



Capital Tree Service Inc.

Arborist Report

722 & 726 Discovery St,

Victoria, BC

August 17, 2022

Prepared for:

BC Housing C/O Sean Rorison

Prepared by:

Capital Tree Service Inc.

Capital Tree Service Inc.

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GST # 861289783RT0001

WSBC Account #713323

Liability and Professional E and O, HSM Insurance - \$5 Million

Summary/Scope of Work

Capital Tree Service Inc. (CTS) was contacted by Sean Rorison (Client), a representative of BC Housing regarding, the construction of a new supportive housing building at 722 and 726 Discovery St (the Site) in the City of Victoria. The Client indicated they required an Arborist Report and Tree Protection Plan (TPP) to move forward with the permit application.

The Client has requested that CTS provide a Basic Visual Tree Assessment (BVTA) and TPP for the Site. CTS agreed to complete the assessment and provide findings in an Arborist Report Form including a TPP.

Under the current proposal six (6) trees are proposed for removal and one (1) boulevard tree will be retained and protected. A tree inventory is included as **Appendix 'A'**. Photographs and a Site Plan are included as **Appendix 'B'** of this report.

Methodology

The Site was entered January 5, 2022, by CTS for the purpose of conducting tree assessments and collecting inventory. Keegan Durovich, a consulting arborist and representative of CTS, conducted the inventory and observed the trees on the site. The weather that day was 2°C, overcast, and there was a 11km/hr NNE breeze.

The Site was assessed from grade. No form of diagnostic tools or invasive techniques were used during the assessment. Tree heights were estimated, and diameters were measured using a Richter Diameter Tape. Diameter at Breast Height (DBH) was measured approximately 1.4m above grade. Measurements and observations were recorded with the intent to provide a static representation of the area. A tree inventory is included as **Appendix 'A'** of this report. Photographs and a Site Plan are included as **Appendix 'B'** of this report.

During the assessment, a total of seven (7) were observed – all (7) of which are protected under the current City of Victoria Tree Bylaw. The trees referenced in **Appendix 'A'** have been tagged. Tags are located approximately 1.5-2m above grade on tree stems and were visible at the time of assessment. One boulevard tree is not tagged and is referred to as No Tag (NT) one (1).

Protected Root Zone calculations are based on the ISA recommended one foot for each one inch of trunk diameter (0.3m for each 2.5 cm).

Observations/Discussion

During the assessment, one (1) parking lot, covering two (2) lots, with trees along the road frontage and a couple (2) of opportunistic trees in a corner was observed. The site appears to receive plenty of sunlight. The rooting area is restricted by retaining walls, pavement, and a building. Additionally, one of the trees (Gary Oak 151) appears to be growing over rocks. The boulevard tree (NT1) has similar restricted rooting area issues as the trees on the lot and has been utility pruned. Overall, trees appear to be in fair-good health with some common structural issues. A tree inventory is included as **Appendix 'A'** (as well as a separate attachment) of this report.

Protected Root Zone calculations are based on the ISA recommended one foot for each one inch of trunk diameter (0.3m for each 2.5 cm). Matheny and Clark's 'Trees and Development' was used to assess relative tolerance to Development Impacts.

All six (6) trees on the lot are proposed for removal due to their location within the footprint of the proposed development. Replacement trees will be required at a 1:1 ratio. Sidewalk upgrades will require the removal of one (1) boulevard tree, in front of lot 726 Discovery. Three (3) replacement boulevard trees are proposed.

Replacement trees and soil calculations

Replacement tree locations (Appendix 2 Figure 2) and soil calculations are shown in the landscape plan prepared by the project landscape architect. Trees selected have been specified with consideration to required soil volume as specified in the City of Victoria Tree Protection Bylaw. See the landscape plan for replacement tree species and soil calculations.

Common and Latin Names

Shore pine – *Pinus contorta* var. *contorta*

Black cottonwood – *Populus balsamifera* subsp. *trichocarpa*

Garry oak – *Quercus garryana*

Field elm – *Ulmus minor*

Tree Condition Ratings Summary

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 little pruning

Species Relative Tolerance to Construction Impacts¹:

Pine – Generally Moderate-Good

¹ Nelda P. Matheny and James R. Clark, *Trees and Development: A Technical Guide to Preservation of Trees during Land Development* (Champaign, Ill: International Soc. of Arboriculture, 1998).

Black Cottonwood – Poor – “Mature trees prone to windthrow and trunk failure.”

Gary Oak – Good – “Largely intolerant of construction injury”

Elm – Good – “Tolerant of root pruning.”

Tree Protection Plan

Utilize Tree Protection Fencing (TPF) to restrict access to Tree Protection Zones, see Appendix C for fencing specifications. Provide signage on fencing which states: Tree Protection Area – No Admittance. Signage must be in a visible location attached to the fence. Signage must be attached to the outside of each Tree Protection Fencing area.

Contact CTS to mark locations for the Tree Protection Fencing. All Tree Protection Fencing must be installed in the locations indicated by CTS. CTS must provide inspection and verification of the fencing detail for District approval.

Each Tree Protection Zone (TPZ) must be vacated of all construction materials and/or equipment. At no time may the fencing be removed or modified unless the Project Arborist is contacted and approval given. In such cases the Project Arborist must assist fence removal and assess combined impacts which are required for construction completion. Capital Tree Service 250-217-8370 – Three business days notice required.

Landing/Storage Area

All construction materials will be stored in areas identified as ‘Landing/Storage’ in site plans. These locations are indicated on the Site Plan.

Access

A single point of access shall be utilized. This shall be in the location marked ‘Access’ on the Site Plan. Contractors and workers shall be made aware of the Tree Protection Zones and Measures in place. Site access will be along the existing driveway. **Tree Protection Zones and areas of the Site not under construction or within the Zone of Impact will be strictly off limits.** It is the responsibility of the Client to schedule a pre-job meeting with the Project Arborist to discuss Tree Protection Plans, Zones, and requirements.

Three business days notice required. Project Arborist. 250-217-8370

Root Assessment and Observation

The Project Arborist must be on site for observation and assessment when working within the Protected Root Zone of any Protected Trees. This shall include trees:

- #NT1

Tree Pruning

Tree pruning required for access and egress, tree health and safety shall be performed by an International Society of Arboriculture (ISA) Certified Arborist without the use of climbing spurs. All tree pruning shall be performed in accordance with ANSI A-300 Standards for Tree Care Operations.

Blasting

The use of blasting for removal of rock may cause serious damage or death to nearby trees if not managed appropriately. Should blasting become necessary, CTS recommends the use of low nitrogen and low velocity explosives. Furthermore, we recommend the use of explosives to strategically fracture the rock before using an excavator to breakup (using a hoe ram) and remove the rock. It is critical that heavy matting is used to dampen shockwaves and ¼" plywood is used to protect (armour) retained trees wherever possible. A removal plan for the rock will be developed with the blasting contractor and the Project Arborist. It is recommended that this plan is created prior to the blasting contractor providing a cost estimate.

Excavation Process Plan

1. Provide and schedule Project Arborist to assess site prior to construction.
2. Inventory and identify trees and hazards which could complicate excavation process.
3. Utilize hand tools and cutting equipment when large tree roots are anticipated.
4. When possible, utilize small, rubberized track excavation equipment which will reduce soil compaction.
5. Excavator operator must be well informed about dig site and goal to complete project.
6. Use shallow excavation sweeps across the site to establish a depth which roots can be easily identified. (3cm to 5cm in depth of soil for each sweep across the soil face)
7. Roots greater than 6cm in diameter shall be preserved and inspected by the Project Arborist. The project arborist will determine if roots should be pruned or cut.
8. All roots greater than 6cm in diameter should be identified and documented for project records.
9. Photos are highly recommended for documentation purposes.

Assessment of the site may expose further tree issues or conditions. If this occurs the project arborist will contact City Staff for further recommendations.

Role of the Project Arborist

As well as creating the Tree Preservation Plan, the Project Arborist must be on site to supervise work within or immediately adjacent to the tree protection areas identified on the attached tree plan. **This will include sidewalk, driveway and any improvements proposed for the municipal boulevard.**

The Project Arborist will be present to supervise landscaping operations and activity within the tree protection areas.

At completion of the project, the Project Arborist will confirm that any tree protection or remediation related deficiencies have been addressed by the owner and building contractor. Once all deficiencies (if any) have been remedied, the Project Arborist shall prepare a letter to the City of Victoria confirming completion of the project.

Tree Protection Plan Summary


- i. Provide a detailed sign specifying that tree protection measures are in place and will be followed during the project. Fines will be posted for malicious acts and can be placed on individuals who disregard the tree protection plan and its guidelines. Signs will be placed at each entrance of the project detailing what is expected when working in potentially high impact tree protection zones.
- ii. Provide tree protection fencing for all trees identified with protection requirement in this report. This fencing shall be four (4ft) feet in height and made of orange plastic. If required, header and footer boards will be used to secure the protective fencing.
- iii. Tree protection and root protection signs will be placed on the fencing (see Appendix C). No entry will be allowed, unless specified by the Project Arborist and in their presence while on site.
- iv. Restrict vehicle traffic to designated access routes and travel lanes to avoid soil compaction and vegetation disturbances.
- v. Make all necessary precautions to prevent the storage of material, equipment, stockpiling of aggregate or excavated soils within tree protection areas. No dumping of fuels, oils or washing of concrete fluids will be allowed in tree protection zones.
- vi. Provide an onsite arborist when a risk of root damage, root cutting, or limb removal is required within the tree protection zone.
- vii. Avoid alterations to existing hydrological patterns to minimize vegetation impacts to the site.
- viii. The use of a Project Arborist is required to provide layout of tree protection zones. The Project Arborist(s) will provide pre-construction information to all parties involved with the project. The Project Arborist must be notified 72hrs prior to construction activities in sensitive areas. The Project Arborist should be used to provide root and branch pruning when diameters are greater than 6cm.

- ix. At no time will tree protection zones be removed from the project unless approved by the Project Arborist

The following is a summary of key roles of the Project Arborist.

- Participation in a site meeting prior to the commencement of works adjacent to Tree Protection Zones to discuss the preservation plan and tree protection measures in place. **It is the responsibility of the Client to schedule a pre-work site meeting. *72 hrs Notice Required. CTS 250-217-8370***
- The meeting will review the Tree Protection Plan, Tree Protection Zones and the specific measures required to protect the trees during the site preparation, construction, and landscape phases of construction.
- The Project Arborist will inspect the Tree Protection Fencing and any other tree protection measures prior to a tree permit being issued by the District and prior to work commencing on site.
- The Project Arborist will be on site during the following work within or immediately adjacent to the Tree Protection Areas as indicated on the attached Site Plan:
 - ❖ demolition
 - ❖ grading
 - ❖ excavation
 - ❖ rock removal or blasting
 - ❖ trenching for underground services and utilities
 - ❖ preparation of grade for the proposed driveways and parking areas
 - ❖ site inspections to insure adherence to Tree Protection Measures

Although this site has been assessed trees in the landscape are dynamic and changes could occur. This report is a static representation of the site during our assessment.



Keegan Durovich 17/08/2022
Capital Tree Service Inc.
ISA Certified Arborist TRAQ PN-9272A
B.A.Sc.

Capital Tree Service Inc. (CTS)**CONDITIONS OF ASSESSMENT AGREEMENT**

This Conditions of Assessment Agreement is made pursuant to and as a provision of CTS, providing tree assessment services as agreed to between the parties, the terms and substance of which are incorporated in and made a part of this Agreement (collectively the "Services").

Trees are living organisms that are subject to stress and conditions and which inherently impose some degree or level of risk. Unless a tree is removed, the risk cannot be eliminated entirely. Tree conditions may also change over time even if there is no external evidence or manifestation. In that CTS provides the Services at a point in time utilizing applicable standard industry practices, any conclusions and recommendations provided are relevant only to the facts and conditions at the time the Services are performed. Given that CTS cannot predict or otherwise determine subsequent developments, CTS will not be liable for any such developments, acts, or conditions that occur including, but not limited to, decay, deterioration, or damage from any cause, insect infestation, acts of god or nature or otherwise. Unless otherwise stated in writing, assessments are performed visually from the ground on the above-ground portions of the tree(s). However, the outward appearance of trees may conceal defects. Therefore, to the extent permitted by law, CTS does not make and expressly disclaims any warranties or representations of any kind, express or implied, with respect to completeness or accuracy of the information contained in the reports or findings resulting from the Services beyond that expressly contracted for by CTS in writing, including, but not limited to, performing diagnosis or identifying hazards or conditions not within the scope of the Services or not readily discoverable using the methods applied pursuant to applicable standard industry practices. Further, CTS' liability for any claim, damage or loss caused by or related to the Services shall be limited to the work expressly contracted for.

In performing the Services, CTS may have reviewed publicly available or other third- party records or conducted interviews and has assumed the genuineness of such documents and statements. CTS disclaims any liability for errors, omissions, or inaccuracies resulting from or contained in any information obtained from any third- party or publicly available source.

Except as agreed to between the parties prior to the Services being performed, the reports and recommendations resulting from the Services may not be used by any other party or for any other purpose. The undersigned also agrees, to the extent permitted by law, to protect, indemnify, defend and hold CTS harmless from and against any and all claims, demands, actions, rights and causes of action of every kind and nature, including actions for contribution or indemnity, that may hereafter at any time be asserted against CTS or another party, including, but not limited to, bodily injury or death or property damage arising in any manner from or in any way related to any disclaimers or limitations in this Agreement.

By accepting or using the Services, the customer will be deemed to have agreed to the terms of this Agreement, even if it is not signed.

Acknowledged by:

Name of Customer: Sean Rorison of the BC Housing Management Commission 722 Discovery St, Victoria

Authorized Signature: _____

Date: 2022-08-17

Appendix 'A' Tree Inventory

Table 1. Tree Inventory for 722 and 726 Discovery St, Victoria. Diameter at breast height (DBH) is measured in centimeters. Protected root zones (PRZ) are calculated using a 0.12 multiplier and represent the protected radius area around the tree in meters.

Capital Tree Service Inc.									
Appendix A - Tree Inventory/Hazard Ratings Summary									
Location: 722 Discovery St, Victoria, BC V8T 1H2									
Date: January 6, 2022					Conditions: Overcast, 2°C, 11km/hr light breeze				
Tag #	Species	DBH (cm)	PRZ (m)	Height (m)	Health/Structure	Canopy Spread (m)	Bylaw Protected	Comments/Recommendations	
151	Garry oak	87	10	16	F-P/F	8	Yes	Deadwood. Pavement over entire rooting area. Rooting area partially restricted by retaining wall. Great CODIT. Some older epicormic shoots.	
152	Garry oak	87	10	19	F/P	7	Yes	Pavement over entire rooting area. Rooting area partially restricted by retaining wall. 2x stem 10m above grade with seam at union. Good CODIT on pruning wounds. Some narrow angles of attachment.	
153	Garry oak	74	9	16	F/P	8	Yes	2x stem 4m above grade. Rooting area restricted by retaining walls and pavement. Epicormic growth.	
154	Shore Pine	49	6	13	F/P	6	Yes	Some narrow angle of attachments. 10cm deadwood. Leaning stem.	
156	Black Cottonwood	67	8	17	G/P	4	Yes	9 time stem at grade (17, 25, 25, 15, 5, 5, 5, 3, 3 cm DBHs). Narrow angle of attachments. Concrete footing for HVAC unit in trunk. Rooting area restricted by retaining wall, parking lot, and building.	
157	Black Cottonwood	62	7	16	G/P	4	Yes	Growing from stump of removed cottonwood. 8x stem just above grade (22, 23, 15, 17, 17, 10, 10, 15cm DBHs).	
NT1	Field Elm	38	5	10	F/P	5	Yes	Boulevard tree. Utility pruned. Limited viable rooting area due to hardscapes.	

Appendix 'B' Photos

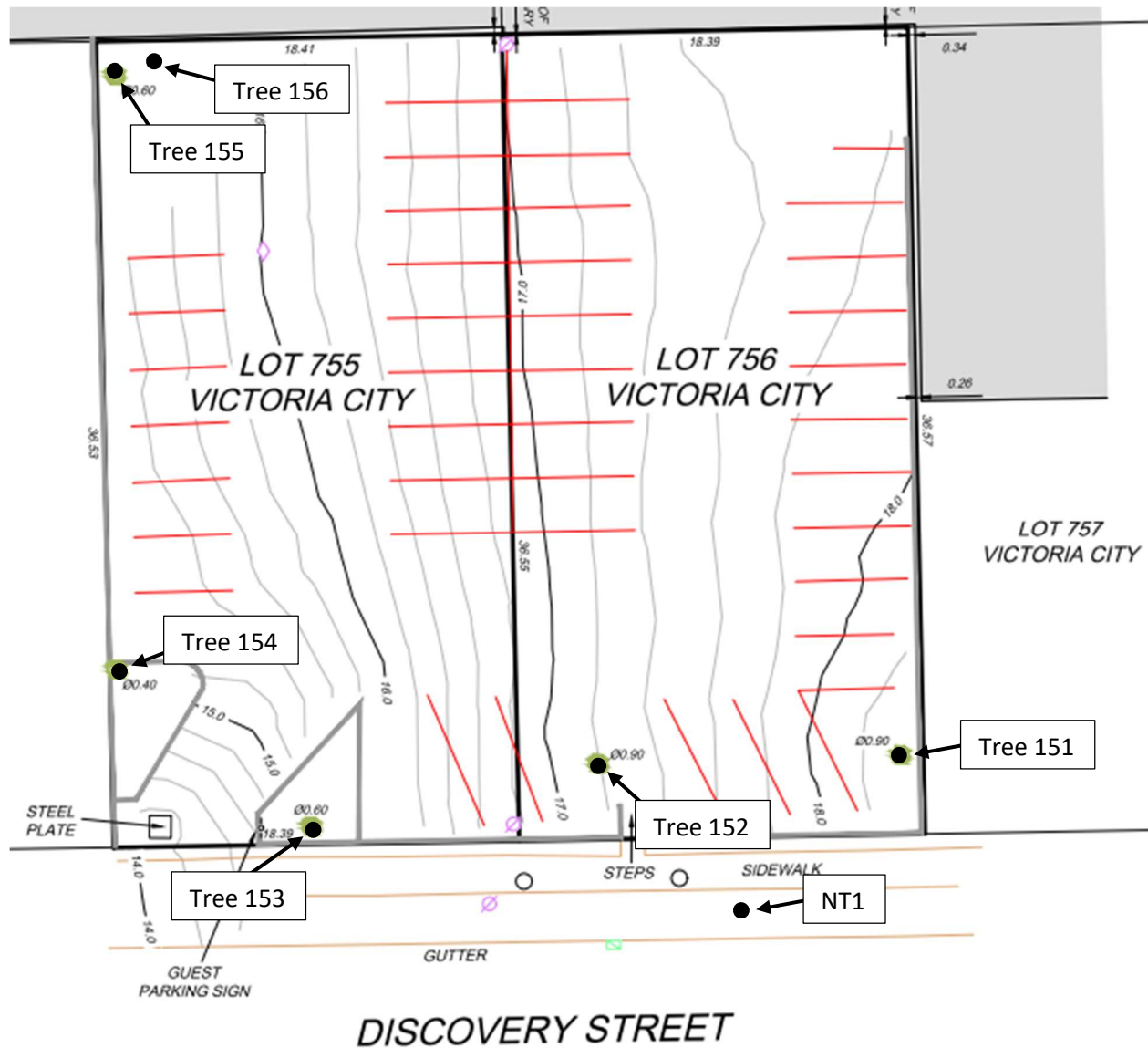


Figure 1. Site Plan and Tree Locations. This site plan depicts the current state of the site and the tree locations. Locations of tree NT1 and 156 have been plotted by CTS for reference and have not been verified by a BC land surveyor.

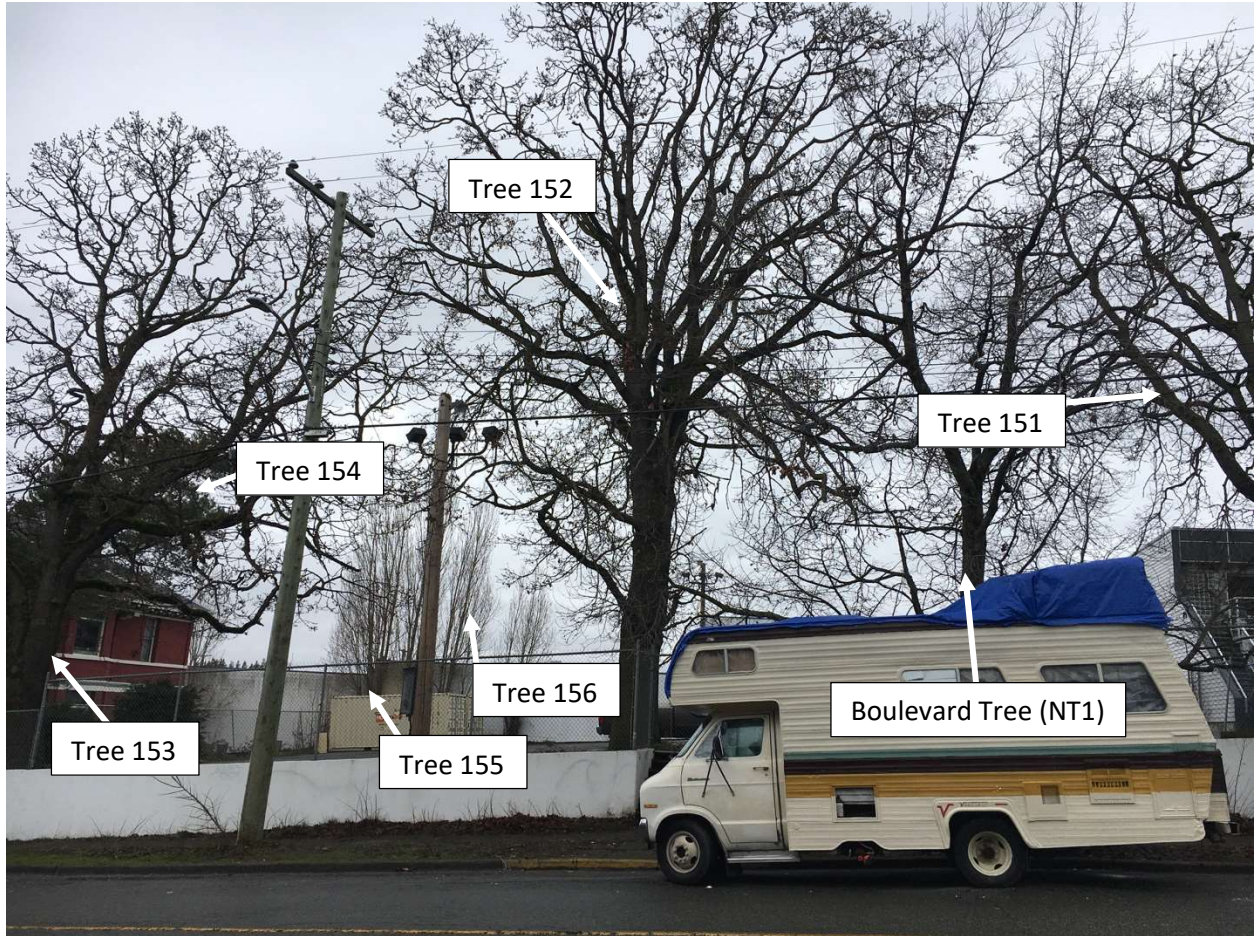


Figure 2. 722 and 726 Discovery St Frontage. Trees are labeled. The Boulevard tree is was not included in this assessment. Tree 154 is the pine behind the Gary oak 153.



Figure 3. Trees 153 and 154. A long horizontal branch can be seen reaching over the driveway.



Figure 4. Tree 154. Tree 154, a Shore Pine. Landscape plants can be seen to the left (south) of the tree.



Figure 5. Tree 153. Note retaining walls restricting rooting area and pavement over available rooting area.



Figure 6. Trees 151 and 152. Note retaining walls restricting rooting area and pavement over available rooting area.



Figure 7. Trunk and root crown of Tree 151. Note rock enveloped by tree. Rooting area is restricted by pavement.



Figure 8. Black Cottonwoods in the Northwest corner of the parking lot. Trees 155 and 156 growing at the edge of the parking lot with a couple of smaller opportunistic cottonwoods. Rooting area is restricted by the building, pavement, and a retaining wall.



Figure 9. Tree 156 Trunk. Tree 156 is growing from the trunk of a removed tree with multiple codominant stems.



Figure 10. Trunk of tree 155. Multiple codominant stems with epicormic growth. Cement footing poured in trunk cavity.