2017 ANNUAL BIOLOGICAL MONITORING REPORT
FORMER FORT ORD, CALIFORNIA

May 2018

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

Submitted to:

U.S. Army Corps of Engineers
Sacramento District
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Sacramento, California 95814

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Attachment A — Habitat Checklists (HCLs) for Work Completed in 2017

List of Acronyms and Abbreviations

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
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
UCLA	University of California Los Angeles
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UXO	Unexploded Ordnance
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 2017 biological monitoring surveys which are required as part of the *Installation-Wide Multispecies Habitat Management Plan* (HMP) *for Former Fort Ord, California* (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 (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; 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 Bos (USFWS, 2015). Then, on June 7, 2017, the USFWS issued a reinitiated Programmatic Biological Opinion that supersedes the 2015

Programmatic Biological Opinion[1] (USFWS, 2017). The Programmatic Biological Opinions contain 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 Opinions (USFWS, 2015 and 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 the Programmatic Biological Opinions (USFWS, 2015 and 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 Concern
- California tiger salamander (*Ambystoma californiense*; CTS) – Federally Threatened, State Threatened
- California red-legged frog (*Rana draytonii*; CRLF) – Federally Threatened
- California linderiella (*Linderiella occidentalis*)
- Western snowy plover (*Charadrius alexandrinus nivosus*) – Federally Threatened
- Monterey ornate shrew (*Sorex ornatus salarius*) – State Species of 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

[1] Please note that because the 2017 Programmatic Biological Opinion was not issued until June 7, 2017, measures included in the 2015 Programmatic Biological Opinion were implemented prior to this date.

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 from approximately 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 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 Opinions (USFWS, 2015 and 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 2017 and a description of the mitigations and avoidance measures, biological trainings, HMP species encounters, and other habitat and species protection measures required by the HMP (USACE, 1997) and the Programmatic Biological Opinions (USFWS, 2015 and 2017).

Work was conducted by KEMRON in 2017 at the following sites:

- **Soil remediation sites (Figure 1-1):**
  - Former Historical Areas (HAs) 26, 34, and 37; and
  - Impact Area MRA (Munitions Response Area) Units 9, 23, and 33.
- **Munitions remediation sites (Figure 1-2):**
  - Impact Area MRA Units 1, 2, 3, 5A, 10, 11, 12, 17, 25, 28, and 31;
  - Bureau of Land Management (BLM) Area B Units A, B, C, B-3 East, B-3 West, and B-2A; and containment lines;
  - Range 48 study area;
  - Fuel breaks along Broadway Bypass, Felix, West Machine Gun Flats, Impossible Canyon, Watkins Gate, Austin, Riso Ridge, Chinook, and Foul Bore Roads;
  - Administrative areas in Units 1, 2, and 3 (including Shirley, Razzle Dazzle, Range 23, Napalm, and Bitter Roads);
  - Fuel break erosion repair areas along Darwin, Nason, Evolution, and Phoenix Roads; and
  - Evolution and Little Moab Roads realignment sites.

2.0 Site 39 - Soil Remediation Activities in 2017

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 2017. However, in 2017 site re-contouring and erosion control work was conducted at HA 26, 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 2-3). Additionally, soil sampling was conducted in 2017 to determine the need for future soil remediation activities within Units 9, 23, and 33 (Figure 1-1).

Erosion problems at HA 26, 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 9, 23, 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 Opinions (USFWS, 2015 and 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 2017).
- 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, flooded detention basins were dip-netted prior to excavation, 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 piles 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 2017).
- Only established roads were used to minimize impacts to surrounding habitats and HMP species. Use of established interior access routes were allowed within Unit 23 only when necessary.
- 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 2017

During 2017, munitions and explosives of concern (MEC) remediation activities within the former Fort Ord Impact Area were conducted within Impact Area MRA Units 1, 2, 3, 5A, 10, 11, 12, 17, 25, 28, 31; BLM Area B Units A, B, C, B-3 East, B-3 West, and B-2A; the Range 48 study area; and various fuel breaks (Figure 1-2). Activities within these areas included:

- Mastication and pruning of vegetation;
- Chipping and stockpiling of mulch;
- Prescribed burning;
- Surface MEC removal;
- Target and structure removal;
- Digital geophysical mapping (DGM) with EM61, MetalMapper and OPTEMA equipment;
- Installation of Instrument Verification Strips for geophysical equipment calibration;
- Subsurface MEC removal where necessary;
- Demolition of live or suspected live MEC items;
- Erosion repair (Darwin, Nason, Evolution, and Phoenix Roads);
- Road realignment (Evolution Road [Figure 3-1] and Little Moab Road [Figure 3-2]); and
- Vehicle use to support these activities.

Table 3-1 identifies the approximate acreage within each work area affected by the work activities in 2017.

3.1 HMP Species 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 Opinions (USFWS, 2015 and 2017). Mitigation and other environmental protection measures that were implemented 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 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 2017, KEMRON provided natural resource training to 88 new employees.

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 2017).

3.1.4 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 2, 3, 11, 12, 23, 25, 28, 31; BLM Area B Units B and B-3 West; and the Range 48 study area
- Seaside bird's-beak: Range 48 study area
- Sand gilia: Impact Area MRA Units 28 and 31; BLM Area B Unit B; and the Range 48 study area
- 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 on the east side of Unit 11 during surveys conducted in 2014 and 2015 prior to subsurface investigations of the fuel breaks and MetalMapper surveys and subsequent intrusive work (Figure 3-3). The populations were observed again in 2016 and 2017. A portion of this area was included in the containment line requiring vegetation removal in 2017 for the burn in Units 11, 12, and 31.
- Populations of Seaside bird's-beak and Yadon's piperia were observed in 2017 within Unit 23 near Pond 54 (Figure 3-4).
- A population of Seaside bird's-beak was observed within the BLM Area B B-2A cut-only area (Figure 3-5).

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 population areas in Units 1, 2, and 3 where new fuel breaks were established. 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.

3.1.5 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. Silt fencing was installed around the temporary mulch piles and the Evolution Road Realignment work area (located near Pond 30) to preclude CTS from entering these areas. 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 2017, the work conducted by KEMRON within vernal pools included mowing, prescribed burning, surface MEC removal, and DGM surveys within Ponds 3 North, 3 South, 35, 39, 40 North, 40 South, 42, 43, 44, 60, 73, 101 East, and 101 West (Figure 3-6). 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 2017, there was one encounter of CTS by KEMRON on the former Fort Ord. One individual CTS was encountered within the Evolution Road reroute/erosion control project area, located near Pond 30 (Figure 3-7). A Field Report Form for CTS was completed and provided to the BRAC Biologist. The following summarizes the encounter.

3.1.5.1 July 11, 2017

On July 11, 2017, one young-of-the-year CTS was found in a disturbed area (the Evolution Road work area near Pond 30) where grading for a road re-route, soil borrow for erosion repair projects, and mulch stockpiling was occurring. The individual was found adjacent to a soil stockpile by the site contractor upon arriving at the site in the morning; the soil in the area had been disturbed the previous day. The work area was located approximately 315 feet from Pond 30 (Figure 3-7). Exclusionary silt fencing had been installed the week prior to commencement of work activities, and as such it is likely that the CTS was present within the area prior to silt fence installation.

Work was stopped in the area and the Project Biologists, Jami Colley and Shaelyn Hession, were called to the site. Upon arrival, the Project Biologists identified that the CTS was alive; however, an injury was present behind the head and consisted of a portion of the left front leg structure protruding through the skin. The exact cause of the injury is unknown, as no work had yet been conducted on that day. It is possible that the individual suffered the injury on the previous day by equipment being used for soil grading activities or it may have been predated on. The Project Biologist measured, weighed, and photographed the individual (Figure 3-8). The measurements for the CTS were: 130mm total length, 75mm snout-vent length, and 13.6g.

The CTS was then moved by the Project Biologists to a mammal burrow outside of the work area. The individual was alive at the time of relocation; however, it is unknown if it survived the injury. The encounter was documented by the Project Biologist and the report was submitted to the BRAC office on July 11, 2017.

3.1.6 Minimize Impacts to Black Legless Lizard

No BLL were encountered during work activities by KEMRON on the former Fort Ord in 2017. To minimize impacts to this species, 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.

3.1.7 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 2017, activities within portions of Units 1, 2, and 3 included mastication and pruning of vegetation, reacquisition of targets for removal, filling of target pits, DGM, and vehicle use to support these activities. In 2014, the Project Biologist completed an evaluation of the presence or absence of invasive plant species within these units. The evaluation identified significant populations of jubata grass within Unit 1 and a portion of Unit 2, and limited to no populations of jubata grass or other invasive plants within Unit 3 and the remaining portion of Unit 2. The Project Biologist mapped the extent of the densest populations of jubata grass, which was

utilized to inform personnel of the area where decontamination would be necessary following work.

In 2017, 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 2017 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.

3.1.8 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. High erosion areas along Darwin, Nason, Felix, Evolution, and Phoenix Roads were repaired in 2017 (Figure 1-2), including filling of gullies with soil borrowed from the Evolution Road Realignment work area, regrading, and application of mulch produced during vegetation removal activities in other work areas.

4.0 References

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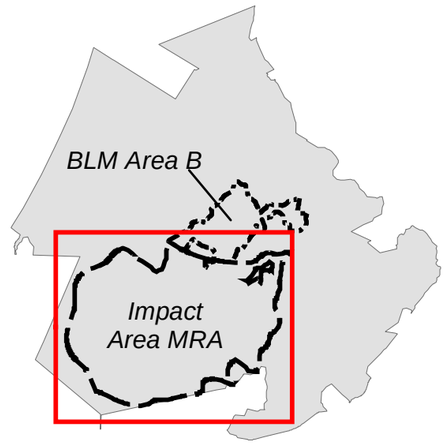
Figures

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

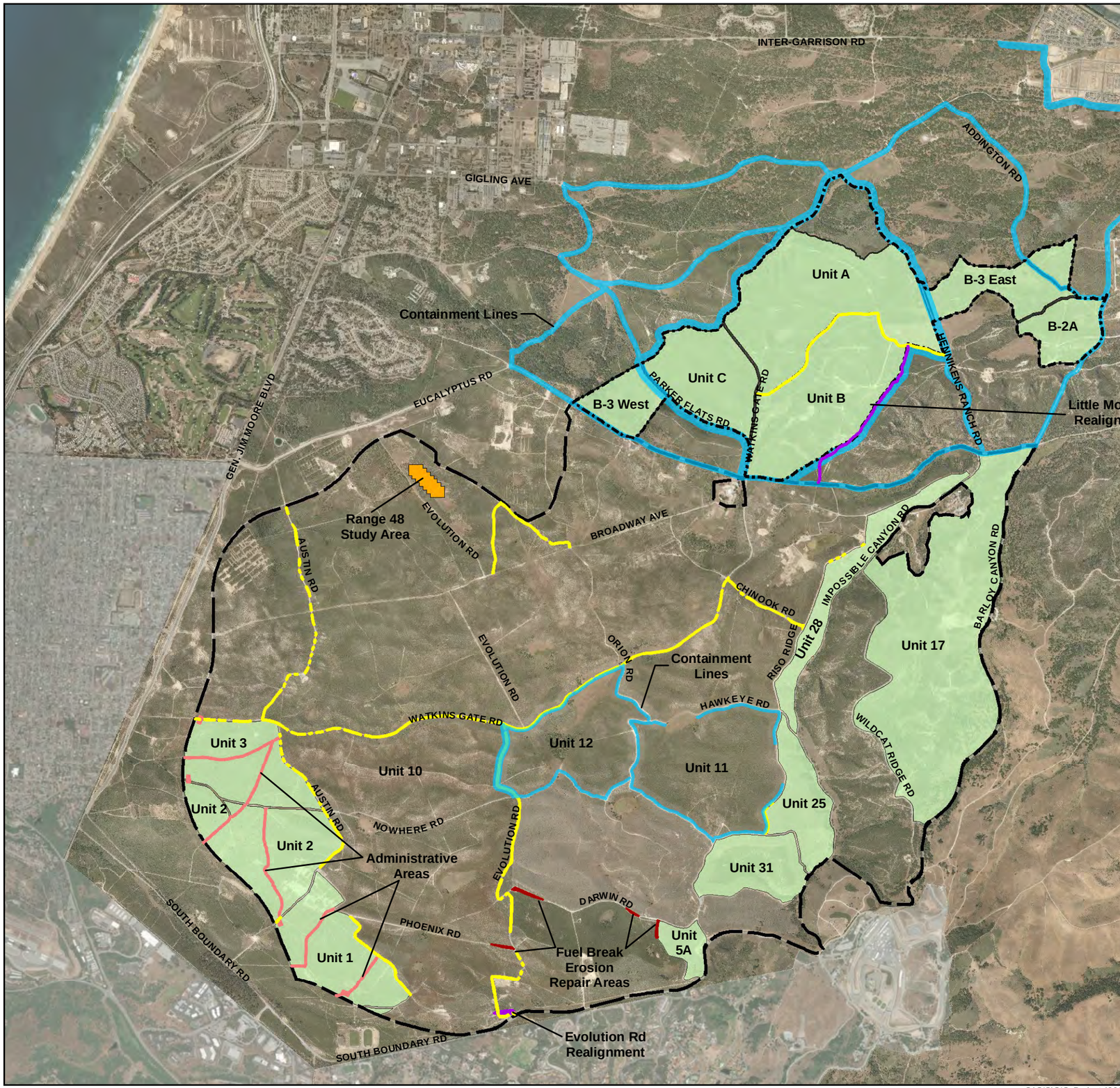
FORMER FORT ORD

FIGURE NUMBER 1-1

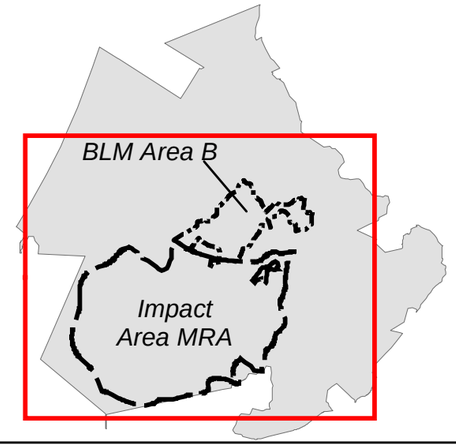
2017 Annual Biological Monitoring Report
Site 39 Soil Remediation Areas Where Biological Monitoring Occurred in 2017

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\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 Where Biological Monitoring Occurred*
- Range 48 Study Area
- Fuel Break Erosion Repair
- Road Realignment
- Fuel Breaks
- Administrative

*Note: Mastication in Units 10, 11, and 12 consisted of an approximately 45-foot wide containment line only.

N

0 2 4 8 Miles

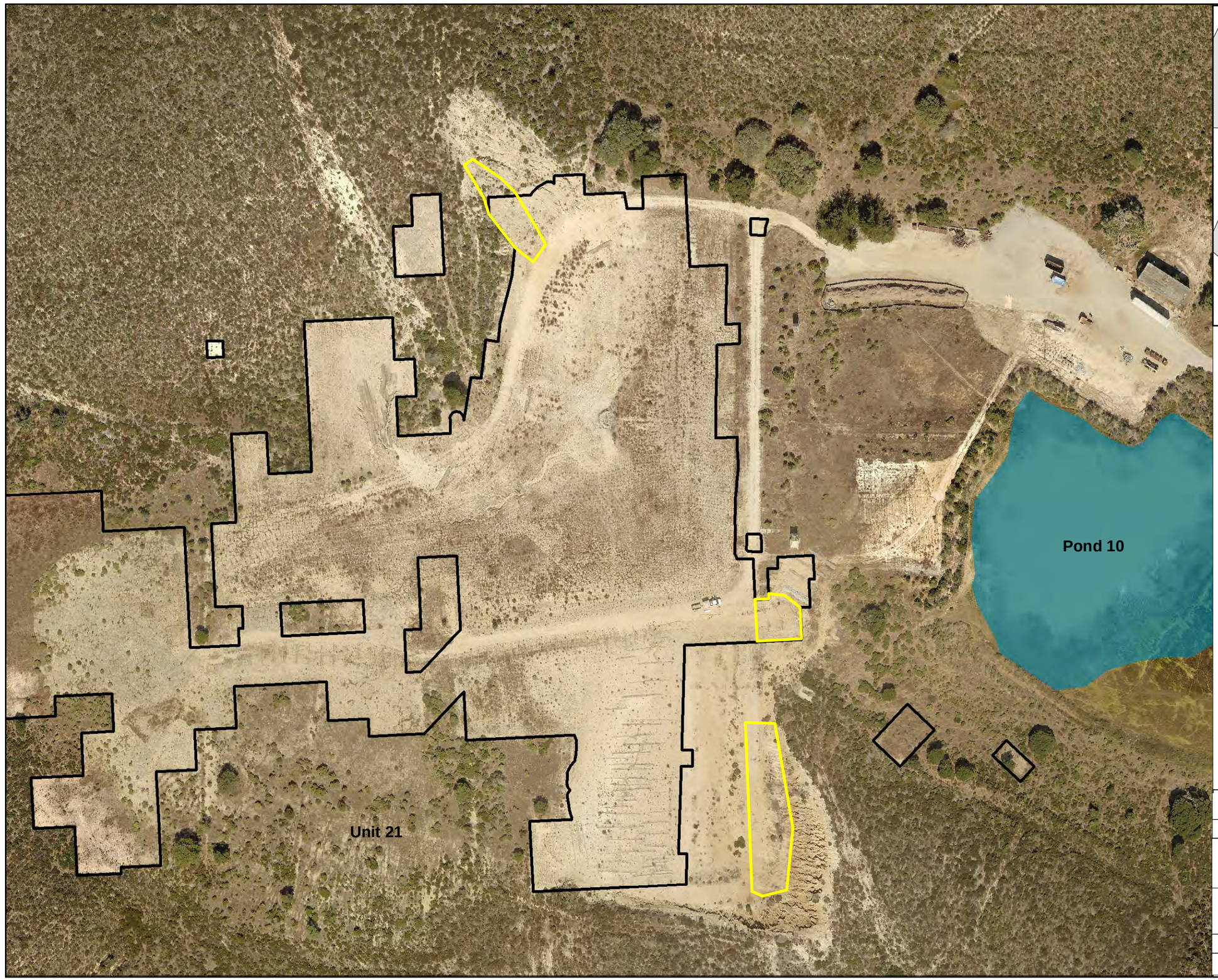
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

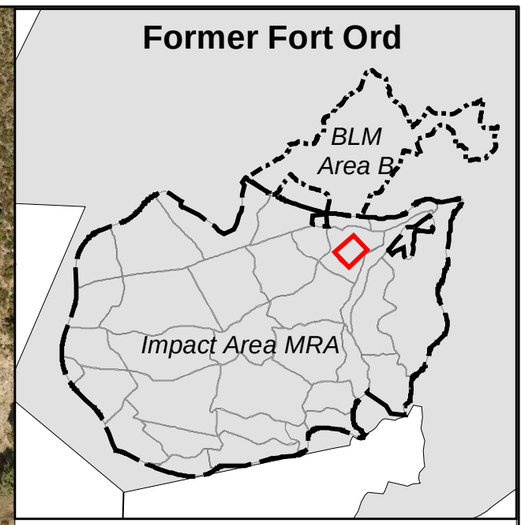
FORMER FORT ORD

FIGURE NUMBER	
1-2	*2017 Annual Biological Monitoring Report* Munitions Remediation Areas Where Biological Monitoring Occurred in 2017

DATE	PROJECT NUMBER	FILE NAME
2/14/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 1-2 Impact Area Munitions Remediation Area.mxd, jdavis, Gilbane





Restoration Area
2017 Erosion Control Areas
Pond

0 50 100 200
Feet

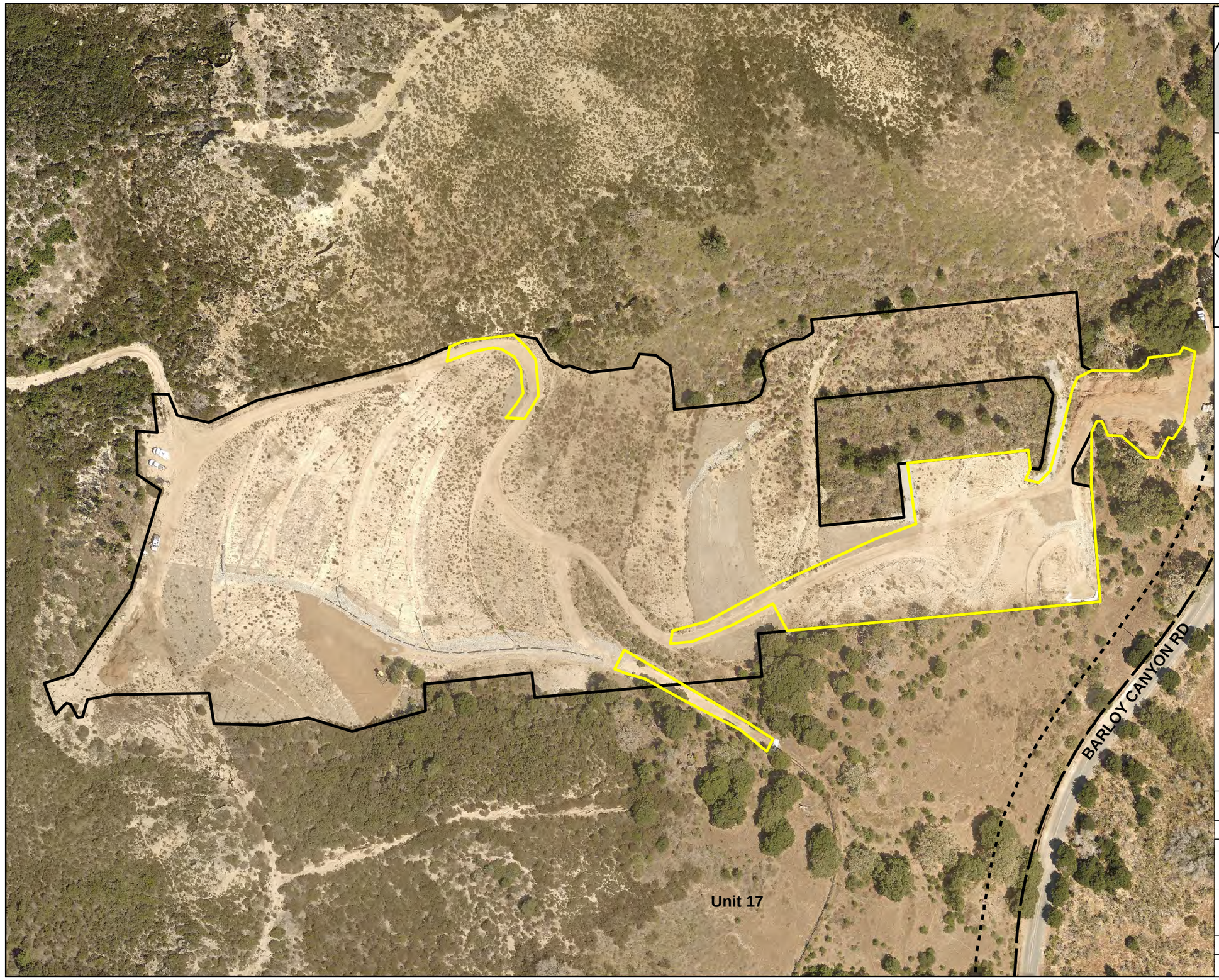
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

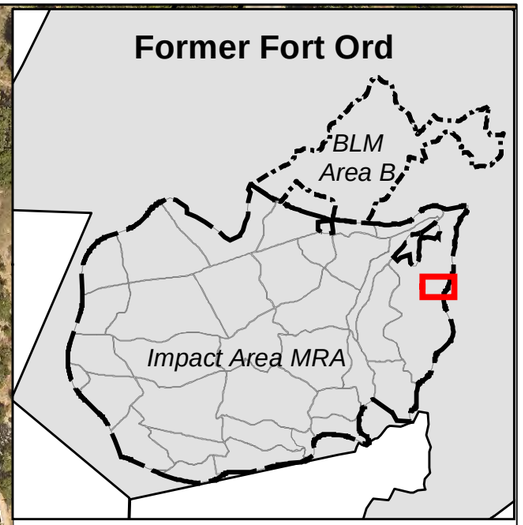
FIGURE NUMBER	*2017 Annual Biological Monitoring Report*
2-1	Erosion Repair Areas Within HA 37

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 2-1 Erosion Repair Areas within HA 37.mxd, jdavis, Gilbane



Former Fort Ord



- Impact Area MRA
- Unit Boundaries
- Restoration Area
- 2017 Erosion Control Areas

N

0 50 100 200 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

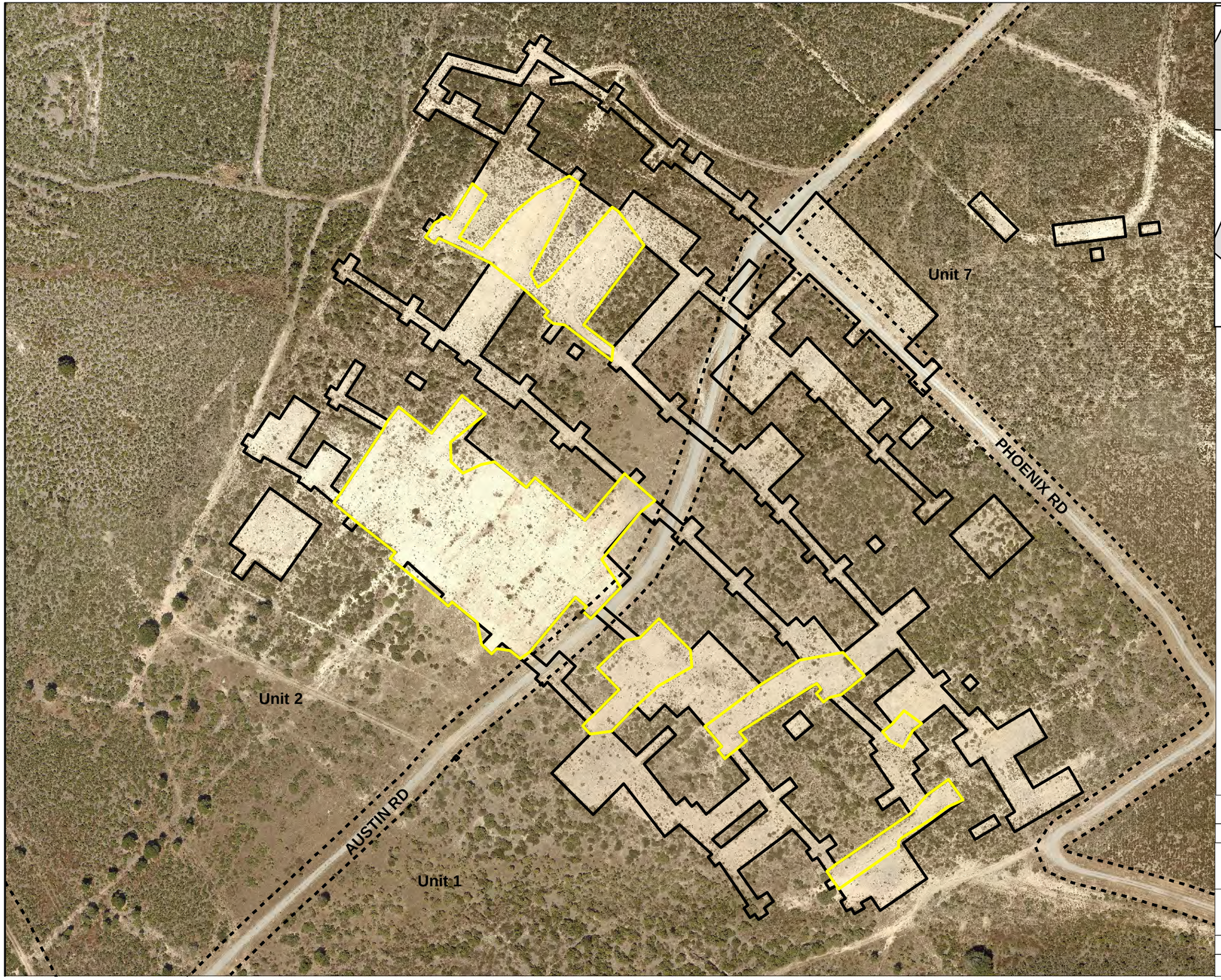
FORMER FORT ORD

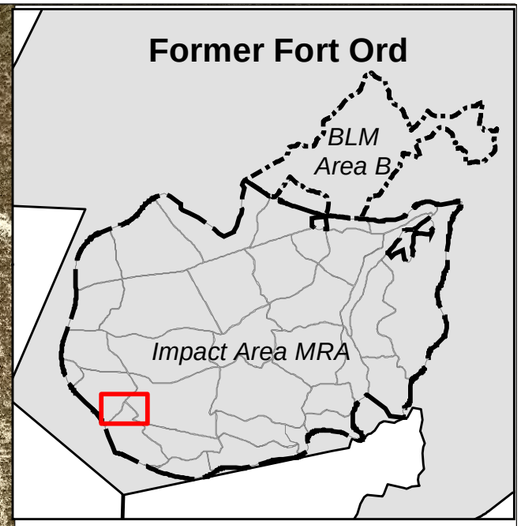
FIGURE NUMBER	*2017 Annual Biological Monitoring Report*
2-2	Erosion Repair Areas Within HA 34

KEMRON ENVIRONMENTAL SERVICES | Gilbane

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 2-2 Erosion Repair Areas within HA 34.mxd, jdavis, Gilbane





Unit Boundaries
Restoration Area
2017 Erosion Control Areas

N

0 75 150 300
Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

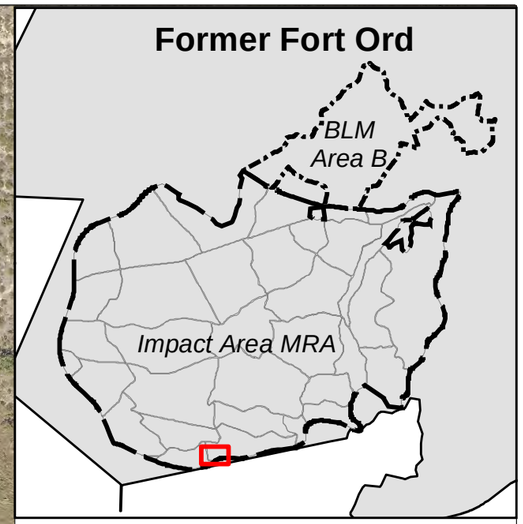
FORMER FORT ORD

FIGURE NUMBER
2-3

2017 Annual Biological Monitoring Report
Erosion Repair Area Within HA 26

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 2-3 Erosion Repair Areas within HA 26.mxd, jdavis, Gilbane



Impact Area MRA
Unit Boundaries
Road Realignment Area
Pond

N

0 50 100 200
Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

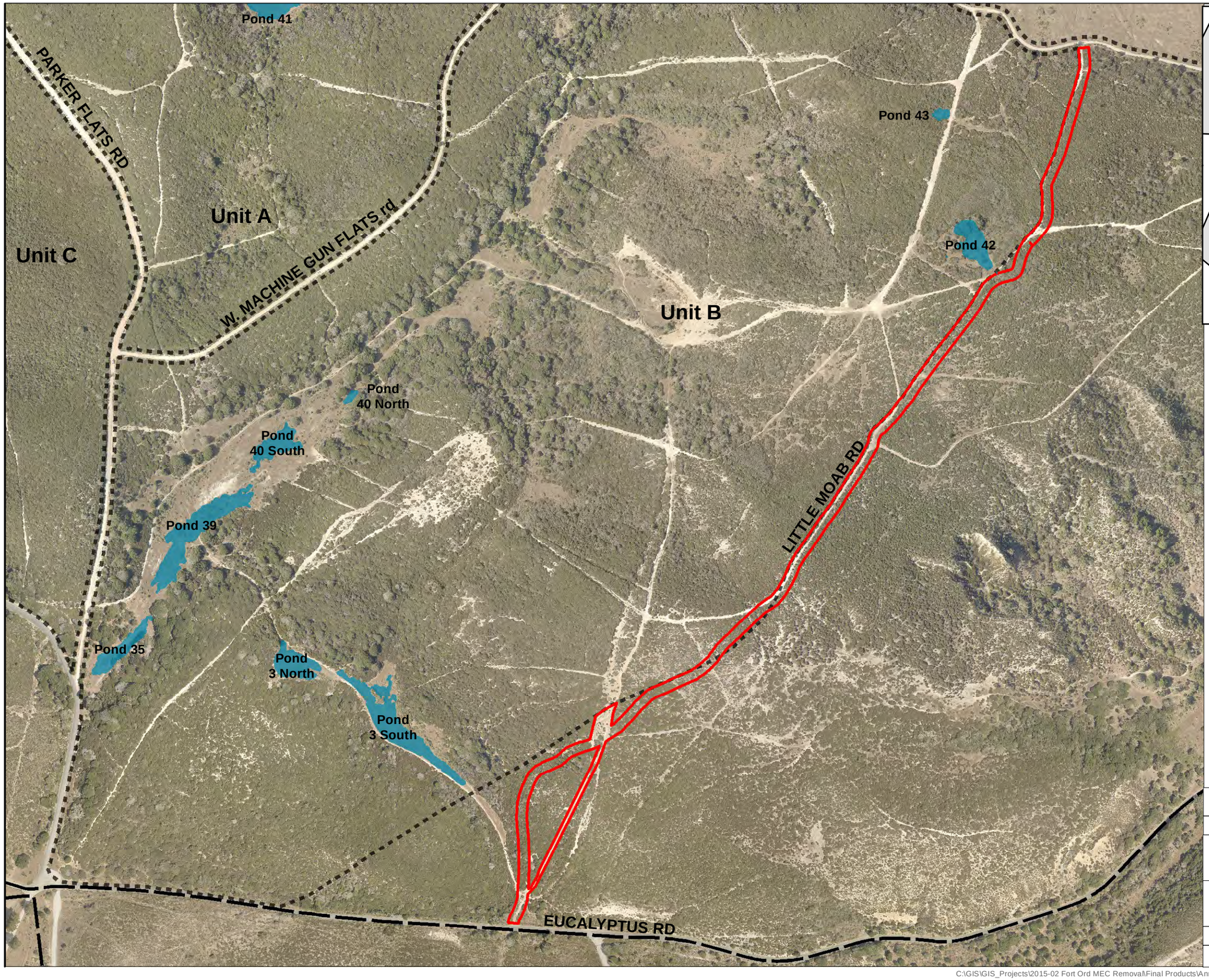
FORMER FORT ORD

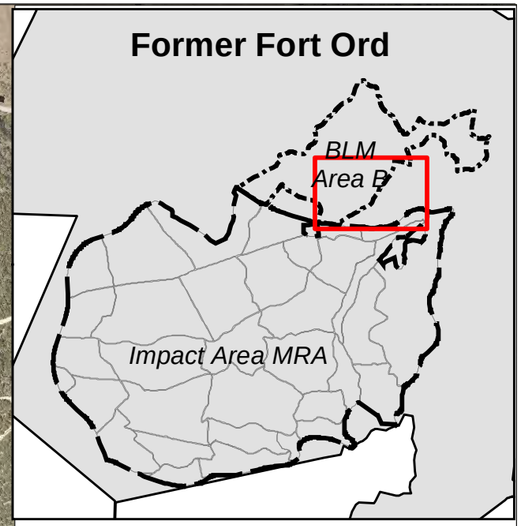
FIGURE NUMBER
3-1

2017 Annual Biological Monitoring Report
Evolution Road Realignment Area

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-1 Evolution Road Reroute Site.mxd, jdavis, Gilbane





BLM Area B Unit Boundaries
Impact Area MRA
Road Realignment Area
Ponds

N

0 200 400 800
Feet

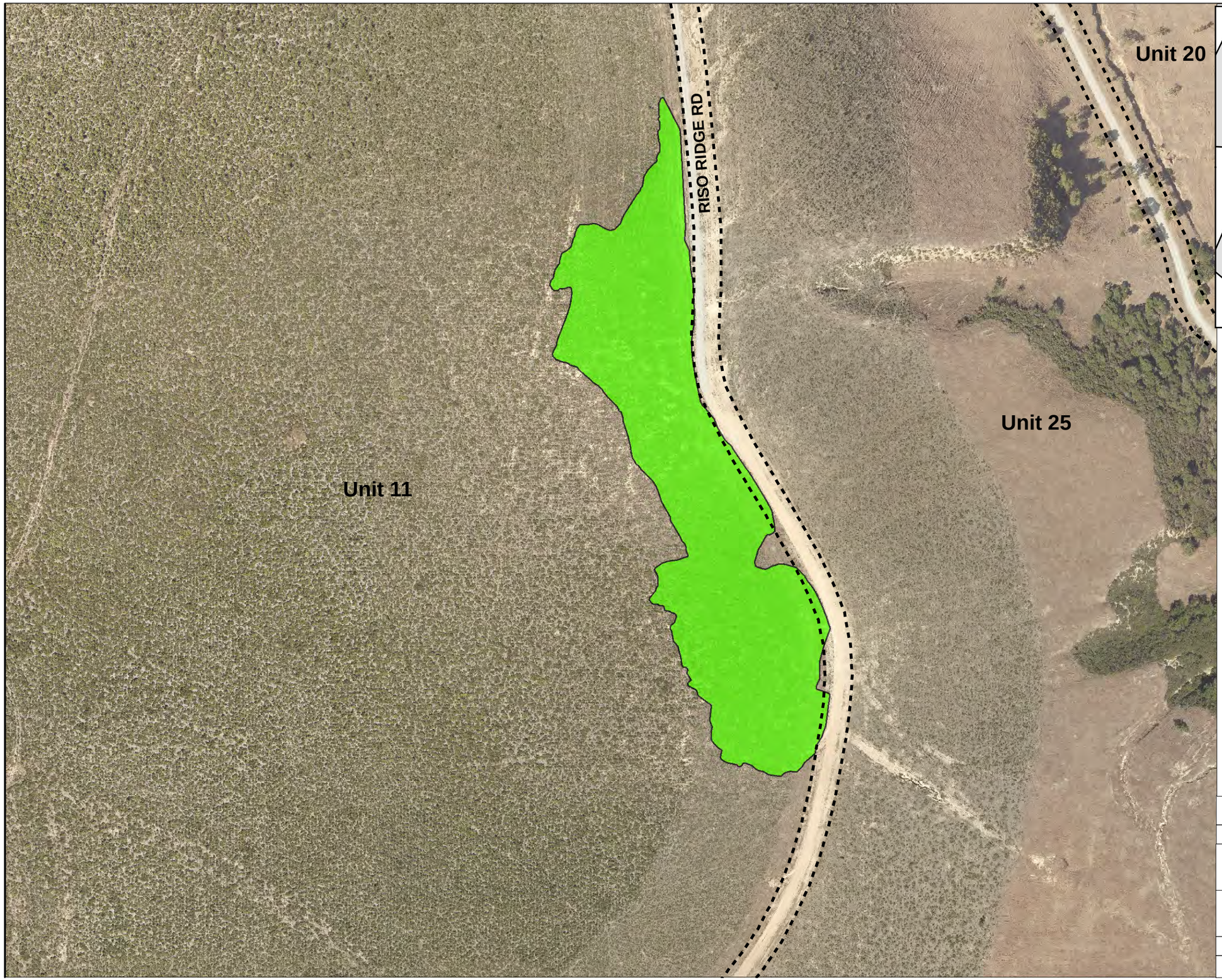
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

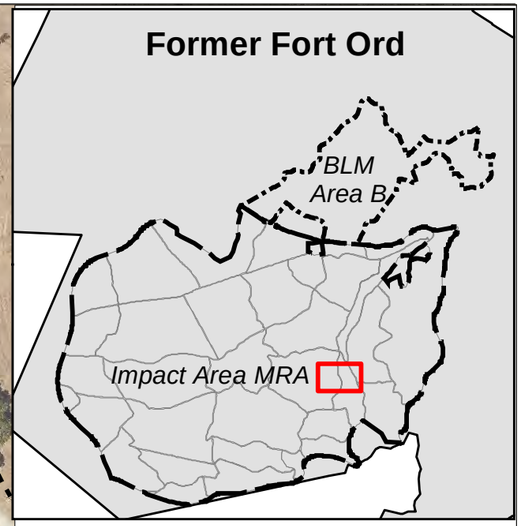
FORMER FORT ORD

FIGURE NUMBER	
3-2	*2017 Annual Biological Monitoring Report* **Little Moab Road Realignment Area**

DATE	PROJECT NUMBER	FILE NAME
1/30/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-2 Little Moab Road Reroute Site.mxd, jdavis, Gilbane





Unit Boundaries

Seaside Bird's-Beak and Yadon's Piperia (1.5 ac)

N

0 75 150 300 Feet

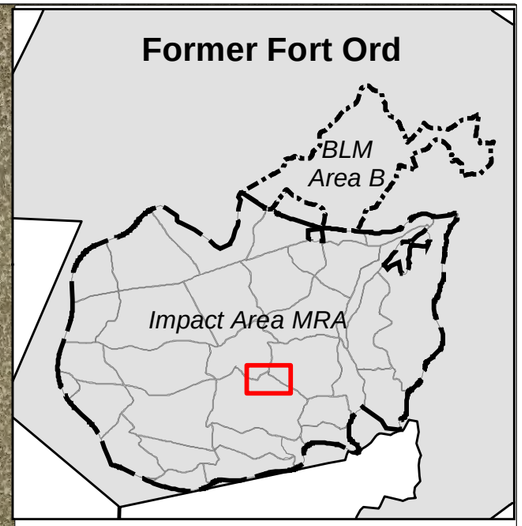
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*2017 Annual Biological Monitoring Report* **Seaside Bird's-Beak and Yadon's Piperia in Unit 11**

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-3 Seaside Birds-Beak and Yadons Piperia in Unit 11.mxd, jdavis, Gilbane



Unit Boundaries

Seaside Bird's-Beak (0.82 ac)

Yadons Piperia (24 individuals)

N

0 75 150 300 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

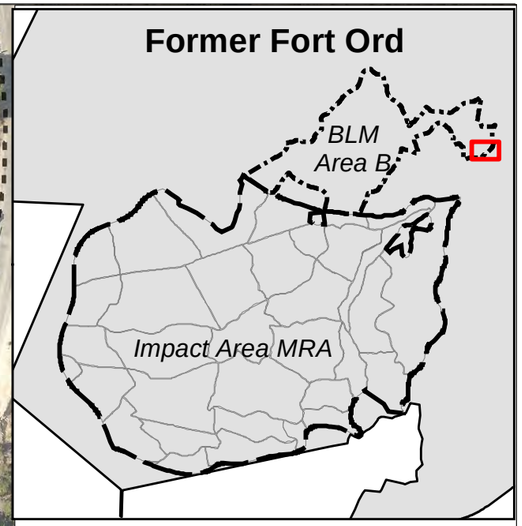
FORMER FORT ORD

FIGURE NUMBER 3-4

2017 Annual Biological Monitoring Report
Seaside Bird's-Beak and Yadon's Piperia in Unit 23

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-4 Seaside Birds-Beak and Yadons Piperia in Unit 23.mxd, jdavis, Gilbane



BLM Area B Unit Boundaries

Seaside Bird's-Beak (0.09ac)

N

0 50 100 200 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER 3-5

2017 Annual Biological Monitoring Report

Seaside Bird's-Beak in Unit B-2A

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-5 Seaside Birds-Beak in Unit B-2A.mxd, jdavis, Gilbane

GIGLING RD
Pond 101 West
Pond 101 East
WATKINS GATE RD
Pond 73
Pond 60
ADDINGTON RD
Pond 44
Unit A
B-3 East
HENNEKENS RANCH RD
B-2A
PARKER FLATS RD
Unit C
W. MACHINE GUN FLATS RD
Unit B
Pond 43
Pond 40 North
Pond 42
B-3 West
Pond 39
Pond 40 South
BARLOY CANYON RD
Pond 35
EUCALYPTUS RD
Pond 3 North
Pond 3 South

Former Fort Ord

BLM Area B

Impact Area MRA

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

N

0 0.15 0.3 0.6 Mile

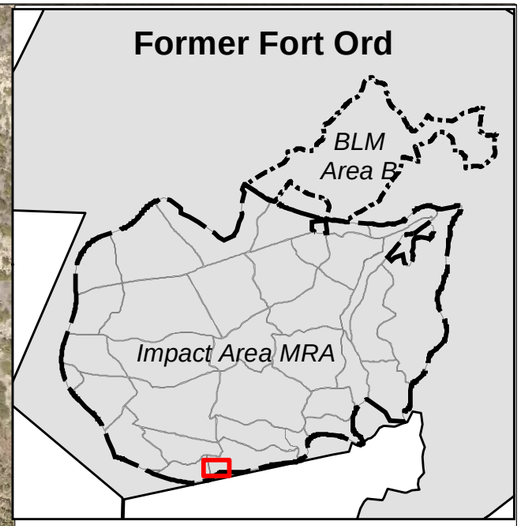
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*2017 Annual Biological Monitoring Report* **Ponds Where Biological Monitoring Occurred in 2017**
3-6	

DATE	PROJECT NUMBER	FILE NAME
1/30/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-6 Ponds Where Bio Monitoring Occurred.mxd, jdavis, Gilbane



Unit Boundaries
Evolution Road Realignment Area
Encounter Site
Relocation Site
Pond

N

0 50 100 200 Feet

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	
3-7	*2017 Annual Biological Monitoring Report* **California Tiger Salamander Encounter and Release Location**

DATE	PROJECT NUMBER	FILE NAME
1/29/2018	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Annual Report Figures\2017\Figure 3-6 California Tiger Salamander Encounter & Release Locations.mxd, jdavis, Gilbane

1.

2.

3.

4.

1. Work area where CTS was encountered on July11, 2017.
2. CTS as it was encountered.
3. CTS as it was being measured by the biologist. Note: An injury was present behind the head and consisted of a portion of the left front leg structure protruding through the skin.
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 3-8	*2017 Annual Biological Monitoring Report* California Tiger Salamander Encounter Photographs	
	KEMRON ENVIRONMENTAL SERVICES	Gilbane
DATE	PROJECT NUMBER	FILE NAME
1/29/2017	WP001	SEE FOOTER

Tables

Table 3-1. 2017 Work Area Activity Acreages

Location	2017 Acres						
	Mechanical Vegetation Mastication	Manual Vegetation Removal	Prescribed Burn	Surface MEC Removal	Subsurface MEC Removal	DGM	Erosion Control/ Road Realignment
	Impact Area MRA						
Unit 1	1.79					1.79	
Unit 2[1]							5.28
Unit 3					36.35		
Unit 5A[2]					1.41		
Unit 10	5.62						
Unit 11	12.46						
Unit 12	12.46						
Unit 17		2.17					
Unit 25				11.30		63.05	
Unit 28				13.90		55.83	
Unit 31	5.83	1.93				41.75	
Range 48 Study Area					0.50		
	BLM Area B						
Unit A	67.72	15.31		54.60		54.60	
Unit B	267.52	8.96	160.18	80.75		13.10	
Unit C	142.08	7.87	81.14	63.95		63.61	
Unit B-3 East	73.97	39.57		78.95		14.76	
Unit B-3 West	40.95	9.52		3.60			
Unit B-2A	58.26	1.54		48.90			
Containment Lines	64.89	32.27		7.50			
	Road Work Areas						
Fuel Breaks[3]		9.88		4.97	40.01[4]	6.51	2.64
Administrative Areas[5]					13.27		
Evolution Road Realignment Area		0.81			0.68		1.77
Little Moab Road Realignment Area[6]					4.77	4.73	5.48
Total	753.55	129.83	241.32	368.42	96.99	319.73	15.17

[1] Work in Unit 2 included only placement of soil in target pits.
[2] Unit 5A work included only a small expanded area of the 100-foot buffer.
[3] Fuel break work (including erosion repair) was conducted on Broadway Bypass, Felix, West Machine Gun Flats, Impossible Canyon, Austin, Riso Ridge, Chinook, Foul Bore, Nason, Evolution, Phoenix, and Darwin Roads.
[4] The acreage of subsurface MEC removal includes mag and dig operations conducted within 30.01 acres of fuel breaks; however, this entire area was not excavated.
[5] Administrative Areas in Units 1, 2, and 3 include Shirley, Razzle Dazzle, Range 23, Napalm, and Bitter Roads.
[6] Vegetation removal and surface MEC removal for the Little Moab Road Realignment area is included in the Unit B acreage.

Attachment A
Habitat Checklists (HCLs) for Work Completed in 2017

Attachment A Table of Contents

[1] This HCL was prepared for the Administrative Areas in Units 1, 2, and 3 as discussed in this report. The "fuel break" nomenclature for these areas was changed to "administrative area" after this HCL was prepared.

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:** _____

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: 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:	Unit 28	**DATE:**	4-4-16
WORK TO BE CONDUCTED:	Surface MEC and target 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:	Monterey spineflower, sand gilia, 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 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.
- No work shall occur in areas known to support Monterey spineflower and/or sand gilia from approximately February 1 to May 31 (see attached maps).
- Heavy equipment shall avoid impacting Toro manzanitas that were left standing following vegetation removal.

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, 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.
- 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, 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 fuelbreaks only. Roads may be used only when necessary. Do not move equipment on southern section of Hawkeye Rd to minimize impact to Yadon's piperia.
- If required, heavy equipment may be used to remove large targets; however, the access routes to targets must be determined/approved by the Project Biologist.

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.

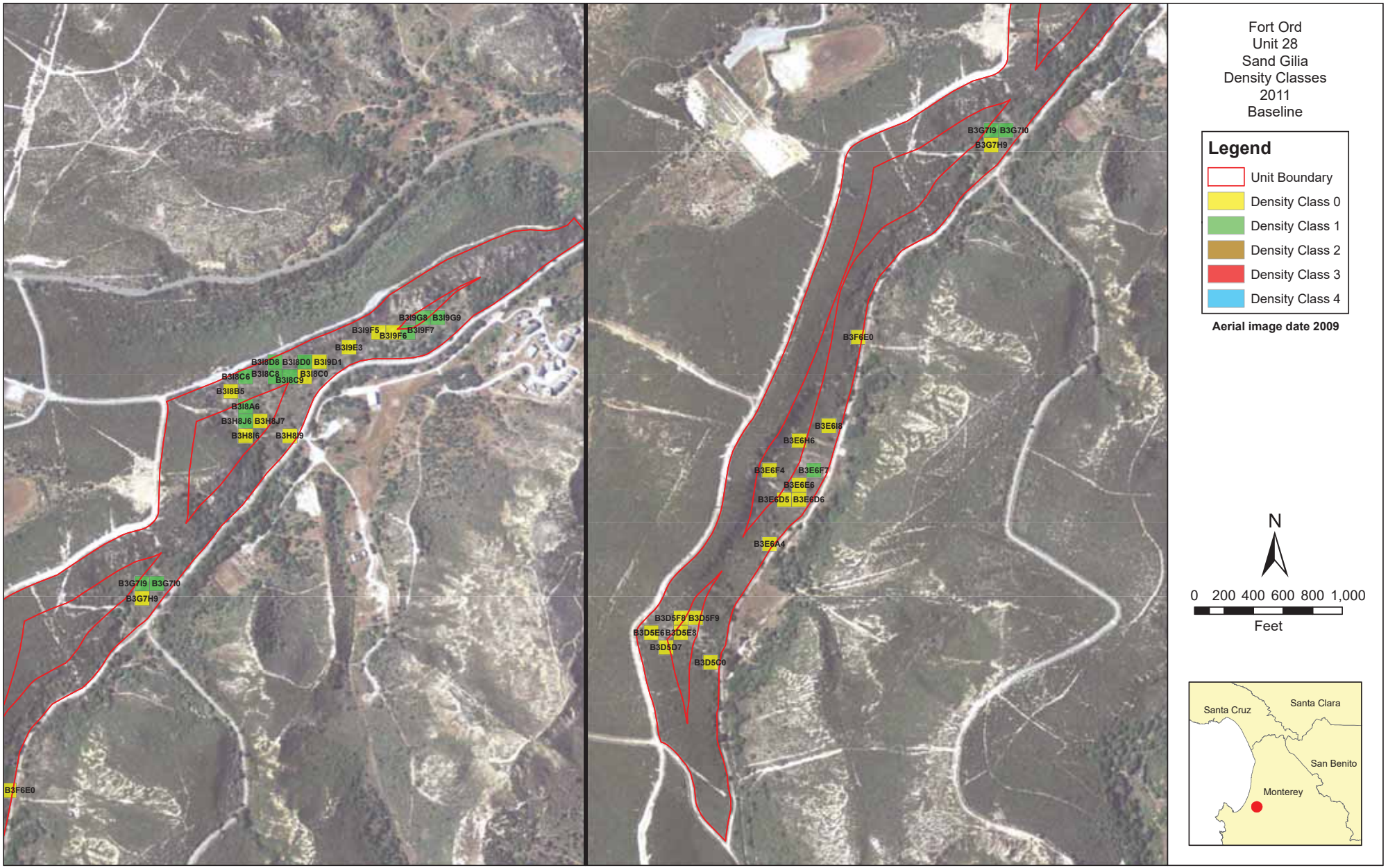
This checklist has been read, approved, and signed by the following:

Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2016.04.04 16:27:02 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2016.04.04 17:25:31 -07'00' **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: 2016.04.04 09:15:28 -07'00'

BRAC Biologist: _____ **Date:** _____


NORTHERN PORTION
SOUTHERN PORTION
B3I9G8 B3I9G9
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B3I9F6
B3I9E3
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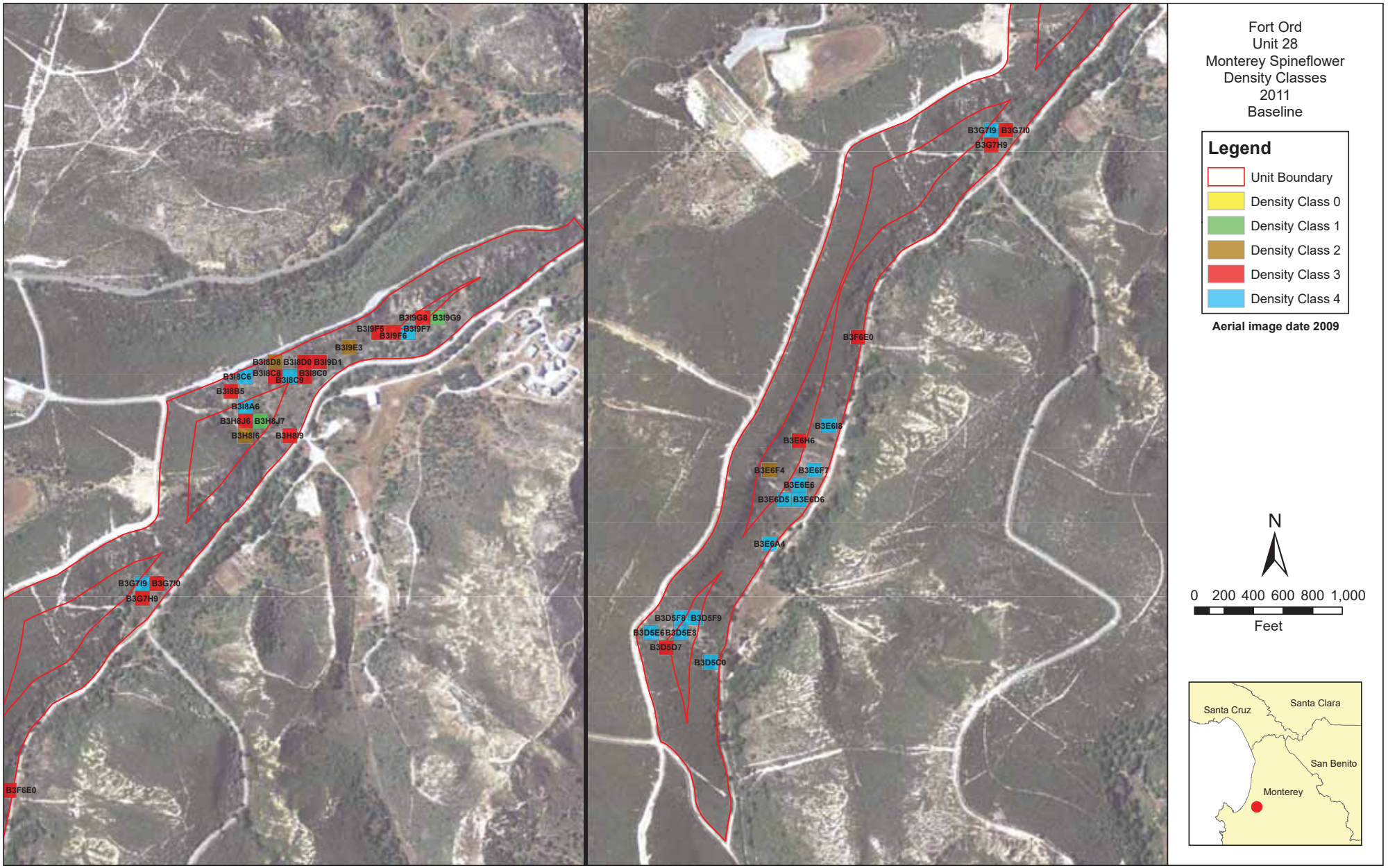
B3E6A4
B3D5F8 B3D5F9
B3D5E6 B3D5E8
B3D5D7
B3D5G0
Fort Ord
Unit 28
Sand Gilia
Density Classes
2011
Baseline
Legend
Unit Boundary
Density Class 0
Density Class 1
Density Class 2
Density Class 3
Density Class 4
Aerial image date 2009
N
0 200 400 600 800 1,000
Feet
Santa Cruz
Santa Clara
San Benito
Monterey

Map A1-20

NORTHERN PORTION

SOUTHERN PORTION



Fort Ord
Unit 28
Monterey Spineflower
Density Classes
2011
Baseline

Legend

- Unit Boundary
- Density Class 0
- Density Class 1
- Density Class 2
- Density Class 3
- Density Class 4

Aerial image date 2009

N

0 200 400 600 800 1,000

Feet

Map A1-22

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 31 Burn Containment Lines and Unit 11 & 12 Containment Lines	**DATE:**	6-1-16
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, Seaside birds beak, sand gilia, HMP shrubs, and nesting birds			
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.
- No work shall occur within 200 feet of the turkey vulture nest, located within Unit 25 until the young have fledged and left the nest, as determined by the Project Biologist. This area is identified on the attached map and has been delineated with stakes and flagging (pink and black stripes).
- No work shall occur in areas known to support Monterey spineflower and/or sand gilia from approximately February 1 to May 31 (see attached map).
- Piling of cut vegetation in areas known to support Monterey spineflower and/or sand gilia shall be reduced to the greatest extent feasible. Areas that are preferred for temporary piling of brush (prior to moving to the fuelbreak for chipping) are identified on the attached map. 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 Seaside bird's-beak or 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 attached map).

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, Seaside birds beak, sand gilia, HMP shrubs, and nesting birds		

- Masticators shall not be permitted within the areas of Seaside bird's-beak. Manual equipment shall be used to cut vegetation within this area. If it is necessary, smaller equipment, such as a bobcat, may be used.
- Mature Toro manzanitas that provide an important seed source for the species in the containment line south of South Boundary Road shall be retained. In areas where the density of Toro manzanita is high, individuals 10 feet or taller and shorter individuals with a very wide canopy cover shall be retained. In areas where the density of Toro manzanita is low, the largest, most mature individuals in that area shall be retained. The individuals to be retained shall be evaluated and flagged by the Project Biologist prior to vegetation removal (pink and black striped flagging will be used). If necessary, the remaining Toro manzanitas may be limbed up to 6 feet.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☒ Flagged/Marked
Location:	Unit 13 (Pond 16), Unit 11 (Pond 72)		
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.
- Masticators shall not be permitted within the vernal ponds identified on the attached map. Small equipment, such as a bobcat or other manual equipment may be used within the vernal ponds.

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Areas of dense oak woodland, the vernal ponds in Units 11 & 13, and areas inaccessible to masticators.
☒ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

- Masticators shall not be used in dense areas of oak woodland or 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, but may be limbed up to 8 feet to allow access beneath the trees. 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:

- 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:

- 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. Fuelbreaks on the western side of Riso Ridge Rd shall be avoided in order to avoid impacts to Yadon's piperia and Seaside bird's-beak. These areas are identified on the attached map and have been delineated with stakes and flagging (pink and black stripes).
- Equipment (skid steer) traffic to access stockpiled vegetation shall be minimized to the greatest extent feasible.

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:

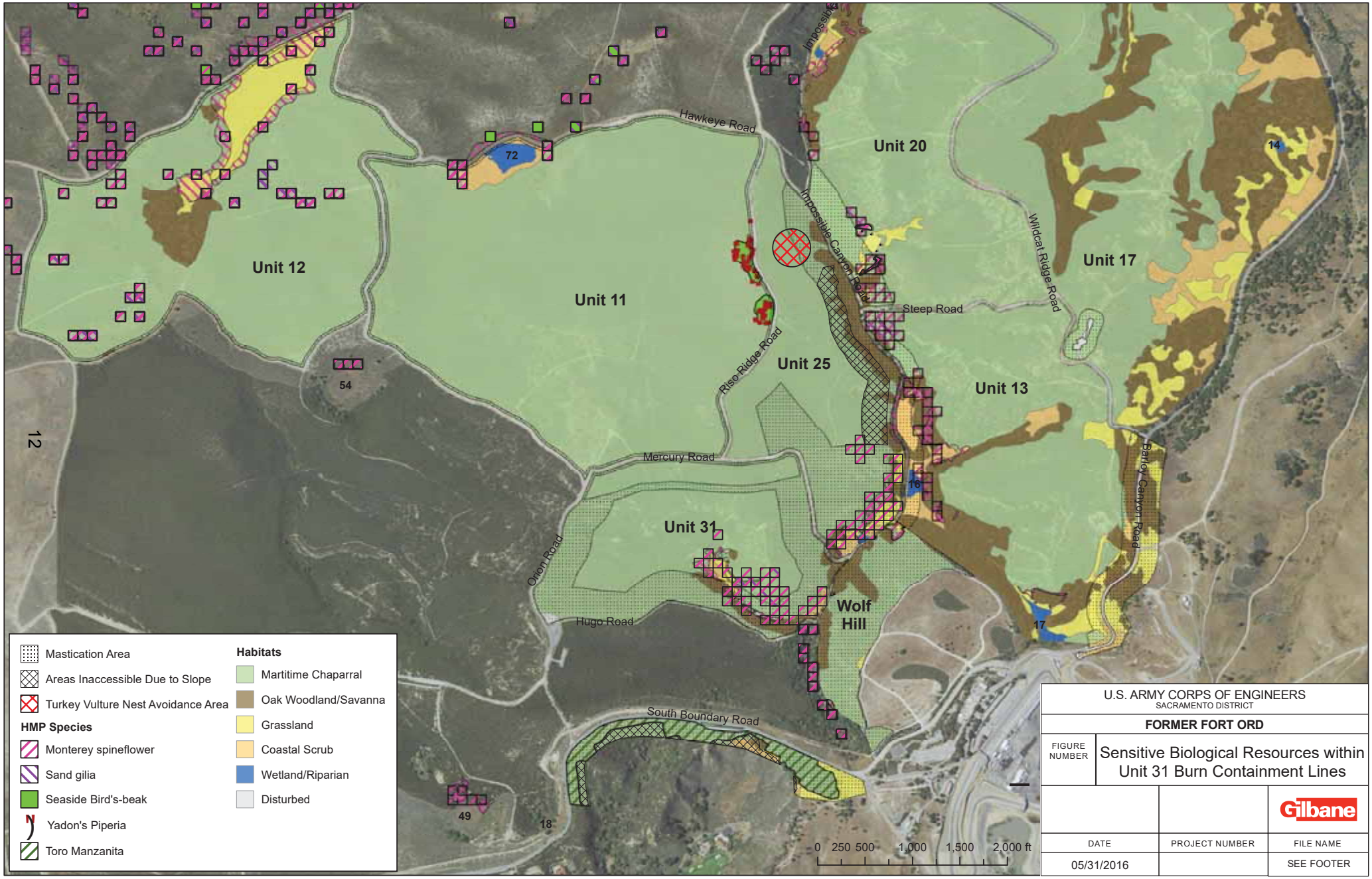
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal ponds in Units 11 and 13.

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: 2016.06.01 10:13:48 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2016.06.01 11:22:17 -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: 2016.06.01 10:38:38 -07'00' **Date:** _____



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 31 Burn Containment Lines

Gilbane

DATE	PROJECT NUMBER	FILE NAME
05/31/2016		SEE FOOTER

Turkey Vulture Nest

200ft Buffer

Fuelbreaks

2016 Mastication

0

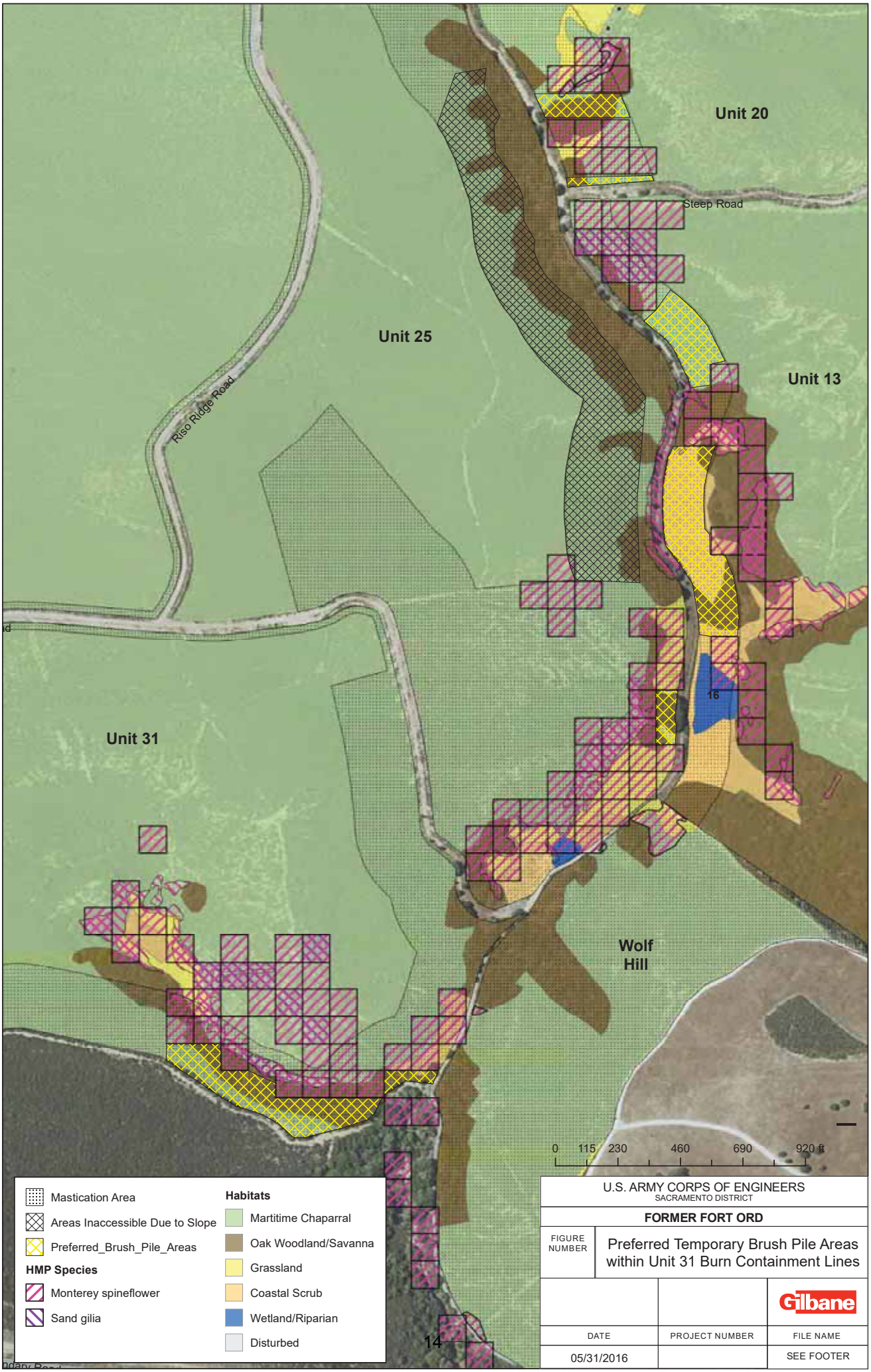
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

Turkey Vulture Nest Unit 25

DATE	PROJECT NUMBER	FILE NAME
5/26/2016	WP001	SEE FOOTER

C:\GIS\GIS_Projects\2015-02 Fort Ord MEC Removal\Final Products\Turkey Vulture Nest Unit 25.mxd, pkrabacher, Gilbane



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Preferred Temporary Brush Pile Areas within Unit 31 Burn Containment Lines

Gilbane

DATE	PROJECT NUMBER	FILE NAME
05/31/2016		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 Davis, 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:	Range 48	**DATE:**	7-20-16
WORK TO BE CONDUCTED:	Vegetation removal, DGM using an EM61 and OPTEMA, subsurface anomaly 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:	Monterey spineflower, sand gilia, seaside bird's-beak, HMP shrubs, and BLL		
Location:	See attached map for known locations of HMP annual plants		
Grid Numbers:			

Restrictions:

- No work shall occur in areas known to support Monterey spineflower or sand gilia from approximately February 1 to June 1 (see attached map).
- No work shall occur in grids containing 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 map).
- Due to the presence of HMP annual plants throughout the entire study area, the top 2-3 inches of the topsoil for **all subsurface investigations** 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.
- CTS are unlikely in this area due to the distance from known or potential breeding ponds; however, any CTS encounters must be reported immediately to field supervisor and KEMRON Biologist and the CTS protocol shall be followed. Contact Jami Davis (925-783-3112) or Bart Kowalski (832-595-5569) to document, handle, or relocate CTS if encountered.

4. VERNAL POOLS/PONDS PRESENT	☐ **Yes**	☒ **No**	☐ **Flagged/Marked**
Location:			

KEMRON
ENVIRONMENTAL SERVICES

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:

- No vegetation removal shall occur in grids containing 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 map).

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 the identified access route (see attached map).
- Although unlikely, 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 approved access routes only (see attached map).
- Heavy equipment transport from site to site must be along existing fuelbreaks 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:

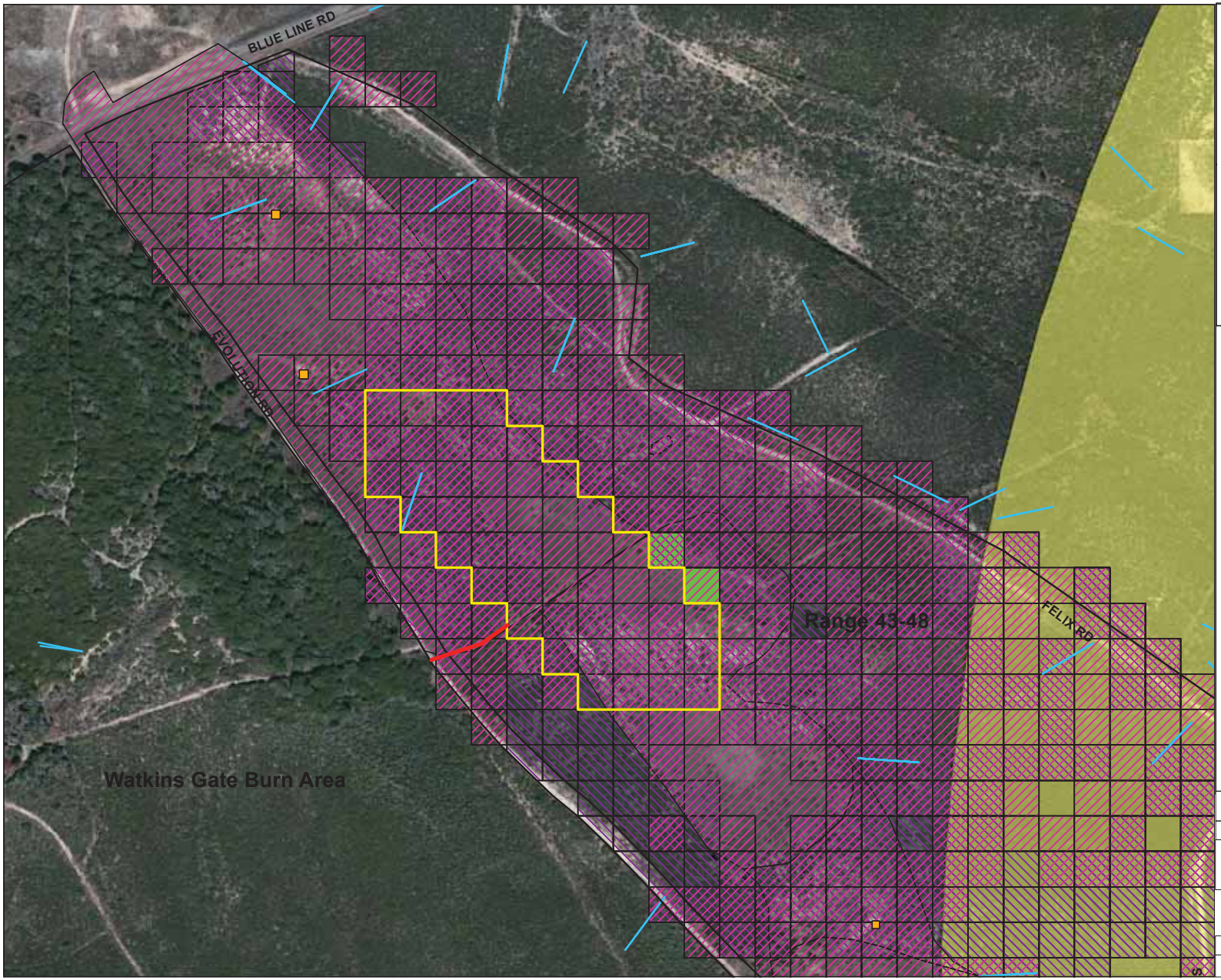
- No work is permitted within the restoration areas or monitoring transects adjacent to the study area (see attached map). This includes turning around of equipment.

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

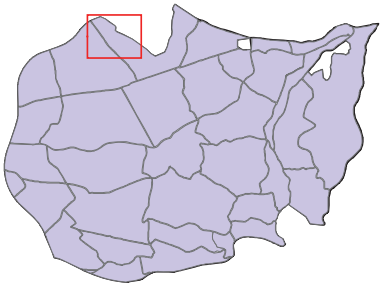
KEMRON Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2016.07.20 11:21:51 -07'00' **Date:** _____

KEMRON QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2016.07.20 11:39:21 -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: 2016.07.20 11:27:05 -07'00' **Date:** _____



Former Fort Ord
Impact Area



- impact_area_track3
- Burn Unit
- Field Study Area
- Monitoring Transect
- Restoration Areas
- Access Route

HMP Species

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

CTS Distribution

- 2km from known/potential CTS ponds
- 1km from known/potential CTS ponds
- 500m from known/potential CTS ponds

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U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*Range 48 Habitat Checklist* Sensitive Biological Resources

DATE	PROJECT NUMBER	FILE NAME
7/20/2016		SEE FOOTER

C:\GIS\Final Products\Range 48 Demonstration\Range 48 Demonstration 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:	Units 1, 2, & 3	**DATE:**	9-7-16
WORK TO BE CONDUCTED:	Vegetation removal and subsurface clearance to depth		

1. LAND USE:	☒ **Habitat Reserve**	☐ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☒ **Army** Although work is within a Habitat Reserve area, the Foul Bore Road and fuel break portion are considered part of BLM's 2% development allowance	**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) 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.
- If excavation is required within grids 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. Grids 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 and fuel breaks only. No vehicles or heavy equipment shall be permitted within the restoration areas or other areas outside of the fuel breaks that are identified as sensitive on the attached maps. If additional access routes are necessary, the site 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.
- Unnecessary movement of equipment from areas infested with pampas grass in Units 1 & 2 (see attached maps) to other units shall be minimized. Equipment used in these units shall be pressure-washed on-site prior to moving to other units to remove invasive plant seeds. Suitable locations for decon are identified on the attached maps.
- Teams working in areas infested with pampas grass in Units 1 & 2 (see attached maps) shall clean boots and equipment daily before leaving the unit to reduce spread of pampas grass. Additionally, teams using vehicles in areas infested with pampas grass in Units 1 & 2 shall dry decon vehicles prior to leaving the unit. Soil and plant material shall be removed using boot brushes or other types of brushes. Suitable locations for decon are identified on the attached maps. 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 is necessary, it must be completed on-site prior to leaving the unit.

KEMRON
ENVIRONMENTAL SERVICES

9. ADDITIONAL SITE CONCERNS:

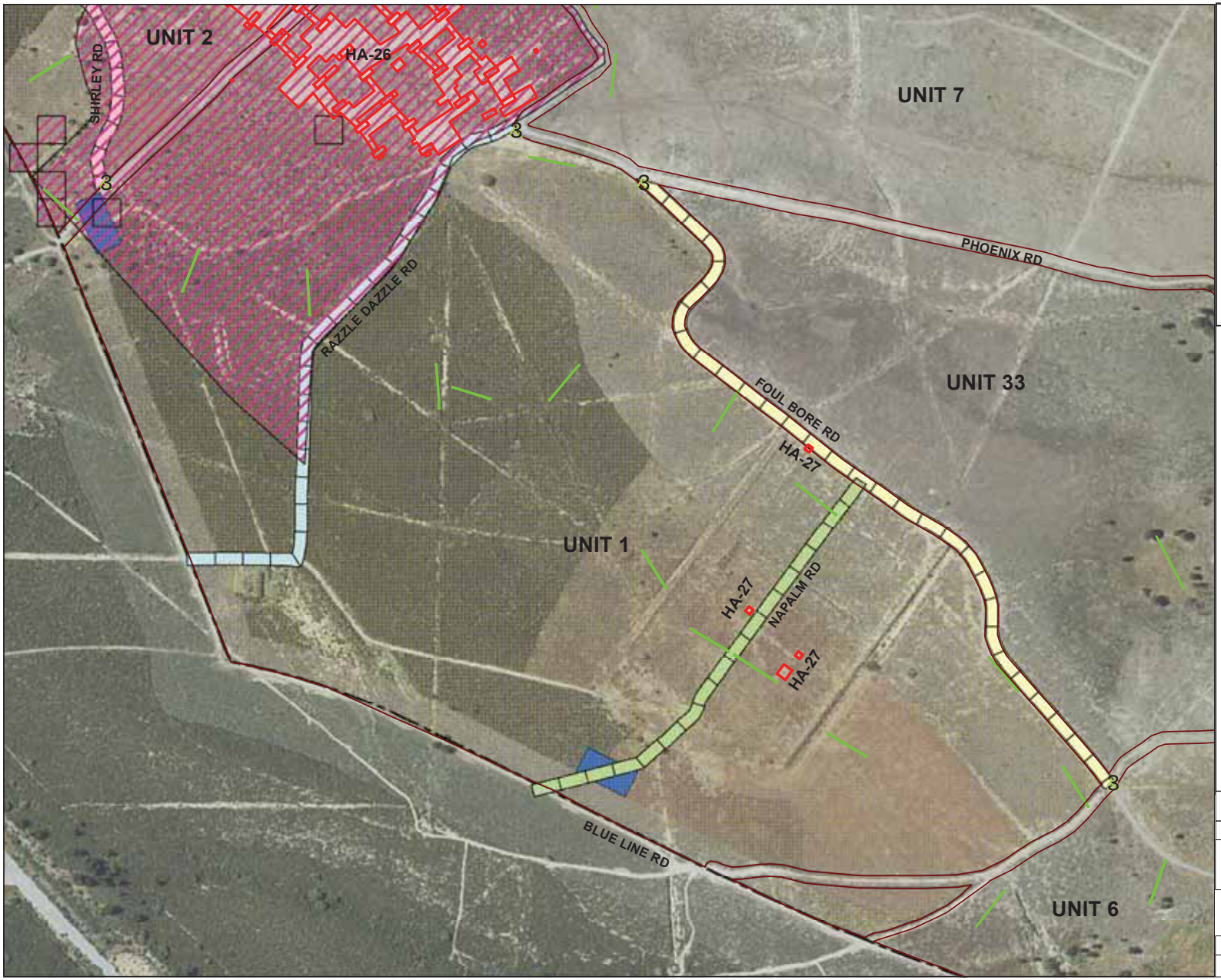
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.
- No work is permitted within the restoration areas (HA-23, HA-26, & HA-27), as shown on the attached maps. The boundary of HA-27 within the Foul Bore fuelbreak shall be flagged for avoidance prior to the initiation of work.

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

Project 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: 2016.09.08 11:37:54 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2016.09.13 10:48:40 -07'00' **Date:** _____

BRAC Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2016.09.13 10:40:42 -07'00' **Date:** _____



Former Fort Ord
Impact Area

- Unit Boundary
- Foul Bore Rd Fuelbreak
- Napalm Rd Fuelbreak
- Razzle Dazzle Rd Fuelbreak
- Shirley Rd Fuelbreak
- Range 23 Rd Fuelbreak
- Bitter Rd Fuelbreak
- Administrative Areas
- Pampas Grass Area - Decon Required
- 3 Decon Locations
- Vegetation Monitoring Transect
- Restoration Areas

HMP Species

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

N

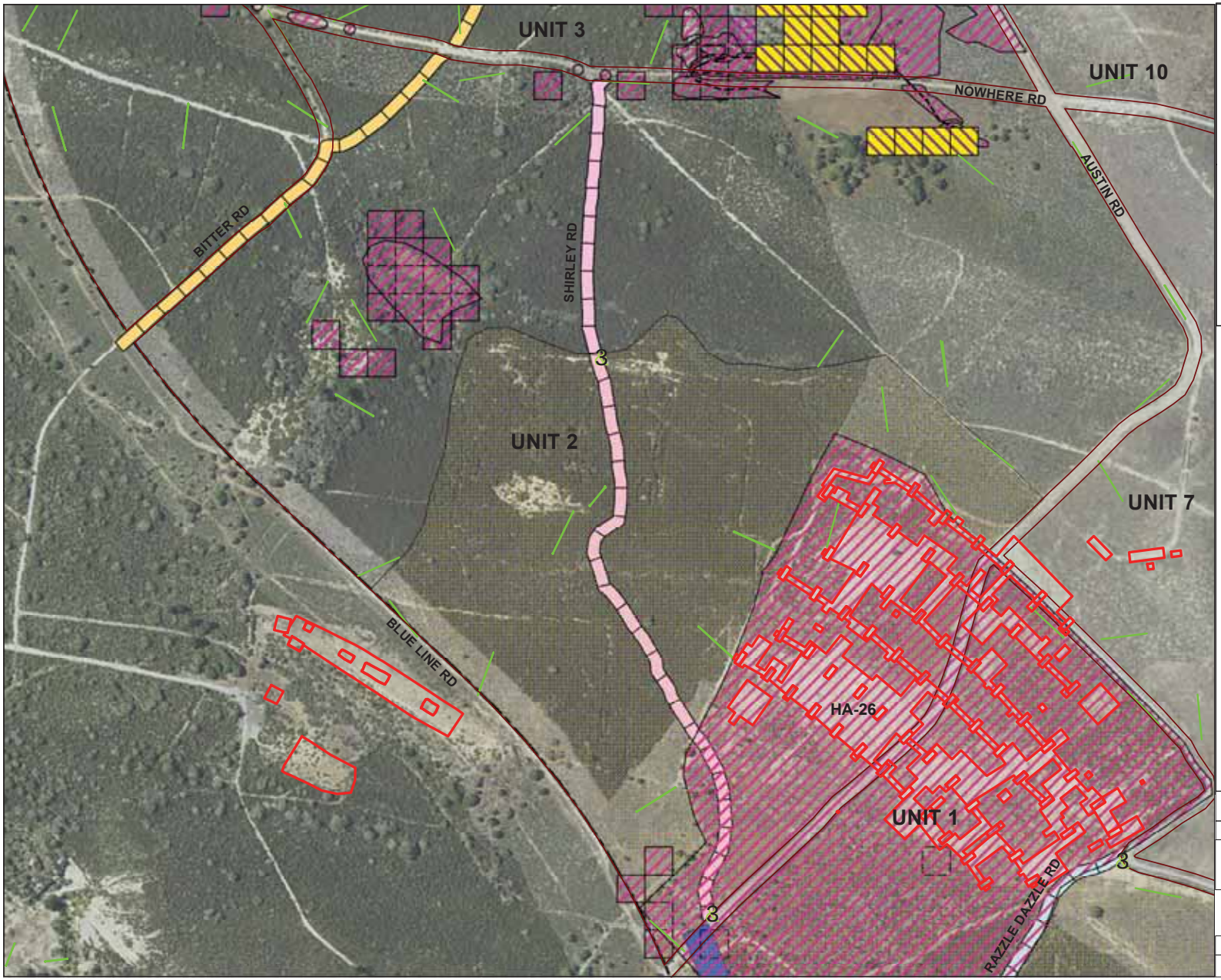
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

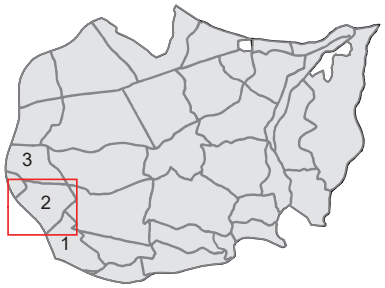
FIGURE NUMBER	*Units 1, 2, & 3 Fuelbreaks HCL*
1A	Unit 1 Biological Constraints

DATE	PROJECT NUMBER	FILE NAME
9/1/2016		SEE FOOTER

C:\GIS\Final Products\Units 1_2_3\Unit 1 Fuelbreaks.mxd, jdavis, Gilbane



Former Fort Ord
Impact Area



- Unit Boundary
- Foul Bore Rd Fuelbreak
- Napalm Rd Fuelbreak
- Razzle Dazzle Rd Fuelbreak
- Shirley Rd Fuelbreak
- Range 23 Rd Fuelbreak
- Bitter Rd Fuelbreak
- Administrative Areas
- Pampas Grass Area - Decon Required
- 3 Decon Locations
- Vegetation Monitoring Transect
- Restoration Areas

HMP Species

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

O

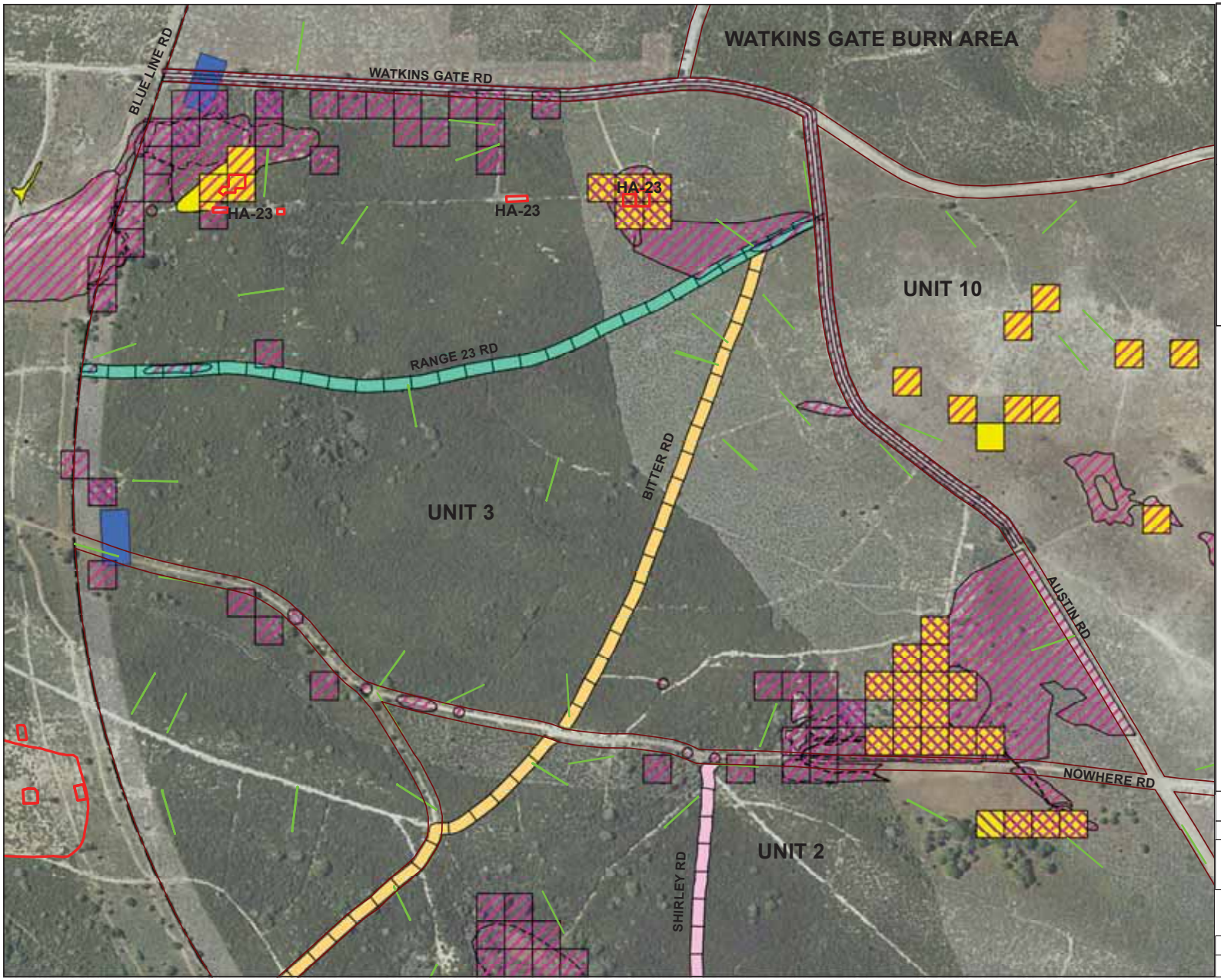
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

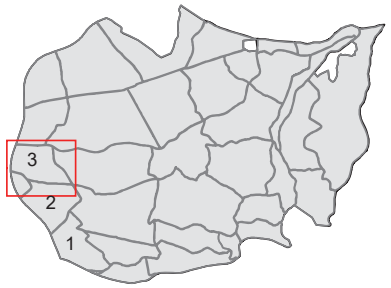
FIGURE NUMBER	*Units 1, 2, & 3 Fuelbreaks HCL*
1B	Unit 2 Biological Constraints

DATE	PROJECT NUMBER	FILE NAME
9/1/2016		SEE FOOTER

C:\GIS\Final Products\Units 1_2_3\Unit 2 Fuelbreaks.mxd, jdavis, Gilbane



Former Fort Ord
Impact Area



- Unit Boundary
- Foul Bore Rd Fuelbreak
- Napalm Rd Fuelbreak
- Razzle Dazzle Rd Fuelbreak
- Shirley Rd Fuelbreak
- Range 23 Rd Fuelbreak
- Bitter Rd Fuelbreak
- Administrative Areas
- Pampas Grass Area - Decon Required
- 3 Decon Locations
- Vegetation Monitoring Transect
- Restoration Areas

HMP Species

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

N

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SACRAMENTO DISTRICT

FORMER FORT ORD

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

DATE	PROJECT NUMBER	FILE NAME
9/1/2016		SEE FOOTER

C:\GIS\Final Products\Units 1_2_3\Unit 3 Fuelbreaks.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:	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:			

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.

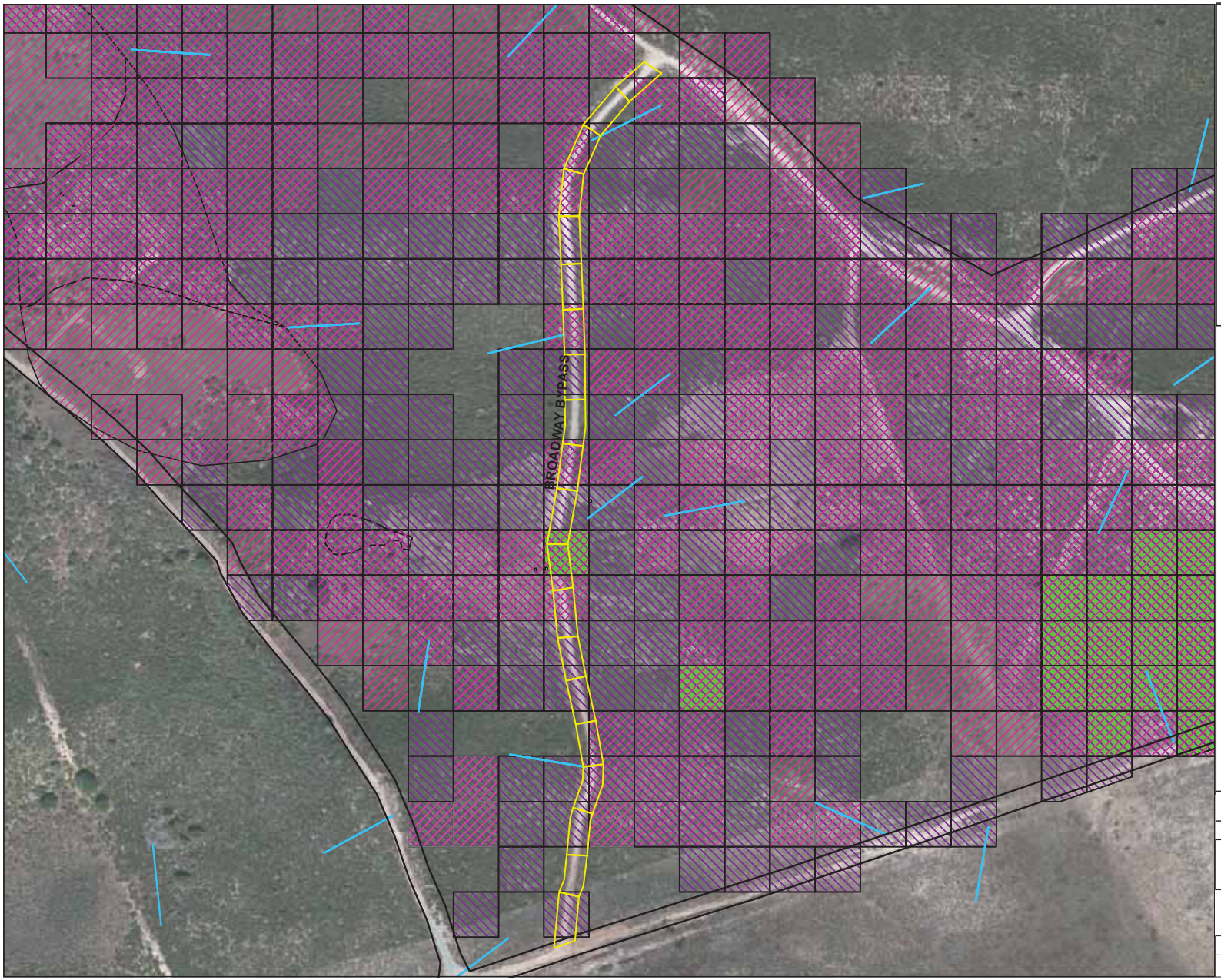
This checklist has been read, approved, and signed by the following:

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:** _____

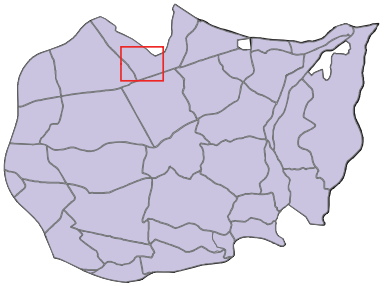
QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.03.07 13:45:58 -08'00' **Date:** _____

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 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 3	**DATE:**	1-26-17
WORK TO BE CONDUCTED:	Subsurface investigation of 126 targets that are potential near-surface Livens projectors or Stokes mortars		

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) 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 HMP annual plants from approximately February 3 to June 1 (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:
☐ 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:

- Upon completion of work within the HMP annual areas, field personnel shall use the Range 23 Road and Bitter Road "fuel breaks" and Nowhere Road to access the remainder of the target locations. Watkins Gate Road shall not be used for access once work within the HMP annual areas is completed in order to avoid 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:

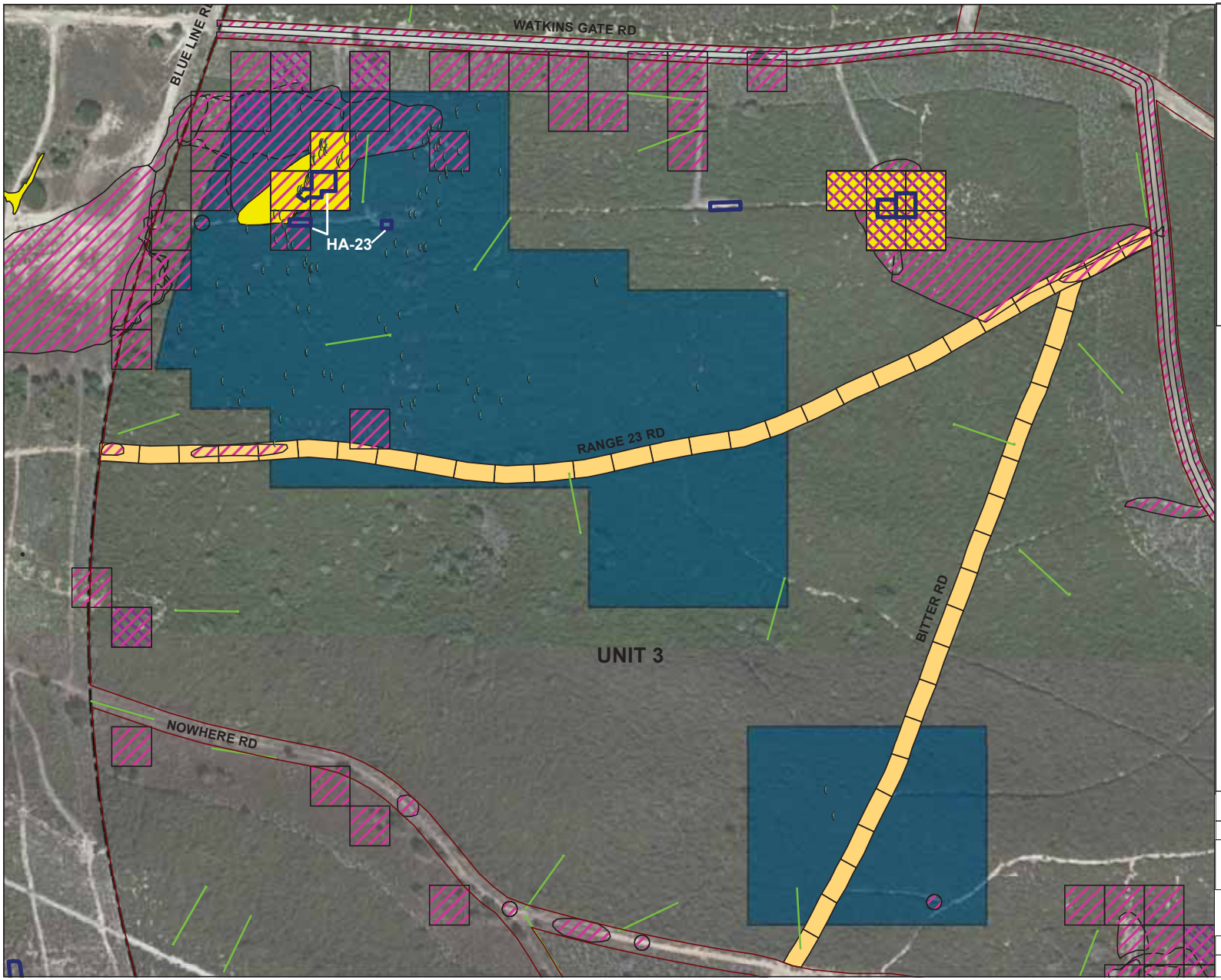
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.
- No work shall occur within the HA-23 Restoration Areas. Additionally, field personnel shall avoid walking through these areas. The boundaries of the Restoration Areas shall be staked and flagged for avoidance prior to beginning work.

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

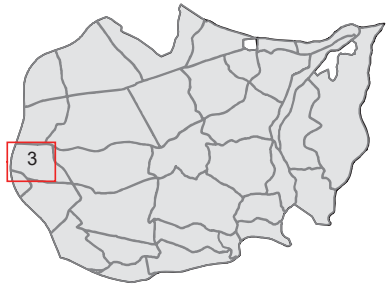
Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.01.26 09:43:52 -08'00' **Date:** _____

QC Manager:  Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.01.27 08:23:17 -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: 2017.01.26 16:06:41 -08'00' **Date:** _____



Former Fort Ord
Impact Area



- Unit Boundary
- Stokes Mortar Area of Interest
- Stokes AOI Targets
- Interior Access Roads
- Vegetation Monitoring Transect
- Restoration Areas

HMP Species

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

N

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SACRAMENTO DISTRICT

FORMER FORT ORD

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

DATE	PROJECT NUMBER	FILE NAME
1/25/2017		SEE FOOTER

C:\GIS\Final Products\Units 1_2_3\Unit 3 Stokes Mortar Investigation_Targets.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:	Fuel Breaks along Watkins Gate, Chinook, Evolution, Felix, Austin, and Riso Ridge Roads	**DATE:**	2/16/17
WORK TO BE CONDUCTED:	Subsurface investigation within fuel breaks		

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, HMP shrubs – potential Yadon's piperia		
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.
- The Project Biologist shall survey the work sites as the work progresses into the germination/blooming period to identify any Yadon's piperia. Any individuals found adjacent to work areas shall be flagged for avoidance (using pink and black striped flagging). Any individuals within the work area shall be removed, under the supervision and direction of the Project Biologist, using hand tools. The individuals shall be preserved and replanted in appropriate areas at the completion of work.

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, avoid making hard turns, and enter and exit the site from a limited number of routes.
- 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.

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 Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.02.16 16:27:15 -08'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.02.21 16:45:02 -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: 2017.02.21 16:28:46 -08'00' **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:	Unit 5a - 100ft Buffer Fuelbreak Extension	**DATE:**	3/6/2017
WORK TO BE CONDUCTED:	Subsurface 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:	HMP shrubs, CTS, BLL		
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.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☐ **Flagged/Marked**
Location:	Units 5a (Unnamed Pond)		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ **Yes**	☐ **No**	

Restrictions:

- No work shall occur within the vernal pool until the pool has dried, as determined by the Project Biologist.
- The boundaries of the vernal pool shall be staked and flagged under supervision of the Project Biologist prior to beginning work.

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:

- 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.

7. SITE ACCESS:

- Vehicle access should be limited to existing roads.
- 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 Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.03.06 15:57:08 -08'00' **Date:** _____

QC Manager: Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.03.07 11:22:04 -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: 2017.03.07 10:25:56 -08'00' **Date:** _____

EROSION REPAIRS EVALUATION
FORMER FORT ORD, CALIFORNIA

Figure X
Unit 5a Fuel Break Bypass

G:\ArcGIS\USACE\Fort_Ord\PROJECTS\AGascho\Erosion Repairs Evaluation\Map_Docs\Unit_5a_FB_Bypass.mxd 2/8/2017 [08:40 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 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 9	**DATE:**	3-6-17
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, Monterey spineflower		
Location:	Monterey spineflower is present in adjacent grids, as shown on the attached map		
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.
- The sampling team shall avoid walking through the HMP annual monitoring grids (see attached map) in order to avoid impacts to Monterey spineflower.

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:
• None

7. SITE ACCESS:
• Vehicle access should be limited to existing roads (Orion Rd and Hugo Rd). Vehicle access along the southern interior road that parallels South Boundary Rd (see attached map) shall not be permitted in order to allow the area to revegetate; however, access along this route by foot is permitted.

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.

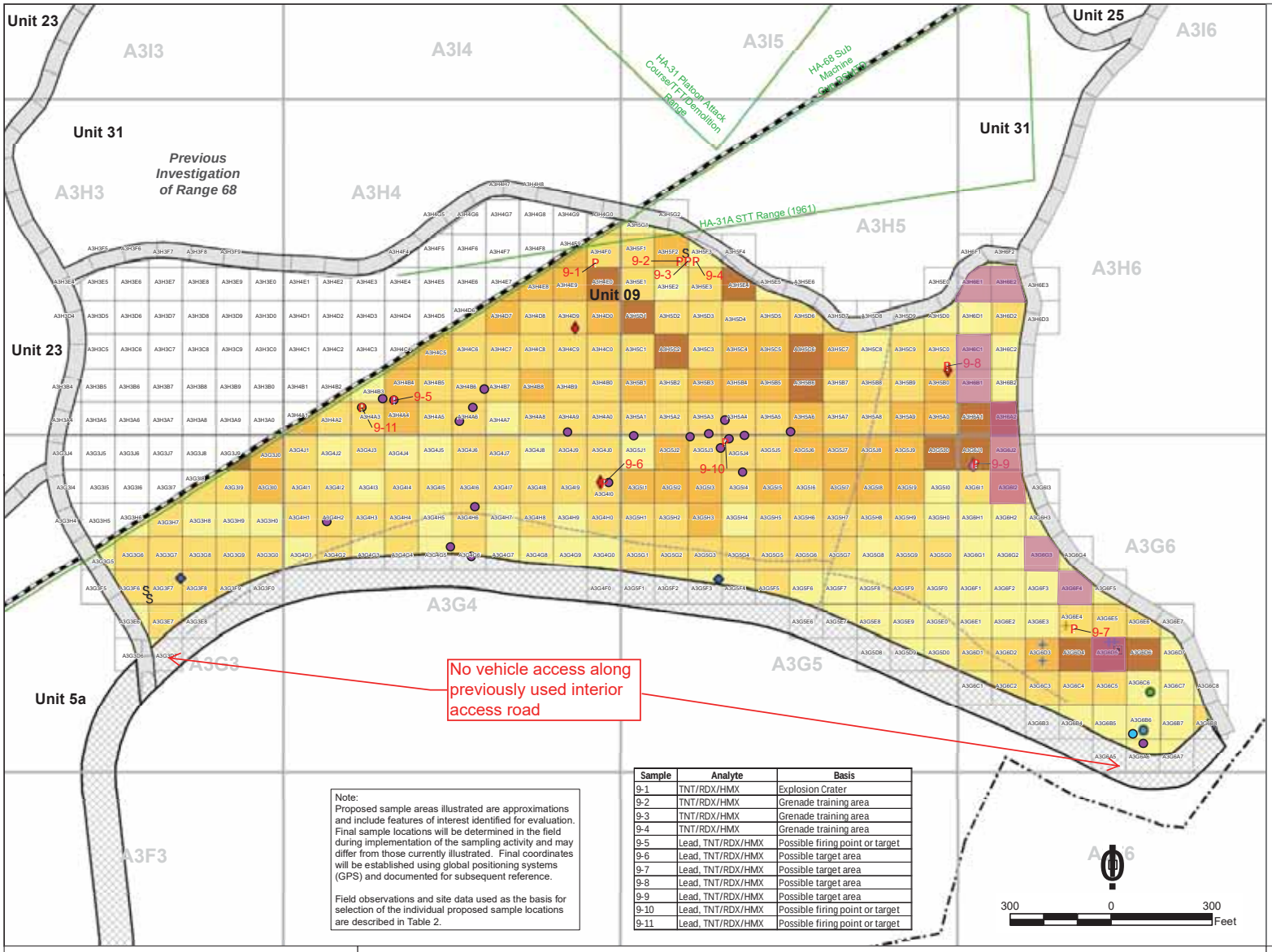
9. ADDITIONAL SITE CONCERNS:

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

Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.03.06 12:39:13 -08'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.03.07 11:17:50 -08'00' **Date:** _____

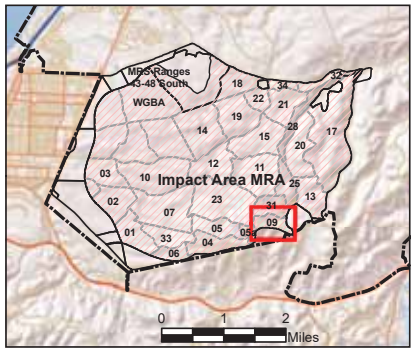
BRAC Biologist: KOWALSKI.BARTHOLOMEW.L.1387978115 Digitally signed by KOWALSKI.BARTHOLOMEW.L.1387978115 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=CONTRACTOR, cn=KOWALSKI.BARTHOLOMEW.L.1387978115 Date: 2017.03.07 10:29:43 -08'00' **Date:** _____



Sample	Analyte	Basis
9-1	TNT/RDX/HMX	Explosion Crater
9-2	TNT/RDX/HMX	Grenade training area
9-3	TNT/RDX/HMX	Grenade training area
9-4	TNT/RDX/HMX	Grenade training area
9-5	Lead, TNT/RDX/HMX	Possible firing point or target
9-6	Lead, TNT/RDX/HMX	Possible target area
9-7	Lead, TNT/RDX/HMX	Possible target area
9-8	Lead, TNT/RDX/HMX	Possible target area
9-9	Lead, TNT/RDX/HMX	Possible target area
9-10	Lead, TNT/RDX/HMX	Possible firing point or target
9-11	Lead, TNT/RDX/HMX	Possible firing point or target

Note:
Proposed sample areas illustrated are approximations and include features of interest identified for evaluation. Final sample locations will be determined in the field during implementation of the sampling activity and may differ from those currently illustrated. Final coordinates will be established using global positioning systems (GPS) and documented for subsequent reference.

Field observations and site data used as the basis for selection of the individual proposed sample locations are described in Table 2.



Legend

- P Proposed Sample Location (See Note)

MEC Encountered
- W Projectile, 75mm, high explosive, M48
- X Projectile, 75mm, high explosive, MK I
- Blocks, demo, C4
- E Fuze, grenade, hand, practice, M228
- E Fuze, grenade, hand, M206 series
- Projectile, 37mm, low explosive, MK I
- Signal, illumination, ground parachute, M131

Features Encountered
- J Concrete box
- Disturbed Area (not Mastication)
- Electrical Conduit
- Mound
- S Structure

Weight of MD/Grid
- 0 - 7 lbs MD
- 7 - 15 lbs MD
- 16 - 25 lbs MD
- 30 - 45 lbs MD
- 45 - 60 lbs MD
- Historical Range Fan
- Abandoned Road
- Area of Previously Completed Remediation or Characterization (not included in this evaluation)
- 100 ft x 100 ft Work Grid
- 1000 ft Grid
- 100 ft Buffer
- Fuel Break
- Fort Ord Boundary (Historical)
- HMP Grid

Site Evaluation Results and Work Plan for Additional Investigation
Basewide Range Assessment Investigation Units 5a and 9
Former Fort Ord, California

Figure 3

Unit 9 Findings and Proposed Sample Locations

G:\ArcGIS\USACE\Fort_Ord\PROJECTS\Basewide_Range_Assessment\U05A_09_Tech_Memo_WP\Map _Docs\Figure_3_U09.mxd 1/18/2017 [12:46 PM] KCHOLAK, 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:	Containment Lines in Units 13, 17, 20, and 31, and Unit 25	**DATE:**	3-13-17
WORK TO BE CONDUCTED:	DGM within 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, 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.
- No work shall occur in areas known to support Monterey spineflower and/or sand gilia from approximately February 1 to May 31 (see attached map).
- Prior to work within Unit 17, the Project Biologist shall survey the work area for Yadon's piperia. If Yadon's piperia are found they will be flagged for avoidance until the individuals have set seed, as identified by the Project Biologist.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Location:	Unit 13 (Pond 16)		
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 Project Biologist.
- Only manual equipment may be used within the 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 fuel breaks only. Roads may be used only when necessary. Fuel breaks on the western side of Riso Ridge Rd shall be avoided in order to avoid impacts to Yadon's piperia and Seaside bird's-beak. These areas are identified on the attached map and have been delineated with stakes and flagging (pink and black stripes).

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:

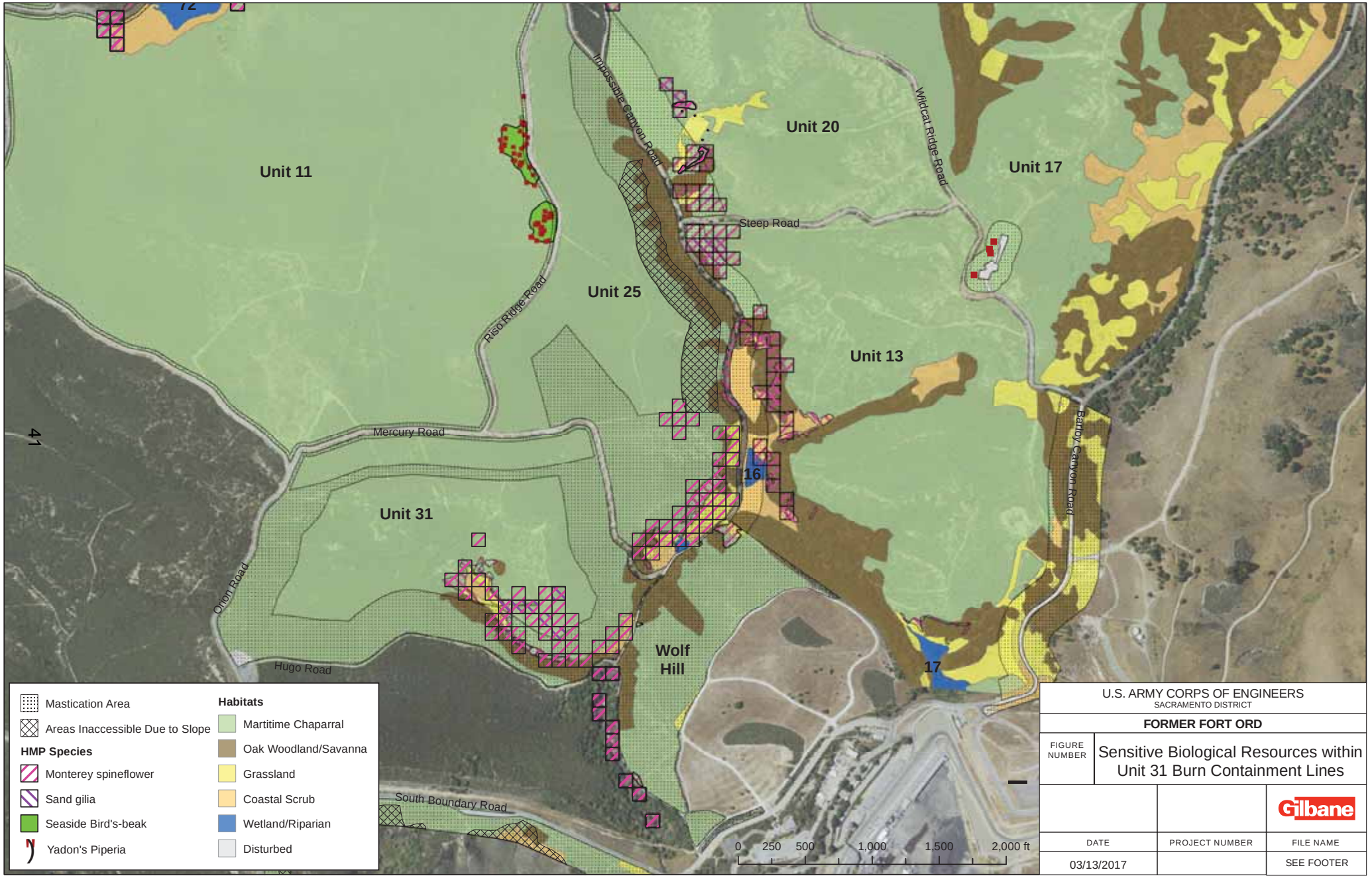
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No refueling shall occur within 400 feet of the vernal pond in Unit 13.

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: 2017.03.13 14:37:27 -07'00' **Date:** _____

QC Manager: Chuck Clyde — Digitally signed by cclyde@gilbaneco.com, DN: cn=cclyde@gilbaneco.com, Date: 2017.03.14 09:57:16 -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: 2017.03.14 09:44:18 -07'00' **Date:** _____



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SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	Sensitive Biological Resources within Unit 31 Burn Containment Lines

Gilbane

DATE	PROJECT NUMBER	FILE NAME
03/13/2017		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:	Range 43 gate to Watkins Gate Rd north gate; Riso Ridge Rd gate to Barloy Canyon Rd gate at Eucalyptus Rd; Orion Rd south gate to Foul Bore Rd gates on Blue Line Rd and South Boundary Rd.	**DATE:**	3-30-17
WORK TO BE CONDUCTED:	Manual vegetation removal within 3-4 feet of the fence line, chipping on site, and blowing back into unit		

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, 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 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 wood chips shall be blown back into the area between the Range 43 gate and Orion Rd north gate as this area is known to support Monterey spineflower, sand gilia, and Seaside bird's-beak (see map).
- Prior to work surrounding the Range 28 gate, the Project Biologist shall complete a survey to ensure no Yadon's piperia is growing in the area, as this species is known to occur in the local vicinity. If Yadon's piperia plants are found, the Project Biologist will flag the individuals and no disturbance shall occur to the individual plants. If protection of individuals precludes removal of the immediately surrounding vegetation, the Project Biologist shall monitor the individuals until they have senesced, at which time vegetation removal may proceed.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☐ Flagged/Marked
Location:	Unit 32 (Pond 11), Unit 5a (Pond 18 and "quarry pond")		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☒ Yes	☐ No	

Restrictions:

- No work shall occur within the vernal ponds.
- No wood chips shall be blown back into areas where vernal ponds are present (see map)

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Within 3-4 feet of the fence line
☐ **Mechanical Removal Needed**	**Location:**

Vegetation Removal Restrictions:

- Coast live oak trees greater than 4" in diameter shall not be removed, but 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:

7. SITE ACCESS:

- Vehicle access should be limited to 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.
- Populations of Acacia, French broom, and pampas grass are present along the fence line (especially from the Range 29 gate to the Austin south gate). Individuals of these species shall not be chipped, but shall be cut and left in the immediate area to reduce spread of invasive species. The Project Biologist shall provide specific training in the identification of these species to the field crew prior to starting work and the Project Biologist shall be contacted if there is any question in identification of these species. See attached for pictures for reference..
- When working in the area between the Range 29 gate to the Austin south gate, the crew shall clean boots and equipment daily before leaving these areas to reduce spread of invasive species. If driving on the interior roads of Units 1 and 2, the vehicles shall be dry de-coned at the intersections with Foul Bore Rd. or Austin Rd. before leaving the unit. Soil and plant material shall be removed using boot brushes or other types of brushes. Decon of equipment and boots shall be completed within the work are. 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 is necessary, it must be completed on-site prior to leaving the unit.

9. ADDITIONAL SITE CONCERNS:

KEMRON
ENVIRONMENTAL SERVICES

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: 2017.03.31 16:34:40 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.04.03 13:46:41 -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: 2017.04.03 09:36:25 -07'00' **Date:** _____

Pampas Grass

French Broom

Acacia

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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:	Evolution Rd near Units 4 & 6, Unit 23 along Darwin Road, Nason Road between Units 5 and 5a, and Unit 7 at intersection of Phoenix and Evolution Roads	**DATE:**	4-6-17
WORK TO BE CONDUCTED:	Realignment of Evolution Road, including vegetation removal, subsurface MEC removal, and grading – Excess soil will be used to repair large erosion features in other areas by filling in rills, regrading, and mulch placement.		

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, HMP shrubs, nesting birds		
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.
- If excavation work is conducted between October 15 and April 30 silt fencing shall be installed surrounding the Evolution Road site to preclude CTS from entering the site. Gaps shall be provided with on-way ramps to allow any CTS present within the project site to exit, but not re-enter. Gaps shall be at intervals no greater than 66ft. The silt fencing shall be buried at least 6 inches in the ground.
- 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.

3. ENDANGERED, THREATENED, RARE, OR HMP-LISTED SPECIES	☒ Yes	☐ No	☐ Flagged/Marked
Species:	California Tiger Salamander (CTS), Black Legless Lizard (BLL), Yadon's piperia, HMP shrubs, nesting birds		

- 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.
- Report all encounters of BLL and follow the BLL encounter protocol.
- Prior to work initiation, the Project Biologist shall survey the work sites to identify any Yadon's piperia present at the time. Any individuals found adjacent to work areas shall be flagged for avoidance (using pink and black striped flagging). Any individuals within the work area shall be removed, under the supervision and direction of the Project Biologist, using hand tools. The individuals shall be preserved and replanted in appropriate areas at the completion of work.
- No work shall occur within 50 feet of the killdeer nest until the young have fledged and left the nest, as determined by the Project Biologist. This area is identified on the attached map and has been delineated with flagging (pink and black stripes). If the birds become agitated during work in the area, the Project Biologist may increase the no-disturbance buffer.

4. VERNAL POOLS/PONDS PRESENT	☒ Yes	☐ No	☐ Flagged/Marked
Location:	Pond 30 is located downslope from the project site within Unit 4		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ Yes	☒ No	

- Prevent all soil runoff into the pond during construction activities.
- The topsoil stockpile shall be covered with plastic to avoid erosion.

5. VEGETATION REMOVAL	
☐ **No Removal Needed**	**Location:**
☒ **Manual Removal Needed**	**Location:** Within new roadway and fuel break alignment and soil borrow area.
☐ **Mechanical Removal Needed**	**Location:**

- See Invasive Species Section for measures regarding removal or invasive plants.

6. EROSION CONCERNS/SITE RESTORATION:

- If soil erosion occurs during the rainy season appropriate erosion control measures must be taken, which may include use of mulch, straw wattles, straw bales, silt fencing, or sterile barley.

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ENVIRONMENTAL SERVICES

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only, except within the new road alignment.
- 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.
- Acacia, French broom, and/or pampas grass present within the Evolution Road site shall be cut and removed to a landfill. The vegetation shall be covered with a tarp during transport to avoid the spread of seed. The landfill shall be informed of the invasive status of the plants in order to properly dispose-of.
- The top 1 foot of topsoil shall not be removed from the Evolution Road site in order to prevent the spread of invasive plants present at the site.
- During vegetation removal and subsurface clearance at the Evolution Road site, 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 equipment 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 of heavy equipment is necessary, it must be completed on-site prior to leaving the unit.
- Following removal of the topsoil, heavy equipment shall be washed on-site with water before moving the underlying soil to the erosion control areas to prevent the spread of invasive plants to the erosion control and other areas. Additionally, the equipment shall be washed upon completion of replacing the topsoil before leaving the site.

9. ADDITIONAL SITE CONCERNS:

- In order to encourage regrowth of vegetation following soil grading, the top 1 foot of topsoil from the Evolution Road site shall be preserved until grading is complete. Following construction of the road realignment, the topsoil shall be spread all graded areas outside of the new roadway.
- 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:

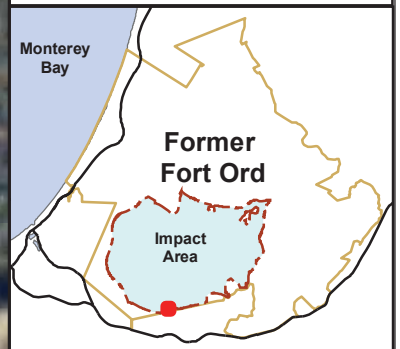
Project Biologist: Jami Colley **Date:** 4-10-17

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.04.10 12:41:22 -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: 2017.04.10 11:59:54 -07'00' **Date:**

Evolution Rd Stabilization Remedy

- Yadon's piperia
- Proposed Work Area
- Fuelbreak Restoration
- Exisiting 45' Fuelbreak
- HA28 Passive Restoration
- HA28 Restoration Affected Area
- Approx Fuelbreak Re-route
- Historic Impact Area



U.S. ARMY CORPS OF ENGINEERS

Figure 1

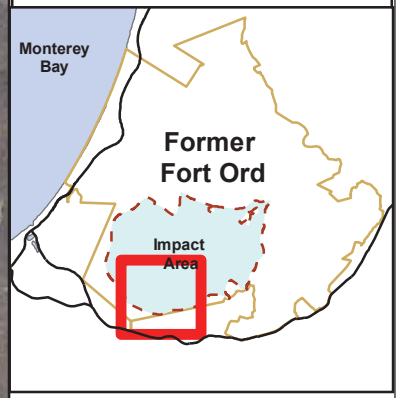
50 25 0 50 Feet

10 5 0 10 Meters

PRINT DATE: 3/6/2017	SOURCE OF DATA: Fort Ord Geodatabase
AERIAL PHOTOGRAPHY: 2016 NAIP	SCALE: 1:1,000
DRAWN BY: Bartholomew.L.Kowalski@usace.army.mil	
FILE: G:\Temp\Bart\mxds\Evolution Reroute Borrow Site_Fig1.mxd	

Evolution Rd Stabilization Remedy

- Proposed Work Area
- Erosion Areas
- Pond 30
- Restoraton Areas
- Impact Area



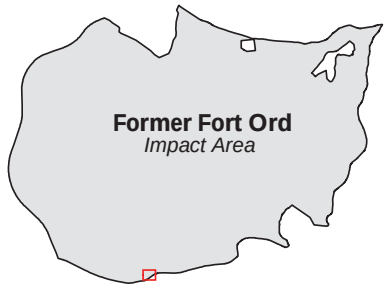
U.S. ARMY CORPS OF ENGINEERS

Figure 2

1,000 500 0 1,000 Feet

200 100 0 200 Meters

PRINT DATE: 3/3/2017	SOURCE OF DATA: Fort Ord Geodatabase
AERIAL PHOTOGRAPHY:	SCALE: 1:16,000
DRAWN BY: Bartholomew.L.Kowalski@usace.army.mil	
FILE: G:\Temp\Bart\mxds\Evolution Reroute Borrow Site_Fig2.mxd	



(Killdeer Nest

Killdeer Nest 50ft Buffer

Fuelbreaks

Impact Area

N

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER	*Biological Annual Report 2015*
2-1	Site 39 Soil Remediation Areas Where Biological Monitoring Occurred in 2015

DATE	PROJECT NUMBER	FILE NAME
4/4/2017		SEE FOOTER

C:\GIS\Templates\Kemron Template.mxd, Patric Krabacher, 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:	BLM Area B Units B/C Containment Lines, B-3 East, B-3 West, & B-2A	**DATE:**	5-10-17
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, Seaside birds-beak, 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. Only authorized biologists can handle CTS.
- 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.
- No work shall occur in flagged areas of Yadon's piperia or the grid containing 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 2).
- Manual removal methods shall be utilized within a portion of Unit B-3 East where tree-sized Toro manzanita occur mixed with oak woodland (see Figure 3). Hand crews shall receive additional training from the Project Biologist in Toro manzanita identification and shall cut around the large individuals. Within the identified area, where oak trees are not present, Toro manzanita individuals approximately 6 feet in height or taller shall be retained at approximately 20-foot intervals.

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, Seaside birds-beak, sand gilia, HMP shrubs		

Mature Toro manzanitas (approximately 6 feet in height or taller) that provide an important seed source for the species shall be retained in areas B-3 East, B-3 West, and B-2A (see Figure 3). These Toro manzanitas shall be flagged by the Project Biologist prior to vegetation removal (pink and black striped flagging will be used) at an interval determined to preserve the aesthetic look of the area.

- In areas of dense Toro manzanita, flagged individuals shall be retained. Masticator operators shall receive additional training from the Project Biologist in Toro manzanita identification
- If necessary, remaining Toro manzanitas may be limbed up to allow access beneath the individuals for future surface clearance. Only the minimum amount of limbs necessary to access beneath the individuals shall be removed.

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 South, 35, 39, 40 South, 40 North, 103, 42, 43, 44, 60, 61, MGF, and unidentified pond in B-3 E) 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 2). Small equipment, such as a bobcat or other manual equipment may be used to remove vegetation within the vernal ponds if necessary after it has been determined by project biologist that have 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.
- Within the Unit B/C containment lines, retained coast live oak trees may be limbed up to 8 feet to allow access beneath the trees. Within the cut-only areas, 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

- Erosion control measures (such as silt fencing) shall be installed around ponds identified by the Project Biologist as "at risk" for erosion prior to vegetation removal. Following vegetation removal, the Project Biologist shall evaluate all ponds in the work area to identify any additional erosion risks.
- 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 4.
- 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.
- Masticators shall not use BLM Restoration Areas within B-2A as regular tracking routes (see Figure 4). Crossing BLM Restoration Areas should be minimized to the extent possible and should be conducted along contours to avoid sheet erosion. If restoration areas are compromised with heavy equipment, their contours shall be restored and additional erosion prevention measures employed as necessary (see section 6 above).

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 known to be infested with Klamath weed (see Figure 5).
- During vegetation removal within areas infested with Klamath weed (see Figure 5) 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; 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.

KEMRON
ENVIRONMENTAL SERVICES

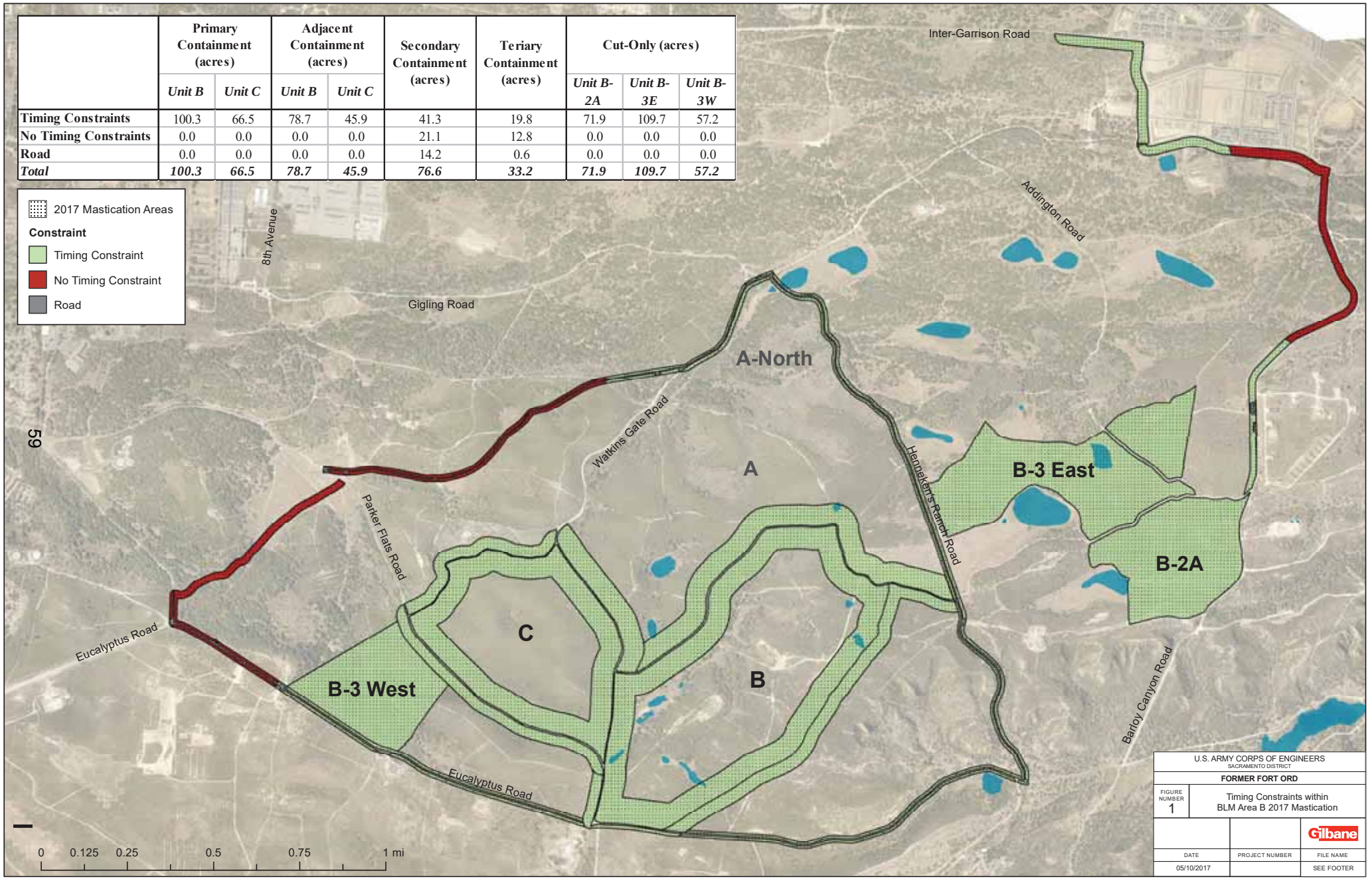
This checklist has been read, approved, and signed by the following:

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: 2017.05.31 12:07:31 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.05.31 12:40:26 -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: 2017.05.26 13:09:50 -07'00' **Date:** _____

	Primary Containment (acres)		Adjacent Containment (acres)		Secondary Containment (acres)	Teriary Containment (acres)	Cut-Only (acres)		
	Unit B	*Unit C*	*Unit B*	*Unit C*			*Unit B-2A*	*Unit B-3E*	*Unit B-3W*
Timing Constraints	100.3	66.5	78.7	45.9	41.3	19.8	71.9	109.7	57.2
No Timing Constraints	0.0	0.0	0.0	0.0	21.1	12.8	0.0	0.0	0.0
Road	0.0	0.0	0.0	0.0	14.2	0.6	0.0	0.0	0.0
Total	***100.3***	***66.5***	***78.7***	***45.9***	***76.6***	***33.2***	***71.9***	***109.7***	***57.2***



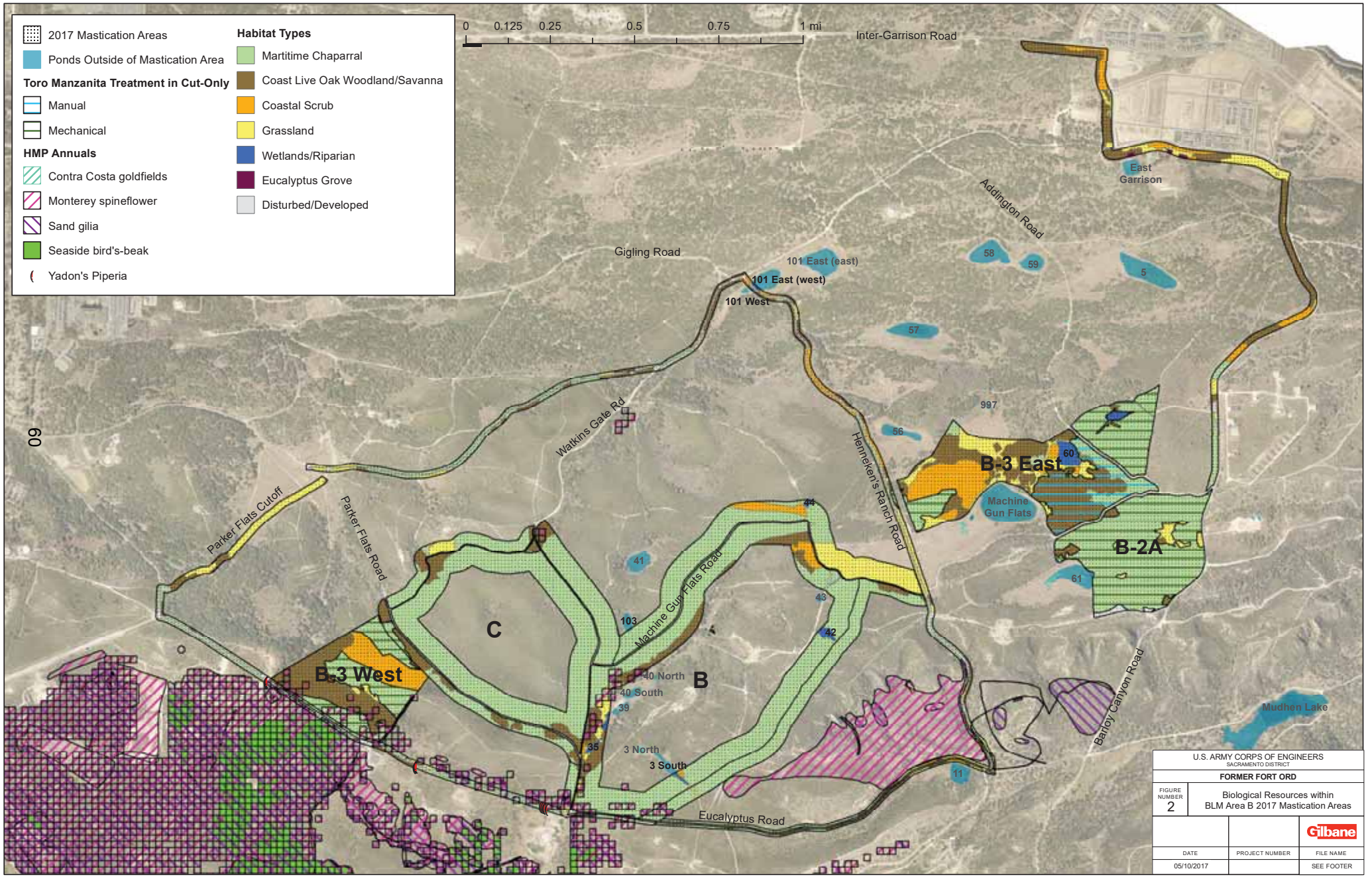
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER 1 — Timing Constraints within BLM Area B 2017 Mastication

Gilbane

DATE	PROJECT NUMBER	FILE NAME
05/10/2017		SEE FOOTER



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

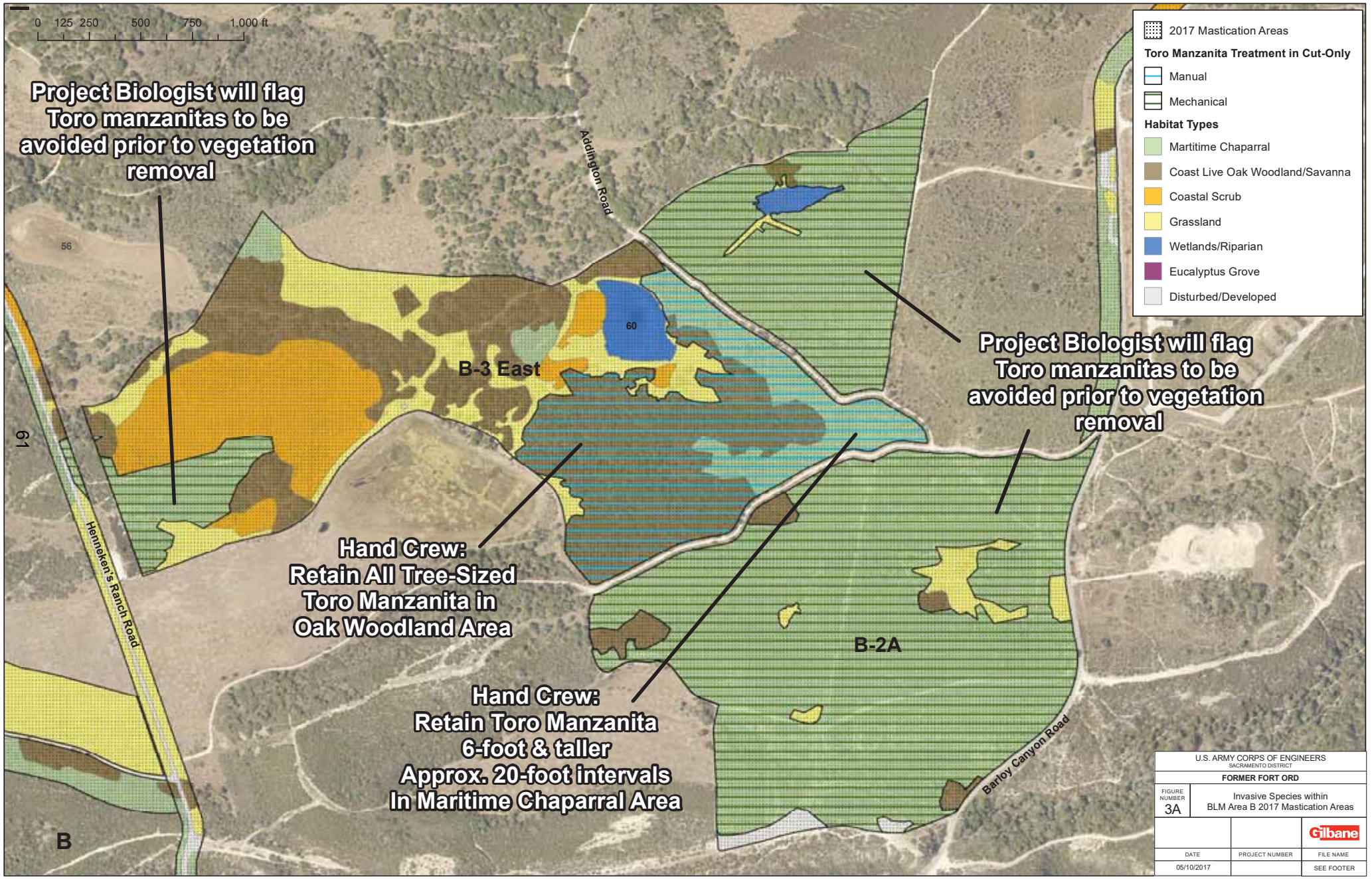
FORMER FORT ORD

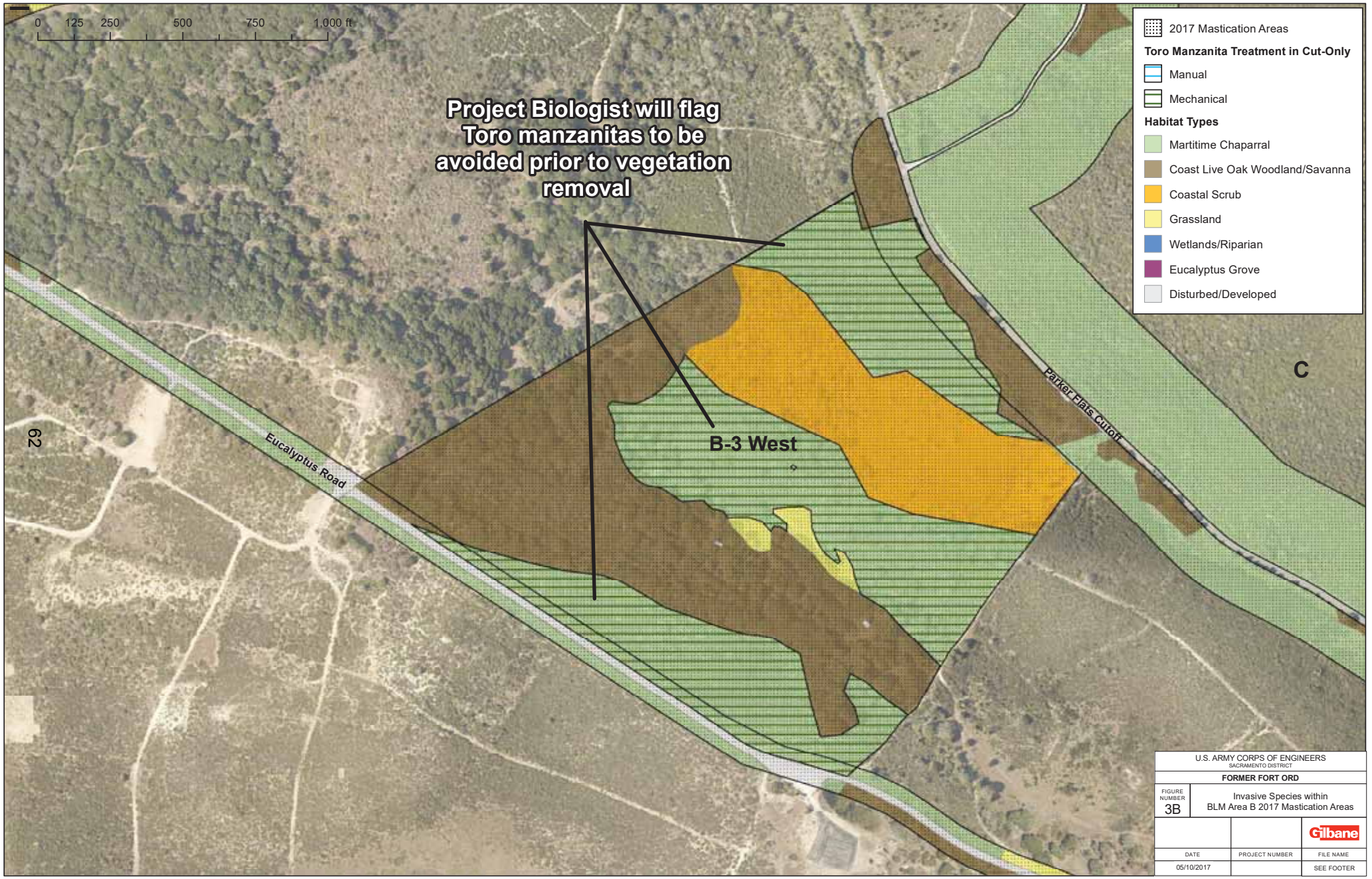
FIGURE NUMBER 2

Biological Resources within BLM Area B 2017 Mastication Areas

Gilbane

DATE	PROJECT NUMBER	FILE NAME
05/10/2017		SEE FOOTER


0 125 250 500 750 1,000 ft
Project Biologist will flag Toro manzanitas to be avoided prior to vegetation removal
Addington Road
56
60
B-3 East
61
Hennekin's Ranch Road
Hand Crew: Retain All Tree-Sized Toro Manzanita in Oak Woodland Area
Hand Crew: Retain Toro Manzanita 6-foot & taller Approx. 20-foot intervals In Maritime Chaparral Area
B
B-2A
Barloy Canyon Road
Project Biologist will flag Toro manzanitas to be avoided prior to vegetation removal
2017 Mastication Areas
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
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER 3A
Invasive Species within BLM Area B 2017 Mastication Areas
Gilbane
DATE
PROJECT NUMBER
FILE NAME
05/10/2017
SEE FOOTER



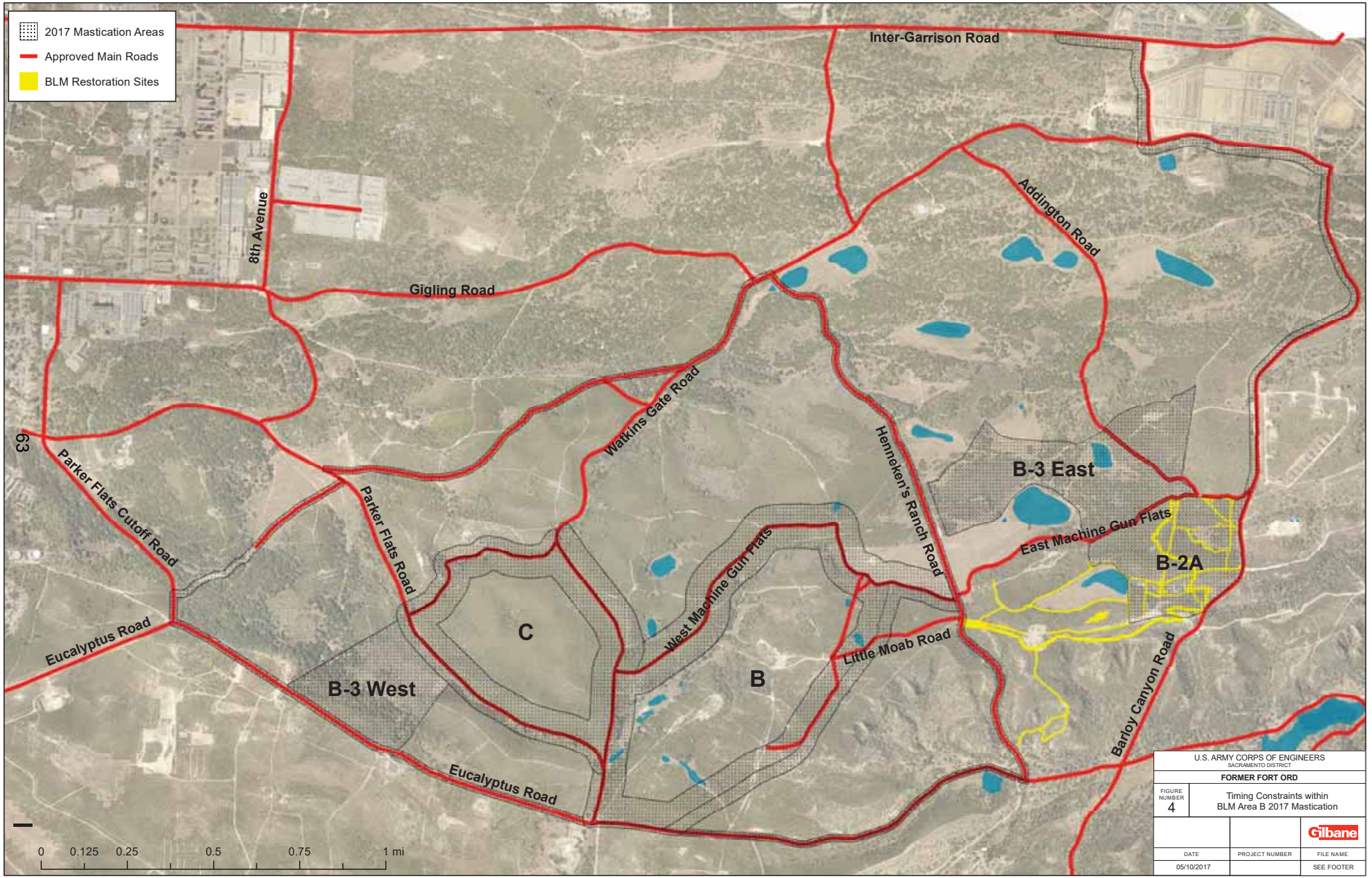
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

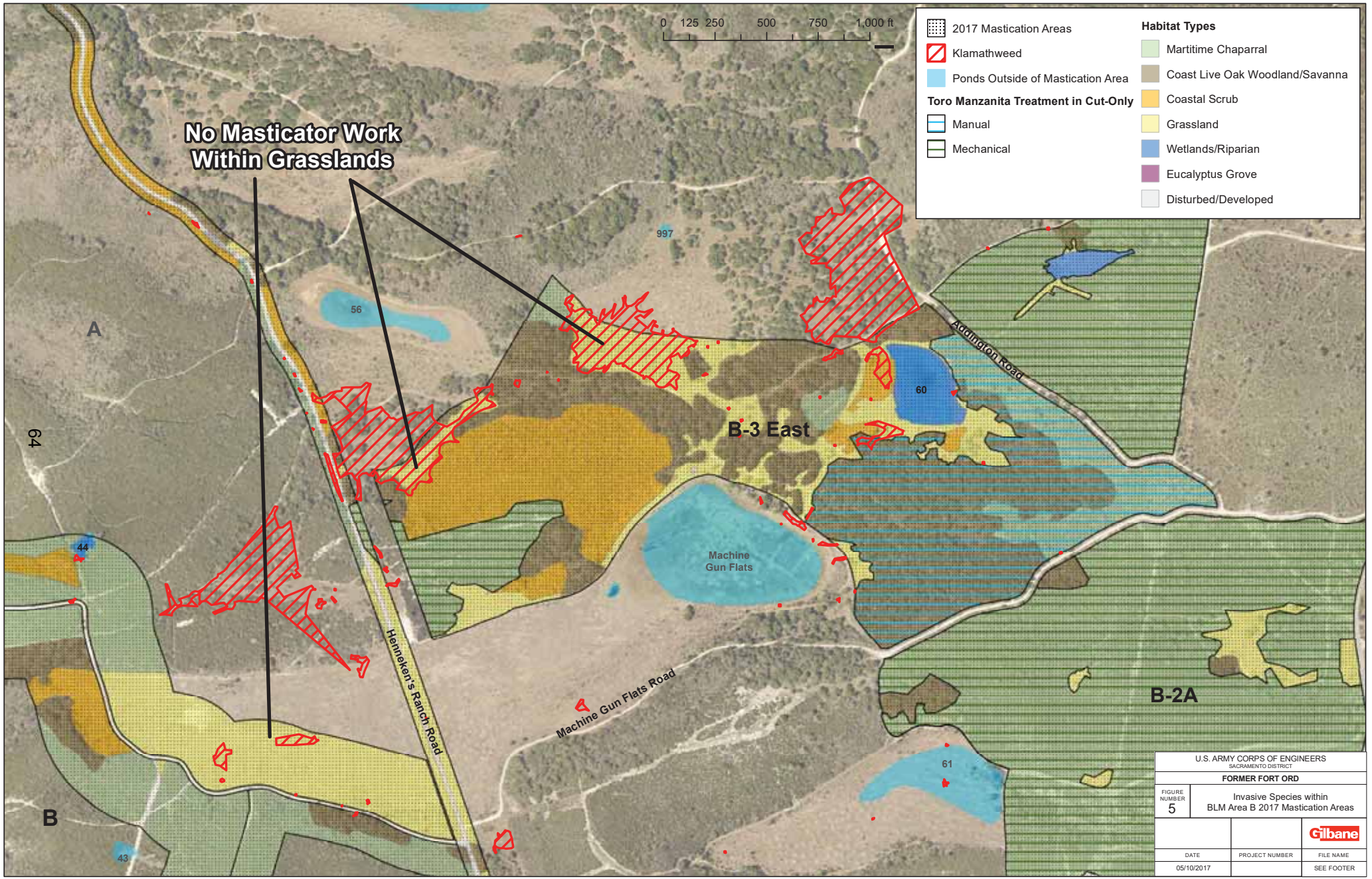
FORMER FORT ORD

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

DATE	PROJECT NUMBER	FILE NAME
05/10/2017		SEE FOOTER

Gilbane


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
63
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
05/10/2017
SEE FOOTER



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

Denise Duffy & Associates, Inc.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: December 14, 2017

From: Amendment to the BLM Area B Units B/C Containment Lines, B-3 East, B-3 West, & B-2A Habitat Checklists for Mastication (Dated 5-10-17) and Surface MEC Removal and DGM (Dated 6-15-17)

The BLM Area B Units B/C Containment Lines, B-3 East, B-3 West, & B-2A Mastication Habitat Checklists (HCLs) for Mastication (Dated 5-10-17) and Surface MEC Removal and DGM (Dated 6-15-17) will be amended as follows:

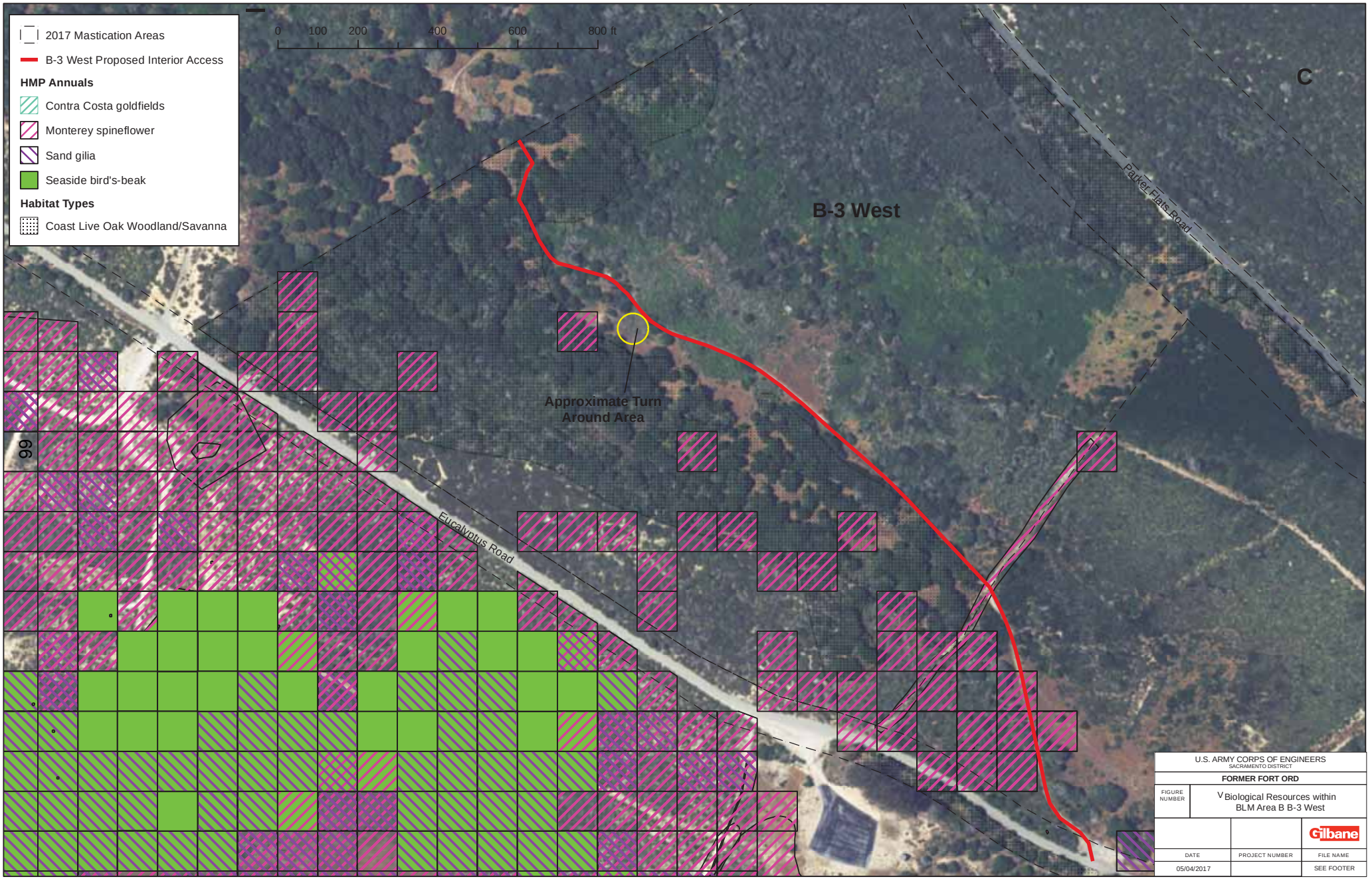
Use of the interior access road in Unit B-3 West, as identified on the attached map, is approved with the following conditions:

- Use of the road shall be minimized to the greatest extent feasible. Use of a Polaris shall be utilized whenever possible.
- Access from and parking on Eucalyptus Road shall be utilized whenever possible.
- The minimum number of vehicles necessary may park adjacent to the access road. Vehicles shall park on or as close to the road as possible.
- Trucks transporting roll-off bins shall back into the site whenever feasible. If turn-around is necessary, the approximate turn-around location shown on the attached map shall be used. Turn-around shall not occur within any areas where HMP annual plants are known (as shown on the attached map).

Project Biologist: Jami Colley **Date:** 12-15-17

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 15:38:30-08'00' **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: 2017.12.15 13:08:02 -08'00' **Date:** _____


2017 Mastication Areas
B-3 West Proposed Interior Access
HMP Annuals
Contra Costa goldfields
Monterey spineflower
Sand gilia
Seaside bird's-beak
Habitat Types
Coast Live Oak Woodland/Savanna
0 100 200 400 600 800 ft
B-3 West
Approximate Turn Around Area
Eucalyptus Road
Parker Flats Road
C
69
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER
V Biological Resources within BLM Area B B-3 West
Gilbane
DATE
PROJECT NUMBER
FILE NAME
05/04/2017
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 23	**DATE:**	5-17-17
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:	Monterey spineflower,Yadon's piperia, HMP shrubs, CTS, BLL	
Location:	Monterey spineflower is present in adjacent grids, as shown on the 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.
- The sampling team shall avoid walking through the HMP annual monitoring grids (see attached map) in order to avoid impacts to Monterey spineflower.
- Yadon's piperia has been identified within the fuelbreaks, but is not known to occur in the interior areas of Unit 23. However, if any piperia individuals are encountered in the interior areas, they shall be reported to the KEMRON biologist. Work in the vicinity of any piperia shall be coordinated with the KEMRON biologist. Please refer to the attached pictures of Yadon's piperia.

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

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

Vegetation Removal Restrictions:

6. EROSION CONCERNS/SITE RESTORATION:

- None

7. SITE ACCESS:

- Vehicle access should be limited to existing roads only (Darwin Rd, Orion Rd, Nowhere Rd, and Evolution Rd) and the two internal access routes only. Use of the interior access routes shall be limited to only necessary traffic.

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: 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: 2017.05.17 17:30:47 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.05.18 08:20:35 -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: 2017.06.07 11:36:41 -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, 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

☐ **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, 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:

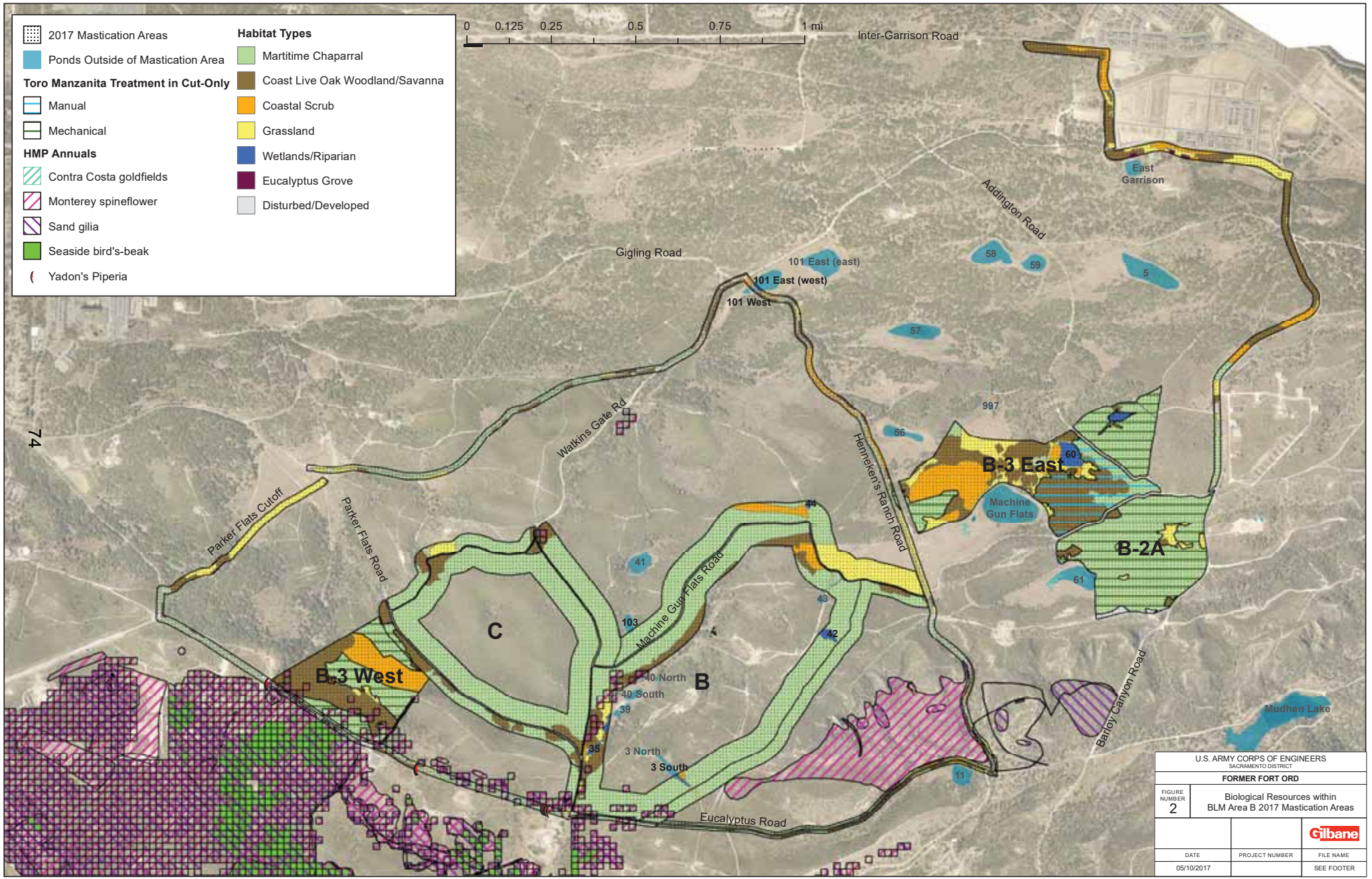
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No 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:** _____



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

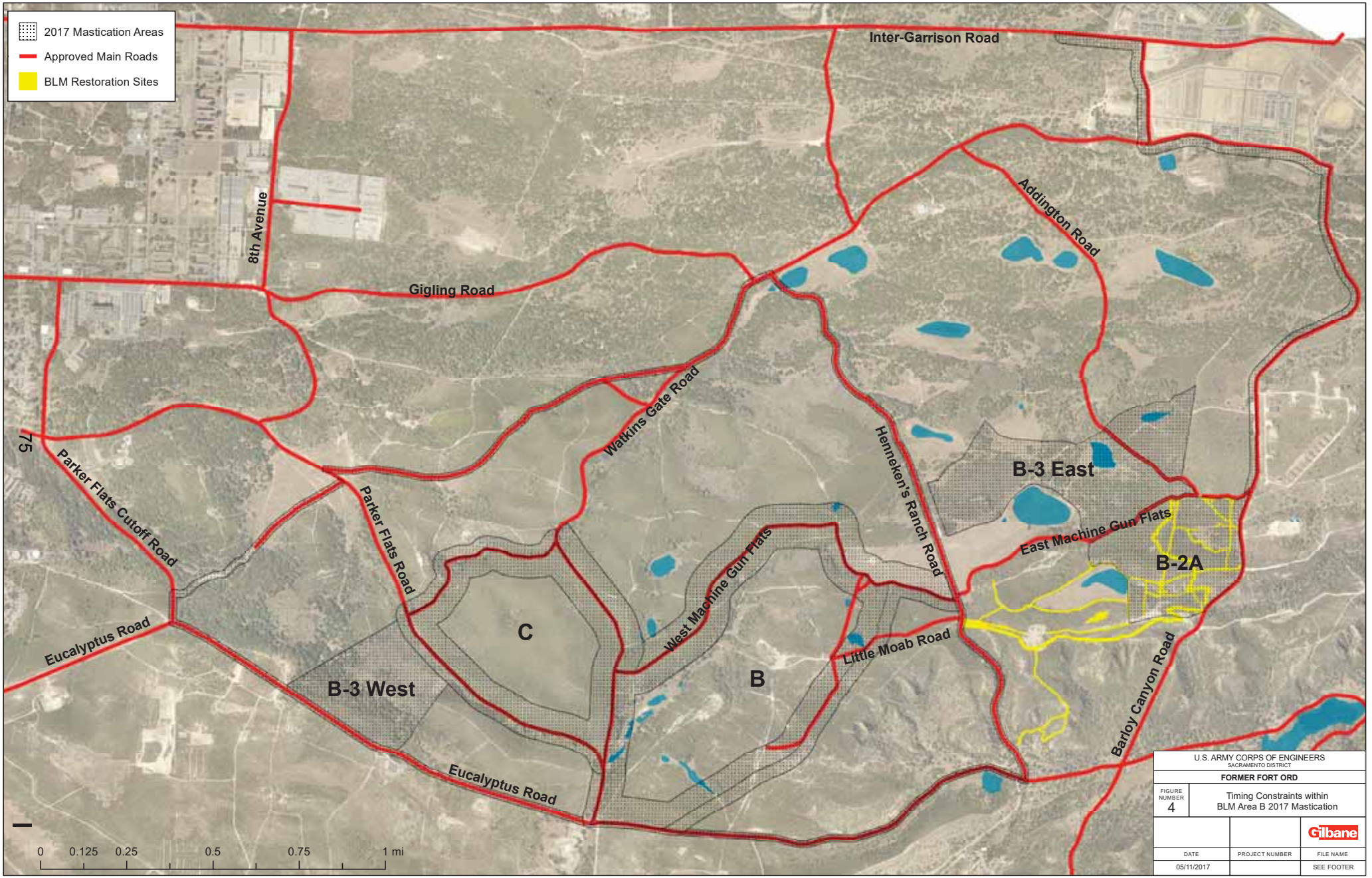
FORMER FORT ORD

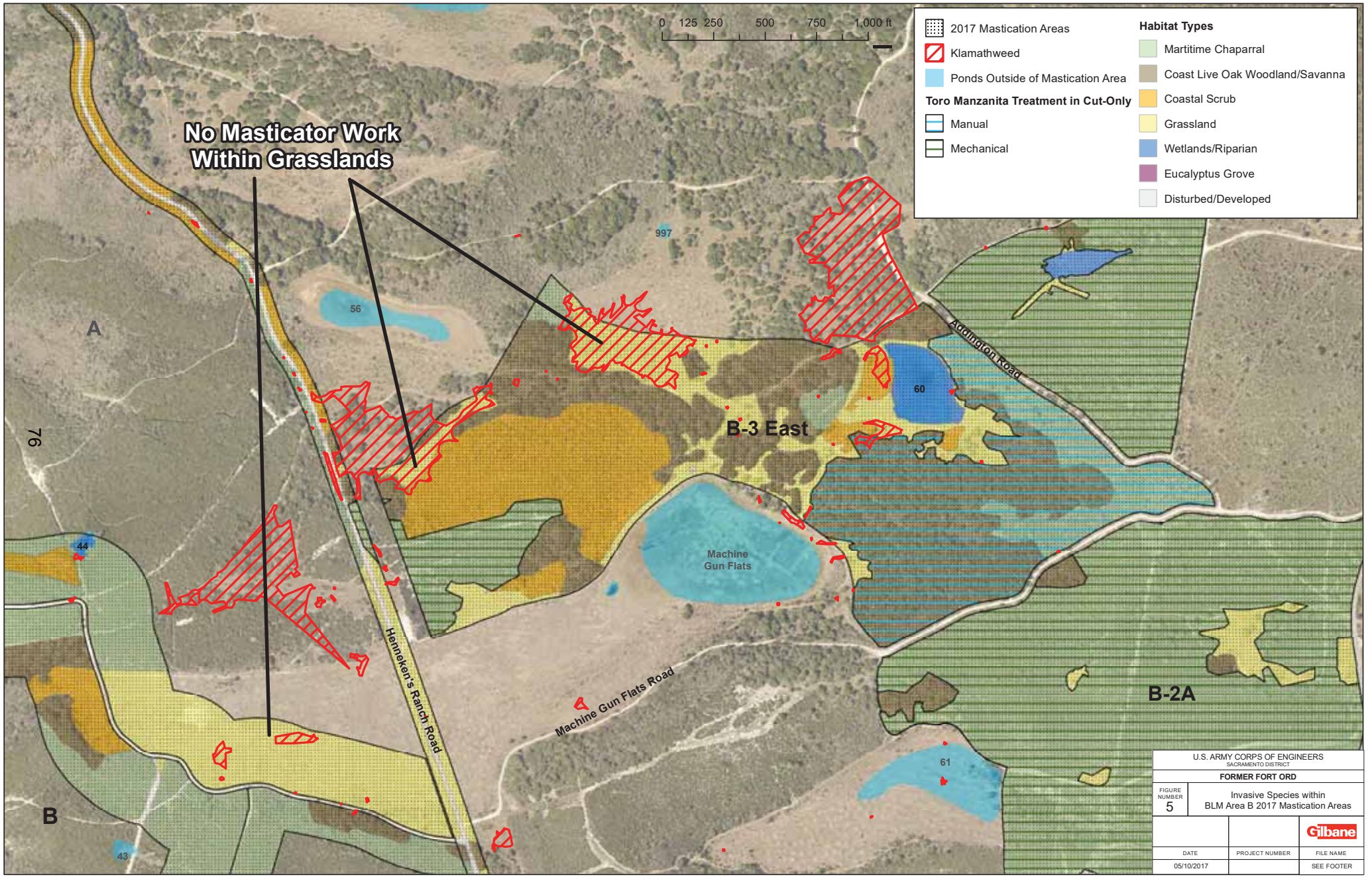
FIGURE NUMBER 2

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
75
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


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
No Masticator Work Within Grasslands
A
B
B-3 East
B-2A
997
56
60
61
44
43
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
05/10/2017
PROJECT NUMBER
FILE NAME
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:	Little Moab Realignment	**DATE:**	6-29-17
WORK TO BE CONDUCTED:	Subsurface MEC 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:	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) 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:	Pond 42 is present adjacent to the work site		
Grid Numbers:			
Work Can Proceed in Pools/Ponds:	☐ **Yes**	☒ **No**	

Restrictions:

- No work shall occur within the vernal pond.

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:

- 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, except within the new road alignment.
- 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: Jami Colley **Date:** 6/30/17

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 15:39:40-08'00' **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: 2017.07.17 17:00:34 -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, 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 2	**DATE:**	8-2-17
WORK TO BE CONDUCTED:	Filling pits with soil		

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		
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 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 attached Figure).

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:

- 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 access routes identified on the attached figure.
- Heavy equipment transport from site to site must be along existing fuelbreaks 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.
- 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; however, if washing of equipment is necessary, it must be completed on-site prior to leaving the area.
- Unnecessary movement of equipment from the area infested with pampas grass to other areas shall be minimized. Equipment shall be pressure-washed on-site prior to moving to other areas to remove invasive plant seeds.

9. ADDITIONAL SITE CONCERNS:

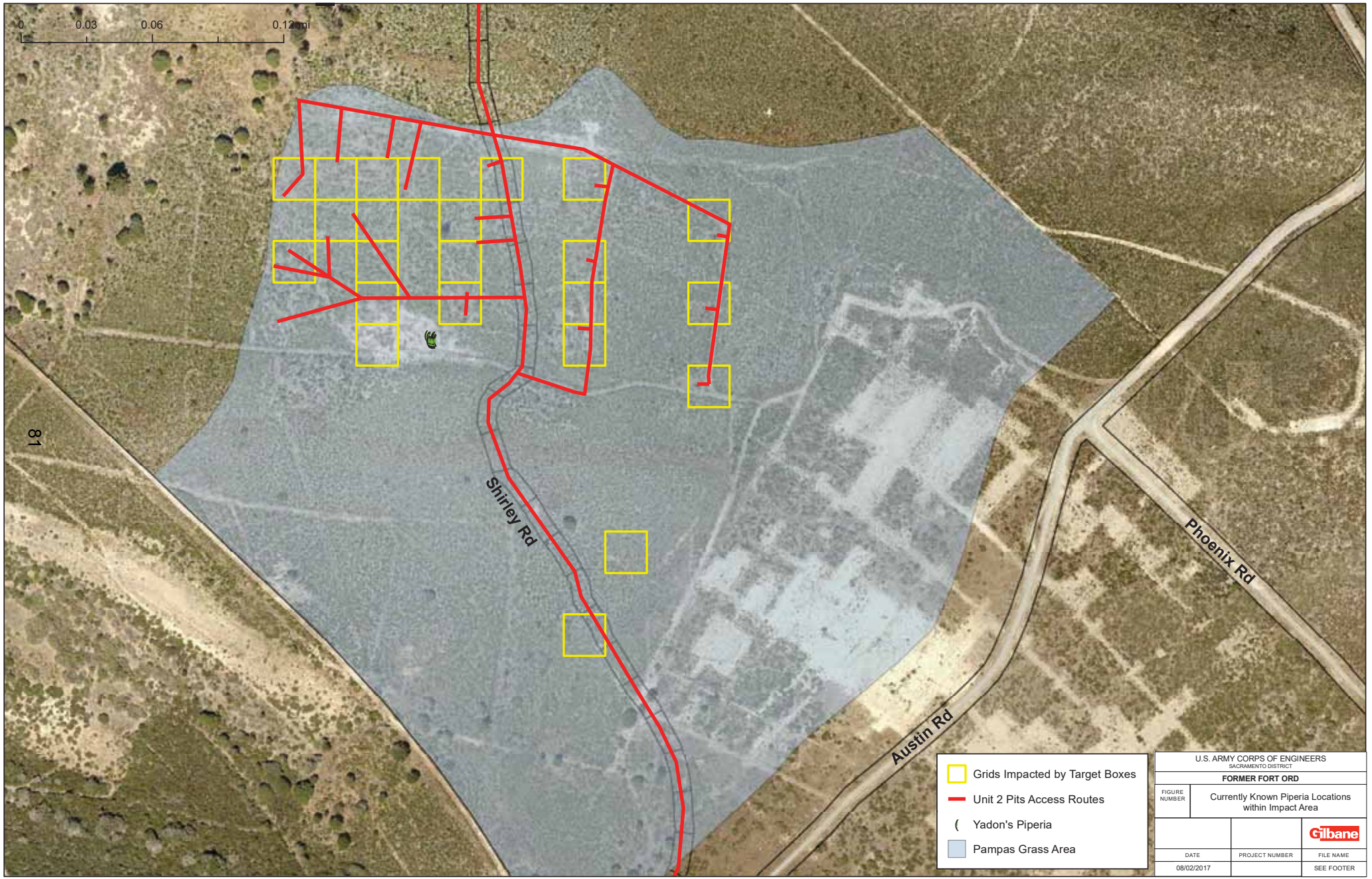
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.
- No work is permitted within the HA-26 restoration area.

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

Project Biologist: Jami Colley **Date:** 8/2/17

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.08.08 10:51:21 -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: 2017.08.08 10:23:23 -07'00' **Date:**


0
0.03
0.06
0.12 mi
Shirley Rd
Phoenix Rd
Austin Rd
81
Grids Impacted by Target Boxes
Unit 2 Pits Access Routes
Yadon's Piperia
Pampas Grass Area
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER
Currently Known Piperia Locations within Impact Area
Gilbane
DATE
PROJECT NUMBER
FILE NAME
08/02/2017
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 Unit C	**DATE:**	9-13-17
WORK TO BE CONDUCTED:	Install Instrument Verification Strip (IVS)		

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:	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
- Monterey spineflower and sand gilia are known to occur in adjacent areas of Unit B (see attached map) – these areas shall not be used for turn-around or for placement of the conex box.

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

- Pond 35 is located in the vicinity of the IVS – if use of the IVS results in erosion issues, installation of silt fencing adjacent to the pond and implementation of the erosion control measures identified below may be necessary to prevent sedimentation of the pond.

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

KEMRON
ENVIRONMENTAL SERVICES

6. EROSION CONCERNS/SITE RESTORATION:

- The potential turn-around area (see attached map) is on a slight slope - repeated use of this route may result in some 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 IVS strip shall be placed so that hard turns are avoided or reduced to the greatest extent feasible.
- The DGM shall use varied paths throughout the cut areas to the IVS to avoid creating new roads/trails through the habitat reserve areas.

7. SITE ACCESS:

- Vehicle access should be limited to 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:

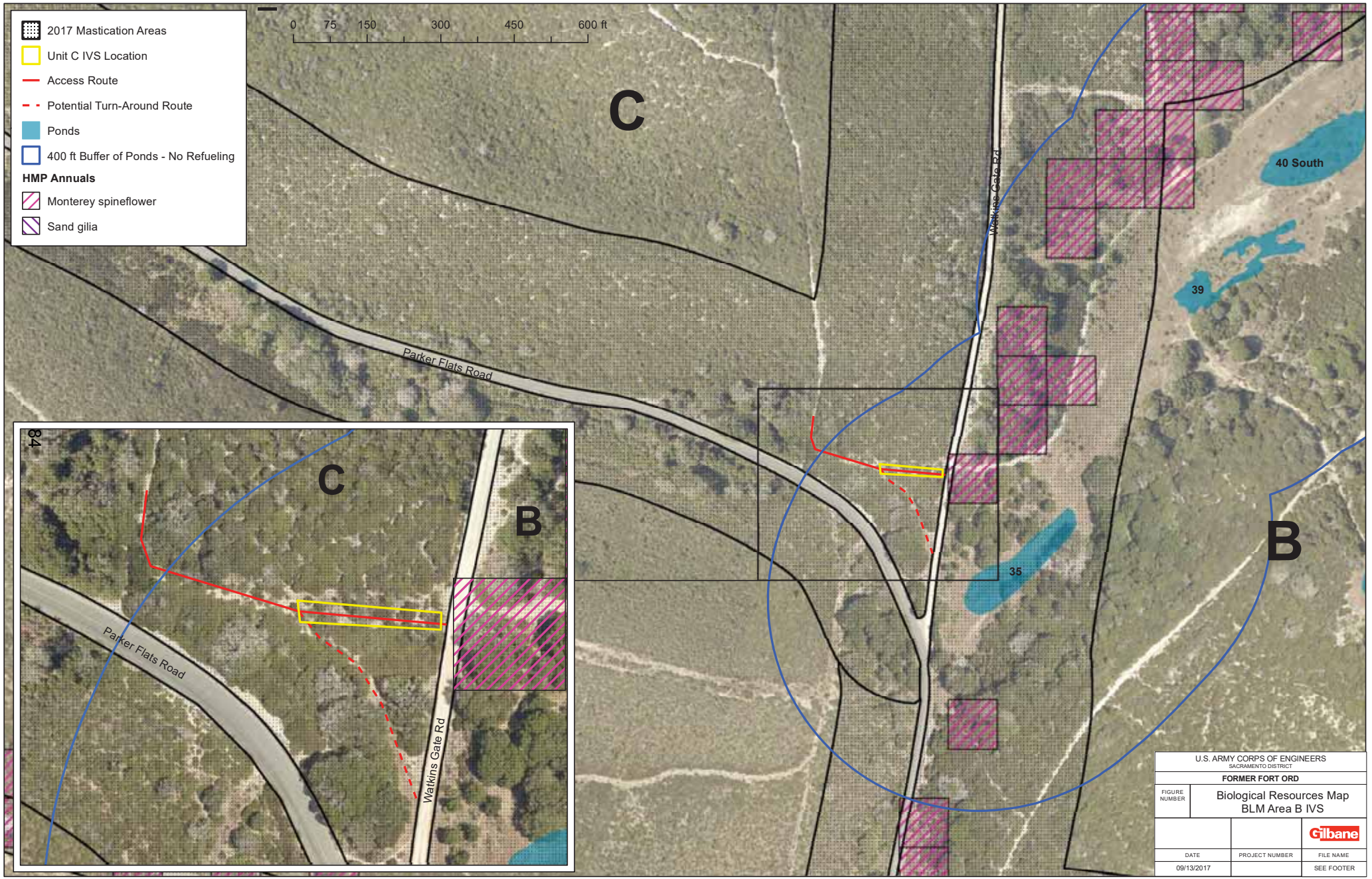
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No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

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: 2017.09.13 12:15:16 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.09.14 09:51:57 -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: 2017.09.14 09:39:01 -07'00' **Date:** _____



U.S. ARMY CORPS OF ENGINEERS SACRAMENTO DISTRICT		
FORMER FORT ORD		
FIGURE NUMBER	Biological Resources Map BLM Area B IVS	
		Gilbane
DATE	PROJECT NUMBER	FILE NAME
09/13/2017		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 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 1	**DATE:**	9-14-17
WORK TO BE CONDUCTED:	Vegetation 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:	HMP shrubs, Monterey spineflower, California Tiger Salamander (CTS), and Black Legless Lizard (BLL)		
Location:	See attached map for known locations of Monterey spineflower		
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.
- No work shall occur within the areas known to support Monterey spineflower from approximately February 1 to May 31

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:**

- Vegetation removal shall be kept to the minimum necessary to complete the proposed work.
- No vegetation shall be removed within the restoration area (HA-26).

KEMRON
ENVIRONMENTAL SERVICES

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 and fuel breaks only. No vehicles or heavy equipment shall be permitted within the restoration areas or other areas outside of the fuel breaks that are identified as sensitive on the attached maps. If additional access routes are necessary, the site 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.
- Unnecessary movement of equipment to other units shall be minimized to reduce the spread of pampas grass. Equipment used in these units shall be pressure-washed on-site prior to moving to other units to remove invasive plant seeds. Suitable locations for decon are identified on the attached map.
- Personnel shall clean boots and equipment daily before leaving the unit to reduce spread of pampas grass. Soil and plant material shall be removed using boot brushes or other types of brushes. Suitable locations for decon are identified on the attached maps. 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 is necessary, it must be completed on-site prior to leaving the unit.

9. ADDITIONAL SITE CONCERNS:

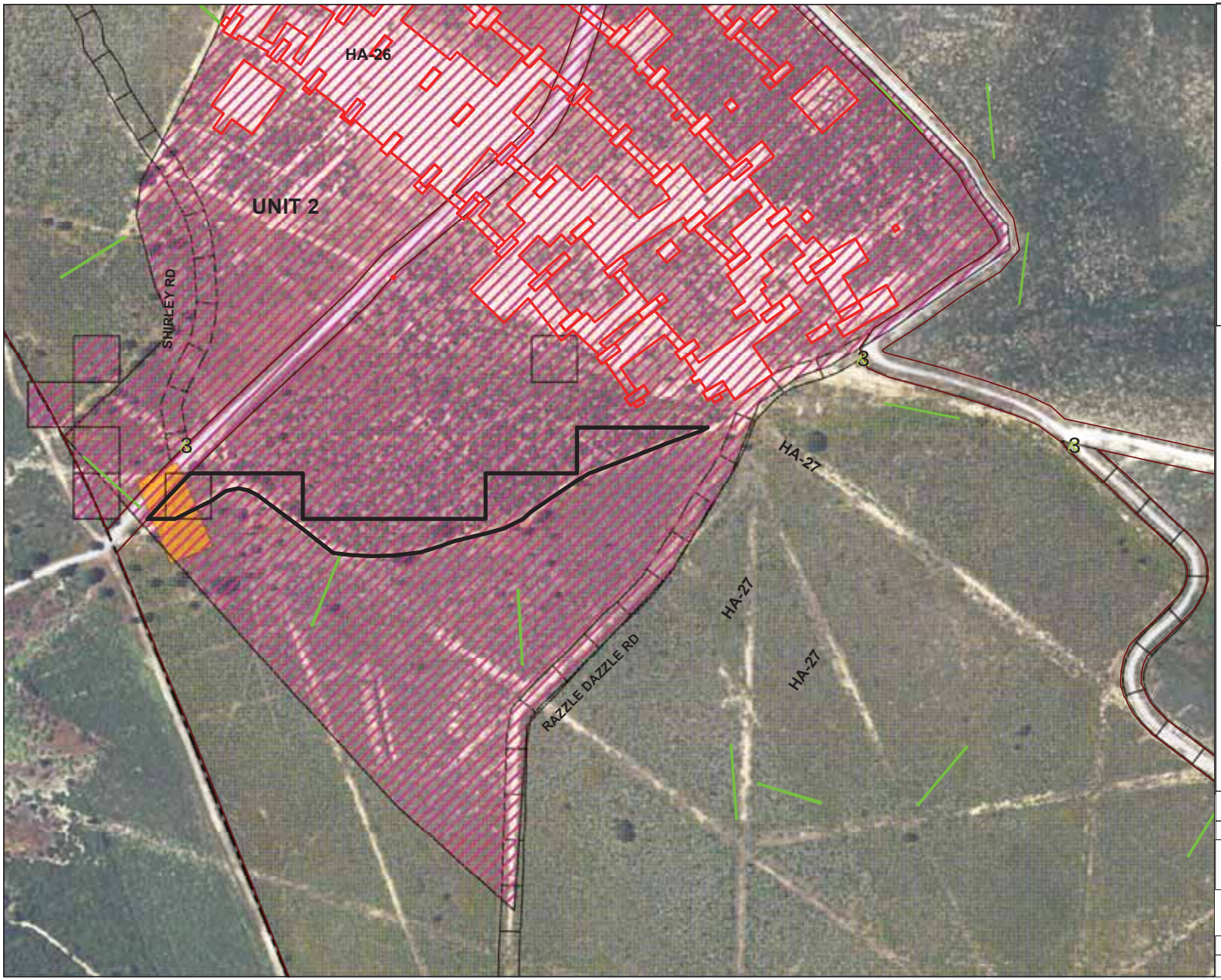
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the 45-foot wide fuel breaks or approved main roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews.
- No work is permitted within the restoration area (HA-26), as shown on the attached map.

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

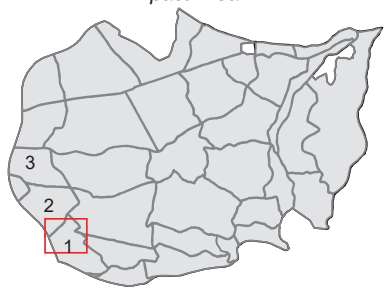
Project Biologist: Jami Davis Digitally signed by Jami Davis DN: cn=Jami Davis, o=DDA, ou, email=jdavis@ddaplanning.com, c=US Date: 2017.09.14 13:58:46 -07'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.09.18 07:12:15 -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: 2017.09.14 16:50:06 -07'00' **Date:** _____



Former Fort Ord
Impact Area



- DGM Data Gap
- Unit Boundary
- Fuelbreak Grids
- Administrative Areas
- Pampas Grass Area - Decon Required
- 3 Decon Locations
- Vegetation Monitoring Transect
- Restoration Areas

HMP Species
- Monterey spineflower

N

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

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

DATE	PROJECT NUMBER	FILE NAME
9/13/2017		SEE FOOTER

C:\GIS\Final Products\Units 1_2_3\Unit 1 DGM Gap.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:	BLM Area B Roads: Portions of West Machine Gun Flats, Watkins Gate, Watkins Gate Spur, Parker Flats, and Hennekens Ranch	**DATE:**	10-2-17
WORK TO BE CONDUCTED:	Subsurface MEC removal		

1. LAND USE:	☒ **Habitat Reserve**	☒ **Development Area**	☐ **Other (specify):**
2. LAND OWNER:	☐ **Army**	**Location:**	
	☒ **BLM**	**Location:**	BLM Area B Roads
	☐ **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, sand gilia, and Monterey spineflower		
Location:	See attached map for known locations of HMP species and other sensitive resources.		
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.

4. VERNAL POOLS/PONDS PRESENT	☒ **Yes**	☐ **No**	☒ **Flagged/Marked**
Location:	Pond 35 is adjacent to the work site		
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.

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:

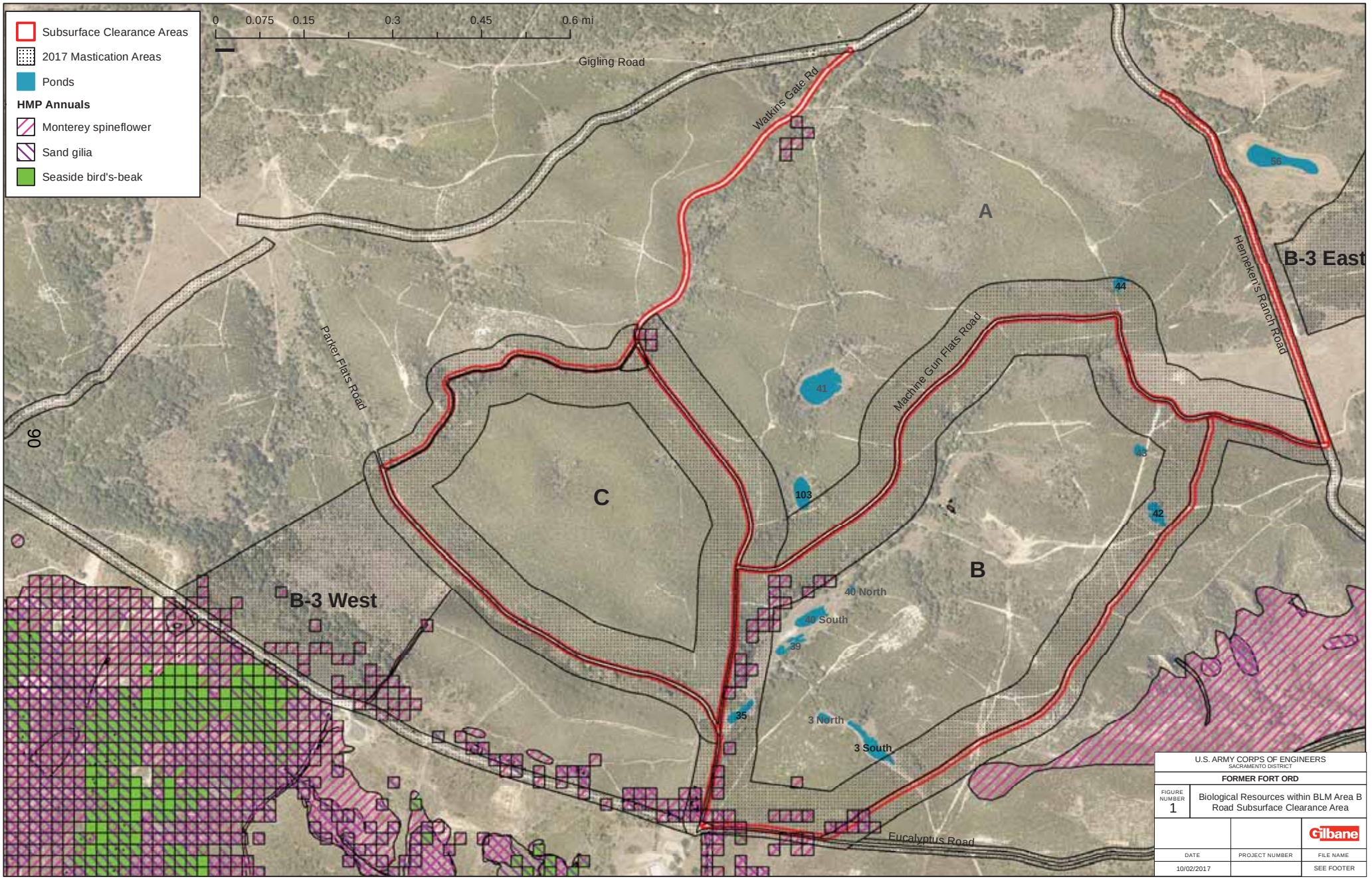
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No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

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

Project Biologist: Jami Colley **Date:** 10-2-17

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 13:19:56-07'00' **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: 2017.10.03 09:24:23 -07'00' **Date:**



U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FORMER FORT ORD

FIGURE NUMBER 1

Biological Resources within BLM Area B Road Subsurface Clearance Area

Gilbane

DATE	PROJECT NUMBER	FILE NAME
10/02/2017		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

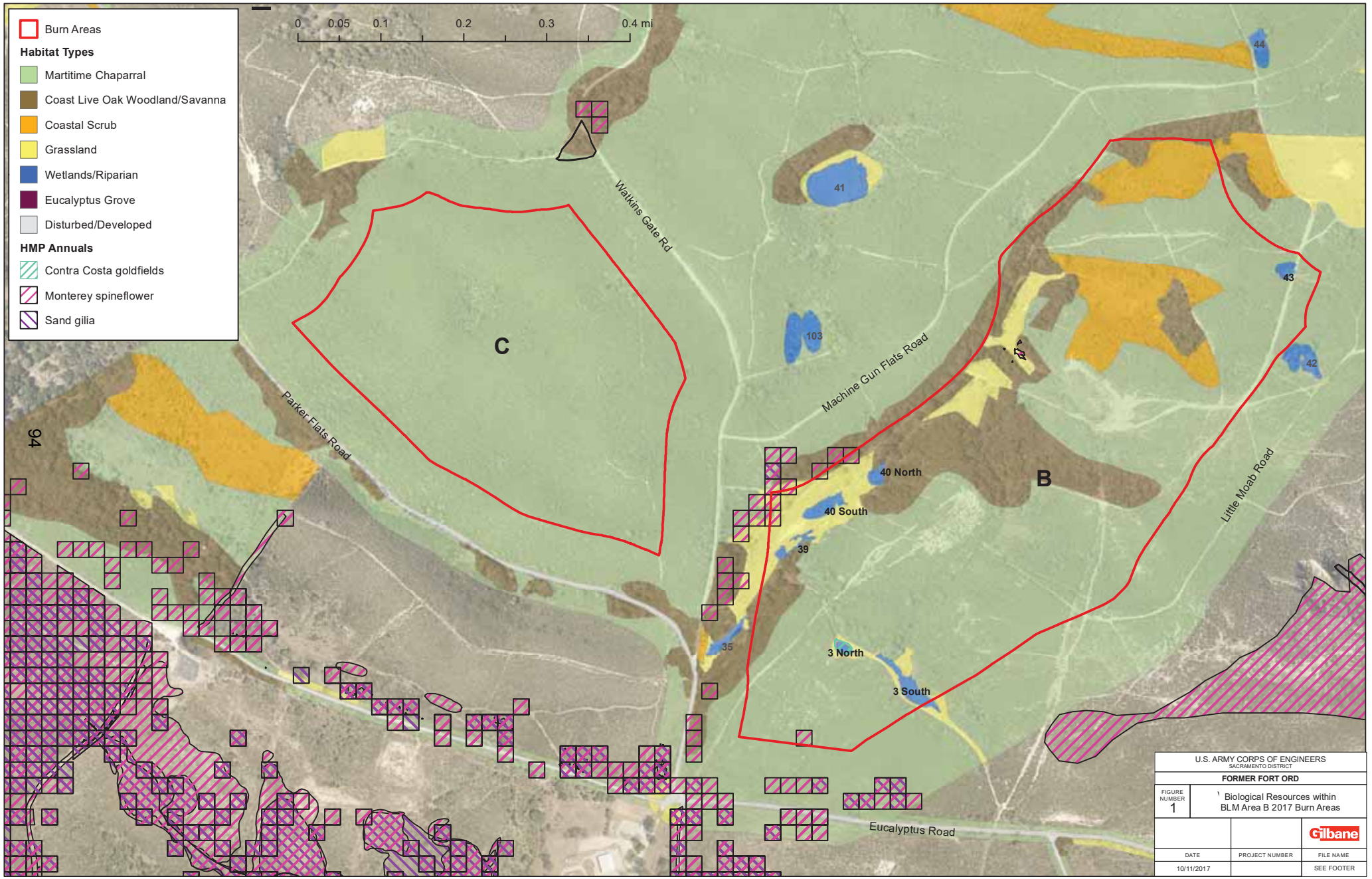
- Only heavy equipment may be refueled in the field. All refueling of heavy equipment will be conducted on the approved roads. Spill control materials such as absorbent pads, noncombustible granular absorbent material, and polyethylene sheeting, will be immediately available to all refueling crews. No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

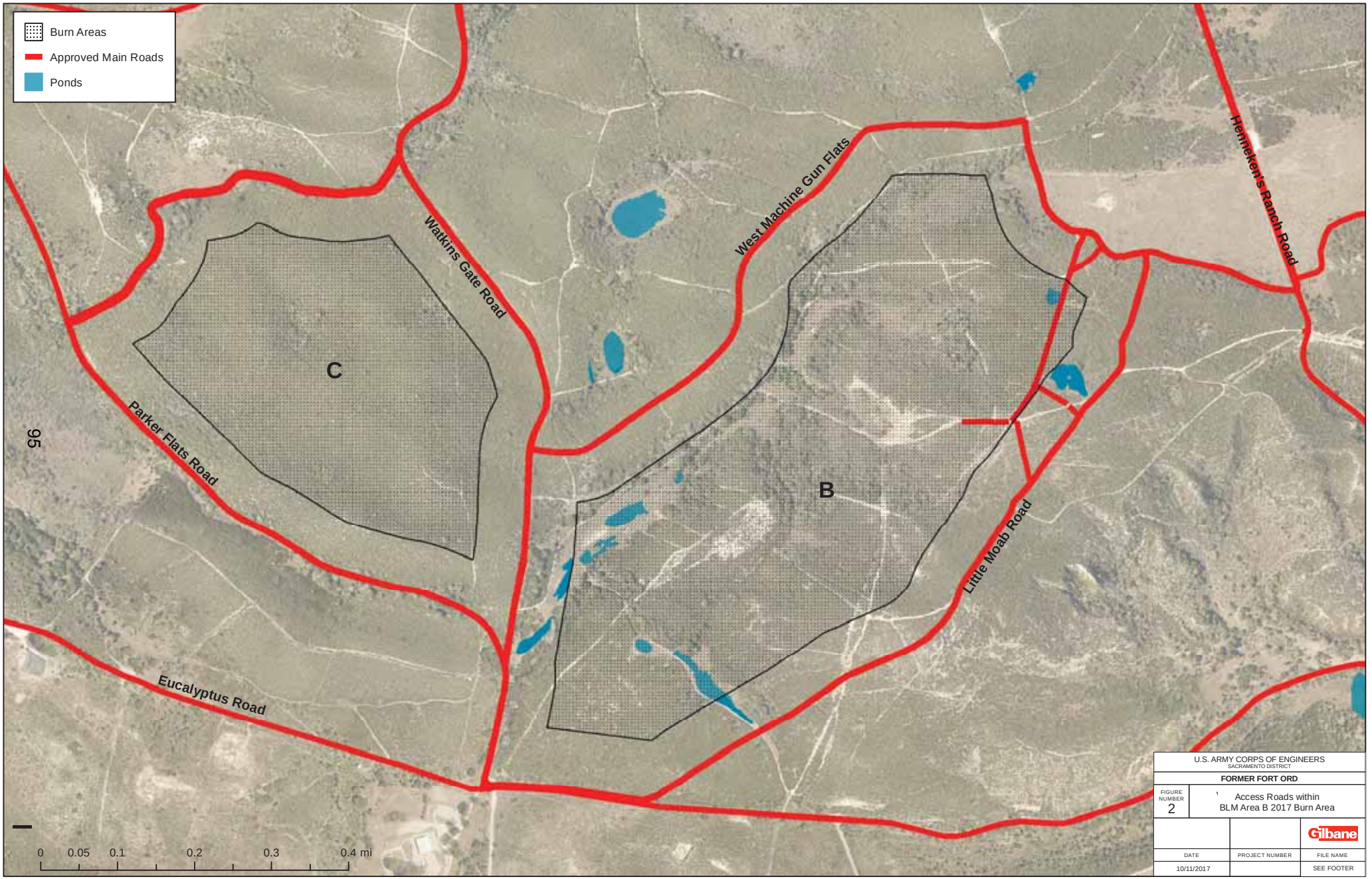
FORMER FORT ORD

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:	BLM Area B3-East	**DATE:**	11-7-17
WORK TO BE CONDUCTED:	Install Instrument Verification Strip (IVS)		

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) 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.
- Remaining Toro manzanitas shall be avoided when entering, exiting, and turning around equipment at the IVS.

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

- Pond 60 is located in the vicinity of the IVS – if use of the IVS results in erosion issues, installation of silt fencing adjacent to the pond and implementation of the erosion control measures identified below may be necessary to prevent sedimentation of the pond.
- Pond 60 shall be avoided when entering, exiting, and turning around equipment at the IVS.

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

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ENVIRONMENTAL SERVICES

6. EROSION CONCERNS/SITE RESTORATION:

- The IVS strip shall be placed so that hard turns are avoided or reduced to the greatest extent feasible.
- The DGM shall use varied paths throughout the cut areas to the IVS to avoid creating new roads/trails through the habitat reserve areas.

7. SITE ACCESS:

- Vehicle access should be limited to 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 ponds (see attached figure).

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: 2017.11.07 11:33:25 -08'00' **Date:** _____

QC Manager: Chuck Clyde Digitally signed by cclyde@gilbaneco.com DN: cn=cclyde@gilbaneco.com Date: 2017.11.07 14:13:30 -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: 2017.11.07 11:59:59 -08'00' **Date:** _____


2017 Mastication Areas
B-3 East IVS Location
Ponds
400 ft Buffer of Ponds - No Refueling
0 50 100 200 300 400 ft
Pond 73
Addington Rd
Pond 60
B-3 East
Machine Gun Flats
86
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
FORMER FORT ORD
FIGURE NUMBER
Biological Resources Map
BLM Area B B-3 East IVS
Gilbane
DATE
PROJECT NUMBER
FILE NAME
11/7/17 t6
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.

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:

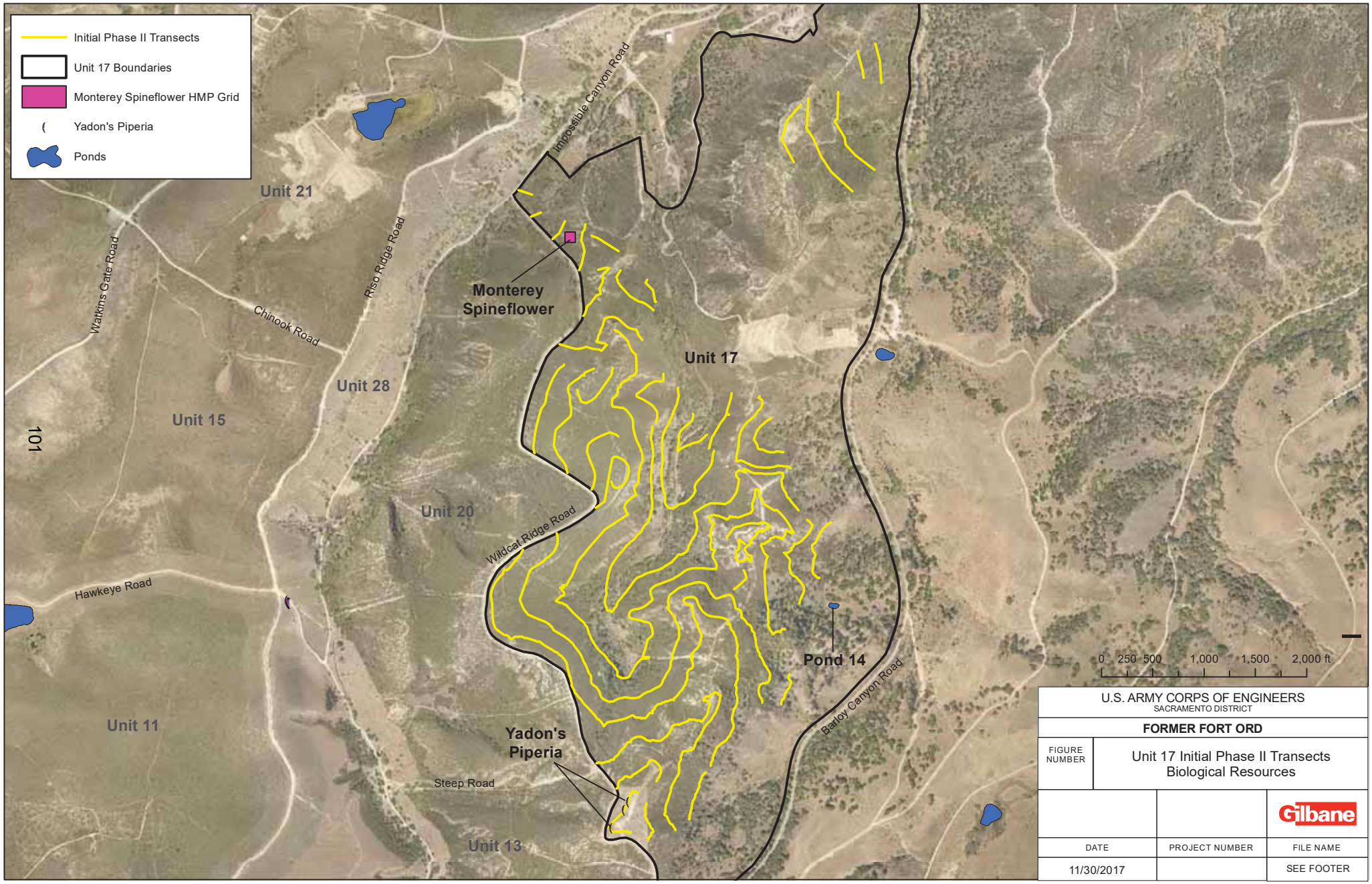
- No refueling or equipment shall occur within 400 feet of Pond 14 or any other pond or wetland identified by the Project Biologist during ongoing habitat evaluations.

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