P.O. BOX 13593, OTTAWA, ON K2K 1X6
TELEPHONE: (613) 838-5717
WEBSITE: WWW.IFSASSOCIATES.CA
URBAN FORESTRY & FOREST MANAGEMENT CONSULTING

February 14, 2022

Joey Theberge
Kanata Woods Inc.
1600 Laperriere Ave, Suite 205
Ottawa, ON
K1Z 8P5

RE: TREE CONSERVATION REPORT FOR 180 KANATA AVENUE, OTTAWA

This Tree Conservation Report (TCR) was prepared by IFS Associates Inc. (IFS) on behalf of Kanata Woods Inc. in support of their proposed development of 180 Kanata Avenue in Ottawa. The need for this report is related to trees protected under the City of Ottawa's Tree Protection By-law (By-law No. 2020-340). Under the Tree Protection By-law a TCR is required for all Plans of Subdivision, Site Plan Control Applications, Common Elements Condominium Applications, and Vacant Land Condominium Applications where there is a tree of 10 cm in diameter at breast height (DBH) or greater on a site and/or if there is a tree on an adjacent site that has a critical root zone (CRZ) extending onto a development site. Trees of any size on adjacent City lands must also be documented in a TCR. A "tree" is defined in the By-law as any species of woody perennial plant, including its root system, which has reached or can reach a minimum height of at least 450 cm at physiological maturity. The CRZ is calculated as DBH x 10 cm.

The approval of this TCR by the City of Ottawa and the issuing of a permit by them authorize the removal of approved trees. **Importantly, although this report may be used to support the application for a city tree removal permit, it does not by itself constitute permission to remove trees or begin site clearing activities. No such work should occur before a tree removal permit is issued by the City of Ottawa.**

The construction proposed for this 1.13 hectare site includes a six-storey mixed-use building with two levels of underground parking. The foot print of the building in addition to surrounding amenity areas and surface parking, and the excavation necessary for the underground parking will result in the removal of the vast majority of trees currently on the property. The exceptions are those trees located in proximity to portions of the northern and western property lines – both of which are contiguous with Bill Teron Park, a park owned by the City of Ottawa. All trees on adjacent property will be retained. The tree preservation and protection measures cited in this report will be followed to ensure the survival of all trees proposed for retention.

TOPOGRAPHY

Bedrock outcroppings are common along the northern limits of the subject property, the highest of which is in the area of the northeast corner where the elevation ranges from 108 to 110m Above Sea Level (ASL). From this height the site slopes quickly towards the south and east.

reaching approximately 99-100m ASL at the southern forest edge near Kanata Avenue. The soil covered portions of the site are undulating except in localized areas where recent substantial changes have been made for mountain biking courses. No wetlands or water courses were encountered during field work for this report.

METHODOLOGY

A survey of this fully wooded property was completed using a total of twenty five 50m^2 sample plots placed at set intervals along transect lines. This provided a total sampling intensity of just over 10 percent of the total property area. In each plot all overstory and understory trees 10cm in diameter and greater were assessed for species, size (average diameter) and general health condition (*i.e.* alive or dead). This information was then compiled so that 'stands' (areas of similar tree age and species composition) could be delineated. In this instance it became apparent early in the inventory that a single stand type was present – one which has now largely transitioned from an upland mixedwood stand to a tolerant deciduous stand.

Typically, on most urban sites individual planted trees or mature trees thought especially worthy of preservation as amenity features are also identified. However, due to the lack of planted trees and the intensity of the proposed development – which is particularly hard on large mature trees in forest settings - tree preservation will instead centre on linear groupings along the north and west property lines. These groupings are intended to serve as buffers for the parkland trees – to protect them from the impacts of 'edge effect' – where trees remaining along forested edges suffer from being newly exposed to direct sunlight and wind forces. This often leads negative consequences in terms of tree health – wind throw, stem breakage, sunscald, etc. Retaining an existing buffer, or where not possible creating one through new landscapes, will be critical to preserving the integrity of the adjacent city parkland.

TREE INVENTORY – DEVELOPMENT PROPERTY

It is apparent the subject land has been in a fully forested condition for many decades. Essentially, it is a small area of a larger remnant forest mainly contained within the adjacent parkland, one which has for the most part escaped disturbance – either natural or anthropomorphic.

Because of the lack of disturbance and the distance of this particular property from built landscapes, the usual presence of invasive woody vegetation in the overstory, in particular Norway maple *(Acer platanoides),* is lacking. However, the invasive buckthorn *(Rhamnus* spp.*)* is present in the understory, especially in proximity to Kanata Avenue. Naturalized Manitoba maple *(Acer negundo)* is found in the same area, but in small numbers. As this species of maple is intolerant to shade it will not invade the closed canopy of the forest as Norway maple would if present. Both species of maple are frequent urban and peri-urban species which were not present pre-settlement but now are naturalized throughout Eastern Ontario. So much so that it is unusual not to find them in large numbers on urban properties.

In terms of tree health, Dutch elm disease *(Ophiostoma ulmi/Ophiostoma novo-ulmi)* has had an impact on the prevalence of white elm *(Ulmus americana)* and emerald ash borer *(Agrilus planipennis)* on ash *(Fraxinus* spp.*).* In fact, no living overstory ash trees were encountered

during the inventory. This speaks to the duration and intensity of the invasion of this introduced insect. However, both ash and elm trees are present as regeneration in the understory – though typically less than 10cm in diameter. Some of the larger understory ash trees are now showing signs of EAB infestation as well.

The results of the inventory found the forest composition to be almost completely deciduous. Alone, ironwood *(Ostrya virginiana)* and sugar maple *(Acer saccharum)* together make up seventy percent of the species composition. Both species are very tolerant of shade and so can regenerate under a consistently closed canopy like that found in this stand. From the presence of several super canopy and scattered dead standing trees, it is apparent that coniferous trees were present in greater numbers in the past, in particular white pine *(Pine strobus)*, white spruce *(Picea glauca)* and white cedar *(Thuja occidentalis)*.

Their diminished presence is one negative consequence to a lack of forest disturbance. White pine seeds require exposed mineral soil for germination, cedars need openings in the canopy for sufficient sunlight and soil moisture (through interception of precipitation) and white spruce seeds will have trouble penetrating the thick litter layer beneath a deciduous stand. Consequently, although trees of seed bearing age are present, no regeneration of the three coniferous species was found in the understory.

Table 1 below details the results of the inventory for 180 Kanata Avenue:

Table 1. Overstory inventory results for 180 Kanata Avenue

Tree species	**Average Diameter(cm)** [1]	**Percent occupancy**[2]
Ironwood *(Ostrya virginiana)*	13.6	54
Sugar maple *(Acer saccharum)*	18.7	16
Black cherry *(Prunus serotina)*	17.6	5
Ash *(Fraxinus* spp.) (dead)	15.6	3
Basswood *(Tilia americana)*	19.9	3
Bitternut hickory *(Carya cordiformis)*	23.1	3
Black maple *(Acer nigrum)*	33.7	3
Red maple *(Acer rubrum)*	20.7	3
White pine *(Pinus strobus)*	52.6	3
American elm *(Ulmus americana)*	20.3	1
American elm (dead)	18.6	1
Bur oak *(Quercus macrocarpa)*	29.6	1
Butternut *(Juglans cinerea)*	10.1	1
Poplar species *(Populus* spp.*)*	23.3	1
Red oak *(Quercus rubra)*	17.0	1
White birch *(Betula papyrifera)*	17.8	1

[1] diameter at breast height, or 1.3m from grade; [2] by stem count (round to the nearest whole number)

The understory, typically trees of less than 10cm diameter, consists primarily of shade tolerant species found in the overstory - especially ironwood and sugar maple. Other smaller growing tree and shrub species are present as well: serviceberry, staghorn sumac *(Rhus typhina)* and dogwood species *(Cornus* spp.*)*. These species have been able to successfully regenerate along the southern stand edge due to the lack of shading from a consistent overstory canopy.

Typical vegetative conditions on the subject property are shown in Pictures 1 through 5 on pages 5, 6, 7 and 8 of this report.

TREE INVENTORY – CITY LANEWAY

In February 2022 a high-level inventory of overstory trees within the proposed laneway on City property east of the development (see plan included on page 15 of this report). This was performed at the request of City staff in order to broadly quantify the amount of tree loss due to road construction.

The species composition was found to consist of 39% ironwood, 16% sugar/black maple, 10% poplar species, 8% ash species, 6% American elm, 6% basswood, 5% bur oak, 3% white cedar, 2% white pine, 1% white spruce, 1% black cherry, 1% bitternut hickory, 1% balsam fir *(Abies balsamifera)* and 1% butternut. Table 2 below details the number of trees found in the laneway per size class.

Table 2. Overstory inventory results within City Laneway

Size Class (DBH)	Tree Count[1]
10-20cm	60
21-30cm	20
31-40cm	1
41-50cm	3
>50cm	3

[1]by stem count

ENDANGERED SPECIES

A total of twelve butternuts *(Juglans cinerea)* were found on or within 50m of the subject property (see plan on page 15). This tree species is listed as endangered under the Province of Ontario's Endangered Species Act (2007) and so is protected from harm. Through the completion of a butternut health assessment all twelve trees were determined to be Category 1 (*i.e.* non-retainable). This assessment was sent to the Ontario Ministry of Environment, Conservation and Parks in June 2021.

TREE CONSERVATION

Given the layout of the proposed development and parking below grade, and the relatively small area of the subject property, there are very limited opportunities for the conservation of existing trees. In particular, the need for substantial grade changes (via blasting due to the presence of extensive rock) precludes large scale tree conservation. Instead, tree retention will be limited to the margins of the property – specifically, along the northern and western property lines (see plan on page 15).

Picture 1. Typical over- and understory conditions at 180 Kanata Avenue property (looking southeastward)

Picture 2. Typical over- and understory conditions at 180 Kanata Avenue property (looking northeastward)

Picture 3. Recently dead veteran white spruce at 180 Kanata Avenue property

Picture 4. Living veteran white pine tree at 180 Kanata Avenue property (notice canopy opening beneath living crown of pine)

Picture 5. Standing dead veteran white pine tree at 180 Kanata Avenue property (notice closed canopy above broken stem).

In this particular situation the need to drastically lower grades over much of the property will have a disproportionate impact on mature trees. In dense groupings mature trees develop far spreading root systems and living crowns held high proportionate to their total height. These growth patterns are the result of intense intercompetition between trees for sunlight, soil moisture and nutrients. On development sites these growth characteristics leave mature trees prone to root loss and vulnerable to the edge effect described earlier. Consequently, smaller trees, especially those under 20cm, will have a greater chance of survival following development. These trees will suffer less root loss and being generally more vigourous will be better able to adapt to their new environment, including altered soil moisture regimes. Mature trees will instead have to expand much energy reacting to very different growing conditions, often unsuccessfully, leading to their decline and death.

The presence of dying and dead mature trees at the perimeter of the property, aside from being an eyesore, will also be a factor in worker health and safety. It is a known fact that edge trees are also often destabilized. With this in mind, the preserved areas should be managed in such as way as to remove mature trees in proximity to the forest edge. As the distance increases from the edge so should the average diameter of the retained trees. Allowing limited sun and wind to enter the newly exposed edges will better help the remaining trees to adapt.

Prior to all clearing activates the property lines must be well marked. It is important that trees fully on adjacent public property be preserved and not harmed in any way.

LANDSCAPING/REFORESTATION PLANTING

Within retained buffers and in areas where treed buffers cannot be retained, consideration should be given to planting new trees as landscaping/reforestation elements. These plantings should emphasize the use of native coniferous trees in order to provide year round buffering to the exposed forest edge. Specifically, white spruce, white pine and white cedar should be used. Further into the forest the same species, along with red and bur oak, should be proposed for planting in the partially closed canopy conditions. In areas where soil depths are too limited for the use of caliper trees, bare root staghorn sumac *(Rhys typhina)* can be planted to prevent soil loss and provide seasonal buffering at the edges.

TREE PRESERVATION AND PROTECTION MEASURES

Preservation and protection measures intended to mitigate damage during construction will be applied for the forest edges to be retained on the perimeter of the subject property. The following measures are the recommended to help ensure edge tree survival during and following construction:

1. Erect a fence as close as possible to the retained trees; in this instance the fencing used should as tall as possible, self-standing and have an opaque screen so as to limit direct sunlight reaching the tree stems.
2. When trees to be removed overlap with the critical rooting zone (CRZ[1]) of trees to be retained, cut roots at the edge of the CRZ and grind down stumps after tree removal.
3. Do not pull out stumps. Ensure there is not root pulling or disturbance of the ground within the CRZ.

4. Any exposed roots 20mm or larger should cleanly cut at right angles to reduce the area of wounding. Clean, sharp by-pass loppers are preferred for this work; chainsaws can be used for larger roots.

[1] The critical root zone (CRZ) is established as being 10 centimetres from the trunk of a tree for every centimetre of trunk diameter at breast height (DBH). The CRZ is calculated as DBH x 10 cm.

BLASTING IMPACTS

Blasting will be necessary to remove bedrock as grades are dropped throughout the site. If not done carefully this work will have far-reaching consequences for retained trees as their root-soil interfaces will likely be disturbed by vibrations travelling through the substrate. It is these intimate interfaces which allow for the absorption of moisture and nutrients from the soil. To this end a survey of trees on City property within the vicinity of the shared western and northern property lines was undertaken. All trees 10cm and greater in diameter were located (via GPS) and assessed for health (poor/fair/good). A total of 132 such trees were found. Table 3 below details the findings of the survey and the aerial plan on page 16 shows locations and species of trees surveyed on City property.

Table 3. Inventory results for City property adjacent to 180 Kanata Avenue

ID	UTM NAD 83	SPECIES	DBH (cm)							HEALTH
1	18 T 428672 5018051	Ironwood	15							Good
2	18 T 428671 5018051	Ironwood	19							Good
3	18 T 428669 5018053	Ironwood	14							Good
4	18 T 428671 5018055	Ironwood	14							Good
5	18 T 428670 5018056	Ironwood	11							Good
6	18 T 428669 5018055	Ironwood	11							Good
7	18 T 428671 5018058	Ironwood	10							Good
8	18 T 428673 5018058	Ironwood	12							Good
9	18 T 428674 5018059	Ironwood	14							Good
10	18 T 428676 5018059	Ironwood	13							Good
11	18 T 428674 5018060	Ironwood	12							Good
12	18 T 428673 5018060	Ironwood	14							Good
13	18 T 428669 5018066	Ironwood	29							Good
14	18 T 428668 5018068	Bitternut Hickory	29							Good
15	18 T 428672 5018067	Bitternut Hickory	11							Good
16	18 T 428673 5018069	Sugar Maple	15							Good
17	18 T 428669 5018070	American Elm	10							Good
18	18 T 428675 5018070	White Ash	11							Dead
19	18 T 428676 5018070	Bitternut Hickory	12							Good
20	18 T 428674 5018073	Basswood	15							Good
21	18 T 428671 5018074	Basswood	16							Good
22	18 T 428668 5018071	Bitternut Hickory	12							Good
23	18 T 428670 5018075	Bitternut Hickory	16							Good
24	18 T 428671 5018074	Bitternut Hickory	10							Good
25	18 T 428675 5018076	Bitternut Hickory	10							Good

ID	UTM NAD 83	SPECIES	DBH (cm)							HEALTH
26	18 T 428677 5018076	Bitternut Hickory	13							Good
27	18 T 428678 5018076	Bitternut Hickory	16							Good
28	18 T 428677 5018078	Basswood	28							Good
29	18 T 428675 5018080	Black Maple	12							Good
30	18 T 428674 5018081	Basswood	12							Good
31	18 T 428671 5018078	Basswood	11							Good
32	18 T 428672 5018078	White Ash	22							Dead
33	18 T 428671 5018082	Black Maple	11							Good
34	18 T 428672 5018086	Ironwood	19							Good
35	18 T 428678 5018087	American Elm	12							Good
36	18 T 428682 5018086	Ironwood	17							Good
37	18 T 428681 5018087	Bitternut Hickory	16							Good
38	18 T 428677 5018090	American Elm	14							Fair
39	18 T 428676 5018094	Bitternut Hickory	16							Good
40	18 T 428679 5018095	Bitternut Hickory	15							Good
41	18 T 428680 5018096	Bitternut Hickory	11							Good
42	18 T 428673 5018094	Bitternut Hickory	34							Good
43	18 T 428679 5018101	Bitternut Hickory	10							Good
44	18 T 428675 5018103	Bitternut Hickory	10							Good
45	18 T 428672 5018109	Ironwood	17							Good
46	18 T 428674 5018109	Black Cherry	20							Good
47	18 T 428672 5018109	White Pine	30							Good
48	18 T 428674 5018110	Black Maple	15							Good
49	18 T 428674 5018113	Sugar Maple	10							Good
50	18 T 428677 5018113	Bitternut Hickory	15							Good
51	18 T 428678 5018113	Ironwood	12							Good
52	18 T 428673 5018113	Bitternut Hickory	13	11						Good
53	18 T 428680 5018116	Ironwood	10							Good
54	18 T 428684 5018116	Bitternut Hickory	11							Good
55	18 T 428686 5018117	American Elm	32							Dead
56	18 T 428694 5018112	Basswood	23	17	6	4	6	11	3	Good
57	18 T 428697 5018118	White Pine	31							Good
58	18 T 428701 5018111	Bitternut Hickory	21							Good
59	18 T 428707 5018111	Bitternut Hickory	16							Good
60	18 T 428709 5018109	Sugar/Black Maple	16							Good
61	18 T 428709 5018107	Ironwood	16							Good
62	18 T 428709 5018113	White Ash	26							Dead
63	18 T 428713 5018117	Sugar/Black Maple	20							Good
64	18 T 428715 5018117	Sugar/Black Maple	20							Good
65	18 T 428713 5018120	Sugar/Black Maple	10							Good

ID	UTM NAD 83	SPECIES	DBH (cm)							HEALTH
66	18 T 428712 5018122	Sugar/Black Maple	15							Good
67	18 T 428719 5018119	Sugar/Black Maple	13							Good
68	18 T 428718 5018108	Sugar/Black Maple	10							Good
69	18 T 428742 5018109	Red Cedar	15							Good
70	18 T 428768 5018120	Basswood	19							Good
71	18 T 428769 5018120	Ironwood	10							Good
72	18 T 428770 5018121	Ironwood	19							Good
73	18 T 428771 5018120	Ironwood	11							Good
74	18 T 428769 5018115	White Ash	11							Dead
75	18 T 428777 5018121	Black Maple	10							Good
76	18 T 428778 5018123	Ironwood	21							Good
77	18 T 428777 5018123	Ironwood	13							Good
78	18 T 428778 5018120	Ironwood	12							Good
79	18 T 428778 5018119	Bitternut Hickory	17							Good
80	18 T 428780 5018116	Ironwood	22							Good
81	18 T 428783 5018116	Ironwood	10							Good
82	18 T 428781 5018121	Ironwood	13							Good
83	18 T 428780 5018124	Ironwood	16							Good
84	18 T 428779 5018123	Ironwood	10							Good
85	18 T 428781 5018122	Ironwood	10							Good
86	18 T 428783 5018119	Ironwood	13							Good
87	18 T 428784 5018122	Ironwood	13							Good
88	18 T 428783 5018123	Ironwood	13							Good
89	18 T 428784 5018124	Ironwood	10							Good
90	18 T 428787 5018125	Ironwood	12							Good
91	18 T 428785 5018127	Ironwood	11							Good
92	18 T 428783 5018127	Ironwood	17							Good
93	18 T 428788 5018126	Ironwood	10							Good
94	18 T 428789 5018125	Ironwood	11							Good
95	18 T 428792 5018123	Ironwood	11							Good
96	18 T 428793 5018124	Ironwood	11							Good
97	18 T 428793 5018121	Ironwood	11	12						Good
98	18 T 428788 5018120	Ironwood	11							Good
99	18 T 428793 5018126	Ironwood	10							Good
100	18 T 428792 5018125	Ironwood	13							Good
101	18 T 428792 5018128	Ironwood	14							Good
102	18 T 428795 5018125	White Pine	17							Good
103	18 T 428797 5018120	Ironwood	13							Good
104	18 T 428796 5018121	American Elm	11							Dead
105	18 T 428797 5018128	Bitternut Hickory	36							Good

ID	UTM NAD 83	SPECIES	DBH (cm)							HEALTH
106	18 T 428800 5018120	American Elm	11							Good
107	18 T 428801 5018121	American Elm	11							Good
108	18 T 428804 5018130	Ironwood	16							Good
109	18 T 428805 5018130	Ironwood	17							Fair
110	18 T 428809 5018129	Ironwood	18							Good
111	18 T 428810 5018125	Ironwood	11							Good
112	18 T 428809 5018123	Ironwood	16							Good
113	18 T 428812 5018127	Ironwood	21							Good
114	18 T 428815 5018124	White Spruce	15							Good
115	18 T 428817 5018124	White Spruce	23							Good
116	18 T 428819 5018121	Ironwood	11							Good
117	18 T 428818 5018121	Sugar/Black Maple	24							Good
118	18 T 428815 5018119	Ironwood	10							Good
119	18 T 428815 5018116	Ironwood	19							Good
120	18 T 428817 5018115	White Cedar	12							Poor
121	18 T 428818 5018115	Ironwood	20							Good
122	18 T 428823 5018117	Ironwood	10							Good
123	18 T 428826 5018124	Black Cherry	45							Good
124	18 T 428826 5018124	Black Cherry	54							Good
125	18 T 428819 5018129	Ironwood	16							Good
126	18 T 428817 5018128	Sugar/Black Maple	15							Good
127	18 T 428821 5018118	Bitternut Hickory	29							Good
128	18 T 428823 5018115	American Elm	18							Good
129	18 T 428830 5018120	Ironwood	13							Good
130	18 T 428830 5018121	Ironwood	10							Good
131	18 T 428830 5018124	Ironwood	10							Good
132	18 T 428816 5018119	Black Cherry	56							Good

BLASTING MITIGATION

In order to help mitigate damage from blasting the following specifications should be followed:

1. Prior to blasting the soil within any nearby trees' CRZs should be soaked with water to help increase the cohesiveness of the soil matrix;
2. Prior to blasting the bedrock must be pre-sheared to create a fissure between the CRZs to be protected and the blasting work. This is achieved by drilling closely spaced holes and using 'Primeaflex' as the explosive product. Pre-shearing will reduce the likelihood of fractures and reverberations traveling into the CRZ.

3. During blasting only dynamite should be used as the explosive product. Since dynamite is oxygen-balanced as well as waterproof it will completely burn off, leaving only CO^2 as the by-product of the explosion. An incomplete burn will produce unburnt gases which are toxic to tree roots.

I trust this report satisfies your requirements. Please do not hesitate to contact the undersigned with any questions or comments you may have.

This report is subject to the attached Limitations of Tree Assessments and Liability to which the reader's attention is directed.

Yours,

Andrew K. Boyd, B.Sc.F, R.P.F. (#1828)
Certified Arborist #ON-0496A and TRAQualified
Consulting Urban Forester

IFS ASSOCIATES

GENERAL NOTES

Maxar, Microsoft

LEGEND

- SUBJECT LANDS
- BUTTERNUT SURVEY
- CATEGORY 1 BUTTERNUT
- LINE OF TREE PRESERVATION
- NEW ROADWAY

N

0 5 10 20 Meters

DRAWING: Locations of Butternut

PROJECT: 180 KANATA AVENUE
CITY OF OTTAWA

IFS ASSOCIATES
613-838-5717

SCALE:	1:394
DATE:	2021-11-24
DRAWN BY:	SS
SHEET NO.	1

DRAWING NO. 180K

GENERAL NOTES

Maxar, Microsoft

LEGEND

- TREE SURVEY AREA
- American Basswood
- American Elm
- Bitternut Hickory
- Black Cherry
- Black Maple
- Ironwood
- Red Cedar
- Sugar Maple
- Sugar/Black Maple
- White Ash
- White Cedar
- White Pine
- White Spruce

0 5 10 Meters

N

DRAWING: Distinctive Trees on or Near City Lands

PROJECT: 180 KANATA AVENUE CITY OF OTTAWA

IFS ASSOCIATES
613-838-5717

SCALE:	1:273
DATE:	2022-02-10
DRAWN BY:	SS
SHEET NO.	1

DRAWING NO.: 180K

LIMITATIONS OF TREE ASSESSMENTS & LIABILITY

GENERAL

It is the policy of *IFS Associates Inc.* to attach the following clause regarding limitations. We do this to ensure that our clients are clearly aware of what is technically and professionally realistic in assessing trees for retention.

This report was carried out by *IFS Associates Inc.* at the request of the client. The information, interpretation and analysis expressed in this report are for the sole benefit and exclusive use of the client. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the client to whom it is addressed. Unless otherwise required by law, neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through public relations, news or other media, without the prior expressly written consent of the author, and especially as to value conclusions, identity of the author, or any reference to any professional society or institute or to any initialed designation conferred upon the author as stated in his qualifications.

This report and any values expressed herein represent the opinion of the author; his fee is in no way contingent upon the reporting of a specified value, a stipulated result, nor upon any finding to be reported. Details obtained from photographs, sketches, *etc.*, are intended as visual aids and are not to scale. They should not be construed as engineering reports or surveys. Although every effort has been made to ensure that this assessment is reasonably accurate, the tree(s) should be reassessed at least annually. The assessment presented in this report is valid at the time of the inspection only. The loss or alteration of any part of this report invalidates the entire report.

LIMITATIONS

The information contained in this report covers only the tree(s) in question and no others. It reflects the condition of the assessed tree(s) at the time of inspection and was limited to a visual examination of the accessible portions only. *IFS Associates Inc.* has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the forestry and arboricultural professions, subject to the time limits and physical constraints applicable to this report. The assessment of the tree(s) presented in this report has been made using accepted arboricultural techniques. These include a visual examination of the above-ground portions of each tree for structural defects, scars, cracks, cavities, external indications of decay such as fungal fruiting bodies, evidence of insect infestations, discoloured foliage, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the proximity of people and property. Except where specifically noted in the report, the tree(s) examined were not dissected, cored, probed or climbed to gain further evidence of their structural condition. Also, unless otherwise noted, no detailed root collar examinations involving excavation were undertaken.

While reasonable efforts have been made to ensure that the tree(s) proposed for retention are healthy, no warranty or guarantee, expressed or implied, are offered that these trees, or any parts of them, will remain standing. This includes other trees on or off the property not examined as part of this assignment. It is both professionally and practically impossible to predict with absolute certainty the behaviour of any single tree or groups of trees or their component parts in all circumstances, especially when within construction zones. Inevitably, a standing tree will always pose some risk. Most trees have the potential for failure in the event of root loss due to excavation and other construction-related impacts. This risk can only be eliminated through full tree removal.

Notwithstanding the recommendations and conclusions made in this report, it must be realized that trees are living organisms, and their health and vigour constantly change over time. They are not immune to changes in site conditions, or seasonal variations in the weather. It is a condition of this report that *IFS Associates Inc.* be notified of any changes in tree condition and be provided an opportunity to review or revise the recommendations within this report. Recognition of changes to a tree's condition requires expertise and extensive experience. It is recommended that *IFS Associates Inc.* be employed to re-inspect the tree(s) with sufficient frequency to detect if conditions have changed significantly.

ASSUMPTIONS

Statements made to *IFS Associates Inc.* in regards to the condition, history and location of the tree(s) are assumed to be correct. Unless indicated otherwise, all trees under investigation in this report are assumed to be on the client's property. A recent survey prepared by a Licensed Ontario Land Surveyor showing all relevant trees, both on and adjacent to the subject property, will be provided prior to the start of field work. The final version of the grading plan for the project will be provided prior to completion of the report. Any further changes to this plan invalidate the report on which it is based. *IFS Associates Inc.* must be provided the opportunity to revise the report in relation to any significant changes to the grading plan. The procurement of said survey and grading plan, and the costs associated with them both, are the responsibility of the client, not *IFS Associates Inc.*

LIABILITY

Without limiting the foregoing, no liability is assumed by *IFS Associates Inc.* for: 1) any legal description provided with respect to the property; 2) issues of title and/or ownership with respect to the property; 3) the accuracy of the property line locations or boundaries with respect to the property; 4) the accuracy of any other information provided by the client or third parties; 5) any consequential loss, injury or damages suffered by the client or any third parties, including but not limited to replacement costs, loss of use, earnings and business interruption; and, 6) the unauthorized distribution of the report.

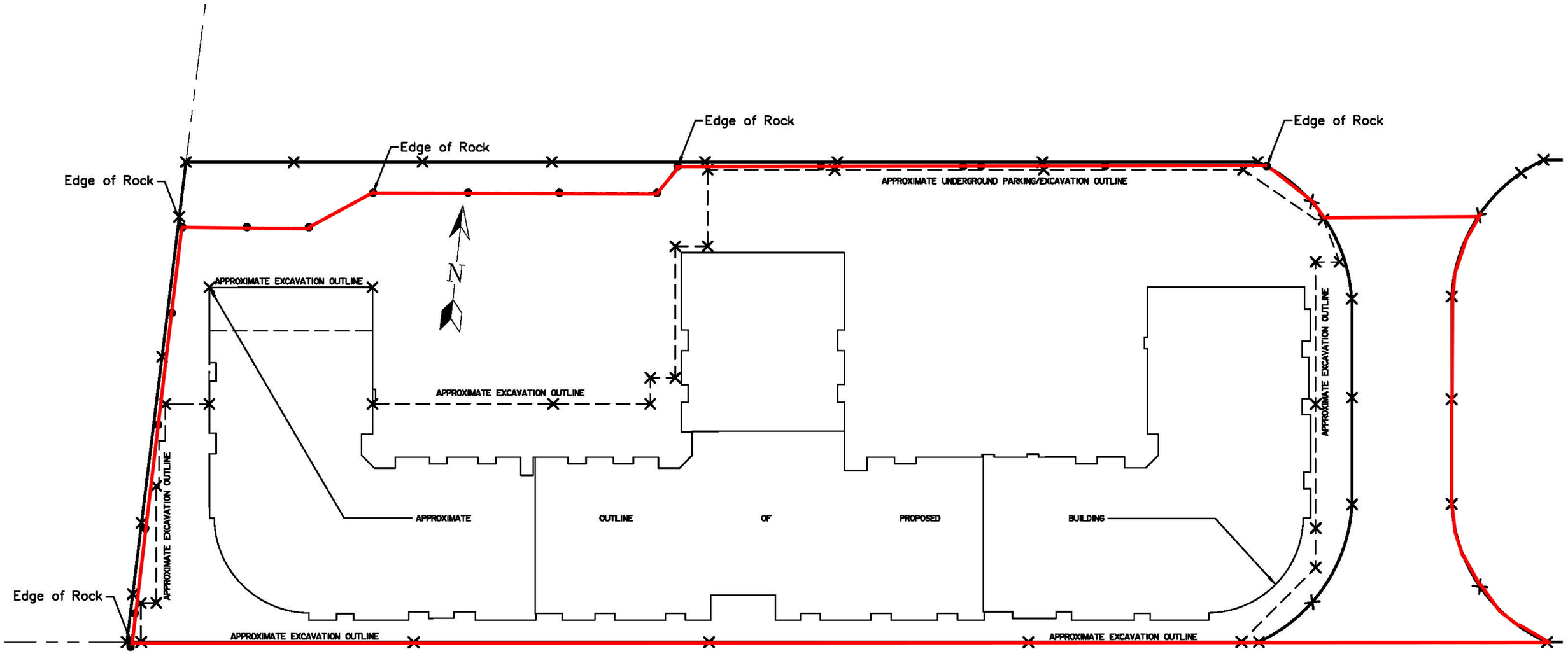
INDEMNIFICATION

An applicant for a permit or other approval based on this report shall agree to indemnify and save harmless *IFS Associates Inc.* from any and all claims, demands, causes of action, losses, costs or damages that affected private landowners and/or the City of Ottawa may suffer, incur or be liable for resulting from the issuance of a permit or approval based on this report or from the performance or non-performance of the applicant, whether with or without negligence on the part of the applicant, or the applicant's employees, directors, contractors and agents.

Further, under no circumstances may any claims be initiated or commenced by the applicant against *IFS Associates Inc.* or any of its directors, officers, employees, contractors, agents or assessors, in contract or in tort, more than 12 months after the date of this report.

ONGOING SERVICES

IFS Associates Inc. accepts no responsibility for the implementation of any or all parts of the report, unless specifically requested to supervise the implementation or examine the results of activates recommended herein. In the event that examination or supervision is requested, that request shall be made in writing and the details, including fees, agreed to in advance.



KANATA AVENUE