Crescent
Max HGL (Basic Day)	147.3 m	147.3 m
Peak Hour	145.4 m	145.4 m
Max Day + Fire (14,000 l/m)	141.5 m	125.1 m

2.2.5 Hydraulic Model

A computer model for the subject site has been developed using the InfoWater program by Innovyze. The model includes the boundary conditions on Spratt Road and Nutting Crescent for the proposed connections.

2.3 Proposed Water Plan

2.3.1 Hydraulic Analysis

A 200 mm watermain is proposed with the first connection to the existing 300mm watermain at Spratt Road, and extends through the site with a second connection to the 200mm watermain on Nutting Crescent. Refer to the general plan of services **Drawing C-001** for detailed watermain layout for the subject site.

The hydraulic model was run under basic day conditions using the SUC Zone reconfiguration boundary condition to determine the maximum pressure for the site. The minimum pressure for the site is determined in the peak hour analysis using the provided boundary condition. The model was run under the max day plus fire (14,000 L/min) SUC Zone Reconfiguration Boundary condition

to determine the design fire flow at the hydrant locations. Results of the analysis for the site are summarized in Section 2.3.2 and the water model schematic and model results are included in **Appendix B**.

2.3.2 Modeling Results

The hydraulic model was run under basic day, maximum day with fire flows and under peak hour conditions. Results of the hydraulic model are included in **Appendix B** and summarized as follows:

Scenario	SUC Zone Reconfiguration
Basic Day (Max HGL) Pressure Range	542.38 to 547.77 kPa
Peak Hour (Min HGL) Pressure Range	523.71 to 529.11 kPa
Max Day + 14,000 l/min Fire Flow – Min. Fire Flow	350.30 l/s

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

Maximum Pressure	All nodes have basic day pressures under 552 kPa under both pressure zone scenarios, therefore pressure reducing control is not required for this development.
Minimum Pressure	All nodes in the model exceed the minimum value of 276 kPa (40 psi).
Fire Flow	Under the future SUC Zone Reconfiguration scenario, all fire nodes exceed the fire flow requirement of 233.33 l/s (14,000 l/min).

3 SANITARY SEWERS

3.1 Existing Conditions

As noted earlier in Section 1.5, sanitary flows from the subject site are routed to RSDC's Phase 9 lands with a sanitary connection to the existing manhole MH31 located at Nutting Crescent. General Plan of Services C-001 included in **Appendix A** shows the existing sanitary stub location.

3.2 RSDC's Phase 9 Design (J.L. Richards, 2012)

Drainage area plan **Figure 4.1** and the sanitary sewer design sheet for the above noted project have been included in **Appendix C** as they demonstrate that the whole of the subject land has been included in the design calculations for the sanitary sewers within RSDC's Phase 9. The subject land is identified as drainage area Claridge Commercial.

3.3 Design Criteria

All on-site sewers have been designed to City of Ottawa and MOE design criteria which include but are not limited to the below listed criteria. A copy of the detailed sanitary tributary area plan 400 and the sanitary sewer design sheets are included in **Appendix C** illustrate the population densities and sewers which provide the necessary outlets.

- Average residential flow = 280 l/c/d
- Peak residential flow factor = (Harmon Formula) x 0.80
- Average commercial 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:

- Two-bedroom stacked town units = 2.1

3.4 Recommended Sanitary Plan

Detailed sanitary sewer drainage area plan **Drawing C-400** and the Sanitary Design Sheets are included in **Appendix C**. A 200mm diameter sanitary main is proposed to bring the sanitary flows from the site to the existing 200mm stub at Nutting Crescent, with 150mm diameter services to each corner of the stacked townhouse blocks.

According to the RSDC Phase 9 sanitary sewer design sheet, the allocated sanitary flow for the site is 3.47 L/s. The calculated sanitary flow for the proposed site plan is 3.77 L/s. The outlet pipe for the site has a capacity of 19.66 L/s, which can sufficiently accommodate the slightly increased flow. The downstream sewers through RSDC Phase 9 all have a residual capacity that exceeds 0.30 L/s. Therefore, the increase in flow on the existing system is considered negligible, and the subject development will have no negative impacts on downstream infrastructure. A copy of the RSDC sanitary sewer design sheet is included in **Appendix C.**

4 MINOR STORM SEWERS

4.1 Existing Conditions

As noted in Section 1.5, storm flows from the subject site outlet to existing stub at Nutting Crescent. **Figure 5.1** shows the location of the existing storm sewers in this area.

There are no existing municipal drains, watercourses or recognized drainage features on the subject lands as noted in the RSDC Phase 9 design report.

4.2 RSDC's Phase 9 Design (J.L. Richards, 2012)

Drainage area plan **Figure 5.1** and the storm sewer design sheet for this project have been included in **Appendix D** as they demonstrate that the whole of the subject land has been included in the design calculations for the storm sewers within RSDC's Phase 9. The subject land is identified as drainage area Claridge Commercial.

4.3 Minor Storm Sewer 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/parking lots)
- Initial Time of Concentration 10 minutes
- Manning's: 0.013
- Minimum Velocity: 0.80 m/s
- Maximum Velocity: 3.00 m/s

PIPE DIAMETER (MM)	MINIMUM 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

4.4 Proposed Minor Storm Plan

As outlined in Section 4.2, the development of RSDC Phase 9 has included the expected stormwater servicing needs of the subject property. The existing 900mm diameter storm sewers constructed downstream of the site were sized to provide the needed capacity for minor storm runoff from the subject site. Minor storm runoff from the subject site will be directed to the existing 750mmØ sewer stub located at the servicing corridor northwest of the site along Nutting Crescent.

Using the criteria identified in Section 4.2, the proposed on-site storm sewers were sized accordingly. A detailed storm sewer design sheet and the associated storm sewer drainage area plan is included in **Appendix D**. The general plan of services **Drawing C-001**, depicting all on-site storm sewers can be found in **Appendix A**.

According to **Table 5.3** in RSDC Phase 9 Design Report, the allowable inlet capture rate is identified to be 77 L/s/ha, see **Appendix D**. The total allowable release rate for the subject site is calculated to be 77 L/s/ha X 2.36 ha = 181.72 L/s. Inlet control devices (ICDs) are proposed across the site to maximize the use of available on-site storage and control surcharge of the minor system during infrequent storm events.

The owner of the site will be responsible for regular maintenance of the on-site sewers, catch basins and inlet control devices (ICDs). Maintenance includes but is not limited to the cost of regular cleaning of the structures and ICDs as necessary. The site owner will also be responsible for replacement of damaged or missing catch basin structures, grates or ICDs as needed.

5 STORMWATER MANAGEMENT

5.1 Background

The subject site is located to the north of the future BRT corridor and west of Spratt Road and east of the RSDC Phase 9 community and is tributary to the Pond 1 Stormwater Facility. This facility was designed and constructed in the early 1990s to provide erosion control, along with water quality and quantity control for its tributary area. Therefore, no further requirements in terms of storm runoff quality and quantity control are expected for the subject lands tributary to Pond 1. The stormwater management strategy for the subject site was outlined in the following reports:

- **Riverside South Development Corporation (RSDC) Riverside South Community Phase 9 Design Report** (J.L. Richards & Associates Limited, 2012). This report provides details on the proposed water supply and major and minor storm systems with proposed connections for the subject lands.
- **Riverside South Community Infrastructure Servicing Study Update (RSCISSU)**, Stantec Consulting Ltd., September 30, 2008

Details of the subject site parameters, on-site storage available, and restricted minor system rates will be discussed in **Section 5.4**.

5.2 Objective

The purpose of this evaluation is to prepare the dual drainage design, including the minor and major system, for this development. The design includes the assignment of inlet control devices, maximum depth and velocity of flow on the surface and hydraulic grade line analysis. The evaluation takes into consideration the following City of Ottawa documents:

- Ottawa Sewer Design Guidelines (OSDG) (October 2012)
- February 2014 Technical Bulletin ISDTB-2014-01
- September 2016 Technical Bulletin PIEDTB-2016-01
- March 2018 Technical Bulletin ISTB-2018-01 and
- June 2018 Technical Bulletin ISTB-2018-04.

5.3 Dual Drainage Design

The subject site is designed with dual drainage features, accommodating minor and major system flow. During frequent storm events, the effective runoff of a catchment area is directly released via catchbasin inlets to the network of storm sewers, called the minor system. During less frequent storm events, the balance of the flow (in excess of the minor flow) is accommodated by a system of rear yard swales and street segments, called the major system.

The private drive aisles and parking lots within the subject site features a sawtooth profile. The sawtooth profile facilitates surface storage based on a maximum of 350 mm separation between the low point at the catchbasin and the high overflow point at the downstream end of the segment. The assigned size of the inlet control devices (ICDs) for the subject site was optimized using PCSWMM. ICDs are incorporated into the stormwater management design to protect the minor system from surcharge during infrequent storm events. The ICDs used for the subject site are provided in the CB Table presented on **Drawing C-010**.

The dual drainage system has been evaluated using the fully dynamic PCSWMM model for both the hydrological and hydraulic analysis. The PCSWMM hydrological evaluation offers single storm

event flow generation and routing. The major system evaluation is fully dynamic and based on typical road cross sections and road profiles.

The Phase 9 design report notes that the minor system targets for Phase 9 corresponds to peak flows smaller than the 2-year storm runoff and as such, it is expected that some ponding will occur in most areas during the 2-year storm. In order to optimize ponding during 2-year storm, storage within an underground storage system will be provided. Further details of the dual drainage design are discussed in **Section 5.4.1**. Major flow up to 100-year storm event will be restricted and detained on-site. The emergency overflow from the subject site outlet Spratt Road via the proposed entrance, refer to **Drawing C-700**.

At certain locations within the site, the opportunity to store runoff is limited due to grading constraints and building geometry. These locations are generally located at the perimeter of the site where it is necessary to tie into public boulevards and adjacent properties or in areas where ponding stormwater is undesirable. These “uncontrolled” areas – 0.09 hectares in total, have an average C value of 0.75. The drainage area plans are presented on **Drawings C-500**. Model files are enclosed as part of the digital submission.

5.4 Stormwater Evaluation

5.4.1 Hydrological Evaluation

Land use, selected modeling routines, and input parameters are discussed in the following sections for the subject site only. The main hydrological parameters for the subject site are summarized below.

Storms and Drainage Area Parameters

The main hydrology parameters are summarized below and in Error! Reference source not found..

- **Design storms:** The site was evaluated using the following storms:
    - 2 year, 3 hour Chicago storm events with a 10 minute time step (for dual drainage evaluation, specifically to confirm no ponding after the storm event);
    - 100 year 3 hour Chicago storm event with a 10 minute time step (to confirm on-site storage requirements); and
    - 100 year 3 hour Chicago storm event + 20% increase in intensity with a 10 minute time step (for a stress test on major flow conveyance as per the City of Ottawa Sewer Design Guidelines).
- **Area:** The drainage area was divided into sub-drainage areas based on the proposed minor system network of storm sewers and the rational method spreadsheet with some minor modifications for modeling purposes. See **Drawing C-700** for the catchment areas used in the detail evaluation of the subject site.
- **Imperviousness:** The imperviousness values are based on the runoff coefficients, which were determined by obtaining the footprint of the model units intended for the site and placing the maximum footprint on the lots. PCSWMM provides an opportunity to specify direct and indirect routing to a pervious or impervious area. For this evaluation, all drainage areas were assumed to be 100% routed to an outlet.
- **Infiltration:** Infiltration losses were selected to be consistent with the OSDG. The Horton values are as follows: Max. infiltration rate = 76.2 mm/h, Min. infiltration rate = 13.2 mm/h, Decay constant = 4.14 1/hr.

- **Subcatchment Width:** The catchment width was based on the conveyance route length of the drainage area and multiplied by two. The multiplier of two was only used if the drainage area had runoff contribution from both sides of the drainage area. This approach is consistent with the OSDG.
- **Slope:** The average surface slope was based upon the average slope for both impervious and pervious area. Based on the surface grading of the subject site an average slope of 1% has been used for subcatchment flow routing.
- **Initial Abstraction (Detention Storage):** Detention storage depths of 1.57 mm and 4.67 mm were used for impervious and pervious areas, respectively. These values are consistent with the OSDG.
- **Manning's Roughness:** Manning's roughness coefficients of 0.013 and 0.25 were used for impervious and pervious areas, respectively.
- **Baseflow:** No baseflow components were assumed for any of the areas contributing runoff to the minor system within the PCSWMM model.
- **Major System Storage and Routing:** The subject site is comprised of sawtooth parking areas and drive aisles. For drainage areas with sawtoothing, flow is attenuated within low points with potential overflow cascading to the next segment downstream. The total volume at each low point, up to the overflow depth, is the maximum static storage. Ponding plan is presented on **Drawings C-600**. Rear yard segments have a sawtooth pattern with some storage available, which is taken into consideration as part of the analysis.

  For areas with ponding, minor system capture is set to fully utilize storage during the 100 year design storm, while minimizing ponding during the 2 year event. Cascading overflow from a low point to a downstream segment utilizes the static storage available plus an additional amount of storage equivalent to the depth required for the flow to cascade over the downstream high point. The attenuation in street sags was evaluated to account for static storage and, if overflow occurs, dynamic storage.

  For areas with sawtoothing, simulations were based on the constraint that during the 100 year design storm the maximum depth of ponding (including cascading flow where applicable) does not exceed 0.35 m. The surface storages for parking lots were modeled in PCSWMM using stage storage curves. The invert of the storage node represents the invert of the CB and the rim of the storage node represents the top of the CB plus the allowable flow depth on the segment. For the subject site, CB inverts have been set 1.4 m below the top of the CB and a flow depth of 0.30 m above the CB has been assumed on road segments. Similarly, for grassed swale segments, a flow depth of 0.30 m above the CB has been assumed. The surface storages for street segments were modeled in PCSWMM using a combination of nodes with inverts corresponding to gutter elevations, and links with corresponding cross-sections. The evaluation was undertaken assuming dynamic flow conditions. It should be noted that the visual interpretation of street links in the model, is based on illustrating street nodes along the center of the road. However, the invert elevations are modified to correspond to the gutter (CB grill) elevations as indicated above.

  Rear yards were considered independently of street segments. Storage volumes in rear yards were accounted for as available on-site storage. Simulations were based on the total interception of runoff by the storm inlets. This was done by specifying a subcatchment outlet in the model at the same node as the rear yard ICD outlet link. Overflow from the rear yards cascades to the next downstream segment and then ultimately to a major system road segment via swales.

- **Minor system capture:** The minor system capture for the subject site is based on 77l/s/ha as per the Phase 9 design report, reference information is provided within **Appendix D**. This will be achieved through a combination of inlet control devices (ICD's) at inlet locations, surface storage where possible and underground storage in oversized storm pipes where required. Surface flows in excess of the site's allowable release rate will be stored on site in strategic surface storage areas or oversized underground pipes and gradually released into the minor system to respect the site's allowable release rate.

  Additionally, a rating curve for each ICD has been created in the model. The rating curve was emulating performance of a particular orifice in question to convey the ICD flow to the minor system. The rating curve was based on an average top of grate (T/G) to the center of CB lead height of 1.3 m for the entire site. The ICD size, head and flow are provided on the CB table presented on **Drawing C-010**.

Summary of Modeling Files

For ease of review, the following is a reference list of the computer modeling files provided as part of the digital submission.

PCSWMM

- 135856-4624SprattRd-REV1-2CH.pcz – 2 year 3 hour Chicago
- 135856-4624SprattRd-REV1-100CH.pcz – 100 year 3 hour Chicago
- 135856-4624SprattRd-REV1-120CH.pcz – 100 year 3 hour Chicago increased by 20%

Table 5-1 Hydrological Parameters – Subcatchment Summary Table

DRAINAGE AREA ID	AREA (HA)	DOWNSTREAM SEGMENT ID	RECEIVING MH (SEWER NODE)	IMP RATIO	SUBCATCHMENT WIDTH (M)	AVAILABLE STATIC STORAGE (CU-M)[1]
MH124	0.16	MH100	MH124	87	70	46.12
MH125	0.15	MH101	MH124	87	70	46.12
MH126	0.12	MH102	MH126	87	78	30.21
MH102	0.10	MH101	MH102	87	88	7.70
MH101	0.11	MH100	MH101	87	100	23.49
MH100	0.06	OUT	MH100	87	64	17.93
MH113	0.20	MH102	MH113	79	48	43.98
CBMH9	0.13	MH113	CBMH9	79	64	68.23
CBMH9B	0.10	CBMH9	CBMH9	43	110	19.23
MH110	0.14	MH131	MH110	79	110	70.32
MH127	0.18	MH127B	MH127	79	70	34.29
MH127B	0.15	MH101	MH127	79	58	42.26

DRAINAGE AREA ID	AREA (HA)	DOWNSTREAM SEGMENT ID	RECEIVING MH (SEWER NODE)	IMP RATIO	SUBCATCHMENT WIDTH (M)	AVAILABLE STATIC STORAGE (CU-M)(1)
MH130	0.05	MH131	MH130	87	42	14.13
MH111	0.13	MH110	MH111	43	96	44.54
MH109B	0.12	MH110	MH109	43	90	31.53
MH100C	0.02	OUT	MH100	43	19	1.84
MH100D	0.05	MH100C	MH100	43	21	4.00
MH109	0.30	MH130	MH109	79	27	62.33
UNC1	0.04	OUT	MH110	79	32	n/a
UNC2	0.04	OUT	MH110	79	34	n/a

*(1) The available on-site static storage is based on **Drawings C-600**.*

5.4.2 Results of Hydrological Evaluation

In PCSWMM, the hydraulic grade line (minor system) and major system are simulated simultaneously. The allowable minor system release rate for the 2.36 ha site is 181.72 L/s according to the Phase 9 design report. As noted in **Section 5.3,** a portion of the site will be left to discharge to Spratt Road uncontrolled. As per PCSWMM model, this uncontrolled area will contribute approximately 40.49 L/s to Spratt Road during the 100 year Chicago design storm. As per discussion with City of Ottawa and in order to optimize the 2 year ponding, the allowable release rate remains at 181.72 L/s without a reduction for the uncontrolled areas to Spratt Road.

Based on the flow allowance for the site, inlet control devices are proposed for the surface drainage. For the 100 year Chicago Storm, the sum of all the minor flow rates is controlled to the maximum allowable flowrate of 181.70 l/s. **Table 5.2** summarizes the ICDs characteristics, refer to **Drawing C-010** for detailed calculations and orifice sizing.

Table 5.2 Summary of ICD

LOCATION	AREA (HA)	RELEASE RATE (L/S)	100 Year Dynamic Head (M)	ICD
MH124	0.16	14	1.68	CUSTOM IPEX MHF
MH125	0.15		1.69	
MH126	0.12		1.63	
MH102	0.10	8	1.61	CUSTOM IPEX LMF
MH101	0.11	8	1.64	CUSTOM IPEX LMF
MH100	0.06	8	1.54	CUSTOM IPEX LMF
MH113	0.20	12	1.66	CUSTOM IPEX MHF
CBMH9	0.13	18	1.6	IPEX MHF
CBMH9B	0.10	13	1.69	CUSTOM IPEX MHF
MH110	0.14	23	1.61	IPEX MHF

LOCATION	AREA (HA)	RELEASE RATE (L/S)	100 Year Dynamic Head (M)	ICD
MH127	0.18	12	1.66	CUSTOM IPEX MHF
MH127B	0.15		1.66	
MH130	0.05	8	1.65	CUSTOM IPEX LMF
MH111	0.13	6	1.68	IPEX LMF
MH109B	0.12	8	1.68	CUSTOM IPEX LMF
MH100C	0.02	10	1.41	CUSTOM IPEX MHF
MH100D	0.05	10	1.61	CUSTOM IPEX MHF
MH109	0.30	28	3.86	IPEX MHF

The below **As noted** in previous sections, the subject was designed with a unit rate that pre-dates the OSDG. The results of the on-site detention analysis show that during the 2 year storm event there is ponding on the subject site. Ponding occurs during the storm event and no ponding remains after the event.

Table 5.1 summarizes the minor system capture for each subcatchment on the subject site for the 2 year, 3 hour Chicago storm events. As noted in previous sections, the subject was designed with a unit rate that pre-dates the OSDG. The results of the on-site detention analysis show that during the 2 year storm event there is ponding on the subject site. Ponding occurs during the storm event and no ponding remains after the event.

Table 5.1 DDSWMM Hydrological Model Results for 2 Year 3 Hour Chicago

DRAINAGE AREA ID	LOCATION	AVAILABLE STATIC STORAGE (m3)	AVAILABLE STATIC DEPTH (m)	MAXIMUM DEPTH AT LOW POINT (M)	OVERFLOW (l/s)	DURATION (HR:MIN)
MH124	Parking Lot	46.1	0.30	0	0	N/A
MH125	Parking Lot	46.1	0.30	0	0	N/A
MH126	Parking Lot	30.2	0.25	0	0	N/A
MH102	Street	7.7	0.20	0	0	N/A
MH101	Street	23.5	0.30	0	0	N/A
MH100	Street	17.9	0.30	0	0	N/A
MH113	Parking Lot	44	0.30	0	0	N/A
CBMH9	Parking Lot	68.2	0.30	0.06	0	1:20
CBMH9B	Landscape Area	19.2	0.30	0.01	0	N/A
MH110	Parking Lot	70.3	0.30	0.04	0	1:10
MH127	Parking Lot	34.3	0.30	0	0	N/A
MH127B	Parking Lot	42.3	0.30	0	0	N/A
MH130	Street	14.1	0.25	0	0	N/A
MH111	Park	44.0	0.30	0.11	0	N/A
MH109B	Landscape Area	31.5	0.30	0.08	0	N/A
MH100C	Landscape Area	1.8	0.18	0	0	N/A
MH100D	Landscape Area	4.0	0.25	0	0	N/A
MH109	Future Block	62.3	0.30	0.15	0	N/A

The **Table 5.2** below, summarize the cascading overflows for each subcatchment on the subject site for the 100 year 3 hour Chicago storm event and the 100 year Chicago storm increased by 20%, respectively. The cascading overflow is the flow exiting a drainage area when maximum minor system inflow and maximum available ponding has been utilized.

Table 5.2 PCSWMM Hydrological Model Results for 100 Year 3 Hour Chicago and 100 Year 3 Hour Chicago +20%

DRAINAGE AREA ID	MINOR SYSTEM CAPTURE (L/S)	AVAILABLE STATIC DEPTH (m)	100 Year 3 Hour Chicago		100 Year 3 Hour Chicago +20%	
			MAXIMUM DEPTH AT LOW POINT (M)	Cascading Depth (m)	MAXIMUM DEPTH AT LOW POINT (M)	Cascading Depth (m)
MH124	14	0.30	0.28	0	0.30	0
MH125		0.30	0.29	0	0.30	0
MH126		0.25	0.23	0	0.25	0
MH102	8	0.20	0.21	0.01	0.22	0.02
MH101	8	0.30	0.24	0	0.31	0.01
MH100	8	0.30	0.14	0	0.24	0
MH113	12	0.30	0.26	0	0.30	0
CBMH9	18	0.30	0.20	0	0.23	0
CBMH9B	13	0.30	0.29	0	0.30	0
MH110	23	0.30	0.21	0	0.24	0
MH127	12	0.30	0.26	0	0.30	0
MH127B		0.30	0.26	0	0.30	0
MH130	8	0.25	0.25	0	0.26	0.01
MH111	6	0.30	0.28	0	0.30	0
MH109B	8	0.30	0.28	0	0.30	0
MH100C	10	0.18	0.01	0	0.10	0
MH100D	10	0.25	0.21	0	0.28	0.03
MH109	28	0.30	0.31	0.01	0.32	0.02

The above results indicate that there is no major system flow to Spratt Road during the 100 year 3 hour Chicago and 100 year 3 hour Chicago + 20% storm event. As noted in **section 5.4.2**, 40.49 L/s and 49.06 L/s flows uncontrolled to Spratt Road during the 100 year 3 hour Chicago and 100 year 3 hour Chicago + 20% storm event, respectively. The peak minor flow remains under 181.72 l/s allocated from the previous Phase 9 design report. Therefore, the proposed design will not have a negative impact on the existing downstream system.

5.4.3 Results of Hydraulic Evaluation

The hydraulic grade line (HGL) was analyzed using PCSWMM for the 100 year 3 hour Chicago storm; the governing storm event for the subdivision. The corresponding stress test (100 year 3 hour Chicago storm + 20% increase in intensity) was also simulated. The HGL elevations are

presented in the following **Table 5-**, along with a comparison of under-side of footing (USF) elevations.

The boundary conditions applied at the storm manhole that is at the interface of the subject site and the receiving RSS Phase 9 is tailwater curve developed based on maximum water elevation for the 100 year 3 hour Chicago storm event. Reference information is provided within **Appendix E**.

Table 5-5 Storm Hydraulic Grade Line for the subject site for the 100 Year 3 Hour Chicago and 100 Year 3 Hour Chicago increased by 20% Storm Events

PCSWMM MH (SEWER NODE)	USF (M)	STORM HYDRAULIC GRADE LINE			
		100 YEAR 3 HOUR CHICAGO		100 YEAR 3 HOUR CHICAGO + 20%	
		HGL (M)	USF–HGL (EG - HGL) (M)	HGL (M)	USF–HGL (EG - HGL) (M)
4624 Spratt Road					
MH100	89.59	87.66	1.93	87.66	1.93
MH101	89.64	87.47	2.17	87.47	2.17
MH102	89.64	87.42	2.22	87.42	2.22
MH103	89.64	87.43	2.21	87.43	2.21
MH104	89.64	87.45	2.19	87.45	2.19
CBMH9	89.69	87.73	1.96	87.73	1.96
MH109	89.74	87.75	1.99	87.76	1.98
MH110	89.74	87.67	2.07	87.67	2.07
MH111	89.69	87.54	2.15	87.54	2.15
MH112	89.69	87.49	2.20	87.49	2.20
MH113	89.69	87.45	2.24	87.45	2.24
MH114	89.69	87.43	2.26	87.43	2.26
MH129	89.59	87.58	2.01	87.58	2.01
MH130	89.64	87.92	1.72	87.93	1.71
MH131	89.64	87.77	1.87	87.78	1.86
MH132	89.59	87.47	2.12	87.47	2.12

The HGL results presented in **Table 5-** indicates that the minimum 0.3 m clearance between the USF and HGL is maintained across the subject site for the 100 year 3 hour Chicago and 100 year 3 hour Chicago increased by 20% storm event.

6 CONVEYANCE CONTROLS

6.1 General

Besides source controls, the development also proposes to use several conveyance control measures to improve runoff quality. These will include:

- flat vegetated swales;
- catchbasin and maintenance hole sumps; and
- pervious rear yard drainage.

6.2 Flat Vegetated Swales

The development will make use of relatively flat vegetated swales where possible to encourage infiltration and runoff treatment.

6.3 Catchbasins

All catchbasins within the development, either rear yard or street, will be constructed with minimum 600 mm deep sumps. These sumps trap pollutants, sand, grit and debris which can be mechanically removed prior to being flushed into the minor pipe system. Both rear yard and street catchbasins will be fabricated to OPSD 705.010 or 705.020. All storm sewer maintenance holes servicing local sewers less than 900 mm diameter shall be constructed with a 300 mm sump as per City standards.

6.4 Pervious Landscaped Area Drainage

Some of the landscaped area swales make use of a filter wrapped perforated drainage pipe constructed below the rear yard swale. This perforated system is designed to provide some ground water recharge and generally reduce both volumetric and pollutant loadings that enter the minor pipe system.

7 SEDIMENT AND EROSION CONTROL PLAN

7.1 General

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

- Until the local storm sewer and storm pond are constructed, groundwater in trenches will be pumped into a filter mechanism prior to release to the environment. After construction of the storm water facility, any construction dewatering will be routed to the nearest storm sewer.
- bulkhead barriers will be installed at the nearest downstream manhole in each sewer which connects to an existing downstream sewer.
- Should the storm and sanitary sewer connections be made in advance of the final ICD installations within the development, temporary ICD's shall be placed in the last manhole prior to connection to existing sewers. The temporary ICD shall be sized to the design flow rate with a 2.0m head.
- seepage barriers will be constructed in any temporary drainage ditches.
- sediment capture filter socks will remain on open surface structures such as maintenance holes and catchbasins until these structures are commissioned and put into use; and
- silt fence on the site perimeter.

7.2 Trench Dewatering

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

For pumping rates between 50,000 to 400,000 liters per day, registration on the Environmental and Sector Registry (EASR) is required.

7.3 Bulkhead Barriers

Although the storm sewers eventually outlet into a sediment forebay, a ½ diameter bulkhead will be constructed over the lower half of the outletting sewers to reduce sediment loadings during construction. These bulkheads will trap any sediment laden flows, thus preventing any construction-related contamination into existing sewers. The bulkheads will be inspected and maintained including periodic sediment removal as needed.

7.4 Seepage Barriers

In order to further reduce sediment loading to the stormwater management facility and existing watercourses, seepage barriers will be installed on any surface water courses at appropriate locations that may become evident during construction. These barriers will be Light Duty Straw Bale Barriers per OPSD 219.100 and Heavy-Duty Silt Fence Barriers per OPSD 219.130; locations are shown on the Sediment and Erosion Control Plan included in Appendix F. They are

typically made of layers of straw bales or geotextile fabric staked in place. All seepage barriers will be inspected and maintained as needed.

7.5 Surface Structure Filters

All catchbasins, and to a lesser degree, manholes, convey surface water to sewers. Until streets are asphalted and curbed where required, all manholes will be constructed with sediment capture filter socks located between the structure frame and cover. These will stay in place and be maintained during construction and build until it is appropriate to remove same.

8 ROADS AND NOISE ATTENUATION

Vehicular access to 4624 Spratt Road is provided by two private entrances from Spratt Road. All private drive aisles are 6.7m width asphalt. The roads have been designed (by others) to accommodate public garbage collection routes and fire truck movements.

All public spaces within the private development are barrier free and accessible. There are no accessible units within the development, as each unit is serviced by stairs.

There are 144 residence parking spaces and 24 visitor parking spaces provided for this development. There are no accessible parking spaces provided.

There are 60 bicycle parking spaces provided throughout the development.

There are 4 solid waste collection and recycling areas placed at strategic locations throughout the development.

An environmental noise attenuation study has been provided for this development. The study has been prepared by IBI Group.

9 SOILS

Paterson Group Inc. was retained to prepare a geotechnical investigation for the proposed residential development for 4624 Spratt Road. The objectives of the investigation were to prepare a report to:

- Determine the subsoil and groundwater conditions at the site by means of test pits and boreholes and,
- To provide geotechnical recommendations pertaining to design of the proposed development including construction considerations.

The geotechnical report PG5641-1 was prepared by Paterson Group in February 2021. The report contains recommendations which include but are not limited to the following:

- The maximum permissible grade raise is 3.0m
- In areas where finished grade exceeds grade raise limits, geotechnical reviews are required
- Fill placed below the foundations to meet OPSS Granular 'A' or Granular 'B' Type II placed in 200 mm lifts compacted to 98% SPMDD.
- Fill for roads to be suitable native material in 300mm lifts compared to 95% SPMDD

Pavement Structure – Car Parking Areas:

LOCAL ROAD	THICKNESS
Asphaltic Concrete	50mm
OPSS Granular A Base	150mm
OPSS Granular B Type II Subbase	300mm

Pavement Structure – Local Roadways:

LOCAL ROAD	THICKNESS
Asphaltic Concrete	90mm
OPSS Granular A Base	150mm
OPSS Granular B Type II Subbase	450mm

- Pipe bedding and cover: The pipe bedding for sewer and water pipes placed on a relatively dry, undisturbed subgrade surface should consist of at least 150 mm of OPSS Granular A material. Where the bedding is located within the firm grey silty clay, the thickness of the bedding material should be increased to a minimum of 300 mm. The cover material, which should consist of OPSS Granular A, should extend from the spring line of the pipe to 300 mm above the obvert of the pipe. The material should be placed in 300 mm thick lifts and compacted to a minimum of 95% of its SPMDD.

In general, the grading plan for 4624 Spratt Road adheres to the grade raise constraints noted above. A copy of the grading plans is included in **Appendix D**.

10 CONCLUSION

This report has illustrated that watermains and storm and sanitary sewers can be extended to service the subject lands in accordance with the approved adjacent developments, the ISSU and the deviation report. The water, wastewater, and stormwater systems required to develop 4624 Spratt Road are designed in accordance with MECP and City of Ottawa's current level of service requirements.

The use of lot level controls, conveyance controls and end of pipe controls outlined in the report will result in effective treatment of surface stormwater runoff from the site. Adherence to the proposed sediment and erosion control plan during construction will minimize harmful impacts on surface water.

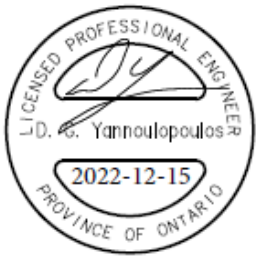
An ECA from the MECP is not required for this development.

Regulatory review and permits from the Rideau Valley Conservation are not required for this development.

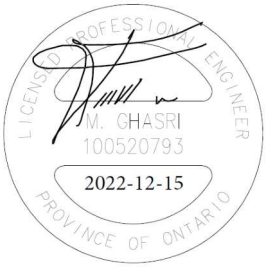
Final detail design will be subject to governmental approval prior to construction, including but not limited to the following:

- Block 203 Commence Work Order: City of Ottawa
- Block 203 Watermain Approval: City of Ottawa

Report prepared by:



Demetrius Yannoulopoulos, P. Eng.
Director – Office Lead



Mahsa Ghasri, P. Eng.
Water Resources Engineer

Ryan Magladry, C.E.T
Project Manager

Amy Zhuang, P.Eng.
Project Engineer

https://ibigroup.sharepoint.com/sites/Projects1/135856/Internal Documents/6.0_Technical/6.04_Civil/03_Tech-Reports/Submission#3/CTR_Design Brief_2022-12-15.docx\

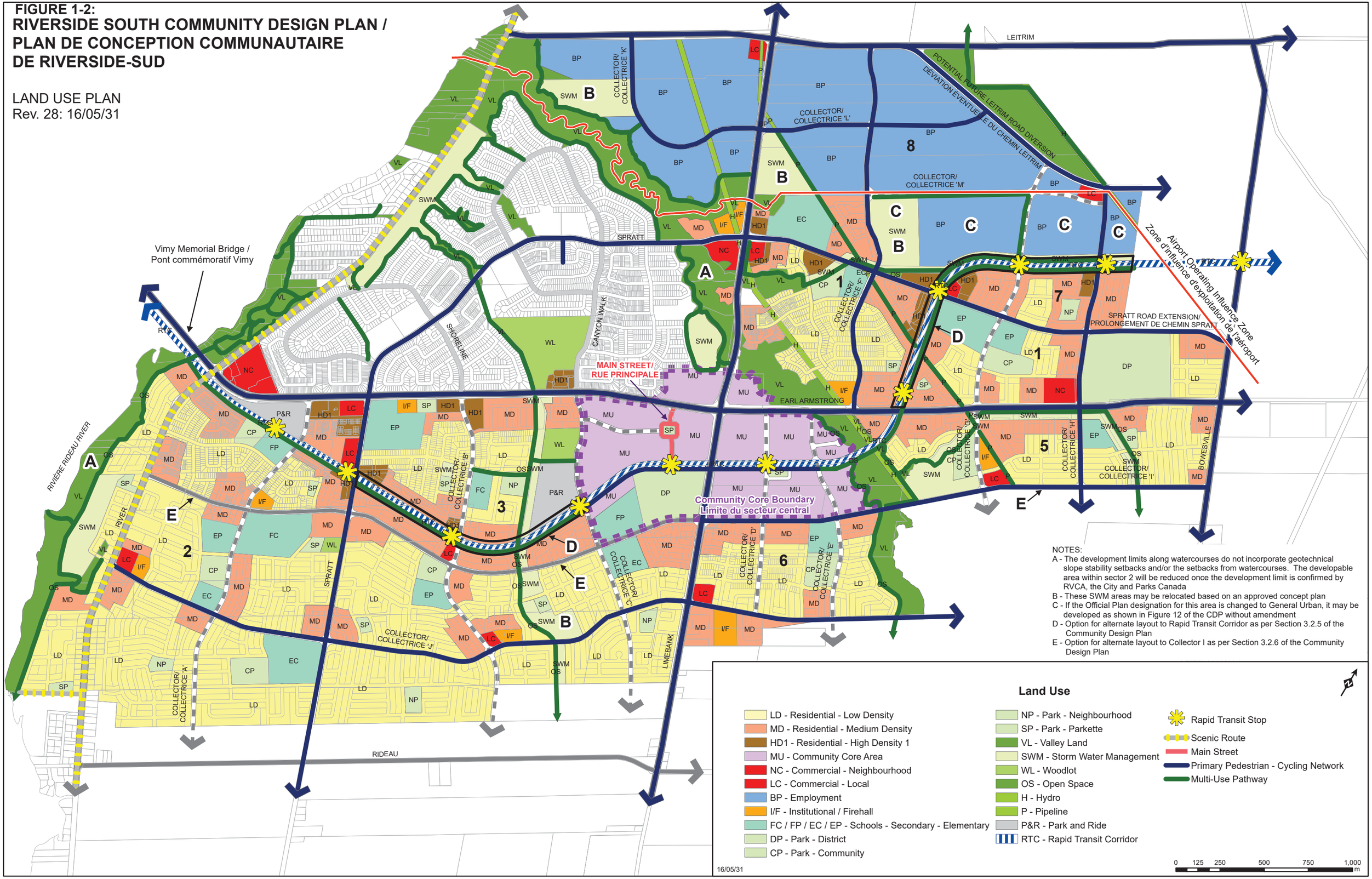
APPENDIX A

- RSDC Land Use Plan
- RSDC Phase 9 - Plan of Subdivision Northeast
- Site Plan
- Legal Plan
- General Plan of Services
- Notes of Pre-consultation

FIGURE 1-2:

RIVERSIDE SOUTH COMMUNITY DESIGN PLAN / PLAN DE CONCEPTION COMMUNAUTAIRE DE RIVERSIDE-SUD

LAND USE PLAN
Rev. 28: 16/05/31



NOTES:
A - The development limits along watercourses do not incorporate geotechnical slope stability setbacks and/or the setbacks from watercourses. The developable area within sector 2 will be reduced once the development limit is confirmed by RVCA, the City and Parks Canada
B - These SWM areas may be relocated based on an approved concept plan
C - If the Official Plan designation for this area is changed to General Urban, it may be developed as shown in Figure 12 of the CDP without amendment
D - Option for alternate layout to Rapid Transit Corridor as per Section 3.2.5 of the Community Design Plan
E - Option for alternate layout to Collector I as per Section 3.2.6 of the Community Design Plan

Land Use

- LD - Residential - Low Density
- MD - Residential - Medium Density
- HD1 - Residential - High Density 1
- MU - Community Core Area
- NC - Commercial - Neighbourhood
- LC - Commercial - Local
- BP - Employment
- I/F - Institutional / Firehall
- FC / FP / EC / EP - Schools - Secondary - Elementary
- DP - Park - District
- CP - Park - Community
- NP - Park - Neighbourhood
- SP - Park - Parkette
- VL - Valley Land
- SWM - Storm Water Management
- WL - Woodlot
- OS - Open Space
- H - Hydro
- P - Pipeline
- P&R - Park and Ride
- RTC - Rapid Transit Corridor
- Rapid Transit Stop
- Scenic Route
- Main Street
- Primary Pedestrian - Cycling Network
- Multi-Use Pathway

16/05/31

0 125 250 500 750 1,000 m

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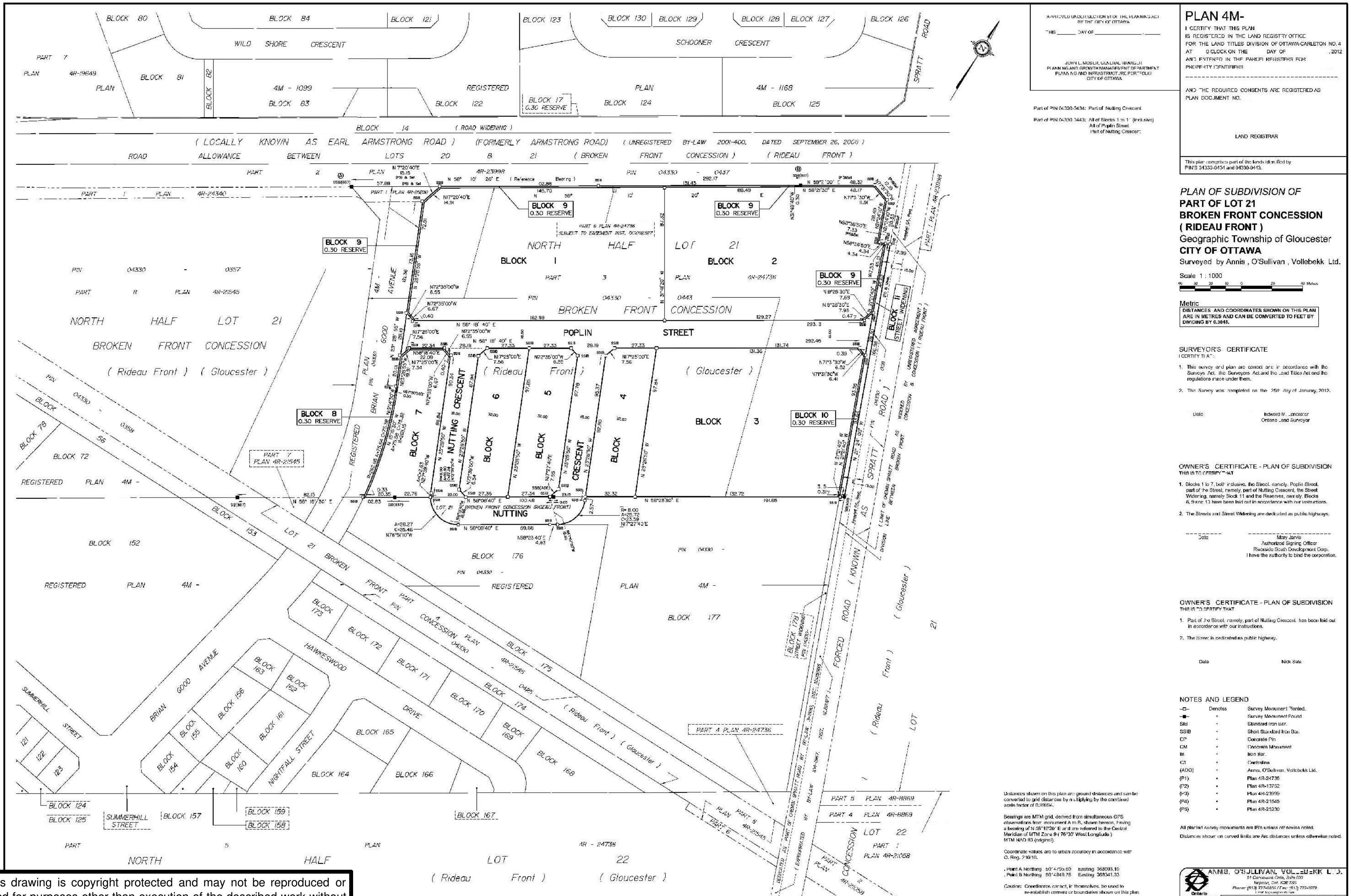


PROJECT:	DRAWING:		DRAWING NO.:
RIVERSIDE SOUTH PHASE 9 CITY OF OTTAWA	COPY OF PLAN OF SUBDIVISION NORTHEAST	DESIGN: OTHER	**FIGURE 1.2b**
		DRAWN: OTHER	
		CHECKED: J.L.P.	JLR NO:
		PLOTTED: Oct16,2012	21464-09

File Location: V:\21464-09.LD\21464-09 P Fig1 2.dwg

DRAWING NOTES

1. PROPERTY LINE
2. BUILDING SETBACKS
3. 1.8 METRE CONCRETE SIDEWALK WITH STREET CURB
4. EXISTING CONCRETE SIDEWALK WITH STREET CURB
5. ORGANIC WASTE ENCLOSURE
6. ASPHALT DRIVING SURFACE
7. BICYCLE PARKING SPACES (SEE BIKE RACK DESIGN BELOW)
8. PROPOSED FIRE HYDRANT
9. EXISTING FIRE HYDRANT
10. PRIVATE PATIOS ABOVE / BELOW GRADE
11. GARBAGE / RECYCLING EARTHBIN
12. COMMUNITY MAIL BOX
13. UTILITY CLOSETS
14. PROPOSED HYDRO TRANSFORMER
15. EXISTING ROGERS VAULT
16. EXISTING HYDRO TRANSFORMER
17. 2.2m HT NOISE BARRIER FENCE, SEE LANDSPACING
18. NOT IN USE
19. NOT IN USE

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE
- SOFT LANDSCAPING
- CONCRETE WALK / PATH
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- PROPERTY LINE
- ZONING SETBACKS
- STANDARD PARKING SPACE
- VISITOR PARKING SPACE
- ACCESSIBLE PARKING SPACE
- COMMUNITY MAIL BOXES
- LANDSCAPE RISERS
- SITE UTILITIES (SEE COMPOSITE UTILITY PLAN)
- TACTILE WALKING SURFACE INDICATOR

PROJECT DEVELOPER

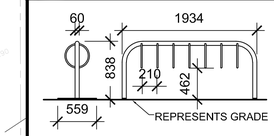
Claridge Homes
2001 - 201 Gladstone Avenue
Ottawa ON,
Tel.: (613) 233-6030
E-Mail:

SURVEYOR

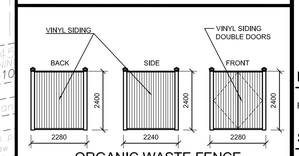
Annis O'Sullivan Vollebekk Ltd.
Ontario Land Surveyors
14 Concourse Gate, Suite 500,
Nepean, Ontario K2E 7S6
Tel: (613) 727-0850
Fax: (613) 727-1079
E-Mail: EdL@aovltd.com

LEGAL DESCRIPTION

PLAN OF SUBDIVISION OF
PART OF LOT 21 AND
BROKEN FRONT CONCESSION (RIDEAU FRONT)
Geographic Township of Gloucester
REGISTERED PLAN 4M-1470
CITY OF OTTAWA
SURVEYED BY ANNIS O'SULLIVAN VOLLEBEKK LTD.



7 RING BIKE RACK BY MAGLIN, MODEL MBR0300-00011, COLOUR GUNMETAL
BIKE RACK



ORGANIC WASTE FENCE ENCLOSURE ELEVATIONS 1:125

PROJECT INFORMATION

ZONING Zoning By-Law 2008-250 — GM
USE — PLANNED UNIT DEVELOPMENT

SITE AREA	23,888.7 sq. m. (257,135) sq. ft.
MAX. BUILDING HEIGHT	18.0 m.
FRONT YARD SETBACK	3.0 M
INTERIOR SIDE YARD SETBACK (RES. BUILDING ≥ 11M)	3.0 M
INTERIOR SIDE YARD SETBACK (NON-RES. BUILDING ABUTTING RES. ZONE)	5.0 M
REAR YARD SETBACK (ABUTTING RES. ZONE)	7.5 M
REAR YARD SETBACK (RESIDENTIAL BUILDING)	7.5 M
AMENITY AREA PER DWELLING UNIT	6.0 sq. m.
COMMUNAL AMENITY AREA	50%
WIDTH OF LANDSCAPE AREA (ABUTTING A STREET)	3.0 M
WIDTH OF LANDSCAPE AREA (ABUTTING RES. ZONE)	3.0 M
WIDTH OF LANDSCAPE AREA AROUND PARKING	1.5 M

PROJECT STATISTICS

PLANNING UNIT DEVELOPMENT
COMPRISED OF STACKED TOWNHOUSES

BUILDING HEIGHT 11.0 M

AMENITY SPACE (720 sq. m. req.)

PRIVATE BALCONY / PATIO =	1092 sq. m.
EXTERIOR AT GRADE =	0 sq. m.
PRIVATE AMENTIY SPACE =	508 sq. m.
TOTAL =	1600 sq. m.

SITE COVERAGE (residential only)

BUILDING FOOTPRINT =	21.1%	4,387 sq. m.
DRIVING SURFACE =	26.3%	5,458 sq. m.
LANDSCAPE AREA =	52.6%	10,913 sq. m.
TOTAL =	100.0%	20,758 sq. m.

GROSS BUILDING - AREAS
(CITY OF OTTAWA'S DEFINITION)

PROPOSED BUILDING 'A'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'B'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'C'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'D'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'E'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'F'	1,220.0 sq. m. (13,130) sq. ft.
PROPOSED BUILDING 'G'	1,220.0 sq. m. (13,130) sq. ft.
PROPOSED BUILDING 'H'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'J'	1,290.5 sq. m. (13,890) sq. ft.
PROPOSED BUILDING 'K'	1,220.0 sq. m. (13,130) sq. ft.
TOTAL PROPOSED AREA	12,693.5 sq. m. (136,620) sq. ft.

UNIT STATISTICS

PROPOSED 2 BEDROOM UNIT	120
TOTAL	120

CAR PARKING

REQUIRED by ZONING BY-LAW

RESIDENCE	- 1.2 PER UNIT (120 UNITS)	144
VISITOR	- 0.2 PER DWELLING UNIT	24
TOTAL		168

PROVIDED

RESIDENCE	- 1.2 PER UNIT (120 UNITS)	144
VISITOR	STANDARD PARKING SPACE - 2.6 x 5.2m	31
	BARRIER FREE SPACE - TYPE A 3.4 x 5.2m	1
	BARRIER FREE SPACE - TYPE B 2.4 x 5.2m	1
TOTAL		177

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (120 UNITS)	60

PROVIDED

EXTERIOR	60

WASTE COLLECTION

GUIDELINES

GARBAGE	- 0.231 CUBIC YARDS / UNIT	27.72 YARDS^3
RECYCLING (GMP)	- 0.018 CUBIC YARDS / UNIT	2.16 YARDS^3
RECYCLING (FIBRE)	- 0,062 CUBIC YARDS / UNIT	7,44 YARDS^3
ORGANICS	- 240L CONTAINER /50 UNITS	3x 240L

TOTAL	GARBAGE	4 EARTHBINS
	RECYCLING (GMP)	1 EARTHBINS
	RECYCLING (FIBRE)	2 EARTHBINS
	ORGANICS	3x 240L

PASSIVE IRRIGATION

RAIN GUTTERS DRAIN TO CORNER PLANTERS

SNOW STORAGE

NO SNOW STORAGE IS PROVIDED ON SITE. TO BE MANAGED UNDER SEPARATE CONTRACT

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- 00 — INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- 00 — INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- 00 — INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- 000 — INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 / A000 — DETAIL NUMBER / TITLE / SCALE / DETAIL REFERENCE PAGE

No.	DESCRIPTION	DATE
4	ISSUED FOR SITE PLAN 2nd REVIEW RESPONSE	DEC 15 2022
3	ISSUED FOR SITE PLAN 1st REVIEW RESPONSE	JUL 07 2022
2	ISSUED FOR CONSULTANT REVIEW	OCT 15 2021
1	ISSUED FOR PRELIMINARY REVIEW	FEB 26 2021

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK J. LAHEY — LICENCE 4375 — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: CLARIDGE HOMES

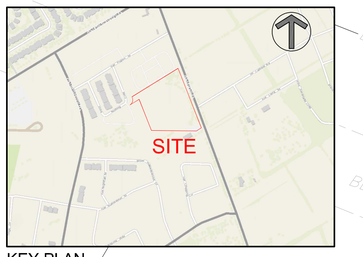
ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t. 613.724.9932 f. 613.724.1209 rlaarchitecture.ca

PROJECT TITLE:
4624 SPRATT ROAD
OTTAWA — ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN:	CHECKED:
CM	RV
SCALE: 1:400	SHEET No. SP-1
PROJECT No. 1721	

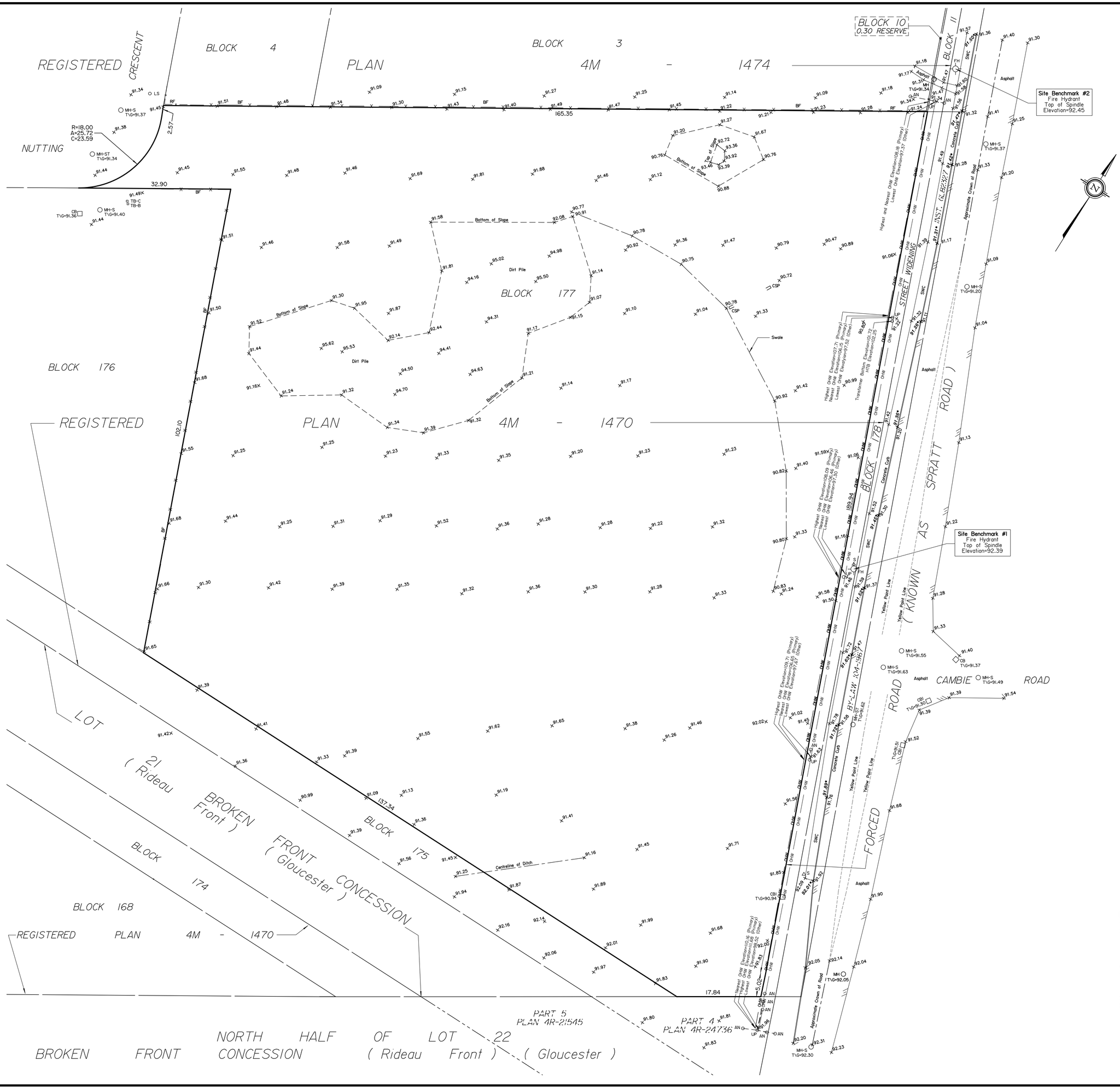
D07-12-22-0021



KEY PLAN

1 SP-1 SITE PLAN
SCALE = 1 : 400

PAPER SIZE: A1 | PLOT DATE: Thursday, December 15, 2022 | PLOT SCALE: 1:25.4 | PEN STYLE: 0-RLA-MASTER-100%.ctb | F:\2020\2033 - Spratt Zen (Claridge Homes)\01 Design Development\01 Site Plan\2033 Zen Site Plans 2021 11 08.dwg #18727



TOPOGRAPHIC SKETCH OF

4624 Spratt Road
CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 400

16 12 8 4 0 8 16 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Notes & Legend

Denotes		
FH	"	Fire Hydrant
MH-ST	"	Maintenance Hole (Storm Sewer)
MH-S	"	Maintenance Hole (Sanitary)
MH	"	Maintenance Hole (Unidentified)
OHW	"	Overhead Wires
CB	"	Catch Basin
CBI	"	Catch Basin Inlet
CSP	"	Corrugated Steel Pipe
TB-B	"	Bell Terminal Box
TB-C	"	Cable Terminal Box
S	"	Sign
BF	"	Board Fence
RF	"	Rail Fence
SWC	"	Concrete Sidewalk
HTB	"	Hydro Transformer Bolt
UP	"	Utility Pole
AN	"	Anchor
LS	"	Light Standard
+ 65.00	"	Location of Elevations
+ 65.00*	"	Top of Concrete Curb Elevation

Caution

This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.

Boundary information compiled from Registered Plans 4M-1470 and 4M-1474.

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 22080-21 Claridge Blk177 4M-1470 SK F AR

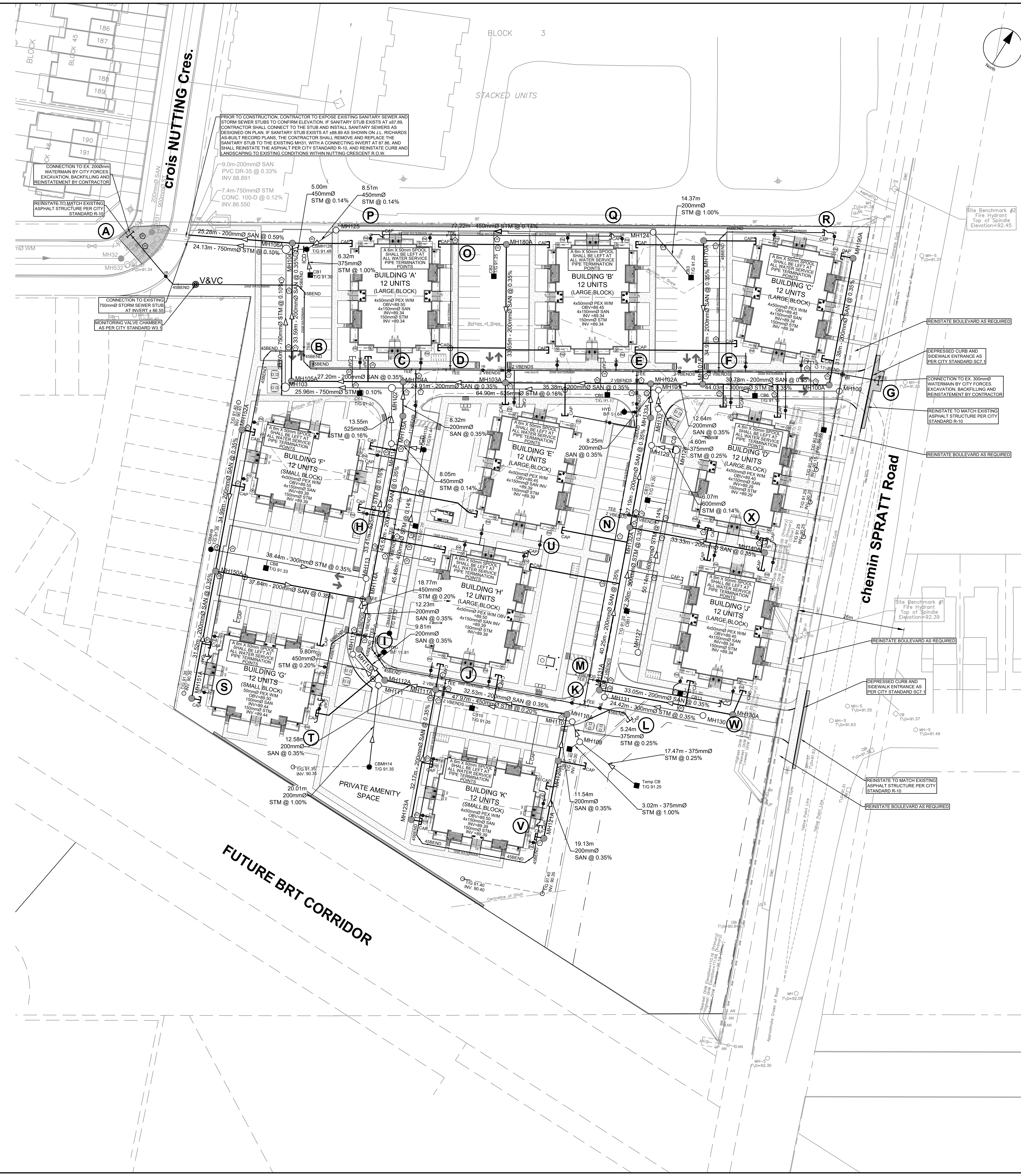
135856 - SAN STRUCTURE TABLE						
NAME	RIM ELEV.	INVERT IN	INVERT IN AS-BUILT	INVERT OUT	INVERT OUT AS-BUILT	DESCRIPTION
MH100A	91.42	N88.876		SW88.816		1200mmØ OPSD-701.010
MH101A	91.47	NE88.708 NW88.748		SW88.688		1200mmØ OPSD-701.010
MH102A	91.42	SE88.684 NE88.644		SW88.624		1200mmØ OPSD-701.010
MH103A	91.51	NE88.500 NW88.540		SW88.480		1200mmØ OPSD-701.010
MH104A	91.53	NE88.393 SE88.433		SW88.373		1200mmØ OPSD-701.010
MH105A	91.58	NE88.278		NW88.218		1200mmØ OPSD-701.010
MH106A	91.54	SE88.100		SW88.040		1200mmØ OPSD-701.010
MH110A	91.62	S89.037		W88.977		1200mmØ OPSD-701.010
MH111A	91.49	E88.863 S88.903		W88.843		1200mmØ OPSD-701.010
MH112A	91.57	E88.799		W88.769		1200mmØ OPSD-701.010
MH113A	91.62	E88.735		N88.705		1200mmØ OPSD-701.010
MH114A	91.56	S88.662 W88.701		N88.642		1200mmØ OPSD-701.010
MH115A	91.55	S88.482		NW88.462		1200mmØ OPSD-701.010
MH120A	91.71	S89.097		N89.077		1200mmØ OPSD-701.010
MH121A	91.82			N89.164		1200mmØ OPSD-701.010
MH123A	91.84			N89.016		1200mmØ OPSD-701.010
MH130A	91.58			W89.165		1200mmØ OPSD-701.010
MH131A	91.59	E89.049		N88.989		1200mmØ OPSD-701.010
MH132A	91.35	S88.848 E88.888		N88.828		1200mmØ OPSD-701.010
MH133A	91.46	S88.733		NW88.713		1200mmØ OPSD-701.010
MH140A	91.67			W89.004		1200mmØ OPSD-701.010
MH150A	91.64	S88.894 N88.894		E88.834		1200mmØ OPSD-701.010
MH151A	91.56			N89.004		1200mmØ OPSD-701.010
MH152A	91.68			S89.017		1200mmØ OPSD-701.010
MH170A	91.51			SE88.871		1200mmØ OPSD-701.010
MH180A	91.47			SE88.658		1200mmØ OPSD-701.010
MH190A	91.69			S88.986		1200mmØ OPSD-701.010

MANHOLE FRAME AND COVERS PER CITY STD S25 AND S24

135856 - STM STRUCTURE TABLE						
NAME	RIM ELEV.	INVERT IN	INVERT IN AS-BUILT	INVERT OUT	INVERT OUT AS-BUILT	DESCRIPTION
CB1	91.30			NW89.900		OPSD-705.010
CB3	91.25			W89.850		OPSD-705.010
CB17	92.89			NE90.000		OPSD-705.010
CBMH9	91.35			E87.563		1200mmØ OPSD-701.010
CBMH14	92.66			NW89.980		1200mmØ OPSD-701.010
CBMH126	91.48	NE86.931 SE89.837		SW86.901		1200mmØ OPSD-701.010
CBMH133	91.52			N87.755		1200mmØ OPSD-701.010
CBMH134	91.44	S87.692		W87.132		1200mmØ OPSD-701.010
MH100	91.32			SW87.502		1200mmØ OPSD-701.010
MH101	91.41	NE87.348 SE87.313		SW87.103		1200mmØ OPSD-701.010
MH102	91.52	NE86.999 SE87.039		SW86.754		1500mmØ OPSD-701.011
MH103	91.61	NE86.728		NW86.668		1800mmØ OPSD-701.012
MH104	91.51	SE86.634 NE86.894		SW86.574		1800mmØ OPSD-701.012
MH109	91.69	E87.660 SW89.970		NW87.600		1200mmØ OPSD-701.010
MH110	91.61	SE87.587		W87.452		1200mmØ OPSD-701.010
MH111	91.52	E87.356 SE89.780		W87.326		1200mmØ OPSD-701.010
MH112	91.64	E87.306		N87.276		1200mmØ OPSD-701.010
MH113	91.58	S87.239 W87.429		N87.144		1200mmØ OPSD-701.010
MH114	91.57	S87.090 E87.120		NW87.060		1200mmØ OPSD-701.010
MH124	91.74	E89.706		SW89.150		1200mmØ OPSD-701.010
MH125	91.78	NE89.041		SW86.943		1200mmØ OPSD-701.010
MH127	91.51			N87.959		1200mmØ OPSD-701.010
MH128	91.52	S87.889		W87.529		1200mmØ OPSD-701.010
MH129	91.46	S87.481 E87.521		N87.461		1200mmØ OPSD-701.010
MH130	91.48			W87.844		1200mmØ OPSD-701.010
MH131	91.61	E87.759		N87.699		1200mmØ OPSD-701.010
MH132	91.45	S87.429		NW87.324		1200mmØ OPSD-701.010

MANHOLE FRAME AND COVERS PER CITY STD S25 AND S24.1

WATERMAIN SCHEDULE					
	Station	Description	Finished Grade	Top of Waterain	As Built Waterain
A	0+000.00	TEE	±91.4	±88.96	
	0+002.35			88.917	
	0+010.02		91.483	89.083	
	0+013.26	VB	91.475	89.075	
	0+015.98	45° BEND	91.542	89.142	
	0+021.47	V&VC	91.669	89.269	
	0+029.96		91.819	89.419	
	0+039.82		91.655	89.255	
	0+038.68	45° BEND	91.634	89.234	
	0+043.27	STM	91.51	89.110	
	0+044.88	SAN	91.448	89.048	
	0+046.29	45° BEND	91.397	88.997	
	0+048.89	45° BEND	91.35	88.950	
B	0+062.24	TEE	91.523	89.123	
	0+064.79	45° BEND	91.547	89.147	
	0+067.29	45° BEND	91.520	89.120	
	0+77.44	STM SERV BLK A	91.55	88.786	
	0+81.09	SAN SERV BLK A	91.565	88.769	
	0+079.20	WM SERV TEE	91.557	89.157	
C	0+092.78	TEE	91.575	89.175	
	0+094.01	WM SERV TEE	91.571	89.171	
D	0+101.15	TEE	91.541	89.141	
	0+109.14	VB	91.518	89.118	
	0+113.63	22½° VBEND	91.518	89.118	
	0+114.13	22½° VBEND	91.518	89.267	
	0+114.73	SAN	91.518	89.267	
	0+115.25	22½° VBEND	91.519	89.267	
	0+115.75	22½° VBEND	91.518	89.118	
	0+116.76	WM SERV TEE	91.517	89.117	
	0+127.21	WM SERV TEE	91.5	89.100	
	0+137.74	STM SERV BLK B	91.488	88.798	
	0+141.51	WM SERV TEE	91.490	89.090	
E	0+146.62	TEE	91.495	89.095	
	0+156.96	VB	91.517	89.117	
	0+160.90	22½° VBEND	91.517	89.117	
	0+161.50	22½° VBEND	91.517	89.471	
	0+162.75	SAN	91.517	89.471	
	0+163.80	22½° VBEND	91.505	89.471	
	0+164.40	22½° VBEND	91.497	89.097	
F	0+166.56	TEE	91.466	89.066	
	0+169.50	WM SERV TEE	91.424	89.024	
	0+173.03	WM SERV TEE	91.374	88.974	
	0+182.85	WM SERV TEE	91.448	89.048	
	0+186.57	WM SERV TEE	91.502	89.102	
	0+188.98	STM SERV BLK C	91.536	88.795	
	0+189.89	VB	91.550	88.795	
	0+193.87	SAN	91.456	88.272	
	0+194.45	11¼° BEND	91.444	88.272	
	0+196.69	VB	91.379	88.835	
	0+204.86			88.850	
G	0+205.61	TEE	±91.169	±88.85	
C	0+000.00	TEE	91.575	89.175	
	0+003.01	SAN	91.529	89.129	
	0+004.48	STM	91.506	89.106	
	0+008.69	VB	91.496	89.096	
	0+011.25	11¼° BEND	91.56	89.160	
	0+018.95	STM	91.497	89.097	
	0+022.35	WM SERV TEE	91.468	89.068	
	0+030.31	SAN SERV BLK E	91.413	88.676	
	0+036.87	WM SERV TEE	91.413	89.013	
H	0+039.23	TEE	91.435	89.034	
	0+041.00	VBEND	91.451	89.051	
	0+041.50	VBEND	91.462	88.748	
	0+042.03	SAN SERV BLK H	91.468	88.748	
	0+045.32	STM SERV BLK H	91.502	88.748	
I	0+066.17	TEE	91.562	89.162	
	0+068.89	45° BEND	91.597	89.197	
	0+071.29	HYDRANT TEE	91.611	89.211	
	0+074.54	45° BEND	91.658	89.258	
	0+085.67	WM SERV TEE	91.640	89.240	
	0+087.69	SAN SERV BLK H	91.640	88.835	
J	0+089.67	TEE	91.639	89.239	
	0+100.08	WM SERV TEE	91.637	89.237	
	0+102.05	SAN SERV BLK H	91.636	88.840	
	0+120.86	VB	91.758	89.358	
K	0+123.86	TEE	91.728	89.328	
	0+127.80	VB	91.689	89.289	
	0+133.89	45° BEND	91.762	89.362	
L	0+136.26	CAP	91.691	89.291	
E	0+000.00	TEE	91.495	89.095	
	0+002.04	VBEND	91.401	89.001	
	0+002.54	VBEND	91.387	89.302	
	0+002.99	SAN	91.374	89.302	
	0+004.52	STM	91.329	89.302	
	0+005.04	VBEND	91.314	89.302	
	0+005.54	VBEND	91.300	88.900	
	0+007.96	VB	91.350	88.950	
	0+009.93	HYDRANT TEE	91.406	89.006	
	0+013.12	11¼° BEND	91.492	89.092	
	0+013.75	WM SERV TEE	91.5	89.100	
N	0+035.00	TEE	91.408	89.008	
	0+041.56	SAN SERV BLK E	91.442	88.724	
	0+051.78	SAN SERV BLK H	91.408	88.661	
M	0+076.01	TEE	91.556	89.156	
K	0+082.47	TEE	91.728	89.328	
B	0+000.00	TEE	91.523	89.117	
	0+003.01	SAN	91.523	89.123	
	0+004.52	STM	91.523	89.123	
	0+008.09	45° BEND	91.557	89.157	
	0+010.54	45° BEND	91.589	89.189	
	0+026.24	WM SERV TEE	91.752	89.352	
	0+028.69	SAN SERV BLK F	91.805	88.870	
	0+040.25	WM SERV TEE	91.882	89.482	
	0+042.29	SAN SERV BLK F	91.861	88.860	
	0+058.65	STM	91.468	89.463	
	0+063.66	SAN	91.471	89.457	
	0+079.22	WM SERV TEE	91.841	89.441	
	0+081.52	SAN SERV BLK G	91.875	88.915	
	0+083.95	WM SERV	91.908	89.508	
S	0+084.40	CAP	91.91	89.510	
D	0+000.00	TEE	91.541	89.141	
	0+005.42	SAN SERV BLK A	91.784	88.774	
	0+020.47		91.784	89.384	
	0+030.68	SAN SERV BLK A	91.751	89.351	
O	0+032.84	TEE	91.739	89.339	
	0+037.98	WM SERV TEE	91.865	89.465	
	0+049.13	WM SERV	91.831	89.431	
P	0+049.58	CAP	91.835	89.435	
O	0+000.00	TEE	91.739	89.339	
	0+010.35	STM	91.521	89.121	
	0+028.39	WM SERV TEE	91.854	89.454	
	0+038.56	WM SERV	91.84	89.440	
Q	0+039.01	CAP	91.844	89.444	
F	0+000.00	TEE	91.466	89.066	
	0+006.89	SAN SERV BLK C	91.533	88.785	
	0+017.81		91.533	89.133	
	0+031.92	SAN SERV BLK C	91.51	88.726	
	0+032.30	45° BEND	91.521	88.726	
	0+034.80	45° BEND	91.754	89.354	
	0+046.38	WM SERV TEE	91.877	89.477	
	0+058.08	WM SERV	91.775	89.375	
R	0+058.53	CAP	91.772	89.372	
H	0+000.00	TEE	91.435	89.034	
	0+003.56	STM	91.338	88.938	
	0+017.60	WM SERV TEE	91.786	89.386	
	0+021.09	WM SERV TEE	91.862	89.462	
	0+032.25	WM SERV TEE	91.984	89.584	
	0+032.71	WM SERV	91.978	89.578	
U	0+033.16	CAP	91.971	89.571	
I	0+000.00	TEE	91.562	89.162	
	0+002.00	V BEND	91.575	89.175	
	0+002.50	V BEND	91.578	89.339	
	0+003.04	SAN	91.582	89.339	
	0+003.50	VBEND	91.585	89.339	
	0+004.00	VBEND	91.588	89.188	
	0+004.32	STM	91.590	89.190	
	0+006.58	45° BEND	91.752	89.352	
	0+011.21	45° BEND	91.86	89.460	
	0+017.16	WM SERV TEE	91.858	89.458	
	0+024.90	WM SERV	91.88	89.480	
T	0+025.35	CAP	91.871	89.471	
J	0+000.00	TEE	91.639	89.239	
	0+002.00	VBEND	91.539	89.139	
	0+002.50	VBEND	91.514	89.585	
	0+002.99	SAN	91.490	89.585	
	0+003.50	VBEND	91.466	89.585	
	0+004.00	VBEND	91.45	89.050	
	0+004.56	STM	91.433	89.033	
	0+019.64	WM SERV TEE	91.935	88.834	
	0+020.95	SAN SERV BLK K	91.941	88.833	
	0+033.66	WM SERV TEE	91.929	88.818	
	0+035.08	SAN SERV BLK K	91.913	88.818	
	0+038.62	45° BEND	91.893	89.493	
	0+041.12	45° BEND	91.932	89.532	
	0+066.45	45° BEND	91.877	89.477	
	0+068.95	45° BEND	91.849	89.449	
	0+072.40	WM SERV TEE	91.917	88.832	
	0+073.91	SAN SERV BLK K	91.942	88.832	
	0+076.33	WM SERV	91.956	89.556	
V	0+076.78	CAP	91.962	89.562	
M	0+000.00	TEE	91.556	89.156	
	0+002.00	V BEND	91.557	89.157	
	0+002.50	V BEND	91.558	89.677	
	0+002.95	SAN	91.558	89.677	
	0+003.50	V BEND	91.559	89.677	
	0+004.00	V BEND	91.559	89.159	
	0+004.49	STM	91.560	89.113	
	0+020.65	WM SERV TEE	91.356	88.956	
	0+022.47	STM	91.323	88.923	
	0+024.33	SAN	91.364	88.788	
	0+032.23	WM SERV	91.549	89.149	
W	0+032.68	CAP	91.551	89.151	
N	0+000.00	TEE	91.408	89.008	
	0+002.00	V BEND	91.339	88.939	
	0+002.50	V BEND	91.321	89.470	
	0+003.03	SAN	91.309	89.470	
	0+003.50	V BEND	91.299	89.470	
	0+004.00	V BEND	91.29	88.890	
	0+004.46	STM	91.289	88.889	
	0+010.55	STM	91.383	89.029	
	0+019.30	WM SERV TEE	91.808	89.408	
	0+021.75	SAN SERV BLK D	91.808	88.757	
	0+024.45	WM SERV TEE	91.801	89.401	
	0+033.89	WM SERV TEE	91.821	88.773	
	0+035.36	SAN SERV BLK D	91.837	88.775	
	0+036.13	WM SERV	91.846	88.776	
X	0+036.58	CAP	91.848	88.777	



CLIENT

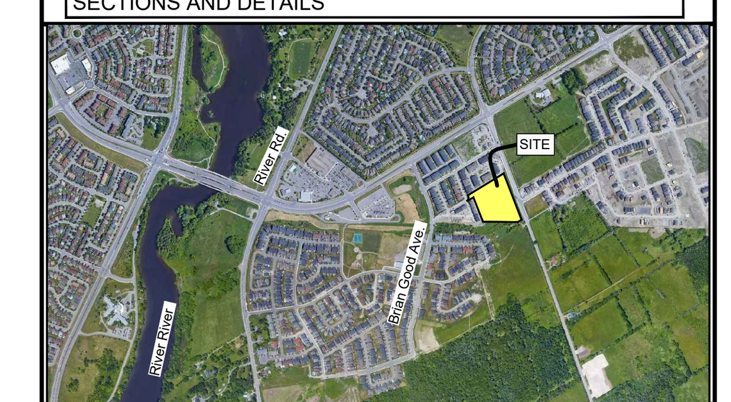
CLARIDGE HOMES

210 Gladstone Ave. Ottawa, On K0P 0Y6

ISSUES

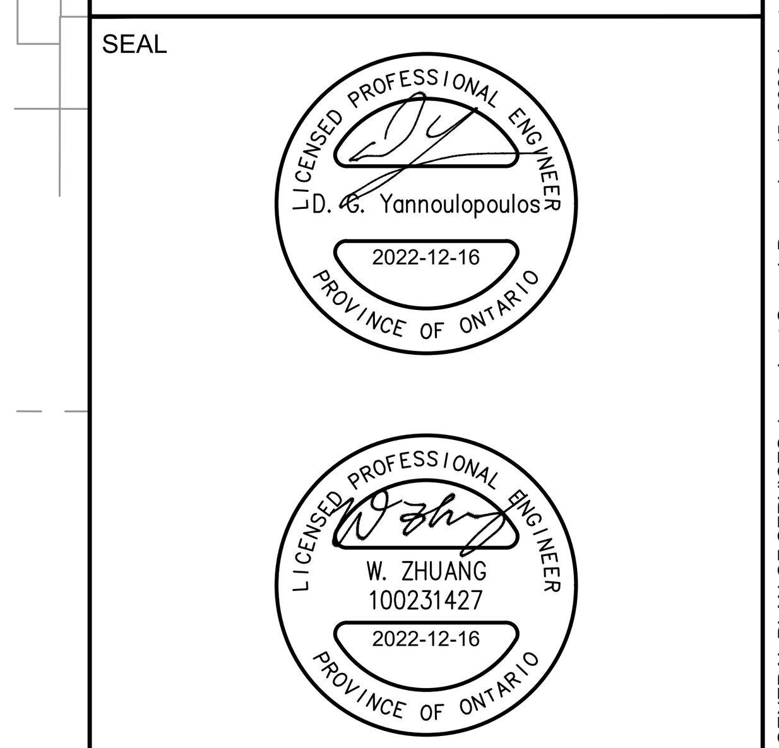
No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-15
2	REVISED PER CITY COMMENTS	2022-08-15
3	REVISED PER CITY COMMENTS	2022-12-16

SEE 010, FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS



CONSULTANTS

SEAL



IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT

ZENS - 4624 SPRATT

PROJECT NO: 135856	
DRAWN BY: D.D./S.G.	CHECKED BY: A.Z.
PROJECT MGR: R.M.	APPROVED BY: R.M./D.Y.

SHEET TITLE

GENERAL PLAN OF SERVICES

SHEET NUMBER C-001 | ISSUE 3

CITY FILE No. D07-12-22-0021

CITY PLAN No. 18727

CLARIDGE HOMES

Vincent Denomme <vincent.denomme@claridgehomes.com>

4624 Spratt Road, follow-up to preconsultation

Tse, Wendy <Wendy.Tse@ottawa.ca> Thu, Oct 8, 2020 at 1:30 PM
To: Vincent Denomme <vincent.denomme@claridgehomes.com>, Jim Burghout <jim.burghout@claridgehomes.com>
Cc: "Sevigny, John" <John.Sevigny@ottawa.ca>, "Walker, Burl" <Burl.Walker@ottawa.ca>, "Siitam, Taavi" <Taavi.Siitam@ottawa.ca>, "Paudel, Neeti" <neeti.paudel@ottawa.ca>

Good afternoon Vincent and Jim,

Thank you for meeting with staff on September 29, 2020 to discuss the proposed development at 4624 Spratt Road. Our understanding is the proposed development will consist of 144 residential units over 12 buildings accessed by a private road.

The applications required are the following:

Site plan: complex (manager approval), $35,487.53+initial engineering design review and inspection (dependent on value of works) +RVCA fee of $1015 (Ward 22)

Lifting of Holding symbol: $7611.99

A 10% reduction in the fees is applicable if the applications are submitted together.

It is our understanding that the Plan of Condominium application will be submitted at a later date.

The following is a summary of comments:

Infrastructure

- Please see attached

Parks

- The subject lands are described as Block 177 on Plan 4M-1470 except Part 1 on Plan 4R-29198. The area of Block 177 is 23,838 sq. m as described in the application form. The applicant is proposing to develop the block with 144 walk-up apartments.

  Parks condition 11(a) in the subdivision agreement for application #D07-16-06-0033 indicates that Block 177 was excluded from the parkland dedication calculations for the subdivision application.

11. **Parks**

(a) The Owner covenants and agrees that the parkland dedication excluding Block 177 is 1.12 hectares. The Owner shall convey to the City a park block, Block 151, being 0.516 hectares in area and shall pay cash-in-lieu of parkland on 0.604 hectares in the amount of $289,009.93 as referenced in Schedule "B" herein. A parkland appraisal fee of $1,000.00 plus HST of $130.00 as referenced in Schedule "B" herein shall also be paid by the Owner. The cash-in-lieu of parkland and appraisal fee are payable to the City upon execution of this Agreement. Pursuant to By-law No. 2009-95, as amended, 100% of the said cash-in-lieu of parkland funds collected shall be earmarked for a future district park in Ward 22.

- The parkland dedication requirements will be determined in accordance with the City's Parkland Dedication By-law. The rate for residential development at a density of 18 dwelling units per net hectare or more is 1 hectare per 300 dwelling units. The parkland dedication requirement is 4,800 sq. m. In the event there is a change in the number of dwelling units, the parkland dedication requirement may also change.

- The proposed development will result in an under dedication of 4,800 sq. m of parkland. The under dedication of parkland within this development shall be offset by the over dedication of parkland in other subdivisions within the Riverside South CDP area. Prior to registration of the site plan agreement, the Owner shall submit to the City proof from the landowners' trustee that the Owner is party to the cost sharing agreement and has paid its share of any costs pursuant to the landowners' agreement, or the Owner shall submit other suitable documentation from the landowners' trustee demonstrating that the Owner is participating in the landowners' agreement, to the satisfaction of the General Manager, Recreation, Cultural and Facility Services Department.

Transportation

- Follow Traffic Impact Assessment Guidelines
  - TIA will be required.
  - Start this process as soon as possible.
  - Applicant advised that their application will not be deemed complete until the submission of the draft step 1-4, including the functional draft RMA package (if applicable) and/or monitoring report (if applicable).
  - Request base mapping asap if RMA is required. Contact Engineering Services (https://ottawa.ca/en/city-hall/planning-and-development/engineering-services)
- Noise Impact Studies required for the following:
  - Road (The proposed BRT corridor south of the development should be considered).
- On site plan:
  - Show all details of the roads abutting the site up to and including the opposite curb; include such items as pavement markings, accesses and/or sidewalks.
  - Turning templates will be required for all accesses showing the largest vehicle to access the site; required for internal movements and at all access (entering and exiting and going in both directions).
  - Show all curb radii measurements; ensure that all curb radii are reduced as much as possible
  - Show lane/aisle widths.
  - Sidewalk is to be continuous across access as per City Specification 7.1.
- The City recommends development on private property be in accordance with the Accessibility Design Standards (AODA legislation). As the site proposed is residential, it is suggested that the design conforms to the Site Plan Checklist, which summarizes AODA requirements (attached).
- The south east corner (fronting Spratt Road) is currently rural. Ensure this section is urbanized to match the existing conditions.
- It is recommended that the concept plan / development plan for the corner of the BRT address this facility (not turn its back to it) and also show ped / cycling connections to/from the station onto the site. Note also that a MUP is planned for along the south side of the BRT corridor in this part of the community.
- ROW protection on Spratt Road is 26m.

Planning

- Given the direction of the current CDP and proposed SP, it is reasonable that new development at this site should have, at minimum, one unit, closest to the future transit station be made suitable for commercial purposes, and subject to the Residential Neighbourhood Commercial Suffix, Section 141 of the Zoning By-law. The goal is to support transit use, make pedestrian activity more convenient and enjoyable, and create a vibrant public realm through the design of the site. A convenience store, or a coffee shop, are examples of the types of uses that would support these objectives. This site should take advantage of the site's proximity to the future BRT
- Consider the materiality and design of the buildings, particularly as it will be highly visible from Stockholm, Spratt and the future BRT. Facades facing the public realm should be designed to be attractive.
- Investigate opportunity to provide buildings fronting on Stockholm Private. Perhaps this would include products like back-to-back townhouses, or similar to those on Nutting Crescent or Stockholm Private, with garages built into them to reduce surface parking.
- Consider connecting a street through from Nutting Crescent. An off-set grid pattern would further mitigate the desire for vehicles to travel quickly through the development. Cut through traffic will likely not be an issue.
- Improve pedestrian connections from surrounding areas; from Nutting as well as Stockholm. The street connections are there already (via Malmo and Gothenburg), and should be used.
- Consider a more urban grid pattern, to build in speed management at the on-set rather than retrofitting and will aid in achieving higher shares of active transportation, not only within this development but also as residents in the general area are able to move through this site to neighbourhood facilities
- Consider the street presence along Spratt, minimize gaps between buildings a much as possible, also examine the internal configuration of the parking and how it might be configured so that the development can create a more continuous built form, rather than large intermittent parking lots, that break up the community character by creating individual "pods".
- Consideration to be given to landscaping particularly with the existing residential development and along Stockholm. To the greatest extent possible, retain any existing trees and landscaping.
- Snow storage and solid waste collection areas to be indicated on plans.
- Within a parking lot, consider clusters of parking broken up with some landscaping (for example, rather than having 10 parking spaces in a row, break up into two sections of 5 each with landscaping section in between). This will soften the parking lot and the appropriate placement of trees will decrease the heat island effect.
- Please advise if you require a copy of the Barrhaven-Riverside South Rapid Transit Environmental Project Report, prepared by MRC, dated October 2013

Submission requirements

- Site servicing plan
- Grade control and Drainage plan
- Plan and Profile drawings
- TIA
- SWM report
- Site servicing study
- Geotechnical study
- Erosion and sediment control plan
- Site plan, including phasing, if applicable
- Landscape plan
- Tree Conservation Report
- Survey plan
- Building elevations
- Architectural Building elevations
- Planning rationale, to include a Design brief
- Site lighting certificate, if available, if not, will be required prior to site plan approval

- Phase 1 ESA and Phase 2 if recommended by Phase 1

Note:

- 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

The signed pdf versions of all reports and plans are required. To assist in our posting of the documents, please also complete the attached files checklist or name the documents in accordance with the list.

If you haven't already reached out to the office of Councillor Meehan to provide a heads-up, it is suggested this be done prior to the submission of the application.

Please let me know if there are any questions.

Regards,

Wendy

Wendy Tse, MCIP, RPP, LEED GA

Planner / Urbaniste

Development Review /Examen des demandes d'aménagement

Planning, Infrastructure and Economic Development Department/

Services de la planification, de l'infrastructure et du développement économique

City of Ottawa/ Ville d'Ottawa

110, avenue Laurier Avenue West / Ouest, 4th Floor / 4ième étage

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3 attachments

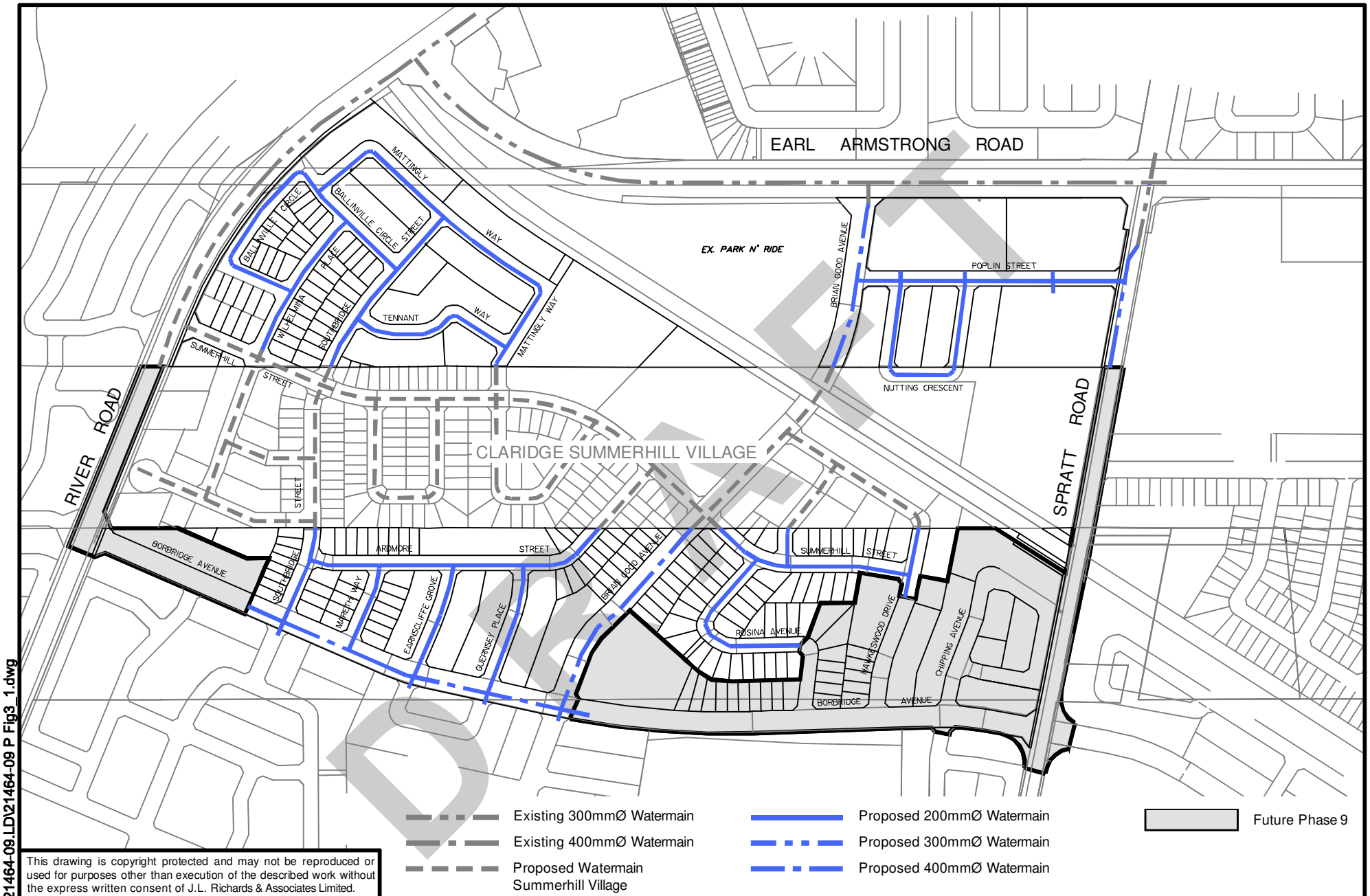
files checklist.docx
18K

4624 Spratt Road, infrastructure.pdf
636K

AODA Checklist.docx
251K

APPENDIX B

- RSDC Phase 9 – Figure 3.1 Water Servicing Plan
- City of Ottawa Boundary Conditions
- Watermain Demand Calculation Sheet
- FUS Fire Flow Requirement Calculation
- Modeling Output Files
- Hydrant Coverage Plan



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Tel: 613 728 3571
Fax: 613 728 6012

PROJECT:
RIVERSIDE SOUTH
PHASE 9
CITY OF OTTAWA

DRAWING:
WATER SERVICING
PLAN

DESIGN: J.L.P.
DRAWN: T.B.
CHECKED: J.L.P.
PLOTTED: Oct09,2012

DRAWING NO.:
FIGURE 3.1

JLR NO:
21464-09

File Location: V:\21464-09.LD\21464-09 P Fig3_1.dwg

Boundary Conditions
4624 Spratt Road

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	63	1.05
Maximum Daily Demand	158	2.63
Peak Hour	347	5.78
Fire Flow Demand #1	14,000	233.33

Location

Results – Existing Conditions

Connection 1 – Spratt Rd.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	130.8	55.8
Peak Hour	125.0	47.6
Max Day plus Fire 1	123.1	44.8

Ground Elevation = 91.5 m

Connection 2 – Nutting Cres.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	130.8	56.5
Peak Hour	125.0	48.3
Max Day plus Fire 1	106.7	22.2

Ground Elevation = 91.1 m

Results – SUC Zone Reconfiguration

Connection 1 – Spratt Rd.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.3	79.3
Peak Hour	145.4	76.6
Max Day plus Fire 1	141.5	71.0

Ground Elevation = 91.5 m

Connection 2 – Nutting Cres.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	147.3	80.0
Peak Hour	145.4	77.3
Max Day plus Fire 1	125.1	48.4

Ground Elevation = 91.1 m

Notes

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

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

IBI GROUP
333 PRESTON STREET
OTTAWA, ONTARIO
K1S 5N4

WATERMAIN DEMAND CALCULATION SHEET

PROJECT : 4624 Spratt Road
CLIENT : Claridge Homes

FILE: 135856-6.4.4
DATE PRINTED: 15-Aug-22
DESIGN: WZ
PAGE: 1 OF 1

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	SINGLE FAMILY UNITS	TOWNHOUSE / BACK TO BACK UNITS	MEDIUM DENSITY UNITS	POPULATION	INDUST. (ha)	COMM. (ha)	INSTIT. (ha)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
Block 'A'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'B'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'C'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'D'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'E'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'F'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'G'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'H'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'J'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Block 'K'		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
Commercial Block						0.30			0.10	0.10		0.24	0.24		0.54	0.54	14,000
Total		**120**		**252.0**				**0.82**		**0.91**	**2.04**		**2.29**	**4.49**		**5.03**	

POPULATION DENSITY

Single Family	3.4 persons/unit
Semi Detached & Townhouse	2.7 persons/unit
2 Bedroom Unit	2.1 persons/unit
Medium Density	1.8 persons/unit

WATER DEMAND RATES

Residential	280 l/cap/day

PEAKING FACTORS

Maximum Daily Residential	2.5 x avg. day
Maximum Hourly Residential	2.2 x max. day

FIRE DEMANDS

Single Family	10,000 l/min (166.7 l/s)
Semi Detached & Townhouse	10,000 l/min (166.7 l/s)
Medium Density	15,000 l/min (250 l/s)

ICI Areas

INST	28,000 L/Ha/day
COM	28,000 L/Ha/day
IND	35,000 L/Ha/day
	17000 L/Ha/day

WATERMAIN DEMAND CALCULATION SHEET (by Nodes)

IBI GROUP
333 PRESTON STREET
OTTAWA, ONTARIO
K1S 5N4

PROJECT : 4624 Spratt Road
CLIENT : Claridge Homes

FILE: 135856-6.4.4
DATE PRINTED: 14-Dec-22
DESIGN: WZ
PAGE: 1 OF 1

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	SINGLE FAMILY UNITS	TOWNHOUSE / BACK TO BACK UNITS	MEDIUM DENSITY UNITS	POPULATION	INDUST. (ha)	COMM. (ha)	INSTIT. (ha)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
J01		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J02		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J03		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J04		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J05		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J06		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J07		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J08																	14,000
J09		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J10		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J11		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J12						0.30			0.10	0.10		0.24	0.24		0.54	0.54	14,000
J13		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J14																	14,000
J15		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J16		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J17		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J18		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J19		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J20		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J21		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
J22		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J23		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J24		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J25		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J26		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
J27		12		25.2				0.08		0.08	0.20		0.20	0.45		0.45	14,000
J28		3		6.3				0.02		0.02	0.05		0.05	0.11		0.11	14,000
J29		6		12.6				0.04		0.04	0.10		0.10	0.22		0.22	14,000
Total		**120**		**252.0**				**0.82**		**0.91**	**2.04**		**2.29**	**4.49**		**5.03**	

POPULATION DENSITY

Single Family	3.4 persons/unit
Semi Detached & Townhouse	2.7 persons/unit
2 Bedroom Unit	2.1 persons/unit
Medium Density	1.8 persons/unit

WATER DEMAND RATES

Residential	280 l/cap/day

PEAKING FACTORS

Maximum Daily Residential	2.5 x avg. day
Maximum Hourly Residential	2.2 x max. day

FIRE DEMANDS

Single Family	10,000 l/min (166.7 l/s)
Semi Detached & Townhouse	10,000 l/min (166.7 l/s)
Medium Density	15,000 l/min (250 l/s)

ICI Areas

INST	28,000 L/Ha/day
COM	28,000 L/Ha/day
IND	35,000 L/Ha/day
	17000 L/Ha/day

4624 Spratt Road - Fire Flow Requirement from Fire Underwriters Survey

Building Floor Area Block 'B'

Floor area	445.4	m^2
Storey	3	
Area	1,336.2	m^2

$F = 220C\sqrt{A}$

C	1.5	
A	1,336	m^2
F	12,063	l/min
use	12,000	l/min

C = 1.5 wood frame
1.0 ordinary
0.8 non-combustile
0.6 fire-resistive

Occupancy Adjustment

-25% non-combustile
-15% limited combustile
0% combustile
+15% free burning
+25% rapid burning

Use	-15%	
Adjustment	-1800	l/min
Fire flow	10,200	l/min

Sprinkler Adjustment

Use	0%	
Adjustment	0	l/min

Exposure Adjustment

Building Face	Separation (m)	Adjacent Exposed Wall			Exposure Charge *
		Length	Stories	L*H Factor	
north	22.0	18	2	36	7%
east	29.0	25	3	76	8%
south	18.2	25	3	76	13%
west	30.0	18	3	54	7%
Total					35%

Adjustment	3,570	l/min
Total adjustments	3,570	l/min
Fire flow	13,770	l/min
Use	**14,000**	**l/min**
	233.3	**l/s**

* Exposure charges from Techinical Bulletin ISTB 2018-02 Table G5

4624 Spratt Road - Fire Flow Requirement from Fire Underwriters Survey

Building Floor Area Block 'E'

Floor area	445.4	m^2
Storey	3	
Area	1,336.2	m^2

$F = 220C\sqrt{A}$

C	1.5		C =	1.5 wood frame
A	1,336	m^2		1.0 ordinary
				0.8 non-combustile
F	12,063	l/min		0.6 fire-resistive
use	12,000	l/min		

Occupancy Adjustment

Use	-15%		
Adjustment	-1800	l/min	
Fire flow	10,200	l/min	

-25% non-combustile
-15% limited combustile
0% combustile
+15% free burning
+25% rapid burning

Sprinkler Adjustment

Use	0%	
Adjustment	0	l/min

Exposure Adjustment

Building Face	Separation (m)	Adjacent Exposed Wall			Exposure Charge *
		Length	Stories	L*H Factor	
north	18.2	18	3	54	11%
east	33.5	25	3	75	5%
south	10.6	18	3	54	16%
west	33.2	18	3	54	5%
Total					37%

Adjustment	3,774	l/min
Total adjustments	3,774	l/min
Fire flow	13,974	l/min
Use	**14,000**	**l/min**
	233.3	**l/s**

* Exposure charges from Techinical Bulletin ISTB 2018-02 Table G5

4624 Spratt Road - Fire Flow Requirement from Fire Underwriters Survey

Building Floor Area Block 'F'

Floor area	422.9	m^2
Storey	3	
Area	1,268.7	m^2

$F = 220C\sqrt{A}$

C	1.5		C =	1.5 wood frame
A	1,269	m^2		1.0 ordinary
				0.8 non-combustile
F	11,754	l/min		0.6 fire-resistive
use	12,000	l/min		

Occupancy Adjustment

		-25%	non-combustile
		-15%	limited combustile
Use	-15%	0%	combustile
		+15%	free burning
Adjustment	-1800 l/min	+25%	rapid burning
Fire flow	10,200 l/min		

Sprinkler Adjustment

Use	0%
Adjustment	0 l/min

Exposure Adjustment

Building Face	Separation (m)	Adjacent Exposed Wall			Exposure Charge *
		Length	Stories	L*H Factor	
north	22.3	18	3	54	11%
east	33.2	25	3	75	5%
south	34.7	25	3	75	5%
west	16.0	18	2	36	11%
Total					32%

Adjustment	3,264	l/min
Total adjustments	3,264	l/min
Fire flow	13,464	l/min
Use	**13,000**	**l/min**
	216.7	**l/s**

* Exposure charges from Techinical Bulletin ISTB 2018-02 Table G5

4624 Spratt Road - Fire Flow Requirement from Fire Underwriters Survey

Building Floor Area Block 'H'

Floor area	445.4	m^2
Storey	3	
Area	1,336.2	m^2

$F = 220C\sqrt{A}$

C	1.5	
A	1,336	m^2
F	12,063	l/min
use	12,000	l/min

C = 1.5 wood frame
1.0 ordinary
0.8 non-combustile
0.6 fire-resistive

Occupancy Adjustment

-25% non-combustile
-15% limited combustile
0% combustile
+15% free burning
+25% rapid burning

Use	-15%	
Adjustment	-1800	l/min
Fire flow	10,200	l/min

Sprinkler Adjustment

Use	0%	
Adjustment	0	l/min

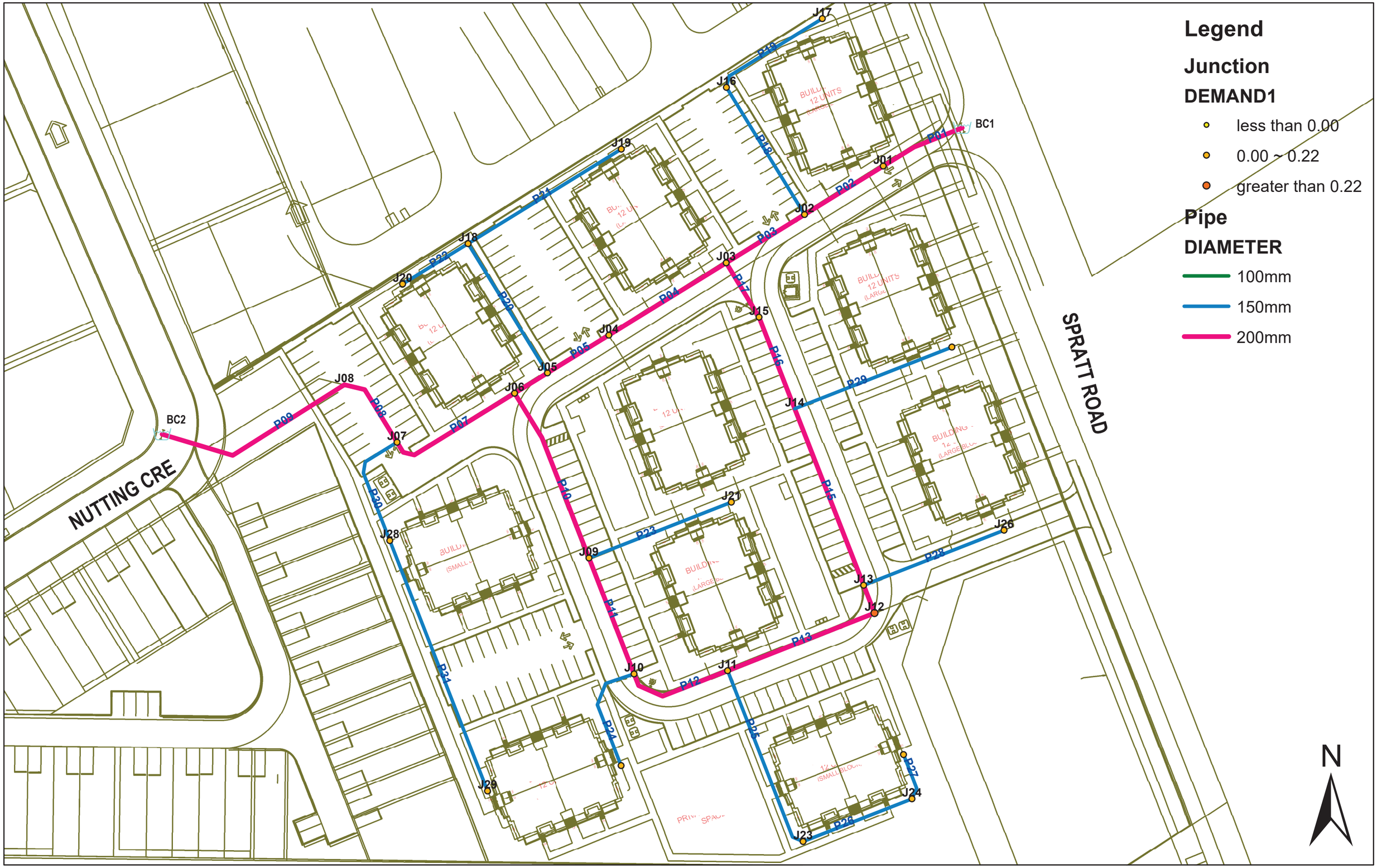
Exposure Adjustment

Building Face	Separation (m)	Adjacent Exposed Wall			Exposure Charge *
		Length	Stories	L*H Factor	
north	10.6	18	3	54	11%
east	42.0	25	3	75	5%
south	24.4	25	3	75	8%
west	28.3	18	3	54	7%
Total					31%

Adjustment	3,162	l/min
Total adjustments	3,162	l/min
Fire flow	13,362	l/min
Use	**13,000**	**l/min**
	216.7	**l/s**

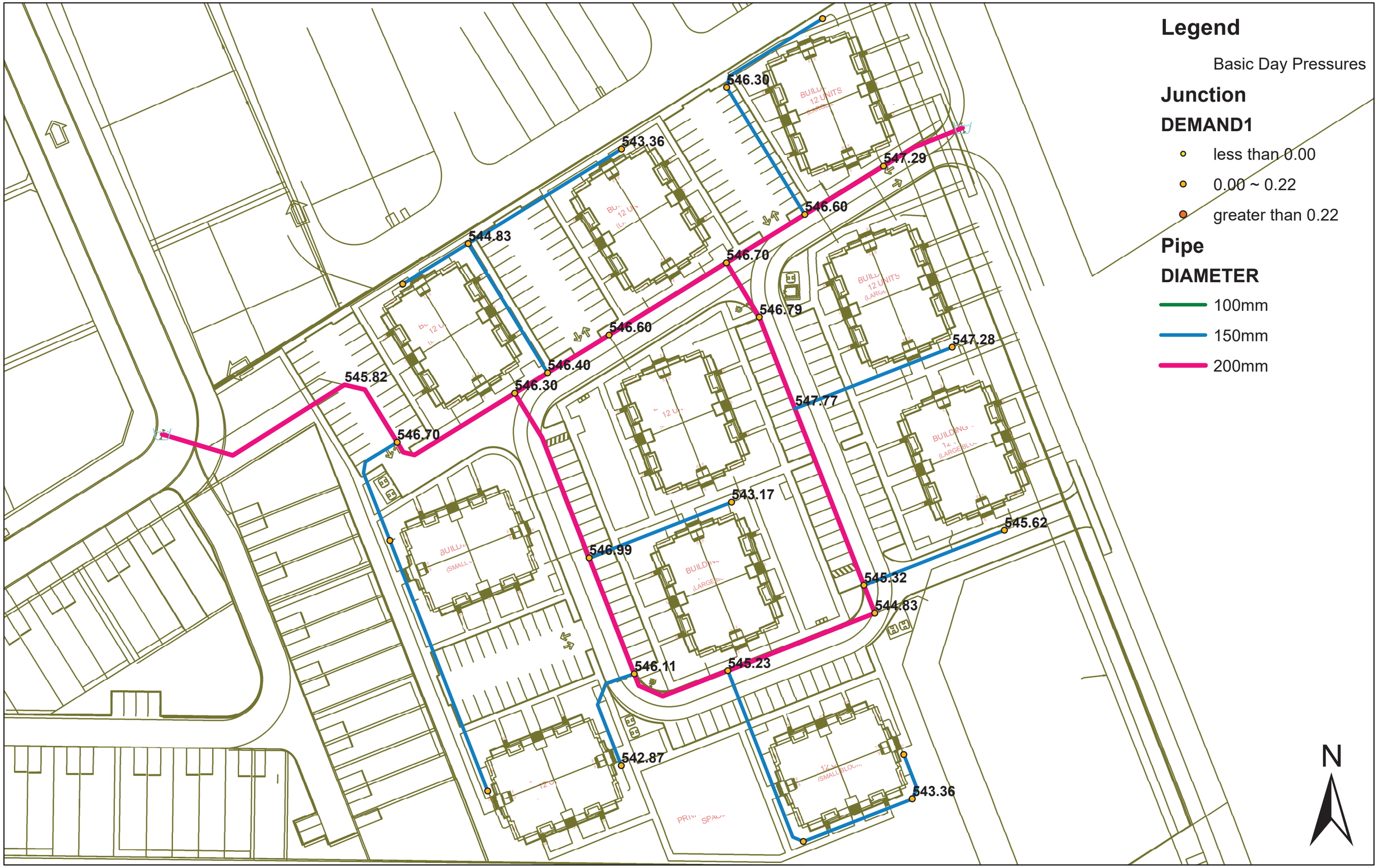
* Exposure charges from Techinical Bulletin ISTB 2018-02 Table G5

Nodes and Pipes Layout



Date: 2022-12-14

Basic Day Pressures (kPa)



Legend

Basic Day Pressures

Junction

DEMAND1

- less than 0.00
- 0.00 ~ 0.22
- greater than 0.22

Pipe

DIAMETER

- 100mm
- 150mm
- 200mm

Date: 2022-12-14

Basic Day Pressures (kPa)

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	☐	J01	0.04	91.45	147.30	547.29
2	☐	J02	0.04	91.52	147.30	546.60
3	☐	J03	0.02	91.51	147.30	546.70
4	☐	J04	0.04	91.52	147.30	546.60
5	☐	J05	0.02	91.54	147.30	546.40
6	☐	J06	0.02	91.55	147.30	546.30
7	☐	J07	0.02	91.51	147.30	546.70
8	☐	J08	0.00	91.60	147.30	545.82
9	☐	J09	0.04	91.48	147.30	546.99
10	☐	J10	0.02	91.57	147.30	546.11
11	☐	J11	0.02	91.66	147.30	545.23
12	☐	J12	0.10	91.70	147.30	544.83
13	☐	J13	0.02	91.65	147.30	545.32
14	☐	J14	0.00	91.40	147.30	547.77
15	☐	J15	0.02	91.50	147.30	546.79
16	☐	J16	0.02	91.55	147.30	546.30
17	☐	J17	0.02	91.85	147.30	543.37
18	☐	J18	0.02	91.70	147.30	544.83
19	☐	J19	0.02	91.85	147.30	543.36
20	☐	J20	0.04	91.85	147.30	543.36
21	☐	J21	0.08	91.87	147.30	543.17
22	☐	J22	0.02	91.90	147.30	542.87
23	☐	J23	0.04	91.85	147.30	543.36
24	☐	J24	0.02	91.85	147.30	543.36
25	☐	J25	0.02	91.95	147.30	542.38
26	☐	J26	0.04	91.62	147.30	545.62
27	☐	J27	0.08	91.45	147.30	547.28
28	☐	J28	0.02	91.80	147.30	543.85
29	☐	J29	0.04	91.88	147.30	543.07

Peak Hour Pressures (kPa)

Legend

Peak Hour Pressures

Junction

DEMAND1

- less than 0.00
- 0.00 ~ 0.22
- greater than 0.22

Pipe

DIAMETER

- 100mm
- 150mm
- 200mm

527.66
524.71
528.65
527.95
526.18
528.04
528.14
527.94
527.75
527.65
527.18
528.05
529.11
528.62
524.50
526.95
528.33
526.66
526.17
527.44
526.56
524.21
524.69

N

Date: 2022-12-14

Peak Hour Pressures (kPa)

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	☐	J01	0.22	91.45	145.40	528.65
2	☐	J02	0.22	91.52	145.40	527.95
3	☐	J03	0.11	91.51	145.40	528.04
4	☐	J04	0.22	91.52	145.40	527.94
5	☐	J05	0.11	91.54	145.40	527.75
6	☐	J06	0.11	91.55	145.40	527.65
7	☐	J07	0.11	91.51	145.40	528.05
8	☐	J08	0.00	91.60	145.40	527.18
9	☐	J09	0.22	91.48	145.40	528.33
10	☐	J10	0.11	91.57	145.40	527.44
11	☐	J11	0.11	91.66	145.40	526.56
12	☐	J12	0.54	91.70	145.40	526.17
13	☐	J13	0.11	91.65	145.40	526.66
14	☐	J14	0.00	91.40	145.40	529.11
15	☐	J15	0.11	91.50	145.40	528.14
16	☐	J16	0.11	91.55	145.40	527.66
17	☐	J17	0.11	91.85	145.40	524.72
18	☐	J18	0.11	91.70	145.40	526.18
19	☐	J19	0.11	91.85	145.40	524.71
20	☐	J20	0.22	91.85	145.40	524.71
21	☐	J21	0.45	91.87	145.39	524.50
22	☐	J22	0.11	91.90	145.40	524.21
23	☐	J23	0.22	91.85	145.39	524.70
24	☐	J24	0.11	91.85	145.39	524.69
25	☐	J25	0.11	91.95	145.39	523.71
26	☐	J26	0.22	91.62	145.40	526.95
27	☐	J27	0.45	91.45	145.40	528.62
28	☐	J28	0.11	91.80	145.40	525.21
29	☐	J29	0.22	91.88	145.40	524.42

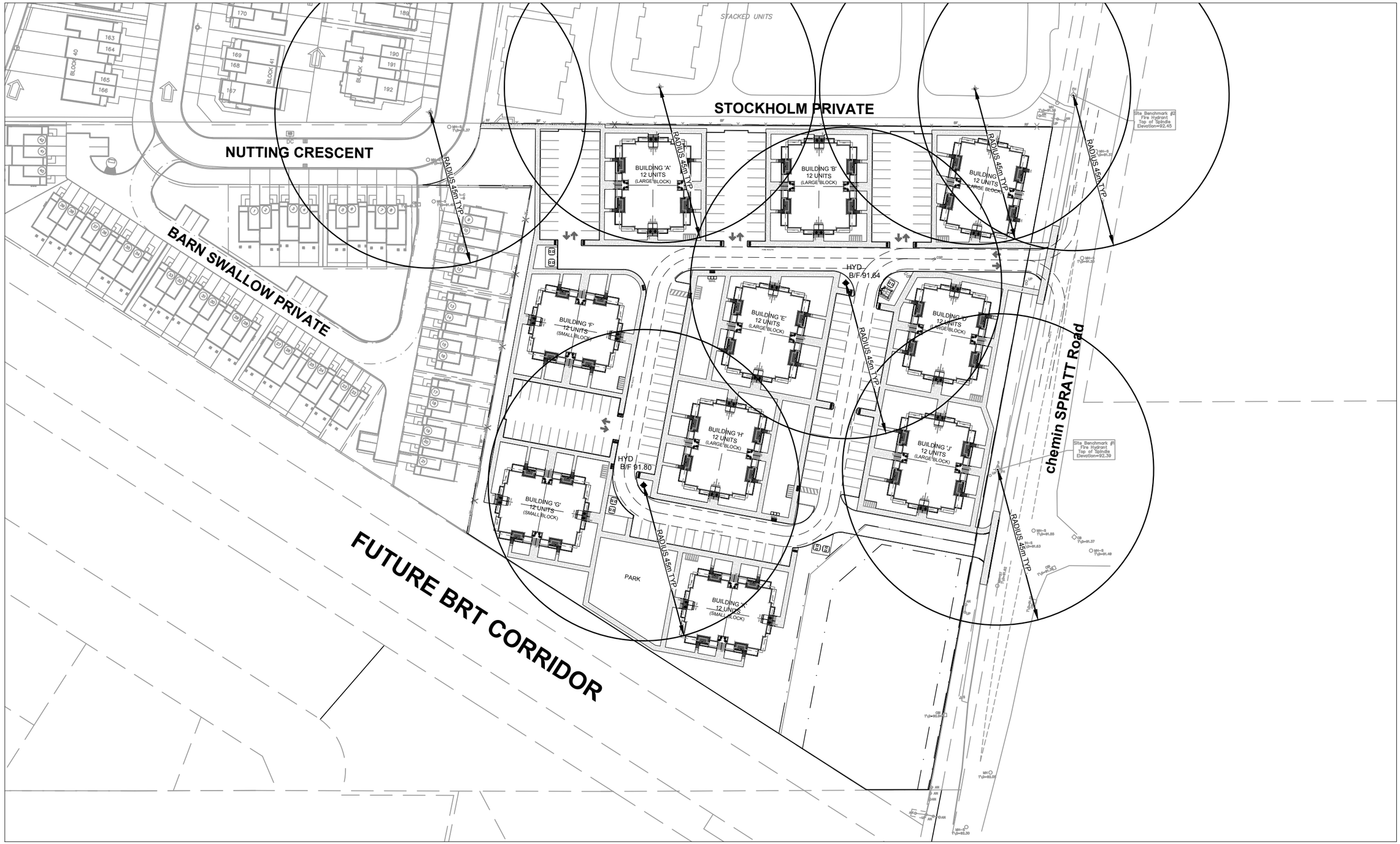
Max Day + Fire Flow 233.33 L/s

Date: 2022-12-14

Max Day + Fire Flow 233.33 L/s

		ID	Static Demand (L/s)	Static Pressure (kPa)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (kPa)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (kPa)
1	☐	J10	0.05	418.92	134.32	233.33	267.16	350.30	139.96
2	☐	J15	0.05	434.12	135.80	233.33	308.04	448.38	139.96

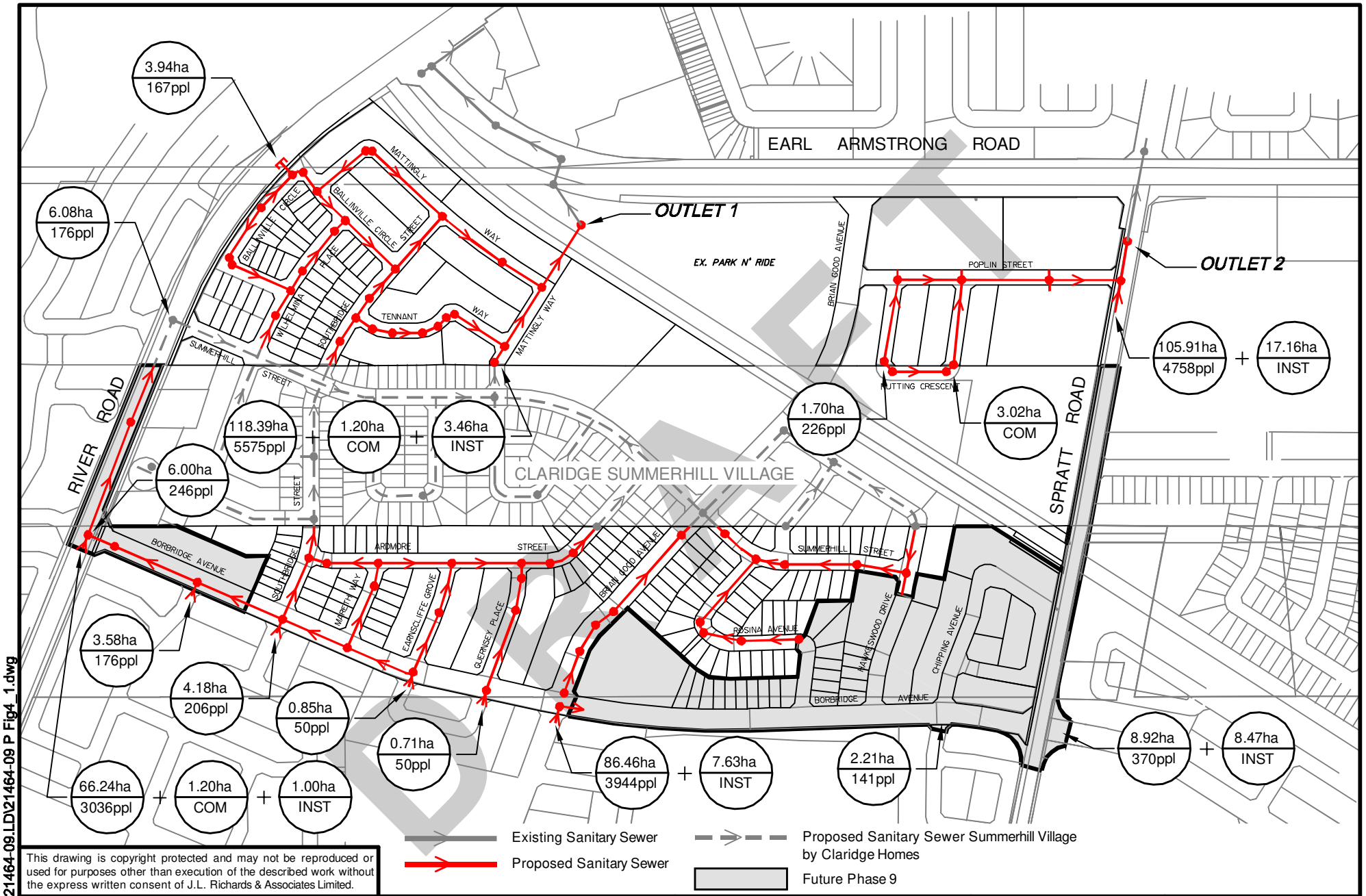
J:\135856_4624_Spratt_\7.0_Production\7.03_Design\04_Civil\Content\Markups\Figure2HydrantCoverage.dwg Plotted At: 6/21/2022 Last Saved By: stefan.geisser Last Saved At: Jun. 21, 22



Scale	Project Title	Drawing Title	Sheet No.
1:1000	ZENS 4624 SPRATT	HYDRANT COVERAGE	FIGURE 2

APPENDIX C

- RSDC Phase 9 Figure 4.1 Sanitary Servicing Plan
- RSDC Phase 9 Sanitary Drainage Plan
- RSDC Phase 9 Sanitary Sewer Design Sheet
- Sanitary Drainage Area Plan Drawing 400
- Sanitary Sewer Design Sheet



J.L.Richards
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864 Lady Ellen Place
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K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

PROJECT:
RIVERSIDE SOUTH
PHASE 9
CITY OF OTTAWA

DRAWING:
SANITARY
SERVICING PLAN

DESIGN: G.D.
DRAWN: T.B.
CHECKED: J.L.P.
PLOTTED: Oct09,2012

DRAWING NO.:
FIGURE 4.1

JLR NO:
21464-09

File Location: V:\21464-09.LD\21464-09 P Fig4_1.dwg

EXISTING RESIDENTIAL

PUFFIN COURT

BLOCK 85

BLOCK 84

BLOCK 80

BLOCK 94

EARL ARMSTRONG ROAD

PHASE 9

SPRATT ROAD

POPLIN STREET

BRIAN COXALL AVENUE

NUTTING CRESCENT

FUTURE PHASE 8

FUTURE COMMERCIAL (BY OTHERS)

FUTURE RESIDENTIAL (BY OTHERS)

EX. PARK+ RIDE

FUTURE RTC

TRANSIT CORRIDOR

SUMMERHILL VILLAGE BY OTHERS

HAWKESWOOD DRIVE

CHIPPING AVENUE

LEGEND

- PROPOSED ELBOW CATCHBASIN
- PROPOSED TEE CATCHBASIN
- CATCH BASIN
- HYDRANT
- SANITARY SEWER & MANHOLE
- LOT NUMBER
- DRAINAGE BOUNDARY
- AREA IN HECTARES / NUMBER OF UNITS
- PHASING LIMIT

NO.	ISSUE	DATE
9	ISSUED FOR MYLARS	AUG. 23, 2012
8	REVISED STORM SEWER ON SPRATT ROAD AND STUBS ON POPLIN STREET	JUNE 27, 2012
7	ISSUED FOR CONSTRUCTION	MAY 30, 2012
6	REVISED PER CITY COMMENTS & LEGAL	MAY 18, 2012
5	REVISED PER CITY COMMENTS / TENDER	MAR. 05, 2012
4	REVISED PER CITY COMMENTS	DEC. 09, 2011
3	REVISED PER CITY COMMENTS	SEPT. 06, 2011
2	REVISED PER CITY COMMENTS & LEGAL	APR. 28, 2011
1	SUBMITTED TO CITY FOR REVIEW	OCT. 13, 2010

SCALE: 1:1000

RIVERSIDE SOUTH DEVELOPMENT CORPORATION (RSDC)

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864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

J.L.Richards
ENGINEERS·ARCHITECTS·PLANNERS

PROFESSIONAL STAMP

PROJECT NORTH

PROJECT:
RIVERSIDE SOUTH
PHASE 9

CITY OF OTTAWA

DRAWING:
SANITARY
DRAINAGE PLAN

DESIGN: G.D.	DRAWING NO.: D2-SAN
DRAWN: T.S.	
CHECKED: J.P.	JLR NO: 21464-09
PLOTTED: Aug 23, 2012	

File Location: V:\21464.09 LDS\21464.09 C D-SAN.dwg

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

CITY OF OTTAWA
RIVERSIDE SOUTH DEVELOPMENT CORPORATION
RIVERSIDE SOUTH PHASE 9

SANITARY SEWER CALCULATION SHEET

DESIGN PARAMETERS

Population Density (Singles)	=	3.2	pers/unit	Commercial	=	50,000	L/d/ha (Peaking Factor = 1.5)
Population Density (Stacks, Towns)	=	2.4	pers/unit	Institutional	=	50,000	L/d/ha (Peaking Factor = 1.5)
Population Density (Mixed)	=	1.9	pers/unit	Light Industrial	=	35,000	L/d/ha (Peaking Factor = Per MOE Graph)
Per Capita Flow (Residential)	=	350	L/cap/d	Infiltration (Residential)	=	0.28	L/s/ha
				Manning's Coefficient, n	=	0.013	

LEGEND

DENOTES FUTURE OR EXISTING SEWERS, AND EXTERNAL FLOWS

BY: G.C. Dumencu, EIT	**PROJECT:** Riverside South Development Corporation Riverside South Phase 9			
CHECKED: J.L. Párraga, P.Eng.	**LOCATION:** City of Ottawa			
JLR NO.: 21464-09	**DATE:** Oct-11	**REVISED:** Apr-11 Aug-11	**REVISED:** Dec-11 Feb-12	**REVISED:** May-12 Jun-12	**REVISED:** Sep-12 FINAL

STREET	PHASE	MH NUMBER		RESIDENTIAL									COMMERCIAL			INSTITUTIONAL				ICI	INFILTRATION				Peak Design Flow (L/s)	Qd/Qcap	SEWER DATA						UPSTREAM					DOWNSTREAM					REMARKS	CAPACITY OK?
				NUMBER OF UNITS					CUMULATIVE		Peaking Factor	Pop. Flow (L/s)	Area (ha)	Cum. Area (L/s)	Comm. Flow (L/s)	Area (ha)	Cum. Area (ha)	Peaking Factor	Institut. Flow (L/s)	Peak ICI Flow (L/s)	Total Area (ha)	Cum. Area (ha)	Infiltration Flow (L/s)				Dia. (mm)	Slope (%)	Q full (L/s)	V full (m/s)	V partial (m/s)	Length (m)	Prop. Centreline	Obvert Drop	Obvert	Invert	Cover	Prop. Centreline	Obvert Drop	Obvert	Invert	Cover		
		FROM	TO	Singles	Towns	Stacks	Total Units	Pop. (people)	Area (ha)	Pop. (people)	Area (ha)																																	
Southeast Quadrant																																											
FUTURE (STANTEC 2c & 2d)	FUT	STUB	150							3,944	86.46	3.34	53.34				7.63	7.63		6.62	6.62	7.63	94.09	26.35	86.31	0.56	525	0.12	155.42	0.70	0.72	20.62	91.00		88.235	87.710	2.77	91.00		88.210	87.685	2.79	Stantec OBV 88.21	Y
BORBRIDGE AVE	FUT 9	150	214						0.15	3,944	86.61	3.34	53.34				1.06	8.69		7.54	7.54	1.21	95.30	26.68	87.57	0.56	525	0.12	155.42	0.70	0.73	63.48	91.00		88.210	87.685	2.79	90.85		88.134	87.609	2.72		Y
BORBRIDGE AVE	FUT 9	214	213	2			2	6	0.41	3,950	87.02	3.34	53.42					8.69		7.54	7.54	0.41	95.71	26.80	87.76	0.56	525	0.12	155.42	0.70	0.73	113.90	90.85		88.134	87.609	2.72	91.52		87.997	87.472	3.52		Y
BORBRIDGE AVE	FUT 9	213	160	8			8	26	0.70	3,976	87.72	3.34	53.73					8.69		7.54	7.54	0.70	96.41	26.99	88.26	0.57	525	0.12	155.42	0.70	0.72	114.99	91.52		87.997	87.472	3.52	92.40		87.859	87.334	4.54		Y
ROSINA AVENUE	FUT 9	163 (E)	162	1			1	3	0.13	3	0.13	4.00	0.05									0.13	0.13	0.04	0.09	0.00	200	1.17	37.01	1.14	0.18	9.18	92.30		89.000	88.800	3.30	92.40		88.893	88.693	3.51		Y
ROSINA AVENUE	FUT 9	162	161	1			1	3	0.13	6	0.26	4.00	0.10									0.13	0.26	0.07	0.18	0.00	200	1.17	37.01	1.14	0.27	9.18	92.40		88.893	88.693	3.51	92.35		88.785	88.585	3.56		Y
ROSINA AVENUE	FUT 9	161	160	5			5	16	0.38	22	0.64	4.00	0.36									0.38	0.64	0.18	0.54	0.01	200	1.17	37.01	1.14	0.42	79.17	92.35		88.785	88.585	3.56	92.40		87.859	87.659	4.54		Y
BORBRIDGE AVE	FUT 9	160	190						0.22	3,998	88.58	3.33	53.99					8.69		7.54	7.54	0.22	97.27	27.24	88.77	0.57	525	0.12	155.42	0.70	0.72	85.95	92.40		87.859	87.334	4.54	92.50		87.756	87.230	4.74		Y
HAWKESWOOD DRIVE	FUT 9	180 (S)	193		4		4	10	0.14	10	0.14	4.00	0.16									0.14	0.14	0.04	0.19	0.01	200	0.65	27.59	0.85	0.25	30.67	92.10		88.554	88.353	3.55	91.88		88.354	88.154	3.53		Y
HAWKESWOOD DRIVE	FUT 9	193	193A	1	12		13	32	0.89	42	1.03	4.00	0.67									0.89	1.03	0.29	0.96	0.04	200	0.40	21.64	0.67	0.35	19.51	91.88		88.354	88.154	3.53	91.93		88.276	88.076	3.65		Y
HAWKESWOOD DRIVE	FUT 9	193A	192							42	1.03	4.00	0.67										1.03	0.29	0.96	0.04	200	0.40	21.64	0.67	0.35	59.06	91.93		88.276	88.076	3.65	92.52		88.039	87.839	4.48		Y
HAWKESWOOD DRIVE	FUT 9	192	191	1	2		3	8	0.13	50	1.16	4.00	0.80									0.13	1.16	0.32	1.13	0.05	200	0.40	21.64	0.67	0.38	16.50	92.52		88.039	87.839	4.48	92.39		87.973	87.773	4.42		Y
HAWKESWOOD DRIVE	FUT 9	191	190	3	4		7	19	0.35	69	1.51	4.00	1.11									0.35	1.51	0.42	1.54	0.07	200	0.40	21.64	0.67	0.40	54.60	92.39		87.973	87.773	4.42	92.50		87.756	87.555	4.74		Y
BORBRIDGE AVE	FUT 9	190	212						0.20	4,067	90.29	3.33	54.81					8.69		7.54	7.54	0.20	98.98	27.71	90.07	0.58	525	0.12	155.42	0.70	0.73	84.27	92.50		87.756	87.230	4.74	92.60		87.655	87.130	4.95		Y
CHIPPING AVENUE	FUT 9	205 (W)	204		11		11	26	0.41	26	0.41	4.00	0.43									0.41	0.41	0.11	0.54	0.03	200	0.33	19.66	0.61	0.27	70.71	92.88		89.524	89.324	3.36	92.64		89.290	89.090	3.35		Y
CHIPPING AVENUE	FUT 9	204	203		6		6	14	0.33	41	0.74	4.00	0.66									0.33	0.74	0.21	0.87	0.04	200	0.33	19.66	0.61	0.32	14.50	92.64		89.290	89.090	3.35	92.70		89.242	89.042	3.46		Y
CHIPPING AVENUE	FUT 9	203	202		12		12	29	0.36	70	1.10	4.00	1.13									0.36	1.10	0.31	1.44	0.07	200	0.33	19.66	0.61	0.37	47.30	92.70		89.242	89.042	3.46	92.58		89.086	88.886	3.49		Y
CHIPPING AVENUE	FUT 9	202	201		12		12	29	0.40	98	1.50	4.00	1.59									0.40	1.50	0.42	2.01	0.10	200	0.33	19.66	0.61	0.41	58.85	92.58		89.086	88.886	3.49	92.70		88.892	88.692	3.81		Y
CHIPPING AVENUE	FUT 9	205 (E)	206						0.02		0.02	4.00										0.02	0.02	0.01	0.01	0.00	200	0.33	19.66	0.61	0.02	8.04	92.88		89.488	89.288	3.39	92.86		89.461	89.261	3.40		Y
CHIPPING AVENUE	FUT 9	206	207		9		9	22	0.35	22	0.37	4.00	0.35									0.35	0.37	0.10	0.45	0.02	200	0.33	19.66	0.61	0.25	76.26	92.86		89.461	89.261	3.40	92.77		89.210	89.010	3.56		Y
CHIPPING AVENUE	FUT 9	207	208		1		1	2	0.08	24	0.45	4.00	0.39									0.08	0.45	0.13	0.51	0.03	200	0.33	19.66	0.61	0.25	10.84	92.77		89.210	89.010	3.56	92.75		89.174	88.974	3.58		Y
CHIPPING AVENUE	FUT 9	208	209		14		14	34	0.44	58	0.89	4.00	0.93									0.44	0.89	0.25	1.18	0.06	200	0.33	19.66	0.61	0.36	62.33	92.75		89.174	88.974	3.58	92.47		88.968	88.768	3.50		Y
CHIPPING AVENUE	FUT 9	209	201		1		1	2	0.05	60	0.94	4.00	0.97									0.05	0.94	0.26	1.23	0.06	200	0.33	19.66	0.61	0.38	23.07	92.47		88.968	88.768	3.50	92.70		88.892	88.692	3.81		Y
CHIPPING AVENUE	FUT 9	201	200		3		3	7	0.10	166	2.54	4.00	2.68									0.10	2.54	0.71	3.39	0.17	200	0.33	19.66	0.61	0.45	17.53	92.70		88.892	88.692	3.81	92.36		88.834	88.634	3.53		Y
CHIPPING AVENUE	FUT 9	200	212		6		6	14	0.25	180	2.78	4.00	2.92									0.25	2.78	0.78	3.70	0.10	200	1.24	38.13	1.18	0.76	46.65	92.36		88.834	88.634	3.53	92.60	0.600	88.255	88.055	4.35		Y
FUTURE DEVELOPMENT	FUT	STUB	212		59		59	141	2.21	141	2.21	4.00	2.28									2.21	2.21	0.62	2.90	0.15	200	0.33	19.66	0.61	0.46	20.78	92.68		87.723	87.523	4.96	92.60		87.655	87.455	4.95		Y
BORBRIDGE AVE	FUT 9	212	211						0.03	4,388	95.31	3.30	58.61					8.69		7.54	7.54	0.03	104.00	29.12	95.27	0.61	525	0.12	155.42	0.70	0.73	20.11	92.60		87.655	87.130	4.95	92.47		87.631	87.106	4.84		Y
BORBRIDGE AVE	FUT 9	211	7						0.27	4,388	95.58	3.30	58.61					8.69		7.54	7.54	0.27	104.27	29.20	95.35	0.61	525	0.12	155.42	0.70	0.73	97.77	92.47		87.631	87.106	4.84	93.00		87.513	86.988	5.49	Stantec OBV 87.51	Y
SPRATT ROAD (STANTEC 3a)	FUT	STUB	7							370	8.92	4.00	6.00				8.47	8.47		7.35	7.35	8.47	17.39	4.87	18.22	0.12	525	0.12	155.42	0.70	0.48	20.96	93.00		87.539	87.014	5.46	93.00		87.513	86.988	5.49		Y
SPRATT ROAD	FUT	7	2						1.41	4,758	105.91	3.26	62.93					17.16		14.90	14.90	1.41	123.07	34.46	112.28	0.72	525	0.12	155.42	0.70	0.74	549.08	93.00		87.513	86.988	5.49	91.35		86.855	86.330	4.50		Y
Northeast Quadrant (Flow East to Spratt Road via Poplin Street)																																											
NUTTING CRESCENT	9	33 (W)	34						0.02		0.02	4.00										0.02	0.02	0.01	0.01	0.00	200	2.00	48.39	1.49		12.36	91.35		88.629	88.429	2.72	91.35		88.382	88.182	2.97		Y
NUTTING CRESCENT	9	34	23		24		24	58	0.75	58	0.77	4.00	0.93									0.75	0.77	0.22	1.15	0.05	200	0.40	21.64	0.67	0.39	106.50	91.35		88.382	88.182	2.97	91.10		87.956	87.756	3.14		Y
POPLIN STREET	9	23	22		2		2	5	0.29	62	1.06	4.00	1.01									0.29	1.06	0.30	1.31	0.06	200	0.40	21.64	0.67	0.40	83.73	91.10		87.956	87.756	3.14	91.20		87.621	87.421	3.58		Y
CLARIDGE RESIDENTIAL	FUT IBI	STUB	33 (E)			94	94	226	1.70	226	1.70	4.00	3.66									1.70	1.70	0.48	4.13	0.21	200	0.33	19.66	0.61	0.49	9.00	91.35		88.562	88.362	2.79	91.35		88.533	88.333	2.82		Y
NUTTING CRESCENT	9	33 (E)	32	2			2	5	0.20	231	1.90	4.00	3.74									0.20	1.90	0.53	4.27	0.15	200	0.65	27.59	0.85	0.63	66.94	91.35		88.533	88.333	2.82	91.37		88.098	87.898	3.27		Y
NUTTING CRESCENT	9	32	31						0.02	231	1.92	4.00	3.74									0.02	1.92	0.54	4.27	0.20	200	0.40	21.64	0.67	0.53	9.86	91.37		88.098	87.898	3.27	91.37		88.058	87.858	3.31		Y
CLARIDGE COMMERCIAL	FUT IBI	STUB	31									4.00		3.02	3.02	2.62					2.62	3.02	3.02	0.85	3.47	0.18	200	0.33	19.66	0.61	0.46	9.01	91.37		88.088	87.888	3.28	91.37		88.058	87.859	3.31		Y
NUTTING CRESCENT	9	31	22		23		23	55	0.69	286	2.61	4.00	4.63		3.02	2.62					2.62	0.69	5.63	1.58	8.83	0.41	200	0.40	21.64	0.67	0.64	109.38	91.37		88.058	87.858	3.31	91.20		87.621	87.421	3.58		Y
POPLIN STREET	9	22	22A		1		1	2	0.11	351	3.78	4.00	5.68		3.02	2.62					2.62	0.11	6.80	1.90	10.21	0.47	200	0.40	21.64	0.67	0.66	38.16	91.20		87.621	87.421	3.58	91.00		87.468	87.268	3.53		Y
FUTURE STACKS	FUT 9	STUB (N)	22A			106	106	254	1.41	254	1.41	4.00	4.12									1.41	1.41	0.39	4.52	0.23	200	0.33	19.66	0.61	0.51	9.00	91.10		87.911	87.712	3.19	91.00	0.413	87.881	87.681	3.12	INV to INV drop = 0.413 m < 0.6 m (no drop pipe req'd)	Y
POPLIN STREET	9	22A	21						0.11	605	5.30	3.93	9.63		3.02	2.62					2.62	0.11	8.32	2.33	14.58	0.67	200	0.40	21.64	0.67	0.71	59.61	91.00		87.468	87.268	3.53	91.09		87.230	87.030	3.86		Y
FUTURE STACKS	FUT 9	STUB (S)	21			104	104	250	1.30	250	1.30	4.00	4.04									1.30	1.30	0.36	4.41	0.22	200	0.33	19.66	0.61	0.49	9.00	91.27		87.259	87.059	4.01	91.09		87.230	87.030	3.86		Y
FUTURE COMMERCIAL	FUT 9	STUB (N)	21									4.00		1.23	1.23	1.07					1.07	1.23	1.23	0.34	1.41	0.07	200	0.33	19.66	0.61	0.36	9.00	91.27		87.259	87.059	4.01	91.09		87.230	87.030	3.86		Y
POPLIN STREET	9	21	2						0.16	855	6.76	3.84	13.30		4.25	3.69					3.69	0.16	11.01	3.08	20.08	0.31	300	0.40	63.80	0.87	0.79	93.77	91.09		87.230	86.930	3.86	91.35		86.855	86.555	4.50		Y
SPRATT ROAD	9	2	1 (AECOM STUB)						0.28	5,613	112.95	3.20	72.71		4.25	3.69		17.16		14.90	18.59	0.28	134.36	37.62	128.92	0.83	525	0.12	155.42	0.70	0.78	41.25	91.35		86.855	86.330	4.50	91.08	1.130	86.805	86.280	4.27	Ex. Aecom Stub INV 85.15	Y
SPRATT ROAD	9	1 (AECOM STUB)	EX. (STANTEC 111)						1.38	5,613	114.33	3.20	72.71		4.25	3.69		17.16		14.90	18.59	1.38	135.74	38.01	129.31	0.83	525	0.12	155.42	0.70	0.78		91.08	AECOM STUB INV.	**85.150**									
								STANTEC POP	**6,216**												STANTEC AREA	**146.27**		**137.40**																			

CLIENT

CLARIDGE HOMES

210 Gladstone Ave. Ottawa, On K0P 0Y6

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-15
2	REVISED PER CITY COMMENTS	2022-08-15
3	REVISED PER CITY COMMENTS	2022-12-16

SEE 010, FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
I.D. K. Tannoulopoulos
2022-12-16
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
W. ZHUANG
100231427
2022-12-16
PROVINCE OF ONTARIO

IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT

ZENS - 4624 SPRATT

PROJECT NO: 135856	
DRAWN BY: **D.D./S.G.**	CHECKED BY: **A.Z.**
PROJECT MGR: **R.M.**	APPROVED BY: **R.M./D.Y.**

SHEET TITLE

SANITARY DRAINAGE AREA PLAN

SHEET NUMBER	ISSUE
C-400	3

CITY FILE No. D07-12-22-0021

CITY PLAN No. 18727

SCALE CHECK 1:500

File Location: J:\135856_4624_Spratt_1^0_Production\7.03_Design\04_Civil\Sheets\C-400 SANITARY DRAINAGE AREA PLAN.dwg Last Saved: December 16, 2022, by stefan gesser Plotted: Friday, December 16, 2022 9:16:21 AM by Stefan Gesser

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

Spratt Road Zens
City of Ottawa
Claridge Homes

LOCATION				RESIDENTIAL										ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW	PROPOSED SEWER DESIGN						
				AREA w/ Units (Ha)	UNIT TYPES				AREA w/o Units (Ha)	POPULATION		RES PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)						ICI PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)		FLOW				CAPACITY	LENGTH	DIA	SLOPE	VELOCITY (full)	AVAILABLE CAPACITY	
STREET	AREA ID	FROM MH	TO MH		SF	SD	TH	APT		IND	CUM			INSTITUTIONAL		COMMERCIAL		INDUSTRIAL				IND	CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(m/s)	L/s	(%)
														IND	CUM	IND	CUM	IND	CUM														
Nutting Crescent	MH130A	MH130A	MH131A	0.04				3		6.3	6.3	3.75	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.04	0.04	0.01	0.00	0.00	0.09	24.19	33.05	200	0.50	0.746	24.11	99.63%
	MH131A	MH131A	MH132A	0.12				3		6.3	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.12	0.16	0.05	0.00	0.00	0.20	20.24	40.25	200	0.35	0.624	20.04	98.99%
	MH140A	MH140A	MH132A	0.15				12		25.2	25.2	3.69	0.30	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.15	0.15	0.05	0.00	0.00	0.35	20.24	33.33	200	0.35	0.624	19.89	98.27%
	MH132A	MH132A	MH133A	0.09				6		12.6	50.4	3.65	0.60	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.09	0.40	0.13	0.00	0.00	0.73	20.24	27.19	200	0.35	0.624	19.51	96.40%
	MH133A	MH133A	MH102A	0.04				0		0.0	50.4	3.65	0.60	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.04	0.44	0.15	0.00	0.00	0.74	20.24	8.25	200	0.35	0.624	19.50	96.34%
	MH170A	MH170A	MH101A	0.07				6		12.6	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.07	0.07	0.02	0.00	0.00	0.18	20.24	34.92	200	0.35	0.624	20.07	99.13%
	MH190A	MH190A	MH100A	0.05				3		6.3	6.3	3.75	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.05	0.12	0.04	0.00	0.00	0.12	20.24	31.38	200	0.35	0.624	20.13	99.43%
	MH100A	MH100A	MH101A	0.10				12		25.2	31.5	3.68	0.38	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.10	0.10	0.03	0.00	0.00	0.41	20.24	30.78	200	0.35	0.624	19.83	97.98%
	MH101A	MH101A	MH102A	0.05				0		0.0	44.1	3.66	0.52	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.05	0.22	0.07	0.00	0.00	0.60	20.24	12.64	200	0.35	0.624	19.65	97.06%
	MH102A	MH102A	MH103A	0.03				0		0.0	94.5	3.60	1.10	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.03	0.69	0.23	0.00	0.00	1.33	20.24	35.38	200	0.35	0.624	18.91	93.43%
	MH180A	MH180A	MH103A	0.07				6		12.6	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.07	0.07	0.02	0.00	0.00	0.18	20.24	33.65	200	0.35	0.624	20.07	99.13%
	MH103A	MH103A	MH104A	0.14				12		25.2	132.3	3.57	1.53	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.14	0.90	0.30	0.00	0.00	1.83	20.24	24.91	200	0.35	0.624	18.42	90.98%
	MH121A	MH121A	MH120A	0.06				3		6.3	6.3	3.75	0.08	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.06	0.06	0.02	0.00	0.00	0.10	20.24	19.13	200	0.35	0.624	20.15	99.52%
	MH120A	MH120A	MH110A	0.03				3		6.3	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.03	0.09	0.03	0.00	0.00	0.18	20.24	11.54	200	0.35	0.624	20.06	99.10%
	MH110A	MH110A	MH111A					0		0.0	12.6	3.72	0.15	0.00	0.00	0.00	0.30	0.00	0.00	1.50	0.15	0.30	0.39	0.13	0.00	0.00	0.43	20.24	32.53	200	0.35	0.624	19.81	97.88%
	MH123A	MH123A	MH111A	0.06				6		12.6	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.06	0.06	0.02	0.00	0.00	0.17	20.24	32.17	200	0.35	0.624	20.07	99.15%
	MH111A	MH111A	MH112A	0.06				3		6.3	31.5	3.68	0.38	0.00	0.00	0.00	0.30	0.00	0.00	1.50	0.15	0.06	0.51	0.17	0.00	0.00	0.69	20.24	12.58	200	0.35	0.624	19.55	96.58%
	MH112A	MH112A	MH113A	0.13				3		6.3	37.8	3.67	0.45	0.00	0.00	0.00	0.30	0.00	0.00	1.50	0.15	0.13	0.64	0.21	0.00	0.00	0.81	20.24	9.81	200	0.35	0.624	19.43	96.01%
	MH113A	MH113A	MH114A	0.05				3		6.3	44.1	3.66	0.52	0.00	0.00	0.00	0.30	0.00	0.00	1.50	0.15	0.05	0.69	0.23	0.00	0.00	0.90	20.24	12.23	200	0.35	0.624	19.34	95.56%
	MH151A	MH151A	MH150A	0.07				6		12.6	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.07	0.07	0.02	0.00	0.00	0.18	20.24	31.52	200	0.35	0.624	20.07	99.13%
	MH152A	MH152A	MH150A	0.08				6		12.6	12.6	3.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.08	0.08	0.03	0.00	0.00	0.18	20.24	34.99	200	0.35	0.624	20.06	99.12%
	MH150A	MH150A	MH114A	0.07				0		0.0	25.2	3.69	0.30	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.07	0.22	0.07	0.00	0.00	0.37	20.24	37.84	200	0.35	0.624	19.87	98.15%
	MH114A	MH114A	MH115A	0.03				3		6.3	75.6	3.62	0.89	0.00	0.00	0.00	0.30	0.00	0.00	1.50	0.15	0.03	0.94	0.31	0.00	0.00	1.34	20.24	45.54	200	0.35	0.624	18.90	93.36%
	MH115A	MH115A	MH104A	0.17				12		25.2	100.8	3.59	1.17	0.00	0.00	0.00	0.30	0.00	0.00	1.50	0.15	0.17	1.11	0.37	0.00	0.00	1.69	20.24	8.32	200	0.35	0.624	18.55	91.66%
	MH104A	MH104A	MH105A	0.11				3		6.3	239.4	3.49	2.71	0.00	0.00	0.00	0.30	0.00	0.00	1.00	0.10	0.11	2.12	0.70	0.00	0.00	3.51	20.24	27.20	200	0.35	0.624	16.73	82.66%
	MH105A	MH105A	MH106A	0.07				3		6.3	245.7	3.49	2.78	0.00	0.00	0.00	0.30	0.00	0.00	1.00	0.10	0.07	2.19	0.72	0.00	0.00	3.60	20.24	33.59	200	0.35	0.624	16.64	82.21%
	MH106A	MH106A	*EX MH31*	0.14				3		6.3	252.0	3.49	2.85	0.00	0.00	0.00	0.30	0.00	0.00	1.00	0.10	0.14	2.33	0.77	0.00	0.00	3.72	20.24	25.28	200	0.35	0.624	16.53	81.64%
				2.08				120		252.0	TRUE						0.30					2.38								200				

Design Parameters:

Residential			ICI Areas			
SF	3.4	p/p/u				
TH/SD	2.7	p/p/u	INST	28,000	L/Ha/day	
APT	2.1	p/p/u	COM	28,000	L/Ha/day	
Other	60	p/p/Ha	IND	35,000	L/Ha/day	MOE Chart
				17000	L/Ha/day	

*** All units will be 2-bedrooms stacked townhouses**

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

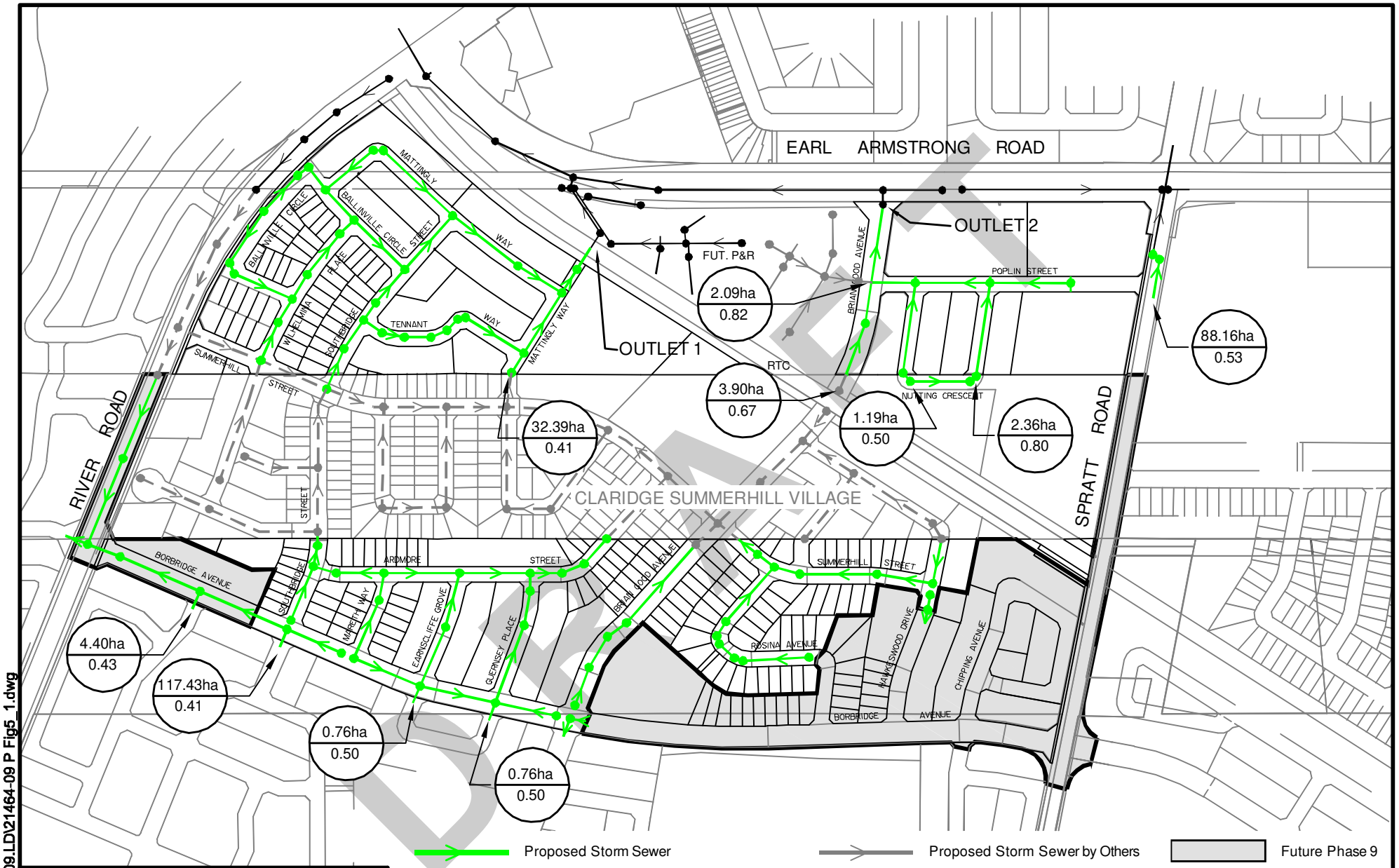
Designed:	W.Z. & R.M.
Checked:	D.G.Y.
Dwg. Reference:	135856-400

No.	Revision	Date
1.	Servicing Brief - Submission No. 1	2021-12-14
2	Servicing Brief - Submission No. 2	2022-08-15

File Reference:		Date:	Sheet No:
135856-6.04.04		2021-12-14	1 of 1

APPENDIX D

- RSDC Phase 9 Figure 5.1 Storm Servicing Plan
- RSDC Phase 9 Storm Drainage Plan
- RSDC Phase 9 Storm Sewer Design Sheet
- RSDC Phase 9 - Figure 5.2 Storm Drainage Plan
- RSDC Phase 9 - Table 5.3 Allowable Inlet Capture Rate
- Storm Drainage Area Plan Drawing 500
- Ponding Plan 600
- Storm Sewer Design Sheet



J.L.Richards
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864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

PROJECT: RIVERSIDE SOUTH PHASE 9
CITY OF OTTAWA

DRAWING: STORM SERVICING PLAN

DESIGN: G.D.
DRAWN: K.T.K.
CHECKED: J.L.P.
PLOTTED: Oct09,2012

DRAWING NO.: **FIGURE 5.1**
JLR NO: 21464-09

File Location: V:\21464-09.LD\21464-09 P Fig5_1.dwg

EXISTING RESIDENTIAL

PUFFIN COURT

BLOCK 85

BLOCK 84

BLOCK 80

EARL ARMSTRONG ROAD

SPRATT ROAD

POPLIN STREET

NUTTING CRESCENT

CHIPPING AVENUE

HAWKESWOOD DRIVE

EX. PARK + RIDE

FUTURE RTC

FUTURE RESIDENTIAL (BY OTHERS)

FUTURE COMMERCIAL (BY OTHERS)

FUTURE PHASE 8

SUMMERHILL VILLAGE BY OTHERS

Inlet Capture Rate
77 l/s/ha x 2.36ha =
181.72 l/s

LEGEND

- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- INTERCONNECTED ROADWAY CB C/W ONE 20.0L/S IPEX TYPE 'A' ICD (OR CITY APPROVED EQUIVALENT)
- CATCH BASIN WITH INDIVIDUAL 20.0 L/S IPEX TYPE 'A' ICD (OR CITY APPROVED EQUIVALENT)
- CATCH BASIN WITH INDIVIDUAL 13.4 L/S CUSTOM MADE ICD (OR CITY APPROVED EQUIVALENT)
- PROPOSED ELBOW CATCHBASIN
- PROPOSED TEE CATCHBASIN
- HYDRANT
- STORM SEWER & MANHOLE
- 250mmø PERFORATED PIPE AS PER CITY OF OTTAWA STANDARD S29
- LOT NUMBER
- DRAINAGE BOUNDARY
- DRAINAGE BOUNDARY BY OTHERS
- AREA IN HECTARES
- RUNOFF COEFFICIENT
- PIPE REACH UPSTREAM MANHOLE TO DOWNSTREAM MANHOLE
- PHASING LIMIT

NO.	ISSUE	DATE
9	ISSUED FOR MYLARS	AUG. 23, 2012
8	REVISED STORM SEWER ON SPRATT ROAD AND STUBS ON POPLIN STREET	JUNE 27, 2012
7	ISSUED FOR CONSTRUCTION	MAY 30, 2012
6	REVISED PER CITY COMMENTS & LEGAL	MAY 18, 2012
5	REVISED PER CITY COMMENTS / TENDER	MAR. 05, 2012
4	REVISED PER CITY COMMENTS	DEC. 09, 2011
3	REVISED PER CITY COMMENTS	SEPT. 06, 2011
2	REVISED PER CITY COMMENTS & LEGAL	APR. 28, 2011
1	SUBMITTED TO CITY FOR REVIEW	OCT. 13, 2010

SCALE: 1:1000

RIVERSIDE SOUTH DEVELOPMENT CORPORATION (RSDC)

J.L.Richards
ENGINEERS·ARCHITECTS·PLANNERS
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864 Lady Ellen Place
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K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

PROFESSIONAL STAMP: J.L. PARRISH 100056079 Jul-08-27 PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT: RIVERSIDE SOUTH PHASE 9

CITY OF OTTAWA

DRAWING: STORM DRAINAGE PLAN

DESIGN: G.D.	DRAWING NO.: D2-STM
DRAWN: T.S.	
CHECKED: J.P.	JLR NO.: 21464-09
PLOTTED: Aug 23, 2012	

File Location: V:\21464-09\1\D2\21464-09 D2-STM.dwg

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STORM SEWER DESIGN SHEET

Spratt Road Zens
City of Ottawa
Claridge Homes

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW														SEWER DATA								
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.25	C= 0.30	C= 0.50	C= 0.57	C= 0.65	C= 0.69	C= 0.70	C= 0.76	C= 0.90	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW IND	FIXED FLOW CUM	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm) DIA	PIPE SIZE (mm) W	PIPE SIZE (mm) H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (2yr) (L/s)	AVAIL CAP (2yr) (%)
Nutting Cresent	MH100, MH100C,D	MH100	MH101				0.07						0.06	0.25	0.25	10.00	0.90	10.90	76.81	104.19	122.14	178.56	19.00	25.78	30.22	44.18	0.00	0.00	19.00	59.68	44.03	300			0.35	0.818	40.68	68.16%
	MH130	MH130	MH131										0.05	0.13	0.13	10.00	0.50	10.50	76.81	104.19	122.14	178.56	9.61	13.03	15.28	22.34	0.00	0.00	9.61	59.68	24.42	300			0.35	0.818	50.07	83.90%
	MH131	MH131	MH132									0.34		0.72	0.84	10.50	1.48	11.98	74.95	101.64	119.13	174.13	63.21	85.72	100.48	146.87	0.00	0.00	63.21	91.46	71.39	375			0.25	0.802	28.24	30.88%
		MH132	MH101											0.00	0.84	11.98	0.10	12.08	69.95	94.78	111.05	162.27	59.00	79.94	93.67	136.87	0.00	0.00	59.00	91.46	4.60	375			0.25	0.802	32.45	35.49%
	MH101	MH101	MH102										0.10	0.25	1.34	12.08	1.33	13.40	69.66	94.37	110.58	161.57	93.41	126.56	148.29	216.68	0.00	0.00	93.41	179.46	64.02	525			0.16	0.803	86.05	47.95%
	MH109, MH109B	MH109	MH110				0.12					0.30		0.80	0.80	10.00	0.11	10.11	76.81	104.19	122.14	178.56	61.49	83.42	97.79	142.96	0.00	0.00	61.49	91.46	5.24	375			0.25	0.802	29.96	32.76%
	MH110	MH110	MH111										0.14	0.35	1.15	10.11	0.99	11.10	76.39	103.62	121.47	177.57	87.92	119.26	139.80	204.37	0.00	0.00	87.92	133.02	47.97	450			0.20	0.810	45.10	33.90%
	MH111	MH111	MH112			0.12								0.10	1.25	11.10	0.20	11.30	72.84	98.74	115.72	169.13	91.12	123.52	144.77	211.58	0.00	0.00	91.12	133.02	9.80	450			0.20	0.810	41.89	31.50%
		MH112	MH113											0.00	1.25	11.30	0.39	11.68	72.16	97.81	114.62	167.51	90.27	122.36	143.39	209.56	0.00	0.00	90.27	133.02	18.77	450			0.20	0.810	42.75	32.14%
	CBMH9. CBMH9B	CBMH9	MH113				0.10					0.13		0.41	0.41	10.00	0.78	10.78	76.81	104.19	122.14	178.56	31.77	43.10	50.53	73.86	0.00	0.00	31.77	59.68	38.44	300			0.35	0.818	27.91	46.77%
	MH113	MH113	MH114									0.20		0.42	2.09	11.68	0.80	12.48	70.89	96.07	112.57	164.51	147.97	200.52	234.97	343.36	0.00	0.00	147.97	179.46	38.39	525			0.16	0.803	31.49	17.55%
		MH114	MH102											0.00	2.09	12.48	0.18	12.66	68.43	92.69	108.60	158.67	142.84	193.47	226.68	331.19	0.00	0.00	142.84	179.46	8.65	525			0.16	0.803	36.62	20.41%
	MH102	MH102	MH103										0.10	0.25	3.68	13.40	0.51	13.91	65.81	89.09	104.36	152.45	242.07	327.72	383.90	560.79	0.00	0.00	242.07	402.33	26.84	750			0.12	0.882	160.25	39.83%
	MH103	MH103	MH104										0.42	1.05	4.73	13.91	0.63	14.55	64.46	87.24	102.19	149.26	304.85	412.61	483.29	705.90	0.00	0.00	304.85	402.33	33.60	750			0.12	0.882	97.47	24.23%
		MH104	*EX Stub*											0.00	4.73	14.55	0.46	15.00	62.86	85.05	99.61	145.47	297.28	402.23	471.08	687.98	0.00	0.00	297.28	402.33	24.13	750			0.12	0.882	105.05	26.11%
						0.12	0.29					0.97	0.87	4.73	TRUE																	750						

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

Notes:
1. Mannings coefficient (n) = 0.013

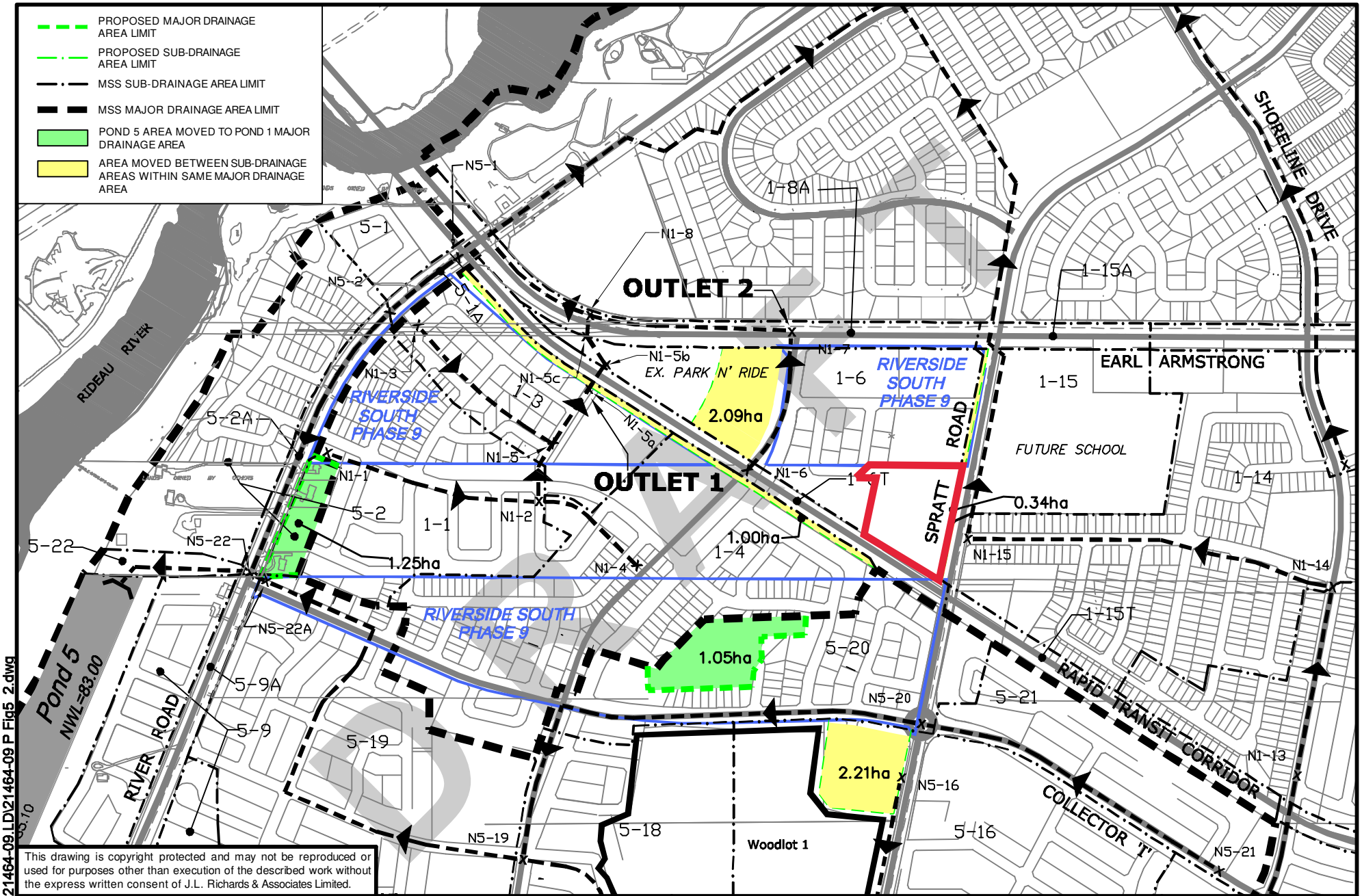
Designed: W.Z. & R.M.

Checked: D.G.Y.

Dwg. Reference: 135856-500

No.	Revision	Date
1.	Servicing Brief - Submission No. 1	2021-11-29

File Reference: 135856.6.04.04
Date: 2021-11-29
Sheet No: 1 of 1



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PROJECT:
RIVERSIDE SOUTH PHASE 9
CITY OF OTTAWA

DRAWING:
STORM DRAINAGE PLAN

DESIGN: OTHER
DRAWN: T.B.
CHECKED: J.L.P.
PLOTTED: Oct05,2011

DRAWING NO.:
FIGURE 5.2

JLR NO:
21464-09

File Location: V:\21464-09.LD\21464-09 P Fig5 2.dwg

Table 5.2: Storm Runoff Coefficients

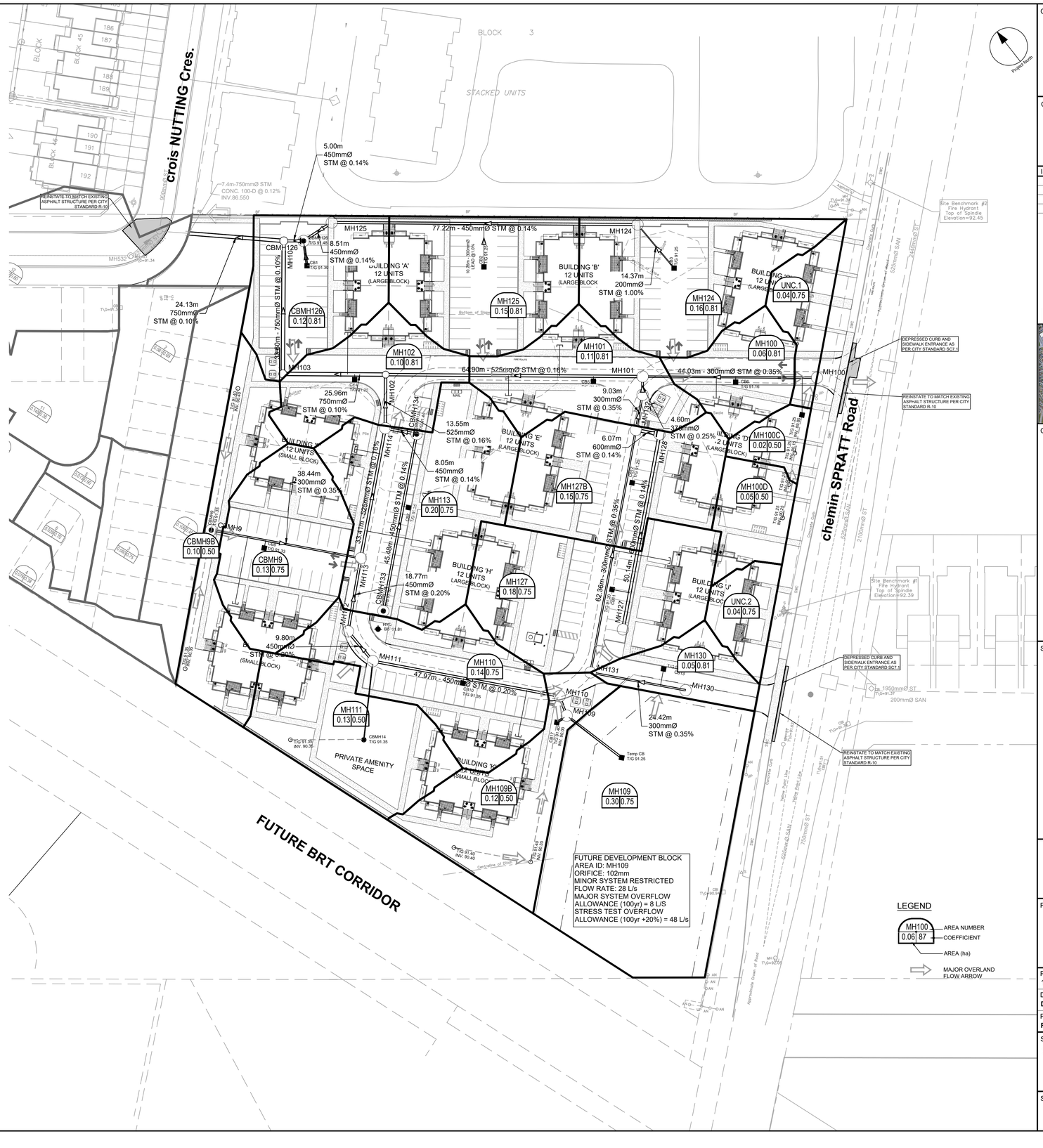
Land Use Description	Runoff Coefficient, C
Residential - Low Density	0.40
Residential - Medium Density	0.50
Residential - High Density	0.60
Core Area	0.80
Commercial Area	0.80
Employment Lands	0.70
Schools	0.40
Institutional (other than school)	0.60
Collector Road/Transitway ROW	0.67
Parkland/Open Space/Hydro/Pipeline Corridor	0.20

Table 5.3: Allowable Inlet Capture Rates

Subcatchment Area ID	Inlet Capture Rate	Subcatchment Area ID	Inlet Capture Rate
1-1	68 L/s/ha	5-1	100 L/s/ha
1-3	57 L/s/ha	5-1A	221 L/s/ha
1-4	83 L/s/ha	5-2	62 L/s/ha
1-6	77 L/s/ha	5-2A	179 L/s/ha
1-6T	151 L/s/ha	5-19	58 L/s/ha
1-15	136 L/s/ha	5-20	77 L/s/ha

5.3.3 Major System

The RSCISSU provides specific design guidelines with regard to on-site storage requirements (refer to Appendix 'F'). On this basis, the provision of 50 m^3/ha of road sag storage is required for all subcatchment areas (i.e., subcatchment areas 1-1 to 1-6, inclusive) that are tributary to the noted outlets in order to meet the RSCISSU requirements. A discussion of major overland flow for RSDC Phase 9 and Claridge Homes Summerhill Village lands is provided in Section 5.5, with detailed calculations included in Appendix 'G'.



CLIENT

CLARIDGE

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-15
2	REVISED PER CITY COMMENTS	2022-08-15
3	REVISED PER CITY COMMENTS	2022-12-16

SEE 010, FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
I.D. K. Yannoulopoulos
2022-12-16
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
W. ZHUANG
100231427
2022-12-16
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PROJECT
ZENS - 4624 SPRATT

PROJECT NO: 135856	
DRAWN BY: **D.D./S.G.**	CHECKED BY: **A.Z.**
PROJECT MGR: **R.M.**	APPROVED BY: **R.M./D.Y.**

SHEET TITLE
STORM DRAINAGE AREA PLAN

SHEET NUMBER	ISSUE
C-500	3

SCALE CHECK

CITY FILE No. D07-12-22-0021

CITY PLAN No. 18727

File Location: J:\135856_4624_Spratt_1\7.0_Production\7.03_Design\04_Civil\Sheets\C-500 STORM DRAINAGE AREA PLAN.dwg Last Saved: December 16, 2022, by stefan.geisler Plotted: Friday, December 16, 2022 9:16:51 AM by Stefan Geisler

CLIENT

CLARIDGE HOMES

210 Gladstone Ave. Ottawa, On K0P 0Y6

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-15
2	REVISED PER CITY COMMENTS	2022-08-15
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SEE 010, FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

CONSULTANTS

1:500 0 5 15 25m

SEAL

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PROJECT

ZENS - 4624 SPRATT

PROJECT NO: 135856	
DRAWN BY: **D.D./S.G.**	CHECKED BY: **A.Z.**
PROJECT MGR: **R.M.**	APPROVED BY: **R.M./D.Y.**

SHEET TITLE

PONDING PLAN

SHEET NUMBER	ISSUE
C-600	3

SCALE CHECK

CITY FILE No. D07-12-22-0021

CITY PLAN No. 18727

File Location: J:\135856_4624_Spratt_\7.0_Production\7.03_Design\04_Civil\Sheets\C-600 PONDING PLAN.dwg Last Saved: December 15, 2022. by stefan.geisser Plotted: Friday, December 16, 2022 9:17:32 AM by Stefan Geisser

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ibigroup.com

STORM SEWER DESIGN SHEET

Spratt Road Zens
City of Ottawa
Claridge Homes

LOCATION				AREA (Ha)										RATIONAL DESIGN FLOW														SEWER DATA									
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.25	C= 0.30	C= 0.50	C= 0.57	C= 0.65	C= 0.69	C= 0.70	C= 0.75	C= 0.81	IND 2.78AC	CUM 2.78AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	2yr PEAK FLOW (L/s)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW IND	FIXED FLOW CUM	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm) DIA	PIPE SIZE (mm) W	PIPE SIZE (mm) H	SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (2yr) (L/s)	AVAIL CAP (2yr) (%)
Nutting Cresent	MH100, MH100C,D	MH100	MH101				0.07						0.06	0.23	0.23	10.00	0.90	10.90	76.81	104.19	122.14	178.56	17.85	24.22	28.39	41.50	0.00	0.00	17.85	59.68	44.03	300			0.35	0.818	41.83	70.09%
	MH130	MH130	MH131										0.05	0.11	0.11	10.00	0.50	10.50	76.81	104.19	122.14	178.56	8.65	11.73	13.75	20.10	0.00	0.00	8.65	59.68	24.42	300			0.35	0.818	51.04	85.51%
		MH131	MH129											0.00	0.11	10.50	1.27	11.77	74.95	101.64	119.13	174.13	8.44	11.44	13.41	19.61	0.00	0.00	8.44	59.68	62.36	300			0.35	0.818	51.24	85.86%
	MH127, MH127B	MH127	MH128									0.33		0.69	0.69	10.00	1.02	11.02	76.81	104.19	122.14	178.56	52.85	71.69	84.04	122.86	0.00	0.00	52.85	239.68	50.14	600			0.14	0.821	186.83	77.95%
		MH128	MH129											0.00	0.69	11.02	0.12	11.14	73.11	99.11	116.15	169.76	50.30	68.19	79.92	116.81	0.00	0.00	50.30	239.68	6.07	600			0.14	0.821	189.37	79.01%
		MH129	MH132											0.00	0.80	11.77	0.18	11.95	70.62	95.70	112.14	163.86	56.54	76.62	89.78	131.20	0.00	0.00	56.54	59.68	9.03	300			0.35	0.818	3.14	5.26%
		MH132	MH101											0.00	0.80	11.95	0.10	12.05	70.04	94.90	111.20	162.49	56.08	75.98	89.03	130.09	0.00	0.00	56.08	91.46	4.60	375			0.25	0.802	35.38	38.68%
	MH101	MH101	MH102										0.11	0.25	1.28	12.05	1.35	13.39	69.75	94.49	110.72	161.78	89.33	121.02	141.80	207.20	0.00	0.00	89.33	179.46	64.90	525			0.16	0.803	90.14	50.23%
	MH109	Temp CB	MH109									0.30		0.63	0.63	10.00	0.36	10.36	76.81	104.19	122.14	178.56	48.04	65.17	76.40	111.69	0.00	0.00	48.04	91.46	17.44	375			0.25	0.802	43.41	47.47%
	MH109B	MH109	MH110				0.12							0.17	0.79	10.36	0.11	10.47	75.44	102.32	119.93	175.31	59.77	81.07	95.02	138.90	0.00	0.00	59.77	91.46	5.24	375			0.25	0.802	31.68	34.64%
	MH110	MH110	MH111									0.14		0.29	1.08	10.47	0.99	11.46	75.04	101.77	119.28	174.36	81.36	110.34	129.33	189.04	0.00	0.00	81.36	133.02	47.97	450			0.20	0.810	51.66	38.83%
	MH111	MH111	MH112				0.13							0.18	1.26	11.46	0.20	11.66	71.63	97.07	113.76	166.25	90.60	122.79	143.89	210.28	0.00	0.00	90.60	133.02	9.80	450			0.20	0.810	42.42	31.89%
		MH112	MH113											0.00	1.26	11.66	0.39	12.05	70.97	96.17	112.70	164.69	89.77	121.65	142.55	208.32	0.00	0.00	89.77	133.02	18.77	450			0.20	0.810	43.25	32.51%
	CBMH9. CBMH9B	CBMH9	MH113				0.10					0.13		0.41	0.41	10.00	0.78	10.78	76.81	104.19	122.14	178.56	31.49	42.72	50.08	73.22	0.00	0.00	31.49	59.68	38.44	300			0.35	0.818	28.19	47.23%
	MH113	CB7	Main									0.20		0.42	0.42	10.00	0.02	10.02	76.81	104.19	122.14	178.56	32.03	43.45	50.93	74.46	0.00	0.00	32.03	48.39	1.40	200			2.00	1.492	16.36	33.81%
		CBMH133	CBMH134											0.00	0.42	10.02	1.12	11.13	76.74	104.11	122.04	178.42	32.00	43.41	50.89	74.40	0.00	0.00	32.00	111.29	45.48	450			0.14	0.678	79.29	71.24%
		CBMH134	MH114											0.00	0.42	11.13	0.20	11.33	72.71	98.56	115.51	168.82	30.32	41.10	48.17	70.40	0.00	0.00	30.32	111.29	8.05	450			0.14	0.678	80.97	72.76%
		MH113	MH114											0.00	1.67	12.05	0.69	12.74	69.75	94.50	110.73	161.80	116.83	158.28	185.46	271.00	0.00	0.00	116.83	179.46	33.41	525			0.16	0.803	62.63	34.90%
		MH114	MH102											0.00	2.09	12.74	0.28	13.02	67.68	91.65	107.38	156.87	141.57	191.73	224.63	328.17	0.00	0.00	141.57	179.46	13.55	525			0.16	0.803	37.89	21.11%
	MH102	MH102	MH103										0.10	0.23	3.60	13.39	0.54	13.93	65.84	89.13	104.41	152.52	236.87	320.68	375.64	548.73	0.00	0.00	236.87	367.27	25.96	750			0.10	0.805	130.40	35.51%
		MH103	MH104											0.00	3.60	13.93	0.70	14.63	64.41	87.17	102.11	149.14	231.73	313.64	367.37	536.58	0.00	0.00	231.73	367.27	33.60	750			0.10	0.805	135.54	36.90%
	MH124	MH124	MH125										0.16	0.36	0.36	10.00	1.90	11.90	76.81	104.19	122.14	178.56	27.67	37.54	44.01	64.33	0.00	0.00	27.67	111.29	77.22	450			0.14	0.678	83.62	75.14%
	MH125	MH125	CBMH126										0.15	0.34	0.70	11.90	0.21	12.11	70.21	95.13	111.47	162.88	49.01	66.41	77.81	113.70	0.00	0.00	49.01	111.29	8.51	450			0.14	0.678	62.28	55.96%
	MH126	CBMH126	MH104										0.12	0.27	0.97	12.11	0.12	12.23	69.56	94.24	110.42	161.34	67.35	91.25	106.92	156.22	0.00	0.00	67.35	111.29	5.00	450			0.14	0.678	43.94	39.48%
		MH104	*EX Stub*											0.00	4.57	14.63	0.50	15.13	62.66	84.78	99.29	145.01	286.12	387.12	453.38	662.12	0.00	0.00	286.12	367.27	24.13	750			0.10	0.805	81.15	22.10%
							0.42					1.10	0.75	4.57	TRUE																	750					

Definitions:
Q = 2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (Ha)
i = Rainfall intensity in millimeters per hour (mm/hr)
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[i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

Notes:
1. Mannings coefficient (n) = 0.013

Designed: W.Z. & R.M.
Checked: D.G.Y.
Dwg. Reference: 135856-500

No.	Revision	Date
1.	Servicing Brief - Submission No. 1	2021-12-14
2	Servicing Brief - Submission No. 2	2022-08-15
3	Servicing Brief - Submission No. 3	2022-12-15

File Reference: 135856.6.04.04
Date: 2021-12-14
Sheet No: 1 of 1

APPENDIX E

- PCSWMM Storm Drainage Area Plan 700
- Stormwater Modeling Files

CLIENT

CLARIDGE HOMES

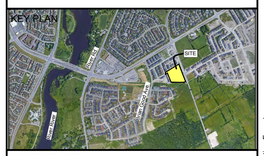
CLARIDGE

210 Gladstone Ave. Ottawa, On K0P 0Y6

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-14
2	REVISED AS PER CITY COMMENTS	2022-08-15

KEY PLAN



CONSULTANTS

LEGEND:

- DRAINAGE AREAS
- S588 / 0.20 | 71 — AREA ID / IMPERVIOUS VALUE / AREA (ha)
- MAJOR FLOW

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
P. SPAL
2022/08/15
PROVINCE OF ONTARIO

IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT

ZENS - 4624 SPRATT ROAD

PROJECT NO: 135856

DRAWN BY:	CHECKED BY:
J.S.F.	**P.S.**
PROJECT MGR: **M.G.**	APPROVED BY:

SHEET TITLE

PCSWMM
DRAINAGE AREA PLAN

SHEET NUMBER	ISSUE
C-700	3

CITY FILE No. D07-XX-XX-XXXX

CITY PLAN No. xxxxx

File Location: J:\135856_4624_Spratt_\7.0_Production\7.03_Design\04_Civil\Sheets\C-700-PCSWMM DRAINAGE AREA PLAN.dwg Last Saved: August 15, 2022 by Jesse-Sebastien Forget Plotted: Monday, August 15, 2022 10:42:00 AM by Jesse-Sebastien Forget

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

CITY OF OTTAWA

RIVERSIDE SOUTH PHASE 9
RIVERSIDE SOUTH DEVELOPMENT CORPORATION
JLR NO. 21464-09

STORM SEWER DESIGN SHEET AND HYDRAULIC GRADE LINE ANALYSIS
1:100 YEAR IDF CURVE

Designed by: GD
Checked by: JLP
Date: Oct-11
Revised: Apr-11, Aug-11, Dec-11, Feb-12, May-12, Jun-12, Sep-12

100 YEAR IDF CURVE
Manning's Coefficient (n) = 0.013

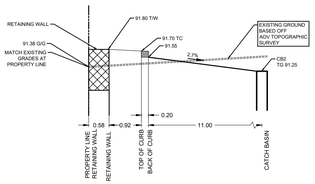
LEGEND
DENOTES FUTURE OR EXISTING SEWERS, AND EXTERNAL FLOWS

STREET	PHASE	MH FROM	MH TO	0.20	0.40	0.45	0.50	0.60	0.67	0.70	0.80	Total Area (ha)	Cum. Area (ha)	2.78AR	Cum. 2.78AR	Time (min)	100-Yr Intens. (mm/hr)	Peak Flow (L/s)	ICD @ 13.4 L/s	ICD @ 20 L/s	ICD Flow (L/s)	Cum. ICD Flow (L/s)	Front & Rear Yards (L/s)	Q_d/Q_{cap}
Northeast Quadrant (Flow North to Earl Armstrong via Brian Good Avenue)																								
FUTURE COMMERCIAL	FUT 9	STUB (N)	521								1.23	1.23	1.23	2.74	2.74	17.92	128.45	351.37				94.71	94.71	0.38
FUTURE STACKS	FUT 9	STUB (S)	521				1.30					1.30	1.30	1.81	1.81	17.75	129.19	233.44				100.10	100.10	0.56
POPLIN STREET	9	521	522A				0.34					0.34	2.87	0.47	5.02	**17.92**	128.45	644.18		2.00	40.00	234.81	234.81	0.50
																19.02								
FUTURE STACKS	FUT 9	STUB (N)	522A						1.41			1.41	1.41	2.63	2.63	13.15	154.11	404.74				108.57	108.57	0.60
POPLIN STREET	9	522A	522				0.06					0.06	4.34	0.08	7.72	**19.02**	123.77	956.09	1.00		13.40	356.78	356.78	0.64
CLARIDGE RESIDENTIAL	FUT IBI	STUB	533 (E)				1.19					1.19	1.19	1.65	1.65	15.00	142.89	236.36				91.63	91.63	0.51
NUTTING CRESCENT	9	533 (E)	532										1.19		1.65	15.00	142.89	236.36		1.00	20.00	111.63	111.63	0.62
NUTTING CRESCENT	9	532	531										1.19		1.65	16.45	135.28	223.77				111.63	111.63	0.62
																16.65								
CLARIDGE COMMERCIAL	FUT IBI	STUB	531								2.36	2.36	2.36	5.25	5.25	20.83	116.89	613.51				181.72	181.72	0.45
NUTTING CRESCENT	9	531	522				0.72					0.72	4.27	1.00	7.90	**20.83**	116.89	923.83	2.00	1.00	46.80	340.15	340.15	0.48
																22.59								
POPLIN STREET	9	522	523				0.30					0.30	8.91	0.42	16.05	**22.59**	110.96	1780.32	1.00	1.00	33.40	730.33	730.33	0.57
																23.92								
NUTTING CRESCENT	9	533 (W)	534													10.00	178.56							
NUTTING CRESCENT	9	534	523				0.59					0.59	0.59	0.82	0.82	10.26	176.23	144.53	1.00	1.00	33.40	33.40	33.40	0.28
																12.00								
POPLIN STREET	9	523	511				0.16					0.16	9.66	0.22	17.09	**23.92**	106.90	1826.74	1.00	2.00	53.40	817.13	817.13	0.64
																24.70								
BRIAN GOOD AVE	IBI	IBI MH 151	STUB (IBI)						3.90			3.90	3.90	7.26	7.26	15.00	142.89	1038.00				506.60	506.60	0.56
																15.24								
BRIAN GOOD AVE	9	STUB (IBI)	513										3.90		7.26	**15.24**	141.58	1028.45				506.60	506.60	0.56
BRIAN GOOD AVE	9	513	512										3.90		7.26	15.59	139.67	1014.60				506.60	506.60	0.56
BRIAN GOOD AVE	9	512	511				0.32					0.32	4.22	0.44	7.71	16.31	135.98	1048.22		2.00	40.00	546.60	546.60	0.61
																17.12								
PARK 'N RIDE	FUT	STUB (FUT. P&R)	511						(at C=0.823)		2.09	2.09	2.09	4.78	4.78	11.50	165.92	793.39				160.93	160.93	0.37
																11.68								
BRIAN GOOD AVE	9	511	EX. MH 102 (AECOM)				0.26					0.26	16.23	0.36	29.94	**24.70**	104.67	3133.67		2.00	40.00	1564.66	1564.66	0.67
												STANTEC AREA	**12.58**			**25.90**					ALLOW. ICD CAPTURE	**1538.31**		
			TOTAL AREAS				5.24		5.31		5.68										STANTEC CAPTURE	**1183.26**		
Northeast Quadrant (Flow North to Earl Armstrong via Spratt Road)																								
STANTEC (N1-11 to N1-15)	FUT		505									87.62	87.62	128.10	128.10	39.80	75.41	9660.53				7490.32	7490.32	0.88
SPRATT ROAD	FUT	505	504										87.62		128.10	39.80	75.41	9660.53				7490.32	7490.32	0.62
SPRATT ROAD	FUT	504	503										87.62		128.10	40.32	74.72	9571.43				7490.32	7490.32	0.62
SPRATT ROAD	9	503	502							0.23		0.23	87.85	0.45	128.55	40.87	74.00	9513.02		2.00	40.00	7530.32	7530.32	0.62
SPRATT ROAD	9	502	501										87.85		128.55	41.45	73.26	9417.87				7530.32	7530.32	0.62
SPRATT ROAD	9	501	EX. STUB (AECOM)										87.85		128.55	41.51	73.18	9407.34				7530.32	7530.32	0.92
SPRATT ROAD	9	EX. STUB (AECOM)	EX. (STANTEC 1-EX)						1.10	0.31		1.41	89.26	2.65	131.20	41.58	73.10	9590.24		2.00	232.50	7762.82	7762.82	0.95
												STANTEC AREA	**89.60**			**42.36**					ALLOW. ICD CAPTURE	**7756.26**		
			TOTAL AREAS						1.10	0.54											STANTEC CAPTURE	**7802.50**		

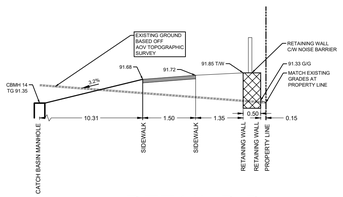
STREET	MH FROM	MH TO	Dia (mm)	Slope (%)	Q full (L/s)	V full (m/s)	V partial (m/s)	Depth of Flow (m)	V surch (m/s)	Length (m)	Flow Time (min)	US Ex. Ground	US Prop. Centreline	US Obvert Drop	US Obvert	US Invert	US Cover	DS Ex. Ground	DS Prop. Centreline	DS Obvert Drop	DS Obvert	DS Invert	DS Cover	f	L/D	K Friction	$V^2/2g$ (m)	Major Losses (m)	Minor Losses Straight	Minor Losses Expans.	Minor Losses Bend	Minor Losses (m)	Total Losses (m)	Applied Losses (m)	HGL U/S (m)	HGL D/S (m)
FUTURE COMMERCIAL	STUB (N)	521	600	0.15	248.09	0.85	0.81	0.256	0.32	6.50	0.13	91.50	91.21		87.249	86.640	3.96	90.80	91.09		87.239	86.630	3.85	0.025	10.663	0.265	0.005	0.001			0.007	0.007	0.009	0.009	87.429	87.420
FUTURE STACKS	STUB (S)	521	525	0.16	179.46	0.80	0.83	0.283	0.45	11.50	0.24	91.50	91.21	0.780	88.038	87.504	3.17	90.80	91.09		88.019	87.486	3.07	0.026	21.560	0.560	0.035	0.020			0.047	0.047	0.067		88.038	88.019
POPLIN STREET	521	522A	825	0.10	469.99	0.85	0.87	0.411	0.43	56.62	1.11	90.80	91.09		87.239	86.401	3.85	90.80	91.20		87.184	86.345	4.02	0.022	67.550	1.508	0.009	0.014	0.001			0.001	0.015	0.015	87.420	87.405
FUTURE STACKS	STUB (N)	522A	525	0.16	179.46	0.80	0.83	0.299	0.49	6.50	0.13	92.50	91.32		87.194	86.660	4.12	90.80	91.20		87.184	86.649	4.02	0.026	12.186	0.316	0.012	0.004			0.016	0.016	0.020	0.020	87.424	87.405
POPLIN STREET	522A	522	825	0.14	560.31	1.02	1.08	0.478	0.65	37.27	0.61	90.80	91.09		87.184	86.345	3.91	91.50	91.35	0.014	87.132	86.293	4.22	0.022	44.464	0.993	0.021	0.021	0.003			0.003	0.024	0.024	87.589	87.565
CLARIDGE RESIDENTIAL	STUB	533 (E)	525	0.16	179.46	0.80			0.41	7.50	0.16	90.88	91.35		87.442	86.908	3.91	91.50	91.35		87.430	86.896	3.92													
NUTTING CRESCENT	533 (E)	532	525	0.16	179.46	0.80	0.83	0.304	0.50	69.92	1.45	91.50	91.35		87.432	86.898	3.92	91.00	91.37		87.320	86.787	4.05	0.026	131.084	3.402	0.013	0.043			0.004	0.004	0.047	0.047	87.513	87.466
NUTTING CRESCENT	532	531	525	0.16	179.46	0.80	0.83	0.304	0.50	9.56	0.20	91.00	91.37		87.320	86.787	4.05	91.25	91.37		87.305	86.771	4.07	0.026	17.923	0.465	0.013	0.006			0.004	0.004	0.010	0.010	87.466	87.456
CLARIDGE COMMERCIAL	STUB	531	750	0.12	402.33	0.88			0.40	7.38	0.14	90.80	91.37		87.312	86.550	4.06	91.25	91.37		87.303	86.541	4.07													
NUTTING CRESCENT	531	522	900	0.14	706.64	1.08	1.09	0.439	0.52	113.69	1.76	91.25	91.37		87.305	86.390	4.07	90.80	91.20		87.146	86.230	4.05	0.022	124.333	2.696	0.014	0.037			0.014	0.014	0.051	0.051	87.456	87.405
POPLIN STREET	522	523	1200	0.10	1286.19	1.10	1.16	0.646	0.63	87.79	1.33	90.80	91.20		87.146	85.926	4.05	90.40	91.10		87.058	85.838	4.04	0.020	72.006	1.419	0.020	0.028	0.003			0.003	0.031	0.031	87.405	87.373
NUTTING CRESCENT	533 (W)	534	375	0.26	93.27	0.82				12.67	0.26	91.50	91.35		87.565	87.184	3.79	91.50	91.35		87.532	87.151	3.82	0.029	33.255	0.965									87.565	87.532
NUTTING CRESCENT	534	523	375	0.43	119.94	1.05	0.90	0.137	0.29	110.23	1.75	91.50	91.35		87.532	87.151	3.82	90.40	91.10		87.058	86.677	4.04	0.029	289.318	8.400	0.004	0.037			0.006	0.006	0.043	0.043	87.532	87.373
POPLIN STREET	523	511	1200	0.10	1286.19	1.10	1.17	0.695	0.70	51.71	0.78	90.40	91.10		87.058	85.838	4.04	90.30	90.30		87.006	85.787	3.29	0.020	42.413	0.836	0.025	0.021			0.025	0.025	0.046	0.046	87.373	87.327
BRIAN GOOD AVE	IBI MH 151	STUB (IBI)	1050	0.10	900.87	1.01			0.57	14.41	0.24				87.134	86.067		91.50	90.80		87.120	86.053	3.68													
BRIAN GOOD AVE	STUB (IBI)	513	1050	0.10	900.87	1.01	1.05	0.565	0.57	21.42	0.35	91.50	90.80		87.120	86.053	3.68	90.90	90.56		87.098	86.031	3.46	0.021	20.079	0.414	0.016	0.007			0.001	0.001	0.007	0.007	87.355	87.348
BRIAN GOOD AVE	513	512	1050	0.10	900.87	1.01	1.05	0.565	0.57	43.46	0.72	90.90	90.56		87.098	86.031	3.46	90.60	90.05		87.055	85.988	3.00	0.021	40.739	0.839	0.016	0.014			0.001	0.001	0.014	0.014	87.362	87.348
BRIAN GOOD AVE	512	511	1050	0.10	900.87	1.01	1.05	0.597	0.61	48.74	0.81	90.60	90.05		87.055	85.988	3.00	90.30	90.30		87.006	85.939	3.29	0.021	45.688	0.941	0.019	0.018	0.003			0.003	0.021	0.021	87.348	87.327
PARK 'N RIDE	STUB (FUT. P&R)	511	675	0.25	438.47	1.19			0.44	13.00	0.18		90.19		87.035	86.350	3.15	90.30	90.30		87.003	86.317	3.30													
																					AECOM INV.	**86.317**														
BRIAN GOOD AVE	511	EX. MH 102 (AECOM)	1500	0.10	2332.02	1.28	1.35	0.914	0.86	92.00	1.20	90.30	90.30		87.006	85.482	3.29	89.75	89.86		86.914	85.390	2.95	0.018	60.367	1.104	0.038	0.041	0.006			0.006	0.047	0.047	87.327	87.280
																					AECOM INV.	**85.390**														
																																		HGL @ N1-7 (per Stantec)		87.280
STANTEC (N1-11 to N1-15)		505	2100	0.22	8484.36	2.37	2.66	1.558	2.10									91.74			86.721	84.587	5.02	0.016			0.224			0.224	0.228	0.452	0.452	0.452	87.383	86.931
SPRATT ROAD	505	504	2400	0.22	12113.35	2.59	2.75	1.366	1.60	81.03	0.52	91.74			86.721	84.283	5.02	91.53			86.543	84.104	4.99	0.016	33.231	0.520	0.131	0.068	0.020			0.020	0.088	0.088	86.931	86.844
SPRATT ROAD	504	503	2400	0.22	12113.35	2.59	2.75	1.366	1.60	85.00	0.55	91.53			86.543	84.104	4.99	91.32			86.356	83.917	4.96	0.016	34.859	0.545	0.131	0.072	0.020			0.020	0.091	0.091	86.844	86.752
SPRATT ROAD	503	502	2400	0.22	12113.35	2.59	2.69	1.390	1.61	90.00	0.58	91.32			86.356	83.917	4.96	91.15			86.158	83.719	4.99	0.016	36.909	0.577	0.133	0.077			0.073	0.073	0.149	0.149	86.752	86.603
SPRATT ROAD	502	501	2400	0.22	12113.35	2.59	2.69	1.390	1.61	10.09	0.06	91.15			85.669	83.719	5.48	91.15			85.647	83.697	5.50	0.016	4.138	0.065	0.133	0.009			0.073	0.073	0.081	0.081	86.603	86.521
SPRATT ROAD	501	EX. STUB (AECOM)	2400	0.10	8166.82	1.75	1.99	1.829	1.61	7.09	0.07	91.15			86.135	83.697	5.01	91.08			86.128	83.690	4.95	0.016	2.908	0.045	0.133	0.006	0.020			0.020	0.026	0.026	86.521	86.495
SPRATT ROAD	EX. STUB (AECOM)	EX. (STANTEC 1-EX)	2400	0.10	8166.82	1.75	2.00	1.878	1.66	82.29	0.78	91.08			86.128	83.690	4.95	91.42			86.038	83.600	5.38	0.016	33.748	0.528	0.141	0.074	0.021			0.021	0.095	0.095	86.495	86.400
															AECOM STUB INV.	**83.690**					EX. INV.	**83.600**														
																																		HGL @ EX. BOX (per Stantec)		86.400

APPENDIX F

- Grading Plan Drawing 200
- Erosion and Sedimentation Control Plan Drawing 900



DETAIL A-A
N.T.S



DETAIL B-B
N.T.S

CLIENT

CLARIDGE HOMES

210 Gladstone Ave. Ottawa, On K0P 0Y6

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-15
2	REVISED PER CITY COMMENTS	2022-08-15
3	REVISED PER CITY COMMENTS	2022-12-16

SEE 010, FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENSED PROFESSIONAL ENGINEER
J.D. de Yannoulopoulos
2022-12-16
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
W. ZHUANG
100231427
2022-12-16
PROVINCE OF ONTARIO

IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT

ZENS - 4624 SPRATT

PROJECT NO: 135856	
DRAWN BY: **D.D./S.G.**	CHECKED BY: **A.Z.**
PROJECT MGR: **R.M.**	APPROVED BY: **R.M./D.Y.**

SHEET TITLE

GRADING PLAN

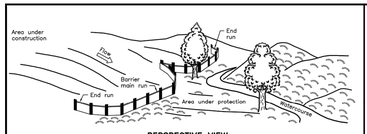
SHEET NUMBER	ISSUE
C-200	3

SCALE CHECK 1:500

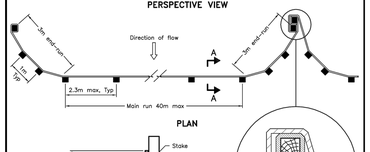
CITY FILE No. D07-12-22-0021

CITY PLAN No. 18727

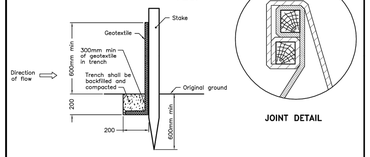
File Location: J:\135856_4624_Spratt_\7.0_Production\7.03_Design\04_Civil\Sheets\C-200 GRADING PLAN.dwg Last Saved: December 16, 2022, by stefan.geisser Plotted: Friday, December 16, 2022 9:15:51 AM by Stefan Geisser



PERSPECTIVE VIEW



PLAN



JOINT DETAIL

SECTION A–A

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

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

NOTES:
1 Number of bales varies and shall suit ditch.
2 Straw bales shall be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
STRAW BALE FLOW CHECK DAM		OPSD 219.180

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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
TEMPORARY ROCK FLOW CHECK DAM V–DITCH		OPSD 219.210

NOTES:

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY,
2. SILT FENCE TO BE ERECTED PRIOR TO EARTH WORKS BEING COMMENCED. SILT FENCE TO BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL START OF SUBSEQUENT PHASE.
3. SILT SACK TO BE PLACED AND MAINTAINED UNDER COVER OF ALL CATCHBASINS. GEOTEXTILE SILT SACK IN STREET CBs TO REMAIN UNTIL ALL CURBS ARE CONSTRUCTED. GEOTEXTILE FABRIC IN RYCBs TO REMAIN UNTIL VEGETATION IS ESTABLISHED. ALL CATCHBASINS TO BE REGULARLY INSPECTED AND CLEANED, AS NECESSARY, UNTIL SOD AND CURBS ARE CONSTRUCTED.
4. WORKS NOTED ABOVE ARE TO BE INSTALLED, INSPECTED, MAINTAINED AND ULTIMATELY REMOVED BY SERVICING CONTRACTOR.
5. THIS IS A "LIVING DOCUMENT" AND MAY BE MODIFIED IN THE EVENT THE PROPOSED CONTROL MEASURES ARE INSUFFICIENT
6. SEE DRAWING C-010 FOR ADDITIONAL DETAILS AND NOTES.

LEGEND :

- LIGHT DUTY SILT FENCE AS PER OPSD-219.110
- SNOW FENCE
- STRAW BALE CHECK DAM AS PER OPSD-219.180
- ROCK CHECK DAM AS PER OPSD-219.210
- CB — SILT SACK PLACED UNDER EXISTING CB COVER
- TEMPORARY MUD MAT 0.15m THICK 50mm CLEAR STONE ON NON WOVEN FILTER CLOTH (7.5 × 15.0)

CLIENT

CLARIDGE HOMES

210 Gladstone Ave. Ottawa, On K0P 0Y6

IBI Group Professional Services (Canada) Inc.
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ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR CITY REVIEW	2021-12-15
2	REVISED PER CITY COMMENTS	2022-08-15
3	REVISED PER CITY COMMENTS	2022-12-16

SEE 010, FOR NOTES, LEGEND, CB TABLE, STREET SECTIONS AND DETAILS

CONSULTANTS

1:500 0 5 15 25m

SEAL

LICENCED PROFESSIONAL ENGINEER
L.D. Mc. Yannoulopoulos
2022-12-16
PROVINCE OF ONTARIO

LICENCED PROFESSIONAL ENGINEER
W. ZHUANG
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2022-12-16
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PROJECT
ZENS - 4624 SPRATT

PROJECT NO: 135856	
DRAWN BY: D.D./S.G.	CHECKED BY: A.Z.
PROJECT MGR: R.M.	APPROVED BY: R.M./D.Y.

SHEET TITLE
EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER	ISSUE
C-900	3

SCALE CHECK

File Location: J:\135856_4624_Spratt_17.0_Production\7.03_Design\04_CivilSheets\C-900 EROSION AND SEDIMENT CONTROL PLAN.dwg Last Saved: December 16, 2022 by stefan geissler Plotted: Friday, December 16, 2022 9:18:05 AM by Stefan Geissler

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CITY PLAN No. 18727