

TREE PROTECTION FENCING SIGNAGE
(Signs shall be 18x36" and made to sustain all weather conditions)



Modular steel panel fencing is recommended in order to reduce land-fill waste post-construction. Fencing panels shall be secured to the ground with rebar w/epoxy to panel frame.

18 x 24 weather-protected signage will be attached with the following wording:
 Ex. protected trees, DO NOT ENTER - Tree Protection Zone
 Ex. replacement trees, DO NOT ENTER - Future Tree Planting Zone

In cases where steel-panel fencing is not practical or available, fencing shall be constructed with a wooden 2x4 frame (with top and bottom rails) and back-bracing supports as required to ensure robust placement. Snow-fencing will then be affixed to the frame using bottom: top-rails, staples, wire or nails.



TREE INVENTORY TABLE

G&A Tree ID	Common Name	Consolidated DBH (cm)	PRZr (m ²)	Crown Radius (m)	Health	Structural Condition	Ownership of Tree?	Bylaw Tree?	Proposed Action at S/D Phase
102	Red cedar	195	17	7	good	good	on-site	yes	Retain and Protect. Top-dress with 100mm of clean tree chip mulch throughout fenced portion of PRZ.
105	Scol pine	44	5	7(E)	fair	fair	on-site	no	Retain and Protect
106	Horse chestnut	94	7	8	good	good	on-site	yes	REMOVE FOR SITE SERVICING
109	Walnut	22	3	4	fair-good	good	on-site	no	Retain and Protect
229	Red cedar	184	17	11(S)	good	fair-good	on-site	yes	ANTICIPATED REMOVAL AT BP (Plotted by Arborist)
230A	Horse chestnut	31	4	8(S)	good	fair-good	on-site	no	Retain and Protect
230B*	Portuguese laurel	37	4	4	good	fair-good	off-site	no	Retain and Protect (Plotted by Arborist)
234A	Fruiting plum	26	3	4	fair	fair	on-site	no	Retain and Protect
234B*	Purple-leaf plum	155	11	8(S)	fair	fair	off-site	yes	REMOVE FOR SITE SERVICING
234C*	English hawthorn	27	3	3	fair	fair	off-site	no	Retain and Protect (Plotted by Arborist)
234D*	Purple-leaf plum	50	6	8(S)	fair	fair	off-site	no	Retain and Protect (Plotted by Arborist)
234E*	Purple-leaf plum	51	4	3	fair	fair	off-site	no	REMOVE FOR SITE SERVICING
235	Garry oak	52	6	6	fair-good	good	on-site	yes	ANTICIPATED REMOVAL AT BP (Plotted by Arborist)
246	Japanese maple	49	4	4	good	good	on-site	no	REMOVE FOR SITE SERVICING
427	Black pine	22	3	2.5	poor-fair	fair	on-site	no	Retain and Protect
428	Magnolia grandiflora	40	5	5	good	good	on-site	no	Retain and Protect
439	Garry oak	36	4	8	good	fair	on-site	yes	ANTICIPATED REMOVAL AT BP (Plotted by Arborist)
485A	Garry oak	35	4	4(N)	fair	good	on-site	yes	Retain and Protect
485B	Garry oak	31	4	5(W)	fair	good	on-site	yes	Retain and Protect
485C	Garry oak	26	3	3(S)	fair	good	on-site	yes	Retain and Protect
486	Garry oak	41	5	7(N)	good	good	on-site	yes	Retain and Protect
487A	Garry oak	24	3	10(NE)	fair-good	fair	on-site	yes	Retain and Protect
487B	Garry oak	17	2	6(S)	poor	fair	on-site	yes	Retain and Protect
488	Garry oak	29	3	2	fair	fair	on-site	yes	Retain and Protect
489A	Garry oak	61	5	4	poor	poor	on-site	yes	ANTICIPATED REMOVAL AT BP
489B	Garry oak	22	3	4	poor	poor	on-site	yes	ANTICIPATED REMOVAL AT BP (Plotted by Arborist)
490	Garry oak	88	7	5(S) & 5(N)	fair-good	fair	boulevard	yes	Retain and Protect
491	Cascade	66	5	5(S)	poor	poor	boulevard	no	Retain and Protect
492	Garry oak	41	5	7(N)	good	fair	boulevard	yes	Retain and Protect
493	Garry oak	70	8	9	good	good	off-site	yes	Retain and Protect
496	Garry oak	66	8	12(N)	good	good	on-site	yes	Retain and Protect
497A	Garry oak	51	6	8(N)	fair-good	fair	on-site	yes	Retain and Protect
497B*	Garry oak	102	9	12	good	good	off-site	yes	Retain and Protect (Plotted by Arborist)
498A	Garry oak	31	4	7	fair	fair	on-site	yes	Retain and Protect
498B*	Garry oak (snag)	25	2	n/a	n/a	n/a	on-site	yes	DANGER TREE
499	Garry oak	48	7	8	fair	fair	on-site	yes	Retain and Protect
500A	Laburnum	51	4	3	poor	poor	on-site	no	ANTICIPATED REMOVAL AT BP (Plotted by Arborist)
500B	Garry oak	46	6	8	good	fair	off-site	yes	Retain and Protect
512	Horse chestnut	94	8	10(S)	good	good	on-site	yes	ANTICIPATED REMOVAL AT BP (Plotted by Arborist)
714	Balsam poplar	41	3	4	good	good	on-site	no	REMOVE FOR SITE SERVICING
792A	Garry oak	178	12	10	fair	fair-good	on-site	yes	Retain and Protect
792B	Garry oak	80	18	15	good	good	off-site	yes	Retain and Protect (Plotted by Arborist)
NT	Row of 27 cypress	40	7	7	good	fair	boundary	no	Retain and Protect

TREE PRESERVATION MEASURES

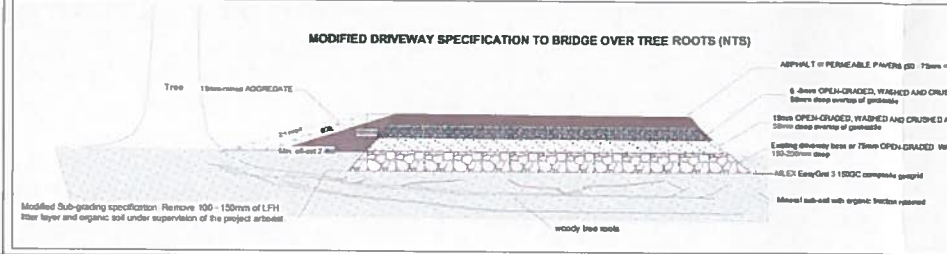
- Pre-Construction Meeting:** Before site servicing begins, the contractor and civil engineer shall meet with the project arborist to review the placement of fencing and other tree protection measures required by this plan.
 - The Project Arborist shall clearly mark the boundaries of all areas to be fenced and protected.
 - Access routes and areas for trade parking and materials storage will be identified with the contractor.
- Tree Fencing:**
 - Tree protection fencing shall be installed to the District of Saanich standards at the locations indicated on this drawing prior to the site servicing and tree permit being issued (see fencing detail on plan).
 - Tree protection fencing shall be maintained in good condition throughout the duration of the project.
 - Requests to temporarily remove or move tree fencing must be reviewed by the project arborist for approval.
- Soil protection:** If it is not possible to fence the entire areas as indicated due to work access constraints, obtain permission from the arborist to adjust the fencing. Any unprotected portion of the tree zones indicated on this plan shall be armored with one of the following options: 5/8" metal plates; two off-set layers of 3/4" plywood sheets; or a temporary cover of geo-textile and 200mm of road-base, moderately compacted with a plate compactor. *Hog fuel or wood chips is not an acceptable material.*
- Tree Removal:**
 - Tree removals associated with site servicing shall be undertaken by tree contractors competent in controlled urban tree removal techniques. Tree contractors shall be approved by the project arborist.
 - Tree fencing shall be temporarily removed as directed by the project arborist to make way for tree cutting and debris removal. Tree fencing shall be immediately re-instated after felling and grubbing is completed.
 - Two off-site trees are recommended for removal (Trees 234 B and 234E). Tree 234E is bylaw-protected and shall require replacing at a ratio of 3:1. Letters of permission are being obtained from the property owners concerned. No other off-site trees shall be impacted by this project.
- Tree Management Plan posting:**
 - A full-sized weather-proof copy of this tree plan shall be posted in plain sight in the site office.
 - The general contractor shall ensure that all relevant sub-trades are familiar with the drawing and tree protection measures.
- Site servicing and excavations:** The project arborist shall be present to oversee excavation, service trenching, stump removal, site grading or blasting within, or adjacent to, the tree protection areas (TPAs).
- Blasting & rock removal:**
 - The general contractor will convene a meeting with the arborist and blasting contractor prior to drilling to develop a work plan that minimizes rock removal impacts to protected trees.
- Root & branch pruning and protection:**
 - Any tree roots or branches damaged during site work shall be pruned back to undamaged tissue by the arborist.
 - The vertical face of excavated cuts adjacent to the TPAs shall be securely covered with non-permeable fabric by the project arborist to prevent soil desiccation and erosion.
- Irrigation:** Retained trees with root zones reduced by excavation shall be irrigated bi-weekly during the dry summer period to a minimum effective depth of 30cm.
- Temporary access:** If temporary access is required within a tree protection area (TPA), the contractor shall notify the project arborist in advance and review the access requirements and any additional protective measures prescribed by the arborist.
- Replacement trees:** It is recommended that planting of replacement trees associated with the S/D site servicing phase be delayed until the landscape stage of the lot build-outs so that irrigation will be available to support the trees during their establishment period (2 years).
- Schedule-1 trees:** No boulevard tree planting is required on strata lots.
- Site inspections:** The District of Saanich requires the project arborist to perform periodic site inspections to ensure ongoing compliance with the tree permit conditions.

EXPLANATORY NOTES

- Blasting Impacts:** With best practices, blasting impacts to protected tree habitat is anticipated to be nominal, as no basements are proposed and main floor elevations are generally higher than existing grade.
- Special Measures Zone:** Sub-grading for the strata-road shall be supervised by the project arborist where it transits across the root zones of protected trees. A modified sub-grade and base preparation shall be used within these areas where considered necessary by the arborist to avoid critical impacts to tree root habitat (see x-section detail).
- Site hydrology:** Moderate changes in site hydrology (surfacial and sub-surface interflows) resulting from site servicing, new roadway and housing construction are anticipated during heavier sustained rainfall events for several protected trees, including Trees 102, 428 and 792A. Lighter, less sustained, rainfall events will continue to nourish these trees. Periodic mulching by future home-owners within the tree root zone should be sufficient to mitigate this change.
- Decommissioning of existing driveway:** Much of the existing driveway resides within the root zone of protected trees. Restoring this area to a higher-functioning ecological condition will benefit the health of the affected trees. This restoration work requires careful oversight by the project arborist to supervise the removal of the gravel base and replacement with good quality mineral soils salvaged from the internal roadworks. The restored areas shall be top-dressed with 100mm of clean tree chip mulch. It is recommended that this work be completed at site servicing phase.
- Tree 496:** A partial root-crown excavation was completed by G&A on Feb 2, 2021, which revealed that the root collar of the tree is approximately 750mm below existing grade. The bark of the tree below grade was in good condition (and is renewed annually with each new growth increment).

EXPLANATORY NOTES cont.

- cont. The overburden is a well structured organic loam soil that is well-populated with fine tree roots. It is recommended that the ambient grade between the tree and the proposed house on Lot 4 remain undisturbed. No basements are proposed, so rock removal impacts are expected to be minimal. Rainwater interflows will remain uninterrupted give ambient and proposed grades. No change to the rock wall or driveway to the south of the tree are anticipated during the subdivision & site servicing phase of this project.
- Tree 792A:** Portions of the stem tissue of the three stems forming this tree exhibit indications of bark necrosis. A Level 3 tree risk assessment was completed on February 3, 2021 by the project arborist to investigate the structural competence of the three stems. Each stem was sampled with an MD-300 resistograph to a depth of 30cm. All samples indicated sound, competent stemwood. The two stems that lean over Lot 2 would benefit from some crown cleaning and reduction pruning to reduce end-weight. In its current condition, the tree risk rating within a two-year period is assessed as *moderate*. If the recommended work is completed, the residual risk rating will be reduced to *low*.

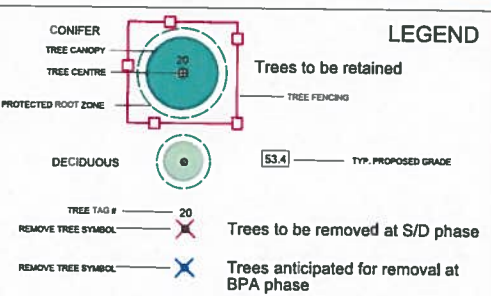
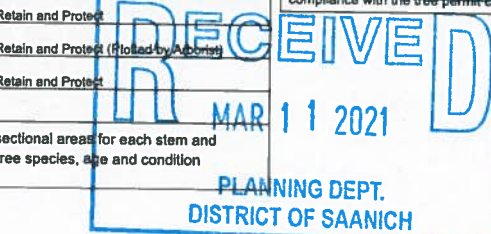


* Trees located by Project Arborist.

PRZ calculations are based on a consolidated dbh calculation that derives from adding the sum of the cross-sectional areas for each stem and calculating the consolidated dbh from this value using the formula $area = \pi r^2$. This value is then adjusted for tree species, site and condition per Methany and Clark's method in their ISA publication, Trees and Development.

SUMMARY TREE STATISTICS

CATEGORY	# OF TREES
Total number of trees indicated on Tree Management Plan	42 plus hedgerow of 27 trees
(Boulevard Trees)	3
(Adjacent Off-site Trees)	9
(On-site Bylaw-Protected Trees)	21
(On-site Unprotected Trees)	9
Proposed On-site Protected Tree Removals for S/D Site Servicing	1
On-site Danger Tree Removal (1 replacement tree proposed)	1
Total Residual On-site Protected Trees after Site Servicing	20
On-site Protected Trees anticipated for removal during lot build-out	5
On-site Replacement Trees Req'd by Tree Bylaw at Site Servicing Phase (1@3:1 + 1@1:1)	4



GyeandAssociates.ca

PROJECT
4171 Cedar Hill Road
Victoria, BC

SHEET TITLE
Tree Management Plan for
Sub-division Site Servicing

REV NO	DESCRIPTION	DATE
02	For S/D Application	Feb 3, 2021
01	For S/D Application	July 8, 2020

PROJECT NO. 20-026
DATE June 25, 2020
SCALE (when plotted to 24x36" sheet) 1:175
DRAWN BY JG
SHEET NO. T-1