

**TREE CONSERVATION REPORT FOR
401 SMYTH ROAD,
CITY OF OTTAWA, ONTARIO**

Prepared for:



Prepared by:

Colville Consulting Inc.

432 Niagara Street, Unit 2

St. Catharines, Ontario

L2M 4W3

Date: September 19th, 2023
File: C23080



This Tree Conservation Report (TCR) has been prepared as part of a proposed development on the located at 401 Smyth Road, in the City of Ottawa, henceforth referred to as the Subject Lands. Colville Consulting Inc was initially retained to complete an arborist report for the Childrens Hospital of Eastern Ontario (CHEO) in 2022 as part of the Integrated Design Brief for the proposed development. Colville Consulting Inc. was later retained by EllisDon in August 2023 to update the initial arborist report to reflect updates to the development plan proposed on the property.

Works undertaken as part of this report include a detailed inventory of trees on the Subject Lands and mitigation strategies to reduce impact on trees recommended to be retained. An initial inventory of trees within and adjacent to the development footprint of the proposed parking garage and treatment facility was completed on June 9th and 10th, 2022, with a follow up inventory and assessment completed on August 25th, 2023.

The general intent of the TCR is to identify trees within and adjacent the proposed development and provide input on which trees are anticipated to be removed based on the construction plans prepared by EllisDon, and which trees may be able to be retained. Information on trees to be removed includes the rationale for removal in addition to information to be used during compensation discussions as part of the development review process with the city. It is our understanding that compensation type and extent will be determined by the total number and size of trees to be removed on site, as well as the ability to incorporate replacement trees into the landscape plan. Information on mitigation strategies has been included in for trees to be retained.

This TCR is required as per the City of Ottawa Tree By-law (No. 2020-340). Schedule E of the By-law outlines the guidelines required for the completion of a TCR and states:

“The Tree Conservation Report (TCR) provides essential information that must be integrated with all plans for a site, including the grading, servicing and landscape plans, to ensure that trees are retained in development scenarios, where feasible, and that new trees will be accommodated and planted to contribute to the City’s forest cover target and to address a site’s tree loss.

The purpose of the Tree Conservation Report is to demonstrate how tree cover will be retained on the site, including mature trees, stands of trees, and hedgerows, using a design with nature approach to planning and engineering. A design with nature approach incorporates the natural features of a site into the design and engineering of a proposed development. This includes, but is not limited to, measures such as retention of vegetation, consideration of wildlife habitats, and respect for natural drainage patterns...”

PROPOSED DEVELOPMENT

The Children’s Hospital of Eastern Ontario (CHEO) is currently operating on the majority of the property located at 401 Smyth Road, in the City of Ottawa. The development proposed is located on the southern portion of the Subject Property to the north of Ring Road. Development proposed as part of this project is understood to include two main components, the construction of a “1door4Care’ multi-purpose building as an extension of the existing main campus and a new parking structure to replace an existing outdoor parking lot.

The proposed multi-level parking structure is being built to replace the parking spots lost as part of the construction of the treatment facility.

Modification to these plans and/or site characteristics will require further investigation to identify changes to the recommendations provided within this report.

ASSUMPTIONS AND LIMITING CONDITIONS

The observations and recommendations within this document are true for the period that staff were on site and therefore do not include any other activities and/or change in overall condition or health to any trees occurring on site before or after our site visit. The existence of any and all trees on site represent a certain inherent degree of risk and our evaluation and recommendation does not preclude all potential risk of failure. Inspection of trees was conducted using visual examination and limited to information gathered through visual observation.

In spite of our recommendations and conclusions in our report, it's important to understand that all trees are living organisms, meaning that their health and status has the potential to be in constant flux over time, and that trees are not immune to changes in site conditions or seasonal variations in weather conditions.

Possession of this report does not imply right of publication or use for any purpose other than to whom it is addressed to, without the prior expressed written or verbal consent of Colville Consulting Inc. This report shall be considered whole and should be considered incomplete if there are any pages missing.

SUBJECT LANDS

The Subject Lands are located on existing surface parking lot structures, driveways, and landscaped areas on the southern portion of the Subject Property. The overall CHEO Subject Property occupies an approximate area of 13.9 hectares, while the Subject Lands assessed as part of this report are approximately 3.1 hectares in size. CHEO shares a campus with the Ottawa General Hospital and the University of Ottawa's Roger Guindon Hall, both located at 451 Smyth Road to the east.

The Subject Lands are primarily surrounded by residential development, as well as additional institutional and recreational uses. A hydro corridor runs north of the Subject Property and is separated by a moderately sized woodland feature.

The Location of the Subject Property and Subject Lands are shown in Figure 1 provided below.

METHODS

This Report has been completed in general compliance with the City of Ottawa's Tree Protection By-Law (No. 2020-340), with the goal of retaining and protecting as many trees as reasonably possible on the site and providing mitigation strategies for trees to be retained. This report is intended to be read in conjunction with other design reports prepared for the project as part of the CHEO Integrated Treatment Centre development plan prepared by EllisDon.



Figure 1
Location Map

Tree Conservation Report
for CHEO, City of Ottawa

Prepared for: **EllisDon**

Prepared by: **COLVILLE CONSULTING INC.**

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The work plan for this report included the following components:

- ◆ Field reconnaissance to collect tree inventory information for trees situated on the Subject Lands
- ◆ Preparation of summary mapping;
- ◆ Evaluation of potential tree saving opportunities based on the proposed site plan; and,
- ◆ Recommend appropriate mitigation measures to help preserve remaining trees on the site.

Tree inventories on the Subject lands were conducted on June 9th and 10th, 2022, and August 25th, 2023. These inventories included the following parameters:

Species – common and botanical names provided in the inventory table.

DBH – diameter at breast height (cm), measured at 1.3 m above the ground.

Canopy Size – Approximate diameter of tree canopy.

Condition – condition of tree considering trunk integrity, crown structure and crown.

Vigor- Condition ratings include Dead (D), poor (P), fair (F), and good (G).

Location – UTM coordinates of the tagged tree.

The inventory of trees on this property was limited to trees 10cm in DBH and larger for trees located within and adjacent to areas anticipated to be impacted through the proposed treatment center and parking garage development. For the purpose of this assessment, the limit of disturbance is understood to be the entirety of the Subject Lands.

TREE INVENTORY RESULTS

Tree Inventory data for all trees surveyed is provided in Appendix A. A total of one hundred and thirty one (131) trees were inventoried and tagged with unique tree ID numbers on and adjacent the Subject Lands during the site assessment. Sixty eight (68) trees inventoried were directly impacted or adjacent to the proposed parking garage, and the remaining sixty-three (63) trees were located within or adjacent to the proposed treatment facility footprint. To facilitate the proposed development on the site, thirty-six (36) of the trees inventoried are recommended to be retained, while ninety-five (95) are recommended for removal.

Trees have been recommended for removal for a number of reasons including direct impacts from development, impacts from site grading, poor overall tree health, or that they are considered invasive.

Tree to be retained are primarily located in landscaped areas or within woodlands outside of the proposed footprint of the developments. Ten trees recommended to be retained will require minor encroachment within the CRZ to facilitate development (Trees 120,121,122,123,124,125,126,129,519 & 525). Further information is provided in the Tree Care Recommendations section below.

Of the trees to be removed, sixteen (16) are invasive common buckthorn. A significant amount of smaller common buckthorn was also observed within the hedgerows adjacent to Ring Road and within the thicket adjacent the woodland feature north of the proposed parking structure.

Detailed information and recommendations for each tree inventoried is provided within Appendix A. Mapping in Appendix B and C shows all trees inventoried on and adjacent the Subject Lands and Critical

Root Zones (CRZ). Tree protection fencing and limits of construction are also shown on Mapping in Appendix B and C. A selection of site photographs taken during field inventories are provided in Appendix D and E.

TREE CARE RECOMMENDATIONS

The following are minimum standards for tree care recommendations that shall be applied to trees recommended to be retained as identified in Appendix A. Any additional specific standards or specifications required by the City of Ottawa shall supersede the following recommendations and be adhered to accordingly.

Tree Protection Zone

The Tree Protection Zone (TPZ) is required for trees to be retained and in order to protect roots and soil within the critical root zone (CRZ). The CRZ is the immediate root zone surrounding the trunk of the tree and is integral to tree for tree health and stability. During construction, no machinery, grading, or general work should be conducted within the limits of TPZ. The TPZ should be delineated through the installation of tree hoarding.

The following recommendations should be adhered to prevent unintended works from occurring within the CRZ.

- ◆ Tree protection zone fencing shall be installed following design criteria as outlined by the City of Ottawa Tree Protection Specifications provided in Appendix F.
- ◆ Signage should be adhered to the tree hoarding protection identifying it and explaining the TPZ and that no works are permitted within the limits of the tree hoarding.
- ◆ Construction materials, equipment, soil, construction waste, or debris shall not be stored within the Tree Protection Zone.
- ◆ TPZ fencing must be installed prior the start of construction activities on the site and inspected by City forestry staff.
- ◆ Tree Protection should be maintained throughout the duration of construction. Should any damage occur to tree protection, it should be repaired as soon as possible.
- ◆ Tree hoarding should remain installed until all construction works have been completed.

Trunk Protection

In areas where construction activities cannot avoid encroachment into the TPZ, and the project arborist has been consulted, protection should be applied to trunks and buttress roots.

- ◆ Thick wood planks installed around the trunk overtop of foam padding and secured with straps or wires are recommended.
- ◆ Barriers should be installed at an angle to protect trunk flare and buttress roots.

Root Maintenance

Root health is essential for tree health and stability. Roots can extend approximately 2-3 times the distance of the dripline. This can result in a significant loss of feeder roots during construction and may require further mitigation.

- ◆ If root cuts are required, the cut should be made as far from the trunk as possible and not occur within the dripline.
- ◆ Any roots over 2.5cm in diameter should be pruned rather than torn or crushed. Two methods that may be employed are soil excavation followed by selective root cutting, or mechanical root pruning tools designed to cut roots. Root pruning should only be completed by a trained and experienced arborist.
- ◆ Mulch may be used as a temporary measure to protect roots systems. Mulch applied at a thickness of 15cm to 30cm can help disperse weight and reduce root compaction.

Retained Trees - Work within CRZ

Generally, no work should be conducted within the CRZ of trees to be retained. However, some trees are recommended to be retained and will require minor encroachment into the CRZ to facilitate development. Trees inventoried that were in good health and with one third (33%) or less of their CRZ impacted through development have been recommended to be retained where possible. It is anticipated that any injury to these trees will not result in significant overall decline where the appropriate mitigation measures as outlined below are adhered to.

- ◆ Any work required within the CRZ should occur as far away from the trunk as feasible.
- ◆ The use of air spading should be considered when working with the CRZ. Forced air is used to loosen compacted soil, exposing the trees root structure. This should be completed where soil compaction within the CRZ has occurred, or significant root pruning is required.
- ◆ Where above ground work is required, wood chip mulch may be used as a temporary measure to protect roots systems. Mulch applied at a thickness of 15cm to 30cm can help disperse weight and reduce root compaction. Mulch should be removed once work has been completed.
- ◆ If more than one-third of the trees root system is required for removal, the structural stability may be compromised, and it is recommended that the tree be removed to prevent creating a hazard. Consultation with City staff should occur prior to removal.
- ◆ No changes to the final grade within the CRZ should occur.
- ◆ When work within the CRZ has been completed, the area should be returned to a suitable condition and tree hoarding reinstated to the full extent of the CRZ to prevent further work within CRZ.

CONCLUSION

The proposed development of the treatment facility and parking structure is anticipated to require the removal of ninety-five (95) trees to facilitate grading and construction. Some trees recommended for retention are located in close proximity to the proposed treatment facility and may need to be removed as part of additional design requirements. Additional assessments are recommended to address these changes as required.

Prior to any works being conducted along property lines, or within the drip lines of trees growing on adjacent properties that have the potential to be impacted, a consent letter from the neighboring property owners is required. Tree Protection measures should be incorporated as recommended in this report for trees that may be impacted.

COLVILLE CONSULTING INC.

Based on background research, our site visits, and review of our findings, we have come to a few important recommendations and conclusions. These recommendations include the following:

- ◆ It is anticipated that to facilitate the proposed development of the treatment facility and parking structure, 95 trees will need to be removed on the Subject Lands.
- ◆ Recommendations for the retention and removal of individual trees are subject to change pending modifications to the final development plan and/or grading requirements associated with construction.
- ◆ As per the City of Ottawa By-law (No. 2020-340), The removal of trees on the site cannot occur until written approval of a Tree Conservation Report has been granted through a tree permit
- ◆ A limit of work fence/ tree hoarding should be installed along the CRZ of trees to be retained, including along the edge of the woodland north of the parking garage.
- ◆ Where work within the CRZ cannot be avoided for trees recommended to be retained, mitigation measures described in the above tree care recommendations should be followed to reduce potential damage to the tree.
- ◆ Tree hoarding for trees to be retained shall meet the City of Ottawa Tree Protection Specifications, as attached in Appendix F.
- ◆ Any Common Buckthorn or other invasive tree species observed during construction should be removed where feasible and areas replanted with native species where possible.
- ◆ Trees to be retained along the periphery of the woodland feature should be pruned by a certified arborist prior to the start of construction to remove potential hazard limbs and promote healthy growth.
- ◆ Tree care recommendations provided should be considered a minimum standard and applied to all trees to be retained in development areas.
- ◆ Tree protection measures and recommendations will not guarantee tree protection, and the potential for damage may still occur. Ongoing monitoring to ensure tree protection measures are effective is recommended.

Respectfully submitted by:



Brett Espensen, B.A. (Hons.), E.P., CISEC
I.S.A. Certified Arborist (ID: ON-2656A)
Colville Consulting Inc.
Brett@colvilleconsultinginc.ca

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APPENDICES

Appendix A – Tree Inventory Data

Appendix B – Figure #2 – Tree Inventory and CRZ for Proposed Parking Garage

Appendix C – Figure #3 – Tree Inventory and CRZ for Proposed Treatment Facility

Appendix D– Site Photographs – Proposed Parking Garage

Appendix E– Site Photographs – Proposed Treatment Facility

Appendix F– City of Ottawa Tree Protection Specifications

Appendix A
Tree Inventory Data

Tag #	Species	Scientific Name	Location	DBH (cm)	Critical Root Zone (CRZ) (cm)	Dripline	Health	Recommendation	Field Notes/Condition Comments	Zone	Northing	Easting
501	White Oak	<i>Quercus alba</i>	Parking Structure	34	340	2	Fair	Remove, grading	Leaf gulls, tightly pruned, soil compaction evident	18T	5027599.98	449147.44
502	White Oak	<i>Quercus alba</i>	Parking Structure	30	300	3	Fair	Remove, grading	Leaf gulls, tightly pruned, soil compaction evident	18T	5027608.92	449145.09
503	Red Maple	<i>Acer rubrum</i>	Parking Structure	10	100	2	Good	Remove, grading	At corner of parking lot, landscaped	18T	5027571.33	449149.24
504	Red Maple	<i>Acer rubrum</i>	Parking Structure	14	140	2	Fair/Poor	Remove, grading	60% dieback, girdling on trunk	18T	5027574.33	449163.75
505	Red Maple	<i>Acer rubrum</i>	Parking Structure	10	100	3	Good	Remove, construction	Minor girdle on trunk, good canopy coverage.	18T	5027575.99	449178.21
506	Red Oak	<i>Quercus rubra</i>	Parking Structure	84	840	7	Good/Fair	Remove, construction	Some crown dieback, union at 175cm - stems 40cm each	18T	5027577.43	449191.89
507	White Oak	<i>Quercus alba</i>	Parking Structure	30	300	4	Good	Remove, construction	80% crown	18T	5027579.05	449202.58
508	Red Maple	<i>Acer rubrum</i>	Parking Structure	12	120	3	Good	Remove, construction	Girdle at 1m, staking removed.	18T	5027577.85	449212.76
509	White Oak	<i>Quercus alba</i>	Parking Structure	20	200	4	Good	Remove, construction	1' from fence, slight lean towards Ring Road.	18T	5027581.13	449223.55
510	Red Maple	<i>Acer rubrum</i>	Parking Structure	10	100	3	Good	Remove, construction	light girdle at 1.2m, good canopy	18T	5027579.35	449227.55
511	Mountain Ash	<i>Sorbus americana</i>	Parking Structure	10	100	3	Good	Remove, construction	largest specimen in area, others smaller than 10cm DBH	18T	5027584.22	449242.97
512	White Oak	<i>Quercus alba</i>	Parking Structure	10	100	2	Good	Remove, construction	Tight branching, good crown	18T	5027586.63	449262.84
513	Eastern white cedar	<i>Thuja occidentalis</i>	Parking Structure	10	100	2	Good	Remove, grading	Good canopy, still has staking attached.	18T	5027595.15	449267.50
514	Eastern white cedar	<i>Thuja occidentalis</i>	Parking Structure	10	100	2	Good	Remove, grading	Still has staking attached.	18T	5027601.13	449267.97
515	American Elm	<i>Ulnus americana</i>	Parking Structure	26	260	5	Good	Remove, grading	slight lean, 95% crown.	18T	5027613.41	449268.00
516	American Elm	<i>Ulnus americana</i>	Parking Structure	16,12,10,10	160	5	Good	Remove, grading	Multi stem, Good canopy	18T	5027614.15	449270.01
517	White Oak	<i>Quercus alba</i>	Parking Structure	38	380	6	Good	Remove, grading	1' from fence line, good taper.	18T	5027646.28	449262.68
518	White Oak	<i>Quercus alba</i>	Parking Structure	18	180	4	Good	Retain	Surrounded by buckthorn, good canopy, good taper	18T	5027652.10	449264.06
519	Norway Maple	<i>Acer platanoides</i>	Parking Structure	30	300	5	Good	Retain	Ripped lower limb	18T	5027666.60	449145.91
520	Norway Maple	<i>Acer platanoides</i>	Parking Structure	24	240	3	Fair	Retain	Union at 155cm, some dieback	18T	5027672.80	449139.65
521	Silver Maple	<i>Acer saccharinum</i>	Parking Structure	18	180	3	Good	Retain	Healed over frost crack	18T	5027667.52	449133.02
522	White Oak	<i>Quercus alba</i>	Parking Structure	54	540	7	Good	Retain	Some leaf wilt, good canopy.	18T	5027657.22	449145.77
523	Red Oak	<i>Quercus rubra</i>	Parking Structure	40	400	8	Good/Fair	Remove, grading	Buried root flare, 80% canopy, touching fence.	18T	5027646.62	449260.71
524	White Oak	<i>Quercus alba</i>	Parking Structure	28	280	4	Good	Remove, grading	90% canopy.	18T	5027590.18	449250.69
525	Red Oak	<i>Quercus rubra</i>	Parking Structure	42	420	6	Good	Retain	Good canopy condition, good taper.	18T	5027661.40	449204.91
526	Red Oak	<i>Quercus rubra</i>	Parking Structure	48	480	5	Good/Fair	Retain	weak union at 3m. Wound on trunk.	18T	5027664.19	449213.95
527	Red Oak	<i>Quercus rubra</i>	Parking Structure	44	440	5	Good/Fair	Retain	slight sweep in trunk, possible fungal infection at root collar.	18T	5027663.64	449214.18
528	Red Oak	<i>Quercus rubra</i>	Parking Structure	68	680	6	Good/Fair	Retain	Union at 4m. Possible slime flux present, further assessment recommended	18T	5027662.46	449223.03
529	Red Oak	<i>Quercus rubra</i>	Parking Structure	40	400	5	Fair	Retain	epicormic growth at along trunk.	18T	5027665.54	449230.55
530	Red Oak	<i>Quercus rubra</i>	Parking Structure	64	640	6	Fair	Retain	70% canopy, Possible slime flux present, further assessment recommended	18T	5027667.52	449239.35
531	American Basswood	<i>Tilia Americana</i>	Treatment Facility	10	100	2	Good/Fair	Remove, construction	Multi stem, Good canopy	18T	5027582.53	448997.83
532	American Elm	<i>Ulnus americana</i>	Treatment Facility	30	300	4	Good/Fair	Remove, construction	Union at 2m, 80% canopy, some dieback	18T	5027568.94	448999.76
533	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	14,14,12,12	140	5	Good	Remove, construction	Coppice, at corner of driveway	18T	5027553.42	448996.89
534	American Elm	<i>Ulnus americana</i>	Treatment Facility	24	240	4	Fair/Poor	Remove, construction	60% canopy dieback	18T	5027552.34	448994.68
535	Red Pine	<i>Pinus resinosa</i>	Treatment Facility	40	400	4	Poor	Remove, construction	Lots of dieback, epicormic growth	18T	5027553.27	448988.94
536	Red Pine	<i>Pinus resinosa</i>	Treatment Facility	34	340	3	Good	Remove, construction	Good canopy, good taper	18T	5027549.83	448986.09
537	American Elm	<i>Ulnus americana</i>	Treatment Facility	36	360	6	Good	Remove, construction	Compacted soils, union at 2m	18T	5027547.43	448932.10
538	Sugar Maple	<i>Acer saccharum</i>	Treatment Facility	40	400	6	Fair/Poor	Remove, construction	Significant canopy dieback, missing codominant stem	18T	5027546.44	448926.75
539	American Elm	<i>Ulnus americana</i>	Treatment Facility	12	120	4	Good/Fair	Remove, construction	Sweep, good taper.	18T	5027546.74	448923.17
540	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	20,18	200	5	Good	Remove, grading	Multi-stem, sprawling	18T	5027547.09	448919.14
541	Scots Pine	<i>Pinus sylvestris</i>	Treatment Facility	58	580	6	Good	Remove, grading	slight lean, Good canopy.	18T	5027600.80	448896.76
542	White Spruce	<i>Picea glauca</i>	Treatment Facility	38	380	4	Fair	Remove, grading	Some canopy dieback, minor root damage	18T	5027705.26	448878.47
543	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	18	180	3	Good	Remove, grading	Good taper, healthy canopy.	18T	5027718.07	448875.28
544	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	24,18,14	240	3	Good	Remove, grading	Multi Stem	18T	5027723.48	448871.84
545	White Spruce	<i>Picea glauca</i>	Treatment Facility	36	360	5	Good/Fair	Retain	Some canopy dieback	18T	5027722.56	448881.28
546	Sugar Maple	<i>Acer saccharum</i>	Treatment Facility	42	420	5	Good/Fair	Remove, construction	Union at 1.5m, codominant	18T	5027727.87	448885.80
547	White Spruce	<i>Picea glauca</i>	Treatment Facility	38	380	5	Good	Remove, construction	No sign of disease	18T	5027721.64	448884.34
548	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	26	260	4	Good	Remove, construction	Good canopy, good taper.	18T	5027718.03	448891.44
549	Sugar Maple	<i>Acer saccharum</i>	Treatment Facility	34	340	4	Fair	Remove, construction	dieback in crown, broken branches removed.	18T	5027713.09	448883.92
551	White Spruce	<i>Picea glauca</i>	Treatment Facility	34	340	3	Fair	Remove, construction	Dieback in crown, good taper.	18T	5027707.69	448888.49
552	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	46	460	3	Good	Remove, construction	Good canopy	18T	5027709.60	448895.52
553	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	24	240	4	Good	Retain	On slope, adjacent existing CHEO	18T	5027705.62	448928.51
554	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	18	180	3	Good	Retain	On slope, adjacent existing CHEO	18T	5027703.71	448939.10
555	Japanese Lilac	<i>Syringa reticulata</i>	Treatment Facility	16	160	3	Good	Retain	Multi Stem, >90% canopy	18T	5027685.39	448950.76
556	Japanese Lilac	<i>Syringa reticulata</i>	Treatment Facility	14	140	2	Fair/Poor	Retain	Significant frost damage, reduced canopy.	18T	5027670.48	448963.15
557	Silver Maple	<i>Acer saccharinum</i>	Treatment Facility	20,26	260	4	Good	Retain	Union at base.	18T	5027664.20	448963.95
558	Sugar Maple	<i>Acer saccharum</i>	Treatment Facility	48	480	5	Fair	Remove, construction	Two leaders, weak union at 2m.	18T	5027641.76	448955.31
559	White Spruce	<i>Picea glauca</i>	Treatment Facility	30	300	2	Fair/Poor	Remove, construction	leaning, codominant at top.	18T	5027640.56	448951.23
560	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	12	120	3	Good	Remove, grading	Multi-stem, Invasive	18T	5027551.53	448979.88
561	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	12	120	3	Good	Remove, grading	Multi-stem, Invasive	18T	5027554.55	448978.41
562	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	12	120	3	Good	Remove, grading	Multi-stem, Invasive	18T	5027552.96	448977.06

Tag #	Species	Scientific Name	Location	DBH (cm)	Critical Root Zone (CRZ) (cm)	Dripline	Health	Recommendation	Field Notes/Condition Comments	Zone	Northing	Easting
563	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	12	120	3	Good	Remove, grading	Multi-stem, Invasive	18T	5027548.44	448940.28
564	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	10	100	2	Good	Remove, grading	Multi-stem, Invasive	18T	5027550.42	448924.11
565	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	10	100	4	Good	Remove, construction	Multi-stem, Invasive	18T	5027705.30	448896.19
566	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	10,10,12	120	4	Good	Remove, construction	Multi-stem, Invasive	18T	5027708.98	448874.98
567	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	10	100	4	Good	Remove, construction	Multi-stem, Invasive	18T	5027710.35	448875.82
568	Japanese Lilac	<i>Syringa reticulata</i>	Treatment Facility	12	120	2	Good	Retain	Mulched, Good condition	18T	5027680.89	448949.42
569	Japanese Lilac	<i>Syringa reticulata</i>	Treatment Facility	10	100	2	Good	Retain	Mulched, good canopy	18T	5027668.64	448959.35
570	White Spruce	<i>Picea glauca</i>	Treatment Facility	28	280	3	Fair	Remove, construction	Codominant at top, branch die back throughout	18T	5027673.39	448922.22
571	White Spruce	<i>Picea glauca</i>	Treatment Facility	34	340	4	Fair	Remove, construction	Some Branch dieback, good taper.	18T	5027671.57	448926.09
572	White Spruce	<i>Picea glauca</i>	Treatment Facility	28	280	3	Fair	Remove, construction	Moderate branch dieback	18T	5027668.78	448926.34
573	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	16,18,18,28	280	7	Good	Remove, construction	Some rot on limb, multi stem	18T	5027667.81	448930.46
574	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	14,12,12	140	6	Good	Remove, construction	Multi-stem, good canopy.	18T	5027648.40	448931.45
575	White Spruce	<i>Picea glauca</i>	Treatment Facility	44	440	4	Fair	Remove, construction	Branch dieback, topped.	18T	5027636.29	448931.60
576	White Spruce	<i>Picea glauca</i>	Treatment Facility	32	320	3	Fair	Remove, construction	Branch dieback, topped.	18T	5027633.51	448934.92
577	White Spruce	<i>Picea glauca</i>	Treatment Facility	26	260	3	Fair/Poor	Remove, construction	Sweep mid trunk, branch dieback, trunk wound	18T	5027640.96	448943.74
578	White Spruce	<i>Picea glauca</i>	Treatment Facility	38	380	6	Good/Fair	Remove, construction	Branch dieback in crown, good taper	18T	5027643.79	448947.66
579	White Spruce	<i>Picea glauca</i>	Treatment Facility	38	380	4	Good/Fair	Remove, construction	Dieback at top of crown	18T	5027639.51	448946.53
580	White Spruce	<i>Picea glauca</i>	Treatment Facility	38	380	4	Good/Fair	Remove, construction	Good taper, some branch dieback	18T	5027634.29	448960.37
581	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	20,20,24	240	7	Good	Remove, construction	Multi-stem, suckering at previous limb removal	18T	5027636.73	448956.91
582	White Spruce	<i>Picea glauca</i>	Treatment Facility	38	380	3	Fair	Remove, construction	Slight lean, branch dieback	18T	5027632.45	448952.08
583	White Spruce	<i>Picea glauca</i>	Treatment Facility	34	340	4	Fair	Remove, construction	Branch dieback, reduced canopy.	18T	5027635.02	448949.80
584	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	16	160	3	Fair	Remove, construction	Dead branch, reduced canopy	18T	5027620.37	448982.23
585	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	18	180	2	Fair	Remove, construction	Frost crack on trunk, weak union at 170cm.	18T	5027610.32	448990.41
586	Norway Maple	<i>Acer platanoides</i>	Treatment Facility	16	160	2	Fair	Remove, construction	Branch dieback, reduced canopy.	18T	5027605.30	448995.24
501	Apple sp.	<i>Malus sp.</i>	Treatment Facility	10,10	100	4	Good	Retain	multi stem, fruit bearing, mid slope adjacent roadway	18T	5027632.37	449001.93
502	American Basswood	<i>Tilia americana</i>	Treatment Facility	42	420	6	Good	Retain	Top of slope along terraced area, wide canopy.	18T	5027659.74	448980.56
503	Russian Olive	<i>Elaeagnus angustifolia</i>	Treatment Facility	30	300	6	Good	Retain	Along top of slop, recommend pruning, overhang onto sidewalk	18T	5027667.16	448980.26
504	Chinese Crab Apple	<i>Malus hupehensis</i>	Treatment Facility	18	180	4	Fair/Good	Remove, construction	Reduced photo period due to location, heavy groundcover, some dieback	18T	5027701.43	448962.01
505	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	12	120	4	Fair/Good	Retain	Reduced photo period due to location, heavy groundcover, some dieback	18T	5027711.28	448952.41
506	Common Buckthorn	<i>Rhamnus cathartica</i>	Treatment Facility	12	120	4	Good	Remove, Invasive	On slope, smaller specimens in vicinity	18T	5027701.75	448950.95
507	Cherry Plum	<i>Prunus cerasifera</i>	Treatment Facility	18	180	4	Fair/Good	Retain	Reduced photo period due to location, heavy groundcover, some dieback	18T	5027717.49	448947.75
508	Red Maple	<i>Acer rubrum</i>	Treatment Facility	18	180	4	Good	Retain	Fresh mulch, good taper, healthy canopy.	18T	5027740.45	448882.87
130	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027573.26	449156.36
131	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027574.46	449171.54
132	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027575.45	449176.72
201	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027575.69	449183.95
202	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027576.19	449195.48
203	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027578.42	449203.54
204	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027581.70	449229.78
205	Mountain Ash	<i>Sorbus americana</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027582.26	449232.88
206	Mountain Ash	<i>Sorbus americana</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027583.71	449236.30
207	White Oak	<i>Quercus alba</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027585.73	449242.70
208	Mountain Ash	<i>Sorbus americana</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027590.29	449266.42
209	Mountain Ash	<i>Sorbus americana</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027595.46	449266.17
210	White Oak	<i>Quercus alba</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027597.06	449269.28
211	Eastern white cedar	<i>Thuja occidentalis</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027600.77	449268.88
212	Eastern white cedar	<i>Thuja occidentalis</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027603.17	449267.42
213	White Spruce	<i>Picea glauca</i>	Parking Structure	10	100	2	Good	Remove, construction	Within landscaped area along north of Ring Road	18T	5027574.08	449163.15
108	Japanese Lilac	<i>Syringa reticulata</i>	Parking Structure	10	100	2	Good	Remove, construction	newly planted, good form.	18T	5027561.22	449094.84
109	Amur Maackia	<i>Maackia amurensis</i>	Parking Structure	14,12,12,10	140	5	Good	Remove, construction	Ornamental, multi stem. Healthy canopy.	18T	5027560.35	449076.89
110	Japanese Lilac	<i>Syringa reticulata</i>	Parking Structure	10	100	2	Good	Remove, construction	newly planted, good form.	18T	5027561.19	449088.00
111	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	12	120	2	Good	Remove, construction	Invasive, part of hedgerow	18T	5027661.48	449180.83
112	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	14	140	2	Good	Remove, construction	Invasive, part of hedgerow	18T	5027662.38	449177.81
113	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	12	120	3	Good	Remove, construction	Invasive, part of hedgerow	18T	5027659.39	449182.33
114	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	14,10,12	140	3	Good	Remove, construction	Invasive, part of hedgerow	18T	5027660.81	449184.86
115	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	14,14	140	2	Good	Remove, construction	Invasive, part of hedgerow	18T	5027664.24	449191.88
116	Manitoba Maple	<i>Acer negundo</i>	Parking Structure	18	180	6	Fair/Good	Remove, construction	epicormic growth, sprawling growth form, weak unions	18T	5027666.49	449192.55
117	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	10,10	100	3	Good	Remove, Invasive	Invasive, part of hedgerow	18T	5027673.09	449187.03
118	White Oak	<i>Quercus alba</i>	Parking Structure	32	320	6	Good	Retain	Good taper, surrounded by buckthorn, tar spots on foliage	18T	5027677.03	449195.37
119	Common Buckthorn	<i>Rhamnus cathartica</i>	Parking Structure	12	120	3	Good	Remove, Invasive	Within retained woodland, invasive and should be removed.	18T	5027671.96	449198.09
120	Pignut Hickory	<i>Carya glabra</i>	Parking Structure	12	120	3	Good	Retain	Clustered together, good taper, frost crack at base	18T	5027663.18	449201.53

Tag #	Species	Scientific Name	Location	DBH (cm)	Critical Root Zone (CRZ) (cm)	Dripline	Health	Recommendation	Field Notes/Condition Comments	Zone	Northing	Easting
121	Pignut Hickory	<i>Carya glabra</i>	Parking Structure	26	260	4	Fair/Good	Retain	Clustered together, good taper, growing alongside 122	18T	5027662.24	449202.60
122	Pignut Hickory	<i>Carya glabra</i>	Parking Structure	20	200	4	Good	Retain	Clustered together, good taper, growing alongside 121	18T	5027663.78	449193.98
123	Pignut Hickory	<i>Carya glabra</i>	Parking Structure	20	200	4	Good	Retain	Clustered together, good taper	18T	5027665.68	449195.30
124	Red Oak	<i>Quercus rubra</i>	Parking Structure	22	220	5	Good	Retain	Good taper, mild dieback, shrubby understory	18T	5027665.33	449202.98
125	Red Oak	<i>Quercus rubra</i>	Parking Structure	28	280	5	Good	Retain	Good taper, mild dieback, shrubby understory	18T	5027669.33	449202.27
126	Red Oak	<i>Quercus rubra</i>	Parking Structure	44	440	5	Good	Retain	Good taper, mild dieback, shrubby understory	18T	5027671.84	449204.21
127	Red Oak	<i>Quercus rubra</i>	Parking Structure	36	360	4	Fair	Retain	dieback at top, broken stem.	18T	5027676.63	449205.14
128	Red Oak	<i>Quercus rubra</i>	Parking Structure	38,34	380	5	Fair	Retain	Coppice, cavity in tree, light sweep, upper branch dieback	18T	5027675.41	449207.66
129	Sugar Maple	<i>Acer saccharum</i>	Parking Structure	46	460	5	Good	Retain	Good taper, along path toward electrical vault.	18T	5027691.20	449170.17

Appendix B

Figure #2 - Tree Inventory and CRZ
for Proposed Parking Garage



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Legend <ul style="list-style-type: none"> • Tree Inventory (DBH) ○ Critical Root Zone ○ Recommended to be Removed ○ Recommended to be Retained --- Limit of Work Fence --- Limit of Construction Line 	<h2>Figure 2</h2> <h3>Tree Inventory (East)</h3>	
	<p>Proposed Parking Garage 401 Smyth Road, Ottawa</p>	
	Prepared for:	<p>EllisDon</p>
	Prepared by:	<p>COLVILLE  CONSULTING INC.</p>
DATE: September 2023		FILE: C23080

Appendix C

Figure #3 - Tree Inventory and CRZ
for Proposed Treatment Facility



Contains information licensed under the Open Government Licence - Ontario. Base map data from Ontario Ministry of Natural Resources, Ontario GeoHub Land Information Ontario (LIO) Warehouse Open Data Products. <https://geohub.lio.gov.on.ca/> Coordinate system : NAD 1983, UTM Zone 18T, Air photo: Ontario Ministry of Natural Resources and Forestry Land Information Ontario. Air photo: Ontario Ministry of Natural Resources and Forestry. Site Plan Overlay: A014-SITE PLAN-PHASE 1A CHEO February 23, 2023.

Legend	
•	Tree Inventory (DBH)
○	Critical Root Zone
○ (Red)	Recommended to be Removed
○ (Green)	Recommended to be Retained

<h3>Figure 3</h3> <h2>Tree Inventory (West)</h2>	
<p>Proposed Treatment Facility 401 Smyth Road, Ottawa</p>	
Prepared for:	EllisDon
Prepared by:	 COLVILLE CONSULTING INC.
DATE: August 2023	FILE: C23080

Appendix D
Site Photographs -
Proposed Parking Garage



Photo 1: Vegetation along median between treatment facility and parking area



Photo 2: Trees along median between treatment facility and parking area



Photo 3: Community garden north of existing parking area, thicket in background



Photo 4: View of existing walking trail, electrical vault in background.



Photo 5: General condition of the buckthorn thicket on northside of parking area



Photo 6: Cluster of trees within woodland on northern edge of parking area.



Photo 7: Northern Red Oaks in woodland feature, cavity visible mid stem.



Photo 8: Staghorn Sumac thicket along northern edge of parking area.



Photo 9: Woodland feature as observed from parking lot, viewing northeast.



Photo 10: Landscaped area on south side of parking area along Ring Road.



Photo 11: Landscaped area south of parking area along Ring Road.



Photo 12: Hedge row along eastern edge of parking area, viewing northwest.



Photo 13: Ripped limb damage on tree #519



Photo 14: Trunk girdling on tree #504



Photo 15 : White Oak #518 at northeast corner of parking lot, surrounded by Common Buckthorn.



Photo 16: Frost crack on tree #520.

Appendix E
Site Photographs -
Proposed Treatment Facility

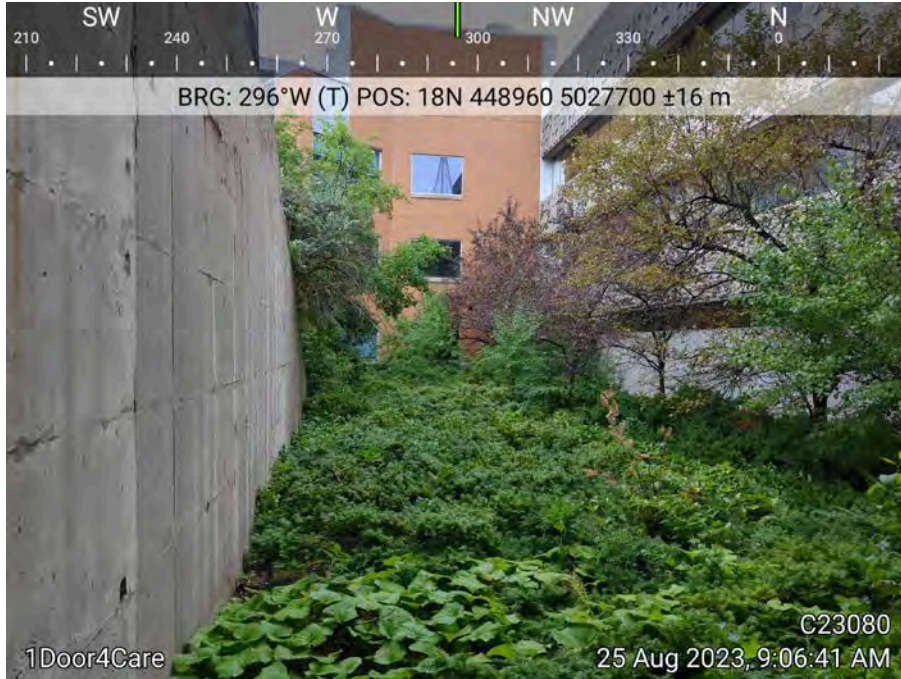


Photo 1: Landscaping adjacent existing hospital below drop off area.



Photo 2: Viewing northwest at manicured area north of drop off area.



Photo 3: Trees adjacent walking path on northwest portion of proposed development



Photo 4: Vegetation adjacent existing hospital staff access



Photo 5: View of trees to be removed in footprint of new building.



Photo 6: View of landscaped trees southeast of existing patient drop off door.



Photo 7: View of trees to be removed southwest of patient drop off door.



Photo 8: View of trees and vegetation in hedgerow adjacent Ring Road.



Photo 9: Example of vegetation conditions within hedgerow along Ring Road.



Photo 10: Cluster of trees in landscaped area southwest of CHEO main entrance.



Photo 11: Tree #534 in poor/fair condition with significant canopy dieback.



Photo 12: Tree #556 adjacent CHEO main entrance, fair condition with reduced canopy.

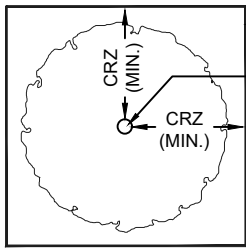


Photo 13: Tree #546, weak union at 1.5 metres.

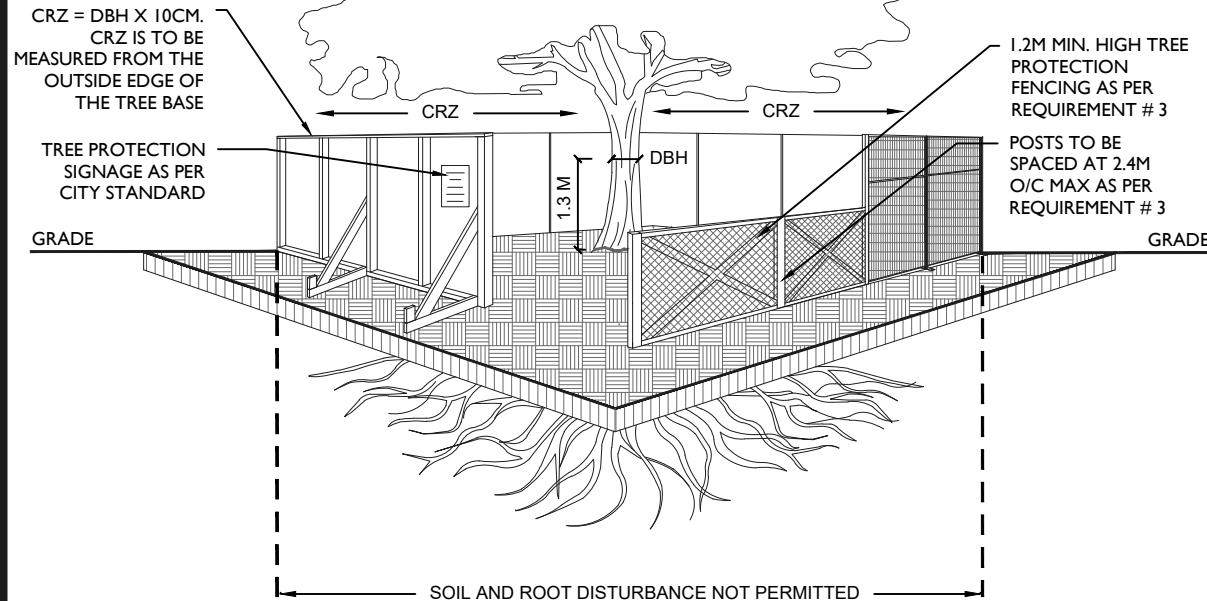


Photo 14: Tree #562, example of larger DBH Common Buckthorn present in hedgerows around parking area.

Appendix F
City of Ottawa Tree
Protection Specifications



PLAN VIEW



TREE PROTECTION REQUIREMENTS:

1. PRIOR TO ANY WORK ACTIVITY WITHIN THE CRITICAL ROOT ZONE (CRZ = 10 X DIAMETER) OF A TREE, TREE PROTECTION FENCING MUST BE INSTALLED SURROUNDING THE CRITICAL ROOT ZONE, AND REMAIN IN PLACE UNTIL THE WORK IS COMPLETE.
2. UNLESS PLANS ARE APPROVED BY CITY FORESTRY STAFF, FOR WORK WITHIN THE CRZ:
 - DO NOT PLACE ANY MATERIAL OR EQUIPMENT - INCLUDING OUTHOUSES;
 - DO NOT ATTACH ANY SIGNS, NOTICES OR POSTERS TO ANY TREE;
 - DO NOT RAISE OR LOWER THE EXISTING GRADE;
 - TUNNEL OR BORE WHEN DIGGING;
 - DO NOT DAMAGE THE ROOT SYSTEM, TRUNK, OR BRANCHES OR ANY TREE;
 - ENSURE THAT EXHAUST FUMES FROM ALL EQUIPMENT ARE NOT DIRECTED TOWARD ANY TREE CANOPY.
 - DO NOT EXTEND HARD SURFACE OR SIGNIFICANTLY CHANGE LANDSCAPING
3. TREE PROTECTION FENCING MUST BE AT LEAST 1.2M IN HEIGHT, AND CONSTRUCTED OF RIGID OR FRAMED MATERIALS (E.G. MODULOC - STEEL, PLYWOOD HOARDING, OR SNOW FENCE ON A 2"X4" WOOD FRAME) WITH POSTS 2.4M APART, SUCH THAT THE FENCE LOCATION CANNOT BE ALTERED. ALL SUPPORTS AND BRACING MUST BE PLACED OUTSIDE OF THE CRZ, AND INSTALLATION MUST MINIMISE DAMAGE TO EXISTING ROOTS. (SEE DETAIL)
4. THE LOCATION OF THE TREE PROTECTION FENCING MUST BE DETERMINED BY AN ARBORIST AND DETAILED ON ANY ASSOCIATED PLANS FOR THE SITE (E.G. TREE CONSERVATION REPORT, TREE INFORMATION REPORT, ETC). THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY CITY FORESTRY STAFF PRIOR TO THE COMMENCEMENT OF WORK.
5. IF THE FENCED TREE PROTECTION AREA MUST BE REDUCED TO FACILITATE CONSTRUCTION, MITIGATION MEASURES MUST BE PRESCRIBED BY AN ARBORIST AND APPROVED BY CITY FORESTRY STAFF. THESE MAY INCLUDE THE PLACEMENT OF PLYWOOD, WOOD CHIPS, OR STEEL PLATING OVER THE ROOTS FOR PROTECTION OR THE PROPER PRUNING AND CARE OF ROOTS WHERE ENCOUNTERED.

THE CITY'S TREE PROTECTION BY-LAW, 2020-340 PROTECTS BOTH CITY-OWNED TREES, CITY-WIDE, AND PRIVATELY-OWNED TREES WITHIN THE URBAN AREA. PLEASE REFER TO WWW.OTTAWA.CA/TREEBYLAW FOR MORE INFORMATION ON HOW THE TREE BY-LAW APPLIES.

ACCESSIBLE FORMATS AND COMMUNICATION SUPPORTS ARE AVAILABLE, UPON REQUEST



TREE PROTECTION SPECIFICATION

TO BE IMPLEMENTED FOR RETAINED TREES, BOTH ON SITE AND ON ADJACENT SITES, PRIOR TO ANY TREE REMOVAL OR SITE WORKS AND MAINTAINED FOR THE DURATION OF WORK ACTIVITIES ON SITE.

SCALE: NTS

DATE: MARCH 2021

DRAWING NO.: 1 of 1