KEMRON
ENVIRONMENTAL SERVICES

TRANSMITTAL MEMORANDUM

To:	Distribution	**Date:**	05/23/19
Subject:	2018 Annual Biological Monitoring Report, Former Fort Ord, California		
DCN:	SH4914-298		

Enclosed for your information is the *2018 Annual Biological Monitoring Report Former Fort Ord, California*, dated May 2019.

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2018 ANNUAL BIOLOGICAL MONITORING REPORT FORMER FORT ORD, CALIFORNIA

May 2019

WORLDWIDE ENVIRONMENTAL REMEDIATION SERVICES
CONTRACT NO. W912DY-10-D-0027

Submitted to:

U.S. Army Corps of Engineers
Sacramento District
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May 2019

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Table of Contents

List of Figures

List of Tables

List of Attachments

List of Acronyms and Abbreviations

AR	Administrative Record
Army	U.S. Department of the Army
BLL	Black Legless Lizard
BLM	Bureau of Land Management
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CDFW	California Department of Fish and Wildlife
CIPC	California Invasive Plant Council
CRLF	California Red-Legged Frog
CTS	California Tiger Salamander
DGM	Digital Geophysical Mapping
DD&A	Denise Duffy & Associates, Inc.
ESA	Endangered Species Act
HA	Historical Area
HCL	Habitat Checklist
HMP	Habitat Management Plan
KEMRON	KEMRON Environmental Services, Inc.
MEC	Munitions and Explosives of Concern
MRA	Munitions Response Area
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UXO	Unexploded Ordnance
WGBA	Watkins Gate Burn Area
WERS	Worldwide Environmental Remediation Services Contract

1.0 Introduction

This report was prepared by Denise Duffy & Associates (DD&A) as a subcontractor to KEMRON Environmental Services, Inc. (KEMRON) under the Worldwide Environmental Remediation Services (WERS) Contract No. W912DY-10-D-0027. This report contains results of the 2018 biological monitoring surveys which are required as part of the *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord* (HMP; U.S. Army Corps of Engineers [USACE], 1997). The U.S. Department of the Army's (Army's) decision to close and dispose of the Fort Ord military base was considered a major federal action that could affect listed species under the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service (USFWS) issued a *Biological Opinion for the Disposal and Reuse of Fort Ord, Monterey County, California (1-8-93-F-14)* (USFWS, 1993) on the disposal and reuse of former Fort Ord requiring that the HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP was prepared to assess impacts on vegetation and wildlife resources and provide mitigation for their loss associated with the disposal and reuse of the former Fort Ord (USACE, 1997).

1.1 Background

The HMP (USACE, 1997) establishes guidelines for the conservation and management of species and habitats on former Fort Ord lands by identifying lands that are available for development, lands that have some restrictions with development, and habitat reserve areas. The intent of the plan is to establish large, contiguous habitat conservation areas and corridors to compensate for future development in other areas of the former base. The HMP identifies what type of activities can occur on each parcel at former Fort Ord. The HMP sets the standards to assure the long-term viability of former Fort Ord's biological resources in the context of base reuse, so that no further mitigation should be necessary for impacts to species and habitats considered in the HMP. This plan has been approved by the USFWS and the California Department of Fish and Wildlife (CDFW); the HMP, deed restrictions, and Memoranda of Agreement between the Army and various land recipients provide the legal mechanism to assure HMP implementation. The HMP is a legally binding document, and all recipients of former Fort Ord lands are required to abide by its management requirements and procedures.

In addition to the HMP, multiple Biological Opinions have been issued by the USFWS over the years as a result of consultation with the Army. In 2015, the USFWS issued a Programmatic Biological Opinion that superseded the previous Biological Opinions (USFWS, 2015). Then, on June 7, 2017, the USFWS issued a reinitiated Programmatic Biological Opinion that supersedes the 2015 Programmatic Biological Opinion (USFWS, 2017). The Programmatic Biological

Opinion contains additional conservation measures and recommendations relating to environmental remediation at former Fort Ord cleanup sites.

Sensitive habitat types identified in the HMP (USACE, 1997) and the Programmatic Biological Opinion (USFWS, 2017) are:

- Central maritime chaparral (maritime chaparral)
- Wetlands and vernal ponds
- Other habitats where listed species are known or suspected to occur (including coastal scrub, coast live oak woodlands, and grasslands with a significant native component of grasses or forbs)

Special-status species listed in the HMP (USACE, 1997) and/or the Programmatic Biological Opinion (USFWS, 2017) are:

- Sand gilia (*Gilia tenuiflora* ssp. *arenaria*) – Federally Endangered, State Threatened
- Monterey spineflower (*Chorizanthe pungens* var. *pungens*) – Federally Threatened
- Robust spineflower (*C. robusta* var. *robusta*) – Federally Endangered
- Seaside bird's-beak (*Cordylanthus rigidus* ssp. *littoralis*) – State Endangered
- Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*)
- Sandmat manzanita (*A. pumila*)
- Monterey manzanita (*A. montereyensis*)
- Monterey ceanothus (*Ceanothus rigidus*)
- Eastwood's goldenbush (*Ericameria fasciculata*)
- Yadon's piperia (*Piperia yadonii*) – Federally Endangered
- Coast wallflower (*Erysimum ammophilum*)
- Contra Costa goldfields (*Lasthenia conjugens*) – Federally Endangered
- California black legless lizard (*Anniella pulchra nigra*; BLL) – State Species of Special Concern
- California tiger salamander (*Ambystoma californiense*; CTS) – Federally Threatened, State Threatened
- California red-legged frog (*Rana draytonii*; CRLF) – Federally Threatened, State Species of Special Concern
- California linderiella (*Linderiella occidentalis*)
- Western snowy plover (*Charadrius alexandrinus nivosus*) – Federally Threatened
- Monterey ornate shrew (*Sorex ornatus salarius*) – State Species of Special Concern

Sand gilia, Monterey spineflower, Seaside bird's-beak, and coast wallflower are annual herb species that may occur within maritime chaparral, coastal scrub, grasslands, dune scrub, or disturbed areas. Robust spineflower is an annual herb that also occurs within these habitat types; however, the only documented occurrence on former Fort Ord, within dune scrub habitat, has not

since been observed and may be erroneous. The Contra Costa goldfield is an annual herb associated with vernal ponds and is known to occur at four locations on former Fort Ord. Hooker's manzanita, sandmat manzanita, Monterey manzanita, Monterey ceanothus, and Eastwood's goldenbush are perennial shrub species that typically occur in maritime chaparral, but individuals can also be found mixed with oak woodland or coastal scrub habitats. Yadon's piperia is a perennial herb that is typically found in maritime chaparral and Monterey pine forest habitats.

The BLL is a rare variety of the California legless lizard (*A. pulchra*) that inhabits areas with sandy soils on the former Fort Ord. The Monterey ornate shrew is a rare variety of the ornate shrew (*S. ornatus*) found in riparian forest and oak woodland habitats. The western snowy plover is a rare avian species found along coastal strand areas. The CTS, CRLF, and California linderiella are typically found in vernal or seasonal ponds on the former Fort Ord. The CTS may also be found aestivating in small mammal burrows or under logs in upland areas within 2.2 kilometers of vernal ponds.

The HMP (USACE, 1997) and Programmatic Biological Opinion (USFWS, 2017) also outline avoidance and mitigation measures that are necessary if the Army's cleanup activities could significantly impact protected species or habitats. These cleanup activities include munitions remediation, soil remediation, groundwater remediation, and other related environmental cleanup operations within former Fort Ord lands designated as Habitat Reserve. To determine whether mitigation measures would be needed to restore populations of affected HMP-listed species or habitats, the HMP requires that a baseline biological survey be conducted prior to work operations within a proposed cleanup site to establish whether protected species are present and map the locations and quantify abundance, and to avoid and minimize impacts. The HMP also requires monitoring consistent with the Programmatic Biological Opinion during and after completion of the cleanup operations to study the recovery of rare species and habitat. Monitoring data are compared to a site's baseline data to determine if recovery or restoration of the protected habitat (maritime chaparral, wetlands, etc.) and associated species are proceeding toward baseline conditions. The results of monitoring of affected areas are presented in annual biological reports managed under several different contracts.

1.2 Report Content

This report includes the results of biological monitoring performed by KEMRON in 2018 and a description of the mitigations and avoidance measures, biological trainings, HMP species encounters, habitat and species protection measures required by the HMP (USACE, 1997) and the Programmatic Biological Opinion (USFWS, 2017), and other environmental protection measures implemented during project activities.

Work was conducted by KEMRON in 2018 at the following sites:

- **Soil remediation sites (Figure 1-1):**
  - Former Historical Areas (HAs) 26, 27A, 34, and 37; and
  - Impact Area Munitions Response Area (MRA) Units 25, 28, 31, and 33.
- **Munitions remediation sites (Figure 1-2):**
  - Impact Area MRA Units 3, 9, 11, 12, 17, 23, 25, 31, and Watkins Gate Burn Area (WGBA);
  - Bureau of Land Management (BLM) Area B Units A, B, C, B-3 East, B-3 West, and B-2A; and containment lines;
  - Wolf Hill, South Boundary Road, Barloy Canyon Road (BLM property);
  - Impact Area MRA Pond 16, BLM Area B Ponds, and Pond 61;
  - Fuel breaks along Orion Road, Impossible Canyon Road, Wildcat Ridge Road, Hawkeye Road, Riso Ridge, Nowhere Road, Mercury Road, and Broadway Bypass;
  - Fuel break erosion repair areas along Little Moab Road;
  - 100-foot buffer; and
  - Lion's Revenge Road realignment site and BLM Area B Trails 15, 16, 56, 57, 61, 62, 65, and 70.

2.0 Site 39 - Soil Remediation Activities in 2018

There are several former ranges on the former Fort Ord, referred to as HAs, where soil remediation for lead or munitions-related contamination was necessary (USACE, 2009). Soil remediation activities were completed in previous years and no soil remediation work was conducted in 2018. However, in 2018 site re-contouring and/or erosion control work was conducted at HA 26, HA 27A, HA 34, and HA 37 in support of the restoration activities being completed by another Army contractor (Figure 1-1 and Figure 2-1 to Figure 2-4). Additionally, soil sampling was conducted in 2018 to determine the need for future soil remediation activities within Units 25, 28, 31, and 33 (Figure 1-1).

Erosion problems at HA 26, HA 27A, HA 34, and HA 37 were treated by a combination of light grading, woven coir fabric, straw wattles, sterile barley seed, native plant seed, and mulch. Mulch was obtained from vegetation removal/chipping activities at other locations of the cleanup project. The mulch contained trimmings from coast live oak limbs and maritime chaparral shrubs.

Soil sampling within Units 25, 28, 31, and 33 included hand auguring to a maximum depth of two feet to collect soil samples for chemical testing. Each sample location included collection of seven "grab" samples taken within an approximately four-foot diameter area, which were combined to form a single composite sample.

2.1 HMP Species Mitigation and Avoidance

Mitigation measures for soil remediation areas are specifically addressed in the HMP (USACE, 1997), the Programmatic Biological Opinion (USFWS, 2017), and the *Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remedial Activities at Former Fort Ord* (USACE, 2006). Avoidance and minimization measures implemented during site re-contouring and erosion control activities in order to reduce impacts to HMP species, sensitive habitats, and the restoration areas were as follows:

- Habitat Checklists (HCLs) were prepared by the Project Biologist outlining specific avoidance and minimization measures to be implemented during work activities. The HCLs were reviewed and approved by the Base Realignment and Closure (BRAC) Biologist and the Quality Control Manager. The avoidance and minimization measures were communicated to the project supervisors and field personnel in preparatory meetings prior to work initiation (see Attachment A for all HCLs implemented for work conducted in 2018).
- Only previously established access routes and staging areas were used at each site to minimize impacts to surrounding habitats and HMP species to the greatest extent feasible. Existing roads and trails; pre-existing paved, graded, or disturbed areas; and areas known

to be unoccupied by HMP annual species (based on previous surveys) were used for access, staging, and soil and mulch stockpiling wherever available.

- CTS avoidance and minimization measures were implemented from October through June or when adjacent vernal ponds were wet. Regular ground checks were made during the rainy season and employee briefings were conducted to ensure that the field personnel followed the protocols for CTS avoidance and reporting.
- Visual surveys of the work area were conducted by the Project Biologist and workers trained to identify CTS prior to the day's work if rain was forecasted within 48 hours (50% chance or greater) or if it had rained overnight; or during work hours if substantial rainfall occurred (work was halted if greater than 0.5 inch of rain fell in a 24-hour period). Work activities commenced once the Project Biologist and the search crew determined that no CTS had dispersed into the area. Workers were also required to conduct morning inspections for CTS under equipment following all rain events.
- Silt fencing was installed around the temporary mulch pile at HA 34 to preclude CTS from entering.

Avoidance and minimization measures implemented during soil chemical sampling in order to reduce impacts to HMP species, sensitive habitats, and the restoration areas were as follows:

- HCLs were prepared by the Project Biologist outlining specific avoidance and minimization measures to be implemented during work activities. The HCLs were reviewed and approved by the BRAC Biologist and the Quality Control Manager. The avoidance and minimization measures were communicated to the project supervisors and field personnel in preparatory meetings prior to work initiation (see Attachment A for all HCLs implemented for work conducted in 2018).
- To avoid trampling and sampling within HMP annual plant populations, the Project Biologist accompanied the sampling team in areas where HMP annual plant populations were known in Units 25, 28, and 31.
- Only established roads were used to minimize impacts to surrounding habitats and HMP species. Specific access routes were identified by the Project Biologist in Units 31 and 25 to avoid trampling of HMP annual plant populations.
- Workers were trained on the appropriate CTS and BLL encounter protocols to follow in the event that CTS or BLL were encountered during sampling activities.

3.0 Munitions Remediation Activities in 2018

During 2018, munitions and explosives of concern (MEC) remediation activities within the former Fort Ord Impact Area were conducted within Impact Area MRA Units 3, 9, 11, 12, 17[1], 23, 25, 31, and WGBA; BLM Area B Units A, B, C, B-3 East, B-3 West, and B-2A; Impact Area MRA Pond 16, BLM Area B ponds, and Pond 61; the 100-foot buffer; and various fuel breaks (Figure 1-2). Activities within these areas included some or all of the following:

- Mastication and pruning of vegetation;
- Chipping and stockpiling of mulch;
- Surface MEC removal;
- Target removal;
- Digital geophysical mapping (DGM) with EM61, MetalMapper and OPTEMA equipment;
- Installation of stakes along the 100-foot buffer;
- Subsurface MEC removal where necessary;
- Demolition of live or suspected live MEC items;
- Erosion repair (Unit 12 and Little Moab and Evolution Roads);
- Road realignment [Lion's Revenge Road (Figure 3-1)]; and
- Vehicle use to support these activities.

Table 3-1 identifies the approximate acreage within each work area affected by the work activities in 2018.

3.1 HMP Species and Habitats Mitigation and Avoidance

Mitigation measures to reduce impacts to protected species and sensitive habitats during MEC remedial actions are described in the HMP (USACE, 1997) and the Programmatic Biological Opinion (USFWS, 2017). Mitigation and protection measures that were implemented to avoid or reduce impacts to HMP species and habitats during this project are summarized below.

3.1.1 Minimize Disturbance Associated with MEC Removal

Disturbances were limited to those required for the abovementioned activities. As required by the HMP, existing roads were used. Exceptions were made where it was necessary to traverse the site using tracked vehicles in order to access excavation sites, remove piles of debris, remove vegetation, and conduct the DGM portion of the MEC removal process. Access routes, staging

[1] Please note that activities within Unit 17 included mastication, investigation, and MEC removal along three-foot wide transects with a maximum of 95 feet between transects (98 feet from each transect center line to the adjacent transect center line), for 3.3% coverage of the field evaluation area totaling 55,956 linear feet.

areas, stockpiles, and other appurtenant facilities were sited to avoid impacts to HMP plant and wildlife species and potential erosion issues.

3.1.2 Conduct Employee Education Program

New KEMRON employees and subcontract workers receive training on former Fort Ord natural resource protection prior to starting work. In 2018, KEMRON provided natural resource training to 49 new employees and subcontract workers.

Training includes the following topics:

- Identification of sensitive HMP-protected habitats and HMP species specific to the work area. Habitats covered in the training include maritime chaparral, vernal ponds, and wetlands. Species covered include CTS, CRLF, California linderiella, BLL, Monterey ornate shrew, sand gilia, Monterey spineflower, Seaside bird's-beak, Yadon's piperia, Contra Costa goldfields, coast wallflower, Monterey manzanita, sandmat manzanita, Hooker's manzanita, Eastwood's goldenbush, and Monterey ceanothus. Additional HMP species occurring within the dune habitats on the former Fort Ord are not included in the training because work has been completed in these areas and these species will not be impacted by work in the inland ranges.
- Specific guidance for CTS and CRLF protection, including the ability to recognize the species, the protocol for reporting all encounters to the Project or BRAC biologists (who are permitted by USFWS to handle and relocate CTS), placing escape ramps or covering open trenches, and checking equipment and excavations for CTS and CRLF during migration seasons.
- Instructions for minimizing all work impacts and work footprints, and for avoidance of areas flagged for sensitive species or habitats wherever marked in the field.
- Instructions for restricting vehicle movement and parking to roads, staging areas, designated access routes, and other designated work areas wherever possible.
- How to reduce soil disturbances in sensitive habitat, particularly areas containing seed bank or live individuals of HMP-listed plant species and vernal ponds.
- How to reduce erosion problems and spread of invasive species.

In addition to the training, HCLs were prepared prior to each activity by the Project Biologist, outlining specific avoidance and minimization measures to be implemented during work activities. The HCLs were reviewed and approved by the BRAC Biologist and the Quality Control Manager. The avoidance and minimization measures were communicated to the project supervisors and field personnel in preparatory meetings prior to work initiation (see Attachment A for all HCLs implemented for work conducted in 2018).

3.1.3 Avoid Disturbance of HMP Annual Plant Populations

Populations of HMP annual plants were identified during baseline and/or follow-up surveys within and adjacent to the following work areas:

- Monterey spineflower: Impact Area MRA Units 3, 9, 23, 25, 31; BLM Area B Units B and B-3 West.
- Sand gilia: Impact Area MRA Units 28 and 31; BLM Area B Unit B.
- Contra Costa Goldfields: BLM Area B Unit B.

In addition, populations of Seaside bird's-beak and Yadon's piperia were observed by the Project Biologist within several areas not identified during baseline surveys:

- Populations of Seaside bird's-beak and Yadon's piperia were observed in 2017 within Unit 23 near Pond 54 (Figure 3-2).
- A population of Seaside bird's-beak was observed in 2017 and 2018 within the BLM Area B Unit B-2A and within the containment lines along Barloy Canyon Road (Figure 3-3).

Areas supporting populations of HMP annual plants were avoided from the time of assumed germination (February 1) to seed-set (assumed May 31 for Monterey spineflower and sand gilia; as observed by the Project Biologist in approximately August/September for Seaside bird's-beak and Yadon's piperia). While MEC removal and DGM activities were necessary within population areas, no equipment or personnel were permitted within these areas during this period, and the populations were flagged off and a map of the locations was provided to all project supervisors and field personnel. The Project Biologist monitored the populations to ensure that work was not conducted in these areas until the time of seed-set for the majority of the individuals.

Subsurface MEC removal was conducted within Monterey spineflower and sand gilia population areas in Unit 3, WGBA, and Unit B-3 West. During this work activity, the top two to three inches of topsoil were preserved and replaced on top of the backfilled holes. Subsurface MEC removal was not conducted within Seaside bird's-beak or Yadon's piperia population areas.

3.1.4 Minimize and Compensate for Impacts to California Linderiella, California Tiger Salamander, and California Red-Legged Frog

To minimize impacts to these species, project supervisors and field personnel were trained during the Employee Education Program to identify CTS and CRLF, and they were informed of the potential for these species (as well as California linderiella) to occur within the project site and the established protocol if any individuals were encountered. Additionally, work within the vernal pool areas was only permitted during the dry season and heavy equipment was precluded to the greatest extent feasible. In 2018, the work conducted by KEMRON within vernal pools included

mowing, DGM surveys using the MetalMapper, and/or sub-surface MEC removal within Ponds 3 North, 3 South, 16, 35, 39, 40 North, 40 South, 42, 43, 44, 54, 60, 61, 73, 101 East, and 101 West (Figures 3-4 and 3-5). These work activities were completed using manual equipment.

No CRLF or California linderiella were encountered by KEMRON on the former Fort Ord in 2017.

In 2018, there was one encounter of CTS by KEMRON on the former Fort Ord. One individual CTS was encountered within Unit B during surface MEC removal activities (Figure 3-6). A Field Report Form for CTS was completed by the BRAC Biologist and provided to the USFWS and CDFW. The following summarizes the encounter.

3.1.4.1 March 12, 2018

On March 12, 2018, one juvenile CTS was found during surface MEC removal activities. The Unexploded Ordnance (UXO) team overturned a piece of scrap metal and the individual was underneath on the surface of the ground. The work area was located approximately 0.3 miles from Ponds 41 and 42, the nearest known CTS breeding resources; additional known breeding resources nearby include Pond 56 (0.5 mi) and Machine Gun Flats (0.7 mi) (Figure 3-6). Additional ponds in the vicinity not currently known to support CTS include Pond 44 (0.2 mile), Pond 43 (0.2 mile), and Pond 40 North (0.5 mile)

The UXO team alerted the Project Biologist, Patric Krabacher, and BRAC Biologist, Bart Kowalski, and stopped work in the area. The CTS was alive, active, and uninjured. The BRAC Biologist measured, weighed, and photographed the individual (Figure 3-7). The CTS was then moved by the BRAC Biologist to a mammal burrow outside of the work area.

3.1.5 Minimize Impacts to Black Legless Lizard

To minimize impacts to BLL, project supervisors and field personnel were trained during the Employee Education Program to identify BLL, and they were informed of the potential for this species to occur within the project site and the established protocol if any individuals were encountered.

No BLL were encountered during work activities by KEMRON on the former Fort Ord in 2018.

3.2 Additional Environmental Protections

In addition to the mitigation and protection measures described above to avoid or reduce impacts to HMP species and habitats, the following environmental protection measures were implemented during this project.

3.2.1 Invasive Weed Control

Several invasive plant species are known to occur on the former Fort Ord, including iceplant (*Carpobrotus sp.*), French broom (*Genista monspessulana*), jubata (pampas) grass (*Cortaderia jubata*), and Klamathweed (*Hypericum perforatum*). These species spread rapidly and can severely degrade native habitats if measures are not taken to control their spread. The Army has reviewed the California Invasive Plant Council's (CIPC's) *Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers* (CPIC, 2011) and has identified appropriate Best Management Practices (BMPs) that can be implemented during cleanup activities. Specifically, BMPs that are employed to the greatest extent practicable include: washing all vehicles and equipment that come from outside of the former Fort Ord work areas, including those of subcontractors, before they are allowed to enter the site; finding weed-free sources for straw, fill, and road base materials that are imported from off-site; using on-site sources for mulch, fill, and road base materials that come only from areas without invasive plant infestations; planning any off-road haul routes to avoid invasive plant populations; and cleaning boots, equipment, and vehicles that have been used in high infestation areas prior to moving to sites where invasive species populations are low or have not been identified. Additionally, each new work area is evaluated for the presence of invasive species, and the appropriate avoidance and minimization measures are identified prior to work initiation.

In 2018, activities within BLM Area B included mastication, mowing, and pruning of vegetation within containment lines, surface clearance activities, and DGM. The BLM provided KEMRON Geographic Information System data of known locations of Klamathweed within the 2018 work areas. This data was utilized to inform personnel of the areas where special minimization measures would be required during work and where decontamination would be necessary following work.

Decontamination by pressure washing was required for vegetation removal equipment prior to leaving areas infested with invasive weeds. For vehicles, boots, and other equipment, decontamination was conducted on a daily basis (or more if personnel left the units multiple times per day) using brushes. If any caked-on soils or materials remained that could not be removed with a brush, boots and equipment were washed with water at the field office compound; however, vehicles were required to be pressure-washed on site.

In addition, iceplant was present on the soil stockpile area near HA 29, which was utilized for erosion control activities in Unit 12 (see below). Prior to use of the soil in the stockpile, personnel

removed iceplant by hand, taking care to remove as much of the root structure as possible, then bagged the iceplant and disposed of it properly.

3.2.2 Erosion Control

To reduce erosion concerns on bare mineral soils, normal vehicle access was restricted to existing roads and established access routes. Tracked vehicles were used to conduct vegetation removal and DGM surveys over the site. KEMRON monitored the work sites for potential erosion problems, and a final inspection was conducted at the conclusion of work at each site by the Project Biologist. In addition, one highly eroded area within Unit 12 was repaired in 2018 (Figure 1-2), which included filling of the gully with soil borrowed from a soil stockpile area near HA 29 in Unit 4, regrading, and application of mulch produced during vegetation removal activities in other work areas. Minor repairs and mulching were also conducted along Little Moab and Evolution Roads.

3.2.3 Minimize Impacts to Monterey Dusky-Footed Woodrat

The Monterey dusky-footed woodrat is a CDFW species of special concern known to occur throughout the former Fort Ord. This species constructs large stick nests within coast live oak woodland and maritime chaparral habitat. To minimize impacts to Monterey dusky-footed woodrat nests within containment lines were deconstructed under the supervision of the Project Biologist. Prior to dismantling, the nests were surveyed to ensure no litters of young were present; none were found. Dismantling was conducted manually, using rakes to allow any individuals within the nest to escape harm. Wood from the dismantled nests was removed from the containment lines after dismantling for fire safety reasons.

4.0 References

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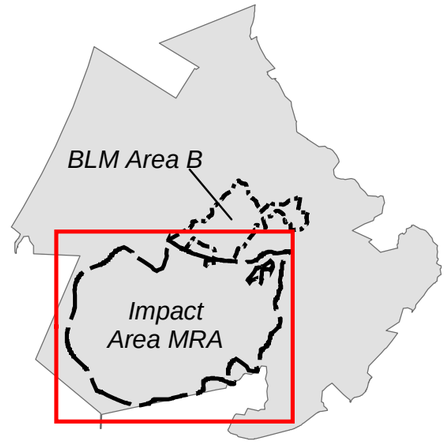
USFWS, 2015. *Programmatic Biological Opinion for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California (8-8-09-F-74).* (AR# BW-2747)

USFWS, 2017. *Reinitiation of Formal Consultation for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California (Original Consultation 8-8-09-F-74, 81440-2009-F-0334).* (AR# BW-2747A)

Figures

Former Fort Ord



- Impact Area MRA
- BLM Area B
- Units Where Soil Chemical Sampling Occurred
- Remediated Area

N

0 2 4 8 Miles

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

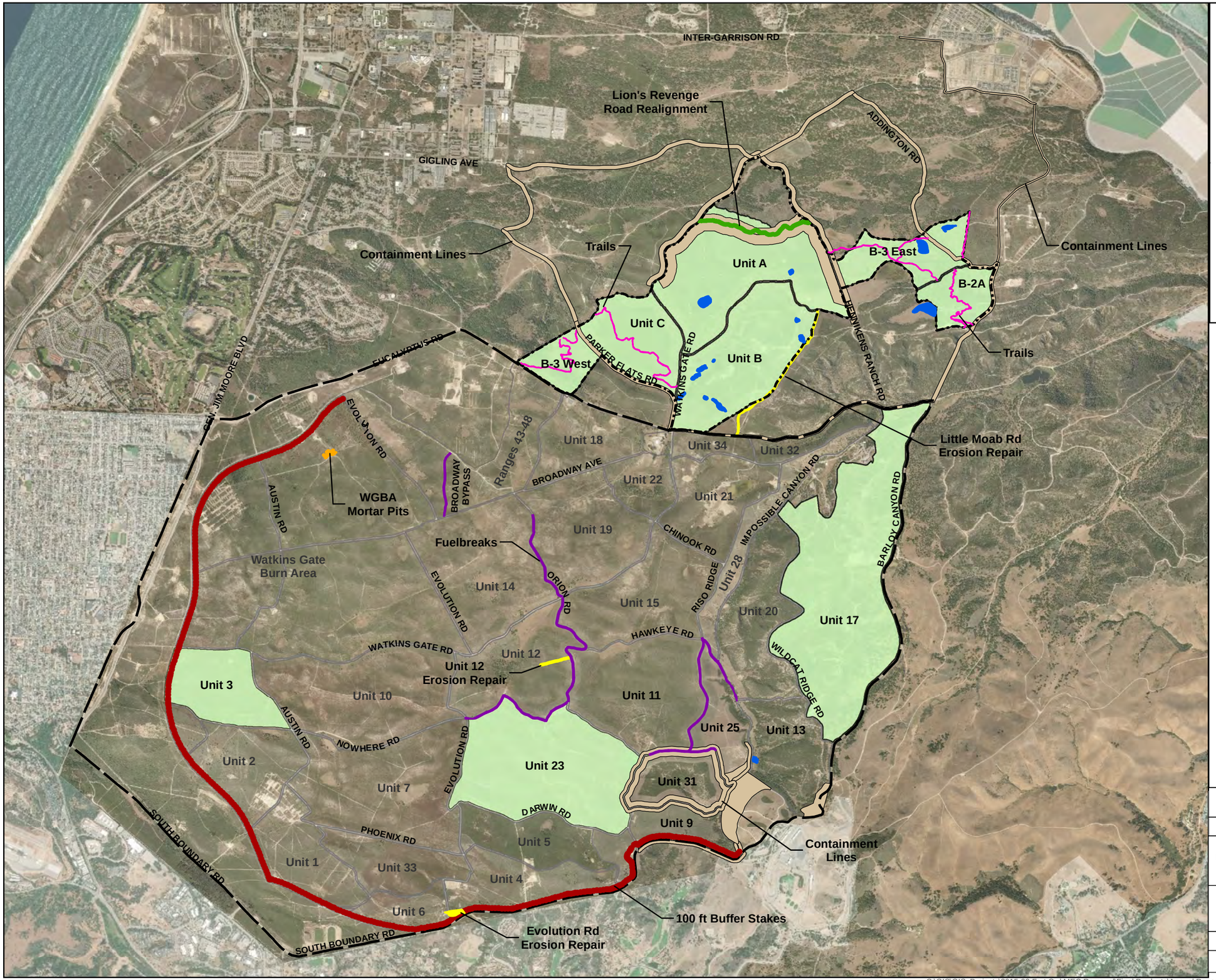
FORMER FORT ORD

FIGURE NUMBER 1-1

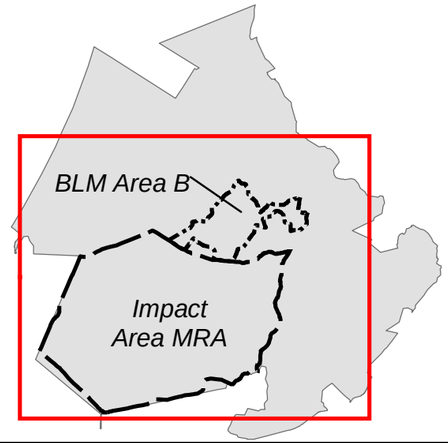
2018 Annual Biological Monitoring Report
Site 39 Soil Remediation Areas Where Biological Monitoring Occurred in 2018

DATE	PROJECT NUMBER	FILE NAME
2/8/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 1-1 Site 39 Soil Remediation.mxd, jdavis, Gilbane



Former Fort Ord



- Impact Area MRA
- BLM Area B
- Units Where Biological Monitoring Occurred
- Mastication Areas
- Trail Subsurface Investigation Areas
- Fuelbreaks
- Lion's Revenge Road Realignment
- Erosion Repair Area
- Ponds Where Subsurface MEC Removal Occurred
- WGBA Mortar Pits
- 100ft Buffer Stakes Alignment

N

0 2 4 8 Miles

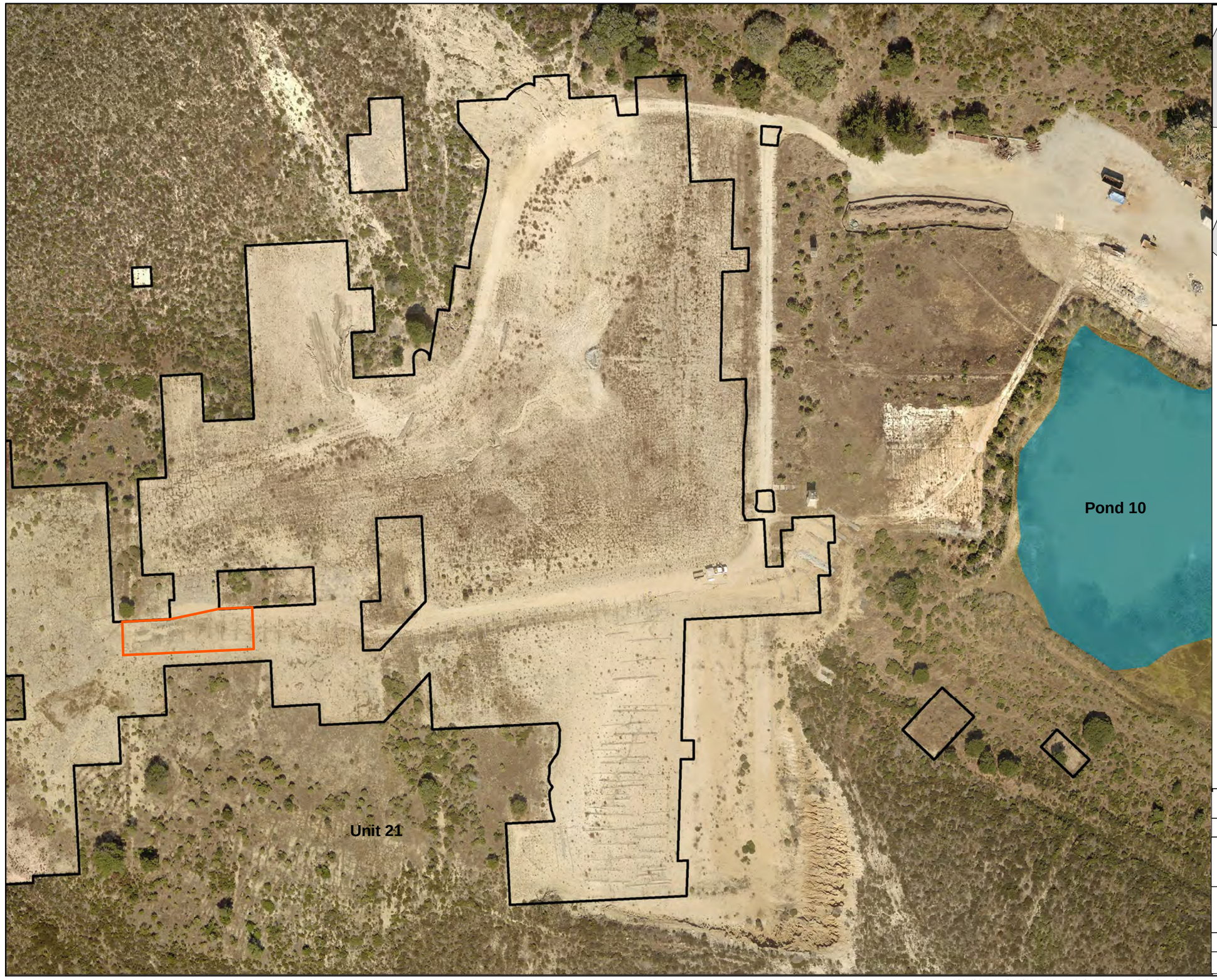
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

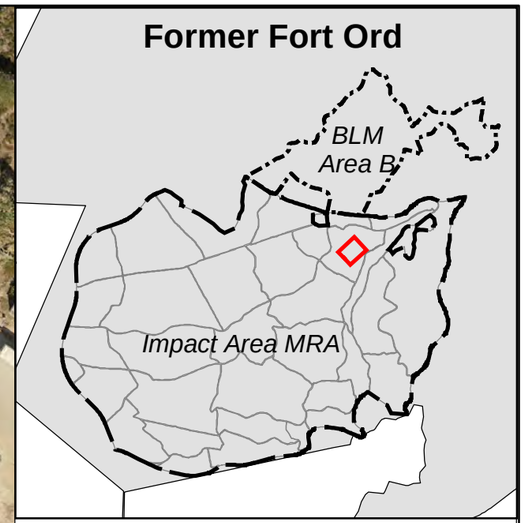
FORMER FORT ORD

FIGURE NUMBER	
1-2	*2018 Annual Biological Monitoring Report* Munitions Remediation Areas Where Biological Monitoring Occurred in 2018

DATE	PROJECT NUMBER	FILE NAME
2/21/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 1-2 Impact Area Munitions Remediation Area.mxd, jdavis, Gilbane





Restoration Area
2018 Erosion Control Areas
Pond

N

0 45 90 180
Feet

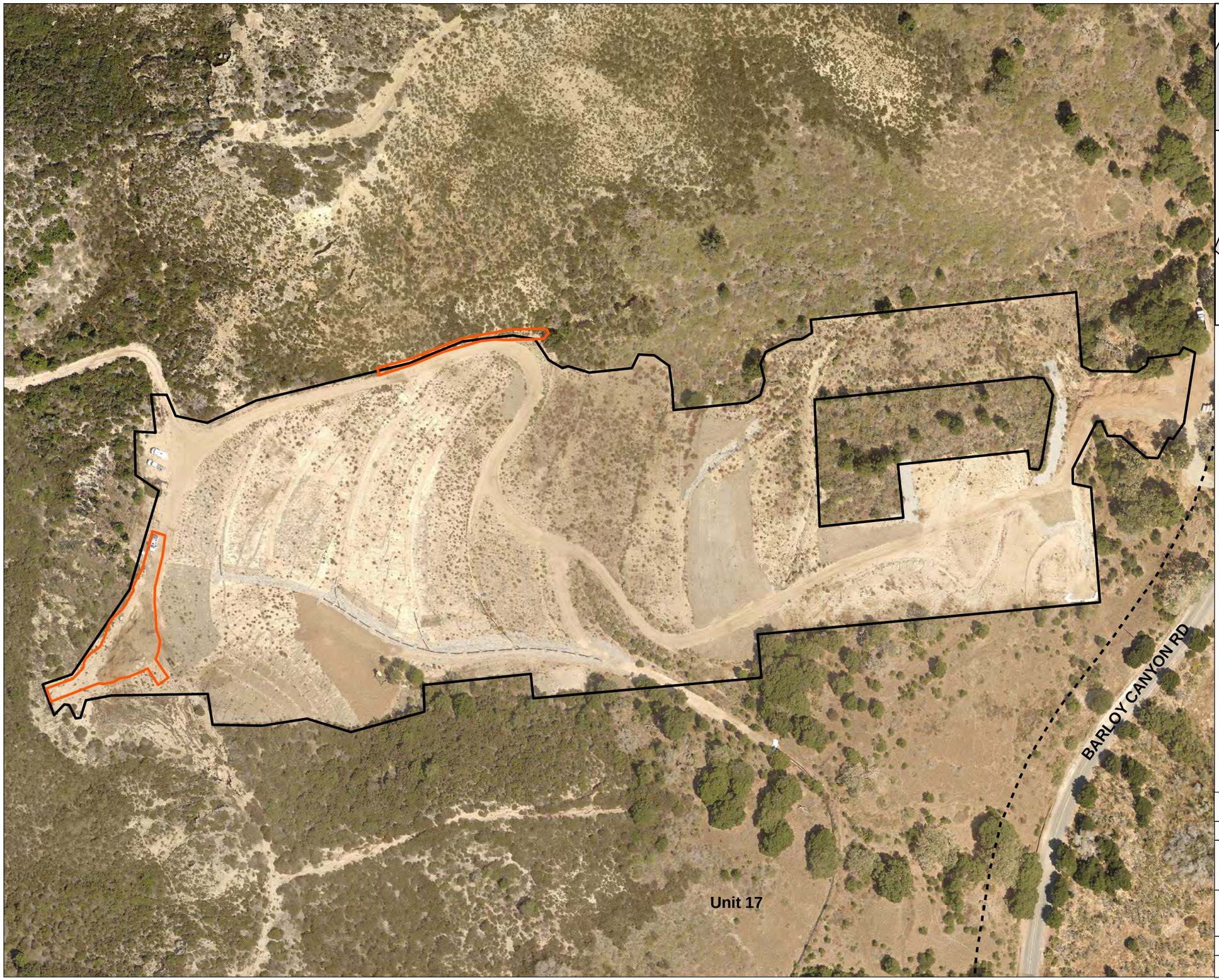
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

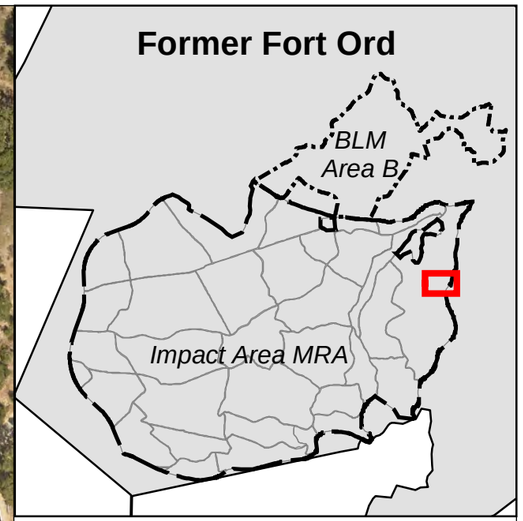
FORMER FORT ORD

FIGURE NUMBER	*2018 Annual Biological Monitoring Report*
2-1	Erosion Repair Areas Within HA 37

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 2-1 Erosion Repair Areas within HA 37.mxd, jdavis, Gilbane





Unit Boundaries
Restoration Area
2018 Erosion Control Areas

N

0 50 100 200
Feet

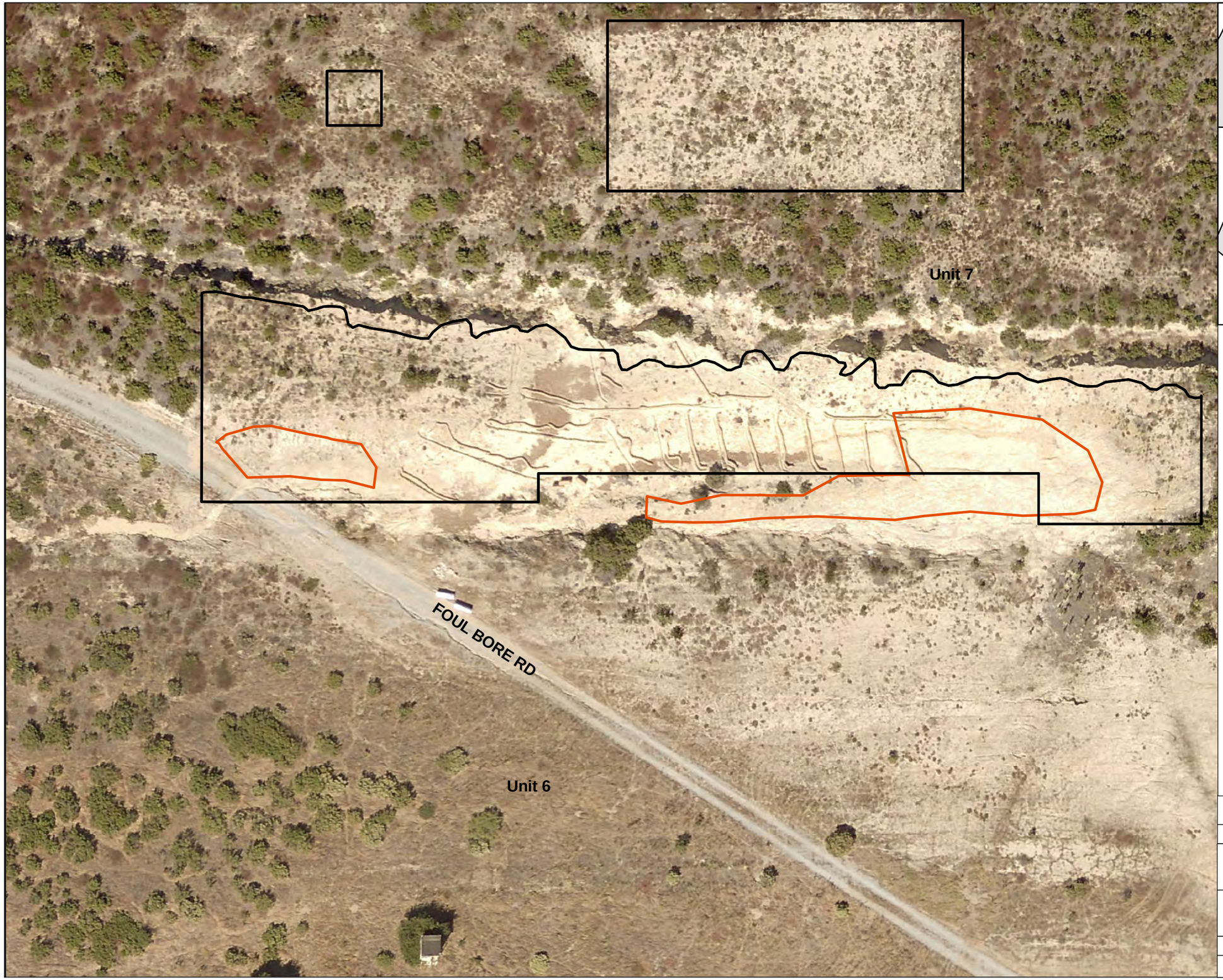
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

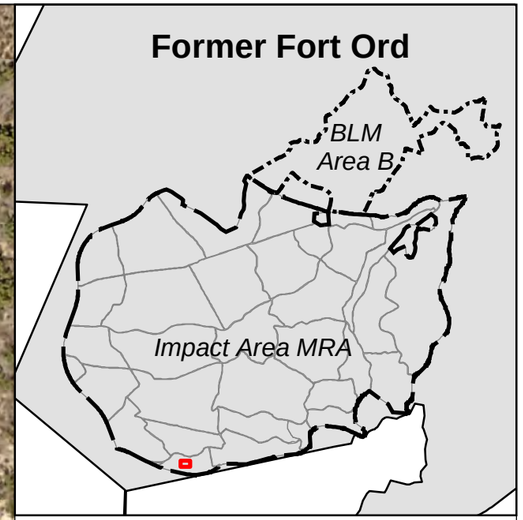
FORMER FORT ORD

FIGURE NUMBER	*2018 Annual Biological Monitoring Report*
2-2	Erosion Repair Areas Within HA 34

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 2-2 Erosion Repair Areas within HA 34.mxd, jdavis, Gilbane





Unit Boundaries
Restoration Area
2018 Erosion Control Areas

N

0 15 30 60 Feet

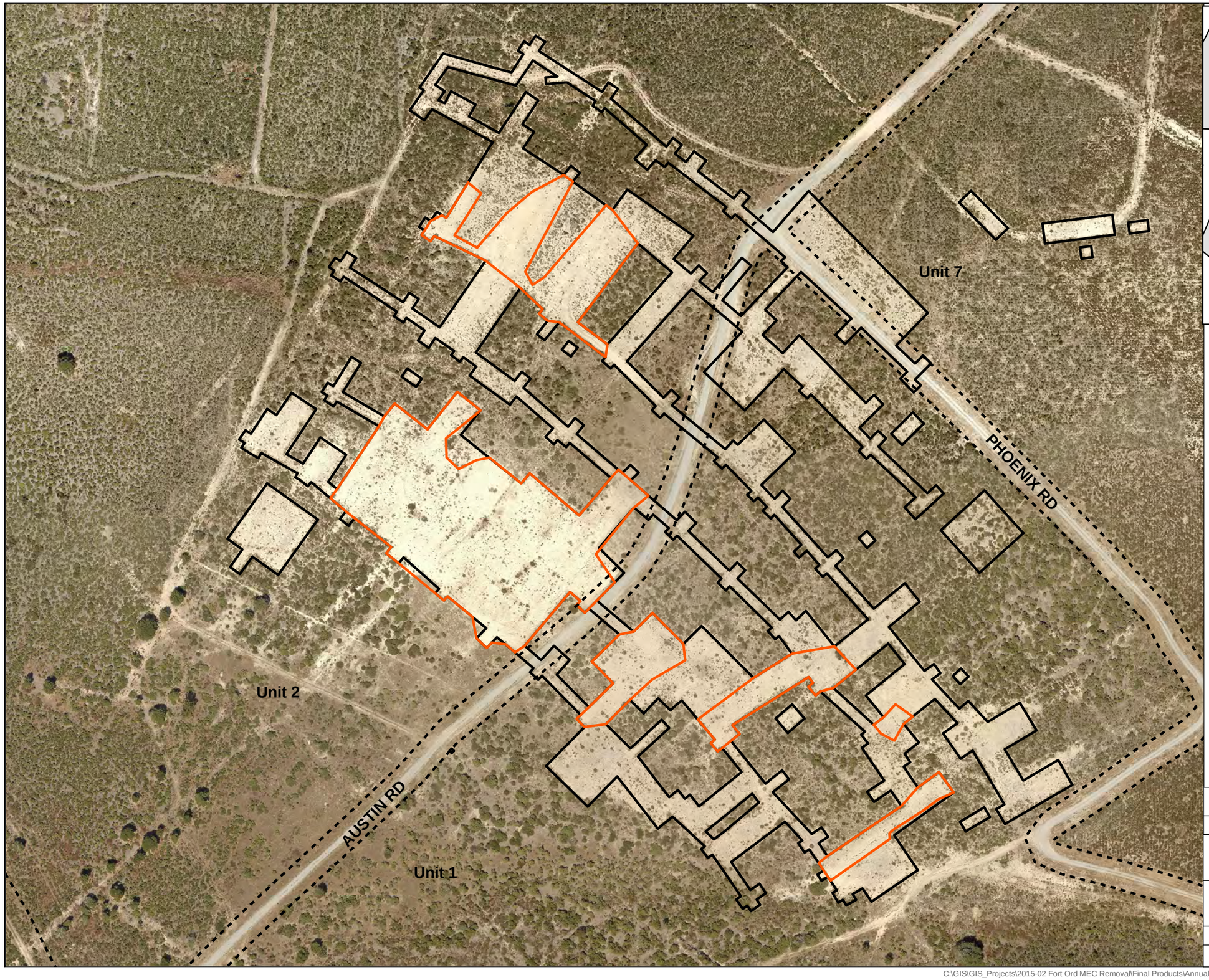
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

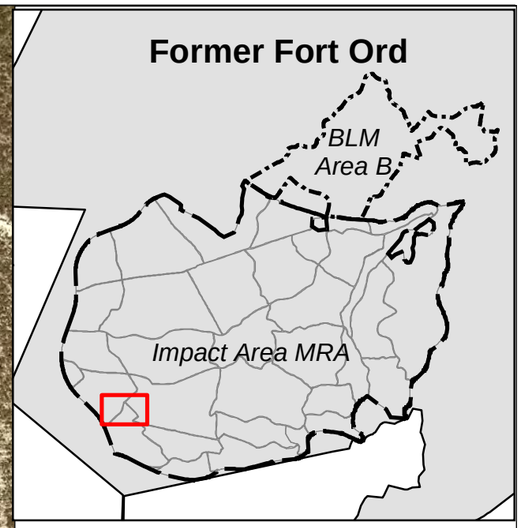
FORMER FORT ORD

FIGURE NUMBER	
2-3	*2018 Annual Biological Monitoring Report* **Erosion Repair Area Within HA 27A**

DATE	PROJECT NUMBER	FILE NAME
3/11/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 2-3 Erosion Repair Areas within HA 27A.mxd, jdavis, Gilbane





Unit Boundaries
Restoration Area
2018 Erosion Control Areas

N

0 75 150 300
Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

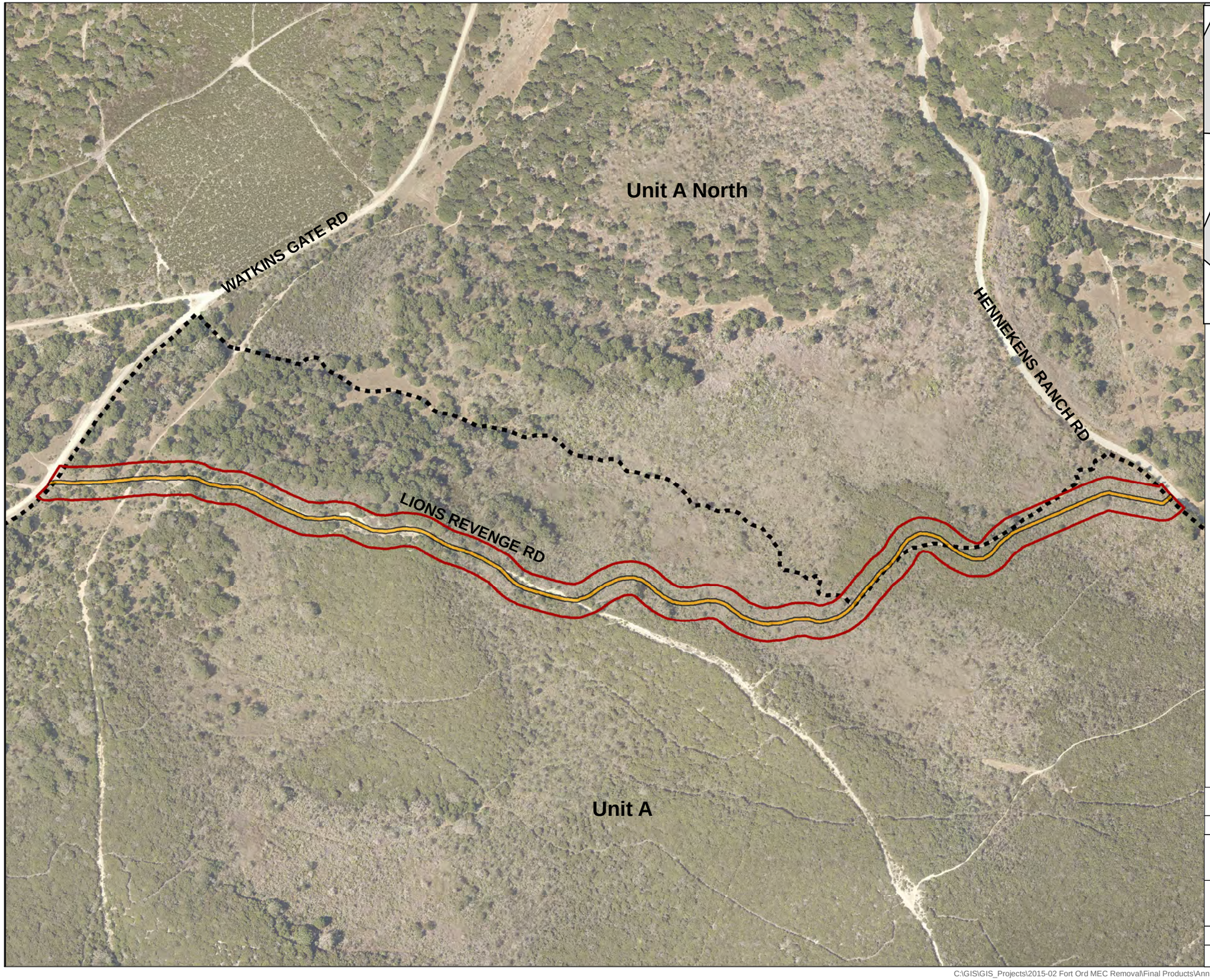
FORMER FORT ORD

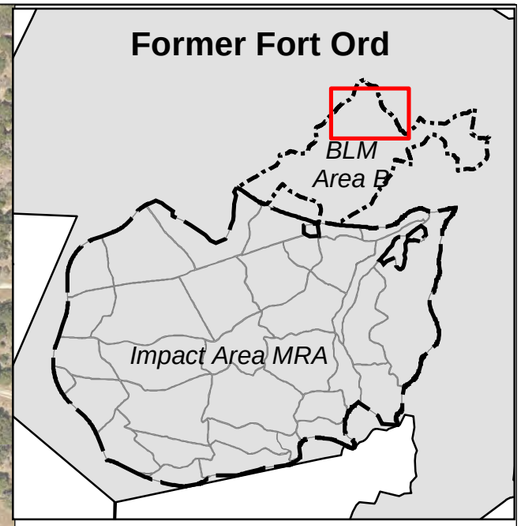
FIGURE NUMBER
2-4

2018 Annual Biological Monitoring Report
Erosion Repair Area Within HA 26

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 2-4 Erosion Repair Areas within HA 26.mxd, jdavis, Gilbane





BLM Area B Unit Boundaries
Lion's Revenge Road Alignment
Work Area

N

0 140 280 560
Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
3-1	*2018 Annual Biological Monitoring Report* **Lion's Revenge Road Realignment Area**

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 3-1 Lions Revenge Rd Reroute Site.mxd, jdavis, Gilbane

Unit 12

NOWHERE RD

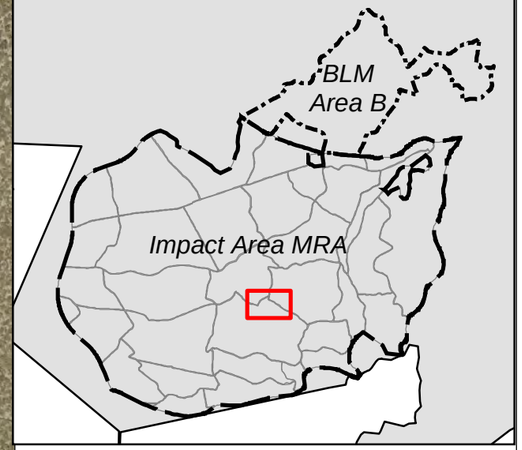
Unit 11

ORION RD

Pond 54

Unit 23

Former Fort Ord



Unit Boundaries

Seaside Bird's-Beak

Yadons Piperia

N

0 75 150 300 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER 3-2

2018 Annual Biological Monitoring Report
Seaside Bird's-Beak and Yadon's Piperia in Unit 23

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 3-2 Seaside Birds-Beak and Yadons Piperia in Unit 23.mxd, jdavis, Gilbane

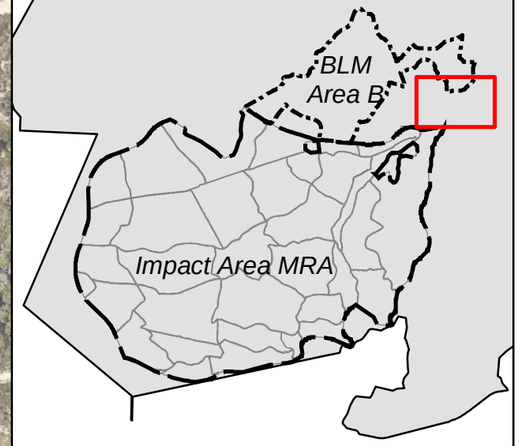
Pond 61

Unit B-2A

BARLOY CANYON RD

EUCALYPTUS RD

Former Fort Ord



- BLM Area B Unit Boundaries
- 2018 Mastication Areas
- Seaside Bird's-Beak (1.53 ac)
- Ponds

N

0 150 300 600 Feet

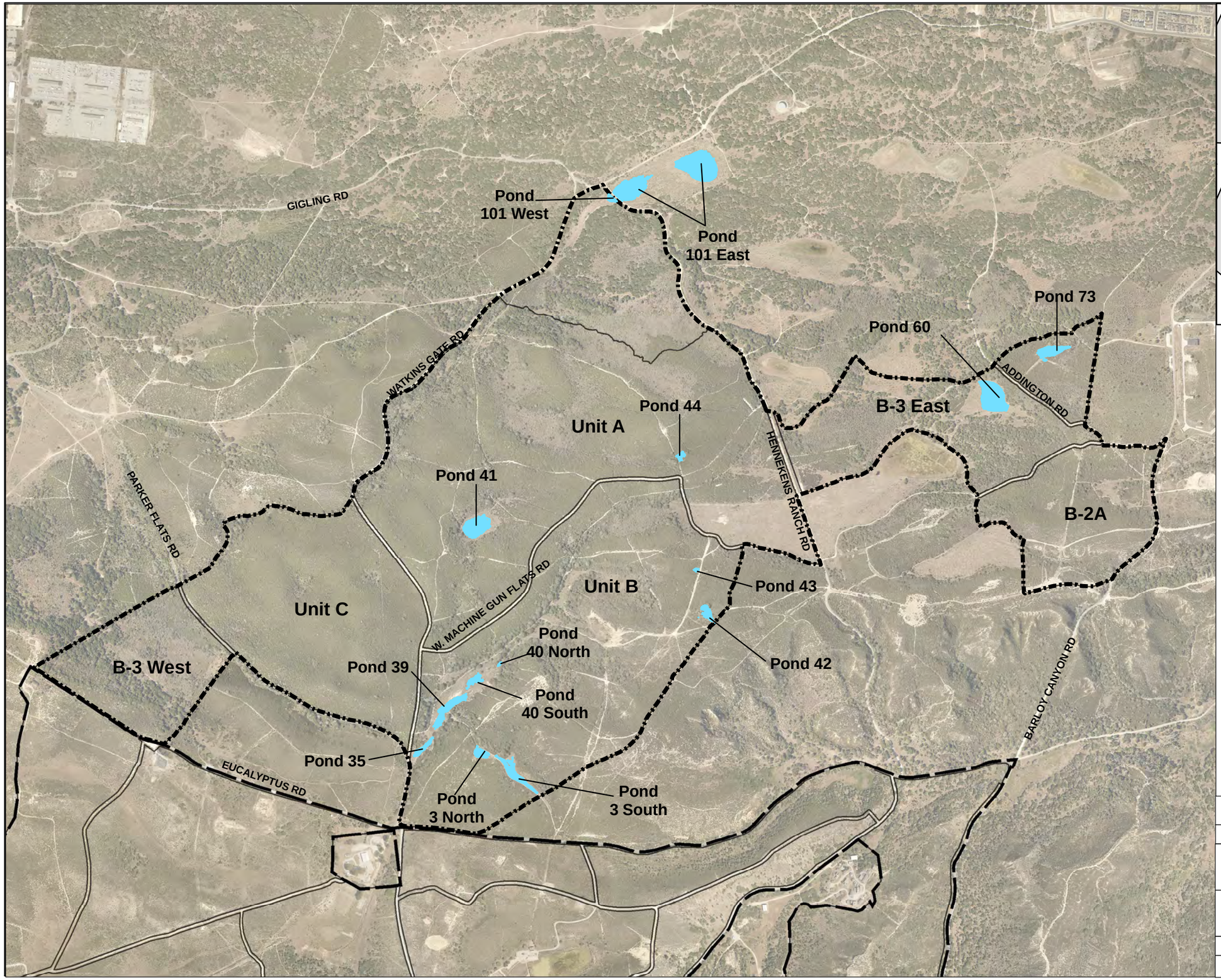
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

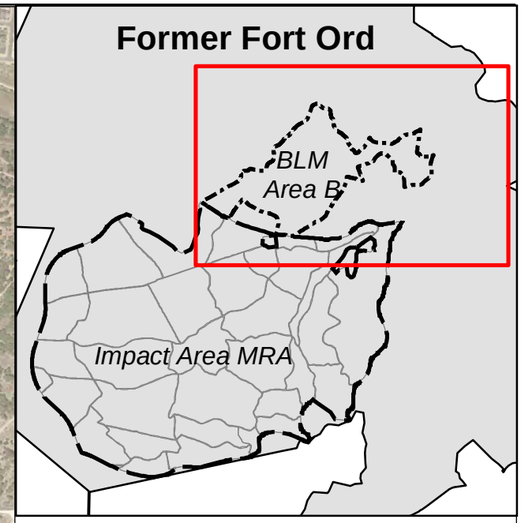
FORMER FORT ORD

FIGURE NUMBER	*2018 Annual Biological Monitoring Report*
3-3	**Seaside Bird's-Beak in Containment Line**

DATE	PROJECT NUMBER	FILE NAME
2/5/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 3-3 Seaside Birds-along Barloy.mxd, jdavis, Gilbane





- Impact Area MRA
- BLM Area B
- Unit Boundaries
- Ponds Where Biological Monitoring Occurred

N

0 0.15 0.3 0.6 Mile

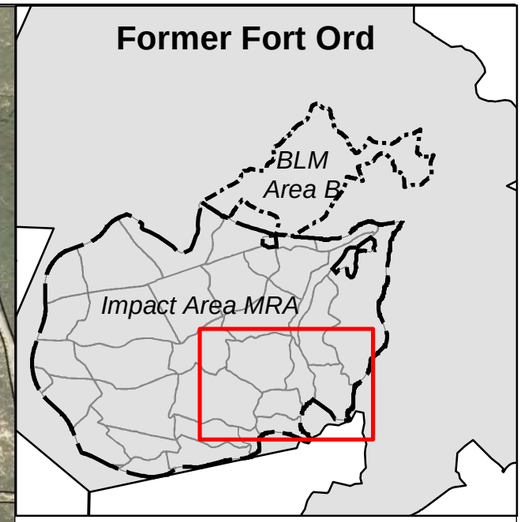
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
3-4	*2018 Annual Biological Monitoring Report* **BLM Area B Ponds Where Biological Monitoring Occurred in 2018**

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 3-4 Ponds Where Bio Monitoring Occurred.mxd, jdavis, Gilbane



Impact Area MRA

Unit Boundaries

Ponds Where Biological Monitoring Occurred

N

0 0.05 0.1 0.2 Mile

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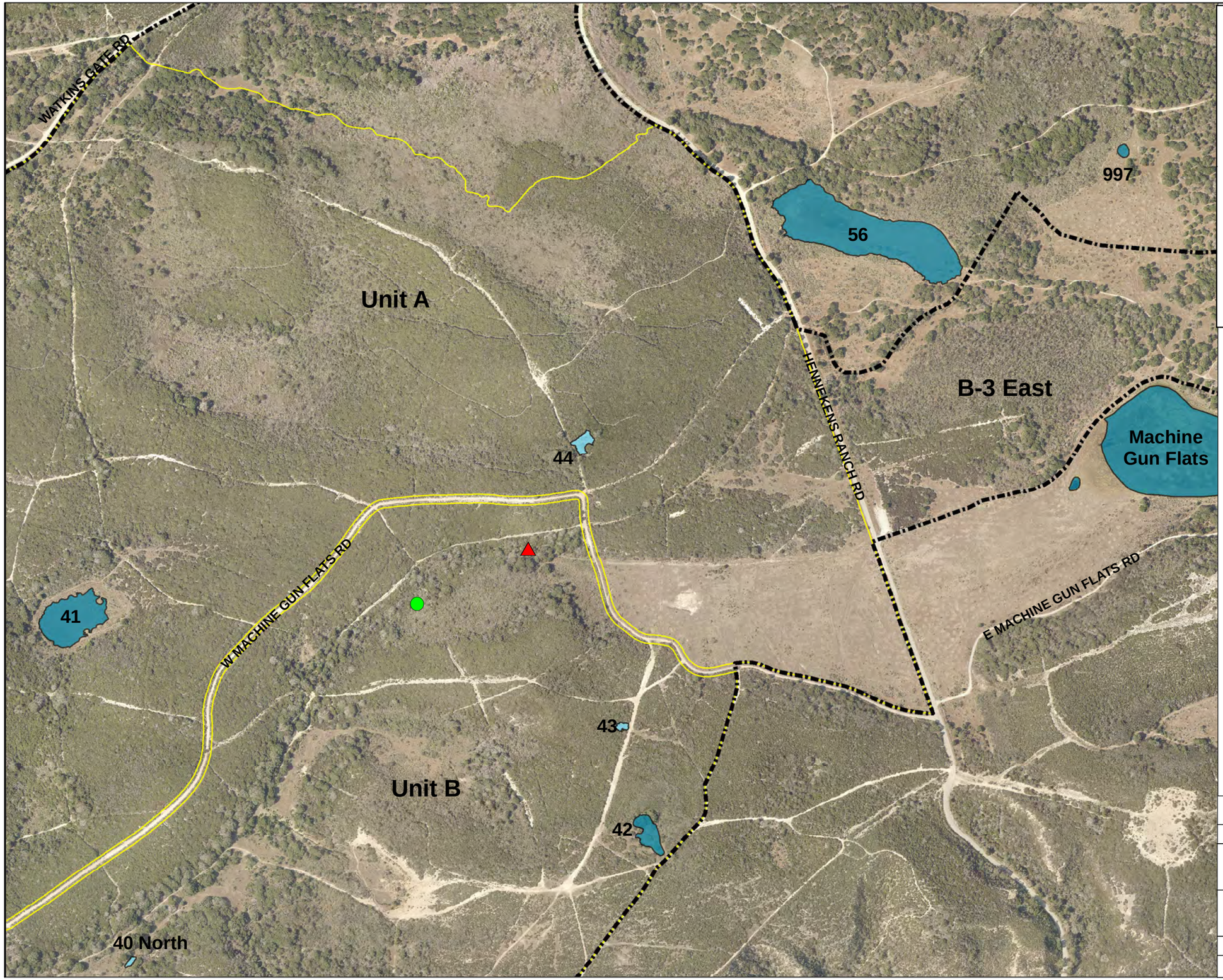
SACRAMENTO DISTRICT

FORMER FORT ORD

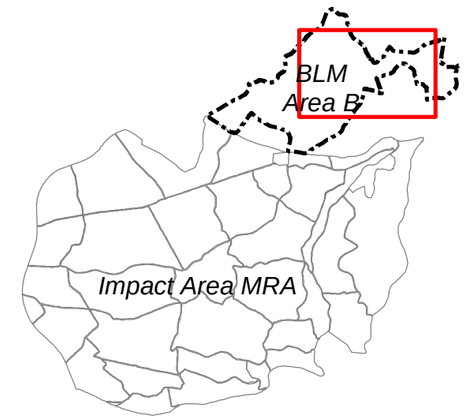
FIGURE NUMBER	
3-5	*2018 Annual Biological Monitoring Report* **Impact Area MRA Ponds Where Biological Monitoring Occurred in 2018**

DATE	PROJECT NUMBER	FILE NAME
1/18/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 3-5 Impact Area Ponds Where Bio Monitoring Occurred.mxd, jdavis, Gilbane



Former Fort Ord



- BLM Area B Boundary
- Unit Boundaries
- Known CTS Breeding Resource
- Potential CTS Breeding Resource
- CTS Encounter Site 3/12/18
- CTS Relocation Site 3/12/18

N

0 270 540 1,080 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
3-6	*2018 Annual Biological Monitoring Report* **California Tiger Salamander Encounter and Release Location**

DATE	PROJECT NUMBER	FILE NAME
2/27/2019	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2018\Figure 3-6 California Tiger Salamander Encounter & Release Locations.mxd, jdavis, Gilbane

1.

2.

3.

4.

1. Scrap metal CTS was found under on March 12, 2018.
2. CTS as it was encountered.
3. CTS as it was being measured by the BRAC biologist.
4. CTS relocated to a mammal burrow outside of the work area.

U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 3-7	*2018 Annual Biological Monitoring Report* California Tiger Salamander Encounter Photographs	
	KEMRON ENVIRONMENTAL SERVICES	Gilbane
DATE	PROJECT NUMBER	FILE NAME
2/01/2018	WP001	SEE FOOTER

Tables

Table 3-1. 2018 Work Area Activity Acreages

Location	2018 Acres					
	Mechanical Vegetation Mastication	Manual Vegetation Removal	Surface MEC Removal	Subsurface MEC Removal	DGM	Erosion Control
	Impact Area MRA					
Unit 3		0.12		18.59		
Unit 9	7.08	8.06				
Unit 11	3.72					
Unit 12				0.17		1.50
Unit 13		9.19		0.38[1]		
Unit 23	4.33			1.10	2.20	
Unit 25	9.94	1.26				
Unit 31	28.79	0.44				
Wolf Hill	4.08	27.76				
South Boundary Road	4.07	3.00				
Barloy Canyon Road		1.94				
WGBA[2]		1.49		1.49		
Unit 17 Transects[3]		3.54	3.85			
	BLM Area B					
Unit A	122.11	31.71	62.26	2.08[4]		
Unit B			152.27	3.71[5]	120.89	
Unit C			79.30	1.17[6]	79.30	
Unit B-3 East			38.31	6.01[7]	84.05	
Unit B-3 West			53.4	6.24[8]	57.91	
Unit B-2A		1.46	12.22	16.56[9]	61.12	
Containment Lines	14.86	85.00	15.51[10]			
	Fuel Breaks					
Fuel Breaks[11]		29.55	13.19	2.86	26.01	
Total						

[1] Subsurface work within Unit 13 was within Pond 16 only.
[2] Work in WGBA was within the mortar pit areas only.
[3] Work in Unit 17 included mastication, investigation, and MEC removal along three-foot wide transects, totaling 55,956 linear feet.
[4] Subsurface work within Unit A was within Ponds 41 and 44 and Lion's Revenge Road.
[5] Subsurface work in Unit B was within Ponds 3 North, 3 South, 35, 39, 40 North, 40 South, 42, and 43.
[6] Subsurface work in Unit C was within Trail 70.
[7] Subsurface work in B-3 East was within Ponds 60 and 73 and Trails 15, 16, 56, and 57.
[8] Subsurface work in B-3 West was within the 100ft buffer and Trail 65.
[9] Subsurface work in B-2A was within Trails 61 and 62, and investigation of large anomalies. Additionally, subsurface work within Pond 61, located adjacent to the unit is included in this total.
[10] Surface clearance work within the containment lines was within Unit A-North.
[11] Fuel break work was conducted on Broadway, Impossible Canyon, Riso Ridge, Orion, Wildcat Ridge, Hawkeye, Nowhere, and Mercury Roads.

Attachment A
Habitat Checklists (HCLs) for Work Completed in 2018

Attachment A Table of Contents

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Davis, ITSI Gilbane Biologist (831-325-9693), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	HA-37, HA-34, HA-28	**DATE:**	9-20-13
WORK TO BE CONDUCTED:	Erosion control activities in support of site restoration, such as re-contouring, installation of straw wattles and erosion control fabric, placement of straw mulch, and track walking		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	BLL, CTS		
Location:	Potential within all areas – known CTS breeding within vernal pools at HA-37 and HA-28		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and ITSI Biologist. Contact Jami Davis (831-325-9693) or Bill Collins (831-242-7920) to document, handle, or relocate CTS if encountered.
- Do not enter vernal pool areas. Do not work within “New Pond” area at HA-28 if water is present within the pond.
- If substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs, work activities must cease until the Service-approved biologist, and workers trained to identify CTS, have searched the work area for dispersing salamanders. Work activities may resume once the biologist and search crew have determined that CTS that could be killed or injured by work activities are no longer present in the work area.
- Report all encounters of BLL and follow ITSI’s BLL encounter protocol.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:	Vernal pools are located adjacent to each restoration area		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	

Restrictions:

- Do not enter vernal pool areas.
- Prevent all soil runoff into the ponds during construction activities.
- "New Pond" area (excavation area that now holds water) at HA-28 should be avoided to the greatest extent feasible. If necessary to work within this area, work shall only occur while the area is dry to prevent impacts to the habitat and potential breeding CTS.

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:** Area is mostly unvegetated due to soil remediation
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

- Restoration activities shall not impact intact vegetation adjacent to the work sites

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize ground disturbance as much as possible.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.

8. INVASIVE SPECIES:

- Any equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

-

This checklist has been read, approved, and signed by the following:

ITSI Biologist: Tom Ghigliotto Digitally signed by Tom Ghigliotto DN: cn=Tom Ghigliotto, o=ITSI Gilbane, ou=CQCSM, email=tghigliotto@itsi.com, c=US Date: 2013.10.01 14:59:29 -07'00' **Date:** _____

ITSI QC Manager: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@itsi.com, c=US Date: 2013.10.01 14:54:17 -07'00' **Date:** _____

BRAC Biologist: Bart Kowalski Digitally signed by Bart Kowalski DN: cn=Bart Kowalski, o, ou, email=bartholomew.l.kowalski@usace.army.mil, c=US Date: 2013.10.01 14:49:40 -07'00' **Date:** _____

Denise Duffy & Associates, Inc.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: October 8, 2015

From: Amendment to HA-37, HA-34, HA-38 Erosion Control Activities in Support of Site Restoration Habitat Checklist, Dated 9-20-13

The HA-37, HA-34, HA-38 Erosion Control Activities in Support of Site Restoration Habitat Checklist (HCL) will be amended as follows:

- CTS encounters must be reported immediately to the field supervisor and Project Biologist. Contact Jami Davis (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.

- If rain is forecasted within 48 hours of work, the work site shall be visually inspected for CTS by the Project Biologist or another Service-approved biologist prior to the commencement of the day's work.

- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist or other Service-approved biologist shall be contacted to relocate the CTS prior to work in the immediate area.

- Surveys shall be conducted by the Project Biologist of other Service-Approved Biologist prior to removal of sediment from sediment basins that contain water.

Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2015.10.08 13:32:35 -07'00' **Date:** _____

QC Manager: Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2015.10.08 14:15:01 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2015.10.08 12:30:02 -07'00' **Date:** _____

Denise Duffy & Associates, Inc.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: August 18, 2016

From: Amendment to HA-37, HA-34, HA-38 Erosion Control Activities in Support of Site Restoration Habitat Checklist, Dated 9-20-13 and Amendment dated 10-8-15

The HA-37, HA-34, HA-38 Erosion Control Activities in Support of Site Restoration Habitat Checklist (HCL) will be amended as follows:

- Work shall not occur within active restoration areas as identified on the attached maps except where access to work areas have been identified. The access routes shall be delineated in the field in coordination with the BRAC Biologist prior to work initiation. If any changes to the access routes are necessary, the BRAC biologist shall be contacted prior to making any changes.

Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2016.08.18 14:52:32 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2016.08.18 15:41:56 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2016.08.18 15:13:47 -07'00' **Date:** _____

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Davis, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Broadway Bypass Road	**DATE:**	12-20-16
WORK TO BE CONDUCTED:	Investigation of anomalies using the MetalMapper mounted on a small tractor and subsurface removal of a subset of targets within 45-foot road alignment and fuel break		

1. LAND USE:	☒ **Habitat Reserve** Although work is within a Habitat Reserve area, the road and fuel break portion are considered part of BLM's 2% development allowance	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**	
Species:	CTS, BLL, Monterey spineflower, Seaside birds-beak, sand gilia, HMP shrubs,			
Location:				
Grid Numbers:				

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Davis (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.
- QC seeds shall not be placed within the monitoring transects (see attached map)

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☐ **No**	
Restrictions:			

KEMRON
ENVIRONMENTAL SERVICES

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☒ **Mechanical Removal Needed**	**Location:** Fuel breaks

Vegetation Removal Restrictions:

- No vegetation removal shall occur outside of the 45-foot fuel breaks
- Vegetation removal will be to 6 inches above the ground so as not to scalp the soil

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing fuel breaks only. Roads may be used only when necessary.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

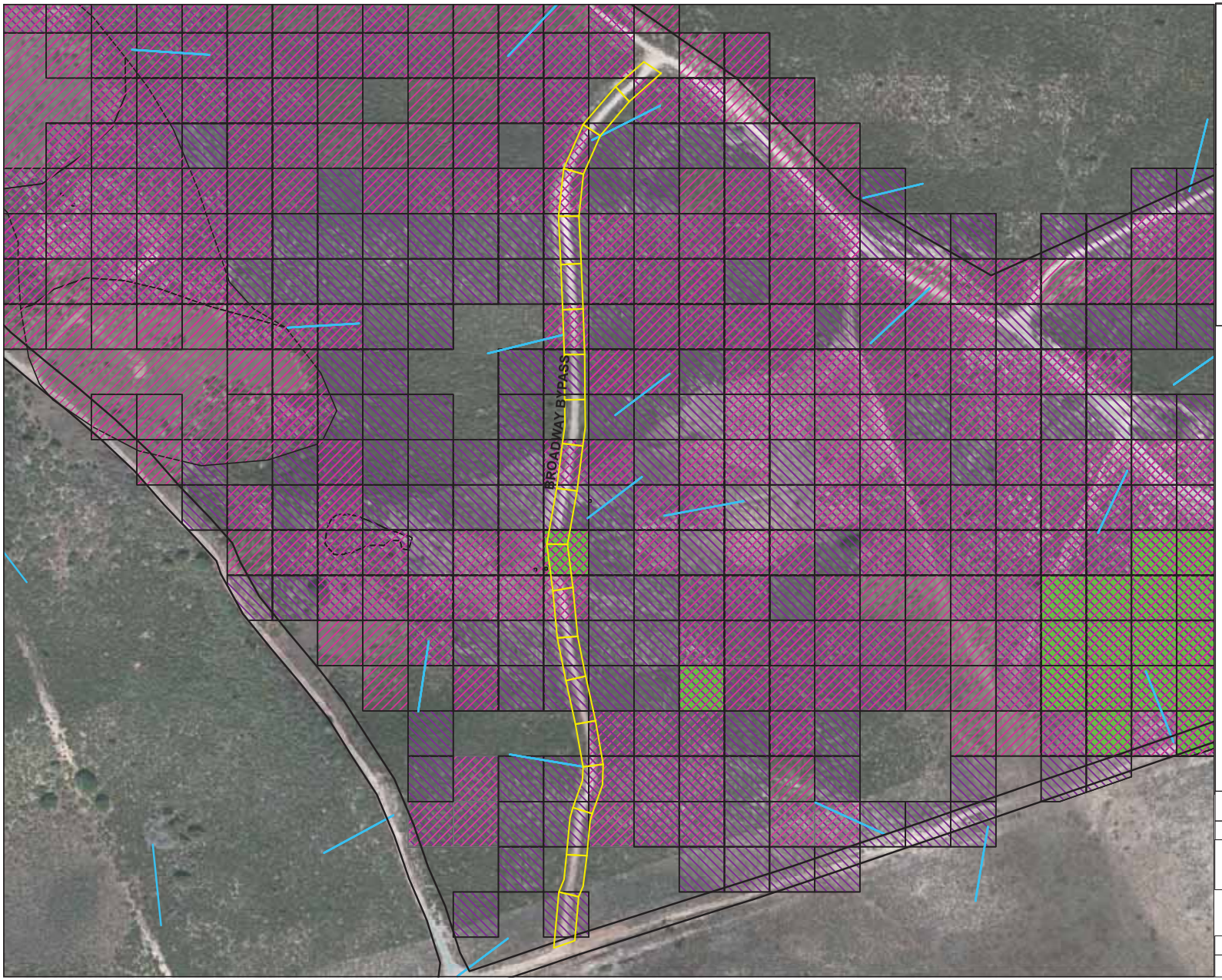
This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2016.12.20 15:21:14 -08'00' **Date:** _____

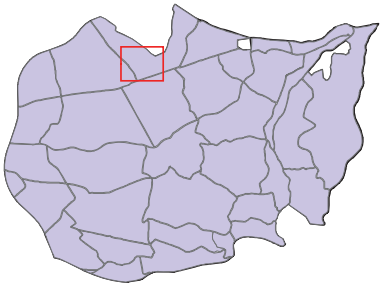
QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.03.07 13:45:58 -08'00' **Date:** _____

KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2016.12.20 15:31:53 -08'00'

BRAC Biologist: _____ **Date:** _____



Former Fort Ord
Impact Area



Burn Unit
Broadway Bypass Fuelbreak Grids
Monitoring Transect

HMP Species

Monterey spineflower
Sand gilia
Seaside bird's-beak
Spineflower and Sand gilia

N

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SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*Broadway Bypass Fuelbreaks* Sensitive Biological Resources

DATE	PROJECT NUMBER	FILE NAME
9/8/2016		SEE FOOTER

C:\GIS\Final Products\Broadway Bypass\Broadway Bypass Bio Resources.mxd, jdavis, Gilbane

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	HA-26	**DATE:**	6-2-2017
WORK TO BE CONDUCTED:	Erosion control activities in support of site restoration, such as collapsing identified erosion rills, and prepare the areas to receive fill.		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	HMP Shrubs, Black Legless Lizard (BLL) and California Tiger Salamander (CTS)		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow BLL encounter protocol.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist or other Service-approved biologist shall be contacted to relocate the CTS prior to work in the immediate area.

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	
Restrictions:			

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:** Area is mostly unvegetated due to soil remediation

KEMRON
ENVIRONMENTAL SERVICES

☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

- Restoration activities shall not impact intact vegetation adjacent to the work sites

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize ground disturbance as much as possible.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads and fuel breaks, and approved interior access routes only. If additional access routes are necessary, the Project Biologist shall be contacted to identify suitable routes that will cause the least amount of impact.

8. INVASIVE SPECIES:

- Any equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

-

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2017.06.02 13:57:23 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.06.06 10:13:13 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2017.06.05 09:23:15 -07'00' **Date:** _____

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, KEMRON Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 23	**DATE:**	6-7-17
WORK TO BE CONDUCTED:	Investigation of large anomalies using the MetalMapper mounted on a small tractor.		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Species:	Monterey spineflower, Yadon's piperia, HMP shrubs, CTS, BLL		
Location:	See attached map for known locations of HMP annual plants		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and KEMRON Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- If greater than 0.5 inch of rain in a 24-hour period occurs, work activities must cease until the site biologist and workers trained to identify CTS have searched the work area for dispersing salamanders. Work activities may resume once the biologist and search crew have determined that CTS that could be killed or injured by work activities are no longer present in the work area.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur in areas known to support Monterey spineflower from approximately February 1 to June 1 (see attached Sensitive Resources Map).
- No work shall occur in flagged areas of Yadon's piperia until it has been determined by the KEMRON biologist that the plants are no longer blooming and have set seed (approximately August/September) (see attached Sensitive Resources Map).
- Yadon's piperia has been identified along the southern border of Unit 23, but is not known to occur within the interior areas of the unit. However, if any Piperia individuals are encountered in the interior areas, they shall be reported to the KEMRON biologist and work in that area shall be avoided until the plants are no longer blooming and have set seed, as determined by the KEMRON biologist. Please refer to the attached pictures of Yadon's piperia.

KEMRON
ENVIRONMENTAL SERVICES

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☐ Flagged/Marked
Location:	Pond 54		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ Yes	☐ No	

Restrictions:

- No work shall occur within the vernal pond until the pond has dried, as determined by the KEMRON biologist. (see attached Sensitive Resources Map for target locations within 2017 ponded area).
- Use of heavy equipment within the vernal pond shall be minimized to the greatest extent feasible.

5. VEGETATION REMOVAL	
☒ No Removal Needed	Location:
☐ Manual Removal Needed	Location:
☐ Mechanical Removal Needed	Location:

Vegetation Removal Restrictions:

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only and the two internal access routes only.
- Use of the interior access routes shall be limited to only necessary traffic.
- Heavy equipment transport from site to site must be along existing fuelbreaks only. Roads may be used only when necessary. If equipment transport is required along Hawkeye Road, the fuelbreak on the north side of the road (within Unit 15) shall be used to avoid the vernal pool in Unit 11.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal pond.

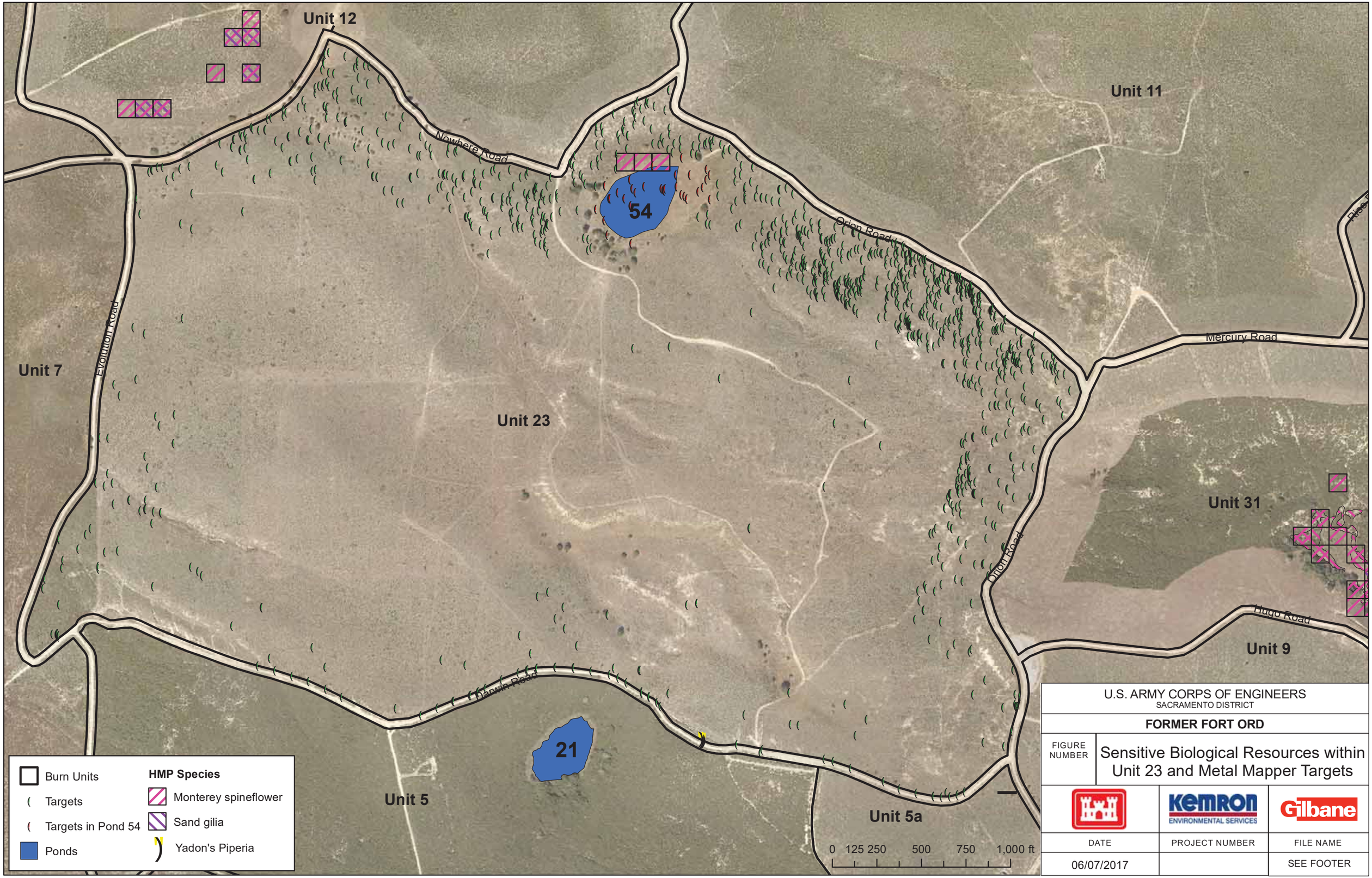
KEMRON
ENVIRONMENTAL SERVICES

This checklist has been read, approved, and signed by the following:

KEMRON Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.06.07 11:03:16 -07'00' **Date:** _____

KEMRON QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.07.17 16:29:22 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2017.06.08 15:25:22 -07'00' **Date:** _____



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 23 and Metal Mapper Targets

DATE	PROJECT NUMBER	FILE NAME
06/07/2017		SEE FOOTER

Denise Duffy & Associates, Inc.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: March 20, 2018

From: Amendment to the Risk Reduction Study Habitat Checklist for Unit 23 (Dated 12-20-17)

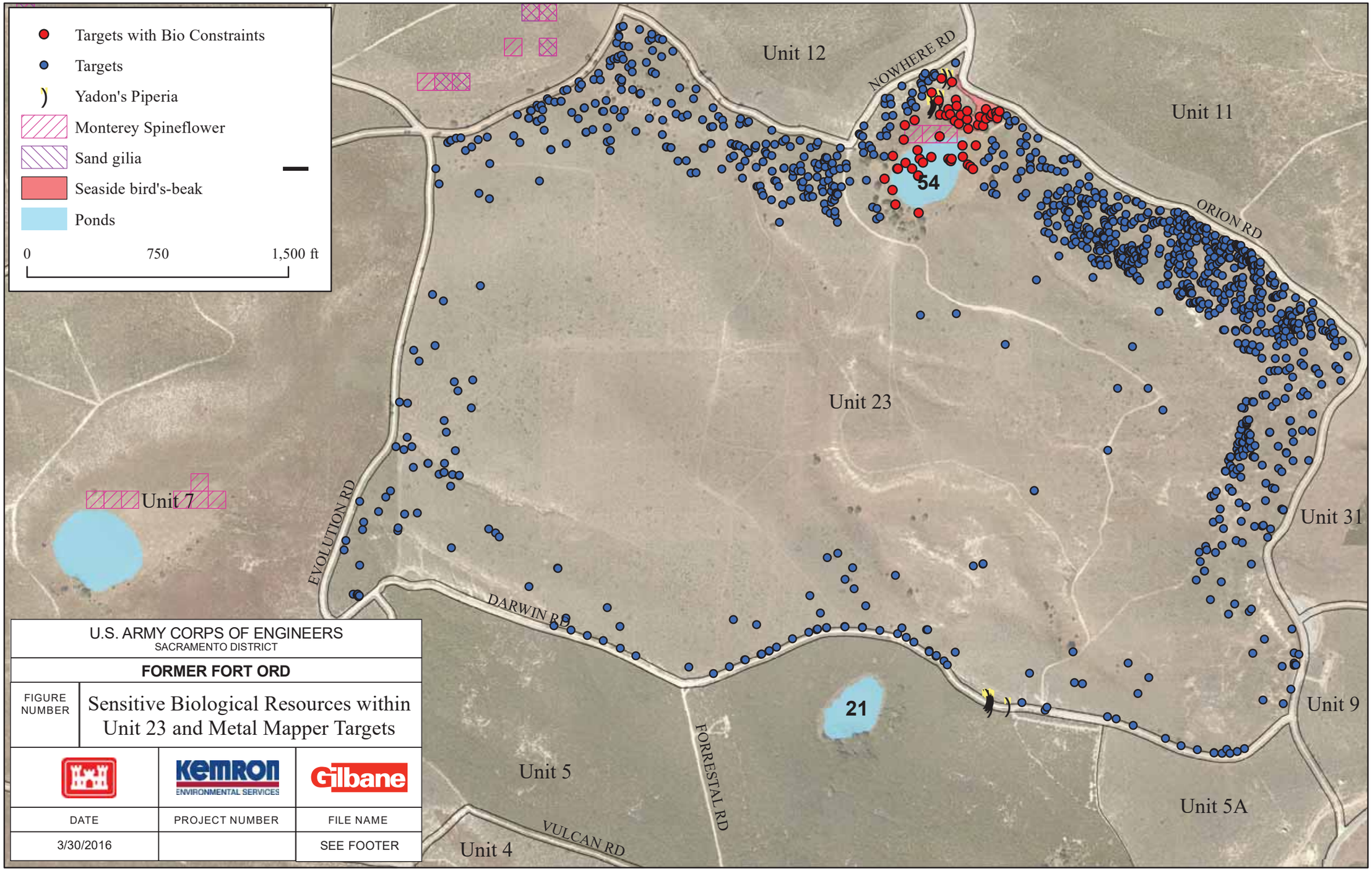
The Unit 23 Risk Reduction Study Habitat Checklist (HCL) (Dated 12-20-17) will be amended as follows:

Yadon's piperia and Seaside bird's-beak have been identified within the interior areas of Unit 23. No work shall occur in flagged areas of Yadon's piperia or Seaside bird's-beak until it has been determined by the Project biologist that the plants are no longer blooming and have set seed (approximately August/September) (see attached map). The Project Biologist shall monitor the site to determine when the plants have set seed and work can commence within the area.

Project Biologist: Jami Colley **Date:** 3-20-18

QC Manager: Charlie Clyde Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.04.12 15:14:51-07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.03.22 09:42:54 -07'00' **Date:** _____

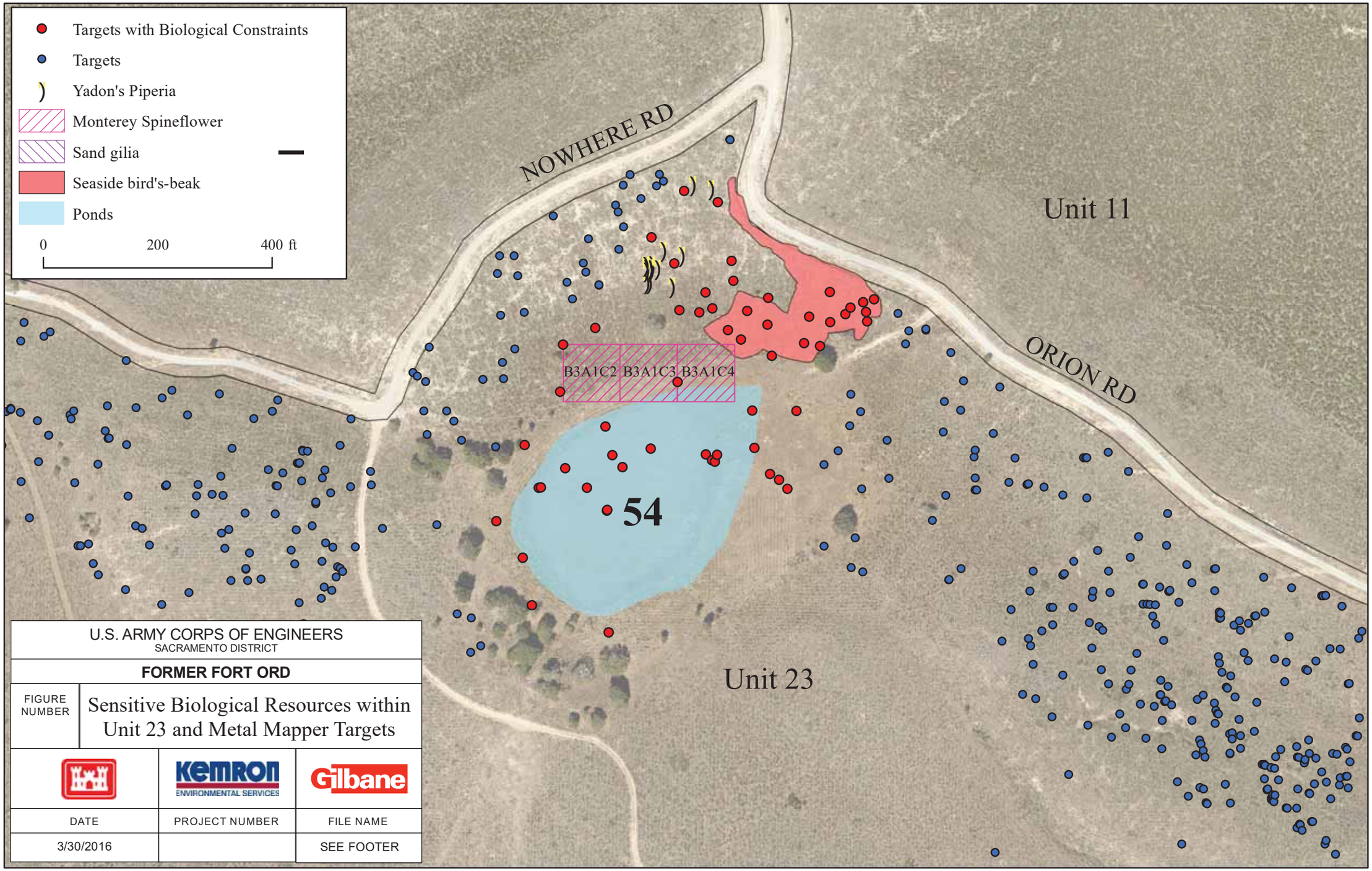


U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 23 and Metal Mapper Targets

	KEMRON ENVIRONMENTAL SERVICES	Gilbane
DATE	PROJECT NUMBER	FILE NAME
3/30/2016		SEE FOOTER



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 23 and Metal Mapper Targets

DATE	PROJECT NUMBER	FILE NAME
3/30/2016		SEE FOOTER

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Units B/C Containment Lines, B-3 East, B-3 West, & B-2A	**DATE:**	6-15-17
WORK TO BE CONDUCTED:	Surface MEC removal and DGM		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☒ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Yadon's piperia, Monterey spineflower, sand gilia, HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol
- No work shall occur in areas known to support Monterey spineflower and/or sand gilia from approximately February 1 to May 31 (see Figure 2).
- No work shall occur in flagged areas of Yadon's piperia until it has been determined by the Project biologist that the plants are no longer blooming and have set seed (approximately August/September) (see Figure 2).
- Heavy equipment shall avoid impacting Toro manzanitas that were left standing in the cut-only areas following vegetation removal.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☒ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ Yes	☐ No	

Restrictions:

- No work shall occur within the vernal ponds until the ponds have dried, as determined by the Project Biologist.
- No work shall occur within Pond 3 North between February 1 and June 30. The Project biologist shall survey the pond to ensure that all Contra Costa goldfields have senesced prior to work initiation.
- Heavy equipment shall not be permitted within the vernal ponds identified (see Figure 2). Manual equipment shall be used to complete DGM work.

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only as shown on Figure 4.
- Heavy equipment transport from site to site must be along existing roads only.
- BLM Restoration Areas within B-2A shall not be used as regular tracking/access routes (see Figure 4).

KEMRON
ENVIRONMENTAL SERVICES

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.
- Teams working within areas infested with Klamath weed (see Figure 5) shall clean boots and equipment daily before leaving the area to reduce spread of invasive species. Soil and plant material shall be removed using boot brushes or other types of brushes. Decon of hand tools and boots shall be completed within the work area. Any caked-on soils or material that cannot be removed using brushes shall be washed off with water – washing can be competed at the Kemron Compound; however, if washing of equipment is necessary, it must be completed on-site prior to leaving the area.
- Unnecessary movement of DGM equipment from the areas infested with Klamath weed to other areas shall be minimized. When working in the large infested areas (see Figure 5), DGM shall work only with the infested areas to the greatest extent feasible, then decon before moving into uninfested areas. DGM Equipment used in these areas shall be pressure-washed daily on-site prior to moving to other areas to remove invasive plant seeds.

9. ADDITIONAL SITE CONCERNS:

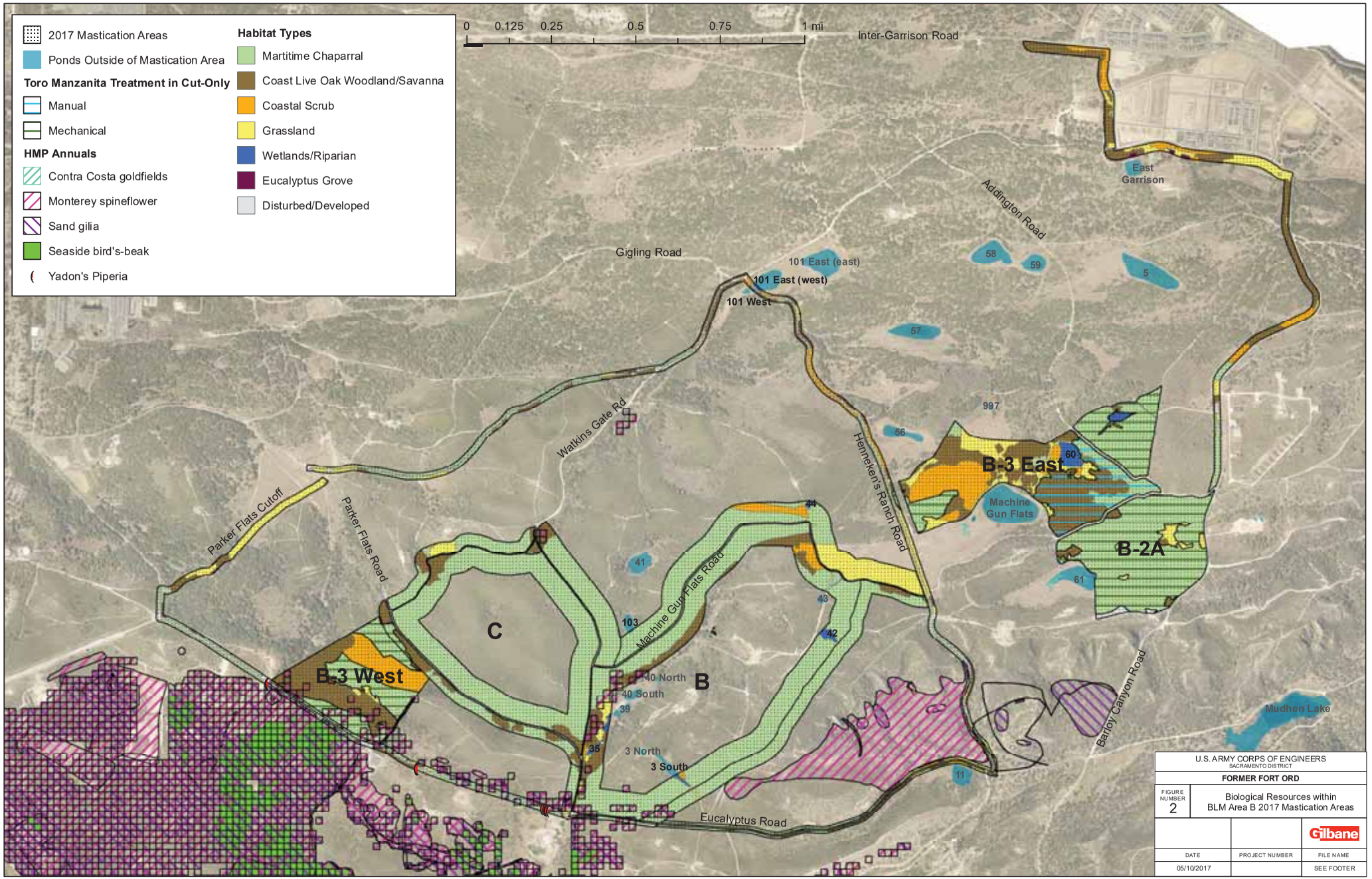
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

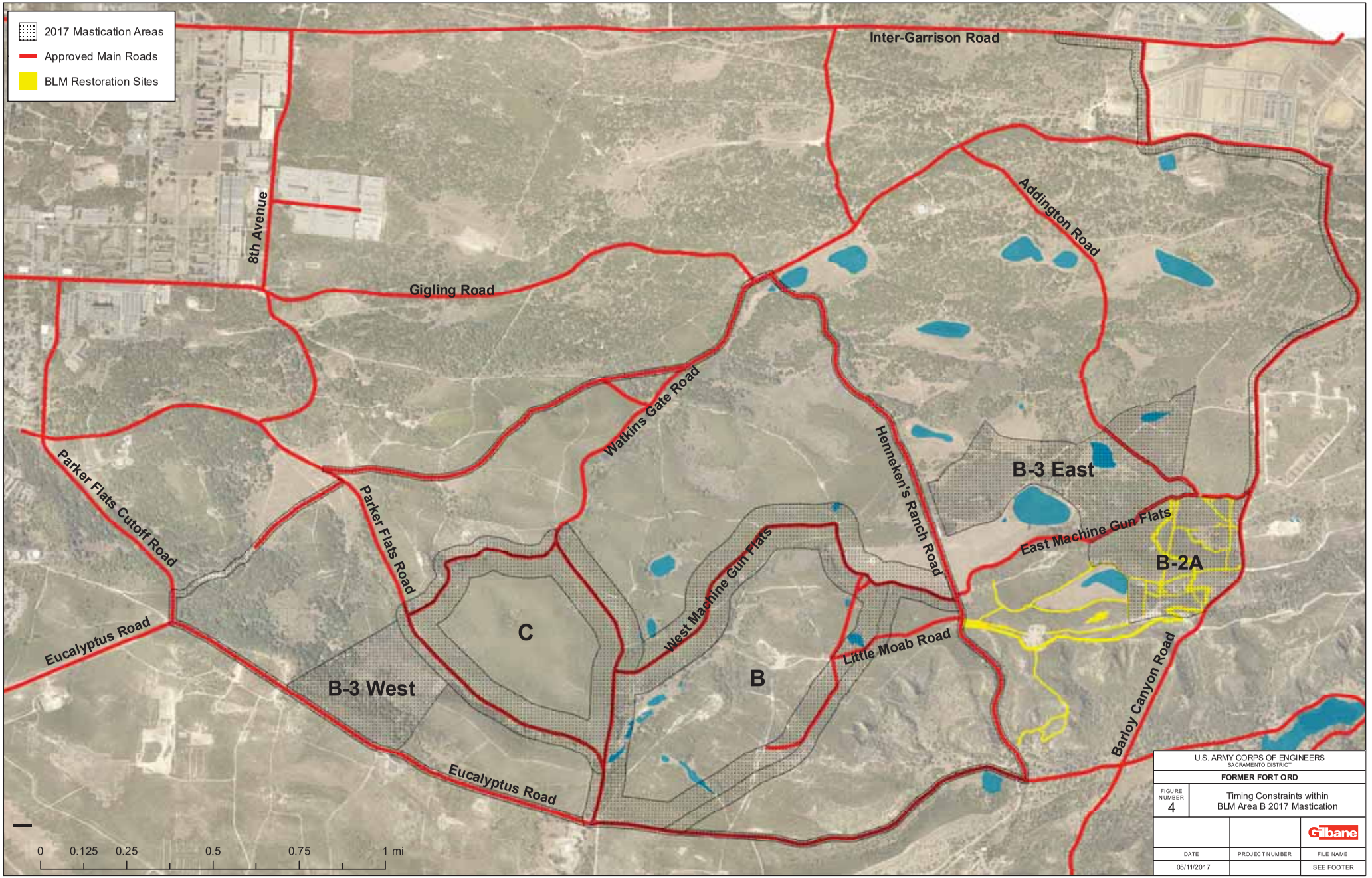
This checklist has been read, approved, and signed by the following:

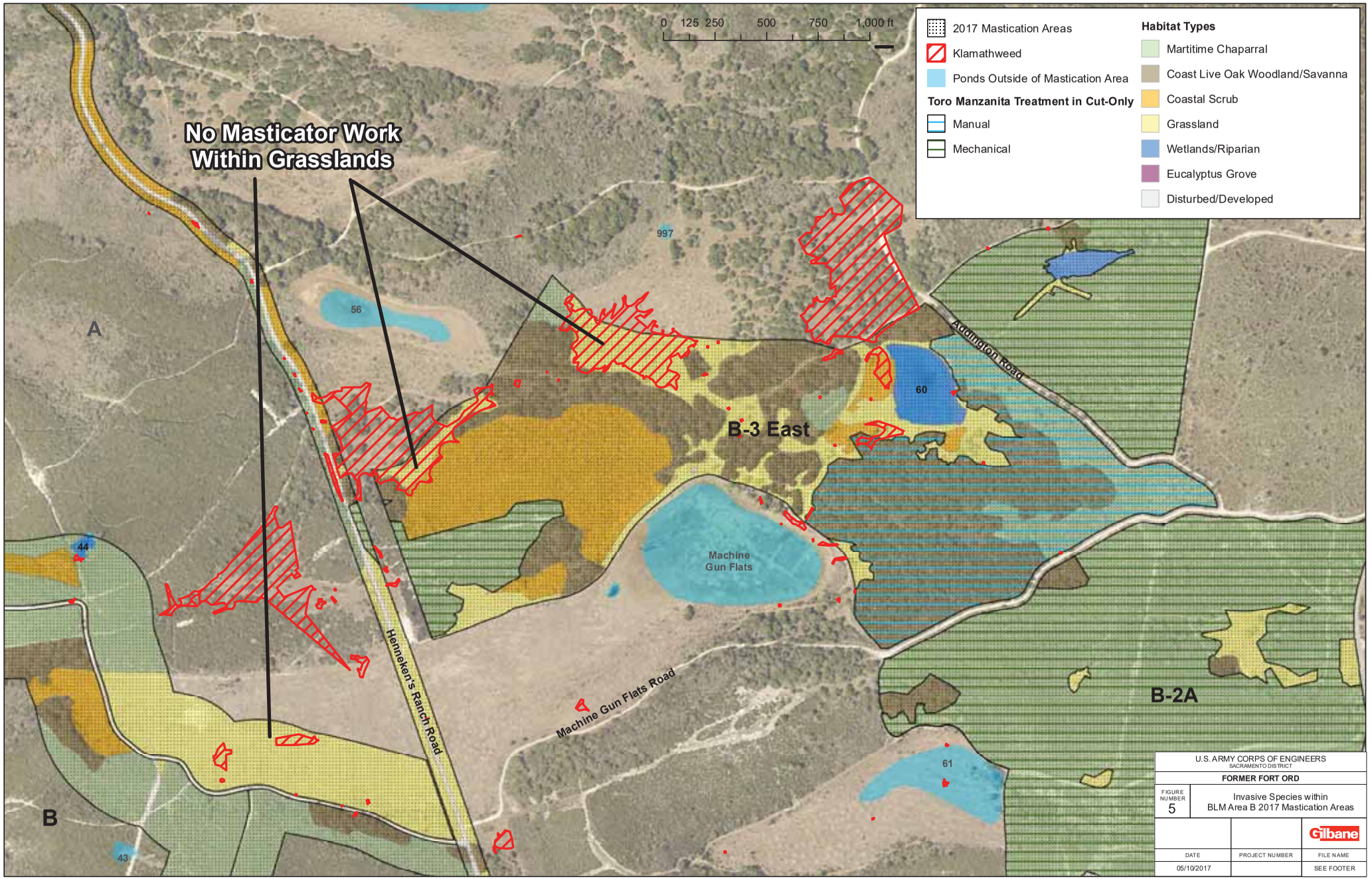
Project Biologist: Jami Davis — Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.06.15 16:48:15 -07'00' — **Date:** _____

QC Manager: Chuck Clyde — Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.06.16 10:58:31 -07'00' — **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 — Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2017.06.16 10:25:51 -07'00' — **Date:** _____


2017 Mastication Areas
Ponds Outside of Mastication Area
Toro Manzanita Treatment in Cut-Only
Manual
Mechanical
HMP Annuals
Contra Costa goldfields
Monterey spineflower
Sand gilia
Seaside bird's-beak
Yadon's Piperia
Habitat Types
Martitime Chaparral
Coast Live Oak Woodland/Savanna
Coastal Scrub
Grassland
Wetlands/Riparian
Eucalyptus Grove
Disturbed/Developed
0 0.125 0.25 0.5 0.75 1 mi
Inter-Garrison Road
East Garrison
Addington Road
Gigling Road
101 East (east)
101 East (west)
101 West
Watkins Gate Rd
Parker Flats Cutoff
Parker Flats Road
Hennekin's Ranch Road
Machine Gun Flats Road
Machine Gun Flats
B-3 East
B-2A
B-3 West
C
B
40 North
40 South
3 North
3 South
Barloy Canyon Road
Mudhen Lake
Eucalyptus Road
997
58
59
5
57
56
60
61
44
41
43
42
103
39
35
11
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER 2
Biological Resources within BLM Area B 2017 Mastication Areas
Gilbane
DATE
PROJECT NUMBER
FILE NAME
05/10/2017
SEE FOOTER


2017 Mastication Areas
Approved Main Roads
BLM Restoration Sites
Inter-Garrison Road
8th Avenue
Gigling Road
Addington Road
Watkins Gate Road
Henneken's Ranch Road
Parker Flats Cutoff Road
Parker Flats Road
B-3 East
East Machine Gun Flats
B-2A
West Machine Gun Flats
C
B
Little Moab Road
Eucalyptus Road
B-3 West
Barloy Canyon Road
Eucalyptus Road
0 0.125 0.25 0.5 0.75 1 mi
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER 4
Timing Constraints within BLM Area B 2017 Mastication
Gilbane
DATE
PROJECT NUMBER
FILE NAME
05/11/2017
SEE FOOTER


No Masticator Work
Within Grasslands
0 125 250 500 750 1,000 ft
2017 Mastication Areas
Klamathweed
Ponds Outside of Mastication Area
Toro Manzanita Treatment in Cut-Only
Manual
Mechanical
Habitat Types
Martitime Chaparral
Coast Live Oak Woodland/Savanna
Coastal Scrub
Grassland
Wetlands/Riparian
Eucalyptus Grove
Disturbed/Developed
997
56
60
61
44
43
A
B
B-3 East
B-2A
Addington Road
Machine
Gun Flats
Machine Gun Flats Road
Hennekens Ranch Road
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER 5
Invasive Species within
BLM Area B 2017 Mastication Areas
Gilbane
DATE
PROJECT NUMBER
FILE NAME
05/10/2017
SEE FOOTER

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Units B/C Burned Areas	**DATE:**	10-11-17
WORK TO BE CONDUCTED:	Mechanical and manual vegetation removal for post burn clean up, and surface clearance		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☒ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**	
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Monterey spineflower, sand gilia, Contra Costa goldfields, HMP shrubs			
Location:				
Grid Numbers:				

Restrictions:

All Areas

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol

Habitat Reserve Areas

- No work shall occur in the HMP grids containing Monterey spineflower, and/or sand gilia from approximately February 1 to May 31 (see Figure 1).
- No work shall occur in the HMP grids containing Contra Costa goldfields from approximately February 1 until the ground has completely dried and the plants have set seed (approximately May 31), as determined by the Project Biologist (see Figure 1).
- Piling of cut vegetation in areas known to support Monterey spineflower and/or sand gilia (see Figure 1) shall be reduced to the greatest extent feasible. No piling of cut vegetation shall occur in areas known to support Contra Costa goldfields. Boundaries of HMP grids near hand-cut areas shall be staked and flagged (pink and black striped flagging) prior to vegetation removal in the area to indicate areas that should be avoided to the greatest extent feasible.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☒ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ Yes	☐ No	

Restrictions:

All Areas

- No work shall occur within the vernal ponds until the ponds have dried, as determined by the Project Biologist.
- Vernal ponds (3 north, 3 south, 35, 39, 40 north, 40 south, 42, and 43) shall be staked and flagged (pink and black striped flagging) for avoidance in coordination with the Project Biologist prior to vegetation removal within the area.
- Masticators shall not be permitted within 50 feet of the vernal ponds identified (see Figure 1). Small equipment, such as a bobcat or other manual equipment may be used to remove vegetation within the vernal ponds if necessary, and after the Project Biologist has determined the pond is dried completely.

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Areas of dense oak woodland, within 50 feet of vernal ponds, and areas inaccessible to masticators.
☒ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

All Areas

- Masticators shall not be used in dense areas of oak woodland or within 50 feet of vernal ponds. Small equipment or manual equipment shall be used in areas where masticators are not permitted or are unable to access.
- Coast live oak trees greater than 4” in diameter shall not be removed. Removal of coast live oak trees smaller than 4” in diameter shall be minimized to the greatest extent feasible. No branches larger than 4” shall be cut from coast live oak trees. Branches shall be cut all the way up to the next branch.
- Retained coast live oak trees may be limbed up to 6 feet to allow access beneath the trees.

6. EROSION CONCERNS/SITE RESTORATION:

All Areas

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

KEMRON
ENVIRONMENTAL SERVICES

7. SITE ACCESS:

All Areas

- Vehicle access should be limited to existing roads only (see Figure 2). Any need of interior access by vehicles shall be coordinated with the Project Biologist prior to use.
- Heavy equipment transport from site to site must be along existing roads only.
- Equipment (skid steer) traffic to access stockpiled vegetation shall be minimized to the greatest extent feasible.

8. INVASIVE SPECIES:

Habitat Reserve Areas

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

All Areas

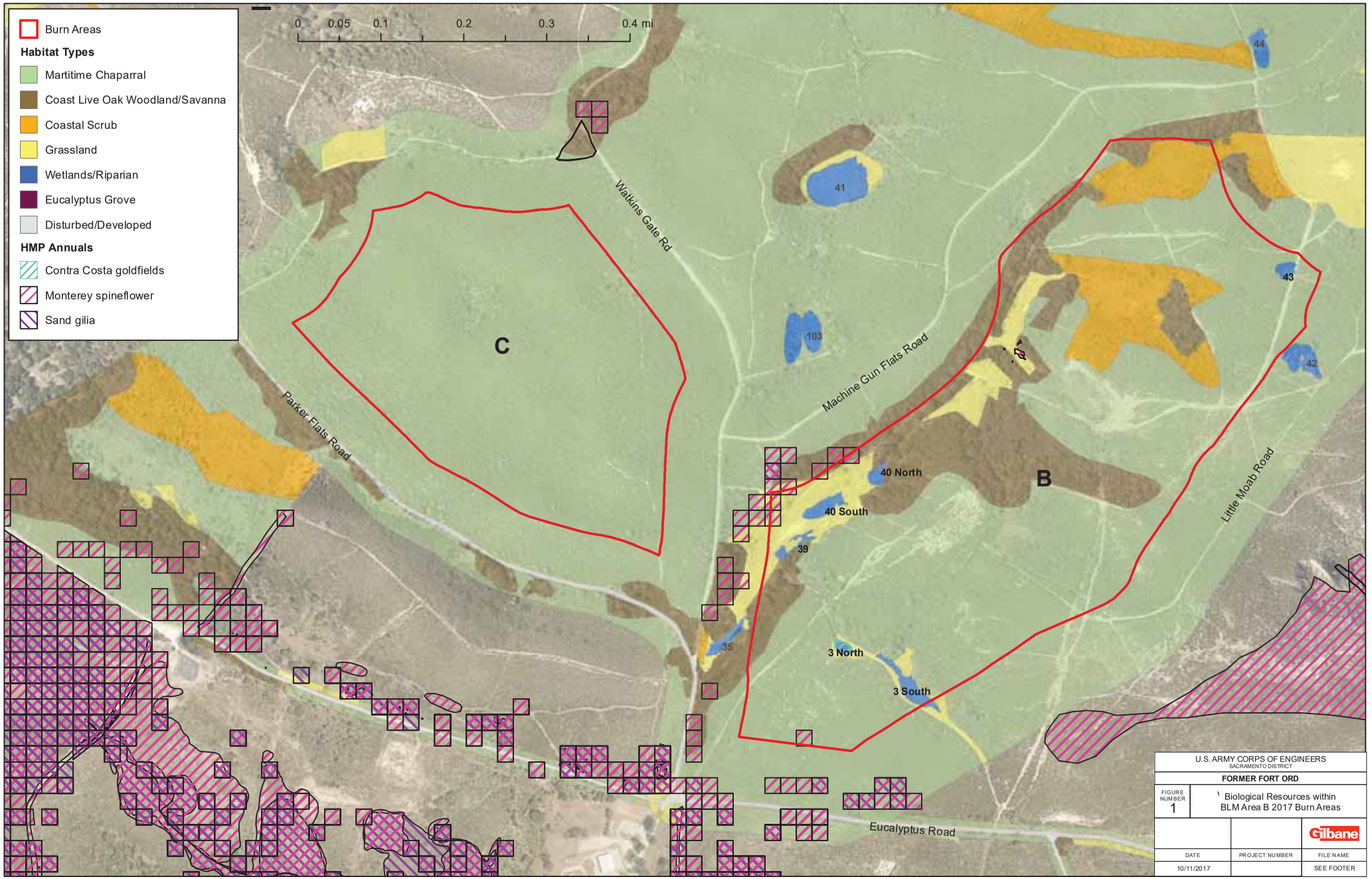
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Davis — Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.10.11 10:23:05 -07'00' **Date:** _____

QC Manager: Charles Clyde — Digitally signed by Charles Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, CN=Charles Clyde Date: 2017.10.11 14:05:57-07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 — Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2017.10.11 13:18:37 -07'00' **Date:** _____



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

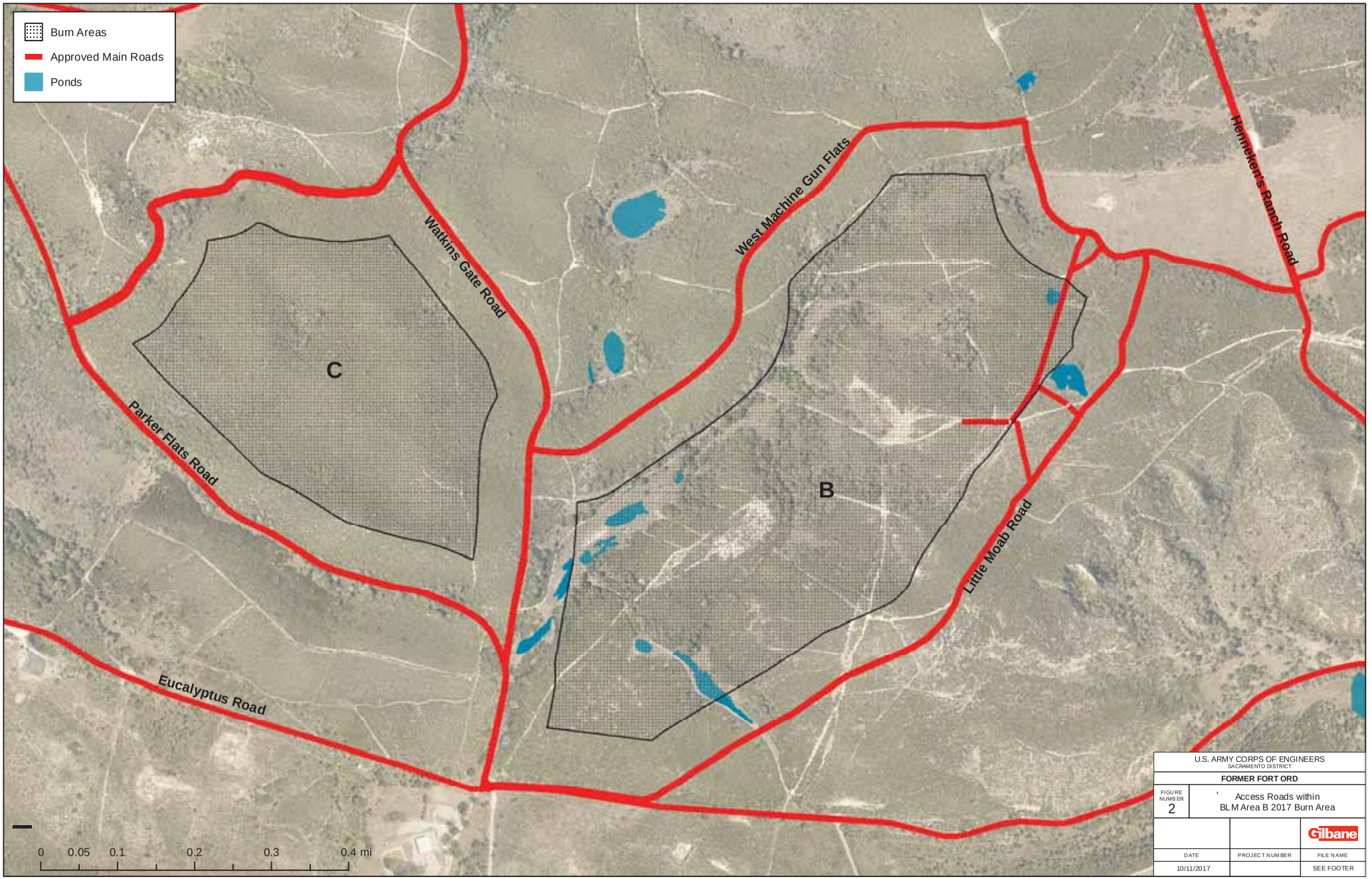
FORMER FORT ORD

FIGURE NUMBER 1

Biological Resources within BLM Area B 2017 Burn Areas

Gilbane

DATE	PROJECT NUMBER	FILE NAME
10/11/2017		SEE FOOTER



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
2	Access Roads within BLM Area B 2017 Burn Area

Gilbane

DATE	PROJECT NUMBER	FILE NAME
10/11/2017		SEE FOOTER

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 17 Initial Phase II Transects	**DATE:**	11-30-17
WORK TO BE CONDUCTED:	Manual vegetation removal and focused field evaluation		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Monterey spineflower, Yadon's piperia		
Location:	See attached map		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol
- No vegetation removal shall occur in the habitat reserve areas from approximately February 1 to May 31.
- No work shall occur in areas known to support Monterey spineflower from approximately February 1 to May 31 (see attached map).
- No work shall occur in areas identified to contain Yadon's piperia from approximately February 1 until it has been determined by the Project biologist that the plants are no longer blooming and have set seed (approximately August/September). The Project Biologist shall flag areas of Yadon's piperia for avoidance at the appropriate time for identification of this species. (see attached map)

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:	Pond 14 is located off of Barloy Canyon Road, adjacent to the work area		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	

- Access routes shall avoid Pond 14 (see attached map).
- The Project Biologist shall evaluate the work area for any unknown ponds. If identified, the Project Biologist shall determine if work can proceed within these areas. No work shall proceed within areas of standing water or saturated soils.

KEMRON
ENVIRONMENTAL SERVICES

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Unit 17 Initial Phase II Transects
☐ **Mechanical Removal Needed**	**Location:**

- Coast live oak trees greater than 4" in diameter shall not be removed. Removal of coast live oak trees smaller than 4" in diameter shall be minimized to the greatest extent feasible. No branches larger than 4" shall be cut from coast live oak trees. Branches shall be cut all the way up to the next branch.

6. EROSION CONCERNS/SITE RESTORATION:

- Vegetation removal and work activities steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- The Project biologist shall monitor the site regularly for erosion concerns.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Interior access outside of the planned transect alignments shall be coordinated with the Project Biologist and shall utilize old Army roads to the greatest extent feasible. Interior access shall be limited to foot traffic only.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

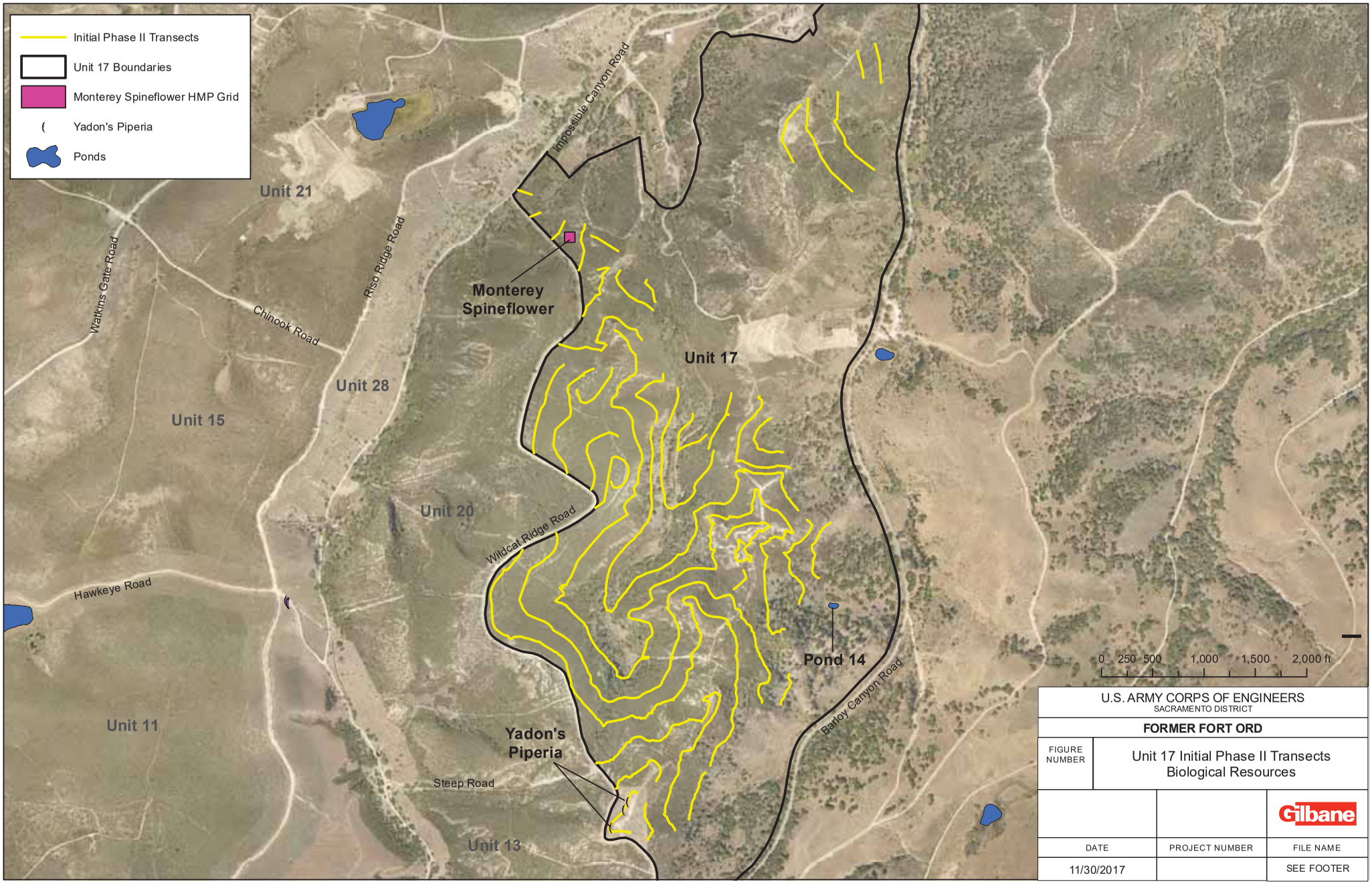
- No refueling or equipment shall occur within 400 feet of Pond 14 or any other pond or wetland identified by the Project Biologist during ongoing habitat evaluations.

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Davis — Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.11.30 14:24:12 -08'00' — **Date:** _____

QC Manager: Charlie Clyde — Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.01.24 15:40:40-08'00' — **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 — Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2017.11.30 16:13:35 -08'00' — **Date:** _____



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Unit 17 Initial Phase II Transects Biological Resources

Gilbane

DATE	PROJECT NUMBER	FILE NAME
11/30/2017		SEE FOOTER

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 33	**DATE:**	1-25-17
WORK TO BE CONDUCTED:	Collection of chemical samples by hand auguring to a maximum depth of 2 feet and backfilling the hole.		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Species:	HMP shrubs, CTS, BLL		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☐ **No**	
Restrictions:			

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:
• None

KEMRON
ENVIRONMENTAL SERVICES

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Vehicle use, including parking shall avoid impacts to the HA 27 Restoration Area (see attached map).

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.
- The crew shall clean boots and equipment daily before leaving the area to reduce spread of invasive species. Soil and plant material shall be removed using boot brushes or other types of brushes. Decon of hand tools and boots shall be completed within the work area. Any caked-on soils or material that cannot be removed using brushes shall be washed off with water – washing can be competed at the Kemron Compound if necessary.

9. ADDITIONAL SITE CONCERNS:

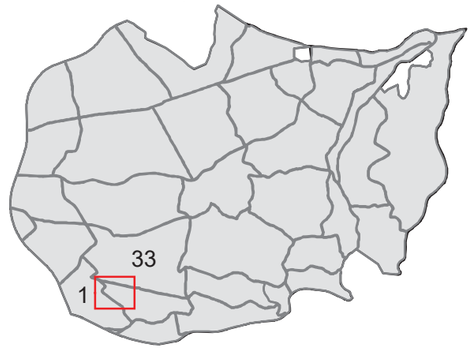
This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Davis — Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2018.01.25 10:09:45 -08'00' **Date:** _____

QC Manager: Charlie Clyde — Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.01.26 07:24:35-08'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 — Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.01.25 13:08:54 -08'00' **Date:** _____

Former Fort Ord
Impact Area



Unit Boundary
Restoration Area

0
0 100 200 400 ft

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
1	*Units 1, 2, & 3 Fuelbreaks HCL* Unit 33 Biological Constraints

DATE	PROJECT NUMBER	FILE NAME
1/25/2018		SEE FOOTER

C:\GIS\Final Products\Unit 33\Unit 33 Bio Resources.mxd, jdavis, Gilbane

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Davis, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 12 Access Road Restoration	**DATE:**	3-19-18
WORK TO BE CONDUCTED:	Restore unused and damaged roads due to erosion, including vegetation removal, subsurface clearance, installation of berms and water bars, re-contouring road, backfilling eroded area, and potentially applying mulch.		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Species:	HMP shrubs, California Tiger Salamander (CTS), Black Legless Lizard (BLL), Yadon's piperia, and Monterey spineflower		
Location:	See attached map for known locations of Yadon's piperia and Monterey spineflower		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur within Monterey spineflower or Yadon's piperia areas located adjacent to the project site (see attached map; flagged with pink and black striped flagging)
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Erosion control areas receiving soil shall be inspected daily prior to placement of soil to ensure no CTS or other wildlife are present that could be buried during work activities.
- If substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs, work activities must cease until the Project Biologist and workers trained to identify CTS have searched the work area for dispersing salamanders. Work activities may resume once the Project Biologist has determined that no CTS that could be killed or injured by work activities are present in the work area.

4. VERNAL POOLS/PONDS PRESENT	☐ Yes	☒ No	☐ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Within existing access road and fuel break
☐ **Mechanical Removal Needed**	**Location:**

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion and should be limited. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, sterile barley, or mulch.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing fuel breaks only. Roads may be used only when necessary.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.
- Iceplant is present on the soil stockpile proposed for use in backfilling the eroded area. Prior to use of the soil, iceplant shall be pulled by hand, taking care to remove as much of the root structure as possible. Iceplant shall be bagged, removed from the site, and disposed of properly.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

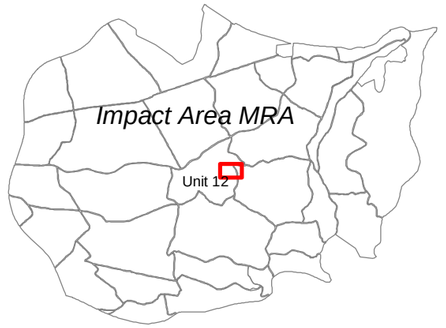
KEMRON
ENVIRONMENTAL SERVICES

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.03.19 14:35:59 -07'00' **Date:** _____

QC Manager: cclyde@gilbaneco.com Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.12.20 07:58:22 -08'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.03.19 15:08:09 -07'00' **Date:** _____



- Unit Boundaries
- Abandoned Rd. Restoration (Buffer 35ft.)
- Monterey spineflower
- Sand gilia
- Piperia sp.

N

0 37.5 75 150 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
1	**Abandoned Rd Restoration Unit 12 Biological Constraints**

DATE	PROJECT NUMBER	FILE NAME
3/14/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\HCL Maps\2018\Unit 12 Abandoned Road Restoration\Unit 12 Abandoned Road Restoration Bio Constraints.mxd, pkrabacher, Gilbane

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Davis, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 12 Access Road Restoration	**DATE:**	3-19-18
WORK TO BE CONDUCTED:	Restore unused and damaged roads due to erosion, including vegetation removal, subsurface clearance, installation of berms and water bars, re-contouring road, backfilling eroded area, and potentially applying mulch.		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Species:	HMP shrubs, California Tiger Salamander (CTS), Black Legless Lizard (BLL), Yadon's piperia, and Monterey spineflower		
Location:	See attached map for known locations of Yadon's piperia and Monterey spineflower		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur within Monterey spineflower or Yadon's piperia areas located adjacent to the project site (see attached map; flagged with pink and black striped flagging)
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Erosion control areas receiving soil shall be inspected daily prior to placement of soil to ensure no CTS or other wildlife are present that could be buried during work activities.
- If substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs, work activities must cease until the Project Biologist and workers trained to identify CTS have searched the work area for dispersing salamanders. Work activities may resume once the Project Biologist has determined that no CTS that could be killed or injured by work activities are present in the work area.

4. VERNAL POOLS/PONDS PRESENT	☐ Yes	☒ No	☐ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Within existing access road and fuel break
☐ **Mechanical Removal Needed**	**Location:**

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion and should be limited. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, sterile barley, or mulch.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing fuel breaks only. Roads may be used only when necessary.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.
- Iceplant is present on the soil stockpile proposed for use in backfilling the eroded area. Prior to use of the soil, iceplant shall be pulled by hand, taking care to remove as much of the root structure as possible. Iceplant shall be bagged, removed from the site, and disposed of properly.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

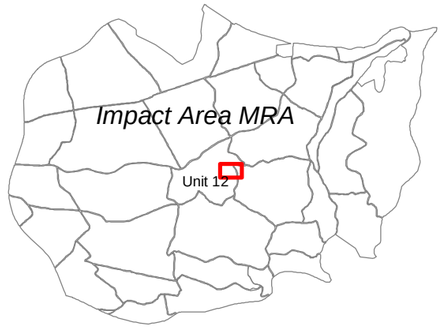
KEMRON
ENVIRONMENTAL SERVICES

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.03.19 14:35:59 -07'00' **Date:** _____

QC Manager: cclyde@gilbaneco.com Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.12.20 07:58:22 -08'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.03.19 15:08:09 -07'00' **Date:** _____



- Unit Boundaries
- Abandoned Rd. Restoration (Buffer 35ft.)
- Monterey spineflower
- Sand gilia
- Piperia sp.

N

0 37.5 75 150 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
1	**Abandoned Rd Restoration Unit 12 Biological Constraints**

DATE	PROJECT NUMBER	FILE NAME
3/14/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\HCL Maps\2018\Unit 12 Abandoned Road Restoration\Unit 12 Abandoned Road Restoration Bio Constraints.mxd, pkrabacher, Gilbane

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	100ft Buffer	**DATE:**	3-28-17
WORK TO BE CONDUCTED:	Installation of stakes along 100ft Buffer		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Yadon's piperia, Monterey spineflower, sand gilia, HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur in areas known to support Monterey spineflower or sand gilia from approximately February 1 to June 1 (see attached maps).
- Prior to work in Unit 4 near Evolution Road, the Project Biologist shall all areas of Yadon's piperia for avoidance (see attached maps). If Yadon's piperia plants are present within an area designated for a stake, the Project Biologist will work with staking crew to move the stake to an appropriate location that avoids impacts to Yadon's piperia.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:	Unit 5a (Pond 18 and "quarry pond")		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	

Restrictions:

- No access is permitted through the vernal ponds (see attached maps).

5. VEGETATION REMOVAL	
☒ No Removal Needed	Location:
☐ Manual Removal Needed	Location:
☐ Mechanical Removal Needed	Location:
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only. Only the Polaris will be used to access the interior staking points.
- Staking point within restoration areas may only be access on-foot (see attached map).

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.
- When working in Units infested with invasive species (Units 1, 2, and 6; see attached maps), the crew shall clean boots, Polaris tires, and equipment before leaving these units to reduce spread of invasive species. Decon shall occur before leaving the units on Nowhere, Austin, or Evolution Roads within the work area. Soil and plant material shall be removed using boot brushes or other types of brushes. Any caked-on soils or material that cannot be removed using brushes shall be washed off with water – washing can be competed at the Kemron Compound; however, if washing of the Polaris is necessary, it must be completed on-site prior to leaving the units.

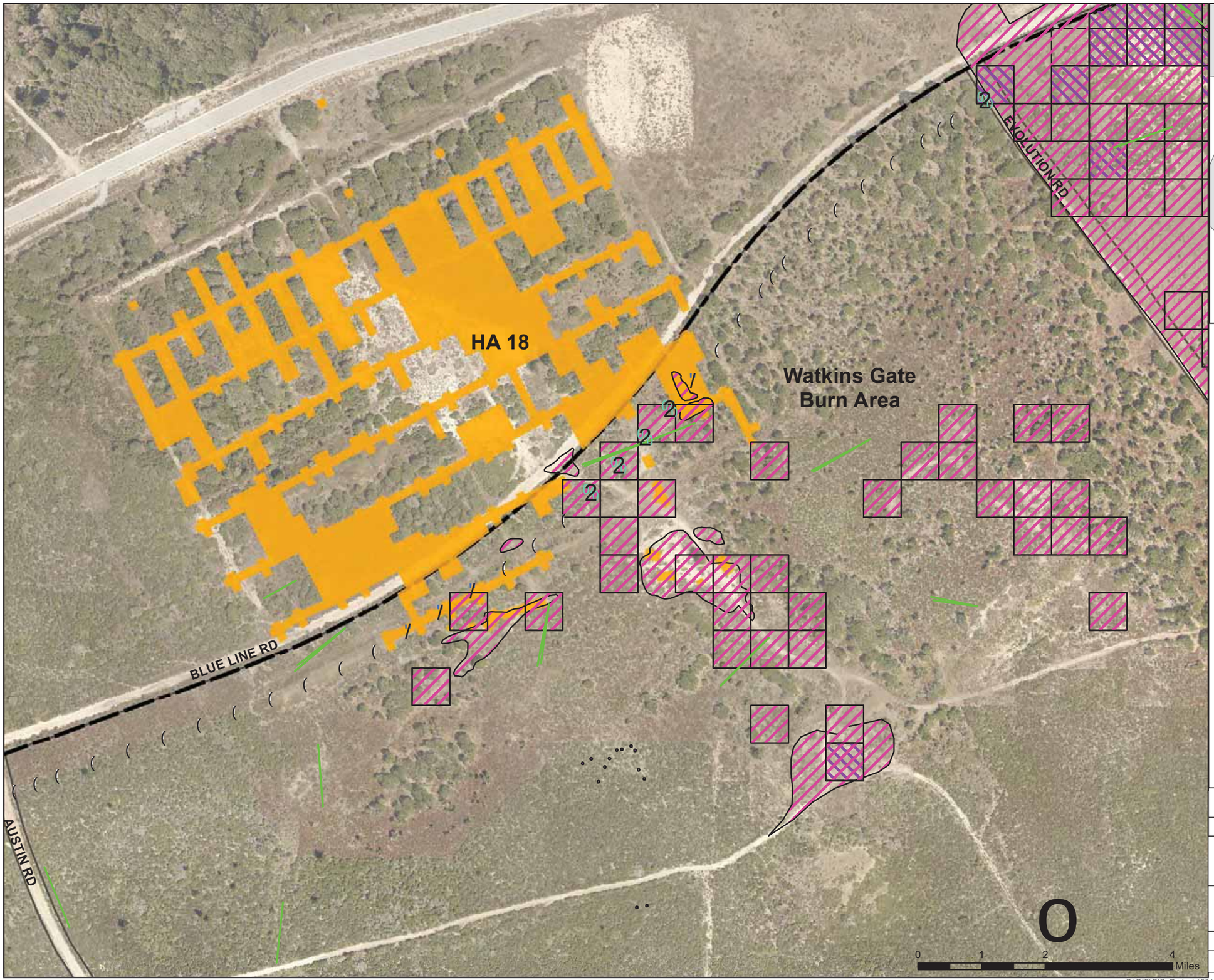
9. ADDITIONAL SITE CONCERNS:

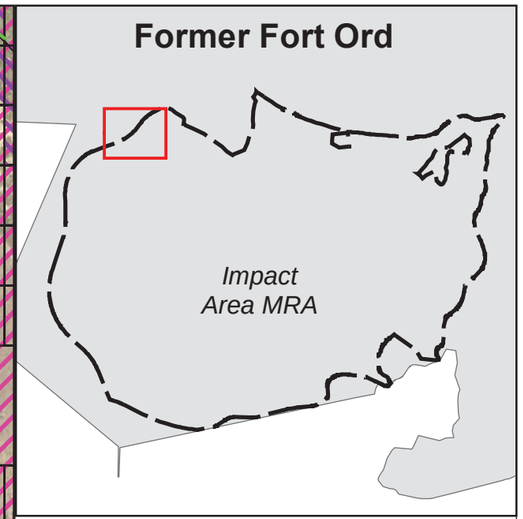
This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2018.03.28 16:02:54 -07'00' **Date:** _____

QC Manager: Charlie Clyde Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.03.29 06:28:16-07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.03.28 17:07:28 -07'00' **Date:** _____





- Impact Area
- Burn Unit Boundaries
- Units Infested with Invasive Species
- Ponds
- Restoration Sites
- Monitoring Transect

HMP Plant Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak
- Spineflower and Sand gilia
- Yadons Piperia

100 ft Buffer Stake Locations

- No Constraints
- Access by foot only
- Avoid nearby resources
- No access until June 1
- No access until June 1 + Access by foot only

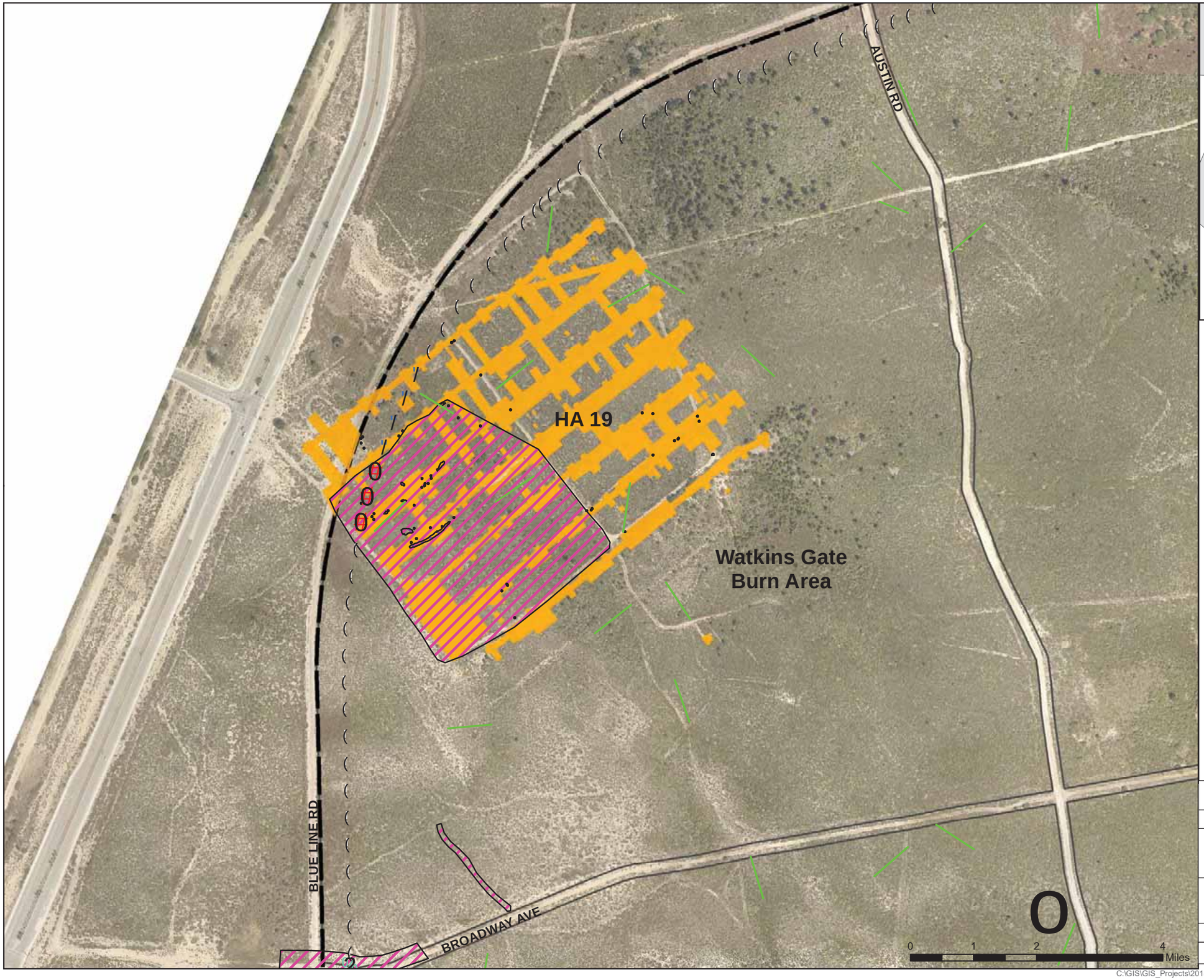
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
1	*100 ft Buffer Stakes* Biological Resources

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane



Former Fort Ord

- Impact Area
- Burn Unit Boundaries
- Units Infested with Invasive Species
- Ponds
- Restoration Sites
- Monitoring Transect

HMP Plant Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak
- Spineflower and Sand gilia
- Yadons Piperia

100 ft Buffer Stake Locations

- No Constraints
- Access by foot only
- Avoid nearby resources
- No access until June 1
- No access until June 1 + Access by foot only

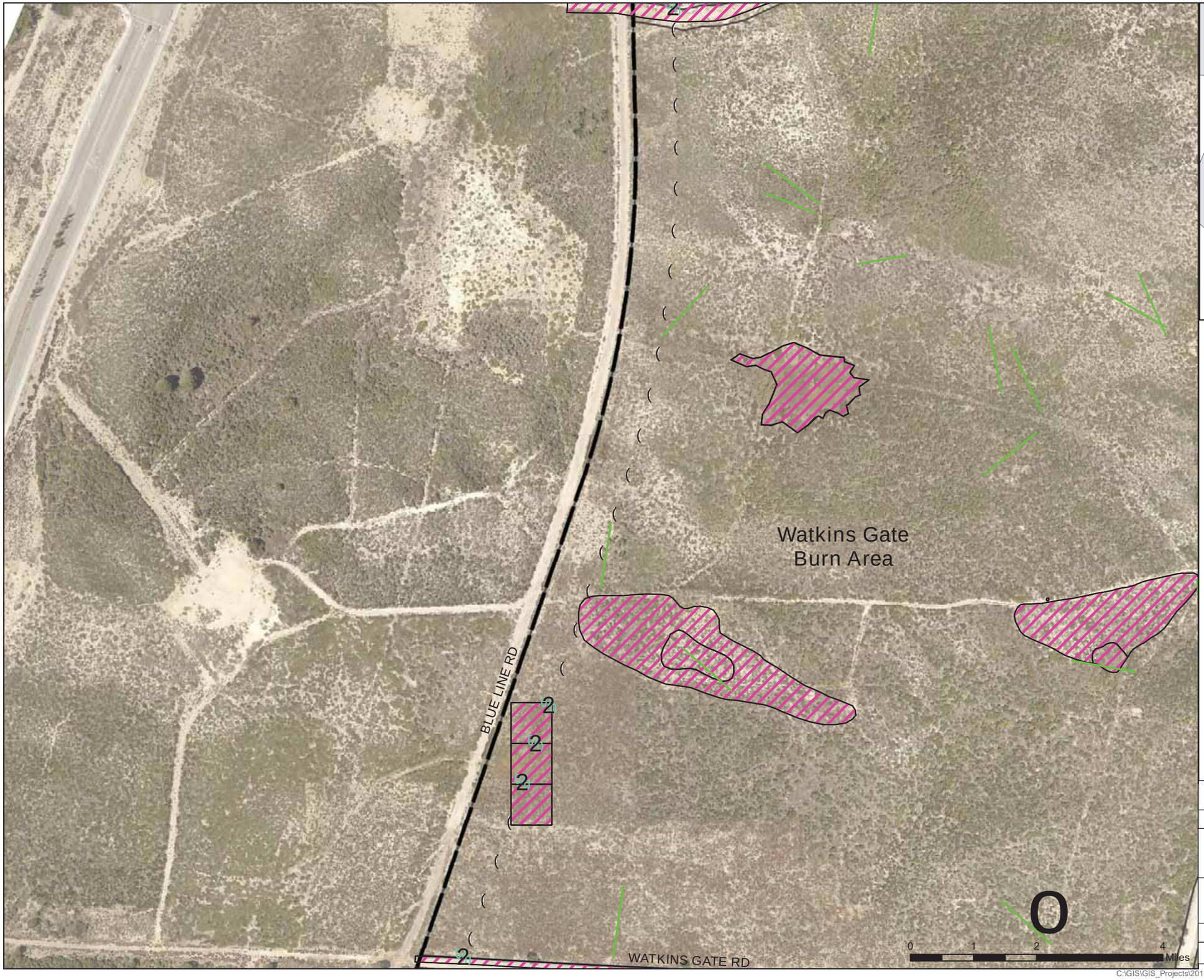
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

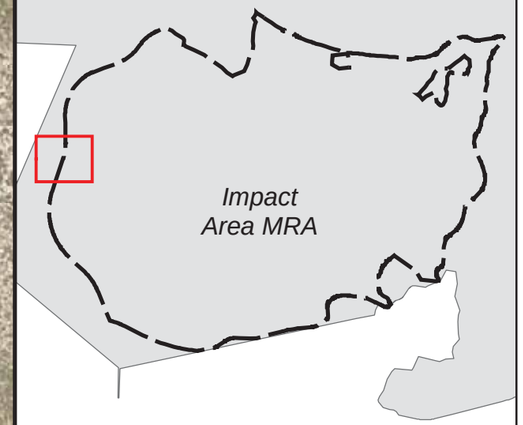
FIGURE NUMBER	
2	*100 ft Buffer Stakes* Biological Resources

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane



Former Fort Ord



Impact Area

Burn Unit Boundaries

Units Infested with Invasive Species

Ponds

Restoration Sites

Monitoring Transect

HMP Plant Species

Monterey spineflower

Sand gilia

Seaside bird's-beak

Spineflower and Sand gilia

Yadons Piperia

100 ft Buffer Stake Locations

(No Constraints

/ Access by foot only

/ Avoid nearby resources

2 No access until June 1

0 No access until June 1 + Access by foot only

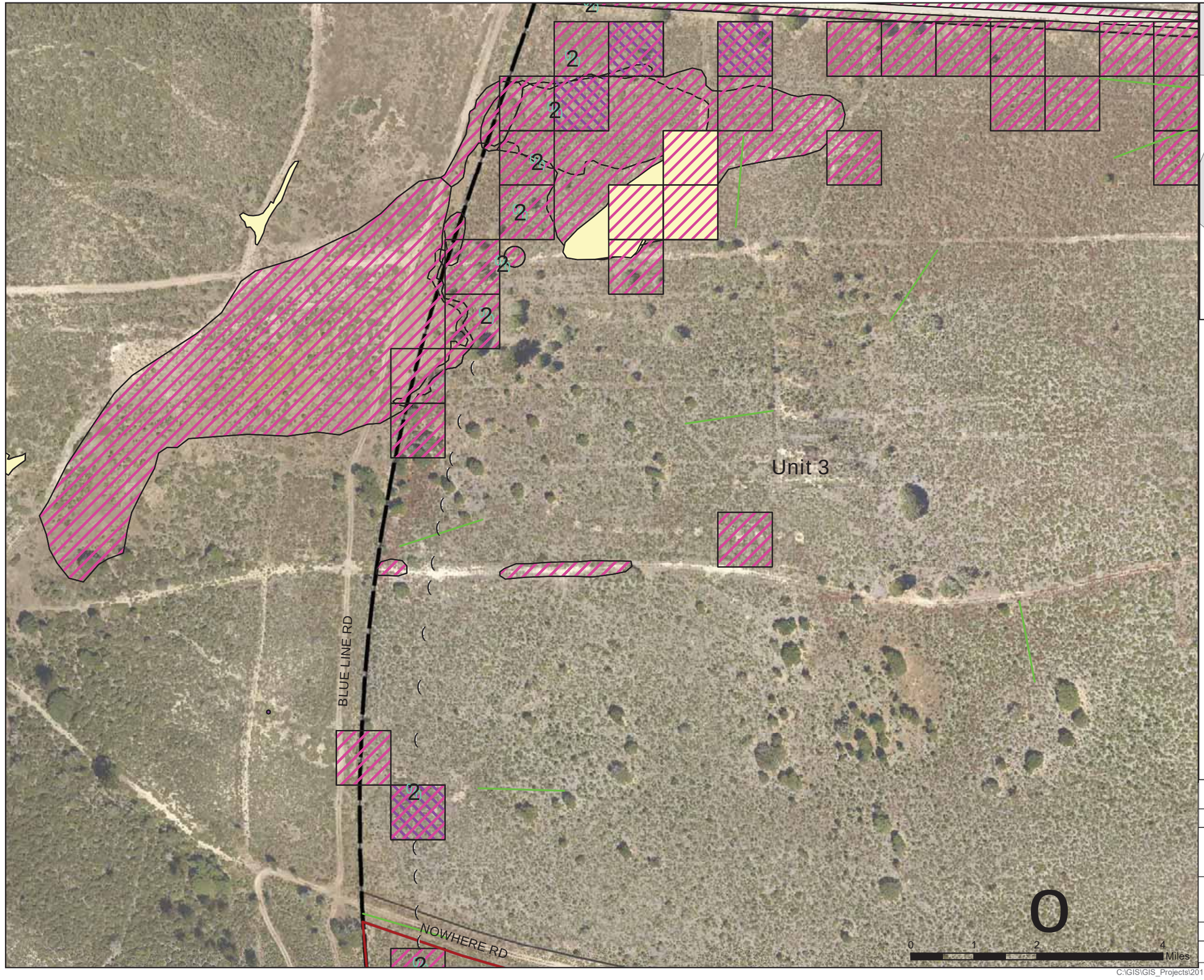
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

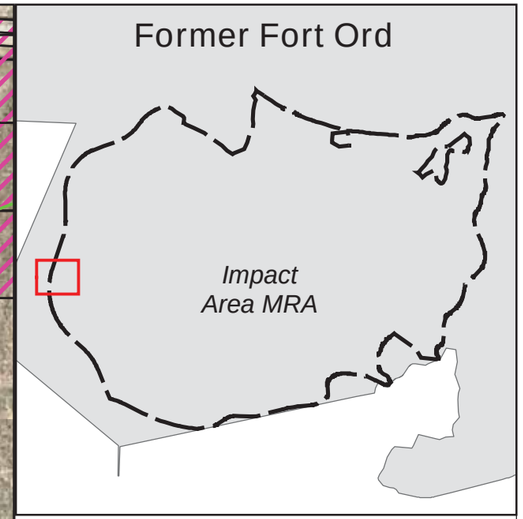
FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane





Impact Area
Burn Unit Boundaries
Units Infested with Invasive Species
Ponds
Restoration Sites
Monitoring Transect

HMP Plant Species
Monterey spineflower
Sand gilia
Seaside bird's-beak
Spineflower and Sand gilia
Yadons Piperia

100 ft Buffer Stake Locations
No Constraints
Access by foot only
Avoid nearby resources
No access until June 1
No access until June 1 + Access by foot only

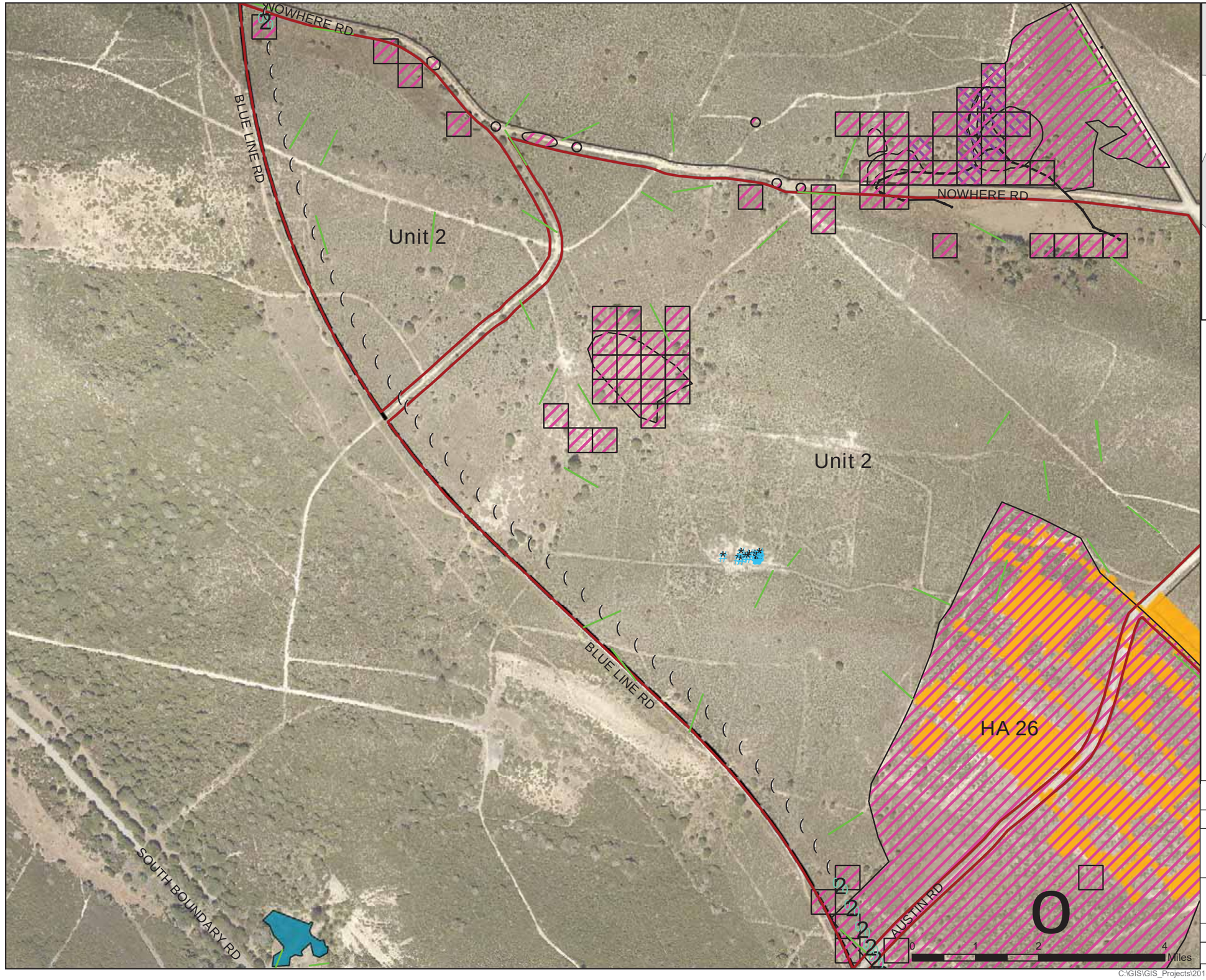
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources
4	

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane



Former Fort Ord

- Impact Area
- Burn Unit Boundaries
- Units Infested with Invasive Species
- Ponds
- Restoration Sites
- Monitoring Transect

HMP Plant Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak
- Spineflower and Sand gilia
- Yadons Piperia

100 ft Buffer Stake Locations

- No Constraints
- Access by foot only
- Avoid nearby resources
- No access until June 1
- No access until June 1 + Access by foot only

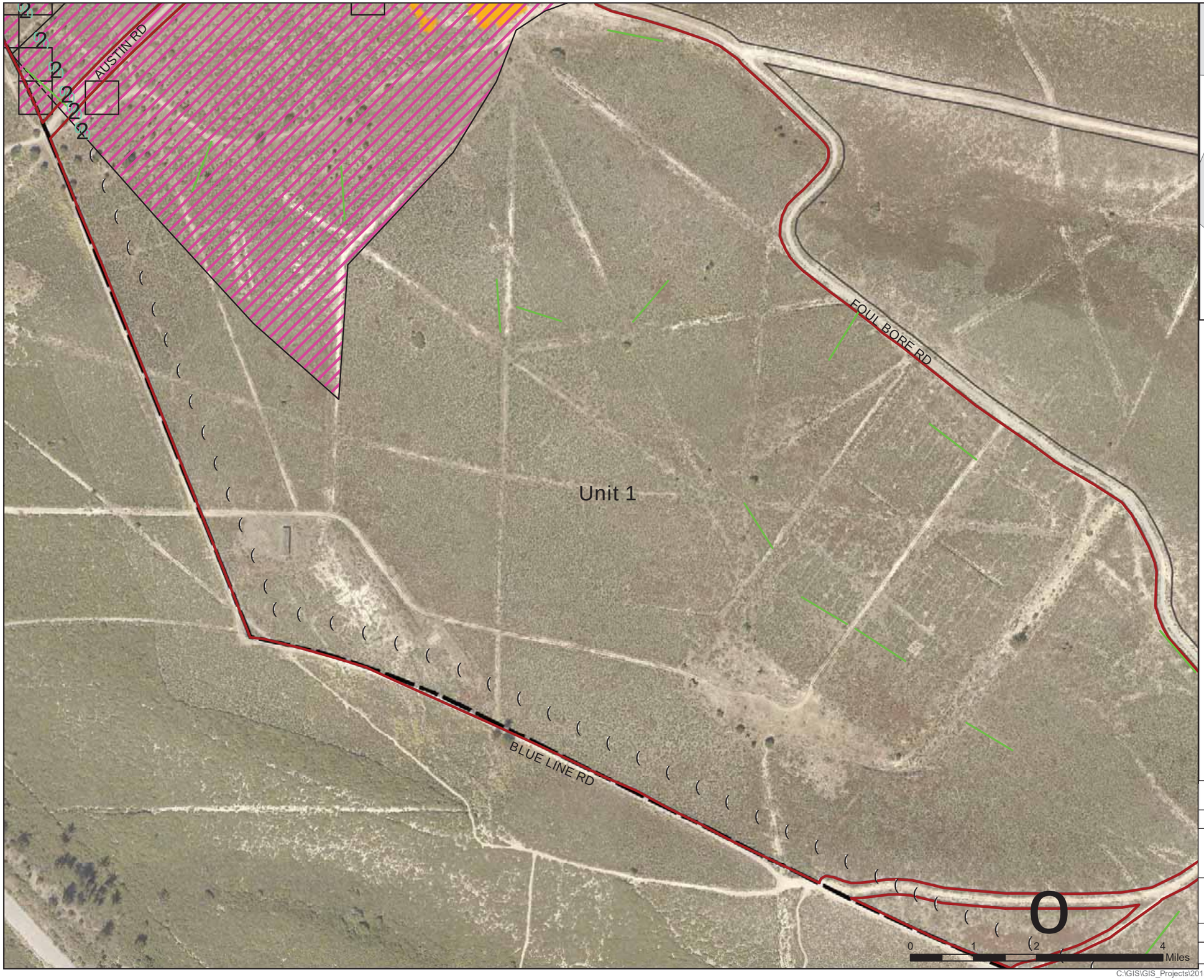
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

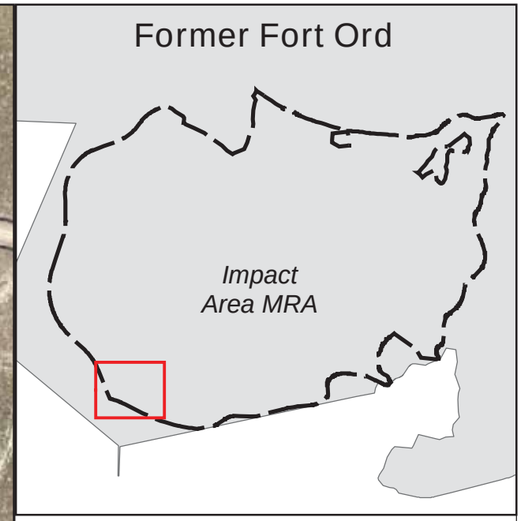
FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources
5	

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane





Impact Area
Burn Unit Boundaries
Units Infested with Invasive Species
Ponds
Restoration Sites
Monitoring Transect

HMP Plant Species
Monterey spineflower
Sand gilia
Seaside bird's-beak
Spineflower and Sand gilia
Yadons Piperia

100 ft Buffer Stake Locations
No Constraints
Access by foot only
Avoid nearby resources
No access until June 1
No access until June 1 + Access by foot only

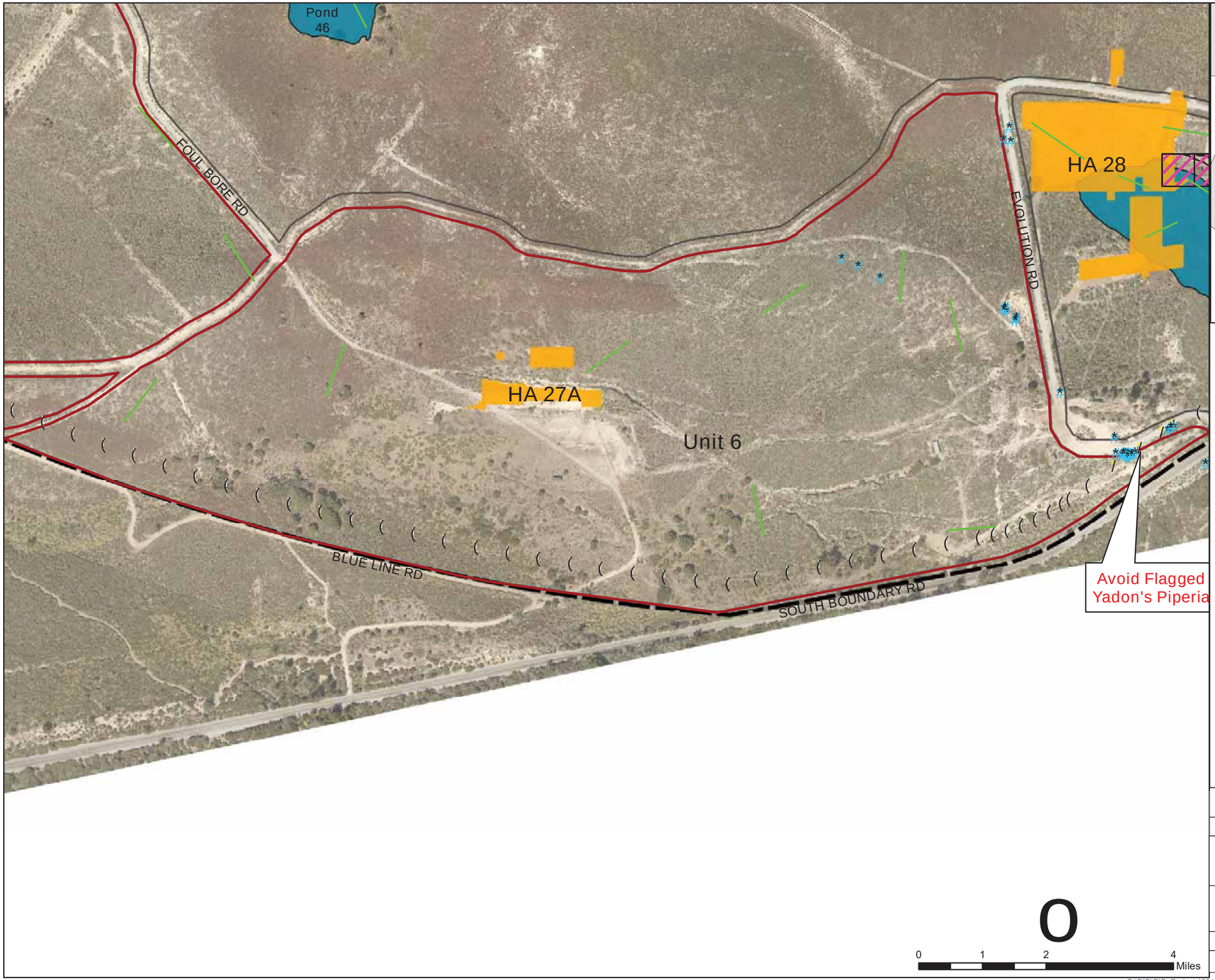
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources
6	

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane



Former Fort Ord

- Impact Area
- Burn Unit Boundaries
- Units Infested with Invasive Species
- Ponds
- Restoration Sites
- Monitoring Transect

HMP Plant Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak
- Spineflower and Sand gilia
- Yadons Piperia

100 ft Buffer Stake Locations

- (No Constraints
- / Access by foot only
- / Avoid nearby resources
- 2 No access until June 1
- 0 No access until June 1 + Access by foot only

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources
7	

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

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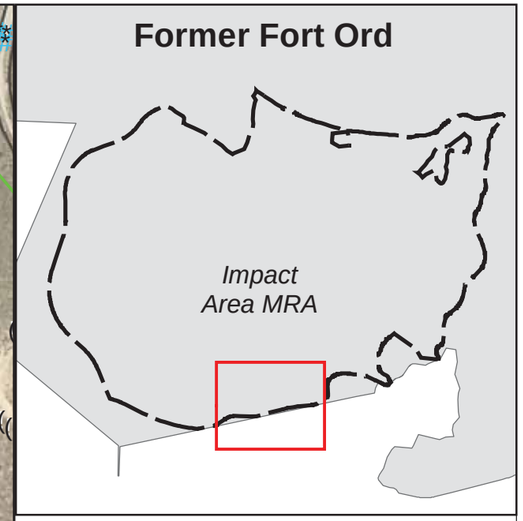


- Impact Area
- Burn Unit Boundaries
- Units Infested with Invasive Species
- Ponds
- Restoration Sites
- Monitoring Transect

HMP Plant Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak
- Spineflower and Sand gilia
- Yadons Piperia

100 ft Buffer Stake Locations

- No Constraints
- Access by foot only
- Avoid nearby resources
- No access until June 1
- No access until June 1 + Access by foot only

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane

DARWIN RD

ORION RD

NASON RD

SOUTH BOUNDARY RD

Unit
5A

POND
49

POND
18

Avoid Pond

Avoid Pond

0 1 2 4 Miles

Former Fort Ord

- Impact Area
- Burn Unit Boundaries
- Units Infested with Invasive Species
- Ponds
- Restoration Sites
- Monitoring Transect

HMP Plant Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak
- Spineflower and Sand gilia
- Yadons Piperia

100 ft Buffer Stake Locations

- No Constraints
- Access by foot only
- Avoid nearby resources
- No access until June 1
- No access until June 1 + Access by foot only

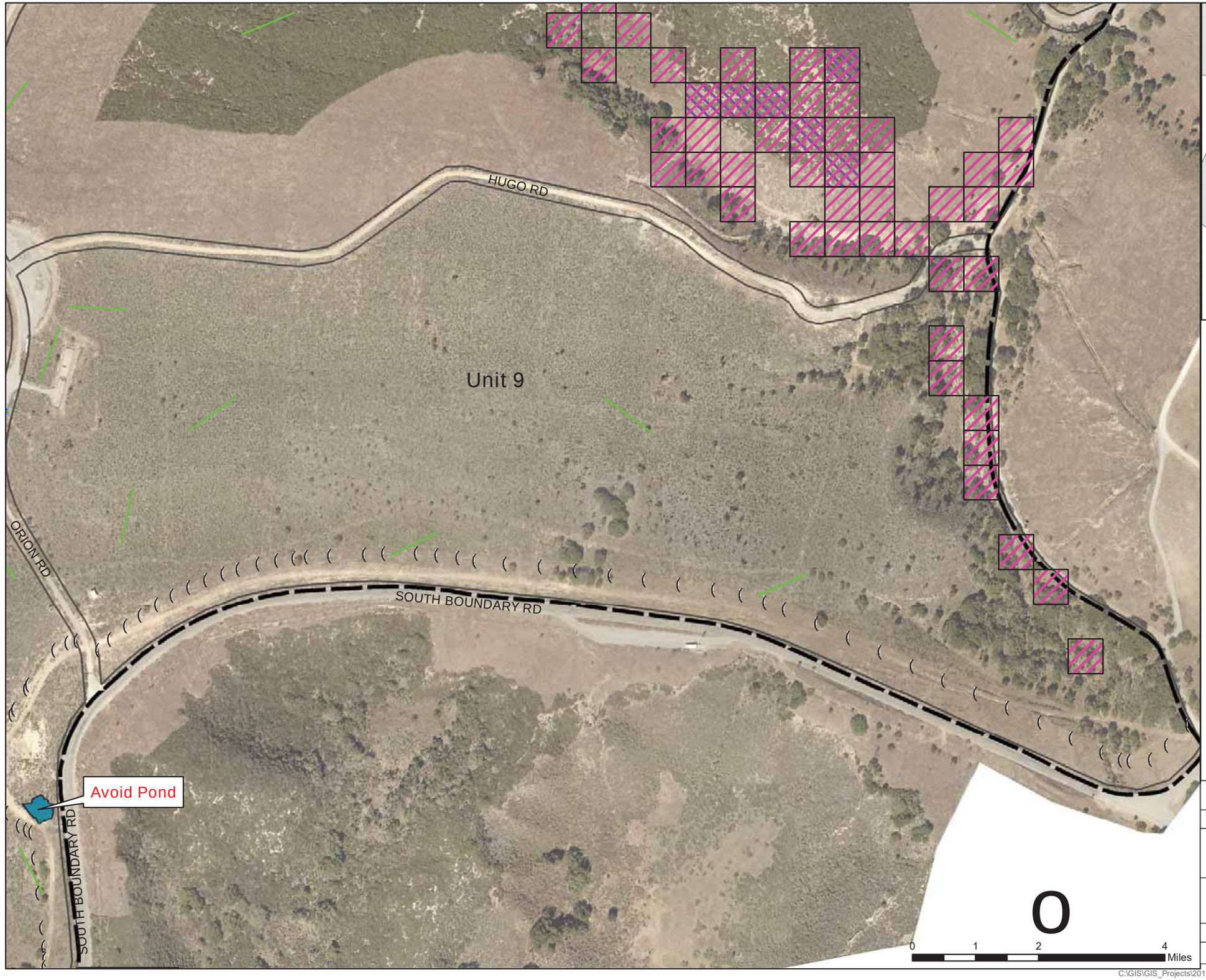
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

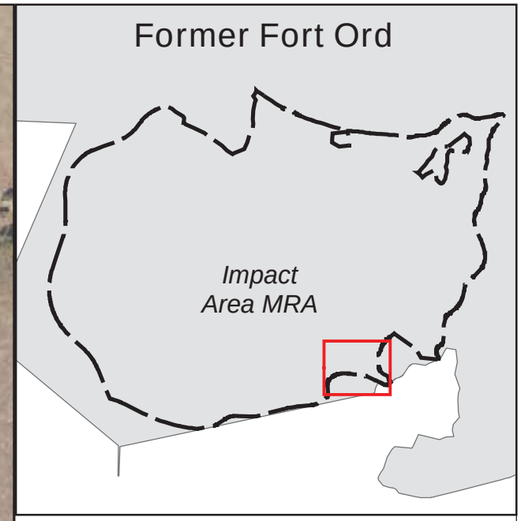
FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources
9	

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane





Impact Area
Burn Unit Boundaries
Units Infested with Invasive Species
Ponds
Restoration Sites
Monitoring Transect

HMP Plant Species
Monterey spineflower
Sand gilia
Seaside bird's-beak
Spineflower and Sand gilia
Yadons Piperia

100 ft Buffer Stake Locations
No Constraints
Access by foot only
Avoid nearby resources
No access until June 1
No access until June 1 + Access by foot only

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*100 ft Buffer Stakes* Biological Resources

DATE	PROJECT NUMBER	FILE NAME
3/28/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\100ft Buffer grid stakes.mxd, jdavis, Gilbane

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 25, 28, and 31	**DATE:**	04-12-17
WORK TO BE CONDUCTED:	Collection of chemical samples by hand auguring to a maximum depth of 2 feet and backfilling the hole.		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes** ☐ **No**	☒ **Flagged/Marked**
Species:	HMP shrubs, Monterey spineflower, sand gilia, Yadon's piperia, California Tiger Salamander (CTS), Black legless lizard (BLL)	
Location:		
Grid Numbers:		

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.
- The Project Biologist shall accompany the sampling team in all areas where HMP annual plant populations may occur within the sampling locations (see attached maps). The Project Biologist will assess the sampling location to identify any HMP annual plants. If HMP annual plants are present within the sampling location the Project Biologist shall work with the sampling team to identify an appropriate sample location nearby that will avoid or reduce impacts to HMP annual plants. Access within these areas shall be on-foot only to reduce impacts to HMP plants.
- Parking of vehicles within the fuelbreaks shall avoid impacts to flagged areas of Yadon's piperia.

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	
Restrictions:			

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**

KEMRON
ENVIRONMENTAL SERVICES

☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Site access through sensitive areas in Units 31 and 25 shall be along the access routes identified on the attached map. The access route may be changed in the field at the discretion of the Project Biologist if necessary to avoid impacts or due to inaccessibility issues. Access within these areas shall be on-foot only to reduce impacts to HMP plants.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.04.12 14:36:48 -07'00' **Date:** _____

QC Manager: Charlie Clyde Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.04.13 10:17:44-07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.04.12 17:21:21 -07'00' **Date:** _____

Unit 11

Riso Ridge Rd

Unit 25

Mercury Rd

Unit 23

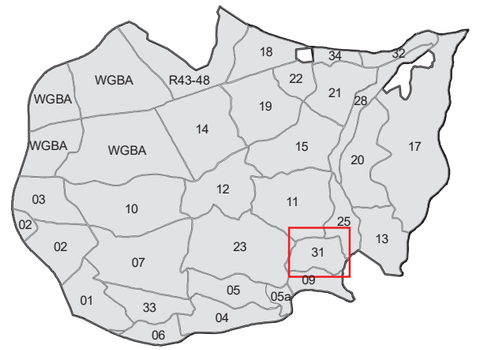
Orion Rd

Unit 31

Hugo Rd

Impossible Cyn Rd

Unit 9



Fuelbreaks

Proposed Samples

Monterey spineflower

Sand gilia

Yadon's piperia

Access Routes Through Sensitive Areas

N

0 350 700 Ft

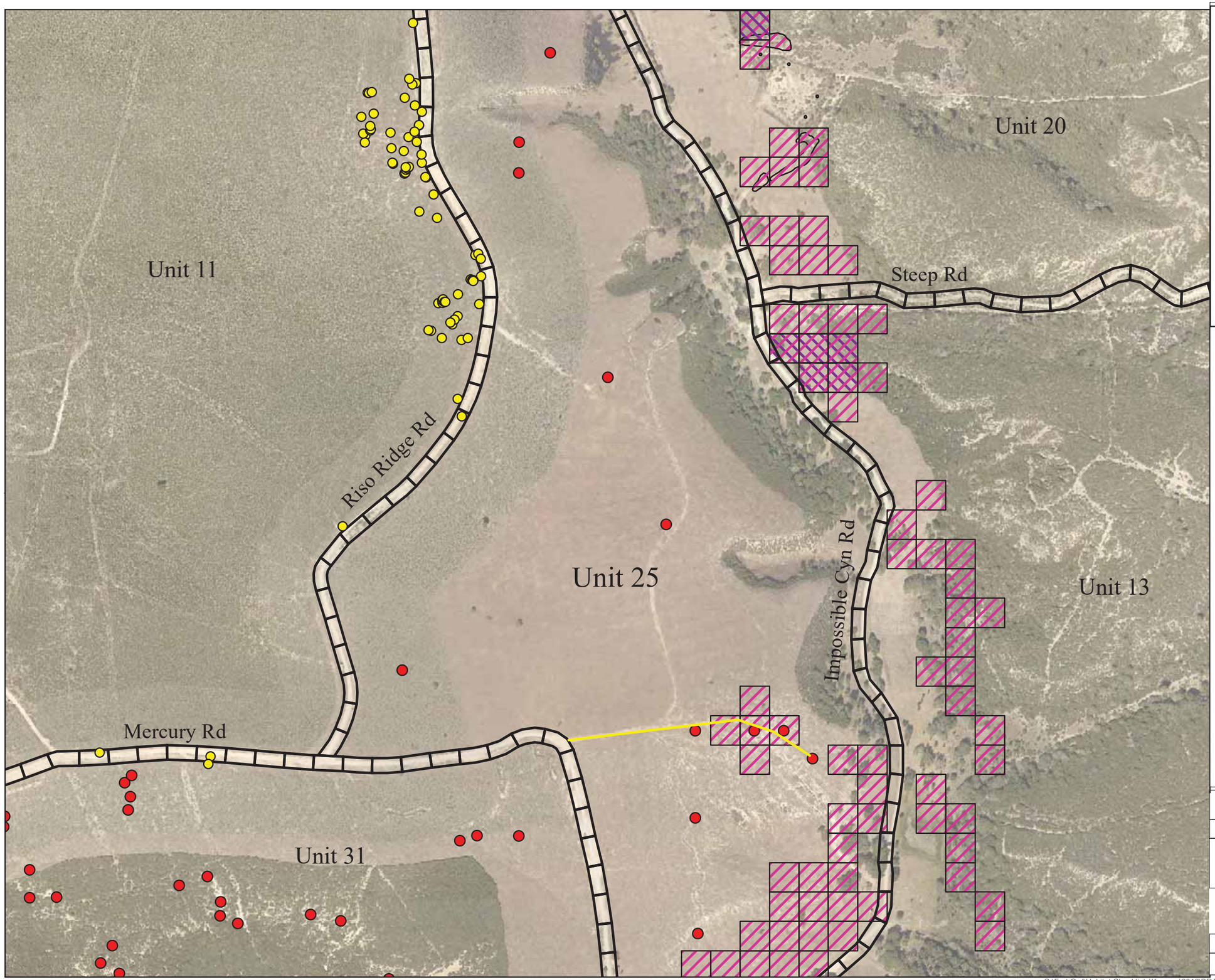
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

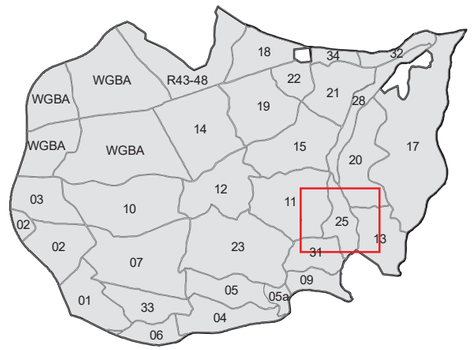
FORMER FORT ORD

FIGURE NUMBER	Unit 31 Biological Constraints
2	

DATE		FILE NAME
4/12/2018		SEE FOOTER

C:\Fort Ord\Habitat Checklists\Kemron\2018\BRA Soil Sampling Unit 25 28 and 31 04-09-2018\Bio_Constraints_Unit31.mxd, jdavis, DDA





Fuelbreaks

Proposed Samples

Monterey spineflower

Sand gilia

Yadon's piperia

Access Routes Through Sensitive Areas

0 450 900 Ft

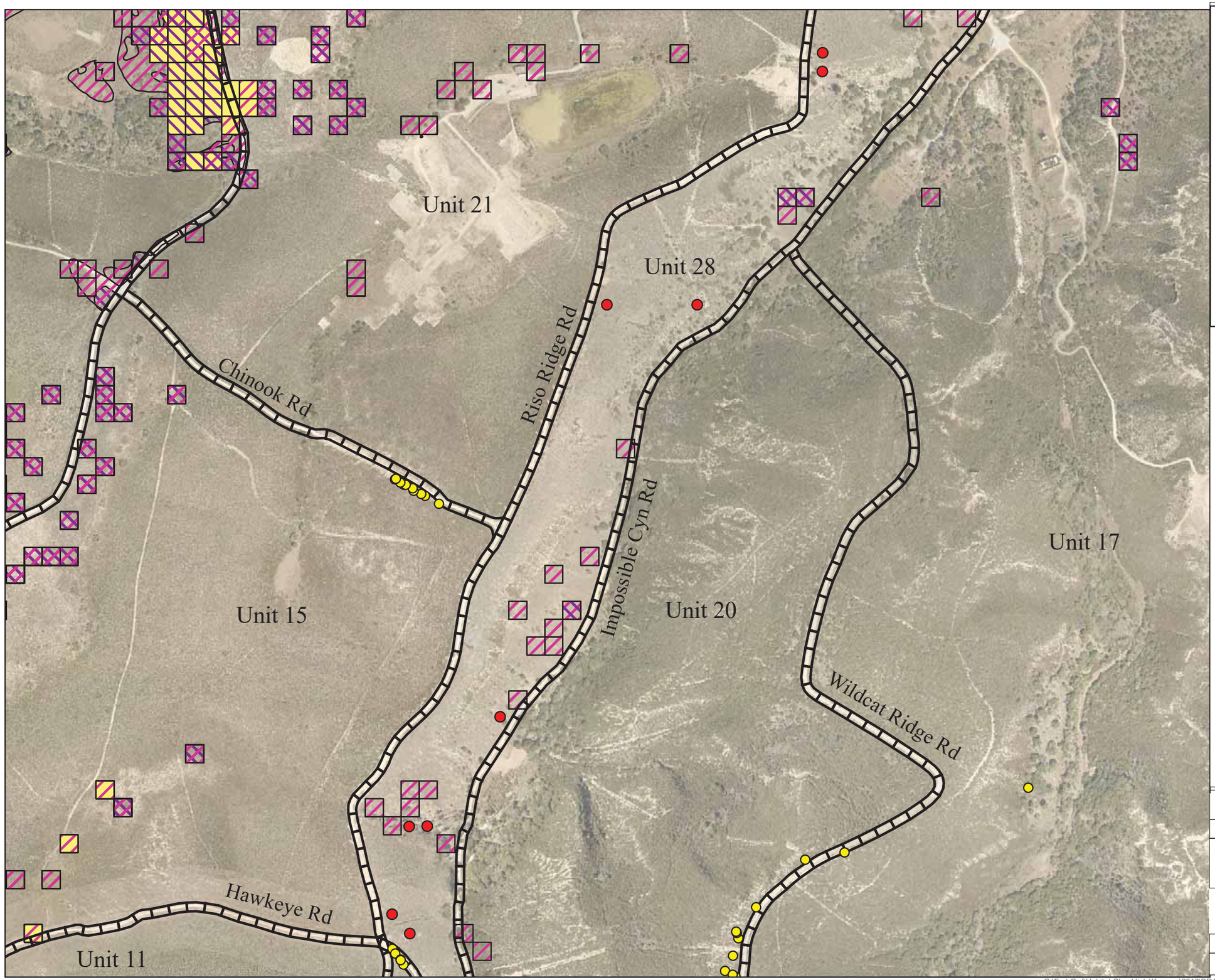
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

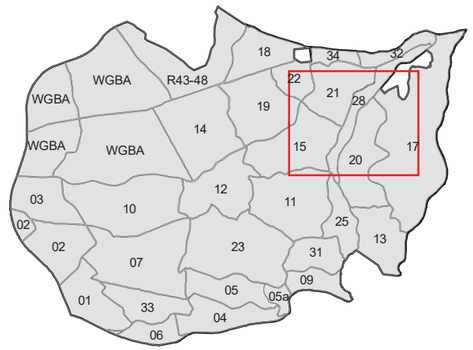
FORMER FORT ORD

FIGURE NUMBER	Unit 25 Biological Constraints
1	

DATE		FILE NAME
4/12/2018		SEE FOOTER

C:\Fort Ord\Habitat Checklists\Kemron\2018\BRA Soil Sampling Unit 25 28 and 31 04-09-2018\Bio_Constraints_Unit25.mxd, jdavis, DDA





Fuelbreaks

Proposed Samples

Monterey Spineflower

Sand gilia

Yadon's piperia

0

0 500 1,000 Ft

U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 3	Unit 28 Biological Constraints	
DATE		FILE NAME
4/11/2018		SEE FOOTER

C:\Fort Ord\Habitat Checklists\Kemron\2018\BRA Soil Sampling Unit 25 28 and 31 04-09-2018\Bio_Constraints_Unit28.mxd, jdavis, DDA

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 31 Containment Lines	**DATE:**	5-22-18
WORK TO BE CONDUCTED:	Mechanical and manual vegetation removal for containment lines		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☒ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**	
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Yadon's piperia, Monterey spineflower, sand gilia, HMP shrubs			
Location:				
Grid Numbers:				

Restrictions:

All Areas

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol

Habitat Reserve Areas

- No vegetation removal shall occur in the habitat reserve areas from approximately February 1 to May 31 due to the presence of Monterey spineflower and sand gilia (see Figure 1).
- Piling of cut vegetation in areas known to support Monterey spineflower and/or sand gilia (see Figure 1) shall be reduced to the greatest extent feasible. Boundaries of HMP grids near hand-cut areas shall be staked and flagged (pink and black striped flagging) prior to vegetation removal in the area to indicate areas that should be avoided to the greatest extent feasible.
- No work shall occur in flagged areas of Yadon's piperia until it has been determined by the Project biologist that the plants are no longer blooming and have set seed (approximately August/ September) (see Figure 1).
- Toro manzanitas that were preserved during the previous mastication shall be avoided (see Figure 1)

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☒ Flagged/Marked
Location:	Unit 13: Ponds 16 and 17		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ Yes	☐ No	

Restrictions:

All Areas

- No work shall occur within the vernal ponds until the ponds have dried, as determined by the Project Biologist.
- Vernal ponds shall be staked and flagged for avoidance in coordination with the Project Biologist prior to vegetation removal within the area.
- Masticators shall not be permitted within 50 feet of the vernal ponds (see Figure 1). Small equipment, such as a bobcat or other manual equipment may be used to remove vegetation within the vernal pond if necessary.

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Areas of dense oak woodland, within 50 feet of vernal pond, and areas inaccessible to masticators.
☒ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

All Areas

- Masticators shall not be used in dense areas of oak woodland or within 50 feet of the vernal ponds. Small equipment or manual equipment shall be used in areas where masticators are not permitted or are unable to access.
- Coast live oak trees greater than 4” in diameter shall not be removed. Removal of coast live oak trees smaller than 4” in diameter shall be minimized to the greatest extent feasible. Coast live oak trees may be limbed up to 8 feet to allow access beneath the trees. No branches larger than 4” shall be cut from coast live oak trees. Branches shall be cut all the way up to the next branch.
- Removal of riparian habitat around Pond 17 shall be avoided.

6. EROSION CONCERNS/SITE RESTORATION:

All Areas

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

KEMRON
ENVIRONMENTAL SERVICES

7. SITE ACCESS:

All Areas

- Vehicle access should be limited to existing roads only. No interior access roads shall be used unless coordinated with the Project Biologist.
- Heavy equipment transport from site to site must be along existing roads only.
- Equipment (skid steer) traffic to access stockpiled vegetation shall be minimized to the greatest extent feasible.

8. INVASIVE SPECIES:

Habitat Reserve Areas

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

All Areas

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.05.22 12:01:37 -07'00' **Date:** _____

QC Manager: Charlie Clyde Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.05.22 13:14:56-07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.05.22 12:32:33 -07'00' **Date:** _____

Mastication Area
Vernal Ponds
HMP Species
Monterey spineflower
Sand gilia
Yadon's Piperia
Toro Manzanita

Unit 11
Unit 25
Unit 13
Unit 23
Unit 31
Unit 9
Unit 5A
Wolf Hill

Riso Ridge Road
Mercury Road
Impossible Canyon Road
Barloy Canyon Road
Hugo Road
Orion Road
Darwin Road
South Boundary Road

Pond 16
Pond 17

0 125 250 500 750 1,000 ft

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 31 Burn Containment Lines
1	

	KEMRON ENVIRONMENTAL SERVICES	Gilbane
DATE	PROJECT NUMBER	FILE NAME
05/21/2018	2015.02	SEE FOOTER

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Unit A Containment Lines	**DATE:**	5-24-18
WORK TO BE CONDUCTED:	Mechanical and manual vegetation removal for containment lines		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☒ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Monterey spineflower, sand gilia, HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

All Areas

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol

Habitat Reserve Areas

- No vegetation removal shall occur in the habitat reserve areas from approximately February 1 to May 31 due to the presence of Monterey spineflower and sand gilia (see Figure 1).
- Piling of cut vegetation in areas known to support Monterey spineflower and/or sand gilia (see Figure 2) shall be reduced to the greatest extent feasible. Boundaries of HMP grids near hand-cut areas shall be staked and flagged (pink and black striped flagging) prior to vegetation removal in the area to indicate areas that should be avoided to the greatest extent feasible.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☒ Flagged/Marked
Location:	Ponds 101 West and 101 East-West		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ Yes	☐ No	

Restrictions:

All Areas

- No work shall occur within the vernal ponds until the ponds have dried, as determined by the Project Biologist.
- The vernal ponds shall be staked and flagged for avoidance in coordination with the Project Biologist prior to vegetation removal within the area.
- Masticators shall not be permitted within 50 feet of the vernal ponds (see Figure 1). Small equipment, such as a bobcat or other manual equipment may be used to remove vegetation within the vernal pond if necessary.

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Areas of dense oak woodland, within 50 feet of vernal pond, and areas inaccessible to masticators.
☒ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

All Areas

- Masticators shall not be used in dense areas of oak woodland or within 50 feet of the vernal pond. Small equipment or manual equipment shall be used in areas where masticators are not permitted or are unable to access.
- Coast live oak trees greater than 4" in diameter shall not be removed. Removal of coast live oak trees smaller than 4" in diameter shall be minimized to the greatest extent feasible. Coast live oak trees may be limbed up to 8 feet to allow access beneath the trees. No branches larger than 4" shall be cut from coast live oak trees. Branches shall be cut all the way up to the next branch.

6. EROSION CONCERNS/SITE RESTORATION:

All Areas

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

All Areas

- Vehicle access should be limited to existing roads only as shown on Figure 2.
- Heavy equipment transport from site to site must be along existing roads only.
- Equipment (skid steer) traffic to access stockpiled vegetation shall be minimized to the greatest extent feasible.

KEMRON
ENVIRONMENTAL SERVICES

8. INVASIVE SPECIES:

Habitat Reserve Areas

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.
- Masticators shall not be used within the grassland areas or other areas known to be infested with Klamath weed (see Figure 3).
- During vegetation removal within areas infested with Klamath weed (see Figure 3) the crew shall clean boots and equipment before leaving the area to reduce spread of invasive species. Soil and plant material shall be removed using boot brushes or other types of brushes. Decon of hand tools and boots shall be completed within the work area. Any caked-on soils or material that cannot be removed using brushes shall be washed off with water – washing can be competed at the Kemron Compound; however, if washing of vehicles or equipment is necessary, it must be completed on-site prior to leaving the area.

9. ADDITIONAL SITE CONCERNS:

All Areas

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher — Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.05.24 09:10:16 -07'00' — **Date:** _____

QC Manager: Charlie Clyde — Digitally signed by Charlie Clyde DN: C=US, E=cclyde@gilbaneco.com, O=Gilbane, OU=CQCSM Fort Ord, CN=Charlie Clyde Date: 2018.05.25 09:46:16-07'00' — **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 — Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.05.25 09:09:53 -07'00' — **Date:** _____

2018 Mastication Areas
Ponds Within Mastication Area
Ponds Outside of Mastication Area

HMP Annuals

Contra Costa goldfields
Monterey spineflower
Sand gilia
Seaside bird's-beak
Yadon's Piperia

0 0.125 0.25 0.5 0.75 1 mi

Inter-Garrison Road
Addington Road
East Garrison
Gigling Road
Parker Flats Cutoff
Watkins Gate Rd
Parker Flats Road
Machine Gun Flats Road
Henneken's Ranch Road
Barloy Canyon Road
Eucalyptus Road

100 East (east)
101 East (west)
101 West
58
59
5
57
997
56
60
Machine Gun Flats
61
44
41
103
43
42
40 North
40 South
39
35
3 North
3 South
11
Mudhen Lake

A-North
A
B
C
B-3 East
B-2A
B-3 West

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Biological Resources within BLM Area B 2018 Mastication Areas
1	

Gilbane

DATE	PROJECT NUMBER	FILE NAME
05/24/2018		SEE FOOTER

2018 Mastication Areas
Approved Main Roads
Ponds

Inter-Garrison Road
Watkins Gate Road
Addington Road
8th Avenue
Gigling Road
A-North
A
B-3 East
B-2A
East Machine Gun Flats
Watkins Gate Road
West Machine Gun Flats
C
B
B-3 West
Parker Flats Road
Eucalyptus Road
Little Moab Road
Henneken's Ranch Road
Barloy Canyon Road
Eucalyptus Road

0 0.1 0.2 0.4 0.6 0.8 mi

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

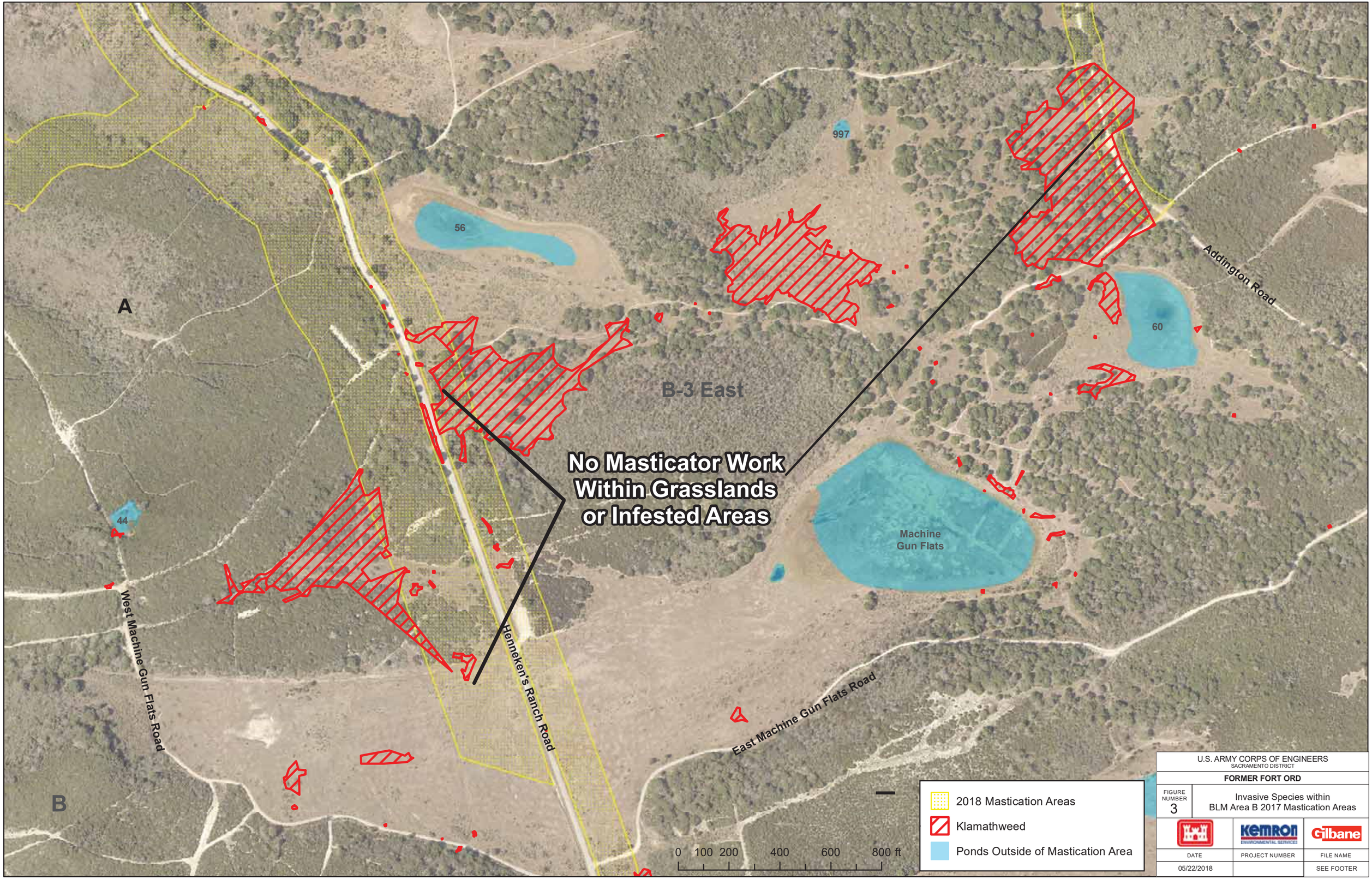
FORMER FORT ORD

FIGURE NUMBER 2

Access Roads within BLM Area B
2018 Containment Line Areas

Gilbane

DATE	PROJECT NUMBER	FILE NAME
05-24-2018		SEE FOOTER



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
3	Invasive Species within BLM Area B 2017 Mastication Areas

DATE	PROJECT NUMBER	FILE NAME
05/22/2018		SEE FOOTER

Denise Duffy & Associates, Inc.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: July 19, 2018

From: Amendment to the BLM Area B Unit A Burn Containment Lines Habitat Checklist (Dated 5-24-18)

The BLM Area B Unit A Burn Containment Lines Habitat Checklist (HCL) will be amended as follows:

- Woodrat nests within the containment lines will be deconstructed under supervision of the Project Biologist. Dismantling shall be conducted manually using rakes or other appropriate equipment to allow animals to escape harm. If a litter of young is found or suspected, nest material shall be replaced, and the nest left alone for 2-3 weeks before a re-check by the Project Biologist to verify that young are capable of independent survival before proceeding with nest dismantling. Wood from the dismantled nests shall be removed from the containment lines.

Project Biologist: _____ **Date:** _____

QC Manager: _____ **Date:** _____

BRAC Biologist: _____ **Date:** _____

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Unit B-2A	**DATE:**	8-2-18
WORK TO BE CONDUCTED:	Metal Mapper Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Seaside bird's-beak, Contra Costa goldfields, HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol
- No work shall occur in flagged areas of Seaside bird's-beak until it has been determined by the Project biologist that the plants are no longer blooming and have set seed (approximately August/September) (see Figure 1).
- Toro manzanitas that were left standing in the cut-only areas following vegetation removal shall be avoided.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Location:	Pond 61 is adjacent		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	

Restrictions:

- No work shall occur within the adjacent vernal pond.

KEMRON
ENVIRONMENTAL SERVICES

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing roads only.
- BLM Restoration Areas within B-2A shall not be used as regular tracking/access routes (see Figure 1).

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

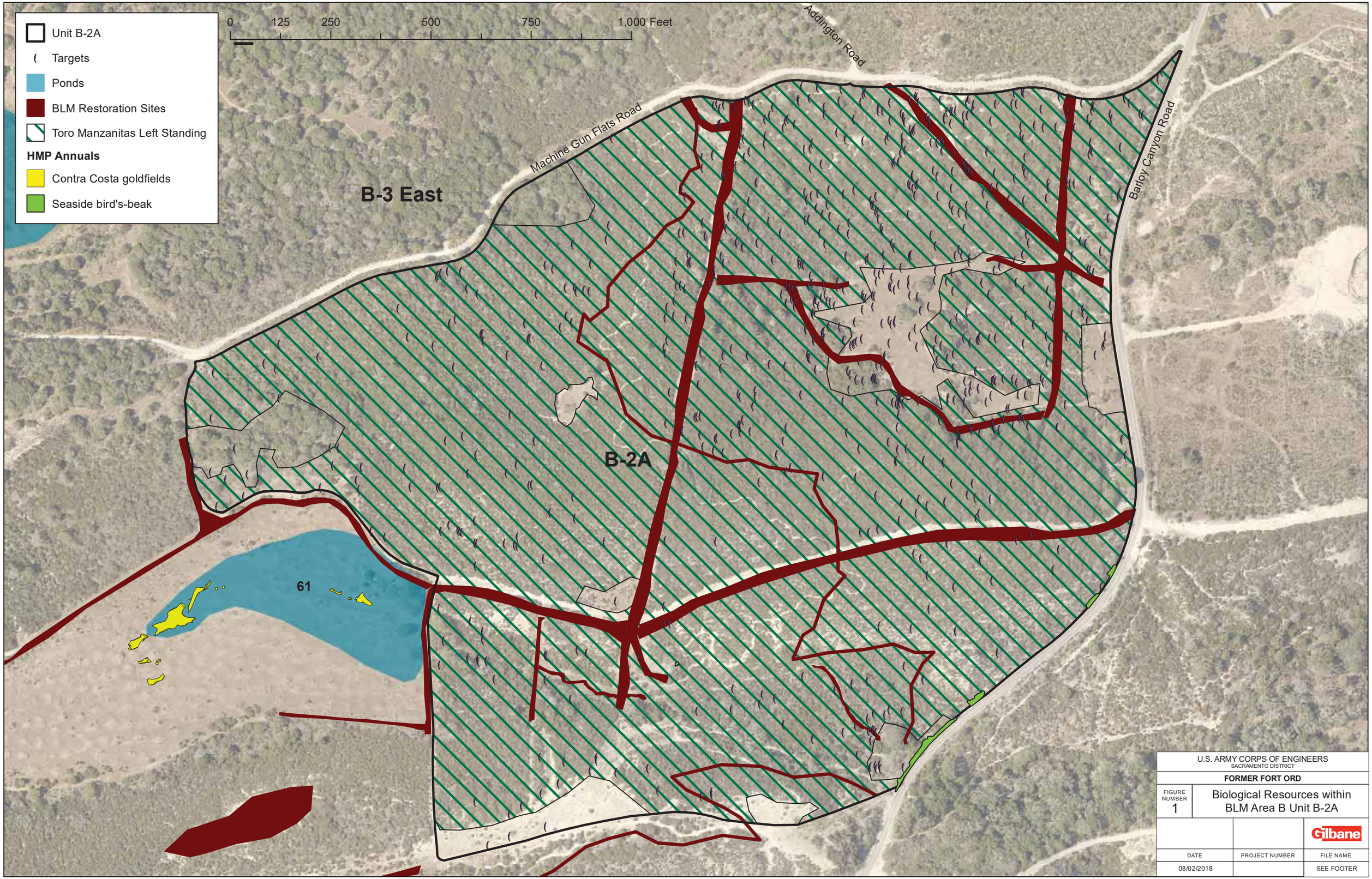
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.08.02 15:08:29 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.08.06 09:25:17 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.08.03 12:43:26 -07'00' **Date:** _____



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER 1	Biological Resources within BLM Area B Unit B-2A	
		Gilbane
DATE	PROJECT NUMBER	FILE NAME
08/02/2018		SEE FOOTER

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Jami Colley, Project Biologist (925-783-3112), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Impossible Canyon Road Vegetation Removal	**DATE:**	8-8-18
WORK TO BE CONDUCTED:	Mechanical and manual vegetation removal for containment lines		

1. LAND USE:	☐ **Habitat Reserve** Although work is within a Habitat Reserve area, the road and fuel break portion are considered part of BLM's 2% development allowance	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**	
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Monterey spineflower, sand gilia			
Location:				
Grid Numbers:				

Restrictions:

All Areas Excluding Impossible Canyon Road Realignment Area

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol
- Woodchips shall not be broadcast outside of the fuel breaks into areas known to support Monterey spineflower and/or sand gilia (see Figure 1).

Within Impossible Canyon Road Realignment Area

- No vegetation removal shall occur in the habitat reserve areas from approximately February 1 to May 31 due to the presence of Monterey spineflower and sand gilia (see Figure 2).
- Piling of cut vegetation in areas known to support Monterey spineflower and/or sand gilia (see Figure 2) shall be reduced to the greatest extent feasible. Boundaries of HMP grids near hand-cut areas shall be staked and flagged (pink and black striped flagging) prior to vegetation removal in the area to indicate areas that should be avoided to the greatest extent feasible.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☒ Flagged/Marked
Location:	Unit 11: Ponds 16		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

Restrictions:

All Areas

- No work shall occur within the vernal ponds until the ponds have dried, as determined by the Project Biologist.
- Vernal ponds shall be staked and flagged for avoidance in coordination with the Project Biologist prior to vegetation removal within the area.
- Masticators shall not be permitted within 50 feet of the vernal ponds (see Figure 1). Small equipment, such as a bobcat or other manual equipment may be used to remove vegetation within the vernal pond if necessary.

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Areas of dense oak woodland, within 50 feet of vernal pond, and areas inaccessible to masticators.
☒ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

All Areas

- Masticators shall not be used in dense areas of oak woodland or within 50 feet of the vernal ponds. Small equipment or manual equipment shall be used in areas where masticators are not permitted or are unable to access.
- Coast live oak trees greater than 4” in diameter shall not be removed, excluding the Impossible Canyon Realignment Area. Removal of coast live oak trees smaller than 4” in diameter shall be minimized to the greatest extent feasible. Coast live oak trees may be limbed up to 6 feet to allow access beneath the trees. No branches larger than 4” shall be cut from coast live oak trees. Branches shall be cut all the way up to the next branch.

6. EROSION CONCERNS/SITE RESTORATION:

All Areas

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

All Areas

- Vehicle access should be limited to existing roads only. No interior access roads shall be used unless coordinated with the Project Biologist.
- Heavy equipment transport from site to site must be along existing roads only.
- Equipment (skid steer) traffic to access stockpiled vegetation shall be minimized to the greatest extent feasible.

KEMRON
ENVIRONMENTAL SERVICES

8. INVASIVE SPECIES:

Habitat Reserve Areas

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

All Areas

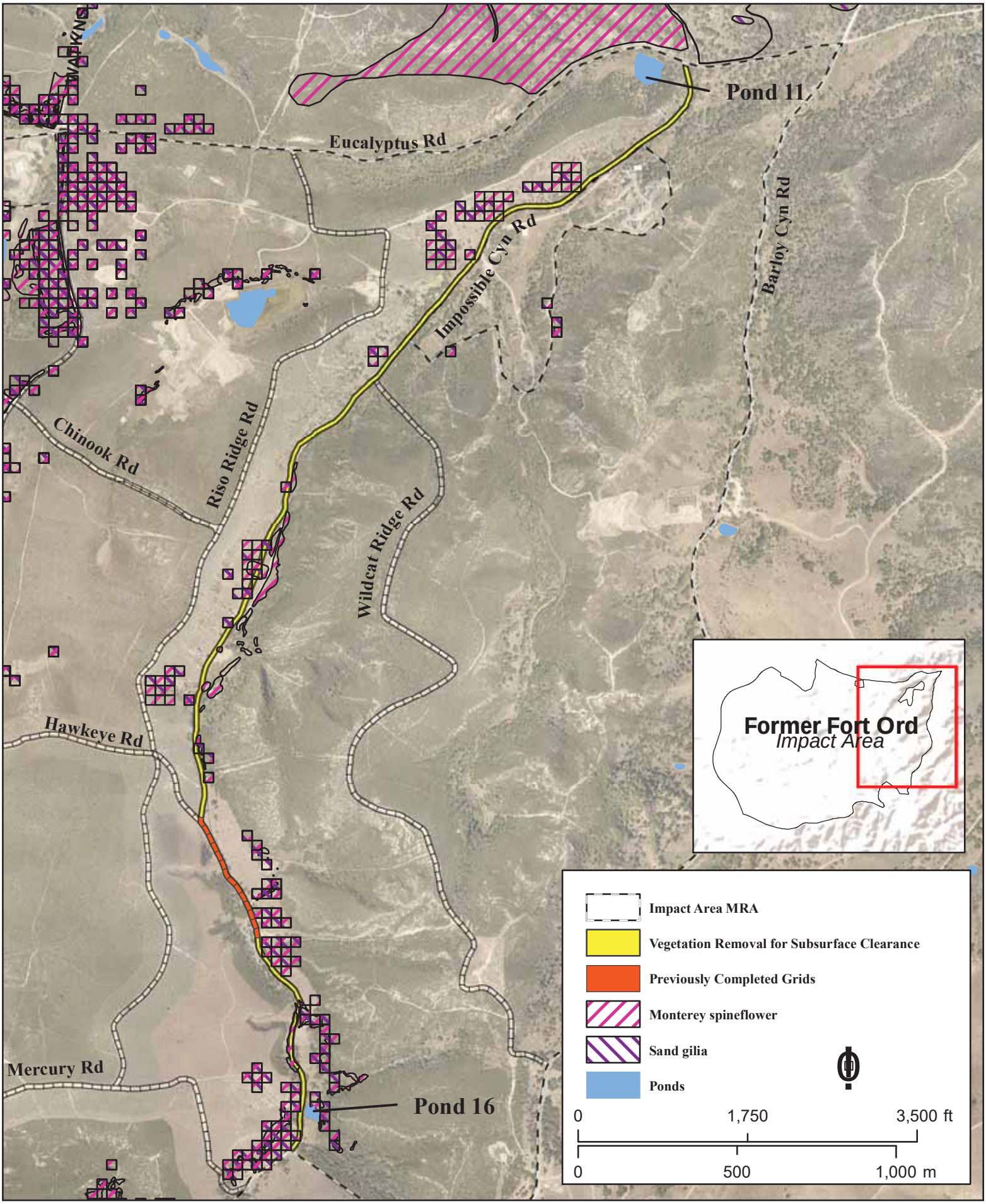
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.08.08 19:40:46 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.08.09 10:50:35 -07'00' **Date:** _____

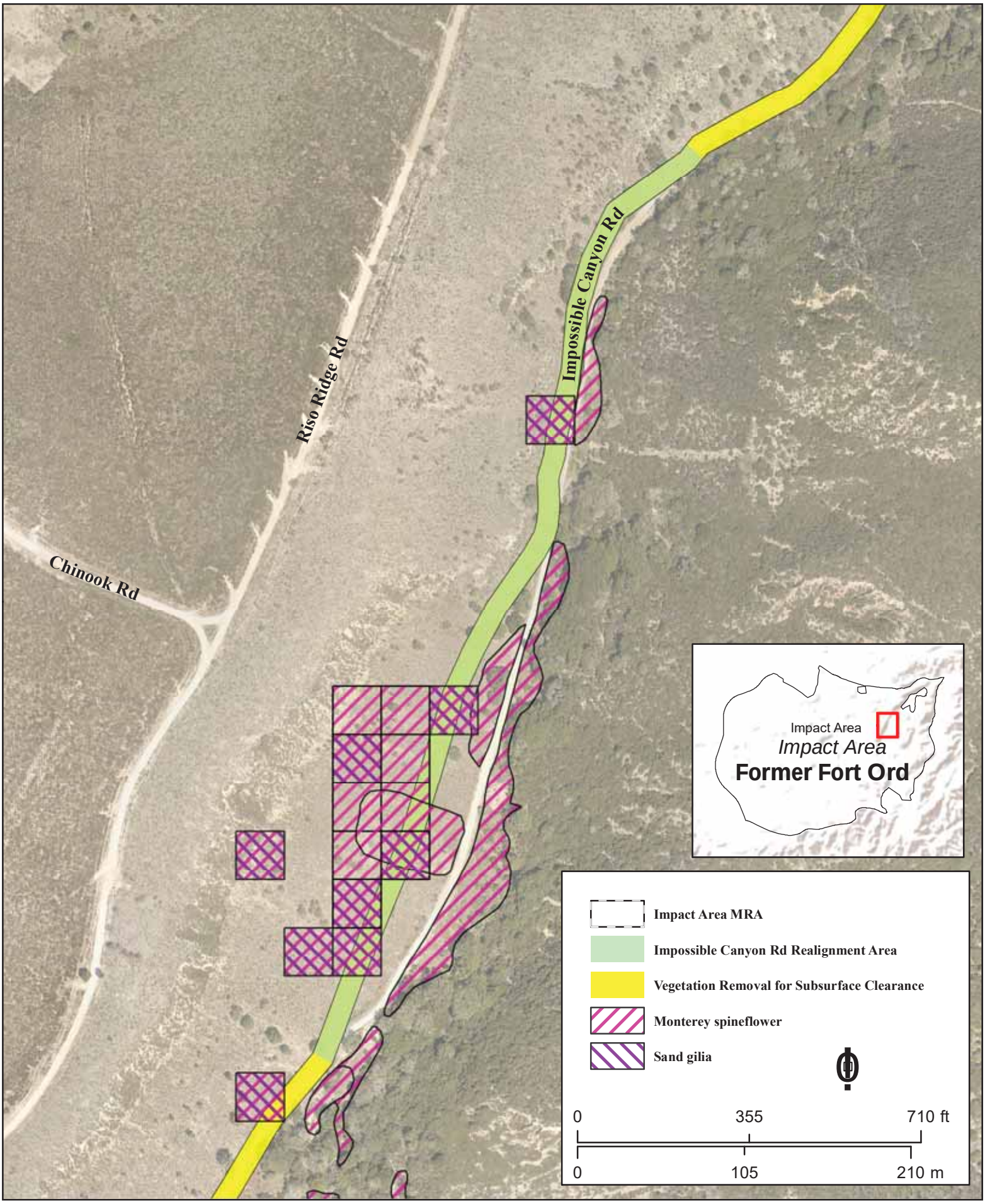
BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.08.09 09:45:55 -07'00' **Date:** _____



Impossible Canyon Road
Former Fort Ord, California

Figure 1
Impossible Canyon Road

C:\GIS\Final Products\Impossible Cyn Realignment\Impossible Cyn Realignment Resources 20180808.mxd 8/8/2018 [19:35 PM] PATRIC KRABACHER, DDA



Impossible Canyon Road
Former Fort Ord, California

Figure 2
Impossible Canyon Road Realignment
Biological Contraints

C:\GIS\Final Products\Impossible Cyn Realignment\Figure 2 Impossible Cyn Realignment Resources 20180808.mxd 8/8/2018 [19:37 PM] PATRIC KRABACHER, DDA

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Trail 62 within BLM Area B Unit B-2A	**DATE:**	8-22-18
WORK TO BE CONDUCTED:	Subsurface Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Report all encounters of BLL and follow the BLL encounter protocol

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☐ **No**	

Restrictions:

- No work shall occur within the adjacent vernal pond.

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing roads only.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

This checklist has been read, approved, and signed by the following:

Project Biologist: _____ **Date:** _____

QC Manager: _____ **Date:** _____

BRAC Biologist: _____ **Date:** _____

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Unit B-3 West 100ft Buffer	**DATE:**	8-22-18
WORK TO BE CONDUCTED:	Subsurface Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Monterey Spineflower, HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist or other Service-approved biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Report all encounters of BLL and follow the BLL encounter protocol
- No work shall occur in areas known to support Monterey spineflower from approximately February 1 to May 31 (see attached map).
- When excavating within areas containing Monterey spineflower, the top 2-3 inches of the topsoil shall be preserved and placed on a tarp or other impermeable surface, and shall be kept separate from any other soil piles. Once excavation is complete, the topsoil shall be replaced on top of the backfilling. If the topsoil pile is not replaced before the end of the work day and rain is forecasted for the night, the pile shall be covered to prevent it from washing away. Areas requiring topsoil preservation are shown on the attached maps.

4. VERNAL POOLS/PONDS PRESENT	☐ Yes	☒ No	☐ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☐ No	
Restrictions:			

5. VEGETATION REMOVAL	
☒ No Removal Needed	Location:
☐ Manual Removal Needed	Location:
☐ Mechanical Removal Needed	Location:
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads and approved interior access routes only.
- Heavy equipment transport from site to site must be along existing roads only.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

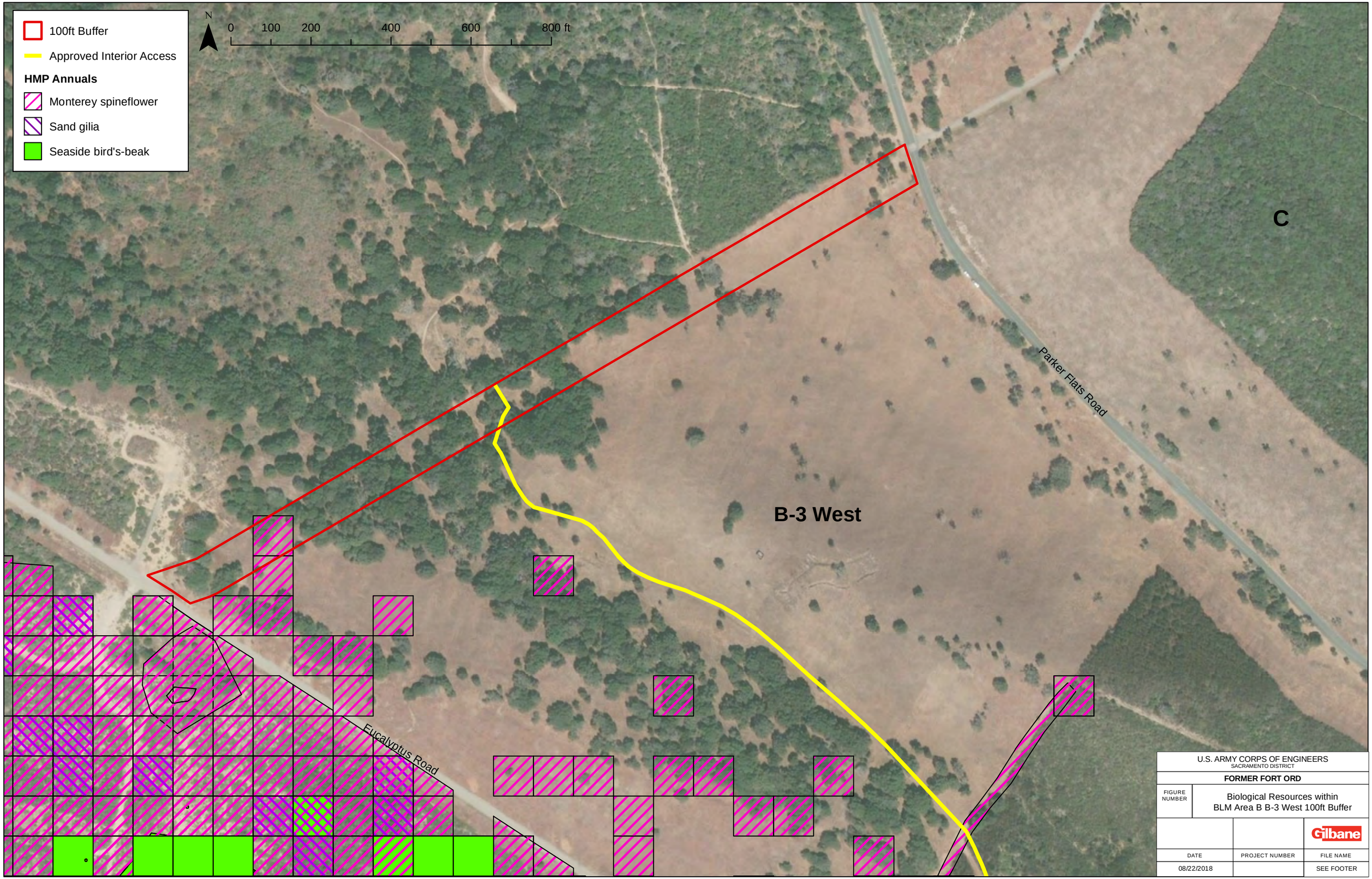
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

This checklist has been read, approved, and signed by the following:

Project Biologist: _____ **Date:** _____

QC Manager: _____ **Date:** _____

BRAC Biologist: _____ **Date:** _____



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Biological Resources within BLM Area B B-3 West 100ft Buffer	
		Gilbane
DATE	PROJECT NUMBER	FILE NAME
08/22/2018		SEE FOOTER

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Project Biologist(s), Jami Davis (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Fuel Breaks along Watkins Gate, Orion, Hawkeye, Nowhere, Mercury, and Riso Ridge Roads	**DATE:**	8/22/18
WORK TO BE CONDUCTED:	Subsurface QC investigation within fuel breaks – analog removal and advanced classification		

1. LAND USE:	☒ **Habitat Reserve** Although work is within a Habitat Reserve area, the road and fuel break portion are considered part of BLM's 2% development allowance	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	CTS, BLL, Monterey spineflower, sand gilia, Yadon's piperia, Seaside bird's-beak, HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Davis (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Report all encounters of BLL and follow the BLL encounter protocol.
- Following advanced classification, the Project Biologist shall review the target locations determine if Yadon's piperia may be impacted. If the Project Biologist identifies potential impacts to Yadon's piperia, an effort shall be made to preserve the plants according to the methodology identified above.

4. VERNAL POOLS/PONDS PRESENT	☐ Yes	☒ No	☐ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☐ No	
Restrictions:			

5. VEGETATION REMOVAL	
☒ No Removal Needed	Location:
☐ Manual Removal Needed	Location:
☐ Mechanical Removal Needed	Location:
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible and avoid making hard turns.
- Excavation on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- To the greatest extent feasible, vehicles should avoid parking and driving within bare areas of the fuel breaks where erosion is already occurring.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing fuel breaks only. Roads may be used only when necessary. If equipment transport is required along Hawkeye Road, the fuelbreak on the north side of the road (within Unit 15) shall be used to avoid the vernal pool in Unit 11.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

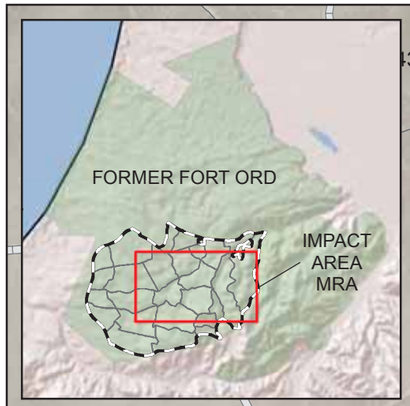
KEMRON
ENVIRONMENTAL SERVICES

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.08.22 15:28:01 -07'00' **Date:** _____

QC Manager: cclyde@gilbaneco.com Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.08.28 10:50:11 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.08.22 15:38:43 -07'00' **Date:** _____



Subsurface Removal Approach

- Advanced Classification (25.3 acres)
- Analog Removal (0.2 acres)
- Current Impact Area MRA Fuel Break System
- Impact Area MRA Unit
- Impact Area MRA

FELIX ROAD
ORION ROAD
CHINOOK ROAD
IMPOSSIBLE CANYON ROAD
WATKINS GATE ROAD
HAWKEYE ROAD
RISO RIDGE
WILDCAT RIDGE ROAD
STEEP ROAD
NOWHERE ROAD
EVOLUTION ROAD
MERCURY ROAD
BARLOY CANYON ROAD

43-48 18 22 21 19 14 28 17 WGBA 15 20 14A 12 10 11 25 13 23 31

1,000 0 1,000 Feet

Technical Information Paper
Supplemental Quality Control Investigation
Impact Area Munitions Response Area Permanent Fuel Breaks
Former Fort Ord, California

Figure 11
Additional Subsurface Removal Approach

G:\ArcGIS\USACE\Fort_Ord\PROJECTS\KEMRON\Fuelbreaks_QC\Map_Docs\Fig_11_FB_QC_Removal_Approach.mxd 4/18/2018 [09:37 AM] AGASCHO, Gilbane

KEMRON ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s), Jami Davis (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	HA-27A	**DATE:**	8-22-18
WORK TO BE CONDUCTED:	Placement of Mulch within Eroded Areas		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	CTS, BLL		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Report all encounters of BLL and follow the BLL encounter protocol.
- Mulch should be applied directly to the site and shall not be stockpiled to avoid impacts to CTS. If stockpiling of mulch is necessary, mulch should be in rows no higher than 8 feet and the base of piles should not be over 16 feet and silt fencing shall be installed around the stockpile.

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☐ **No**	
Restrictions:			

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**.
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

KEMRON
ENVIRONMENTAL SERVICES

6. EROSION CONCERNS/SITE RESTORATION:

- Small equipment (e.g. skid steer) or hand tools shall be used to place the mulch to avoid damaging existing vegetation within or adjacent to the restoration area.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- The site shall be accessed from foul bore road.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- No mulch shall be placed in areas supporting wetland plants. These areas shall be flagged by the Project Biologist prior to the placement of mulch.
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.08.23 11:47:35 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.08.23 11:44:26 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.08.22 15:15:12 -07'00' **Date:** _____

Apply mulch in shown areas in at HA27A. Access site from the south avoiding restoration area.

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 3	**DATE:**	8-22-18
WORK TO BE CONDUCTED:	Subsurface investigation of targets that are potential near-surface Livens projectors or Stokes mortars including vegetation removal		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	HMP shrubs, Monterey spineflower, sand gilia, Seaside bird's-beak, California Tiger Salamander (CTS), and Black Legless Lizard (BLL)		
Location:	See attached map for known locations of HMP annual plants		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Davis (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist or other Service-approved biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur in areas known to support Monterey spineflower or sand gilia from approximately February 1 to May 31 (see attached map).
- When excavating within areas containing HMP annual plant species, the top 2-3 inches of the topsoil shall be preserved and placed on a tarp or other impermeable surface and shall be kept separate from any other soil piles. Once excavation is complete, the topsoil shall be replaced on top of the backfilling. If the topsoil pile is not replaced before the end of the work day and rain is forecasted for the night, the pile shall be covered to prevent it from washing away. Areas requiring topsoil preservation are shown on the attached maps.

4. VERNAL POOLS/PONDS PRESENT	☐ Yes	☒ No	☐ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Approximately 5ft radius around target if item is found
☐ **Mechanical Removal Needed**	**Location:**

- No vegetation shall be removed within the HA-23 Restoration Areas.

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.

7. SITE ACCESS:

- No work shall occur within the HA-23 Restoration Areas. The boundaries of the shall be staked and flagged prior to the start of work and teams and equipment shall avoid passing through these areas when accessing targets.
- Access to targets through the HMP annual areas shall be reduced to the greatest extent necessary in order to reduce impacts to the densest population of HMP annual plants.
- Vehicle access should be limited to existing roads and fuel breaks, and approved interior access routes only. If additional access routes are necessary, the Project Biologist shall be contacted to identify suitable routes that will cause the least amount of impact.
- Heavy equipment transport from site to site must be along existing fuel breaks only. Roads may be used only when necessary.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.08.22 15:41:56 -07'00' **Date:** _____

QC Manager: cclyde@gilbaneco.com Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.08.28 10:27:54 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.08.22 16:18:12 -07'00' **Date:** _____

WATKINS GATE BURN AREA

BLUE LINE RD

WATKINS GATE RD

HA-23

HA-23

HA-23

UNIT 10

RANGE 23 RD

BITTER RD

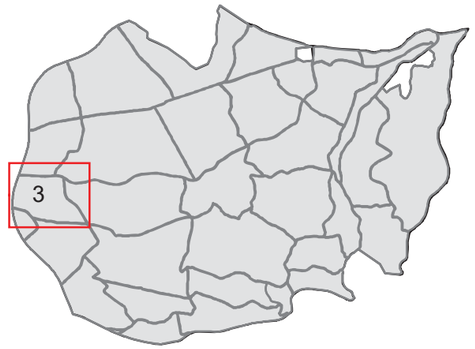
UNIT 3

NOWHERE RD

AUSTIN RD

Former Fort Ord

Impact Area



- Unit Boundary
- Stokes AOI Targets
- Interior Access Roads
- Vegetation Monitoring Transect
- Restoration Areas

HMP Species

- Monterey spineflower
- Sand gilia
- Seaside bird's-beak

0

0 100 200 400 600 800 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*Unit 3 Stokes Mortar Investigation*
1	Biological Constraints

DATE	PROJECT NUMBER	FILE NAME
8/22/2018		SEE FOOTER

C:\GIS\Final Products\Units 1_2_3\Unit 3 Stokes Mortar Investigation_Targets_20180802.mxd, jdavis, Gilbane

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	WGBA Mortar Pits	**DATE:**	9-18-18
WORK TO BE CONDUCTED:	Removal and manual subsurface investigation of WGBA Mortar Pits including vegetation removal		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	HMP shrubs, Monterey spineflower, sand gilia, California Tiger Salamander (CTS), and Black Legless Lizard (BLL)		
Location:	See attached map for known locations of HMP annual plants		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Davis (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist or other Service-approved biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur from approximately February 1 to May 31 due to the presence of Monterey spineflower or sand gilia (see attached map).
- The top 2-3 inches of the topsoil shall be preserved and placed on a tarp or other impermeable surface and shall be kept separate from any other soil piles. Once excavation is complete, the topsoil shall be replaced on top of the backfilling. If the topsoil pile is not replaced before the end of the work day and rain is forecasted for the night, the pile shall be covered to prevent it from washing away. Areas requiring topsoil preservation are shown on the attached maps.

4. VERNAL POOLS/PONDS PRESENT	☐ Yes	☒ No	☐ Flagged/Marked
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

5. VEGETATION REMOVAL	
☐ No Removal Needed	Location:
☒ Manual Removal Needed	Location:
☐ Mechanical Removal Needed	Location:

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads (Stinger Road) and fuel breaks, and approved interior access routes only. If additional access routes are necessary, the Project Biologist shall be contacted to identify suitable routes that will cause the least amount of impact.
- Heavy equipment transport from site to site must be along existing fuel breaks only. Roads may be used only when necessary.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

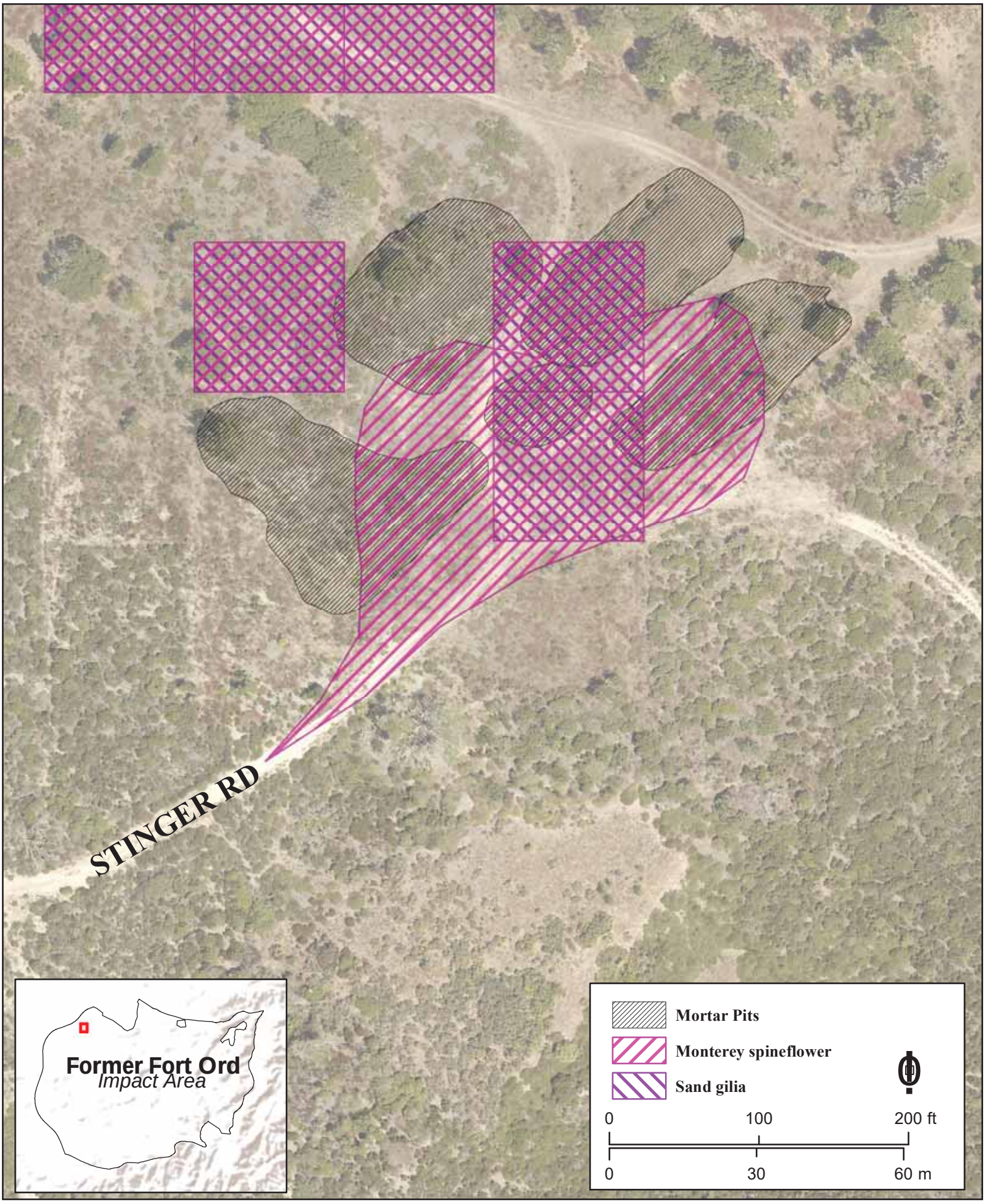
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.09.18 13:44:28 -07'00' **Date:** _____

QC Manager: _____ **Date:** _____

BRAC Biologist: _____ **Date:** _____



KEMRON ENVIRONMENTAL SERVICES

Gilbane

Biological Resources within WGBA Mortar Pits
Former Fort Ord, California

Figure 1

C:\GIS\Project Specific Data\WGBA Mortar Pits\WGBA Mortar Pits Bio Resources 20180918.mxd 9/18/2018 [13:40 PM] PATRIC KRABACHER, DDA

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the KEMRON Biologist(s), Jami Davis (925-783-3112) and Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Unit 23	**DATE:**	9-4-18
WORK TO BE CONDUCTED:	Subsurface investigation of large anomalies		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	
	☐ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Species:	Monterey spineflower, Yadon's piperia, Seaside bird's-beak, HMP shrubs, CTS, BLL		
Location:	See attached map for known locations of HMP annual plants		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and KEMRON Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- If greater than 0.5 inch of rain in a 24-hour period occurs, work activities must cease until the site biologist and workers trained to identify CTS have searched the work area for dispersing salamanders. Work activities may resume once the biologist and search crew have determined that CTS that could be killed or injured by work activities are no longer present in the work area.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist or other Service-approved biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Report all encounters of BLL and follow the BLL encounter protocol.
- No work shall occur in areas known to support Monterey spineflower from approximately February 1 to June 1 (see attached Sensitive Resources Map).
- No work shall occur in flagged areas of Yadon's piperia and Seaside bird's-beak until it has been determined by the KEMRON biologist that the plants are no longer blooming and have set seed (approximately August/September) (see attached Sensitive Resources Map).

- When excavating within areas containing HMP annual plant species, the top 2-3 inches of the topsoil shall be preserved and placed on a tarp or other impermeable surface and shall be kept separate from any other soil piles. Once excavation is complete, the topsoil shall be replaced on top of the backfilling. If the topsoil pile is not replaced before the end of the work day and rain is forecasted for the night, the pile shall be covered to prevent it from washing away. Areas requiring topsoil preservation are shown on the attached maps.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:	Pond 54		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ **Yes**	☐ **No**	

Restrictions:

- No work shall occur within the vernal pond until the pond has dried, as determined by the KEMRON biologist. (see attached Sensitive Resources Map).
- If work occurs within periods of rain, the Project Biologist shall complete surveys following rain events to determine if work can proceed.
- Use of heavy equipment within the vernal pond shall be minimized to the greatest extent feasible.
- Excavations within the vernal pond shall follow the *SOP for Soil and Vegetation Handling in Vernal Pools* (attached)

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

- Any vegetation removal necessary shall be completed manually using mowers, weed whackers, chainsaws, or similar equipment. No heavy equipment (such as a masticator) shall be used within the ponds.
- Only the minimum amount of vegetation removal necessary to complete work shall be conducted.

6. EROSION CONCERNS/SITE RESTORATION:

- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.
- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only and the two internal access routes only.
- Use of the interior access routes shall be limited to only necessary traffic.
- Heavy equipment transport from site to site must be along existing fuelbreaks only. Roads may be used only when necessary. If equipment transport is required along Hawkeye Road, the fuelbreak on the north side of the road (within Unit 15) shall be used to avoid the vernal pool in Unit 11.

KEMRON
ENVIRONMENTAL SERVICES

8. INVASIVE SPECIES:
• All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:
• Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal pond.

This checklist has been read, approved, and signed by the following:

KEMRON Biologist: Jami Colley Digitally signed by Jami Colley DN: cn=Jami Colley, o=Denise Duffy & Associates, Inc., ou, email=jdavis@ddaplanning.com, c=US Date: 2018.09.04 09:40:03 -07'00' **Date:** _____

KEMRON QC Manager: cclyde@gilbaneco.com Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.09.04 12:56:50 -07'00' **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.09.04 11:30:18 -07'00' **Date:** _____

Burn Units
Targets
Targets in Pond 54
Targets in HMP Areas
Ponds

HMP Species
Monterey spineflower
Sand gilia
Yadon's Piperia
Seaside Bird's Beak

Unit 12
Unit 11
Unit 23
Unit 7
Unit 5
Unit 9
Unit 31
Unit 12
Unit 11
Unit 23

Nowhere Road
Orion Road
Evolution Road
Darwin Road
Mercury Road
Olson Road

54
21

0 250 500 1,000 1,500 2,000 ft

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 23 and Target Locations

DATE	PROJECT NUMBER	FILE NAME
08/28/2018		SEE FOOTER

Standard Operating Procedure for Soil and Vegetation Handling In Vernal Pools

PURPOSE:

The purpose of this standard operating procedure (SOP) is to describe the process that will be protective of biotic constituents of vernal pools affected by manual and mechanical soil screening activities in support of Munitions and Explosives of Concern (MEC) remedial investigations located in the BLM Area B and the Impact Area. Handling of soil and vegetation in aquatic features should be conducted under the guidance of the Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remedial Activities at Former Fort Ord (Burleson 2006); and in accordance with the Installation-Wide Multispecies Habitat Management Plan (HMP; USACE 1997). The work falls under the Programmatic Biological Opinion (PBO; USFWS 2017) issued to the United States Department of the Army to enable compliance with the federal Endangered Species Act and to avoid or minimize, to the extent feasible, take of listed species as well as protecting other species of concern and their habitats.

GEOLOGIC CONDITIONS:

Core sampling and GPR analysis were conducted across eight vernal pools in BLM Area B Subunits A and B. Core sampling identified clay layers with varying sand content present in all vernal pools sampled that became difficult to auger at depths around 10 inches and deeper. Three vernal pools had a second layer of clay around 12 inches that differed in color and texture. Based on the profiles of the cores and GPR results it is expected that most of the target digs will occur within clay layers, and that the excavations will not penetrate past them.

PROCEDURE:

MEC remedial investigation activities in identified vernal pools is required to make the vernal pools safe for entry when they are inundated with water. Targets will be acquired down to 18 inches. For each excavated target, soil will be stockpiled separately to allow for replacement that mirrors preexisting conditions after operations are complete, to the extent feasible. Soil disturbance activities will be conducted when the vernal pools are dry, as determined by the project biologist. Each excavated target will be backfilled with stockpiled soil immediately after the target is acquired.

The soil and vegetation handling process for each MEC item shall be conducted as follows:

1. For each target, prior to any work, a digital photograph with a GPS tag should be taken of the target location with an engineer's ruler (Photo 1), and a whiteboard with the following information:

   Date
   Pond number
   Unique target ID

2. In case that the location of the target is overgrown with vegetation, vegetation will be cut around the target and set aside in a pile.

3. During MEC excavation the top 6 inches of topsoil layer should be removed first and set aside. Subsequent soil layers will be removed at 6 inch intervals down to the target item, but not further than 18 inches. Soils should be stockpiled into separate piles at 6 inch intervals and placed on wooden board or plastic sheet for easy transfer back into to the excavated area.

4. After acquisition of the target item is complete, a digital photograph with a GPS tag should be taken of the excavated area with an engineer's ruler placed in the X and Y axis for estimation of size of the excavated area. The photograph should also include a whiteboard with the following information:

   Date
   Pond number
   Unique target ID
   Depth of excavation

5. A digital photograph with a GPS tag should be taken of the separate soil piles with an engineer's ruler and the whiteboard with information from # 4 above.

6. The excavated area should be backfilled using soils in the reverse order that were excavated and were set aside. Each layer should be returned to its original position. During backfilling, the soil should be compacted at 6-inch intervals to help preserve the impermeability of the disturbed soil. Use enough water to moisten the soil, but not saturate it to ensure even compaction. Placement of hard chips may require breaking the large fragments of clay into smaller, more readily compacted pieces before placement. Use a compaction and breaker bar to compact the filled area uniformly, by dropping the bar 20 times from 1 foot height across the excavated area with the flat end (Photo 2). The final layer must be the top 6 inches saved from the surface. If vegetation was removed the clippings should be placed back on top of the excavation area.

7. After backfilling of the excavated area is complete, a digital photograph with a GPS tag should be taken of the backfilled area with an engineer's ruler placed approximately in the same position as in # 4 above. The photograph should also include a whiteboard with the following information:

   Date
   Pond number
   Unique target ID
   Depth of excavation

Photograph 1. Suggested example of an engineer's ruler.

Photograph 2. Suggested example of a compaction and breaker bar.

REFERENCES:

[Burleson] Burleson Consulting, Inc. 2006. Wetland monitoring and restoration plan for munitions and contaminated soil remedial activities at former Fort Ord, California.

[USACE] U.S. Army Corps of Engineers. 1997. Installation-wide multi-species habitat management plan for former Fort Ord, California. April. Sacramento, California.

[USFWS] U.S. Fish and Wildlife Service. 2017. Reinitiation of Formal Consultation for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California (Original Consultation #8-8-09-F-74, 81440-2009-F-0334).

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B-3 East and West Trail Realignments and Subsurface Investigations (Trails 16, 56, 57, and 65)	**DATE:**	9-20-18
WORK TO BE CONDUCTED:	Subsurface Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**	
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), sand gilia, Monterey spineflower, HMP shrubs			
Location:				
Grid Numbers:				

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- No work shall occur from approximately February 1 to May 31 due to the presence of Monterey spineflower or sand gilia (see attached maps).
- When excavating within areas containing HMP annual plant species (see attached maps), the top 2-3 inches of the topsoil shall be preserved and placed on a tarp or other impermeable surface and shall be kept separate from any other soil piles. Once excavation is complete, the topsoil shall be replaced on top of the backfilling. If the topsoil pile is not replaced before the end of the work day and rain is forecasted for the night, the pile shall be covered to prevent it from washing away.
- Report all encounters of BLL and follow the BLL encounter protocol

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☐ Flagged/Marked
Location:	Pond 73, Machine Gun Flats, and Pond 60 are adjacent to the work areas		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

Restrictions:

- No work shall occur within the adjacent vernal ponds.

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing roads only.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.

KEMRON
ENVIRONMENTAL SERVICES

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley **Date:** 9-20-18

cclyde@gilbaneco.com
Digitally signed by cclyde@gilbaneco.com
DN: cn=cclyde@gilbaneco.com
Date: 2018.09.24 08:01:54 -07'00'

QC Manager: _____ **Date:** _____

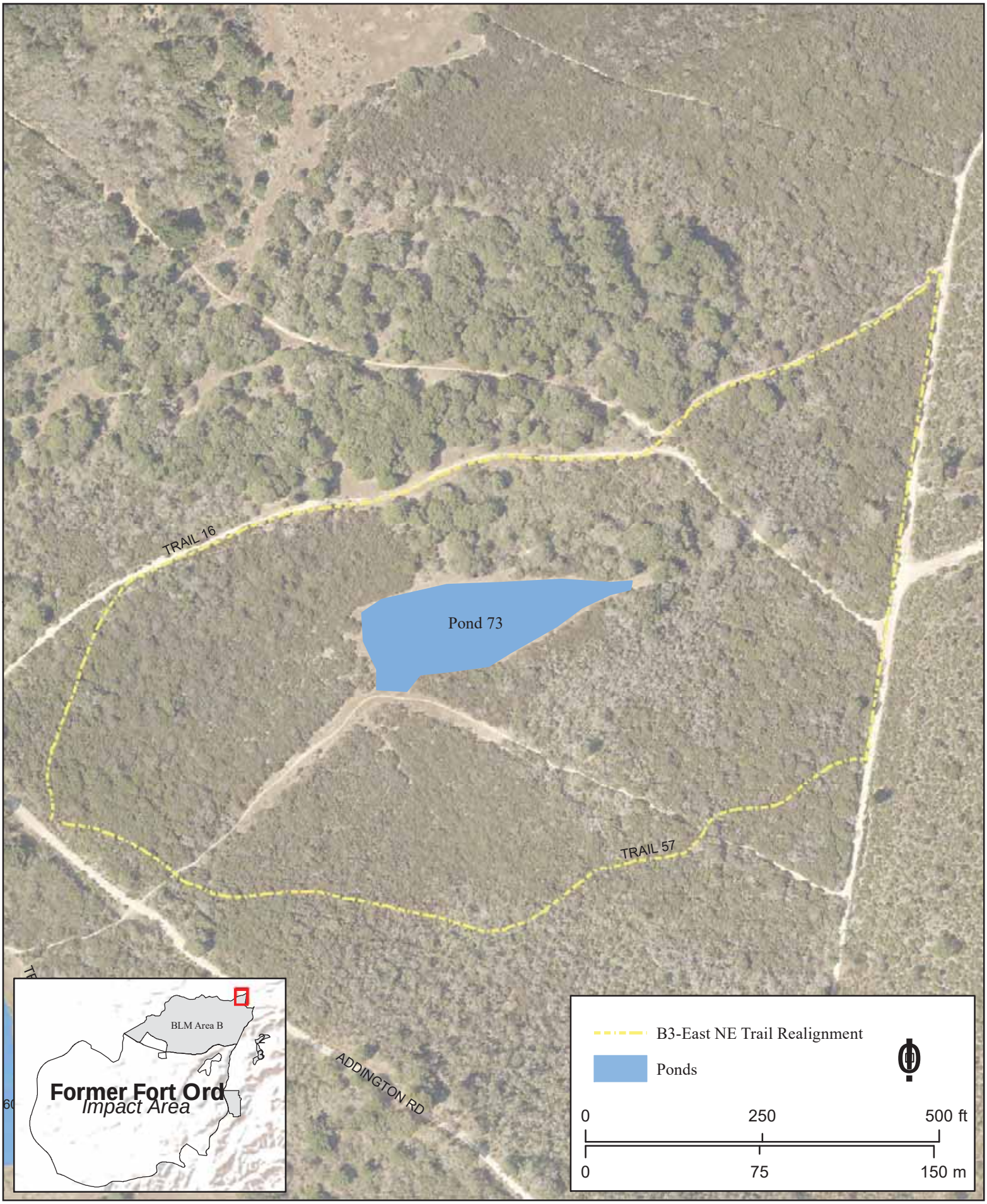
KOWALSKI.BARTHOLOMEW.L.1387978115
Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115
Date: 2018.09.21 10:24:15 -07'00'

BRAC Biologist: _____ **Date:** _____

BLM Area B3 East and West Trail Realignment
Fort Ord, California

Figure 1

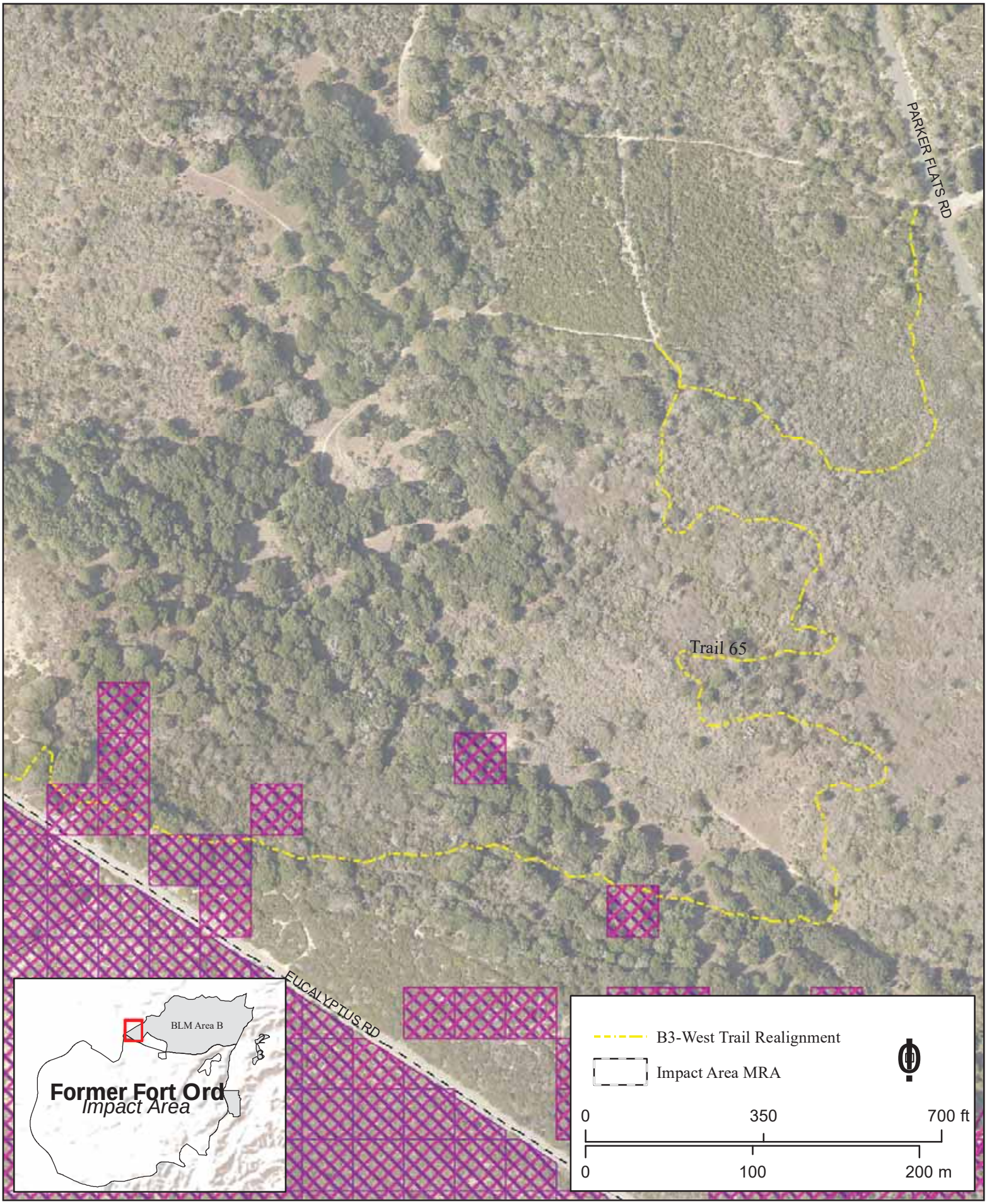
C:\GIS\Final Products\BLM Area B\BLM B3E Trail Realignment.mxd 9/20/2018 [15:51 PM] PATRICK KRABACHER, DDA



BLM Area B3 East and West Trail Realignment
Fort Ord, California

Figure 2

C:\GIS\Final Products\BLM Area B\BLM B3E NE Trail Realignment.mxd 9/20/2018 [16:26 PM] PATRIC KRABACHER, DDA



BLM Area B3 East and West Trail Realignment
Fort Ord, California

Figure 3

C:\GIS\Final Products\BLM Area B\BLM B3W Trail Realignment.mxd 9/20/2018 [16:40 PM] PATRIC KRABACHER, DDA

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Unit B-2A	**DATE:**	9-27-18
WORK TO BE CONDUCTED:	Subsurface Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), HMP shrubs, Seaside's bird-beak		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- Toro manzanitas that were left standing in the cut-only areas following vegetation removal shall be avoided.
- Report all encounters of BLL and follow the BLL encounter protocol

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☐ **No**	

Restrictions:

- No work shall occur within the adjacent vernal pond.

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes. Equipment operators should minimize driving parallel to the slope to the greatest extent feasible to prevent creating rills.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing roads only.
- BLM Restoration Areas within B-2A shall not be used as regular access routes (Figure 1)

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

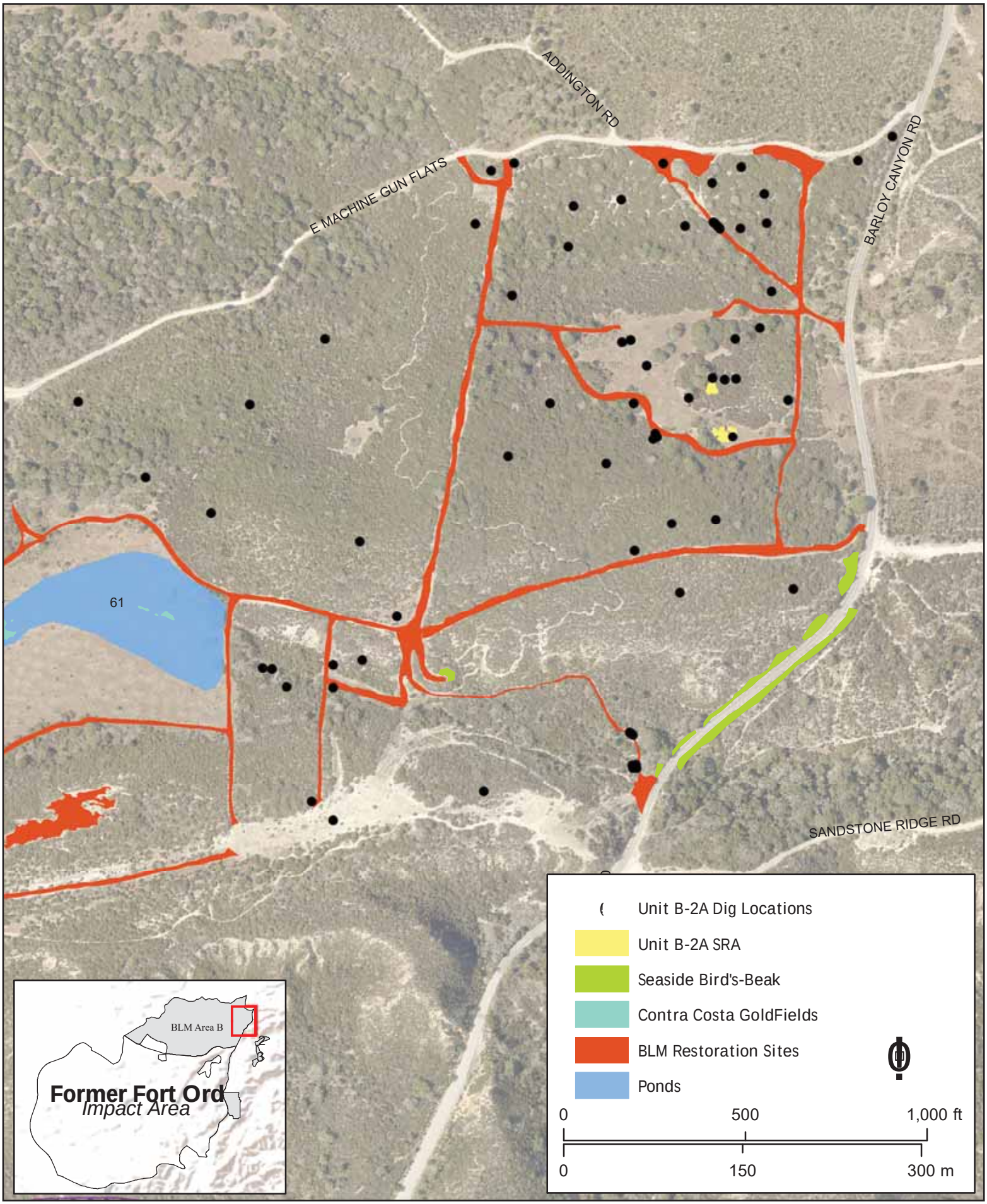
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.09.27 18:19:07 -07'00' **Date:** _____

QC Manager: _____ **Date:** _____

BRAC Biologist: _____ **Date:** _____



BLM Area B-2A Subsurface
Fort Ord, California

Figure 1

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KEMRON ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	Ponds 3 North, 3 South, 16, 35, 39, 40 North, 40 South, 41, 42, 43, 44, 60, 61, and 73	**DATE:**	10-9-18
WORK TO BE CONDUCTED:	Subsurface Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army**	**Location:**	Unit 13
	☒ **BLM**	**Location:**	BLM Area B
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Contra Costa Goldfields		
Location:	CTS: Pond 16, 41, 42, and 60; Goldfields: Ponds 3 North and 61		
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- If substantial rainfall (greater than 0.5 inch of rain in a 24-hour period) occurs, work activities must cease until the Service-approved biologist, and workers trained to identify CTS, have searched the work area for dispersing salamanders. Work activities may resume once the biologist and search crew have determined that CTS that could be killed or injured by work activities are not present in the work area.
- No work shall occur within Ponds 3 North and 61 between February 1 and June 30

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:			
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	

Restrictions:

- Work shall be conducted as described in the SOP.
- No work shall occur while the ponds hold water or are saturated, as determined by the Project Biologist.
- If work occurs within periods of rain, the Project Biologist shall complete surveys following rain events to determine if work can proceed.

5. VEGETATION REMOVAL	
☒ **No Removal Needed**	**Location:**
☐ **Manual Removal Needed**	**Location:**
☐ **Mechanical Removal Needed**	**Location:**
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:
•

7. SITE ACCESS:
• Vehicle access should be limited to existing roads only.

8. INVASIVE SPECIES:
• All equipment coming from off-site must be washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:
•

This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Colley **Date:** 10-9-18

QC Manager: _____ **Date:** _____

BRAC Biologist: _____ **Date:** _____

Standard Operating Procedure for Soil and Vegetation Handling In Vernal Pools

PURPOSE:

The purpose of this standard operating procedure (SOP) is to describe the process that will be protective of biotic constituents of vernal pools affected by manual soil investigation activities in support of Munitions and Explosives of Concern (MEC) remedial investigations located in the BLM Area B and the Impact Area. Handling of soil and vegetation in aquatic features should be conducted under the guidance of the Wetland Monitoring and Restoration Plan for Munitions and Contaminated Soil Remedial Activities at Former Fort Ord (Burleson 2006); and in accordance with the Installation-Wide Multispecies Habitat Management Plan (HMP; USACE 1997). The work falls under the Programmatic Biological Opinion (PBO; USFWS 2017) issued to the United States Department of the Army to enable compliance with the federal Endangered Species Act and to avoid or minimize, to the extent feasible, take of listed species as well as protecting other species of concern and their habitats.

GEOLOGIC CONDITIONS:

Core sampling and GPR analysis were conducted across eight vernal pools in BLM Area B Subunits A and B. Core sampling identified clay layers with varying sand content present in all vernal pools sampled that became difficult to auger at depths around 10 inches and deeper. Three vernal pools had a second layer of clay around 12 inches that differed in color and texture. Based on the profiles of the cores and GPR results it is expected that most of the target digs will occur within clay layers, and that the excavations will not penetrate past them.

PROCEDURE:

MEC remedial investigation activities in identified vernal pools is required to make the vernal pools safe for entry when they are inundated with water. Targets will be acquired down to 18 inches. For each excavated target, soil will be stockpiled separately to allow for replacement that mirrors preexisting conditions after operations are complete, to the extent feasible. Soil disturbance activities will be conducted when the vernal pools are dry, as determined by the project biologist. Each excavated target will be backfilled with stockpiled soil immediately after the target is acquired.

The soil and vegetation handling process for each anomaly investigation shall be conducted as follows:

1. For each target, prior to any work, a digital photograph with a GPS tag should be taken of the target location with an engineer's ruler (Photo 1), and a whiteboard with the following information:

   Date
   Pond number
   Unique target ID

2. In case that the location of the target is overgrown with vegetation, vegetation will be cut around the target and set aside in a pile.

3. During anomaly excavation the top 6 inches of topsoil layer should be removed first and set aside. Subsequent soil layers will be removed at 6 inch intervals down to the target item, but not further than 18 inches. Soils should be stockpiled into separate piles at 6 inch intervals and placed on wooden board or plastic sheet for easy transfer back into to the excavated area.

4. After acquisition of the target item is complete, a digital photograph with a GPS tag should be taken of the excavated area with an engineer's ruler placed in the X and Y axis for estimation of the excavated area. The photograph should also include a whiteboard with the following information:

   Date
   Pond number
   Unique target ID
   Depth of excavation

5. A digital photograph with a GPS tag should be taken of the separate soil piles with an engineer's ruler and the whiteboard with information from # 3 above.

6. The excavated area should be backfilled using soils in the reverse order that were excavated and were set aside. Each layer should be returned to its original position. During backfilling, the soil should be compacted at 6-inch intervals to help preserve the impermeability of the disturbed soil. Use enough water to moisten the soil, but not saturate it to ensure even compaction. Placement of hard chips may require breaking the large fragments of clay into smaller, more readily compacted pieces before placement. Use a compaction and breaker bar to compact the filled area uniformly, by dropping the bar 20 times from 1 foot height across the excavated area with the flat end (Photo 2). The final layer must be the top 6 inches saved from the surface. If vegetation was removed the clippings should be placed back on top of the excavation area.

7. After backfilling of the excavated area is complete, a digital photograph with a GPS tag should be taken of the backfilled area with an engineer's ruler placed approximately in the same position as in No. 4 above. The photograph should also include a whiteboard with the following information:

   Date
   Pond number
   Unique target ID
   Depth of excavation

Photograph 1. Suggested example of an engineer’s ruler.

Photograph 2. Suggested example of a compaction and breaker bar.

REFERENCES:

[Burleson] Burleson Consulting, Inc. 2006. Wetland monitoring and restoration plan for munitions and contaminated soil remedial activities at former Fort Ord, California.

[USACE] U.S. Army Corps of Engineers. 1997. Installation-wide multi-species habitat management plan for former Fort Ord, California. April. Sacramento, California.

[USFWS] U.S. Fish and Wildlife Service. 2017. Reinitiation of Formal Consultation for Cleanup and Property Transfer Actions Conducted at the Former Fort Ord, Monterey County, California (Original Consultation #8-8-09-F-74, 81440-2009-F-0334).

KEMRON
ENVIRONMENTAL SERVICES

FORT ORD
SITE HABITAT CHECKLIST

The following are requirements to minimize biological disturbances to protected species and habitat.

Please notify the Project Biologist(s) Jami Colley (925-783-3112) or Patric Krabacher (970-216-3514), *before* proceeding if work tasks or work boundaries change, additional vegetation removal is necessary, vegetation cutting methods change, or any other conditions change. Field Supervisors must receive a copy of this checklist.

SITE:	BLM Area B Unit C Trail 70	**DATE:**	11-5-18
WORK TO BE CONDUCTED:	Subsurface Investigation		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	
	☐ **Other:**	**Location:**	

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), HMP shrubs		
Location:			
Grid Numbers:			

Restrictions:

- CTS encounters must be reported immediately to field supervisor and Project Biologist. Contact Jami Colley (925-783-3112), Patric Krabacher (970-216-3514), or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.
- Excavations 6-inches or deeper left open overnight shall be covered to prevent CTS and other wildlife from becoming entrapped. If it is not feasible to cover these excavations overnight, ramps shall be placed in the excavations to allow CTS to escape. Additionally, if these excavations will be left open for more than one night, boards or similar material shall be placed in the excavations to provide cover for CTS if they accidentally become entrapped. The excavations shall be inspected each morning prior to the commencement of the day's work and prior to filling. If any CTS are entrapped in the excavations, the Project Biologist shall be contacted to relocate the CTS prior to work in the immediate area.
- HMP grids in the adjacent BLM Area B Unit B shall be avoided (see attached map).
- Report all encounters of BLL and follow the BLL encounter protocol

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:	Pond 35		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☐ **No**	

Restrictions:

- No work shall occur within the adjacent vernal pond.

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5. VEGETATION REMOVAL	
☒ No Removal Needed	Location:
☐ Manual Removal Needed	Location:
☐ Mechanical Removal Needed	Location:
Vegetation Removal Restrictions:	

6. EROSION CONCERNS/SITE RESTORATION:

- Use of heavy equipment on steep slopes may cause erosion. If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of straw wattles, straw bales, silt fencing, or sterile barley.
- Heavy equipment should minimize topsoil disturbance as much as possible, avoid making hard turns, and enter and exit the site from a limited number of routes.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only.
- Heavy equipment transport from site to site must be along existing roads only.

8. INVASIVE SPECIES:

- All equipment coming from off-site must be pressure-washed prior to entering habitat reserve areas to reduce the potential for spread of invasive plant species.

9. ADDITIONAL SITE CONCERNS:

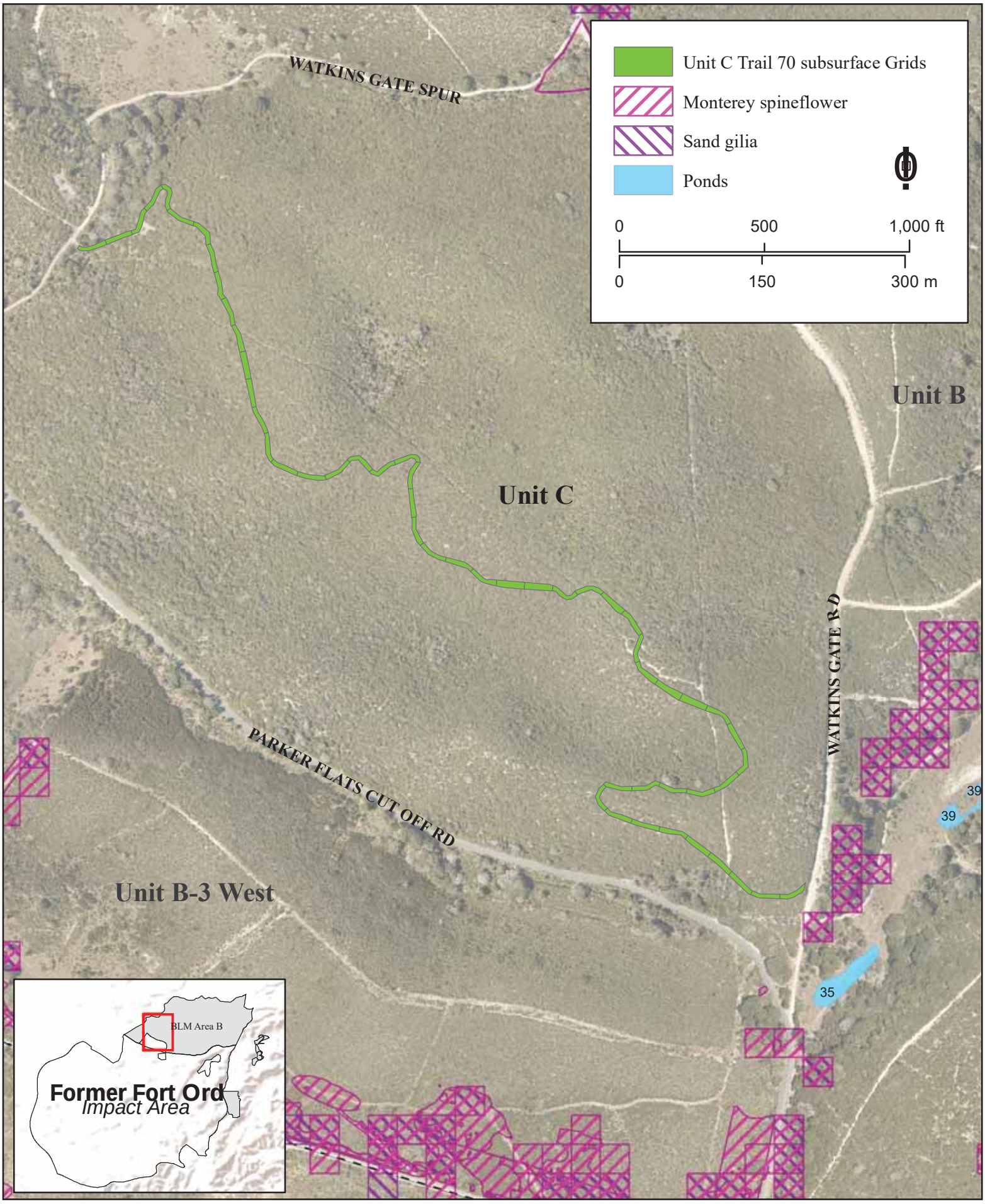
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds.
-

This checklist has been read, approved, and signed by the following:

Project Biologist: Patric Krabacher — Digitally signed by Patric Krabacher DN: cn=Patric Krabacher, o=Denise Duffy and Associates, Inc., ou, email=pkrabacher@ddaplanning.com, c=US Date: 2018.11.05 14:54:41 -08'00' — **Date:** _____

QC Manager: cclyde@gilbaneco.com — Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2018.11.05 16:31:44 -08'00' — **Date:** _____

BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 — Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2018.11.05 16:06:34 -08'00' — **Date:** _____



KEMRON ENVIRONMENTAL SERVICES Gilbane	BLM Area B Unit C Trail 70 Subsurface Fort Ord, California	**Figure 1**

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