Exhibit E

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SOIL SURVEYS GROUP INC.

103 CHURCH ST • SALINAS, CALIFORNIA 93901 • TELEPHONE (831) 757-2172

April 21, 2017
Job #6814

Clifton-Wolske Residence
c/o William E. Foster Architecture
Attn: Bill Foster
716 Lighthouse Avenue, Suite F
Pacific Grove, CA 93950

Dear Mr. Foster:

Submitted herewith is the report of our Geotechnical Investigation for the proposed new single family residence with garage and guest house to be constructed within Parcel 1, on Rinconada Drive, APN 416-361-043, in Carmel Valley, California. One boring was drilled on February 28, 2017 and an additional boring was drilled on March 28, 2017 for geotechnical investigation purposes. Laboratory tests were subsequently made on driven soil core samples taken from the borings to determine the near surface and subsurface soil conditions and suitability for the construction of the proposed single family residence and detached guesthouse. We find that the project site is suitable for the proposed use with the recommendations made herein.

It is a pleasure working with you on this project. If you have any questions regarding our geotechnical investigation or this report, please contact us.

Very truly yours,

SOIL SURVEYS GROUP, INC.

_____ _____

Belinda A. Taluban, P.E.
R.C.E. 44217

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Engineering Geologist 2668

BAT/MMG/tr/jg

cc. Monterey County Resource Management Agency Divisions of Planning and Building Inspection

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Figure I - Site Location Map
Figure II - Boring Locations (approx.)

Appendix A - Boring Logs
Appendix B - Direct Shear Test From Nearby Site
Appendix C - R-Value Test

SOIL SURVEYS GROUP INC.

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GEOTECHNICAL INVESTIGATION

FOR THE PROPOSED NEW SINGLE FAMILY RESIDENCE AND GUESTHOUSE

TO BE LOCATED WITHIN PARCEL 1, ON RINCONADA DRIVE, APN 461-361-043,

IN CARMEL VALLEY, CA

FOR HEATHER CLIFTON AND RUSS WOLSKE

APRIL 21, 2017; JOB #6814

I. INTRODUCTION:

This Geotechnical Investigation was made to determine the suitability of the soils at the project site for the for the proposed new single family residence with garage and detached guest house to be constructed within Parcel 1, on Rinconada Drive, APN 416-361-043, in Carmel Valley, California. One boring was drilled on February 28, 2017 to a depth of 31.0 feet and an additional boring was drilled on March 28, 2017 to a depth of 20.83 feet for geotechnical investigative purposes. Core samples were taken from the borings for laboratory testing. The boring logs, our field observations, and field and laboratory test data were analyzed to determine the following:

1. **Suitability of the soils at the project site for the proposed new single family residence and guesthouse.**
2. **Expansive, unsuitable or unstable soil conditions, if any.**
3. **Foundation, retaining wall, and pavement design criteria.**
4. **Subsurface groundwater and soil moisture considerations.**
5. **Surface drainage considerations.**
6. **Analysis of seismic hazards and seismic design factors per the 2016 California Building Code.**

Site Setting: The project consists of the construction of a new single family residence with garage, detached guest house, and new driveway. The project is located within a 27.9 acre parcel that is situated to the southeast side of Rinconada Drive, approximately 0.3 kilometers east of Laureles Grade Road, in Carmel Valley. The proposed residence is to be constructed on a slope within the northerly third of the parcel, adjacent to an existing dirt road cut into the native shale soils. The general topography of the site slopes downward towards the southeast at gradients ranging from 20 to 30 percent. The building site is mapped as a siliceous portion of the Monterey Shale formation by Clark et al., 1997. The site slopes are well vegetated with grasses, native shrubs and Coast Live Oak. There are no obvious signs of major erosion, slippage or mass movement on the subject slopes.

II. LABORATORY TEST DATA[1]:

Nineteen moisture density tests were made from the driven core samples. Standard Penetration Tests (SPT) were performed with a Terzaghi Split Spoon sampler. Core samples were also taken with a 2½-inch interior diameter (i.d.) Modified California Sampler. All samplers were driven into the soil by a 140 lb. hammer dropped a vertical distance of 30 inches. Results of these tests are shown as follows:

MOISTURE DENSITY TESTS

Boring No.	Depth/ Ft.	Water Content %	Dry Density p.c.f.	Standard penetration Tests, Blows /foot	Pocket Penetrometer Tons S.F.
B-1	2-2.5	42.1	45.8	4	>4.5
B-1	3.5-4	38.3	63.1	4(2)*	3.25
B-1	4-4.5	39.3	66.5	5(3)*	3.5
B-1	5.5-6	31.6	59.2	17	1.0
B-1	10.5-11	36.8	64.6	31(19)*	>4.5
B-1	11-11.5	44.8+	69.0+	52(31)*	>4.5
B-1	12.5-13	36.8	53.9	50	2.0
B-1	16-16.5	37.5	50.6	50	---
B-1	21-21.5	49.2	46.6	30	1.5
B-1	22.5-23	41.4	41.2	37	2.0
B-1	26-26.5	44.0	35.7	40	---
B-1	30.5-31	42.2	43.7	82	---
B-2	1-1.5	51.4	47.9	7(4)	2.5
B-2	1.5-2	48.9	52.2	9(5)	1.0
B-2	3-3.5	52.3	46.0	14	2.5
B-2	6-6.5	51.3	48.6	34	2.75
B-2	11-11.5	35.6	61.1	25	4.5
B-2	15.75-16.25	40.0	68.5	91/9"	3.0
B-2	20.33-20.83	36.3	67.5	75/10"	---

* = 2.5 -inch mod. Cal, not SPT () = Blow counts adjusted to approximate SPT values
+ = Direct Shear Test - Average values shown

[1] Boring Logs are located in Appendix A

Four Sieve Analysis tests were made from the driven core samples. Results of these tests are shown as follows:

A.S.T.M. D 422 SIEVE ANALYSIS TEST-Percent Passing

Boring No.	Depth/ Ft.	Sieve No. 4	Sieve No. 10	Sieve No. 20	Sieve No. 30	Sieve No. 40	Sieve No. 100	Sieve No. 200
B-1	2-2.5	48	41	35	34	32	28	25
B-1	3.5-4	65	53	45	42	40	35	31
B-1	4-4.5	72	56	45	42	39	33	28
B-1	10.5-11	72	50	36	32	29	23	20

Four plasticity index test were performed on driven core samples. Results of these tests are as follows:

PLASTICITY INDEX TEST

Test Hole No.	Depth/ Feet	% Passing Sieve No. 40	% Passing Sieve No. 200	Liquid Limit	Plastic Limit	Plasticity Index
B-1	2-2.5	32	25	63	43	20
B-1	3.5-4	40	31	64	44	20
B-1	4-4.5	39	28	58	43	15
B-1	10.5-11	29	20	103	46	57

The test results for the samples taken from Boring 1 indicate that the fine fraction of the near surface sandy, clayey, silty soils at 2.0 to 2.5 feet in depth, 3.5 to 4.0 feet in depth, and 4.0 to 4.5 feet in depth and deeper subsurface weathered siliceous shale soils at 10.5 to 11.0 are moderately plastic and moderately to highly expansive.

Boring 1 was located near the southerly portion of the proposed new single family residence. The near surface soil consists of soft, silty, sandy clay with scattered gravels to a depth of 1.0 feet and of soft, sandy, clayey silt with fractured gravels to a depth of 4.5 feet. Below 4.5 feet in depth, the soils consists of very stiff, clayey silt with fractured gravels to a depth of seven feet and of hard, weathered, siliceous shale with thin veins of clay to a depth of 13.0 feet. Below 13.0 feet, the soil consists of very stiff to hard, fractured, siliceous shale to a depth of 26.0 feet and of hard, siliceous shale with thin veins of clay to the bottom of the boring at 31.0 feet.

Boring 2 was located near the northeasterly corner of the proposed new guest house. The near surface soil consists of soft, silty clay with organics to a depth of one foot and of soft to firm fractured shale with thin lenses of silty clay to a depth of two feet in depth. Below two feet in depth the soil consists of medium dense, fractured shale gravels with thin lenses of clay to a depth of five feet. At five feet in depth the soil consists of very stiff to hard, shale to the bottom of the boring at 20.83 feet.

No groundwater was observed in the borings to a maximum depth explored of 31.0 feet, prior to backfilling the holes with soil cuttings on the date of drilling. The actual depth to groundwater during rainy months is unknown, but it should be noted that groundwater fluctuations can occur due to variations in rainfall, temperature and other factors not evident during the time of our investigation.

III. SUITABILITY OF SITE FOR PROPOSED USE:

No unsuitable or unstable soil conditions were found at the proposed building pad location except for loose/soft near surface moderately expansive soils to a depth of 4.5 feet. In our opinion, the site is suitable for the proposed residence with the recommendations made herein, specifically the recommendations for recompaction of loose/soft soil.

IV. RECOMMENDED FOUNDATION DESIGN CRITERIA:

Spread footings may be used for the building foundations after the site is cleared, grubbed and the proposed building pads are graded, compacted and properly prepared. Spread footings shall be installed to a minimum depth of 18 inches below the lowest adjacent grade for both single and second story portions of the proposed buildings. The minimum depths shall be measured from the **inside building pad soil subgrade.** Mitigation for recompaction of loose soil conditions must be followed.

Allowable foundation pressures after proper compaction of the building pad areas are:
Continuous footings = 1800 p.s.f.
Isolated rectangular footings = 2000 p.s.f.

Continuous footings shall be reinforced with four #4 steel reinforcement bars, two placed near the bottom of footing and two at the top of footing. Spread footings shall also meet the minimum requirements of the 2016 California Building Code and Monterey County building ordinances for width, thickness, embedment and reinforcement steel. The proposed residence and any future additions shall be designed in strict accordance with the requirements specified in the 2016 California Building Code, or latest approved edition, to resist seismic forces.

All concrete floor slabs-on-grade shall be a minimum of five inches thick and shall be reinforced with a minimum of #3 steel reinforcement bars at 12 inches on center or #4 steel reinforcement bars placed 24 inches on center, each way and shall be extend into perimeter foundation. *The reinforcement steel must be firmly held in the vertical center of the slabs during placement and finishing of concrete with pre-cast concrete dobies.* All new concrete floor slabs-on-grade shall be underlain by an approved 15 mil. vapor barrier installed over a minimum four inch thick open graded gravel capillary break with two inches of clean sand placed over the vapor barrier as recommended in Section VIII-C herein. ***Concrete slabs shall have weakened plane joints a maximum of fifteen feet on center, each way. All concrete shall be properly cured with an approved curing compound or wetted burlap for a minimum of 14 days.***

Soil Surveys Group, Inc. shall inspect and approve the foundation footing excavations and the subgrade beneath concrete floor slabs for suitable soil bearing and proper penetration into competent soil. We also recommend that Soil Surveys Group, Inc. review and approve the grading, drainage and foundation plans prior to building construction.

A. Concrete Sidewalks and Outside Flatwork:

We recommend that any new on-site concrete sidewalks and outside flatwork be at least five inches thick and be placed over a compacted subgrade. All concrete flatwork should be divided into as nearly square panels as possible. Frequent joints should be installed to provide articulation to the concrete panels. Landscaping and planters adjacent to concrete flatwork should be designed in such a manner that positive drainage away from the new project buildings is achieved. It is assumed that the outside concrete flatwork will be subjected only to pedestrian traffic.

V. LOOSE/SOFT AND EXPANSIVE SOIL MITIGATION:

To mitigate the effects of the loose and expansive near surface soil conditions, the following measures are recommended:

1. Any existing loose/soft soil within the proposed building envelopes and extending a minimum of five feet in all directions outside of the proposed building foundations shall be recompacted **as necessary** to 90 percent relative compaction at the direction of Soil Surveys Group, Inc. prior to placing any additional building pad fill or finishing the building pad subgrade. Soil Surveys Group, Inc. shall determine the depth of recompaction, if any (two to four feet is anticipated), within the building pad perimeters.

2. If the new buildings will bear on both cut and fill, the cut portion of the building pad shall be subexcavated and recompacted a minimum of two feet deep for a distance of five feet outside the building, so that the entire building overlies engineered fill, prior to excavating for the foundation footings.

3. Spread footings shall be constructed a minimum depth of 18 inches for the proposed buildings as measured from the lowest adjacent grade and continuous non-retaining footings shall be reinforced with two steel reinforcement bars placed near the bottom of the footing and two steel reinforcement bars placed near the top of the footing.

4. All concrete floor slabs-on-grade shall be a minimum of five inches thick and shall be reinforced with a minimum of #3 steel reinforcement bars at 12 inches on center or #4 steel reinforcement bars at 24 inches on center, each way.

5. Roof and site rain water should be directed away from the proposed building foundations. Rainfall runoff must not be allowed to collect or flow in a downslope direction against any new or existing building foundation.

6. Soil Surveys Group, Inc. shall be retained to inspect and test the recompaction of all loose/soft soil and engineered fill within the building pad perimeters and shall inspect and approve foundation and any retaining wall footing excavations for soil bearing conditions. Soil Surveys Group, Inc. shall also inspect and approve the subgrade below concrete floor and garage slabs-on-grade prior to placement of reinforcing steel and shall inspect and approve the installation of all roof and site drainage facilities.

VI. SURFACE AND SUBSURFACE DRAINAGE AND EROSION CONSIDERATIONS:

The near surface soil at the project site has the potential to erode, especially if protective vegetation is removed. Therefore all new cut and fill slopes, as well as disturbed soil areas, must be seeded with grass or landscape plants for erosion control and to prevent sloughing soil from blocking drainage patterns at the project site. Such erosion control measures shall be taken during and at completion of grading and during building construction operations.

Concentrated storm water runoff from the project site should not be allowed to discharge uncontrolled onto sloping ground. Suitable energy dissipation systems shall be designed where rainfall runoff is concentrated, or the drainage water should be collected and piped to flat ground or discharged onto a rocked energy dissipater down slope of the building foundations. Rock energy dissipaters consisting of four inch to six inch diameter rock or rubble rip rap should be installed at collection pipe discharge points to reduce soil erosion. Rain gutter downspouts shall discharge onto concrete splash blocks, or shall discharge into collector pipes. The building sites, any new paved areas and ground adjacent to the residence shall be graded so that rainfall runoff does not become trapped or flow against any building foundations.

The boring log does not indicate the need for a subsurface drain system. However, the Geotechnical engineer may recommend a system of subsurface drains should wet subsurface soil conditions be encountered during site preparation or excavations for any new building foundations.

VII. RETAINING WALL DESIGN CRITERIA:

The following design criteria are recommended for the site retaining walls:

Friction Angle	*$\varphi = 40°$*
Cohesion	*$c = 230$ p.s.f.*
Soil Weight,	*$w = 99.9$ p.c.f.*
Equivalent fluid pressure, active	*= 30 pounds per square foot per foot of depth for* ***Level Grade***
Equivalent fluid pressure, active	*= 40 p.c.f. with* ***2:1 slope behind wall***
Equivalent fluid pressure, at rest,	*= 45 p.c.f., restrained condition, level grade behind wall*
Equivalent fluid pressure, passive	*= 490 p.c.f.*
Sliding friction	*$f = 0.30$*
Allowable Footing Toe Pressure	*= 2700 p.s.f. plus ⅓ additional for seismic force (if added)*

Retaining walls that are part of or within ten feet of a building should include the seismic force of the soil against the wall. The estimated seismically generated ground accelerations to be used for this area are:

PAGA = 0.354g
RHGA =0.24g = k_h
w = 99.9 p.c.f.

The resultant seismic force is calculated by the formula: 3/8 w H^2 k_h per linear foot of retaining wall, or for this case **9.0 H^2*, where H is the height of the retaining wall. These forces, where needed, should be applied at a height of 0.6H above the base of the retaining wall and must be combined with the force produced by active soil pressure.***

These retaining wall design criteria are based on a fully drained condition. Therefore, we recommend that a four-inch diameter perforated NDS or PVC pipe be installed behind or along the top of the footing, holes placed down, behind all walls that retain earth. The pipe shall be covered with a 12-inch wide envelope of

¾-inch drain rock or Class 2 Permeable Material (per Caltrans Standard Specifications Section 68-1.025) which shall extend to a minimum of one foot above the top of pipe and extend to within one foot of the level of retained soil. Filter fabric shall be installed over the top of the drain rock. No gravel shall be placed below the pipe. The remainder of the trench can be backfilled with clean native sand. As an alternative to installing drain rock or permeable material, a composite filter material, eg. Miradrain, can be installed with a perforated pipe at the bottom of the material. Clean-out risers must be installed on the perforated pipe at the up-stream ends, every 100-feet, and at 90° angle points. The capped end of the cleanout riser shall be located at the ground surface outside of or behind the retaining walls.

VIII. RECOMMENDED SPECIFICATIONS:

A. GRADING:

The building pads, extending a minimum of five feet in each direction past new foundation footings shall be cleared and grubbed of all surface vegetation, demolition debris, and organic topsoil before recompacting the original ground, placing engineered fill or finishing the subgrade for the new residence. On site surface or subsurface grass, roots, deleterious material, or brush (if any) within any new building pad areas shall be removed. Soil Surveys Group, Inc. should determine if any subexcavation is necessary after clearing and grubbing are completed. Any subexcavated soil shall then be backfilled in eight inch loose lifts and recompacted to 90 percent relative compaction, prior to placing engineered fill or finishing subgrade of the new building pad.

Any new cut and fill slopes shall be 2:1 or flatter unless retained. The native soil is suitable to be used as engineered fill provided any organics or debris are first removed from the soil to be used as fill. Any native soil used for fill, or any imported fill soil for the new building pads shall be compacted to at least 90 percent relative compaction, and any cut portions of the new building pads, if located within both cut and fill, shall be subexcavated a minimum of two feet, backfilled in eight inch loose lifts and recompacted to a minimum of 90 percent relative compaction. All fills placed on slope grades of 5:1 or greater shall be provided with a keyway excavated a minimum of two feet below grade, a minimum of 10 feet wide and at a 2% slope into the slope. The bottom of the keyway should be moisture conditioned, compacted (if necessary) and approved by Soil Surveys Group, Inc. prior to backfilling in eight inch loose lifts and compacting the backfill to 90 percent relative compaction. ***Grading, filling, compaction operations and foundation excavations shall be inspected and tested by Soil Surveys Group, Inc.***

B. COMPACTION:

Laboratory soils compaction test method shall be *A.S.T.M. D 1557-09.* Subgrade *in existing soil* beneath the new building pads shall be compacted to 90 percent relative compaction unless waived by the Geotechnical engineer. Subgrade soil below any new pavement shall also be compacted to 95 percent relative compaction, and aggregate base beneath new pavement shall be compacted to 95 percent relative compaction. Any imported sandy soil fill placed for the new building pads shall be compacted to a minimum of 95 percent relative compaction.

C. CONCRETE FLOOR SLABS-ON-GRADE:

Subgrade in recompacted soil under any new concrete floor slabs-on-grades shall be brought to at least 2% over optimum moisture prior to placing native or imported sandy soil fill, prior to placing the capillary break rock and moisture proof barrier or prior to pouring concrete. We recommend that a capillary break consisting of:

- a mat of clean, open graded rock, four inches thick, shall be placed over the finished soil subgrade
- a minimum 15 mil. water-proof membrane (such as Stego, Moistop or equal) shall be placed over the open graded rock
- two inches of clean, moistened sand shall be placed between the water-proof membrane and the bottom of the concrete floor slab. The moistened sand will help protect the membrane and will assist in equalizing the concrete curing rate to minimize shrinkage cracking.

Class 2 Aggregate Base or sand should not be used as the capillary break material. Capillary break material shall comply with and be installed according to the following:

1. MATERIAL:
   The mineral aggregate for use under the floor slabs shall consist of broken stone, crushed or uncrushed gravel, quarry waste, or a combination of the above. The aggregate shall be free of adobe, vegetable matter, loam, volcanic tuff and other deleterious materials. It shall be of such quality that the absorption of water in a saturated, surface dry condition does not exceed 3% of the oven dry weight of the sample.

2. GRADING:
   The mineral aggregate shall be of such size that the percentage composition by dry weight as determined by laboratory sieves (U.S. Sieves) will conform to the following grading:

Sieve Size	Percentage Passing Sieve
⅜" to ½"	100
No. 4	0-10
No. 200	0-2

3. PLACING:
   Subgrade, upon which aggregate base, gravel or crushed rock is to be placed, shall be prepared by removing grass and roots. Where loose topsoil is present, it shall be removed and cleaned of debris and recompacted to 90 percent of maximum density.

4. THICKNESS AND STRENGTH:
   Concrete slabs should be at least five inches thick. Concrete shall be five sack minimum (5.5 sack if pumped) and shall achieve a 28 day compressive strength of at least 2500 p.s.i., or as specified by the project engineer.

5. REINFORCEMENT:
   Concrete slabs-on-grade shall be reinforced with a minimum of #3 steel reinforcement bars placed 12 inches on center, each way, or #4 steel reinforcement bars placed 24 inches on center, each way, and shall be bent to extend a minimum of eight inches into the perimeter footings.

D. UTILITY TRENCH BACKFILL:

All new on-site utility trenches shall be backfilled with a clean sand having a sand equivalent of 30 or higher. A two feet thick plug of compacted, **clayey soil backfill** or lean concrete shall be required

around the pipe or conduit at places where utility trenches intersect the building perimeter. All trench backfill of imported clean sand shall be compacted to 95 percent relative compaction at all locations. Clean native sand shall be approved by Soil Surveys Group, Inc. prior to using for trench backfill.

E. PAVEMENT DESIGN CRITERIA:

One R-Value test was made on a composite sample of the underlying subgrade soil. The R-Value was 48, which indicates that the soil is moderately strong for pavement support purposes. Based on the Traffic Indices given in the table below, asphalt pavement consisting of the relevant thickness of Hot Mix Asphalt (HMA) over the relevant thickness of Class 2 Aggregate Base (AB), compacted to 95 percent relative compaction. The underlying soil subgrade shall be proof rolled and recompacted (if necessary) to 95 percent relative compaction. Soil Surveys Group, Inc. shall test and approve the finished soil subgrade and finished subgrade of Class 2 Aggregate Base.

Traffic Index(T.I.)	Thickness of H.M.A.	Thickness of A.B.
3	2"	4"
4	2.5"	6"
5	3"	8"

As an alternative to new asphalt pavement in vehicular traffic areas, concrete pavement can be installed. **If concrete pavement is selected for the vehicular traffic areas, we recommend that the concrete paving be a minimum of six inches thick over a soil subgrade compacted as necessary to a minimum of 90 percent relative compaction.** Concrete shall be reinforced with a minimum of #4 steel bars placed no more than 24 inches on center, each way.

IX. GEOLOGIC AND SEISMIC CONSIDERATIONS:

Monterey County is in a seismically active area of the state of California. The following table provides a list of nearby faults that could produce an earthquake that could impact the project site:

Fault Name	Approximate Distance to Site	Orientation from Site	Data Source
Chupines (Concealed)	1.26 km	Northeast	Clark and others, 2000
Corral de Tierra	1.95 km	Northeast	Clark and others, 2000
Laureles (Certain)	2.44 km	Southwest	Clark and others, 1997
Berwick Canyon (Inferred)	3.28 km	West	Clark and others, 1997
Monterey Bay-Tularcitos	4.3 km	Southwest	Uniform Building Code, 1997
San Gregorio (Sur Region)	20.75 km	Southwest	Uniform Building Code, 1997
Rinconada	10.5 km	Northeast	Uniform Building Code, 1997

Fault Name	Approximate Distance to Site	Orientation from Site	Data Source
San Andreas Creeping Section (Pajaro)	26.0 km	Northeast	Uniform Building Code, 1997
Zayante-Vergeles	32.8 km	Northeast	Uniform Building Code, 1997
San Andreas (Pajaro)	38.0 km	Northeast	Uniform Building Code, 1997

The proposed residence and any future additions must be designed in strict compliance with the 2016 California Building Code, or current edition to help withstand such seismically generated ground accelerations for a reasonably expected duration without suffering major damage.

The following are the project site coordinates and the seismic design criteria/coefficients per the requirements of the 2016 California Building Code (CBC):

Site Class	Latitude	Longitude	S_S	S_1	F_a	F_v
D	36.53985°	-121.74977°	1.406	0.508	1.00	1.50

Frame and semi-rigid structures with proper strengthening connections and hold-down fasteners (where needed) are recommended for the proposed residence and any future building additions. With proper design parameters, seismic damage to the building can be mitigated for major earthquakes centered near the project area.

Surface rupture, liquefaction, lurch cracking, lateral spreading, and differential settlement are seismic hazards that must be considered at the project site. Surface rupture usually occurs along fault lines, and no known faults have been mapped through the project site. Therefore, the potential for surface rupture or lurch cracking is considered to be low.

Liquefaction and lateral spreading tend to occur in loose, fine saturated sands and in places where the liquefied soils can move toward a free face (e.g. a cliff or ravine). The deeper soils underlying the project site are typically very stiff to hard, siliceous shale soils. No ground water was encountered in the boring to a maximum depth explored of 31.0 feet. Considering the deeper, very stiff to hard, siliceous shale soils and lack of shallow groundwater, the potential risk for occurrence of damaging liquefaction or lateral spreading is considered to be low during a strong seismic event.

Differential compaction and settlement occur generally in loose, granular or unconsolidated semi-cohesive soils during severe ground vibration. In our opinion, the risk for soil consolidation caused differential compaction and settlement during a major seismic event is considered to be low.

X. UNFORESEEN OR UNUSUAL CONDITIONS:

If any unforseen or unsuitable soils conditions are found during grading or construction the Geotechnical engineer shall be notified immediately so that remedial action can be taken. Such unsuitable conditions could be:

1. Wet, soft or unsuitable pockets of clayey soil within the proposed building sites.
2. Soil with a high organic content at the finished subgrade of the building pads.
3. Any other unforeseen conditions that would require remedial action by the Geotechnical engineer, project engineer, architect or contractor.

XI. CONCLUSIONS AND RECOMMENDATIONS:

From our field observations, analysis of the test data, and knowledge of the general area soils, the following are concluded:

1. The project soil conditions are suitable for the proposed new residence with garage and guest house provided any loose near surface soil is recompacted prior to excavating for the new building foundations or finishing the subgrade of the building pads as recommended in Sections V and VIII herein.

2. Design criteria for a spread footing foundation system are provided in Sections IV and V. Design criteria for any future retaining walls are provided in Section VII. Design criteria for concrete slabs-on-grade are provided in Sections IV, V and VIII herein.

3. Surface storm water runoff should be carefully controlled around the proposed building pads and foundations to provide positive drainage away from any building foundations as discussed in Section VI herein.

4. The Geotechnical engineer should review the building and site grading plans for compliance with the recommendations herein and may provide additional specific recommendations for surface or subsurface drainage. The Geotechnical engineer shall inspect and approve all new foundation footing excavations.

5. Grading and compaction specifications and specifications for new concrete floor slabs-on-grade are provided in Section VIII herein.

6. Seismic considerations are discussed, and geoseismic design coefficients are provided in Section IX herein per the 2016 CBC. The potential for damaging earthquake related liquefaction is considered to be low to moderate at the project site.

XII. LIMITATIONS:

This report necessarily assumes that the subsurface conditions are as found in the borings. It should be recognized that the soil conditions described in this report are based on two borings and our knowledge of the general area soils. It must be understood that subsurface soil conditions can vary between borings and from site to site. If any unusual soil conditions are found during grading, installation of underground utilities or building construction, the Geotechnical engineer should be notified immediately so that remedial action can be taken (see Section X).

This report is issued with the understanding that it is the responsibility of the Owners or their representative to ensure that the applicable provisions of the recommendations contained herein are incorporated into the plans and specifications and that the necessary steps are taken to see that contractors and subcontractors carry out such provisions in the field. The use of this report, its contents or any part thereof, by a party or its agents, other than Russ Wolske and Heather Clifton, their engineer, architect, contractor or designated

agents, is hereby disallowed unless specific permission is given to do so by Soil Surveys Group, Inc. This investigation and report were prepared with the understanding that a new single family residence with detached guest house is to be constructed as shown on the Figure II map enclosed herein. The use of this report, boring logs and laboratory test data shall be restricted to the original use for which they were prepared and publication by any method, in whole or in part, is prohibited without the written consent of Soil Surveys Group, Inc. Title to the designs remains with Soil Surveys Group, Inc. without prejudice. Visual contact with this report and drawings constitutes prima facie evidence of the acceptance of these restrictions.

Soil Surveys Group, Inc. will not take responsibility for or assume any liability for the recommendations made in this report unless Soil Surveys Group, Inc. performs the field inspections and testing mentioned herein.

The findings and recommendations of this report are considered valid at the present date. However, changes in the property conditions can occur with the passage of time on this or adjacent properties, whether due to natural processes or the works of man. Therefore, the findings of this report shall be considered valid for a period of not more than three years without being reviewed and updated by Soil Surveys Group, Inc.

N

BASE: U.S. Geological Survey, Seaside and Spreckels 7.5' Quadrangles, Carmel Valley, CA

FIGURE I: VICINITY MAP

SCALE
1" = 2000'

Job #6814

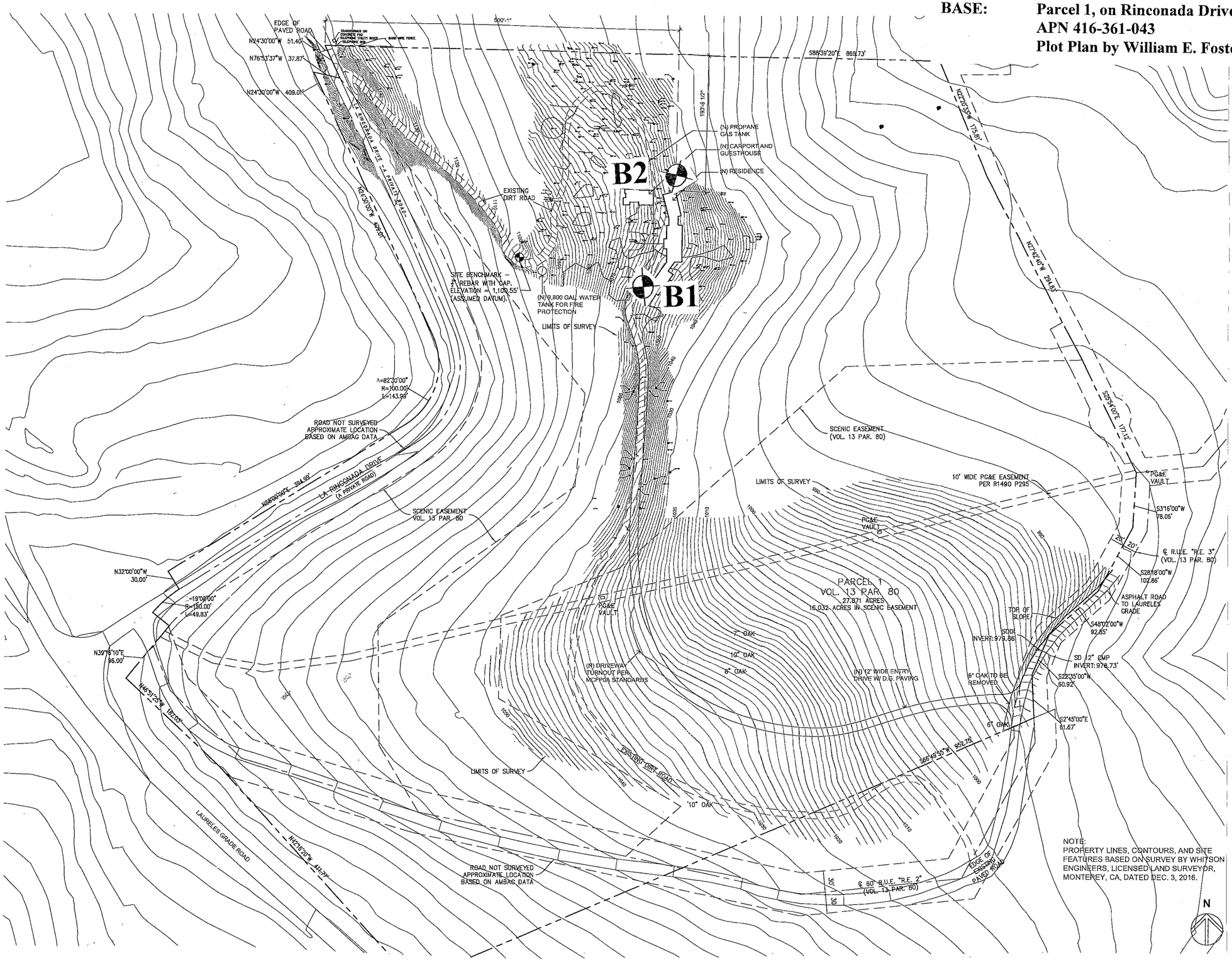
By: Soil Surveys Group, Inc.
103 Church Street
Salinas, CA 93901
831-757-2172

BASE: **Parcel 1, on Rinconada Drive, Carmel Valley**
APN 416-361-043
Plot Plan by William E. Foster Architecture, December 2016 - Job #6814

FIGURE II

Boring Locations (approx.)

By: **Soil Surveys Group, Inc.**
103 Church Street
Salinas, CA 93901
ph. 831-757-2172
fax 831-755-7330
email: info@soilsurveys.net



NOTE:
PROPERTY LINES, CONTOURS, AND SITE FEATURES BASED ON SURVEY BY WHITSON ENGINEERS, LICENSED LAND SURVEYOR, MONTEREY, CA, DATED DEC. 3, 2016.

NO SCALE

APPENDIX A
BORING LOGS

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS — LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

GRAIN SIZES

U.S STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4"	3"	12"	
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FT*
VERY LOOSE	0 - 4
LOOSE	4-10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	STRENGTH**	BLOWS/FT*
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

*Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1 3/8 inch I.D) split spoon (ASTM D-1586)

** Unconfined compressive strength in tons/ft^2 as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation

FIGURE NO. KEY TO LOGS

EXPLORATION DRILL LOG

HOLE NO. B-1

PROJECT Parcel 1, Rinconada Drive - Carmel Valley | Job #6814 | DATE 2.28.17 | LOGGED BY JG

DRILL RIG Central Coast B-53 | HOLE DIA. 5" | SAMPLER Terzaghi Split Spoon (SPT) & 2½"Cal

GROUNDWATER DEPTH: | INITIAL --- | FINAL --- | HOLE ELEV. ---

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	DRY DENSITY (pcf)	WATER CONTENT %	LIQUID LIMIT	PLASTIC LIMIT	POCKET PEN. (tsf)
Grass/dark brown, silty, sandy CLAY with scattered	CL								
fine gravels and organics; moist to wet, soft		1							
Dark grey, light reddish-yellow, dark brown, sandy,	CL/ML		SPT						
silty CLAY with fractured shale gravels; moist,		2							
soft/firm			XXX	4	45.8	42.1	63	43	>4.5
		3							
Olive-tan, dark brown, reddish-yellow tan, clayey	ML		2½"Cal						
SILT with fractured shale gravels; wet, soft		4	XXX	4 (2)	63.1	38.3	64	44	3.25
			XXX	5 (3)	66.5	39.3	58	43	3.5
Light grey, light tan, sandy, clayey SILT with iron	ML	5	SPT						
staining and fractured shale gravels; moist, very stiff									
		6	XXX	17	59.2	31.6			1.0
Increase in density at 6.5 feet (harder drilling)	ML	7							
		8							
		9							
		10							
Light tan, light greyish-tan, weathered, siliceous	ML		2½"Cal						
SHALE with iron staining and thin veins of dark		11	XXX	31 (19)	64.6	36.8	103	46	>4.5
brown, dark grey clay; moist, very stiff			XXX	52 (31)	69.0	44.8			>4.5
Light tan, light greyish-tan, weathered, siliceous	ML	12	SPT						
SHALE with iron staining and thin veins of dark									
brown, dark grey clay; moist, hard		13	XXX	50	53.9	36.8			2.0
		14							
		15							
Light greyish-olive tan, fractured siliceous SHALE;	ML		SPT						
slightly moist, hard		16							
			XXX	50	50.6	37.5			---
		17							
		18							
		19							
Same	ML	20							

DEPTH 31.0'

SOIL SURVEYS GROUP, INC.

EXPLORATION DRILL LOG

HOLE NO. B-1 CONTINUED

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	DRY DENSITY (pcf)	WATER CONTENT %	LIQUID LIMIT	PLASTIC LIMIT	POCKET PEN. (tsf)
Light tan, light greyish-tan, fractured, siliceous	ML		SPT						
SHALE; slightly moist, very stiff		21							
			XXX	30	46.6	49.2			1.5
Light tan, light greyish-tan, fractured, siliceous	ML	22	SPT						
SHALE; slightly moist, hard									
		23	XXX	37	41.2	41.4			2.0
		24							
		25							
Light grey, siliceous SHALE; slightly moist, hard	ML		SPT						
		26							
			XXX	40	35.7	44.0			---
		27							
		28							
		29							
		30							
Light tan, light yellowish-reddish tan, siliceous	ML		SPT						
SHALE with thin veins of dark grey clay; slightly	ML	31	XXX	82	43.7	42.2			---
moist, very hard. Bottom of boring at 31.0'									
		32							
		33							
		34							
		35							
		36							
		37							
		38							
		39							
		40							
		41							
		42							

DEPTH 31.0' Job #6814 SOIL SURVEYS GROUP, INC.

EXPLORATION DRILL LOG

HOLE NO. B-2

PROJECT Parcel 1, Rinconada Drive - Carmel Valley | Job #6814 | DATE 3.28.17 | LOGGED BY JG

DRILL RIG Cenozoic Portable | HOLE DIA. 6" Solid Flight | SAMPLER Terzaghi Split Spoon (SPT) & 2½"Cal

GROUNDWATER DEPTH: | INITIAL --- | FINAL --- | HOLE ELEV. ---

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	DRY DENSITY (pcf)	WATER CONTENT %	LIQUID LIMIT	PLASTIC LIMIT	POCKET PEN. (tsf)
Grass/dark brown, silty CLAY; moist, soft	CL								
		1	2½"Cal						
Light gray & tan fractured siliceous shale GRAVEL	GP		XXX	7(4)	47.9	51.4			2.5
with dark brown silty clay; moist, loose		2	XXX	9(5)	52.2	48.9			1.0
Light olive-tan fractured shale GRAVEL with thin	GP		SPT						
lenses of dark brown clay; slightly moist, medium		3							
dense			XXX	14	46.0	52.3			2.5
		4							
		5							
Reddish-yellow tan SHALE with thin veins of gray	ML		SPT						
clay; moist, hard		6							
			XXX	34	48.6	51.3			2.75
		7							
		8							
		9							
		10							
Light reddish-yellow tan and dark gray fractured	ML		SPT						
SHALE; slightly moist, very stiff		11							
			XXX	25	61.1	35.6			4.5
		12							
		13							
		14							
		15							
Light reddish-tan, dark gray siliceous, fractured	ML		SPT						
SHALE; slightly moist, hard		16							
			XXX	91/9"	68.5	40.0			3.0
		17							
		18							
		19							
Same	ML	20							

DEPTH 20.83'

SOIL SURVEYS GROUP, INC.

EXPLORATION DRILL LOG

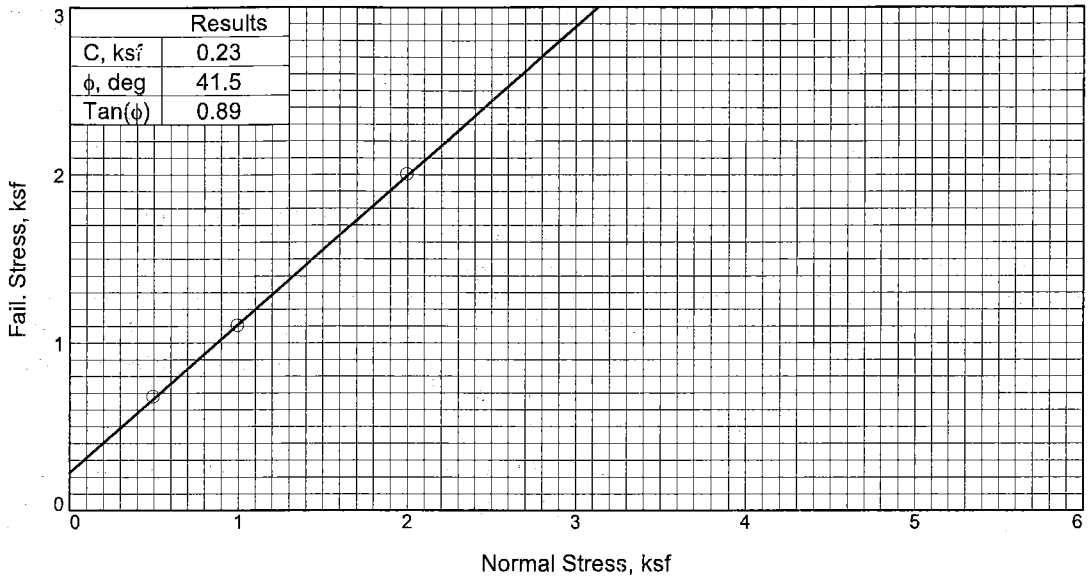
HOLE NO. B-2 CONTINUED

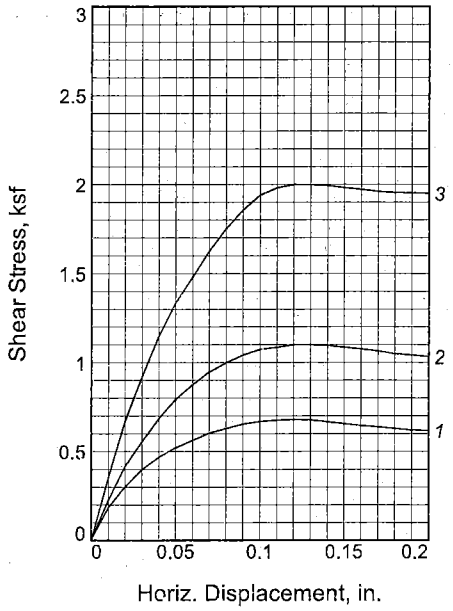
DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	DRY DENSITY (pcf)	WATER CONTENT %	LIQUID LIMIT	PLASTIC LIMIT	POCKET PEN. (tsf)
Reddish-tan, light gray dark gray siliceous, fractured	ML		SPT						
SHALE; moist, hard. Bottom of boring at 20.83'	ML	21	XXX	75/10"	67.5	36.3			---
		22							
		23							
		24							
		25							
		26							
		27							
		28							
		29							
		30							
		31							
		32							
		33							
		34							
		35							
		36							
		37							
		38							
		39							
		40							
		41							
		42							

DEPTH 20.83' Job #6814 SOIL SURVEYS GROUP, INC.

APPENDIX B

DIRECT SHEAR TEST FROM NEARBY SITE





Sample No.		1	2	3
Initial	Water Content, %	30.3	30.3	30.3
	Dry Density, pcf	76.6	76.6	76.8
	Saturation, %	76.1	76.2	76.5
	Void Ratio	0.9553	0.9547	0.9515
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	35.8	35.4	35.7
	Dry Density, pcf	76.7	76.7	76.9
	Saturation, %	90.0	89.3	90.3
	Void Ratio	0.9546	0.9528	0.9491
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		0.50	1.00	2.00
Fail. Stress, ksf		0.68	1.10	2.00
Displacement, in.		0.11	0.12	0.12
Ult. Stress, ksf				
Displacement, in.				
Strain rate, %/min.		0.02	0.02	0.02

Sample Type: Mod.Cal.
Description: Very dense,dark brown clayey SAND(SC).*

Assumed Specific Gravity= 2.40
Remarks: *Diatomeceous

Plate _____

Client: Soil Surveys Group,Inc.

Project:

Location: B-1
Depth: 1.67-2.17'
Proj. No.: 6789 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Soil Mechanics Lab
Oakland, California

Tested By: MA

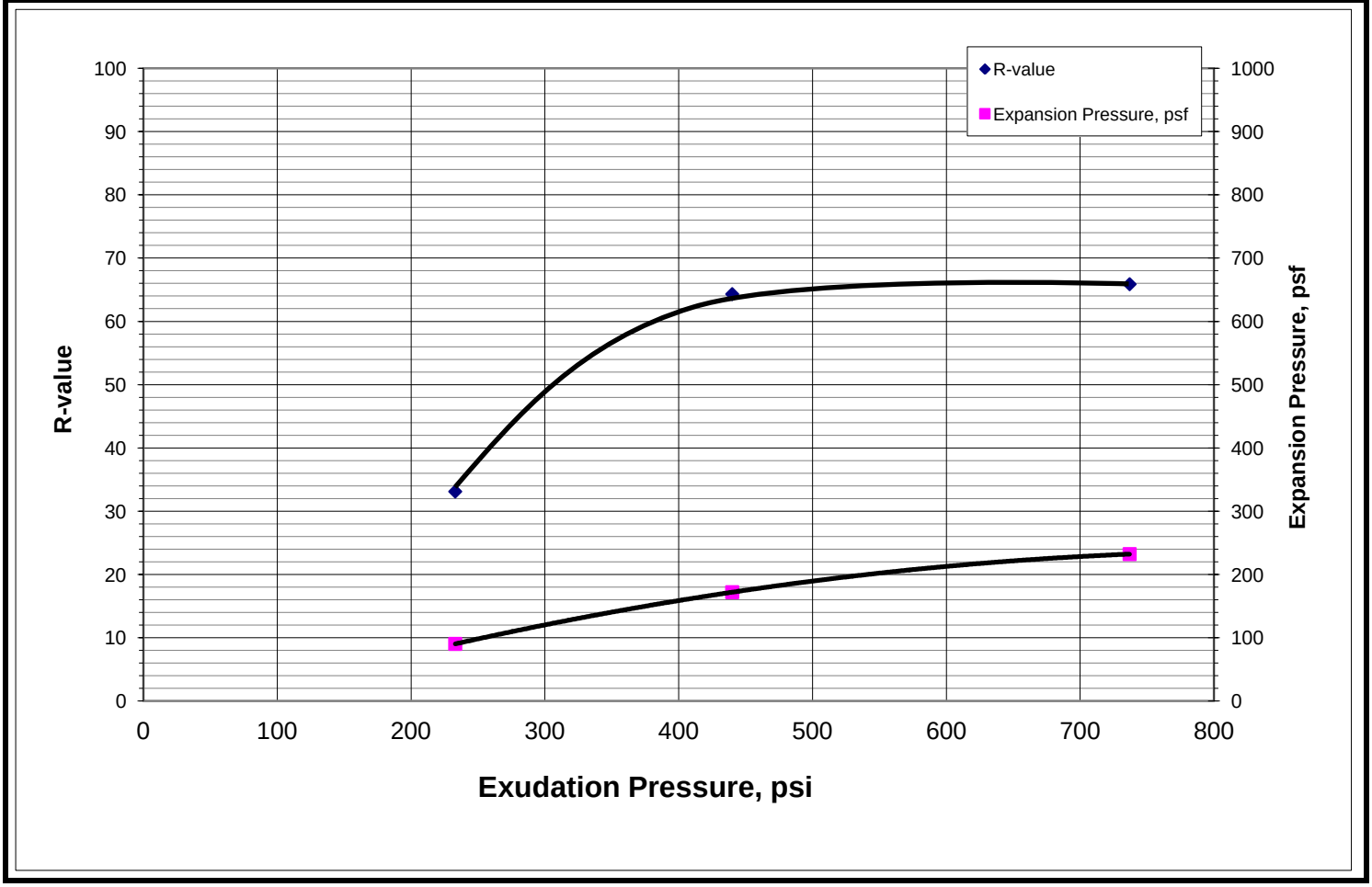
APPENDIX C

R-VALUE TEST

R-value Test Report (Caltrans 301)

Job No.:	699-051	**Date:**	03/16/17	**Initial Moisture,**	38.7
Client:	Soil Surveys Inc.	**Tested**	PJ	**R-value**	**48**
Project:	Riconada Drive - 6814	**Reduced**	RU		
Sample	1 @ 0.5-1.0'	**Checked**	DC	**Expansion Pressure**	**120** **psf**
Soil Type:	Very Dark Brown Sandy CLAY				

Specimen Number	A	B	C	D	**Remarks:**
Exudation Pressure, psi	233	737	440		
Prepaired Weight, grams	1200	1200	1200		
Final Water Added, grams/cc	80	45	59		
Weight of Soil & Mold, grams	2887	2832	2882		
Weight of Mold, grams	2083	2106	2099		
Height After Compaction, in.	2.50	2.33	2.44		
Moisture Content, %	47.9	43.9	45.5		
Dry Density, pcf	65.9	65.6	66.9		
Expansion Pressure, psf	90	232	172		
Stabilometer @ 1000					
Stabilometer @ 2000	104	40	46		
Turns Displacement	2.72	3.32	3.24		
R-value	33	66	64		



BIOLOGICAL ASSESSMENT

26735 Laureles Grade, Carmel Valley - APN 416-361-043
Clifton-Wolske Property

April 22, 2017

Prepared By:
Nicole Nedeff
Consulting Ecologist
P.O. Box 1525, Carmel Valley, CA 93924
831.320.9463 – nikki@ventanaview.net

Prepared For:
William E. Foster, Architect
716 Lighthouse Avenue, Suite F
Pacific Grove, CA 93950
831.373.7000 – bill@fosterarchs.com

April 24, 2017

PROPERTY PROFILE

DATE: April 24, 2017

PREPARED BY: Nicole Nedeff, Consulting Ecologist, P.O. Box 1525, Carmel Valley, CA 93924
nikki@ventanaview.net, 831.320.9463

SITE NAME: Clifton-Wolske parcel

SITE VISITS: January 29, 2017 and April 22, 2017

PHYSICAL ADDRESS: 26735 Laureles Grade, Carmel Valley. Undeveloped parcel adjacent to Rinconada Road and Laureles Grade.

APN and ACREAGE of SUBJECT PROPERTY: APN 416-361-043; 27.87 acres

USGS QUAD: Parcel straddles both the Seaside and Spreckles 7.5' quadrangles, T16S, R2E, unsurveyed section.

OWNER: Heather Clifton and Russ Wolske, 1911 Hopkins Ave., Redwood City, CA 94062

OWNER REPRESENTATIVE: William E. Foster, Architect, 716 Lighthouse Avenue, Suite F, Pacific Grove, CA 93950. bill@fosterarchs.com, 831.373.7000

MONTEREY COUNTY ZONING and PRESENT LAND USE: Parcel is zoned RDR/5.1-VS (Rural Density Residential, with a 5.1-acre per lot minimum and a Visual Sensitivity Overlay), Toro Planning Area. A portion of the parcel is designated a Scenic Easement.

PROJECT DESCRIPTION: Residential development plans have been prepared by William E. (Bill) Foster, the project Architect. Plans include driveway access, single-family residence, carport, guesthouse, swimming pool and 9,800-gallon water tank for fire protection. The proposed project is typical of other residential development in the surrounding unincorporated County lands. The total area impacted by the project is 54,813 square feet (1.258 acres), which includes all structures (3,978 square feet) and impervious surfaces (50,835 square feet) consisting of the driveway, parking areas, patios, planters and swimming pool.

HABITAT IN PROJECT AREA: The residence will be situated in Coast Live Oak Woodland, with driveway access through Northern Coastal Scrub and disturbed, ruderal habitat.

SIGNIFICANT BIOLOGICAL ATTRIBUTES IN PROJECT AREA:

- √ Monterey Dusky-footed Woodrat (*Neotoma fuscipes luciana*), California State Species of Concern
- √ Coast Live Oak Woodlands (A Tree Resource Evaluation/ Protection Plan has been prepared by Arborist Maureen Hamb, April 2017)
- √ Some areas with slopes in excess of 25%

PROJECT AREA

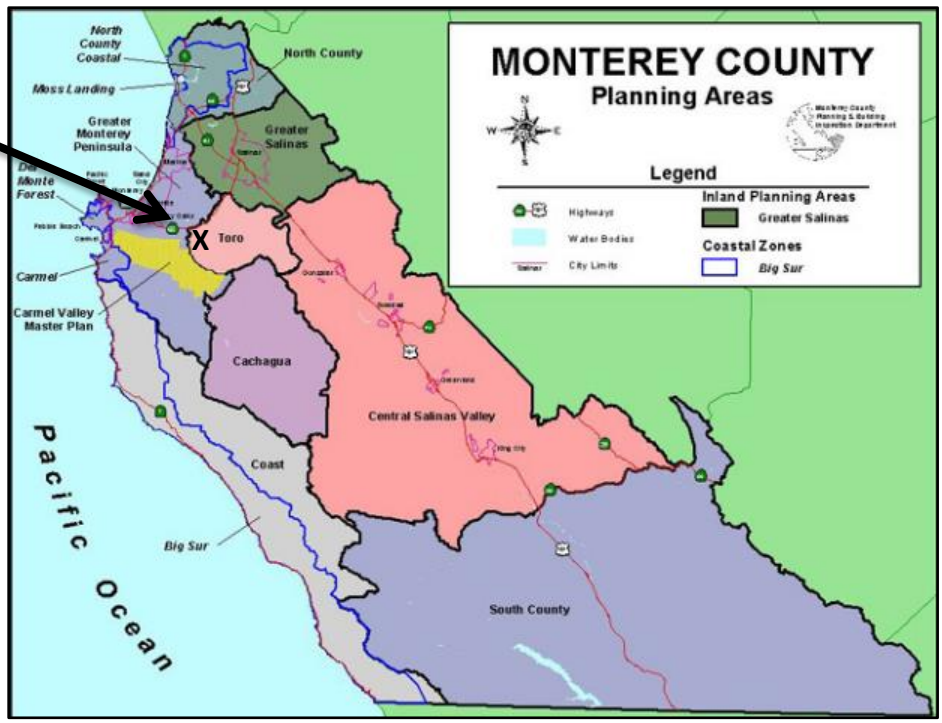


Figure 1 – Project site location in the Toro Planning Area adjacent to Laureles Grade.

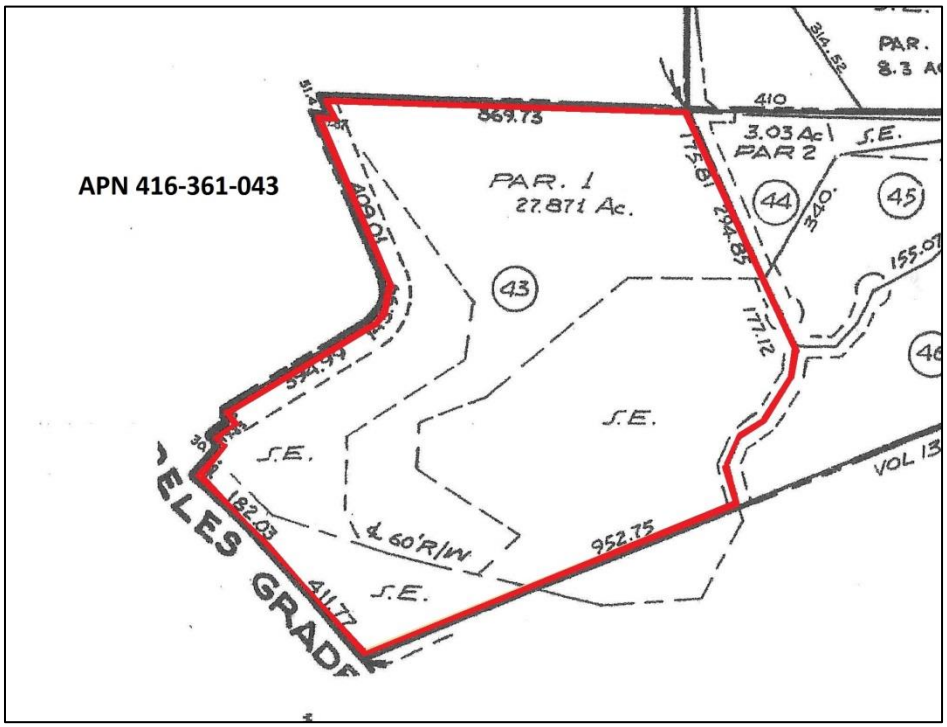


Figure 2 – Assessor's parcel map, APN 416-361-043

I. SUMMARY

In January 2017, I was contacted by Architect William E. (Bill) Foster and retained by his clients Heather Clifton and Russ Wolske to prepare a Biological Assessment for undeveloped land between Laureles Grade and Rinconada Road near the summit of Laureles Grade. The following report describes current biological conditions on APN 416-361-043, the 27.87-acre Clifton-Wolske property, and outlines a strategy for the replacement of 33 coast live oak trees that are proposed for removal pursuant to the development of the Clifton-Wolske residence.

Active nests of the special status Monterey Dusky Footed Woodrat were observed on the property during field survey for this report, however no nests were documented in the footprint of the proposed residential development. Impacts to Oak Woodlands and tree protection specifications are detailed in the report prepared by Arborist Maureen Hamb, April 2017. No other sensitive, or special status species of plants or wildlife were noted within the proposed residential development footprint.

Implementation of the recommendations outlined in this Biological Assessment will reduce environmental impacts associated with proposed new residential development on APN 416--361-043 to a less than significant level.

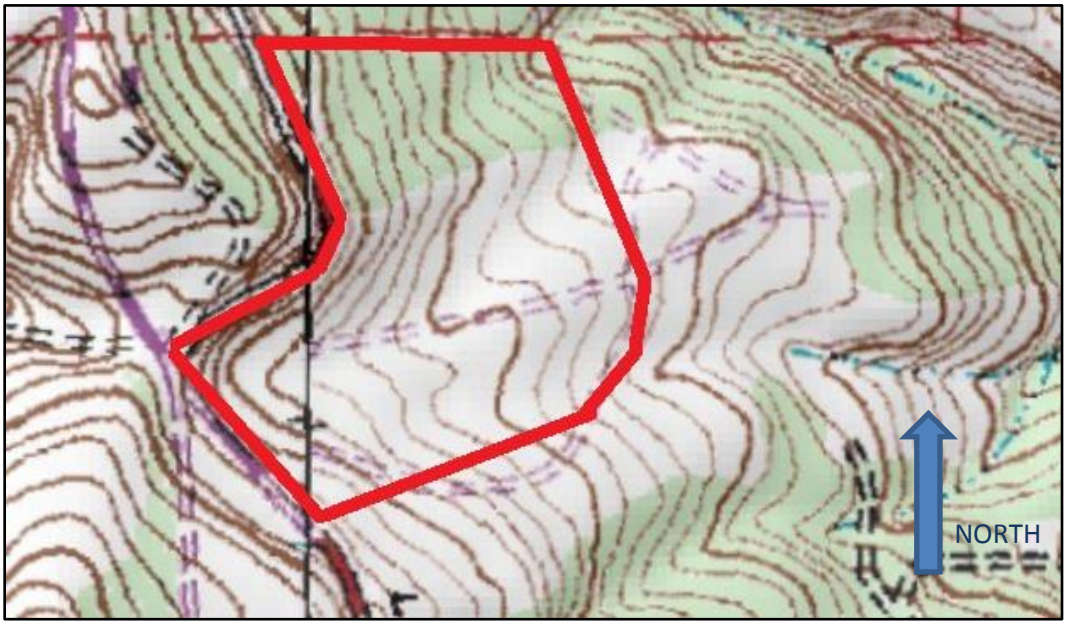


Figure 3 – Topographic map with approximate boundary of subject parcel.

II. SURVEY METHODS

Local maps, literature references, Internet-based searches and consultations with knowledgeable individuals were used during the preparation of this Biological Assessment. Floristic field survey methods utilized in the Biological Assessment conform to protocols outlined by the California Department of Fish and Wildlife (November 2009). The purpose of the statewide survey protocols is to facilitate a comprehensive, consistent and systematic approach for the identification of plants, natural communities and special status elements in project areas. The goal is to produce reliable information and maximize the potential for locating special status species and natural communities.

Field assessment for the Biological Assessment focused on the following objectives:

- Identify and map natural communities
- Locate and map special status plants and wildlife species
- Identify and map significant biological features
- Identify potential oak replacement sites

Botanical and habitat surveys were conducted on January 29, 2017 and April 22, 2017. Botanical and habitat surveys around and through the project area and surrounding natural habitats were conducted on foot. The spring 2017 survey period was appropriate for the identification of common indicator species, as well as the uncommon herbaceous plants and shrubs found in the Laureles Grade area between Carmel Valley and the Highway 68 corridor. Where a positive identification of a plant species could not be made, the plant taxon was simply identified to genus. All species noted in the plant list for the property were observed by the author of this report.

To identify known and potential element occurrences of special status habitats, plants and wildlife species, a records search was initiated with the California Department of Fish and Wildlife – California Natural Diversity Data Base (CNDDB). CNDDB classifies and maps occurrences of taxa and natural communities considered uncommon, special or listed by either the state or federal government. CNDDB data and maps for the general Laureles Grade area, and in particular the vicinity of the subject parcel, were consulted prior to field survey of the Clifton-Wolske property.

The California Department of Fish and Wildlife (CDFW) RareFind and BIOS data base, as well as the List of Special Animals (2008), were reviewed online for information on sensitive plant and wildlife species in the project area. Appendix A lists the biologically significant element occurrences noted by CNDDB for the general inland region surrounding the subject parcel.

The California Native Plant Society web-based "Inventory of Rare and Endangered Vascular Plant Species" was also consulted to identify occurrences and rarity rankings of special status plant species in the region surrounding the subject property.

Based on the presence of typical Coast Live Oak Woodlands and Northern Coastal Scrub vegetation in the project vicinity, and considering the CNDDB records of documented special status species occurring near the subject property, the project area and surrounding undisturbed habitat areas were specifically surveyed for the following special status plants and animals:

- Smith's Blue Butterfly, *Euphilotes enoptes smithii* (Federally Endangered)
- Monterey Dusky-footed Woodrat, *Neotoma fuscipes luciana*
- Pacific Grove clover, *Trifolium polyodon* (California Rare, CNPS 1B.1)
- Santa Cruz clover, *Trifolium buckwestiorum* (CNPS 1B.1)
- Congdon's tarplant, *Centromadia parryi* (CNPS 1B.1)
- Toro manzanita, *Arctostaphylos montereyensis* (CNPS 1B.2)
- Carmel Valley bushmallow, *Malacothamnus palmeri* var. *involucratus* (CNPS 1B.2)
- Santa Cruz microseris, *Stebbinsoseris decipiens* (CNPS 1B.2)
- Jolon clarkia, *Clarkia jolonensis* (CNPS 1B.2)

III. SURVEY RESULTS

Scientific nomenclature for plants described in this report follows protocols used in Matthews and Mitchell (2015), and Baldwin, et al. (2012). A list of CNDDB special status species in the project vicinity is presented in Appendix A. Appendix B includes a list of all plant species observed in the project area.

A. Special Status Species –

1. Animals: Two Monterey Dusky-footed Woodrat stick nests were observed both in the Oak Woodland and Northern Coastal Scrub natural communities on the subject parcel, however no active nests were documented in the proposed residential development footprint. Monterey Dusky-footed Woodrat (*Neotoma fuscipes luciana*, aka *Neotoma macrotis luciana*) is a nocturnal rodent considered a Species of Concern by both the federal Fish and Wildlife Service and the California Department of Fish and Wildlife. The population of this native rat is distributed in woodland, forest, scrub and chaparral habitat types between Monterey and Point Conception. Woodrats are identified most easily by the presence of their large, mounded nests built out of sticks and fresh twigs. Nests are often grouped in clusters, with occupied, active nests exhibiting a "sharper" profile and fresh, woody material placed at the apex of the stick pile.

No Smith's Blue Butterfly (*Euphilotes enoptes smithi*) appears to be present in the general vicinity, and no buckwheat host plants (*Eriogonum parvifolium*) for the federally endangered butterfly were observed during field survey. No other special status species of wildlife were observed in the project area, or in the immediate vicinity.

2. Plants: Specific uncommon and/or listed plants known from the general Laureles Grade area were surveyed for during field work for the project in January 2017 and again in April 2017. A number of plants known from the general project region are considered special status species based on their California Native Plant Society rare plant ranking. All of the plants constituting California Rare Plant Rank 1B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and are eligible for state listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as these plants meet the definition of Rare or Endangered under CEQA Guidelines §15125; (c) and/or §15380.

No special status plant species were observed anywhere on the subject parcel.

Please refer to Appendix A for the list of Special Status Plants and Wildlife known from the general region surrounding the proposed Clifton-Wolske residential development.
Please refer to Appendix B for a list of plant species observed on the subject property.

B. Special Status Natural Communities –

Northern Coastal Scrub as a vegetation type is not considered a rare, uncommon or special status plant community by the California Department of Fish and Wildlife. However, Northern Coastal Scrub can support a variety of special status shrubs, forbs and grass species. These species were not observed on the Clifton-Wolske property.

Monterey County encourages the preservation of Oak Woodlands and oak tree removal must be kept to the minimum necessary. Zoning Ordinance 21.64.260 specifically states that, "No oak or madrone tree six inches or more in diameter two feet above ground level shall be removed in the North County Area Plan or Toro Area Plan areas without approval of the permit(s) required in Subsection 21.64.240D". Replacement planting must be achieved at a 1:1 ratio for each 6-inch and greater diameter oak removed. In addition, Monterey County has "Voluntary Oak Woodland Stewardship Guidelines" that were prepared in September 2009.

The "Tree Resource Evaluation, Project Impact Analysis and Tree Protection Plan" prepared by Arborist Maureen Hamb describes impacts to 33 coast live oaks in the project footprint. Ms. Hamb also recommends protective measures for other oaks within close proximity to the construction site. Ms. Hamb notes in her report that appropriate areas for replanting oaks will be identified by the project Biologist. A tree replacement strategy is presented in Section V of this report.

Figure 4 – Vegetation map of Clifton-Wolske property, with red "X" at proposed home site.

IV. PROPERTY DESCRIPTION and EXISITNG CONDITIONS

The 27.87-acre Clifton-Wolske property (subject, APN 416-361-043) is primarily undeveloped, however at some point in the past, Northern Coastal Scrub in the lower (easterly) portion of the parcel was mowed or masticated and portions of the Oak Woodland area where the residence is proposed was partially cleared of understory vegetation.

Access to the proposed building site is provided by a pre-existing dirt roadway that roughly bisects the parcel and connects with both Rinconada Road and a paved, private driveway. The pre-existing dirt roadway extends with several switchbacks across slopes in excess of 25% from Rinconada Road on the northwestern corner of the parcel and then downslope to the building pad. This steep section of the dirt road will not provide the primary vehicular access for the residence, however the roadway will likely be used to install a water line to service the home from a municipal Cal-Am point of connection along Rinconada Road.

The existing dirt track extends from Rinconada Road through the entire building pad and then across the lower slope of the property to a private road that borders much of the lot on the southern side. The unnamed, private road is paved and intersects Rinconada Road near Laureles Grade. The unnamed, paved private road and the southern portion of the existing dirt track will serve as the primary vehicular ingress/egress route to the Clifton-Wolske home site. Electricity will be brought in to the residence from an existing PG&E vault situated along the pre-existing roadway near the center of the parcel. Figure 5 is the Architect's Plot Plan, with an outline depicting the main house, carport and guest house. Solid lines depict the course of the proposed driveway.

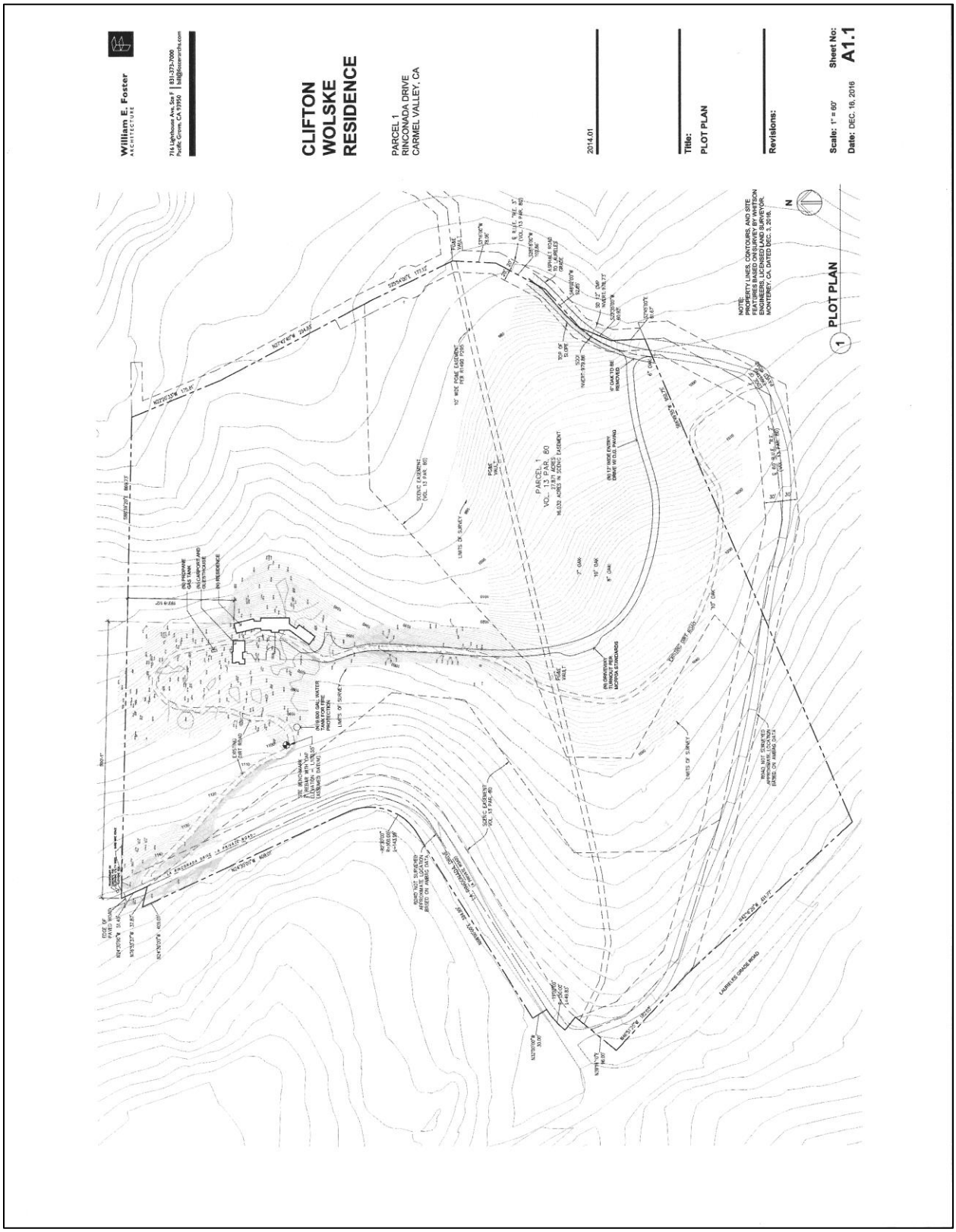
Elevations on the sloping property range from approximately 1150-feet along Rinconada Road to about 995-feet above sea level in the lowest portion of the parcel. The parcel abuts Rinconada Road and Laureles Grade along the north- and southwestern borders, and opens up with expansive views to the east. The property is approximately 3 miles from Carmel Valley Road and 3 miles from Highway 68 along Laureles Grade.

VEGETATION: The 27.87-acre parcel supports approximately 5.5 acres of Oak Woodland habitat. The remainder of the parcel is vegetated with typical Northern Coastal Scrub vegetation and areas of ruderal habitat that speak to past vegetation management. The proposed development footprint includes the residential area, as well as driveway – the residential area is situated within the Oak Woodland habitat, while the majority of the driveway traverses through the Northern Coastal Scrub and ruderal habitat.

Residential development is proposed on a sloped building pad within the Oak Woodland. The forest vegetation in this area is described by Arborist Maureen Hamb in her report (page 2):

> The trees are mainly small diameter, short-statured trees. The average diameter is 10 inches. In general the trees are in fair condition. Canopy development is sparse with lower and interior branching that is suppressed by the dense forest condition.

Ms. Hamb notes that 33 oak trees will need to be removed to develop the site as proposed. Other oaks in close proximity to the development area will be protected by straw bale barricades and exclusionary fencing. Replacement of trees removed for construction is proposed at a 1:1 ratio, however no specific areas on the property were identified in the Hamb report as potential oak "restoration" sites.


William E. Foster
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CLIFTON
WOLSKE
RESIDENCE
PARCEL 1
RINCONADA DRIVE
CARMEL VALLEY, CA
2014.01
Title:
PLOT PLAN
Revisions:
Scale: 1" = 60'
Date: DEC. 16, 2016
Sheet No:
A1.1
1 PLOT PLAN
NOTE
PROPERTY LINES, CONTOURS, AND SITE
FEATURES BASED ON SURVEY BY WHITSON
ENGINEERS, LICENSED LAND SURVEYOR,
MONTEREY, CA, DATED DEC. 1, 2016
N
PARCEL 1
VOL. 13 PAR. 80
27.81 ACRES
16.032 ACRES IN SCENIC EASEMENT
LIMITS OF SURVEY
EXISTING DIRT ROAD
CARMELITE GRADE ROAD
ROAD NOT SURVEYED
APPROXIMATE LOCATION
BASED ON AERIAL DATA
10' WIDE POLE EASEMENT
PER 91-490 P290
STOVE EASEMENT
VOL. 13 PAR. 80
(N) PROPANE
GAS TANK
(N) CARPORT AND
STORAGE
(N) RESIDENCE
(N) 20' WIDE ENTRY
DRIVE W/ OLD PAVING
(N) DRIVEWAY
TURNOUT PER
MCFPDA STANDARDS
EXISTING
DIRT ROAD
SITE BENCHMARK
3" REBAR WITH TAG
ELEVATION = 1,135.97'
(ASSUMED DATUM)
(N) 5,000 GAL WATER
TANK W/ FIRE
PROTECTION
LIMITS OF SURVEY
ROAD NOT SURVEYED
APPROXIMATE LOCATION
BASED ON AERIAL DATA
EDGE OF
PAVED ROAD
TOP OF
BANK
TOP OF
BANK
ASPHALT ROAD
TO CARMEL
VALLEY ROAD
GRADE
6" OAK
7" OAK
10" OAK
8" OAK
10" OAK
10" OAK
10

The Oak Woodlands are anchored by coast live oak (*Quercus agrifolia*), with no other tree species observed on the property except one Monterey pine (*Pinus radiata*) and a large blue gum eucalyptus (*Eucalyptus globulus*) along the Laureles Grade right-of-way. The Oak Woodland understory is quite shaded in most places and toyon (*Heteromeles arbutifolia*), coffeeberry (*Frangula californica*), and osoberry (*Oemleria cerasiformis*) occur with wood fern (*Dryopteris arguta*) and creeping snowberry (*Symphoricarpos mollis*). Hound's tongue (*Cynoglossum grande*) was no longer flowering at the time of botanical survey (April 22, 2017), however stinging phacelia (*Phacelia malvifolia* var. l*oasifolia*), blue dicks (*Dichelostemma capitatum*) and bee plant (*Scrophularia californica*) were in full bloom. Oak Woodland habitat covers approximately 5.5 acres of the Clifton-Wolske property, as shown on the vegetation map in Figure 4.

The Northern Coastal Scrub habitat on the subject parcel is shrub-dominated vegetation typical of coastal areas that experience the regular marine influence of fog. Vegetation includes coyotebrush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), deerweed (*Acmispon glaber*), coastal sagebrush (*Artemisia californica*) and redberry (*Rhamnus crocea*). Areas where the Coastal Scrub vegetation was masticated or mowed in the past have become infested with non-native, invasive French broom (*Genista monspessulana*) and a variety of invasive thistles, including milk thistle, Italian thistle and bull thistle (*Silybum marianum, Carduus pycnocephalus, Circium vulgare*). Scattered throughout the Northern Coastal Scrub community are various clovers (*Trifolium* spp.), California poppies (*Eschscholzia californica*) and a variety of annual, non-native grasses. Several notable patches of the native, perennial bunchgrass little California melica (*Melica imperfecta*) occur within the matrix of largely non-native forbs and grasses.

Figure 6 – Northern Coastal Scrub vegetation along proposed driveway route, with annual, non-native grass understory.

V. OAK RESTORATION STRATEGY

The development of the Clifton-Wolske property will result in the loss of 33 coast live oak trees, which will be replaced at a 1:1 ratio. Seedling trees should be propagated from acorns collected on-site during the fall, as indigenous genetic strains of oaks are uniquely adapted to local microclimates and soils. The short, stunted stature of the oaks on the subject parcel may reflect ecotype variability and maintaining those genetic traits will be accomplished by using local acorns for the revegetation component of the development project.

A. Fundamental Guidelines – recommendations to minimize environmental impacts during construction:

1. The construction work site should be delineated with drift fencing to identify the limits of proposed work within the Oak Woodland habitat. No equipment access should be provided to areas within the fenced zone in order to minimize impacts to Dusky-footed Woodrat nests, remaining coast live oaks, understory species and undisturbed habitat outside the footprint of the project development area.

2. Oaks within the drift fence that are situated at the margin of the work zone should be protected with straw bakes and additional exclusionary fencing. Care should be taken during grading activities to protect remaining oak tree roots from being damaged. At no time should graded material be placed against the base of tree stumps, or under the canopies of oaks. Elevating the soil level under the oak canopy may disrupt the uptake of moisture and nutrients, and can compress soil in the root zone.

3. Stage and remove oak tree and vegetative biomass from the work site and dispose of properly.

4. Remove and aggressively control non-native, invasive plant species throughout the work site and dispose of in appropriate containers, specifically thistles and French broom. Disturbed soils and bare ground in locations outside of the development footprint should be immediately seeded and mulched to avoid contamination by non-native weedy plant species. Native, perennial grass seed should be used for seeding and sourced locally – purple needle grass (*Stipa pulchra*) is an appropriate native grass seed for the subject parcel.

B. Coast Live Oak Planting Guidelines:

1. Indigenous acorns from the Clifton-Wolske property should be collected in Fall months when the nuts are mature. Seedlings can be propagated on-site, or by a local native plant nursery for the land owners. Acorns should be started in tall 1-gallon tree-pots to promote root growth and viable seedlings should be out-planted during fall months prior to the onset of winter rain. It is possible that acorn collection will be deferred until Fall 2018, depending on the acquisition of project permits. Seedling development could take more than one growing season before the juvenile oaks are ready to be out-planted. Ideally, acorns will be collected in Fall 2017 and seedlings out-planted in late Fall 2018 or Winter 2019.

2. The oak planting areas should be located in forest canopy gaps and at the margin of the existing Oak Woodland, particularly where the driveway to the residence enters the canopy of the forest habitat. Soils suitable for sustaining coast live oaks will be found closest to the margin

of the existing canopy – soil chemistry and texture may not be appropriate for oak plantings in areas where Northern Coastal Scrub dominates, however a number of oak seedlings may be planted in various locations along the driveway in random groupings. Individual seedlings should not be planted within 10 feet of other seedlings or mature oak trees. A conceptual planting plan is presented in Figure 7 for the 1:1 planting mitigation, however a qualified Biologist, or Arborist should supervise the placement of seedling trees for the land owners and create a detailed map of tree seedling locations when planting is completed.

3. Seedlings should be planted in gopher-proof baskets to deter root herbivory, and each seedling should be marked and numbered for easy identification. Seedlings will likely need to be hand-watered during the spring and summer months after planting, particularly if dry conditions prevail. Soils should be damp at the time of planting and during the initial establishment period for the juvenile oak trees.

4. A regular maintenance and monitoring program should be implemented by the land owners to maintain the area around each juvenile oak in a weed-free condition. Invasive French broom, poison hemlock and thistles should be removed from the property, to the extent feasible.

C. Success Criteria and Monitoring Schedule: Under ideal conditions, all 33 coast live oak seedlings should survive to maturity, however ideal conditions rarely transpire. A defensible measure of success will be if two-thirds, or 22 trees, survive for three years after planting.

Seedlings should be monitored regularly by the land owners and any signs of herbivory or weakness addressed immediately. A qualified Biologist or Arborist should inspect the planted oaks annually for three years after the seedlings are installed to insure that two-thirds of the trees survive. If less than 22 trees are alive at the time of annual inspection, the trees that did not survive must be replaced and survive for an additional three years after installation. The annual inspection reports should be mailed to the Monterey County Director of Planning.

Coast live oak leaves and acorn

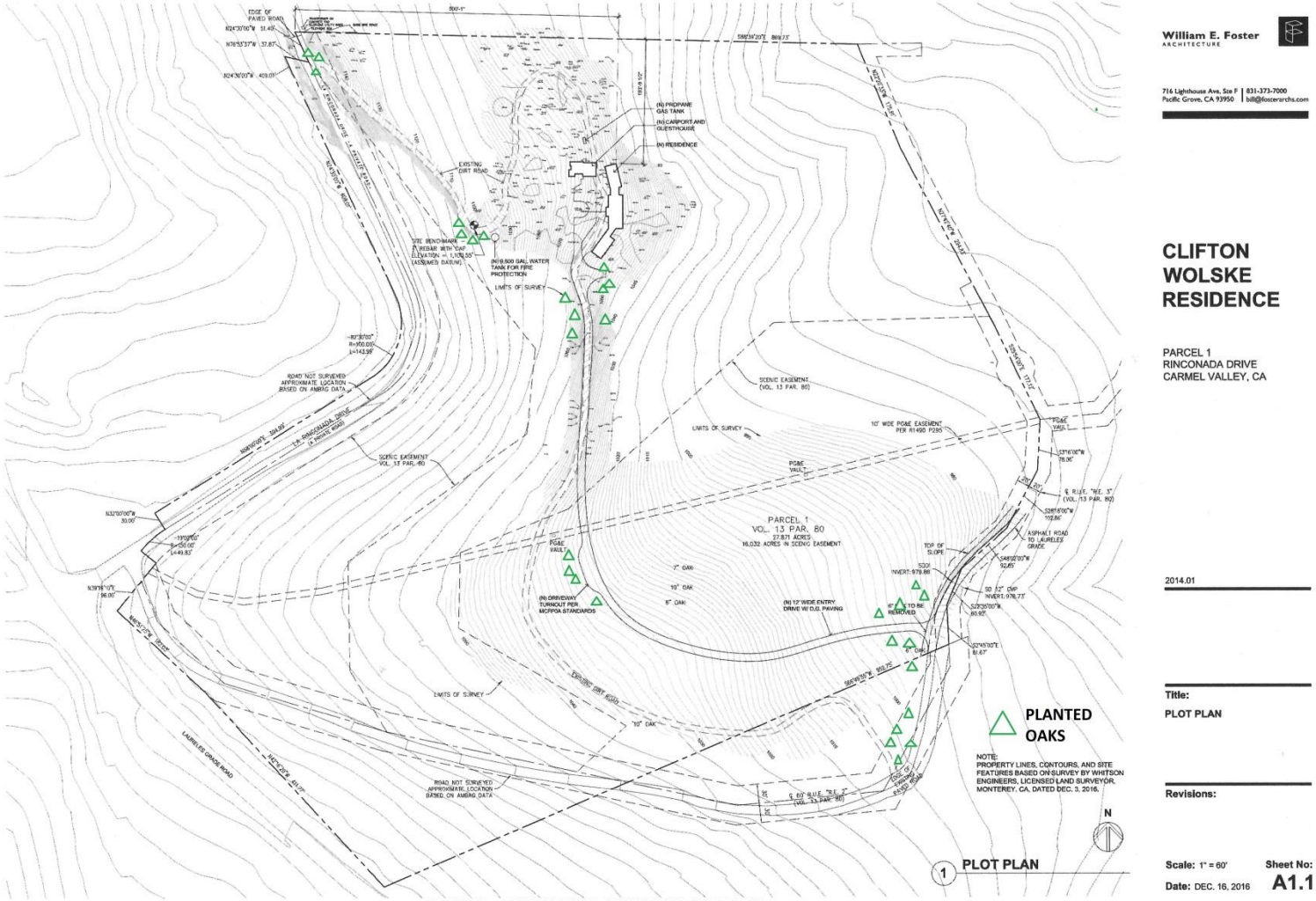

FIGURE 7 - CONCEPTUAL OAK PLANTING PLAN

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APPENDIX A

California Department of Fish and Wildlife, California Natural Diversity Data Base (CNDDB) list of special status species in the vicinity of APN 416-361-043

Scientific Name	Common Name	Federal	State	CNPS	Habitat
PLANTS					
Allium hickmanii	Hickman's onion			1B.2	CP
Arctostaphylos hookeri	Hooker's manzanita			1B.2	MC
Arctostaphylos montereyensis	Toro manzanita			1B.2	MC
Castilleja latifolia	Monterey Indian paintbrush			4.3	CBS, NCS
Ceanothus rigidus	Monterey ceanothus			4.2	MC
Centromadia parryi	Congdon's tarplant			1B.1	CP, G
Cirsium occidentale var. *compactum*	Compact cobwebby thistle			1B.2	NCS, CP
Clarkia jolonensis	Jolon clarkia			1B.2	G
Cordylanthus rigidus ssp. littoralis	Seaside bird's beak		E	1B.1	C,MC,NCS,OW
Delphinium hutchinsoniae	Hutchinson's larkspur			1B.2	C,CP,NCS
Delphinium umbraculorum	Umbrella larkspur			1B.3	OW
Ericameria fasciculata	Eastwood's goldenbush			1B.2	MC, MPF
Hesperocyparis goveniana	Gowen cypress	T		1B.2	MCF
Lomatium parvifolium	small-leaved lomatium			4.2	MC, MPF
Malacothamnus palmeri var. involucratus	Carmel Valley bush mallow			1B.2	NCS
Piperia michaeli	Michael's rein-orchid			4.2	MC, NCS
Plagiobothrys uncinatus	Hooked popcorn flower			1B2	CP
Stebbinsoseros decipiens	Santa Cruz microseris			1B.2	G
Trifolium buckwestiorum	Santa Cruz clover			1B.1	G, CP
Trifolium polyodon	Pacific Grove clover		R	1B.1	CP, MPF
ANIMALS					
Reptiles/Fish/Amphibians					
Ambystoma californiense	California tiger salamander	T	T		ponds, grasslands
Phrynosoma coronatum frontale	Coast horned lizard	SC	SC, CP		G,C,CS,MC
Thamnophis hammondii	Two-striped garter snake	FSS	SC		pools, ponds riparian

Rana aurora draytonii	California red-legged frog	T	FP,SC	ponds, creeks with pools
Taricha torosa torosa	Coast Range newt		SC	creeks with pools, ponds
Mammals				
Lasirius cinereus	Hoary bat			trees, mosaic habitats
Neotoma fuscipes luciana	Monterey dusky-footed woodrat	SC	SC*	CS,OW, riparian,MEF
Taxidea taxus	American badger		SC	G, CP
Birds				
Cypseloides niger	Black swift		SC	cliffs
Dendroica petechia	Yellow Warbler		SC	riparian
Falco mexicanus	Prairie falcon		SC	G,OW,CP, CS, MC
Falco peregrinus anatum	Peregrine falcon		E	cliffs,bridges
Invertebrates				
Bombus caliginosus	Obscure or Fogbelt Bumblebee		SC	MPF,MC,CP, NCS, OW
Danus plexippus	Monarch butterfly winter roost			RW groves
Euphilotes enoptes smithi	Smith's blue butterfly	E		CS

Abbreviations for Status Codes

E = Endangered

SC = Species of Special Concern, * indicates potential status change
CP = Protected under California Code of Regulations
FP = Protected under California Fish and Game Codes
FSS = Forest Service Sensitive Species
1B = Plants rare, threatened or endangered in California and elsewhere
1B.1 = Seriously endangered in California
1B.2 = Moderately endangered in California
1B.3 = Not very endangered in California
4 = Plants of limited distribution in California - A Watch List
4.2 = Fairly Endangered in California
4.3 = Not very endangered in California

Habitat Abbreviations

C = Chaparral
G = Foothill and Valley Grassland
OW = Oak Woodland
CP = Coastal Prairie
NCS = Northern Coastal Scrub
MC = Maritime Chaparral
MPF = Monterey Pine Forest
RW = Redwood Forest
MEF = Mixed Evergreen Forest
MCF = Mixed Coniferous Forest
CBS = Coastal Bluff Scrub
R = Riparian

APPENDIX B

List of Plant Species Observed on APN 416-361-043

Trees:
Eucalyptus globulus, blue gum eucalyptus (one tree)
Pinus radiata, Monterey pine (one tree)
Quercus agrifolia, coast live oak

Shrubs:
Acmispon glaber, deerweed
Artemisia californica, coast sagebrush
Baccharis pilularis, coyotebrush
Diplacus aurantiacus, sticky monkeyflower
Eriophyllum confertiflorum, golden yarrow
Frangula californica, coffeeberry
Genista monspessulana, French broom *
Heteromeles arbutifolia, toyon
Oemleria cerasiformis, oso berry
Rhamnus crocea, redberry
Ribes californicum, hillside gooseberry
Ribes speciosum, fuchsia-flowered gooseberry
Ribes sp., currant (not flowering)
Rubus usrsinus, wild blackberry
Sambucus mexicana, elderberry
Symphoricarpos mollis, creeping snowberry
Toxicodendron diversilobum, poison oak

Forbs and Ferns:
Acmispon parviflorus, small-flowered lotus
Anagallis (Lysimachia) arvensis, scarlet pimpernel *
Anthiscus caucalis, bur-chervil *
Artemisia douglasiana, mugwort
Brassica nigra, black mustard *
Calystegia macrostegia subsp. *cyclostegia*, coast morning-glory
Carduus pycnocephalus, Italian thistle *
Castilleja affinis, coast paintbrush
Chlorogalum pomeridianum, soap plant
Cirsium vulgare, bull thistle *
Claytonia perfoliata, miner's lettuce
Chlorogalum pomeridianum, soap plant
Conium maculatum, poison hemlock *
Cynoglossum grande, hound's tongue
Dichelostemma capitatum, blue dicks
Dryopteris arguta, wood fern
Eschscholzia californica, California poppy
Galium californicum, California bedstraw
Galium porrigens, climbing bedstraw

Geranium disectum, cut-leaved geranium *
Geranium molle, dove's foot geranium *
Horkelia californica, California horkelia
Lathyrus vestitus, pea vine
Lomatium californicum, California lomatium
Lupinus bicolor, miniature lupine
Lupinus nanus, sky lupine
Marah fabacea, wild cucumber
Medicago polymorpha, bur clover *
Pentagramma triangularis, gold-back fern
Phacelia malvifolia, stinging phacelia
Pseudognaphalium californicum, California cudweed
Rumex crispus, curly dock *
Rupertia physodes, California tea
Sanicula crassicaulis, gambleweed
Scrophularia californica, bee plant
Silene gallica, catchfly *
Sonchus oleraceus, sow thistle *
Stachys bullata, woodmint
Sylibum marianum, milk thistle *
Trifolium hirtum, rose clover *
Trifolium wildenovii, tomcat clover
Verbena lasiostachys var. ?, vervian
Vicia sativa, spring vetch *

Grasses and Grass-like Plants:
Aira caryophyllea, silver hair grass *
Avena fatua, wild oats *
Bromus diandrus, ripgut brome *
Bromus hordeaceous, soft chess *
Bromus madritensis, red brome *
Elymus condensatus, giant wild rye
Elymus glaucus, blue wild rye, aka western ryegrass
Festuca myuros, rattail fescue *
Hordeum brachyantherum, California barley
Juncus patens, spreading rush
Melica imperfecta, little California melica

* Non-native, invasive plant

Maureen Hamb-WCISA Certified Arborist WE2280
Professional Consulting Services

TREE RESOURCE EVALUATION
PROJECT IMPACT ANALYSIS
TREE PROTECTION PLAN

Clifton Wolske Residence
26735 Laureles Grade

April 2017

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INTRODUCTION

This arboricultural resource assessment includes an evaluation of coast live oak trees growing on an undeveloped parcel located at 26735 Laureles Grade. The site is oak woodland where residential development is proposed.

Impacts to trees related to the proposed development have been assessed and recommendations for tree removal and tree preservation are included along with tree protection measures.

PROJECT DESCRIPTION

Residential development plans have been completed by William E. Foster the project Architect. The project includes a driveway access, single-family home, carport and guesthouse.

ASSIGNMENT/SCOPE OF SERVICES

In February of this year, I was contacted by William Foster Architect to complete an arborist report for the project proposed for 26735 Laureles Grade in Monterey County.

To complete the evaluation and impact analysis I have completed the following:

- Complete an inventory of all trees six inches and greater growing adjacent to the proposed improvements for the project (76 trees).
- Complete a cursory visual analysis of approximately 150 additional trees growing outside the development area.
- Identify tree species and measure trunk diameter at a point 54 inches above grade (DBH) to determine “landmark” status as defined in Monterey County Ordinance 21.64.260.
- Complete a Visual Tree Assessment to determine tree health and structural integrity.
- Provide the Critical Root Zone for each tree inventoried
- Review plans to evaluate potential impacts to trees.
- Provide recommendations for tree retention/tree removal based on impacts and tree condition.
- Provide recommendations for reducing impacts to retained trees that include creating a fenced exclusionary zone and minor reduction of grading.

SUMMARY

I have completed an evaluation of the health and structural stability of 76 individual coast live oak trees and one large grove of oaks.

The trees are mainly small diameter, short statured trees. The average diameter is 10 inches. In general the trees are in fair condition. Canopy development is sparse with lower and interior branching that is suppressed by the dense forest condition.

In addition to the 76 individual trees I inspected the other areas of oak woodland on the property. At least 200 trees are on the property outside the proposed development area.

Thirty-three trees will require removal to develop the site as proposed. The trees are either within the development footprint or in close proximity to grading or excavation. This is the minimum necessary to develop the site as proposed.

Impacts to retained trees have been rated from low to moderate. The attached Tree Location and Protection Plan indicate the areas where exclusionary fencing and straw bale barricades will be installed to prevent inadvertent damage to tree roots or branch structures.

TREE INVENTORY OVERVIEW

The attached inventory includes the following information on trees growing adjacent to proposed development.

Tree Species
The inventory indicates the "common" name for each protected tree. The botanical names of the trees are listed here:

Coast live oak (*Quercus agrifolia*)

Trunk Diameter
The diameter of each trunk/trunks was measured at a point 54 inches above natural grade (DBH) using a diameter tape.

Tree Health
Tree health and tree structure are evaluated separately. A "healthy" tree can be weakly structured and represent a risk, a well-structured tree can be "unhealthy" or in poor vigor.

The determination of tree health is made during a Visual Tree Inspection. This analysis includes an evaluation of the biology of each tree using procedures developed by Claus Mattheck and published in The Body Language of Trees. The health of the tree is then rated as "good", "fair", or "poor" in the inventory.

The biological assessment determines health status and includes an evaluation of the following:

- Vitality of the leaves, bark and twigs
- Presence of fungi or decay
- Percentage and size of dead branching
- Status of old wounds or cavities.

Healthy trees rated as "good" display dense full canopies with dark green foliage. Dead branching is limited to small twigs and branches less than one inch in diameter. No evidence of disease, significant decay or inspect activity is visible. Vigorous, health trees are much better able to tolerate site alteration and invasive construction impacts than less vigorous trees of the same species.

Trees in "fair" health have 10-30% foliar dieback, small areas of dead branching greater than one inch in diameter and minor evidence of disease, decay, or insect activity.

Trees in "poor" health display greater than 30% foliar dieback, dead branches greater than two inches in diameter and/or areas of decay, disease or insect activity.

Tree Structure
As with tree health, the structural integrity of each tree is determined using the Visual Tree Inspection methods. This mechanical assessment includes an evaluation of the following:

- Integrity of the framework of the tree (supporting trunk and major branches)
- External symptoms (bulges, ribs or cracks) that can indicate internal defects
- Lean of main trunk and canopy configuration
- Development of root buttress

Trees with "good" structure are well rooted with visible taper in the lower trunk leading to buttress root development. These qualities indicate that the tree is solidly rooted in its growing site. No significant structural defects such as codominant stems (two stems of similar size that emerge from the same point on the trunk), weakly attached branches, cavities or decay are present.

Trees with "fair" structural integrity may have defects such as poor taper in the trunk, inadequate root development or growing site limitations. They may have multiple trunks, included bark (where bark turns inward at an attachment point), or suppressed canopies. Small areas of decay or evidence of small limb loss may be present in these trees. The condition of these trees can be improved using common maintenance procedures.

Poorly structured trees display one or more serious structural defects that may lead to the failure of branches, trunk or the whole tree due to uprooting. Trees in this condition may have had root loss due to decay or site conditions. The supporting trunk or large stems could be compromised by decay or structural defect (large codominant stems with included bark). Trees in this condition represent a risk. In some situations maintenance including cable support systems, props or severe pruning can reduce, but not eliminate the potential hazard.

Critical Root Zone (CRZ)
The Critical Root Zone represents the "optimum" area under the tree canopy where site changes should be avoided. This area does not necessarily need to be an exact circle under the tree, nor does it represent a "hard" boundary where no disturbances can occur.

In most cases, trunk diameter, along with tree species and tree condition are factored into the equation. The goal in determining the CRZ is based on adequate retention of both absorbing roots (those responsible for transportation of moisture and nutrients) and structural roots (those responsible for keeping the tree upright and stable).

Studies based on root loss have determined that safe distances for excavation or other site changes vary. Typical calculations used by arborists range from three to five times the trunk diameter.

If encroachment into the CRZ is necessary for project construction alternative methods or pre-construction treatments are recommended to reduce impacts to trees.

Impact Description
This section summarizes the development activity that could potentially affect tree health or stability. Impacts on this site include:

- Grading for driveway and development area
- Excavation for foundations and retaining walls

Recommendations
This section summarizes the recommendations that may include special construction methods and tree protection measures. They can include but not be limited to the following:

- Exclusionary fencing and straw bale barricades
- Reduction of grading adjacent to trees.

OBSERVATIONS

The site is currently accessed by a steep dirt driveway with several switchbacks. At the base of the access the site levels off to moderately sloping undeveloped oak woodland.

In general the trees have small diameter trunks (average of 10 inches) with short stature. The trees have developed as a dense grove condition that is not conducive to large canopy development. Lower and interior branching is sparse due to the suppressed conditions. One area is more open and level, the development is proposed in this portion of the site.

A number of trees display minor to severe structural defects such as decay, previous branch and stem failures along with weak stem and branch attachments. Defects like this are common to forest grown trees.

DISCUSSION

Tree Removal
Monterey County ordinances encourage the preservation of trees and discourage unnecessary tree removal. On development projects tree removal must be kept to the minimum necessary on a case-by-case basis (21.64.260).

Oak Woodland Act
California Public Resources code 2183.4 provides guidelines for determining impacts to oak woodlands proposed for conversion within the code, required mitigation strategies are defined and must include at least one of the following:

- Impact Avoidance
- Creation of permanent conservation easements
- Reforestation/replanting programs

Restrictions within the code state that replanting or reforestation efforts cannot be utilized as the only strategy for reducing impacts to the oak woodland. At least one of the other methods must be used in conjunction with replanting.

The project proposed for this site follows the guidelines for oak woodland protection required by the Oak Woodlands Conservation Law. The first and most important strategy, avoidance of impact has been utilized. The majority of the intact oak grove will not be disturbed or impacted.

One coast live oak will be planted on the site for every one tree removed. There are several appropriate areas for replanting that will be identified by the project biologist. I recommend using a variety of plant sizes from seedling to 5-gallon nursery containers. This will provide a natural variation to the site that does not currently exist.

(The discussion of the California Oak Woodland Conservation Law is based on information included in the Oak Woodland Impact Decision Matrix 2008 prepared by the UC Integrated Hardwood Range Management Program.)

CONCLUSION

The residential development proposed for this site can be completed with the removal of 33 protected coast live oak trees. No landmark trees will be removed for this project. All other trees adjacent to development will be protected by exclusionary fencing and straw bale barricades. The dense woodland to the north and west will not be fragmented or disturbed during construction.

Please call my office with any questions or concerns regarding the trees on this project site.

Respectfully submitted,

Maureen Hamb-Certified Arborist WE2280

26735 Laureles Grade
Tree Impact Inventory

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
1	coast live oak	6.2	good	moderate	Driveway grading	3	Growing at edge of existing dirt driveway/Protect with fencing and barricades
2	coast live oak	28/30	fair	moderate	Driveway grading	15	Growing at edge of existing dirt driveway/Protect with fencing and barricades
3	coast live oak	25.6/23.2	fair	moderate	Driveway grading	15	Growing at edge of existing dirt driveway/Protect with fencing and barricades
4	coast live oak	12.5	fair	moderate	Driveway grading	6	Growing at edge of existing dirt driveway/Protect with fencing and barricades
5	coast live oak	9 & 17.4	fair	moderate	Driveway grading	8	Growing at edge of existing dirt driveway/Protect with fencing and barricades
6	coast live oak	22.9 & 28	fair	moderate	Driveway grading	15	Growing at edge of existing dirt driveway/Protect with fencing and barricades
7	coast live oak	10.8	poor	moderate	Driveway grading	5	Growing at edge of existing dirt driveway/Protect with fencing and barricades

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
8	coast live oak	21 & 20	fair	moderate	Driveway grading	10	Growing at edge of existing dirt driveway/Protect with fencing and barricades
9	coast live oak	13.3	fair	moderate	Driveway grading	6	Growing at edge of existing dirt driveway/Protect with fencing and barricades
10	coast live oak	26.5	fair	moderate	Driveway grading	13	Growing at edge of existing dirt driveway/Protect with fencing and barricades
11	coast live oak	12	fair	moderate	Driveway grading	6	Growing at edge of existing dirt driveway/Protect with fencing and barricades
12	coast live oak	12	poor	moderate	Driveway & fire truck turnaround	6	Protect with fencing and barricades
13	coast live oak	10.2	fair	moderate	Driveway & fire truck turnaround	5	Protect with fencing and barricades
14	coast live oak	10.5	fair	high	Within driveway	5	Remove due to impacts/Plant one replacement tree

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
15	coast live oak	18.7	fair	moderate	Grading for driveway	9	Protect with fencing and barricades
16	coast live oak	19	fair	moderate	Fire truck turn around	9	Protect with fencing and barricades
17	coast live oak	15.5 & 16	fair	high	Within swimming pool	10	Remove due to impacts/Plant one replacement tree
18	coast live oak	8.5& 9	fair	low		9	Protect with fencing and barricades
19	coast live oak	16.5	good	high	Within building envelope	8	Remove due to impacts/Plant one replacement tree
20	coast live oak	21	poor	low		10	Protect with fencing and barricades
21	coast live oak	8 & 8	fair	low		8	Protect with fencing and barricades

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
22	coast live oak	9&10&8	fair	low		8	Protect with fencing and barricades
23	coast live oak	17.8	poor	low		9	Protect with fencing and barricades
24	coast live oak	12.5	fair	low		6	Protect with fencing and barricades
25	coast live oak	9.6	poor	high	Within building envelope	4	Remove due to impacts/Plant one replacement tree
26	coast live oak	15 & 16.8	fair	high	within building envelope	10	Remove due to impacts/Plant one replacement tree
27	coast live oak	12.8	good	high	Adjacent to building	6	Remove due to impacts/Plant one replacement tree
28	coast live oak	11 & 10	fair	high	Within building envelope	7	Remove due to impacts/Plant one replacement tree

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
29	coast live oak	12.8	fair	high	within building envelope	6	Remove due to impacts/Plant one replacement tree
30	coast live oak	14.2	fair	moderate		7	Protect with fencing and barricades
31	coast live oak	12 & 15	fair	low		12	Protect with fencing and barricades
32	coast live oak	7&6&6	fair	high	Within building envelope	7	Remove due to impacts/Plant one replacement tree
33	coast live oak	7.5	fair	high	Within building envelope	4	Remove due to impacts/Plant one replacement tree
34	coast live oak	8	fair	high	Within building envelope	4	Remove due to impacts/Plant one replacement tree
35	coast live oak	7	fair	high	Within building envelope	4	Remove due to impacts/Plant one replacement tree

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
36	coast live oak	11.5	fair	low		6	Protect with fencing and barricades
37	coast live oak	15.6	fair	low		8	Protect with fencing and barricades
38	coast live oak	10.8	fair	low		5	Protect with fencing and barricades
39	coast live oak	7.4	fair	high	Within building envelope	4	Remove due to impacts/Plant one replacement tree
40	coast live oak	8.5	fair	high	within building envelope	4	Remove due to impacts/Plant one replacement tree
41	coast live oak	8.4	fair	high	within building envelope	4	Remove due to impacts/Plant one replacement tree
42	coast live oak	12.6	fair	high	Adjacent to building	6	Protect with fencing and barricades

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
43	coast live oak	9.5	fair	low		5	Protect with fencing and barricades
44	coast live oak	14	poor	low		7	Protect with fencing and barricades
45	coast live oak	14.2 & 14.8	fair	high	Within driveway	10	Remove due to impacts/Plant one replacement tree
46	coast live oak	13.8	fair	low		7	Protect with fencing and barricades
47	coast live oak	14 & 13 &16	good	moderate	Adjacent to retaining wall	15	Protect with fencing and barricades
48	coast live oak	8.3	poor	high	Adjacent to retaining wall	4	Remove due to impacts/Plant one replacement tree
49	coast live oak	12	fair	high	Within development envelope	6	Remove due to impacts/Plant one replacement tree

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
50	coast live oak	9.2	fair	high	Within development envelope	5	Remove due to impacts/Plant one replacement tree
51	coast live oak	8.5	fair	high	Within development envelope	4	Remove due to impacts/Plant one replacement tree
52	coast live oak	8.8	fair	high	Within development envelope	4	Remove due to impacts/Plant one replacement tree
53	coast live oak	14.6	fair	high	Within development envelope	7	Remove due to impacts/Plant one replacement tree
54	coast live oak	14.5	fair	high	Within development envelope	7	Remove due to impacts/Plant one replacement tree
55	coast live oak	8.3	fair	high	Within development envelope	4	Remove due to impacts/Plant one replacement tree
56	coast live oak	8.8	fair	high	Within development envelope	4	Remove due to impacts/Plant one replacement tree

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
57	coast live oak	7 & 6 & 9	poor	high	Within development envelope	8	Remove due to impacts/Plant one replacement tree
58	coast live oak	9.5	fair	high	Within development envelope	5	Remove due to impacts/Plant one replacement tree
59	coast live oak	8.9	poor	high	Within development envelope	4	Remove due to impacts/Plant one replacement tree
60	coast live oak	10	poor	high	Within development envelope	5	Remove due to impacts/Plant one replacement tree
61	coast live oak	8.8	poor	high	Within development envelope	4	Remove due to impacts/Plant one replacement tree
62	coast live oak	10.2	fair	high	Within development envelope	5	Remove due to impacts/Plant one replacement tree
63	coast live oak	11 & 12	poor	high	Adjacent to guest house foundation	10	Remove due to impacts/Plant one replacement tree

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
64	coast live oak	11.7	poor	high	Adjacent to carport	6	Remove due to impacts/Plant one replacement tree
65	coast live oak	14.5	fair	moderate		7	Protect with fencing and barricades
66	coast live oak	11.8	fair	high	Adjacent to building	6	Protect with fencing and barricades
67	coast live oak	10.2	fair	high	Adjacent to building	5	Protect with fencing and barricades
68	coast live oak	9	poor	moderate	Adjacent to building	5	Protect with fencing and barricades
69	coast live oak	8.5	fair	moderate	Adjacent to carport	4	Protect with fencing and barricades
70	coast live oak	8.8	fair	moderate	Adjacent to grading for guesthouse	4	Protect with fencing and barricades

Tree #	Species	Diameter	Condition	Impacts: High Moderate Low	Impact Description	CRZ radius in feet	Comments/Recommendations
71	coast live oak	15.8	poor	moderate	Adjacent to grading for guesthouse	7	Protect with fencing and barricades
72	coast live oak	11.9	fair	moderate	Adjacent to grading for guesthouse	5	Protect with fencing and barricades
73	coast live oak	14.7	poor	moderate	Adjacent to grading for guesthouse	7	Protect with fencing and barricades
74	coast live oak	11	poor	moderate	Adjacent to grading for guesthouse	5	Protect with fencing and barricades
75	coast live oak	10	poor	moderate	Adjacent to grading for guesthouse	5	Protect with fencing and barricades
76	coast live oak	8 & 7	poor	low		7	Protect with fencing and barricades

William E. Foster
ARCHITECTURE

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LEGEND:

- EXISTING CONTOURS
- NEW OR FINISHED CONTOURS
- EXISTING TREE
- TREE TO BE REMOVED
- PROTECTION FENCING & BARRICADES

#1 TREE TAG RETAIN AND PROTECT

#2 TREE TAG REMOVE DUE TO IMPACTS

TREES #1-#11

EXIST. DIRT ROAD

FIRE TRUCK TURNAROUND W/ D.G. PAVING

SEPTIC TANK

ENTRANCE COURT W/ D.G. PAVING

TERRACED PLANTING

FIN. FLR. ELEV. = 1057.5

NEW RESIDENCE FIN. FLR. ELEV. = 1059.0

TERRACE 1052.9

SWIMMING POOL

TERRACE 1057.4

HOT TUB

TERRACE 1058.9

TERRACE

NEW GUESTHOUSE FIN. FLR. ELEV. = 1069.0

NEW CARPORT FIN. FLR. ELEV. = 1064.0

TERRACED PLANTING

FIN. FLR. ELEV. = 1060.5

ENTRY

UP

DN

36"

22'-6"

11'-9"

12'-0"

7'-0"

12'-0"

3'-4"

7'-4"

#12 & #13 — 12" OAK, 10" OAK

#14 — 10" OAK

#15 — 18" OAK; 8" OAK

#16 — 19" OAK

#17 — 16" OAK; 16" OAK

#18 — 9" OAK; 9" OAK

#19 — 17" OAK

#20 — 21" OAK

#21 — 8" OAK; 8" OAK

#22 — 9" OAK; 10" OAK; 8" OAK

#23

#24 — 12" OAK

#25 — 10" OAK; 1057.4

#26 — 16" OAK; 17" OAK

#27 — 13" OAK

#28 — 11" OAK; 10" OAK

#29 — 13" OAK

#30 — 14" OAK

#31

#32 — 6" OAK; 7" OAK; 6" OAK

#33 — 7" OAK

#34 — 8" OAK

#35 — 7" OAK

#36 — 11" OAK; 15" OAK

#37 — 11" OAK

#38

#39 — 7" OAK

#40 — 8" OAK; 8" OAK

#41

#42 — 12" OAK

#43 — 9" OAK

#44 — 14" OAK

#45 — 15" OAK; 15" OAK

#46 — 14" OAK

#47 — 16" OAK; 13" OAK; 14" OAK

#48 — 8" OAK

#49 — 12" OAK

#50 — 9" OAK

#51 — 8" OAK

#52

#53 — 15" OAK; 9" OAK

#54 — 15" OAK

#55 — 8" OAK

#56 — 9" OAK

#57 — 8" OAK; 7" OAK; 9" OAK

#58 — 9" OAK

#59 — 9" OAK

#60 — 8" OAK; 10" OAK

#61

#62 — 10" OAK

#63 — 12" OAK; 11" OAK

#64

#65 — 15" OAK

#66 — 12" OAK

#67 — 10" OAK

#68 — 9" OAK

#69 — 8" OAK

#70 — 9" OAK

#71 — 16" OAK

#72 — 12" OAK

#73 — 15" OAK

#74

#75 — 10" OAK; 11" OAK

#76 — 8" OAK; 7" OAK

N

1 SITE PLAN

CLIFTON WOLSKE RESIDENCE

PARCEL 1
RINCONADA DRIVE
CARMEL VALLEY, CA

2014.01

Title:

SITE PLAN

Revisions:

Scale: 1/8" = 1'-0"

Date: DEC. 16, 2016

Sheet No: A1.2

Clifton and Wolske Residence
Tree Assessment/ Forest Management Plan

Prepared for:

Heather Clifton and Russ Wolske

Prepared by:

Frank Ono
Forester
Society of American Foresters I.D. # 48004
Certified Arborist #536
1213 Miles Avenue
Pacific Grove, CA 93950

October 31, 2017

Owner:

Heather Clifton and Russ Wolske
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Architect:

Bill Foster
William Foster Architecture
716 Lighthouse Avenue, Suite F
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Forester and Arborist:

Frank Ono, Society of American Foresters # 048004, Certified Arborist #536
F.O. Consulting
1213 Miles Ave
Pacific Grove, CA 93950

SUMMARY

Development in the form of building two attached new structures and a driveway has been proposed for the site located at 26735 Laureles Grade in Carmel Valley. The project proposes to add a new single family home with an attached guest house as well as a 9800 gallon water tank in close proximity to 77 trees requiring the pruning/removal of 33 tree(s) located on site and the retention and protection of others. The building site and 77 trees sit within a larger Oak woodland comprised of over 300 trees. Trees that are adjacent to the proposed construction are for the most part considered to be in fair to poor condition both structurally and in health and are to be protected and retained. A forest management plan has been prepared that encompasses the tree resource evaluation and project impact analysis by Maureen Hamb as well as the Biological Assessment by Nicole Nedeff. The plan addresses the effects that the project will have to the existing tree resources on site as well as a list of recommendations for future stewardship of the retained trees.

ASSIGNMENT/SCOPE OF PROJECT

77 Oak trees forest this building site and development of this parcel may have various effects to the adjacent trees from proposed construction. To ensure protection of the tree resources on site, the property owners, Heather Clifton and Russ Wolske have requested a Forest Management Plan that incorporates the assessment of the trees in proximity to proposed development areas and the Biological Assessment report for an overall forest maintenance and stewardship plan for the property. To accomplish this assignment, the following tasks have been completed;

- Evaluate preservation suitability and regrowth of 27 stumps (removed prior to current ownership) in and around the proposed building area.
- Evaluate tree spacing and stocking with an emphasis for fire defensible space.
- Review proposed building site plans as provided by Mr. Bill Foster, Architect.
- Make recommendations for alternative methods and preconstruction treatments to facilitate tree retention.
- Create preservation specifications, as it relates to a Tree Location/Preservation Map.
- Determine the quantity of trees affected by construction that meet "Landmark" criteria as defined by the County of Monterey, Title 21 Monterey County Zoning Ordinance; as well as mitigation requirements for those to be affected.
- Document findings in the form of a report as required by the County of Monterey Planning Department.

LIMITATIONS

This assignment is limited to the review of plans submitted to me dated July, 24th 2017 by Bill Foster to assess effects from potential construction to trees within or adjacent to construction activities. The assessment has been made of these plans specifically, the arborist report, and the biological report. No other plans were reviewed. Grading and erosion details are discussed in this report as it relates to tree stand health.

PURPOSE

This Tree Assessment/Forest Management Report is prepared for this parcel due to proposed construction activities that are intent on developments of new structures located at 26735 Laureles Grade, Carmel Valley CA. The purpose of the site visit was to give an independent assessment of the existing trees that are on site and to determine the residual impact from removal of 43 trees that occurred in 2012 prior to Mr. Wolske and Ms. Clifton purchasing the property and the removal of 33 more trees by the proposed project. Oak trees are considered protected trees as defined by the County of Monterey, Titles 16 and 21 Monterey County Inland Zoning Ordinance.

GOAL

The goal of this plan is to protect and maintain the Toro Area forested resources through the adherence of development standards, which allow the protection, and maintenance of its forest resources. Furthermore it is the intended goal of this management plan to aid in planning to offset any potential effects of proposed development on the property while encouraging forest stability, sustainability, and fire defensibility perpetuating the forested character of the property and the immediate vicinity.

INTRODUCTION

This forest management plan is prepared for Heather Clifton and Russ Wolske, owners of the lot located at 26735 Laureles Grade in Carmel Valley CA by Frank Ono, Forester and Certified Arborist, S.A.F. #48004 and ISA #536 due to construction. Monterey County's Title 16 Sec. 16.60.030 and Title 21 Sec. 21.64.260 requires a forest management plan when tree removal is necessary of native trees regardless of size or amount so as to preserve and maintain the forest and its beneficial uses. The County identifies Coast Live Oak trees as native tree species that require special consideration for management.

SITE DESCRIPTION

1) Assessor's Parcel Number: 416-361-043-000

2) Location: 26735 Laureles Grade in Carmel Valley

3) Parcel size: 27.87 Acres

4) Existing Land Use: The parcel is undeveloped and zoned RDR/B-8-VS for rural density residential use in a visually sensitive area.

5) Slope: The parcel is on the mid slope area of a hill with slopes greater than 25%.

6) Soils: The parcel is located channery clay loam about 12-20" deep. Clay subsoil is found generally at a depth of 15 to 20 inches. Runoff and erosion hazard are considered high.

7) Vegetation: The vegetation is mixed Oak Woodland and Coastal Scrub type. It is a mixture of some scattered Coast live oaks with an understory of poison oak, Sticky Monkey Flower, and Coyote Brush present. The Oaks are mostly located on the shoulders and benches of the slopes near the building area with the foot of the slopes and lower slopes consisting mainly of Northern Coastal Scrub.

8) Forest Condition and Health: The forest condition and health is evaluated with the use of the residual trees and those of the surrounding Oak Woodland as a stand. This is a mature Declining Coast Live Oak Woodland with remaining Oak trees in fair to poor condition. The more southern facing exposure of the building site

creates a xeric moisture regime with increased sun and heat leading the trees to be in competition for water and would partly explain the overall decline of the trees during the hot dry summers that have occurred in the past few years.

This forest is a mature forest with significant presence of insects and pathogens. It is predominantly even aged with the older trees in the 40 to 60 year range. Coast Live Oaks can commonly grow to at least twice that age with proper spacing and growing conditions. Growth on these mature trees has slowed with most trees having an average height of 20-25 feet tall, much shorter than an average healthy Coast Live Oak.

The natural over-crowding and hot dry site has caused mature trees in this stand to begin declining and will continue to do so. As the biology report observed the thinning of the stand by the removal of the 43 trees should have a beneficial effect on not only tree health, regeneration, and resource availability but also fire defensibility and fuel separation. Natural seeding and regeneration will occur in the openings created when trees fall or are cut. This may take a number of years to occur as cone crop production can be highly variable. The timing of favorable growing conditions is also variable. We can speed this natural process along by a program that includes tree planting (taking in to account final structure placement and grading), stem regeneration, and light availability.

The following pests were observed in the residual trees onsite or in the surrounding forest. A brief discussion of each pest follows.

Oak Root Fungus

Oak Root Fungus (other names – shoestring rot, *Armillaria mellea*). This disease, a mushroom producing fungus, seldom causes severe injury or damage in natural stands of oak unaffected by development. When soil conditions are altered or completely changed, the disease spreads and becomes an important cause of oak dieback and death. Over watering is the usual cause. Oak trees do not respond well to summer watering and prefer dry soil during the summer months. An increase in soil moisture and/or the presence of other disease organisms can cause development of oak root fungus. When the disease begins to spread, decline of the oak is extremely rapid.

Signs of this disease are white or cream-colored, fan-shaped fungus growths which occur between the bark and wood of roots and portions of the trunk just below soil level. There is a characteristic mushroom odor to infected tissue. Black root hair strands on the surface of infected roots indicate the presence of this disease. During advanced stages, mushrooms can be seen growing around the tree's base. The wood becomes pulpy, very moist, and gray or white in color.

Halting the advance of this disease requires removal of all infected tissue, exposing the healthy tissue to the air for drying purposes and discontinuing any artificial watering. There are no known chemical compounds that can eradicate this disease.

Water Mold

Water mold (other names - crown rot, *Phytophthora*) cause crown and root rot diseases of herbaceous and woody plants. In general, trees affected by Phytophthora develop darkened areas in the bark around the crown and upper roots. Gum or dark sap may ooze from the margins of the diseased trunk area. If bark tissue is carefully cut away, reddish brown streaks or zones can be seen in the inner bark and outer layer of wood. No mycelium (slender filaments of a fungus body) is visible in between the bark and wood in trees affected by *Phytophthora*, distinguishing this disease from *Armillaria* root rot, which is caused by a true fungus.

In trees and shrubs, the *Phytophthora* pathogen kills plants by growing from the roots up through the root crown and into the lower trunk, where it kills the inner bark and causes a browning of the outer layer of sapwood. In many of these crops, different species of *Phytophthora* are involved. In general, *Phytophthora* requires warm, moist soils in order to cause disease. Another species of *Phytophthora*, *Phytophthora ramorum*, causes sudden oak death, which has very different symptoms and management than the species discussed here. The most important factor in reducing the threat of *Phytophthora* rot is good water management. Avoid prolonged saturation of the soil or standing water around the base of trees or other susceptible plants. Irrigate only as much and as often as necessary

Western oak bark beetle

Oak bark beetles (*Pseudopityophthorus pubipennis*) colonize the bark of branches and trunks. The outermost sapwood just under the bark may be extensively engraved due to tunneling by the adult beetles. The engravings score the wood surface across the grain but do not enter deeply into wood. Tunnels produced by P. pubipennis adults are limited to the inner bark and do not score the sapwood. In dry, dead stems, deposits of sawdust-like frass and/or pinhead sized emergence holes are typical symptoms. Oak bark beetle boring dust is typically dark or reddish due to the feeding of the beetles in the phloem.

Adults bore through the bark to the interface with the sapwood. From the entrance hole, two tunnels, about 5 cm long combined, are excavated in the inner bark perpendicular to the wood grain. Eggs are laid in niches along these tunnels. As larvae hatch they begin tunneling in the inner bark (phloem) at right angles to the adult gallery, i.e., with the wood grain. Larval tunnels are up to 2.5 cm long for P. pubipennis and 1–2 cm long for P. agrifoliae. At maturity, the larvae tunnel to just below the bark surface and pupate at the end of the tunnel. Adults emerge and chew through the bark, leaving behind small exit holes (“shot holes”). Depending on the location, there may be two or more generations per year. Generations overlap, so adult beetles are always present during the growing season. Larvae and adults overwinter under bark.

BACKGROUND/PROJECT DESCRIPTION

On September 6th, 2017 I (Frank Ono, F.O. Consulting) I was contacted by Bill Foster, Architect who requested that I visit the site owned by Heather Clifton and Russ Wolske for an assessment of trees adjacent or within the proposed construction areas. Mr. Foster requested the findings from the review and assessment of trees that occupy the land at 26735 Laureles Grade in Carmel Valley that are adjacent to the proposed design development be prepared and documented in a report to work in conjunction with other conditions for approval of the building permit application. This report is designed to work in concert with the existing Arborist Report by Maureen Hamb and the existing Biological Assessment by Nicole Nedeff to create a more complete prescription for the whole woodland stand.

A site visit was taken to the property during the months of September and October 2017 where stand was assessed for health and condition at that time. The field study of 77 trees in and around building area was conducted by Maureen Hamb in April 2017. Our assessment focused on the incorporation of the preliminary location of site improvements coupled with the previous site disturbance/ tree removal which occurred in 2012. During those site visits, the proposed improvements assessed included preserving existing trees to the greatest extent feasible including regrowth from previously cut stumps and additional oak tree planting. A study of the individual trees and stumps was made to determine the treatments necessary to complete the project in order to meet the goals of the landowner while maintaining the view shed and general aesthetic quality of the area and comply with county codes. As a result of the study, trees within and immediately adjacent to the proposed development area were located, analyzed, inspected, and recorded. The assessment of each tree and stump concluded with an opinion of whether the tree or stump should be removed, or preserved, based on the extent and effect of proposed construction activity to the short and long term health of the trees and woodland as a whole. All meetings and field review were focused on the area immediately surrounding the proposed development.

OBSERVATIONS/DISCUSSION

The following list includes observations made while on site, in review of plans submitted, and in review of reports by Maureen Hamb and Nicole Nedeff, and summarizes details discussed during this stage of the planning process.

- The site is forested mainly with coast live oak.
- 33 trees are proposed for removal.
- 43 trees were previously removed.
- Most of the trees on the property are of moderate size (less than 24" in diameter) and compose the majority of the stand of trees. With an average size of 10" - 12" in diameter; no landmark trees or stumps were observed.
- Remaining trees in and around building site are in fair to poor condition with multiple pests, overcrowding, and drought related stress observed.
- The building area and surrounding woodland are surrounded by coastal scrub that merges in with the oak trees.
- Building site has undergone previous disturbance in the form of tree removal and a pre-existing road cut to the building site.

PROJECT ASSESSMENT/CONCLUSION

This proposal to build a single-family residence and driveway is planned to maintain the existing oak woodland environment and will allow the forest to continue to exist and regenerate over time. The 33 trees proposed for removal will not only be of minor impact to the woodland stand as a whole but are actually an improvement to the overall health of the stand. Thinning to increase tree spacing will be beneficial not only for fire defensibility and fuel reduction but will also reduce competition between existing trees and sprouts for resources which would be consistent with best management practices for fire defensible landscapes as mandated by the California State Board of Forestry. Letting the stumps re-sprout near the building area will help the stand grow out more naturally and will establish new trees that can fill in the canopy when current oaks start to age out and decline. Replanting of oaks slightly outside of the wooded area near the proposed building will create a shaded fuel break below the proposed structure and will expand the area of the woodland without increasing the tree spacing. No watercourses are near the planned construction.

Short Term Impacts

Site disturbance will occur during driveway and home construction. Approximately 0.57 acres of the parcel will be occupied by the improvements planned (home site, driveway, and water tank). This is approximately 2.0% of the parcel size and approximately 10% of the existing woodland. Although a somewhat large amount of trees are proposed for removal for this project, the total tree population will be reduced by 10% or less. The site disturbance is minimized by the prior road construction and tree removal. Much of the site impacts already exist due to the roads cut to the building pad and the trees that were removed in 2012 prior to current ownership. The shallow slope upon which the construction is planned will be a factor in minimizing the disturbance that must take place for the construction. Impacts to the view shed will be minor due to the offset of construction from the edge of the woodland as well as the proposed planting of trees at

the margin of the wooded area. The short term site impacts are confined to the construction envelope and immediate surroundings where trees will be removed and trimmed and root systems reduced. The pruning of tree crowns above 30% and reduction of root area may have a short term impact on those trees treated, including a reduction of growth, dieback, and potentially death. Every attempt has been made to recommend removing those trees likely to experience severe decline and death as a result of planned activities.

Long Term Impacts

No significant long-term impacts to the woodland ecosystem are anticipated due to the large area of Oak woodland on site, and the relatively small amount of area that will be occupied by the proposed residence and driveway. Approximately 3.5% of the parcel will be permanently altered by the project. The project as proposed is not likely to significantly reduce the availability of wildlife habitat over the long-term. The planting of 33 trees in the forest gaps and at the margins of the wooded area in a 1-1 replacement adds new trees to the Oak woodland that can grow in and replace the old maturing tree cover.

RECOMMENDATIONS

Tree Planting and Restoration

Because it is recommended that replacement of removed trees be undertaken replacement planting is necessary following current Best Management Practices as promulgated by the University of California IHRMP shall be followed to maintain and promote regeneration of oak trees. Trees should be planted in small gaps in the canopy and areas with the greatest opening in the stand to allow for a minimum of competition and maximum sunlight. Trees should also be planted and brush removed from the margins of the wooded stand with a concentration of clearing and planting on the downhill slope from the proposed structure and at the proposed driveway entrance as prescribed by the Biology report. As recommended by the Hamb report, new plantings should be a mixture of sizes varying from seedlings to 5 gallon container stock.

Spacing between trees should be at least 15-20 feet to maintain a fire safe environment and reduce future accumulation of ladder fuels. Occasional deep watering (more than two weeks apart) during the late spring, summer, and fall is recommended during the first two years after establishment. The best way to insure water is available for re-planting is to install a temporary drip irrigation system, then a 3”-4” mulch layer of wood chips placed around new plantings to both keep plants hydrated and to minimize weed growth. Wood chips must be 6” -12” away from the root collars of the newly planted trees to minimize fungal growth potential.

Three Year Replant Success Criteria - To ensure the survivability and proper growth of the replacement or relocation of trees success criteria will be defined to meet a 100% survival rate and implemented as follows. A qualified professional monitor newly planted trees for a period of three (3) years for the following:

- Tree health and growth rates of new or relocated planting must be assessed by a qualified forester or certified arborist.
- Trees suffering poor growth rates or declining health are to be identified and documented as to reason it was not successful.
- Invigoration treatments if feasible will be recommended and implemented.
- Dead trees or trees identified in an irreversible state of decline will be replaced after a written recommendation is made by a qualified forester or certified arborist identifying type and location of new replacement. Trees found that need replacement will be replaced on a 1:1 ratio. Replant material shall be minimum container grown five gallon-size or greater. In the case of failing stump re-sprouts then a five gallon tree shall be planted in its place.
- Near the end of the three year monitoring period, the status of the plantings will be again assessed to make certain that success criteria has been met and all mitigation trees planted are performing well.
- At three years a report shall be prepared by a registered forester or certified arborist and submitted to the Planning Department for review and approval of the Director of Planning describing reforestation activities, success rates and adjustments for previous failures or unsuccessful transplanting.

Fire Defensible Space

A) Maintain around and adjacent to the building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side of the building or structure or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. This subdivision does not apply to single specimens of trees or other vegetation that is well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to any building or structure.

B) Maintain around and adjacent to the building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from the building or structure or to the property line or at a greater distance if required by state law, or local ordinance, rule, or regulation. Grass and other vegetation located more than 30 feet from the building or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.

C) Remove that portion of any tree that extends within 10-feet of the outlet of a chimney or stovepipe.

D) Maintain any tree adjacent to or overhanging a building free of dead or dying wood.

E) Maintain the roof of a structure free of leaves, needles, or other dead vegetative growth.

F) Provide and maintain at all times a screen over the outlet of every chimney or stovepipe that is attached to any fireplace, stove, or other device that burns any solid or liquid fuel. The screen shall be constructed of nonflammable material with openings of not more than one-half inch in size. (PRC 4291)

Tree Protection

The health of trees remaining should not be affected if the following best management practices (BMPs) are adhered to:

A) Do not deposit any fill around trees, which may compact soils and alter water and air relationships. Avoid depositing fill, parking equipment, or staging construction materials near existing trees. Covering and compacting soil around trees can alter water and air relationships with the roots. Fill placed within the drip-line may encourage the development of oak rot fungus (*Armillaria mellea*). As necessary, trees may be protected by boards, fencing or other materials to delineate protection zones.

B) Pruning shall be conducted so as not to unnecessarily injure the tree. General-principals of pruning include placing cuts immediately beyond the branch collar, making clean cuts by scoring the underside of the branch first, and for live oak, avoiding the period from February through May.

C) Native live oaks are not adapted to summer watering and may develop crown or root rot as a result. Do not regularly irrigate within the drip line of oaks. Native, locally adapted, drought resistant species are the most compatible with this goal.

D) Root cutting should occur outside of the springtime. Late June and July would likely be the best. Pruning of the live crown should not occur February through May.

E) Oak material greater than 3 inches in diameter remaining on site more than one month that is not cut and split into firewood should be covered with black plastic that is dug in securely around the pile. This will discourage infestation and dispersion of bark beetles.

F) A mulch layer up to approximately 4 inches deep should be applied to the ground under selected oaks following construction. Only 1 to 2 inches of mulch should be applied within 1 to 2 feet of the trunk, and under no circumstances should any soil or mulch be placed against the root crown (base) of trees. The best source of mulch would be from chipped material generated on site.

G) If trees along near the development are visibly declining in vigor, a Professional Forester or Certified Arborist should be contacted to inspect the site to recommend a course of action.

Tree Protection Standards

Prior to the commencement of any construction activity the following tree protection measures shall be implemented and approved by a qualified arborist or forester:

- Trees located adjacent to the construction area shall be protected from damage by construction equipment by the use of temporary fencing and through wrapping of trunks with protective materials.
- Fencing shall consist of chain link, snowdrift, plastic mesh, hay bales, or field fence.
- Fencing is not to be attached to the tree but free standing or self-supporting so as not to damage trees. Fencing shall be rigidly supported and shall stand a minimum of height of four feet above grade and placed to the farthest extent possible from the trees base to protect the area within the trees drip line (typically 10-12 feet away from the base of a tree).
- In cases where access or space is limited for tree protection it is permissible to protect the tree within the 10-12 foot distance after determination and approval by a qualified forester or arborist.
- Soil compaction, parking of vehicles or heavy equipment, stockpiling of construction materials, and/or dumping of materials shall not be allowed adjacent to trees on the property especially within fenced areas.
- Fenced areas and the trunk protection materials must remain in place during the entire construction period.

During grading and excavation activities:

- All trenching, grading or any other digging or soil removal that is expected to encounter tree roots should be monitored by a qualified arborist or forester to ensure against drilling or cutting into or through major roots.
- The project architect and qualified arborist should be on site during excavation activities to direct any minor field adjustments that may be needed.
- Trenching for retaining walls or footings located adjacent to any tree shall be done by hand where practical and any roots greater than 2-inches diameter should be bridged or pruned appropriately.
- Any roots that must be cut shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment.
- Any roots damaged during grading or excavation must be exposed to sound tissue and cut cleanly with a saw.

If at any time potentially significant roots are discovered:

- The arborist/forester will be authorized to halt excavation until appropriate mitigation measures are formulated and implemented.
- If significant roots are identified that must be removed that will destabilize or negatively affects the target trees negatively, the property owner will be notified immediately and a determination for removal will be assessed and made as

required by law for treatment of the area that will not risk death decline or instability of the tree consistent with the implementation of appropriate construction design approaches to minimize affects, such as hand digging, bridging or tunneling under roots, etc..

Tree Pruning

It is understood that the pruning of retained trees will be expected for this site, especially where the proposed addition is to be constructed. Pruning will also include the trees that have deadwood or are exhibiting some minor structural defect or minor disease that must be compensated. Those trees that may require pruning and possible monitoring are the closest to the proposed structure improvements. Trees should be monitored on occasion for health and vigor after pruning. Should the health and vigor of any tree decline it will be treated as appropriately recommended by a certified arborist or qualified forester.

The following are offered as guidelines when pruning

- In general the trees will be pruned first for safety, next for health, and finally for aesthetics.
- Type of pruning is determined by the size of branches to be removed. General guidelines for branch removal are:
    1. Fine Detail pruning- limbs under 2 inch diameter are removed
    2. Medium Detail Pruning – Limbs between 2 and 4 inch diameter
    3. Structural Enhancement – limbs greater than 4 inch diameter.
    4. Broken and cracked limbs-removed will be removed in high traffic areas of concern.

Crown thinning is the cleaning out of or removal of dead diseased, weakly attached, or low vigor branches from a tree crown

- All trees will be assessed on how a tree will be pruned from the top down.
- Trimmers will favor branches with strong, U- shaped angles of attachment and where possible remove branches with weak, V-shaped angles of attachment and/or included bark.
- Lateral branches will be evenly spaced on the main stem of young trees and areas of fine pruning.
- Branches that rub or cross another branch will be removed where possible.
- Lateral branches will be no more than one-half to three-quarters of the diameter of the stem to discourage the development of co-dominant stems where feasible.
- In most cases trimmers will not remove more than one- quarter of the living crown of a tree at one time. If it is necessary to remove more, it will be done over successive years.

Crown- raising removes the lower branches of a tree to provide clearance for buildings, vehicles, pedestrians and vistas.

- Live branches on at least two-thirds of a tree's total height will be maintained wherever possible. The removal of many lower branches will hinder the development of a strong stem.
- All basal sprouts and vigorous epicormic sprouts will be removed where feasible.

Crown reduction is used to reduce the height and/or spread of trees and is used for maintaining the structural integrity and natural form of a tree.

- Crown reduction pruning will be used only when absolutely necessary. Pruning cuts will be at a lateral branch that is at least one-third the diameter of the stem to be removed wherever possible.
- When it is necessary to remove more than half of the foliage from a branch it may be necessary remove the entire branch.

Crown restoration is used to improve the structure and appearance of trees that have been topped or severely pruned by the use of heading cuts. One of three sprouts on main branch stubs should be selected to reform a natural appearing crown. Selected vigorous sprouts may need to be thinned to ensure adequate attachment for the size of the sprout. Restoration may require several years of pruning.

Remedial pruning should occur prior to construction. Following construction, any above ground tree pruning/trimming should be delayed until one year after completion of construction. Following construction, a qualified forester/arborist should monitor trees adjacent to the improvements area and if any decline in health that is attributable to the construction is noted, additional trees should be planted on the site.

Agreement by Landowner

The following standard conditions are made a part of all Monterey County Forest Management Plans:

A. Management Objectives

1. Minimize erosion in order to prevent soil loss and siltation.
2. Preserve natural habitat including native forest, understory vegetation and associated wildlife.
3. Prevent forest fire.
4. Preserve scenic forest canopy as located within the Critical View shed (any public viewing area).
5. Preserve landmark trees to the greatest extent possible as defined below.

B. Management Measures

1. Tree Removal: No tree will be removed without a Forest Management Plan or an Amended Forest Management Plan.

2. Application Requirements: Trees proposed for removal will be conspicuously marked by flagging or by paint. Proposed removal of native trees greater than six inches will be the minimum necessary for the proposed development. Removal not necessary for the proposed development will be limited to that required for the overall health and long term maintenance of the forest, as verified in this plan or in subsequent amendments to this plan.

3. Landmark Trees: All landmark trees will be protected from damage if not permitted to be removed as a diseased tree, which threatens to spread the disease to nearby healthy trees or as a dangerous tree, which presents an immediate danger to human life or structures. Landmark oaks are trees that are visually, historically, or botanically significant specimens or are greater than 24 inches or more in diameter at breast height (DBH), or more than 1.000 years old.

4. Dead Trees: Because of their great value for wildlife habitat (particularly as nesting sites for insect eating birds) large dead trees will normally be left in place. Smal1er dead trees will normally be removed in order to reduce the fire hazard. Dead trees may be removed at the convenience of the owner.

5. Thinning: Trees less than six inches diameter breast height may be thinned to promote the growth of neighboring trees, without first developing a Forest Management Plan.

6. Protection of Trees: All trees other than those approved for removal shall be retained and maintained in good condition. Trimming, where not injurious to the health of the tree, may be performed wherever necessary in the judgment of the owner, particularly to reduce personal safety and fire hazards. Retained trees which are located close to the construction site shall be protected from inadvertent damage by construction equipment through wrapping of trunks with protective materials, bridging or tunneling under major roots where exposed in foundation or utility trenches and other measures appropriate and necessary to protect the well-being of the retained trees.

7. Fire prevention: In addition to any measures required by the local California Department of Forestry fire authorities, the owner will;

A) Maintain a spark arrester screen atop each chimney.
B) Maintain spark arresters on gasoline-powered equipment.
C) Establish a "greenbelt" by keeping vegetation in a green growing condition to a distance of at least 50 feet around the house.
D) Break up and clear away any dense accumulation of dead or dry underbrush or plant litter, especially near landmark trees and around the greenbelt.

8. Use of fire (for clearing, etc.): Open fires will be set or allowed on the parcel only as a forest management tool under the direction of the Department of Forestry authorities, pursuant to local fire ordinances and directives.

9. Clearing Methods: Brush and other undergrowth, if removed, will be cleared through methods, which will not materially disturb the ground surface. Hand grubbing, crushing and mowing will normally be the methods of choice

10. Irrigation: In order to avoid further depletion of groundwater resource, prevent root diseases and otherwise maintain favorable conditions for the native forest, the parcel will not be irrigated except within developed areas. Caution will be exercised to avoid over watering around trees.

11. Exotic Plants: Care will be taken to eradicate and to avoid introduction of the following pest species:

A) Pampas grass
B) Genista (Scotch broom, French broom)
C) Eucalyptus (large types)

Amendments

The Monterey County Director of Planning may approve amendments to this plan, provided that such amendments are consistent with the provisions of the discretionary permit or building submittal. Amendments to this Forest Management Plan will be required for proposed tree removal not shown as part of this Plan, when the proposed removal fans within the description of a Forest Management Plan or Amendment to an existing Forest Management Plan.

Amended Forest Management Plan

A) An amended forest Management Plan shall be required when:

1. The Monterey County Director of Planning has previously approved a Forest Management Plan for the parcel.
2. The proposed tree removal as reviewed as part of a development has not been shown in the previously approved Forest management plan

B) At a minimum, the Amended Forest Management Plan shall consist of:

1. A plot showing the location, type and size of each tree proposed for removal, as well as the location and type of trees to be replanted,
2. A narrative describing reasons for the proposed removal, alternatives to minimize the amount and impacts of the proposed tree removal, tree replanting information and justification for removal of trees outside of the developed area if proposed.

Compliance

It is further understood that failure to comply with this Plan will be considered as failure to comply with the conditions of the Use Permit.

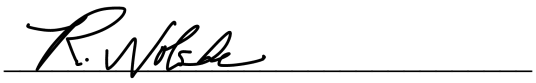
Transfer of Responsibility

This plan is intended to create a permanent forest management program for the site. It is understood, therefore, that in the event of a change of ownership, this plan shall he as binding on the new owner as it is on the present owner. As a permanent management program, this Plan will be conveyed to the future owner upon sale of the property.

Report Prepared By:

Frank Ono, SAF Forester #48004 and ISA Certified Arborist #536 — October 31, 2017 Date

Recommendations Agreed to by landowner:



Landowner — November 9, 2017 Date

Forest Management Plan approved by:

_____ _____

Director of Planning — Date

PHOTOGRAPHS

View from west upper roadway

View looking down slope

View from within stand on access road

View of building site area

View from toe of slope looking up at proposed area for house site

From lower edge of property

View to the south from bottom of slope

SOURCES USED

ANSI A-300 (Part 1), Standard Practices for Trees, Shrubs and Other Woody Plant Maintenance; Pruning. Tree Care Industry Association; 2008.

Clark JR, Matheny N. Trees and Development. Champaign, Illinois: International Society of Arboriculture; 1998. 183 p.

Costello LR, Hagen Bw, Jones KS. Oaks in the Urban Landscape. Richmond, CA: University of California; 2011. 246 p.

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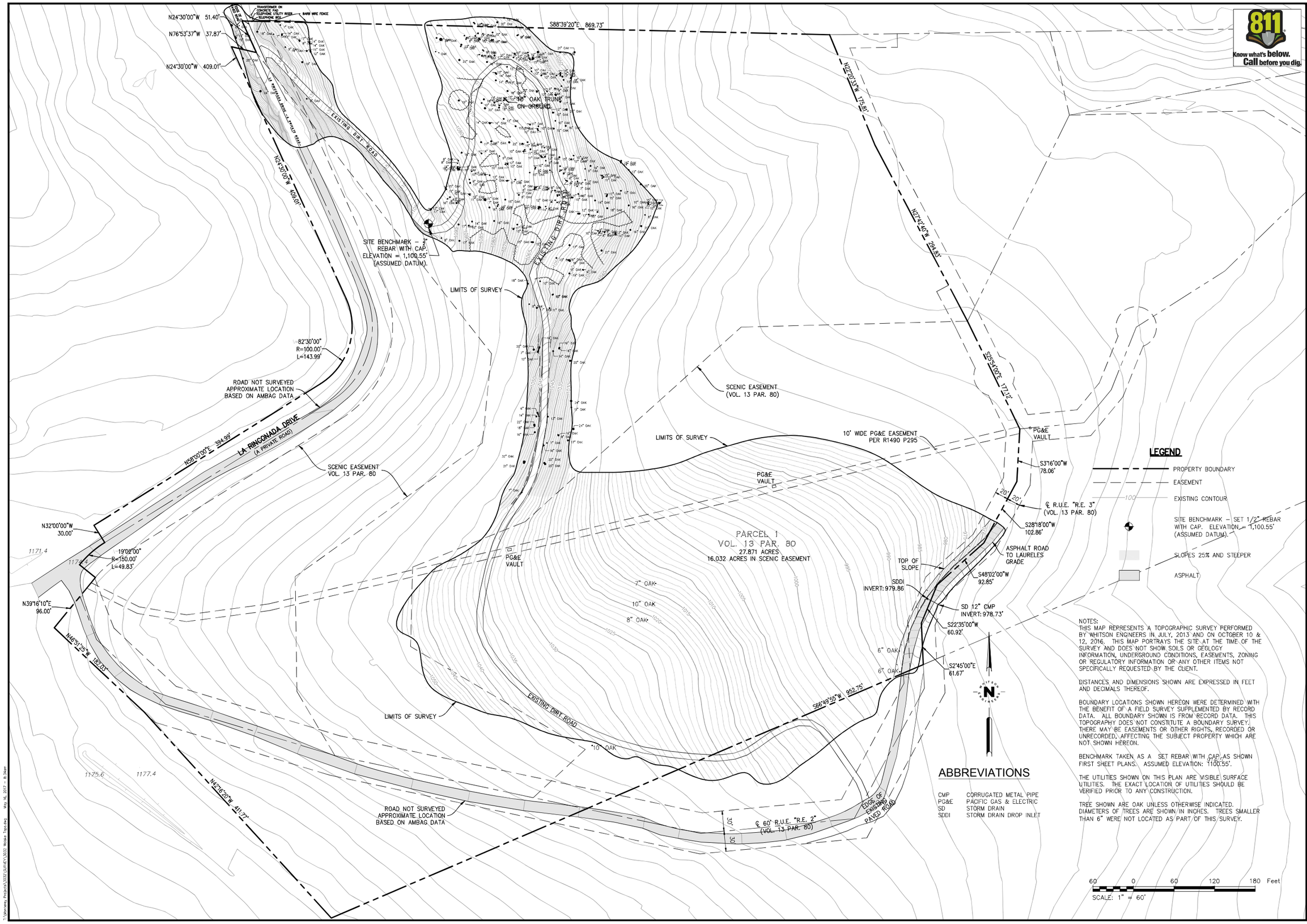
Dunster J. Tree Risk Assessment in Urban Areas and the Urban/Wildland Interface: Course Manual. Silverton, Oregon: International Society of Arboriculture; 2009. 68 p.

Fazio JR. Woodland Steward. Moscow, Idaho: Woodland Press; 1987. 211 p.

Harris RW, Matheny NP, Clark JR. Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines, 4th ed. : Prentice Hall; 2004.

Kent D. Firescaping. Berkeley: Wilderness Press; 2005. 149 p.

Wenger CF. Forestry Handbook. New York: John Wiley and Sons; 1984. 1335 p.



Know what's below. Call before you dig.

REVISIONS			
NO.	BY:	DATE:	DESCRIPTION:

DATE: 11/10/16
SCALE: 1"=60'
ENGR.
JOB NO. 3032.00

LICENSED LAND SURVEYOR RICHARD P. WEBER No. 8002 STATE OF CALIFORNIA

WHITSON ENGINEERS
9699 Blue Larkspur Lane ■ Suite 105 ■ Monterey, CA 93940
831 649-5225 ■ Fax 831 373-5065
CIVIL ENGINEERING ■ LAND SURVEYING ■ PROJECT MANAGEMENT

CLIFTON WOLSKE RESIDENCE
MONTEREY COUNTY CALIFORNIA
APN 416-361-043

EXISTING TOPOGRAPHIC SURVEY

SHEET C1.0 OF 8

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

J:\Monterey Projects\3033\DWG\3033 Wolske Topo.dwg May 16, 2017 - 8:34am

Frank Ono

International Society of Arboriculture
Certified Arborist # 536
Society of American Foresters Professional Member 48004
1213 Miles Avenue
Pacific Grove CA, 93950
Telephone (831) 373-7086
Cellular (831) 594-2291

December 5, 2017

Heather Clifton and Russ Wolske
250 North 10th Street
Apt. 638
Brooklyn, NY 11211

Mr. Wolske and Ms. Clifton;

Purpose: This letter is to serve as an amendment to the plan dated October 31, 2017 for the proposed project located at 26735 Laureles Grade, Carmel Valley CA.

Inadvertently, some information was omitted in the Forest Management plan regarding trees located within the proposed driveway to the residence as indicated in sheet C1.2. There are three (3) additional trees that will be impacted by the new driveway which entails cut and fill to accomplish desired slopes and radius of the roadway. The following must occur to accomplish the desired goals:

- Tree #241 will be removed. It is 6" Oak in poor condition located in the road cut area immediately to the west of the new driveway.
- Tree #245 will be removed. It is a 16" Oak in fair condition located within the new proposed roadway footprint.
- Tree# 248 will be removed. It is a 7" Oak in fair condition located inside of the new proposed road turnout footprint.

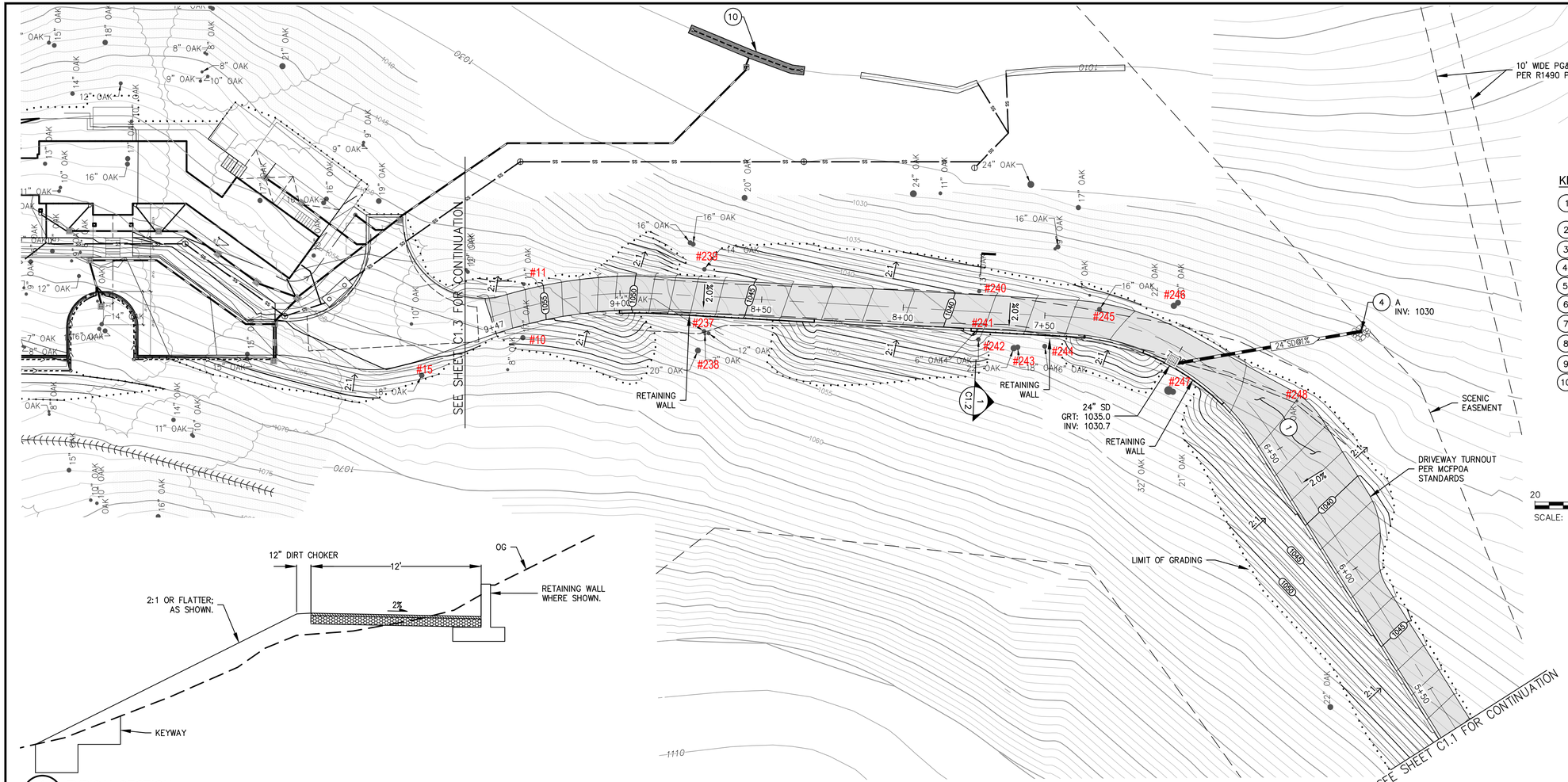
Additional trees located near the roadway may be retained due to minimal grading that will occur. Remaining trees in this area appear to be retainable but may need wells surrounding them to protect their bases from soil accumulation from cut and fill processes; in particular, trees #242, #240, #15 and #10.

In summary, what this means is that the total trees to be removed is now 36 from the 33 originally stated and replanting will be need three additional Oak seedlings from the original plan. All other elements of the plan remain the same.

Thank you very much and please feel free to call if there are any questions or if I can be of further assistance.

Sincerely,

Frank Ono
Certified Arborist # 536
Society of American Foresters # 048004

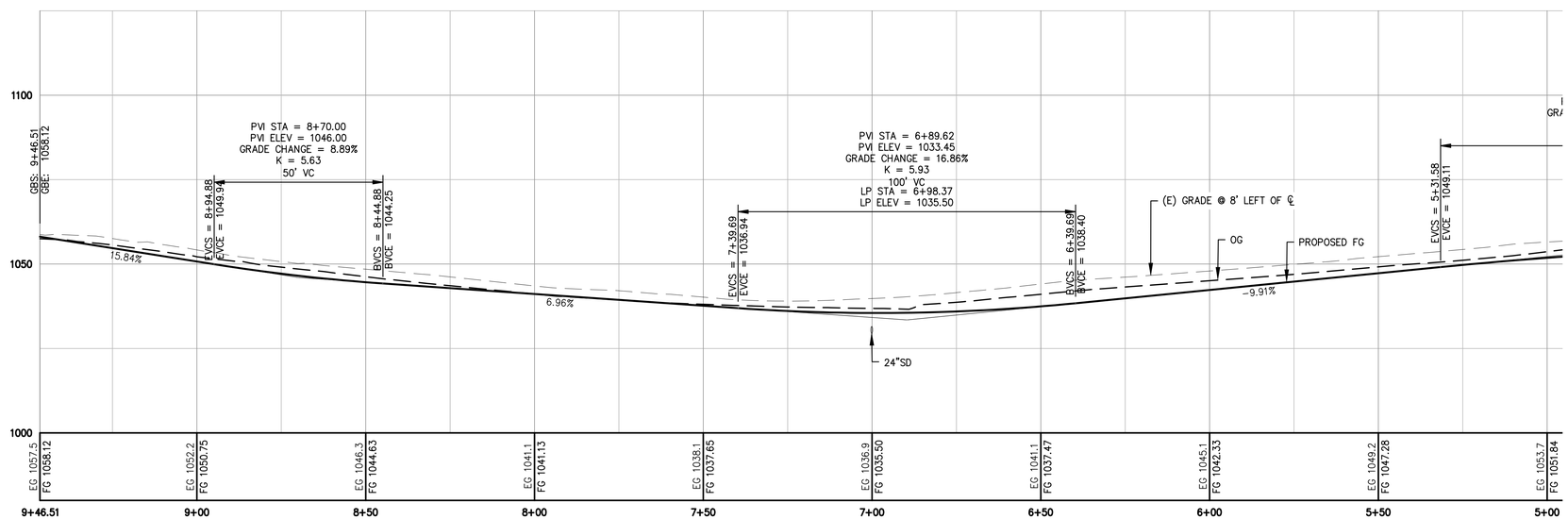


KEYNOTES

1. RECYCLED AGGREGATE BASE DRIVEWAY; SEE TYPICAL SECTION.
2. CEMENT STABILIZED MOTORCOURT
3. FIRETRUCK TURNAROUND
4. STORM DRAIN OUTFALL ROCK SLOPE PROTECTION
5. CONCRETE SURFACE S.L.D.
6. GRADED SWALE
7. BROW DITCH
8. RETAINING WALL WITH GUARD RAILING, S.S.D.
9. 4" HIGH CURB
10. COUNTY STANDARD DISPERSION OUTLET.

SCALE: 1" = 20'

1 C1.2 TYPICAL SECTION
SCALE: 1" = 4'



DRIVEWAY CENTERLINE PROFILE
SCALE: 1" = 20'

PLANNING REVIEW ONLY
NOT FOR CONSTRUCTION

REVISIONS:

NO.	BY:	DATE:	DESCRIPTION:

DATE: 11/13/17
SCALE: 1"=20'
ENGR: SJ
JOB NO: 3032.00

REGISTERED PROFESSIONAL ENGINEER
RICHARD P. WEBER
No. 55219
CIVIL
STATE OF CALIFORNIA

WHITSON ENGINEERS
6 Harris Court ▪ Monterey, CA 93940
831 649-5225 ▪ Fax 831 373-5065
CIVIL ENGINEERING ▪ LAND SURVEYING ▪ PROJECT MANAGEMENT

CLIFTON WOLSKE RESIDENCE
MONTEREY COUNTY CALIFORNIA

DRIVEWAY PLAN AND PROFILE

APN 416-361-043

SHEET C1.2 OF 8

DIGALERT 811

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0 1 2 INCHES 3

August 3, 2017

Russ Wolske
250 North 10th Street, Suite 638
Brooklyn, NY 11211

SUBJECT: Tree removal, 26735 Laureles Grade, Carmel Valley, CA,
APN 416-361-043, Monterey County

Dear Mr. Wolske:

Per your request, Architect William (Bill) Foster directed me to investigate whether unauthorized oak tree removal had occurred on undeveloped property you co-own with Heather Clifton in Monterey County. This inquiry is related to an anonymous complaint received by the Monterey County Code Enforcement Department regarding potentially illegal tree cutting on your property.

The 27.87-acre subject parcel (APN 416-361-043) is located at 26735 Laureles Grade, Carmel Valley, near the junction of Laureles Grade and Rinconada Road. I understand you and Heather Clifton purchased this parcel in December 2012. I previously surveyed this property in April 2017 and prepared a Biological Assessment, pursuant to your plans to develop the site for residential use.

When Mr. Foster asked me to investigate the potential of unauthorized tree removal on your property, he stated that you had not directed vegetation clearing of any sort and that you were unaware of potential tree cutting or wood removal from the property. According to Mr. Foster, no tree removal occurred during the preparation of the topographic site plan for the property, or during the installation of story-poles outlining the footprint and roof lines of proposed structures. However, Mr. Foster asked me for search for evidence of tree removal and develop an independent determination of the approximate timing of tree removal activity, if any was found.

On July 25, 2017, I visited your property and documented a number of coast live oak tree stumps and decomposing wood chips in the vicinity of the footprint of your proposed home site. No pieces of cut wood occur on the ground in the vicinity, which indicates that all of the oak material associated with the cut tree stumps was either removed, chipped on-site, or possibly decayed in situ. The tree removal was conducted in Coast Live Oak Woodland habitat (*Quercus agrifolia*), with an understory dominated by poison oak, annual grasses, and French broom. The oak stumps were cut at ground level and while many exhibit decay, many have young, sprouting shoots (as do several toyon bushes in the vicinity). Many of the oak stumps have both some level of decomposition, as well as sprouting shoots. Many of the stumps also have evidence of termite attack and holes of various sizes, which extended deep into the root-crown of the former trees. I puzzled over the origin of the holes and determined that they were likely formed by tunneling beetles, probably the California prionus, *Prionus californicus*, in the Long-horned beetle family Cerambycidae. This beetle has larvae that feed and tunnel in the lower trunk and roots of oaks, other hardwoods, conifers and woody shrubs. Their tunnels and borings are exposed when trunks are cut.

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The condition of the oak stumps and the majority of callouses that have developed on cut tree limbs in the area look to be between 3 and 6 years old. Some of the callouses on limbs cut above the ground are quite a bit older than 3-6 years and appear to be associated with a previous episode of tree thinning 15, or more years ago. I arrived at the approximate ages of the cut limbs and stumps by comparing the condition of the wood to coast live oak branches and small trees I removed on my personal property at various times over the past 15 years. My home is situated in similar oak woodland habitat about one mile away on the western side of Laureles Grade.

Understory vegetation in the area where trees were thinned and the ground was cleared includes numerous annual grasses, poison oak and French broom (*Genista monspessulana*), which has attained heights in excess of 7-feet and is producing seeds. This weedy vegetation is consistent with what I would expect to grow in the understory of Oak Woodland habitat that has experienced some level of disturbance.

Figure 1 is a cut limb from a coast live oak near your proposed water tank site. The cut is approximately 4 feet off the ground and I estimate it to be approximately 5 or 6 years old. Note the callous developing on the upper, center portion of the cut. Figure 2 is a much older callous from a cut limb that is in excess of 15-20 years old – this older, calloused cut is located on Tree #15 (marked with a metal tag) along the access road in the general vicinity of the building site. The metal tag on Tree #15 corresponds with the "Tree Resource Evaluation and Protection Plan" prepared by Certified Arborist Maureen Hamb, April 2017. The well-formed callous seen in Figure 2 demonstrates that there was a much older episode of tree thinning (and possibly tree removal) that occurred on the subject parcel at some time in the past.

Figure 1 – Callous on limb cut approximately 5-6 years ago (photo August 2, 2017).

Figure 2 – Callous on limb cut more than 15 ago on Tree #15 (photo July 25, 2017).

A historical search of Google Earth imagery confirmed that clearing and mowing of portions of the subject parcel occurred at some time between May 2012 and August 2013, Figures 3 and 4.

NOTE DIFFERENCE IN CANOPY COVERAGE BETWEEN THESE TWO IMAGES - Target Area outlined in red.

Figure 3 – Google Earth image, May 5, 2012.

Figure 4 – Google Earth image August 25, 2013.

Enlargements of Figures 3 and 4 clearly exhibit vegetation removal and brush clearance that occurred at some point between the two image dates, May 5, 2012 and August 25, 2013. Clearing of oak canopy and understory vegetation, as well as road grading occurred between May 2012 and August 2013. Faint mowing lines are visible in the lower right of Figure 6, the enlargement of August 25, 2013, imagery.

Figure 5 - May 5, 2012

Figure 6 – August 25, 2013

I understand that you and Ms. Clifton purchased the parcel in December of 2012 and that the lower portion of parcel and the general area proposed as a house site had been mowed and cleared at the time you first visited the property. Based on the knowledge that tree removal occurred at some point during the 7-month period between May 2012 and December 2012 (prior to your purchase in December 2012), it appears that the condition of decay on a majority of the cut trees on the parcel corresponds with my estimate for a time frame of tree cutting approximately 3-6 years ago.

It appears that mowing and tree removal may have been completed in order to clear the property of vegetation when it was first marketed for sale by the previous owner. It is not known whether the previous owner obtained the proper permits from Monterey County for this work.

I returned to the property on July 31 and again on August 2, 2017, to make a thorough count of trees removed in the general building envelope of the parcel. The majority of tree removal appears to be concentrated in the area between the proposed fire safety water tank and the future house site. I counted and mapped 43 different oak tree stumps that had been cut at ground level. Many were obscured by understory vegetation. Several of the stumps were associated with trees that originally had multiple trunks. I measured the widest diameter of the cut trees at the stump level and noted whether the stumps were sprouting – sprouts indicate the tree is not yet dead and may continue to grow until the leader sprout (or sprouts) mature into dominant tree(s). It is possible that additional cut trees are buried under piles of wood chips that are scattered throughout the wood removal area, however no evidence of sprouting stumps was observed protruding from chip piles.

Table 1 notes each tree I discovered that was cut at ground level and whether it is currently sprouting. The width of each stump at the widest point is also noted. Each tree was numbered with a yellow Forester's crayon and most stumps were photographed. Tree stump #13 was not measured or photographed because it is adjacent to an active nest of wasps. Photographs of cut stumps I observed are included for reference and most photographs include a portion of the toe of my boot for scale. Several stumps were not photographed because all you would see in the photo is a cluster of sprouts.

Figure 10 is a map of the location of the cut trees and wood chip piles. All work appears to be concentrated between the proposed water tank location and the proposed building site in an area approximately one-acre in size.

SUMMARY OF FINDINGS: Tree removal occurred between May and December 2012 in an approximately 1-acre portion of the 27.87-acre property you and Ms. Clifton purchased in December 2012. The decomposing condition of cut stumps and the development of callouses on a majority of cut tree limbs appear to be consistent with a time frame that matches the 2012 clearing and mowing visible on Google Earth imagery – the clearing and mowing work occurred prior to your ownership of the subject parcel.

I counted 43 tree stumps cut at ground level - there may be others buried under thick, decomposing chip piles. Of the 43 cut trees, 27 are sprouting back. The largest base width measured 26-inches at ground level (multiple trunks had merged and grown together in this tree), and the average base width of the 43 cut stumps is 12.4 inches. According to the mapped oaks trees on the original Plot Plan, there are more than 150 oaks of varying sizes remaining in the 1-acre area where the tree clearing occurred.

Figure 7 – Wood chip pile (lower center of photograph) in the general vicinity of tree stump #22. Photograph August 2, 2017.

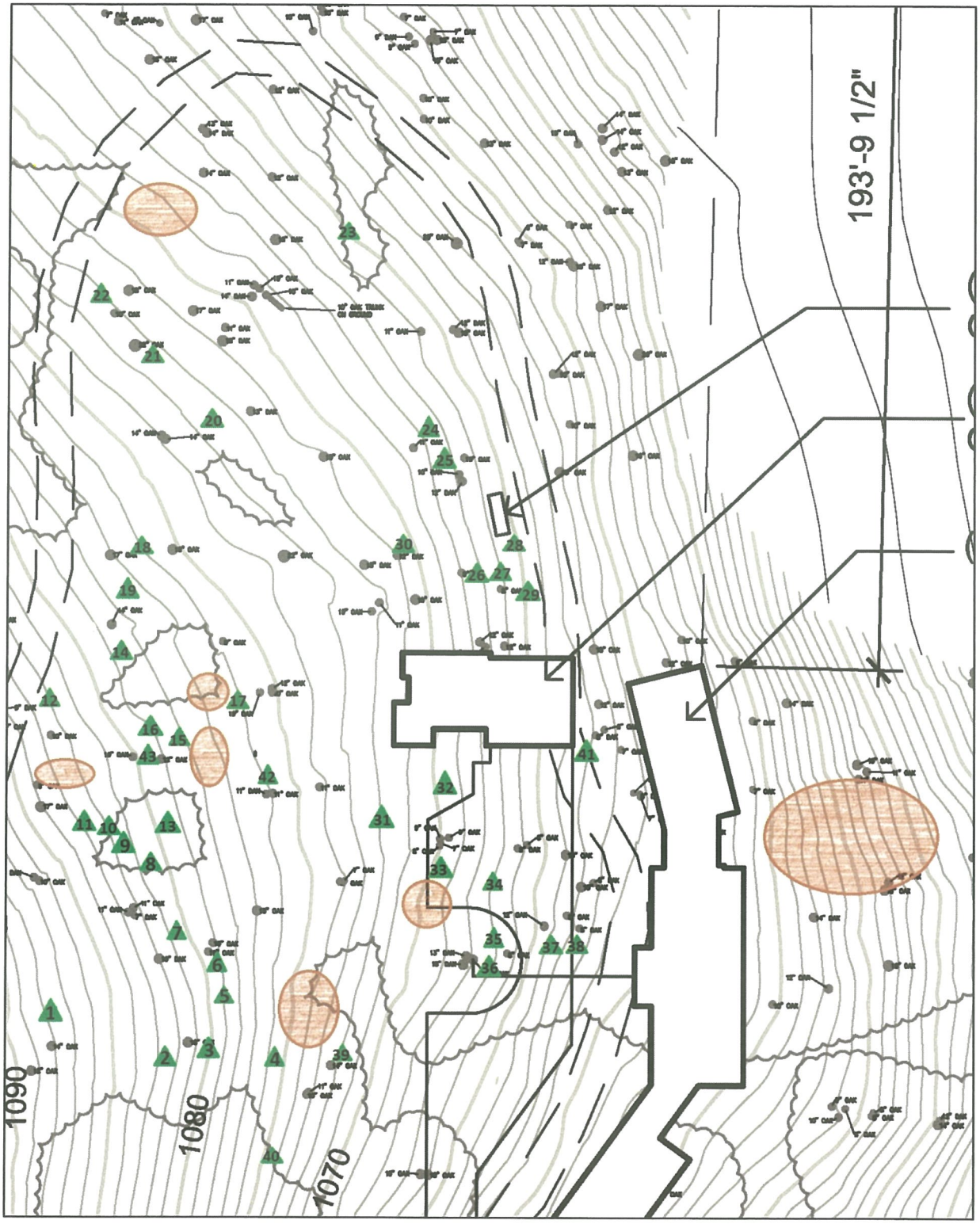
Figure 8 – Sprouts of tree stump #22 in lower center of photograph (August 2, 2017).

TABLE 1 – NOTES ON TREE STUMPS

TREE NUMBER	TRUNK DIAMETER	SPROUTS		TREE NUMBER	TRUNK DIAMETER	SPROUTS
1	11	yes		23	14, 17	no
2	14, 16, 10	yes		24	10, 12, 12	no
3	9	no		25	11.5	yes
4	21	no		26	12	yes
5	14	no		27	6	yes
6	9.5	yes		28	17	yes
7	9.5	no		29	11	no
8	7	yes		30	11	no
9	14	yes		31	24	yes
10	16.5	yes		32	7, 10	yes
11	12	yes		33	7, 9, 11	yes
12	4	yes		34	8.5	yes
13	near wasps	yes		35	12	no
14	14	no		36	11.5	no
15	10	no		37	9	yes
16	24	yes		38	26 (stems merged)	no
17	7.5, 13, 13	yes		39	15	no
18	7.5	yes		40	20	yes
19	17	yes		41	7, 10, 10	yes
20	14	yes		42	25	no
21	8	yes		43	8, 11	no
22	12	yes				

TOTAL TREES OBSERVED AND COUNTED = 43 (a few with multiple stumps)
LARGEST BASE = 26" at widest part, ground level (this stump included stems that had grown together)
SMALLEST BASE = 4"
AVERAGE BASE SIZE = 12.4"

Figure 10 – The figure is an enlargement of the Plot Plan and depicts where tree removal occurred between May and December 2012. Tree stumps are numbered with green symbols and chip piles are mapped with pink ovals. 43 trees stumps were documented, with more than 150 standing trees remaining in this approximately 1-acre area.



PHOTOGRAPHS OF TREE STUMPS CUT BETWEEN MAY AND DECEMBER 2012

Tree 1 – hole in center

Tree 2 - multiple holes & stems

Tree 3 – adjacent to living tree

Tree 4 – big diameter

Tree 5 – multiple holes

Tree 6

Tree 7 – multiple holes

Tree 8 – decay fungus

Tree 9 – big holes in center

Tree 10 – large cavities in center

Tree 11

Tree 12 – small

Tree 14 – heart rot and holes

Tree 15

Tree 16 – stems merged

Tree 17 – heart rot and holes

Tree 18

Tree 19

Tree 20 – holes

Tree 21 – holes

Tree 22 – very clean base

Tree 24 – multiple stems

Tree 25 – decay fungus

Tree 28

Tree 29

Tree 30 – holes

Tree 31 – wide, irregular base

Tree 32 – multiple stems

Tree 33 – multiple stems

Tree 35 – termite damage

Tree 36 – decay fungus

Tree 37 – big hole

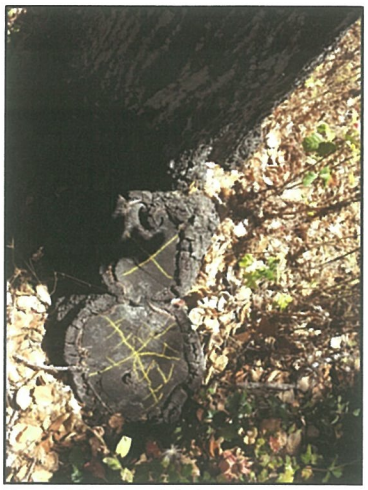
Tree 38 – merged stems

Tree 39 – termite damage

Tree 40 – big base

Tree 41 – multiple trunks

Tree 42 – merged stems



Tree 43 – multiple stems

In conclusion, clearly there has been tree cutting, limbing and harvest of coast live oak wood on your property. It appears that this activity occurred prior to your ownership of the parcel and it is not known whether this work was permitted.

My observation is that the tree removal that occurred in the 1-acre area has not been detrimental to the remaining trees and has resulted in an overall reduction in competition between standing oaks. This area must have been an extremely dense forest of relatively small stature trees, with a high degree of boring beetle infestation. The thinning that occurred in 2012 has reduced ladder fuel, fuel loads and fire hazard, and has contributed to the creation of habitat similar to what CalFire would define as a shaded fuel break. Current understory vegetation is weedy and should be controlled by regular mowing.

If you feel some compensatory oak tree planting is appropriate to offset the previous owner's removal of 43 trees, my recommendation is to encourage recruitment of between 8 and 10 of the most vigorously sprouting stumps within the tree removal area and allow them to continue to regrow naturally. The regrowth should not be located adjacent to the proposed buildings in order to maintain fire clearance as the trees mature. Additional oak tree planting of seedlings propagated from local acorns could be considered, but it seems inappropriate to overcrowd the remaining trees in the vicinity of your proposed home site.

Please contact me if I can elaborate on any aspect of this letter report, or if you would like to receive electronic copies of any of the photographs taken between July 25 and August 2, 2017.

I would be happy to show you the tree removal area and point out cut stumps during your next visit to the property.

Sincerely,

Nicole Nedeff

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