



**Arborist Report for Development  
1091 Stayte Road  
White Rock, BC V4B 4Y8**

***April 28, 2022 Updated***

Submitted to:  
**City of White Rock  
Planning & Development Services Department**

Submitted by:  
**Freedom Sukenick  
ISA Certified Arborist PN 7712A  
White Rock Business License #23377**

Client:  
**Mirus Enterprises Inc.  
Jamie Walgren  
Jamie.walgren@gmail.com**

## TABLE OF CONTENTS

Assignment/Introduction .....	Page 3
Methodology .....	Page 3
Observations .....	Page 4
Table 1 - Tree Inventory and Assessment .....	Page 5
Summary and Recommendations .....	Page 7
Construction, Watering and Maintenance Specifications .....	Page 9
Table 2 - Tree Protection Summary .....	Page 10
Tree Protection Plan .....	Page 10
Photos .....	Page 11
Tree Survey Drawings .....	Page 17
Assumptions, Limiting Conditions and Certification .....	Page 19

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If there are any questions or concerns with the contents of this report, please do not hesitate to contact us.

### Contact information

Phone: 604-306-6942

Email: [info@freedomtreecare.com](mailto:info@freedomtreecare.com)

Website: [www.freedomtreecaretrimmingservice.com](http://www.freedomtreecaretrimmingservice.com)

## ASSIGNMENT / INTRODUCTION

I was asked to assess all trees located onsite, and all City & offsite trees within 4 meters of the property line. The purpose of my consultation is to determine the viability of the trees and the potential impact in relation to the construction of a new house and upgrading of all services.

I conducted my assessment on September 19, 2019.

**March 27, 2022** - I was asked to update the Report to provide recommendations on how to care for the retained trees including a maintenance and watering program. The site plan has also been updated showing new walkway and screw pile locations and a reduced excavation zone on the south side of the proposed building.

**NEW April 26, 2022** - Pathway near tree #678 has been modified. Additional comments provided in the Summary and Recommendations on page 8.

## METHODOLOGY

- **A level 2 Qualitative approach** with a mallet and probe were used on accessible items without dissection, excavation, climbing or coring.
- All trees were inspected using a ground based visual examination.
- Photos have been included to help with tree identification.
- Tree Survey drawing #1 shows all trees.
- Tree Survey drawing #2 shows trees to be retained, Tree Protection Barriers and Replacement Tree locations.
- Trees were evaluated for their preservation potential based on health, structure, location, biotic, abiotic, pathogenic, decay and species factors. Topping cuts and codominant stems are considered structural defects and under most circumstances are considered structurally poor.
- Trees found to be unsafe, conflicting with the proposed building plans, of poor health, of little long term retentive value or having been requested by the owner are recommended for removal in Table #1 and shown on Tree Survey Drawing #1 with an X.
- The maximum amount of encroachment from excavation is generally around 30%. Further encroachment may de-stabilize the tree and is not recommended.
- A 1.5 meter excavation zone is calculated and used around the new house structure to show any potential conflicts with proposed construction.

## OBSERVATIONS

### Tree Resource

The tree resource in this report is made up of 17 trees. 10 Western red cedar (*Thuja plicata*), 2 Paper bark maple (*Acer griseum*), and one each of the following; English oak (*Quercus robur*), Douglas fir (*Pseudotsuga menziesii*), Pacific dogwood (*Cornus nuttallii*), Mountain-ash (*Sorbus aucuparia*), and Spruce (*Picea engelmannii*). Three hedges have been found which are on city property. They are labeled H1, H2 and H3 on the tree survey drawings.

All trees have been tagged and located on the tree survey drawing.

### Tree Inventory and Assessment - Table 1

The following Inventory Table provides individual tree data for all protected trees. Specific information includes:

- tree/tag number, offsite (OS), shared or City Tree (City, C), species
- diameter at breast height (DBH), approximate height, live crown ratio (LCR) %, deadwood %
- structural integrity - a qualitative rating of a tree's shape and structure when compared to ideal trees of the same species and age class (good, fair, poor, dead)
- health - the trees overall health and vigour (good, fair, poor, dead)
- **Good:** Trees in this category are in good health and structural stability and have the potential for longevity at this site.
- **Fair:** Trees in this category are in moderate health and/or have structural defects that may be mitigated with treatment. These trees may require more intense management and monitoring, and may have shorter life-spans than those in the "good" category.
- **Poor:** Trees in this category are in poor health or have structural defects that may not be mitigated with treatment. These trees can be expected to decline regardless of management.
- comments and recommendations
- Tree Protection Zones (TPZs)

**TABLE 1 - Tree Inventory and Assessment**

Tag #	Common Name	Botanical Name	DBH (m)	Height (m)	LCR (%)	Dead wood (%)	Structural Integrity	Health	Comments	Recommendations	TPZ 6X DBH (m)
665 City	English oak	<i>Quercus robur</i>	.42	13	90	5	Good	Good	Multi-stemmed at 2m.	<b>Retain and Monitor</b>	2.52
666 City	Western red cedar	<i>Thuja plicata</i>	.35, .22	13	85	10	Poor	Fair	Multi-stemmed at base & 4.5m Previously topped at 2.5m with dieback at the topping cuts	<b>Retain and Monitor</b>	3.42
667 City	Western red cedar	<i>Thuja plicata</i>	.33	13	85	10	Poor	Fair	Multi-stemmed at 3m 2m long damage to main stem Previously topped at 2.5m with dieback at the topping cuts	<b>Retain and Monitor</b>	1.98
668 City	Western red cedar	<i>Thuja plicata</i>	.2, .54	13	85	10	Poor	Fair	Multi-stemmed at base Previously topped at 2.5m with dieback at the topping cuts	<b>Retain and Monitor</b>	4.44
669 OS	Douglas fir	<i>Pseudotsuga menziesii</i>	.59	20	85	5	Fair	Good		<b>Retain and Monitor</b>	3.54
670 OS	Western red cedar	<i>Thuja plicata</i>	.33, .38	15	90	10	Fair	Good	Multi-stemmed at base & 4m	<b>Retain and Monitor</b>	4.26
671 OS	Western red cedar	<i>Thuja plicata</i>	.37, .56	15	90	10	Poor	Good	Multi-stemmed at base	<b>Retain and Monitor</b>	5.58
672 OS	Western red cedar	<i>Thuja plicata</i>	.44, .46	15	90	10	Poor	Fair	Multi-stemmed at base & 4m Significant lvy in canopy	<b>Retain and Monitor</b>	5.4

**TABLE 1 - Tree Inventory and Assessment**

Tag #	Common Name	Botanical Name	DBH (m)	Height (m)	LCR (%)	Dead wood (%)	Structural Integrity	Health	Comments	Recommendations	TPZ 6X DBH (m)
673 OS	Western red cedar	<i>Thuja plicata</i>	.54	15	90	5	Poor	Fair	Multi-stemmed at 4m. Significant Ivy in canopy	<b>Retain and Monitor</b>	2.52
674	Mountain ash	<i>Sorbus aucuparia</i>	.24, .32	7	75	10	Fair	Fair	Multi-stemmed at base Significant Ivy in canopy	<b>Remove due to conflicts with construction.</b>	3.42
675 OS	Western red cedar	<i>Thuja plicata</i>	.8	15	90	5	Poor	Good	Multi-stemmed at 3m & 5m	<b>Retain and Monitor</b>	1.98
676 OS	Western red cedar	<i>Thuja plicata</i>	.12, .1, .15	7	70	5	Good	Good	Crown on south side	<b>Retain and Monitor</b>	4.44
677 City Shared	Western red cedar	<i>Thuja plicata</i>	.46, .48	15	90	5	Poor	Good	Pruning for the electrical house drop is required	<b>Retain and Monitor</b>	3.54
678	Pacific dogwood	<i>Cornus nuttallii</i>	.21, .3, .41	13	75	5	Good	Good	Pruning for the electrical house drop is required Multi-stemmed at 1m	<b>Retain and Monitor</b>	4.26
679 City	Paperbark maple	<i>Acer griseum</i>	.1, .11	4.5	60	<5	Good	Good		<b>Retain and Monitor</b>	5.58
680 City	Paperbark maple	<i>Acer griseum</i>	.13	4.5	65	<5	Good	Good		<b>Retain and Monitor</b>	5.4
681	Spruce	<i>Picea engelmannii</i>	.54	15	90	5	Good	Fair	Moderate Sapsucker damage and related resinosis	<b>Remove due to conflicts with construction.</b>	3.24

## SUMMARY AND RECOMMENDATIONS

### Viability of trees

City trees #666 - #668 are in poor health due to decay found on the main stems.

All 3 hedges on City property are in good condition.

Trees #669 - #674 share canopies.

**March 27, 2022** - The Western red cedar (*Thuja plicata*) tree has a poor-moderate relative tolerance to construction impacts and the addition of fill soil (Matheny and Clark, 1998, Trees and Development). Effort must be made to ensure the long term success and retention of all retained trees before, during and after construction is complete.

### Development impact on trees

Offsite tree #670 will have encroachment from the new open patio. Arborist supervision is recommended during construction.

Offsite tree #671, 672, 673 and 675 will have 20%, 20%, 3% and 27% encroachment from the new house excavation zones. Arborist supervision is recommended during excavation and construction. A reduction in the excavation zone from 1.5m to 1m has been implemented for this side of the house.

Tree #674 will have 60% encroachment from the new house excavation zone and is therefore recommended for removal due to conflicts with construction.

Offsite/City shared tree #677 will have 32% encroachment from the new house excavation zone. A concrete walkway, gate and fence are proposed in its TPZ. Arborist supervision is recommended during excavation and construction. A reduction in the excavation zone from 1.5m to 1m has been implemented.

Tree #678 will have 3% encroachment from the new house excavation zone. A concrete walkway, gate and fence are proposed in its TPZ. Arborist supervision is recommended during excavation and construction. A reduction in the excavation zone from 1.5m to 1m has been implemented.

Tree #681 will have 100% encroachment from the new house excavation zone and is therefore recommended for removal due to conflicts with construction.

**March 27, 2022** - To reduce the construction impacts to trees #671, 672, 673, 675, 677 and 678, the basement has been reduced in size and the excavation zone has been reduced from 1.5m to 1m. To support the unreduced floors above, screw piles shall be used and located near the protected trees. The excavation for the screw piles is approximately 60cm X 60cm and is to be done by hand or Hydro-vacuum machine. The suitability, quantity and locations of the screw piles shall be determined by the Project Architectural and Geotechnical engineers.

## **SUMMARY AND RECOMMENDATIONS continued**

**NEW April 26, 2022** – The pathway has been aligned with the east side entry doorway. The pathway located inside the tree protection zone of tree #678 shall be above grade using paving stones, slab-on grade concrete, Grasscrete or gravel. The pathway shall be a suitable distance away from the basal flare of the tree, as determined by the project Arborist at time of preparation/installation. No digging shall be done inside the tree protection zone. Arborist supervision during the preparation and installation of the pathway is recommended.

### **Potential conflicts with services**

Storm comes from Cliff Ave. - No conflict is expected.

Natural gas comes from Cliff Ave. - No conflict is expected.

Sanitation comes from Cliff Ave. - No conflict is expected.

Water comes from Cliff Ave. - No conflict is expected.

Electrical is above ground and comes from Cliff Avenue, through tree #677. Pruning for clearance for the new above ground electrical house drop may be necessary.

### **GENERAL NOTES**

1. Replacement trees must meet the plant condition and structure requirements set out in the latest edition of the BCSLA/BCLNA "B.C. Landscape Standard" and the CNTA "Canadian Standards for nursery stock".
2. Replacement trees must be located, planted and maintained in accordance with the BCSLA/ BCLNA and "White Rock Tree Management Bylaw NO. 1831".
3. Replacement trees must be a minimum size of 3.0m ht. coniferous / 6 cm cal. deciduous
4. Trees must be located a minimum distance of 1m from any property lines and 3m from any other tree or buildings/services.



## CONSTRUCTION, WATERING AND MAINTENANCE SPECIFICATIONS

1. Before beginning work, the contractor should meet with the project arborist on site to review all work procedures, access routes, storage areas and tree protection measures.
2. **Any work within two meters of a tree protection zone (TPZ)** shall be monitored and done under the directions of the project arborist.
3. All trees shall be irrigated prior to, during, and after any root pruning or after any excavation and every week after, during the months of June, July, August and September (2022). Each irrigation shall wet the soil to a depth of 150cm.
4. Clearing of vegetation in the TPZ shall be done by hand. Brush shall be chipped and placed in the TPZ to a depth of 6". Wood chips shall not be placed against the trunk(s). Additional wood chips may be required.
5. Tree(s) to be removed that have branches extending into the canopy of tree(s) to remain or are in the TPZ of tree(s) to remain, must be removed by a qualified arborist. The qualified arborist shall remove the tree(s) in a manner that causes no damage to the tree(s) and understory to remain. Trees to be removed that are located in the TPZ of trees to remain, shall be cut near ground level and the stump ground out.
6. Erosion control devices such as silt fencing, debris basins, and water diversion structures shall be installed to prevent siltation and/or erosion within the TPZ.
7. All work required within the TPZ shall be done by hand and under the direct supervision of the project Arborist.
8. All pruning shall be performed by a certified arborist and will be in accordance with ANSI A300 (part 5) pruning standards and ANSI Z133.1 safety standards. Pruning for building clearance will be required and is best achieved at the framing stage, prior to the installation of glazing and building wrap.
9. Trees should be monitored by a certified arborist for a period of 18 months after construction is complete.
10. No swales shall be located in the tree protection zones of retained trees.
11. Trees to be retained will require arborist supervision any time heavy machinery encroaches within 2 meters of the tree protection zones. Excavation pins will need to be located prior to excavation for construction. Roots should be pruned or cut prior to excavation to minimize the damage from ripping. Ripped or damaged roots shall be exposed using the least injurious method and the damaged section cut cleanly. Exposed roots should be covered with moisture retaining material such as burlap or moist fill soil, and a covering such as a tarpaulin, to prevent drying of the soil and roots.

**TABLE 2 - Tree Protection Summary**

	Onsite	Offsite	City	Total
Number of protected trees identified	3	7	7	17
Number of protected trees to be Removed	2	0	0	2
Number of protected trees to be retained	1	7	7	15
Number of replacement trees required	6	0	0	6
Number of replacement trees proposed	6	0	0	6
Number of replacement trees in deficit	0	0	0	0
Total number of retained trees & replacement trees	21			

**TREE PROTECTION PLAN**

Tree protection shall be done in accordance with White Rock Tree Management Bylaw No. 1831. Tree protection fencing is to be installed prior to construction with no excavation, grade alterations or materials storage within the Tree Protection Zones (TPZ) unless preapproved by the project Arborist. Tree protection zones are listed on the Tree drawing #1. The project Arborist must be contacted prior to and be on site for any construction within **the recommended TPZ which is 6X the tree diameter**. All parties must be aware that long-term success in tree preservation efforts depends greatly on minimizing the impact caused during and post construction. Mechanical injuries caused to trees above or below ground are difficult to repair and can cause long term damage or death. Best efforts must be made to ensure that soils remain undisturbed within the tree protection zones.

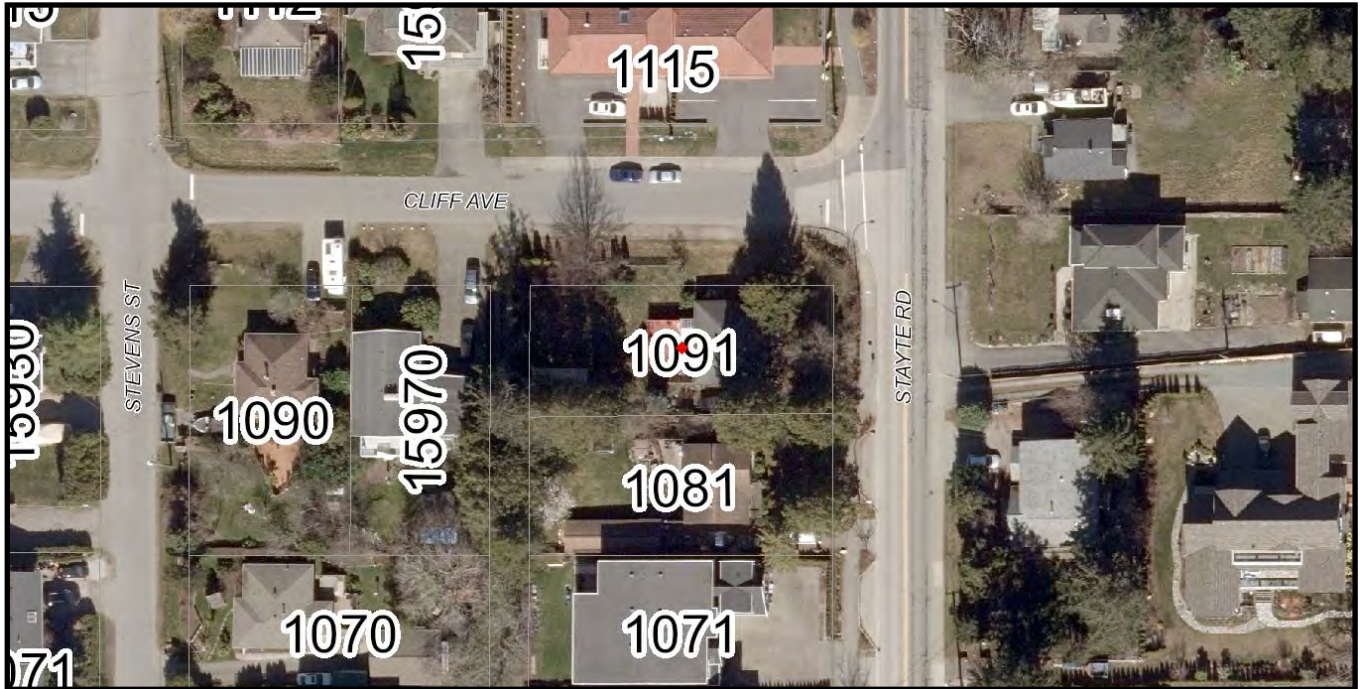


Photo 1

Aerial photo March 2019, White Rock's WROMS.



Photo 2

Street view of property at time of assessment.



Photo 3  
Tree #665 and #H3. Facing west.



Photo 4  
Tree #665 on left and #H3. Facing east.



Photo 5  
Trees #666 - #674, from right to left.  
All trees share a crown.



Photo 6  
Tree #666, photo showing pruning cut dieback on the main stems. Good reaction growth has developed.



Photo 7

Tree #667, photo showing pruning cut dieback on the main stem. Minimal reaction growth has developed.



Photo 8

Tree #668, photo showing pruning cut dieback on the main stem. Good reaction growth has developed.

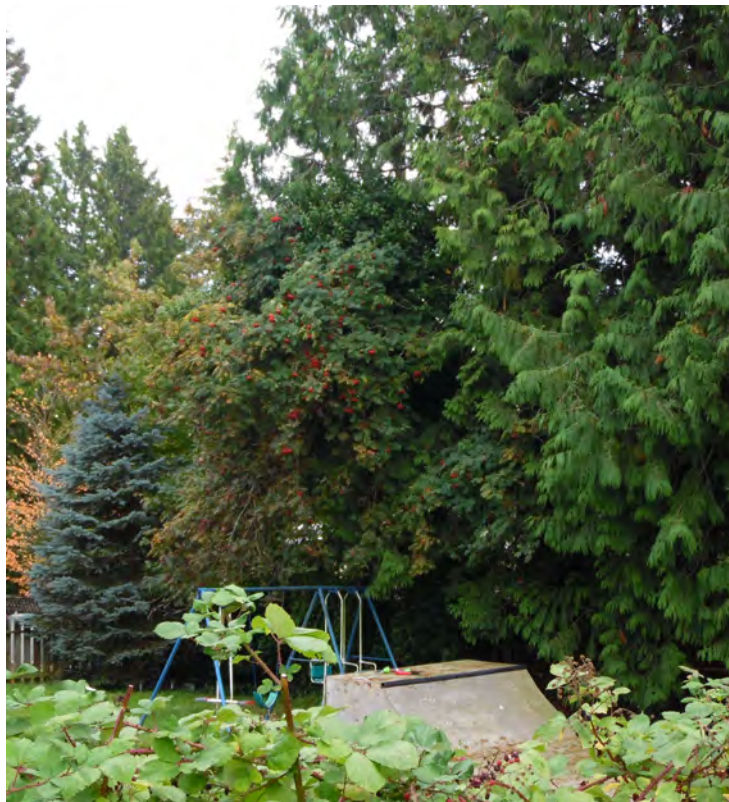


Photo 9

Tree #674 in center with red berries.



Photo 10

Tree #675, photo showing co-dominant stems at 3m and 5m.



Photo 11  
Tree #676 (left) and #677 (right).



Photo 12  
Photo showing the co-dominant base of tree #677.



Photo 13  
Tree #678 and #678 in center, #677 on left, and #681 on right.



Photo 14  
Photo showing the base of tree #678.  
Tree #681 in background.



Photo 15  
Tree #681



Photo 16  
Sapsucker damage on tree #681.



Photo 17  
Boulevard trees #679, #680 and #H1.



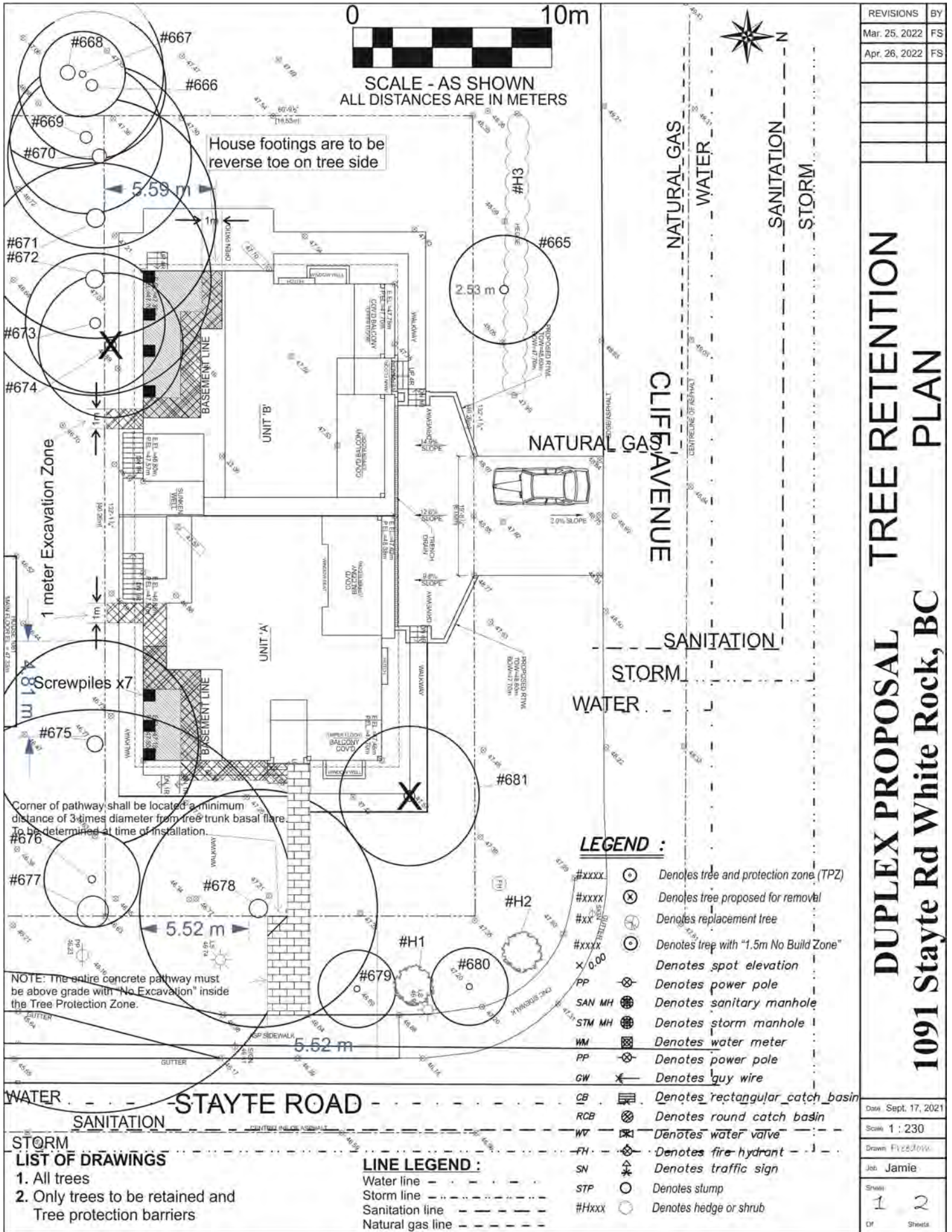
Photo 18  
Boulevard trees #679 , #680 and hedge #H1.  
All on city property.

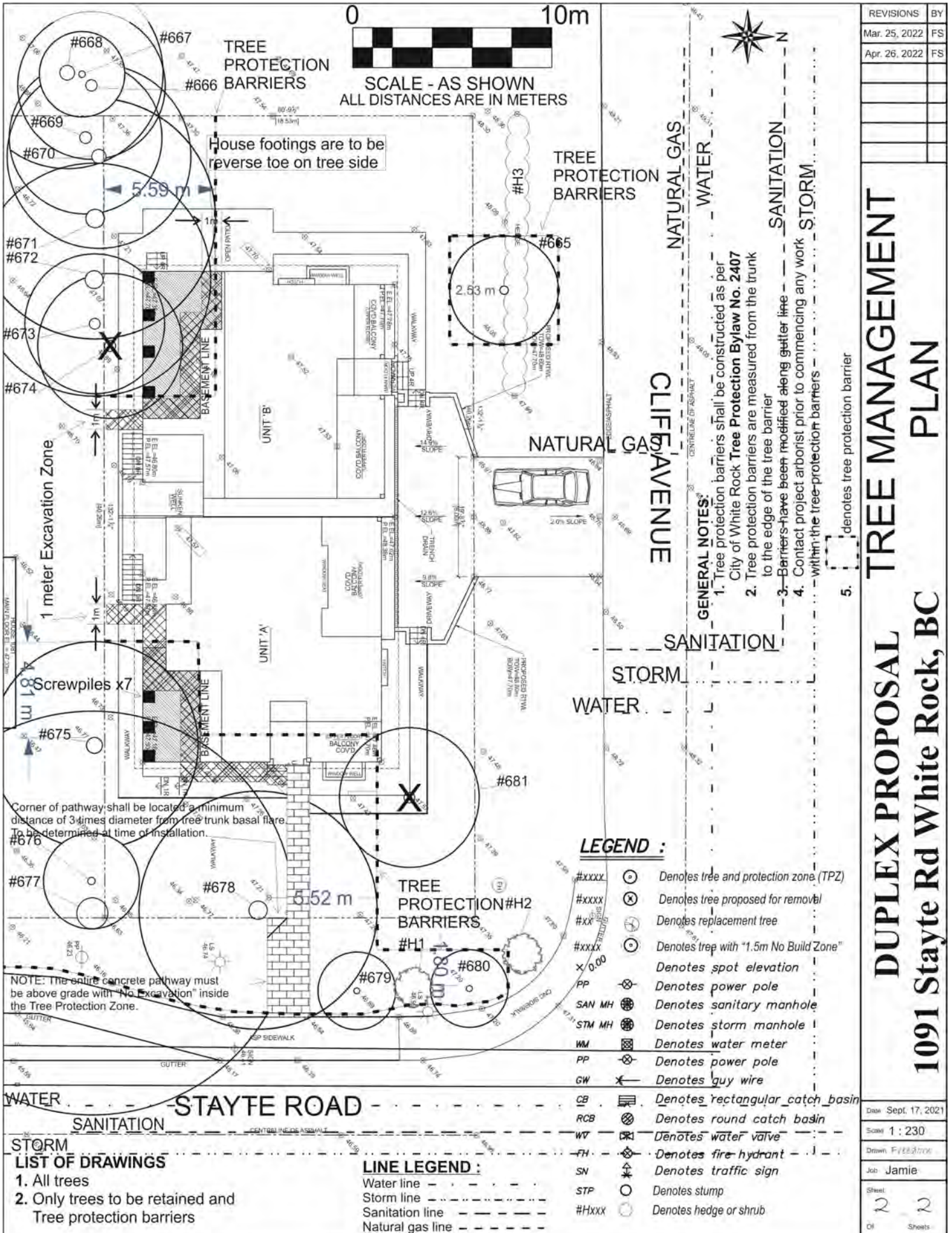


Photo 19

Hedge #2 on city property. Volunteer trees have started growing in the hedge.







REVISIONS	BY
Mar. 25, 2022	FS
Apr. 26, 2022	FS

# TREE MANAGEMENT PLAN

## DUPLIX PROPOSAL

### 1091 Stayte Rd White Rock, BC

Date	Sept. 17, 2021
Scale	1 : 230
Drawn	FYE/STW
Job	Jamie
Sheet	2
Of	2

## ASSUMPTIONS AND LIMITING CONDITIONS

- Information contained in this report covers only those items that were examined and reflects conditions of those items at the time of assessment. The assessment is limited to visual examination of accessible items without dissection, excavation, climbing or coring.
- Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible, however, Freedom Tree Care Ltd can neither guarantee nor be responsible for the accuracy of information.
- Any legal description provided to the consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Freedom Tree Care Ltd shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made .
- Loss or alteration of any part of this report invalidates the entire report.
- This report shall be used for its intended purpose only and by the parties to whom it is addressed. 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 advertising, public relations, news, sales, or other media, without the prior expressed written and verbal consent of Freedom Tree Care Ltd.
- Sketches, diagrams, graphs and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be constructed as engineering or architectural reports or surveys.
- There is no warranty or guarantee expressed or implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.

I certify that this report has been prepared in accordance with accepted Arboricultural standards from the information made available to me at the time, and that the facts and opinions expressed within it are true and accurate to the best of my knowledge and belief.

If there are any questions regarding the contents of this report, please contact Freedom Tree Care Ltd.



Freedom Sukenick

ISA Certified Arborist #PN-7712A

Certified Tree Risk Assessor (TRAQ)

Freedom Tree Care Ltd.