



Talbot Mackenzie & Associates

Consulting Arborists

**310-338 Michigan St and
333 Superior St, Victoria**
Construction Impact Assessment &
Tree Preservation Plan

Prepared For: de Hoog & Kierulf architects
977 Fort St
Victoria, BC
V8V 3K3

Prepared By: Talbot, Mackenzie & Associates

Noah Borges
ISA Certified # PN-8409A
TRAQ – Qualified

Date of Issuance: January 22, 2020
Updated: February 4, 2020
Updated: February 13, 2020

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6
Ph: (250) 479-8733
Fax: (250) 479-7050
Email: tmtreehelp@gmail.com



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Jobsite Property: 310-338 Michigan St and 333 Superior St, Victoria, BC

Date of Site Visits: January 16, 2020

Site Conditions: No ongoing construction activity.

Summary:

- 72 trees will have to be removed as a result of the proposed development, 2 of which are bylaw protected.
- Based on discussions with the landscape architects, it is our understanding that excavation for construction of the walkways and main entranceway can be minimized where required and that these features will be constructed overtop the root systems of municipal trees #836-844 to mitigate health impacts. Any excavation within their critical root zones (CRZs) should be supervised by the project arborist. Less invasive excavation methods (e.g. hydro-vac in combination with hand-digging) is recommended for select service installations. If our recommendations are followed, we do not anticipate the health of these trees will be significantly impacted.
- Any excavation for the proposed walkway along the northeast property line within the CRZs of neighbours' trees #845-847, 849-851, 853, 848, and NT2 should be supervised by the project arborist. Based on discussions with the landscape architect, the walkway will be constructed overtop the trees' root systems. The stumps of some of the trees on the subject property will also have to be left in place or routed to grade to avoid root damage.

Scope of Assignment:

- Inventory the existing bylaw protected trees and any trees on municipal or neighbouring properties that could potentially be impacted by construction or that are within three metres of the property line
- Review the proposal to demolish three of the existing four buildings, demolish and reconstruct a portion of the existing underground parkade, and construct two new four storey buildings
- Comment on how construction activity may impact existing trees
- Prepare a tree retention and construction damage mitigation plan for those trees deemed suitable to retain given the proposed impacts

Methodology:

- We visually examined the trees on the property and prepared an inventory in the attached Tree Resource Spreadsheet.

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- All trees (including non-bylaw protected trees) on the subject property were identified using a numeric metal tag attached to its lower trunk. Most of the trees on the property, as well as some trees on municipal and neighbouring properties had been previously tagged. Where municipal trees and neighbours' trees were not previously tagged, they were assigned an identification number with the prefix, "NT" (No Tag).
- Information such as tree species, DBH (1.4m), crown spread, critical root zone (CRZ), health, structure, and relative tolerance to construction impacts were included in the inventory.
- The conclusions reached were based on the information provided within the attached site and building plans from de Hoog & Kierulf architects (dated November 2019), site servicing plan from Gwaii Engineering (dated December 2019), and landscape plan from LADR Landscape Architects (updated February 3, 2019).

Limitations:

- No exploratory excavations have been conducted and thus the conclusions reached are based solely on critical root zone calculations and our best judgement using our experience and expertise. The location, size and density of roots are often difficult to predict without exploratory excavations and therefore the impacts to the trees may be more or less severe than we anticipate.
- Where trees were not surveyed on the plans provided, we have added their approximate locations. The accuracy of our estimated locations has not been verified by a professional surveyor.

Summary of Tree Resource: 112 trees were included in the inventory. There is a row of mostly native species growing along the northwest and northeast property lines; the remaining trees on the property are predominantly ornamental species. There are mature cherry and birch trees on the Michigan St boulevard.

2 of the 112 trees are by-law protected. Based on comments received from Victoria Parks, this proposal falls under Tree Preservation Bylaw No. 05-106 (consolidated June 1, 2015), since the permit application was received prior to October 24, 2019.

Trees to be Removed: The following 72 trees will likely have to be removed as a result of the proposed construction. 2 of these 72 trees are bylaw protected.

- **Lawson Cypress #195 (148cm at base):** This bylaw protected tree is growing approximately 5m from the existing building ("A") and 1-1.5m from the existing underground parkade wall, which will be retained. The proposed building is approximately 3m from the base of the tree and the patio areas outside the building are 1-1.5m from the tree. Assuming that excavation will be required 1m outside the proposed building footprint, we anticipate that all roots will need to be cut 2m from the base of this tree in the north quadrant of its CRZ (we have not completed an exploratory excavation). Depending on the final grade of the patio and whether excavation is required down to bearing soil, excavation may occur as near as 0.5-1m from the tree. Given the size of the tree, the proximity of the cut, and that this species typically exhibits very poor tolerance to root loss and is highly susceptible to root rot caused by the fungus-like

plant pathogen *Phytophthora lateralis*, we anticipate its health will likely decline as a result of the required excavation. It may also be destabilized, as large roots are likely to be encountered in this area. Therefore, we recommend it be removed.

- **Hawthorn #283 (22cm DBH):** This tree is in the location of a proposed metre for a fire department connection (see “Services” section below). This tree is not bylaw protected.
- **Trees #762-792:** Based on the attached landscape plan, these trees will be removed and a new hedgerow of columnar hornbeam trees will be planted in their place. Only Western Red Cedar #782 is bylaw protected. We recommend that the stumps of these trees be left in place or routed to grade where they are located within the CRZs of the neighbour’s trees, which will be retained. Trees #773 and 777 are likely shared with the neighbour. The neighbour must approve before these trees are removed, or be notified of the potential impacts if they do not approve of the removal of the trees.
- **Trees #794-797:** Based on the attached landscape plans, these trees will be removed for construction of a new walkway and stairway. None of these trees are bylaw protected.
- **Trees #799 and 801-834:** These trees are within or immediately adjacent to the footprint of the new buildings, patios, walkways, or will be impacted by the reconstruction of the underground parkade. None of these trees are bylaw protected.

Potential Impacts on Trees to be Retained and Mitigation Measures

- **Austrian Pine #793 (51cm DBH):** Based on the attached plans, it appears the existing walkway adjacent to this tree and the stairway to the southwest will remain in place. A new walkway will be constructed 3m away. We anticipate small roots from this tree may be encountered if excavation is required down to bearing soil in this area but do not anticipate the health or structure of this tree will be impacted. We recommend the project arborist supervise any excavation within the CRZ of this tree and prune back any roots encountered to sound tissue. Depending on the number and size of roots encountered, the arborist may recommend the depth of excavation be minimized and the walkway constructed above the roots. Barrier fencing should be erected as indicated on the attached site survey.
- **Neighbour’s Hawthorn #835 (29cm DBH):** This tree is approximately 3m from the fence. The attached plans indicate the southeast portion of the underground parkade will be removed and reconstructed. We anticipate excavation will occur up to the property line (up to the edge of the tree’s CRZ). Small roots from this tree are likely to be encountered, but we do not anticipate its health or structural stability will be significantly impacted. We recommend the project arborist prune back any roots encountered to sound tissue and the neighbour notified of the potential impacts to their tree.
- **Municipal trees #836-844:** These trees have the potential to be impacted during excavation for construction of the building, patios, walkways, main entranceway, other landscaping work, and the installation of underground service connections and kiosks/transformers (see “Services” section below). The buildings are, at the nearest 5.5m from the municipal property

line. The patios outside the buildings will encroach an additional 2m towards the trees (at the nearest, about 6.5m away from the trees). Concrete walkways are proposed to be constructed up to the existing sidewalk. The trees are approximately 2.5m southwest from the property line on the municipal boulevard.

We recommend any excavation that occurs within the CRZs of these trees be supervised by the project arborist. An effort should be made to minimize the extent of excavation outside the building and patio footprints towards the trees to minimize health impacts. We do not anticipate the health of the trees will be impacted if excavation is limited to 1m outside the patio footprints. We recommend one of the methods in the “Minimizing Soil Compaction” section be used over the lawn areas north of the sidewalk if construction equipment or materials are to be operated in these areas during the demolition or construction phase.

Based on discussions with the landscape architect, it is our understanding that the walkways and main entranceway between the two buildings will be constructed overtop the root systems of the municipal trees. We recommend a geotextile fabric/grid layer, such as CombiGrid 30/30 be installed above the tree roots, and the base layers and surfacing materials installed overtop (see “Paved Surfaces Above Tree Roots” section below). The attached landscape plan indicates the entranceway will be surfaced using sawcut concrete. As concrete washout can be damaging to tree roots, we further recommend the washout be directed northward, away from the base of the trees. We have recommended permeable pavers be used to surface the entranceway, rather than sawcut concrete (it is our understanding that permeable pavers would be cost-prohibitive for this project). We do not anticipate any of the municipal trees will be significantly impacted by the proposed construction. Less than one-quarter of the root system of Cherry #840 will be covered by an impermeable surface, but its root system will predominantly be undisturbed. If the above recommendations are followed, we anticipate this tree will incur, at most, minor health impacts.

Trees #836 and #837 are also likely to be further impacted by the excavation required to remove and reconstruct the southeast portion of the underground parkade. Depending on the extent of excavation required to remove and reconstruct the southeast portion of the parkade, trees #836 and #837 may incur health impacts. If excavation can be limited to 2-3m outside the parkade footprint, we anticipate the health impacts will be minor. Any roots encountered from building, patio, or parkade construction should be pruned back to sound tissue at the edge of excavation by the project arborist to encourage rapid wound compartmentalization and new root growth.

- **Neighbour’s trees #845-847, 849-851, 853, 848 and NT2:** A new walkway will be constructed along the northeast property line adjacent to these trees. Based on discussions with the landscape architect, excavation within the walkway footprint can be minimized and the walkway constructed overtop the any critical roots that are encountered from the neighbour’s trees. Where the stumps of the trees to be removed on the subject property overlap with the CRZs of the neighbour’s trees, we recommend they be left in place or routed to grade, rather than removed, to avoid possible root damage. If the methods and materials recommended in the “Paved Surfaces Above Tree Roots” section below are used, we do not anticipate these trees will be impacted as a result of walkway construction.

Based on discussions with the applicant, it is our understanding that no excavation will be required outside the foundation walls to repair them. If perimeter drains outside the northeast side of the parkade wall need to be upgraded, we anticipate excavation will be minimal and that the trees will not be impacted given that this portion of the parkade is partially above existing grade. If any excavation occurs within the CRZs of these trees, the project arborist should be on site to supervise.

- **Neighbour's Plum Trees #NT7-9:** Based on discussions with the applicant, the existing retaining wall west of these trees will be left in place and not extended northward (an earlier iteration of the landscape plan indicated it may be extended). We do not anticipate these trees will be impacted.
- **Services:** The attached servicing plan indicates that water, storm, sewer, gas, and fire department laterals will be connected to mains underneath Michigan St. Existing water and sewer services will be capped and abandoned. Underground hydro connections will also be made, likely to poles on the south side of Michigan St. Two hydro kiosks/transformers are shown on the site plans (there is an existing transformer in the location northeast of the existing building to be retained off Superior St). Additional infrastructure may be required for rainwater management and hydro. We recommend the project arborist review these plans once available to review the potential impacts to trees to be retained.
 - **Water:** The existing and proposed laterals are between trees Cherry #842 and Birch #843. They are more than 9m from #843. The proposed water lateral is approximately 6m from #842, at the edge of the tree's CRZ. We recommend an arborist be on site to supervise any excavation within 6m of the tree and prune any roots back to sound tissue at the edge of excavation. We do not anticipate the health of either tree will be impacted.
 - **Storm:** The proposed storm lateral is 5m from Birch #843, just inside the tree's CRZ (6.0m). We anticipate small roots from this tree may be encountered. We recommend an arborist supervise any excavation within 6m of the tree and prune any roots back to sound tissue at the edge of excavation. We do not anticipate the health of the tree will be impacted.
 - **Sewer:** The proposed sewer lateral is 5m from Cherry #842 (within the tree's CRZ) and approximately 5.5m from Maple #841 (outside the tree's CRZ). Given that Cherry trees often have large roots that extend long distances, we anticipate roots larger than 3cm in diameter may be encountered. We recommend an arborist supervise any excavation within 6m of the tree and prune any roots back to sound tissue at the edge of excavation. If large roots are encountered, it may be necessary for the trench to be excavated using alternative excavation methods (e.g. a hydro-vac in combination with hand-digging). We do not anticipate the health of the tree will be impacted.
 - **Gas:** The proposed gas lateral is 4.5m from Cherry #840. We recommend an arborist supervise the excavation and that a hydro-vac be used to excavate the trench, in

combination with hand-digging. If these recommendations are followed, we do not anticipate the health of the tree will be impacted.

- **Fire Department:** This lateral is proposed to be installed directly underneath or adjacent to Maple #841 (the tree is not shown on the attached site servicing plan). We recommend the lateral be installed 3m from the base of the tree in either direction to avoid encountering roots. If the position of the lateral cannot be shifted, this tree may have to be removed.

Off Superior St, a second connection will be made, the attached plans show a second metre will be installed, approximately in the location of Hawthorn #283 (22cm DBH). We anticipate this tree will have to be removed (it is not bylaw protected). Assuming a connection will be made to the existing building, excavation will be required within the CRZ of Austrian Pine #282 (44, 40cm DBH). Any excavation within the CRZ of this tree should be completed under arborist supervision and alternative excavation methods may be required (e.g. hydro-vac).

- **Hydro:** The lateral is proposed to be installed between Cherry #836 and Birch #837, approximately 4.5m from both. As this is within the CRZs of both trees, we recommend the excavation be completed using a hydro-vac and that an arborist be on site to supervise the excavation. If these recommendations are followed, we do not anticipate the health of the tree will be impacted. If any additional excavation is required to install the kiosk/transformer at the south corner of the property, these trees, as well as the neighbour's Hawthorn tree (#835) may be impacted. We recommend that the project arborist supervise review the final site servicing plan once available.

- **Arborist Supervision:** All excavation occurring within the critical root zones of municipal and neighbours' trees, and any non-bylaw protected trees that the property owner wishes to retain, should be completed under supervision by the project arborist. This includes (but is not limited to) the following activities:
 - Any excavation within the CRZ of Austrian Pine #793 for construction of the walkway along the northeast property line
 - Any excavation within the CRZs of municipal trees #836-844 for construction of the building, patios, walkways, main entranceway, other landscaping work, and the installation of underground service connections and kiosks/transformers
 - Any excavation within the CRZs of neighbour's trees #845-847, 849-851, 853, 848 and NT2 for construction of the walkway along the northeast property line, as well as the removal of any stumps
- **Pruning Roots:** Any severed roots must be pruned back to sound tissue to reduce wound surface area and encourage rapid compartmentalization of the wound. Backfilling the excavated area around the roots should be done as soon as possible to keep the roots moist and aid in root regeneration. Exposed roots should be kept moist until the area is backfilled, especially if excavation occurs during a period of drought. This can be accomplished in a

number of ways, including wrapping the roots in burlap or installing a root curtain of wire mesh lined with burlap, and keeping the area moist throughout the construction process.

- **Barrier Fencing:** The areas surrounding the trees to be retained should be isolated from the construction activity by erecting protective barrier fencing. Where possible, the fencing should be erected at the perimeter of the critical root zones.

The barrier fencing must be a minimum of 4 feet in height, of solid frame construction that is attached to wooden or metal posts. A solid board or rail must run between the posts at the top and the bottom of the fencing. This solid frame can then be covered with plywood, or flexible snow fencing. The fencing must be erected prior to the start of any construction activity on site (i.e. demolition, excavation, construction), and remain in place through completion of the project. Signs should be posted around the protection zone to declare it off limits to all construction related activity. The project arborist must be consulted before this fencing is removed or moved for any purpose.

- **Minimizing Soil Compaction:** In areas where construction traffic must encroach into the critical root zones of trees to be retained, efforts must be made to reduce soil compaction where possible by displacing the weight of machinery and foot traffic. This can be achieved by one of the following methods:

- Installing a layer of hog fuel or coarse wood chips at least 20 cm in depth and maintaining it in good condition until construction is complete.
- Placing medium weight geotextile cloth over the area to be used and installing a layer of crushed rock to a depth of 15 cm over top.
- Placing two layers of 19mm plywood.
- Placing steel plates.

- **Demolition of the Existing Buildings:** The demolition of the existing house and any services that must be removed or abandoned, must take the critical root zone of the trees to be retained into account. If any excavation or machine access is required within the critical root zones of trees to be retained, it must be completed under the supervision and direction of the project arborist. If temporarily removed for demolition, barrier fencing must be erected immediately after the supervised demolition.

- **Paved Surfaces Above Tree Roots:**

If the new paved surfaces within the CRZs of trees to be retained require excavation down to bearing soil and roots are encountered in this area, their health or stability could be impacted. If tree retention is desired, a raised and permeable paved surface should be constructed in the areas within the critical root zone of the trees. The “paved surfaces above root systems” diagram and specifications is attached.

The objective is to avoid root loss and to instead raise the paved surface and its base layer above the roots. This may result in the grade of the paved surface being raised above the existing grade (the amount depending on how close roots are to the surface and the depth of

the paving material and base layers). Final grading plans should take this potential change into account. This may also result in soils which are high in organic content being left intact below the paved area.

To allow water to drain into the root systems below, we also recommend that the surface be made of a permeable material (instead of conventional asphalt or concrete) such as permeable asphalt, paving stones, or other porous paving materials and designs such as those utilized by Grasspave, Gravelpave, Grasscrete and open-grid systems.

- **Mulching:** Mulching can be an important proactive step in maintaining the health of trees and mitigating construction related impacts and overall stress. Mulch should be made from a natural material such as wood chips or bark pieces and be 5-8cm deep. No mulch should be touching the trunk of the tree. See “methods to avoid soil compaction” if the area is to have heavy traffic.
- **Scaffolding:** This assessment has not included impacts from potential scaffolding including canopy clearance pruning requirements. If scaffolding is necessary and this will require clearance pruning of retained trees, the project arborist should be consulted. Depending on the extent of pruning required, the project arborist may recommend that alternatives to full scaffolding be considered such as hydraulic lifts, ladders or platforms. Methods to avoid soil compaction may also be recommended (see “Minimizing Soil Compaction” section).
- **Landscaping and Irrigation Systems:** The planting of new trees and shrubs should not damage the roots of retained trees. The installation of any in-ground irrigation system must take into account the critical root zones of the trees to be retained. Prior to installation, we recommend the irrigation technician consult with the project arborist about the most suitable locations for the irrigation lines and how best to mitigate the impacts on the trees to be retained. This may require the project arborist supervise the excavations associated with installing the irrigation system. Excessive frequent irrigation and irrigation which wets the trunks of trees can have a detrimental impact on tree health and can lead to root and trunk decay.
- **Arborist Role:** It is the responsibility of the client or his/her representative to contact the project arborist for the purpose of:
 - Locating the barrier fencing
 - Reviewing the report with the project foreman or site supervisor
 - Locating work zones, where required
 - Supervising any excavation within the critical root zones of trees to be retained
 - Reviewing and advising of any pruning requirements for machine clearances
- **Review and Site Meeting:** Once the project receives approval, it is important that the project arborist meet with the principals involved in the project to review the information contained herein. It is also important that the arborist meet with the site foreman or supervisor before any site clearing, tree removal, demolition, or other construction activity occurs and to confirm the locations of the tree protection barrier fencing.

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Please do not hesitate to call us at (250) 479-8733 should you have any further questions.

Thank you,



Noah Borges
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Encl. 7-page tree resource spreadsheet; 1-page site survey, 29-page site, servicing, and landscape plans; 1-page "Paved Surfaces Above Tree Roots"; 1-page barrier fencing specifications; 2-page tree resource spreadsheet methodology and definitions

Disclosure Statement

The tree inventory attached to the Tree Preservation Plan can be characterized as a limited visual assessment from the ground and should not be interpreted as a "risk assessment" of the trees included.

Arborists are professionals who examine trees and use their training, knowledge and experience to recommend techniques and procedures that will improve their health and structure or to mitigate associated risks.

Trees are living organisms, whose health and structure change, and are influenced by age, continued growth, climate, weather conditions, and insect and disease pathogens. Indicators of structural weakness and disease are often hidden within the tree structure or beneath the ground. It is not possible for an Arborist to identify every flaw or condition that could result in failure or can he/she guarantee that the tree will remain healthy and free of risk.

Remedial care and mitigation measures recommended are based on the visible and detectable indicators present at the time of the examination and cannot be guaranteed to alleviate all symptoms or to mitigate all risk posed.

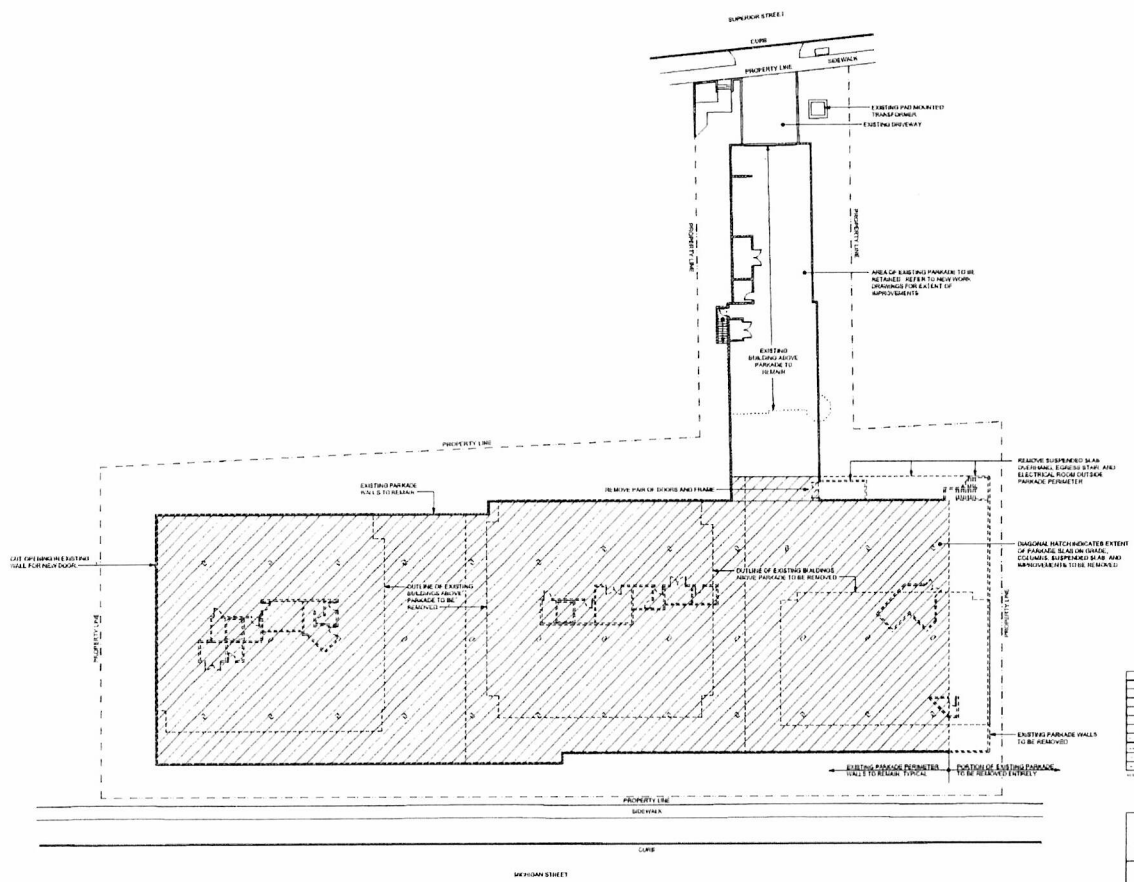
Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate * over ivy	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Location	Bylaw Protected	Retention Suitability	Retention Status	Reason for Removal
194	Japanese Maple	<i>Acer palmatum</i>	12, 9, 8, 7, 6, 4, 3, 3	5	2.5	Moderate	Good	Good		Subject property	N	Suitable	Retain	-
195	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	148 at base	12	12.0	Poor	Good	Fair	6 codominant stems, asymmetric crown due to building	Subject property	Y	Suitable	X	Building construction
196	Japanese Maple	<i>Acer palmatum</i>	10, 8	2	2.0	Moderate	Good	Fair	In planter	Subject property	N	Suitable	Retain	-
197	Japanese Maple	<i>Acer palmatum</i>	6, 5, 4, 4	2	1.5	Moderate	Good	Fair	In planter	Subject property	N	Suitable	Retain	-
198	Japanese Maple	<i>Acer palmatum</i>	10, 8, 7, 4	2	2.5	Moderate	Good	Fair	In planter	Subject property	N	Suitable	Retain	-
199	Japanese Maple	<i>Acer palmatum</i>	7, 7	2	1.5	Moderate	Good	Fair	In planter	Subject property	N	Suitable	Retain	-
282	Austrian Pine	<i>Pinus nigra</i>	44, 40	12	7.0	Good	Fair	Fair	Dieback, one stem leans over neighbour's property	Subject property	N	Suitable	Retain*	-
283	Hawthorn	<i>Crataegus spp.</i>	22	5	2.0	Good	Fair	Fair		Subject property	N	Suitable	X	Fire Department Connection
284	Hawthorn	<i>Crataegus spp.</i>	19	4	2.0	Good	Fair	Fair		Subject property	N	Suitable	Retain	-
285	Austrian Pine	<i>Pinus nigra</i>	53	8	5.5	Good	Fair	Fair	Codominant leaders	Subject property	N	Suitable	Retain	-
286	Maple	<i>Acer spp.</i>	13	2	1.5	Moderate	Fair	Fair		Subject property	N	Suitable	Retain	-
287	Magnolia	<i>Magnolia spp.</i>	8, 7	3	1.5	Moderate	Fair	Fair		Subject property	N	Suitable	Retain	-
288	Magnolia	<i>Magnolia spp.</i>	10, 7	3	1.5	Moderate	Fair	Fair		Subject property	N	Suitable	Retain	-
289	Magnolia	<i>Magnolia spp.</i>	13	4	1.5	Moderate	Good	Fair		Subject property	N	Suitable	Retain	-
290	Ash	<i>Fraxinus spp.</i>	34	5	4.0	Moderate	Fair	Fair	Codominant leaders	Subject property	N	Suitable	Retain	-
762	Douglas-fir	<i>Pseudotsuga menziesii</i>	39	7	6.0	Poor	Fair/poor	Fair	Dieback	Subject property	N	Suitable	X	Northeast walkway / landscaping
763	Norway Maple	<i>Acer platanoides</i>	13	4	1.5	Moderate	Good	Good		Subject property	N	Suitable	X	Northeast walkway / landscaping
764	Western Hemlock	<i>Tsuga heterophylla</i>	31	6	4.5	Poor	Fair	Good	Some dieback	Subject property	N	Suitable	X	Northeast walkway / landscaping
765	Western Hemlock	<i>Tsuga heterophylla</i>	23	5	3.5	Poor	Fair	Fair	Lower crown dieback, narrow crown due to competition	Subject property	N	Suitable	X	Northeast walkway / landscaping
766	Western Hemlock	<i>Tsuga heterophylla</i>	16	4	2.5	Poor	Fair	Fair	Dieback, suppressed	Subject property	N	Suitable	X	Northeast walkway / landscaping
767	Western Hemlock	<i>Tsuga heterophylla</i>	31	6	4.5	Poor	Fair	Good		Subject property	N	Suitable	X	Northeast walkway / landscaping
768	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	35	6	5.5	Poor	Fair	Good	Some dieback	Subject property	N	Suitable	X	Northeast walkway / landscaping
769	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	34	6	5.0	Poor	Good	Good		Subject property	N	Suitable	X	Northeast walkway / landscaping

Tree ID	Common Name	Latin Name	DBH (cm) -- approximate * over ivy	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Location	Bylaw Protected	Retention Suitability	Retention Status	Reason for Removal
770	Plum	<i>Prunus</i> spp.	12	3	1.5	Moderate	Poor	Poor	Heavily pruned, suppressed	Subject property	N	Not suitable	X	Northeast walkway / landscaping
771	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	22	4	3.5	Poor	Fair	Fair	Narrow crown due to competition	Subject property	N	Suitable	X	Northeast walkway / landscaping
772	Western Hemlock	<i>Tsuga heterophylla</i>	30	7	4.5	Poor	Fair	Good		Subject property	N	Suitable	X	Northeast walkway / landscaping
773	Hawthorn	<i>Crataegus</i> spp.	29*	4	3.0	Good	Fair	Fair	Shared tree, covered in ivy	Shared (with 415 Superior St)	N	Suitable	X	Northeast walkway / landscaping
774	Western Hemlock	<i>Tsuga heterophylla</i>	15	3	2.5	Poor	Fair	Fair	Asymmetric crown	Subject property	N	Suitable	X	Northeast walkway / landscaping
775	Japanese Maple	<i>Acer palmatum</i>	4, 4, 4, 5	2	1.0	Moderate	Good	Fair		Subject property	N	Suitable	X	Northeast walkway / landscaping
776	Japanese Maple	<i>Acer palmatum</i>	7, 6	2	1.5	Moderate	Good	Fair		Subject property	N	Suitable	X	Northeast walkway / landscaping
777	Norway Maple	<i>Acer platanoides</i>	21	5	2.5	Moderate	Good	Fair	Shared tree	Shared (with 415 Superior St)	N	Suitable	X	Northeast walkway / landscaping
778	Western Hemlock	<i>Tsuga heterophylla</i>	10	4	1.5	Poor	Fair	Good	Growing through crown of 779	Subject property	N	Suitable	X	Northeast walkway / landscaping
779	Plum	<i>Prunus</i> spp.	53	10	6.5	Moderate	Fair	Fair		Subject property	N	Suitable	X	Northeast walkway / landscaping
780	Western Hemlock	<i>Tsuga heterophylla</i>	4	2	0.5	Poor	Fair/poor	Poor		Subject property	N	Not suitable	X	Northeast walkway / landscaping
781	Western Hemlock	<i>Tsuga heterophylla</i>	5	2	1.0	Poor	Fair	Fair		Subject property	N	Suitable	X	Northeast walkway / landscaping
782	Western Red Cedar	<i>Thuja plicata</i>	55, 31	8	11.0	Poor	Good	Fair	Asymmetric crown due to building	Subject property	Y	Suitable	X	Northeast walkway / landscaping
783	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	42	4	6.5	Poor	Fair/poor	Fair	Dieback, sparse upper crown	Subject property	N	Suitable	X	Northeast walkway / landscaping
784	Western Hemlock	<i>Tsuga heterophylla</i>	11	4	1.5	Poor	Good	Fair	Asymmetric crown due to competition	Subject property	N	Suitable	X	Northeast walkway / landscaping
785	Serviceberry	<i>Amelanchier</i> spp.	4	2	0.5	Moderate	Fair	Fair	Possibly serviceberry, ID when leaves out	Subject property	N	Suitable	X	Northeast walkway / landscaping
786	Serviceberry	<i>Amelanchier</i> spp.	4, 2	2	0.5	Moderate	Fair	Fair	Possibly serviceberry, ID when leaves out	Subject property	N	Suitable	X	Northeast walkway / landscaping
787	Douglas-fir	<i>Pseudotsuga menziesii</i>	38	6	5.5	Poor	Fair	Good	Dieback	Subject property	N	Suitable	X	Northeast walkway / landscaping
788	Weeping Birch cultivar	<i>Betula pendula</i>	14	3	2.0	Poor	Good	Fair	Trunk covered in ivy	Subject property	N	Suitable	X	Northeast walkway / landscaping
789	Weeping Birch cultivar	<i>Betula pendula</i>	10	2	1.5	Poor	Good	Good		Subject property	N	Suitable	X	Northeast walkway / landscaping
790	Weeping Birch cultivar	<i>Betula pendula</i>	14	2	2.0	Poor	Good	Good		Subject property	N	Suitable	X	Northeast walkway / landscaping
791	Honeylocust	<i>Gleditsia triacanthos</i>	11	4	1.0	Good	Good	Fair		Subject property	N	Suitable	X	Northeast walkway / landscaping
792	Honeylocust	<i>Gleditsia triacanthos</i>	9	3	1.0	Good	Good	Fair		Subject property	N	Suitable	X	Northeast walkway / landscaping

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate * over ivy	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Location	Bylaw Protected	Retention Suitability	Retention Status	Reason for Removal
793	Austrian Pine	<i>Pinus nigra</i>	51	8	5.0	Good	Good	Fair	Asymmetric crown due to building, some dieback	Subject property	N	Suitable	Retain*	-
794	Japanese Maple	<i>Acer palmatum</i>	12, 11, 11, 9, 7, 7	2	3.0	Moderate	Fair	Fair	Dead cambium at base	Subject property	N	Suitable	X	Walkway and stairway construction
795	Magnolia	<i>Magnolia spp.</i>	14, 14	4	2.5	Moderate	Good	Good		Subject property	N	Suitable	X	Walkway and stairway construction
796	European Hornbeam	<i>Carpinus betulus</i>	37	8	4.5	Moderate	Good	Fair/poor	Narrow unions between stems	Subject property	N	Suitable	X	Walkway and stairway construction
797	European Hornbeam	<i>Carpinus betulus</i>	43	8	5.0	Moderate	Good	Fair	Narrow unions between stems	Subject property	N	Suitable	X	Walkway and stairway construction
799	Japanese Maple	<i>Acer palmatum</i>	8, 6	2	1.5	Moderate	Good	Fair		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
801	Japanese Maple	<i>Acer palmatum</i>	19, 14, 14, 13, 11	6	4.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
802	Japanese Maple	<i>Acer palmatum</i>	12, 12, 10, 10	4	3.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
803	Serbian Spruce	<i>Picea omorika</i>	15	3	2.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
804	Serbian Spruce	<i>Picea omorika</i>	15	3	2.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
805	Serbian Spruce	<i>Picea omorika</i>	17	3	2.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
806	Magnolia	<i>Magnolia spp.</i>	13, 10, 6	4	2.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
807	Magnolia	<i>Magnolia spp.</i>	15, 15, 14	5	4.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
808	Dogwood	<i>Cornus spp.</i>	5, 4, 3, 3	3	1.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
809	Magnolia	<i>Magnolia spp.</i>	20, 18, 13, 12	5	4.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
810	Magnolia	<i>Magnolia spp.</i>	17, 15, 15, 10	4	4.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
811	Serbian Spruce	<i>Picea omorika</i>	16	3	2.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
812	Serbian Spruce	<i>Picea omorika</i>	21	4	2.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
813	Serbian Spruce	<i>Picea omorika</i>	16	3	2.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
814	Serbian Spruce	<i>Picea omorika</i>	15	3	2.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
815	Serbian Spruce	<i>Picea omorika</i>	14	4	1.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
816	Serbian Spruce	<i>Picea omorika</i>	13	5	1.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
817	Cherry	<i>Prunus spp.</i>	6	2	0.5	Moderate	Good	Fair	In planter	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade

Tree ID	Common Name	Latin Name	DBH (cm) - approximate * over ivy	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Location	Bylaw Protected	Retention Suitability	Retention Status	Reason for Removal
818	Hawthorn	<i>Crataegus spp.</i>	7	2	0.5	Good	Good	Fair	In planter	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
819	Dogwood	<i>Cornus spp.</i>	5, 5	3	1.0	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
820	Dogwood	<i>Cornus spp.</i>	7, 6, 5, 4, 4	2	1.5	Moderate	Good	Good		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
821	Katsura	<i>Cercidiphyllum japonicum</i>	20, 13, 3x10	5	4.0	Moderate	Good	Fair	Narrow unions	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
822	Katsura	<i>Cercidiphyllum japonicum</i>	21, 14, 11, 11	4	4.5	Moderate	Fair	Fair	Narrow unions	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
823	Dogwood	<i>Cornus spp.</i>	3x11	3	3.0	Moderate	Good	Fair	Leaning	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
824	Paperbark Maple	<i>Acer griseum</i>	6, 4	2	1.0	Moderate	Fair	Fair		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
825	Paperbark Maple	<i>Acer griseum</i>	10	3	1.0	Moderate	Good	Fair		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
826	Paperbark Maple	<i>Acer griseum</i>	4	2	0.5	Moderate	Good	Fair		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
827	Maple	<i>Acer spp.</i>	20	5	2.5	Moderate	Good	Fair	Codominant leaders	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
828	European Hornbeam	<i>Carpinus betulus</i>	33	5	4.0	Moderate	Good	Fair	Asymmetric crown	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
829	European Hornbeam	<i>Carpinus betulus</i>	18, 16, 14	5	4.5	Moderate	Good	Fair	Asymmetric crown	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
830	European Hornbeam	<i>Carpinus betulus</i>	27, 18	5	4.5	Moderate	Good	Fair	Asymmetric crown	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
831	European Hornbeam	<i>Carpinus betulus</i>	16, 15	4	3.0	Moderate	Good	Fair	Asymmetric crown	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
832	European Hornbeam	<i>Carpinus betulus</i>	22, 16, 16, 15	5	5.0	Moderate	Good	Fair	Asymmetric crown	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
833	European Hornbeam	<i>Carpinus betulus</i>	25, 21, 15, 11	6	5.5	Moderate	Good	Fair		Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
834	European Hornbeam	<i>Carpinus betulus</i>	34, 26, 25, 24	10	8.0	Moderate	Good	Fair	Narrow stem unions	Subject property	N	Suitable	X	Buildings / patios / walkways / parkade
835	Hawthorn	<i>Crataegus spp.</i>	29	4	3.0	Good	Good	Good	Neighbour's, 3m from fence	Offsite (443 Superior St)	N	Suitable	Retain*	-
836	Cherry	<i>Prunus serrulata</i> 'Kwanzan'	53	10	6.5	Moderate	Fair	Fair	Municipal (ID: 14978), pruned for hydro lines	Michigan St Boulevard	N	Suitable	Retain*	-
837	White Birch	<i>Betula papyrifera</i>	45	10	7.0	Poor	Fair	Fair	Municipal (ID: 14977), pruned for hydro lines	Michigan St Boulevard	N	Suitable	Retain*	-
838	Cherry	<i>Prunus serrulata</i> 'Kwanzan'	65	10	8.0	Moderate	Fair	Fair/poor	Municipal (ID: 14976), pruned for hydro lines, crossing limbs, multiple Ganoderma fruiting bodies at base	Michigan St Boulevard	N	Suitable	Retain*	-
839	White Birch	<i>Betula papyrifera</i>	46	10	7.0	Poor	Fair	Fair	Municipal (ID: 14975), pruned for hydro lines, epicormic growth	Michigan St Boulevard	N	Suitable	Retain*	-
840	Cherry	<i>Prunus serrulata</i> 'Kwanzan'	60	10	7.0	Moderate	Fair	Fair	Municipal (ID: 14973), pruned for hydro lines, crossing limbs	Michigan St Boulevard	N	Suitable	Retain*	-

Tree ID	Common Name	Latin Name	DBH (cm) ~ approximate * over ivy	Crown Spread (m)	CRZ (m)	Relative Tolerance	Health	Structure	Remarks and Recommendations	Location	Bylaw Protected	Retention Suitability	Retention Status	Reason for Removal
841	Red Maple	<i>Acer rubrum</i>	11	3	1.5	Moderate	Good	Good	Municipal (ID: 14971)	Michigan St Boulevard	N	Suitable	Retain*	-
842	Cherry	<i>Prunus serrulata</i> 'Kwanzan'	50	10	6.0	Moderate	Fair	Fair	Municipal (ID: 14970), pruned for hydro line+J65s	Michigan St Boulevard	N	Suitable	Retain*	-
843	White Birch	<i>Betula papyrifera</i>	41	10	6.0	Poor	Fair	Fair	Municipal (ID: 14969), pruned for hydro lines	Michigan St Boulevard	N	Suitable	Retain*	-
844	Cherry	<i>Prunus serrulata</i> 'Kwanzan'	48	12	6.0	Moderate	Fair	Fair	Municipal (ID: 14967), pruned for hydro lines	Michigan St Boulevard	N	Suitable	Retain*	-
845	Laurel	<i>Prunus spp.</i>	~25	5	2.5	Good	Good	Good	Neighbour's, 3m from fence, leaning	Offsite (415 Superior St)	N	Suitable	Retain*	-
846	Douglas-fir	<i>Pseudotsuga menziesii</i>	~50	10	7.5	Poor	Good	Fair	Neighbour's, 2m from fence, multiple trunk bends	Offsite (415 Superior St)	N	Suitable	Retain*	-
847	Western Red Cedar	<i>Thuja plicata</i>	~45	6	7.0	Poor	Good	Fair	Neighbour's, 2m from fence, codominant leaders	Offsite (415 Superior St)	N	Suitable	Retain*	-
848	Douglas-fir	<i>Pseudotsuga menziesii</i>	~60	12	9.0	Poor	Good	Fair	Neighbour's, next to fence, limb failure, topped historically. Tag #848 on north side of trunk	Offsite (415 Superior St)	Y (Possibly)	Suitable	Retain*	-
849	Douglas-fir	<i>Pseudotsuga menziesii</i>	~50	8	7.5	Poor	Good	Fair/poor	Neighbour's, 2m from fence, topped historically, two leaders	Offsite (415 Superior St)	N	Suitable	Retain*	-
850	Laurel	<i>Prunus spp.</i>	~25, 12	5	3.0	Good	Good	Fair	Neighbour's 2.5m from fence	Offsite (415 Superior St)	N	Suitable	Retain*	-
851	Hawthorn	<i>Crataegus spp.</i>	~20, 20	6	3.0	Good	Fair	Fair	Neighbour's, 2m from fence, leaning	Offsite (415 Superior St)	N	Suitable	Retain*	-
853	Cherry	<i>Prunus spp.</i>	~25	4	3.0	Moderate	Fair	Fair	Neighbour's, 0.5m from fence, leans away	Offsite (415 Superior St)	N	Suitable	Retain*	-
NT2	Holly	<i>Ilex spp.</i>	~20, 20	4	3.0	Good	Good	Fair	Neighbour's, adjacent to fence	Offsite (423 Superior St)	N	Suitable	Retain*	-
NT3	English Oak	<i>Quercus robur</i>	27	5	2.5	Good	Fair	Fair/poor	Municipal (ID: 15016), pruned heavily from hydro pole	Superior St Boulevard	N	Suitable	Retain	-
NT4	Chamaecyparis	<i>Chamaecyparis spp.</i>	~25, 20	5	4.5	Moderate	Fair	Fair	Neighbour's, next to fence, overhangs 3m, some dieback	Offsite (443 Superior St)	N	Suitable	Retain	-
NT5	Spruce	<i>Picea spp.</i>	~25	4	4.0	Poor	Fair	Fair	Neighbour's, 0.5m from fence, lower crown dieback	Offsite (443 Superior St)	N	Suitable	Retain	-
NT6	Norway Maple	<i>Acer platanoides</i>	~30, 30, 20	6	7.0	Moderate	Good	Fair	Neighbour's, next to fence, trunk partially grows under fence (possibly shared)	Offsite (443 Superior St)	N	Suitable	Retain	-
NT7	Plum	<i>Prunus spp.</i>	~35	10	4.0	Moderate	Fair	Fair	Neighbour's, next to fence, severe lean	Offsite (443 Superior St)	N	Suitable	Retain*	-
NT8	Plum	<i>Prunus spp.</i>	~40, 30, 30	8	9.0	Moderate	Good	Fair	Neighbour's, next to fence	Offsite (443 Superior St)	N	Suitable	Retain*	-
NT9	Plum	<i>Prunus spp.</i>	~40, 40	8	7.5	Moderate	Good	Fair	Neighbour's, next to fence, gamoderma at base	Offsite (443 Superior St)	N	Suitable	Retain*	-



NO.	DESCRIPTION	DATE	BY	CHECKED BY
1	ISSUED FOR PERMIT	11/11/11	W. J. [illegible]	[illegible]
2	REVISED	11/11/11	W. J. [illegible]	[illegible]
3	REVISED	11/11/11	W. J. [illegible]	[illegible]
4	REVISED	11/11/11	W. J. [illegible]	[illegible]
5	REVISED	11/11/11	W. J. [illegible]	[illegible]

CHURCHMAN

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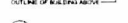
Michigan St
 1111 1/2 ST. N. W. & 1111 Superior St

Demolition Plan

A100

Package Demolition Plan
 Scale: 1/8" = 1'-0"





SCIENCE IN THE FUTURE: PROSPECTS AND CHALLENGES
2006-2011



CH2K Architects

HEAD OFFICE
 139 East Broadway
 Victoria BC V8B 2G5
 T: 250-388-5167

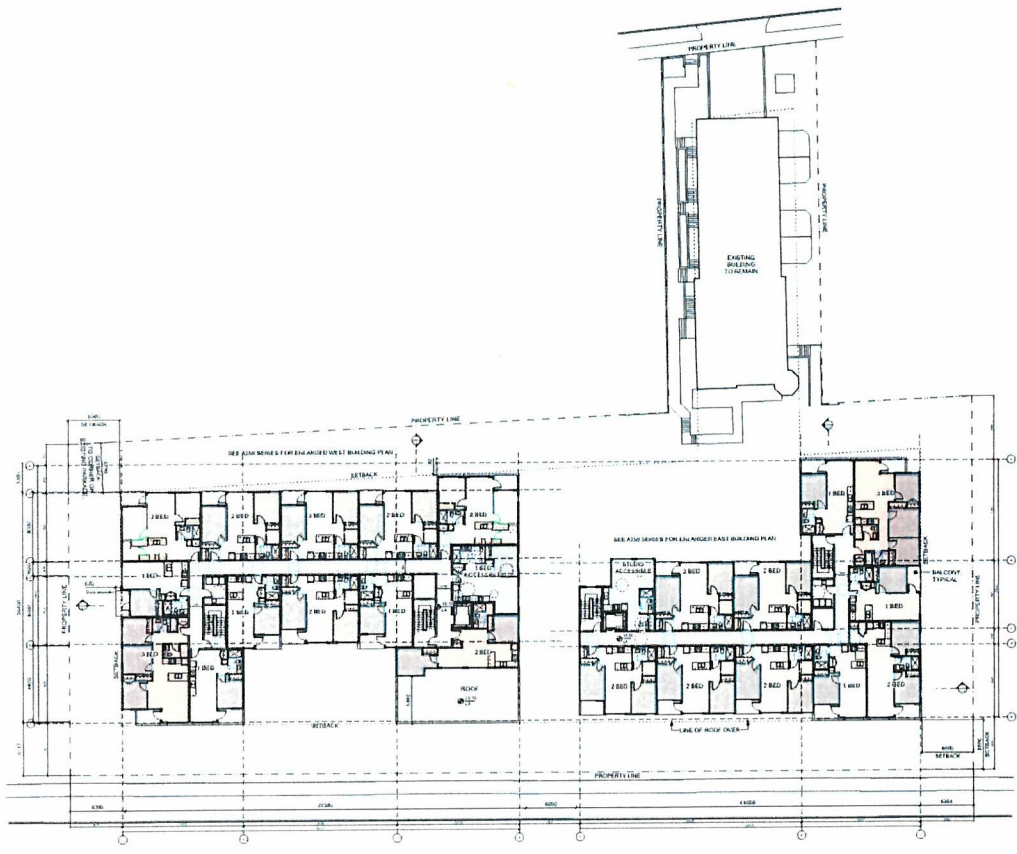
BRANCH OFFICE
 1001 - 10th Avenue West
 Vancouver BC V6H 2A5
 T: 604-681-0816

Michigan St
 111 338 Michigan St. & 222 Superior St.
 Victoria BC

Architectural Site Plan

A201





1 L2 - L4 FLOORS
A204 SCALE: 1/8" = 1'-0"

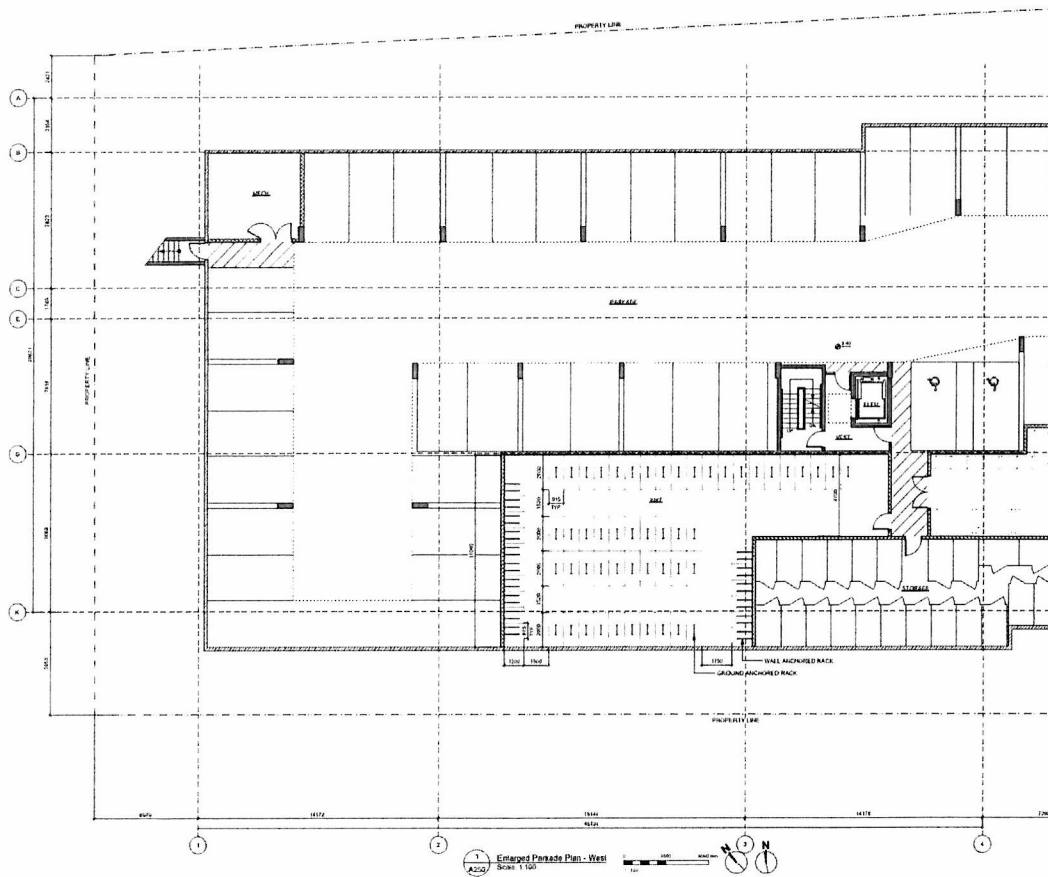
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7	REVISION	10/1/2011
8	REVISION	10/1/2011
9	REVISION	10/1/2011
10	REVISION	10/1/2011

Architect
J. J. Landmark
11111 111th St.
Suite 100
Oak Ridge, TN 37830
615.881.1111
www.jjlandmark.com

Michigan St
11111 111th St. & 2011 Suburban St.
Oak Ridge, TN

L4 Plan

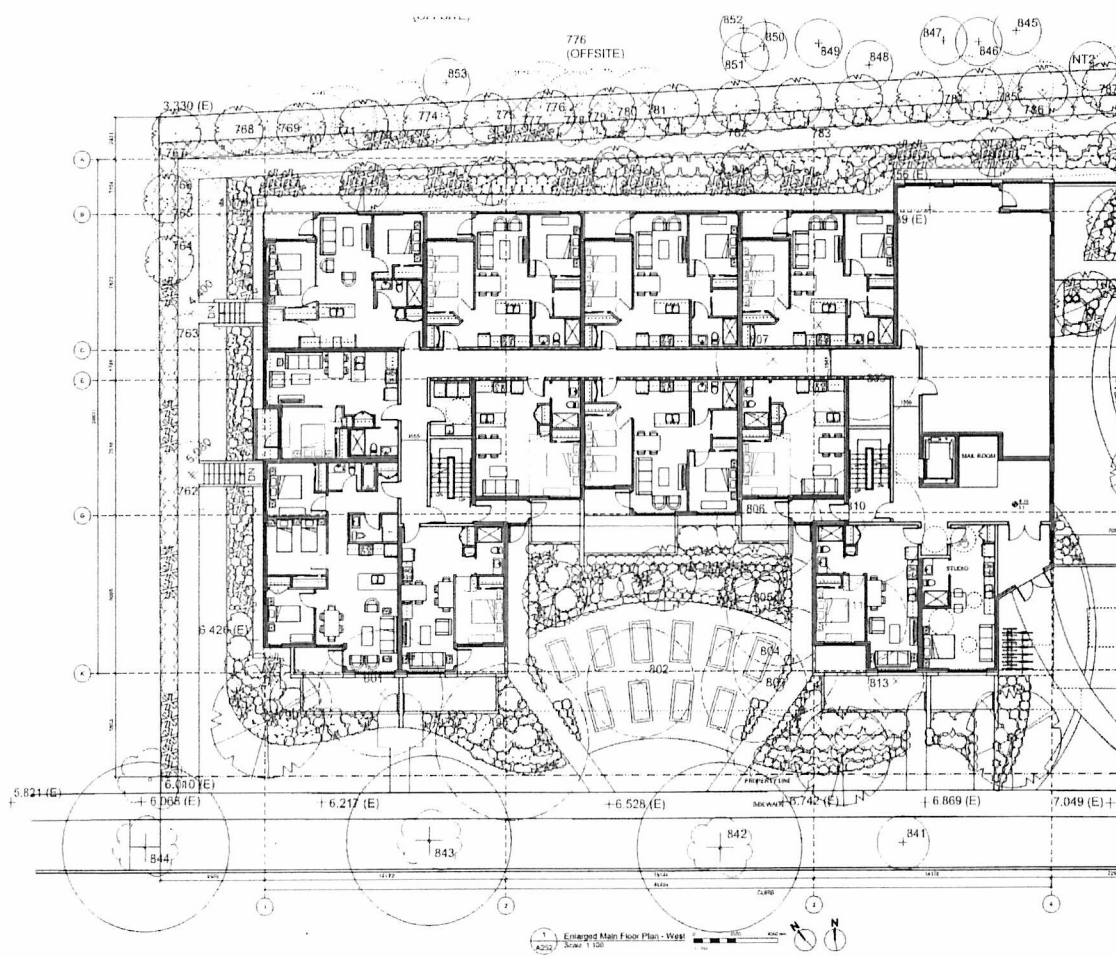
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3	REVISED PER COMMENTS	2014.03.10
4	REVISED PER COMMENTS	2014.04.10
5	REVISED PER COMMENTS	2014.05.10
6	REVISED PER COMMENTS	2014.06.10
7	REVISED PER COMMENTS	2014.07.10
8	REVISED PER COMMENTS	2014.08.10
9	REVISED PER COMMENTS	2014.09.10
10	REVISED PER COMMENTS	2014.10.10
11	REVISED PER COMMENTS	2014.11.10
12	REVISED PER COMMENTS	2014.12.10

McKean St
 1712 E. McKean St. & 223 Superior St.
 Victoria BC
Enlarged Parkade Plan - West
A250





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9	REVISION	10/1/2011
10	REVISION	10/1/2011

OF WASHINGTON

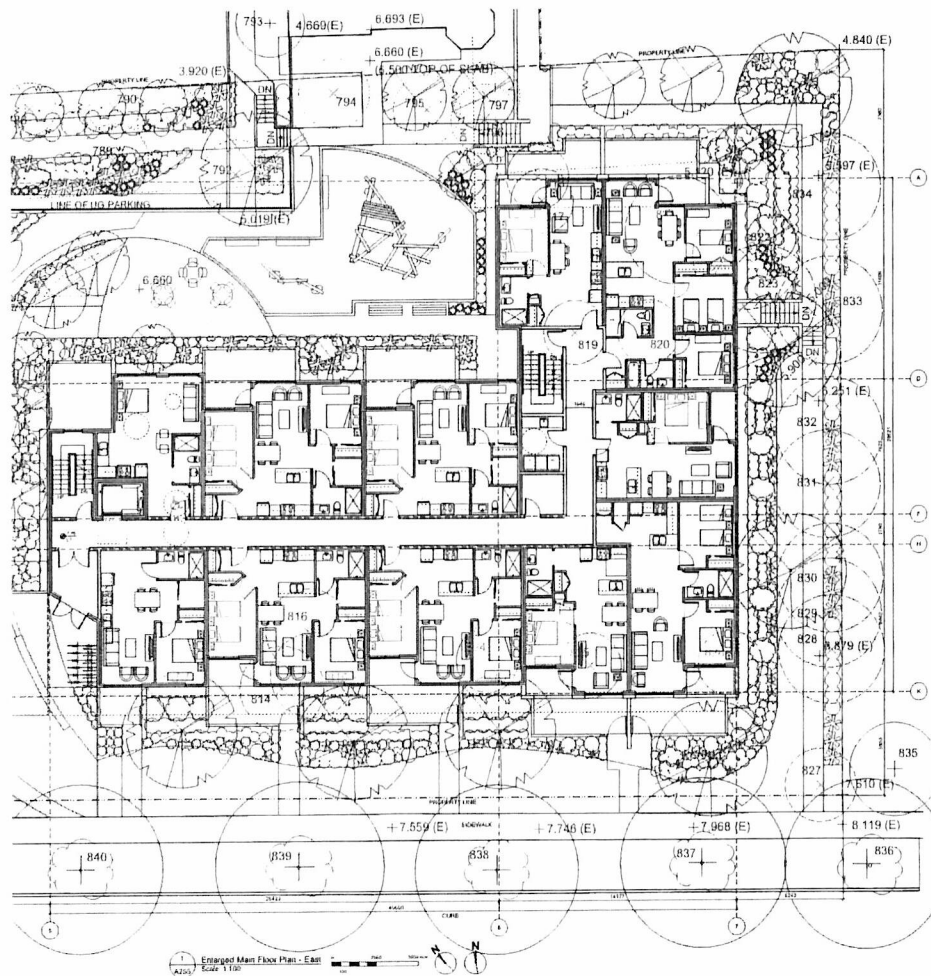
1111 11th Street, N.W.
Washington, D.C. 20004
Tel: (202) 462-1000
Fax: (202) 462-1001
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Michigan St.
1111 11th Street, N.W. & 11th Street SW
Washington, DC

Enlarged L1 Plan - West Building

A252

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10	10/1/00	ISSUED FOR PERMIT

OF WASHINGTON

1111 14th St. N.W.
Washington, D.C. 20005
Tel: (202) 462-1000
Fax: (202) 462-1001
E-mail: info@ofw.com

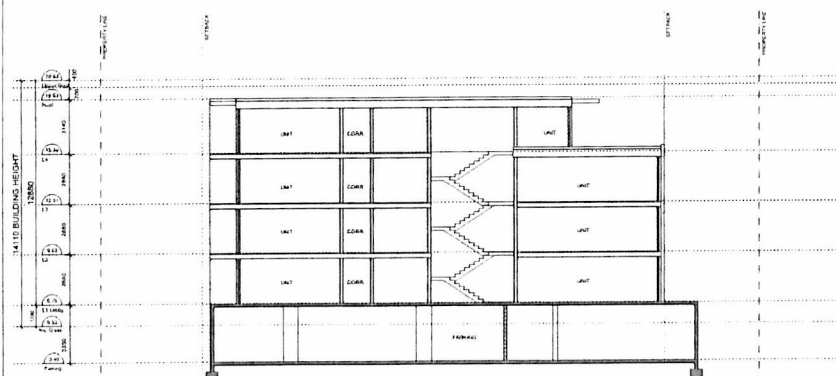
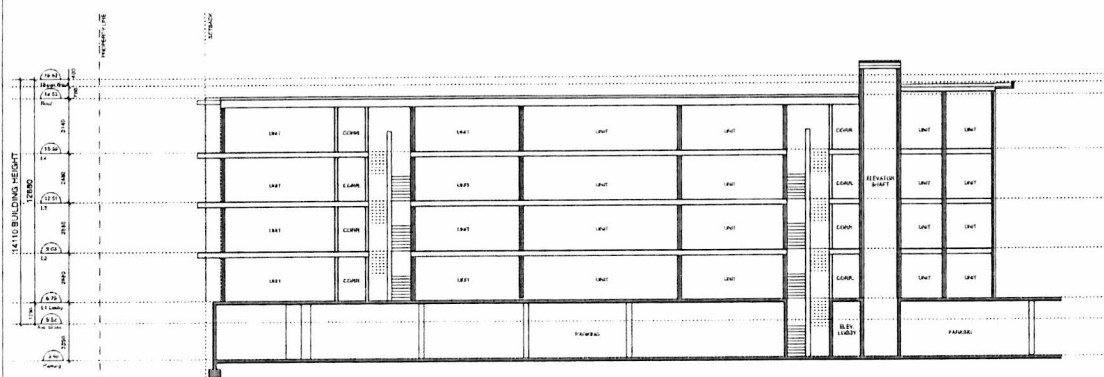
Michigan St.
1717 Michigan St. N.E. 2nd Floor
Grand Rapids, MI 49503
Tel: (616) 455-1000
Fax: (616) 455-1001
E-mail: info@ofw.com

Enlarged L1 Plan - East Building

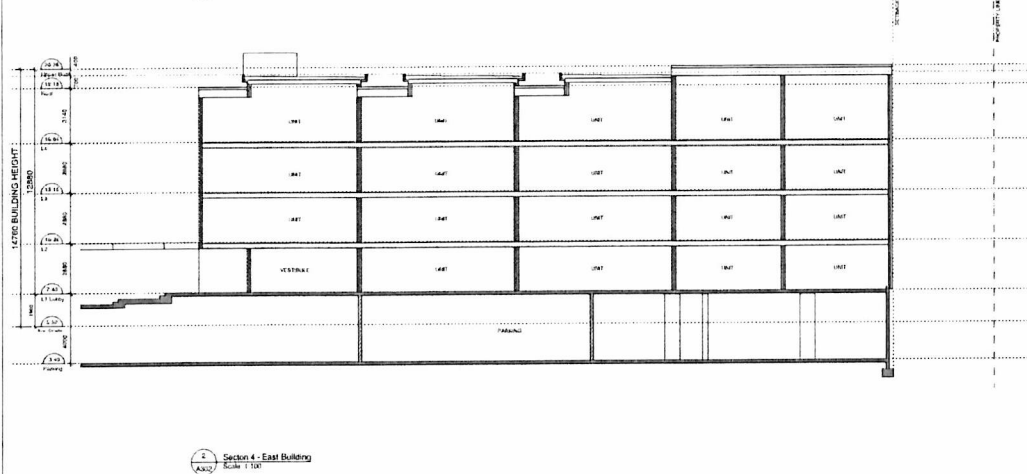
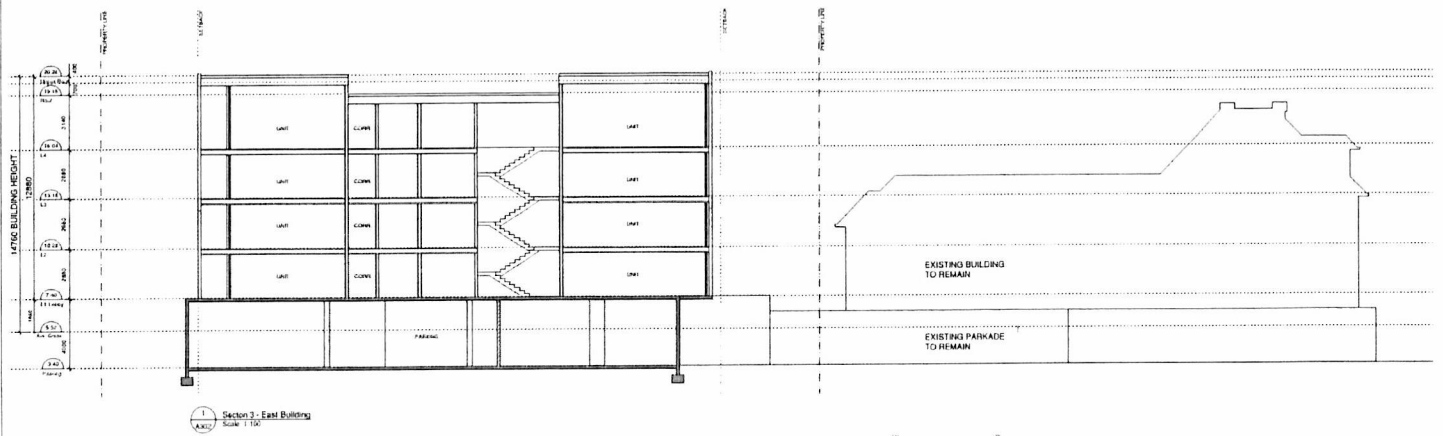
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 <p>Finnigan 10000 49th Ave. 117 East Avenue Suite 100 St. Louis, MO 63126 P 314-862-2222</p>	<p>offKorphenachts</p> <p>awards office 1000 10th Avenue, N.E. Suite 100 St. Louis, MO 63126 P 314-862-2222</p>	<p>offKorphenachts</p> <p>awards office 1000 10th Avenue, N.E. Suite 100 St. Louis, MO 63126 P 314-862-2222</p>
<p>Michigan St 110 155 Michigan St. & 233 Superior St. Windsor BC</p>		
<p>Enlarged L2-L4 Plans - East Building</p>		
<p>A256</p>	<p>A256</p>	<p>A256</p>

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Michigan St
 310 S Michigan St. & 338 Superior St
 VANUO 65



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<p>McCracken & Associates 2111 15th Avenue SE Victoria BC V8M 2M1 Tel: 250-363-1111 Fax: 250-363-1112 www.mccracken.ca</p>	<p>Sections - East Building</p> <p>A302</p>
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Michigan St
 310 S Michigan St & 320 Superior St
 Indiana 46204

Site Section

[illegible]

 <p>City of Vancouver 411, P.O. Box 2618 Vancouver, BC V6Z 2N1 Tel: 604-681-2222</p>	<p>CityArchitects</p> <p>Architects 1000-1010-1010-1010 1010-1010-1010-1010 1010-1010-1010-1010</p>	<p>CityArchitects</p> <p>Architects 1000-1010-1010-1010 1010-1010-1010-1010 1010-1010-1010-1010</p>
<p>Michigan St 310-330 Michigan St & 330 Superior St Vancouver BC</p>		
<p>Elevations - West Building</p>		
<p>A401</p>	<p>A401</p>	<p>A401</p>

[illegible]

CH2M HILL

10000 North Central Expressway
 Suite 1000
 Dallas, Texas 75243-1099
 Tel: 214-635-6000 ext. 2222
 Fax: 214-635-6000 ext. 2222

Michigan St
 310-338 Michigan St. & 333 Superior St.
 Ann Arbor, MI

Elevations - West Building

A402

[illegible]

 <p>CH2M Kiewit</p> <p>10000 14th Avenue North Suite 200 Minneapolis, MN 55412 Tel: 612-480-4000 Fax: 612-480-4001</p>		<p>CH2M Kiewit</p> <p>10000 14th Avenue North Suite 200 Minneapolis, MN 55412 Tel: 612-480-4000 Fax: 612-480-4001</p>	
<p>Michigan St 110 S Michigan St & 333 Superior St Jackson MI</p>			
<p>Elevations - East Building</p>			
<p>A403</p>		<p>A403</p>	

[illegible]

	<p>Office of the State Architect</p> <p>1000 Michigan St 4th Floor Lansing, MI 48906-1000 Tel: 517.487.2000 Fax: 517.487.2001</p>	<p>Office of the State Architect</p> <p>1000 Michigan St 4th Floor Lansing, MI 48906-1000 Tel: 517.487.2000 Fax: 517.487.2001</p>
<p>Michigan St</p> <p>310-335 Michigan St & 330 Superior St Van Buren Bldg</p>	<p>Elevations - East Building</p>	<p>A404</p>



1 South Elevation
A40% Scale 1/16"



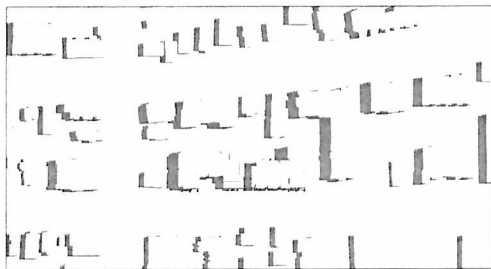
2 North Elevation
A405 Scale 1:150

[illegible]

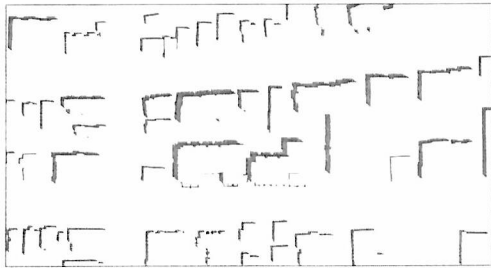
[illegible]

<p>ASME 3120 Park Ave. N.E. Atlanta, GA 30305 Tel: 404/541-2000 Fax: 404/541-2001</p>	<p>ASMEArchitects</p> <p>Representatives: 1100 15th Street, N.W. Atlanta, GA 30335 Tel: 404/524-2010</p>	
<p>Michigan St. 310-330 Michigan St. & 322 September St. VIRGINIA, BC</p>		
<p>Perspectives</p>		
<p>A501 1100 15th Street, N.W. Atlanta, GA 30335 Tel: 404/524-2010 Fax: 404/524-2001</p>	<p>A501</p>	

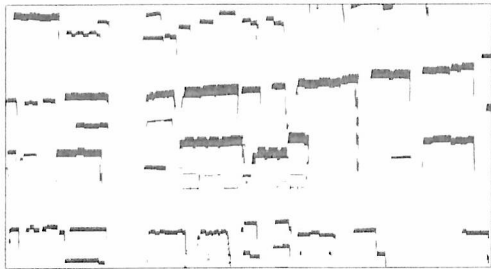
SUMMER SOLSTICE - 21 JUNE



10 AM



12 PM



2 PM

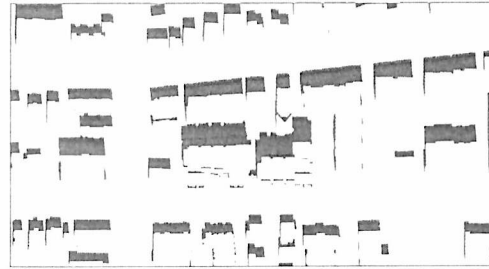
EQUINOX - 21 SEPTEMBER



10 AM



12 PM



2 PM

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[illegible]

[illegible]

ISSUED FOR
REVIEW

GENERAL NOTES

- [illegible]

THE LOCATION AND ELEVATION OF
FIXED UNMANNED SERVICES ON
THE SHIPBOARD MAY NOT BE ACCURATE
OR COMPLETE. THE ACTUAL HORIZONTAL
AND VERTICAL LOCATIONS MUST BE
CONFIRMED BY OTHER COMPANIES AND
THE CONSTRUCTION PAGES TO THE
END OF THE SET OF THE ELEVATIONS

KATUN	W	CEPA	C
OPAN	B	USWILA	S
CHILU	W	CEPA	C
SEWER	S	USWILA	S
CHILU	W	CEPA	C

LEGEND - PROPOSED SERVICES SHOWN DASHED

[illegible]

REVISIONS	
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DESCRIPTION	REASON	
	APR	DUE

REVISIONS APPROVED

RELATION 1			RELATION 2		
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5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
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9	9	9	9	9	9
10	10	10	10	10	10

DESIGN APPROVED:

EXCEPTIONS		
APPROVED BY	DATE	TIME
DESIGN ENG		
ASST ENG		
MANUFACT ENG		

310-338 MICHIGAN STREET
CONCEPTUAL SERVING PLAN

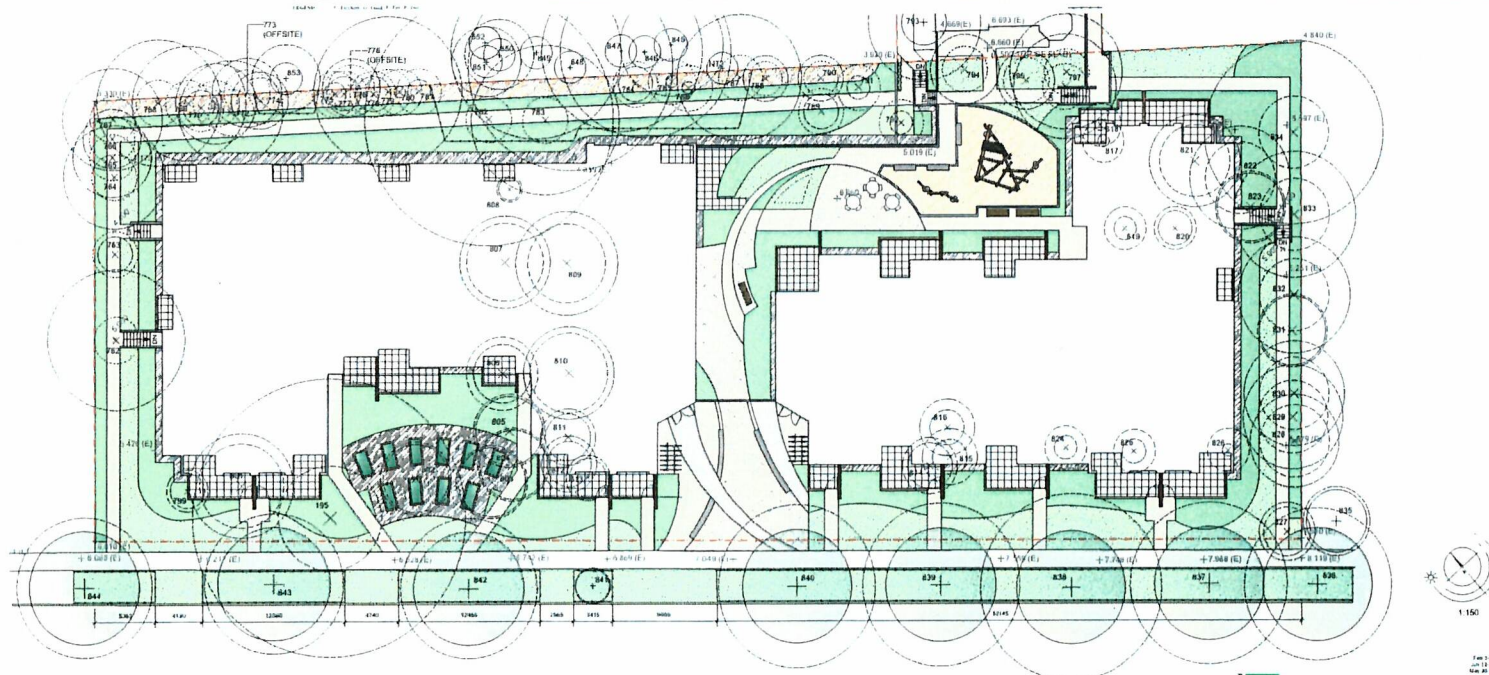
CITY OF VICTORIA

GAGE PROJECT No.	
2214G	
SHEET 3 OF 3	REV

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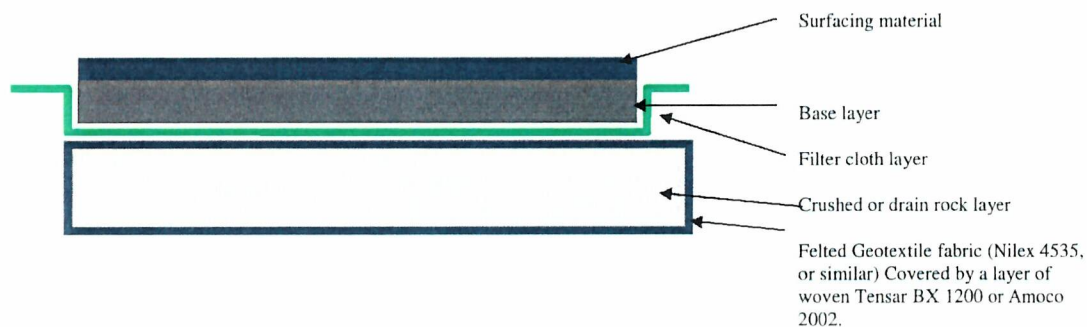
[illegible]

LADR LANDSCAPE ARCHITECTS
 Project No: 5634 No 27-1A
 23-864 Queens Ave. Victoria, B.C. V8T 1M5
 Phone: (250) 599-0106

Talbot Mackenzie & Associates

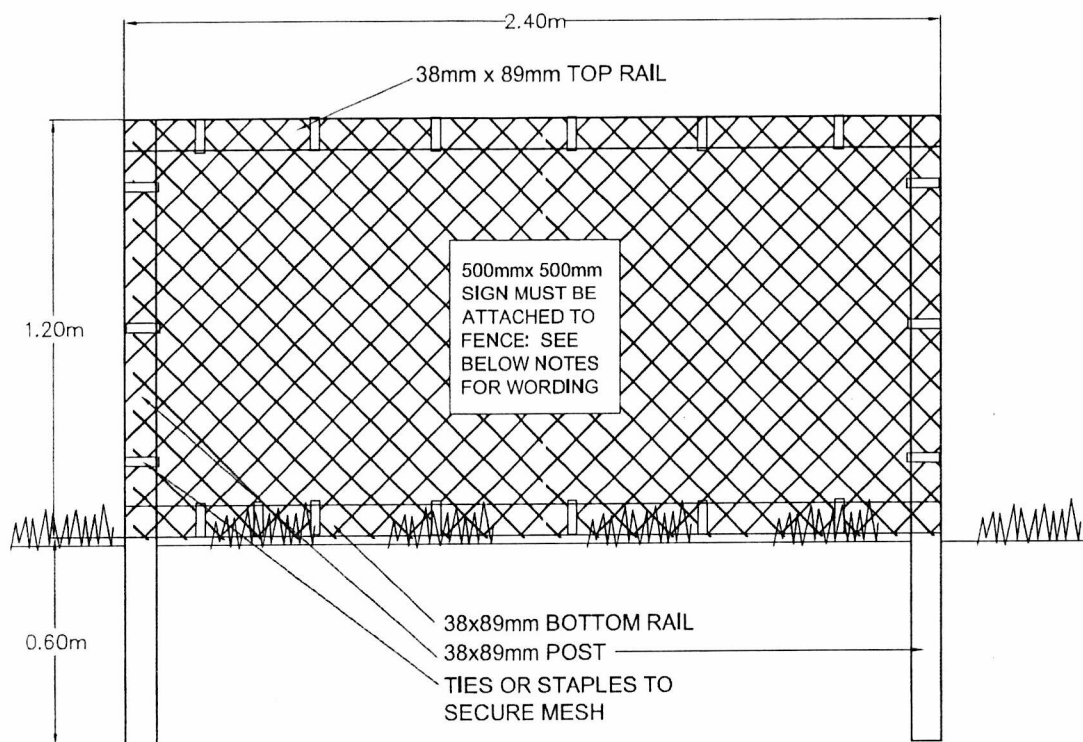
Consulting Arborists

Diagram – Site Specific Driveway, Parking and Walkway



Specifications for Paved Surfaces Above Tree Roots (Driveway, Parking and Walkway Areas)

1. Excavation for construction of the driveway/parking/walkway areas must remove only the top layer of sod and not result in root loss
2. A layer of medium weight felted Geotextile fabric (Nilex 4535, or similar) is to be installed over the entire area of the critical root zone that is to be covered by the paved surface. Cover this Geotextile fabric with a layer of woven Amoco 2002 or Tensar BX 1200. Each piece of fabric must overlap the adjoining piece by approximately 30-cm.
3. A 10cm layer of torpedo rock or 20-mm clean crushed drain rock, is to be used to cover the Geotextile fabric (depth dependent on desired finished grade).
4. A layer of felted filter fabric is to be installed over the crushed rock layer to prevent fine particles of sand and soil from infiltrating this layer.
5. The bedding or base layer and permeable surfacing can be installed directly on top of the Geotextile fabric.
6. Two-dimensional (such as CombiGrid 30/30 or similar) or three-dimensional geo-grid reinforcements can be installed in combination with, or instead of, the geotextile fabric specified in the attached diagram.
7. Ultimately, a geotechnical engineer should be consulted and in consultation with the project arborist may specify their own materials and methods that are specific to the site's soil conditions and requirements, while also avoiding root loss and reducing compaction to the sub-grade.



TREE PROTECTION FENCING

1. FENCE WILL BE CONSTRUCTED USING 38 mm X 89mm WOOD FRAME: TOP, BOTTOM AND POSTS * USE ORANGE SNOW-FENCING MESH AND SECURE THE WOOD FRAME WITH "ZIP" TIES OR GALVANIZED STAPLES.
 2. ATTACH A 500mm X 500mm SIGN WITH THE FOLLOWING WORDING: WARNING- TREE PROTECTION AREA. THIS SIGN MUST BE AFFIXED ON EVERY FENCE OR AT LEAST EVERY 10 LINEAR METERS.
- * IN ROCKY AREAS, METAL POSTS (T-BAR OR REBAR) DRILLED INTO ROCK WILL BE ACCEPTED



Talbot Mackenzie & Associates

Consulting Arborists

Box 48153 RPO - Uptown Victoria, BC V8Z 7H6

Ph: (250) 479-8733

Fax: (250) 479-7050

Email: tmtreehelp@gmail.com

Tree Resource Spreadsheet Methodology and Definitions

Tag: Tree identification number on a metal tag attached to tree with nail or wire, generally at eye level. Trees on municipal or neighboring properties are not tagged.

NT: No tag due to inaccessibility or ownership by municipality or neighbour.

DBH: Diameter at breast height – diameter of trunk, measured in centimetres at 1.4m above ground level. For trees on a slope, it is taken at the average point between the high and low side of the slope.

* Measured over ivy

~ Approximate due to inaccessibility or on neighbouring property

Crown Spread: Indicates the diameter of the crown spread measured in metres to the dripline of the longest limbs.

Relative Tolerance Rating: Relative tolerance of the tree species to construction related impacts such as root pruning, crown pruning, soil compaction, hydrology changes, grade changes, and other soil disturbance. This rating does not take into account individual tree characteristics, such as health and vigour. Three ratings are assigned based on our knowledge and experience with the tree species: Poor (P), Moderate (M) or Good (G).

Critical Root Zone: A calculated radial measurement in metres from the trunk of the tree. It is the optimal size of tree protection zone and is calculated by multiplying the DBH of the tree by 10, 12 or 15 depending on the tree's Relative Tolerance Rating. This methodology is based on the methodology used by Nelda Matheny and James R. Clark in their book "Trees and Development: A Technical Guide to Preservation of Trees During Land Development."

- 15 x DBH = Poor Tolerance of Construction
- 12 x DBH = Moderate
- 10 x DBH = Good

To calculate the critical root zone, the DBH of multiple stems is considered the sum of 100% of the diameter of the largest stem and 60% of the diameter of the next two largest stems. It should be noted that these measures are solely mathematical calculations that do not consider factors such as restricted root growth, limited soil volumes, age, crown spread, health, or structure (such as a lean).

Health Condition:

- Poor - significant signs of visible stress and/or decline that threaten the long-term survival of the specimen
- Fair - signs of stress
- Good - no visible signs of significant stress and/or only minor aesthetic issues

Structural Condition:

- Poor - Structural defects that have been in place for a long period of time to the point that mitigation measures are limited
- Fair - Structural concerns that are possible to mitigate through pruning
- Good - No visible or only minor structural flaws that require no to very little pruning

Retention Status:

- X - Not possible to retain given proposed construction plans
- Retain - It is possible to retain this tree in the long-term given the proposed plans and information available. This is assuming our **recommended mitigation measures are followed**
- Retain * - See report for more information regarding potential impacts
- TBD (To Be Determined) - The impacts on the tree could be significant. However, in the absence of exploratory excavations and in an effort to retain as many trees as possible, we recommend that the final determination be made by the supervising project arborist at the time of excavation. The tree might be possible to retain depending on the location of roots and the resulting impacts, but concerned parties should be aware that the tree may require removal.
- NS - Not suitable to retain due to health or structural concerns