BECKY DUCKLES

CONSULTING ARBORIST & LANDSCAPE ADVISOR

SEBASTOPOL, CA.

SID COMMONS

Petaluma, Ca

ARBORIST RESPONSES TO SPAR LETTER of INCOMPLETENESS

March 31, 2021

9. Protected Tree Replacement

Addressed in letter of March 23, 2021 – TREE REMOVAL & MITIGATION CALCULATIONS

Six protected trees to be removed listed, and replacement calculations listed with mitigation requirements.

This document is included on the most recent submittal October 16, 2020, reviewed and resubmitted with Mar 23 date. No changes.

Replacement trees (as per mitigation calculations) are shown on the landscape planting plans, sheets L4.0, L4.1, L4.2

335 new trees are shown on those plans, all 24" box minimum size.

10. Tree Protection Plan

Tree Protection Notes have been submitted with previous arborist reports for this project. They are now printed on the plan, part of the landscape set, sheet L-5.2. The Tree Inventory, and Arborist's Summary, Tree Removal & Mitigation Calculations, and Tree Protection Notes are all printed on sheet L-5.2, titled Arborist's Report & Notes.

24. Arborist's Report

Discrepancies with previous versions have been reconciled with the Tree Inventory and Arborist's Summary. The Arborist's Report is also printed on sheet L-5.2 titled Arborist's Report & Notes.

Please let me know if you need this in a different format – I'm assuming you will add my comments to your response.

Thank you for coordinating

Becky Duckles

SID COMMONS

PETALUMA, CALIFORNIA

REVISED ARBORIST'S REPORT & TREE INVENTORY

March 23, 2021

Prepared & Submitted By:

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SEBASTOPOL, CA.

SID COMMONS

Petaluma, Ca

REVISED TREE INVENTORY & EVALUATION

March 23, 2021

This is a gently sloping site, adjacent to the railroad right-of-way. It is bordered on the east side by Oak Creek I apartments, private homes on the southeast side, on the west by the railroad right-of-way, and by the Petaluma River floodway on the northeast side. All protected trees over 4" d.b.h. on this site that may be impacted by construction have been measured, identified and evaluated. They have been tagged in the field with numbers which relate to the numbers shown on the Grading Plan, the Tree Disposition Plan, and the inventory/report.

Over the years several grass fires have started on this site and covered several acres, causing damage to many trees. I've been evaluating trees on this site since 2003. Their current condition is listed, assessing fire damage where it occurred. Most of the Monterey cypress which were growing near the old railroad right of way were badly damaged.

Additional revisions have been added to the plan which preserve more trees. I have updated the Tree Inventory and the mitigation calculations (which remain unchanged) and coordinated some details with Wayne Leach, the civil engineer for the project as well as the rest of the design team.

Report & Recommendations - The format of the Tree Inventory/Evaluation & Arborist's Report is as follows:

Tree Location Plan - The existing trees are located and numbered on the Preliminary Grading & Drainage Plan by CSW/Stuber Stroeh, referenced for discussion in the Tree Inventory & Evaluation.

Tree Inventory & Evaluation - A listing and discussion of the existing trees on site, including the following information:

- Number - The number assigned to a tree for location reference on the Tree Location Map
- Diameter - Trunk diameter at 54" above grade (d.b.h.), (unless noted otherwise)
- Common Name
- Botanical Name
- Condition – Brief rating of tree's present overall health
- Structure – Brief rating of tree's structural condition
- Recommendations - Specific comments regarding tree status on proposed plans or treatment for tree condition. For consistency, dead trees are still shown on the plan and inventory for reference.

Tree Protection Measures – Site specific, to be printed on final plans

Tree Removal & Mitigation Calculations – As per Petaluma's ordinance, revised to show reduced number of protected tree removals

During the development of final plans, I will continue to provide information regarding existing trees to the project engineers and the rest of the design team. Tree Protection Measures shall be included on construction documents. Also, Tree Protection Fencing locations will be shown on the plans. Project engineers have already incorporated some tree protection input into their grading and site plans, and will use a special paving detail for sidewalks and walkways near protected trees.

Although no changes in the final status of existing trees from the October 2020 submittal have occurred (no more or fewer removals), I have changed the date on the Tree Removal and Mitigation Calculations report to verify that it has been checked and is current.

Tree Protection Measures have been provided to the civil engineer for inclusion on construction documents.
If there are any questions, or more information is needed, please contact me.

Respectfully submitted,

Becky Duckles

Becky Duckles, Project Arborist
ISA Certified Consulting Arborist #WE-0796A

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SID COMMONS, PETALUMA, CA
TREE REMOVAL & MITIGATION CALCULATIONS

March 23, 2021

Of the more than 100 existing trees on this site, the following 6 protected trees will be removed, based on the Site Plan and Preliminary Grading Plan by CSWST2. The design team has realigned the driveway entry and the sidewalk to preserve two excellent specimens of coast redwood. For trees in good-excellent condition replacement will be at the rate of one-to-one trunk diameter inch, and for trees in fair or marginal condition or structural soundness, replacement will be at a two-to-one basis, as per City of Petaluma IZO, Section 17.065.

PROTECTED TREES TO BE REMOVED

Tree #	Diameter	Species	Condition	Replacement ratio/trunk inches	
39	9,11,12"	Valley Oak	Good	1:1	32"
40	15"	Valley Oak	Good	1:1	15"
43	24"	Coast Redwood	Excellent	1:1	24"
102	5,6"	Valley Oak	Good	1:1	11"
104	8"	Valley Oak	Excellent	1:1	8"
200	11,13,13,14"	Coast Live Oak	Good	1:1	51"

Total number of diameter inches of protected trees to be removed = 141"

Mitigation required per ordinance (minimum 24" box specimens):
If 24" box trees are used, 1 = 2" trunk diameter, 1 - 36" box tree = 3" trunk diameter,
1 – 48" box tree = 4" trunk replacement diameter
If all were 24" boxes that would require 71 - 24" box trees (141 divided by 2" = 70.5), all 36" box = 47 box trees (141 divided by 3"), 48" box trees = 36 trees. Any combination of those sizes to meet the required number of removed trunk inches is acceptable. If the City agrees, 15 gallon size containers may also be used for replacement mitigation, most likely at the ratio of 1" per 15 gal. tree. Smaller container sizes would be especially suitable for planting valley oaks or other native species in terraced areas or other areas designated by the biological consultants. Field grown native trees are available from Specialty Oaks in Lower Lake and we can discuss equivalent caliper size from field grown trees for mitigation with the City.

Respectfully submitted,

Becky Duckles

Becky Duckles, Certified Consulting Arborist #WE-0796A

SID COMMONS
Petaluma, Ca

TREE PROTECTION NOTES

1. Plastic or chain link (panels with feet) tree protection fencing should be installed at the driplines of trees to remain, (or the outer edge of the dripline of groups of trees). If it must be removed during construction for access, it should be replaced immediately after work is completed. Work done within fenced tree protection zones should be done under the supervision of a monitoring arborist.

2. Pruning should be the minimum necessary for hazard reduction or necessary access, (i.e. the removal of deadwood 2" and larger, etc.), pedestrian and vehicular clearance, and crown restoration. It should be done by trained, qualified tree workers according to ISA Pruning Guidelines & ANSI-300 standards, prior to construction activity and fencing.

3. Where drainage swales or utilities must pass within protected tree driplines, they should be hand dug or excavated under the supervision of an arborist. Roots 2"+ should be preserved where possible, carefully exposing them and installing pipe or lines under them.

4. If any roots larger than 1" are encountered that cannot be preserved, they should be cut cleanly across the face of the root with a sharp saw.

5. Arbormulch (chipped wood, bark and foliage) generated from pruning and trees to be removed shall be spread under protected trees (kept 1’ away from tree trunks) to serve as a permanent top dressing and mulch. It should be augmented as needed to provide a 4” layer of mulch within the driplines of all protected trees to remain within the limits of construction, and designated landscape areas. This mulch will not be used within the riverbanks or terraced areas.

6. No parking, storage or disposal of materials (such as concrete slurry, paint, etc.), or other construction activity shall occur within driplines of protected trees to remain.

7. Excavation within terraced areas shall be kept a minimum of 10' from trunks of protected trees shown to be preserved. Rip rap or large boulders may be used to stabilize soil at edge of cuts near tree trunks if needed.

8. An arborist shall be notified to be present on site during work within tree rootzones/driplines. 48 hours minimum notice is requested

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
1	Valley Oak/Quercus lobata	23"	Good	Good/Excellent	Lg. broken branch on north side; prune for clearance and to remove branch; 25' canopy radius. Outside zone of construction impact; protected tree; to be preserved
2	Valley Oak/Quercus lobata	23"	Good/Excellent	Good/Excellent	Will need clearance pruning for EVA; protected tree; to be preserved
3	Black Walnut/Juglans sp.	11"	Fair	Good	Outside zone of construction impact; not a protected tree; to be preserved
4	Black Walnut/Juglans sp.	13"	Dead	Dead	Dead; remove when pruning or removing other trees in group
5	Bailey Acacia/Acacia baileyana	5"	Good	Good	This group of acacias is a dense grove of escaped exotics - fallen and broken trees. Preservable, evergreen trees, not a protected species; outside zone of construction impact.
6	Black Walnut/Juglans sp.	6"	Good	Fair	Tall; outside zone of construction impact; to be preserved; not a protected species
7	Bailey Acacia/Acacia baileyana	6/7"	Poor	Poor	Part of a group of acacias in poor condition; 1 large tree down (dead); to be preserved
8	Bailey Acacia/Acacia baileyana	4"	Fair	Poor	Outside zone of construction impact; to be preserved; not a protected species
9	Bailey Acacia/Acacia baileyana	10"	Fair	Poor	Outside zone of construction impact; to be preserved; not a protected species
10	Bailey Acacia/Acacia baileyana	11/9/5"	Fair	Poor	Outside zone of construction impact; to be preserved; not a protected species
11	Bailey Acacia/Acacia baileyana	13"	Fair	Poor	Outside zone of construction impact; to be preserved; not a protected species
12	English Walnut/Juglans sp.	8" @ 3'	NA	NA	Gone
13	Valley Oak/Quercus lobata	11/8"	Good/Excellent	Good	To be preserved; protected tree; outside zone of construction impact
14	Valley Oak/Quercus lobata	9/11/13"	Good	Good	To be preserved; protected tree; outside zone of construction impact
15	Olive/Olea europaea	11/14" @ 4'	Good/Excellent	Good	To be preserved; not a protected species; some impact from grading; would need some clearance pruning
16	Coast Live Oak/Quercus agrifolia	11"	Good/Excellent	Good/Excellent	To be preserved; protected tree; outside zone of construction impact
17	Valley Oak/Quercus lobata	20"	Good	Good	Minimize grading within dripline; 25' canopy radius; to be preserved; protected tree

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
18	California Sycamore/Platanus racemosa	24"	Dead, burned	Dead	NA
19	Chinese Photinia/Photinia serratifolia	5"	Gone	NA	NA
20	Monterey Cypress/Cupressus macrocarpa	32"	Fair/Good	Poor	Very twisted, fallen, decaying trunk; remove; not protected
21	Valley Oak/Quercus lobata	3"	Gone	NA	NA
22	Coast Live Oak/Quercus agrifolia	7"	Gone	NA	NA
23	Coast Live Oak/Quercus agrifolia	5"	Gone	NA	NA
24	Monterey Cypress/Cupressus macrocarpa	24"	Gone	NA	NA
25	Valley Oak/Quercus lobata	4"	Gone	NA	NA
26	Coast Live Oak/Quercus agrifolia	12/14"	Good	Good	A few feet on west side of property line; fence at limit of required grading and preserve; protected species; slight impact from construction
27	Monterey Cypress/Cupressus macrocarpa	24"	Gone	Gone	All these Monterey cypress trees have been repeatedly topped (past overhead utility line clearance) and are breaking up; many large scaffold branches and leaders have failed, some are decaying/dying; several were burned; not a protected species; dead, gone
28	Monterey Cypress/Cupressus macrocarpa	24"	Fair	Poor form	Previously burned; to be removed; not a protected species
29	Monterey Cypress/Cupressus macrocarpa	26"	Fair	Poor	Previously burned; to be removed; not a protected species
30	Coast Live Oak/Quercus agrifolia	7"	Good	Fair	To be preserved; good young tree; protected species/size; fence uphill side at limit of required access
31	Monterey Cypress/Cupressus macrocarpa	26"	95% burned	Fair	Burned previously; to be removed; not a protected species
32	Monterey Cypress/Cupressus macrocarpa	29"	Poor	Fair/Poor	Trunk burned, 1/2 dead; to be removed; not a protected species
33	Monterey Cypress/Cupressus macrocarpa	22"	Dead/burned	NA	Standing, dead; remove
34	Monterey Cypress/Cupressus macrocarpa	24"	40% burned	Fair	Burned previously; to be removed; not a protected species

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
35	Valley Oak/Quercus lobata	11/15/15"	Good	Fair/Good	Multiple trunks; to be preserved; will need clearance pruning, removing one trunk on east side; discuss grading & wall detail further; significant impact from construction; protected tree
36	Valley Oak/Quercus lobata	37"	Good	Good/Excellent	Will be preserved; protected tree; use special paving detail (reinforced concrete at grade, no sub-base) within rootzone
37	Valley Oak/Quercus lobata	24"	Fair	Fair/Good	Will be preserved; protected tree; use special paving detail (reinforced concrete at grade, no sub-base) within rootzone
38	Valley Oak/Quercus lobata	33"	Good	Good	Lo-branched on south side; ensure grading, utilities, walks, decks all minimal depth/impact within rootzone; shift piers or posts a few inches if needed to avoid roots; to be preserved; protected tree
39	Valley Oak/Quercus lobata	9/11/12"	Good	Fair/Good	Will have to be removed for site grading; protected tree
40	Valley Oak/Quercus lobata	15"	Good	Good	To be removed for construction; protected tree
41	Valley Oak/Quercus lobata	6/7"	Good	Good	On the northeast corner of Graylawn and a private home; minimize grading to retain roots; to be preserved; protected tree
42	Coast Redwood/Sequoia sempervirens	21"	Good/Excellent	Excellent	To be preserved with special paving; protected tree
43	Coast Redwood/Sequoia sempervirens	24"	Excellent	Excellent	To be preserved with special paving; protected tree
44	Coast Redwood/Sequoia sempervirens	25"	Excellent	Excellent	To be preserved with special paving; protected tree
45	Western Redbud/Cercis occidentalis	4"	Gone	Gone	NA (a few suckers remain, < 1/2" diameter)
46	Coast Redwood/Sequoia sempervirens	25"	Good	Good/Excellent	To be preserved with special paving; protected tree
47	Coast Redwood/Sequoia sempervirens	26"	Good/Excellent	Good	To be preserved with special paving; protected tree
48	Coast Redwood/Sequoia sempervirens	26"	Good/Excellent	Good/Excellent	To be preserved with special paving; protected tree
49	Coast Redwood/Sequoia sempervirens	18"	Good/Excellent	Good/Excellent	To be preserved with special paving; protected tree
50	Coast Redwood/Sequoia sempervirens	21"	Good/Excellent	Good/Excellent	To be preserved with special paving; protected tree
51	Coast Redwood/Sequoia sempervirens	10"	Good/Excellent	Good/Excellent	To be preserved; not protected size

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
52	Coast Redwood/Sequoia sempervirens	21"	Good/Excellent	Good/Excellent	To be preserved with special paving; protected tree
53	Coast Redwood/Sequoia sempervirens	18"	Good	Good/Excellent	To be preserved with special paving; protected tree
54	Coast Redwood/Sequoia sempervirens	15"	Good/Excellent	Good/Excellent	To be preserved with special paving; protected tree
55	Coast Redwood/Sequoia sempervirens	15"	Good	Good/Excellent	To be preserved with special paving; protected tree
56	Coast Redwood/Sequoia sempervirens	14"	Good	Good/Excellent	To be preserved with special paving; protected tree
57	Coast Redwood/Sequoia sempervirens	13"	Good	Good/Excellent	To be preserved with special paving; protected tree
58	Coast Redwood/Sequoia sempervirens	16"	Good/Excellent	Good/Excellent	To be preserved with special paving; protected tree
59	Valley Oak/Quercus lobata	34"	Good	Good	Leans east; low-branched to SE; to be preserved; protected tree; minimize grading (no grading closer than 10' from the trunk), and use special paving detail within dripline; will need clearance pruning
60	Valley Oak/Quercus lobata	36"	Good	Good/Excellent	To be preserved; protected tree; minimize grading (fill) within dripline/rootzone
61	Valley Oak/Quercus lobata	21"	Good	Good	To be preserved; stay outside rootzone with drainline/trenching/grading; protected tree
62	Valley Oak/Quercus lobata	18/20/24"	Good/Excellent	Good/Excellent	To be preserved; protected tree, outside zone of construction impact
63	Valley Oak/Quercus lobata	10"	Good	Good	Very low branching; to be preserved, outside zone of construction impact; protected tree
64	Valley Oak/Quercus lobata	19"	Fair/Good	Good	To be preserved; protected tree
65	Valley Oak/Quercus lobata	7"	Good	Good	To be preserved; protected tree
66	Valley Oak/Quercus lobata	40"	Good	Good	To be preserved; protected heritage tree; review final grading concept
67	Valley Oak/Quercus lobata	36"	Good	Good	To be preserved; protected heritage tree; review final grading concept
68	Valley Oak/Quercus lobata	30"	Good	Good	All canopy development east and south; to be preserved; protected tree; review final grading concept
69	Valley Oak/Quercus lobata	26"	Good	Good/Excellent	To be preserved; protected tree; outside zone of construction impacts

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
70	Valley Oak/Quercus lobata	13/15"	Fair	Fair	To be preserved; protected tree
71	Valley Oak/Quercus lobata	45"	Fair/Good	Fair/Good	Large branch failures (canker); hazard reduction pruning needed; to be preserved; protected tree
72	Valley Oak/Quercus lobata	34"	Good	Good	Large branch failures (canker); to be preserved; protected tree
73	Valley Oak/Quercus lobata	40"	Good	Good	Fire damage (old); cavity at base & undersides of branches; to be preserved; protected tree
74	California Bay Laurel/Umbellularia californica	Many 3-8" stems	Good	Poor (mult. trunks)	To be preserved; not protected size
75	Valley Oak/Quercus lobata	27"	Fair	Fair	Fire damage (old); to be preserved; protected tree
76	Blue Gum Eucalyptus/Eucalyptus globulus	37"	Fair	Good	To be preserved; not a protected species
77	Valley Oak/Quercus lobata	28"	Fair/Good	Good	Beehive in base of trunk (cavity); 24' canopy radius to south; to be preserved; protected tree
78	Box Elder/Acer negundo	4/5/6/6/8"	Fair	Poor (mult. trunks)	To be preserved; not a protected species
79	Valley Oak/Quercus lobata	11"	Good	Good	To be preserved; outside zone of construction impact; protected tree
80	Valley Oak/Quercus lobata	23"	Good	Good/Excellent	To be preserved; protected tree
81	Coast Redwood/Sequoia sempervirens	18"	Good/Excellent	Good/Excellent	To be preserved; protected tree
82	White Alder/Alnus rhombifolia	26"	Excellent	Good/Excellent	To be preserved; not a protected species
83	Coast Redwood/Sequoia sempervirens	18"	Good	Good/Excellent	To be preserved; protected tree
84	White Alder/Alnus rhombifolia	31"	Excellent	Good/Excellent	To be preserved; not a protected species
85	Coast Redwood/Sequoia sempervirens	19"	Good/Excellent	Good/Excellent	To be preserved; protected tree
86	Coast Redwood/Sequoia sempervirens	23"	Good/Excellent	Good/Excellent	To be preserved; protected tree
87	Coast Redwood/Sequoia sempervirens	17"	Fair	Good/Excellent	To be preserved; not protected size
88	Coast Redwood/Sequoia sempervirens	13"	Fair/Good	Good	To be preserved; not protected size

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
89	White Alder/Alnus rhombifolia	22"	Good	Good	To be preserved; not a protected species
100	Valley Oak/Quercus lobata	6/7/9"	Fair/Good	Fair/Good	To be preserved; outside zone of construction impact
101	Coast Live Oak/Quercus agrifolia	5/9"	Excellent	Good	To be preserved (near tree #38); protected tree
102	Valley Oak/Quercus lobata	5/6"	Good	Good	To be removed for construction (near tree #40); protected tree
103	Valley Oak/Quercus lobata	9"	Good	Good	Site plan has been revised to retain; (near tree #41) protected tree
104	Valley Oak/Quercus lobata	8"	Excellent	Excellent	To be removed for construction (near tree #49); protected tree
105	Coast Live Oak/Quercus agrifolia	7/8"	Excellent	Good	To be preserved (near tree #64)
106	Valley Oak/Quercus lobata	6"	Fair	Fair	To be preserved (near tree #65)
107	Valley Oak/Quercus lobata	7"	Good	Good	To be preserved (near tree #65)
200	Coast Live Oak/Quercus agrifolia	11,13,13,14"	Good/Excellent	Good (low-branched, multi-trunk)	Grading can't accommodate tree, will have to be removed; protected tree
202	Valley Oak/Quercus lobata	5"	Excellent	Good	To be preserved; site plan has been revised to protect tree; protected tree
203	Black Oak/Quercus kelloggii	4"	Gone	Gone	NA
204	Black Oak/Quercus kelloggii	5"	Fair/Good	Good	To be preserved
205	Valley Oak/Quercus lobata	32"	Fair/Good	Fair/Good	To be preserved; special paving walk at grade to avoid damaging roots
206	Valley Oak/Quercus lobata	20,28"	Good	Fair/Good	To be preserved; special paving walk at grade to avoid damaging roots
207	Valley Oak/Quercus lobata	35"	Fair/Good	Good	To be preserved; no impact from construction; recheck condition prior to construction; may need pruning to reduce hazard - cankers on branches
208	Valley Oak/Quercus lobata	21"	Good	Fair/Good	To be preserved; no construction planned in area at this time

SID COMMONS - TREE EVALUATION and INVENTORY

TREE #	SPECIES	TRUNK DIAMETER (In.)	GENERAL HEALTH	STRUCTURAL INTEGRITY	COMMENTS/RECOMMENDATIONS
209	Box Elder/Acer negundo	12"	Good	Good	To be preserved; no construction planned in area at this time
210	Box Elder/Acer negundo	9,9,10"	Good	Fair - multi-trunked	To be preserved; no construction planned in area at this time
211	Box Elder/Acer negundo	10,13,15"	Fair/Good	Fair; 15" trunk fallen	To be preserved; no construction planned in area at this time
212	Box Elder/Acer negundo	11,16"	Fair/Good	Fair	To be preserved; no construction planned in area at this time