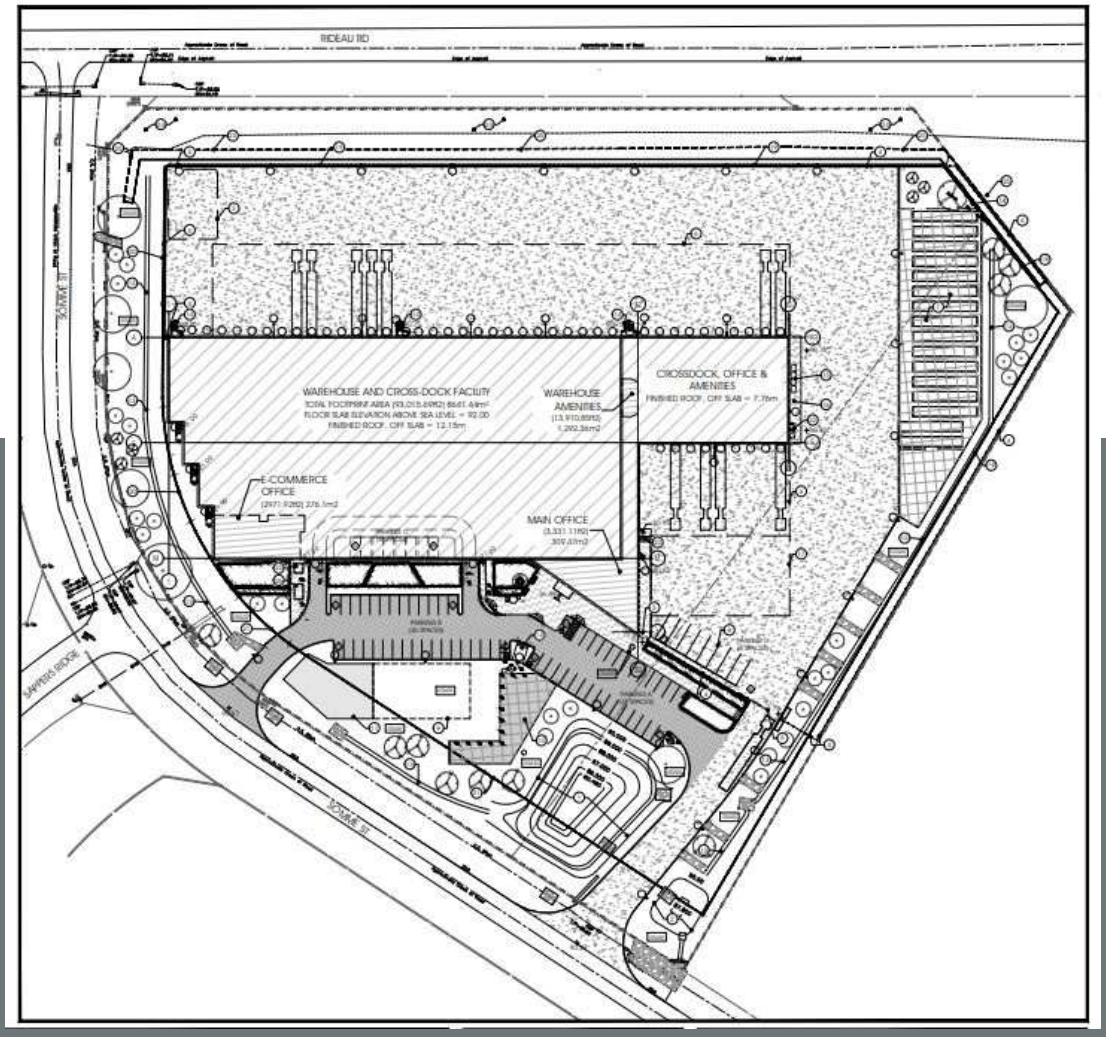
Planning Rationale Site Plan Control Application

Fastfrate Ottawa Warehouse Facility
301 Somme Street – Hawthorne Industrial Park



CIMA+ file number: A001083
August 16, 2021

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Fastfrate Ottawa Warehouse Facility
301 Somme Street – Hawthorne Industrial Park

Prepared by:

Tony Sroka, MPL, MCIP, RPP
Principal Planner
Haven Group Inc

Verified by:

Christian Lavoie-Lebel, P. Eng, ing.
Partner, Project Director, CIMA+

Prepared on behalf of Consolidated Fastfrate (Ottawa) Holdings Inc.

Submitted to the City of Ottawa

240 Catherine Street, Suite 110, Ottawa, Ontario
Canada K2P 2G8

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Confidentiality and ownership

Table of involved resources

In addition to the signatories of this report, the following individuals have also been involved in the study and writing of the report as technical experts within the project team:

Name	Discipline

Review and submission register			
Review No.	Reviewed by	Date	Description of the change or submission
001	CLL	12-08-21	CIMA+ Peer Review draft report

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AODA	Accessibility for Ontarians with Disabilities Act
CoA	Committee of Adjustment (City of Ottawa)
EA	Environmental Assessment
EIS	Environmental Impact Statement
GLA	Gross Leasable Area
OP	Official Plan
PPS	Provincial Policy Statement (2020)
SNCA	South Nation Conservation Authority
SPA	Site Plan Control Application
TIA	Transportation Impact Assessment
ZBL	Zoning Bylaw
SWM	Stormwater Management

1. Introduction

CIMA+ has been retained by *Civitas Architecture Inc*. on behalf of Consolidated Fastfrate (Ottawa) Holdings to prepare and submit a site plan control application and related Lifting of 30 cm Reserve application for the property located at 301 Somme Street within the Hawthorne Industrial Park herein referred to as the subject site. The legal description of the subject site is defined as Part of Lot 26, Concession 6 (Rideau Front) Geographic Township of Gloucester and Part of Blocks 5 and 14, Registered Plan 4M – 1388 as presented on Plan 4R – 33406. Refer to Appendix B.

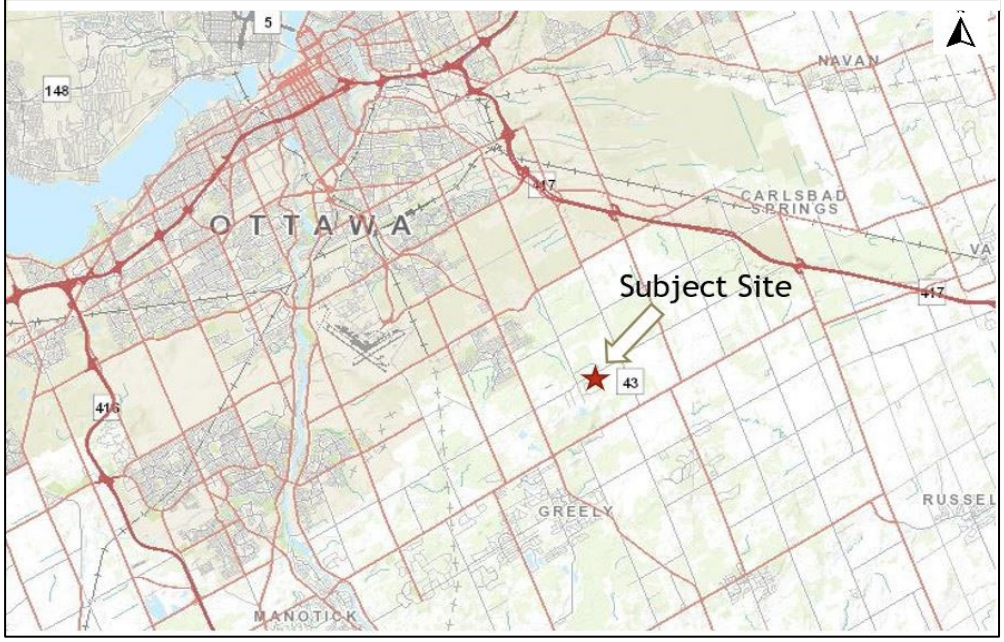
The purpose of the site plan control application is to attain site plan control approval from the City of Ottawa to support the construction of a new warehouse facility for Consolidated Fastfrate (Ottawa) Holdings to operate out of the Hawthorne Industrial Park. Consolidated Fastfrate (Ottawa) Holdings Inc has undertaken formal pre application consultation with the City of Ottawa on December 16, 2020. The City of Ottawa has deemed this application as “complex” in terms of the city’s site plan control application process.

The following Planning Rationale Report provides a planning justification in support of the proposed development, associated “Site Plan Control” application and “Lifting 30 Centimeter Reserve” application. This report demonstrates how the proposed development represents good land use planning and is consistent with the Planning Act, Provincial Policy Statement, City of Ottawa, Official Plan and Zoning Bylaw, and other relevant plans and policies considerations.

2. Site Overview

The subject site is located within the southeastern rural area of the City of Ottawa north of the Village of Greely and east of the Findlay Creek Community. The local rural road network offers access to both urban and rural areas of the city as well as access to the 417 Highway which is located to the northeast of the subject site. Refer to Figure 1.

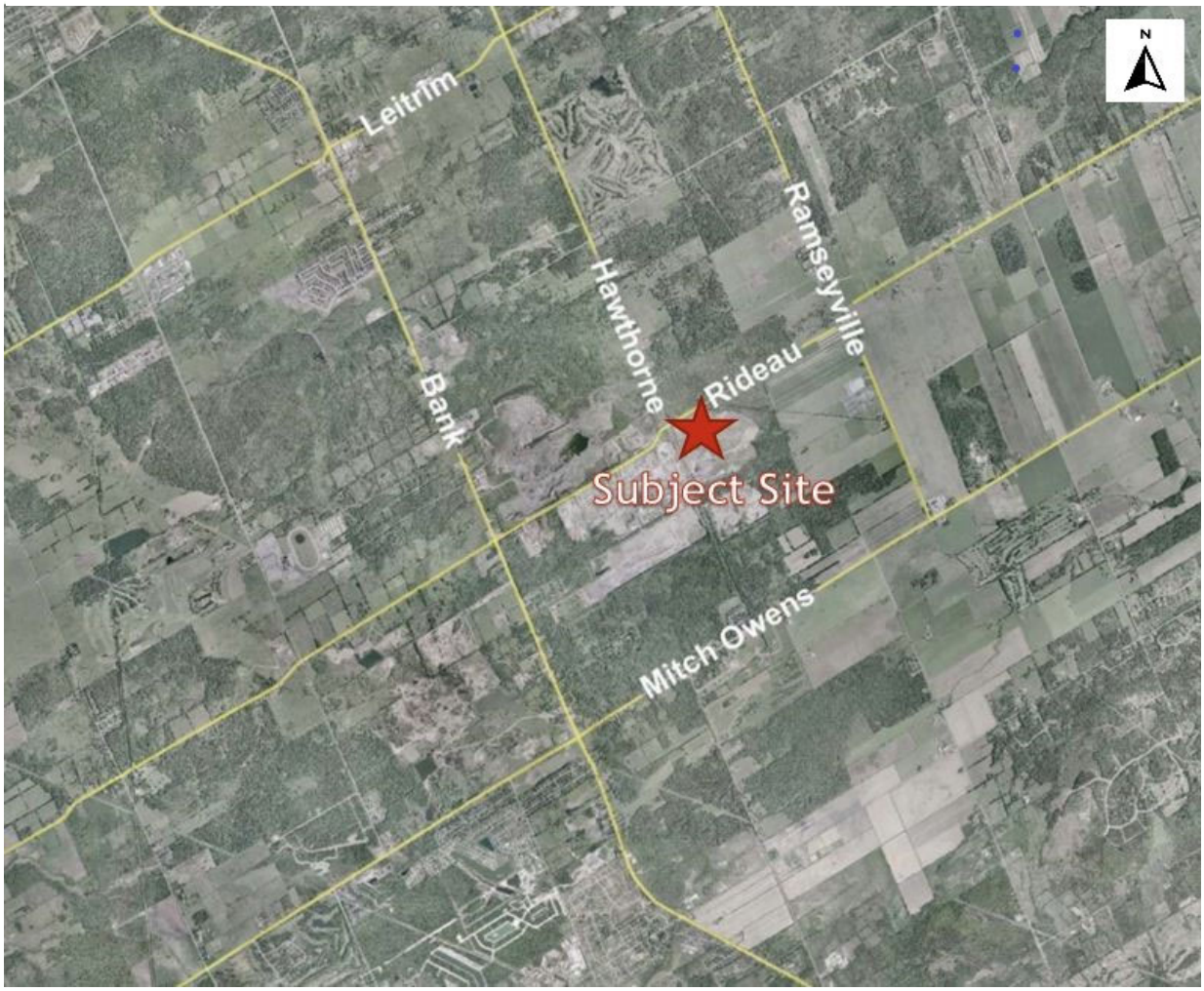
Figure 1: Citywide Rural Area Context



Source: Google Maps

The subject site is located within the Hawthorne Industrial Park in the southeast quadrant of the Rideau Road and Hawthorne Road intersection. The Hawthorne Industrial Park is intended for heavy industrial land uses. The Fastfrate site's municipal address is 301 Somme Street. Refer to Figure 2.

Figure 2 : Local Rural Area Context



Source: Google Maps

The Hawthorne Industrial Park is currently owned by Tomlinson Development Corporation and was developed through an approved plan of subdivision in 2009 (City of Ottawa File Reference 15-94-0505). This industrial park subdivision is accessible off both Hawthorne Road and Rideau Road. Refer to Figure 3.

Historical land use of the neighbouring properties noted in the Paterson Group, Phase I Environmental Site Assessment Study (Nov. 2020) consists primarily of vacant and/or undeveloped lands to the north, of the Hawthorne Industrial Park, and farmland to the east. A vacant vegetated area is located directly to the north of Rideau Road and the Hawthorne Industrial Park. Agricultural lands including cultivated fields are located to the east of the Industrial Park.

Figure 3: Subject Site Area Context - Hawthorne Industrial Park

Source: geoOttawa

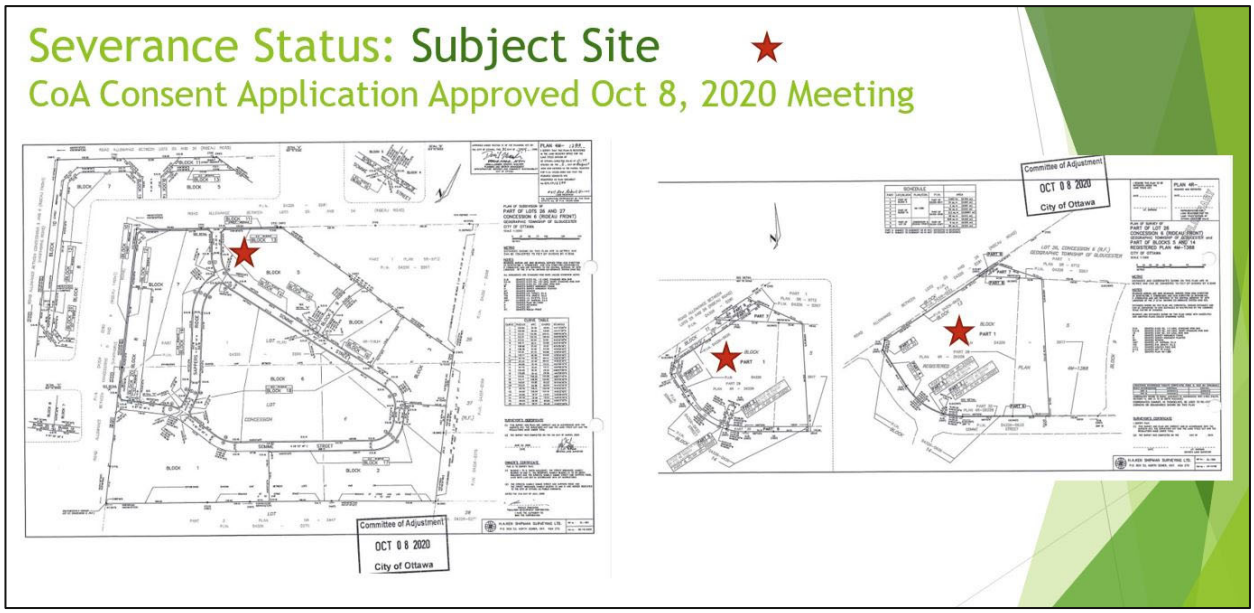
Adjacent land uses to the west of the Industrial Park include the Tomlinson Rideau Quarry and Plant site in addition to the Lafarge ready mix concrete facilities located to the west of the industrial park and Hawthorne Road. A remnant quarry site is located to the south of the park.

The subject site is generally flat and is currently a vacant lot comprised of a disturbed open field. GHD Limited has assessed the property and confirmed the following:

The surrounding topography slopes up at approximately 2 meters horizontal north to south by approximately 5.0 meters from Rideau Road and reaches a plateau area which extends across the site to the Somme Street. The Site elevation is higher compared to the surrounding streets varying from approximately 0.2 meter's higher on the south side (Somme Street) to 5 meters higher on the north side (Rideau Street). There is also a ditch along the south, west, and north perimeters of the Site. The "Scoped Environmental Impact Study" (July 2021) prepared by GHD concluded that there is no watercourse located directly on the subject property. There is an existing roadside ditch along Somme Street that conveys minimal flows to the ditch along Rideau Road. The ditch along Somme Street mainly conveys drainage flows south into an existing stormwater management facility located within the Hawthorne Industrial Park. GHD biologists did not identify any significant terrestrial or aquatic species on a national, provincial, or regional level within the subject property during the field surveys. The roadside ditch located directly northwest of the property was identified in the EIS to have the potential to provide indirect fish habitat downstream to Findlay Creek Municipal Drain.

The entire industrial park has been zoned to permit uses such as industrial manufacturing, warehousing, storage, construction facilities and other heavy industrial uses. Most land parcels within the park are currently vacant. Within the Hawthorne Business Park only one other developed parcel has a large building on it located at 681 Somme Street. This developed site is located at the southeast corner of the Hawthorne Road and Somme Street intersection and features an existing waste management services facility operated by Renewi Canada Ltd. Two (2) other parcels within the park are currently being used for what appear to be onsite storage of materials.

Figure 4: Subject Site 301 Somme Street



Source: City of Ottawa, Committee of Adjustment

The subject site is referred to as 301 Somme Street and is presently owned by Consolidated Fastfrate (Ottawa) Holdings. This parcel was created because of a consent application approved by the City of Ottawa Committee of Adjustment in November of 2020 (City of Ottawa File References D08-01-20/B-00260 to D08-01-20/B-00261). Refer to Figure 4.

The lands within the industrial park that are immediately adjacent to the subject site are presently vacant and do not have any existing buildings on them. Beyond the limits of the industrial park, land uses consist of heavy industrial and aggregate uses to the west and south, vacant lands to the north and agricultural lands to the east.

3. Description of Proposed Site Development

The subject site is an irregular parcel of land encompassing an area of approximately 4.07 Hectares or ~10.05 Acres). Refer to Figures 4 and 5. The site is located adjacent to the intersection of Rideau Road and Somme Street. For site planning purposes the city's Planning Department has deemed the frontage along Somme Street to be considered as the front yard. The site is vacant and relatively flat in terms of elevation. The is a rise in the grade elevation from the Somme Street frontage toward the northern portion of the site.

Figure 5: Local Transportation Network

Source: Fastfrate Warehouse Facility, Rideau Road Ottawa, Transportation Impact Study May 10, 2021, Castleglenn Consultants,

There is a 30 cm reserve along both the Somme Street and Rideau Road frontages of the property. A lifting of a reserve application is required for access and servicing requirements. The reserve was put in place during the establishment of the subdivision and, as per clause 18 of Schedule F, Section D, of the Subdivision Agreement.

Figure 6: Subject Site Area Photo - 301 Somme Street Northeast View

Source: 1- Haven Group, Site Photo Ref 2650, April 14, 2021

Consolidated Fastfrate (Ottawa) Holdings' site plan defines the develop of a one storey warehouse facility 12.4 meters in height on the subject site at 301 Somme Street. The proposed warehouse facility has a base building gross floor area (GFA) footprint of approximately 8,641 m^2. The proposed site design details are highlighted on Table 1, Figure 7 and in Appendix C.

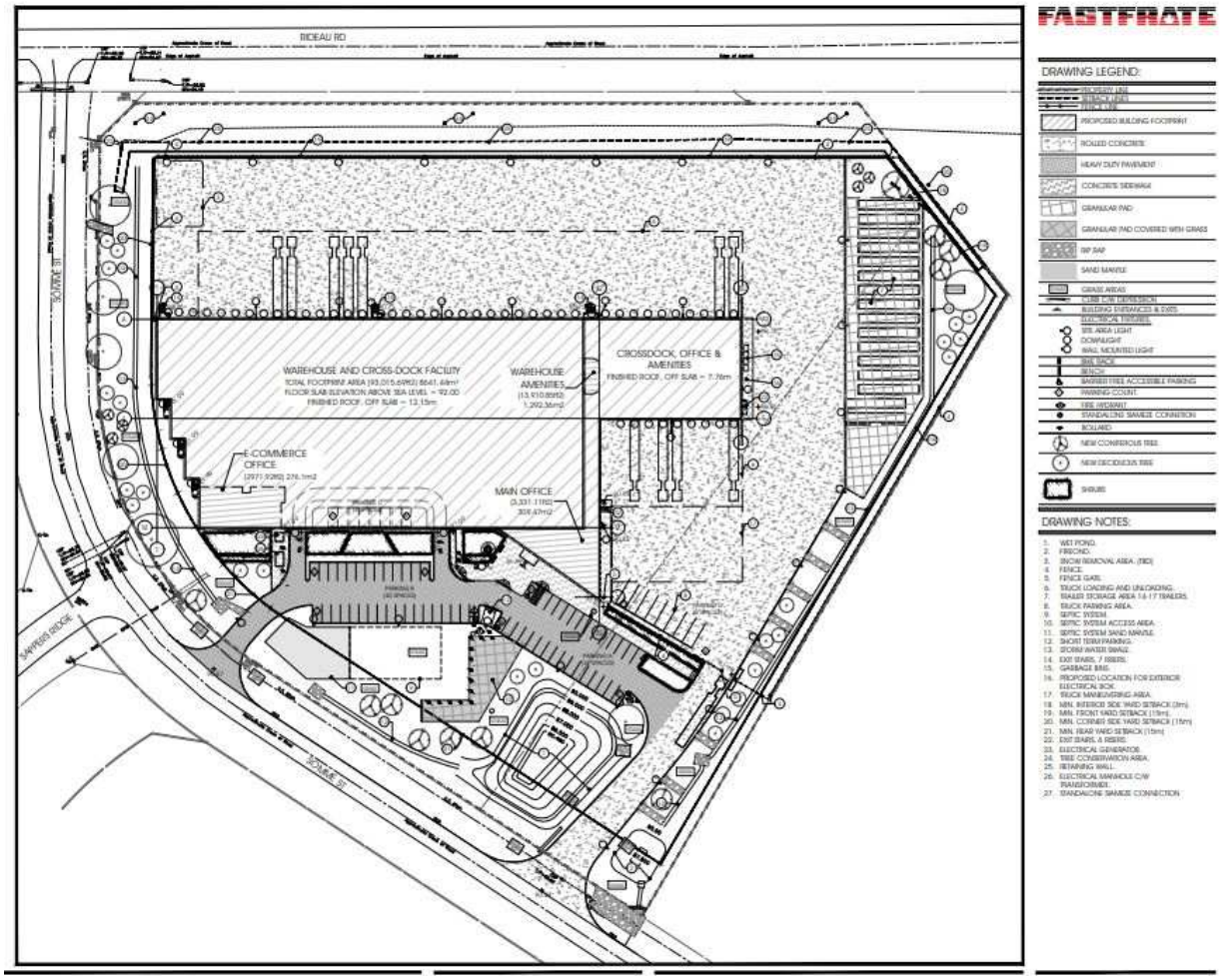
Table 1: Site Plan Statistics – Fastfrate Ottawa – 301 Somme Street

BUILDING AREA DATA	TOTAL m2	OCCUPANCY
2.1 WAREHOUSE (CROSS-DOCK)	1,292.37 m2	5 PERSONS
2.2 WAREHOUSE	6,610.36 m2	6 PERSONS
2.3 E-COMMERCE OFFICES	276.09 m2	8 PERSONS
2.1 MAIN OFFICE	309.47 m2	7 PERSONS
2.5 WAREHOUSE (AMENITIES)	153.15 m2	10 PERSONS
TOTAL BUILDING AREA	8,641.44 m2	36 PERSONS

SITE APPLICATION DATA	REQUIRED, CITY OF OTTAWA	PROPOSED
1.0 LAND USE REQUIREMENTS		
1.1 ZONE	RH	RH
1.2 MAXIMUM HEIGHT	15m	12.4m
1.3 FRONT YARD SETBACK	15m	60.5m
1.4 CORNER SIDE YARD SETBACK	15	16.2m
1.5 SIDE YARD SETBACK	3m	46.7m
1.6 REAR YARD SETBACK	15m	15.2m
1.7 MINIMUM LOT WIDTH	50m	N/A
1.8 MINIMUM LOT AREA	8,000m²	40,665.3m²
1.9 MAXIMUM LOT COVERAGE	50% (20,332.65m²)	21.25% (8,641.43m²)
1.10 TOTAL LANDSCAPED AREA ON PROPERTY	-	33% (13,419.55m²)
1.11 TOTAL LANDSCAPED OUTSIDE OF PROPERTY	-	11.2% (4,554.51m²)
2.0 PARKING REQUIREMENTS		
2.1 WAREHOUSE - FIRST 5000m2	5000m² x (0.8/100m²) = 40 SPACES	40 SPACES
2.1.1 WAREHOUSE (CROSS-DOCK)	1292.37m²	
2.1.2 WAREHOUSE	6610.36m²	
2.1.3 WAREHOUSE (AMENITIES)	153.15m²	
2.1.4 TOTAL WAREHOUSE	8055.88m²	
2.1.5 WAREHOUSE REMAINING PARKING SPACES	8,055.88m² - 5,000m2=3,055.88m2 x (0.4/100m2)	13 SPACES
2.2 E-COMMERCE OFFICES	276.10m² x (2.4/100m²) = 6.6 SPACES	8 SPACES
2.3 MAIN OFFICE	309.47m² x (2.4/100m²) = 7.42 SPACES	16 SPACES
2.4 TOTAL PARKING REQUIRED	66.24 SPACES	77 SPACES
2.5 PARKING PROVIDED BREAKDOWN		
2.5.1 PARKING LOT A PROVISION		8 SPACES
2.5.2 PARKING LOT B PROVISION		30 SPACES
2.5.3 PARKING LOT C PROVISION		31 SPACES
2.5.4 PARKING LOT D PROVISION		8 SPACES
2.5.5 TOTAL PARKING PROVIDED		77 SPACES
2.6 ACCESSIBLE PARKING SPACES	1 SPACE	1 SPACE
2.7 BICYCLE PARKING - OFFICE	585.56² x (1/250m²) = 2.34 SPACES	3 SPACES
2.8 BICYCLE PARKING - WAREHOUSE	8,055.88m² x (1/2000m²) =4.03 SPACES	5 SPACES
3.0 OTHER PARKING REQUIREMENTS		
3.1 LOADING FACILITIES	1 LOADING SPACE	1 LOADING SPACE
3.2 LOADING BAYS	N/A	48 LOADING SPACE

Source: CIVITAS, Site Plan (Drawing Ref. No. 2001-A1.0, Date: 210813

Figure 7: 301 Somme Street – Proposed Warehouse Development Site Plan



Source: CIVITAS ARCHITECTURE INC, Site Plan (Drawing Ref No 2001-A1.0} Date: 210813

The proposed site includes the following features:

- Vehicle, e-commerce, and transport trailer site access off Somme Street at the southeast corner of the property. Transport Trailers will also use this access point to exit the property.
- Employee, visitor, and e-commerce vehicle traffic to exit site at southwestern driveway.
- A cross-dock area located in the rear of the property and northeastern side of the facility.
- Additional parking area for transport trailers in the northeast corner of the site.
- An office area which is accessory to the warehouse principle use of the site is located in the southeastern part of the facility.
- An e-commerce delivery vehicle delivery pickup area incorporated in the front of the facility which is accessed off the front parking area. Delivery pickup vehicles will drive into the designated entrance to the facility and drive out the designated exit.
- Landscaped and staff / visitor parking areas located in front of the warehouse facility.
- A wastewater and septic field facility, as well as a wet stormwater pond to be in the front yard landscaped area.

3.1 Adjacent Development Initiatives

A review of adjacent developments planned within the immediate study area was undertaken by Castleglenn consultants a transportation consulting firm as part of the TIA study prepared in May of 2021 on behalf of the applicant. The following development initiatives were identified within proximity to the subject site

- 300 Somme Street: Located within Block 6 of the Tomlinson Hawthorne Industrial Park subdivision, the 300 Somme Street development is approximately 17.8 hectares in size. The development proposes a combined 740 m^2 office and 454 m^2 warehouse with the remaining land serving as temporary outdoor vehicle storage yard with stalls for tractor trailer storage (15.6 meters). The site would provide two, one-way accesses along Somme Street located 145 meter and 210 meters east of Sappers Ridge opposite the Fastfrate development.
- 35 Sappers Ridge: The 35 Sappers Ridge development proposes 16 commercial units on three separate pads, totalling 2,300 m^2 gross floor area of commercial development. A single access is proposed from Sappers Ridge.
- 581 Somme Street (Includes 601 Somme and 5123 Hawthorne): The 581 Somme Street proposes a new Techo-Bloc warehouse, showroom and accessory office building for a landscape business totalling approximately 370 m^2.
- 631 Somme Street: The 631 Somme Street development proposes 12 mini-storage warehouse buildings and 83 m^2 of office space. The total floor area of the development is proposed to be approximately 3,850 m^2.

3.2 Pre-Application Consultation

A pre-application consultation meeting was held on December 17, 2021, with the applicant, the project design team, City of Ottawa planning staff and technical staff for the purposes of reviewing the proposed warehouse development on the subject site, identifying city site plan control application requirements as well as allowing city staff to provide planning and engineering feedback regarding the preliminary site development concept presented. The City of Ottawa responded to Consolidated Fastfrate (Ottawa) Holdings and provided summary follow-up notes from this meeting which are presented in Appendix E.

On the advice of city planning staff, a follow-up meeting was held on March 1, 2021, with City Councillor George Darouze representing Osgoode Ward 20 for the purposes of reviewing the proposed site development on the subject site and receiving comments. The Councillor received a copy of the design team's preliminary site concept proposal for reference and public distribution to affected communities for further comment.

4. Planning Policy and Regulatory Context

The following section provides a summary overview of applicable planning policies and regulations which have been taken into consideration with regards to the site plan control application for the subject site.

4.1 Provincial Policy Statement (PPS)

Section 3 of the Provincial Planning Act (R.S.O.) requires that decisions affecting planning matters "shall be consistent with" the policies of the Provincial Policy Statement (PPS) including the development of employment uses and the promotion of economic activity). The Fastfrate Ottawa proposed warehouse is deemed an employment use. The current Provincial Policy Statement which came into effect May 1, 2020, is organized into three policy sections including:

+ Building Strong Healthy Communities (Section 1 PPS).
+ Wise Use and Management of Resources, (Section 2 PPS).
+ Protecting Public Health and Safety (Section 3 PPS).

The following assessment rationalizes how the proposed site plan for the subject site is consistent with the applicable PPS policies.

4.1.1 Building Strong Healthy Communities – Section 1.0 PPS

Section 1.1 of the PPS focuses on "Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns". This section of the PPS provides land use policy direction with regards to how healthy, liveable, and safe communities are to be sustained. The proposed site plan is consistent with this policy direction as follows:

+ The proposed site plan supports and promotes the efficient development of the subject site located within the Hawthorne Industrial Park which is designated in the City of Ottawa's Official Plan as a "Rural Employment Area" and zoned within the City of Ottawa's Zoning Bylaw as a Rural Heavy Industrial (RH) zone.
+ Development within the planned Hawthorne Industrial Park is under the City of Ottawa's site plan control approval process whereby the proposed site plan development avoids conflicting land use development patterns which may cause environmental or public health and safety concerns.
+ The proposed site plan supports the achievement of integrated industrial land use planning and development within the designated Hawthorne Industrial Park, achievement of effective growth management development, and implementation of City of Ottawa's cost-effective infrastructure planning and standards to minimize land consumption and servicing costs.
+ The proposed site plan development addresses the improvement for persons with disabilities by addressing land use barriers and development standards which will comply with the Accessibility for Ontarians with Disabilities Act (AODA). and
+ The proposed site plan development will ensure that necessary infrastructure will be available to meet current and projected needs.

Section 1.1.4 of the PPS provides policy directions regarding development within "Rural Areas in Municipalities". The proposed site plan development supports the applicable "Healthy, Integrated and Viable Rural Areas" policy direction as follows:

+ The warehouse facility as proposed in the site plan is a permitted use within the rural Hawthorne Industrial Park, and
+ The development as presented in the site plan control application will utilize rural infrastructure efficiently.

With regards to **Section 1.1.5.4 of the PPS** the proposed site plan development is deemed compatible with the planned function of the Hawthorne Industrial Park located within rural landscape of Southeast Ottawa which can be sustained by rural service levels.

The PPS provides that the City of Ottawa shall promote economic development through various measures, including ensuring suitable land and the necessary infrastructure is available for the development of employment uses. The City of Ottawa has identified and designated land for the development of rural employment area uses based on factors such as access to transportation and logistics facilities, land use compatibility, and the availability of public services and infrastructure to support employment uses. The proposed site plan development will be located within a designated Rural Employment Area and will be compatible with and contribute to the diversity of employment uses in this rural area, while utilizing existing infrastructure.

4.1.2 Wise Use and Management of Resources – Section 2.0 PPS

Section 2.1 of the PPS identifies policies concerning Natural Heritage. The proposed site plan is located within the approved Hawthorne Industrial Park subdivision and is deemed consistent with the policy direction cited in Section 2.1 as follows:

With regards to the City of Ottawa's Official Plan "Schedule K – Environmental Constraints" no environmental constraints are identified on the site. With regards to the Official Plan's "Schedule L1 – Natural Heritage System Overlay (East)" no Natural Heritage System features are located on the subject site. **Section 2.1.1 of the PPS indicates that natural areas and features must be protected**, and that development on lands adjacent to natural heritage features are prohibited unless it is demonstrated that there will be no negative impacts on such features or their ecological functions. A vegetated area is located within the property located to the north of Rideau Road and the Hawthorne Industrial Park subject site area.

The South Nation Conservation Authority (SNCA) identified that the subject site and Hawthorne Industrial Park borders a mapped watercourse on the north and east sides. The watercourse located on the east side of the Property has been identified as the Findlay Creek Municipal Drain. The SNCA confirmed that at a minimum, this watercourse contributes to downstream aquatic habitats in the form of base flow and nutrients and may provide habitat for fish in the spring and after rain events.

This watercourse feature was interpreted to meet the City of Ottawa's Official Plan definition of a Surface Water Feature, Section 2.4.2. of the OP, and therefore required an Environmental Impact Statement (EIS) for consideration of subject site's future development or site alteration requirements. GHD's environmental consulting branch have completed and submitted on behalf to the applicant site plan control application an Environmental Impact Statement which is deemed consistent with the City of Ottawa's Official Plan policies for Environmental Impact Statement, Section 4.7.8.

No negative impacts are anticipated on the forested area based on preliminary and environmental review and fieldwork. The EIS was prepared by GHD on behalf of the applicant in support of the site plan control application. A specified 15 meters development set back along the rear of the subject site property has been recommended by GHD and is proposed to mitigate impact on the drainage ditch running along the south side of Rideau Road.

Section 2.2 of the PPS provides policies on Water. Policy 2.2.2 states "Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored".

No sensitive surface or ground water features exist on the subject site. A drainage ditch is located adjacent to the site running along the south side of Rideau Road. A 15 meters development setback from the centre line of the ditch in addition to undertaking slope stabilization mitigation measures within the setback area are proposed to protect and improve this feature. Refer to section 6.5 of this report and the Design Brief include in Appendix D.

Section 2.3 of the PPS identifies policies addressing Agriculture. Policy 2.3.1 states that "Prime agricultural areas shall be protected for long-term use for agriculture".

The subject site is located within the Hawthorne Industrial Park and is not located within or adjacent to prime agricultural land.

Section 2.5 of the PPS identifies policies on Mineral Aggregate Resources. Policy 2.5.1 states "Mineral aggregate resources shall be protected for long-term use and, where provincial information is available, deposits of mineral aggregate resources shall be identified'.

No mineral aggregate resources exist on the subject site. The Lafarge and Tomlinson Rideau Quarry aggregate areas are located to the west of the Hawthorne Industrial Park will not be impacted by the proposed site plan. The Transportation Impact Assessment (TIA) completed by Caslteglenn in May 2021, included a review of the existing and future background intersection capacity analysis. This review identified that the existing Hawthorne Road and Rideau Road intersection and surrounding minor road intersections were identified in the TIA to operate with acceptable levels of service, delay, and v/c ratios. The TIA concluded that the existing transportation network can accommodate additional growth resulting from the proposed subject site development.

Section 2.6 of the PPS identifies policies on Cultural Heritage and Archaeology. Policy 2.6.1 states "Significant built heritage resources and significant cultural heritage landscapes shall be conserved". Policy 2.6.2 states that "Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved".

Archaeological resources and potential would have been investigated and assessed during the City of Ottawa review, approval, and registration of the Hawthorne Industrial Park subdivision. City planning staff during the pre consultation and SPA submission process did not identify the need for the applicant to complete an "Archaeological Resource Assessment" for the subject site. With regards to Policy 2.6.3 the subject site is not adjacent to protected heritage property.

4.1.3 Protecting Public Health and Safety – Section 3.0 PPS

Section 3 of the PPS identifies policies regarding the protection of public health and safety.

Section 3.1 of the PPS identifies policies on Natural Hazards. Policy 3.1.1 of the PPS states that "Development shall generally be directed, in accordance with guidance developed by the province (as amended from time to time), to areas outside of:

- Hazardous lands adjacent to the shorelines of the Great Lakes - St. Lawrence River System and large inland lakes which are impacted by flooding hazards, erosion hazards and/or dynamic beach hazards.
- Hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.
- Hazardous sites".

The proposed site plan is not occurring within or adjacent to natural hazard lands or sites. The SNCA has confirmed that the subject site is not located within a municipal drinking water Wellhead Protection Area or Intake Protection Zone.

Section 3.2 of the PPS identifies policies on Human-Made Hazards. Policy 3.2.1 states "Development on, abutting or adjacent to lands affected by mine hazards; oil, gas and salt hazards; or former mineral mining operations, mineral aggregate operations or petroleum resource operations may be permitted only if rehabilitation or other measures to address and mitigate known or suspected hazards are under way or have been completed."

The subject site is located within the Hawthorne Industrial Park subdivision. The industrial park is located east of the Tomlinson Rideau Quarry Plant and Lefage (Ready Mix Concrete Supplier) aggregate operations which are located on the south side of Hawthorne Road. Refer to Figure 3. Rehabilitation and measures to address any known or suspected hazards associated with the location of the aggregate operations adjacent to the Industrial Park would have been addressed as part of the Hawthorne Industrial Park subdivision approval agreement.

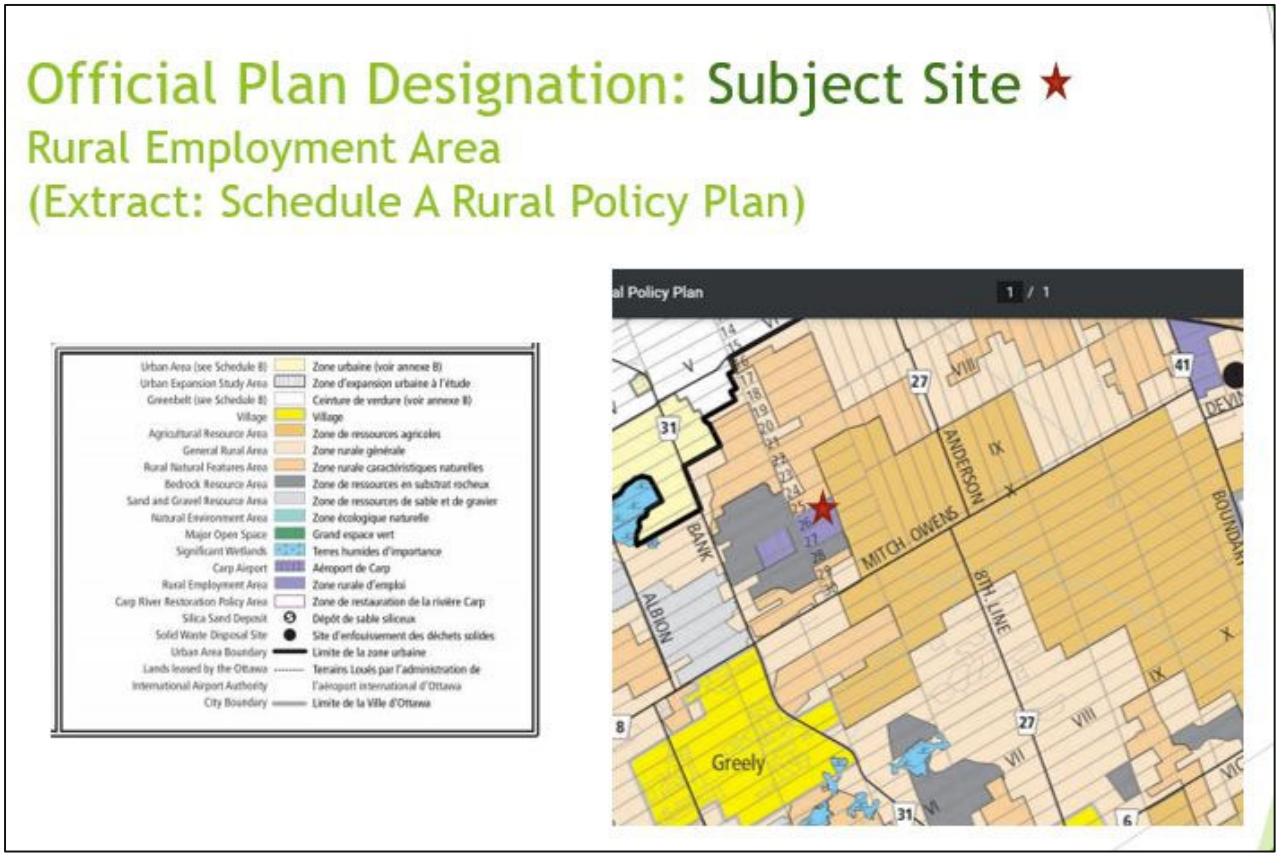
Based on above assessment of the identified relevant policies of the PPS the proposed site plan is concluded to be consistent with the policy direction of the Provincial Policy Statement (2020).

4.2 City of Ottawa Official Plan (2003 Consolidation as amended)

The City of Ottawa Official Plan ('OP') was adopted by City of Ottawa Council in 2003 and has subsequently been amended since then as per Council and provincially approved amendments. The OP provides guidance to city Council, municipal staff and the public when making decisions about future land use and economic development in the City of Ottawa. The site is located within the rural boundary area of the City and is designated **"Rural Employment Area**" identified on Schedule A, Rural Policy Plan of the OP and illustrated in Figure 8.

Section 3.7.5 of the OP states that the "Rural Employment Area" land use designation is intended to support and encourage clustering of primarily industrial uses not suitable in the Urban Area or General Rural Area. The OP further states that "rural employment areas located near 400 Series Highway interchanges are uniquely suited to transportation facilities such as truck terminals, warehouses, courier and freight facilities that support intra and interprovincial movements of goods". Uses permitted within rural employment areas include both heavy and industrial uses, new transportation, warehouse, and storage operations, specified noxious uses, new limited commercial uses that primarily provide services to employees of rural business park or travelling public.

Figure 8: Official Plan (2003 Consolidation, as amended) Land Use Designation



Source: 2 - Adapted from City of Ottawa, Official Plan Schedule A Rural Policy Plan

The proposed site plan and development of the subject site for a warehouse, e-commerce distribution facility is consistent with the intent of the "Rural Employment Area" land use designation and associate policies of the Official Plan.

'Section 3.7.5 requires development within Rural Employment Areas to undergo Site Plan Control approval and particular attention is to be given to the physical design of the building and site.

Section 2 of the OP entitled "Strategic Directions" outlines broad policies that govern growth and change in Ottawa over a 20-year planning horizon. With regards to the proposed development relevant policies within this section of the OP include the following. **Section 2.1 of the OP – "Patterns of Growth"** identifies that Ottawa's growth will be managed in ways that create complete communities with a good balance of facilities and services to meet people's everyday needs, including schools, community facilities, parks, a variety of housing options, and places to work and shop. The plan provides projections in terms of anticipated population, household and employment which is to be realized over the planning horizon in both urban and rural areas of the city.

The proposed development of the subject site is deemed consistent with the policies for managing "Patterns of Growth" and the achievement of employment projections in the rural area of Ottawa.

Section 2.5.1 of the OP identifies several Design Objectives in the form of statements which express how the city wants to influence the built environment as the city evolves. These Design Objectives are broadly applicable, to plans and development in all land use designations, and from a city-wide to a site-specific basis. Table 2 provides an assessment of how the proposed sites plan is consistent with these policy objectives.

Table 2: Consistency with Official Plan Design Objectives - Policy Ref 2.5.1

Official Plan Policy Reference Section 2.5.1 Designing Ottawa Design Objectives	
Design Objectives (OP Section 2.5.1)	**Site Plan Design Response**
1. To enhance the sense of community by creating and maintaining places with their own distinct identity.	Proposed Site Plan design for the warehouse facility enhanced the intended rural industrial park identity area and add to the infill development of the Hawthorne Industrial Park.
2. To define quality public and private spaces through development	The proposed warehouse on the subject site will be defined by a quality development on a corner gateway entrance site location within the Hawthorne Industrial Park.
3. To create places that are safe, accessible and are easy to get to, and move through.	The proposed site plan layout provides for a safe, accessible and are easy to get to, and move through Warehouse facility.
4. To ensure that new development respects the character of existing areas.	The subject site is located within the Hawthorne Industrial Park which respects the character and intended use of the area as a rural industrial park.
5. To consider adaptability and diversity by creating places that can adapt and evolve easily over time and that are characterized by variety and choice.	The site plan design and layout provide for the adaptive re-use of the site over time for industrial uses requiring a large format building site.
6. To understand and respect natural processes and features in development design.	Phase I and II Environmental Assessment have been undertake on behalf of Consolidated Fastfrate (Ottawa) Holdings Inc to assist in understanding and responding to natural processes and features. The site plan design respects the natural processes identified in the EA report including provision of a sufficient development setback and slope stabilization

Official Plan Policy Reference Section 2.5.1 Designing Ottawa Design Objectives	
Design Objectives (OP Section 2.5.1)	**Site Plan Design Response**
	measures from the recommended 15 m development set back for the centre line of the drainage ditch which runs along the south side of Rideau Road adjacent to the site.
7. To maximize energy-efficiency and promote sustainable design to reduce the resource consumption, energy use, and carbon footprint of the built environment.	While Fastfrate is not seeking a LEED certification or equivalency on this new construction project efforts and best practices will be considered by the tenant to reduce the resource consumption, energy use, and carbon footprint of the built environment were deemed appropriate.

The proposed site plan development is deemed consistent with the broad design objectives outline in Section 5.2.1 of the Official Plan.

Section 4.3, Policy 6 of the OP identifies that a transportation impact assessment (TIA) report is required to be undertaken in accordance with the city's Transportation Impact Assessment Guidelines and submitted when reviewing development applications to assess the adequacy of the transportation network to meet the needs of the proposed development. The TIA is intended to be used by the city to determine the level of impact the development may have on the transportation network in the surrounding area.

A TIA prepared by Castleglenn Consultants on behalf of the Consolidated Fastfrate (Ottawa) Holdings Inc has been submitted to the city in support of the site plan control application. The TIA was prepared in compliance with the OP's Section 4.3 Policy 6 requirements. A summary of the TIA report is provided in Section 6.1 of this Planning Rationale.

Policy 4.4.2 (1) of the OP applies for developments requiring private water and wastewater systems. With regards to servicing requirements, the subject site is located outside of the Public Service Area of the City of Ottawa. For projects requiring site plan approval Section 4.4.2 of the OP "Policy (1)" requires for to include sufficient information with the application to assess the likelihood that:

+ "Sufficient quantity of groundwater exists on site to service the development.
+ A water well can be constructed on the proposed lot(s) that will not be impacted by identified potential sources of groundwater contamination in the area.
+ The quality of the groundwater meets or exceeds the Ontario Drinking Water Standards, Objectives and Guidelines.
+ The operation of the on-site wastewater system on the new lot(s) will not adversely impact on a well to be constructed on the proposed lot(s) and on the wells of neighbouring properties.
+ The development is within the reserve capacity of the municipal sewage system for hauled sewage."

To address these site servicing policy requirements the following support studies have been submitted in support of the Site Plan Control application including:

+ A Site Servicing Study and Stormwater Management Report prepared by **CIMA+**., dated August 2021.

+ A Hydrogeological Evaluation, prepared by GHD consultants, dated September 2020.

These reports conclude that the proposed development can be adequately serviced by way of drilled well and on-site septic system which will be owned and managed by Consolidated Fastfrate (Ottawa) Holdings. The Hydrogeological Evaluation prepared by GHD concluded that the available groundwater is of sufficient quality and quantity to service the proposed development.

Policy Section 4.7.1 of the OP identifies that "site plan control applications requiring an environmental impact statement, tree retention and protection plan or landscape feature assessment be accompanied by an integrated Environmental Review Statement." City planning staff identified during the pre application consultation meeting held in December 2020 that an Environmental Impact Statement and Tree Conservation report would be required to be undertaken and submitted as part of the site plan control application. City planning staff did not identify the requirement for Consolidated Fastfrate (Ottawa) Holdings Inc to undertake a separate Environmental Review Statement.

In compliance with the city's identified requirements Consolidated Fastfrate (Ottawa) Holdings Inc retained consultants to prepare and submit the following reports as part of the site plan control application including:

+ An Environmental Impact Statement prepared by GHD Limited dated May 28, 2021.
+ A Tree Conservation Report, prepared by Civitas Architecture Inc, dated August 2021.

These reports address proposed tree saving measures, slope protection, environmental impact statements, water feature setbacks, and landform protection measures to be integrated as part of the site plan approval. The submitted site plan control application identifies the location of treed areas, watercourses, poorly drained and wetland areas, and changes in elevation of the site.

Section 4.7.3 for the OP identifies policies regarding Erosion Prevention and Protection of Surface Water. The "water course" running along the Rideau Road ditch line has a 30-meter setback from water to the bank. The city has advised that a 15-meter setback from the water course may be accepted where mitigation measures are proposed. Consolidated Fastfrate (Ottawa) Holdings Inc has retained the services of GHD Limited environmental consultants to review with drainage control. The consultant has proposed that the owner of the subject site proceed on site plan approval to build a retaining wall for erosion prevention and protection of surface water mitigation, whereby a 15-meter setback from the centreline of the ditch will be maintained. Refer to the Erosion and Sediment Control Plan prepared by **CIMA+** on behalf of Consolidated Fastfrate (Ottawa) Holdings Inc and submitted as part of the Site Plan Control application. The proposed measures for erosion prevention and protection of surface water are deemed consistent with the relevant Section 4.7.3 Policies of the OP.

Section 4.7.6 Policy (1) of the OP requires that "site plan control applications be supported by a stormwater site management plan". To satisfy this requirement and in support of the site plan control application, a Development Servicing Study and Stormwater Management Report has been prepared by **CIMA+** and has been submitted as part of this site plan control application. The **CIMA+** report concluded that stormwater management can be accommodated through proposed on-site ditches, pond, and existing off-site ditches.

Section 4.11 of the Official Plan provides policy direction related to "Urban Design and Compatibility" with regards to site development. Table 3 provides an assessment of the proposed site plan consistency in addressing the relevant policy direction set out in Section 4.11 of the OP.

Table 3: Urban Design and Compatibility OP Policy Ref 4.11

Official Plan Urban Design and Compatibility Policy Reference Section 4.11	
Section 4.11 Relevant Policies	**Site Plan Compatibility Response**
Policies	
"**4.11.1** A Design Brief will be required as part of a complete application…."	A Design Brief has been prepared and is presented in Appendix D of this Planning Rationale Report.
Building Design	
"**4.11.5** Compatibility of new buildings with their surroundings will be achieved in part through the design of the portions of the structure adjacent to existing buildings and/or facing the public realm."	There are no existing buildings adjacent to the subject site as these properties are vacant lots at the present. The Fastfrate Facility development has been designed to fit with the existing desirable character and planned Industrial Park function of the surrounding area. Required setbacks, heights and building transition are designed in accordance with city's official plan land use policies and associated zoning bylaw provisions. The facility's structural and site elements including massing, façade and roofline articulation, colours and materials have been designed to promote the site as a gateway location to the evolving Hawthorne Industrial Park. Architectural elements, including windows, public entranceways, doors, and landscaping have been located facing the front of the property along Somme Street. The site has been designed to respect the existing and planned drainage grades considerations according to the submitted grade control and drainage plan.
"**4.11.6** The City will require that all applications for new development: a) Orient the principal façade and entrance(s) of main building(s) to the street. b) Include windows on the building elevations that are adjacent to public spaces. c) Use architectural elements, massing, and landscaping to accentuate main building entrances."	• The principal façade of the Fastfrate Facility including public entrance to the main building is oriented to the Somme Street. • Windows and public entranceways to the main warehouse office areas are located to the front of the building facing the parking and landscape areas along the front of the property. • Architectural elements, massing and landscaping element designed to accentuate the main building entranceways are presented in the submitted site plan package as shown in Appendix D.
"**4.11.7** The intersections of arterial and collector roads can serve as gateways into communities and can support high levels of pedestrian and vehicular traffic, the greatest density of housing, and other land uses and services, and commercial services and other land uses that are focal points for a community. The city will encourage development proposals at such locations to include the following:	• The site design of the Fastfrate facility is located at the corner of the Somme Street and Rideau Road entrance to the Hawthorne Industrial Park. The site and building design incorporate strong architectural design elements including the used of glass windows, doorways, and coloured cladding along the southern edge of the facility in a manner which focuses on

Official Plan Urban Design and Compatibility Policy Reference Section 4.11	
Section 4.11 Relevant Policies	**Site Plan Compatibility Response**
a. Strong architectural design elements that feature the corner or street axis by locating buildings close to the street edge, and/or orienting the highest and most interesting portion of a building (e.g., the main entrance) to the corner or axis which has a view of the terminus. b. Capitalizing on design possibilities for both street façades (by wrapping the materials used on the front façade around the building where any façades are exposed to the public realm); and c. Soft landscaping features, special paving materials, and/or curb extensions to shorten the distance across the street and larger sidewalk area to accommodate sidewalk activity."	the views on this corner street axis site featuring the most interesting portion of the building to the public. • Materials used on the front façade are wrapped around those portions of the building where key façades are exposed to the public realm. • The are no sidewalks along the Hawthorne Industrial Parks internal road system. The parking lots for non truck vehicles are located near the front of the building fronting Somme Street whereby facilitating short walking distances to and from the main office area building entrances.
"**4.11.8** To maintain a high quality, obstacle free pedestrian environment, all servicing, loading areas, and other required mechanical equipment and utilities should be internalized and integrated into the design of the base of the building where possible. If they cannot be internalized these services are to be screened from public view (i.e., trees, landscaping, decorative walls, and fences etc.) and are to be acoustically dampened where possible. The location and operation these areas and equipment should be designed to maintain a pedestrian friendly environment and not impede public use of the sidewalk."	• Servicing, loading areas, and other required mechanical equipment and utilities have been internalized and integrated into the design of the base building. • The location and operation of these areas and equipment will be designed to maintain a pedestrian friendly environment
"**4.11.9** Roof-top mechanical or telecommunications equipment, signage, and amenity spaces should be incorporated into the design and massing of the upper floors of the building."	The proposed one storey warehouse will have roof-top mechanical systems. Signage will be located on the side of the building the upper wall face as identified in the site elevation drawing submitted as part of the Site Plan Control Application.
Massing and Scale	The warehouse facility is a single storey building having a maximum height of 12.4 meters and a total footprint area of approximately 8641.43 m^2. This building will occupy approximately 21.43 % of the total site area. The building is positioned on an angle from Somme Street and has a minimum front yard set back of 15.2 meters along the western side. There a no other buildings on the lots immediately adjacent to the subject site in the industrial park.
High Rise Buildings	N/A
Outdoor Amenity Areas	Aside from the outdoor grassed and landscaped entranceway areas located in front of the office areas located along the southern edge of the

Official Plan Urban Design and Compatibility Policy Reference Section 4.11	
Section 4.11 Relevant Policies	**Site Plan Compatibility Response**
Outdoor amenity areas are the private and communal areas of a property that are designed to accommodate a variety of leisure activities.	building there is no real amenity area on the site. The overall site layout minimizes undesirable impacts on adjacent sites through the siting of the cross dock and transport truck loading area being located along the eastern side and northern rear sides of the building.
Public Art	N/A
Design Priority Areas The city has identified target areas for intensification and other prominent areas which are significant destinations in the city and recognized them as design priority areas in Section 2.5.1 of this Plan.	N/A not in Design Priority Area
First Nations Peoples Design Interests The city will engage and work with the Algonquins where proposals on public lands, such as Chaudière Island/Victoria Island, provide opportunities to incorporate aboriginal history and culture.	N/A

The “Design Brief” prepared Civitas Architecture Inc included in Appendix D of this report provides more detailed information regarding the proposed site plan response to the city’s design and compatibility policy considerations.

Based on this overview assessment, the design and compatibility of the proposed site plan has been deemed consistent and in compliance with the relevant policies identified within Section 4.11 of the OP.

Section 5.2.1 (7) of the OP, identifies the entire City as a Site Plan Control Area where Site Plan Control (as provided for under the Planning Act, RSO) may be applied to all commercial, institutional, industrial, and multiple residential developments in the City.

The subject site’s proposed development is therefore subject to Site Plan Control.

Section 5.2.1 (8) of the Official Plan provides policy directions with regards to other site plan control requirements.

The Design Brief prepared by and included in Appendix D addresses the site plan’s response to the city’s policy direction concerning exterior architectural details, design features, elevations to illustrate matters of compatibility with adjacent buildings or sensitivity to local area place, context and setting, to address the relationship between buildings and between buildings and the street, incorporating sustainable design features, and illustrating scale, transitions in form, massing, character and materials.

4.3 Draft Official Plan Policy Direction (as revised July 2021)

At the time of the Site Plan Control application submission the City of Ottawa is undertaking a comprehensive review of a new Official Plan. A new draft version of the Official Plan is scheduled for consideration of approval by city council during the fall of 2021. An initial version of the new draft Official Plan was first released during the fall of 2020 for public review and comment. The city has released a revised version of the draft Official Plan during late July and August of 2021.

For the purposes of the Planning Rationale the revised version of the draft Official Plan, dated July 26, 2021. The revised draft OP was reviewed within the context of the proposed site plan application and general consistency with regards to the relevant draft land use designation policies.

The revised draft Official Plan (July 26, 2021) identifies the subject site to be located within that area of the city identified within the "Rural Transect" identified on Schedule B8 of the revised draft OP and presented in Figure 9 of this report. The subject site is proposed to be designated as "**Rural Industrial and Logistics**" on Schedule B9 of the revised draft plan.

Section 9 of the revised draft OP provides land use policy direction regarding "Rural Designations". Section 9.3 states that *"*lands designated as "Rural Industrial and Logistics" are intended to support uses that are not suitable in the Urban Area or Rural Countryside due to the requirements for large areas of land or separation from their noxious activity. These uses provide for a full range of activities across multiple industry sectors, which include warehouse, distribution, light and heavy industrial uses, and small offices. Rural Industrial and Logistics areas are served by arterial roads, most of which are in close proximity to 400 series Highway Interchanges to facilitate the efficient movement of goods while limiting disruption to local rural traffic."

The site plan control application's proposed warehouse and ecommerce distribution facility along with the site location in a rural industrial park is consistent with the above noted intent of the proposed draft OP's "Rural Industrial and Logistics land use designation.

Figure 9: Draft Official Plan Land Use Designation

Source: City of Ottawa, Draft Official Plan, July 2021

Section 9.3.1 policies of the revised draft OP are intended to "Permit a range of industrial activity and functions to make best use of rural locations". The proposed site plan for a warehouse with an e-commerce distribution component is deemed consistent with the intent of this subsection relevant policies. In accordance this this subsections policy direction the proposed site plan facilitates the orderly development of a permitted industrial activity in a designated "Rural Industrial and Logistic" area being the Hawthorne Industrial Park. Building design, site layout and landscaping are proposed in a way that maintains and enhances the planned function and rural identity of the Hawthorne Industrial Park. The site will be appropriately screened from the public road and adjacent properties as per the submitted landscape plan. Accesses to the site have been designed to minimize traffic hazards between Somme Street and vehicular points of site access and egress. The proposed development is to be services by a private well and sewage system.

Section 9.3.2 Policies of the revised draft OP are intended to "Maintain Clusters of Industrial use to reduce incompatibilities with the rural area". The proposed site plan for a warehouse with an e-commerce distribution component is deemed consistent with the relevant policy direction of this subsection. The proposed warehouse use with an e-commerce distribution component is deemed a permitted use within the Hawthorne Industrial Park which is designated on Schedule B9 of the revised draft plan as a "Rural Industrial and Logistics" land use area.

Other sections of the proposed revised draft official plan have not been reviewed at this time due to the changing nature of the draft policies resulting from ongoing public input.

The revised draft Official Plan is still under review and revisions because of the extended public review period into the fall of 2021. The new version of the OP will not come into "full force and effect" until Ottawa City Council has deliberated on the revised draft subject to a formal public hearing and completed the formal adoption process.

4.4 Integrated Environmental Review

The applicant commissioned a Phase I and Phase II Environmental Assessment regarding the subject site area which was undertaken by the Paterson Group. These two (2) reports have been submitted as support studies to the Fastfrate Site plan control application.

These two (2) Environmental Assessment provide a summary of the environmental features, including recommendations on potential implications which have assisted in providing an integrated site plan design solution.

A subsequent EIS was undertaken by GHD Limited on behalf of Consolidated Fastfrate (Ottawa) Holdings and has been submitted as a support study for the site plan control application. The key findings of this report are summarized in Section 6.7 of this Planning Rationale.

4.5 Zoning Bylaw No. 2008-250

The City of Ottawa's Zoning Bylaw 2008-250 identifies that the subject site located at 301 Somme Street is zoned as "Rural Heavy Industrial" (RH) zone. Refer to Figure 10.

Section 221 of the Zoning Bylaw states that the purpose of the RH zone is to:

+ "Permit the development of heavy industrial uses in areas mainly designated as General Rural Area, Village and Carp Road Corridor Rural Employment in the Official Plan.
+ Accommodate a range of heavy industrial uses and limited-service commercial uses at locations which are neither environmentally sensitive nor near incompatible land uses.
+ Regulate development in a manner that respects adjacent land uses and will have a minimal impact on the rural area."

The proposed Site Plan Control Application for a warehouse development including e-commerce distribution and accessory offices is deemed compatible with Section 221.

Figure 10: Subject Site and Area Zoning

Source: geoOttawa web site (July 2021)

Section 221 of the Zoning Bylaw further identifies that a warehouse is considered a permitted use in addition to other industrial uses within lands zoned as “RH”.

The Zoning Bylaw defines a warehouse as “a building used for the storage and distribution of goods and equipment including self-storage units and mini-warehouses and may include one accessory dwelling unit for a facility manager”.

The proposed Fastfrate development includes a warehouse facility including associated e-commerce distribution component and supporting warehouse office facilities on the subject site. The subject site is located in an area designated within the Official Plan as “Rural Employment Area”. The proposed development of the site respects adjacent land uses will have a minimal impact on the rural area and complies with the provisions of the Zoning Bylaw as per Table 4.

Table 4: Fastfrate Facility Zoning Compliancy Summary

Zoning Compliance Summary **Fastfrate Facility 301 Somme St.** **RH: Rural Heavy Industrial Zone Provisions**				
RH: Rural Heavy Industrial Zone Provisions[1] **(Table 221 Zoning Bylaw)**	**Required**	**Provided[2]**	**Compliance**	**Comment**
Minimum Lot Area[3] (m^2)	8,000	40,665.3m^2	Yes	
Minimum Lot Width (m)	50	N/A	Yes	Irregular
Minimum Front Yard Setback (m)	15	15.2	Yes	Somme Street Frontage
Minimum Rear Yard Setback (m)	15	60.5	Yes	
Minimum Interior Side Yard Setback (m)	3	46.7	Yes	
Minimum Corner Side Yard Setback (m)	15	16.2	Yes	
Maximum Building Height (Principal Building) (m)	15	12.4	Yes	
Maximum Lot Coverage (%)	50%	21.25%	Yes	
Setback from Watercourses (Section 69 ZBL) • **high water mark, or** • **top of bank, which ever is greater**	30 m Or 15 m	15 m (ditch centreline)		Exception to setback required due to site constraint[4]
Parking Requirements				
Minimum Required Parking Spaces (Vehicle) – Area D Rural Zoning Bylaw Schedule 1A - Table 101	**Required**	**Provided**	**Compliance**	**Comment**
Office: 2.4 per 100 m^2 of GFA GFA ~ (276.10 + 309.47) = 585.56 2.4 * 6.2854 =	14.05 stalls	16	Yes	

Warehouse: (0.8 per 100 m^2 for the ***first*** 5000 m^2 GFA) 0.8 * 50 = 40	40 stalls	61	Yes	
Warehouse: (0.4 per 100 m^2 ***above*** 5000 m^2 of GFA) GFA 8055.88m2 – 5000 = 3055.88m^2	12.22stalls			
Total required parking	**66.24 Stalls**	77	Yes	
Minimum Required Bicycle Parking Spaces – Zoning Bylaw Section 111(2)(h) identified in TIA (May 2021) **Office Space**:1 stall / 250 m2 GFA (GFA ~ 276.10 + 309.47) = 585.56 m^2 / 250 = 2.34 Stalls **Warehouse**:1 stall / 2000 m2 GFA GFA ~ 8055.88 m^2. / 2000 = 4.03	6.37	8	Yes	
[1] **Zoning Bylaw requirements as per City of Ottawa Comprehensive Zoning Bylaw**. [2] **As per Civitas Site Plan Drawing No. 2001 – A1.0 received August 6, 2021** [3] **Area of Subject Site for 301 Somme Street identified on Survey Plan** [4] **Refer to Official Plan Policy 4.7.3 (6) (7)**				

Section 69 of the City of Ottawa's Zoning Bylaw addresses "**Setback from Watercourses**" and states the following:

+ Subject to subsection (3), despite the provisions of the underlying zone, the minimum setbacks set forth in subsection (2) must be provided to provide a margin of safety from hazards associated with flooding and unstable slopes and to help protect the environmental quality of watercourses and waterbodies.

- Except for flood or erosion control works, or a public bridge or a marine facility, no building or structure, including any part of a sewage system, which does not require plan of subdivision, or site plan control approval, shall be located closer than.
  - 30 meters to the normal high-water mark of any watercourse or waterbody, or
  - 15 meters to the top of the bank of any watercourse or waterbody, whichever is the greater.
- Development requiring a plan of subdivision or that is subject to site plan control must provide the watercourse or waterbody setbacks set forth in subsection (2) unless, as established through conditions of approval, a different setback is determined to be appropriate in accordance with the criteria set forth in the Official Plan. (Bylaw 2009-347).

The site plan identifies a need for a 15-meter setback from the centreline of the ditch which has been recommended in the EIS report prepared by GHD consultants dated July 27, 2021. The rationale for the required 15-meter setback is detailed the Design Brief prepared by CIVITAS dated August 2021 which is presented in Appendix F. This setback is required:

- Accommodate the site design layout proposed in the site plan.
- Address existing site conditions concerning the ditch along the south side of Rideau Road where the top of back is deemed indeterminable.

Section 4.7.3 of the City of Ottawa's Official Plan provides policy direction for consideration of reduced setback as follows:

4.7.3 (6) of the Official Plan states: Exceptions to the setbacks in policy 2 will be considered by the City in consultation with the Conservation Authority in situations where development is proposed:

- On existing lots where, due to the historical development in the area, it is unreasonable to demand or impossible to achieve minimum setback distances because of the size or location of the lot, approved or existing use on the lot, or other physical constraint.
- Adjacent to a minor tributary that serves primarily a surface water function and that may have only an intermittent flow. This provision includes situations where a watershed, sub watershed or environmental management plan exists but does not provide guidance on a minor tributary.
- Adjacent to an existing top of bank where the regulatory flood line and the geotechnical limit of the hazard lands are within 15 meters from the existing top of bank [OMB decision #1754, May 10, 2006]"

4.7.3 (7) of the Official Plan states: "Where an exception to the setback is requested under Policy 6, an alternate setback will be considered by the City in consultation with the Conservation Authority based on a study that addresses the following criteria: [Amendment #96, February 22, 2012

- Slope of the bank and geotechnical considerations related to unstable slopes, as addressed in Council's Slope Stability Guidelines for Development Applications in the City of Ottawa, 2004.
- Natural vegetation and the ecological function of the setback area.
- The nature of the abutting water body, including the presence of a flood plain.

+ The need to demonstrate that there will be no negative impacts on adjacent fish habitat. [OMB decision #1754, May 10, 2006".

The Environmental Impact Statement (EIS) undertaken by GHD Limited (July 27, 2021) assess these requirements and recommends a reduced 15-meter setback from the centreline of the ditch according to the findings and recommendation of EIS report.

4.6 Design Brief Overview

Civitas Architecture Inc has prepared a Design Brief (August 2021) is response to the City of Ottawa's Site Plan Control application requirements. Refer to Appendix D. This document illustrates how the proposed development of the subject site has been designed to work with the existing and planned context, to improve its surroundings and demonstrate how the proposal supports the overall goals of the Official Plan and secondary plans, Council approved plans and design guidelines. There are no secondary plans affecting the subject site. The proposed development project was concluded to a compatible and thoughtful response to the site plan control application requirements and in alignment with the City of Ottawa development guidelines within the context of the Hawthorne Industrial Park. The proposed design and development of the site were deemed to be environmentally sensitive, improving the street presence along Somme Street and creating a user friendly and accessible environment despite its industrial uses. The projects highlights identified within the Design Brief include the following:

+ The Fastfrate development will create a new anchoring element to the Hawthorne Industrial Park to encourage further development and create a presence particularly to the Rideau Road and Somme Street intersection. An existing deficient public access intersection at Hawthorne and Somme Street will be upgraded under this project to the benefit of the City of Ottawa.
+ Despite the challenges of large vehicle circulation area requirements, site planning has enabled the creation of an environmentally themed and aesthetic frontage to Somme Street. Transport operations have been confined to a majority of the 'back of house' areas.
+ The area of the existing minor watercourse on the North side of the subject property will be environmentally preserved and augmented with new landscape to create a natural buffer or to the development along Rideau Road.
+ The development is orientated to maximize solar access to the Somme Street forecourt design for pedestrians, building occupants and office-type functions. In addition, the adjacent properties will not be impacted for their own solar access.
+ The new Fastfrate Ottawa facility is incorporating several sustainable techniques including the adaptive re-use and soils management of existing poor soils conditions present on the site. The roof structure is designed to accommodate future large array of solar panels and incorporates self contained site services for water and sanitary waste. The site drainage is configured to be effective and will tie in the existing subdivision stormwater management systems.
+ The design and planning of this development is leading-edge and of a higher quality in relation to the existing developments in the vicinity. It sets an excellent precedent for the Hawthorne Industrial Park future.

5. Lifting of 30 cm Reserve

The City of Ottawa established a 30 cm Reserve along the Rideau Road and Somme Street frontages as part of the 2009 approved subdivision agreement for the Hawthorne Industrial Park. The City of Ottawa identified in this agreement the requirement for "Lifting 30 Centimeter Reserve" to gaining legal access to affected sites within the Hawthorne Industrial Park for access and development servicing purposes.

An application to the City of Ottawa to "Lift 30 cm Reserve "has been submitted to the City of Ottawa on behalf of Fastfrate which is concurrent with the associated Site Plan Control Application for the subject site.

The "Lift 30 cm Reserve" application is requesting the following:

+ **Lifting of 30 cm Reserve along Somme Street** frontage of subject site for site access and servicing purposes, (defined as Parts 4, 5 and 6 of 4R-33406).
+ **Lifting of 30 cm Reserve along a segment of Rideau Road** frontage of subject site for site servicing purposes to provide for a gas line connection off Rideau Road.

The City's requirements for lifting the 30 cm Reserve on the subject site are identified in Appendix E which state that the reserve can only be lifted: "when certification of the proposed on-site well has been provided by a Professional Engineer or professional geoscientist licensed in the Province of Ontario that the well construction is in accordance with Ontario Regulation 903 and the recommendations contained in the report titled "Hydrogeological Investigation, Terrain Analysis & Impact Assessment, Proposed Industrial Subdivision" prepared by Golder Associates; Dated December 2008; Project No. 08-1122-0215 and the supporting letter "Tomlinson Industrial Subdivision – City of Ottawa File Number D07-16-15-94-0505; response to South Nation Conservation Authority"; Golder Associates; Dated April 17, 2009; Project No. 08-1122-0215. This certification must be to the satisfaction of the General Manager, Planning and Growth Management."

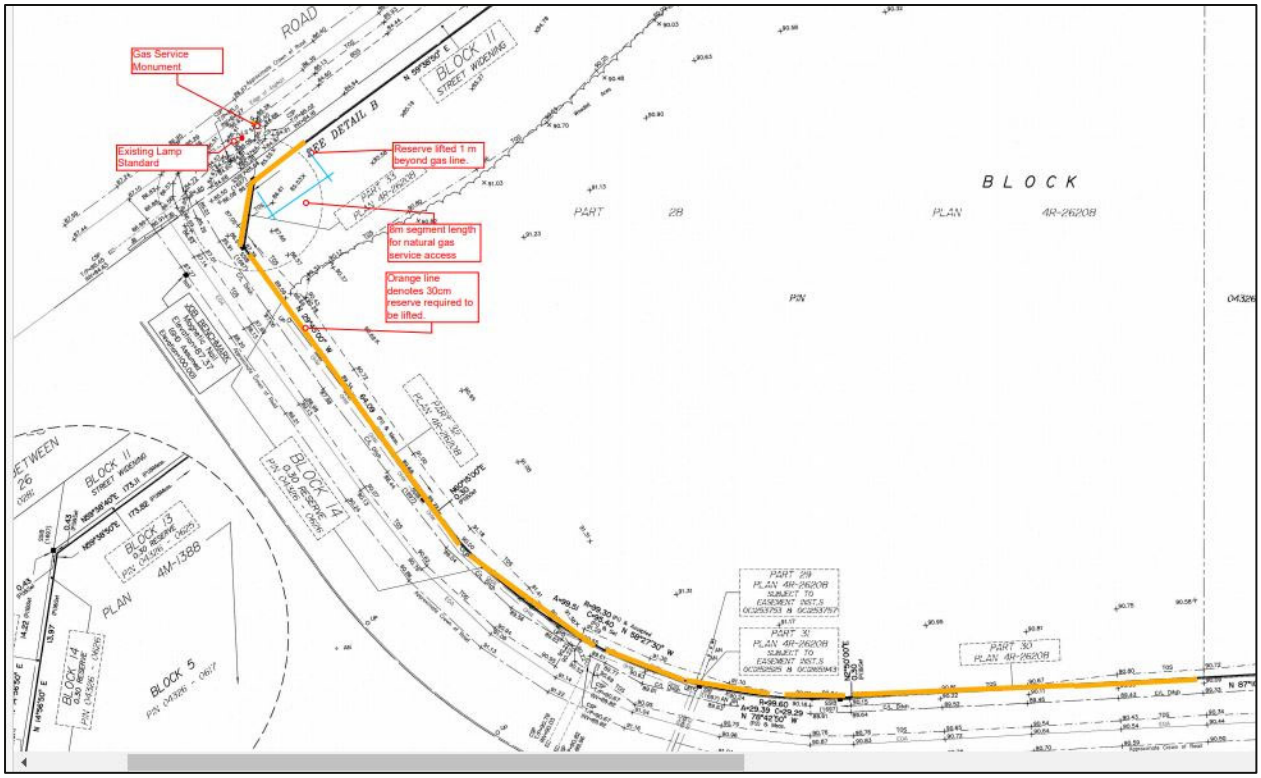
GHD Limited was retained by Consolidated Fastfrate (Ottawa) Holdings Inc to respond to the requirements identified above for lifting 30 cm reserve. The consultant findings are presented in the May 31, 2021, letter from GHD consultants to the city's Planning, Infrastructure and Economic Development Department, (Attention: Krishon Walker). Refer to Appendix F. The findings identified in the GHD letter support the rationale for approving the Lifting of 30 cm Reserve. Consolidated Fastfrate (Ottawa) Holdings Inc has applied for the Lifting of the 30 cm Reserve on the subject site and has included the GHD supporting May 31, 2021, letter as part of this application.

The May 31, 2021, GHD consultant letter concluded the following:

+ GHD's assessment reviewed the previous "Hydrogeological Investigation, Terrain Analysis & Impact Assessment, Proposed Industrial Subdivision" report prepared by Golder Associates and Tomlinson supporting letter, including the recommendations that are applicable to the property and the existing test well information (identified as TW-2). GHD's assessment of this information concluded that the existing test well TW-2 meets the recommendations of the above noted documents. The test well is equipped with 12 meters of steel casing and is cased through the overburden and 3.4 meters (11 feet) into the underlying sandstone, meeting the recommendations.

- The more current hydrogeological assessment report prepared by GHD dated January 19, 2021, for the subject site has been submitted as a support study for the Site Plan Control application and the Lifting 30 cm Reserve application. This hydrogeological assessment concluded that the existing test well meets the needs of the proposed commercial development with no health-related groundwater concerns. Based upon the well record reviewed by GHD and included in the hydrogeological assessment report, it is GHD's opinion that the test well has been constructed in accordance with Ontario Regulation (O. Reg) 903. Any future wells drilled on the Property must also adhere to the above noted recommendations and O. Reg 903.
- Based on these findings it is GHD's opinion that the existing test well TW-2 is constructed in accordance with O. Reg. 903, meets the recommendations of the Golder and Tomlinson documents and supports the city's approval requirement for the Lifting 30 cm Reserve application.

Figure 11: Detail on Reserves to be Lifted



Source: 3: Civitas Architecture Inc., 210812

Figure 11 identifies the details on the Somme Street frontage reserve segment and the Rideau Road Street frontage reserve segment which Consolidated Fastfrate (Ottawa) Holdings Inc has made application to the City of Ottawa to be lifted according to the planning rationale outline in the following sub sections.

5.1.1 Lifting 30 cm Reserve along Somme Street Frontage

The “Lifting of the 30 cm Reserve” along the entire Somme Street frontage of the subject site is required for site access and development servicing purposes as per the site plan and site servicing plans submitted as part of the Site Plan Control Application submitted to the city by Consolidated Fastfrate (Ottawa) Holdings Inc. Block 14 of 4M-1388 is the original 30 cm Reserve for the registered plan of subdivision for Block 5. Block 5 has been further divided. The legal description of the reserve which is to be lifted along Somme Street as defined by the City included: Parts 4, 5 and 6 of 4R-33406. Refer to Appendix A and B. The subject 30 cm Reserve segment along Somme Street is identified on Figure 11 in yellow.

Based on this planning rationale the application for Lifting 30cm Reserve along Somme Street is deemed appropriate for site servicing and access purposes.

5.1.2 Lifting 30 cm Reserve along a portion of Rideau Road Frontage

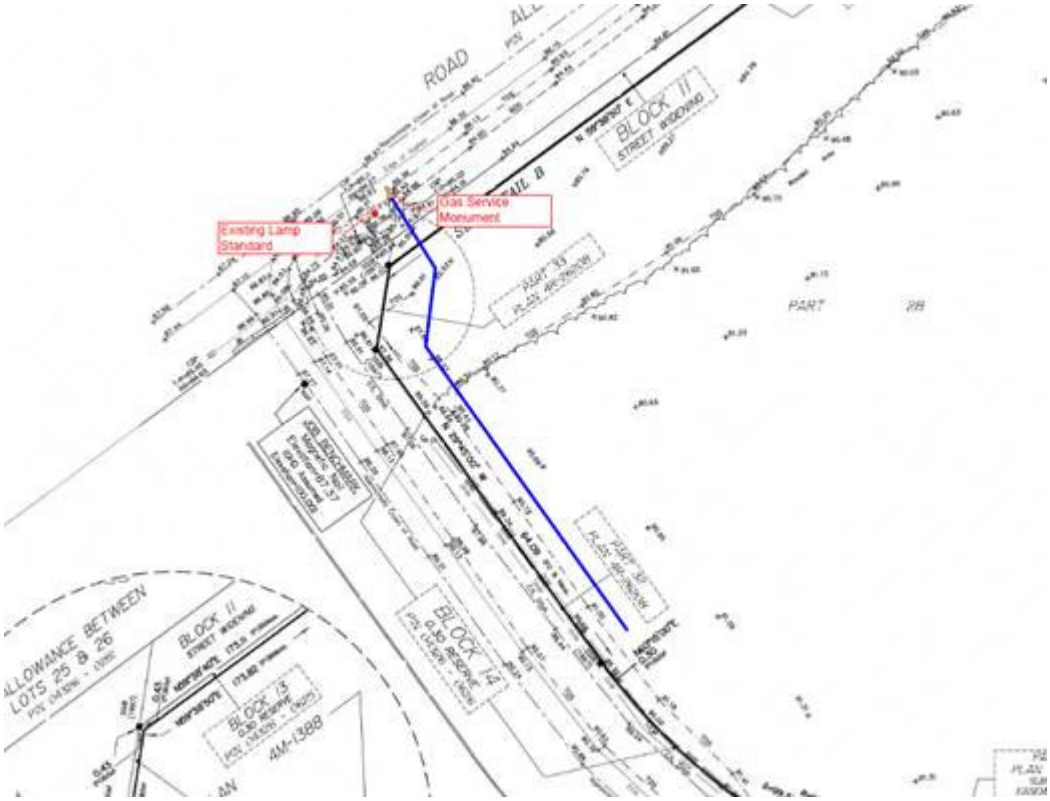
The location of the proposed gas connection point to the main line on Rideau Road is located near the intersection of Rideau Road and Somme Street. Refer to Figures 12 and 13. Fastfrate has also made a request in the submitted application to lift an 8-meters long segment of the 30 cm Reserve along the Rideau Road frontage as illustrated on Figure 11. The Lifting of this segment of the 30 cm Reserve is required to provide for a gas line connection from the main gas line connection point located on Rideau Road. The location of the gas line connect point on Rideau Road is identified on Figure 12. The proposed gas line across subject site to provide for a connection to the base building as identified on Figure 13. The location of the gas line servicing requirement from Rideau Road to the base building on the subject site is identified in more detail on the site servicing plans submitted as part of the Site Plan Control Application.

Figure 12: Gas Line Connection Point - (Eastern View corner of Rideau Rd.& Somme St.)

Source: Google Maps (21-08-10)

The applicant is requesting that only that portion of the 30 cm Reserve segment required for the gas line connection running across the reserve be lifted. Refer to Figure 12.

Figure 13: Location of Gas Line Connection



Source: Goodkey, Weedmark & Associates Ltd, Aug 06, 2021

Based on this planning rationale, the application for Lifting 30 cm Reserve along the identified portion of the Rideau Road frontage is deemed appropriate for site servicing purposes.

6. Technical Studies and Plans

City staff identified several required technical studies which have been undertaken on behalf of the applicant in support of the Site Plan Control application and Lifting 30 cm Reserve Application. These studies have been submitted as part of the Site Plan Control Application. The key findings of these studies are summarized in the following subsections:

6.1 Transportation Impact Assessment

A Transportation Impact Assessment (TIA) has been prepared by Castleglenn Consultants during May 2021 and submitted on behalf of the applicant as a separate document in support of the site plan control application. The TIA evaluated the proposed development of a warehouse and e-commerce distribution facility at 301 Somme Street located within the Tomlinson Heavy Industrial Subdivision according to City guidelines.

The TIA identified the following key findings:

+ The Rideau Road/Hawthorne Road would operate with acceptable levels-of-service “C” or better in the existing and 2022 forecast build-out morning and afternoon peak hours.

- The proposed development would generate between 60-and-120 truck trips per day, resulting in approximately 10-two-way truck and 15 two-way employee trips during the peak hours of travel demand.
- The development is anticipated to have a negligible impact on the surround roadway level of service and roadway capacity.
- The Hawthorne Road/Somme Street and Rideau Road/Somme Street intersections, with their existing configurations, do not offer satisfactory lane widths and curb radii to facilitate the movement of heavy vehicles to and from the Tomlinson Hawthorne Industrial Subdivision.
- Improvements in the form of corner widening at the Hawthorne Road/Somme Street intersection would be required to improve inbound and outbound truck maneuvers at this intersection.

6.2 Assessment of Adequacy of Servicing

CIMA+ was retained to prepare a "Site Servicing and Stormwater Management Report" for the proposed construction of a warehouse containing cross-docks and office building, at 301 Somme Street in Ottawa, Ontario. This assessment confirms that the proposed development will be adequately serviced by the proposed well water supply, septic system, and stormwater management. The detailed design of required sediment and erosion control measures, site servicing (including storm, sanitary, water) and grading, as well as measures for the control of stormwater runoff, are addressed in this report in accordance with the Ottawa Sewer Design Guidelines (2012), the Ottawa Design Guidelines – Water Distribution (2010) and associated Technical Bulletins. Key findings of the site servicing assessment include the following:

- The sanitary servicing design for the proposed development conforms to the requirements of the City of Ottawa Sewer Design Guidelines, 2012, as amended by all applicable Technical Bulletins. The on-site wastewater disposal system (Septic Tank, Level IV treatment unit and shallow-buried trench system) generally conform to the requirements of the Ontario Building Code Part 8. However, due to the Total Daily Design Sewage Flow being >10,000L, an Environmental Compliance Approval (ECA) from the Ministry of the Environment, Conservation and Parks (MECP) will be required for this system.
- The proposed well will provide sufficient potable water supply for the development. The proposed stormwater management (SWM) pond will not provide sufficient storage to address storm runoff quantity and control for the development. The SWM will provide sufficient storage volume to fulfill fire protection requirements for the building.
- The storm servicing design for the proposed development generally conforms to the requirements of the City of Ottawa Sewer Design Guidelines, 2012, as amended by all applicable Technical Bulletins. The storm servicing design also conforms to the HIP SWM report (JL. Richards, 2009). The allowable release rate for the site post-development was calculated to be 906.9 L/s based on the HIP SWP report. South Nation Conservation Authority (SNCA) confirmed that enhanced storm runoff quality treatment will be required as well for this development. It is expected that quality and quantity control requirements can be achieved using drainage swales, a wet retention pond and providing some retention on the building roof. A Roof Flow Control Declaration will be provided upon completion of the Mechanical and Structural design.

- Appropriate measures to control erosion and sedimentation during the construction process are identified for the proposed development. Sediment will be trapped on site, implementing the Ontario Ministry of Natural Resources and Forestry's (MNRF) "Guidelines on Erosion and Sediment Control for Urban Construction Sites," to assure proper control measures are upheld.
- The "Site Servicing and Stormwater Management Report" has been submitted to the city as a required support study in support of the site plan control application for the subject site.

6.3 Geotechnical Study

GHD Limited was retained by Consolidated Fastfrate (Ottawa) Holdings Inc. to undertake a geotechnical investigation for a new warehouse and office building located southeast of the intersection of Rideau Street and Somme Street in Ottawa, Ontario (Site). The GHD report entitled "Geotechnical Investigation, Warehouse and Offices, Intersection of Rideau Street and Somme Street, Ottawa, Ontario", dated September 10, 2020, has been submitted as a separate document in support of the site plan control application for the subject site.

GHD (formerly Inspec Sol/CRA) completed a Geotechnical Investigation and Phase II Environmental Site Assessment for the Site in 2008 and 2009 respectively in support of the original subdivision application for the Hawthorne Industrial Park.

The geotechnical investigation presented in the Sept 2020 GHD Geotechnical report evaluated the subsurface stratigraphy on the subject site and based upon the data, provides supporting site plan recommendations concerning foundation type and associated design bearing pressures, groundwater conditions. The report provides direction on excavation, backfill, pavement design and other geotechnical aspects of the development.

6.4 Hydrogeological and Terrain Analysis

A Hydrogeological, Terrain Analysis and Impact Assessment prepared by Golder Associates was initially undertaken in 2008 to support of the Hawthorne Industrial Subdivision application approved by the City of Ottawa in 2009. The purpose of this investigation was to:

- Assess the quantity and quality of groundwater available on site.
- Determine the nature and distribution of soils on the site and the suitability of the site for the installation of Class IV sewage disposal systems.
- Assess if land use, both present and historic, and both on and adjacent to the site posed a potential threat to the proposed development.
- Assess the potential impact of the proposed sewage systems on downgradient groundwater resources.

The results of this assessment supported the approval of the subdivision that is to be serviced by individual water wells and on-site sewage disposal systems.

As a follow-up to the site plan control application and Lifting 30 cm Reserve application requirements for the subject site GHD Limited was retained on behalf of Consolidated Fastfrate (Ottawa) Holdings to undertake a hydrogeological investigation. The findings of this assessment are presented in the report entitled "Hydrogeological Assessment Report, Proposed Commercial Development – CBRE Fastfrate Ottawa SPA, Rideau Road and Somme Street, Part of Lot 26, Concession 6 (Rideau Front), Geographic Township of Gloucester and Part of Blocks 5 and 14 Registered Plan 4M-1388 Ottawa, Ontario" dated January 19, 2021. This report has been included within the Site Plan Control application submission documents to the City of Ottawa.

Based on the results of this assessment, the test well has sufficient water of good quality and quantity to provide ample supply of potable groundwater for the proposed commercial development while preserving the long-term water quality of the aquifer complex. There was minor interference between adjacent wells; however, the interference is not considered significant to impact the operation of the wells. There is no vertical hydraulic connection between the shallow overburden groundwater and the bedrock aquifer unit. It was the consultant's opinion that in the long term, the bedrock aquifer tested can support the commercial development and neighbouring wells.

Water quality impacts are not expected, provided that the waste disposal system is properly constructed. No impact is anticipated on downgradient baseline water quality functions or to the existing water bearing aquifers.

If a new well is drilled for the development, the well must be properly constructed and adequately sealed and the existing well decommissioned in accordance with Ontario Regulation 903.

Construction dewatering is estimated to be about 725,000 L/day or greater based upon field testing and dewatering the entire warehouse footprint to the bedrock surface. A PTTW is recommended for this approach. For dewatering of volumes up to 400,000 L/day, an EASR application is recommended.

No significant impacts from construction dewatering are anticipated.

It is GHD's opinion that the results of this hydrogeological assessment support the development of the proposed commercial development.

6.5 Noise / Vibration Study

A Noise / Vibration study was initially identified by the City of Ottawa as a required site plan support study during of the pre application consultation meeting in December of 2020 with city staff. In response to this requirement the consulting firm Menard Canada undertook on behalf of the Consolidated Fastfrate (Ottawa) Holdings Inc. a **Vibration Control Form Study** (March 16, 2021) regarding dynamic compaction works planned in relation with the construction of the proposed warehouse and office building on the subject site. This study assessed the extent of the zone of influence of the vibrations generated during the works. The pre-condition inspection survey and the monitoring activities planned for this project were reviewed. Associated mitigation actions were identified. The Menard Canada "Vibration Control Form" study dated March 16, 2021, has been included as part of the Site Plan Control Application. The study concluded the following:

- In consideration of the poor existing ground conditions encountered at site, ground improvement is required to compact the loose fill to increase bearing capacity and limit total and differential settlement below the structures.
- Dynamic Compaction will be used on this site to improve the ground.
- The zone of influence of vibrations is the zone inside which the vibrations can be greater than 5 mm/s. The extent of the identified red zone of influence is located approximately 60 meters from site limit and the nearest activity to the site is at approximately 240 meters away.
- Considering the distance of existing structures from the zone of influence, Menard Canada deemed that a vibrational study is not necessary for this ground improvement technique proposed; and
- In the unlikely event that the measured vibrations exceed threshold for safe levels for drywall or for human intolerance mitigation measures to reduce the level of vibrations generated by Dynamic Compaction such as: 1) Reduce the drop height of the tamper 2) Reduce the number of drops per location and 3) Dig a trench to attenuate the amplitude of the superficial vibration.

City planning staff confirmed through email to Civitas Architecture Inc June 11, 2021, that Fastfrate Ottawa did not need to undertake a separate noise / acoustical study of the purposes of site plan approval. Planning staff further confirmed that a geotechnical/ slope stability report would be required to include an analysis of the potential vibration from the proposed dynamic compaction to ensure the slope at the north end of the property will remain stable during the compaction activity.

GDH Limited on behalf of by Consolidated Fastfrate (Ottawa) Holdings Inc. undertook a slope stability assessment for the slopes along Rideau Road and Somme Street (301 Somme Street - Subject Site) in preparation for the dynamic compaction works. The findings of this assessment are detailed in the submitted correspondence letter to Consolidated Fastfrate (Ottawa) Holdings Inc. attention Mr. Pierre Courteau dated August 11, 2021, regarding a "**Slope stability assessment for dynamic compaction – Warehouse and offices – Intersection of Rideau Road and Somme Street, Ottawa, ON.**". This Slope Stability Assessment study has been submitted as part of the Site Plan Control Application for 301 Somme Street.

The Slope Stability Assessment included a review of pre-construction geotechnical information of subsurface site conditions, a slope stability assessment addressing the west perimeter of the site and along the north perimeter of the site, and a vibration analysis regarding dynamic compaction on the site. The study also addressed the proposed retaining wall requirement along the site's north boundary due to vehicle circulation constraints and to redirect storm water drainage to the south. Vibration monitoring requirements and contingency plans are identified in this study. The study findings included:

- The west and north slope are stable under static and pseudo-static conditions under the described assumptions.
- The west slope could experience some minor instability during dynamic compaction, which will require restoration works post dynamic compaction.
- It is recommended that the pad be extended with a minimum distance of four (4) metres and a 3H:1V slope before the start of the dynamic compaction works. This distance should be updated once the dynamic compaction construction method has been detailed (i.e., compaction weight and height, equipment, expected frequency).

- The north and west slope should remain stable during the dynamic compaction process using the described assumptions.

6.6 Tree Conservation Report

The Tree Conservation Report has been prepared by Civitas Architecture Inc, dated August 13, 2021, on behalf of Consolidated Fastfrate (Ottawa) Holdings Inc. to address a requirement for the Site Plan Control Application. Key findings from this report which support the site landscaping requirement for the are as follows.

The site is located outside the urban and suburban areas which are subject to the City of Ottawa Tree Protection Bylaw as identified on Schedule F of this bylaw. Schedule M of the Bylaw shows that the site is located outside and adjacent to an additional protected area located to the north of Rideau Road. As such, the site is not subject to tree protection under the bylaw.

The approach to tree conservation and new planting gives regard to the Scope EIS recommendations and the objectives and principles of Ottawa's Urban Forest Management Plan and Ottawa's tree canopy cover goals and tree policies.

The Landscape Architects from Civitas Architecture Inc undertook site visits in late Fall 2020 and in early Spring 2021 to locate, identify, and record the tree species, size (dbh), and condition of each existing tree. Existing trees were identified to occur in two zones along the northern edge of the property. The generally level "roadside", adjacent to the south side of Rideau Road, is comprised of grasses, scrub vegetation, and occasional trees. The slope that rises on the subject site where site fill previously occurred is generally forested.

The identified mixed forest was observed to be in various states of maturation and decline. A total of **164 existing trees** over 10 cm DBH (64% of the total) were identified as being in good condition. The rest of the forest trees were in fair, poor, or dead and dying condition. Tree removal is proposed in the following zones:

- Within the building setback to accommodate the level parking area.
- Between the watercourse setback (15 meters from BOS) and the building setback to construct and accommodate the proposed soil reinforced retaining wall.

New tree planting is proposed as follows:

- 50 trees on the development site.
- 22 caliper trees on the new escarpment.
- 205 tree seedlings on the escarpment.

Total: 277 trees.

Survival rate of trees planted on the slope, assuming no maintenance is estimated to range from between 50% to 75%.

6.7 Environmental Impact Statement

GHD Limited completed a scoped Environmental Impact Study (EIS) dated July 27, 2021, for the proposed development on the subject site located at 301 Somme Street. The study area included the open disturbed site area and the roadside ditch along the south side of Rideau Road. Within this area, GHD staff confirmed the boundaries on key natural features (e.g., watercourse), confirmed their ecological functions, and have recommended appropriate mitigation measures, including buffers (setbacks) to prevent impacts on natural features from the proposed development. The key findings and recommendation of the EIS are as follows:

- The subject property is generally flat, is it currently a vacant lot comprised of a disturbed open field. There are no watercourses located directly on the subject property.
- There is an existing roadside ditch that is located directly northwest of the subject property along Rideau Road that is directly connected to Findlay Creek Municipal Drain. As a result, the City of Ottawa, and South Nation Conservation Authority (SNCA) requires a scoped EIS as part of the supporting documentation for the approval of the development.
- There is an existing roadside ditch along Somme Street that conveys some flows north to the ditch along Rideau Road and most of the flows to the south into an existing stormwater management facility. GHD biologists did not identify any significant terrestrial or aquatic species on a national, provincial, or regional level within the subject property during the field surveys.
- From the banks of the roadside ditch northwest of the subject property that runs along Rideau Road and connects to a main watercourse, GHD is recommending a 15-meters naturally vegetive buffer to protect the form and function of the downstream watercourse.
- During the construction of the retaining wall there may be some disturbance within the 15 meters buffer which will be rehabilitated afterwards. No development should be located within this buffer.

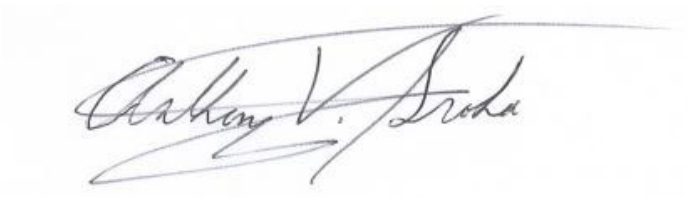
The EIS concluded that the proposed Fastfrate development on the site will not have a significant negative impact on identified natural heritage features (i.e., watercourses) provided the proposed 15 meters buffer from the centre of the ditch is respected, and the mitigation measures described in the EIS are implemented. The recommendations identified in the EIS have been made to address potential impacts to natural features (identified watercourse) and/or their functions during the site preparation, construction, and post-construction period.

7. Summary and Conclusions

The Site Plan Control application and associate Lifting 30 cm Reserve application to allow for the development of a warehouse facility located at 301 Somme Street within the Hawthorne Industrial Park have been assessed with regards to consistency with the Provincial Policy Statement (2020), and the City of Ottawa Official Plan and Zoning Bylaw. The findings of this Planning Rationale are summarised as follows.

+ The applications are deemed consistent with the applicable policies presented in the Provincial Policy Statement (2020).
+ The proposed development of the subject site for a warehouse facility including e-commerce distribution and associated site plan control application are found to be consistent with the intentions, applicable policies and purpose and intent of the identified “Rural Employment Area” land use designation presented in the City of Ottawa’s Official Plan.
+ The site plan addresses the City of Ottawa’s required engineering, environmental and planning considerations based on the submitted support studies and plans required by the City of Ottawa.
+ The proposed site plan and associated applications are consistent with the intent and purpose of the (RH) zoning designation and generally comply with the associated zoning provisions identified within the City of Ottawa’s comprehensive zoning bylaw for this property. An exception to the Zoning Bylaw setback requirement associated with the ditch running along Rideau Road and the relevant provision for setbacks from watercourse may be required accordingly. The of Ottawa’s Zoning Bylaw states the development requiring a site plan must provide the watercourse setback unless a different setback is determined to be appropriate in accordance with the criteria set forth in the Official Plan.

Based on the findings of this planning rationale, the applications for Site Plan Control on the subject site and associated Lifting of 30 cm Reserve application are deemed appropriate, represent good land use planning and are consistent in meeting the public interest intended for this site.



Prepared by:

Tony Sroka, MPL, MCIP, RPP

Principal Planner / Director

The Haven Group Inc.

August 16, 2021

List of References

- Castleglenn Consultants, Transportation Impact Study, Proposed Fastfrate Warehouse Facility, Rideau Road, Ottawa, May 2021,
- **CIMA+**, Site Servicing and Stormwater Management Report, Fastfrate Warehouse Development, **CIMA+** Project Ref. No. A001083, July 27, 2021
- GHD, Geotechnical Investigation, Warehouse and Offices, Intersection of Rideau Street and Somme Street, Ottawa, Ontario, Consolidated Fastfrate (Ottawa Holdings Inc., Sept 10, 2020.
- GHD, Hydrogeological Assessment Report, Proposed Commercial Development – CBRE Fastfrate Ottawa SPA, Rideau Road and Somme Street, Part of Lot 26, Concession 6 (Rideau Front), Geographic Township of Gloucester and Part of Blocks 5 and 14 Registered Plan 4M-1388 Ottawa, Ontario, prepared for Consolidated Fastfrate (Ottawa) Holdings Inc., January 19, 2021
- GHD, Letter – "30 cm Reserve Lift Application, Proposed Commercial Development – CBRE Fastfrate Ottawa SPA, Rideau Road and Somme Street, Part of Lot 26, Concession 6 (Rideau Front), Geographic Township of Gloucester and Part of Blocks 5 and 14 Registered Plan 4M-1388 Ottawa, Ontario", prepared on behalf of Consolidated Fastfrate (Ottawa) Holdings Inc., to the City of Ottawa, May 31, 2021
- GHD, Letter - Slope stability assessment for dynamic compaction - Warehouse and offices - Intersection of Rideau Road and Somme Street, Ottawa, ON, attention: Mr. Pierre Courteau, Consolidated Fastfrate (Ottawa) Holdings Inc. August 11, 2021
- GHD, Scoped Environmental Impact Study, Proposed Development, Part of Lot 26, Concession 6, 301 Somme Street, Gloucester, Ontario, City of Ottawa, July 27, 2021
- Golder Associates, Hydrogeological Investigation, Terrain Analysis & Impact Assessment, Proposed Industrial Subdivision, December 2008; Golder Project No. 08-1122- 0215
- Golder Associates, supporting letter "Tomlinson Industrial Subdivision – City of Ottawa File Number D07-16-15-94- 0505; response to South nation Conservation Authority"; Golder Associates; April 17, 2009; Project No. 08-1122-0215 (Tomlinson).
- Menard, (correspondence to Harry Alvery, City of Ottawa, Rural Services) Subject: VIBRATION CONTROL FORM, LARGE SCALE SOIL COMPACTION WORKS, SOMME STREET, OTTAWA, ON., on behalf of Consolidated Fastfrate Holdings Inc, March 16, 2021
- Paterson Group, Phase I – Environmental Site Assessment, Northern Part of 5123 Hawthorne Road, Ottawa, Ontario, prepared for Fastfrate (Ottawa) Holdings Inc., Nov 20, 2020, Report: PE5100-1
- Paterson Group, Phase II – Environmental Site Assessment, Northern Part of 5123 Hawthorne Road, Ottawa, Ontario, prepared for Fastfrate (Ottawa) Holdings Inc., Nov 30, 2020, Report: PE5100-2

A

Appendix A: Approved Severance December 2020

15-94-0505

DETAIL "A"
NOT TO SCALE

DETAIL "B"
NOT TO SCALE

DETAIL "C"
NOT TO SCALE

APPROVED UNDER SECTION 51 OF THE PLANNING ACT, BY THE CITY OF OTTAWA, THIS 31 DAY OF July, 2009.

DEDRICK MOORE-ASTINS
~~JOHN L. MOSER~~, GENERAL MANAGER
PLANNING AND GROWTH MANAGEMENT
INFRASTRUCTURE SERVICES AND COMMUNITY SUSTAINABILITY
CITY OF OTTAWA

PLAN 4M- 1388

I CERTIFY THAT THIS PLAN IS REGISTERED IN THE LAND REGISTRY OFFICE FOR THE LAND TITLES DIVISION OF OF OTTAWA-CARLETON (No.4) AT 11:20 O'CLOCK ON THE 5 DAY OF August 2009 AND ENTERED IN THE PARCEL REGISTER FOR P.I.N. 04326-0266 AND THAT THE REQUIRED CONSENTS ARE REGISTERED AS PLAN DOCUMENT No. OC1012790

Asst Dep Robert Unnau
LAND REGISTRAR

THE SUBDIVISION REPRESENTED BY THIS PLAN AFFECTS ALL OF P.I.N. 04326-0266

PLAN OF SUBDIVISION OF
PART OF LOTS 26 AND 27
CONCESSION 6 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA
SCALE 1:2000

0 25 50 75 100 150 200
METRES

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

NOTES
BEARINGS HEREON ARE GRID BEARINGS, DERIVED FROM ISCM 019871768 (N 5016745.786, E 379008.599) AND ISCM 019871769 (N5016468.145, E 378560.015) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76° 30'W LONGITUDE OF THE 3° M.T.M. ONTARIO CO-ORDINATE SYSYEM (NAD 83).

ALL MONUMENTS ARE STANDARD IRON BARS UNLESS OTHERWISE NOTED

S.I.B.	DENOTES 0.025 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.025 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.016 SQ., 0.6 LONG, IRON BAR
▣	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WIT.	DENOTES WITNESS
647	DENOTES H.R. FARLEY, O.L.S.
725	DENOTES R.W. ARNETT, O.L.S.
990	DENOTES J.G. PAYETTE, O.L.S.
1697	DENOTES J.P. SHIPMAN, O.L.S.
P	DENOTES PLAN 4R-11834
M	DENOTES MEASURED
S	DENOTES SET
R.F.	DENOTES RIDEAU FRONT

CURVE TABLE

CURVE	RADIUS	ARC	CHORD	BEARING
1	125.60	50.28	49.94	N41°13'00"W
2	125.90	50.29	49.95	N41°11'30"W
3	141.01	134.00	129.02	N00°18'40"W
4	141.31	134.18	129.20	N00°20'00"W
5	117.01	52.24	51.81	N14°44'40"W
6	116.71	52.11	51.68	N14°44'40"W
7	136.00	37.43	37.31	N74°55'30"E
8	136.30	37.40	37.28	N74°54'00"E
9	101.01	67.10	65.88	N78°54'40"E
10	100.71	66.90	65.68	N78°54'40"E
11	67.70	97.69	89.43	N18°32'30"E
12	67.40	97.26	89.04	N18°32'30"E
13	68.00	76.40	72.45	N54°58'50"W
14	67.70	76.07	72.13	N54°58'50"W
15	125.60	29.45	29.39	N80°27'00"W
16	125.90	29.42	29.36	N80°28'20"W
17	115.01	109.35	105.28	N00°17'45"W
18	114.71	108.95	104.90	N00°19'30"W
19	143.01	63.85	63.32	N14°44'40"W
20	143.31	63.98	63.45	N14°44'40"W
21	93.70	135.21	123.78	N18°32'30"E
22	94.00	135.64	124.18	N18°32'30"E
23	94.00	19.07	19.04	N28°36'20"W
24	94.30	19.08	19.05	N28°35'30"W
25	99.60	99.82	95.69	N58°27'30"W
26	99.30	99.51	95.40	N58°27'30"W

SURVEYOR'S CERTIFICATE

(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 THE 4th DAY OF MARCH, 2009.

JUNE 23, 2009
DATE

J.P. SHIPMAN
ONTARIO LAND SURVEYOR

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT:

(1) BLOCKS 1 TO 9, (BOTH INCLUSIVE), THE STREET WIDENINGS, NAMELY BLOCKS 10 AND 11, THE RESERVES, NAMELY BLOCKS 12 TO 20 (BOTH INCLUSIVE) AND THE STREETS, NAMELY SOMME STREET AND SAPPERS RIDGE, HAVE BEEN LAID OUT IN ACCORDANCE WITH MY INSTRUCTIONS.

(2) THE STREETS, NAMELY SOMME STREET AND SAPPERS RIDGE AND THE STREET WIDENINGS, NAMELY BLOCKS 10 AND 11 ARE HEREBY DEDICATED TO THE CITY OF OTTAWA AS PUBLIC HIGHWAYS.

DATED THE 31st DAY OF JULY, 2009.

RONALD TOMLINSON
TOMLINSON DEVELOPMENT CORPORATION
I HAVE THE AUTHORITY TO BIND THE CORPORATION

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

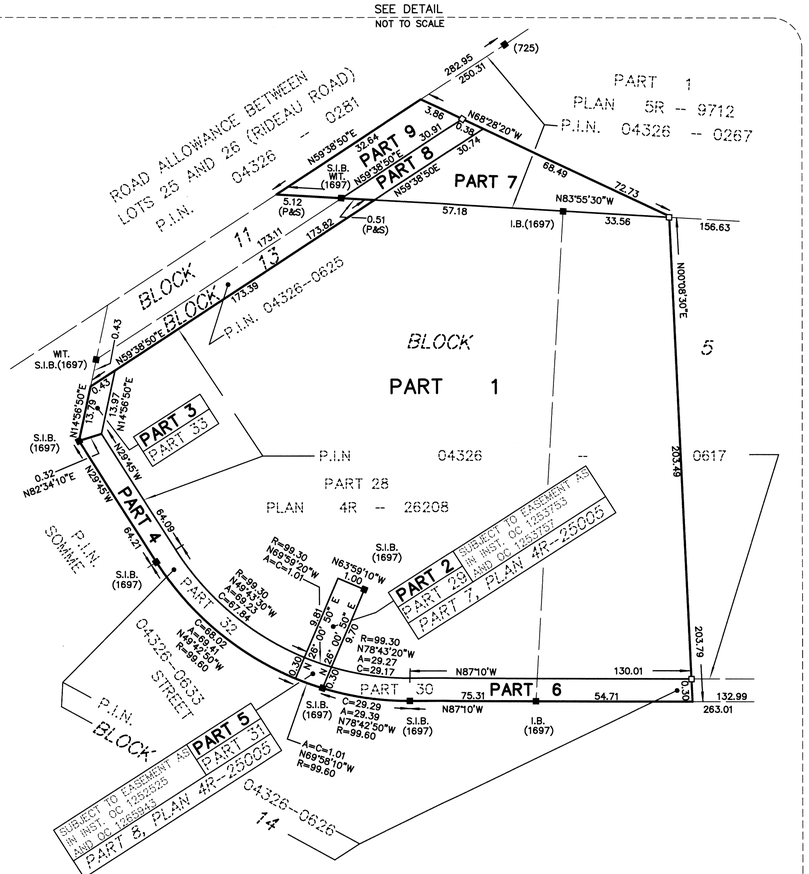
REF No. : GL.-362
FILE No. : 08-10-9202

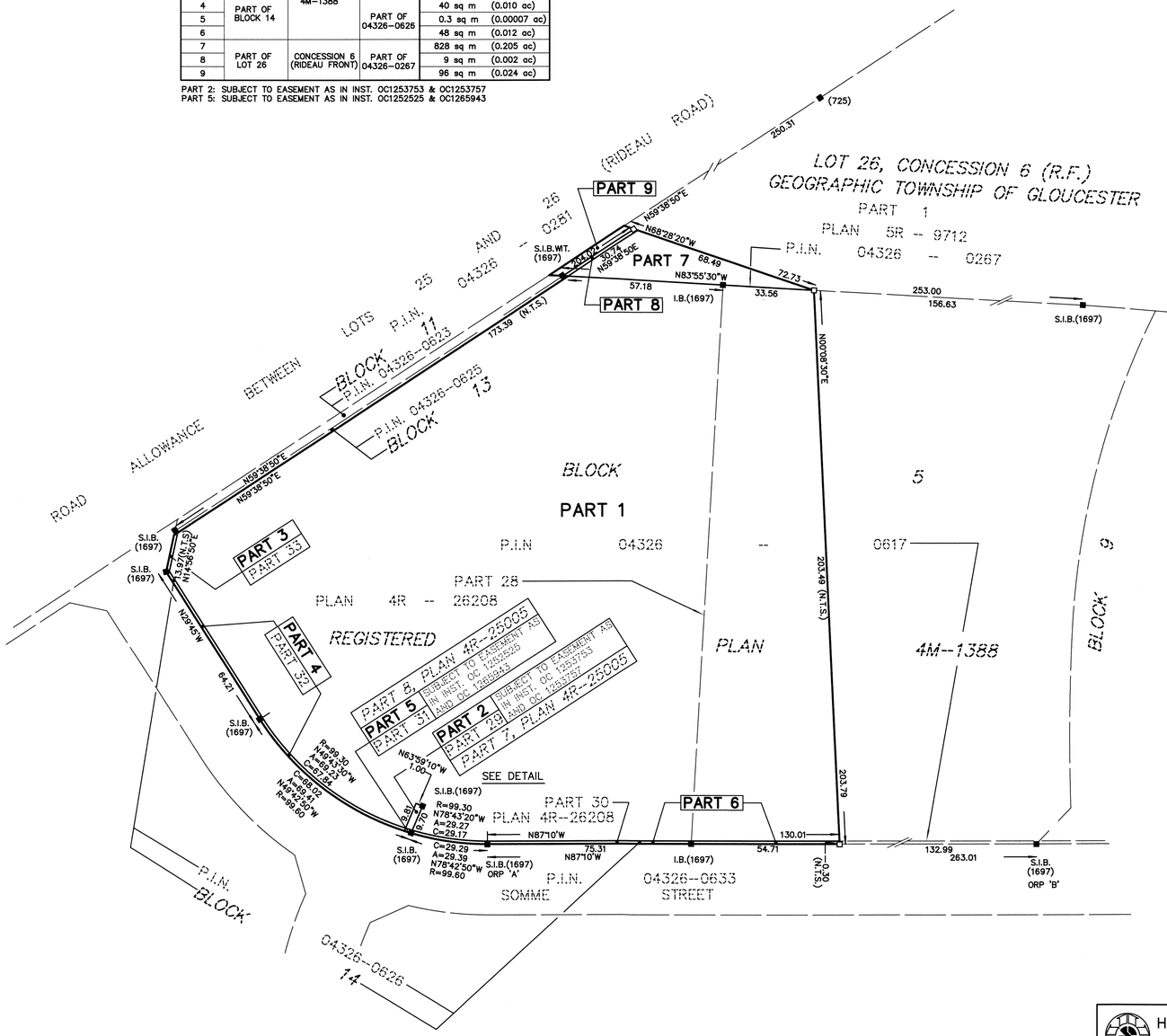
15-94-0505

SCHEDULE				
PART	LOT/BLOCK	PLAN/CON.	P.I.N.	AREA
1	PART OF BLOCK 5	4M–1388	PART OF 04326–0617	3.963 ha (9.793 ac)
2				10 sq m (0.002 ac)
3				4 sq m (0.001 ac)
4	PART OF BLOCK 14		PART OF 04326–0626	40 sq m (0.010 ac)
5				0.3 sq m (0.00007 ac)
6				48 sq m (0.012 ac)
7	PART OF LOT 26	CONCESSION 6 (RIDEAU FRONT)	PART OF 04326–0267	828 sq m (0.205 ac)
8				9 sq m (0.002 ac)
9				96 sq m (0.024 ac)

PART 2: SUBJECT TO EASEMENT AS IN INST. OC1253753 & OC1253757
PART 5: SUBJECT TO EASEMENT AS IN INST. OC1252525 & OC1265943

SEE DETAIL
NOT TO SCALE





I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE _____

_____
J.P. SHIPMAN

PLAN 4R–_____
RECEIVED AND DEPOSITED

DATE _____

_____
REPRESENTATIVE FOR LAND REGISTRAR FOR THE LAND TITLES DIVISION OF OTTAWA–CARLETON (No.4)

PRELIMINARY

PLAN OF SURVEY OF
PART OF LOT 26
CONCESSION 6 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER and
PART OF BLOCKS 5 AND 14
REGISTERED PLAN 4M–1388
CITY OF OTTAWA
SCALE 1:1000

0 10 20 30 40 50 75 100
METRES

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

NOTES
BEARINGS HEREON ARE GRID BEARINGS, DERIVED FROM ISCM 019871768 (N 5016745.786, E 379008.599) AND ISCM 019871769 (N 5016468.145, E 378560.015) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76° 30'W LONGITUDE OF THE 3° M.T.M. ONTARIO CO–ORDINATE SYSTEM (NAD 83).

DISTANCES SHOWN ON THIS PLAN ARE HORIZONTAL GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999955

BEARINGS AND DISTANCES SHOWN ON THIS PLAN AGREE WITH UNDERLYING AND ABUTTING PLANS UNLESS OTHERWISE NOTED.

S.I.B.	DENOTES 0.025 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.025 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.016 SQ., 0.6 LONG, IRON BAR
■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WIT.	DENOTES WITNESS
1697	DENOTES J.P. SHIPMAN, O.L.S.
725	DENOTES R.W. ARNETT, O.L.S.
U.P.L.	DENOTES UTILITIES POLE LINE
N.T.S.	DENOTES NOT TO SCALE
P	DENOTES PLAN 4M–1388

OBSERVED REFERENCE POINTS (ORP): MTM ZONE 9, NAD 83 (ORIGINAL)		
POINT IDENTIFICATION	NORTHING	EASTING
ORP A	5018947.5	378970.6
ORP B	5018934.5	379233.2

COORDINATES SHOWN TO RURAL ACCURACY IN ACCORDANCE WITH O.REG 216/10, SECTIONS 14, AND 31 TO 35 (BOTH INCLUSIVE).
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE–ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN

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 THE DAY OF , 2019.

_____ DATE

_____
J.P. SHIPMAN
ONTARIO LAND SURVEYOR

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

REF No. : GL–502
FILE No. : 19–11756

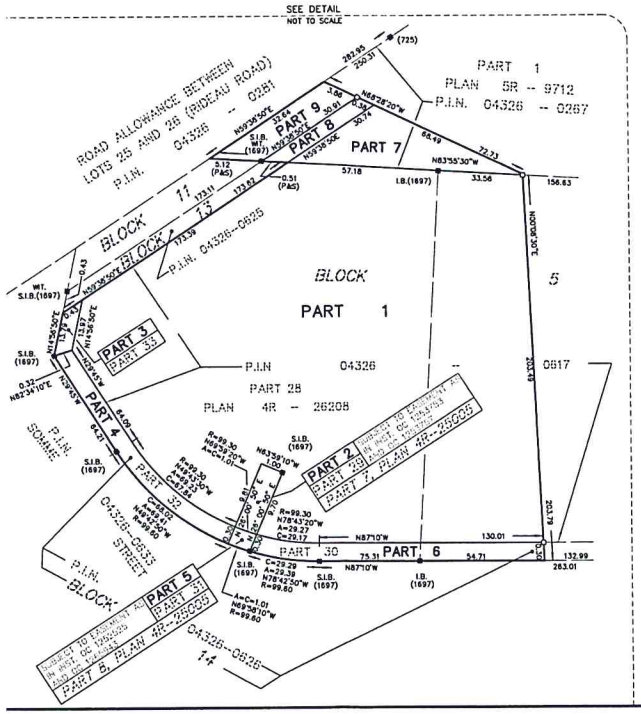
Committee of Adjustment

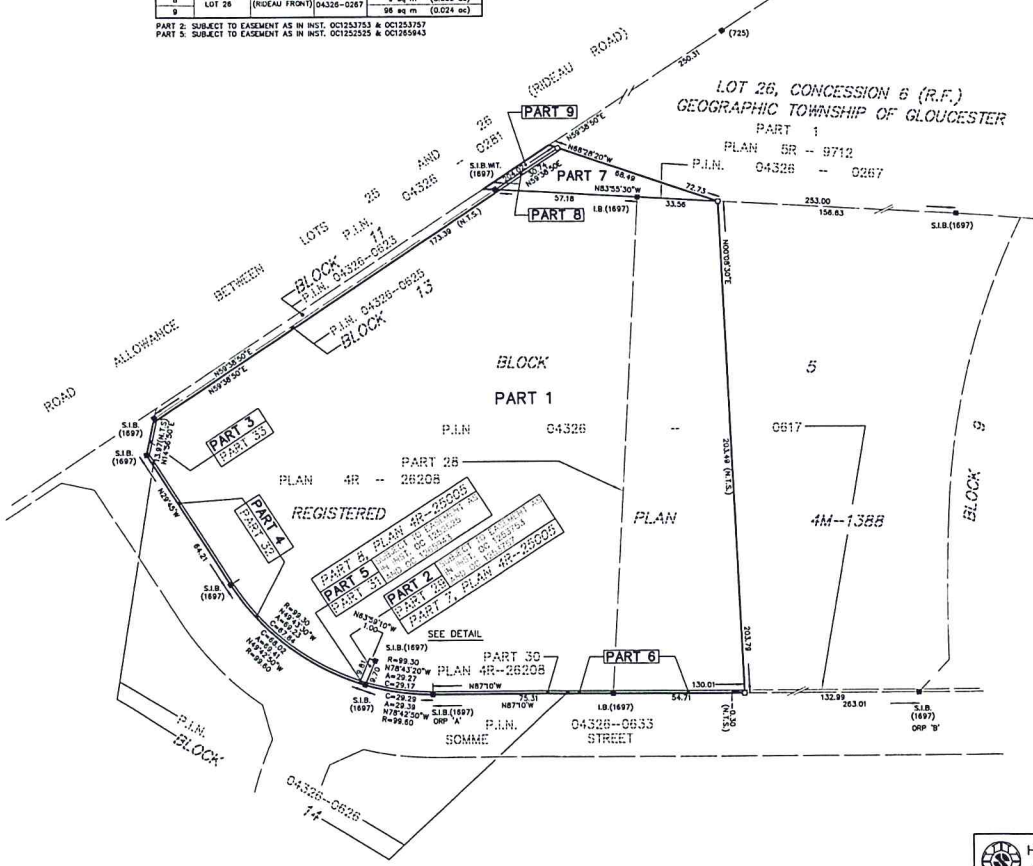
OCT 0 8 2020

City of Ottawa

SCHEDULE				
PART	LOT/BLOCK	PLAN/CON.	P.I.N.	AREA
1	PART OF BLOCK 5	4M-1388	PART OF 04326-0617	3.983 ha (9.793 ac)
2				10 sq m (0.002 ac)
3			PART OF 04326-0626	4 sq m (0.001 ac)
4	PART OF BLOCK 14			40 sq m (0.010 ac)
5				0.3 sq m (0.00007 ac)
6				48 sq m (0.012 ac)
7	PART OF LOT 26	CONCESSION 6 (RIDEAU FRONT)	PART OF 04326-0267	828 sq m (0.205 ac)
8				9 sq m (0.002 ac)
9				98 sq m (0.024 ac)

PART 2: SUBJECT TO EASEMENT AS IN INST. OC1253753 & OC1253757
PART 5: SUBJECT TO EASEMENT AS IN INST. OC1252525 & OC1265943





I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE _____

_____
J.P. SHIPMAN

PLAN 4R-_____
RECEIVED AND DEPOSITED

DATE _____

_____
REPRESENTATIVE FOR LAND REGISTRAR FOR THE LAND TITLES DIVISION OF OTTAWA-CARLETON (No.4)

PRELIMINARY

PLAN OF SURVEY OF
PART OF LOT 26
CONCESSION 6 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER and
PART OF BLOCKS 5 AND 14
REGISTERED PLAN 4M-1388
CITY OF OTTAWA
SCALE 1:1000

0 10 20 30 40 50 75 100
METRES

METRIC

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

NOTES

BEARINGS HEREON ARE GRID BEARINGS, DERIVED FROM ISCM 019871768 (N 5016745.786, E 379008.599) AND ISCM 019871789 (N 5016468.145, E 378560.015) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76° 30'W LONGITUDE OF THE 3° M.T.M. ONTARIO CO-ORDINATE SYSTEM (NAD 83).

DISTANCES SHOWN ON THIS PLAN ARE HORIZONTAL GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999955

BEARINGS AND DISTANCES SHOWN ON THIS PLAN AGREE WITH UNDERLYING AND ABUTTING PLANS UNLESS OTHERWISE NOTED.

S.I.B.	DENOTES 0.025 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.025 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.010 SQ., 0.6 LONG, IRON BAR
■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WIT.	DENOTES WITNESS
1697	DENOTES J.P. SHIPMAN, O.L.S.
725	DENOTES R.W. ARNETT, O.L.S.
U.P.L.	DENOTES UTILITIES POLE LINE
N.T.S.	DENOTES NOT TO SCALE
P	DENOTES PLAN 4M-1388

OBSERVED REFERENCE POINTS (ORP): MTM ZONE 9, NAD 83 (ORIGINAL)		
POINT IDENTIFICATION	NORTHING	EASTING
ORP 'A'	5018947.5	378970.6
ORP 'B'	5018934.5	379233.2

COORDINATES SHOWN TO RURAL ACCURACY IN ACCORDANCE WITH O.REG 216/10, SECTIONS 14, AND 31 TO 35 (BOTH INCLUSIVE).
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-EST CORNERS OR BOUNDARIES SHOWN ON THIS PLAN

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 THE DAY OF , 2019.

_____ DATE

_____
J.P. SHIPMAN
ONTARIO LAND SURVEYOR

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

REF No.: GL-502
FILE No.: 19-11756

D07-17-15-94-0505

APPROVED UNDER SECTION 51 OF THE PLANNING ACT, BY THE CITY OF OTTAWA, THIS 31 DAY OF JULY, 2009.

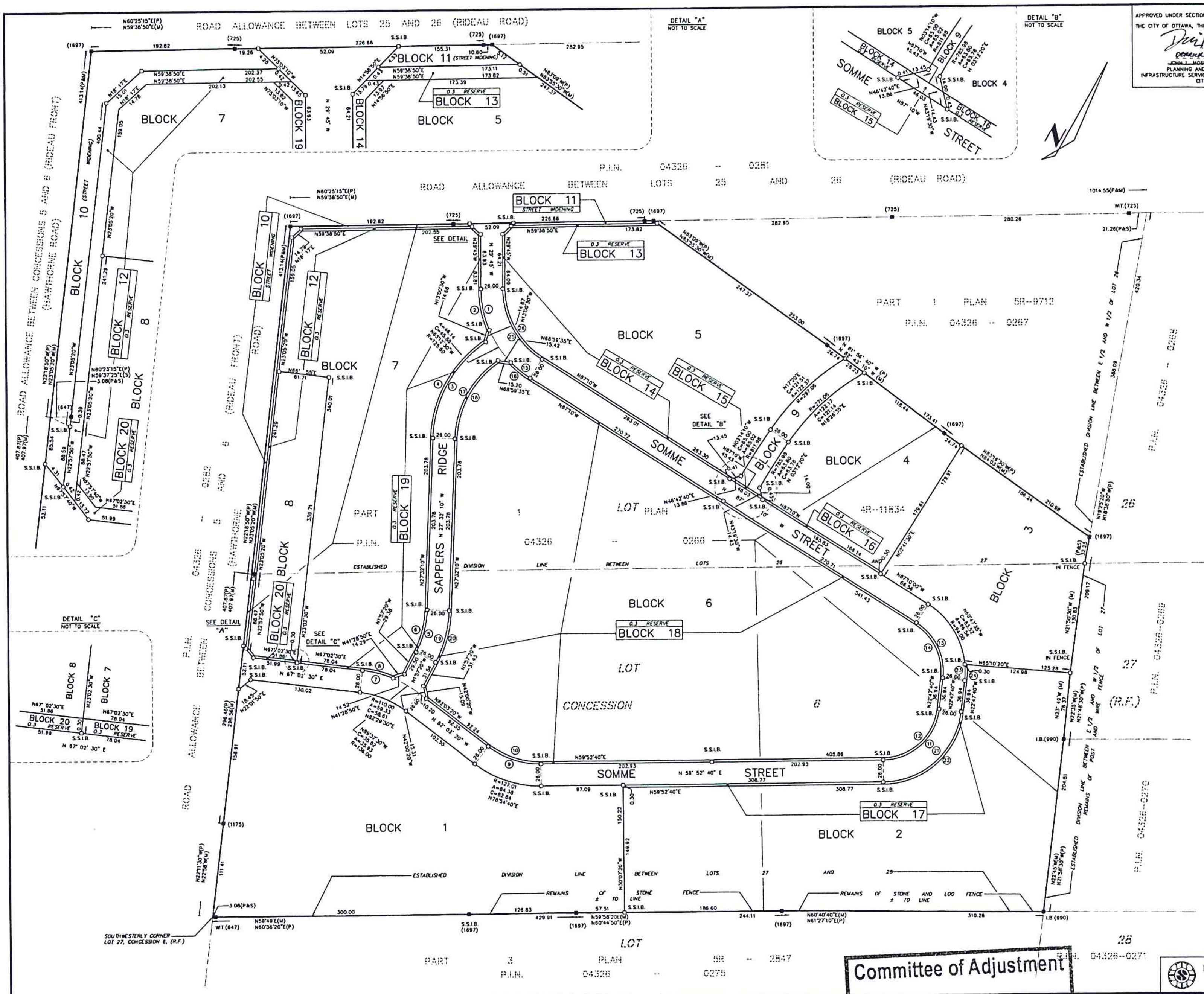
DERRICK MOODIE ACTING ~~JOHN L. MOSER~~, GENERAL MANAGER
PLANNING AND GROWTH MANAGEMENT
INFRASTRUCTURE SERVICES AND COMMUNITY SUSTAINABILITY
CITY OF OTTAWA

PLAN 4M- 1388

I CERTIFY THAT THIS PLAN IS REGISTERED IN THE LAND REGISTRY OFFICE FOR THE LAND TITLES DIVISION OF OF OTTAWA-CARLETON (No.4) AT 11:40 O'CLOCK ON THE 5 DAY OF August 2009 AND ENTERED IN THE PARCEL REGISTER FOR P.I.N. 04326-0266 AND THAT THE REQUIRED CONSENTS ARE REGISTERED AS PLAN DOCUMENT No. OC1012290

Asst Dep Robert Unrau
LAND REGISTRAR

THE SUBDIVISION REPRESENTED BY THIS PLAN AFFECTS ALL OF P.I.N. 04326-0266



PLAN OF SUBDIVISION OF

PART OF LOTS 26 AND 27 CONCESSION 6 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA
SCALE 1:2000

0 25 50 75 100 150 200
METRES

METRIC

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

NOTES

BEARINGS HEREON ARE GRID BEARINGS, DERIVED FROM ISCM 019871768 (N 5016745.766, E 379008.599) AND ISCM 019871769 (N5016468.145, E 378560.015) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76° 30'W LONGITUDE OF THE 3° M.T.M. ONTARIO CO-ORDINATE SYSYEM (NAD 83).

ALL MONUMENTS ARE STANDARD IRON BARS UNLESS OTHERWISE NOTED

S.I.B.	DENOTES 0.025 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.025 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.016 SQ., 0.6 LONG, IRON BAR
■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WIT.	DENOTES WITNESS
647	DENOTES H.R. FARLEY, O.L.S.
725	DENOTES R.W. ARNETT, O.L.S.
990	DENOTES J.G. PAYETTE, O.L.S.
1697	DENOTES J.P. SHIPMAN, O.L.S.
P	DENOTES PLAN 4R-11834
M	DENOTES MEASURED
S	DENOTES SET
R.F.	DENOTES RIDEAU FRONT

CURVE TABLE

CURVE	RADIUS	ARC	CHORD	BEARING
1	125.60	50.28	49.94	N41°13'00"W
2	125.90	50.29	49.95	N41°11'30"W
3	141.01	134.00	129.02	N00°18'40"W
4	141.31	134.18	129.20	N00°20'00"W
5	117.01	52.24	51.81	N14°44'40"W
6	116.71	52.11	51.68	N14°44'40"W
7	136.00	37.43	37.31	N74°55'30"E
8	136.30	37.40	37.28	N74°54'00"E
9	101.01	67.10	65.88	N78°54'40"E
10	100.71	66.90	65.68	N78°54'40"E
11	67.70	97.69	89.43	N18°32'30"E
12	67.40	97.26	89.04	N18°32'30"E
13	68.00	76.40	72.45	N54°58'50"W
14	67.70	76.07	72.13	N54°58'50"W
15	125.60	29.45	29.39	N80°27'00"W
16	125.90	29.42	29.36	N80°28'20"W
17	115.01	109.35	105.28	N00°17'45"W
18	114.71	108.95	104.90	N00°19'30"W
19	143.01	63.85	63.32	N14°44'40"W
20	143.31	63.98	63.45	N14°44'40"W
21	93.70	135.21	123.78	N18°32'30"E
22	94.00	135.64	124.18	N18°32'30"E
23	94.00	19.07	19.04	N28°36'20"W
24	94.30	19.08	19.05	N28°35'30"W
25	99.60	99.82	95.69	N58°27'30"W
26	99.30	99.51	95.40	N58°27'30"W

SURVEYOR'S CERTIFICATE

(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 THE 4th DAY OF MARCH, 2009.

JUNE 23, 2009
DATE

J.P. SHIPMAN
ONTARIO LAND SURVEYOR

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT:

(1) BLOCKS 1 TO 9, (BOTH INCLUSIVE), THE STREET WIDENINGS, NAMELY BLOCKS 10 AND 11, THE RESERVES, NAMELY BLOCKS 12 TO 20 (BOTH INCLUSIVE) AND THE STREETS, NAMELY SOMME STREET AND SAPPERS RIDGE, HAVE BEEN LAID OUT IN ACCORDANCE WITH MY INSTRUCTIONS.

(2) THE STREETS, NAMELY SOMME STREET AND SAPPERS RIDGE AND THE STREET WIDENINGS, NAMELY BLOCKS 10 AND 11 ARE HEREBY DEDICATED TO THE CITY OF OTTAWA AS PUBLIC HIGHWAYS.

DATED THE 31st DAY OF JULY, 2009.

RONALD TOMLINSON
TOMLINSON DEVELOPMENT CORPORATION
I HAVE THE AUTHORITY TO BIND THE CORPORATION

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

REF No.: GL-362
FILE No.: 08-10-9202

SCHEDULE					
PART	LOT	CONCESSION	INST.	AREA	REMARKS
1	26	6 (R.F)	NS253680	31.57 Acres	

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE REGISTRY ACT.

March 10, 1986
DATE

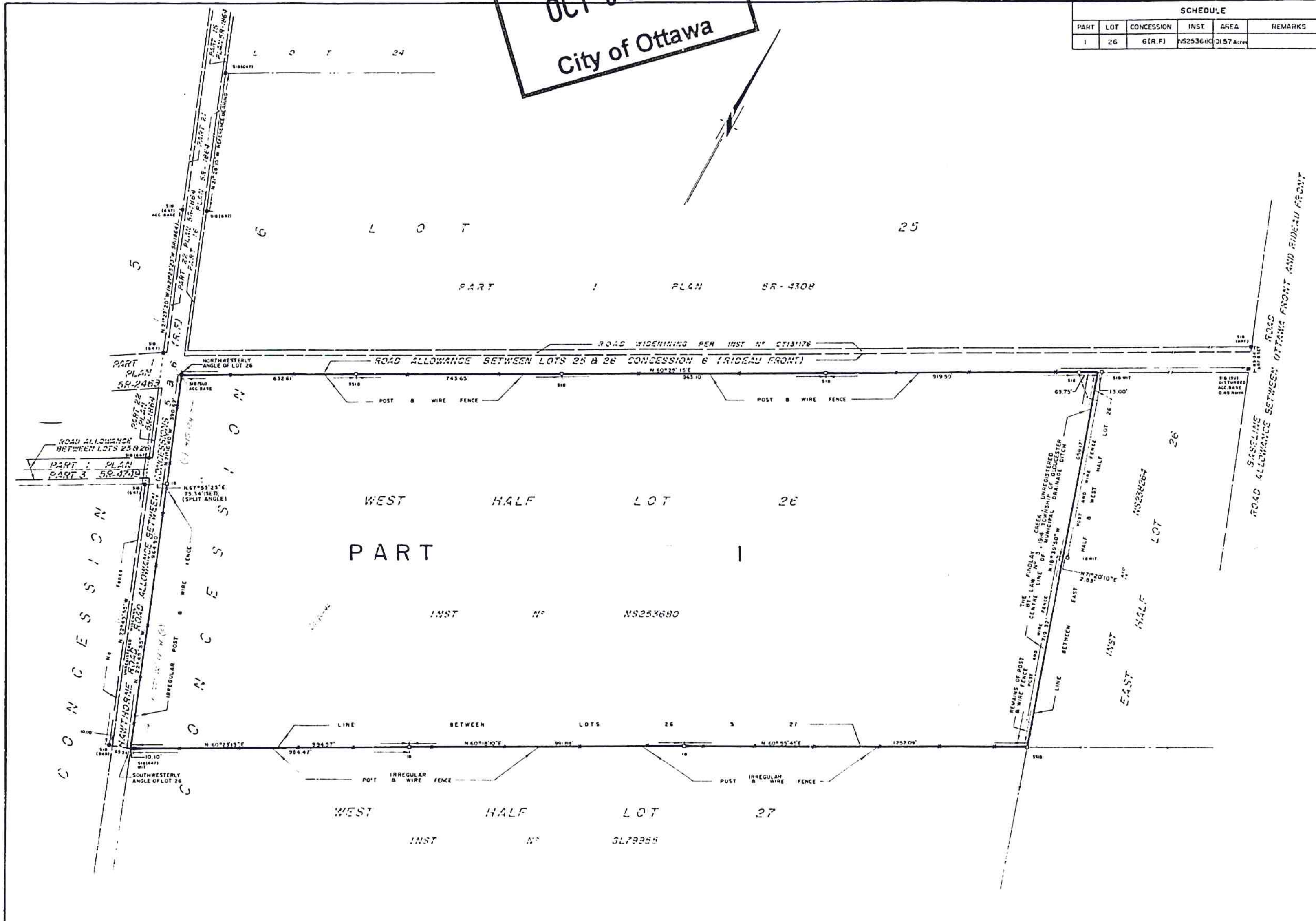
R.M. Jason
RON M. JASON O.L.S.

PLAN 5R-9712

RECEIVED AND DEPOSITED

14 MAR. 1986
DATE

ASST. DEP. K. Dillabough
LAND REGISTRAR FOR THE REGISTRY DIVISION OF OTTAWA-CARLETON (N°5)



PLAN OF SURVEY OF

WEST HALF OF LOT 26
CONCESSION 6 (RIDEAU FRONT)

TOWNSHIP OF GLOUCESTER

NOW IN THE CITY OF GLOUCESTER

REGIONAL MUNICIPALITY OF OTTAWA-CARLETON
RON M. JASON O.L.S
1986

SCALE : 1 : 2000

0 50 100 200 400 600' FEET

NOTE

BEARINGS SHOWN HEREON ARE ASTRONOMIC, DERIVED FROM THE BEARING N 21°28'15"W ON THE EASTERLY LIMIT OF PART 16 AS SHOWN ON PLAN 5R-1864

LEGEND

□	DENOTES SURVEY MONUMENT PLANTED
■	DENOTES SURVEY MONUMENT FOUND
IB	DENOTES IRON BAR
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
IBØ	DENOTES ROUND IRON BAR
(SU)	DENOTES SOURCE UNKNOWN
WIT	DENOTES WITNESS
ACC	DENOTES ACCEPTED
MEAS	DENOTES MEASURED
INST	DENOTES INSTRUMENT
(647) & HRF	DENOTES H.R. FARLEY O.L.S.
-----	DENOTES FENCE
(948)	DENOTES H.J. MARTIN O.L.S.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE REGISTRY ACT AND THE REGULATIONS MADE THEREUNDER
2. THE SURVEY WAS COMPLETED ON THE 12th DAY OF MARCH, 1986

MARCH 10 1986
DATE

R.M. Jason
RON M. JASON
ONTARIO LAND SURVEYOR

CAUTION: THIS PLAN IS NOT A PLAN OF SUBDIVISION WITHIN THE MEANING OF THE PLANNING ACT.

Arnett, Kennedy, Riddell & Jason Surveying Ltd.

ONTARIO & CANADA LAND SURVEYORS

OTTAWA KEMPTVILLE BROCKVILLE

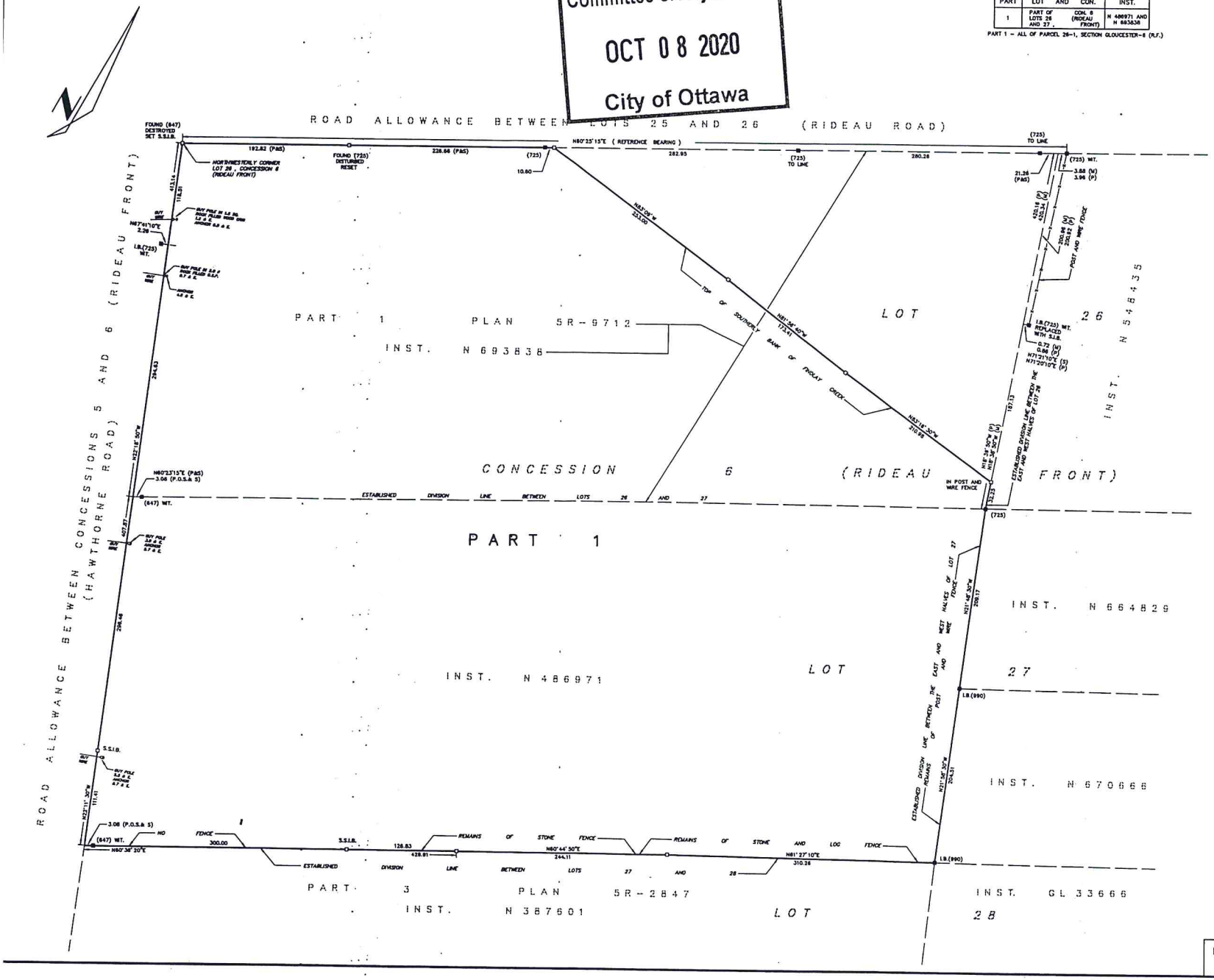
Ref. 895-85 PH

SCHEDULE			
PART	LOT AND CON.		INST.
1	PART OF LOTS 26 AND 27 ,	CON. 6 (RIDEAU FRONT)	N 486971 AND N 683838

PART 1 – ALL OF PARCEL 26-1, SECTION GLOUCESTER-6 (R.F.)

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.
DATE FEBRUARY 13, 1996
J.P. SHIPMAN

PLAN 4R-11834
RECEIVED AND DEPOSITED
DATE 19 February 1996
M. Chwaick Verloff
LAND REGISTRAR FOR THE LAND TITLES DIVISION OF OTTAWA-CARLETON (No.4)



PLAN OF SURVEY OF
PART OF LOTS 26 AND 27 CONCESSION 6 (RIDEAU FRONT)
TOWNSHIP OF GLOUCESTER
NOW IN THE CITY OF GLOUCESTER
REGIONAL MUNICIPALITY OF OTTAWA-CARLETON
BY H.A.KEN SHIPMAN SURVEYING LTD. 1995

SCALE 1:2000
0 25 50 75 100 150 200
METRES

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

NOTES
BEARINGS HEREON ARE ASTRONOMIC, DERIVED FROM THE BEARING OF N60° 25' 15"E AS SHOWN FOR THE NORTHERLY LIMIT OF PART 1, ON DEPOSITED PLAN 5R-9712.

ALL MONUMENTS ARE STANDARD IRON BARS UNLESS OTHERWISE NOTED

S.I.B.	DENOTES 0.023 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.023 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.016 SQ., 0.6 LONG, IRON BAR
⊠	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WIT.	DENOTES WITNESS
847	DENOTES H.R. FARLEY, O.L.S.
725	DENOTES R.W. ARMETT, O.L.S.
990	DENOTES J.G. PAYETTE, O.L.S.
S	DENOTES SET
P.O.S.	DENOTES PLAN OF SURVEY BY H.J. MARTIN, O.L.S., DATED JUNE 11, 1970. (NOT REGISTERED)
P	DENOTES DEPOSITED PLAN 5R-9712
S.U.	DENOTES SOURCE UNKNOWN
M	DENOTES MEASURED

CAUTION THIS PLAN IS NOT A PLAN OF SUBDIVISION WITHIN THE MEANING OF THE PLANNING ACT.

SURVEYOR'S CERTIFICATE

(1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE THEREUNDER.

(2) THE SURVEY WAS COMPLETED ON THE 24 th DAY OF MAY, 1994.

DECEMBER 5, 1995
DATE

J.P. SHIPMAN
ONTARIO LAND SURVEYOR

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

REF No.: GL-208
FILE No.: 94-4-3836

B

Appendix B: Registered Survey Plan

SCHEDULE			
PART	LOT/BLOCK	PLAN/CON.	P.I.N.
1	PART OF BLOCK 5	4M–1388	PART OF 04326–0617
2			
3	PART OF BLOCK 14		PART OF 04326–0626
4			
5			
6			
7	PART OF LOT 26	CONCESSION 6 (RIDEAU FRONT)	PART OF 04326–0267
8			
9			

PART 2: SUBJECT TO EASEMENT AS IN INST. OC1253753 & OC1253757
PART 5: SUBJECT TO EASEMENT AS IN INST. OC1252525 & OC1265943

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE SEPTEMBER 16, 2020

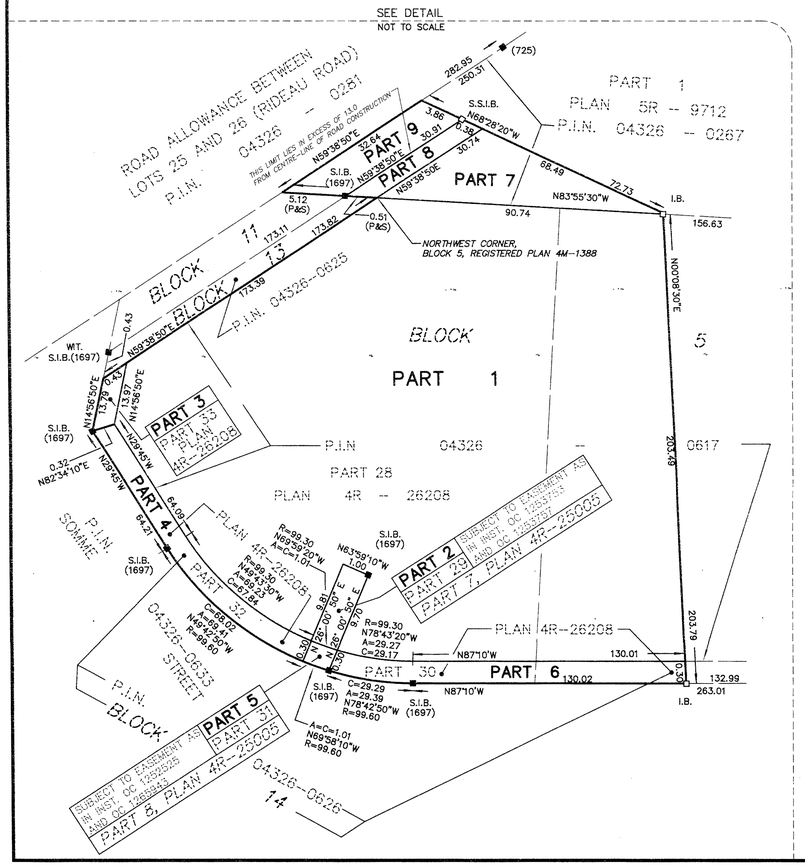
J.P. SHIPMAN

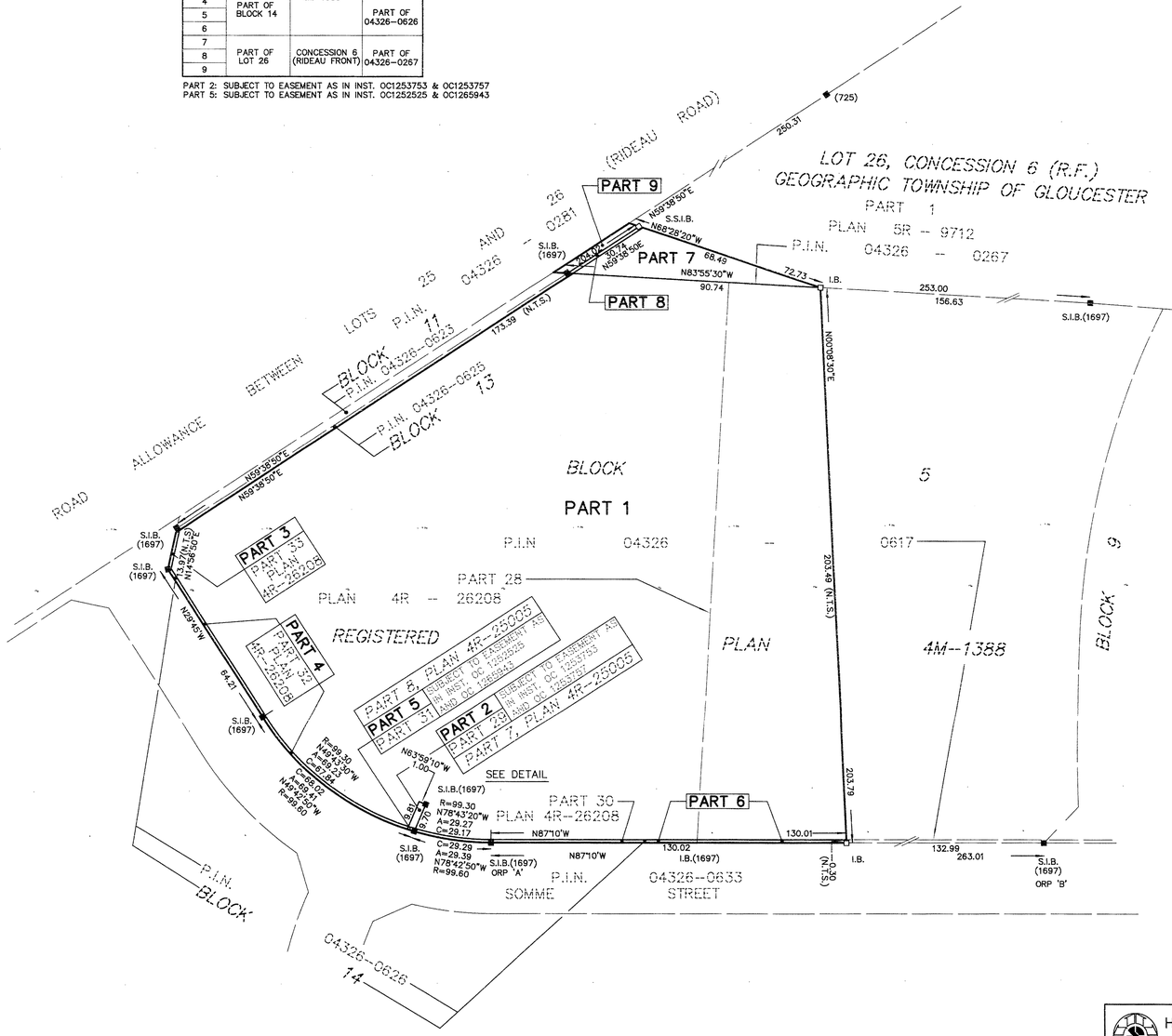
PLAN 4R–33406
RECEIVED AND DEPOSITED
DATE Dec. 22 / 2020

REPRESENTATIVE FOR LAND REGISTRAR FOR THE LAND TITLES DIVISION OF OTTAWA–CARLETON (No.4)

PLAN OF SURVEY OF
PART OF LOT 26
CONCESSION 6 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER and
PART OF BLOCKS 5 AND 14
REGISTERED PLAN 4M–1388
CITY OF OTTAWA
SCALE 1:1000

0 10 20 30 40 50 75 100
METRES





OBSERVED REFERENCE POINTS (ORP): MTM ZONE 9, NAD 83 (ORIGINAL)		
POINT IDENTIFICATION	NORTHING	EASTING
ORP A	5018947.5	378970.6
ORP B	5018934.5	379233.2

COORDINATES SHOWN TO RURAL ACCURACY IN ACCORDANCE WITH O.REG 216/10, SECTIONS 14, AND 31 TO 35 (BOTH INCLUSIVE).
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE–ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN

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

NOTES
BEARINGS HEREON ARE GRID BEARINGS, DERIVED FROM ISCM 019871768 (N 5016745.786, E 379008.599) AND ISCM 019871769 (N 5016468.145, E 378560.015) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76° 30'W LONGITUDE OF THE 3° M.T.M. ONTARIO CO–ORDINATE SYSTEM (NAD 83).

DISTANCES SHOWN ON THIS PLAN ARE HORIZONTAL GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999955

BEARINGS AND DISTANCES SHOWN ON THIS PLAN AGREE WITH UNDERLYING AND ABUTTING PLANS UNLESS OTHERWISE NOTED.

S.I.B.	DENOTES 0.025 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.025 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.016 SQ., 0.6 LONG, IRON BAR
■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WT.	DENOTES WITNESS
1697	DENOTES J.P. SHIPMAN, O.L.S.
725	DENOTES R.W. ARNETT, O.L.S.
U.P.L.	DENOTES UTILITIES POLE LINE
N.T.S.	DENOTES NOT TO SCALE
P	DENOTES PLAN 4M–1388

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 THE 10th DAY OF DECEMBER, 2020.

DECEMBER 14, 2020
DATE

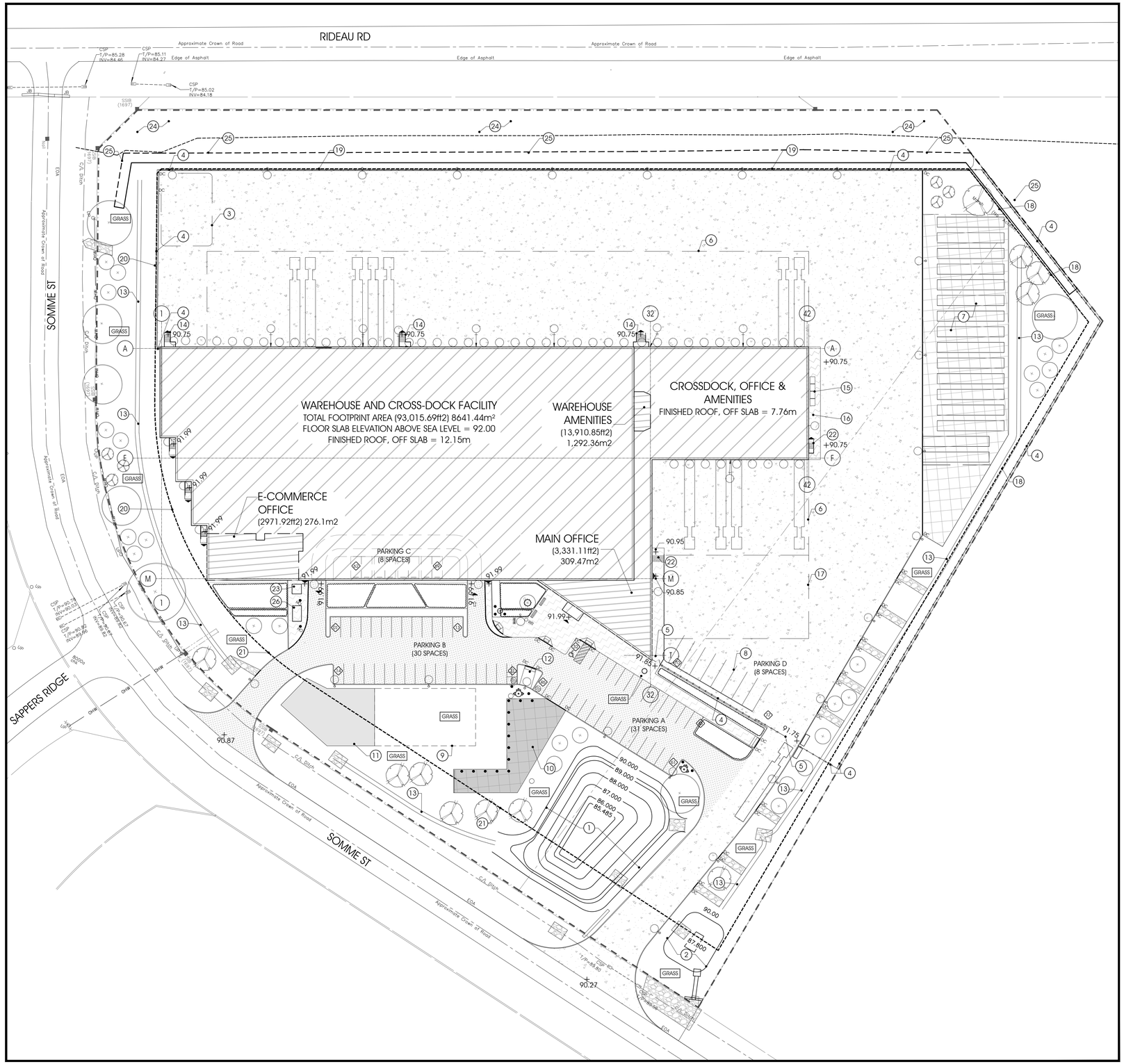
J.P. SHIPMAN
ONTARIO LAND SURVEYOR

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

REF No. : GL–502
FILE No. : 19–11756

C

Appendix C: Site Plan Concept



THE UNDERGROUND FEATURES AND INFORMATION THAT APPEARS ON THE DRAWINGS WERE OBTAINED FROM THE PUBLIC UTILITY COMPANIES AND OR FROM THE CITY EACH RESPECTIVELY.

ALL INFORMATION UNDER THE LEGEND 'EXISTING' IS FOR INFORMATION ONLY. COMPLETE OR EXACT LOCATION AND ELEVATION OF UNDERGROUND SERVICES ARE NOT GUARANTEED.

CERTAIN UNDERGROUND FEATURES ON PRIVATE PROPERTY ARE NOT SHOWN ON THE CURRENT DRAWING.

ANYONE WHO PROCEEDS WITH EXCAVATION WORK SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND FEATURES, BY EXPLORATORY EXCAVATIONS, AND SHALL ASSUME FULL RESPONSIBILITY IF THERE IS ANY DAMAGE THAT OCCURS DURING WORK.

THE CONTRACTOR WILL HAVE THE RESPONSIBILITY AND THE OBLIGATION TO VALIDATE, BY EXPLORATORY EXCAVATION, THE SIZE OF THE PUBLIC UTILITIES UNDERGROUND SERVICES AND TO WARN THE ENGINEER OF ANY CONFLICT WITH THE PROJECTED WORK.

BUILDING AREA DATA	TOTAL m2	OCCUPANCY
2.1 WAREHOUSE (CROSS-DOCK)	1,292.37 m2	5 PERSONS
2.2 WAREHOUSE	6,610.36 m2	6 PERSONS
2.3 E-COMMERCE OFFICES	276.09 m2	8 PERSONS
2.1 MAIN OFFICE	309.47 m2	7 PERSONS
2.5 WAREHOUSE (AMENITIES)	153.15 m2	10 PERSONS
TOTAL BUILDING AREA	8,641.44 m2	36 PERSONS

SITE APPLICATION DATA	REQUIRED, CITY OF OTTAWA	PROPOSED
1.0 LAND USE REQUIREMENTS		
1.1 ZONE	RH	RH
1.2 MAXIMUM HEIGHT	15m	12.4m
1.3 FRONT YARD SETBACK	15m	60.5m
1.4 CORNER SIDE YARD SETBACK	15	16.2m
1.5 SIDE YARD SETBACK	3m	46.7m
1.6 REAR YARD SETBACK	15m	15.2m
1.7 MINIMUM LOT WIDTH	50m	N/A
1.8 MINIMUM LOT AREA	8,000m²	40,665.3m²
1.9 MAXIMUM LOT COVERAGE	50% (20,332.65m²)	21.25% (8,641.43m²)
1.10 TOTAL LANDSCAPED AREA ON PROPERTY	-	33% (13,419.55m²)
1.11 TOTAL LANDSCAPED OUTSIDE OF PROPERTY	-	11.2% (4,554.51m²)
2.0 PARKING REQUIREMENTS		
2.1 WAREHOUSE - FIRST 5000m2	5000m² x (0.8/100m²) = 40 SPACES	40 SPACES
2.1.1 WAREHOUSE (CROSS-DOCK)	1292.37m²	
2.1.2 WAREHOUSE	6610.36m²	
2.1.3 WAREHOUSE (AMENITIES)	153.15m²	
2.1.4 TOTAL WAREHOUSE	8055.88m²	
2.1.5 WAREHOUSE REMAINING PARKING SPACES	8,055.88m² - 5,000m2=3,055.88m2 x (0.4/100m2)	13 SPACES
2.2 E-COMMERCE OFFICES	276.10m² x (2.4/100m²) = 6.6 SPACES	8 SPACES
2.3 MAIN OFFICE	309.47m² x (2.4/100m²) = 7.42 SPACES	16 SPACES
2.4 TOTAL PARKING REQUIRED	66.24 SPACES	77 SPACES
2.5 PARKING PROVIDED BREAKDOWN		
2.5.1 PARKING LOT A PROVISION		8 SPACES
2.5.2 PARKING LOT B PROVISION		30 SPACES
2.5.3 PARKING LOT C PROVISION		31 SPACES
2.5.4 PARKING LOT D PROVISION		8 SPACES
2.5.5 TOTAL PARKING PROVIDED		77 SPACES
2.6 ACCESSIBLE PARKING SPACES	1 SPACE	1 SPACE
2.7 BICYCLE PARKING - OFFICE	585.56² x (1/250m²) = 2.34 SPACES	3 SPACES
2.8 BICYCLE PARKING - WAREHOUSE	8,055.88m² x (1/2000m²) =4.03 SPACES	5 SPACES
3.0 OTHER PARKING REQUIREMENTS		
3.1 LOADING FACILITIES	1 LOADING SPACE	1 LOADING SPACE
3.2 LOADING BAYS	N/A	48 LOADING SPACE

FASTFRATE

DRAWING LEGEND:

- PROPERTY LINE
- SETBACK LINES
- FENCE LINE
- PROPOSED BUILDING FOOTPRINT
- ROLLED CONCRETE
- HEAVY DUTY PAVEMENT
- CONCRETE SIDEWALK
- GRANULAR PAD
- GRANULAR PAD COVERED WITH GRASS
- RIP RAP
- SAND MANTLE
- GRASS AREAS
- CURB C/W DEPRESSION
- BUILDING ENTRANCES & EXITS
- ELECTRICAL FIXTURES:
  - SITE AREA LIGHT
  - DOWNLIGHT
  - WALL MOUNTED LIGHT
- BIKE RACK
- BENCH
- BARRIER FREE ACCESSIBLE PARKING
- PARKING COUNT.
- FIRE HYDRANT
- STANDALONE SIAMEZE CONNETION
- BOLLARD
- NEW CONIFEROUS TREE
- NEW DECIDUOUS TREE
- SHRUBS

DRAWING NOTES:

1. WET POND.
2. FIREOND.
3. SNOW REMOVAL AREA. (TBD)
4. FENCE.
5. FENCE GATE.
6. TRUCK LOADING AND UNLOADING.
7. TRAILER STORAGE AREA 14-17 TRAILERS.
8. TRUCK PARKING AREA.
9. SEPTIC SYSTEM.
10. SEPTIC SYSTEM ACCESS AREA.
11. SEPTIC SYSTEM SAND MANTLE.
12. SHORT TERM PARKING.
13. STORM WATER SWALE.
14. EXIT STAIRS, 7 RISERS.
15. GARBAGE BINS.
16. PROPOSED LOCATION FOR EXTERIOR ELECTRICAL BOX.
17. TRUCK MANEUVERING AREA.
18. MIN. INTERIOR SIDE YARD SETBACK (3m).
19. MIN. FRONT YARD SETBACK (15m).
20. MIN. CORNER SIDE YARD SETBACK (15m)
21. MIN. REAR YARD SETBACK (15m)
22. EXIT STAIRS, 6 RISERS.
23. ELECTRICAL GENERATOR.
24. TREE CONSERVATION AREA.
25. RETAINING WALL.
26. ELECTRICAL MANHOLE C/W TRANSFORMER.
27. STANDALONE SIAMEZE CONNECTION

CIVITAS GROUP

FASFRATE OTTAWA
NEW WAREHOUSE & CROSS-DOCK FACILITY
301 SOMME STREET OTTAWA, ONTARIO

TRUE NORTH

PROJECT NORTH

SCALE: 1:500

DATE: 2021.08.13

GRAPHIC SCALE: 0 5m 10m 20m
1m

SITE PLAN

2001 - A1.0

D

Appendix D: Design Brief – CIVITAS ARCHITECTURE INC

Fastfrate Distribution Centre

301 Somme Street, Ottawa, Ontario

DESIGN BRIEF
SITE PLAN APPROVAL APPLICATION

CBRE Project Number 119011

18 August 2021

Civitas Architecture Inc
Architecture + Landscape Architecture
14 Chamberlain Avenue, Suite 101, Ottawa, Ontario K1S 1V9

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The goal of this document is to clarify how the proposed development project achieve the requirements, policies, and the objectives of the City of Ottawa, by illustrating the design work, with its existing and planned context, to demonstrate how the proposal supports the overall goals of the Official Plan, relevant secondary plans, Council approved plans and design guidelines.

The project is a fully compatible and thoughtful response to a relatively straightforward development application, in complete alignment with the City of Ottawa development guidelines and within the context of the existing Hawthorne Industrial Park. The Client, Fastfrate Inc., along with their Project Manager firm CBRE, have fully supported sound design and planning principles. They have also enabled the design development to be environmentally sensitive, improving the street presence along Somme Street, and creating a user friendly and accessible environment despite its industrial uses. The project highlights include the following:

- The Fastfrate development will create a new anchoring element to the Hawthorne Industrial Park to encourage further development and create a presence particularly to the Rideau Road and Somme Street intersection. An existing deficient public access intersection at Hawthorne and Somme Street will be upgraded under this project to the benefit of the City of Ottawa.

- Despite the challenges of large vehicle circulation area requirements, site planning has enabled the creation of an environmentally themed and aesthetic frontage to Somme Street. Transport operations have been confined to a majority of the 'back of house' areas.

- The area of the existing minor watercourse on the North side of the subject property will be environmentally preserved and augmented with new landscape to create a natural buffer to the development along Rideau Road Even though it conforms with the industrial zoning of the site, it was designed for the distance, grade elevation and natural features on the South side of Rideau Road to camouflage the utilitarian aspects from Rideau Road.

- The development is orientated to maximize solar access to the Somme Street forecourt design for pedestrians, building occupants and office-type functions. In addition, the adjacent properties will not be impacted for their own solar access.

- The new Fastfrate Ottawa facility is incorporating several sustainable techniques including the adaptive re-use and soils management of existing poor soils conditions present on the site. The roof structure is designed to accommodate future large array of solar panels and incorporates self-contained site services for water and sanitary waste. The site drainage is configured to be effective and will tie in the existing subdivision stormwater management systems.

- The design and planning of this development is leading-edge and of a higher quality in relation to the existing developments in the vicinity. It sets an excellent precedent for the Hawthorne Industrial Park future.

Diane Matichuk, Principal, Landscape Architect
B. Land. Arch., OALA, AAPQ, CSLA, CHP
Civitas Architecture Inc.

Douglas Rancier, Principal, Architect
B.Arch., Dipl. Arch. Tech., OAA, RAIC, AIA, LEED® AP
Civitas Architecture Inc.

PREAMBLE

Civitas Group (Civitas Architecture Inc.) have been retained by Fastfrate (Ottawa) Inc. for the design, project development and contract administration of a new warehouse and distribution facility located at the Hawthorne Industrial Park.
The Civitas Group is an integrated architecture and landscape architecture firm focussing on the sustainable dovetailing between building and site. They are supported by sub-consultant and specialist teams including: Cunliffe and Associated (Structural); Goodkey Weedmark and Associated Limited (Mechanical & Electrical); GHD (Environmental); GHD (Geotechnical, Slope Stability and Vibration Control); Paterson (ESA); Transportation (Castleglenn); Security and Telecommunications) (The Attain Group), CIMA+ (site servicing and storm water management).

SECTION 1: APPLICATION

1.1. APPLICATION SUBMISSION

The purpose of this application is to submit the comprehensive design proposal for the new Fastfrate Ottawa Warehouse and Distribution Facility to be located at **301 Somme Street**, Hawthorne Industrial Park, for site plan approval. The new facility will bring a new centralized facility for the company from an existing and over-capacity leased facility to a larger, fully owned centre. The facility will provide:

- New building and site development by a reputable, national transportation company anchoring the Hawthorne Business Park.
- The central warehouse and distribution centre is conveniently located in close proximity to major highway interchanges south of Ottawa to quickly more goods in a safe efficient manner.
- New corporate warehouse Facility including accessory distribution and office components to represent the City of Ottawa in the Fastfrate national chain of warehouse sites.
- Development of an underutilized, environmentally challenging site in a sustainable and responsible manner.

Civitas Group, acting as agent for Fastfrate Inc., is submitting an application for Site Plan Approval to the City of Ottawa with the objective of securing site plan approval prior to the elaboration of the Contract Documents for the warehouse project identified as *Fastfrate Ottawa Warehouse Facility*. The project is located at the intersection of Somme Street and Rideau Road, in Ottawa, Ontario. The site is located within Block 5 of the 72-hectare Tomlinson Hawthorne Industrial Subdivision. The City of Ottawa has recently provided the municipal address as 301 Somme Street.
Time is of the essence for Site Plan Approvals. The Owner is urgently requiring the construction phase of the project to proceed without delays. Their present facilities are extended beyond capacity and has been affecting the efficiency of their operations. The objective is complete documents for building permit purposes for end of October 2021 and make application for building permit in early October 2021. The Issued for Tender documents will be issued shortly thereafter for a General Contractor to be engaged and mobilized before December 2021. Accordingly, the construction is expected to proceed in early Spring 2022 and an occupancy for August 2022.

The Site Plan control application proposal is intending to meet the applicable policies of the Rural Area (Schedule A, Official Plan), and Sections 4.11 and 5. A review of the existing zoning by-law indicates a "RH-Rural Heavy Industrial Zone" designation of which a warehouse is a permitted land use. The site is currently greenfield. The proposed development also meets the policies of Section 4.11 regarding urban design and compatible development.
The purpose of this document is to assist the applicant to organize and substantiate the design justification in support of the proposed development and to assist staff and the public in the review of the proposal.

The "Concept Plan", prepared by Civitas Group, outlines the major features of the project in sufficient detail for the initial site plan review submission. We understand the City Planning Staff will need to be comfortable that the proposed development will comply with the City's zoning by-law and infrastructure requirements. Every effort has been made to meet or exceed expectations and present a high-quality project for the City of Ottawa.

Zoning considerations include such matters as lot frontage, access, building footprint and elevations, a sufficient number of parking spaces for the desired floor area, walkways, driveways, yards, and landscaped open space; infrastructure requirements, including preliminary sewer and water design as well as preliminary lot grading, drainage, and storm water management. Other site plan details related to such matters as lighting, and waste storage may also need to be considered in the initial Concept Plan review. This plan is being produced by Civitas Group with the sole intent of meeting the objective of obtaining site plan approval.

1.2. RESPONSE TO CITY DOCUMENTS

1.2.1. OFFICIAL PLAN

The proposed development is located in the Rural Area (Schedule A, Official Plan). A review of the existing zoning by-law indicates a "RH-Rural Heavy Industrial Zone" designation, which purpose is to permit the development of heavy industrial uses in areas mainly designated as General Rural Area, Village and Carp road corridor rural employment in the Official Plan; accommodate a range of heavy industrial uses and limited service commercial uses at locations which are neither environmentally sensitive or in close proximity to incompatible land uses; and, regulate development in a manner that respects adjacent land uses and will have a minimal impact on the rural area. (https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/law-z/planning-development-and-construction/maps-and-zoning/zoning-law-no-2008-250/zoning-law-2008-250-consolidation/part-13-rural-zones-sections-211-236#rh-rural-heavy-industrial-zone-sections-221-and-222).

Section 2.5.1 of the Official Plan identifies several Design Objectives in the form of statements which express how the City wants to influence the built environment as the city evolves. These Design Objectives are broadly applicable, to plans and development in all land use designations, and from a city-wide to a site-specific basis. Table 1 provides an assessment of how the proposed site plan for this project is consistent with these guidelines.

Official Plan Policy Reference Section 2.5.1 Designing Ottawa Design Objectives	
Design Objectives	Site Plan Design Response
1. To enhance the sense of community by creating and maintaining places with their own distinct identity.	The Proposed Site Plan for the Warehouse facility has been **designed to initiate a positive identity for the industrial park** and act as a **catalyst for the future industrial community** of the Hawthorne Industrial Park.
2. To define quality public and private spaces through development	The proposed warehouse has been sited to **create a strong separation between the active transport and vehicle circulation and the more subdued office and pedestrian orientated 'forecourt'** facing Somme Street.
3. To create places that are safe, accessible and are easy to get to, and move through.	Transport activities have been placed to one side of the property for access and behind the main warehouse building massing. **This creates a quiet and pedestrian-safe front landscape** related to the office functions.
4. To ensure that new development respects the character of existing areas.	Located within the Hawthorne Industrial Park which respects the character and intended use of the area as a rural industrial park. **In fact, this development strives to set a high-quality precedent for vacant lands in the industrial park.**
5. To consider adaptability and diversity by creating places that can adapt and evolve easily over time and that are characterized by variety and choice.	The site plan design and layout provide for the adaptive re-use of the site over time for industrial uses requiring a large format building site. In particular, the building facades and structures behind the building faces all along Somme Street have been designed with flexibility; **using materials and modular construction which can be readily changed or reconfigured to adapt to new circumstances.**
6. To understand and respect natural processes and features in development design.	The site plan design respects the natural processes in the immediate area including **provision a sufficient development setback from the minor watercourse and environmental conservation area** along Rideau Road adjacent to the Northern site property line.
7. To maximize energy-efficiency and promote sustainable design to reduce the resource consumption, energy use, and carbon footprint of the built environment.	Incorporation of best practices will be into the building and site to reduce reduce the resource consumption, energy use, and carbon footprint of the built environment were deemed appropriate. For example, with the large roof area common to any warehouse, **the building was aligned to solar exposure and will be designed to accommodate future solar roof panel array units.**

The proposed site plan development is consistent with the broad design objectives outlined in Section 2.5.1 of the Official Plan.

Section 5.2.1 of the Official Plan identifies several components in order to ensure that the design provisions of this Plan are addressed; building elevations provided to the City in support of applications submitted for approval under the provisions for Site Plan Control in the Planning Act may be required to show exterior architectural details and design features. Drawings and elevations have been provided to sufficient scope, quality, clarity and detail to ascertain detailed design, materials, and finishes and the treatment of the public realm. Drawings and elevations serve to illustrate matters of compatibility with adjacent buildings or sensitivity to local area place, context and setting, to address the relationship between buildings and between buildings and the street, to incorporate sustainable design features, and to illustrate scale, transitions in form, massing, character and materials.

Official Plan Policy Reference Section 5.2.1 Building/Site Design Objectives	
Design Objectives	Site Plan Design Response
a) Treatment of the public realm;	As the development is situated in an almost vacant Industrial Park without neighboring development, the design is actually investing into the initiation of the first public realm for the area and setting precedence.
b) Views of the entire block, so that proposed buildings may be seen in their context;	The proposed warehouse is situated with no surrounding buildings within over 550 metres. It will be situated along a heavily treed and environmentally conserved area along its Northern boundary. The remaining area is open subdivision lots, with little foliage.
c) Finish, texture, materials, patterns and colours of all building exteriors, including roofs;	The relatively large building has been treated with varying materials and finishes to breakdown its massing, providing human scale, patterning and visual interest. For example, precast concrete wall panels are being proposed with surface texture/patterns.
d) Location, size, colour, and type of all building exterior signage and lighting;	Lighting for the project is primarily by way of freestanding lighting standards designed to light the secure compounds. Signage will be primarily building mounted due to the area available on the building massing and minimize ground visual environment. Photometric studies have been performed to provide site lighting which is effective and minimizes light pollution to the adjacent properties and be cognizant of Dark Skies principles.

e) Number, placement, type and finishing of all exterior doors and windows	For design interest, the design has invested in providing translucent glazing features to the warehouse to provide natural lighting to interior aisles of the warehouse. Prominent glazing features are provided to the forecourt and landscaping along Somme Street.
f) Finish, texture, materials, patterns and colours of functional elements attached to or forming part of the exterior of buildings such as entrance elements, walls, stairs, gates, railings, balconies, planters, awnings, alcoves, canopies, bays, seating, parking decks and ramps;	To enhance the facades and 'break down' the large massing of the main warehouse, subsidiary office areas are provided with several highlighting features. Coloured metal panels are introduced at areas of entrance doors or glazing. Pronounced horizontal and vertical prefinished coloured fin elements are added to the facades which introduce feature lighting and highlight the more pedestrian environments, versus the utilitarian transport functions.
g) Any sustainable design features to be incorporated, such as green roofs or walls, sun traps, reflective or permeable surfaces;	Sustainable design features are integrated into the design and includes a white reflective roof covering and capacity for future solar panel arrays on the main roof. The orientation of the building was designed to maximize solar access to the frontage along Somme Street, along with considerable landscaping features.
h) Placement, finish, colour, size of any exterior mechanical systems such as heating and air conditioning, electronic transmission / receiving devices, and all above ground utilities (whether stand-alone or attached to the building) including any screening materials associated with the foregoing;	Generally, there will be no visible mechanical systems or prominent utilitarian features to the building around the site. A ground mounted emergency generator and necessary electrical transformer has been located in accordance with utility requirements. These are positioned to one side of the development and within a landscaped screened area.
i) Integration of elements such as mechanical equipment, elevator machine rooms, communication devices and visible temporary devices (window washing equipment), together with any building parapet that constitute the roofscape design;	As the site is located in an industrial park, raised significantly in grade from Rideau Road and the warehouse is relatively high, the main mechanical system units will not be readily apparent to the surrounding areas. No other large appurtenances on the main roofs are anticipated other than the future solar panels. The lower roof areas, primarily visible to Somme Street, are fitted with raised parapets to screen any smaller HVAC components or roof access ladders.

The proposed site plan development is consistent with the aesthetic building elevation and massing design objectives outlined in Section 5.2.1 of the Official Plan.

1.3. CONTEXT PLAN

The context plan intends to provide a contextual analysis that discusses and illustrates the properties, of a 100-meter radius for the surrounding area of the project, such as: transit stations, transportation networks for cars, cyclists, and pedestrians, focal points/nodes, gateways; parks/open spaces, topography, views towards the site, the urban pattern (streets, blocks), future and current proposals (if applicable), public art and heritage resources.

1.3.1. CONTEXTUAL BACKGROUND

In this contextual analysis, the Architect and Landscape Architect provides a full description of the subject development context and any important considerations in the design of the project. We refer the reader to the aerial and ground photographs included in this section.

1.3.1.1 Transportation and Road Network

The subject site is located to the Northeast corner of the existing Hawthorne Industrial Park. The site frontage is located along Somme Street which is longest property line. As Somme is the internal road to the subdivision the frontage offers opportunities for access, particular to the southerly areas. Rideau Road is located along the length of the Northern property line, with a minor intersection at Somme Street and Rideau Road. To the Northwest/west property line are open land areas and to the Southeast/South an existing undeveloped lot for the subdivision.

The primary access for transport vehicles for this site and the subdivision in general is located at the Somme Street and Hawthorne Road intersection, Southwest of the site. Vehicles are primarily required to use this intersection and traverse Somme Street and enter the site by the Southeast property line.

1.3.1.2 Adjacent Buildings or Structures

The site and adjacent properties of the subdivision are greenfield technically; there has been the importation of excess poor fill materials over the years. There are no adjacent buildings or structure within at least 550 metres to the West but is primarily open for several thousand metres in almost all directions.

1.3.1.3 Pedestrian Walkways or Road Features

There are no pedestrian sidewalks serving the site nor the subdivision, with minimal road lighting, no public transportation stops or service. The roadways have shallow gravel shoulders and generally drainage ditches.

1.3.1.4 Green Space

Between Rideau Road and the North Property line is an existing man-made ditch which serves Rideau Road, and an area deemed an environmentally sensitive area. It is essentially a low-lying wet area with treed vegetation. As an industrial subdivision there are no public park amenities or greenspaces in the area.

The Greenbelt area is to the Northeast of the site, but the remaining areas are primarily open subdivision lots with little or no trees; only low, weedy vegetation.

1.3.1.5 Existing Vegetation

Much of the site and adjacent properties is disturbed open field. The vegetation characteristics of the site are typical of areas with high disturbance and historical clearing. This area was dominated by perennial rye grass (Lolium perenne), Kentucky blue grass (Poa pratensis), Canada goldenrod (Solidago canadensis), common burdock (Arctium minus), Queen Anne's lace (Daucus carota), common dandelion (Taraxacum officinale), chicory (Cichorium intybus), white clover (Trifolium repens), and common mullein (Verbascum thapsus). The only tree species identified were willow and balsam poplar (Populus balsamifera), located at the base of the Northern property line pronounced slope. For more information, please refer to Tree Conservation Report.

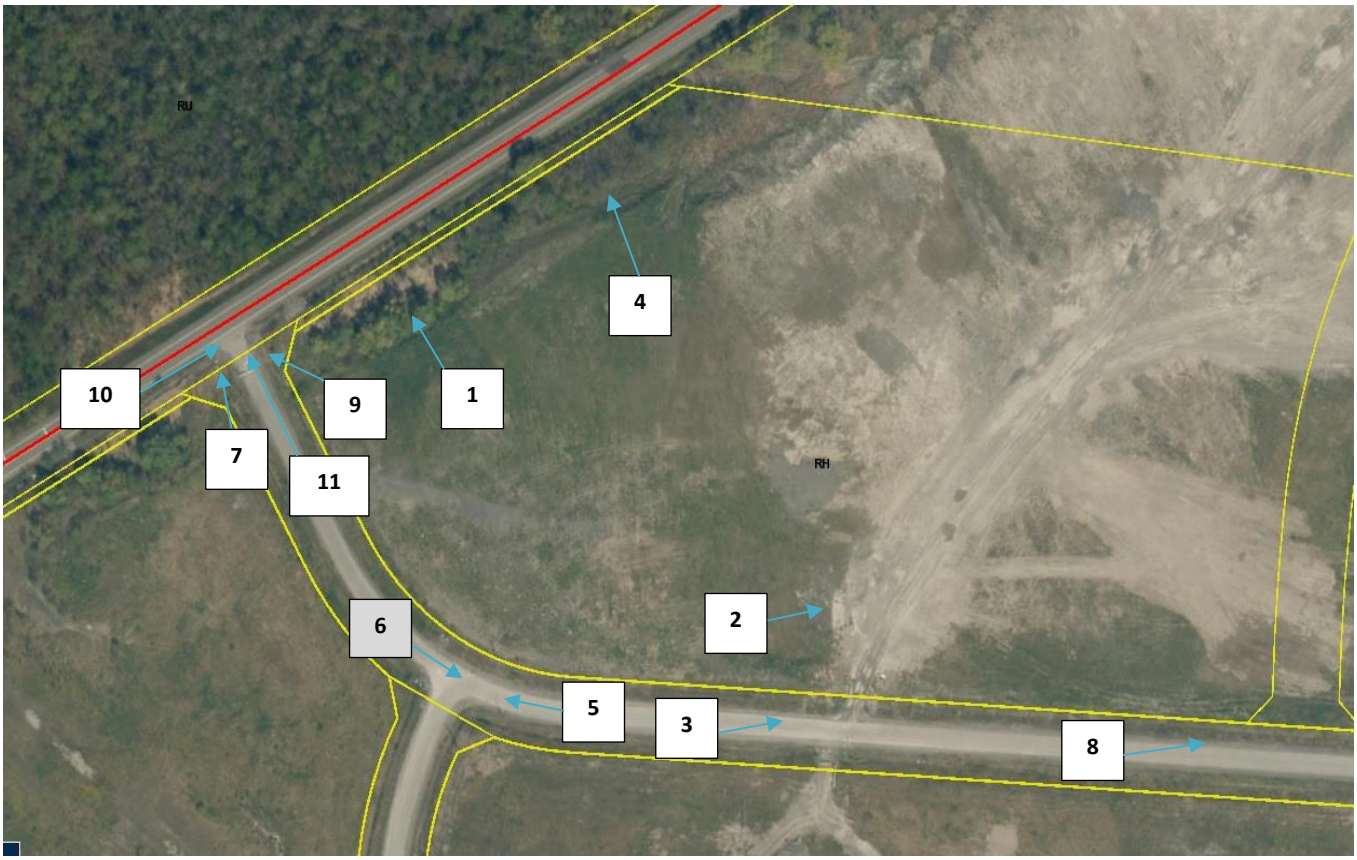
1.3.1.6 Views

The site does not offer any significant aesthetic views with its position in an industrial subdivision. The only realistic opportunity is to address the view towards Somme Street and provide a street frontage to create an area for views or view refuge from its industrial context.

1.3.1.7 Topography

The site topography is relatively flat with various small mounds of fill material, sloping down to the surrounding streets. The surrounding topography slopes up from south to north by approximately 3.5 meters from Rideau Road to the section of Somme Street south of the Site. The Site elevation is higher compared to the surrounding streets varying from approximately 0.2 metres (m) higher on the south side (Somme Street) to 4.0 m higher on the north side (Rideau Road). There was also a ditch along the south, west, and north perimeters of the Site. The historic fill placement at the Site has created sloping of approximately 2:1 (H:V) around the south, west, and north perimeters of the Site.

Existing conditions on the site are shown in the following photographs. See images below, each number indicates the order of the picture.



Parcel location
https://maps.ottawa.ca/geoOttawa/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1.3.2. CONTEXTUAL ANALYSIS AND RESPONSE

The context of the project being located within a relatively flat undeveloped industrial park, it seemed clear to the architecture and landscape architecture design team that, in some ways, we were required to a) enhance any features or elements to **improve or preserve the context** and b) add or design the project to **create a context and contribute to the future of the subdivision**. The following were the key contextual design responses.

1.3.2.1 Environmental Preservation

The acknowledgement of the sensitivity of the designated watercourse and associated lands between Rideau Road and the subject development property line is important to the Consultant team. An Environmental Impact Study has been prepared to address potential environmental issues associated with an application to develop the property. The study area included open disturbed area and a roadside ditch. Within this area, we confirmed the boundaries on key natural features (e.g., watercourse), confirmed their ecological functions, and have recommended appropriate mitigation measures, including buffers (setbacks) to prevent impacts on natural features from the proposed development.

The photograph to the left which was taken on June 2021 is a view of the existing Rideau Road ditch, looking East. It shows the top of bank along Rideau Road and the watercourse approximately 2-3m in width. However, there is no distinguishing bank on the south side of the ditch and therefore no definition for top of bank for the purpose of the 15m setback distance. The area undulates in topography and is effectively a wet area.

Accordingly, we have used a reasonable allowance and defined the 15m setback from the centreline of the watercourse for all design and planning of the development.

In summary, the Environmental Impact Study identifies that the proposed development will not result in a significant negative impact on identified natural heritage features or their functions provided the 15m buffer measured from the centreline of the watercourse (ditch) is respected, and associated mitigation measures are implemented. These recommendations have been made to address potential impacts to natural features (identified watercourse) and/or their functions during the site preparation, construction and post-construction period.

1.3.2.2 Street Presence and Sanctuary

The design team understands the nature of the industrial and utilitarian context of the Hawthorne Industrial Park. A remote and 'rough and ready' environment often results in developments which are simple and take the view 'out of site/out of mind'. Through the support of the Client Fastfrate, the design and planning has endeavoured to make a 'place' which accommodates not only the hub of transport trucking, but street presence and calmness. The design is focused in centring the aesthetics, low activity function and greenspace to the street frontage in the form of a forecourt.

1.3.2.3 Environmental Adaptation

The soils and slope conditions are less than ideal for this development and makes this particularly challenging. However, the Consultant has accepted the challenge and have approached this almost as a brownfield site and what we call an 'environmental adaptation' or reuse.

The existing property has been used as a dump site for exported fill material. The fill material encountered at the site consisted of a mixture of sand, silt, clay, and gravel. The composition of the fill material varied with depth and borehole location. The thickness of the fill at the borehole locations was approximately 6.0 m; the fill material was found to be loose to compact in compactness state and was recovered in a damp condition becoming moist to saturated with depth. Site preparation within the building footprint will depend on design finish grade and preferred foundation option; the existing fill within the building footprint will need to be improved using site specific ground improvement techniques. The recommended soil improvement method at this time is Dynamic Compaction performed by specialty contractors. This method will compact the existing fill material using a crane that repeatedly drops a 15 to 20 ton weight in a closely spaced grid pattern across the site, creating a uniformly compacted subgrade. In the areas with softer cohesive soils, the addition and compaction of imported granular material may be required to further strengthen the soil. Following completion of the compaction, the contractor will perform on site pressure meter tests in the compacted areas to confirm that the design bearing capacity has been achieved or whether additional compaction is required.

Based on the preliminary slope stability analysis, depending on the composition and compactness state of the fill material, the factor of safety for the slope may be equal or slightly below (i.e., 1.3 under static condition and 0.9 under pseudo-static condition) the recommend values of 1.5 for static condition and 1.1 for pseudo-static condition. Some slope remediation or adjustment is required, and the condition of the slope must be monitored during site preparation and building construction.

With the above conditions, we have set the following objectives in line with environmentally responsible practices:

1.3.2.3.1 Consolidate Poor Soil Material

The development is endeavouring to **reduce the amount of exported unsuitable fill** to the greatest extent possible. We do not want to merely transport our 'garbage' to another location. Through Dynamic Compaction we can consolidate poor fill material and compact it to accommodate the building foundation substrate. This also reduces the cost and environmental impact to import large amounts of fill.

1.3.2.3.2 Reduce Dynamic Compaction Impacts

Dynamic Compaction activities in an urban or populated area often have noise and vibration impacts on adjacent properties and uses, due to the repetitive dropping of weights to the ground. Contextually, this ground improvement procedure will not adversely affect the area in terms of sound or vibrations. There are no built-up properties within 1000m in almost all directions, the only built-up property is a heavy industrial one, approximately 550m from the site. However, we are exercising caution with the Vibration Report in the Site Plan Application documents and our commitment to monitor operations. **Responsibility**

for the environmental controls will be exercised by the Dynamic Compaction Contractor and mitigation plans coordinated with the City of Ottawa.

1.3.2.3.3 Stabilization of Existing Slopes

It should be noted that the existing slopes on the site are not natural or original slope features. by and large. They are a result of the importation of 6 to 8m of unsuitable fill material to the site. A Slope Stabilization Report has been executed to analyse and provide the measures to prevent slope destabilization along the perimeter of the property. Our engineering team has been provided **measures to retain and monitor the slopes primarily along the North property line to preserve the environmental sensitive areas** noted earlier.

SECTION 2: DESIGN PROPOSAL

2.1. MASSING AND SCALE

2.1.1. BUILDING MASSING

Early conceptual work strived to isolate the transport truck activities to zones away from the Somme Street frontage as much as possible. The objective was to use the massing, landscape features and building elements to create a quieter, pedestrian and environmentally friendly space. Our team envisioned an almost pastoral forecourt to Somme Street; creating inviting views, pedestrian friendly environment, and offer exterior amenity areas.

Fastfrate Ottawa Distribution Centre - Early Conceptual Sketch

It is always a challenge to work with large scale industrial buildings on sites. The effort was to set back and turn the large warehouse element away from Somme Street. Transport trucking does require significant turning and circulation space and was also challenging with the irregular property configuration.

However, the major transport access off Somme and the circulation was able to be concentrated to the side and rear of the property respectively. The result was a generous forecourt of small vehicle parking, circulation and pedestrian movement with and environmental landscape emphasis.

The massing is divided into three main volumes or buildings:

- **The main warehouse block**: With a height to top of parapet of 12.4m, this is the main building and is composed of a standard warehouse (Cluster B), and the E-commerce area (Cluster C). The structure and foundation of this building will be designed to allow for the future construction of an interior mezzanine on the south side of the building.
- **The cross-dock block**: With a height to top of parapet of 8m, this is the second building in area and is located on the east side of the main warehouse building.
- **The offices and driver's amenities areas**: With a height to top of parapet of 6.2m, this building accommodates the supportive Office space (Cluster D) and the Driver's Amenities and Support areas (Cluster E) and is attached to the main warehouse on its south side. Its main façade will contain curtain wall, which will contrast in appearance with the almost fully opaque building envelope of the rest of the warehouse.

2.1.2. VIEWS

Due to its location, the building mass, height and location does not impact the views visible from public viewpoints, such as monuments, bridges, civic spaces, landforms, or other valued spaces.
One of the main focus of the design has been to develop the building perspective from the employee/visitor access to the site, since this will be the first view when approaching the building. The main building entrance is located on the south side (at Cluster D - Office) and shall be noticeable when employees and visitors approach the two-way vehicle access leading to the parking lots. Landscape design also plays a fundamental role on the design of the south side of the site to accentuate the main building entrance.
The west and north areas of the site contain the loading and unloading areas. Trucks and vehicles transporting and distributing goods have access to these areas through a primary truck access located on the south of the site. Transport trailers and vehicles will be screened from public view and acoustically dampened by the building mass, along with planted trees and vegetation between the south access/entrance areas and the west loading areas.

2.1.3. BUILDING TRANSITION

The site is currently greenfield with no adjacent buildings to the site.

The transition of the warehouse to the adjacent uses is resolved with setbacks and building site orientation as follows:

- South Side, Main Property Line: A forecourt has been created to front on Somme Street. This contains two parking lots divided with landscape features, concrete sidewalks and an environmentally themed natural landscape area including a stormwater pond. This presents a calming and professional approach from Somme Street.
- West Side, Transition to Rideau Road: A continuation of Somme Street, where the grades rise from the Somme Street and Rideau Road intersection into the subdivision. The building is provided with a stepped building façade to frame the forecourt oriented to the South, identified above. This is the short side of the main building rectangle to reduce visual impact to Somme.
- North Side, Environmental and Visual Buffer: Along the north property line the development is separated from the roadway by approximately 25m and the building by approximately 85m. The vehicle compound is approximately 6m above the level of Rideau road. The public thoroughfare is not only separated by significant distance and elevation, the conservation area with natural landscape screens the development.
- East side: The west loading/downloading area, concrete sidewalks, the track access driveway, and a landscape area separate the building from an adjacent property.

A building height and massing transition has been implemented on the east side of the development, where the development is in contact with an adjacent property, by reducing the height from 13.6 m of the main warehouse to the 8 m of the cross-dock.

2.1.4. GRADING AND DRAINAGE

As discussed earlier, the site topography is relatively flat with various small mounds of fill material, sloping down to the surrounding streets. The surrounding topography slopes up from south to north by approximately 3.5 meters from Rideau Road to the section of Somme Street south of the Site. The Site elevation is higher compared to the surrounding streets varying from approximately 0.2 metres (m) higher on the south side (Somme Street) to 4.0 m higher on the north side (Rideau Road).

The topography lends itself nicely for the necessity for even, low slope areas for transport truck circulation and maneuvering. However, with the amount of unsuitable fill material present on site, it presents challenges to managing the cut and fill for the development. The architectural, environmental and engineering team established a balance approach between:

a) Dropping the existing grades to reduce the height requirement of retaining walls along the Northern property line but incurring the cost and negative environmental impact to export the unsuitable fill material.
versus
b) Maintaining the existing grades to minimize the need to export the unsuitable fill, but then requiring much higher retaining walls to the North.

It should be noted that the above approaches impacted the ability for the grading and drainage design to utilize the subdivision stormwater management. Lowering the grades too much to reduce the height of the Northern retaining wall then required some alternatives to using the Subdivision Plan stormwater system. The team opted to tie into to the subdivision's stormwater system.

2.2. PUBLIC REALM

2.2.1. STREETSCAPE

The Hawthorne Industrial Park presently is primarily vacant land, with minimal subdivision development. There are no defining building elements, structures or features that would constitute a streetscape in the urban sense. One could argue the remoteness and nature of the land use would not anticipate the sensitivities found in more urban areas. Both Somme Street and Rideau Road have no pedestrian sidewalks or boulevards; no bike lines; and both roadways have one traffic lane in each direction.

The following photographic views illustrates the context for street design in relation to the proposed development:

Views along Somme Street, along the front of the subject property looking East (left) and North (right)

2.2.2. RELATIONSHIP TO THE PUBLIC REALM

The Fastfrate Ottawa Warehouse and Distribution Centre will be accessed by way of two locations at 301 Somme Street.

- A primary access near the east site boundary intended primarily for the ingress/egress of tractor trailers (coming from Hawthorne) and other transport trucks destined to the warehouse/crossdock facility to the rear areas of the property. Features include an accommodation for queuing of two tractor trailers in tandem, card access/intercom kiosks and vertical pivoting security gates. The primary ground-mounted lit signage will be provided at the street to demarcate the transport access. This entrance will also serve standard vehicles to access the parking lots for employees who usually arrive and depart the facility outside of the times of transport vehicles; no conflict safety concerns are anticipated.

- A secondary access to the West of the main truck access is provided for vehicle and pedestrian safety. Employee or visitor regular vehicles (there is minimal visitors to the facility) are able to access the office components of the development. This will also act as a secondary means of exit for transport trucks from the main access for emergencies only (i.e., in the event of turnaround requirement from the queue) or emergency vehicle circulation. Features for this entrance are a secondary ground-mounted sign demarcating employee/visitor access.

The frontage along Somme Street, despite its context, has been designed to be a welcoming forecourt/landscape to the otherwise utilitarian use. The building massing and elevations were designed to take advantage of the solar exposure to the South. Parking areas have been divided and articulated to reduce the heat island effect and monotony. The forecourt includes an environmentally themed landscape view which houses the underground septic systems and stormwater/fire pond. This is made accessible for building user and visitor amenity.

Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Model, Main Views from Somme Street

2.3. BUILDING DESIGN

2.3.1. EXTERIOR ARCHITECTURAL DETAILS AND DESIGN

2.3.1.1 Building Programme and Planning

The building consists of one ground floor with a total area of 8,641.44 m^2. See images below for floor plans. The building programme is divided into several clusters, as follows:

- Cluster A is the Cross-Dock building, which has a lower roof height than the rest of the warehouse and a total area of 1,292.37 m^2. It includes a main open space and cross-dock loading bays, the dispatch and the coordinator offices, and a driver's desk.
- Cluster B is the main Warehouse, that has an area of 6,610.36 m^2. It contains the warehouse main area and loading bays, a mechanical room and a forklift charging area.
- Cluster C is the E-commerce office with an area of 276.10 m^2. It contains a waiting room, two washrooms, driver's dispatch office, meeting room, open workstation area, two individual offices, lunchroom, and other ancillary rooms, such as electrical and IT rooms. Also, the vehicle entrance, parking and exit areas are considered within this cluster.
- Cluster D is the main Office of the building. With an area of 304.47 m^2, it contains the main entrance vestibule door, a lobby/guest seating area, an open office-workstations area, two individual offices, small meeting room, two washrooms, IT/Security room, and the main lunchroom of the building.
- Cluster E is the Driver's Amenities and Support and has an area of 153.15 m^2. It includes several washrooms & changing rooms, and other ancillary rooms, such as janitor, storage, first AID and PPE room.

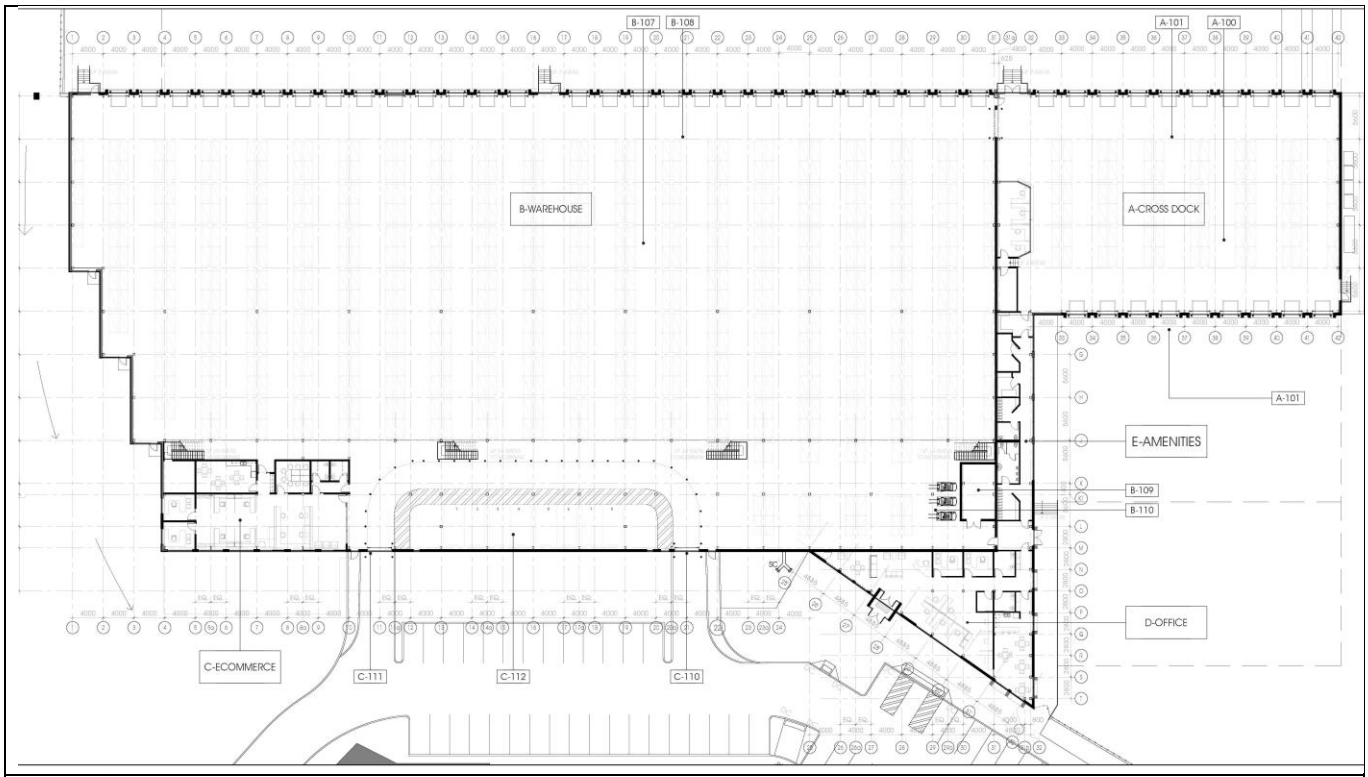
The interior of the main Warehouse (Cluster B) and Cross-Dock building (Cluster A) should be filled with large, open spans and take advantage of natural light as much as possible. The main warehouse space is essentially conceived to maximize the number of warehouse shelving racks. The main warehouse structure and foundation will be designed to be able to support the addition of a second floor (mezzanine) on the south of the building, which will maximize the warehouse space without the high costs of a complete renovation.

The main building of the complex in terms of design relevance is the Office (Cluster D). This building contains the main entrance door to the complex and will be characterized by the presence of a full-height glass curtain wall on its main elevation, which will allow for the filtration of natural light into the building.

The designers are envisioning the main lobby/open office area as a casual space for interaction between the office employees, visitors, and clients. Both the lobby/open office and the lunchroom are designed as flexible and spacious open areas, where Fastfrate can accommodate different programmatic and

operational needs. Both areas are conceived as open environments, with no visual barriers to the exterior of the building. The design of Cluster D also entails taking advantage of the high ceilings and exposing the building structure and deck.

The interior design of both Cluster D and C includes the use of big sidelights/glazing opening to contribute to create the perception of open, interconnected and fluid spaces. The designers want to create minimalist workspaces, featuring a restrained palette of transparent materials and light and neutral colours. This is a resource to look for abstraction and luminosity. The interiors are also conceived as a neutral environment where Fastfrate employees can display the company branding.



Fastfrate Ottawa Warehouse and Distribution Centre - Overall Ground Floor Plan

2.3.1.2 Look and Feel Preferences

The following are inspirational images selected by designers for character and architectural treatments.

Contemporary Facades

Overhead door facades integrated in the overall building design

Simplicity of the volumes and neutral colour palette

Big glass openings for specific locations, like the offices and lunchrooms

Glass curtain wall for the main building access facade (Cluster D)

Simple design for the lateral facades

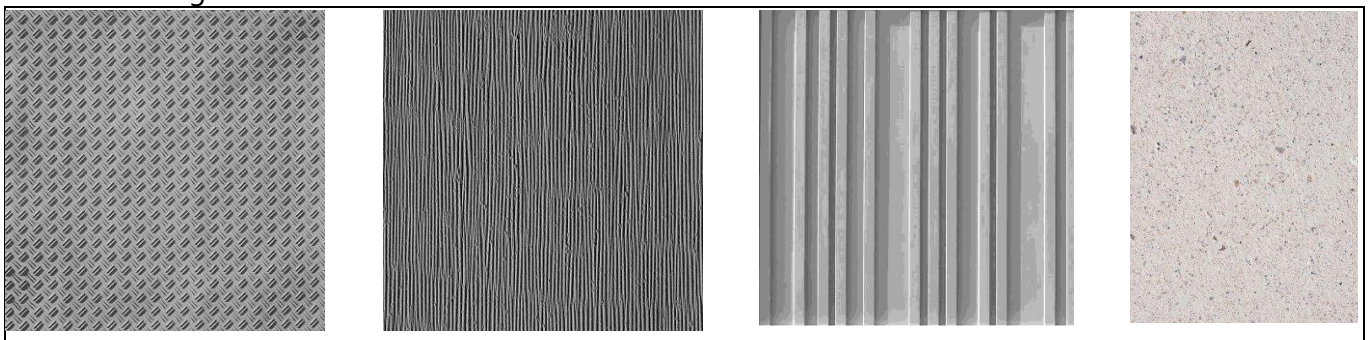
2.3.1.3 Exterior Building Materials and Finishes:

The building is located in the periphery of the city of Ottawa, in a relatively remote industrial area in the Hawthorne Industrial Park. The design of a practical warehouse has been a crucial aspect for the architects since this will have a direct impact on the efficiency of the warehouse and goods distribution operations. The exterior and interior architecture of the warehouse primarily focused on solutions for the distribution and handling of products; providing easy access to stored goods, minimize travel time and improve order fulfillment rates. The project also accommodates offices, lunchrooms, washrooms and other ancillary rooms to support the warehousing operations.

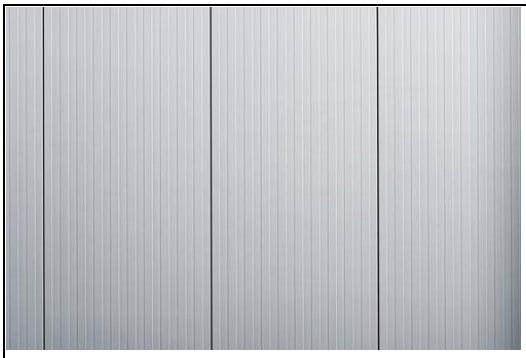
- The general design approach is for contemporary rationalist industrial architecture that serves the function of the building while considering the budget of the client. The building exterior should not be too modern, traditional, or 'noisy'. On the contrary, it should be a simple, strong, and categorical architecture in harmony with the natural environment.
- The massing and elevations for the entire building are conceived as a unitary design. However, the emphasis is to the design of the main elevation of the building, since it will be the first view of the building for visitors, employees and clients when approaching the building.
- The main entrance to the building is located in Cluster D (Offices), a building that will be marked by a glass curtain wall. This façade will provide contrast with the relatively opaque building envelope of

the rest of the building.

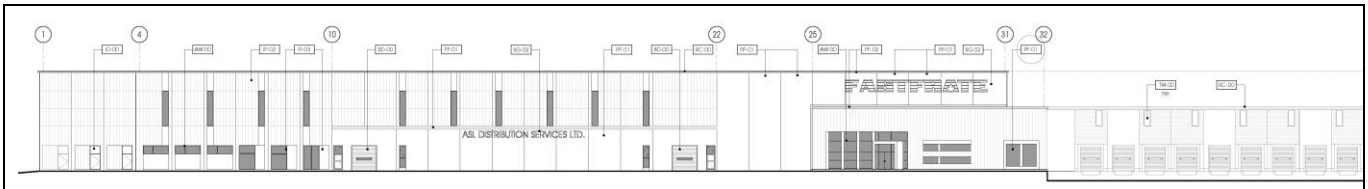
- On the main warehouse façade, alternate sets of windows give rhythm and 'movement' to the façade. During the day, the building looks like a closed metallic body with slim vertical windows. At night, they become subtle lines of light floating in the darkness. The horizontal windows allow for the filtration of natural light into the office component of the building, reducing electricity consumption. These windows also eliminate the perception of confinement of most warehouses, which will improve the quality of the employees working environment.
- Two secondary entrances to the building will be located near the e-commerce area – on the front elevation – and to get access to Cluster E (Driver's Amenities and Support) on one side elevation.
- The flush docks will be located on the north elevation of the main warehouse and the north and south elevations of the cross-dock building.
- Main building materials for the main warehouse building are precast concrete panels intended for energy efficiency, affordability and durability. However, the design team is proposing to use decorative concrete form liners to provide pattern and visual interest to the building, particularly on the street façade(s)
- To 'lighten' the mass of the main building, insulated prefinished metal panels are utilized. These panels are primarily employed on the office identities along Somme Street and will be in neutral, contrasting colours for visual interest.



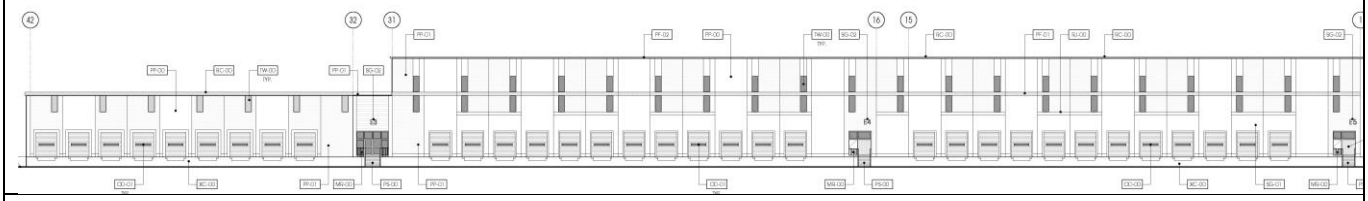
Precast Concrete Finishes – Possible Options for Main Warehouse Building



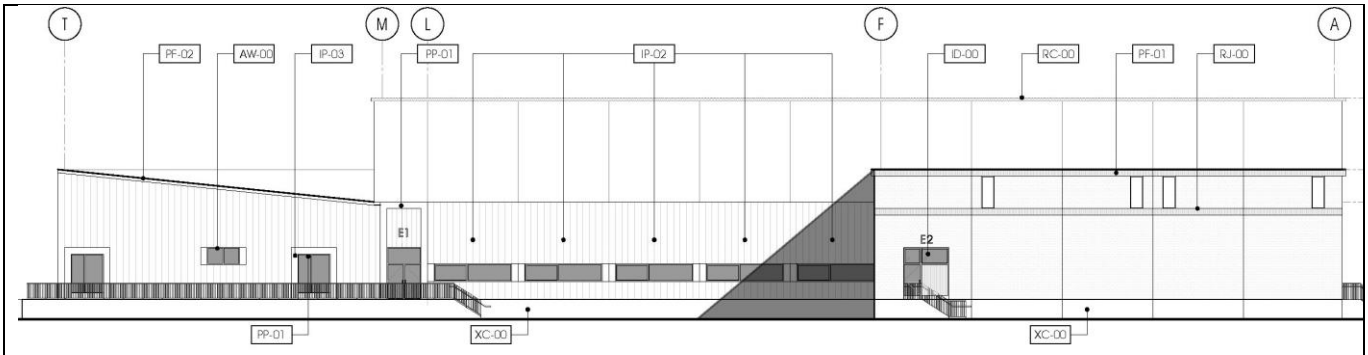
Prefinished Insulated Metal Panels Finishes – Possible Options for Office Facades and Somme Street Frontage



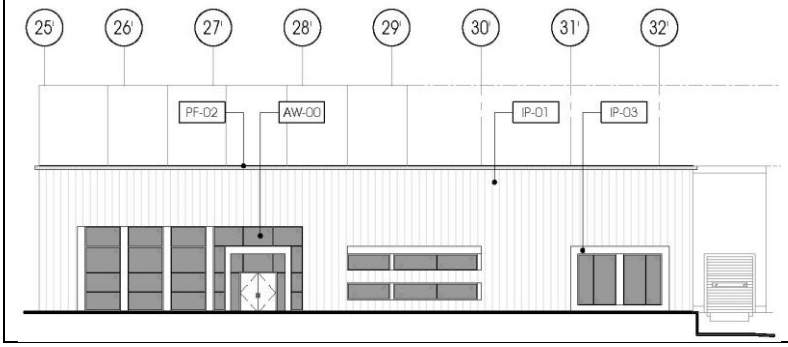
Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Building South Elevation along Somme Street



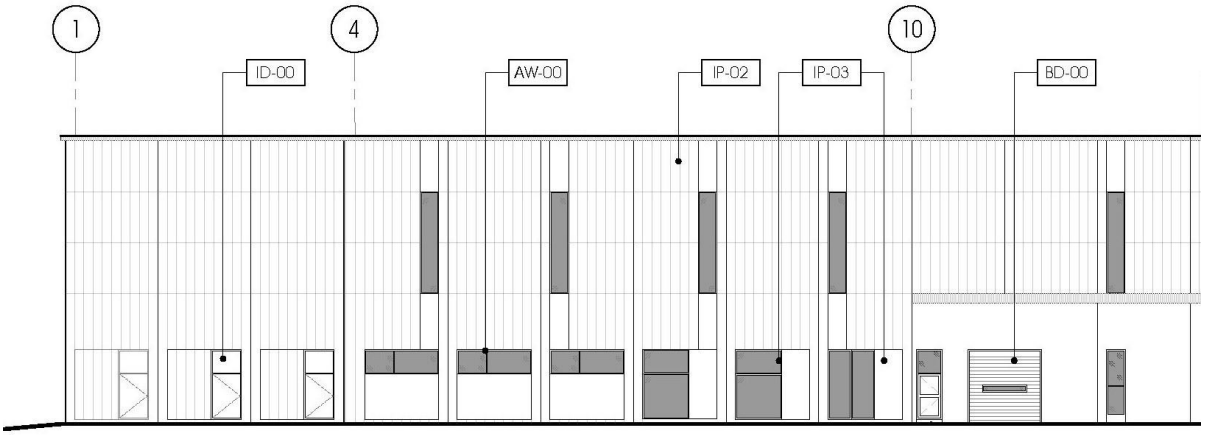
Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Building North Elevation - Loading Docks



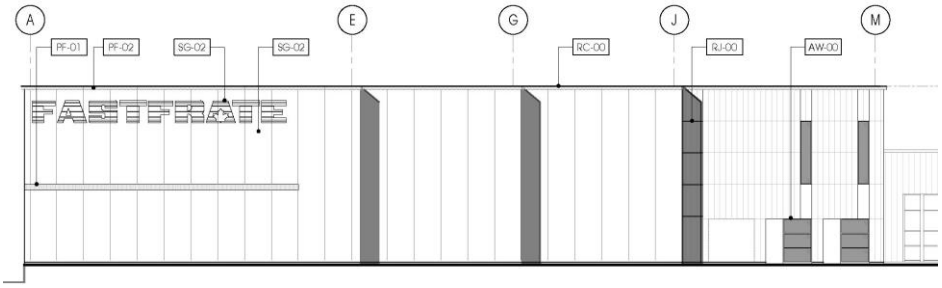
Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Building West Elevation - Crossdocks



Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Building East Elevation – Main Office Facade



Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Building South Detail Elevation – E-Commerce



Fastfrate Ottawa Warehouse and Distribution Centre – Conceptual Building East Elevation

2.4. SUSTAINABILITY

The following are some sustainable practices that will be incorporated into the building design:

- Recycled Materials: The insulated metal sandwich panels used on the building envelope (Kingspan) utilize QuadCore Insulation (EcoAlf), made of recycled bottles recovered from plastic waste in the Ocean. The recycled bottles are converted into PET and then used in the insulation.
- Energy Saving and Indoor Environmental Quality: The warehouse space design maximizes the access of natural light to reduce electricity consumption and eliminate the perception of confinement of most warehouses, which will improve the quality of the employees working conditions.
- Crime Prevention through Environmental Design: The proposed building has been designed with substantial glazing into the offices and lunchrooms maximizing visibility to the exterior amenity areas and parking lots to support Crime Prevention through Environmental Design (CPTED) principles of eyes on the street. Lighting for the proposed building will be strategically located to ensure safety for warehouse employees at all ingress and egress points.
- Industrial Construction Processes: The building is designed to take advantage of Industrial Modular Construction. Modular construction is a process in which a building is constructed off-site, under controlled plant conditions, using the same materials and designing to the same codes and standards as conventionally built facilities – but in about half the time. Buildings are produced in "modules" that are then put together on site. Modular buildings can be disassembled, and the modules relocated or refurbished for new use, reducing the demand for raw materials and minimizing the amount of energy expended to create a building to meet the new need. When building in a factory, waste is eliminated by recycling materials, controlling inventory and protecting building materials.
- Alternative Transportation: The design includes bike racks to foster alternative transportation. methods.

End of Document

E

Appendix E: Pre-Application Consultation, Site Plan 301 Somme St., City Meeting Notes

Pre-Application Consultation
Site Plan Control (Complex)
301 Somme Street

Applicant:	Douglas Rancier, Civitas Group	**Owner:**	Rod Pierce, R. W. Tomlinson Limited
Ward	20 - Osgoode	**Councillor**	George Darouze
Proposal Summary:	Development of a 4,645.15 square metre (*50,000 sq. ft.*) warehouse on the western portion of the subject site, an 1,858.06 square metre (*20,000 sq. ft.*) cross deck that would connect to the warehouse, and a 278.71 square metre (3*,000 sq. ft.*) office space.		
Attendees:	Krishon Walker, Planner, PIEDD, City of Ottawa Harry Alvey, Infrastructure Project Manager, PIEDD, City of Ottawa		
Regrets:	Mike Giampa, Transportation Project Manager, PIEDD, City of Ottawa Matthew Hayley, Environmental Planner, PIEDD, City of Ottawa Michel Kearney, Project Manager, Hydrogeologist, PIEDD, City of Ottawa James Holland, Watershed Planner, South Nation Conservation Authority		

Meeting Notes

Planning Comments (Provided by Krishon Walker, Planner)

- As per Schedule A of the Official Plan, the site is designated Rural Employment Area. The Rural Employment Area is intended to support and encourage clustering of primarily industrial uses not suitable in the Urban Area or General Rural Area. Uses permitted in this designation includes but is not limited to new; heavy and light industrial uses, transportation uses, and warehouse and storage operations. The prosed use is consistent with the policies of the Official Plan.

  Development within the Rural Employment Area triggers Site Plan Control. Particular attention will be given to the physical design of the building(s) and site, including signage, buffering, landscaping and fencing.

- As per the City's Zoning By-law, the site is zoned as Rural Heavy Industrial Zone (RH).

  The Zoning By-law defines a warehouse as "*a building used for the storage and distribution of goods and equipment including self-storage units and mini-warehouses and may include one accessory dwelling unit for a facility manager*".

  Please ensure that your proposal complies with all applicable provisions of the Zoning By-law.

  Additionally, please ensure that the proposed parking complies with the provisions of Part 4 of the Zoning By-law. Parking areas should be screened from the street.

  If any aspect of the proposal does not comply with the zoning provisions of the applicable zone, a Minor Variance may be required through the Committee of Adjustment. If a Minor Variance is required, please note approval from the Committee of Adjustment would be required before a decision is made on the Site Plan Control application.

- Cash-in-Lieu of Parkland was be collected through the Plan of Subdivision (*15-94-0505*) application. As the proposed site development is the same as anticipated in the subdivision agreement, we would not request any additional CIL or land at this time.

- There is a 30cm reserve along the frontage of the property. A lifting of a reserve application will also be required. The reserve was put in place during the establishment of the subdivision and, as per clause 18 of Schedule F, Section D, of the Subdivision Agreement, can only be lifted:

  '*when certification of the proposed on-site well has been provided by a Professional Engineer or professional geoscientist licensed in the Province of Ontario that the well construction is in accordance with Ontario Regulation 903 and the recommendations contained in the report titled "Hydrogeological Investigation, Terrain Analysis & Impact Assessment, Proposed Industrial Subdivision" prepared by Golder Associates; Dated December 2008; Project No. 08-1122-0215 and the supporting letter "Tomlinson Industrial Subdivision – City of Ottawa File Number D07-16-15-94-0505; response to South nation Conservation Authority"; Golder Associates; Dated April 17, 2009; Project No. 08-1122-0215. This certification must be to the satisfaction of the General Manager, Planning and Growth Management.*'

- As the property is located within 500 metres of a Bedrock Resource Area, the Planning Rationale must speak to this designation and provide a discussion on how the proposal will impact (*if at all*) the Bedrock Resource Area.
- Please note that, as per Table 221 of the RH zone, any proposed outdoor storage is not permitted within the front yard and must be screened from the public street by an opaque screen at least 1.8 metres in height from finished grade.
- Please contact the South Nation Conservation Authority (SNC), amongst other federal and provincial departments/agencies, to identify all the necessary permits and approvals required to facilitate the development. Responsibility rests with the developer and their consultant for obtaining all external agency approvals. The address shall be in good standing with all approval agencies. Copies of confirmation of correspondence will be required by the City of Ottawa from all approval agencies that a form of assent is given. No construction shall commence until after a commence work notification is given.
- Please ensure that the Site Plan shows the full extent of the property and that a complete zoning table is provided. The Site Plan should also clearly show the dimensions of all proposed buildings, roads, radii of turns, overhead clearances, parking areas with defined parking spaces, steps, terraces, fences, walks, aisles and private approaches.
- Please show the location for snow storage on both the Site Plan and Landscape Plan. Storage shall not interfere with approved grading and drainage patterns or servicing. If snow is to be removed from the site, then please make a note of that on the Site Plan and include where the snow will be placed in the interim. Temporary snow storage areas should not conflict with utility box, landscaping, required parking, and site circulation.
- Be sure to follow the City's guide to preparing plans and studies (*see link below*) to ensure a high quality of your submission.

  Feel free to contact Krishon Walker at Krishon.Walker@ottawa.ca, for follow-up questions.

Engineering Comments (Provided by Harry Alvey, Infrastructure Project Manager)

- This site is part of the Hawthorne Industrial Park that was approved in 2009. A stormwater management pond was constructed as part as the development of this park. This stormwater management pond provides stormwater management for 75% of Hawthorne Industrial Park and includes the proposed development in that service area. The pond was designed to provide 70% TSS removal. The current requirement is to provide 80% TSS removal, which will require this proposed development to meet the new enhanced requirement. It is suggested that the consultant procure a copy of the stormwater management report for Hawthorne

Industrial Park for coordination. The stormwater management report was prepared by J.L. Richards & Associates Limited (J*.L.R. Project #: JLR 20983; City Index #: R-2973; City Old Tag #: W09-04-1713*) Revision date May 2009.

- The site appears to cover two adjacent drainage areas. There should be a comprehensive discussion of how the SWM will be handled in each of the drainage areas.
- Provide Pre- and Post-Drainage Area Maps with Pre- based on existing site conditions.
- The conceptual plan provided indicated there would possibly be several stormwater management ponds provided on site. These stormwater management facilities could be used to achieve the required 80% TSS removal now required. During the pre-consultation meeting, the design team indicated that the ponds along with underground water tanks will be needed to provide the required fire protection and sprinkler system for the proposed warehouse and truck docks. Information will need to be provided during the design process discussing how both the stormwater management objectives and the fire flow conditions will be meet jointly form these ponds.
- Information will need to be provide for fire siamese connections to the building for the sprinklers. These will need to be accessible from fire lanes for fire trucks.
- Provide fire flow computations based on FSU method and information on interior fire sprinkler system.
- This site has been filled with uncontrolled fill. The geotechnical report will should provide an analysis of these soils and their ability to provide adequate bearing capacity for the traffic and proposed structures on site.
- The geotechnical report will need to include a section on slope stability for the slopes along Rideau Road and Somme Street.
- Percolations tests should be provided to indicate that an appropriate infiltration rate can be achieved for the needed septic discharge. This should be provided in the hydrogeological report.
- Truck traffic maneuvers for the proposed trucks, fire trucks and garbage trucks should be modeled in AutoTurn for onsite to show there is adequate access/space for these vehicles to maneuver safely. This analysis should also show proposed location of proposed well if it is in or adjacent to the pavement.
- For onsite design of pavement provide the ESAL's expected for the site, the CBR or Mr of the subgrade soils, frost heave potential and proposed pavement design.
- The stormwater management will require a direct submission of the ECA to the MECP. The current turnaround times for these ECA applications are approximately 11 to 12 months.

Feel free to contact Harry Alvey at Harry.Alvey@ottawa.ca, for follow-up questions.

Transportation Comments (Provided by Mike Giampa, Transportation Project Manager)

- A Transportation Impact Assessment (TIA) is warranted, please proceed to scoping.
- The application will not be deemed complete until the submission of the draft step 1-4, including the functional draft RMA package (*if applicable*) and/or monitoring report (*if applicable*).
- Although a full review of the TIA Strategy report (*Step 4*) is not required prior to an application, it is strongly recommended.

- Right-of-way protection on Rideau is 26 metres and the sight triangle at Somme/Rideau: 5 metre x 5 metres
- A Road Noise Impact Study is required for the proposed office use.

Feel free to contact Mike Giampa at Mike.Giampa@ottawa.ca, for follow-up questions.

Enviromental Comments (Provided by Matthew Hayley, Environmental Planner)

- The lot was created as part of a subdivision (15-94-0505) and in 2008 a "Tree Preservation and Protection Plan, Proposed Industrial Subdivision (Excluding Orgawolrd site)…" was prepared by Golder Associates; dated October 15, 2008 as part of the final approval of the subdivision. This document will need to be followed.
- The site plan will need to have a Tree Conservation Report (TCR) to implement the previously approved tree preservation and protection plan. The TCR will also need to reflect current requirements regarding butternuts and other Official Plan policies. The proposal to add parking within the wooded area will not be supported if this area is identified from preservation in the approved tree preservation and protection plan.
- Please note that a watercourse is mapped along Rideau Road and the South Nation Conservation Authority should consulted as the proposed parking lot may be within 30 m of this mapped feature. You will need to support this location for the parking lot as per the Official Plan and the Shields Creek Subwatershed study.

Feel free to contact Matthew Hayley at Matthew.Hayley@ottawa.ca, for follow-up questions.

Hydrogeological Comments (Provided by Michel Kearney, Hydrogeologist)

- A Hydrogeological and Terrain Analysis report is required, in accordance with Procedures D-5-4 and D-5-5 of the Ministry of the Environment, Conservation and Parks. This will include the siting, drilling and testing of the production well (*i.e. not just a test well*).
- It appears that there are thin soils (*defined as 2 m or less*) on the subject site. Enough test pits and boreholes are to be put down in the area of the leaching bed and in the surrounding area to assess the risk to the onsite well and any existing or future offsite wells. The report is to document the fieldwork and provide an opinion on the level of risk.
- Depending on the findings of the fieldwork, mitigation measures may be required in order to reduce the risk to the water supply. These may include a longer casing length for the well, a deeper aquifer source, an advanced (*Level 4 or beyond*) sewage treatment system and ensuring the well is upgradient from the sewage system. Discussion with the City's technical reviewers is encouraged, as the study progresses.
- The well must be located in a landscaped area, away from traffic and potential sources of contamination, a minimum distance of 3 m from property lines and buildings, as well as the minimum distance to the sewage system as prescribed in the Ontario Building Code. Grades are to be provided on the Grading Plan for the top of casing, the ground at the well and 3 m away from the well, to demonstrate drainage away from the well in accordance with the Regulation (O.Reg. 903).

Feel free to contact Michel Kearney at Michel.Kearney@ottawa.ca, for follow-up questions.

Conservation Authority Comments (Provided by James Holland, Watershed Planner, SNC)

Natural Heritage

- A watercourse flows along Rideau Road towards the Findlay Creek Municipal Drain, approximately 70m downstream. Findlay Creek is a permanent feature watercourse known to contain sensitive aquatic species.
- To prevent soil erosion and impacts to surface water, development and site alteration should be set back 30 metres from the high water mark of the watercourse, or 15 metres from the existing top of bank, whichever is greater. This is consistent with Section 4.7.3 of the City of Ottawa's Official Plan and Section 69 of the Zoning By-law.
- For any development within the setback area, an EIS should be completed demonstrating that the development will have no negative impacts on the feature or its functions.

Stormwater Management

- Stormwater management must conform to the design for the Hawthorn Industrial Park and meet the current standards.
- Water quality should be managed so that post-runoff equals pre runoff volumes for the 1 or 5 and the 100 year event.
- Water quality should achieve 80% TSS removal.
- The stormwater design should include, at a minimum, a grading and drainage plan, sediment and erosion control plan and a supporting report with calculations demonstrating how the standards have been met.

Conservation Authority Regulations

- Any interference with a watercourse, including a roadside ditch, may require a permit under O. Regulation 170/06, and restrictions may apply.

Private Servicing

- The applicant should contact the Ottawa Septic Service Office for input on the design of private servicing.

Feel free to contact Planner, James Holland, at jholland@nation.on.ca, for follow-up questions.

Application Submission Information

Applications Type**: Site Plan Control, Complex**.
Application processing timeline generally depends on the quality of the submission. For more information on standard processing timelines, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/development-application-forms#site-plan-control

Prior to submitting a formal application, it is recommended that you pre-consult with the Ward Councillor.

For information on application fees, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/fees-and-funding-programs/development-application-fees

To request City of Ottawa plan(s) or report information please contact the City of Ottawa Information Centre: InformationCentre@ottawa.ca or (613) 580-2424 ext. 44455

Application Submission Requirements

For information on the preparation of Studies and Plans and the City's requirements, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans

Please provide hard copies and electronic copy (PDF) of all plans and studies required.

All plans and drawings must be produced on A1-sized paper and folded to 21.6 cm x 27.9 cm (8½"x 11").

Note that many of the plans and studies collected with this application must be signed, sealed and dated by a qualified engineer, architect, surveyor, planner or designated specialist.

F

Appendix F: May 31, 2021, GHD Letter, 30 cm Reserve Lift Application

347 Pido Road
Peterborough, Ontario K9J 6X7
Canada
www.ghd.com

Our ref: 11220832-01

31 May 2021

Krishon Walker, MCIP, RPP
Economic Development Officer
Planning, Infrastructure and Economic Development

City of Ottawa
110 Laurier Avenue West
Ottawa ON K1P 1J1

Re: Letter – 30 cm Reserve Lift Application
Proposed Commercial Development – CBRE Fastfrate Ottawa SPA
Rideau Road and Somme Street
Part of Lot 26, Concession 6 (Rideau Front)
Geographic Township of Gloucester and Part of Blocks 5 and 14 Registered Plan 4M-1388
Ottawa, Ontario

Dear Mr. Walker:

GHD has been retained on behalf of Consolidated Fastfrate (Ottawa) Holdings Inc., to provide the following letter regarding the lifting of a 30 cm reserve at the above noted location (the Property). Specifically, the lifting of the reserve applies to 301 Somme Street and the 30 cm reserve within that portion of 301 Somme Street that fronts on to Somme Street. The Subdivision Agreement for the industrial park established the requirements for lifting of the 30 cm reserve. The reserve and lifting of the reserve are understood by GHD as the following:

"There is a 30 cm reserve along the frontage of the Property. A lifting of a reserve application will also be required. The reserve was put in place during the establishment of the subdivision and, as per clause 18 of Schedule F, Section D, of the Subdivision Agreement, can only be lifted when certification of the proposed on-site well has been provided by a Professional Engineer or Professional Geoscientist licensed in the Province of Ontario that the well construction is in accordance with Ontario Regulation 903 and the recommendations contained in:

– *The report titled "Hydrogeological Investigation, Terrain Analysis & Impact Assessment, Proposed Industrial Subdivision" prepared by Golder Associates; Dated December 2008; Project No. 08-1122-0215 (Golder); and,*
– *The supporting letter "Tomlinson Industrial Subdivision – City of Ottawa File Number D07-16-15-94-0505; response to South nation Conservation Authority"; Golder Associates; Dated April 17, 2009; Project No. 08-1122-0215 (Tomlinson).*

This certification must be to the satisfaction of the General Manager, Planning and Growth Management."

GHD has reviewed the above noted Golder report and Tomlinson supporting letter, the recommendations that are applicable to the Property and the existing test well information (identified as TW-2).

The existing test well TW-2 meets the recommendations of the above noted documents. The test well is equipped with 12 m of steel casing and is cased through the overburden and 3.4 m (11 feet) into the underlying sandstone, meeting the recommendations.

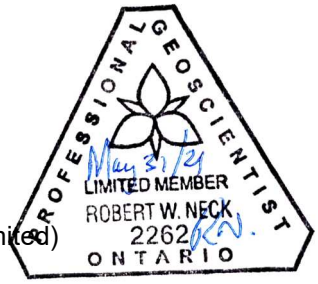
The current hydrogeological assessment report (GHD dated January 19, 2021) is an attachment document to this letter and concluded that the existing test well meets the needs of the proposed commercial development with no health-related groundwater concerns. Based upon the well record reviewed by GHD and included in the hydrogeological assessment report (provided in Appendix B of the report), it is GHD's opinion that the test well has been constructed in accordance with Ontario Regulation (O.Reg.) 903. Any future wells drilled on the Property must also adhere to the above noted recommendations and O.Reg. 903.

It is our opinion that the existing test well TW-2 is constructed in accordance with O.Reg. 903, meets the recommendations of the Golder and Tomlinson documents and as such the 30 cm reserve can be lifted for this well.

Should you have any questions regarding this letter, please contact the undersigned.

Sincerely

GHD



Robert Neck, P.Geo. (Limited)

Nyle McIlveen, P. Eng.

Email to Krishon Walker
Cc: Douglas Rancier

Attachments

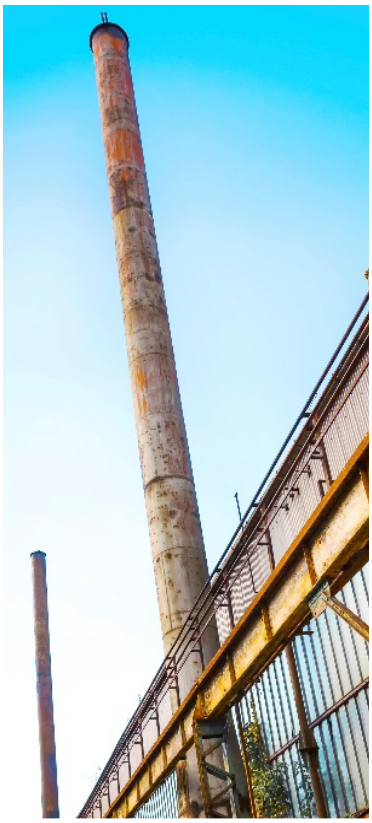
Attachment 1

Hydrogeological Assessment Report

Hydrogeological Assessment Report

Proposed Commercial Development
Rideau Road and Somme Street
Gloucester Con 6 from Rideau River, Lot 26
Ottawa, Ontario

Prepared for: Consolidated Fastfrate (Ottawa) Holdings Inc.



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Appendices

1. Introduction

GHD Limited (GHD) is pleased to present the following hydrogeological report in support of a proposed commercial development at the intersection of Rideau Road and Somme Street in Ottawa, Ontario (herein referred to as "the Site"). The proposed development is to consist of a warehouse, cross-docks and office building, geographically located at Lot 26, Gloucester Concession 6 from the Rideau River. The Site covers an area of 7.02 hectares (17.35 acres) and will also consist of asphalt parking and storm water pond. The development will be serviced by a well and septic system. The Site consists of vacant parcel with evidence of fill (gravel, concrete, asphalt) observed on the ground surface. The surrounding lots in the area were in a similar condition.

This report has been prepared for the purposes of examining the hydrogeological characteristics of the Site and assessing the capacity of the on-site well to supply the proposed development and the potential impact to neighbouring properties. The scope of work was to identify the local hydrogeology of the Site including a desktop review of available geological and groundwater mapping and Ministry of the Environment, Conservation and Parks (MECP) well records; a water well survey within 500 m of the development, aquifer performance testing including analytical sampling; and single well response testing to determine hydraulic conductivity for purposes of construction dewatering. A septic assessment was not conducted in this report and the design is being completed by others.

1.1 Terms of Reference

GHD was retained by Consolidated Fastfrate (Ottawa) Holdings Inc. (the Client) to complete this hydrogeological assessment in accordance with our proposal reference no. 11216085 and dated November 6, 2020.

GHD (formerly Inspec Sol and Conestoga-Rovers & Associates) completed a Geotechnical Investigation and Phase II Environmental Site Assessment for the Site in 2008 and 2009, respectively; and a Geotechnical Investigation in 2020.

GHD has reviewed the following documents provided by the client as part of the investigation:

- Phase II Environmental Site Assessment and Hydrogeological Assessment, Report Ref. No. 045804 (12), by Conestoga-Rovers & Associates, dated September 2008;
- Hydrogeological Investigation, Terrain Analysis and Impact Assessment, Proposed Industrial Subdivision, Report Ref. No. 08-1122-0215, by Golder Associates, dated December 2008;
- Geotechnical Study Subdivision Plan, Hawthorne Industrial Park, Report Ref. No. T020556-A1, by Inspec-Sol, dated May 4, 2009; and
- Stormwater Management Report. Hawthorne Industrial Park, Report Ref. No. JLR 20983, by J.L. Richards & Associates Limited, dated February 2009 (Revised May 2009).

2. Hydrogeological Assessment

2.1 Existing Conditions

The following sections provide details and discussion regarding the existing conditions of the Site.

2.1.1 Assessment Overview

The location of the Site relative to nearby roads and watercourses is illustrated on the mapping entitled Site Location Plan, Figure 1. The mapping shows the Site is undeveloped. The areas to the north, east and south are currently privately serviced. To the west is a quarry development and additional industrial / commercial properties that are municipally serviced. Plans and figures are discussed throughout this report and provided following the text.

A field program was completed consisting of a site inspection; aquifer performance testing and observation well monitoring; well survey; and, single well response testing in support of the proposed development. A preliminary concept plan was provided to GHD that illustrated a 4,650 square metre (m^2) (50,000 square feet or s.f.) warehouse; a 1,860 m^2 (20,000 s.f.) cross-docks and 280 m^2 (3,000 s.f.) office area with asphalt parking, stormwater pond, underground water tanks and a septic bed area. The concept plan is provided as Figure 2. As the concept plan is preliminary, locations of the well, building, septic, stormwater pond etc may be subject to change; however, the final locations will need to respect the setback distances required by the Ontario Building Code.

The hydrogeological assessment consisted of performing a pumping test of an existing drilled well at the Site known as test well TW-2 and monitoring of various observation wells including a private domestic well. The locations of the test well and observation wells is illustrated on the Well Location Plan, Figure 3.

The field work was conducted on November 19 and 20, 2020 by GHD to observe the general surficial characteristics of the Site, neighbouring lands and complete the pumping and hydraulic testing. The Site consists of undeveloped lands. GHD observed the test well and various production and monitoring wells in the vicinity of the Site. No surface water was observed on the Site. Photographs are provided in Appendix A.

Surrounding land use within 500 m of the Site are:

- East – undeveloped lands;
- West – undeveloped lands; Hawthorne Road then industrial properties (Tomlinson Rideau Quarry and Plant; LaFarge);
- North – Rideau Road, forested area then residential lots; and
- South – Somme Street; undeveloped lands then industrial / commercial lots (gated equipment lay-down yard and stormwater ponds; then Renewi Canada Ltd.).

Within 500 m of the proposed development, one residential lot was observed at 4885 Hawthorne Road.

2.1.2 Topography and Drainage

Regional topography is illustrated on Figure 4. The Site is relatively flat with the regional topography sloping from south to north. Topographic relief is on the order of 3 to 4 metres across the Site. Shallow groundwater flow is expected to follow the local topography.

Drainage of surface water is directed towards ditches alongside the Site. Drainage is generally to the east / northeast.

2.1.3 Physiography

The Site is situated within the physiographic region known as the Russell and Prescott Sand Plains. In the United Counties of Prescott and Russell, and the Regional Municipality of Ottawa-Carleton, there is a group of large sand plains separated by the clays of the lower Ottawa Valley. The plains cover an area of nearly 1500 square kilometers and a level surface of about 85 metres above sea level. The plains were originally a continuous delta that was built by the Ottawa River into the Champlain Sea. The plains are as thick as 6 to 10 m in some areas (Chapman and Putnam, 1984). The local physiography is illustrated on Figure 5 showing the Site is within a sand plains with Peat and Muck to the north and Limestone Plains to the west.

2.1.4 Geology and Soils

Surficial geology mapping on Figure 6 indicates the Site is a mix of organic deposits, Paleozoic bedrock and coarse textured glaciolacustrine deposits. The Quaternary geology (Figure 7) suggests carbonate and clastic sedimentary rock exposed at surface or covered by a discontinuous thin layer of drift. Bedrock outcrops are common in the area. Based upon GHD's previous geotechnical work (GHD, 2020), the upper soils are comprised of fill. Underlying the fill is native silty sand / sandy silt followed by a glacial till (GHD, 2020). Bedrock was found at 8.5 metres below ground surface (mbgs) based upon the well record for TW-2 at the Site.

The bedrock is Dolostone / Sandstone of the Beekmantown group (Figure 8). Golder's report also outlined the Gloucester Fault, a major northwest-southeast trending, steeply dipping structural feature in close proximity and northeast of the Site.

Based upon the well records reviewed within 500 m of the Site, bedrock was encountered within the drilled production wells at depths between ground surface and 8.5 mbgs.

2.1.5 Description of Surface Water Features

There are no surface water features on the Site.

2.1.6 MECP Well Records

Information regarding groundwater characteristics of the immediate area was obtained from an inventory of existing MECP well records. A total of seventeen (17) well records were identified within 500 m of the Site for statistical breakdown. A summary of the MECP well records and their locations are provided in Appendix B and summarized in Table 2.1.

The well records indicate a mix of overburden materials (fill, sand, clay, gravel etc.) overlying bedrock including shale, sandstone, limestone and quartz. Based upon the well records, there is one (1) primary bedrock aquifer in this immediate area that is tapped by drilled wells. Of the 17 records, seven (7) are for monitoring wells and will not be considered further within this discussion.

The groundwater was generally described as "fresh" in the well records reviewed. The information from the MECP data indicates that all ten (10) wells were drilled bedrock wells averaging a depth of about 41 m. The bedrock wells encountered water at an average depth of 31 m with pumping rates averaging nearly 100 L/min. No flowing artesian wells were reported.

No dug / bored well records were reviewed. Shallow dug / bored wells are susceptible to large seasonal fluctuations in the groundwater. The result is that shallow wells are also more prone to becoming dry in the winter and summer months. From a quality perspective, shallow dug / bored wells are generally difficult to seal at the surface and therefore considered to be susceptible to shallow sources of contamination and are not recommended for this commercial development.

Table 2.1: Summary of Information from MECP Well Records

Total Number of Wells Inventoried:	17
Dug/Bored Wells:	0 (0%)
Drilled Wells (Overburden):	0 (0%)
Drilled Wells (Bedrock):	10 (59%)
Monitoring Wells*:	7 (41%)

Parameters	Statistical Summary					
	Dug / Bored Wells		Drilled – Overburden		Drilled – Bedrock	
WELL YIELDS						
Range	--	--	--	--	19 to 680 L/min	5 to 180 USgpm
Average	--	--	--	--	99.1 L/min	26.2 USgpm
REPORTED YIELDS	Frequency		Frequency		Frequency	
Not Reported	0	0%	0	0%	0	0%
Dry	0	0%	0	0%	0	0%
0 to 1 USgpm	0	0%	0	0%	0	0%
2 to 4 USgpm	0	0%	0	0%	0	0%
5 to 9 USgpm	0	0%	0	0%	6	60%
≥10 USgpm	0	0%	0	0%	4	40%
STATIC WATER LEVELS						
Range	--	--	--	--	2.3 to 14.2 m	7.5 to 46.6 ft
Average	--	--	--	--	8.4 m	27.6 ft
WATER ENCOUNTERED						
Range	--	--	--	--	9.1 to 75.0 m	30 to 246 ft
Average	--	--	--	--	31.2 m	103.5 ft
WELL DEPTH						
Range	--	--	--	--	17.4 to 75.6 m	57 to 248 ft
Average	--	--	--	--	40.8 m	133.9 ft

Notes: Data based on MECP well record information (refer to Appendix B for well information).
*Monitoring wells are not included in the statistical data summarized in Table 2.1

2.1.7 Well Survey

A well survey was conducted. There was one home within 500 m of the Site at 4885 Hawthorne Road. This residential dwelling utilizes a drilled well that is 10.9 metres deep. The owner indicated they had resided at the home for about 3 months and that the water had a sulphur odour and was of sufficient quantity. No other issues were identified. The owner also provided authorization to use the well for monitoring purposes during our pumping test.

2.1.8 Groundwater Levels

Water levels were obtained from the test well, observation wells and neighbouring residential well on November 19, 2020 prior to the commencement of the pumping test. The data is summarized in Table 2.2. Based upon the water levels obtained from the drilled production wells, the groundwater flow tapped by the drilled wells is in a southeasterly direction. Shallow groundwater flow tapped by monitoring wells was not assessed.

Table 2.2: Water Level Summary

Location	Ground Elevation* (masl)	Depth of Well (mbgs)	Water Level (mbgs)	Potentiometric Elevation (masl)
			November 19, 2020	
TW-2	90	34.9	6.90	83.1
MW7-08	90	5.9	3.00	87.0
MW1-20	90	7.0	3.80	86.2
A305146	90	> 30	7.00	83.0
4885 Hawthorne	85	10.9	1.23	83.8
TW-5	90	29.9	7.23	82.8
Well 1514733	100	35.4	12.36	87.6

Notes:
masl = metres above sea level
*Elevations estimated from topographic contours provided on Figure 4. The elevations provided are for the purposes of evaluating potentiometric elevations and should not be relied upon as a legal survey or topographic elevation survey.

2.2 Aquifer Performance Assessment

The following sections discuss the test well, pumping test results and coefficients, well interference and water quality.

2.2.1 Test Well Information

The following sections discuss the test well utilized for the aquifer performance testing. For this project, an existing production well was utilized for assessment of the local aquifer via a pumping test. Based upon the location of the well and location identified on the well record, it is GHD professional opinion that the test well record provided in Appendix B is TW-2. The existing well is a drilled well constructed by Capital Water Supply Ltd. (MECP License No. 1558) and completed in on August 8, 1993. The test well is located on Figure 3 and is identified as TW-2. Adjacent water production wells, monitoring wells and a residential well that were monitored during testing are also illustrated on Figure 3.

Test Well TW-2

Test well TW-2 has the following characteristics based upon the well record filed with the MECP:

- Drilled to total depth of 30.5 mbgs (100 feet). GHD measured the actual well depth to be 34.9 mbgs. The well record indicates overburden materials consisting of brown sand with stone to 1.5 m and hardpan with boulders from 1.5 m to 8.5 m. The well is confined with the sandstone between 8.5 m and 30.5 m;
- Water was encountered at 17.7 mbgs and 26.8 mbgs and was not tested;
- The well was tested by the drillers at 75.6 litres per minute or L/min (20 gallons per minute or gpm) resulting in a drawdown of 2.1 m or about 7% of the available drawdown. The well is recommended for pumping at 18.9 L/min; and
- Construction was completed in August 1993. Constructed with steel casing to 11.9 mbgs (39 feet) then open hole to the bottom of the well. From grade to 11.4 mbgs (37.5 feet) the annular space was grouted and sealed with cement.

2.2.2 Discussion of Pumping Test

A pumping test was conducted at TW-2 on November 19, 2020 to assess aquifer conditions and confirm the availability of a suitable groundwater resource for the proposed commercial development. A pumping test was conducted for six (6) hours at a constant rate of 60 L/min (15.9 gpm). Recovery measurements were collected after the pumping was completed.

A submersible pump was used in the well to conduct the testing. Water levels in the test well and adjacent observation and monitoring wells were monitored throughout the aquifer performance testing manually and through the use of data loggers to evaluate drawdown, recovery and the potential of mutual interference with adjacent wells. The discharge water was directed away from the pumped well a distance of about 30 m downgradient. This practice safeguards against artificial recharge of the well from occurring during the pumping test.

The test well was chlorinated in advance of the pumping test. Chlorine levels were confirmed in the field prior to bacteria sampling conducted at the test well. The residual chlorine was at trace levels or non-detect prior to obtaining the bacteriological samples.

Water samples were collected and submitted to an accredited analytical laboratory for testing. The analytical data is provided in Appendix C.

Field measurements of methane, pH, temperature, free chlorine, turbidity, and conductivity were completed with a turbidity meter, Hach Pocket Pro+ Multi 2 and chlorine meter. Calibration of the instruments was completed prior to the pumping test. The field measurements are provided in Appendix D on Figure D-3.

The results of the constant rate pumping tests including field testing data are graphically presented in Appendix D. Pumping test information is summarized in Table 2.4.

Test Well TW-2

The water level during the pumping test at TW-2 is illustrated on Figures D-1 and D-2 showing water level versus time. The plot shows the water level very slowly lowering over the course of the testing at 60.0 L/min. After six hours of pumping, the water level was about 9.0 metres below top of pipe (mbtp). The drawdown was about 1.15 m over the course of the testing with about 23.9 m of available drawdown above the pump remaining. Approximately 4.6% of the available drawdown was used during the pumping test. A total groundwater volume of 21,600 L was pumped during the testing. Based upon the preliminary septic design flow calculations, about 10,000 L/day has been estimated. Actual groundwater usage is expected to be much less than 10,000 L/day for the warehouse and offices.

Recovery measurements were collected manually for 60 minutes after pumping ceased. The water level recovered about 46% in one (1) hour and fully recovered 100% in 13.5 hours. The estimated transmissivity for TW-2 was 47.6 m^2/day (3193 gpd/ft) based on the drawdown and 46.4 m^2/day (3115 gpd/ft) based on the recovery period and represents a high transmissivity. The specific capacity for this well is calculated to be 52.6 L/min/m based upon the pumping test completed.

The plotted data indicates the aquifer that this well is tapped into can safely provide long-term quantities of groundwater at a pumping rate of 60 L/min (15.9 gpm) based upon the pumping test completed.

Pumping tests were completed previously at TW2 in 1994 and 2008 and documented by Golder in 2008. Previous testing was completed at 67 L/min and 55 L/min in 1994 and 2008, respectively. The drawdowns of these tests were similar to our drawdown at 1.18 m in 1994 and 1.2 m in 2008. Static water levels were also similar 3.15 mbgs in 1994 and 6.90 mbgs in 2020, indicating that development in this area including quarries on nearby properties has not resulted in significant negative effects to the water supply well at the Site.

2.2.3 Summary of Aquifer Performance

Table 2.3 summarizes the data and coefficients obtained from the pumping test.

Table 2.3: Aquifer Performance Testing Summary

WELL No.	STEP No.	YIELD		TEST TYPE	TIME	MAXIMUM DRAWDOWN		AVAILABLE DRAWDOWN*		SPECIFIC CAPACITY		ESTIMATED TRANSMISSIVITY	
		gpm	L/min		minutes	feet	metres	feet	metres	gpm/ft	L/min/m	gpd/ft	m^2/day
TW-2	1	0	0	Static	0	0	0	82.1	25.0	---	---	---	---
	2	10	60.0	Const.	360	3.7	1.15	78.4	23.85	4.2	52.6	3193	47.6
	3	0	0	Recvy.	46% recovery in 60 minutes; 100% recovery in 13.5 hours							3115	46.4

Notes:
gpm = gallons per minute; gpd/ft = gallons per day per foot
"Recvy" refers to Recovery measurements; "Const" refers to the Constant Rate test conducted for 360 minutes.
*Available Drawdown refers to the height of water in the well above the pump.
Static water level at TW-2 was 7.83 metres below top of pipe (6.90 metres below ground surface).

2.2.4 Test Well Water Quality

Groundwater samples for laboratory testing were collected during the course of the pumping test for the purpose of water quality analyses. The well was sampled after one (1) hour into the constant rate test and at the end of the test on November 19, 2020. The water samples were delivered to Paracel Laboratories Ltd. in Ottawa, an accredited laboratory, for chemical analyses. The bacteria parameters of E.coli, Total Coliform and Fecal Coliform were re-sampled on December 10, 2020 to confirm the initial bacteria results were non-detect (i.e. zero colony forming units). Certificates of chemical analyses are presented in Appendix D. The water quality data are summarized and compared with the Ontario Drinking Water Standards (ODWS) in Table 2.4.

Table 2.4: Test Well Water Quality Summary

PARAMETER	Test Well TW-2			ODWS	
	1 hour (Nov. 19, 2020)	End of test (Nov. 19, 2020)	TW-2 Re-Test** (Dec. 10, 2020)	MAC	AO/OG
Alkalinity (as $CaCO_3$)	269	267	--	--	30 to 500
Ammonia as N	0.25	0.25	--	--	--
Dissolved Organic Carbon	2.4	2.2	--		
Calcium	154	153	--	--	--
Chloride	91	94	--	--	250
Colour (ACU)	67	68	--	--	--
Conductivity (mS/cm)	1390	1380	--	--	--
Fluoride	0.3	0.3	--	1.5	--
Hardness (as $CaCO_3$)	**633**	**632**	--	--	80 to 100
Iron	**0.739**	**0.699**	--	--	0.3
Magnesium	60.6	60.9	--	--	--
Manganese	**0.176**	**0.180**	--	--	0.05
Nitrite as N	<0.05	<0.05	--	1.0	--
Nitrate as N	<0.1	<0.1	--	10	--
pH (units)	7.8	7.7	--	--	6.5 to 8.5
Potassium	9.55	9.77	--	--	--
Phenolics	<0.001	<0.001	--	--	--
Sodium	69.2*	68.6*	--	--	200
Sulphate	378	389	--		500
Sulphide	<0.02	<0.02	--	--	0.05
Tannin and Lignin	<0.1	<0.1	--	--	--
Total Dissolved Solids	**930**	**940**	--	--	500
Total Kjeldahl Nitrogen	0.3	0.4	--	--	--
Turbidity (NTU)	**10**	**9.5**	--	--	5
E. coli	--	ND (<10)	0	0	--
Total Coliform	--	ND (<10)	0	< 6	--
Fecal Coliform	--	ND (<10)	0	0	--
Heterotrophic Plate Count	--	<10	--	--	--

Notes:
Units are mg/L unless otherwise stated; "<" indicates concentrations are less than laboratory reporting limits
MAC = maximum acceptable concentration
AO / OG = aesthetic objective / operational guideline
Bold / shaded indicates the concentration exceeds the ODWS AO / OG. There are no exceedances of MAC (health related).
*The aesthetic objective for sodium in drinking water is 200 mg/L. When the sodium concentration exceeds 20 mg/L, this information should be communicated to those on sodium restricted diets.
**Re-tested at SGS Laboratory to confirm bacteria was non-detect.

The laboratory analyses confirmed that there were no health-related parameter exceedances of the ODWS. In general, the test results indicate the majority of parameters meet the ODWS with several exceedances of aesthetic objectives:

- Hardness;
- Total Dissolved Solids;
- Turbidity;
- Manganese; and
- Iron.

Elevated hardness is related to the overburden materials containing calcium and to a lesser extent, magnesium. Elevated hardness and iron are common traits of groundwater supplies in Southern Ontario and can be treated using commercially available treatment equipment such as a water softener.

The bacteria results were reported by Paracel as non-detect (i.e. <10 colony forming units per 100 mL (CFU)). GHD collected a re-sample from the well on December 10, 2020 to confirm that the bacteria results were non-detect. The sample was collected after pumping a well volume from the well and submitting the sample to SGS Environmental Laboratory in Lakefield, ON. The residual chlorine was measured in the field prior to testing and confirmed to be less than 0.05 mg/L.

As a proactive measure, GHD recommends that bacteriological treatment (i.e. ultraviolet (UV) treatment) be used at a minimum. As it is anticipated that this well system will be regulated and will require treatment to meet appropriate standards to ensure potable water is available to employees and visitors.

To supplement the analytical data, field measurements were obtained throughout the pumping test by GHD. At the end of the pump test, the groundwater at the well head had a conductivity of 1.2 mS/cm, a water temperature of 9.2 degrees Celsius, a pH of 6.65 and turbidity of 1.4 NTU. There was no methane detected within the water.

2.2.5 Well Interference

The potential for hydraulic connection between the test well TW-2 and neighbouring wells was monitored during the pumping test to assess the potential for hydraulic connection and well interference and overall impact on the aquifer with increased groundwater usage. Water levels were recorded of the observation wells during the pumping test and is provided in Appendix E. The approximate linear distances between the test well and observation wells are provided in Table 2.5.

Table 2.5: Distance Between Pumping Well and Observation Wells

Location	Distances between Test Wells and Observation Wells in metres						
	TW-2	TW-5	4885 Hawthorne	Well 1514733	Well A305146	MW1-20	MW7-08
TW-2 (test well)	---	555	635	495	130	125	10
TW-5	555	---	1185	785	450	670	550
4885 Hawthorne	635	1185	---	675	735	510	640
Well 1514733	495	785	675	---	450	430	520
Well A305146	130	450	735	450	---	225	145
MW1-20	125	670	510	430	225	---	145
MW7-08	10	550	640	520	145	145	---

Notes:
Distances based upon locations identified on Well Location Plan, Figure 3.
MW = monitoring well; TW = test well

The following table illustrates the maximum drawdowns that were observed in the test well and adjacent neighbouring wells during the pumping test.

Table 2.6: Maximum Drawdowns in Pumping and Observation Wells

PUMPING WELL		OBSERVATION WELLS	
LOCATION	MAXIMUM DRAWDOWN AT PUMPING WELL(m)	LOCATION	DRAWDOWN AT OBSERVATION WELL(m)
TW-2	**1.15**	TW-5	~0.03
		4885 Hawthorne	~0.03
		Well 1514733	0
		Well A305146	~0.95
		MW1-20	0
		MW7-08	0

2.2.5.1 Interference Assessment

During the pumping test, data loggers were installed within nearby production wells (TW-5, Well 1514733 and Well A305146); a residential well (4885 Hawthorne Road) and monitoring wells (MW1-20 and MW7-08). This was completed to quantify any hydraulic connection between the overburden and bedrock aquifer, and, within the bedrock aquifer itself.

There was no drawdown attributable to pumping at TW-2 within the monitoring wells (MW1-20 and MW7-08) indicating that there is no vertical hydraulic connection between the overburden groundwater and confined bedrock aquifer that TW-2 draws from.

There was no drawdown at Well 1514733 and minimal drawdown within TW-5 and the residential well throughout the duration of the pumping test. The drawdown at TW-5 and 4885 Hawthorne Road was about 3 cm based upon the data logger readings and is considered insignificant. No impacts are expected at these wells as a result of future TW-2 usage.

The results of the interference monitoring did illustrate a hydraulic connection between TW-2 and Well A305146 about 130 m to the south. The drawdown at this well was about 95 cm during the pumping test. It is expected that these wells are confined within the same aquifer unit and are hydraulically connected.

The testing showed that the pumping of over 20,000 L resulted in the usage of about 5% of the available drawdown of the test well. As daily usage is expected to be below 10,000 L/day, the pump test results indicate that there is sufficient water quantity below the Site for the planned development without significant interference to future and existing neighbouring wells. In our professional opinion the risk of interference is minimal.

2.3 Water Supply

The water supply system for the commercial development is expected to be regulated under Ontario Regulation 170 with the MECP. Based upon the pumping test, the test well TW-2 provided sufficient water quantity and could support a higher yield if required. The testing indicated that the bedrock aquifer below the Site can produce enough groundwater to support the proposed commercial development without significant impact to other wells.

It is also understood by GHD that, due to the location of TW-2, a replacement production well may be drilled for the Site. The following requirements are outlined for a new replacement well.

2.3.1 Production Well Requirements

Based on the results of this assessment, it is recommended that the commercial development be serviced by a properly constructed drilled well. GHD understands that the current drilled well used at the Site may be used to support the proposed development. However, if a new replacement well is needed, the current well should be abandoned in accordance with Regulation 903 of the Ontario Water Resources Act.

A future well should target the bedrock aquifer on the order of about 30 m deep. Large diameter (300 mm or greater) wells are not considered suitable as a source of water supply as they can be susceptible to shallow sources of contamination and may be prone to going dry during summer and winter months. Water wells installed should be in accordance with Regulation 903 of the Ontario Water Resources Act and the following design specifics:

1. If the well is a bedrock well, the casing should be sealed in accordance with Regulation 903 to the bedrock.
2. The well must be developed by conventional techniques to obtain a minimum of 70% efficiency. It is recommended that a statement be provided that indicates the well is essentially sand-free (i.e. less than 5 mg/L sand). In addition, the statement should also include that the total drawdown in the well, comprising the pumping level plus the mutual interference from the other wells, is within a reasonable tolerance of the available drawdown.
3. A water sample must be collected from the new well and analyzed for the following, at a minimum, test parameters to meet the ODWS:

-Iron	-Manganese	-Nitrate
-Sodium	-Hardness	-Turbidity
-Total Coliform	-E.*coli*	-Fecal coliform
-Chloride	-Total Dissolved Solids	

4. It is recommended that the new well be pump tested by qualified hydrogeologic personnel prior to issuance of a building permit. The well should be pump tested to determine a safe long-term yield and short-term capacity to ensure uninterrupted water supply for the development and to ensure that adjacent properties will not be impacted. A report should be prepared by a Professional Engineer or Professional Geoscientist verifying the pump testing data.

The use of a properly constructed drilled well that is adequately sealed and certified by qualified hydrogeological personnel should be sufficient to provide ample quantities of potable water while preserving the long term water quality of the existing aquifer complexes. Based on the aforementioned water quality data, some aesthetic related exceedances were noted. Aesthetic objectives are not health related. Methane was not observed in the test well discharge water or detected with our field instrumentation.

The use of groundwater heat pumps that extract water from the aquifer is not recommended. Geothermal drilling is unregulated and there are no mandatory requirements to seal boreholes that are drilled through or into aquifers. Therefore, unsealed or improperly sealed boreholes into the aquifer could put the water supply at risk.

2.4 Septic Waste Disposal

The septic waste disposal system is being designed by others.

2.5 Construction Dewatering

Based upon the GHD Geotechnical Report (2020), approximately 6 m of fill was encountered on the Site. The report suggests that foundations are to be either shallow foundations completed in the fill (requiring soil improvements, such as dynamic compaction) or deep foundations (Drilled Micro piles or drilled cast-in-place concrete piles / caissons). Bedrock was encountered at depths of 8.2 to 11.1 mbgs. Groundwater during the geotechnical program was encountered at depths of 3.3 to 4.0 mbgs at the Site and measured on November 19, 2020 to be 3.0 mbgs at MW7-08 and 3.8 mbgs at MW1-20.

Based on these observations, the excavations for the deep foundation option will extend below the water table and will require dewatering to remove groundwater seepage as well as surface water runoff and precipitation to ensure safe and dry working conditions.

2.5.1 Groundwater Sampling for Construction Dewatering

On November 19, 2020, a groundwater sample was collected from MW7-08 as part of the hydrogeological assessment. The sample was submitted to Paracel Laboratories in Ottawa, Ontario for analysis of metals, general inorganics, and volatile organic compounds (VOCs). The results were compared to criteria described in City of Ottawa By Law 2003-514, which addresses discharge to the Municipal sewage system. The analytical results are summarized and provided with the certificates of analysis in Appendix G.

When the analytical results are compared to the City of Ottawa criteria, it is noted that the following parameters exceeded the criteria:

- Phosphorus (total);
- Suspended solids (total);
- Arsenic (total);
- Copper (total);
- Manganese (total);
- Nickel (total); and
- Zinc (total).

The results represent total concentrations including dissolved and sorbed particulate. Based on these observations, the water discharged from an excavation must be filtered to minimize the particulate and reduce the total concentrations to meet the City of Ottawa criteria. The discharge would be expected to be a combination of groundwater, surface water runoff and precipitation into the excavation and would require further assessment to verify its quality. City of Ottawa approval, sewer-use discharge permit and pre-treatment will be required prior to discharge to a drainage ditch or sewer.

2.5.2 Single Well Response Testing

On November 20, 2020, Single Well Response Tests (SWRTs) were completed on monitoring wells MW1-20 and MW7-08, both of which are completed within the overburden. The tests consisted of inducing a measurable change to the water level in the monitoring well and measuring the rate at which the water level recovers. In this case, dataloggers were placed in the wells, then water in the wells were displaced by inserting a solid slug. When water levels had stabilized, the slug was then removed.

The SWRT was analysed using AQTESOLV and the Bouwer-Rice solution for unconfined groundwater unit within the fill. The results yielded a geometric mean of $5.7x10^{-5}$ cm/s at MW1-20 and $2.1x10^{-3}$ cm/s at MW7-08 in the general area of the southern edge of the proposed warehouse. The SWRT analyses are provided in Appendix F. The hydraulic conductivity testing suggests that excavations within fill material such as MW7-08 would be expected to yield moderate water infiltration.

It is noted that the hydraulic conductivities in MW7-08 was significantly faster than that measured at MW1-20 (near the northwest limit of the Site). This is attributed to a combination of differing

screened depths and variations in fill composition. Accordingly, it is assumed that the hydraulic conductivities vary across the Site. For the calculations used in this report, hydraulic conductivity will be assumed to be 1 x10^{-3} cm/sec.

2.5.3 Water Taking Evaluation

This section of the report is not intended to be considered for use as a dewatering plan for the construction contractor, as the water takings are for the purposes of regulatory submissions. It must also be noted that groundwater levels are transient and tend to fluctuate with the seasons, periods of precipitation and temperature.

The Site-specific borehole data, results of the hydraulic testing (i.e. single well response tests) and groundwater water monitoring were utilized to determine the aquifer hydraulic properties (hydraulic conductivity) and conditions to provide the basis for estimating the construction water taking rates and area of influence. If excavations extend beyond 3 mbgs, it is expected that groundwater will be encountered. The water takings and area of influence were determined using the field data and by employing analytical modelling methods. The projected drawdown was calculated as a partially penetrating excavation in an unconfined aquifer within the fill.

The radius of influence (R_o) was estimated using an empirical relationship developed by Sichardt and Kryieleis that gives R_o as a function of drawdown and hydraulic conductivity (Powers et al., 2007).

$R_o = 3000(H - h)\sqrt{K}$ (For circular source)

$R_o = 1750(H - h)\sqrt{K}$ (For line source)

Based upon an excavation depth of 8.5 m (i.e. removing all of the fill and native soil to bedrock as per the depth of bedrock at TW-2), the radius of influence is about 70 to 90 m. Based upon the size of the Site, no impacts to neighbouring properties is expected.

The steady state dewatering (Q) into the excavation was estimated using:

$$Q = \frac{\pi K\left(H^2 - h_w^2\right)}{\ln R_0 / r_w}$$ (For steady state into a semi-penetrating shaft)

Where: $r_w = \sqrt{\frac{ab}{\pi}}$

There are a number of assumptions to this method including:

- Homogeneous material
- Steady state
- Initial horizontal potentiometric surface
- Unconfined aquifer
- Partially penetrating well
- Gravity flow
- Circular source
- Effect of a large rectangular excavation is equivalent to circular excavation of same area

Based upon an excavation size that includes the entire warehouse area (4650 m^2) but does not include the cross docks or office areas, and assuming a dewatering depth to 9.5 m (one (1) m below the bedrock as per the bedrock depth at TW-2 to maintain dry conditions) steady state dewatering is estimated to be on the order of 725,000 L/day. This estimation includes a safety factor of 1.5 that was applied to the infiltration rate. The initial flows from the excavation may also be expected to be two to three times greater than the steady state.

Accordingly, the Owner should be aware of the limitations associated with the flow volume estimate contained in this report before utilizing the flow estimates for any use beyond their intended purpose (the generation of estimates to assess the need for a Permit To Take Water or an Environmental Activity and Sector Registry (EASR) application for construction). Our calculations assumed that there are 8.5 m of material to be removed to the bedrock for construction of the warehouse and dewatering to a depth of 9.5 m required to maintain 'dry' conditions. There may be areas on the Site with greater depths of material above the bedrock; or, other areas that have greater permeability and have more significant groundwater volume to be dewatered. The calculations also assumed that the footprint of the warehouse would be excavated in its entirety. To reduce groundwater pumping efforts, smaller areas of the warehouse footprint could be excavated at one time or alternative construction methods may be considered.

It is recommended that any contractor carry out a test excavation and / or pump testing of the fill layer prior to dewatering to evaluate the conditions and the most appropriate method to deal with the onsite conditions.

Based on the above assumptions and the scenario presented, we suggest that that the Client should:

- **Submit a Permit To Take Water (PTTW) application** to remove water from the Site, allowing for a water taking volume of greater than **400,000 Litres/day (L/day)** for the purposes of the submission. It should be noted that PTTW reviews may take up to 90 business days (i.e. 4.5 months). Alternatively, an EASR application for construction dewatering can be obtained within several days and allows for up to 400,000 L/day of groundwater pumping for construction dewatering purposes.
- **If required, obtain a City Ottawa Discharge Permit** to allow discharge to the local municipal sewer system or ditch. At a minimum, the construction water takings will require sediment filtration prior to discharge such as a sediment filter bag or equivalent methods.

The discharge from the dewatering should be directed to the nearby ditches or ground surface away from the excavation in an area protected from erosion. In addition, the discharge water should be properly filtered to reduce turbidity and total suspended solids. The volume and rate of the water takings will be recorded daily and measured using a flow meter or other acceptable method. The daily groundwater discharge shall be maintained below the limits identified in PTTW or EASR permit, and the City of Ottawa Discharge Permit (if required).

It is important to conduct the excavation and dewatering work in a timely manner (i.e. short duration) if possible. In addition, the ideal period to conduct the program is during the summer when groundwater and surface water are expected to be at their lowest. Any suppression of the local shallow groundwater from dewatering during the construction phase is expected to be of a temporary nature.

3. Summary and Recommendations

Supporting data upon which our conclusions and recommendations are based have been presented in the foregoing sections of this report. The following conclusions and recommendations are governed by the physical properties of the subsurface materials that were encountered at the Site and assume that they are representative of the overall Site conditions. It should be noted that these conclusions and recommendations are intended for use by the designers only. Contractors bidding on or undertaking any work at the Site should examine the factual results of the assessment, satisfy themselves as to the adequacy of the information for construction, and make their own interpretation of this factual data as it affects their proposed construction techniques, equipment capabilities, costs, sequencing, and the like. Comments, techniques, or recommendations pertaining to construction should not be construed as instructions to the contractor.

Based on the results of the assessment, the test well has sufficient water of good quality and quantity to provide ample supply of potable groundwater for the proposed commercial development while preserving the long-term water quality of the aquifer complex. There was minor interference between adjacent wells; however, the interference is not considered significant to impact the operation of the wells. There is no vertical hydraulic connection between the shallow overburden groundwater and the bedrock aquifer unit. In the long term, it is our opinion that the bedrock aquifer tested can support the commercial development and neighbouring wells.

Water quality impacts are not expected provided that the waste disposal system is properly constructed. No impact is anticipated on downgradient baseline water quality functions or to the existing water bearing aquifers.

If a new well is drilled for the development, the well must be properly constructed and adequately sealed and the existing well decommissioned in accordance with Ontario Regulation 903.

Construction dewatering is estimated to be about 725,000 L/day or greater based upon field testing and dewatering the entire warehouse footprint to the bedrock surface. A PTTW is recommended for this approach. For dewatering of volumes up to 400,000 L/day, an EASR application is recommended. No significant impacts from construction dewatering are anticipated.

It is GHD's opinion that the results of this hydrogeological assessment support the development of the proposed commercial development.

The following Statement of Limitations should be read carefully and is an integral part of this report. We trust this report meets your immediate needs. Should any questions arise regarding any aspect of our report, please contact our office.

Sincerely,

GHD

Robert Neck, M.Eng., P.Geo. (Limited)

Nyle McIlveen, P.Eng.

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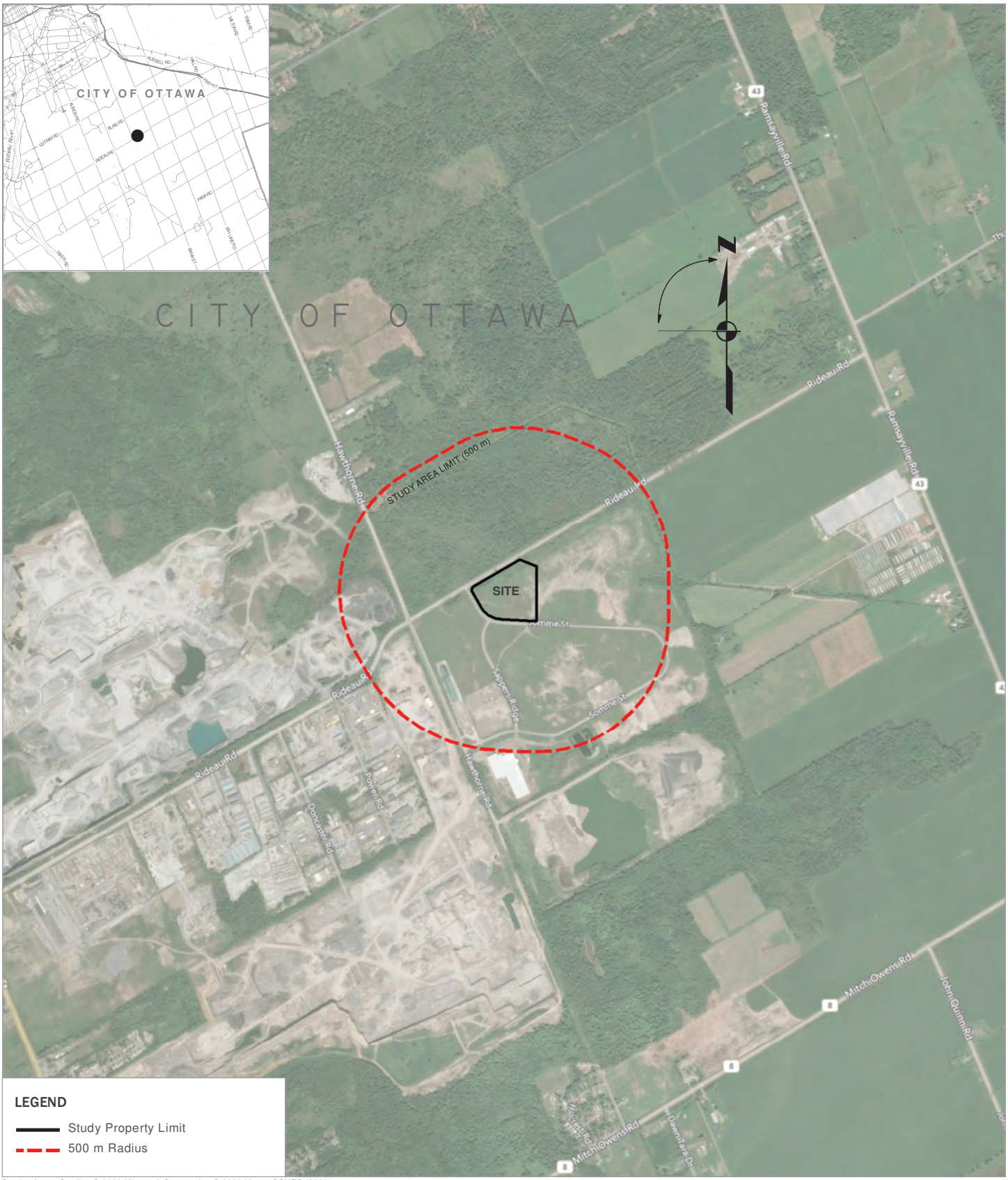
5. Statement of Limitations

This report is intended solely for Consolidated Fastfrate (Ottawa) Holdings Inc. in assessing the hydrogeological aspects of the Site (Rideau Road and Somme Street, Ottawa, Ontario) and is prohibited for use by others without GHD's prior written consent. This report is considered GHD's professional work product and shall remain the sole property of GHD. Any unauthorized reuse, redistribution of or reliance on the report shall be at the Client and recipient's sole risk, without liability to GHD. Client shall defend, indemnify and hold GHD harmless from any liability arising from or related to Client's unauthorized distribution of the report. No portion of this report may be used as a separate entity; it is to be read in its entirety and shall include all supporting drawings and appendices.

The recommendations made in this report are in accordance with our present understanding of the project, the current site use, ground surface elevations and conditions, and are based on the work scope approved by the Client and described in the report. The services were performed in a manner consistent with that level of care and skill ordinarily exercised by members of hydrogeological engineering professions currently practicing under similar conditions in the same locality. No other representations, and no warranties or representations of any kind, either expressed or implied, are made. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.

All details of design and construction are rarely known at the time of completion of a hydrogeological study. The recommendations and comments made in the study report are based on our subsurface investigation and resulting understanding of the project, as defined at the time of the study. We should be retained to review our recommendations when the drawings and specifications are complete. Without this review, GHD will not be liable for any misunderstanding of our recommendations or their application and adaptation into the final design.

Enclosures



NAD83, MTM Zone 9
1 cm : 200 meters

Meters
0 220 440 880

ATTRIBUTION STATEMENTS

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Consolidated Fastfrate (Ottawa) Holdings Inc.

RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
SITE LOCATION PLAN

Project No.	11220832-01
Revision No.	1
Date	Jan. 2021

FIGURE 1

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NAD83, MTM Zone 9
1 cm : 18 meters

Meters
0 20 40 80

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- Preliminary Site Blocking Diagram [A100]. Civitas Group. 2020-11-04.
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RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
PRELIMINARY CONCEPT PLAN

Project No. 11220832-01
Revision No. 1
Date Jan 21

FIGURE 2

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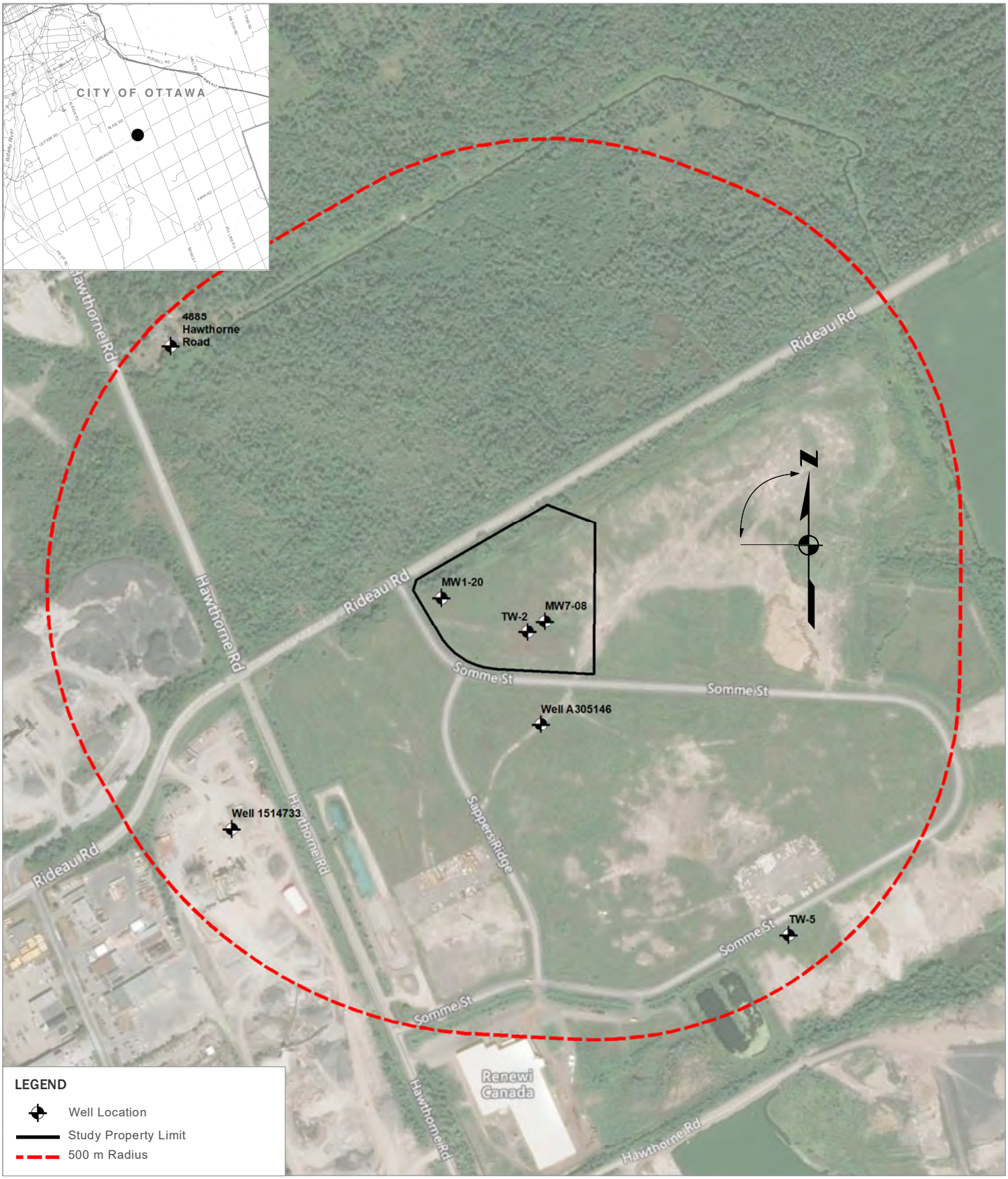

NAD83, MTM Zone 9
1 cm : 72 meters

Meters

0 80 160 320

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RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
WELL LOCATION PLAN

Project No. 11220832-01
Revision No. 1
Date Jan 21

FIGURE 3

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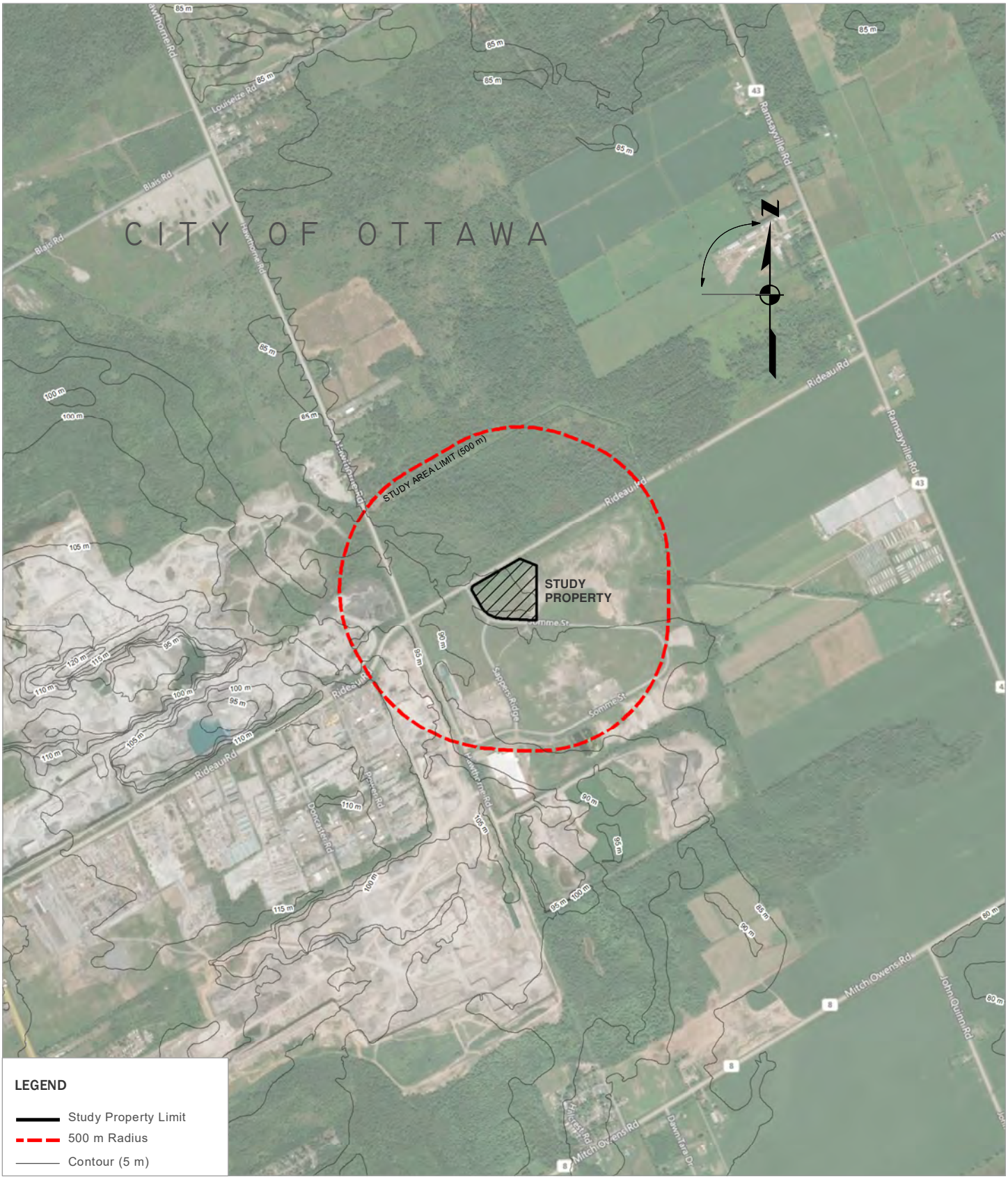

NAD83, MTM Zone 9
1 cm : 200 meters
Meters
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ATTRIBUTION STATEMENTS

- MRD128-REV. Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.
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Consolidated Fastfrate (Ottawa) Holdings Inc.

RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
REGIONAL TOPOGRAPHY

Project No. 11220832
Revision No. -
Date Jan 21

FIGURE 4

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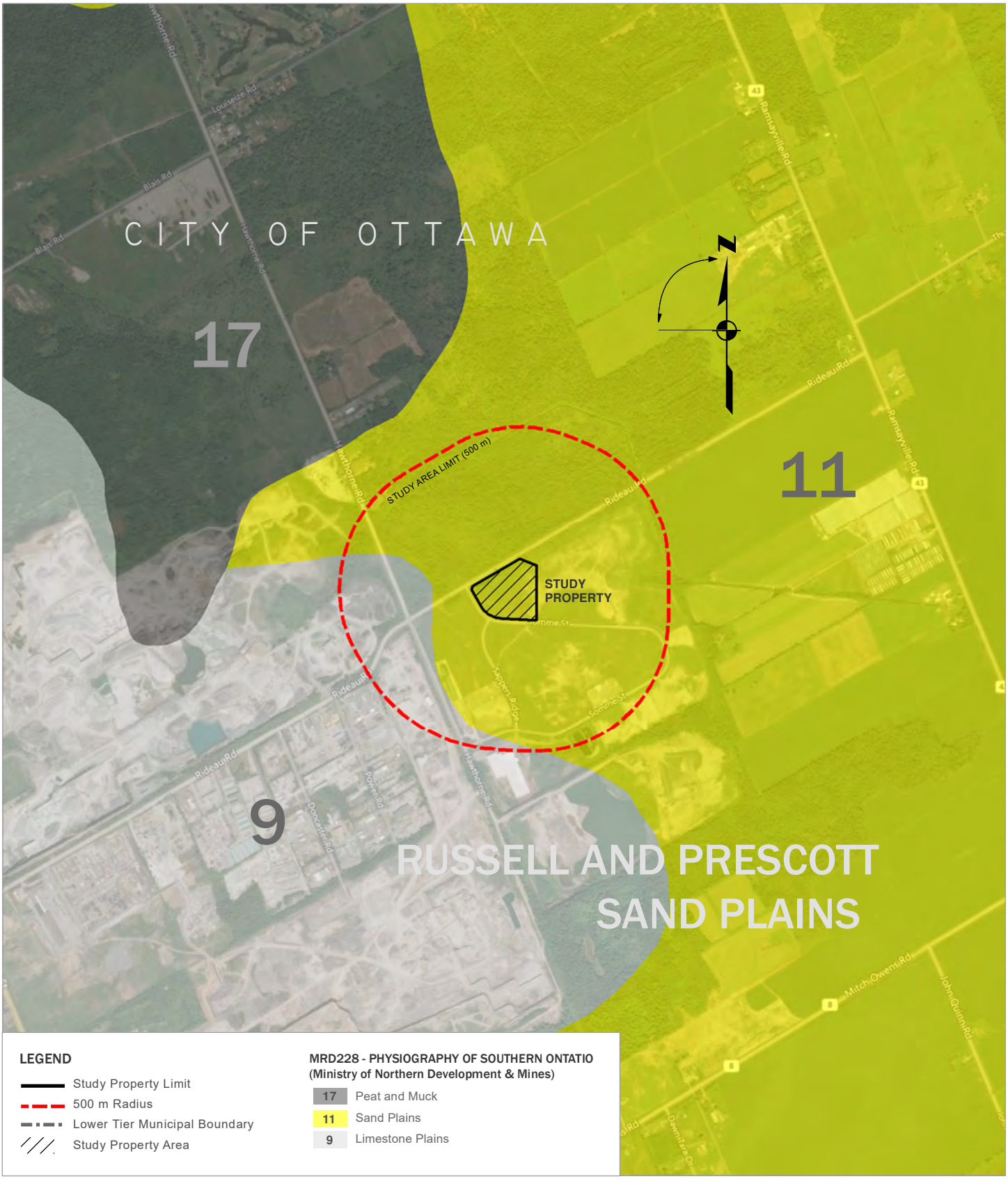

NAD83, MTM Zone 9
1 cm : 200 meters
Meters
0 220 440 880

ATTRIBUTION STATEMENTS

- MRD228-REV. Chapman, L.J. and Putnam, D.F. 2007. Physiography of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 228.
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Consolidated Fastfrate (Ottawa) Holdings Inc.

RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
PHYSIOGRAPHY

Project No.	11220832
Revision No.	-
Date	Jan 21

FIGURE 5

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LEGEND

- Study Property Limit
- 500 m Radius
- Landslide Scar
- Beach

MRD128 - SURFICIAL GEOLOGY (Ministry of Northern Development & Mines)

- 3 **Paleozoic Bedrock**
- 20 **Organic Deposits:** peat, muck, marl
- 17 **Eolian deposits:** fine to very fine sand and silt
- 11 **Coarse-textured glaciolacustrine deposits:** sand, gravel, minor silt and clay
  - 11b Littoral deposits
  - 11c Foreshore and basinal deposits
- 10 **Fine-textured glaciomarine deposits**
  - 10a Massive to well laminated
- 5b **Till:** Silty sand to sand-textured till on Precambrian terrain
  - 5b Stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain

NAD83, MTM Zone 9
1 cm : 200 meters
Meters
0 220 440 880

ATTRIBUTION STATEMENTS

- MRD128-REV. Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.
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Consolidated Fastfrate (Ottawa) Holdings Inc.

RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
SURFICIAL GEOLOGY

Project No.	11220832
Revision No.	-
Date	Jan 21

FIGURE 6

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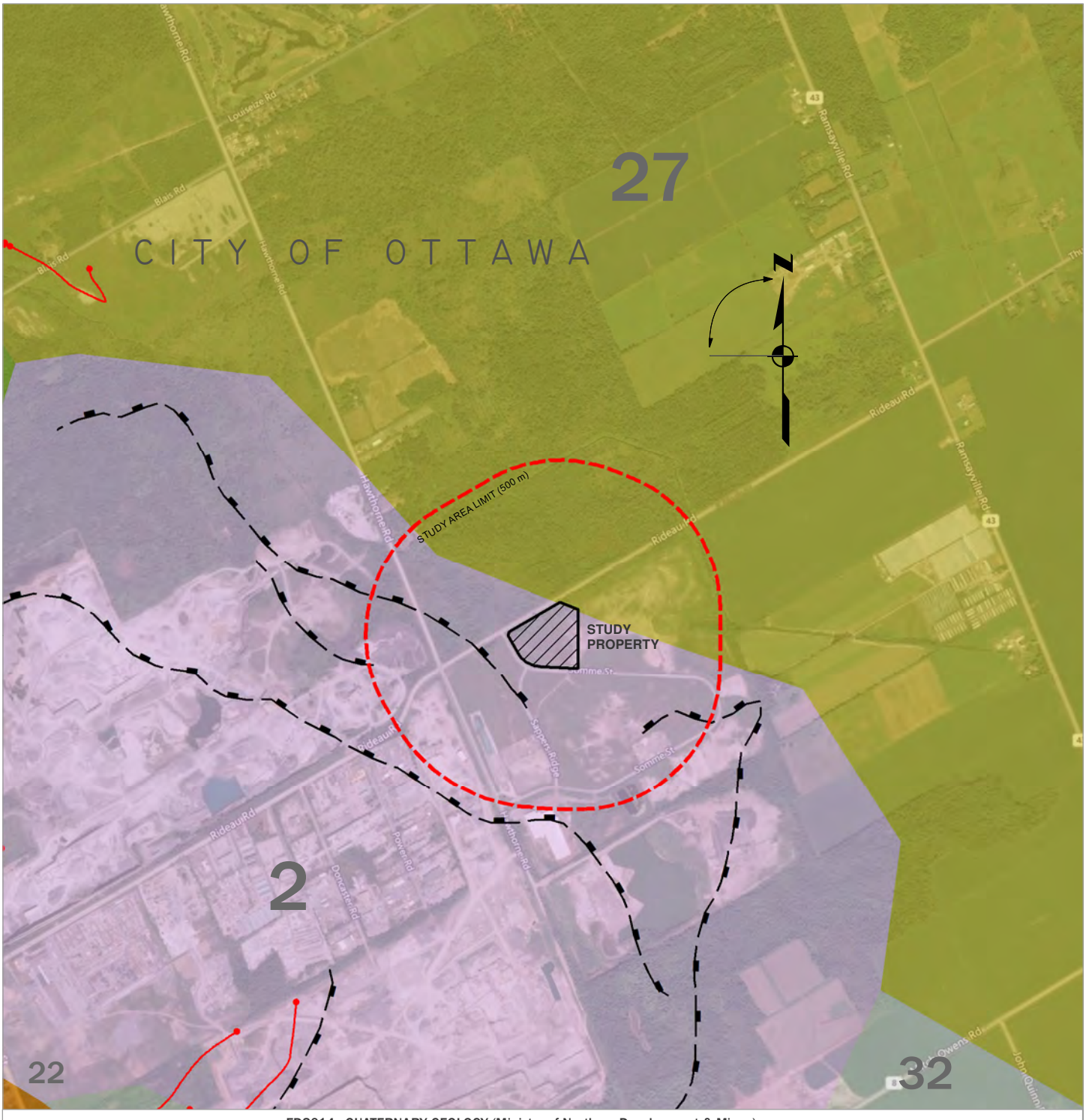

LEGEND

- Study Property Limit
- 500 m Radius
- Landslide Scar
- Beach

EDS014 - QUATERNARY GEOLOGY (Ministry of Northern Development & Mines)

32 Organic deposits:
peat, muck and marl

27 Glaciomarine and marine deposits:
sand, gravelly sand and gravel nearshore and beach deposits

22 Glaciofluvial ice-contact deposits:
gravel and sand minor till includes esker, kame, end moraine, ice-marginal delta and subaqueous fan deposits

2 Bedrock:
undifferentiated carbonate and clastic sedimentary rock, exposed at surface or covered by a discontinuous, thin layer of drift

NAD83, MTM Zone 9
1 cm : 200 meters
Meters
0 220 440 880

ATTRIBUTION STATEMENTS

- EDS014-REV. Ontario Geological Survey, 1997. Quaternary geology, seamless coverage of the province of Ontario: Ontario Geological Survey, Data Set 14.
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Consolidated Fastfrate (Ottawa) Holdings Inc.

RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
QUATERNARY GEOLOGY

Project No. 11220832
Revision No. -
Date Jan 2021

FIGURE 7

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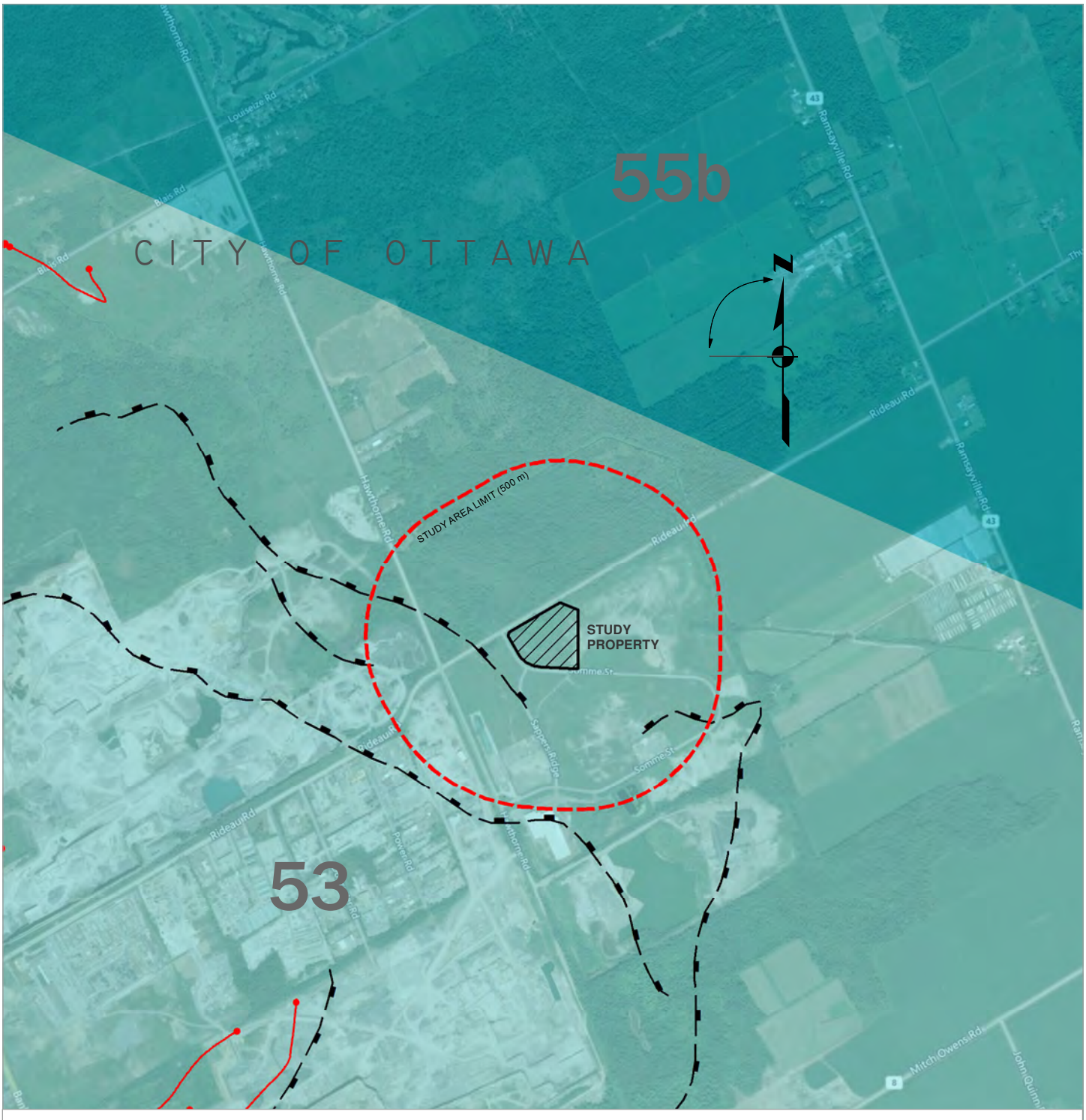

LEGEND

- Study Property Limit
- 500 m Radius
- Landslide Scar
- Beach

MRD126 - BEDROCK GEOLOGY (Ministry of Northern Development & Mines)

ORDOVICIAN (443.7 Ma to 488.3 Ma)

UPPER ORDOVICIAN

55 **Shale, limestone, dolostone, siltstone**
55b Georgian Bay Fm.; Blue Mountain Fm.; Billings Fm.; Collingwood Mb.; Eastview Mb.

53 **Dolostone, sandstone:** Beekmantown Gp.

NAD83, MTM Zone 9
1 cm : 200 meters
Meters
0 220 440 880

ATTRIBUTION STATEMENTS

- MRD126-REV. Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release---Data 126-Revision
- Produced by GHD Limited under Licence with the Ontario Ministry of Natural Resources and Forestry© Queen's Printer for Ontario, 2020 (2020).

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Consolidated Fastfrate (Ottawa) Holdings Inc.

RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
BEDROCK GEOLOGY

Project No. 11220832
Revision No. -
Date Jan. 2021

FIGURE 8

Created by: Will Pridham

Appendix A
Photographs

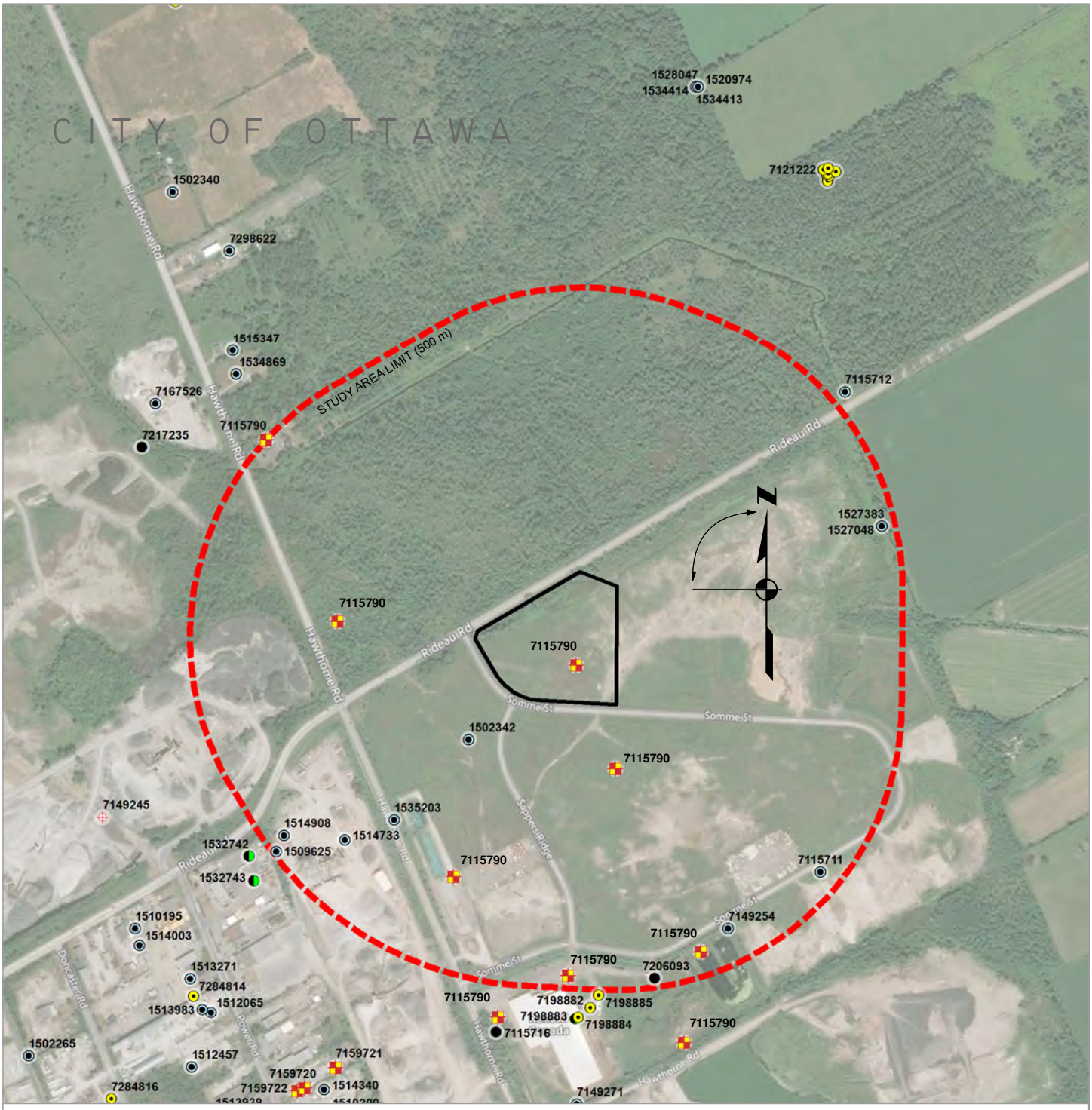
Photo 1 - View of drilled test well on the Site used during pumping test.

Photo 2 - View of discharge area looking across the Site.

Site Photographs

Photo 3 - Example of observation well (ID A305146) used during pumping test for monitoring of potential interference effects.

Appendix B
MECP Well Records



LEGEND

- Study Property Limit
- 500 m Radius

MECP Well, Final Status

- Abandoned Monitoring and Test Hole
- Abandoned-Other
- Abandoned-Quality
- Abandoned-Supply
- Alteration
- Dewatering
- Monitoring and Test Hole
- Observation Wells
- Recharge Well
- Replacement Well
- Test Hole
- Unfinished
- Water Supply
- Other Status
- No Data
- Not A Well

NAD83, MTM Zone 9
1 cm : 100 meters

Meters: 0 | 110 | 220 | 440

ATTRIBUTION STATEMENTS

K:\GIS_PROJECTS\GHD\CA-

Consolidated Fastfrate (Ottawa) Holdings Inc.
RIDEAU ROAD & SOMME STREET
CITY OF OTTAWA
ONTARIO

HYDROGEOLOGY ASSESSMENT
MECP WATER WELLS

Project No. 11220832
Revision No. -
Date Jan 21

APPENDIX B

Created by: Will Pridham

WELL RECORD LISTINGS

Ministry of the Environment Conservation & Parks (MECP)

Database Currency: 2020-04-30

Date Accessed: 2020-11-13

Project ID: 11220832 **Office:** Peterborough, ON

Lot: LOT 27
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: 35 SAPPERS RIDGE
City: Ottawa
Site:
Elevation: 89.57 *masl.*
UTM: 18 E 456749 N 5016668 **Long/Lat:** -75.552 , 45.302

Well ID: 7206093
Borehole ID: 1004500104
Completion Date: 7/18/2013
Received Date: 8/12/2013
Tag: A089801
Audit No: Z103282
Contractor License: 3749

DETAILS

Primary Use: Public **Secondary Use:** Public **Final Status:**

Well Depth: 47.2 m **Depth to Bedrock:** 0 m **Static Level:** 7.6 m **Well Type:**

Pump Rate: 10 GPM **Boring Method:** Rotary (Convent.)

CASING DETAILS		DEPTH IN METERS		
Material	**Diameter (cm)**	**Top**	-	**Bottom**
STEEL	14.29	12.19		-0.61

FORMATION DETAILS		DEPTH IN METERS		
Colour	**Material**	**Top**	-	**Bottom**
	LIMESTONE	7.32		47.24
	FILL	0.00		2.44
GREY	CLAY	2.44		7.32

Lot: LOT 27
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: HAWTHORNE ROAD AT RIDEAU ROAD
City: Ottawa
Site:
Elevation: 90.95 *masl.*

Well ID: 7115790
Borehole ID: 1002782554
Completion Date: 7/7/2008
Received Date: 11/26/2008
Tag: A074584
Audit No: M02897
Contractor License: 1844

UTM: 18 E 456598 N 5016675 **Long/Lat:** -75.554 , 45.302

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Test Hole

Well Depth: 0 m **Depth to Bedrock:** 0 m **Static Level:** 1 m **Well Type:**

Pump Rate: **Boring Method:** H.S.A.

CASING DETAILS DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom

FORMATION DETAILS DEPTH IN METERS

Colour	Material	Top	-	Bottom
BROWN	FILL	0.27		1.43
GREY	SAND	1.43		1.83
BROWN	TILL	1.83		2.32
GREY	FINE SAND	0.00		0.27

Lot: LOT 27
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: HAWTHORNE ROAD AT RIDEAU ROAD
City: Ottawa
Site:
Elevation: 94.41 *masl.*

Well ID: 7115790
Borehole ID: 1002782518
Completion Date: 7/7/2008
Received Date: 11/26/2008
Tag: A074584
Audit No: M02897
Contractor License: 1844

UTM: 18 E 456831 N 5016712 **Long/Lat:** -75.551 , 45.303

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Test Hole

Well Depth: 0 m **Depth to Bedrock:** 0 m **Static Level:** 1.3 m **Well Type:**

Pump Rate: **Boring Method:** H.S.A.

CASING DETAILS | DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom
STEEL	15.86	-0.45		6.40

FORMATION DETAILS | DEPTH IN METERS

Colour	Material	Top	-	Bottom
GREY	SANDSTONE	1.30		9.10
BROWN	TOPSOIL	0.00		1.30

Lot: LOT 27
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: TW#7 HOAWTHORNE RD.
City: GLOUCESTER
Site:
Elevation: 88.61 *masl.*
UTM: 18 E 456879 N 5016752 **Long/Lat:** -75.550 , 45.303

Well ID: 7149254
Borehole ID: 1003262503
Completion Date: 5/25/2010
Received Date: 8/4/2010
Tag: A082844
Audit No: Z101832
Contractor License: 1558

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Water Supply

Well Depth: 29.9 m **Depth to Bedrock:** 0 m **Static Level:** 4.4 m **Well Type:**

Pump Rate: 27.3 LPM **Boring Method:** Rotary (Reverse)

CASING DETAILS | DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom
STEEL	15.86	-0.45		6.40

FORMATION DETAILS | DEPTH IN METERS

Colour	Material	Top	-	Bottom
GREY	SANDSTONE	1.30		9.10
BROWN	TOPSOIL	0.00		1.30

Lot:	LOT 26	**Well ID:**	7115790
Con:	CON 6 FROM RIDEAU RIVER	**Borehole ID:**	1001905211
Township:	GLOUCESTER	**Completion Date:**	7/14/2008
County:	OTTAWA-CARLETON	**Received Date:**	11/26/2008
Street:	HAWTHORNE ROAD AT RIDEAU ROAD	**Tag:**	A074584
City:	Ottawa	**Audit No:**	M02897
Site:		**Contractor License:**	1844
Elevation:	89.13 *masl.*		
UTM:	18 E 456400 N 5016852 **Long/Lat:** -75.556 , 45.304		

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Test Hole

Well Depth: 7.6 m **Depth to Bedrock:** 0 m **Static Level:** 1.7 m **Well Type:**

Pump Rate: **Boring Method:** H.S.A.

CASING DETAILS DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom

FORMATION DETAILS DEPTH IN METERS

Colour	Material	Top	-	Bottom
GREY	FINE SAND	0.00		0.27
BROWN	FILL	0.27		1.43
BROWN	TILL	1.83		2.32
GREY	SAND	1.43		1.83

Lot:	LOT 27	**Well ID:**	7115711
Con:	CON 6 FROM RIDEAU RIVER	**Borehole ID:**	1001904894
Township:	GLOUCESTER	**Completion Date:**	9/26/2008
County:	OTTAWA-CARLETON	**Received Date:**	12/2/2008
Street:	TW #5	**Tag:**	A068335
City:	GLOUCESTER	**Audit No:**	Z84410
Site:		**Contractor License:**	1558

Elevation: 87.38 *masl.*

UTM: 18 E 457043 N 5016848 **Long/Lat:** -75.548 , 45.304

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 29.9 m **Depth to Bedrock:** 0 m **Static Level:** 6.8 m **Well Type:** Bedrock

Pump Rate: 180 GPM **Boring Method:** Cable Tool

CASING DETAILS		DEPTH IN METERS	
Material	**Diameter (cm)**	**Top** -	**Bottom**
STEEL	25.40		5.49
OPEN HOLE	22.86		58.52

FORMATION DETAILS		DEPTH IN METERS	
Colour	**Material**	**Top** -	**Bottom**
BROWN	SANDSTONE	0.00	15.85
GREY	QUARTZITE	15.85	21.95
WHITE	SANDSTONE	21.95	48.77
GREY	SANDSTONE	48.77	58.52

Lot: LOT 26 **Well ID:** 1509625

Con: CON 5 FROM RIDEAU RIVER **Borehole ID:** 10031657

Township: GLOUCESTER **Completion Date:** 5/4/1968

County: OTTAWA-CARLETON **Received Date:** 6/12/1968

Street: **Tag:**

City: **Audit No:**

Site: **Contractor License:** 3002

Elevation: 103.27 *masl.*

UTM: 18 E 456091 N 5016902 **Long/Lat:** -75.560 , 45.304

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 58.5 m **Depth to Bedrock:** 0 m **Static Level:** 11 m **Well Type:** Bedrock

Pump Rate: 180 GPM **Boring Method:** Cable Tool

CASING DETAILS		DEPTH IN METERS	
Material	**Diameter (cm)**	**Top** -	**Bottom**
OPEN HOLE	22.86		58.52

STEEL	25.40	5.49

FORMATION DETAILS		DEPTH IN METERS	
Colour	**Material**	**Top** -	**Bottom**
BROWN	SHALE	0.61	3.05
BROWN	TOPSOIL	0.00	0.61
GREY	LIMESTONE	3.05	35.36

Lot: LOT 26
Con: CON 5 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street:
City:
Site:
Elevation: 99.42 *masl.*
UTM: 18 E 456211 N 5016920 **Long/Lat:** -75.559 , 45.304

Well ID: 1514733
Borehole ID: 10036703
Completion Date: 4/15/1975
Received Date: 7/8/1975
Tag:
Audit No:
Contractor License: 1517

DETAILS

Primary Use: Commerical **Secondary Use:** Commerical **Final Status:** Water Supply

Well Depth: 35.4 m **Depth to Bedrock:** 0.6 m **Static Level:** 12. m **Well Type:** Bedrock

Pump Rate: 10 GPM **Boring Method:** Cable Tool

CASING DETAILS		DEPTH IN METERS	
Material	**Diameter (cm)**	**Top** -	**Bottom**
OPEN HOLE	12.70		35.36
STEEL	12.70		5.49

FORMATION DETAILS		DEPTH IN METERS	
Colour	**Material**	**Top** -	**Bottom**
BROWN	TOPSOIL	0.00	0.61
BROWN	SHALE	0.61	3.05
GREY	LIMESTONE	3.05	35.36

Lot: LOT 26
Con: CON 5 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON

Well ID: 1514908
Borehole ID: 10036875
Completion Date: 8/15/1975
Received Date: 9/11/1975

Street: 3500 RIDEAU ROAD **Tag:** A018916

City: GLOUCESTER **Audit No:** Z19099

Site: **Contractor License:** 1119

Elevation: 90.37 *masl.*

UTM: 18 E 456105 N 5016929 **Long/Lat:** -75.560 , 45.304

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 75.6 m **Depth to Bedrock:** 0 m **Static Level:** 12. m **Well Type:** Bedrock

Pump Rate: 75.71 LPM **Boring Method:** Air Percussion

CASING DETAILS		DEPTH IN METERS	
Material	**Diameter (cm)**	**Top**	**Bottom**
OPEN HOLE		6.09	42.67
STEEL	15.88	0.00	6.70

FORMATION DETAILS		DEPTH IN METERS	
Colour	**Material**	**Top**	**Bottom**
GREY	LIMESTONE	10.68	13.01
GREY	SANDSTONE	0.37	10.68
	GRAVEL	0.00	0.37

Lot: <null> **Well ID:** 1535203

Con: **Borehole ID:** 11172955

Township: GLOUCESTER **Completion Date:** 10/27/2004

County: OTTAWA-CARLETON **Received Date:** 11/26/2004

Street: 3500 RIDEAU ROAD **Tag:** A018916

City: GLOUCESTER **Audit No:** Z19099

Site: **Contractor License:** 1119

Elevation: 90.37 *masl.*

UTM: 18 E 456298 N 5016953 **Long/Lat:** -75.557 , 45.305

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 42.7 m **Depth to Bedrock:** 1.2 m **Static Level:** 14. m **Well Type:** Bedrock

Pump Rate: 75.71 LPM **Boring Method:** Air Percussion

CASING DETAILS	DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom

FORMATION DETAILS		DEPTH IN METERS		
Colour	Material	Top	-	Bottom
GREY	FINE SAND	0.00		0.27
GREY	SAND	1.43		1.83
BROWN	TILL	1.83		2.32
BROWN	FILL	0.27		1.43

Lot: LOT 26
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: HAWTHORNE ROAD AT RIDEAU ROAD
City: Ottawa
Site:
Elevation: 85.10 *masl.*
UTM: 18 E 456687 N 5017036 **Long/Lat:** -75.552 , 45.305

Well ID: 7115790
Borehole ID: 1002782572
Completion Date: 7/15/2008
Received Date: 11/26/2008
Tag: A074584
Audit No: M02897
Contractor License: 1844

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Test Hole

Well Depth: 0 m **Depth to Bedrock:** 0 m **Static Level:** 3 m **Well Type:**

Pump Rate: **Boring Method:**

CASING DETAILS DEPTH IN METERS

H.S.A.

Material	Diameter (cm)	Top	-	Bottom

FORMATION DETAILS		DEPTH IN METERS		
Colour	Material	Top	-	Bottom
BROWN	TILL	1.83		2.32
BROWN	FILL	0.27		1.43
GREY	SAND	1.43		1.83

GREY	FINE SAND	0.00	0.27

Lot: LOT 26
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street:
City:
Site:
Elevation: 87.74 *masl.*
UTM: 18 E 456431 N 5017092 **Long/Lat:** -75.556 , 45.306

Well ID: 1502342
Borehole ID: 10024385
Completion Date: 11/30/1950
Received Date: 12/6/1951
Tag:
Audit No:
Contractor License: 3504

DETAILS

Primary Use: Livestock **Secondary Use:** Livestock **Final Status:** Water Supply

Well Depth: 17.4 m **Depth to Bedrock:** 8.2 m **Static Level:** 4 m **Well Type:** Bedrock

Pump Rate: 1 GPM **Boring Method:** Cable Tool

CASING DETAILS / DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom
STEEL	12.70			8.23
OPEN HOLE	12.70			17.37

FORMATION DETAILS / DEPTH IN METERS

Colour	Material	Top	-	Bottom
	PREV. DRILLED	0.00		8.23
	SANDSTONE	8.23		17.37

Lot: LOT 26
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: HAWTHORNE ROAD AT RIDEAU ROAD
City: Ottawa
Site:
Elevation: 84.01 *masl.*
UTM: 18 E 456622 N 5017219 **Long/Lat:** -75.553 , 45.307

Well ID: 7115790
Borehole ID: 1002782563
Completion Date: 7/14/2008
Received Date: 11/26/2008
Tag: A074584
Audit No: M02897
Contractor License: 1844

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Test Hole

Well Depth: 0 m **Depth to Bedrock:** 0 m **Static Level:** 3.6 m **Well Type:**

Pump Rate: **Boring Method:** H.S.A.

CASING DETAILS DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom

FORMATION DETAILS DEPTH IN METERS

Colour	Material	Top	-	Bottom
GREY	FINE SAND	0.00		0.27
BROWN	TILL	1.83		2.32
BROWN	FILL	0.27		1.43
GREY	SAND	1.43		1.83

Lot: LOT 25
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street: HAWTHORNE ROAD AT RIDEAU ROAD
City: Ottawa
Site:
Elevation: 84.01 *masl.*
UTM: 18 E 456206 N 5017303 **Long/Lat:** -75.559 , 45.308

Well ID: 7115790
Borehole ID: 1002782590
Completion Date: 7/15/2008
Received Date: 11/26/2008
Tag: A074584
Audit No: M02897
Contractor License: 1844

DETAILS

Primary Use: Monitoring **Secondary Use:** Monitoring **Final Status:** Test Hole

Well Depth: 0 m **Depth to Bedrock:** 0 m **Static Level:** 1.6 m **Well Type:**

Pump Rate: **Boring Method:**

CASING DETAILS DEPTH IN METERS

H.S.A.

Material	Diameter (cm)	Top	-	Bottom
OPEN HOLE	15.24			30.48
STEEL	15.24			11.89

FORMATION DETAILS — DEPTH IN METERS

Colour	Material	Top	-	Bottom
GREY	SANDSTONE	8.53		30.48
GREY	HARDPAN	1.52		8.53
BROWN	SAND	0.00		1.52

Lot: LOT 26
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street:
City:
Site:
Elevation: 82.18 *masl.*
UTM: 18 E 457162 N 5017453 **Long/Lat:** -75.546 , 45.309

Well ID: 1527383
Borehole ID: 10049033
Completion Date: 8/16/1993
Received Date: 9/21/1993
Tag:
Audit No: 135946
Contractor License: 1558

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 30.5 m **Depth to Bedrock:** 8.5 m **Static Level:** 2.1 m **Well Type:** Bedrock

Pump Rate: 20 GPM **Boring Method:** Air Percussion

CASING DETAILS — DEPTH IN METERS

Material	Diameter (cm)	Top	-	Bottom
STEEL	15.24			11.89
OPEN HOLE	15.24			30.48

FORMATION DETAILS — DEPTH IN METERS

Colour	Material	Top	-	Bottom
BROWN	SAND	0.00		1.52

GREY	HARDPAN	1.52	8.53
GREY	SANDSTONE	8.53	30.48

Lot: LOT 26
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street:
City:
Site:
Elevation: 82.18 *masl.*
UTM: 18 E 457162 N 5017453 **Long/Lat:** -75.546 , 45.309

Well ID: 1527048
Borehole ID: 10048727
Completion Date: 4/19/1993
Received Date: 5/6/1993
Tag:
Audit No: 130025
Contractor License: 1558

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 41.1 m **Depth to Bedrock:** 0 m **Static Level:** 9.4 m **Well Type:** Bedrock

Pump Rate: 15 GPM **Boring Method:** Air Percussion

CASING DETAILS		DEPTH IN METERS		
Material	**Diameter (cm)**	**Top**	-	**Bottom**
OPEN HOLE	15.24			22.86
STEEL	15.24			9.45
OPEN HOLE	15.24			41.15

FORMATION DETAILS		DEPTH IN METERS		
Colour	**Material**	**Top**	-	**Bottom**
WHITE	SANDSTONE	10.06		41.15
GREY	HARDPAN	2.74		4.57
BROWN	CLAY	0.00		2.74
GREY	LIMESTONE	4.57		10.06

Lot: LOT 26
Con: CON 6 FROM RIDEAU RIVER
Township: GLOUCESTER
County: OTTAWA-CARLETON
Street:
City:
Site:

Well ID: 1527384
Borehole ID: 10049034
Completion Date: 8/16/1993
Received Date: 9/21/1993
Tag:
Audit No: 135944
Contractor License: 1558

Elevation: 82.18 *masl.*

UTM: 18 E 457162 N 5017453 **Long/Lat:** -75.546 , 45.309

DETAILS

Primary Use: Domestic **Secondary Use:** Domestic **Final Status:** Water Supply

Well Depth: 30.5 m **Depth to Bedrock:** 0 m **Static Level:** 6.7 m **Well Type:** Bedrock

Pump Rate: 15 GPM **Boring Method:** Air Percussion

CASING DETAILS		DEPTH IN METERS		
Material	**Diameter (cm)**	**Top**	-	**Bottom**
STEEL	15.24			6.71
OPEN HOLE	15.24			30.48

FORMATION DETAILS		DEPTH IN METERS		
Colour	**Material**	**Top**	-	**Bottom**
GREY	SANDSTONE	0.00		30.48

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 — 1527383 — MUNICIP 15002 — CON. CON — K6

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
[redacted]	[redacted]ucester	6	26

[redacted] Box 4208 stn. "E" Ottawa, Ontario K1S 5B2

DATE COMPLETED: DAY 16 MO 8 YR 93

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Sand	Stone		0	5
Gray	Hardpan	Boulders		5	28
Gray	Sandstone		Hard	28	100

31
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
58	1 ☐ FRESH 2 ☐ SALTY — 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
88	1 ☐ FRESH 2 ☐ SALTY — 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
NOT TESTED	1 ☐ FRESH 2 ☐ SALTY — 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY — 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY — 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☐ STEEL 2 ☒ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.188	0	39
5 15/16	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE 5 ☐ PLASTIC		39	100
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER ETC.)
37.5	0	Cement - Grouted

71 PUMPING TEST

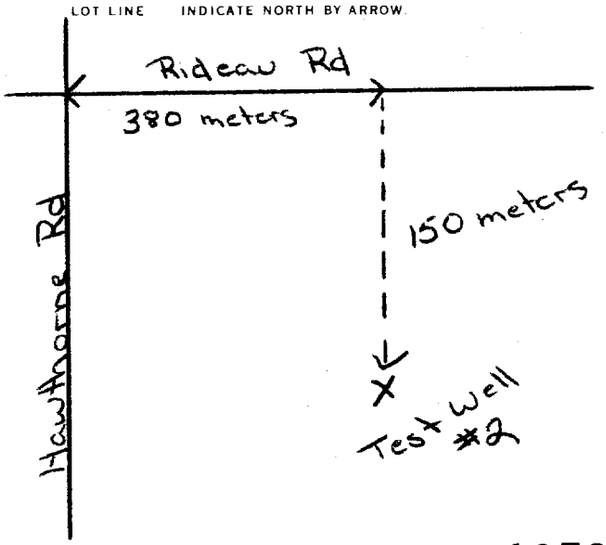
PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	20 GPM	1 HOURS ___ MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
7'6" FEET	14'6" FEET		13'11" FEET	14 FEET	14'4" FEET	14'6" FEET

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST	RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
GPM	FEET	1 ☐ CLEAR 2 ☒ CLOUDY	☐ SHALLOW ☒ DEEP	50 FEET	5 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS: 135946

FINAL STATUS OF WELL	1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED POOR QUALITY; 7 ☐ UNFINISHED; ☐ DEWATERING
WATER USE	1 ☒ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED
METHOD OF CONSTRUCTION	1 ☐ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☒ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING; ☐ DIGGING; ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd.
WELL CONTRACTOR'S LICENCE NUMBER: 1558
ADDRESS: Box 490 Stittsville, Ontario K2S 1A6
NAME OF WELL TECHNICIAN: S.Miller/T. Harrison
WELL TECHNICIAN'S LICENCE NUMBER: T0097/T2251
SIGNATURE OF TECHNICIAN/CONTRACTOR: [signature]
SUBMISSION DATE: DAY 18 MO 8 YR 93

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR 1558 | DATE RECEIVED SEP 21 1993
DATE OF INSPECTION | INSPECTOR
REMARKS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Appendix C
Certificates of Analysis – Water Supply

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Certificate of Analysis

GHD Limited (Kingston)

1225 Gardiners Rd.
Kingston, ON K7P 0G3
Attn: Scott Wallis

Client PO: 73522033 - Scott Wallis
Project: 11220832
Custody: 50734

Report Date: 25-Nov-2020
Order Date: 19-Nov-2020

Order #: 2047521

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2047521-01	TW2-1hr

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 25-Nov-2020

Client: GHD Limited (Kingston)

Order Date: 19-Nov-2020

Client PO: 73522033 - Scott Wallis

Project Description: 11220832

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	23-Nov-20	23-Nov-20
Ammonia, as N	EPA 351.2 - Auto Colour	20-Nov-20	20-Nov-20
Anions	EPA 300.1 - IC	20-Nov-20	20-Nov-20
Colour, apparent	SM2120 - Spectrophotometric	20-Nov-20	20-Nov-20
Conductivity	EPA 9050A- probe @25 °C	23-Nov-20	23-Nov-20
Dissolved Organic Carbon	MOE E3247B - Combustion IR, filtration	20-Nov-20	20-Nov-20
Metals, ICP-MS	EPA 200.8 - ICP-MS	20-Nov-20	20-Nov-20
pH	EPA 150.1 - pH probe @25 °C	23-Nov-20	23-Nov-20
Phenolics	EPA 420.2 - Auto Colour, 4AAP	25-Nov-20	25-Nov-20
Hardness	Hardness as CaCO3	20-Nov-20	20-Nov-20
Sulphide	SM 4500SE - Colourimetric	20-Nov-20	20-Nov-20
Tannin/Lignin	SM 5550B - Colourimetric	23-Nov-20	23-Nov-20
Total Dissolved Solids	SM 2540C - gravimetric, filtration	20-Nov-20	23-Nov-20
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	20-Nov-20	20-Nov-20
Turbidity	SM 2130B - Turbidity meter	20-Nov-20	20-Nov-20

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Scott Wallis

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 11220832

	Client ID:	TW2-1hr	-	-	-
	Sample Date:	19-Nov-20 12:00	-	-	-
	Sample ID:	2047521-01	-	-	-
	MDL/Units	Water	-	-	-
General Inorganics					
Alkalinity, total	5 mg/L	269	-	-	-
Ammonia as N	0.01 mg/L	0.25	-	-	-
Dissolved Organic Carbon	0.5 mg/L	2.4	-	-	-
Colour, apparent	2 ACU	67	-	-	-
Conductivity	5 uS/cm	1390	-	-	-
Hardness	0.824 mg/L	633	-	-	-
pH	0.1 pH Units	7.8	-	-	-
Phenolics	0.001 mg/L	<0.001	-	-	-
Total Dissolved Solids	10 mg/L	930	-	-	-
Sulphide	0.02 mg/L	<0.02	-	-	-
Tannin & Lignin	0.1 mg/L	<0.1	-	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.3	-	-	-
Turbidity	0.1 NTU	10.0	-	-	-
Anions					
Chloride	1 mg/L	91	-	-	-
Fluoride	0.1 mg/L	0.3	-	-	-
Nitrate as N	0.1 mg/L	<0.1	-	-	-
Nitrite as N	0.05 mg/L	<0.05	-	-	-
Sulphate	1 mg/L	378	-	-	-
Metals					
Calcium	100 ug/L	154000	-	-	-
Iron	100 ug/L	739	-	-	-
Magnesium	200 ug/L	60600	-	-	-
Manganese	5 ug/L	176	-	-	-
Potassium	100 ug/L	9550	-	-	-
Sodium	200 ug/L	69200	-	-	-

Certificate of Analysis

Report Date: 25-Nov-2020

Client: GHD Limited (Kingston)

Order Date: 19-Nov-2020

Client PO: 73522033 - Scott Wallis

Project Description: 11220832

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Colour, apparent	ND	2	ACU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Calcium	ND	100	ug/L						
Iron	ND	100	ug/L						
Magnesium	ND	200	ug/L						
Manganese	ND	5	ug/L						
Potassium	ND	100	ug/L						
Sodium	ND	200	ug/L						

Certificate of Analysis

Report Date: 25-Nov-2020

Client: GHD Limited (Kingston)

Order Date: 19-Nov-2020

Client PO: 73522033 - Scott Wallis

Project Description: 11220832

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	93.6	1	mg/L	91.4			2.3	10	
Fluoride	0.33	0.1	mg/L	0.33			1.5	10	
Nitrate as N	ND	0.1	mg/L	ND			NC	10	
Nitrite as N	ND	0.05	mg/L	ND			NC	10	
Sulphate	352	1	mg/L	378			7.1	10	
General Inorganics									
Alkalinity, total	302	5	mg/L	265			13.0	14	
Ammonia as N	9.63	0.20	mg/L	8.78			9.1	18	
Dissolved Organic Carbon	3.2	0.5	mg/L	3.9			20.4	37	
Colour, apparent	67	2	ACU	67			0.0	12	
Conductivity	904	5	uS/cm	921			1.9	5	
pH	7.9	0.1	pH Units	7.9			0.4	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	566	10	mg/L	570			0.7	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	5.22	0.2	mg/L	5.40			3.3	16	
Turbidity	8.6	0.1	NTU	8.1			5.9	10	
Metals									
Calcium	31700	100	ug/L	31000			2.2	20	
Iron	ND	100	ug/L	ND			NC	20	
Magnesium	8220	200	ug/L	8150			0.9	20	
Manganese	ND	5	ug/L	ND			NC	20	
Potassium	1820	100	ug/L	1810			0.4	20	
Sodium	15400	200	ug/L	15300			0.7	20	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	100	1	mg/L	91.4	85.8	77-123			
Fluoride	1.18	0.1	mg/L	0.33	85.2	79-121			
Nitrate as N	1.02	0.1	mg/L	ND	102	79-120			
Nitrite as N	0.952	0.05	mg/L	ND	95.2	84-117			
Sulphate	9.24	1	mg/L	ND	92.4	86-114			
General Inorganics									
Ammonia as N	0.390	0.01	mg/L	0.126	106	81-124			
Dissolved Organic Carbon	15.1	0.5	mg/L	3.9	112	60-133			
Phenolics	0.021	0.001	mg/L	ND	83.6	69-132			
Total Dissolved Solids	90.0	10	mg/L	ND	90.0	75-125			
Sulphide	0.46	0.02	mg/L	ND	93.0	79-115			
Tannin & Lignin	0.9	0.1	mg/L	ND	89.9	71-113			
Total Kjeldahl Nitrogen	1.99	0.1	mg/L	ND	99.4	81-126			
Metals									
Calcium	10600	100	ug/L	ND	106	80-120			
Iron	2130	100	ug/L	ND	84.5	80-120			
Magnesium	9570	200	ug/L	ND	95.7	80-120			
Manganese	48.4	5	ug/L	ND	94.6	80-120			
Potassium	10900	100	ug/L	1810	91.2	80-120			
Sodium	9510	200	ug/L	ND	95.1	80-120			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

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Certificate of Analysis

GHD Limited (Kingston)

1225 Gardiners Rd.
Kingston, ON K7P 0G3
Attn: Scott Wallis

Client PO: 73522033 - Robert Neck
Project: 11220832
Custody: 57054

Report Date: 18-Jan-2021
Order Date: 19-Nov-2020

Revised Report

Order #: 2047519

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2047519-01	TW2-END

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Robert Neck

Report Date: 18-Jan-2021

Order Date: 19-Nov-2020

Project Description: 11220832

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	23-Nov-20	23-Nov-20
Ammonia, as N	EPA 351.2 - Auto Colour	20-Nov-20	20-Nov-20
Anions	EPA 300.1 - IC	20-Nov-20	20-Nov-20
Colour, apparent	SM2120 - Spectrophotometric	20-Nov-20	20-Nov-20
Conductivity	EPA 9050A- probe @25 °C	23-Nov-20	23-Nov-20
Dissolved Organic Carbon	MOE E3247B - Combustion IR, filtration	20-Nov-20	20-Nov-20
Hardness	Hardness as CaCO3	20-Nov-20	20-Nov-20
Metals, ICP-MS	EPA 200.8 - ICP-MS	20-Nov-20	20-Nov-20
pH	EPA 150.1 - pH probe @25 °C	23-Nov-20	23-Nov-20
Phenolics	EPA 420.2 - Auto Colour, 4AAP	25-Nov-20	25-Nov-20
Sulphide	SM 4500SE - Colourimetric	20-Nov-20	20-Nov-20
Tannin/Lignin	SM 5550B - Colourimetric	23-Nov-20	23-Nov-20
Total Dissolved Solids	SM 2540C - gravimetric, filtration	20-Nov-20	23-Nov-20
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	20-Nov-20	20-Nov-20
Turbidity	SM 2130B - Turbidity meter	20-Nov-20	20-Nov-20

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Robert Neck

Report Date: 18-Jan-2021

Order Date: 19-Nov-2020

Project Description: 11220832

	Client ID:	TW2-END	-	-	-
	Sample Date:	19-Nov-20 15:30	-	-	-
	Sample ID:	2047519-01	-	-	-
	MDL/Units	Water	-	-	-
General Inorganics					
Alkalinity, total	5 mg/L	267	-	-	-
Hardness	mg/L	632	-	-	-
Ammonia as N	0.01 mg/L	0.25	-	-	-
Dissolved Organic Carbon	0.5 mg/L	2.2	-	-	-
Colour, apparent	2 ACU	68	-	-	-
Conductivity	5 uS/cm	1380	-	-	-
pH	0.1 pH Units	7.7	-	-	-
Phenolics	0.001 mg/L	<0.001	-	-	-
Total Dissolved Solids	10 mg/L	940	-	-	-
Sulphide	0.02 mg/L	<0.02	-	-	-
Tannin & Lignin	0.1 mg/L	<0.1	-	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.4	-	-	-
Turbidity	0.1 NTU	9.5	-	-	-
Anions					
Chloride	1 mg/L	94	-	-	-
Fluoride	0.1 mg/L	0.3	-	-	-
Nitrate as N	0.1 mg/L	<0.1	-	-	-
Nitrite as N	0.05 mg/L	<0.05	-	-	-
Sulphate	1 mg/L	389	-	-	-
Metals					
Calcium	100 ug/L	153000	-	-	-
Iron	100 ug/L	699	-	-	-
Magnesium	200 ug/L	60900	-	-	-
Manganese	5 ug/L	180	-	-	-
Potassium	100 ug/L	9770	-	-	-
Sodium	200 ug/L	68600	-	-	-

Certificate of Analysis

Report Date: 18-Jan-2021

Client: GHD Limited (Kingston)

Order Date: 19-Nov-2020

Client PO: 73522033 - Robert Neck

Project Description: 11220832

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Colour, apparent	ND	2	ACU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Calcium	ND	100	ug/L						
Iron	ND	100	ug/L						
Magnesium	ND	200	ug/L						
Manganese	ND	5	ug/L						
Potassium	ND	100	ug/L						
Sodium	ND	200	ug/L						

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	93.6	1	mg/L	91.4			2.3	10	
Fluoride	0.33	0.1	mg/L	0.33			1.5	10	
Nitrate as N	ND	0.1	mg/L	ND			NC	10	
Nitrite as N	ND	0.05	mg/L	ND			NC	10	
Sulphate	352	1	mg/L	378			7.1	10	
General Inorganics									
Alkalinity, total	302	5	mg/L	265			13.0	14	
Ammonia as N	9.63	0.20	mg/L	8.78			9.1	18	
Dissolved Organic Carbon	3.2	0.5	mg/L	3.9			20.4	37	
Colour, apparent	67	2	ACU	67			0.0	12	
Conductivity	904	5	uS/cm	921			1.9	5	
pH	7.9	0.1	pH Units	7.9			0.4	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	566	10	mg/L	570			0.7	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	5.22	0.2	mg/L	5.40			3.3	16	
Turbidity	8.6	0.1	NTU	8.1			5.9	10	
Metals									
Calcium	31700	100	ug/L	31000			2.2	20	
Iron	ND	100	ug/L	ND			NC	20	
Magnesium	8220	200	ug/L	8150			0.9	20	
Manganese	ND	5	ug/L	ND			NC	20	
Potassium	1820	100	ug/L	1810			0.4	20	
Sodium	15400	200	ug/L	15300			0.7	20	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	100	1	mg/L	91.4	85.8	77-123			
Fluoride	1.18	0.1	mg/L	0.33	85.2	79-121			
Nitrate as N	1.02	0.1	mg/L	ND	102	79-120			
Nitrite as N	0.952	0.05	mg/L	ND	95.2	84-117			
Sulphate	9.24	1	mg/L	ND	92.4	86-114			
General Inorganics									
Ammonia as N	0.390	0.01	mg/L	0.126	106	81-124			
Dissolved Organic Carbon	15.1	0.5	mg/L	3.9	112	60-133			
Phenolics	0.021	0.001	mg/L	ND	83.6	69-132			
Total Dissolved Solids	90.0	10	mg/L	ND	90.0	75-125			
Sulphide	0.46	0.02	mg/L	ND	93.0	79-115			
Tannin & Lignin	0.9	0.1	mg/L	ND	89.9	71-113			
Total Kjeldahl Nitrogen	1.99	0.1	mg/L	ND	99.4	81-126			
Metals									
Calcium	10600	100	ug/L	ND	106	80-120			
Iron	2130	100	ug/L	ND	84.5	80-120			
Magnesium	9570	200	ug/L	ND	95.7	80-120			
Manganese	48.4	5	ug/L	ND	94.6	80-120			
Potassium	10900	100	ug/L	1810	91.2	80-120			
Sodium	9510	200	ug/L	ND	95.1	80-120			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

Revision 1 - Hardness is now included in this report.

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

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Certificate of Analysis

GHD Limited (Kingston)

1225 Gardiners Rd.
Kingston, ON K7P 0G3
Attn: Scott Wallis

Client PO: 73522033 - Scott Wallis
Project: 11220832
Custody: 57054

Report Date: 25-Nov-2020
Order Date: 19-Nov-2020

Order #: 2047519

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2047519-01	TW2-END

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Scott Wallis

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 11220832

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
E. coli	MOE E3407	20-Nov-20	20-Nov-20
Fecal Coliform	SM 9222D	20-Nov-20	20-Nov-20
Heterotrophic Plate Count	SM 9215C	21-Nov-20	21-Nov-20
Total Coliform	MOE E3407	20-Nov-20	20-Nov-20

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Scott Wallis

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 11220832

	Client ID:	TW2-END	-	-	-
	Sample Date:	19-Nov-20 15:30	-	-	-
	Sample ID:	2047519-01	-	-	-
	MDL/Units	Water	-	-	-
Microbiological Parameters					
E. coli	1 CFU/100 mL	<10 [1]	-	-	-
Fecal Coliforms	1 CFU/100 mL	<10 [1]	-	-	-
Total Coliforms	1 CFU/100 mL	<10 [1]	-	-	-
Heterotrophic Plate Count	10 CFU/mL	<10	-	-	-

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Scott Wallis

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 11220832

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL						
Fecal Coliforms	ND	1	CFU/100 mL						
Total Coliforms	ND	1	CFU/100 mL						
Heterotrophic Plate Count	ND	10	CFU/mL						

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Scott Wallis

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 11220832

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Microbiological Parameters									
E. coli	ND	10	CFU/100 mL	ND			NC	30	BAC13
Fecal Coliforms	ND	10	CFU/100 mL	ND			NC	30	BAC13
Total Coliforms	ND	10	CFU/100 mL	ND			NC	30	BAC13
Heterotrophic Plate Count	ND	10	CFU/mL	ND			NC	30	

Qualifier Notes:

Sample Qualifiers :

1 : Bacteria reporting limits are raised due to dilutions based on expected elevated concentrations based on source of water sample.

QC Qualifiers :

BAC13 : Bacteria reporting limits are raised due to dilutions based on expected elevated concentrations based on source of water sample.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Project : 11220832-01 Ottawa

15-December-2020

GHD Limited - 735
Attn : Jason Geraldi

347 Pido Rd., Unit #29
Peterborough, ON
K9J 6Z8, Canada

Phone: 705-749-3317
Fax:705-749-9248

Date Rec. : 10 December 2020
LR Report: **CA15152-DEC20**
Reference: PO:73522265,
11220832-01 Jason Geraldi

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: MAC	6: TW-2
Sample Date & Time						10-Dec-20
Temp Upon Receipt [°C]	---	---	---	---	---	9.0
Total Coliform [cfu/100mL]	10-Dec-20	16:05	14-Dec-20	11:02		0
Ecoli [cfu/100mL]	10-Dec-20	16:05	14-Dec-20	11:02		0
Fecal Coliform [cfu/100mL]	10-Dec-20	16:05	14-Dec-20	11:02		0

MAC - Maximum Acceptable Concentration
AO/OG - Aesthetic Objective / Operational Guideline
NR - Not reportable under applicable drinking water regulations as per client.

Temperature of Sample upon Receipt: 9 degrees C
Cooling Agent Present:Yes
Custody Seal Present:YEs

Chain of Custody Number:011447

Jill Campbell

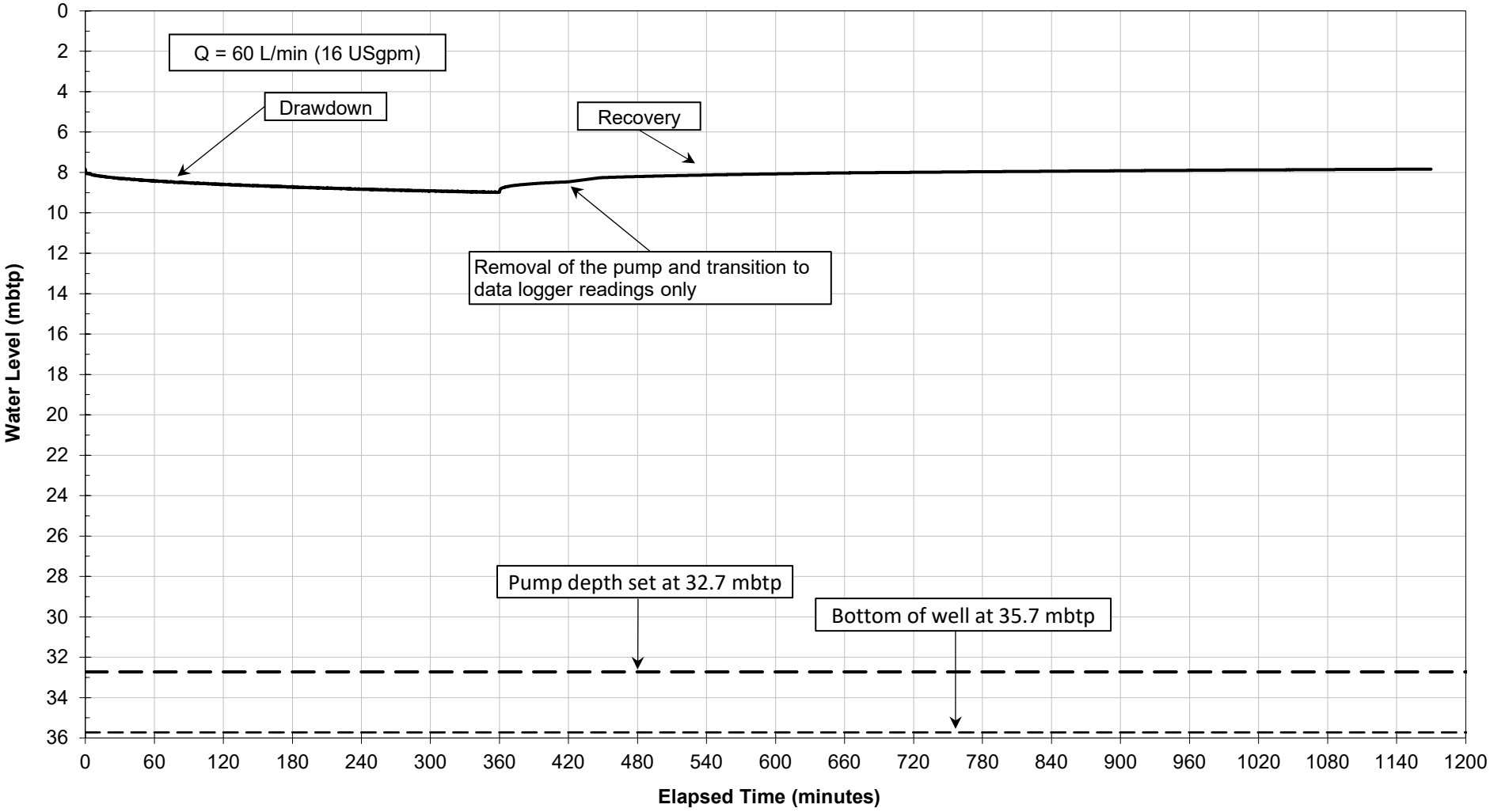
Jill Campbell, B.Sc.,GISAS
Project Specialist, Environment, Health & Safety

OnLine LIMS

0002350752

Appendix D
Aquifer Performance Testing Data

PUMP HISTORY CURVE
TW-2: November 19-20, 2020



PUMP HISTORY CURVE

Drilled Test Well (TW-2)
MECP Well ID: 1527383
Static Level = 7.83 mbtp (6.90 mbgs)

Note: m = metres; mbtp = metres below top of pipe; mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau & Somme St, Ottawa, ON

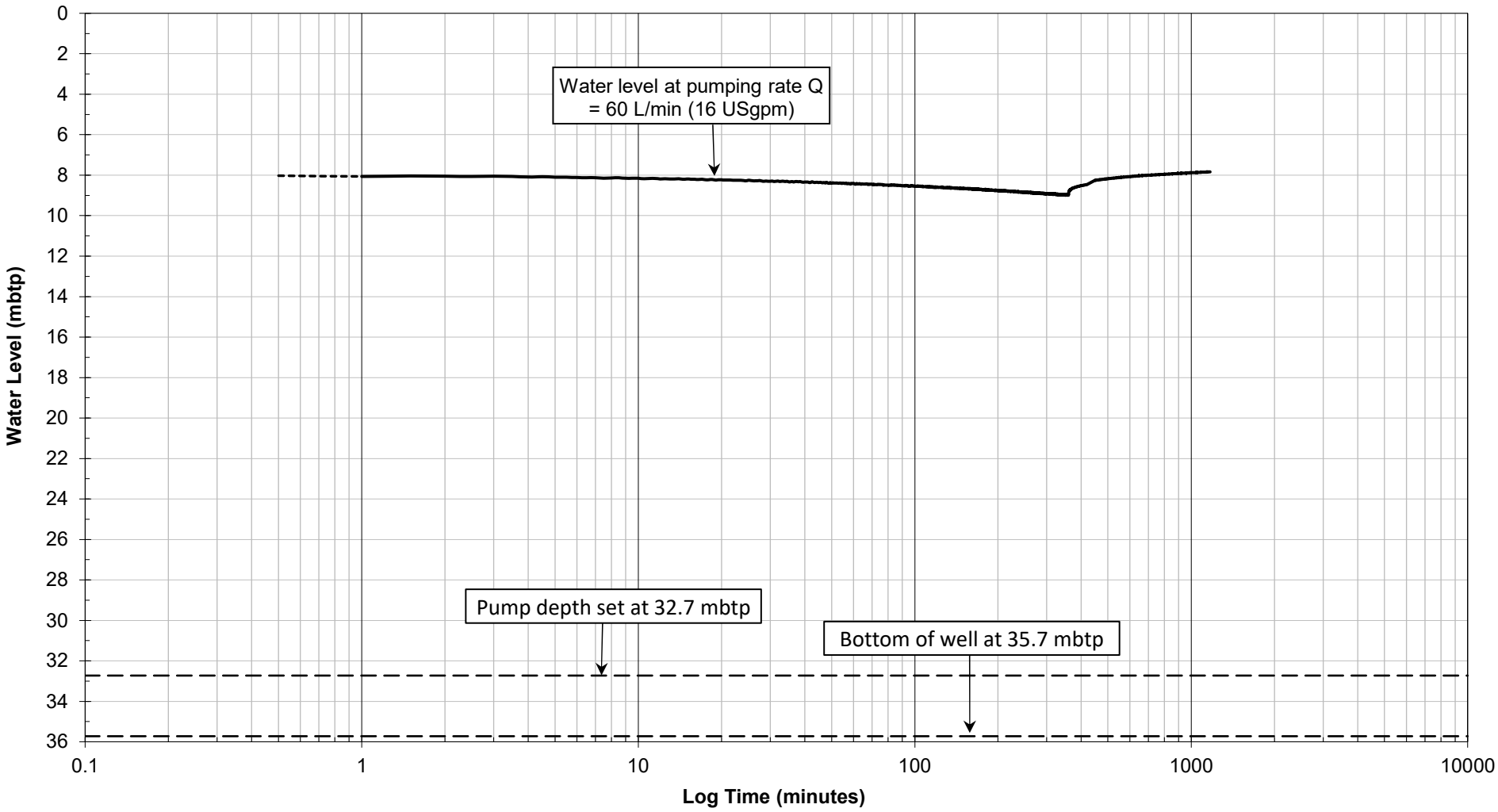
JOB NUMBER: 11220832-01

DRAWING NUMBER: D-1

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
(705) 749-3317 www.ghd.com

CONSTANT RATE TEST: WATER LEVEL vs LOG TIME
TW-2: November 19-20, 2020



CONSTANT RATE

Drilled Test Well (TW-2)
MECP Well ID: 1527383
Static Level = 7.83 mbtp (6.90 mbgs)

Note: m = metres; mbtp = metres below top of pipe; mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau & Somme St, Ottawa, ON

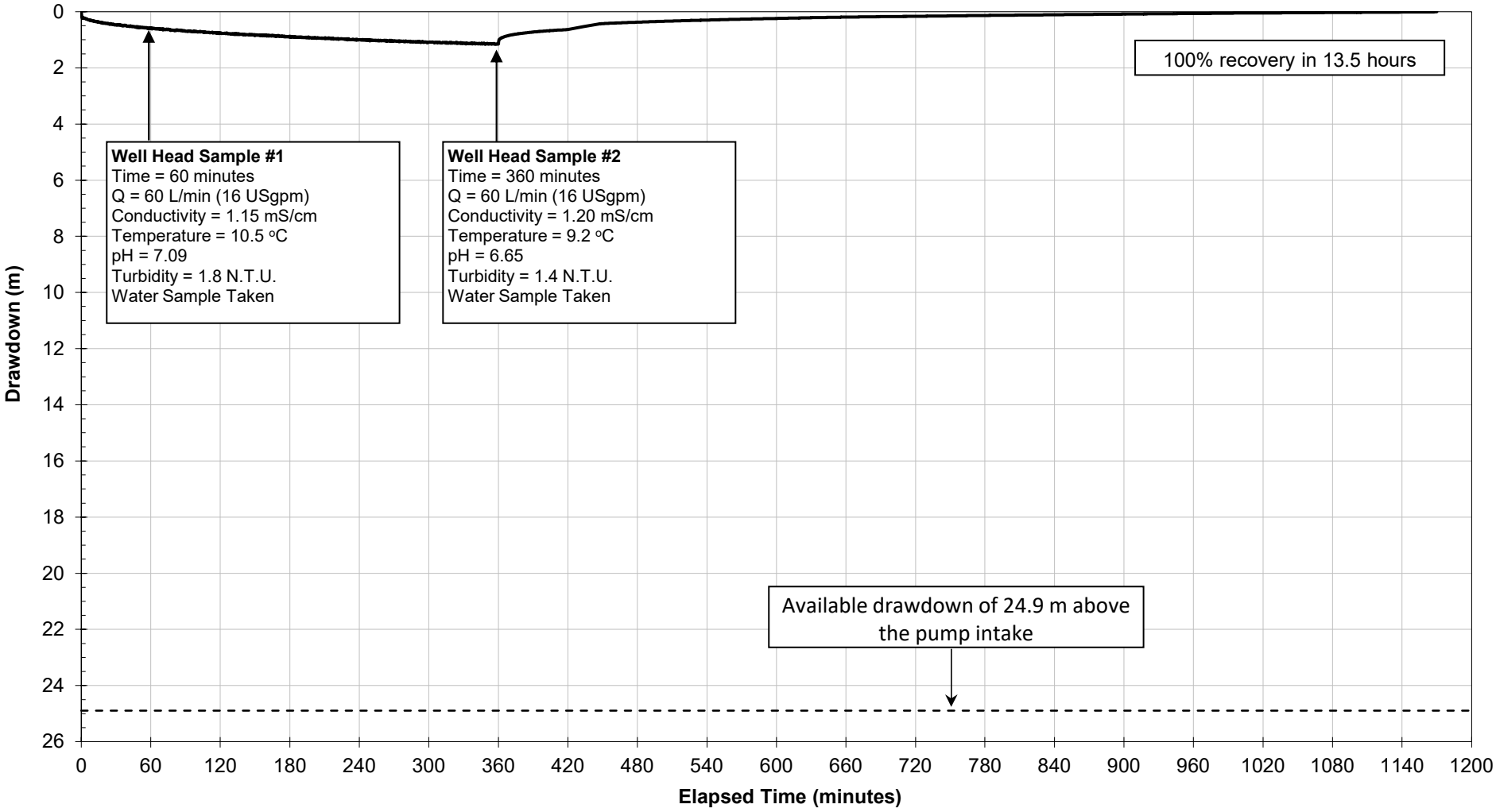
JOB NUMBER: 11220832-01

DRAWING NUMBER: D-2

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
(705) 749-3317 www.ghd.com

CONSTANT RATE DRAWDOWN, RECOVERY AND TESTING DETAILS
TW-2: November 19-20, 2020



CONSTANT RATE DRAWDOWN

Drilled Test Well (TW-2)
MECP Well ID: 1527383
Static Level = 7.83 mbtp (6.90 mbgs)

Note: m = metres; mbtp = metres below top of pipe; mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau & Somme St, Ottawa, ON

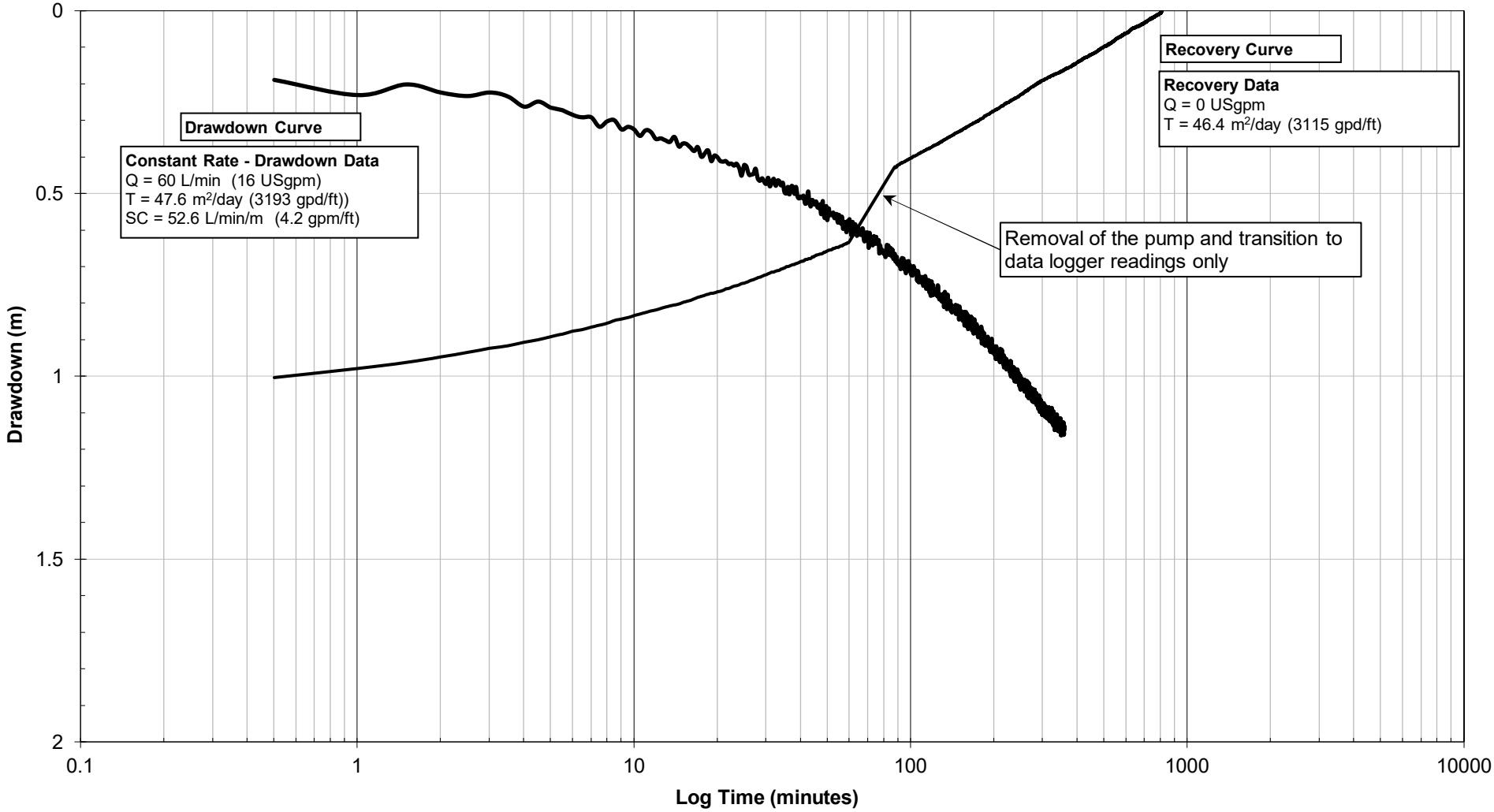
JOB NUMBER: 11220832-01

DRAWING NUMBER: D-3

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
(705) 749-3317 www.ghd.com

CONSTANT RATE: DRAWDOWN and RECOVERY VS LOG TIME
TW-2: November 19-20, 2020



TRANSMISSIVITY

Drilled Test Well (TW-2)
MECP Well ID: 1527383
Static Level = 7.83 mbtp (6.90 mbgs)

Note: m = metres; mbtp = metres below top of pipe; mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau & Somme St., Ottawa ON

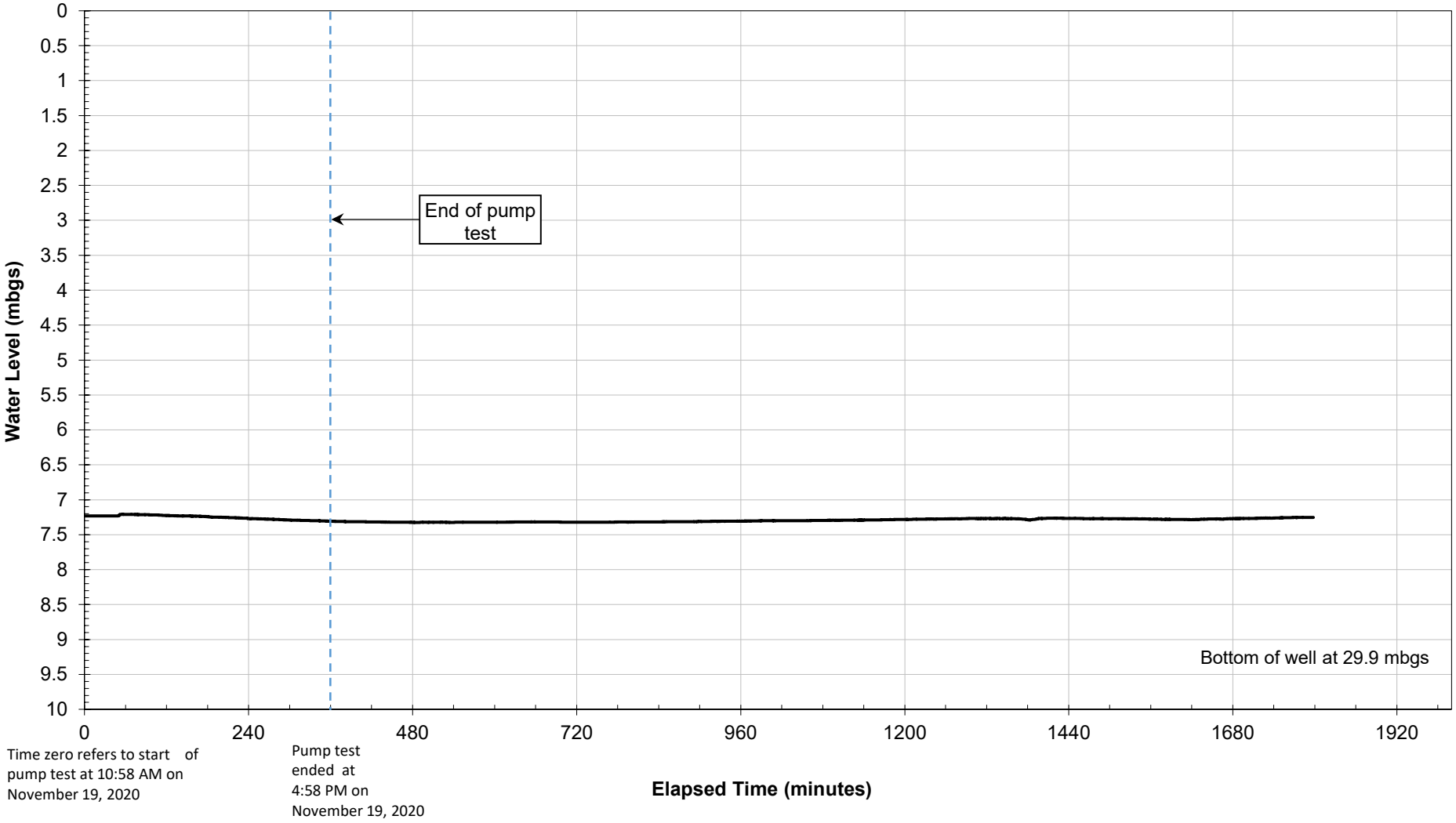
JOB NUMBER: 11220832-01

DRAWING NUMBER: B-4

GHD
347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
(705) 749-3317 www.ghd.com

Appendix E
Observation Well Monitoring Data

TW-5
OBSERVATION WELL
November 19 - 20, 2020



OBSERVATION WELL

Drilled Observation Well - TW-5
MECP Well Tag No. A295342
Static Level = 7.2 mbgs

Note: mbgs = metres below ground surface

DATE: JANUARY 2021

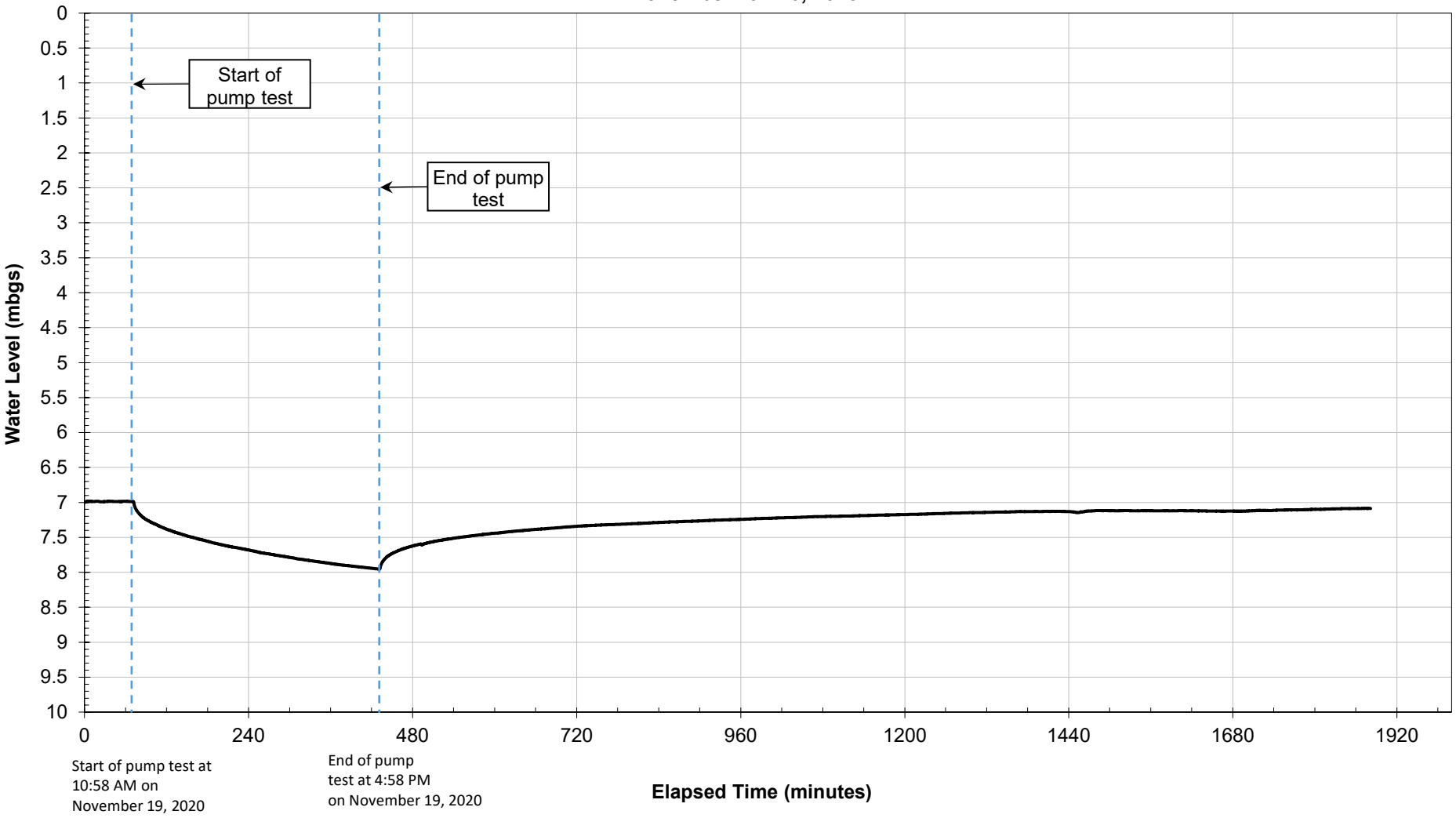
LOCATION: Rideau Rd. & Somme St., Ottawa, ON

PROJECT NUMBER: 11220832-01

DRAWING NUMBER: E-1

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
www.ghd.com

A305146
OBSERVATION WELL
November 19 - 20, 2020



OBSERVATION WELL

Drilled Well
MECP Well Tag No. A305146
Static Level = 7.0 mbgs

Note: mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau Rd. & Somme St., Ottawa, ON

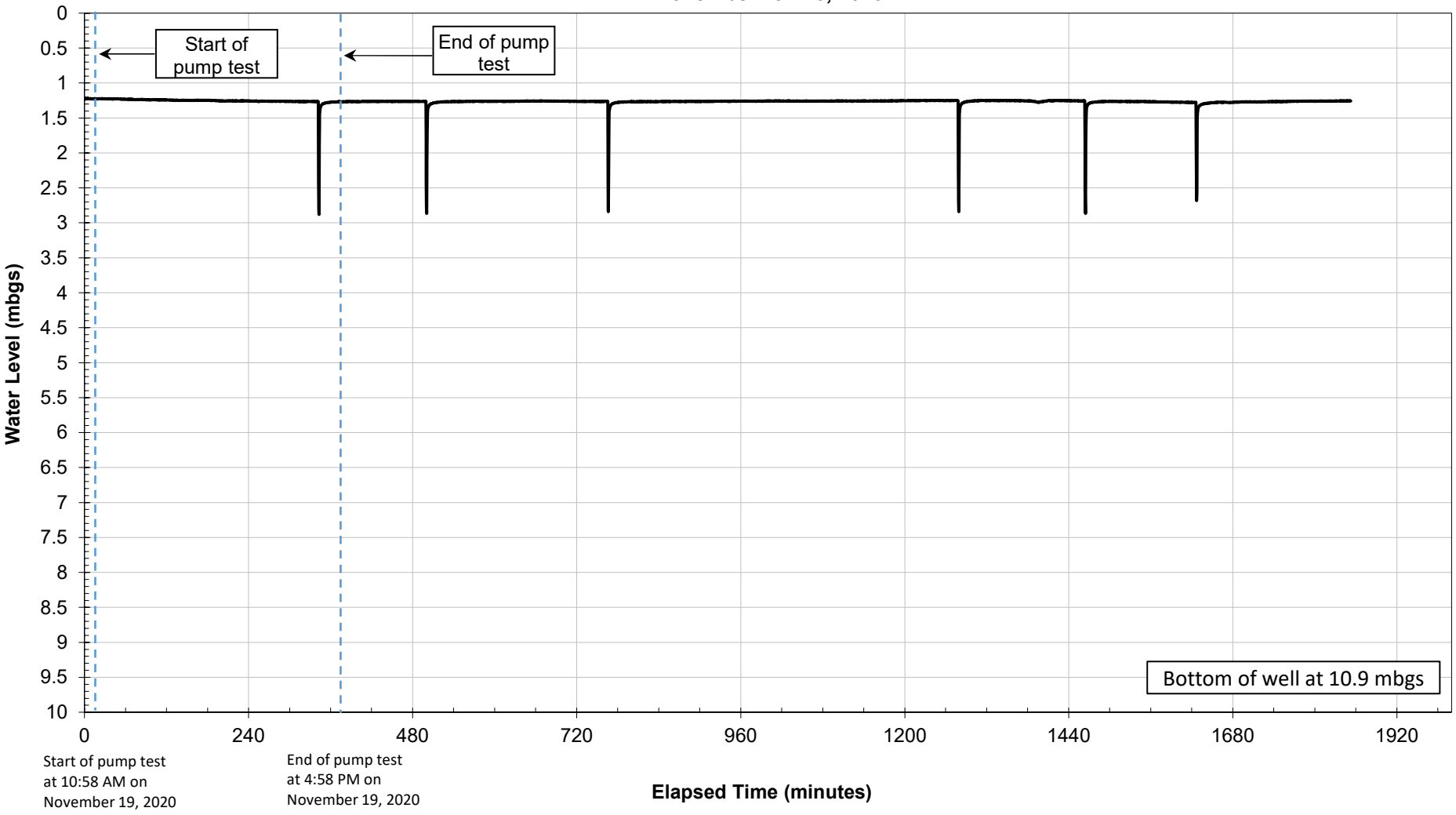
PROJECT NUMBER: 11220832-01

DRAWING NUMBER: E-2

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
www.ghd.com

4885 HAWTHORNE ROAD
DOMESTIC WELL
November 19 - 20, 2020



DOMESTIC WELL

Drilled Domestic Well
4885 Hawthorne Road, Ottawa, ON
Static Level = 1.2 mbgs

Note: mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau Rd. & Somme St., Ottawa, ON

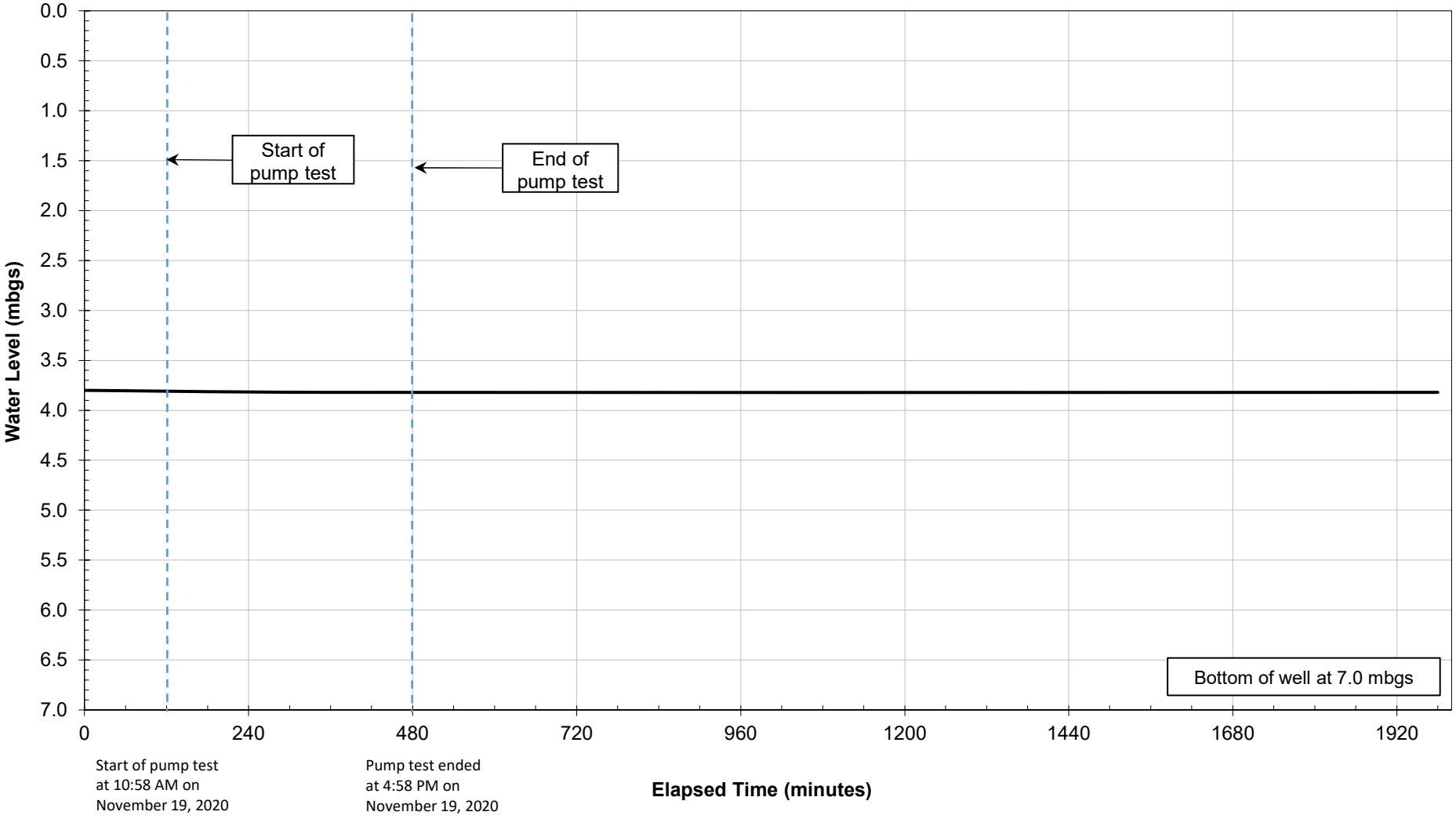
PROJECT NUMBER: 11220832-01

DRAWING NUMBER: E-3

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
www.ghd.com

MW1-20
OBSERVATION WELL
November 19 - 20, 2020



OBSERVATION WELL

Observation Well - MW1-20
MECP Well Tag No. A290162
Static Level = 3.8 mbgs

Note: mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau Rd. & Somme St., Ottawa, ON

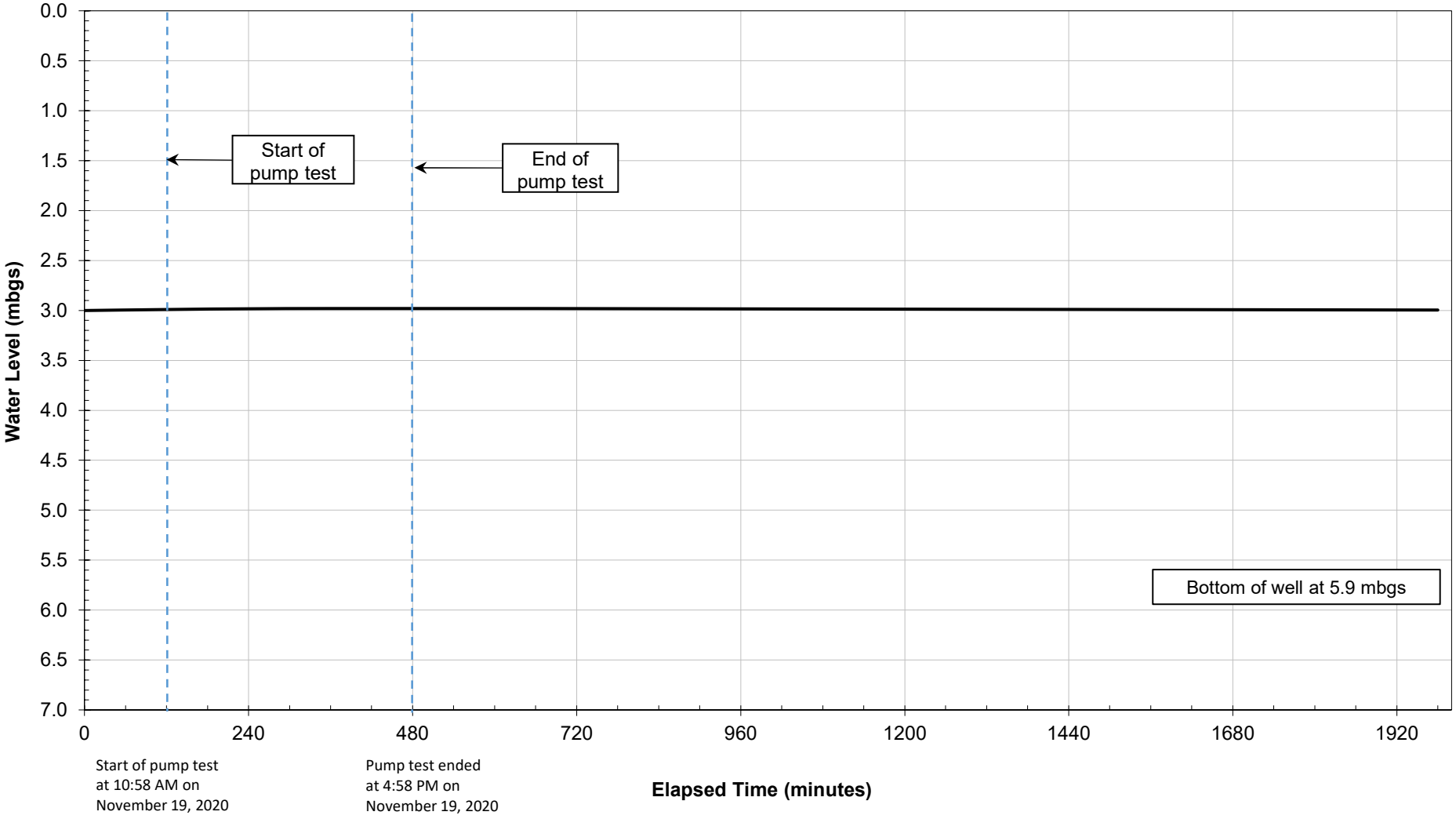
PROJECT NUMBER: 11220832-01

DRAWING NUMBER: E-4

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
www.ghd.com

MW7-08
OBSERVATION WELL
November 19 - 20, 2020



OBSERVATION WELL

Observation Well - MW7-08
Static Level = 3.0 mbgs

Note: mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau Rd. & Somme St., Ottawa, ON

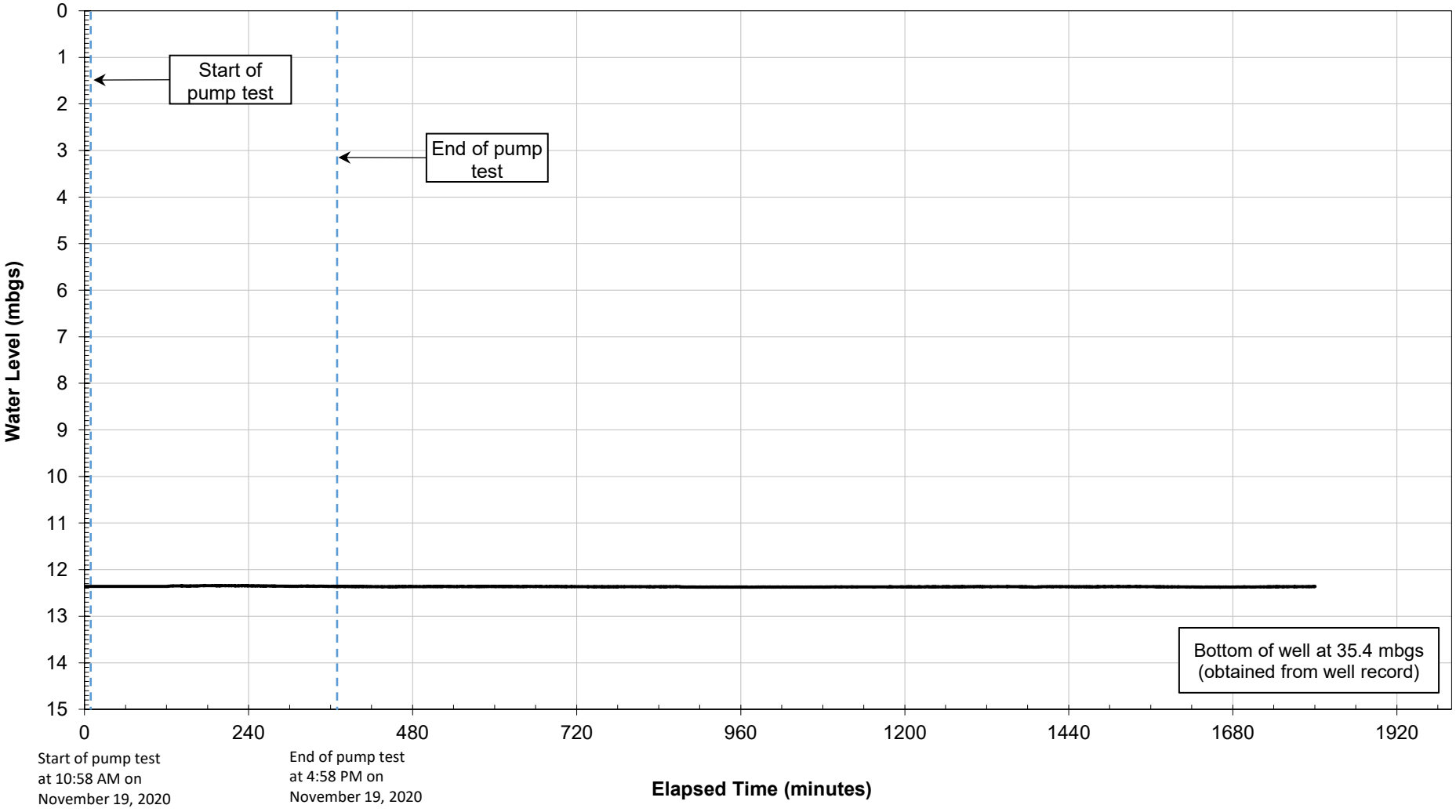
PROJECT NUMBER: 11220832-01

DRAWING NUMBER: E-5

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
www.ghd.com

TOMLINSON QUARRY - WELL 1514733
OBSERVATION WELL
November 19 - 20, 2020



OBSERVATION WELL

Drilled Well - Tomlinson Quarry
MECP Well ID 1514733
Static Level = 12.4 mbgs

Note: mbgs = metres below ground surface

DATE: JANUARY 2021

LOCATION: Rideau Rd. & Somme St., Ottawa, ON

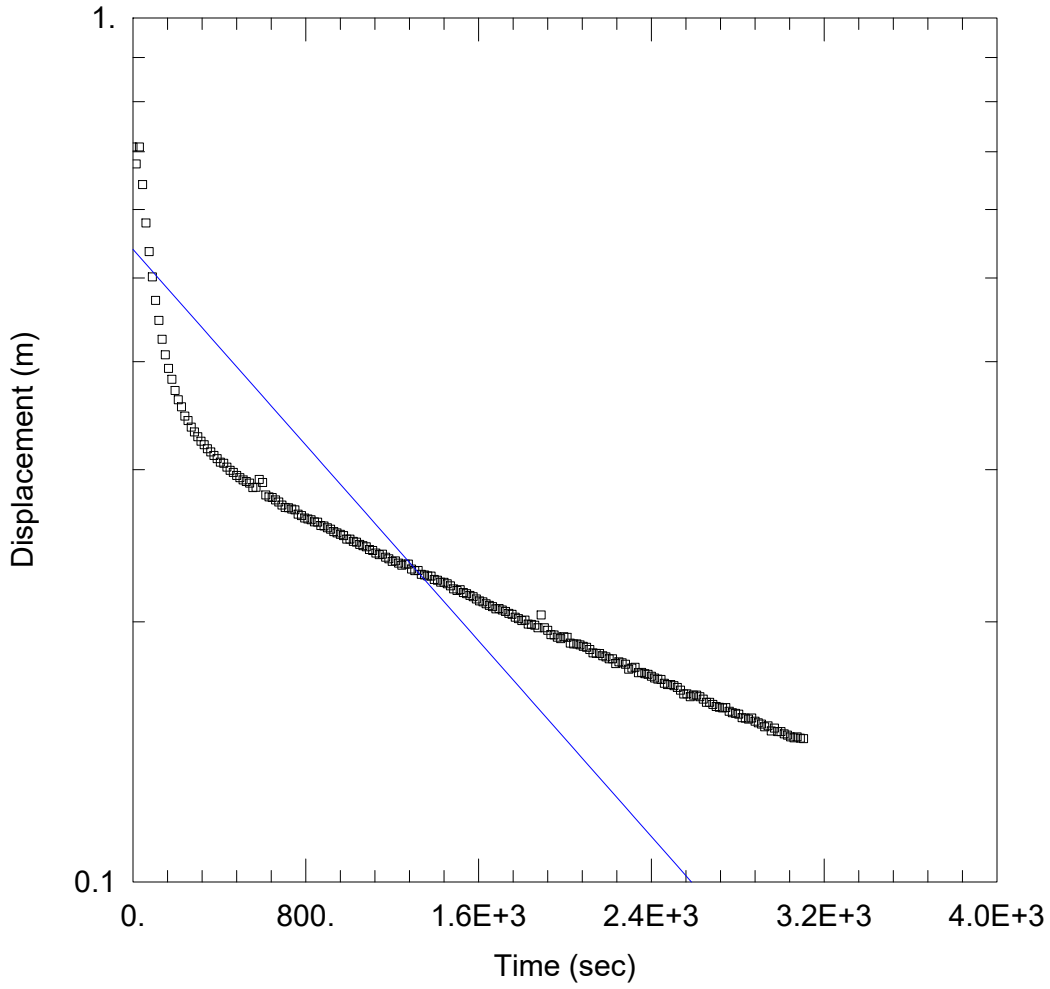
PROJECT NUMBER: 11220832-01

DRAWING NUMBER: E-6

GHD

347 PIDO ROAD, UNIT 29
PETERBOROUGH, ON K9J 6X7
www.ghd.com

Appendix F
Single Well Response Testing



MW1-20 FALLING HEAD TEST

Data Set: G:\662\11220832\Tech\Field\slug test\BH1-20 Falling Head Test.aqt
Date: 12/08/20 Time: 14:41:47

PROJECT INFORMATION

Company: GHD
Client: Consolidated Fastrate (Ottawa)
Project: 11220832-01
Location: Rideau St and Somme St, Ottawa
Test Well: BH1-20
Test Date: November 23, 2020

AQUIFER DATA

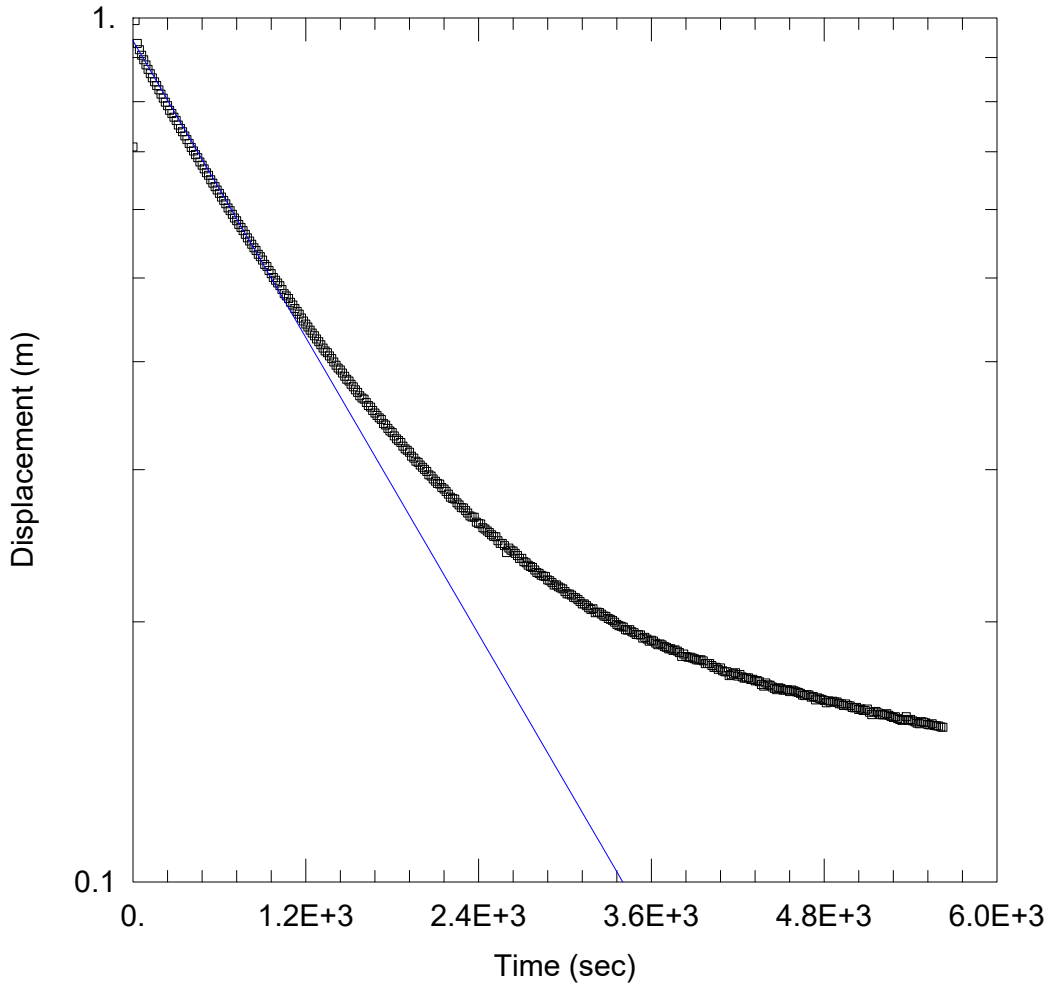
Saturated Thickness: 3.15 m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH1-20)

Initial Displacement: 0.7091 m
Total Well Penetration Depth: 6.99 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.15 m
Screen Length: 1.52 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 5.632E-5 cm/sec
y0 = 0.5397 m



MW1-20 RISING HEAD TEST

Data Set: G:\662\11220832\Tech\Field\slug test\BH1-20 Rising Head Test.aqt
Date: 12/08/20 Time: 14:42:19

PROJECT INFORMATION

Company: GHD
Client: Consolidated Fastrate (Ottawa)
Project: 11220832-01
Location: Rideau St and Somme St, Ottawa
Test Well: BH1-20
Test Date: November 23, 2020

AQUIFER DATA

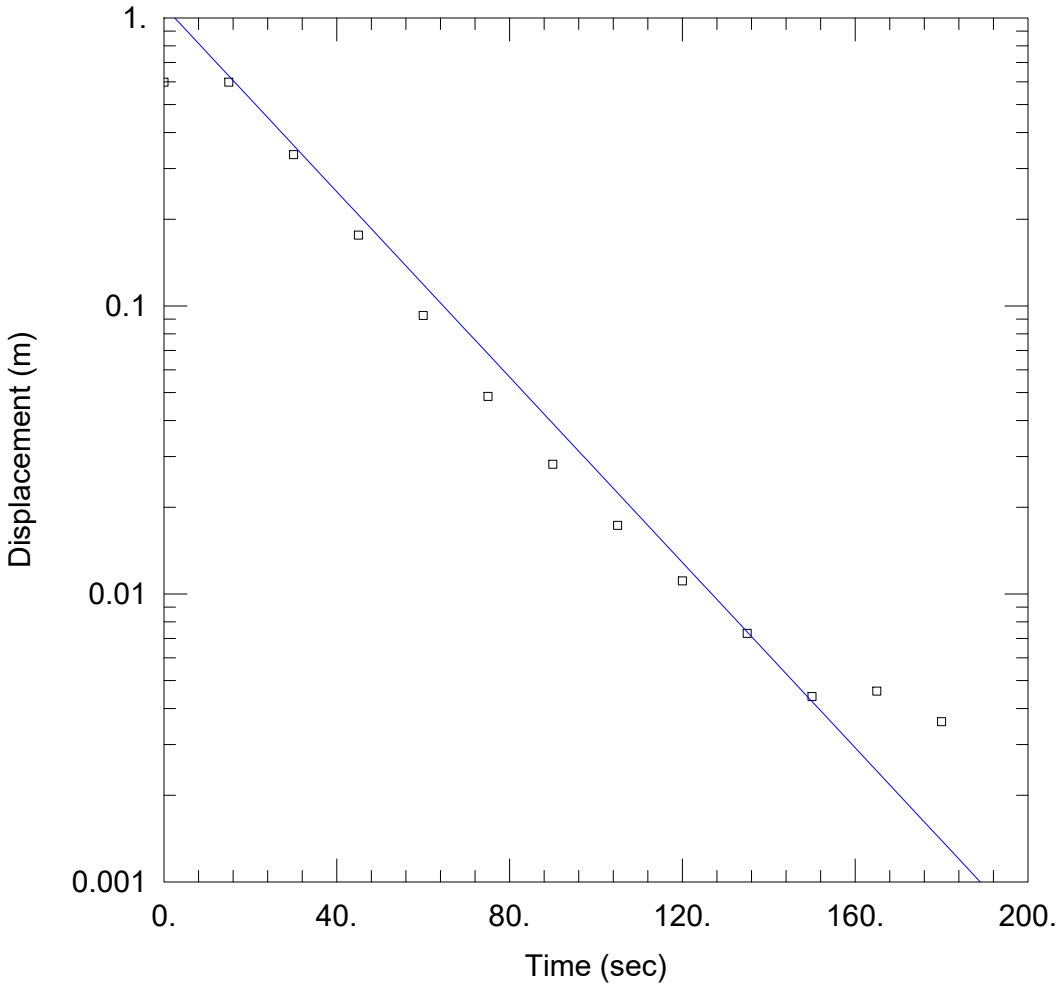
Saturated Thickness: 3.15 m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH1-20)

Initial Displacement: 0.7091 m
Total Well Penetration Depth: 6.99 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.15 m
Screen Length: 1.52 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 5.694E-5 cm/sec
y0 = 0.941 m



MW7-08 FALLING HEAD TEST

Data Set: G:\662\11220832\Tech\Field\slug test\BH7-08 Falling Head Test.aqt
Date: 12/08/20 Time: 14:56:02

PROJECT INFORMATION

Company: GHD
Client: Consolidated Fastrate (Ottawa)
Project: 11220832-01
Location: Rideau St and Somme St, Ottawa
Test Well: BH7-08
Test Date: November 23, 2020

AQUIFER DATA

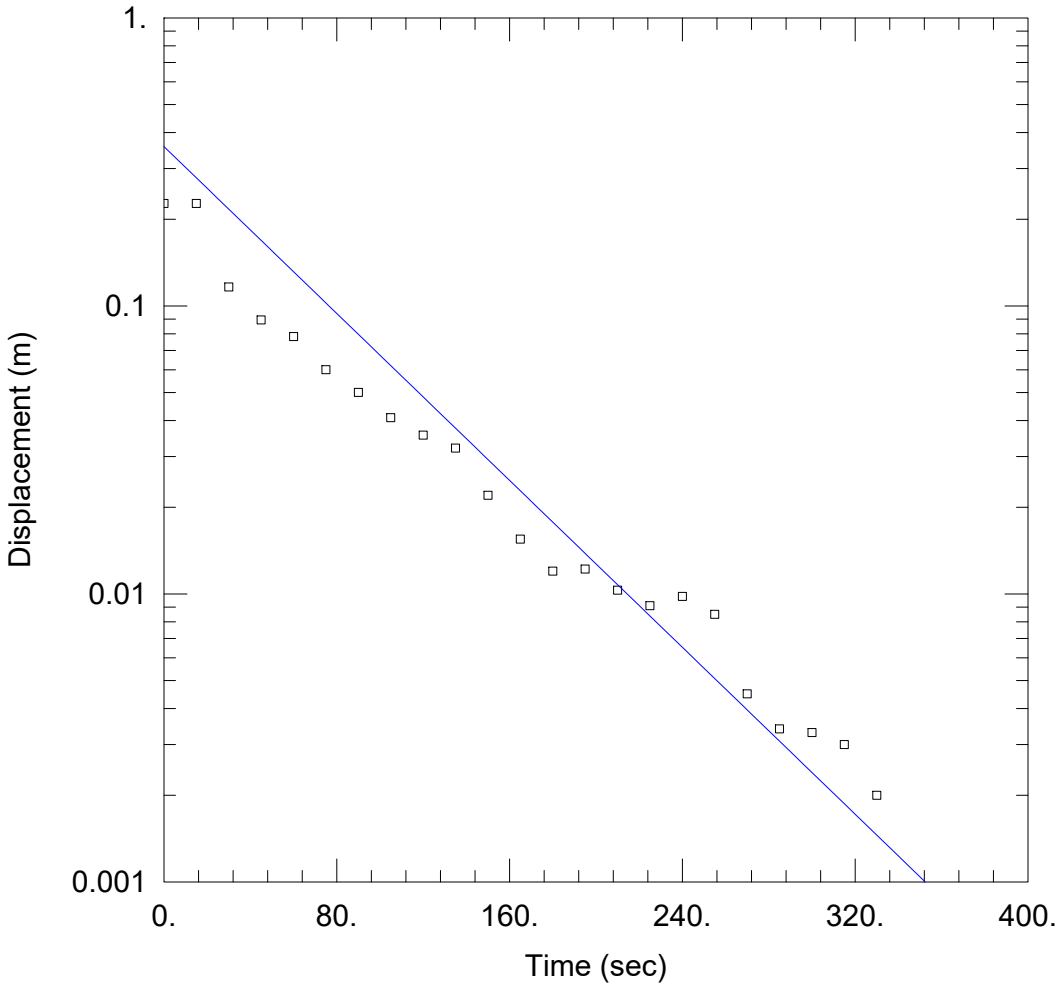
Saturated Thickness: 3.09 m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH7-08)

Initial Displacement: 0.5981 m
Total Well Penetration Depth: 6.1 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.09 m
Screen Length: 1.52 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.003138 cm/sec
y0 = 1.097 m



MW7-08 RISING HEAD TEST

Data Set: G:\662\11220832\Tech\Field\slug test\BH7-08 Rising Head Test.aqt
Date: 12/08/20 Time: 15:03:09

PROJECT INFORMATION

Company: GHD
Client: Consolidated Fastrate (Ottawa)
Project: 11220832-01
Location: Rideau St and Somme St, Ottawa
Test Well: BH7-08
Test Date: November 23, 2020

AQUIFER DATA

Saturated Thickness: 3.09 m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH7-08)

Initial Displacement: 0.2268 m
Total Well Penetration Depth: 6.1 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.09 m
Screen Length: 1.52 m
Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001413 cm/sec
y0 = 0.3575 m

Appendix G
Certificates of Analysis – Construction Dewatering

Appendix G: Summary of Groundwater Sampling for Construction Dewatering

Storm Sewer
ByLaw 2003-514
Schedule A Table 2

Parameter	Units	Limit		MW7-08
Biochemical Oxygen Demand	mg/L	25		<6
Cyanide (total)	mg/L	0.02		<0.01
Phenolics (4AAP)	mg/L	0.008		<0.001
Phosphorous (total)	mg/L	0.4		**1.83**
Suspended Solids (total)	mg/L	15		**1030**
pH		6-9		7.4
Arsenic (total)	mg/L	0.02		**0.03**
Cadmium (total)	mg/L	0.008		<0.001
Chromium (total)	mg/L	0.08		0.08
Copper (total)	mg/L	0.04		**0.191**
Lead (total)	mg/L	0.12		0.066
Manganese (total)	mg/L	0.05		**9.34**
Mercury (total)	mg/L	0.0004		<0.0001
Nickel (total)	mg/L	0.08		**0.099**
Selenium (total)	mg/L	0.02		0.007
Silver (total)	mg/L	0.12		<0.001
Zinc (total)	mg/L	0.04		**0.33**
Benzene	mg/L	0.002		<0.0005
Chloroform	mg/L	0.002		<0.0005
1,2.Dichlorobenzene / o	mg/L	0.0056		<0.0005
1,4-Dichlorobenzene / p	mg/L	0.0068		<0.0005
cis-1,2-dichloroethylene	mg/L	0.0056		<0.0005
trans-1,2-dichloroethylene	mg/L	0.0056		<0.0005
Ethylbenzene	mg/L	0.002		<0.0005
Methylene Chloride	mg/L	0.0052		<0.005
1,1,2,2-Tetrachloroethane	mg/L	0.017		<0.0005
Tetrachloroethylene	mg/L	0.0044		<0.0005
Toluene	mg/L	0.002		<0.0005
Trichloroethylene	mg/L	0.0076		<0.0005
Xylene (total)	mg/L	0.0044		<0.0005

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300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

GHD Limited (Kingston)

1225 Gardiners Rd.
Kingston, ON K7P 0G3
Attn: Scott Wallis

Client PO: 73522033 - Scott Wallis
Project: 11220832
Custody: 55735

Report Date: 25-Nov-2020
Order Date: 19-Nov-2020

Order #: 2047520

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2047520-01	MW7-08

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 25-Nov-2020

Client: GHD Limited (Kingston)

Order Date: 19-Nov-2020

Client PO: 73522033 - Scott Wallis

Project Description: 11220832

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
CBOD	SM 5210B - DO Probe	20-Nov-20	20-Nov-20
Cyanide, total	MOE E3015 - Auto Colour	20-Nov-20	20-Nov-20
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	20-Nov-20	20-Nov-20
Metals, ICP-MS	EPA 200.8 - ICP-MS	20-Nov-20	20-Nov-20
Ottawa - Storm: VOCs	EPA 624 - P&T GC-MS	20-Nov-20	22-Nov-20
pH	EPA 150.1 - pH probe @25 °C	23-Nov-20	23-Nov-20
Phenolics	EPA 420.2 - Auto Colour, 4AAP	25-Nov-20	25-Nov-20
Phosphorus, total, water	EPA 365.4 - Auto Colour, digestion	20-Nov-20	20-Nov-20
Total Suspended Solids	SM 2540D - Gravimetric	20-Nov-20	20-Nov-20

Certificate of Analysis

Client: GHD Limited (Kingston)

Client PO: 73522033 - Scott Wallis

Report Date: 25-Nov-2020

Order Date: 19-Nov-2020

Project Description: 11220832

	Client ID:	MW7-08	-	-	-
	Sample Date:	19-Nov-20 10:00	-	-	-
	Sample ID:	2047520-01	-	-	-
	MDL/Units	Water	-	-	-
General Inorganics					
CBOD	2 mg/L	<6 [1]	-	-	-
Cyanide, total	0.01 mg/L	<0.01	-	-	-
pH	0.1 pH Units	7.4	-	-	-
Phenolics	0.001 mg/L	<0.001	-	-	-
Phosphorus, total	0.01 mg/L	1.83	-	-	-
Total Suspended Solids	2 mg/L	1030	-	-	-
Metals - Total					
Arsenic	0.01 mg/L	0.03	-	-	-
Cadmium	0.001 mg/L	<0.001	-	-	-
Chromium	0.05 mg/L	0.08	-	-	-
Copper	0.005 mg/L	0.191	-	-	-
Lead	0.001 mg/L	0.066	-	-	-
Manganese	0.05 mg/L	9.34	-	-	-
Mercury	0.0001 mg/L	<0.0001	-	-	-
Nickel	0.005 mg/L	0.099	-	-	-
Selenium	0.005 mg/L	0.007	-	-	-
Silver	0.001 mg/L	<0.001	-	-	-
Zinc	0.02 mg/L	0.33	-	-	-
Volatiles					
Benzene	0.0005 mg/L	<0.0005	-	-	-
Chloroform	0.0005 mg/L	<0.0005	-	-	-
1,2-Dichlorobenzene	0.0005 mg/L	<0.0005	-	-	-
1,4-Dichlorobenzene	0.0005 mg/L	<0.0005	-	-	-
cis-1,2-Dichloroethylene	0.0005 mg/L	<0.0005	-	-	-
trans-1,3-Dichloropropylene	0.0005 mg/L	<0.0005	-	-	-
Ethylbenzene	0.0005 mg/L	<0.0005	-	-	-
Methylene Chloride	0.005 mg/L	<0.005	-	-	-
1,1,2,2-Tetrachloroethane	0.0005 mg/L	<0.0005	-	-	-
Tetrachloroethylene	0.0005 mg/L	<0.0005	-	-	-
Toluene	0.0005 mg/L	<0.0005	-	-	-
Trichloroethylene	0.0005 mg/L	<0.0005	-	-	-
Xylenes, total	0.0005 mg/L	<0.0005	-	-	-
4-Bromofluorobenzene	Surrogate	93.1%	-	-	-
Dibromofluoromethane	Surrogate	119%	-	-	-
Toluene-d8	Surrogate	127%	-	-	-

Certificate of Analysis

Report Date: 25-Nov-2020

Client: GHD Limited (Kingston)

Order Date: 19-Nov-2020

Client PO: 73522033 - Scott Wallis

Project Description: 11220832

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
CBOD	ND	2	mg/L						
Cyanide, total	ND	0.01	mg/L						
Phenolics	ND	0.001	mg/L						
Phosphorus, total	ND	0.01	mg/L						
Total Suspended Solids	ND	2	mg/L						
Metals - Total									
Arsenic	ND	0.01	mg/L						
Cadmium	ND	0.001	mg/L						
Chromium	ND	0.05	mg/L						
Copper	ND	0.005	mg/L						
Lead	ND	0.001	mg/L						
Mercury	ND	0.0001	mg/L						
Manganese	ND	0.05	mg/L						
Nickel	ND	0.005	mg/L						
Selenium	ND	0.005	mg/L						
Silver	ND	0.001	mg/L						
Zinc	ND	0.02	mg/L						
Volatiles									
Benzene	ND	0.0005	mg/L						
Chloroform	ND	0.0005	mg/L						
1,2-Dichlorobenzene	ND	0.0005	mg/L						
1,4-Dichlorobenzene	ND	0.0005	mg/L						
cis-1,2-Dichloroethylene	ND	0.0005	mg/L						
trans-1,3-Dichloropropylene	ND	0.0005	mg/L						
Ethylbenzene	ND	0.0005	mg/L						
Methylene Chloride	ND	0.005	mg/L						
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L						
Tetrachloroethylene	ND	0.0005	mg/L						
Toluene	ND	0.0005	mg/L						
Trichloroethylene	ND	0.0005	mg/L						
Xylenes, total	ND	0.0005	mg/L						
Surrogate: 4-Bromofluorobenzene	*0.0948*		*mg/L*		*119*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0656*		*mg/L*		*82.0*	*50-140*			
Surrogate: Toluene-d8	*0.0863*		*mg/L*		*108*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
CBOD	ND	6	mg/L	ND			NC	20	BOD01
Cyanide, total	ND	0.01	mg/L	ND			NC	11	
pH	7.9	0.1	pH Units	7.9			0.4	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Phosphorus, total	ND	0.01	mg/L	ND			NC	15	
Total Suspended Solids	6.0	2	mg/L	6.0			0.0	10	
Metals - Total									
Arsenic	ND	0.01	mg/L	ND			NC	20	
Cadmium	ND	0.001	mg/L	ND			NC	20	
Chromium	ND	0.05	mg/L	ND			NC	20	
Copper	0.007	0.005	mg/L	0.007			0.1	20	
Lead	0.003	0.001	mg/L	0.003			0.5	20	
Mercury	ND	0.0001	mg/L	ND			NC	20	
Manganese	4.14	0.05	mg/L	4.16			0.4	20	
Nickel	0.012	0.005	mg/L	0.013			1.5	20	
Selenium	ND	0.005	mg/L	ND			NC	20	
Silver	ND	0.001	mg/L	ND			NC	20	
Zinc	0.023	0.02	mg/L	0.023			0.6	20	
Volatiles									
Benzene	ND	0.0005	mg/L	ND			NC	30	
Chloroform	ND	0.0005	mg/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.0005	mg/L	ND			NC	30	
Ethylbenzene	ND	0.0005	mg/L	ND			NC	30	
Methylene Chloride	ND	0.005	mg/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L	ND			NC	30	
Tetrachloroethylene	ND	0.0005	mg/L	ND			NC	30	
Toluene	ND	0.0005	mg/L	ND			NC	30	
Trichloroethylene	ND	0.0005	mg/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*0.0952*		*mg/L*		*119*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0763*		*mg/L*		*95.4*	*50-140*			
Surrogate: Toluene-d8	*0.0852*		*mg/L*		*107*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
CBOD	109	2	mg/L	ND	54.6	62-129			QS-02
Cyanide, total	0.090	0.01	mg/L	ND	90.0	53-130			
Phenolics	0.021	0.001	mg/L	ND	83.6	69-132			
Phosphorus, total	0.492	0.01	mg/L	ND	98.4	80-120			
Total Suspended Solids	24.0	2	mg/L	ND	120	75-125			
Metals - Total									
Arsenic	50.5	0.01	mg/L	0.472	100	80-120			
Cadmium	41.8	0.001	mg/L	0.035	83.5	80-120			
Chromium	55.7	0.05	mg/L	0.946	110	80-120			
Copper	48.6	0.005	mg/L	0.727	95.8	80-120			
Lead	43.8	0.001	mg/L	0.268	87.0	80-120			
Mercury	0.0031	0.0001	mg/L	ND	103	70-130			
Manganese	453	0.05	mg/L	416	75.1	80-120			QM-4X
Nickel	50.0	0.005	mg/L	1.27	97.6	80-120			
Selenium	40.0	0.005	mg/L	0.126	79.7	80-120			QM-01
Silver	40.1	0.001	mg/L	0.032	80.2	80-120			
Zinc	44.9	0.02	mg/L	2.25	85.2	80-120			
Volatiles									
Benzene	0.043	0.0005	mg/L	ND	107	60-130			
Chloroform	0.040	0.0005	mg/L	ND	98.8	60-130			
1,2-Dichlorobenzene	0.040	0.0005	mg/L	ND	100	60-130			
1,4-Dichlorobenzene	0.041	0.0005	mg/L	ND	103	60-130			
cis-1,2-Dichloroethylene	0.046	0.0005	mg/L	ND	115	60-130			
trans-1,3-Dichloropropylene	0.041	0.0005	mg/L	ND	102	60-130			
Ethylbenzene	0.035	0.0005	mg/L	ND	86.8	60-130			
Methylene Chloride	0.045	0.005	mg/L	ND	112	60-130			
1,1,2,2-Tetrachloroethane	0.036	0.0005	mg/L	ND	90.4	60-130			
Tetrachloroethylene	0.040	0.0005	mg/L	ND	100	60-130			
Toluene	0.035	0.0005	mg/L	ND	87.7	60-130			
Trichloroethylene	0.042	0.0005	mg/L	ND	105	60-130			
Surrogate: 4-Bromofluorobenzene	*0.0961*		*mg/L*		*120*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0945*		*mg/L*		*118*	*50-140*			
Surrogate: Toluene-d8	*0.0724*		*mg/L*		*90.5*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1 : Raised Reporting Limits for BOD due to dilutions based on preliminary COD screening results.

QC Qualifiers :

BOD01 : Raised Reporting Limits for BOD due to dilutions based on preliminary COD screening results.

QM-01 : The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

QM-4X : The spike recovery was outside of QC acceptance limits due to elevated analyte concentration.

QS-02 : Spike level outside of control limits. Analysis batch accepted based on other QC included in the batch.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

Nyle McIlveen, P.Eng.
nyle.mcilveen@ghd.com
705-875-6106

Robert Neck, P.Geo. (Limited)
robert.neck@ghd.com
705-761-9694

www.ghd.com

ghd.com → The Power of Commitment