JURISDICTIONAL DELINEATION REPORT

CLINTON KEITH ROAD EXTENSION PROJECT

RIVERSIDE COUNTY, CALIFORNIA

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Acronyms and Abbreviations

AMSL	above mean sea level
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	facultative
FACW	facultative wetland
HA	Hydrologic Area
HU	Hydrologic Unit
ICF	ICF International
JD	Jurisdictional Determination
NI	no indicator
NO	no occurrence
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	obligate
OHWM	Ordinary High Water Mark
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
RCTD	Riverside County Transportation Department
RGL	Regulatory Guidance Letter
ROW	right of way
RPWs	relatively permanent waters
RWQCB	Regional Water Quality Control Board
SSURGO	Soil Survey Geographic
SWANCC	Solid Waste Agency of Northern Cook County
SWRCB	State Water Resources Control Board
TNWs	Traditional navigable waters
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geologic Survey
WoS	Waters of the State
WoUS	Waters of the United States

Chapter 1
Introduction

The Riverside County Transportation Department (RCTD), in cooperation with the City of Murrieta, proposes to construct a six-lane urban arterial in the City of Murrieta and unincorporated Riverside County that would extend the existing Clinton Keith Road between Whitewood Road and Winchester Road (State Route 79, SR-79) (Figures 1and 2; Appendix A).

The purpose of this delineation was to identify the extent of federal and state jurisdiction within and adjacent to the project site to support the resource-agency permitting process under Sections 401 and 404 of the Clean Water Act (CWA), as well as Section 13260 of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and Section 1602 of the California Fish and Game Code.

Section 404 of the CWA covers waters of the United States (WoUS) as well as federal wetlands and is regulated by the U.S. Army Corps of Engineers (USACE). Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) and the U.S. Environmental Protection Agency (EPA) regulate at the state level all activities that are regulated at the federal level by the USACE. The RWQCB/SWRCB may also regulate activities affecting non-federal waters and wetlands (e.g., isolated features) under the Porter-Cologne Act. Section 1600 of the California Fish and Game Code is regulated by the California Department of Fish and Wildlife (CDFW) and covers aquatic features, which may include lakes or streambeds with a defined bed and bank, plus any adjacent riparian vegetation. If a proposed project may affect waters or wetlands, the project site must be evaluated to determine the presence of jurisdictional waters. Permits for the proposed activity must be sought from each applicable resource agency. Details regarding each of these resource agencies, their regulatory authority, jurisdiction, permits, and regulatory processes are provided in Chapter 2, “Regulatory Background.”

The information and results presented in this report document the investigation, best professional judgment, and conclusions of ICF. It is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by the regulatory agencies.

1.1 Project Description

Clinton Keith Road is proposed to be constructed as a 6-lane urban arterial (typical paved width of 134 feet) along an approximately 2.7 - mile alignment between Whitewood Road and SR-79 at Benton Road in western Riverside County. From Whitewood Road, extending east, the proposed alignment follows existing Clinton Keith Road to its current terminus at Los Alamos Road. At Los Alamos Road, the alignment transitions to the northeast to meet the west end of the existing segment of Clinton Keith Road that was constructed as part of Tract 29484 (between Trois Valley Street and Leon Road). Beyond the existing terminus at Leon Road, the proposed alignment transitions to the south, generally following existing Briggs Road to Porth Road, where the alignment curves eastward to intersect with SR-79 at Benton Road.

At the crossings of Warm Springs Creek and French Valley Creek, project design incorporates bridges spanning the existing streams. At Leon Road, a double 24-foot, soft-bottom arch culvert is

proposed at the crossing of an unnamed tributary to French Valley Creek. East of Warm Springs Creek, the improvements include an approximately 110-foot wide land bridge spanning over the new road – this is a key feature of the project design for the benefit of wildlife species protected under the Western Riverside County Multiple Species Habitat Conservation Plan.

The improvements are proposed to be constructed in two segments, the first consisting of the segment between Whitewood Road and Trois Valley Street and the second consisting of the segment between Leon Road and SR-79. For the first segment, the grading, drainage improvements and the bridges will be completed in accordance with the ultimate improvements; however, paving outside the Warm Springs Creek Bridge will be limited to one lane in each direction, within the eastbound half of the graded roadway. Construction of the second segment between Leon Road and SR-79 is expected to proceed within a year or two of the first segment. Phasing of improvements for this section of the road and timing of paving of the remainder of the road west of Trois Valley Street are not determined at this time.

The proposed improvements include three basins to collect, detain and treat runoff from the new road and culverts to convey local area runoff across the new road. The three basins are generally located at Warm Springs Creek, at Leon Road, and at Porth Road. Culverts are proposed east of Arendt Lane, east of Menifee Road (replaces existing culvert just west of Menifee Road), east of Avenida Mañana (replaces an existing culvert at this location), and about 1,300 feet west of Trois Valley Street. The last culvert incorporates risers to enhance light conditions within the pipe to encourage use as a wildlife crossing; a second culvert west of the Warm Springs Creek bridge is designed for use solely as a wildlife crossing (would not convey runoff).

Limited modifications to other local roads are required to provide alternate public street access to privately-owned properties that are currently accessed from Clinton Keith Road and Briggs Road within the project limits.

Porth Road would be extended east of its existing terminus at Briggs Road to intersect with the new Clinton Keith Road. This requires raising the grade on existing Porth Road (between French Valley Creek and Briggs Road) by up to approximately 13 feet. South of the existing culverted crossing of French Valley Creek, Briggs Road would be realigned to the west to maintain a continuous local connection with improved Porth Road, to accommodate intersection spacing standards (between Briggs/Porth and Porth/Clinton Keith), and to accommodate the proposed basin at Porth Road. At Los Alamos Road, Briggs Road would be realigned slightly to the west to provide a continuous curving transition between the two roads; a driveway connection would be created here to provide local access to an adjacent private parcel.

1.2 Project Location

The proposed Project is located within unimproved areas between Whitewood Road and Winchester Road/State Route 79 (SR-79) in the City of Murrieta, Riverside County, California(Figures 1 and 2; Appendix A). The project occurs within Section 36, Township 6 South, Range 3 West, within Section 31, Township 6 South, Range 2 West, and Section 6, Township 7 South, Range 2 West as mapped on the Bachelor Mountain (USGS 1953a) and Murrieta (USGS 1953b) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 2; Appendix A).

Chapter 2
Regulatory Background

The following sections summarize the regulations imposed on each type of jurisdictional feature potentially present within the project area.

2.1 U.S. Army Corps of Engineers Regulated Activities

Pursuant to Section 404 of the CWA, the USACE regulates the discharge (temporary or permanent) of dredged or fill material into WoUS, including wetlands. A discharge of fill material includes, but is not limited to, grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

2.1.1 Waters of the United States

WoUS, as defined in Code of Federal Regulations (CFR) title 33, section 328.3, includes the following.

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

  (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

  (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

  (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section.

(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for

> the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.
>
> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

The limit of USACE jurisdiction, excluding wetlands and tidal waters, is delineated using the Ordinary High Water Mark (OHWM), defined in CFR 328.3(e) as:

> …that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

2.1.2 Wetlands

Normally, three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology) (Environmental Laboratory 1987).

2.1.3 Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers

In 1986, in an attempt to clarify the reach of its jurisdiction, USACE stated that Section 404(a) extends to intrastate waters that:

> …(a) are or would be used as habitat by birds protected by migratory bird treaties, or (b) are or would be used as habitat by other migratory birds which cross state lines, or (c) are or would be used as habitat for endangered species, or (d) used to irrigate crops sold in interstate commerce." (51 Federal Register 41217).

As a result of the 2001 *Solid Waste Agency of Northern Cook County (SWANCC)* case, the U.S. Supreme Court held that USACE may not rely on the Migratory Bird Rule to establish a significant nexus to interstate or foreign commerce. Although no formal guidance was issued by USACE interpreting the extent to which the *SWANCC* decision would limit jurisdictional determinations, in practice, USACE considers intrastate waters as WoUS where there is an appropriate connection to a navigable water or other clear interstate commerce connection. Therefore, WoUS, including jurisdictional wetlands, must show connectivity with (be tributary to) a navigable WoUS to be subject to the USACE under Section 404 of the CWA.

2.1.4 Rapanos v. United States and Carabell v. United States Army Corps of Engineers

In 2006, the U.S. Supreme Court issued an opinion regarding the extent of USACE jurisdiction over certain waters under Section 404 of the CWA. The *Rapanos-Carabell* consolidated decisions addressed the question of jurisdiction over attenuated tributaries to WoUS, as well as wetlands adjacent to those tributaries.

On June 5, 2007, the USACE and the EPA issued guidance related to the *Rapanos* decision, with clarifying guidance issued on December 2, 2008. The guidance identifies those waters over which the agencies (USACE and EPA) will assert jurisdiction categorically and on a case-by-case basis. To summarize, USACE will continue to assert jurisdiction over the following features.

- Traditional navigable waters (TNWs) and their adjacent wetlands.
- Non-navigable tributaries of TNWs that are relatively permanent waters (RPWs) (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally [i.e., typically 3 months]) and wetlands that directly abut such tributaries (i.e., not separated by uplands, berm, dike, or similar feature).

For non-RPWs, the agencies will determine whether a "significant nexus" exists with a TNW using the data found in an Approved Jurisdictional Determination (JD) Form. The purpose of the significant nexus evaluation is to determine whether the existing functions of a tributary affect the chemical, physical, and/or biological integrity of a downstream TNW. Tributary characteristics that are considered when evaluating whether a significant nexus exists include volume, duration, and frequency of flow; proximity to a TNW; and hydrologic and ecologic functions performed by the tributary and all of its adjacent wetlands. Based on that information, the agencies may assert jurisdiction over the following features.

- Non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally.
- Wetlands adjacent to such tributaries.
- Wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary.

The agencies will typically not assert jurisdiction over the following features.

- Swales or erosional features (e.g., gullies and small washes characterized by low volume and infrequent or short-duration flow).
- Ditches (including roadside ditches) excavated wholly in uplands and draining only uplands that do not carry a relatively permanent flow of water.

2.1.4.1 Approved Jurisdictional Determinations

An Approved JD is an official USACE jurisdictional determination, is valid for five years, can be used and relied upon in a CWA citizen's lawsuit if its legitimacy is challenged (except under extraordinary circumstances), and can be immediately appealed (33 CFR 331). Approved JDs are documented in accordance with Regulatory Guidance Letter (RGL) No. 07-01 and require the use of the Approved JD Form. Approved JDs are evaluated by the USACE and EPA.

Under the *Rapanos* guidance, an Approved JD is required for determinations for all "isolated" waters or wetlands, and is subject to review by the USACE and EPA.

2.1.4.2 Preliminary Jurisdictional Determinations

The USACE issued RGL No. 08-02 on June 26, 2008, allowing the USACE to issue Preliminary JDs for a project. A Preliminary JD is a non-binding written indication that there may be WoUS, including wetlands, on a project site and identifies the approximate location of these features. Preliminary JDs are used when a landowner, permit applicant, or other affected party elects to voluntarily waive or

set aside questions regarding CWA jurisdiction over a particular site, usually in the interest of allowing the landowner to move ahead expeditiously to obtain Section 404 authorization where the party determines that it is in his or her best interest to do so. A Preliminary JD is not an official determination regarding the jurisdictional status of potentially jurisdictional features and has no bearing on Approved JDs. A Preliminary JD cannot be used to confirm the absence of jurisdictional waters or wetlands, is advisory in nature, and cannot be appealed. It is considered "preliminary" because a recipient can later request an Approved JD if one is necessary or appropriate.

A Preliminary JD is documented using the Preliminary Jurisdictional Determination Form. For purposes of impact calculations, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a Preliminary JD treats all waters and wetlands that would be affected in any way, except by the permitted activity, as if they are jurisdictional. Although a Preliminary JD may be chosen by the applicant, the district engineer reserves the right to use an Approved JD where warranted.

2.1.4.3 2011 Draft Clean Water Act Guidance

On April 27, 2011, the USACE and EPA issued draft guidance for determining jurisdiction under the CWA (USACE 2011). The guidance supersedes the previous guidance from 2003 regarding *SWANCC* (68 Federal Register 1991–1995) and 2007-2008 *Rapanos* guidance. This document reiterated the guidance issued under the *Rapanos* decision, asserting that the following waters are protected by the CWA.

- Traditional navigable waters.
- Interstate waters.
- Wetlands adjacent to either traditional navigable waters or interstate waters.
- Non-navigable tributaries to traditional navigable waters that are relatively permanent (meaning they contain water at least seasonally).
- Wetlands that directly abut relatively permanent waters.

The guidance further clarifies the criteria for defining TNWs, primarily consistent with previous guidance. In addition, a significant nexus evaluation is required for the "other waters" category of the regulations (see item 3 in Section 2.1.1, "Waters of the United States," above). The guidance divides these waters into two categories—those that are physically proximate to other jurisdictional waters and those that are not, and discusses how each category should be evaluated.

Finally, the guidance reiterated that certain aquatic areas are generally not considered WoUS.

- Wet areas that are not tributaries or open waters and do not meet the agencies' regulatory definition of "wetlands."
- Waters excluded from coverage under the CWA by existing regulations.
- Waters that lack a "significant nexus" where one is required for a water to be protected by the CWA.
- Artificially irrigated areas that would revert to upland should irrigation cease.
- Artificial lakes or ponds created by excavating and/or diking dry land and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.

- Artificial reflecting pools or swimming pools created by excavating and/or diking dry land.
- Small ornamental waters created by excavating and/or diking dry land for primarily aesthetic reasons.
- Water-filled depressions created incidental to construction activity.
- Groundwater drained through subsurface drainage systems.
- Erosional features (gullies and rills), and swales and ditches that are not tributaries or wetlands.

2.2 State Regulated Activities

2.2.1 Section 401 of the Clean Water Act

A federal permit or license cannot be issued that may result in a discharge to WoUS unless certification under Section 401 of the CWA is granted or waived by the EPA, state, or tribe where the discharge would originate (EPA 2010). Within the proposed project area, the ability to grant, grant with conditions, deny, or waive certification falls to three separate parties: the RWQCB or SWRCB, and the EPA.

Pursuant to Section 401 of the CWA:

> …any applicant for a federal permit for activities that involve a discharge to waters of the United States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.

Therefore, before USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver, as applicable. Under Section 401 of the CWA, all activities that are regulated at the federal level by USACE are also regulated at the state level. Therefore, state jurisdiction usually includes all waters or tributaries to waters that are determined to be WoUS and, similar to WoUS, are typically delineated at the OHWM.

However, if waters are determined not to be WoUS, they may still be subject to state jurisdiction based on the Porter-Cologne Act.

2.2.2 Porter-Cologne Water Quality Control Act

The state also regulates activities that would involve "discharging waste, or proposing to discharge waste, within any region that could affect waters of the state" (California Water Code 13260[a]), pursuant to provisions of the Porter-Cologne Act. Waters of the State (WoS) are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050 [e]). Such waters may include waters not subject to regulation under Section 404 (i.e., isolated features). These waters may include isolated vernal pools, isolated wetlands, or other aquatic habitats not normally subject to federal regulation under Section 404 of the CWA.

2.2.3 State Water Resources Control Board/Regional Water Quality Control Boards

In California, the SWRCB and nine RWQCBs regulate activities within state and federal waters under Section 401 of the CWA and the Porter-Cologne Act. The SWRCB is responsible for setting statewide policy, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each semi-autonomous RWQCB sets water quality standards, issues Section 401 certifications and waste discharge requirements, and takes enforcement action for projects occurring within its boundary. However, when a project crosses multiple RWQCB jurisdictional boundaries, the SWRCB becomes the regulating agency and issues project permits.

2.3 California Department of Fish and Wildlife Regulated Activities

Pursuant to Sections 1600–1616 of the California Fish and Game Code, CDFW regulates any activity that will substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFW also regulates any activity that will deposit or dispose of debris, wastewater, or other material containing crumbled, flaked, or ground pavement that may pass into any river, stream, or lake. The applicant must notify CDFW prior to such activities and obtain a Lake or Streambed Alteration Agreement.

2.3.1 California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of: (1) definable bed and banks, and (2) existing fish or wildlife resources. Furthermore, CDFW jurisdiction often extends to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that support hydrologic functions within the riparian system. CDFW jurisdiction typically does not include features without a discernible bed and bank, such as swales, vernal pools, or wet meadows.

2.3.2 California Fish and Game Code Section 1602

The California Fish and Game Code mandates that:

> …it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.

Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional.

Water features such as vernal pools and other seasonal swales—where the defined bed and bank are absent, and the feature is not contiguous or closely adjacent to other jurisdictional features—are generally not asserted to fall within state jurisdiction under Section 1602. CDFW generally does not assert jurisdiction over human-made water bodies unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

Chapter 3
Methodology

3.1 Project Research

Prior to the field visit, a 200-foot-scale (1 inch = 200 feet) aerial photograph of the site was obtained and compared with the Murrieta (1979) and Bachelor Mountain (1978) USGS 7.5-minute topographic quadrangles to identify drainage features within the study area as indicated by vegetation types, topographic changes, or visible drainage patterns. The National Hydrography Dataset data for the study area (USGS 2012) and the National Wetlands Inventory (USFWS 2013) were referenced to identify any mapped features such as streams and wetlands. Finally, the study area was carefully reviewed in Google Earth (Google Earth 2014) in various scales, and potentially jurisdictional features were marked onto field maps.

In addition, the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database (USDA/NRCS 2006) was reviewed to identify the soil series that occur in the study area.

3.2 Field Investigation

The entire study area was delineated for the project in August, September, and October of 2013, and in January 2014 by Senior Regulatory Specialist/Biologist Zackry West and Biologists Marisa Flores and Amanda Parra. The study area consisted of the entire project footprint, plus an additional 100-foot study area buffer where the potential for secondary direct effects or up/downstream indirect effects to jurisdictional resources are anticipated to be likely to occur.

These areas where a buffer was applied consist of six locations, including: immediately northeast of the existing intersection of Clinton Keith Road and Whitewood Road, approximately 600 feet east of the existing intersection of Clinton Keith Road and Menifee Road, the proposed Clinton Keith Road Warm Springs Creek crossing, immediately northwest of the existing intersection of Clinton Keith Road and Trois Valley Street (where direct effects are expected to occur, timed with the build-out of the ultimate design), immediately south and east of the existing intersection of Clinton Keith Road and Leon Road, and where the proposed improvements coincide with French Valley Creek and its associated flood plain, along Briggs Road and Porth Road.

The areas studied were surveyed on foot and jurisdictional limits were recorded using a Trimble Yuma Global Positioning Satellite (GPS) unit with Trimble ProXT receiver, providing sub-meter accuracy, where GPS satellite coverage was available.

Common plant species observed were identified by visual characteristics and morphology in the field. Taxonomic nomenclature for plants follows the *Jepson Manual: Higher Plants of California,* Second edition. (Baldwin et al. 2012).

In addition to the field investigation described above, two previously delineated areas were field verified to determine that jurisdictional resources mapped by the previous delineations accurately reflect conditions observed during the August through October 2013 and January 2014 field effort.

These locations consist of the area south and east of the existing intersection of Clinton Keith Road and Leon Road (herein referred to as Drainage 15), which was previously delineated by CH2M Hill in April of 2011 (CH2M Hill 2013), and the portion of French Valley Creek located east of the existing Briggs Road crossing, which was previously delineated in 2003 by M.J. Klinefelter GIS and Environmental Consulting Services (Klinefelter 2003).

3.2.1 USACE Jurisdiction

Potential WoUS and wetlands were delineated using methods established in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and *Draft Guidance on Identifying Waters Protected by the Clean Water Act* (USACE/EPA 2011). Non-wetland waters were delineated based on the presence of OHWM indicators, and OHWM data sheets were recorded and are attached as Appendix A. At each evaluation area, several parameters were considered to determine whether the sample point is within a wetland. Three criteria normally must be fulfilled in order to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. Details of the application of these techniques are described below.

- **Hydrophytic Vegetation:** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (Environmental Laboratory 1987). An OBL indicator status refers to plants that have a 99% probability of occurring in wetlands under natural conditions. A FACW indicator status refers to plants that usually occur in wetlands (67–99% probability) but are occasionally found elsewhere. A FAC indicator status refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability 34–66% for each). An NI (no indicator) status designates that insufficient information was available to determine an indicator status. An NO (no occurrence) status indicates that the species does not occur in the region; when a plant with an NO status is found within a region, it usually indicates that the plant is ornamental. The wetland indicator status used for the August through October 2013 and January 2014 field efforts, as described above, follows the *Arid West Final Regional Wetland Plant List* (Lichvar 2013). The wetland indicator status used for the previously delineated areas, as described above, follows the *National List of Plant Species that Occur in Wetlands: 1988 National Summary* (USFWS 1988), as these delineations took place prior to the issuance of the *Arid West Final Regional Wetland Plant List*.
- **Hydric Soils:** The definition of a hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA/NRCS 1994). This determination is made based on various field indicators detailed in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* and the *Field Indicators of Hydric Soils in the United States (Version 7.0)* (USDA/NRCS 2010).
- **Wetland Hydrology:** Wetland hydrology is determined using indicators of inundation or saturation (flooding, ponding, or tidally influenced) detailed in the *Corps of Engineers Wetland*

Delineation Manual and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* .

Where appropriate based on the vegetation community and hydrology present, or based on the review of aerial photography, a soil pit was dug to examine soil color and texture to determine whether hydric soil indicators were present. Wetland Determination Data Forms are attached as Appendix C.

According to Section 5, Problem Hydric Soils, of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, soils described as moderately to very strongly alkaline are considered hydric soils where a predominance of hydrophytic vegetation and wetland hydrology indicators are present, even in the absence of typical hydric soil indicators, such as redox concentrations (USACE 2008a). Such indicators typically are not encountered, as identifiable iron and manganese concentrations do not readily form in the high pH of these soils. Areas in the proximity of mapped moderately alkaline soils were delineated as USACE jurisdictional wetlands to the outer extent of the combination of the following three parameters: predominance of hydrophytic vegetation, presence of wetland hydrology indicators, and positioning in the landscape consistent with wetlands in the area.

3.2.2 State Jurisdiction

Evaluation of state jurisdiction followed guidance from Section 401 of the CWA and typically follows the same jurisdictional areas as USACE, and includes RWQCB jurisdiction under the Porter-Cologne Act.

3.2.3 CDFW Jurisdiction

CDFW jurisdiction typically includes water features with a defined bed and bank. Evaluation of potentially jurisdictional areas followed the guidance of relevant CDFW materials and standard practices by CDFW personnel. Briefly, CDFW jurisdiction was delineated by measuring outer width and length boundaries of potentially jurisdictional areas, consisting of the greater of either the top of bank measurement or the extent of associated riparian or wetland vegetation.

Chapter 4
Environmental Setting

The following section describes the topography, land use, hydrology, and soils associated with the project area.

4.1 Topography

The study area consists of moderately sloped hills and valleys between Whitewood Road to just east of Briggs Road and gently rolling hills east of Briggs Road. The elevation of the study area ranges from approximately 1,285 to 1,510 feet above mean sea level (amsl). Two named blue-line streams, Warm Springs Creek and French Valley Creek, are depicted on the Bachelor Mountain (USGS 1953a) and Murrieta (USGS 1953b) USGS topographic quadrangles maps (Figure 2; Appendix A), occurring within the study area.

4.2 Land Use

Primary land uses within the study area consist of rural residential, single-family residential, and open space/undeveloped lands. A large area of conserved open space, which consists of two separate parcels divided by existing RCTD right of way (ROW), occurs near the center of the study area, and encompasses the location of the proposed Clinton Keith Road Warm Springs Creek crossing. An additional conserved open space area is located within the French Valley Creek drainage area (further referred to herein as Drainage 16- French Valley Creek) east of the existing Briggs Road. These areas are dedicated to be preserved in an undeveloped condition in perpetuity by the Western Riverside County Regional Conservation Authority..

4.3 Hydrology

4.3.1 Precipitation

The regional climate is characterized by hot, dry summer months with moderately cold winters. Seasonal rainfall occurs predominantly in the winter months (December-March). The average precipitation data for Murrieta, California presented in Table 4-1 were utilized for this analysis (The Weather Channel 2014).

Table 4-1. Rainfall Data Summary for Murrieta, CA (in inches)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yearly Total
Average*	2.24	3.39	1.65	0.90	0.32	0.04	0.04	0.22	0.10	0.42	0.59	1.30	11.21

4.4 Hydrologic Units

The entire study area is located within the Santa Margarita Hydrologic Unit Code (HUC) 8 watershed, within the Murrieta Creek HUC 10 watershed (Figures 5a and 5b; Appendix A). The Santa Margarita watershed contains the Santa Margarita River and its tributaries, including: Murrieta Creek, Drainage 2- Warm Springs Creek, and Drainage 16- French Valley Creek and eventually drains into the Pacific Ocean.

4.5 Soil Series

Thirteen soil series occur on or in the immediate vicinity of the project site (Figure 6; Appendix A). A soil series is a group of soils with similar profiles. Based on direct observation and texturing of soils in the study area, it appears that soils found to be present are largely consistent with mapped soils. One of the mapped soils, Chino silt loam, is identified on national hydric soil list (USDA/NRCS 2012a).

4.5.1 Soils Description

A description of all of the series included within the Soil Survey Geographic (SSURGO) Database mapping units is provided below based on the official soil descriptions provided by USDA (USDA/NRCS 2012b).

The following soil series occur within the study area according to the National Resource Conservation Service:

- Bosanko
- Buchenau
- Cajalco
- Chino
- Cieneba
- Greenfield
- Hartford
- Honcut
- Las Posas
- Monserate
- Porterville
- Vista

- Wyman

4.5.1.1 Bosanko

The Bosanko series soils occur on foothills upland areas from 300 to 2,500 feet amsl. This soil series forms from residuum weathered from igneous rocks. The soils are mildly alkaline in the upper 12 inches and moderately alkaline below. These soils are well-drained with slow to rapid runoff (depending on the slope) and slow permeability once cracks swell shut.

4.5.1.2 Buchenau

The Buchenau soil series occurs on alluvial fans and is formed from alluvium derived from mixed sources. This series is well to moderately well drained. Runoff is medium to very slow and permeability is moderately slow to the hardpan, then very slow. Buchenau soils in the study area are mapped as silt loam from 2 to 8 percent slopes.

4.5.1.3 Cajalco

The Cajalco soil series occurs on gently sloping to steep upland areas and form from deeply weathered igneous rocks. The Cajalco soils occur at elevations lower than 3,500 feet amsl. This soils series is classified as well drained, moderately permeable, with medium runoff.

4.5.1.4 Chino

Chino soils occur in basins and floodplains from near sea level to 3,100 feet amsl and can be moist at shallow depths during the winter months. This soil series is characterized by its poor to somewhat poorly drained nature, slow to very slow runoff and moderately slow permeability. Chino soils as mapped within the study area consist of Chino silt loam, drained, saline-alkali, which is considered moderately alkaline.

4.5.1.5 Cieneba

This soil series is formed from weathered granitic rock and is found at elevations from 500 to 4,000 feet amsl. The Cieneba series soils are somewhat excessively drained, have low to high runoff, and moderately rapid permeability.

4.5.1.6 Greenfield

Soils in the Greenfield series are typically found on alluvial fans and terraces where slopes are from 0 to 30 percent. They occur at elevations from 100 to 3,500 feet amsl. Greenfield soils are deep, well drained, have slow to medium runoff, and moderately rapid permeability.

4.5.1.7 Hartford

Hartford soils are very deep and somewhat excessively drained soils. These soils occur on plains and terraces and have high to very high saturated hydraulic conductivity, with negligible to medium runoff.

4.5.1.8 Honcut

Honcut soils are very deep and well drained soils. These soils occur on floodplains and moderately sloping alluvial fans at elevations lower than 2,000 feet. These soils have slow to medium runoff, and moderately rapid permeability. The Hartford soils in the study area are mapped as coarse sandy loam from 2 to 8 percent slopes.

4.5.1.9 Las Posas

The Las Posas soil series is a moderately deep, well drained soil that forms from weather igneous rocks. This soils series occurs in uplands from 200 to 3,000 feet amsl. Las Posas soils have medium to rapid runoff and slow permeability. These soils within the study area are mapped as loam, 2 to 8 percent slopes.

4.5.1.10 Monserate

Monserate soils are formed on moderately steep old dissected terraces and fans. These soils are moderately well to well drained, have slow to rapid runoff and moderately slow to very slow permeability . Within the study area, Monserate soils are mapped on ruderal lands and developed areas. The Monserate soils in the study area are mapped as sandy loams from 0 to 5, 5 to 8, and 8 to 15 percent slopes.

4.5.1.11 Porterville

Porterville series soils consist of deep, well drained soils that occur on fans and foothills from 2,000 to 4,500 feet amsl. These soils form in fine-textured alluvial material from basic and metabasic igneous rock and have slow to rapid runoff with slow permeability. Within the study area, the Porterville series is mapped as cobbly clay, 2 to 15 percent slopes.

4.5.1.12 Vista

Vista series soils consist of moderately deep, well drained soils that occur on hills and mountainous uplands from 400 to 3,900 feet amsl. These soils form from weathered decomposed granite and have slow to rapid runoff with moderately rapid permeability. Within the study area, the series is mapped as Vista coarse sandy loam, 8 to 15 percent slopes, eroded.

4.5.1.13 Wyman

Soils within the Wyman series occur on strongly sloping terraces and alluvial fans occurring at elevations from 300 to 2,500 feet amsl. These soils are deep and well drained. They have moderately slow permeability and slow to medium runoff. Within the study area, these soils occur as Wyman loam, 2 to 8 percent slopes, eroded.

Chapter 5
Jurisdictional Delineation Results

The following chapter describes the delineated features and expected jurisdictional status within the study area. This report documents existing conditions within the study area. An impacts analysis is not included as a part of this report.

The information and results included herein document the investigation, best professional judgment, and conclusions of ICF. It is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by the regulatory agencies.

Figures 8a and 8b depict the results of the jurisdictional delineation (Appendix A). Ordinary High Water Mark Data Sheets, Wetland Determination Forms, and site photographs are provided in Appendices B through D. A Preliminary Jurisdictional Determination Form is included as Appendix E.

5.1 Delineated Feature Descriptions

Seventeen features were observed and documented within or adjacent to the JD study area (Figures 8a and 8b, with the exception of Drainage 6 as noted below in Section 5.1.6; Appendix A). All features within the study area were delineated with the understanding that a request for a Preliminary JD would be submitted for the project. As such, all features are considered USACE and RWQCB jurisdictional WoUS and subject to state jurisdiction. In addition, all features identified were determined to be subject to CDFW jurisdiction. Jurisdictional wetlands were observed in association with 3 features within the JD study area. In addition, CDFW jurisdictional riparian vegetation was present within 5 features within the study area.

For the purpose of this report, jurisdictional status has been inferred within portions of Drainages 4, 5, 8, 12, 14, and 16- French Valley Creek, due a natural lack of OHWM indicators/bed and bank, a lack of OHWM indicators/bed and bank caused by human disturbance, and/or a limitation in the extent to which portions of features could be studied based upon access restrictions. These inferred areas, and the associated cause, are described for each individual feature in the proceeding sections.

5.1.1 Drainage 1

Drainage 1 is an ephemeral, earthen tributary to Drainage 2- Warm Springs Creek. Drainage 1 originates immediately south of the study area, and conveys flows from an undeveloped watershed, in a generally east to west fashion.

OHWM indicators observed within Drainage 1 include presence of bed and bank, change in average sediment texture, sediment sorting, and change in vegetation cover. An average USACE/RWQCB width of 3 feet was observed within the study area. CDFW unvegetated streambed widths varied from 5 to 8 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 1 within the study area totaled approximately 0.066 acre (1,189 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately

0.178 acre (1,189 linear feet) of unvegetated streambed, subject to CDFW jurisdiction was observed within Drainage 1 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 1 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.2 Drainage 2- Warm Springs Creek

Drainage 2- Warm Springs Creek is an intermittent, earthen tributary to Murrieta Creek. The portion of Drainage 2- Warm Springs Creek that occurs within the study area conveys flows from a largely undeveloped watershed, from north to south, and crosses beneath the existing Los Alamos Road, approximately 400 feet south of the location of the proposed Clinton Keith Road Warm Springs Creek crossing. Throughout the study area, Drainage 2- Warm Springs creek supports a mature riparian vegetation community, and includes two areas that meet the three-parameter definition of a jurisdictional wetland.

Riparian plant species associated with this feature include mule fat (FAC), Emory's baccharis (*Baccharis salicina*; FACW), yerba mansa (*Anemopsis californica*; OBL), stinging nettle (*Urtica dioica*; FAC), Mexican rush (*Juncus mexicanus*; FACW); western ragweed (*Ambrosia psilostachya*; FACU), alkali heliotrope (*Heliotropium curassavicum*; FACU), poison hemlock (*Conium maculatum*; FACW), Goodding's black willow (*Salix gooddingii*; FACW), and spike rush (*Eleocharis palustris*; OBL).

OHWM indicators observed within Drainage 2- Warm Springs Creek include presence of bed and bank, change in average sediment texture, drift and/or debris, benches, change in vegetation species, change in vegetation cover, and break in bank slope (Appendix B). USACE/RWQCB widths within the study area varied from 13 to 75 feet. CDFW riparian widths varied from 45 to 132 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 2- Warm Springs Creek within the study area totaled approximately 0.508 acre of non-wetland WoUS/WoS and 0.033 acre of wetland WoUS/WoS (Table 5-1). Approximately 610 linear feet of WoUS/WoS associated with this feature occur within the study area (Table 5-1). Approximately 1.278 acres (610 linear feet) of CDFW riparian were observed within the study area within Drainage 2- Warm Springs Creek (Table 5-1).

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 2- Warm Springs Creek within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.3 Drainage 3

Drainage 3 is a west to east trending ephemeral, incised earthen tributary to Drainage 2- Warm Springs Creek that parallels much of the proposed alignment. Drainage 3 largely occurs immediately to the north of the study area, yet enters the study area at two locations. Drainage 3 conveys flows from a primarily rural residential watershed to its confluence with Drainage 2- Warm Springs Creek, which is located immediately north of the proposed Clinton Keith Road Warm Springs Creek crossing.

Riparian plant species associated with this feature include mule fat (FAC), Goodding's black willow (FACW), and blue elderberry (*Sambucus nigra*; FAC).

OHWM indicators observed within Drainage 3 include presence of bed and bank, change in average sediment texture, sediment sorting, drift and/or debris, benches, change in vegetation species, change in vegetation cover, surface relief, and break in bank slope (Appendix B). USACE/RWQCB widths within the study area varied from 3 to 14 feet. CDFW unvegetated streambed widths varied from 3 to 19 feet and CDFW riparian widths varied from 10 to 65 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 3 within the study area totaled approximately 0.105 acre of non-wetland WoUS/WoS (Table 5-1). Approximately 560 linear feet of WoUS/WoS associated with this feature occur within the study area (Table 5-1). Approximately 0.041 acre of unvegetated streambed, subject to CDFW jurisdiction, and 0.436 acre of CDFW riparian were observed within Drainage 3 (Table 5-1). Approximately 560 linear feet of CDFW jurisdictional areas associated with this feature occur within the study area (Table 5-1). No jurisdictional wetlands were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 3 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.4 Drainage 4

Drainage 4 is a small ephemeral, incised, earthen tributary to Warm Springs Creek located immediately north of the existing Los Alamos Road. Drainage 4 originates west of the study area immediately south of the proposed alignment, and conveys flows from an undeveloped watershed, in a generally west to east fashion.

OHWM indicators observed within Drainage 4 include presence of bed and bank, change in average sediment texture, sediment sorting, change in vegetation cover, and break in bank slope. The OHWM and bed and bank associated with Drainage 4 has been inferred for an approximately 85-foot segment located in the eastern-most portion of where this feature coincides with the study area, due to a natural lack of these elements. This segment is characteristic of a sheetflood zone (lacking indicators of an OHWM and bed and bank), which is often associated with discontinous ephemeral streams, a common form of stream morphology found within the Arid West Region. An average USACE/RWQCB width of 2 feet was observed within the study area. An average CDFW unvegetated streambed width of 5 feet was observed within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 4 within the study area totaled approximately 0.005 acre (112 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.013 acre (112 linear feet) of unvegetated streambed was observed within Drainage 4 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 4 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.5 Drainage 5

Drainage 5 is an ephemeral, earthen tributary to Drainage 3. Drainage 5 enters the study area south of the existing Clinton Keith Road approximately 35 feet east of the existing intersection of Clinton Keith Road and Avenida Mañana, and conveys flows from a watershed consisting of rural residential and open space/undeveloped land uses. Upon leaving the study area, Drainage 5 conveys flows for approximately 100 feet downstream, where it reaches its confluence with Drainage 3.

OHWM indicators observed within Drainage 5 include presence of bed and bank, change in average sediment texture, sediment sorting, change in vegetation cover, and break in bank slope. The OHWM and bed and bank associated with Drainage 5 has been inferred for an approximately 140-foot segment located in the center and southern portion of this feature, due to a combination of a sheetflood zone (lacking indicators of an OHWM and bed and bank) and ongoing vehicular disturbance associated with the existing Clinton Keith Road Alignment, along with restricted physical access within the southern-most portion.

An average USACE/RWQCB width of 3 feet was observed within the study area. CDFW unvegetated streambed widths varied from 5 to 17 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 5 within the study area totaled approximately 0.025 acre (387 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.074 acre (355 linear feet) of unvegetated streambed, subject to CDFW jurisdiction, was observed within Drainage 5 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 5 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.6 Drainage 7[1]

Drainage 7 is an earthen, ephemeral drainage, which appears to be a naturally occurring feature that has been manipulated over time for the purpose of conveying surface runoff from the existing Clinton Keith Road alignment to Drainage 3, immediately north (downstream) of the study area along Menifee Road, approximately 250 feet north of the existing Clinton Keith Road.

OHWM indicators observed within Drainage 7 include presence of bed and bank, change in average sediment texture, sediment sorting, change in vegetation cover, and break in bank slope. An average USACE/RWQCB width of 5 feet was observed within the study area. An average CDFW unvegetated streambed width of 9 feet was observed within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 7 within the study area totaled approximately 0.028 acre (234 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.049 acre (234 linear feet) of unvegetated streambed was observed within Drainage 7 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 7 within the study area is shown on Figures 8a and 8b (Appendix A).

[1] A potentially isolated earthen, ephemeral drainage was observed within approximately 20 feet of the study area, immediately south, near the existing intersection of Menifee Road and Los Alamos Road. This feature was noted as Drainage 6 during the August through October 2013 and January 2014 field efforts; however, as this feature does not coincide with the study area, it has not been further described nor quantified, and is not graphically depicted for the purposes of this report. As a result, this has caused a non-consecutive numbering of the features presented within this report.

5.1.7 Drainage 8

Drainage 8 is a potentially isolated earthen, ephemeral drainage that originates immediately south of the study area east of the existing intersection of Clinton Keith Road and Arendt Lane. This feature flows northeast for approximately 300 feet, where it loses all evidence of a discernible OHWM and bed and bank approximately300 feet south of Drainage 3, immediately north of the study area.

OHWM indicators observed within Drainage 8 include presence of bed and bank, change in average sediment texture, sediment sorting, change in vegetation cover, and break in bank slope. The OHWM and bed and bank associated with Drainage 8 has been inferred for an approximately 100-foot segment located in the center portion of this feature, due to a combination of a sheetflood zone (naturally lacking indicators of an OHWM and bed and bank) and ongoing vehicular disturbance associated with existing Clinton Keith Road. USACE/RWQCB widths within the study area varied from 1 to 5 feet. CDFW unvegetated streambed widths varied from 4 to 5 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 8 within the study area totaled approximately 0.030 acre (376 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.039 acre (376 linear feet) of unvegetated streambed was observed within Drainage 8 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 8 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.8 Drainage 9

Drainage 9 is an ephemeral tributary to Drainage 3, located immediately east of the existing intersection of Clinton Keith Road and Whitewood Road. An approximately 100-foot segment of the low flow channel, located within the southern portion of the study area consists of a concrete-lined channel bed, giving way to an earthen bed as it conveys flows northward toward its confluence with Drainage 3, which is located approximately 300 feet downstream of the study area boundary.

Within the portion of the study area located south of the existing Clinton Keith Road, riparian vegetation is supported on earthen banks above the concrete-lined channel bed. Plant species observed within this area include Emory's baccharis (FACW), stinging nettle (FAC), annual beard grass (*Polypogon monspeliensis*; FACW); blue elderberry (FAC), and red willow (*Salix laevigata*; FACW).

OHWM indicators observed within Drainage 9 include presence of bed and bank, change in average sediment texture, sediment sorting, drift and/or debris, water staining, change in vegetation cover, and break in bank slope. USACE/RWQCB widths within the study area varied from 2 to 3 feet. CDFW unvegetated streambed widths varied from 3 to 9 feet and CDFW riparian widths varied from 6 to 27 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 9 within the study area totaled approximately 0.024 acre (409 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.013 acre of unvegetated streambed, subject to CDFW jurisdiction, and 0.043 acre of CDFW riparian were observed within Drainage 9 (Table 5-1). Approximately 267 linear feet of CDFW jurisdictional areas associated with this feature occur within the study area (Table 5-1). No jurisdictional wetlands were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 9 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.9 Drainage 10

Drainage 10 is a small ephemeral drainage complex consisting of two asphalt concrete-lined overside drains that convey surface runoff from the existing intersection of Clinton Keith Road and Whitewood Road into Drainage 9.

OHWM indicators observed within Drainage 10 include presence of bed and bank (as designed) and water staining. An average USACE/RWQCB width of 2 feet was observed within the study area. An average CDFW unvegetated streambed width of 2 feet was observed within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 10 within the study area totaled approximately 0.006 acre (169 linear feet) of non-wetland WoUS (Table 5-1). Approximately 0.009 acre (169 linear feet) of unvegetated streambed was observed within Drainage 10 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 10 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.10 Drainage 11

Drainage 11 is an earthen, ephemeral tributary to Drainage 16- French Valley Creek, which enters the study area from a culvert outlet beneath SR-79, and conveys flows from a largely urbanized watershed. Surface flows are maintained for approximately 65 feet, where this feature enters the existing storm drain system, and is then discharged to Drainage 16- French Valley Creek approximately 1,000 feet to the northwest.

OHWM indicators observed within Drainage 11 include presence of bed and bank, change in average sediment texture, sediment sorting, drift and/or debris, water staining, change in vegetation cover, and break in bank slope. USACE/RWQCB widths within the study area varied from 9 to 30 feet. CDFW unvegetated streambed widths varied from 9 to 79 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 11 within the study area totaled approximately 0.029 acre (64 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.054 acre (64 linear feet) of unvegetated streambed was observed within Drainage 11 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 11 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.11 Drainage 12

Drainage 12 is an earthen, ephemeral tributary to Drainage 16- French Valley Creek, which enters the study area from an existing culvert outlet beneath SR-79.

OHWM indicators observed within Drainage 12 include presence of bed and bank, change in average sediment texture, sediment sorting, drift and/or debris, water staining, and a change in vegetation species. The OHWM and bed and bank associated with Drainage 12 have been inferred for an

approximately 45-foot segment located in the western-most portion of this feature within the study area, due to a natural lack of these elements, characteristic of a sheetflood zone. A discernable OHWM and bed and bank are re-established immediately west of the study area, and appear to be maintained for the remaining extent of this feature, to its confluence with Drainage 16- French Valley Creek outside of the study area, approximately one-quarter mile west of Briggs Road.

An average USACE/RWQCB width of 4 feet was observed within the study area. An average CDFW unvegetated streambed width of 4 feet was observed within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 12 within the study area totaled approximately 0.009 acre (103 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.009 acre (103 linear feet) of unvegetated streambed, subject to CDFW jurisdiction was observed within Drainage 12 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 12 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.12 Drainage 13

Drainage 13 is a small earthen, ephemeral tributary to Drainage 16- French Valley Creek, which originates within the study area from concentrated surface runoff from Briggs Road, and enters the active flood plain associated with Drainage 16- French Valley Creek.

OHWM indicators observed within Drainage 13 include presence of bed and bank, change in average sediment texture, sediment sorting, water staining, and change in vegetation cover. An average USACE/RWQCB width of 2 feet was observed within the study area. An average CDFW unvegetated streambed width of 4 feet was observed within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 13 within the study area totaled approximately 0.004 acre (94 linear feet) of non-wetland WoUS/WoS (Table 5-1). Approximately 0.008 acre (7 linear feet) of unvegetated streambed was observed within Drainage 13 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature. Note that much of the CDFW jurisdiction associated with Drainage 13 has been incorporated into the top of bank measurements reported for Drainage 16- French Valley Creek. Therefore, the respective acreage and linear feet of USACE/RWQCB jurisdictional areas reported for this feature are much larger than that reported for CDFW.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 13 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.13 Drainage 14

Drainage 14 is an unvegetated, earthen, ephemeral drainage located immediately south of the existing intersection of Clinton Keith Road and Trois Valley Street, and originates from a culvert outlet, which conveys flows from Basin 1 in a northeast to southwest direction, eventually reaching Warm Springs Creek outside of the study area. For the purposes of this project, Drainage 14 has been inferred as non-wetland WoUS/WoS and CDFW unvegetated streambed, as it is located entirely within a parcel for which access was denied. Conditions within Drainage 14 were observed from within the existing Clinton Keith Road ROW and aerial photographs at varying scales and from

multiple dates, were reviewed. Jurisdictional widths were inferred based on observations of the culvert outlet location from within the existing Clinton Keith Road ROW, as well as at downstream portions of Drainage 14 that occur outside of the study area, within parcels where access has been granted.

OHWM indicators observed within Drainage 14 include presence of bed and bank and break in bank slope. An average USACE/RWQCB width of 4 feet was inferred within the study area. An average CDFW unvegetated streambed width of 6 feet was inferred within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 14 within the study area totaled approximately 0.014 acre (323 linear feet) of inferred non-wetland WoUS/WoS (Table 5-1). Approximately 0.021 acre (153 linear feet) of unvegetated streambed, subject to CDFW jurisdiction, was inferred within Drainage 14 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 14 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.14 Drainage 15

Drainage 15 is a tributary to Drainage 16- French Valley Creek, which enters the study area via a large reinforced concrete box culvert beneath Leon Road, immediately east of the existing intersection of Clinton Keith Road and Leon Road. Drainage 15 conveys flows from a watershed consisting of a mix of single-family residential tracts and undeveloped areas. Flows are conveyed from the study area southward beneath the existing Los Alamos Road to its confluence with Drainage 16- French Valley Creek, immediately west of the study area.

Drainage 15 was originally delineated in April 2011 by CH2M Hill (CH2M Hill 2013). Plant species observed in association with this feature at that time include annual beard grass (OBL [USFWS 1988]), brass-buttons (*Cotula coronopifolia*; FACW [USFWS 1988]), and curly dock (*Rumex crispus*; FACW [USFWS 1988]) (CH2M Hill 2013). Based on the August through October 2013 and January 2014 field verification, the original mapping of this area remains consistent with the late 2013 and January 2014 conditions, and is depicted within the full extent of the study area on Figures 8a and 8b (Appendix A)

Additional plant species that were observed to have developed within Drainage 15 during the August through October 2013 and January 2014 field efforts include yerba mansa (OBL), stinging nettle (FAC), saltcedar (*Tamarix ramosissima*; FAC), southern cattail (*Typha domingensis*; OBL), Mexican rush (FACW), cocklebur (*Xanthium strumarium*; FAC), and arroyo willow (*Salix lasiolepis*; FACW).

OHWM indicators observed within Drainage 15 include water staining, change in vegetation species, change in vegetation cover, and break in bank slope. USACE/RWQCB widths within the study area varied from 7 to 184 feet. CDFW unvegetated streambed widths varied from 7 to 28 feet and CDFW riparian widths varied from 20 to 184 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 15 within the study area totaled approximately 0.179 acre of non-wetland WoUS/WoS and 1.178 acres of wetland WoUS/WoS (Table 5-1). Approximately 818 linear feet of WoUS/WoS associated with this feature occur within the study area (Table 5-1). Approximately 0.179 acre of unvegetated streambed, subject to CDFW

jurisdiction, and 1.178 acres of CDFW riparian were observed within Drainage 15 (Table 5-1). Approximately 818 linear feet of CDFW jurisdictional areas associated with this feature occur within the study area (Table 5-1).

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 15 within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.15 Drainage 16- French Valley Creek

Drainage 16- French Valley Creek is an intermittent creek, supporting alkali marsh on the associated active flood plain. French Valley Creek enters the study area approximately 300 feet east of the existing Briggs Road crossing, conveys flows from a largely urbanized watershed, and is tributary to Drainage 2- Warm Springs Creek.

Within the study area, Drainage 16- French Valley Creek exists in three segments: east of Briggs Road, between Briggs Road and Porth Road, and south of Porth Road (Figures 8a and 8b; Appendix A). The segment east of Briggs Road was originally delineated in 2003 by M.J. Klinefelter GIS and Environmental Consulting Services (Klinefelter 2003). Sample plots were conducted by ICF within the portion of this segment located within the Project ROW in January of 2014, to confirm that currently existing conditions reflect the previously delineated jurisdictional boundaries. Based on the January 2014 field verification, the original mapping of this area remains consistent with the January 2014 conditions, and is depicted within the study area on Figures 8a and 8b (Appendix A). The portion between Briggs Road and Porth Road was physically accessed and fully analyzed within the study area, as access was granted to this parcel (APN 963-060-069). The portion south of Porth Road was delineated only within existing ROW, as a request for access to the adjoining privately-owned parcel was denied. The remainder of this segment was observed from within the ROW and aerial photographs at varying scales and from multiple dates, were reviewed. A sample plot was conducted within the ROW, supporting the conclusion that the sampled area is non-wetland WoUS/WoS and CDFW unvegetated streambed. For the purposes of this project, resources within a small portion of the study area within this segment , located to the east of the existing ROW have been inferred as non-wetland WoUS/WoS and CDFW unvegetated streambed, as conditions appear to be similar to those at the sample plot location. Also, for the purpose of this project, portions of this segment located west of the existing ROW have conservatively been inferred as potential wetland WoUS/WoS and potential CDFW riparian, as this area could not conclusively be classified without the physical access needed to conduct sample plots.

Chino silt loam, drained, saline-alkali is mapped within Drainage 16- French Valley Creek and the associated flood plain (Figure 6; Appendix A), and is considered moderately alkaline by NRCS. As described in Chapter 3 of this report, where a predominance of hydrophytic vegetation and wetland hydrology indicators are present, this moderately alkaline soil is considered hydric; therefore supporting the hydric soil element of the three-parameter definition of a jurisdictional wetland. This problem area wetland type is present throughout much of Drainage 16- French Valley Creek (Figure 8a; Appendix A) (Appendix C).

Plant species comprising the alkali marsh associated with this feature include alkali heath (*Frankenia salina*; FACW), yerba mansa (OBL), stinging nettle (FAC), saltcedar (FAC), southern cattail (OBL), annual beard grass (FACW); salt grass (*Distichlis spicata*; FAC), Mexican rush (FACW), cocklebur (FAC), and curly dock (FAC).

OHWM indicators observed within Drainage 16- French Valley Creek include presence of bed and bank, mud cracks, drift and/or debris, benches, salt crust, change in vegetation species, surface rounding, and break in bank slope (Appendix B). USACE/RWQCB widths within the study area varied from 28 to 376 feet. CDFW unvegetated streambed widths varied from 10 to 51 feet and CDFW riparian widths varied from 20 to 380 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Drainage 16- French Valley Creek within the study area totaled approximately 1.237 acres of non-wetland WoUS/WoS and 4.310 acres of wetland WoUS/WoS (Table 5-1). Approximately 1,581 linear feet of WoUS/WoS associated with this feature occur within the study area (Table 5-1). Approximately 2.027 acres of unvegetated streambed, subject to CDFW jurisdiction, and 4.384 acres of CDFW riparian were observed within Drainage 16- French Valley Creek (Table 5-1). Approximately 1,581 linear feet of CDFW jurisdictional areas associated with this feature occur within the study area (Table 5-1).

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Drainage 16- French Valley Creek within the study area is shown on Figures 8a and 8b (Appendix A).

5.1.16 Basin 1

Basin 1 is a constructed basin located at the northwest corner of the existing intersection of Clinton Keith Road and Trois Valley Street, and accepts flows from the adjacent single-family residential development located to the east. Flows are conveyed toward the south via a culvert to Drainage 14.

A small concrete-lined v-ditch also occurs within this area, is tributary to this feature, and for the purpose of this report, is included as a portion of Basin 1.

OHWM indicators observed within Basin 1 include sediment sorting, drift and/or debris, benches, water staining, salt crust, and break in bank slope (as designed). USACE/RWQCB widths within the study area varied from 25 to 95 feet. CDFW unvegetated streambed widths varied from 52 to 132 feet within the study area.

USACE and RWQCB jurisdictional areas associated with Basin 1 within the study area totaled approximately 0.172 acre of non-wetland WoUS/WoS (Table 5-1). Approximately 0.357 acre of unvegetated streambed, subject to CDFW jurisdiction, was observed within Basin 1 (Table 5-1). No jurisdictional wetlands or CDFW riparian vegetation were observed in association with this feature.

The extent of USACE, RWQCB, and CDFW jurisdiction associated with Basin 1 within the study area is shown on Figures 8a and 8b (Appendix A).

5.2 Delineation Results Summary

Within the entire study area, 16 features potentially subject to the jurisdiction of the USACE, RWQCB, and CDFW were delineated. All potentially USACE jurisdictional features are also subject to state jurisdiction. Table 5-1 summarizes the total USACE, RWQCB, and CDFW jurisdiction for each feature.

Table 5-1. Jurisdictional Delineation Summary

Feature	Non-Wetland WoUS/WoS (acres)	Wetland WoUS/WoS (acres)	WoUS/WoS Linear Feet	CDFW Unvegetated Streambed (acres)	CDFW Riparian (acres)	CDFW Linear Feet
Drainage 1	0.066	--	1,189	0.178	--	1,189
Drainage 2-Warm Springs Creek	0.508	0.033	610	--	1.278	610
Drainage 3	0.105	--	560	0.041	0.436	560
Drainage 4*	0.005	--	112	0.013	--	112
Drainage 5*	0.025	--	387	0.074	--	355
Drainage 7	0.028	--	234	0.049	--	234
Drainage 8*	0.030	--	376	0.039	--	376
Drainage 9	0.024	--	409	0.013	0.0432	267
Drainage 10	0.006	--	169	0.009	--	169
Drainage 11	0.029	--	64	0.054	--	64
Drainage 12*	0.009	--	103	0.009	--	103
Drainage 13	0.004	--	94	<0.001	--	7
Drainage 14*	0.014	--	323	0.021	--	153
Drainage 15	0.179	1.178	818	0.179	1.178	818
Drainage 16- French Valley Creek*	1.237	4.310	1,581	2.027	4.384	1,581
Basin 1	0.172	--	--	0.357	--	--
Total	**2.441**	**5.521**	**7,029**	**3.063**	**7.319**	**6,599**

*Indicates features that include inferred areas. See section 5.1, above, for a full description of inferred areas by feature.

5.3 List of Delineators and Report Preparers/Reviewer

Kathleen Dale, Regulatory Compliance Specialist —Report Reviewer

Zackry West, Senior Regulatory Specialist/Biologist —Delineator, Report Preparer

Marisa Flores, Biologist— Delineator, Report Preparer

Amanda Parra, Biologist— Delineator, Report Preparer

David Duncan, GIS Specialist—GIS

Chapter 6
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Appendix A
Figures

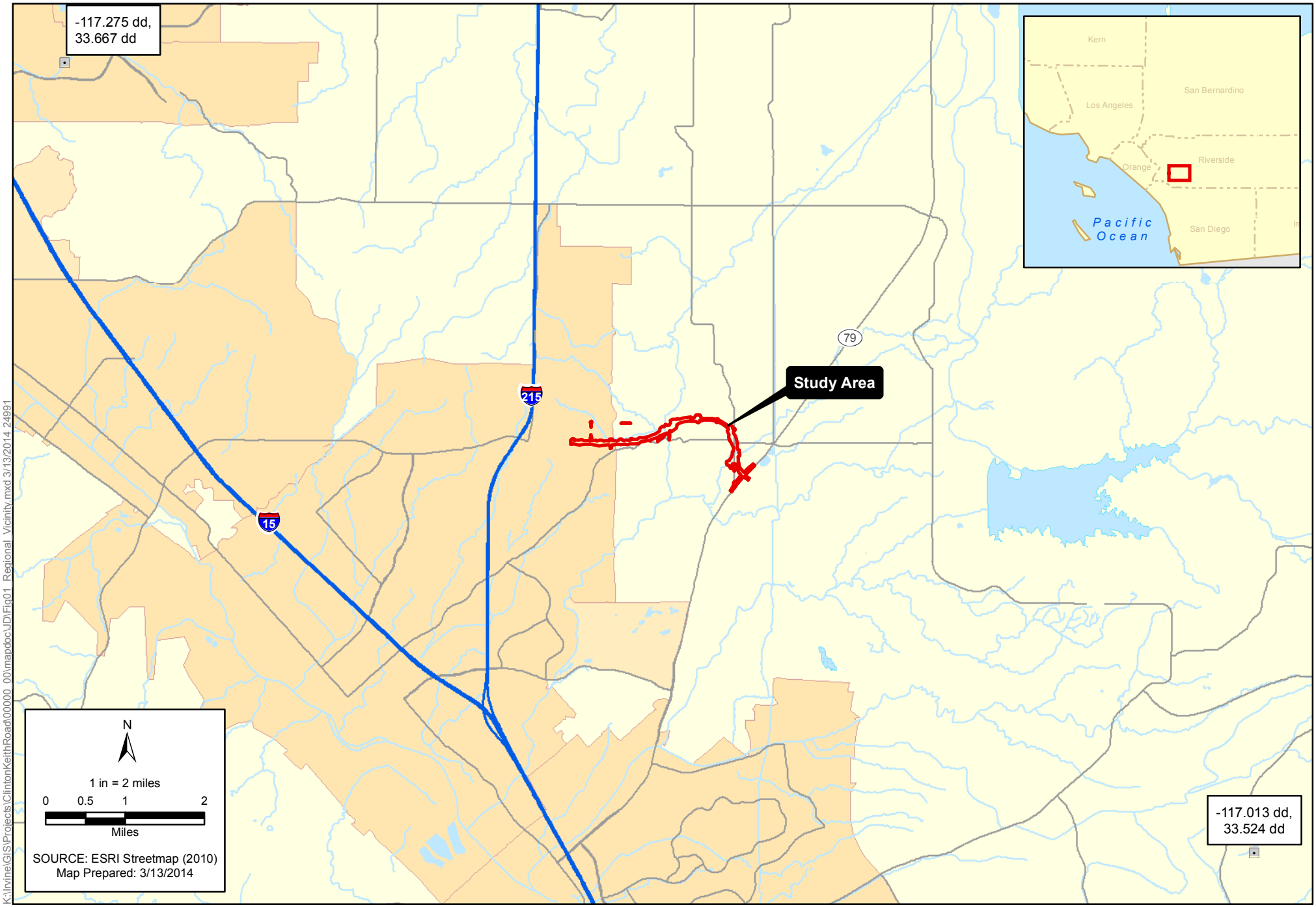

Figure 1
Regional Vicinity
Clinton Keith Road Extension Project

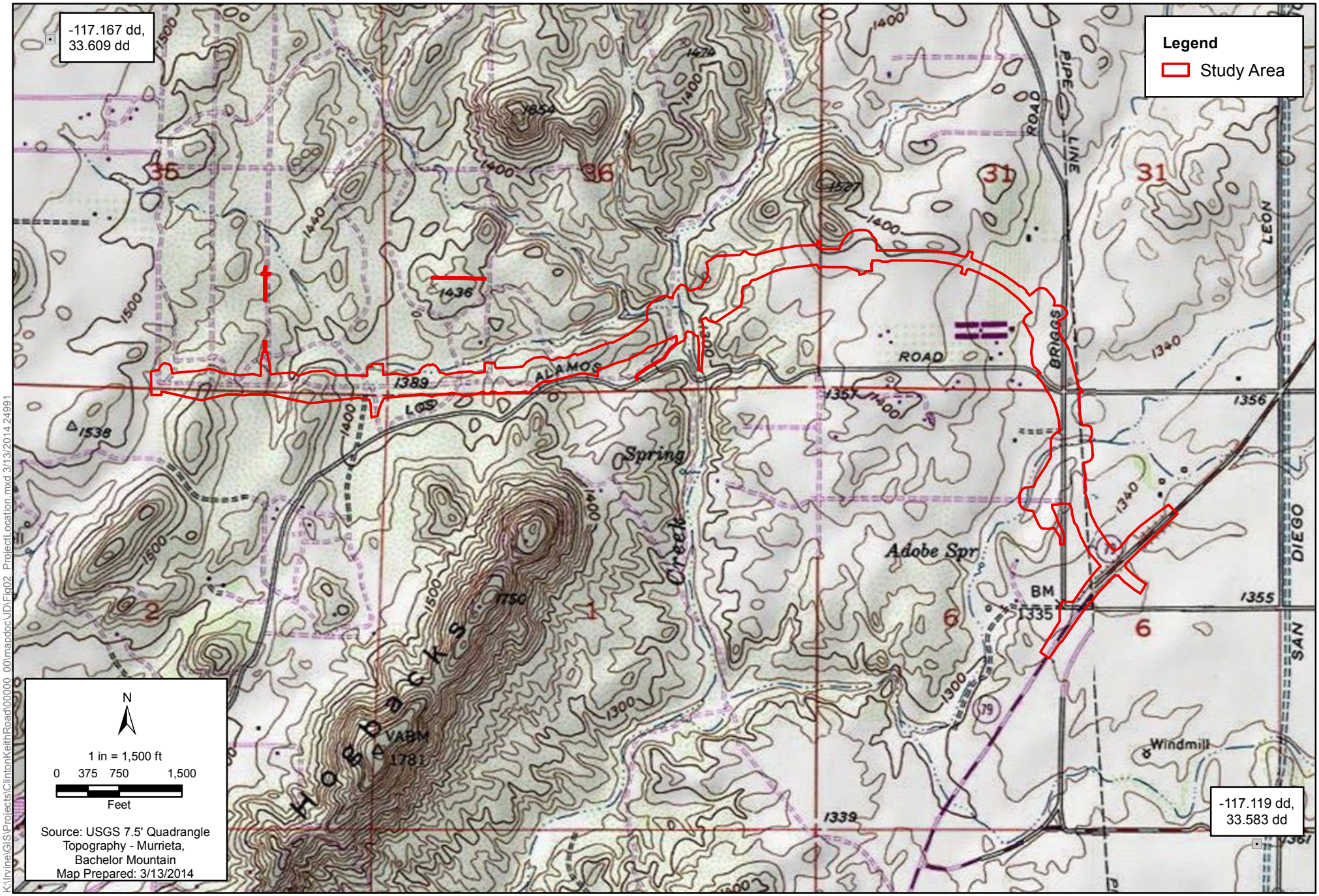

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Figure 2
Project Location
Clinton Keith Road Extension Project

Figure 3
National Hydrography Dataset Map
Clinton Keith Road Extension Project

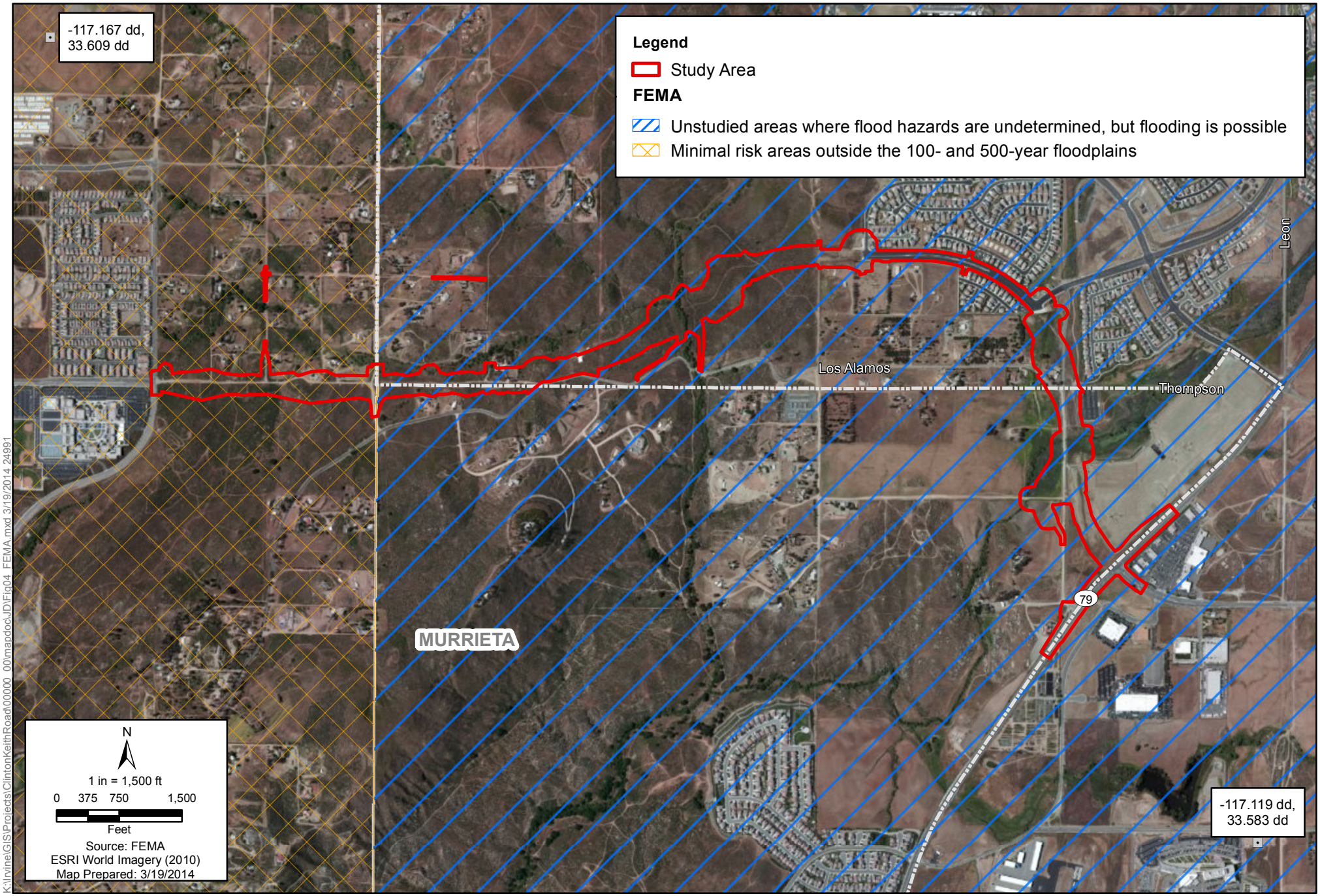


Figure 4
FEMA 100 - year Floodplain
Clinton Keith Road Extension Project

Figure 5a
Watershed (HUC 10)
Clinton Keith Road Extension Project

Figure 5b
Watershed (HUC 8)
Clinton Keith Road Extension Project

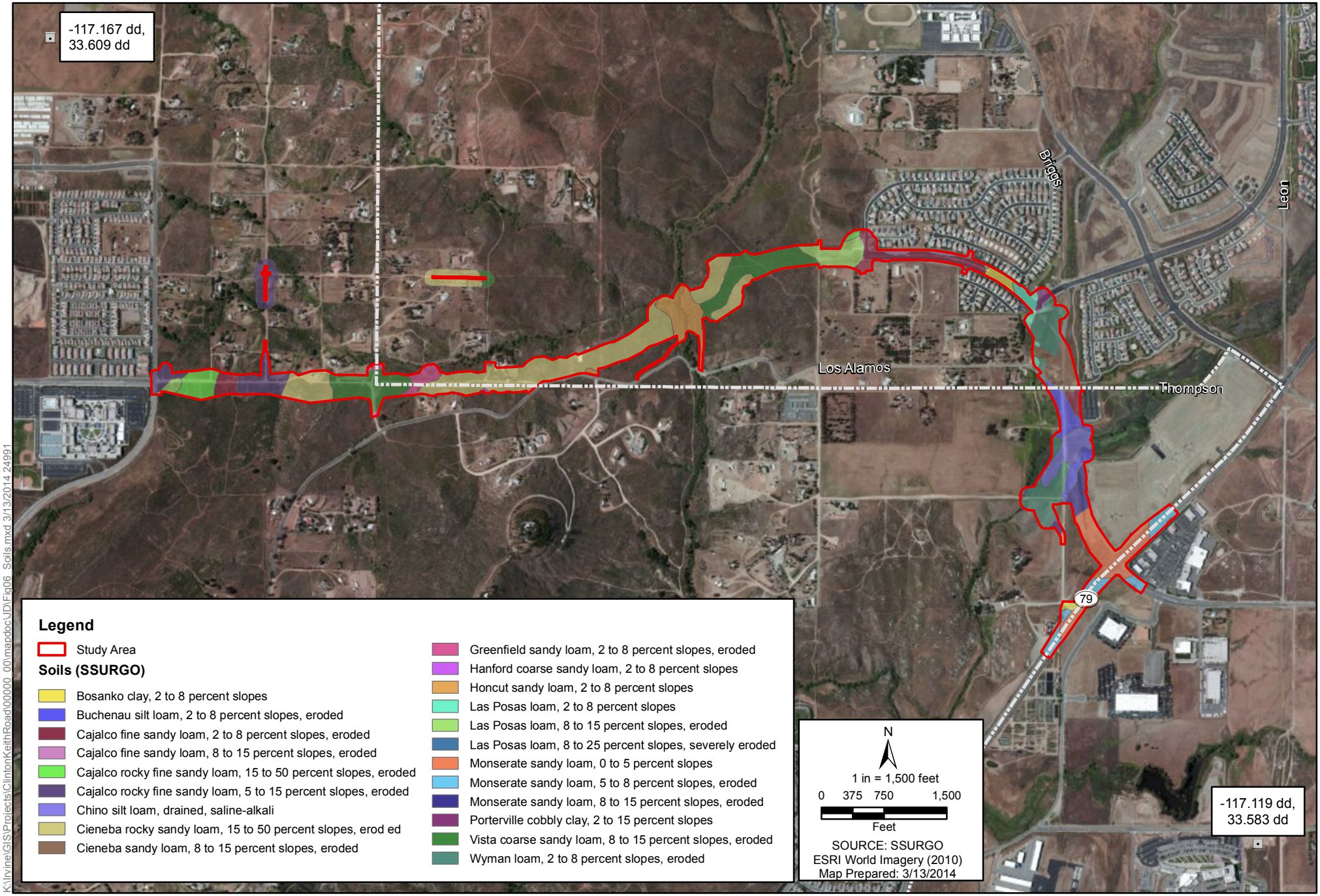


Figure 6
Soils
Clinton Keith Road Extension Project

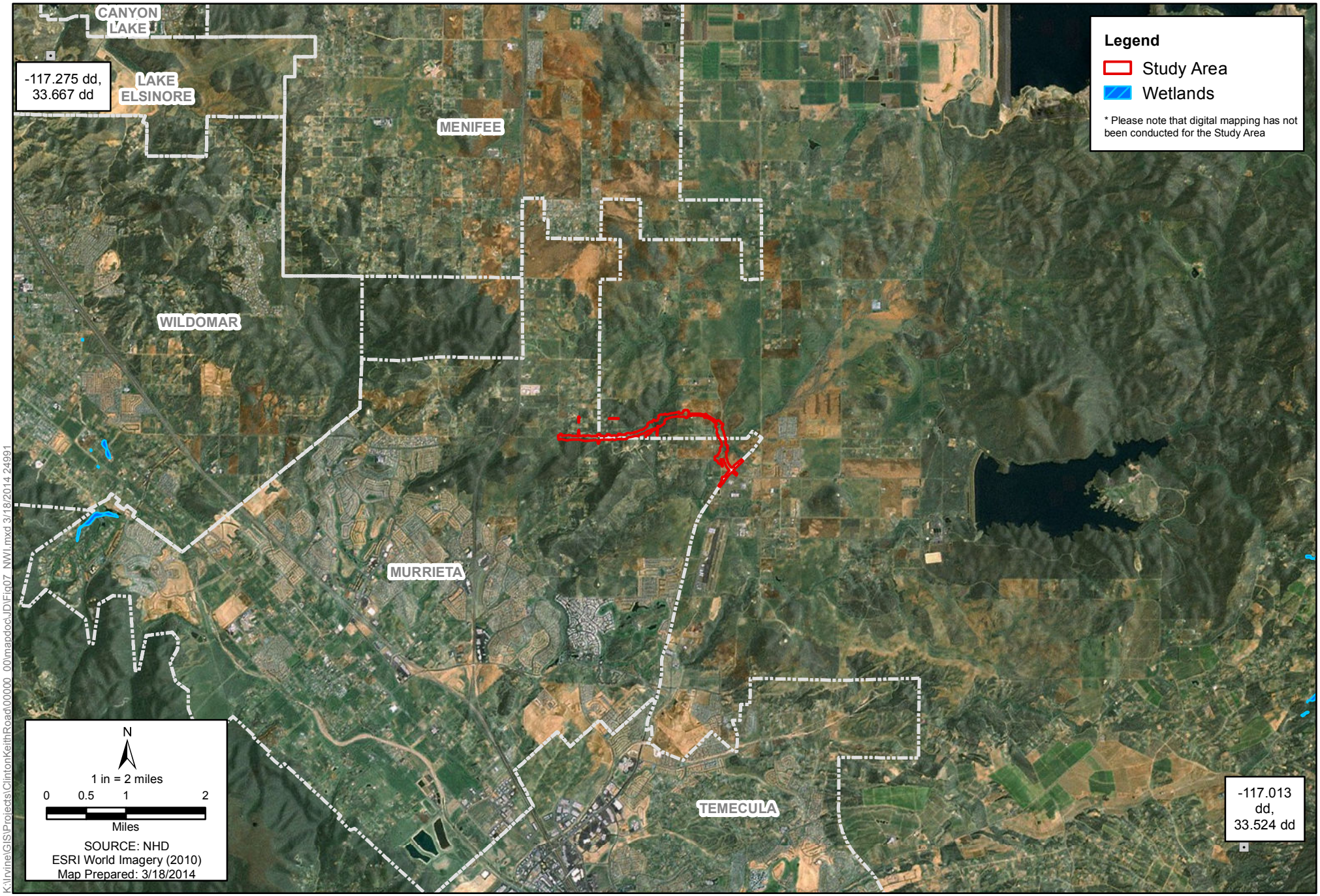


Figure 7
National Wetland Inventory Map
Clinton Keith Road Extension Project

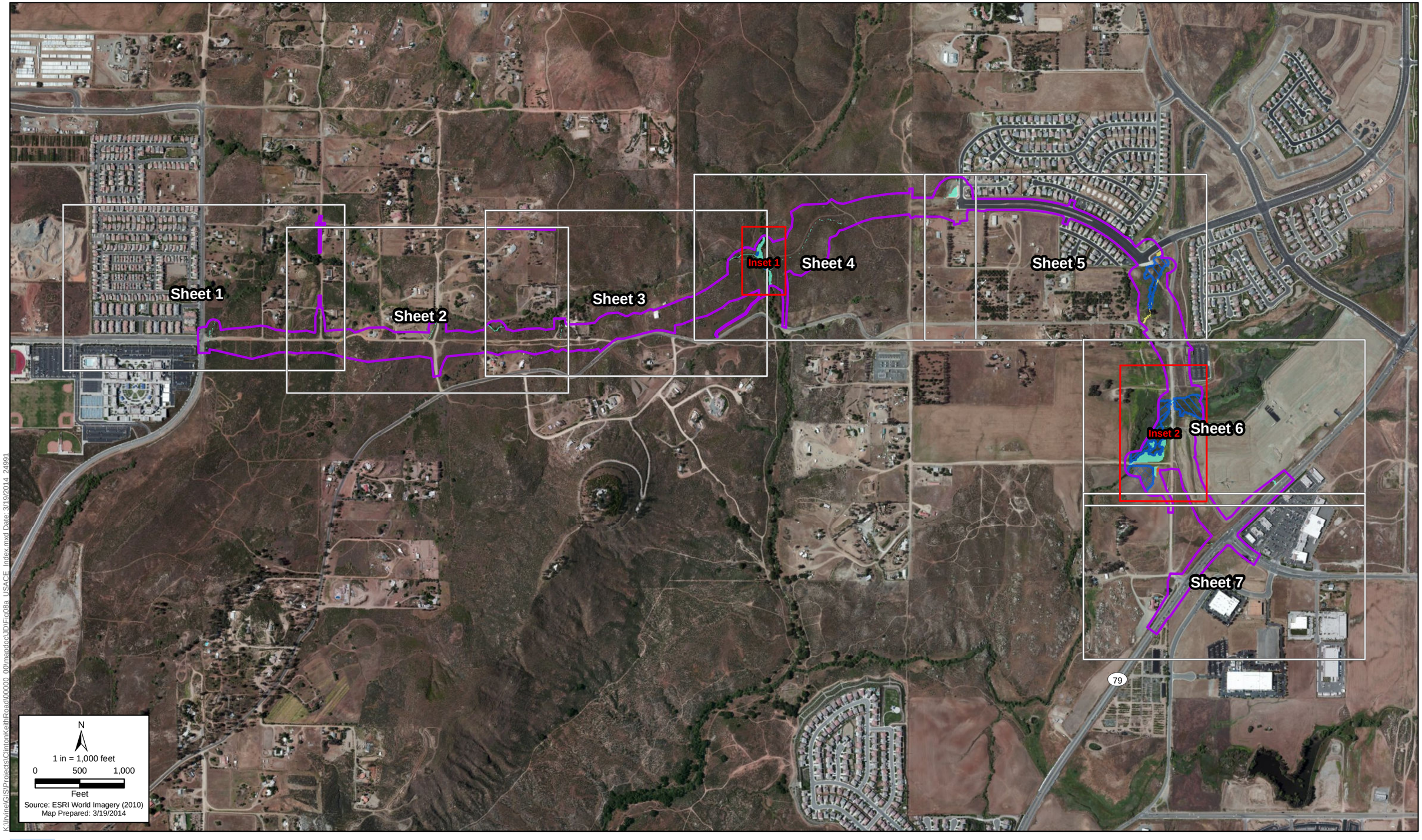
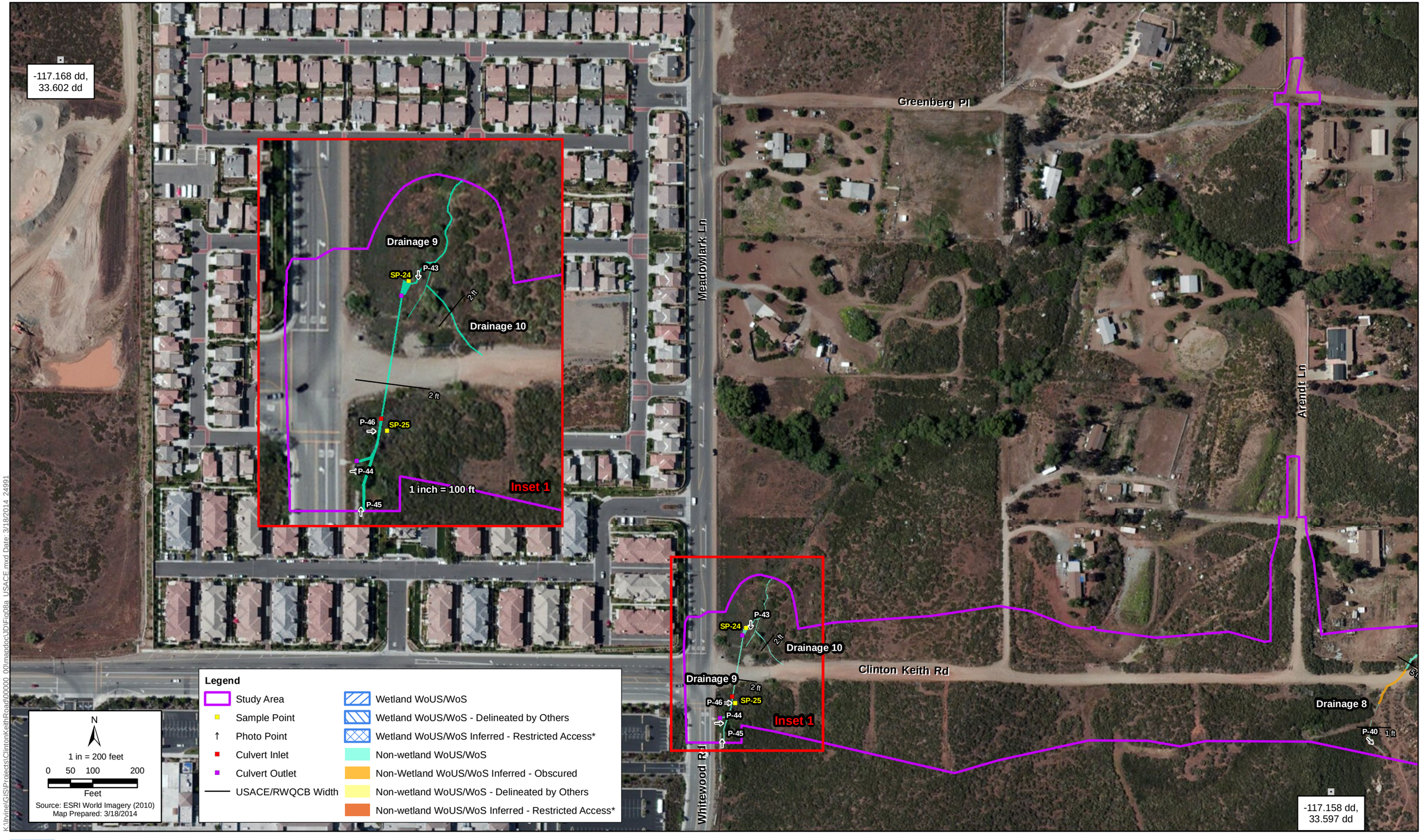


Figure 8a - Index Sheet
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 1
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.159 dd,
33.601 dd

Arendt Ln

Capra Rd

Clinton Keith Rd

Drainage 5*

P-37

3 ft

P-36

P-34

P-35

1 inch = 100 ft

Inset 2

Drainage 3

SP-39

SP-40

P-63

P-64

Drainage 7

5 ft

P-39

P-38

P-42

P-41

5 ft

Drainage 8

P-40

1 ft

Menifee Rd

Los Alamos Rd

Ave Mancuna

-117.150 dd,
33.597 dd

Legend

- Study Area
- Sample Point
- Photo Point
- Culvert Inlet
- Culvert Outlet
- USACE/RWQCB Width
- Wetland WoUS/WoS
- Wetland WoUS/WoS - Delineated by Others
- Wetland WoUS/WoS Inferred - Restricted Access*
- Non-wetland WoUS/WoS
- Non-Wetland WoUS/WoS Inferred - Obscured
- Non-wetland WoUS/WoS - Delineated by Others
- Non-wetland WoUS/WoS Inferred - Restricted Access*

N

1 in = 200 feet

0 50 100 200

Feet

Source: ESRI World Imagery (2010)
Map Prepared: 3/18/2014

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*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 2
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.152 dd,
33.602 dd

Green

Sideline Rd

P-37

3 ft

P-36

Drainage 5*

P-34

P-35

1 inch = 100 ft

Inset 2

P-30

SP-22

P-28

P-29

P-27

P-26

SP-20

SP-21

P-31

SP-18

P-16

P-23

P-24

P-32

SP-19

P-25

P-9

P-33

Drainage 3

SP-7

SP-13

P-20

SP-6

P-19

SP-15

SP-9

P-21

P-13

SP-12

P-12

SP-5

P-10

Drainage 2-
Warm Springs
Creek

Inset Sheet 1

Drainage 3

9 ft

SP-39

SP-40

P-63

P-64

Clinton Keith Rd

Ave Mariana

P-37

3 ft

P-36

Drainage 5*

P-34

P-35

Inset 2

Los Alamos Rd

Los Alamos Rd

N

1 in = 200 feet

0 50 100 200

Feet

Source: ESRI World Imagery (2010)
Map Prepared: 3/18/2014

Legend

- Study Area
- Sample Point
- Photo Point
- Culvert Inlet
- Culvert Outlet
- USACE/RWQCB Width
- Wetland WoUS/WoS
- Wetland WoUS/WoS - Delineated by Others
- Wetland WoUS/WoS Inferred - Restricted Access*
- Non-wetland WoUS/WoS
- Non-Wetland WoUS/WoS Inferred - Obscured
- Non-wetland WoUS/WoS - Delineated by Others
- Non-wetland WoUS/WoS Inferred - Restricted Access*

-117.143 dd,
33.597 dd

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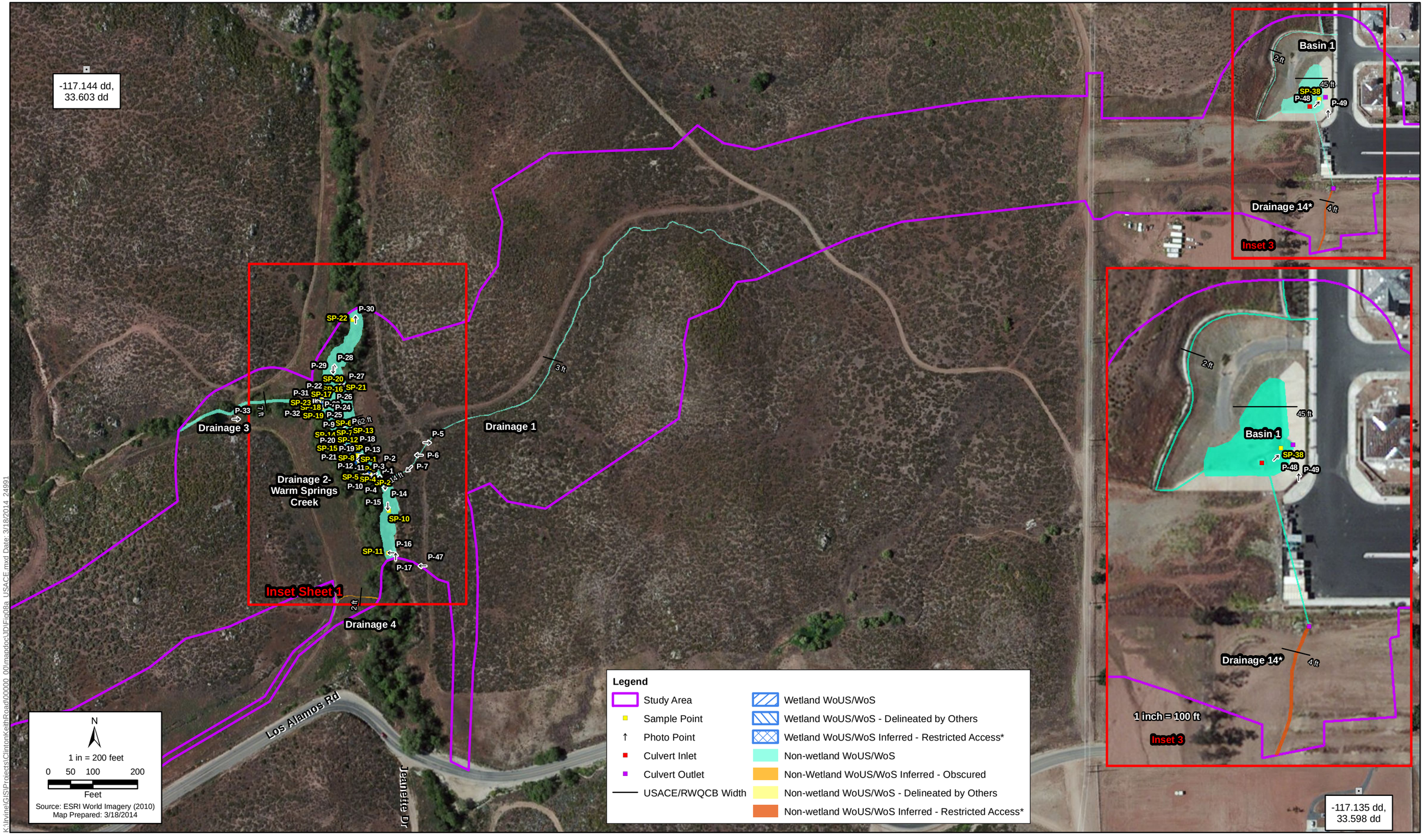
*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 3
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



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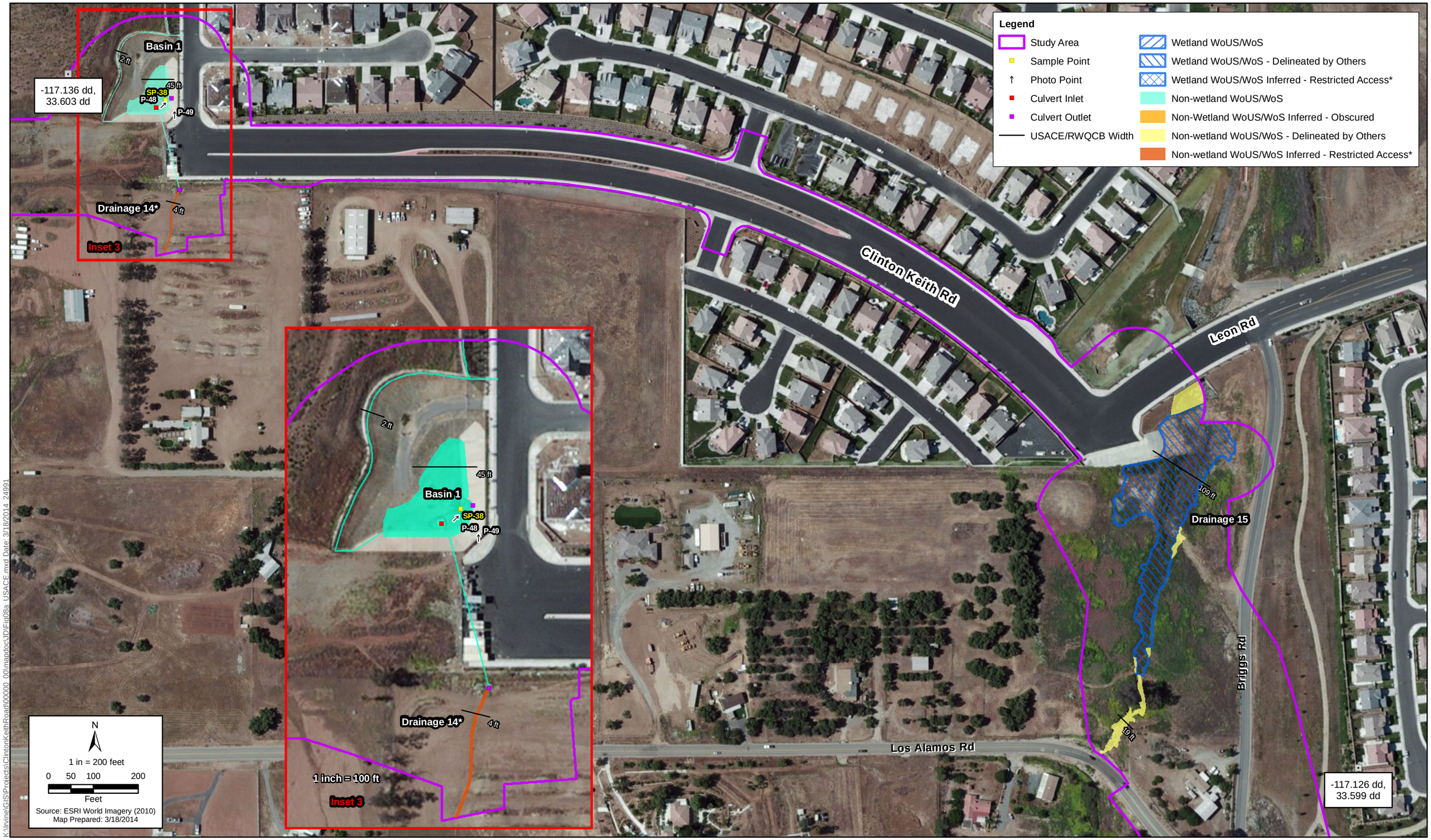
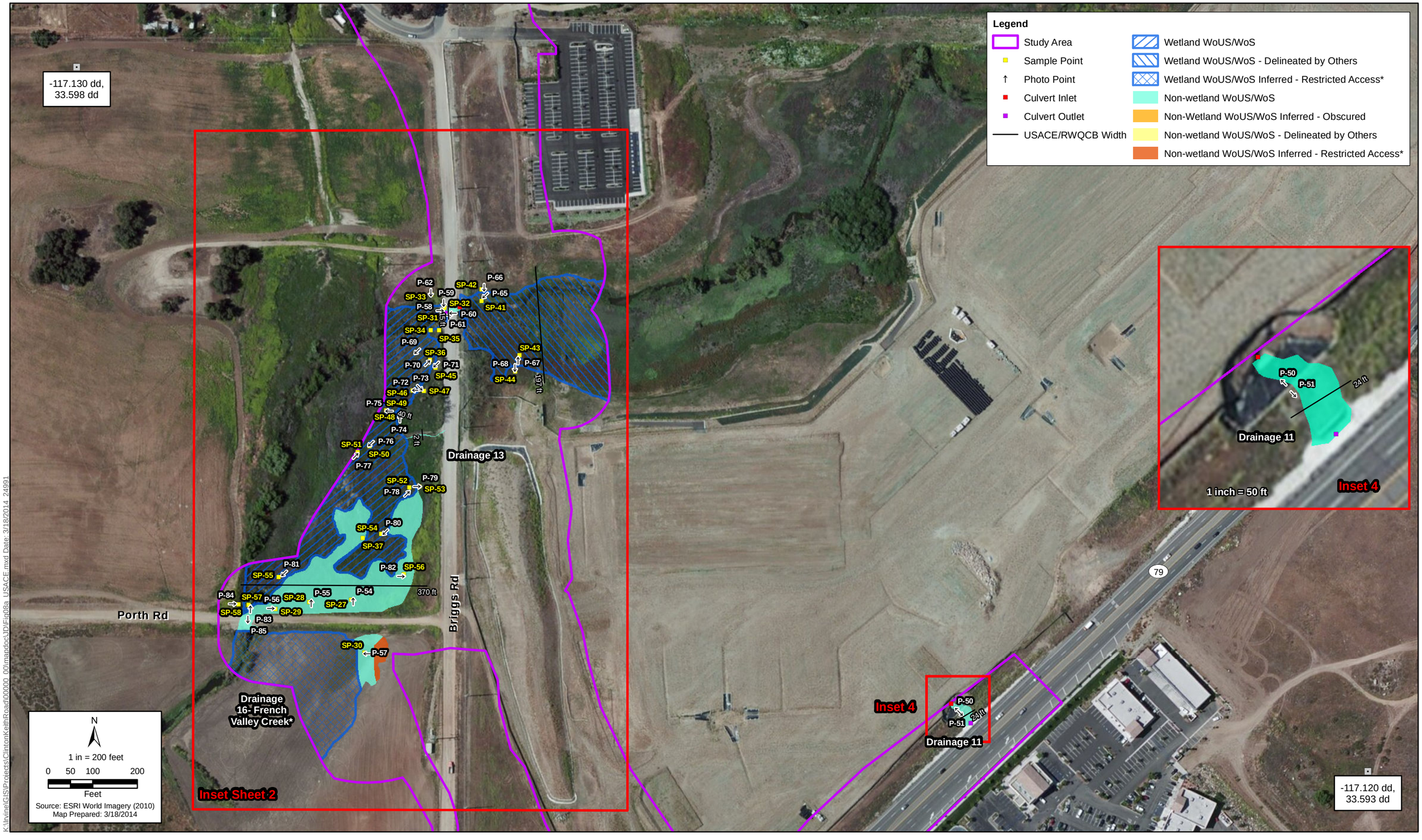
*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 4
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



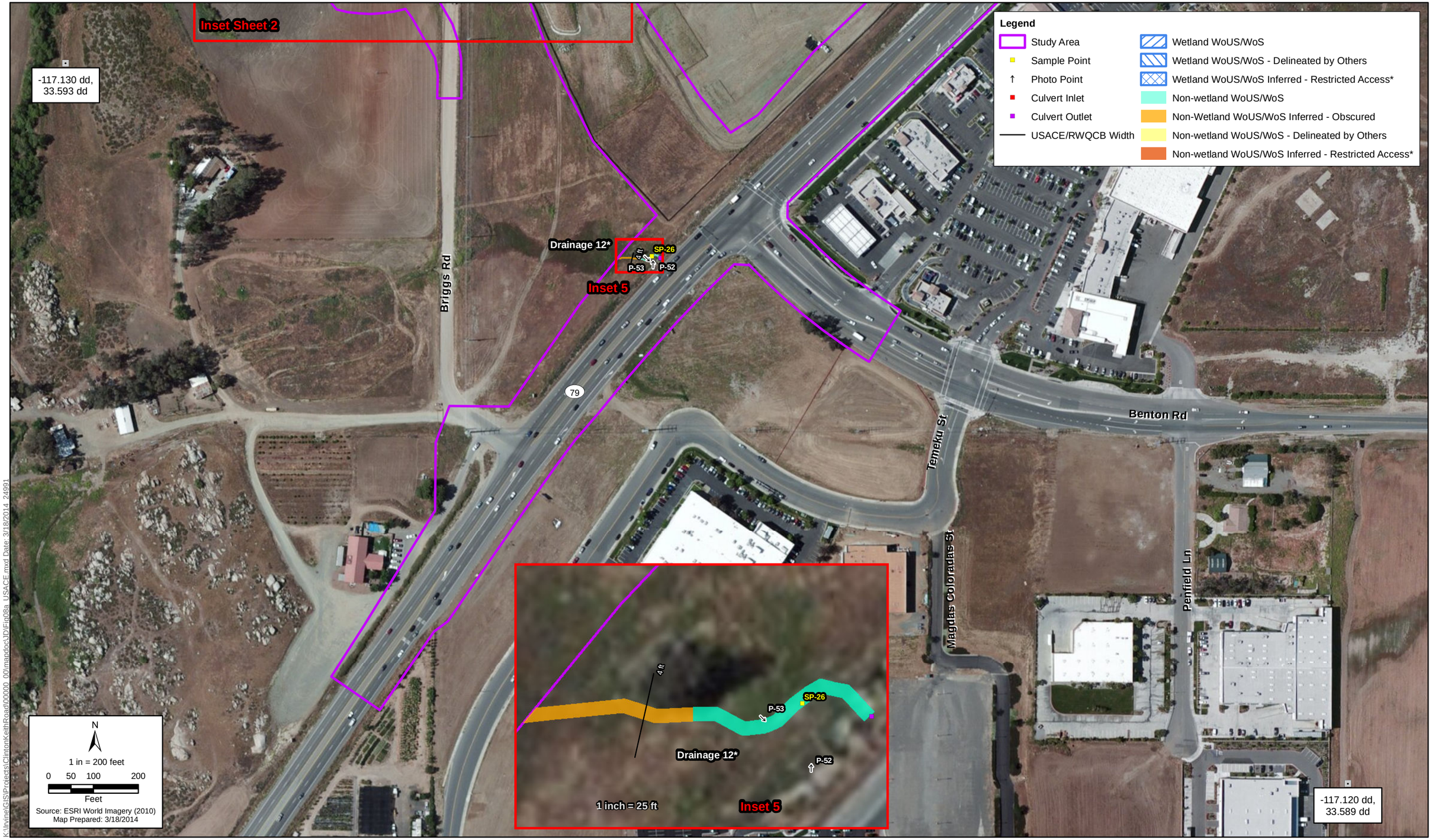
*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 5
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 6
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



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*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8a - Sheet 7
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.143 dd,
33.602 dd

Legend

- Project Footprint
- Sample Point
- Photo Point
- Culvert Inlet
- Culvert Outlet
- USACE/RWQCB Width
- Wetland WoUS/WoS
- Wetland WoUS/WoS - Delineated by Others
- Wetland WoUS/WoS Inferred - Restricted Access*
- Non-wetland WoUS/WoS
- Non-Wetland WoUS/WoS Inferred - Obscured
- Non-wetland WoUS/WoS - Delineated by Others
- Non-wetland WoUS/WoS Inferred - Restricted Access*

SP-22, P-30, P-29, P-28, SP-21, SP-20, P-27, P-26, SP-16, P-22, P-31, P-23, SP-17, P-24, P-25, SP-18, P-32, SP-19, SP-23, P-9, SP-7, SP-6, P-8, SP-14, SP-13, P-20, P-19, SP-15, P-18, P-21, SP-12, SP-9, P-13, P-12, SP-8, P-2, SP-1, SP-4, P-10, SP-2, SP-5, P-1, P-11, SP-3, P-3, P-4, P-14, P-5, P-6, P-7, P-15, SP-10, SP-11, P-16, P-17, P-47

Drainage 3

Drainage 2- Warm Springs Creek

Drainage 1

Drainage 4

7 ft

62 ft

14 ft

2 ft

N

1 in = 50 feet

0 25 50

Feet

Source: ESRI World Imagery (2010)
Map Prepared: 3/19/2014

-117.141 dd,
33.600 dd

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Figure 8a - Inset Sheet 1
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

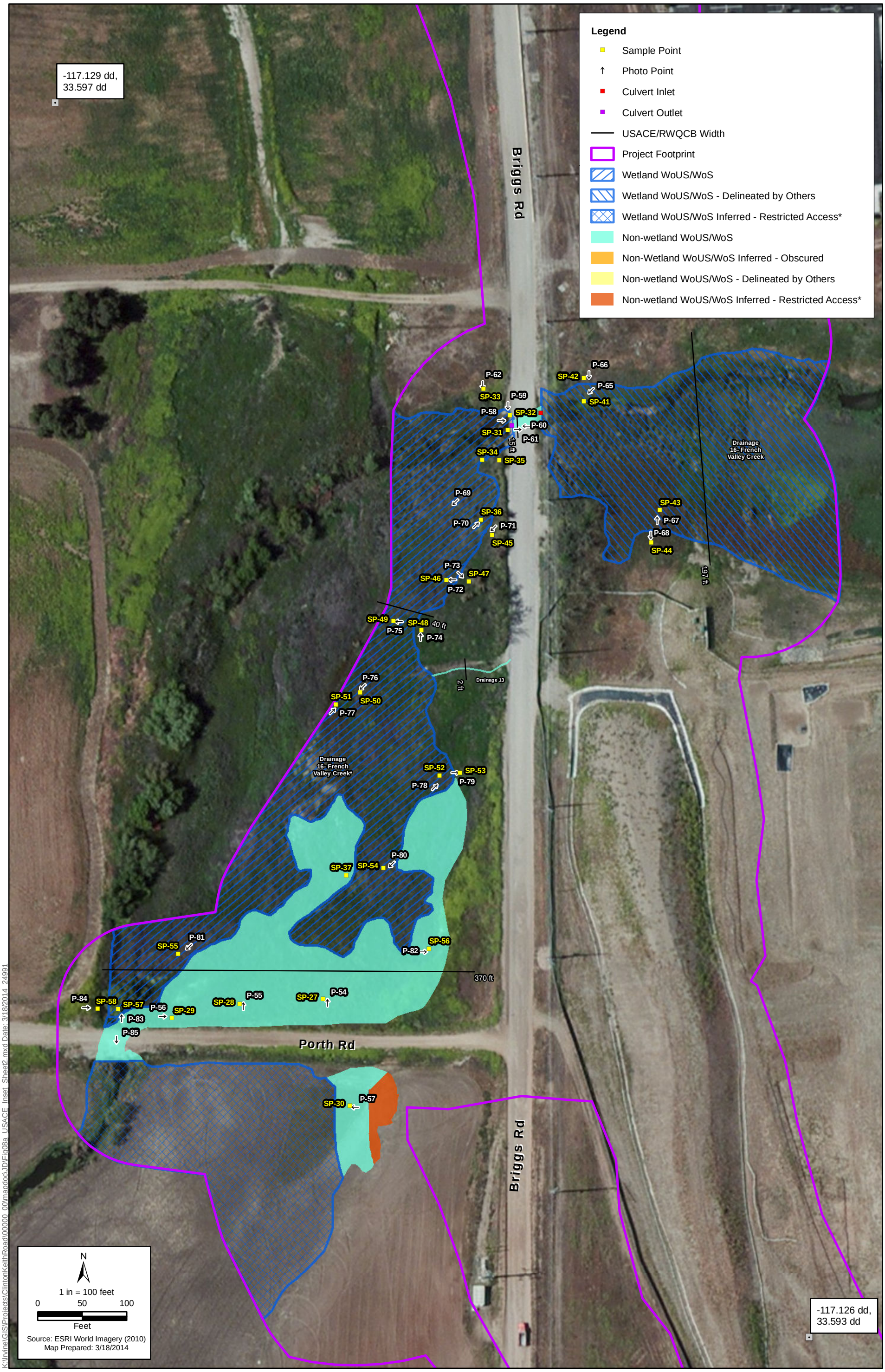

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Figure 8a - Inset Sheet 2
USACE/RWQCB Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

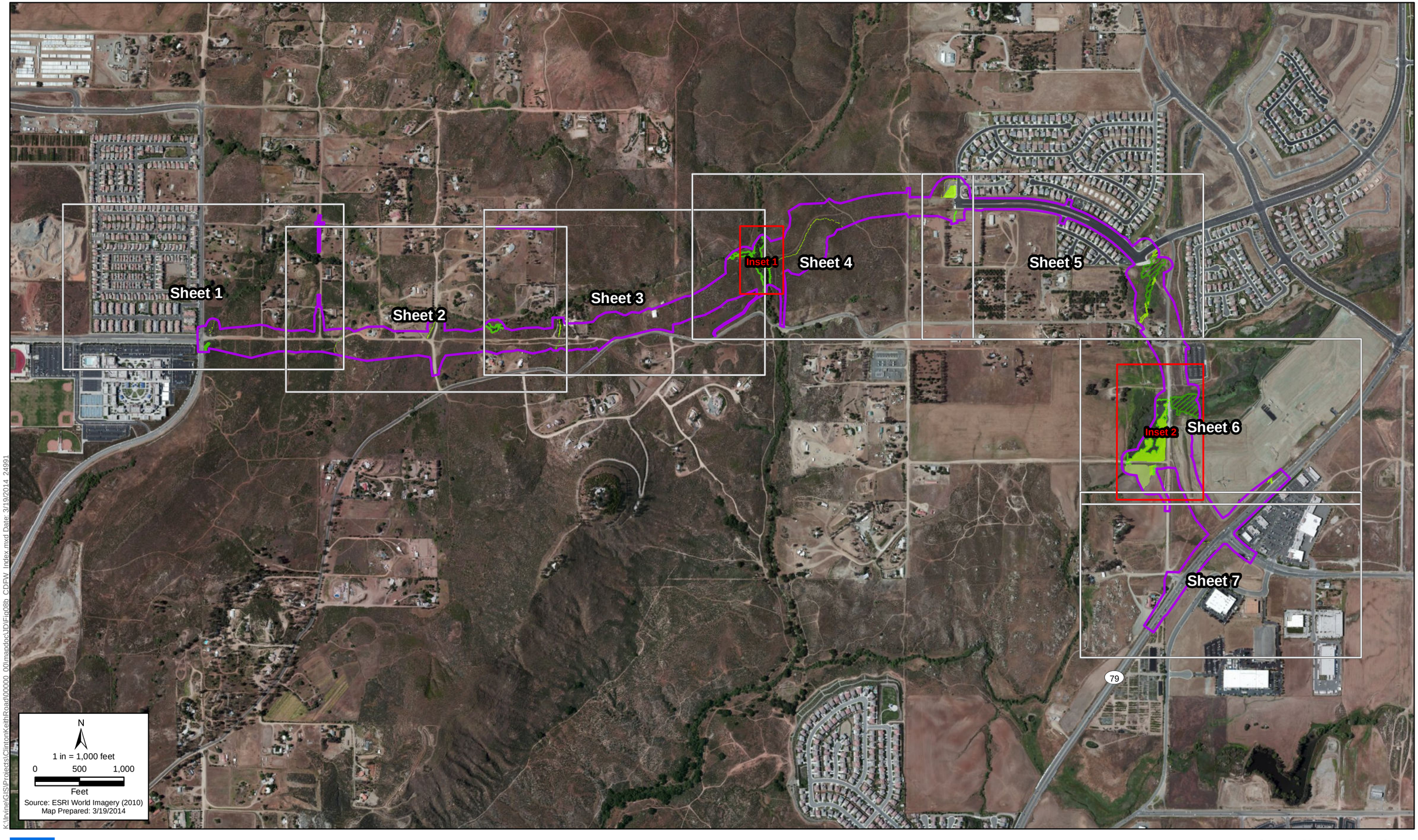

Figure 8b - Index Sheet
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.168 dd,
33.602 dd

Greenberg Pl

Meadowlark Ln

Arendt Ln

Drainage 9

3 ft

P-43

2 ft

Drainage 10

P-46

5 ft

Drainage 9

P-44

28 ft

P-45

8 ft

1 inch = 100 ft

Inset 1

Clinton Keith Rd

Whitewood Rd

Drainage 8

P-40

4 ft

-117.158 dd,
33.597 dd

Legend

- Study Area
- Photo Point
- Culvert Inlet
- Culvert Outlet
- Culvert
- CDFW Width
- CDFW Riparian
- CDFW Riparian - Delineated by Others
- CDFW Riparian Inferred - Restricted Access*
- CDFW Unvegetated Streambed
- CDFW Unvegetated Streambed - Delineated by Others
- Unvegetated Streambed Inferred - Obscured
- Unvegetated Streambed Inferred - Restricted Access*

N

1 in = 200 feet

0 50 100 200

Feet

Source: ESRI World Imagery (2010)
Map Prepared: 3/18/2014

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*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8b - Sheet 1
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.159 dd,
33.601 dd

Arendt Ln

Capra Rd

Shawna Dr

Clinton Keith Rd

Drainage 8

P-42

P-41

5 ft

P-40

4 ft

Drainage 7

9 ft

P-39

P-38

Drainage 3

25 ft

64 ft

P-63

P-64

Menifee Rd

Los Alamos Rd

Ave Marguerite

Drainage 5*

P-37

16 ft

P-36

P-34

P-35

1 inch = 100 ft

Inset 2

-117.150 dd,
33.597 dd

Legend

Study Area	CDFW Riparian
Photo Point	CDFW Riparian - Delineated by Others
Culvert Inlet	CDFW Riparian Inferred - Restricted Access*
Culvert Outlet	CDFW Unvegetated Streambed
Culvert	CDFW Unvegetated Streambed - Delineated by Others
CDFW Width	Unvegetated Streambed Inferred - Obscured
	Unvegetated Streambed Inferred - Restricted Access*

N

1 in = 200 feet

0 50 100 200

Feet

Source: ESRI World Imagery (2010)
Map Prepared: 3/18/2014

K:\Irvine\GIS\Projects\ClintonKeithRoad\00000_00\mapdocs\Fig08b_CDFW.mxd Date: 3/18/2014 24991

*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8b - Sheet 2
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.152 dd,
33.602 dd

P-37
16 ft
P-36
Drainage 5*
P-34
P-35
1 inch = 100 ft
Inset 2
Sideli

P-30
P-28
P-29
P-27
P-26
P-31
P-22
P-23
P-24
P-32
P-25
P-33
48 ft
16 ft
Drainage 3
P-9
P-8
P-19
P-20
P-21
P-13
P-12
P-11
P-10
Drainage 2-
Warm Springs
Creek
Inset Sheet 1
5 ft
Draina

Drainage 3
25 ft
65 ft
P-63
P-64
Clinton Keith Rd
Ave Mariana
P-37
16 ft
P-36
Drainage 5*
P-34
P-35
Inset 2
Los Alamos Rd
Los Alamos Rd

N
1 in = 200 feet
0 50 100 200
Feet
Source: ESRI World Imagery (2010)
Map Prepared: 3/18/2014

Legend

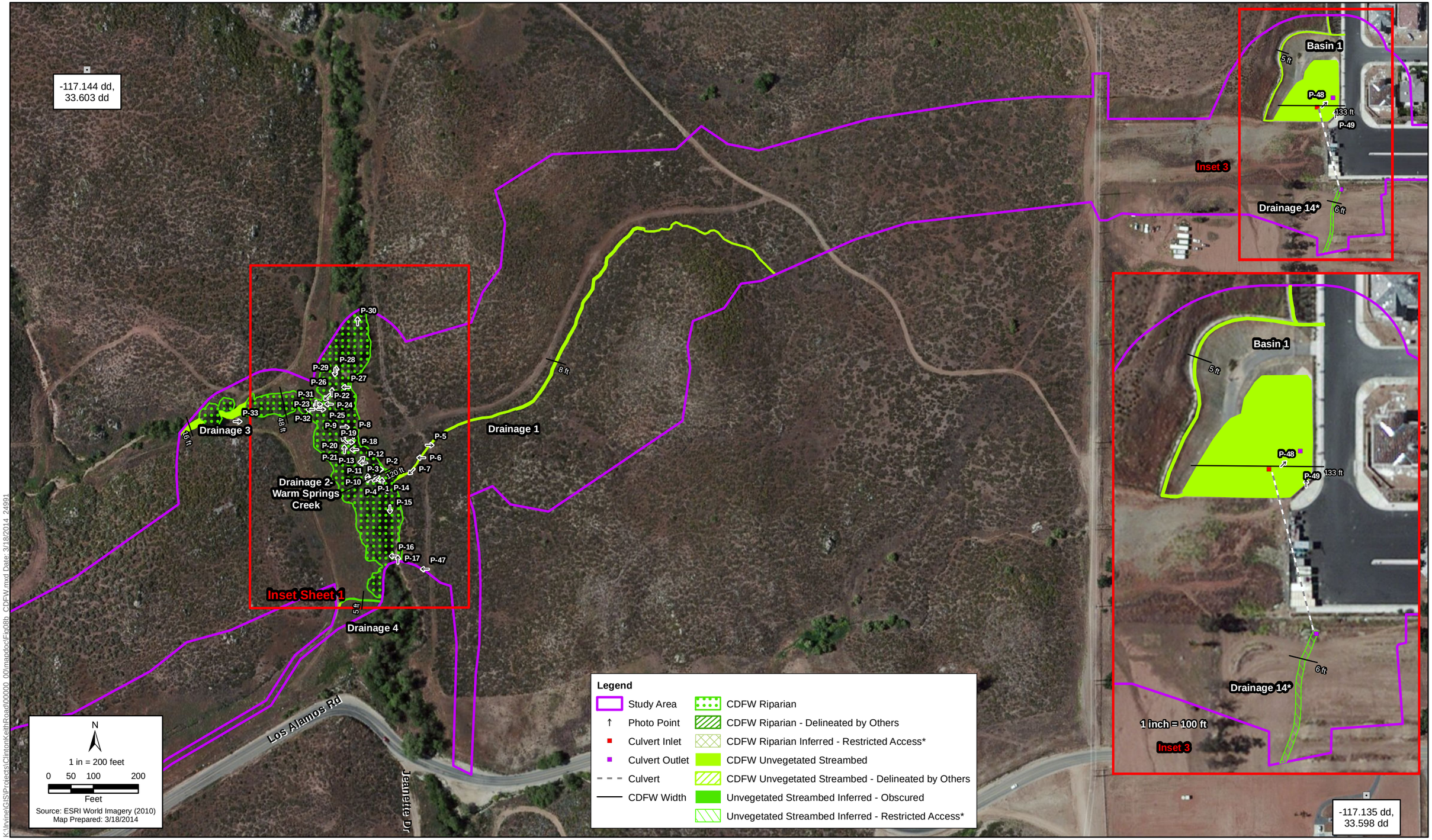
Study Area	CDFW Riparian
Photo Point	CDFW Riparian - Delineated by Others
Culvert Inlet	CDFW Riparian Inferred - Restricted Access*
Culvert Outlet	CDFW Unvegetated Streambed
Culvert	CDFW Unvegetated Streambed - Delineated by Others
CDFW Width	Unvegetated Streambed Inferred - Obscured
	Unvegetated Streambed Inferred - Restricted Access*

-117.143 dd,
33.597 dd

K:\IrvineGIS\Projects\ClintonKeithRoad\00000_00\mapdoc\Fig08b_CDFW.mxd Date: 3/18/2014 24991

*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

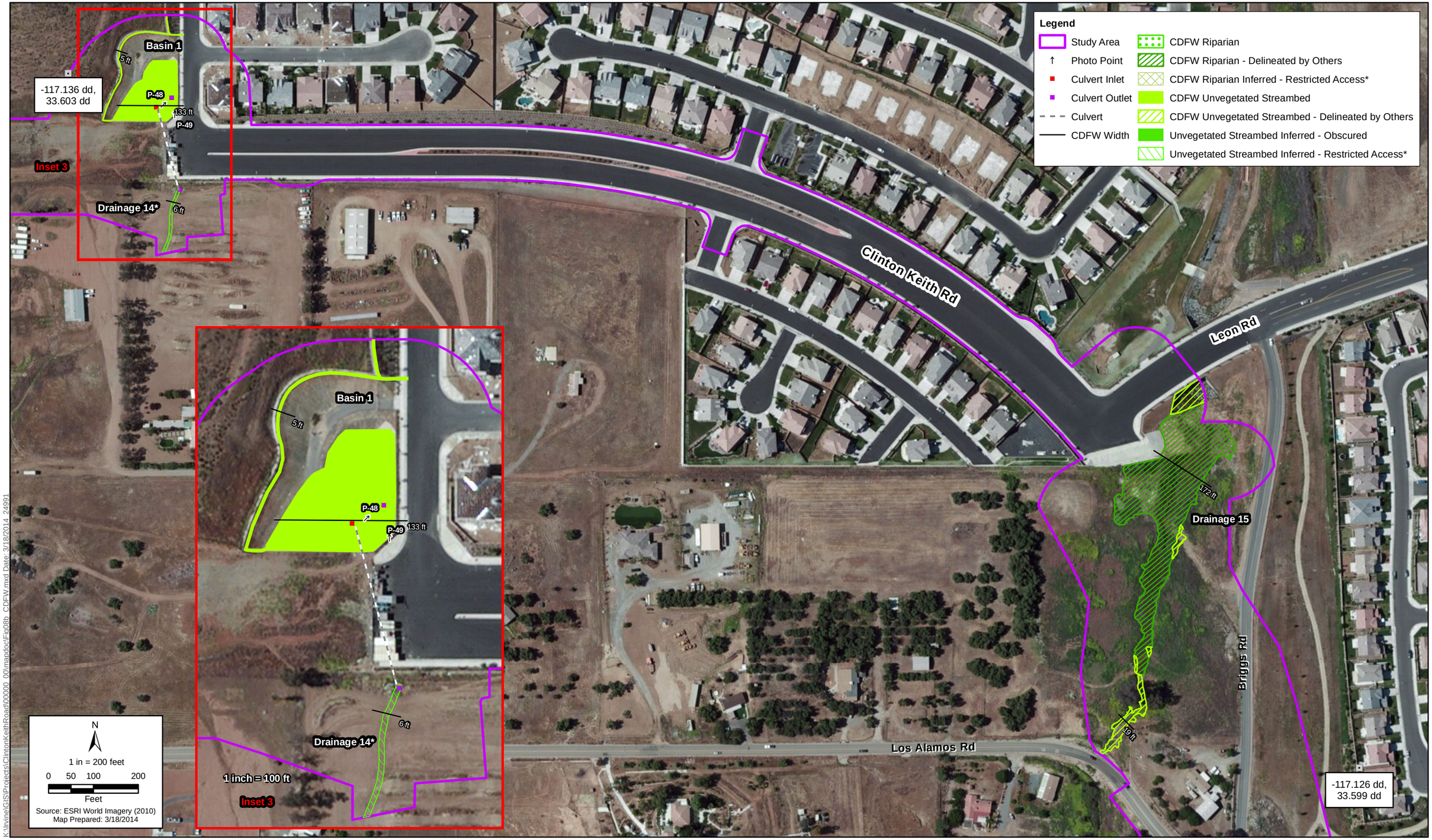
Figure 8b - Sheet 3
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



K:\Irvine\GIS\Projects\ClintonKeithRoad\00000_00\mapdoc\Fig08b_CDFW.mxd Date: 3/18/2014 24991

*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

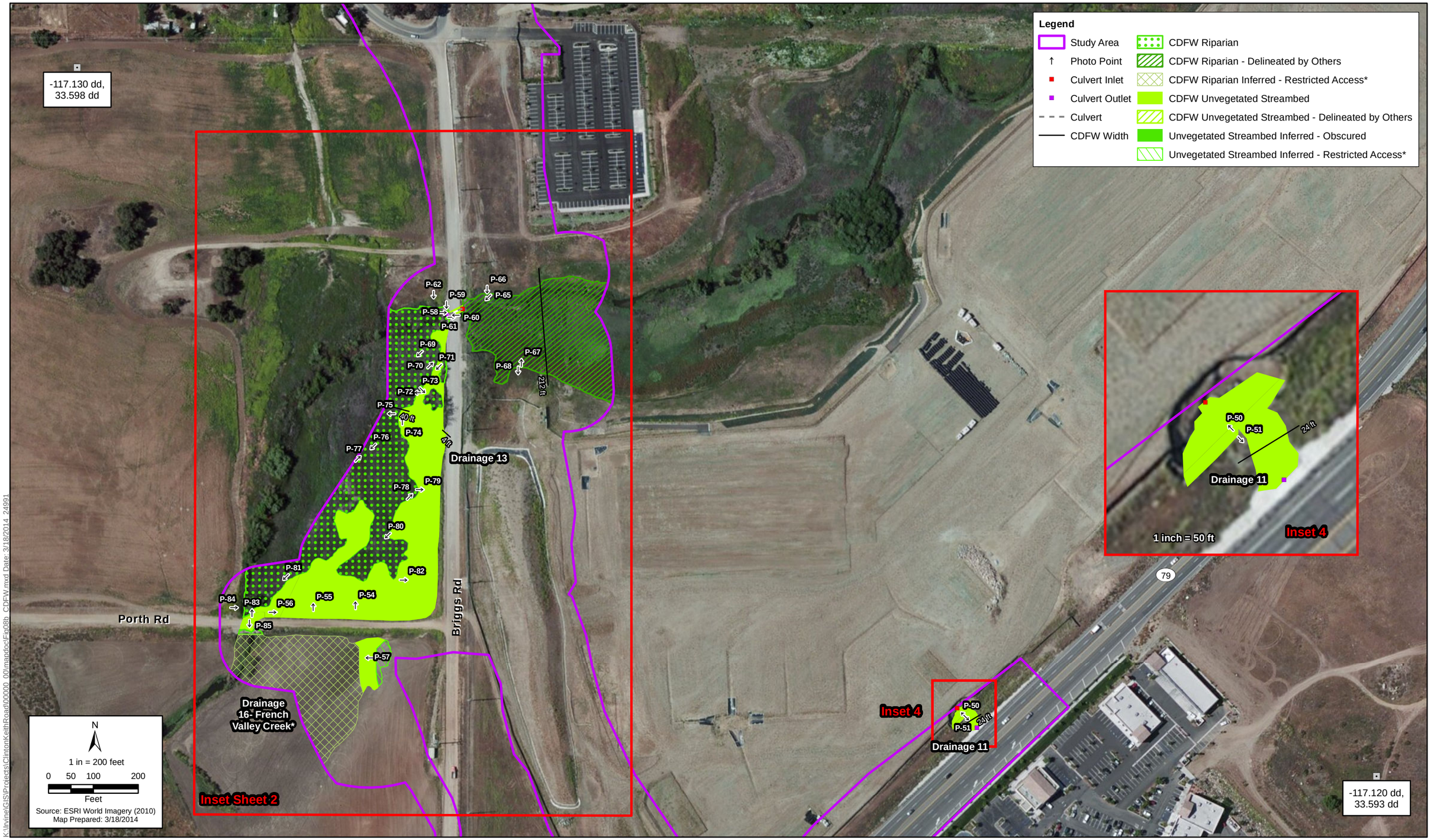
Figure 8b - Sheet 4
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



K:\Irvine\GIS\Projects\ClintonKeithRoad\00000 00\mapdoc\Fig08b CDFW.mxd Date: 3/18/2014 24991

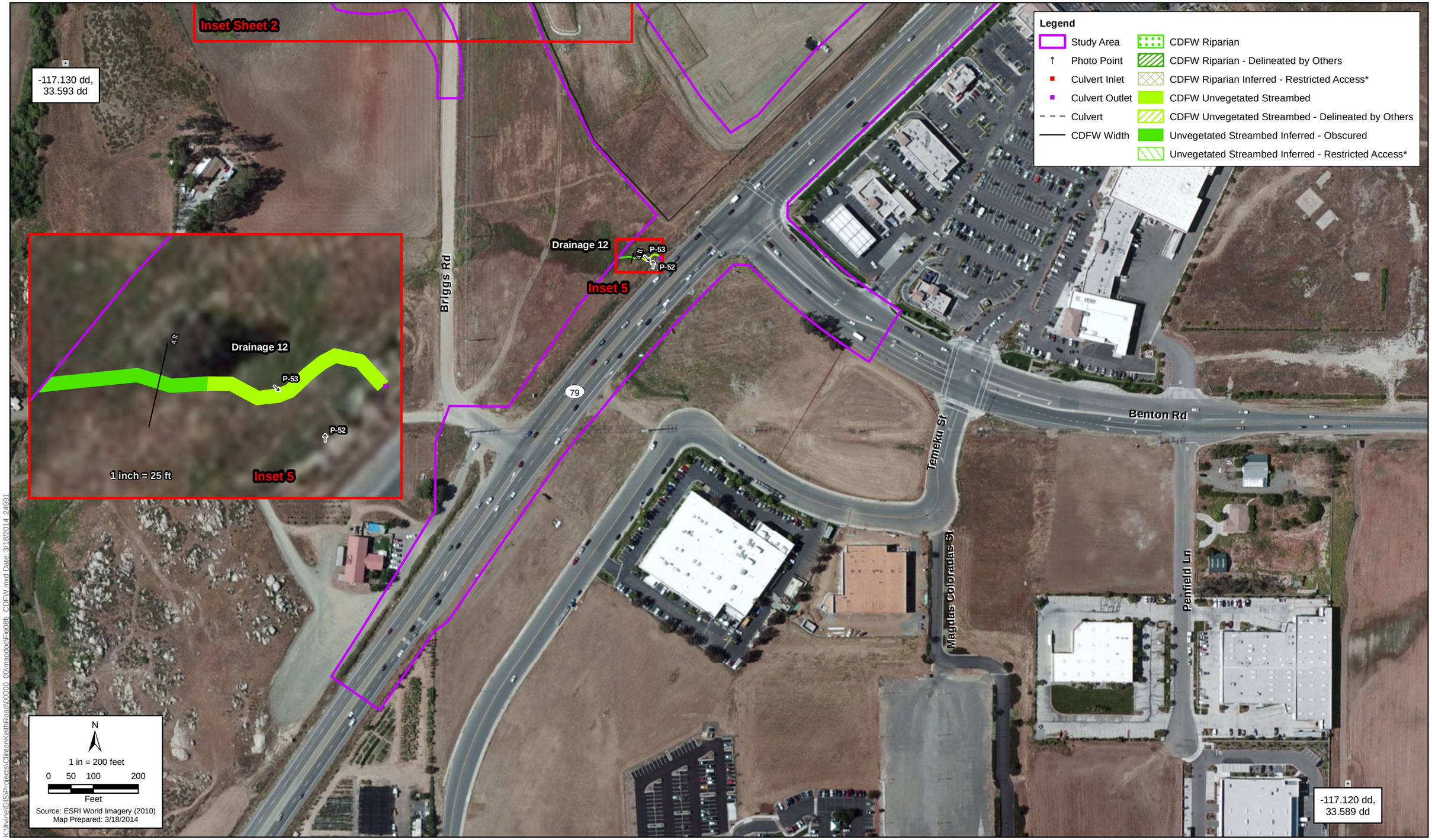
*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8b - Sheet 5
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8b - Sheet 6
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



*Portions of jurisdictional limits have been inferred for features occurring on Assessor's Parcels where access has not been granted or where access has been specifically denied.

Figure 8b - Sheet 7
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

-117.143 dd,
33.602 dd

Legend

- Study Area
- Photo Point
- CDFW Width
- CDFW Riparian
- CDFW Riparian - Delineated by Others
- CDFW Riparian Inferred - Restricted Access*
- CDFW Unvegetated Streambed
- CDFW Unvegetated Streambed - Delineated by Others
- Unvegetated Streambed Inferred - Obscured
- Unvegetated Streambed Inferred - Restricted Access*

P-30
P-28
P-29
P-27
P-26
P-22
Drainage 3
P-31
P-23
P-24
P-32
P-25
40 ft
P-9
P-8
P-20
P-19
P-21
P-18
P-13
P-12
P-2
Drainage 2 - Warm Springs Creek
120 ft
P-10
P-3
P-1
P-4
P-11
P-14
P-15
Drainage 1
P-5
P-6
P-7
P-16
P-17
P-47
Drainage 4
5 ft

N

1 in = 50 feet

0 25 50

Feet

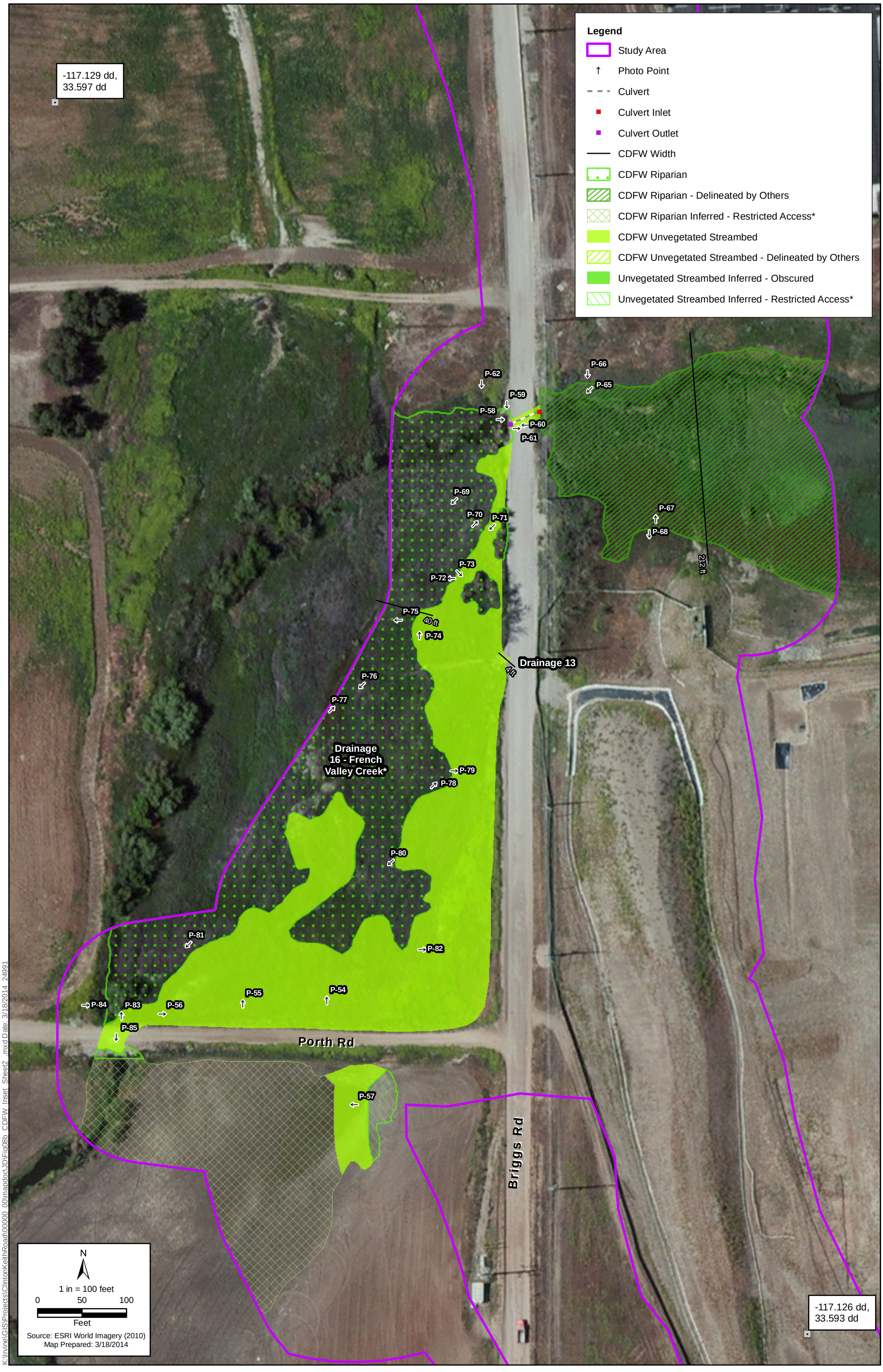
Source: ESRI World Imagery (2010)
Map Prepared: 3/19/2014

-117.141
dd,
33.600 dd

K:\Irvine\GIS\Projects\ClintonKeithRoad\00000 00\mapdoc\JD\Fig08b CDFW Inset Sheet1.mxd Date: 3/19/2014 24991

ICF INTERNATIONAL

Figure 8b - Inset Sheet 1
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project



K:\Irvine\GIS\Projects\ClintonKeithRoad\000000 00\mapdoc\JD\Fig08b_CDFW_Inset_Sheet2_.mxd Date: 3/18/2014 24991

Figure 8b - Inset Sheet 2
CDFW Jurisdictional Delineation Results Map
Clinton Keith Road Extension Project

Appendix B

Ordinary High Water Mark Data Sheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Clinton Keith Road Extension
Project Number:
Stream: Warm Springs Creek - OHWM-1
Investigator(s): Zack West, Marisa Flores

Date: 8/1/2013
Town:
Photo begin file#: OHWM 1

Time: 14:00
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Warm Springs Creek

Projection: **Datum:**
Coordinates:

Potential anthropogenic influences on the channel system:
Road crossing approx 650 ft downstream which could influence hydrology

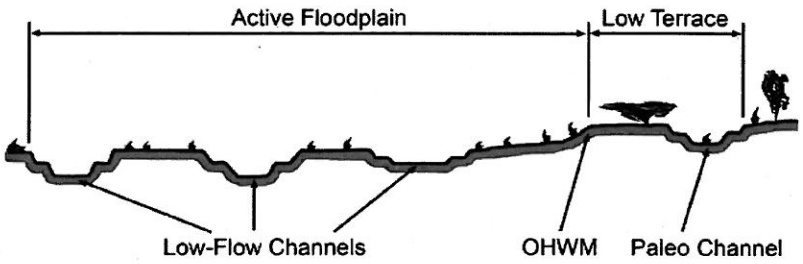
Brief site description: Warm Springs Creek, north side of Los Alamos

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☒ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

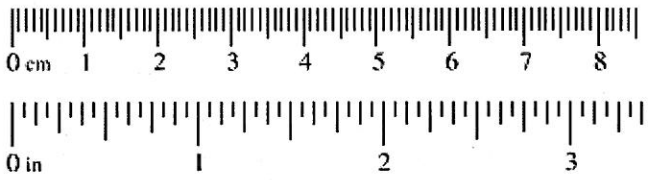


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Wentworth Size Classes

Millimeters (mm)		Inches (in)		Wentworth size class	
	10.08		256	Boulder	
	2.56		64	Cobble	Gravel
	0.157		4	Pebble	
	0.079		2.00	Granule	
	0.039		1.00	Very coarse sand	
	0.020		0.50	Coarse sand	
1/2	0.0098		0.25	Medium sand	Sand
1/4	0.005		0.125	Fine sand	
1/8	0.0025		0.0625	Very fine sand	
1/16	0.0012		0.031	Coarse silt	
1/32	0.00061		0.0156	Medium silt	Silt
1/64	0.00031		0.0078	Fine silt	
1/128	0.00015		0.0039	Very fine silt	
				Clay	Mud



Project ID: **Cross section ID:** CltWM-1 **Date:** 8/1/13 **Time:** 14:00

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: very fine silt

Total veg cover: 90 % Tree: 40 % Shrub: 90 % Herb: 15 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

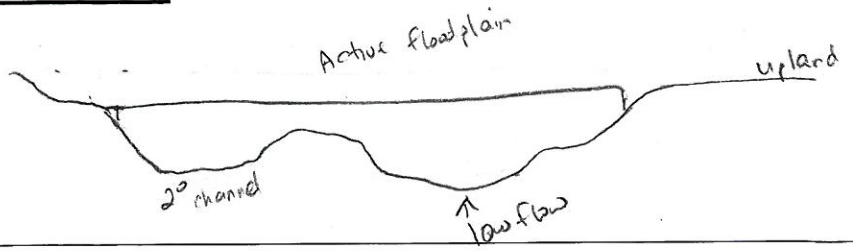
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: ClintonKeith **Cross section ID:** OHWM 1 **Date:** 8/1/2018 **Time:** 14:00

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 60 % Tree: 0 % Shrub: 30 % Herb: 30 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

bottom of channel void of vegetation.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Clinton Keith Extension
Project Number:
Stream: Drainage 3
Investigator(s): Zack West Marisa Flores

Date: 3/20/13 **Time:** 1300
Town: Riv County **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Tributary to Warm Springs Creek

Projection: **Datum:**
Coordinates:

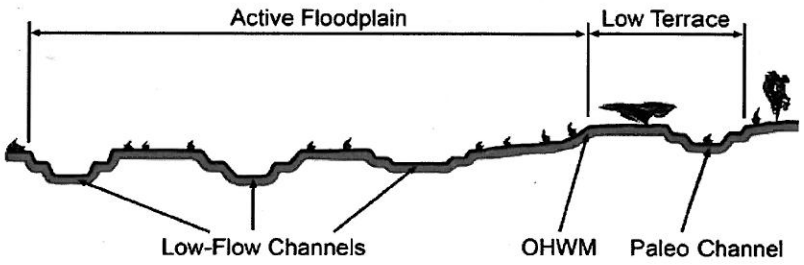
Potential anthropogenic influences on the channel system:
Area surrounding location has historically been subject to ongoing ranching activities.

Brief site description: Tributary to Warm Springs Creek. Occurs in an existing Conservation area.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 2003, 2010
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

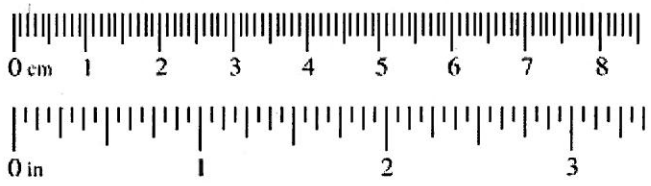


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

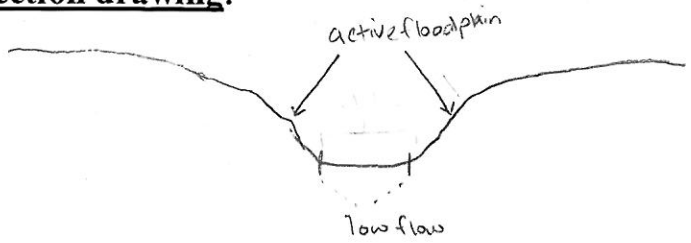
Wentworth Size Classes

Millimeters (mm)		Inches (in)	Wentworth size class	
	10.08	256	Boulder	
	2.56	64	Cobble	Gravel
	0.157	4	Pebble	
			Granule	
	0.079	2.00		
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: Clinton Keith Extension **Cross section ID:** OHWM 2 **Date:** 8/20/13 **Time:** 1300

Cross section drawing:



OHWM

GPS point: OHWM 2

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: no low terrace present Active floodplain transitions into upland

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Medium Sand

Total veg cover: 5 % Tree: 0 % Shrub: 0 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: Sandy creekbed

Project ID: Clintonkeith Ext. **Cross section ID:** OHWM 2 **Date:** 9/20/13 **Time:** 1300

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine sand

Total veg cover: 100 % Tree: 20 % Shrub: 50 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Clinton Keith Road Extension
Project Number:
Stream: Drainage 3
Investigator(s): A Perez, Z West

Date: 1/10/14
Town: Murrieta
Time: 10:30
State: CA
Photo begin file#:
Photo end file#:

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: East of McAfee Road

Projection: **Datum:**
Coordinates:

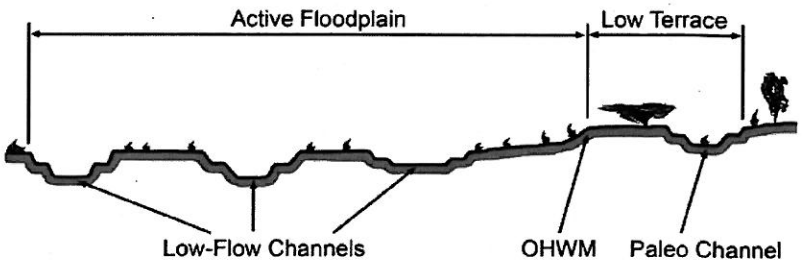
Potential anthropogenic influences on the channel system: several small road crossings occur upstream of location.

Brief site description: Incised, earthen, ephemeral channel with mature riparian community.

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

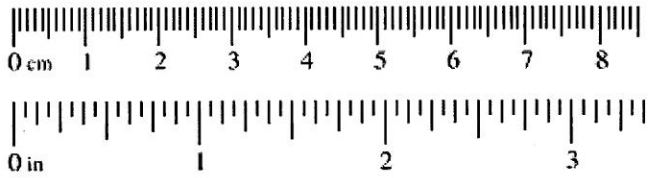


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [X] GPS
   - [ ] Other:

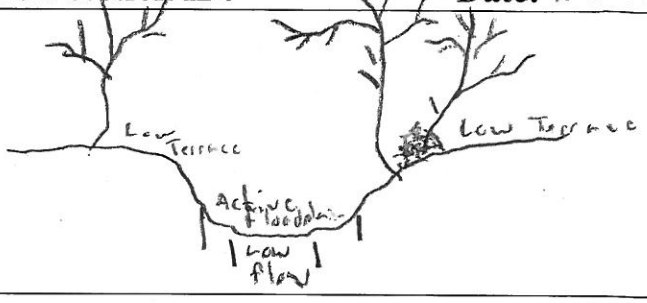
Wentworth Size Classes

Millimeters (mm)	Inches (in)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: Clinton Keith Road Ext. **Cross section ID:** OHWM-3 **Date:** 1/10/14 **Time:** 10:30

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☒ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: Sediment sorting
- ☒ Other: Drift and Debris

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 5 % Tree: ____ % Shrub: ____ % Herb: 5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: Clinton Keith Road Ext. **Cross section ID:** OHWM-3 **Date:** 1/10/14 **Time:** 10:30

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: fine silt

Total veg cover: 5 % Tree: ____ % Shrub: ____ % Herb: 5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Very fine silt

Total veg cover: 100 % Tree: 80 % Shrub: ____ % Herb: 20 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☒ Soil development
- ☐ Surface relief
- ☐ Other: Surface rounding
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Clinton Keith Road Extension
Project Number:
Stream: French Valley Creek
Investigator(s): A Perrin, Z West

Date: 1/16/14
Town: Murrieta
Photo begin file#:

Time: 11:10
State: CA
Photo end file#:

Y ☐ / N ☒ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Downstream of Briggs Road Crossing

Projection:
Datum:
Coordinates:

Potential anthropogenic influences on the channel system: Floodplain has been subjected to ongoing agricultural practices, including discing, for multiple decades and is confined by Briggs and Porth Roads.

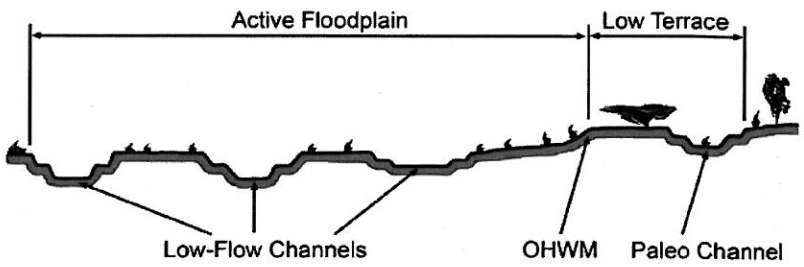
Brief site description: Alkali marsh within floodplain associated with French Valley Creek.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

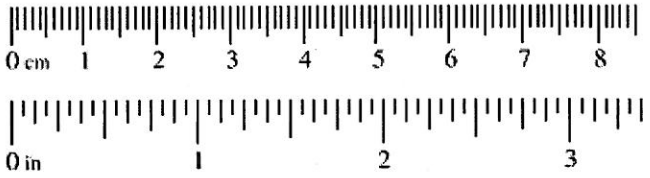


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

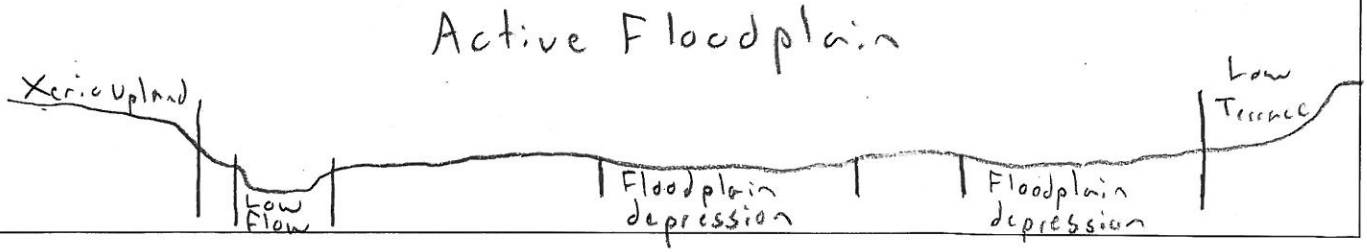
Wentworth Size Classes

Millimeters (mm)		Inches (in)		Wentworth size class	
	10.08		256	Boulder	
	2.56		64	Cobble	Gravel
	0.157		4	Pebble	
	0.079		2.00	Granule	
	0.039		1.00	Very coarse sand	
	0.020		0.50	Coarse sand	
1/2	0.0098		0.25	Medium sand	Sand
1/4	0.005		0.125	Fine sand	
1/8	0.0025		0.0625	Very fine sand	
1/16	0.0012		0.031	Coarse silt	
1/32	0.00061		0.0156	Medium silt	Silt
1/64	0.00031		0.0078	Fine silt	
1/128	0.00015		0.0039	Very fine silt	
				Clay	Mud



Project ID: Clinton Keith Road Ext. **Cross section ID:** OHWM 4 **Date:** 1/16/14 **Time:** 11:10

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: Salt crust
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine silt

Total veg cover: 20 % Tree: ____ % Shrub: 5 % Herb: 15 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: Clinton Keith Road Ext. **Cross section ID:** OHUM4 **Date:** 1/16/14 **Time:** 11:10

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine silt

Total veg cover: 80 % Tree: 5 % Shrub: 45 % Herb: 30 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Fine silt

Total veg cover: 10 % Tree: ____ % Shrub: 10 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☒ Soil development
- ☐ Surface relief
- ☒ Other: Surface rounding
- ☐ Other: _____
- ☐ Other: _____

Comments:

Appendix C

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Riverside Co Sampling Date: 3/1/2013
Applicant/Owner: RCTD State: CA Sampling Point: SP-1
Investigator(s): Zack West, Marisa Flores Section, Township, Range:
Landform (hillslope, terrace, etc.): 2° channel Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes ✓	No X	
Wetland Hydrology Present?	Yes ✓	No	

Remarks: Warm Springs Creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix gooddingii	15	Y	FACW
2.			
3.			
4.			
	15	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10')			
1. Baccharis salicifolia	40	Y	FAC
2. Ambrosia psilostachya	10	Y	FACU
3. Conium maculatum	3	N	FACW
4.			
5.			
	53	= Total Cover	

Herb Stratum (Plot size: 5')			
1.			
2. Helistropium curvassicum	3	N	FACU
3. Bromus hordeceus	35	Y	UPL
4. Bromus Madritensis	40	Y	UPL
5. Hirschfeldia incana	3	N	UPL
6. Conium maculatum	2	N	FACW
7.			
8.			
	93	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	40	x 3 =	120
FACU species	13	x 4 =	52
UPL species	78	x 5 =	390
Column Totals:	151 (A)		602 (B)

Prevalence Index = B/A = 3.98

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No X

Remarks: Leaf litter ~ 17%

SOIL

Sampling Point: Sp-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-24	10YR3/3	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- X Drift Deposits (B3) **(Riverine)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): -

Water Table Present? Yes ___ No ✓ Depth (inches): -

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): -

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Murrieta, Riverside Sampling Date: 8/1/2013

Applicant/Owner: RCTD State: _____ Sampling Point: SP 2

Investigator(s): Zack West, Marisa Flores Section, Township, Range: _____

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): C Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: Warm Springs Creek

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10')			
1. Ambrosia psilostachya	30	Y	FACU
2. Conium maculatum	10	N	FACW
3. Stachys ajugoides	15	N	OBL
4. Baccharis salicifolia	30	Y	FAC
5.			
	95	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Anemopsis californica	30	Y	OBL
2. Heliotropium curassavicum	1	N	FACU
3.			
4. Conium maculatum	2	N	FACW
5. Polygonum monspeliensis	2	N	FACW
6. Eleocharis palustris	2	N	OBL
7. Juncus mexicanus	10	Y	FACW
8. Oncosiphon piluliferum	1	N	FACU
	47	= Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 53% % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Sample pit in bottom of creek

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 3/2	100					sand	
6-10	2.5Y 3/2	85	7.5YR 4/6	15	RM	M	clay loam	
11-18	2.5Y 3/2	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Murrieta, Riverside Sampling Date: 8/1/13

Applicant/Owner: RCTD State: CA Sampling Point: SP-3

Investigator(s): Zack West, Marisa Flores Section, Township, Range:

Landform (hillslope, terrace, etc.): bench of low flow Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix gooddingii	40	Y	FACW
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Ambrosia psilostachya	30	Y	FACU
2. Baccharis salicifolia	30	Y	FAC
3. Artemisia douglasiana	25	Y	FAC
4. Conium maculatum	10	N	FACW
5. Toxicodendron diversilobum	5	N	UPL
	100 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Anemopsis californica	15	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Leaf litter = 85%

SOIL

Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-32	2.5Y 3/2	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Ext City/County: Murrieta, Riv Co Sampling Date: 8/9/13

Applicant/Owner: RCTD State: CA Sampling Point: SP-4

Investigator(s): DW, MF Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix goodingi (hybrid?)	20	Y	FACW
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Baccharis salicifolia	25	Y	FAC
2. Artemisia douglasiana	75	Y	FAC
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus madritensis	1	N	UPL
2. Anamopsis California	5	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	6 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: Leaf litter in herb stratum 94%

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5 Y 3/2	93	5 YR 3/4	7	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Ext City/County: Riv. Co Sampling Date: 8/9/13

Applicant/Owner: RCTD State: CA Sampling Point: SP-5

Investigator(s): Jack West, Marisa Flores Section, Township, Range:

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes No X	
Wetland Hydrology Present?	Yes No X	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix gooddingii (hybrid?)	70	Y	FACW
2.			
3.			
4.			
	70 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Artemisia douglasiana	85	Y	FAC
2. Conium maculatum	5	N	FACW
3. Toxicodendron diversilobum	5	N	UPL
4.			
5.			
	95 = Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: 90% leaf litter

SOIL

Sampling Point: SP-S

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-24	2.5Y 3/2	100					sndy lm	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Riv. Co Sampling Date: 8/2/2013
Applicant/Owner: RCTD State: CA Sampling Point: SP-6
Investigator(s): Zack Wood, Marisa Flores Section, Township, Range:
Landform (hillslope, terrace, etc.): toe of terrace Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes No ✓	
Wetland Hydrology Present?	Yes No	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Baccharis emoryi	15	Y	FACW
2. Baccharis salicifolia	20	Y	FAC
3. Ambrosia psilostachya	10	Y	FACU
4. Rumex crispus	1	N	FAC
5. Conium maculatum	2	N	FACW
	48 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Anemopsis californica	40	Y	OBL
2. Distichlis spicata	58	Y	FAC
3. Heliotropium curvassicum	2	N	FACU
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
✓
- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

SOIL

Sampling Point: SP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2							gravelly sand	100%
2-4	10YR 2/2	100					lmy sand	
4-18	10YR 2/2	100					sndy lm	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ~

Depth (inches): ~

Hydric Soil Present? Yes ___ No ✓

Remarks: no redox present, soft masses 10YR 4/6 starting @ 14" (15")

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Murrieta, Riverside Sampling Date: 8/2/2013
Applicant/Owner: RCTD State: CA Sampling Point: SP-7
Investigator(s): Zack West Marisa Flores Section, Township, Range:
Landform (hillslope, terrace, etc.): channel (low flow) Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): C Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix lasiolepis	70	Y	FACW
2.			
3.			
4.			
	70 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Baccharis salicifolia	30	Y	FAC
2. Ambrosia psilostachya	10	Y	FACU
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Anemopsis californica	20	Y	OBL
2. Conium maculatum	3	N	FACW
3. Scirpus sp. (flat edge)	4	N	?
4. Polypogon monspeliensis	2	N	FACW
5. Xanthium strumarium	5	N	FAC
6. Eleocharis palustris	3	N	OBL
7.			
8.			
	37 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 63 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: P-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-34	2.5 Y 3/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Riv Co Sampling Date: 8/9/13

Applicant/Owner: RCTD State: CA Sampling Point: SP-8

Investigator(s): Z. WEST, M. FLORES Section, Township, Range:

Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none): CONCAVE Slope (%): 1

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Ambrosia psilostachya	30	Y	FACU
2. Baccharis salicifolia	40	Y	FAC
3. Conium maculatum	20	Y	FACW
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Anamopsis californica	50	Y	OBL
2. Conium maculatum	10	N	FACW
3. Cyperus (flat sedge?)	10	N	OBL
4.			
5.			
6.			
7.			
8.			
	70 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 3/4 = 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 3/2	95	5YR 3/4	5	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: While redox concentrations extend below 12" depth, the soil in this pit is similar in character to that found within several nearby sample plots, which meet for F6, Redox Dark Surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- X Drift Deposits (B3) (**Riverine**)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Clinton Keith Extension City/County: Riv Co Sampling Date: 3/9/13

Applicant/Owner: RCTD State: CA Sampling Point: Sp-9

Investigator(s): Z-WEST, M. FLORES Section, Township, Range:

Landform (hillslope, terrace, etc.): edge of channel Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): C Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Toxicodendron diversilobum	50	Y	UPL
2. Baccharis salicifolia	40	Y	FAC
3.			
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Aramopsis californica	45	Y	OBL
2. Bromus madritensis	1	N	UPL
3. Eleocharis palustris	5	N	OBL
4. Polypogon monspeliensis	5	N	FACW
5. Schoenoplectus californicus (southern bulrush)	9	N	OBL
6.			
7.			
8.			
	59 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 41 % Cover of Biotic Crust 9

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/3 = 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 3/2	95	5YR 3/4	5	C	M/PL	sndy day lm	
10-16	2.5Y 3/2	100		0				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: