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Biological Resources Technical Report for the Honeydew Ranch Project, Humboldt County, California

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1 PROJECT BACKGROUND

The proposed Honeydew Ranch Project (Project) located at 665 Old Hindley Ranch Road consists of the construction of a 3-million-gallon water storage pond for irrigation use, up to eight acres of cannabis cultivation in greenhouses, and new processing buildings with footprints up to 929 square meters (m^2) (10,000 square feet [ft^2]). The proposed project will be designed and constructed outside of all wetlands and waters on the property with a minimum 30-m (100-ft) setback from seasonal wetlands and tributaries, 45-m (150-ft) setback from semipermanently flooded wetlands, and 61-m (200-ft) setback from the Mattole River.

1.1 Project Location

The property is located in unincorporated Humboldt County in the community of Honeydew, California (Figure 1). The Project is in Section 6 of Township 3 South, Range 1 East of the Honeydew U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle. The property is located at approximately latitude 40.2393° and longitude -124.1165°. The elevation within the property ranges from approximately 66 to 93 m (219 to 308 ft) above mean sea level. The property is situated on a high terrace adjacent to the Mattole River and approximately 1.6 kilometer (km) (1 mile [mi]) upstream of the Upper North Fork Mattole River (Figure 1).

The Project can be accessed by taking the CA-254 exit toward South Fork/Honeydew from US-101, continuing west on Mattole Road, and turning east on Old Hindley Ranch Road. At the fork with Applewood Road, stay right (south) to continue on Old Hindley Ranch Road; the property's gated access road is to the south and descends to 665 Old Hindley Ranch Road (Figure 1). Access to the site requires land owner permission and entry through a private gate.

The biological assessment was performed across the entire 18.8-hectare (ha) (46.5-acre [ac]) property (Survey Area) (Figure 1).

1.2 Report Purpose and Organization

The purpose of this biological resources technical report is to describe the special-status and/or sensitive biological resources (plants, vegetation communities, fish, wildlife, and wetlands and waters) in or with potential to occur in the Survey Area that may be affected by Project activities. The Project includes some existing and proposed structures used for cultivation-related activities, a proposed pond, a parking area, access roads, and cultivation areas, the footprint of which is collectively referred to as the proposed Project area. All project features are depicted in the grading plans for the Project (Appendix A). Potential impact on biological resources are discussed along with suggested minimization measures to reduce impacts.

Figure 1. Location of the Project and the Survey Area.

2 VEGETATION ASSESSMENT

Vegetation communities were characterized based on information collected in the Survey Area during the 1 December 2017 wetland delineation (Stillwater Sciences 2018). Vegetation in the Survey Area was mapped to the alliance-level following classification using the online edition of *A Manual of California Vegetation* (California Native Plant Society [CNPS] 2018a). The resulting vegetation map was used to: (1) determine if any stands are considered special-status natural communities, (2) if present, determine if they are likely to be impacted by the proposed Project, and (3) assess the likelihood of occurrence for special-status species in the Survey Area and proposed Project area.

Special-status natural communities are defined as those with a state ranking of S1, S2, or S3 (critically imperiled, imperiled, or vulnerable, respectively) on CDFW's *California Sensitive Natural Communities List* (CDFW 2018a).

2.1 Methods

2.1.1 Desktop review

The CDFW's California Natural Diversity Database (CNDDB) (CDFW 2018b) was queried for the U.S. Geological Survey (USGS) 7.5-minute quadrangles where the Project is located (Honeydew), and the surrounding eight quadrangles (Shubrick Peak, Buckeye Mountain, Bull Creek, Weott, Ettersburg, Shelter Cove, Briceland) (hereinafter Project vicinity) to determine if a special-status natural community was recorded in the Survey Area. Table 1 lists special-status natural communities identified from the CNDDB query.

Table 1. CNDDB special-status natural communities with potential to occur in the Survey Area.

Natural communities	Description	State rank[1]
Upland Douglas-fir Forest	A tall (60 m [197 ft]), mixed-age climax forest dominated (greater than 80%) by Douglas-fir. Climax stands appear restricted to droughty but not xeric conditions as caused by rainshadows, overly drained soils, or aspect. Sites typically occur on moderately deep, well-drained soils. Annual precipitation ranges from 58 to 309 cm (23 to 120 in) (Holland 1986). Stands within the Project vicinity are described as small pockets of old-growth conifers mixed with hardwoods along the south and west slopes of Gilham Butte between 365–914 m (1,200–3,000 ft) elevation above sea level (CDFW 2018b).	S3

[1] State ranks for special-status natural communities (CDFW 2018b):
S3 Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state

Existing information from the CALVEG geodatabase (USDA Forest Service 2018) and the United States Geologic Survey (USGS) regional geologic map (McLaughlin et al. 2000) on vegetation and soils in the Survey Area were reviewed. Field notes and photographs from the 1 December 2017 wetland delineation conducted by Stillwater Sciences in the Survey Area were reviewed to confirm dominant and diagnostic vegetation of each stand. This was followed by a one-day site visit on 28 September 2018 to collect supplemental vegetation data to support the classification to the alliance-level. All vegetation data were reviewed, and a final vegetation

alliance was determined using the online edition of *A Manual of California Vegetation* (CNPS 2018a). The finalized vegetation alliance names were checked against CDFW's *California Sensitive Natural Communities Lis*t (CDFW 2018a) to determine if any of these types are considered special-status natural communities. These alliances were also used to further assess the likelihood of occurrence for special-status plants in the Project.

2.2 Results

The approximately18.85-ha (46.59-ac) Survey Area includes: 1.76 ha (4.36 ac) of developed/landscaped land (formerly mostly grassland habitat) that includes various existing project and non-project related structures (e.g., barns, sheds, residence) and nonnative planted vegetation (e.g., *Salix babylonica* [weeping willow]); 1.95 ha (4.82 ac) of active Mattole River channel; and 0.09 ha (0.22 ac) semipermanently flooded wetland (Figure 2, Table 2). The existing structures that will be used for cultivation-related activities are confined to the developed/landscaped land and are all outside of the 150-foot wetland setback (Figure 2). Vegetation alliances observed in the Survey Area are listed in Table 2 and presented in Figure 2. Two special-status vegetation alliances (with a state rank of S3) were observed in the Survey Area, *Arbutus menziesii* and *Umbellularia californica* forest alliances (Table 2). Neither of these special-status natural communities were observed within the proposed Project area (Figure 2). The CNDDB special-status natural community Upland Douglas-Fir Forest (Table 1), which is associated with old-growth stands of Douglas-fir, was not observed in the Survey Area. Descriptions of the vegetation types are provided in the sub-sections below, along with representative photographs.

Table 2. Vegetation alliances and other cover types observed in the Survey Area.

Cover type	State status[1]	Total area ha (ac)
Developed/landscaped	-	1.76 (4.36)
Mattole River channel	-	1.95 (4.82)
Semipermanently flooded wetland	-	0.09 (0.22)
Annual/perennial grassland[2]	-	12.01 (29.68)
Arbutus menziesii Forest Alliance	S3	1.62 (4.01)
Quercus chrysolepis Forest Alliance	S4	0.53 (1.32)
Salix lasiolepis Shrubland Alliance	S4	0.19 (0.46)
Umbellularia californica Forest Alliance	S3	0.70 (1.72)
Total		**18.82 (46.50)**

[1] State ranks for special-status natural communities:
S3 Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

[2] All proposed Project features are located within this cover type.

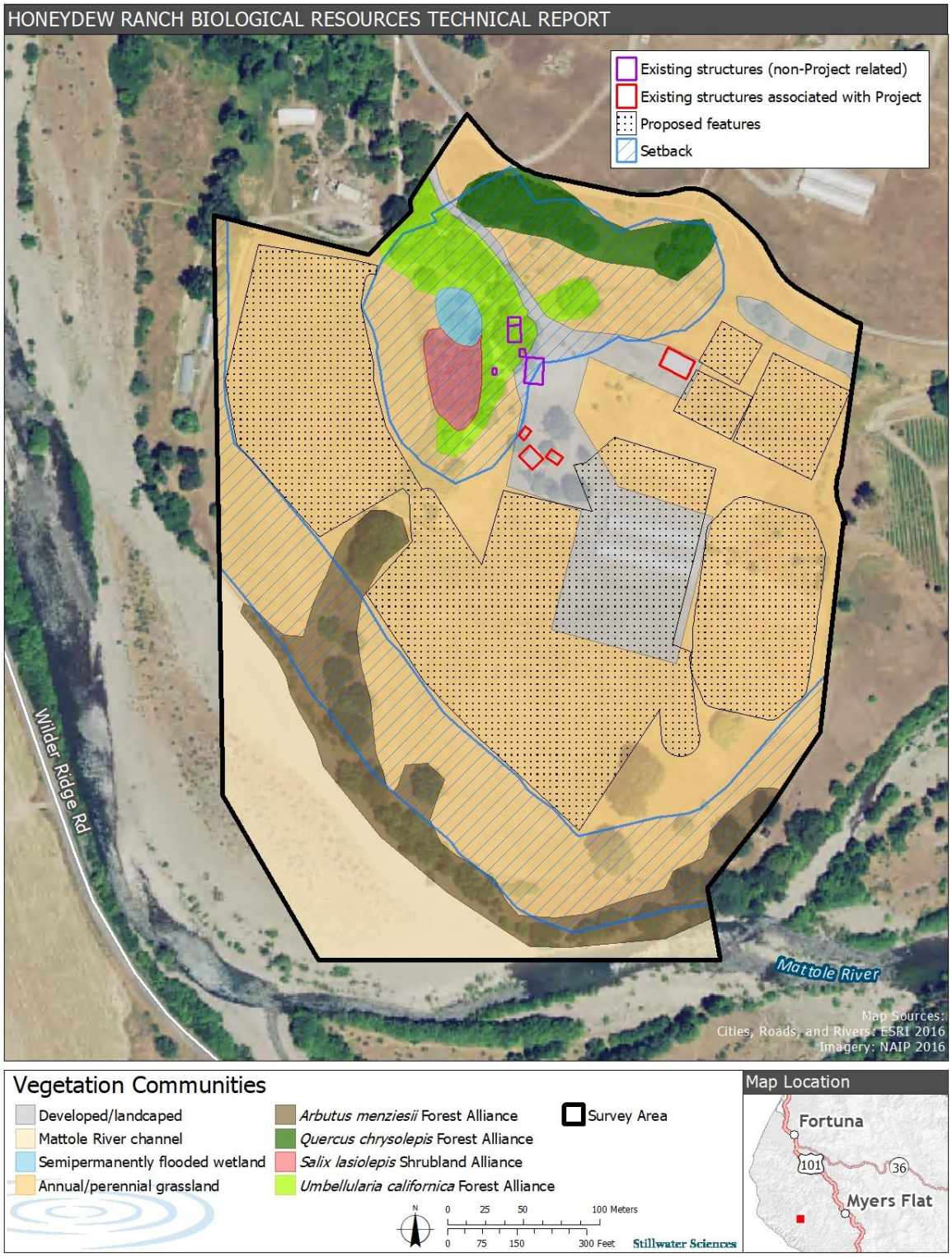

Figure 2. Vegetation communities and proposed and existing Project features within the Survey Area.

2.2.1 Annual/Perennial grassland

Annual/Perennial grassland were associated with flat terraced landforms in the Survey Area. Grasses observed at these locations included *Briza maxima* (rattlesnake grass), *Phalaris arundinacea* (reed canary grass), *Avena barbata* (slender wild oat), *Festuca perennis* (rye grass), *Elymus glaucus* subsp. *glaucus* (blue wildrye), *Hordeum marinum* subsp. *gussoneanum* (Mediterranean barley), *Agrostis (capillaris)* (colonial bentgrass), *Aira praecox* (early hair grass), *Cynosurus echinatus* (bristly dogtail grass), *Holcus lanatus* (velvet grass), and *Festuca arundinacea* (tall fescue). Herbaceous vegetation included *Rumex acetosella* (sheep sorrel), *Erodium botrys* (long-beaked filaree), *Erodium moschatum* (greenstem filaree), *Leontodon saxatilis* (hairy hawkbit), *Plantago lanceolata* (English plantain), *Lotus corniculatus* (bird's-foot trefoil), *Geranium molle* (dove-footed geranium), *Rumex acetosella* (sheep sorrel), and *Trifolium* spp. (various clovers). Grassland areas delineated in 2017 as seasonally-flooded palustrine emergent wetlands contained hydrophytic forb species including *Mentha pulegium* (pennyroyal), *Rumex occidentalis* (western dock), and *Rumex crispus* (curly dock).

This cover type is associated with grassland habitats. It has a total geographic extent of 12.01 ha (29.68 ac) in the Survey Area (Table 2, Figure 2). Proposed project structures, cultivation areas, pond, and parking are entirely within this cover type (Figure 2, Appendix A).

2.2.2 *Arbutus menziesii* Forest Alliance

Arbutus menziesii Forest Alliance was located along the upland elevated terrace above the Mattole River. This mapped vegetation community was comprised of various hardwoods including *Arbutus menziesii* (Pacific madrone), *Acer macrophyllum* (big-leaf maple), *Populus* sp. (poplar), *Aesculus californica* (California buckeye), *Umbellularia californica* (California bay), and *Quercus kelloggii* (black oak). Understory cover varied from moderate to sparse and included *Baccharis pilularis* (coyote bush), *Pteridium aquilinum* var. *pubescens* (bracken fern), and *Arctostaphylos* sp. (manzanita).

This alliance is associated with broadleaved upland forest and is a sensitive natural community (S3) on CDFW's *California Sensitive Natural Communities List* (CDFW 2018a) (Table 2). This forest alliance has a total geographic extent of 1.62 ha (4.01 ac) in the Survey Area and is almost entirely within the setback associated with the Mattole River's top of bank (Figure 2). No existing or proposed Project structures or activities will occur within this forest alliance (Figure 2).

2.2.3 *Quercus chrysolepis* Forest Alliance

Quercus chyrsolepis Forest Alliance was located along the upland hillslope within the Survey Area. It is common in various habitats including stream benches and terraces in canyon bottoms near streams and upland slopes on steep, shallow, rocky, infertile soils. At this location *Quercus chrysolepis* (canyon live oak) and black oak formed a small stand with no shrub understory and the herbaceous cover was comprised mostly of annual grasses.

This alliance is associated with cismontane woodland and broadleaved upland forest habitats. It has a total geographic extent of 0.53 ha (1.32 ac) in the Survey Area and is almost entirely within the boundaries of the wetland setback (Figure 2). No existing or proposed Project structures or activities will occur within this forest alliance (Figure 2).

2.2.4 *Salix lasiolepis* Shrubland Alliance

The *Salix lasiolepis* Shrubland Alliance was delineated as broad-leaved deciduous scrub-shrub wetlands in the 2017 wetland delineation. This shrubland alliance includes primarily *Salix lasiolepis* (arroyo willow), *Salix lasiandra* (Pacific willow), and nonnative *Salix babylonica* (weeping willow) with dense, continuous shrub canopy with sparse herbaceous layer.

This shrubland alliance is associated with riparian forest and riparian woodland habitats. It has a total geographic extent of 0.19 ha (0.46 ac) in the Survey Area and is almost entirely within the boundaries of the wetland setback (Table 2, Figure 2). No existing or proposed Project structures or activities will occur within this shrubland alliance (Figure 2).

2.2.5 *Umbellularia californica* Forest Alliance

Umbellularia californica Forest Alliance was located along intermittent drainages and along some toe slopes within the Survey Area. This alliance was not connected to the Mattole River's active channel. Tree canopy was intermixed with California bay, *Fraxinus latifolia* (Oregon ash), big-leaf maple, buckeye, and oaks. Herbaceous understory was sparse.

This alliance is associated with broadleaved upland forest and riparian forest habitats and is a sensitive natural community (S3) on CDFW's *California Sensitive Natural Communities List* (CDFW 2018a) (Table 2). It has a total geographic extent of 0.70 ha (1.72 ac) in the Survey Area (Figure 2). The existing structures within this alliance will not be used for cultivation-related activities (Figure 2, Appendix A, Sheet 2 of 12). No proposed Project structures or activities will occur within this forest alliance (Figure 2).

3 SPECIAL-STATUS PLANTS

Protocol-level special-status plant surveys were not conducted in the Survey Area. Instead, the results of the vegetation assessment were used alongside a list of special-status plant species with potential to occur in the Survey Area to determine the likelihood for these plant species to be present.

Special-status plant species are defined as those listed, proposed, or under review as threatened or endangered under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA); designated as rare under the California Native Plant Protection Act; and/or taxa that meet the criteria for listing as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines including species listed on the CDFW's *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2018c); have a California Rare Plant Rank (CRPR) of 1, 2, 3 or 4; and/or considered a locally significant species (i.e., rare or uncommon in the county or region).

3.1 Methods

A list of special-status plants that may occur in the Survey Area was developed by querying the following resources:

- U.S. Fish and Wildlife Service (USFWS) list of federally listed and proposed endangered and threatened species and designated critical habitat using the USFWS Information for Planning and Consultation (IPaC) portal (USFWS 2018),
- CDFW's CNDDB (CDFW 2018b), and
- California Native Plant Society's (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2018b).

The database queries were based on a search of Project vicinity (as defined in Section 2.1.1). Appendix B (Table B–1) lists special-status plants identified from the sources described above and provides mapped locations of CNDDB occurrences in the Project vicinity (Appendix B).

The potential for species meeting the above criteria to occur in the Survey Area (which includes the smaller proposed Project area) was determined by: (1) reviewing the current distribution of each species (i.e., whether it overlaps with the Survey Area); (2) reviewing the documented occurrence information from the CNDDB; (3) reviewing existing vegetation information from the wetland delineation conducted in the Survey Area on 1 December 2017 (Stillwater Sciences 2018); (4) reviewing soils in the USGS regional geologic map (McLaughlin et al. 2000); (5) comparing the habitat associations of each species with the vegetation alliances and habitat conditions documented in and adjacent to the Survey Area, and (6) using professional judgement to evaluate habitat quality and the relevance of occurrence data, or lack thereof.

This review and analysis resulted in the following categories of the likelihood for a special-status species to occur in the Survey Area:

- None: the Survey Area is outside the species' current distributional or elevation range and/or the species' required habitat is lacking from the Survey Area (e.g., coastal dunes).
- Low: the species' known distribution or elevation range overlaps with the Project vicinity but not the Survey Area, and/or the species' required habitat is of very low quality or quantity in the Survey Area.
- Moderate: The species' known distribution or elevation range overlaps with the Survey Area and/or the species' required habitat occurs in the Survey Area.
- High: The species has been documented in the Survey Area and/or its required habitat occurs in the Survey Area and is of high quality.

These results are provided in Appendix B and are summarized in the following section.

To determine whether any special-status species were likely to occur within the proposed Project area any plant identified with some likelihood to occur (e.g., low, moderate, high) in the Survey Area that also was associated with vegetation communities within the proposed Project area (see Section 2.2) were compiled and reported in the following section.

3.2 Results

A total of 27 special-status plant species were documented as occurring within the Project vicinity (Appendix B). Alliances documented in the Survey Area during the vegetation assessment are associated with the following habitats: broadleaved upland forest, riparian forest, riparian scrub, cismontane woodland, and grasslands, some of which was seasonally wet (Appendix B). Based on these habitat associations along with landform, soils, and known elevation range within the Survey Area, seven special-status plants have low potential to occur and two have moderate potential to occur in the Survey Area (Appendix B). However, since the annual/perennial grassland and developed/landscaped cover types are the only habitats within the proposed Project area (Figure 2, Appendix A), only one special-status plant species, *Gilia capitata* ssp. *pacifica* (Pacific gilia), has potential to occur within the proposed Project area (Table 3).

Table 3. Special-status plant species with potential to occur in the proposed Project area.

Species name	Status[1] Federal/ State/CRPR	Habitat associations and blooming period[2]	Source	Likelihood of occurrence (none, low, moderate, high)
Gilia capitata ssp. *pacifica* (Pacific gilia)	None/None/1B.2	Coastal bluff scrub, openings in chaparral, coastal prairie, valley and foothill grassland; 5–1,665 m (15–5,465 ft). Blooming period: April–August	CDFW, CNPS	**Moderate:** Valley and foothill grassland habitats present within Survey Area. Over 20 occurrences within 16 km (10 mi) of the Project.

[1] Status:
California Rare Plant Rank (CRPR):
1B Plants rare, threatened, or endangered in California and elsewhere
CRPR Threat Ranks:
0.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)

4 WETLANDS AND WATERS

The Survey Area contains 2.53 ha (6.27 ac) of waters and 0.37 ha (0.92 ac) of wetlands adjacent to these waters (Table 4 and Figure C-1, Appendix C) (Stillwater Sciences 2018). Except for the Mattole River, all waters and wetlands in the Survey Area were isolated and had no permanent or seasonal flowing waterways into the Mattole River (Appendix C).

Waters associated with the Mattole River are presumed under USACE jurisdiction by Section 404 of the Clean Water Act (CWA) regulatory authority and under State Water Resources Control Board (SWRCB) jurisdiction by Section 401 of the CWA. Section 404 of the CWA applies to all waters including wetlands that have significant nexus to interstate commerce (USACE 1986).

Potential waters of the U.S. in the Survey Area are also considered potential waters of the State by CDFW. Furthermore, riparian vegetation adjacent to waters of the state is interpreted by CDFW as being within the streambed and thereby falls under CDFW jurisdiction.

No existing or proposed Project structures or activities will occur within the setback area surrounding delineated waters and wetland features in the Survey Area (Figure 2, Appendix A).

Table 4. Waters and wetlands in the Survey Area.

Description	Area ha (ac)
Waters	
Intermittently flowing drainage (W-1)	0.02 (0.04)
Mattole River (W-2)	2.52 (6.23)
Wetlands	
Palustrine broad-leaved deciduous scrub-shrub wetlands (PS-1)	0.19 (0.46)
Semipermanently flooded palustrine emergent wetland (SP-1)	0.09 (0.22)
Seasonally flooded palustrine emergent wetland (SF-1–SF-2)	0.10 (0.24)

4.1 Waters

Waters total 2.54 ha (6.27 ac) in the Survey Area and includes one intermittently flowing drainage with a clear OHWM that at least seasonally conveys surface water into wetlands in the Survey Area and a TNW, the Mattole River (Table 4, W-1–W-2 in Figure C-1, Appendix C). One culvert conveying seasonal surface water to nearby wetland features in the Survey Area was identified crossing under the access road to the property (Figure C-1, Appendix C).

Measurements were taken from three transects to characterize waters in the Survey Area (Appendix A). Based on data collected from these transects, there are 0.02 ha (0.04 ac) of seasonally flowing waters and 2.52 ha (6.23 ac) of the Mattole River in the Survey Area (Table 4). The primary OHWM indicators at the transects included a break in slope, impression on bank, and changes in vegetation. Waters in the Survey Area ranged in width from 3 m (10 ft) to approximately 64 m (210 ft) (based on the horizontal distance between the OHWM on the right and left banks, respectively) with depths greater than 0.9 m (3.0 ft) (based on the vertical distance between the OHWM and channel thalweg.

4.2 Wetlands

There is a total of 0.37 ha (0.92 ac) of palustrine wetlands in the Survey Area (Table 4; Figure C-1, Appendix C). Three wetland types occur in the Survey Area: (1) semipermanently flooded palustrine emergent wetlands and (2) seasonally flooded palustrine emergent wetlands, and (3) palustrine broad-leaved deciduous scrub-shrub wetlands (hereinafter described as palustrine scrub-shrub wetlands) (Figure C-1, Appendix C). FGDC (2013) defines the palustrine system as including all nontidal wetlands dominated by trees, shrubs, persistent emergent plants, emergent mosses or lichens (i.e., nonvascular). Semipermanently flooded conditions occur when surface water persists throughout the growing season in most years, or, when surface water is absent, the water table is usually at or very near the land surface (FGDC 2013) Seasonally flooded conditions are those where surface water is present for extended periods during the growing season (generally for more than a month), but is absent by the end of the season in most years, during which the depth to substrate saturation may vary (FGDC 2013). Emergent wetlands are characterized by erect, rooted herbaceous hydrophytes, excluding mosses and lichens, that are the tallest life form, have at least 30% areal coverage, and are present for most of the growing season in most years (FGDC 2013). Broad-leaved deciduous scrub-shrub wetlands are characterized by woody plants that are less than 6.1 m (20.0 ft) tall and are the dominant life form with at least 30% areal coverage (FGDC 2013).

The wetlands in the Survey Area are located along the northwest portion of the property, forming a complex of semipermanently flooded palustrine emergent wetlands with adjacent palustrine scrub-shrub wetlands and seasonally flooded palustrine emergent wetlands adjacent to a seasonally flowing water drainage (W-1) (Figure C-1, Appendix C).

5 SPECIAL-STATUS FISH AND WILDLIFE

5.1 Methods

An assessment of suitable habitat for special-status fish and wildlife was conducted to inform future analysis of the proposed Project's potential to impact such species. Special-status species are defined as those that are:

- listed as endangered or threatened, or are proposed/candidates for listing, under ESA and/or CESA);
- designated by CDFW as a Species of Special Concern

5.1.1 Desktop review

The following biological databases were queried for records of special-status fish and wildlife or critical habitat that have potential to occur in the Survey Area:

- USFWS species list using the USFWS IPaC portal (USFWS 2018),
- CDFW's CNDDB (CDFW 2018b),
- CDFW's CNDDB northern spotted owl viewer (CDFW 2018b), and
- National Marine Fisheries Service's (NMFS) *California Species List Tools* database (NMFS 2018).

The database queries were each based on a search of the USGS 7.5-minute quadrangles in the Project vicinity (see Section 3.1.1). The NMFS database query was based on a query of the Briceland and Bear Harbor quadrangles.

Other sources consulted to determine which special-status species could occur in the Survey Area included:

- several salmonid survey reports developed by the Mattole Salmon Group (2011, 2012),
- literature on recent occurrences of special-status species,
- information provided by CDFW for another project in the Mattole River watershed, and
- a field review conducted by a Stillwater Sciences biologist on 28 September 2018.

5.1.2 Fish and wildlife site assessment

A site visit was conducted on 28 September 2018 to evaluate habitat conditions for special-status fish and wildlife species in the Survey Area that could be affected by the proposed project. The field survey included a walk-through of the Survey Area, general characterization of aquatic and wildlife habitat, and photo documentation.

5.2 Results

A total of 32 special-status wildlife species were identified from the database queries as having potential to occur in the Survey Area (Table B-2 and Appendix B). Several other bird species (yellow warbler, yellow-breasted chat, Bryant's savannah sparrow, grasshopper sparrow, and olive-sided flycatcher) were not recorded on any database, but were identified by CDFW as potentially being present in the Survey Area for another project. The proposed Project will occur on the annual/perennial grassland and developed/landscaped cover types well outside of the

Mattole River channel and adjacent riparian habitat. As such, many aquatic-dependent species (Chinook and coho salmon, steelhead, red-bellied newt, etc.) are not present in areas that will be developed. In addition, suitable habitat for many of the recorded species does not occur in the Survey Area and/or the Survey Area is outside of the species' known range. For example, short-tailed albatross and leatherback turtles are species that were identified as having potential to exist in the Survey Area, but these are marine species and do not occupy terrestrial forested environments. Therefore, species without suitable habitat or with a low potential to occur in the Survey Area will not be discussed further in this document.

There are 17 special-status fish and wildlife species that have a moderate or high potential to occur in the Survey Area and/or be affected by Project activities. These species are discussed in further detail in the sections below.

Table 4. Special-status fish and wildlife species with moderate to high potential to occur in the Survey Area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Fish				
Entosphenus tridentatus (Pacific lamprey)	None/SSC	Coastal streams primarily north of San Luis Obispo	Gravel-bottomed streams at the upstream end of riffle habitat. Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.
Oncorhynchus kisutch (coho salmon - southern Oregon / northern California ESU)	FT, CH/ST	Oregon border to Punta Gorda, California. Spawn in coastal streams and large mainstem rivers in riffles and pool tails-outs and rear in pools >1 m (3 ft) deep with overhead cover with high levels oxygen and temperatures of 10–15ºC (50–59°F).	Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.
Oncorhynchus kisutch (coho salmon – Central California Coast ESU)	FE, CH/SE	Punta Gorda, California south to Aptos Creek in Santa Cruz County. Spawn in coastal streams and large mainstem rivers in riffles and pool tails-outs and rear in pools >1 m (3 ft) deep with overhead cover with high levels oxygen and temperatures of 10–15ºC (50–59°F).	Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Oncorhynchus mykiss (steelhead trout – Northern California DPS)	FT, CH/None	Inhabits small coastal streams to large mainstem rivers with gravel-bottomed, fast-flowing habitat for spawning. However, habitat criteria for different life stages (spawning, fry rearing, juvenile rearing) are can vary significantly.	Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.
*Oncorhynchus tshawytscha (*Chinook salmon – California Coastal ESU*)*	FT, CH/None	Wild coastal, spring, and fall-run Chinook found in streams and rivers between Redwood Creek, Humboldt County to the north and the Russian River, Sonoma County to the south.	Suitable habitat occurs in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.
Amphibians				
Rana aurora (northern red-legged frog)	None/ SSC	Humid forests, woodlands, grasslands, and streamsides usually near dense cover. Generally near permanent water but can be found far from water in damp woods and meadows during non-breeding season.	Suitable habitat is present in habitat types associated with water, nearby uplands, and existing ponds.	**High**: May be seasonally present in the semipermanent wetland pond in the Survey Area, but these features are outside of the proposed Project area.
Rana boylii (foothill yellow-legged frog)	None/ SSC, SCT	Associated with partially shaded, shallow streams, and riffles with rocky substrate. Some cobble-sized substrate required for egg laying.	Suitable habitat occurs in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.
Taricha rivularis (red-bellied newt)	None/SSC	Ranges from southern Humboldt to Sonoma counties. Found in streams during breeding season. Moist habitats under woody debris, rocks, and animal burrows.	Suitable habitat occurs in the Mattole River and larger tributaries. Documented to occur in the Mattole River downstream of the Upper North Fork.	**High**: Habitat present in the Mattole River adjacent to the southern property line, but outside of the proposed Project area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Birds				
Contopus cooperi (Olive-sided flycatcher)	None/SSC	Occupy a wide variety of forested habitats in California, including mixed conifer, Douglas-fir, redwood, and montane hardwood-conifer forests with open canopies, near forest edges or forest openings (e.g., meadows, rivers, harvest units).	Suitable habitat occurs in the Survey Area. The nearest sighting was approximately 5 miles downstream of the Survey Area.	**High:** Habitat present in the Survey Area.
Dendroica petechia (Yellow warbler)	None/SSC	Throughout California. Preferred habitat includes open-canopy, deciduous riparian vegetation in close proximity to water, often along streams or wet meadows.	Suitable habitat occurs in the Survey Area. The nearest sighting was at A. Way County Park downstream of the Survey Area.	**High:** Habitat present in the Survey Area.
Icteria virens (Yellow-breasted chat)	None/SSC	Found in dense thickets of willows or other brushy areas of riparian woodlands throughout California. Prefers areas with an open-canopy and close proximity to water along streams or wet meadows; however, the preferred understory for nesting sites is thick and often includes a tangle of blackberry and wild grape.	Habitat is present in the Survey Area. The nearest sighting of this species occurred at the mouth of the Upper North Fork Mattole River.	**High:** Habitat present in the Survey Area.
Passerculus sandwichensis alaudinus (Bryant's savannah sparrow)	None/SSC	North coastal California and the San Francisco Bay Area, from Humboldt County to northern Monterey County. This species resides in the narrow coastal fogbelt, its range extending approximately 9 mi (15 km) inland. Low tidal marshlands and adjacent ruderal communities, and, within the fog belt, in mesic grasslands. Short herbaceous vegetation communities that lack woody plant cover; in all habitats bare ground is an important component	Habitat is present in the Survey Area. The nearest sighting of this species occurred at the mouth of the Upper North Fork Mattole River.	**High:** Habitat present in the Survey Area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Ammodramus savannarum (Grasshopper sparrow)	None/SSC	Coastal California and sporadically through most of the Central Valley, as well as Siskiyou County and at the base of the Sierra Nevada in Kern County. In the northern California coast, despite the apparent lack of suitable habitat, breeding pairs are found in the patchwork of grasslands that occur in the matrix of coniferous forest.	Habitat is present in the Survey Area. One individual was heard vocalizing at the Petrolia cemetery in 2017.	**High:** Habitat present in the Survey Area.
Mammals				
Antrozous pallidus (Pallid bat)	None/SSC	Found throughout California. Roosts in rock crevices, outcrops, cliffs, mines, and caves; trees (underneath exfoliating bark of pine and oak) and in basal hollows; and a variety of vacant and occupied structures (e.g., bridges) or buildings. Roost individually or in small to large colonies (hundreds of individuals). Feeds low to or on the ground in a variety of open habitats, primarily on ground-dwelling arthropods. Forages most frequently in riparian zone, in open oak savannah, and open mixed deciduous forest. Drinks at stream pools.	Suitable foraging habitat throughout most of the Survey Area, however barns, old building, and bridges are not present within the Survey Area.	**Moderate**: May be present in some of the older structures adjacent to the Survey Area.
Corynorhinus townsendii (Townsend's big-eared bat)	None/ SSC, SCT	Documented throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Suitable foraging habitat throughout most of the Survey Area, however barns, old building, and bridges are not present within the Survey Area.	**Moderate**: May be present in some of the older structures adjacent to the Survey Area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Lasiurus blossevillii (Western red bat)	–/SSC	Near the Pacific Coast, Central Valley, and the Sierra Nevada	Riparian forests, woodlands near streams, fields and orchards. The nearest recorded sighting was on the Mattole Road approximately 8.5 miles northeast of the Survey Area.	**Moderate**: May be present in some of the woodlands within and adjacent to the Survey Area.
Reptiles				
Emys marmorata (Western pond turtle)	None/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with abundant vegetation, and either rocky or muddy bottoms, in woodland forest and grasslands. Below 1,829 m (6,000 ft) elevation. Basking sites are required. Egg-laying sites are located on suitable upland habitats (grassy open fields) up to 500 m (1,640 ft) from water.	Suitable habitat occurs in the middle and lower Mattole River. Present in stock ponds in the Mattole watershed.	**High**: Habitat present in the Mattole River adjacent to the southern property line, but outside of the proposed Project area.

[1] Status:

Federal

FT	Federal Threatened
FC	Federal Candidate
CH	Designated critical habitat within the Project vicinity

State

ST	Threatened
CT	Candidate Threatened
SSC	CDFW species of special concern

5.2.1 Fish

5.2.1.1 Pacific lamprey

The Pacific lamprey is a wide-ranging anadromous fish that spawns and rears in streams along the northern margin of the Pacific Ocean, from central Baja California north along the west coast of North America to the Bering Sea in Alaska (Hubbs 1971, Ruiz-Campos and Gonzales-Guzman 1996, Lin et al. 2008). The Pacific lamprey is designated a species of special concern by the CDFW.

The Pacific lamprey rears in freshwater before migrating to the ocean, where it grows to full size prior to returning to natal streams to spawn. Adults generally migrate upstream from late fall to spring (Luzier et al. 2006). Spawning typically takes place in March through July, depending on water temperature and local conditions such as seasonal flow regimes (Kan 1975, Brumo et al. 2009, Gunckel et al. 2009). Spawning occurs primarily in the mainstems of medium-sized rivers and larger tributaries, and generally takes place in pool and run tailouts and low-gradient riffles (Luzier et al. 2006, Brumo et al. 2009, Gunckel et al. 2009). Adults typically die within a few weeks after spawning (Kan 1975, Brumo 2006).

After hatching, the eyeless larvae, known as ammocoetes, drift downstream and settle out of the water column and burrow into fine silt and sand substrate in low-velocity, depositional areas such as pools, alcoves, and side channels (Torgensen and Close 2004, Stone and Barndt 2005). Depending on factors influencing their growth rates, ammocoetes remain in freshwater from 4 to 10 years, filter-feeding on algae, diatoms, and detrital matter prior to metamorphosing into adult form (Pletcher 1963, Moore and Mallatt 1980, Beamish and Levings 1991, van de Wetering 1998). During metamorphosis, individuals develop eyes, a suctoral disc, sharp teeth, and more-defined fins (McGree et al. 2008).

After metamorphosis, smolt-like individuals known as macropthalmia migrate to the ocean. from early winter through early summer. Once reaching the ocean, Pacific lampreys feed parasitically on a variety of marine fishes (Richards and Beamish 1981, Close et al. 2002). They are thought to remain in the ocean for approximately 18–40 months before returning to freshwater as sexually immature adults (Kan 1975, Beamish 1980).

Pacific lamprey are known to occur in the Mattole River within the Survey Area, but outside of the proposed Project area.

5.2.1.2 Coho salmon, Southern Oregon/Northern California coast ESU

The Southern Oregon/Northern California Coast (SONCC) evolutionary significant unit (ESU) for coho salmon is listed as threatened under the federal ESA (NMFS 2005a) and was listed as threatened under the California ESA in 2005. Critical habitat was designated in 1999 between the Mattole River in California and the Elk River in Oregon, inclusive (NMFS 1999a). Critical habitat includes all accessible streams and waters of estuarine areas. Coho salmon are known to spawn and rear in the Mattole River and its tributaries. Upon emergence from the gravels, coho fry seek low-velocity areas along shallow stream margins (Shapovalov and Taft 1954). As they grow, juvenile coho move to deeper habitats, although they continue to prefer low-velocity habitat throughout the rearing period.

Coho salmon adults typically migrate upstream from October through December, and spawn from November through January. Spawning generally occurs in low-gradient stream reaches with

gravel and cobble substrates. Females dig nests (redds) in the gravel, and deposit 2,500–5,000 eggs in a sequence of egg pockets, which are fertilized by one or more males (Beacham 1982, Sandercock 1991). Egg development is temperature-dependent, with fry emerging from the gravel in the spring, approximately three to four months after spawning. Upon emergence from the gravels, coho fry seek low-velocity areas along shallow stream margins (Shapovalov and Taft 1954). As they grow, juvenile coho move to deeper habitats, although they continue to prefer low-velocity habitat throughout the rearing period. Juveniles typically spend one to two years rearing in fresh water before outmigrating. Emigration from streams to the estuary and ocean generally takes place from February through June. Coho typically spend two years foraging at sea before returning to their natal streams to spawn.

Adult coho salmon are known to pass through the Mattole River, adjacent to the Survey Area, but outside of the proposed Project area, during their upstream spawning migration. Coho smolts pass through the same area during their migration to the estuary and sea. It is unlikely that juvenile coho salmon rear in the Mattole River, adjacent to the Survey Area, due to high summertime water temperatures and generally unsuitable habitat conditions.

5.2.1.3 Coho salmon, Central California Coast ESU

The Central California Coast (CCC) ESU coho salmon was initially listed as a threatened species on 31 October 1996 of the ESA and up-listed under the ESA from "threatened" to "endangered," effective 28 June 2005. This ESU includes naturally-spawned coho salmon originating from rivers south of Punta Gorda, to and including Aptos Creek, as well as coho salmon originating from San Francisco Bay tributaries. Critical habitat was designated in 1999 between the Mattole River in California and the Elk River in Oregon, inclusive (NMFS 1999a). Critical habitat includes all accessible streams and waters of estuarine areas. Coho salmon from Punta Gorda south to San Francisco Bay were listed as endangered under the California Endangered Species Act in August 2002. The mouth of the Mattole River is at Punta Gorda, so the river may be occupied by coho salmon from both the SONCC and CCC ESUs.

The life history requirements and presence information for the CCC coho salmon in the Mattole River are the same as those for SONCC coho salmon as described in the section above. Habitat for this species is not present in the proposed Project area.

5.2.1.4 Steelhead, Northern California Coast DPS

The Northern California Coast steelhead DPS was listed as threatened in 2006 under the federal ESA (NMFS 2006). The Northern California Coast steelhead DPS extends from Redwood Creek in Humboldt County to the Gualala River in Mendocino County (inclusive). Critical habitat for the species was designated in 2005 (NMFS 2005b). Critical habitat includes the mainstem Mattole River and its many tributaries including Lost River, Baker Creek, and Thompson Creek.

Adult winter steelhead generally begin migrating to spawning areas in October, with the peak migration in December through February. Steelhead spawning occurs in mainstems, tributaries, and intermittent streams in December through May. Spawning occurs in gravel and cobble substrates where the female digs an egg pocket and deposits her eggs, which are fertilized externally by one or more males. Redds typically consist of a series of egg pockets that excavated and subsequently covered during redd construction process. Unlike Chinook and coho salmon, steelhead typically do not remain on the spawning grounds for extended periods to defend the completed redd to reduce the potential for superimposition. Egg development time is inversely proportional to water temperature and varies from about 19 days at 16°C (60°F) to about 80 days

at 6°C (42°F). Fry typically emerge from the gravel two to three weeks after hatching. Upon emerging from the gravel, fry move to shallow edgewater habitats to rear, and gradually move into deeper habitats as they grow. During winter, when water temperatures are cold, juveniles are less active and hide in the interstitial spaces between cobbles and bounders. Juvenile steelhead typically rear in fresh water for two to three years prior to migrating downstream to the estuary and ocean. Steelhead spend between six months and three years at sea before returning to their natal streams to spawn. Unlike salmon, steelhead are capable of repeat spawning.

Suitable habitat for steelhead migration, spawning, and rearing is present within the Survey Area, but outside the proposed Project area, in the mainstem Mattole River. Steelhead have been recorded spawning in the Mattole River in the area around Honeydew (Queener 2018). Juvenile steelhead have also been observed rearing in the mainstem Mattole and Upper North Fork Mattole rivers (Haas 2012).

5.2.1.5 Chinook salmon, California coastal ESU

California coastal Chinook salmon were listed in 1999 as threatened under the federal ESA (NMFS 1999b). The California coastal Chinook salmon ESU extends from the Klamath River (exclusive) south to the Russian River (inclusive). Critical habitat for the species was designated in 2005 (NMFS 2005b) and includes the mainstem Mattole River up to Ancestor Creek. Lost River was not included in the critical habitat designation.

Chinook salmon in the California coastal ESU exhibit life history characteristics of the fall-run ecotype. In California, most adult fall-run Chinook enter streams from August through November, with peak arrival usually occurring in October and November. Spawning occurs from early October through December. Upon arrival at the spawning grounds, adult females dig shallow depressions or pits in gravel and cobble substrate, deposit eggs in the bottom during the act of spawning and cover them with additional gravel. Female fall-run Chinook deposit an average of about 5,500 eggs. Egg incubation generally lasts between 40 to 90 days at water temperatures of 6 to 12°C (42.8 to 53.6°F), and the alevins remain in the gravel for two to three weeks before emerging from the gravel. Fall-run Chinook salmon fry usually begin migrating downstream soon after emergence in February or March, with outmigration continuing into late-July. Chinook spend two or more years at sea before migrating back to their natal streams to spawn.

Suitable habitat for Chinook spawning and rearing is present in the Mattole River, adjacent to, but outside of the proposed Project Area. The reach of the Mattole River near Honeydew is used by Chinook salmon for spawning (Queener 2018). Juvenile Chinook salmon rear in the Mattole River for a few months after hatching and emerging prior to migrating downstream to the estuary and sea.

5.2.2 Wildlife

5.2.2.1 Northern red-legged frog

Northern red-legged frog is a California species of special concern. It is known to occur along the California coast from Mendocino County north to southwestern British Columbia, at elevations from sea level to 1,160 m (0–3,800 ft) (Lannoo 2005).

Northern red-legged frogs utilize a variety of habitats throughout their various life stages. Aquatic sites such as coastal lagoons, pools, marshes, ponds, or backwater areas are used for breeding.

Deep pools are a particularly important breeding habitat feature, as they provide frogs better opportunity to evade predation. Streams are not used for breeding. Other sources of cover include emergent vegetation, undercut banks, and root-wads. Upland habitats such as open grasslands with seeps and springs may be used for over-summering and for foraging. In northwestern California, northern red-legged frogs have been observed in dense understory vegetation such as ferns and sedges in streamside flats stands of redwoods.

Breeding for northern red-legged frogs generally occurs in late winter through early spring, typically when water temperatures exceed 6–7°C (43–46°F) (Lannoo 2005). Eggs hatch in the spring (March–April) and tadpoles metamorphose in June or July (Lannoo 2005). Most northern red-legged frog males begin breeding after 2 years of age, and females begin breeding after 3 years of age (Lannoo 2005). Adults may move large distances (>300 m [1,000 ft]) from breeding ponds in riparian areas (Lannoo 2005).

The existing semipermanent pond within the property boundaries may be suitable for, and potentially occupied by, northern red-legged frogs for breeding and larval development, but this pond is outside of the proposed Project area.

5.2.2.2 Foothill yellow-legged frog

Foothill yellow-legged frog is a California species of special concern and has recently been designated as a candidate for threatened listing under the California Endangered Species Act. Within California, foothill yellow-legged frogs were historically found in the Sierra Nevada foothills, up to elevations of approximately 1,829 m (6,000 ft), and in the Coast Range from the Oregon state border south to the San Gabriel River in southern California (Stebbins 2003). Currently, populations are thought to have disappeared from the southern Sierra Nevada foothills, in areas south of the Transverse ranges, and along the coast south of Monterey County (Jennings and Hayes 1994).

Foothill yellow-legged frogs are typically found in perennial streams or rivers, and intermittent creeks with pools. The species often breeds in open and sunny, low-gradient stream reaches near junctions with tributary streams, due to the proximity of adult overwintering habitat in tributaries and to the presence of boulders and cobbles in these locations. Egg deposition usually occurs in cobble bars or under large boulders in areas of low-velocity flow. Tadpoles show affinity to the oviposition site, remaining in edgewater habitat with substrate interstices, vegetation, and/or detritus for cover. Adults prefer areas with exposed basking sites and cool, shady areas adjacent to the water's edge. Following egg laying, many adults move into tributary watercourses and in some cases, range uphill to the headwater springs to live through the summer, fall, and winter.

Suitable habitat for foothill yellow-legged frog breeding and larval development occurs in the Mattole River. More than 100 FYLF (young of year, young of previous year, and adults) were observed in the Mattole River along the southern property boundary, outside of the proposed Project area. The proposed Project area does not contain suitable habitat or the perennial tributary watercourses preferred by this species.

5.2.2.3 Red-bellied newt

The red-bellied newt is a California species of special concern. In California, this species is found along the coast from near Bodega, Sonoma County, to near Honeydew, Humboldt County, and inland to Lower Lake and Kelsey Creek, Lake County. It lives in coastal woodlands, especially redwood forests.

Adults are terrestrial and become aquatic when breeding. Terrestrial animals spend the dry summer in moist habitats under woody debris, rocks, in animal burrows. Adults forage on the forest floor for a variety of invertebrates. Adults move toward streams in late February at the start of the breeding season, which extends into May. This species avoids ponds or lakes. Females lay eggs under rocks or attached to submerged roots in rocky streams and rivers with moderate to fast flow. Incubation takes between two weeks to one month. Larval development to metamorphosis occurs in about four to six months, at which time they emerge from the streams and go terrestrial. Juveniles spend most of their time underground and are not active on the surface until near sexual maturity, which occurs at about four to six years of age.

Habitat is present within the Mattole River and its tributaries adjacent to the Survey Area. An individual was documented in the Mattole River downstream of the Upper North Fork Mattole River (CDFW 2018b). Habitat for this species is not present in the proposed Project area.

5.2.2.4 Olive-sided flycatcher

Olive-sided flycatchers are a CDFW Species of Special concern and are migratory and summer residents in California that typically breed in the Sierra Nevada foothills (CalPIF 2002, Widdowson 2008). Olive-sided flycatchers have been documented in a wide variety of forested habitats in California, including mixed conifer, Douglas-fir, redwood, and montane hardwood-conifer forests (Widdowson 2008). They primarily occur in advanced successional coniferous forests with open canopies, near forest edges or forest openings (e.g., meadows, rivers, harvest units), and with abundant perches (Zeiner et al. 1990a, Altman and Sallabanks 2000, CalPIF 2002, Widdowson 2008). The birds prefer nesting areas near water bodies, potentially due to increased insect abundance in these areas (Altman and Sallabanks 2000). In addition, studies have shown an increase in nesting olive-sided flycatchers with a reduction in forest canopy due to logging operations or fire (CalPIF 2002).

Suitable habitat occurs in the Project area. The nearest sighting was approximately 8 km (5 mi) downstream of the Survey Area (eBird 2018).

5.2.2.5 Yellow warbler

Yellow warbler, a California Species of Special Concern, is a summer resident that breeds throughout much of California, except the Central Valley, southern Californian deserts, and high Sierra Nevada (Zeiner et al. 1990a; Heath 2008). The largest concentrations of breeding pairs occur in northeastern California, in Modoc National Forest and Shasta County, as well as in the Cascade Range and Sierra Nevada (Heath 2008). The preferred habitat of yellow warbler includes open canopy or deciduous riparian vegetation, often along streams or wet meadows (Heath 2008). This species frequently nests in small willows and alders, and is also associated with cottonwoods, Oregon ash, and other riparian shrubs and trees, depending upon the geographic region (Zeiner et al. 1990a, Heath 2008). This species also occasionally nests in montane chaparral in open coniferous forests (Heath 2008). Breeding occurs from mid-April through early August, with peak activity in June (Zeiner et al. 1990a). Yellow warblers nest 1–5 m (2–16 ft) above ground, at the bases of branches (branch forks) in small deciduous trees and shrubs, often in willow thickets (Zeiner et al. 1990a, Lowther et al. 1999). Birds forage for insects within the shrub and tree canopy, occasionally feeding on the wing or eating fruit (Zeiner et al. 1990a, Lowther et al. 1999).

Yellow warblers have not been recorded in the Survey Area, but suitable habitat is present. The nearest sighting was approximately 10.0 km (6.25 mi) northwest of the Survey Area at A. W. Way County Park (eBird 2018).

5.2.2.6 Yellow-breasted chat

Yellow-breasted chat is a CDFW Species of Special Concern. This species can be found in dense thickets of willows or other brushy areas of riparian woodlands (Zeiner et al. 1990a, Ricketts and Kus 2000). The species prefers areas with an open-canopy and close proximity to water along streams or wet meadows; however, the preferred understory for nesting sites is thick and often includes a tangle of blackberry and wild grape (Zeiner et al. 1990a, Comrack 2008). A few taller trees are necessary to use as perches singing (Comrack 2008). This species forages in low, dense riparian shrubland on a variety of spiders, insects, and berries gleaned from vegetation (Zeiner et al. 1990a, Ricketts and Kus 2000).

Habitat for this species is present in the meadow areas of the Survey Area and proposed Project area. The nearest recorded sighting of this species occurred at the mouth of the Upper North Fork Mattole River immediately downstream of the Survey Area (eBird 2018).

5.2.2.7 Bryant's savannah sparrow

Bryant's savannah sparrows are a CDFW Species of Special Concern and are year-round residents in north coastal California and the San Francisco Bay Area, from Humboldt County to northern Monterey County, with occasional occurrences along the central coast (Fitton 2008). This species resides in the narrow coastal fogbelt, its range extending approximately 15 km (9 mi) inland, possibly up to 40 km (25 mi) (Fitton 2008). Bryant's savannah sparrows reside in low tidal marshlands and adjacent ruderal communities, and, within the fog belt, in mesic grasslands (Fitton 2008). Within tidally-influenced habitats, the species is associated with the higher marsh dominated by pickleweed and/or saltgrass; within mesic grasslands, the species is associated with short herbaceous vegetation communities that lack woody plant cover; in all habitats bare ground is an important component of the habitat (Fitton 2008).

Habitat for this species is present in the meadow areas of the Survey Area and porposed Project area. The nearest recorded sighting of this species occurred at the mouth of the Upper North Fork Mattole River immediately downstream of the Survey Area (eBird 2018).

5.2.2.8 Grasshopper sparrow

Grasshopper sparrow, a summer resident of California, is a CDFW Species of Special Concern. This species' current breeding distribution in California is described as "sparse and irregularly distributed" by Grinnell and Miller (1944, as cited in Unitt 2008). The grasshopper sparrow's range spans from Del Norte and Siskiyou counties, along the Coast Ranges to southern California, east to the west slope of the Sierra Nevada, and scattered throughout the Central Valley (Unitt 2008). In general, grasshopper sparrows in California prefer relatively large patches of moderately open grasslands—short to moderately high in stature—with scattered shrubs or other taller vegetation (e.g., California buckwheat [*Eriogonum fasciculatum*] or California sagebrush [*Artemisia californica*]) for use as song perches (Slater 2004, Unitt 2008). Breeding in California generally occurs from mid-March to August (Unitt 2008).

Suitable habitat for this species is present in the Survey Area and proposed Project area. One individual heard vocalizing at the Petrolia cemetery in 2017 (eBird 2018).

5.2.2.9 Pallid bat

Pallid bat is a CDFW Species of Special Concern. This species occurs year-round in California. Pallid bat may forage in all habitat types and roost in forest stands (montane riparian, closed-cone pine cypress, redwood) and in buildings and bridges throughout the Survey Area.

Pallid bats are associated with a variety of habitats from desert to coastal regions. At low- to mid-elevations, they are particularly associated with oak habitat (oak savannah, black oak, and oak grasslands) (Pierson and Rainey 2002). In natural settings, day and night roosts are in rock crevices and cliffs, but can also be found in trees (underneath exfoliating bark of pine and oak and in hollows) and caves (Sherwin and Rambaldini 2005, Hermanson and O'Shea 1983, Pierson et al. 2001, Pierson and Rainey 1996). However, in more urban settings (e.g., Central Valley and western Sierran foothills), day and night roosts are frequently associated with human structures such as abandoned buildings, old mine workings, and bridges (Sherwin and Rambaldini 2005, Pierson and Rainey 1996, Pierson et al. 2001). Overwintering roosts require relatively cool and stable temperatures out of direct sunlight. Pallid bats primarily forage in open spaces away from water. They can feed on the ground, on vegetation, and in the air by using a 'wing-cupping' method that forces the prey to the ground (Sherwin and Rambaldini 2005). Their generalist diet consists primarily of large ground-dwelling or slow flying insects and arachnids (Zeiner et al. 1990b), but can also include scorpions (pallid bats are immune to the sting), small rodents, and lizards.

Suitable pallid bat foraging habitat occurs throughout the Survey Area and roosting habitat may be present in the older structures or trees within the proposed Project area.

5.2.2.10 Townsend's big-eared bat

Townsend's big-eared bat is a candidate for state listing as threatened, and a state species of special concern. This species occurs throughout California and is associated with caves and structures in a variety of habitats from deserts to coastal scrub to montane forests. Townsend's big-eared bats have been documented from sea level to 3,292 m (10,800 ft), although in California maternity roosts appear to be confined to elevations below 1,798 m (5,900 ft) (Pierson and Fellers 1998, Sherwin and Piaggio 2005).

This cavity-dwelling species roosts and hibernates in caves (commonly limestone or basaltic lava), mines, buildings, bridges (with a cave-like understructure), rock crevices, tunnels, basal hollows in large trees, and cave-like attics (Pierson and Fellers 1998, Pierson and Rainey 2007, Pierson et al. 2001, Pierson and Rainey 1996, Sherwin et al. 2000, Sherwin and Piaggio 2005). Townsend's big-eared bats breed in both transitory migratory sites and hibernacula between September or October and February (CDFW 2013). The maternity season extends from 1 March through 31 October, with colonies forming between March and June and breaking up by September or October (CDFW 2013). Maternity colonies and winter hibernacula (found in caves, tunnels, mines, and buildings [Zeiner et al. 1990b]) are particularly sensitive to disturbance. This species could be directly impacted by removal or disturbance of maternity roosts (e.g., trees, abandoned buildings) during the breeding season (March–October).

Townsend's big-eared bat is a moth specialist with over 90% of its diet composed of lepidopterans. Foraging habitat associations include edge habitats along streams, adjacent to and within a variety of wooded habitats. These bats often travel long distances while foraging, including movements of over 150 km (93 mi) during a single evening (Sherwin et al. 2000).

Evidence of long foraging distances and large home ranges has also been documented in California (Pierson and Rainey 1996).

Snags and large trees may be important roosts for this species. In northwestern California, Fellers and Pierson (2002, as cited in Woodruff and Ferguson 2005) documented individual Townsend's bats using tree hollows created by fire or rot in very large redwood (*Sequoia sempervirens*) and California bay trees (*Umbellularia californica*). A nursery colony was found using the basal hollows of large redwood trees in northwestern California (Mazurek 2004, as cited in Woodruff and Ferguson 2005) and in Muir Woods National Monument near San Francisco (Heady and Frick 2001, as cited in Woodruff and Ferguson 2005).

Suitable foraging habitat occurs throughout the Survey Area and roosting habitat may be present in the older structures within the proposed Project area.

5.2.2.11 Western red bat

Western red bats are a CDFW Species of Special Concern and have been observed near the Pacific Coast, Central Valley, and the Sierra Nevada in California. Usually found at lower elevations, recent acoustic surveys in California have documented that western red bats, while relatively rare, are broadly distributed up to 2,500 m (8,202 ft) in the Sierra Nevada (Pierson et al. 2001, 2006).

Western red bats in California sexually segregate in summer, with males moving to higher elevations and breeding females and young typically roosting at lower elevations (Grinnell 1918). Reproduction occurs between August and September with the onset of delayed fertilization occurring in March. Females typically give birth to four young. This species is migratory, and winter records for both sexes are concentrated along the central and southern coast (Pierson et al. 2006). Winter behavior is not well understood, however western red bats apparently arise from hibernation on warmer days to feed (Shump and Shump 1982).

Western red bats forage at both canopy height and low over the ground (Shump and Shump 1982). Diet studies in California suggests that the species feeds primarily on small moths, but a variety of other insects, particularly orthopterans, are also eaten (Ross 1961). Along the central Sacramento River, western red bats were repeatedly observed flying within one meter of the water surface, presumably foraging on emerging insects (Stillwater Sciences et al. 2003). This species roosts non-colonially in dense canopies and within tree foliage, beneath overhanging leaves (Constantine 1959, Shump and Shump 1982). Roosts have been observed near streams, fields, and orchards. Studies in the Central Valley found that summering populations of western red bats are substantially more abundant in remnant stands of cottonwood/sycamore riparian greater than 164 ft (50 m) wide than in younger, less extensive stands (Pierson et al. 2006). Foraging habitats of western red bat are not currently well-understood.

Suitable habitat for this species is present in the Survey Area and proposed Project area. The nearest recorded sighting was along the Mattole Road approximately 13.6 km (8.5 mi) northeast of the Survey Area.

5.2.2.12 Western pond turtle

The western pond turtle is a CDFW Species of Special Concern and the only freshwater turtle native to most of the west coast of temperate North America. In California it is found from the

Oregon border along the Coast Ranges to the Mexican border, and west of the crest of the Cascades and Sierras.

Western pond turtle eggs are typically laid in June and July, though they may be laid throughout the year (Holland 1994, Reese 1996). Egg-laying sites vary from sandy shoreline to forest soil types, though are generally located in grassy meadows, away from trees and shrubs (Holland 1994), with canopy cover commonly less than about 10% (Reese 1996). Incubating eggs are extremely sensitive to increased soil moisture, which can cause high mortality (Bettelheim 2005, Shaffer 2005, Ashton et al. 1997). Young hatch in late fall or overwinter in the nest and emerge in early spring. Low fecundity, low hatchling and juvenile survivorships, high adult survivorship, and potentially long lifespans are characteristic of this species (Jennings et al. 1992). Western pond turtles have temperature-dependent sex determination, where the temperature of the egg determines the sex.

Western pond turtles inhabit fresh or brackish water habitats characterized by areas of deep water, low flow velocities, moderate amounts of riparian vegetation, warm water and/or ample basking sites, and underwater cover elements such as large woody debris and rocks (Jennings and Hayes 1994). Along major rivers, western pond turtles are often concentrated in side channel and backwater areas. Turtles may move to off-channel habitats, such as oxbows, during periods of high flows (Holland 1994). Although adults are habitat generalists, hatchlings and juveniles require very specialized habitat for survival through their first few years. In addition to requiring low-flow and backwater areas of rivers, hatchlings need to spend much of their time feeding in shallow water amongst dense submergent and short emergent vegetation, presumably to avoid predators (Jennings and Hayes 1994). Although an aquatic reptile, western pond turtles spend time on land basking, overwintering, and nesting, up to 0.6 mi (1 km) away from aquatic habitats (Holland 1994). Reese and Welsh (1997) recorded frequent and prolonged year-round use of terrestrial habitat up to 0.3 mi (500 m) from the Trinity River for both nesting and overwintering activities.

This species is known to exist in the lower Mattole River and suitable habitat is present in the Survey Area, but not the proposed Project area.

6 POTENTIAL EFFECTS AND MINIMIZATION MEASURES

6.1 Special-status Plants and Natural Communities

No special-status plant species have been observed in the Survey Area to date. Based on the vegetation communities within the proposed Project area (i.e., annual/perennial grassland) only one special-status plant has low potential to occur in the Project area, Pacific gilia (Table 3, Appendix B).

Pacific gilia is not a federally or state endangered or threatened species, and has a CRPR of 1B (rare, threatened, or endangered in California and elsewhere) (Table 3).

Floristic surveys that coincide with the blooming period of Pacific gilia (i.e., April–August) may be required prior to Project implementation to determine presence of special-status plant species, potential Project impacts on special-status plant populations, and/or measures to apply to minimize or avoid impacts on these populations.

All Project features are outside the special-status natural communities observed in the Survey Area; therefore, no potential effects to these communities are anticipated by the Project (Figure 2).

The following minimization measures are recommended to reduce any potential impacts on special-status plants and natural communities during project activities:

- Ground disturbance and vegetation clearing and/or trimming will be confined to the minimum amount necessary to facilitate Project implementation and will not be conducted within the forested or shrubland alliances delineated within the Survey Area.
- Heavy equipment and vehicles will use existing access roads to the extent possible.
- Project-related materials will be stored in designated existing and proposed Project features provided in Figure 2 and Appendix A.
- Measures to prevent the spread of invasive weeds will be taken, including, where appropriate, inspecting equipment for soil, seeds, and vegetative matter, cleaning equipment, utilizing weed-free materials and native seed mixes for revegetation, and proper disposal of soil and vegetation. Prior to entering and leaving the work site, workers will remove all seeds, plant parts, leaves, and woody debris (e.g., branches, chips, bark) from clothing, vehicles, and equipment.

6.2 Wetlands and Waters

Construction activities associated with the proposed project will not affect wetlands and waters of the U.S. given the Project footprint will remain outside of the wetland setback (Figure 2, Appendix A). The following minimization measures are recommended to ensure there are no potential impacts on adjacent wetlands and waters by the Project:

- Heavy equipment and vehicles will use Project designated access roads and parking locations (Appendix A).
- Project-related materials will be stored in the designated existing and proposed Project features provided in Figure 2 and Appendix A.
- All equipment will be well maintained to prevent leaks of fuels, lubricants, or other fluids and extreme caution will be used when handling chemicals (fuel, hydraulic fluid, etc.). Service and refueling procedures will not be conducted where there is potential for fuel spills to seep or wash into wetlands or waters. Appropriate materials will be on-site to prevent and manage any spills.

6.3 Special-status Fish and Wildlife

6.3.1 Fish

Coho and Chinook salmon, steelhead, and Pacific lamprey are the special-status fish species known to occur in the Mattole River adjacent to the Project area. Project-related impacts on individuals of these species are unlikely to occur since no Project activities will occur within 60 m (200 ft) of the Mattole River. However, impacts on designated Critical Habitat could occur due to delivery of sediment from grading activities. Therefore, implementation of best management practices (BMPs) are recommended to prevent soil erosion and sediment delivery to the area watercourses. Implementation of BMPs will reduce the potential impact to a less than significant level.

6.4 Wildlife

6.4.1 Northern red-legged frog

Northern red-legged frogs may occupy the existing seasonal wildlife pond for breeding and larval development. Adult may travel through the proposed Project area during nights or wet periods. The following protection measures are recommended to avoid or minimize the potential take of northern red-legged frogs:

- The Project manager or qualified designee will conduct daily morning inspections of the area slated for work following foggy or rainy nights to determine if red-legged frogs entered the areas overnight.
- Any individuals will be captured and relocated prior to the start of the day's work.
- A management plan will be developed to avoid colonization and reproduction of bullfrogs in the proposed 3-million-gallon pond.

6.4.2 Foothill yellow-legged frog

Foothill yellow-legged are present in the Mattole River adjacent to the proposed Project area. However, the proposed Project will not encroach to within 60 m (200 ft) of the river and does not contain perennial tributary watercourses preferred by post-breeding adults and young of the previous year. However, construction of the irrigation pond could provide an attractant for individuals of this species and subject them to potential bullfrog predation. Therefore, the following protection measure is recommended:

- A management plan will be developed to avoid colonization and reproduction of bullfrogs in the proposed 3-million-gallon pond.

6.4.3 Red-bellied newt

Adult and juvenile red-bellied newts would not be likely to inhabit the grassland area where the proposed Project is located. In addition, the Project will not encroach within 200 feet of the Mattole River and there are no suitable tributary streams located on the property. Therefore, it is unlikely that red-bellied newts will be affected by the Project.

6.4.4 Olive-sided flycatcher

Olive-sided flycatchers are not likely to inhabit the proposed Project area due the lack of advanced successional coniferous forest. However, there is the potential that this species could occupy vegetated areas along the Mattole River, but these areas would be within the 60-m (200-ft) setback and outside of the Project footprint. Therefore, it is unlikely that the Project will impact this species.

6.4.5 Yellow warbler

Yellow warblers have not been recorded in the proposed Project area. The nearest sighting was approximately 9 km (6 mi) to the northwest (eBird 2018). The preferred habitat of yellow warbler includes open canopy or deciduous riparian vegetation, often along streams or wet meadows (Heath 2008). This species frequently nests in small willows and alders, and is also associated with cottonwoods, Oregon ash, and other riparian shrubs and trees. Nesting habitat for this species is present in the deciduous riparian areas adjacent to the proposed Project area along the Mattole River, but not within the proposed Project area. The proposed Project footprint will be

separated from suitable nesting habitat by the 60-m (200-ft) setback. Therefore, it is unlikely that the Project will impact this species.

6.4.6 Yellow-breasted chat

This species can be found in dense thickets of willows or other brushy areas of riparian woodlands that are in the Survey Area. The nearest recorded sighting of this species occurred at the mouth of the Upper North Fork Mattole River immediately downstream of the Survey Area (eBird 2018). The proposed Project footprint will be separated from suitable habitat by the 60-m (200-ft) setback. Therefore, it is unlikely that the Project will impact this species.

6.4.7 Bryant's savannah sparrow

Habitat for this species is present in the meadow areas of the Survey Area. The nearest recorded sighting of this species occurred at the mouth of the Upper North Fork Mattole River immediately downstream of the Survey Area (eBird 2018). There is potential for the proposed Project to affect this species during vegetation grubbing operations within the grassland prior to grading and greenhouse construction. Therefore, the following protection measures are recommended to reduce the potential impact to a less than significant level:

- Clearing and vegetation grubbing operations will occur outside the nesting season (1 March to 15 August);
- If clearing and grubbing operations occur during the nesting season, then the landowner will have a qualified biologist conduct a nesting survey of the proposed clearing site and a surrounding 30-m (100-ft) buffer. The nest survey results will be valid for two weeks. If clearing operations do not occur within the two-week window, the biologist will conduct another survey.
- If a nest is found, then the biologist will mark a 15-m (50-ft) diameter buffer around it that will remain in place until the young have fledged. The nest and buffer can be removed at that point.

6.4.8 Grasshopper sparrow

Suitable habitat for this species is present in the Survey Area and proposed Project area. There is potential for the proposed Project to affect this species during vegetation grubbing operations within the grassland prior to greenhouse construction. Therefore, the following protection measures are recommended to reduce the potential impact to a less than significant level:

- Clearing and vegetation grubbing operations will occur outside the nesting season (1 March to 15 August);
- If clearing and grubbing operations occur during the nesting season, then the landowner will have a qualified biologist conduct a nesting survey of the proposed clearing site and a surrounding 30-m (100-ft) buffer. The nest survey results will be valid for two weeks. If clearing operations do not occur within the two-week window, the biologist will conduct another survey.
- If a nest is found, then the biologist will mark a 15-m (50-ft) diameter buffer around it that will remain in place until the young have fledged. The nest and buffer can be removed at that point.

6.4.9 Pallid bat

Suitable pallid bat foraging habitat occurs throughout the Survey Area and roosting habitat may be present in the older structures or trees within the proposed Project area. There no records of Pallid bats being near the proposed Project area. All existing structures capable of being occupied by this species as well as all large trees that may contain suitable habitat will be retained under the current design. In addition, any greenhouses that use lighting will be fully covered during the night time to insure no light escapes and potentially affects bat foraging. Therefore, the proposed Project is unlikely to affect this species.

6.4.10 Townsend's big-eared bat

Suitable Townsend's big-eared bat foraging habitat occurs throughout the Survey Area and roosting habitat may be present in the older structures or trees within the proposed Project area. There no records of Townsend's big-eared bats being near the proposed Project area. All existing structures capable of being occupied by this species as well as all large trees that may contain suitable habitat will be retained under the current design. In addition, any greenhouses that use lighting will be fully covered during the night time to insure no light escapes and potentially affects bat foraging. Therefore, the proposed Project is unlikely to affect this species.

6.4.11 Western red bat

Suitable western red bat foraging habitat occurs throughout the Survey Area and roosting habitat may be present in the older structures or trees within the proposed Project area. There are no records of Western red bats being near the proposed Project area. All existing structures capable of being occupied by this species as well as all large trees that may contain suitable habitat will be retained under the current design. In addition, any greenhouses that use lighting will be fully covered during the night time to insure no light escapes and potentially affects bat foraging. Therefore, the proposed Project is unlikely to affect this species.

6.4.12 Western pond turtle

Western pond turtles are present in the Mattole River. However, habitat for this species is not present in the proposed Project area. The proposed Project area will be separated from the Mattole River channel by a 60-m (200-ft) setback. Therefore, the proposed Project is unlikely to affect this species.

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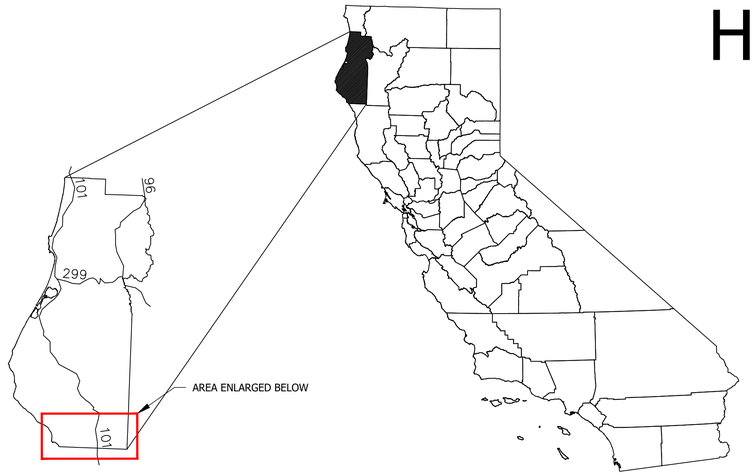
Zeiner, D. C., W. F. Laudenslayer Jr., K. E. Mayer, and M. White, editors. 1990b. California's wildlife. Volume III, Mammals. California Statewide Habitat Relationships System. California Department of Fish and Game.

Appendices

Appendix A

Honeydew Ranch Project Site Map and Grading Plans

GRADING PLAN
APN 107-272-005
HUMBOLDT COUNTY, CA



HUMBOLDT COUNTY MAP
NTS

CALIFORNIA MAP
NTS

OWNER:
HONEYDEW RANCH LLC
665 OLD HINDLEY RANCH ROAD
HONEYDEW, CA 95545
707-683-6686
HSOM16@HOTMAIL.COM

AGENT:
JOEL MONSCHKE PE
STILLWATER SCIENCES
850 G STREET, SUITE K
ARCATA, CA 95521
707-496-7075
JMONSCHKE@STILLWATERSCI.COM

POND NOTES:

1. <P> 3,000,000 GALLON POND
2. WATER SOURCE TO FILL NEW POND: RAINWATER CATCHMENT
3. WATER USE FOR PROPOSED POND: IRRIGATION & FIRE SUPPRESSION

GRADING QUANTITIES:

EARTHWORK
POND - 16,000 CY CUT/CY FILL
ROADS/SWALES/FLATS - 14,000 CY CUT/CY FILL
(ALL GRADING BALANCED ON SITE)

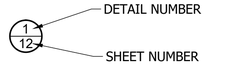
IMPORTED ROCK QUANTITIES
¾" DRAIN ROCK:
FRENCH DRAIN - 100 CY
BACKING ROCK (0.5'Ø TO 1'Ø):
SPILLWAY - 20 CY
DRAINAGE SWALE - 20 CY

TREE REMOVAL
NO TREES TO BE REMOVED

ADDITIONAL NOTES:

1. PARCEL EXTENT TAKEN FROM HUMBOLDT COUNTY GIS AND ASSESSORS PARCEL MAPS; MODIFIED BASED ON FIELD CONDITIONS; APPROXIMATE ONLY.
2. SLOPE DIRECTION AND GRADIENT CAN BE DETERMINED USING SCALE BAR AND UNDERLYING USGS TOPO MAP (40' CONTOUR INTERVALS); SLOPES TYPICALLY RANGE FROM 0% TO 40%.
3. NO SCHOOLS, BUS STOPS, PLACES OF WORSHIP, PUBLIC PARKS, OR TRIBAL CULTURAL RESOURCES WITHIN 600' OF PROPERTY.
4. ALL ROADS AND PARKING AREAS SURFACED WITH GRAVEL, ~16' - 20' WIDTH.

SYMBOL AND ABBREVIATION KEY:



<P> = PROPOSED
<E> = EXISTING

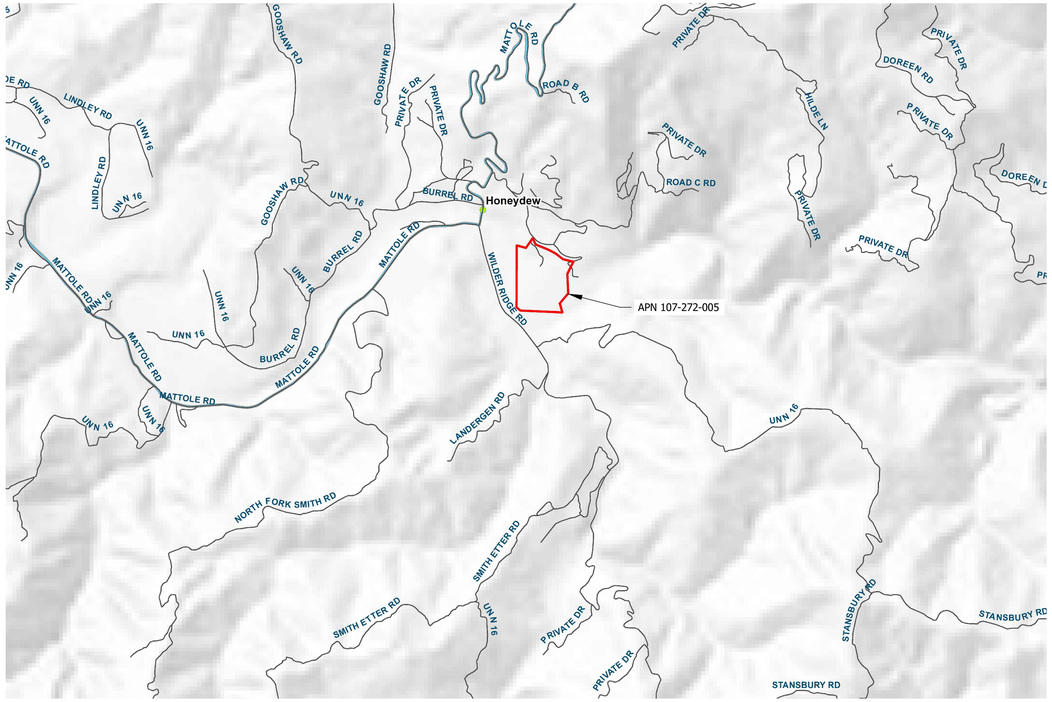
ENGINEER'S APPROVAL REQUIRED:

UPON COMPLETION OF THE PROJECT, ENGINEER OF RECORD WILL SUBMIT A LETTER OF CERTIFICATION TO THE HUMBOLDT COUNTY BUILDING DEPARTMENT CONFIRMING THAT THE PROJECT MEETS ALL OF THE REQUIREMENTS DETAILED IN THE APPROVED R2 SOILS REPORT, AS WELL AS THE GRADING, EROSION AND SEDIMENT CONTROL PLANS

Sheet List Table

REGIONAL LOCATION MAP

VICINITY LOCATION MAP



APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
2855 TELEGRAPH AVENUE, SUITE 400
BERKELEY, CA 94705 P: (510) 848-8098

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER JOEL MONSCHKE No. 79688 9-30-18 EXPIRES CIVIL STATE OF CALIFORNIA

TITLE SHEET

SHEET 1 OF 12

LAST SAVED: 10/23/2018 PLOT DATE: 10/23/2018 PLOT STYLE: ---
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APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
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L=46'
R=200
86'
59'
98'
96'
55'
<E> UNNAMED GRAVEL ACCESS ROAD; ~12' WIDTH; 0-12% GRADE
150' SETBACK FROM SEMI-PERMANENT POND & 100' SETBACK FROM SEASONAL WETLAND
345'
129'
L=148'
R=220
OLD LINDLEY RANCH ROAD
L=96'
R=220
L=86'
R=90
100' SETBACK FROM WETLANDS
170'
25'
RIGHT OF WAY
<E> SPRING (DOMESTIC USE)
88'
<E> SEMI-PERMANENT WILDLIFE POND (NOT USED FOR IRRIGATION)
<E> SEASONAL WETLANDS
L=60'
R=170
L=83'
R=150
40'
<P> 100x100 SF 2 STOREY BUILDING FOR DRYING AND PROCESSING (20,000 SF TOTAL AREA)
NOTE: ONLY 5,000 SF FOOTPRINT TO BE CONSTRUCTED IN 2019; ADDITIONAL 5,000 SF FOOTPRINT TO BE CONSTRUCTED IN FUTURE BASED ON FULL CULTIVATION BUILDOUT
<E> BARN (2,800 SF)
96'
L=137'
R=360
L=98'
R=200
L=36'
R=190
L=79'
R=28
57'
109'
<P> 14 x GREENHOUSES (200'x35') 98,000 SF TOTAL
<E> GARAGE
<E> 10'x10' ENCLOSED RECYCLING CONTAINER
<E> SEASONAL WETLANDS
PARKING AREA FOR UP TO 30 CARS
<E> BARN (2,100 SF)
<E> SHED (100 SF)
<E> SEPTIC & LEACHFIELD
96'
L=59'
R=750
215'
SWS001
<P> CULTIVATION AREA
<E> 500 GALLON PROPANE TANK
<E> SHED (600 SF)
SPRING AND WATER EASEMENTS
L=108'
R=120
<E> RESIDENCE (1,300 SF)
SUBSURFACE SOIL OBSERVATION
<P> 5 x GREENHOUSES (200'x35') 35,000 SF TOTAL
<E> SHALLOW GROUNDWATER WELL
<E> SHED (600 SF)
60'
<E> PARKING & TURNAROUND AREA
L=81'
R=120
125'
20 FT FROM <E> CULTIVATION
<P> 4 x GREENHOUSES (200'x35') 28,000 SF TOTAL
39'
<E> WATER TANKS (~10,000 GALLONS OF TOTAL STORAGE)
<E> 500 GALLON PROPANE TANK
<E> 5 x GREENHOUSES (200'x35') 35,000 SF TOTAL
<P> 4 x GREENHOUSES (200'x35') 28,000 SF TOTAL
30 FT SETBACK FROM PROPERTY LINE
457'
<P> EARTHWORK EXTENTS FOR CULTIVATION AREAS, ACCESS ROAD & DRAINAGE SWALE
SWS002
SUBSURFACE SOIL OBSERVATION
<P> 3,000,000-GALLON POND
200'
<P> 15 x GREENHOUSES (200'x35') 105,000 SF TOTAL
200' BUFFER FROM TOP OF BANK (NO DEVELOPMENT)
212'
411'
157'
MATTOLE RIVER
865'

0 50 100 200 FEET
SCALE: 1" = 100'

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPERTY BOUNDARY
- EXISTING BUILDING
- EXISTING GREENHOUSE
- EXISTING POND
- EXISTING TREE
- SURVEY CONTROL POINT

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER
JOSEF MONSCHKE
No. 79688
9-30-18 EXPIRES
CIVIL
STATE OF CALIFORNIA

SITE OVERVIEW

SHEET 2 OF 12

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

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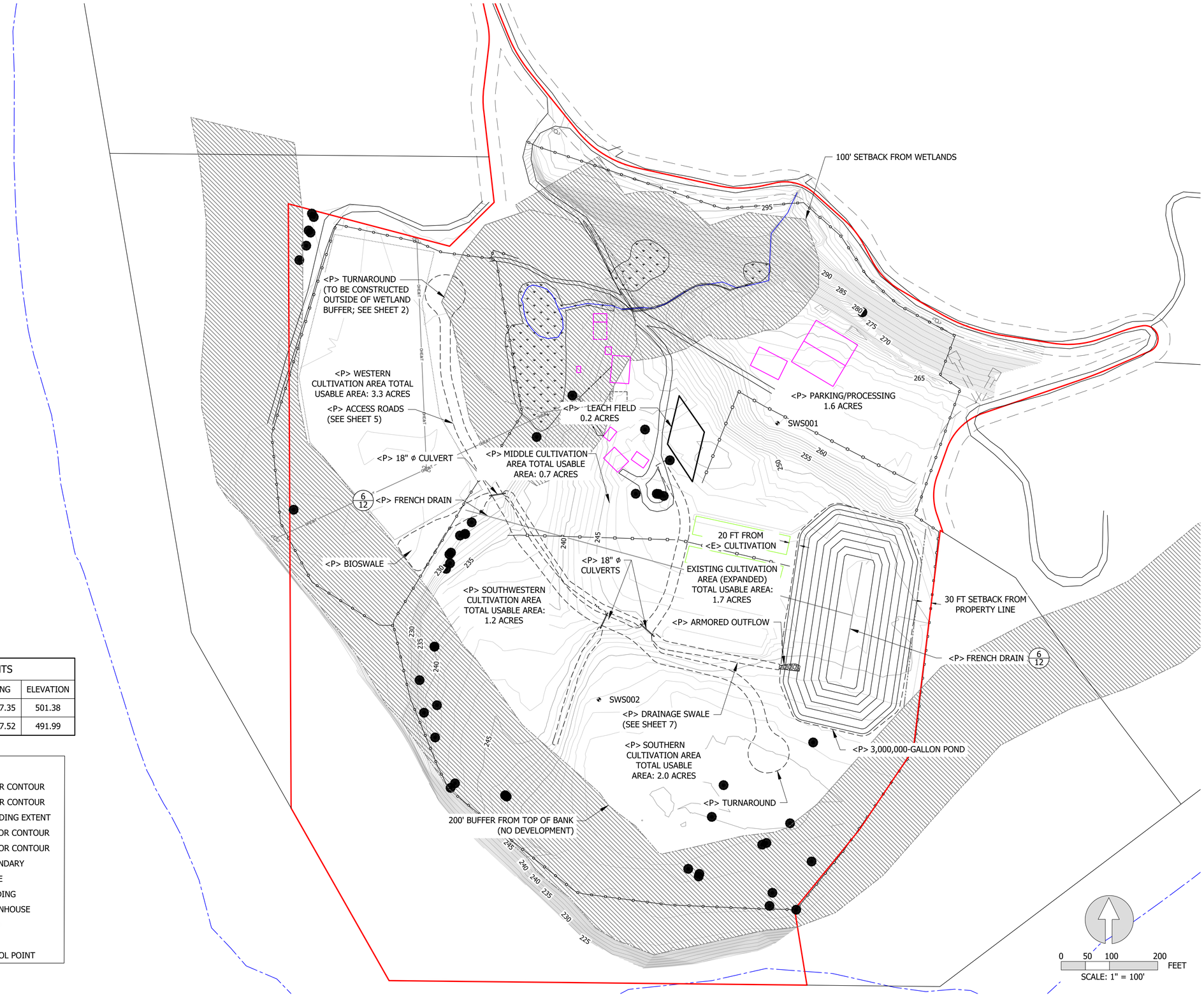
APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
2855 TELEGRAPH AVENUE, SUITE 400
BERKELEY, CA 94705 P: (510) 848-8098



CONTROL POINTS			
POINT #	NORTHING	EASTING	ELEVATION
SWS001	1978129.67	5970917.35	501.38
SWS002	1977557.77	5970547.52	491.99

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED GRADING EXTENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING
- EXISTING GREENHOUSE
- EXISTING POND
- EXISTING TREE
- SWS002 SURVEY CONTROL POINT

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER — JOSEF MONSEBROK — No. 79688 — 9-30-18 EXPIRES — CIVIL — STATE OF CALIFORNIA

EXISTING & PROPOSED SITE OVERVIEW

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY
LAST SAVED: 10/23/2018 PLOT DATE: 10/23/2018 PLOT STYLE: ---
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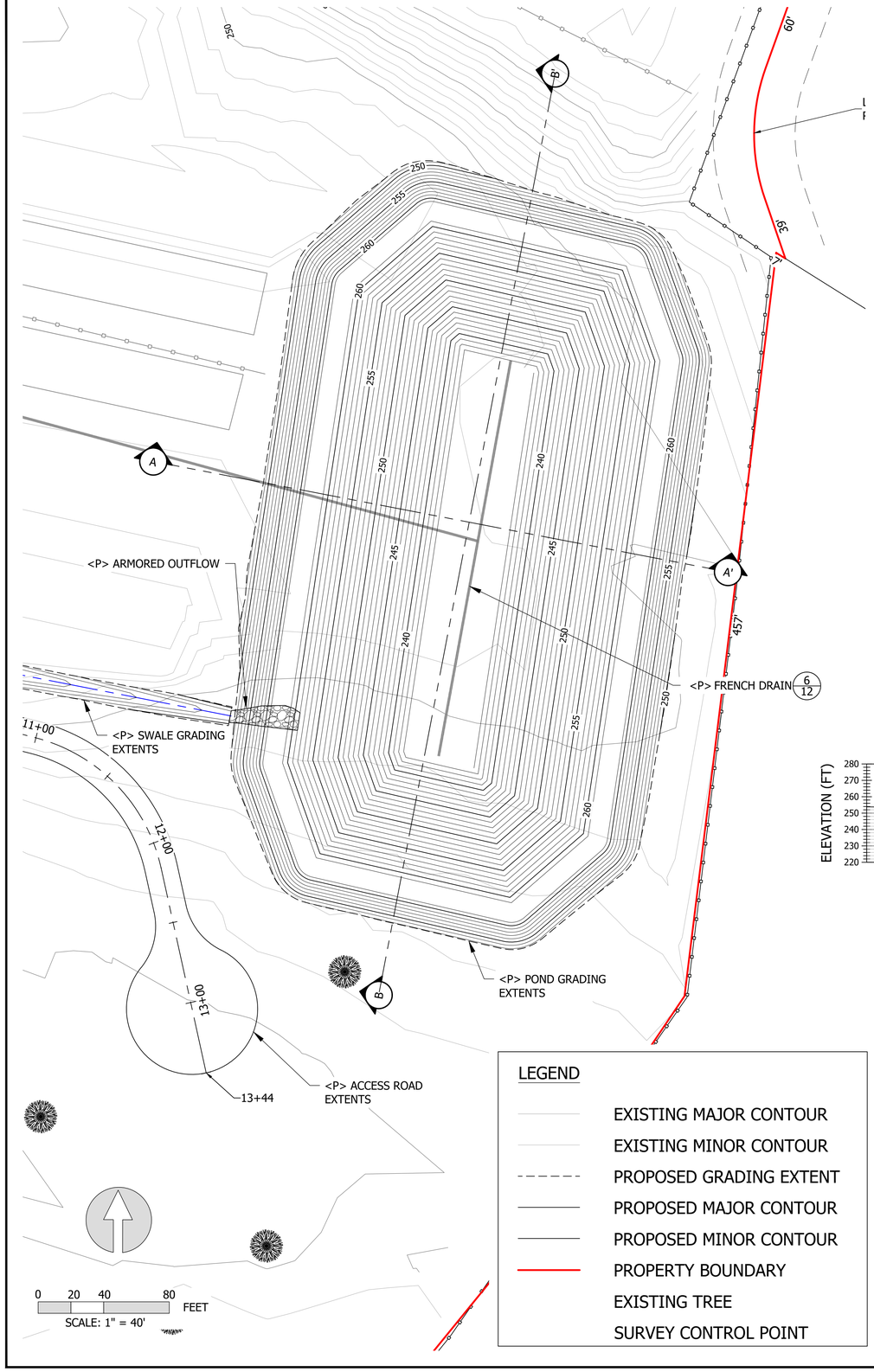
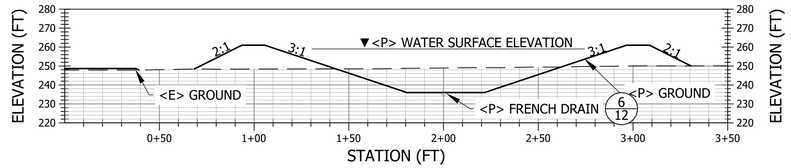


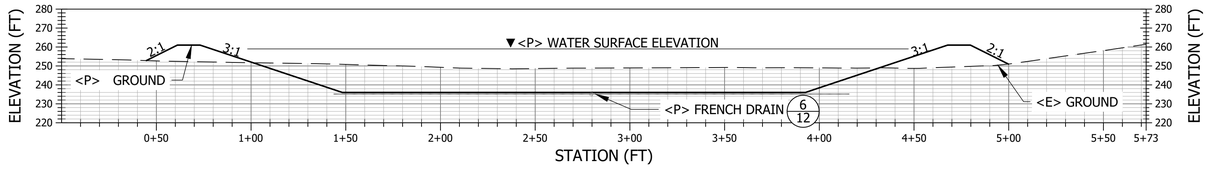
LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED GRADING EXTENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPERTY BOUNDARY
- EXISTING TREE
- SURVEY CONTROL POINT

LOWER POND SECTION A-A'



LOWER POND SECTION B-B'



APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
2855 TELEGRAPH AVENUE, SUITE 400
BERKELEY, CA 94705 P: (510) 848-8098

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

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POND GRADING PLAN & SECTION VIEWS

SHEET 4 OF 12

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 10/23/2018 PLOT DATE: 10/23/2018 PLOT STYLE: ----

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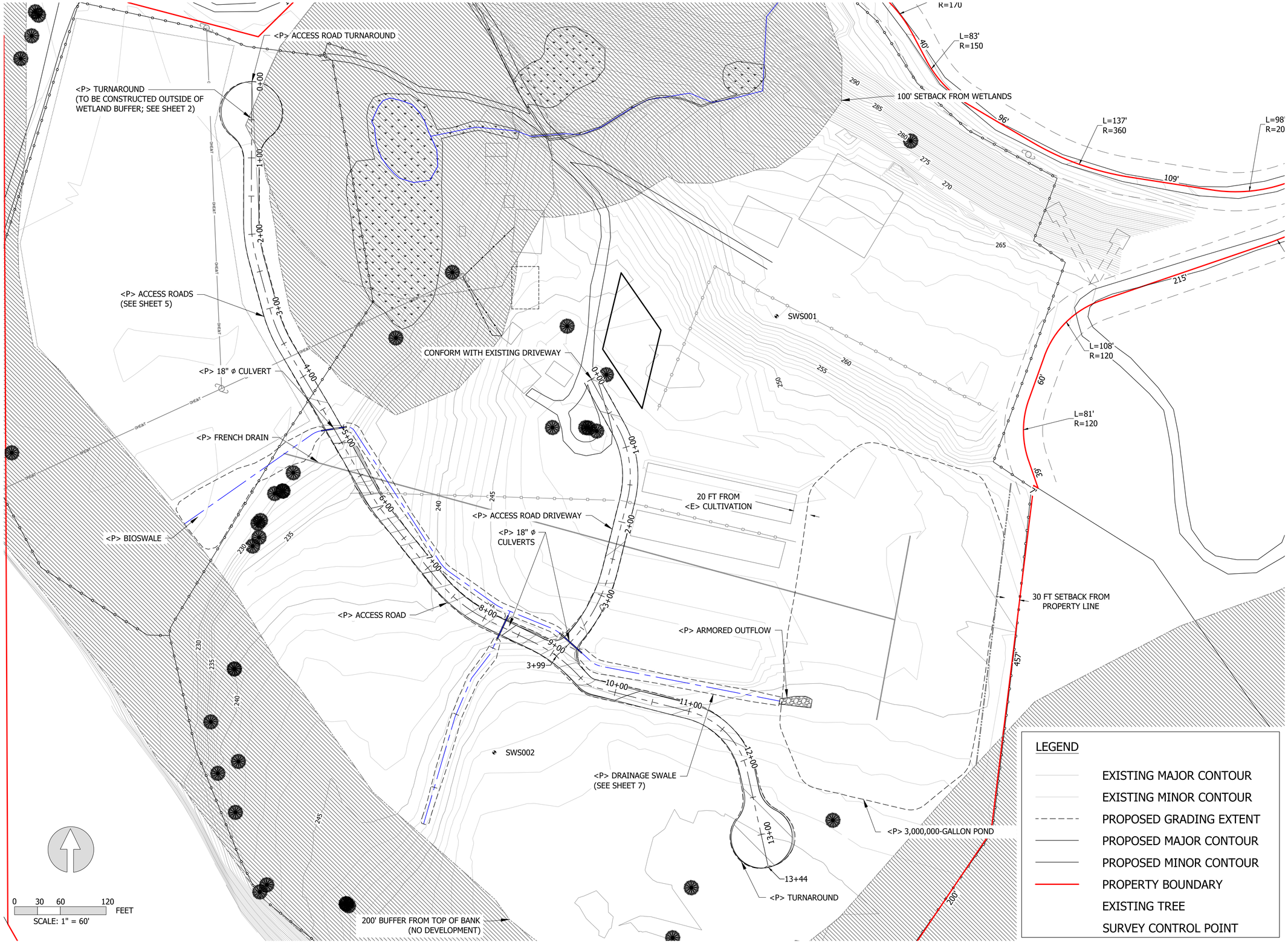

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED GRADING EXTENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPERTY BOUNDARY
- EXISTING TREE
- SURVEY CONTROL POINT

APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
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PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER
JOSEF MONSEN
No. 79688
9-30-18 EXPIRES
CIVIL
STATE OF CALIFORNIA

ROAD GRADING PLAN

SHEET 5 OF 12

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY
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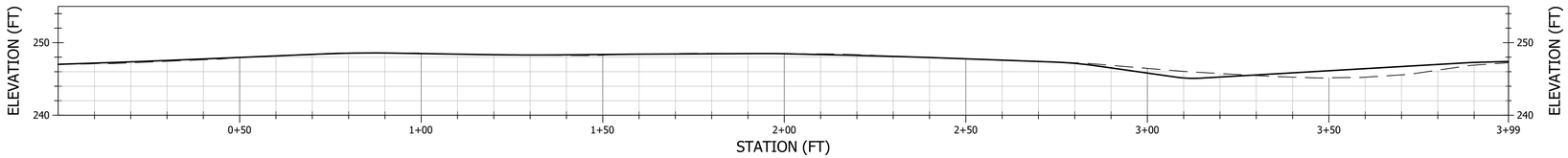
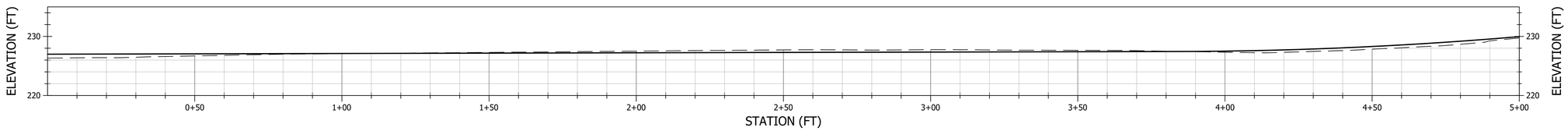
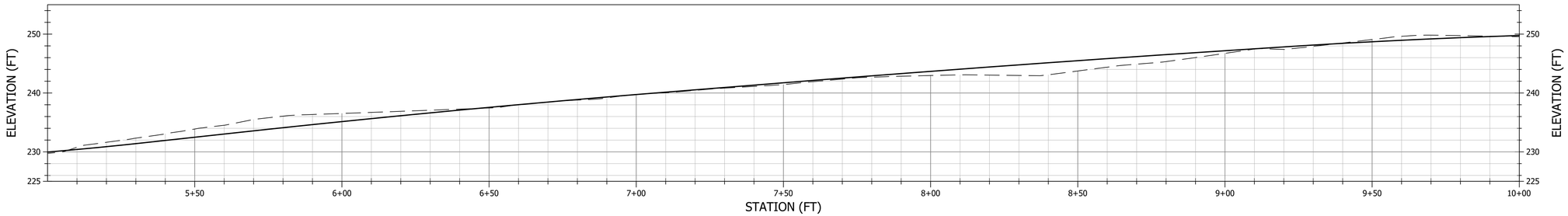
ACCESS ROAD DRIVEWAY



ACCESS ROAD STA. 0+00 TO 5+00



ACCESS ROAD STA. 0+00 TO 5+00.00



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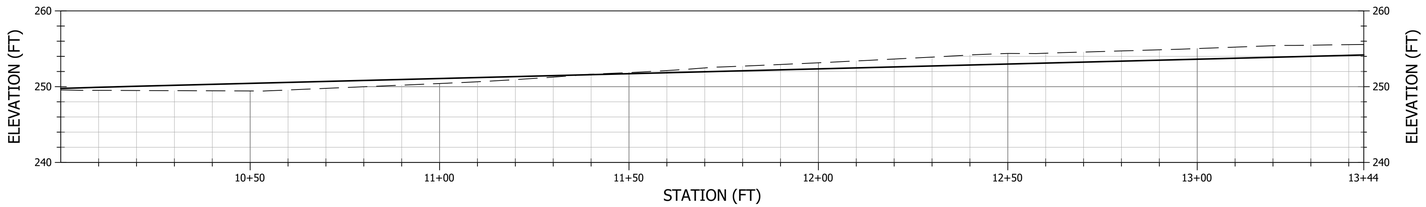

LEGEND

- EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE

APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
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PROJECT NUMBER: 546.42
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DESIGN: CL
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APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER
JOEL MONSCHKE
No. 79688
9-30-18
EXPIRES
CIVIL
STATE OF CALIFORNIA

ROAD GRADING PROFILE VIEWS

SHEET 6 OF 12

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 10/23/2018 PLOT DATE: 10/23/2018 PLOT STYLE: ----

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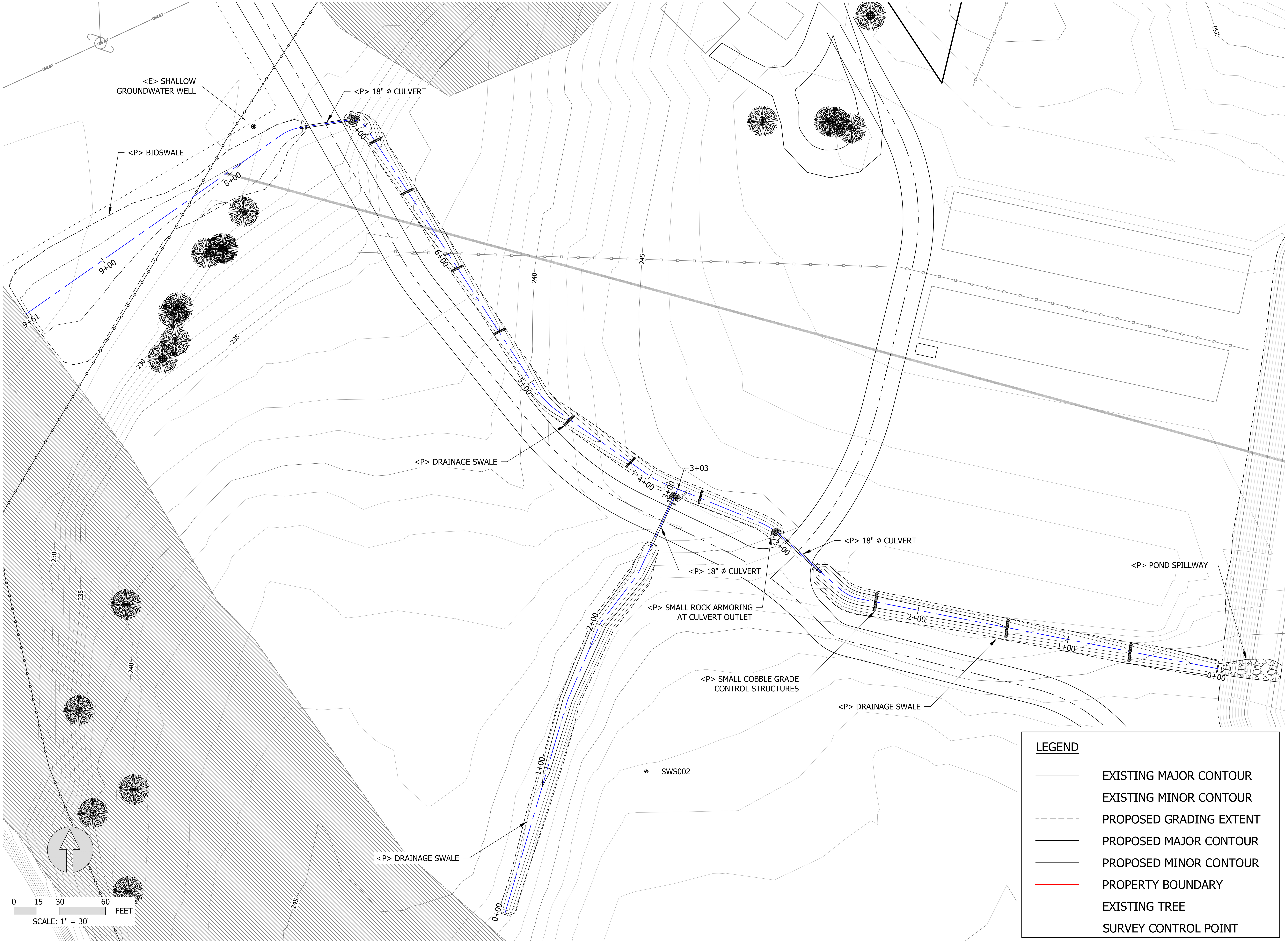


APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
2855 TELEGRAPH AVENUE, SUITE 400
BERKELEY, CA 94705
P: (510) 848-8098

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

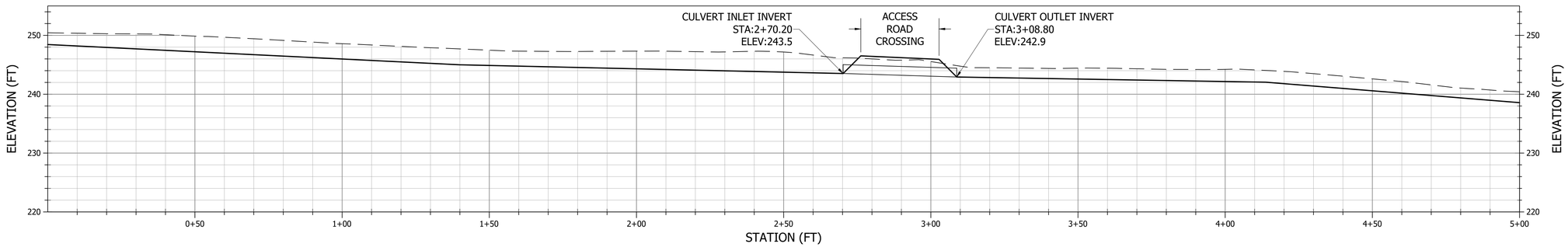
DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER JOEL MONSCHKE No. 79688 9-30-18 EXPIRES CIVIL STATE OF CALIFORNIA

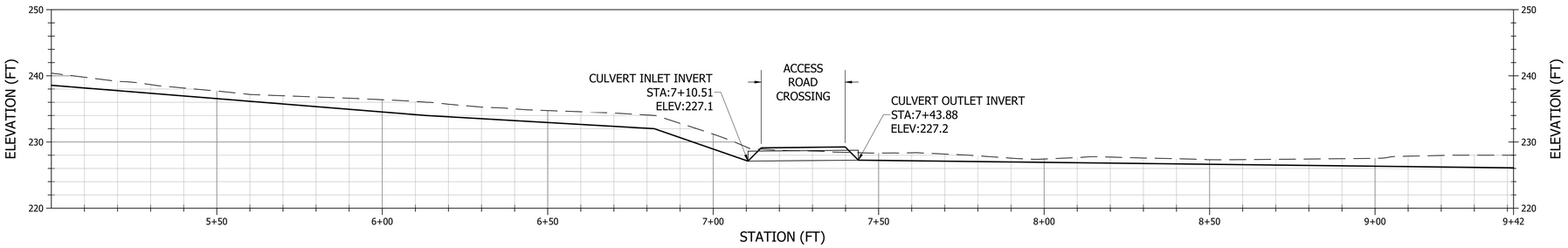
SWALE GRADING PLAN

SHEET 7 OF 12

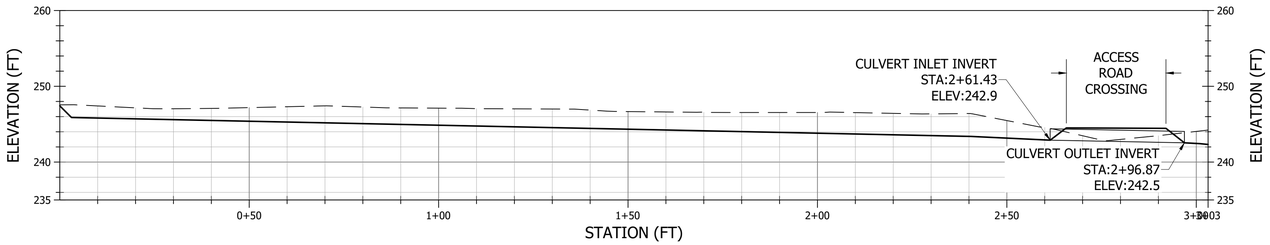
DRAINAGE SWALE STA. 0+00 TO 5+00.00



DRAINAGE SWALE STA. 5+00 TO 9+42



SWALE



LEGEND

EXISTING GROUND PROFILE

PROPOSED GROUND PROFILE

APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
2855 TELEGRAPH AVENUE, SUITE 400
BERKELEY, CA 94705 P: (510) 848-8098

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APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER
JOSEL MONSCHKE
No. 79688
9-30-18
EXPIRES
CIVIL
STATE OF CALIFORNIA

SWALE GRADING PROFILE VIEWS

SHEET 8 OF 12

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 10/23/2018 PLOT DATE: 10/23/2018 PLOT STYLE: ----

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APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

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<P> WESTERN CULTIVATION AREA TOTAL USABLE AREA: 3.3 ACRES

<P> LEACH FIELD 0.2 ACRES

<P> MIDDLE CULTIVATION AREA TOTAL USABLE AREA: 0.7 ACRES

100' SETBACK FROM WETLANDS

<P> PARKING/PROCESSING 1.6 ACRES

SWS001

20 FT FROM <E> CULTIVATION

EXISTING CULTIVATION AREA (EXPANDED) TOTAL USABLE AREA: 1.7 ACRES

30 FT SETBACK FROM PROPERTY LINE

<P> SOUTHWESTERN CULTIVATION AREA TOTAL USABLE AREA: 1.2 ACRES

SWS002

<P> SOUTHERN CULTIVATION AREA TOTAL USABLE AREA: 2.0 ACRES

200' BUFFER FROM TOP OF BANK (NO DEVELOPMENT)

<P> 3,000,000-GALLON POND

CONTROL POINTS			
POINT #	NORTHING	EASTING	ELEVATION
SWS001	1978129.67	5970917.35	501.38
SWS002	1977557.77	5970547.52	491.99

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED GRADING EXTENT
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPERTY BOUNDARY
- EXISTING FENCE
- EXISTING BUILDING
- EXISTING GREENHOUSE
- EXISTING POND
- EXISTING TREE
- SWS002 SURVEY CONTROL POINT

0 30 60 120 FEET
SCALE: 1" = 60'

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

PROFESSIONAL ENGINEER — JOEL MONSCHKE — No. 79688 — 9-30-18 EXPIRES — CIVIL — STATE OF CALIFORNIA

CULTIVATION AREA GRADING

SHEET 9 OF 12

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE - ADJUST ACCORDINGLY

LAST SAVED: 10/23/2018 PLOT DATE: 10/23/2018 PLOT STYLE: ---

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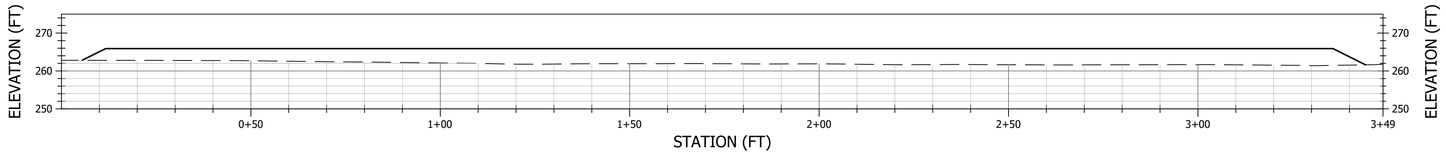
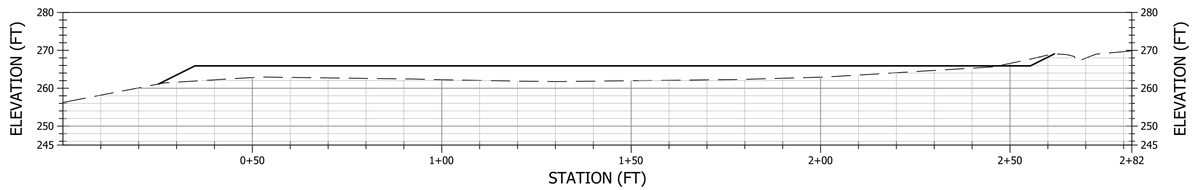
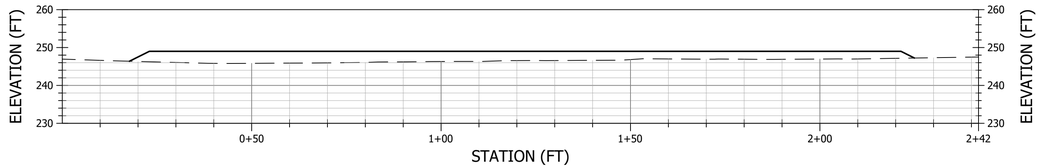
PARKING & PROCESSING AREA SECTION A-A'



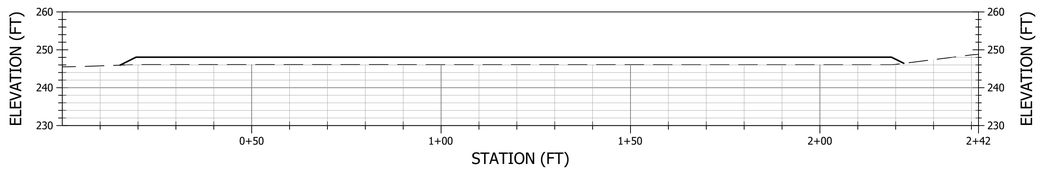
PARKING & PROCESSING AREA SECTION B-B'



EXPANDED CULTIVATION AREA SECTION C-C'



EXPANDED CULTIVATION AREA SECTION D-D'



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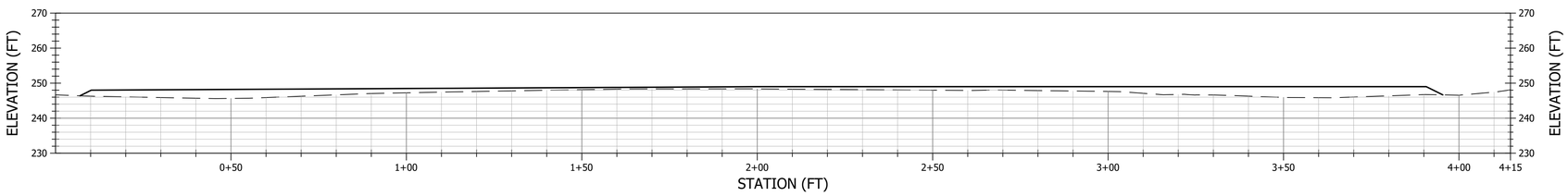
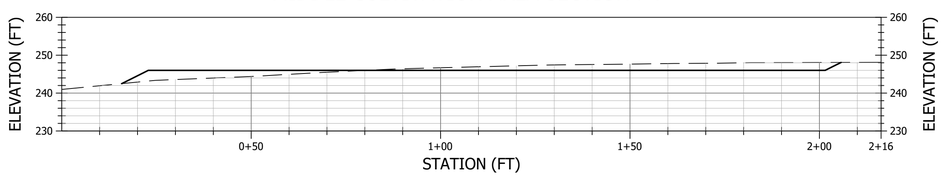


MIDDLE CULTIVATION AREA SECTION F-F'



LEGEND

EXISTING GROUND PROFILE

PROPOSED GROUND PROFILE

APN 107-272-005
GRADING PLAN

HUMBOLDT COUNTY, CA

Stillwater Sciences
2855 TELEGRAPH AVENUE, SUITE 400
BERKELEY, CA 94705 P: (510) 848-8098

PROJECT NUMBER: 546.42
SCALE: AS NOTED
DATE: 10/23/2018

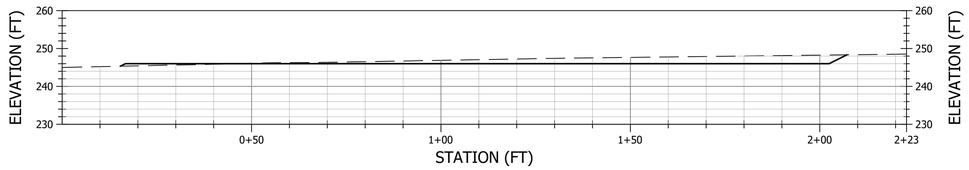
DESIGN: CL
DRAWN: CL
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER JOEL MONSCHKE No. 79688 9-30-18 EXPIRES CIVIL STATE OF CALIFORNIA

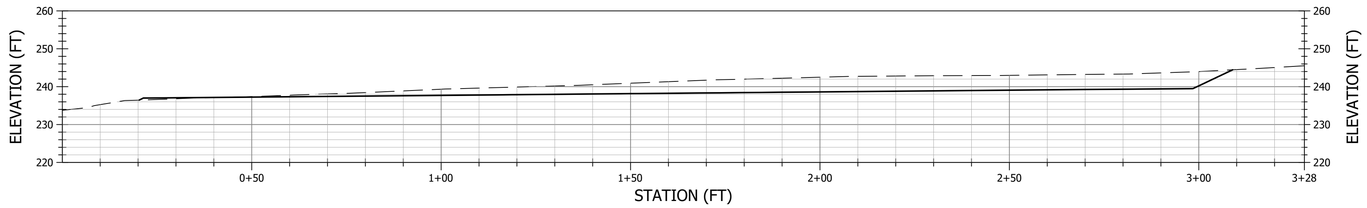
CULTIVATION AREA SECTIONS 1

SHEET 10 OF 12

MIDDLE CULTIVATION AREA SECTION G-G'



SOUTHWESTERN CULTIVATION AREA SECTION H-H'



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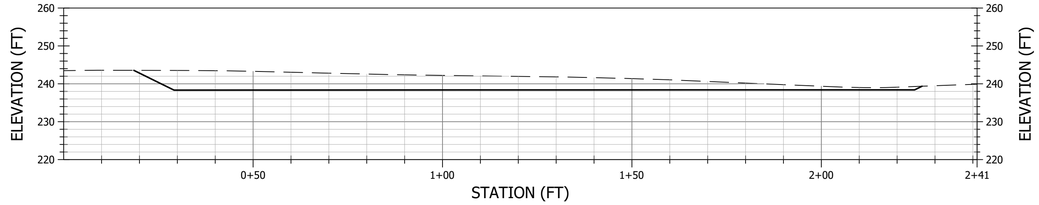
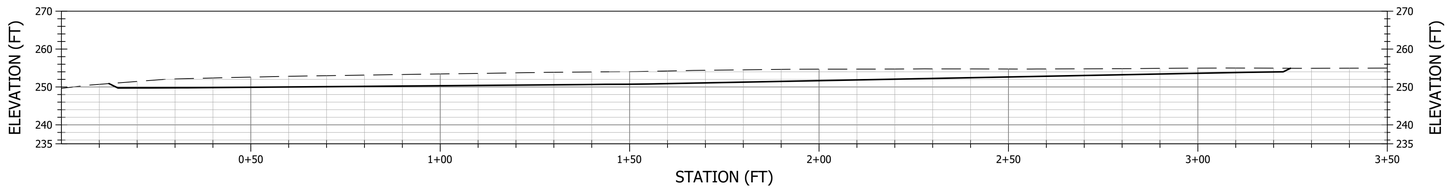


SOUTHERN CULTIVATION AREA SECTION J-J'



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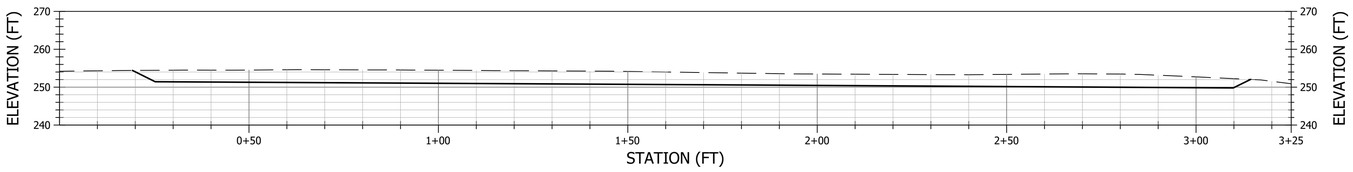

LEGEND

— — — EXISTING GROUND PROFILE

——— PROPOSED GROUND PROFILE

APN 107-272-005
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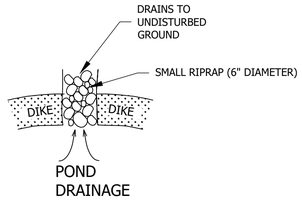
CHECKED: JM
APPROVED: JM

REGISTERED PROFESSIONAL ENGINEER
JOSEF M. MONSCHKE
No. 79688
9-30-18 EXPIRES
CIVIL
STATE OF CALIFORNIA

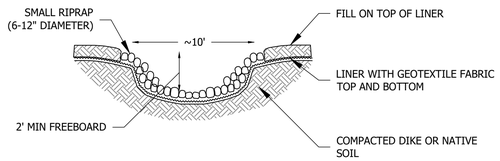
CULTIVATION AREA SECTIONS 2

SHEET 11 OF 12



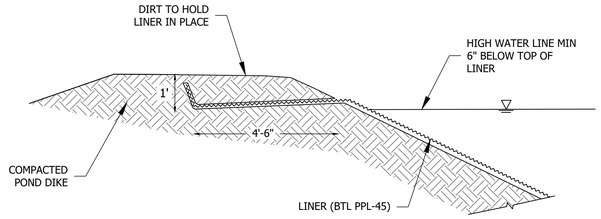
1 SPILLWAY PLAN VIEW

NTS



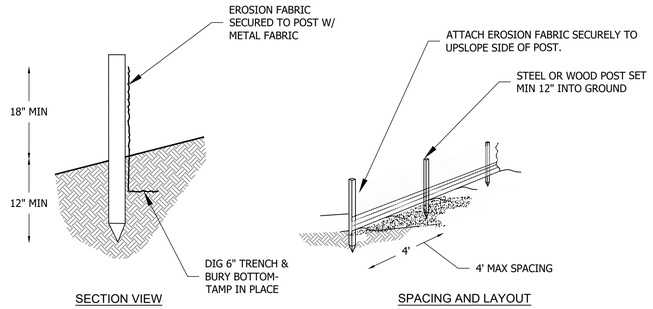
2 SPILLWAY SECTION VIEW

NTS



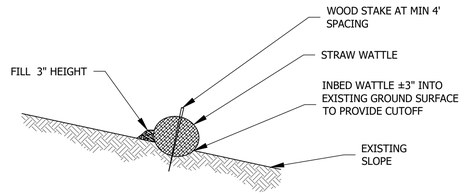
3 POND EDGE DETAIL

NTS



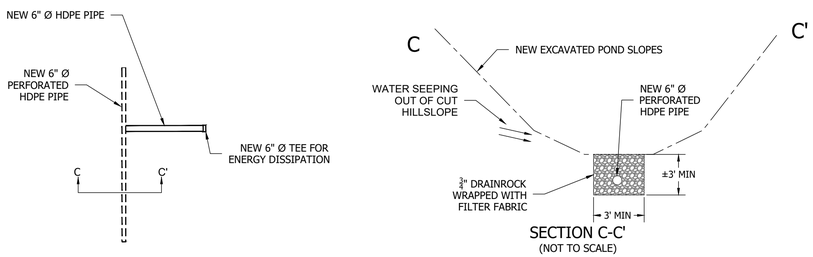
4 SILT FENCING

NTS



5 STRAW WATTLE DETAIL

NTS



ADDITIONAL NOTES:

1. NEW DRAIN PIPES SHALL HAVE A MINIMUM SLOPE OF 2%
2. ALL BACKFILL ON TOP OF 6" PIPE SHALL BE COMPACTED TO 95% RELATIVE COMPACTION
3. POND LINER SHALL BE INSTALLED, AND POND SHALL BE FILLED IMMEDIATELY FOLLOWING DRAIN INSTALLATION
4. QUANTITIES: APPROXIMATELY 100 CY ¾" DRAIN ROCK
5. SEE SHEETS 3 & 4 FOR FRENCH DRAIN LAYOUT

6 FRENCH DRAIN DETAIL

NTS

EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS) SHALL BE INSTALLED PRIOR TO THE WET SEASON (OCTOBER 1 THROUGH APRIL 30).
2. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING; FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION ACTIVITIES.
3. ALL AREAS DISTURBED DURING GRADING ACTIVITIES SHALL BE SEEDED WITH NATIVE GRASS SEED AND MULCHED WITH RICE STRAW.
4. PRIOR TO SEEDING AND STRAW, DISTURBED AREAS SHOULD BE ROUGHENED BY TRACK WALKING WITH A DOZER.
5. STRAW SHALL BE APPLIED AT A UNIFORM RATE OF APPROXIMATELY 4000 LBS PER ACRE BY HAND.
6. AT THE COMPLETION OF THE PROJECT, ONE ROW OF STRAW WATTLES SHALL BE PLACED AT MID SLOPE ALONG THE POND BERM.
7. PRIOR TO ANY RAINFALL, A SILT FENCE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER TO PREVENT SEDIMENT FROM DISCHARGING FROM THE PROJECT.
8. ALL SEDIMENT CONTROL BMPS SHALL BE MAINTAINED THROUGHOUT THE WET SEASON UNTIL NEW VEGETATION HAS BECOME ESTABLISHED ON ALL GRADED AREAS.

GENERAL PROJECT AND GRADING NOTES:

1. **DESIGN INTENT.** THESE DRAWINGS REPRESENT THE GENERAL DESIGN INTENT TO BE IMPLEMENTED AND CONTRACTOR IS RESPONSIBLE FOR ALL ITEMS SHOWN ON THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE ENGINEER FOR ANY CLARIFICATIONS OR FURTHER DETAILS NECESSARY TO ACCOMMODATE ACTUAL SITE CONDITIONS. ANY DEVIATION FROM THESE PLANS WITHOUT THE LANDOWNER AND ENGINEER'S APPROVAL ARE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. NOTIFY ENGINEER IMMEDIATELY OF ANY UNEXPECTED AND CHANGED CONDITIONS, SAFETY HAZARDS, AND ENVIRONMENTAL PROBLEMS ENCOUNTERED.
2. **JOB SITE CONDITIONS AND CONTRACTOR RESPONSIBILITY.** CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR SITE CONDITIONS DURING THE COURSE OF THE CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, AND ALL ENVIRONMENTAL PROTECTION ELEMENTS, WHETHER SHOWN ON THESE DRAWINGS OR NOT. CONTRACTOR SHALL FOLLOW ALL APPLICABLE CONSTRUCTION AND SAFETY REGULATIONS. THESE REQUIREMENTS SHALL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE LANDOWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FROM LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE LANDOWNER OR ENGINEER.
3. **DAMAGE.** CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGE TO EXISTING PUBLIC AND PRIVATE PROPERTY, INCLUDING NATIVE TREES AND SHRUBS, AND OTHER PROPERTY IMPROVEMENTS. IF CONTRACTOR CAUSES DAMAGES TO SUCH ITEMS, HE SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT IN LIKE NUMBER, KIND, CONDITION, AND SIZE. ANY SUCH COST MAY BE DEDUCTED BY OWNER FROM MONIES DUE CONTRACTOR UNDER THIS CONTRACT.
4. **SOILS REPORT.** ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE SOILS REPORT PREPARED FOR THIS PROPERTY.
5. **LIMITS OF WORK, ACCESS, STAGING AND MOBILIZATION AREAS.** EXACT LIMITS OF WORK, POINTS OF INGRESS-EGRESS, MOBILIZATION, STAGING, AND WORK AREAS WILL BE IDENTIFIED IN THE FIELD BY THE LANDOWNER AND/OR ENGINEER.
6. **EARTHWORK QUANTITIES.** CONTRACTOR IS RESPONSIBLE FOR ALL EARTHWORK, INCLUDING GRADING, PROVISION AND PLACEMENT OF ROCK MEETING SIZE LIMITS, AS SHOWN ON DRAWINGS, AND DISPOSAL OF ALL EXCESS SOIL AND RUBBLE. EARTHWORK QUANTITIES, INCLUDING GRADING, PLACED ROCK RIP-RAP QUANTITY ESTIMATES PROVIDED BY THE ENGINEER ARE ESTIMATES ONLY. LANDOWNER AND ENGINEER DO NOT, EXPRESSLY OR OTHERWISE BY IMPLICATION, EXTEND ANY WARRANTY TO EARTHWORK CALCULATIONS.
7. AREAS TO BE GRADED SHALL BE CLEARED OF ALL VEGETATION INCLUDING ROOTS AND OTHER UNSUITABLE MATERIAL FOR A STRUCTURAL FILL, THEN SCARIFIED TO A DEPTH OF 6 INCHES PRIOR TO PLACING OF ANY FILL.
8. AREAS WITH EXISTING SLOPES WHICH ARE TO RECEIVE FILL MATERIAL SHALL BE KEYED AND BENCHED.
9. FILL MATERIAL SHALL BE SPREAD IN LIFTS NOT EXCEEDING 12 INCHES IN COMPACTED THICKNESS, MOISTENED OR DRIED AS NECESSARY TO NEAR OPTIMUM MOISTURE CONTENT AND COMPACTED BY AN APPROVED METHOD. FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DENSITY AS DETERMINED BY 1957 ASTM D - 1557 - 91 MODIFIED PROCTOR (AASHO) TEST OR SIMILAR APPROVED METHODS.
10. CUT AND FILL SLOPES SHALL NOT EXCEED A GRADE OF 2 HORIZONTAL TO 1 VERTICAL EXCEPT WHEN SHOWN ON PLANS. ALL DISTURBED GROUND SHALL BE PLANTED WITH NATIVE GRASS SEED AND MULCHED. SEE SHEET 12 FOR ADDITIONAL DETAILS.
11. BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES: ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ONSITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM.TRASH AND CONSTRUCTION RELATED SOLID WASTE MUST BE DEPOSITED INTO A COVERED WASTE RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND. SEDIMENTS AND OTHER MATERIAL MAY NOT BE TRACKED FROM TO THE SITE BY VEHICLE TRAFFIC. SEE SHEET 12 FOR ADDITIONAL DETAILS.

APN 107-272-005 GRADING PLAN

HUMBOLDT COUNTY, CA

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REGISTERED PROFESSIONAL ENGINEER — JOEL MONSCHKE — No. 79688 — EXPIRES 9-30-18 — CIVIL — STATE OF CALIFORNIA

DETAILS

SHEET 12 OF 12

Appendix B

Scoping List and Map of CNDDB Special-Status Plant and Wildlife Species in the Project Vicinity

CNDDB Data Is Confidential – Map Available Upon Request

Table B-1. Comprehensive scoping list of special-status plants in the Project vicinity.

Species name	Status[1] Federal/ State/CRPR	Habitat associations and blooming period[2]	Source	Likelihood of occurrence (none, low, moderate, high)
Antennaria suffrutescens (evergreen everlasting)	None/None/4.3	Serpentinite in lower montane coniferous forest; 500–1,600 m (1,640–5,250 ft). Blooming period: January–July	CNPS	**None**: No suitable habitat present within Survey Area and outside of elevation range. In addition, no ultramafic soils were mapped or observed in Survey Area.
Calamagrostis foliosa (leafy reed grass)	None/CR/4.2	Rocky coastal bluff scrub and north coast coniferous forest; 0–1,220 m (0–4,005 ft). Blooming period: May–September	CDFW, CNPS	**None:** No suitable habitat present within Survey Area, all occurrences within 8 km (5 mi) of the Project are associated with rock outcrops or undisturbed coastal prairie habitat.
Castilleja litoralis (Oregon coast paintbrush)	None/None/2B.2	Sandy areas in coastal bluff scrub, coastal dunes, coastal scrub; 15–100 m (45–330 ft). Blooming period: June	CDFW, CNPS	**None**: No suitable habitat present within Survey Area.
Ceanothus gloriosus var. *exaltatus* (glory brush)	None/None/4.3	Chaparral; 30–610 m (95–2,000 ft). Blooming period: March–June (August)	CNPS	**None:** No suitable habitat present within Survey Area.
Clarkia amoena ssp. *whitneyi* (Whitney's farewell-to-spring)	None/None/1B.1	Coastal bluff scrub, coastal scrub; 10–100 m (30–330 ft). Blooming period: June–August	CDFW, CNPS	**None**: No suitable habitat present within Survey Area.
Coptis laciniata (Oregon goldthread)	None/None/4.2	Mesic meadows and seeps, streambanks in north coast coniferous forest; 0–1,000 m (0–3,280 ft). Blooming period: (February) March–May (September–November)	CDFW, CNPS	**None**: No suitable habitat present within Survey Area.
Epilobium septentrionale (Humboldt County fuchsia)	None/None/4.3	Sandy or rocky areas in broadleafed upland forest, North coast coniferous forest; 45–1,800 m (145–5,905 ft). Blooming period: July–September	CNPS	**None:** Although broadleafed upland forest present within Survey Area there are no known occurrences within 16 km (10 mi) of the Survey Area.
Erythronium oregonum (giant fawn lily)	None/None/2B.2	Sometimes serpentinite in rocky areas and openings in cismontane woodland, meadows and seeps; 100–1,150 m (325–3,775 ft). Blooming period: March–June (July)	CDFW, CNPS	**Low**: Cismontane woodland present within Survey Area however no ultramafic soils mapped or observed. The five occurrences within 16 km (10 mi) of the Survey Area are associated with Douglas-fir and Douglas-fir-tanoak forests which were not observed in the Survey Area.

Species name	Status[1] Federal/ State/CRPR	Habitat associations and blooming period[2]	Source	Likelihood of occurrence (none, low, moderate, high)
Erythronium revolutum (coast fawn lily)	None/None/2B.2	Mesic areas and streambanks in bogs and fens, broadleafed upland forest and north coast coniferous forest; 0–1,600 m (0–5,250 ft). Blooming period: March–July (August)	CDFW, CNPS	**Low:** Broadleafed upland forest habitat present within Survey Area. One occurrence within 16 km (10 mi) of the Project.
Gilia capitata ssp. *pacifica* (Pacific gilia)	None/None/1B.2	Coastal bluff scrub, openings in chaparral, coastal prairie, valley and foothill grassland; 5–1,665 m (15–5,465 ft). Blooming period: April–August	CDFW, CNPS	**Moderate:** Valley and foothill grassland habitats present within Survey Area. Over 20 occurrences within 16 km (10 mi) of the Project.
Lasthenia burkei (Burke's goldfields)	FE/CE/1B.1	Mesic areas in meadows and seeps, vernal pools; 15–600 m (45–1,970 ft). Blooming period: April–June	USFWS	**None**: No suitable habitat present within Survey Area.
Lasthenia californica ssp. *macrantha* (perennial goldfields)	None/None/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; 5–520 m (15–1,705 ft). Blooming period: January–November	CDFW, CNPS	**None**: No suitable habitat present within Survey Area.
Lasthenia conjugens (Contra Costa goldfields)	FE/None/1B.1	Mesic areas in cismontane woodland, alkaline playas, valley and foothill grassland, vernal pools; 0–470 m (0–1,540 ft). Blooming period: March–June	USFWS	**None**: No mesic areas within the cismontane woodland and valley and foothill grassland habitats observed in Survey Area. No known occurrences within 16 km (10 mi) of the Project
Lathyrus glandulosus (sticky pea)	None/None/4.3	Cismontane woodland; 300–800 m (980–2,625 ft). Blooming period: April–June.	CNPS	**None**: Survey Area is outside of the known elevation range.
Lathyrus palustris (marsh pea)	None/None/2B.2	Mesic areas in bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, north coast coniferous forest; 1–100 m (0–330 ft). Blooming period: March–August	CDFW, CNPS	**None**: No suitable habitat present and Survey Area is outside of the known elevation range.

Species name	Status[1] Federal/ State/CRPR	Habitat associations and blooming period[2]	Source	Likelihood of occurrence (none, low, moderate, high)
Lilium rubescens (redwood lily)	None/None/4.2	Sometimes serpentinite, sometimes roadsides in broadleafed upland forest, chaparral, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest; 30–1,910 m (95–6,265 ft). Blooming period: April–August (September)	CNPS	**Low**: Broadleaved upland forest habitats present within Survey Area. No ultramafic soils mapped or observed in Survey Area. No known occurrences within 16 km (10 mi) of the Project.
Listera cordata (heart-leaved twayblade)	None/None/4.2	Bogs and fens, lower montane coniferous forest, north coast coniferous forest; 5–1,370 m (15–4,495 ft). Blooming period: February–July	CNPS	**None**: No suitable habitat present within Survey Area and no known occurrences within 16 km (10 mi) of the Project.
Lycopodium clavatum (running-pine)	None/None/4.1	Often edges, openings, roadsides, and mesic areas in lower montane coniferous forest, marshes and swamps, and north coast coniferous forest; 45–1,225 m (145–4,020 ft). Blooming period: June–August (August).	CDFW, CNPS	**None**: No suitable habitat present within Survey Area.
Montia howellii (Howell's montia)	None/None/2B.2	Vernally mesic areas and sometimes roadsides in meadows and seeps, north coast coniferous forest, and vernal pools; 0–835 m (0–2,740 ft). Blooming period: (February) March–May	CDFW, CNPS	**None**: No suitable habitat present within Survey Area
Packera bolanderi var. *bolanderi* (seacoast ragwort)	None/None/2B.2	Sometimes roadsides in coastal scrub and north coast coniferous forest; 30–650 m (95–2,135 ft). Blooming period: (January–April) May–July (August)	CNPS	**None**: No suitable habitat present within Survey Area
Piperia candida (white-flowered rein orchid)	None/None/1B.2	Sometimes serpentinite areas in broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest; 30–1,310 m (95–4,300 ft). Blooming period: (March) May–September	CDFW, CNPS	**Low:** Broadleafed upland forest present within Survey Area. All occurrences within 16 km (10 mi) of the Project are associated with Douglas-fir mixed hardwood forest which is not present in the Survey Area. In addition, there is no ultramafic soils mapped or observed within Survey Area.

Species name	Status[1] Federal/ State/CRPR	Habitat associations and blooming period[2]	Source	Likelihood of occurrence (none, low, moderate, high)
Pityopus californicus (California pinefoot)	None/None/4.2	Mesic areas in broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest; 15–2,225 m (45–7,300 ft). Blooming period: (March–April) May–August	CNPS	**None:** No mesic areas within the broadleafed upland forest habitat present within Survey Area. No known occurrences recorded within 16 km (10 mi) of the Project.
Pleuropogon refractus (nodding semaphore grass)	None/None/4.2	Mesic areas in lower montane coniferous forest, meadows and seeps, north coast coniferous forest, and riparian forest; 0–1,600 m (0–5,250 ft). Blooming period: (March) April–August	CNPS	**Low:** Riparian forest habitat present within Survey Area. No known occurrences within 16 km (10 mi) of the Project.
Ribes roezlii var. *amictum* (hoary gooseberry)	None/None/4.3	Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest; 120–2,300 m (390–7,545 ft). Blooming period: March–April	CNPS	**Low**: Broadleafed upland forest and cismontane woodland habitats present within Survey Area. No known within 16 km (10 mi) of the Project and majority of the Survey Area is below the known elevation range.
Sidalcea malachroides (maple-leaved checkerbloom)	None/None/4.2	Often in disturbed areas in broadleafed upland forest, coastal prairie, coastal scrub, north coast coniferous forest, and riparian woodland; 0–730 m (0–2,395 ft). Blooming period: (March) April–August	CDFW, CNPS	**Low:** Broadleafed upland forest habitat present within Survey Area. Several occurrences recorded within 16 km (10 mi) of the Project, all of which are associated with redwood forest.
Trifolium amoenum (two-fork clover)	FE/None/1B.1	Coastal bluff scrub, and sometimes serpentinite areas in valley and foothill grassland; 5–415 m (15–1,360 ft). Blooming period: April–June	USFWS	**None:** No suitable habitat. No ultramafic soils mapped or observed within grassland habitat in Survey Area and no known occurrences within 16 km (10 mi) of the Project.

Species name	Status[1] Federal/ State/CRPR	Habitat associations and blooming period[2]	Source	Likelihood of occurrence (none, low, moderate, high)
Usnea longissima (Methuselah's beard lichen)	None/None/4.2	On tree branches; usually on old-growth hardwoods and conifers in broadleafed upland forest and north coast coniferous forest; 50–1,460 m (160–4,790 ft). Blooming period: N/A (lichen)	CDFW, CNPS	**Moderate:** Broadleafed upland forest habitat present within Survey Area. Multiple nearby occurrences mapped within 8 km (5 mi) of the Project associated with buckeye and Douglas-fir late seral trees.

[1] Status:

Federal

FE Federally endangered

State

CE State endangered

CR State Rare

California Rare Plant Rank (CRPR):

List 1B Plants rare, threatened, or endangered in California and elsewhere

List 2 Plants rare, threatened, or endangered in California, but more common elsewhere

List 3 More information needed about this plant, a review list

List 4 Plants of limited distribution, a watch list

CRPR Threat Ranks:

0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

0.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[2] Months in parentheses are uncommon; N/A = Not applicable

Table B-2. Comprehensive scoping list of special-status fish and wildlife in the Project vicinity.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Fish				
Eucyclogobius newberryi (Tidewater Goby)	FE/SSC	Tillas Slough (mouth of the Smith River, Del Norte County) to Agua Hedionda Lagoon (northern San Diego County). Coastal lagoons and the uppermost zone of brackish large estuaries; prefer sandy substrate for spawning, but can be found on silt and rocky mud substrates; can occur in water up to 4 m (15 ft) in lagoons and within a wide range of salinity (0–42 parts per thousand).	Nearest suitable habitat and detections are in the Eel River estuary.	**None:** Habitat not suitable
Entosphenus tridentatus (Pacific lamprey)	None/SSC	Coastal streams primarily north of San Luis Obispo	Gravel-bottomed streams at the upstream end of riffle habitat. Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary.
Oncorhynchus kisutch (coho salmon - southern Oregon / northern California ESU)	FT, CH/ST	Oregon border to Punta Gorda, California. Spawn in coastal streams and large mainstem rivers in riffles and pool tails-outs and rear in pools >1 m (3 ft) deep with overhead cover with high levels oxygen and temperatures of 10–15ºC (50–59°F).	Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Oncorhynchus kisutch (coho salmon – Central California Coast ESU)	FE, CH/SE	Punta Gorda, California south to Aptos Creek in Santa Cruz County. Spawn in coastal streams and large mainstem rivers in riffles and pool tails-outs and rear in pools >1 m (3 ft) deep with overhead cover with high levels oxygen and temperatures of 10–15ºC (50–59°F).	Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary, but outside of the proposed Project area.
Oncorhynchus mykiss (steelhead trout – Northern California DPS)	FT, CH/None	Inhabits small coastal streams to large mainstem rivers with gravel-bottomed, fast-flowing habitat for spawning. However, habitat criteria for different life stages (spawning, fry rearing, juvenile rearing) are can vary significantly.	Suitable habitat is present in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary.
*Oncorhynchus tshawytscha (*Chinook salmon – California Coastal ESU*)*	FT, CH/None	Wild coastal, spring, and fall-run Chinook found in streams and rivers between Redwood Creek, Humboldt County to the north and the Russian River, Sonoma County to the south.	Suitable habitat occurs in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Amphibians				
Ascaphus truei (Pacific tailed frog)	None/SSC	Associated with high-gradient, perennial and montane streams in hardwood conifer, redwood, Douglas-fir, and ponderosa pine habitats. Tadpoles require water temperatures below 15°C (59°F).	Suitable habitat may occur in high gradient perennial watercourses outside of the Survey Area.	**None**: High gradient perennial watercourses are not present in the Survey Area.
Rana aurora (northern red-legged frog)	None/ SSC	Humid forests, woodlands, grasslands, and streamsides usually near dense cover. Generally near permanent water but can be found far from water in damp woods and meadows during non-breeding season.	Suitable habitat is present in habitat types associated with water, nearby uplands, and existing ponds.	**High**: May be seasonally present in the seasonal wetland pond in the Survey Area.
Rana draytonii (California red-legged frog)	FT, CH/SSC	Largely restricted to coastal drainages on the central coast from Mendocino County to Baja California; in the Sierra foothills south to Tulare and possibly Kern counties	Breeds in still or slow-moving water with emergent and overhanging vegetation, including wetlands, wet meadows, ponds, lakes, and low-gradient, slow moving stream reaches with permanent pools; uses adjacent uplands for dispersal and summer retreat	**None:** Outside current distribution
Rana boylii (foothill yellow-legged frog)	None/ SSC, SCT	Associated with partially shaded, shallow streams, and riffles with rocky substrate. Some cobble-sized substrate required for egg laying.	Suitable habitat occurs in the Mattole River.	**High**: Present in the Mattole River along the southern property boundary.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Rhyacotriton variegatus (southern torrent salamander)	None/SSC	Coastal redwood, Douglas-fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. Seeps and small streams in coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Seeps and springs need to be relatively unembedded with fine sediment.	Suitable habitat occurs in high-gradient gravelly seeps and springs within redwood and montane riparian habitat types on the steep slopes outside of the Survey Area.	**None**: High-gradient seeps are not present in the Survey Area
Taricha rivularis (red-bellied newt)	None/SSC	Ranges from southern Humboldt to Sonoma counties. Found in streams during breeding season. Moist habitats under woody debris, rocks, and animal burrows.	Suitable habitat occurs in the Mattole River and larger tributaries. Documented to occur in the Mattole River downstream of the Upper North Fork.	**High**: Habitat present in the Mattole River adjacent to the southern property line
Birds				
Brachyramphus marmoratus (marbled murrelet)	FT, CH/SE	Associated with mature conifers (i.e., redwood and Douglas-fir) for nesting. During the breeding season, may be present 4–5 km (6–8 mi) inland.	No suitable habitat within or adjacent to the Survey Area. The nearest suitable habitat may be in Bull Creek, Humboldt Redwoods State Park.	**None**: No suitable habitat
Charadrius alexandrinus nivosus (Western snowy plover)	FT/None	Nests on barren to sparsely vegetated dune-backed beaches, barrier beaches, and salt-evaporation ponds, infrequently on bluff-backed beaches.	No ocean beaches or open large gravel bars are located within or adjacent to the Survey Area	**None**: No suitable habitat

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Empidonax traillii brewsteri (Little willow flycatcher)	None/SE	Typically breeds in wet meadows and montane riparian habitats (with a significant shrub component within or near a taller overstory) from 600 to 2,440 m (2,000-8,000 ft) in elevation from Tulare County north, along the western side of the Sierra Nevada and Cascades. Common spring (mid-May to early June) and particularly fall (mid-August to early September) migrant in riparian habitats at lower elevations, including the north coast of California.	The nearest recorded sighting of this species was along the South Fork Eel River near Miranda in June 2000. Multi-storied riparian forest or woodland (e.g., alder, cottonwood, willow) habitat is not present in the Survey Area.	**Low**: Suitable habitat not in Survey Area, but may be present in significant willow patches in the lower Mattole river.
Contopus cooperi (Olive-sided flycatcher)	None/SSC	Occupy a wide variety of forested habitats in California, including mixed conifer, Douglas-fir, redwood, and montane hardwood-conifer forests with open canopies, near forest edges or forest openings (e.g., meadows, rivers, harvest units).	Suitable habitat occurs in the Survey Area. The nearest sighting was approximately 8 km (5 mi) downstream of the Survey Area.	**High:** Suitable habitat occurs in Survey Area.
Dendroica petechia (Yellow warbler)	None/SSC	Throughout California. Preferred habitat includes open-canopy, deciduous riparian vegetation in close proximity to water, often along streams or wet meadows.	Suitable habitat occurs in the Survey Area. The nearest sighting was at A. Way County park downstream of the Survey Area.	**High:** Habitat present in the Survey Area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Icteria virens (Yellow-breasted chat)	None/SSC	Found in dense thickets of willows or other brushy areas of riparian woodlands throughout California. Prefers areas with an open-canopy and close proximity to water along streams or wet meadows; however, the preferred understory for nesting sites is thick and often includes a tangle of blackberry and wild grape.	Habitat is present in the Survey Area. The nearest sighting of this species occurred at the mouth of the Upper North Fork Mattole River.	**High:** Habitat present in the Survey Area.
Passerculus sandwichensis alaudinus (Bryant's savannah sparrow)	None/SSC	North coastal California and the San Francisco Bay Area, from Humboldt County to northern Monterey County. This species resides in the narrow coastal fogbelt, its range extending approximately 15 km (9 mi) inland. Low tidal marshlands and adjacent ruderal communities, and, within the fog belt, in mesic grasslands. Short herbaceous vegetation communities that lack woody plant cover; in all habitats bare ground is an important component	Habitat is present in the Survey Area. The nearest sighting of this species occurred at the mouth of the Upper North Fork Mattole River.	**High:** Habitat present in the Survey Area.
Ammodramus savannarum (Grasshopper sparrow)	None/SSC	Coastal California and sporadically through most of the Central Valley, as well as Siskiyou County and at the base of the Sierra Nevada in Kern County. In the northern California coast, despite the apparent lack of suitable habitat, breeding pairs are found in the patchwork of grasslands that occur in the matrix of coniferous forest.	Habitat is present in the Survey Area. One individual was heard vocalizing at the Petrolia cemetery in 2017.	**High:** Habitat present in the Survey Area.

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Phoebastria (Diomedea) albatrus (Short-tailed Albatross)	FE/None	Pacific Ocean (nests in Japan)	Feeds in north Pacific Ocean.	**None**: Habitat not suitable
Strix occidentalis caurina (Northern Spotted Owl)	FE/ST	Typically found in large, contiguous stands of mature and old-growth coniferous forest with dense multi-layered structure.	Suitable breeding and roosting habitat is not present within the Survey Area. The closest activity center is over 4.0 km (2.5 mi) to the west of the Survey Area.	**None**: Habitat not suitable
Coccyzus americanus (Western yellow-billed cuckoo)	FT/SE	Breeds in limited portions of the Sacramento River and the South Fork Kern River; small populations may nest in Butte, Yuba, Sutter, San Bernardino, Riverside, Inyo, Los Angeles, and Imperial counties	Summer resident of valley foothill and desert riparian habitats; nests in open woodland with clearings and low, dense, scrubby vegetation. The nearest recorded sighting of this species was in the Eel River delta area.	**None**: Habitat not suitable

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Mammals				
Antrozous pallidus (Pallid bat)	None/SSC	Found throughout California. Roosts in rock crevices, outcrops, cliffs, mines, and caves; trees (underneath exfoliating bark of pine and oak) and in basal hollows; and a variety of vacant and occupied structures (e.g., bridges) or buildings. Roost individually or in small to large colonies (hundreds of individuals). Feeds low to or on the ground in a variety of open habitats, primarily on ground-dwelling arthropods. Forages most frequently in riparian zone, in open oak savannah, and open mixed deciduous forest. Drinks at stream pools.	Suitable foraging habitat throughout most of the Survey Area, however barns, old building, and bridges are not present within the Survey Area.	**Moderate**: May be present in some of the older structures adjacent to the Survey Area
Corynorhinus townsendii (Townsend's big-eared bat)	None/ SSC, SCT	Documented throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Suitable foraging habitat throughout most of the Survey Area, however barns, old building, and bridges are not present within the Survey Area.	**Moderate**: May be present in some of the older structures adjacent to the Survey Area
Lasiurus blossevillii (Western red bat)	–/SSC	Near the Pacific Coast, Central Valley, and the Sierra Nevada	Riparian forests, woodlands near streams, fields and orchards	**Moderate**: May be present in some of the woodlands within and adjacent to the Survey Area

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Arborimus pomo (Sonoma tree vole)	None/SSC	Associated nearly exclusively with Douglas-fir trees and occasionally grand fir trees within the North Coast fog belt between the northern Oregon border and Sonoma County. Eats Douglas-fir needles exclusively.	Stands of Douglas-fir are present on the hillslopes north and south of the Survey Area. The closest recorded sighting is 3 miles to the north of the Survey Area.	**Low**: Only isolated Douglas-fir are in the Survey Area. No fir needle resin ducts observed around Douglas-firs during field review.
Pekania pennanti (Pacific fisher – West Coast DPS)	FCT/SSC	Associated with dense advanced-successional conifer forests, with complex forest structure and high percent canopy closure; den in hollow trees and snags.	Habitat in the Survey Area does not correspond to the dense advanced-successional forest this species prefers.	**None**: No suitable habitat
Martes americana humboldtensis (Humboldt marten)	None/SE	Historical range included coastal redwood zone from the Oregon border south to Fort Ross, Sonoma County. Currently known only from southern Del Norte County and northern Humboldt County.	Mid- to advanced-successional stands of conifers with complex structure near the ground and dense canopy closure	**None**: No suitable habitat
Reptiles				
Dermochelys coriacea (Leatherback sea turtle)	FE/None	Oceanic/pelagic, though also forages near coastal waters	Pacific Ocean	**None**: No suitable habitat
Chelonia mydas (Green Sea Turtle)	FT/none	Oceanic/pelagic, though also forages near coastal waters	Pacific Ocean	**None**: No suitable habitat

Scientific name (common name)	Status[1] (Federal/ State)	Distribution and habitat associations	Location of suitable habitat	Likelihood of occurrence in the Survey Area
Emys marmorata (Western pond turtle)	None/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with abundant vegetation, and either rocky or muddy bottoms, in woodland forest and grasslands. Below 1,829 m (6,000 ft) elevation. Basking sites are required. Egg-laying sites are located on suitable upland habitats (grassy open fields) up to 500 m (1,640 ft) from water.	Suitable habitat occurs in the middle and lower Mattole River. Present in stock ponds in the Mattole watershed.	High: Habitat present in the Mattole River adjacent to the southern property line, but not on the property.

[1] Status:
Federal
- FE Federal endangered
- FT Federal threatened
- FCT Federal candidate threatened
- CH Critical habitat designated within the Project vicinity

State
- SE Endangered
- ST Threatened
- SCT State candidate threatened
- SSC CDFW species of special concern

Appendix C

Potentially Jurisdictional Waters and Wetlands within the Survey Area

Figure C-1. Waters within Honeydew Ranch Wetland Delineation Survey Area.