GLENN LUKOS ASSOCIATES
Regulatory Services

June 25, 2020

Mark Chagnon
City of Mission Viejo
200 Civic Center
Mission Viejo, CA 92691

SUBJECT: Jurisdictional Delineation for Lower Curtis Park, an Approximately 40.26-Acre Site Located in Mission Viejo, Orange County

Dear Mr. Chagnon:

This letter report summarizes our preliminary findings of U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW) jurisdiction for the above-referenced property.[1]

The Lower Curtis Park site in Mission Viejo, Orange County [Exhibit 1], comprises approximately 40.26 acres and contains no blue-line drainages (as depicted on the U.S. Geological Survey (USGS) topographic map San Juan Capistrano, California [Exhibit 2]. On June 19, 2020, regulatory specialists of Glenn Lukos Associates, Inc. (GLA) examined the project site to determine the limits of (1) Corps jurisdiction pursuant to Section 404 of the Clean Water Act, (2) Regional Board jurisdiction pursuant to Section 401 of the CWA and Section 13260 of the California Water Code (CWC), and (3) CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. Enclosed are 350-scale maps [Exhibits 3A, 3B and 3C] that depict the areas of Corps, CDFW, and Regional Board jurisdiction. Wetland data sheets are attached as Appendix A.

Corps jurisdiction at the site totals approximately 0.215 acres of which 0.06 acres consist of jurisdictional wetlands.

CDFW jurisdiction at the site totals approximately 0.723 acre, of which approximately 0.323 acre consist of riparian habitat.

[1] This report presents our best effort at estimating the subject jurisdictional boundaries using the most up-to-date regulations and written policy and guidance from the regulatory agencies. Only the regulatory agencies can make a final determination of jurisdictional boundaries.

Regional Board jurisdiction at the site includes the areas of Section 404 Jurisdiction pursuant to Section 401 of the Clean Water Act and totals 0.215 acre of which 0.06 acre consists of wetlands. In addition, under the Porter Cologne Act, Regional Board jurisdiction extends beyond Corps jurisdiction to the limits of waters of the State encompassing additional 0.247 acre of non-wetland/non-riparian streambed.

I. METHODOLOGY

Prior to beginning the field delineation, a color aerial photograph, a topographic base map of the property, the previously cited USGS topographic map, and a soils map were examined to determine the locations of potential areas of Corps, Regional Board, and CDFW jurisdiction. Suspected jurisdictional areas were field checked for evidence of stream activity and/or wetland vegetation, soils and hydrology. Where applicable, reference was made to the 2008 Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (OWHM Manual)[2] to identify the width of Corps jurisdiction and suspected wetland habitats on the site were evaluated using the methodology set forth in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual[3] (Wetland Manual) and the 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement (Arid West Supplement).[4] While in the field the potential limits of jurisdiction were recorded with a sub-meter Trimble GPS device in conjunction with a color aerial photograph using visible landmarks. Other data were recorded onto wetland data sheets.

The National Cooperative Soil Survey (NCSS) has mapped the following soil types as occurring in the general vicinity of the project site:

Bosanko Clay, 9 to 15 Percent Slopes
The Bosanko series consists of well drained soils on foothills. These soils formed in material weathered from calcareous shale, sandstone, or weakly consolidated sediments. Slopes range 9-15%. Elevation ranges from 200 - 2,500 feet. The vegetation is annual grasses, mustard, and other forbs.

[2] U.S. Army Corps of Engineers. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States
[3] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, Mississippi.
[4] U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Bosanko Clay, 15 to 30 Percent Slopes
The Bosanko series consists of well drained soils on foothills. These soils formed in material weathered from calcareous shale, sandstone, or weakly consolidated sediments. Slopes range 15-30%. Elevation ranges from 200- 2,500 feet. The vegetation is annual grasses, mustard, and other forbs.

Bosanko-Balcom complex, 15 to 30 percent slopes
The Bosanko-Balcom complex is about 45% Bosanko clay and about 40% Balcom clay loam. The Bosanko clay is on north-and east-facing side slopes and in swales. The Balcom clay loam is on hill ridgetops and on south-and west-facing side slopes. These soils formed in material weathered from calcareous shale, sandstone, or weakly consolidated sediments. Slopes range 15-30%. Elevation ranges from 200- 2,500 feet. The vegetation is annual grasses, mustard, and other forbs.

Botella clay loam, 9 to 15 percent slopes
The Botella series Consists of well drained soils on alluvial fans. These soils formed in sedimentary alluvium. Slopes are 2-15%. Elevation ranges from 25-1,500 feet. The vegetation is mainly annual grasses and forbs and some oak trees and brush.

Calleguas clay loam, 50 to 75 percent slopes, eroded
This series consists of well drained soils on uplands. These soils formed in material weathered from lime coasted shale or lime coated sandstone, or both. Slopes are 50-75%. Elevation ranges from 200-2,500 feet. The vegetation is annual grasses and forbs, mostly mustard and brush.

Cieneba sandy loam, 15 to 30 percent slopes
This series consists of somewhat excessively drained soils. These soils formed in material weathered from granitic rocks of the Santa Ana Mountains and from the sandstone of the coastal foothills. Slopes are 9-75%.

Corralitos loamy sand
This series consists of somewhat excessively drained soils on fans in long, narrow valleys. These soils formed in mixed coarse textured alluvium. Slopes are 0-5%. Elevation ranges from 50-1,500 feet. The vegetation is mainly annual grasses and forbs and some trees and brush generally near stream channels.

Cropley clay, 2 to 9 percent slopes
This series consists of well drained soils on fans and valley fill. These soils formed in fine textured alluvium derived from sedimentary rocks. Slopes are 2-9%. Elevation ranges from 50-1,000 feet. The vegetation is annual grasses and forbs.

Myford sandy loam, thick surface, 2 to 9 percent slopes
This series consists of moderately well drained soils on marine terraces. These soils formed in sandy sediments. Slopes are 0-30%. Elevation ranges from 50-1,500 feet. The vegetation generally is annual grasses and forbs and scattered low growing brush.

Soboba cobbly loamy sand, 0 to 15 percent slopes
This series consists of excessively drained soils on flood plains and alluvial fans. These soils formed in mixed alluvium. Slopes are 0- 15%. Elevation ranges from 50-2,500 feet. The vegetation is annual grasses, forbs, cactus, brush, and some trees.

II. JURISDICTION

A. <u>Army Corps of Engineers</u>

On June 22, 2020, the *Navigable Waters Protection Rule* (NWPR) became effective and superseded the previous definition of waters of the United States in all states except for Colorado. The U.S. District Court for the Northern District of California denied a motion on June 19, 2020 for preliminary injunction. District courts will hear the merits of the challenges over the next few months; however, at the time of the writing of this report, the definition of waters of the United States are as follows:

(a) *Jurisdictional waters.* For purposes of the Clean Water Act, 33 U.S.C. 1251 *et seq.* and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term ‘‘waters of the United States’’ means:

> *(1) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;*
> *(2) Tributaries;*
> *(3) Lakes and ponds, and impoundments of jurisdictional waters; and*
> *(4) Adjacent wetlands.*
> *(b) Non-jurisdictional waters. The following are not ‘‘waters of the United States’’:*
> *(1) Waters or water features that are*
> *not identified in paragraph (a)(1), (2),*
> *(3), or (4) of this section;*
> *(2) Groundwater, including groundwater drained through subsurface drainage systems;*
> *(3) Ephemeral features, including ephemeral streams, swales, gullies, rills,*
> *and pools;*
> *(4) Diffuse stormwater run-off and directional sheet flow over upland;*

(5) Ditches that are not waters identified in paragraph (a)(1) or (2) of this section, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this section that do not satisfy the conditions of paragraph (c)(1) of this section;
(6) Prior converted cropland;
(7) Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;
(8) Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) of this section;
(9) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
(10) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater runoff;
(11) Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters; and
(12) Waste treatment systems.

Should the *Navigable Waters Protection Rule* be stayed or otherwise blocked due to pending litigation, the definition for Waters of U.S. would likely revert to the prior definition provided in Corps regulations at 33 CFR Part 328.3(a) as:

(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 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 shell fish 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 (a) (1)-(4) of this section;
(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(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 the 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 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

Under either definition, in the absence of wetlands, the limits of Corps jurisdiction in non-tidal waters, such as intermittent streams, extend to the OHWM which is defined at 33 CFR 328.3(e) as:

...that line on the shore established by the fluctuation of water and indicated by physical characteristics such as 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.

1. Wetland Definition Pursuant to Section 404 of the Clean Water Act

The term “wetlands” (a subset of “waters of the United States”) is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987 the Corps published the Wetland Manual to guide its field personnel in determining jurisdictional wetland boundaries. The methodology set forth in the Wetland Manual and the Arid West Supplement generally require that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the Wetland Manual and Arid West Supplement provide great detail in methodology and allow for varying special conditions, a wetland should normally meet each of the following three criteria:

- More than 50 percent of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the Arid West 2016 Regional Wetland Plant List[5],[6]);

- Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions); and

- Whereas the Wetland Manual requires that hydrologic characteristics indicate that the ground is saturated to within 12 inches of the surface for at least five percent of the growing season during a normal rainfall year, the Arid West Supplement does not include a quantitative criteria with the exception for areas with "problematic hydrophytic vegetation", which require a minimum of 14 days of ponding to be considered a wetland.

B. Regional Water Quality Control Board

The State Water Resource Control Board and each of its nine Regional Boards regulate the discharge of waste (dredged or fill material) into waters of the United States[7] and waters of the state. Waters of the United States are defined above in Section II.A and waters of the state are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050[e]).

Section 401 of the CWA requires certification for any federal permit or license authorizing impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as Section

[5] Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Arid West 2016 Regional Wetland Plant List. Phytoneuron 2016-30: 1-17. Published 28 April 2016.

[6] Note the Corps also publishes a National List of Plant Species that Occur in Wetlands (Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016.); however, the Regional Wetland Plant List should be used for wetland delineations within the Arid West Region.

[7] Therefore, wetlands that meet the current definition, or any historic definition, of waters of the U.S. are waters of the state. In 2000, the State Water Resources Control Board determined that all waters of the U.S. are also waters of the state by regulation, prior to any regulatory or judicial limitations on the federal definition of waters of the U.S. (California Code or Regulations title 23, section 3831(w)). This regulation has remained in effect despite subsequent changes to the federal definition. Therefore, waters of the state includes features that have been determined by the U.S. Environmental Protection Agency (U.S. EPA) or the U.S. Army Corps of Engineers (Corps) to be "waters of the U.S." in an approved jurisdictional determination; "waters of the U.S." identified in an aquatic resource report verified by the Corps upon which a permitting decision was based; and features that are consistent with any current or historic final judicial interpretation of "waters of the U.S." or any current or historic federal regulation defining "waters of the U.S." under the federal Clean Water Act.

404 of the CWA and Section 10 of the Safe Rivers and Harbors Act, to ensure that the impacts do not violate state water quality standards. When a project could impact waters outside of federal jurisdiction, the Regional Board has the authority under the Porter-Cologne Water Quality Control Act to issue Waste Discharge Requirements (WDRs) to ensure that impacts do not violate state water quality standards. Clean Water Act Section 401 Water Quality Certifications, WDRs, and waivers of WDRs are also referred to as orders or permits.

1. State Wetland Definition

The Water Boards define an area as wetland[8] as follows: *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*

The following wetlands are waters of the state:

1. *Natural wetlands;*
2. *Wetlands created by modification of a surface water of the state;[9] and*
3. *Artificial wetlands[10] that meet any of the following criteria:*
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the state unless they also satisfy the criteria set forth in 2, 3a, or 3b):

[8] State Water Resources Control Board. 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. [For Inclusion in the Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California].

[9] "Created by modification of a surface water of the state" means that the wetland that is being evaluated was created by modifying an area that was a surface water of the state at the time of such modification. It does not include a wetland that is created in a location where a water of the state had existed historically, but had already been completely eliminated at some time prior to the creation of the wetland. The wetland being evaluated does not become a water of the state due solely to a diversion of water from a different water of the state.

[10] Artificial wetlands are wetlands that result from human activity.

i. Industrial or municipal wastewater treatment or disposal,
ii. Settling of sediment,
iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
iv. Treatment of surface waters,
v. Agricultural crop irrigation or stock watering,
vi. Fire suppression,
vii. Industrial processing or cooling,
viii. Active surface mining – even if the site is managed for interim wetlands functions and values,
ix. Log storage,
x. Treatment, storage, or distribution of recycled water, or
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or
xii. Fields flooded for rice growing.

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in 2, 3.a, 3.b, or 3.c are not waters of the state. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

C. California Department of Fish and Wildlife

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

CDFW defines a stream (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW also defines a stream as “a body of water that flows, or has flowed, over a given course during the historic hydrologic regime, and where the width of its course can reasonably be identified by physical or biological indicators.”

It is important to note that the Fish and Game Code defines fish and wildlife to include: all wild animals, birds, plants, fish, amphibians, invertebrates, reptiles, and related ecological communities including the habitat upon which they depend for continued viability (FGC Division 5, Chapter 1, section 45 and Division 2, Chapter 1 section 711.2(a) respectively). Furthermore, Division 2, Chapter 5, Article 6, Section 1600 et seq. of the California Fish and

Game Code does not limit jurisdiction to areas defined by specific flow events, seasonal changes in water flow, or presence/absence of vegetation types or communities.

III. RESULTS

A. Corps Jurisdiction[11]

Corps jurisdiction associated with the Lower Curtis Park site totals approximately 0.22 acre of water of the United States of which 0.06 acre consists of wetlands. The boundaries of the waters of the United States are depicted on the enclosed maps. The site contains two drainages that developed following construction of Olympiad Road adjacent development with the construction of storm drains that discharge to the site. Drainage A is an intermittent drainage, tributary to Arroyo Trabuco Creek, which is an intermittent drainage course that is tributary to San Juan Creek, which is tributary to the Pacific Ocean and thus, is a Water of the U.S. Drainage B is an ephemeral drainage that only flows in direct response to rainfall and does not meet the definition of Waters of the U.S. under the Navigable Waters Protection Rule as discussed in more detail below.

1. Drainage A

Drainage A originates from a storm drain that discharges near the south-central portion of the site and includes 0.215 acre of Waters of the U.S., of which 0.063 acre consist of jurisdictional wetland. From the storm drain outfall, the drainage extends to the east, ultimately exiting the site before discharging to Arroyo Trabuco Creek. The drainage receives nuisance water that enters the site from the storm drain outfall and portions of the drainage exhibit standing or flowing water. Approximately 50 feet downstream of the outfall, a stand of southern cattail (*Typha domingensis*, OBL) starts and extends to where yerba mansa (*Anemopsis californica*, OBL) becomes dominant in the understory with a canopy of non-native Mexican fan palms (*Washingtonia robusta*, FACW). Soils in the area exhibit hydric characteristics including Hydrogen Sulfide (A4), and Redox Dark Surface (F6). Indicators for wetland hydrology include standing water, and saturation in the upper 12 inches. The wetland varies in width from 4 to 40 feet. Downstream of the wetland, the drainage ranges in width from four to 12 feet and the presence of an OHWM is indicated by the shelving and debris wrack.

[11] On January 23, 2020, the U.S. Environmental Protection Agency (EPA) and the Corps finalized the *Navigable Waters Protection Rule* to redefine "Waters of the United States" and thereby establish federal regulatory authority under the Clean Water Act. The *Navigable Waters Protection Rule* is expected to be published in the Federal Register in the first quarter of 2020 and will become effective 60 days after publication in the Federal Register, which is June 22, 2020. However, the rule has been challenged by a number of states and could potentially be "stayed" and its implementation could be delayed. Implementation of the *Navigable Waters Protection Rule* may result in a change to the delineated areas of Corps jurisdiction as outlined in this report.

Below the wetland the channel is variously vegetated with Spanish sunflower (*Pulicaria paludosa*), upland non-native grasses and forbs or is unvegetated. Below the wetland the drainage banks support upland shrubs including a predominance of coyote brush (*Baccharis pilularis*, UPL).

2. Drainage B

Drainage B is a deep erosional gully that extends 564 feet from near the western site boundary to where the feature exits the site, where it discharges to the Arroyo Trabuco Creek and would not be considered a Water of the U.S. under the Navigable Waters Protection Rule due to its ephemeral flows. The gully is up to approximately 30 feet deep and indicators for an OHWM are limited to the very bottom of the gully ranging from three to five feet in width. The gully bottom is unvegetated and indicators for the presence of an OHWM consists of shelving and changes in the character of the soil.

As noted, under the Navigable Waters Protection Rule, this feature would not likely be considered a Water of the U.S. because of its ephemeral character. Specifically, the Navigable Waters Protection Rule excludes ephemeral drainages:

Section 328.3b of the NWPA states:

> *(b) Non-jurisdictional waters. The following are not ''waters of the United States'': (1) Waters or water features that are not identified in paragraph (a)(1), (2), (3), or (4) of this section; (2) Groundwater, including groundwater drained through subsurface drainage systems; (3)* ***Ephemeral features, including ephemeral streams,*** *swales,* ***gullies****, rills, and pools;*

The definition for ephemeral streams is defined in the NWPR as:

> *Ephemeral. The term ephemeral means surface water flowing or pooling only in direct response to precipitation (e.g., rain or snow fall).*

Table 1: Summary of Corps Jurisdiction			
Name	Type	Acres	Linear Feet
Drainage A	Wetland	0.063	151
Drainage A	Non-Wetland Waters	0.152	748
Drainage B	Not Jurisdictional	NA	NA
	Total	0.215	899

B. CDFW Jurisdiction

1. Drainage A

CDFW jurisdiction includes all areas of Corps jurisdiction and extends to the top of the drainage banks or the edge of the riparian canopy and totals 0.540 acre of which 0.217 acre consists of vegetated riparian habitat. Riparian vegetation includes the southern cattail (*Typha domingensis*, OBL), yerba mansa (*Anemopsis californica*, OBL) and includes non-native Mexican fan palms (*Washingtonia robusta*, FACW) a few coast live oaks (*Quercus agrifolia*, UPL), and mulefat scrub in the lower portions of the drainage.

2. Drainage B

Drainage B is a deep erosional gully that extends 564 feet from near the western site boundary to where the feature exits the site, where it discharges to the Arroyo Trabuco Creek. The gully is up to approximately 30 feet deep and the depth at top of bank ranges from 10 to 20 feet and totals 0.182 acre. The gully is unvegetated and indicators for flow consist of shelving and changes in the character of the soil.

Table 2: Summary of CDFW Jurisdiction

Name	Type	Acres	Linear Feet
Drainage A	Riparian	0.323	364
Drainage A	Non-Riparian Stream	0.217	535
Drainage B	Non-Riparian Stream	0.182	564
	Total	0.215	1,463

C. Regional Water Quality Control Board Jurisdiction

1. Drainage A

Drainage A originates from a storm drain that discharges near the south-central portion of the site and includes 0.277 acre of Waters of the State., of which 0.06 acre consist of jurisdictional wetland. As noted above, approximately 50 feet downstream of the outfall, a stand of southern cattail (*Typha domingensis*, OBL) starts and extends to where yerba mansa (*Anemopsis californica*, OBL) becomes dominant in the understory with a canopy of non-native Mexican fan palms (*Washingtonia robusta*, FACW). Soils in the area exhibit hydric characteristics including Hydrogen Sulfide (A4), and Redox Dark Surface (F6). Indicators for wetland hydrology include

standing water, and saturation in the upper 12 inches. The wetland varies in width from 4 to 40 feet. Downstream of the wetland, the drainage ranges in width from four to 12 feet and the presence of an OHWM is indicated by the shelving and debris wrack.

2. Drainage B

Drainage B is a deep erosional gully that extends 564 feet from near the western site boundary to where the feature exits the site, where it discharges to the Arroyo Trabuco Creek. The gully is up to approximately 30 feet deep and the depth at top of bank ranges from 10 to 20 feet and Waters of the State totals 0.182 acre. The gully is unvegetated and indicators for flow consist of shelving and changes in the character of the soil.

Table 3: Summary of Regional BoardJurisdiction

Name	Type	Acres	Linear Feet
Drainage A	Wetland	0.063	151
Drainage A	Non-Wetland Stream	0.217	748
Drainage B	Non-Riparian Stream	0.182	564
	Total	0.462	1,463

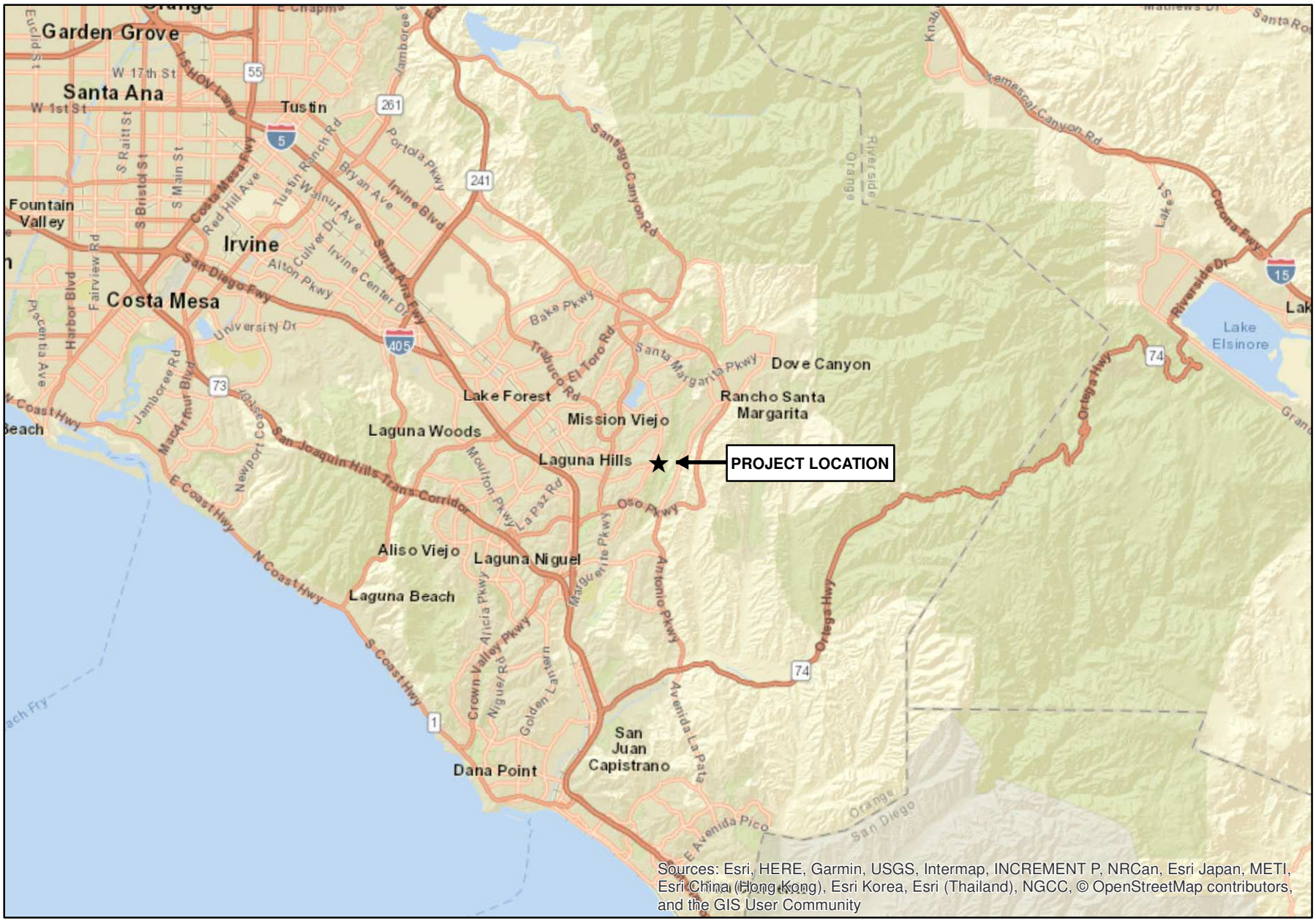
If you have any questions about this letter report, please contact Tony Bomkamp at my direct line (949) 340-7333 or by cell (949) 929-1651.

Sincerely,

GLENN LUKOS ASSOCIATES, INC.

Tony Bomkamp
Regulatory Specialist

p:1454-2_JD_June 2020.docx



Source: ESRI World Street Map

N

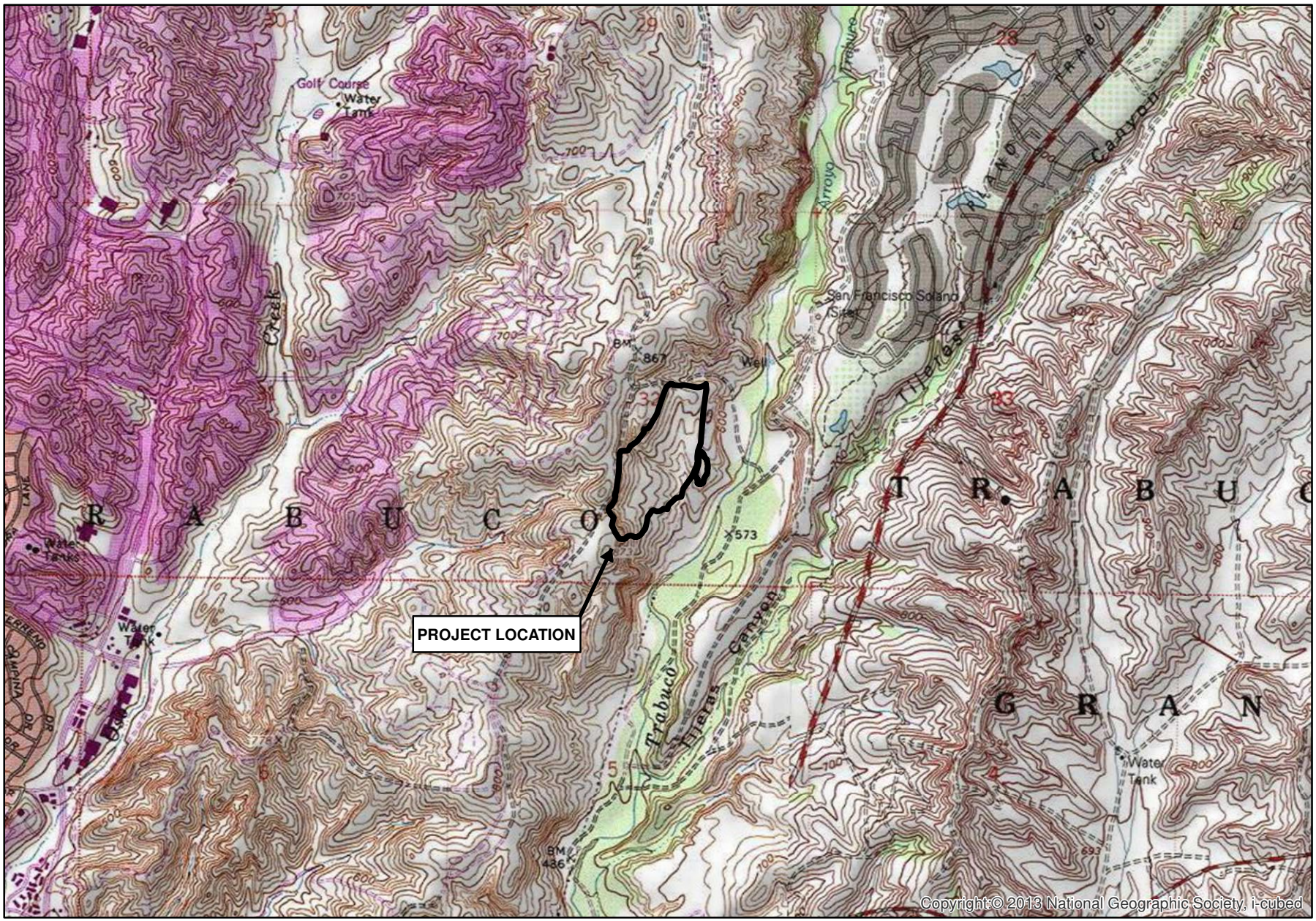
0 2 4 8 Miles

LOWER CURTIS PARK EXPANSION

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1



Adapted from USGS San Juan Capistrano, CA quadrangle

N

0 1,000 2,000 4,000 Feet

LOWER CURTIS PARK EXPANSION

Vicinity Map

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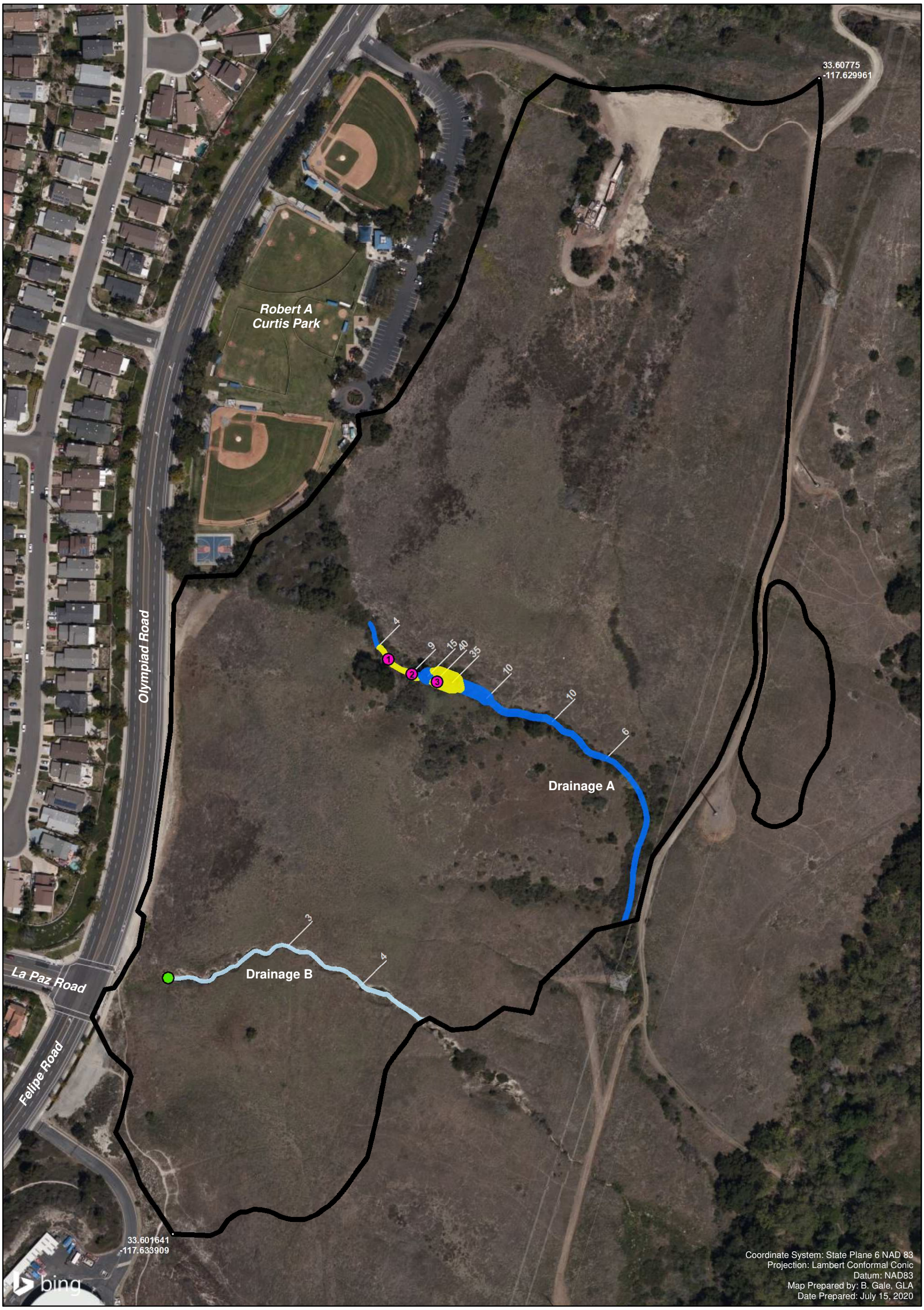
Exhibit 2



Project Site

Wetland

Non-Wetland Waters

Non-Jurisdictional Drainage

10 Width of Drainage in Feet

Data Pit

Culvert

N

0 87.5 175 350

Feet

1 inch = 175 feet

LOWER CURTIS PARK EXPANSION

Corps Jurisdictional Delineation Map

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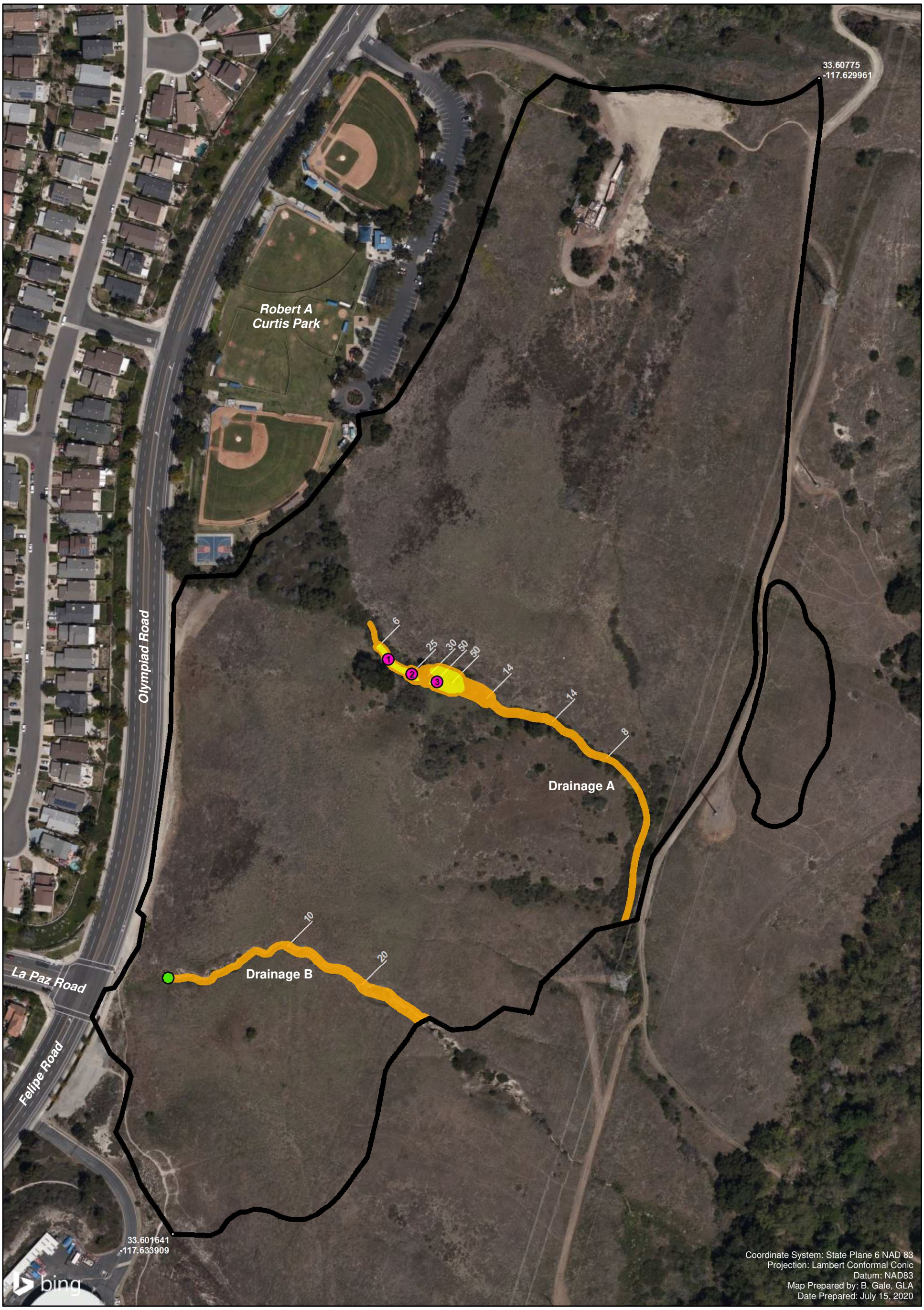
Exhibit 3A

X:\1100 AFTER THE REST\1454-02OLYM\1454-2_GIS\DelineationGIS\1454-2_Corps.mxd



Project Site

Wetland

Non-Riparian Streambed

10 Width of Drainage in Feet

Data Pit

Culvert

N

0 87.5 175 350

Feet

1 inch = 175 feet

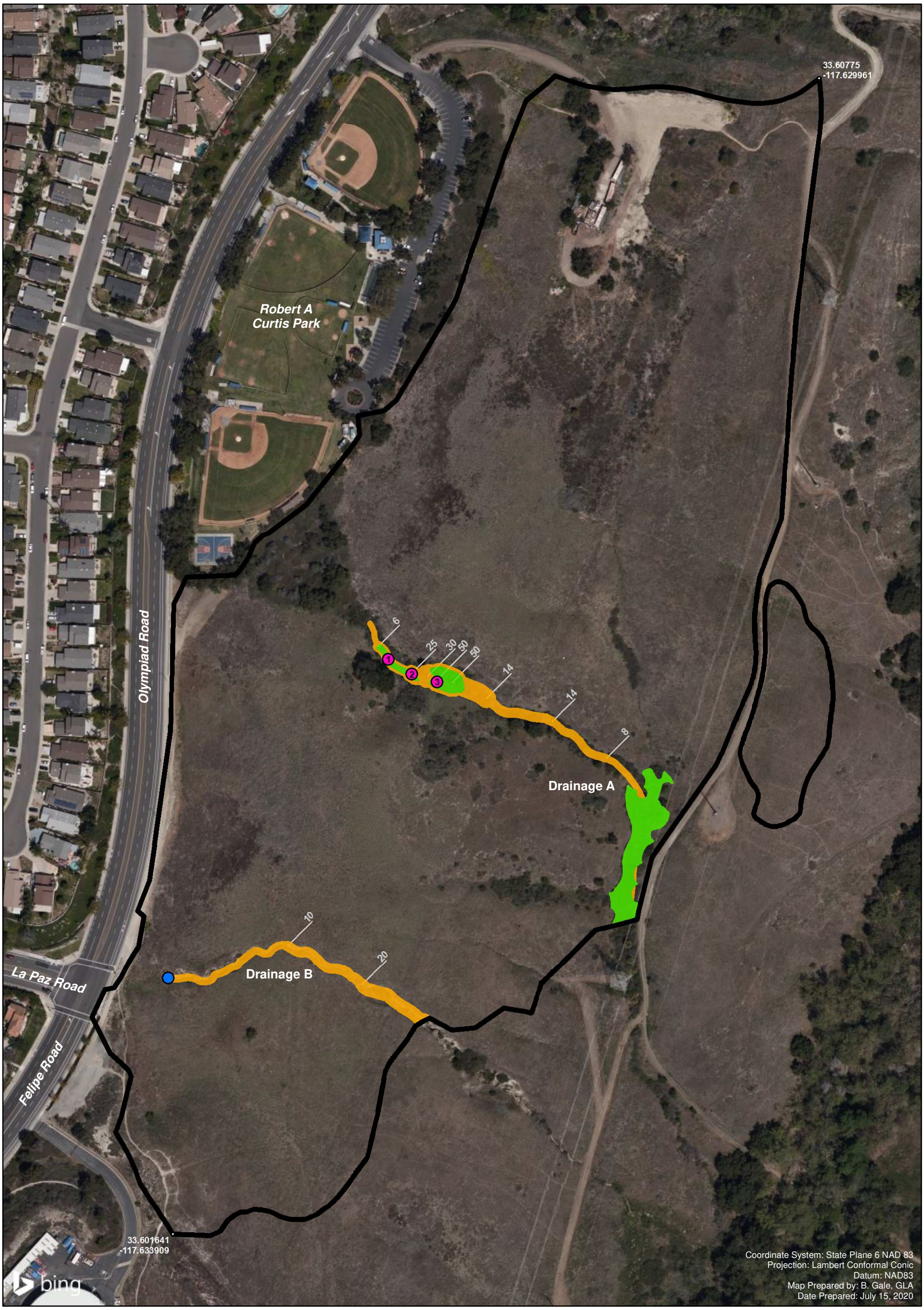
LOWER CURTIS PARK EXPANSION

RWQCB Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3B

X:\1100 AFTER THE REST\1454-02OLYM\1454-2_GIS\DelineationGIS\1454-2_RWQCB.mxd



Project Site

Riparian

Non-Riparian Streambed

10 Width of Drainage in Feet

Data Pit

Culvert

N

0 87.5 175 350

Feet

1 inch = 175 feet

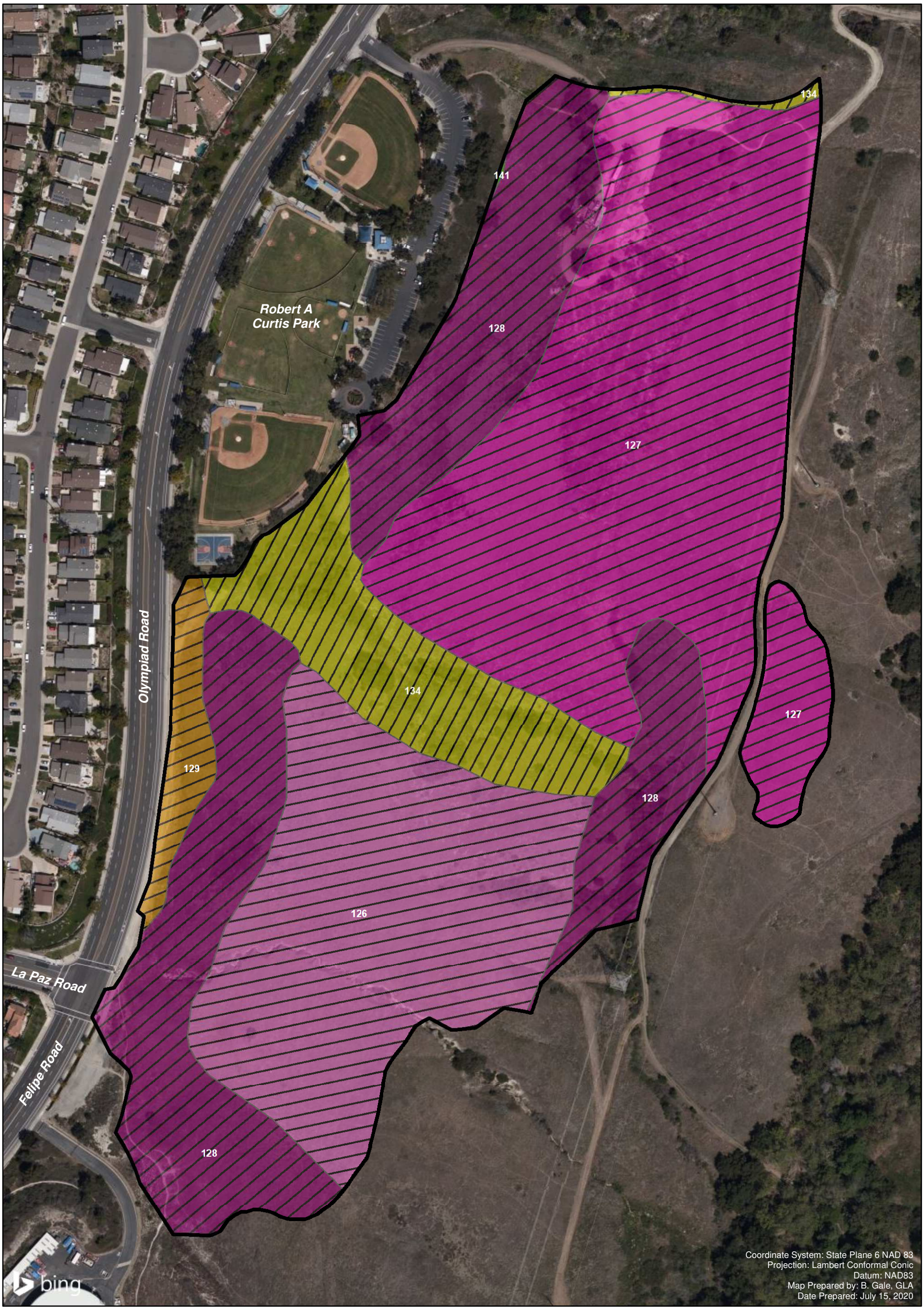
LOWER CURTIS PARK EXPANSION

CDFW Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3C

X:\1100 AFTER THE REST\1454-02OLYM\1454-2_GIS\DelineationGIS\1454-2_CDFW.mxd



Project Site

126 - Bosanko Clay, 9 to 15 Percent Slopes

127 - Bosanko Clay, 15 to 30 Percent Slopes

128 - Bosanko Clay, 30 to 50 Percent Slopes

129 - Bosanko-Balcom Complex, 15 to 30 Percent Slopes

134 - Calleguas Clay Loam, 50 to 75 Percent Slopes, Eroded

141 - Cieneba Sandy Loam, 15 to 30 Percent Slopes

N

0 87.5 175 350

Feet

1 inch = 175 feet

LOWER CURTIS PARK EXPANSION

Soils Map

GLENN LUKOS ASSOCIATES

Exhibit 4

X:\1100 AFTER THE REST\1454-02OLYM\1454-2_GIS\SoilsGIS\1454-2_Soils.mxd

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Lower Curtis Park City/County: Mission Viejo Sampling Date: June 18, 2020

Applicant/Owner: City of Mission Viejo State: CA Sampling Point: Point 1

Investigator(s): T. Bomkamp and D. Smith Section, Township, Range: Section 32, T6S, R7W

Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): Concave Slope (%): 5 - 10

Subregion (LRR): LRR Lat: 33.604313 Long: -117.631944 Datum: NAD 83

Soil Map Unit Name: Botella Clay Loam NWI classification: Palustrine

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Typha domingensis	85	Y	OBL
2. Urtica dioica holosericea	15	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum None % Cover of Biotic Crust NA

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	_____	x 2 =	_____
FAC species	15	x 3 =	45
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.3

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: Point 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 %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 yr 3/1	90	7.5YR 4/6	5	C	M	SCL	Also Layers of Muck & Sulfidic

[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: None

Depth (inches): NA

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): one

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

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

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: Lower Curtis Park City/County: Mission Viejo Sampling Date: June 18, 2020

Applicant/Owner: City of Mission Viejo State: CA Sampling Point: Point 2

Investigator(s): T. Bomkamp and D. Smith Section, Township, Range: Section 32, T6S, R7W

Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): Concave Slope (%): 5 - 10

Subregion (LRR): LRR Lat: 33.604313 Long: -117.631944 Datum: NAD 83

Soil Map Unit Name: Botella Clay Loam NWI classification: Palustrine

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Typha domingensis	85	Y	OBL
2. Urtica dioica holosericea	15	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum None % Cover of Biotic Crust NA

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species		x 2 =	
FAC species	15	x 3 =	45
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.3

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: Point 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
0-12	10 yr 3/1	90	7.5YR 4/6	5	C	M	SCL	Also Layers of Muck & Sulfidic

[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: None

Depth (inches): NA

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): one

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

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

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: Lower Curtis Park City/County: Mission Viejo Sampling Date: June 18, 2020

Applicant/Owner: City of Mission Viejo State: CA Sampling Point: Point 3

Investigator(s): T. Bomkamp and D. Smith Section, Township, Range: Section 32, T6S, R7W

Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): Concave Slope (%): 5 - 10

Subregion (LRR): LRR Lat: 33.604313 Long: -117.631944 Datum: NAD 83

Soil Map Unit Name: Botella Clay Loam NWI classification: Palustrine

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

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

Are Vegetation _____, Soil _____, or Hydrology _____ 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: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Washington robusta	FACW	Y	FACW
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Anemopsis californica	100	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	160 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum None % Cover of Biotic Crust NA

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 100	x 1 = 100
FACW species 60	x 2 = 120
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 160 (A)	220 (B)

Prevalence Index = B/A = 1.38

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: Point 3

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
0-12	10 yr 3/2	90	7.5YR 4/6	5	C	M	SCL	Also Sulfidic Odor

[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: None

Depth (inches): NA

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): one

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks: