



C.C.Tatham & Associates Ltd.
Consulting Engineers

CEDAR RUN WAKEBOARD CABLE PARK

Town of The Blue Mountains

Functional Servicing Report

prepared by:

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prepared for

2533827 Ontario Limited

November 2017

CCTA File 115232

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1 Introduction

The following Functional Servicing Report (FSR) has been prepared in support of an application for Official Plan Amendment (OPA), re-zoning and Site Plan Approval for the proposed Cedar Run Wakeboard Cable Park in the Town of The Blue Mountains (TOBM). This report presents an overview of the proposed servicing strategy for the site, including water supply and distribution, sanitary sewage collection and conveyance, and utility distribution (electrical, telephone, cable TV and gas). Additional servicing components such as transportation and stormwater management assessments have been completed under separate cover by C.C. Tatham & Associates Ltd. (CCTA).

1.1 Site Description

The site is located near the southwest corner of Grey Road 2 and Clark Street as depicted on Figure 1 provided overleaf. The site consists of 35.78 ha of land formerly referred to as the Cedar Run Horse Park property and is bisected southwest to northeast by an intermittent tributary watercourse. The site is currently zoned as “Recreational Commercial (C4-12h)” zone and “Hazard (H)” zone under the site specific by-law (By-law 2012-49) applicable to the property. The property is legally described as part Lot 30, Concession 9, Town of the Blue Mountains in Grey County.

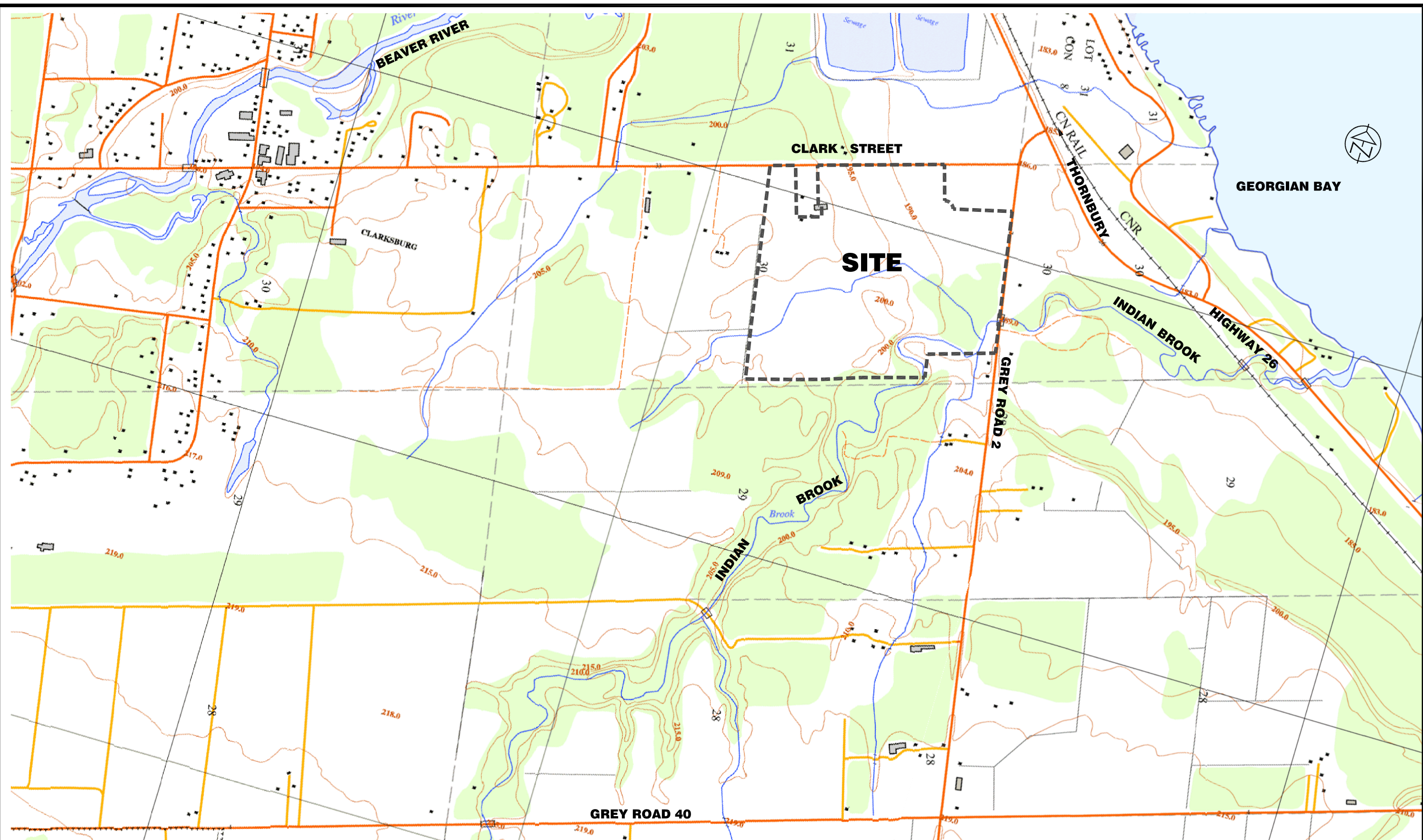
1.2 Objectives

The primary objective of this report is to determine the services that are available at the subject property and demonstrate how the proposed development will use these services. The report will confirm the available capacity of the services and outline how the proposed development can access the services so as to not adversely affect other users and comply with Town and Provincial Regulations.

1.3 Background

The Cedar Run Wakeboard Cable Park property has been the subject of various development reports and approvals over the past years. This report shall demonstrate that the plan has been designed considering all past input from approval agencies. The following summary documents background information pertinent to the planning and development of the area:

- Proposed Thornbury Horse Park Development Functional Servicing Report. C.C. Tatham & Associates Ltd. (July, 2006). This report presented an overall analysis demonstrating serviceability of the proposed horse park in terms of traffic, stormwater, sewage flows, water supply and utilities.
- Cedar Run – Thornbury Horse Park 2009-2010 Horse Show Approval Submission and Technical Report. C.C. Tatham & Associates Ltd. (March, 2009). This report summarized the grading and



CONTRACT DRAWINGS CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.	C.C. TATHAM & ASSOCIATES LTD. CLAIMS COPYRIGHT TO THIS DOCUMENT WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF C.C. TATHAM & ASSOCIATES LTD.	 C.C. Tatham & Associates Ltd. Consulting Engineers Collingwood Bracebridge Orillia Barrie Ottawa	CEDAR RUN WAKEBOARD CABLE PARK TOWN OF THE BLUE MOUNTAINS SITE PLAN			DWG. No.
						FIG. SP-1
			SCALE: 1:10,000	DRAWN: DEP	DATE: MAR./17	JOB NO. 115232

drainage work completed on-site for the horse park from 2006-2008 and presented an overall plan summarizing the site servicing works required for the events proposed in 2009-2010.

- Thornbury Horse Park Stormwater Management Report. C.C. Tatham & Associates Ltd. (June, 2009). This report presented a SWM Plan for the interim drainage conditions for the Horse Park events planned in 2009 and 2010. The three ponds constructed from 2006-2008 were to provide the required quality and quantity control.
- Thornbury Horse Park Stormwater Design Brief - Addendum. C.C. Tatham & Associates Ltd. (April, 2011). This report presented a SWM Plan for a proposed parking area. The parking area was designed to drain to two new proposed SWM ponds. The parking area and ponds did not proceed to construction.
- Thornbury Horse Park Approval Submission and Technical Report: Proposed 2012 Works. C.C. Tatham & Associates Ltd. (March, 2012). This report presented the work proposed on-site in 2012. The work presented in this report did not proceed to construction. This report included the design for a proposed diversion channel.

2 Proposed Development

Cedar Run Wakeboard Cable Park is proposed to consist of a large circular wakeboard pond (Pond A), a smaller multi-level wakeboard pond, a pro shop/office, a commercial plaza, overnight accommodations, a passive recreation area and associated parking and access roads. It is noted that the Town is considering the re-alignment of Clark Street to improve intersection functionality approaching Highway 26. The potential to accommodate this re-alignment has been accounted for in the plans prepared to date.

The development is proposed to be phased with the interim development plan to construct the ponds, pro shop/office, parking areas and associated access roads. The residential accommodation and commercial development will be constructed as part of a later phase.

Under interim conditions, the development will be serviced by a single access on the south side of Clark Street. The three existing ponds constructed onsite will be modified as required for stormwater management. An intermittent tributary watercourse that currently bisects the lower portion of the property will be diverted to split flows between Indian Brook and the Grey Road 2 roadside ditch as previously approved. During interim conditions, a tile bed will provide sewage treatment. Water supply for the pro shop/clubhouse shall be from a drilled groundwater well. Ultimately, when the residential and commercial components proceed, the water and sanitary servicing will be connected to the municipal system. Watermain and sanitary services will be extended to the site via connection to the existing watermain on Grey Road 2 and the existing sanitary sewer installed along Highway 26. Utilities (hydro, gas, telephone and cable) will be provided by the respective utility providers in the surrounding area.

A site plan of the proposed development project has been included with this report for reference purposes.

3 Sanitary Sewage

Under interim conditions the site will be serviced via tile bed. The tile bed will provide treatment for the pro shop/office and the daytime visitors to the park. Preliminary sizing calculations for the tile bed have been completed using Ontario Building Code guidelines based on the expected number of visitors and the existing soil conditions. Sizing indicates a bed sized to accommodate 6,000 L/d can accommodate this first phase of development. Sizing calculations are included in Appendix A. Refer to Drawing SS-1 for the preliminary servicing layout for the project.

As documented in the previous reports, the long-term plan for sanitary sewers on the site is to extend the existing sanitary sewer that runs along Highway 26. The extension will be from Highway 26 west to Grey Road 2, south along Grey Road 2 and then east onto the site. The sanitary extension will be required to service the proposed commercial development and overnight accommodations. The exact routing and grade for this sewer will be developed once the expansion plan is finalized.

4 Water Supply & Distribution

Under interim conditions, potable water shall be supplied from a drilled groundwater well. Similar to the tile bed, the well will provide service for the pro shop/office and the daytime visitors to the park.

The expected peak flow required from the well is 1.9 l/s as per Ontario Building Code and MOE Design Guidelines for Drinking-Water Systems. Water supply calculations are included in Appendix B.

Ultimately it is proposed to connect to the existing water supply at Grey Road 2 to provide potable water for the entire area. The existing 250 mm watermain along Grey Road 2 east of the site has a 250 mm dia. service to the site and will be used as the water source. If required, a watermain (minimum 150 mm dia.) will be looped through the site to service the commercial development and overnight accommodations as required. Additional details such as the preferred path for the looping and confirmation of pipe size and hydrant locations will be developed once the expansion plans are finalized.

5 Stormwater Management

A separate Surface Water Management Strategy Report (November 2017) has been prepared by CCTA to address drainage and stormwater management requirements, and should be read in conjunction with this report. The Surface Water Management Strategy Report has been prepared to address the internal and external servicing requirements related to stormwater management for this project and describes in detail the stormwater management plan for this development. The report also presents a surface water management strategy that will demonstrate how the wakeboard ponds are to be filled and water levels maintained. A general grading plan (SG-1) has been included with this report for information purposes.

6 Traffic Impact Assessment

A separate Traffic Impact Study (November 2017) has been prepared by CCTA to address issues with traffic operations and the transportation system. It confirms an adequate road network exists to support the development and proposed entrances. This report should be read for details related to traffic operations. We note the site plan presents a potential realignment location for Clark Street. This realignment is not proposed as a result of this development but was subject to a recently completed EA by the Town. This realignment is shown to demonstrate that the realignment can occur in the future should the Town wish to proceed with it and that it will not disrupt the site plan proposal presented.

7 Utilities

All utilities in the area were reviewed to determine if any significant constraints exist in this regard. Although most utilities will require more detail than is currently available for the development to precisely confirm capacity, the following has been resolved.

There is an existing gas main along the east side of Grey Road 2 adjacent the right-of-way boundary that tees to service the existing firehall. After this junction, the gas is terminated. There is no existing gas main along Clark Street. Gas would be available to the development by extending a main down Clark Street.

There is an existing Bell station at the southeast corner of the Grey Road 2 and Clark Street intersection. There is an existing bell main underground 1.0m off of the right-of-way property line on the west side of Grey Road 2 and the south side of Clark Street. These services can be extended to the site subject to confirmation from Bell that capacity is available to service the development.

For hydro supply, there is existing three-phase power on the west side of Grey Road 2 and three phase supply on the north side of Clark Street. These facilities can be utilized to provide hydro supply for the site, however, more detailed information must be provided to hydro to confirm that capacity is available to service the development.

Additional work in this regard will be completed as the development proceeds through the planning approval process.

8 Conclusion

Based on the preceding analyses, the development has adequate services available to support the proposed interim development conditions. An ultimate development servicing plan with full services is also presented.

The development shall utilize a tile bed for sanitary sewage and a drilled well for potable water for its initial phase. A retrofit of the existing on-site ponds shall satisfy the stormwater management requirements. Hydro One, Union Gas, Rogers and Bell Canada have been contacted to confirm the availability of their utilities for the proposed development.

Should you have any questions or concerns, please do not hesitate to contact the undersigned.



Authorized by: David Marshall, B.A.Sc., E.I.T.
Intern Engineer



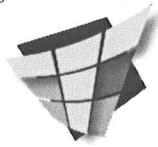
Reviewed by: Dan Hurley, B.A.Sc., P.Eng., LEED AP
Vice President,
Manager - Water Resources Engineering

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APPENDIX A: SANITARY DEMAND AND TILE BED SIZING

**C.C. Tatham & Associates Ltd.**

Consulting Engineers

Collingwood

Bracebridge

Orillia

Barrie

Project: Cedar Run Wakeboard Cable Park**Date:** March 2017**File No.:** 115232**Designed:** DAM**Subject:** Sanitary Demand and Tile Bed Calculations**Checked:** DJH**ONTARIO BUILDING CODE GUIDELINES***Wakeboard Park Including Pro Shop / Office (Required Service Level for Interim Conditions)*

Peak Usage = 120 Riders per day Expected According To Proposal

*Total Daily Design Sanitary Sewage Flow As Per Table 8.2.1.3.B. O.B.C.*Public Parks With Bathhouse, Showers and Toilets per Person = 50 litres/day **Applied as more conservative estimate**

Swimming and Bathing Facilities (Public) per Person = 40 litres/day

DESIGN FLOW

Total Daily Design Flow = 6000 litres/day

Design Percolation Time (T) = 50 min/cm

Lesser of 50 and percolation time of underlying soil as per O.B.C.

Underlying soil is sandy till with field infiltration tests of 43 min/cm under wet conditions.

TREATMENTSeptic Tank Volume = $Q \times 3$ As per 8.2.2.3 of O.B.C.
= 18,000 litres Minimum 18,000 litre tankMaximum Area of Each Filter Bed = 50 m² As per 8.7.5.2 of O.B.C.Effective Area of Filter Bed = 50 litres/m² As per 8.7.5.2 of O.B.C.Required Area = $Q / \text{Effective Area}$
= 120 m² Provide 3 Beds at 40 m²Filter Medium Base Area = $QT/850$ As per 8.7.5.3 of O.B.C.(Expanded Contact Area) = 353 m²Maximum Loading Rate = 6 litres/m² As per 8.7.4.1 of O.B.C. for percolation time between 35 and 50 minutesRequired Loading Area = $Q / \text{Loading Rate}$ = 1,000 m² Imported Sand

APPENDIX B:

WATER SUPPLY CALCULATIONS



C.C. Tatham & Associates Ltd.
Consulting Engineers

Collingwood Bracebridge Orillia Barrie

Project: Cedar Run Wakeboard Cable Park

Date: March 2017

File No.: 115232

Designed: DAM

Subject: Water Supply Calculations

Checked: DJH

ONTARIO BUILDING CODE GUIDELINES

Wakeboard Park Including Pro Shop / Office (Required Service Level for Interim Conditions)

Peak Usage = 120 Riders per day Expected According To Proposal

Total Daily Design Sanitary Sewage Flow As Per Table 8.2.1.3.B. O.B.C.

Public Parks With Bathhouse, Showers and Toilets per Person = **50 litres/day** **Applied as more conservative estimate**

Swimming and Bathing Facilities (Public) per Person = 40 litres/day

DESIGN FLOW

Total Daily Design Flow = 6,000 litres/day

Factored to 8 Hour Period = 18,000 litres/day 50 litres/person/day is expected in an 8 hour period.

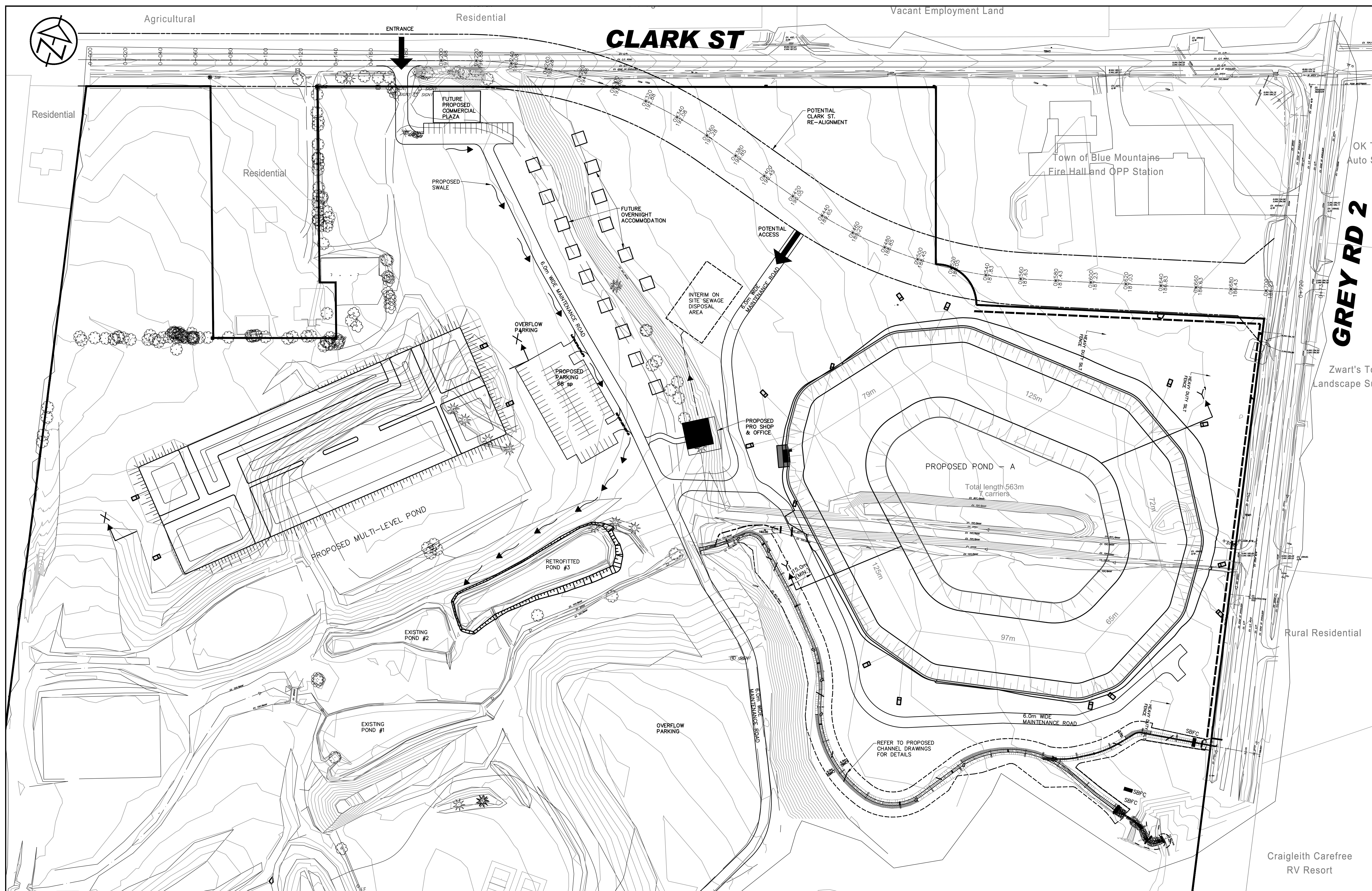
Maximum Day Factor = 2.0 The Blue Mountain Engineering Standards for Domestic Use. Conservative for Commercial as per

Peak Hour Factor = 4.5 MOE Design Guidelines for Drinking-Water Systems

Maximum Day Demand: 0.42 L/s

Peak Hour Demand: 1.88 L/s

Design Flow: 1.88 L/s Maximum Demand



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ENGINEER WITHOUT THE EXPRESS CONSENT OF C.C.
TATHAM & ASSOCIATES LTD.

TBM#1 - ELEVATION 186.773

TBM#2 - ELEVATION 186.555
NAIL IN HYDRO POLE LOCATED ON WEST SIDE OF GREY ROAD
#2, 3RD HYDRO POLE SOUTH OF POLICE AND EMS STATION.

TBM#2 - ELEVATION 188.333
NAIL IN HYDRO POLE LOCATED ON NORTH SIDE OF CLARK
ST., APPROXIMATELY 160m WEST OF INTERSECTION OF CLARK
ST. & GREY ROAD #2.

TBM#2 - ELEVATION 198.028
NAIL IN HYDRO POLE LOCATED ON WEST SIDE OF CLARK ST.,
APPROXIMATELY 500m WEST OF INTERSECTION OF CLARK ST.
& GREY ROAD #2.

NO.	REVISIONS	DATE	INITIAL

APPROVED

PRELIMINARY

**CEDAR RUN WAKEBOARD
CABLE PARK
TOWN OF THE BLUE MOUNTAINS**

SITE SERVICING PLAN



C.C. Tatham & Associates Ltd.
Consulting Engineers

Collingwood Bracebridge Orillia Barrie Ottawa

SCALE: 1 : 1,000

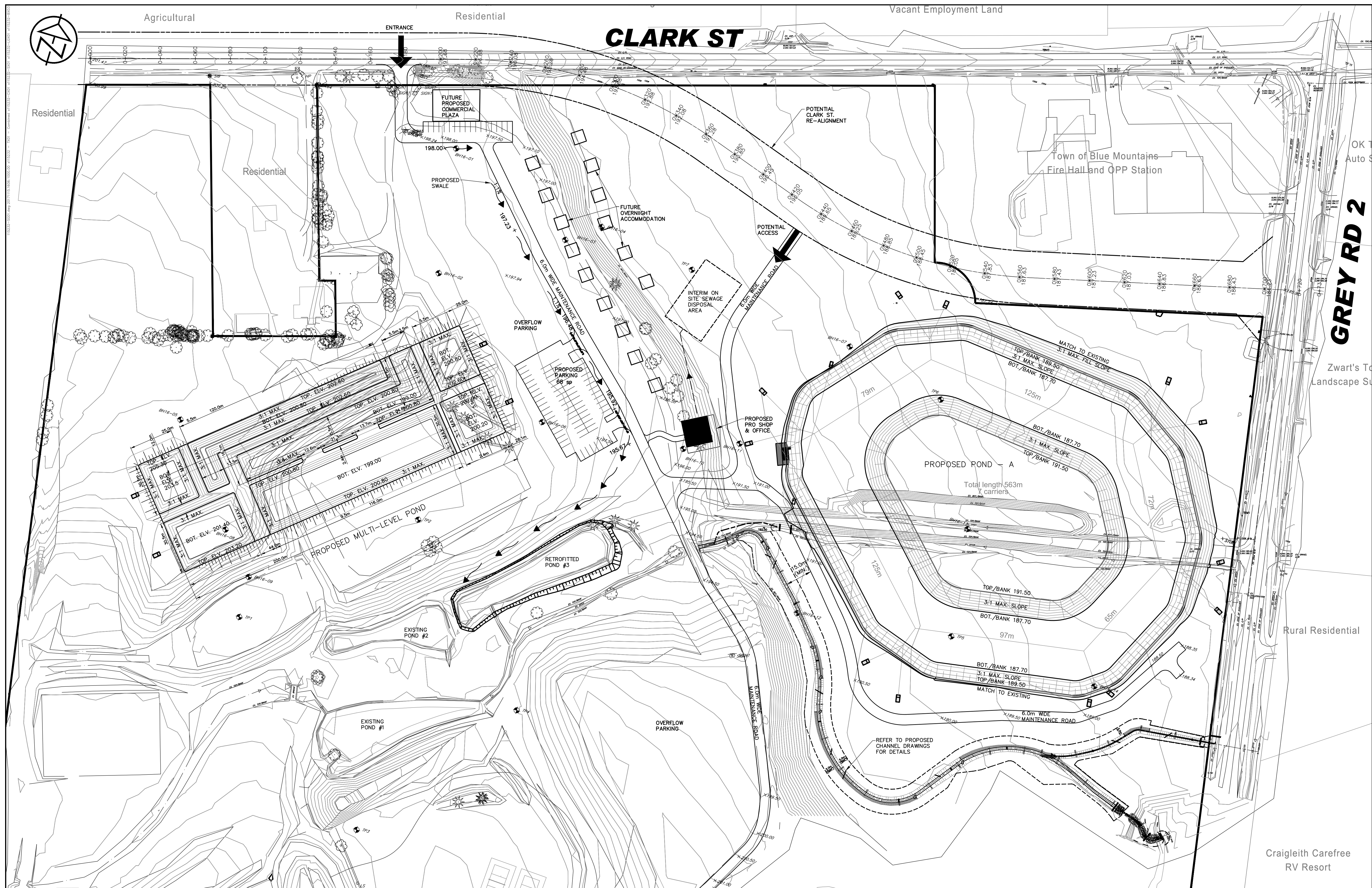
DESIGN: AR

CHECKED: DJH

JOB NO.	115232
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DWG. **SS-1**



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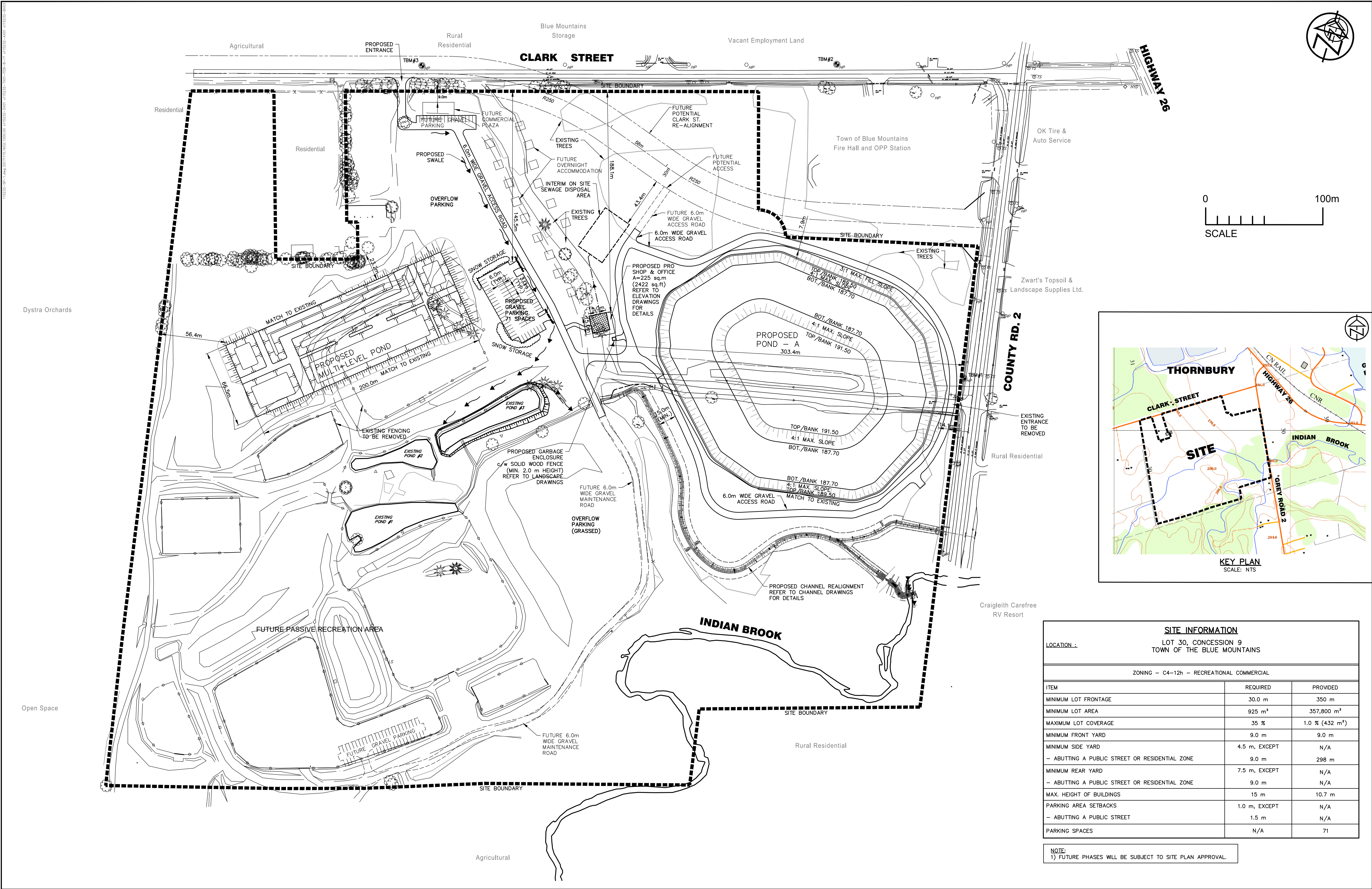
NO.	REVISIONS	DATE	INITIAL

APPROVED

PRELIMINARY

CEDAR RUN WAKEBOARD CABLE PARK TOWN OF THE BLUE MOUNTAINS	
SITE GRADING PLAN	

 C.C. Tatham & Associates Ltd. Consulting Engineers	
Collingwood Bracebridge Orillia Barrie Ottawa	
SCALE: 1 : 1,000	JOB NO. 115232
DESIGN: AR	CHECKED: D.J.H.
DRAWN: DEP	DATE: JAN. 2017
DWG. SG-1	



SITE INFORMATION		
LOCATION :		
LOT 30, CONCESSION 9 TOWN OF THE BLUE MOUNTAINS		
ZONING — C4-12h — RECREATIONAL COMMERCIAL		
ITEM	REQUIRED	PROVIDED
MINIMUM LOT FRONTAGE	30.0 m	350 m
MINIMUM LOT AREA	925 m ²	357,800 m ²
MAXIMUM LOT COVERAGE	35 %	1.0 % (432 m ²)
MINIMUM FRONT YARD	9.0 m	9.0 m
MINIMUM SIDE YARD	4.5 m, EXCEPT	N/A
— ABUTTING A PUBLIC STREET OR RESIDENTIAL ZONE	9.0 m	298 m
MINIMUM REAR YARD	7.5 m, EXCEPT	N/A
— ABUTTING A PUBLIC STREET OR RESIDENTIAL ZONE	9.0 m	N/A
MAX. HEIGHT OF BUILDINGS	15 m	10.7 m
PARKING AREA SETBACKS	1.0 m, EXCEPT	N/A
— ABUTTING A PUBLIC STREET	1.5 m	N/A
PARKING SPACES	N/A	71

NOTE:
1) FUTURE PHASES WILL BE SUBJECT TO SITE PLAN APPROVAL.

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APPROVED

CEDAR RUN WAKEBOARD
CABLE PARK
TOWN OF THE BLUE MOUNTAINS

SITE PLAN



C.C. Tatham & Associates Ltd.
Consulting Engineers

Collingwood Bracebridge Orillia Barrie Ottawa

SCALE: 1 : 1,500

DESIGN: DEP

DRAWN: DEP

JOB NO. 115232

CHECKED: DJH

DATE: MAY 2017

DWG.

SP-1