Day & Ross Inc.

5494, 5500, AND 5510 BOUNDARY ROAD

Environmental Impact Statement Update

CIMA+ file number: A001395A
01 December 2025 – Review 001

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Environmental Impact Statement Update

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Confidentiality and ownership

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Revision History			
Revision No.	**Reviewed by**	**Date of review**	**Description of review**
001	ML/AQ	2025-11-28	Address comments from Novatech

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Glossary of Terms

Adjacent Lands	Typically 120 m, or wider to address other guidelines (i.e., MECP with respect to endangered or threatened species)
Proponent	Day & Ross Inc.
Project	The proposed construction of the truck transport facility / cross dock facility and activities associated with its construction and operation.
Site	The properties at 5494, 5500 and 5510 Boundary Road, Navan, Ontario.

List of Acronyms

ANSI	Area of Natural and Scientific Interest
ARA	Aquatic Resource Area
CASAR	Canadian Aquatic Species at Risk
CC	Coefficient of Conservation
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
DBH	Diameter-at-breast Height
DFO	Fisheries and Oceans Canada
ELC	Ecological Land Classification
ESA	Endangered Species Act, 2007(Provincial)
FA	Fisheries Act
FWCA	Fish and Wildlife Conservation Act, 1997 (Provincial)
GPS	Global Positioning System
LIO	Land Information Ontario
MBCA	Migratory Bird Convention Act, 1994 (Federal)
MCEA	Municipal Class Environmental Assessment
MECP	Ministry of Environment, Conservation and Parks
MNR	Ministry of Natural Resources
MTO	Ministry of Transportation of Ontario
NAD 83	North American Datum 1983
NHAR	Natural Heritage Assessment Report
NHIC	Natural Heritage Information Centre
NHRM	Natural Heritage Reference Manual
NHS	Natural Heritage System
OBBA	Ontario Breeding Bird Atlas
OMNR/MNRF	Ontario Ministry of Natural Resources (old name) Ministry of Natural Resources and Forestry (old name)
OP	Official Plan
ORAA	Ontario Reptile and Amphibian Atlas
OSAP	Ontario Stream Assessment Protocol
OWES	Ontario Wetland Evaluation System
PPS	Provincial Policy Statement
PSW	Provincially Significant Wetlands
SAR	Species at Risk (in this report, they refer to species that are provincially or federally listed as endangered or threatened and receive protection under ESA or SARA)
SARA	Species at Risk Act (Federal)
SARO	Species at Risk in Ontario

SWHTG	Significant Wildlife Habitat Technical Guide
UTM	Universal Transverse Mercator

List of Definitions

SRANK Definitions

S1 Critically Imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure; uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure; Common, widespread, and abundant in the nation or state/province.

? Inexact Numeric Rank—Denotes inexact numeric rank

SNA Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

S#B Breeding

S#N Non-Breeding

SARA Status Definitions

END Endangered: a wildlife species facing imminent extirpation or extinction.

THR Threatened: a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

SC Special Concern: a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

SARO Status Definitions

END Endangered: A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.

THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SC Special Concern: A species with characteristics that make it sensitive to human activities or natural events.

Coefficient of Conservatism Ranking Criteria

0 Obligate to ruderal areas.

1 Occurs more frequently in ruderal areas than natural areas.

2 Facultative to ruderal and natural areas.

3 Occurs less frequent in ruderal areas than natural areas.

4 Occurs much more frequently in natural areas than ruderal areas.
5 Obligate to natural areas (quality of area is low).
6 Weak affinities to high-quality natural areas.
7 Moderate affinity to high-quality natural areas.
8 High affinity to high-quality natural areas.
9 Very high affinity to high-quality natural areas.
10 Obligate to high-quality natural areas

1. Introduction

Day & Ross Inc. (the Proponent) is proposing to construct a truck transport facility (cross dock facility) at 5494, 5500 and 5510 Boundary Road in Navan, Ontario. For the purposes of this report, the following terminology is used:

- "Site" refers to the three aforementioned properties;
- "Project" refers to the truck transport facility and all activities associated with its construction and operation.

An Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) for this development was submitted on May 3, 2021. That submission included the original Environmental Impact Statement (EIS) / Tree Conservation Report (TCR) prepared by Holly Bickerton and the EIS – Fisheries Component prepared by Bowfin Environmental Consulting (Bowfin). The EIS/TCR included information from Bowfin with respect to turtle surveys and headwater drainage feature assessments. The most recent of these reports are both dated November 9, 2021 (Bickerton, 2021; Bowfin, 2021). The City of Ottawa has since noted that the OPA is no longer required and has approved the ZBA (Agriculture and Rural Affairs Committee May 2, 2024). The previously completed environmental reports (Bickerton, 2021; Bowfin, 2021) were approved in support of the ZBA.

The following EIS consolidates the previous environmental reports into one cohesive document as a condition for Site Plan Approval (as per email communications with the City, January 14, 2025 email). This includes the original EIS has been incorporated below, with permission from Holly Bickerton (email dated April 17, 2025) and Bowfin (which is now merged with CIMA+), along with the EIS update by CIMA+ (dated October 1, 2024).

1.1 Project Description and Location

The Site consists of 3 parcels, 5494, 5500, and 5510 Boundary Road, encompassing an approximately 200 m by 400 m plot located on part of Lot 1 Concession 9 on Ottawa River in the Geographic Township of Navan, City of Ottawa (Latitude 45.338753 and Longitude - 75.442709; UTM NAD83 18N 465314E 5020678N) (Figure 1). The Site was largely disturbed and filled (compacted aggregates) from previous land use activities. The Project's activities will be restricted to these three properties; there are no off site temporary laydown yards etc. As described in the EIS – Fisheries Component (Bowfin, 2021) and EIS/TCR (Bickerton, 2021), the development will include the following activities:

- Construction of an access road into the Site from Boundary Road:
  - Installation of a fish friendly culvert

  - Potential for minor clearing of vegetation
- Construction of trucking and cross dock facilities
  - Clearing of vegetation and grading of Site.
  - Realignment and rehabilitation of Pond 1 and Feature 5

As noted above, the ZBA was adopted (Zoning By-Law 2024-238) and the Site Plan (001 revision #8, February 2024) submitted for approval; they depict the zoning boundaries of the development (Appendix D). The recently adopted Zoning By-law rezoned most of the Site to Rural General Industrial Zone to permit the truck transport terminal and cross dock facility land uses. In addition, rezoning was completed to capture the proposed realignment of a relocated headwater, shown on the Site Plan, along the northern limit of the site to Open Space – O1R Zone, and additionally provided relief from Section 69 - Setback from Watercourses on the Site and a portion of the neighboring property to the north. Included within the rezoned Open Space – O1R Zone is a setback from the wetland on the neighbouring property to the south. The proposed development is required to maintain the setbacks as set-out in the zoning amendment (Agriculture and Rural Affairs Committee May 2, 2024). This has been accomplished and is depicted on the Site Plan found in Appendix D.

1.2 Purpose and Scope of Assessment

This report compiles all information contained in the original EIS / TCR (Bickerton, 2021; Bowfin, 2021) and the EIS update prepared by CIMA+ (2024) into one cohesive document. Any changes to the Site Plan have been incorporated (Appendix D), and all avoidance and mitigation measures have been updated to meet current guidelines.

This report also serves to document discussions with the City on the rezoning and to address all City comments received to date. Note that mitigation measures and potential for the habitat of endangered and threatened species should be treated as a living document to update as needed in order to adhere to changing legislative requirements and guidelines. These have been updated to reflect any known changes implemented between the last EIS and the date of this report.

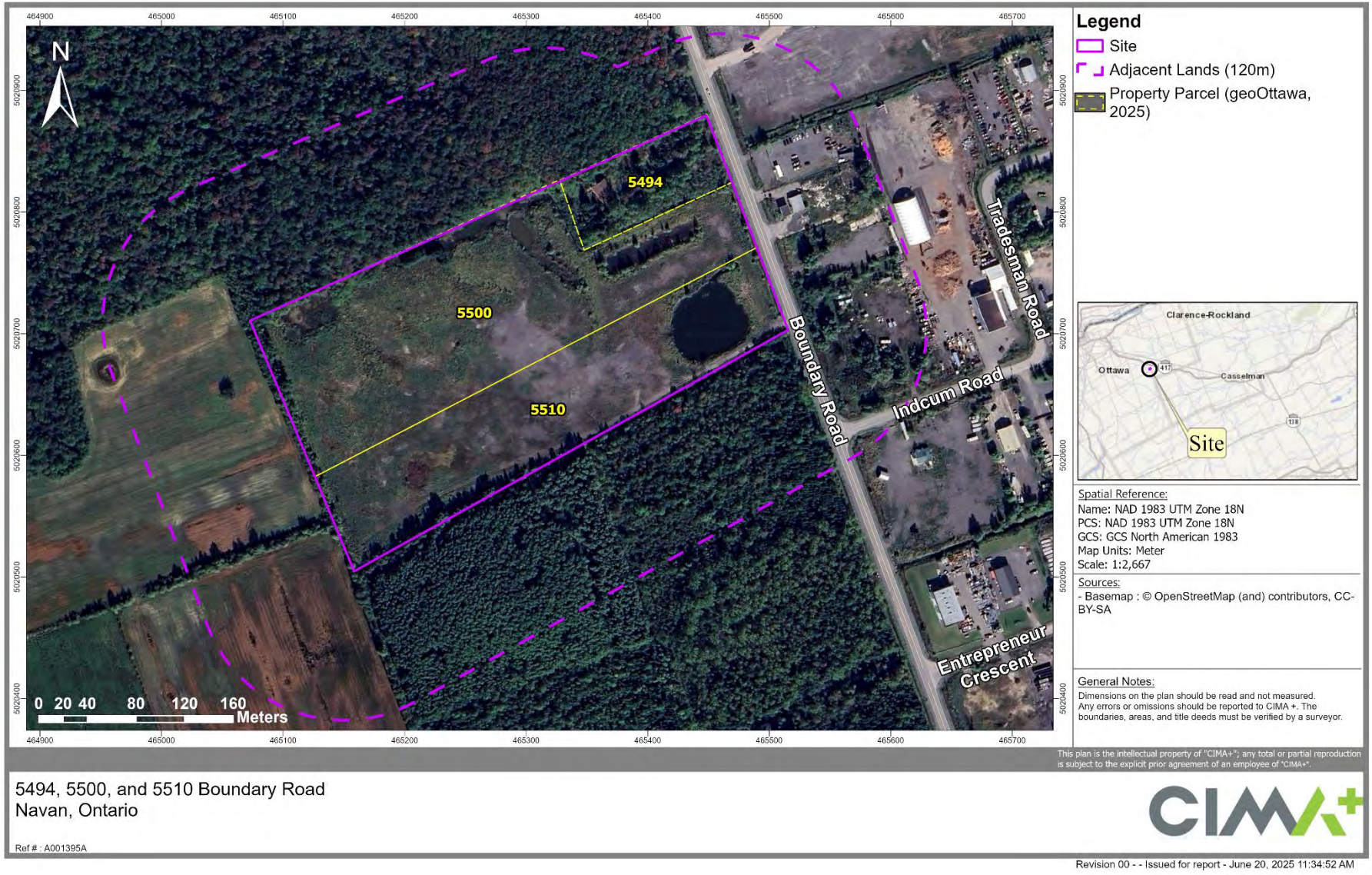

Figure 1: Location of Site and Adjacent Lands (120 m)

2. Legislative Context

2.1 Planning Act/Official Plan

As per the 2022 OP, an EIS is required to determine if significant natural features have been designated in or adjacent to the site followed by an assessment of the potential impacts to any identified natural environment from the Site.

The City's natural heritage features (NHF) are listed in Subsection 4.8.1 Policy 3 and summarized in Table 1 below. The City provides more significance to features that are **within** a Natural Heritage System (NHS) than those outside of its boundaries. The NHS includes both Core Natural Areas (CNA) and Natural Linkage Areas (NLAs). All of these are now found on Schedule C11.

Note that, as per 5.6.4.1 Policy 2, the edge of the boundary would need to be verified on-site, as the OP only displays to a reasonable level of detail. Where identified, the boundaries of any significant features are noted and the potential for the development of the site to cause negative impacts is assessed. For features that may be negatively impacted, mitigation measures and compensation measures are recommended where appropriate. The various features are evaluated, when needed, following the appropriate reference document for this jurisdiction.

This EIS follows the *City of Ottawa Environmental Impact Statement Guidelines* (City of Ottawa, 2023) as applicable for Rural Area (the Site is designated in the Rural Area and designated as Rural Industrial and Logistics).

A pre-consultation meeting was held at City Hall on January 20, 2020, in support of a planned Site Plan Control Application and Zoning By-law Amendment application. Subsequently, a requirement for an Official Plan Amendment was identified. The environmental reports listed below were identified as requirements and were prepared and approved through the Zoning By-law Amendment application.

1. Environmental Impact Statement (terrestrial and fisheries) (Bickerton, 2021; Bowfin, 2021)
2. Tree Conservation Report (TCR) (Bickerton, 2021)
3. Headwater Drainage Features Assessment Report (HDFA) (Bowfin, 2021)

2.2 Endangered Species Act

The *Endangered Species Act, 2007* (ESA) prohibits killing or damaging the habitat of species that are listed on the SAR in Ontario list. Endangered (END) indicates that the species lives in the wild in Ontario but is facing imminent extinction or extirpation. Threatened (THR) indicates the species lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address the factors threatening it. Note that species listed as special concern are not afforded protection under the Act.

The ESA is applicable on private and provincial lands. It can also sometimes be applicable to federal lands. The relevant sections to the project are:

- Prohibition on killing or harming of END or THR individuals (Section 9)
- Prohibition on damage to END or THR habitat (Section 10)

2.3 Fish and Wildlife Conservation Act

In addition to the protections offered by the statutes and policies noted above, the *Fish and Wildlife Conservation Act* (FWCA)*, 1997*, administered by the Ministry of Natural Resources (MNR), needs to be considered. This *Act* imposes restrictions on the hunting, trapping, and fishing of wildlife, as well as the possession of animals (live or dead). These restrictions include the capturing or harassing of specially protected wildlife or any wild bird species (not a game bird and not listed as an exception) regardless of its live stage (egg, adult) (Part II 5 (1)). It also protects nests or eggs of wild bird species (other than American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird, or starling) (Part II 7(1)). In case of conflicting provisions with the *Endangered Species Act, 2007*, the Act providing greater protection for the animal, invertebrate, or fish in question will prevail.

2.4 Conservation Authorities Act

On April 1, 2024, changes to the *Conservation Authorities Act* and a new regulation (O. Reg. 41/24) under the *Act* came into effect. Note that O.Reg. 41/24, Prohibited Activities, Exemptions, and Permits, replaces all previous Conservation Authority development regulations.

2.5 Fisheries Act

The *Fisheries Act,* last amended on August 28, 2019, is intended to provide a framework for the management of threats to fish[1] and fish habitat, including the prevention of pollution, regardless of their attachment to a fishery. The most relevant sections to works, undertakings and activities are:

- Prohibition of the Death of Fish (Section 34.4 (1));
- Prohibition of the Harmful alteration, disruption, or destruction of Fish Habitat (Section 35 (1));
- Prohibition on discharging deleterious substances (Section 36); and,
- The provisional Ministerial powers to ensure the free passage of fish or the protection of fish or fish habitat with respect to existing obstructions (Section 34.3).

Under the updated *Fisheries Act*, certain types of waterbodies remain that do not require DFO review. Generally, these are projects that will occur on a waterbody that is not connected to fish habitat and does not contain fish at any time of year.

2.6 Migratory Birds Convention Act

The *Migratory Birds Convention Act, 1994* (MBCA) regulates the protection and conservation of migratory birds as populations and individuals. It also offers protection for nests containing a live bird or viable eggs for most migratory bird species. Schedule 1 under the Migratory Bird Regulations (2022) lists 18 species that may reuse nests and whose nests are protected year-round regardless of occupation, unless the nest has been reported and deemed abandoned after a waiting period. Species listed under Schedule 1 that occur in Ontario include great egret, great blue heron, cattle egret, green heron, snowy egret, black-crowned night heron, and pileated woodpecker. The Migratory Bird Regulations (2022) prohibit the disturbance, damage, or destruction of migratory bird nests or eggs. These prohibitions and regulations apply to any areas where migratory birds and their nests are found in Canada.

2.7 Species at Risk Act

Federally protected species are listed in 'Schedule 1' of the *Species at Risk Act* (SARA). The application of SARA varies depending on the species and the level of government with jurisdiction over the land. In general, the relevant sections are:

- Prohibition of killing, harming, harassment, capturing or taking of an individual listed as extirpated, endangered, or threatened (Section 32(1))

[1] Summary of the FA definition of fish: parts of fish, shellfish, crustaceans, marine animals, and any parts of these, and eggs, sperm, spawn, larvae and juvenile stages of the above list.

- Prohibition of possessing, collecting, buying, selling, or trading an individual listed as extirpated, endangered, or threatened (Section 32(2))
- Prohibition against the damaging or destruction of residences of species listed as endangered or threatened. For extirpated species, the recovery strategy must also recommend the reintroduction of the species into the wild in Canada (Section 33)

However, on lands that are not federal, Sections 32 and 33 do not apply except for aquatic species (those listed as "fish" under the *Fisheries Act* or a migratory bird' as per the *Migratory Birds Convention Act,* 1994 (MBCA), unless a federal order has been created. For bird species with defined residences, the residences are protected year-round on all lands, while nests (that are not also defined as "residences") are protected during the nesting period (CWS, 2025).

3. Methodology

The following methodology stems from the EIS, Fisheries, and HDFA reports and has only been updated to incorporate any additional work completed by CIMA+.

3.1 Background Review

A search through available records and available consulting reports was made to gather existing information on the on natural heritage features and designations in proximity to the site, as well as a listing of SAR and their habitat potentially documented on or within 5 km of the Site. The following web sources were analyzed: Land Information Ontario (LIO), Natural Heritage Information Centre (NHIC), and DFO Aquatic Species at Risk Distribution 2019 (on-line). The review also included a summary of fish species found in Simpson Municipal Drain by Kilgour & Associates (2014). This section was updated, as applicable, for this report, in June 2025.

3.1.1 Fish Habitat Description

To assess the potential impacts to fish habitat, fish communities or fish species at risk (SAR) the aquatic habitats within the study area were assessed based on the point observation technique used by *Ontario Stream Assessment Protocol* (Stanfield, 2013) and the Ministry of Transportation of Ontario (MTO)'s *Environmental Guide for Fish and Fish Habitat October 2006* (MTO, 2006). The channel morphology was described using evenly spaced transects upon which data was recorded from evenly spaced observation points. The data collected included: channel width, wetted width, bankfull depth, water depth, substrate size, morphological units, and in-stream cover. Summaries of this information are available below.

3.1.2 Fish Community Sampling

Fish community sampling was performed to document the use of the Site by fish during the spring and summer of 2020, as well as the spring of 2021 for feature 8. The community was sampled using dip netting, hoop nets, and backpack electrofishing. The fish were identified, counted, measured [fork length (FL)/total length (TL) as appropriate], and released. The transect length, approximate width, volts, current and effort were also recorded.

3.2 Terrestrial Site Investigation Methods (Bickerton, 2021)

The following information was collected, using standard protocols as identified:

- Ecological Land Classification (Lee *et al*. 1998 and updates) for the Site;
- Wetland boundary assessment of the adjacent unevaluated wetland (using Ontario Wetland Evaluation System OWES) (MNRF, 2022). Evaluation of the entire regional wetland adjacent to the subject site to determine its provincial significance under the OWES was outside the scope of this study, as it would require access to an approximately 100 ha as well as significant inventory, analysis and scoring of this entire area.
- Identification of tree species and vegetation communities on site, and assessment of their function as per Tree Conservation Report Guidelines (City of Ottawa, 2020);
- Assessment of Significant Woodlands and Significant Wildlife Habitat (OMNR 2010, Natural Heritage Reference Manual, City of Ottawa 2018);
- Avian surveys using five 10-minute point counts within each representative habitat (Ontario Breeding Bird Atlas 2001); incidental surveys also completed;
- Amphibian surveys completed for headwater drainage assessment following methods in Marsh Monitoring Program (Birds Canada 2020);
- Species at Risk surveys, targeting Butternut, Barn Swallow, Bank Swallow, Wood Thrush, Eastern Wood Pewee, and Blanding's Turtle (see below). Survey requirements for Species at Risk were confirmed with the Ministry of Environment, Conservation, and Parks (MECP) in March 2020.
- Five basking surveys for Blanding's Turtle following Ontario Ministry of Natural Resources (OMNR) protocol (OMNR 2013). Surveys were completed on 28 April (BEC), 17 May (BEC), 20 May (BEC), 21 May (BEC), 28 May (HB) and 8 June (HB). All surveys were completed under appropriate weather conditions as defined by the protocol; coverage of the entire aquatic area of the site occurred over 1.25 to 2 hours on each survey day.
- Visual surveys for bats and suitable habitat were completed in May and June 2020 to identify possible nesting habitat for SAR bats;
- Complete incidental species lists (flora, fauna) from the subject property, including any regionally significant species (Brunton, 2005) and/or forest interior bird species.

4. Background Information

4.1 Summary of Natural Heritage Features

A desktop review was conducted and summarized for the 2021 EIS/TCR; results are taken from Bickerton, 2021, with permission, and updated in June 2025. The Site measures approximately 8.46 ha, and as mentioned above, consists of three properties (5495, 5500, and 5510 Boundary Road. The zoning, as per the most current City of Ottawa Official Plan (2021), across the three properties is:

- Rural General Industrial Zone (RG)
- Parks and Open Space Zone (O1) with a subzone of O1R.

The natural heritage features identified from the desktop review were:

- A watercourse along the southern edge of the Site (5494 Boundary Road property);
- Potential significant woodlands to the north and south of the Site;
- Provincially Significant Wetland (PSW) (evaluated in 2024) on the adjacent property to the north;
- Significant wildlife habitat; and,
- Habitat of endangered and threatened species.

Table 1: Identification of Known and/or Candidate Natural Heritage Features Based on Background Review

Natural Heritage Feature	Adjacent Lands	Presence on Site	Presence within Adjacent Lands (typically 120 m)	Comments
Habitat of Endangered and/or Threatened Species	Variable	Potential for endangered or threatened species was determined following the assessment of suitable habitat in or near the Site. Site investigations were conducted, and this item is discussed in 6.3 and tabulated in Appendix A		
Wetlands	120 m (Provincially Significant)	No	Yes. South Bear Brook Wetland, a provincially significant wetland, is present north of the Site.	Discussed in Section 6.6
Significant Woodlands	120 m	No	Yes	Discussed in Section 6.4
Areas of Natural and Scientific Interest (ANSIs)	120 m (life science)	No	No	Not discussed further.
Significant Valleylands	120 m	No	No	Not discussed further
Significant Wildlife Habitat	120 m	Potential for significant wildlife habitat was determined following the assessment of suitable habitat in or near the Site based on provincial protocols. Site investigations were conducted, and this item is discussed in 6.6		
Fish Habitat / Watercourses	120 m from seasonal high-water mark	Yes	Yes	Discussed in Section 6.7.

4.2 Geology and Topography (Bickerton, 2021)

As described in the EIS (Bickerton, 2021), the ecological function of 5500 and 5510 Boundary Road is dominated by surface aggregate fill of unknown origin, resulting from past land use. Geotechnical investigation reveals that beneath aggregated fill is sand, with little absorption capacity. The two southern parcels that have been filled over the last 20 years are now topographically elevated over adjacent properties. Along the northern edge of the property, fill has been excavated and graded to the adjacent lot. This has resulting in standing water (a pond) and a mapped watercourse that conveys water off the property. There are no steep slopes on Site or in the surrounding area. The geological characteristics on Site are provided in Table 2.

Table 2: Summary of Soils and Geology (adopted from Bickerton, 2021 and updated in 2025)

Map	Classification
Bedrock	Sedimentary (Limestone, dolostone, shale, arkose and/or sandstone), Middle Ordovician era*
Surficial Geology	Quaternary glaciomarine deposits*
Physiography Unit	Sand Plains**
Permeability	High**
Overburden Depth	High: Deep/Low: Deep**
Hydrological Soil Group	C**

**Ontario Geological Survey, 2009 with a map scale of 1:250,000*; ***Characterization of Ottawa's Watershed: An Environment Foundation Document with Supporting Information Base* (March 2011)

4.3 Fish Community Information

The Site is within the Bear Brook sub-watershed of the South Nation River watershed. The majority of water features on-Site drained into Simpson Municipal Drain. Simpson Municipal Drain originates on Mitch Owen's Road, directing flows east to the west Boundary Road ditch at which points it turns north and continues with that road ditch. Roughly 200 m south of this project, the municipal drain veers to the east and eventually reaches Bear Brook via Shaw's Creek (>8 km downstream) (Figure 2).

There was available fish information for Simpson Municipal Drain, Shaw's Creek, and Bear Brook. The information for Simpson Municipal Drain was taken from the report entitled *Fish and Fish Habitat Risk Assessment for the Simpson Municipal Drain at 100 Entrepreneur Crescent* by Kilgour & Associates (2014) and from the Aquatic Resource Area (ARA) data on LIO. The information on Shaw's Creek and Bear Brook were from the Aquatic Resource Area (ARA) data on LIO. The available background information listed a total of 6 fish species in Simpson Municipal Drain, two in Shaw's Creek, and 29 in the section of Bear Brook. A list of species available for the three watercourses is available in Table 3.

There was no thermal regime mentioned for Simpson Municipal Drain, but Shaw's Creek was listed as a cool water stream and Bear Brook was listed as warmwater.

There were no known occurrences of aquatic (fish or mussel) species at risk in Kilgour & Associates' report (2014) or on LIO. This is supported by the DFO Canadian Aquatic Species at Risk Map database (CASAR), which showed no federally listed species or their critical habitat (on-line mapping accessed June 23, 2025) (Appendix B).

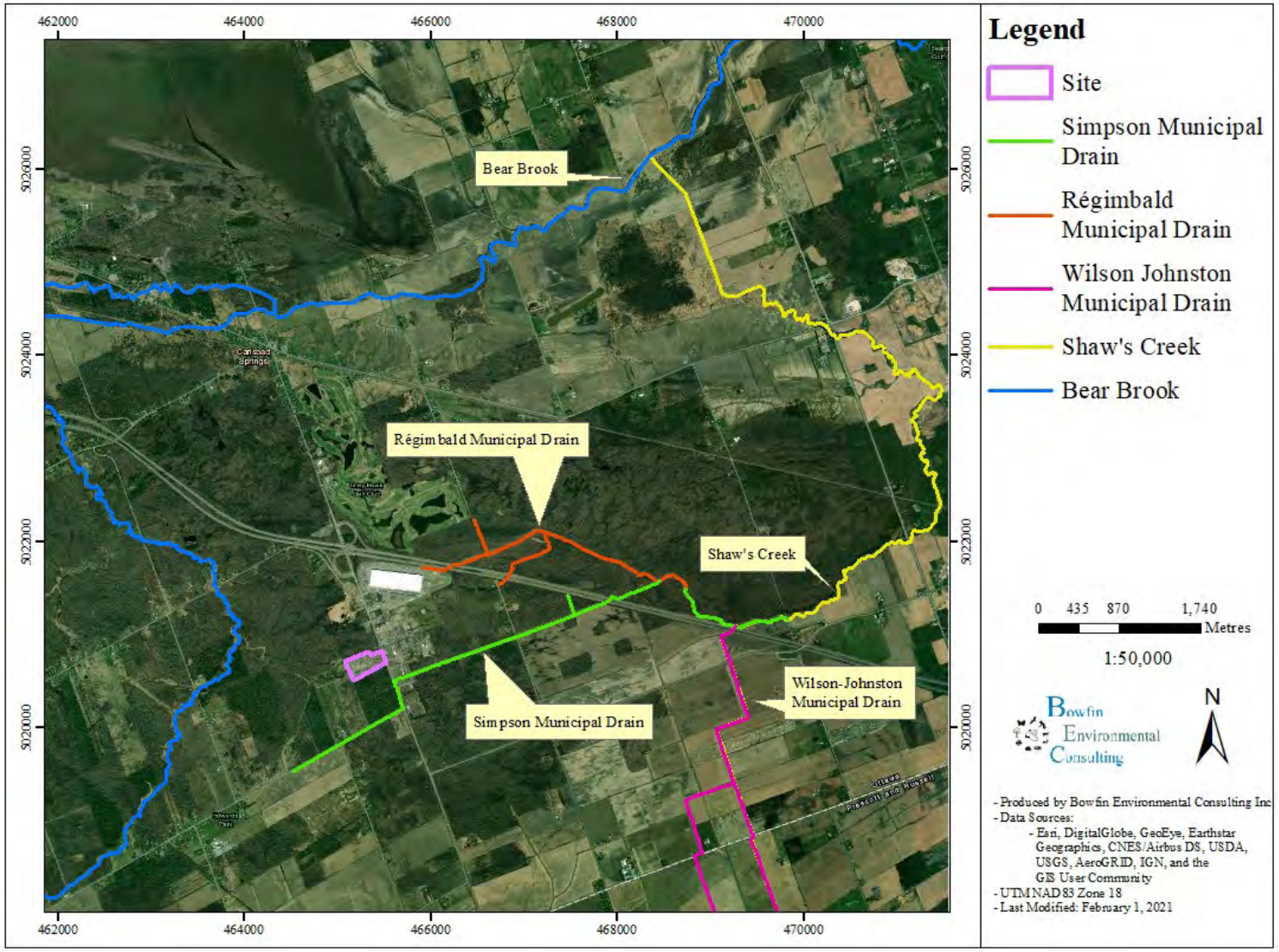

Figure 2: Map of the Watercourses Surrounding the Site

Table 3: Historical Fish Community in Simpson Municipal Drain, Shaw's Creek and Bear Brook

Species Name	Scientific Name	Trophic Class	Thermal Regime	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Present in Simpson Municipal Drain	Present in Shaw's Creek	Present in Bear Brook	References
Northern Pike	*Esox lucius*	carnivore	cool	S5	no status	no status			X	OMNRF, 2014
Central Mudminnow	*Umbra limi*	invertivore	cool	S5	no status	no status	X		X	OMNRF, 2014
Spotfin Shiner	*Cyprinella spiloptera*	invertivore / herbivore	warm	S4	no status	no status			X	OMNRF, 2014
Common Carp	*Cyprinus carpio*	invertivore / detritivore	warm	SNA	no status	no status			X	OMNRF, 2014
Brassy Minnow	*Hybognathus hankinsoni*	planktivore/ detritivore	cool	S5	no status	no status			X	OMNRF, 2014
Golden Shiner	*Notemigonus crysoleucas*	invertivore / herbivore	cool	S5	no status	no status		X	X	OMNRF, 2014
Blacknose Shiner	*Notropis heterolepis*	invertivore / herbivore	cool	S5	no status	no status			X	OMNRF, 2014
Rosyface Shiner	*Notropis rubellus*	Invertivore /detritivore/herbivore	warm	S4	no status	no status			X	OMNRF, 2014
Mimic Shiner	*Notropis Volucellus*	invertivore /herbivore	warm	S5	no status	no status			X	OMNRF, 2014
Northern Redbelly Dace	*Chrosomus eos*	invertivore / planktivore	cool	S5	no status	no status			X	OMNRF, 2014
Finescale Dace	*Chrosomus neogaeus*	invertivore /planktivore	cool	S5	no status	no status	X			Kilgour & Associates, 2014
Bluntnose Minnow	*Pimephales notatus*	detritivore	warm	S5	no status	no status			X	OMNRF, 2014

Species Name	Scientific Name	Trophic Class	Thermal Regime	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Present in Simpson Municipal Drain	Present in Shaw's Creek	Present in Bear Brook	References
Fathead Minnow	*Pimephales promelas*	detritivore / invertivore	warm	S5	no status	no status	X		X	OMNRF, 2014, Kilgour & Associates, 2014
Creek Chub	*Semotilus atromaculatus*	invertivore / carnivore	cool	S5	no status	no status	X		X	OMNRF, 2014
Fallfish	*Semotilus corporalis*	invertivore / carnivore	cool	S4	no status	no status			X	OMNRF, 2014
White Sucker	*Catostomus commersonii*	invertivore / detritivore	cool	S5	no status	no status			X	OMNRF, 2014
Redhorse	*Moxostoma*	*N/A*	*N/A*	*N/A*	no status	no status			X	OMNRF, 2014
Brown Bullhead	*Ameiurus nebulosus*	invertivore / herbivore/ carnivore	warm	S5	no status	no status			X	OMNRF, 2014
Stonecat	*Noturus flavus*	invertivore / carnivore	warm	S4	no status	no status			X	OMNRF, 2014
Trout-Perch	*Percopsis omiscomaycus*	Invertivore /carnivore	cool	S5	no status	no status			X	OMNRF, 2014
Banded Killifish	*Fundulus diaphanus*	invertivore / planktivore	cool	S5	no status	no status			X	OMNRF, 2014
Brook Stickleback	*Culaea inconstans*	planktivore/ invertivore	cool	S5	no status	no status	X		X	OMNRF, 2014
Rock Bass	*Ambloplites rupestris*	invertivore / carnivore	cool	S5	no status	no status			X	OMNRF, 2014

Species Name	Scientific Name	Trophic Class	Thermal Regime	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Present in Simpson Municipal Drain	Present in Shaw's Creek	Present in Bear Brook	References
Pumpkinseed	*Lepomis gibbosus*	invertivore / carnivore	warm	S5	no status	no status	X	X	X	OMNRF, 2014
Smallmouth Bass	*Micropterus dolomieu*	invertivore / carnivore	cool	S5	no status	no status			X	OMNRF, 2014
Johnny Darter	*Etheostoma nigrum*	invertivore	cool	S5	no status	no status			X	OMNRF, 2014
Yellow Perch	*Perca flavescens*	Invertivore /carnivore	cool	S5	no status	no status			X	OMNRF, 2014
Logperch	*Percina caprodes*	invertivore	warm	S5	no status	no status			X	OMNRF, 2014
Walleye	*Sander vitreus*	invertivore / carnivore	cool	S5	no status	no status			X	OMNRF, 2014
Johnny Darter/ Tessellated Darter	*Etheostoma nigrum/ Etheostoma olmstedi*	invertivore	cool	S5/S4	no status	no status			X	OMNRF, 2014
					Total Number of Species		**6**	**2**	**29**	
	Represents a species present in the respective watercourse									

(Coker et al., 2001; Eakins, 2018; MEC, 2008; OMNRF, 2014; MTO, 2006; Page et al., 2013; RVCA, 2016; Scott & Crossman, 1973)
Table Updated: June 16, 2025

5. Site Investigations

5.1 Site Visit Summary for Terrestrial and SAR Habitat

A record of dates, time, ambient conditions, and purpose is provided in Table 4 for site visits conducted to document the existing terrestrial conditions and identify relevant natural features to be assessed. Information on site visits for fish and fish habitat, as well as headwater drainage features, is provided in Section 5.3.2.

Table 4: Summary of Dates and Times of Natural Heritage Site Investigations

Date	Staff	*Air Temperature (Min-Max) °C	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Purpose
October 10, 2019	H. Bickerton	5.0	no snow cover	Initial site visit, watercourse identification, habitat suitability for SAR, wetlands.
April 28, 2020	S. Lafrance,	7.0 (-0.9-15.1)	clear, light breeze	Blanding's Turtle survey.
April 29, 2020	Bowfin Inc.	12.0	overcast, light breeze	Amphibian surveys
May 17, 2020	Bowfin Inc.	17.0	clear, light breeze	Blanding's Turtle survey
May 19, 2020	Bowfin Inc.	16.0	clear, light breeze	Amphibian surveys
May 21, 2020	Bowfin Inc.	22.0	clear, light breeze	Blanding's Turtle survey
May 28, 2020	H. Bickerton	22.0	clear, calm	ELC, SAR, TCR, SWH2, Significant Woodlands, Blanding's Turtle survey, flora and fauna.
June 8, 2020	H. Bickerton	15.0	clear, light breeze	ELC, SAR, TCR, SWH2, Significant Woodlands, Blanding's Turtle survey, flora and fauna.
June 16, 2020	Bowfin Inc.	20.0	clear, calm	Amphibian surveys

H. Bickerton – Holly Bickerton – B.A.Sc., M.E.S Environmental Studies
Bowfin Inc.
M. Lavictoire – Michelle (Nunas) Lavictoire – B. Sc. Wildlife Resources and M.Sc. Natural Resources
S. Lafrance – Sophie Lafrance – B.Sc. Biology and Graduate Certificate in Ecological Restoration
C. Fontaine - Cody Fontaine – Fish and Wildlife Technologist
A. Quinsey – Al Quinsey – B.Sc. Environmental Biology

*Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Ottawa International Airport. Available http://climate.weatheroffice.gc.ca/ [April 20, 2021]

5.2 Vegetation Communities (Bickerton, 2021)

The following section consists of excerpts from the EIS (Bickerton, 2021). Vegetation communities on the Site were identified and mapped according to Ecological Land Classification methods (Lee *et al.*, 1998). The vegetation communities on adjacent lands were identified and mapped to the extent possible.

Note that a wetland vegetation communities identification does not necessarily imply that an area is a wetland according to the OWES system; for details, please see 3.5 Wetlands.

The description of wooded communities (e.g. Deciduous Forest) constitutes an inventory and description of the trees currently on the Site, including species composition, size, age and health in accordance with Ottawa's Tree Conservation Report Guidelines (City of Ottawa 2020).

Taken as a whole, the Site has little natural vegetation cover. Both 5500 and 5510 Boundary Road consist mainly of recent fill. The vegetation communities on these properties are early successional and are dominated by non-native vegetation. Approximately half of 5494 Boundary Road is covered by natural vegetation, with the remainder being a residence, landscaped area, and driveway. A description of each vegetation community on the subject and adjacent lands is found below. All vegetation communities found on the Site are considered secure in Ontario (NHIC, 2020).

OWES boundaries are identified with red dashed line. CUM: Cultural Meadow; CUT: Cultural Thicket; SWT: Swamp Thicket; CUW: Cultural Woodland; FOD8: Poplar Forest; MAS3: Cattail Shallow Marsh; SWD 3-1: Red Maple Swamp; FOD 7: Red Maple Forest; CUP 3: White Spruce Plantation.

Figure 3: Vegetation communities and OWES wetlands on and adjacent to the Site (Bickerton, 2021)

5.2.1 Site

Filled Area

The majority of the Site consists of aggregate fill, and is almost devoid of vegetation (Photo 1). Scattered vegetation in this area (<30% cover, and often less) is dominated by nonnative species such as Sweet White Clover (*Melilotus alba*), Cow Vetch (*Vicia cracca*) and Yellow Rocket (*Barbarea vulgaris*).

Photo 1: Filled Area (Bickerton, 2021)

Fresh-Moist Poplar Deciduous Forest (FOD 8)

This mid-successional forest is on the former residential lot at 5494 Boundary Road (northeast corner of Site). It is dominated by species characteristic of mesic to moist woodlands (Photo 2). The overstory is dominated by poplars (*Populus grandidentata, P. tremuloides, P. deltoides*), with Red Maple (*Acer rubrum*), and Green Ash (*Fraxinus pensylvanica*). The forest is approximately ~40-50 years in age (GeoOttawa 2020). Most trees in this community range between 10-20 cm DBH, with three larger Cottonwoods (*P. deltoides*) with DBH ranging around 30 cm. Trees are in generally good health, with the exception of Ash (*Fraxinus sp.*), which are in poor health or dead. The mid-story is dominated by invasive Glossy Buckthorn (*Frangula alnus*), with Speckled Alder (*Alnus incana ssp. rugosa*) toward the watercourse. The understory includes a mix of upland species including Wild Strawberry (*Fragaria virginiana*), Lady Fern (*Athyrium felix-femina)*, Canada Mayflower (*Maianthemum canadense*) and Starflower (*Trientalis borealis*), with some facultative wetland species such as Sensitive Fern (*Onoclea sensibilis*) and Meadow Horsetail *(Equisetum arvense*).

Photo 2: Fresh-Moist Deciduous Poplar Forest (Bickerton, 2021)

Cultural Woodland (CUW)

The area near the residence at 5494 Boundary Road was previously cleared, but now consists of 75% cover of naturally regenerating young saplings of Trembling Aspen (*Populus tremuloides*), with remaining landscape plantings such as Blue Spruce (*Picea pungens*) and Eastern White Cedar (*Thuja occidentalis*) (Photo 3). Trees are generally in good health, with the exception of planted Jack Pine which is in moderate health. Invasive Common and Glossy Buckthorn dominate the mid-story. Virginia Creeper (*Parthenocissus inserta*), Frost Grape (*Vitis riparia*) and Common Dandelion (Taraxacum officinalis) are common in the understory.

Photo 3: Cultural Woodland (Bickerton, 2021)

Cultural Thicket/Thicket Swamp (CUT/SWT)

The community at the edge of the residential lot grading into the watercourse is a mixture of upland and wetland shrubs in a transition zone (Photo 4). Staghorn Sumac (*Rhus typhina*) and Common and Glossy Buckthorn dominate toward the residence. Slender Willow (*Salix petiolaris*), Speckled Alder (*Alnus incana ssp. rugosa*) and other wetland plants dominate toward the mapped watercourse. These communities are described together because they represent an ecotone and are too small to map as separate units.

Photo 4: Cultural Thicket/Thicket Swamp (Bickerton, 2021)

Shallow Aquatic Cattail Marsh (MAS)

Pond 2 was created on the Site around 2003 as a result of excavation for previous industrial use (GeoOttawa 2020 and Google Earth 2020). Non-native Narrow-leaved Cattails (*Typha angustifolia*) dominate the pond, which also contains Common Reed (*Phragmites australis ssp. australis*) (Photo 5). Submerged aquatic vegetation (*Potamogeton sp.*) is also present. The pond is surrounded by shrubs including Slender Willow (*Salix pedicellaris*), Staghorn Sumac (*Rhus typhina*), and saplings of Balsam Poplar (*Populus balsamifera*).

Photo 5: Shallow Cattail Marsh, Pond 2 (Bickerton, 2021)

Cultural Meadow (CUM)

This area is regenerating as early successional meadow, dominated by non-native species (Photo 6) (e.g. Smooth Brome (*Bromus inermis*), Yellow Rocket (*Barbarea vulgaris*), Wild Carrot (*Daucus carota*), with occasional natives including Common Milkweed (*Asclepias syriaca*).

Photo 6: Cultural Meadow (Bickerton, 2021)

Deciduous Fencerow

At the western margin of the property is a narrow fencerow with Poplar, Elm and Red Maple, and willows (e.g. Slender Willow) near the drainage line here.

5.2.2 Adjacent Lands (within 120 m)

Vegetation communities on adjacent lands within 120 m are described below in order to evaluate potential impacts of the proposed development.

Fresh-Moist Red Maple Deciduous Forest (FOD 7)

To the north of the Site, there is a Red Maple forest with White Elm and Poplar. Glossy Buckthorn is common in the shrub layer; the understory contains upland species such as Lady Fern, Wild Sarsaparilla (*Aralia nudicaulis*), and Canada Mayflower. Red Maple Mineral Deciduous Swamp (SWD 3-1, Photo 8): There are two parcels of Red Maple mineral swamp adjacent to the subject Site. To the north of the Site, the Red Maple forest grades gradually into a Red Maple Deciduous Swamp. Canopy associates in the swamp include Black Ash (*Fraxinus nigra*), with Glossy Buckthorn and Speckled Alder in the mid-story. There is substantial coverage by facultative and obligate wetland plants such as Royal Fern, Sensitive Fern, Dwarf Raspberry (*Rubus pubescens*), and Bladder Sedge (*Carex intumescens*).

Photo 7: Fresh-Moist Red Maple Deciduous Forest (Bickerton, 2021)

Red Maple Deciduous Swamp (SWD 3-1)

A second, younger Red Maple Deciduous Swamp (SWD 3-1) is found to the south of the Site. Soils in both areas were mainly dry in June 2020 with scattered damp depressions, and both of these areas consist of mainly of mineral soils.

Photo 8: Red Maple Mineral Deciduous Swamp (Bickerton, 2021)

Willow Deciduous Plantation

This polygon has no ELC code because it is planted and there it is a very unusual vegetation type for which no code exists. It was planted in the 1980s or 1990s in Crack Willow (*Salix x fragilis*), a non-native tree willow (GeoOttawa imagery); rows are still apparent within the woodland. The understory has naturalized with mostly native facultative wetland species including Sensitive Fern, Dwarf Raspberry, and Royal Fern (*Osmunda regalis*) and it is considered to be a wetland for this reason, according using OWES criteria. The mid-story is dominated by invasive Glossy Buckthorn (*Frangula alnus*).

Photo 9: Willow Deciduous Plantation (Bickerton, 2021)

White Spruce Coniferous Plantation (CUP3)

This plantation was similarly planted in the 1980s or 1990s (GeoOttawa imagery), and was previously an agricultural field. It is dominated by planted White Spruce (Picea glauca) and now also contains some Large-tooth Aspen (*Populus grandidentata*), White Birch (*Betula papyrifera*) and Glossy Buckthorn with an understory of mostly upland and some facultative wetland species. It is therefore considered to be functionally an upland community, based on the percent cover of naturally occurring native vegetation present in all vegetation layers following OWES criteria. In summer 2020, the agricultural field to the west was fallow/pasture, and the field to the southwest was in cultivation (Appendix 2).

Photo 10: White Spruce Coniferous Plantation (Bickerton, 2021)

5.3 Aquatic Habitat Summary

5.3.1 Watercourses and Drainage Features

The entire Site was flat, and the features did not flow, even during the early spring. All were poorly constructed, or simply the result of the on Site fill, resulting in gradient barriers. Because of this, some features were split into "a" and "b" to show which ones were connected to one another in terms of possible fish movement.

A Headwater Drainage Report was completed (Bowfin, 2021). Headwater Drainage Features were identified and assessed based on features including hydrology, riparian vegetation, fish habitat, and other factors (Bowfin, 2021). The features are depicted on Figure 5 and herein labelled as:

- Boundary Road West ditch (referred to herein as Roadside Ditch) drains south into the Simpson Municipal Drain roughly 200 m downstream.
- HDF 1a/HDF 1b: Feature 1 is found along the southeast perimeter of the site, to the east of Feature 2. One part of Feature 1 (Feature 1a) inclines towards the roadside ditch, the other (Feature 1b) towards Feature 2. Features 1a and 1b were frozen and snow-covered on April 7, 2020.
- HDF 2: Feature 2 travels from the perimeter of the site, south to Mitch Owens Road (roughly 530 m downstream). This feature also receives water from the treed swamp surrounding it.
- HDF 3: Feature 3 is the southwest perimeter ditch. Like Feature 1, this was split into two with only the lower 20 m of Feature 3a directing water to feature 2. The rest of Feature 3a was separated by gradient changes in the ditch which were not overtopped even in early April. Feature 3b inclines towards Feature
  - Features 3a and 3b were frozen and snow covered on April 7, 2020. All but the lower 20 m of Feature 3a is not fish habitat as it was isolated or connected for Feature 4 (Feature 4 is also isolated).
- HDF 4: Feature 4 is found along the west edge of the site. This feature had many barriers to fish movement in the form of small soil berms throughout the northern portion. It was also a dead end on the downstream side, resulting in a deeper pool that was not connected to the other features. This was not fish habitat.
- Ponds: Feature 5 is situated along the north side of the site. The west side consists of ponds (labelled as Ponds), and the remainder is a ditch that is connected to the Roadside Ditch. The ponds were created by the fill activities on-Site. One portion of the ponds branched south approximately 80 m into the Site. This branch was seasonally separated from the other ponds by a soil berm.

Most features (except for Features 3b and 4) led to the Simpson Municipal Drain. Features 3b and 4 were isolated and did not contribute flow to any downstream habitat. Two isolated ponds created by excavation of fill were found near the frontage with Boundary Road (Pond 2, Pond 3, Figure 5). More information and station data on each Feature are provided in the next sections.

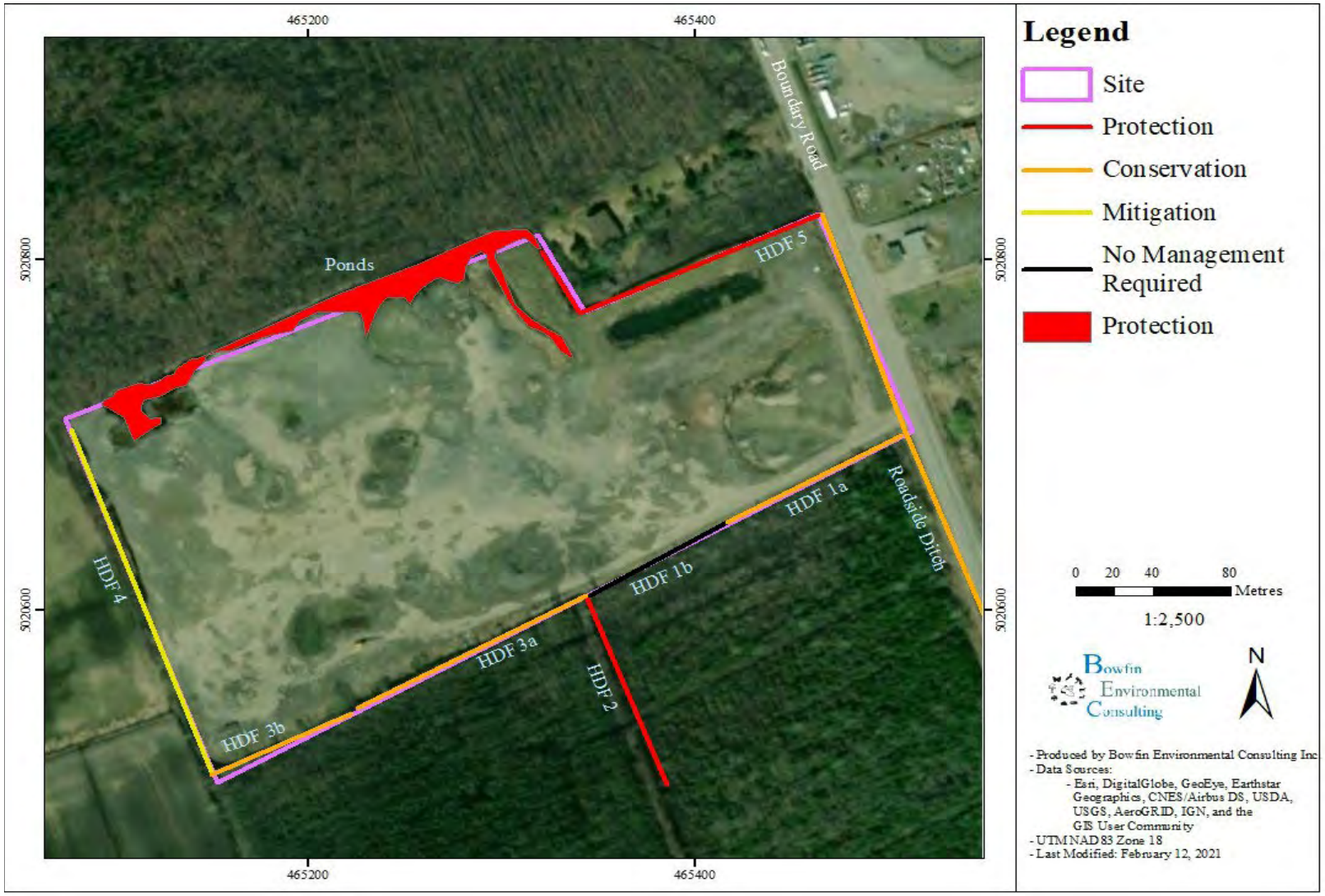

Figure 4: Watercourse and other drainage features (Bickerton, 2021; Bowfin, 2021)

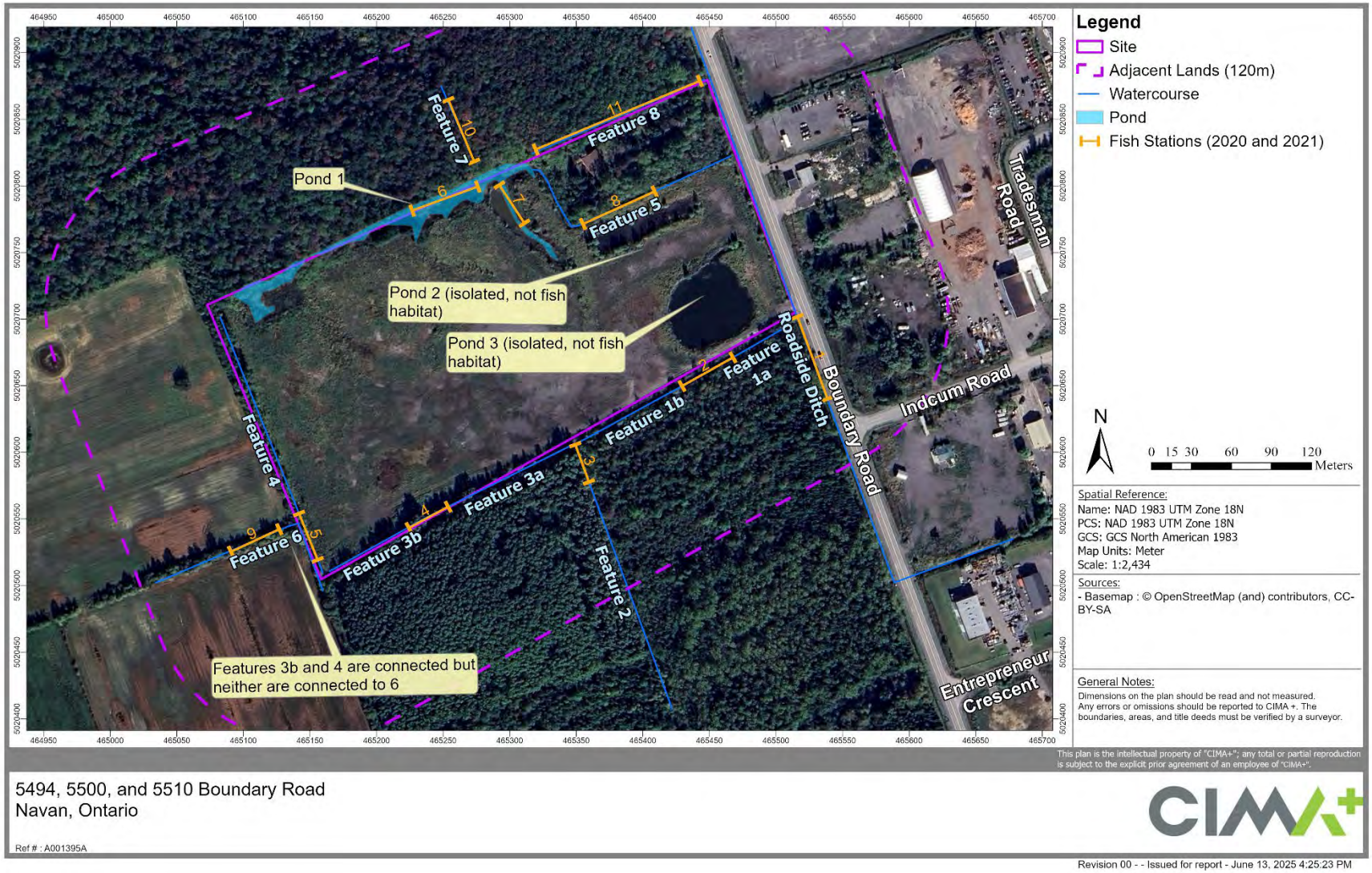

Figure 5: Location of Fish Stations (2020, 2021)

5.3.2 Site Visit Summary – Fish Habitat

A record of site visits pertaining to fish and fish habitat is summarized in Table 5. A total of eleven stations were established (Figure 5), at least one for every feature present on Site or in its adjacent lands (120 m).

Table 5: Summary of Site Investigations for Aquatic Habitat and Conditions

Date	Time (h)	Staff	*Air Temperature (Min-Max) °C	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Total Rainfall from 7 Previous Day (mm)	**Watershed Condition	Purpose
April 7, 2020	1030-1500	M. Lavictoire S. Lafrance	7.0 (-0.4-12.5)	Clear sky Wind: light air (1) to light breeze (2)	2.7	Flood Warning	Fish Community Sampling
April 7, 2020	1015-1500	C. Fontaine	7.0 (-0.4-12.5)	Clear sky Wind: light air (1) to light breeze (2)	2.7	Water Safety	HDF Flow Visit 1
April 28, 2020	1015-1200	S. Lafrance C. Fontaine	7.0 (-0.9-15.1)	Clear sky Wind: light breeze (2)	11.5	Water Safety	HDF Flow Visit 2
July 10, 2020	0930-1100	S. Lafrance	29.0 (21.2-36.4)	Clear sky Wind: light wind (1)	2.2	Level 2 – Low Water Status	HDF Flow Visit 3
July 23, 2020	1100-1200	C. Fontaine S. Lafrance	23.0 (16.0-27.4)	Overcast Wind: light breeze (2)	20.0	Level 2 – Low Water Status	Fish Community Sampling
July 24, 2020	1000-1215	M. Lavictoire S. Lafrance	27.0-29.0 (14.6-30.8)	Clear sky Wind: light air (1)	20.0	Level 2 – Low Water Status	Fish Community Sampling
July 29, 2020	0745-1100	M. Lavictoire	21.0-25.0 (16.9-28.3)	Clear sky Wind: light breeze (2) changing to Cloudy	9.0	Level 2 – Low Water Status	Fish Habitat Description

Date	Time (h)	Staff	*Air Temperature (Min-Max) °C	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Total Rainfall from 7 Previous Day (mm)	**Watershed Condition	Purpose
				Wind: light breeze (2)			
April 12, 2021	0855-0920	M. Lavictoire	13.0 (8.5-18.6)	Partially Cloudy Wind: moderate breeze (4)	0.0	Flood Outlook Statement	Fish Habitat Description, HDF Flow Visit
April 13, 2021	1135-1230	S. Lafrance A. Quinsey	14.0 (8.6-18.4)	Partially Cloudy Wind: light breeze (2)	0.0	Flood Outlook Statement	Fish Sampling Fish Habitat Description

M. Lavictoire – Michelle (Nunas) Lavictoire – B. Sc. Wildlife Resources and M.Sc. Natural Resources
S. Lafrance – Sophie Lafrance – B.Sc. Biology and Graduate Certificate in Ecological Restoration
C. Fontaine - Cody Fontaine – Fish and Wildlife Technologist
A. Quinsey – Al Quinsey – B.Sc. Environmental Biology

*Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Ottawa International Airport. Available http://climate.weatheroffice.gc.ca/ [April 20, 2021]

**Water Level Conditions taken from South Nation Conservation Authority https://snc.on.ca

Definitions:

Flood Outlook Statement: Early notice of the potential for flooding based on weather forecasts calling for heavy rain, snow melt, high wind or other conditions that could lead to high runoff, cause ice jams, lakeshore flooding or erosion.
Flood Warning: Flooding is imminent or already occurring in specific watercourses or municipalities.
Level 2 low water status: Flows are less than 50 per cent of their normal summer low flow. The Ministry of the Environment will send letters to holders of Permits to Take Water to ask them to voluntarily reduce their consumption by 20 per cent
Water Safety: High flows, melting ice, or other factors could be dangerous for users such as boaters, anglers, and swimmers, but flooding is not expected.

5.3.3 Roadside Ditch (west side of Boundary Road – tributary to Simpson's Drain further downstream, direct fish habitat)

This is the west road ditch of Boundary Road. Roughly 200 m downstream of the Site, this road ditch meets Simpson's Municipal Drain.

Station 1

Station 1 was located on Roadside Ditch and was 65 m in length. The average channel width was 1.2 m and the average bankfull height 19 cm. The average spring wetted width and depth were 1.1 m and 9 cm, respectively. The station was dry during the summer visit.

The substrate consisted primarily of fines and the stream morphology was a glide. The in-water cover throughout the station was provided mostly by aquatic vegetation (cattails and purple loosestrife), with some overhanging vegetation. The top of the banks was fully vegetated (purple loosestrife, Canada goldenrod, cow vetch, American hog-peanut, bird's-foot trefoil, glossy buckthorn, and narrow-leaved meadowsweet). There was some glossy buckthorn and trembling aspen on the west bank. Much of the station contained no or poor canopy cover.

During the April 7, 2020, visit, the station was electroshocked over an area of approximately 72 m^2 for 648 seconds. A total of 5 central mudminnow were captured (size range: 30 – 50 mm). The electrofishing effort was of 9 s/m^2. No sampling took place during the summer as the station was dry (July 29, 2020).

Photo 11: Roadside Ditch, upstream of station 1, looking downstream (April 7, 2020)

Photo 12: Roadside Ditch, upstream of station 1, looking downstream (July 29, 2020)

5.3.4 Feature 1 (Swale on Southeast Perimeter)

Feature 1 was the portion of the perimeter on the south side of the Site, east of Feature 2. It was not graded properly and only the eastern 100 m was connected to the Roadside Ditch (1a). The remainder was mostly dry with a few pockets of very shallow water on April 7, 2020 (1b). In 2021 (April 12, 2021), a review of this area found only a few centimeters of water in the upstream end of 1a and no water within the vegetation in 1b. 1b did not provide fish habitat.

Station 2

Station 2 was located on feature 1a and was 40 m in length. The average channel width was 2.2 m and the average bankfull height 12 cm. The average spring wetted width and depth were 1.7 m and 11 cm, respectively. The station was dry during the summer visit.

The substrate consisted primarily of fines and the stream morphology was standing water. The in-water cover throughout the station was provided by aquatic vegetation (reed canary grasses, cut-leaved water horehound, lakebank sedge, purple loosestrife, smartweed, broad-leaved cattail, and cow vetch). The top of the banks was fully vegetated (reed canary grass, water horehound, lakebank sedge, purple loosestrife, smart weed, broad-leaved cattails, willow, speckled alder, and glossy buckthorn). Much of the station contained areas of no canopy cover on the north side but was entirely shaded by the dense woody vegetation on the south and inside the channel by the dense common reed.

The area was not fished in the spring because it was covered in snow and ice during the sampling visit. A few days later, when the water melted, it was confirmed to be connected to the Roadside Ditch without any barriers to fish movement along the first 100 m. No sampling took place during the summer as the station was dry (July 29, 2020).

Photo 13: Feature 1a, downstream of station 2, looking upstream (April 4, 2020)

Photo 14: Feature 1a, upstream of station 2, looking downstream (July 29, 2020)

The remaining section (labelled as 1b) could direct flow towards feature 2 but it was already dry by April 7, 2020, and as such does not provide fish habitat (Photo 15).

Photo 15: Feature 1b, looking upstream from downstream (April 7, 2020)

5.3.5 Feature 2 (Off-site and connected to the north ditch of Mitch Owens Road to the south)

Feature 2 had a north to south direction and was situated entirely offsite but connected to the perimeter drain. The distance to Mitch Owens Road ditch was ±530 m. Direct fish habitat.

Station 3

Station 3 was located on feature 2, ending at the perimeter ditch and was 30 m in length. The average channel width was 3.7 m and the average bankfull height 25 cm. The average spring wetted width and depth were 5.1 m and 28 cm, respectively. The station was dry during the summer visit. Portions of the channel were ice covered on April 7, 2020.

The substrate consisted primarily of fines and the stream morphology was a glide. The in-water cover consisted of leaf litter, and large and small woody debris. There was also overhanging vegetation providing some cover. The banks were fully vegetated with trees (red maple and green ash), shrubs (speckled alder and glossy buckthorn) and herbs (purple loosestrife, sensitive fern, broad-leaved cattail, narrow-leaved and tall meadowsweet, and lakebank sedge). Most of the station contained little to no canopy cover.

During the April 7, 2020, visit, the station was electroshocked over an area of approximately 153 m^2 (1274 seconds). The electrofishing effort was of 8 s/m^2. A total of 4 central mudminnow (size range: 28 – 100 mm) and one brook stickleback (45 mm) were captured. In addition, 3 central mudminnows were observed but not captured. No sampling took place during the summer as the station was dry (July 29, 2020)

Photo 16: Feature 2, upstream of Station 3, looking downstream (April 7, 2020)

Photo 17: Feature 2, upstream of station 3, looking downstream (July 24, 2020)

5.3.6 Feature 3 (Portion of 3a was connected to Feature 2; 3b to Feature 4)

Feature 3a ran along the southwest perimeter of the Site and measured 130 m long. Approximately 20 m of the downstream portion of feature 3a was connected to feature 2 and is considered fish habitat. But gradient issues made it that the rest of the feature was not connected to any other watercourse, even during the early spring, making this portion an isolated waterbody that is not fish habitat.

Station 4

Station 4 was located on Feature 3a, alongside the southeast perimeter of the Site in the section that was not fish habitat. The station was 40 m in length. The average channel width was 2.6 m and the average bankfull height 15 cm. The station was dry during the summer visit.

The substrate consisted primarily of fines and the stream morphology was a glide. The in-water cover throughout the station was provided by overhanging vegetation, aquatic vegetation, and small wooded debris. The top of the banks was fully vegetated (speckled alder, glossy buckthorn, willow, lakebank sedge, sensitive fern, purple loosestrife, glossy buckthorn, grasses, and horsetail). The left bank was a treed swamp (willow, red maple). Much of the station had complete canopy cover.

The area was not sampled in the spring. Even during the first visit only the downstream 20 m was accessible to fish. The remaining 110 m is not considered fish habitat due to its lack of connectivity with feature 2. No sampling took place during the summer as the station was dry (July 29, 2020).

Photo 18: Feature 3a looking upstream from its connection with Feature 2 (April 7, 2020)

Photo 19: Feature 3a, upstream of station 4, looking downstream (July 24, 2020)

Feature 3b also ran along the southwest perimeter of the Site and measured 80 m. This feature contained some water in the spring but was only connected to Feature 4. That feature was isolated from all fish bearing watercourses. No stations were created.

Photo 20: Feature 3b, downstream of station 4, looking upstream (May 17, 2020)

5.3.7 Feature 4 (Isolated, not fish habitat)

Feature 4 was the west perimeter drain and measured 210 m long. The feature was not connected to any other watercourse as it flowed towards the southwest corner of the Site where it ended in a ponded area. No connections to other waterbodies, even during the spring, makes this an isolated waterbody that is not fish habitat.

Station 5

Station 5 was located on Feature 4, alongside the west perimeter of the Site, and was 50 m in length. The average channel width was 3.1 m and the average bankfull height 18 cm. The spring average wetted width and water depth was 2.1 m and 26 cm, respectively. The station was dry during the summer visit.

The substrate consisted primarily of fines and the stream morphology was standing water, with a few pools. The in-water cover throughout the station was provided by terrestrial and aquatic vegetation (purple loosestrife, reed canary grass, grasses, purple clover, bird's-foot trefoil, cow vetch, and willows). The top of the banks was fully vegetated (wild carrot, cow vetch, bird's-foot trefoil, sow thistle, glossy buckthorn, trembling aspen, willow, purple loosestrife). Much of the drain had no canopy cover but some had complete cover from the willows growing within the channel.

The area was not sampled in the spring as it was covered in snow. It was then found that it is not fish habitat due to its lack of connectivity with any other features.

Photo 21: Feature 4, downstream of Station 5, looking upstream (May 17, 2020)

Photo 22: Feature 4, downstream of station 5, looking upstream (July 29, 2020)

5.3.8 Feature 5 (connected to the Roadside Ditch)

Information was collected from within the ponded areas (stations 6 and 7) and from the ditched portion of this habitat (station 8). The entire feature was 450 m long and flowed into the Roadside Ditch.

Station 6 (upper pond along edge of forest)

Station 6 was located on the Ponds of Feature 5 and was 50 m in length. The average channel width was 7.6 m and the average bankfull height 23 cm. The spring wetted width and depth were 13.0 m and 50 cm, respectively, and the summer wetted width and depth were 4.1 m and 4 cm, respectively. During low water, this area becomes an area with isolated pools of shallow water, subjected to thermal impacts.

The substrate consisted primarily of fines and the stream morphology was a pool. The in-water cover consisted of aquatic vegetation (algae, water plantain, water plant, grasses, and softstem bulrush) and large woody debris. The banks were mostly vegetated (burweed, stonewort, Joe-pye-weed, wild carrot, sensitive fern, purple loosestrife, broad-leaved cattail, willow, and eastern cottonwood). The cottonwood was young (regenerating) and did not provide canopy cover. Most of the station contained little to no canopy cover.

This station was not sampled in the spring as it shared fish habitat with Station 8 and is considered fish habitat (see species list from Station 8). In the summer, this station was dip netted. One central mudminnow (36 mm) and approximately 60 common shiners (size range: 15-30 mm) were captured. Several other small minnows were observed but not captured.

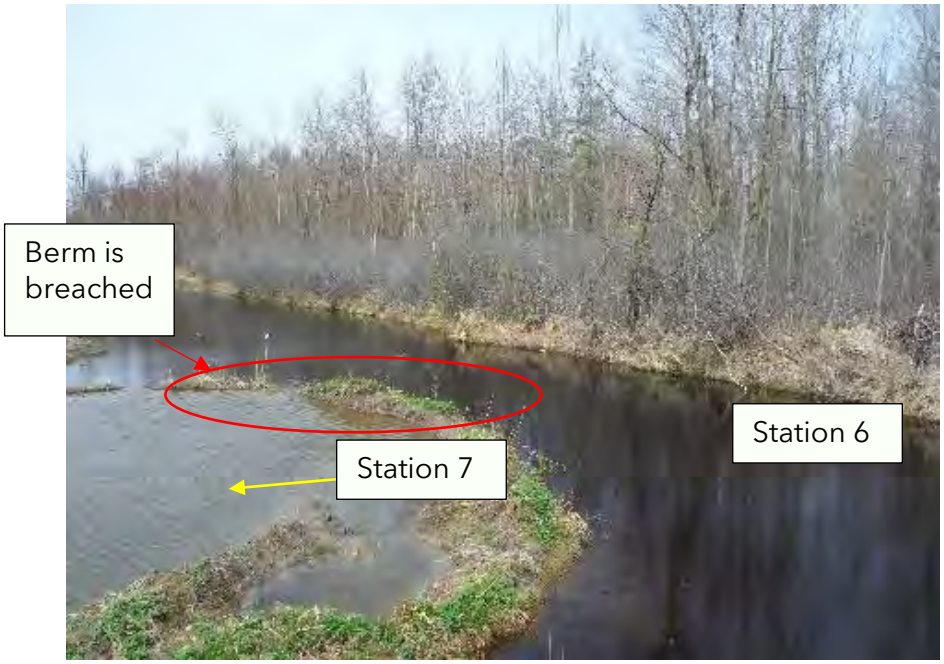

Photo 23: Feature 5 (upper ponds), downstream of Station 6, looking upstream (May 17, 2020)

Photo 24: Feature 5 (upper ponds), downstream of Station 6, looking upstream (July 24, 2020)

Station 7 (pond perpendicular to rest of feature)

The entire pond was 75 m in length and Station 7 was placed in the permanent habitat (northern 35 m). The average channel width was 10.9 m and the average bankfull height 46 cm. The spring wetted width and depth were 7.0 m and 80 cm, respectively. In the summer, the southern 44 m in length of the pond was dry. The remainder had a summer average wetted width and depths of 6.7 m and 33 cm, respectively. A seasonal barrier to fish movement was found on the northern edge of this pond. This berm was overtopped during the spring. In the summer, the soil berm created a seasonal barrier and was 49 cm high (Photo 23).

The substrate consisted of fines and the stream morphology was a pond. The in-water cover consisted of aquatic vegetation (softstem bulrush, narrow-leaved cattail, purple loosestrife, stonewort, common reed, water plantain, and woolgrass). The banks were mostly vegetated (willow, common reed, wild carrot, sensitive fern, common vetch, narrow-leaved cattails, and purple loosestrife). The station contained no canopy cover.

This station was not sampled in the spring as it shared fish habitat with station 8. The station was sampled in the summer using two hoop nets. Two central mudminnows (length 76 and 90 mm) and three pumpkinseeds (size range: 86 to 89 mm) were captured. A brook stickleback (approximately 15 mm in size) was observed in the water and a painted turtle was also captured in the nets.

Table 6: Feature 5 in the Ponds, Station 7 – Summer Catch

Species Name	Scientific Name	No. of fish (size range, mm) Spring
Central Mudminnow	*Umbra limi*	2 (76-90)
Brook Stickleback	*Culaea inconstans*	1 (15)
Pumpkinseed	*Lepomis gibbosus*	3 (86-89)
Effort		**2 hoop nets**
Total No. Species		**3**
Total No. Individuals		**6**

Photo 25: Feature 5 (pond), downstream of station 7, looking southwest (April 7, 2020)

Photo 26; Feature 5 (pond), downstream of station 7, looking south (July 24, 2020)

Station 8 (ditch)

Station 8 was located along the northeast perimeter and was 55 m in length. The average channel width was 2.0 m and the average bankfull height 18 cm. The spring average wetted width and water depth was 2.4 m and 17 cm, respectively. The station was dry in the summer.

The substrate consisted primarily of fines and the hydrological flow was a glide. The in-water cover consisted of aquatic vegetation (narrow-leaved cattail, and purple loosestrife). The top of the banks was mostly vegetated with grasses and shrubs (goldenrod, cow vetch, willows, Manitoba maple, and sensitive fern). Most of the station contained areas of good canopy cover.

During the April 7, 2020, visit, the station was electroshocked over an area of approximately 134 m^2 (819 seconds). The electrofishing effort was of 6 s/m^2. A total of 15 fish were captured, representing 3 species: central mudminnow, creek chub, and brook stickleback (Table 7). No sampling took place during the summer as the station was dry (July 29, 2020).

Table 7: Feature 5, Station 8 – Spring Catch

Species Name	Scientific Name	No. of fish (size range, mm) Spring
Central Mudminnow	*Umbra limi*	12 (40 – 97)
Creek Chub	*Semotilus atromaculatus*	1 (105)
Brook Stickleback	*Culaea inconstans*	2 (48 – 53)
Effort		6 s/m^2
Total No. Species		3
Total No. Individuals		15

Photo 27: Feature 5 (ditch), downstream of station 8, looking upstream (April 7th, 2020)

Photo 28: Feature 5 (ditch), upstream of station 8, looking downstream (July 29, 2020)

5.3.10 Feature 6 (agricultural ditch, direct fish habitat)

Information was collected from an agricultural ditch flowing towards and then parallel to the Site boundary for about 45 m before flowing another 580 m to Mitch Owens Road.

Station 9

Station 9 was a few meters west of the study area and was 43 m in length. The average channel width was 2.0 m and the average bankfull height 18 cm. The spring average wetted width and water depth was 1.9 m and 21 cm (range: 20-23 cm), respectively. The station was dry in the summer.

The substrate consisted primarily of fines and the hydrological flow habitat consisted of glide. The in-water cover consisted mostly of aquatic vegetation (purple loosestrife), with some overhanging vegetation (goldenrod, reed canary grass, willow, glossy buckthorn). The top of the banks was fully vegetated with grasses and shrubs (goldenrod, reed-canary grass, willow, glossy buckthorn, and trembling aspen). Most of the station contained areas of poor canopy cover. There was erosion throughout the station.

During the April 7, 2020 visit, the station was electroshocked over an area of approximately 82 m^2 (856 seconds). The electrofishing effort was of 10 s/m^2. A total of 39 fish were captured, representing 3 species: central mudminnow, brassy minnow and brook stickleback (Table 3). No sampling took place during the summer as the station was dry (July 29, 2020).

Table 8: Station 9 – Spring Catch

Species Name	Scientific Name	No. of fish (size range, mm) Spring
Central Mudminnow	*Umbra limi*	32 (34 – 106)
Brassy Minnow	*Hybognathus hankinsoni*	1 (54)
Brook Stickleback	*Culaea inconstans*	6 (40 – 43)
Effort		10 s/m^2
Total No. Species		3
Total No. Individuals		39

Photo 29: Feature 6, downstream of station 9, looking upstream (April 7th, 2020)

Photo 30: Feature 6, downstream of station 9, looking upstream (July 29, 2020)

5.3.11 Feature 7 (ephemeral swale, not fish habitat)

Information was collected from a shallow ephemeral swale without defined banks located immediately north of the Site, in the forest. There was no connection with Feature 5 (flow went through the bank, not exit location was found).

Station 10

Station 10 was in the woodlands north of the study area and was 50 m in length. The spring average wetted width and water depth was 1.1 m and 5 cm (range: 4-7 cm), respectively. The station was dry in the summer.

The substrate consisted primarily of soil (no sorting) and the hydrological flow consisted of glide. The in-water cover consisted of leaf litter. The top of the banks was mostly vegetated with trees and shrubs. The station had good canopy cover overall.

During the April 7, 2020, visit, the station was fished using a dipnet over an area of approximately 55 m^2 (50 dipnets). No fish were seen or caught. No sampling took place during the summer as the station was dry (July 29, 2020).

Photo 31: Feature 7, upstream of station 10, looking downstream (April 7th, 2020)

Photo 32: Feature 7, looking downstream at the connection with the ponds (April 7, 2020)

5.3.12 Feature 8 (ephemeral swale, not fish habitat)

Information was collected from a shallow ephemeral swale without defined banks located north-east of the Site, in the forest. There was no connection with the roadside ditch (disconnected by a blockage of a soil between this feature and the ditch, >120 cm long). The channel was not continuous, with another length of 165 cm of soil holding back water further upstream.

Station 11

Station 11 was in the woodlands north-east of the study area and was 120 m in length. The spring average wetted width and water depth was 1.4 m and 5 cm (range: 2-13 cm), respectively. The station has not been visited in the summer but would likely be dry.

Th substrate consisted primarily of soil (no sorting) and the hydrological flow consisted of standing water (held back by the humps of soil). The in-water cover consisted of leaf litter. The top of the banks was mostly vegetated with trees and shrubs. The station had good canopy cover overall.

During the April 13, 2021, visit, the station was fished using a dipnet over an area of approximately 120 m^2 (over 50 dipnets). No fish were seen or caught.

Photo 33: Downstream of the station, looking at the standing water (April 12, 2021)

Photo 34: Looking upstream at the soil berm separating the feature from the roadside ditch (April 12, 2021)

5.4 Incidental Wildlife Observations (Bickerton, 2021)

Twenty-four bird species were observed or heard on the site during two field visits, at four five-minute point counts (completed on two dates) and incidental survey across the property (Appendix C). Of these, none are considered forest-interior species, and all are considered secure in Ontario (S4 or S5).

An additional nine bird species were observed or heard in areas adjacent to the site. Two of these species are considered to be area-sensitive forest interior species (Great-crested Flycatcher and Veery), reflecting the wooded nature of the adjacent area.

A total of six amphibian species were heard or observed on the Site during field visits: (Green Frog (1), Northern Leopard Frog (1), Wood Frog (1), Spring peeper (3), Gray Tree Frog (1). American Toad was also heard on adjacent lands.

Two reptile species were observed (Painted Turtle (S5) and Snapping Turtle (S4, SC)). Three mammal species were observed (Eastern Gray Squirrel (S5), Eastern Chipmunk (S5) and White-Tailed Deer (S5). All observed species are tabulated in Appendix C.

6. Evaluation of Significance and Assessment of Impacts

6.1 Review of Project Activities

It is understood that the following will take place:

- Access to the Site will be from Boundary Road. The construction of the will require:
  - Installation of a properly designed and sized culvert to allow fish access.
  - Potential for minor clearing of vegetation along road ditch and in the road ditch itself.
- Construction of warehouse/trucking site.
  - All permanent disturbances are to be a minimum of 15 m from the new habitat (to be created/relocated along the north), and from the existing perimeter ditches.
  - Clearing of woody vegetation may be required for the realignment of Feature 5.
  - Water quantity and quality reaching all of the features (even the non-fish habitat) will remain the same through the creation of an infiltration berm.
  - The infiltration berm will be situated within the 15 m buffer and is acceptable as this is a mitigation measure to protect water quality. It could also be vegetated with native species appropriate for the site and functions.

- A dry pond will be situated within the 15 m buffer from the road ditch of Boundary Road. This is also acceptable provided that the outlet of the facility is designed to prevent fish from entering the facility and to prevent erosion of the road ditch.

Based on the background review and site investigations it has been noted that there is no potential for fish/mussel SAR.

6.2 Impact Assessment Methods

The assessment of the potential impacts is completed by analyzing the impact of the activities associated with the development of the long-term care facility (listed in section above) using four different criteria:

1. Area affected may be:
    a. local in extent signifying that the impacts will be localized within the Site
    b. regional signifying that the impacts may extend beyond the immediate Site.

2. Nature of Impact:
    a. negative or positive
    b. direct or indirect

3. Duration of the impact may be rated as:
    a. short term (construction phase, 1-2 years)
    b. medium term (3-4 years)
    c. long term (>4 years).
    d. permanent

4. Magnitude of the impact may be:
    a. negligible signifying that the impact is not noticeable
    b. minor signifying that the project's impacts are perceivable and require mitigation
    c. moderate signifying that the project's impacts are perceivable and require mitigation as well as monitoring and/or compensation
    d. major signifying that the project's impacts would destroy the environmental component within the project area.

6.3 Habitat of Endangered and Threatened Species

Endangered and threatened Species at Risk (SAR) are protected under the provincial *Endangered Species Act, 2007*. The federal *Species at Risk Act* (SARA) applies only to fish and residences of birds on private land. Most birds, including SAR, also receive protection from *Migratory Bird Convention Act, 1994,* and/or *Fish and Wildlife Conservation Act, 1997*. Together, provincially, and federally protected species are referred, herein, as SAR. The lands within the Site include are private lands and as such, the evaluation of presence was complete following the province's guidelines with SARA restricted to fish and birds.

A list of potential endangered and threatened species was compiled using various sources. The NHIC database provides information available to the public on those SAR documented as occurring within the general area. It should be noted that not all information for all species is available to the public. Furthermore, the absence of a record does not necessarily indicate that the species is absent from the area. The purpose of the NHIC database is to help determine what species may occur within the project area. The background review included looking at the list of birds observed as part of the Ontario Breeding Bird Atlas (OBBA) and any SAR species listed on these lists were considered as potentially occurring within the Site. Added to this list were species that often occur within the general area based on personal experience or observations. The resulting list includes 14 SAR: 1 reptile (Blanding's Turtle), 4 birds (Bank Swallow, Chimney Swift, Bobolink, and Eastern Meadowlark), 7 mammals (SAR Bats), and 2 plants (Butternut and Black Ash) (Table 11). Note that following site investigations, this list of species, their habitat, and their potential to occur were reviewed and adjusted. Additionally, Eastern Whip-poor-will, which was threatened at the time of the previous report, has now been downlisted to special concern and is therefore excluded from the list above.

For some species, the federal and/or provincial governments provide guidelines on what habitats should receive automatic protection. This is usually based on distances from known sightings or suitable habitat. Federally, the habitat is typically classed based on function and provincially it is either regulated or general habitat. Regulated habitat has detailed description and is prescribed in an Ontario Regulation. General habitat often splits the habitat needs into up to three categories, listed as Categories 1-3 with 1 being the most sensitive to disturbances. Note the exception with Butternuts where Category 1 individuals are least sensitive. In the table below, the candidate SAR for the Site are listed along with their habitat needs. Where guidance is provided by the government, this is used, to evaluate whether to bring the species forward to assessment. When there is no guidance available, the available literature is used to evaluate the suitability of the habitat on-Site for that species.

6.4 Wetlands (Bickerton, 2021)

Wetlands exist adjacent to the Site, both to the north and to the south. OWES wetland boundaries were mapped adjacent to the subject property and are shown in Figure 3. These wetlands are greater than 2 ha and are considered functional wetlands (based on OWES).

As discussed above, a full OWES wetland evaluation to determine provincial significance of these adjacent wetlands is outside of the scope of the EIS. However, appropriate mitigation measures have been incorporated to protect and enhance the adjacent wetland features and will be discussed in Section 6. Also, since the initial EIS (Bickerton, 2021), the wetland to the north has now been evaluated by others as a PSW. The PSW boundary as per the official mapping by the province is used within this report.

None of the ponds on Site are considered wetlands.

- Pond 1 and Pond 3 are not naturalized, having been recently excavated (< 2-4 years), and contain bare substrate, little vegetation, and open water.
- Pond 2 has been present in its current form since about 2005 and is now naturalized as a functional shallow cattail marsh (see vegetation descriptions below). However, at 0.13 ha, this functional wetland is less than the threshold size (2 ha) for consideration as a wetland community under OWES.

Potential Impacts to Wetlands

It is understood that impacts to the adjacent PSW (community SWD 3-1) to the north will be mitigated with a restored and naturalized setback that extends 45 m from the original wetland boundary (along the property boundary) to the edge of development.

The intervening area, including the sand treatment swale, will be vegetated. It is understood that the pond will be restored to a natural shoreline, with pools of varying depths. It is recommended that riparian areas and perimeter swale be revegetated with native vegetation to the extent possible, including trees and shrubs common on and adjacent to the subject property.

Potential sedimentation and erosion during site preparation and construction is to be avoided and mitigated with appropriate general mitigation measures (see Headwater Drainage Features Assessment by Bowfin, 2020) Following construction, surface runoff from impermeable surfaces of the transfer facility will be directed via the closed sand swale system to detention dry ponds before being conveyed to the roadside ditch.

The area between the adjacent wetland to the south (Willow plantation and SWD 3-1) and the edge of pavement, which currently is currently devoid of most vegetation, will be regraded to form the perimeter swale and revegetated. As above, the sand swale system will promote infiltration of storm events into the sand overburden layer, while directing any surface runoff from the transfer facility away from the wetland toward detention dry ponds and the roadside ditch. The sand overburden layer is underlain with various clay layers, resulting in a perched water table and resultant generally wet soils. The purpose of the sand swale is to replicate the infiltration that is currently occurring due to the imperfect drainage on the site. The water table surrounding the proposed development should remain unchanged, and there should be no hydrological impacts on adjacent wetlands.

6.5 Significant Woodlands (Bickerton, 2021)

The City of Ottawa recently adopted the NHRM criteria for Significant Woodlands (OMNR 2010) to assess those woodlands within Ottawa's rural area. None of the woodlands on the subject property (i.e., FOD 8) meet the NHRM criteria for Significant Woodlands (City of Ottawa 2018).

The adjacent forest to the north meets the following NHRM criteria for Significant Woodlands based on its size >20 ha) for the Ottawa East- Bearbrook Rural Planning Area (29.9% forest cover, City of Ottawa 2018).

It also meets the criteria based on Ecological Function, containing > 2ha woodland interior, and providing ecological linkages within a defined natural heritage system. Other criteria could not be evaluated without full investigation.

Adjacent Lands (120 m)

The adjacent wooded areas to the south of the subject property consist mainly of unmanaged plantation (CUP) mixed with an area that has naturalized to Deciduous Swamp. The NHRM considers that "plantations…can be considered to be woodlands," in cases where the assumed purpose is permanent reforestation. This 20.5 ha unmanaged wooded area contains more than 2 ha of functional woodland interior, and more than 2 ha of functional interior forest. Other ecological functions, uncommon characteristics and economic and social values are not known without full investigation, but based on available evidence, it can be considered as a Significant Woodland, mainly due to the size and naturalization of the understory and mid-storey.

Significant Woodlands are present to the north and south of the Site and will be protected by restored and naturalized setbacks as described above. At the north boundary, vegetated setbacks to the Significant Woodlands range from 27.0 to 45.2 m. To the south of the site, vegetated setbacks to Significant Woodland range from 11.9 m to 26.50 m including the naturalized swales. This represents an increase over the current status.

6.6 Significant Wildlife Habitat (Bickerton, 2021)

6.6.1 Fauna

As a Special Concern species, the habitat of Snapping Turtle is considered significant wildlife habitat under the PPS. The permanent Headwater Drainage Features (Features 5 and 7) and the connected Pond 1 are therefore considered significant wildlife habitat. No other significant wildlife habitat as defined in the NHRM (e.g. wildlife staging areas, congregation areas, colonial nests, significant vegetation communities, regionally rare plant species) was observed on the Site.

6.6.2 Terrestrial Corridors and Linkages

There is insufficient natural vegetation remaining on this Site to provide terrestrial corridors or wildlife linkages to the surrounding area. Aquatic connection and linkages are described in the Headwater Drainage Features Assessment (Bowfin, 2020).

6.6.3 Vascular Plant Species and Significant Vegetation (Bickerton, 2021)

Surveys found that 87 vascular plant species were found on the Site (Appendix C). No provincially significant (S1-S3, NHIC 2020) or regionally significant vascular plant species (Brunton, 2005) were observed on the Site. Note that although native stands of Jack Pine are considered Regionally Significant, individuals present on the formerly residential property were planted. Thirty-four species (39%) on the Site are considered non-native in Ontario. This is a high percentage of non-native plant composition, reflecting the Site's disturbed history.

6.7 Fish Habitat

This assessment focused on the potential of the development to impact the fish habitat. The features and which ones were considered fish habitat is summarized in Table 9. In short, there were eight features identified, plus one roadside ditch and several isolated ponds. All habitats that were not connected to downstream fish bearing habitat [1b, 3a (upper portion), 3b, 4, 8 and the isolated ponds] do not need a review under the *Fisheries Act*. These are discussed in the headwater drainage feature report, and it is noted here that only the isolated ponds will be altered.

Other features [1a, 2, and 3a (lower section)] will remain in place and will receive the same quality and quantity of water via an infiltration berm. Feature 8 will not be impacted. The use of the infiltration berm facilitates review of the headwater impacts, as it prevents changes pre- and post-construction to these existing features. Of the remaining features four (the road ditch and features 1a, 5 and 6) are direct seasonal fish habitat (forage fish). Feature 7 provides contributing flow as its water drains through a sand berm into Feature 5. Feature 8 is unlikely to provide any contributing flow as it was ponded with little water on April 12, 2021, and disconnected from the road ditch by soil.

Table 9: Summary of Findings for Aquatic Features

Feature	Contributes Water to	Fish Habitat	Species	Flow Condition	Direct Impacts	Indirect Impacts	Bought Forward (Fisheries)
Boundary Road West Ditch	Simpson Municipal Drain	Direct	Forage	Seasonal, standing water	Culvert	Reduced setback and work within 30 m of HWM	Yes
Feature 1a	Boundary Road Ditch	Direct	Forage	Seasonal, standing water	None	Reduced setback and work within 30 m of HWM	Yes
Feature 1b	N/A	N/A	N/A	Dry	N/A	N/A (see headwater report)	No (see Headwater Report)
Feature 2	Simpson Municipal Drain	Direct	Forage	Seasonal, standing water	None	Start (u/s end) of channel will have reduced setback and work within 30 m of HWM	Yes
Feature 3a	Lower 20 m – Feature 2	Direct	Forage	Seasonal, standing water	None	Reduced setback and work within 30 m of HWM	Yes
	Remainder isolated	Indirect	N/A	Ephemeral, pockets of standing water	None	Reduced setback and work within 30 m of HWM	No (see Headwater Report)
Feature 3b	N/A	Not Fish Habitat – Isolated	N/A	Seasonal, isolated, standing water	None	N/A (see headwater report)	No (see Headwater Report)
Feature 4	N/A	Not Fish Habitat – Isolated	N/A	Seasonal, isolated, standing water	None	N/A (see headwater report)	No (see Headwater Report)

Feature	Contributes Water to	Fish Habitat	Species	Flow Condition	Direct Impacts	Indirect Impacts	Bought Forward (Fisheries)
Feature 5 and Pond	Boundary Road Ditch	Direct	Forage, Pan	Seasonal, isolated, standing water	Realigned and piped	Reduced setback and work within 30 m of HWM	Yes
Feature 6	Simpson Municipal Drain	Direct	Forage	Seasonal	None	Reduced setback and work within 30 m of HWM but impacts intercepted by Feature 4	Yes (offsite)
Feature 7	Feature 5	Indirect	N/A	Ephemeral flow	None	None	No (offsite)
Feature 8	None (not connected to road ditch)	Not fish habitat	None	Standing water	None	None	No
Isolated Ponds	None – isolated	Not Fish Habitat – isolated	N/A	N/A	N/A	N/A	No

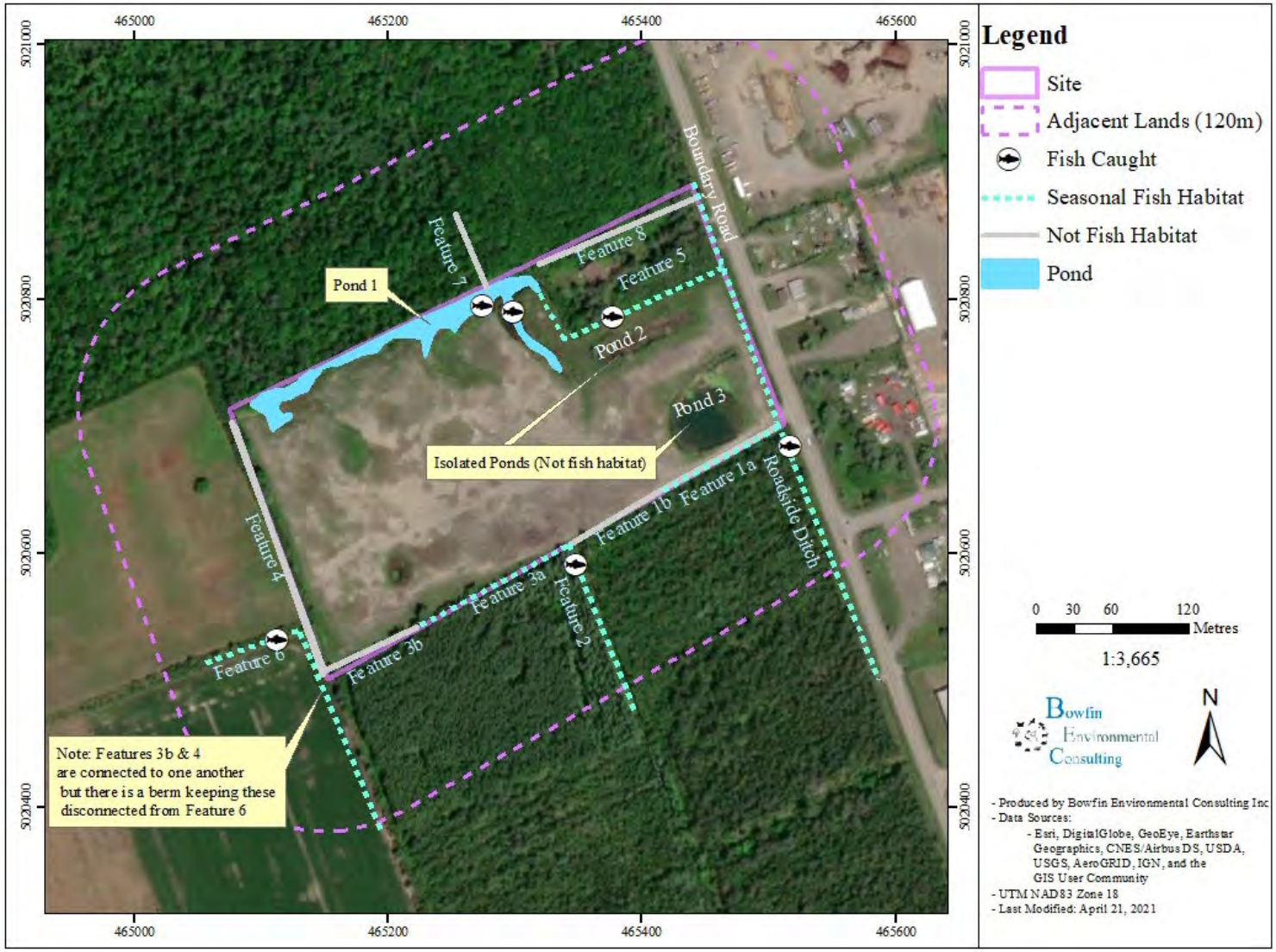

Figure 6: Summary of Features

Potential Impacts to Fish and Fish Habitat

Based on the list of work activities provided, it is likely that this concept plan would be acceptable to DFO, though offsetting may be required for the relocation of the pond and Feature 5. A request for review must be submitted for Items 3 and 4 listed below, prior to development.

1. A reduced setback of from 30 m to 15 m for all features is acceptable, especially given the existing conditions that has fill up to the edge of all features.

    a. As per the Natural Heritage Reference Manual (OMNR, 2005), Table 11-3 on page 106 (see below), the recommended setback of 30 m can be reduced 15 m for warmwater systems. This system is currently degraded by the lack of buffer on the property and on and off site, by the system flowing through the road ditches for Boundary Road. A setback of 15 m will be an improvement over the existing conditions.

Table 11-3: Recommended Minimum Natural Vegetated Cover Adjacent to Fish Habitat

STREAM TYPE	RECOMMENDED MINIMUM NATURAL VEGETATED COVER ADJACENT TO FISH HABITAT
Warmwater streams	30 m or 15 m where it is demonstrated as satisfying policy 2.1.6

    b. Also noted in the Natural Heritage Reference Manual (OMNR, 2005), Table 11-1 on page 103 (see below), intermittent systems, including headwaters, can measure adjacent lands from the centre line of the channel.

Table 11-1: Recommendations for How to Measure Adjacent Lands Width for Fish Habitat

AREA WHERE FISH HABITAT FOUND	WHERE ADJACENT LANDS WIDTH IS MEASURED FROM
Lakes and large rivers	the normal high-water mark
Inland lake trout lake on the Canadian Shield at capacity[43]	the normal high-water mark[44]
Meandering stream with defined bed and banks[45]	the line that connects each outside curve/concave bank at the bankfull stage
Non-meandering stream with defined bed and banks	the normal high-water mark
Intermittent stream and drainage feature with no defined bed and banks, including headwater drainage feature	the centre line of a channel or depression that concentrates flow

2. Properly designed and constructed stormwater treatment facilities (infiltration drains and dry pond) to ensure that the water reaching the fish habitat remains the same in quantity and quality.

3. New culvert on the roadside ditch needs to be designed to permit fish passage.

4. Relocation of Feature 5 (including its ponds).

    a. Design of this habitat is pending detailed design phase and discussions with DFO.

    b. It is noted that the current configuration of the habitat is not desirable as the shallow hot water in the summer could cause fish traps.

No Request for Review is required for the setback reduction from 30 m to 15 m if:

1. Fish habitats on-site (road ditch, 1a, and 5) and those offsite (2 and 6) continue to receive the same water quantity and quality.
2. If possible complete the work within 30 m of the watercourse during the normal in-water timing window (work between July 1 and March 14, inclusive). If there is an accident or malfunction, there is less risk to fish.
3. Proper erosion and sediment control measures are installed and maintained prior to any clearing of vegetation within 30 m of the watercourse and until the banks are stabilized (>80% revegetated).
4. The stormwater management facility and septic treatment systems are designed and installed as appropriate with an outlet that does not allow fish access to the facility.

7. Avoidance and Mitigation Measures

Note that this section, along with the discussion of endangered and threatened species in Appendix A, should be updated as needed to meet new and/or altered legislative requirements, protections, and/or guidelines.

7.1 Endangered and Threatened Species

There has been no change to the potential to impact protected endangered or threatened species as a result of the updated site plan. All impacts still require the same avoidance and mitigation measures. Advice from the Ministry of Environment, Conservation and Parks (MECP) discussed in the EIS (Bickerton, 2021) remain applicable, however the newer timing windows from MECP (MECP, no date) have been applied. The Barn Swallow discussed in the EIS (Bickerton, 2021) is no longer protected, and Black Ash is now added to the list as an endangered species. The list in Appendix A has also excluded Eastern Whip-poor-will, as this species is no longer be protected as of February 1, 2025, and there is no clearing of potential breeding habitat for this species, and this Project's activities will not indirectly (i.e., sensory disturbances during construction) affect any potential habitat offsite during the breeding season of 2024 (after which protection to the species and its habitat under the ESA was removed). The addition of three woodland bat species in January 2025, has been added.

General:

- Endangered and threatened species are protected and cannot be harmed, harassed, or killed and in some cases their habitats are also protected. These individuals will only be handled by qualified person and only if the individual is in imminent threat of harm. An authorization under the ESA 2007 would be required to handle individuals that are not in imminent threat of harm.
- If a Species at Risk (SAR) enters the work area during the construction period, any work that may harm the individual is to stop immediately and the supervisor will be contacted. No work will continue until the individual has left the area.
- Should an individual be harmed or killed then work will stop, and the MECP will be contacted immediately.
- Educate staff and contractors on the potential for SAR to be in the area and their significance, with a particular emphasis on the SAR listed as potentially occurring on the Site or in adjacent lands (Appendix A)
- If a SAR is encountered, this information will be provided to the Natural Heritage Information Centre (NHIC) (Report rare species (animals and plants) | Ontario.ca).
- No later than 1 year prior to construction, complete a review of this report to ensure that no new SAR or changes to legislation have occurred. This will ensure that ESA is not

accidentally contravened and provide the opportunity to contact MECP for advice, should it be warranted.

SAR Turtles

Review of online data sources indicate show sightings within 2 km of the Site; however, Natural Heritage Information Centre (NHIC) was contacted there are no new sightings since the EIS was completed (Bickerton, 2021). Basking surveys were completed for Blanding's Turtles in 2021, and no endangered or threatened species were observed. Bickerton (2021) concluded that no Blanding's Turtle habitat was present. Since this species can move large distances, avoidance and mitigation measures have been added for turtles.

- Implement a strict speed limit of 15 km/h for vehicles during construction and operations. The speed limit is to be posted.
- Sediment fencing along the edge of the work areas can be used for temporary exclusion fencing during construction. These will be properly countersunk and maintained to ensure that no turtles cannot get into the Site. This sediment fencing is, at a minimum, to include the three (3) sides of the property (the north, west and south edges of the work area). The provinces guidelines for fencing will be followed (https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing and will include the J-hook turnarounds.
- Prior to impacting the headwater or ponds, ensure that a qualified biologist or wildlife technician completes a salvage for fauna after the exclusion fencing is installed and prior to commencing work.
- Additional fencing is recommended around any stockpiles that might provide suitable nesting substrate (i.e. gravel, soil) to help prevent turtles from nesting in the work area. Should suspected Blanding's Turtle nesting occur, stop all work and contact MECP or a biologist to follow appropriate procedures.
- Infilling or alteration of the headwaters is recommended to occur outside of the hibernation period (typically November 1-March 31) (MECP, no date).
- Educate construction workers of the potential for Blanding's Turtles to be present and that it is a protected species from harm and injury under the provincial *Endangered Species Act* (ESA). Be sure to inform workers that there is a high potential for the species to occur in this area.
- Educate workers that this species is known to travel far from aquatic habitats and as such, workers are to perform a daily sweep of the work area when they first arrive onsite during the active turtle season (typically April 1-October 31 (MECP, no date); timing affected by weather conditions).

- During clearing of vegetation, contractors are to be informed that they should be aware of wildlife and if any are observed, they should be given the opportunity to leave the area. If a turtle is observed:
  - All work that may harm the individual must stop and the worker should notify their supervisor.
  - Try to take a photograph but do not chase the turtle in order to do so.
  - Turtles encountered on-site cannot be harmed or harassed.
  - Turtles should be allowed to leave the area on their own.
  - It is also important that the individual be watched, from afar, to ensure that it does not enter an area where it may come to harm.
  - If an individual has been impacted, the supervisor should contact MECP (and if applicable the project biologist) immediately.
- Revegetation plans, to occur within the Open Space zoning, include the restoration of the pond and planting native vegetation.

SAR Birds

The EIS included breeding bird surveys, and no SAR birds were observed breeding on the Site. Consultation with MECP indicated that timing of the infilling of Pond 3 could take place outside of the breeding bird period (Bickerton, 2021). No nests were found on the Site and the onsite habitat was classed as foraging habitat. The Project's activities will have little in the way of clearing of vegetation. The pond and headwaters on the north side of the Site will be relocated and enhanced.

- The active season for SAR bird species provided by the province is now listed as between April 1 and August 31. This would leave the month of September available for infilling of the pond as September is both outside of the hibernation period for turtles and the nesting season for SAR birds. If this is too restrictive, then alternatives will be discussed with MECP.
- No impacts to federal SAR bird nests, or their eggs is permitted under the federal Species at Risk Act (SARA). If a federally listed bird SAR nest is encountered, then work must stop until the young have fledged. If the nest/young have been harmed, then Environment Canada must be notified immediately for guidance.
- No impacts to provincial SAR bird nests or their eggs is permitted under the provincial ESA. If a provincially listed bird SAR is encountered, then work must stop and MECP must be contacted (sarontario@ontario.ca).
- Should a nest be discovered, stop all work that may disturb the birds (i.e. that cause the adults to fly off the nest) and contact a biologist or MECP or Environment Climate change Canada (ECCC), as appropriate for the species.

- Revegetation plans, to occur within the Open Space zoning, include the restoration of the pond and planting native vegetation.

SAR Bats

The EIS indicated that no SAR bat habitat would be impacted (Bickerton, 2021).

- Educate contractors by informing them that most bats in Ontario are protected.
- Prior to removal of potential bat roosting trees or the single dwelling, complete surveys that confirm to MECP's policies. If bat habitat is identified, then follow the appropriate MECP process.
- Plan for the removal of trees (>10 cm in diameter) between October 1 and March 31 (Bat active season is currently assumed to be April 1 to September 30 for woodland species). If this is not possible contact MECP or a biologist for additional guidance.

SAR Plants

No SAR Flora were found within the Site (Bickerton, 2021).

- A Butternut inventory and assessment must be completed prior to clearing any vegetation. Butternut inventories have a 2-year shelf-life, and the timing of the inventory should reflect this period.
- Note that as guidelines can be updated from time to time, the most recent guidelines and Ontario Regulations should be followed (at the time of writing, the O. Reg for Butternuts is 830/21). Butternut inventories must be completed between May 15-August 31.
- Assessment of Black Ash will be undertaken prior to construction, and can be completed between June 1 and September 30.
- Should butternuts be newly identified, they will need to be assessed. A buffer of 50 m around any unassessed Butternut will be applied until further direction is provided as per the province's guidelines for this species.
- Should black ash be newly identified, they will need to be assessed. A buffer of 30 m around any unassessed black ash will be applied until further direction is provided as per the province's guidelines for this species.

7.2 Significant Wildlife Habitat/Wetlands/Woodlands/Tree Protection

There is no change from the EIS with respect to significant wildlife habitat (SWH) and linkages. Significant Wildlife Habitat (Snapping Turtle (SC) habitat) will be maintained by the restoration of Pond 1 and Feature 5 with an aim of improving habitat quality. The feature will be contoured with variable depths and a natural shoreline. The current area of 0.35 ha will be retained and restored using natural design principles where possible. Standard mitigations are recommended during construction, including watercourse realignment, including a vertebrate salvage during excavation.

- Respect the setbacks established during the ZBA approved by City Council as these are intended to protect the significant wildlife habitat, woodlands and wetland functions of the surrounding properties.
  - The nearest impermeable surface is 45 m from the wetland, which includes 30 m of open space zoning (see landscaping plan) plus 15 m grassed swale. The minimum of a 30m setback as per the City's Policy is met.
  - The original EIS assumed significance of the wetland in the adjacent lands to the north. As such, it being officially recognized as a provincially significant wetland does not affect the EIS evaluation and the 30 m setback will provide sufficient protection to the wetland's form and function. No change to the EIS evaluation.
  - South Nation Conservation will be contacted as required as per O. Reg. 42/06 (wetland and watercourse).
  - See the Stormwater Management Report that indicates that the development will not have a negative hydrologic impact to the PSW. There is no municipal storm sewer fronting the development. A perimeter ditch system is proposed to be developed to outlet to the existing Boundary Road ditch; as such, no runoff from the site will be conveyed to the PSW, the realigned headwater feature, or the wetland to the south. Stormwater flows from the site to the roadside ditch will be controlled through inlet control devices and a dry pond at the north and south ditch outlets to ensure release rates remain the same pre- and post-development. Additionally, the size of the perimeter ditch system ensures that runoff does not pool in parking areas during the 2-year event and spills directly into the roadside ditch.
- Ensure that appropriate wildlife exclusion fencing is installed. That described under the SAR turtle section will be effective for SWH.
- Prior to impacting the headwater or ponds, ensure that a qualified biologist or wildlife technician completes a salvage for fauna after the exclusion fencing is installed and prior to commencing work.
- Complete infilling of the ponds during the turtle active season to facilitate relocation and minimize disturbance during overwintering.

- Almost all breeding birds are protected under the Migratory Bird Convention Act (MBCA) and/or Fish and Wildlife Conservation Act (FWCA). The only species not protected are: American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird, and starling. It is prohibited to destroy or disturb an active nest of other birds, or to take or handle nests, eggs, or nestlings. In this part of Ontario, the newer SAR timing window is April 1 to August 31. Outside of this timing window, it is considered unlikely that birds would be nesting. Note, there are some birds (birds of prey, herons etc.) that do begin nesting earlier in the year. It should also be noted, that if an active nest is present before or after the above dates, that it is still protected.
- There is a potential for ground nesting birds (i.e., killdeer) to be present during construction. These prefer to nest on bare soil or gravel areas. Perform regular walks of the cleared areas looking for ground nesters. If any are present, contact a biologist for guidance.
- Work during the daytime hours to prevent light disturbances. If lighting is required, ensure that it is full cut off and illuminates the work area (avoiding the natural features such as the pond and headwaters and adjacent forests/wetlands) and minimizing illumination of the sky.
- Ensure that all equipment have the appropriate mufflers to reduce noise disturbances.
- Almost all reptiles are protected by the FWCA. If a turtle nest is suspected, then flag a 10 m buffer to protect the nest. Contact MECP (for Endangered or Threatened species) and the Ministry of Natural Resources (MNR) (all other species, including those listed as special concern).
- Do not flag bird nests, as it attracts predators.
- Do not raise or lower the existing grade within the CRZ of a tree on adjacent lands. The critical root zone is equal to 10x the diameter-at-breast-height of the individual tree.
- The edge of the property should be clearly delineated on the site plans.
- Install Tree Protection Fencing prior to commencement of construction activities, and retain fencing until construction activities have been completed, as per City of Ottawa's Tree Protection (By-law No. 2020-340), Part VI.
- Tree protection fencing shall be at least 1.2 m in height and installed in such a way that the fence cannot be altered.
- Signage will be posted every 15-20 m along the protective fencing that indicates:
  - Fencing is to protect trees
  - Fencing is not to be removed
  - Fence is to be maintained until construction is complete
- Do not place any material or equipment within the critical root zone (10x the diameter-at-breast-height) (CRZ) of a tree.
- Surface runoff is to be directed to the stormwater management facilities on Site.

- Ensure that exhaust fumes from all equipment are not directed towards any tree's canopy.
- Do not attach any signs, notices, or posters to trees.
- Do not damage the root system, trunk, or branches of any tree. If any roots are encountered during excavation while working outside the CRZ, they should be cut off cleanly with sharp pruning tools rather than allow them to be torn by large equipment; clean cuts will help to minimize decay and entry points for disease.
- All exposed roots of trees to be retained should be covered in a minimum of 5 cm of firm soil within 24 hours of exposure.
- If root pruning is implemented, the crown of the tree should be reduced proportionately under the direction of a Certified Arborist or Registered Forester, to decrease wind sail. Pruning should be kept to thinning cuts (no major limb removal), and crowns should be monitored, and maintenance carried out for two (2) years after root pruning to remove any dieback under the direction of a Certified Arborist or Registered Forester.
- If branches are likely to hang in the way of passing equipment, the branches should be pruned by a Certified Arborist or Registered Forester to avoid tearing and undue injury to the tree.
- Refer to the Landscape Plan (Novatech, 2024) for a list of types and species of proposed native plantings.

7.3 Fish and Fish Habitat

Under the *Fisheries Act*, works below the high-water mark requires Fisheries and Oceans Canada (DFO)'s review unless they are listed as a standard Code of Practice (CoP) and no SAR are present. In this case, there are no SAR present, and DFO will be consulted prior to impacting fish habitat. The avoidance and mitigation measures from the EIS-Fisheries (Bowfin, 2021) has been updated and are provided below.

Planning

- Submit a Request for Review to DFO prior to completing any works that affect the fish habitat (road ditch, Features 1a, 2, and 5 (including the connected ponds)); Ensure that spring velocities (1:2) through the new road ditch culvert allows for fish passage.
- Ensure that the same quantity and quality of water continues to reach the same waterbodies post-construction as pre-construction.
- Site instruction will be provided to contractor to highlight the fish habitat findings (road ditch, Features 1a, 2, and 5 (including the connected ponds)). These areas must be clearly demarcated on construction drawings.
- Construction of the outlet drain from the dry pond to the road ditch, is to be scheduled to occur during dry conditions (if a rain event is scheduled to occur, the work will be

postposed) and designed to prevent fish from accessing the stormwater management facility.

- All works associated with the relocation of fish habitat must occur during the in-water work window (July 1 to March 14, inclusive).

Erosion and Sediment Control

- An erosion and sediment control plan will be developed by Novatech and implemented by the contractor prior to any work within 30 m of fish habitat.
  - Provide regular maintenance to the erosion and sediment control measures during construction. Contractor shall be responsible for ensuring that the erosion and sediment control measures are maintained and will monitor the water clarity downstream of the work site throughout the day and during rain events. Water quality is to meet the Canadian Water Quality Guidelines for the Protection of Aquatic Life. Monitoring for visible plumes outside of the work area is to be undertaken.
  - At a minimum, the erosion and sediment control plan will include the installation of sediment fencing, above the high-water mark.
  - Additional materials (i.e. rip rap, filter cloth and silt fencing) will be readily available in case they are needed promptly for erosion and/or sediment control.
- Suspend activities that cause muddy environments during periods of heavy rains.
- Any stockpiles of soil or fill material will be stored as far as possible from the fish habitat or channels leading to fish habitat (minimum 30 m).
- The erosion control measures will not be removed until the banks are stabilized (i.e., <20% exposed soil).
- Where banks/riparian area (area within 30 m of channel) have been stabilized by seeding and/or planting, monitor the revegetation to ensure that the vegetation becomes fully established (at least 80% cover required).
- Where possible, limit clearing of vegetation to trimming and leave the stump and lower 60 cm of the tree trunk in place (for shoreline stabilization).
- Once work is completed, stabilize using native vegetation. Where possible, this should include native trees and shrubs as per the landscaping plan (to be developed at detailed design).

Fish and Fish Habitat Protection/Fish Passage

- Any work planned for existing fish habitat (i.e., Feature 5 and its ponds, the road ditch) will be completed in an isolated area and in the dry.
- A license to collect fish for scientific purposes will be obtained from the Ministry of Natural Resources prior to any fish relocation efforts.

- Fish (and other aquatic fauna) will be removed from the isolated work areas by a qualified biologist/technologist. The salvage will need to be repeated if the work area becomes flooded.
- Minimize the size of temporary in-water work areas.

Contaminant and Spill Management

- Machinery working near or in-water should have vegetable based hydraulic fluids.
- All equipment working in or near the water must be well maintained, clean and free of leaks. Maintenance on construction equipment such as refueling, oil changes or lubrication would only be permitted in a designated area located at least 30 m from the shoreline, in an area where erosion and sediment control measures and all precautions have been made to prevent oil, grease, antifreeze or other materials from inadvertently entering the ground or the surface water flow.
- Emergency spill kits will be located on site. The crew will be fully trained on the use of clean-up materials to minimize impacts of any accidental spills. The area would be monitored for leakage and in the unlikely event of a minor spillage, the project manager would stop the activity, and corrective measures would be implemented.
- If a spill occurs:
  - Stop all work
  - Spills are to be immediately reported to the MECP Spills Action Centre (1800 268-6060). Note that under the *Fisheries Act,* deleterious substance includes sediments.
  - Clean-up measures are to be appropriate and are not to result in further harm to fish/fish habitat.
  - Sediment-laden water will be removed and disposed of appropriately.
- No construction debris will be allowed to enter the watercourse.
- Following the completion of construction, all construction materials will be removed from Site.

7.4 Other

- Machinery will be cleaned prior to arriving on-Site to prevent the potential spread of invasive species. Invasive species on site (i.e., Common Reed, buckthorn, honeysuckle) should be removed as appropriate for the species. See Ontario Invasive Plants Website for guidance https://www.ontarioinvasiveplants.ca.
- Dust suppression should consist of water.

7.5 Impacts and Mitigation Summary Table

Table 10: Summary of Potential Impacts and Proposed Mitigation Measures

Activity	Natural Heritage Feature / Function	Potential Effect	Proposed Mitigation	Residual Effect
Site Preparation				
Clearance of existing terrestrial vegetation and removal of abandoned dwelling.	Vegetation communities (no significant features on Site)	Loss of vegetation primarily in 5494 Boundary Road Potential compaction or physical damage to trees and vegetation on adjacent lands	■ Project will not directly impact the PSW or Woodlands. ■ Minimize clearing of vegetation to the extent feasible. ■ City of Ottawa Tree Permit is to be obtained prior to removing any trees that are 10 cm in dbh or larger. ■ There will be no change in grade within the Critical Root Zone (CRZ) of trees on adjacent lands. ■ Temporary tree protection fencing to be established at the CRZ of trees located adjacent to grading/construction areas. ■ No equipment or stockpiling within CRZ. See additional measures in 7.2. ■ Signage will be posted every 15-20 m along protective fencing, indicating that 1) fencing is to protect trees and their critical root zones, 2) the fence is not to be moved and 3) the fence is to be maintained until construction is complete (7.2). ■ Restoration plans are to use locally native plant species, including native trees where	■ Removal of 1.73 ha of existing vegetation. ■ Rehabilitation of 2.2 ha of lands within the designated buffers with native vegetation will provide improved protection of adjacent features.

Activity	Natural Heritage Feature / Function	Potential Effect	Proposed Mitigation	Residual Effect
			possible, and locally sourced where possible.	
	Potential breeding bird habitat. SWH – Snapping Turtle Aquatic habitat, headwater features, including fish habitat.	Potential harm to migratory birds or their habitat (MBCA) Potential for accidental harm to individuals Potential for newly exposed soil to cause erosion of banks and sedimentation of nearby aquatic habitats.	▪ Consultations with MECP will be completed as applicable, prior to impacting any provincially protected species at risk. Any offsetting measures required are to be applied as per the Province's policies and recommendations. ▪ Vegetation removal to occur outside of bird breeding period (April 1 to August 31) to ensure compliance with the federal *Migratory Birds Convention Act* (MBCA) and to protect SAR birds. ▪ Turtle exclusion fencing will be required during turtle active season (currently April 1-October 31, inclusive). Fencing is to meet MECP guidelines (Reptile and amphibian exclusion fencing | ontario.ca). ▪ Daily sweeps for wildlife during active season. ▪ Proper design, installation, monitoring, and maintenance of erosion and sediment control measures appropriate for the Site.	▪ None
Construction				

Activity	Natural Heritage Feature / Function	Potential Effect	Proposed Mitigation	Residual Effect
Grading of site to accommodate Site Plan. Watercourse Realignment Infill of offline Ponds 2 and 3 Installation of culvert in road ditch for new access road. Installation of other infrastructure, final grading and paving.	Fish and fish habitat Potential breeding bird habitat (i.e., ground nesters). SWH – Snapping Turtle	Alteration or loss of fish habitat (alteration of 0.42 ha of fish habitat) Potential for erosion of banks and sedimentation of aquatic habitat Potential for interruption of ground nesting birds. Potential for accidental harm to individuals (i.e., turtles)	■ Several aquatic features were avoided and will not be impacted. ■ The design is to ensure that contributing flows to various features match existing and that water quality meets MECP's guidelines. ■ Consultations with DFO prior to impacting any fish habitat, directly or indirectly. Any offsetting measures deemed necessary will be implemented as per DFO's requirements. ■ Consultation with South Nation Conservation prior to alterations of waterways. ■ Construction/Enhancement of pond and watercourse habitat to ensure continuation of fish habitat and headwater features through the restoration of Pond 1 and watercourse (Feature 5). ■ No in-water works within fish habitat between March 15 and June 30 inclusive ■ Works with high potential to cause mud are to avoid periods of rain to minimize erosion and transportation of sediments. ■ Contractor to develop an Erosion and Sediment Control (ESC) Plan. ESC measures are to be used, monitored for effectiveness, and	■ None

Activity	Natural Heritage Feature / Function	Potential Effect	Proposed Mitigation	Residual Effect
			maintained throughout construction. - ESC measures are to be installed prior to any clearing of vegetation, and within 30 m of the watercourse; measures shall be maintained in place until 80% vegetative cover is achieved to stabilize banks - In-water works are to be conducted in the isolated area only, using appropriate techniques to control turbidity. - Machinery working within 30 m of water will be well-maintained and free of leaks. - Machinery entering the Site should be cleaned to minimize the introduction/spread of invasive species (e.g., Common Reed, Reed Canary Grass). - Machinery used to complete in-water works to be free of mud and plant material to avoid spreading invasive species. - Restoration Plan to consist of native vegetation. - Aquatic fauna and fish encountered in construction areas are to be removed and relocated to a safe area nearby.	
	Snapping Turtle habitat (SWH)	Alteration or loss of turtle habitat	- Construction/Enhancement of pond and watercourse habitat to	- None

Activity	Natural Heritage Feature / Function	Potential Effect	Proposed Mitigation	Residual Effect
		Accidental harm to individuals	ensure continuation of SWH (Snapping Turtle habitat). - Monitoring during work to avoid accidental harm to reptiles. - Turtle exclusion fencing will be required during the turtle active season (currently April 1-October 31, inclusive). Fencing is to meet MECP guidelines (Reptile and amphibian exclusion fencing | ontario.ca). - Protection of individual aquatic fauna by conducting infill outside of hibernation (typically November 1 to March 31). - Isolation of potential nesting areas (i.e., new spoil piles) during active turtle period (i.e., disturbed between April 1 and October 31) such that turtle nesting in areas to be disturbed is prevented during nesting/incubation period. - Aquatic fauna encountered in construction areas are to be removed and relocated to a safe area nearby.	
	Category 3 feeding habitat for Bank Swallow Potential for ground nesting birds.	Removal of Category 3 SAR feeding habitat Potential harm to migratory birds or their habitat (MBCA)	- MECP was consulted during 2021 and confirmed no contravention of ESA for Bank Swallow. - Rehabilitation works (as per rows above) include pond habitat which will continue to provide feeding habitat.	- None

Activity	Natural Heritage Feature / Function	Potential Effect	Proposed Mitigation	Residual Effect
			■ Monitor for ground nesting birds daily during the bird breeding period (April 1 to August 31) to ensure compliance with the federal *Migratory Birds Convention Act* (MBCA) and to protect SAR birds	
Operation				
Effluent from parking operations and/or spills	Adjacent wetland Restored watercourse	Potential for accidental release of harmful substances into adjacent aquatic habitat, or wetlands.	■ Design includes meeting MECP's water quality guidelines (i.e., oil/grit separator). ■ Surface runoff directed to closed, vegetated semi-permeable sand swale network surrounding the Site. ■ Swales to convey to detention dry ponds before releasing into ditch along Boundary Road. ■ Water quality and quantity flowing to features are to remain the same pre- and post-construction through the use of infiltration berms.	■ None

8. Conclusion

The existing condition of the Site is that of an area that was heavily disturbed by the fill brought in by others with limited vegetation. The background review and site investigations identified several confirmed or potential natural heritage features on Site. These include:

- Habitat of endangered and threatened species;
  - Bank Swallow – Feeding Area (Confirmed)
  - Potential for SAR Bats
  - Potential for SAR Flora (Butternut, Black Ash)
- Significant wildlife habitat; and,
  - Snapping turtle (Feature 5, Feature 7, Pond 1)
- Fish Habitat / Watercourses (8 aquatic features, plus 1 road ditch)
  - Of these, the only fish habitat (seasonal, forage fish) that will be impacted are Feature 5 and the Boundary Road west ditch.

All other features identified (confirmed or potential) were present in the adjacent lands: PSW (South Bear Brook Wetland), Woodlands, other Fish Habitat and Headwater Drainage Features not listed above, as well as potential for habitat of endangered or threatened species.

Through discussions during the planning process, setbacks and buffers were identified. The proponent's planners and engineers (Novatech) have ensured that the proposed Site Plan respects the boundaries to the developable work area as established during the ZBA.

The application of avoidance and mitigation measures and establishment of buffers to be rehabilitated with native vegetation minimizes the impact to many features. Prior to construction that could impact habitat of endangered or threatened species or fish habitat, the appropriate consultations and processes must be completed. These are anticipated to consist of:

- Consultation with South Nation Conservation prior to affecting watercourses;
- Obtaining of City of Ottawa Tree Permit prior to removal of trees 10 cm in dbh or larger;
- Consultation with DFO prior to any impacts to the fish habitat (Request for Review process is anticipated); and
- Consultation with MECP as appropriate.
  - Complete flora SAR inventories no earlier than 2 years prior to construction (as they have a shelf-life of 2-years):

- Butternut inventory and assessment during appropriate time of year (assessments are to be completed between May 15-August 31).
- Black Ash inventory and assessment to be completed during the appropriate time of year (assessments are to be completed between June 1 and October 1).
- Bat habitat (leaf-off and June, as appropriate).

Provided that the avoidance and mitigation measures as outlined above are implemented appropriately and that any additional consultations and permitting are obtained, there would be no negative residual effects, and the Project can proceed as per the Site Plan.

I trust that this report will meet your requirements. Should you have any questions or comments, please contact Michelle Lavictoire at michelle.lavictoire@cima.ca.

9. Study Limitations and Constraints

CIMA+ completed diligent and reasonable research in conducting this evaluation, with respect to recognized laws and standards of practice. The facts presented in this report are strictly limited to the period of investigation. Conclusions are based on available information and documents, observations made during Site investigations, and communications with various contacts. Interpretation is therefore limited to this data.

CIMA+ is not responsible for erroneous conclusions due to voluntary abstention or the non-availability of pertinent information. Any opinion expressed in relation to legal or regulatory conformity is technical and should not be, in any case, considered legal advice.

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A

Appendix A
Review of Potential Endangered or Threatened Species

Table 11: List of Potential Endangered or Threatened Species and Identification of those Brought Forward

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
REPTILES							
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	END	Shallow water, large marshes, shallow lakes, or similar water bodies (COSEWIC, 2016). Federal guidelines use a 2 km distance and bases the automatic protection on the occupancy and suitability of the habitat for nesting, overwintering and functional habitat (ECCC, 2018). Provincial guidelines provide general habitat protection to suitable habitat within 2 km of an occurrence when certain conditions are met (MECP, 2019).	Record of an occurrence within 2 km in 2008 (NHIC). Surveys in 2021 did not find any Blanding's Turtles. Species is anticipated to be present in general area but none found on Site following basking turtle surveys. Avoidance and mitigation measures are included.	Yes
BIRDS							
Least Bittern	*Ixobrychus exilis*	S4B	THR	THR	Freshwater marsh habitat with dense vegetation (Sandilands, 2005; COSEWIC, 2009a). Nests are typically in cattail marshes, near edge or openings but they have been found in other emergents and occasionally in willow (Woodcliff, 2007). Recovery strategy states that the species must have permanent marsh/shrub swamps and a mosaic of tall and robust herbaceous or woody vegetated with open water areas and natural regime water levels (ECCC, 2014). The open water areas can be shallow (10-50cm) (OMNRF, 2016). Movements within this suitable habitat can extend within a 500m radius of the nest (ECCC, 2014). and are usually found in those that are larger than 5 ha (COSEWIC 2009; OMNRF, 2014). The province does not currently have any guidance on the general habitat requirements of this species.	No suitable marsh habitat is present in the surveyed area. This species is not brought forward for this project.	No
Chimney Swift	*Chaetura pelagica*	S4B, S4N	THR	THR	Cities, towns, villages, rural, and wooded areas. This species rarely utilizes trees; they prefer trees greater than 50 cm in diameter and that are within 1 km of waterbodies (COSEWIC 2007). Provincially, this species' protected habitat consists of Category 1 habitat, which is a human-made nesting/roosting feature or natural nesting/roosting tree cavity, as well as the area within 90 m of the natural tree cavity (MECP, 2017). No Category 2 or 3 habitats are outlined for this species (MECP, 2017).	This species has not been recorded in the ABBO squares of the general area; the nearest recorded occurrences (breeding evidence: possible) are Squares 18TVR52 to the west and 18TVR72 to the east. Potentially could use structures on site. Not identified as present in the EIS (Bickerton, 2021). And none were observed as incidentals by Bowfin. This species is considered absent.	No
Loggerhead Shrike	*Lanius ludovicianus*	S2B	END	END	Breeding habitat is characterized by open areas such as pastures, prairie grasslands, and agricultural fields. Nesting sites are small shrubs and trees, usually those with thorns or dense interiors (COSEWIC, 2014). The federal recovery strategy states that the species critical habitat is all suitable habitat patches in which confirmed or probable breeding evidence was observed between 2004-2008 (ECCC, 2010) OR two such observation were made in differing years between 1999-2003 as well as suitable habitat patches of which >50% fall within a 400 m radius of the observation/s. Provincially, the species' critical habitat is the 200 m surrounding a nesting site (Category 1) and 200 m surrounding the Category 1 habitat (Category 2) (MECP, 2017).	The Site consisted primarily of compacted aggregate fill. No suitable habitat on site. Not identified as present in the EIS (Bickerton, 2021). And none were observed as incidentals by Bowfin. It is considered absent.	No

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
Bank Swallow	*Riparia riparia*	S4B	THR	THR	This species nests within vertical banks, with a preference for sand-silt substrate. Nesting sites more likely near open upland habitats. (COSEWIC, 2013). Provincially, the species protected habitat is the 50 m in front of a breeding colony's bank face and all suitable foraging habitat within 500 m (MECP, 2015).	Searches for nesting habitat within the Site did not locate any nests (Bickerton, 2021). Individuals were observed flying overhead and may use the Site for forwarding (Bickerton, 2021). EIS listed Site as Category 3 habitat. Impacts to Pond 3 were to be restricted to inactive season (Bickerton, 2021). That timing window is now April 1 to August 31. Brought forward for avoidance and mitigation measures. If this cannot be adhered to, while protecting turtles, then it will be discussed with MECP.	Yes
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	Primarily in forage crops, and grassland habitat. It is sensitive to edge effects, size of habitat and areas with dense shrub vegetation or a litter layer deeper than a few centimeters (COSEWIC, 2010). Provincially, this species' protected habitat is the area extending 60 m from the nest as well as the 300 m of suitable habitat around the nest (MECP, 2013).	The Site consisted primarily of compacted aggregate fill. No suitable habitat on site. Not identified as present in the EIS (Bickerton, 2021). And none were observed as incidentals by Bowfin. It is considered absent.	No
Eastern Meadowlark	*Sturnella magna*	S4B	THR	THR	Typically require larger grasslands but have been known to breed in habitats that were 1 ha in the United States. Usually, this species' defended territories consist of 2.8-3.2 ha of uncut meadow or field (OMNR, 2014). Personal observations of successful nesting habitat for this species in Eastern Ontario have not found any successful nesting pairs in habitats that were less than 5 ha, which is estimated to be this species' approximate area requirement (COSEWIC, 2011). Provincially, this species protected habitat is the area extending 100 m from the nest as well as the 300 m of suitable habitat around the nest (MECP, 2013).	The Site consisted primarily of compacted aggregate fill. No suitable habitat on site. Not identified as present in the EIS (Bickerton, 2021). And none were observed as incidentals by Bowfin. It is considered absent.	No
MAMMALS							
Little Brown Myotis	*Myotis lucifugus*	S4	END	END	Females establish summer maternity colonies, often in buildings or large-diameter trees. Foraging occurs over water, along waterways, and forest edges. Overwinter in cold and humid hibernacula (caves/mines) (COSEWIC, 2013). Critical habitat has not yet been defined by the province.	No suitable hibernacula present in the area (no crevices or entrances to bedrock). No suitable maternity roost habitat is present within or adjacent to the Site for Eastern Small-footed Myotis. There remains the potential for woodland bats to utilize adjacent lands for maternity or day-roots. As of 2025, three additional bats have been listed as endangered and are now protected. All seven protected bat species are brought forward for avoidance and mitigation measures.	Yes
Northern Myotis	*Myotis septentrionalis*	S3	END	END	Older (late successional or primary forests) with large interior habitat and snags that are in the mid-stage of decay. They prefer intact interior habitat and are sensitive to edge habitats (Menzel et al. 2002, Broders et al. 2006, SWH 6E Ecoregion Criterion Schedule). Critical habitat has not yet been defined by the province.		

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
Eastern Small-footed Myotis	*Myotis leibii*	S2S3	END	No Status	Roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. The recovery strategy for the eastern small-footed myotis indicates that the preferred maternity habitat of this species consists of open rock habitats and that it doesn't use old buildings. In the winter, these bats hibernate, most often in caves and abandoned mines (Humphrey, 2017). Critical habitat has not yet been defined by the province.		
Tri-colored Bat	*Perimyotis subflavus*	S3?	END	END	Females establish summer maternity colonies, often in buildings or large-diameter trees. Foraging occurs over water, along waterways, and forest edges. Overwinter in cold and humid hibernacula (caves/mines). (COSEWIC, 2013). Critical habitat has not yet been defined by the province.		
Silver-haired Bat	*Lasionycteris noctivagans*	S4	END (as of 2025)	No Status	Females establish summer maternity colonies in large diameter trees (COSEWIC 2023). They also use buildings as roosting sites. Critical habitat has not yet been defined. Provincially, hibernacula have a buffer of 200 m. Buffers for maternity sites have not been established.		
Eastern Red Bat	*Lasiurus borealis*	S4	END (as of 2025)	No Status	Day roosts can be in a variety of deciduous and coniferous forest types, usually in trees but occasionally shrubs. Trees used as maternity roosts by both species tend to be large diameter and tall (COSEWIC 2023). Both migrate south to hibernate in the southern United States (COSEWIC 2023).		
Hoary Bat	*Lasiurus cinereus*	S4	END (as of 2025)	No Status			
VASCULAR PLANTS							
Butternut	*Juglans cinerea*	S2?	END	END	Found in a variety of habitat types but grows best on well-drained fertile soils in shallow valleys and on gradual slopes (COSEWIC, 2017). The federal recovery strategy does not outline critical habitat for this species. Provincially, butternuts are assessed and categorized based on the amount of canker. These categories are outlined in Section 6.	Suitable habitat and site are well within the range for this species. Inventories valid for 2-years. Species is brought forward for further investigations closer to construction period.	Yes
Black Ash	*Fraxinus nigra*	S4	END (As of Jan 25, 2024)	No Status	Swamps, bogs, and riparian areas, occasionally poorly drained upland areas (COSEWIC 2018).	Suitable habitat and site are well within the range for this species. Inventories valid for 2-years. Species is brought forward for further investigations closer to construction period.	Yes

Table Updated: June 2025

SRANK Definitions

S2 Imperiled, imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 Vulnerable, Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S#S# Range Rank, A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
? Inexact Numeric Rank—Denotes inexact numeric rank
S#B Breeding

SARO Status Definitions

END Endangered: A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.

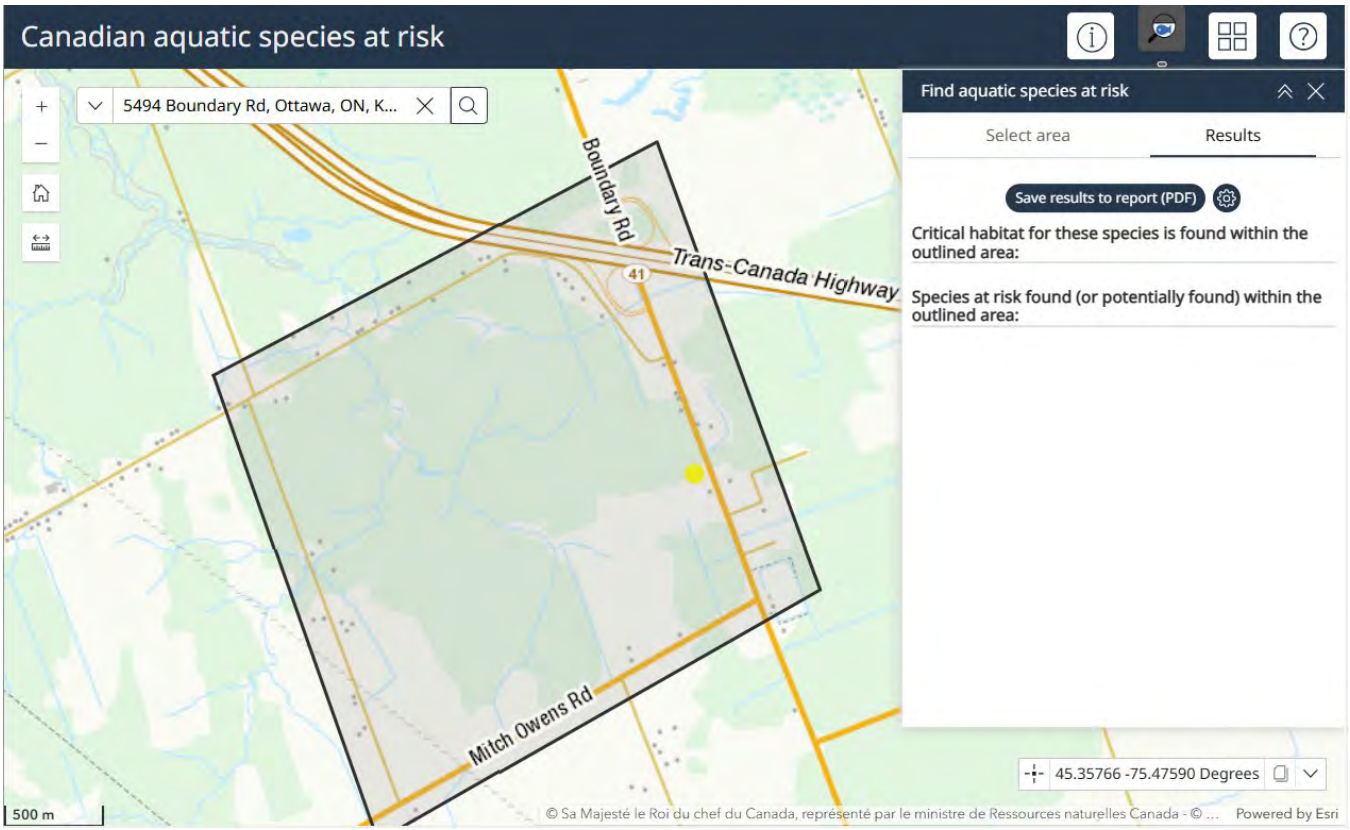
THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SARA Status Definitions

END Endangered, a wildlife species facing imminent extirpation or extinction.
THR Threatened, a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

B

Appendix B
CASAR Mapping



DFO Canadian Aquatic Species at Risk Mapping (Accessed on June 23, 2025)

C

Appendix C
List of Observed Species (Bickerton, 2021)

List of Observed Plant Species

BOTANICAL NAME		COMMON NAME	Regional Status	Prov. Status[3]
Acer	*rubrum*	Red Maple	Common	**S5**
Alnus	*incana ssp. rugosa*	Speckled Alder	Common	**S5**
Ambrosia	*artemisiifolia*	Ragweed	Common	**SNA**
Anemone	*canadensis*	Canada Anemone	Common	**S5**
Apocynum	*androsaemifolium ssp. androsaemifolium*	Spreading Dogbane	Common	**S5**
Arctium	*minus*	Common Burdock	Common	**SNA**
Arisaema	*triphyllum*	Jack-in-the-pulpit	Common	**S5**
Asclepias	*syriaca*	Common Milkweed	Common	**S5**
Athyrium	*filix-femina*	Northern Lady Fern	Common	**S5**
Barbarea	*vulgaris*	Yellow-rocket	Common	**SNA**
Betula	*papyrifera*	White Birch	Common	**S5**
Betula	*populifolia*	Gray Birch	Common	**S4**
Bromus	*inermis*	Smooth Brome Grass	Common	**SNA**
Calla	*palustris*	Wild Calla	Common	**S5**
Capsella	*bursa-pastoris*	Shepherd's Purse	Common	**SNA**
Carex	*intumescens*	Bladder Sedge	Common	**S5**
Cirsium	*arvense*	Canada Thistle	Common	**SNA**
Cornus	*stolonifera*	Red-osier Dogwood	Common	**S5**
Coronilla	*varia*	Crown Vetch	Common	**SNA**
Cynoglossum	*officinale*	Comfrey	Common	**SNA**
Dactylis	*glomerata*	Orchard Grass	Common	**SNA**
Daucus	*carota*	Queen Anne's Lace	Common	**SNA**
Dryopteris	*cristata*	Crested Woodfern	Uncommon	**S5**
Eleocharis	*acicularis*	Needle Spikerush	Common	**S5**
Elodea	*canadensis*	Canada Waterweed	Common	**S5**
Equisetum	*arvense*	Field Horsetail	Common	**S5**
Equisetum	*hyemale*	Scouring Rush	Common	**S5**
Eupatorium	*perfoliatum*	Boneset	Common	**S5**
Fragaria	*virginiana*	Common Strawberry	Common	**S5**
Frangula	*alnus*	Glossy Buckthorn	Common	**SNA**
Fraxinus	*pennsylvanica*	Green Ash	Common	**S5**
Fraxinus	*nigra*	Black Ash	Common	**S5**
Glechoma	*hederacea*	Ground-ivy	Common	**SNA**
Hesperis	*matronalis*	Dame's Rocket	Common	**SNA**
Ilex	*verticillata*	Winterberry Holly	Common	**S5**
Iris	*germanica*	Bearded Iris	Rare	**SNA**
Leonurus	*cardiaca*	Motherwort	Common	**SNA**
Leucanthemum	*vulgare*	Ox-eye Daisy	Common	**SNA**
Lonicera	*tatarica*	Tartarian Honeysuckle	Common	**SNA**
Lotus	*corniculatus*	Bird's-foot Trefoil	Common	**SNA**
Lythrum	*salicaria*	Purple Loosestrife	Common	**SNA**
Maianthemum	**canadense**	**Wild Lily-of-the-valley**	**Common**	**S5**

List of Observed Bird Species

COMMON NAME	SCIENTIFIC NAME	Prov Status	Forest interior	On ite	Ad-jacent
Alder Flycatcher	*Empidonax alnorum*	S5B		H	
American Crow	*Corvus brachyrhynchos*	S5B		O	
American Robin	*Turdus migratorius*	S5B		O	
Bank Swallow	*Riparia riparia*	S4B		O	
Barn Swallow	*Hirundo rustica*	S4B		O	
Black-capped Chickadee	*Poecile atricapillus*	S5B		H	
Blue Jay	*Cyanocitta cristata*	S5B		H	
Brown Thrasher	*Toxostoma rufum*	S4B			**H**
Chestnut-sided Warbler	*Setophaga pensylvanica*	S5B		O	
Common Grackle	*Quiscalus quiscula*	S5B		O	
Common Yellowthroat	*Geothylpis trichas*	S5B		H	
Downy Woodpecker	*Picoides pubescens*	S5		H	
Eastern Phoebe	*Sayornis phoebe*	S5B		H	
Eastern Wood-Pewee	*Contopus virens*	S4B			**H**
European Starling	*Sturnus vulgaris*	SNA		O	
Green Heron	*Butoroides virescens*	S4B		H	
Great Crested Flycatcher	*Myiarchus crinitus*	S4B	*		**O**
Killdeer	*Charadrius vociferus*	S5B		O	
Mallard	*Anas platyrhynchos*	S5B		O	
Northern Flicker	*Colaptes auratus*	S4B		H	
Northern Rough-winged Sw	*Stelgidopteryx serripennis*	S4B			**H**
Northern Waterthrush	*Parkesia noveboracensis*	S5B			**H**
Pileated Woodpecker	*Dryocopus pileatus*	S5		S	
Red-winged Blackbird	*Agelaius phoeniceus*	S5B		O	
Ring-billed Gull	*Larus delawarensis*	S5B, S4N			**fly-over**
Rock Pigeon	*Columba livia*	SNA		O	
Song Sparrow	*Melospiza melodia*	S5B		O	
Spotted Sandpiper	*Actitis macularius*	S5		O	
Swamp Sparrow	*Melospiza georgiana*	S5B		O	
Veery	*Catharus fuscescens*	S4B	*		**H**
White-throated Sparrow	*Zonotrichia albicollis*	S5B			**H**
Yellow Warbler	*Setophaga petechia*	S5B		H	
Yellow-rumped Warbler	*Setophaga coronata*	S5B		H	

List of Observed Amphibian, Reptile, and Mammal Species

Common Name	Scientific Name	SRank
Amphibians		
Green Frog	*Lithobates clamitans*	S5
Northern Leopard Frog	*Lithobates pipiens*	S5
Spring Peeper	*Pseudacris crucifer*	S5
Gray Tree Frog	*Hyla versicolor*	S5
American Toad	*Anaxyrus americanus*	S5
Reptiles		
Painted Turtle	*Chrysemys picta marginata*	S5
Snapping Turtle	*Chelydra serpentina*	S3
Mammals		
Eastern Gray Squirrel	*Sciurus carolinensis*	S5
Eastern Chipmunk	*Tamias striatus*	S5
White-tailed Deer	*Odocoileus virginianus*	S5

D

Appendix D
Site Plan and Landscape Plan

1 A001 EXISTING KEY PLAN
SCALE N/A

LEGEND

- PROPERTY LINE
- YARD SETBACK
- 8ft HIGH CHAIN FENCE, REFER TO LANDSCAPE
- FH FIRE HYDRANT
- CB CATCH BASIN - SEE CIVIL
- MH MANHOLE - SEE CIVIL
- MAIN ENTRANCE/EXIT
- GARBAGE ENCLOSURE C/W 2m HIGH OPAQUE SCREEN
- UP EXISTING UTILITY POLE
- AN EXISTING ANCHOR
- EXTERIOR LIGHT POLE REFER TO ELEC.
- T.W.S.I.
- BR BIKE RACK FOR 4 BIKES 0.6 x 1.8 m SPACE PER BIKE
- FP FLAG POLE, REFER TO LANDSCAPE
- LANDSCAPED AREA REFER TO LANDSCAPE PLAN
- CONCRETE PAD AND SIDEWALK
- ASPHALT
- 6m WIDE FIRE ROUTE, REFER TO CIVIL
- PAVERS REFER TO LANDSCAPE PLAN
- LOADING SPACE PER ZBL, SECTION 113, TABLE 113B
- DC NEW DEPRESSED CURB
- NEW CURB
- B IN-GROUND BOLLARD, REFER TO DETAIL 1/A002
- BH BLOCK HEATER, REFER TO DETAIL 2/A002
- R RECEPTACLE, REFER TO DETAIL 1/A003
- C CONDUIT STUB UP FOR FUTURE ELEC. EQUIPMENT
- EV CHARGER, REFER TO DETAIL 11/A002

SIGNAGE LEGEND:

REFER TO SPEC SECTION 10 14 54 TRAFFIC SIGNAGE

- NO TRESPASSING
- FR FIRE ROUTE
- BF BARRIER-FREE PARKING
- ST STOP SIGN

PAINTED SIGN LEGEND:

REFER TO SPEC SECTION 32 17 23 PAINTING TRAFFIC LINES AND MARKINGS

- WHITE PAINTED BARRIER-FREE PARKING SYMBOL AND PARKING LINES
- WHITE PAINTED CAR PARKING LINES
- WHITE PAINTED SYMBOL FOR ELECTRIC CAR CHARGING STATION

PROJECT INFORMATION

TOPOGRAPHICAL PLAN INFORMATION:
SURVEY PROPERTY BOUNDARIES TAKEN FROM TOPOGRAPHICAL PLAN OF PART OF LOT 1 CONCESSION 9, GEOGRAPHIC TOWNSHIP OF GLOUCESTER; CITY OF OTTAWA, WEST OF BOUNDARY ROAD, PIN 04324-0177 AND PIN 04324-0161, PER PLAN 4R-13964

PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
DATED AUGUST 15, 2018

SITE ZONING AS PER OTTAWA ZONING BY-LAW 2008-250 SITE DESIGNATION
RG - RURAL GENERAL INDUSTRIAL ZONE
AREA "D" OF SCHEDULE 1, CITY OF OTTAWA

BUILDING CLASSIFICATION:
THE BUILDING IS CLASSIFIED AND DESIGNED TO CONFORM TO THE ONTARIO BUILDING CODE 2020

OCCUPANCY:
GROUP F DIVISION 2 - UP TO 2 STOREYS, SPRINKLERED (3.2.2.72.)
GROUP D - UP TO 3 STOREYS, SPRINKLERED (3.2.2.54.)

BUILDING STATISTICS:
NUMBER OF STOREYS = 1
THE BUILDING IS SPRINKLERED

NUMBER OF ACCESS ROUTES REQUIRED = 1
NUMBER OF ACCESS ROUTES PROVIDED = 2

CONSTRUCTION TYPE = NON-COMBUSTIBLE CONSTRUCTION

OWNER
DAY & ROSS INC.
358 MAIN STREET
HARTLAND, NB
E7P 1C6

SURVEYOR
ANNIS, O'SULLIVAN, VOLLEBEKK LTD
14 CONCOURSE GATE, SUITE 500
NEPEAN, ON
K2E 7S6

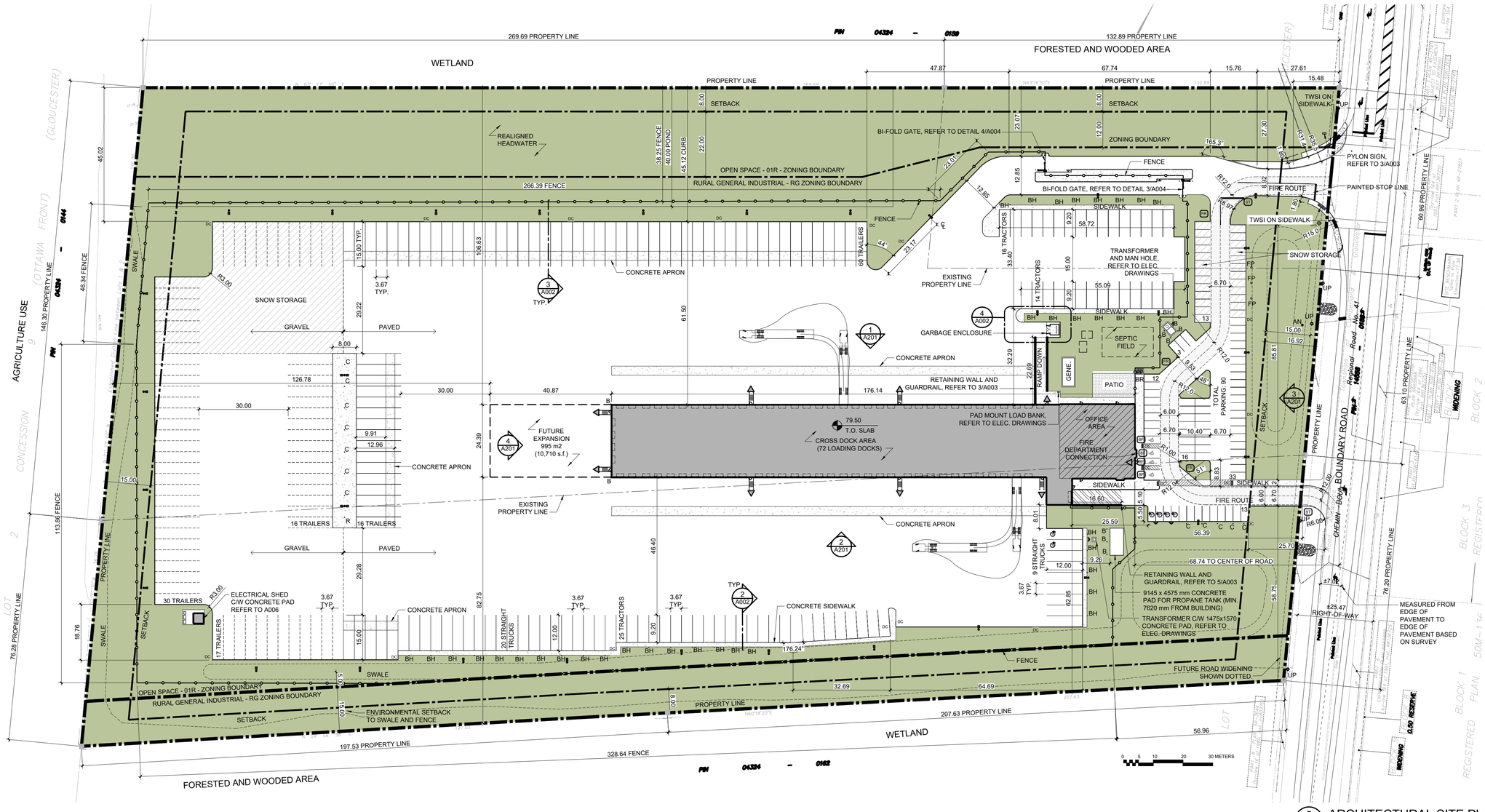
CIVIL ENGINEER
NOVATECH
240 MICHAEL COWPLAND DRIVE, SUITE 200
OTTAWA, ON
K2M 1P6

ARCHITECT
N45 ARCHITECTURE INC.
ROBERT MATTHEWS
71 BANK STREET, 7TH FLOOR
OTTAWA, ON
K1P 5N2

ZONING INFORMATION

NOTE: ALL ZONING DEFINITIONS AND REQUIREMENTS AS PER CITY OF OTTAWA ZONING BY-LAW 2008-250

ZONING MECHANISM	REQUIRED	PROVIDED	FUTURE EXPANSION
ADDRESS	5494-5510 BOUNDARY ROAD GLOUCESTER, ON	TRUCK TRANSPORT TERMINAL AND CROSS DOCK	
DEFINITION	RG RURAL GENERAL INDUSTRIAL ZONE		
MIN.LOT WIDTH	30 m	200 m	200 m
MIN. LOT AREA	4, 000 m^2	84,540 m^2	84,540 m^2
MIN. FRONT YARD SETBACK	15 m	56.39 m	56.39 m
MIN. CORNER SIDE SETBACK	12 m	N/A	N/A
MIN. INT. SIDE YARD SETBACK	8 m	62.9 m	62.9 m
MIN. REAR YARD SETBACK	15 m	167.7 m	126.8 m
MAX. LOT COVERAGE	50%	5.2%	6.4%
MAX. BUILDING HEIGHT	15 m	8 m	8 m
MIN. WIDTH OF LANDSCAPING	1.5 m	MIN. 3 m	MIN. 3 m
STANDARD PARKING SPACE	2.6m x 5.2m (max 3.1m wide)	2.6m x 5.2m	
ACCESSIBLE PARKING SPACE	3.6m x 5.2m	3.4m x 5.2m (TYPE A), 2.4 x 5.2m (TYPE B)	
PARKING REQUIREMENTS AREA D: RURAL	46 OFFICE: 2.4 / 100 m^2 G.F.A CROSS DOCK: 0.8 / 100 m^2 G.F.A	90	90 (54 required)
BARRIER-FREE PARKING	3	2 (TYPE A) + 2 (TYPE B)	
LOADING SPACES	1 (MIN. 3.5 m WIDE x 7 m LONG)	72	90
BICYCLE PARKING RATE	3 (1 / 2000 m^2 of G.F.A.)	4	4 (3 required)
GROSS FLOOR AREA		4,440 m^2 (47,790 s.f)	5,435 m^2 (58,500 s.f)
BUILDING AREA (FOOTPRINT)		4,400 m^2 (47,360 s.f)	5,395 m^2 (58,070 s.f)
OFFICE AREA		642 m^2 (6,910 s.f)	642 m^2 (6,910 s.f)
CROSS DOCK AREA		3,758 m^2 (40,450 s.f)	4,753 m^2 (51,160 s.f)



2 A001 ARCHITECTURAL SITE PLAN
SCALE 1:750

no.	revision	date
09	ISSUE FOR SPA RESPONSE	15 SEPT 2025
08	ISSUE FOR BLDG COMMENT RESPONSE 1	18 APR 2025
07	SPA COMMENTS RESPONSE	3 APR 2025
06	SPA COMMENTS RESPONSE	12 DEC 2024
05	ISSUE FOR BUILDING PERMIT	24 OCT 2024
04	ISSUE FOR 90% SUBMISSION	03 OCT 2024
03	ISSUE FOR SITE PLAN CONTROL APPLICATION	24 SEPT 2024
02	ISSUE FOR 60% SUBMISSION	15 AUG 2024
01	ISSUE FOR 30% SUBMISSION	27 JUNE 2024

N45 ARCHITECTURE INC.
71 Bank Street, 7th Floor - Ottawa, Ontario, K1P 5N2
tel. 613.224.0095 fax 613.224.9811

DAY & ROSS
5494-5510 BOUNDARY ROAD
GLOUCESTER, ON

Project North / True North

seal: ONTARIO ASSOCIATION OF ARCHITECTS — ROBERT C. MATTHEWS — LICENCE 2966

drawing title: SITE PLAN

scale	drawn by
AS SHOWN	DL
date	checked by
FEB 2024	RM
project number	drawing number
22-765	A001

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES.

DO NOT SCALE DRAWINGS

revision 08

CITY PLAN NO. 19296

CITY'S FILE NUMBER: D07-12-24-0117

Reforestation Mix

%	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	SPACING
Coniferous Trees						
5%	24	*Abies balsamea*	Balsam Fir	0.60m Ht	PT	2.0m O.C.
5%	24	*Larix laricina*	Tamarack	0.60m Ht	PT	2.0m O.C.
5%	24	*Pinus banksiana*	Jack Pine	0.60m Ht	PT	2.0m O.C.
5%	24	*Pinus strobus*	Eastern White Pine	0.60m Ht	PT	2.0m O.C.
5%	24	*Thuja occidentalis*	Eastern White Cedar	0.60m Ht	PT	2.0m O.C.
Deciduous Trees						
10%	49	*Acer rubrum*	Red Maple	1.20m Ht	PT	2.0m O.C.
5%	24	*Acer saccharum*	Sugar Maple	1.20m Ht	PT	2.0m O.C.
10%	49	*Betula papyrifera*	Paper Birch			
5%	24	*Celtis occidentalis*	Hackberry	1.20m Ht	PT	2.0m O.C.
5%	24	*Juglans cinerea*	Butternut	1.20m Ht	PT	2.0m O.C.
5%	24	*Juglans nigra*	Black Walnut	1.20m Ht	PT	2.0m O.C.
5%	24	*Ostrya virginiana*	Ironwood	1.20m Ht	PT	2.0m O.C.
2%	10	*Populus balsamifera*	Balsam Poplar	1.20m Ht	PT	2.0m O.C.
3%	15	*Populus deltoides*	Eastern Cottonwood			
2%	10	*Populus grandidentata*	Largetooth Aspen	1.20m Ht	PT	2.0m O.C.
3%	15	*Populus tremuloides*	Trembling Aspen	1.20m Ht	PT	2.0m O.C.
10%	49	*Prunus serotina*	Black Cherry	1.20m Ht	PT	2.0m O.C.
5%	24	*Quercus rubra*	Red Oak	1.20m Ht	PT	2.0m O.C.
5%	24	*Tilia americana*	Basswood	1.20m Ht	PT	2.0m O.C.

Sandy Buffer Mix

%	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	SPACING
Deciduous Shrubs						
10%	40	*Amelanchier humilis*	Low Shadbush	0.60m Ht	PT	2.0m O.C.
10%	40	*Amelanchier canadensis*	Shadblow Serviceberry	0.60m Ht	PT	2.0m O.C.
10%	40	*Ceanothus americanus*	New Jersey Tea	0.60m Ht	PT	2.0m O.C.
10%	40	*Diervilla lonicera*	Northern Bush Honeysuckle	0.60m Ht	PT	2.0m O.C.
15%	59	*Prunus pumila*	Sand Cherry	0.60m Ht	PT	2.0m O.C.
10%	40	*Rhus typhina*	Staghorn Sumac	0.60m Ht	PT	2.0m O.C.
10%	40	*Rhus aromatica*	Fragrant Sumac	0.60m Ht	PT	2.0m O.C.
15%	59	*Rosa blanda*	Meadow Rose	0.60m Ht	PT	2.0m O.C.
10%	40	*Symphoricarpos alba*	Snowberry	0.60m Ht	PT	2.0m O.C.

Dry Shrub Mix

%	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	SPACING
Deciduous Shrubs						
10%	21	*Aronia melanocarpa*	Black Chokeberry	0.60m Ht	PT	2.0m O.C.
10%	21	*Ceanothus americanus*	New Jersey Tea	0.60m Ht	PT	2.0m O.C.
10%	21	*Diervilla lonicera*	Northern Bush Honeysuckle	0.60m Ht	PT	2.0m O.C.
10%	21	*Physocarpus opulifolius*	Common Ninebark	0.60m Ht	PT	2.0m O.C.
10%	21	*Rhus typhina*	Staghorn Sumac	0.60m Ht	PT	2.0m O.C.
10%	21	*Rhus aromatica*	Fragrant Sumac	0.60m Ht	PT	2.0m O.C.
10%	21	*Rosa blanda*	Meadow Rose	0.60m Ht	PT	2.0m O.C.
10%	21	*Rubus occidentalis*	Black Raspberry	0.60m Ht	PT	2.0m O.C.
10%	21	*Rubus odoratus*	Flowering Raspberry	0.60m Ht	PT	2.0m O.C.
10%	21	*Symphoricarpos alba*	Snowberry	0.60m Ht	PT	2.0m O.C.

Wetsoils Shrub Mix

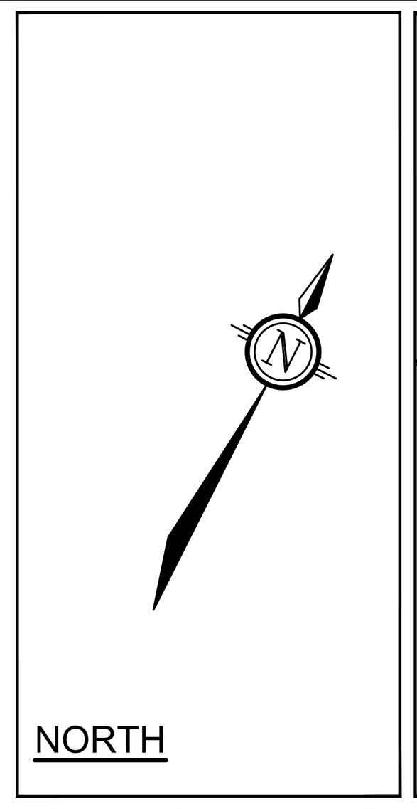
%	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	SPACING
Deciduous Shrubs						
10%	41	*Alnus incana ssp. rugosa*	Speckled Alder	0.60m Ht	PT	2.0m O.C.
10%	41	*Betula populifolia*	Gray Birch	0.60m Ht	PT	2.0m O.C.
10%	41	*Cephalanthus occidentalis*	Buttonbush	0.60m Ht	PT	2.0m O.C.
5%	20	*Cornus alternifolia*	Pagoda Dogwood	0.60m Ht	PT	2.0m O.C.
5%	20	*Cornus racemosa*	Grey Dogwood	0.60m Ht	PT	2.0m O.C.
10%	41	*Cornus sericea*	Red Osier Dogwood	0.60m Ht	PT	2.0m O.C.
10%	41	*Myrica gale*	Sweet Gale	0.60m Ht	PT	2.0m O.C.
5%	20	*Salix eriocephala*	Heart-Leaved Willow	0.60m Ht	PT	2.0m O.C.
5%	20	*Salix discolor*	Pussy Willow	0.60m Ht	PT	2.0m O.C.
10%	41	*Salix petiolaris*	Slender Willow	0.60m Ht	PT	2.0m O.C.
10%	41	*Spiraea alba*	White Meadowsweet	0.60m Ht	PT	2.0m O.C.
10%	41	*Viburnum lentago*	Nannyberry	0.60m Ht	PT	2.0m O.C.

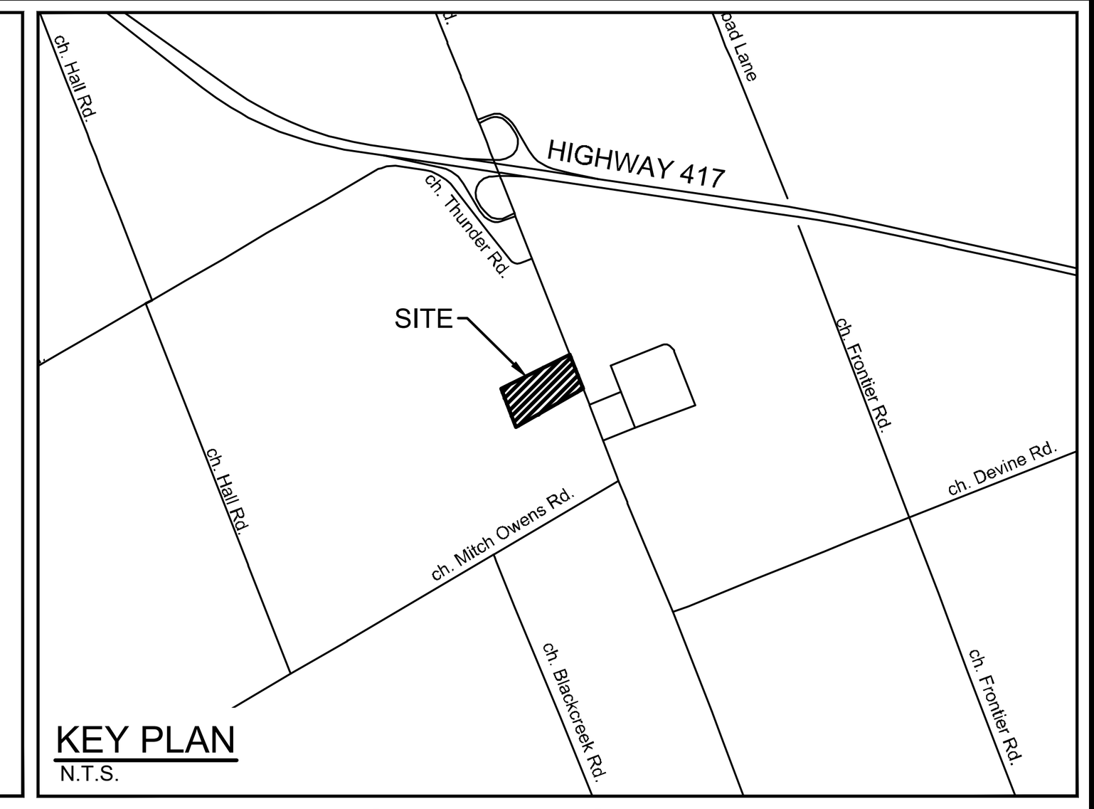
Proposed Trees: Ownership	Total
Private	119
City-Owned	

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	SPACING	NATIVE/NON-NATIVE
Coniferous Trees							
ABA	6	*Abies balsamea*	*Balsam Fir*	200cm Ht	WB	As Shown	Native
LL	9	*Larix laricina*	Tamarack	200cm Ht	WB	As Shown	Native
PM	6	*Picea mariana*	Black Spruce	200cm Ht	WB	As Shown	Native
PNS	8	*Pinus strobus*	Eastern White Pine	200cm Ht	WB	As Shown	Native
TO	9	*Thuja occidentalis*	Eastern White Cedar	200cm Ht	WB	As Shown	Native
TCS	1	*Tsuga canadensis*	Eastern Hemlock	200cm Ht	WB	As Shown	Native
Deciduous Trees							
ARN	5	*Acer rubrum 'Northwood'*	Northwood Red Maple	50mm Cal	WB	As Shown	Nativar
AR	6	*Acer rubrum*	Red Maple	50mm Cal	WB	As Shown	Native
AES	5	*Acer saccharum*	Sugar Maple	50mm Cal	WB	As Shown	Native
AEG	2	*Aesculus glabra*	Ohio Buckeye	45mm Cal	WB	As Shown	Native
AXB	2	*Amelanchier x grandiflora 'Ballerina'*	Ballerina Serviceberry	50mm Cal	WB	As Shown	Nativar
BAL	5	*Betula alleghaniensis*	Yellow Birch	50mm Cal	WB	As Shown	Native
BP	3	*Betula papyrifera*	Paper Birch	50mm Cal	WB	As Shown	Native
COV	4	*Carya ovata*	Shagbark Hickory	50mm Cal	WB	As Shown	Native
CEL	6	*Celtis occidentalis*	Hackberry	50mm Cal	WB	As Shown	Native
GTI	7	*Gleditsia triacanthos var. inermis 'Impcole'*	Imperial Honeylocust	50mm Cal	WB	As Shown	Nativar
GDI	5	*Gymnocladus dioicus*	Kentucky Coffee Tree	50mm Cal	WB	As Shown	Native
JN	4	*Juglans nigra*	Black Walnut	50mm Cal	WB	As Shown	Native
MORU	3	*Morus rubra*	Red Mulberry	60cm 2g	PT	As Shown	Native
PGD	2	*Populus grandidentata*	Largetooth Aspen	40mm Cal	WB	As Shown	Native
PTR	3	*Populus tremuloides*	Trembling Aspen	40mm Cal	WB	As Shown	Native
PS	1	*Prunus serotina*	Black Cherry	50mm Cal	WB	As Shown	Native
QA	4	*Quercus alba*	White Oak	50mm Cal	WB	As Shown	Native
QM	6	*Quercus macrocarpa*	Burr Oak	50mm Cal	WB	As Shown	Native
TA	7	*Tilia americana*	Basswood	50mm Cal	WB	As Shown	Native
Deciduous Shrubs							
Axv	13	*Aronia x prunifolia 'Viking'*	Viking Black Chokecherry	60cm Ht	PT	80cm O.C	Nativar
Pon	26	*Physocarpus opulifolius 'Nanus'*	Dwarf Ninebark	60cm Ht	PT	100cm O.C	Nativar
Rag	10	*Rhus aromatica 'Gro-Low'*	Gro-Low Fragrant Sumac	60cm Ht	PT	160cm O.C	Nativar
Sni	2	*Salix nigra*	Black Willow	60cm Ht	PT	As Shown	Native
Ornamental grasses							
ckf	6	*Calamagrostis acutiflora 'Karl Foerster'*	Karl Foerster Feather Reed Grass	1g	PT	45cm O.C	Non-Native

LEGEND

- 3-D1 — DETAIL SHEET # EG. L1, L2, ETC. — NOVATECH DETAIL NUMBER, SEE LIST FOR CODE
- PROPERTY LIMIT
- PROPOSED CONCRETE
- PROPOSED PAVERS
- PARKING AREA SEED MIX
- RETENTION SEED MIX
- WETLAND SEED MIX
- PROPOSED SANDY BUFFER MIX
- PROPOSED WET SOILS SHRUB MIX
- PROPOSED DRY SHRUB MIX
- PROPOSED REFORESTATION
- PROPOSED SNOW STORAGE AREA
- PROPOSED DECIDUOUS TREE
- PROPOSED CONIFEROUS TREE
- KEY / ## — SPECIES (SEE PLANT LIST) / QUANTITY
- CHAIN LINK FENCE WITH TURTLE FENCE
- CHAIN LINK FENCE
- TURTLE FENCE
- TREE PROTECTION FENCE, SEE TCR PLAN
- BOULDER CLUMP
- BASKING LOGS
- ROOT WAD
- EV — PROPOSED EV CHARGING, REFER TO ELE
- PROPOSED LIGHT POLE, REFER TO ELE





NOVATECH DETAILS

Found on Sheet L2.

D1. Standard Deciduous Tree Planting
D2. Standard Coniferous Tree Planting
D3. Shrub and Perennial Planting
D4. Shrub Naturalization
D5. Reforestation in Grass
D6. Root Wad
D7. Basking Log
D8. Creek Channel
D9. Bike Layout
D10. Turtle Fence

CITY DETAILS

Related details from City of Ottawa Standard Tender Documents Volume No. 2 Standard Detail Drawings.

F9. Chainlink Fence

SC4. Typical Concrete Sidewalk in Boulevard
SC5. Sidewalk Construction Joints

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

Owner:
DAY & ROSS INC.
358 MAIN STREET
HARTLAND,
NB E7P 1C6

Surveyor
ANNIS O'SULLIVAN,
VOLLEBEKK LTD
14 CONCOURSE GATE,
SUITE 500, NEPEAN,
ON K2E 7S6

Civil Engineer
NOVATECH
240 MICHAEL COWPLAND
DRIVE, SUITE 200
OTTAWA,
ON K2M 1P6

Architect
N45 ARCHITECTURE INC.
ROBERT MATTHEWS
71 BANK STREET,
7TH FLOOR, OTTAWA,
ON K1P 5N2

DISCLAIMER:
The elements on this plan illustrate the design intent and general constructability of the proposed landscape which will support the associated development. This is to demonstrate how the canopy cover, urban design, health, and climate change objectives of the Official Plan will be met through tree planting and site design. This drawing is for City review only and is not intended for construction. Final detailed design and construction documentation is to be provided with certified 'Issued for Construction' drawings and specifications prior to construction.

No.	REVISION	DATE	BY
6.	REVISED PER CITY AND SNCA COMMENTS	NOV 14/25	SC
5.	ISSUED FOR COMPLETENESS COMMENTS	FEB 27/25	SC
4.	ISSUED FOR BUILDING PERMIT	OCT 24/24	RGJ
3.	ISSUED FOR 90% SUBMISSION	OCT 4/24	RGJ
2.	ISSUED FOR SITE PLAN APPLICATION	OCT 2/24	RGJ
1.	ISSUED FOR 60% SUBMISSION	AUG 16/24	RGJ

SCALE 1:500

DESIGN KEW
CHECKED RGJ
DRAWN KEW/TB
CHECKED SC
APPROVED SC

FOR REVIEW ONLY

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — D. SCOTT COVELL — OALA MEMBER — NOV 14, 2025

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

LOCATION
CITY OF OTTAWA
5494-5510 BOUNDARY ROAD

DRAWING NAME
LANDSCAPE PLAN

PROJECT No. 118168
REV REV # 6
DRAWING No. 118168-L

CITY PLAN NO. 19296

PLANB1.DWG - 1000mmx707mm
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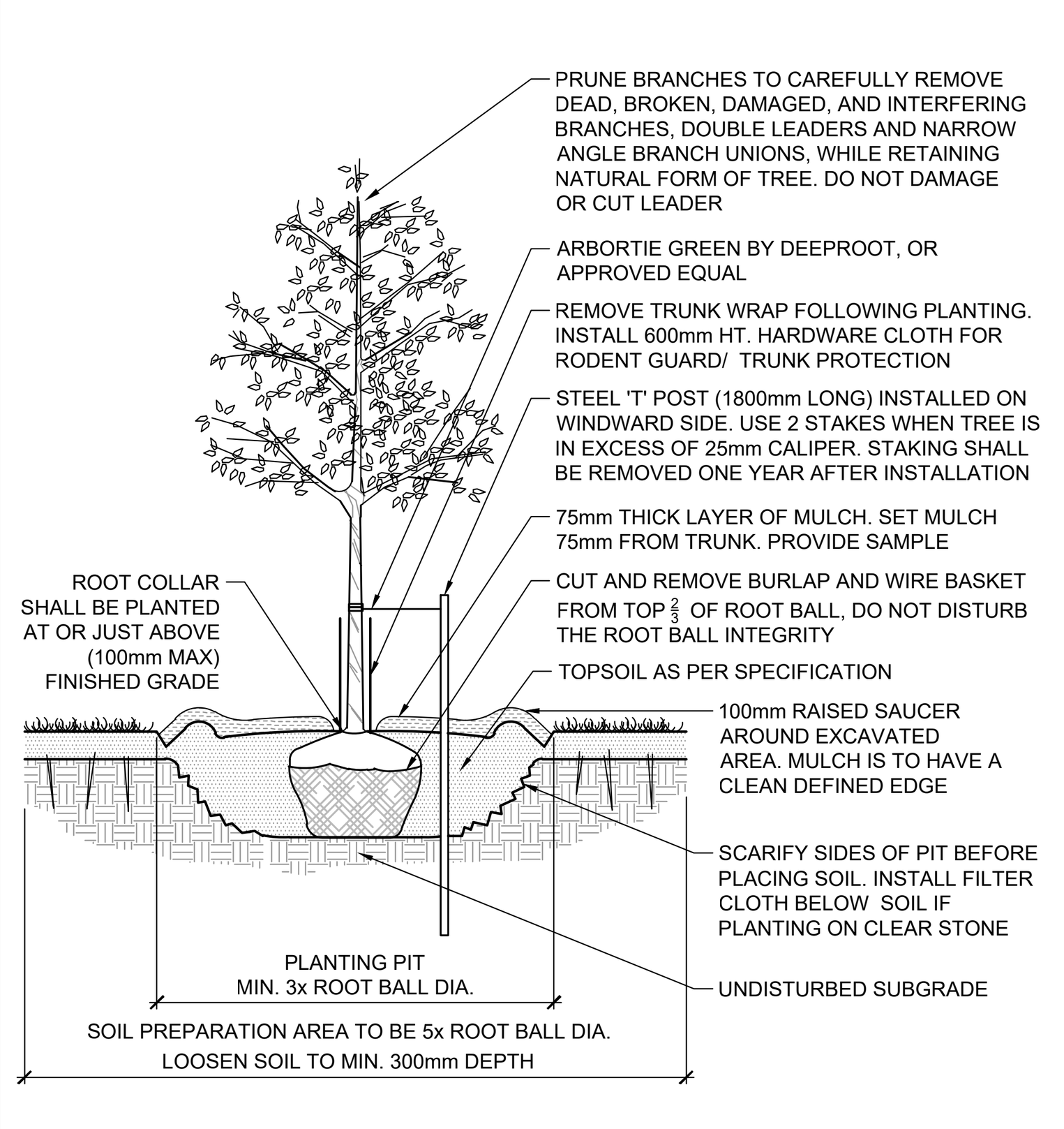
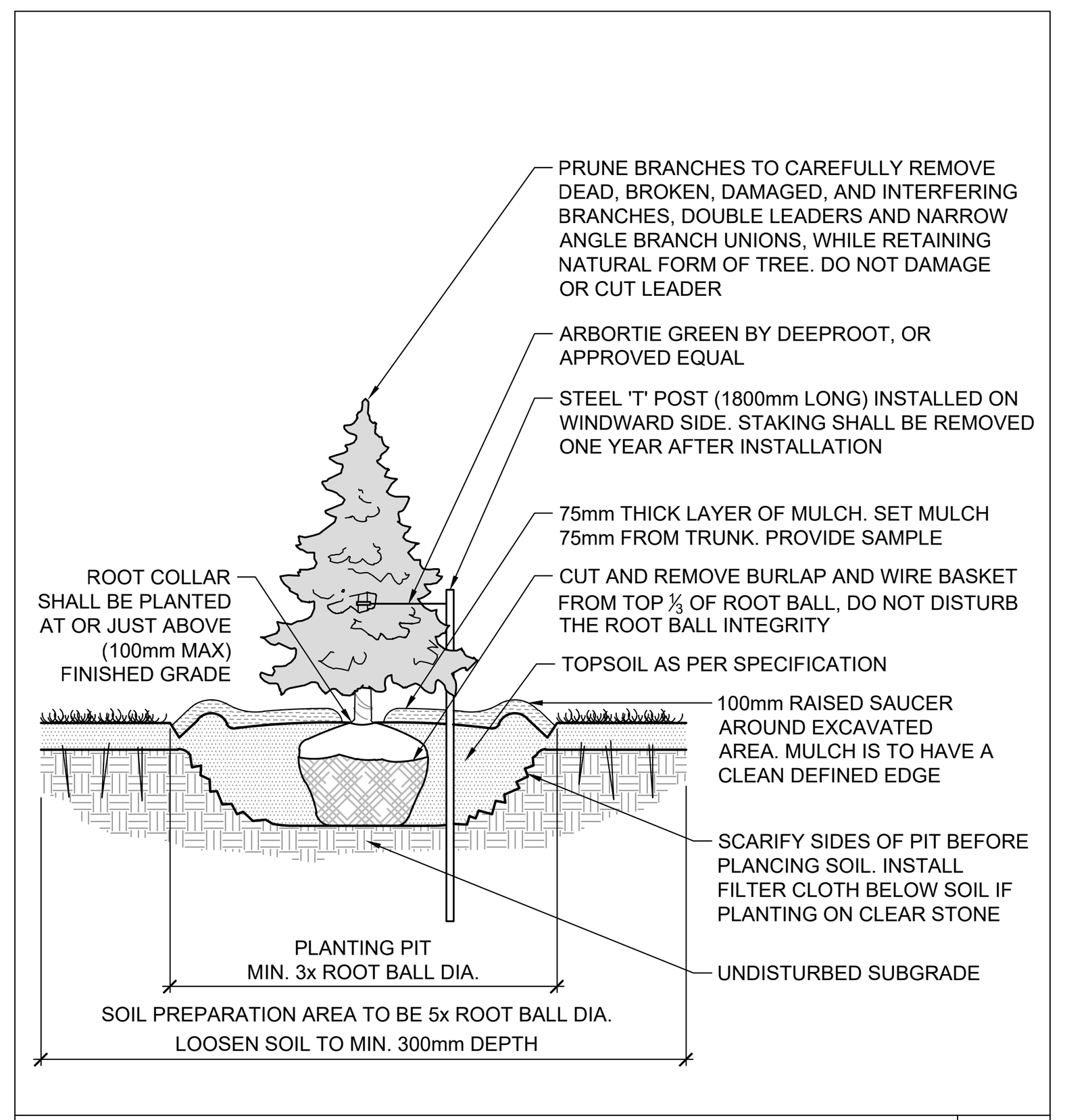
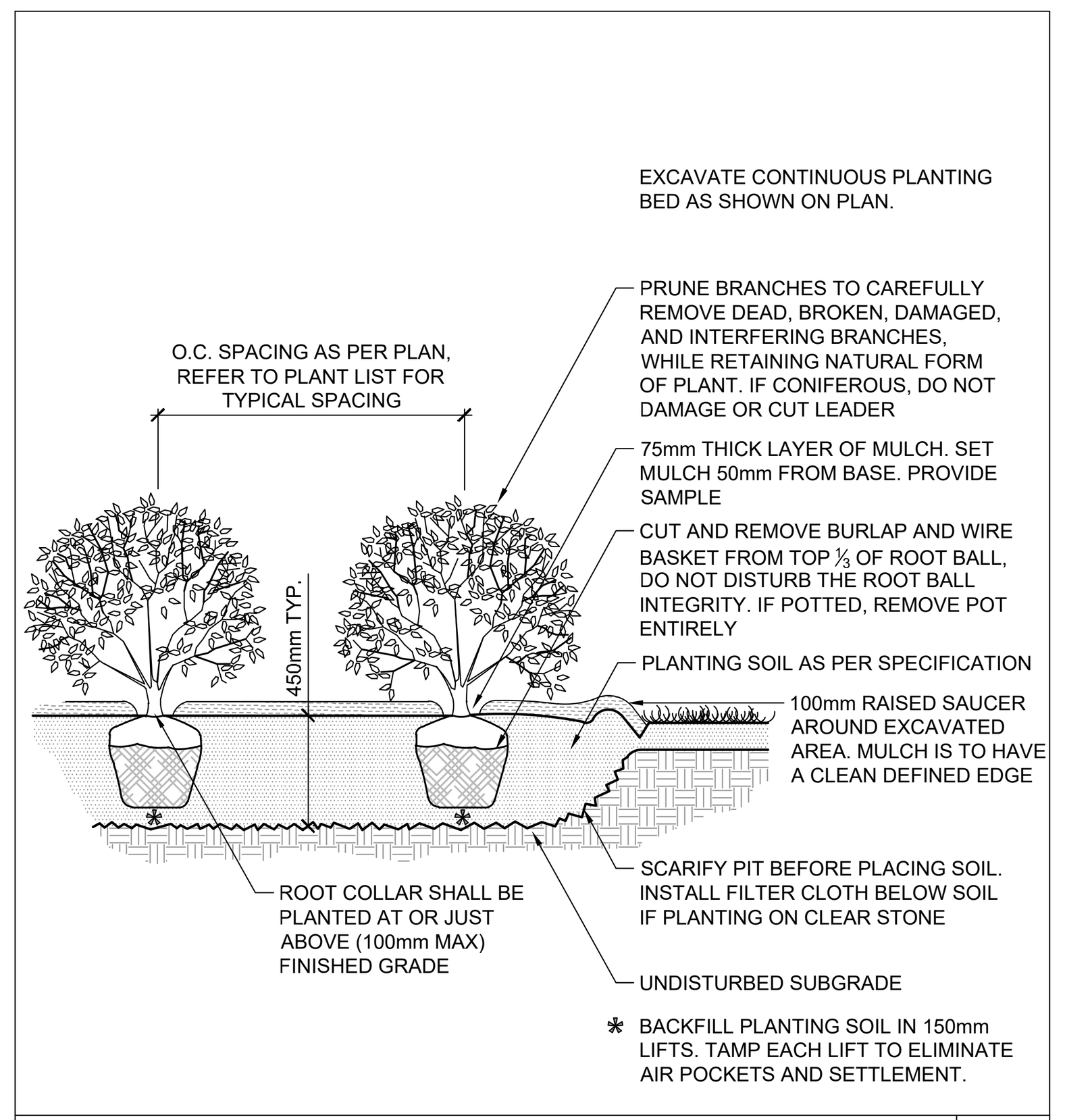
CITY FILE NUMBER: D07-12-24-0117



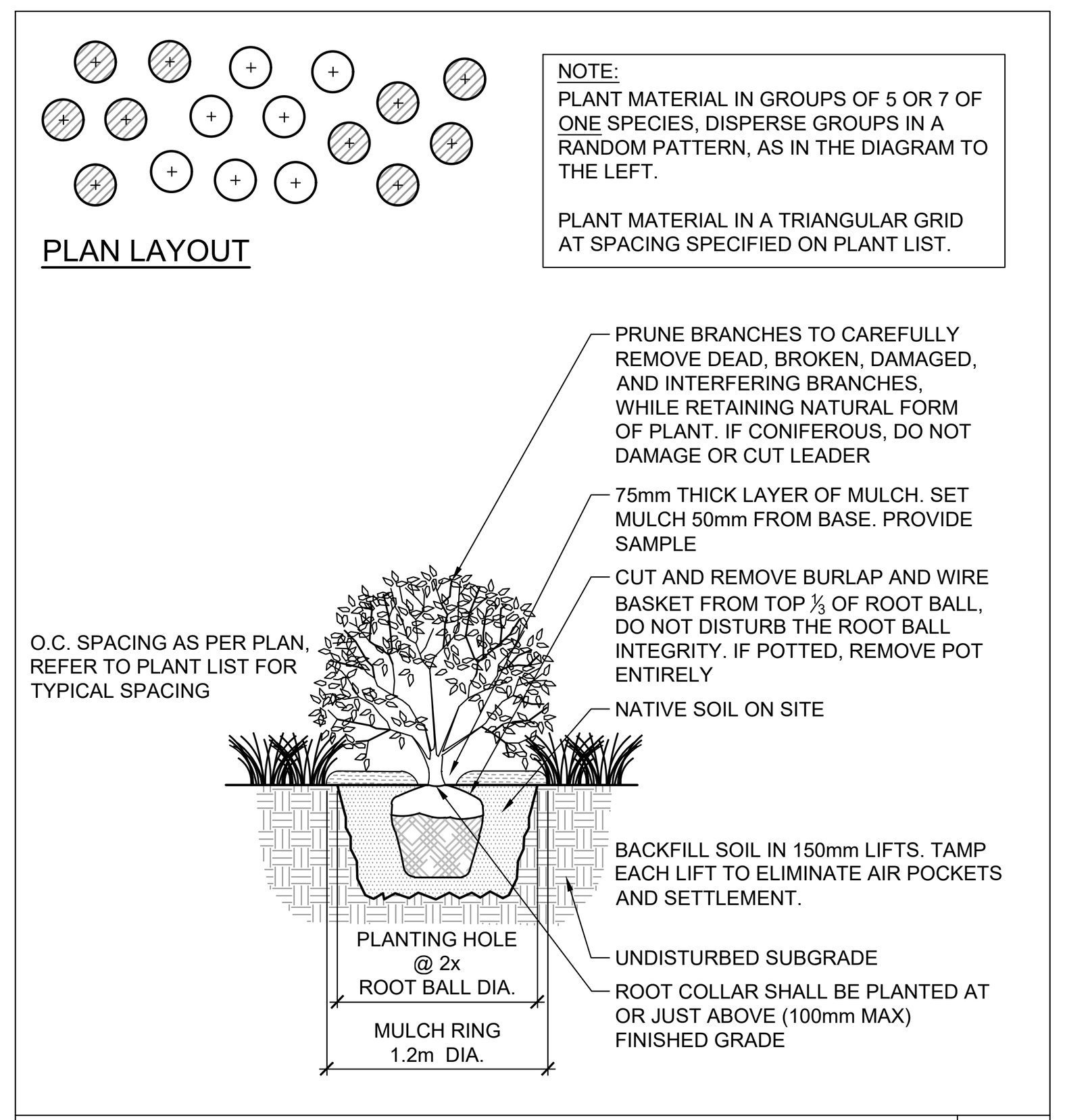
STANDARD DECIDUOUS TREE PLANTING D1



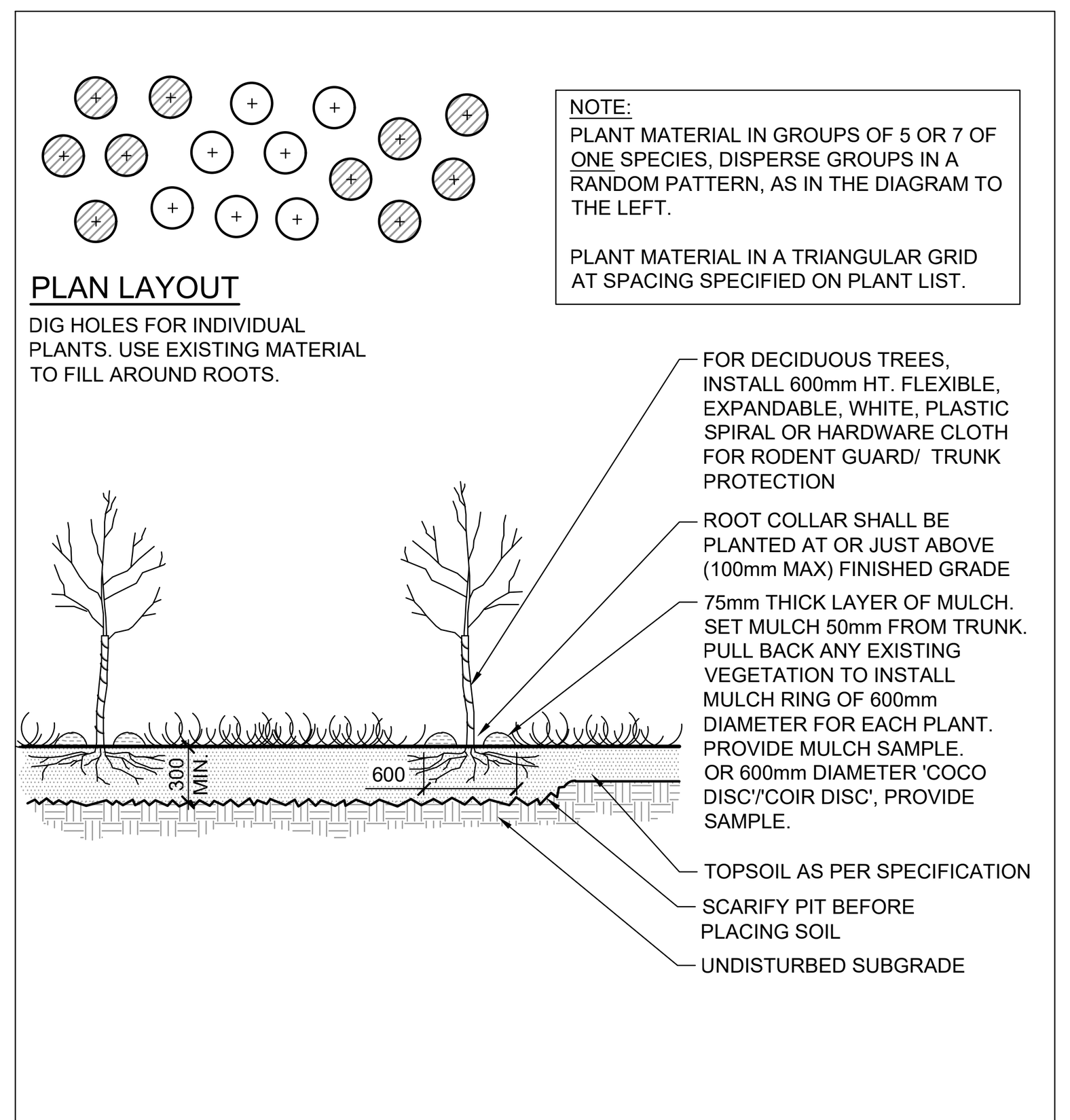
STANDARD CONIFEROUS TREE PLANTING D2



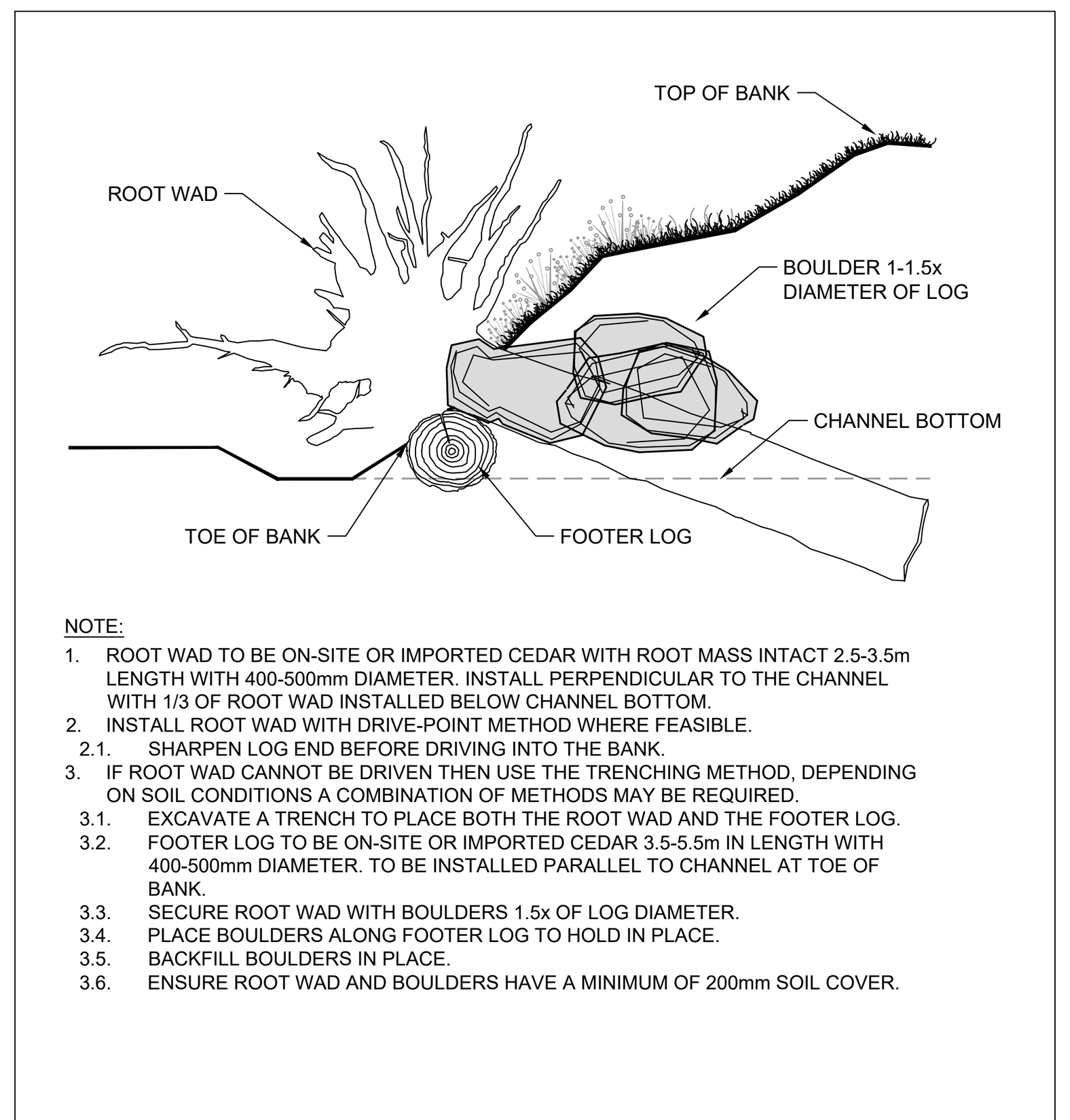
SHRUB AND PERENNIAL PLANTING D3



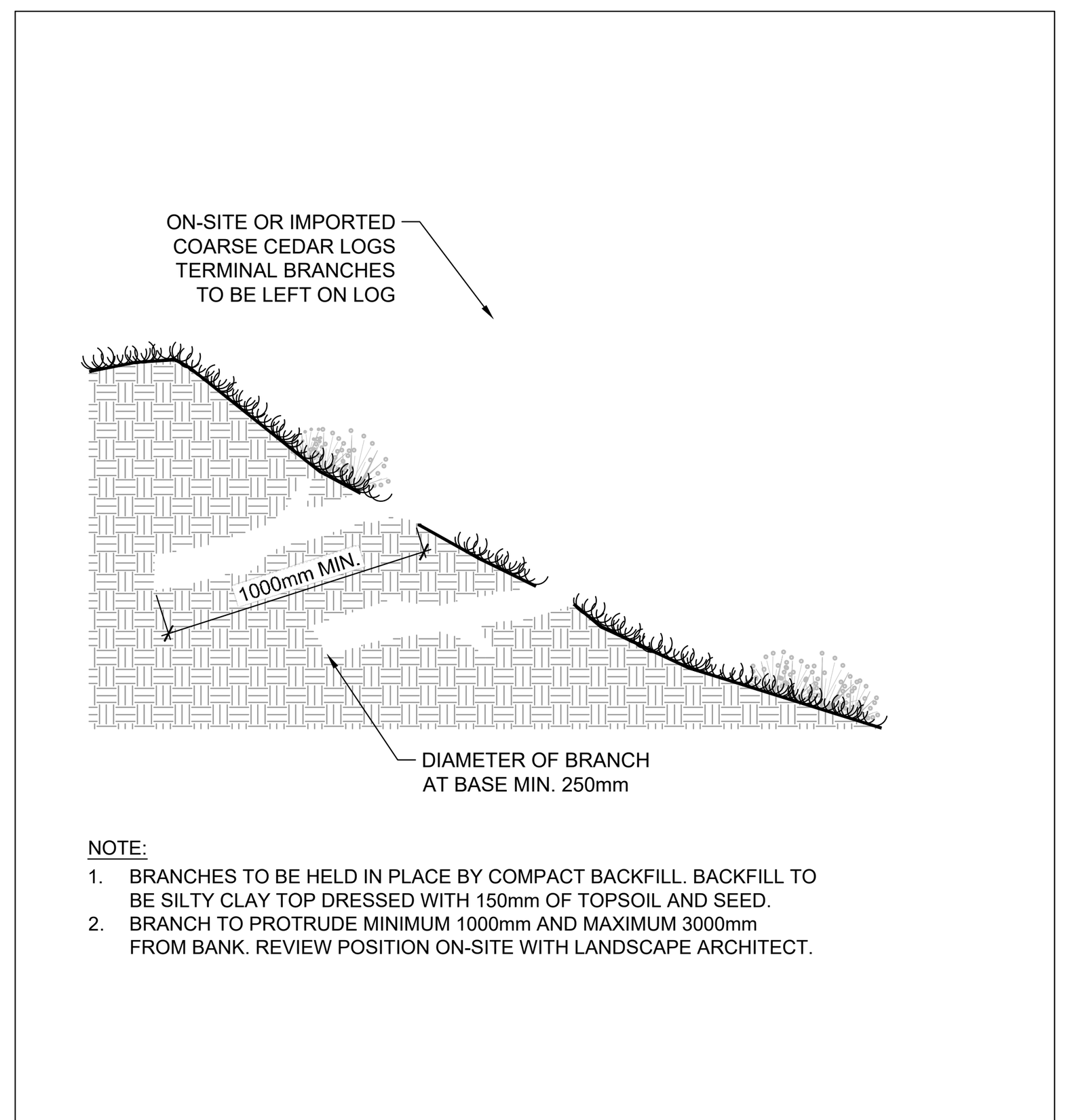
SHRUB NATURALIZATION D4



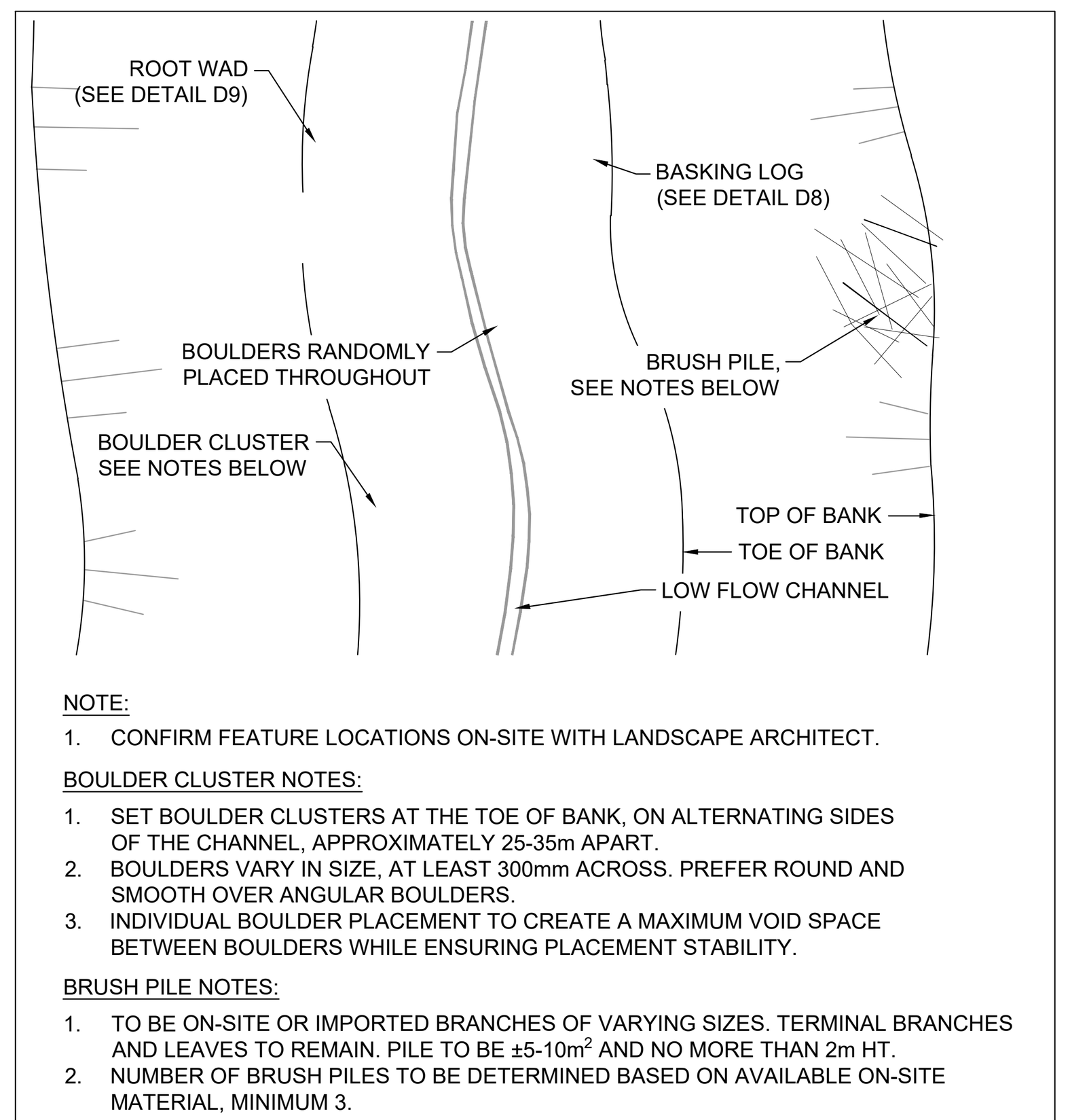
REFORESTATION IN GRASS D5



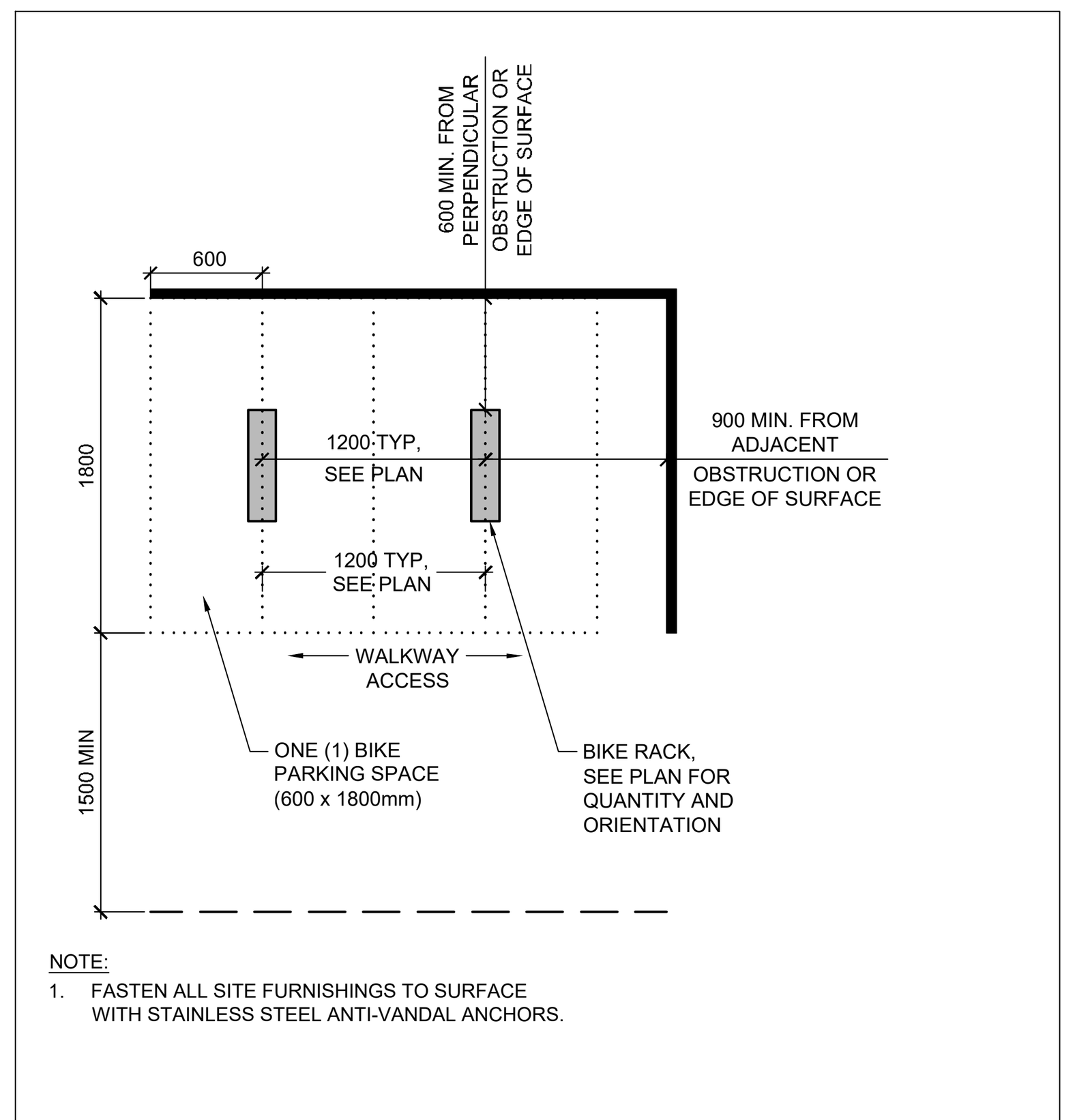
ROOT WAD D6



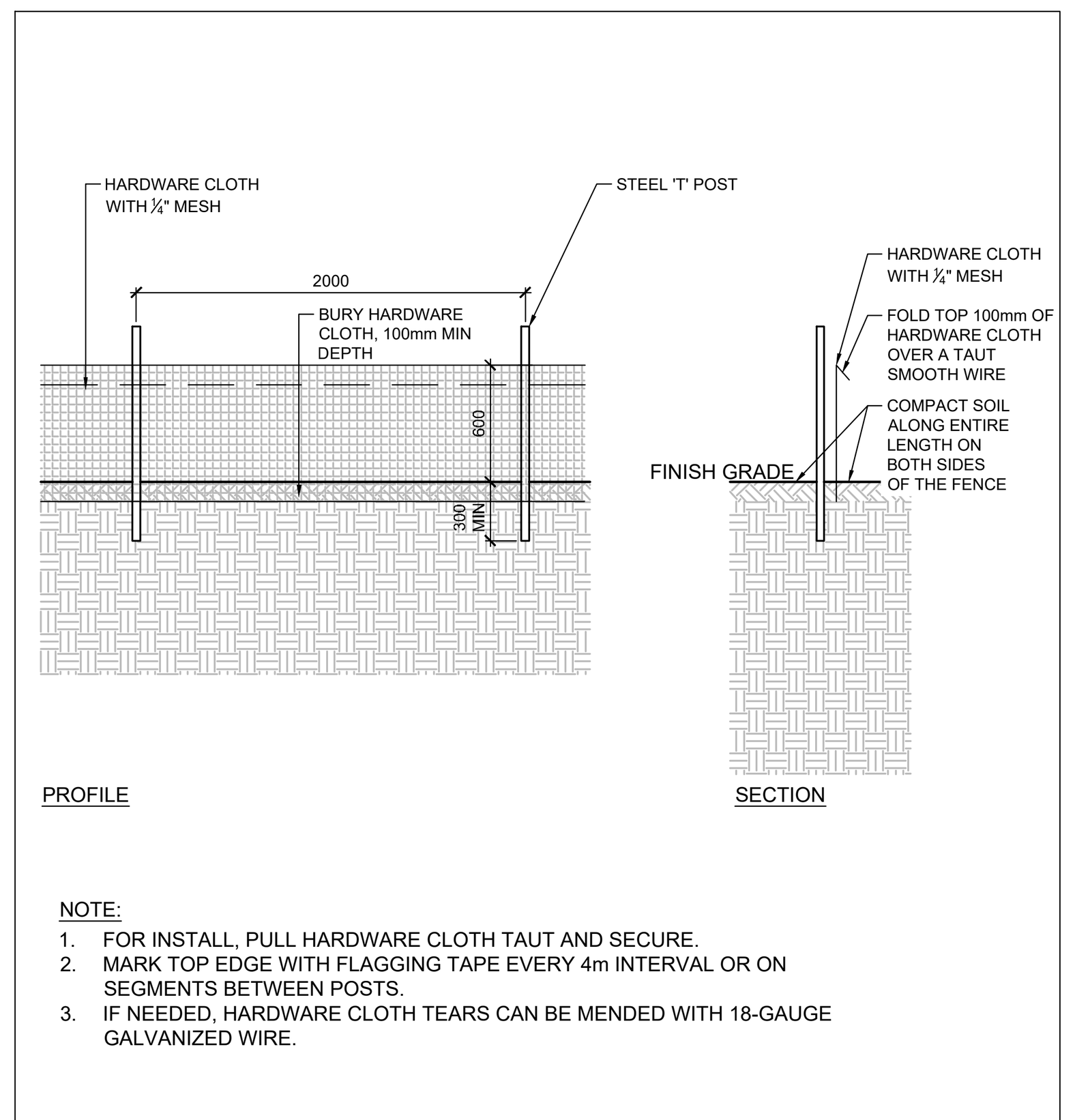
BASKING LOG D7



CREEK CHANNEL D8



BIKE LAYOUT D9



TURTLE FENCE D10

REALIGNED HEADWATER

1. Depth of realigned headwater to be 0.5m to 1m depth of water.

GENERAL

1. Read and interpret this drawing/ drawing set in conjunction with all the contract details and specifications, including related civil, utility, structural, architectural, mechanical, electrical, environmental, geotechnical, and survey information.
2. The Contractor is to determine the exact location, size, material, and elevation of all existing utilities prior to commencing construction. Protect and assume responsibility for all existing utilities regardless of being shown on the drawings.
3. It is essential to use the plans and details in conjunction with the specifications and notes.
4. Do not scale drawings. Work to dimensions only.
5. Protect all existing and retained vegetation for the duration of construction according to the contract details and specifications.
6. Reinstate all areas and items damaged or disturbed, beyond the Limit of Work, because of construction activities, including but not limited to construction staging areas, haul roads, stockpile areas, etc. to the satisfaction of the Consultant. Unless otherwise noted, Contractor is to reinstate all areas to pre-construction condition or better to the satisfaction of the Contract Administrator.

PLANTING

1. Plant material to be No. 1 Grade and is to comply with Canadian Standards for Nursery Stock (latest edition) published by the Canadian Nursery Landscape Association.
2. Use structurally sound plant material with strong fibrous root system free of disease, defects, and injuries. Use trees with straight trunks, well and characteristically branched for species. Obtain approval from consultant of plant material at source prior to digging. All trees and shrubs to be container grown, potted, W/B or B/B, as indicated on Plant List. Bare root plants are only acceptable for certain species and as approved by the Landscape Architect.
3. Plant material substitutions are not be permitted without the written approval from the Consultant, **with 48 hours notice**, prior to shipping plant material.
4. Plant locations are schematic / approximate only. **Contractor is to stake out locations on site for approval by the Landscape Architect prior to installation.**
5. The illustrated number of plants shown in the Planting Plan supersedes the estimated number in the Plant List. Contractor to report any discrepancies to the Landscape Architect prior to installation. Contractor will assume full responsibility if the Landscape Architect is not notified.
6. Ensure trees are thoroughly watered following planting. Monitor material and ensure adequate moisture until acceptance.
7. In heavy clay or poorly drained soils, set root ball with root collar 75-100mm higher than finished grade.
8. Approved topsoil depths are as follows:
   a. Plant Beds - **450mm** continuous depth. Applies to shrubs, perennials, vines, and groundcovers.
   b. Sod/ Seed Areas - **100mm** depth.
   c. Reforestation - **300mm** depth.
9. Sod to be No. 1 Kentucky Bluegrass Sod grown from minimum mixture of 3 Kentucky Bluegrass cultivars. Quality and source are to comply with Canadian Standards for Nursery Stock, Section 17, (latest edition) published by the Canadian Nursery Landscape Nursery Landscape Association.
10. Apply the following mineral fertilizer unless soil tests show other requirements:
   a. Plant Beds - (8-32-16), i.e. 8% Nitrogen, 32% Phosphorus, 16% Potash per manufacturer specifications.
   b. Sod Areas - (8-32-16), i.e. 8% Nitrogen, 32% Phosphorus, 16% Potash at a rate of 350kg/ha.
12. Where applicable, for any plant areas with a mix of species/ cultivars notes, Contractor is to cluster like plants in groups of 3-5 and evenly distribute these in the noted area.

SEED MIX AND APPLICATION

For areas steeper than 3:1, Contractor to apply erosion control blanket. Erosion control blanket to be machine woven mats made from natural wood, coco or cotton fiber, or combination depending on manufacturer, with stitching between two photo-degradable natural organic fiber nettings. Submit products for approval by Consultant. OPSS 804 applies except as may be amended and extended herein.

SEED - WETLAND HABITAT
Seed mix for wetland restoration.

PICKSEED: WETLAND HABITAT MIX
Seeding Rate: 22-25 kg/ha

Rate	Botanical Name	Common Name
10%	*Andropogon gerargii*	Big Blue Stem
1%	*Asclepias incarnata*	Swamp Milkweed
1%	*Aster puniceus*	Purplestem Aster
3%	*Carex crinita*	Fringe Sedge
5%	*Carex scoparia*	Blunt Broom Sedge
2%	*Carex stipata*	AWL Sedge
23%	*Carex vulpinoidea*	Fox Sedge
2%	*Desmodium canadense*	Showy Tick Trefoil
21%	*Elymus virginicus*	Virginia Wild Rye
2%	*Eupatorium maculatum*	Spotted Joe Pye Weed
2%	*Eupatorium perfoliatum*	Boneset
3%	*Euthamia graminifolia*	Grassleaf Goldenrod
3%	*Helenium autumnale*	Sneezeweed
2%	*Heliopsis helianthoides*	Ox Eye Sunflower
1%	*Monarda fistulosa*	Wild Bergamot
5%	*Panicum virgatum*	Switchgrass
10%	*Sorghastrum nutans*	Indian Grass
4%	*Verbena hastata*	Blue Vervain

SEED - EASTERN ECOTYPE PARKING LOT MIX
Stabilizes slopes greater than 3:1.

PICKSEED: EASTERN ECOTYPE PK LOT MIX
Seeding Rate: 22-25 kg/ha

Rate	Botanical Name	Common Name
1%	*Agrostis perennans*	Autumn Bentgrass
15%	*Andropogon gerardii*	Big Bluestem
25%	*Elymus virginicus*	Virginia Wild Rye
6%	*Panicum virgatum*	Switchgrass
35%	*Schizachyrium scoparium*	Little Bluestem
18%	*Sporobolus cryptandrus*	Sand Dropseed

SEED - RETENTION AREA
Used to stabilize soils in retention basins.

PICKSEED: RETENTION MIX
Seeding Rate: 22-25 kg/ha

Rate	Botanical Name	Common Name
15%	*Agrostis hyemalis*	Ticklegrass
15%	*Agrostis perennans*	Autumn Bentgrass
20%	*Carex vulpinoidea*	Fox Sedge
20%	*Elymus virginicus*	Virginia Wild Rye
5%	*Juncus tenuis*	Path Rush
25%	*Panicum clandestinum*	Deer Tongue

CONSTRUCTION

1. All general site information and conditions are compiled from Consultant field notes and plans provided by the Owner and are supplied for information purposes only. It is the responsibility of the Contractor to verify the accuracy of all the information obtained from this plan.
2. Together with all Subcontractors involved, the Contractor is to examine all surfaces or conditions relating to the work, in order to determine the acceptability of such surfaces or conditions for the work to commence. Notify the Contract Administrator in writing of conditions which could be detrimental to installation and do not commence work until instructed by the Contract Administrator. The commencement of work implies Contractor acceptance of the conditions.
3. Contractor to check and report any discrepancies before commencing work. No responsibility is borne by the Consultants for subsurface conditions.
4. Contractor to check and verify all dimensions and quantities on site and report any errors or omissions to the Consultant.
5. Contractor is responsible for all fees arising from the completion of works conveyed by these drawings, details, and specifications.
6. Carry out all construction in accordance with the most current provincial and municipal standards and specifications.
7. Contractor to coordinate all access and protect the public and users of the site with appropriate control fence and supervision throughout the construction period, to the satisfaction of the Consultant.
8. Contract Administrator is to approve access point(s) prior to mobilization.
9. A Contractor flagman is required to direct all deliveries of machinery or materials to the site.
10. Contractor to coordinate and schedule all work with other trades and contractors. Contractor is to notify Contract Administrator of any schedule difficulties.
11. Contractor responsible for the removal and off-site disposal of all materials as required to facilitate new construction. Store all items and materials identified by the Consultant for salvage at a location on site as identified by the Consultant. Excavate and remove from site any contaminated material. Dispose all contaminated material at a licensed landfill facility.
12. Maintain site in a clean and orderly state for the duration of construction; perform all work in accordance with the Occupational Health and Safety Act. Remove all excess materials, packaging, and debris from the site.
13. Contractor is responsible to take all necessary measures to control dust on the project site and to the satisfaction of the Contract Administrator.
14. Contractor is responsible for all layout for construction purposes.
15. Contractor is to protect all iron bars. Replace any disturbed bars by Owner at the Contractor expense.
16. The Contractor is to notify the Contract Administrator upon completion of the required works to schedule an inspection for acceptance.

GRADING

1. Contractor is to verify accuracy of existing topography and survey and report any discrepancies to the Contract Administrator. Commencement of grading is to constitute acceptance of site conditions; no claims for extras will be entertained thereafter.
2. Strip topsoil, organic matter, or deleterious material from all areas of the site designated for hard landscaping, or the construction of structures. Strip topsoil to its full depth, exercising caution not to mix topsoil with subsoil.
3. Provide drainage as indicated in grading plan. Round all tops and toes of slopes, smoothly. Compact all areas to 95% standard proctor density unless otherwise noted.
4. Contractor to excavate to accommodate hard surface and ensure proper depth of excavation as specified on related drawings, contract details and specifications.
5. Match existing grades at limit of work.
6. Ensure positive surface drainage of all areas within the limit of work, whether indicated or not, and prevent ponding.
7. Refer to geotechnical recommendations (if available) prepared by Geotechnical Engineer for subsurface conditions and construction recommendations. Claims for conditions that could have been ascertained by review of geotechnical report will not be considered.
8. The Geotechnical Engineer is to inspect compacted subgrade prior to placement of granular material.
9. Sub-excavate and replace any soft areas evident from compaction with suitable material that is frost compatible with the existing soils as recommended by the Geotechnical Engineer.
10. Remove from site all excess excavated material unless instructed otherwise by Consultant.
11. Slopes, unless otherwise noted:
    a. Walkways - maximum 12:1 slope (do not exceed 2% cross slopes).
    b. Asphalt and concrete surfaces - minimum 1.0% slope; maximum 5% slope.
    c. Sod/ Seed Areas and Plant Beds - minimum 2% slope; maximum 33% slope.
    d. Swales - Flat-bottomed per Contract drawings and specification, with maximum side slopes of 3:1 and a minimum slope of 8:1.
12. New surfaces are to have smooth, safe, and seamless transition of materials, where construction of proposed surfaces adjoins existing materials. This is applicable for all surfaces soft and hard.

PRODUCT INFORMATION

Install products as per manufacturer specifications. Shop drawings required.

PAVERS
Edge of pavers to receive edge restraint.
- Melville 80 Paver by Permacon
  Location: Patio Area
  Size: ALL
  Pattern: Modular
  Colour: Range Scandina Grey

GATE*
- FoldSmart XT Speedgate by Wallace Perimeter Security
  Panel Height: 1.8m (6')
  Width: 4.57m (15')
  Panel Infill: Vertical Picket Infill
  Optional: Barb Wire Anti-Climb Edge, Dual head card reader pedestal, Card reader to enter and exit, CCTV and intercom attachment at entrance and exit.
  Finish: Hot Dipped Galvanized Steel

*Contractor to coordinate:
1. Distance the pedestal for card reader is from bi-fold gate
2. How many bollards and where
3. Refer to Manufacturer Specifications regarding mounting adjoining fence material to columns.
4. How far the curb needs to be cut back to install the gates.

SITE FURNITURE
Fasten all site furnishing to surface with stainless steel anti-vandal anchors.
- Bike Rack by Maglin
  Product Number: MBR-0100-00003
  Mounting Type: Surface Mount
  Colour: Black
- 210 Cluster Seating by Maglin
  Product Number: MTB-0210-00064
  Material: Thermally Modified Ash Wood
  Colour: Black
  Mounting Type: Surface Mount
  Option: Umbrella Mount

Flag Pole by Ottawa Flag Shop
  Material: Aluminum
  Finish: Satin
  Top: Rotating cap or ball
  Flag Assembly: for 3' flags, 3' x6' flags included (not custom)
  Option: One piece, cone tapered, internal halyard chain, stainless steel cable and hardware, retaining ring and weight, door lock and key, tilt anchor and shoe base
  Instructions: Ottawa Flag Shop will mark and locate, install anchor cage in concrete base, assemble deliver and erect flag poles. NOTE TO CONTRACTOR - 2 to 3 MONTH LEAD TIME REQUIRED. PLAN ACCORDINGLY.

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Owner:
DAY & ROSS INC.
358 MAIN STREET
HARTLAND,
NB E7P 1C6

Surveyor
ANNIS O'SULLIVAN, VOLLEBEKK LTD
14 CONCOURSE GATE, SUITE 500, NEPEAN, ON K2E 7S6

Civil Engineer
NOVATECH
240 MICHAEL COWPLAND DRIVE, SUITE 200
OTTAWA, ON K2M 1P6

Architect
N45 ARCHITECTURE INC.
ROBERT MATTHEWS
71 BANK STREET, 7TH FLOOR, OTTAWA, ON K1P 5N2

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The elements on this plan illustrate the design intent and general constructability of the proposed landscape which will support the associated development. This is to demonstrate how the canopy cover, urban design, health, and climate change objectives of the Official Plan will be met through tree planting and site design. This drawing is for City review only and is not intended for construction. Final detailed design and construction documentation is to be provided with certified 'Issued for Construction' drawings and specifications prior to construction.

No.	REVISION	DATE	BY
6.	REVISED PER CITY AND SNCA COMMENTS	NOV 14/25	SC
5.	ISSUED FOR COMPLETENESS COMMENTS	FEB 27/25	SC
4.	ISSUED FOR BUILDING PERMIT	OCT 24/24	RGJ
3.	ISSUED FOR 90% SUBMISSION	OCT 4/24	RGJ
2.	ISSUED FOR SITE PLAN APPLICATION	OCT 2/24	RGJ
1.	ISSUED FOR 60% SUBMISSION	AUG 16/24	RGJ

SCALE

DESIGN KEW
CHECKED RGJ
DRAWN KEW/TB
CHECKED SC
APPROVED SC

FOR REVIEW ONLY

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — D. SCOTT COVELL — OALA — NOV 14, 2025 — MEMBER

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

LOCATION
CITY OF OTTAWA
5494-5510 BOUNDARY ROAD

DRAWING NAME
DETAILS

PROJECT No. 118168
REV REV # 6
DRAWING No. 118168-L2

CITY PLAN NO. 19296

PLANB1.DWG - 1000mmx707mm

CITY FILE NUMBER: D07-12-24-0117

SOIL AVAILABILITY ESTIMATE

Planting bed no.	Available Soil Area (sq m)	Available Soil Volume (cu m)	No. of trees proposed				Total No. of trees	Min. required Soil volume total (cu m)
			Small/ Column (25m³)	Medium (30m³)	Large (35m³)	Evergreen (30m³)		
Planting bed 1	30273	45,410	0	9	53	36	98	2715.00
Planting bed 2	2096	3,144	0	2	7	3	12	335.00
Planting bed 3	57	86	1	1		0	2	45.00
Planting bed 4	1239	1,859	1	3	4	0	8	215.00
Planting bed 5	46	69	0	0	0	0	0	0.00

Note: For all planting beds proposed, the available soil depth is considered to be 1.5m.

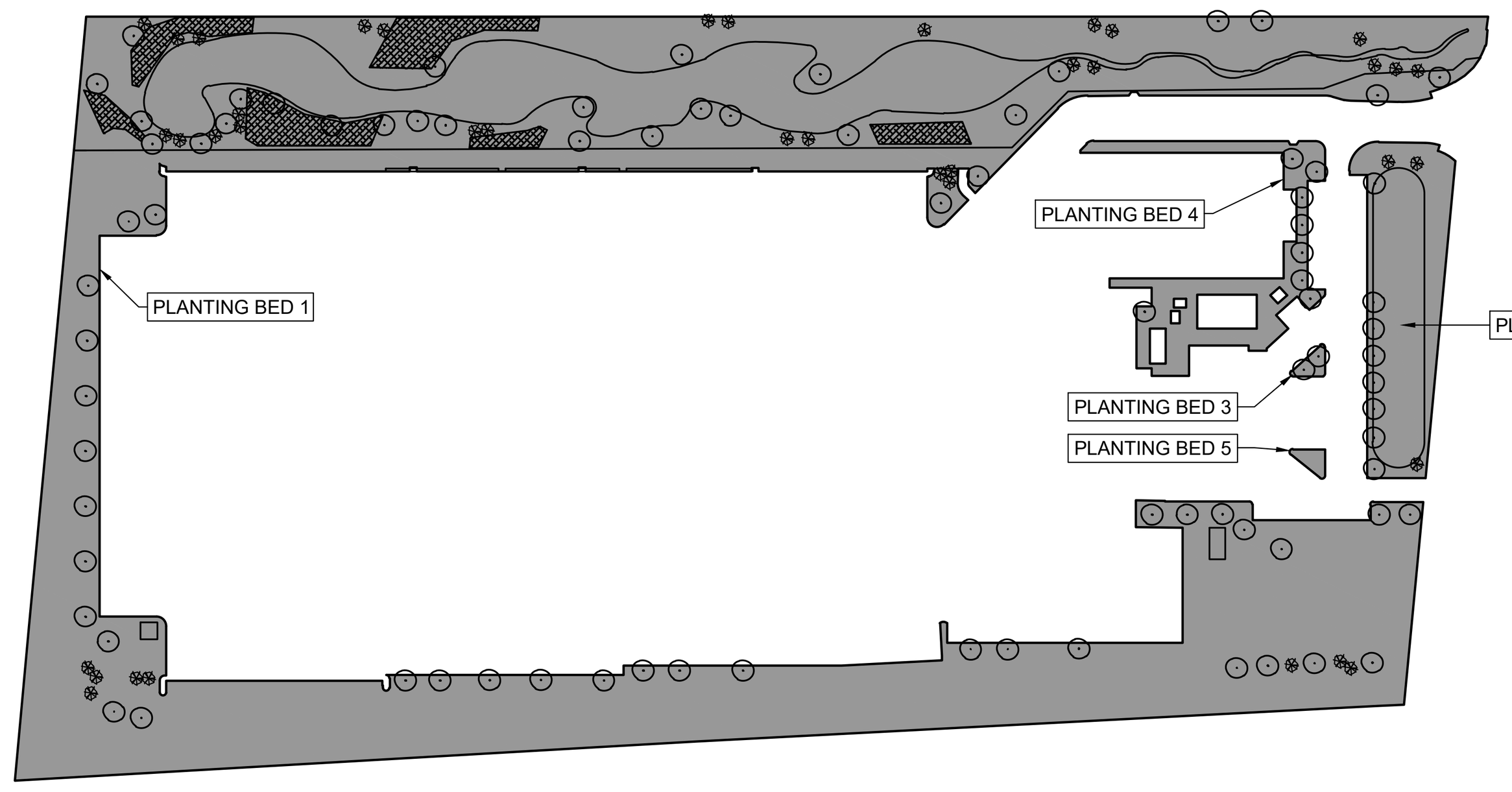
CANOPY COVER ESTIMATE

ESTIMATED CANOPY COVERAGE AT MATURITY				
SIZE OF TREE	AVERAGE MATURE SPREAD	CANOPY COVERAGE PER TREE (m2)	QUANTITY OF TREES	TOTAL CANOPY COVERAGE (m2)
Deciduous - Small/Column (<7.5m tall)	5m	20	2	39
Deciduous - Medium (7.5-14m tall)	10m	79	14	1100
Deciduous - Large (14m+ tall)	15m	177	64	11309
Coniferous	5m	20	39	766
PROPOSED TOTAL CANOPY COVERAGE (m2):				13214
PROPOSED REFORESTATION PLANTING (m2)*:				5806
TOTAL SITE AREA (m2):				**84,894**
EST. CANOPY COVERAGE (%):				**22%**

Area of a circle = $(r \times r) \times \pi$

Canopy coverage per tree calculation: (average mature spread/2) x (average mature spread/2) x π

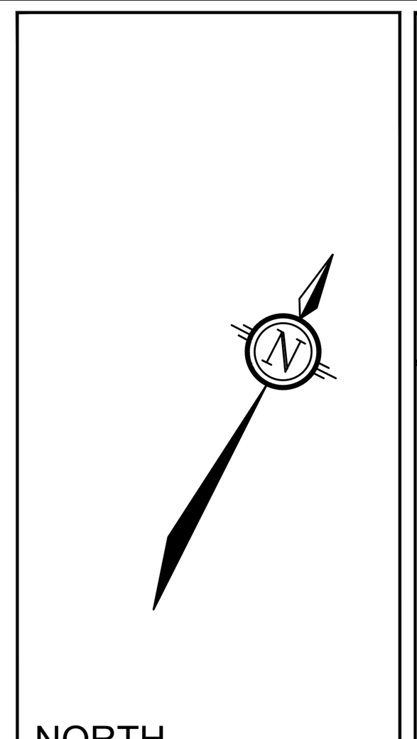
*NOTE: The canopy cover of reforestation planting is calculated with a 7.5m offset outside of the planting areas in order to account for at-maturity factor.



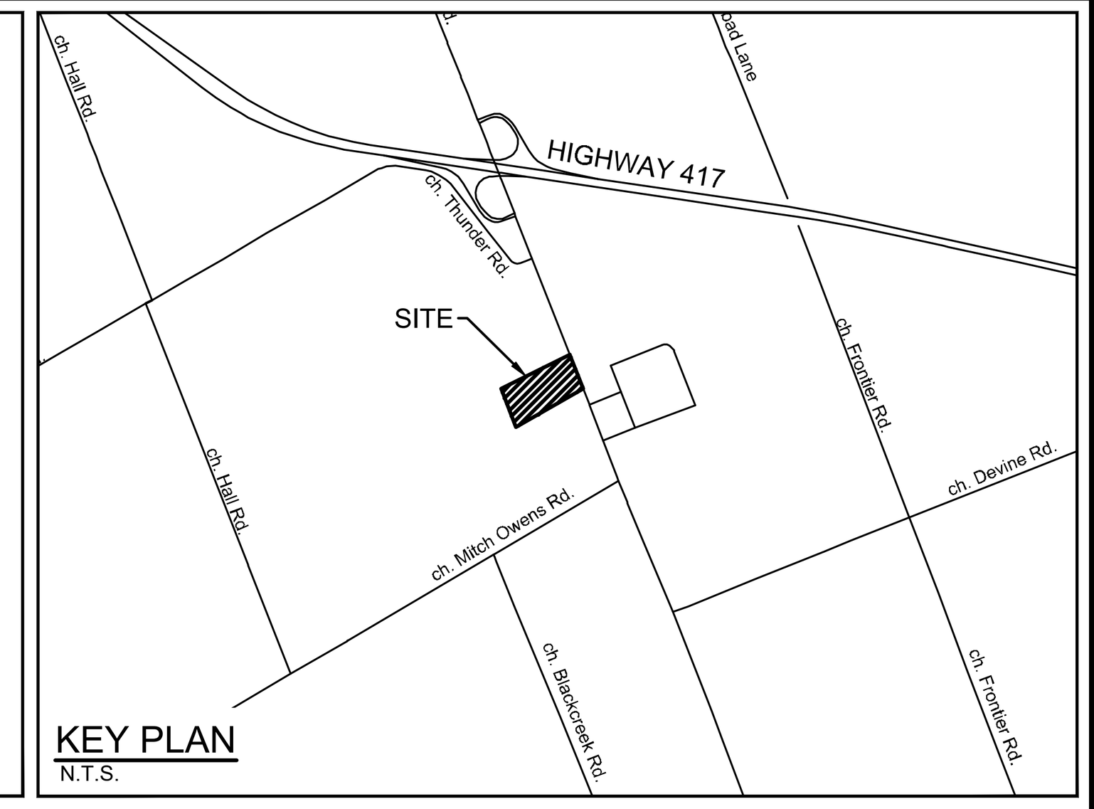
SOIL AVAILABILITY FIGURE
(Not To Scale)

LEGEND

3-D1	DETAIL SHEET # EG. L1, L2, ETC. — NOVATECH DETAIL NUMBER, SEE LIST FOR CODE
	PROPERTY LIMIT
	PROPOSED CONCRETE
	PROPOSED PAVERS
	PARKING AREA SEED MIX
	RETENTION SEED MIX
	WETLAND SEED MIX
	PROPOSED SANDY BUFFER MIX
	PROPOSED WET SOIL SHRUB MIX
	PROPOSED SOIL SHRUB MIX
	PROPOSED REFORESTATION
	PROPOSED SNOW STORAGE AREA
	ESTIMATED CANOPY COVER OF TREES AT MATURITY
	ESTIMATED CANOPY COVER OF REFORESTATION AREA AT MATURITY
	PROPOSED DECIDUOUS TREE
	PROPOSED CONIFEROUS TREE
KEY / ##	SPECIES (SEE PLANT LIST) / QUANTITY
	CHAIN LINK FENCE WITH TURTLE FENCE
	CHAIN LINK FENCE
	TURTLE FENCE
EV	PROPOSED EV CHARGING, REFER TO ELE
	PROPOSED LIGHT POLE, REFER TO ELE



NORTH



KEY PLAN
N.T.S.

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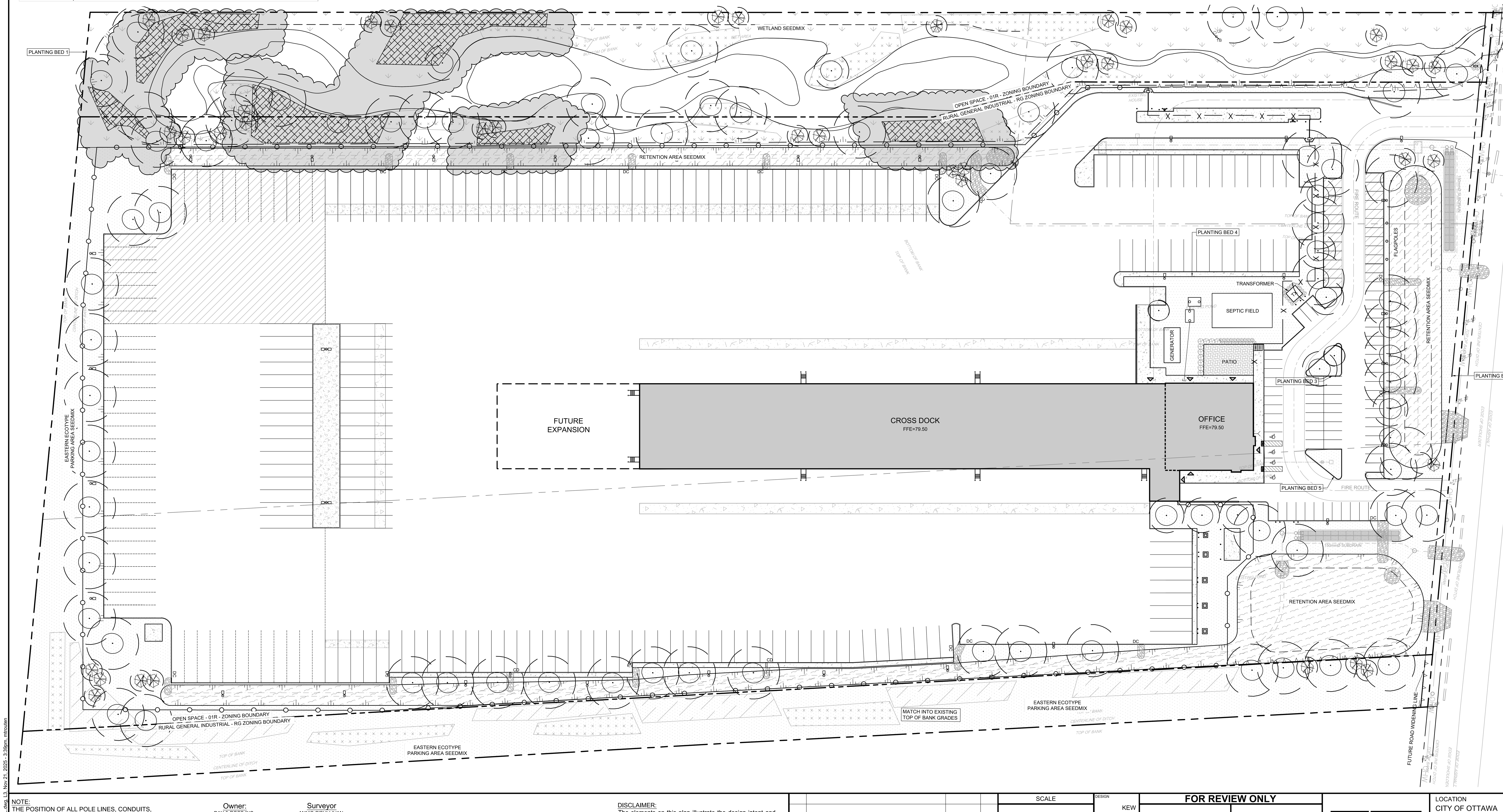

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SCALE 1:500

DESIGN KEW
CHECKED RGJ
DRAWN KEW/TB
CHECKED SC
APPROVED SC

FOR REVIEW ONLY

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — D. SCOTT COVELL — OALA MEMBER — NOV 14, 2025

NOVATECH
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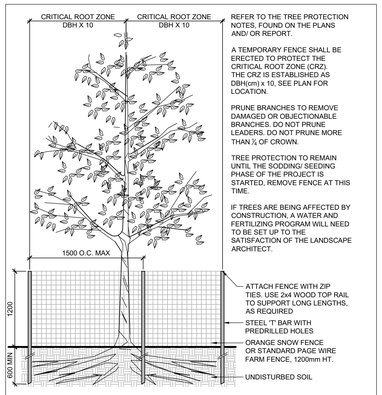
LOCATION
CITY OF OTTAWA
5494-5510 BOUNDARY ROAD

DRAWING NAME
SOIL AND CANOPY PLAN

PROJECT No. 118168
REV REV # 2
DRAWING No. 118168-L3

CITY PLAN NO. 19296

CITY FILE NUMBER: D07-12-24-0117



TREE PROTECTION FENCE | D1

REFER TO THE TREE PROTECTION NOTES, FOUND ON THE PLANS AND/ OR REPORT.

A TEMPORARY FENCE SHALL BE ERECTED TO PROTECT THE CRITICAL ROOT ZONE (CRZ). THE CRZ IS ESTABLISHED AS DBH(cm) x 10, SEE PLAN FOR LOCATION.

PRUNE BRANCHES TO REMOVE DAMAGED OR OBJECTIONABLE BRANCHES. DO NOT PRUNE LEADERS. DO NOT PRUNE MORE THAN ⅓ OF CROWN.

TREE PROTECTION TO REMAIN UNTIL THE SODDING/ SEEDING PHASE OF THE PROJECT IS STARTED, REMOVE FENCE AT THIS TIME.

IF TREES ARE BEING AFFECTED BY CONSTRUCTION, A WATER AND FERTILIZING PROGRAM WILL NEED TO BE SET UP TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT.

EXISTING TREE INVENTORY

Key	Botanical Name	Common Name	% Compos.	DBH Min-Max	DBH Avg	Owner	Remarks	Recomm.
Group A								
A	*Populus grandidentata*	Large-Tooth Aspen	30%	5cm-25cm	20cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
A	*Populus tremuloides*	Trembling Aspen	20%	5cm-25cm	10cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
A	*Salix sp. (tree)*	Willow	20%	10cm-20cm	15cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
A	*Acer rubrum*	Red Maple	10%	5cm-30cm	15cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
A	*Betulus papyrifera*	Paper Birch	10%	5cm-10cm	8cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
A	*Ulmus americana*	White Elm	5%	5cm-10cm	8cm	Neighbour	-	PROTECT
a	*Rhamnus catharticа*	European Buckthorn	-	-	-	Neighbour	Invasive	PROTECT
Group B								
B	*Salix sp. (tree)*	Willow	95%	5cm-35cm	25cm	Neighbour	Most trees in good to fair health with limited defects and cavities	PROTECT
B	*Betulus papyrifera*	Paper Birch	3%	5cm-10cm	8cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
B	*Populus grandidentata*	Large-Tooth Aspen	2%	5cm-10cm	8cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
b	*Rhamnus catharticа*	European Buckthorn	-	-	-	Neighbour	Invasive	PROTECT
Group C								
C	*Betulus papyrifera*	Paper Birch	40%	5cm-10cm	5cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
C	*Acer rubrum*	Red Maple	35%	5cm-25cm	15cm	Shared	Most trees in good to fair health with limited defects and cavities	PROTECT
C	*Populus grandidentata*	Large-Tooth Aspen	15%	5cm-10cm	8cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
C	*Salix sp. (tree)*	Willow	10%	5cm-10cm	8cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
c	*Rhamnus catharticа*	European Buckthorn	-	-	-	Shared	Invasive	PROTECT
Group D								
D	*Acer rubrum*	Red Maple	80%	5cm-40cm	30cm	Neighbour	Most trees in good to fair health with limited defects and cavities	PROTECT
C	*Populus grandidentata*	Large-Tooth Aspen	15%	5cm-35cm	20cm	Neighbour	Most trees in good to fair health with limited defects and cavities	PROTECT
D	*Salix sp. (tree)*	Willow	5%	5cm-10cm	8cm	Neighbour	Mostly young vigourous trees / Little to no defects present	PROTECT
D	*Larix laricina*	Tamarack	1%	5cm-20cm	15cm	Neighbour	Most trees in good to fair health with limited defects and cavities	PROTECT
D	*Picea glauca*	White Spruce	1%	5cm-20cm	15cm	Neighbour	Most trees in good to fair health with limited defects and cavities	PROTECT
d	*Rhus typhina*	Staghorn Sumac	-	-		Neighbour	-	PROTECT

Key	Botanical Name	Common Name	% Compos.	DBH Min-Max	DBH Avg	Owner	Remarks	Recomm.
Group E								
E	*Pinus sylvestris*	Scot's Pine	45%	15cm-25cm	20cm	Client	Most trees in good to fair health with limited defects and cavities	**Conflict**
E	*Picea glauca*	White Spruce	45%	10cm-20cm	15cm	Client	Most trees in good to fair health with limited defects and cavities	**Conflict**
E	*Thuja occidentalis*	White Cedar	10%	5cm-10cm	8cm	Client	Mostly young vigourous trees / Little to no defects present	**Conflict**
Group F								
F	*Populus deltoides*	Eastern Cottonwood	20%	20cm-45cm	30cm	Shared	Most trees in good to fair health with limited defects and cavities	**Conflict**
F	*Populus grandidentata*	Large-Tooth Aspen	25%	5cm-25cm	20cm	Shared	Mostly young vigourous trees / Little to no defects present	**Conflict**
F	*Populus tremuloides*	Trembling Aspen	15%	5cm-25cm	10cm	Shared	Mostly young vigourous trees / Little to no defects present	**Conflict**
F	*Salix sp. (tree)*	Willow	15%	10cm-20cm	15cm	Shared	Mostly young vigourous trees / Little to no defects present	**Conflict**
F	*Acer rubrum*	Red Maple	10%	5cm-30cm	15cm	Shared	Mostly young vigourous trees / Little to no defects present	**Conflict**
F	*Betulus papyrifera*	Paper Birch	10%	5cm-10cm	8cm	Shared	Mostly young vigourous trees / Little to no defects present	**Conflict**
F	*Ulmus americana*	White Elm	5%	5cm-10cm	8cm	Shared	-	**Conflict**
f	*Rhamnus catharticа*	European Buckthorn	-	-	-	Shared	Invasive	**Conflict**
Group G								
G	*Populus grandidentata*	Large-Tooth Aspen	20%	5cm-25cm	20cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
G	*Populus tremuloides*	Trembling Aspen	20%	5cm-25cm	10cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
G	*Picea glauca*	White Spruce	20%	10cm-20cm	15cm	Client	Most trees in good to fair health with limited defects and cavities	PROTECT
G	*Picea abies*	Norvay Spruce	10%	10cm-20cm	15cm	Client	Most trees in good to fair health with limited defects and cavities	PROTECT
G	*Salix sp. (tree)*	Willow	10%	10cm-20cm	15cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
G	*Acer rubrum*	Red Maple	10%	5cm-30cm	15cm	Shared	Mostly young vigourous trees / Little to no defects present	PROTECT
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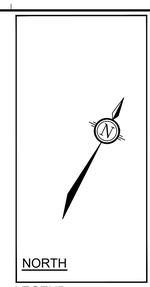

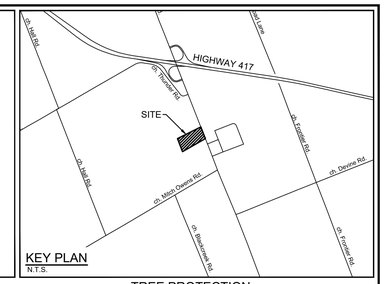

KEY PLAN
N.T.S.

LEGEND

- 3-D1 — DETAIL SHEET # EG. L1, L2, ETC. — NOVATECH OR CITY DETAIL NUMBER SEE LIST FOR CODE
- PROPERTY LIMIT
- EXISTING TREE TO REMAIN, SYMBOL SIZE REFLECTS CRZ
- EXISTING TREE TO REMOVE, SYMBOL SIZE REFLECTS CRZ
- TREE PROTECTION FENCE

TREE PROTECTION

Implement the following protection measures for retained trees, both on site and on adjacent sites, prior to any work activity, including tree removal. Maintain tree protection fence in place and in good condition for the duration of site works:

1. The Landscape Architect or Certified Arborist is to determine the location of the tree protection fencing and detail it on any associated plans for the site (e.g. tree conservation report, tree disclosure report, etc.).
2. Under the guidance of a Landscape Architect or Certified Arborist, erect a fence at the critical root zone (CRZ) of trees. Diameter at breast height (DBH) is the trunk diameter measured at 1.3m height on the tree trunk. The CRZ is calculated as DBH x 10. Refer to the Tree Protection Fence detail.
3. Refer to the Tree Protection Plan for fence location. City Forestry Staff are to approve both the plan and the installed fence prior to work commencement.
4. Do not place any material or equipment within 2m of the CRZ of any tree, including outhouses.
5. Do not attach any signs, notices, or posters to any tree.
6. Do not disturb, raise, or lower the existing grade within the CRZ without approval.
7. Only tunnel or bore when digging within the CRZ of a tree. Hand work only where required within the CRZ; absolutely no machinery permitted.
8. Do not damage the root system, trunk, or branches, or any tree.
9. Do not extend hard surface or significantly change landscaping.
10. Ensure that exhaust fumes from all equipment are directed away from any tree canopy.
11. When trees marked for removal overlap with the CRZ of trees marked for preservation: cut roots at the edge of the CRZ and grind down stumps after tree removals, do not pull out stumps. Ensure there is not root pulling or disturbance of the ground within the CRZ.
12. Prior to work taking place, notify and consult the Landscape Architect and City Forestry Staff if roots must be cut. Roots 20mm or larger should be cut at right angles with clean, sharp horticultural tools without tearing, crushing, or pulling. Refer to City of Ottawa Specification S.P. F-8011 Tree Protection, Excavation of Root Zone.
13. If damaged or objectionable branches are observed, consult the Landscape Architect, before any work is conducted. Do not prune leaders. Do not prune more than 1/4 of crown.
14. Set up a water and fertilizing program, if trees are being affected by site works, to the satisfaction of the Landscape Architect.
15. The Landscape Architect is to prescribe mitigation measures if the protected fenced area must be reduced to facilitate construction. Measures may include the placement of plywood, wood chips, or steel plating over the roots for protection. City Forestry Staff are to approve said measures prior to fence movement.
16. City of Ottawa By-law: Protects municipal trees and municipal natural areas in the City of Ottawa and trees on private property in the urban area of the City of Ottawa (2020-340).

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ROBERT MATTHEWS
71 BANK STREET, 7TH FLOOR, OTTAWA,
ON K1P 5N2

DISCLAIMER:
The elements on this plan illustrate the design intent and general constructability of the proposed landscape which will support the associated development. This is to demonstrate how the canopy cover, urban design, health, and climate change objectives of the Official Plan will be met through tree planting and site design. This drawing is for City review only and is not intended for construction. Final detailed design and construction documentation is to be provided with certified 'Issued for Construction' drawings and specifications prior to construction.

No.	REVISION	DATE	BY
2.	REVISED PER CITY AND SNCA COMMENTS	NOV 14/25	SC
1.	ISSUED FOR COMPLETENESS COMMENTS	FEB 27/25	SC

SCALE
1:750
1:750
0 10 20 30

DESIGN MT
CHECKED SC
DRAWN MT
CHECKED SC
APPROVED SC

FOR REVIEW ONLY

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
OALA
NOV 14, 2025
MEMBER

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LOCATION
CITY OF OTTAWA
5494-5510 BOUNDARY ROAD

DRAWING NAME
TREE CONSERVATION PLAN

PROJECT No. 118168
REV REV # 2
DRAWING No. 118168-TCR

CITY PLAN NO. 19296

CITY FILE NUMBER: D07-12-24-0117

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