



Date: **May 18, 2021**

ACL File: **21154**

Attn: **Jeremy Hanson
Aplin and Martin**
201 – 12448 82 Avenue
Surrey, BC V3W 3E9

Prepared by: **Norman Hol**
Principal and Senior Consultant

Project: **84 Avenue Connector
King George Blvd to 140 St Surrey BC**

Re: **Preliminary Tree Inventory and Construction Impact Assessment**

Dear Mr. Hanson,

We have completed our initial tree inventory and assessment for the study area on this project and enclose preliminary drafts of the inventory and drawing for your reference in project planning and design. Based on the current project design (received May 18, 2021) we have summarized the tree impacts as follows:

Overall Inventory Data:

- Total of 183 Tagged Trees
- 178 Bylaw Sized Tagged Trees
- 5 Undersize Tagged Trees

Tree Removal Data to Accommodate Construction: (from Direct Conflicts)

- 90 Tagged Bylaw Sized Trees Proposed to be Removed
- 2 Tagged Undersize Trees Proposed to be Removed
- 94 Un-Tagged Undersize Trees to be Removed

Note: Protect trees consisting of 88 tagged bylaw sized trees and 3 tagged undersize trees in this preliminary submission will require further study to confirm their viability for preservation based on their pre-existing condition as well as considering potential indirect impacts from construction once the design is finalized. Additional trees may require inventory and assessment depending on the scope of the final project design.

Table 1. Preliminary Tree Retention/Removal Quantities by Species:

	Total	Remove	Retain
<u>Alder and Cottonwood Species:</u>			
Alder (<i>Alnus rubra</i>)	69	37	32
Cottonwood (<i>Populus trichocarpa</i>)	65	38	27
subtotal alder/cottonwood	134	75	59
<u>Broadleaf Species:</u>			
Bigleaf maple (<i>Acer macrophyllum</i>)	1	0	1
Paper birch (<i>Betula papyrifera</i>)	2	0	2
Apple (<i>Malus sp.</i>)	1	1	0
Bitter cherry (<i>Prunus emarginata</i>)	1	0	1
Oak (<i>Quercus sp.</i>)	1	0	1
Pin oak (<i>Quercus palustris</i>)	8	5	3
Cascara (<i>Rhamnus purshiana</i>)	11	6	5
subtotal broadleaf	25	12	13
<u>Coniferous Species</u>			
Austrian pine (<i>Pinus nigra</i>)	8	0	8
Western redcedar (<i>Thuja plicata</i>)	11	3	8
subtotal coniferous	19	3	16
Subtotal broadleaf and coniferous	44	15	29
TOTAL (including alder/cottonwood)	178	90	88



Perimeter Tree Management Strategy:

Additional trees along the perimeter of the road alignment may need to be removed, however further assessment will be required as the project advances in detailed design and then at the time of land clearing to identify the following issues/impacts before finalizing which trees require treatment. Some issues/impacts for trees located outside of the current expected construction footprint that we will be considering may include:

- Trees that are expected to have their roots or crowns impacted by cuts/fills, temporary access, other civil infrastructure and connections, or other construction needs unforeseen and/or still to be determined.
- Trees with defects severe enough to predispose the tree or parts of the tree to failure, and that are within striking range such that may pose risks to workers or users of the road. This will be best addressed after the final design is achieved and then re-assessed at the time of land clearing (i.e. danger trees or high risk hazard trees due to pre-existing defects and proximity to the work zones).
- Trees that are destabilized from the removal of adjacent trees to be cut within the construction footprint (i.e. danger trees or high risk hazard trees created by clearing and new exposure).

Note that the designation of whether a tree is to be retained/protected or removed is not included in appendix B, but shown on a preliminary basis on appendix C. Tree protection measures are not yet shown but are to be added once the design is finalized. We will remain on stand-by to advance our findings for impacts and mitigation as the project design advances.

Certified by;		ISA Certified Arborist #PN-0730A ISA Qualified Tree Risk Assessor (TRAQ) PNWISA Certified Tree Risk Assessor #0076 BC Certified Wildlife and Danger Tree Assessor #P2529 ASCA Qualified Tree and Plant Appraiser (TPAQ) Land Surveying Technologist
Norman Hol, Company Principal and Senior Consultant		

Enclosures;
Appendix A – excluded at this time
Appendix B – Tree Inventory List – PRELIMINARY
Appendix C – Tree Management Drawing (4 sheets) – PRELIMINARY



APPENDIX B: TREE INVENTORY LIST: (all dimensions are metric)

Tag/ID denotes the arborist tag # or serial ID number as referenced in report and drawing documentation.

Dbh denotes the trunk diameter in cm at 1.4 m above grade or to arboricultural standards (i.e. below scaffold union). The dbh may be estimated or derived from survey data.

Multiple stems; attached above the root crown used trunk area method for equivalent single stem dbh; attached below the root crown references the largest stem.

Ht denotes the height of the tree in metres as measured or estimated by the assessor.

Spr denotes the spread RADIUS of the branches and foliage (dripline) in metres as measured or estimated by the assessor.

LCR denotes the live crown ratio based on percent of live crown observed in relation to a tree of normal form and with a full crown.

Class denotes the structural class of a tree. **Landscape Trees;** considers exposure: **O** denotes open, **G** denotes Grove, **E** denotes Edge

Forest Stand Trees; considers relative dominance, LCR and HT:DIA Ratio, and other factors (see below):

U denotes Understory (i.e. differs in species from primary canopy or an emerging tree with reasonable form)

S denotes Suppressed (i.e. declining tree of primary canopy species, spindly taper, very low LCR (<30%) and usually not structurally viable along new forest edges)

I denotes Intermediate (i.e. poor trunk taper and low LCR (10 to 30%), dependent on stand level retention zones subject to windthrow analysis findings)

C denotes Codominant (i.e. moderate trunk taper and LCR (30 to 50%), potentially viable in stand level retention zones subject to windthrow analysis findings)

D denotes Dominant (i.e. stand anchoring, good trunk taper, moderate to full LCR (>50%), important to stand/grove retention subject to windthrow analysis findings)

SE denotes Stand Edge (i.e. stand buffering trees of significance along pre-existing windfirm boundaries with fuller but sometimes asymmetric crown form)

Condition represents the **Health and Structural** characteristics as observed by arborist. **VP** denotes Very Poor, **P** denotes Poor, **F** denotes Fair, **G** denotes Good

Value rating considers **Condition and Contribution** to the proposed land use; **VL** denotes Very Low, **L** denotes Low, **M** denotes Medium, **H** denotes High, **VH** denotes Very High

Priority denotes preservation ranking for consideration in tree retention planning considering multiple factors including; condition, value rating, age, species, etc.

Priority rankings; **1, 2 and L (Low)**. **NOTE;** if prefix **S** is included, it denotes stand tree suitable for retention only with special measures and in grove/stand form.

Individual trees within forest stands are generally deemed Nil priority for selective retention except when sufficiently large stands are protected.

Assessment Findings includes; our summary of overt defects, noteworthy growing condition factors, preservation and protection considerations and treatment rationale.

Action denotes proposed treatment in context to the project design; **RETAIN, REMOVE or PROTECT**. Removal of Shared and Off-Site trees **require owner consent**.

CPZ and RPZ; arborist setbacks for Crown and Root protection (measured from centre of trunk). A **WSS** (working space setback) is additional to the RPZ (see drawing). All 3 form the Tree Protection Zone (**TPZ**).

6X Dbh is an arbitrary city guideline for minimum root protection, not a specification. The calculation includes radius of the trunk and is dimensioned relative to the center of trunk. **Use RPZ plus WSS.**

Reference Bylaw: SURREY SURREY TREE PROTECTION BYLAW 2006 NO. 16100, AMMENDED DECEMBER 21, 2020

Minimum Bylaw Protected Tree Size: 30 cm DBH

Bylaw Minimum Tree Protection Setback: • Minimum barrier alignment is at dripline. • Minimum barrier detail is 6 x DBH.

Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
554	1	N	Pin oak (<i>Quercus palustris</i>)	22	13	4.0	70	G	G	VH	1	N		PROTECT	4.0		1.4
555	1	N	Pin oak (<i>Quercus palustris</i>)	18	11	4.0	60	G	G	VH	1	N		PROTECT	4.0		1.2
556	1	N	Pin oak (<i>Quercus palustris</i>)	16	11	4.0	60	G	G	VH	1	N		PROTECT	4.0		1.0



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
557	1	Y	Pin oak (<i>Quercus palustris</i>)	30	16	4.0	70	G	G	VH	1	N		REMOVE			
558	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	37	14	5.0	90	O	G	L	LOW	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (37, 16cmø) at 1.4m above grade for protection setback calculation purposes. Openly grown; south side of fence 	REMOVE			
559	1	Y	Oak sp. (<i>Quercus sp.</i>)	31	7	7.0	80	G	VG	VH	1	N	<ul style="list-style-type: none"> Private tree in strata on north side of fence 	PROTECT	7.0		2.0
560	1	Y	Red alder (<i>Alnus rubra</i>)	84	17	7.0	60	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> Bifurcation at 1m above grade. One dead stem. Asymmetrical crown biased to the south 60% dieback 	REMOVE			
561	1	Y	Red alder (<i>Alnus rubra</i>)	38	17			SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (38, 35cmø) at 1.4m above grade for protection setback calculation purposes. These two stems are snags. 	PROTECT			2.5
562	1	Y	Red alder (<i>Alnus rubra</i>)	42	20	5.0	60	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> Basal rot. Leader failure (broken and hanging). 	PROTECT	5.0		2.7
563	1	Y	Red alder (<i>Alnus rubra</i>)	53.6	20	4.0	40	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (35+25+32cmø) at 1.4m above grade for protection setback calculation purposes. Multiple branch failure throughout. One stem leaning towards proposed road centerline with no correction; crowns not merged. 	PROTECT	4.0		3.5
564	1	Y	Red alder (<i>Alnus rubra</i>)	32	17	3.0	30	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> Dead and broken top. 	PROTECT	3.0		2.1



Tag/ID	# of Trees	Bylaw Y/N	Common name, (Botanical)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
565	1	Y	Red alder (Alnus rubra)	51.2	20	5.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • DBH of a single stem equivalent is calculated based on the area of measured stems (32+40cmØ) at 1.4m above grade for protection setback calculation purposes. • Crown biased to the south. • One stem near base of trunk broke off causing decay. 	PROTECT	5.0		3.3
566	1	Y	Red alder (Alnus rubra)	30	19	5.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Large crook at 7m. • Crown biased to the south. 	PROTECT	5.0		2.0
567	1	Y	Red alder (Alnus rubra)	36.1	20	4.0	70	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • DBH of a single stem equivalent is calculated based on the area of measured stems (24+27cmØ) at 1.4m above grade for protection setback calculation purposes. • Co-dominant stems (east-west) at 0.3m above grade. • Thin foliage. • Historic scaffold branch failure 	REMOVE			
568	1	Y	Red alder (Alnus rubra)	35	20	5.0	60	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the south. • Historic stem failure. • Upper crown branch failure. 	REMOVE			
569	1	Y	Red alder (Alnus rubra)	45	21	5.0	70	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • 15% dieback. • Multiple leaders starting from 10m up. • Crown merged with #570. • Crown biased to the south. 	REMOVE			
570	1	Y	Red alder (Alnus rubra)	46	20	5.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Old scar at 4m above grade. • Old nest (or nest-like) at 2m above grade. • Leaning to the south. • Upper crown dieback 10-20%. • Crown biased to the south. • Crown merged with #569. 	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
571	1	Y	Red alder (<i>Alnus rubra</i>)	31	6	3.0	30	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> Main stem is dead. Smaller stem is green but has structural issues. 	REMOVE			
572	1	Y	Red alder (<i>Alnus rubra</i>)	37	18	3.0	40	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> Co-dominant stems at 7m above grade. Dead top. Branch failure in the upper crown. One failed stem causing decay column. 	REMOVE			
573	1	Y	Red alder (<i>Alnus rubra</i>)	30	18	3.0	40	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> Crook at 3m above grade. Dead top. Branch failure. Knots and kinks on branches. 	REMOVE			
574	1	Y	Red alder (<i>Alnus rubra</i>)	43	18	6.0	60	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> Stem failure. Decay cavity at 3m above grade. Upper crown dieback. Epicormic growth on lower stem. 	REMOVE			
575	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	38	16	6.0	60	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> Lean corrected at 1.5m. Butt rot. Branch and stem failure. Epicormic growth on lower stem. Decay of scaffold branches. 	REMOVE			
576	1	Y	Red alder (<i>Alnus rubra</i>)	31	15	4.0	40	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> Broken top at 8m above grade. Leaning to the south. 15% dieback. 	REMOVE			
577	1	Y	Red alder (<i>Alnus rubra</i>)	42	20	5.0	70	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> Dead top. 20% dieback overall. 	PROTECT	5.0		2.7



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
578	1	Y	Red alder (<i>Alnus rubra</i>)	30	12	4.0	40	SE	P	L	S-LOW	Y	• Dead top causing decay.	REMOVE			
579	1	Y	Red alder (<i>Alnus rubra</i>)	30	18	4.0	70	SE	G	L	S-LOW	Y	• Historic stem failure. • 20-30% dieback in the upper crown. • Leaning to the south.	REMOVE			
580	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	61.8	20	8.0	60	SE	P	VL	S-2	Y	• DBH of a single stem equivalent is calculated based on the area of measured stems (39+48cmØ) at 1.4m above grade for protection setback calculation purposes. • Leaning to the south. • Both stems rotten at base. • Frass. • Failure of scaffold branches causing decay column. • Reactive growth forming part of the crown. • 25% dieback overall.	REMOVE			
581	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	33	23	7.0	80	SE	G	L	S-LOW	Y	• One of the co-dominant stems at ground level failed and rotten (girdled by beavers). • Multiple crooks.	REMOVE			
582	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	98	38	8.0	80	D	F	L	S-LOW	Y	• Scaffold branch failure.	REMOVE			
583	1	Y	Western redcedar (<i>Thuja plicata</i>)	31	10			S	VP	VL	S-LOW	Y	• 1/3 stem diameter girdled by beaver • Deep checks on stem. • Dying	REMOVE			
584	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	84	40	9.0	80	SE	G	L	S-LOW	Y	• Asymmetrical crown biased to the west.	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
585	1	Y	Red alder (<i>Alnus rubra</i>)	31	15	3.0	40	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Crook at 2m above grade. • Dead and broken top. 	PROTECT	3.0		2.0
586	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	90	41	9.0	50	D	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown biased to the northwest. • Historic scaffold branch failure. 	PROTECT	9.0		5.9
587	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	84	39	8.0	50	D	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Adjacent to trail. • Recent failure of large scaffold branch. • Broken top at 17m above grade (partially attached, bending towards the walking trail, creating an overhead hazard). 	PROTECT	8.0		5.5
588	1	Y	Western redcedar (<i>Thuja plicata</i>)	52	18	4.0	50	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • Dead top (no foliage from 7m up). • Bottle butt. 	PROTECT	4.0		3.4
589	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	84	38	6.0	60	D	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Historic branch failure. 	PROTECT	6.0		5.5
590	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	54	26	8.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Adjacent to walking trail. • Historic branch failure. 	REMOVE			
591	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	90	33	6.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Adjacent to walking trail. • Historic branch failure. 	REMOVE			
592	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	44	25	4.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Adjacent to walking trail. • Historic branch failure. 	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
593	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	38	15	4.0	50	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • Extensive rot in the lower stem. • Bifurcation at 1.6m. • Broken and hanging stems. 	REMOVE			
594	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	37	18	4.0	50	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • Multiple stems. • Leaning to the northeast. • Cavity at 1.5m (from breakage of old stem). 	REMOVE			
595	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	31	18	3.0	50	SE	G	M	S-1	Y	<ul style="list-style-type: none"> • Bifurcation at 1.4m above grade. • Multiple leaders; leaning to the northeast. 	REMOVE			
596	1	Y	Red alder (<i>Alnus rubra</i>)	32	13	6.0	70	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Dead and broken top. 	REMOVE			
597	1	Y	Red alder (<i>Alnus rubra</i>)	30	17	5.0	70	SE	G	L	S-LOW	Y		REMOVE			
598	1	Y	Red alder (<i>Alnus rubra</i>)	31	12	5.0	30	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Dead and broken top. 	REMOVE			
599	1	Y	Western redcedar (<i>Thuja plicata</i>)	53	18	5.0	10	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • Dying. 	PROTECT	5.0		3.4
600	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	56	30	6.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown biased to the south. 	REMOVE			
601	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	79	37	9.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown biased to the south. 	REMOVE			
602	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	78	37	10.0	50	D	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown biased to the south. 	PROTECT	10.0		5.1
603	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	89	37	11.0	50	D	P	L	S-LOW	Y	<ul style="list-style-type: none"> • 40% dieback. • Butt rot. 	PROTECT	11.0		5.8



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
604	1	Y	Western redcedar (<i>Thuja plicata</i>)	49	21	4.0	80	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • 40% dieback. • Bottle butt. • Crown merged with #605. 	PROTECT	4.0		3.2
605	1	Y	Western redcedar (<i>Thuja plicata</i>)	58	21	5.0	80	SE	G	M	S-1	Y	<ul style="list-style-type: none"> • Bottle butt. • Crown merged with #604. 	PROTECT	5.0		3.8
606	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	80	37	11.0	50	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Co-dominant stems at 15m above grade. 	PROTECT	11.0		5.2
607	1	Y	Red alder (<i>Alnus rubra</i>)	32	20	4.0	50	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Decay cavity. 	PROTECT	4.0		2.1
608	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	55	38	5.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the south. • Mid crown: thin foliage. • Currently exposed. 	PROTECT	5.0		3.6
609	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	52	37	15.0	50	G	G	L	LOW	N	<ul style="list-style-type: none"> • Leader is bending to the east. 	REMOVE			
610	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	87	37	12.0	50	G	G	L	LOW	N		REMOVE			
611	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	112	37	11.0	50	G	G	L	LOW	N	<ul style="list-style-type: none"> • Co-dominant stems at 1m above grade. 	REMOVE			
612	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	67	37	15.0	50	G	G	L	LOW	N	<ul style="list-style-type: none"> • Crooked. 	REMOVE			
613	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	40	37	7.0	50	G	G	L	LOW	N	<ul style="list-style-type: none"> • Crooked. 	REMOVE			



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614	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	57	17	7.0	50	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> Multiple leaders. Historic scaffold branch and stem failure causing butt and stem rot. 	PROTECT	7.0		3.7
615	1	Y	Red alder (<i>Alnus rubra</i>)	42	15	5.0	40	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> Co-dominant stems at 1.5m above grade with bark inclusion. Historic branch failure causing decay pockets. 	PROTECT	5.0		2.7
616	1	Y	Western redcedar (<i>Thuja plicata</i>)	78.5	22	7.0	80	SE	VG	H		Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (44+65cm\emptyset) at 1.4m above grade for protection setback calculation purposes. Limb-tied. Crown biased to the southeast. 	PROTECT	7.0		5.1
617	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	45	22	7.0	50	SE	G	M	S-1	Y	<ul style="list-style-type: none"> Multiple leaders. Decay from scaffold branch failure. 	PROTECT	7.0		2.9
618	1	Y	Paper birch (<i>Betula papyrifera</i>)	30	12	4.0	20	SE	VP	VL	S-LOW	Y	<ul style="list-style-type: none"> Mostly dead. Conked. Snag with one small live branch. 	PROTECT	4.0		2.0
619	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	31	17	5.0	40	SE	G	M	S-1	Y		PROTECT	5.0		2.0
620	1	Y	Paper birch (<i>Betula papyrifera</i>)	30	13	3.0	15	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> Decay cavity on stem. Dead top. 	PROTECT	3.0		2.0
621	1	Y	Western redcedar (<i>Thuja plicata</i>)	55	18	4.0	15	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> Dead top. 	PROTECT	4.0		3.6



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
622	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	41.4	17	4.0	50	SE	G	M	S-1	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (39+14cmØ) at 1.4m above grade for protection setback calculation purposes. Historic branch failure. 	REMOVE			
623	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	65	37	10.0	60	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> Historic branch failure. 	REMOVE			
624	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	57.1	37	8.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (31+48cmØ) at 1.4m above grade for protection setback calculation purposes. Historic branch failure. 	REMOVE			
625	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	39	37	7.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> Historic branch failure. 	REMOVE			
626	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	41	37	7.0	30	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> Historic branch failure. 	REMOVE			
627	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	30	13	5.0	20	S	P	L	S-LOW	Y	<ul style="list-style-type: none"> Historic branch failure. Broken top at 13m. 	REMOVE			
628	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	62	40	13.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (38+49cmØ) at 1.4m above grade for protection setback calculation purposes. Crown biased to the south. Co-dominant stems at 0.2m above grade 	PROTECT	13.0		4.0
629	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	70	40	14.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> Crown biased to the south. Slight dieback on the north side. Buttress roots on the north and northwest side. 	PROTECT	14.0		4.6



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
630	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	50	37	10.0	50	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Treat #630 - #632 cohesively. • Root crown contact and limb-tied. • Butt rot from historic stem failure. 	PROTECT	10.0		3.3
631	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	52	37	11.0	50	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Treat #630 - #632 cohesively. • Root crown contact and limb-tied. 	PROTECT	11.0		3.4
632	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	30	37	10.0	50	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Treat #630 - #632 cohesively. • Root crown contact and limb-tied. 	PROTECT	10.0		2.0
633	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	58.9	13	11.0	25	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • DBH of a single stem equivalent is calculated based on the area of measured stems (32+26+42cm\emptyset) at 1.4m above grade for protection setback calculation purposes. • Historic failed branches causing decay cavities at 1.2m, 2m and 3.5m above grade. • Crown biased to the south. • Triple stems originating at 0.4m above grade 	PROTECT	11.0		3.8
634	1	Y	Bitter cherry (<i>Prunus emarginata</i>)	52	10	7.0	20	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • 60% dieback. • Recent scaffold branch and stem failure. • One of the co-dominant stems broke off creating entry for disease causing pathogen. • Crown biased to the southwest. 	PROTECT	7.0		3.4
635	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	70	39	10.0	50	SE	G	L	S-LOW	Y		PROTECT	10.0		4.6
636	1	Y	Cascara buckthorn (<i>Rhamnus purshiana</i>)	33	16	4.0	30	SE	P	VL	S-2	Y	<ul style="list-style-type: none"> • 35% dieback. • Bifurcation at 6m above grade, with one failed leader. • Leaning to the north corrected at 6m. 	PROTECT	4.0		2.1



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
637	1	Y	Red alder (<i>Alnus rubra</i>)	35	18	6.0	20	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • 60% dieback. • Failing. 	PROTECT	6.0		2.3
638	1	Y	Red alder (<i>Alnus rubra</i>)	36	18	4.0	20	S	P	L	S-LOW	Y	<ul style="list-style-type: none"> • 50% dieback. • Leaning to the southwest, corrected at 7m. 	PROTECT	4.0		2.3
639	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	62	40	11.0	60	D	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown biased to the south and southeast. 	PROTECT	11.0		4.0
640	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	36	38	5.0	50	C	G	L	S-LOW	Y		REMOVE			
641	1	N	Western redcedar (<i>Thuja plicata</i>)	26	12	4.0	80	S	VG	H		Y	<ul style="list-style-type: none"> • Sweep. • Undersize. 	REMOVE			
642	1	Y	Red alder (<i>Alnus rubra</i>)	33	23	3.0	20	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Upper crown dieback. • One of the two stems is dead. 	REMOVE			
643	1	Y	Western redcedar (<i>Thuja plicata</i>)	54	20	5.0	20	I	P	VL	S-LOW	Y	<ul style="list-style-type: none"> • Dead top. • Bottle butt. • Butt rot from sounding. 	REMOVE			
644	1	Y	Western redcedar (<i>Thuja plicata</i>)	72	20	5.0	30	C	P	VL	S-LOW	Y	<ul style="list-style-type: none"> • Dead top. • Bottle butt. 	REMOVE			
645	1	Y	Red alder (<i>Alnus rubra</i>)	35	22	6.0	20	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> • DBH is representative of the largest of measured stems (34, 35cm\emptyset) at 1.4m above grade for protection setback calculation purposes. • Co-dominant stems at ground level. • Severe decay noted on one stem. • Leaning to the southeast. 	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
646	1	Y	Apple (<i>Malus sp.</i>)	34	14	12.0	70	S	G	M	S-LOW	Y	<ul style="list-style-type: none"> Bifurcation at 1.5m above grade. Historic branch failure. 	REMOVE			
647	1	Y	Red alder (<i>Alnus rubra</i>)	33	19	3.0	40	I	G	L	S-LOW	Y	<ul style="list-style-type: none"> Leaning to the south. 	REMOVE			
648	1	Y	Red alder (<i>Alnus rubra</i>)	33	8			I	VP	L	S-LOW	Y	<ul style="list-style-type: none"> 8m tall snag leaning to the south. 	REMOVE			
649	1	Y	Western redcedar (<i>Thuja plicata</i>)	71	31	6.0	80	C	P	VL	S-LOW	Y	<ul style="list-style-type: none"> Uprooted towards the north. Upper crown contact with #650 (result of uprooting/severe lean). Bottle Butt. 	PROTECT	6.0		4.6
650	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	85	37	15.0	70	D	P	L	S-LOW	Y	<ul style="list-style-type: none"> Upper crown contact with #649 (result of uprooting of #649). Failed leader. 	PROTECT	15.0		5.5
651	1	Y	Western redcedar (<i>Thuja plicata</i>)	61	17	6.0	80	S	G	M	S-LOW	Y	<ul style="list-style-type: none"> Crown merged with #652. 	PROTECT	6.0		4.0
652	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	75	39	8.0	50	D	G	L	S-LOW	Y	<ul style="list-style-type: none"> Crown biased to the southeast, merged with #651. 	PROTECT	8.0		4.9
653	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	93	38	13.0	40	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> Historic scaffold branch failure causing decay. Asymmetrical crown biased to the north. 	PROTECT	13.0		6.0
654	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	71	38	6.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> Crown biased to the southwest 	PROTECT	6.0		4.6
655	1	Y	Red alder (<i>Alnus rubra</i>)	36.1	20	6.0	50	I	G	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (27+24cm\emptyset) at 1.4m above grade for protection setback calculation purposes. Co-dominant stems at 0.5m above grade. 	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
656	1	Y	Red alder (<i>Alnus rubra</i>)	31	20	3.0	50	I	G	L	S-LOW	Y		REMOVE			
657	1	Y	Red alder (<i>Alnus rubra</i>)	33	21			I	VP	L	S-LOW	Y	• Dead	PROTECT			2.1
658	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	34	16	6.0	50	C	P	L	S-LOW	Y	• Limb-tied and root crown contact with #659 • Frost crack from ground to 1.5m up. • Broken top at 16m.	PROTECT	6.0		2.2
659	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	80	37	11.0	60	D	G	L	S-LOW	Y	• 15% dieback. • Asymmetrical crown biased to the south. • Crook at 11m. • Canopy gap to the north and south. • Historic scaffold branch failure.	PROTECT	11.0		5.2
660	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	85	37	13.0	50	D	G	L	S-LOW	Y	• 2 main leaders. • Crown merged with #661.	REMOVE			
661	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	50	30	7.0	50	I	G	L	S-LOW	Y	• Crook at 8m. • Crown biased to the southwest.	REMOVE			
662	1	Y	Red alder (<i>Alnus rubra</i>)	32	16	4.0	15	S	P	L	S-LOW	Y	• Dead top. • Crooked.	REMOVE			
663	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	77	40	10.0	70	D	G	L	S-LOW	Y	• Crown merged with #664. • Epicormic growth.	REMOVE			
664	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	67	28	10.0	60	C	G	L	S-LOW	Y	• Crown merged with #663. • Epicormic growth.	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
665	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	31	28	3.0	70	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Crook at 18m. • Broken top at 28m. 	PROTECT	3.0		2.0
666	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	36	23	5.0	60	I	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crook at 8m. • Crown biased to the south. 	REMOVE			
667	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	48	30	7.0	40	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the southwest. • Limb-tied with #668. 	PROTECT	7.0		3.1
668	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	63	37	10.0	40	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Limb-tied with #667. 	PROTECT	10.0		4.1
669	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	32	37	7.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown merged with #670. 	PROTECT	7.0		2.1
670	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	73	39	12.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown merged with #669. 	PROTECT	12.0		4.7
671	1	Y	Red alder (<i>Alnus rubra</i>)	38	18			I	VP	L	S-LOW	Y	<ul style="list-style-type: none"> • Dead. • Sweep. 	REMOVE			
672	1	Y	Red alder (<i>Alnus rubra</i>)	38	18	5.0	50	I	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the south corrected at 7m. • 20-30% dieback. 	REMOVE			
673	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	77	40	13.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Crown merged with #674. 	REMOVE			
674	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	32	32	6.0	60	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Historic stem failure causing decay column at 3m above grade. 	REMOVE			
675	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	72	39	10.0	70	SE	G	L	S-LOW	Y		REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
676	1	Y	Red alder (<i>Alnus rubra</i>)	37	23	3.0	10	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> 70% dieback. Decay from ground level to 10m up on the stem. 	PROTECT	3.0		2.4
677	1	Y	Red alder (<i>Alnus rubra</i>)	39	20	5.0	30	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> 30% dieback. Crooked. Leaning to the northwest corrected at 8m. Bifurcation at 10m. Dead top. 	PROTECT	5.0		2.5
678	1	Y	Red alder (<i>Alnus rubra</i>)	30	20	4.0	30	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> 20% dieback. Leaning to the northwest corrected at 10m. Dead top. 	PROTECT	4.0		2.0
679	1	Y	Red alder (<i>Alnus rubra</i>)	56.6	19	6.0	30	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (39+41cmØ) at 1.4m above grade for protection setback calculation purposes. Decay cavity and fruiting bodies at 1.5m above grade. Co-dominant stems at 0.5m above grade. Leaning to the north. Broken stem at 17m. 	PROTECT	6.0		3.7
680	1	Y	Red alder (<i>Alnus rubra</i>)	32	18	7.0	20	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> Crotch rot at 8m above grade. Historic branch failure causing decay at 6m above grade. 	PROTECT	7.0		2.1
681	1	Y	Red alder (<i>Alnus rubra</i>)	33	21	7.0	30	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> Leaning to the southeast corrected at 5m. 20-30% dieback. Decay cavity from 5-7m above grade. 	REMOVE			
682	1	Y	Red alder (<i>Alnus rubra</i>)	34	21	6.0	40	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> 30% dieback. Dead top. Leaning to the south corrected at 6m. 	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
683	1	Y	Red alder (<i>Alnus rubra</i>)	36	19	5.0	40	I	P	L	S-LOW	Y	• Upper crown dieback 30-40%.	PROTECT	5.0		2.3
684	1	Y	Red alder (<i>Alnus rubra</i>)	30	19	4.0	50	I	G	L	S-LOW	Y	• 20% dieback	REMOVE			
685	1	Y	Red alder (<i>Alnus rubra</i>)	32	18	3.0	40	I	G	L	S-LOW	Y	• 20% dieback.	REMOVE			
686	1	Y	Red alder (<i>Alnus rubra</i>)	43	14			I	VP	L	S-LOW	Y	• Dead with broken top.	PROTECT			2.8
687	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	80	38	13.0	60	SE	G	L	S-LOW	Y	• Crown biased to the southwest. • Sparse ALN beyond and in vicinity.	PROTECT	13.0		5.2
688	1	Y	Red alder (<i>Alnus rubra</i>)	42	30	5.0	50	I	P	L	S-LOW	Y	• Bifurcation at 4m above grade. • One stem with broken top. • Severe upper crown dieback.	REMOVE			
689	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	66	38	10.0	60	SE	G	L	S-LOW	Y		REMOVE			
690	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	78	40	11.0	60	SE	G	L	S-LOW	Y		REMOVE			
691	1	Y	Red alder (<i>Alnus rubra</i>)	50	17	5.0	20	I	P	L	S-LOW	Y	• Co-dominant stems at 1.5m above grade. • One dead stem, the other with severe dieback.	REMOVE			
692	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	90	40	6.0	80	SE	G	L	S-LOW	Y		REMOVE			
693	1	Y	Red alder (<i>Alnus rubra</i>)	48	20	5.0	40	C	P	L	S-LOW	Y	• Bifurcation at 10m above grade. • Upper crown dieback.	PROTECT	5.0		3.1



Tag/ID	# of Trees	Bylaw Y/N	Common name, (Botanical)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
694	1	Y	Red alder (Alnus rubra)	38	18	4.0	30	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> Decay cavities at 1.5m and 3m above grade. 25% dieback. 	PROTECT	4.0		2.5
695	1	Y	Red alder (Alnus rubra)	33	23	4.0	25	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> Dead top. Leaning to the southeast. 30-40% dieback overall. 	PROTECT	4.0		2.1
696	1	Y	Red alder (Alnus rubra)	40.3	25	6.0	50	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (29+28cmØ) at 1.4m above grade for protection setback calculation purposes. One stem failed 18m. 40% dieback. 	PROTECT	6.0		2.6
697	1	Y	Red alder (Alnus rubra)	38	15	5.0	30	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> Fruiting bodies at 6m above grade. Severe dieback in the upper crown. Bifurcation at 12m and broken top at 15m above grade. 	PROTECT	5.0		2.5
698	1	Y	Red alder (Alnus rubra)	34	23	5.0	50	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> Leaning to the southeast corrected at 12m. 	PROTECT	5.0		2.2
699	1	Y	Red alder (Alnus rubra)	38	22	5.0	20	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> 30% dieback concentrated in the upper crown. Crook at 9m above grade. Dead top. Leaning to the east. 	PROTECT	5.0		2.5
700	8	Y	Austrian pine (Pinus nigra)	40	14	4.0	80	G	VG	M	2	N	<ul style="list-style-type: none"> DBH is representative of the largest of measured stems (30-40cmØ) at 1.4m above grade for protection setback calculation purposes. north-south orientation, currently in good condition. 	PROTECT	4.0		2.6
701	1	Y	Red alder (Alnus rubra)	43	22	7.0	50	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> Co-dominant stems at 3m above graded. One failed stem. 	REMOVE			



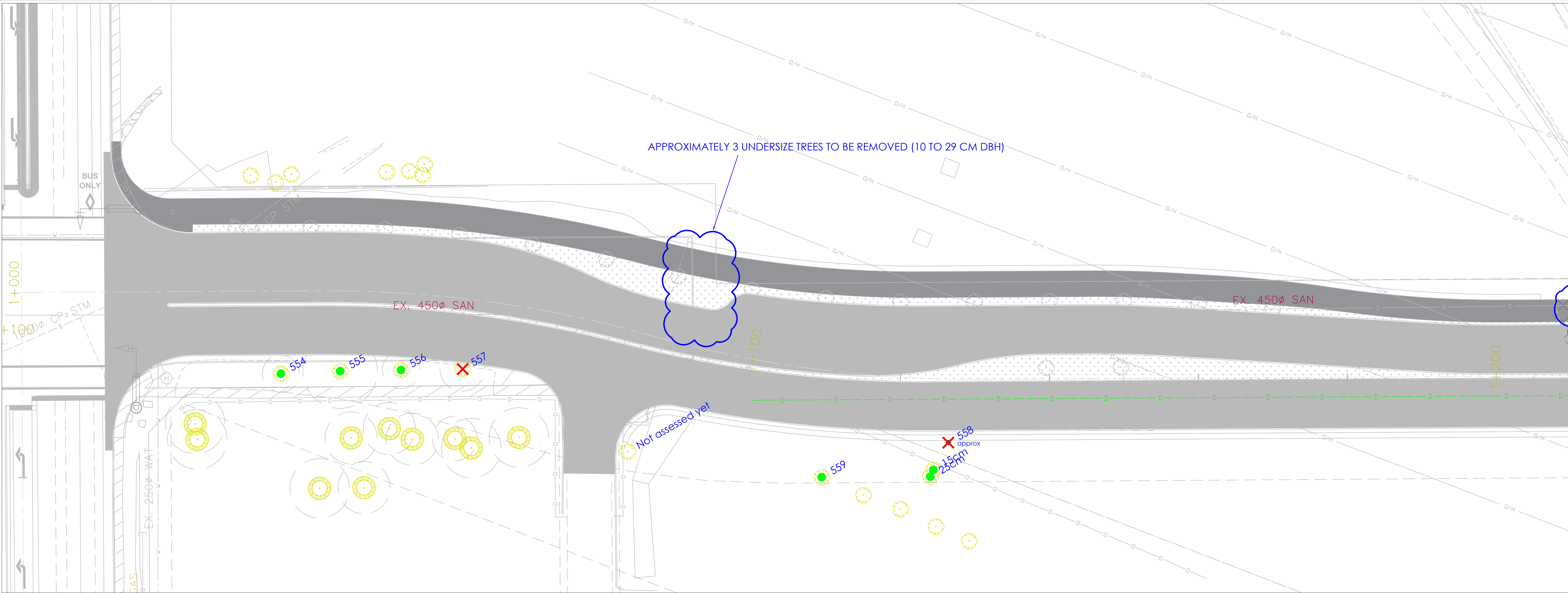
Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
702	1	Y	Red alder (<i>Alnus rubra</i>)	34	23	4.0	30	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Crook at 5m above grade. • Upper crown dieback 30%. • Decay cavity from ground level to 2m up on the stem. 	PROTECT	4.0		2.2
703	1	Y	Red alder (<i>Alnus rubra</i>)	36	24	4.0	30	C	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the east, corrected at 7m. • Bifurcation at 7m above grade. • Dead top. 	PROTECT	4.0		2.3
704	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	97	40	12.0	60	D	G	L	S-LOW	Y		PROTECT	12.0		6.3
705	1	Y	Red alder (<i>Alnus rubra</i>)	34	20	5.0	40	I	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the south. 	REMOVE			
706	1	Y	Red alder (<i>Alnus rubra</i>)	64	19	6.0	80	SE	P	L	S-LOW	Y	<ul style="list-style-type: none"> • Historic stem failure causing an extensive decay cavity. 	REMOVE			
707	1	Y	Red alder (<i>Alnus rubra</i>)	69	20	7.0	60	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Three stems emerging at 5m above grade. • Co-dominant stems at 2m above grade. 	REMOVE			
708	1	Y	Red alder (<i>Alnus rubra</i>)	37	20	6.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Bifurcation at 6m above grade. 	PROTECT	6.0		2.4
709	1	Y	Red alder (<i>Alnus rubra</i>)	50	20	10.0	80	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • Leaning to the south. • Multi-stemmed. 	REMOVE			
710	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	50	38	13.0	80	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> • DBH is representative of the largest of measured stems (31, 50, 45, 45, 33, 31cmØ) at 1.4m above grade for protection setback calculation purposes. • 6 stems attached at or near ground level. 	REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
711	1	Y	Red alder (<i>Alnus rubra</i>)	50	23	6.0	30	C	G	L	S-LOW	Y	<ul style="list-style-type: none"> Butt rot. Co-dominant stems at 5m above grade. 20% dieback. 	PROTECT	6.0		3.3
712	1	Y	Red alder (<i>Alnus rubra</i>)	54	17	6.0	20	I	P	L	S-LOW	Y	<ul style="list-style-type: none"> Historic stem failure at 8m. Dead and broken top. 	REMOVE			
713	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	54	36	10.0	70	SE	G	L	S-LOW	Y		REMOVE			
714	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	51	36	10.0	80	SE	G	L	S-LOW	Y		REMOVE			
715	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	84.9	36	16.0	70	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (60+60cm\emptyset) at 1.4m above grade for protection setback calculation purposes. Co-dominant stems at 1.5m above grade. 	REMOVE			
716	1	Y	Bigleaf maple (<i>Acer macrophyllum</i>)	74.3	31	15.0	60	D	G	M	S-1	Y	<ul style="list-style-type: none"> DBH of a single stem equivalent is calculated based on the area of measured stems (50+55cm\emptyset) at 1.4m above grade for protection setback calculation purposes. Co-dominant stems at 1m above grade. 	PROTECT	15.0		4.8
717	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	49	30	6.0	50	C	G	L	S-LOW	Y		REMOVE			
718	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	49	35	6.0	60	SE	G	L	S-LOW	Y		REMOVE			
719	1	Y	Red alder (<i>Alnus rubra</i>)	38	20	5.0	40	SE	G	L	S-LOW	Y	<ul style="list-style-type: none"> Upper crown dieback. 	PROTECT	5.0		2.5
720	1	Y	Black cottonwood (<i>Populus x trichocarpa</i>)	84	30	8.0	80	SE	G	L	S-LOW	Y		REMOVE			



Tag/ID	# of Trees	Bylaw Y/N	Common name, (<i>Botanical</i>)	Dbh (cm)	Ht (m)	Spr (m)	LCR (%)	Class	Condition	Value	Priority	Stand Y/N	Assessment Findings:	PRELIMINARY ACTION	CPZ (m)	RPZ (m)	6X Dbh (m)
721	1	Y	Red alder (<i>Alnus rubra</i>)	35	18	4.0	20	C	VP	L	S-LOW	Y	<ul style="list-style-type: none"> • Dying. • Co-dominant stems at 10m above grade. 	PROTECT	4.0		2.3
722	1	Y	Pin oak (<i>Quercus palustris</i>)	59	17	12.0	80	G	VG	VH	1	N		PROTECT	12.0		3.8
723	1	Y	Pin oak (<i>Quercus palustris</i>)	42	18	13.0	80	G	VG	VH	1	N		PROTECT	13.0		2.7
724	1	Y	Pin oak (<i>Quercus palustris</i>)	50	17	13.0	80	G	G	VH	1	N	<ul style="list-style-type: none"> • 15% dieback overall concentrated in the lower crown. 	PROTECT	13.0		3.3
725	1	Y	Pin oak (<i>Quercus palustris</i>)	43	17	11.0	80	G	G	VH	1	N	<ul style="list-style-type: none"> • 15% dieback overall concentrated in the lower crown. 	REMOVE			
726	1	N	Pin oak (<i>Quercus palustris</i>)	29	17	7.0	80	G	G	VH	1	N	<ul style="list-style-type: none"> • 15% dieback overall concentrated in the lower crown. 	REMOVE			
727	1	Y	Pin oak (<i>Quercus palustris</i>)	37	15	7.0	80	G	G	VH	1	N	<ul style="list-style-type: none"> • 15% dieback overall concentrated in the lower crown. 	REMOVE			
728	1	Y	Pin oak (<i>Quercus palustris</i>)	41	16	7.0	80	G	G	VH	1	N	<ul style="list-style-type: none"> • 15% dieback overall concentrated in the lower crown. 	REMOVE			
729	1	Y	Pin oak (<i>Quercus palustris</i>)	34	12	6.0	80	G	G	VH	1	N	<ul style="list-style-type: none"> • 15% dieback overall concentrated in the lower crown. 	REMOVE			

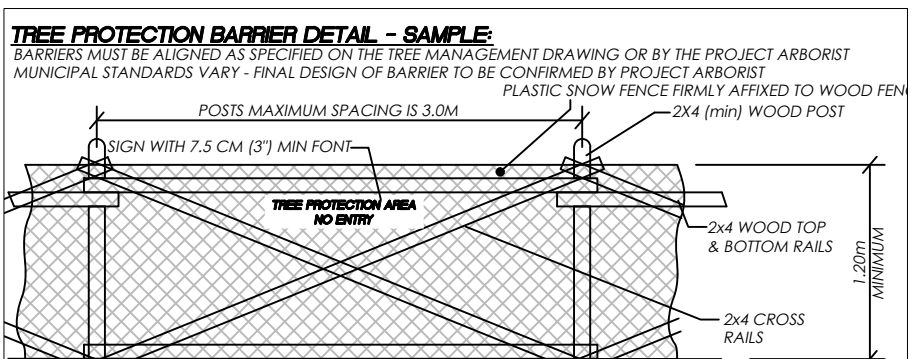


LEGEND-TREE RETENTION:

1:000 DBH TREES:
 (see arborist report and detail herein for further details)
 XXX denotes ARBORIST TAG NUMBER or ID REFERENCE (see tree inventory and assessment file)
 denotes SURVEY TAG NUMBER or ID REFERENCE (if applicable)
 denotes APPROXIMATE LOCATION for an unsubstantiated tree (if corroborated to be retained we recommend that the tree be accurately located before design finalizes)
 denotes RETENTION tree (preconstruction or as specified)
 denotes REMOVAL tree (municipal permit or approvals required as applicable)
 denotes HIGH RISK tree to be REMOVED or MODIFIED (municipal permit or approvals required as applicable)

LEGEND-TREE PROTECTION:

denotes CROWN PROTECTION ZONE - CPZ (protection zone - no aerial encroachment of buildings, vehicles, cranes, etc.)
 denotes ROOT PROTECTION ZONE - RPZ (minimum diameter for TREE PROTECTION BARRIERS - no soil disturbance within)
 denotes WORKING SPACE SETBACK - WSS (minimum diameter for TREE PROTECTION BARRIERS - no soil disturbance within)
 denotes SPECIAL MEASURES required (the project arborist is required to direct implementation measures as indicated herein on as detailed in letter of Understanding - appendix E of arborist report)
 denotes INTERNAL TREE BARRIER (for pre-construction and demolition phase work)
 denotes 4X DBH SETBACK GUIDELINE from Municipal Bylaw (note that on specified CPZ, RPZ and WSS supersede the municipal guideline)
 denotes 4X DBH+1.5M SETBACK GUIDELINE from Municipal Bylaw (note that on specified CPZ, RPZ and WSS supersede the municipal guideline)



TREE PROTECTION STANDARD MEASURES:

The Client is required to consult the project arborist to review and approve, as well as to attend and direct and/or supervise certain works from time to time during the project, such as but not limited to the following:

- Tree Protection Barrier Installation and Contractor Mobilization:**
 Prior to site works commencing, it is recommended that we attend to direct and inspect the installation of tree protection barriers. We will provide a sign off report (as required by city where applicable) once they meet our specifications confirming compliance to the tree management drawing and/or with any field adjustments that needed to be made.
- Pre-Construction and/or Construction Phases:**
 Project arborist coordination and/or on-site supervision/direction is required:
 - during service and utility decommissioning, civil enabling works, site demolition, invasive plant treatments, site hoarding installation, excavation, service and utility installation, or other construction activities which may impact retained or protected trees,
 - proactively scheduled to meet municipal requirements for securing inspections and/or at a frequency determined by the project arborist,
 - in response to contractor requests when project arborist specified treatments or measures are required, or
 - at an "on call" basis for troubleshooting access or construction conflicts within a tree protection zone.
- Tree Health Management and Compensatory Treatments:**
 Prior to or during construction, the project arborist may prescribe and undertake/direct soil and root zone remediation or enhancement treatments in response to construction impacts as deemed necessary, such as but not limited to:
 - vertical aeration to improve soil gas exchange and percolation, and to loosen compacted soil,
 - placement of soil amendment may be applied within TPZ (e.g. 10mm-minus well composted bark mulch (i.e. Nutra-Mulch by The Answer Products or equivalent) to a depth of 75 to 100 mm (or as directed by the Project Arborist), and/or
 - implementing an interim watering program and system (i.e. manual sprinkler on a timer, temporary irrigation, or truck delivery) by developer/owner or by the project arborist. Note that log booms of the watering may be required. The watering shall achieve even coverage within the RPZ to deliver the equivalent of up to 50mm (2 inches) depth on a twice monthly schedule in April through June and September, and to a weekly schedule for July and August. Watering events will be exempted when natural rainfall for a period meets or exceeds those amounts.
- Access within TPZ:**
 Whenever workers or equipment access into a tree protection zone (TPZ) is contemplated or desired for any reason. We have cost effective methods that may be feasible in order to enable access while minimizing tree, root and soil impacts and remaining compliant with city bylaws or conditions of project approval.
- Any Ground Work or Stump Work within TPZ:**
 Whenever any stripping (overburden removal or scraping), re-grading (cuts or fills), trenching, excavation or other ground disturbance work occurs within or adjacent to a TPZ, including the root protection zone (RPZ) and the working space setback (WSS) as well as when crane or equipment usage is directly adjacent to a CPZ.
- Pruning:**
 Certain retained trees may require pruning however all pruning is conditional to limitations on scope and method as prescribed by the project arborist. Pruning might be required to mitigate one or more of the following: restoration of form, aesthetics, mitigation of dieback, building clearance, sight lines, crown raising clearance for vehicles or pedestrians and/or construction access. All tree pruning work is to be carried under the direction of the project arborist from this office and by an ISA Certified Arborist employed by a qualified tree service firm working in conformance with applicable ANSI standards (A300 and Z133), and meeting the city, contractor and/or developer/owner insurance and licensing requirements.
- Low Impact Trees or Stump Removal:**
 For any tree removal or stump removal from within a RPZ or WSS options such as stump grinding and/or digging and cutting roots will be required, as directed by the Project Arborist to suit the specific site conditions.
- Landscape Finishes:**
 All landscaping activities must be reviewed by this office in advance of commencing and on-site direction and guidance from the project arborist planned accordingly, such as but not limited to:
 - Preparation works and construction of landscape finishing works including but not limited to: sidewalks, paths, patios, decks, retaining walls, fencing, irrigation, conduit, benches, patio covers, soil placement, grass or turf installation, planting or other landscape items.
 - Turf within TPZ is discouraged, however if desired we may support it as long as a suitable mulch zone setback is implemented around the base of the tree.
 - Certain landscape features may be excluded or will require specific materials and methods to be utilized that meet tree root protection compliance requirements.
 - Note that the planting of any plants, shrubs or hedges within the TPZ is restricted to small pot sizes (i.e. #1 or #2 depending on species) and using "pocket planting" standards. Planting holes are minimum in size, dug into existing grade to avoid damage to woody roots, and backfilled with minimal addition of growing medium.

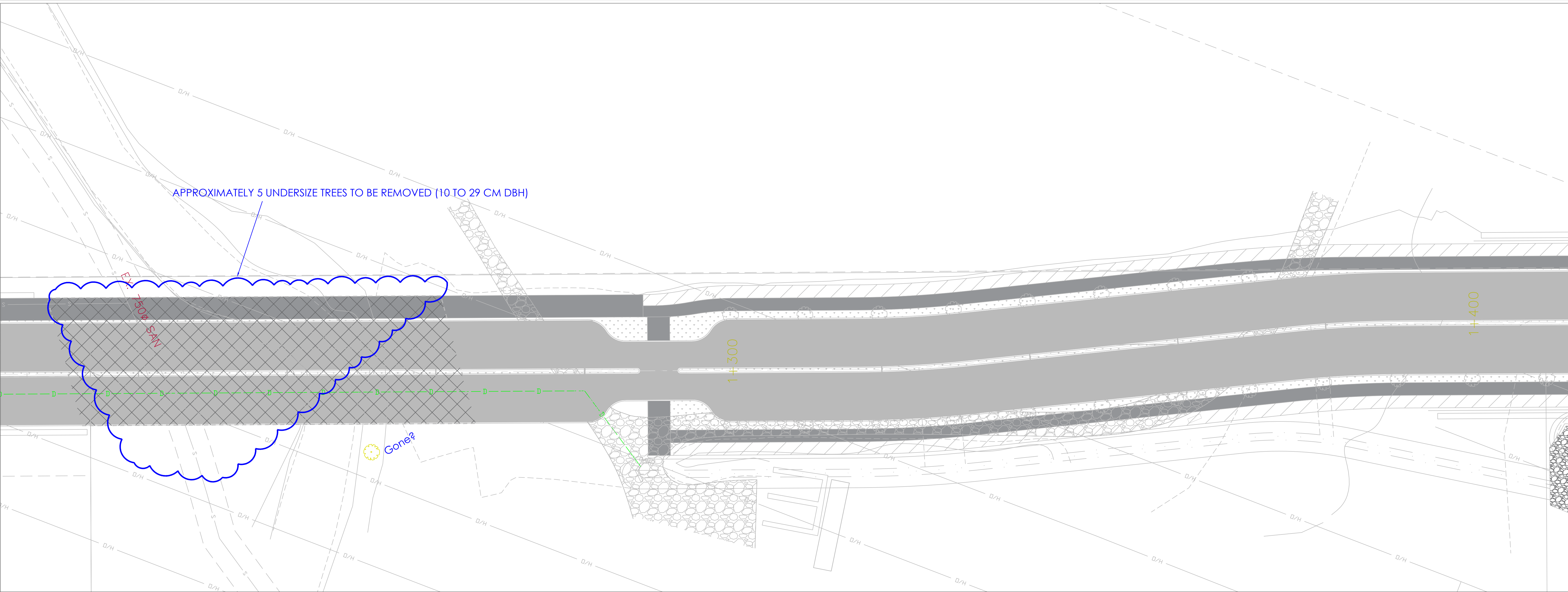
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DRAWING USER AND COORDINATION:

- This drawing relies on information and drawings supplied by the client or their consultant. Refer to original drawings from the consultants (e.g. sewer, engineer, architect or other design professionals) for accurate locations and dimension of site features.
- All tree protection measures specified herein should be included and coordinated with the designs for the project, including but not limited to: architectural, landscape, civil and geo-technical. It is the responsibility of each design professional to understand and review the tree protection measures and determine any conflicts. If conflicts are identified, the design professional and/or the client should bring these to the attention of the project arborist from this office to review and resolve.
- Retaining and concrete for site preparation, land clearing, civil works and/or construction should include specifications for tree protection measures to be implemented on per this drawing and any reference documents.
- It is the responsibility of the owner or their agent to obtain all necessary approvals for the tree retention and removal scheme presented herein. Any changes that the municipality requires should be brought to the attention of the project arborist from this office to review and resolve.
- Some existing trees may not be shown on this drawing (e.g. undersize or bylaw exempt trees, or grouped trees). It is the responsibility of the contractor(s) to confirm that all necessary municipal approvals are in place, and to determine the full scope of tree removal work. Only the trees shown to be retained and protected are to remain on site, unless otherwise directed by the owner.
- Trees and shrubs to be removed from within the tree protection zone (including CPZ, RPZ and WSS) are to be removed as directed and with on-site supervision from an arborist from this office.
- Stump grinding may be required for the removal of trees within the tree protection zone, at the discretion of an arborist from this office.
- Certain tree removals in proximity of retained lines or power lines may require assistance from a suitably qualified professional, such as but not limited to:
 - ISA Certified Arborist (tree removal, rigging, pruning and other tree service work) working to ANSI A300 and ANSI Z133 Standards and Best Management Practices,
 - Certified Utility Arborist (tree removal, pruning and other tree service work) working to ANSI A300 and ANSI Z133 Standards and Best Management Practices and following BC bylaws policies and procedures.

APPENDIX C: TREE MANAGEMENT DRAWING SHEET 1 OF 4

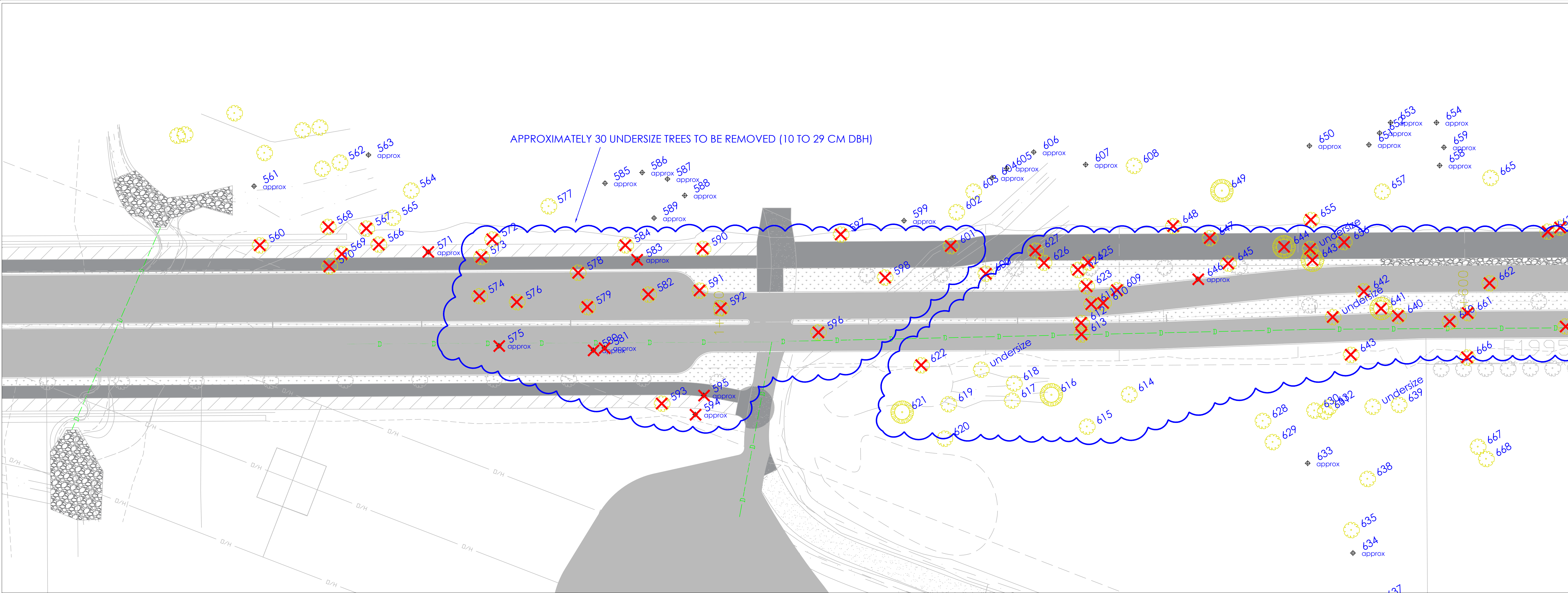
<p>ARBORTECH CONSULTING SUITE 145 - 12051 HORSESHOE WAY, RICHMOND, BC V7A 4V4 604 275 3484</p>	PROJECT: 84 AVENUE CONNECTOR ADDRESS: KING GEORGE BLVD TO 140 ST SURREY BC
	CLIENT: APLIN AND MARTIN - CITY OF SURREY CITY REF: [] PROJECT REF: []
	DATE: MAY 18, 2021 REV #1: 0
	ACCL FILE: 21154



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APPENDIX C: TREE MANAGEMENT DRAWING SHEET 2 OF 4

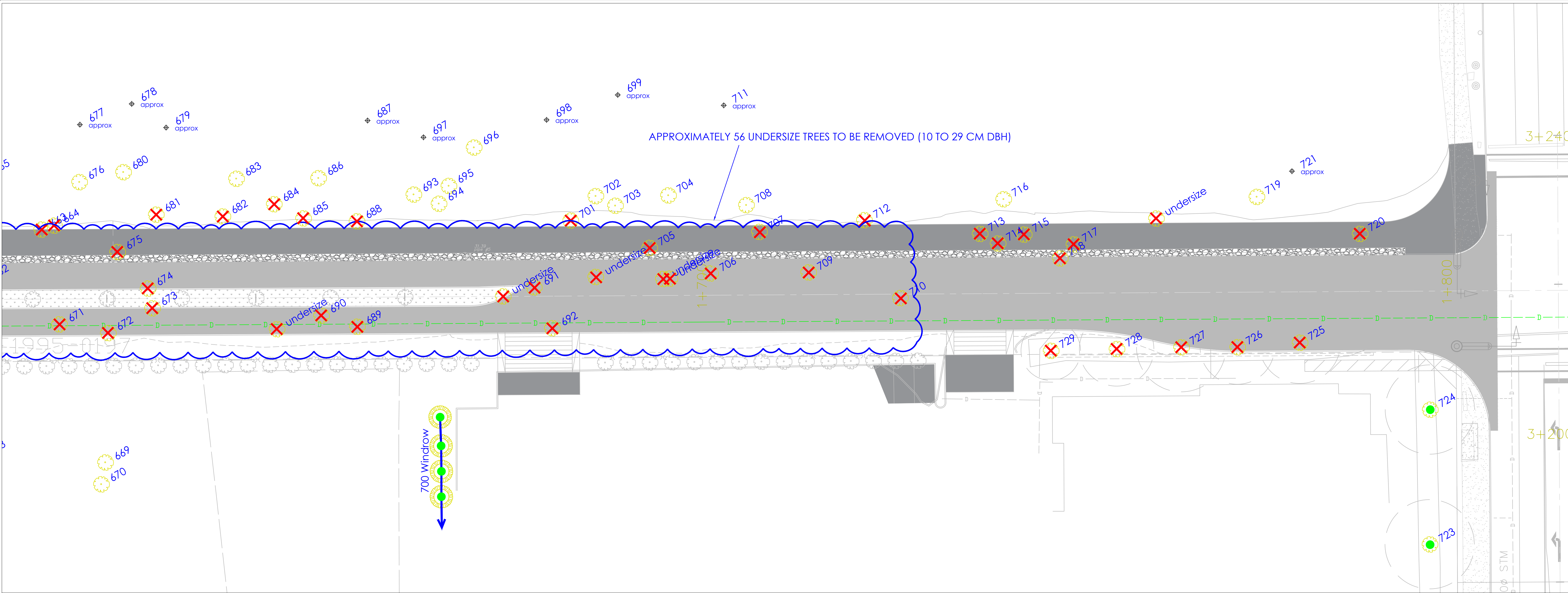
<p>ARBORTECH CONSULTING SUITES 145 - 12051 HORSESHOE WAY, RICHMOND, BC V7A 4V4 604 275 3484</p>	PROJECT: 84 AVENUE CONNECTOR
	ADDRESS: KING GEORGE BLVD TO 140 ST SURREY BC
	CLIENT: APLIN AND MARTIN - CITY OF SURREY
	CITY REF: A/C/L FILE: 21154
	PLOT SIZE: 22'x34' REV #: 0 DATE: MAY 18, 2021



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APPENDIX C: TREE MANAGEMENT DRAWING SHEET 3 OF 4

 <p>ARBORTECH CONSULTING SUIITE 145 - 12051 HORSESHOE WAY, RICHMOND, BC V7A 4V4 604 275 3484</p>	PROJECT: 84 AVENUE CONNECTOR	DATE: MAY 18, 2021
	ADDRESS: KING GEORGE BLVD TO 140 ST SURREY BC	REV #: 0
	CLIENT: APJIN AND MARTIN - CITY OF SURREY	ACCL FILE: 21154
	CITY REF: [blank]	DATE: [blank]



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APPENDIX C: TREE MANAGEMENT DRAWING SHEET 4 OF 4

 ARBORTECH CONSULTING <small>SUITE 145 - 12051 HORSESHOE WAY, RICHMOND, BC V7A 4V4 604 275 3484</small>	PROJECT: 84 AVENUE CONNECTOR	
	ADDRESS: KING GEORGE BLVD TO 140 ST SURREY BC	
	CLIENT: APJL AND MARTIN - CITY OF SURREY	
	CITY REF: JA CL FILE: 21154	
PLOT SIZE: 22'x34'	REV #: 0	DATE: MAY 18, 2021