Revised Biological Evaluation of Proposed Goerner Residential Construction Project, 1017 Hot Springs Road (APN 011-010-008), Santa Barbara, California

Canyon sunflower and coastal morning-glory in coastal sage scrub and coast live oak woodland habitat proposed turnaround location. 12 May 2020.

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1.0 Background and Project Description. The project proposes to construct a single-family residence, guest house, and pool on a 40-acre parcel (APN 011-010-008) at 1017 Hot Springs Road, Montecito. A major component of the project involves grading, widening, and paving an existing unpaved track that extends approximately 2,900 feet from the end of Hot Springs Road at 820 feet above sea level to the proposed house site at 1,170 feet above sea level. A portion of the lower road that parallels Hot Springs Creek lies on private parcels, including Santa Barbara Land Trust property, via existing easements. The subject parcel boundary begins approximately 1,430 linear feet upslope from the end of Hot Springs Road. In order to comply with Fire Department requirements regarding emergency vehicle, access plans for the improved access road through the private parcels and subject parcel up to the residence site will include several turnouts and 'hammerheads', as well as replacement of an existing at-grade ("Arizona") crossing on Hot Springs Creek with a span bridge.

Since first proposed in 2008, the project has undergone various iterations, each resulting in a biological evaluation of potential project impacts (Tierney, 2008; Hunt & Associates, 2011, 2013, 2017, 2018). This, the sixth biological evaluation of the proposed project, is necessary because construction design elements for the access road and required improvements to the at-grade crossing of Hot Springs Creek have changed significantly from previous project proposals in the aftermath of the Thomas Fire in December 2017 that burned all of the subject parcel and most of the adjacent parcels, and a subsequent debris flow in January 2018 that significantly altered the channel and riparian corridor of Hot Springs Creek.

The current document updates descriptions of existing biological conditions in the project area (flora and fauna) originally presented in the five previous biological evaluations and analyzes potential project-related impacts to biological resources resulting from current roadway and creek crossing improvement and construction of the single-family residence and associated structures, including fire fuel management practices that will be required around habitable structures (see Ashley-Vance Engineering, Inc., 2020 and Goodkind, 2018, in Appendix 4). The following project elements will affect biological resources:

- remove existing 12-foot wide concrete at-grade crossing of Hot Springs Creek, requiring average excavation depth in channel of two feet, but up to 5 feet in places, to expose concrete;
- install a new 16 ft wide x 100 ft long span bridge on new abutments located beyond the existing top-of-bank of the creek;
- widen and pave approximately 1,900 feet of the existing 12-foot wide access road to 16 feet wide; approximately 700 linear feet is in riparian Environmentally Sensitive Habitat Areas (ESHA) associated with Hot Springs Creek; the remainder is in coastal sage scrub/chaparral; stabilize roadway by installing curbs,

retaining walls, and/or grade beams on caissons at specific locations along the access road, as determined by structural engineers;
- construct five storm drain/culvert structures at various points along the access road for drainage;
- construct 11 turnarounds and turnouts for emergency vehicle access and maneuvering at specific locations along the access road;
- construct main residence, garage, pool, and guest house on proposed house site;
- implement required fire fuel management practices in zones extending 200 feet outward from habitable structures for the life of the project (Goodkind, 2018 in Appendix 4).

Native, locally-occurring trees, shrubs, and herbaceous species will be planted in disturbed soils following construction of the access road improvements and the house site (Goodkind, 2020).

2.0 Methods. Field methods employed in previous biological evaluations of the project are discussed in Tierney (2008) and Hunt & Associates (2011, 2013, 2017, 2018). The cumulative results of these successive surveys were updated for the present document by site surveys that were conducted on 17 April 2020 and 12 May 2020 between 0900 hrs and 1500 hrs. Site photos are included in Appendix 1. The field survey areas included:

- the channel and riparian corridor of Hot Springs Creek extending 800 feet downstream and 1,200 feet upstream of the existing road crossing,
- upland habitats within 50 feet of either side of the edges of the existing access road to the house site, and;
- habitats in a 100-foot radius around the proposed house site where fire fuel management activities will occur.

The field surveys were timed to detect early- and late-season special-status annual plants. The surveys also overlapped with a significant portion of the nesting season for resident and migratory birds. Plants and wildlife observed on-site during the various site visits between 2008 and 2020 are listed in Appendices 2 and 3. Focused surveys for California red-legged frogs (*Rana draytonii*) and special-status riparian birds were conducted along Hot Springs Creek for the 2011 and 2013 biological evaluations, but were not repeated for the present document due to lack of suitable habitat in the aftermath of the Thomas Fire in December 2017 and subsequent debris flow event in January 2018. Vegetation was mapped and identified to the alliance- and association-level based on conditions observed during the site surveys (Sawyer et al, 2009; CDFW, 2018). The occurrence of native grasses within the proposed footprint of access road improvements were originally quantified and mapped in Hunt & Associates (2013) and updated in Hunt & Associates, 2017; 2018; this document). Observations of special-status plants and wildlife within a five-mile radius of the project area were referenced through the California Natural Diversity Database (CNDDB, 2020) for the Goleta, Santa Barbara, Carpinteria, Little Pine Mountain, Hildreth Peak, and San Marcos Pass U.S. Geological Survey 7.5-minute quadrangles (CDFW, 2020), and CalFlora records (2020). Areal impacts to vegetation

from roadway improvements, house site construction, and fire fuel management practices were determined in the field and mapped on Google Earth imagery.

3.0 Environmental Setting. Existing conditions described in previous biological evaluations of this project (Tierney, 2008; Hunt & Associates, 2011; 2013; 2017; 2018), are updated in the following sections based on conditions observed during the site surveys conducted in April and May 2020.

3.1 Project Area Location. The approximately 40-acre subject parcel (APN 011-010-008), lies on the south slope of the Santa Ynez Mountains within the Hot Springs Creek watershed at elevations ranging from about 960 feet at the southeastern corner of the parcel to about 1,575 feet above sea level at the northeastern corner (Fig. 1).

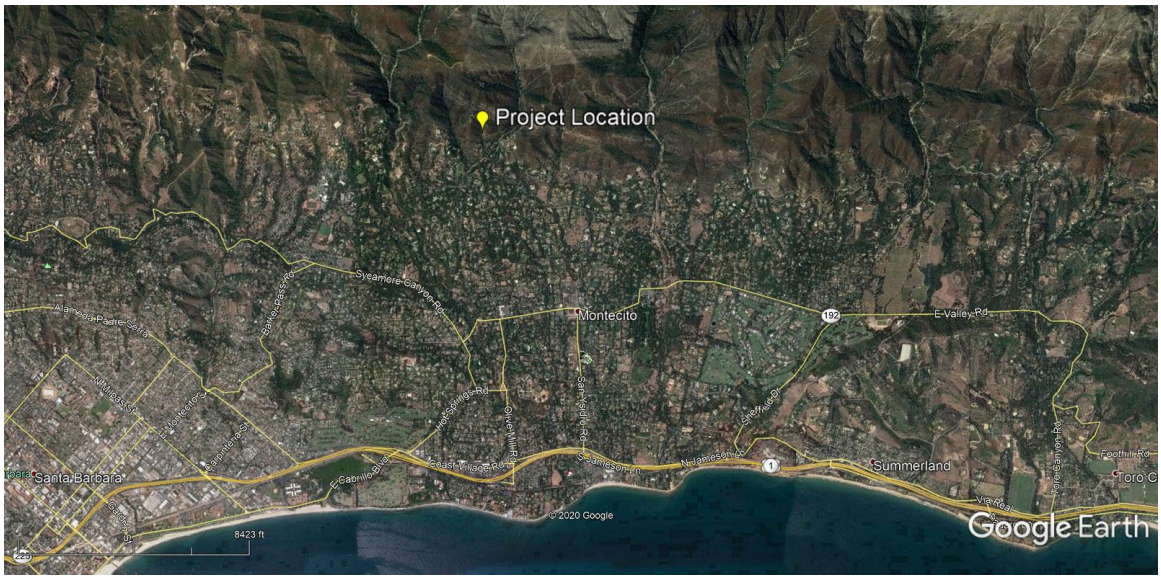

Figure 1. Project area location.

The project area extends from the Hot Springs Road crossing of Hot Springs Creek at about 750 feet above sea level and continues along an easement through private property on an existing paved roadway for about 1,250 feet. At this point, the paving ends and the existing unpaved access road continues through an easement on four other private parcels for approximately 1,280 feet before contacting the southeastern corner of the subject parcel at elevation 960 feet. The access road continues for about 1,150 feet through the subject parcel to the proposed house site, located between 1,150 feet and 1,175 feet above sea level. In total, the proposed access road improvements will extend along approximately 2,430 feet of existing, unpaved roadway, with at least 50% of it occurring on an easement through adjacent private properties (Fig. 2).

3.2 Land Use. The subject parcel consists of approximately 40 acres of undeveloped land in the southern foothills of the Santa Ynez Mountains in Montecito, an unincorporated area in southern Santa Barbara County (Figs. 1 and 3). The parcel contacts U.S. Forest Service land on the north, open space to the east and west, and

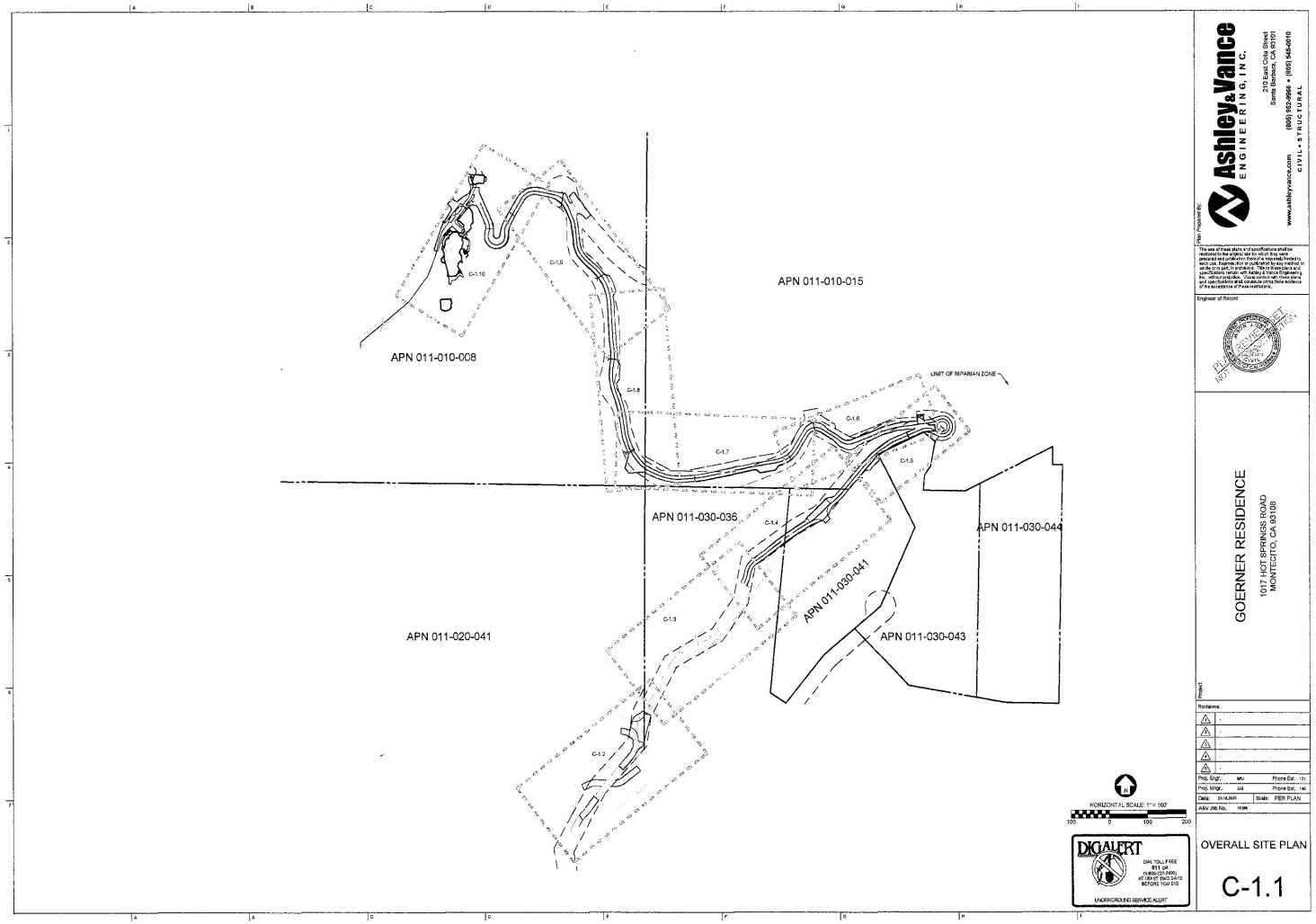

Figure 2. Configuration of project area. The subject parcel (APN 011-010-008) is shown at upper left. Over 50% of the proposed access road and Hot Springs Creek crossing improvements will occur on adjacent parcels. Hot Springs Creek roughly parallels the eastern side of the lower portion of the roadway before turning westerly and crossing the roadway in APN 011-020-041 (bottom center).

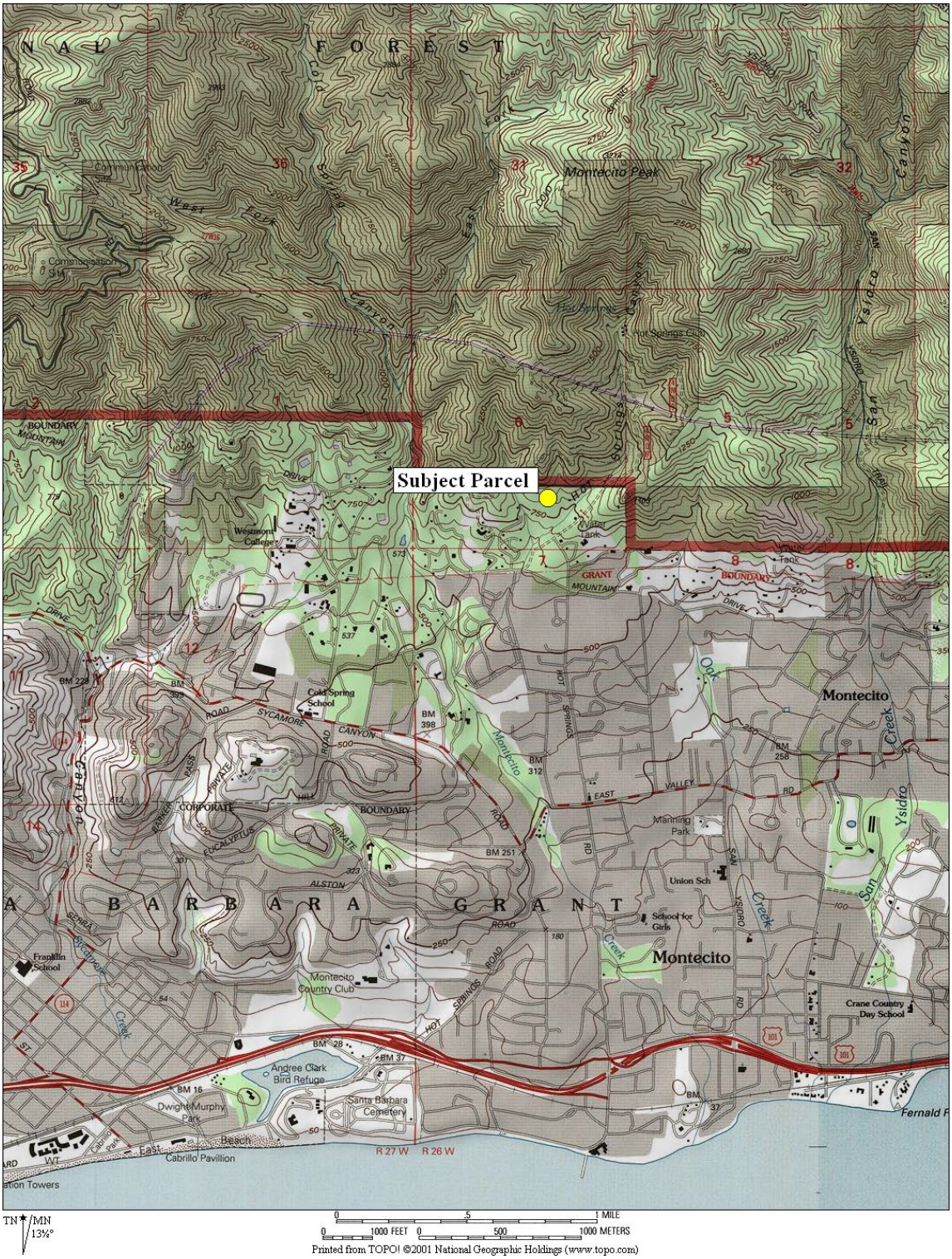

Figure 3. Regional Setting of Project Area.

single-family, estate-sized parcels to the south (Fig. 3). The parcel abutting the subject parcel on the east, APN 011-010-015, is conserved as permanent open space and managed by The Land Trust for Santa Barbara County. All of the Forest Service land, the subject parcel, and adjacent parcels burned during the Thomas Fire in December 2017, then experienced severe slope erosion and debris flows during an intense storm event on 9-10 January 2018.

3.3 Soils. Shipman (1981) mapped soils in the project region. Soils along the main access road, including Hot Springs Creek, are classified as Milpitas stony fine sandy loam (MdD), formed from alluvial deposits derived from sandstone bedrock. Most of the subject parcel is mapped as Maymen-Rock outcrop complex on very steep slopes (MbH and Rb). Maymen soils form in material weathered from sandstone, conglomerate, and shale bedrock and the bedrock is exposed in many places on the subject parcel (see photos in Appendix 1).

3.4 Hot Springs Creek. Hot Springs Creek is a sub-watershed of the Montecito Creek watershed and drains a portion of the south slope of Montecito Peak (elev. 3,174 feet) in the Santa Ynez Mountains. Cold Springs Creek contacts the main stem of Hot Springs Creek approximately 675 feet downstream of the Hot Springs Road crossing to form Montecito Creek. Montecito Creek contacts the Pacific Ocean between the Biltmore Hotel and Fernald Point, approximately 2.2 stream miles downstream from this confluence.

The access road/driveway parallels the northwestern edge of the floodplain and active channel of Hot Springs Creek between 750 feet and 895 feet above sea level and crosses two unnamed seasonal tributaries of Hot Springs Creek at 915 and 1,095 feet above sea level (Fig. 4 and photos in Appendix 1). Surface flows in the main stem are intermittent, with perennial reaches in the upper watershed and seasonally dry reaches in the lower watershed (although portions of the lower watershed may be perennial as a result of residential runoff). Surface flows along the project area reach of Hot Springs Creek are intermittent and the at-grade crossing on Hot Springs Road is typically dry in summer. This watercourse is typical of other South Coast drainages in being seasonally 'flashy', i.e., experiencing scouring flows during significant storm events that rapidly decline to low-flow conditions.

The bed gradient along the project reach varied from 0-15 degrees before the Thomas Fire. The streambed consists of coarse sand, gravel, cobbles, and boulders, with scattered sandstone bedrock outcrops. Prior to the Montecito Debris Flow on 9-10 January 2018, the channel of Hot Springs Creek in the project area was incised from three to six feet deep and the active channel meandered over substrate composed of fines, gravel, cobbles, and boulders. In-channel aquatic features consisted mostly of riffle segments punctuated with small scour pools, one to three feet deep. Riffle segments were separated by low cascades (1-3 feet high) formed by boulders. Aquatic vegetation was minimal, consisting only of filamentous and encrusting algae. In general, the active channel supported little aquatic or emergent vegetation.

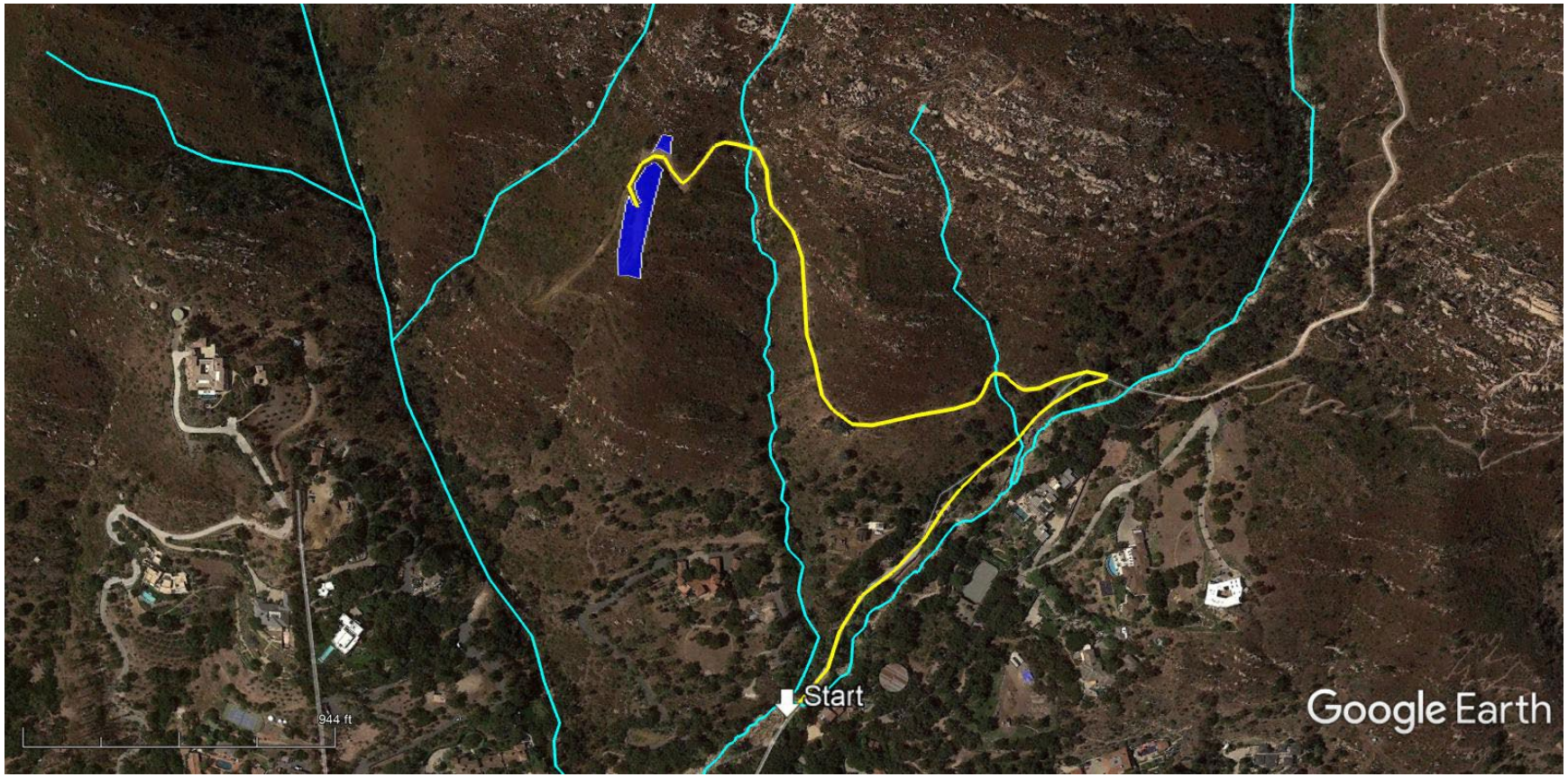

Figure 4. Project area. Yellow line delineates access road from Hot Springs Road creek crossing at elevation 750 feet (labelled 'Start'), to proposed house site at elevation 1,150-1,175 feet (blue polygon). Blue lines indicate approximate center line of drainages: the main stem of Hot Springs Creek crosses image at right and two unnamed, seasonal tributaries run north to south through center of image. Cold Spring Creek and its tributaries are shown at left. Hot Springs and Cold Spring creeks converge approximately 600 feet downstream of the image to form Montecito Creek. Image dated 19 August 2019.

Although the Thomas Fire scorched the riparian tree canopy but left it mostly intact, the subsequent debris flow scoured the active channel and major portions of the floodplain of Hot Springs Creek to a depth of 6-12 feet from the upper watershed through Montecito Creek. Channel substrates now consist mostly of boulders and exposed bedrock, with little smaller alluvium. The bed gradient has been transformed into a series of steps, separated by boulder cascades. Pool and riffle habitat has all but disappeared from the project area reach.

Mature western sycamore, coast live oak, white alder, and arroyo willow trees as well as understory vegetation throughout the floodplain was uprooted and carried far downstream. Riparian vegetation is recovering, e.g., riparian trees are stump-sprouting, but the entire floodplain remains much more open compared to pre-debris flow conditions. There is little or no aquatic or emergent vegetation along the active channel. Instream features, such as scour pools and runs with overhanging banks, that formerly provided suitable breeding and larval development habitat for California red-legged frogs (*Rana draytonii*), South Coast newts (*Taricha torosa torosa*), were obliterated by the debris flow and will take years to decades to recover (see photos in Appendix 1).

Two unnamed, seasonal tributaries of Hot Springs Creek drain slopes in the eastern and central portions of the subject parcel. These drainages trend in a nearly north-south orientation and are bordered by steep, scrub-covered slopes that burned completely in the Thomas Fire (see photos in Appendix 1). (Fig. 4; Appendix 1). The bed gradients of both drainages are very steep (> 30 degrees), with flashy surface flows that occur only during and immediately after rain events. The westernmost unnamed tributary runs through the approximate center of the subject parcel and supports intermittent seep flows in wet years. Neither drainage supports aquatic emergent or riparian understory vegetation and are floristically undifferentiated from coastal sage scrub and chaparral vegetation found on adjacent, exposed slopes. All of the scrub vegetation burned completely in the Thomas Fire (see photos in Appendix 1). The understory of the easternmost tributary upslope of the existing access road supports dense patches of invasive, non-native vegetation, including cape ivy (*Delairea odorata*).

3.5 Vegetation. Native plant communities in the project area are closely associated with landforms: riparian woodland, including oak woodland, occurs along the floodplain of Hot Springs Creek and the lower reaches of tributaries to the main stem, and scrub vegetation occurs on upland, exposed slopes. These general communities are differentiated into vegetation alliances and associations on the basis of species composition (Holland, 1986; Sawyer et al., 2009; CDFW, 2018; Table 1). Figures 5a-d map vegetation in the project area.

Platanus racemosa Woodland Alliance (Western Sycamore-Coast Live Oak Riparian Woodland). This plant community is closely associated with the active channel and floodplain of Hot Springs Creek. The access road improvements at the Hot Springs Creek crossing and between road elevation 824 and 894 pass through this plant community (Table 1; Fig. 5a). The open tree canopy here is formed by nearly equal numbers of mature western sycamore (*Platanus racemosa*), coast live oak

Table 1. Vegetation Alliances and Associations in Project Area.

Project Component *	Vegetation Alliance (Sawyer et al., 2009)	Vegetation Association (Sawyer et al., 2009)
Hot Springs Creek crossing improvements between road elevations 748 and 775 (Sheet C1.2)	*Platanus racemosa* Woodland Alliance**	*Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Association
	Quercus agrifolia Woodland Alliance**	*Quercus agrifolia-Umbellularia californica-Toxicodendron diversilobum* Association
Access road improvements between road elevations 824 and 894 (Sheets C-1.3, C-1.4, and C-1.5)	*Platanus racemosa* Woodland Alliance**	*Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Association
	Quercus agrifolia Woodland Alliance**	*Quercus agrifolia-Umbellularia californica-Toxicodendron diversilobum* Association
Access Road improvements between road elevations 894 and 1,170 (Sheets C-1.6 through C-1.10)	*Quercus agrifolia* Woodland Alliance**	*Quercus agrifolia-Ceanothus spinosus Association* *Quercus agrifolia-Heteromeles arbutifolia-Toxicodendron diversilobum* Association
	Eriogonum fasciculatum Shrubland Alliance	*Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Association
	Adenostoma fasciculatum-Salvia mellifera Shrubland Alliance	*Adenostoma fasciculatum-Salvia mellifera/(herbaceous)* Association *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Association
	Ceanothus megacarpus Shrubland Alliance	*Ceanothus megacarpus-Adenostoma fasciculatum Association* *Ceanothus megacarpus-Malosma laurina Association* *Ceanothus megacarpus-Salvia mellifera Association*
	Arctostaphylos glauca Shrubland Alliance	*Several Mixed Associations with Adenostoma fasciculatum, Salvia mellifera, Diplacus aurantiacus, Ceanothus spinosus*, etc., as co-dominants
	Brassica (nigra) Semi-Natural Herbaceous Stands	
	Bromus (diandrus, hordeaceus) Semi-Natural Herbaceous Stands	
House site at elevation 1,170 (Sheet C-1.10)	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Association
	Adenostoma fasciculatum-Salvia mellifera Shrubland Alliance	*Adenostoma fasciculatum-Salvia mellifera/(herbaceous)* Association *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Association
	Ceanothus megacarpus Shrubland Alliance	*Ceanothus megacarpus-Adenostoma fasciculatum Association* *Ceanothus megacarpus-Malosma laurina Association* *Ceanothus megacarpus-Salvia mellifera Association*
	Arctostaphylos glauca Shrubland Alliance	*Several Mixed Associations with Adenostoma fasciculatum, Salvia mellifera, Diplacus aurantiacus, Ceanothus spinosus*, etc.
	Brassica (nigra) Semi-Natural Herbaceous Stand	
	Bromus (diandrus, hordeaceus) Semi-Natural Herbaceous Stands	

**** See plan sheets prepared by Ashley-Vance Engineering, Inc. (2020.)***

***** Environmentally Sensitive Habitat (ESH) (County of Santa Barbara, 2008a; 2015).***

(*Quercus agrifolia*), with black cottonwood (*Populus balsamifera* subsp. *trichocarpa*), and white alder (*Alnus rhombifolia*) less common. Arroyo willow (*Salix lasiolepis*) forms a patchy sub-canopy. The canopy is relatively open in the reach that parallels the main access road but becomes denser upstream near the 'turnaround' (road elevation 890 on Sheet C-1.5) as the bed gradient of the watercourse steepens and the riparian corridor narrows. Many trees were removed or damaged by the debris flow in January 2018. The understory is relatively open beneath mature trees on the south-facing slope along the north side of the access road and consists of the following shrubs (roughly in order of cover): laurel sumac (*Malosma laurina*), elderberry (*Sambucus mexicana*), arroyo willow, toyon (*Heteromeles arbutifolia*), greenbark ceanothus (*Ceanothus spinosus*), coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), and California blackberry (*Rubus ursinus*). Ruderal vegetation and ornamentals (some escaped, some intentionally planted), are scattered across the floodplain, including brome grasses (*Bromus diandrus*, *B. rubens*), rice grass (*Piptatherum miliaceum*), fennel (*Foeniculum vulgare*), poison hemlock (*Conium maculatum*), pride-of-Madeira (*Echium candicans*), unid. acacia (*Acacia* sp.), and various ornamental shrubs. Native herbaceous species present in the understory include (roughly in order of cover): mugwort (*Artemisia douglasiana*), canyon sunflower (*Venegasia carpesioides*), nut-sedge (*Cyperus* sp.), Douglas' nightshade (*Solanum douglasii*), hummingbird sage (*Salvia spathacea*), miner's lettuce (*Claytonia perfoliata* subsp. *perfoliata*), dock (*Rumex* sp.), western bracken (*Pteridium aquilinum* var. *pubescens*), and deer grass (*Muhlenbergia rigens*).

A number of ornamental species, such as Victorian box (*Pittosporum undulatum*), Irish juniper (*Juniperus scopulorum*), and Pride-of-Madeira (*Echium candicans*), have colonized the riparian understory between the main access road and Hot Springs Creek. Previous attempts to remove this non-native vegetation appear to have targeted pittosporum and cape ivy, although both species were re-sprouting throughout this portion of the riparian corridor in 2017. Chaparral shrubs, such as ceanothus and laurel sumac, were colonizing these open areas in 2017. All of this vegetation was removed in the debris flow on 9 January 2018 (see photos in Appendix 1).

The Thomas Fire in December 2017 scorched portions of the riparian corridor but caused comparatively little damage to vegetation within the riparian corridor. However, the debris flow that occurred on 9 January 2018 scoured the channel several feet deeper and uprooted and removed at least 60% of the riparian trees (western sycamore, alder, and coast live oak) along this reach. Understory vegetation on the floodplain was completely removed. All of this vegetation, along with floodplain and channel material, including boulders up to 8 feet tall, were transported downstream (see photos in Appendix 1).

Quercus agrifolia Woodland Alliance (Coast Live Oak Woodland). Coast live oak woodland occurs on slopes along the access road between road elevations 824 and 920 (Plan sheets C-1.4-1.6), and grades into western sycamore-coast live oak riparian woodland on the floodplain. Coast live oaks are also associated with the lower reaches of the two unnamed seasonal tributaries of Hot Springs Creek (Figs. 4, 5a-d). Canopy density depends on soil moisture levels, slope, and aspect. Oak woodland transitions from oak riparian woodland on the floodplain into coastal sage scrub and chaparral on

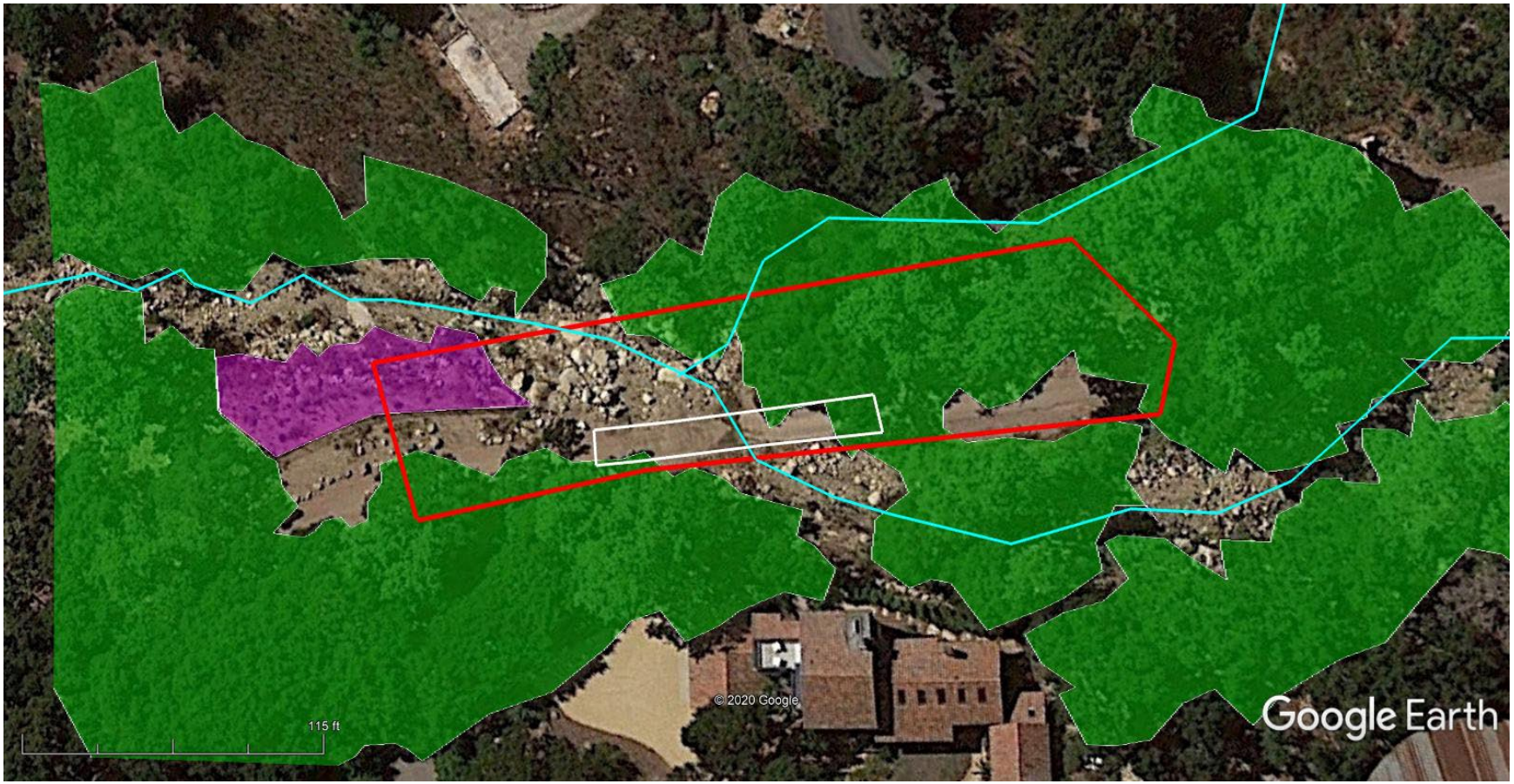

Figure 5a. Existing vegetation in Hot Springs Creek crossing portion of project area between road elevations 745 and 780 (Plan sheet C-1.2). Approximate centerline of Hot Springs Creek runs through center of image; seasonal unnamed tributary drainage coming in from top of image runs through center of subject parcel. Western sycamore-coast live oak riparian woodland (ESHA) is shown in light green; coastal sage scrub is shown in violet (ESHA). The existing at-grade road crossing to be replaced with 100-foot long span bridge is outlined in white; the approximate right-of-way for the access road in this area is outlined in red; the work limits will be confined to the immediate crossing. North is towards upper right. Image dated 19 August 2019.

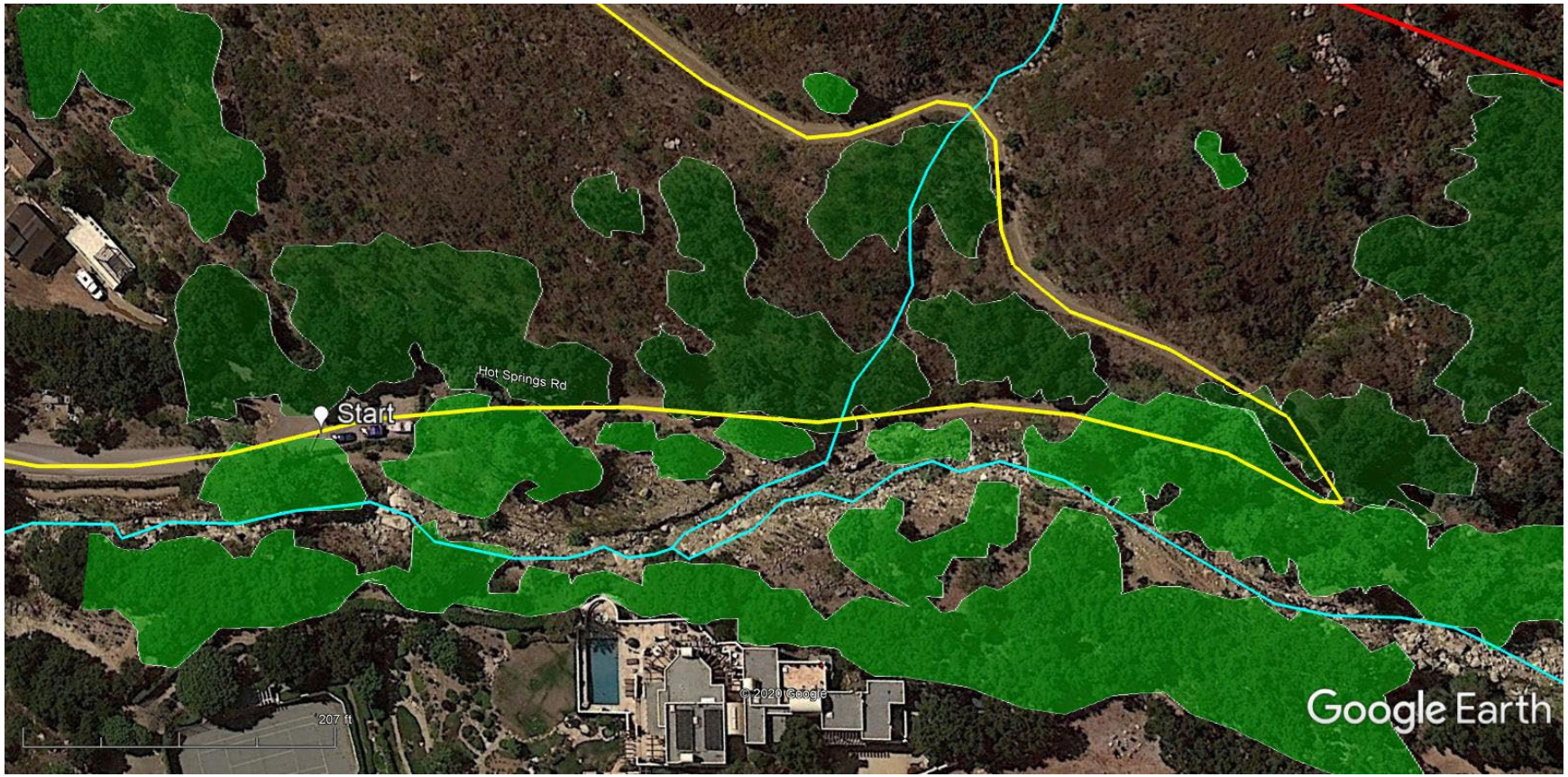

Figure 5b. Current vegetation in access road portion of project area from start of project between road elevation 823 (at left) and road elevation 920 (Plan sheets C-1.4 through C-1.6). Hot Springs Creek runs through image from right to left; unnamed seasonal tributary east of subject parcel contacts main stem of creek in center of image. Western sycamore-coast live oak riparian woodland is shown in light green (ESHA); coast live oak woodland (ESHA) is shown in dark green. Uncolored areas on slopes outside of floodplain support coastal sage scrub and chaparral, which burned completely in the Thomas Fire in December 2017. Red line in upper right corner shows general transition from coastal sage scrub at lower elevations to chaparral at higher elevations. Yellow line shows approximate centerline of existing/proposed access road/driveway. Roadway improvements begin at label marked 'Start'. Ruderal vegetation occurs along both sides of the access road. North is towards upper right. Image dated 12 August 2019.

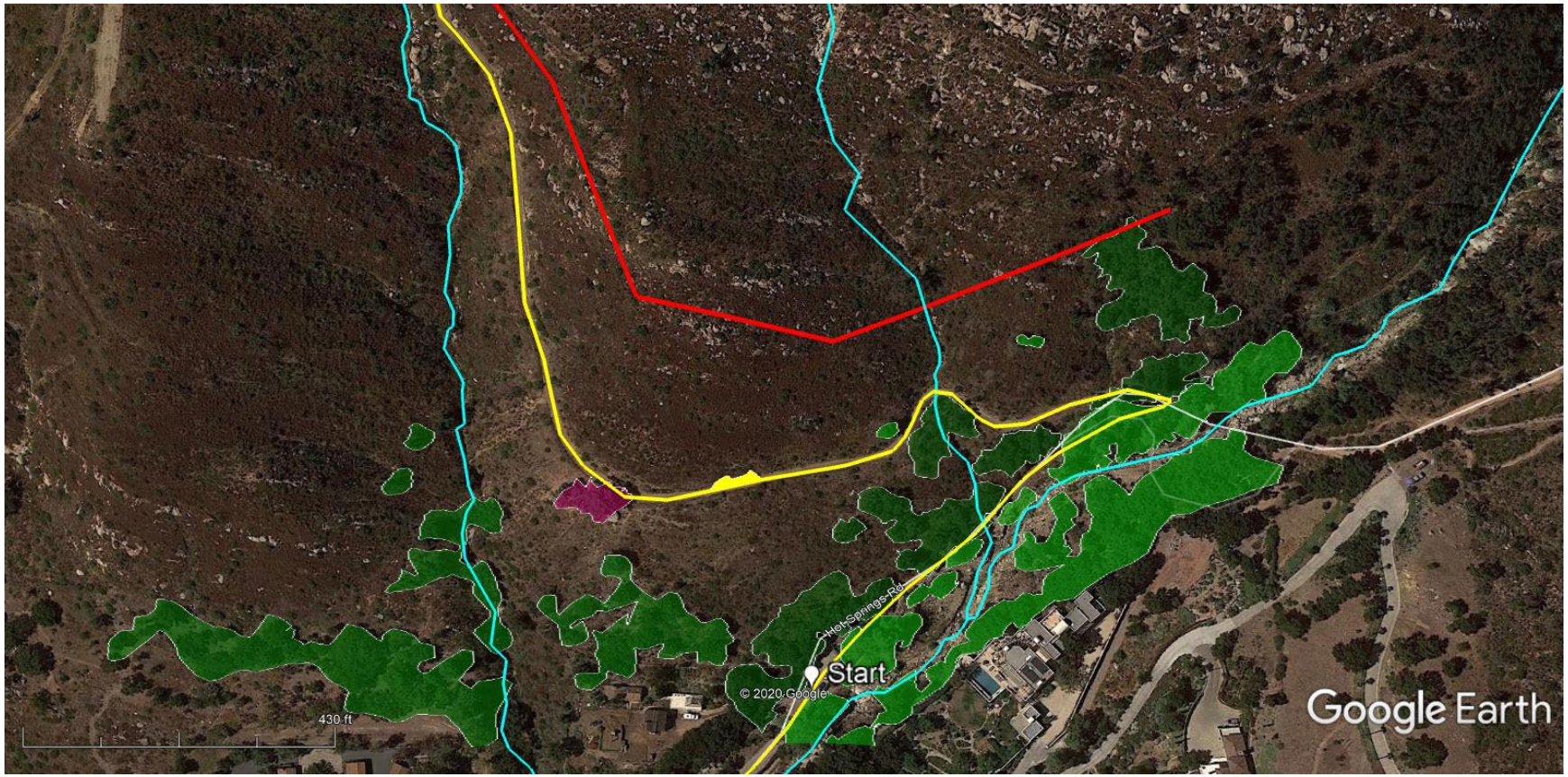

Figure 5c. Current vegetation in center of project area between road elevations 923 and 1,050 (Plan Sheets C-1.4 and C-1.9). Yellow line follows approximate center of existing/proposed access road. Coast live oak woodland (ESHA) is shown in dark green; eucalyptus trees at southeastern corner of subject parcel are shown in violet; concentration of native grasses observed in 2013 is shown in yellow. Native grasses and ruderal vegetation occurs along edges of existing access road; uncolored portions of the image support coastal sage scrub and chaparral. The red line shows approximate transition from coastal sage scrub at lower elevations to chaparral at higher elevations. Blue lines show approximate centerlines of two unnamed seasonal tributaries of Hot Springs Creek that cross the access road. North is up. Image dated 18 August 2019.

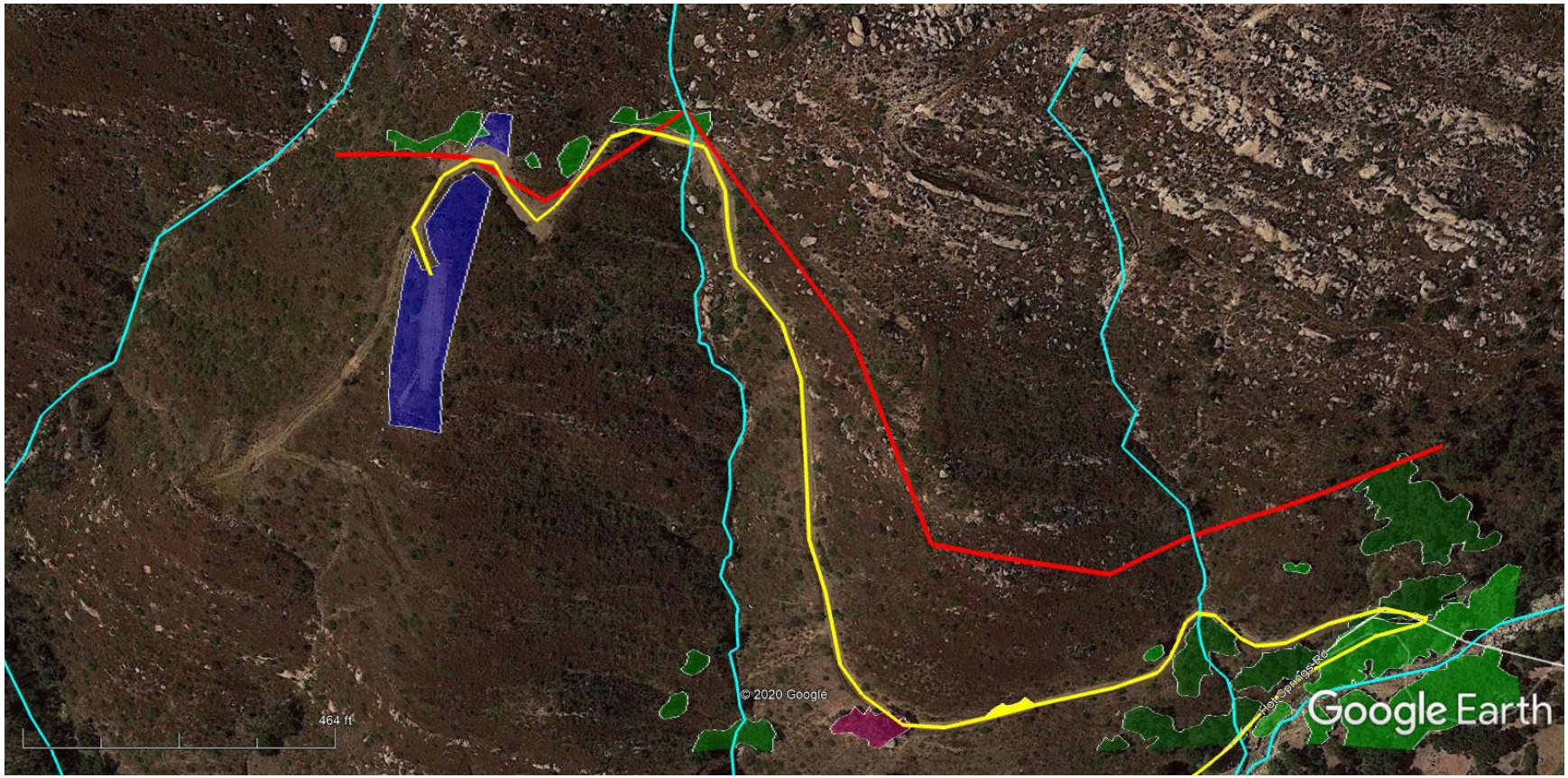

Figure 5d. Current vegetation in northern portion of project area, including proposed house site from road elevations 878 and house site (purple polygon) at 1,170 (Plan sheets C-1.6-C-1.10). Southeastern corner of subject parcel lies approximately in center of violet polygon (eucalyptus trees) in lower center of image. Western sycamore woodland and coast live oak woodland (ESHA) are associated with main stem of Hot Springs Creek (lower right corner). Dark green polygons near access road and house site in upper center of image map clusters of mature trees. Uuncolored areas support coastal sage scrub and chaparral; red line show approximate transition between these scrub types. Ruderal vegetation and scattered native grasses occur along both sides of the access road (yellow line) and around proposed house site. Blue line at left shows approximate centerline of East Fork of Cold Springs Creek; blue lines at center and right show approximate centerlines of unnamed seasonal tributaries of Hot Springs Creek; yellow line shows approximate centerline of existing/proposed access road. North is up. Image dated 19 August 2019.

exposed slopes and shares woody and herbaceous understory species with both, including canyon sunflower, elderberry, giant rye (*Elymus condensatus*), coastal wood fern (*Dryopteris arguta*), wood mint (*Stachys bullata*), greenbark ceanothus (*Ceanothus spinosus*), black sage (*Salvia mellifera*), phacelia (*Phacelia cicutaria*), mugwort (*Artemisia douglasiana*), California sagebrush (*Artemisia californica*), southern bush monkeyflower (*Diplacus longiflorus* var. *longiflorus*), Douglas' nightshade (*Solanum douglasii*), hummingbird sage (*Salvia spathacea*), miner's lettuce (*Claytonia perfoliata* subsp. *perfoliata*), dock (*Rumex* sp.), western bracken (*Pteridium aquilinum* var. *pubescens*), deer grass (*Muhlenbergia rigens*), and manroot (*Marah macrocarpus*). Mature coast live oaks also are emergent in scrub habitats, particularly chaparral, here. Coast live oak woodland was severely damaged by the Thomas Fire. The burned trees remained standing and most of these oaks are regenerating. The fire completely burned the understory in this plant community, then the intense storm event that triggered the debris flow on 9-10 January 2018 stripped large amounts of soil from the steeply sloping ground and exposing bedrock in many places. However, these areas are recovering rapidly and understory vegetative cover now exceeds 75% throughout most of the oak woodland habitats.

Coastal Sage Scrub and Chaparral. Table 1 includes a number of vegetation alliances found in the portions of the project area away from Hot Springs Creek that can be loosely classified as coastal sage scrub or chaparral. These scrub habitats cover most of the subject parcel and occur along the access road from about road elevation 890 up to the proposed house site at elevation 1,170 feet (Plan sheets C-1.6 through C-1-10).

Coastal sage scrub contains a mixture of low-stature woody and herbaceous species, including native grasses, and generally occurs at lower elevations on slopes in the project area. Chaparral is dominated by perennial, woody shrubs of typically taller stature and predominates on slopes at middle and higher elevations. The transition from one to the other is broad and contains species characteristic of both plant communities. The line on Figs. 5b and 5c demarcates a rough boundary between coastal sage scrub (south of the line and downslope) and chaparral (north of the line and upslope). The distribution of various alliances and vegetation associations of scrub communities in the project area is complex and can be mapped as discrete polygons only at finer spatial scales than is necessary for this report.

Coastal sage scrub vegetation here occurs on the deeper soils on the steep lower slopes of the project area and floristically is classified as *Eriogonum fasciculatum* Shrubland Alliance and *Adenostoma fasciculatum-Salvia mellifera* Shrubland Alliance (Table 1; Sawyer et al., 2009), with the following species predominating: chamise (*Adenostoma fasciculatum*), California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), toyon (*Heteromeles arbutifolia*), saw-tooth goldenbush (*Hazardia squarrosa*), black sage (*Salvia mellifera*), giant rye (*Leymus condensatus*), southern bush monkeyflower (*Diplacus longiflorus*), laurel sumac (*Malosma laurina*), greenbark ceanothus, mountain mahogany (*Cercocarpus betuloides*), and elderberry (*Sambucus nigra*) (Fig. 5a). The edges around patches of coastal sage scrub patches and mostly devoid of vegetation due to chemicals in the shrubs that inhibit the growth of most

herbaceous vegetation (allelopathy). An exception are native grasses, which occur in these bare areas as scattered to locally dense clumps of several species of native grasses, including small-flowered melic (*Melica imperfecta*), thin grass (*Agrostis pallens*), and foothill needlegrass (*Stipa lepida*).

Scrub vegetation transitions from coastal sage scrub to chaparral at about 1,000 feet elevation in the project area as soils become shallow, with exposed bedrock (Figs. 5b,c). Chaparral in these portions of the project area is represented by *Ceanothus megacarpus* (bigpod ceanothus) Shrubland Alliance and *Arctostaphylos glauca* (big-berried manzanita) Shrubland Alliance, with both alliances displaying several variants depending on dominant and co-dominant species presence (Table 1). Big-berried manzanita and western Transverse Range manzanita (*A. glandulosa* subsp. *mollis*), are conspicuous, local dominants emergent in *Ceanothus megacarpus* Shrubland Alliance north of the proposed house site.

The bigpod ceanothus alliance predominates across most of higher portions of the project area, i.e., generally north of the red line shown in Figs. 5c and 5d. Dominant shrubs in this alliance on-site include: bigpod ceanothus (*Ceanothus megacarpus* var. *megacarpus*), chamise, (*Adenostoma fasciculatum*), southern bush monkey flower (*Diplacus longiflorus* var. *longiflorus*), toyon, chaparral mallow (*Malacothamnus fasciculatus*), and redberry (*Rhamnus crocea*). The following species are present in the understory in chaparral habitats: coastal morning-glory (*Calystegia cyclostegia*), peak rush-rose (*Helianthemum scoparium*), hoary nightshade (*Solanum umbelliferum* var. *incanum*), Nuttall's bedstraw (*Galium nuttallii* subsp. *nuttallii*), deerweed (*Lotus scoparius*), California aster (*Lessingia filaginifolia* var. *filaginifolia*), poison oak, giant wild rye, coastal sanicle (*Sanicula laciniata*), bedstraw (*Galium* sp.), huckleberry (*Vaccinium ovatum*), California figwort (*Scrophularia californica* var. *californica*), golden yarrow (*Eriophyllum confertiflorum*), and chaparral clematis (*Clematis lasiantha*). Mature coast live oaks are imbedded as individual trees in the chaparral, particularly upslope (north) of the proposed house site. Prior to the Thomas Fire, cape ivy was a conspicuous element of woodland and scrub habitats in the project area, and it completely covered the canopy in places (see photos in Appendix 1). The fire removed much of this species, but it is rapidly spreading in some parts of the project area. Seeps were scattered throughout chaparral in this area, their presence indicated by patches of mesic-tolerant shrubs, such as giant wild rye and elderberry.

Coastal sage scrub and chaparral vegetation alliances throughout the subject parcel burned completely in the Thomas Fire. Site visits in February and July 2018 confirmed that less than 5% of the pre-fire biomass remained after the fire (Hunt & Associates, 2018). Many of the woody chaparral shrubs, such as chamise, ceanothus, toyon, laurel sumac, and elderberry that were re-sprouting from burned stumps in 2018 continue to spread to the extent that slopes along the access road now support at least 70% vegetative cover (see photos in Appendix 1).

Native grasses. Hunt & Associates (2013) mapped areas along the edges of the access road between road elevations 910 and 980 feet (Plan sheets C-1.6 and C-1.7) where three

species of native grasses were common (Fig. 5c). These areas are within the disturbance footprint of proposed access road improvements and collectively covered approximately 4,125 s.f. (0.1 acres) at that time. These areas burned completely in the Thomas Fire in 2017. Surveys in 2018 (Hunt & Associates, 2018) and in 2020 for this document found native grass occurrence in these areas much reduced. Native grasses, mostly needlegrass, occur as individual clumps or small clusters of plants in narrow bands along the edges of patches of scrub vegetation and the upslope edge of the access road up to and including the proposed house site.

Ruderal and Ornamental Vegetation. Ruderal vegetation describes a loose association of mostly invasive non-native, but some native, plants that share the ability to rapidly colonize substrates that are chronically disturbed by human activities. Ruderal vegetation occurs on disturbed soils along both sides of the access road, from the Hot Springs Creek floodplain upslope to the proposed house site and grades into oak woodland, oak-sycamore riparian woodland, and chaparral plant communities.

Ruderal vegetation here is classified as *Bromus (diandrus, hordeaceus)* Semi-Natural Herbaceous Stands and *Brassica* (*nigra*) and Other Mustards Semi-Natural Herbaceous Stands (Sawyer et al., 2009; Table 1). Common invasive species found here include black mustard (*Brassica nigra*), Mediterranean mustard (*Hirschfeldia incana*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* subsp. *rubens*), soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), rice grass (*Pipatherum miliaceum*), sour-grass (*Oxalis pes-caprae*), Italian thistle (*Carduus pycnocephala*), beggar's ticks (*Bidens pilosa*), and Japanese wisteria (*Wisteria floribunda*). foxtail (*Hordeum murinum*), milk thistle (*Silybum marianum*), Italian thistle (*Carduus pycnocephala*), prickly lettuce (*Lactuca serriola*), rattail fescue (*Vulpia* [*Festuca*] *myuros* var. *myuros*), sour-grass, cape ivy, sweet fennel (*Foeniculum vulgare*), flax-leaved fleabane (*Conyza bonariensis*), English plantain (*Plantago lanceolata*), yellow star-thistle (*Centaurea solstitialis*), tree tobacco (*Nicotiana glauca*), and redstem filaree (*Erodium cicutarium*). Native species noted in rudral vegetation along the roadside include native species, such as live-forever (*Gnaphalium bicolor*) and hairy golden aster (*Heterotheca sessiliflora* subsp. *sessiliflora*), and yellow-flowered hawkweed (*Hieracium argutum*). Sticky eupatorium (*Ageratina adenophora*), a non-native shrub, is common along portions of the channel and top-of-bank of Hot Springs Creek where it grades into adjoining woodland and chaparral habitats. Cape ivy (*Delairea mikanioides*), a highly invasive, non-native vine, covered much of the unnamed tributary of Hot Springs Creek in the center of the project area and portions of the eastern tributary before the Thomas Fire. This invasive species was completely removed by the fire, but is returning (see photos in Appendix 1). Ruderal and ornamental vegetation in and along the edges of the floodplain of Hot Springs Creek was almost completely removed by the debris flow of 9 January 2018, but has returned from seed or stump-sprouts (see photos in Appendix 1).

4.0 Special-Status Biological Resources.

4.1 Special-Status Plant Communities and ESHA. Two special-status vegetation alliances listed by the California Department of Fish and Wildlife (CDFW, 2018) and

Sawyer et al. (2009) occur in the project area: *Platanus racemosa* Alliance (Western Sycamore-Coast Live Oak Riparian Woodland) and *Quercus agrifolia* Alliance (Coast Live Oak Woodland) (Table 1). Both of these communities are mapped as Environmentally Sensitive Habitat (ESHA) by the County of Santa Barbara.

Riparian Woodland. Western sycamore-coast live oak riparian woodland is associated with elevated soil moisture and alluvial substrates associated with the bed, banks, and floodplain of Hot Springs Creek (Fig. 5a-d). The access road traverses this habitat at the proposed creek crossing between road elevations 750 and 775 (Plan sheet C-1.2) and along access road improvements between road elevations 821 and 894 (Plan sheets C-1.4 to C-1.6). All of this route lies within the mapped ESHA overlay along Hot Springs Creek (County of Santa Barbara 2008a; 2015).

Coast Live Oak Woodland. Oak woodland occurs along the drier, south-facing slopes in the project area (Figs. 5a-d). This plant community grades into oak-sycamore riparian woodland on the adjacent floodplain of Hot Springs Creek as western sycamore and black cottonwood trees are present because of elevated soil moisture. The other mapped occurrence of oak woodland is associated with portions of the unnamed tributary of Hot Springs Creek in the eastern portion of the subject parcel. Clusters of mature oaks also occur as emergent in scrub habitats north and west of the proposed house site and adjacent access road (Fig. 5d). County of Santa Barbara and Montecito Community Plan policies (County of Santa Barbara, 2006; 2008a; 2015) protect individual oak trees that exceed four inches dbh (diameter at breast height). Several mature western sycamores and mature coast live oaks will be removed or otherwise impacted by the proposed access road improvements along the edge of the floodplain of Hot Springs Creek. Impacts to individual trees are shown on the Plan sheets (Ashley-Vance Engineering, Inc., 2020), and have been evaluated, mapped, and mitigated in a separate Tree Protection Plan prepared by a certified arborist (McPherson, 2020).

Native Grassland. The County's Environmental Thresholds and Guidelines Manual (County of Santa Barbara, 2015), defines native grasslands on the basis of density (>10% relative cover) and areal extent (>0.25 acres of >10% relative cover). Prior to the Thomas Fire, four species of native grasses occurred as scattered individuals or patches of plants in the project area along the edges of the existing roadway/dirt track between road elevations 888 and 1170: giant wild rye (*Leymus condensatus*), small-flowered melic grass (*Melica imperfecta*), foothill needlegrass (*Nassella lepida*), and thin grass (*Agrostis pallens*).

In 2013, a seasonal seep located along the upslope edge of the access road near road elevation 1080 supported a relatively dense stand of melic grass covering about 400 sq. feet (Hunt & Associates, 2013). This was the largest patch of native grass found along the edge of the access road at that time. Small-flowered melic also occurred as scattered individual clumps along the access road/driveway from road elevation 888 to 1120. Thin grass (*Agrostis pallens*) was found along the edges of the upslope side of the access road between road elevations 888 and 965, and foothill needlegrass (*Stipa lepida*) occurred as scattered clumps through these reaches. Foothill needlegrass and small-flowered melic

also occurred as scattered clumps in previously disturbed portions of the proposed house site around elevation 1170 (Hunt & Associates, 2013; 2017). All of these sites burned in the Thomas Fire in 2017.

Site visits in February 2018 and July 2018 found only wild rye and melic grass present in these areas, distributed as scattered plants re-sprouting on burned slopes along the edges of the access road. A large colony of melic grass covering several hundred square feet was found in 2018 along the north side of the access road around road elevation 950 (Fig. 5b). Surveys in Spring 2020 for the present document found only scattered plants at this location, and melic grass, thin grass, and needlegrass were found scattered as individual plants along the edges of the upslope side of the access road and proposed house site at this time. None of these occurrences, from observations made in 2013 to 2020, are sufficiently large to meet the definition of 'native grasslands' for percent cover or areal extent (Hunt & Associates, 2013; 2018, field surveys for this document). Expanding the width of the access road to the house site and construction of the house site will impact these grasses (see Impacts and Mitigation section and Table 5).

4.2 Special-Status Plant Species. Table 2 evaluates the potential for special-status plants known to occur within a five-mile radius of the project area to occur on-site. Plummer's baccharis (*Baccharis plummerae*), listed by the California Native Plant Society as a List 4 species (Watch List taxon), was found within the proposed disturbance footprint for the access road at Station 29+40 (road elevation 1,030) (Plan sheet C-1.8) during surveys for this document in Spring 2020. Only a single shrub was found. No other special-status plant species have been observed in the proposed project area footprint to date (Tierney, 2008; Hunt & Associates, 2011, 2013, 2017; this document), although several species have a moderate to high potential to occur in woodland or scrub habitats outside the development areas (Table 2).

4.3 Special-Status Wildlife Species. Table 2 evaluates the potential for special-status animals known to occur within a five-mile radius of the project area to occur on-site. Four special-status wildlife species have been observed on-site during site visits between 2011 and 2020:

- monarch butterfly (*Danaus plexippus*) - Proposed for Listing as Federally Endangered: several individuals observed foraging across site during each site visit; no aggregations;
- Anna's hummingbird (*Calypte anna*) - CA Species of Special Concern (nesting): several individuals observed on-site during all site visits; likely nests on-site;
- Pacific slope flycatcher (*Empidonax difficis*) – CA Species of Special Concern (nesting): individuals have been observed along Hot Springs Creek riparian corridor; likely nests along this watercourse and unnamed drainage on-site although suitable channel habitat was mostly destroyed in debris flow in 2018.

The Thomas Fire and debris flow significantly altered aquatic, riparian woodland, upland woodland, and scrub habitats throughout the project area and may have extirpated local populations of many special-status wildlife species that could take years to recolonize

Table 2. Special-Status Plants and Animals Known or Expected to Occur in Project Region (Five-Mile Radius around Project Area) Prior to Thomas Fire and Debris Flow and Potential Project-Related Impacts.

COMMON NAME	SCIENTIFIC NAME	REGULATORY STATUS (*)	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE IN PROJECT AREA	POTENTIAL IMPACTS ARISING FROM PROPOSED PROJECT
PLANTS					
Plummer's baccharis	*Baccharis plummerae*	List 4	Coastal sage scrub, chaparral, oak woodland, typically on cool-moist, north-facing slopes, but found in many shaded canyons on south slope of Santa Ynez Mtns.	One plant observed along upslope edge of access road at Station 29+40 during surveys for this document in April 2020.	Plant will be removed by grading and improvements to new access road
Mesa horkelia	*Horkelia cuneata* subsp. *puberula*	List 1B	Chaparral, oak woodland, coastal sage scrub, and sandhill scrub on sandy soils along South Coast and sand dunes in western Santa Barbara County	Moderate to high potential in sandy soils derived from sandstone parent material, but soils on-site, even those around sandstone outcrops north of proposed house site appear to be too dense for this species	No impacts expected
Catalina mariposa lily	*Calochortus catalinae*	List 4	Grasslands, coastal scrub, and open oak woodland	Low potential in oak woodland and open chaparral on-site	No impacts expected
Cooper's lip fern	*Cheilanthes cooperi*	Locally Sensitive	Sandstone outcrops in canyons	Likely occurs in sandstone outcrops in chaparral north of proposed house site, outside of development footprint	No impacts expected
Santa Barbara bedstraw	*Galium cliftonsmithii*	List 4	Chaparral and oak woodland	*Galium nuttallii* observed on-site; high potential for *G. cliftonsmithii* on-site in chaparral	Could be disturbed by proposed grading for construction of access road to house site
Santa Barbara locoweed	*Astragalus trichopodus* var. *trichopodus*	Locally Sensitive	Oak-sycamore riparian woodland; coastal bluff scrub	Moderate to high potential for occurring in oak woodland associated with Hot Springs Creek riparian corridor	No impacts expected
Santa Barbara honeysuckle	*Lonicera subspicata* spp. *subspicata*	List 1B	Coastal sage scrub and oak woodlands, endemic to south slope of Santa Ynez Mountains	Not observed during site visits and unlikely to occur in proposed development footprint, but likely to be present on-site in chaparral	No impacts expected
South Coast Range morning-glory	*Calystegia collina* ssp. *venusta*	List 4	Oak woodland, chaparral, and coastal scrub	*C. cyclostegia* observed on-site; moderate to high potential of occurring in chaparral on-site	Could be disturbed by proposed grading for construction of access road to house site
Nuttall's scrub oak	*Quercus dumosa*	List 1B	Coastal sage scrub and chaparral along south coast of Santa Ynez Mountains from Montecito to Goleta area	Not observed during site visits, but high likelihood of occurring in chaparral, particularly around sandstone outcrops, north of proposed house site, outside of development envelope	No impacts expected. If present on-site, it occurs outside of the proposed development footprint
Hoffmann's	*Ribes amarus*	List 3	Chaparral and riparian woodland along south	Not observed in proposed project	No impacts expected. If present

gooseberry	var. *hoffmannii*		slope Santa Ynez Mtns from Montecito to Gaviota Pass	area footprint, but may occur in chaparral or riparian woodland elsewhere on-site	on-site, it occurs outside of the proposed development footprint
Humboldt lily	*Lilium humboldtii* ssp. *ocellatum*	List 4	Chaparral, coastal sage scrub, and riparian woodland	Not observed during site visits; conspicuous when present, so low potential of occurring in Hot Springs Creek riparian corridor on parcel	No impacts expected
INVERTEBRATES					
Monarch butterfly	*Danaus plexippus*	CSC (State Insect)	Overwinters (October-April) in dense roosts in eucalyptus woodland and, to a lesser degree, sycamore-oak woodland, generally in association with drainages; several known overwintering and autumnal roosts in region, but none reported from near project area	A few individuals were observed cruising on-site during site visits; no aggregations	No impacts expected
FISHES					
Southern steelhead	*Oncorhynchus mykiss*	FE	Anadromous, spawns in freshwater streams and rivers; not known from Toro Canyon Creek watershed	Hot Springs Creek does not provide suitable spawning habitat nor is accessible to steelhead that may enter Montecito Creek; no resident rainbow trout known from Hot Springs Creek sub-watershed	Sedimentation; pollution from landscape chemicals; non-native plants and animals
AMPHIBIANS					
Coast Range newt	*Taricha torosa torosa*	CSC	Scour pools in rocky canyons throughout south slope of Santa Ynez Mtns.	Upper, perennial reaches of Hot Springs Creek provide good to excellent aquatic habitat. Tierney (2008) reports known occurrence in Hot Springs Creek (location?). Project area reach provides good upland habitat, but aquatic habitat may only be seasonally present here.	Grading and improvements to main access road paralleling Hot Springs Creek could disturb individuals aestivating in upland habitat; sedimentation of Hot Springs Creek from soil disturbance on-site could degrade aquatic habitat conditions
California red-legged frog	*Rana draytonii*	FT	Day and nighttime surveys were conducted in the subject reach of Hot Springs Creek in February and March 2011 did not find CRLF (Hunt & Associates, 2011). At that time and up to December 2017, the surveyed reach provided good- to excellent-quality foraging, breeding, upland (aestivation), and larval development habitat for CRLF. CRLF are known to occur in the main stem of Montecito Creek, 1-2 stream miles downstream of the	Not observed during focused surveys for this species, but species has a moderate to high potential of occurring in project area reaches of Hot Springs Creek and possibly unnamed drainage on subject parcel; good breeding and larval development habitat present along Hot Springs Creek; excellent upland habitat along both watercourses	Grading and improvements to main access road paralleling Hot Springs Creek could disturb/kill individuals aestivating in upland habitat; sedimentation of Hot Springs Creek from soil disturbance on-site could degrade aquatic habitat conditions

			surveyed reach of Hot Springs Creek in 2006 (Hunt, pers. observ.), which is well within the dispersal abilities of adult and subadult CRLF, but this reach was severely damaged in the Montecito debris flow on 9 January 2018.		
REPTILES					
Western pond turtle	*Actinemys marmorata*	FSC	Known from the coastal plain reaches of several drainages along south slope of Santa Ynez Mtns.	Unlikely to occur in project area reaches of Hot Springs Creek because of habitat unsuitability; may occur in lower reaches of Montecito Creek	No impacts expected
California legless lizard	*Anniella pulchra*	CSC	Known from sandstone-derived soils in Santa Barbara area	Moderate to high potential for occurring in sandy soils in chaparral and oak woodland	Grading and road improvements for proposed access road could disturb/kill individuals
Two-striped garter snake	*Thamnophis hammondii*	CSC	Known from floodplain habitats associated with perennial and intermittent streams at several locations along south slope of Santa Ynez Mtns.	Moderate to high potential of occurring in Hot Springs Creek watershed and unnamed tributary on subject parcel	Grading and road improvements for proposed access road near Hot Springs Creek and unnamed tributary could disturb/kill individuals
BIRDS					
White-tailed kite	*Elanus leucurus*	FP	Resident in grassland and oak savanna in region; may form communal roosts in oak and willow woodland	Moderate to high potential of occurring in project vicinity; unlikely to establish long-term roosts or nests in or near parcel	No impacts expected
Cooper's hawk	*Accipiter cooperi*	CSC	Resident in oak riparian woodland throughout region	Observed in oak-sycamore riparian woodland during site visits; likely nests on-site in oak woodland	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could abandon nests by same
Allen's hummingbird	*Calypte anna*	CSC (nesting)	Uncommon spring migrant to shrublands and woodlands along south slope of Santa Ynez Mtns.	Observed in oak-sycamore riparian woodland during site visits; likely nests on-site in oak woodland and chaparral	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could abandon nests by same
Pacific slope flycatcher	*Empidionax difficilis*	CSC	Uncommon to fairly common spring and summer migrant to riparian woodland throughout region	Observed in oak-sycamore riparian woodland during site visits; likely nests on-site in oak woodland, especially along Hot Springs Creek and unnamed tributary	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could

					abandon nests by same
Yellow warbler	*Dendroica petechia*	CSC	Uncommon to fairly common spring and fall transient in willow thickets and riparian woodlands along south slope of Santa Ynez Mtns.	High potential of nesting in Hot Springs Creek riparian corridor on-site	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could abandon nests by same
Yellow-breasted chat	*Icteria virens*	CSC	Rare transient and summer breeder along south coast of Santa Ynez Mtns	Low to moderate potential to occur on-site in oak-sycamore riparian woodland associated with Hot Springs Creek	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could abandon nests by same
Warbling vireo	*Vireo gilvus*	CSC	Common transient and spring/summer breeding along south coast of Santa Ynez Mtns.	High potential for occurrence in riparian corridor. Tierney (2008) notes they found this species on-site.	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could abandon nests by same
MAMMALS					
Red bat	*Lasiurus blossevillii*	CSC	Migratory species; may overwinter along coast	Moderate to high potential to occur on-site in fall and winter; known from temporary (daytime) roosts at several locations in Montecito	Increased human presence and noise associated with grading and road improvement could cause individuals to temporarily shift foraging area; individuals could abandon roosts by same
San Diego desert woodrat	*Neotoma bryanti*	CSC	Rock outcrops in open chaparral and coastal sage scrub along coastal slope of Santa Ynez Mtns	Moderate potential to occur around sandstone outcrops north of proposed house site; nests of dusky-footed woodrat (*N. macrotis*) observed in chaparral and oak woodland on-site during site visits	None for *N. bryanti*; disturbance of nests of *N. macrotis* should be avoided, nests in development/grading footprint should be dismantled by hand by biologist
Ringtail	Bassariscus astutus	FPF	Occurrence poorly known because of secretive habits, but likely occurs in middle and upper portions of coastal watersheds throughout the south slope of the Santa Ynez Mtns.	Likely occurs on-site, especially in chaparral and oak woodland near Hot Springs Creek and unnamed tributary of same; dens expected to occur in and around sandstone outcrops north of proposed development footprint	Temporary, construction noise and increased human presence during construction. Occupancy of residence may alter foraging patterns
Mountain lion	*Felis concolor*	PFE	Widely distributed throughout scrub, riparian, and woodland habitats throughout the Santa Ynez Mountains, including urban environments; large home range and dispersal ability	One or more lions likely include project area in home range	Temporary, construction noise and increased human presence during construction. Occupancy of residence may alter foraging patterns

(*) Key:

Plants:
CNPS (California Native Plant Society; Tibor, 2001):

List 1B: Plants rare, threatened, or endangered in California
List 3: Rare and/or local endemic.
List 4: Plants of limited distribution; a "watch" list
Locally Sensitive Plants: plants with limited local distributions (*Smith, 1998 and Santa Barbara Botanic Garden, 1988).*
Locally Sensitive Birds: birds with limited local and regional distributions (*Lehman, 1994).*

Animals:
FE: Listed by the U.S. Fish and Wildlife Service or National Marine Fisheries Service as Endangered, according to the statutes of the Federal Endangered Species Act
PFE: Petitioned for listing by the U.S. Fish and Wildlife Service as Endangered under the Federal Endangered Species Act
FT: Listed by the U.S. Fish and Wildlife Service or National Marine Fisheries Service as Threatened, according to the statutes of the Federal Endangered Species Act
FSC: Federal Species of Concern (= candidate for listing as Threatened or Endangered by the U.S. Fish and Wildlife Service under the Endangered Species Act)
CSC: California Species of Special Concern (California Department of Fish and Game), and protected by the California Environmental Quality Act
FP: Fully Protected (California Department of Fish and Game)
FPF: Fully Protected Furbearer – California Department of Fish and Game Code.

these habitats. In particular, habitat for aquatic and aquatic-associated species has been severely modified or destroyed by the 2018 debris flow. South Coast newts (*Taricha torosa*), California red-legged frogs (*Rana draytonii*), southwestern pond turtles (*Actinemys marmorata*), and two-striped garter snakes (*Thamnophis hammondii*), have been observed in the upper reaches of Hot Springs Creek as, well as in Montecito Creek and Cold Spring Creek (Table 2). The project area reach of Hot Springs Creek is no longer provides suitable breeding or foraging habitat for these species, but may still function as a dispersal corridor. The present status of populations of these species in Hot Springs, Cold Spring, and Montecito creeks following the Thomas Fire in 2017 and debris flow in 2018 is unknown.

5.0 Impact Evaluation and Proposed Mitigation Measures. This section identifies project-related impacts to biological resources from the proposed project. Although the impacts presented herein are considered to be Class II, i.e., they can be mitigated to less than significant levels, they can easily become Class I impacts if proposed mitigation measures are not properly implemented. Implementing mitigation measures such as habitat restoration and proper fire fuel management techniques, for this project will be challenging because portions of the project impact area lies on adjacent parcels.

Impact BIO-1: Disturbance to ESHA Associated with Hot Springs Creek. Improvements to the existing creek crossing between road elevations 750 and 775 (Plan sheet C-1.2) will impact aquatic and riparian ESHA. Proposed improvements to the existing access road between road elevations 824 and 920 (Plan sheets C-1.4, C-1.5, and C-1.6) will impact native vegetation within *Platanus racemosa* Woodland Alliance and *Quercus agrifolia* Woodland Alliance vegetation associated with Hot Springs Creek. These habitats are classified as a special-status plant community by the California Department of Fish and Wildlife and mapped as ESHA by the County of Santa Barbara. .

The existing at-grade creek crossing will be replaced with a applicant/owner proposes to comply with the Fire Department requirement by widening the access road/driveway from its existing 11-foot width to 16 feet wide, with a 'hammerhead' turnaround at road elev. 854, a pull-out at road elev. 874, and a 'turnaround' at Elev. 890 (Plan Sheets C-1.2 and C-1.3 in Ashley-Vance Engineering, Inc. (2020). This work will occur within the ESHA overlay for the riparian corridor associated with Hot Springs Creek. Hot Springs Creek in this area formerly supported suitable habitat for several special-status wildlife, such as South Coast newt, California red-legged frog, western pond turtle, and two-striped garter snake, but channel and floodplain habitats were severely disturbed by the January 2018 debris flow (See photos in Appendix 1). Project-related impacts to wildlife in general include increased noise and human presence during construction. Road work could affect water quality, particularly turbidity and downstream sedimentation, if the work occurs when surface flows are present.

Table 3 quantifies temporary and permanent impacts to habitats in the ESHA overlay (Elev. 821 to Elev. 888) on Hot Springs Creek.

Table 3. Construction Disturbance in ESHA.
References to Plan Sheets are found in Ashley-Vance Engineering, Inc. (2020).

Project Element	Plan Sheet	Area Within ESHA	Disturbance
Demolish existing at-grade crossing of Hot Springs Creek at Hot Springs Road	C-1.2	Creek bed and banks (remove existing crossing): 140 ft x 14 ft = 2,184 sf (0.05 ac) (minimum 1,200 ft in banks and channel of creek)	Temporary
Install new 100-foot long span bridge and make roadway improvements per plan	C-1.2	Widen roadway between Stations 2+50 to 4+75 = 325 ft x 16 ft wide = 5,200 sf (0.12 ac) Widen roadway to 44 ft from Station 4+75 to 5+75 = 4,400 sf (0.10 ac)	Permanent
Install retaining walls along portions of new roadway on either side of bridge	C-1.2	350 linear ft x 4 ft wide disturbance area = 1,400 sf (0.03ac)	Permanent
Widen existing 12-foot wide access road to 16 feet wide between Stations 10+00 to 22+00, and install curbing along both sides of roadway throughout	C-1.5 C-1.6	1,200 linear feet x 18 ft wide = 21,600 sf (0.5 ac)	Permanent
Construct grade beams/retaining walls between Stations 11+75 to 16+00 and 17+50 to 20+00	C-1.4 C-1.5 C-1.6	675 linear feet x 5 ft wide = 3,375 sf (0.08 ac)	Permanent
Construct turnouts and hammerheads	C-1.4 C-1.5 C-1.6	Stations 12+25 to 13+25 = 2,600 sf (0.06 ac) Stations 14+00 to 15+00 = 4,300 sf (0.10 ac) Stations 16+25 to 16+75 = 1,000 sf (0.03 ac) Stations 17+75 to 18+25 = 1,000 sf (0.03 ac) Stations 19+75 to 20+50 = 1,800 sf (0.04 ac)	Permanent
Native tree removal		Plan Sheet C-1.2: 3 sycamores; 1 coast live oak Plan Sheet C-1.4: 2 sycamores Plan Sheet C-1.5: 3 sycamores; 2 coast live oaks	Temporary
Total Temporary Impacts in ESHA		**2,184 sf (0.05 acres)**	
Total Permanent Impacts in ESHA		**46,675 (1.07 acres)**	
Total Native Tree Loss in ESHA		**11 trees: 8 sycamores; 5 coast live oaks**	

At least 1.07 acres will be permanently disturbed and 13 native riparian trees will be removed for the proposed roadway improvements in riparian ESHA, including the creek crossing. ***Removal of the existing at-grade crossing and installation and use of the span bridge is expected to be a temporary impact that ultimately will improve water and habitat quality at the crossing.***

The impacts listed in Table 3 will occur in sycamore-coast live oak riparian woodland and coast live oak woodland habitats, as well as the channel and banks of Hot Springs Creek at the existing crossing. Impacts to vegetation and wildlife habitats include: loss of eight sycamore and five coast live oak trees, loss of native understory woody shrubs and herbaceous vegetation, impacts to native trees and understory vegetation from downslope

loss of excavated soil during construction, soil disturbance that could increase the potential for invasive, non-native species to colonize the disturbance footprint, and increased potential for soil erosion for an unknown amount of time post-construction. ***Disturbance/loss of 1.07 acres of riparian ESHA habitats is potentially significant, but can be mitigated to less than significant levels (Class II impact) by the following measures:***

- Prior to initial grading, a qualified native plant nursery shall salvage all wood mint, coastal wood fern, western bracken fern, hummingbird sage, California blackberry, mugwort, and other rhizomatous species found within the construction footprint along the access road. This material shall be maintained at a native plant nursery and transplanted along the edges of the newly constructed roadway following construction, as part of the landscaping plan proposed in Goodkind (2020).
- Refer to Certified Arborist's Report (McPherson, 2020) and Goodkind (2020), for mitigation for loss of mature western sycamore and coast live oak trees during road widening activities.
- A qualified biologist shall prepared a Habitat Restoration Monitoring Plan to:
    - outline methods to be implemented to remove and control invasive, non-native vegetation in the project area;
    - identify performance criteria for monitoring native trees, shrubs, and herbaceous species to be planted per the driveway and house site planting plans developed by Goodkind (2018, 2020);
    - monitor fire fuel management practices (see other mitigation measures below).
    - monitor performance criteria for a period of five years post-planting; summarize monitoring results in an annual report to be submitted to Planning & Development for review and comment.
- Work in ESHA, including the channel and banks of Hot Springs Creek, shall be restricted to the dry season and when no surface water (ponded or flowing) is present within 100 feet upstream and downstream of the crossing (1 May to 1 November).
- A qualified biologist shall monitor all grading and construction activities in and adjacent to ESHA, including crossing demolition, bridge installation, and final road paving.
- The qualified biologist shall conduct a 'tailgate' environmental training session on-site for all construction supervisors and workers in order to explain special status of work areas, permit conditions, etc. The session shall be repeated for new workers and when non-compliance conditions arise.
- Permit conditions of approval shall be observed by all contractors and will be enforced or guided by the project biologist (monitoring biologist) for all work within or adjacent to the floodplain of Hot Springs Creek.
- No more than three (3) days prior to ground disturbance, a qualified biologist shall conduct a pre-construction survey of the work area and surrounding riparian corridor for aquatic-associated wildlife and nesting birds. Trees slated for removal shall be inspected for evidence of active nesting. If nesting birds

are found within 100 feet of the work area, work shall be temporarily halted until the biologist has determined whether work will disturb nesting. Birds that nest within these limits after construction has begun are not subject to this measure.

- A qualified biologist shall supervise the temporary installation of orange construction fence along the boundaries of the disturbance footprint. ***The fencing shall be installed along both sides of the existing access road prior to any ground disturbance and shall be maintained for the duration of construction in this area.***
- Construction storage and parking areas shall be identified on all Grading Plans. Construction equipment and vehicles shall not be driven or parked off of paved surfaces, except where required for approved work. No fill, soil, rocks, or construction materials shall be stored or placed outside the work limits.
- Machinery, vehicles, and equipment shall not be re-fueled or otherwise maintained within 100 feet of Hot Springs Creek.
- All applicable BMPs shall be implemented to ensure that surface waters are not contaminated with uncured concrete, asphalt, sediment, fluids, solvents, oils, or other substances.
- Concrete washout areas shall be clearly marked, self-contained, and located at least 100 feet from the top-of-bank of the creek.
- Existing cobble within the creek channel that may be disturbed by work activities shall be moved by hand, stockpiled on-site, and replaced in the channel where removed once work has been completed.
- The creek crossing and access road improvements in this portion of the project area will require a 1603 Agreement from the California Department of Fish and Wildlife in hand before construction can begin.

Impact BIO-2: Impacts to Biological Resources from Roadway Improvements Outside of ESHA. The access road/driveway outside of the Hot Springs Creek riparian corridor will be widened from its existing average 11-foot width to a minimum of 16 feet wide. Curbing, retaining walls, and grade beams will be installed to stabilize the roadway as it crosses steep slopes. Six 'hammerheads' and other turnouts will be installed at various locations to facilitate emergency vehicle access. Storm drains will be installed at five locations. Table 4 quantifies the disturbance footprint that will result from this construction outside of ESHA.

Table 4. Disturbance Outside of ESHA Due to Construction.

Project Element	Plan Sheet	Dimensions	Disturbance
Grade and pave 16-ft wide roadway and install curbing (1 ft wide) on both sides of access road between road elevations 920 and 1,170 (house site)	C-1.6 C-1.7 C-1.8 C-1.9 C-1.10	Stations 22+00 to 37+25 = 1,525 linear ft x 18 ft wide = 27,450 sf (0.63 ac)	Permanent
Install retaining walls and grade beams, including over-excavation*	C-1.6 C-1.7	Beam: Stations 22+00 to 24+50 = 1,000 sf Wall: Stations 25+50 to 26+50 = 400 sf	Permanent

	C-1.8 C-1.9 C-1.10	Beam: Stations 27+25=33+50 = 2,500 sf Wall: Stations 34+00 to 38+00 = 1,600 sf Wall: Stations 35+50 to 38+00 = 1,000 sf Beam: Stations 35+25 to 35+90 = 260 sf Wall: Stations 35+90 to 37+25 = 540 sf Total = 7,300 sf (0.17 ac)	
Install five storm drains**	C-1.6 C-1.7 C-1.8 C-1.9	300 sf per culvert x 5 culverts = 1,500 sf (0.035 ac)	Permanent
Install six 'hammerheads' or turnouts	C-1.7 C-1.8 C-1.9 C-1.10	Station 22+50: 500 sf Station 26+25: 2,100 sf Station 28+50: 750 sf Station 30+75: 750 sf Station 33+00: 800 sf Station 36+00: 500 sf Total = 5,400 sf (0.13 ac)	Permanent
House site, including driveway/parking, turnarounds, guest house, outbuilding, and pool	C-1.10	25,600 sf (0.59 ac)	Permanent
Native tree removal	C-1.9	2 coast live oaks	Temporary
Total Temporary Disturbance		**Same as Permanent Disturbance**	
Total Permanent Disturbance Outside ESHA		**67,250 sf (1.55 acres)**	
Total Native Tree Removal Outside ESHA		**2 coast live oaks**	

**** assume 48-inch wide disturbance footprint each for grade beam and retaining wall installation***
***** assume disturbance footprint of 30 ft long x 10 ft wide/storm drain location***

At least 1.55 acres of wildlife habitat, mostly in the form of coastal sage scrub, will be permanently lost or significantly disturbed as a result of the proposed driveway improvements outside of ESHA, including the house site construction. Grading and over-excavation necessary to create and stabilize the proposed access road, including curbing, retaining walls, grade beams/caissons, and drainage culverts, will remove vegetation and wildlife within the work areas and could disturb vegetation, wildlife, and soils beyond the construction limits on either side of the access road and house site. Impacts to native vegetation and wildlife arise from direct removal of vegetation, soil disturbance, migration of soil downslope of roadway, slope erosion at drainage culvert outfalls, degraded wildlife habitat quality due to proliferation of invasive, non-native plants in disturbed soils, and displacement or mortality of wildlife due to habitat loss. Temporary impacts (during construction) may include burial of vegetation by fugitive soil during road grading, increased soil erosion on disturbed slopes, introduction and proliferation of invasive, non-native grasses and other vegetation that negatively affects habitat quality and increases fire potential, loss of one mature coast live oak, and increased noise and human presence during construction.

Nearly all of this construction and permanent impacts will occur in coastal sage scrub and chaparral vegetation, but native grasses also will be removed. Approximately 0.1 acres of native grasses belonging to four species were observed along the access road disturbance footprint in 2013 (Hunt & Associates, 2013). The Thomas Fire removed all of this vegetation in 2017, but surveys in 2018 for Hunt & Associates (2018) and in Spring 2020 for the present document, found these species in approximately the same areas, albeit in much lower densities. Native grasses were re-sprouting from burned basal clumps or growing from seed. The proposed roadway improvements through coastal sage scrub and chaparral habitats will cumulatively remove up to approximately 0.1 acres of native grasses, including (in order of abundance): small-flowered melic grass (*Melica imperfecta*), foothill needlegrass (*Nassella lepida*), thin grass (*Agrostis pallens*), and giant wild rye (*Leymus condensatus*). The County criteria for classifying a habitat as native grassland is that patches of native grass must be at least 0.25 acres in areal extent and show a percent cover of at least 10% (County of Santa Barbara, 2015). None of the patches observed individually or cumulatively meet these criteria however, the species richness of native grasses found in the project area should be recognized and disturbance appropriately mitigated.

The proposed roadway improvements outside of ESHA will result in significant impacts to vegetation and wildlife that can be mitigated to less than significant levels with the following measures (Class II impact).

- The contractor shall install orange construction fencing along both sides of the roadway route prior to initial ground disturbance (supervised by monitoring biologist). This fencing shall be maintained for the duration of construction and checked periodically by the monitoring biologist.
- The biologist shall supervise the installation and maintenance of silt fencing or other temporary measures used to capture and contain fugitive soil that may be transported downslope during grading and roadway improvement construction. The fencing shall be installed prior to initial grading activities and shall remain in place for the duration of roadway construction and landscaping. Soil that has collected against this fencing shall be removed with hand tools.
- Prior to initial grading, a qualified native plant nursery shall salvage native perennial grasses or grass seed (if present) of native annual grasses found within the construction footprint of the access road and house site. This material shall be maintained at a native plant nursery for transplanting along the edges of the newly constructed roadway and house site following construction, as part of the habitat restoration effort.
- A qualified biologist shall prepare a Habitat Restoration Monitoring Plan prior to project permitting to:
    - outline methods to be implemented to remove and control invasive, non-native vegetation in the project area;
    - identify performance criteria for monitoring native trees, shrubs, and herbaceous species to be planted per the driveway and house site planting plans developed by Goodkind (2018, 2020);

  - monitor fire fuel management practices (see other mitigation measures below).
  - monitor performance criteria for a period of five years post-planting; summarize monitoring results in an annual report to be submitted to Planning & Development for review and comment.

The Habitat Restoration Plan shall make strategic use of hydroseeding (hydromulch with native, locally-occurring shrub and grass seed added) and other erosion control measures on all slopes disturbed by construction in order to reduce weed occurrence and soil erosion and facilitate restoration of these areas. The goal of this Plan will be to limit impacts to native vegetation and promote high wildlife habitat quality and is intended to supplement the driveway and house site planting plans developed by Goodkind (2018, 2020).

- Soils on steep slopes on both sides of the roadway that are disturbed by roadway construction shall be hydroseeded with a native, locally-occurring seed mix of coastal sage scrub shrubs, chaparral shrubs, and native grasses, including melic grass, thin grass, and/or foothill needlegrass to mitigate for loss of native grasses.
- All construction work shall be restricted to the dry season (1 May to 1 November).
- All applicable BMPs for controlling soil erosion shall be in place by 1 October.
- No work shall occur if rain is forecast within the succeeding 24 hours. The contractor(s) will stop work if rain is forecast within 24 hours and install all applicable BMPs to stop soil erosion and contain and filter surface runoff from disturbed soils.
- The applicant shall plant only native, locally-occurring shrub and tree species as landscaping around the house site and access road.
- Mitigation plantings for impacts to oaks shall follow the Tree Protection Plan prepared by McPherson (2020).
- Blasting, if necessary to remove bedrock during construction, shall not be used during the bird nesting season between 1 March and 1 August.
- No more than three (3) days prior to initial grading, a qualified biologist shall conduct a pre-construction survey of the work areas for wildlife and nesting birds. Construction work within 100 feet of active nests shall be halted until the biologist can determine if construction will not impact nesting. Birds that nest in the construction area after construction has begun are not subject to this proscription.
- A qualified biologist shall conduct environmental training sessions for all construction supervisors and personnel to explain special status of work areas, permit conditions, etc. The session shall be repeated for new workers and when non-compliance conditions arise.
- A qualified biologist shall monitor all access road construction, including all improvements, to ensure that mitigation measures and construction BMPs are being implemented to avoid or minimize impacts to native vegetation and wildlife.
- Contractors and sub-contractors shall be prohibited from smoking while working within the construction zone.

- Construction storage and parking areas shall be identified on all Grading Plans. Construction equipment and vehicles shall not be driven or parked off of paved surfaces or existing dirt roads, except where required for approved work. No fill, soil, rocks, or construction materials shall be stored or placed on the side of the main access in the riparian area, except where required for approved work.
- Machinery, vehicles, and equipment shall not be re-fueled or otherwise maintained within 100 feet of Hot Springs Creek.
- Equipment storage and stockpile areas shall be clearly marked on all construction plans and shall not be located within the dripline of coast live oaks or western sycamore trees.
- Individual trees located outside of the disturbance area, but within 25 feet of disturbance, shall be fenced at least 6 feet outside the critical root zone, unless approved grading shall occur closer to the trunk, or unless the tree is located far upslope. Fencing shall remain in place for the duration of construction.
- Oak tree roots disturbed by construction shall be cut clean and kept moist until the soil can be back-filled. Trees disturbed within their critical root zone shall be deep fed and checked by a County-approved arborist for other treatment recommendations.
- A County-approved arborist shall monitor during initial grading within the critical root zone of trees impacted by road construction.

Impact BIO-3: Impacts to Biological Resources from House Site Construction. As discussed in the Impact BIO-2, construction of the house site (grading for and construction of the main house, garage, pool, and guest house), will permanently remove approximately 25,600 (0.59 acres) of wildlife habitat. Most of the impacts will occur in mixed coastal sage scrub, with comparatively small loss of chaparral and ruderal vegetation (Fig. 5d; Table 4). Construction work for the house site will occur on a ridgeline bordered by steep slopes. In addition to direct loss/disturbance to native vegetation within the construction footprint, downslope impacts could occur to vegetation, wildlife habitat, and water quality in the tributaries and main stem of Hot Springs Creek as a result of soil erosion on disturbed slopes and proliferation of non-native grasses and other vegetation in disturbed areas that degrade habitat values for wildlife value and increase the potential for wildlife fires. Additional permanent impacts to vegetation and wildlife include increased noise and human presence for the life of the project. These are potentially significant impacts to wildlife habitat, vegetation, and water quality (Class II) that can be reduced to less than significant levels by consistent application of the following mitigation measures before and during construction and landscaping:

- A qualified biologist shall supervise the installation of orange construction fencing around the disturbance limits of the house site prior to initial ground disturbance. This fencing shall be maintained for the duration of construction and checked periodically by a qualified biologist.
- A qualified biologist shall supervise the installation and maintenance of silt fencing or other measures to capture and prevent fugitive soil from being transported downslope during grading. The fencing shall remain in place for

the duration of house site construction and soil collected against this fencing shall be removed with hand tools.

- Work shall be restricted to the dry season (1 May to 1 November).
- No work shall occur if rain is forecast within the next 24 hours. Contractor will stop work if rain is forecast within 24 hours and install all applicable BMPs, including covering disturbed soils with tarps or other cover methods in order to prevent soil erosion. All applicable BMPs shall be employed to contain and filter surface runoff from construction soils. Soils disturbed by construction shall be covered with hydromulch within three days after disturbance if these areas will not be disturbed again for two weeks.
- Blasting (if used to remove bedrock during construction) shall not occur during the bird nesting season (1 April to 1 July).
- No more than three (3) days prior to initial grading, a qualified biologist shall conduct a pre-construction survey of the work areas for wildlife and nesting birds. Woodrat nests found within the construction footprint shall be dismantled by hand and relocated outside the construction footprint. Construction work within 100 feet of active nests shall be halted until the young have fledged. Birds that nest in the construction area after construction has begun are not subject to this proscription.
- A qualified biologist shall monitor house site construction to ensure permit compliance and that all applicable mitigation measures and BMPs are being implemented to avoid or minimize impacts to native vegetation and wildlife.
- Prior to initial grading, a qualified biologist shall salvage all native perennial grasses and grass seed (if present) of native annual grasses, as well as all wood mint, hummingbird sage, California blackberry, mugwort and other rhizomatous species found within the construction footprint. This material shall be maintained at a native plant nursery for transplanting along the edges of the newly constructed roadway following construction.
- Contractors and sub-contractors shall be prohibited from smoking while on the project site.
- Construction storage and parking areas shall be identified on all Grading Plans. Construction equipment and vehicles shall not be driven or parked off of paved surfaces or existing dirt roads, except where required for approved work.
- Invasive, non-native vegetation shall be removed and controlled around the house site. The homeowner shall landscape the building envelope with a mixture of non-invasive ornamental species with high wildlife value and appropriate native trees, shrubs, and ground cover.
- Soils on steep slopes on both sides of the house site that are disturbed by roadway construction shall be hydroseeded with a native, locally-occurring seed mix of coastal sage scrub shrubs, chaparral shrubs, and native grasses, including melic grass, thin grass, and/or foothill needlegrass to mitigate for loss of native grasses. This measure is intended to supplement landscape plans developed in Goodkind (2018).

Impact BIO-4: Impacts to Biological Resources From Fire Fuel Management Practices. The house site and access road improvements are proposed to be constructed

in an extremely high fire danger area that has experienced severe wildland fires several times over the past 25 years. The most recent fire in December 2017 burned the entire project area. Almost all of the impacts to vegetation and wildlife habitats from the fire fuel management practices that must be implemented after construction of the house site, will occur in coastal sage scrub. These impacts are permanent because they will occur for the life of the project. The Fire Department requires owners to create and maintain fire fuel management zones around habitable structures. Because of the extreme fire danger in the project area, vegetation modification is required in three zones extending 200 feet outward around structures:

- *Zone 1: 0-30 feet from habitable structures (1.10 acres).* Full clearance of woody shrubs; retain oak trees; plant with irrigated, low-growing shrubs and ground cover.
- *Zone 2: 30-100 feet from habitable structures (1.52 acres).* Selective clearance of woody shrubs; removal of dead wood; plant with drought-tolerant, fire-resistant, irrigated trees, shrubs, and ground cover; maintain grasses and ground cover to less than 18 inches in height.
- *Zone 3: 100-200 feet from habitable structures (3.60 acres).* Selective clearance of woody shrubs and limbing of trees to remove ladder fuels; removal of dead wood.

Zone 1 around the house, garage, and pool will remove about 1.10 acres of mixed chaparral shrubs and ruderal vegetation. Zones 2 and 3 will impact about 5.12 acres of mixed coastal sage scrub and chaparral habitat as well as several mature coast live oak trees near the guest house and imbedded in the scrub. Scrub shrubs range in height from 1-12 feet high and in most places form a continuous canopy (see photos in Appendix 1).

In total, fire fuel modification for this project will impact at least 6.22 acres of coastal sage scrub vegetation around the house site (see Goodkind, 2018 in Appendix 4). Mixed coastal sage scrub and chaparral habitats are considered biodiversity "hotspots", so vegetation modification will likely impact a broad variety of wildlife. Removal of dead wood reduces microhabitats that are used by a variety of wildlife species for various life history functions. Vegetation management practices on the steep hillsides around the house site also have the potential to significantly destabilize slopes and increase soil erosion into Hot Springs Creek.

Soil disturbance and erosion also creates conditions favorable for invasive, non-native vegetation, such as non-native annual grasses that, when established, can increase the fire hazard compared to native woody shrub communities. Vegetation management will occur on steeply sloping ground and could create ideal conditions for spreading invasive, non-native species. The most egregious of these are cape ivy (*Senecio mikanioides*) and several non-native grass species, including veldt grass (*Ehrharta calycina*), fountain grass (*Pennisetum setaceum*). The grasses mentioned above were not observed on-site, but are common in disturbed habitats in the area and these, along with several non-native grasses already on-site, can proliferate when the shrub cover of chaparral and coastal sage scrub is removed or disturbed. Once established, these grasses can prevent native shrubs and

grasses from re-colonizing disturbed sites, thereby maintaining a grass-dominated habitat that is more fire-prone than the scrub habitats they replace. Additionally, if left unchecked, non-native grass invasions are expected to extend from the points of disturbance well into adjacent, undisturbed scrub and oak woodland habitats. Replacement of native scrub habitats with non-native, grass-dominated habitats would be a significant impact because of the length of the access road and the location of the proposed residence and guest house.

Creating and maintaining the required fire fuel management zones around the house site will result in permanent disturbance of at least 6.22 acres of coastal sage scrub, a native plant community with high biodiversity and high levels of endemism. Although these impacts can be mitigated to less than significant levels by adopting the following mitigation measures presented in this document, these impacts could easily become a Class I impact to vegetation and wildlife if non-native plants, including non-native grasses, are allowed to proliferate around the house site and in the fire fuel management zones. These species could rather easily spread into the surrounding chaparral. Landowner cooperation with the vegetation management guidelines in a Fire Fuel Management Plan is critical to limiting impacts to a Class II level. Adjacent properties in this area are showcases of fire fuel management practices that have all but replaced native vegetation with non-native, ornamental, and, in some cases, invasive species that have little or no value to wildlife and which contribute to higher frequency of fire.

Mitigation Measures:

- A qualified biologist shall prepare a Fire Fuel Management Plan prior to construction of the driveway and house site. The Plan shall detail methods to be used in creating and maintaining fire fuel management zones around the house site that maximize habitat values for wildlife and still maintain fire safety.
- The biologist shall monitor fire fuel management practices for a period of five years post-planting, as part of the monitoring of the native plant installation along the driveway and house site (see previous mitigation measures under impacts associated with crossing and access road improvements).
- Landscaping around the house site and driveway access road shall use only native, locally-occurring ground cover, shrub, and tree species. In particular, the use of invasive, non-native grasses, such as fountain grass, shall be prohibited. The plans developed by Goodkind (2018) in Appendix 4 emphasize native, locally-occurring trees, shrubs, and ground cover.

6.0 Residual Impacts and Conclusions. Table 5 summarizes total permanent disturbance estimates to woodland and scrub habitats from construction of the access road/driveway improvements, house site construction, and fire fuel management zones around habitable structures.

Table 5. Summary of Project-Related Impacts to Vegetation and Wildlife Habitats.

Proposed Project Element	Sycamore-Oak Woodland and Coast Live Oak Woodland (ESHA)	Coastal Sage Scrub and Chaparral Habitats	Total Permanent Disturbance	Native Tree Removal
Remove existing at-grade crossing of Hot Springs Creek and replace with a span bridge	Minimum 1,200 sf	None	**None**	None
Access road improvements	17,350 sf 0.40 acres	71,730 1.65 acres	**89,080 sf** **2.05 acres**	13 trees
Grading for main residence, garage, pool, and guest house	None	47,515 sf 1.09 acres	**47,515 sf** **1.09 acres**	None
Fire Fuel Management Zones	None	270,945 sf 6.22 acres	**270,945 sf** **6.22 acres**	TBD
TOTAL	**18,550 sf** **0.43 acres**	**390,190 sf** **8.96 acres**	**407,540 sf** **9.36 acres**	**13 trees**

Project-related impacts to biological resources arise from both construction and occupation of the proposed project:

- Impacts associated with removing the existing at-grade crossing of Hot Springs Creek and replacing it with a span bridge are expected to be temporary and ultimately will provide a significant improvement to water and habitat quality in the creek.
- Access road widening and stabilization, construction of the house site, and especially, implementation of fire fuel management practices around the house site, will permanently remove or disturb approximately 9.36 acres of native vegetation and wildlife habitat, including at least 1.07 acres of mapped ESHA. By far the largest impact is from fire fuel management activities that must be implemented for the life of the project.
- Residual Impacts: project-related impacts caused by creek crossing and roadway improvements and house site construction can be partially mitigated by the use of native, locally-occurring trees, shrubs, and ground cover, per Goodkind (2020) and measures recommended herein, but fire fuel management practices represent the largest impacts to plant and wildlife habitats and species. Improper or inconsistent application of guidelines developed in a Fire Fuel Management Plan designed to balance biodiversity with fire safety, could significantly degrade habitat values for the life of the project.

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APPENDIX 1. SITE PHOTOGRAPHS
(all photos taken 11 May 2020 unless otherwise indicated)

At-grade crossing of Hot Springs Creek, looking south from access road. Creek is flowing from left to right.

At-grade crossing, looking upstream. Bed gradient steepens significantly immediately downstream of crossing (at left).

Access road looking northeast from Station 11+00 at start of access road improvements following debris flow on 9 January 2018 that occupied the entire floodplain along this reach. Note proximity of channel (at right) to roadway. 22 February 2018.

Same view on 19 May 2020. Proposed road improvements will impact native understory vegetation on slope on left side of road.

Unnamed seasonal tributary of Hot Springs Creek, looking upslope from access road at Station 18+50 following Thomas Fire in Dec. 2017 and debris flow on 9-10 January 2018. 22 February 2018.

Same view on 19 May 2020, showing massive re-growth of coastal sage scrub and oak woodland understory vegetation on slopes. Proposed turnaround and retaining walls along upslope side of access road here will impact vegetation on lower slope.

Coastal sage scrub along access road at Station 23+00. Clumps of native foothill needlegrass are visible along lower slope and will be impacted by proposed roadway improvements.

Access road near Station 31+00, showing re-growth of diverse coastal sage scrub vegetation.

Coastal sage scrub vegetation at Station 33+00, site of proposed hammerhead and turnaround. Native grasses and shrubs visible here include sticky snapdragon, deerweed, golden yarrow, and southern bush monkeyflower, and foothill needlegrass.

Pre-fire example of native grass occurrence along access road at road elev. 945, pre-Thomas Fire. Clumps of small-flowered melic (*Melica imperfecta*) were growing along upslope edge of existing access road here. 11 March 2011.

Pre-Thomas Fire condition of access road and subject parcel (mostly to left), looking north from access road at about Station 28+40 (road elev. 1,000). Unnamed seasonal tributary of Hot Springs Creek is visible at left. 22 February 2018.

Same view on 19 May 2020. Note recovery of coastal sage scrub and chaparral vegetation on slopes.

East-facing slope below proposed house site (to be constructed on ridgeline), post-Thomas Fire, looking west from access road about Station 28+40 (road elev. 1,000). Slopes below access road are highly erosive. Drainage in center of photo is an unnamed tributary of Hot Springs Creek. Large portions of this slope are in the 200-foot fire fuel management zone around the proposed house site (Appendix 4). 22 February 2018.

Unnamed tributary of Hot Springs Creek, looking south, on 19 May 2020. Portion of slope in previous photograph is visible at right. Note amount of re-growth of native shrub cover.

APPENDIX 2. PLANT SPECIES OBSERVED ON-SITE

Appendix 2. The following plant species were observed on-site on 24 February 2011, 8 March 2011, 11 March 2011, 2013, 22 February 2018, and 27 July 2018, and during surveys for this report in Spring 2020. Plants are listed in alphabetical order by common name. Bolded species are invasive, non-native species. Special-status species with some potential to occur here are discussed in Table 2 in the text.

Western Sycamore- Coast Live Oak Riparian Woodland:

arroyo willow (*Salix lasiolepis*)
black cottonwood (*Populus balsamifera* subsp. *trichocarpa*)
California blackberry (*Rubus ursinus*)
canyon sunflower (*Venegasia carpesioides*)
cape ivy (*Delairea odorata*)
coast live oak (*Quercus agrifolia*)
coyote brush (*Baccharis pilularis*)
dock (*Rumex* sp.)
Douglas' nightshade (*Solanum douglasii*)
elderberry (*Sambucus mexicana*)
greenbark ceanothus (*Ceanothus spinosus*)
hummingbird sage (*Salvia spathacea*)
laurel sumac (*Malosma laurina*)
miner's lettuce (*Claytonia perfoliata* subsp. *perfoliata*)
mugwort (*Artemisia douglasiana*)
poison oak (*Toxicodendron diversilobum*)
snowberry (*Symphoricarpos mollis*)
smilo (*Pipatherum miliaceum*)
sticky eupatorium (*Ageratina adenophora*)
toyon (*Heteromeles arbutifolia*)
western bracken (*Pteridium aquilinum* var. *pubescens*)
western sycamore (*Platanus racemosa*)

Coast Live Oak Woodland and Coast Live Oak Riparian Woodland:

black sage (*Salvia mellifera*)
canyon sunflower (*Venegasia carpesioides*)
cape ivy (*Delairea odorata*)
caterpillar phacelia (*Phacelia cicutaria*)
coast live oak (*Quercus agrifolia*)
coastal wood fern (*Dryopteris arguta*)
elderberry (*Sambucus mexicana*)
foothill needlegrass (*Nassella* [*Stipa*] *lepida*)
giant rye (*Elymus condensatus*)
greenbark ceanothus (*Ceanothus spinosus*)
manroot (*Marah macrocarpus*)
smilo (*Pipatherum miliaceum*)
sticky eupatorium (*Ageratina adenophora*)
sweet fennel (*Foeniculum vulgare*)
wood mint (*Stachys bullata*)

Coastal Sage Scrub and Chaparral:

bedstraw (*Galium* sp.)
big-berried manzanita (*Arctostaphylos glauca*)
bigpod ceanothus (*Ceanothus megacarpus* var. *megacarpus*)
black sage (*Salvia mellifera*)
California aster (*Lessingia filaginifolia* var. *filaginifolia*)
blue-eyed grass (*Sisyrinchium bellum*)
California figwort (*Scrophularia californica* var. *californica*)
canyon sunflower (*Venegasia carpesioides*)
cape ivy (*Delairea odorata*)
chamise, (*Adenostoma fasciculatum*)
chaparral clematis (*Clematis lasiantha*)
chaparral mallow (*Malacothamnus fasciculatus*)
coast live oak (*Quercus agrifolia*)
coastal morning-glory (*Calystegia cyclostegia*)
coastal sagebrush (*Artemisia californica*)
coastal sanicle (*Sanicula laciniata*)
deerweed (*Lotus scoparius*)
western Transverse Range manzanita (*Arctostaphylos glandulosa* subsp. *mollis*)
elderberry (*Sambucus mexicana*)
foothill needlegrass (*Nassella* [*Stipa*] *lepida*)
giant wild rye (*Elymus condensatus*)

golden yarrow (*Eriophyllum confertiflorum*)
greenbark ceanothus (*Ceanothus spinosus*)
hairy golden aster (*Heterotheca sessiliflora* subsp. *sessiliflora*)
hoary nightshade (*Solanum umbelliferum* var. *incanum*)
huckleberry (*Vaccinium ovatum*)
laurel sumac (*Malosma laurina*)
live-forever (*Gnaphalium bicolor*)
mountain mahogany (*Cercocarpus betuloides*)
Nuttall's bedstraw (*Galium nuttallii* subsp. *nuttallii*)
peak rush-rose (*Helianthemum scoparium*)
poison oak (*Toxicodendron diversilobum*)
Plummer's baccharis (*Baccharis plummerae*)
Pride-of-Madeira (*Echium candicans*)
redberry (*Rhamnus crocea*)
saw-tooth goldenbush (*Hazardia squarrosa*)
small-flowered melic (*Melica imperfecta*)
smilo (*Pipatherum miliaceum*)
southern bush monkey flower (*Diplacus longiflorus* var. *longiflorus*)
sticky snapdragon (*Antirrhinum multiflorum*)
sweet fennel (*Foeniculum vulgare*)
western Transverse Range manzanita (*Arctostaphylos glandulosa* subsp. *mollis)*
Victorian box (*Pittosporum undulatum*)
yellow-flowered hawkweed (*Hieracium argutum*)

Ruderal and Ornamental:

beggar's ticks (*Bidens pilosa*)
black mustard (*Brassica nigra*)
cape ivy (*Senecio mikanioides*)
English plantain (*Plantago lanceolata*)
flax-leaved fleabane (*Conyza bonariensis*)
foxtail (*Hordeum murinum*)
Irish juniper (*Juniperus scopulorum*)
Italian thistle (*Carduus pycnocephala*)
Japanese wisteria (*Wisteria floribunda*)
Mediterranean mustard (*Hirschfeldia incana*)
milk thistle (*Silybum marianum*)
pampas grass (*Cortaderia jubata*)
prickly lettuce (*Lactuca serriola*)
Pride of Madeira (*Echium candicans*)
rattail fescue (*Vulpia* [*Festuca*] *myuros* var. *myuros*)
red brome (*Bromus madritensis* subsp. *rubens*)
redstem filaree (*Erodium cicutarium*)
ripgut brome (*Bromus diandrus*)
wild oat (*Avena fatua*)
silver dollar tree (*Eucalyptus cinerea*)
smilo (*Pipatherum miliaceum*)
sour-grass (*Oxalis pes-caprae*)
sweet fennel (*Foeniculum vulgare*)
tree tobacco (*Nicotiana glauca*)
Victorian box (*Pittosporum undulatum*)
yellow star-thistle (*Centaurea solstitialis*)

APPENDIX 3. WILDLIFE SPECIES EXPECTED TO OCCUR OR OBSERVED ON-SITE DURING SITE VISITS

Appendix 3. The following wildlife species are expected to occur or were observed on and around the subject parcel during site visits on 24 February 2011, 8 March 2011, and 11 March 2011, 2013, 22 February 2018, 27 July 2018, and during surveys for this report in Spring, 2020. Animals are listed in phylogenetic order. Scientific names of birds are not given because the common names are standardized. Species observed are bolded; unbolded have a moderate to high potential for occurring in the project area. Special-status species with some potential to occur here are discussed in Table 2 in the text.

Insects:

Monarch (*Danaus plexippus*)

Amphibians:

Coast Range newt (*Taricha torosa torosa*) – dispersal through creek
Black-bellied slender salamander (*Batrachoseps nigriventris*)
Ensatina (*Ensatina eschscholtzii*)
Arboreal salamander (*Aneides lugubris*)
Western toad (*Anaxyrus boreas*)
Pacific tree frog (*Pseudacris regilla*)
California treefrog (*Pseudacris cadaverina*)
California red-legged frog (*Rana draytonii*) – dispersal through creek

Reptiles:

Western fence lizard (*Sceloporus occidentalis*)
Side-blotched lizard (*Uta stansburiana*)
Western skink (*Eumeces skiltonianus*)
California legless lizard (*Anniella pulchra*)
Southern alligator lizard (*Elgaria multicarinatus*)
Western blind snake (*Leptotyphlops humilis*)
California whipsnake (*Masticophis lateralis*)
California mountain kingsnake (*Lampropeltis zonata*)
Common kingsnake (*Lampropeltis getulus*)
Gopher snake (*Pituophis melanoleucus*)
Night snake (*Hypsiglena torquata*)
Ring-neck snake (*Diadophis punctatus*)
Common garter snake (*Thamnophis sirtalis*)
Western terrestrial garter snake (*Thamnophis elegans*)
Two-striped garter snake (*Thamnophis hammondii*)
Western rattlesnake (*Crotalus oreganus*)

Birds:

Turkey vulture
White-tailed kite
Cooper's hawk
Red-shouldered hawk
Red-tailed hawk
Golden eagle
American kestrel
Prairie falcon
Peregrine falcon
California quail
Band-tailed pigeon
Rock dove

Eurasian collared dove
Greater roadrunner
Great horned owl
Barn owl
Western screech owl
Common nighthawk
White-throated swift
Anna's hummingbird
Allen's hummingbird
Costa's hummingbird
Belted kingfisher
Acorn woodpecker
Yellow-bellied sapsucker
Williamson's woodpecker
Northern flicker
Nuttall's woodpecker
Hairy woodpecker
Pacific-slope flycatcher
Olive-sided flycatcher
Western wood pewee
Black phoebe
Say's phoebe
Ash-throated flycatcher
Loggerhead shrike
Hutton's vireo
Warbling vireo
Western kingbird
Western scrub-jay
American crow
Violet-green swallow
Cliff swallow
Northern rough-winged swallow
Mourning dove
Barn swallow
Wrentit
Oak titmouse
Bushtit
House wren
Bewick's wren
Canyon wren
Ruby-crowned kinglet
Western bluebird
Orange-crowned warbler
Yellow-rumped warbler
Yellow warbler
Wilson's warbler
Hermit warbler
Western tanager
California towhee
Spotted towhee
White-crowned sparrow
Golden-crowned sparrow
Song sparrow
Dark-eyed junco
Black-headed grosbeak
Brewer's blackbird
Bullock's oriole
Hooded oriole
House finch
Purple finch
Lesser goldfinch
American goldfinch
Lawrence's goldfinch
House sparrow

Mammals:

Virginia opossum
Ornate shrew
Broad-handed mole
Pallid bat
Spotted bat
California bat
Small-footed bat
Red bat
Hoary bat
Long-eared bat
Little brown bat
Fringed bat
Long-legged bat
Yuma bat
Western pipistrelle
Townsend's long-eared bat
Guano bat
Coyote
Grey fox
Black bear
Raccoon
Ringtail

Long-tailed weasel
Striped skunk
Spotted skunk
Feral cat
Bobcat
Mountain lion
Black-tailed deer
Merriam's chipmunk
Western grey squirrel
Fox squirrel
Botta's pocket gopher
California meadow vole
Heermann's kangaroo rat
San Diego desert woodrat
Dusky-footed woodrat
Brown rat
House mouse
Harvest mouse
Deer mouse
Brush mouse
Pinyon mouse
Parasitic mouse
Brush rabbit
Audubon's cottontail

APPENDIX 4. FIRE FUEL MANAGEMENT ZONES AROUND HOUSE SITE (GOODKIND, 2014)

ZONE 1: 0-30' FROM STRUCTURES

1. MAINTAIN ALL TREES, SHRUBS AND OTHER PLANTS THAT ARE ADJACENT TO OF OVERHANGING THE BUILDING IN GOOD CONDITION FREE OF DISEASED, DEAD OR DYING WOOD.
2. MAINTAIN ROOFS OF ALL BUILDINGS AND STRUCTURES FREE OF LEAVES.
3. REMOVE ALL CHAMISE (ADENOSTOMA SP.) SHRUBS.
4. THIN MOUNTAIN MAHOGANY (CERCOCARPUS SP.) CHAPARRAL TO INCREASE SPACE BETWEEN MATURE SHRUBS TO FIVE (5) FEET. APPROXIMATELY 40% REDUCTION IN COVER WILL LIKELY BE REQUIRED TO OBTAIN THIS GOAL.
5. THIN OR REMOVE ALL EUCALYPTUS TREES.
6. USE A LANDSCAPE PALETTE THAT CONSISTS OF LOW-FLAMMABILITY SPECIES. OBTAIN APPROVAL FROM SANTA BARBARA COUNTY FIRE DEPARTMENT (SBCFD) FOR THE PROPOSED PALETTE.

ZONE 2: 30-100' FROM STRUCTURES

1. THIN MOUNTAIN MAHOGANY (CERCOCARPUS SP.) CHAPARRAL TO INCREASE SPACE BETWEEN MATURE SHRUBS TO FIVE (5) FEET. APPROXIMATELY 40% REDUCTION IN COVER WILL LIKELY BE REQUIRED TO OBTAIN THIS GOAL.
2. PRUNE ALL EUCALYPTUS TREES TO REMOVE DEAD, DAMAGED, AND DISEASED WOOD TO REDUCE FLAMMABILITY. ADDITIONAL PRUNING MAY BE REQUIRED UP TO 50% OF TREE CANOPY FOR TREES IMMEDIATELY ADJACENT TO STRUCTURES. ALTERNATIVELY, REMOVE EUCALYPTUS FROM THE 100-FOOT ZONE.
3. PRUNE UNDERSTORY VEGETATION WHERE WOODY SHRUBS ARE PRESENT. PRUNE LOWER BRANCHES OF TREES TO MINIMUM HEIGHT OF SIX(6) FEET ABOVE GROUND LEVEL.
4. SINGLE SPECIMENS OF TREES OR OTHER VEGETATION MAY BE KEPT IF THEY ARE WELL SPACED (A MINIMUM OF 30 FEET BETWEEN TREES), WELL PRUNED, AND CREATE AN OVERALL CONDITION THAT AVOIDS THE SPREAD OF FIRE TO OTHER VEGETATION OR TO BUILDINGS OR STRUCTURES.
5. THIN CHAPARRAL SHRUBS TO CREATE A MINIMUM 5FT CLEAR ZONE BETWEEN INDIVIDUAL SHRUBS. TO DO SO, USE SELECTIVE CLEARING TO PREFERENTIALLY PRESERVE NATIVE SCRUB OAKS (QUERUC BERBERIDIFOLIA) AND SANTA BARBARA HONEYSUCKLE (LONICERA SUBSPICATA VAR SUBSPICATA) WHILE REMOVING THE MORE COMMON SHRUBS TO MEET CLEARANCE GOALS. SELECTIVELY PRUNE ODLER WOODY MATERIAL OUT OF EXISTING SANTA BARBARA HONESUCKLE.
6. REDUCE THE NUMBER AND DENSITY OF INDIVIDUALS OF BIG-POD CEANOTHUS (CEANOTHUS MEGACARPUS) AND MOUNTAIN MAHOGANY (CERCOCARPUS BETULOIDES). REMOVE CHAMISE (ADENOSTOMA FASCICULATUM).
7. MAINTAIN HERBACEOUS SPECIES AND GRASSE UNDERSTORY AT HEIGHT OF NO MORE THAT FOUR (4) INCHES. THIS MAY REQUIRE MOWING MORE THAN ONCE PER YEAR. MONITOR THE SITE QUARTERLY FOR HERBACEOUS GROWTH BETWEEN SHRUBS AND MAINTAIN AT HEIGHTS NO GREATER THAT FOUR INCHES DURING THE FIRE SEASON.

ZONE 3: 100-200' FROM STRUCTURES

1. CONSTRIANED SITE ZONE: AN ACTIVELY MANAGED BUFFER EXTENDING 100 FEET BEYOND ZONE 2. FOR SLOPES GREATER THAN 25% OR FUEL LOADS IN EXCESS OF 100 TONS PER ACRE.
2. PRUNE TREES AND SHRUBS TO REMOVE DEAD, DAMAGED AND DISEASED WOOD TO REDUCE FLAMMABILITY.
3. REMOVE ALL EUCALYPTUS.
4. PRUNE UNDERSTORY VEGETATION WHERE WOODY SHRUBS ARE PRESENT. PRUNE LOWER BRANCHES OF TREES TO MAINTAIN A HEIGHT OF SIX(6) ABOVE GROUND LEVEL.
5. THIN CHAPARRAL SHRUBS TO CREATE A MINIMUM 5-FOOT CLEAR ZONE BETWEEN INDIVIDUAL SHRUBS. TO DO SO USE SELECTIVE

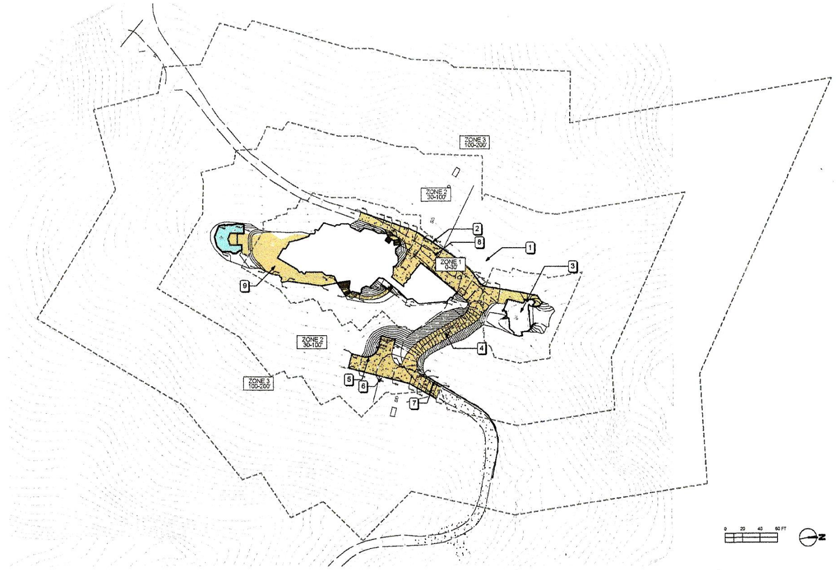
KEYNOTES

1. EXISTING OAK TREE TO REMAIN, PROTECT IN PLACE. SEE TREE PROTECTION NOTES
2. 2' HIGH MAX RETAINING WALL, INTEGRAL COLOR PLASTER TO MATCH LOCAL SANDSTONE/RESIDENCE
3. GREEN-ROOF PLANTING OVER GUEST HOUSE
4. INTEGRAL COLORED CONCRETE DRIVEWAY ON SLOPES OVER 12%
5. SANDSTONE FACED RETAINING WALL, MAX 6' HIGH
6. 5' HIGH MAX RETAINING WALL, INTEGRAL COLOR PLASTER TO MATCH LOCAL SANDSTONE/RESIDENCE
7. SANDSTONE FACED RETAINING WALL, MAX 3' HIGH
8. CRUSHED STONE / CHIP-SEAL DRIVEWAY AT SLOPES < 5%
9. FLAGSTONE PAVING AT TERRACE

PLANTING IN ZONE 1 ONLY. FUEL MANAGEMENT IN OTHER ZONES SEE PLANTING PLAN

PLANT LIST

Symbol	Botanical Name	Common Name	Size	Mature Ht	Qty	Notes
	Trees/Palms					
	Quercus agrifolia	Coast Live Oak	36" box	20'0"	12	
	Shrubs					
A	*Arctostaphylos 'Howard McMinn'*	McMinn Manzanita	5 gal	5'0"	5	
AS	*Arctostaphylos densiflora 'Sentinel'*	Sentinel Manzanita	5 gal	10'0"	8	
	Arctostaphylos glandulosa glandulosa	Eastwood Manzanita	5 gal	4'0"	108	
Ci	*Ceanothus impressus*	Wild Lilac	5 gal	4'0"	41	
	Rhamnus californica 'Mound San Brun	California Coffee Berry		4'0"	3	
Rhu	*Rhus integrifolia*	Lemonadeberry	5 gal	8'0"	27	
Sa	*Salvia 'Allen Chickering'*	Allen Chickering Sage		4'0"	11	
sw	*Salvia clevelandii 'Winifred Gillman'*	Winifred Gillman Sage		4'0"	8	
	Groundcover					
	Salvia 'Bee's Bliss'	Groundcover Sage	1 gal	1'6"	118	
	Arctostaphylos John Dourley	Manzanita	1 gal	2'0"	43	
	Perennials					
	Epilobium 'Select Mattole'	California Fucshia	1 gal	2'6"	80	
	Solanum xantii	Purple Nightshade	1 gal	3'0"	29	
T	*Trichostema parishii*	Mountain Blue Curls	1 gal	3'0"	22	
V	*Verbena lilacina 'Paseo Rancho'*	Cedros Island Verbena	1 gal	4'0"	38	
	Grasses					
	Leymus condensatus 'Gaviota Grey'	Canyon Prince Wildrye	1 gal	3'0"	107	
	Muhlenbergia rigens	Deer Grass	1 gal	3'0"	336	
n	*Nasella pulchra*	Purple Needle Grass	1 gal	1'6"	1620	
	Sporobolus aircides	Alkali Sacaton	1 gal	2'0"	55	
	Succulents					
	Agave parryi truncata	Century Plant	3 gal	2'0"	70	



GOERNER RESIDENCE

1017 Hot Springs Rd
Santa Barbara, CA

LGLA |

REGISTERED LANDSCAPE ARCHITECT
4375
LANE GOODKIND
CALIFORNIA

Title

FUEL MANAGEMENT PLAN

rev	date	issued for
1		
2		
3		
4		

date	project number
2/8/14	LCG
scale	DRAWN BY
13-06	LG

SHEET NUMBER

L3.0

PROGRESS PRINT: NOT FOR CONSTRUCTION