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39 Years

West Capital Airpark Phase 1B-2 Residential (Novatech Phase 2B)

Serviceability and Conceptual Stormwater Management Report

Prepared for: West Capital Developments

West Capital Airpark – Phase 1B-2 Residential

(Novatech Phase 2B)

1500 Thomas Argue Road

Ottawa, Ontario

Serviceability and Conceptual

Stormwater Management Report

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

October 17, 2022

Novatech File: 102085
Ref: R-2022-134

NOVATECH
Engineers, Planners & Landscape Architects

October 17, 2022

City of Ottawa
Planning & Growth Management Department
110 Laurier Avenue West
4th Floor Infrastructure Approvals Division
Ottawa, ON K1P 1J1

Attention: **Jeff Ostafichuk**

Reference: **West Capital Airpark – Phase 1B-2 Residential**
Serviceability and Conceptual Stormwater Management Report
City of Ottawa File No.: D07-16-22-0017
Our File No.: 102085, Phase 2B

Please find enclosed the above-noted report, dated October 17, 2022. This report is submitted in support of the Draft Plan of Subdivision revision application.

If you have any questions or require any additional information, please contact the undersigned.

Yours truly,

NOVATECH

Alex McAuley, P.Eng.
Project Manager | Land Development Engineering

cc: West Capital Developments

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

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102085-1B2-PGS1: Phase 1B-2 Preliminary Grading and Servicing Plan
102085-1B2-PGS2: Phase 1B-2 Preliminary Grading and Servicing Plan

References

Village of Carp Class Environmental Assessment for Water and Wastewater Infrastructure Upgrade/Expansion (1634-00693) dated May 2008, by Stantec

Geotechnical Investigation (PG2450-2) dated July 2013, by Paterson Group

Wastewater Treatment System (14-1125-0011) dated January 2015, by Golder

Phase 1 Residential – SB Sanitary Collection Design Brief dated April 2015, by Clearford

Hydraulic Network Analysis (R-2015-118) dated July 2015, by Novatech

Stormwater Site Management Brief – Residential (Phase 1) (R-2015-060) dated April 2015, by Novatech

1.0 INTRODUCTION

1.0 Background

Novatech has been retained to provide engineering design services for the proposed West Capital Airpark (residential development and business park) located at Carp Airport. The Carp Airport lands are described as Part of Lots 12, 13, 14 and 15 Concession 3, Part of Lots 13 and 14 Concession 4 and part of the Road Allowance between Concession 3 & 4, in the former Township of West Carleton (Huntley Ward), now the City of Ottawa. Refer to **Figure 1** (Key Plan) for the site location.

This Serviceability and Conceptual Stormwater Management Report has been prepared in support of an application for revision to the Draft Plan of Subdivision Approval for the proposed Phase 1B-2 Residential subdivision. Residential Phases 1A, 2A, and 1B-1 are registered and are currently under various stages of construction.

This report outlines the conceptual servicing design for the proposed Phase 1B-2 Residential development with respect to water distribution, sanitary servicing, storm drainage, and stormwater management.

1.1 Proposed Development

In Phase 1B-2, it is proposed to construct a residential subdivision consisting of 77 single family homes and 30 townhouse units, for a total of 107 residential units. The development will include one new private street with extensions to existing Chandelle Private and Albert Boyd Private.

The Draft Plan of Subdivision for Phases 1 and 2 was approved on the basis of 270 single family homes and 59 townhomes, with a corresponding population of 1,077. The Phase 1B-2 development will bring the total unit count to 342, and the total development population will be 1,109 based on the current unit breakdown. This is based on a population per unit of 3.4 person per single family home and 2.7 person per townhouse unit. A summary of the residential unit counts, and population is as follows:

Table 1: Residential Units and Populations

Phase	Single Family Homes	Townhouses	Total Units	Population	Status
1A	77	-	77	262	Registered
1B-1	28	-	28	95	Registered
2A	82	48	130	409	Registered
1B-2	77	30	107	343	Draft Plan Revision Application
Subtotal	264	78	342	1,109	
1 & 2	270	59	329	1077	Draft Approved

Refer to the Concept Plan and Draft Plan for the proposed development concept for Phase 1B-2 Residential.

1.2 Ownership, Operation and Maintenance of Proposed Servicing

The sanitary and water servicing, including the sanitary clarifier tanks, would be private communal systems owned, operated, and maintained by a condominium corporation as common elements. The sewage treatment facility and water storage facility have been constructed and are currently being maintained by Clearford Water Systems Inc.

The right of ways within the West Capital Airpark development will be owned by the condominium as common elements. However, in accordance with the Municipal Capital Facility Development Agreement (MCFDA) the City of Ottawa would be responsible for maintenance, repair, and replacement of the surface works that include roadways, curbs, sidewalks, boulevards, and streetlights, as well as the storm drainage system and the stormwater management facilities.

The City's maintenance responsibilities are included in the Schedule I of the Subdivision Agreement for Phase 1A and 1B (refer to **Appendix A**). The same approach is proposed for Phase 1B-2.

2.0 ROAD DESIGN

The proposed roadways for Phase 1B-2 will consist of the following right-of-way and asphalt widths:

- Chandelle Pvt. extension - 20m right-of-way, 8.5m asphalt width with barrier curbs
- Albert Boyd Pvt. extension - 20m right-of-way, 8.5m asphalt width with barrier curbs
- Street Three - 18m right-of-way, 8.5m asphalt width with barrier curbs.

The proposed cross sections are shown on drawings **102085-1B2-PGS1 and 102085-1B2-PGS2** (Phase 1B-2 Preliminary Grading and Servicing Plans).

The Geotechnical Investigation report (Paterson, July 2013) for Phase 1 of the development provided recommendations for pavement structure, servicing, and foundations. For the residential roadways the recommended pavement structure is as follows:

Table 2: Recommended Pavement Structure (from Geotechnical Investigation Report)

Pavement Material Description	Layer Thickness (mm)
Asphalt Wear Course (Superpave 12.5)	40
Asphalt Base Course (Superpave 19.0)	50
Granular A Base Course	150
Granular B -Type II Subbase	450

3.0 SERVICEABILITY

The objective of the serviceability design is to confirm that a suitable domestic water supply and adequate sanitary and storm servicing can be provided for the proposed development.

3.1 Watermain

The proposed watermain for Phase 1B-2 Residential subdivision would be located on Street Three and would connect to the existing Phase 1B-1 watermain at three locations. The proposed watermain would also provide a stub on Albert Boyd Pvt for connection of future developments to the east. The proposed watermain within Phase 1B-2 is anticipated to be 200mm in diameter on Albert Boyd Pvt and 150mm in diameter on Street Three. The proposed servicing concept for the watermain system is shown on **Figure 2** (Watermain Servicing).

Domestic water supply is provided to the Carp Airport from the Village of Carp municipal water system. Onsite water storage tanks are used to accommodate peak flows and provide fire protection in accordance with the approved Hydraulic Network Analysis (Novatech, July 2015).

The preliminary watermain design is consistent with the recommendations of the Hydraulic Network Analysis (Novatech, July 2015). The hydraulic analysis and model would be updated as part of the detailed design process for Phase 1B-2.

3.1.1 Water Demands

The Village of Carp EA accounts for an allocation of 1.46ML/day to the Draft Plan Approved Carp Airport development, after long term upgrades to the City's infrastructure. These planned upgrades have not yet been completed. The City of Ottawa has confirmed that a total of 0.5ML/day of water is currently available to the Carp Airport. Short term upgrades are currently underway which will provide an additional 0.2ML/day for a total of 0.7ML/day. Refer to **Appendix B** for the City of Ottawa email which provides a Carp Village servicing update.

The individual house meters for the existing Carp Airport Residential (Phases 1A, 1B-1 & 2A) have been monitored. Based on this metered data, the existing average daily demand was determined to be 200L/capita/day. A combination of monitored and theoretical (per City of Ottawa Water Distribution Guidelines) average day water demands were used to assess the impact of Phase 1B-2 on the allocated water demand available to the Carp Airport. The combined demands are summarized in **Table 3** below under two scenarios.

Table 3: Combined Water Demands

				Scenario #1 [1]		Scenario #2 [2]	
Use	**Number of Units**	**ppu**	**Population**	**Combined Theoretical[3] and Monitored [4] Average Day Rates (ML/day)**		**Monitored Average Day Rates (ML/day)**	
RESIDENTIAL				Avg Day	Max Day	Avg Day	Max Day
					2.0xAvg Day[5]		2.0xAvg Day[5]
Registered Phases 1A, 2A, 1B-1				200L/c/day		200L/c/day	
Single Family	187	3.4	636	0.13		0.13	
Townhomes	48	2.7	130	0.03		0.03	
Total Phases 1A, 2A, 1B-1	235		766	0.15	0.31	0.15	0.30
Proposed Phase 1B-2				280L/c/day		200L/c/day	
Single Family	77	3.4	262	0.07		0.05	
Townhomes	30	2.7	81	0.02		0.02	
Total Phase 1B-2	107		343	0.10	0.19	0.07	0.14
Total Residential Phases 1 & 2	342		1109		**0.50 ML/day**		**0.44 ML/day**

[1] Scenario 1 combines the Monitored Average Day Rate for Registered Phases (1A, 2A, and 1B-1) and the Theoretical Average Day Rate for the Proposed Phase (1B-2).
[2] Scenario 2 uses the Monitored Average Day Rate for all phases.
[3] Theoretical Average Day Rate of 280L/capita/day based on City of Ottawa Water Distribution Guidelines.
[4] Monitored Average Day Rate of 200L/capita/day based on monitored flows from current occupied Carp Airport units (98 homes to date with flow data from January 2021 to August 2022).
[5] Average Day to Maximum Day Peaking Factor of 2.0 from Village of Carp EA (2008).

Based on preliminary demand calculations, there is sufficient water allocation available from the Village of Carp (within the current 0.5ML/day) to service Phase 1B-2 under both Scenario 1 and 2.

3.1.2 Water Storage

The Water Storage Facility currently has one operational water storage tank, constructed as part of the Phase 1A works with a capacity of 352,000L. **Table 4** below outlines the water storage requirements for Phase 1B-2 under the same two scenarios presented in **Table 3** above.

Table 4: Water Storage Review

		Scenario #1	Scenario #2
		Combined Theoretical and Monitored Average Day Rates	**Monitored Average Day Rates**
[1]	**Maximum Day Demand[1] (L/day)**	498,480	437,200
[2]	**Peak Hour Demand[2] (L/s)**	12.7	11.1
[3]	**Required Fire Flow[3] (L/s)**	63.08	63.08
[4]	**Required Fire Duration[3] (hrs)**	0.5	0.5
[5]	**Fire Storage (L) ([3] x [4])**	113,544	113,544
[6]	**Max Day Storage (L)**	498,480	437,200
[7]	**Equalization Storage[4] (L) ([6] x 25%)**	124,620	109,300
[8]	**Emergency Storage[5] (L) (25% x {[5] + [7]})**	59,541	55,711
[9]	**Total Storage Required[6] (L) ([5] + [7] + [8])**	**297,705**	**278,555**
[10]	**Tank Storage Provided**	352,000	352,000

[1] Maximum Day Demands for Scenario 1 and 2 (from Table 3)

[2] Peak Hour Demand = 2.2 x Max Day Demand per City of Ottawa Water Distribution Guidelines (July 2010)

[3] Required Fire Flow and Duration indicated in Section 4 of Novatech Hydraulic Network Analysis (2015)

[4] Equalization Storage = 25% Max Day Storage

[5] Emergency Storage = 25% (Fire Storage + Equalization Storage)

[6] Total Storage Required = Fire Storage + Equalization Storage + Emergency Storage

As demonstrated in **Table 4**, in both scenarios the existing water storage tank provides sufficient storage to accommodate the addition of Phase 1B-2.

3.2 Sanitary Sewer

Sanitary servicing will be by means of small-bore sewers and would be designed by Clearford Industries Inc. The proposed servicing concept for the sanitary system is shown on **Figure 3** (Sanitary Servicing).

The small-bore sewer collection system consists of a clarifier tank installed on each lot. The clarifier tank is a septic tank fitted with Clearford proprietary components. The outlet from the clarifier tank will connect to a small-bore sewer collection system, located within the right-of-way, which will connect to the existing wastewater treatment facility at the intersection of Wingover Private and Thomas Argue Road. System access point cleanout structures would be installed at approximately 90m spacing. Details would be provided as part of the detailed design for Phase 1B-2.

The wastewater treatment facility is being constructed in phases. The first phase (one module) was constructed as part of the Phase 1A works, and the second phase (one additional module) was constructed as part of the Phase 1B-1 works. The two modules provide a combined average day wastewater treatment rated capacity of 372m^3/day. **Table 5** below summarizes treatment capacity requirements for combined theoretical/monitored average day flows (Scenario #1) and monitored average days flow (Scenario #2).

Table 5: Average Day Wastewater Flows

				Scenario #1		Scenario #2	
Type of Unit	**Number of Units**	**ppu**	**Population**	**Combined Theoretical[1]/ Monitored[2] Avg Day Flow (L/cap/day)**	**Combined Theoretical/ Monitored Avg Day Flow (L/day)**	**Monitored Average Day Flow [2] (L/cap/day)**	**Avg Day Monitored Flow (L/day)**
RESIDENTIAL							
Phase 1A, 2A, 1B-1							
Single Family	187	3.4	636	188	119,568	188	119,568
Townhomes	48	2.7	130	188	24,440	188	24,440
Phase 1B-2:							
Single Family	77	3.4	262	290	75,980	188	49,256
Townhomes	30	2.7	81	290	23,490	188	15,228
Total Residential	342		1,109		243,478		208,492
NON-RESIDENTIAL							
Park [3]					2,000		2,000
Total Non-Residential					2,000		2,000
TOTAL	342		1,109		245,478		210,492
					245m^3/day		210m^3/day

[1] Average day theoretical flow of 290L/cap/day from Phase 1 Residential – SBS Sanitary Collection Design Brief, dated April 2015, by Clearford.
[2] Average day monitored flow of 188L/cap/day (65% of theoretical) based on monitored flow data provided by Clearford for the wastewater treatment facility (January 2021 to August 2022).
[3] Park Flows from Phase 2A Residential – SBS Sanitary Collection Design Brief, dated July 2020, by Clearford

As indicated by the MECP, the wastewater treatment facility may operate at no more than 80% of its rated capacity (80% of 372m^3/day which is 297.6m^3/day) when using monitored flows. Refer to **Appendix C** for email correspondence with the MECP. The preliminary review of the capacity of the two constructed modules indicates that both scenarios do not exceed 80% of the design treatment capacity. Therefore, the two modules provide sufficient capacity to service the proposed Phase 1B-2 development.

A copy of the MOECC ECA for the wastewater treatment facility is included in **Appendix C**.

3.3 Storm Sewer

The proposed residential lots within Phase 1B-2 would be serviced with a storm sewer system. The storm sewers would be sized for the 1:5-year minor storm event, controlled with ICDs in the roadway catch basins. Major flows would be conveyed overland along roadways and within the right-of-way. The proposed servicing concept for the stormwater system is shown on **Figure 4** (Storm Servicing).

Foundation drains surrounding the dwellings would be connected to the storm sewers. Underside of footing elevations would be set a minimum of 0.3m above the 1:100 hydraulic grade line.

The proposed storm sewer system would direct all minor storm runoff to the existing East Stormwater Management (SWM) Facility. Major storm runoff would be directed to the same facility. The East SWM Facility has been designed to provide stormwater quantity control for Phase 1B-1 and 1B-2 prior to outletting to Carp Creek.

4.0 CONCEPTUAL STORMWATER MANAGEMENT

The Stormwater Site Management Brief (Novatech, April 2015) provides details of the stormwater management design for the Phase 1 and Phase 2 draft approved residential lots. The details include calculations and analysis of the proposed stormwater quantity control, stormwater quality control, temperature mitigation and erosion and sediment control.

4.1 Stormwater Management Criteria

The following stormwater management criteria were confirmed with the Mississippi Valley Conservation Authority (MVCA) in 2022.

- Control post-development flows to pre-development levels for the 1:2-year to 1:100-year events,
- Provide an Enhanced level of water quality protection corresponding to 80% long-term TSS removal.

4.2 East Stormwater Management Facility

The East SWM Facility, designed for the East Community (Phases 1B-1, 1B-2 and future lands), was approved by the MOECC to meet the above noted criteria, and was constructed as part of the Phase 1B-1 works. The facility consists of a Vortech treatment unit to provide quality control of the Phase 1B-1 stormwater runoff, a dry pond to provide quantity control, a cooling trench to provide outlet temperature control. Refer to **Appendix D** for a copy of the MOECC ECA for the east Stormwater Management Facility.
The stormwater for Phase 1B-2 would be directed to the East SWM Facility. A new, second inlet to the East SWM Facility would be required to connect Phase 1B-2 storm sewers and major overland drainage. The new inlet would require a new, second hydrodynamic separator to provide stormwater quality control for Phase 1B-2.

The revised East Community subdivision design has increased unit density since the Stormwater Site Management Brief (Novatech, April 2015), however the area under development has been reduced. A preliminary review of the revised post-development drainage areas in **Table 6** shows that the total A*C value (Area multiplied by the Runoff Coefficient) of Phases 1B-1 and 1B-2 is

significantly lower than the A*C value of the original subdivision layout. Therefore, the SWM Facility as constructed has capacity to service the Phase 1B-2 development.

Table 6: Area x Runoff Coefficient Comparison

East SWMF Drainage Areas	Phase 1 Residential Registration [1]	Proposed Phase 1B-2 Residential SWMF Review [2]
	A*C	A*C
Phase 1B-1	22.7	2.6
Phase 1B-2		4.9[3]
Existing undeveloped[5]	--	4.5[4]
Total A*C	**22.7**	**12.0**

[1] Refer to markup of Storm Drainage Areas Plan (Oct. 2022) in Appendix D
[2] Refer to Post-Development Drainage Area Figure 5 (Post-Development Drainage Area Plan)
[3] A*C value based on a theoretical C value of 0.65
[4] A*C value based on a theoretical C value of 0.20
[5] Existing upstream drainage area that flows overland towards East SWMF

The preliminary post-development drainage areas are shown on **Figure 5** (Post-Development Drainage Area Plan).

Requirement for any additional cooling measures would be determined at the detailed design stage of Phase 1B-2.

5.0 WATER BALANCE (INFILTRATION)

The Stormwater Site Management Report (Novatech, 2015) included water balance calculations to estimate the impacts of development on the hydrologic cycle and to estimate performance of the proposed infiltration Best Management Practices (BMPS). The water balance calculations were completed for both the East and West Residential Communities, based on pre- and post-development conditions, with the post-development condition being full build-out of the Draft Approved residential lands.

At the time of the 2015 report, all infiltration measures were designed to be located on development lands east of the Carp Creek.

No infiltration measures were installed in Phase 1A, however, as part of Phase 2A detailed design, the infiltration rates for the West Community (both Phases 1A and 2A) were reviewed and updated. Infiltration measures were installed in Phase 2A with the results summarized below.

Table 7: West Community Infiltration Rates (Annual)

Average Annual Infiltration Rate	Pre-Development	Post-Development (With infiltration BMPs constructed as part of Phase 2A)
West Community	232 mm	164 mm

The permanent infiltration measures implemented within the Phase 2A lands, did not meet the full pre-development infiltration rate for the West Community (Phases 1A & 2A). Therefore, as part of Phase 2A construction, temporary infiltration swales were constructed on development lands east of the creek. This combination of permanent and temporary infiltration measures constructed with Phase 2A, meet the West Community pre-development infiltration rate of 232mm/year.

In order to meet the Average Annual Infiltration requirements for the overall residential development, the East Community will need to provide infiltration measures to replace the temporary measures discussed above and provide sufficient infiltration for development east of the creek (Phases 1B-1 and 1B-2). These measures would be designed and constructed with Phase 1B-2. Methods such as rear yard infiltration, roadside infiltration measures and other measures would be considered.

The overall infiltration rates are summarized below.

Table 8: Overall Residential Communities Infiltration Rates (Annual)

Average Annual Infiltration Rate	Pre-Development	Post-Development – With infiltration BMPs
West Community	232 mm	164 mm
East Community	250 mm	277 mm*
Total (Weighted by Area)	245 mm	245 mm

*Note: This is the infiltration rate to be met with the design and construction of Phase 1B-2, so that the overall pre-development infiltration rate of 245mm/year is met.

Should additional measures be required over what could reasonably be accommodated within the Phase 1B-2 lands, measures would be constructed on adjacent lands held by West Capital Developments, so that by the end of construction of Phase 1B-2, infiltration requirements will have been met for the development of all Draft Approved residential lands.

6.0 FUTURE RESIDENTIAL LANDS

Future residential lands would require Draft Plan approval, along with an associated serviceability and conceptual stormwater management report. Although the road patterns for potential development to the east would likely connect through Phase 1B-2, the servicing would be independent.

Based on a preliminary review, servicing for future residential lands to the east would be addressed as follows.

- A watermain and sanitary sewer network would be designed with connection directly to the Water Storage Facility/Wastewater Treatment block (i.e. connection would not be made to the existing watermain and sanitary lines on Wingover).

- An independent storm sewer system would be designed, with connection directly to the East Stormwater Facility.
- The East Stormwater Facility would be reviewed to confirm any excess quantity or quality control capacity and may require expansion.
- The capacity of the existing water storage tank and sewage treatment plant would be reviewed to confirm whether a second tank and/or additional treatment plant modules are required. To date, one tank and two modules have been constructed. There is room within the existing block (Block 1, Plan 4M-1512) for two storage tanks and five treatment modules.
- Independent infiltration measures would be provided.

7.0 EROSION AND SEDIMENT CONTROL MEASURES

7.1 Temporary Measures

Temporary erosion and sediment control measures would be implemented during construction in accordance with the "Guidelines on Erosion and Sediment Control for Urban Construction Sites" (Government of Ontario, May 1987). Details would be provided on an Erosion and Sediment Control Plan during the detailed design phase. Erosion and sediment control measure may include:

- Placement of geotextile or filter bags under catch basins and maintenance holes,
- Silt fences around the area under construction,
- Light duty straw bale or rock check dams, and
- Vegetating disturbed areas.

The erosion and sediment control measures would be subject to regular inspection. Filter cloth catches should be inspected daily, and after every rain event to determine maintenance, repair or replacement requirements. Sediments or granular that enter site sewers shall be removed immediately by the contractor. The erosion and sediment control measure would be implemented prior to commencement of construction and maintained in good order until vegetations has been established.

7.2 Permanent Measures

The following will provide permanent erosion and sediment control measures:

- Vegetating disturbed areas;
- Grass swales along the rear property lines;
- Roof leaders directed to grassed areas;
- A hydrodynamic separator at the SWM Facility inlet.

8.0 SUMMARY AND CONCLUSIONS

This report has been prepared in support of an application to revise the Draft Plan Approval for the proposed West Capital Airpark Phase 1B-2 Residential Subdivision.

The servicing capacity required and provided is summarized in the **Table 9** below.

Table 9: Servicing Summary

Item	Required	Provided
Carp Village Water Availability	0.50 ML/day	0.50 ML/day
Water Storage Capacity	297,705 L	352,000 L
Wastewater Treatment Facility Capacity	245 m^3/day	298 m^3/day (80% of rated capacity per MECP)
SWM Facility Capacity	AC = 12.0	AC = 22.7
Average Annual Infiltration Rate	245mm	245mm

The conclusions are as follows:

- The proposed Phase 1B-2 Residential subdivision will consist of 77 single family homes and 30 townhouse units,
- The sanitary and water servicing, including the sanitary collection system, sewage treatment and disposal, the water storage facility, and the water distribution system will be private communal systems owned, operated, and maintained by a condominium corporation as common elements,
- The City of Ottawa will be responsible for maintenance, repair, and replacement of the surface works, including roadways, curbs, sidewalks, boulevards, streetlights, and the storm drainage system, including the stormwater management facility,
- The proposed watermains will connect to the existing Phase 1B-1 watermains on Chandelle Pvt.
- Sanitary servicing will be by means of small-bore sewer system consisting of a clarifier tank installed on each lot connected to a small-bore sewer collection system,
- The proposed small-bore sewers will connect to the existing small bore sewer stub left at Block 163 (Plan 4M-1593) as part of the Phase 1B-1 construction, and will be conveyed to the existing wastewater treatment facility at the intersection of Wingover Pvt. and Thomas Argue Rd,
- The proposed storm sewer system will direct stormwater to the East Stormwater Management Facility which will provide quantity and quality control of stormwater from the proposed development,
- Erosion and sediment control measures would be implemented during construction and permanent measures would be provided.

NOVATECH

Prepared by:

Mitch Parker, B. Eng.
Land Development Engineering

Prepared by:

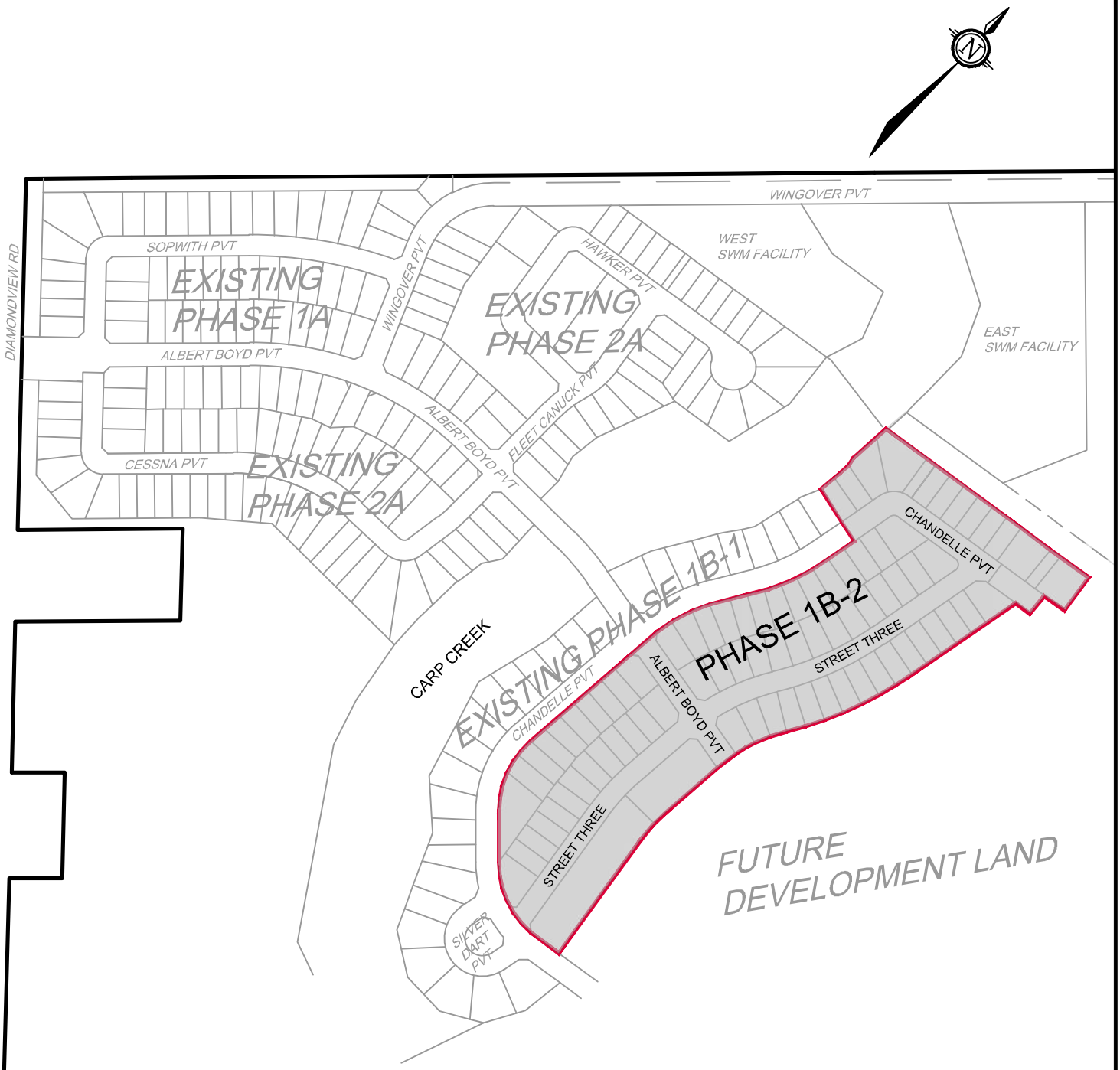
Aden Rongve, B.E. (Civil Engineering), EIT
Land Development Engineering

Reviewed by:

Alex McAuley, P. Eng.
Project Manager
Land Development Engineering

Reviewed by:

Susan M. Gordon, P.Eng.
Director
Land Development



NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

WEST CAPITAL AIRPARK
PHASE 1B-2 RESIDENTIAL

KEY PLAN

DATE	JOB	FIGURE
OCT 2022	102085	1

SHT8X11.DWG - 216mmx279mm

M:\2002\102085\DATA\Phase 2B\Reports\SERVICEABILITY\Figures\102085-2B-KP.dwg, 8x11 Keyplan, Oct 13, 2022 - 3:56pm, mparker

LEGEND

EXISTING WATERMAIN

PROPOSED WATERMAIN

CARP CREEK

EXISTING PHASE 1B-1

EXISTING PHASE 1B-1

ALBERT BOYD PVT

CHANDELLE PVT

STREET THREE

SILVER DART PVT

200mmØ WATERMAIN

150mmØ WATERMAIN

200mmØ WATERMAIN

150mmØ WATERMAIN

200mmØ WATERMAIN

150mmØ WATERMAIN

CONNECT TO EXISTING 200mmØ WATERMAIN

CONNECT TO EXISTING 200mmØ WATERMAIN

FUTURE DEVELOPMENT LOTS

STUB FOR FUTURE CONNECTION (200mmØ TO BE CONFIRMED)

CONNECT TO EXISTING 150mmØ WATERMAIN

FUTURE DEVELOPMENT LAND

NOVATECH

Engineers, Planners & Landscape Architects

Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

WEST CAPITAL AIRPARK

WATERMAIN SERVICING PHASE 1B-2 RESIDENTIAL

SCALE 1 : 2000 (0, 20, 40, 60, 80)

DATE OCT 2022 | JOB 102085 | FIGURE 2

SHT11X17.DWG - 279mmX432mm

LEGEND

EXISTING SANITARY SEWER AND DIRECTION OF FLOW

PROPOSED SANITARY SEWER AND DIRECTION OF FLOW

CARP CREEK

EXISTING PHASE 1B-1

EXISTING PHASE 1B-1

ALBERT BOYD PVT

CHANDELLE PVT

100mmØ SBS SANITARY

75mmØ SBS SANITARY

75mmØ SBS SANITARY

150mmØ SBS SANITARY

STREET THREE

100mmØ SBS SANITARY

75mmØ SBS SANITARY

75mmØ SBS SANITARY

SILVER DART PVT

CONNECT TO EXISTING
150mmØ SANITARY SEWER
INV.= ± 111.98

FUTURE DEVELOPMENT LOTS

STUB FOR POTENTIAL PHASE
3 CONNECTION

FUTURE DEVELOPMENT LAND

M:\2002\102085\DATA\Phase 2B\Reports\SERVICEABILITY\Figures\102085-2B-SAN.dwg, 11x17 landscape, Oct 13, 2022 - 4:03pm, mparker

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

WEST CAPITAL AIRPARK

SANITARY SERVICING
PHASE 1B-2 RESIDENTIAL

SCALE 1 : 2000 (0, 20, 40, 60, 80)

DATE OCT 2022 | JOB 102085 | FIGURE 3

SHT11X17.DWG - 279mmX432mm

LEGEND

- EXISTING STORM SEWER AND DIRECTION OF FLOW
- PROPOSED STORM SEWER AND DIRECTION OF FLOW
- PROPOSED REAR YARD INFILTRATION TRENCH AND DIRECTION OF FLOW

EXISTING SWM POND INLET

EXISTING OGS UNIT

STORMWATER MANAGEMENT EAST POND

1050mmØ STORM

300mmØ STORM

FUTURE DEVELOPMENT LOTS

EXISTING PHASE 1B-1

825mmØ STORM

ALBERT-BOYD PVT

250mmØ STORM

CARP CREEK

EXISTING PHASE 1B-1

CHANDELLE PVT

675mmØ STORM

STREET THREE

825mmØ STORM

675mmØ STORM

FUTURE DEVELOPMENT LAND

300mmØ STORM

SILVER DART PVT

M:\2002\102085\DATA\Phase 2B\Reports\SERVICEABILITY\Figures\102085-2B-STM.dwg, 11x17 landscape, Oct 13, 2022 - 4:05pm, mparker

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Website www.novatech-eng.com

WEST CAPITAL AIRPARK

STORM SERVICING PHASE 1B-2 RESIDENTIAL

SCALE 1 : 2000 (0, 20, 40, 60, 80)

DATE OCT 2022 | JOB 102085 | FIGURE 4

SHT11X17.DWG - 279mmX432mm

LEGEND

0.39 / 249-251 / 0.45
- DRAINAGE AREA (ha)
- AREA ID
- RUN-OFF COEFFICIENT

PHASE 1B-2 DRAINAGE AREA

EXISTING DRAINAGE AREA

MAJOR OVERLAND DRAINAGE ROUTE

WINGOVER PVT

3.94 ha / 1B-14 / 0.20
STORMWATER MANAGEMENT EAST POND

CARP CREEK

0.26 / 1B-10 / 0.47
0.28 / 1B-11 / 0.60
0.28 / 1B-12 / 0.62
0.50 / 1B-13 / 0.63
0.48 ha / 2B-8 / 0.47
1.40 ha / 2B-8 / 0.45
0.20 ha / 2B-7 / 0.61
1.13 ha / 2B-4 / 0.47
1.06 ha / 2B-2 / 0.49
0.62 ha / 2B-5 / 0.37
0.33 ha / 2B-3 / 0.61
1.69 ha / 2B-1 / 0.52
0.45 / 1B-9 / 0.62
0.23 / 1B-8 / 0.59
0.24 / 1B-7 / 0.51
0.21 / 1B-6 / 0.46
0.14 / 1B-5 / 0.50
0.22 / 1B-4 / 0.50
0.17 / 1B-3 / 0.45
0.24 / 1B-2 / 0.54
0.14 / 1B-1 / 0.49
22.73 / FUTURE 3 / 0.20

CARP CREEK

EXISTING ORIGINAL GROUND DRAINAGE BOUNDARY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

WEST CAPITAL AIRPARK

POST-DEVELOPMENT DRAINAGE AREA PLAN

SCALE 1 : 3500 (0, 35, 70, 105, 140)

DATE OCT 2022 | JOB 102085 | FIGURE 5

SHT11X17.DWG - 279mmX432mm

Appendix A

- Maintenance of Works/Facilities Subdivision Agreement, Schedule “I”
- Plan 4M-1593

SCHEDULE "I"

MAINTENANCE OF WORKS/FACILITIES

West Capital Airpark (Carp Airport)
Residential – Phase 1

In accordance with Section 7.6 of the Carp Airport Municipal Capital Facility and Development Agreement, the City is responsible for maintenance, repair and replacement of the works/facilities listed below:

1) **Roads including roadside ditches, grassed boulevards, sidewalks, curbs, culverts, streetlights, line painting, street name signs and traffic control signs:** Blocks 172 and 175 (Albert Boyd Private), Block 173 (Sopwith Private), Blocks 174, 180, 181 and 182 (Wingover Private), Blocks 159 and 176 (Chandelle Private) (from the cul-de-sac to Block 178 (Tailslide Private) and Block 178 (Tailslide Private).

2) **Storm Sewer Network including storm sewers, ICD's, road catchbasins, storm manholes):** Along Blocks 160, 169, 170, 171, 185, 197 and 201; Blocks 172 and 175 (Albert Boyd Private), Block 173 (Sopwith Private), Blocks 174, 180, 181 and 182 (Wingover Private), Blocks 159 and 176 (Chandelle Private) and Block 178 (Tailslide Private)

3) **Rearyard catachbasins and leads:**
   - Parts of Lots 1 and 2 being Parts 2, 3, 4 and 5 on an approved draft reference plan
   - Parts of Lots 5 and 6 being Parts 10, 11, 12 and 13 on an approved draft reference plan
   - Parts of Lots 45 and 46 being Parts 71, 72, 73 and 74 on an approved draft reference plan
   - Parts of Lots 33 and 34 being Parts 55, 56, 57 and 58 on an approved draft reference plan
   - Parts of Lots 25 and 26 being Parts 39, 40, 41 and 42 on an approved draft reference plan
   - Parts of Lots 22 and 23 being Parts 32, 33, 34 and 35 on an approved draft reference plan
   - Parts of Lots 69 and 70 being Parts 99, 100, 101 and 102 on an approved draft reference plan
   - Parts of Lots 74 and 75 being Parts 108, 109, 110 and 111 on an approved draft reference plan
   - Parts of Lots 31 and 32 being Parts 49, 50, 51 and 52 on an approved draft reference plan
   - Part of Lot 28 being Parts 114 and 115 on an approved draft reference plan

4) **Stormwater Management Pond:**
   - Block 157 - Stormwater Management Pond East
   - Block 156 - Stormwater Management Pond West

5) **Outlet Ditches:**
   - Blocks 163, 184, 186 and 193

6) **Stone Trench:** Beneath roadside ditches in Block 178 (Tailslide Private).

7) **Asphalt Walkways (including culverts, grassed areas and fence):**
   - Blocks 161, 162, 164, 165 and 170

8) **Stonedust Pathways including culverts:**
   - Along Blocks 174, 180, 181 and 182 (Wingover Private) from the west limit of the park to the bend in the road
   - Through Blocks 166, 167, 168 and 199

The City will be maintaining the roads in the Residential Phase 1 to the Class 5A standard as described in the City of Ottawa Maintenance Quality Standards for Roadway, Sidewalks and Pathways approved by Council and any future amendments.

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

COORDINATES WERE DERIVED FROM PLAN 4R-27606 MTM ZONE 9, NAD83 ORIGINAL.

COORDINATES HAVE BEEN DETERMINED TO AN URBAN ACCURACY IN ACCORDANCE WITH SECTION 14(2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
1	340550.55	5019408.52
59	340752.53	5019181.88
101	340896.66	5019736.61

COORDINATES CANNOT IN THEMSELVES BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

PLAN OF SUBDIVISION OF PART OF LOTS 13 AND 14 CONCESSION 4 GEOGRAPHIC TOWNSHIP OF HUNTLEY NOW CITY OF OTTAWA

SCALE 1 : 1000
0 10 20 50 100 metres

FAIRHALL, MOFFATT & WOODLAND LIMITED
ONTARIO LAND SURVEYORS

APPROVED UNDER SECTION 51 OF THE PLANNING ACT BY THE CITY OF OTTAWA
THIS 6 DAY OF SEPT, 2017.

STEPHEN WILLIS, MCIP, RPP, GENERAL MANAGER
PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

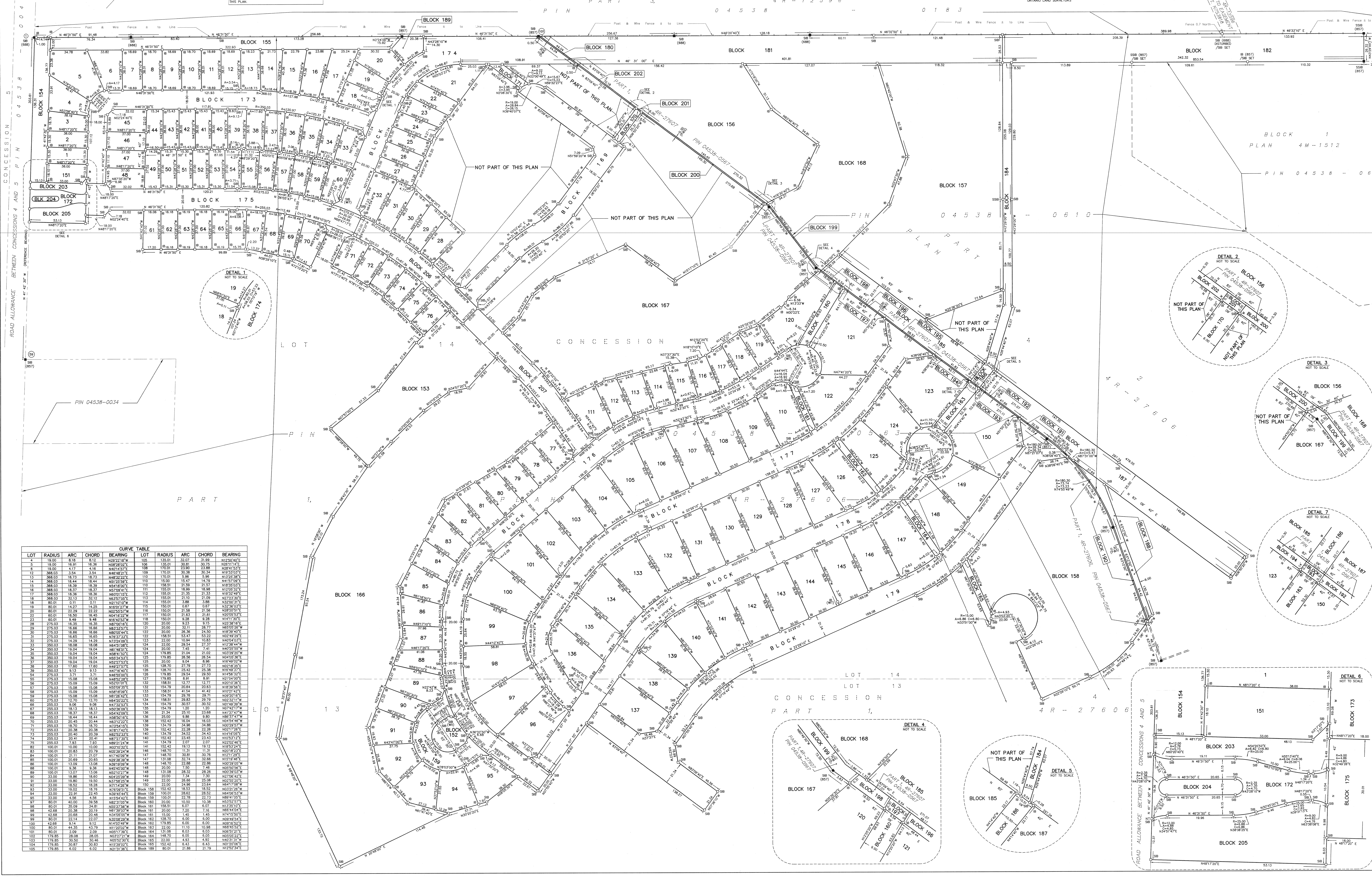
LOT/ BLOCK	PIN
LOTS 1 TO 151, (Inclusive) BLOCKS 152 TO 155, (Inclusive) BLOCKS 158 TO 167, (Inclusive) BLOCKS 169 TO 179, (Inclusive) BLOCKS 189 & 203 TO 207, (Inclusive)	PART OF 04538–0563
BLOCKS 156, 157, 168, 181, 182, 184, 185, 186, 187 & 188	PART OF 04538–0610
BLOCKS 180 BLOCKS 190 TO 202,(Inclusive)	PART OF 04538–0567
BLOCK 183	ALL OF 04538–0611

PLAN 4M-1593

I certify that this Plan is registered in the Land Registry Office for the Land Titles Division of Ottawa – Carleton No. 4 at 14:16 o'clock on the 18th day of Sept 2017 and entered in the parcel register for Property Identifier 04538-0611, 04538-0563, 04538-0567, 04538-0610 and required consents are registered as Plan Document No OC1930872

"Suzanne Iacovitti"
Representative for Land Registrar

THIS PLAN COMPRISES LAND IDENTIFIED BY ALL OF PIN 04538–0611 AND PART OF PINS 04538–0563, 04538–0567 AND 04538–0610.



CURVE TABLE									
LOT	RADIUS	ARC	CHORD	BEARING	LOT	RADIUS	ARC	CHORD	BEARING
4	19.00	8.18	8.12	N29°22'18"W	105	135.01	32.07	31.99	N12°50'40"E
5	19.00	16.91	16.36	N08°28'02"E	106	135.01	30.81	30.75	N26°11'14"E
6	19.00	4.17	4.16	N40°14'57"E	108	170.01	23.90	23.88	N28°41'53"E
12	368.03	3.54	3.54	N46°48'21"E	109	170.01	30.38	30.34	N19°33'03"E
13	368.03	18.73	18.73	N48°32'22"E	110	170.01	5.96	5.96	N13°25'38"E
14	368.03	18.44	18.44	N51°25'59"E	110	15.00	15.47	14.79	N41°57'09"E
15	368.03	18.39	18.39	N54°18'00"E	110	158.51	21.59	21.57	N18°35'03"E
16	368.03	18.37	18.37	N57°09'41"E	111	155.01	18.99	18.98	N12°05'32"E
17	368.03	18.36	18.36	N60°01'15"E	112	155.01	21.35	21.33	N19°32'49"E
18	368.03	32.13	32.12	N63°57'05"E	113	155.01	21.10	21.09	N27°23'30"E
18	80.01	0.11	0.11	N21°10'10"W	114	155.01	3.88	3.88	N32°00'31"E
19	80.01	14.27	14.25	N16°01'27"W	115	150.01	0.67	0.67	N32°36'03"E
20	80.01	22.29	22.22	N02°55'57"W	116	150.01	21.58	21.56	N28°20'51"E
22	60.01	16.50	16.45	N04°16'22"W	117	150.01	21.63	21.61	N20°05'53"E
23	60.01	9.49	9.48	N16°40'53"W	118	150.01	9.28	9.28	N14°11'30"E
28	275.03	16.35	16.35	N87°00'16"E	120	20.00	9.23	9.15	N25°38'16"E
29	275.03	16.66	16.66	N83°33'57"E	121	20.00	32.11	28.77	N65°05'26"W
30	275.03	16.66	16.66	N80°05'44"E	122	20.00	26.36	24.50	N18°39'40"E
31	275.03	16.65	16.65	N76°37'33"E	122	158.51	53.47	53.22	N02°49'29"E
32	275.03	14.29	14.29	N73°24'09"E	123	22.00	10.94	10.83	N40°04'03"E
33	350.03	18.08	18.08	N64°51'08"E	124	22.00	29.54	27.37	N12°38'44"W
34	350.03	19.04	19.04	N61°48'51"E	124	20.00	7.45	7.41	N40°25'55"W
35	350.03	19.04	19.04	N58°41'52"E	124	179.85	21.04	21.02	N03°29'20"W
36	350.03	19.04	19.04	N55°34'53"E	125	179.85	26.56	26.54	N04°05'36"E
37	350.03	19.04	19.04	N52°27'53"E	125	20.00	9.04	8.96	N16°49'02"W
38	350.03	17.60	17.60	N49°27'57"E	125	128.70	27.79	27.73	N02°18'35"E
39	350.03	9.13	9.13	N47°16'40"E	126	128.70	25.42	25.38	N16°49'37"E
54	275.03	3.71	3.71	N46°55'00"E	126	179.85	29.54	29.50	N14°56'32"E
55	275.03	15.08	15.08	N48°52'28"E	127	179.85	8.91	8.91	N21°04'00"E
56	275.03	15.09	15.09	N52°01'01"E	132	158.51	12.77	12.77	N20°10'36"E
57	275.03	15.08	15.08	N55°09'35"E	132	154.79	20.64	20.63	N18°39'56"E
58	275.03	15.09	15.09	N58°18'09"E	133	158.51	41.54	41.42	N10°21'42"E
59	275.03	15.08	15.08	N61°26'42"E	133	154.79	29.76	29.71	N09°20'16"E
60	275.03	12.70	12.70	N64°20'22"E	134	158.51	29.83	29.79	N02°32'11"W
66	255.03	9.06	9.06	N47°32'53"E	134	154.79	30.57	30.52	N01°49'39"W
67	255.03	18.13	18.13	N50°36'09"E	135	154.79	1.20	1.20	N07°42'17"W
68	255.03	18.37	18.37	N54°42'09"E	136	21.34	25.10	23.68	N41°37'47"W
69	255.03	18.44	18.44	N58°50'16"E	136	25.00	9.86	9.80	N86°37'47"W
70	255.03	20.45	20.44	N63°12'22"E	138	152.42	16.04	16.03	N04°54'46"W
71	255.03	18.70	18.70	N73°54'15"E	139	134.79	34.96	34.86	N00°29'57"W
72	255.03	20.38	20.38	N78°17'42"E	139	152.42	22.28	22.26	N02°17'26"E
73	255.03	20.40	20.39	N82°52'33"E	140	134.79	34.52	34.43	N14°16'05"E
74	255.03	20.41	20.41	N87°27'35"E	140	152.42	23.45	23.43	N10°53'12"E
75	255.03	7.93	7.93	N89°21'24"W	141	134.79	2.07	2.07	N22°02'46"E
82	100.01	10.00	10.00	N03°10'32"E	141	152.42	19.13	19.12	N18°53'24"E
83	100.01	20.83	20.79	N05°39'24"W	146	148.70	11.31	11.31	N20°18'23"E
84	100.01	21.11	21.07	N17°40'09"W	147	148.70	30.81	30.76	N12°11'29"E
85	100.01	20.69	20.65	N29°38'39"W	147	131.08	32.74	32.66	N15°19'46"E
86	100.01	13.09	13.08	N39°19'09"W	148	148.70	22.88	22.86	N00°29'05"W
88	100.01	9.36	9.36	N45°45'00"W	148	20.00	7.50	7.46	N05°50'56"E
89	100.01	13.07	13.06	N52°10'27"W	148	131.08	28.32	28.26	N00°39'03"W
90	33.00	18.86	18.60	N04°25'09"W	149	20.00	7.34	7.30	N27°06'42"E
91	33.00	19.80	19.50	N37°58'25"W	149	22.00	26.66	25.06	N02°55'20"E
92	33.00	18.52	18.28	N71°14'26"W	150	22.00	24.96	23.64	N64°17'08"W
93	33.00	19.02	18.76	N76°09'51"E	Block 158	152.42	18.53	18.52	N03°21'26"W
94	33.00	22.91	22.45	N39°45'44"E	Block 159	100.01	28.62	28.52	N64°06'53"W
95	33.00	4.56	4.56	N15°54'42"E	Block 159	100.01	22.78	22.73	N89°41'05"E
97	80.01	40.00	39.58	N82°31'05"W	Block 160	20.00	10.50	10.38	N53°52'57"E
98	80.01	35.09	34.81	N55°37'56"W	Block 161	158.51	6.07	6.07	N13°35'10"E
98	42.68	20.38	20.19	N61°39'03"W	Block 161	20.00	7.20	7.16	N66°44'04"E
99	42.68	20.68	20.48	N34°05'05"W	Block 161	15.00	1.45	1.45	N74°15'50"E
99	80.01	22.14	22.07	N35°08'29"W	Block 162	128.70	6.00	6.00	N09°49'54"E
100	42.68	9.14	9.12	N14°03'49"W	Block 162	179.85	6.00	6.00	N09°16'52"E
100	80.01	44.35	43.79	N11°20'02"W	Block 163	22.00	11.10	10.98	N68°45'52"E
101	80.01	2.09	2.09	N05°17'39"E	Block 164	131.08	6.03	6.03	N06°51'21"E
102	179.85	28.08	28.05	N03°27'21"W	Block 164	148.70	6.05	6.05	N05°05'22"E
103	179.85	30.50	30.46	N05°52'30"E	Block 165	22.00	4.93	4.92	N40°31'31"W
104	179.85	30.87	30.83	N15°39'02"E	Block 165	152.42	6.43	6.43	N01°20'06"E
105	179.85	6.02	6.02	N21°31'36"E	Block 189	80.01	21.86	21.79	N12°52'34"E

NOTES

1. BEARINGS ARE GRID, DERIVED FROM THE WESTERLY LIMIT OF PLAN 4R–27606 HAVING A BEARING OF N 41°42'30" W AND ARE REFERRED TO THE CENTRAL MERIDIAN 76°30'W LONGITUDE, MTM, ZONE 9 (NAD83 ORIGINAL).
2. DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999905.

LEGEND

- □ – SURVEY MONUMENT SET
- ■ – SURVEY MONUMENT FOUND
- CP – CONCRETE PIN
- SIB – STANDARD IRON BAR
- SSIB – SHORT STANDARD IRON BAR
- IB – IRON BAR
- (WIT) – WITNESS
- (688) – C. D. COPELAND, O.L.S.
- (857) – FAIRHALL, MOFFATT & WOODLAND LIMITED, O.L.S.
- (1692) – FARLEY, SMITH & DENIS SURVEYING LTD., O.L.S.
- PIN – PROPERTY IDENTIFIER NUMBER
- (P) – PLAN 4R–27606

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT:

1. LOTS 1 TO 151, INCLUSIVE, BLOCKS 152 TO 179, INCLUSIVE, BLOCKS 181 TO 189, INCLUSIVE, AND BLOCKS 203, 204, 205, 206 AND 207 HAVE BEEN LAID OUT IN ACCORDANCE WITH OUR INSTRUCTIONS.

DATED THIS 28 DAY OF APRIL, 2017.

1514947 ONTARIO INC.

I HAVE THE AUTHORITY TO BIND THE CORPORATION

ANDREW WILDEBOER
PRESIDENT

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT:

1. BLOCK 180 AND BLOCKS 190 TO 202, INCLUSIVE, HAVE BEEN LAID OUT IN ACCORDANCE WITH OUR INSTRUCTIONS.

DATED THIS 28 DAY OF APRIL, 2017

WCD RESERVE CORPORATION

I HAVE THE AUTHORITY TO BIND THE CORPORATION

ANDREW WILDEBOER
PRESIDENT

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON APRIL 19, 2017.

AUGUST 8, 2016
DATE

JOHN H. GUTRI
ONTARIO LAND SURVEYOR

Fairhall Moffatt & Woodland LIMITED OTTAWA
ONTARIO LAND SURVEYORS
Surveying and Land Information Services
100–600 TERRY FOX DRIVE, KANATA, ONTARIO K2L 4B6
TEL: (613) 591–2580 FAX: (613) 591–1495
www.fmw.on.ca

JOB No. P21600
E 341221, N 5019648
REFERENCE No. 120 (b) – 3 HUNTLEY
S: \JOBS\P21600\MPLANS\NOVATECH SEPT 29. 2014\mp–s216p west–1.dwg APRIL 19, 2017

Appendix B

- City of Ottawa, Village of Carp Servicing Update Email (February 8, 2022)

From: Brown, Adam <Adam.Brown@ottawa.ca>
Sent: Tuesday, February 8, 2022 6:54 PM
To: 'Jack Stirling' <jack@tsgdi.ca>; 'Alison Stirling' <alison@tsgdi.ca>; Kyle MacHutchon <kyle@invernesshomes.ca>; 'Melissa Cote' <melissa.cote@taggart.ca>; Jim Moffatt <jmoffatt@ibigroup.com>; 'Matt Nesrallah' <MNesrallah@thomascavanagh.ca>; Pierre Dufresne (pdufresne@thomascavanagh.ca) <pdufresne@thomascavanagh.ca>; John Riddell <J.Riddell@novatech-eng.com>; Susan Gordon <s.gordon@novatech-eng.com>; 'Josh Kardish' <JKardish@eqhomes.ca>; 'andrew@wildeboer.ca' <andrew@wildeboer.ca>; Greg Winters <G.Winters@novatech-eng.com>
Cc: Xu, Lily <Lily.Xu@ottawa.ca>; Whittaker, Damien <Damien.Whittaker@ottawa.ca>; Hall, Kevin <Kevin.Hall@ottawa.ca>; Morgan, Brian <Brian.Morgan@ottawa.ca>; McWilliams, Cheryl <Cheryl.McWilliams@ottawa.ca>; McCormick, Sarah <sarah.mccormick@ottawa.ca>; Ostafichuk, Jeffrey <Jeffrey.Ostafichuk@ottawa.ca>; Zagorski, Joseph <Joseph.Zagorski@ottawa.ca>; Rogers, Christopher <Christopher.Rogers@ottawa.ca>
Subject: Carp Servicing update

Please see below for a status update of the servicing situation in Carp. If you have any questions, please advise

- There is currently no capacity for additional water users in Carp as the current GAC filters operating method is a limiting factor.
- For wastewater, based on the existing flow data, there is limited capacity available (equivalent of 100 single houses). However, because of no overflow protection at the station, Wastewater Operations do not support adding more connections at the present time.
- Infrastructure Planning, in conjunction with consultant RVA, already has a short-term project underway to increase capacity of the water and wastewater systems. The time frame including detailed design and construction phases, would be two to three years from today.
- Once the proposed short-term upgrades are in place, it is estimated that there should be additional water and wastewater capacity for the equivalent of 350 single houses in the Village. For the Carp Airport, there is expected to be an additional allocation of drinking of 0.2 ML/d for a total of 0.7 ML/d.
- It is noted that the City currently has two active Plan of Subdivision applications in the village of Carp.
    - Inverness Homes subdivision (D07-16-19-0034):147 Langstaff. Details here. Unit count is 67 townhouse dwellings and 128 apartment dwellings, total 195.
    - Tartan subdivision (D07-16-21-0035): 232 Donald B. Munro Drive. Details here. Unit count is 57 single detached, 6 semi-detached, 54 townhouse units, total 117.
    - Two other possible applications could be forthcoming, with combined unit count totals estimated at +/- 390.
- The available fire flow at the Carp water plant is 6500 L/min for two hours duration. Due to village topography, depending on the new development location, it could be a lot less. Developers will need to prove that their proposal meets the available fire flow through the development review process.
- Ongoing monitoring of flows will be undertaken in the village as developments advance to reassess capacity as necessary in the future.
- Infrastructure improvements beyond the short-term upgrades will be eight to ten years into the future assuming financing availability.

Appendix C

- MECP Sewage Treatment Capacity Email (July 13, 2021)
- Wastewater Treatment Facility MOECC ECA# 0961-A9UHS8

From: Susan Gordon
Sent: Tuesday, July 13, 2021 12:08 PM
To: Kevin Hall - City of Ottawa - Approvals (kevin.hall@ottawa.ca)
Cc: Jeff Ostafichuk (jeffrey.ostafichuk@ottawa.ca); Alex McAuley; Adam Thompson
Subject: FW: Carp Airport - Sewage Treatment Plant Capacity
Attachments: 20210616-SewageTreatmentCapacity.pdf; 0961-A9UHS8_2017Feb10.pdf

Hi Kevin,

The MECP has confirmed that all of the Phase 2A Residential lots can connect to the first module of the sewage treatment plant, which is in operation. The summary memo we provided to the MECP (Revised June 16, 2021) and a copy of the ECA (0961-A9UHS8) are attached for reference.

Susan Gordon, P.Eng., MBA, Director | Land Development
NOVATECH Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 269 | Cell: 613.265.5415 | Fax: 613.254.5867

From: Diamond, Emily (MECP) <Emily.Diamond@ontario.ca>
Sent: Tuesday, July 13, 2021 9:13 AM
To: Susan Gordon <s.gordon@novatech-eng.com>
Subject: RE: Carp Airport - Sewage Treatment Plant Capacity

Hi Susan,

The developer can go ahead and connect the remaining Phase 2A lots to the first module.

Thanks and have a great vacation!

Emily Diamond
Environmental Officer
Ministry of the Environment, Conservation and Parks
Ottawa District Office
2430 Don Reid Drive
Ottawa, Ontario, K1H 1E1
Cell: 613-866-0938
Fax: 613-521-5437
e-mail: emily.diamond@ontario.ca

From: Susan Gordon <s.gordon@novatech-eng.com>
Sent: July 13, 2021 8:20 AM
To: Diamond, Emily (MECP) <Emily.Diamond@ontario.ca>
Subject: FW: Carp Airport - Sewage Treatment Plant Capacity

Hello again Emily,

We would like check in with you again about confirmation from the MECP that the developer can connect all of the Phase 2A residential subdivision lots to the first module of the sewage treatment plant currently in operation at the Carp Airport development. These units would exceed the theoretical capacity, but would be within 80% the Rated Capacity of the plant, based on monitored flows. As mentioned, the City of Ottawa has asked that we approach the MECP to obtain this confirmation.

I will be away on vacation next week. Do you think you could have an answer from Approvals Branch before then or perhaps we could set up a call in the next day to answer any questions they might have?

Thank you,

Susan Gordon, P.Eng., MBA, Director | Land Development
NOVATECH Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 269 | Cell: 613.265.5415 | Fax: 613.254.5867

From: Susan Gordon
Sent: Wednesday, July 7, 2021 1:22 PM
To: Emily Diamond (Emily.Diamond@ontario.ca) <Emily.Diamond@ontario.ca>
Subject: FW: Carp Airport - Sewage Treatment Plant Capacity

Hello Emily,

Would you have a response for us on this?

Susan Gordon, P.Eng., MBA, Director | Land Development
NOVATECH Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 269 | Cell: 613.265.5415 | Fax: 613.254.5867

From: Susan Gordon
Sent: Monday, June 28, 2021 10:49 AM
To: Emily Diamond (Emily.Diamond@ontario.ca) <Emily.Diamond@ontario.ca>
Cc: Fariha Pannu (fariha.pannu@ontario.ca) <fariha.pannu@ontario.ca>; Alex McAuley <a.mcauley@novatech-eng.com>
Subject: Carp Airport - Sewage Treatment Plant Capacity

Hello Emily,

As discussed, the City of Ottawa is looking for confirmation from the MECP that the developer can connect all of the Phase 2A residential subdivision to the first module of the sewage treatment plant currently in operation at the Carp Airport development. These units would exceed the theoretical capacity, but would be within the Rated Capacity of the plant, based on monitored flows. From our follow up in mid June, we understand that the MECP Approvals Branch has provided you with some preliminary feedback, indicating that they would prefer the sewage treatment plant operate at about 75% to 80% of capacity when using monitored flow data.

We have found that the monitored flow for the past five months of operation is about 76% of the theoretical design flow, and are requesting approval to connect all of the Phase 2A residential subdivision to the plant. With these flows and the current number of units for Phase 2A, the plant would be at about 80% of its Rated Capacity.

Operating the plant on this basis would not require any changes to the ECA, as the plant would still be operating within its Rated Capacity. Recently, on another file, the MECP Approvals Branch suggested that if an ECA amendment is not required, updated information could be appended to the MECP IDS file, and we would like to do the same in this case. The updated information (see below) provides rationale that the Phase 2A residential subdivision, which has more units than anticipated at the time the ECA was issued, can be accommodated within the plant.

The updated information is attached*, Sewage Treatment, Residential Development to Date and Pending (Novatech, Revised June 16, 2021)* and provides the following information:

- **Reference Documents/Information** which includes:
    - A list of the supporting documents that were included with the ECA application that pertain to the Sewage Treatment Plant and are referenced in Schedule B in the ECA.
    - The sewage treatment plant Rated Capacity from the ECA (186m3/day for the module constructed to date and 372m3/day total). The first module is in place and the second module will be constructed this fall.
- **Monitored Data:**
    - Data for December 2020 to April 2021 showing the monitored flows are approximately 76% of the theoretical sewage design flow.
- Updated **Design Flow** chart:
    - Sewage flow to the plant based on monitored data which would be 149.6m3/day, about 80% of the plant's 186m3/day Rated Capacity.
- **Monitored Wastewater Treatment Flows** chart
    - Summarizing the daily monitored flow data provided by the Licensed Operator (Clearford), used to establish the monitored flows are approximately 80% of the theoretical.

Please let us know if you would need anything further to provide us with a response we could forward to the City. We've copied Fariha Pannu, who signed the ECA and have attached a copy of the ECA for reference.

Attachments:

- ECA# 0961-A9UHS8
- Sewage Treatment, Residential Development to Date and Pending (Novatech, Revised June 16, 2021)

Susan Gordon, P.Eng., MBA, Director | Land Development
NOVATECH Engineers, Planners & Landscape Architects
240 Michael Cowpland Drive, Suite 200, Ottawa, ON, K2M 1P6 | Tel: 613.254.9643 x 269 | Cell: 613.265.5415 | Fax: 613.254.5867

Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 0961-A9UHS8
Issue Date: February 10, 2017

1514947 Ontario Inc.
1500 Thomas Argue Rd
Carp, Ontario
K0A 1L0

Site Location: Carp Airport Subdivision
1500 Thomas Argue Road
City of Ottawa
K0A 1L0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

construction of private sewage treatment facilities for the collection, transmission, treatment and discharge of treated effluent to a dry ditch (which discharges to Carp Creek eventually to Carp River), designed at a Rated Capacity of 372,000 Litres per day and a maximum daily flow of 744,000 Litres per day, together with stormwater management facilities to serve the Phase I and Phase 2 residential development and business park at the West Capital Airpark located at the Carp Airport, in the City of Ottawa, consisting of the following:

Septic Tanks

- installation of clarifier tanks, each having a minimum volume of 4,000 L capacity complete with inlet and outlet hatches, hydraulic mixer and flow attenuator located on each residential lot and the communal hangar site, 9,000 L capacity for the wastewater treatment system/City park location, and a 45,000 L capacity tank for the community center site, discharging to the sanitary collection system, identified below;

Sewage Collection System

- a small diameter gravity sewer system (Small Bore Sewer (SBS) by Clearford Water Systems or equivalent), approximately 3,690 m in total length of collection mains with diameters ranging from 75 mm to 200 mm on the following streets:
  - Albert Boyd Private, 400 m;
  - Silver Dart Private 10 m;
  - Sopwith Private 360 m;
  - Wingover Private 985 m;

- Easements 550 m;
- Chandelle Private 670 m;
- Tailslide Private 415 m;
- TaxiwayE 300 m,

all complete with SAP type cleanouts;

- an inverted syphon, consisting of two (2) 100 mm diameter pipes, approximately 145 m in length, and one (1) 250 mm diameter sanitary sewer, approximately 30.7 m in length from the Wastewater Treatment Plant (described below), all discharging to the sanitary lift station, described below.

- one (1) 200mm diameter sanitary sewer, approximately 16.7m in length from the pump building, discharging to the equalization tanks located at the Wastewater Treatment Plan (described below);

Sanitary Lift Station

- a sanitary lift station, to convey sewage flows to the equalization tanks located at the wastewater treatment plant, and consisting of:

  - one (1) wet well with a minimum operating volume of approximately 1,840 L;
  - two (2) submersible pumps (one standby), each pump rated at 7.66 L/s at 6 m TDH, complete with a high liquid level alarm, and discharging via a 75 mm diameter forcemain to a 200 mm diameter sanitary sewer, approximately 21.6 m in length, discharging to the equalization tanks at the Wastewater Treatment Plant (described below);
  - one (1) covered control panel.

Wastewater Treatment Plant

A modular package type wastewater treatment system rated at an average daily flow of 186 m³/day for Phase 1 of the development and an additional average daily flow of 186 m^3/day for Phase 2 of the development (progressing to average daily flow of 910 m³/day at full build-out in Phase 5 in future), consisting of the following:

Phase 1

- an equalization tank system (multiple tanks) with a volume of 103 m³ for Phase 1 of the development (309 m³ at full build-out in Phase 5 in future), complete with an ultrasonic level transmitter to control pump operation and back-up high level alarm float switch.
- two rotary lobe blowers for aeration of the equalization tank system, as required.
- two variable speed pumps (one duty and one standby) to transfer wastewater through the screening system.
- two rotary brush screens (one duty and one standby) with 2 mm openings, each with a capacity of approximately 983 L/min, equipped with water level sensor and two feed forwards pumps (one duty and one standby).
- an aerobic tank with a storage volume of approximately 41 m³, equipped with two rotary lobe blowers (one duty and one standby) for fine bubble aeration, complete with dissolved oxygen and pH transmitters, and chemical metering pumps to feed sodium hydroxide for pH adjustment (as needed) and alum to promote

flocculation of suspended solids (as needed).

- a tank level transmitter and high level float alarm switch in aerobic tank as well as two centrifugal submersible feed pumps (one duty and one standby) rated at 12 L/s at 4.6 m TDH to pump wastewater to the membrane bioreactor.
- a membrane reactor system consisting of one membrane tank (approximate volume of 11.4 m³) and two flat sheet membrane modules (newterra MB3-2 MicroClear) equipped with two permeate extraction pumps (one duty and one standby), complete with an overflow return line to the aerobic tank.
- two blowers (one duty and one standby) within the membrane reactor system for scouring of the membrane modules.
- a sludge holding tank having an approximate volume of 7 m³ complete with a sludge dewatering system with mixing tank for polymer addition and dewatering press equipped with water return line to the equalization tank, with dried sludge stored in an outdoor bin.
- an effluent flow meter prior to effluent discharge to an onsite dry ditch via a 200mm diameter sanitary sewer, approximately 31.7m in length.

Phase 2

- a second equalization tank with a volume of 103 m^3 for Phase 2 of the development.
- an aerobic tank with a storage volume of approximately 41 m³, equipped with two rotary lobe blowers (one duty and one standby) for fine bubble aeration, complete with dissolved oxygen and pH transmitters, and chemical metering pumps to feed sodium hydroxide for pH adjustment (as needed) and alum to promote flocculation of suspended solids (as needed).
- a tank level transmitter and high level float alarm switch in aerobic tank as well as two centrifugal submersible feed pumps (one duty and one standby) rated at 12 L/s at 4.6 m TDH to pump wastewater to the membrane bioreactor.
- a membrane reactor system consisting of one membrane tank (approximate volume of 11.4 m³) and two flat sheet membrane modules (newterra MB3-2 MicroClear) equipped with two permeate extraction pumps (one duty and one standby), complete with an overflow return line to the aerobic tank.
- two blowers (one duty and one standby) within the membrane reactor system for scouring of the membrane modules.

Stomwater Management Facilities

Construction of stormwater management works related to the construction of the Wastewater Treatment and Water Storage Facility at the West Capital Airpark located at the Carp Airport, in the City of Ottawa, to provide on-site stormwater quality protection and erosion control and to attenuate post-development peak flows to pre-development release rates for all storm events up to and including the 100-year storm event for a catchment area of 0.489 hectares of industrial area, discharging to the roadside ditch along Wingover Private and ultimately discharging to Carp Creek, consisting of the following:

- enhanced grassed swales, located along the east, south and west property boundaries (180m total) designed to convey runoff from storms up to and including the 100-year return period, with a trapezoidal cross-section, bottom slope of approximately 0.50%, bottom width of 0.75 metres, and 3:1 side slopes, discharging to two ditch inlet catch basins (DICB A and B);

- stormwater management facility (catchment area 0.489 hectares): Two (2) dry swales (WSW and ESW), located along the east, south and west property boundaries, each having a total storage volume of 27.90 m³ and 27.14 m³ respectively at a depth of 0.30 m, with side slopes of 3H:1V (maximum) and a bottom slope of approximately 0.5%, complete with two inlet control structures (DICB A and DICB B), receiving inflow from enhanced grassed swales; two multi-staged outlet control structures, Tempest 115mm orifice (installed in outlet pipe of DICB A) controlling flows to 17.9 L/s and a Tempest 90mm orifice (installed din the outlet pipe of DICB B) controlling flows to 11.1 L/s during the 100-year event, connecting to a riprap lined swale, discharging to the Wingover Private roadside ditch and ultimately discharging to Carp Creek;

- including erosion/ sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned Works,

all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works;

all in accordance with the submitted supporting documents listed in **Schedule B.**

For the purpose of this environmental compliance approval, the following definitions apply:

"Annual Average Concentration" means the arithmetic mean of all Single Sample Concentrations of a contaminant in the Final Effluent sampled or measured, or both, during a calendar year;

"Annual Average Daily Flow" means the cumulative total sewage flow of Influent to the Sewage Treatment Plant during a calendar year divided by the number of days during which sewage was flowing to the Sewage Treatment Plant that year;

"Annual Average Loading" means the value obtained by multiplying the Annual Average Concentration of a contaminant by the Annual Average Daily Flow over the same calendar year;

"Approval" means this entire document and any schedules attached to it, and the application;

"BOD5" (also known as $TBOD_5$) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"Bypass" means diversion of sewage around one or more unit processes within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling point, and discharging to the environment through the Sewage Treatment Plant outfall;

"CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

"*E. coli* " refers to the thermally tolerant forms of Escherichia that can survive at 44.5 degrees Celsius;

"EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;

"Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and performance standards of a named equipment;

"Event" means an action or occurrence, at a given location within the Works that causes a Bypass or Overflow. An Event ends when there is no recurrence of a Bypass or Overflow in the 12-hour period following the last Bypass or Overflow. Two Events are separated by at least 12 hours during which there has been no recurrence of a Bypass or Overflow. An Overflow Event and a Bypass Event are two separate reportable events even when they occur concurrently;

"Final Effluent" means effluent that are discharged to the environment through the approved Final Effluent Outfall, including all Bypasses, that are required to comply with the effluent limits stipulated in the Approval for the Sewage Treatment Plant, pertaining specifically to the Final Effluent sampling point;

"Geometric Mean Density" is the nth root of the product of multiplication of the results of n number of samples over the period specified;

"Influent" means flows to the Sewage Treatment Plant through the collection system, excluding all process return flows;

"Limited Operational Flexibility" (LOF) means the minor modifications that the Owner is pre-approved to make to the Works under this Approval;

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Monthly Average Concentration" means the arithmetic mean of all Single Sample Concentrations of a contaminant in the Final Effluent sampled or measured, or both, during a calendar month;

"Monthly Average Effluent Flow" means the cumulative total Final Effluent discharged during a calendar month divided by the number of days during which Final Effluent was discharged that month;

"Monthly Average Loading" means the value obtained by multiplying the Monthly Average Concentration of a contaminant by the Monthly Average Effluent Flow over the same calendar month:

"Overflow" means a discharge to the environment from the Works at a location other than the Sewage Treatment Plant outfall or into the outfall downstream of the Final Effluent sampling point;

"Owner" means 1514947 Ontario Inc. and its successors and assignees;

"OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

"Peak Daily Flow Rate" means the largest volume of flow to be received during a one-day period for which the sewage treatment process unit or equipment is designed to handle. This flow is also referred to as maximum daily flow or maximum day flow;

"Proposed Works" means those portions of the Works to be constructed under this Approval;

"Rated Capacity" means the Annual Average Daily Flow for which the Sewage Treatment Plant is designed to handle;

"Sewage Treatment Plant" means the entire sewage treatment and effluent outfall facility;

"Substantial Completion" has the same meaning as "substantial performance" in the *Construction Lien Act* ;

"Works" means the sewage works described in the Owner's application, and this Approval, and modifications made under Limited Operational Flexibility.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these terms and conditions, the Owner shall design, construct, operate and maintain the Works in accordance with this Approval.

(3) Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the documents in the Schedule A, the document bearing the most recent date shall prevail.

(4) The Conditions of this Approval are severable. If any Condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

(5) This Approval is granted based upon a review of the Works in the context of its effect on the environment, its process performance and general principles of wastewater engineering. The review did not include a consideration of the architectural, mechanical, electrical or structural components and minor details of the Works except to the extent necessary to review the Works.

(6) This Approval only pertains to approval required under OWRA S.53 and does not include Air, Noise,

Waste, Renewable Energy and other media approvals that may be required under other sections of the EPA or the Green Energy Act or other Federal or Provincial regulations for any portion of the Works.

2. EXPIRY OF APPROVAL

This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

3. CHANGE OF OWNER

(1) The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

a. change of address of Owner or operating authority;
b. change of Owner or operating authority or both, including address of new Owner or operating authority, or both;
c. change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* ; and
d. change of name of the corporation where the Owner or operating authority is or at any time becomes a corporation, and a copy of the "Initial Return" or "Notice of Change" filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , shall be included in the notification to the District Manager.

(2) In the event of any change in ownership of the Works, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager.

(3) The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

(4) Notwithstanding any other requirements in this Approval, upon transfer of the ownership or assumption of the Works to a municipality if applicable, any reference to the Regional Director shall be replaced with the Regional Water Compliance Manager.

4. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Upon the Substantial Completion of the Works, the Owner shall prepare a statement, certified by a Professional Engineer, that the works are constructed in accordance with this Approval, and upon request, shall make the written statement available for inspection by Ministry personnel.

(2) Within six (6) months of the Substantial Completion of the Works, a set of as-built drawings showing the works "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the Works for the operational life of the Works.

5A. BYPASSES

(1) Any Bypass is prohibited, except:

a. in an emergency situation when a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the Sewage Treatment Plant or in unexpected and/or unavoidable circumstance(s) that are likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset;
b. where the Bypass is a direct and unavoidable result of a planned maintenance procedure or other circumstance(s), the Owner having notified the District Manager at least fifteen (15) days prior to the occurrence of Bypass, including an assessment of the potential adverse effects on the environment and the anticipated duration of the Bypass and the mitigation measures, and the District Manager has given written consent of the Bypass;

(2) For any Bypass Event, the Owner shall forthwith notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information for each Event:

a. the date and time of the Bypass;
b. the treatment process(es) Bypassed and the status of the disinfection;
c. the reason(s) for the Bypass.

(3) After each Bypass Event, the Owner shall collect and record the following information:

a. the duration of the Bypass Event;
b. the measured or the estimated volume of Bypass.

(4) For any Bypass Event, the Owner shall collect sample(s) of the Final Effluent, representative of the Event, at the Final Effluent Compliance sampling point, and analyze for all effluent parameters outlined in Effluent Limits condition. These samples shall be of the same type as the regular samples required in the Monitoring and Recording condition and shall follow the same protocols specified in the Monitoring and Recording condition. If the Bypass occurs within 48 hours prior to a scheduled regular sample, then the scheduled regular sample may be omitted for that one time only.

(5) The Owner shall submit a summary report of the Bypass Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary reports shall be in an electronic format, which shall contain, at a minimum, the types of information set out in Subsections (2), (3) and (4) for Bypass(es). The District Manager may modify the reporting frequency at any time in writing.

5B. OVERFLOWS

(1) Any Overflow is prohibited, except:

a. in an emergency situation when a structural, mechanical or electrical failure that causes a temporary reduction in the capacity of the Sewage Treatment Plant or in unexpected and/or unavoidable circumstance(s) that are likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset;
b. where the Overflow is a direct and unavoidable result of a planned maintenance procedure or other circumstance(s), the Owner having notified the District Manager at least fifteen (15) days prior to the occurrence of the Overflow, including an assessment of the potential adverse effects on the environment and the anticipated duration of the Overflow and the mitigation measures, and the District Manager has given written consent of the Overflow.

(2) For any Overflow Event, the Owner shall forthwith notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information for each Event:

a. the date and time of the Overflow;
b. the location of the Overflow and the receiver;
c. the reason(s) for the Overflow; and
d. the level of treatment the Overflow has received and disinfection status of same.

(3) After any Overflow Event, the Owner shall collect and record the following information:

a. the duration of the Overflow Event;
b. the monitored or estimated volume of the Overflow; and
c. the impact of Overflow on the receiver.

(4) For each Overflow Event, the Owner shall collect samples, representative of the Event, consisting of a minimum of two (2) grab samples of the Overflow, one at the beginning of the Event and one approximately near the end of the Event, and every 4 hours for the duration of the Event, and have them analyzed for effluent parameters outlined in Effluent Limits condition. For raw sewage and primary treatment system Overflow, BOD5 shall be monitored instead of CBOD5 and monitoring of *E. coli* is not required.

(5) The Owner shall submit a summary report of the Overflow Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary report shall be in an electronic format, which shall contain, at a minimum; the types of information set out in Subsections (2), (3) and (4) for Overflow(s). The District Manager may modify the reporting frequency at any time in writing.

6. DESIGN OBJECTIVES

(1) The Owner shall use best efforts to design, construct and operate the Works with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the Works.

Table 1 - Design Objectives
(samples to be collected at the point discharge from the treatment system to the dry ditch)

Effluent Parameter	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)
Column 1	Column 2
CBOD5	5.0
Total Suspended Solids	5.0
Total Phosphorus	0.1
Total Ammonia Nitrogen	4.0 (winter) 2.0 (summer)
E.coli	100 CFU /100 mL

(2) The Concentration Objectives of all parameters named in Column 1 in Table 1, are based on monthly averages, with the exception of E. coli, which should be calculated as monthly geometric mean.

(3) The Owner shall use best efforts to:

(a) maintain the pH of the effluent from the Works within the range of 6.5 - 8.5, inclusive, at all times;
(b) operate the works within the Rated Capacity of the Works;
(c) ensure that the effluent from the Works is essentially free of floating and settable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

(4) The Owner shall include in all reports submitted in accordance with Condition 10 a summary of the efforts made and results achieved under this Condition.

7. COMPLIANCE LIMITS

(1) The Owner shall operate and maintain the Works such that the compliance limits of the materials named below as effluent parameters are not exceeded in the Final Effluent from the Sewage Treatment Plant.

Table 2 - Compliance Limits
(samples to be collected at the point discharge from the treatment system to the dry ditch)

Effluent Parameter	**Monthly Average Concentration** (milligrams per litre unless otherwise indicated)	**Annual Average Loading** (kilograms per day unless otherwise indicated)
Column 1	Column 2	Column 3
$CBOD_5$	10.0	-
Total Suspended Solids	10.0	-
Total Phosphorus	0.15	10.2 kg/year[1] 49.8 kg/year[2]
Total Ammonia Nitrogen	5.0 (winter) 3.0 (summer)	-
E.coli	200 CFU /100 mL	-
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

1 - based on average daily flow of 186 m³/day for Phase 1
2 - based on average daily flow of 910 m³/day for full build-out Phase 5

(2) For the purposes of determining compliance with and enforcing subsection (3):

(a) The Monthly Average Concentration of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).

(b) The Annual Average Loading of a parameter named in Column 1 of subsection (1) shall not exceed the corresponding maximum waste loading set out in Column 3 of subsection (1).

(c) The Concentration Limits of all parameters named in Column 1 in Table 1, are based on monthly averages, with the exception of E.coli, which should be calculated as monthly geometric mean.

(d) The pH of the effluent shall be maintained between 6.0 to 9.5, inclusive, at all times.

(3) The effluent limits set out in this Condition shall apply upon ninety (90) days after Substantial Completion of the Works.

8. OPERATION AND MAINTENANCE

(1) The Owner shall exercise due diligence in ensuring that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding,

adequate operator staffing and training, including training in all procedures and other requirements of this Approval and the Act and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

(2) The Owner shall prepare an operations manual at the start up of the Works operation, that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the Works;

(b) inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the Works;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) a spill prevention control and countermeasures plan, consisting of contingency plans and procedures for dealing with equipment breakdowns, potential spills and any other abnormal situations, including notification of the District Manager; and

(f) procedures for receiving, responding and recording public complaints, including recording any follow up actions taken.

(3) The Owner shall maintain the operations manual current and retain a copy at the location of the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

(4) The Owner shall provide for the overall operation of the Works with an operator who holds a licence that is applicable to that type of facility and that is of the same class as or higher than the class of the facility in accordance with Ontario Regulation 129/04.

9. MONITORING AND RECORDING

The Owner shall, upon commencement of operation of the Works, carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored.

(2) For the purposes of this condition, the following definitions apply:

(a) Weekly means once each week.

(b) Monthly means once every month.

(3) Samples shall be collected at the following sampling points, at the frequency specified, by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 3 - Raw Sewage Monitoring (influent to the sewage treatment plant)		
Parameters	**Sample Type**	**Frequency**
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Table 4 - Final Effluent Monitoring (samples to be collected at the end-of-pipe discharge to receiving dry ditch)		
Parameters	**Sample Type**	**Frequency**
CBOD5	Composite	Weekly
Total Suspended Solids	Composite	Weekly
Total Phosphorus	Composite	Weekly
Total Ammonia Nitrogen	Composite	Weekly
E. coli	grab	Weekly
pH	grab	Weekly
Temperature	grab	Weekly

(4) Frequency of sampling in Table 4 may be changed from weekly to bi-weekly by the District Manager following a written request made by the Owner to the District Manager, after a minimum period of time of six (6) consecutive months of operation, providing that compliance limits as outlined in Table 2 are consistently met. Any other amendments to sampling parameters and frequency of sampling may be approved by the District Manager following a written request made by the Owner to the District Manager, after a minimum period of time of two (2) years of operation, providing that results of Works operation are acceptable to the Ministry.

(5) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 2016), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions;

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition),

as amended from time to time by more recently published editions;

(6) The Owner shall install and maintain (a) continuous flow measuring device(s), to measure the flowrate of the effluent from the Works with an accuracy to within plus or minus 15 per cent (+/-15%) of the actual flowrate for the entire design range of the flow measuring device, and record the flowrate at a daily frequency.

10. REPORTING

(1) One week prior to the start up of the operation of the Proposed Works, the Owner shall notify the District Manager (in writing) of the pending start up date.

(2) The Owner shall report to the District Manager orally as soon as possible any non-compliance with the effluent criteria, and in writing within seven (7) days of non-compliance.

(3) In addition to the obligations under Part X of the *Environmental Protection Act* , the Owner shall, within ten (10) working days of the occurrence of any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

(4) The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

(5) The Owner shall prepare performance reports on an annual basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information:

a. a summary and interpretation of all monitoring data and a comparison to the final effluent limits outlined in Compliance Limits Condition, including an overview of the success and adequacy of the Works;

b. a description of any operating problems encountered and corrective actions taken;

c. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

d. a summary of any effluent quality assurance or control measures undertaken in the reporting period;

e. a summary of the calibration and maintenance carried out on all effluent monitoring equipment;

f. a description of efforts made and results achieved in meeting the Design Objectives outlined in the Design Objectives Condition;

g. a tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the

sludge was disposed;

h. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

i. a summary of all By-pass, spill or abnormal discharge events;

j. a copy of all Notice of Modifications submitted to the District Manager as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

k. a report summarizing all modifications completed as a result of Schedule B, Section 3; and

l. any other information the District Manager requires from time to time.

11. LIMITED OPERATIONAL FLEXIBILITY

(1) The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule A of this Approval, as amended.

(2) Sewage works under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

(4) For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

(a) Modifications to the Works that result in an increase of the approved Rated Capacity of the Works;

(b) Modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall;

(c) Modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design;

(d) Modifications to the Works approved under s.9 of the EPA, and

(e) Modifications to the Works pursuant to an order issued by the Ministry.

(5) Implementation of Limited Operational Flexibility is not intended to be used for piecemeal measures that result in major alterations or expansions.

(6) If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, provide a revised copy of this plan to the local fire services authority prior to implementing Limited Operational Flexibility.

(7) For greater certainty, any modification made under the Limited Operational Flexibility may only be

carried out after other legal obligations have been complied with, including those arising from the *Environmental Protection Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, Lake Simcoe Protection Act* and *Greenbelt Act.*

(8) At least thirty (30) days prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the District Manager.

(9) The Owner shall not proceed with implementation of Limited Operational Flexibility until the District Manager has provided written acceptance of the Notice of Modifications or a minimum of thirty (30) days have passed since the day the District Manager acknowledged the receipt of the Notice of Modifications.

SCHEDULE 'A'

Limited Operational Flexibility Criteria for Modifications to Industrial Sewage Works

1. The modifications to sewage works approved under an Environmental Compliance Approval (Approval) that are permitted under the Limited Operational Flexibility (LOF), are outlined below and are subject to the LOF conditions in the Approval, and require the submission of the Notice of Modifications. If there is a conflict between the sewage works listed below and the Terms and Conditions in the Approval, the Terms and Conditions in the Approval shall take precedence.

1.1 Sewage Pumping Stations

a. Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, provided that the modifications do not result in an increase of the sewage treatment plant Rated Capacity and the existing flow process and/or treatment train are maintained, as applicable.

b. Forcemain relining and replacement with similar pipe size where the nominal diameter is not greater than 1,200mm.

1.2 Sewage Treatment Process

a. Installing additional chemical dosage equipment including replacing with alternative chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no modifications of treatment processes or other modifications that may alter the intent of operations and may have negative impacts on the effluent quantity and quality.

b. Expanding the buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses provided that the buffer zone is entirely on the proponent's land.

c. Optimizing existing sanitary sewage lagoons with the purpose to increase efficiency of treatment operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.

d. Optimizing existing sewage treatment plant equipment with the purpose to increase the efficiency of the existing treatment operations, provided that there are no modifications to the works that result in an increase of the approved Rated Capacity, and may have adverse effects to the effluent quality or location of the discharge.

e. Replacement, refurbishment of previously approved equipment in whole or in part with Equivalent Equipment, like-for-like of different make and model, provided that the firm capacity, reliability, performance standard, level of quality and redundancy of the group of equipment is kept the same. For clarity purposes, the following equipment can be considered under this provision: pumps, screens, grit separators, blowers, aeration equipment, sludge thickeners, dewatering equipment, UV systems, chlorine contact equipment, bio-disks, and sludge digester

systems.

1.3 Sanitary Sewers

a. Pipe relining and replacement with similar pipe size within the Sewage Treatment Plant site, where the nominal diameter is not greater than 1,200mm.

1.4 Pilot Systems

a. Installation of pilot systems for new or existing technologies provided that:

i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,
ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and District Manager three months after completion of the pilot project.

2. Sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this Limited Operational Flexibility.

3. Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment, are considered pre-approved.

4. The modifications noted in section (3) above are <u>not</u> required to follow the notification protocols under Limited Operational Flexibility, provided that the number of pieces and description of the equipment as described in the Approval does not change.

Schedule 'B' forms part of this Approval and contains a list of supporting documentation / information received,
reviewed and relied upon in the issuance of this Approval.

SCHEDULE 'B'

Environmental Compliance Approval (ECA) supporting documents:

1. Application for Environmental Compliance Approval (ECA) dated April 6, 2015 signed by Andrew Wildeboer, Director, 1514947 Ontario Inc. and supporting documents submitted by Novatech, Consulting Engineers.

2. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Volume 1 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

3. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Drawings, Volume 2 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

4. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Drawings, Volume 3 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

5. Report entitled "West Capital Airpark, 1500 Thomas Argue Road, Servicing Design Brief, Drawings, Volume 4 of 4" dated April 2015 prepared by Novatech, Consulting Engineers.

6. Report entitled "West Capital Airpark, Carp, Ontario, Phase 1, Residential, SBS Design Brief" dated April 2015 prepared by Clearford Water Systems Inc.

7. Report entitled "Wastewater Treatment and Water Storage Facility, West Capital Airpark, (Carp Airport), City of Ottawa, Stormwater Management Report" revised April 22, 2015 prepared by Novatech, Consulting Engineers.

8. Report entitled "Wastewater Treatment System, Carp Airport, Carp, Ontario" dated January 2015 prepared by Golder Associates.

Ontario
Ministry of
the Environment

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:

1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:

1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:

1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this Approval the existence of this Approval.

2. Condition 2 is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction, to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included to ensure that the Works are constructed in accordance with the approval and that record drawings of the Works "as constructed" are maintained for future references.

5. Condition 5 is included to indicate that by-passes of untreated sewage to the receiving watercourse is prohibited, save in certain limited circumstances where the failure to Bypass could result in greater injury to the public interest than the Bypass itself where a Bypass will not violate the approved effluent requirements, or where the Bypass can be limited or otherwise mitigated by handling it in accordance with an approved contingency plan. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of Bypass events.

6. Condition 6 is imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 7 are exceeded.

7. Condition 7 is imposed to ensure that the effluent discharged from the Works to the dry ditch meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body.

8. Condition 8 is included to require that the Works be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the Ministry.Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a

benchmark for Ministry staff when reviewing the Owner's operation of the work.

9. Condition 9 is included to enable the Owner to evaluate and demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and effluent limits specified in the Approval and that the Works does not cause any impairment to the receiving watercourse.

10. Condition 10 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

11. Condition 11 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These Conditions are also included to ensure that a Professional Engineer has reviewed the proposed modifications and attests that the modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed modifications comply with the Ministry's requirements stipulated in the Terms and Conditions of this Approval, MOE policies, guidelines, and industry engineering standards and best management practices.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment and
Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 10th day of February, 2017

Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

HV/

c: District Manager, MOECC Ottawa District Office
Susan M. Gordon, Novatech Engineering

- The current water and wastewater infrastructure charge, paid at permit issuance for development in Carp, will continue to be assessed. City staff will review a possible change to an area-specific development charge in the 2024 DC by-law update.
- Staff propose reserving future water and wastewater capacity for development in the village at the draft approval stage. As applications are draft approved, water and wastewater flows will be reserved accordingly for that location. However, staff will reserve the right to reassess the allocation of flows to other areas when draft conditions expire if the development has not proceeded.
- Notwithstanding the above recommendation, if the development industry wishes to enter into an agreement for other arrangements to share allocations of flows, City staff are open to participating in these discussions.

Regards,
Adam Brown
City of Ottawa / Ville d'Ottawa
Manager, Development Review - Rural | Gestionnaire, Revue des projets d'aménagement - rurales
Planning, Real Estate and Economic Development Department | Direction générale de la planification, des biens immobiliers et du développement économique
(613) 580-2424 x:28352
http://ottawa.ca/rural
http://ottawa.ca/rurales

Note: I will be out of the office March 14 – 18.

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This e-mail originates from the City of Ottawa e-mail system. Any distribution, use or copying of this e-mail or the information it contains by other than the intended recipient(s) is unauthorized. Thank you.

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Appendix D

- Novatech Markup of Storm Drainage Areas Plan 102085-SWM4, rev. 5 – Oct.17/22
- East Stormwater Management Facility MOECC ECA# 2447-C6UGGS

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

WEST CAPITAL Developments

No.	REVISION	DATE	BY
5.	RE-ISSUED WITH NO CHANGES	NOV 3/14	DJC
4.	REVISED AS PER CITY / MVC COMMENTS	NOV 29/13	MJP
3.	ISSUED WITH REVISED STORMWATER SITE MANAGEMENT REPORT	SEPT 26/13	MJP
2.	ISSUED WITH REVISED STORMWATER SITE MANAGEMENT REPORT	MAY 28/13	MJP
1.	ISSUED WITH STORMWATER MANAGEMENT REPORT (NOV 2011)	NOV 22/11	MJP

SCALE 1:1500

DESIGN RTL
CHECKED MJP
DRAWN RBG
CHECKED MJP
APPROVED MJP

FOR REVIEW ONLY

LICENSED PROFESSIONAL ENGINEER M.J. PETEPIECE 100079354 Nov 13/14 PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
WEST CAPITAL AIRPARK

EAST RESIDENTIAL DEVELOPMENT
POST DEVELOPMENT
STORM DRAINAGE AREAS PLAN
(SWMHYMO)

PROJECT No. 102085-01
REV # 5
DRAWING No. 102085-SWM4

PLANB1.DWG - 1000mmx707mm

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 2447-C6UGGS
Issue Date: September 24, 2021

1514947 Ontario Inc.
1500 Thomas Argue Road
Ottawa, Ontario
K0A 1L0

Site Location: West Capital Airpark - Phase 1B Residential
1500 Thomas Argue Road
Part of Lots 13 and 14, Concession 4, Huntly
City of Ottawa, Ontario

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

the establishment of stormwater management Works to serve Phase 1B of the West Capital Airpark East Residential Community, located in the City of Ottawa, including treatment and disposal of stormwater run-off from the development, to provide Enhanced Level water quality control and erosion protection, with a maximum outflow water temperature of 25 degrees Celcius, before entering Carp Creek, and to attenuate post-development peak flows to pre-development peak flows for all storm events up to and including the 100-year storm event, consisting of the following:

- **hydrodynamic separator (catchment area 6.9 hectares):** one (1) hydrodynamic separator, Vortechs Model 9000 or Equivalent Equipment, located on Stormwater Management East Pond Block 157, having a sediment storage capacity of 3.67 cubic metres, and a maximum treatment flow rate of 396 litres per second, discharging to the Stormwater Management East Pond located on the north-west corner of the East Residential Community on Block 157; and

- **stormwater management facility (catchment area 47.2 hectares):** one (1) dry pond, located at the north-west corner of the East Residential Community on Block 157, having a total storage volume of 17,020 cubic metres, at a total depth of approximately 1.66 metres, discharging via an outlet control structure to a 0.3 metres deep subsurface stone cooling trench, having a total volume of approximately 82 cubic metres, and an outfall weir at a maximum discharge rate of 1,180 litres per second and an outfall swale to Carp Creek;

including erosion/sedimentation control measures during construction and all other controls and

appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the submitted application and supporting documents listed in Schedule "A" forming part of this Approval.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this entire document and any schedules attached to it, and the application;

2. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

3. "District Manager" means the District Manager of the appropriate local District Office of the Ministry, where the Works are geographically located;

4. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19, as amended;

5. "Equivalent Equipment" means a substituted equipment or like-for-like equipment that meets the required quality and performance standards of the approved named equipment.

6. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

7. "Owner" means 1514947 Ontario Inc., and includes its successors and assignees;

8. "OWRA" means the *Ontario Water Resources Act, R.S.O. 1990, c. O.40* , as amended;

9. "Works" means the sewage Works described in the Owner's application, and this Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITIONS

1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. Except as otherwise provided by these Conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

3. Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.

4. Where there is a conflict between the documents listed in Schedule "A" and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

5. The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. EXPIRY OF APPROVAL

1. This Approval will cease to apply to those parts of the Works which have not been constructed within five (5) years of the date of this Approval.

2. In the event that completion and commissioning of any portion of the Works is anticipated to be delayed beyond the specified expiry period, the Owner shall submit an application of extension to the expiry period, at least twelve (12) months prior to the end of the period. The application for extension shall include the reason(s) for the delay, whether there is any design change(s) and a review of whether the standards applicable at the time of Approval of the Works are still applicable at the time of request for extension, to ensure the ongoing protection of the environment.

3. CHANGE OF OWNER

1. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

    a. change of Owner;

    b. change of address of the Owner;

    c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act,* R.S.O. 1990, c.B17 shall be included in the notification to the District Manager; or

    d. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the *Corporations Information Act,* R.S.O. 1990, c. C39 shall be included in the notification to the District Manager.

2. In the event of any change in ownership of the Works, other than a change to a successor municipality, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager and the Director.

3. The Owner shall ensure that all communications made pursuant to this condition refer to the number at the top of this Approval.

4. OPERATION AND MAINTENANCE

1. If applicable, any proposed storm sewers or other stormwater conveyance in this Approval can be constructed but not operated until the proposed stormwater management facilities in this Approval or any other Approval that are designed to service the storm sewers or other stormwater conveyance are in operation.

2. The Owner shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the Works do not constitute a safety or health hazard to the general public.

3. The Owner shall undertake an inspection of the condition of the Works, at least once a year, and undertake any necessary cleaning and maintenance to ensure that sediment, debris and excessive decaying vegetation are removed from the Works to prevent the excessive build-up of sediment, oil/grit, debris and/or decaying vegetation, to avoid reduction of the capacity and/or permeability of the Works, as applicable. The Owner shall also regularly inspect and clean out the inlet to and outlet from the Works to ensure that these are not obstructed.

4. The Owner shall construct, operate and maintain the Works with the objective that the effluent from the Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam or discoloration on the receiving waters.

5. The Owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the Owner's administrative office for inspection by the Ministry. The logbook shall include the following:

    a. the name of the Works; and

    b. the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed and method of clean-out of the Works.

6. The Owner shall prepare an operations manual prior to the commencement of operation of the Works that includes, but is not necessarily limited to, the following information:

    a. operating and maintenance procedures for routine operation of the Works;

    b. inspection programs, including frequency of inspection, for the Works and the methods or tests

employed to detect when maintenance is necessary;

c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;

d. contingency plans and procedures for dealing with potential spills and any other abnormal situations and for notifying the District Manager; and

e. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.

7. The Owner shall maintain the operations manual current and retain a copy at the Owner's administrative office for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.

5. TEMPORARY EROSION AND SEDIMENT CONTROL

1. The Owner shall install and maintain temporary sediment and erosion control measures during construction and conduct inspections once every two (2) weeks and after each significant storm event (a significant storm event is defined as a minimum of 25 mm of rain in any 24 hours period). The inspections and maintenance of the temporary sediment and erosion control measures shall continue until they are no longer required and at which time they shall be removed and all disturbed areas reinstated properly.

2. The Owner shall maintain records of inspections and maintenance which shall be made available for inspection by the Ministry, upon request. The record shall include the name of the inspector, date of inspection, and the remedial measures, if any, undertaken to maintain the temporary sediment and erosion control measures.

6. REPORTING

1. One (1) week prior to the start-up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.

2. The Owner shall, upon request, make all reports, manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

3. The Owner shall prepare a performance report within ninety (90) days following the end of the period being reported upon, and submit the report(s) to the District Manager when requested. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be prepared to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

   a. a description of any operating problems encountered and corrective actions taken;

   b. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism

or thing forming part of the Works, including an estimate of the quantity of any materials removed from the Works;

c. a summary of any complaints received during the reporting period and any steps taken to address the complaints;

d. a summary of all spill or abnormal discharge events; and

e. any other information the District Manager requires from time to time.

7. RECORD KEEPING

1. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the operation, maintenance and monitoring activities required by this Approval.

Schedule "A"

1. Application for Environmental Compliance Approval, dated August 18, 2021, received on August 24, 2021, submitted by 1514947 Ontario Inc.;

2. Transfer of Review Letter of Recommendation, dated August 24, 2021, and signed by Damien Whittaker, P.Eng., Senior Engineer - Infrastructure Applications; Development Review, Rural Branch; City of Ottawa, including the following supporting documents:

    a. Final Plans and Specifications prepared by Novatech

    b. Stormwater Management Report prepared by Novatech

3. Email received on September 7, 2021, from Susan Gordon, Novatech

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted. This condition is also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.

3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

4. Condition 4 is included as regular inspection and necessary removal of sediment and excessive decaying vegetation from the Works are required to mitigate the impact of sediment, debris and/or decaying vegetation on the treatment capacity of the Works. The Condition also ensures that adequate storage is maintained in the Works at all times as required by the design. Furthermore, this Condition is included to ensure that the Works are operated and maintained to function as designed.

5. Condition 5 is included as installation, regular inspection and maintenance of the temporary sediment and erosion control measures is required to mitigate the impact on the downstream receiving watercourse during construction until they are no longer required.

6. Condition 6 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.

7. Condition 7 is included to require that all records are retained for a sufficient time period to adequately evaluate the long-term operation and maintenance of the Works.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment,
Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 24th day of September, 2021

Aziz Ahmed, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

MM/

c: District Manager, MECP Ottawa District Office
City Clerk, City of Ottawa (D07-16-18-0007)
Damien Whittaker, City of Ottawa
Susan Gordon, Novatech

Drawings

Unit Yield	
Lot Type	**Lotting Extension**
50'	77
20' Townhome	30
Total	**107**

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
2.	ISSUED WITH SERVICEABILITY REPORT	OCT 17/22	ARM
1.	REVISED LOTTING	SEPT 08/21	JGR

SCALE
1:1000 (A1) / 1:2000 (11x17)
1:1000
0 10 20 30 40

DESIGN XXX
CHECKED XXX
DRAWN wls
CHECKED XXX
APPROVED XXX

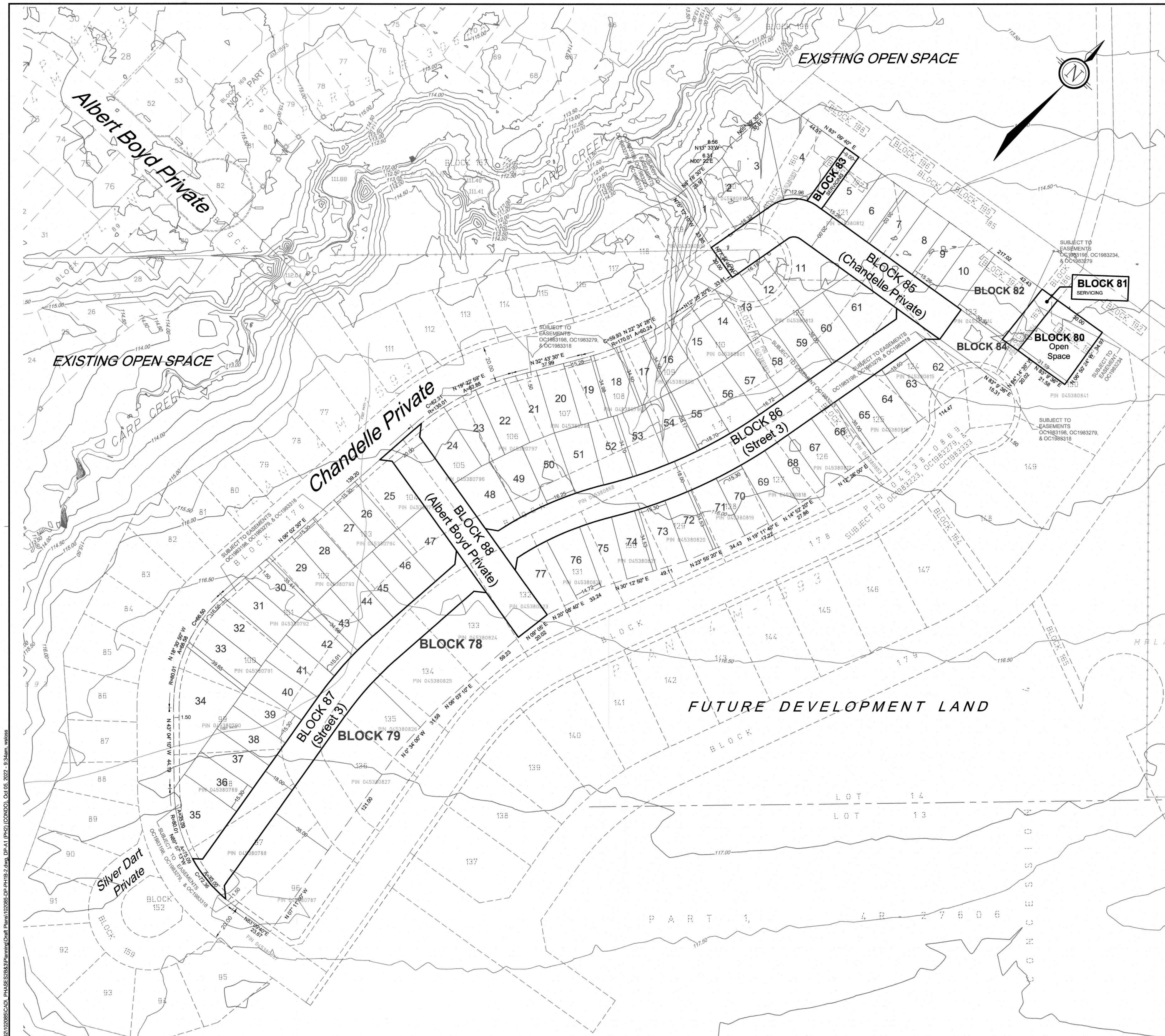
FOR REVIEW ONLY

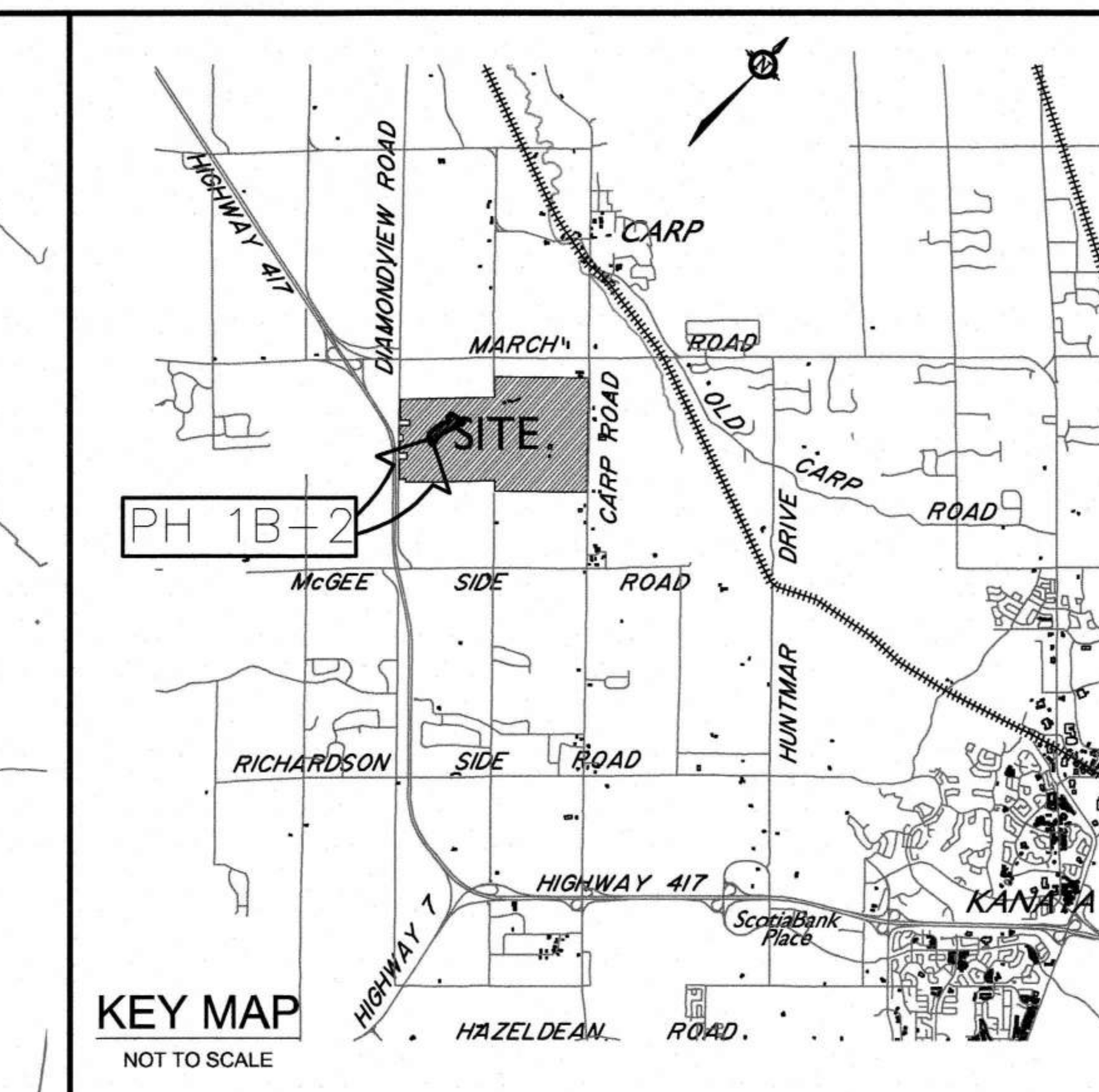
NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY of OTTAWA
WEST CAPITAL AIRPARK

DRAWING NAME
CONCEPT PLAN 3
PHASE 2B

PROJECT No. 102085-08
REV REV #2
DRAWING No. 102085-2021-CP3





KEY MAP
NOT TO SCALE

METRIC : MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

DRAFT PLAN OF CONDOMINIUM OF

PART OF LOTS 97, 98, 104, 105
120 TO 136 (INCLUSIVE) & 150
PART OF BLOCKS 160, 162, 163, 176 & 177
REGISTERED PLAN 4M-1593
CITY OF OTTAWA

CITY OF OTTAWA
SCALE
1 : 1000 (0 10 20 30 40)

DATE: OCTOBER, 2022

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJOINING LANDS ARE CORRECTLY SHOWN.

DATED 2022/10/06

JOHN H. GUTRI
ONTARIO LAND SURVEYOR

FAIRHALL MOFFATT & WOODLAND LIMITED
ONTARIO LAND SURVEYORS

JOB No. AB25901

OWNER'S CERTIFICATE

I/WE, 1514947 ONTARIO INC.,BEING THE REGISTERED OWNER(S), HEREBY AUTHORIZE NOVATECH TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF OTTAWA FOR REVIEW AND APPROVAL.

DATED

ANDREW WILDEBOER
(I have the authority to bind the company)

PROPOSED CONDOMINIUM BLOCKS FOR COMMON ELEMENTS.

BLOCKS 85, 86, 87, & 88	-PRIVATE ROADS
BLOCK 80	-OPEN SPACE
BLOCKS 81 & 83	-SERVICING

WEST CAPITAL AIRPARK - PHASE 1B-2

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

PROJECT No. 102085-1

PLANA1.DWG - 841mmx594mm

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No.	REVISION	DATE	BY
1.	ISSUED WITH SERVICEABILITY REPORT	OCT 17/22	ARM

SCALE 1:500

DESIGN MNP
CHECKED ARM
DRAWN MNP
CHECKED ARM
APPROVED SMG

FOR REVIEW ONLY

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
WEST CAPITAL AIRPARK

DRAWING NAME
PRELIMINARY GRADING & SERVICING PLAN - PHASE 1B-2

PROJECT No. 102085-08
REV REV # 1
DRAWING No. 102085-1B2-PGS1

STORMWATER MANAGEMENT EAST POND
NORTH
KEY PLAN
N.T.S.
SITE BENCHMARK
REFERENCED TO LOCAL GEODETIC DATUM
CHANDELLE PVT
STREET THREE
ALBERT BOYD PVT
FUTURE DEVELOPMENT LAND
MAJOR OVERLAND FLOW ROUTE DEPRESSED CURB AND ASPHALT BOULEVARD
PROPOSED VORTECHS UNIT
FUTURE DEVELOPMENT LOTS
3.0m WIDE SWMF ACCESS ROAD
PHASE 1B-2 COMMUNITY BLOCK
6.0m DRIVEWAY TO COMMUNITY BLOCK (TEMPORARY). TO BE REPLACED WITH ROADWAY FOR FUTURE DEVELOPMENT LOTS
PROPOSED ELEVATION
EXISTING ELEVATION
TOP OF FOUNDATION ELEVATION (STANDARD 8' BASEMENT HEIGHT)
UNDERSIDE OF FOOTING ELEVATION
PROPOSED TERRACE ELEVATION
DRIVEWAY & PROPERTY GRADE
PROPOSED ROADSIDE CATCHBASIN
PROPOSED ROADSIDE CATCHBASIN WITH INLET CONTROL DEVICE
PROPOSED CATCHBASIN MANHOLE
PROPOSED REARYARD CATCHBASIN
PROPOSED LANDSCAPE ELBOW CATCHBASIN
MAJOR OVERLAND FLOW ROUTE
DEVELOPMENT SETBACK
EXISTING PHASE 1B-1 DEVELOPMENT
PROPOSED WATERMAIN AND DIAMETER
PROPOSED VALVE & VALVE BOX
VALVE & VALVE CHAMBER
PROPOSED HYDRANT C/W VALVE & LEAD
PROPOSED TOP OF BOTTOM FLANGE
PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE
PROPOSED SMALL BORE SEWER-SANITARY AND DIRECTION OF FLOW
PROPOSED SANITARY SYSTEM ACCESS POINT
PROPOSED STORM SEWER AND DIRECTION OF FLOW
PROPOSED REAR YARD INFILTRATION TRENCH AND DIRECTION OF FLOW
PROPOSED STORM MH
PROPOSED SERVICE LOCATION
SERVICE LOCATION - SERVICE INSTALLED AS PART OF PHASE 1B WORKS
PROPOSED SERVICE LOCATION (WATER AND STORM)
PROPOSED SERVICE LOCATION (SANITARY ONLY)
1.8m CONCRETE SIDEWALK
RESIDENTIAL ROAD 20.0m ROAD ALLOWANCE
URBAN SECTION 4 PARTY JOINT USE TRENCH
(CHANDELLE PVT)
RESIDENTIAL ROAD 18.0m ROAD ALLOWANCE
URBAN SECTION 4 PARTY JOINT USE TRENCH
(STREET THREE)

NOTE:
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1.	ISSUED WITH SERVICEABILITY REPORT	OCT 17/22	ARM

SCALE 1:500

DESIGN MNP
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LOCATION
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WEST CAPITAL AIRPARK

DRAWING NAME
PRELIMINARY GRADING & SERVICING PLAN - PHASE 1B-2

PROJECT No. 102085-08
REV: REV # 1
DRAWING No. 102085-1B2-PGS2