Focused Survey for Agassiz's Desert Tortoise,
Habitat Assessments for Burrowing Owl and Mohave Ground Squirrel, and
General Biological Resource Assessment for a
1.72-acre± Site (APN 0467-101-12) in the Community of Helendale,
San Bernardino County, California

(U.S. Geological Survey 7.5' Helendale quadrangle, Township 7 North, Range 4 West, a portion of Section 5, S.B.B.&M.)

Job#: 16-016

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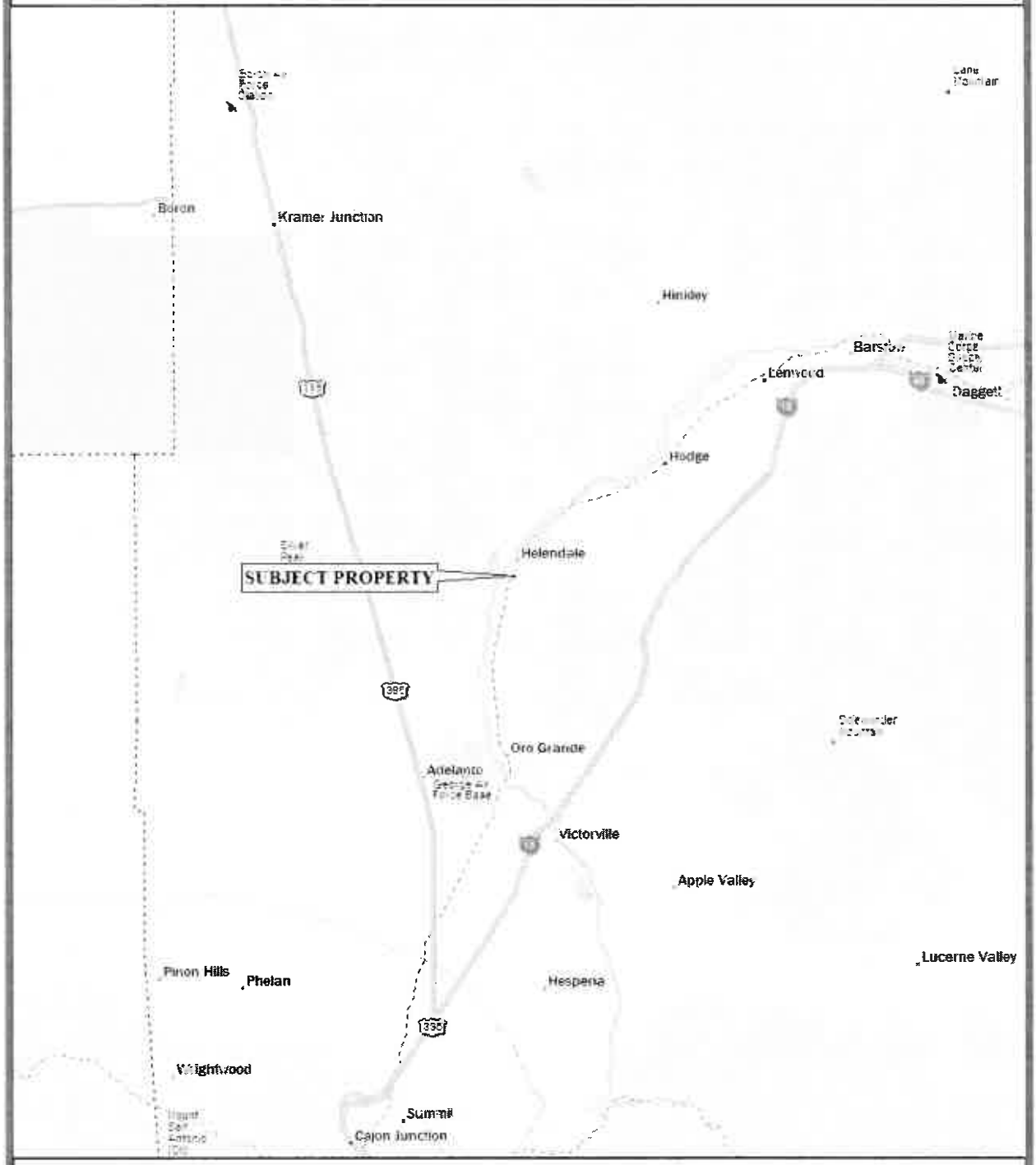
I hereby certify that the statements furnished herein, including attached exhibits, present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a nondisclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Sharon Dougherty

Circle Mountain Biological Consultants, Inc.
Author and Field Investigator: Sharon Dougherty

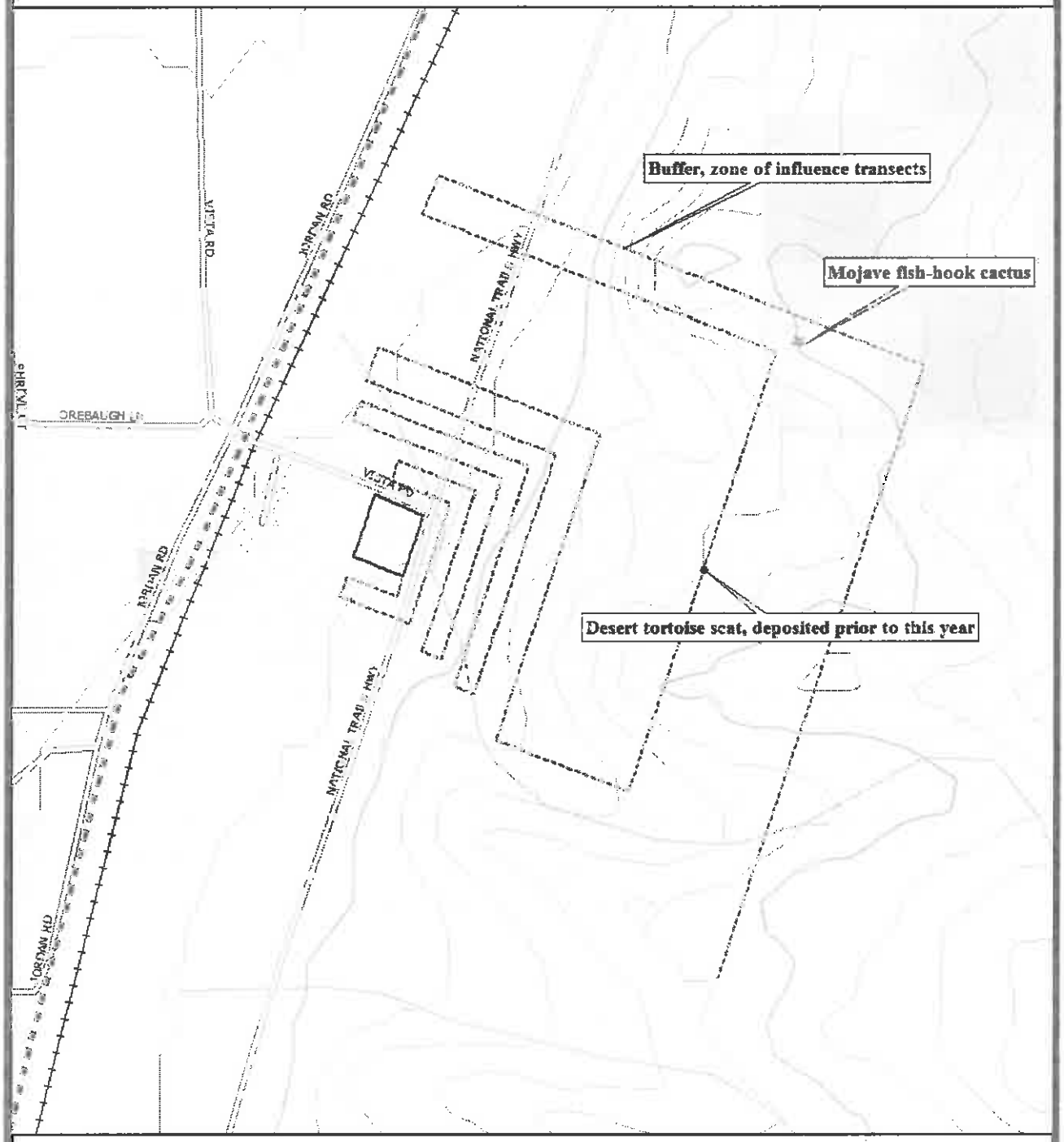
June 2016

Figure 1. APN 0467-101-12: Vicinity Map



Map produced by Circle Mountain Biological Consultants, Inc. June 2016

Figure 2. APN 0467-101-12: Site Map with Sensitive Species Location & Tortoise Sign



Map produced by Circle Mountain Biological Consultants, Inc. June 2016

Figure 3. Locations of Other Tortoise Surveys in Vicinity of Subject Property

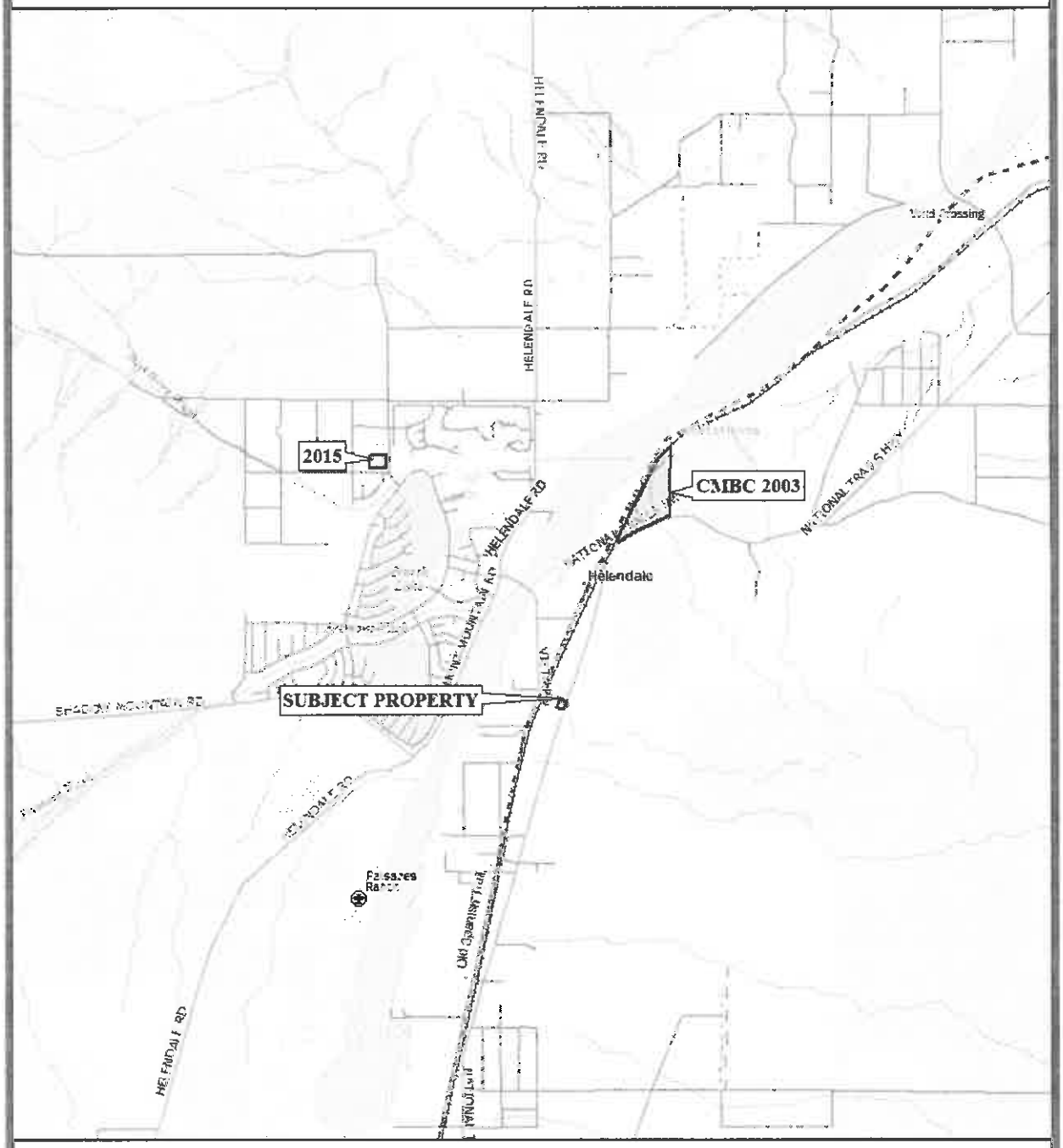


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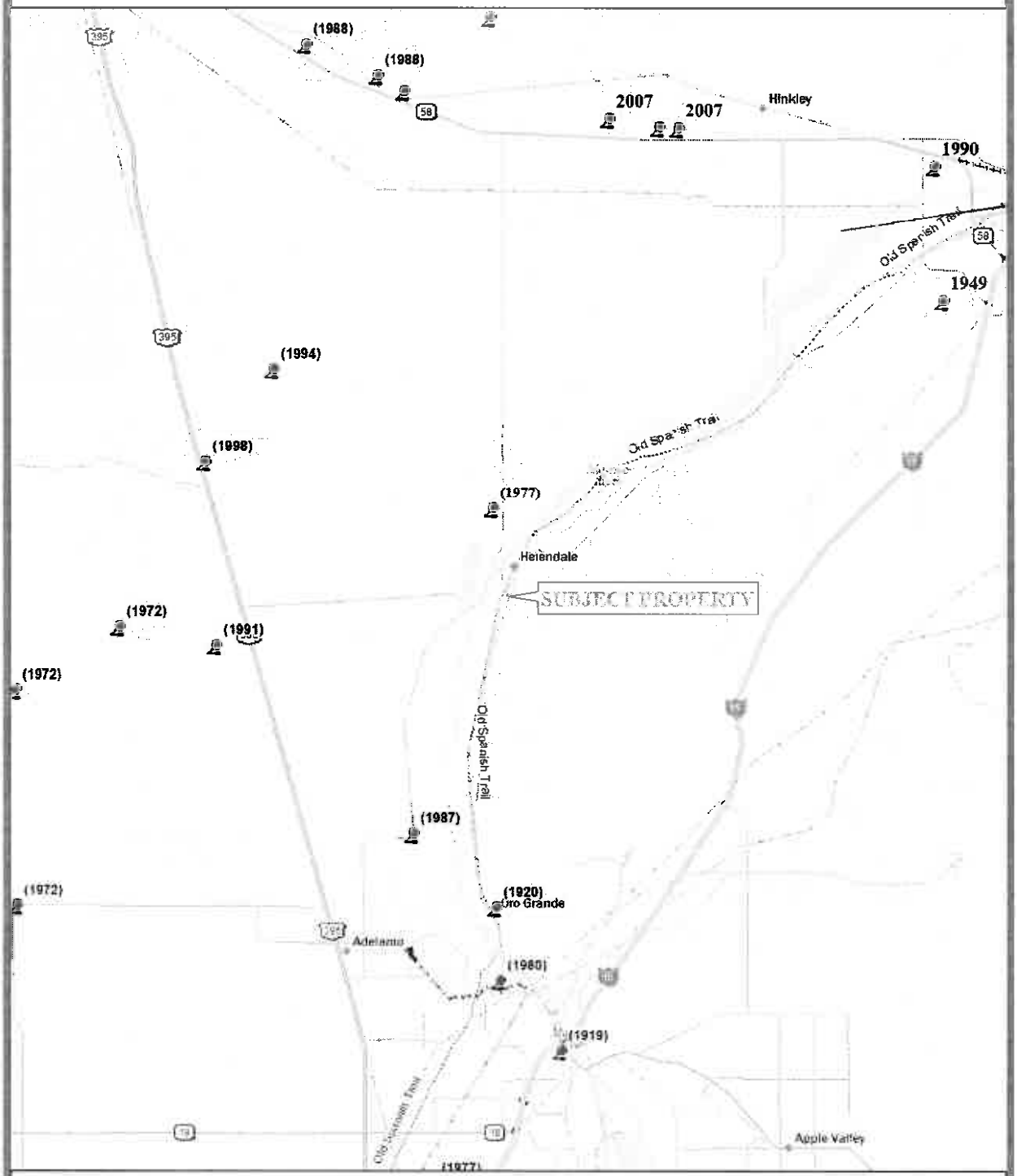
Figure 4. APN 0567-101-12: Aerial Photograph (©2016Google™ Earth)

Figure 5. Known Mohave Ground Squirrel Locations



Map produced by Circle Mountain Biological Consultants, Inc. May 2016

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Data Zoom 9-6

Executive Summary

Circle Mountain Biological Consultants, Inc. (CMBC) was contacted in March of 2016 by PA Design Associates on behalf of an unnamed client (Proponent) to perform a focused survey for Agassiz's desert tortoise, habitat assessments for burrowing owl (*Athene cunicularia*) and Mohave ground squirrel, and a general biological resource assessment, on a 1.72-acre± site (APN 0467-101-12) in San Bernardino County, California, in the Community of Helendale.

For a total of 3.75 hours, between 0615 and 1000 on 3 June 2016, Sharon Dougherty of CMBC surveyed the site and adjacent areas. The 29 plant species identified during the survey are listed in Appendix A. Only three perennials, cheesebush, creosote bush, and allscale, were found on the site. Annual plants found on the site were limited to invasive exotic species. The 4 reptile, 5 bird, and 4 mammal species identified during the survey are listed in Appendix B.

Positive evidence of tortoise found during this survey included a scat found approximately 400 m to the east of the site. Evidence of tortoise has also been observed approximately 200m north of the site by a local biologist (Tom Egan, pers. comm. 3 June 2016). No evidence of the species was found on the subject property. Given the presence of desert tortoise in the surrounding area, it is possible that an animal could move through the site on an occasional basis, but given the poor quality of habitat on the site, it is unlikely that a tortoise would become resident on the site. CMBC considers that impacts to tortoises can be avoided if the site is fenced with tortoise fencing and clearance surveys for desert tortoise are completed prior to brushing the site, and if the fence is maintained during construction. It is prudent to contact USFWS to review this report to agree or disagree with this conclusion.

No special status species were identified on-site during the current survey. No evidence of burrowing owl was found during focused surveys. Given the low shrub diversity on the site, the location of the subject property at the eastern edge of the species range, and the presence of development to the south and west, CMBC concludes that the Mohave ground squirrel has a low likelihood of occurrence on the subject property, but cannot be considered absent with certainty. It is prudent to have Heather Weiche of the CDFW review this report to determine whether trapping or mitigation for the species is appropriate.

No washes or blue line streams are present on the subject property. No protected plants are present on the subject property although several protected species were detected in adjacent areas.

The California Fish and Game Code prohibits take of all birds and their active nests, including raptors and other migratory nongame birds (as listed under the Migratory Bird Treaty Act). Typically, CDFW requires that vegetation not be removed from a project site between March 15 and September 15 to avoid impacts to nesting birds. If it is necessary to commence project construction between March 15 and September 15, a qualified biologist should survey all shrubs and structures within the project site for nesting birds, prior to project activities (including construction and/or site preparation).

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San Bernardino County, California

1.0. Introduction

1.1. Purpose and Need for Study. Circle Mountain Biological Consultants, Inc. (CMBC) was contacted in March of 2016 by PA Design Associates on behalf of an unnamed client (Proponent) to perform a focused survey for Agassiz's desert tortoise (*Gopherus agassizii*), habitat assessments for burrowing owl (*Athene cunicularia*) and Mohave ground squirrel (*Xerospermophilus mohavensis*), and a general biological resource assessment, on a 1.72-acre± site in San Bernardino County, California, in the Community of Helendale (see Figures 1 and 2). Given the location of the site in an unincorporated portion of the county, this report has been prepared according to County of San Bernardino's *Report Protocol for Biological Assessment Reports* (County of San Bernardino 2006).

As the California Environmental Quality Act (CEQA) Lead Agency, the County of San Bernardino, Public and Support Services Group, Land Use Services Department, Advance Planning Division (County) is required to complete an initial study to determine if site development will result in any adverse impacts to rare biological resources. The information may also be useful to federal and State regulatory agencies, including U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), respectively, if the Lead Agency asks them to assess impacts associated with proposed development. Results of CMBC's focused tortoise survey, burrowing owl and Mohave ground squirrel habitat assessments, and general biological resource assessment are intended to provide sufficient baseline information to these agencies to determine if impacts will occur and to identify mitigation measures, if any, to offset those impacts.

1.2. Project Description. APN 0467-101-12 is a 1.72-acre± parcel located at the southwestern corner of National Trails Highway and Vista Road in the community of Helendale (see Figures 1 and 2). The legal description for the subject property is Township 7 North, Range 4 West, a portion of Section 5, S.B.B.&M.

The Proponent plans to develop a gas station with a convenience store on the property. A second phase of development will include an additional retail building on the southern part of the property. Copies of site plans and floor plans are included in Appendix F.

2.0. Methods

2.1. Literature Review. CMBC consulted materials included in our library to determine the nearest tortoise locations and other special status plant and animal species that have been reported from the vicinity of the subject property. Of particular relevance given their proximity to the subject property are focused tortoise surveys and biological monitoring completed for two projects, located within approximately one mile of the parcel, between 2003 (Circle Mountain Biological Consultants 2003) and 2015 (Dougherty, pers. comm.), which, along with the subject property, are mapped in Figure 3. These and other materials used in the completion of this report are listed in Section 5.0, below.

2.2. Field Survey.

2.2.1. *Survey and Habitat Assessment Protocols.* For **Agassiz's desert tortoise,** CMBC generally followed the survey protocol first identified by the USFWS (1992) and revised in 2010 (USFWS 2010) for their detection. USFWS (2010) protocol recommends that transects be surveyed at 30-foot (10-meter) intervals throughout all portions of a given parcel. If neither tortoises nor sign are encountered during *action area* surveys and the project, or any portion of project, is ≤ 0.8 km^2 (200 acres) or linear, three additional 30-foot (9 meters) belt transects at 655-foot (200 meters), 1,310-foot (400 meters), and 1,970-foot (600 meters) intervals parallel to and/or encircling the project perimeter should be surveyed.

The *action area* is defined by regulation as all areas to be affected directly or indirectly and not merely the immediate area involved in the action (50 CFR §402.02). For this site, the action area is considered the project area itself, since adjacent areas to the west and south are developed and it is separated from undeveloped lands to the north and east by busy roadways.

Like the USFWS 1992 and 2009 protocols that recommended seasonal restrictions for completing tortoise surveys, the USFWS 2010 protocol recommends that tortoise surveys should occur in the April-to-May and September-to-October time frames, with a few exceptions. Importantly, the 2010 protocol revised the 2009 version to indicate that sites *less than 40 acres* may be surveyed for tortoises year-round. As such, since this site is only 1.72 acres, this survey conforms to the current protocol.

For **burrowing owl**, the CDFG (2012) survey protocol recommends transects be surveyed at 30-meter intervals throughout a given site, with five additional transects surveyed at 30-meter intervals out to 150 meters in adjacent areas in potential habitat (i.e., excluding areas substantially developed for commercial, residential, and/or industrial purposes). With its narrower transect intervals, the tortoise survey is sufficient to cover the site for burrowing owl. The focus of the survey is to find and inspect all burrows sufficiently large to be used by burrowing owls. Dougherty inspected and tallied a total of four such burrows on the subject property during the survey. Importantly, this methodology is considered a formal *habitat assessment* for presence of burrowing owls, which can be conducted any time of the year. Had burrowing owl sign been found, which it was not, it would have then been necessary to perform breeding burrowing owl surveys during the spring and summer as outlined in CDFG (2012).

For **Mohave ground squirrel**, some jurisdictions have recently required that habitat assessments be performed by individuals certified by CDFW for trapping the species. Sharon Dougherty, who performed the fieldwork and drafted this assessment, is listed as an independent researcher for Mohave ground squirrel trapping under her partner Ed LaRue's Memorandum of Understanding with CDFW, dated 11 April 2012 as an attachment to scientific collecting permit (SC-001544). The primary assessment herein asks the following questions: (1) Is the site within the range of the species? (2) Is there native habitat with a relatively diverse shrub component? And, (3) is the site surrounded by development and therefore isolated from potentially occupied habitat?

2.2.2. *Field Survey Methods*. For a total of 3.75 hours, between 0615 and 1000 on 3 June 2016, Sharon Dougherty of CMBC surveyed the site and adjacent areas as described herein. This entailed a survey of nine transects, spaced at 30-foot intervals and oriented in a west-northwest, east-southeast direction throughout the 1.7-acre± parcel. As depicted in Figure 2, zone of influence transects were surveyed for detection of tortoise sign and burrowing owls at 30 and 60m to the south, and 30, 60, 90, 120, 150, 200, 400, and 600 m to the east, and north. No surveys were completed further to the south or to the west due to the presence of existing development. A copy of CMBC's data sheet completed in the field is included in this report (see Appendix C).

As transects were surveyed, Dougherty kept tallies of observable human disturbances encountered on each of the on-site transects. The results of this method provide *encounter rates* for observable human disturbances. For example, two roads observed on each of 10 transects would yield a tally of 20 roads (i.e., two roads encountered 10 times). Habitat quality, adjacent land uses, and this disturbance information are discussed below in Section 3.2 relative to the potential occurrence of Agassiz's desert tortoise and other special status species on and adjacent to the subject property.

Weather conditions at the beginning of the survey included a temperature [measured approximately 2.5 inches (5 centimeters) above the ground] of 68°F (20°C), with clear skies, and average winds of 5 miles per hour and gusts up to 6 miles per hour out of the east, as measured by a hand-held Kestrel® weather and wind speed meter. Weather conditions at the end of the survey included a temperature of 95°F (35°C), with 5% cloud cover, and average winds of 2 miles per hour and gusts up to 4 miles per hour out of the southwest.

All plant and animal species identified during the survey were recorded in field notes and are listed in Appendices A and B, respectively. A Garmin® hand-held, global positioning system (GPS) unit was used to survey straight transects and record Universal Transverse Mercador (UTM) coordinates (North American Datum – NAD 83) for property boundaries, rare species locations, and other pertinent information (Appendix C). A digital camera was used to take representative photographs (Appendix D). ©2016Google™ Earth was accessed via the internet to provide recent aerial photographs of the subject property and surrounding areas (Figure 4).

3.0. Results

3.1. Common Biological Resources. The common plant and animal species identified during the survey are influenced by multiple factors such as elevation, topography, soil substrates, and adjacent land uses. Based on DeLorme Topo USA® 10.0 software, elevations on the subject property range from approximately 787 meters (2,482 feet) at the southeastern corner down to 752 meters (2,466 feet) at the northwestern corner. Terrain is relatively flat. Soils are sandy loam on the subject property, although areas to the north and east have gravelly soils with large cobbles in some areas, and steep hills are located east of the site opposite National Trails Highway. No USGS-designated blue line streams occur onsite.

3.1.1. *Common Flora.* The 29 plant species identified during the survey are listed in Appendix A. Only three perennials, cheesebush *(Ambrosia salsola)*, creosote bush *(Larrea tridentata)*, and allscale *(Atriplex polycarpa)*, were found on the site. Other common shrub species found in the vicinity include burrobush *(Ambrosia dumosa)*, peach thorn *(Lycium cooperi)*, Anderson's boxthorn *(L. andersonii)*, and Nevada joint-fir *(Ephedra nevadensis)*. Annual plants found on the site were limited to invasive exotic species such as Mediterranean split-grass *(Schismus* sp.*)*, Russian thistle *(Salsola tragus)*, Saharan mustard *(Brassica tournefortii)*, London rocket *(Sisymbrium irio)*, and puncture vine *(Tribulus terrestris)*. Native annuals (mostly dried due to the season) detected in adjacent areas included rattlesnake weed *(Euphorbia albomarginata)*, desert dandelion *(Malacothrix glabrata)*, and suncup *(Camissonia pallida)*, among others.

3.1.2. *Common Fauna.* The 4 reptile, 5 bird, and 4 mammal species identified during the survey are listed in Appendix B. Birds observed on the site and in adjacent areas include Brewer's blackbird *(Euphagus cyanocephalus)*, house finch *(Carpodacus mexicanus)*, house sparrow *(Passer domesticus)*, common raven *(Corvus corax)*, and horned lark *(Eremophila alpestris)*. All of these species with the exception of horned lark, are often associated with developed areas. Mammals found on the site include California ground squirrel *(Otospermophilus beecheyi)* and black-tailed hare *(Lepus californica)*. Coyote *(Canis latrans)* and bobcat *(Lynx rufus)* were detected in adjacent areas. Common side-blotched lizard *(Uta stansburiana)* and western whiptail *(Cnemidophorus tigris)* occurred on the site, and Agassiz's desert tortoise *(Gopherus agassizii)*, desert horned lizard *(Phrynosoma platyrhinos)*, and sidewinder *(Crotalus cerastes)* were detected in adjacent areas. Other locally common reptile species that may occur include zebra-tailed lizard *(Callisaurus draconoides)*, long-nosed leopard lizard *(Gambelia wislizenii)*, desert night lizard *(Xantusia vigilis)*, red racer *(Masticophis flagellum)*, glossy snake *(Arizona elegans)*, gopher snake *(Pituophis melanoleucus)*, long-nosed snake *(Rhinocheilus lecontei)*, and various rattlesnake species (*Crotalus* ssp.).

3.2. Uncommon Biological Resources.

3.2.1. *Agassiz's Desert Tortoise.* A significant paper was published in June 2011 (Murphy et al. 2011) whereby the "desert tortoise" of the Mojave Desert was split into two species, including *G. agassizii*, referred to as "Agassiz's desert tortoise," and a newly described species, *G. morafkai*, referred to as "Morafka's desert tortoise," which occurs in the Sonoran Desert. According to Murphy et al. (2011), "...this action reduces the distribution of *G. agassizii* to only 30% of its former range. This reduction has important

implications for the conservation and protection of *G. agassizii*, which may deserve a higher level of protection." Agassiz's desert tortoise is the threatened species that occurs in the region surrounding the subject property.

When tortoise sign is found, the County (2006) requires that the following information be included in technical reports: (a) the number of individuals observed onsite and off-site during this survey; (b) an estimate of the total population present both on and off-site; and (c) exact locations of tortoise sign on a habitat map.

No animals were observed on the site or in adjacent areas during the survey. A population estimate could not be made since no individual live tortoises were observed. Positive evidence of tortoise found during this survey included a scat found approximately 400 m to the east of the site. (See Figure 2.) Evidence of tortoise has also been observed approximately 200m north of the site by a local biologist (Tom Egan, pers. comm. 3 June 2016). No evidence of the species was found on the subject property. Given the presence of desert tortoise in the surrounding area, it is possible that an animal could move through the site on an occasional basis, but given the poor quality of habitat on the site, it is unlikely that a tortoise would become resident on the site.

Encounter rates for observable human disturbances included (in descending order of prevalence) off-highway vehicle tracks (18 encounters), a well-established dirt track adjacent to the highway (9 encounters), and dumping (5 encounters). An old well and a small shed are present as well. (See Exhibits 5 and 6).

As depicted in Figure 3, CMBC personnel have surveyed or monitored two sites within approximately one mile of the subject property. In both cases, evidence of desert tortoise was found, confirming that the species is present in the Helendale area.

The County (2004) requires that habitat categories designated by the U.S. Bureau of Land Management (1989) be identified in all Agassiz's desert tortoise technical reports. Although habitat categories apply only to public lands administered by the BLM, regulatory agencies typically determine habitat compensation ratios based on the nearest BLM habitat categories (U.S. Bureau of Land Management 2005, 2006). With the formulation of the West Mojave Plan (U.S. Bureau of Land Management 2005) and its formal adoption through a Record of Decision (U.S. Bureau of Land Management 2006), all lands that are outside Desert Wildlife Management Areas, including the subject property, are characterized as Category 3 Habitat, which is the lowest priority management area for viable populations of the Agassiz's desert tortoise.

The site is not found within Agassiz's desert tortoise critical habitat, which was designated in 1994 (U.S. Fish and Wildlife Service 1994a) nor is it within a Desert Wildlife Management Area as recommended in the Desert Tortoise (Mojave Population) Recovery Plan (U.S. Fish and Wildlife Service 1994b) and formally adopted in March 2006 as a result of the West Mojave Plan Record of Decision (U.S. Bureau of Land Management 2006). The nearest such areas are the Fremont-Kramer Critical Habitat Unit and Desert Wildlife Management Area, which are located approximately two miles west of the site.

3.2.2. *Other Special Status Species*. U.S. Fish and Wildlife Service (2008), California Department of Fish and Wildlife (CDFW 2016a, 2016b, 2016c), and California Native Plant Society (CNPS 2016) maintain lists of animals and/or plants considered rare, threatened, or endangered, which are collectively referred to as "special status species." No special status species were identified on-site during the current survey. A review of the California Natural Diversity Data Base (CNDDB) for the Helendale quadrangle (CDFW 2016a) shows records for special status species in the vicinity.

Beaver Dam breadroot *(Pediomelum castoreum)*, a BLM sensitive and CNPS List 1B.2 species has been observed 1.4 miles northwest in 1998 (CDFW 2016a). This species is absent from the subject property.

Mohave monkeyflower *(Mimulus mohavensis)*, a BLM sensitive and CNPS List 1B.2 species has been reported in the CNDDB 19 times from the Helendale quadrangle. The closest records are 1.1 miles east-southeast, 1.2 mile east, 1.4 miles east, and 1.4 miles east, all in 1992 (CDFW 2016a). This species is absent from the subject property.

Mojave fish hook cactus *(Sclerocactus polyancistrus)*, a CNPS List 4.2 species was detected during CMBC's surveys approximately 600m to the northeast of the subject property (see Figure 2), but did not occur on site.

Each of the bird species discussed below is considered a Bird of Conservation Concern by the USFWS (2008) and/or a Bird Species of Special Concern by the CDFW (2016a).

Least Bell's vireo (*Vireo bellii pusillus*) a federal and California endangered species has been reported four times in the CNDDB on the Helendale quadrangle (CDFW 2016a). No suitable habitat is present on the subject property for this species, and it is considered absent from the site.

Prairie falcon *(Falco mexicanus)*, considered a Bird of Conservation Concern by the USFWS (2008) and a Bird Species of Special Concern by the CDFW (2016a) was reported from the Helendale quadrangle in 1990 (CDFW 2016a). No suitable nesting habitat is present on the subject property for this species, although it may occasionally forage in the vicinity of the subject property. No impacts are anticipated for this species.

The **silver-haired bat** *(Lasionycterus noctivagans)*, considered sensitive in the CNDDB, has been reported once from the lakes in the community of Silver Lake about 1 mile to the west in 1995 (CDFW 2016a). Silver-haired bats are closely tied to water, and roost under bark in trees or rarely under rocks. No suitable habitat is present and this species is considered absent from the subject property.

No evidence of **burrowing owl** was found on the subject property or in adjacent areas.

Mohave ground squirrel is designated as a Threatened species by the California Fish and Game Commission and is not federally listed. In spite of two petitions, one in 1993 and another in 2005, to list the Mohave ground squirrel as a federally Endangered species, the USFWS ruled in both instances that listing was not warranted at those times. CDFW has considered three criteria in assessing potential impacts to the Mohave ground squirrel

(Adrienne Disbrow, personal communication to CMBC in 2004): (1) Is the site within the range of the species? (2) Is there native habitat with a relatively diverse shrub component? (3) Is the site surrounded by development and therefore isolated from potentially occupied habitats?

First, Figure 5 shows known locations of Mohave ground squirrels relative to the subject property (CDFW 2016a) and the suspected range of the species (Gustafson 1993; U.S. Bureau of Land Management 2005). The nearest reported occurrence was approximately 2.4 miles north where a squirrel was found in 1977. Other proximate occurrences have been 7.7 miles south-southwest (1987), and 8.8 miles west (1991). The Mojave River, located about ½ mile west of the subject property is considered roughly the eastern boundary of the species range (U.S. Bureau of Land Management 2005). The site is considered at the edge of the species range.

Second, the Mohave ground squirrel has been reported between 1,800 feet (549 meters) and 5,600 feet (1,707 meters) elevation from a wide range of habitats including creosote bush scrub, Joshua tree woodland, juniper woodland, and Mohave mixed woody scrub (U.S. Bureau of Land Management 2005). At about 2,470 feet (753 meters) elevation, the site is well within the known elevational range of the species. There is a relatively low level of diversity of native perennial plants, with about eight shrub species identified in the vicinity and only three on the subject property.

In the northern part of the range, winter fat and spiny hop-sage are ecologically important shrubs for Mohave ground squirrel (U.S. Bureau of Land Management 2005). Neither species was detected during the survey. In any case, the presence of these plants does NOT imply that the Mohave ground squirrel occurs. There are no data to suggest that these plants are important to the species in the south as they appear to be in the Coso Range, near the northern extent of the Mohave ground squirrel known range.

Finally, contiguous lands are developed to the west and south, although lands to the north and east are largely undeveloped.

Given the above information, CMBC concludes that the Mohave ground squirrel has a low likelihood of occurrence on the subject property, but cannot be considered absent with certainty.

3.3. Other Protected Biological Resources. Stream courses provide relatively important resources to animals and plants. No blue line streams or washes are present on the subject property.

At the County level, the San Bernardino County Development Code was revised and adopted on 12 April 2007. Chapter 88.01 Plant Protection and Management, Section 88.01.020 states, "The provisions of this Chapter apply to the removal and relocation of regulated trees or plants and to any encroachment (for example, grading) within the protected zone of a regulated tree or plant on all private land within the unincorporated areas of the County and on public lands owned by the County, unless otherwise specified..."

Section 88.01.060 Desert Native Plant Protection states, "This Section provides regulations for the removal or harvesting of specified desert native plants in order to preserve and protect the plants and to provide for the conservation and wise use of desert resources…"

Section 88.01.060(c) Regulated Desert Native Plants states, "The following desert native plants or any part of them, except the fruit, shall not be removed except under a Tree or Plant Removal Permit in compliance within Section 88.01.050 (Tree or Plant Removal Permits):

(1) The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:
(A) *Dalea spinosa* (smoke tree).
(B) All species of the genus *Prosopis* (mesquites).
(2) All species of the family *Agavaceae* (century plants, nolinas, yuccas).
(3) Creosote Rings, 10 feet or greater in diameter.
(4) All Joshua trees.
(5) Any part of the following species, whether living or dead:
(A) *Olneya tesota* (desert ironwood).
(B) All species of the genus *Prosopis* (mesquites).
(C) All species of the genus *Cercidium* (palo verdes)."

At the State level, the 1998 Food and Agricultural Code, Division 23: California Desert Native Plants, Chapter 3: Regulated Native Plants, Section 80073 states: The following native plants, or any parts thereof, may not be harvested except under a permit issued by the commissioner or the sheriff of the county in which the native plants are growing:

(a) All species of the family Agavaceae (century plants, nolinas, yuccas).
(b) All species of the family Cactaceae (cacti), except for the plants listed in subdivisions (b) and (c) of Section 80072 (i.e., saguaro and barrel cacti), which may be harvested under a permit obtained pursuant to that section.
(c) All species of the family Fouquieriaceae (ocotillo, candlewood).
(d) All species of the genus *Prosopis* (mesquites).
(e) All species of the genus *Cercidium* (palo verdes).
(f) *Senegalia (Acacia) greggii* (catclaw acacia).
(g) *Atriplex hymenelytra* (desert holly).
(h) *Dalea (Psorothamnus) spinosa* (smoke tree).
(i) *Olneya tesota* (desert ironwood), including both dead and live desert ironwood.

None of the plant species included in one or both of the above lists that were observed on the subject property, although three species of cactus (pencil cholla *(Cylindropuntia ramosissima)*, beavertail cactus *(Opuntia basilaris)*, and Mojave fish hook cactus *(Sclerocactus polyancistrus)*), and Mojave yucca *(Yucca schidigera)* were detected in adjacent areas.

4.0. Conclusions and Recommendations

4.1. Impacts to Agassiz's Desert Tortoise and Proposed Mitigation. Based on the absence of tortoise sign on-site and presence of a tortoise scat about 400m east of the site, and other known occurrences in the general area, CMBC concludes that Agassiz's desert tortoise do not occur on the site, but have potential to occasionally pass through the subject property. Since no tortoises were seen during surveys, USFWS' (2010) formula could not be applied to determine an estimated number of tortoises within the action area, as identified in Section 2.2 of this report. There is some risk of harm to individual animals during construction, although the site is not considered occupied habitat. This impact is considered avoidable, as described below.

The County (2006) requires that specific mitigation measures, such as project redesign to avoid or reduce impacts that could be included in County approval of the project, be identified. CMBC considers that impacts to tortoises can be avoided if the site is fenced with tortoise fencing and clearance surveys for desert tortoise are completed prior to brushing the site, and if the fence is maintained during construction. It is prudent to contact USFWS to review this report to agree or disagree with this conclusion.

According to USFWS (2010) pre-project survey protocol the results of this survey will remain valid for the period of one year, or until 3 June 2017, after which time, if the site has not been developed in the interim, another survey may be required to confirm the absence of tortoises on-site.

Regardless of survey results and conclusions given herein, tortoises are protected by applicable State and federal laws, including the California Endangered Species Act and Federal Endangered Species Act, respectively. As such, if a tortoise is found on site at the time of construction, all activities likely to affect that animal(s) should cease and the County contacted to determine appropriate steps.

Importantly, nothing given in this report, including recommended mitigation measures, is intended to authorize the incidental take of tortoises during site development. Such authorization must come from the appropriate regulatory agencies, including CDFW (i.e., authorization under section 2081 of the Fish and Game Code) and USFWS [i.e., authorization under section 10(a)(1)(B) of the Federal Endangered Species Act].

Finally, it has been CMBC's since 1994 to NOT submit technical reports to either the USFWS or the CDFW unless asked to do so by the Proponent. However, the Proponent is advised of the following three conditions identified in January 2010 in the USFWS' revised pre-project survey protocol and assumes responsibility for implementing (or not) these recommendations:

- Occurrence of either live tortoises or tortoise sign (burrows, scats, and carcasses) in the action area indicated tortoise presence and therefore requires formal consultation with USFWS.

• If neither tortoises nor tortoise sign are encountered during the action area surveys, as well as project perimeter surveys where appropriate, please contact your local USFWS office. Informal consultation with the USFWS may be required even though no tortoises or sign are found during surveys.

• Please submit a copy of the original data sheets with results of the survey to the local USFWS office within 30 days of survey completion.

4.2. Impacts to Other Biological Resources and Proposed Mitigation.

4.2.1 *Other Special Status Species*. Based on the field survey and habitat assessment, CMBC concludes that none of the following special status species reported from the region will be adversely affected by site development: Beaver Dam breadroot, Mohave monkeyflower, Mojave fish hook cactus, prairie falcon, least Bell's vireo, silver-haired bat, and Mohave River vole. As such, no adverse impacts have been identified and no mitigation measures are recommended.

Given the location of the site, the appropriate CDFW contact is Heather Weiche (Heather.Weiche@wildlife.ca.gov). She would advise the Proponent of appropriate steps to either avoid impacts or mitigate them according to latest CDFW standards.

Although a focused Mohave ground squirrel trapping survey was not performed, CMBC assessed habitats and reviewed available information to provide a professional opinion as to the presence or absence of this species on the subject property. Given the information discussed herein, CMBC concludes there is a low likelihood that Mohave ground squirrel occurs on the subject property. Although it is CMBC's professional opinion that Mohave ground squirrel is likely absent from the site, it is prudent to have Heather Weiche review this report to determine whether trapping or mitigation for the species is appropriate.

4.2.2. *Other Protected Biological Resources.*

4.2.2.a. Washes. No washes or blue line streams are present on the subject property.

4.2.2.b. Protected Plants. No protected plants are present on the subject property although several protected species were detected in adjacent areas.

4.2.2.c. Bird Nests. Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests, including raptors and other migratory nongame birds (As listed under the Migratory Bird Treaty Act). Typically, CDFW requires that vegetation not be removed from a project site between March 15 and September 15 to avoid impacts to nesting birds.
If it is necessary to commence project construction between March 15 and September 15, a qualified biologist should survey all shrubs and structures within the project site for nesting birds, prior to project activities (including construction and/or site preparation).

Surveys should be conducted at the appropriate time of day during the breeding season, and surveys would end no more than three days prior to clearing. CDFW is typically notified in writing prior to the start of the surveys. Documentation of surveys and findings should be submitted to the CDFW within ten days of the last survey. If no nesting birds were observed project activities may begin. If an active bird nest is located, the plant in which it occurs should be left in place until the birds leave the nest. No construction is allowed near active bird nests of threatened or endangered species.

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Appendix A. Plant Species Detected

The following plant species were identified on-site or in adjacent areas (i.e., signified by "+") during the general biological inventory described in this report. Those plant species that are protected by pertinent State ordinances are highlighted in red and signified by "(SC)" following the common name.

GNETAE	GNETAE
Ephedraceae	**Joint-fir family**
+*Ephedra nevadensis*	Nevada joint-fir
ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Asteraceae	**Sunflower family**
+*Ambrosia dumosa*	Burrobush
Ambrosia salsola	Cheesebush
+*Coreopsis bigelovii*	Bigelow coreopsis
+*Malacothrix glabrata*	Desert dandelion
+*Stephanomeria pauciflora*	Desert milk aster
Brassicaceae	**Mustard family**
**Brassica tournefortii*	Saharan mustard
**Sisymbrium irio*	London rocket
Cactaceae	**Cactus family**
+*Cylindropuntia ramosissima*	Pencil cholla (SC)
+*Opuntia basilaris*	Beavertail cactus (SC)
+*Sclerocactus polyancistrus*	Mojave fish hook cactus (SC)
Chenopodiaceae	**Goosefoot family**
Atriplex polycarpa	Allscale
**Salsola tragus*	Russian thistle
Euphorbiaceae	**Spurge family**
+*Euphorbia albomarginata*	Rattlesnake weed
Geraneaceae	**Geranium family**
+**Erodium cicutarium*	Red-stemmed filaree
Onagraceae	**Evening-primrose family**
+*Camissonia pallida*	Suncup
Polygonaceae	**Buckwheat family**
+*Eriogonum davidsonii*	Davidson buckwheat
+*Eriogonum inflatum*	Desert trumpet

Solanaceae	**Nightshade family**
+*Lycium andersonii*	Anderson's box-thorn
+*Lycium cooperi*	Peach thorn
Zygophyllaceae	**Caltrop family**
Larrea tridentata	Creosote bush
**Tribulus terrestris*	Puncture vine
ANGIOSPERMAE: MONOCOTYLEDONES	MONOCOT FLOWERING PLANTS
Liliaceae	**Lily family**
+*Yucca schidigera*	Mojave yucca (SC)
Poaceae	**Grass family**
+*Achnatherum speciosum*	Desert needlegrass
**Schismus* sp.	Split-grass

* - indicates a non-native (introduced) species.
c.f. - compares favorably to a given species when the actual species is unknown.

Some species may not have been detected because of the seasonal nature of their occurrence. Common names are taken from Beauchamp (1986), Hickman (1993), Jaeger (1969), and Munz (1974).

Appendix B. Animal Species Detected

The following animal species were detected during the general biological inventory described in this report. Special status animal species are highlighted in red and signified by "(SC)" following the common names. Those only found in adjacent areas are signified by "+."

REPTILIA	REPTILES
Testudinidae	**Land tortoises**
+Gopherus agassizii	Agassiz's desert tortoise (SC)
Iguanidae	**Iguanids**
Uta stansburiana	Common side-blotched lizard
+Phrynosoma platyrhinos	Desert horned lizard
Teiidae	**Whiptails**
Cnemidophorus tigris	Western whiptail
Viperidae	**Vipers**
+Crotalus cerastes	Sidewinder
AVES	BIRDS
Alaudidae	**Larks**
Eremophila alpestris	Horned lark
Corvidae	**Crows and jays**
Corvus corax	Common raven
Emberizidae	**Sparrows, warblers, tanagers**
Euphagus cyanocephalus	Brewer's blackbird
Fringillidae	**Finches**
Carpodacus mexicanus	House finch
Passeridae	**Weavers**
Passer domesticus	House sparrow
MAMMALIA	MAMMALS
Leporidae	**Hares and rabbits**
Lepus californicus	Black-tailed hare
Sciuridae	**Squirrels**
Otospermophilus beecheyi	California ground squirrel

Canidae	**Foxes, wolves and coyotes**
+*Canis latrans*	Coyote
Felidae	**Cats**
+*Lynx rufus*	Bobcat

Nomenclature follows Stebbins, *A Field Guide to Western Reptiles and Amphibians* (2003), third edition; Sibley, National Audubon Society, the Sibley Guide to Birds (2000), first edition; and Ingles, Mammals of the Pacific States (1965), second edition.

Appendix C. Field Data Sheets Completed on 3 June 2016

The USFWS and County have recently required consultants to include copies of the data collected in the field from which the results and conclusions given in reports are derived. As such, following this page are copies of the data sheets completed by Sharon Dougherty on 3 June 2016.

2016 Field Season

Page __ of __

JOB #/NAME	DATE	DRIVE TIME TO	DRIVE TIME FROM	MILES	FIELD TIME BEGIN	FIELD TIME END	SURVEYORS
16-016 PAD Helendale	6-3-16	0530	1100	85	0615	1000	SD

WEATHER CONDITIONS (Start/End)	UTM (NAD 83) (circle starting corner) NE→	NW→	SE→	SW→
TEMP: 68°F WIND X: 5 ↑ 6 N S E W CLOUD: 0%				
TEMP: 95°F WIND X: 2 ↑ 4 N S E W CLOUD: 5%	0470093 / 3843367	0470024 / 3843397	0470064 / 3845381	0469958 / 3843325

PERENNIAL PLANTS				ANNUAL PLANTS				BIRDS		HERP	MAM
Amb sal				Sch sp				BRBL		SBLI	CAGS
Lar tri				Sal tra				HOFI		WEWH	BTJA
Atr pol				Tri ter				CORA		DEHL	COYO
Amb dum	Eri ...			Bro tro				HOSP		SIDE	Bobc
Lyc coo	Pho arc			Sc iri				HOLA			
Ste pau	Tet sto			Eup ...							
Cyl ech				Bra nig							
Eph nev				Chel ...							
Lyc and				Eri ...							
Opu bas				Cam pal							
Cyl ech				Cor big...							
Yuc sch											
Sti spe											
Sel pol	-0624, -3611										

Photographs

1 SE → NW
2 well? -0005, -3304
3 SW → NE
4 shed -0013, -3849
5 NE → SW
6 NW → SE

OBSERVABLE HUMAN DISTURBANCES

TR	East	North	OHV	Road	Dog	Dump	S Gun	Rifle	Target		
1	0064	3281	·	·							
2	-9998	-3379		·		· [illegible]				old fence	
3	-0059	-3296	·	·		·					
5	-0078	-3324		·		·					
6	·0014	·3367	⊔	·							
7	-0092	-3354	::	·		·					
8	-0071	-3397	·								
9	-0090	·3367	::	·							
30S	-9986	-3283	to -0059 -3261				150N	-0277, -3468 to -9973, -3340			
60S	-0046	-3232	to -9974 -3259				200N	-9938 -3572			
30E	-0015	-3255	to 0317 -3377				220E	-0835 .3497 to -0037 -2585			
30N	-0137	-3337					60N	-0216 -2918 to -0085 -3766			
60N	-0061	-3445					600N	short due to fenced properties -3863 -0083			
60E	·0171	-3407	to -0084 -3397				600E	0047 3643 to -0206, -2284			
90E	-0109	-3180									
90N	-0214	-3393	to -9974 -3487								
120N	-9987	-3512									
120E	-0203	-3427	to -0106, -3138								
150E	-0131	-3123									

DT Scat: NTY 16 -0489, -3290

Soils: sandy loam onsite
gravelly loam
cobbles in hills to east

Appendix D. Photographic Exhibits

Exhibit 1. APN 0467-101-12: View from the southeast corner of the parcel, facing northwest.

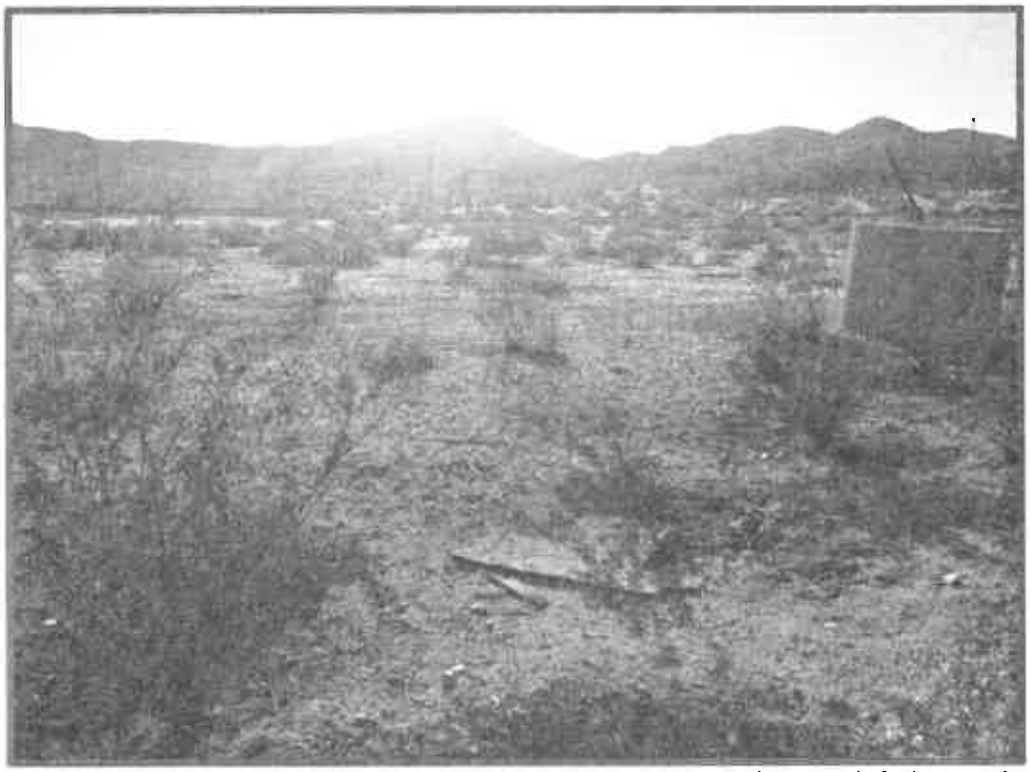

Exhibit 2. APN 0467-101-12: View from the southwest corner of the parcel, facing northeast.

Exhibit 3. APN 0467-101-12: View from the northeast corner of the parcel, facing southwest.

Exhibit 4. APN 0467-101-12: View from the northwest corner of the parcel, facing southeast.

Exhibit 5. Well on subject property.

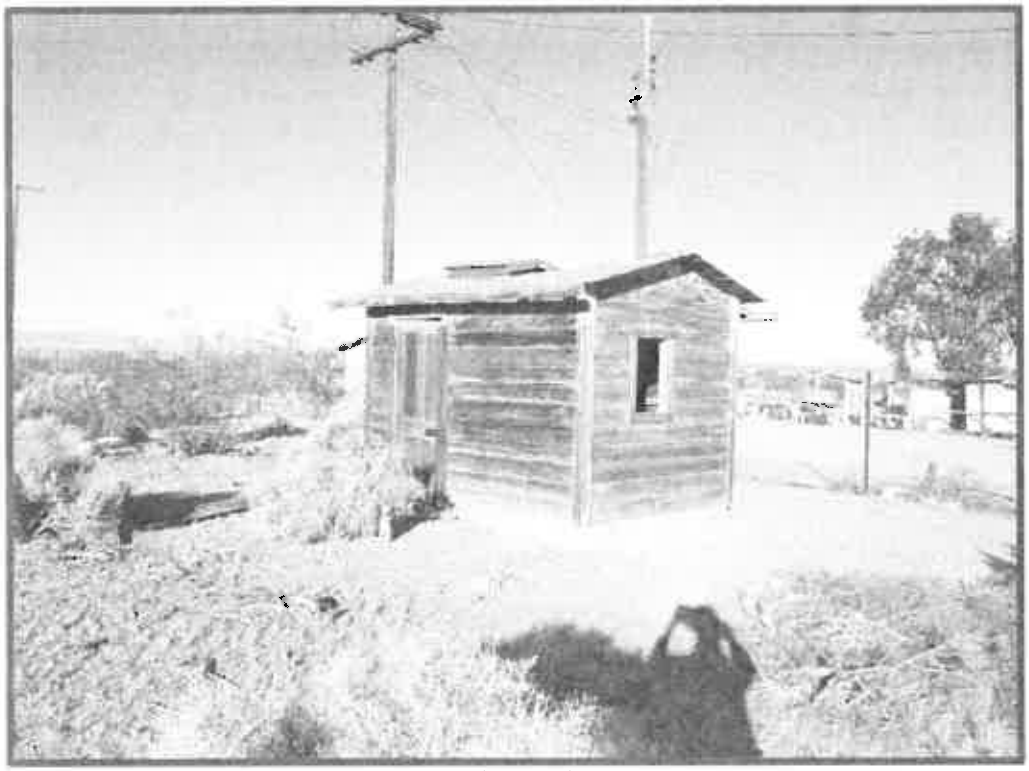

Exhibit 6. Shed on subject property.

Appendix E. Project Map and Site Plans

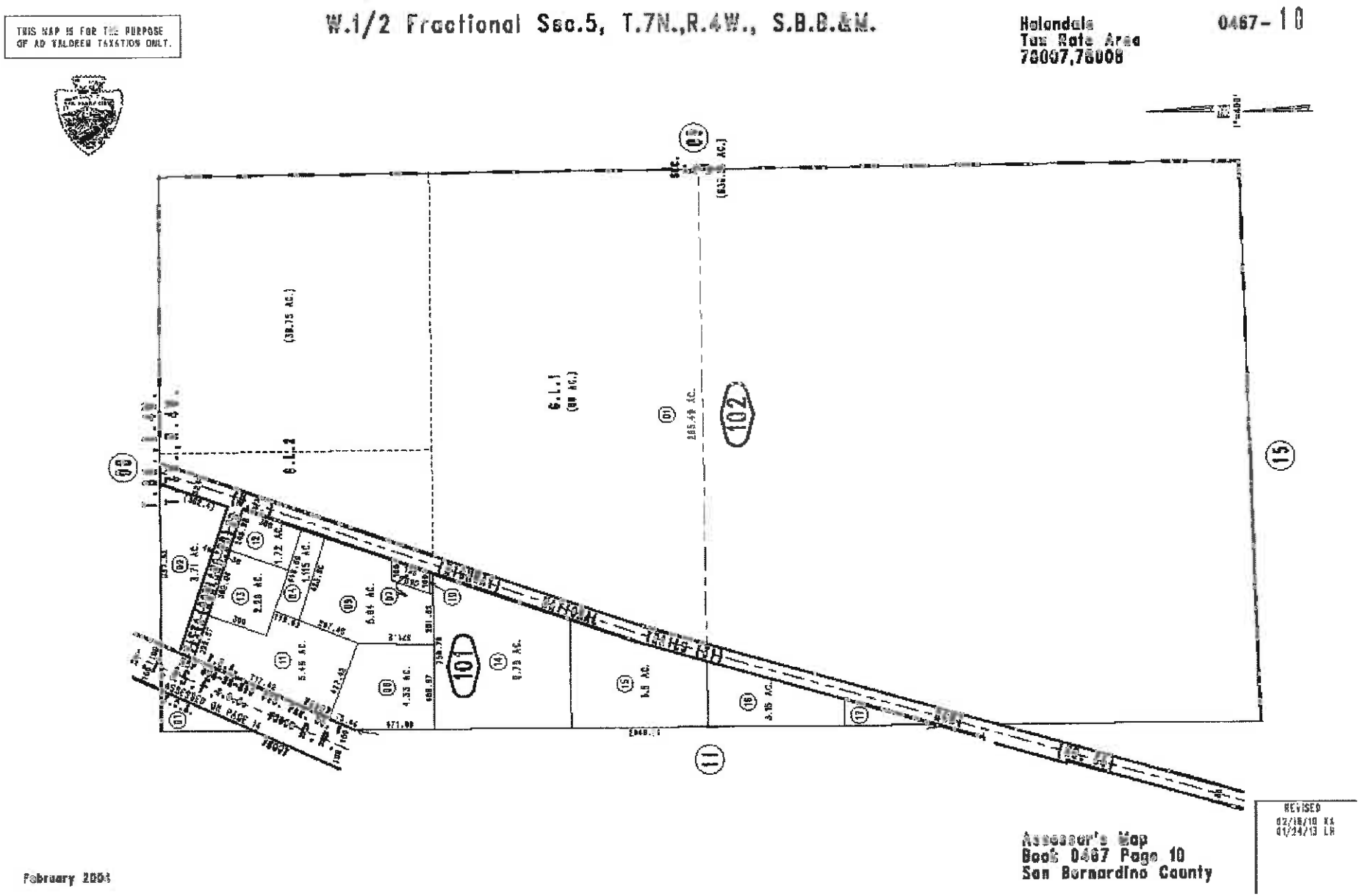

Figure E1. Project Map: APN 0467-101-12

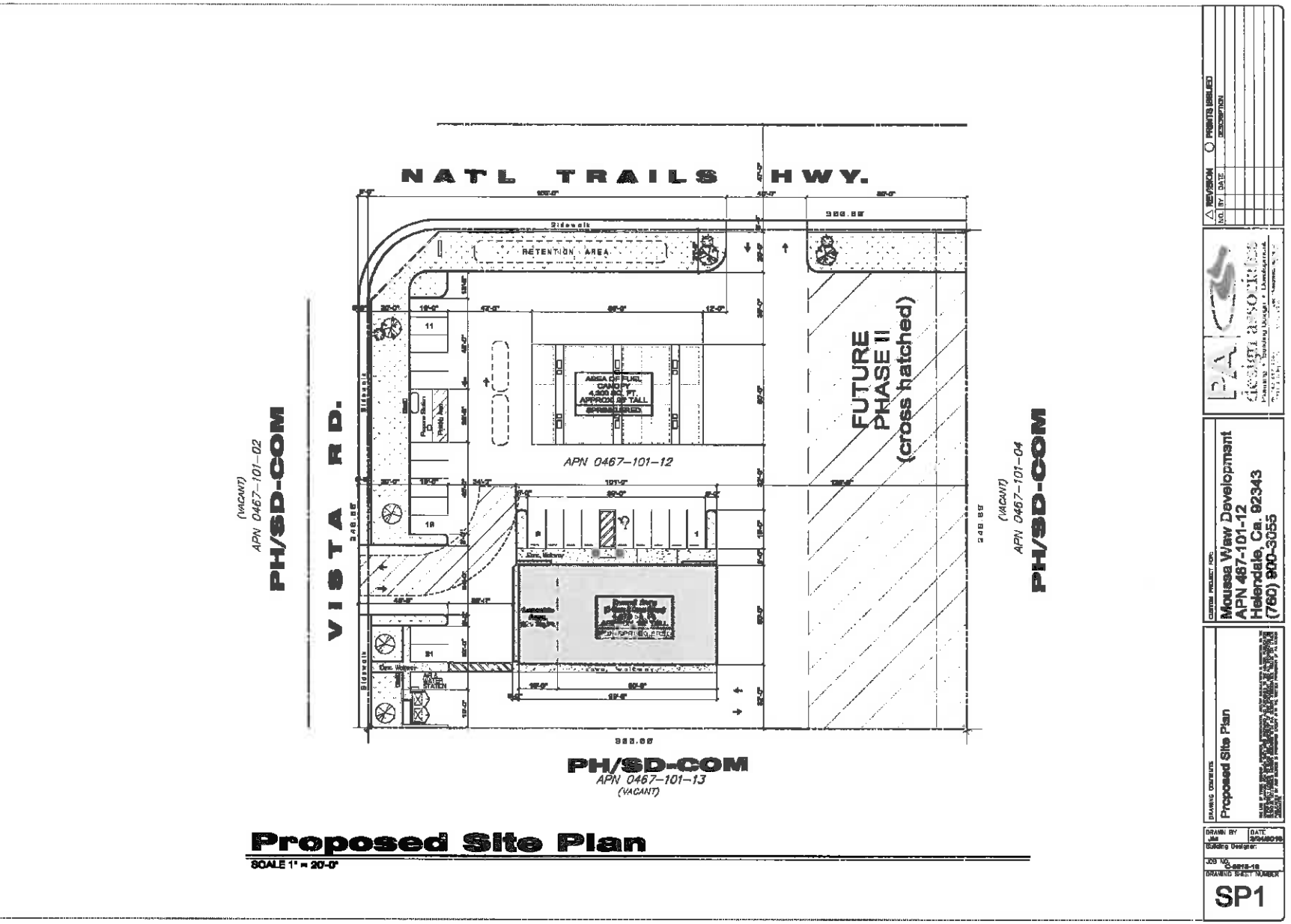

Figure E2. Site Plan Phase I

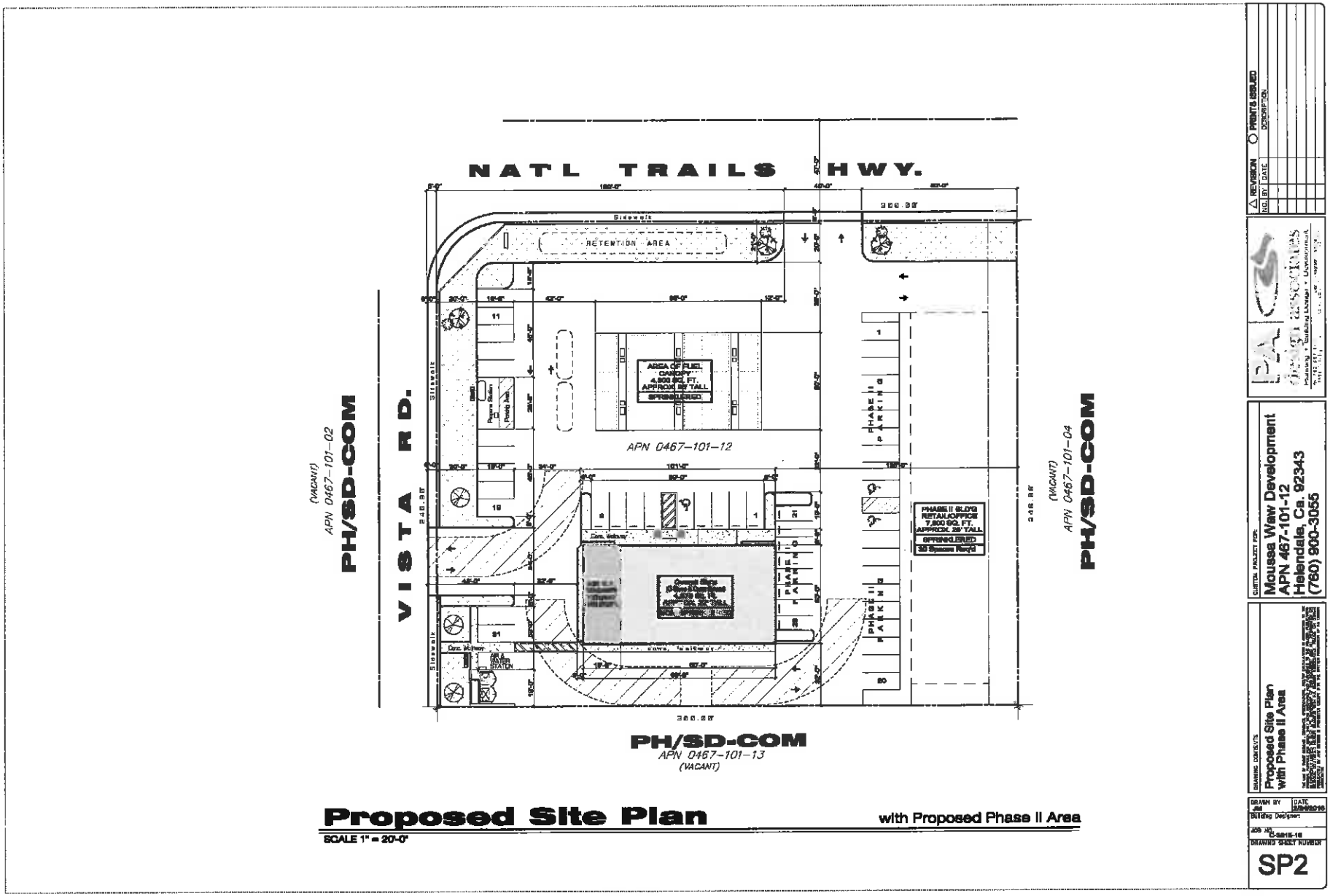

Figure E3. Site Plan Phase II (Future Development)