#	***SHEET 1 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
-	GENERAL RECOMMENDATIONS FOR THE PRELIMINARY PLANS:							<u>Sheet A001 – Cover Sheet.</u> - An additional line item should be added to the General Notes to specify that the contractor must comply with the Tree Protection Notes on the Tree Protection Plan. <u>Sheet C1.0 – Preliminary Site Plan:</u> <u>Sheet C2.0 – Preliminary Grading Plan:</u> <u>Sheet C3.0 – Preliminary Utility Plan:</u> - The final plans must only show the locations of the existing trees to be preserved. - The trees marked for preservation should be numbered on these sheets for an easy reference during design work and during construction. - Best to include Tree Protection Notes on the Grading & Utility plans. Otherwise provide a clear reference to the notes found on Sheet TPZ1.00 – I recommend that the specific plan call-outs for arborists supervision (identified below) are included on the final grading plans. <u>Sheet TPZ1.00 – Tree Protection & Removal Plan:</u> - TP & R Notes - Item 2 should specify that the project arborist must inspect & document the installation of tree protection before any equipment comes on site. There should also be Tree Protection Zone notice template on this sheet (see Arborist Report). - Item 5 – Mulch should be no thicker than a 4-inch layer and set back 9-inches from trunks at grade. - The Inspection Schedule on page 43 of the Arborist's Report also needs to be added to this plan.

#	***SHEET 2 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
1	Coast Live Oak *(Quercus agrifolia)*	32	40	50	2	X	-	1- Concerns about the following tree protection issues: **1**- The great potential for root significant loss during construction of curb & parking stalls (trunk is setback about 3-feet from curb). **- Recommend utilization of a reinforced concrete slab that requires minimal base excavation, concerning the footprint of the closest 4 parking stalls.** **- Recommend that an exploratory trench is carefully dug by hand or with an air spade at the proposed curb line before grading, to locate any 1.5-inch and larger roots that may require pruning.** **- Recommend that a call out note is added on the grading plan concerning required Project Arborist's supervision during careful excavation work required within the root zone.** **- Recommend that the closest back flow preventer location is moved further back from the trunk if at all possible.**
3	Coast Live Oak	5	15	5	3	X	-	1- Concerns about the following tree protection issues: No specific recommendations apart from standard tree protection requirements.
5	Coast Live Oak	14	25	25	2	X	?	2- County review questions regarding tree preservation on the site: **- The preservation of this tree will require the removal of parking stalls 7 & 8, and appropriate care to protect the root zone during grading and construction.**
7	Coast Live Oak	4	10	5	2	X	X	To be removed because of its location on site plan.
8	Coast Live Oak	7	15	10	1	X	X	2- County review questions regarding tree preservation on the site: **- Cannot be preserved due to its location in the proposed trash enclosure.**

#	***SHEET 3 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
9	Coast Live Oak	7	15	10	2	X	X	2- County review questions regarding tree preservation on the site: **- Cannot be preserved due to its location in the proposed trash enclosure.**
13	Coast Live Oak	5/4	15	10	2	X	X	2- County review questions regarding tree preservation on the site: **- Cannot be preserved due to location in paved area and close proximity to building.**
14	Coast Live Oak	14/17/13	15	25	2	X	X	To be removed because of its location shown on the site plan.
15	Coast Live Oak	15	10	5	2	X	X	To be removed because of its location shown on the site plan.
16	Coast Live Oak	4	20	5	2	X	X	To be removed because of its location shown on the site plan.
18	Coast Live Oak	6	15	10	1	X	X	To be removed because of its location shown on the site plan.
24	Coast Live Oak	19	30	30	3	X	X	To be removed because of its location shown on the site plan.
25	Coast Live Oak	7	25	5	2	X	X	To be removed because of its location shown on the site plan.
26	Coast Live Oak	20	35	35	2	X	X	To be removed because of its location shown on the site plan.
27	Coast Live Oak	20/17/8	45	45	2	X	?	2- County review questions regarding tree preservation on the site: **- Preservation may be an option if the landscape soil area can be increased around the trunk (by possibly changing the corner of the driveway?). The adjacent pedestrian path and driveway will then have to be constructed carefully. The oak will also require the pruning & cabling maintenance as prescribed in the arborist's report if saved.**
28	Coast Live Oak	16	25	25	3	X	X	2- County review questions regarding tree preservation on the site: **- Located in a parking stall and must be removed due to lack of options.**

#	***SHEET 4 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
29	Coast Live Oak	15/9	30	25	2	X	X	2- County review questions regarding tree preservation on the site: **- Located in a parking stall and must be removed due to lack of other options.**
30	Coast Live Oak	16	40	30	2	X	X	2- County review questions regarding tree preservation on the site: **- Located in a parking stall and must be removed due to lack of other options.**
31	Coast Live Oak	6	20	10	2	X	X	2- County review questions regarding tree preservation on the site: **- Located in the parking stall and must be removed due to lack of other options.**
34	Coast Live Oak	14/13	25	35	2	X	X	1- Concerns about the following tree protection issues: - The very limited soil area around the trunk and the great potential for significant root loss during construction. - The close proximity of the tree canopy as the trunk is setback about 7-feet from the building. This will require extensive pruning work to allow for construction work (at least 3 or 4-feet of setback between the canopy and structure will be needed). **- Removal and replacement is the only practical option due to design constraints concerning the limited root zone area available and the tree's broad canopy dimensions.**
35	Chinese Pistache	6	15	15	1	X	X	Tree to be removed due to its location within the construction footprint.
36	Chinese Pistache	4	10	10	1	X	-	Street Tree. 1- No specific recommendations apart from required tree protection.

#	***SHEET 5 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
37	Chinese Pistache	7	15	20	1	X	-	Street Tree. 1- No specific recommendations apart from required tree protection.
38	Chinese Pistache	7	15	20	1	X	-	Street Tree. 1- No specific recommendations apart from required tree protection.
39	Coast Live Oak	15	30	20	3	X	?	2- County review questions regarding tree preservation on the site: **- I recommend that consideration is given to expanding the landscape area around this tree and the adjacent oaks in order to preserve more root zone area, if at all possible (see the marked-up site plan).**
40	Coast Live Oak	9/9	30	15	3	X	?	2- County review questions regarding tree preservation on the site: **- I recommend that consideration is given to expanding the landscape area around this tree and the adjacent oaks in order to preserve more root zone area, if at all possible (see the marked-up site plan).**
41	Coast Live Oak	12	30	25	2	X	?	2- County review questions regarding tree preservation on the site: **- I recommend that consideration is given to expanding the landscape area around this tree and the adjacent oaks in order to preserve more root zone area, if at all possible (see the marked-up site plan).**
42	Coast Live Oak	8/17	15	25	2	X	X	2- County review questions regarding tree preservation on the site: **- This tree must be removed because it leans strongly to the east and its trunk and canopy will encroach into the paved area if left in place.**
43	Coast Live Oak	15	25	25	2	X	X	2- County review questions regarding tree preservation on the site: **- Must be removed due to its location within the construction footprint (unless the synthetic turf area and paving can be significantly reduced).**

#	***SHEET 6 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
44	Coast Live Oak	8/8	20	20	3	X	X	2- County review questions regarding tree preservation on the site: **- Must be removed due to its location within the construction footprint.**
48	Coast Live Oak	19	25	40	2	X	X	2- County review questions regarding tree preservation on the site: **- Must be removed due to its location within the construction footprint and close proximity to the handicapped parking area. I noted that it will be in a parking stall and will be setback about 10-feet west of Building 1. The broad canopy will also be problematic regarding its size and proximity next to the building.**
49	Coast Live Oak	25	25	40	2	X	X	2- County review questions regarding tree preservation on the site: **- Must be removed due to its location within the construction footprint. The tree is located in the proposed sidewalk and is setback about 10-feet from Building 4. Alteration of the plan to save this tree does not appear to be a practical option when considering its canopy dimensions and location next to the driveway.**
50	Coast Live Oak	10	20	15	2	X	X	- Must be removed as located within footprint of Building 4.
52	Coast Live Oak	15	20	15	2	X	X	- Must be removed as located within footprint of Building 4.
53	Coast Live Oak	13/14	20	20	2	X	X	- Must be removed as located within footprint of Building 4.
54	Coast Live Oak	7	10	10	2	X	X	2- County review questions regarding tree preservation on the site: **- Must be removed because of its location within the artificial turf area.**
56	Coast Live Oak	10	15	15	2	X	X	- Must be removed as located within footprint of Building 4.
57	Coast Live Oak	6	15	10	2	X	X	- Must be removed as located within footprint of Building 4.
58	Chinese Pistache	5	15	10	2	X	X	- Must be removed as located within footprint of Building 4.

#	***SHEET 7 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
60	Fern Pine *(Afrocarpus falcatus)*	36/14	60	65	2	X	X	2- County review questions regarding tree preservation on the site: - Located in the paved area at the south end of the synthetic turf area. **- The preservation of this large tree would require a significant landscape design change in order to preserve enough of the surrounding root zone area. The turf area would have to be much reduced in size and the paved surfaces within 25-feet of the trunk removed. I believe it will be more constructive to focus on possibly expanding the landscape area around the existing trees at the north side of the proposed turf area (Tree #60 and the adjacent oaks).**
61	Fern Pine	14/21/12/ 10/12/13/ 24	70	75	2	X	-	1- Concerns about the following tree protection issues: - The open soil area around the trunk of this large tree will be too small and will likely result in significant root loss during construction. **- I recommend that the landscape area around this tree and the nearby oaks is expanded in size. I recommend that consideration be given to scooting the synthetic turf footprint about ten feet to the south, if this can be achieved when considering design constraints. This action will preserve a lot more root zone area (see the mark-up on the attached site map).**
63	Liquidambar *(Liquidambar styraciflua)*	8	25	20	2	X	X	Tree to be removed due to its location within the construction footprint.
65	Coast Live Oak	5	20	5	2	X	X	Tree to be removed due to its location within the construction footprint.
66	Coast Live Oak	22	25	40	2	X	X	Tree to be removed due to its location within the construction footprint.
67	Coast Live Oak	5	15	10	2	X	X	Tree to be removed due to its location within the construction footprint.

#	***SHEET 8 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
68	Coast Live Oak	4	10	10	2	X	X	Tree to be removed due to its location within the construction footprint.
69	Chinese Pistache	3	10	10	2	X	X	Tree to be removed due to its location within the construction footprint.
70	Chinese Pistache	4	10	10	2	X	X	Tree to be removed due to its location within the construction footprint.
74	Coast Live Oak	8	25	10	2	X	X	Tree to be removed due to its location within the construction footprint.
75	Coast Live Oak	8	25	10	2	X	X	Tree to be removed due to its location within the construction footprint.
76	Coast Live Oak	6	20	10	2	X	X	Tree to be removed due to its location within the construction footprint.
77	Coast Live Oak	7	15	15	2	X	X	Tree to be removed due to its location within the construction footprint.
78	Raywood Ash *(Fraxinus angustifolia "Raywood")*	9	35	20	2	X	X	Tree to be removed due to its location within the construction footprint.
79	Coast Live Oak	6	15	10	2	X	X	Tree to be removed due to its location within the construction footprint.
80	Coast Live Oak	10	20	20	2	X	X	Tree to be removed due to its location within the construction footprint.
81	Coast Live Oak	7	30	10	2	X	X	Tree to be removed due to its location within the construction footprint.
85	Coast Redwood *(Sequoia sempervirens)*	38	50	35	2	X	-	1- Concerns about the following tree protection issues: The trunk of this tree is located on an adjacent property. The proposed parking area will be setback about 18-feet from the trunk and care must be taken to avoid root tearing and damage during grading work (root pruning will be needed). **- Requires a call-out on the grading plans concerning the need for project arborist supervision during grading and excavation work for the permeable parking area.**

#	***SHEET 9 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
86	Coast Live Oak	8/10/7	25	20	2	X	-	1- Concerns about the following tree protection issues: These oaks are located near the edge of the proposed parking area footprint. **- Requires a plan call-out on the grading plans for project arborist supervision during grading work.**
87	Coast Live Oak	7	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
88	Coast Live Oak	8	15	15	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
91	Coast Live Oak	6	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
92	Coast Live Oak	7	20	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
93	Coast Live Oak	5/6	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
94	Coast Live Oak	4	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
95	Coast Live Oak	7	15	10	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
96	Coast Live Oak	9	20	10	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
97	Coast Live Oak	7/6/5	15	15	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.

#	***SHEET 10 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
98	Coast Live Oak	9/6	20	10	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
100	Coast Live Oak	6	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
101	Coast Live Oak	9	20	15	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
102	Coast Live Oak	6	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
103	Coast Live Oak	4	10	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
105	Coast Live Oak	8	15	15	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
106	Coast Live Oak	5	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
107	Coast Live Oak	5	20	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
109	Coast Live Oak	6	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
110	Coast Live Oak	10	20	15	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
111	Coast Live Oak	6	15	5	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.

#	***SHEET 11 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
112	Coast Live Oak	8	20	15	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work.
116	Monterey Pine	29	55	45	2	X	X	2- County review questions regarding tree preservation on the site: - **This pine must be removed** as it will be setback 5-feet from the parking area curb, resulting in significant root loss and potential instability in the soil. Mature pines are not tolerant of root loss and decline and death will result within a number of years as a result.
117	Coast Live Oak	6	20	10	2	X	-	1- Concerns about the following tree protection issues: - Requires a call-out for project arborist supervision during grading work
119	Eucalyptus Tree	18	40	40	2	X	X	Tree to be removed due to its location within the construction footprint.
120	Monterey Pine	22	80	40	2	X	X	2- County review questions regarding tree preservation on the site: - **This pine must be removed** because it will be setback 6-feet from the parking area curb, resulting in significant root loss and potential instability in the soil. Mature pines are not tolerant of root loss and decline and death will result within a number of years as a result.
124	Raywood Ash	16	45	35	2	X	X	Tree to be removed due to its location within the construction footprint.
127	Windmill Palm *(Trachycarpus fortunei)*	9	10	5	2	X	-	2- County review questions regarding tree preservation on the site: - This small palm can easily be relocated in the landscape.
128	Coast Redwood	25/21/10	85	35	2	X	-	1- Concerns about the following tree protection issues: **- I recommend a grading & utility plan call out regarding Project Arborist supervision during work within 25-feet of trunk (may need root pruning).**

#	***SHEET 12 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
130	Mexican Fan Palm *(Washingtonia robusta)*	19	45	5	2	X		1- Concerns about the following tree protection issues: - No specific recommendations apart from the required tree protection fencing.
131	Black Walnut	6	25	15	2	X	-	1- Concerns about the following tree protection issues: - No specific recommendations apart from the required tree protection fencing.
132	Black Walnut	6	40	15	2	X	-	1- Concerns about the following tree protection issues: - No specific recommendations apart from the required tree protection fencing.
133	Black Walnut	8	35	15	2	X	-	1- Concerns about the following tree protection issues: - No specific recommendations apart from the required tree protection fencing.
135	Coast Live Oak	11/11	25	25	2	X	X	2- County review questions regarding tree preservation on the site: **- This oak must be removed** as it will be less than 5-feet from proposed storm drain and significant root loss will be unavoidable during drain installation work. This oak also has a poor codominant structure at four-feet above grade.
136	London Plane Sycamore *(Platanus x hispanica)*	11	40	25	3	X	-	1- Concerns about the following tree protection issues: Located on the street frontage in front of the adjacent private property to the west. - No specific recommendations apart from the required tree fencing.
138	Monterey Pine	26	80	60	2	X	X	Pine is located within the footprint of Building 2.
139	Coast Live Oak	13/16	30	40	2	X	X	2- County review questions regarding tree preservation on the site: - Located within the sidewalk between the drive and the west side of Building 1. (setback a few feet from structure). **It must be removed** because there is not enough space for the preservation of root zone or for the broad canopy above ground.
140	Coast Live Oak	3/4	20	10	2	X	X	This oak is located next to the footprint of Building 2.

#	***SHEET 13 OF 13.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH: (1 = Best Rating out of 5)**	**SUITABLE FOR PRESERVATION BASED ON CONDITION RATINGS:**	**REMOVE TREE BECAUSE OF LOCATION IN PROJECT AREA:**	**PLAN REVIEW COMMENTS:** **1- RECOMMENDATIONS FOR TREE PROTECTION - PERTAINING TO THE REVIEW OF THE PRELIMINARY PLAN SET** **2- PLAN REVIEW COMMENTS - PERTAINING TO THE SPECIFIC TREES IDENTIFIED FOR RE-EVALUATION BY THE COUNTY OF SANTA CRUZ**
141	Coast Live Oak	13	30	20	2	X	X	Oak is located within the footprint of Building 2.
142	Coast Live Oak	7/9	30	25	2	X	X	Oak is located within the footprint of Building 2.
143	Coast Live Oak	7	20	15	2	X	X	2- County review questions regarding tree preservation on the site: - Small tree located within the proposed trash enclosure footprint. It must be removed as there is no available space available for its preservation.
147	Coast Live Oak	5	15	5	2	X	X	Located within the proposed driveway footprint.
148	Coast Live Oak	8	20	10	2	X	X	Located within the proposed driveway footprint.
149	Coast Live Oak	7	20	10	2	X	X	Located within the proposed driveway footprint.
152	Chinese Pistache	4	15	10	2	X	-	No specific recommendations apart from the required tree protection fence.

Project Arborist Comments:

See the Plan Review Matrix for more detailed comments and recommendations concerning tree protection requirements and responses to county planning concerns.

Nigel Belton - 1/2/19

Can tree's #39, #40, #41 & #42 be preserved by moving the turf area further south and expanding the landscape area further east into the paved area?

Area of concern regarding potential for significant root loss. See comments & recommendations in plan review matrix

CAPITOLA ROAD

MERRIMAN LANE

LEILA COURT

BUILDING 1
TWO-STORY COMMERCIAL
(SC HEALTH CENTERS)

BUILDING 2
TWO-STORY COMMERCIAL
(DIENTES)

BUILDING 3
THREE-STORY RESIDENTIAL APARTMENTS: COMMUNITY CENTER

BUILDING 4
THREE-STORY RESIDENTIAL APARTMENTS

BUILDING 5
THREE-STORY RESIDENTIAL APARTMENTS

BUILDING 6
THREE-STORY RESIDENTIAL APARTMENTS

T.R. – PARCEL ONE
APN 026–741–12
1412 CAPITOLA RD.
42,278 SQ. FT.
0.9706 AC.
(DOC. 2012–0047784)

T.R. – PARCEL TWO
APN 026–741–13
1438 CAPITOLA RD.
42,354 SQ. FT.
0.9723 AC.
(DOC. 2012–0047785)

T.R. – PARCEL THREE
APN 026–741–14
1500 CAPITOLA RD.
45,449 SQ. FT.
1.043 AC.
(DOC. 2012–0047786)

T.R. – PARCEL FOUR
APN 026–741–15
1514 CAPITOLA RD.
29,029 SQ. FT.
0.6664 AC.
(DOC. 2012–0047787)

TOTAL AREA
159,110 SQ. FT.
3.6527 AC.

ONE-STORY COMMERCIAL

R-1 HOTEL / MOTEL

SINGLE-FAMILY HOME

PLAN NORTH
TRUE NORTH

SITE PLAN
SCALE: 1/" = 20'-0"

KEY NOTES

THE KEY NOTES THAT FOLLOW APPLY TO THE DRAWING(S) ON THIS SHEET ONLY. REFER TO FOLLOWING SHEETS FOR NOTES THAT ARE APPLICABLE TO THOSE DRAWINGS.

1. TRASH ENCLOSURE.
2. MAINTENANCE SHED.
3. INDICATES DRIVEABLE PERMEABLE PAVERS.
4. DASHED LINE INDICATES FIRE TRUCK APPARATUS TURNAROUND.
5. PAVER WALKWAY.
6. COMMUNITY GARDEN RAISED PLANTERS AND SHED.
7. STAIR / ELEVATOR TOWER
8. EXISTING BUS STOP.
9. ARCHED ENTRYWAY.
10. MONUMENT SIGN.
11. DASHED LINE INDICATES AWNING ABOVE.
12. BICYCLE STORAGE RACK.
13. MAILBOXES.

LIGHTING LEGEND

INDICATES POLE / POST LIGHTING.

INDICATES WALL MOUNTED LIGHTING.

WALD RUHNKE & DOST ARCHITECTS LLP

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MONTEREY, CALIFORNIA 93940

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MID-PEN HOUSING
1500 CAPITOLA ROAD MIXED-USE

MID-PEN HOUSING CORP.
WATSONVILLE DEVELOPEMENT OFFICE
275 MAIN STREET, SUITE 204, WATSONVILLE, CA 95076
A.P.N.: 026-741-12, 026-741-13, 026-741-14, 026-741-15

JOB NO. 17088

PRINT DATE:

PLOT DATE: 1.28.2019

DRAWN BY: VV

CHECKED BY: HR

SET ISSUED:

SHEET NAME: SITE PLAN

SHEET NO.: A100

FILE NAME.: 17088-A100

Nigel Belton
Consulting Arborist

AN ASSESSMENT OF THE TREES LOCATED WITHIN THE PROPOSED DEVELOPMENT SITE AT 1412, 1438, 1500 AND 1514 CAPITOLA ROAD, SANTA CRUZ - CALIFORNIA

Prepared at the request of:
Carlos Jurado
Project Associate
Mid-Peninsula Housing Corporation
257 Main Street
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Site visit by:
Nigel Belton - ISA Certified Arborist WE-0410A
July 16, 2018

Job - Mid-Pen Housing Corp - 7.22.18

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TABLE OF CONTENTS:

AN ASSESSMENT OF THE TREES LOCATED WITHIN THE PROPOSED DEVELOPMENT SITE AT 1412, 1438, 1500 AND 1514 CAPITOLA ROAD, SANTA CRUZ - CALIFORNIA

SUMMARY:

One hundred and fifty-two trees were surveyed within the development site. All of these trees are identified within the accompanying Tree Survey Matrix and on a Tree Location Map, both of which are attached to this report. The majority of the surveyed trees within the project area comprise of native Coast Live Oaks of varying sizes.

One hundred and two trees are recommended for preservation based upon their health and structural condition ratings. A number of these trees will have to be removed to facilitate the design and construction of the development.

Fifty trees are recommended for removal based upon their health and/or structural conditions, or because of undesirable species characteristics. All of the Bailey Acacia and Wild Plum Trees are recommended for removal on this site.

The final number of trees that can be preserved on this site will be influenced by design requirements and constraints. It is crucial that the trees preserved on this site have large enough undisturbed root zone areas, otherwise they will not thrive. These determinations must be made by the project arborist in collaboration the design team during the design development period.

The trees identified for preservation must be protected from damage and excessive root loss during the demolition and construction phases of this project. Tree Protection Zone Fences must be installed before any equipment comes on site and must be maintained in good order throughout the entire construction period.

The project arborist must provide inspections, supervision and oversight during the construction period, as prescribed within the Inspection Schedule in this report.

BACKGROUND:

Carlos Jurado contacted me on behalf of the Mid-Peninsula Housing Corporation, concerning the need for a tree survey and an arborist's report regarding the proposed multi use development at 1412, 1438, 1500 and 1514 Capitola Road. This development site comprises of four separate parcels which are owned by the Santa Cruz County Redevelopment Successor Agency. It is my understanding that the proposed development includes the construction two commercial buildings fronting Capitola Road and that two high density housing structures will be constructed in the area behind them. The project area comprises of two existing residential structures surrounded by a large open area of grassland and groupings of trees, some of which are of significant size and value to the community.

ASSIGNMENT:

This assignment entails the provision of a tree resource survey and the preparation of an arborist's report on behalf of the Mid-Peninsula Housing Corporation. The 152 surveyed trees within the project area are identified with numbered tags affixed to their trunks. The tree tag numbers correspond with the numbering utilized within this arborist's report and the accompanying tree survey matrix. The numbered tree's locations are also shown on a tree location map.

The Tree Survey Matrix serves to document the dimensions, health and structural conditions of individual trees. The matrix also denotes whether individual trees are suitable for preservation or should be removed, based upon their condition ratings and/or undesirable species characteristics. The matrix also provides limited comments pertaining to trees of concern.

The arborist's report provides a background and discussion regarding the nature of the proposed improvements. This report provides observations and conclusions regarding the subject trees and their suitability for preservation. The report further provides preliminary recommendations for tree preservation and protection during both the design and the construction phases of the proposed development. This report also provides a preliminary inspection schedule for the project arborist during the construction period.

LIMITATIONS:

The inspection of the surveyed trees was made from the ground only. No tree canopies were accessed to examine their above ground structures, nor were any of these trees inspected below soil grade to examine their root systems. The inspections of trees were limited to visual examinations and did not entail any advanced testing of their interior structures.

This is a preliminary Tree Protection Report based on a site inspection and discussions pertaining to the nature of the proposed improvements. I was provided with a conceptual schematic showing the outlines of proposed structures and the surrounding infrastructure within the project area. I have not had the opportunity to review any detailed Civil or Architectural Plans at this early stage of the project. It is my understanding that the final locations of the new structures and surrounding infrastructure are yet to be determined.

DISCUSSION:

Fifty-two trees were surveyed within the project site, the smallest of which measured 3-inches in diameter when measured at 54-inches above ground level (Standard Diameter at Breast Height or DBH Measurement). The predominant tree species on this site comprises of native Coast Live Oaks (87 trees), the majority of which appear to have grown naturally from acorns. These oaks vary in height (between 10 and 40-feet tall). The larger established specimens are more desirable for preservation and protection during the design and construction periods of this project but are also more vulnerable to construction impacts resulting from root loss. I also noted the row of smaller oaks adjacent to the boundary of the southwest corner of the project site. These trees will serve to provide valuable screening and should be preserved if at all possible.

I noted some undesirable tree species on this site, including Bailey Acacia, Wild Plums and Mayten Trees. These trees are recommended for removal as they are naturally invasive. Three of the six mature Monterey Pines on this site are recommended for preservation based upon their condition ratings, however these mature pines are approaching the end of their life spans and they are very sensitive to construction impacts. I recommend that consideration be given to these concerns during design development.

The two Coast Redwood Trees that are located on the project site and on a neighbor's property, should be preserved, being generally tolerant of construction impacts if properly protected. Both of these trees appear to be well setback from proposed parking infrastructure in the preliminary development schematic provided to me.

The two large Fern Pines located within the proximity of the street frontage and the residence at 1438 Capitola Road will likely be located within the footprint of the proposed commercial building site and surrounding infrastructure. The opportunity for the preservation of these significant trees will be contingent on their locations relative to the proposed structures and the surrounding driveway and parking areas.

OBSERVATIONS AND RECOMMENDATIONS PERTAINING TO TREE PRESERVATION:

Tree #1 - 32-inch DBH Coast Live Oak *(Quercus agrifolia)*:
Tree #3- 5-inch DBH Coast Live Oak:
Tree #5- 14-inch DBH Coast Live Oak:

These three oaks are located in the northeast corner of the project site and are recommended for preservation and protection due to their good condition ratings. I recommend that these oaks are pruned to improve their structural conditions and appearance.

Tree's #2, #4, #6, #19, #21, #22, #32, #33 and #71 - Nine Bailey Acacia *(Acacia baileyana)*:

The great majority of the Bailey Acacia trees on this site exhibit poor health and have poor structural conditions. This species is undesirable due to its invasive nature. All of the Bailey Acacia Trees on this site are recommended for removal.

Tree's #10, #17, #20, #23 and #72 - Five Wild Plum Trees *(Prunus spp.)*:
Tree #11 - Purple Plum *(Prunus cerasifera)*:

These Wild Plums comprise of clusters of individual trunks. All of the plums are recommended for removal because they are potentially invasive and have poor health and structure ratings.

Tree #26 - 20-inch DBH Coast Live Oak:

This tree is located within the grouping of oaks located to the east of the residence at 1500 Capitola road (Tree's #24 through #31). The six of the larger oaks within the group of trees are recommended for preservation and protection during the design and construction periods of this project.

I recommend that tree #26 is pruned to improve its structure and appearance. Remove larger dead wood and reduce end-weight in any heavy and overextended limbs (also referred to as end weight reduction in this report).

Tree #27 - 20, 17 & 8-inch DBH Coast Live Oak:

I recommend that this oak is preserved and protected during the design and construction periods of this project.

This oak has a poor structural condition due to its codominant growth pattern which comprises of three trunks attached to a common stump. The areas of attachment between these trunks are weak and they are vulnerable to failing at this time.

I recommend that this oak pruned to improve its structure (reducing weight in the ends of heavier limbs and the remove larger dead wood). I also recommend that one or more support cables are installed between the codominant trunks in order to reduce the risk of trunk failures. Utilize 5/16-inch diameter EHS Grade Cable attached to 3/8-inch through rods, with amon-eyes as the attachment points.

Tree #28 - 16-inch DBH Coast Live Oak:

I recommend that this oak is preserved and protected during the design and construction periods of this project.

I recommend that this tree is pruned to improve its structure and appearance. Remove larger dead wood and reduce end-weight in any heavy and overextended limbs.

Tree #29 - 15 & 9-inch DBH Coast Live Oak:

I recommend that this codominant oak is preserved and protected during the design and construction periods of this project.

I recommend that this tree is pruned to improve its structure and appearance. Remove larger dead wood and reduce end-weight in any heavy and overextended limbs.

I also recommend that one support cable is installed in between the two codominant trunks. Utilize 5/16-inch diameter EHS Grade Cable attached to 3/8-inch through rods.

Tree #30- 16-inch DBH Coast Live Oak:

I recommend that this oak is preserved and protected during the design and construction periods of this project.

I recommend that this tree is pruned to improve its structure and appearance. Remove larger dead wood and reduce end-weight in any heavy and overextended limbs.

Tree #34- 14 7 13-inch DBH Coast Live Oak:

This oak is located next to the sidewalk at the front of 1514 Capitola Road. I noted that it will likely be situated within the entry way to the proposed parking area.

Tree's #35, #36, #37 and #152 - Four Chinese Pistache *(Pistacia chinensis)*:

The four Chinese Pistache growing in the landscape strip between the sidewalk and the curb are attractive trees that exhibit good health and generally have good structural conditions. They are recommended for protection during the design and construction of this project, if at all possible.

Tree #40 - 9 & 9-inch DBH Coast Live Oak:
Tree #41- 12-inch DBH Coast Live Oak:
Tree #42- 8 & 17-inch DBH Coast Live Oak:
Tree #43- 15-inch DBH Coast Live Oak:
Tree #44 - 8 & 8-inch DBH Coast Live Oak:

This cluster of five Coast Live Oaks is located near the road frontage to the northwest of the residence at 1500 Capitola Road. All of these trees are worthy of preservation and protection during the design and construction phases of this project, if space permits.

I recommend that the oaks are pruned to improve their structures and appearance. Remove larger dead wood and reduce end-weight on any heavy and overextended limbs.

Tree #45- 12 & 10-inch DBH Coast Live Oak:

Located to the west of the house at 1500 Capitola road.

This oak is recommended for removal due to its poor structural condition. It has a poor codominant structure, having two scaffold limbs that are poorly attached at the common trunk. The oak has also developed an asymmetrical growth pattern resulting in a poor canopy shape.

Tree #48 - 19-inch DBH Coast Live Oak:
Tree #49 - 25-inch DBH Coast Live Oak
Tree #50 - 10-inch DBH Coast Live Oak:

These three oaks are located on the property boundary to the southwest of the house at 1500 Capitola Road. All three oaks are worthy of preservation based upon their condition ratings, however it appears that they will be situated within the construction footprint, as shown on the conceptual schematic provided to me.

Tree #51 - 7, 8, 5, 5 & 5-inch DBH Black Walnut *(Juglans spp.)*:
Tree #55 - 11, 11, 8 & 8-inch DBH Black Walnut:

Both of these Walnut trees are recommended for removal because they have regenerated from stumps and have poor structures.

Tree #52 - 15-inch DBH Coast Live Oak:
Tree #53 - 13 & 14-inch DBH Coast Live Oak:

These two oaks are located to the southwest of the house at 1500 Capitola road. The two oaks are worthy of preservation based upon their condition ratings, however it appears that they will be situated within the construction footprint as shown on the conceptual site plan provided to me.

Tree #56 - 10-inch DBH Coast Live Oak:

This oak is worthy of preservation based upon its condition ratings, however it appears to be located within the proposed construction footprint.

Tree #60 - 36 7 14-inch DBH Fern Pine *(Afrocarpus falcatus)*:

This large tree is located east of the residence at 1438 Capitola Road. I noted that it has a co-dominant structure having two scaffold trunks attached to a common trunk. The area of attachment between the two scaffold trunks is poor. The tree is recommended for preservation based upon its overall condition rating. I noted that this tree is located within the proposed construction footprint, as shown on the conceptual schematic provided to me.

In the event that it can be preserved, it must be pruned to improve its structure and support cables must be installed between the scaffold limb structure to improve its structural integrity.

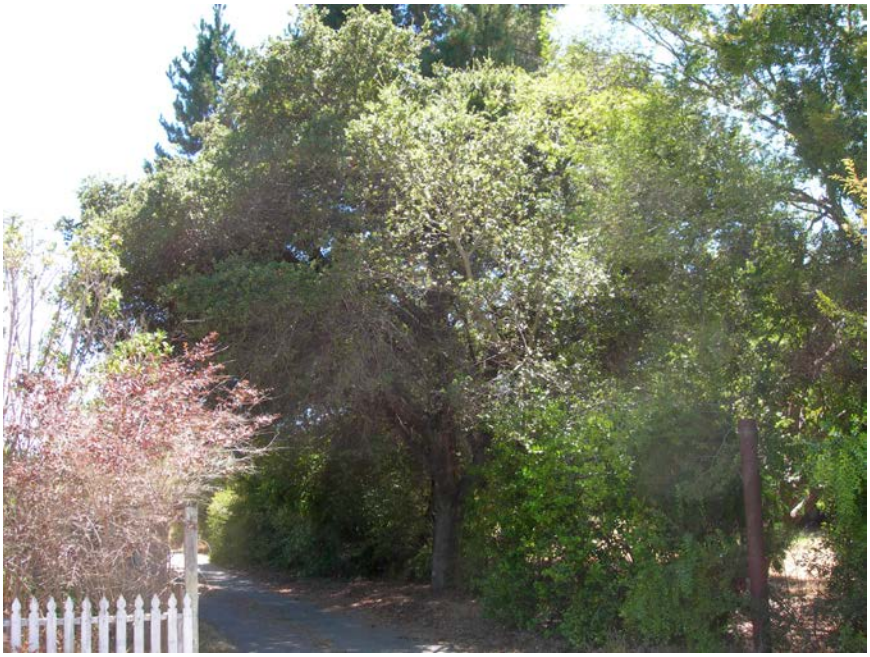
Tree #61 - 14, 21, 12, 10, 12, 13, 24-inch DBH African Fern Pine:

This large tree is growing within the street frontage next to Capitola Road. The tree exhibits good health but it has a poor structural condition due to the development of multiple scaffold limbs attached at the common trunk.

The tree is recommended for preservation based upon its condition rating and as long enough of the root zone can be preserved during construction. In the event that this tree can be preserved, it must be protected and pruned to improve its structure. Support cables must also be installed between the scaffold limb structure in order to improve its structural integrity.

Tree #66 - 22-inch DBH Coast Live Oak:

This oak, exhibits good health and it has a fair structural condition. It is worthy of preservation if there will be adequate space for the protection of its Critical Root Zone Area during the design and construction phases of this project. I also recommend that this tree is pruned to improve its structural condition, if preserved.



Tree #82 - 22-inch DBH Monterey Pine *(Pinus radiata)*:

This pine has died as a result of the recent drought period and a resultant infestation by Red Turpentine Beetle *(Dendroctonus valens)* and Engraver Beetles *(Ipps spp.)*.

Tree #83 - 22-inch DBH Monterey Pine:

This pine is recommended for removal based upon its condition rating and location.

I noted that this pine has a significant infestation of Red Turpentine Beetle on its lower trunk. The tree is located within the footprint of the housing development as shown on the conceptual schematic provided to me.

It is important to note that the six mature Monterey Pines located within the project site are located either within, or very close to the footprints of the proposed structures and surrounding driveway/parking infrastructure. These construction disturbances will likely result in significant root loss if any of the pines preserved in place. It has been my experience that mature Monterey Pines are not tolerant of significant root loss during site development work and it is likely that these trees will die within a short period of time in the event that there is significant root loss. For these reasons, I recommend that all of the Monterey Pines are removed on this site (unless the final design of the development allows for adequate areas of their Critical Root Zones to be preserved). Note that the Critical Root Zone Area required for tree preservation is generally defined by the canopy drip line perimeter (applicable to a symmetrical canopy form), or by calculating the required protection radius based upon trunk diameter. The Tree Protection Zone around these pines should be between one and 1.25-feet per inch of trunk caliper, measured at 54-inches above grade in this context (Reference - Trees and Development, A Technical Guide to Preservation of Trees During Land Development - Nelda Matheny and James Clark).

Tree #85 - 38-inch DBH Coast Redwood *(Sequoia sempervirens)*:

The trunk of this healthy redwood is primarily located on the adjacent private property to the south of 1438 Capitola Road. The trunk appears to transect the property boundary.

The tree is worthy of preservation and its Critical Root zone must be protected during the construction period. I recommend that construction disturbances are limited to the edge of the canopy drip-line if at all possible. The small Coast Live Oak next to it should be removed.

Tree's #86 through #88 - Three Coast Live Oaks next to the southern boundary:

Tree's #91 Through #98 - Eight Coast Live Oaks next to the southern boundary:

Tree's #100 through #103 - Three Coast Live oaks next to the southern boundary:

Tree's #105 through #112 - Eight Coast Live Oaks located next to the southern boundary and the southwestern corner of the project site:

The row 22 Coast Live Oaks growing within the proximity of the southwest corner of the project site are young trees which exhibit good health. These trees provide valuable screening along the project boundary and are recommended for preservation and protection during the construction phase. The preservation of these oaks will require that there is an adequate setback distance between their trunks and the new curb line of the proposed parking area, as shown on the conceptual site plan (preferably a minimum eight-foot setback distance between the trunks and the curb line if possible).

A number of these trees are crowded close together and some of the poorer specimens could be removed to provide for more space between them.

The three Arizona Cypress Trees *(Hesperocyparis arizonica)* and the one Mayten Tree *(Maytenus boaria)* growing within this row of oaks should be removed because of their poor condition ratings.

Tree #114 - 22-inch DBH Monterey Pine:

This mature pine is located on the west boundary of the project site. It is recommended for removal due to its poor condition rating and its close proximity to proposed construction disturbances. I noted that the top of the pine had been previously killed by Pine Pitch Canker *(Fusarium circinatum)* and that the loss of apical dominance resulted in the development of a heavy limb structure which is vulnerable to failure. I also noted a number of active Pine Pitch Canker infection sites in some of the limb ends.

Tree #116 - 29-inch DBH Monterey Pine:

This mature pine is located next to the western boundary. I noted a number of distinctive pitch tubes on the lower trunk associated with an infestation by Red Turpentine Beetle.

The tree is suitable for preservation based upon its condition rating, however I recommend that it is considered for removal because of its close proximity to the proposed parking area as represented on the conceptual site plan provided to me. The construction of the parking area as shown will likely result in significant root loss within the Critical Root Zone Area of this mature pine.

Tree #118 - 30-inch DBH Monterey Cypress *(Hesperocyparis macrocarpa)*:

This large tree is located on the west boundary of the project site. It must be removed as it has partially failed in the ground as evidenced by its strong lean to the east and the heaved soil area observed on the west side of the trunk. The tree also exhibits fair to poor health at this time.

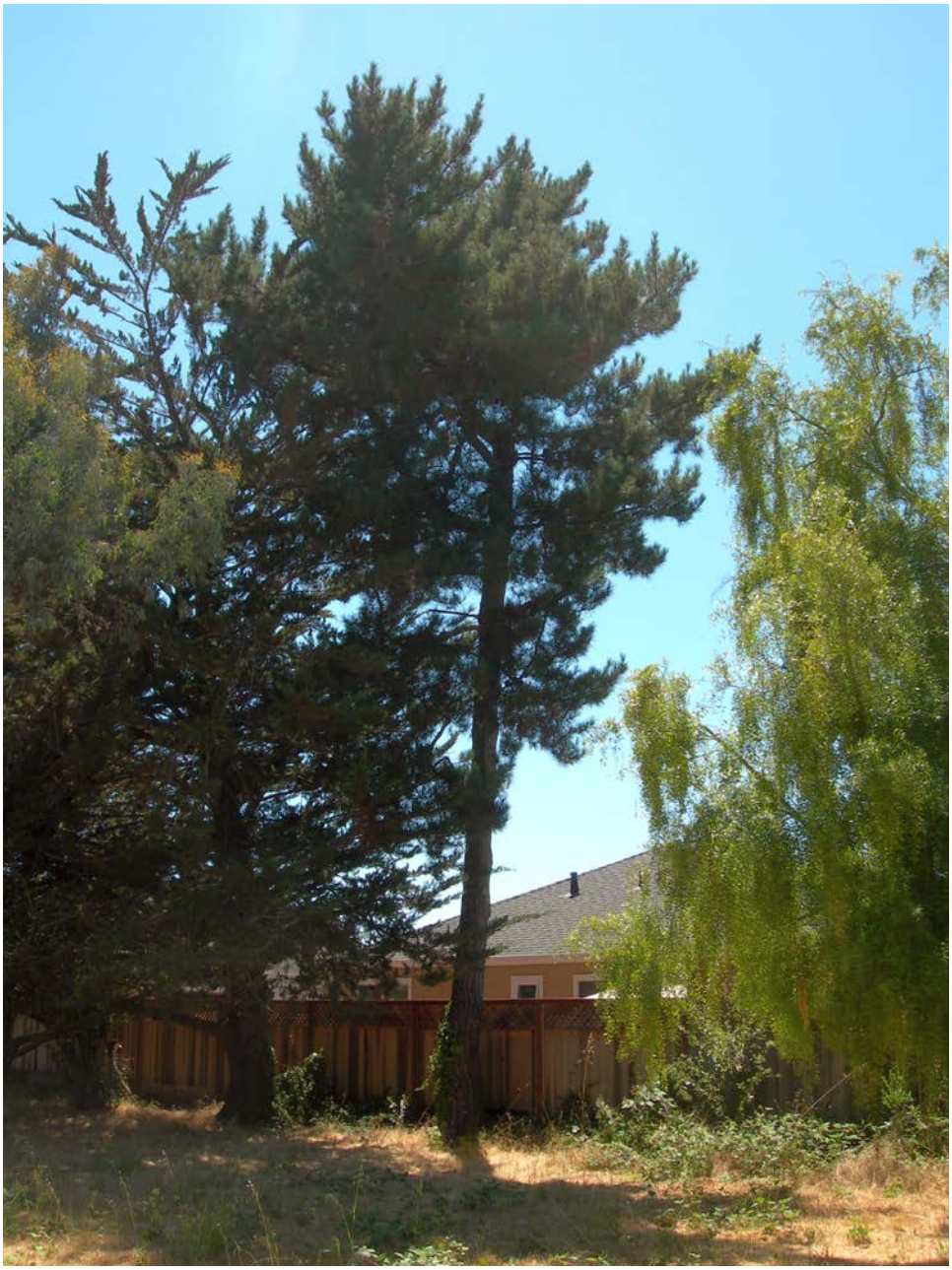
Tree #119 - 18-inch Eucalyptus Tree *(Eucalyptus spp.)*:

This tree exhibits good health and has a good structural condition which makes it worthy of preservation. Unfortunately, it appears to be located within the development footprint.

Tree #120 - 22-inch DBH Monterey Pine:

This mature pine is situated next to the western property boundary. The tree exhibits good health and has a poor structural condition rating. The top of this tree has developed a heavy lean and I noted that the great majority of the limb structure had been removed over the neighbor's yard.

I recommend that this tree is removed because of its close proximity poor structure and its location next to the proposed parking area as represented on the conceptual schematic provided to me. The construction of the parking area as shown, will likely result in significant root loss within the Critical Root Zone Area of this mature pine.



Tree's #121 through #123 - Three Mayten Trees:

These three trees are growing within close proximity to each other and they have fair overall condition ratings. I recommend that these crowded trees are removed and replaced with a more desirable species.

Tree #124 - 16-inch DBH Raywood Ash *(Fraxinus angustifolia "Raywood)*:

This tree is worthy of preservation based upon its condition rating.

In the event that it can be preserved and will be setback far enough from construction disturbances, it must be pruned to improve its structural condition and appearance.

Tree #126 - 22-inch DBH Scarlet Flowering Gum *(Corymbia ficifolia)*:

This tree exhibits good health but has a poor structural condition due to the development of a poor growth pattern. I noted that there are poor attachment areas between the main scaffold limbs which makes them vulnerable to failure. I recommend that the flowering gum is removed and replaced with a new specimen tree.

Tree #128 - 25, 21 & 10-inch DBH Coast Redwood:

This large tree is located near the western boundary of the project site and it is worthy of preservation and protection during the design and construction phases of the development.

I noted that the conceptual site plan shows the proposed landscape area around this tree to be large enough in size to ensure the preservation of its Critical Root Zone Area.

Tree #130 - 19-inch DBH Mexican Fan Palm *(Washingtonia robusta)*:

This palm is located next to the western boundary of the project site. The palm merits preservation based upon its health and structural condition ratings but is poorly located, being crowded between the adjacent redwood and the three Black Walnuts located within its proximity.

I recommend that it is preserved based upon its good condition rating and that the dead fronds on the trunk are removed at this time.

Tree's #131 through #133 - Three 6-inch, 6-inch & 8-inch DBH Black Walnuts:

These three trees are recommended for preservation because of their good overall condition ratings. I noted that the surrounding landscape area represented on the conceptual site plan appears to be large enough for the preservation of these trees. I recommend that they are pruned to improve their structures.

Tree #134 - 12 & 15-inch DBH Cottonwood Poplar *(Populus spp.)*:

This codominant tree has two trunks attached to the stump at grade. The area of attachment between these trunks is very poor, being very narrow with a significant area of bark inclusion (trapped bark).

I recommend that this tree is removed because of its poor condition rating and its undesirable species characteristics. This species is not recommended for preservation as a landscape tree because of its weak growth pattern and invasive root growth habit.

Tree #135- 11 & 11-inch DBH Coast Live Oak:

This oak has a poor structure and a misshapen canopy due to competition with the adjacent Cottonwood Poplar. The tree exhibits good health.

The removal and replacement of this misshapen tree with a better specimen is a practical consideration at this time.

Tree #136 - 11-inch DBH London Plane Sycamore *(Platanus x hispanica)*:

This tree is located in the landscape in front of the adjacent property to the left of the project site. It has been included within this report because its Critical Root Zone must be protected during the construction period.

Tree #137 - 19-inch DBH Chinese Elm *(Ulmus parvifolia)*:

This Elm has a very poor structure, having developed an asymmetrical growth pattern and heavy scaffold limb development on one side. I recommend that this tree is removed because it is vulnerable to failure at this time.

Tree #138 - 26-inch DBH Monterey Pine:

This mature pine is a good specimen, having good health and a good structural condition. The pine is worthy of preservation based upon its condition rating.

I noted that this tree may be situated within the landscape area as shown on the conceptual site plan. This large Monterey Pine can only be preserved if there will be a large enough area of the Critical Root Zone left undisturbed during the construction period (the area of the CRZ must equal the drip-line perimeter or a minimum radius of 26-feet around the trunk).

Tree's #139 through #142 - Four Coast Live Oaks:

These four trees have DBH measurements equaling 13 & 16, 3 & 4, 13 and 7 & 9-inches, respectively. All of these trees are worthy of preservation based upon their condition ratings.

Tree's #144 & #146 - Two Silk Oaks *(Grevillea robusta)*:

These trees are not worthy of preservation due to their poor condition ratings and appearance.

Tree's #147 through #149 - Three small Coast Live Oaks:

These young oaks have trunk diameters of less than 10-inches at 54-inches above grade. They are worthy of preservation, as long as a large enough area of landscape will be available for the protection of their rootzones.

Tree #150 - 16-inch DBH Mexican Fan Palm:

This established palm is recommended for removal due to its poor growth pattern. The lower trunk has developed a large bow to the west, which is a significant structural defect.

RECOMMENDATIONS FOR TREE PRESERVATION DURING DESIGN AND CONSTRUCTION:

TREE PROTECTION DURING DESIGN DEVELOPMENT:

The project arborist must work with the design team in order to provide plan review comments and recommendations concerning the preservation and protection of desirable trees during the design development phases of this project. These recommendations pertain the protection of the Critical Root Zones of trees situated within close proximity to proposed grading, work, construction activities and new underground utilities and drains (and the new driveway and parking infrastructure).

1- Tree Protection Zone (TPZ) fence locations must be shown on the Final Site Demolition and Construction Plans.

2- I recommend that the individual tree numbers are identified within this report are shown on the Completed Civil Plans, so as to provide an easy reference in the field during the demolition and construction periods of this project.

3- I recommend that the following notes are added on the final Demolition, Grading, Drainage, Utility and Construction Plan Sheets:

- Tree Protection Zone Fencing must be installed and approved of by the project arborist, before site demolition and construction work proceeds. These fences must not be dismantled or moved at any time during the construction period, without first obtaining the consent of the project arborist.

Tree Protection Zone Fences must comprise of steel chain-link construction, attached to steel posts driven into the ground. Laminated Tree Protection Notices must be attached to TPZ fences at distances of every 10-feet (see the attached TPZ notice template). TPZ fences must not be dismantled or moved at any time during the construction period, without first obtaining the consent of the project arborist.

- The project arborist must attend a pre-construction meeting with the General Contractor and the grading contractor and must also be notified concerning scheduled site meetings throughout the construction period.

- All construction activities must be excluded from fenced Tree Protection Zones unless such encroachments are unavoidable, in which case the project arborist must provide supervision regarding root protection and preservation. Vehicles and equipment must be excluded from Tree Protection Zones. No materials, chemicals or waste products may be stored or disposed of within these protected areas.

- The project arborist must be notified in the event that significant roots over 2-inches diameter are encountered during any underground work.

TREE PRUNING AND MAINTENANCE RECOMMENDATIONS:

I recommend that the trees designated for preservation should be pruned in order to improve their structural conditions and to reduce the risk of limb failures. This work should be completed before the construction phase begins.

The Project Arborist must meet with the approved Tree Service Provider to discuss the scope of recommended pruning work before it proceeds and must also inspect the work in progress in order to ensure that it is being performed correctly. Such work must be undertaken by a State Licensed Tree Service Provider and comply with ANSI A-300 Best Management Practices and ISA Standards for tree pruning and maintenance work. This work must be performed under the supervision of an ISA Certified Arborist.

CONSTRUCTION PERIOD RECOMMENDATIONS:

1- **Tree Protection Zone Fencing must be installed and approved of by the project arborist, before site demolition and construction work proceeds**. **These TPZ Fences must comprise of steel chain-link construction, attached to steel posts driven into the ground. Laminated Tree Protection Notices must be attached to TPZ fences at distances of every 10-feet.**

TPZ fences must not be dismantled or moved at any time during the construction period, without first obtaining the consent of the project arborist.

All construction activities must be excluded from fenced Tree Protection Zones, unless such encroachments are unavoidable, in which case the project arborist must provide supervision regarding root protection and preservation. Vehicles and equipment must be excluded from Tree Protection Zones. No materials, chemicals or waste products may be stored or disposed of within these protected areas.

2- **The project arborist must attend a pre-construction meeting with the General Contractor and the grading contractor and must also be notified concerning scheduled site meetings throughout the construction period.**

3- **The project arborist must be notified in the event that significant roots over 2-inches diameter are encountered during any underground work.**

PRELIMINARY INSPECTION SCHEDULE:

Document all site inspections in an e-mail format and share this correspondence with the Project Team and MPH.

1- The project arborist must meet with the General Contractor at a pre-construction meeting before any site work proceeds in order to discuss tree protection requirements.

2- The project arborist must inspect Tree Protection Zone Fences once they have been installed and before any site work proceeds.

3- The project arborist must provide supervision and oversight in the event that any grading, excavation or trenching work will encroach within the Tree Protection Zones defined by TPZ fences. The project arborist must provide direction and supervision concerning required root preservation and root pruning measures.

4- The project arborist must provide supervision and oversight concerning all construction disturbances that encroach within the Critical Root Zones areas of Protected Trees (as defined by their canopy drip line perimeters or their trunk diameter measurements).

5 - Inspect the site whenever roots 2-inches or larger in diameter are encountered outside fenced TPZ areas during any grading, trenching and construction activities.

6- Provide guidance and supervision pertaining to required tree pruning work. Meet with the approved Tree Service Provider to discuss the required scope of work and provide inspections and oversight as needed.

Please contact me if you have any questions pertaining to this report.

Respectfully submitted

Nigel Belton

Attachments:
- Assumptions and Limiting Conditions
- Tree Survey Matrix
- Tree Location Map
- Sample Tree Protection Zone Notice
- The Conceptual Site Plan

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 1 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
1	Coast Live Oak *(Quercus agrifolia)*	32	40	50	2	2	X	-	-	Very good specimen worthy of preservation.
2	Bailey Acacia *(Acacia baileyana)*	9	30	20	3	3	-	-	X	Note - Invasive species, all of which should be removed from this site.
3	Coast Live Oak	5	15	5	3	3	X	-	-	-
4	Bailey Acacia	10/9	40	30	3	4	-	X	X	Invasive species.
5	Coast Live Oak	14	25	25	2	2	X	-	-	Larger tree worthy of preservation.
6	Bailey Acacia	10/13	15	20	5	5	-	X	-	Dead tree.
7	Coast Live Oak	4	10	5	2	2	X	-	-	-
8	Coast Live Oak	7	15	10	1	2	X	-	-	-
9	Coast Live Oak	7	15	10	2	2	X	-	-	-
10	Wild Plum *(Prunus ssp.)*	4/5/4/3	10	15	4	4	-	X	X	Tree cluster.
11	Purple Plum *(Prunus cerasifera)*	6/5/3	15	20	3	4	-	X	X	Tree cluster.
12	Coast Live Oak	3	10	10	3	4	-	X	-	-
13	Coast Live Oak	5/4	15	10	2	2	X	-	-	-

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 2 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
14	Coast Live Oak	14/17/13	15	25	2	4	X	-	-	Codominant structure with weak areas of attachment between the trunks. The installation of support cables is recommended.
15	Coast Live Oak	15	10	5	2	3	X	-	-	Larger tree worthy of preservation.
16	Coast Live Oak	4	20	5	2	3	X	-	-	-
17	Wild Plum	3/3/3	20	10	4	4	-	X	X	-
18	Coast Live Oak	6	15	10	1	2	X	-	-	-
19	Bailey Acacia	4	25	10	3	3	-	X	-	Invasive species.
20	Wild Plum	6/6/11/5	25	15	4	4	-	X	-	-
21	Bailey Acacia	5	15	10	4	4	-	X	-	Dead top.
22	Bailey Acacia	12	15	20	5	4	-	X	-	Dead tree.
23	Wild Plum	7/5/4	20	20	3	4	-	X	-	-
24	Coast Live Oak	19	30	30	3	3	X	-	-	Larger tree worthy of preservation.
25	Coast Live Oak	7	25	5	2	3	X	-	-	Leaning tree.
26	Coast Live Oak	20	35	35	2	2	X	-	-	Larger tree worthy of preservation.
27	Coast Live Oak	20/17/8	45	45	2	4	X	-	-	A codominant tree with weak areas of attachment between the three separate trunks at near grade. The installation of support cables is recommended.
28	Coast Live Oak	16	25	25	3	3	X	-	-	An asymmetrical canopy.
29	Coast Live Oak	15/9	30	25	2	3	X	-	-	Larger tree worthy of preservation.
30	Coast Live Oak	16	40	30	2	3	X	-	-	Larger tree worthy of preservation.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 3 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
31	Coast Live Oak	6	20	10	2	2	X	-	-	-
32	Bailey Acacia	8	25	20	3	2	-	-	X	Invasive species.
33	Bailey Acacia	6	25	10	3	3	-	-	X	Invasive species.
34	Coast Live Oak	14/13	25	35	2	3	X	-	-	Codominant at grade. The installation of a support cable is recommended.
35	Chinese Pistache *(Pistacia chinensis)*	6	15	15	1	2	X	-	-	Street Tree.
36	Chinese Pistache	4	10	10	1	3	X	-	-	Street Tree.
37	Chinese Pistache	7	15	20	1	3	X	-	-	Street Tree.
38	Chinese Pistache	7	15	20	1	2	X	-	-	Street Tree.
39	Coast Live Oak	15	30	20	3	3	X	-	-	Larger tree worthy of preservation.
40	Coast Live Oak	9/9	30	15	3	3	X	-	-	Larger tree worthy of preservation.
41	Coast Live Oak	12	30	25	2	3	X	-	-	Larger tree worthy of preservation.
42	Coast Live Oak	8/17	15	25	2	4	X	-	-	Leans heavily.
43	Coast Live Oak	15	25	25	2	3	X	-	-	Larger tree worthy of preservation.
44	Coast Live Oak	8/8	20	20	3	3	X	-	-	Noted a dieback pattern.
45	Coast Live Oak	12/10	20	25	2	4	-	X	-	Poor asymmetrical structure and poor areas of attachment between scaffold limbs.
46	Japanese Photinia *(Photinia glabra)*	9/5/5/4/4	15	15	2	4	-	X	-	-
47	Coast Live Oak	5	25	15	2	4	-	X	-	Exhibits a strong lean to the east and an asymmetrical canopy.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 4 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
48	Coast Live Oak	19	25	40	2	3	X	-	-	Larger tree worthy of preservation.
49	Coast Live Oak	25	25	40	2	3	X	-	-	Larger tree worthy of preservation.
50	Coast Live Oak	10	20	15	2	2	X	-	-	Larger tree worthy of preservation.
51	Black Walnut *(Juglans spp.)*	7/8/5/5/5	20	20	2	4	-	X	-	A regenerated stump cluster.
52	Coast Live Oak	15	20	15	2	4	X	-	-	An asymmetrical canopy.
53	Coast Live Oak	13/14	20	20	2	4	X	-	-	A codominant structure with a poor area of attachment between the trunks and an asymmetrical canopy shape.
54	Coast Live Oak	7	10	10	2	2	X	-	-	-
55	Black Walnut	11/11//8/ 8	220	25	2	4	-	X	-	A regenerated stump cluster.
56	Coast Live Oak	10	15	15	2	3	X	-	-	-
57	Coast Live Oak	6	15	10	2	3	X	-	-	-
58	Chinese Pistache	5	15	10	2	3	X	-	-	-
59	Coast Live Oak	5/4	10	5	2	4	-	X	-	A poor structure.
60	Fern Pine *(Afrocarpus falcatus)*	36/14	60	65	2	4	X	-	-	The large specimen beside the residence.
61	Fern Pine	14/21/12/ 10/12/13/ 24	70	75	2	4	X	-	-	The large codominant tree within the street frontage. This tree has seven scaffold leaders attached to a common trunk. If preserved, it should be pruned to improve its structure and the installation of support cables is also recommended.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 5 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
62	Japanese Maple *(Acer palmatum)*	4/4/5	15	10	3	4	-	X	-	Declining in health due to an infection by Verticillium Wilt.
63	Liquidambar *(Liquidambar styraciflua)*	8	25	20	2	3	X	-	-	Located within the street frontage.
64	Apricot *(Prunus armeniaca)*	7	15	20	4	3	-	X	-	-
65	Coast Live Oak	5	20	5	2	3	X	-	-	-
66	Coast Live Oak	22	25	40	2	3	X	-	-	Larger tree worthy of preservation.
67	Coast Live Oak	5	15	10	2	2	X	-	-	-
68	Coast Live Oak	4	10	10	2	2	X	-	-	-
69	Chinese Pistache	3	10	10	2	2	X	-	-	-
70	Chinese Pistache	4	10	10	2	2	X	-	-	-
71	Bailey Acacia	8	20	10	2	4	-	X	X	Invasive species.
72	Wild Plum	4/3/3/3	20	15	4	4	-	X	X	A tree cluster.
73	Coast Live Oak	4	10	5	2	4	-	X	-	This oak has a poor asymmetrical structure and is crowded by adjacent trees.
74	Coast Live Oak	8	25	10	2	2	X	-	-	A crowded tree with an asymmetrical canopy shape.
75	Coast Live Oak	8	25	10	2	2	X	-	-	A crowded tree with an asymmetrical canopy shape.
76	Coast Live Oak	6	20	10	2	3	X	-	-	A crowded tree with an asymmetrical canopy shape.
77	Coast Live Oak	7	15	15	2	2	X	-	-	-

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 6 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
78	Raywood Ash *(Fraxinus angustifolia "Raywood")*	9	35	20	2	2	X	-	-	-
79	Coast Live Oak	6	15	10	2	3	X	-	-	A leaning tree with an asymmetrical canopy shape.
80	Coast Live Oak	10	20	20	2	2	X	-	-	Larger tree worthy of preservation.
81	Coast Live Oak	7	30	10	2	3	X	-	-	A leaning tree with an asymmetrical canopy shape.
82	Monterey Pine *(Pinus radiata)*	22	50	30	5	4	-	X	-	Dead tree.
83	Monterey Pine	22	45	45	4	3	-	X	-	I noted an infestation by Red Turpentine Beetle on the lower trunk. This boring insect will kill this tree if untreated.
84	Coast Live Oak	4/3	15	10	2	3	-	X	-	A leaning tree crowded out by the adjacent Coast Redwood.
85	Coast Redwood *(Sequoia sempervirens)*	38	50	35	2	4	X	-	-	The trunk of this tree is located on an adjacent property. The tree has a codominant structure at six-feet above grade and was previously topped. Worthy of preservation and protection.
86	Coast Live Oak	8/10/7	25	20	2	4	X	-	-	Noted a codominant growth pattern with poor areas of attachment between the trunks.
87	Coast Live Oak	7	15	5	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
88	Coast Live Oak	8	15	15	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 7 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
89	Arizona *(Hesperocyparis arizonica)*	7/6	10	15	4	4	-	X	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
90	Mayten Tree *(Maytenus boaria)*	4/3	20	5	4	4	-	X	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
91	Coast Live Oak	6	15	5	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
92	Coast Live Oak	7	20	5	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
93	Coast Live Oak	5/6	15	5	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
94	Coast Live Oak	4	15	5	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
95	Coast Live Oak	7	15	10	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
96	Coast Live Oak	9	20	10	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
97	Coast Live Oak	7/6/5	15	15	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
98	Coast Live Oak	9/6	20	10	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 8 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
99	Arizona Cypress	7	10	5	5	5	-	X	-	A dead tree.
100	Coast Live Oak	6	15	5	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
101	Coast Live Oak	9	20	15	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
102	Coast Live Oak	6	15	5	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
103	Coast Live Oak	4	10	5	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
104	Arizona Cypress	4	20	15	3	4	-	X	-	Partially collapsed.
105	Coast Live Oak	8	15	15	2	3	X	-	-	Crowded.
106	Coast Live Oak	5	15	5	2	2	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
107	Coast Live Oak	5	20	5	2	3	X	-	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
108	Coast Live Oak	7/5	15	10	2	4	-	X	-	Within the row of young Coast Live Oaks next to the southern boundary of the development site. Generally crowded trees.
109	Coast Live Oak	6	15	5	2	3	X	-	-	Located in the southwest corner of the site.
110	Coast Live Oak	10	20	15	2	2	X	-	-	Located in the southwest corner of the site.
111	Coast Live Oak	6	15	5	2	3	X	-	-	Located in the southwest corner of the site.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 9 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
112	Coast Live Oak	8	20	15	2	2	X	-	-	Located in the southwest corner of the site.
113	Bradford Pear *(Pyrus calleryana)*	4/3/3	20	15	2	4	-	X	-	A regenerated stump.
114	Monterey Pine	22	50	45	3	4	-	X	-	Adjacent to the western boundary of the development. Noted a heavy limb structure and some active Pine Pitch Canker infections in branch ends within the canopy.
115	Wild Plum	5/4/7/6/5	20	25	2	4	-	X	X	A poor codominant structure.
116	Monterey Pine	29	55	45	2	3	X	-	-	Located adjacent to the western boundary of the development. Noted the presence of some Red Turpentine Beetle infestation sites on the trunk.
117	Coast Live Oak	6	20	10	2	2	X	-	-	
118	Monterey Cypress *(Hesperocyparis macrocarpa)*	30	60	75	3	4	-	X	-	Located adjacent to the western boundary of the development. This tree has partially failed in the soil and is leaning heavily at this time. The tree must be removed as it is a significant potential hazard.
119	Eucalyptus Tree *(Eucalyptus spp.)*	18	40	40	2	2	X	-	-	-
120	Monterey Pine	22	80	40	2	3	X	-	-	Located adjacent to the western boundary of the development. I noted that the majority of the canopy had been removed on the west side, over the neighbor's property.
121	Mayten Tree	13	30	20	3	2	-	X	-	-

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 10 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
122	Mayten Tree	5/5	15	15	3	3	-	X	-	-
123	Mayten Tree	8/5	20	15	3	3	-	X	-	-
124	Raywood Ash *(Fraxinus angustifolia "Raywood")*	16	45	35	2	3	X	-	-	-
125	Shamel Ash *(Fraxinus uhdei)*	9	10	15	2	5	-	X	-	Fallen tree.
126	Scarlet Flowering Gum *(Corymbia ficifolia)*	21	35	45	2	4	-	X	-	A poor growth pattern and structural development.
127	Windmill Palm *(Trachycarpus fortunei)*	9	10	5	2	2	X	-	-	-
128	Coast Redwood	25/21/10	85	35	2	3	X	-	-	-
129	Black Walnut	5/5/5	45	25	2	4	-	X	-	Grew from a regenerated stump.
130	Mexican Fan Palm *(Washingtonia robusta)*	19	45	5	2	2	X	-	-	Located adjacent to the western boundary of the development.
131	Black Walnut	6	25	15	2	3	X	-	-	-
132	Black Walnut	6	40	15	2	3	X	-	-	-
133	Black Walnut	8	35	15	2	3	X	-	-	-

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 11 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
134	Cottonwood Poplar *(Populus spp.)*	12/15	50	50	2	4	-	X	X	Noted a very poor structure due to the development of a weak codominant structure at grade. This tree is vulnerable to splitting apart at this time.
135	Coast Live Oak	11/11	25	25	2	4	X	-	-	This oak has a poor codominant structure at four-feet above grade.
136	London Plane Sycamore *(Platanus x hispanica)*	11	40	25	3	2	X	-	-	Located on the street frontage in front of the adjacent private property to the west.
137	Chinese Elm *(Ulmus pavifolia)*	19	45	40	2	4	-	X	-	This tree has a very poor structure due to the development of a heavy limb structure and an asymmetrical growth pattern. It is vulnerable to failure and cannot be effectively pruned.
138	Monterey Pine	26	80	60	2	2	X	-	-	This large pine is a good specimen and is suitable for preservation, if enough space permits.
139	Coast Live Oak	13/16	30	40	2	2	X	-	-	Larger tree worthy of preservation.
140	Coast Live Oak	3/4	20	10	2	2	X	-	-	-
141	Coast Live Oak	13	30	20	2	2	X	-	-	Larger tree worthy of preservation.
142	Coast Live Oak	7/9	30	25	2	3	X	-	-	Larger tree worthy of preservation.
143	Coast Live Oak	7	20	15	2	2	X	-	-	-
144	Silk Oak *(Grevillea robusta)*	7	25	15	3	4	-	X	-	A poor specimen.

Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE SURVEY MATRIX - MID-PENINSULA HOUSING DEVELOPMENT SITE - CAPITOLA ROAD - SANTA CRUZ, CA

#	***SHEET 12 OF 12.*** **SPECIES:**	**TRUNK DIAMETER AT 54-INCHES ABOVE NATURAL GRADE:**	**ESTIMATED HEIGHT:**	**ESTIMATED SPREAD:**	**HEALTH:** (1 = Best Rating out of 5)	**STRUCTURE:** (1 = Best Rating out of 5)	**SUITABLE FOR PRESERVATION:** (Based on condition ratings)	**RECOMMENDED FOR REMOVAL:** (POOR CONDITION RATINGS)	**RECOMMENDED FOR REMOVAL:** (UNDESIRABLE SPECIES)	**COMMENTS:**
144	Silk Oak *(Grevillea robusta)*	7	25	15	3	4	-	X	-	A poor specimen.
145	Coast Live Oak	4	10	5	2	3	-	X	-	A crowded tree with an asymmetrical growth pattern.
146	Silk Oak	4/6	20	10	4	4	-	X	-	A poor specimen.
147	Coast Live Oak	5	15	5	2	3	X	-	-	-
148	Coast Live Oak	8	20	10	2	3	X	-	-	-
149	Coast Live Oak	7	20	10	2	3	X	-	-	-
150	Mexican Fan Palm	16	35	5	2	4	-	X	-	I noted a significant bow in the lower trunk.
151	Mayten Tree	6	10	15	2	4	-	X	-	A poor specimen comprising of a cluster of trunks.
152	Chinese Pistache	4	15	10	2	3	X	-	-	A street Tree.

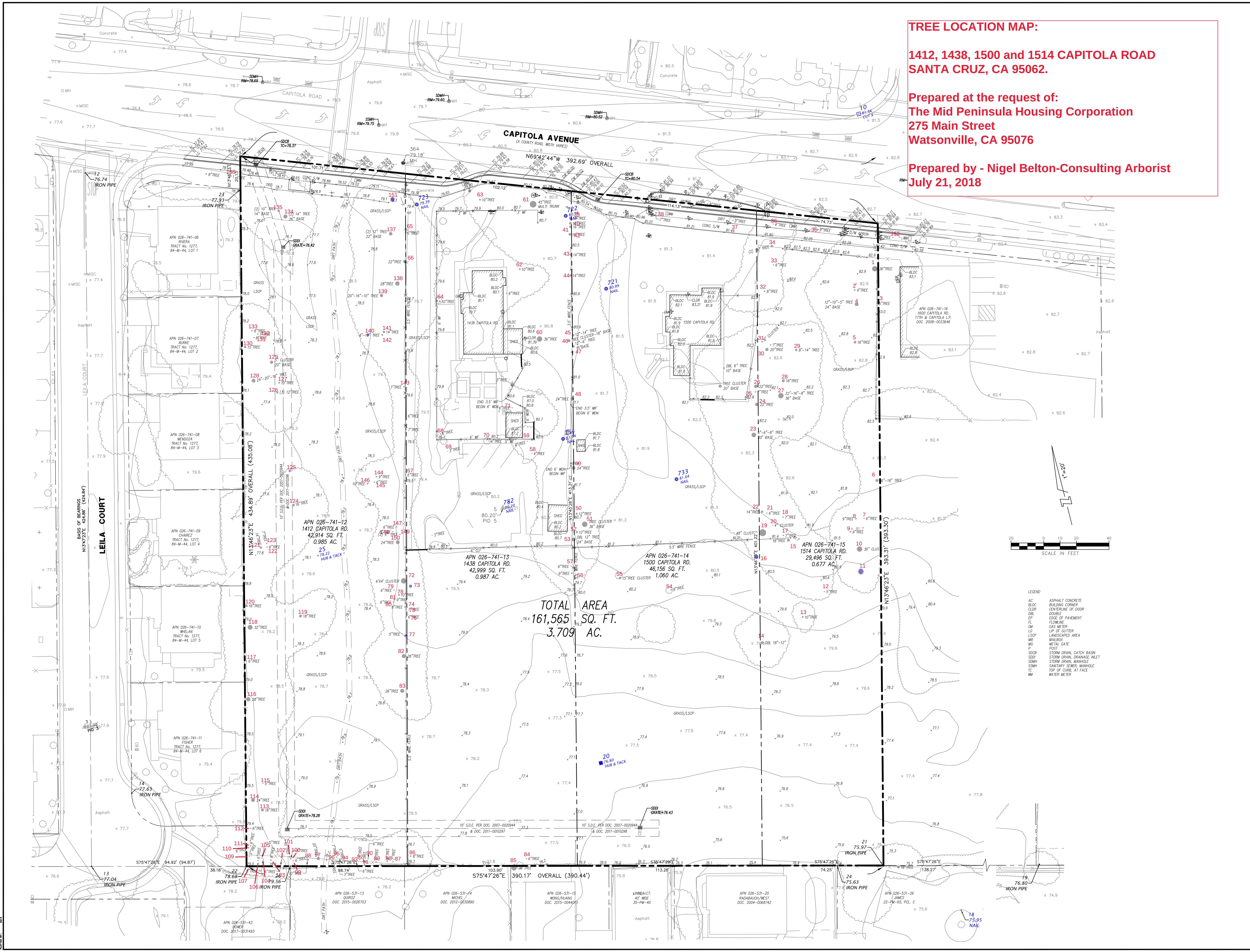
Site visit by Nigel Belton, ISA Certified Arborist WE-0410A - July 16, 2018

TREE LOCATION MAP:

1412, 1438, 1500 and 1514 CAPITOLA ROAD
SANTA CRUZ, CA 95062.

Prepared at the request of:
The Mid Peninsula Housing Corporation
275 Main Street
Watsonville, CA 95076

Prepared by - Nigel Belton-Consulting Arborist
July 21, 2018



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TOPOGRAPHIC SURVEY
LANDS OF SANTA CRUZ COUNTY REDEVELOPMENT SUCCESSOR AGENCY
1412, 1438, 1500, 1514 CAPITOLA ROAD
UNINCORPORATED AREA COUNTY OF SANTA CRUZ CALIFORNIA

Revisions

Date: 4-20-2018
Scale: 1" = 20'
Design: ---
Drawn: HP/DD
Approved: DSD
Job No. 20176343-10

Drawing Number:
TOPO
1 OF 1

Carlos Jurado

From: Ashley Schweickart
Sent: Monday, February 4, 2019 10:19 AM
To: Carlos Jurado
Cc: Karen A. Gomez
Subject: FW: My contact information
Attachments: Draft Biological Guidelines 05 07 12.pdf

From: Juliette Robinson [mailto:Juliette.Robinson@santacruzcounty.us]
Sent: Tuesday, January 29, 2019 3:40 PM
To: Ashley Schweickart <aschweickart@midpen-housing.org>
Cc: Lezanne Jeffs <Lezanne.Jeffs@santacruzcounty.us>; Leah MacCarter <Leah.MacCarter@santacruzcounty.us>
Subject: RE: My contact information

Hi Ashley,

After reviewing the information provided by environmental planning staff and development review staff, below is my understanding regarding biotic resources at the project site associated with REV181579 (APN 026-741-12):

The project site is located in an area that was identified as a potential area of biotic concern (as defined by SCCC 16.32) during preliminary analysis. The project site was evaluated by environmental planning staff to identify if any potential habitat for special status species may occur there. This evaluation involved review of existing resource information including a query of the California Natural Diversity Data Base (CNDDB), and a reconnaissance level site visit to assess the potential for sensitive habitat on the project site. It was determined based on the results of this evaluation that habitat for State or Federal listed species, or other sensitive habitat, does not occur on the project site.

Trees and shrubs within and around the project site may serve as nesting habitat for migratory birds and/or roosting habitat for special-status bats. Standard measures for protection of these species should be included in the CEQA document including preconstruction surveys and seasonal constraints for removal of woody vegetation. Mature trees should be incorporated into the site and landscape design to the maximum extent practical.

If at any time it is determined that additional information is required to ensure protection of potentially sensitive habitat, or if the applicant wants a formal assessment on file, they can apply for a biotic assessment or biotic report review and obtain approval before development can occur. If this is the case, please find information about the County's list of approved biotic consultants below:

Information about the Approved Biotic Consultant List
To be included on the County's approved biotic consultant list, a consulting biologist must submit a copy of qualifications (resume with applicable work history) and any other appropriate documentation (i.e. examples of your work) that shows familiarity with species common to Santa Cruz County.

If the firm, or biologist preparing the report, does *not* have experience specific to Santa Cruz County, it's important to consider consulting or teaming with regional experts especially if locally significant resources (such as sandhills habitat or Santa Cruz Long-toed Salamander habitat) have potential to occur on your project site.

It's also imperative for any consultant working in our area to become familiar with SCCC Chapters 16.30 and 16.32 as well as our locally significant resources. Locally available information can be found on the Santa Cruz County Planning

webpage under Environmental and Resource Protection:
http://www.sccoplanning.com/PlanningHome/Environmental.aspx

The County also has an extensive GIS system that includes layers transposed from historic maps that are referenced throughout the County Code. Because of the way the code is written, these maps must be consulted as part of the Environmental Review Process. The GIS Maps can be found on the web page for the County's GIS department:
http://www.co.santa-cruz.ca.us/Departments/GeographicInformationSystems(GIS).aspx

Reports should be prepared following standard protocol and the County's Draft Guidelines (attached).

Thanks!

Juliette

Juliette Robinson
Resource Planner/Biologist
Santa Cruz County Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060
(831) 454-3156

From: Ashley Schweickart <aschweickart@midpen-housing.org>
Sent: Tuesday, January 29, 2019 3:33 PM
To: Juliette Robinson <Juliette.Robinson@santacruzcounty.us>
Subject: My contact information

Ashley Schweickart | Acquisition & Pre-Construction Project Manager
MidPen Housing Corp.
Watsonville Development Office
275 Main Street, Suite 204, Watsonville, CA 95076
t. 831.707.2133 c. 831.291.1104 f. 831.761.7218
aschweickart@midpen-housing.org

DRAFT

County of Santa Cruz

Guidelines for Biological Resources Assessments and Related Documents

Prepared by:

County of Santa Cruz
Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060
www.sccoplanning.com

April 20, 2012

DRAFT
Guidelines for Biological Resources Assessments and Related Documents

Guidelines for Biological Consultants

Prepared by:

County of Santa Cruz
Planning Department
701 Ocean Street, 4th Floor
Santa Cruz, CA 95060
www.sccoplanning.com

Adopted by the Board of Supervisors on:

XXXX XX, 2012

Table of Contents

Appendices

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I. INTRODUCTION

The Standard Guidelines for Biological Resources Assessments (herein after referred to as the Guidelines) are intended to provide biological consultants with information on the necessary steps to conduct biological surveys, prepare biological reports, and prepare mitigation and monitoring plans for projects that require a permit from the County of Santa Cruz Planning Department (County). The Guidelines were developed by the County in order to streamline the submittal and review of all types of biological resources assessments and to ensure consistency of quality among these reports.

The primary objectives of the Guidelines are to:

1. Ensure quality, accuracy and completeness of biological survey work, biological resources assessments, mitigation and monitoring plans, and revegetation/restoration plans prepared for projects that require a County permit;
2. Ensure that all biological resources assessments submitted to the County provide adequate information to make appropriate planning decisions and to make determinations regarding conformance with applicable regulations, including the California Environmental Quality Act (CEQA);
3. Aid in staff's efficient and consistent review of documents and associated maps from different biological consultants; and,
4. Increase the efficiency of the environmental review process and avoid unnecessary delays.

The Guidelines should be followed for the preparation of all biological resources assessments submitted to the County. The Guidelines provide guidance for evaluating adverse environmental effects that a proposed project may have on biological resources. These Guidelines should be consulted during the evaluation of any biological resource pursuant to CEQA. Specifically, this document addresses the following questions listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, IV. Biological Resources, IX. Land Use and Planning, and XVII. Mandatory Findings of Significance:

IV. Biological Resources – Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional or state habitat conservation plan?

IX. Land Use and Planning – Would the project:

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

XVII. Mandatory Findings of Significance

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects.)

II. PROCESS OVERVIEW

Once the County receives an application, Environmental Planning staff reviews the project location to determine whether or not a biological resources assessment is needed. Although planning staff may identify specific biological species or habitats of concern, the County occasionally relies upon the expertise of qualified biologists to provide recommendations for any issues or additional studies that may need to occur, based on their expertise and fieldwork, to the County project planner (example: County staff recommends a botanical survey and the biologist conducting the work finds there are potential impacts to a wetland.)

The County and/or other regulatory agencies may require additional fieldwork as the project progresses if deemed necessary, but biologists should attempt to identify and address all possible resources on and near the project site. Any questions or discussion about the level of survey and reporting effort should be coordinated with the County planner or appropriate regulatory agency before and/or during the survey work and biological resources assessment preparation.

III. REPORT REQUIREMENTS

The County has prepared a report template that identifies the required content for a Biological Resource Assessment (refer to Appendix A). Biologists are encouraged to utilize the template when preparing their reports. However, if a consultant chooses to use a different format, it is incumbent upon the consultant to ensure that all the required components are included in the report.

The County submittal requirement includes:

1. Submit one copy of the biological report to the applicant and two hard copies and one electronic (on CD or DVD) copy of the report to the County. Indicate in the report if it is a preliminary report and will be amended after additional surveys are conducted.

2. If the County requires additional information, submit the required information as soon as possible to prevent project delays. Include the Assessor's Parcel Number (APN) and County-assigned project application number on any additional information that is submitted and reference your or any other previous documents.

3. It is recommended that all biological resource assessments submitted to the County be conducted by a biologist that is on the County's list of Qualified Consultants. Biologists will be required to sign the following statement,

   "*As a County-approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of Santa Cruz Planning Department and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visit(s) associated with this report.*"

All biologists that participated in the fieldwork and/or prepared the document should sign this statement.

IV. BIOLOGICAL SURVEY PROCESS

The biological survey process identifies the key steps that should be conducted for all biological surveys. Additional resources for biological consultants include the

Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants, prepared by the U.S. Fish and Wildlife Service (USFWS) http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/botanicalinventories.pdf (January 2000); *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities*, prepared by the California Department of Fish and Game (CDFG) http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf (revised June 2, 2001); and CDFG and USFWS protocol surveys and guidelines for specific species. These documents are periodically updated and the most current version should be used. All are available on the CDFG and USFWS websites.

V. REPORT ACCEPTANCE PROCEDURES

In order to ensure that all approved biologists comply with the County's recommendations for biological reports, the quality of work and consultant qualifications will be reviewed on an as needed basis. The County maintains the list of qualified biologists as a courtesy to applicants and biologists, however, the list is not exhaustive, and biologists not appearing on the list may submit reports on behalf of applicants. The purpose of the guidelines is to provide a clearly defined process for submittal of environmental documents necessary for the County to complete a CEQA review. By not following the guidelines, biologists may be unnecessarily delaying their client's projects and adding additional burden to County staff.

The following summarizes how this process will work:

After a biological report is submitted, it is reviewed for adequacy of meeting the County's guidelines. If a report is deemed to not meet all of the County's guidelines, the Resource Planner will prepare an "incomplete" letter. If the report meets the County's guidelines, an acceptance letter will go to both the biologist and the applicant. An "incomplete" letter will identify which areas need to be revised in the report for resubmittal.

One important note: if a biologist decides to not follow the County guidelines, they need to provide an explanation for the variation. For example, many biologists prefer to search a five-mile radius rather than using the nine-quadrangle search as recommended in the County's guidelines and by the California Native Plant Society. This is acceptable if the biologist provides information on how they ensured they are considering all possible sensitive resources that may occur on the property, including additional research that they may have conducted.

VI. EXISTING REGULATIONS AND STANDARDS

Several Federal, State and local regulations have been established to protect and conserve biological resources. The descriptions below provide a brief overview of the most appropriate regulations and their respective requirements.

Federal Endangered Species Act

[http://www4.law.cornell.edu/uscode/16/ch35.html]

Enacted in 1973, the Endangered Species Act (ESA) provides for the conservation of threatened and endangered species and their ecosystems. The Act prohibits the "take" of threatened and endangered species except under certain circumstances and only with authorization from the U.S. Fish and Wildlife Service (USFWS) through a permit under Section 4(d), 7 or 10(a) of the Act. Under the Endangered Species Act, "take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Migratory Bird Treaty Act

[http://www4.law.cornell.edu/uscode/16/ch7schII.html]

Congress passed the Migratory Bird Treaty Act (MBTA) in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The prohibition applies to birds included in the respective international conventions between the U.S. and Great Britain, the U.S. and Mexico, the U.S. and Japan, and the U.S. and Russia.

Bald and Golden Eagle Protection Act

[http://www4.law.cornell.edu/uscode/html/uscode16/usc_sup_01_16_10_5A_20_II.html]

When first enacted in 1940, the Act prohibited the take, transport or sale of bald eagles, their eggs or any part of an eagle except where expressly allowed by the Secretary of Interior. The Act was amended in 1962 to extend the prohibitions to the golden eagle.

Federal Water Pollution Control Act (Clean Water Act), 1972

[http://www4.law.cornell.edu/uscode/33/ch26.html]

The Federal Water Pollution Control Act was first passed by Congress in 1948. The Act was later amended and became known as the Clean Water Act. The Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The Act makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, without a permit under its provisions. Clean Water Act 404 permits are issued by the U.S. Army Corps of Engineers for dredge/fill activities within wetlands or non-wetland waters of the U.S. Clean

Water Act 401 certifications are issued by the Regional Water Quality Control Board for activities requiring a federal permit or license which may result in discharge of pollutants into waters of the U.S.

California Environmental Quality Act (CEQA)

[http://ceres.ca.gov/ceqa/stat/]

California Environmental Quality Act requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

California Fish and Game Code

[http://law.justia.com/california/codes/fgc.html]

The California Fish and Game (CFG) Code regulates the taking or possession of birds, mammals, fish, amphibians and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA; Sections 2050-2115) and Streambed Alternation Agreement regulations (Section 1600-1616), as well as provisions for legal hunting and fishing, and tribal agreements for activities involving take of native wildlife.

California Endangered Species Act

[http://law.justia.com/california/codes/2009/fgc/2050-2069.html]

The California Endangered Species Act (CESA) generally parallels the main provisions of the Federal Endangered Species Act (ESA) and is administered by the California Department of Fish and Game (CDFG). The CESA prohibits take of any species that the California Fish and Game Commission determines to be threatened or endangered. CESA allows for take incidental to otherwise lawful development projects upon approval from CDFG. Under the California Fish and Game Code, "take" is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

California Native Plant Protection Act

[http://law.justia.com/california/codes/fgc/1900-1913.html]

The Native Plant Protection Act (NPPA) of 1977 (Fish and Game Code Section 1900-1913) directed the Department of Fish and Game (CDFG) to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take.

Porter-Cologne Water Quality Control Act

[http://law.justia.com/california/codes/wat/13000-13002.html]

This Act provides for statewide coordination of water quality regulations. The Act established the California State Water Resources Control Board as the statewide authority and nine separate Regional Water Quality Control Boards to oversee water quality on a day-to-day basis at the regional/local level.

Natural Community Conservation Planning (NCCP) Act of 1991

[http://law.justia.com/california/codes/fgc/2800-2835.html]

The NCCP Act is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. The California Department of Fish and Game is the principal state

agency implementing the NCCP Program. NCCP Plans developed in accordance with the Act provide for comprehensive management and conservation of multiple wildlife species and identify and provide for the regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth.

California Oak Woodland Conservation Act

[http://law.justia.com/california/codes/fgc/1360-1372.html]

In 2001, the California Legislature passed the California Oak Woodland Conservation Act. This act established the Oak Woodland Conservation Program, administered by the Wildlife Conservation Board (WCB), which was designed to provide $10 million to help local jurisdictions protect and enhance their oak woodland resources. It offers landowners, conservation organizations, and cities and counties an opportunity to obtain funding for projects designed to conserve and restore California's oak woodlands. It authorizes the WCB to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts. While the Program is statewide in nature, it is designed to address oak woodland issues on a regional priority basis. The Program provides a mechanism to achieve sustainable ranching and farming operations, along with healthy oak woodlands.

Western Bat Working Group

(WBWG) (1998). According to the CDFG Special Animals List, species designated as 'High Priority' by WBWG are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats" (CDFG 2008b).

Local Regulations and Standards

General Plan Chapter 5; Conservation and Open Space

[http://www.sccoplanning.com/pdf/policy/1994GeneralPlan/chapter5.pdf]

The Conservation and Open Space Element of the General Plan provides guiding principles for the conservation of biotic resources. The goals, objectives, policies and programs of this chapter recognize the need to balance conservation and preservation of natural and cultural resources with their productive use and stewardship. Appendix B of the General Plan consists of lists of special status plants and animals and their habitats, and is attached to this document for reference. These lists are not comprehensive, as species may be added or removed from the various lists over time, and the County General Plan lists may not reflect the most up to date versions.

County Code Title 16; Environmental and Resource Protection

[http://www.codepublishing.com/ca/santacruzcounty/]

The purpose of these regulations is to preserve and enhance the environment of the County of Santa Cruz by providing for the adoption of County Environmental Review Guidelines setting forth regulations and procedures implementing the California Environmental Quality Act (CEQA) and State Environmental Impact Report Guidelines promulgated pursuant thereto. Chapters 16.30 and 16.32 deal specifically with riparian and wetland protection and sensitive habitats and are typically the focus of biotic reports and assessments, however, depending upon the scope of a project, any of the chapters in Title 16 may be relevant.

APPENDIX A

REQUIRED CONTENTS FOR BIOLOGICAL RESOURCES ASSESSMENTS

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REQUIRED CONTENTS FOR BIOLOGICAL RESOURCES ASSESSMENTS

REQUIRED REPORT CONTENTS

A. Cover Page

The cover page should include the following information:

- Original report date
- Revision report date (if applicable)
- County application number
- Applicant name and contact information
- Assessor Parcel Number(s)
- Physical address of the property, if applicable
- Reporting Biologist- Include name, title, company, and contact information. In addition, please include the following statement along with your signature and the date: "As a County approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of Santa Cruz Planning Department and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visit(s) associated with this report."

B. Executive Summary/Synopsis

The executive summary is one of the most significant parts of any biological resources assessment report. It should **not** be an abstract of the report, an introduction, a preface, or a random collection of report highlights. There should be no new information provided in the executive summary. Rather, the executive summary should stand alone as a condensed version of the entire biological resources assessment. It should inform the reader about all aspects of the project site, the proposed action, existing and proposed land uses, habitat types, sensitive species, impacts identified, and reference to recommended mitigation measures. The length of the executive summary depends directly on the nature and complexity of the biological resources within the survey area. The purpose of the executive summary is to provide a quick reference for the public and the decision makers. Therefore, the language should be less technical than that used in the remainder of the report.

C. Introduction

This section of the report should include a detailed description of the development proposal and the size and location of the construction footprint and the entire disturbance envelope. The description of the development proposal should cover the **whole of the project**. This includes the immediate action being pursued as well as any reasonably anticipated future development plans. For example, for grading permit applications the project is not just the immediate grading, but also the end result for which the land will be graded. Another example is a Tentative Map that proposes to subdivide property. The project in question is not just the increase in the number of lots, but the ultimate outcome of commercial or residential development.

The introduction should include the following minimum requirements:

- Development Proposal Description – Also referred to as the Disturbance Envelope. Describe all physical alterations that will occur to the existing site. Describe all proposed structures,

their size, location, and purpose. Be sure to include all ancillary features (e.g., staging areas, septic location and leach field, road improvements, utility improvements/installations, etc.).

- Construction Footprint Size – Also referred to as the Building Envelope. State the size of the area proposed for development including such things as the buildable lot, fire hazard clearance areas, access roads, and fire department turn around areas. **Note:** The construction footprint size will be smaller than the survey area size because it does not take into account areas of potential indirect impacts.
- Existing and Proposed Land Use Designations
- Site Plans
- Maps: Location, topographic, and vegetation communities; should also show where sensitive species (rare endangered, threatened or unique species) were found

D. Methodology

This is possibly the most crucial portion of the work conducted by biologists. This section of the report should be based on the biological survey process as identified in Appendix B below.

Although the methods section may seem like a "boilerplate" item when preparing the report, it is often unique to the project area and provides important details regarding the biologists' work and level of assessment. All reports submitted to the County should include the details listed below.

- Research conducted – California natural diversity database (CNDDB), Biological Open Source/Biological Innovation for Open Society (BIOS), other reports, museum records, etc.
- References including any relevant personal communications
- Survey Details – this should include type of survey(s), date of survey(s), duration of each survey, names of biologists, weather conditions (including drought conditions if applicable), and how the area was covered (e.g., 25 feet transects, entire property, etc).
- Description of how the vegetation communities were mapped. Note: vegetation communities should always be mapped, regardless of whether sensitive species are located.
- Survey Purpose – State if this is a preliminary biological resources assessment, a follow up spring botanical survey, protocol-level survey, oak tree survey, wetland delineation, California long-toed salamander habitat evaluation, etc.
- Survey Area - Description of the area, regional location, boundaries of the survey (how much area beyond the footprint was surveyed?), environmental setting (habitat type(s)) and soil type(s).

E. Results

A main goal of this section of the report is to answer the following questions from the CEQA checklist:

Will the project:

- Result in a loss of unique or special status species or their habitats?
- Reduce the extent, diversity or quality of native or other important vegetation?
- Impact wetland or riparian habitat?
- Introduce barriers to movement of resident or migratory fish or wildlife species, or factors that could hinder the normal activities of wildlife?

During the process of conducting the research and fieldwork for a project, biologists should keep these questions in mind. Biological resources assessments should provide sufficient information to allow these questions to be answered by the County and other Responsible Agencies.

The following topics should be addressed in the results section of the biological resources assessment report:

- Results of background research relevant to the project area
- Plant communities – what types were found, what was the quality, and how much of each?
- Habitat communities – this is not always the same as plant communities
- Physical features
- Wetlands, drainages, and/or riparian areas (if not covered in above items)
- Species (Endangered, Threatened, Rare, Locally Important) and Nests
- Special status species summary and table (observed and potential)
- Include blooming period for plants and nesting/breeding period for wildlife
- Include a copy of completed CNDDB forms submitted to CDFG if sensitive species were found
- Habitat Connectivity
- Mapped riparian corridors or drainages
- Stream crossing structures
- Barriers to connectivity
- Any correspondence from regulatory agencies and/or local experts, if applicable

F. Impact Assessment and Mitigation

This section of the report shall identify any potential adverse impacts to sensitive biological resources and recommend mitigation to avoid, minimize, or compensate for these impacts, as appropriate.

1. Sufficiency of Biological Data

In some cases the information within the biological resources assessment may not be sufficient to definitively determine impacts to certain resources. Determining the impacts to some resources may require additional seasonal field surveys, coordination with other regulatory agencies, or a specialized investigation. This section of the document shall clearly identify any deficiencies in the existing biological data and shall make recommendations for further action (**Note:** Additional survey work should not be included as a mitigation measure).

2. Impacts

The robustness of the impact analysis will vary depending on the biological resources found onsite and the intensity of the proposed development. In general, types of impacts include: direct (primary), indirect (secondary), short-term, long-term, and cumulative.

Use the following as a guide in the analysis of impacts:

- Discuss impacts specific to the project proposed by the applicant, but keep the discussion generic enough to allow the County flexibility of analysis in the event changes in project description occur.
- Address the questions in the CEQA checklist (as identified above); however, CEQA significance determinations will ultimately be made by the County and any other Responsible Agencies.

- Consider all phases of development including grading, construction, occupation, and/or operation.
- Identify all possible disturbances (both **on-site and off-site**). Examples include: alteration of drainage, erosion, sedimentation, noise, introduction of exotic plants and animals, and other potential disturbances, which may become evident during project review.
- Quantify impacts whenever possible (e.g. "project will result in the elimination of 3.5 acres of riparian habitat").
- Evaluate impacts the development may have on the habitats, and whether the development will be consistent with long-term viability of the habitats.
- Discuss the adequacy of setbacks from the habitat area(s).
- Discuss the potential for incidental take of rare/threatened/endangered species.
- Consider cumulative impacts.

3. Mitigation Measures

Mitigation measures should be developed for those potentially significant project impacts for which adequate data (including mapped data) was gathered during the biological impact assessment. If sufficient information is not available this should be noted in the "Sufficiency of Biological Data" section above.

By definition, a mitigation measure should:

- Avoid the impact altogether;
- Minimize impacts by limiting the magnitude;
- Rectify impacts by repairing, rehabilitating, restoring;
- Reduce or eliminate the impact over time; or,
- Compensate for the impact by replacing or providing substitute resources.

The measures above should be considered in the order presented. If an impact can be avoided, it should be. If it cannot be avoided, then efforts should be made to minimize the impacts.

Use the following as a guide in the development of mitigation measures:

- Identify the maximum feasible mitigation measures (other than "no project") to protect the resources and suggestions for monitoring and evaluating the effectiveness of the mitigation measures.
- Address the "Who, What, Where, Why and When" (See below)
- Why – State the objective of the mitigation measure and why it is recommended.
- What – Explain the specifics of the mitigation measure and how it will be designed and implemented. Identify measurable performance standards by which success of the mitigation can be determined.
- Who – Identify the agency, organization, or individual responsible for implementing the measure.
- Where – Identify the specific location(s) of the mitigation measure(s).
- When – Identify the appropriate timing for mitigation implementation (i.e., prior to issuance of grading and/or construction permit).
- Consider a range of possibilities, including: avoidance, fencing, open space easements, clustering development, and off-site mitigation if necessary.

- Strive for solutions that work toward regional protection of the resources, including: combining open space easements with adjacent ownerships, maintenance of open space corridors.
- Develop a Mitigation Monitoring and Reporting Program (MMRP) when necessary (refer to Appendix C, Guidelines for Mitigation, Monitoring and Reporting Plans).
- Recommend conditions of approval for the restoration of damaged habitats, where feasible (refer to Appendix D, Guidelines for Revegetation/Restoration Plans).

G. Photos

Color photos shall be taken during survey efforts. It may be appropriate to include photos from multiple site visits to show the change in season and available habitat.

- Photos should be included in each report.
- Digital photos shall be clearly labeled and provided on the CD submitted to the County.

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APPENDIX B

BIOLOGICAL SURVEY PROCESS FOR BIOLOGICAL RESOURCES ASSESSMENTS

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BIOLOGICAL SURVEY PROCESS FOR BIOLOGICAL RESOURCES ASSESSMENTS

BIOLOGICAL SURVEY PROCESS

The County is providing guidance because the fieldwork and survey methodologies being employed by biologists are crucial to an accurate and complete biological resource assessment of proposed projects. As detailed below, the biologists hired by applicants are responsible for conducting biological resource assessments. However, the biologists can assist the County in determining the level and number of surveys that should be conducted based on field conditions. It is the responsibility of the biologists to evaluate field conditions and provide a recommendation to the applicant and the County as to the fieldwork approach.

For example, a County planner may generate an initial request letter that identifies a potential for sensitive botanical species on the project site. However, when the biologist visits the site, s/he sees what appears to be an established wetland that eventually drains to an adjacent perennial stream. The biologist should contact the County planner to discuss these additional findings.

The following outlines the biological survey process:

1. After being contacted by an applicant to conduct field surveys, determine if you have the necessary knowledge, experience and permits to conduct the work. If you do not, refer the applicant to a biologist that has the appropriate experience. If you do have the necessary knowledge and experience and are not on the County's list of qualified consultants, you should submit your qualification information to the County for approval **before** conducting any field studies.
2. If you are retained by an applicant to conduct biological surveys, obtain from the applicant the Assessor's Parcel Number (APN), a detailed project description, County-assigned application number, if an application has been submitted, and the most recent set of site (project) plans.
3. Prior to a site visit, conduct a nine-quadrangle (7.5 minute/24,000 scale) search in the California Natural Diversity Database (CNDDB) for sensitive plant and animal species. The nine quadrangles should include the quadrangle including the project site and the eight surrounding quadrangles. The CNDDB search is the starting point to determine the potentially occurring sensitive species at the project site but is not definitive, and may be out of date or of too gross of a scale to be accurate for a given project. Use your personal biological expertise, results from previous biological reports, museum records, etc. to identify additional potential sensitive species for the project site. If you choose to vary from this protocol, provide an explanation of how you conducted your research to determine what sensitive species potentially occur in the project area.
4. Based on the information collected in step 3, prepare a list of potentially-occurring sensitive species in table format that includes the following:
    a. Species common name
    b. Species scientific name
    c. Species special status (federal, state, CNPS, CDFG, other)
    d. Habitat requirements and vegetation associations

e. Time of year when species is present, flowering, or identifiable, which determines the time of year when surveys should be conducted to identify those species. Many species have a small survey window and surveys should be conducted during the appropriate window.

f. Assessment of potential for species to be present on-site (e.g. red-legged frog is unlikely to occur because no water bodies or streams are located on-site and no permanent water bodies are located within one mile of project site," or "California red-legged frog is likely to occur because breeding habitat is present on-site in the creek and red-legged frogs sightings have occurred in the creek within ¼ mile of the project site."). When sensitive wildlife is being considered, address the potential for the site to provide important wildlife or migration corridors.

g. Assessment of life phase(s) present in project area and type of habitat present (e.g.; breeding, upland, migratory, etc.).

5. Using the table prepared in step 4, schedule field surveys to coincide with the time of year species are present, flowering, or identifiable in order to document presence/absence of sensitive species. Coordinate with the applicant about the need and timing for field surveys and the possible need for multiple surveys at different times of year. Biologists should determine the type of biological surveys and reporting appropriate for the project site. Applicants should be made aware that this might require an initial reconnaissance-level site assessment in addition to specific follow-up surveys that evaluate the potential impacts to particular sensitive species and/or habitats**. Please note that some projects will involve more than one survey.**

6. Meet with applicant at the project site. Have the applicant describe the project and show you the project site boundaries and impact area. Question the applicant about the proposed project, alternatives being considered, the location of leach fields, wells, utility lines, and any off-site improvements. Ask the applicant about Cal Fire requirements for road improvements and defensible space. For forested areas, or areas with “moderate” to “high fuel” vegetation, one should assume that all areas within 100 feet of proposed structures and 10 feet from existing/proposed roads will receive a Cal Fire recommendation for heavy “modification” or removal of such vegetation. This assumption should be included in all biological assessments when such conditions exist. Examine the entire project site using maps, aerial photographs, and site plans. Take notes on the physiographic setting, topography, drainage patterns, rock outcrops, cliffs, waterbodies, creeks, etc., on-site and adjacent land uses, and existing conditions. Vegetation classification can be done during this field visit. Make note of habitat identified by the County of Santa Cruz as sensitive or in serious decline (e.g., maritime chaparral, etc.). Map the vegetation types using aerial photographs, site plans, and/or GPS. Identify location and condition of creeks, rivers, drainage channels, swales, wetlands, vernal pools, depressions, serpentine rock formations, and other noteworthy features. Assess the potential for the site to provide habitat for sensitive species. If you rule out the possible occurrence of a sensitive species based on habitat conditions, provide enough detail to explain this conclusion. For example, if you conclude that “drainages on-site are insignificant”, provide the rationale that led you to that decision: e.g., “The drainage occurs as a flat swale with no definable bed, bank, or channel. Additionally, the area is not shown as a blue line stream on topographic maps. Extensive cattle grazing on-site has denuded the area of native vegetation and only weedy species such as yellow star thistle occur. Furthermore, the lack of mature

vegetative cover and ephemeral sheet flow would not provide suitable habitat for sensitive wildlife species such as steelhead, California red-legged frog, and southwestern pond turtle".

7. Obtain necessary state and federal permits, collecting permits, and/or Memorandums of Understanding (MOUs) from CDFG or verify that your permits and MOUs are valid and up-to-date.
8. At the time of botanical field survey(s), visit known reference populations of target species to verify their flowering periods. Where feasible, reference populations should be in the same general area as the project site. This information will help to support any conclusions that the species does not occur on the project site if they are not observed during the field surveys. Visiting reference populations may also be appropriate for other animal species, if they are migratory, or have a particular active/dormant cycle, to determine if they are present/active.
9. Conduct field surveys in all habitats as per standard biological techniques and recommended federal and state protocols (as applicable) for target species. The County recommends that the entire parcel be surveyed for projects that will encompass the entire parcel, and for small projects on small parcels (i.e. less than 10 acres). For small projects located on larger parcels encompassing hundreds of acres, it may not be necessary to survey the entire site, but at a minimum, the surveys should include the proposed project area, road improvements, leach fields, utility lines, and off-site improvements and appropriate buffer areas, including any areas that have the potential to be the subject to indirect impacts (such as impacts from occupation, such as pets, noise, and/or lighting). The biologist should identify all habitats/vegetation associations on the entire parcel, regardless of the project and parcel size. If sensitive resources are found on the project site which may be impacted by the proposed project, a larger area should be surveyed, to determine the extent of impacts to specific resources on the project site, to identify alternate project locations and/or to identify areas to which it would be appropriate to direct compensatory mitigation. If the entire parcel is not surveyed, the biologist should be aware that frequently project plans are changed either by the applicant, the County, or the approving hearing body. If the initial survey(s) does not include the new project areas, it could result in the need for additional surveys and delays to the project. If a project site has been disturbed or denuded prior to the field survey, it may not be possible for the County to determine possible impacts to sensitive resources that may have been present. These situations often require additional field surveys after the site is allowed to revegetate. The County may request that the applicant hire a biologist to assess the existing resources and the potential for sensitive resources to have been impacted by the activities. In these cases, the biologist should use their expertise and available resources to make a professional assessment of what was present on the site before the activity occurred. If sensitive plants are located adjacent to the area that was impacted, the species may also have occurred in the impact area. An assessment of the potential impacted population would then be required.
10. Accurately map the locations of sensitive habitats and species. Provide these maps with your report.
11. Record all plant and animal species observed on or near the project site. Identify the species to the taxonomic level necessary to determine its rarity and status. Provide this information in your report, including the survey methodology/protocol.
12. Take photographs of existing conditions, habitats, vegetation associations, sensitive resources, unique features, etc.

13. Complete the table of potentially occurring species with the survey results. (e.g. "species not found on project site during appropriately timed surveys" or "species identified on project site in wetland habitat.")
14. Assess the potential of direct and indirect impacts to biological resources from project activities. Include all impacts from the project; leach fields, wells, utility lines, Cal Fire defensible space requirements, road improvements, etc. Identify potential take of federal or state listed species that would require consultation with USFWS, NOAA Fisheries, and/or CDFG.
15. Submit survey results for habitat assessments and/or protocol surveys for listed species to CDFG/USFWS, as appropriate, and send a copy of the report to the County Environmental Planning Section of the Planning Department.
16. Recommend avoidance or mitigation measures to minimize impacts to the resources.
17. Coordinate with the applicant about the survey results and your recommendations.
18. If appropriate, prepare California Natural Diversity Database (CNDDB) forms for sensitive species sightings. Include a copy of your submitted form(s) to the County, preferably as an attachment to your biological report.
19. Prepare the biological report as per the County's Guidelines for Preparation of Biological Resources Assessments.
20. The biological report should note the jurisdictional habitats observed on-site and the necessity for the applicant to obtain all applicable permits as determined by potential impacts to those areas.

APPENDIX C

TEMPLATE FOR
BIOLOGICAL RESOURCES ASSESSMENTS

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EXAMPLE COVER PAGE

LOCAL PROJECT (physical address if applicable)
APN: 000-000-000
Permit or application type:
County application number (if known):

***Prepared for**:*
Applicant and/or Agent
Mailing address
Phone number
Email address
Prepared by:

Prepare by:
Biologist and/or Company name
Mailing address
Phone number
Email address

Date Report Prepared
Date of Revised Report, if applicable
Reporting Biologist: name, title, company, and contact information.

"As a County-approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of Santa Cruz Planning Department and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visit(s) associated with this report."

_____
Printed Name

_____ _____
Signature *Date*

Add additional lines as needed for each staff person involved in the project.

Table of Contents

I. EXECUTIVE SUMMARY/SYNOPSIS

Provide a clear, concise summary of the project, habitats present, potential sensitive species present, and reference to mitigation offered.

This section should clearly define the project and what resources exist on-site. It should briefly explain all aspects of the project, with additional details provided in the remainder of the document.

The language in this section is intended for review by the public and decision makers, therefore, should not be technical in nature. The length of this section will depend on the complexity of the project, potential impacts, and the amount of disturbance to the environment in question.

II. INTRODUCTION

This section of the report should include a detailed description of the development proposal and the size and location of the disturbance footprint. The description of the development proposal should cover the **whole of the project**. This includes the immediate action being pursued as well as any reasonably anticipated future development plans. For example, for grading permit applications the project is not just the immediate grading, but also the end result for which the land will be graded. Another example is a Tentative Map that proposes to subdivide property. The project in question is not just the increase in the number of lots, but the ultimate outcome of commercial or residential development.

The introduction should include at least the following information:

- Development Proposal Description - Describe all physical alterations that would occur to the existing site. Describe all proposed structures, their approximate size, location, and purpose. Be sure to include all ancillary features (e.g., staging areas, septic location and leach field, road improvements, utility improvements/installations, etc.).
- Disturbance Envelope Size - State the size of the area proposed for development including such things as the buildable lot, fire hazard clearance areas, access roads, and fire department turn around areas. **Note:** The construction footprint size will be smaller than the survey area size because it does not take into account areas of potential indirect impacts.
- Existing and, if applicable, Proposed Land Use Designations
- Site Plans
- Maps: Location, topographic, and vegetation communities; should also show where sensitive species were found.

III. METHODOLOGY

All reports submitted to the County should include the details listed below.

- Research conducted – CNDDB, BIOS, other reports, museum records, etc.
- References including any relevant personal communications
- Survey Details – this should include type(s) of survey(s), date(s) of survey(s), duration of each survey, names of biologists, weather conditions (including drought conditions if applicable), and how the area was covered (e.g., 25 feet transects, entire property, etc).

- Description of how the vegetation communities were mapped. Note: vegetation communities should always be mapped, regardless of whether sensitive species are located.
- Survey Purpose – State if this is a preliminary biological resources assessment, a follow up spring botanical survey, protocol-level survey, oak tree survey, wetland delineation, California long-toed salamander habitat evaluation, etc.
- Survey Area - Description of the area, regional location, boundaries of the survey (how much area beyond the footprint was surveyed?), environmental setting (habitat type(s)) and soil type(s).

IV. RESULTS

A main goal of this section of the report is to answer the following questions from the CEQA checklist:

Will the project:

a) Result in a loss of unique or special status species or their habitats?

b) Reduce the extent, diversity or quality of native or other important vegetation?

c) Impact wetland or riparian habitat?

d) Introduce barriers to movement of resident or migratory fish or wildlife species, or factors, which could hinder the normal activities of wildlife?

The following applicable categories should be included in the results section of the biological resources assessment report:

- Habitats:
  - Results of background research relevant to the project area
  - Plant communities – what types were found, what quality, and how much of each?
  - Habitat communities – this is not always the same as plant communities; riparian habitat may consist of several different plant communities.
  - Physical features
  - Wetlands, drainages, and/or riparian areas (if not covered in above items).
- Species (Endangered, Threatened, Rare, Locally Important) and Nests
  - Results of background research relevant to the project area
  - Special status species summary and table (observed and potential)
  - Blooming period for plants and nesting/breeding period for wildlife
  - A copy of completed CNDDB forms submitted to CDFG if sensitive species were found
- Habitat Connectivity
  - Results of background research relevant to the project area
  - Mapped corridors or linkages
  - Stream crossing structures
  - Barriers to connectivity

- Any correspondence from regulatory agencies and/or local experts, if applicable

V. IMPACT ASSESSMENT AND MITIGATION

This section of the report should identify adverse impacts to sensitive biological resources and recommend compensatory mitigation as required to minimize these impacts.

A. Sufficiency of Biological Data

In some cases the information within the biological resources assessment may not be sufficient to definitively determine impacts to certain resources. Determining the impacts to some resources may require additional seasonal field surveys, coordination with other regulatory agencies, or a specialized investigation. This section of the document should clearly identify any significant deficiencies in the existing biological data and should make recommendations for further action (**Note:** Additional survey work should not be included as a mitigation measure).

B. Impact Analysis

The robustness of the impact analysis will vary depending on the biological resources found onsite and the intensity of the proposed development. In general, types of impacts include: direct (primary), indirect (secondary), short-term, long-term, and cumulative.

Use the following as a guide in the analysis of impacts:

- Discuss both temporary and permanent impacts specific to the project proposed by the applicant, but keep the discussion generic enough to allow the County flexibility of analysis in the event changes in project description occur.
- Address the questions in the CEQA checklist (as identified above); however, the County and any other Responsible Agencies will ultimately make CEQA significance determinations.
- Consider all phases of development including grading, construction, occupation, and/or operation.
- Identify all possible disturbances (both **on-site and off-site**). Examples include: alteration of drainage, erosion, sedimentation, noise, introduction of exotic plants and animals, and other potential disturbances, which may become evident during project review.
- Quantify impacts whenever possible (e.g. "project will result in the elimination of 3.5 acres of coastal scrub habitat").
- Evaluate impacts the development may have on the habitat(s), and whether the development will be consistent with long-term viability of the habitat(s).
- Discuss the adequacy of proposed setbacks from the habitat area(s).
- Discuss the potential for incidental take of rare/threatened/endangered species.
- Consider cumulative impacts.

C. Mitigation Measures

Mitigation measures should be developed for those potentially significant project impacts for which adequate data (including mapped data) was gathered during the biological impact assessment. If sufficient information is not available this should be noted in the “Sufficiency of Biological Data” section above.

Mitigation measures should be designed to accomplish the following results, in this order:

- Avoid the impact altogether;
- Minimize impacts by limiting the magnitude;
- Rectify impacts by repairing, rehabilitating, restoring;
- Reduce or eliminate the impact over time; or,
- Compensate for the impact by replacing or providing substitute resources.

Use the following as a guide in the development of mitigation measures:

- Identify the maximum feasible mitigation measures (other than "no project") to protect the resources and suggestions for monitoring and evaluating the effectiveness of the mitigation measures.
- Address the "Who, What, Where, Why and When"
  - Why – State the objective of the mitigation measure and why it is recommended.
  - What – Explain the specifics of the mitigation measure and how it would be implemented. Identify measurable performance standards by which success of the mitigation can be determined.
  - Who – Identify the agency, organization, or individual responsible for implementing the measure.
  - Where – Identify the specific location of the mitigation measure.
  - When – Identify the appropriate timing for mitigation implementation (i.e., prior to issuance of grading and/or construction permit), and any follow-up monitoring.
- Consider a range of possibilities, including: avoidance, fencing, open space easements, clustering, and off-site mitigation.
- Strive for solutions that work toward regional protection of the resources, including maintenance of open space corridors.
- Recommend conditions of approval for the restoration of damaged habitats, where feasible (refer to Appendix B, Guidelines for Revegetation/Restoration Plans).
- Develop a Mitigation Monitoring and Reporting Plan (MMRP) when necessary (refer to Appendix C, Guidelines for Mitigation and Monitoring Plans).

D. Photos (This section can be provided as an appendix.)

Color photos should be taken during survey efforts. It may be appropriate to include photos from multiple site visits to show the change in season and available habitat.

- Photos should be included in each report.
- Digital photos should be clearly labeled and provided on a CD submitted to the County.

VI. REFERENCES

Include a standard list of sources cited, including personal communications.

APPENDIX D

GUIDELINES FOR THE PREPARATION OF REVEGETATION/RESTORATION PLANS

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GUIDELINSE FOR THE PREPARATION OF REVEGETATION/RESTORATION PLANS

I. Applicability

These guidelines are for biologists preparing Revegetation/Restoration Plans (RRPs) for the County of Santa Cruz Planning Department. These guidelines do not supersede existing Federal or State laws or regulations.

II. Purpose

The purpose of these Revegetation/Restoration Guidelines is to assist applicants in understanding the County requirements for RRPs, to improve the overall success of RRP proposals, to improve the predictability of RRPs, and to provide for more consistency in the contents of RRPs. The guidelines are intended to be used by applicants, agents, and consultants as a guide for the development of RRPs required to mitigate for adverse impacts to sensitive botanical resources. These guidelines may not be suitable in every situation, and do not guarantee the success of a revegetation/restoration project. These guidelines are intended to provide background information that may be assimilated in RRPs; however, the actual details required in an RRP needed for a particular project may vary, depending on the site conditions, project scope, and sensitive resources that require mitigation.

III. Definitions and General Information

Revegetation/Restoration Plan is defined as a plan to mitigate or compensate for the loss of sensitive habitat resulting from project activities or unauthorized development activities, and monitor over time the success of the revegetation/restoration plan.

Performance standards are specific, measurable outcomes used to track progress towards achieving the mitigation goals and objectives. The development of performance standards is a required element in an RRP. Applicants and consultants should coordinate with the County early in the RRP development to develop performance standards.

Replacement Ratio: RRPs should be developed to replace impacted sensitive resources at a minimum 1:1 replacement ratio. This replacement ratio may be increased depending on the type of resource, the percentage of the total resource that is lost due to the project activities, the likelihood of success, the time required to achieve full mitigation of the impacted resource, and the type of proposed mitigation. (i.e. young oak trees may be replaced at a 3:1 ratio, while mature oaks may be replaced at a 7:1 ratio.) Habitat enhancement as mitigation for lost habitat should be at a minimum of 3:1.

Approval of RRPs: RRPs should include a discussion of how on-site impacts were avoided and minimized and how the proposed RRP will compensate for the remaining unavoidable impacts. A preliminary RRP should be submitted to the Environmental Coordinator's Office of the County Planning Department for review. The County should review the preliminary RRP to ensure that the RRP appropriately compensates for the unavoidable impacts. The final RRP should be completed, incorporating the County's comments.

Coordination: Coordination meetings between contractors, environmental consultants, and the project planner are encouraged to facilitate the evaluation of potentially complex projects and to discuss revegetation/restoration requirements and opportunities. In addition, coordination

meetings are encouraged for larger, higher risk revegetation/restoration projects to ensure proper compliance.

IV. Revegetation/Restoration Checklist

The attached checklist is intended to serve as a guide for applicants preparing RRPs to mitigate for impacts from projects that require revegetation or restoration. The checklist identifies the items generally required when developing compensatory RRPs. Not every RRP will require each item on the checklist; however, applicants should address all applicable items and indicate, when appropriate, why a particular item was not included.

V. Contents of Revegetation/Restoration Plan

Refer to the attached checklist of RRPs. The checklist should be used prior to submittal of RRPs to ensure that all required items are included.

A. Executive Summary

1. Impacted versus created or enhanced vegetation and habitat type(s)
2. Project goals and objectives
3. Summary schedule

B. Baseline Information for Impact Site, Proposed Revegetation/Restoration-Sites and Reference Sites (if applicable)

1. Description of project that requires mitigation
   - Describe the project type (e.g. parcel map, tract map, grading permit, etc.),
   - Describe project phases
   - Describe project schedule
   - Include total area of disturbance (temporary and permanent)
   - Include conditions of approval as they relate to the RRP
2. Location - For the impact site, revegetation/restoration-site, and reference site (if applicable), include the following information:
   - Assessor's parcel number (i.e. APN)
   - Address
   - Location description
   - Township and range coordinates and/or Global Positioning System (GPS) coordinates.
   - Maps (e.g., vicinity map, site map showing project plans, USGS map, zoning or planning maps, etc.)
   - Aerial and on-site photos
   - Environmental setting of impact, revegetation/restoration and reference sites
   - Climate/aspect
   - Configuration and topography

- Soils testing and soils description
- Watershed
- Existing hydrology (surface and groundwater)
- Quantify wetland resources (acreage) or stream resources (linear feet) by type(s).
- Existing vegetation/habitats (descriptions and maps)
- List of species on-site, indicating dominant species
- Plant species characteristics such as densities, general age and health, and native/nonnative/invasive status
- Percent vegetative cover; community structure (canopy stratification)
- Existing wildlife usage (indicate possible rare, threatened and endangered species habitat)
- Map showing location of plant communities
- For revegetation/restoration-sites, also describe level of existing disturbance, exotic invasive species presence, and site constraints (e.g. zoning, current uses, surrounding uses, etc.)

3. Land Use and Ownership
   - Current owner(s)
   - Historic and current land use
   - Surrounding land use
4. Parties responsible for project
5. Required Permits from Non-County Agencies.
   - Describe permits required from other agencies such as the Department of Fish and Game, U.S. Fish and Wildlife Service, Army Corps of Engineers, etc., and when permits will be obtained.
   - If cultural or historical resources will be impacted, discuss whether a letter is needed by the State Historic Preservation Office. Explain how and when this will be accomplished.

C. Revegetation/Restoration Goals and Objectives

- Describe the resource type and functions that will be impacted at the proposed impact site and the resource and functions for which the revegetation/restoration project is intended to compensate.
- Include both temporary and permanent impacts
- Include attainable and measurable goals and objectives to achieve through implementation of the RRP (e.g. goals pertaining to revegetation/restoration, drainage and hydrology, slope stability, erosion and sedimentation, sensitive target species and habitats)
- Proposed compensation ratios
- Schedule for accomplishing goals and objectives

D. Revegetation/Restoration-site Selection and Justification (If the revegetation/restoration site is located off-site from the impact site, include the following information)**:**

- Explain why on-site options are not practicable or environmentally preferable.
- Description of site selection practicability in terms of cost, existing technology, and logistics
- Description of likelihood of success, future adjacent land uses and compatibility (show on map or aerial photo)
- Existing and proposed revegetation/restoration-site deed restrictions and rights-of-way. Demonstrate how the existence of any such restriction will be addressed, particularly in the context of incompatible uses.
- Explanation of how the design is sustainable and self-maintaining

E. Revegetation/Restoration Work Plan (The work plan should include the following information)**:**

- Specific details so that work can be accomplished by a secondary party, if necessary. Methodologies should be repeatable.
- Responsible party(ties)
- Maps marking boundaries of proposed revegetation/restoration-sites, preparation and/or treatments. Include GPS coordinates.
- Revegetation/restoration schedule for all phases (expected start and end dates of each phase, expected date for finished plan)
- Protections to be implemented for extant vegetation, hydrologic features, and landforms
- Description of revegetation/restoration methods (e.g., equipment to be used)
- Describe land shaping, grading, and drainage. Include planned elevation, slopes, hydrology, soils, vegetation, plant species, etc.
- Include grading plan, if applicable
- Slope protection, erosion control, and soil compaction control measures
- Planned soils/substrate/growth media
    - Source of soils (e.g., salvaging existing soil, stockpiling, replacing or importing)
    - Soil characteristics (organic content, structure, texture, permeability)
    - Soil amendments (e.g., organic material or topsoil)
    - Mulching
    - Weed eradication from soil source
- Plant materials
    - Species selection
    - Stock type (bare root, potted, seed)
    - Plant age(s)/size(s)

- Quantities of each species and stock type
- Propagule source (e.g. salvaged from impact site, local source, seed bank, commercial)
- Plant/seed handling
- Planting/seeding rates, densities, spacing, percent cover
- Planting/seeding methods (details)
- Planting/seeding locations (include description and show locations on map)

- Expected natural regeneration from existing seed bank, plantings, and natural recruitment
- Plant protection (e.g. Chan can, screens, Weedstop)
- Irrigation installation (frequency, duration, source and water quality)
- Planned habitat features (identify large woody debris, rock mounds, etc. on map)
- Other planned features, such as interpretive signs, trails, fence(s)
- Planned buffer (identify on map)
  - Physical characteristics (location, dimensions, native plant composition, spatial and vertical structure etc.

F. Site Protection and Maintenance

- Describe long-term legal protection instrument (e.g. conservation easement, deed restriction, transfer of title).
- Party(ies) responsible for site protections and their role (e.g. property owner, easement owner, maintenance implementation). If more than one party, identify primary party.
- Schedule of maintenance activities
- Maintenance plan
  - Measures to control predation/grazing
  - Invasive species control plan (plant and animal)
  - Fertilizing
  - Irrigation/supplemental watering
  - Replanting
  - Control of anthropogenic effects (e.g. fencing, signing, replacement planting, structure maintenance/repair, etc.)
- Evaluation and reporting of maintenance activities

G. Performance Standards

- Identify clear, precise, quantifiable parameters that can be used to evaluate the status of the RRP in attaining the desired goals and objectives (objectives may include measures such as number of individual plants, percent vegetative cover, percent cover of exotic/invasive species, etc).

- Describe how performance standards were derived (e.g. industry standards, local ordinances, developed specific for this project).
- Describe basis for standards (e.g. pilot project, research, monitored results of previously implemented project)
- Describe how performance standards will be used to verify that goals and objectives identified in section V.C. have been attained.
- Describe when performance standards will be evaluated.
- Set target values or ranges for the parameters identified.
- Describe standards for each revegetation/restoration project element such as species, community, structure, site, or function.
    - Describe qualitative standards (e.g. photo reference points, visual/aesthetic quality)
    - Reference sites or other controls

H. Monitoring Plan

- Include site plans of RRP with elevations and acreage. Explanations of any deviations from the approved RRP plan should be provided. Plans of completed project should also indicate the actual plantings.
- Party(ies) responsible for monitoring. If more than one, identify primary party
- Monitoring schedule
- Description of monitoring methods: data to be collected and reported, how often and for what duration. Identify proposed monitoring stations, including transect locations on map. Include specific details so that monitoring can be repeated by secondary party, if necessary.
- Discussion of methods for analyzing results
- Identify locations of photo stations and transects on map
- Photographs from stations

I. Adaptive Management Plan

- Describe party(ies) responsible for adaptive management and their responsibilities
- Identification of potential challenges that pose a risk to RRP project success (e.g., flooding, drought, invasive species, seriously degraded site, extensively developed landscape). Discuss how the design accommodates these challenges.
- Discussion of potential remedial measures in the event mitigation does not meet performance standards in a timely manner
- Discussion of how and when adaptive management practices will be applied to the plan
- Identify party(ies) to consult when goals and objectives are not attained.

J. Budget

- Include estimated costs associated with

- Planning RRP
- Implementation of RRP
- Maintenance
- Monitoring
- Contingencies

K. Financial Assurances

- For each of the following, identify party(ies) responsible to establish and manage the financial assurance, the specific type of financial instrument, the method used to estimate assurance amount, the date of establishment, and the release and forfeiture conditions:
  - Implementation
  - Maintenance
  - Monitoring
  - Adaptive Management
  - Project success
- Describe types of assurances (e.g., performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit, etc.).
- Payees/designated appropriate use of funds
- Schedule by which financial assurance will be reviewed and adjusted to reflect current economic factors

L. Data sheets

- Include copies of data sheets for baseline data
- Include copies of monitoring forms
- Monitoring results

M. Monitoring Reports

- Include part(ies) responsible for submission of monitoring reports.
- Include schedule for submission of monitoring reports.
- Include details about contents of monitoring reports.

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APPENDIX E

REVEGETATION/RESTORATION PLAN CHECKLIST

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REVEGETATION/RESTORATION PLAN CHECKLIST

Executive Summary

- ☐ Impacted resources vs. resources proposed
- ☐ Project goals
- ☐ Schedule Summary

Baseline Information for Impact Site, Proposed Revegetation/Restoration-sites, and Reference Sites

- ☐ Description of project that requires mitigation (type, phases, schedule, quantify area of disturbance). Include proposed project site plan, topographic maps, and aerial photographs
- ☐ Location of impact site, revegetation/restoration-site, and reference sites (location description and site plan, APN, GPS coordinates, maps, photos, etc.)
- ☐ Provide data on environmental setting of sites (climate, topography, soils, watershed, hydrology, wetlands, plant communities, vegetation, habitat, wildlife species, level of existing disturbance, etc.)
- ☐ Describe historic and existing land uses and resources impacted
- ☐ Describe surrounding land use
- ☐ Land ownership
- ☐ Responsible parties
- ☐ Required permits from non-county agencies

Revegetation/Restoration Goals and Objectives

- ☐ Describe functions/resources lost at impact site
- ☐ Describe functions/resources to be gained at revegetation/restoration-site
- ☐ Include attainable and measurable goals and objectives
- ☐ Relationship to mitigation measures required for project
- ☐ Proposed mitigation ratios
- ☐ Time frame for accomplishing goals and objectives

Mitigation-site Selection and Justification (if located off-site from impact site)

- ☐ Describe process of selecting proposed site
- ☐ Likelihood of success, future land use compatibility, etc.
- ☐ Explain reason for selecting off-site mitigation (if applicable)
- ☐ Describe site restrictions

Mitigation Work Plan

- ☐ Include specific details of all aspects of revegetation/restoration work
- ☐ Responsible parties
- ☐ Maps showing boundaries of revegetation/restoration-sites
- ☐ Schedule
- ☐ Describe land shaping, grading, drainage
- ☐ Describe planned elevation, slopes, hydrology, soils, buffers, vegetation, plant and wildlife species, habitat features, signs, etc.
- ☐ Describe slope protection, erosion control, and soil compaction measures
- ☐ Planned soils information
- ☐ Plant materials information

- [ ] Plant protection
- [ ] Irrigation installation
- [ ] Habitat features
- [ ] Other features
- [ ] Buffers

Site Protection and Maintenance

- [ ] Provide evidence of long-term protective measures
- [ ] List parties and responsibilities
- [ ] Maintenance schedule
- [ ] Predation/grazing control plan
- [ ] Invasive species control plan
- [ ] Fertilizing
- [ ] Irrigation/supplemental watering
- [ ] Replanting
- [ ] Control of anthropogenic effects
- [ ] Evaluation and reporting maintenance activities

Performance Standards

- [ ] Identify precise, measurable parameters to determine success of revegetation/restoration plan. Performance standards should address project goals.
- [ ] Describe performance standards for each project element
- [ ] Describe how performance standards were derived
- [ ] Identify how and when performance standards will be evaluated

Monitoring Plan

- [ ] Include site plans of RRP work efforts
- [ ] Identify party(ies) and responsibilities
- [ ] Monitoring schedule
- [ ] Describe monitoring methods. Include specific details so that monitoring data collection can be repeated by secondary party, if necessary
- [ ] Identify photo station and transect locations
- [ ] Reporting monitoring data and assessing RRP status

Adaptive Management Plan

- [ ] Identify party(ies) and responsibilities
- [ ] Identify potential challenges (e.g. flooding, drought, invasive species, etc.)
- [ ] Remedial measures to implement in the event that performance standards are not met
- [ ] Identify when and how success criteria will be evaluated
- [ ] Identify how and when adaptive management practices will be applied to the plan
- [ ] Identify party(ies) to consult when goals and objectives are not attained.

Budget

- [ ] Include estimated costs for RRP planning, implementation, maintenance, monitoring, and contingencies

Financial Assurances

- [ ] Identify party(ies) responsible for assurances
- [ ] Specify type of assurances (e.g. performance bonds, irrevocable trusts, escrow accounts, etc.)
- [ ] Schedule for reviewing financial assurances

Data Sheets

- [ ] Include copies of data sheets for baseline data
- [ ] Copies of monitoring forms
- [ ] Monitoring results

Monitoring Reports

- [ ] Include party(ies) responsible for submission of monitoring reports
- [ ] Include schedule for submission of monitoring reports
- [ ] Include details about contents of monitoring reports

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Legend

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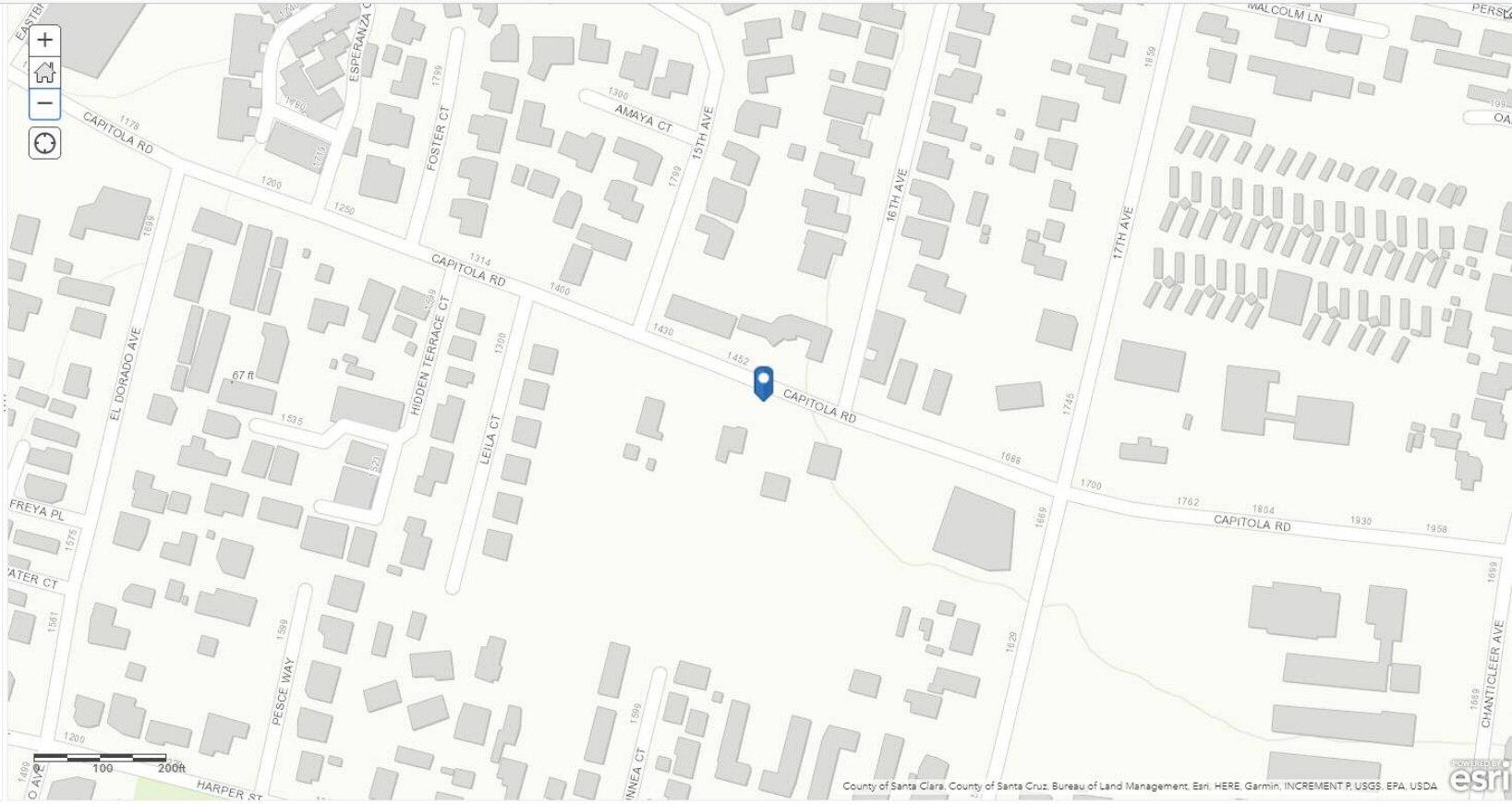
Final Polygon Features

Proposed Linear Features

Proposed Polygon Features



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