

**Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
The South Road, Wollaston Lake
Part Lot 23, Concession 5 & 6
Township of Wollaston, County of Hastings**



Prepared For:

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Project #: 23-3326

February 2024



ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

February 14th, 2024

128 Talbot Drive
Oakville, Ontario
LGL 4C5

Attention: **Justin Caple**

Re: *Scoped* Environmental Impact Study (sEIS)
Proposed Single Residential Development
The South Road, Wollaston Lake
Part Lot 23, Concession 5 & 6
Township of Wollaston, County of Hastings
ORE File No. 23-3326

We are pleased to provide this *scoped* Environmental Impact Study (sEIS) for the above referenced property. Our report has been completed in support of your application for a single residential development on the shore of Wollaston Lake. Based on our review of the site conditions, Wollaston Lake and the associated wetland on the property appear to be the main environmental receptors.

The subject property is a lot of record, therefore, a “least impact” approach should be applied to address any potential impacts to Deer River/Wollaston Lake and/or its associated unevaluated wetland occurring on the subject property. Provided the recommendations outlined in this report are adhered to, any potential adverse impacts to the lake and/or the on-site wetland can be mitigated.

We anticipate this proposal having to obtain approval from the Crowe Valley Conservation Authority (CVCA) Board of Directors, as the dwelling/garage has to be constructed within the on-site wetland which contravenes CVCA’s Regulation. We expect that the proponent will need to request a meeting/hearing with the Board in this regard.

Yours truly,

Oakridge Environmental Ltd.



Rob West, HBSoc.
Senior Ecologist

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1.0 Introduction

Oakridge Environmental Ltd. is pleased to present this *scoped* Environmental Impact Study (sEIS) in support of your application for a single residential development.

It is understood that the property is currently vacant, and that a residence/garage with private services is being proposed. Given the site's proximity to Deer River (Wollaston Lake) and the presence of wetland on the property, an sEIS is required to support the development application and to demonstrate that the development will not result in any impacts to the on-site and off-site hydrologic features.

This sEIS was determined by Crowe Valley Conservation Authority to be a requirement to obtain a Permit. A Terms of Reference (ToR) was not provided for the study. However, similar to other applications, this report assumes that a *scoped* EIS will be acceptable, and that a two (2) site inspections focussing on KNHF will be acceptable - with the main focus being any sensitive hydrological features.

The following sections outline our data sources, methodologies, findings and recommendations.

2.0 Site Location and Description

The site is situated on "The South Road" (no municipal address) along the west shoreline of Deer River (near the south entrance to Wollaston Lake), southwest of Coe Hill (Figures 1 and 2). The site occurs within Part of Lot 23, Concessions 5 & 6, Township of Wollaston, County of Hastings. The property has an approximate area of 0.457 ha (1.13 acres).

The property is accessed from Highway 620, by turning south onto The South Road, just past Ferguson Bay. It is located on the east side of The South Road.

The lot is currently vacant and is within close proximity to the shoreline of Wollaston Lake, located to the east. The site contains marshy areas along the lake/river perimeter. It is predominantly cleared and the low-cut vegetation appears similar to a lawn. There is a drainage swale feature along the property boundary to the north, within the woodland edge. The swale is far too straight to be a natural feature, therefore, was likely dug long ago to route runoff from the South Road ditch.

3.0 Proposed Development / Site Alteration

The current owner is proposing to construct a single residential dwelling/garage and associated services on the subject parcel. As there are no municipal services in the area, the development will be privately serviced with a potable well and septic system.

The proponent has provided a sketch identifying where the proposed dwelling/garage and septic system are to be located on the property, subject to approvals (Appendix A).

4.0 Policy

According to the information provided, the requirement for this study was triggered due to the proposed development occurring within 30 m of Deer River/Wollaston Lake, and due to the presence of on-site wetland habitat. As such, this EIS has been *scoped* specifically to address any associated hydrological issues and has been formatted in accordance with Township and CVCA requirements.

5.0 Topography and Drainage

As illustrated by Figure 2, the subject property overlooks the mouth of the Deer River where it enters into Wollaston Lake, on a northeast-facing slope exhibiting approximately 5 m of topographic relief. The slope occurs on the flank of a large Precambrian bedrock-controlled ridge with abundant outcrop.

Although the published mapping does not illustrate the presence of wetlands associated with the site, the eastern part of the property contains wetland that extends to the lakeshore (see discussion in a following section). Other than the wetland, there are no watercourses present on the site. A small tributary to the lake occurs just north of the site, conveying flows from a similar ridge feature in this area, directly to the lake.

As the site occurs near the base of a large ridge and is associated with a wetland (and the lake), there is a significant potential for a shallow water table condition.

6.0 Geological Setting

As illustrated by Figure 3, the geology of the subject site is dominated by the outcrops of a large bedrock ridge to the south and an area of Precambrian bedrock-drift to the north, consisting mainly of a low-permeability, stratified veneer of silty sand and

shield-derived till. The bedrock-drift soils occupy the lower flank and base of the ridge, including the lowlands that occur between the ridge and the highlands to the north.

The lowlands north of the site also contain glaciofluvial deposits, consisting of coarse, highly permeable sand and gravel. The deposits appear to represent remnants from an ancient period of inundation when the Wollaston Lake basin was flooded by glacial meltwaters. At that time, the larger bedrock ridges would likely have been small islands. In a few low-lying areas around the river/lake, (especially where lacustrine wetlands occur), the surficial soils are likely composed of organic muck with an alluvial substrate.

Although not illustrated by the mapping of Figure 3, other published geological maps indicate that the site contains numerous bedrock outcrops exposing granite, referred to as the “Coe Hill Granite”. The Coe Hill granite pluton is composed mainly of pink, medium to coarse crystalline, massive, biotite-granite. Locally, this granite has been quarried in the past.

Although the native soil thickness is expected to be minimal in the southern part of the site, it is not possible to determine the thickness of the soil cover from the mapping. However, by perusing the Ministry of the Environment, Conservation and Parks (MECP) well record database for the site area, we note that nearby well No. 2910096 encountered 3.7 m of “brown sand, gravel and boulders” overlying the granite. That well also exhibited a static water level of only 0.6 m, despite the aquifer being encountered at a depth of 12.8 m.

7.0 Inspection Methodologies

The site has been characterized by its various vegetation communities using the methodologies included in the *Ecological Land Classification (ELC) - First Approximation and Its Applications* (1998). The 1998 Ecological Land Classification - First Approximation is a guide used by Ecologists to standardize the classification of different vegetation community types across Ontario. The classification system enables an ecologist to identify vegetation communities based on the species present, soil materials and moisture regimes.

There have been a number of updates to the ELC scheme to further refine the classification of Ecosites throughout Ontario. As a result, the 2008 *Draft ELC Guide* provides a further breakdown of the 1998 ELC Guide - First Approximation communities and includes many new communities to index from. The 2008 ELC scheme also provides a cross-reference to the 1998 guide communities. This report uses a combination of both the 1998 ELC communities (which are considered the primary

vegetation communities) and the 2008 Draft ELC to supplement the vegetation community lists.

Prior to conducting the site inspections, aerial photography of the subject site was analysed to roughly delineate communities based on recognizable vegetation differences. Each identified community was subsequently inspected. Dominant vegetation types were recorded and boundaries of the various communities mapped on an air photo or utilizing a dGPS.

In addition to identifying and mapping the ELC communities, ORE staff assessed each vegetation community from the perspective of whether they are hydrologically sensitive. The vegetation survey included examination of the development footprint and immediate surrounding areas.

All wetlands are identified based on the Ontario Wetland Evaluation System (OWES). The wetland boundary has been delineated based on the 50/50 rule, whereby 50% wetland vegetation occurs on one side of the boundary and 50% upland vegetation occurs on the other. Wetland species include both groundcover shrub and tree species and a list of hydrophytic species is provided in the manual.

ORE staff use these basic principles to map the wetland boundary in addition to reviewing the shallow soils stratigraphy as a means of confirming the boundary. Wetland soils tend to not only be saturated near or at surface, they can have either organic or organic/mineralized soils. The soils can also contain mottles and gley which exemplify the high groundwater conditions. Mottles are indicated by an oxidized zone in the upper soils that suggest water levels have fluctuated within this shallow depth and gley is a “greyish” zone in the soils that often indicated a shallow groundwater table condition, whereby oxygen is depleted in the soils and continually saturated.

8.0 Site Inspection Data

8.1 Site Inspections

ORE staff attended the site on the following dates:

<u>Date of Inspection</u>	<u>Temp. °C</u>	<u>Beaufort (Wind) Scale</u>	<u>Conditions Reason for Inspections</u>
August 17 th , 2023	26 and Humid	3 - Gentle Breeze	Mostly cloudy (95%). Hot and humid summer day. Meet with CVCA staff regarding wetland. Observe vegetation/existing site conditions, and determine wetland boundary location, identify species, and ascertain where a potential building site could be located.
September 22 nd , 2023	17	4 - Moderate Breeze	Clear (0%) Cloud cover. Relatively warm late summer/early fall season day, but breeze from north was cool. Identify ELC types based on vegetation and soils, confirm wetland boundary through hand auger/soils review.

Appendix B contains the list of species identified on the property during our inspection.

8.2 Ecological Land Classification (ELC)

Based on our site observations, we have determined that there are two (2) upland community/habitats on-site, and four (4) wetland/aquatic communities associated with Deer River/Wollaston Lake.

Figure 4 illustrates the distribution of the on-site vegetation communities, and the off-site aquatic community. These habitats and their associated vegetation and environmental sensitivities are characterized below.

Representative photos of these communities are provided in Figure 5. Descriptions of the communities are provided below.

Upland Community:

1. Rural Property (CVR_4)

There is no description in the ELC regarding the Residential-type community.

This community includes the area between The South Road ditch/road allowance and the wetland limit, leaving a very narrow corridor along the south side of the subject property for development. The CVR_4 area contains upland non-native grasses typically observed in lawn areas of rural properties and is a residually disturbed area.

This community encompasses a portion of where the dwelling/garage is proposed to occur and is not sensitive to development.

2. Dry - Fresh White Cedar Coniferous Forest (FOC2-2)

The Dry - Fresh White Cedar Coniferous Forest (FOC2-2) possesses a dry to fresh moisture regime and is therefore dominated by Eastern White Cedar (*Thuja occidentalis*) and possesses very little understory species. The ELC characterizes the community as possessing 75% or more canopy cover.

This community occurs as a narrow corridor between the property's southerly limit and the neighbour to the south. The predominant coniferous species is Eastern White Cedar (*Thuja occidentalis*), with lesser amounts of Balsam Fir (*Abies balsamea*), White Pine, Paper Birch (*Betula papyrifera*), White Ash (*Fraxinus americana*), and White Elm (*Ulmus americana*).

This community transitions to the Speckled Alder thicket discussed below.

Wetland/Aquatic Community:

3. Mixed Graminoid Mineral Meadow Marsh Type (MAMM1-16)

The MAMM1-16 wetland type is dominated by grasses or sedges. This meadow marsh habitat typically occurs proximal to the shoreline and is continually wave swept or ice scoured. As a result the community can be sparsely vegetated. The MAMM1-16 typically possesses a mixture of organic and mineral substrates overtop of sand, gravel, cobble deposits.

This is type of wetland habitat occurs between the cattail/speckled alder shoreline areas

and the CVR_4 community towards the top of the on-site slope. Due to the mineral meadow marsh being maintained by lawn mower(s) for many years, the sedges and hydrophytic graminoid species appeared similar to a lawn environment. However, after careful review of the vegetation, it was determined the mineral meadow marsh comprises the majority of the gradual slope on the property.

The wetland boundary is illustrated on Figure 4.

This community is part of the on-site wetland habitat and is sensitive to development. However, ORE staff notes the vegetation has been impacted for a number of years by previous owner(s) mowing the meadow marsh area. Presumably, the majority of shrubs (Speckled Alder, etc.) and trees (possibly more Silver Maple/Freeman's Maple - *Acer X Freemanii*) were removed. Only one Freeman's Maple occurs within the central portion of the meadow marsh on the slope.

The majority of the confirmatory surficial soils investigations was completed in this habitat.

4. Speckled Alder Mineral Deciduous Thicket Swamp (SWTM1-1)

The SWTM1-1 is dominated by Speckled Alder (*Alnus incana*). The substrates consists of mineral and peaty phase mineral soils with organic accumulations of between 20 cm to 40 cm. This community typically occurs in low-lying areas where spring flooding duration is short. The substrate is often aerated by early to mid summer.

The SWTM1-1 community occurs towards the lakefront. It appears as though some of the Speckled Alder was removed by a previous owner to allow for vistas of the lake on the lot. The actual natural extent of the alders is best identified in the southeastern portion of the subject property. This location is dominated by relatively large Speckled Alders that form a dense stand extending down the slope to the shoreline.

This community is part of the wetland habitat on-site and is considered sensitive to development.

5. Cattail Mineral Shallow Marsh (MASM1-1)

According to ELC, the Cattail Mineral Shallow Marsh (MASM1-1) primarily possesses less than 25% tree and shrub cover while hydrophytic emergent macrophyte cover must be greater than 25%. Parent mineral substrates often consist of sand, gravel or cobble. Shallow marshes tend to have water up to 2 m deep.

The MASM1-1 occurs directly along the shoreline and extends out into the open water area of the site offshore. This community also intermingles with the above-mentioned Speckled Alder thicket towards the interface of the lake and the wetland areas that extend up from the shoreline.

This community is part of the shoreline wetland habitat on-site and is sensitive to development.

6. Open Water (OAW)

The ELC (2008) describes OAW as an environment containing no macrophyte vegetation and no tree or shrub cover. This ecosite tends to be dominated by plankton and has a lake trophic status.

This ecosite represents the open water/offshore habitat of Deer River/Wollaston Lake, which occurs across the entire northeastern edge of the subject property. The lake bottom substrate along the shoreline is comprised of an organic muck with some minor reed species emerging from the muck and sediments on the bottom. There are a few redds that have been fanned-out by Centrarchid in the near-shore environment proximal to the existing docks. These areas appear to possess sands and minor gravel materials.

This community is part of the lake habitat and is considered sensitive to development.

8.3 Fauna

No significant fauna were observed directly on-site. Only tracks of common/secure mammals were observed on the subject parcel.

Due to the shoreline area being predominantly comprised of muck and loose unconsolidated sediments, there were only a few sporadic spawning areas in the littoral zone/offshore area. Therefore, the nearshore environments do not appear to be Significant Fisheries habitat from a spawning perspective. ORE staff observed only

Centrarchid species in the littoral zone, associated with the docks.

Although ORE staff did not observe any turtles in the area of the subject property, there is the potential for turtles to access the lawn areas and use these areas for nesting purposes. The property owner/contractor should install measures to prevent all turtle species from entering the construction area/work zone, if the proposed work is to occur during the growing period when most turtles are active.

ORE staff did not observe any Species at Risk birds while on-site; only common species were detected in the area of the subject site.

The site and surrounding area does not appear to possess any mapped/known Significant Wildlife Habitat such as Deer Yards or Deer Wintering Habitat. The site does not possess sufficient cover for use by deer.

The fauna species observed on-site are listed within Appendix B.

9.0 Impact Assessment

9.1 General Considerations

Based on our assessment, it is our opinion that there will be potential impacts to the on-site wetland habitat and potential impacts to the adjacent Deer River/Wollaston Lake. These are listed below:

On-site Wetland Habitat

- 1) Displacement and/or degradation/alteration of the on-site wetland vegetation communities/hydrological feature.
- 2) Degradation of the on-site wetland by filling, grading and preparation of the subject site for a single residential development.
- 3) Excavation into the highwater table on the subject property, intersecting groundwater that naturally discharges to the ground surface resulting in concentrated flows rather than diffuse within the meadow marsh areas of the subject site, draining to the adjacent lake/river feature.

The excavations could also alter drainage patterns within the on-site wetland habitat altering the moisture regimes in this area, directly impacting the downgradient wetland vegetation outside of the proposed building envelope.

- 4) Potential impacts related to construction activities, including destabilisation and denuding of the wetland vegetation by equipment accessing the proposed building construction site, should those activities extend beyond the building envelope identified by the Constraint plan in this sEIS.
- 5) Permanent loss of wetland habitat on-site in the area where the building envelope is proposed to occur.
- 6) Maintaining the wetland area as lawnspace rather than allowing the vegetation to grow-out and become a naturalized wetland area in the post construction era.

Adjacent Deer River / Wollaston Lake

- 7) Degradation of the subject property directly upgradient of the shoreline of Deer River/Wollaston Lake resulting in sedimentation and water quality deterioration of this hydrological feature.
- 8) Alteration of thermal gradients within the shallow groundwater should the subsurface flows be interested by construction equipment, resulting in discharge to surface as concentrated flows rather than diffuse flows within the on-site wetland vegetation, thereby impacting offshore fisheries spawning areas that depend on cool water, for Centrarchid species.
- 9) Potential impacts related to potential flooding in the Deer River/Wollaston Lake system during the freshette/peak flow season rising to the level of the proposed development components. This hydrological feature also has a defined flood elevation, therefore water levels could conceivably rise to the levels identified on the proponent's survey which would correspond to the Speckled Alders on-site, which can be periodically inundated..
- 10) A single residential development between the existing developments on the west side of The South Road will reduce the vegetation buffer between the other upgradient existing developments and the shoreline of Deer River/Wollaston Lake, with respect to the uptake/attenuation of nutrients/non-point source pollutants.

All of the above would be in direct contravention of Crowe Valley Conservation's - Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations (Ontario Regulation 159/06).

These general impact considerations are further discussed in the following sections.

9.2 Development Envelope

Our field investigations have confirmed that the main concern with respect to the construction of a new dwelling/garage on-site is the location relative to the lakeshore and on-site wetland communities (as illustrated on Figure 6).

Considering that the majority of the subject property contains wetland, it is likely that a portion of the on-site wetland habitat will need to be filled and graded to create a viable building envelope. The filling and grading could result in a relatively large area of filled/bare soils around the proposed dwelling/garage being exposed to the elements, adjacent to the lakeshore. That being said, it is expected that the construction zone can be contained largely within the proposed building envelope for the planned dwelling/garage, septic system and parking area, while limiting disturbance to the wetland conditions that dominate the property. According to the policy requirement in Section 4.0 of this sEIS, a 30 m setback should be maintained between the shoreline of Deer River/Wollaston Lake and the development, which is a key constraint to the proposed development's building envelope.

Overall, the gradient between the proposed building site/disturbance area and shoreline is relatively gentle. As such, the majority of runoff will be slowed in the area of the proposed dwelling/garage, making it more manageable during the construction and post construction phases.

Recommendations are provided in a following section to define the limits of the proposed building envelope and to mitigate impacts on the local hydrologic features.

9.3 Construction Related Impacts

In addition to the list of general potential impacts listed above, the following potential impacts that relate to construction activities on-site need to be considered:

- equipment related impacts on the on-site wetland vegetation by filling/grading activities outside the proposed building envelope;
- erosion and sediment generated by exposed and/or disturbed soils being tracked into the on-site wetland areas by equipment operating outside the building envelope area;
- presence of construction debris and waste materials during the building stages;

- fauna, such as turtles entering the work area during construction from the Deer River/Wollaston Lake side of the property;
- permanent stabilization of the construction area in the post construction era as both filling and grading appear to be necessary to establish a building envelope on-site, and
- sensitivity of the site with respect to imported fill materials, invasive species and stockpiling of these materials during construction.

Recommendations are provided below to ensure that the potential for impacts relating to occupation and use of the new dwelling/garage are minimized/mitigated.

10.0 Recommendations

10.1 Development Envelopes and Site Constraints

- Unfortunately, there is no alternative location to situate the proposed dwelling/garage and septic system outside the wetland on the subject property. This was confirmed through consultations with CVCA staff during the August 17th, 2023 site meeting. Therefore, wetland loss cannot be avoided on this existing lot of record. As such, some concessions are necessary on behalf of the property owner to reduce the overall building envelope footprint of the proposed development, as illustrated by Figure 6.
- As illustrated, the majority of the disturbance and alteration should be confined to the general area of the western portion of the property (as proximal to the road as possible), as this is the most elevated area on the subject property. Even though the majority still occurs within the wetland, it is the only feasible location within the property to target a development that is well back from the limit of the riverfront/lakeshore.
- As per the on-site meeting, CVCA staff recommended having the sEIS completed to suggest what could be done to limit the development within the wetland and to recommend mitigation measures that would prevent impacts to the function of the wetland and the river/lakefront.
- CVCA staff stated during the site meeting that they would not be in a position to permit a development on the subject property due to its inability to meet the required 15 m setback for wetlands of less than 2 ha in area, as per the Regulation. Therefore, the property owners will need to bring their application

before the Crowe Valley Chair and Board Members to determine whether the concessions and mitigation warrant approval of the proposed single residential development.

According to Figure 6, the development will meet certain standard criteria with respect to maintaining a 30 m distance or more to the interface of Deer River/Wollaston Lake. In addition to maintaining a minimum 30 m vegetated buffer zone to the river/lakeshore, the proposed building envelope can also be situated outside the 6 m setback off the 100 year floodplain of the river/lake.

- The on-site wetland is the main constraint on both the subject property and area directly downgradient of the subject property (totalling approximately 6,167 m²). ORE recommended the following mitigation measures during the on-site meeting with CVCA and the proponent to off-set the loss of the on-site wetland/hydrological feature on the property:
 - ▶ Reduce the overall size of the combined dwelling/garage structure to only what is needed;
 - ▶ Reduce the overall size of the septic system to minimize the footprint and fill materials necessary to construct the unit. This could include construction of a filter bed or the inclusion of a tertiary treatment unit;
 - ▶ Elevate the dwelling/garage structure to a 2nd level to achieve the overall desired square footage;
 - ▶ Compensate with shrub and/or tree plantings in the open areas of the property to improve the quality of the wetland between The South Road and the shoreline;
 - ▶ Allow some of the areas within the buffers to grow-in naturally (i.e., do not mow the groundcover in both the setback areas and areas outside the fill placement limit/building envelope, thereby allowing these areas to become a naturalized wetland again, excluding a pathway to the lakeshore/existing dock location);
 - ▶ It may be necessary to construct some small crossings to maintain low-lying drainage features between the proposed dwelling/structure and the shoreline;
 - ▶ Use woodchips as a base to create a walkway down to the shoreline and docks;
 - ▶ Construct either a slab-on-grade or partially in-ground dwelling (depending on fill levels) to keep the base outside the highwater table of the on-site wetland habitat;
 - ▶ Minimize the amount of fill being placed on-site to only what is necessary to elevate the proposed dwelling/garage structure and for

- construction of the septic system, and
- ▶ Locate the dwelling/garage and septic system as close as possible to The South Road to reduce the overall footprint in the on-site wetland and to maximize the separation from the river/lakeshore to protect fisheries and other biota associated with this adjacent hydrological feature.

By applying the above mentioned mitigation/concessions into the development plan, the overall building envelope between the new development proposal and the old development proposal would reduce imposition into the wetland habitats by 9% (i.e., $1,435 \text{ m}^2 = 23\%$ to $856 \text{ m}^2 = 14\%$). By reducing the footprint to 856 m^2 it will retain 86% of the wetland vegetation between the shoreline and on-site subject property area.

Additional mitigation / recommendations not discussed at the site meeting:

- In addition to the above mentioned mitigation measures, ORE staff recommend planting twenty (20) new native trees/shrubs (bare-root whips or plugs) within the on-site meadow marsh wetland habitat to offset the loss of wetland vegetation as a result of the building envelope. Certain trees and shrubs can be planted without resulting in any significant reduction to the lake vistas. The shrubs will also enhance the property with respect to erosion-stabilization while improving the buffering capacity for runoff and/or potential shallow groundwater flows/seepage in the area.

The trees would aid in the uptake of non-point source nutrients/pollutants from the proposed development and upgradient developments across The South Road to the west. Eventually, these planted trees would cast seeds of the native wetland trees/shrubs elsewhere within the wetland, which should be allowed to naturally germinate/succeed. If a small tree/shrub grows directly within the line of sight between the proposed new residence/garage, it can be relocated by the property owner elsewhere on the property.

The smaller stock should be obtained from a reputable nursery and cannot be transplanted from any nearby woodland habitats. The stock should be distributed evenly across the site allowing them to grow to their full potential. ORE staff can provide recommendations in this regard.

10.2 General Design Considerations

- The design/layout plan for the new build targets the smaller residence/garage structure as close as possible to the elevated swath proximal to The South Road which situates the building envelope 30 m or more from the Deer River/Wollaston Lake (as illustrated on Figure 6 - Constraints). The site plan should illustrate which native trees/shrubs will be planted on-site to improve the overall on-site wetland and shoreline conditions. It may be best to target the majority of the trees/shrub plantings within the meadow marsh habitat on the property, while allowing the wetland groundcovers to naturalize beneath the planted stock. The planted trees/shrubs can become part of the landscaping plan.
- All recommended erosion controls should be installed prior to commencing any work on the property to reduce sprawl of any imported fill materials beyond the building envelope. The prescribed trees/shrubs to be planted on the property will help stabilize the soils between the proposed /garage/private services and the shoreline and reduce shoreline erosion effects. Vegetation/seed/sod must be established on any/all bare soil areas by the end of the construction. The works cannot be considered complete until all surfaces are stable. The Site Plan should illustrate how all surfaces/grades will be stabilized/finished.

10.3 Construction Mitigation

- Proper erosion/sedimentation controls will be required at all times while heavy equipment operates at the site. Heavy-duty silt fence should be installed around the work zone/building envelope in the western portion of the property, as illustrated by Figure 6 (Appendix C). Construction should not continue during heavy precipitation events. After these events, the fence should be checked to ensure their effectiveness.
- The heavy-duty silt fence provides a solution to mitigate sheet runoff, not concentrated flows. Therefore, if a concentrated flow results from a precipitation event during construction (not anticipated), another type of erosion/sedimentation control, such as a rock check dam that incorporates stone and geotextile filter cloth to prevent sediment laden runoff from entering the sensitive watercourse features, should be utilized. The contractor or owner should illustrate any such controls on their Site Plan. The construction and development shall not interfere with the drainage ditch along the southern edge of the property as it collects runoff from the adjacent property to the south and from The South Road.

- To ensure the development does not advance any closer than necessary to Deer River/Wollaston Lake, the building envelope should be clearly demarcated on-site by installing a heavy-duty silt fence, as illustrated by Figure 6. This will prevent the construction crew from unnecessarily increasing the overall disturbance footprint towards the lakefront, especially during the use of heavy equipment. The heavy-duty silt fencing will ensure that any loose/unconsolidated materials in the fill materials will not migrate beyond this limit, thereby protecting the remaining wetland and Deer River/Wollaston Lake (considered the sensitive hydrological features on-site).
- As there is a potential for turtles to occur within Wollaston Lake during the growing season (e.g., Snapping Turtle), the heavy-duty silt fence will not only serve as a building envelope boundary, it will serve as a turtle exclusion fence, as recommended by the Ministry of Natural Resources and Forestry (MNR). Light-duty fence is not considered an exclusion fence material, as large turtles such as Snapping Turtle could dig beneath the fence or potentially push the fence over.
- Only clean fill should be imported to the site. The fill should not contain organic materials such as plant debris or topsoil that may contain exotic or invasive species that could out-compete native species along the lakeshore. Screened topsoil should be the only material applied to top-dress the fill. Any imported materials that are stockpiled on-site should be surrounded by heavy-duty silt fence until the materials are applied. The fence will also prevent species such as turtles from leaving the lakeshore to nest within the loose unconsolidated materials during construction. This time of year (when the report was written) is the best time of year to complete any vegetation removal or filling as most faunal species that do not migrate are overwintering in their respective habitats (e.g. turtles and snakes).
- The contractor should ensure their machinery is clean as per the Clean Equipment Protocol for Industry (May 2016) to prevent species such as European Common Reed (*Phragmites australis*), which could impact the shoreline and meadow marsh habitats on-site.
- Grass seed and/or sod should also be applied to any exposed/bare topsoil areas within the building envelope resulting from site preparation and construction activities, in addition to the recommended shrub/tree plantings. The recommended shrub and/or tree plantings downgradient of the residence /garage should be included on the Site Plan drawing.
- Absolutely no construction equipment should be operated beyond the

construction/work zone limitation, nor should equipment grade any new swales or other drainage works on-site to direct water toward the lake. The building envelope should maintain sheet-type runoff flows to avoid any concentrated flow conditions within the downgradient wetland. All equipment must remain within the area designated for construction (to be outlined by the heavy-duty silt fence).

10.4 Closing Remarks

The subject property is an existing lot of record which the property owners purchased not knowing that the entire site contained wetland vegetation. That being said, they are prepared to considerably reduce the extents of the proposed residential development on-site to retain as much of the wetland habitat as possible. Once the measures outlined in this sEIS are applied to the subject property, an effective area of 86% of the overall wetland vegetation between the shoreline and western property edge along The South Road will be preserved. This compares favourably to the 77% wetland retention that would have occurred under the former development plan, marking a significant effort by the property owners to retain as much of the wetland vegetation as possible. This is in addition to maintaining the 30 m setback/vegetation protection zone off the river/lakeshore and situating the development outside the 100 year flood limit, which are remarkable, considering the site contains wetland habitat and the shoreline of a watercourse directly adjacent to the property.

Therefore, it is our opinion that the applicant should be granted a Building Permit and CVCA Permit for the purpose of building a new dwelling/garage and septic system on the subject property, provided the mitigation measures recommended herein are adhered to.

The proponent should recognize that this *scoped* Environmental Impact Study provides recommendations pertaining only to natural environmental issues. Other issues related to Land Use Planning, servicing and/or Engineering may also need to be addressed with respect to any future application(s) and/or development plans.

ORE staff anticipate that it will be necessary to request a CVCA Board Hearing regarding this proposal, as per the comments provided during the on-site meeting. Once the proponents have a complete application, they should schedule a date for the hearing. If needed, ORE staff can attend and discuss the site condition findings and our recommendations/mitigation as outlined in this report.

Should the Board approve the application, the proponent should obtain all required permits from the agencies prior to commencing any alterations/construction on-site. Failure to do so may result in delays and/or other liabilities.

****End of *Scoped* EIS Report****

Yours truly,
Oakridge Environmental Limited

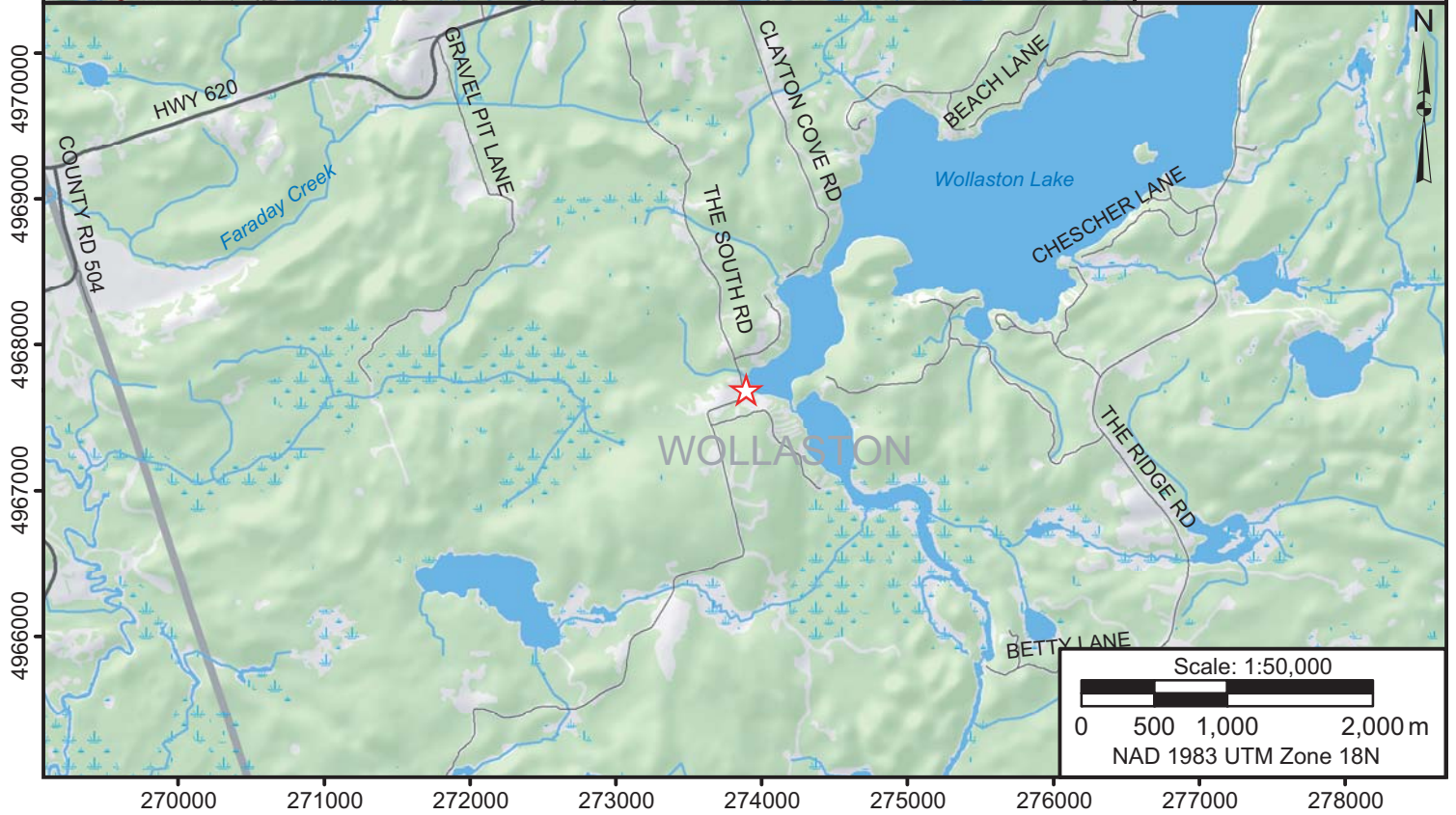
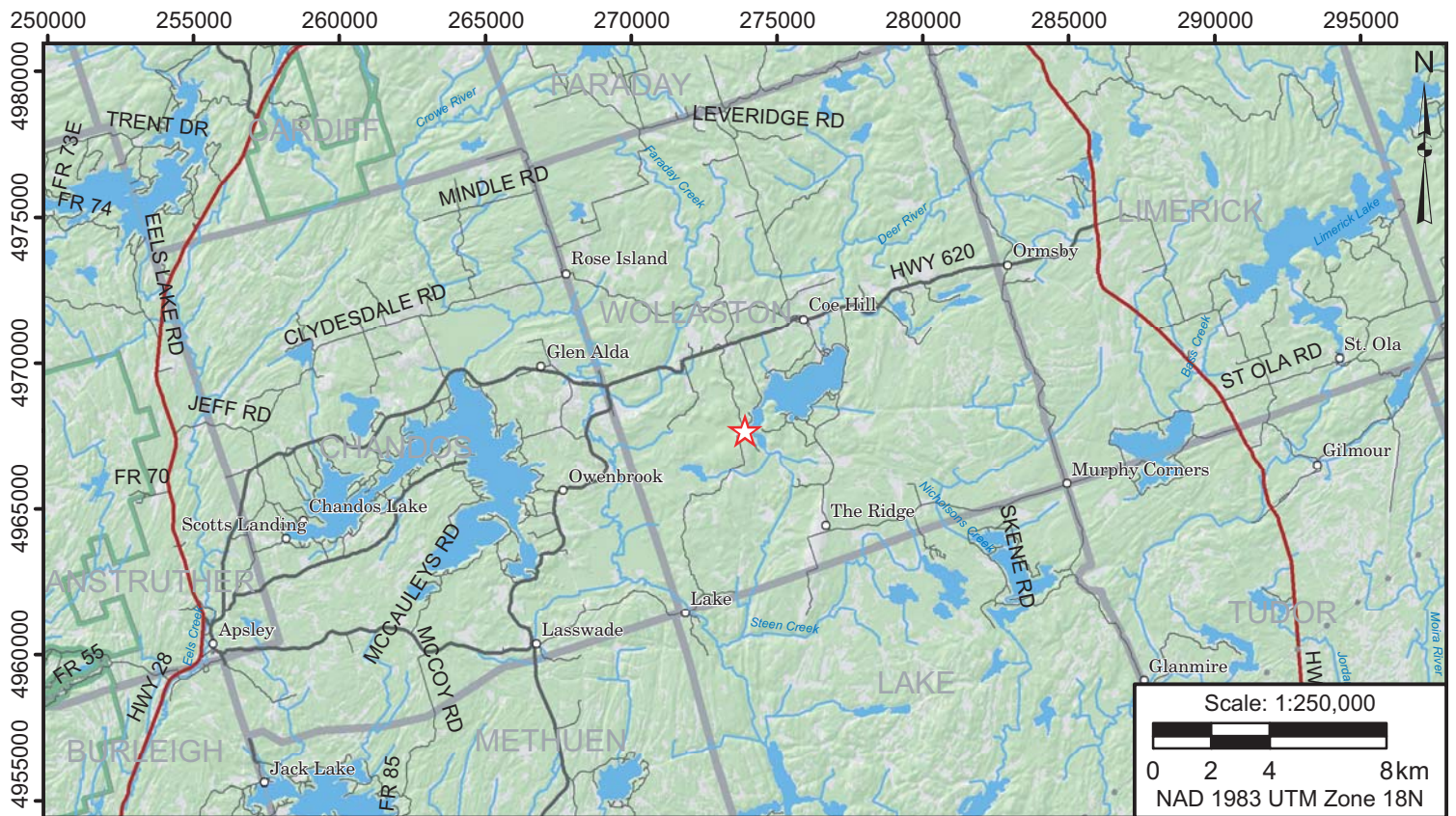


Rob West, HBSoc.
Senior Ecologist

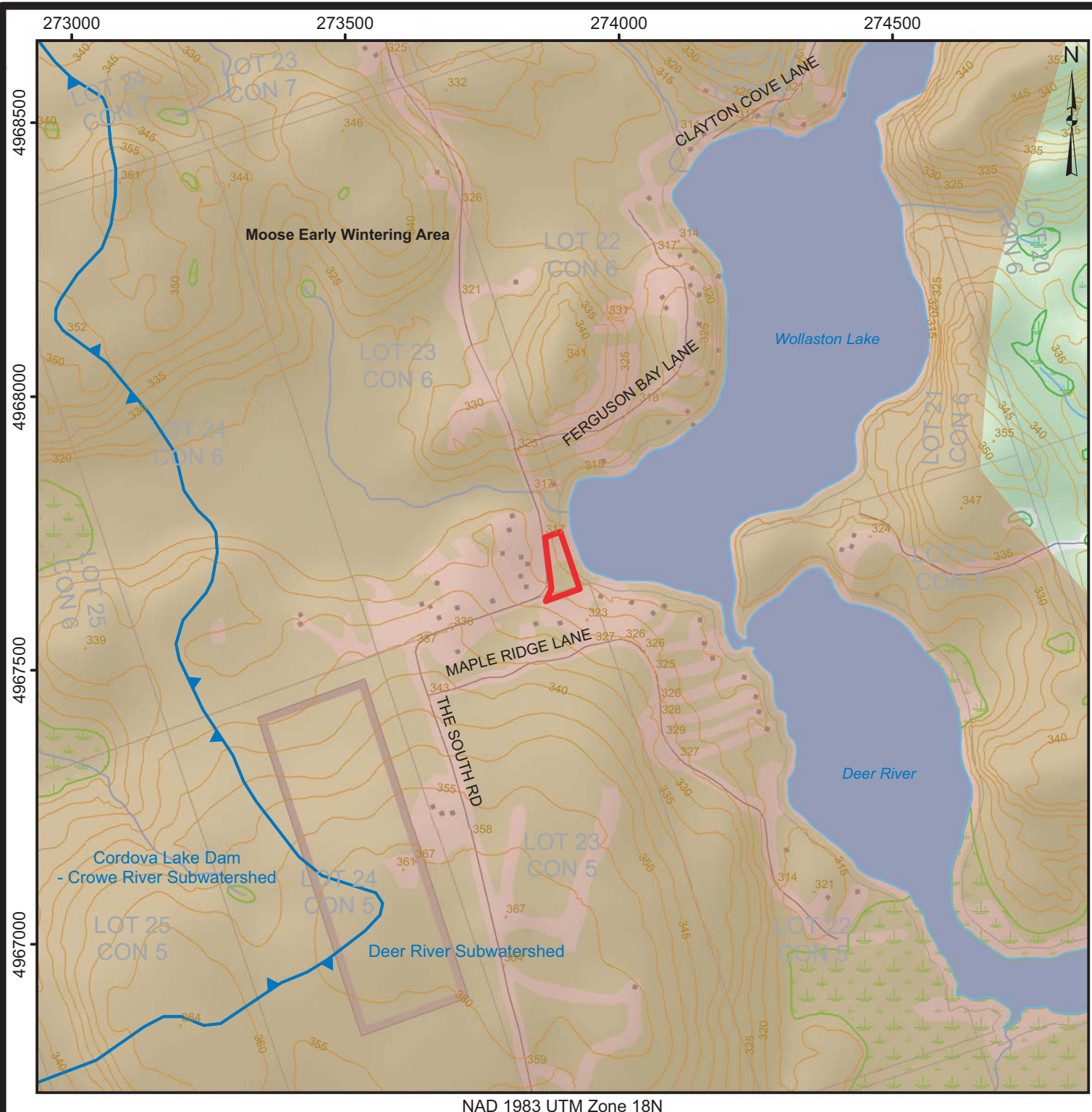
Selected References

- Argus, G.W. and K.M. Pryer.** 1982-1987, "Atlas of the Rare Vascular Plants of Ontario". Four Parts. National Museum of Natural Sciences, Ottawa, Ontario.
- Austen, M.J. et. al.** 1995. "Ontario Birds at Risk Program". Federation of Ontario Naturalists and Long Point Observatory. 165 pp. OBAR website contacted September 2012.
- Bezener.A.** 2000. "Birds of Ontario". Lone Pine Publishing.. 376 pp.
- Bakowsky, W.,** 1995. "S-ranks for Southern Ontario Vegetation Communities". OMNR, Natural Heritage Information Centre, Peterborough, ON. 11 pp.
- Bellrose F.C.** 1976. "Ducks, Geese and Swans of North America". Stackpole Books
- Cadman, M.D. et. al.,** 1987, "Atlas of Breeding Birds of Ontario", OBBA website contacted September 2012.
- Cheskey, E.D.** 1995. "Towards Conserving Birds of Ontario". Federation of Ontario Naturalists. 48 pp.
- Gill F.B.** 2007. "Ornithology - Third Edition". National Audobon Society, W.H. Freeman and Company.
- Jones et. al.** 2008. "The Dragonflies and Damselflies of Algonquin Park and the Surrounding Area." The Friends of Algonquin Park. 263 pp.
- Habib, L., Bayne, E. M. & Boutin, S.** "Chronic Industrial Noise Affects Pairing Success and Age Structure of Ovenbirds *Seiurus Aurocapilla*." Journal of Applied Ecology 44 (2007): 176-84.
- Holmes et. al.** 1991. "The Ontario Butterfly Atlas". Toronto Entomologists Association, Toronto, Ontario.
- Holmgren, Noel H.,** "Manual of Vascular Plants of Northeastern United States and Adjacent Canada - Second Edition", The New York Botanical Garden, 1998.
- Lee, H.D. et. al..** 1998. "Ecological Land Classification for Southern Ontario -First Approximation and it's Application - SCSS FieldGuide; FG-02." OMNR, North Bay, Ontario.
- McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier.** 2013. "Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario." Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii + 88 pp.
- Newcomb, L.,** "Newcomb's Wildflower Guide". Little Brown and Company(Canada) Limited, 1977.
- Oldham, M.J.,** 1996, "Natural Heritage Resources of Ontario, Amphibians and Reptiles", Ontario Herpetofaunal Survey (OHS),, 1996, OHS website contacted August 2012..
- Peck G.K. & James R.D.** 1983, "Breeding Birds of Ontario Nidology and Distribution Volume 1 : Nonpasserines and Volume 2: Passerines". Royal Ontario Museum, Toronto.
- Royal Ontario Museum.** 2009. "Species at Risk." ROM website contacted September 2012.
- Sibley, D.A.** 2003, "The Sibley Field Guide to Birds of Eastern North America". New York: Alfred A. Knopf.
- Voss, Edward G.,** "Michigan Flora - Part I to Part III"; Cranbrook Institute of Science Bulletin 55 and The University of Michigan Herbarium, 1972.

Figures

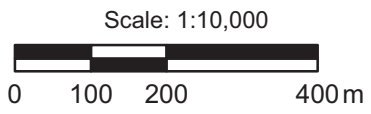


Approximate Location	Scoped Environmental Impact Study (sEIS) Proposed Single Residential Development Part Lot 23, Concession 5 & 6 The South Road, Wollaston Lake Township of Wollaston, County of Hastings		North American Datum (NAD) 1983	
			General Location	
Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)				PROJECT # 23-3326
Optimized for Oakridge Environmental Ltd. printing		DATE February 2024		FIGURE NO. 1



**Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development**
The South Road, Wollaston Lake
Part Lot 23, Concession 5 & 6
Township of Wollaston, County of Hastings

- Approximate Property Boundary
- Wooded Area
- Waterbody
- Wetland (Unevaluated)
- Watercourse
- Watershed Boundary
- Contour (5m Intervals)
- Spot Height (m asl)
- Building (symbol)
- Road
- Aggregate Site
- Geographic Lot Fabric
- Moose Early Wintering Area



Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

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TITLE
Topography and Drainage

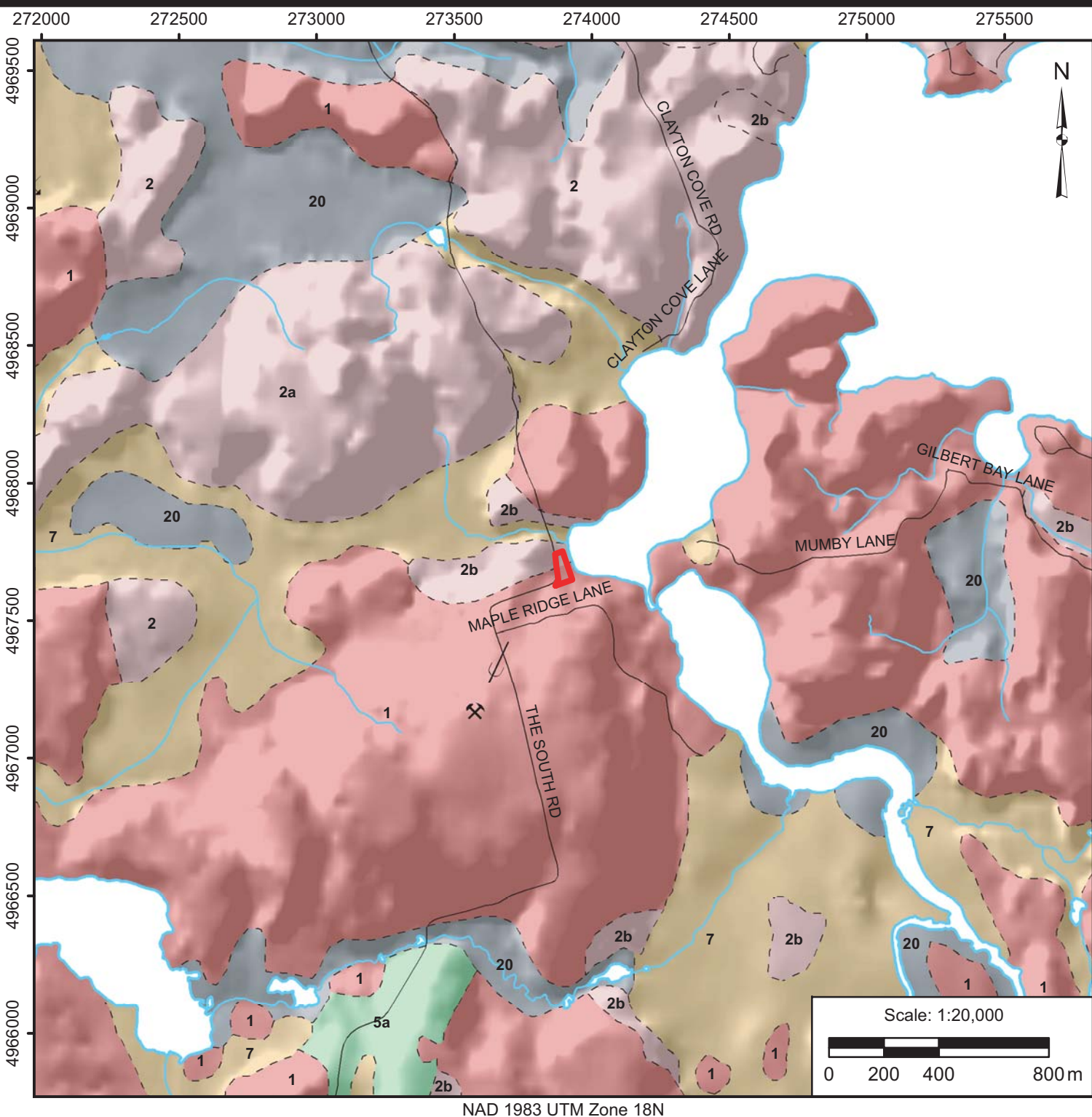


PROJECT #
23-3326

DATE
February 2024

FIGURE NO.
2

NAD 1983 UTM Zone 18N



Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
 The South Road, Wollaston Lake
 Part Lot 23, Concession 5 & 6
 Township of Wollaston, County of Hastings

- Approximate Property Boundary
- Waterbody
- Watercourse
- Quarry
- Sand and Gravel Pit
- Glacial Striae (direction of ice movement known)
- Contact (approximate/assumed)
- 1 Precambrian bedrock
- 2 Precambrian bedrock-drift complex
- 2a Precambrian bedrock-drift complex: Mainly till veneer
- 2b Precambrian bedrock-drift complex: Mainly stratified veneer
- 5a Glacial Deposits (Till): Shield-derived silty to sandy till
- 7 Glaciofluvial deposits
- 20 Organic deposits

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Optimized for Oakridge Environmental Ltd. printing

TITLE
Surficial Geology



PROJECT #
23-3326

DATE
February 2024

FIGURE NO.
3

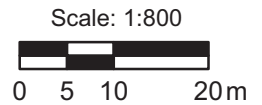
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Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
 The South Road, Wollaston Lake
 Part Lot 23, Concession 5 & 6
 Township of Wollaston, County of Hastings

- Property Boundary (PAMS)
- Proposed Development
- Rural Property (CVR_4)
- Dry - Fresh White Cedar Coniferous Forest (FOC2-2)
- Mixed Graminoid Graminoid Mineral Meadow Marsh (MAMM1-16)
- Speckled Alder Mineral Deciduous Thicket Swamp (SWTM1-1)
- Cattail Mineral Shallow Marsh (MASM1-1)
- Open Water (OAW)
- Wetland (ORE)
- Wetland Boundary (ORE)
- Road
- Spot Height (m asl)
- Auger Boreholes



TITLE
Vegetation

PROJECT #
23-3326

FIGURE NO.
4

DATE
February 2024

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)
 Imagery provided by Google Earth (2019)
 Plan of Survey provided by P. A. Miller Surveying LTD. (October 11, 2023) (PAMS)
 Feature locations determined by differential GPS (+/- 3.0 m)
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NAD 1983 UTM Zone 18N



Photo A (Above): Taken looking north from the southern portion of the property. The South Road is located just west of the hydro line and elevated above the site. A single Freeman's Maple (reddish) occurs in the middle of the property. The property has been cut low over the years giving it a lawn-like appearance.



Photo B (Above): Taken looking northeast towards Wollaston Lake. Upon closer inspection of the meadow, it was determined that the majority of the graminoid species are sedges, rushes, and hydrophytic species, suggesting this is a meadow marsh habitat. Meadow Marsh is a type of wetland under the Southern Ontario - Ecological Land Classification system.



Photo C (Above): Taken looking southeast towards the southeast corner of the property. The majority of the understory in this area consists of Speckled Alder which is a wetland species. There are also poplar, birch, spruce, cedar and other tree species which can also occur in wetland habitats.



Photo D (Above): Taken looking southeast from the midsection of the property and closer to the waterfront. The property owner has installed some light-duty silt fence due to some grading that was completed behind the photographer. The shrub species along the tree-line is Speckled Alder, the wetland shrub mentioned in the previous photo (C). There is also Soft-stemmed Bulrush and cattail along the shoreline. Just beyond the fence in the foreground is an abundance of meadow marsh species, suggesting this wetland community occurs towards the base of the slope and continues up the entire on-site slope towards The South Road.

Photos Taken: September 22, 2023

Optimized for Oakridge Environmental Ltd. printing

**Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development**
The South Road, Wollaston Lake
Part Lot 23, Concession 5 & 6
Township of Wollaston, County of Hastings



TITLE
Site Photos

PROJECT #
23-3326

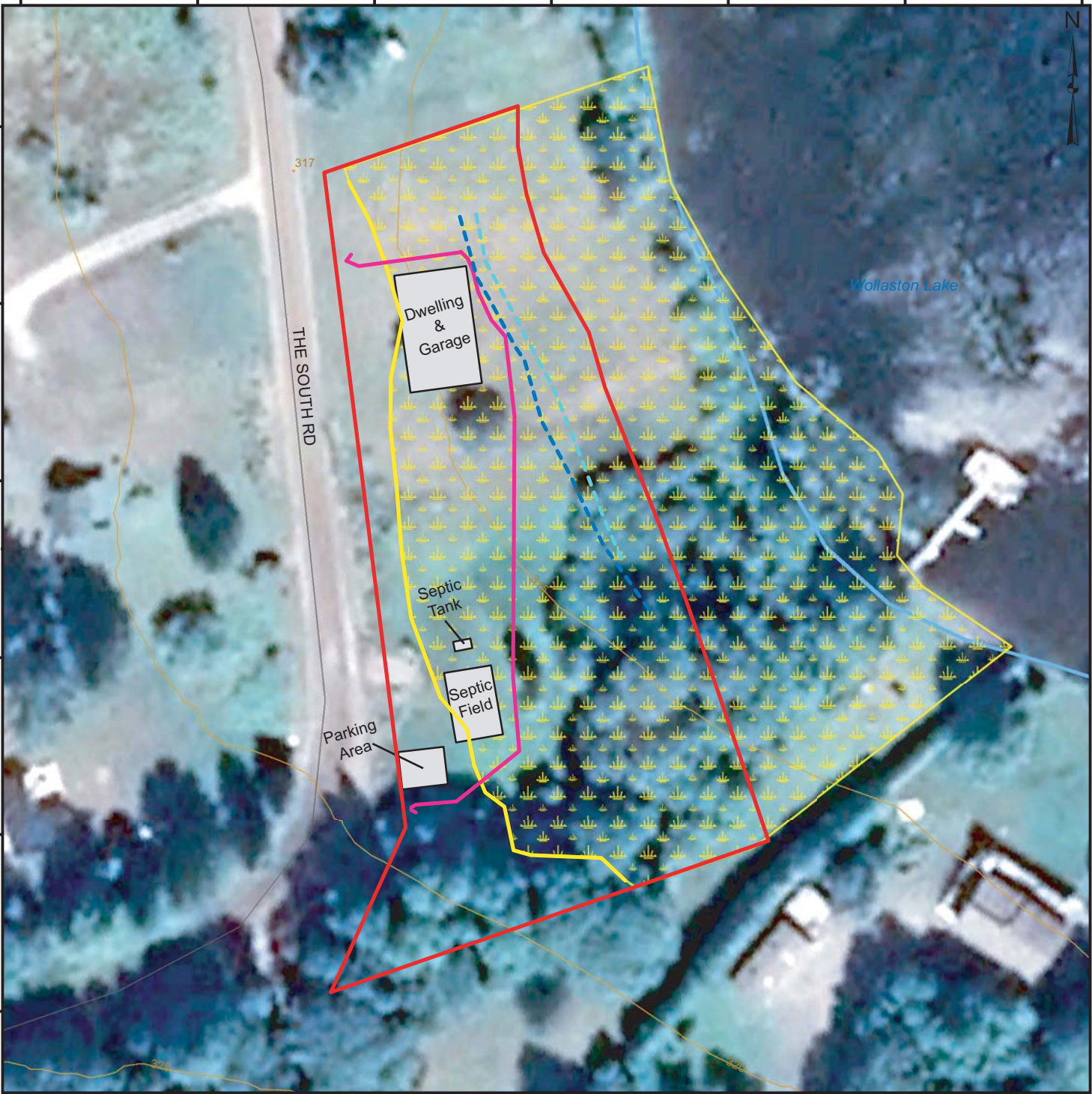
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FIGURE NO.

5

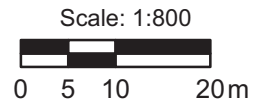
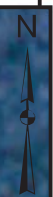
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Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
 The South Road, Wollaston Lake
 Part Lot 23, Concession 5 & 6
 Township of Wollaston, County of Hastings

- Property Boundary (PAMS)
- Proposed Development
- Wetland (ORE)
- Wetland Boundary (ORE)
- Waterbody/Shoreline (LIO)
- Road
- Contour (5 m Intervals)
- Spot Height (m asl)
- 100 Year Floodline Setback (6 m - PAMS)
- Shoreline Setback (30 m - PAMS)
- Heavy-duty Silt Fence



Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Imagery provided by Google Earth (2019)

Plan of Survey provided by P. A. Miller Surveying LTD. (October 11, 2023) (PAMS)

Feature locations determined by differential GPS (+/- 3.0 m)

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TITLE

Constraints



PROJECT #
23-3326

FIGURE NO.
6

DATE
February 2024

NAD 1983 UTM Zone 18N

Appendix A

Proponent's Conceptual Development Plan

**PLAN OF SURVEY OF
SHOWING LOCATION OF PROPOSED DWELLING
AND ZONING SETBACKS ON
PART OF LOT 23, CONCESSION 6
TOWNSHIP OF WOLLASTON
COUNTY OF HASTINGS**

KEVIN R.D. SMITH, O. L. S.
SCALE 1 : 500



LEGEND

- | SYMBOL | DENOTES |
|-------------|--|
| □ | SURVEY MONUMENT PLANTED |
| ■ | SURVEY MONUMENT FOUND |
| SSIB | SHORT STANDARD IRON BAR 25mm x 25mm x 60cm |
| SIB | STANDARD IRON BAR 25mm x 25mm X 120cm |
| IB | IRON BAR 15mm x 15mm x 60cm |
| Wit. | WITNESS |
| MEAS. | MEASURED |
| ORP | OBSERVED REFERENCE POINT |
| R. | ROTATED |
| P1 | PLAN 21R-22439 |
| P2 | PLAN 21R-23524 |
| FNE | FOUND NO EVIDENCE |
| CGVD28 | CANADIAN GEODETIC VERTICAL DATUM 1928 (1978) |
| ☒ | WOODEN STAKE |
| UPA | UTILITY POLE ANCHOR |
| OFN | ORIGINAL FIELD NOTES OF SURVEY OF THE TOWNSHIP OF WOLLASTON |
| SPOT HEIGHT | |
| --- | 1:100 YEAR FLOODLINE CONTOUR ELEVATION 311.6 CGVD28 |
| --- | 6m SETBACK FROM 1:100 YEAR FLOODLINE |
| --- | 21m SETBACK FROM WATER'S EDGE OF DEER RIVER (WOLLASTON LAKE) |
| --- | MUNICIPAL ZONING SETBACKS 8m FRONT YARD & REAR YARD
3m SIDE YARD & 30m FROM WATERCOURSE |

PHOTOGRAPH STATION & DIRECTION

POINT No.	NORTHING	EASTING
191	4967732.2	273898.9
192	4967713.1	273907.6
193	4967701.3	273911.6
194	4967721.0	273905.3
230	4967749.7	273915.0
231	4967739.9	273917.7
232	4967728.9	273923.9
233	4967720.4	273926.5

OBSERVED REFERENCE POINTS (ORPs) DERIVED FROM STATIC GNSS OBSERVATIONS, BASELINE POST PROCESSED FROM LEICA REFERENCE STATION - LAKEFIELD, UTM ZONE 18, NAD83 (CSRS) V7.1 EPOCH 2010. COORDINATES TO RURAL ACCURACY PER SEC. 14 (2) OF O.REG. 216/10.

POINT ID	NORTHING	EASTING
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ORP B	4967743.54	273867.87
ORP C	4967692.48	273915.87

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



PHOTOGRAPH A



PHOTOGRAPH B

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY STATIC GNSS OBSERVATIONS, SHOWN HEREON, BEARING OF N7°07'50"W, REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 18 (75° WEST LONGITUDE) NAD 83 (CSRS) v7.1 EPOCH 2010. GNSS BASELINE POST PROCESSED FROM LEICA REFERENCE STATION - LAKEFIELD. FOR BEARING COMPARISONS, A ROTATION OF 2°01'10" CLOCKWISE WAS APPLIED TO BEARINGS ON PLANS 21R-22439.

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.0001850. PROPERTY LINES ARE UNFENCED, UNLESS OTHERWISE NOTED.

FENCES ARE LOCATED ON PROPERTY LINES, UNLESS OTHERWISE NOTED.

TIES SHOWN TO THE WATER'S EDGE OF DEER RIVER (WOLLASTON LAKE) ARE AT RIGHT ANGLES TO THE TRAVERSE LINE, UNLESS OTHERWISE NOTED.

SSIB'S PLANTED DUE TO INSUFFICIENT OVERBURDEN

ORTHOMETRIC HEIGHTS ARE DERIVED FROM GNSS OBSERVATIONS POST PROCESSED FROM LEICA BASE STATION-LAKEFIELD AND THE HTV2 GEOD MODEL.

DEER RIVER (WOLLASTON LAKE) IS ARTIFICIALLY REGULATED TO MAXIMUM CONTOUR ELEVATION 310.2 CGVD28.

METRIC

DISTANCES AND COORDINATES ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
- THIS SURVEY WAS COMPLETED ON THE 26th DAY OF APRIL, 2022.

DATE : SEPTEMBER 19, 2022

KEVIN R.D. SMITH
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO
LAND SURVEYORS
PLAN SUBMISSION FORM
V-XXXXX

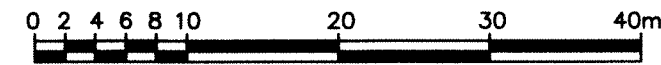
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In accordance with Regulation 1026, Section 29(3).

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(613) 395-3070
22-10921

**PLAN OF SURVEY OF
SHOWING LOCATION OF PROPOSED DWELLING
AND ZONING SETBACKS ON
PART OF LOT 23, CONCESSION 6
TOWNSHIP OF WOLLASTON
COUNTY OF HASTINGS**

KEVIN R.D. SMITH, O. L. S.
SCALE 1 : 500



LEGEND

SYMBOL	DENOTES
□	SURVEY MONUMENT PLANTED
■	SURVEY MONUMENT FOUND
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- - - - -	1:100 YEAR FLOODLINE CONTOUR ELEVATION 311.6 CGVD28
- - - - -	6m SETBACK FROM 1:100 YEAR FLOODLINE
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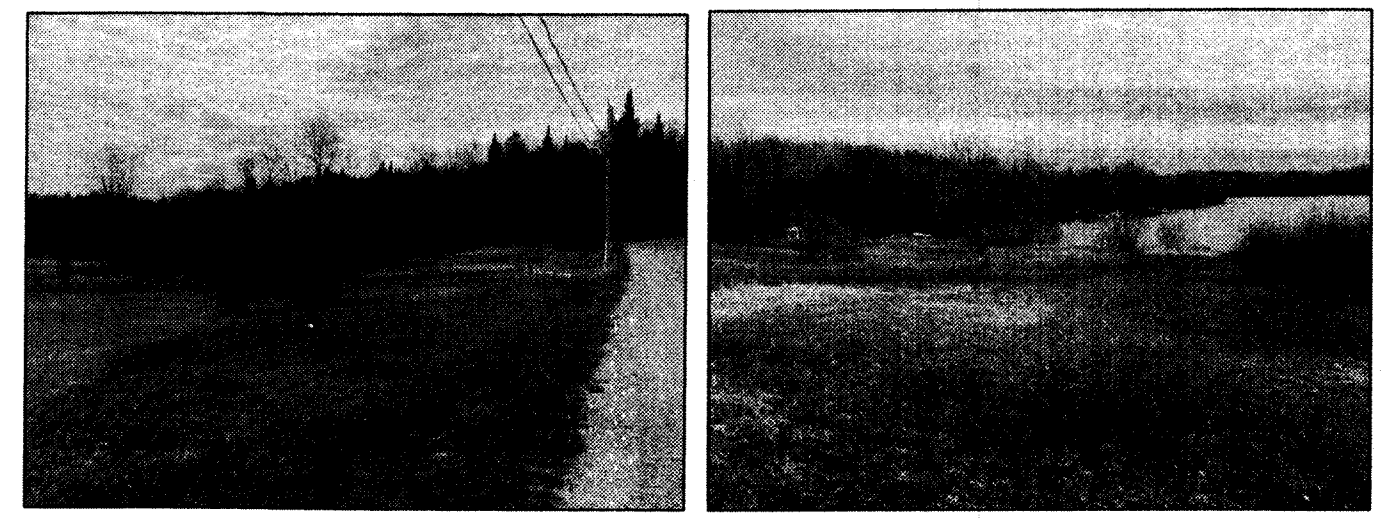
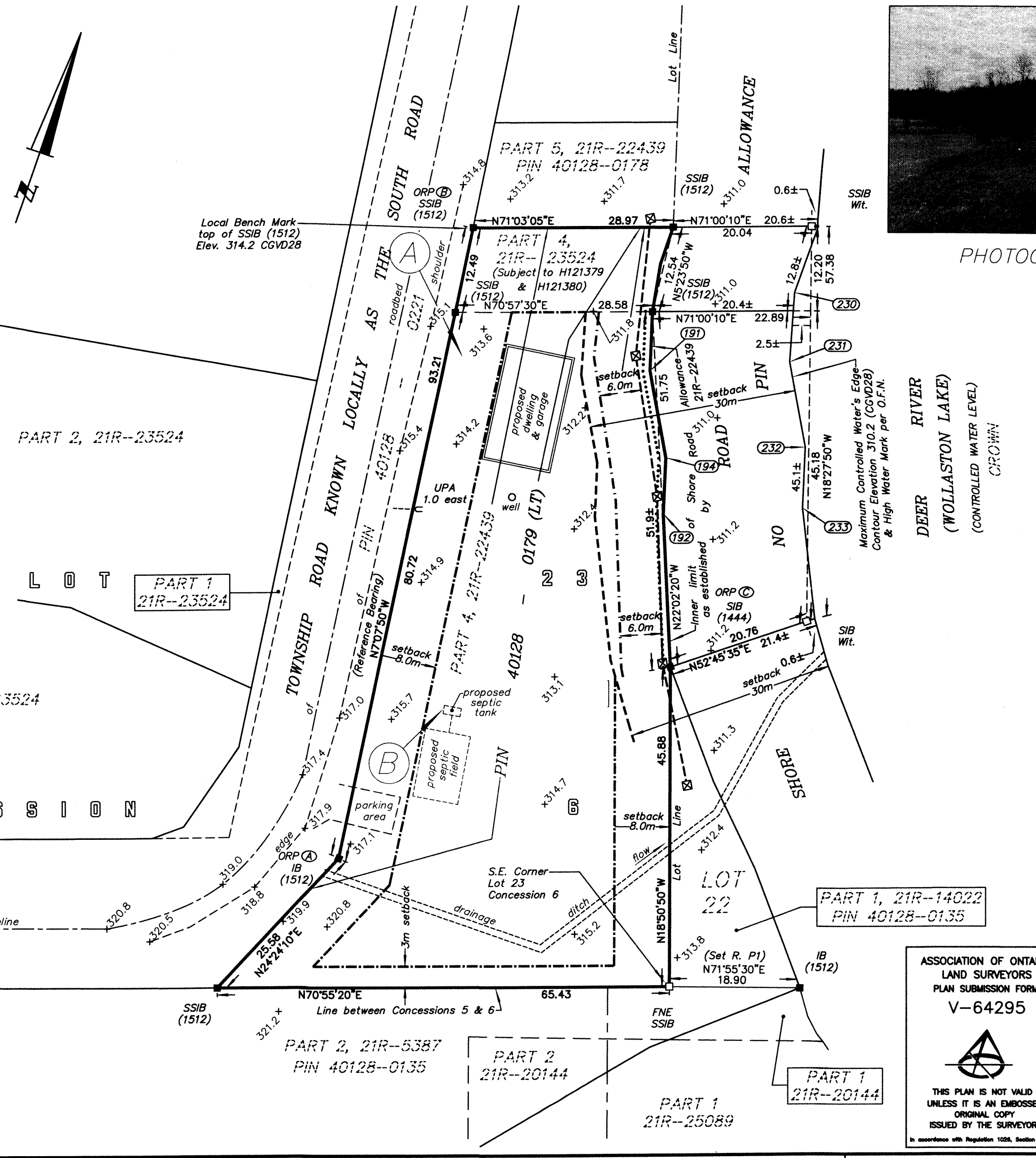


POINT No.	NORTHING	EASTING
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PHOTOGRAPH A

PHOTOGRAPH B

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DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.0001850. PROPERTY LINES ARE UNFENCED, UNLESS OTHERWISE NOTED. FENCES ARE LOCATED ON PROPERTY LINES, UNLESS OTHERWISE NOTED.

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METRIC

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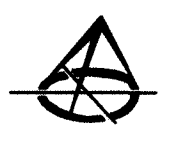
SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THIS SURVEY WAS COMPLETED ON THE 26th DAY OF APRIL, 2022.

DATE : OCTOBER 11, 2023

Kevin R.D. Smith
KEVIN R.D. SMITH
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO
LAND SURVEYORS
PLAN SUBMISSION FORM
V-64295



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(613) 395-3070

Appendix B

Species List

Species List

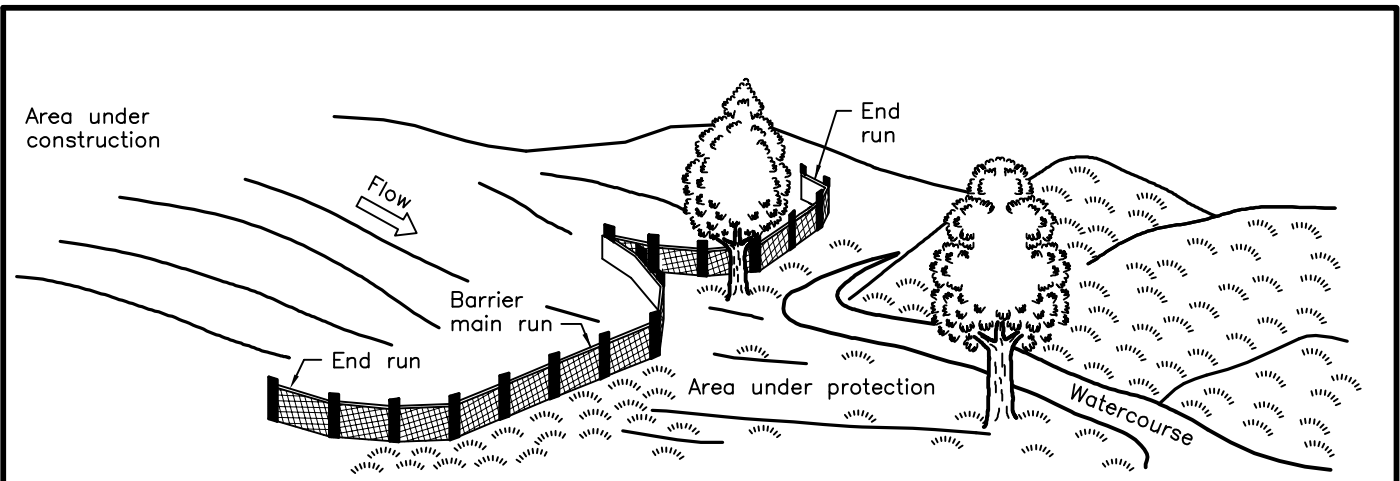
KINGDOM	Common Name	Scientific Name	SARO	SARA
Animalia				
	American Crow	Corvus brachyrhynchos		
	American Goldfinch	Spinus tristis		
	American Mink	Neogale vison		
	American Robin	Turdus migratorius		
	Black-capped Chickadee	Poecile atricapillus		
	Blue Jay	Cyanocitta cristata		
	Brown-headed Cowbird	Molothrus ater		
	Cedar Waxwing	Bombycilla cedrorum		
	Chipping Sparrow	Spizella passerina		
	Common Grackle	Quiscalus quiscula		
	Dark-eyed Junco	Junco hyemalis		
	Downy Woodpecker	Dryobates pubescens		
	Gray Catbird	Dumetella carolinensis		
	Hairy Woodpecker	Dryobates villosus		
	Northern Cardinal	Cardinalis cardinalis		
	Northern Leopard Frog	Lithobates pipiens	NAR	
	Northern Raccoon	Procyon lotor		
	Pileated Woodpecker	Dryocopus pileatus		
	Purple Finch	Haemorhous purpureus		
	Red-winged Blackbird	Agelaius phoeniceus		
	Song Sparrow	Melospiza melodia		
	Spring Peeper	Pseudacris crucifer		
	Swamp Sparrow	Melospiza georgiana		
Plantae				
	(Acer rubrum X Acer saccharinum)	Acer x freemanii		
	Black Spruce	Picea mariana		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Broad-leaved Cattail	<i>Typha latifolia</i>		
	Bull Thistle	<i>Cirsium vulgare</i>		
	Canada Goldenrod	<i>Solidago canadensis</i>		
	Canada Rush	<i>Juncus canadensis</i>		
	Common Milkweed	<i>Asclepias syriaca</i>		
	Common Reed	<i>Phragmites australis</i>		
	Cranberry Viburnum	<i>Viburnum opulus</i>		
	Dark-green Bulrush	<i>Scirpus atrovirens</i>		
	Dudley's Rush	<i>Juncus dudleyi</i>		
	Eastern White Cedar	<i>Thuja occidentalis</i>		
	Field Horsetail	<i>Equisetum arvense</i>		
	Field Thistle	<i>Cirsium discolor</i>		
	Flat-stemmed Spikerush	<i>Eleocharis compressa</i>		
	Fox Sedge	<i>Carex vulpinoidea</i>		
	Marsh Sow-thistle	<i>Sonchus palustris</i>		
	Narrow-leaved Cattail	<i>Typha angustifolia</i>		
	New England Aster	<i>Symphyotrichum novae-angliae</i>		
	Pale Spikerush	<i>Eleocharis flavescens</i>		
	Paper Birch	<i>Betula papyrifera</i>		
	Path Rush	<i>Juncus tenuis</i>		
	Poison Ivy	<i>Toxicodendron radicans</i>		
	Porcupine Sedge	<i>Carex hystericina</i>		
	Red Maple	<i>Acer rubrum</i>		
	Reed Canarygrass	<i>Phalaris arundinacea</i>		
	Soft Rush	<i>Juncus effusus</i>		
	Soft-stemmed Bulrush	<i>Schoenoplectus tabernaemontani</i>		
	Speckled Alder	<i>Alnus incana</i> ssp. <i>rugosa</i>		
	Spinulose Wood Fern	<i>Dryopteris carthusiana</i>		
	Star Sedge	<i>Carex echinata</i>		
	Trembling Aspen	<i>Populus tremuloides</i>		

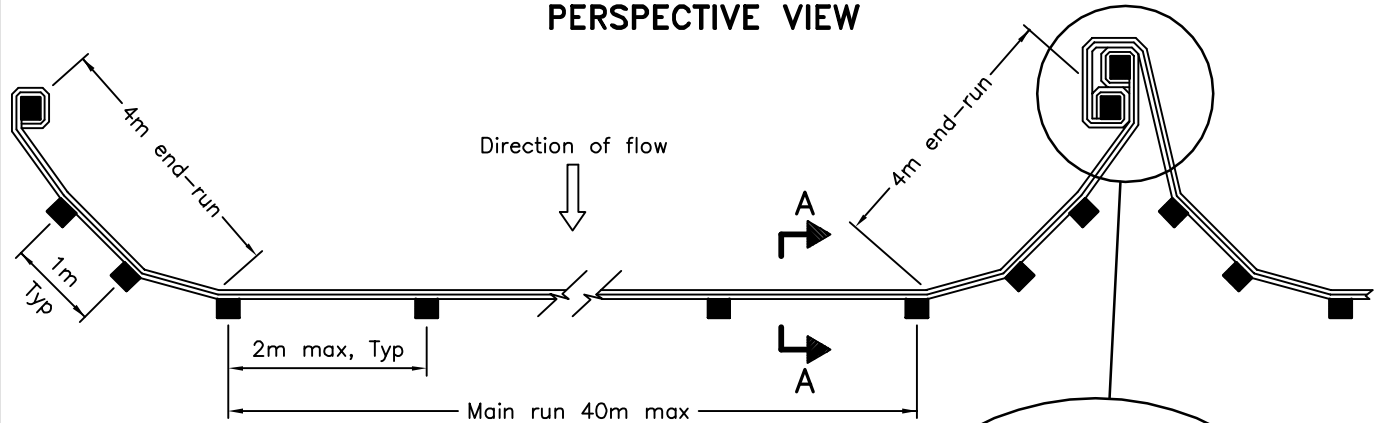
KINGDOM	Common Name	Scientific Name	SARO	SARA
	Tussock Sedge	Carex stricta		
	Water Horsetail	Equisetum fluviatile		
	Water Sedge	Carex aquatilis		
	Wild Carrot	Daucus carota		

Appendix C

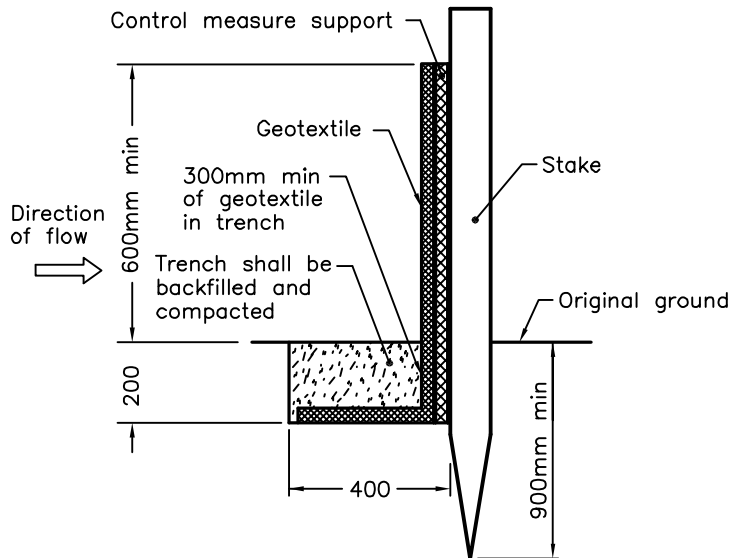
OPSD Heavy-duty Silt Fence



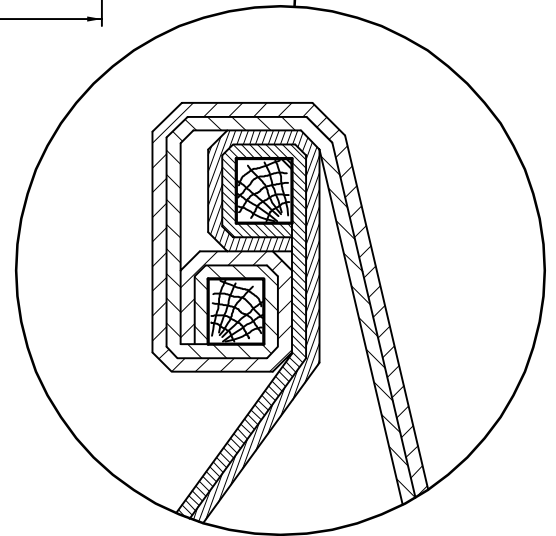
PERSPECTIVE VIEW



PLAN



SECTION A-A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING		Nov 2015	Rev 2	
HEAVY-DUTY SILT FENCE BARRIER		-----		

OPSD 219.130				