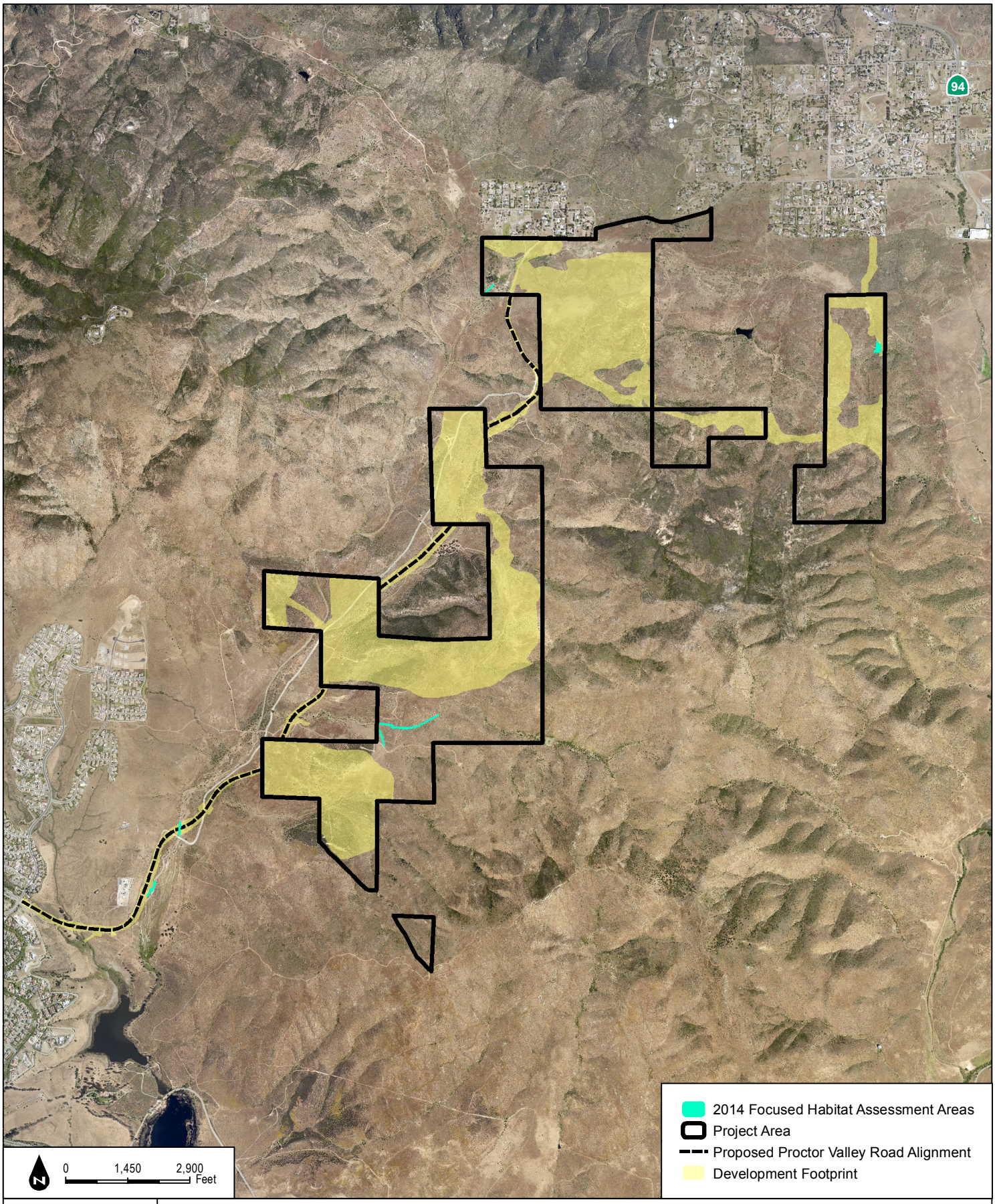


DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

FIGURE 3-4

Arroyo Toad Habitat Assessment

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK

3.3.7 Hermes Copper Butterfly Habitat Assessment and Focused Survey

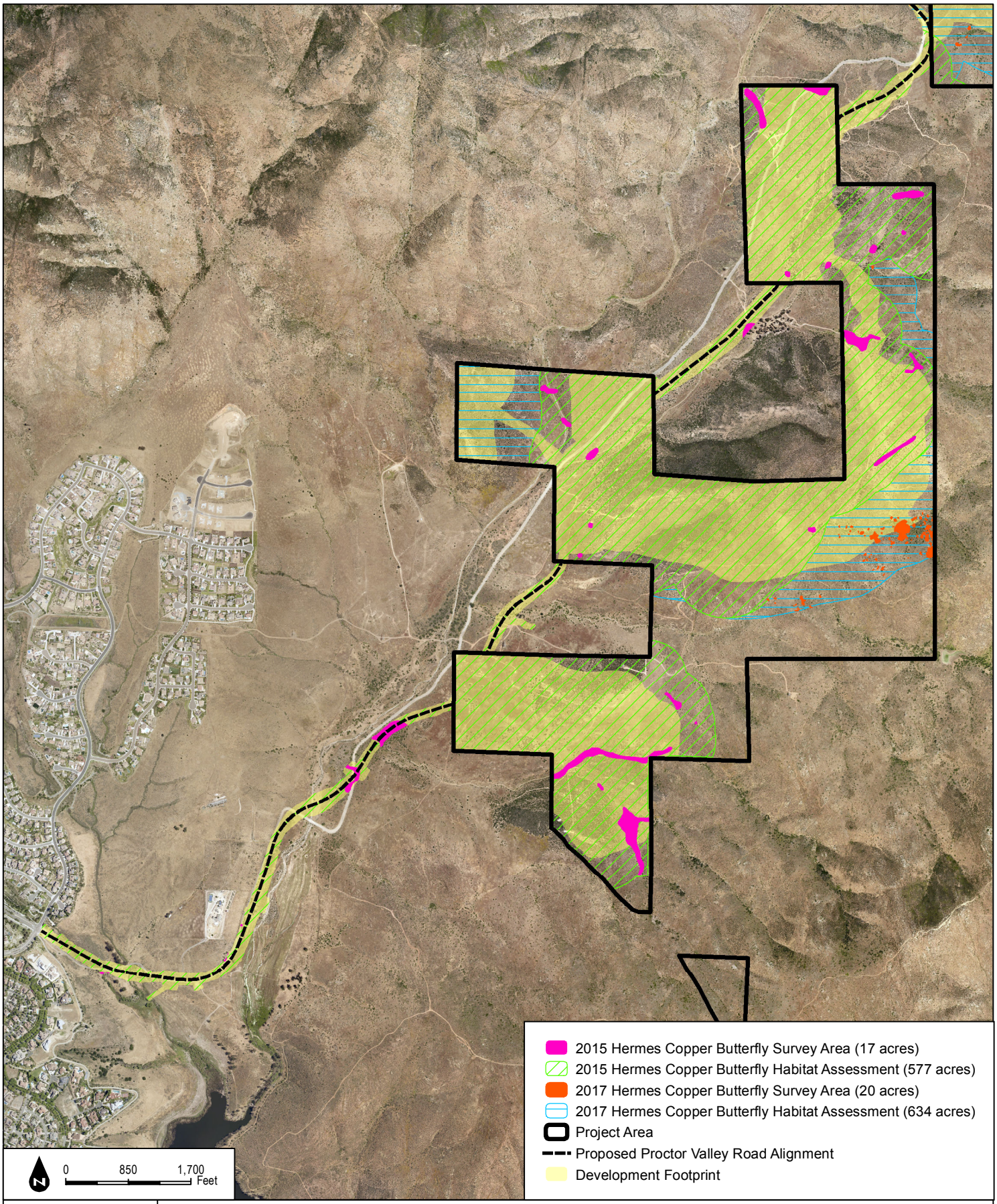
Hermes copper butterfly is not a Covered Species under the MSCP, but is a candidate for federal listing. In 2015 and 2017, Dudek mapped Hermes copper butterfly habitat in accordance with the County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*) (Attachment B of County of San Diego 2010b). The County guidelines state that habitat within 150 meters (492 feet) of a Hermes copper observation should be mapped as occupied habitat; therefore, a 500-foot buffer was created around the Village 14 Development Footprint associated with a project alternative and off-site improvement areas to create the 2015 Hermes copper butterfly study area. In 2017, biologists conducted additional habitat assessments and focused Hermes copper butterfly surveys within Planning Areas 16/19 and within those areas outside of the previously defined Development Footprint to ensure that the entire Project Area was surveyed. Within these study areas, redberry buckthorn (*Rhamnus crocea*) was mapped within 15 feet of Eastern Mojave buckwheat (*Eriogonum fasciculatum*) as potential habitat and was surveyed (Figure 3-5a, Hermes Copper Survey Area, and Figure 3-5b, Hermes Copper Survey Area – Planning Areas 16/19). Based on the 2015 habitat assessment, 17 acres of the Hermes copper butterfly study area was determined to contain potential habitat and was surveyed according to County of San Diego protocol survey guidelines. Four surveys from May to July 2015 were conducted per the County guidelines. Based on the 2017 habitat assessment, 20 acres of the Hermes copper butterfly study area was determined to contain potential habitat for the species and was surveyed according to County of San Diego protocol survey guidelines. Four survey passes were conducted from May to July 2017; no Hermes copper butterflies were observed during the 2015 or 2017 protocol surveys.

3.3.8 San Diego and Riverside Fairy Shrimp Surveys

San Diego and Riverside fairy shrimp are both federally listed as endangered species, and both are Covered Species under the MSCP. However, a 2006 lawsuit against the City of San Diego challenged the City of San Diego's MSCP Subarea Plan under FESA, claiming that the City of San Diego's MSCP Subarea Plan did not provide adequate protections for vernal pools or listed fairy shrimp (*Southwest Center for Biological Diversity v. Bartel*, 470 F.Supp.2d 1118, 1130-1133 (S.D. Cal. 2006)). Because the court in that case invalidated the City of San Diego's MSCP Subarea Plan coverage for fairy shrimp, and because the MSCP County Subarea Plan includes fairy shrimp coverage provisions similar to those in the City of San Diego's MSCP Subarea Plan, the County has taken the position that the MSCP County Subarea Plan does not provide FESA take coverage for San Diego or Riverside fairy shrimp. This report, however, was prepared to provide technical support for the County's CEQA analysis and does not address "take" issues per se, as those are covered under a different statute, namely the FESA.

An assessment and mapping of potential features (i.e., vernal pools, ephemeral basins, and road ruts) was conducted throughout the study area in April and June 2014. The study area used for conducting vernal pool branchiopods habitat assessment and surveys included areas outside of the Project Area that could be impacted by the Proposed Project. During these efforts, Dudek biologists reviewed the specific on-site microhabitats (e.g., flat topography, soil types, and slopes) ~~and~~ along with the potential vernal pool locations provided in the Proctor Valley Vernal Pool Restoration Plan (AECOM and Hogan 2012) and *A Report on the Flora of Otay Ranch Vernal Pools*, 1990-1991 (Dudek 1992). Following the onset of winter rainstorms in December 2014, Dudek biologists holding federal permits (i.e., 10(a)(1)(A) Recovery Permit) for fairy shrimp implemented a protocol-level wet-season survey in accordance with the USFWS survey protocol for listed fairy shrimp species (USFWS 1996). A total of 11 survey sampling visits were completed throughout the 2014/2015 wet season, which ceased when all features were observed dry again in June 2015. A total of 81 features were identified and sampled during the 2014/2015 wet-season survey, which were mapped with a GPS unit and the presence of fairy shrimp was recorded (Figures 3-6a through 3-6i, Fairy Shrimp Survey Area and Results). Of the identified features, only one—Feature B2 (located within lands owned by CDFW and outside of the Project Area)—would be considered a vernal pool. The remaining features are categorized as road ruts or ephemeral basins. The results of these surveys are discussed further in Section 4.6.1 of this report. The survey reports are provided in Appendix F, Fairy Shrimp Survey Reports.

Subsequent to the 2014/2015 wet season survey and the USFWS release of new survey guidelines for listed large branchiopods (adopted May 31, 2015), dry-season sampling was authorized by USFWS and was conducted according to the 2015 guidelines (USFWS 2015b). The soil sample collection was conducted by Dudek biologist Thomas Liddicoat (Permit No. TE139634) on October 22, 2015 (Table 3-1). Based on the feature location in the study area (i.e., in and outside of the Project Area) and the detection of fairy shrimp during the 2014/2015 wet-season survey, dry soil samples were collected from 40 of the 81 known features (Figures 3-6a through 3-6i). Samples were taken using a 6-inch-long hand trowel to excavate sample "chunks" of substrate from the upper 3 centimeters (1.2 inches) of soil. The hand trowel was cleaned between each feature prior to collection. Samples were collected at equal distances along two perpendicular transects (lengthwise and widthwise), incorporating the deepest region(s) of the feature and thoroughly sampling the feature surface area. If neither transect passed within the deepest region of the seasonal feature, another sample was taken to specifically include it. The amount of soil collected from each feature was proportional to the size of the feature and followed the direction provided in the USFWS guidelines. Features sampled were less than 24 square meters (260 square feet); therefore, no more than 11 samples (less than 100 milliliters (3.4 ounces) each), totaling 1 liter (34 ounces) composite samples per feature, were collected.



DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

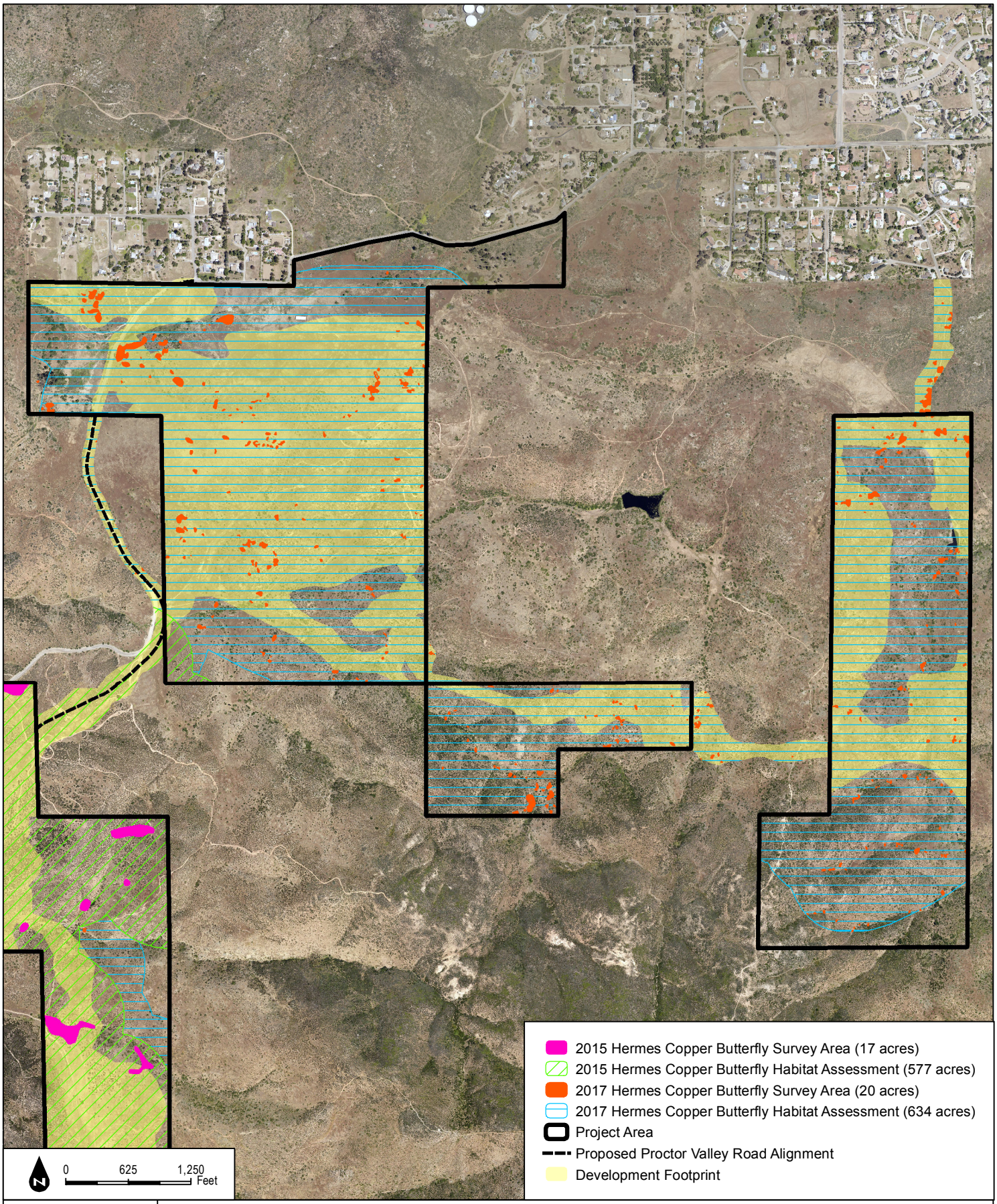
FIGURE 3-5a

Hermes Copper Survey Area

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK



DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

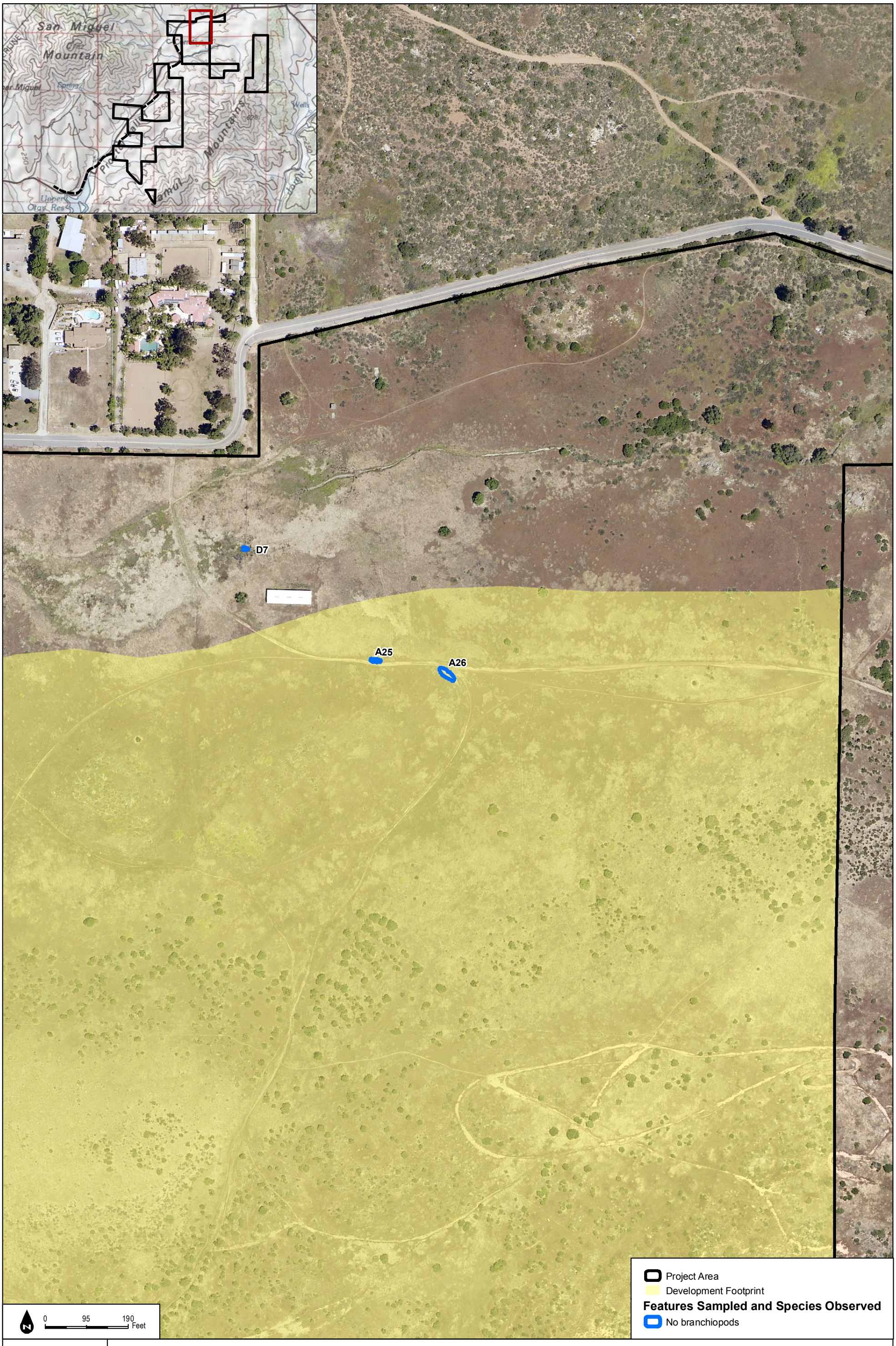
FIGURE 3-5b

Hermes Copper Survey Area - Planning Areas 16/19

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK



SOURCE: NAIP 2016; Hunsaker 2017

DUDEK

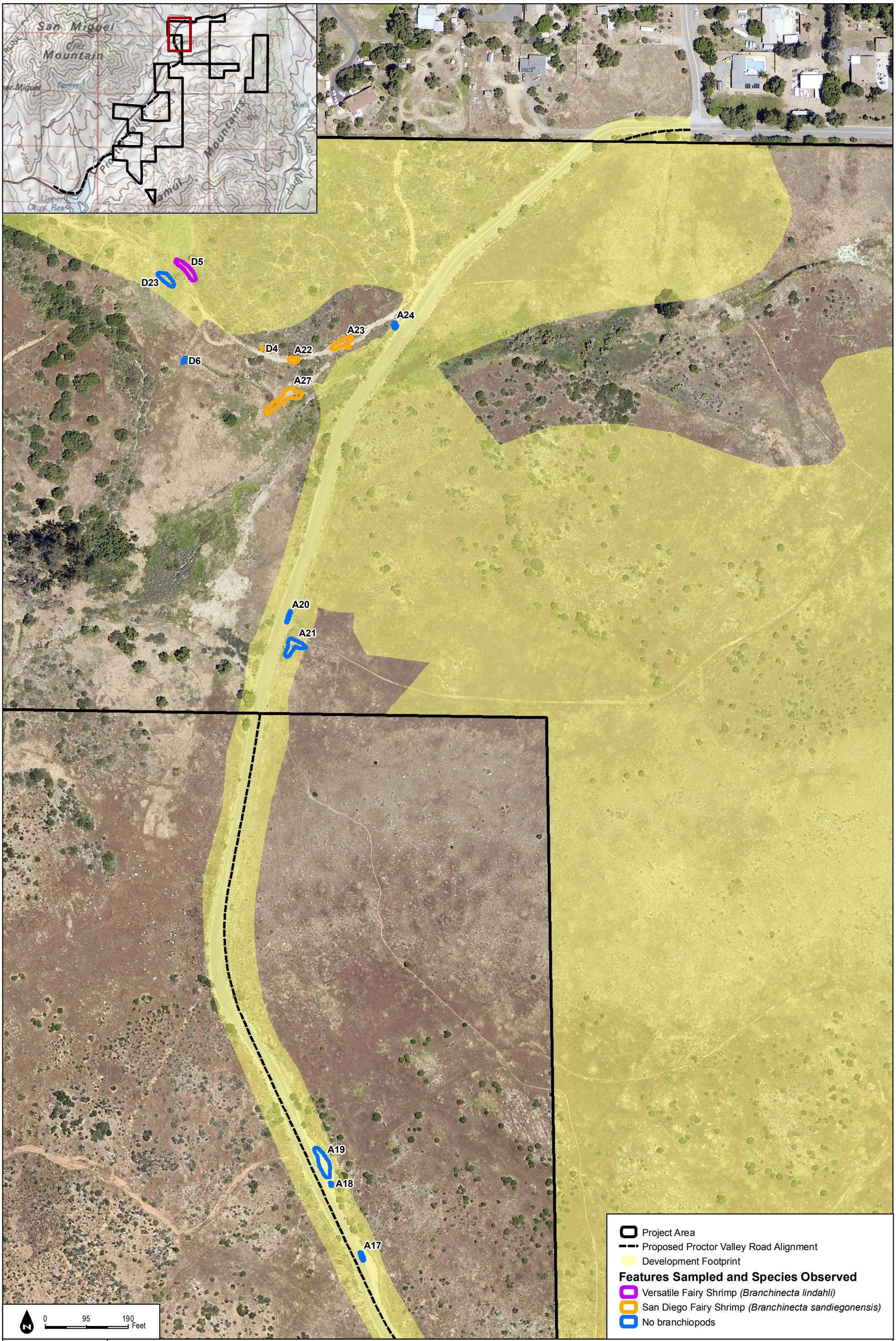
Figure 3-6a

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK



DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

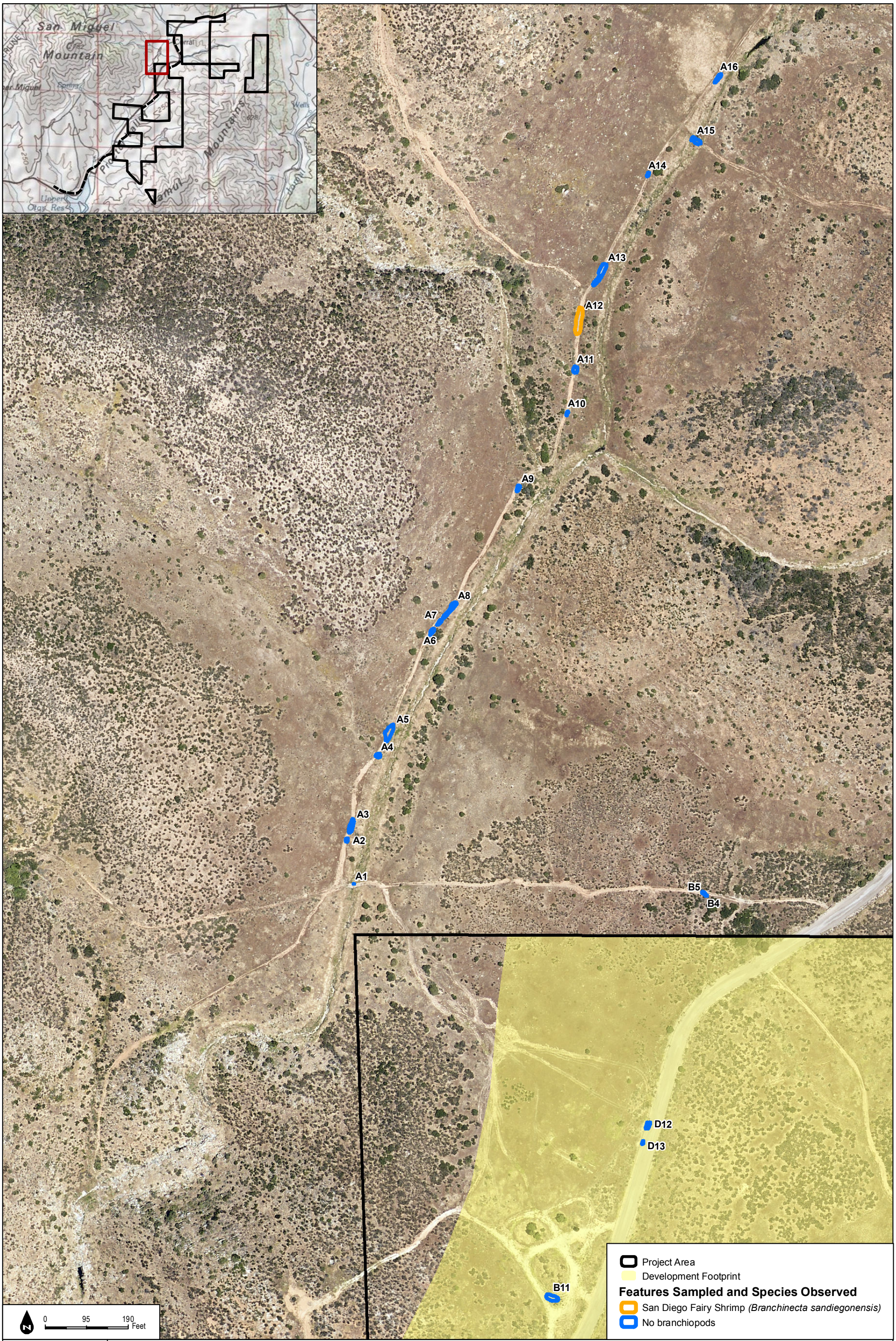
Figure 3-6b

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK



SOURCE: NAIP 2016; Hunsaker 2017

DUDEK

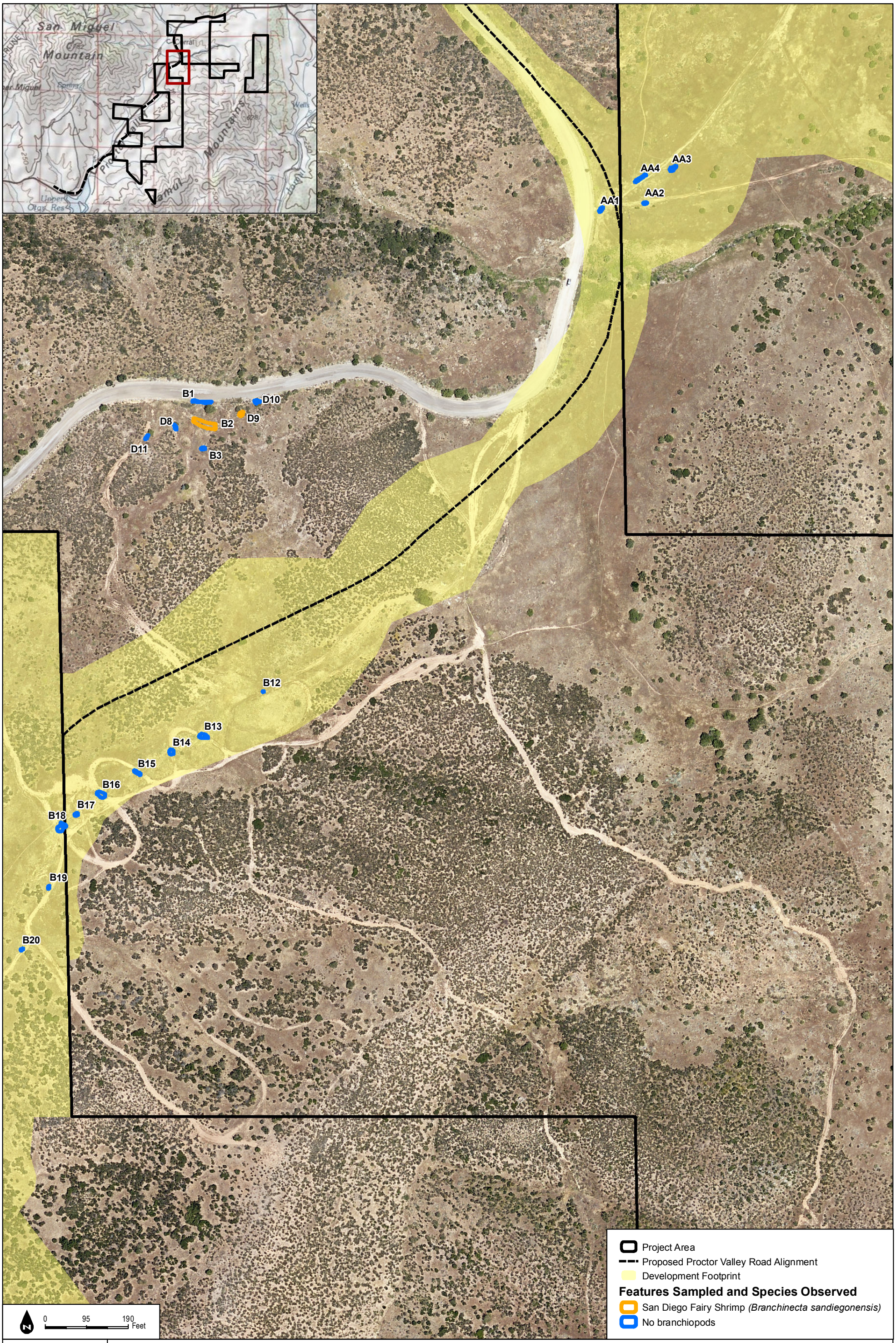
Figure 3-6c

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK



SOURCE: NAIP 2016; Hunsaker 2017

DUDEK

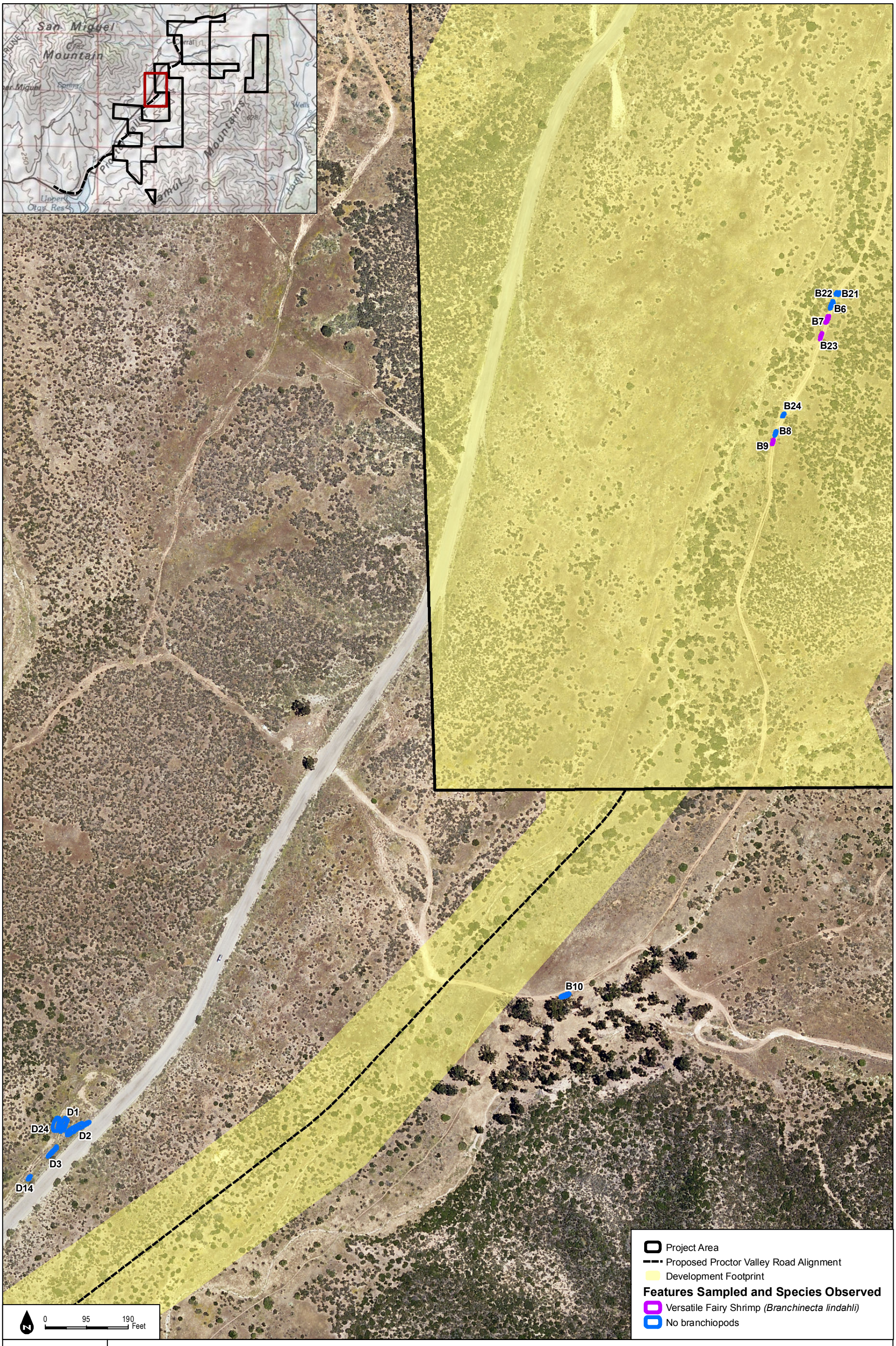
Figure 3-6d

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK



DUDEK

SOURCE: NAIP 2016; Hunsaker 2017

Figure 3-6e

Fairy Shrimp Survey Area and Results

Otay Ranch Village 14 and Planning Areas 16/19

NOTE: Survey areas may include additional acreage outside of the Project Area

INTENTIONALLY LEFT BLANK